NWL

JULY 2017

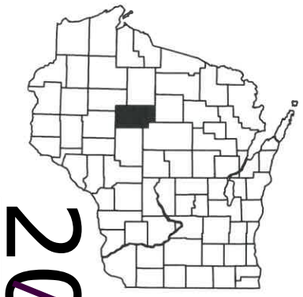
PROJECT ID: 8780-00-71

WITH: N/A

COUNTY: RUSK

ORDER OF SHEETS

TOTAL SHEETS = 40



2017

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STH 40 - STH 27

LITTLE THORNAPPLE RIVER BRIDGE B-54-0123

CTH J

RUSK COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8780-00-71		

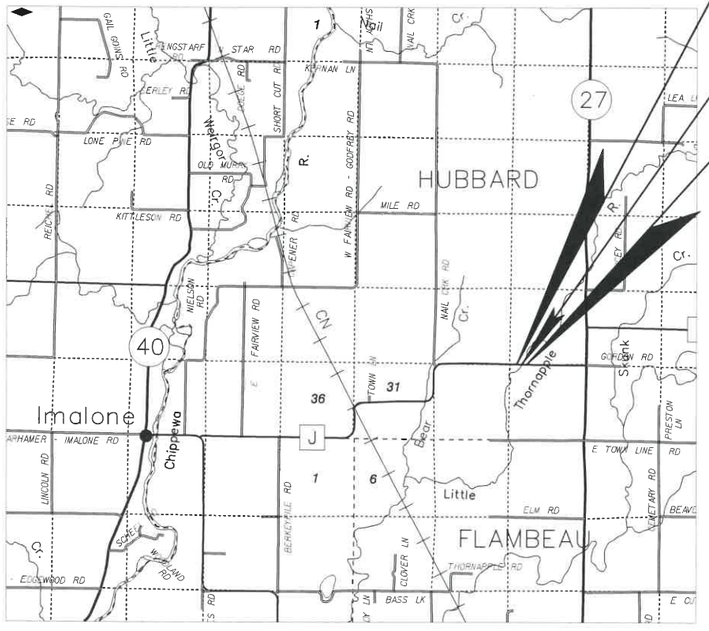
STATE PROJECT NUMBER

8780-00-71

BEGIN PROJECT 8780-00-71
STA. 8+50.00
Y = 600,684.878
X = 805,771.592

STRUCTURE B-54-0123
STA. 10+00.00

END PROJECT 8780-00-71
STA. 11+50.00
Y = 600,681.143
X = 806,071.569



LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.057 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, RUSK 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.

DESIGN DESIGNATION

A.A.D.T.	(2016)	= 170
A.A.D.T.	(2036)	= 260
D.H.V.		= NA
D.D.		= NA
T.		= NA
DESIGN SPEED		= 55
ESALS		= NA

CONVENTIONAL SYMBOLS

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

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

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

ACCEPTED FOR

COUNTY of RUSK

DATE: 1/9/17 (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY

Mead & Hunt

WISCONSIN JAY P. WHEATON E-36779 LA CROSSE, WI PROFESSIONAL ENGINEER

DATE: 1/13/17 (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	MEAD & HUNT
Designer	MEAD & HUNT
Management Consultant	KNIGHT E/A, INC.

APPROVED FOR THE DEPARTMENT

DATE: 1/26/17 (Management Consultant Signature)

E

GENERAL NOTES

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

WHEN THE QUANTITY OF BASE AGGREGATE OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT 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.

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

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

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

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

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

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

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS AND PAVEMENTS AT REMOVAL LIMITS.

4-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A 1 3/4-INCH UPPER LAYER AND A 2 1/4-INCH LOWER LAYER.

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%.

CONSULTANT CONTACT
MEAD & HUNT, INC.
750 NORTH THIRD STREET
LA CROSSE, WI 54601
ATTN: JAY WHEATON, P.E.
TELEPHONE: 608-784-6040
E-MAIL: JAY.WHEATON@MEADHUNT.COM

DNR LIAISON
DEPARTMENT OF NATURAL RESOURCES
DNR NORTHERN REGION HQ
810 WEST MAPLE STREET
SPOONER, WI 54801
ATTN: AMY CRONK
TELEPHONE: 715-635-4229
E-MAIL: AMY.CRONK@WISCONSIN.GOV

RUSK COUNTY
RUSK COUNTY HIGHWAY DEPARTMENT
N4711 HWY 27
LADYSMITH, WI 54848
ATTN: SCOTT EMCH
TELEPHONE: 715-532-2633
E-MAIL: SEMCH@RUSKCOUNTYWI.US

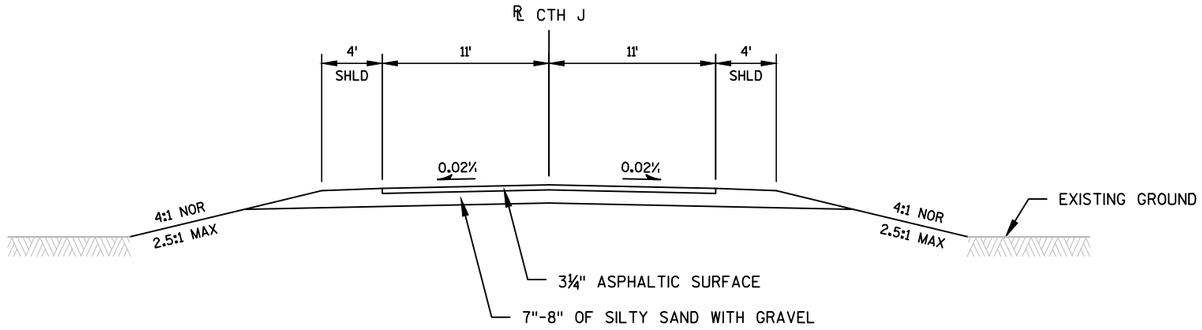
UTILITY CONTACTS

*JUMP RIVER ELECTRIC
ELECTRIC
ATTN: HANK LEW
P.O. BOX 99
LADYSMITH, WI 54848
TELEPHONE: 715-532-5524
E-MAIL: HLEW@JREC.NET

* Denotes Diggers Hotline Member

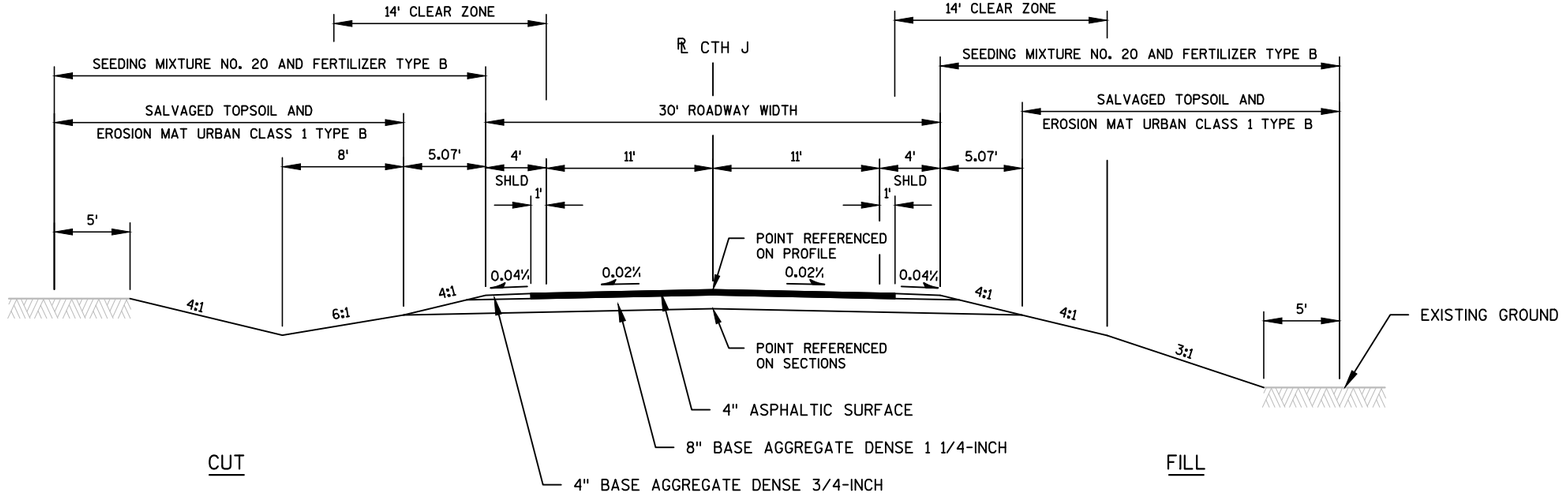
DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

2



EXISTING TYPICAL SECTION

STA 8+50.00TO STA 9+84.50
STA 10+15.50 TO STA 11+50.00

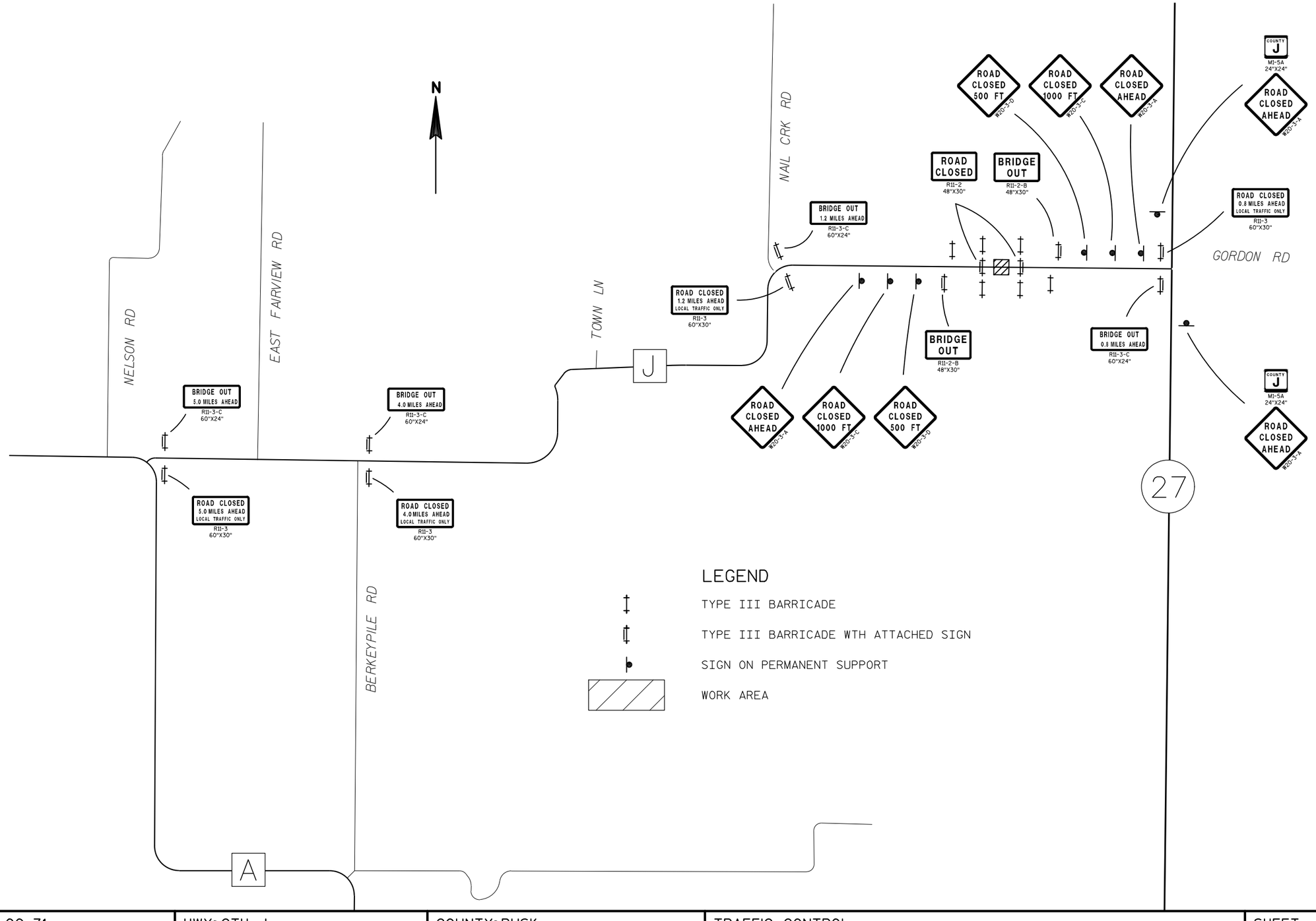


PROPOSED TYPICAL SECTION

STA 8+50.00 TO STA 9+81.23
STA 10+18.77 TO STA 11+50.00

PROJECT NO: 8780-00-71	HWY: CTH J	COUNTY: RUSK	TYPICAL SECTIONS	SHEET 3	E

2



PROJECT NO:8780-00-71	HWY:CTH J	COUNTY:RUSK	TRAFFIC CONTROL	SHEET 4	E

FILE NAME : X:\2881800\141903.01\TECH\CAD\8780-00-71\SHEETSPLAN\025001-TC.DWG
LAYOUT NAME - 025001-TC - 025001-TC

PLOT DATE : 1/10/2017 8:04 AM PLOT BY : JEFF BREU PLOT NAME : PLOT SCALE : 1 IN:0.5 MI

8780-00-71

Line	Item	Item Description	Unit	Total	Qty
0010	201.0105	Clearing	STA	1.000	1.000
0020	201.0205	Grubbing	STA	1.000	1.000
0030	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+00	LS	1.000	1.000
0040	205.0100	Excavation Common	CY	292.000	292.000
0050	206.1000	Excavation for Structures Bridges (structure) 01. B-54-123	LS	1.000	1.000
0060	210.1500	Backfill Structure Type A	TON	220.000	220.000
0070	213.0100	Finishing Roadway (project) 01. 8780-00-71	EACH	1.000	1.000
0080	305.0110	Base Aggregate Dense 3/4-Inch	TON	50.000	50.000
0090	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	500.000	500.000
0100	312.0115	Select Crushed Material	CY	19.000	19.000
0110	455.0605	Tack Coat	GAL	50.000	50.000
0120	465.0105	Asphaltic Surface	TON	170.000	170.000
0130	502.0100	Concrete Masonry Bridges	CY	143.000	143.000
0140	502.3200	Protective Surface Treatment	SY	174.000	174.000
0150	505.0400	Bar Steel Reinforcement HS Structures	LB	3,680.000	3,680.000
0160	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	18,840.000	18,840.000
0170	513.4061	Railing Tubular Type M (structure) 01. B-54-123	LF	120.000	120.000
0180	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0190	550.0020	Pre-Boring Rock or Consolidated Materials	LF	38.000	38.000
0200	550.0500	Pile Points	EACH	5.000	5.000
0210	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	125.000	125.000
0220	606.0300	Riprap Heavy	CY	210.000	210.000
0230	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	126.000	126.000
0240	619.1000	Mobilization	EACH	1.000	1.000
0250	624.0100	Water	MGAL	6.000	6.000
0260	625.0500	Salvaged Topsoil	SY	1,000.000	1,000.000
0270	628.1504	Silt Fence	LF	650.000	650.000
0280	628.1520	Silt Fence Maintenance	LF	1,300.000	1,300.000
0290	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0300	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0310	628.2008	Erosion Mat Urban Class I Type B	SY	1,000.000	1,000.000
0320	628.6005	Turbidity Barriers	SY	280.000	280.000
0330	628.7504	Temporary Ditch Checks	LF	60.000	60.000
0340	629.0210	Fertilizer Type B	CWT	0.800	0.800
0350	630.0120	Seeding Mixture No. 20	LB	35.000	35.000
0360	630.0200	Seeding Temporary	LB	20.000	20.000
0370	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0380	637.2230	Signs Type II Reflective F	SF	12.000	12.000

8780-00-71

Line	Item	Item Description	Unit	Total	Qty
0390	638.2602	Removing Signs Type II	EACH	4.000	4.000
0400	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0410	642.5001	Field Office Type B	EACH	1.000	1.000
0420	643.0100	Traffic Control (project) 01. 8780-00-71	EACH	1.000	1.000
0430	643.0420	Traffic Control Barricades Type III	DAY	1,440.000	1,440.000
0440	643.0705	Traffic Control Warning Lights Type A	DAY	2,560.000	2,560.000
0450	643.0900	Traffic Control Signs	DAY	1,760.000	1,760.000
0460	645.0120	Geotextile Type HR	SY	400.000	400.000
0470	646.0106	Pavement Marking Epoxy 4-Inch	LF	1,100.000	1,100.000
0480	650.4500	Construction Staking Subgrade	LF	262.000	262.000
0490	650.5000	Construction Staking Base	LF	262.000	262.000
0500	650.6500	Construction Staking Structure Layout (structure) 01. B-54-123	LS	1.000	1.000
0510	650.9910	Construction Staking Supplemental Control (project) 01. 8780-00-71	LS	1.000	1.000
0520	650.9920	Construction Staking Slope Stakes	LF	262.000	262.000
0530	690.0150	Sawing Asphalt	LF	44.000	44.000
0540	715.0502	Incentive Strength Concrete Structures	DOL	858.000	858.000

EARTHWORK SUMMARY

FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION CUT (1)	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	AVAILABLE MATERIAL (2)	UNEXPANDED FILL	EXPANDED FILL (FACTOR 1.25)	MASS ORDINATE +/- (3)	WASTE
8+50 - 11+50	M/L	292	71	221	126	157	64	64
		292				**TOTAL**		**64**

(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.

CLEARING & GRUBBING

STATION	TO	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
9+00	-	10+00	M/L RT	1	1
			TOTAL	**1**	**1**

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
8+50	-	9+81	M/L	25	250	3
10+19	-	11+50	M/L	25	250	3
			TOTAL	**50**	**500**	**6**

ASPHALT SUMMARY

STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
8+50	-	9+81	M/L	25	85
10+19	-	11+50	M/L	25	85
			TOTAL	**50**	**170**

TACK COAT ESTIMATED AT 0.07 GAL/SY

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
8+50	-	9+81	M/L, LT & RT	395	395	0.3	14	7
10+19	-	11+50	M/L, LT & RT	345	345	0.3	12	6
WASTE SITE				260	260	0.2	9	7
			TOTAL	**1,000**	**1,000**	**0.8**	**35**	**20**

*HALF RATE

MOBILIZATION

CATEGORY	STATION	TO	STATION	LOCATION	619.1000 MOBILIZATION EACH
0010	PROJECT			M/L	0.250
0020	PROJECT			M/L	0.750
				TOTAL	**1.000**

SILT FENCE

STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF
8+50	-	9+81	M/L, LT & RT	260	520
10+19	-	11+50	M/L, LT & RT	260	520
UNDISTRIBUTED			VARIOUS	130	260
			TOTAL	**650**	**1,300**

TURBIDITY BARRIERS

STATION	LOCATION	628.6005 TURBIDITY BARRIERS SY
9+95	M/L	140
10+05	M/L	140
	TOTAL	**280**

NOTE: ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED AS 0020.

EROSION CONTROL SUMMARY

STATION	TO	STATION	LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.7504 TEMPORARY DITCH CHECKS LF
8+50	-	9+81	M/L, LT & RT	-	-	20
10+19	-	11+50	M/L, LT & RT	-	-	20
UNDISTRIBUTED			VARIOUS	4	2	20
			TOTAL	**4**	**2**	**60**

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+68	M/L, RT	1	3	-	-	W5-52R
9+73	M/L, LT	1	3	-	-	W5-52L
9+84	M/L, LT	-	-	1	1	
9+84	M/L, RT	-	-	1	1	
10+10	M/L, LT	-	-	1	1	
10+10	M/L, RT	-	-	1	1	
10+27	M/L, RT	1	3	-	-	W5-52L
10+32	M/L, LT	1	3	-	-	W5-52R
	TOTAL	**4**	**12**	**4**	**4**	

TRAFFIC CONTROL ITEMS

LOCATION	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	REMARKS
CTH J	1,440	2,560	1,760	80 DAYS
TOTAL	**1,440**	**2,560**	**1,760**	

SAWING ASPHALT

STATION	LOCATION	690.0150 SAWING ASPHALT LF
8+50	M/L	22
11+50	M/L	22
	TOTAL	**44**

PAVEMENT MARKING

STATION	TO	STATION	LOCATION	646.0106 EPOXY LF	REMARKS
8+50	-	11+50	M/L, LT & RT	700	WHITE EDGELINES
8+50	-	11+50	M/L, CL	325	YELLOW SOLID
8+50	-	11+50	M/L, CL	75	YELLOW SKIPS WB
			TOTAL	**1,100**	

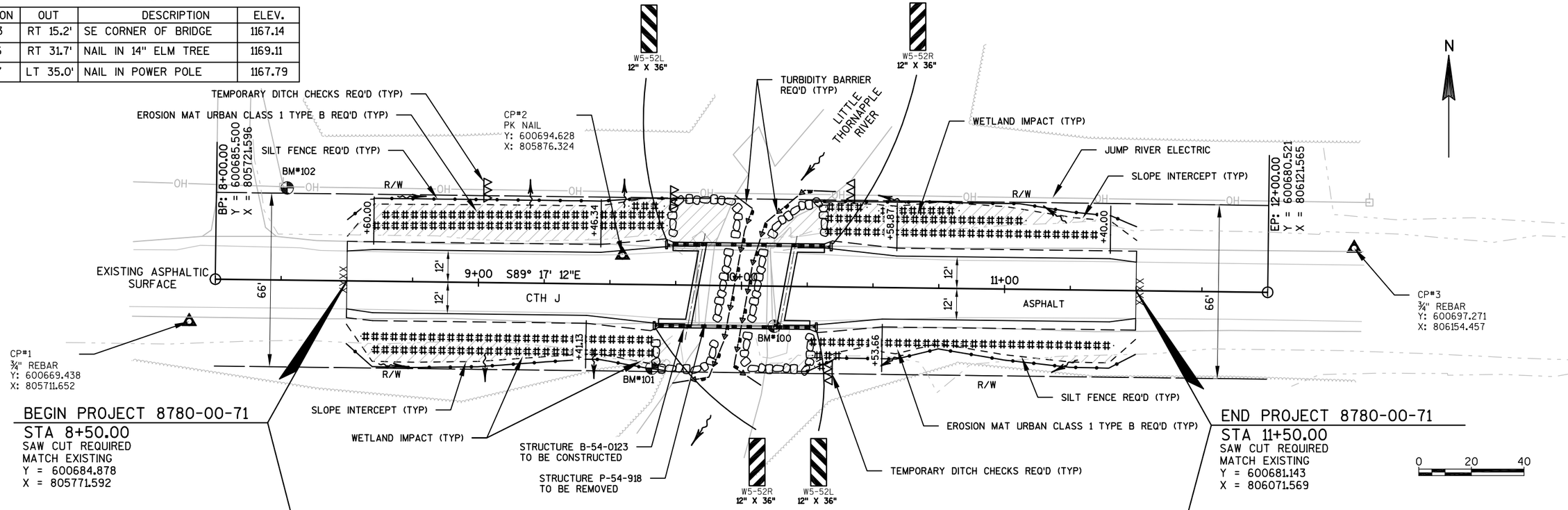
CONSTRUCTION STAKING

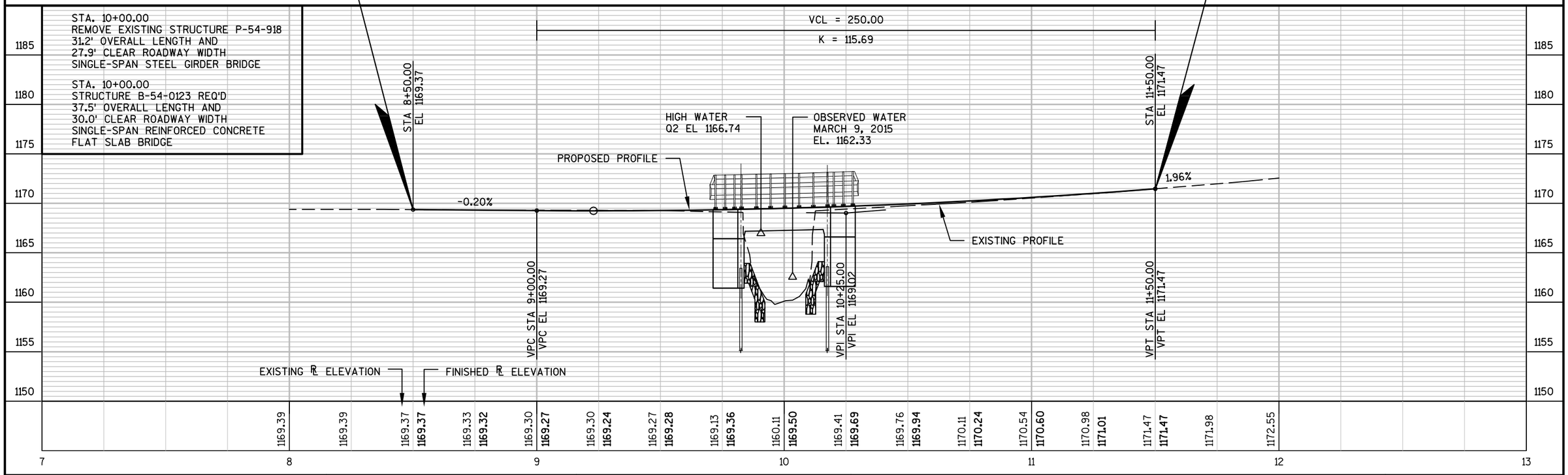
CATEGORY	STATION	TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6500 CONSTRUCTION STAKING STRUCTURE LAYOUT (B-54-0123) LS	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
0010	8+50	-	9+81	M/L	131	131	-	-	131
0010	10+19	-	11+50	M/L	131	131	-	-	131
0020	10+00			M/L	-	-	1	-	-
0010	PROJECT			M/L	-	-	-	1	-
				TOTAL	**262**	**262**	**1**	**1**	**262**

NOTE: ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED AS 0020.

BENCH MARKS

NO.	STATION	OUT	DESCRIPTION	ELEV.
100	10+13	RT 15.2'	SE CORNER OF BRIDGE	1167.14
101	9+66	RT 31.7'	NAIL IN 14" ELM TREE	1169.11
102	8+27	LT 35.0'	NAIL IN POWER POLE	1167.79



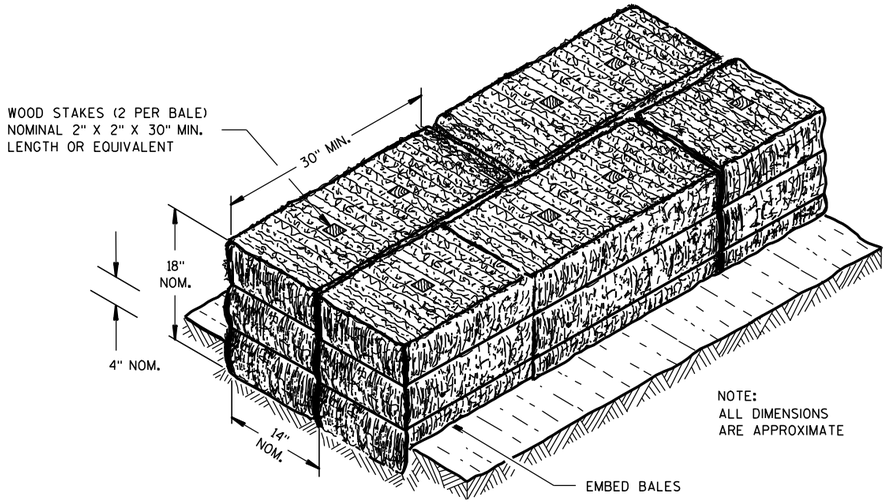


PROJECT NO: 8780-00-71	HWY: CTH J	COUNTY: RUSK	PLAN AND PROFILE: CTH J	SHEET 9	E

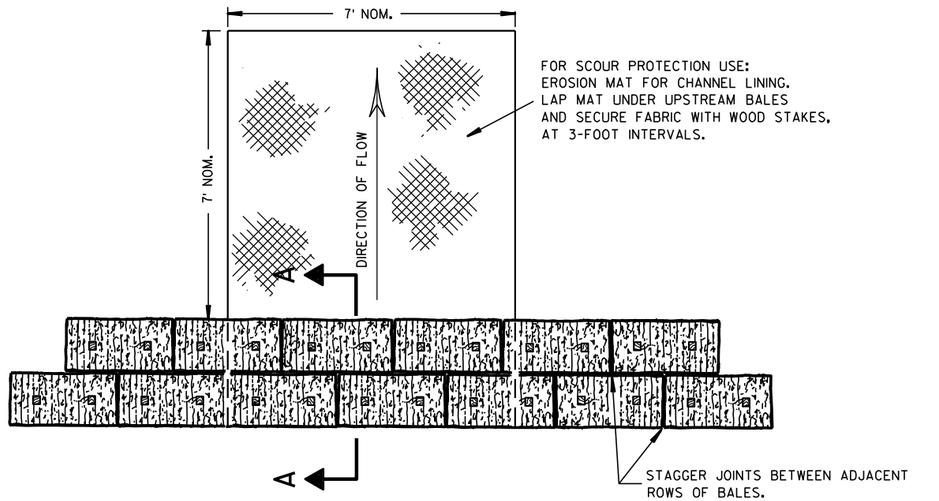
Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-08	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-17A	LONGITUDINAL MARKING (MAINLINE)

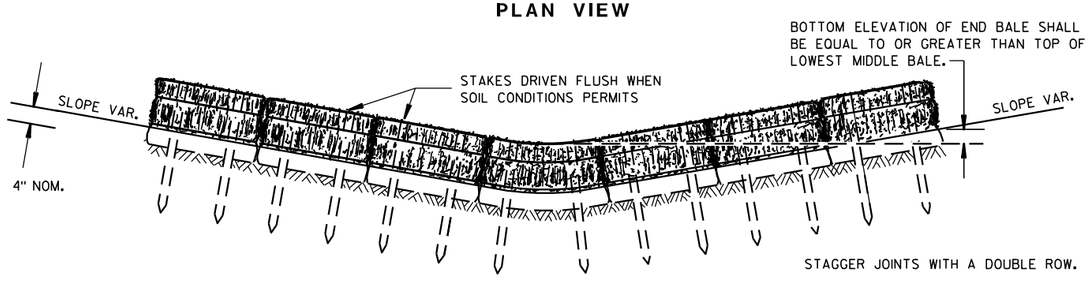
6



SECTION A-A



PLAN VIEW



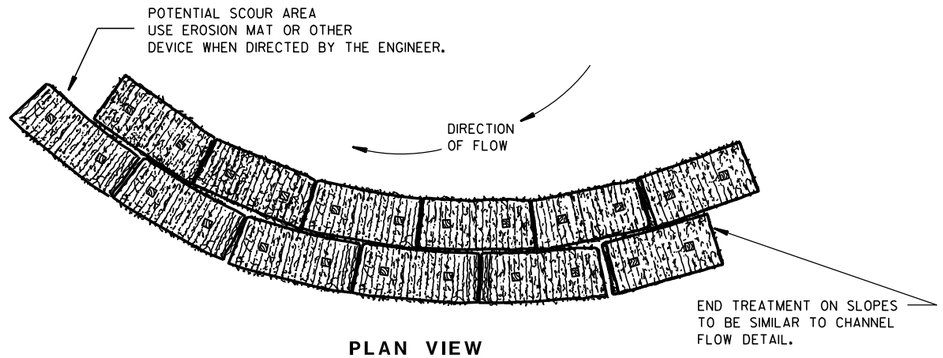
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

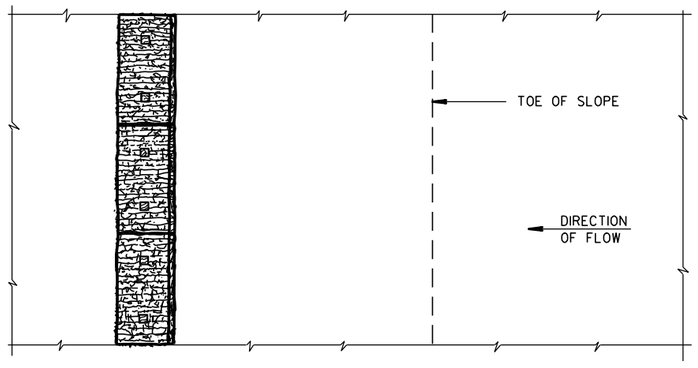
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

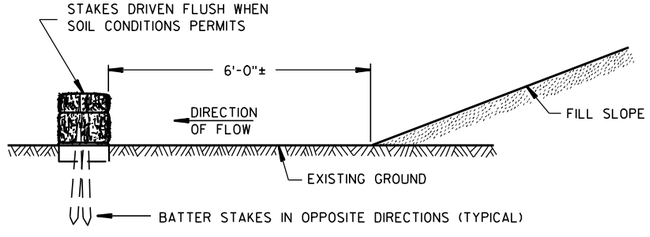


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

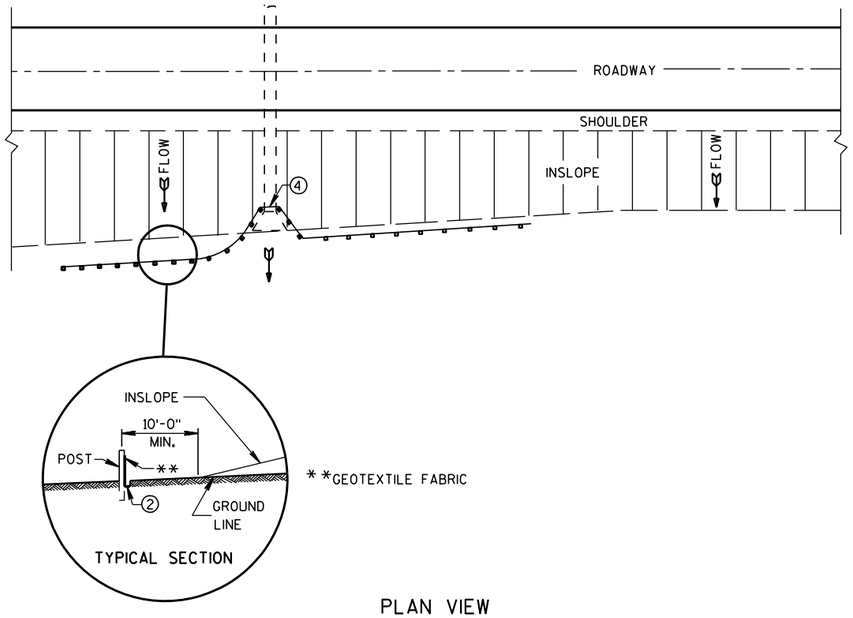
APPROVED
6/04/02 DATE
/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

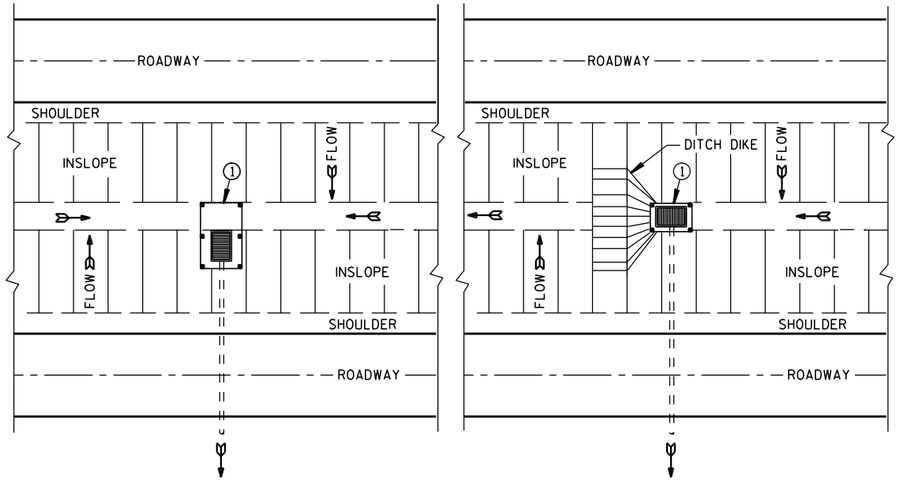
6

S.D.D. 8 E 8-3



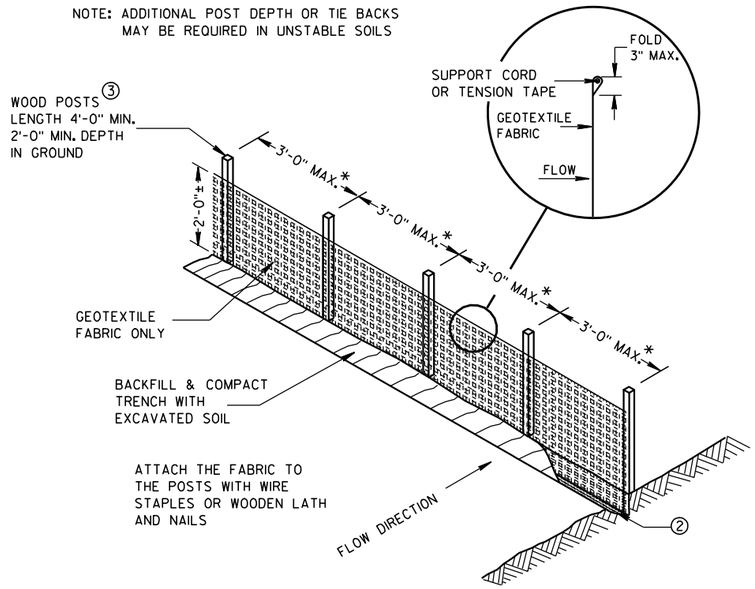
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



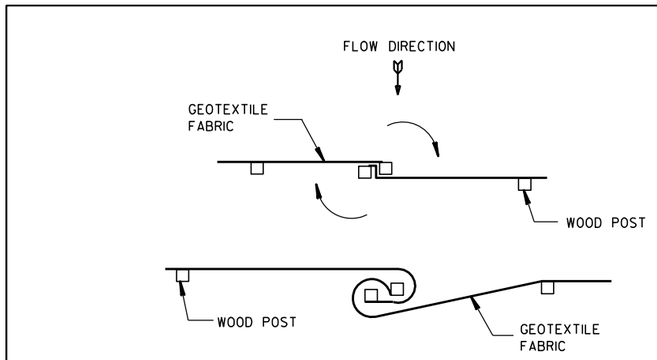
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



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

SILT FENCE

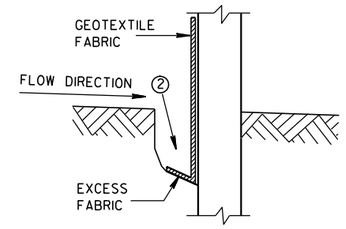


JOINING TWO LENGTHS OF SILT FENCE 5

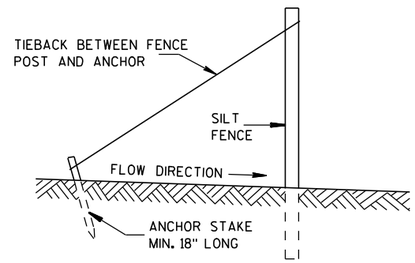
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 E 9-6

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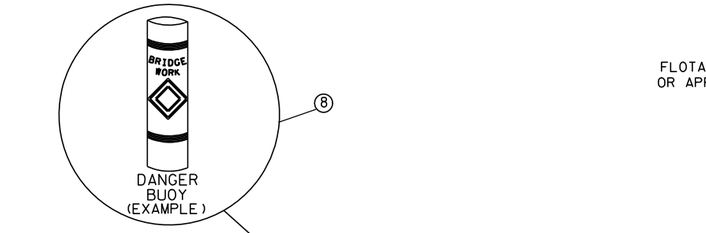
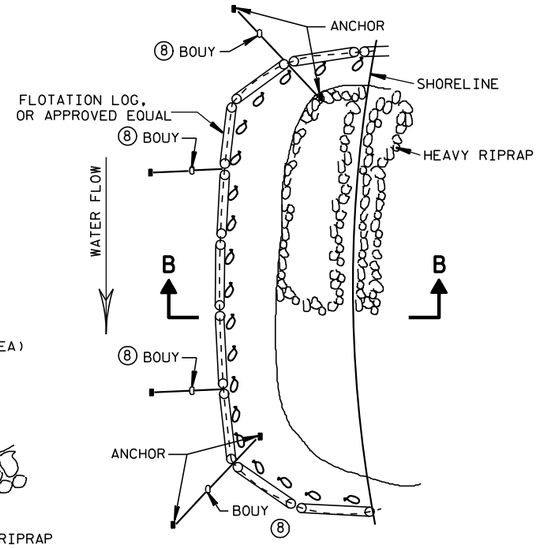
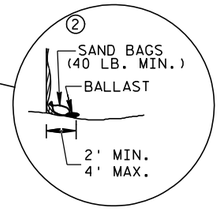
S.D.D. 8 E 9-6

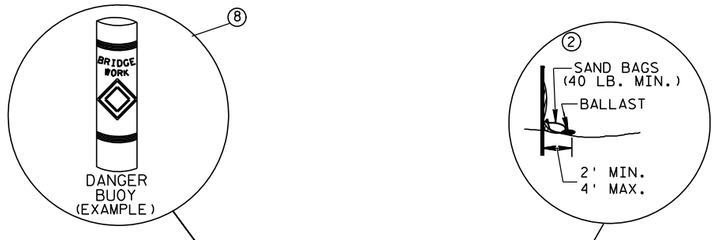


SECTION B-B

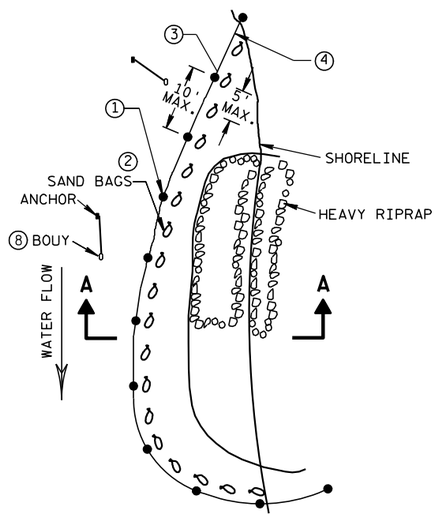




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

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

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

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

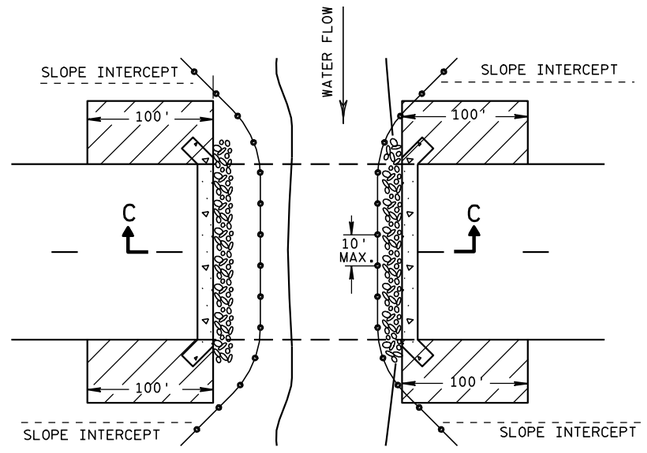
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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

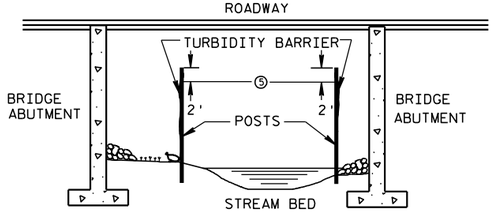
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

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



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

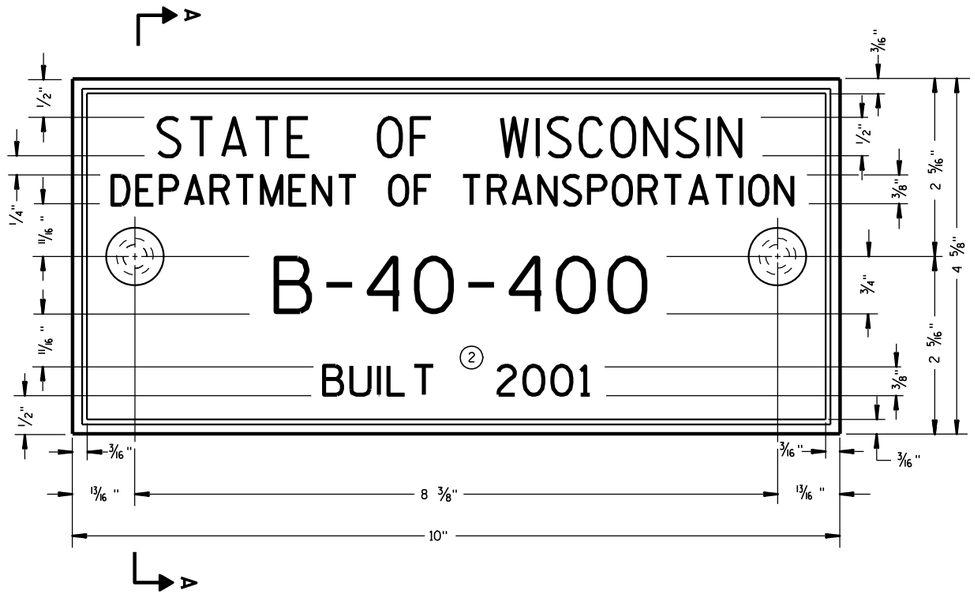
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 E 11-2



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)

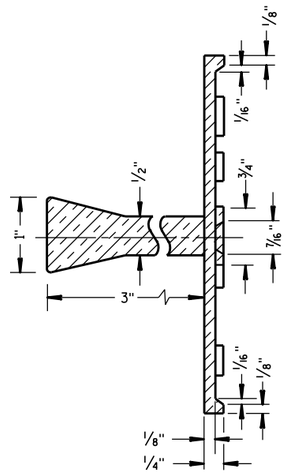
GENERAL NOTES

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

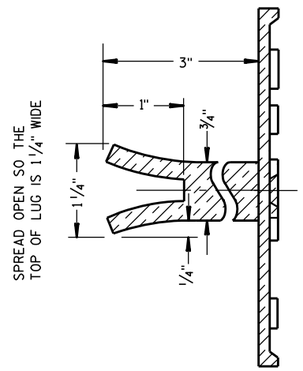
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

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



SECTION A-A



ALTERNATE LUG

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

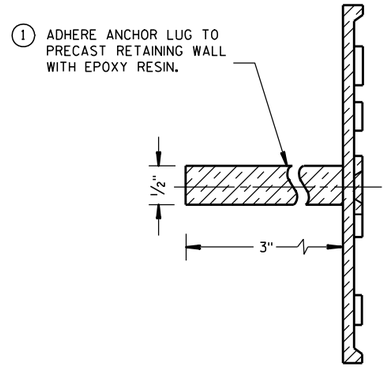
COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION MULTI-UNIT STRUCTURES



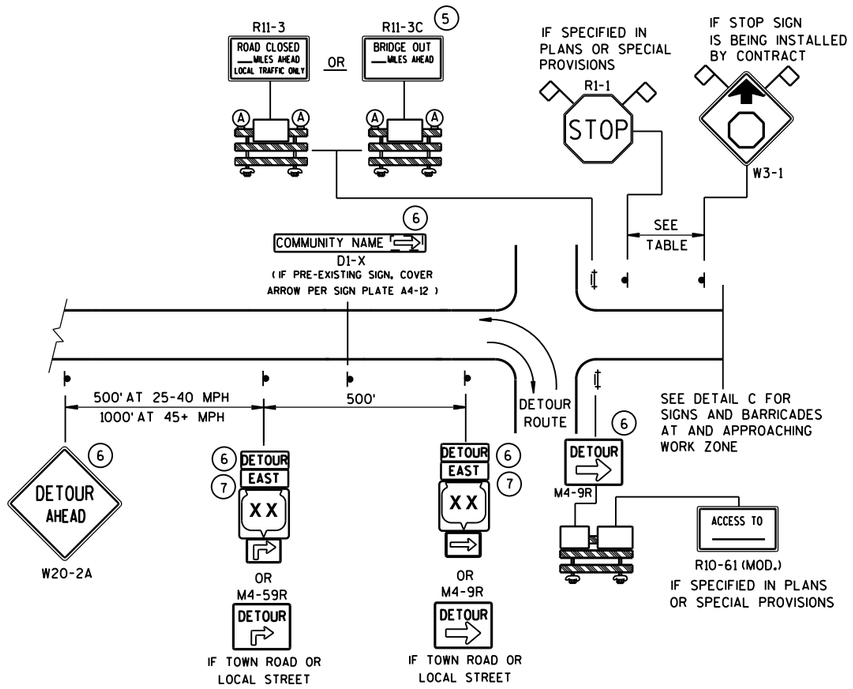
ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

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

6

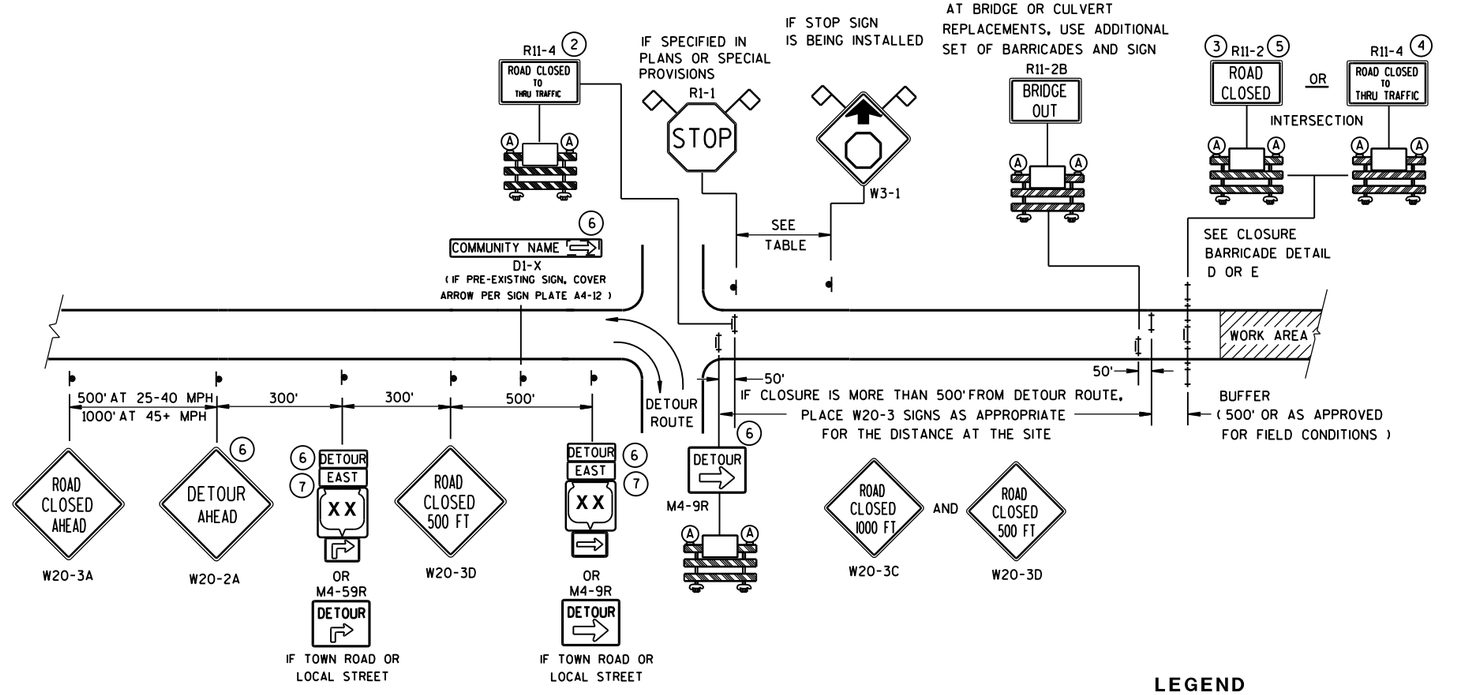
S.D.D. 12 A 3-10



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

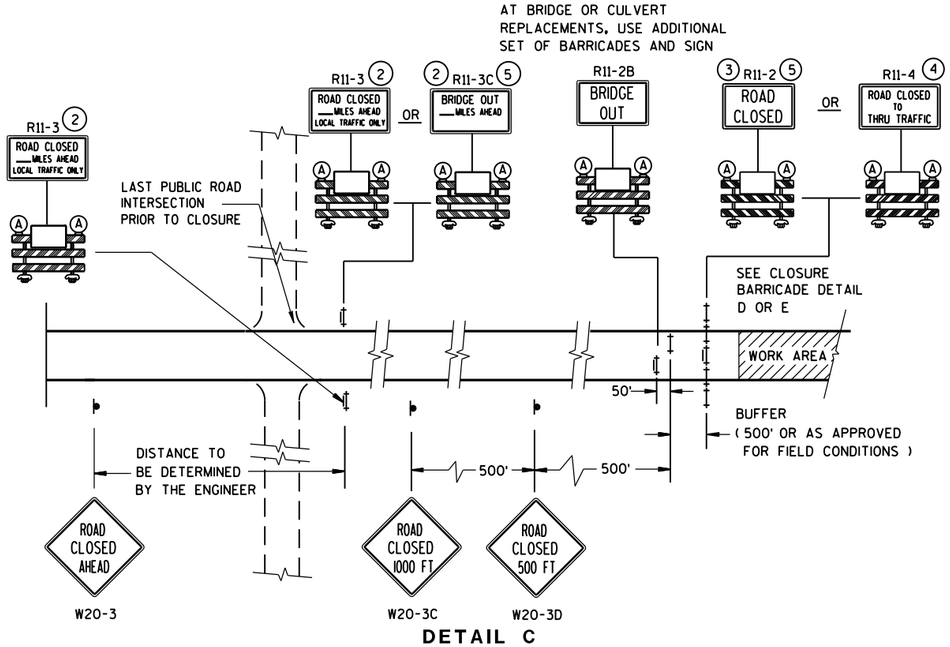
WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

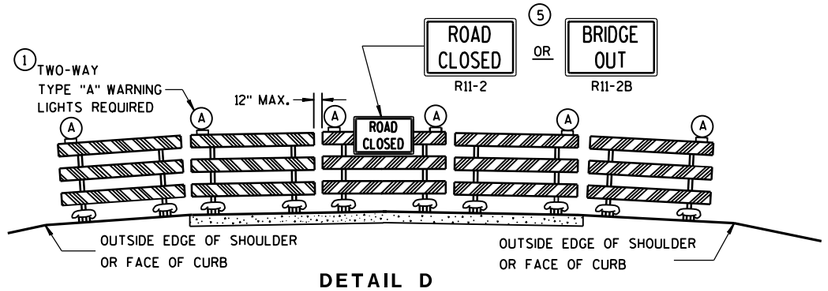
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

6

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

6

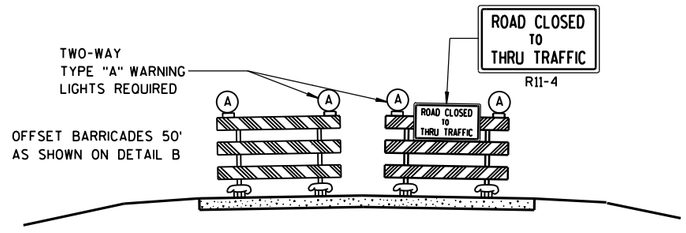
S.D.D. 15 C 2-6a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

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

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

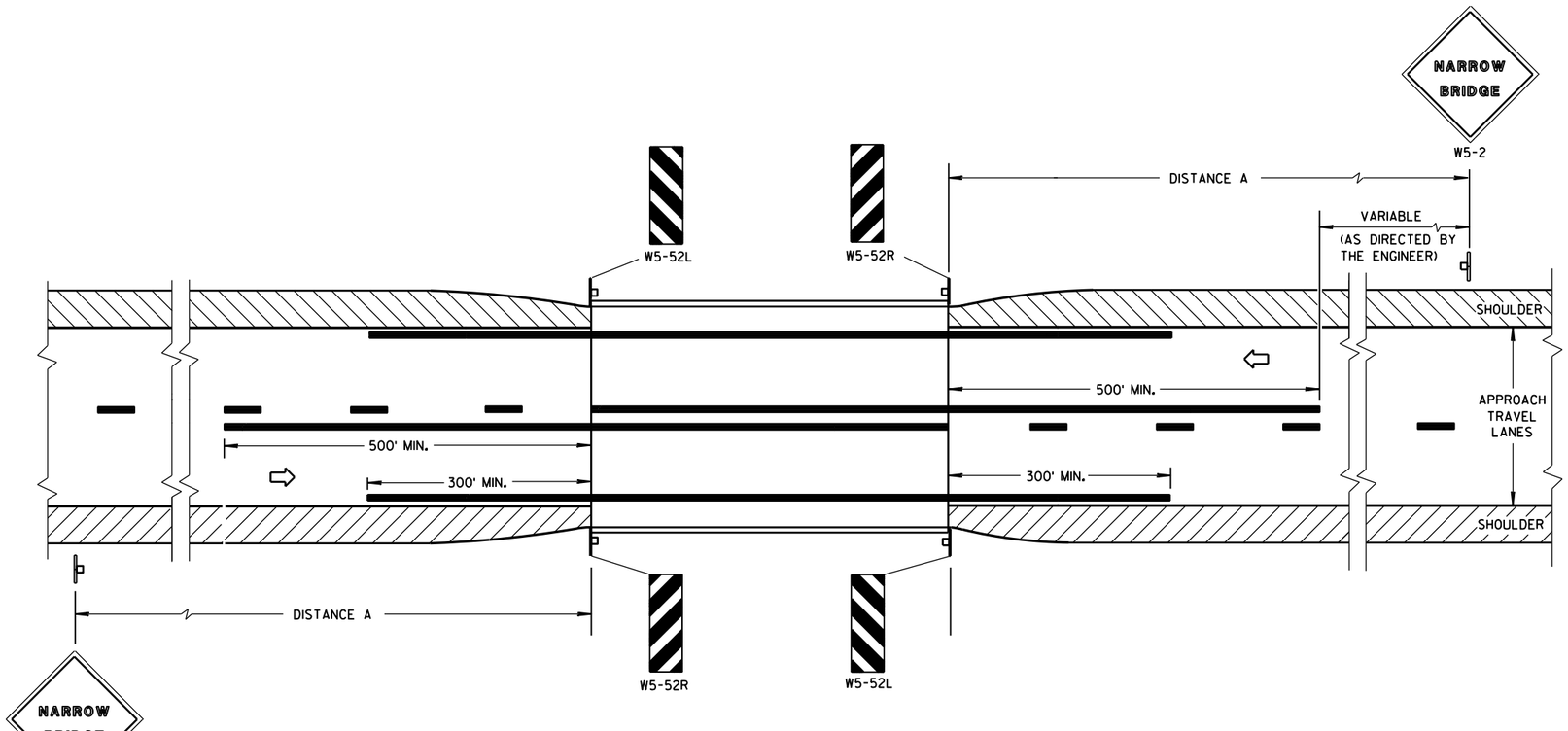
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO[illegible] SAFETY ENGI[illegible] — FHWA

6

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

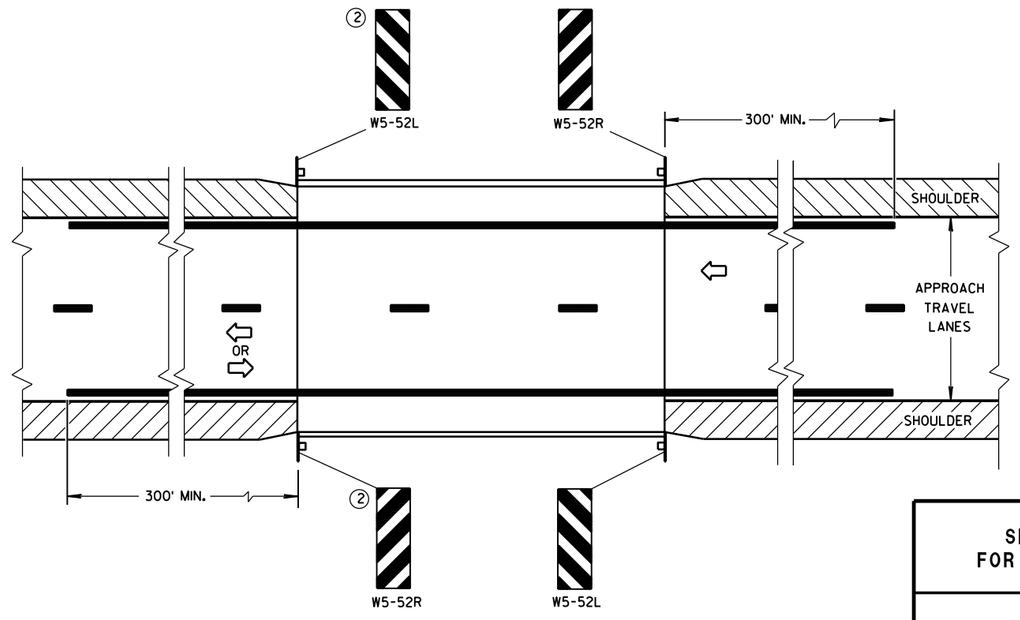


SITUATION 1

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

DISTANCE TABLE

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



SITUATION 2

WARRANTING CRITERIA:

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

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.

① LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

② OMIT ON ONE-WAY TRAVELLED WAYS.

③ EDGE OF W5-52 SIGN SHALL BE PLACED IN LINE WITH FACE OF CURB OR PARAPET.

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-18-16 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MAR ...EER
FHWA

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S.D.D. 15 C 6-8

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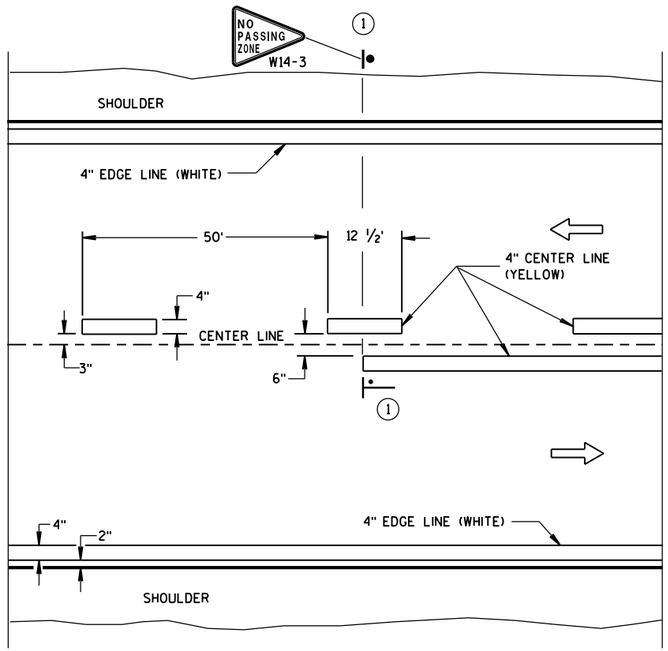
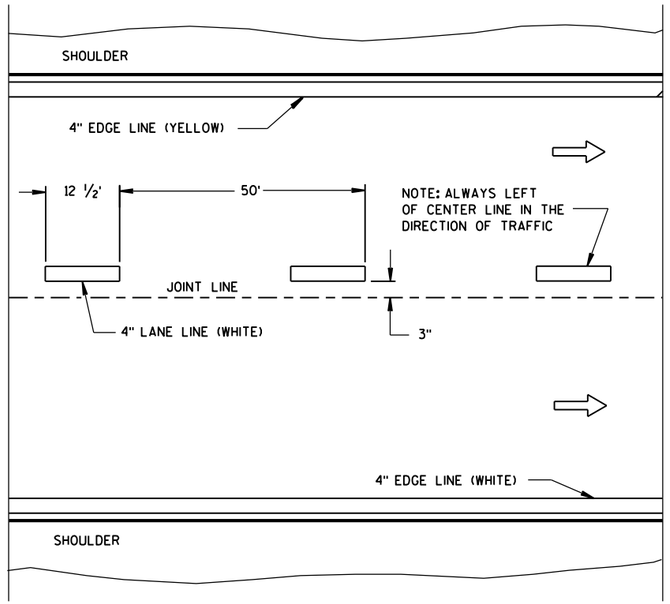
S.D.D. 15 C 6-8



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) NO PASSING ZONE W14-3 SIGN SHALL BE LOCATED WITHIN 50 FEET OF THE "T" MARKING.

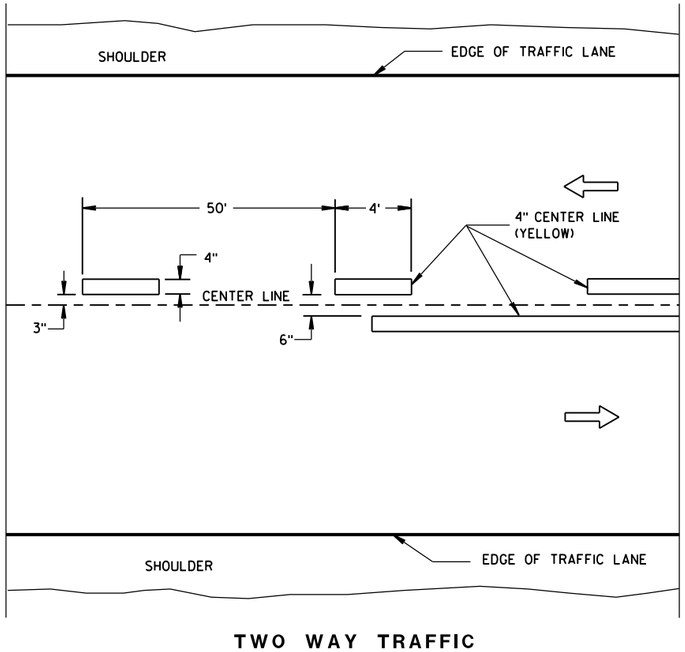
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

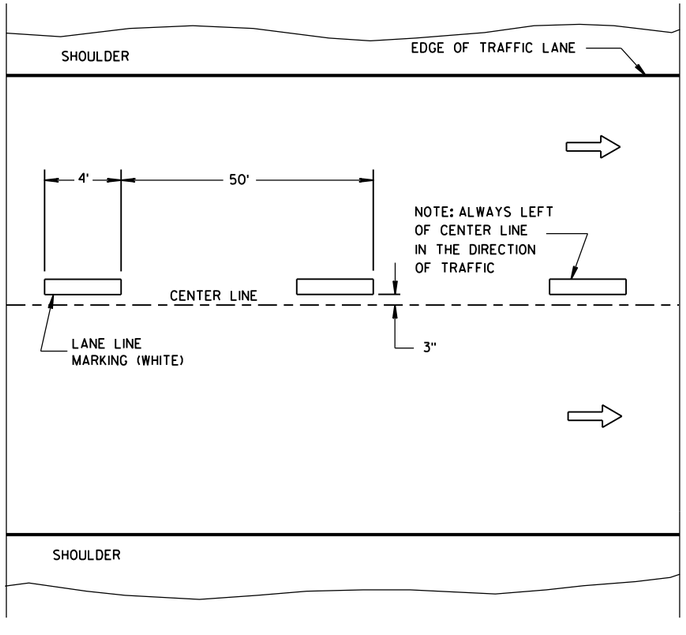
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
Sept., 2016	/S/ Matthew R. Rauch
DATE	STATE SIGNING AND MAR[illegible] INEER
FHWA	

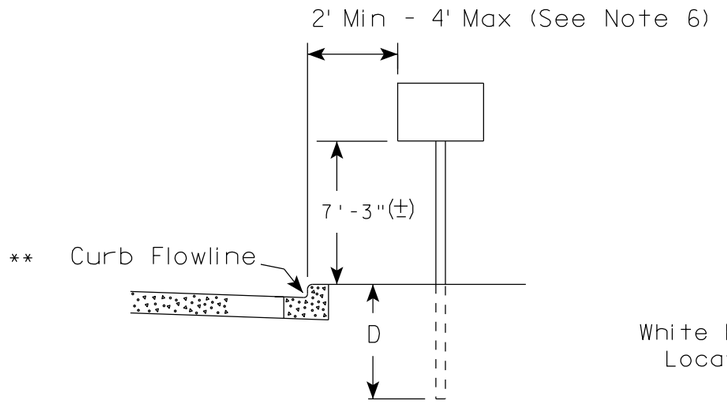
6

S.D.D. 15 C 8-17a

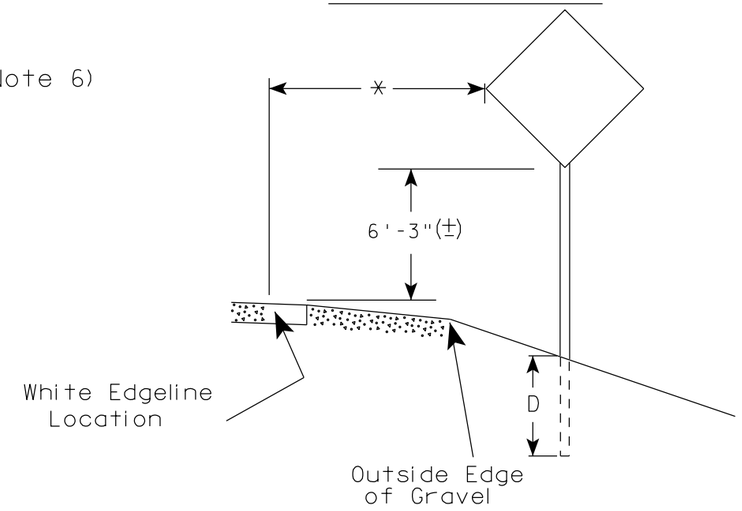
6

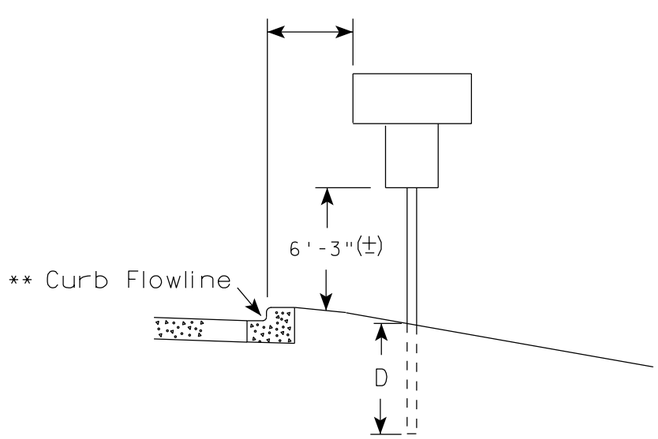
S.D.D. 15 C 8-17a

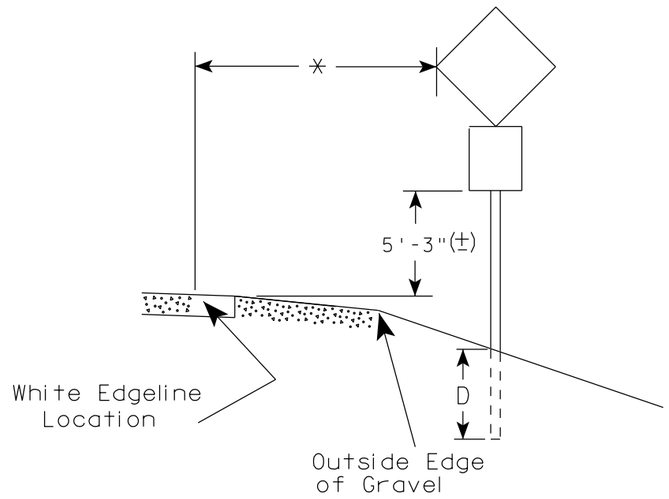
URBAN AREA



RURAL AREA (See Note 2)







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. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
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" (±).

POST EMBEDMENT DEPTH

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

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

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

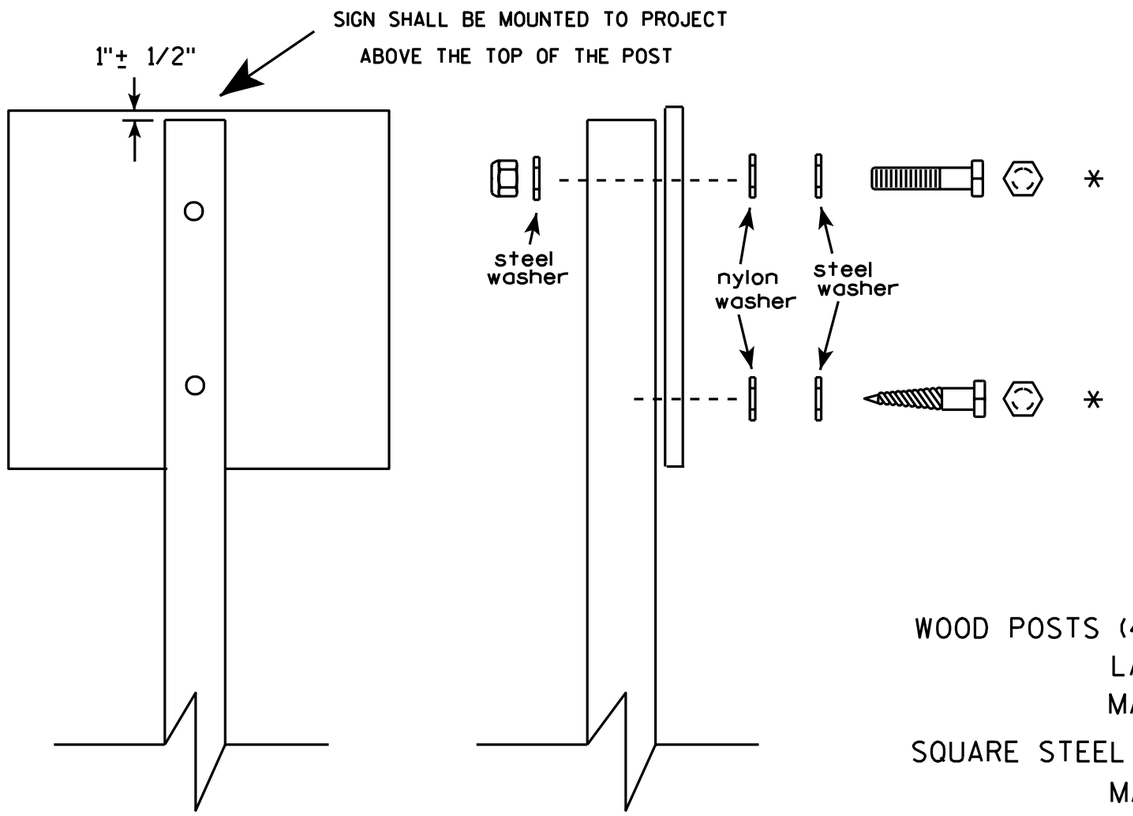
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	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

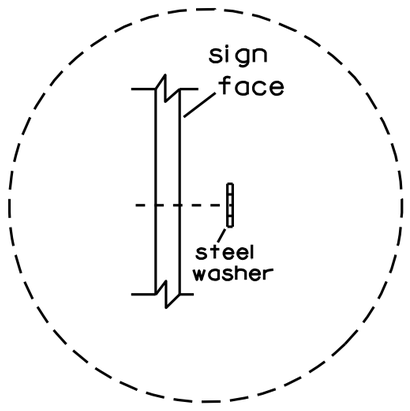
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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.

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.



Washer Placement when Sign Has Other Than Type H or Type F Face

* 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

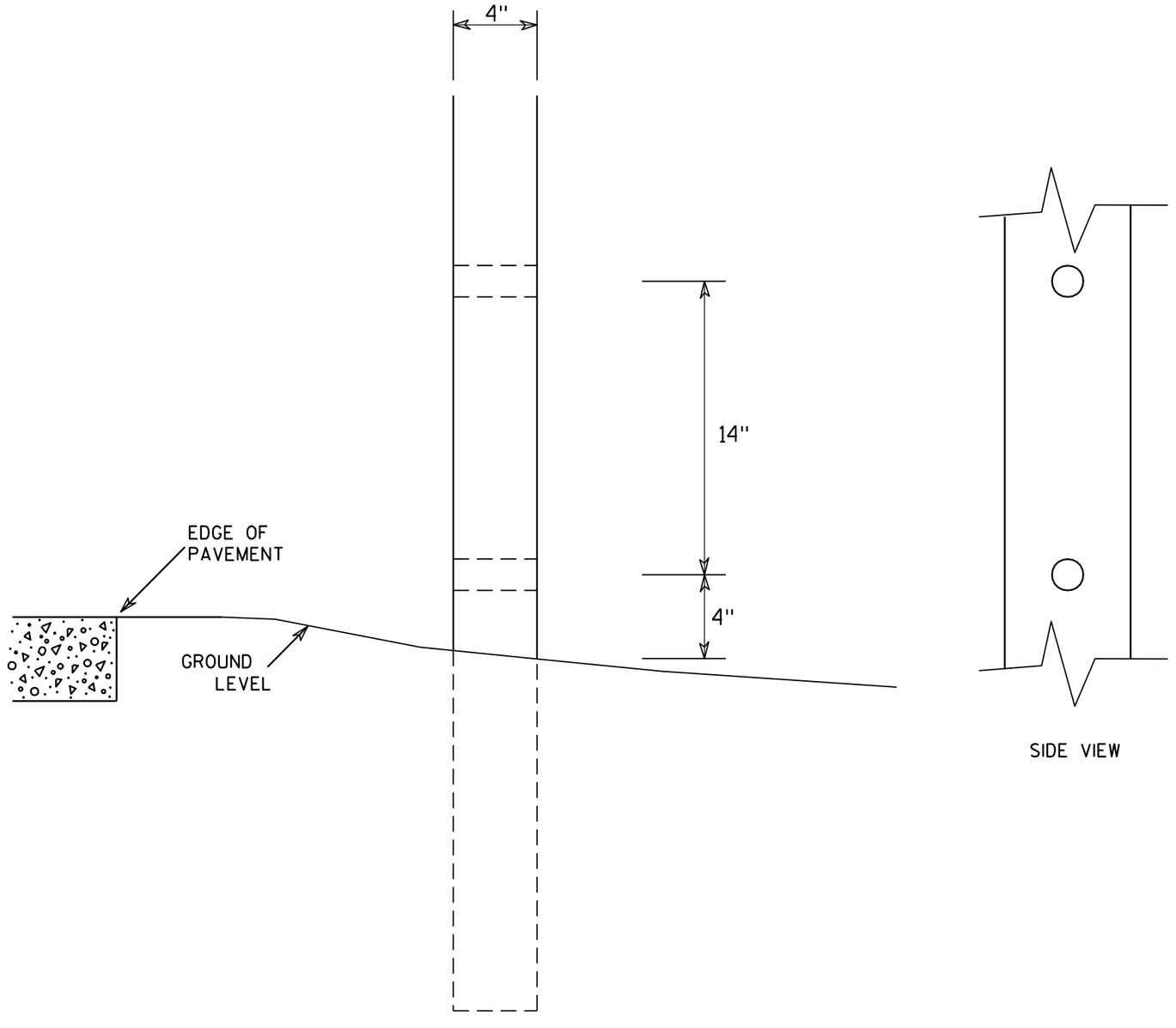
DATE 3/23/10 PLATE NO. A4-8.7

7

7

PROJECT NO:

SHEET NO: 20 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

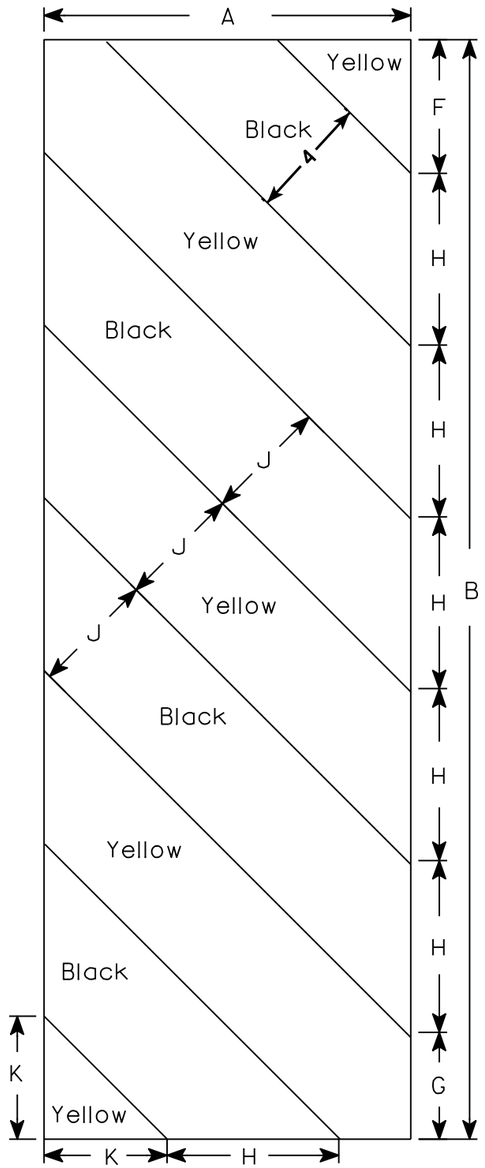
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

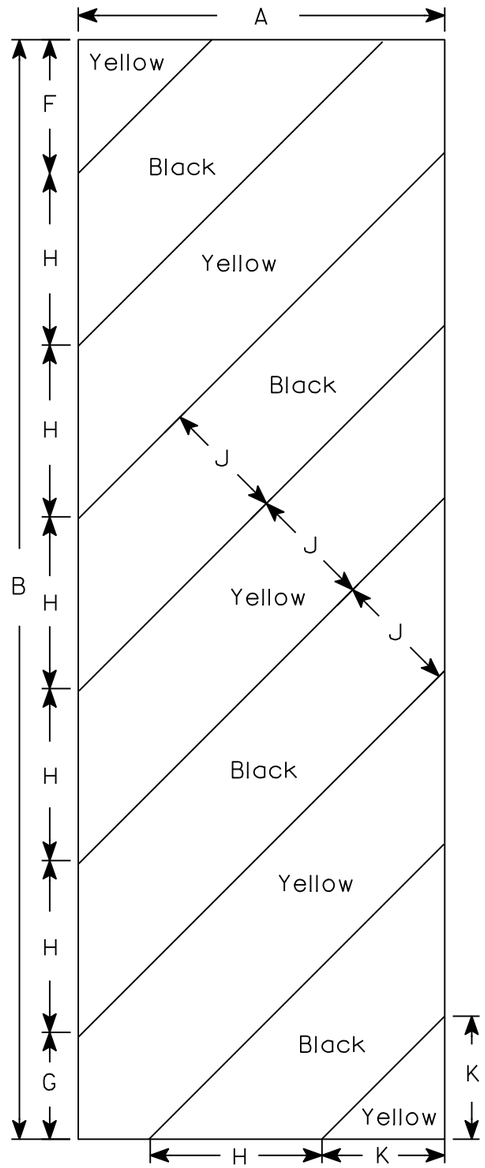
APPROVED Chester J Spang
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 21	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

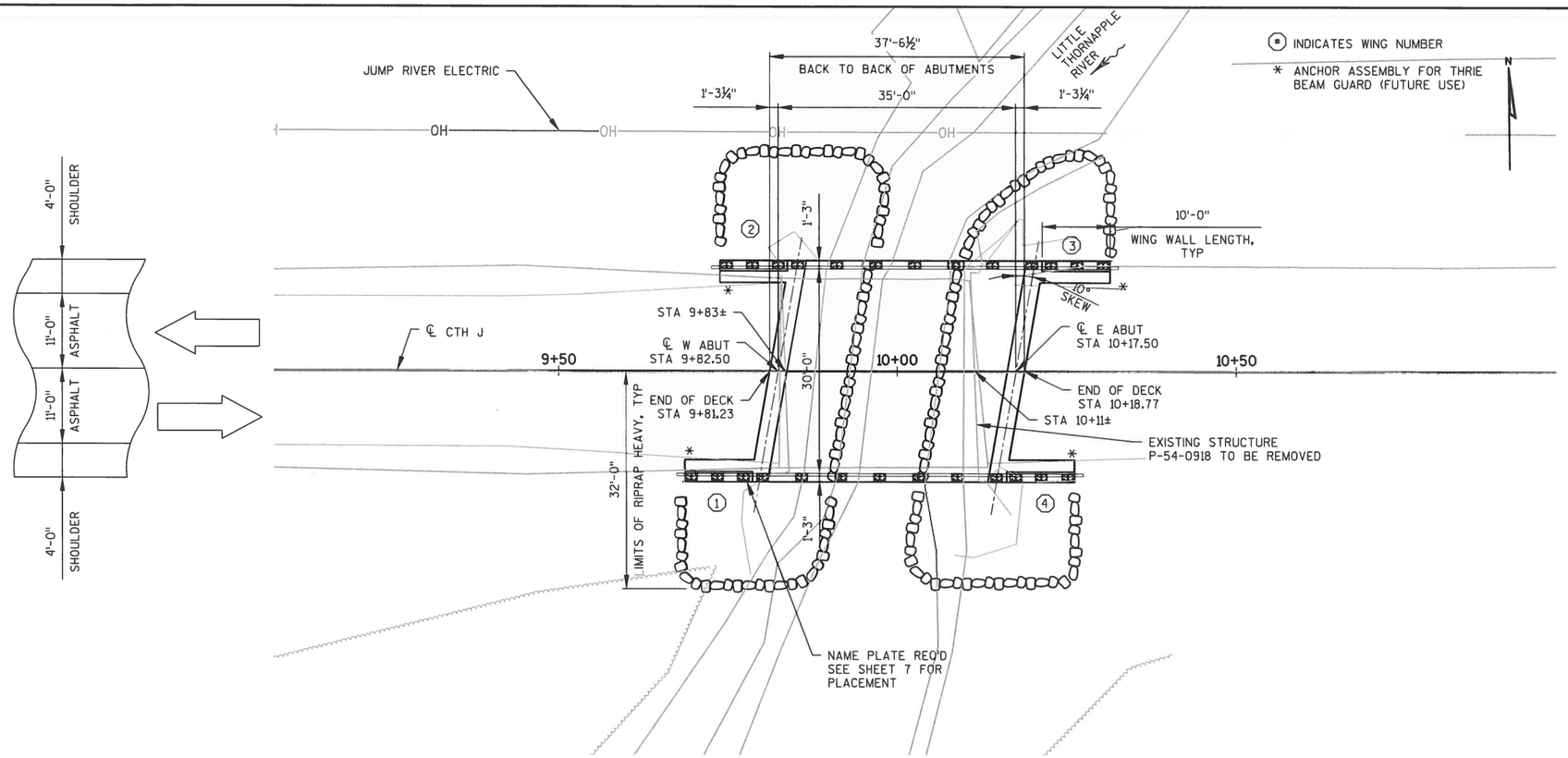
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

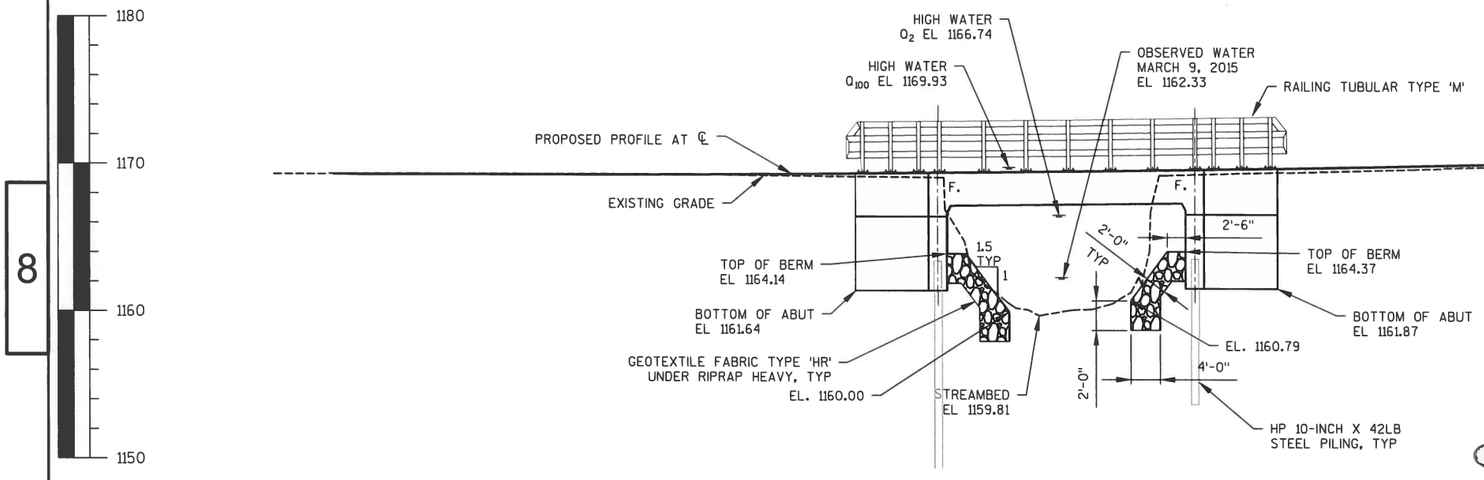
DATE 5/29/12 PLATE NO. W5-52.9

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



PLAN

(SINGLE SPAN REINFORCED CONCRETE FLAT SLAB BRIDGE)



ELEVATION

(NORMAL TO ℄ OF STREAM)

STATE PROJECT NUMBER

8780-00-71

DESIGN DATA:

DESIGN LOADING — HL-93
INVENTORY RATING FACTOR — 1.32
OPERATING RATING FACTOR — 1.71
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 = 4000 psi
ALL OTHER — f'c = 3500 psi
HIGH STRENGTH BAR STEEL REINFORCEMENT — fy = 60,000 psi

TRAFFIC DATA:

ADT (2016) = 170
ADT (2036) = 260
DESIGN SPEED = 55 MPH

FOUNDATION DATA:

ABUTMENTS SUPPORTED ON HP 10-INCH X 42 LB STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 130* TONS PER PILE AS REQUIRED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 10' LONG AT THE EAST ABUTMENT AND 15' LONG AT THE WEST ABUTMENT. PILE POINTS REQUIRED AT THE WEST ABUTMENT. PREBORING TO EL 1154.00 REQUIRED AT THE EAST ABUTMENT.

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

HYDRAULIC DATA:

100 YEAR FREQUENCY
Q_{100} — 2200 cfs
Q_{100} BRIDGE — 842 cfs
Q_{100} ROAD — 1358 cfs
STREAM VELOCITY — 4.52 fps
HIGH WATER — EL. 1169.93
WATERWAY AREA — 186 ft^2
DRAINAGE AREA — 19.0 mi^2
SCOUR CRITICAL CODE — 8
OVERTOPPING FREQUENCY — 18 YEARS

2 YEAR FREQUENCY
Q_2 — 618 cfs
HIGH WATER — EL. 1166.74

LIST OF DRAWINGS:

WISCONSIN
GARY A. RUCHTI
E-30936
MADISON
WI
PROFESSIONAL ENGINEER
12-2016

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 02/27/17
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-54-0123

CTH J OVER LITTLE THORNAPPLE RIVER

COUNTY	TOWN/~~CITY/VILLAGE~~
RUSK	HUBBARD

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JAK	RCP	JAK	GAR

GENERAL PLAN

SHEET 1 OF 12
23

BRIDGE OFFICE CONTACT
WILLIAM DREHER, P.E.
TELEPHONE: (608) 266-8489
CONSULTANT CONTACT
GARY RUCHTI, P.E.
TELEPHONE: (608) 273-6380

8

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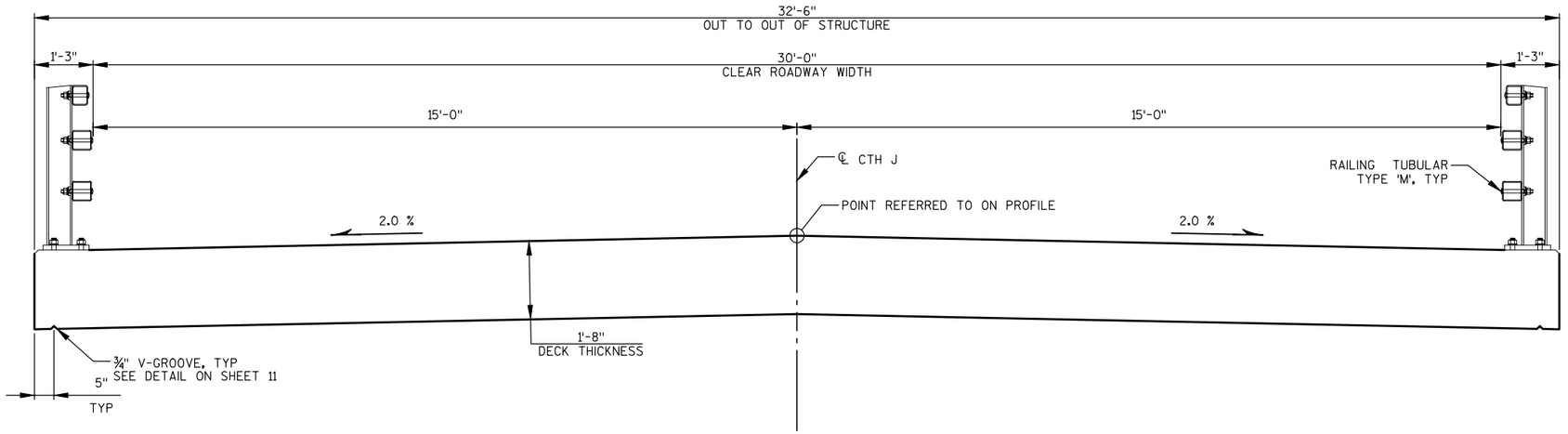
FILE NAME : X:±2881800±141903.01±TECH±CAD±8780-00-71±DESIGN±STRUCTURE±080101_GP.DWG PLOT DATE : 12/2/2016 PLOT BY : MATTHEW BUCKLI

STATE PROJECT NUMBER
8780-00-71



CROSS SECTION THRU ROADWAY

(LOOKING EAST)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

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

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

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

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 BACKFILL STRUCTURE TYPE A.

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

PROTECTIVE SURFACE TREATMENT TO BE PLACED FULL WIDTH ON TOP SURFACE, SIDES AND OUTSIDE 1'-0" ON BOTTOM OF CONCRETE SLAB DECK. SEE DETAILS ON SHEET 11.

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.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

THE EXISTING STRUCTURE, TO BE REMOVED, IS A 31.2-FOOT SINGLE-SPAN STEEL GIRDER BRIDGE, WITH A 27.9-FOOT CLEAR BRIDGE WIDTH (P-54-0918).

THE UPPER LIMITS FOR "EXCAVATION OF STRUCTURES BRIDGES B-54-123" SHALL BE THE EXISTING GROUNDLINE.

RIPRAP VOIDS ABOVE OBSERVED WATER LEVEL TO BE FILLED WITH SELECT CRUSHED MATERIAL TO ACCOMMODATE WILDLIFE PASSAGE.

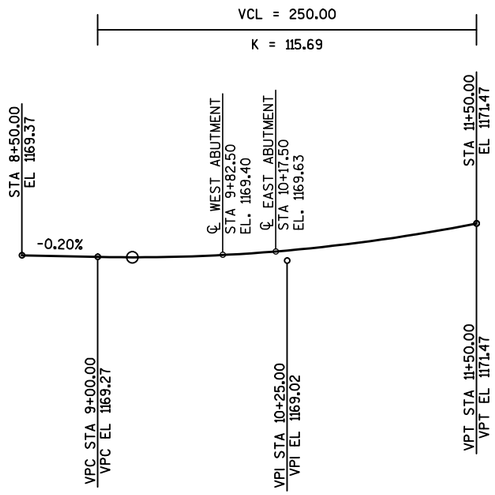
THE QUANTITY FOR BACKFILL STRUCTURE, BID ITEM 210.1500 IS CALCULATED BASED ON THE DETAIL SHOWN ON SHEET 3.

BENCH MARKS ★

NO.	STATION	OFFSET	DESCRIPTION	ELEV.
100	10+13	15.2' RT	SE CORNER OF BRIDGE	1167.14'
101	9+66	31.7' RT	NAIL IN 14" ELM TREE	1169.11'
102	8+27	35.0' LT	NAIL IN POWER POLE	1167.79'

TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEMS	UNIT	W ABUT	E 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-54-123	LS	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	110	110	---	220
312.0115	SELECT CRUSHED MATERIAL	CY	10	9	---	19
502.0100	CONCRETE MASONRY BRIDGES	CY	31	31	81	143
502.3200	PROTECTIVE SURFACE TREATMENT	SY	7	7	160	174
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1840	1840	---	3680
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1380	1380	16080	18840
513.4061	RAILING TUBULAR TYPE M B-54-123	LF	---	---	120	120
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	10	---	20
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	---	38	---	38
550.0500	PILE POINTS	EACH	5	---	---	5
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	75	50	---	125
606.0300	RIPRAP HEAVY	CY	105	105	---	210
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	63	63	---	126
645.0120	GEOTEXTILE TYPE 'HR'	SY	200	200	---	400
	NON BID ITEMS					
	FILLER	SIZE				1/2" & 3/4"



PROFILE GRADE LINE, ℄ CTH J

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-0123

DRAWN BY JAK | PLANS CK'D. GAR

CROSS SECTION, GENERAL NOTES AND QUANTITIES

SHEET 24 12

8

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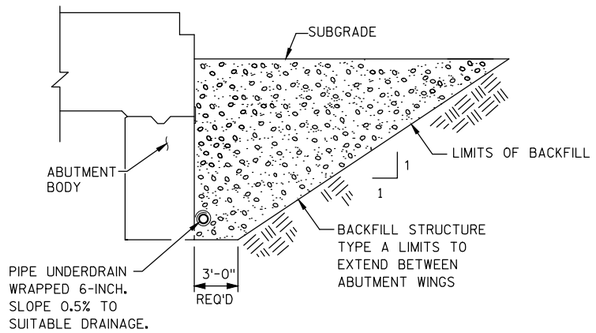
STATE PROJECT NUMBER

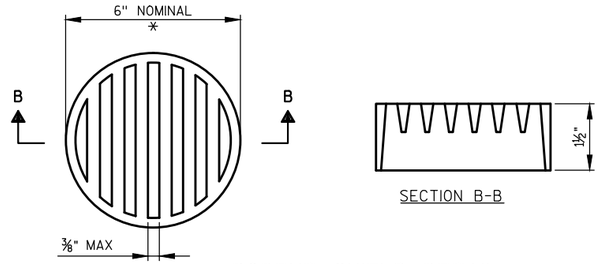
8780-00-71



STRUCTURE BACKFILL & PIPE UNDERDRAIN DETAIL

(TYPICAL AT BOTH ABUTMENTS)

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

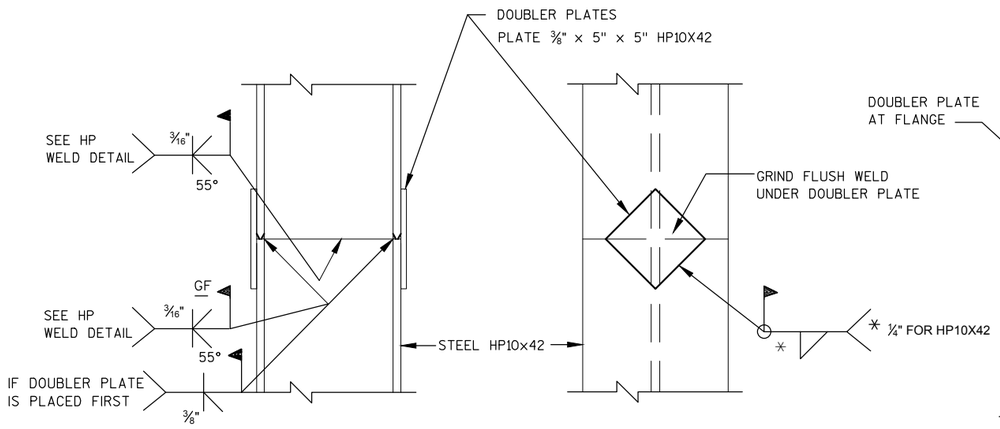


RODENT SHIELD DETAIL

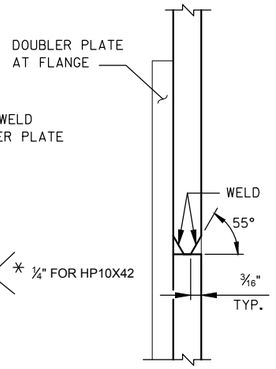
* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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

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



PILE SPLICE DETAILS



HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

8

8

NO.	DATE	REVISION	BY

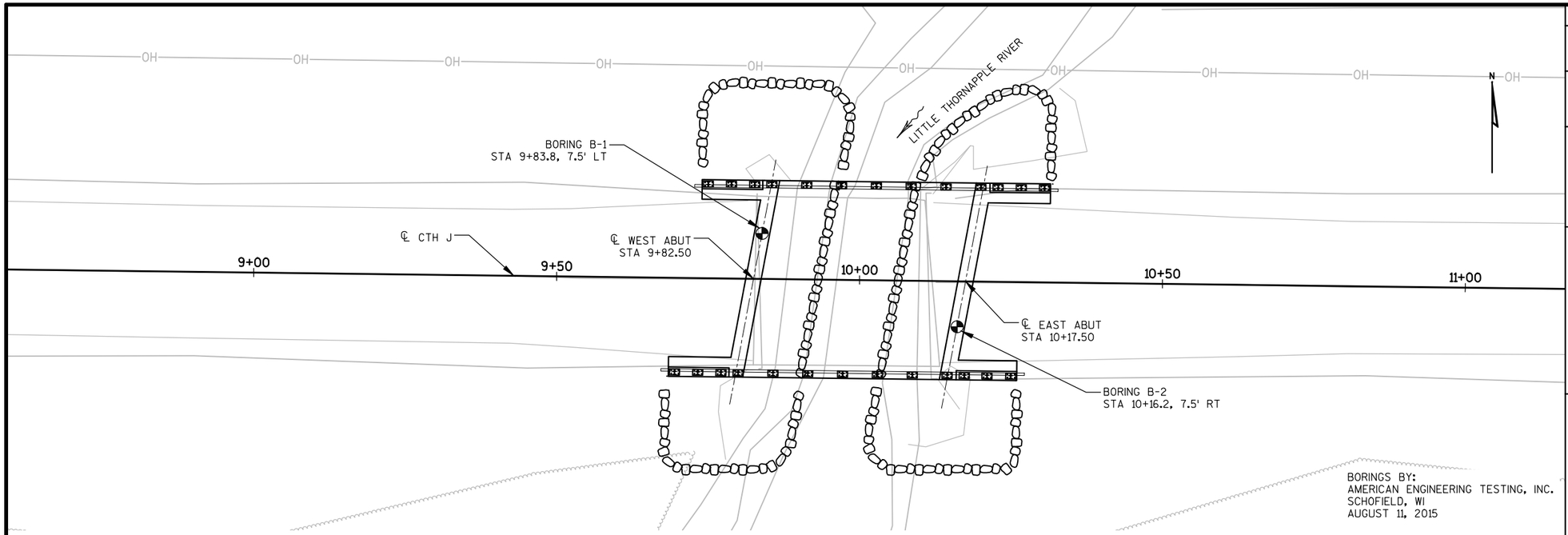
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-0123

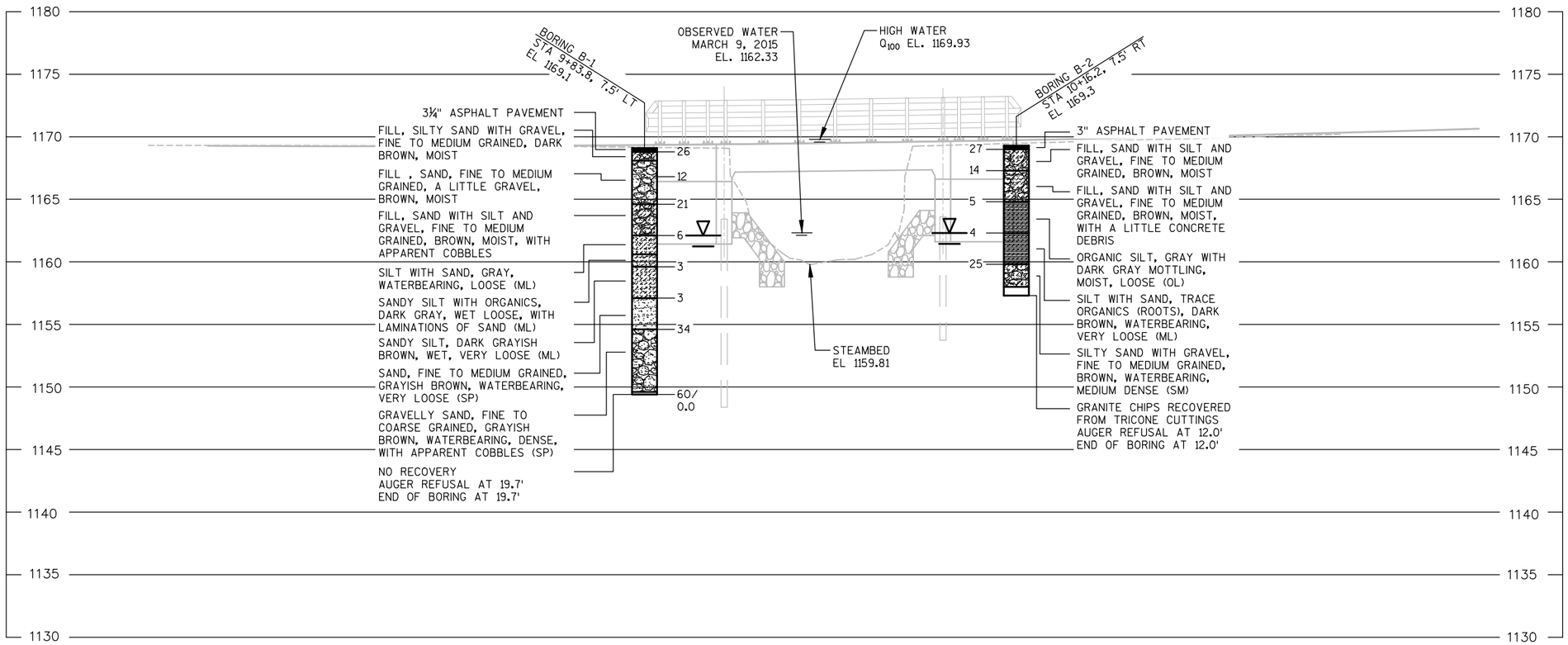
DRAWN BY JAK | PLANS CK'D. GAR

GENERAL DETAILS

SHEET 25 12



BORINGS BY:
AMERICAN ENGINEERING TESTING, INC.
SCHOFIELD, WI
AUGUST 11, 2015



STATE PROJECT NUMBER

8780-00-71

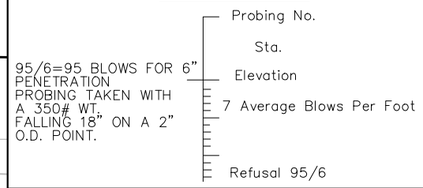
ABBREVIATIONS

F — Fine M — Medium C — Coarse
Ws — Weathered So — Sound

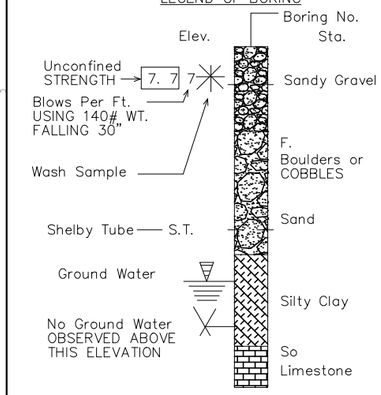
MATERIAL SYMBOLS

Asphalt, Silt, Sand, Concrete, Organic Soil, Air, Gravel, Clay, Water

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-0123

DRAWN BY JAK | PLANS CK'D. GAR

SUBSURFACE EXPLORATION

SHEET 26 OF 12

8

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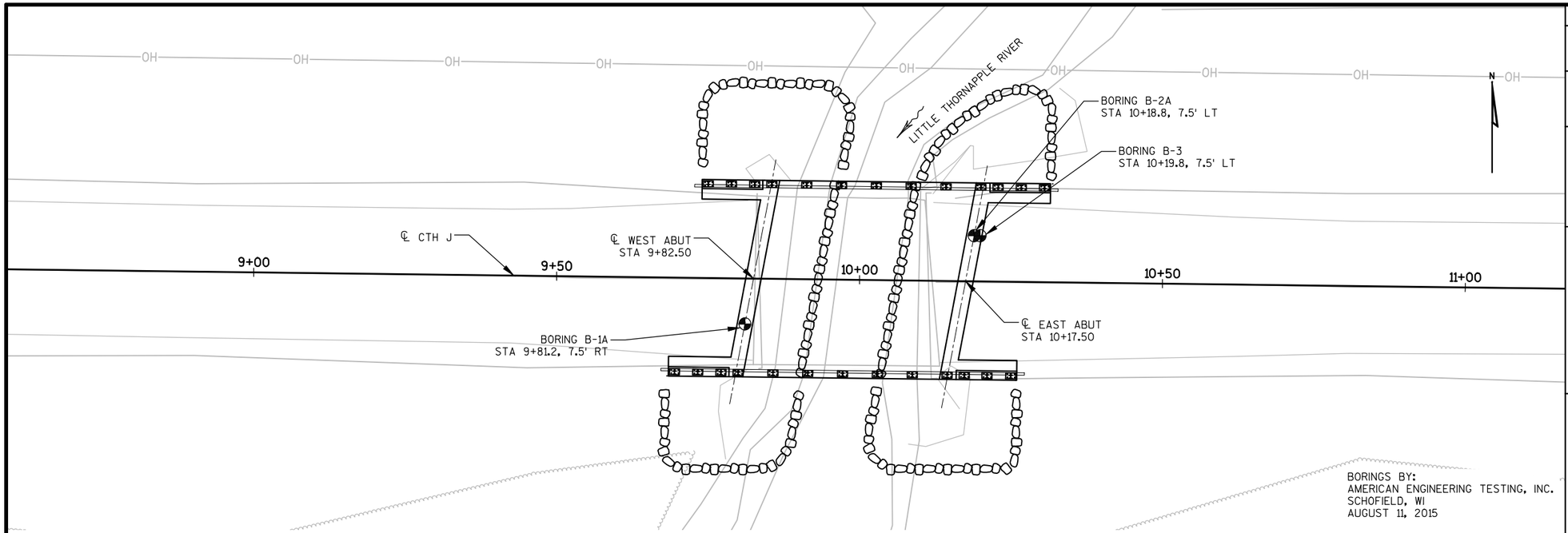
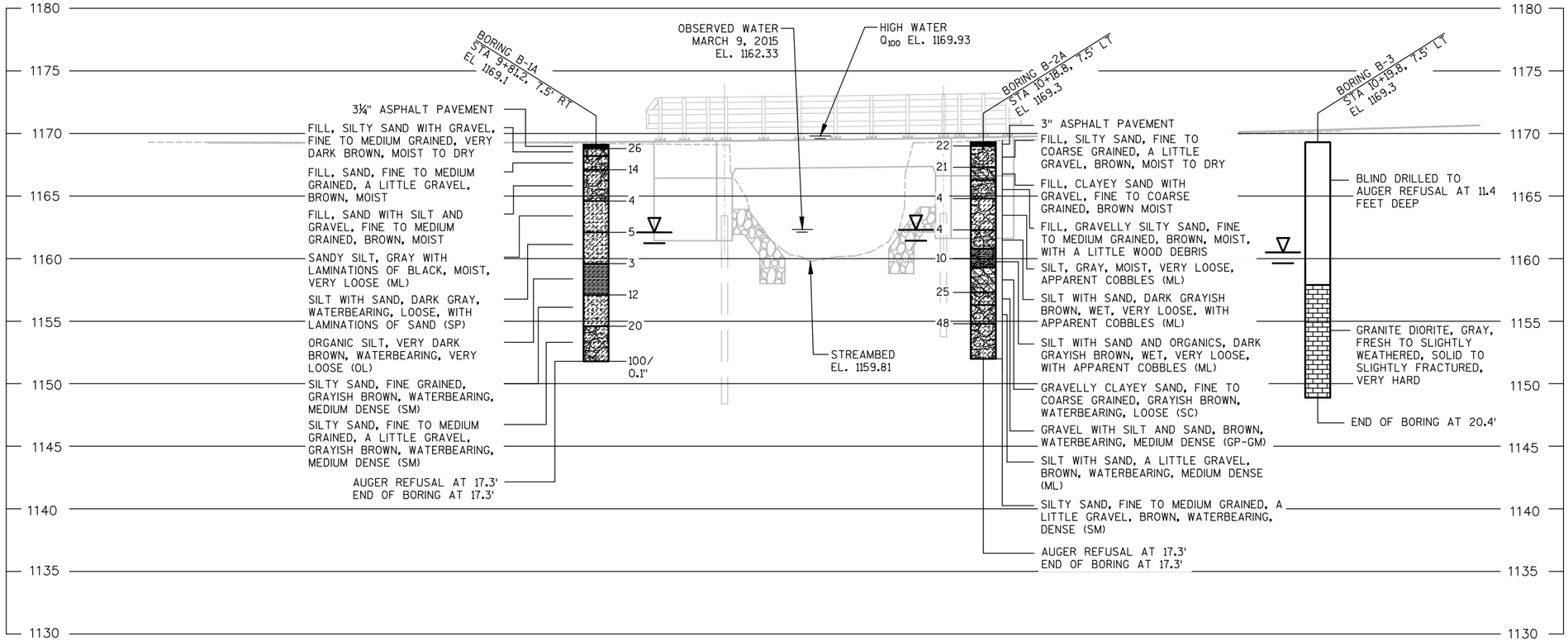


BORINGS BY:
AMERICAN ENGINEERING TESTING, INC.
SCHOFIELD, WI
AUGUST 11, 2015



STATE PROJECT NUMBER

8780-00-71

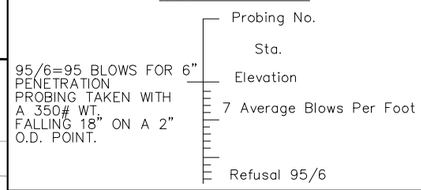
ABBREVIATIONS

F — Fine M — Medium C — Coarse
Ws — Weathered So — Sound

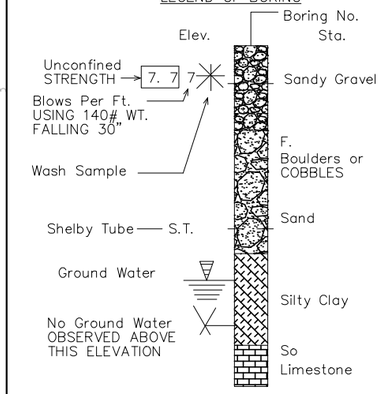
MATERIAL SYMBOLS

Asphalt, Silt, Sand, Concrete, Organic Soil, Air, Gravel, Clay, Water

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30", THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-0123

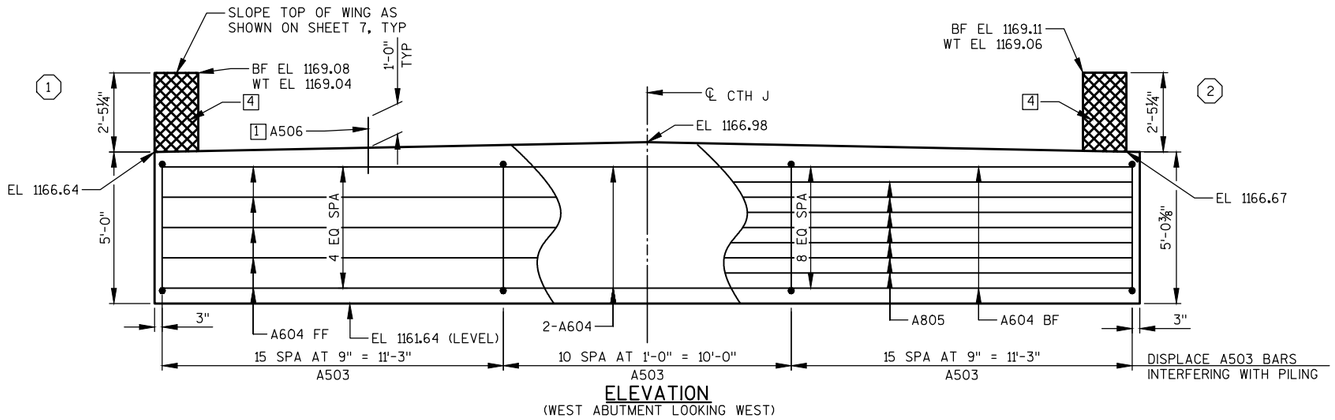
DRAWN BY JAK | PLANS CK'D. GAR

SUBSURFACE EXPLORATION – 2

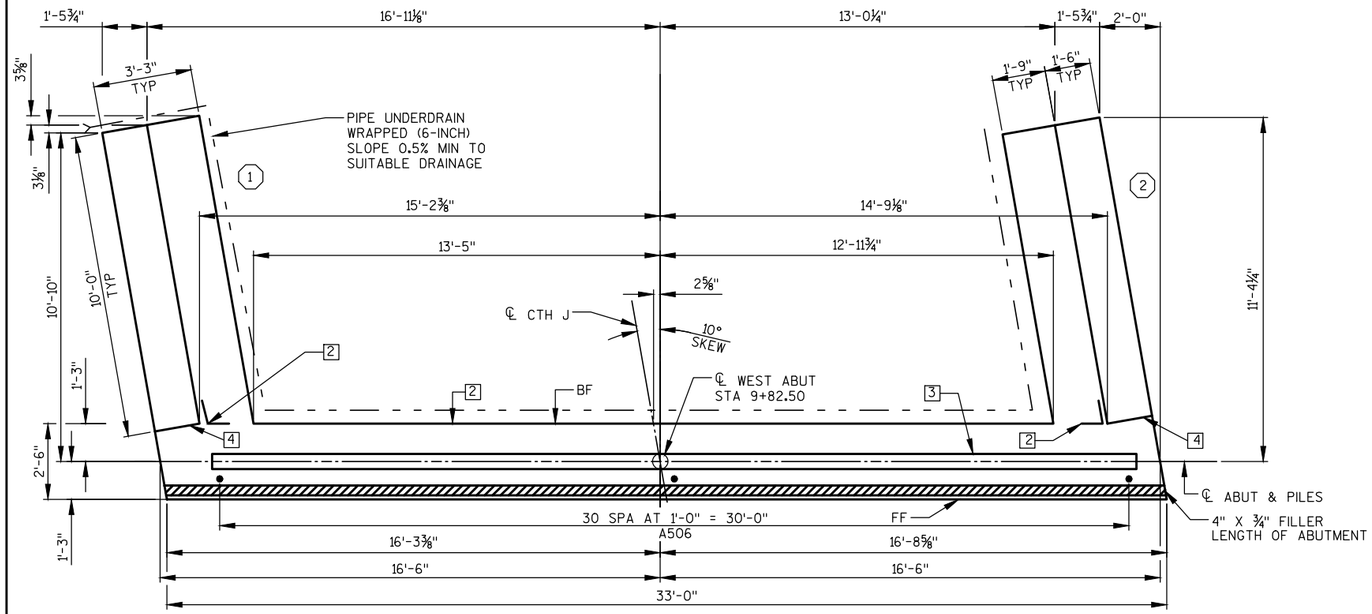
SHEET 27 OF 12

8

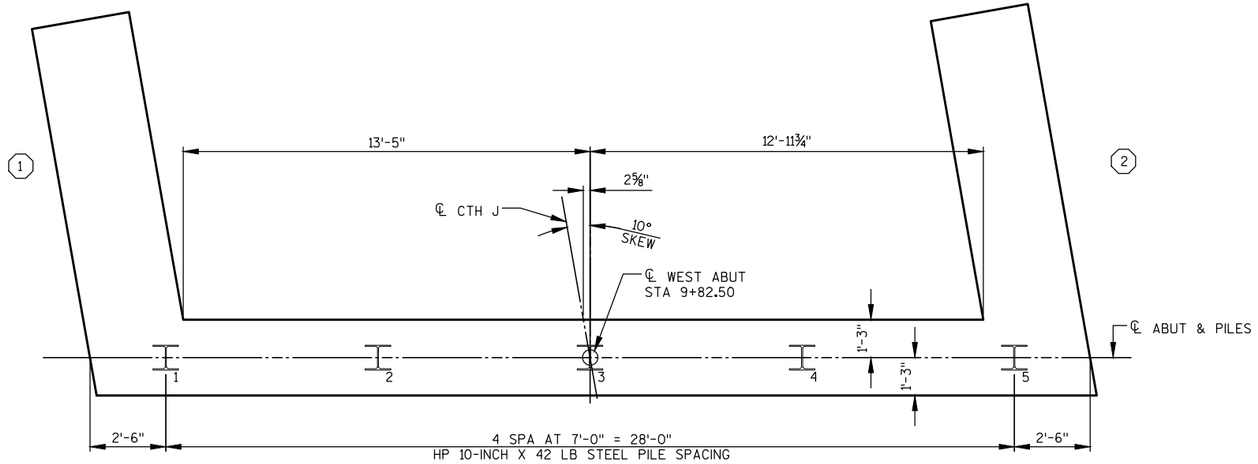
8



ELEVATION
(WEST ABUTMENT LOOKING WEST)



PLAN



PILE PLAN

NOTES

FOR PILE SPLICE SEE SHEET 3

FILL/EXCAVATE TO BOTTOM OF ABUTMENT EL 1161.64 BEFORE DRIVING PILING.

SEE SHEET 3 FOR STRUCTURE BACKFILL AND PIPE UNDERDRAIN DETAIL.

ABUTMENT SUPPORTED ON HP 10-INCH X 42 LB STEEL PILING WITH REQUIRED DRIVING RESISTANCE OF 130 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 10' LONG. PILE POINTS REQUIRED.

[1] A506 BARS MAY BE PLACED AFTER CONCRETE IS POURED, BUT BEFORE INITIAL SETTING HAS TAKEN PLACE.

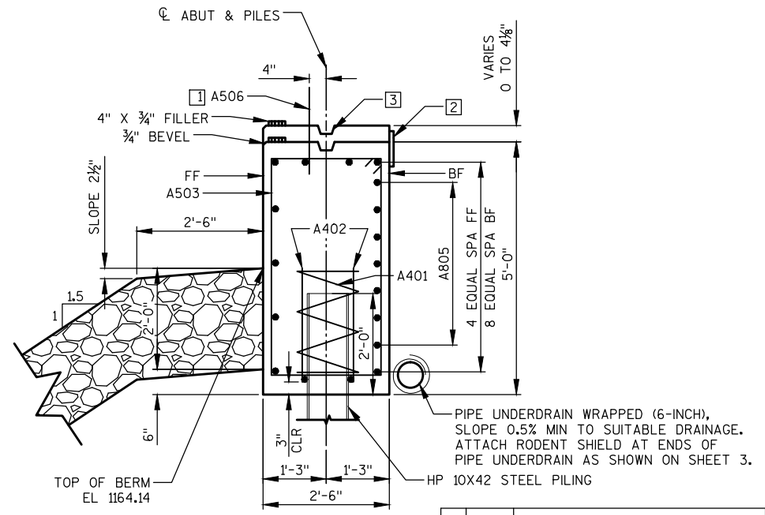
[2] 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE. EXTEND FROM BRIDGE SEAT TO TOP OF WING.

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

[4] ½" FILLER - TO EXTEND FROM BRIDGE SEAT TO TOP OF WING. FILLER 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.

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

(#) INDICATES WING NUMBER



SECTION THRU ABUTMENT BODY

ALL HORIZONTAL BARS NOT LABELED ARE A604 BARS.

STATE PROJECT NUMBER

8780-00-71

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-0123

DRAWN BY JAK | PLANS CK'D. GAR

WEST ABUTMENT

SHEET 28 12

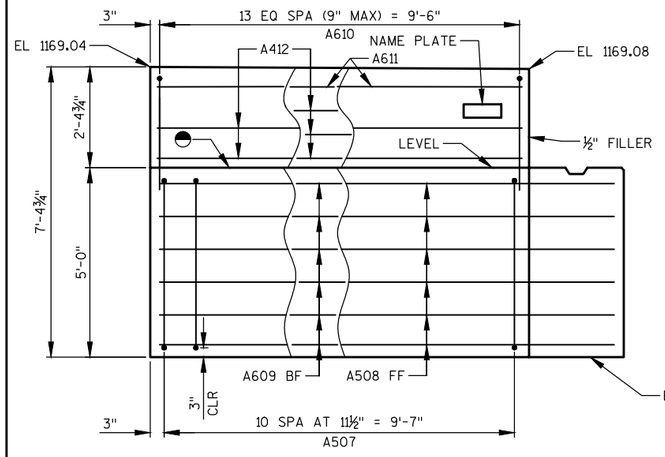
8

8

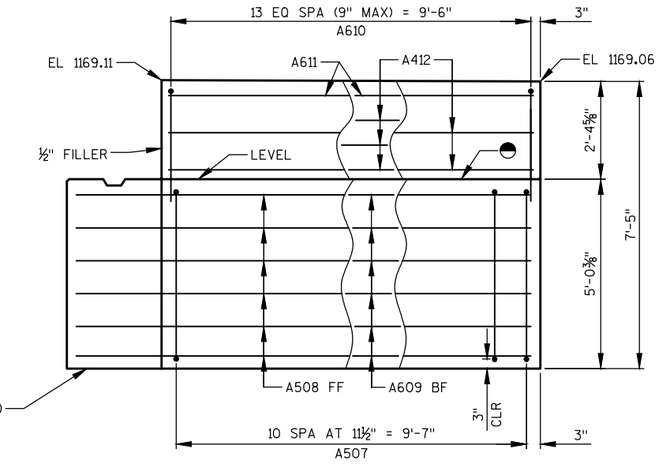
FILE NAME : X:±2881800±141903.01±TECH±CAD±8780-00-71±DESIGN±STRUCTURE±080106_WA.DWG PLOT DATE : 12/2/2016 PLOT BY : MATTHEW BUCKLI PLOT SCALE : 1" = 1'

STATE PROJECT NUMBER

8780-00-71



WING 1 ELEVATION



WING 2 ELEVATION

BILL OF BARS
WEST ABUTMENT

COATED= 1380 LBS.
UNCOATED= 1840 LBS.

MARK	NUMBER COATED	NUMBER UNCOATED	LENGTH FT - IN	BENT	BAR SERIES	LOCATION	
A401		5	28 - 0	X		ABUTMENT BODY - 1 PER PILE	SPIRAL
A402		10	2 - 3			ABUTMENT BODY - 2 PER PILE	VERT
A503		41	13 - 8	X		ABUTMENT BODY - STIRRUPS	VERT
A604		11	32 - 6			ABUTMENT BODY - FF, TOP, BTM	HORIZ
A805		7	32 6			ABUTMENT BODY - BF	HORIZ
A506	31		2 - 0			ABUTMENT BODY - DOWELS	VERT
A507	22		15 - 3	X		WING WALL - BODY	VERT
A508	12		11 - 11			WING WALL - FF OF BODY	HORIZ
A609	16		11 - 11			WING WALL - BODY	HORIZ
A610	28		9 - 6			WING WALL - TOP	VERT
A611	4		9 - 7			WING WALL - TOP	HORIZ
A412	10		9 - 7			WING WALL - TOP	HORIZ
			-				

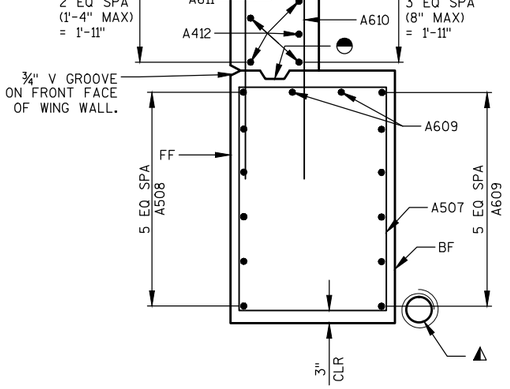
FF - FRONT FACE
BF - BACK FACE

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

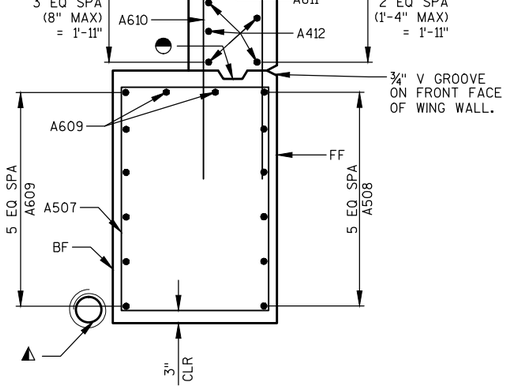
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.

◓ OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY, WITH MEMBRANE ON BACK FACE.

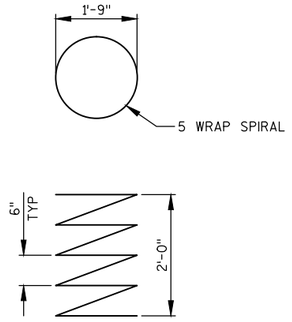
⚠ PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN TO SUITABLE DRAINAGE.



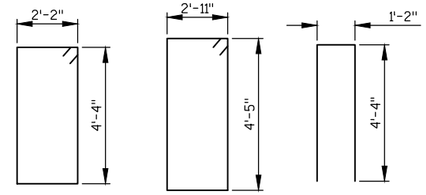
WING 1 SECTION
SEE SHEET 12 FOR RAIL POST ANCHORS



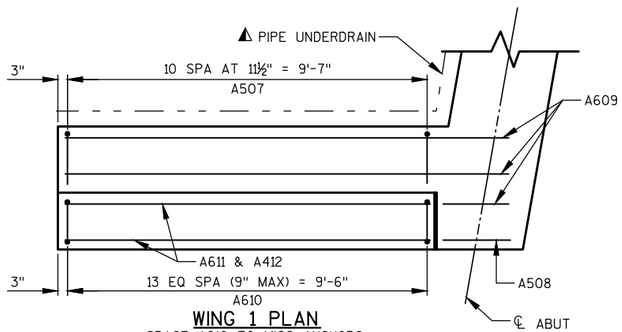
WING 2 SECTION
SEE SHEET 12 FOR RAIL POST ANCHORS



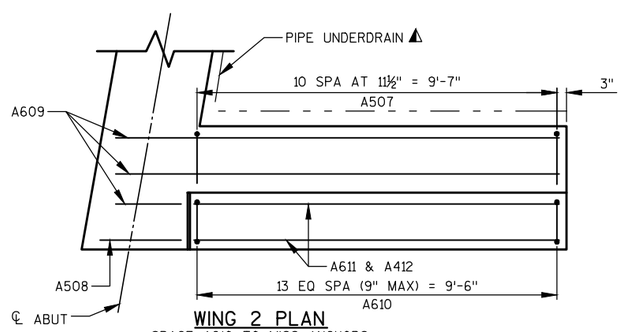
A401



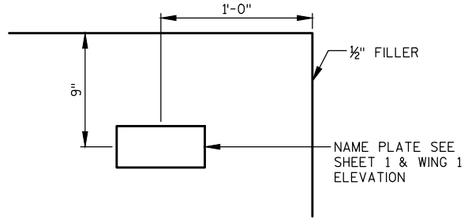
A503 A507 A610



WING 1 PLAN
SPACE A610 TO MISS ANCHORS FOR RAIL POSTS.



WING 2 PLAN
SPACE A610 TO MISS ANCHORS FOR RAIL POSTS.



NAME PLATE LOCATION
ON WING 1

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-0123

DRAWN BY JAK | PLANS CK'D. GAR

WEST ABUTMENT DETAILS

SHEET 29 12

8

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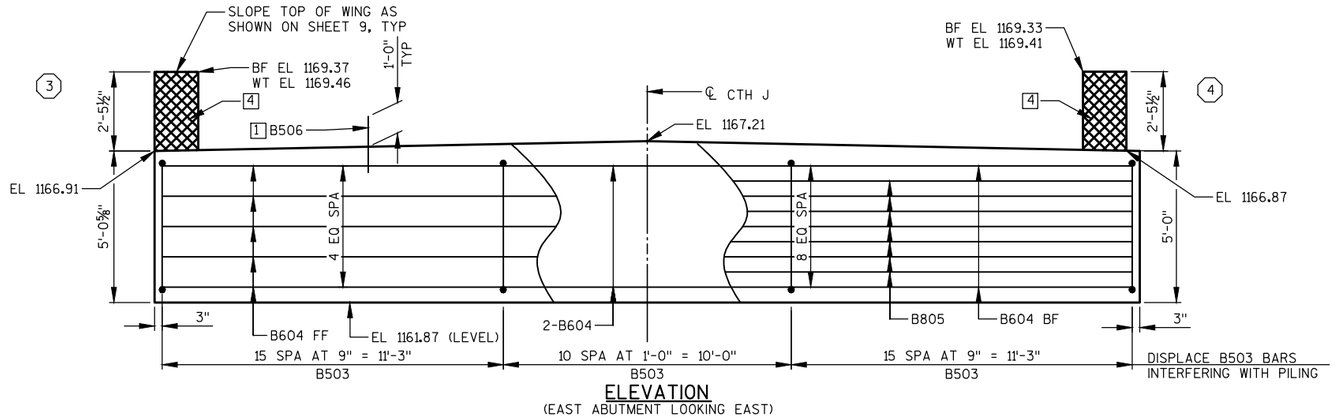
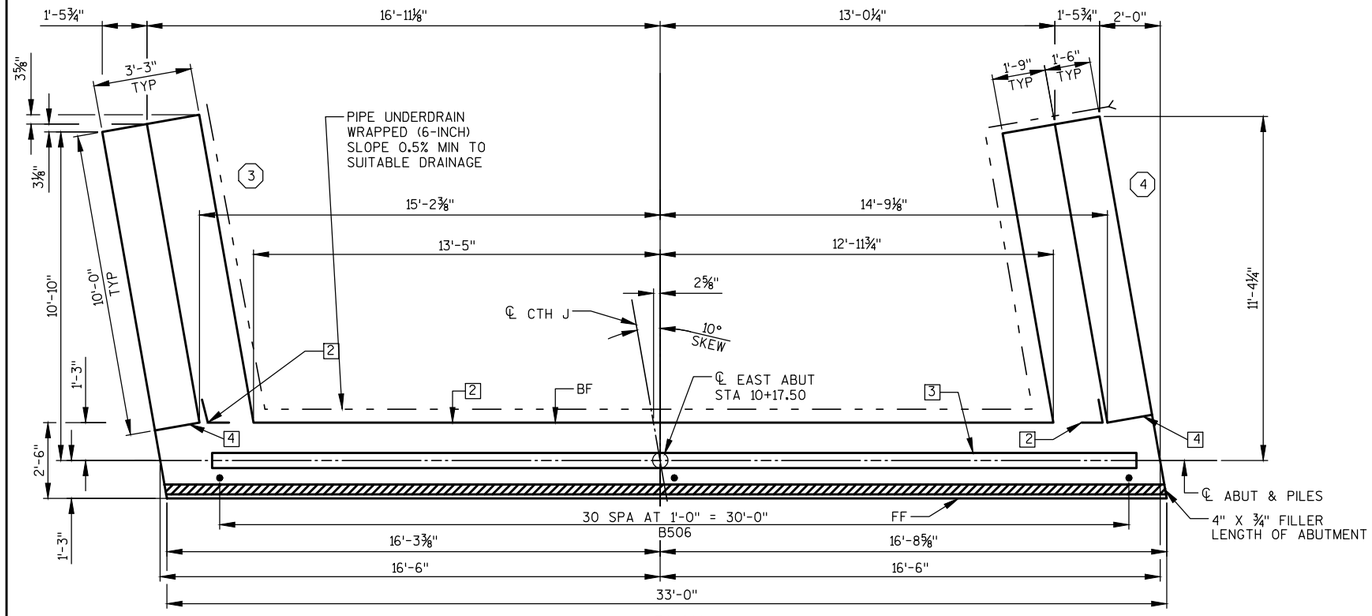
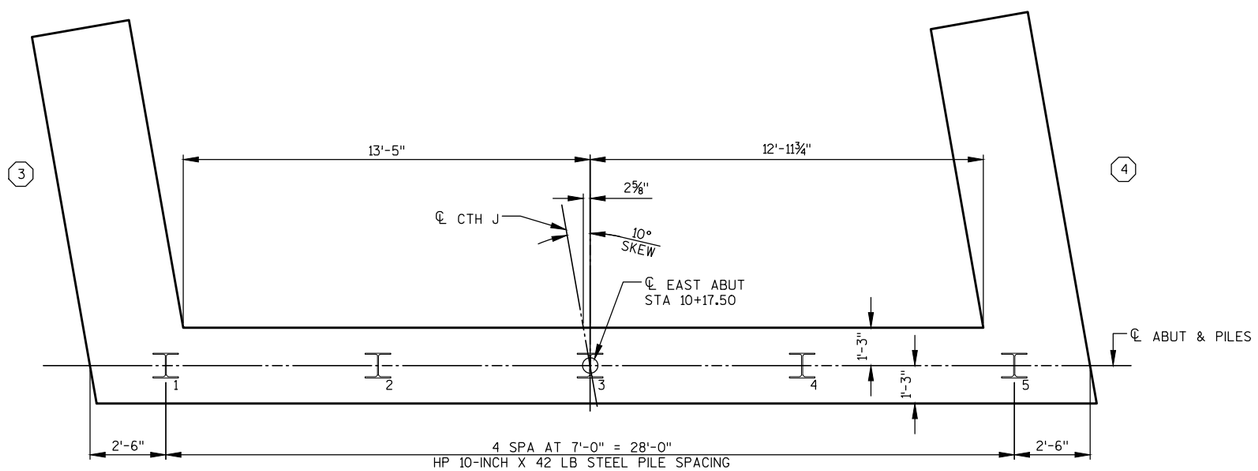


ELEVATION
(EAST ABUTMENT LOOKING EAST)



PLAN



PILE PLAN

NOTES

FOR PILE SPLICE SEE SHEET 3

FILL/EXCAVATE TO BOTTOM OF ABUTMENT EL 1161.87 BEFORE DRIVING PILING.

SEE SHEET 3 FOR STRUCTURE BACKFILL AND PIPE UNDERDRAIN DETAIL.

ABUTMENT SUPPORTED ON HP 10-INCH X 42 LB STEEL PILING WITH REQUIRED DRIVING RESISTANCE OF 130 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 10' LONG. PREBORING TO EL. 1154.00 REQUIRED.

[1] B506 BARS MAY BE PLACED AFTER CONCRETE IS POURED, BUT BEFORE INITIAL SETTING HAS TAKEN PLACE.

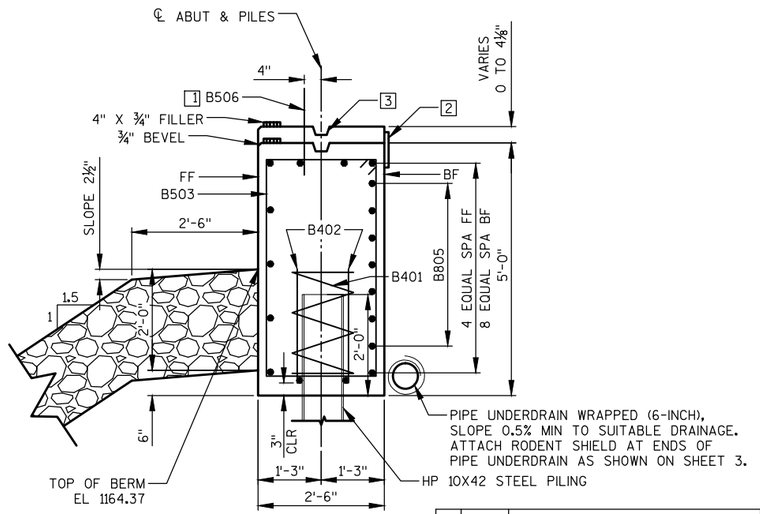
[2] 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE. EXTEND FROM BRIDGE SEAT TO TOP OF WING.

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

[4] ½" FILLER - TO EXTEND FROM BRIDGE SEAT TO TOP OF WING. FILLER 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.

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

(#) INDICATES WING NUMBER



SECTION THRU ABUTMENT BODY

ALL HORIZONTAL BARS NOT LABELED ARE B604 BARS.

STATE PROJECT NUMBER

8780-00-71

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-0123

DRAWN BY JAK | PLANS CK'D. GAR

EAST ABUTMENT

SHEET 30 12

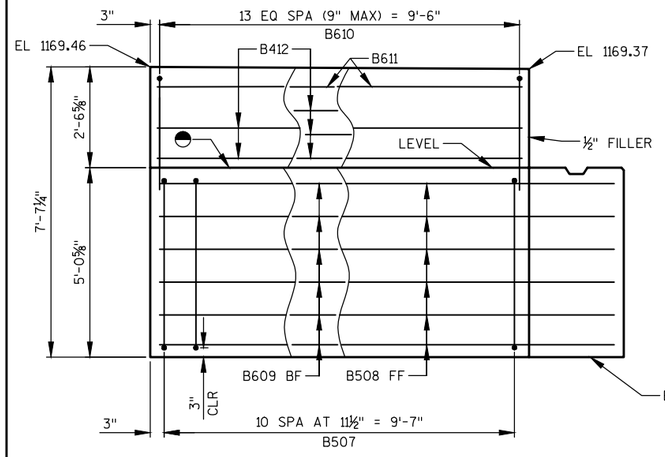
8

8

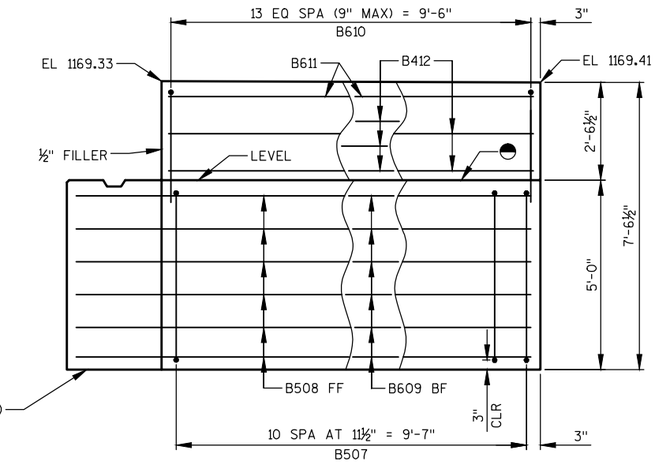
FILE NAME : X:±2881800±141903.01±TECH±CAD±8780-00-71±DESIGN±STRUCTURE±080108_EA.DWG PLOT DATE : 12/2/2016 PLOT BY : MATTHEW BUCKLI PLOT SCALE : 1" = 1'

STATE PROJECT NUMBER

8780-00-71



WING 3 ELEVATION



WING 4 ELEVATION

BILL OF BARS
EAST ABUTMENT

COATED= 1380 LBS.
UNCOATED= 1840 LBS.

MARK	NUMBER COATED	NUMBER UNCOATED	LENGTH FT - IN	BENT	BAR SERIES	LOCATION	
B401		5	28 - 0	X		ABUTMENT BODY - 1 PER PILE	SPIRAL
B402		10	2 - 3			ABUTMENT BODY - 2 PER PILE	VERT
B503		41	13 - 8	X		ABUTMENT BODY - STIRRUPS	VERT
B604		11	32 - 6			ABUTMENT BODY - FF, TOP, BTM	HORIZ
B805		7	32 6			ABUTMENT BODY - BF	HORIZ
B506	31		2 - 0			ABUTMENT BODY - DOWELS	VERT
B507	22		15 - 3	X		WING WALL - BODY	VERT
B508	12		11 - 11			WING WALL - FF OF BODY	HORIZ
B609	16		11 - 11			WING WALL - BODY	HORIZ
B610	28		9 - 6			WING WALL - TOP	VERT
B611	4		9 - 7			WING WALL - TOP	HORIZ
B412	10		9 - 7			WING WALL - TOP	HORIZ
			-				

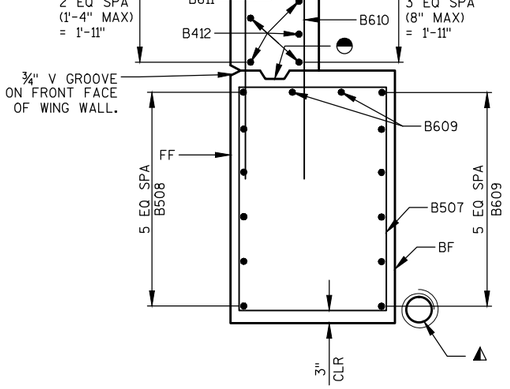
FF - FRONT FACE
BF - BACK FACE

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

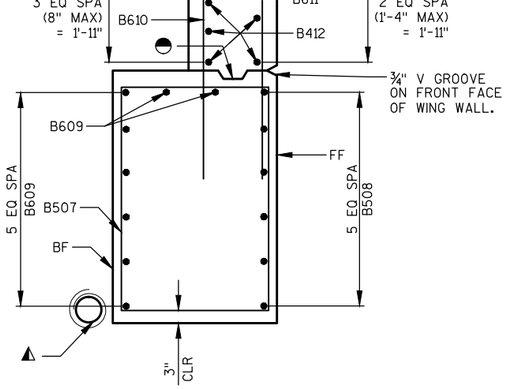
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.

◓ OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY, WITH MEMBRANE ON BACK FACE.

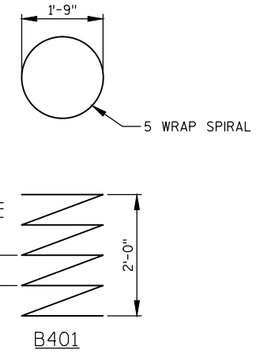
⚠ PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN TO SUITABLE DRAINAGE.



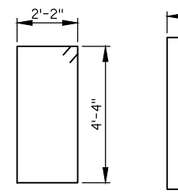
WING 3 SECTION
SEE SHEET 12 FOR RAIL POST ANCHORS



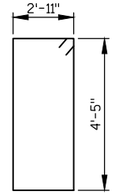
WING 4 SECTION
SEE SHEET 12 FOR RAIL POST ANCHORS



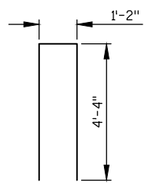
B401



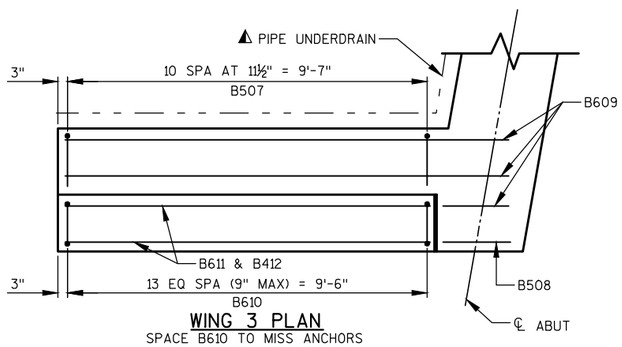
B503



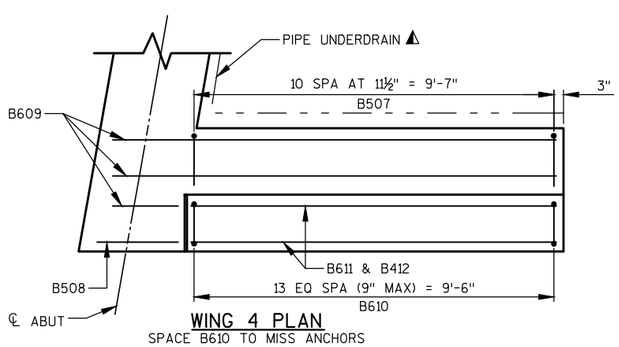
B507



B610



WING 3 PLAN
SPACE B610 TO MISS ANCHORS FOR RAIL POSTS.



WING 4 PLAN
SPACE B610 TO MISS ANCHORS FOR RAIL POSTS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-0123

DRAWN BY JAK | PLANS CK'D. GAR

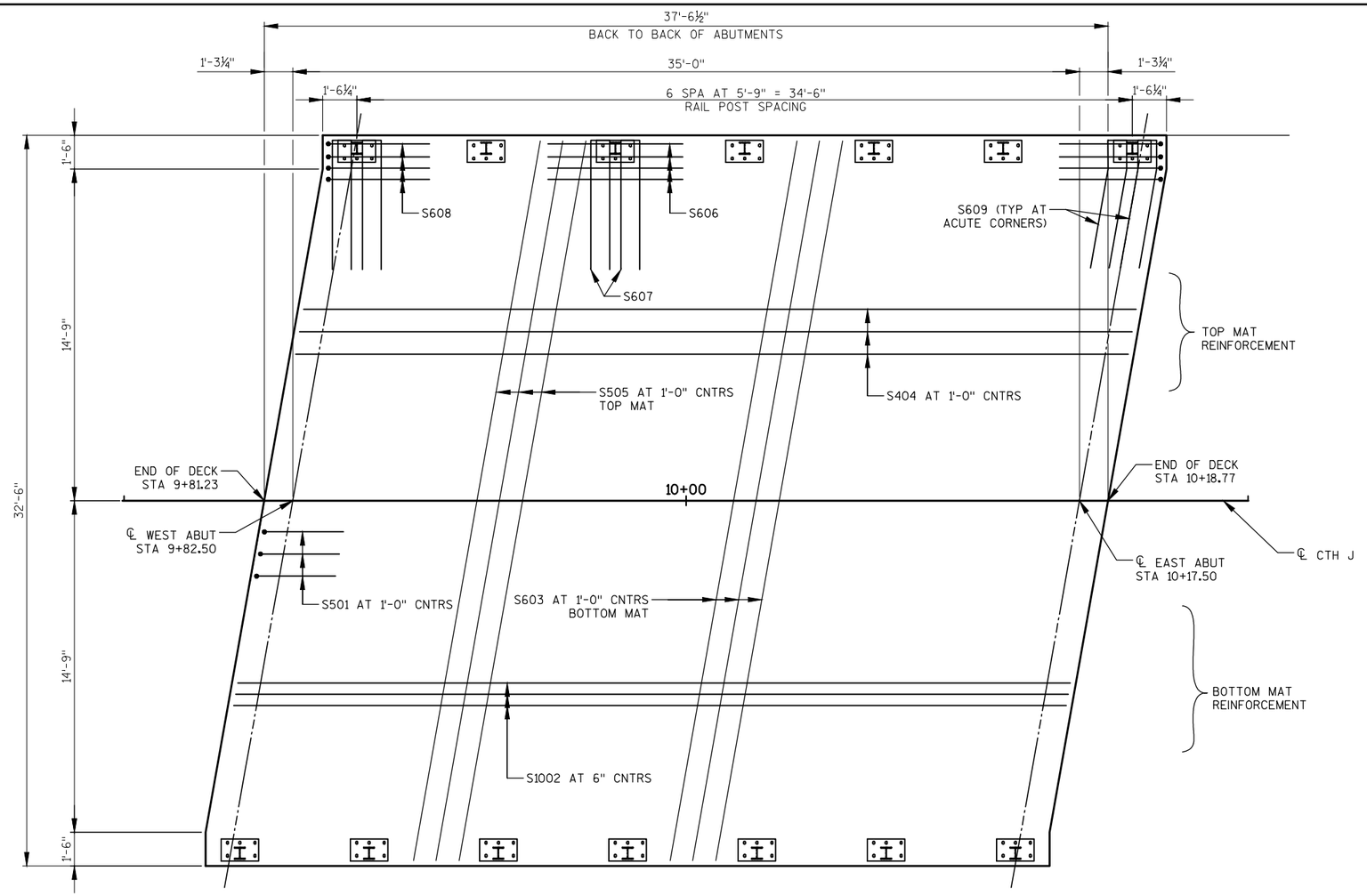
EAST ABUTMENT DETAILS

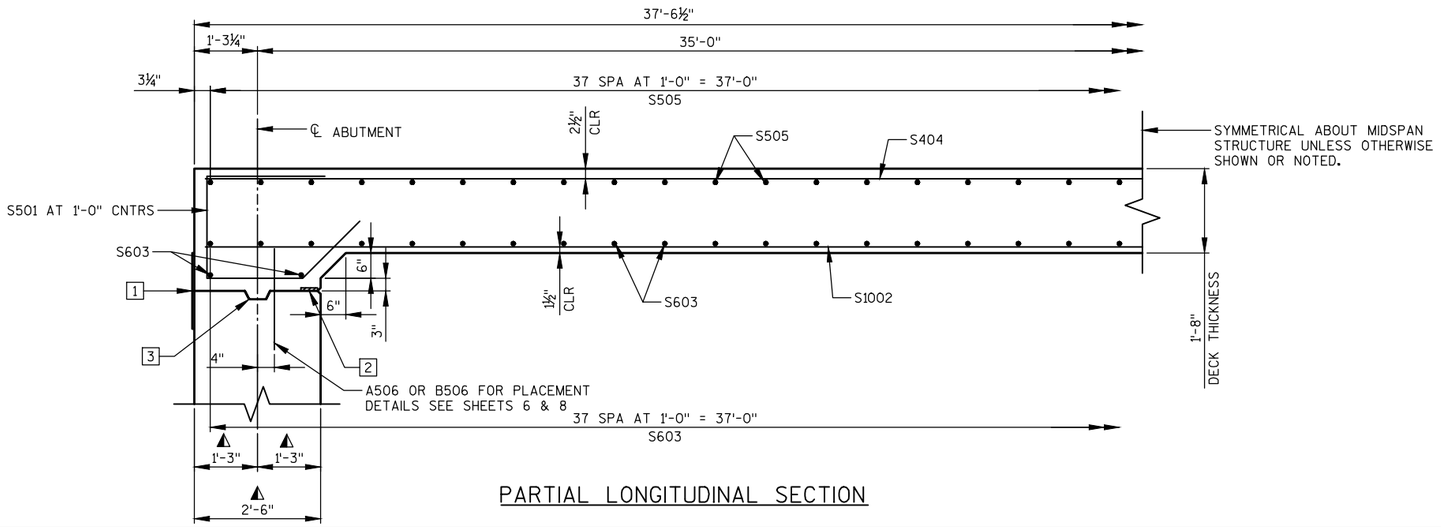
SHEET 31 12

8

8

STATE PROJECT NUMBER
8780-00-71





PARTIAL LONGITUDINAL SECTION

NOTES

1. 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING AND BETWEEN INSIDE FACES OF WINGS. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
2. 4" X ¾" FILLER LENGTH OF ABUTMENT.
3. KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY.

⚠ DIMENSIONS SHOWN ARE NORMAL TO ABUTMENT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-0123

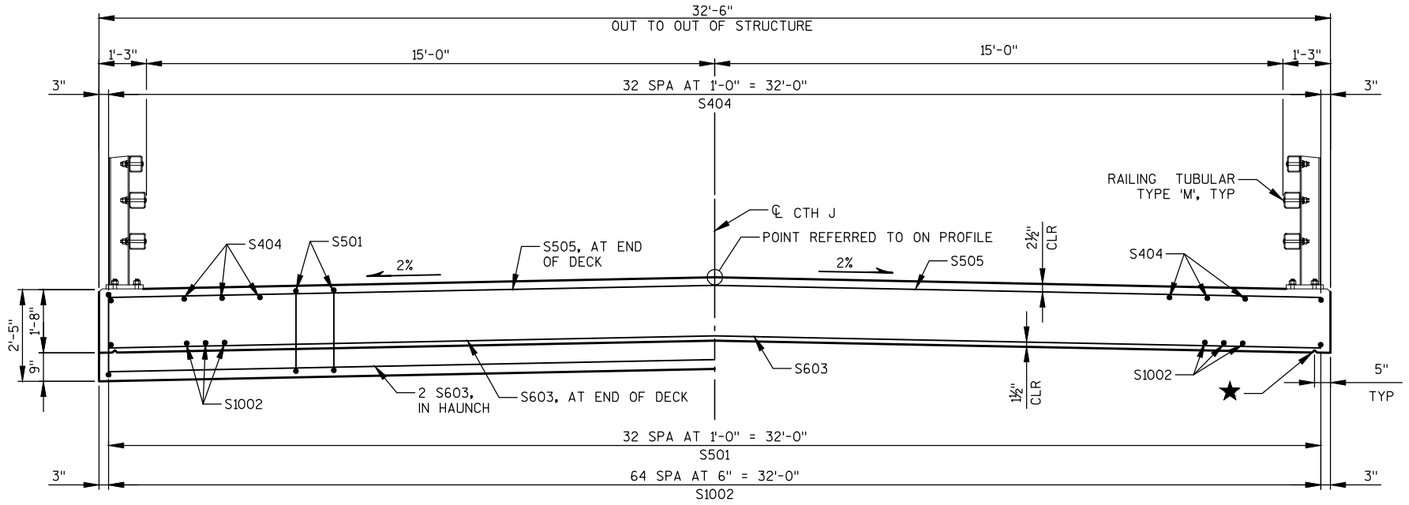
DRAWN BY JAK | PLANS CK'D. GAR

SUPERSTRUCTURE | SHEET 32 12

8

FILE NAME : X:±2881800±141903.01±TECH±CAD±8780-00-71±DESIGN±STRUCTURE±080110_SS.DWG PLOT DATE : 12/2/2016 PLOT BY : MATTHEW BUCKLI PLOT SCALE : 1" = 1'

STATE PROJECT NUMBER
8780–00–71



AT ABUTMENTS

CROSS SECTION THRU ROADWAY

(LOOKING EAST)

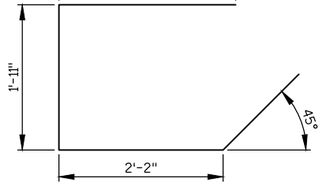
IN SPAN

BILL OF BARS **COATED= 16080 LBS.**
SUPERSTRUCTURE **UNCOATED= 0 LBS.**

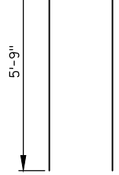
MARK	NUMBER COATED	NUMBER UNCOATED	LENGTH FT - IN	BENT	BAR SERIES	LOCATION	
S501	66		8 - 0	X		SLAB - ABUTMENT TIES	VERT
S1002	65		37 - 0			SLAB - BOTTOM	LONGIT
S603	42		32 - 8			SLAB - BOTTOM	TRANS
S404	33		37 - 0			SLAB - TOP	LONGIT
S505	38		32 - 8			SLAB - TOP	TRANS
S606	40		6 - 0			RAILING ANCHORS	LONGIT
S607	24		12 - 0	X		RAILING ANCHORS	TRANS
S608	16		6 - 0	X		RAILING ANCHORS AT CORNERS	LONGIT
S609	4		12 - 0	X		RALING ANCHORS AT CORNERS	TRANS

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

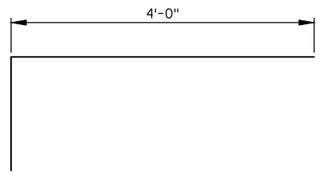
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.



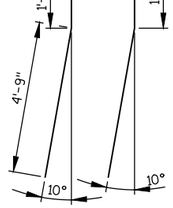
S501



S607



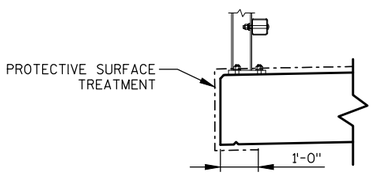
S608



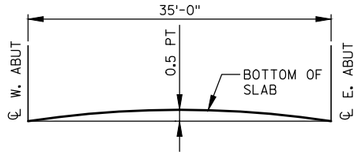
S609

TOP OF DECK ELEVATIONS

SPAN PT.	NORTH EDGE STATION	NORTH EDGE ELEVATION	CENTERLINE/CROWN STATION	CENTERLINE/CROWN ELEVATION	SOUTH EDGE STATION	SOUTH EDGE ELEVATION
W. ABUT.	9 + 85.37	1169.09	9 + 82.50	1169.40	9 + 79.63	1169.06
0.1	9 + 88.87	1169.11	9 + 86.00	1169.42	9 + 83.13	1169.08
0.2	9 + 92.37	1169.13	9 + 89.50	1169.44	9 + 86.63	1169.10
0.3	9 + 95.87	1169.15	9 + 93.00	1169.46	9 + 90.13	1169.12
0.4	9 + 99.37	1169.17	9 + 96.50	1169.48	9 + 93.63	1169.14
0.5	10 + 02.87	1169.20	10 + 00.00	1169.50	9 + 97.13	1169.16
0.6	10 + 06.37	1169.22	10 + 03.50	1169.53	10 + 00.63	1169.18
0.7	10 + 09.87	1169.25	10 + 07.00	1169.55	10 + 04.13	1169.21
0.8	10 + 13.37	1169.27	10 + 10.50	1169.58	10 + 07.63	1169.23
0.9	10 + 16.87	1169.30	10 + 14.00	1169.60	10 + 11.13	1169.26
E. ABUT.	10 + 20.37	1169.33	10 + 17.50	1169.63	10 + 14.63	1169.28



PROTECTIVE SURFACE TREATMENT DETAIL



CAMBER DIAGRAM

SPAN (PT)	CAMBER (IN)
℄ W ABUT	0
0.1	⅜
0.2	⅝
0.3	¾
0.4	⅞
0.5	1
0.6	⅞
0.7	¾
0.8	⅝
0.9	⅜
℄ E 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.

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 TOE 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 END OF DECK AND ℄.

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B–54–0123

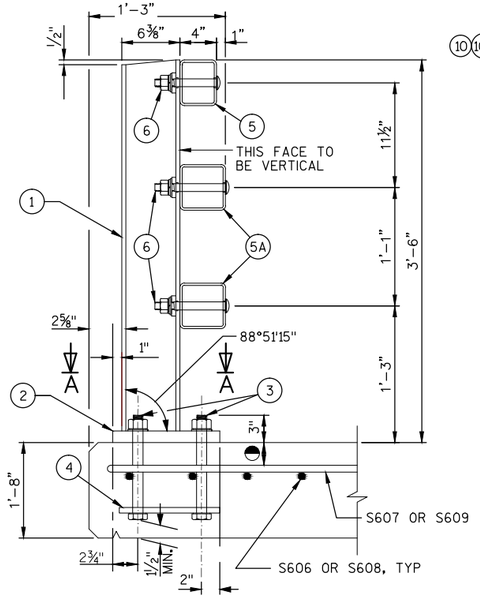
DRAWN BY JAK | PLANS CK'D. GAR

SUPERSTRUCTURE DETAILS

SHEET 33 12

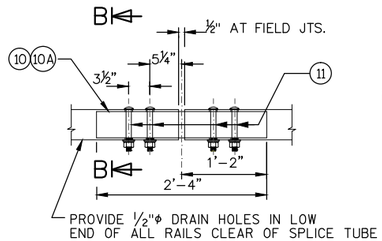
8

FILE NAME : X:±2881800±141903.01±TECH±CAD±8780-00-71±DESIGN±STRUCTURE±080110_SS.DWG PLOT DATE : 12/2/2016 PLOT BY : MATTHEW BUCKLI PLOT SCALE : 1" = 1'

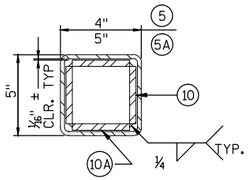


SECTION THRU RAILING ON DECK

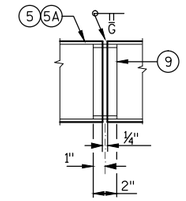
◓ PLACE BELOW TOP MAT OF SLAB REINF.



FIELD ERECTION JOINT DETAIL

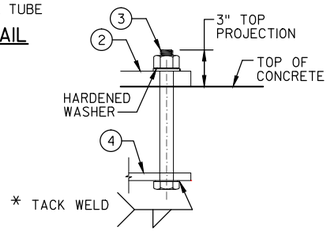


SECTION B-B



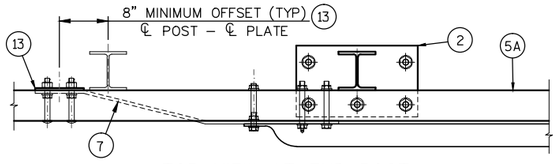
SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



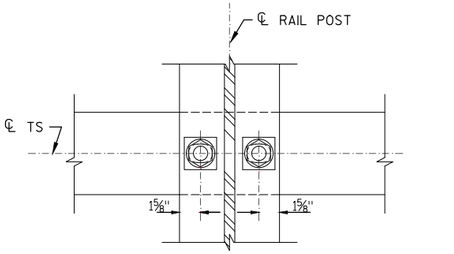
ANCHOR BOLTS

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

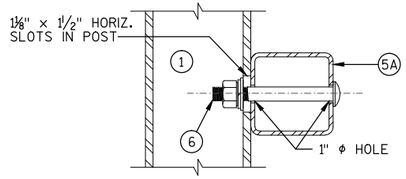


TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT



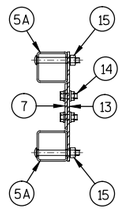
SECTION THRU POST WEB



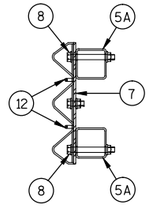
SECTION THRU RAIL

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 1⁵⁄₁₆" X 1⅝" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.

(3) ASTM A449 - ⅝" 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 1³⁄₁₆" 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 1⅜" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)

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

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

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

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

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

(11) ⅞" φ 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).

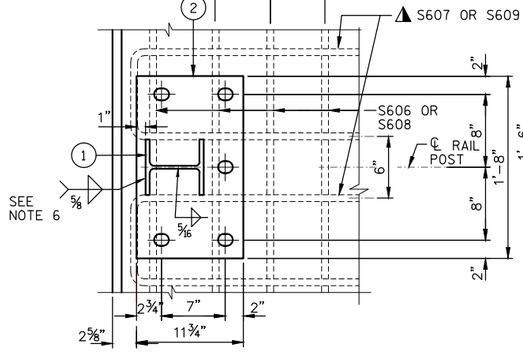
(13) ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.

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

(15) 1" φ 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.

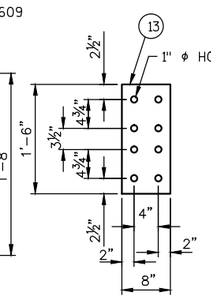
GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M (B-54-0123)" 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 NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).



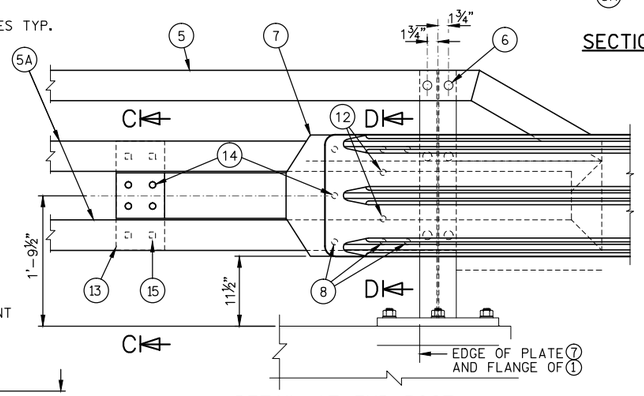
SECTION A-A

◭ TIE TO TOP MAT OF STEEL.



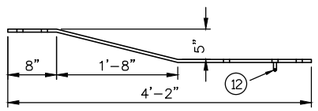
ANCHOR PLATE

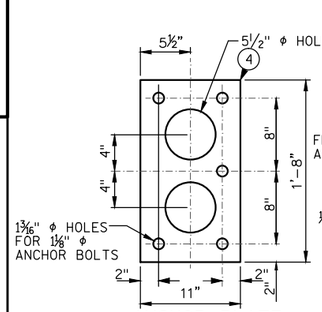
AT BEAM GUARD ATTACHMENT



DETAIL AT END POST

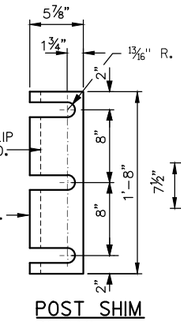
THRIE BEAM RAIL ATTACHMENT



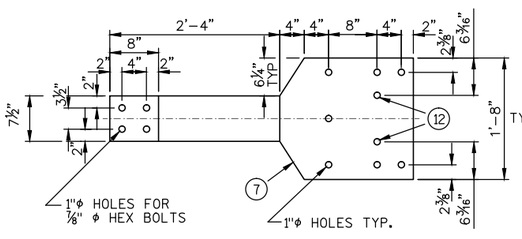


ANCHOR PLATE

AT RAIL TO DECK CONNECTION

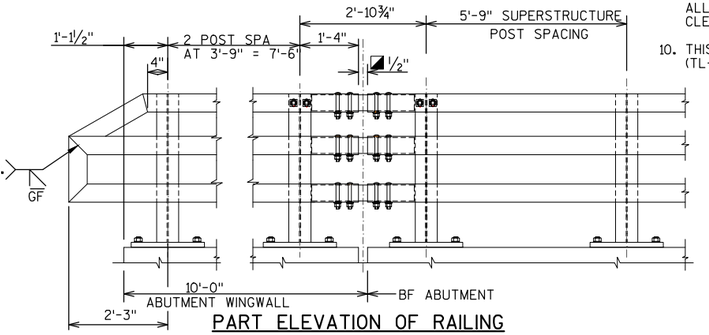


POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

◪ ½" JOINT FILLER

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STATE PROJECT NUMBER

8780-00-71

STRUCTURE B-54-0123

DRAWN BY JAK | PLANS CK'D. GAR

TUBULAR STEEL RAILING TYPE 'M'

SHEET 34 12

8

8

FILE NAME : X:\2881800\141903.01\TECH\CAD\8780-00-71\DESIGN\STRUCTURE\080113_RL.DWG PLOT DATE : 12/2/2016 PLOT BY : MATTHEW BUCKLI PLOT SCALE : 1" = 1'

STATION	AREA (SF) Cut	Salvaged/Unusable Pavement Material	Fill	Incremental Vol (CY) (Unadjusted) Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Expanded Fill 1.25	Mass Ordinate Note 4
8+50	30	6	0	0	0	0	0	0	0
8+75	30	6	28	28	7	13	28	16	5
9+00	30	6	24	28	7	24	55	46	-4
9+25	32	6	17	29	7	19	84	70	-6
9+50	31	6	16	29	7	15	112	89	-3
9+80	28	6	27	32	6	23	145	118	-6
9+80	0	0	0	0	0	0	145	118	-6
10+20	0	0	0	0	0	0	145	118	-6
10+20	28	6	15	0	3	0	145	118	-9
10+50	29	6	8	32	6	13	176	134	-1
10+75	29	6	6	27	6	7	203	143	11
11+00	31	6	5	28	7	5	231	149	26
11+25	33	6	4	30	7	4	261	155	43
11+50	34	6	0	31	8	2	292	157	64
			Column Total	292	71	126			

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

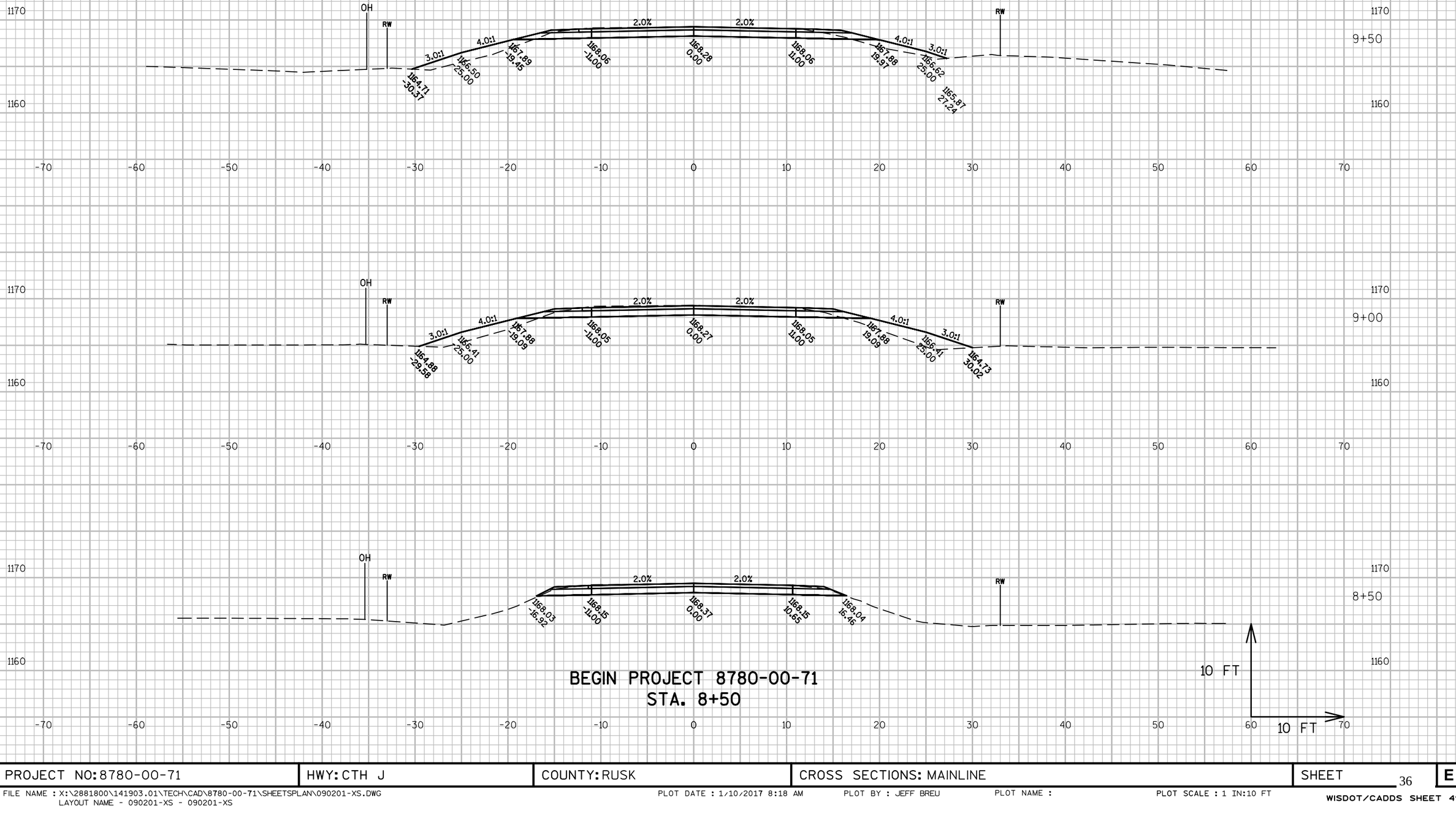
No Marsh or EBS is anticipated.

9

9

PROJECT NO: 8780-00-71	HWY: CTH J	COUNTY: RUSK	EARTHWORK SUMMARY	SHEET NO:	E

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

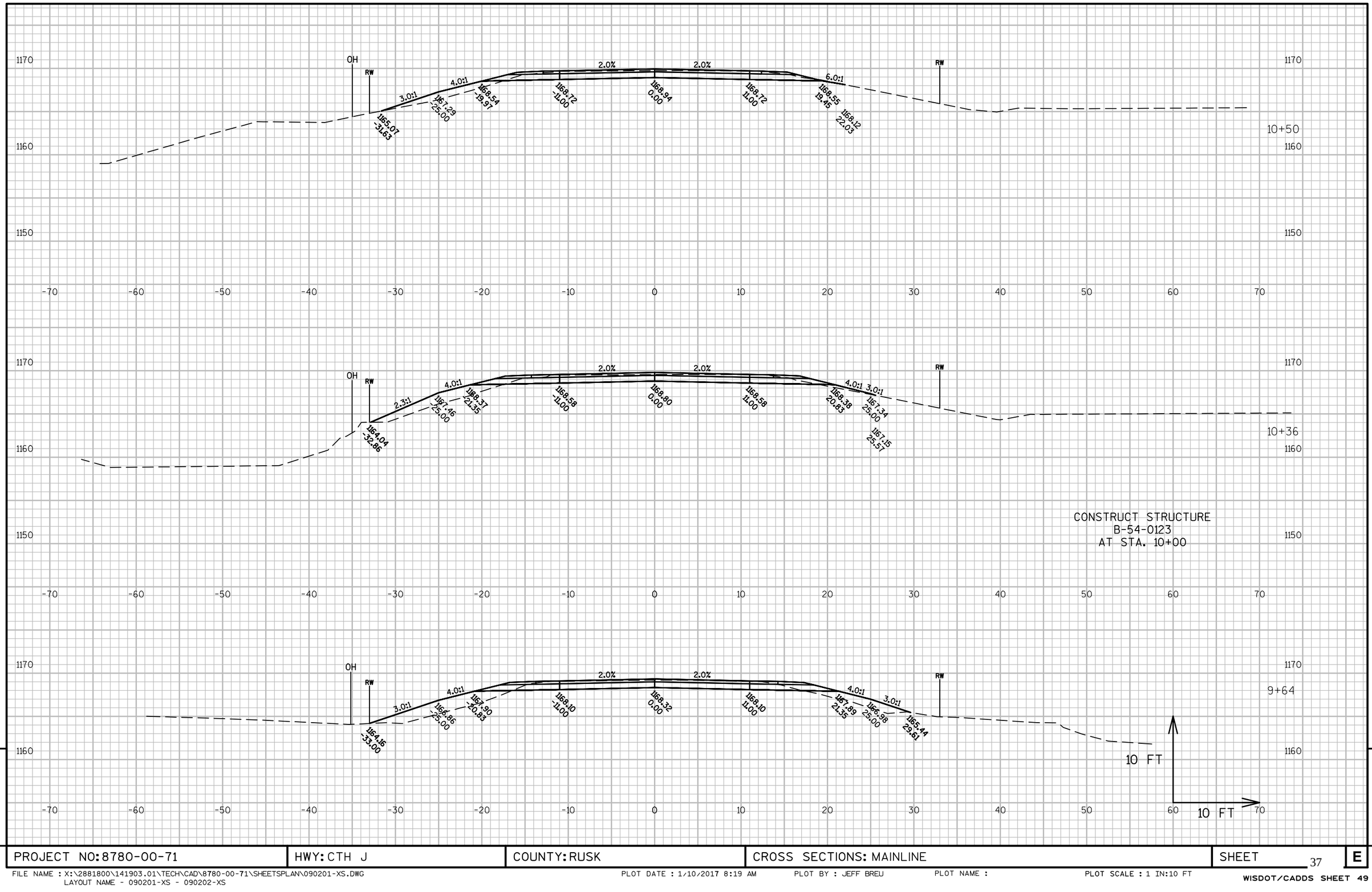


BEGIN PROJECT 8780-00-71
STA. 8+50

9

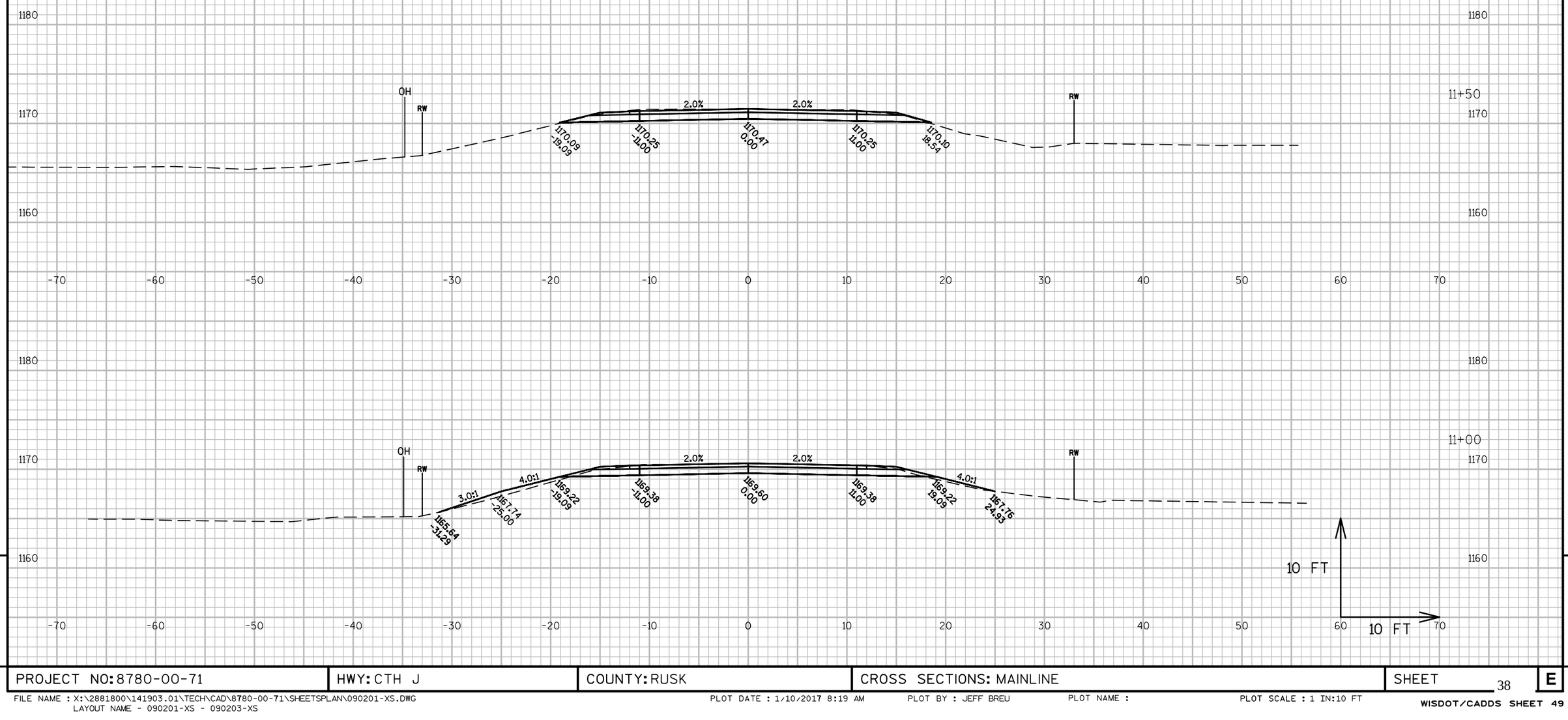
9

PROJECT NO: 8780-00-71	HWY: CTH J	COUNTY: RUSK	CROSS SECTIONS: MAINLINE	SHEET 36	E



PROJECT NO: 8780-00-71	HWY: CTH J	COUNTY: RUSK	CROSS SECTIONS: MAINLINE	SHEET 37	E

END PROJECT 8780-00-71
STA. 11+50



PROJECT NO: 8780-00-71	HWY: CTH J	COUNTY: RUSK	CROSS SECTIONS: MAINLINE	SHEET 38	E

Notes

Wisconsin Department of Transportation

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through innovation and exceptional service.

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