EAU

NOVEMBER 2018

PROJECT ID: 7841-00-71

WITH: N/A

COUNTY: CLARK

ORDER OF SHEETS

TOTAL SHEETS = 32

35

DESIGN DESIGNATION 7841-00-71

A.A.D.T.	2019	= 100
A.A.D.T.	2039	= 140
D.H.V.		= 14
D.D.		= 50/50
T.		= 10%
DESIGN SPEED		= 40 MPH
ESALS		= ---

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 (300'EB')
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7841-00-71	———	—

T BEAVER, MILL ROAD

BR NELSON CREEK BRIDGE B-10-0233

LOC STR

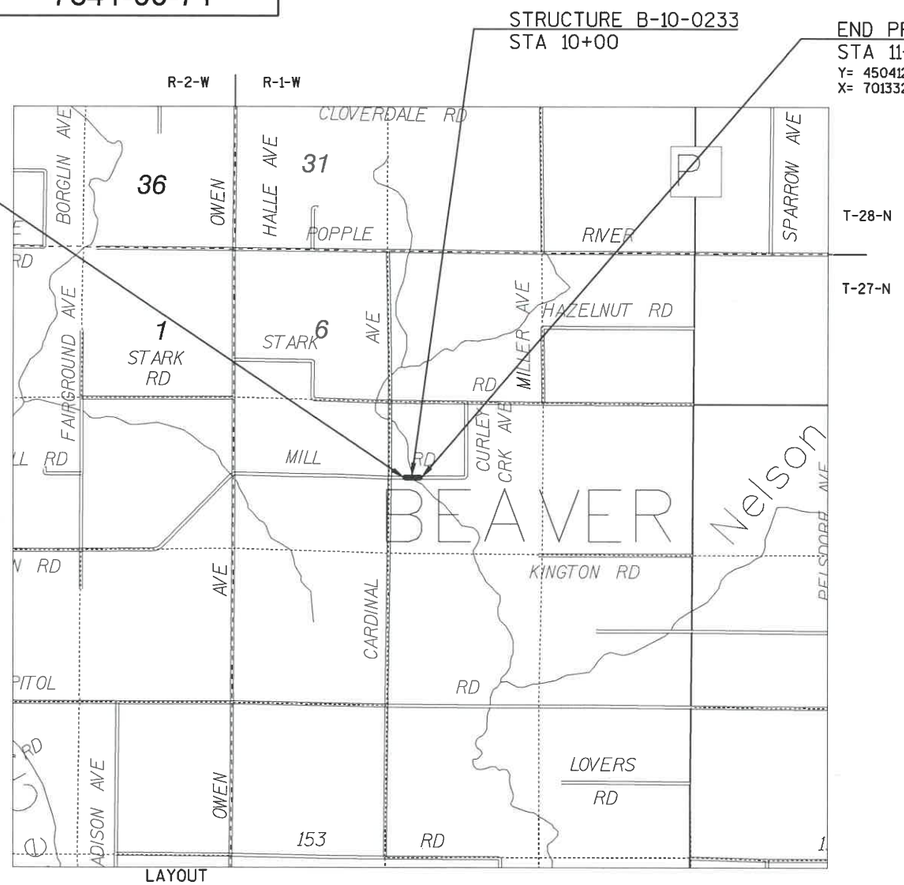
CLARK COUNTY

STATE PROJECT NUMBER
7841-00-71

BEGIN PROJECT
STA 8+50
Y= 450409.443
X= 701082.694

STRUCTURE B-10-0233
STA 10+00

END PROJECT
STA 11+00
Y= 450412.284
X= 701332.678



LAYOUT

SCALE 0 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.047 MI

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, CLARK COUNTY, NAD 83 (2007)

ACCEPTED FOR
TOWN of BEAVER

3-22-18 (Date) (Town Chairman Signature)

ORIGINAL PLANS PREPARED BY

SEH

WISCONSIN
TARA L. KRISTA
37975
CHIPPEWA FALLS, WI
PROFESSIONAL ENGINEER

3-29-18 (Date) (Signature)

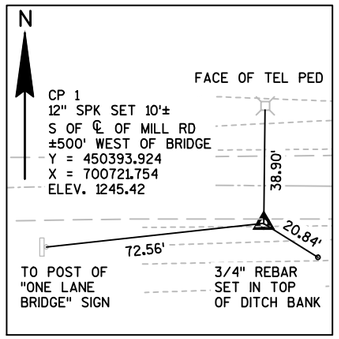
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

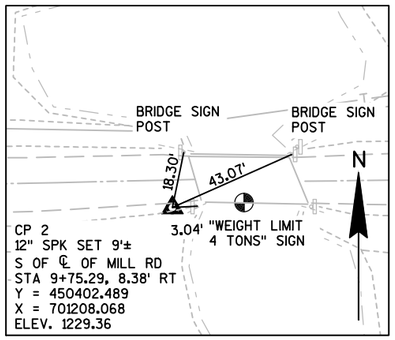
PREPARED BY

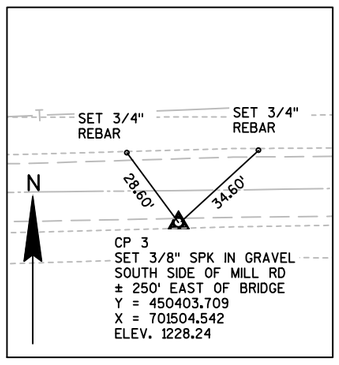
Surveyor	SEH
Designer	SEH
Management Consultant	KNIGHT E/A INC.
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 4/20/18 (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 IS MEASURED FOR PAYMENT BY THE TON, 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 MULCHED.

SILT FENCE IS TO BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, AND IN PLACE PRIOR TO BRIDGE REMOVAL.

UTILITY CONTACTS

TDS TELECOM
10 COLLEGE AVENUE
APPLETON, WI 54911
TELEPHONE: 920.882.4166
ATTENTION: STEVE JAKUBIEC
EMAIL: STEVE.JAKUBIEC@TDSTELECOM.COM

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 = 0.38 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.26 ACRES

MUNICIPALITY CONTACT

TOWN OF BEAVER
W4234 153RD ROAD
LOYAL, WI 54446
TELEPHONE: 715.897.4653
ATTENTION: MITCH MALM
EMAIL: BEAVERTWNSHP@YAHOO.COM

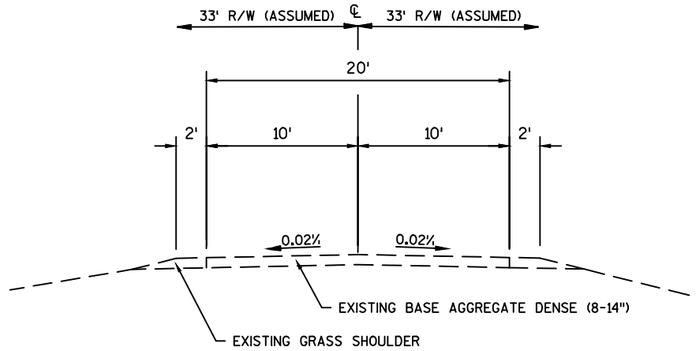
DESIGN CONTACT

SEH
10 NORTH BRIDGE STREET
CHIPPEWA FALLS, WI 54729
TELEPHONE: 715.720.6291
ATTENTION: TARA KRISTA
EMAIL: TKRISTA@SEHINC.COM

WDNR CONTACT

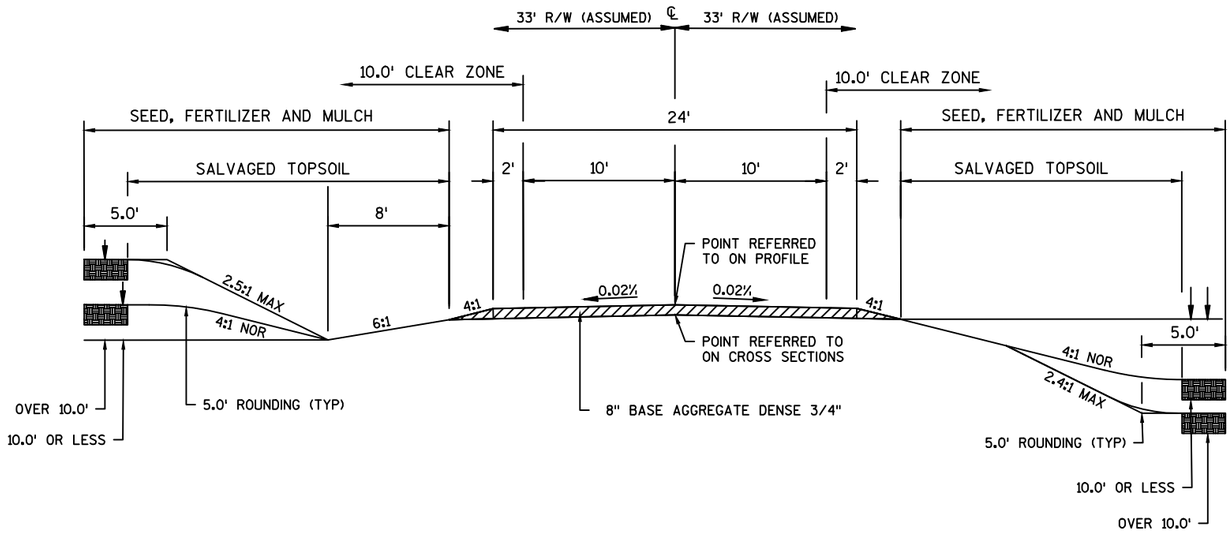
DNR NORTHERN REGION HQ
810 WEST MAPLE STREET
SPOONER, WI 54701
TELEPHONE: 715.635.4228
ATTENTION: SHAWN HASELEU
EMAIL: SHAWN.HASELEU@WISCONSIN.GOV

2



TYPICAL EXISTING SECTION

STA 8+50 TO STA 11+00



TYPICAL FINISHED SECTION

STA 8+50 TO STA 11+00

PROJECT NO: 7841-00-71	HWY: MILL ROAD	COUNTY: CLARK	TYPICAL SECTION	SHEET 3	E

Estimate Of Quantities

7841-00-71

Line	Item	Item Description	Unit	Total	Qty
0002	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+00	LS	1.000	1.000
0004	205.0100	Excavation Common	CY	90.000	90.000
0006	206.1000	Excavation for Structures Bridges (structure) 01. B-10-233	LS	1.000	1.000
0008	208.0100	Borrow	CY	170.000	170.000
0010	210.1500	Backfill Structure Type A	TON	350.000	350.000
0012	213.0100	Finishing Roadway (project) 01. 7841-00-71	EACH	1.000	1.000
0014	305.0110	Base Aggregate Dense 3/4-Inch	TON	330.000	330.000
0016	502.0100	Concrete Masonry Bridges	CY	178.000	178.000
0018	502.3200	Protective Surface Treatment	SY	205.000	205.000
0020	505.0400	Bar Steel Reinforcement HS Structures	LB	3,700.000	3,700.000
0022	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	24,630.000	24,630.000
0024	506.0105	Structural Steel Carbon	LB	480.000	480.000
0026	513.4061	Railing Tubular Type M 01. B-10-233	LF	150.000	150.000
0028	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0030	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	200.000	200.000
0032	606.0300	Riprap Heavy	CY	163.000	163.000
0034	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	220.000	220.000
0036	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7841-00-71	EACH	1.000	1.000
0038	619.1000	Mobilization	EACH	1.000	1.000
0040	624.0100	Water	MGAL	3.000	3.000
0042	625.0500	Salvaged Topsoil	SY	450.000	450.000
0044	627.0200	Mulching	SY	540.000	540.000
0046	628.1504	Silt Fence	LF	410.000	410.000
0048	628.1520	Silt Fence Maintenance	LF	410.000	410.000
0050	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0052	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0054	628.2008	Erosion Mat Urban Class I Type B	SY	50.000	50.000
0056	628.6005	Turbidity Barriers	SY	225.000	225.000
0058	629.0210	Fertilizer Type B	CWT	0.500	0.500
0060	630.0120	Seeding Mixture No. 20	LB	15.000	15.000
0062	630.0200	Seeding Temporary	LB	15.000	15.000
0064	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0066	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0068	638.2602	Removing Signs Type II	EACH	6.000	6.000
0070	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0072	642.5001	Field Office Type B	EACH	1.000	1.000
0074	643.0420	Traffic Control Barricades Type III	DAY	1,062.000	1,062.000

7841-00-71

Line	Item	Item Description	Unit	Total	Qty
0076	643.0705	Traffic Control Warning Lights Type A	DAY	2,124.000	2,124.000
0078	643.0900	Traffic Control Signs	DAY	944.000	944.000
0080	643.5000	Traffic Control	EACH	1.000	1.000
0082	645.0111	Geotextile Type DF Schedule A	SY	80.000	80.000
0084	645.0120	Geotextile Type HR	SY	316.000	316.000
0086	650.4500	Construction Staking Subgrade	LF	202.000	202.000
0088	650.5000	Construction Staking Base	LF	202.000	202.000
0090	650.6500	Construction Staking Structure Layout (structure) 01. B-10-233	LS	1.000	1.000
0092	650.9910	Construction Staking Supplemental Control (project) 01. 7841-00-71	LS	1.000	1.000
0094	650.9920	Construction Staking Slope Stakes	LF	202.000	202.000
0096	715.0502	Incentive Strength Concrete Structures	DOL	1,068.000	1,068.000

EXCAVATION

STATION - STATION	LOCATION	205.0100 COMMON CY	AIR FILL CY	EXPAND. FILL CY	208.0100 BORROW CY
MILL ROAD					
8+50 - 9+76	LT & RT	55	142	184	129
10+24 - 11+00	LT & RT	35	58	76	41
ITEM TOTALS		90	200	260	170

NOTES:
1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN COMMON EXCAVATION.
2) FILL DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.
3) FILL WILL BE BACKFILLED WITH CUT OR BORROW.
4) POSITIVE BORROW INDICATES A SHORTAGE OF MATERIAL.
5) EXPANSION FACTOR = 1.3

SALVAGED TOPSOIL, MULCHING, FERTILIZER AND SEEDING

STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB
MILL ROAD						
8+50 - 9+75.71	LT & RT	293	347	0.3	10	10
10+24.29 - 11+00	LT & RT	157	193	0.2	5	5
ITEM TOTALS		450	540	0.5	15	15

FIELD OFFICE TYPE B

STATION - STATION	642.5001 EACH
MILL ROAD	1
ITEM TOTAL	1

FINISHING ROADWAY (7841-00-71)

STATION - STATION	213.0100 EACH
MILL ROAD	1
ITEM TOTAL	1

EROSION CONTROL ITEMS

STATION - STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.6005 TURBIDITY BARRIERS SY	606.0300* RIPRAP HEAVY CY	645.0120* GEOTEXTILE TYPE HR SY
MILL ROAD							
8+50 - 9+75.71	LT & RT	250	250	-	85	31	46
10+24.29 - 11+00	LT & RT	160	160	-	140	-	-
UNDISTRIBUTED	LT & RT	-	-	50	-	-	-
ITEM TOTALS		410	410	50	225	31	46

*ITEM LOCATED ELSEWHERE IN PLANS

TRAFFIC CONTROL

STATION - STATION	643.5000 TRAFFIC CONTROL EACH	643.0420 BARRICADES TYPE III DAY	643.0705 WARNING LIGHTS TYPE A DAY	643.0900 SIGNS DAY
MILL ROAD				
8+50 - 11+00	1	1062	2124	944
ITEM TOTAL	1	1062	2124	944

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110 3/4-INCH TON	624.0100 WATER MGAL
MILL ROAD			
8+50 - 9+75.71	LT & RT	207	2
10+24.29 - 11+00	LT & RT	124	1
ITEM TOTALS		330	3

MOBILIZATIONS EROSION CONTROL

STATION - STATION	628.1905 EROSION CONTROL EACH	628.1910 EMERGENCY EROSION CONTROL EACH
MILL ROAD	3	3
	3	3

CONSTRUCTION STAKING

STATION - STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	*650.6500 STRUCTURE LAYOUT B-10-0233 LS	650.9910 SUPPLEMENTAL CONTROL (7841-00-71) LS	650.9920 SLOPE STAKES LF
MILL ROAD					1	
8+50 - 9+75.71	LT & RT	126	126	-	-	126
10+00	LT & RT	-	-	1	-	-
10+24.29 - 11+00	LT & RT	76	76	-	-	76
ITEM TOTALS		202	202	1	1	202

*CATEGORY 0020

MOBILIZATION

STATION - STATION	619.1000 EACH
MILL ROAD	
CATEGORY 0010	0.25
CATEGORY 0020	0.75
ITEM TOTAL	1

PERMANENT SIGNING

SIGN GROUP CODE	SIGN CODE	SIGN MESSAGE	TYPE II SIZE	637.2230 SIGNS TYPE II REFLECTIVE F SF	634.0612 POSTS WOOD 4X6-INCH 12-FT EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
1-1	W5-52L	CLEARANCE STRIPER	12" X 36"	3	1	1	1	REPLACE
1-2	W5-52R	CLEARANCE STRIPER	12" X 36"	3	1	1	1	REPLACE
1-3		WEIGHT LIMIT 40 TONS		-	-	1	1	REMOVE
1-4	W5-52L	CLEARANCE STRIPER	12" X 36"	3	1	1	1	REPLACE
1-5	W5-52R	CLEARANCE STRIPER	12" X 36"	3	1	1	1	REPLACE
1-6		WEIGHT LIMIT 40 TONS		-	-	1	1	REMOVE
ITEM TOTALS				12	4	6	6	

MAINTENANCE AND REPAIR OF HAUL ROADS (7841-00-71)

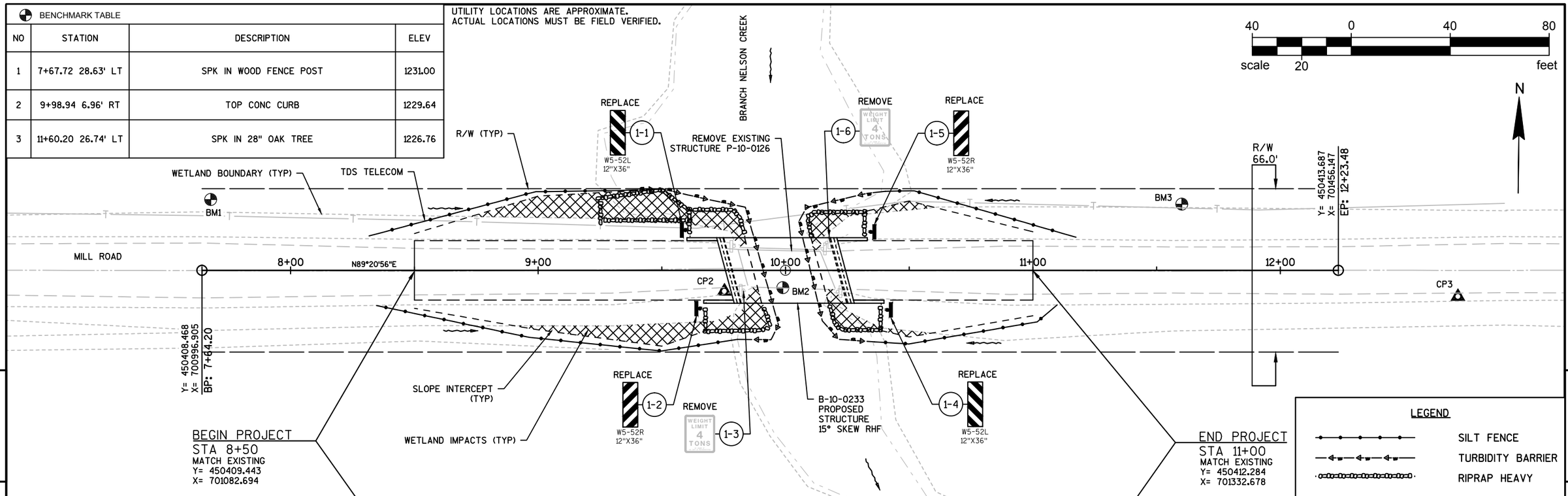
STATION - STATION	618.0100 EACH
MILL ROAD	
CATEGORY 0030	1
ITEM TOTAL	1

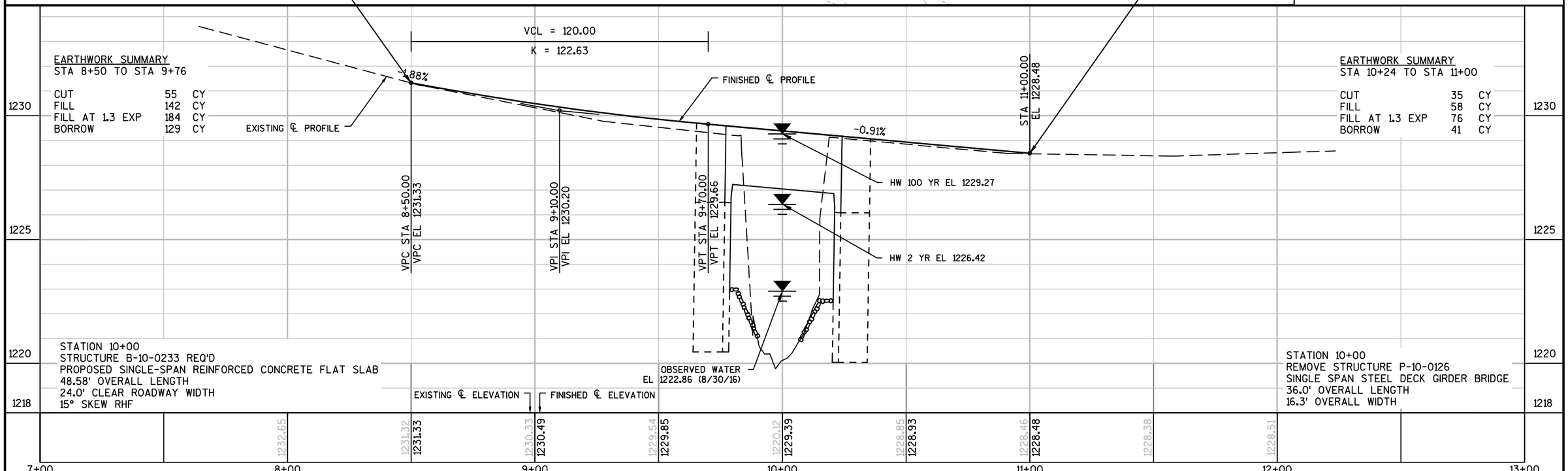
NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010, UNLESS OTHERWISE NOTED.

BENCHMARK TABLE

NO	STATION	DESCRIPTION	ELEV
1	7+67.72 28.63' LT	SPK IN WOOD FENCE POST	1231.00
2	9+98.94 6.96' RT	TOP CONC CURB	1229.64
3	11+60.20 26.74' LT	SPK IN 28" OAK TREE	1226.76

UTILITY LOCATIONS ARE APPROXIMATE.
ACTUAL LOCATIONS MUST BE FIELD VERIFIED.



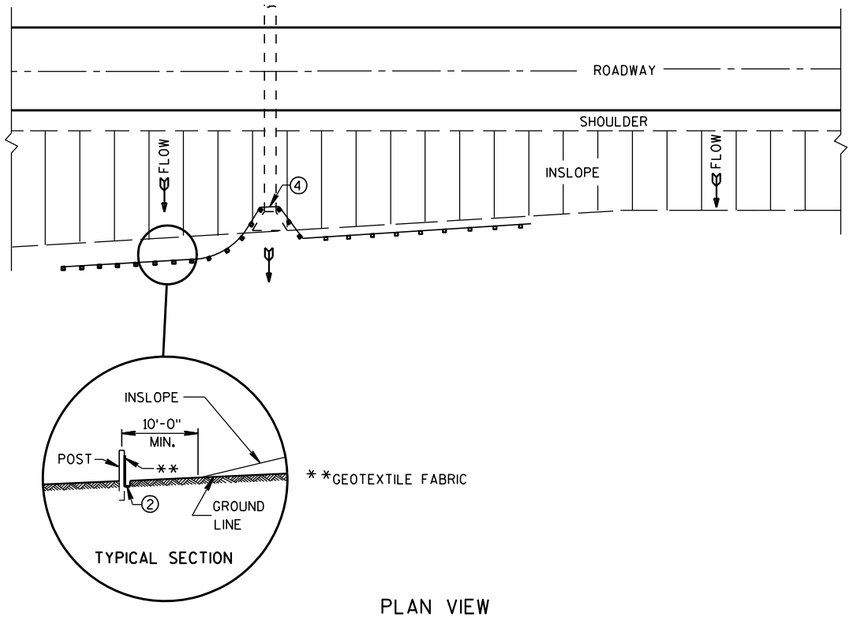


PROJECT NO: 7841-00-71	HWY: MILL ROAD	COUNTY: CLARK	PLAN AND PROFILE: MILL ROAD	SHEET 7 E

FILE NAME : \\SEHCF1\PROJECTS\AE\B\BEAVT\138121\CIVIL 3D\SHEETSPLAN\050101_PP.DWG
LAYOUT NAME - 050101_PP - PLANPROF 1 IN 40 FT
PLOT DATE : 4/26/2018 3:31 PM PLOT BY : JUSTIN SHAVLIK PLOT NAME : PLOT SCALE : 1 IN:40 FT

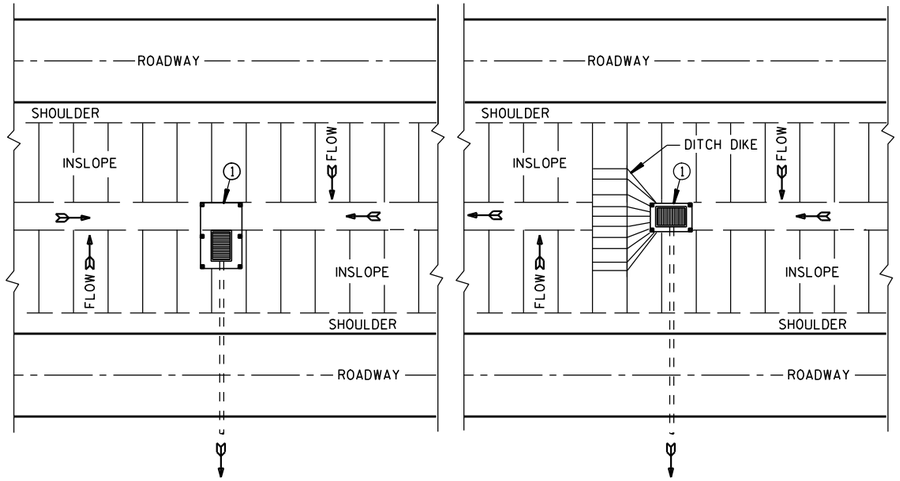
Standard Detail Drawing List

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
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



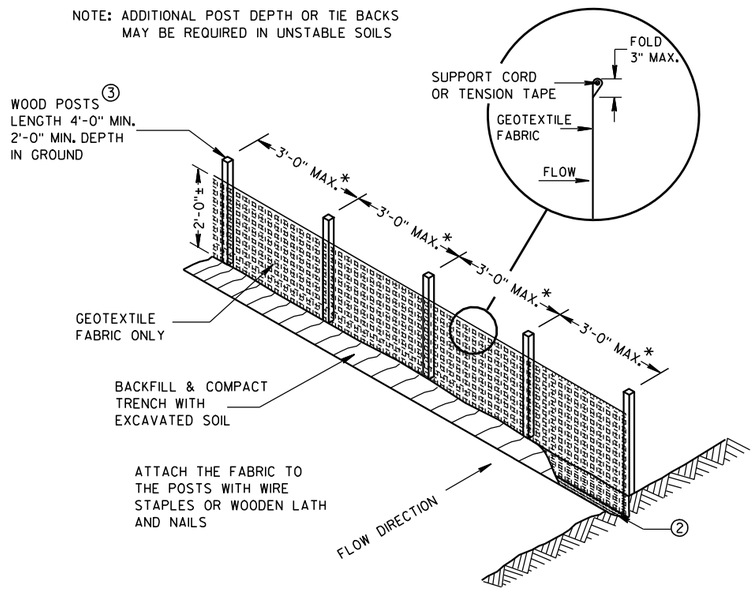
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



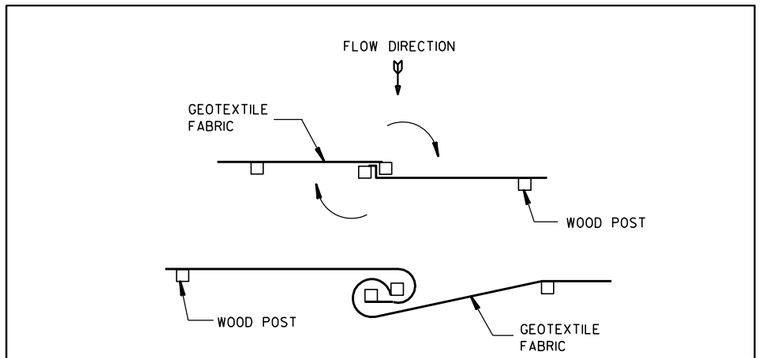
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



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

SILT FENCE

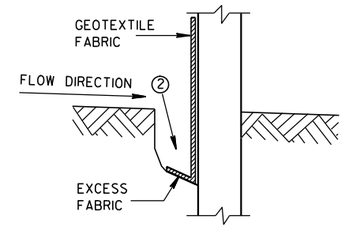


JOINING TWO LENGTHS OF SILT FENCE 5

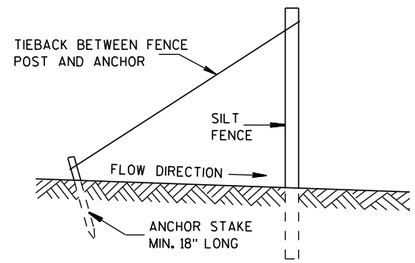
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

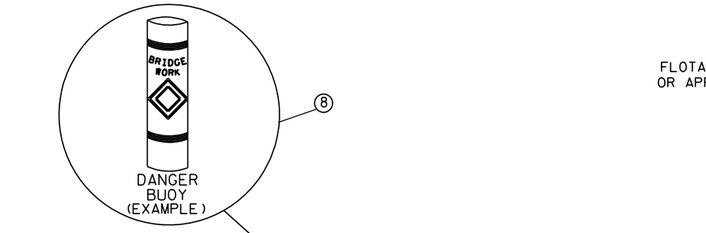
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

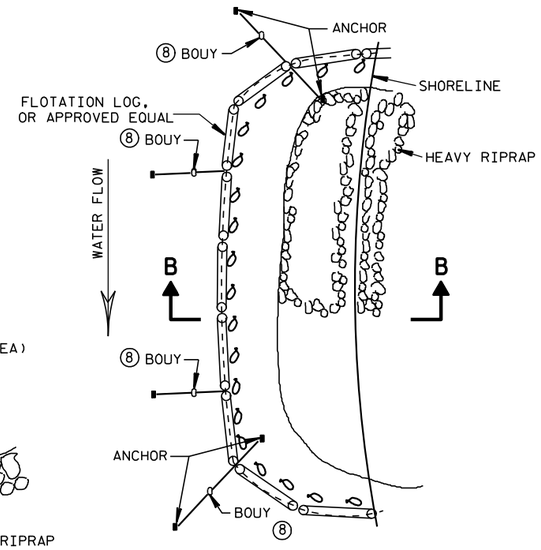
6

S.D.D. 8 E 9-6

6

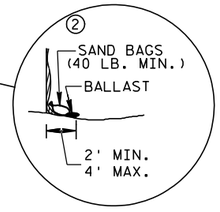
S.D.D. 8 E 9-6

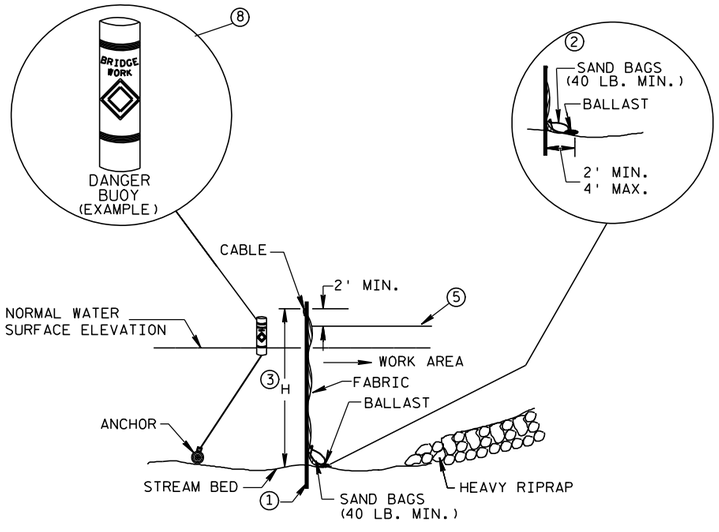




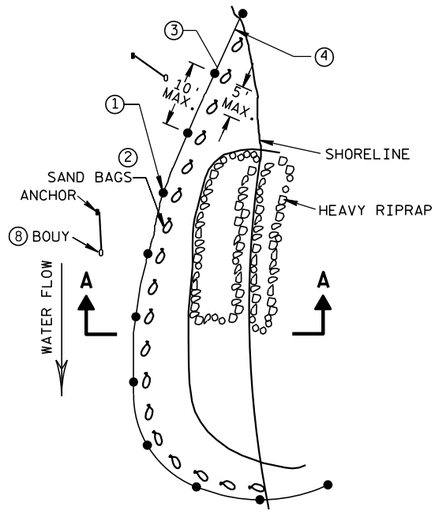
SECTION B-B

TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6





SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

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.

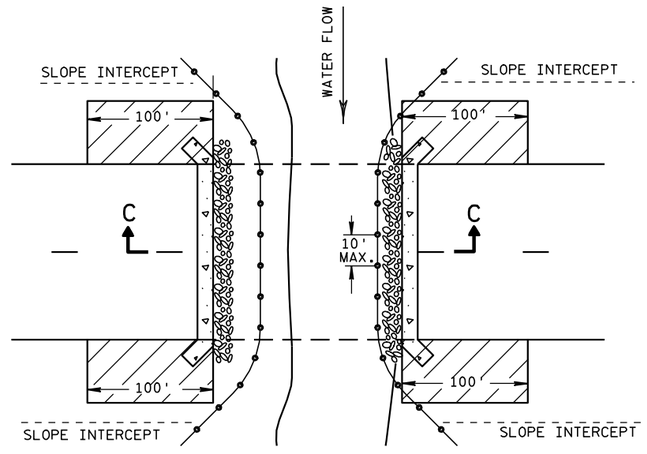
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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.

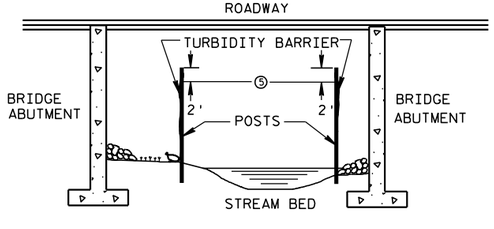
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

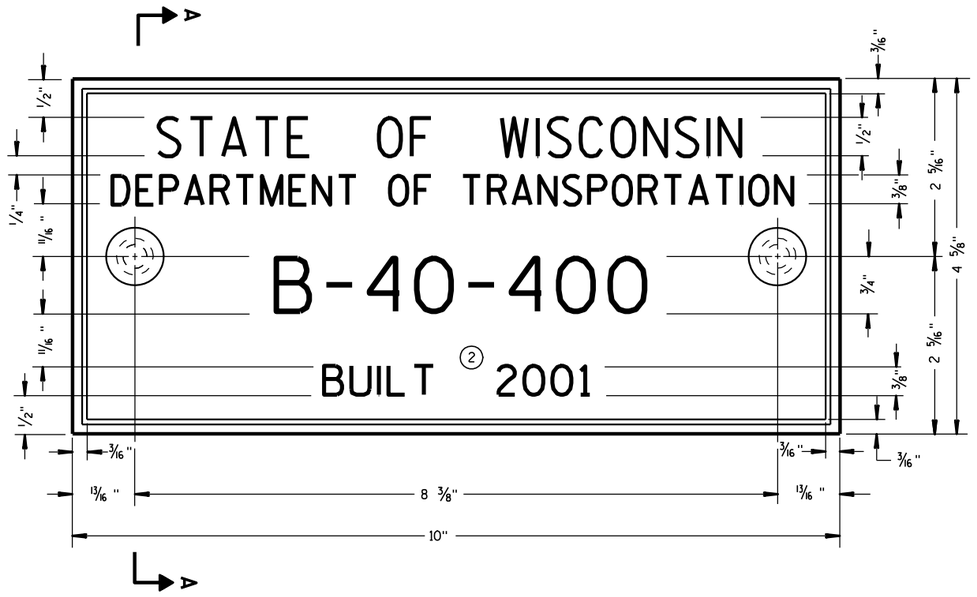
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

TURBIDITY BARRIER PLACEMENT DETAILS

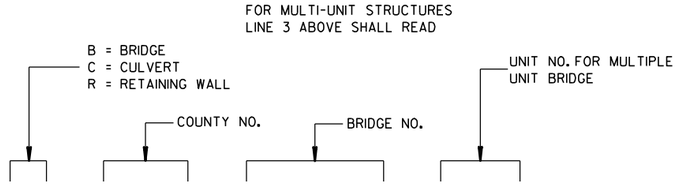
6

S.D.D. 8 E 11-2



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

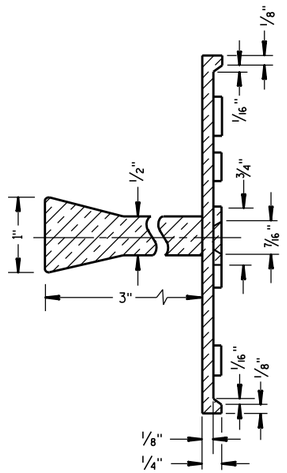
GENERAL NOTES

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.

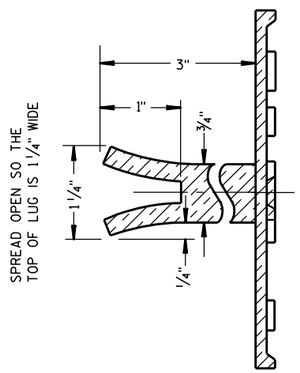
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

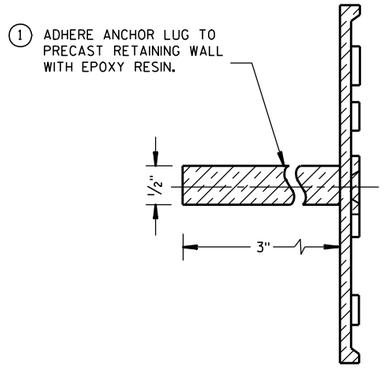
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

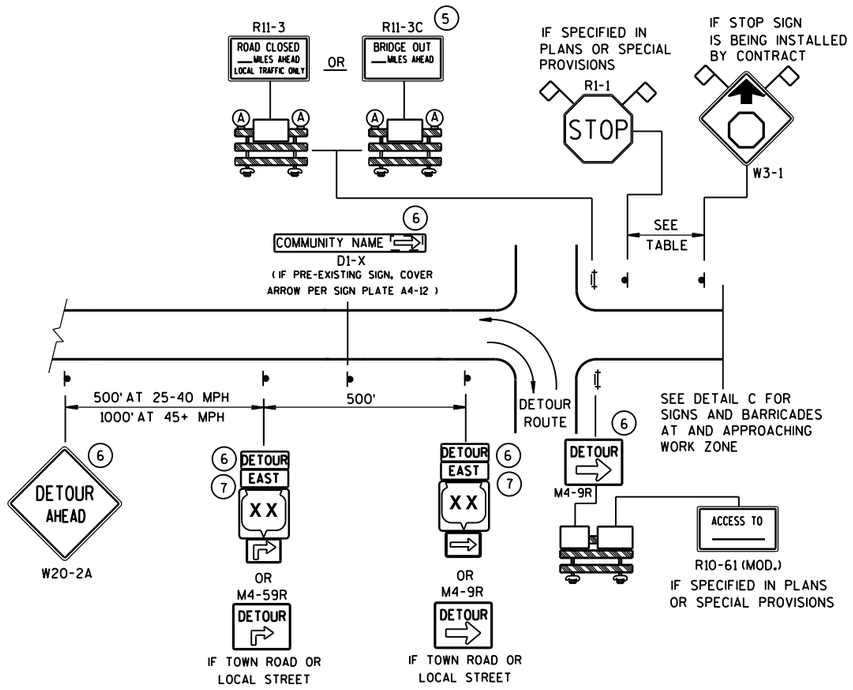
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
3/26/10 DATE	/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	

6

S.D.D. 12 A 3-10

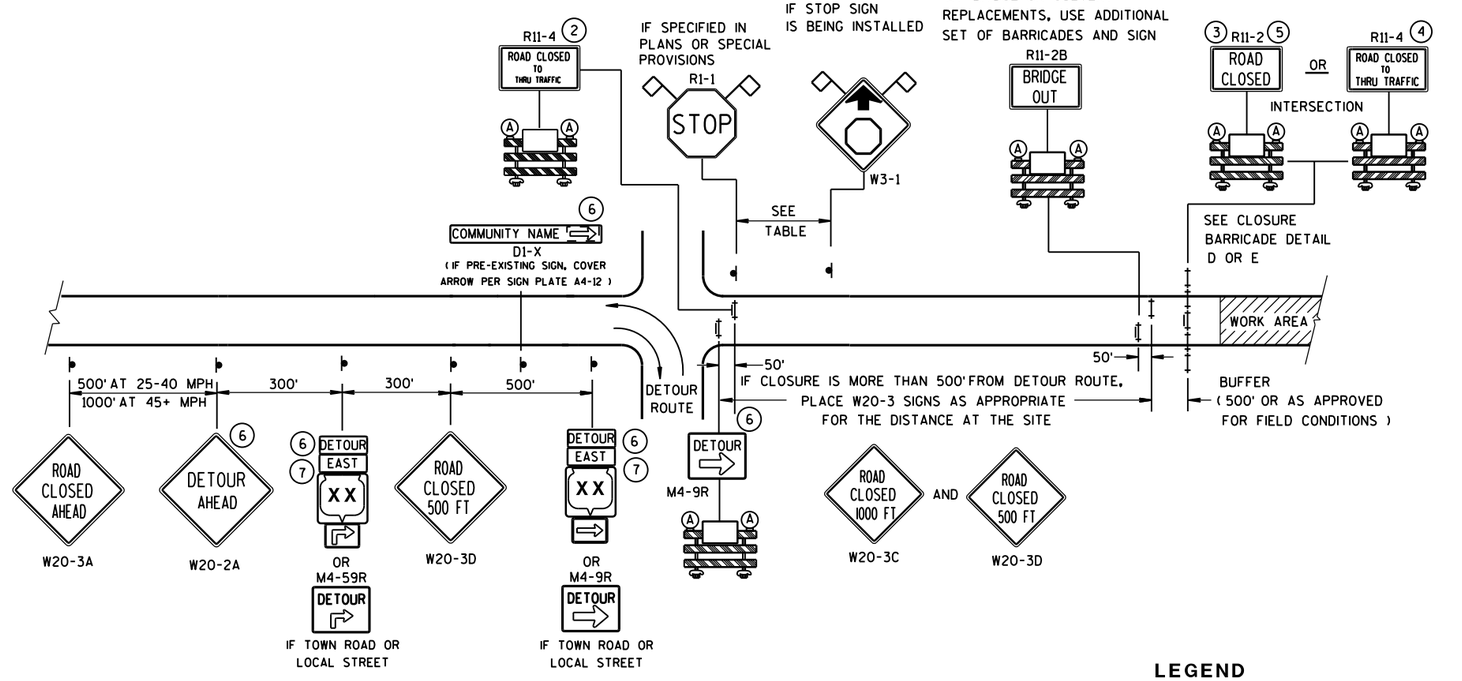
6

S.D.D. 12 A 3-10



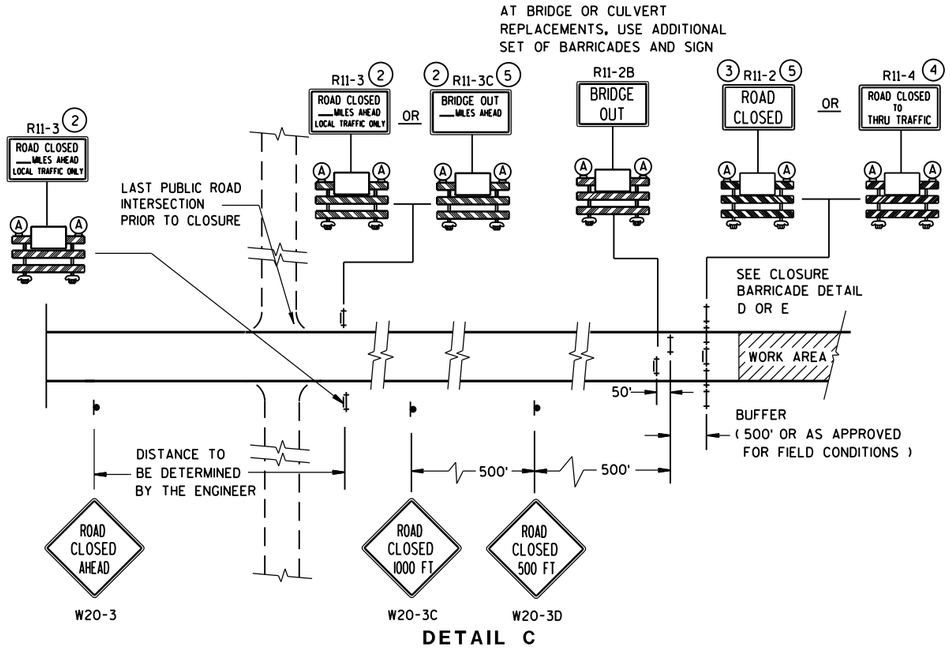
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN 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

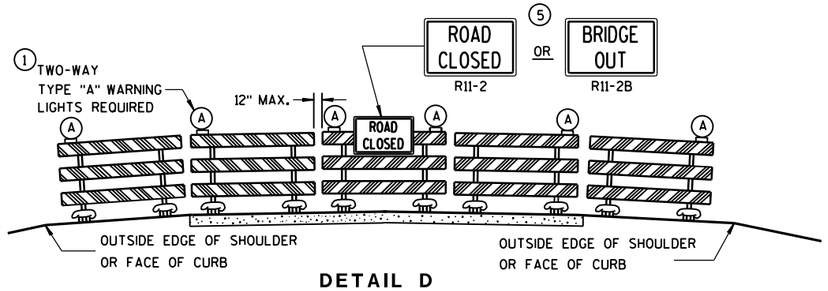
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

6

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

6

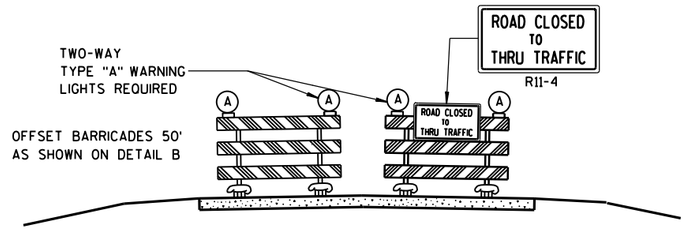
S.D.D. 15 C 2-6a



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 SAFETY ENGI — FIC
FHWA

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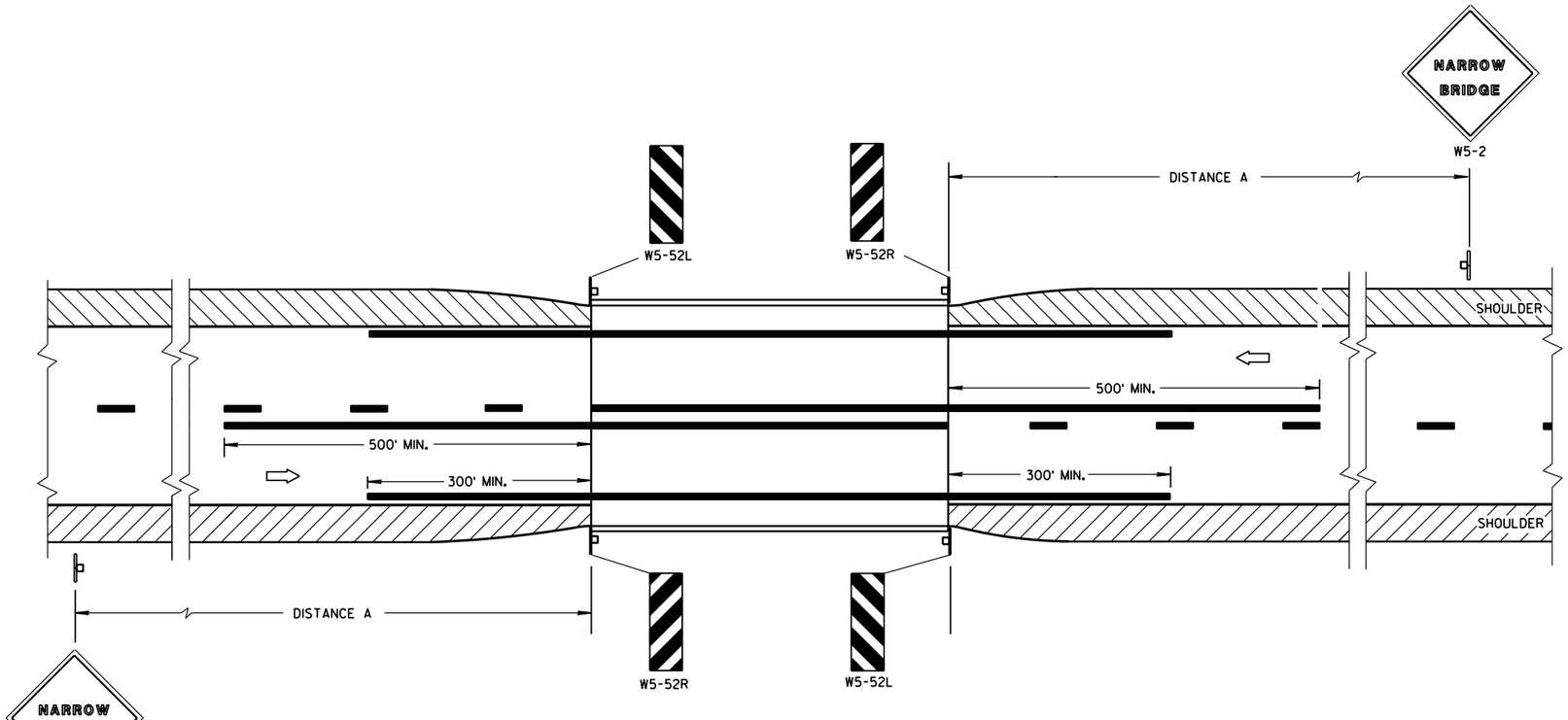
S.D.D. 15 C 2-6b



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'

GENERAL NOTES

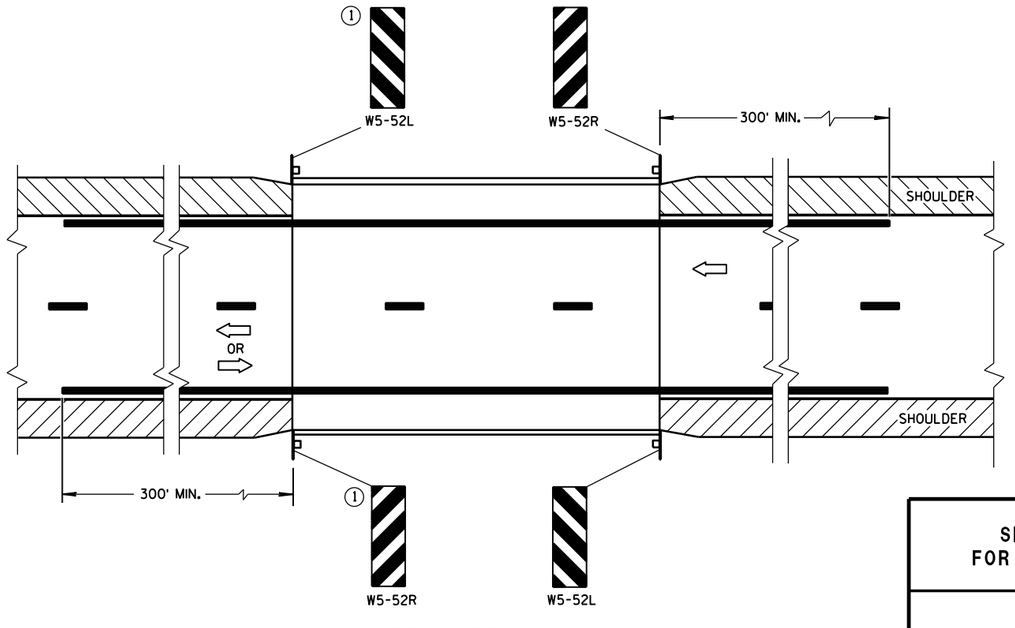
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

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

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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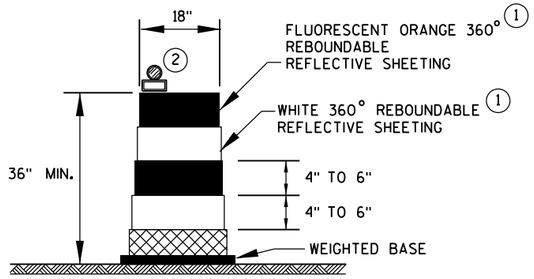
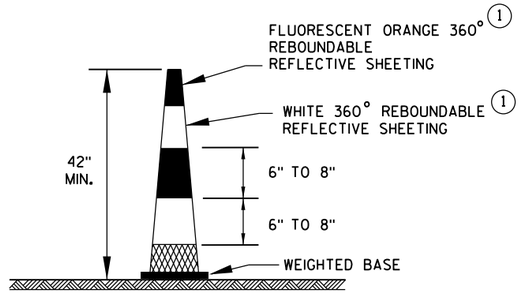
S.D.D. 15 C 6-9



DRUM

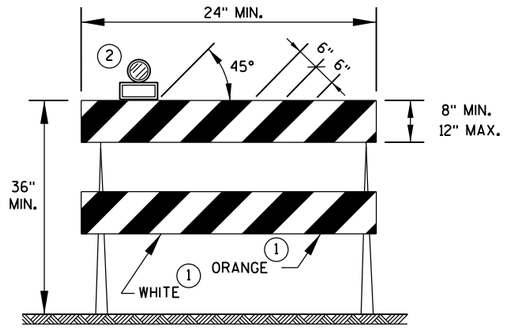


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

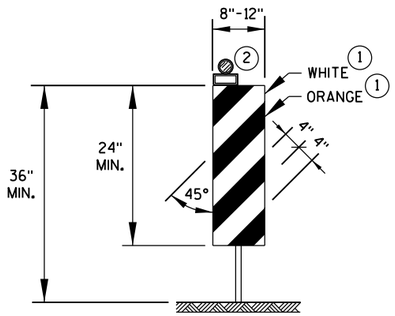
GENERAL NOTES

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



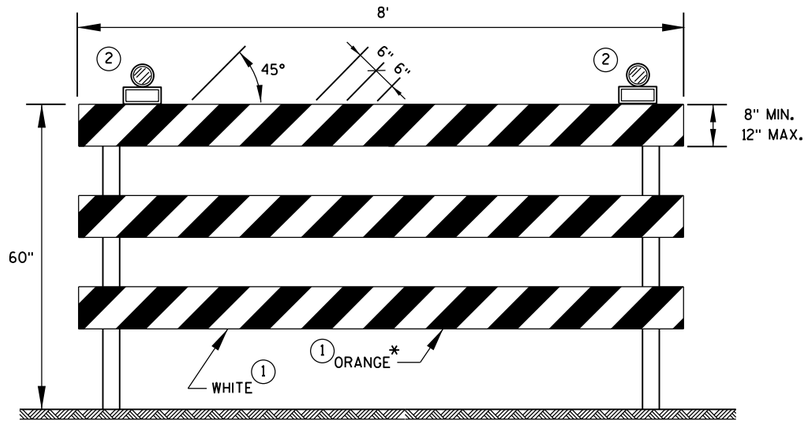
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 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

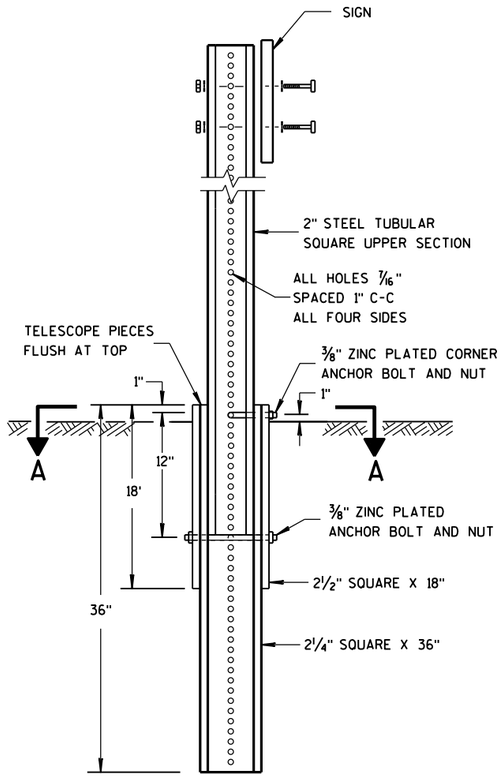
APPROVED

June 2017	/S/ Andrew Heidtke
DATE	WORK ZONE ENG

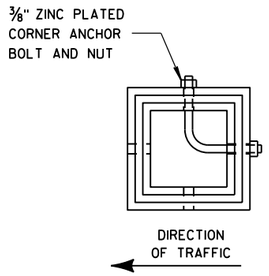
FHWA

6

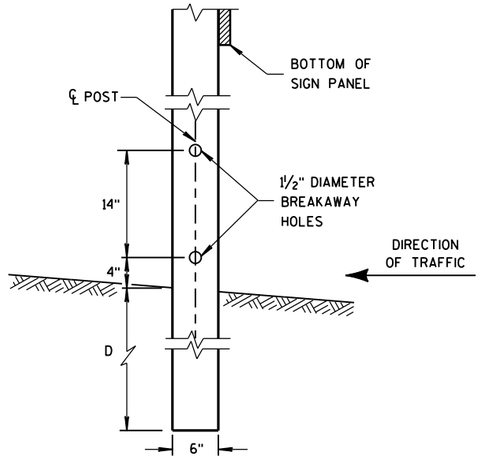
S.D.D. 15 C 11-7b



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



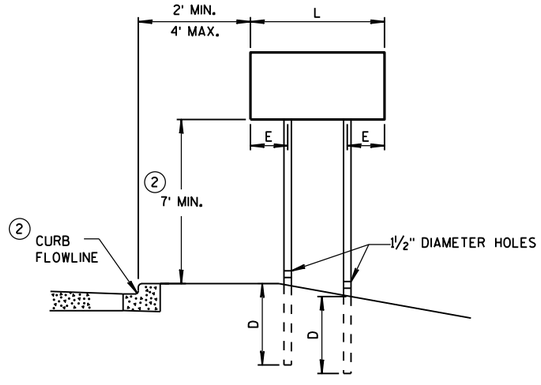
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

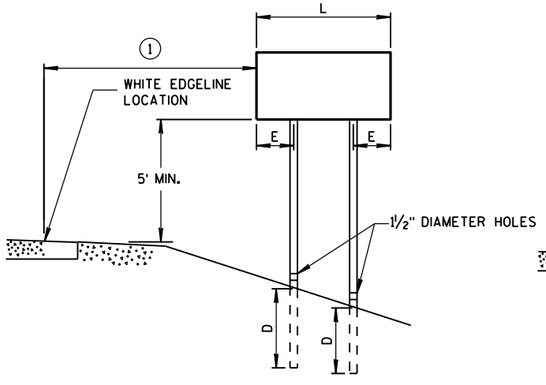
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

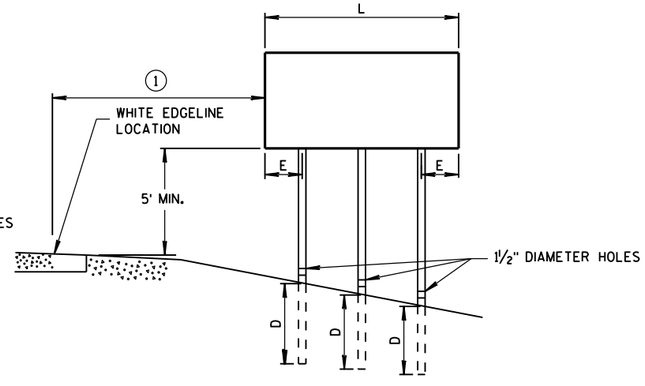
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

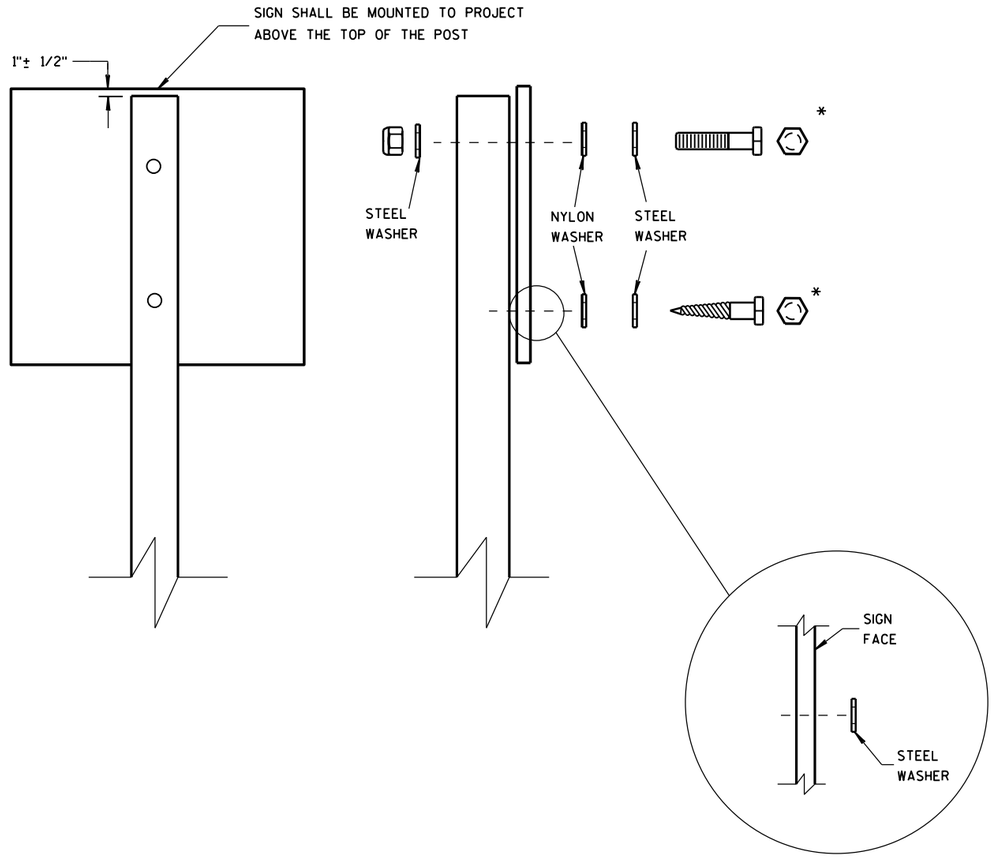
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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

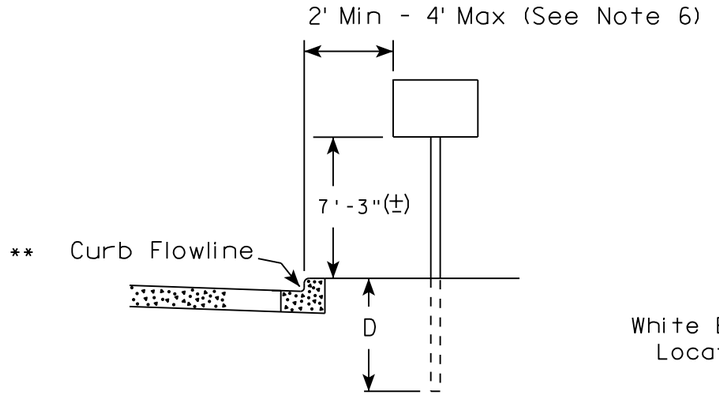
APPROVED

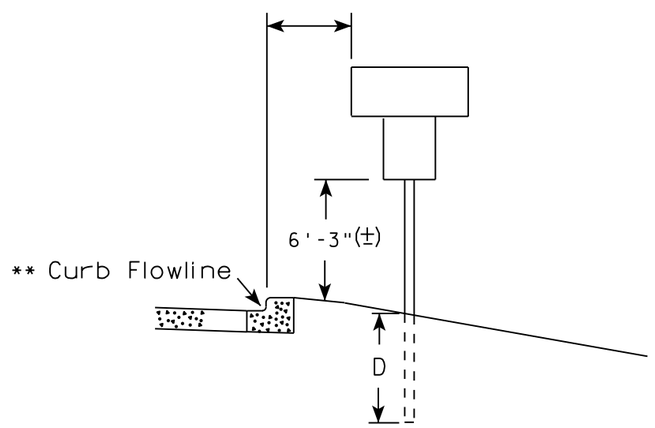
June 2017
DATE

/S/ Andrew Heldtke
WORK ZONE ENG

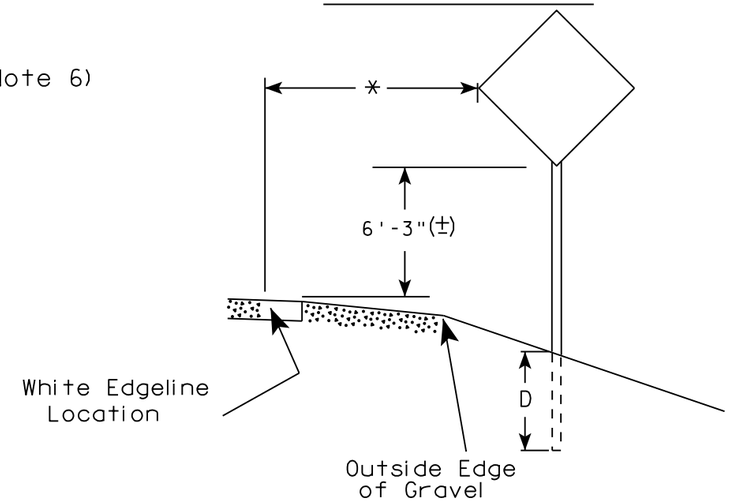
FHWA

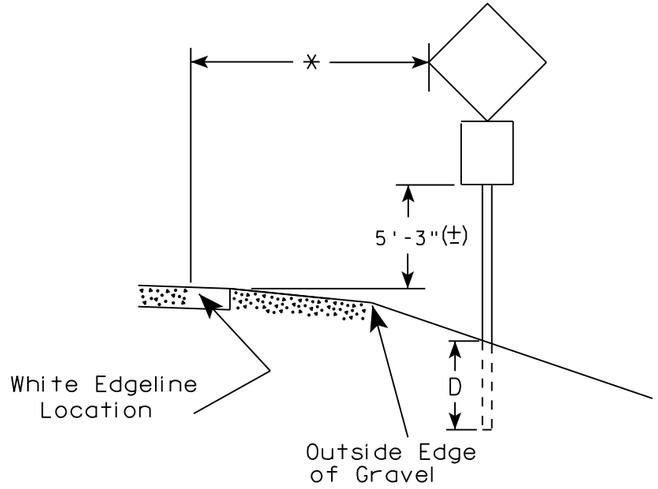
URBAN AREA





RURAL AREA (See Note 2)





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" (±).

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

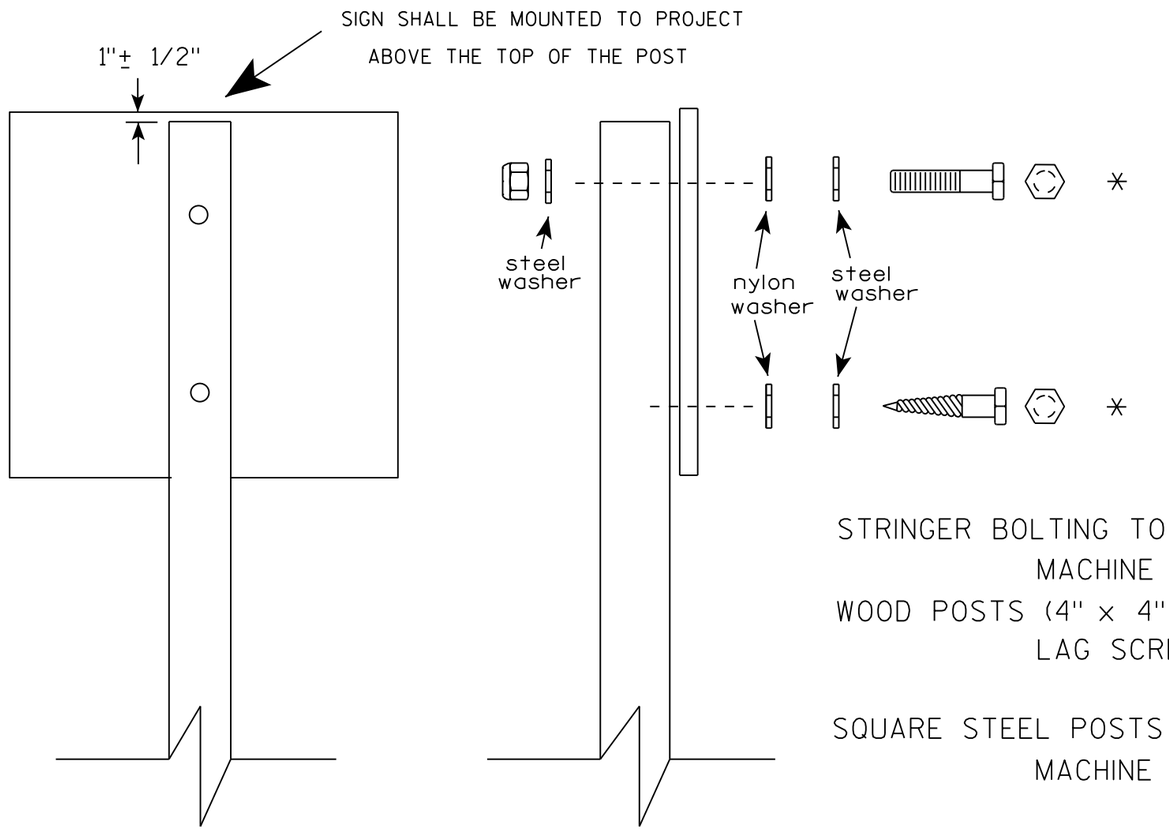
APPROVED Matthew R Rauch for State Traffic Engineer

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

7

7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 18	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

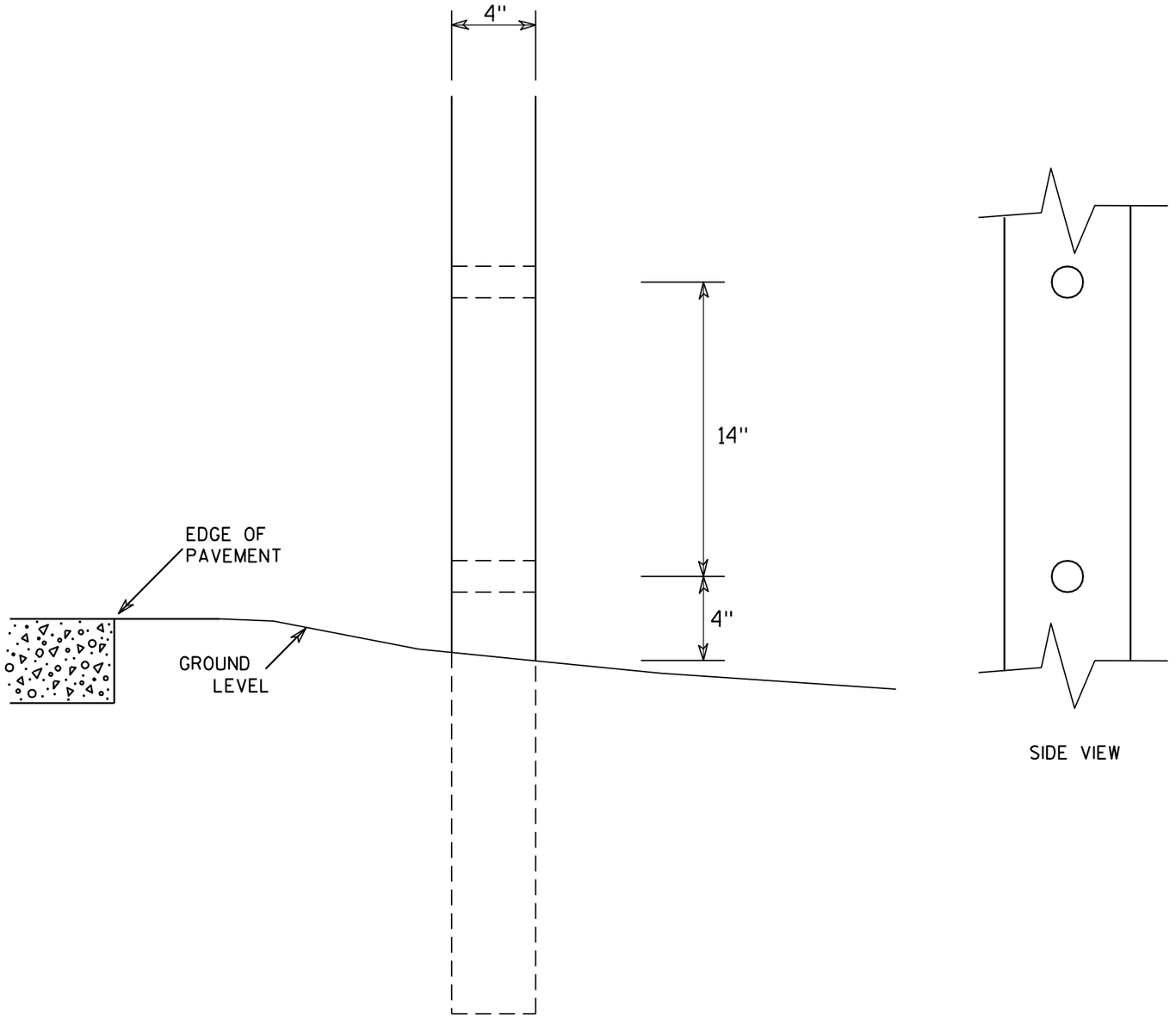
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO: SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 11-AUG-2016 11:35 PLOT BY : $$ plotuser $$



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

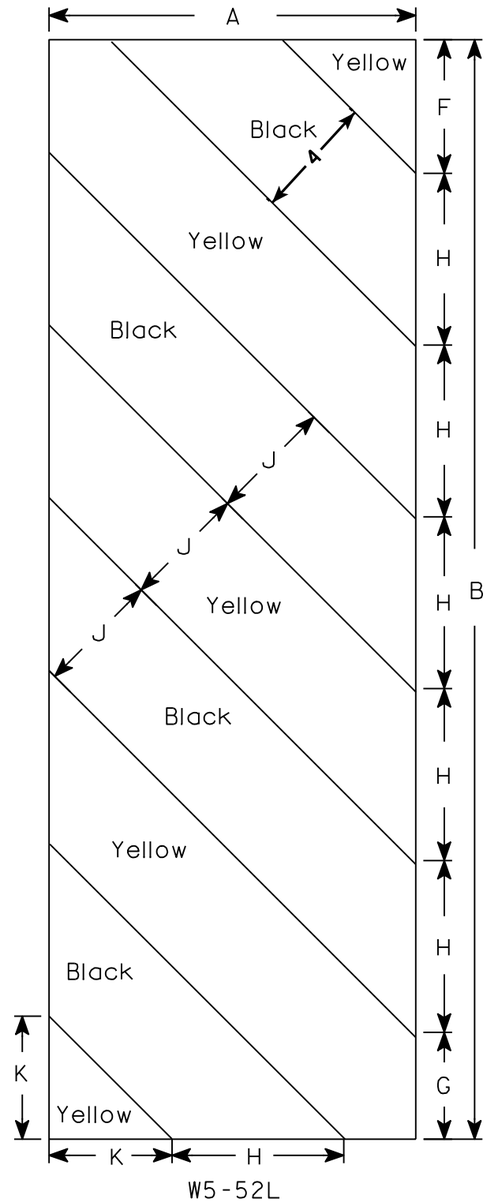
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

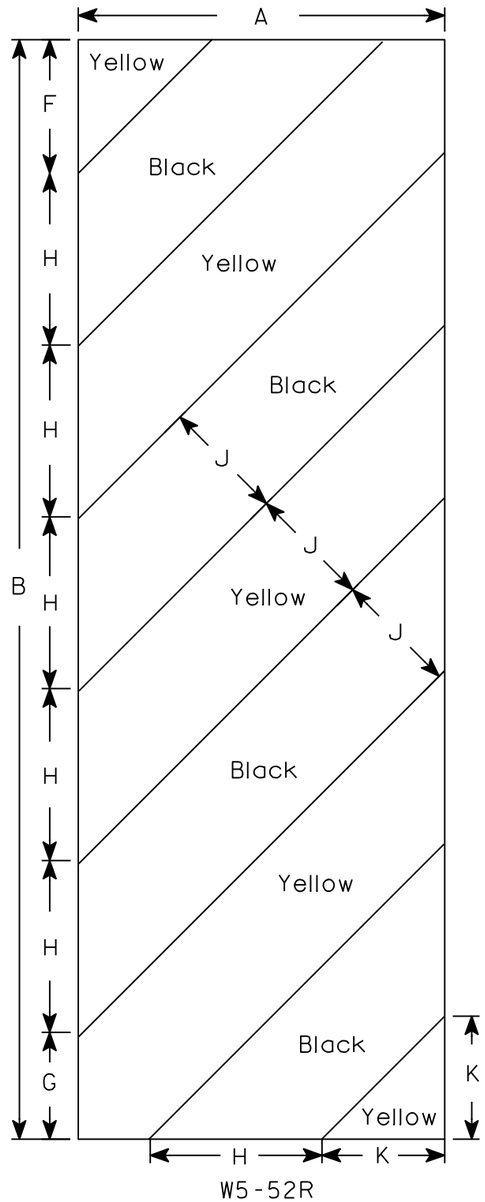
APPROVED Chester J Spang
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 20	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

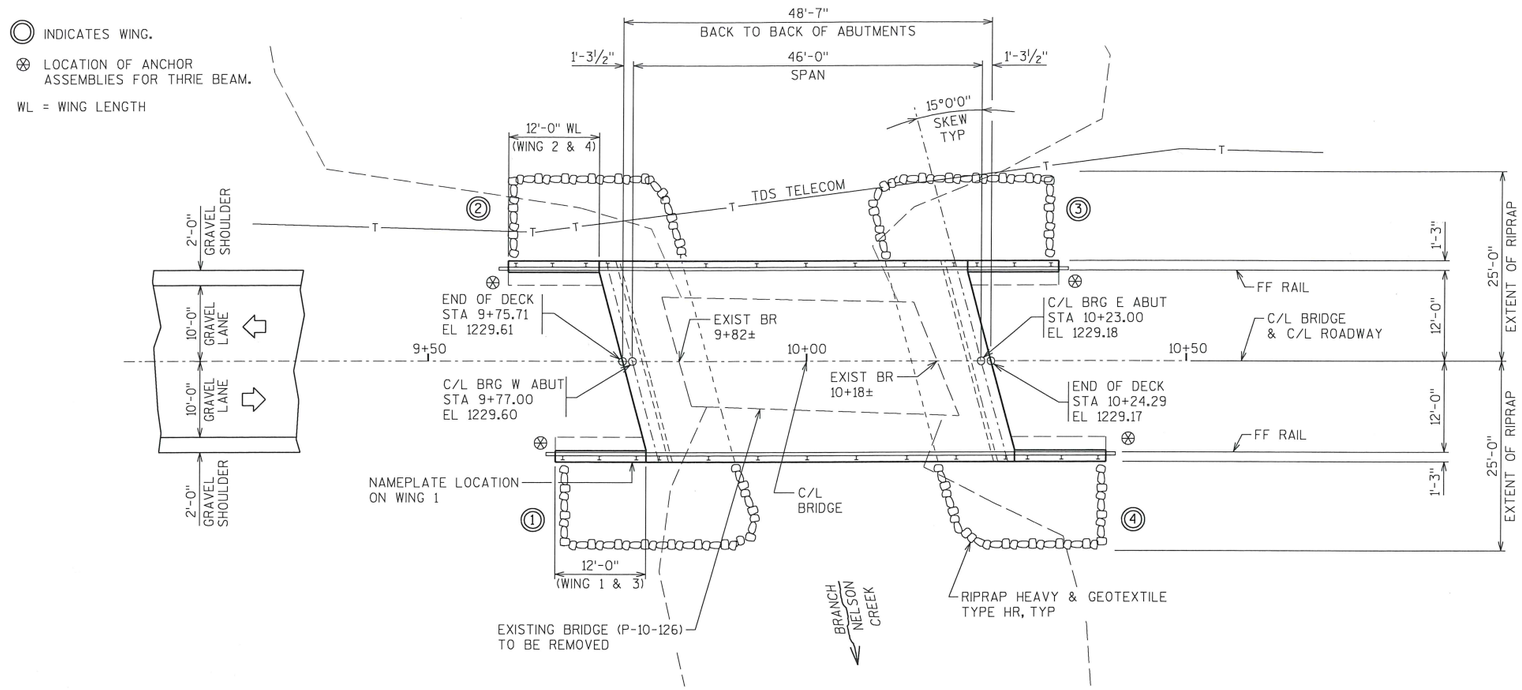
DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 21 | E

PLOT TIME: 2:34:19 PM
PLOT DATE: 7/26/2017
FILE NAME : S:\AE\B\BEAVT\13812\5-final-dsgn\51-drawings\20-Struct\bridge\bl0233gl.dgn

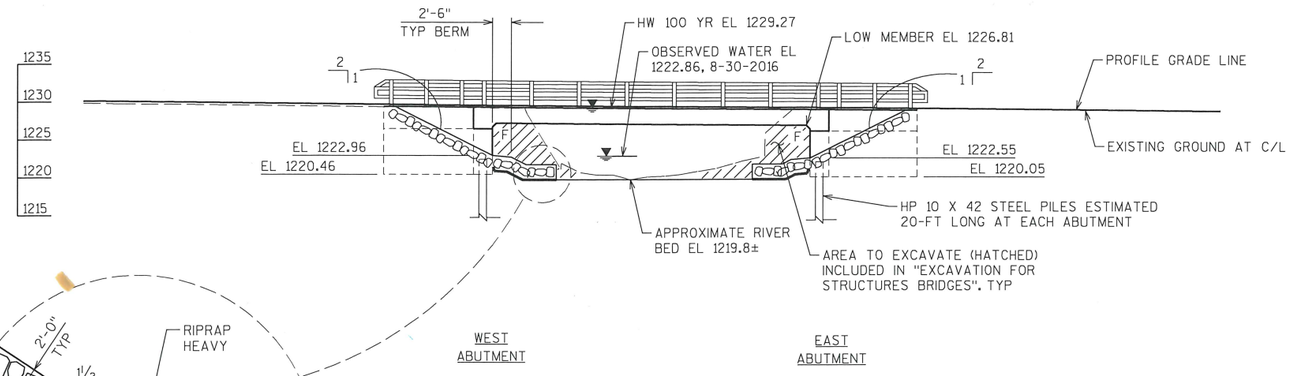
STATE PROJECT NUMBER

7841-00-71



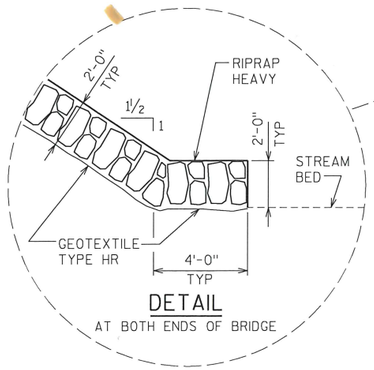
PLAN

SINGLE-SPAN REINFORCED CONCRETE FLAT SLAB



ELEVATION

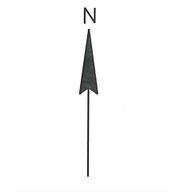
LOOKING NORTH



DETAIL

AT BOTH ENDS OF BRIDGE

BENCHMARK			
NO	STATION	DESCRIPTION	ELEV
1	7+67.8 28.7'LT	SPK IN WOOD FENCE POST	1231.00
2	9+99.0 6.9'RT	TOP CONC CURB	1229.64
3	11+60.3 26.8'LT	SPK IN 28" OAK TREE	1226.76



DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.18
OPERATING RATING FACTOR: RF = 1.52
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF

INVENTORY AND OPERATING RATINGS DO NOT INCLUDE FUTURE WEARING SURFACE.

MATERIAL PROPERTIES:

CONCRETE MASONRY - SUPERSTRUCTURE f'c = 4,000 psi
- ALL OTHER f'c = 3,500 psi

HIGH STRENGTH BAR STEEL REINFORCEMENT
AASHTO GRADE 60 fy = 60,000 psi

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 160 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 20-LONG AT EACH ABUTMENT.

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

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100}	2000	CFS
Q_{100} OVER ROAD	341	CFS
Q_{100} THRU STRUCTURE	1659	CFS
VELOCITY	5.0	FPS
HIGH WATER EL	1229.27	FT
WATERWAY AREA	226.2	SQ FT
DRAINAGE AREA	12.5	SQ MI

ROADWAY OVERFLOW DESIGN FREQUENCY

YEARS	27	
Q	1508	CFS
HIGH WATER EL	1228.38	FT

2 YEAR FREQUENCY

Q_2	564	CFS
HIGH WATER EL	1226.42	FT
VEL_2	2.9	FPS

SCOUR CODE 8

TRAFFIC DATA

ADT (2018)	=	100
ADT (2038)	=	140
DHV	=	14
DD	=	50/50
T	=	10 %
DESIGN SPEED	=	40 MPH

LIST OF DRAWINGS

WISCONSIN
CHRISTOPHER J. BLUM
E-33157
MADISON
WI
PROFESSIONAL ENGINEER
8.8.17

SEH CONTACT: CHRIS BLUM, PE, 608.620.6192
WISDOT BRIDGE OFFICE CONTACT: BILL DREHER, PE, 608.266.8489

NO.	DATE	REVISION	BY

SEH
SHORT ELLIOTT HENDRICKSON INC.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 05/15/18
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-10-233

MILL ROAD OVER BRANCH NELSON CREEK

COUNTY	TOWN ~~CITY/VILLAGE~~
CLARK	BEAVER

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
CJB	NCK	DLF	CJB

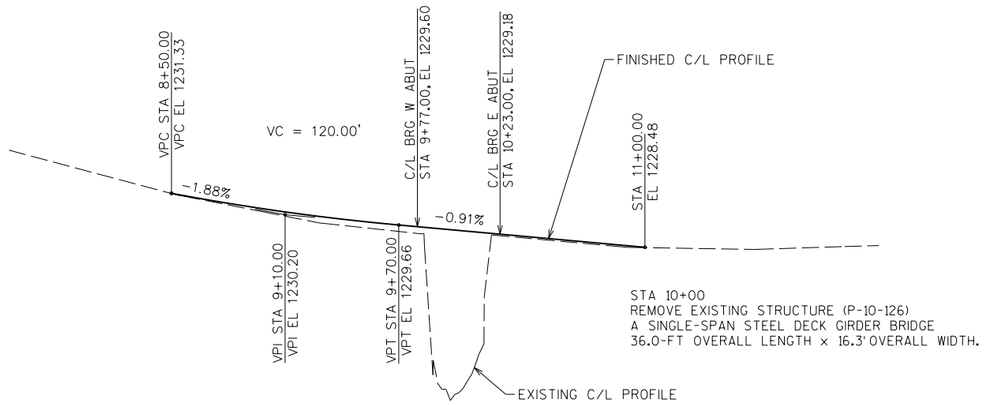
GENERAL PLAN

SHEET 22 OF 7

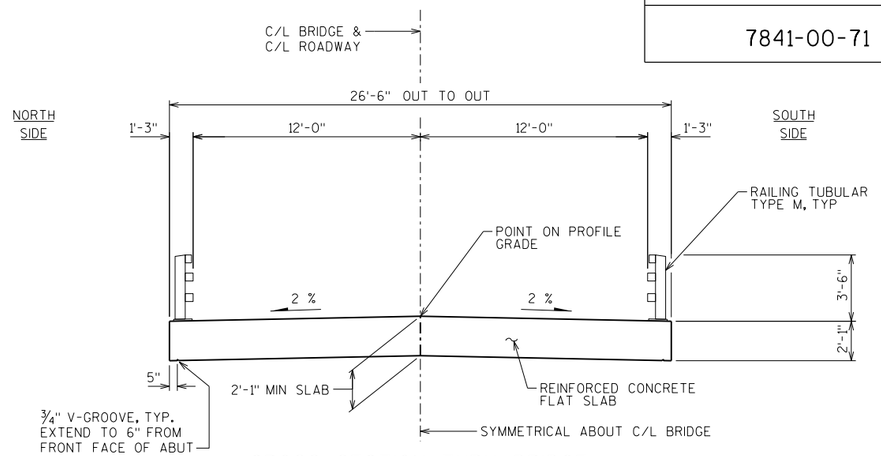
8

8

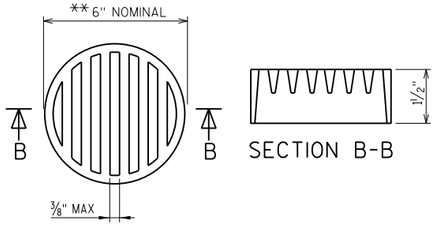
STATE PROJECT NUMBER
7841-00-71



PROFILE GRADE LINE



CROSS SECTION THRU BRIDGE
(LOOKING EAST)



RODENT SHEILD

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

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 SIMLAR 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.

TOTAL ESTIMATED QUANTITIES - B-10-233

	BID ITEM NUMBER	BID ITEMS	UNIT	WEST ABUT	EAST 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-10-233	LS	-	-	-	1
(1)	210.1500	BACKFILL STRUCTURE TYPE A	TON	175	175	-	350
	502.0100	CONCRETE MASONRY BRIDGES	CY	37	37	104	178
	502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	205	205
	505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,850	1,850	-	3,700
	505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,915	1,915	20,800	24,630
	506.0105	STRUCTURAL STEEL CARBON	LB	-	-	480	480
	513.4061	RAILING TUBULAR TYPE M B-10-233	LF	-	-	150	150
	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	9	9	-	18
	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	100	100	-	200
	606.0300	RIPRAP HEAVY	CY	66	66	-	132
(2)	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	110	110	-	220
	645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	40	40	-	80
	645.0120	GEOTEXTILE TYPE HR	SY	135	135	-	270
		NON-BID ITEMS					
		FILLER	SIZE	———	———	———	1/2 & 3/4

(1) A FACTOR OF 2.0 WAS USED TO CONVERT CU YDS TO TONS.

(2) INCLUDES RODENT SHIELD FOR PIPE UNDERDRAIN PER SDD 8F6-4.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

FOR EXISTING STRUCTURE SEE PROFILE GRADE LINE THIS SHEET.

REFER TO ROADWAY DRAWINGS FOR EXISTING UTILITY LOCATIONS.

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.

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

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 RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENTS DETAILS.

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-10-233 SHALL BE THE EXISTING GROUNDLINE.

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

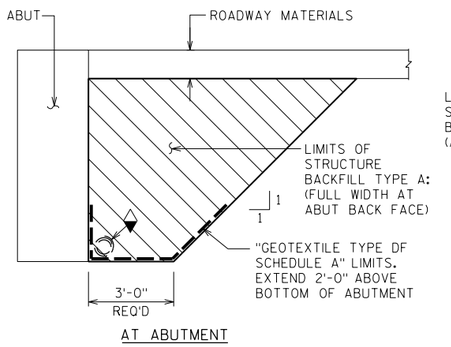
THE QUANTITY FOR BACKFILL STRUCTURE TYPE A IS CALCULATED BASED ON THE BACKFILL STRUCTURE LIMITS DETAILS SHOWN ON THIS SHEET.

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

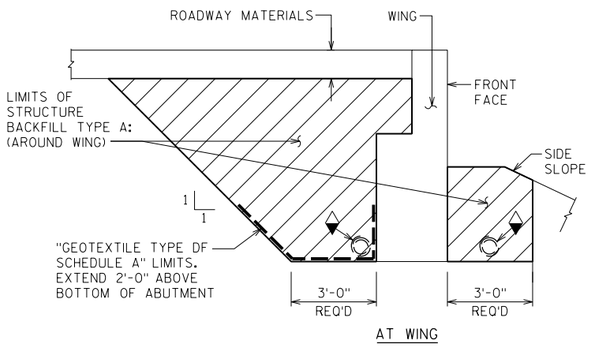
AT THE BACKFACE OF ABUTMENTS ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M153 TYPE 1, 2, OR 3 OR AASHTO DESIGNATION M213.

APPLY A PROTECTIVE SURFACE TREATMENT PER THE STANDARD SPECIFICATIONS AND THE SUPERSTRUCTURE DETAILS SHEET.



AT ABUTMENT

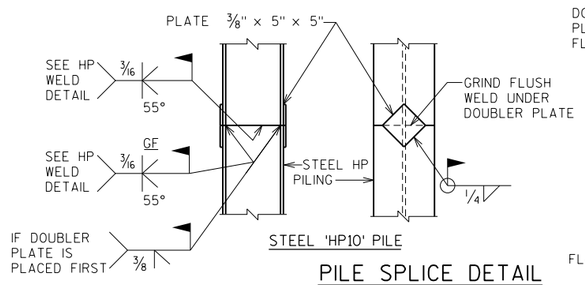


AT WING

BACKFILL STRUCTURE LIMITS

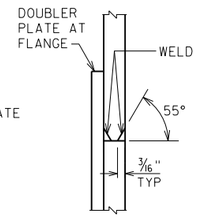
A FACTOR OF 2.0 WAS USED TO CONVERT CU YDS TO TONS

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



STEEL 'HP10' PILE

PILE SPLICE DETAIL



'HP10' WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-10-233

DRAWN BY DLF | PLANS CK'D. CJB

CROSS SECTION AND QUANTITIES

SHEET 2 OF 7
23

PLOT DATE: 7/26/2017 PLOT TIME: 2:34:20 PM

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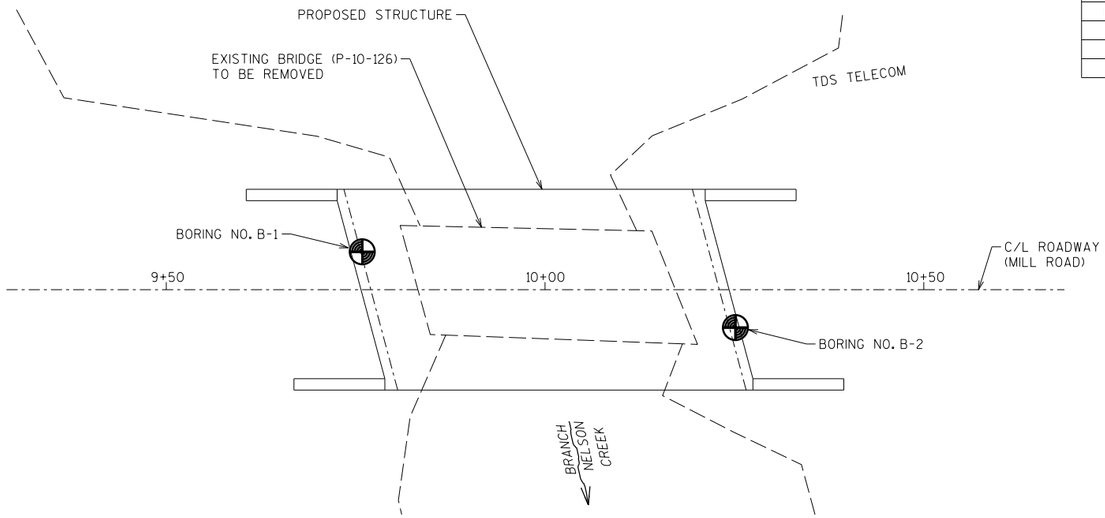
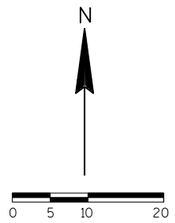




BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B-1	11/10/2016	-	-
B-2	11/10/2016	-	-

SOIL BORINGS PERFORMED BY:

PROFESSIONAL SERVICE INDUSTRIES, Inc.
12839 30TH AVENUE, SUITE A
Chippewa Falls, WI 54729
715-738-2770 Fax 715-738-2771

REPORT BY:
JEFFREY A MANNINEN
BRANCH MANAGER

STATE PROJECT NUMBER

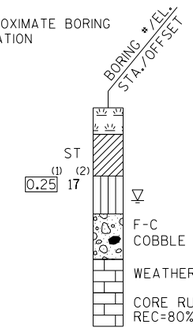
7841-00-71

MATERIAL SYMBOLS

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

LEGEND OF BORING

= APPROXIMATE BORING LOCATION



(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

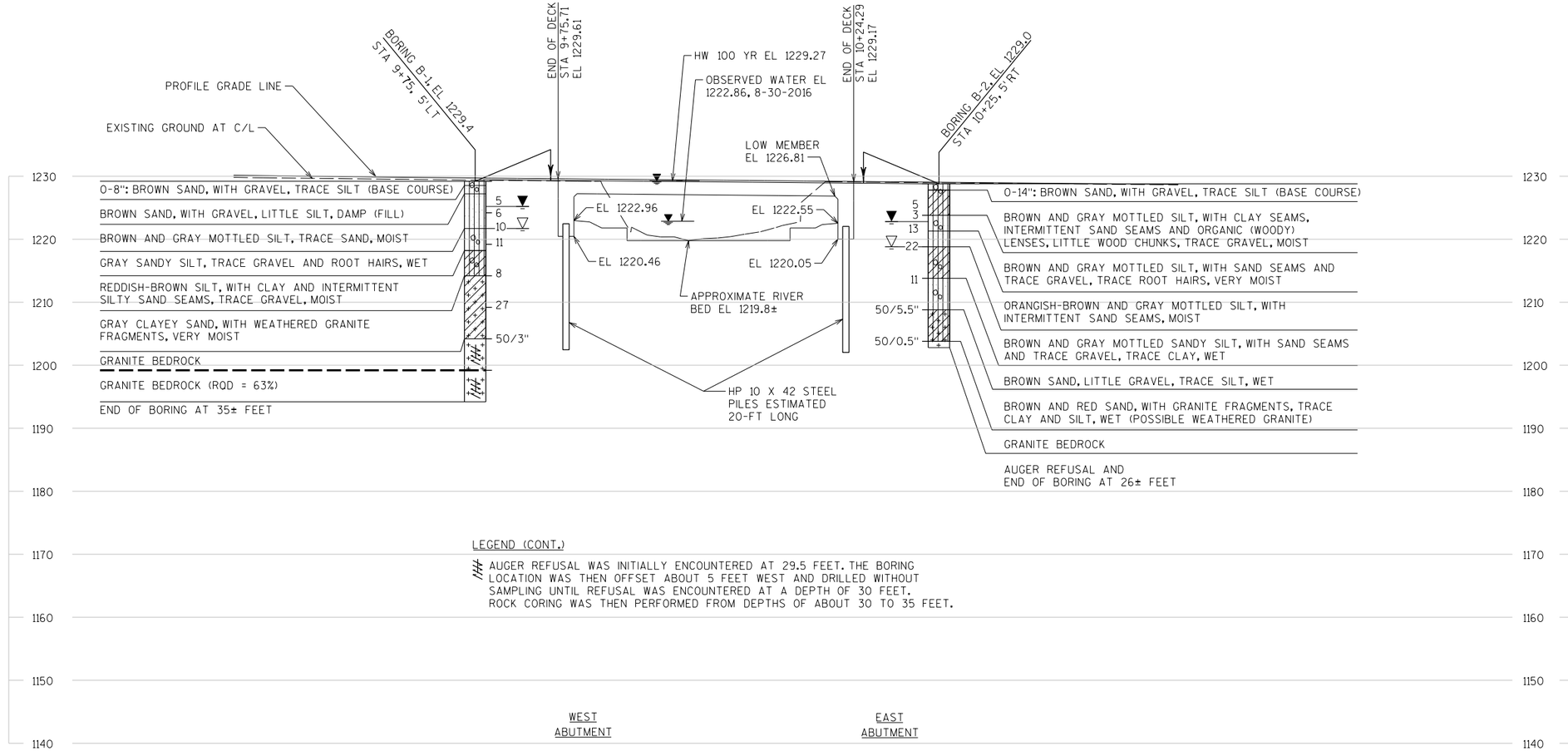
▽ AT TIME OF DRILLING

▼ END OF DRILLING

▽ AFTER DRILLING

ABBREVIATIONS

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



LEGEND (CONT.)

AUGER REFUSAL WAS INITIALLY ENCOUNTERED AT 29.5 FEET. THE BORING LOCATION WAS THEN OFFSET ABOUT 5 FEET WEST AND DRILLED WITHOUT SAMPLING UNTIL REFUSAL WAS ENCOUNTERED AT A DEPTH OF 30 FEET. ROCK CORING WAS THEN PERFORMED FROM DEPTHS OF ABOUT 30 TO 35 FEET.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-10-233

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SUBSURFACE EXPLORATION

SHEET 3 OF 7

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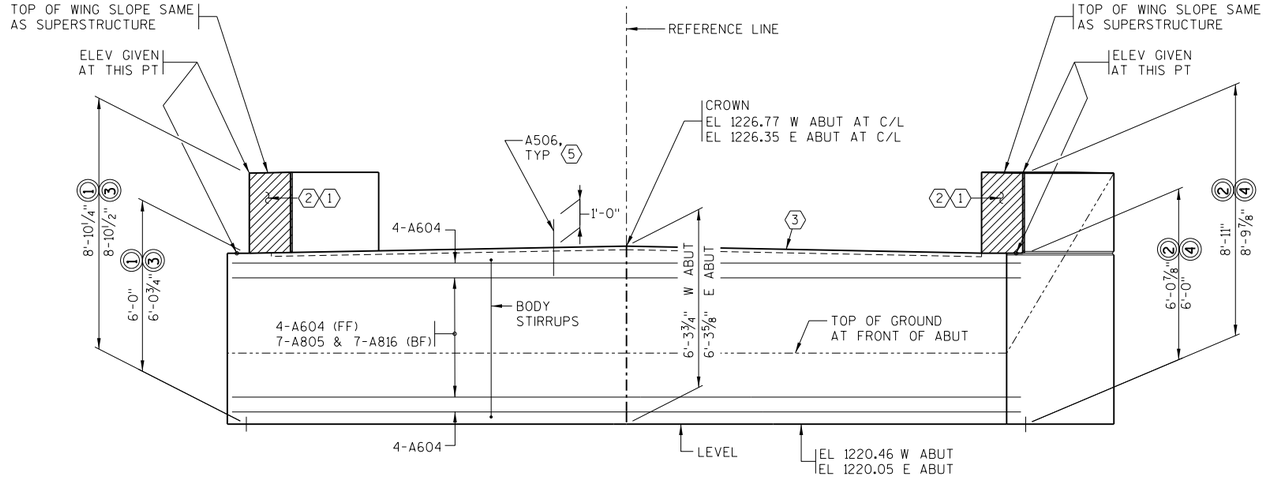
8

8

PLOT DATE: 7/26/2017 PLOT TIME: 2:34:20 PM
FILE NAME : S:\AE\B\BEAVT\38121\5-final-dsgn\51-drawings\20-Struct\bridge\bl0233bl.dgn

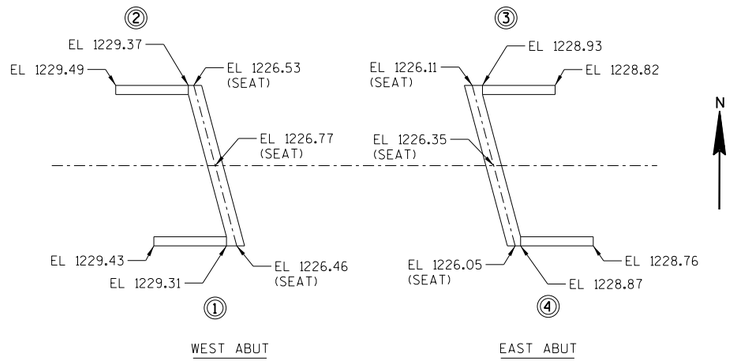
STATE PROJECT NUMBER

7841-00-71

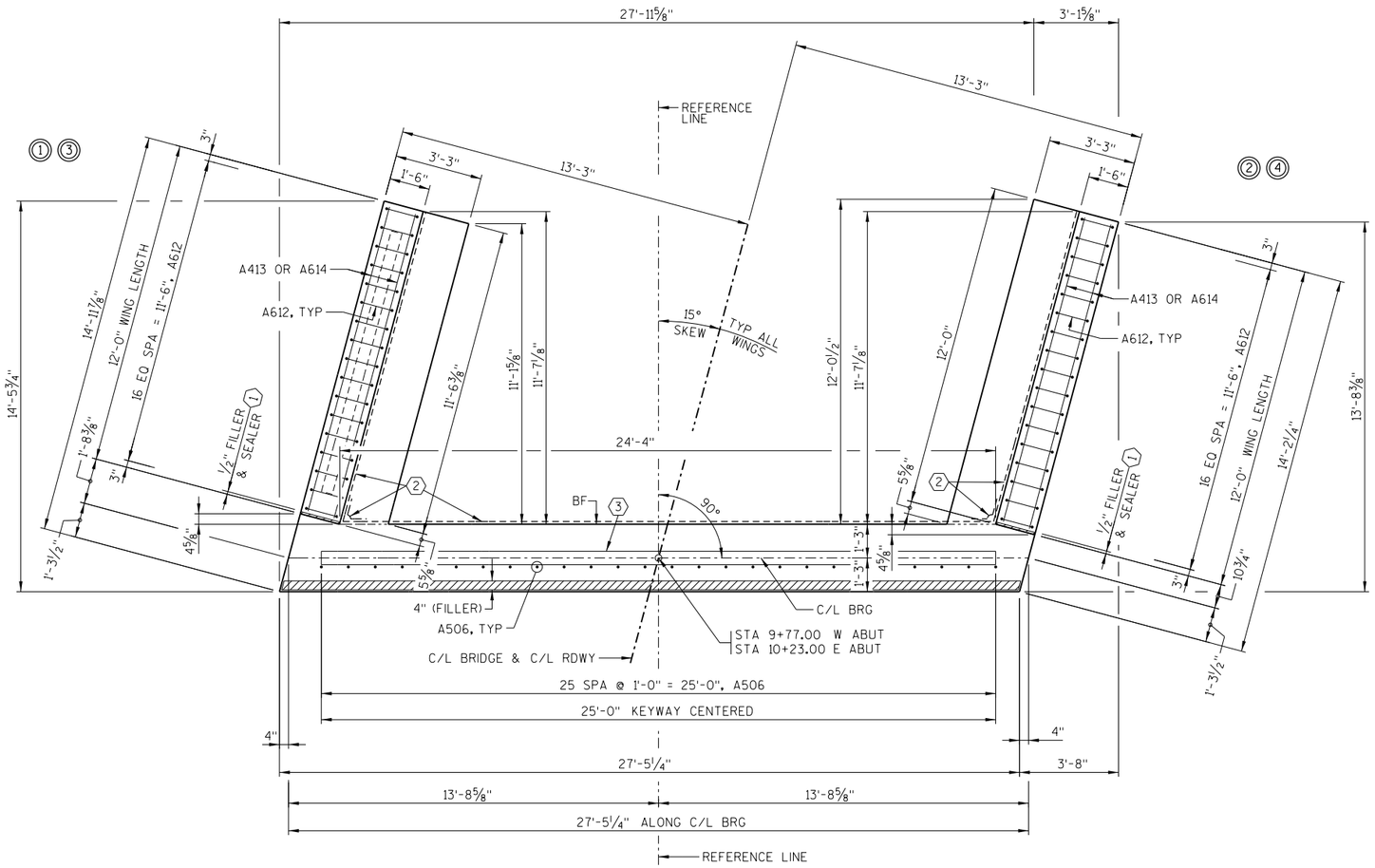


FRONT ELEVATION

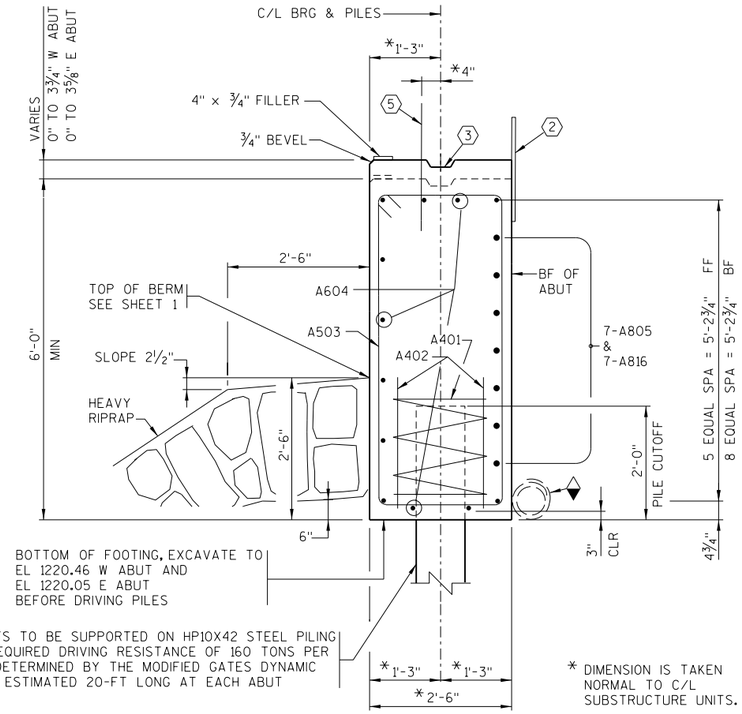
(PILES NOT SHOWN FOR CLARITY)



ELEVATIONS GIVEN AT THESE POINTS



PLAN



TYPICAL SECTION THRU BODY

ALL HORIZ BARS TO BE A604 UNLESS OTHERWISE SHOWN OF NOTED

NOTES:

SEE ABUTMENT NOTES ON SHEET 5 (① ② ③ ⑤ ◆).

W ABUT = WEST ABUTMENT
E ABUT = EAST ABUTMENT

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-10-233

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WEST AND EAST ABUTMENT DETAILS

SHEET 4 OF 7

25

8

8

PLOT DATE: 7/26/2017 PLOT TIME: 2:34:20 PM

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PLOT DATE: 7/26/2017
FILE NAME : S:\AE\B\BEAVT\38121\5-final-dsgn\5i-drawings\20-Struct\bridge\b0233d2.dgn

STATE PROJECT NUMBER
7841-00-71

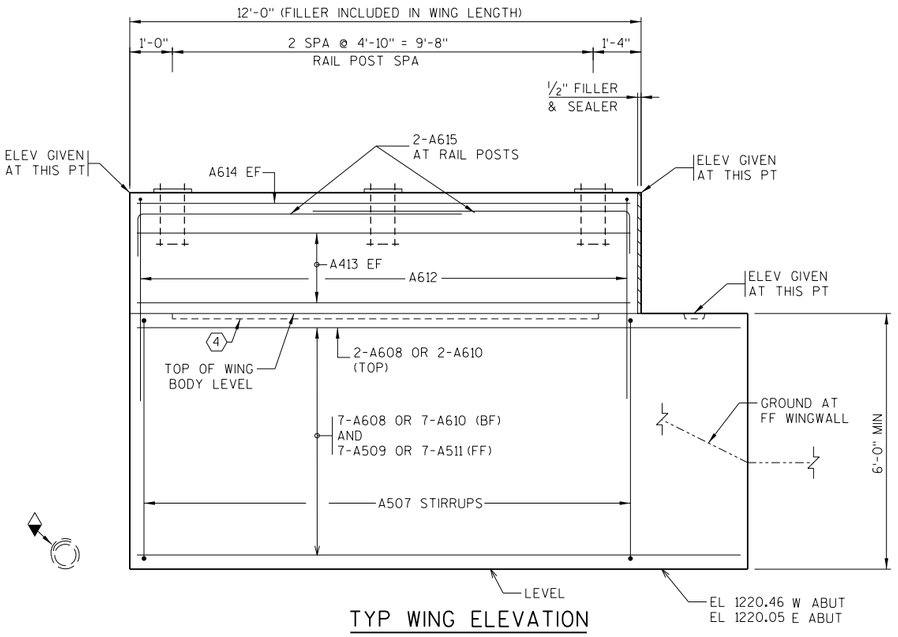
NOTE: THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE ENGLISH BAR DIAMETER SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

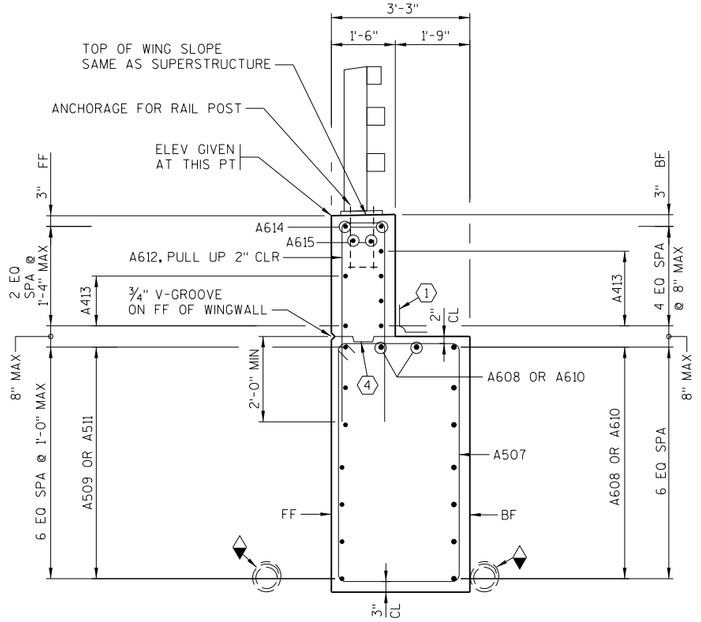
* NO. REQ'D. IS FOR 2 ABUTMENTS. DIVIDE BY 2 FOR EACH ABUTMENT.

BILL OF BARS — BOTH ABUTMENTS

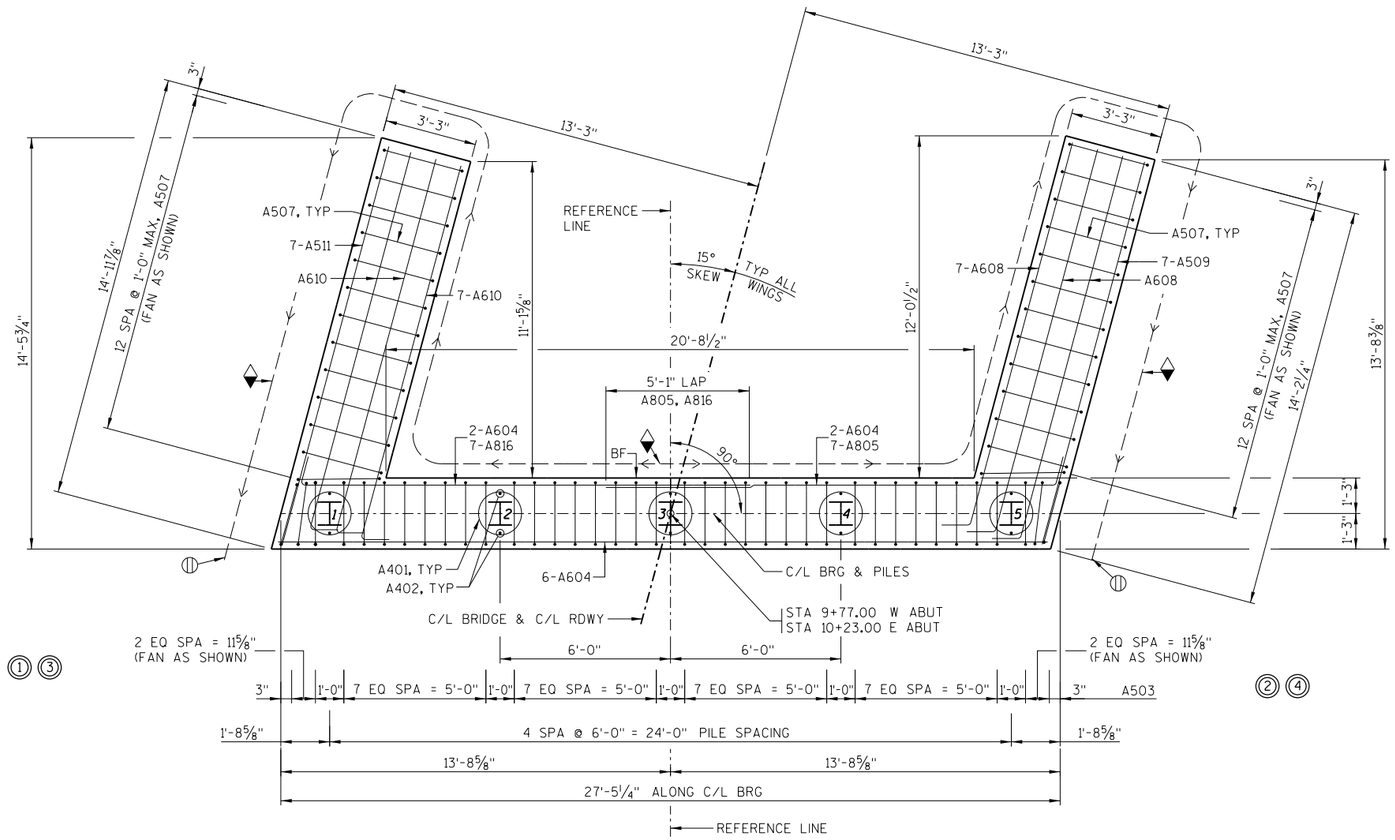
BAR MARK	COAT	NO. * REQ'D.	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
A401		10	28 - 0		X	BODY AT PILES
A402		20	2 - 3			BODY AT PILES
A503		76	15 - 7		X	BODY STIRRUPS
A604		24	27 - 0			BODY HORIZ
A805		14	17 - 4		X	BODY HORIZ BF
A506	X	52	2 - 0			BODY DOWELS
A507	X	52	17 - 1		X	WING STIRRUPS
A608	X	18	15 - 1		X	WING HORIZ BF 2 & 4 & TOP
A509	X	14	13 - 10			WING HORIZ FF 2 & 4
A610	X	18	14 - 9		X	WING HORIZ BF 1 & 3 & TOP
A511	X	14	14 - 7			WING HORIZ FF 1 & 3
A612	X	68	10 - 2		X	WING VERT
A413	X	24	11 - 8			WING HORIZ EF
A614	X	8	11 - 8			WING HORIZ EF TOP
A615	X	16	8 - 4		X	WING AT RAIL POST
A816		14	16 - 9		X	BODY HORIZ BF



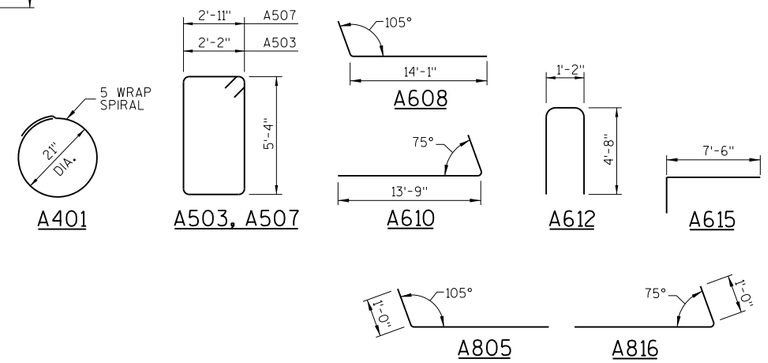
TYP WING ELEVATION



TYP SECTION THRU WINGWALLS



FOOTING LAYOUT



ABUTMENT NOTES:

(1) SEAL ALL EXPOSED HORIZ. AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-ASPHALTIC JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE). FILLER INCLUDED IN WING LENGTH.

(2) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ & VERT JOINTS ON BACKFACE. VERTICAL WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

(3) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2" X 6".

(4) OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2" X 6" WITH MEMBRANE ON BACKFACE.

(5) A506 BARS MAY BE PLACED AFTER CONC HAS BEEN POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

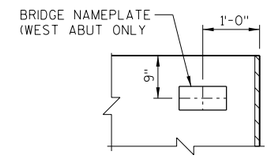
◆ PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT END OF PIPE.

◍ ATTACH RODENT SHIELD AT END OF PIPE UNDERDRAIN, FOR RODENT SHIELD DETAIL SEE SHEET 2.

◎ INDICATES WING

W ABUT = WEST ABUTMENT
E ABUT = EAST ABUTMENT

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE



NAMEPLATE LOCATION DETAIL
(ON WING 1 WEST ABUTMENT ONLY)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-10-233

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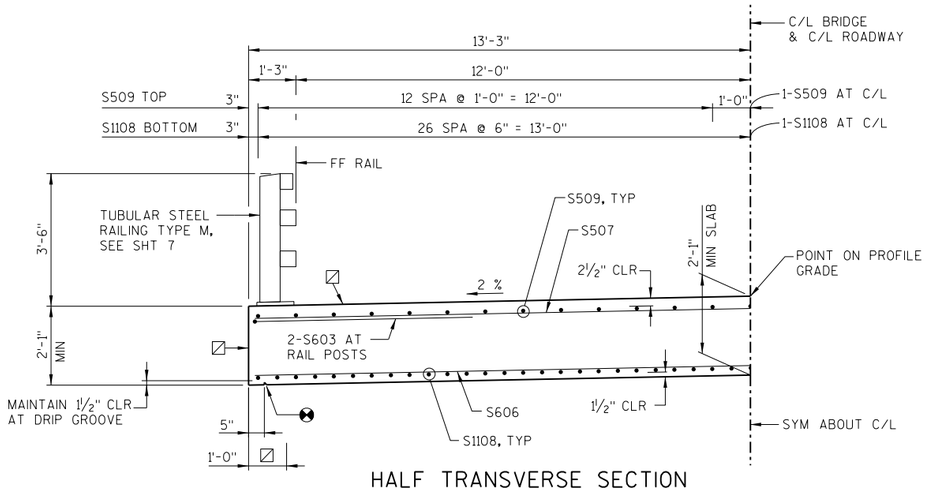
WEST AND EAST ABUTMENT DETAILS

SHEET 5 OF 7
26

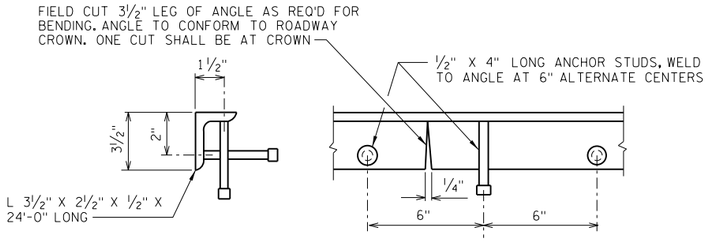
8

8

STATE PROJECT NUMBER
7841-00-71



HALF TRANSVERSE SECTION



PROTECTION ANGLE ARMOR

(PAYMENT BASED ON 9.9 LBS/FT)

PROTECTION ANGLE ARMOR NOTES:

ONE FIELD SPLICE SHALL BE PERMITTED IN ANGLES OVER 34'-0" IN LENGTH.

ANGLE AND STUDS TO BE PAID FOR AT THE UNIT PRICE BID FOR "STRUCTURAL CARBON STEEL". NO PAINTING REQUIRED.

SANDBLAST PROTECTION ANGLE AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PROTECTION ANGLE SHALL BE HOT DIPPED GALVANIZED.

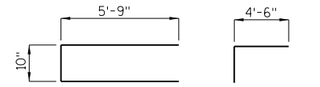
ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709 GRADE 36.

NOTE: THE FIRST ONE OR TWO DIGITS OF THE BAR MARK SIGNIFIES THE ENGLISH BAR DIAMETER SIZE.

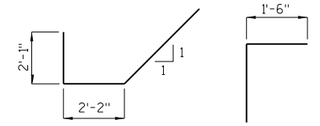
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

BILL OF BARS SUPERSTRUCTURE

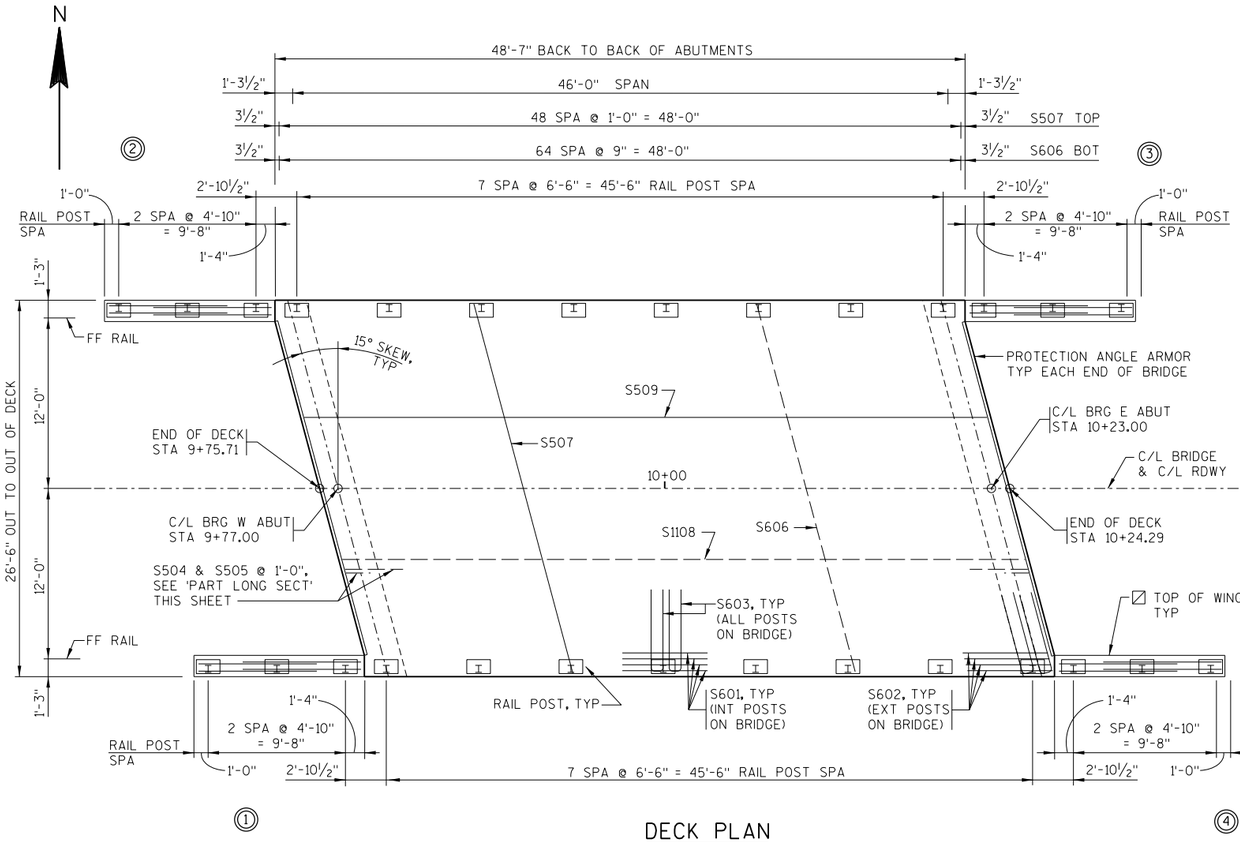
BAR MARK	COAT	NO. REQ'D.	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
S601	X	48	6 - 0			RAIL POST
S602	X	16	6 - 0		X	RAIL POST
S603	X	32	12 - 0		X	RAIL POST
S504	X	54	6 - 2		X	END OF DECK
S505	X	54	3 - 6		X	END OF DECK
S606	X	69	27 - 0			BOT TRANS
S507	X	49	27 - 0			TOP TRANS
S1108	X	53	48 - 2			BOT LONG
S509	X	27	48 - 2			TOP LONG



S603 S602



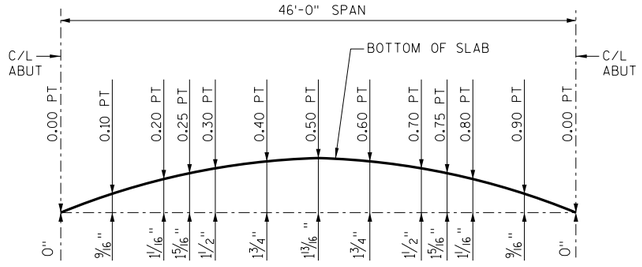
S504 S505



DECK PLAN

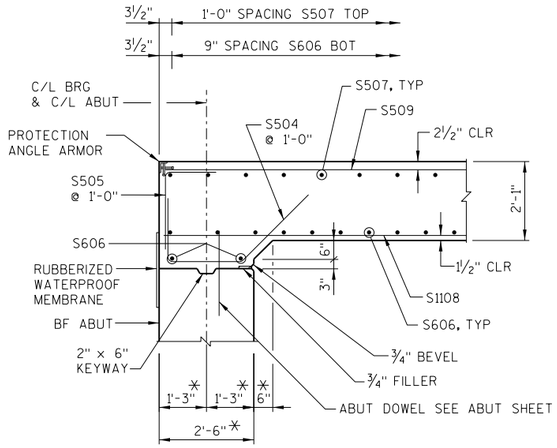
——— INDICATES TOP BAR STEEL REINFORCEMENT

— — — — INDICATES BOTTOM BAR STEEL REINFORCEMENT



CAMBER DIAGRAM

CAMBER SPAN AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE VERTICAL ROADWAY PROFILE OR ALLOWANCE FOR FORM SETTLEMENT. DEAD LOAD DEFLECTION ONLY EQUALS APPROXIMATELY 1/3 OF CAMBER VALUES SHOWN.



AT ABUTMENTS

PARTIAL LONGITUDINAL SECTION

✳ DIMENSION IS TAKEN NORMAL TO C/L SUBSTRUCTURE UNITS

SUPERSTRUCTURE NOTES:

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

PRIOR TO RELEASING SLAB FLASEWORK, TAKE TOP OF SLAB ELEVATIONS AT C/L ABUTMENTS AND 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE LINE AND CROWN OR C/L.

TRANSVERSE BARS SHALL BE PLACED PARALLEL TO THE C/L OF SUBSTRUCTURE UNITS.

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 ON CONTINUOUS BAR CHAIRS APPROXIMATELY 4'-0" CENTERS.

◐ ¾" V-GROOVE, EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT.

☑ COAT WITH PROTECTIVE SURFACE TREATMENT 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.

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

◎ INDICATES WING

FINAL TOP OF DECK ELEVATIONS

	WEST ABUT	.1	.2	.3	.4	.5	.6	.7	.8	.9	EAST ABUT
NORTH EDGE OF DECK	1229.36	1229.32	1229.28	1229.24	1229.20	1229.15	1229.11	1229.07	1229.03	1228.99	1228.95
C/L	1229.60	1229.55	1229.51	1229.47	1229.43	1229.39	1229.35	1229.30	1229.26	1229.22	1229.18
SOUTH EDGE OF DECK	1229.30	1229.26	1229.22	1229.17	1229.13	1229.09	1229.05	1229.01	1228.97	1228.92	1228.88

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-10-233

DRAWN BY DLF | PLANS CK'D. CJB

SUPERSTRUCTURE DETAILS

SHEET 6 OF 7
27

PLOT DATE: 7/26/2017 PLOT TIME: 2:34:21PM

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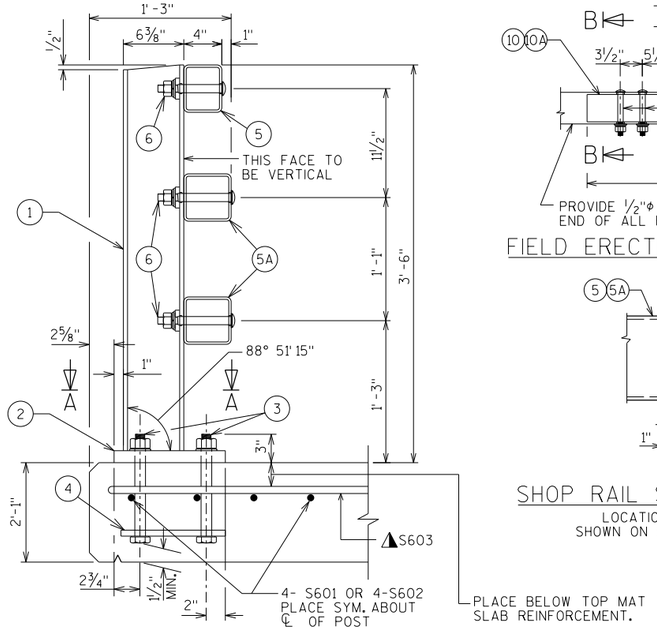
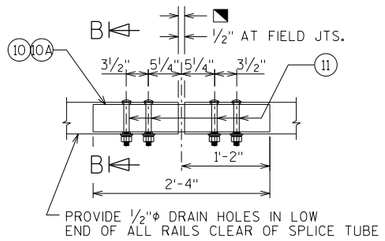
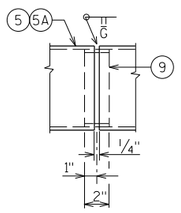


SECTION THRU RAILING ON SLAB

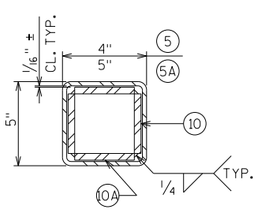


FIELD ERECTION JOINT DETAIL

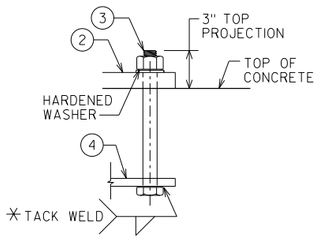


SHOP RAIL SPLICE DETAIL

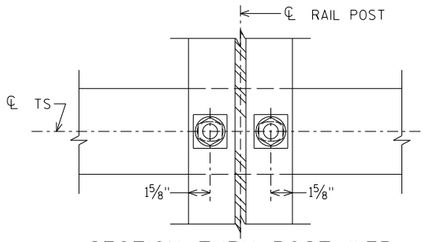
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



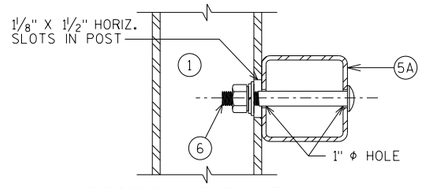
SECTION B-B



ANCHOR BOLTS



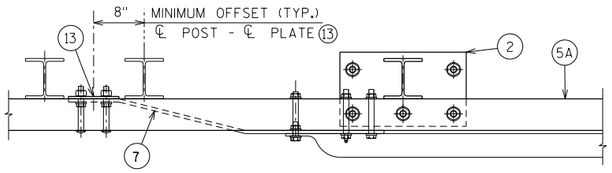
SECTION THRU POST WEB



SECTION THRU RAIL

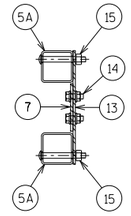
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

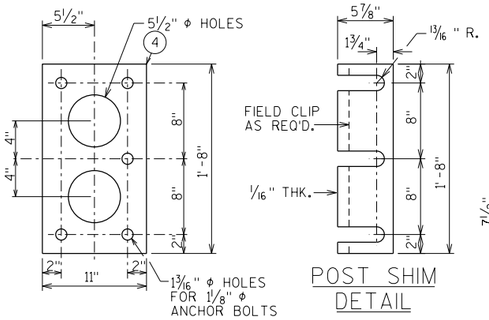


TOP VIEW AT END POST

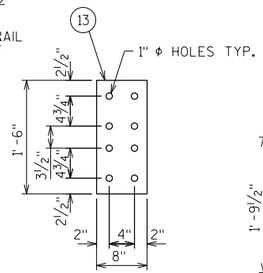
THRIE BEAM RAIL ATTACHMENT



SECTION C-C

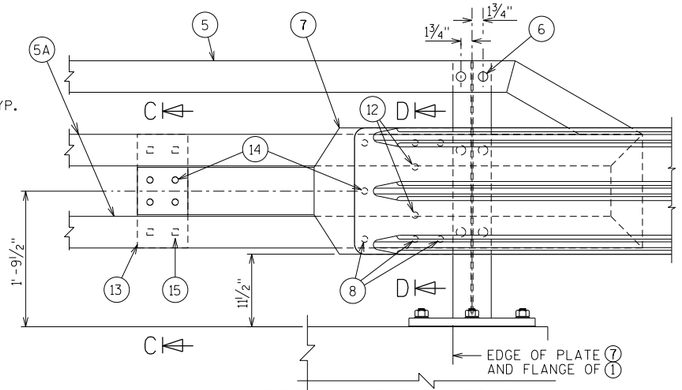


SECTION A-A



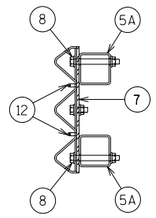
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT



DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT



SECTION D-D

LEGEND

(1) W6 x 25 WITH 1 1/8" X 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

(2) PLATE 1 1/4" x 11 3/4" x 1'-8" WITH 1 5/16" X 1 5/8" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.

(3) ASTM A449 - 1 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10 3/4" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)

(4) 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" 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) 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/8" X 1 5/8" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)

(7) 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" X 1 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.

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

(9) SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".

(10) 3/8" X 3 5/8" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.

(10A) 3/8" X 2 5/8" X 2'-4" PLATE USED IN NO. 5, 3/8" X 3 5/8" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.

(11) 7/8" Φ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16" X 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 15/16" X 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.

(12) 7/8" DIA. X 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D).

(13) 3/8" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.

(14) 7/8" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).

(15) 1" Φ HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325, ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-10-233" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.
10. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).

⚠ TIE TO TOP MAT OF STEEL.

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

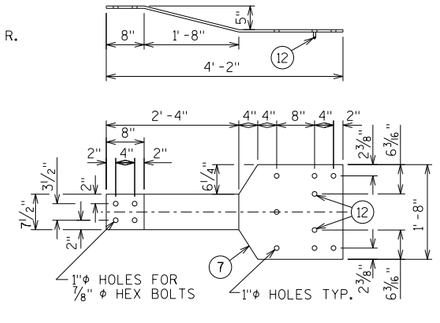
◥ RDWY. OPENING OR 1/2" OPENING FOR A1 ABUTMENT.

SEE SHEET 5 & 6 FOR RAIL POST SPACING.

ANCHOR PLATE

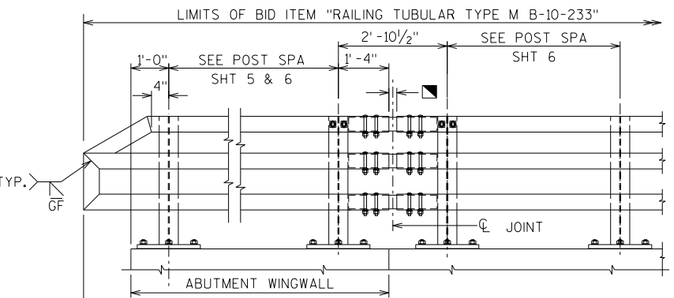
AT RAIL TO SLAB CONNECTION

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-10-233

DRAWN BY DLF | PLANS CK'D. CJB

TUBULAR STEEL RAILING TYPE M

SHEET 7 OF 7

28

RAILM
7-16

PLOT DATE: 7/26/2017 PLOT TIME: 2:34:22 PM
FILE NAME : S:\AE\B\BEAVT\38121\5-final-dsgn\51-drawings\20-Struct\bridge\bl0233ml.dgn

8 8

MILL ROAD								
		AREA (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		
Station	Distance	Cut Note 1	Fill	Cut Note 2	Fill Note 3	Cut 1.00 Note 2	Expanded Fill 1.30 Note 4	Mass Ordinate Note 5
8+50	0	15.6	0.0	0.0	0.0	0.0	0.0	0
9+00	50	13.1	24.5	26.6	22.7	27	30	-3
9+50	50	9.9	66.6	21.3	84.3	48	139	-91
9+63	13	8.0	49.4	5.0	22.5	53	168	-116
9+76	13	0.0	0.0	1.9	11.9	55	184	-129
10+24	48	0.0	0.0	0.0	0.0	55	184	-129
10+37	13	13.3	24.9	3.2	6.0	58	192	-134
10+50	13	13.2	36.2	6.4	14.7	64	211	-147
11+00	50	14.5	0.7	25.3	38.1	90	260	-170

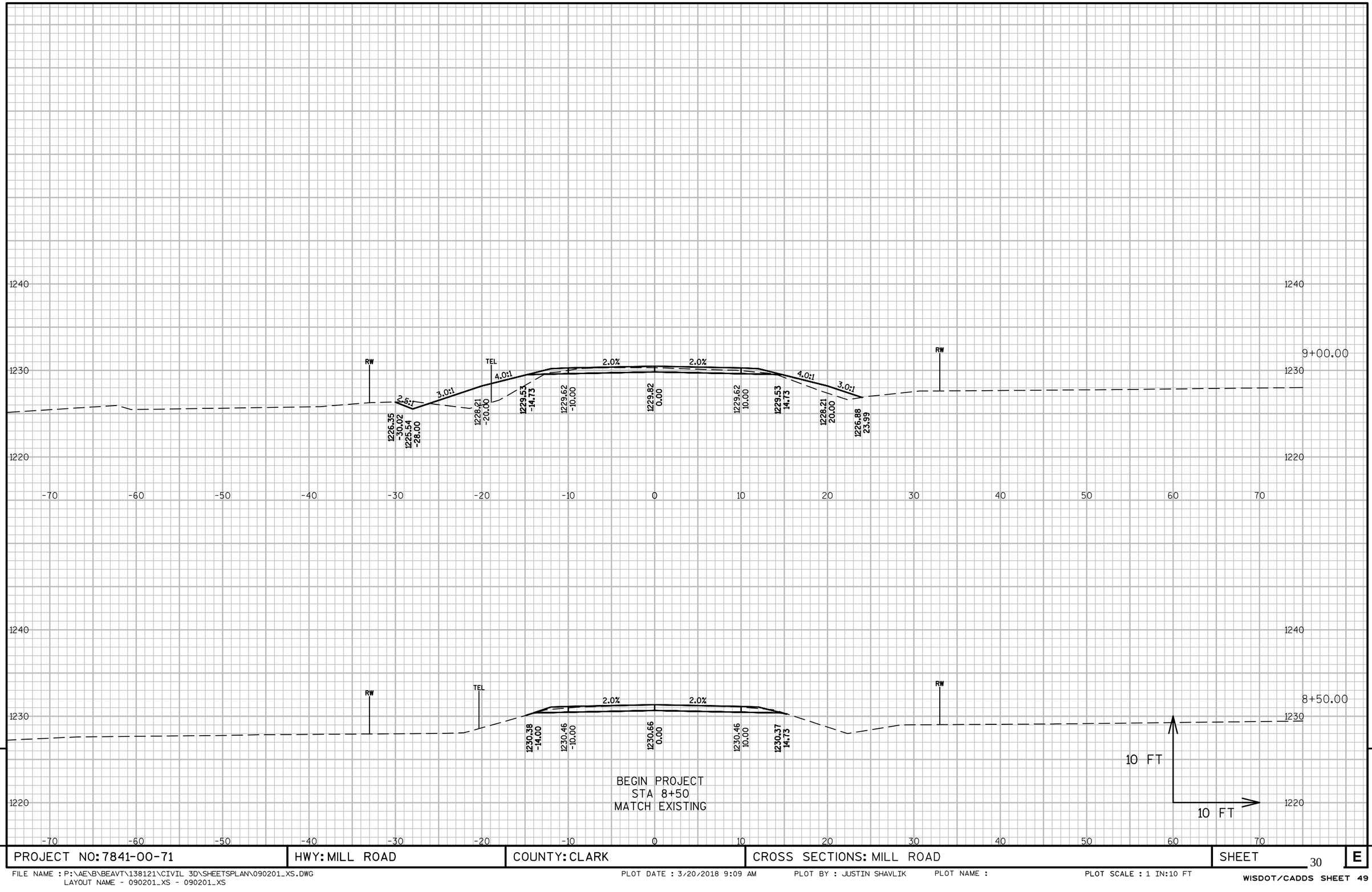
Notes:
1) Salvaged/Unusable Pavement Material is included in Cut.
2) Excavation Common is the sum of the Cut column. Item number 205.0100
3) Does not include Unusable Pavement Excavation volume.
4) Will be backfilled with Excavation Common or Borrow.
5) Plus quantity indicates an excess of material. Minus indicates a shortage of material. Borrow item number 208.0100

9

9

PROJECT NO: 7841-00-71	HWY: MILL ROAD	COUNTY: CLARK	EARTHWORK TABULATIONS	SHEET 29	E

FILE NAME : P:\AE\B\BEAVT\138121\CIVIL 3D\SHEETSPLAN\090101_EW.DWG
LAYOUT NAME - 090101_EW - 090101-EW
PLOT DATE : 3/20/2018 9:08 AM PLOT BY : JUSTIN SHAVLIK PLOT NAME : PLOT SCALE : 1 IN:2 FT



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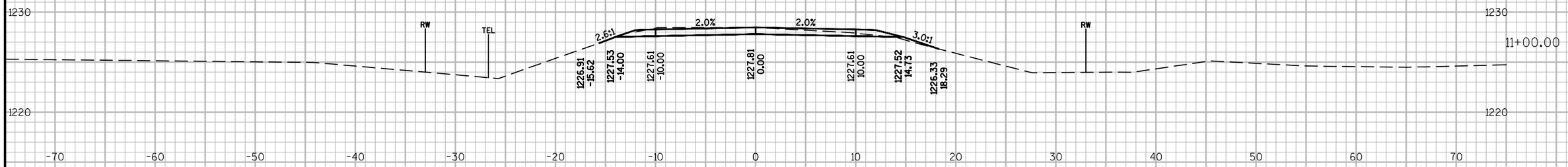
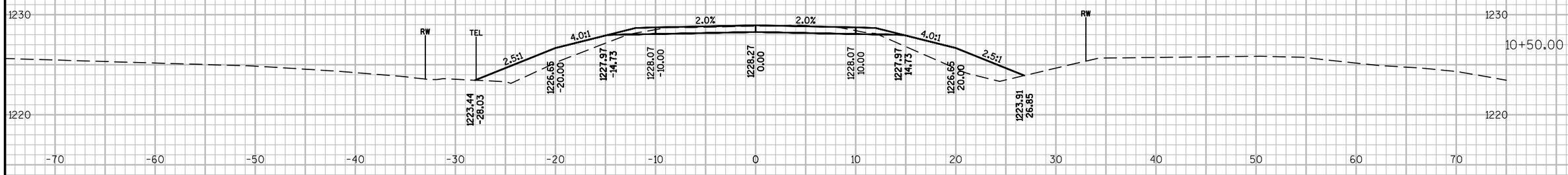
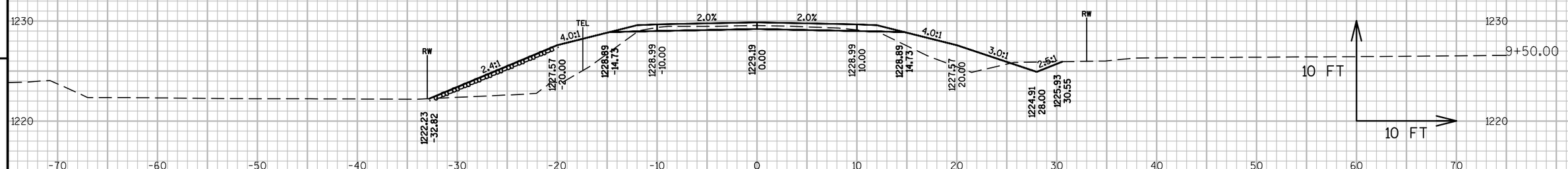
PROJECT NO: 7841-00-71	HWY: MILL ROAD	COUNTY: CLARK	CROSS SECTIONS: MILL ROAD	SHEET 30	E

END PROJECT
STA 11+00
MATCH EXISTING





STRUCTURE B-10-0233
STA 10+00



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PROJECT NO: 7841-00-71	HWY: MILL ROAD	COUNTY: CLARK	CROSS SECTIONS: MILL ROAD	SHEET 31	E

FILE NAME : P:\AE\B\BEAVT\138121\CIVIL 3D\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090201_XS - 090202_XS

PLOT DATE : 3/20/2018 9:09 AM PLOT BY : JUSTIN SHAVLIK PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov