

EAU NOVEMBER 2018

PROJECT ID: 7836-00-70

WITH: N/A

COUNTY: CLARK

ORDER OF SHEETS

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

TOTAL SHEETS = 40



Project Location



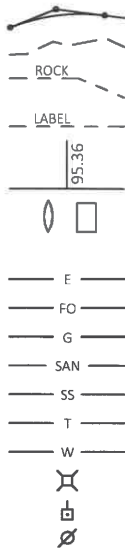
DESIGN DESIGNATION

A.A.D.T.	2019	= 120 (EST.)
A.A.D.T.	2039	= 180 (EST.)
D.H.V.		= <15 (EST.)
D.D.		= 60/40 (EST.)
T.		= 15% (EST.)
DESIGN SPEED		= 40 MPH
ESALS		= 52,000

CONVENTIONAL SYMBOLS

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

PROFILE	
GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	



STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

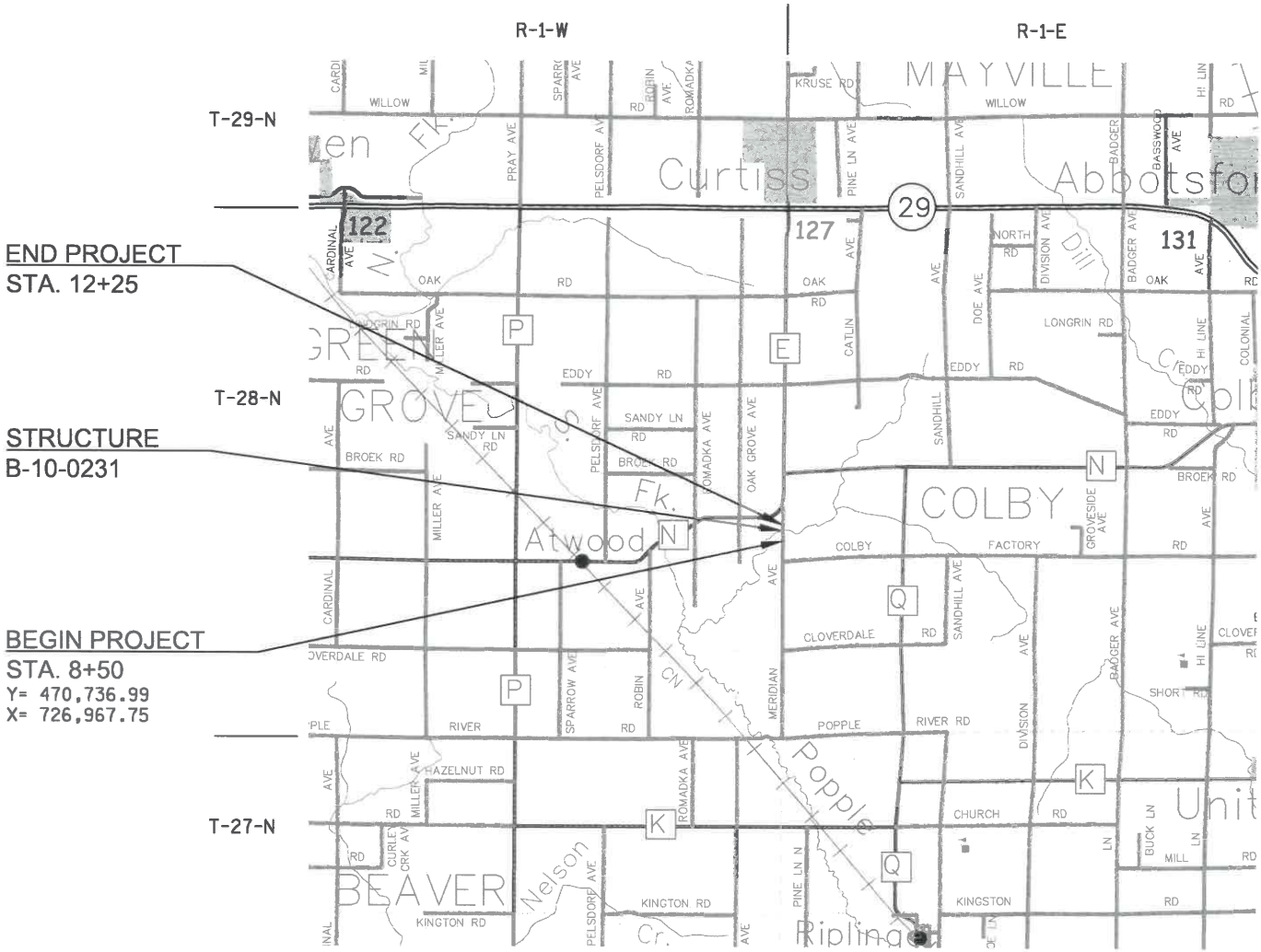
T GREEN GROVE, MERIDIAN AVENUE

E FORK POPPLE RIVER BRIDGE B-10-0231

LOCAL STREET

CLARK COUNTY

STATE PROJECT NUMBER
7836-00-70



LAYOUT

SCALE 0 2.0 MI

TOTAL NET LENGTH OF CENTERLINE = 0.071 MI

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

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7836-00-70		

ACCEPTED FOR

TOWN of GREEN GROVE

4-6-18 (Date) *[Signature]* CHAIRMAN

ORIGINAL PLANS PREPARED BY

MSA TRANSPORTATION • MUNICIPAL DEVELOPMENT • ENVIRONMENTAL
148 North Central Avenue, Suite 201, Marshfield, WI 54449
715-384-2133 1-877-204-0572 Fax: 715-384-9787
Web Address: www.msa-ps.com
© MSA Professional Services, Inc.

WISCONSIN
SEAN M. SPROMBERG
E 37771-008
SCHOFIELD, WI
PROFESSIONAL ENGINEER

5/6/18 (Date) *[Signature]* (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor MSA PROFESSIONAL SERVICES, INC.

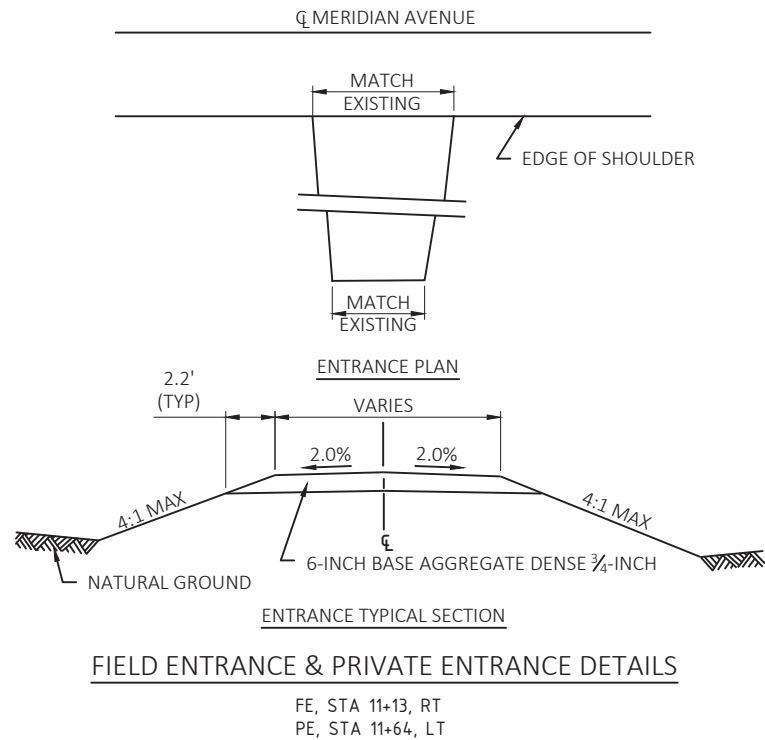
Designer MSA PROFESSIONAL SERVICES, INC.

Management Consultant KNIGHT E/A, INC.

APPROVED FOR THE DEPARTMENT

DATE: 4/20/18 *[Signature]* MANAGEMENT CONSULTANT SIGNATURE

E



EROSION CONTROL NOTES

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

TOTAL PROJECT AREA = 0.57 ACRES

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.39 ACRES

DESIGN CONTACT

MSA PROFESSIONAL SERVICES, INC.
1230 SOUTH BOULEVARD
BARABOO, WI 53913
JOLIE SNYDER, PE
PHONE: (608) 355-8912
jsnyder@msa-ps.com

TOWN CONTACT

TOWN OF GREEN GROVE
CHAIRMAN
N12865 SPARROW AVENUE
OWEN, WI 54460
MARK KLEIN
PHONE: (715) 229-2941
markk4765@gmail.com

DNR CONTACT

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
810 W. MAPLE STREET
SPOONER, WI 54801
SHAWN HASELEU - CLARK COUNTY INTERIM LIAISON
PHONE: (715) 635-4228
shawn.haseleu@wisconsin.gov

UTILITIES

BURIED TELEPHONE:
FRONTIER COMMUNICATIONS
1851 14TH AVENUE
WAUSAU, WI 54401
CALVIN KLADE
PHONE: (715) 847-1525
calvin.klade@ftr.com

OVERHEAD ELECTRIC:
CLARK ELECTRIC COOPERATIVE
1209 W DALL-BERG ROAD
GREENWOOD, WI 54437
RICK SUDA
PHONE: (715) 267-6188
rsuda@cecoop.com



GENERAL NOTES

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED AND MULCHED AS DIRECTED BY THE ENGINEER. OVERSOW PERMANENT SEEDING AREAS WITH TEMPORARY SEED.

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

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

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO USGS NAVD 88 (2012). BENCHMARKS WERE LOCATED IN THE FIELD USING GPS TECHNOLOGY.

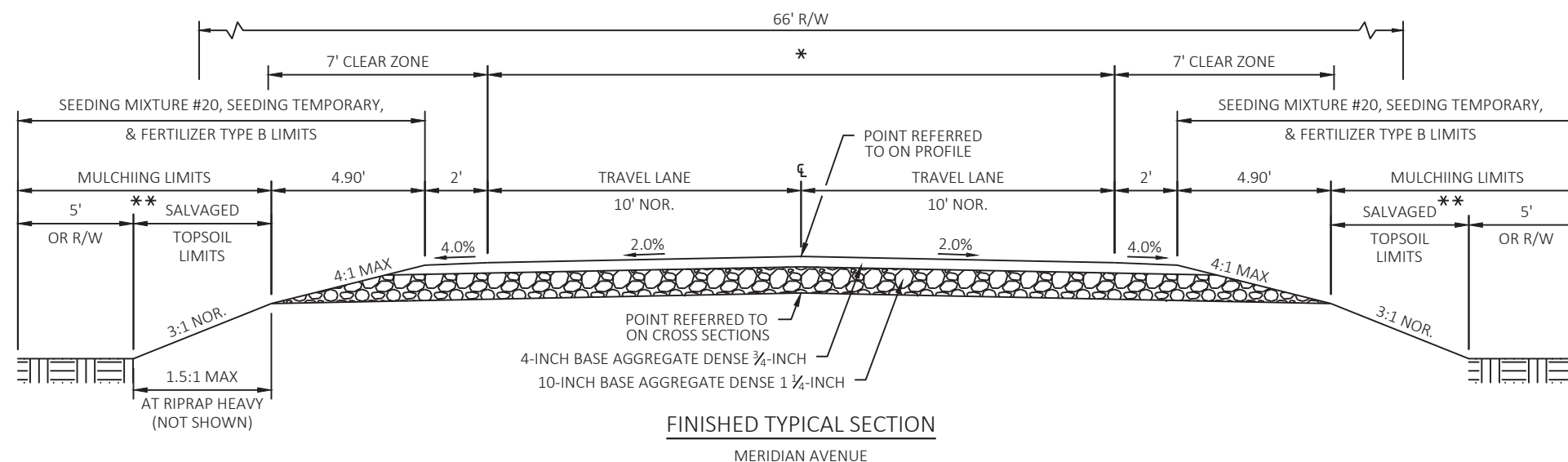
WHEN THE QUANTITY OF THE ITEM BASE LAYER IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

SILT FENCE AND TURBIDITY BARRIER TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER AND IN PLACE PRIOR TO CONSTRUCTION OR BRIDGE REMOVAL.

WETLANDS ARE PRESENT OUTSIDE THE EXISTING TOE OF SLOPE AND ON THE STREAM BANKS. AREAS OUTSIDE OF THE SLOPE INTERCEPTS SHALL NOT BE DISTURBED IN THIS AREA.

THE CONTRACTOR SHALL NOT GO OUTSIDE THE LIMITS OF CONSTRUCTION WITHOUT APPROVAL FROM THE ENGINEER.

PROJECT NO: 7836-00-70	HWY: LOCAL STREET	COUNTY: CLARK	GENERAL NOTES	SHEET	E
------------------------	-------------------	---------------	---------------	-------	---



*** SEE PLAN AND PROFILE SHEET FOR EROSION CONTROL URBAN CLASS I TYPE B LOCATIONS. DO NOT PLACE MULCH AT THOSE LOCATIONS.



FILE NAME : P:\17700S\17730S\17739\17739002\CADD\SHEETSP\PLAN\021001_CD.DWG
LAYOUT NAME - 021001_cd

PLOT DATE : 4/26/2018 2:24 PM PLOT BY : JOLIE SNYDER PLOT NAME :
PLOT SCALE : #####

WISDOT/CADDS SHEET 4:

Estimate Of Quantities

7836-00-70					
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	276.000	276.000
0006	206.1000	Excavation for Structures Bridges (structure) 01. B-10-231	LS	1.000	1.000
0008	210.1500	Backfill Structure Type A	TON	300.000	300.000
0010	213.0100	Finishing Roadway (project) 01. 7836-00-70	EACH	1.000	1.000
0012	305.0110	Base Aggregate Dense 3/4-Inch	TON	219.000	219.000
0014	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	535.000	535.000
0016	502.0100	Concrete Masonry Bridges	CY	223.000	223.000
0018	502.3200	Protective Surface Treatment	SY	324.000	324.000
0020	505.0400	Bar Steel Reinforcement HS Structures	LB	5,830.000	5,830.000
0022	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	29,650.000	29,650.000
0024	513.4061	Railing Tubular Type M 01. B-10-231	LF	169.000	169.000
0026	516.0500	Rubberized Membrane Waterproofing	SY	10.000	10.000
0028	550.0020	Pre-Boring Rock or Consolidated Materials	LF	60.000	60.000
0030	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	336.000	336.000
0032	606.0300	Riprap Heavy	CY	225.000	225.000
0034	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	160.000	160.000
0036	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7836-00-70	EACH	1.000	1.000
0038	619.1000	Mobilization	EACH	1.000	1.000
0040	624.0100	Water	MGAL	39.000	39.000
0042	625.0500	Salvaged Topsoil	SY	430.000	430.000
0044	627.0200	Mulching	SY	490.000	490.000
0046	628.1504	Silt Fence	LF	700.000	700.000
0048	628.1520	Silt Fence Maintenance	LF	700.000	700.000
0050	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0052	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0054	628.2008	Erosion Mat Urban Class I Type B	SY	215.000	215.000
0056	628.6005	Turbidity Barriers	SY	125.000	125.000
0058	629.0210	Fertilizer Type B	CWT	0.700	0.700
0060	630.0120	Seeding Mixture No. 20	LB	28.000	28.000
0062	630.0200	Seeding Temporary	LB	28.000	28.000
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	642.5001	Field Office Type B	EACH	1.000	1.000
0070	643.0420	Traffic Control Barricades Type III	DAY	1,480.000	1,480.000
0072	643.0705	Traffic Control Warning Lights Type A	DAY	2,220.000	2,220.000
0074	643.0900	Traffic Control Signs	DAY	1,110.000	1,110.000

Estimate Of Quantities

7836-00-70					
Line	Item	Item Description	Unit	Total	Qty
0076	643.5000	Traffic Control	EACH	1.000	1.000
0078	645.0111	Geotextile Type DF Schedule A	SY	60.000	60.000
0080	645.0120	Geotextile Type HR	SY	450.000	450.000
0082	650.4500	Construction Staking Subgrade	LF	293.000	293.000
0084	650.5000	Construction Staking Base	LF	293.000	293.000
0086	650.6500	Construction Staking Structure Layout (structure) 01. B-10-231	LS	1.000	1.000
0088	650.9910	Construction Staking Supplemental Control (project) 01. 7836-00-70	LS	1.000	1.000
0090	650.9920	Construction Staking Slope Stakes	LF	293.000	293.000
0092	715.0502	Incentive Strength Concrete Structures	DOL	1,338.000	1,338.000

EARTHWORK				
205.0100 EXCAVATION COMMON				
STATION - STATION	CY	FILL CY (1)	EXPANDED FILL CY (2)	WASTE CY
STA 8+50.00 - STA. 9+58.75	116	50	65	51
STA 10+41.25 - STA 12+25.00	160	33	44	117
TOTALS:	276	84	109	168

(1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSES ONLY.
(2) - FILL EXPANSION 30%

BASE AGGREGATE ITEMS			
305.0110 BASE AGGREGATE DENSE 3/4-INCH		305.0120 BASE AGGREGATE DENSE 1 1/4-INCH	624.0100 WATER (1)
STATION - STATION	TON	TON	MGAL
8+50.00 - 9+58.75	71	210	6
10+15.25 - 11+40.00	148	325	9
TOTALS:	219	535	15

(1) - ADDITIONAL QUANTITIES LISTED ELSEWHERE

RESTORATION ITEMS							
		625.0500 SALVAGED TOPSOIL	627.0200 MULCHING	629.0210 FERTILIZER TYPE B	630.0120 SEEDING MIXTURE NO. 20	630.0200 SEEDING TEMPORARY	624.0100 WATER (1)
STATION - STATION	LOCATION	SY	SY	CWT	LB	LB	MGAL
8+50.00 - 9+58.75	LT	10	30	0.05	2	2	2.1
8+50.00 - 9+58.75	RT	175	45	0.20	8	8	6.3
10+41.25 - 12+25.00	LT	105	165	0.15	6	6	5.3
10+41.25 - 12+25.00	RT	55	150	0.15	7	7	5.5
UNDISTRIBUTED	—	85	100	0.15	5	5	4.8
TOTALS:		430	490	0.70	28	28	24

(1) - ADDITIONAL QUANTITIES LISTED ELSEWHERE

SILT FENCE			
		628.1504 SILT FENCE	628.1520 SILT FENCE MAINTENANCE
STATION - STATION	LOCATION	LF	LF
8+50 - 9+75	LT & RT	300	300
10+25 - 12+25	LT & RT	260	260
UNDISTRIBUTED	-	140	140
TOTALS:		700	700

EROSION MAT		
628.2008 URBAN CLASS I TYPE B		
STATION - STATION	LOCATION	SY
8+50 - 9+50	RT	174
UNDISTRIBUTED	-	41
TOTAL:		215

MAINTENANCE AND REPAIR OF HAUL ROADS	
*618.0100 MAINTENANCE AND REPAIR OF HAUL ROADS	
DESCRIPTION	EACH
PROJECT 7836-00-70	1
TOTAL:	1

* CATEGORY 0030 ITEM

TURBIDITY BARRIER		
628.6005 TURBIDITY BARRIERS		
STATION - STATION	LOCATION	SY
PIER	LT & RT	100
UNDISTRIBUTED	-	25
TOTAL:		125

MOBILIZATION EROSION CONTROL		
628.1905 MOBILIZATION EROSION CONTROL		
628.1910 MOBILIZATION EMERGENCY EROSION CONTROL		
DESCRIPTION	EACH	EACH
PROJECT 7836-00-70	2	2
TOTALS:	2	2

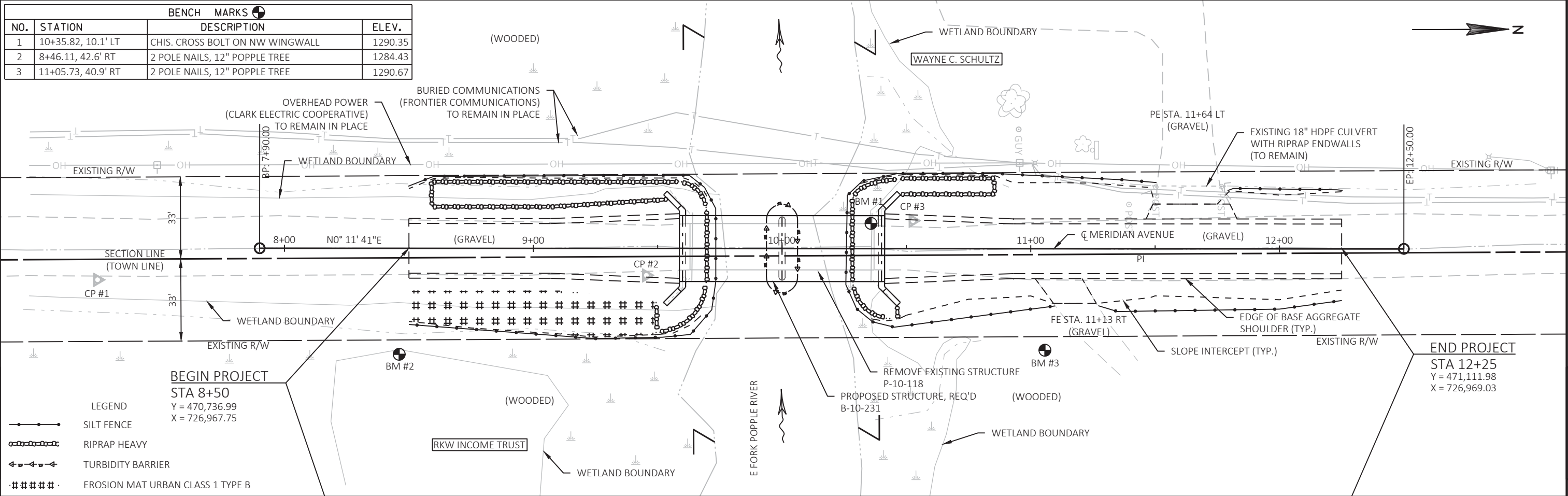
SIGNING ITEMS						
		634.0612 POSTS 4X6-INCH X 12 FT	637.2230 WOOD SIGNS TYPE II REFLECTIVE F			
STATION	LOCATION	SIGN CODE	SIZE	EACH	SF	COMMENTS
9+58	LT	W5-52L	12"x36"	1	3	OBJECT MARKER
9+58	RT	W5-52R	12"x36"	1	3	OBJECT MARKER
9+60	RT	—	—	—	—	WEIGHT LIMIT POSTING (REMOVED BY TOWN)
9+63	LT	—	—	—	—	EXISTING OBJECT MARKER (REMOVED BY TOWN)
9+63	RT	—	—	—	—	EXISTING OBJECT MARKER (REMOVED BY TOWN)
10+37	LT	—	—	—	—	EXISTING OBJECT MARKER (REMOVED BY TOWN)
10+37	RT	—	—	—	—	EXISTING OBJECT MARKER (REMOVED BY TOWN)
10+39	LT	—	—	—	—	WEIGHT LIMIT POSTING (REMOVED BY TOWN)
10+41	LT	W5-52R	12"x36"	1	3	OBJECT MARKER
10+41	RT	W5-52L	12"x36"	1	3	OBJECT MARKER
—	CTH N JCT	—	—	—	—	WEIGHT LIMIT POSTING (REMOVED BY TOWN)
—	COLBY FACTOR RD JCT	—	—	—	—	WEIGHT LIMIT POSTING (REMOVED BY TOWN)
13+50	LT	—	—	—	—	NARROW BRIDGE SIGN (REMOVED BY TOWN)
TOTALS:				4	12	

TRAFFIC CONTROL ITEMS							
		643.0420 TRAFFIC CONTROL BARRICADES TYPE III	643.0420 TRAFFIC CONTROL BARRICADES TYPE III	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A	643.0900 TRAFFIC CONTROL SIGNS	643.0900 TRAFFIC CONTROL SIGNS
LOCATION	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS
COLBY FACTORY RD INTERSECTION	74	2	148	4	296	5	370
BEGINNING OF PROJECT	74	7	518	10	740	2	148
END OF PROJECT	74	7	518	10	740	2	148
CTH N INTERSECTION	74	2	148	4	296	4	296
UNDISTRUBUTED	74	2	148	2	148	2	148
TOTALS:			1,480		2,220		1,110

CONSTRUCTION STAKING				
		650.4500 CONSTRUCTION STAKING SUBGRADE	650.5000 CONSTRUCTION STAKING BASE	650.9920 CONSTRUCTION STAKING SLOPE STAKES
		650.9910.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL		
STATION - STATION	LF	LF	LF	LS
8+50.00 - 9+58.75	109	109	109	—
10+41.25 - 12+25.00	184	184	184	—
7836-00-70	—	—	—	1
TOTALS:	293	293	293	1

NOTE: ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED OTHERWISE.

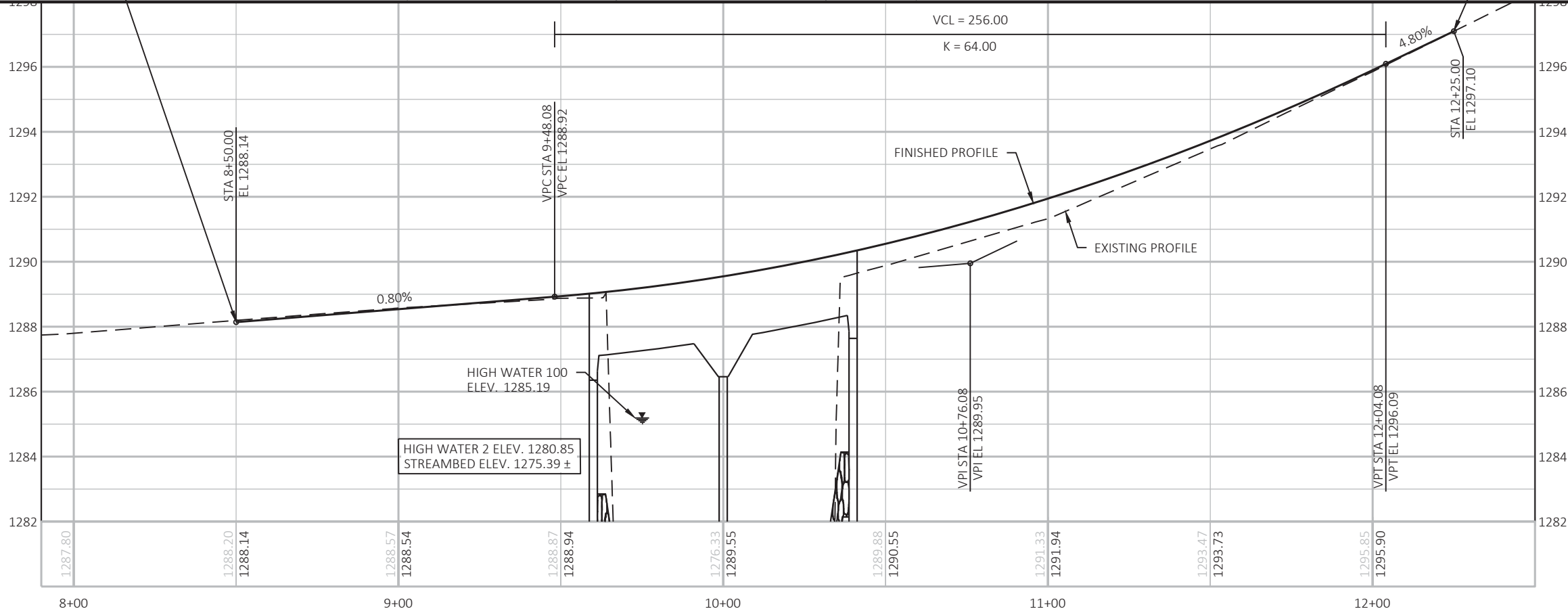
BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
1	10+35.82, 10.1' LT	CHIS. CROSS BOLT ON NW WINGWALL	1290.35
2	8+46.11, 42.6' RT	2 POLE NAILS, 12" POPPLE TREE	1284.43
3	11+05.73, 40.9' RT	2 POLE NAILS, 12" POPPLE TREE	1290.67



EARTHWORK SUMMARY	
STA. 8+50 - STA. 12+25	
COMMON EXC.	276 CY
FILL	84 CY
FILL EXPANSION	30%
EXPANDED FILL	109 CY
WASTE	168 CY

REMOVE OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS
STA 10+00, STRUCTURE P-10-118
SINGLE SPAN STEEL - LOW TRUSS BRIDGE
18.6' CLEAR ROADWAY WIDTH
74.0' OVERALL LENGTH
0.0 DEG SKEW

STA 10+00, STRUCTURE B-10-231 REQ'D
TWO SPAN HAUNCHED SLAB BRIDGE
24.0' CLEAR ROADWAY WIDTH
82.5' OVERALL LENGTH
0.0 DEG SKEW



PROJECT NO: 7836-00-70	HWY: LOCAL STREET	COUNTY: CLARK	PLAN AND PROFILE: MERIDIAN AVENUE	SHEET	E
------------------------	-------------------	---------------	-----------------------------------	-------	---

Standard Detail Drawing List

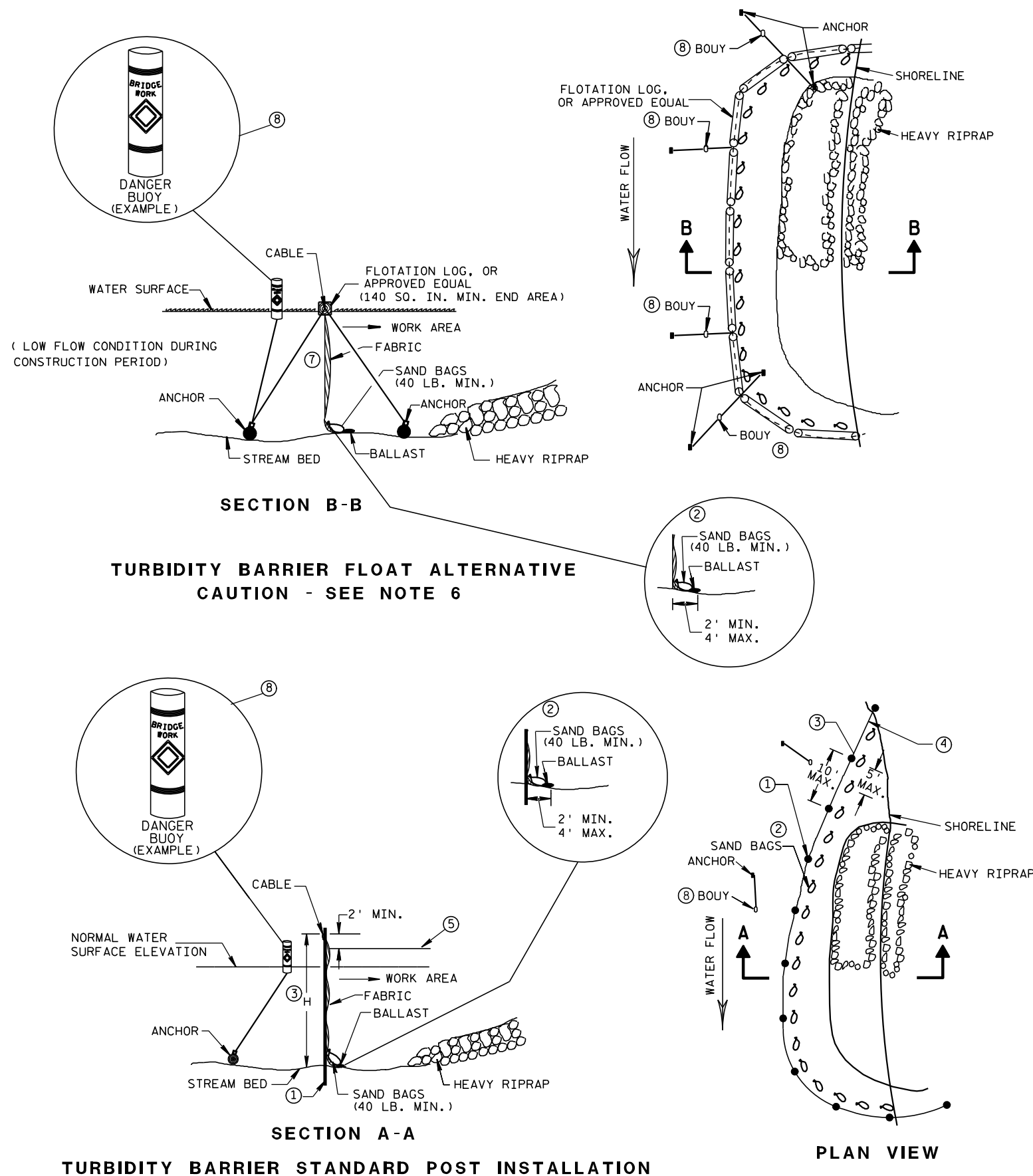
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL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



- 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 1½" X 1½" 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.



<div style="text-align: center;">SILT FENCE</div>	
<div style="text-align: center;">STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</div>	
<div>APPROVED</div> <div><u>4-29-05</u></div> <div><u>DATE</u></div>	<div><u>/S/ Beth Canestra</u></div> <div>CHIEF ROADWAY DEVELOPMENT ENGINEER</div>

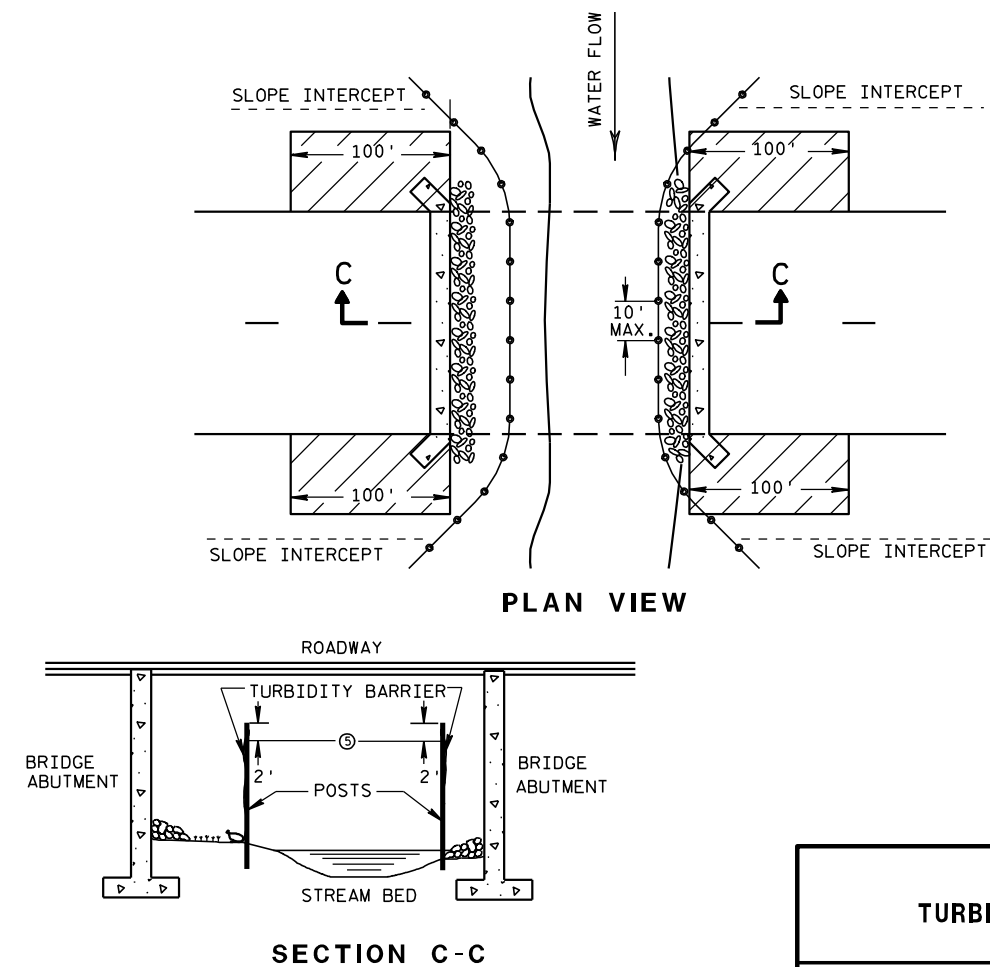


GENERAL NOTES

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

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

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

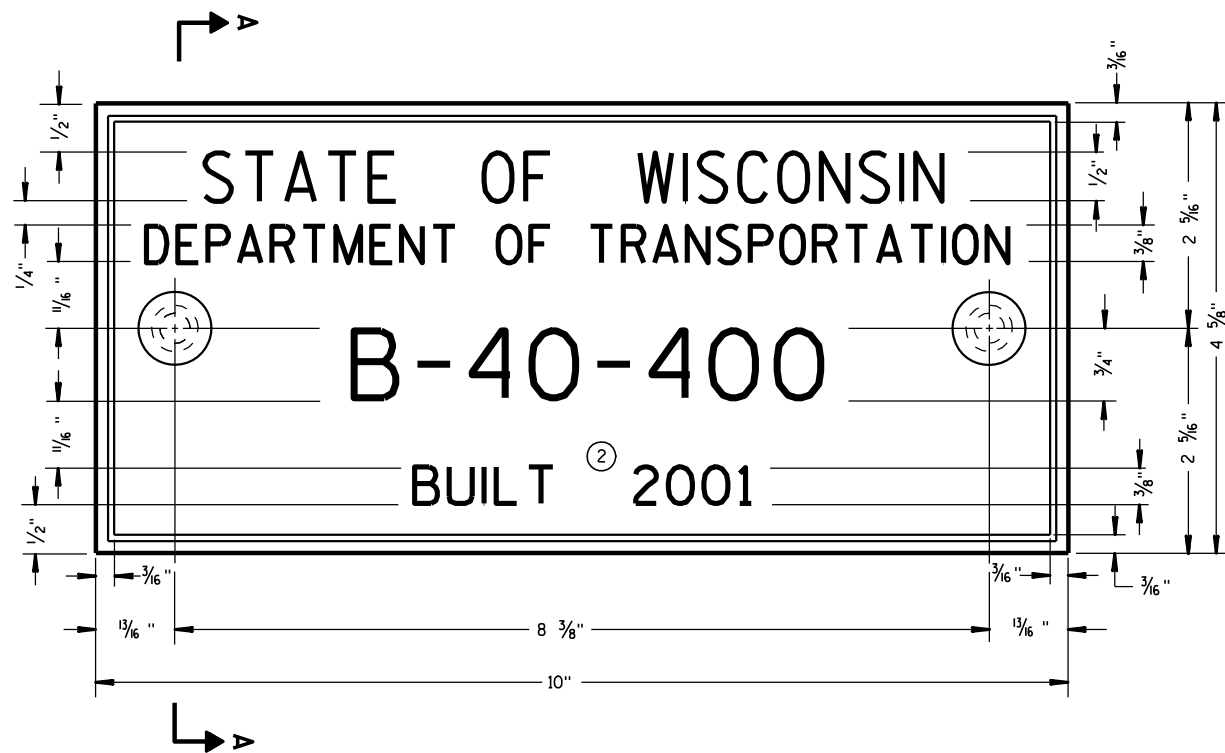
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

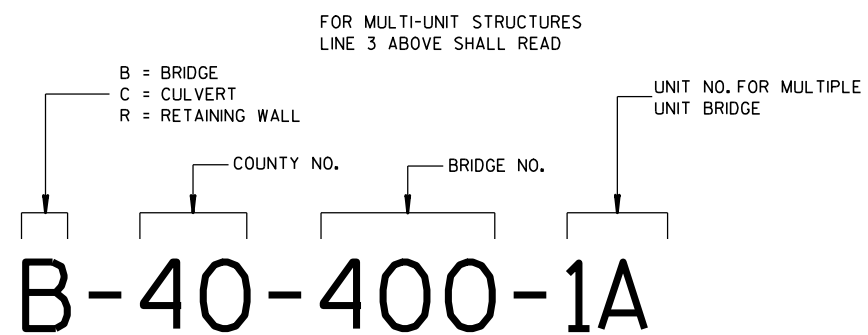
6/04/02
DATE

FHWA

/S/ Beth Connestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



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



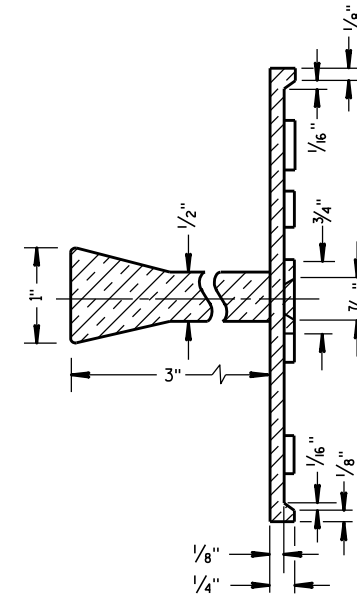
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

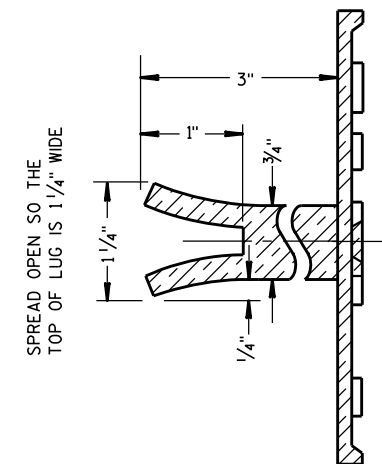
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

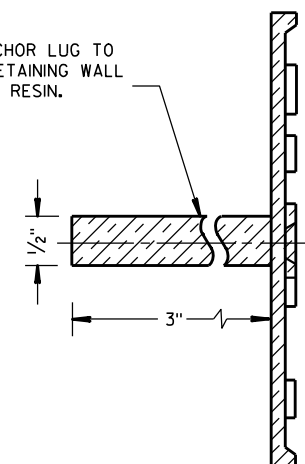


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

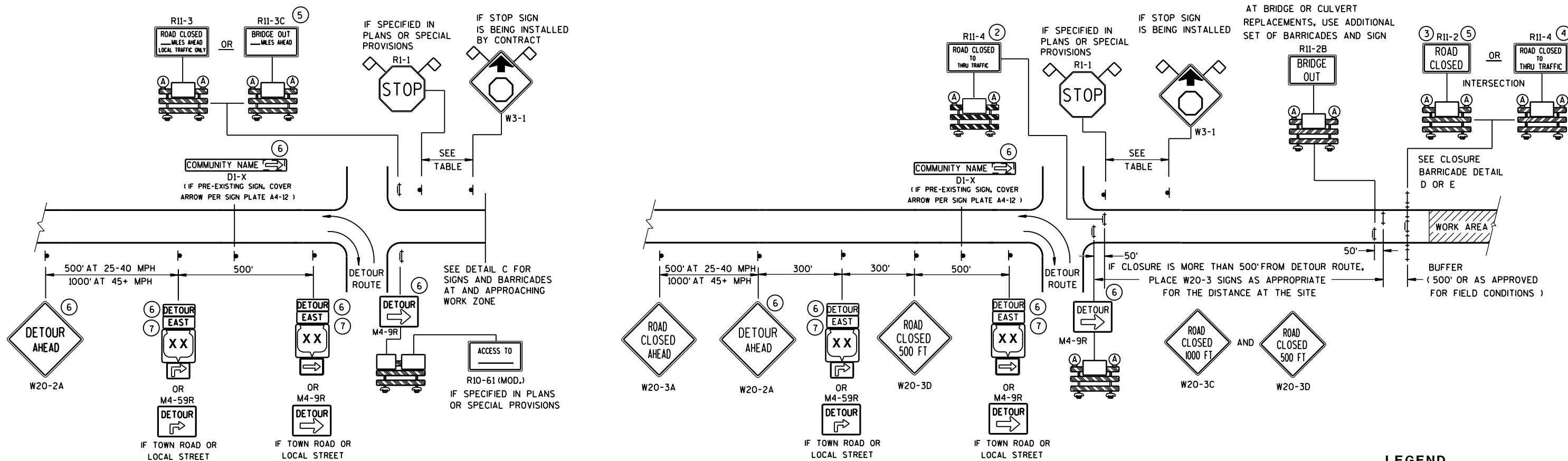
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10
DATE

FHWA

/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

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

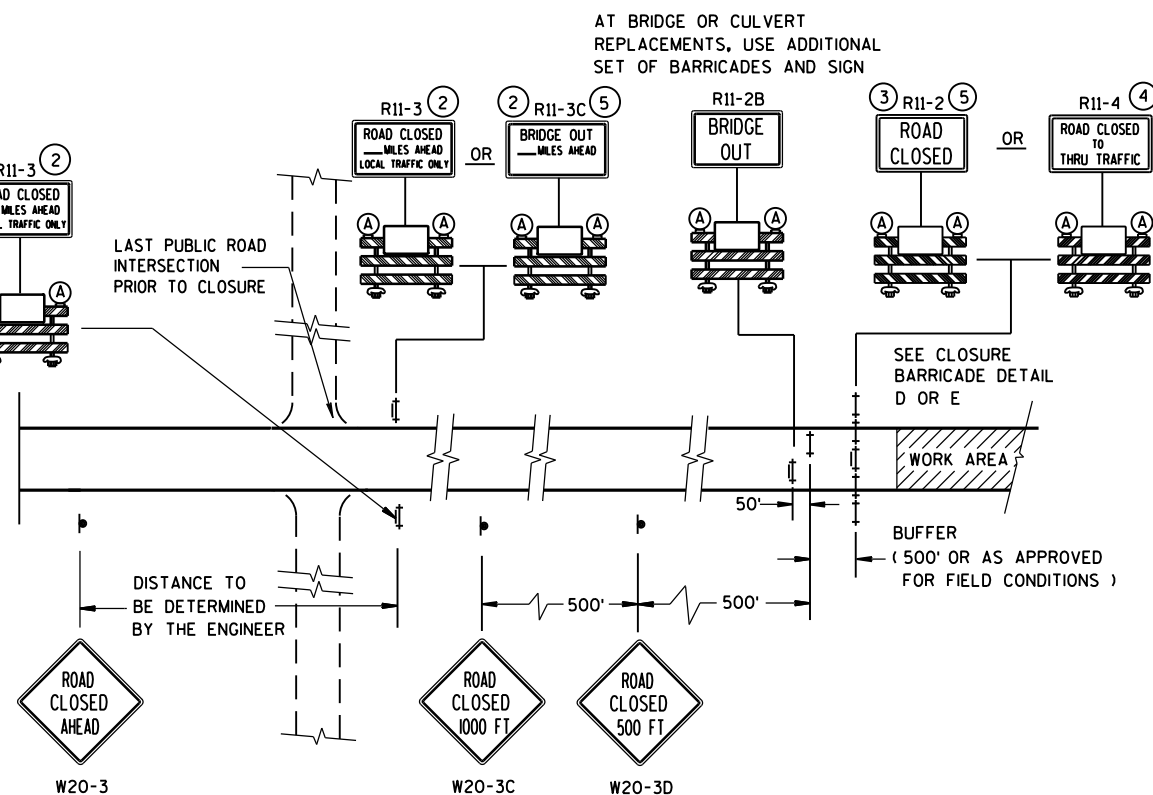
WORK AREA

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

M05-1 OR M06-1

FLAGS, 16" X 16" MIN., (ORANGE)

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



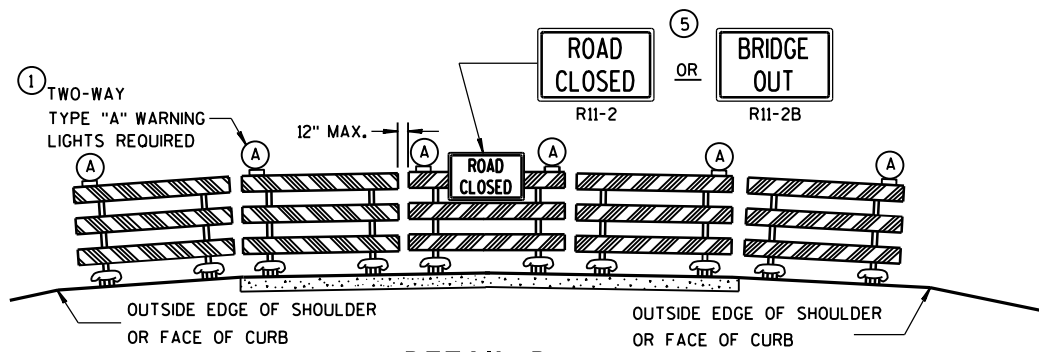
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

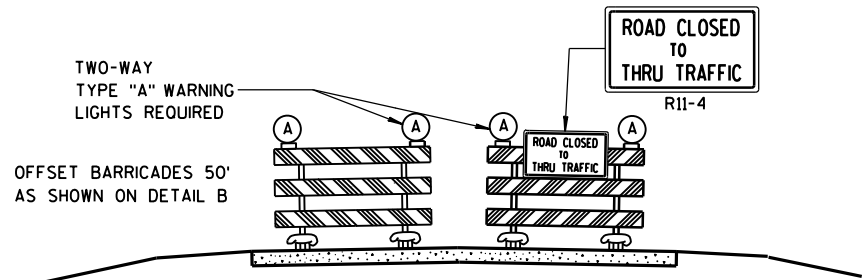
**BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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:

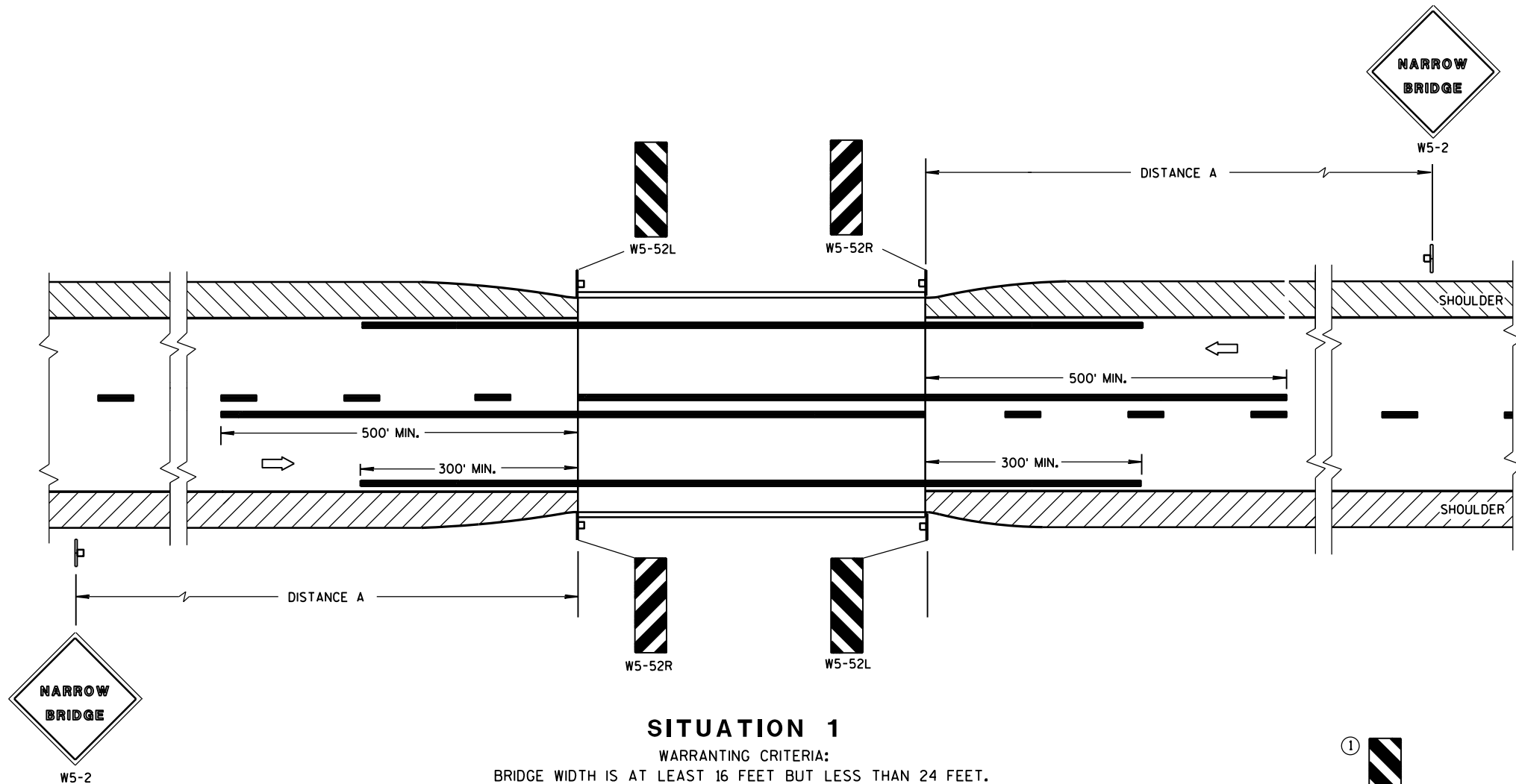
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" 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 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER



SITUATION 1

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

DISTANCE TABLE

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

GENERAL NOTES

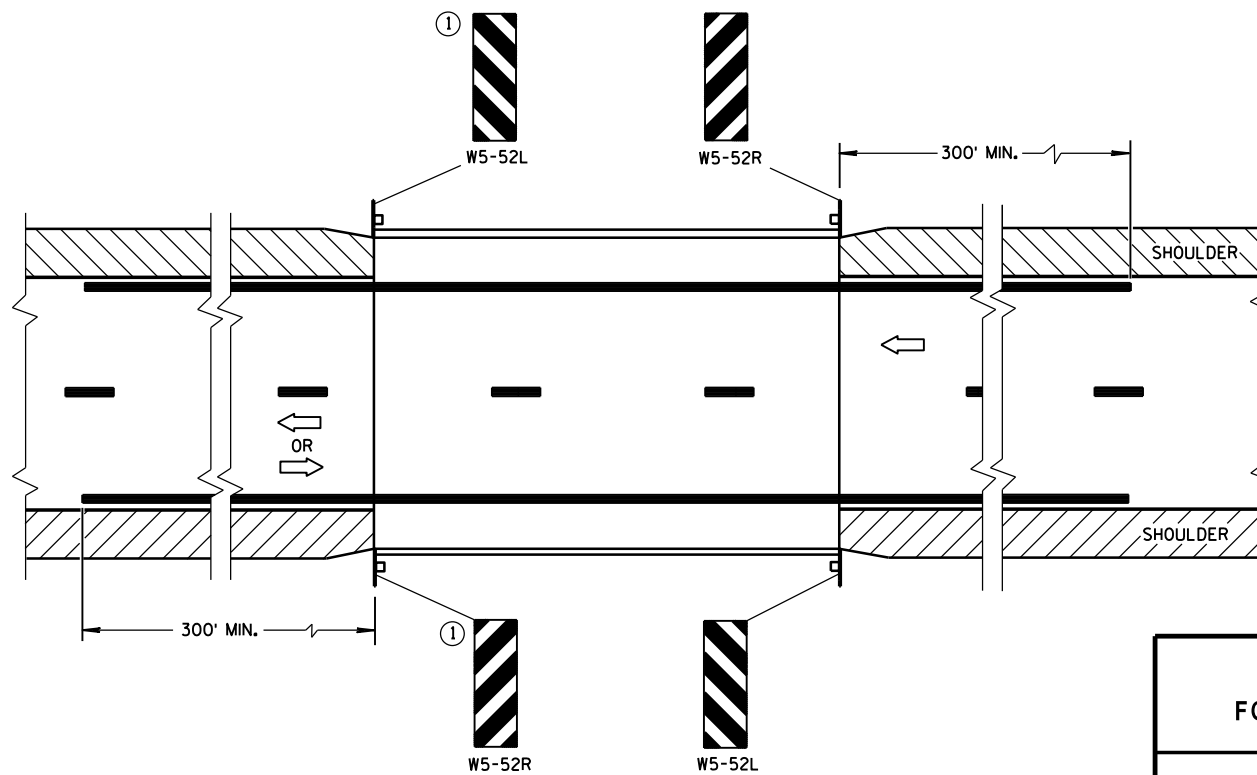
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 2

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

SIGNING & MARKING FOR TWO LANE BRIDGES

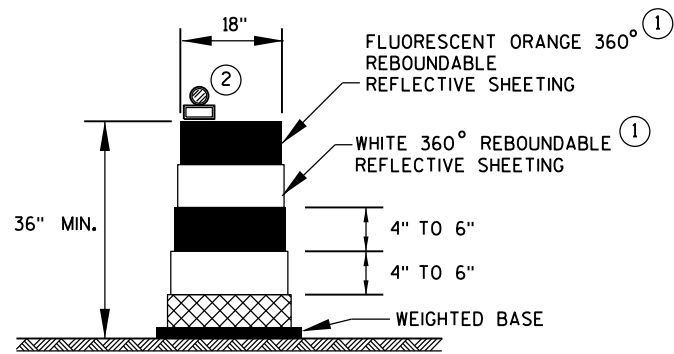
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

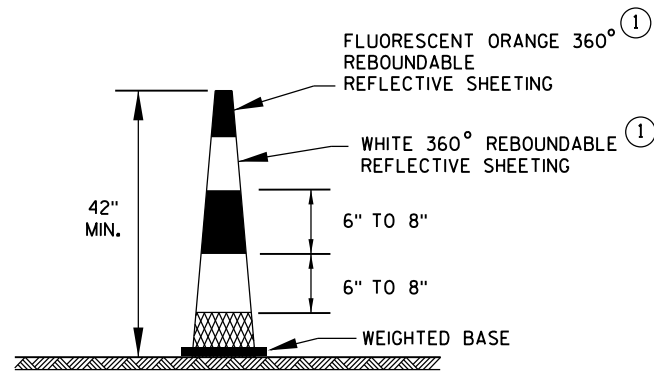
June 2017
DATE

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

FHWA



DRUM

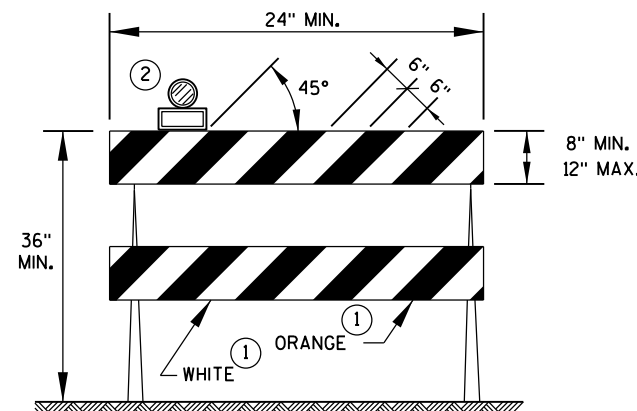


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

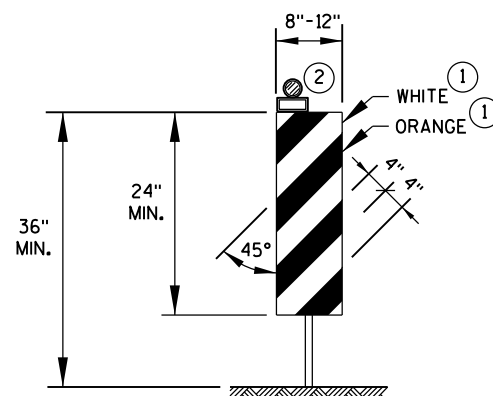
GENERAL NOTES

- 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.



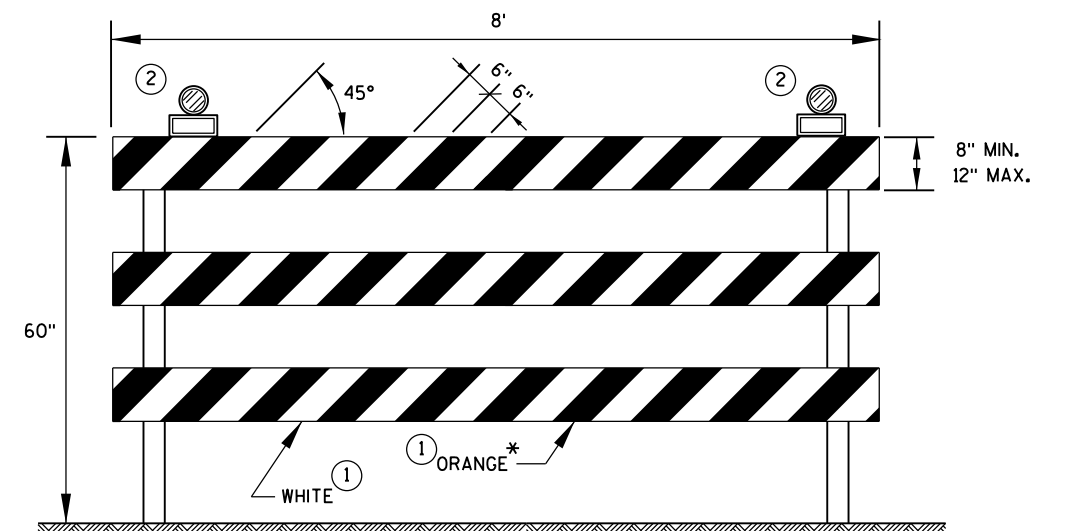
TYPE 2 BARRICADE

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

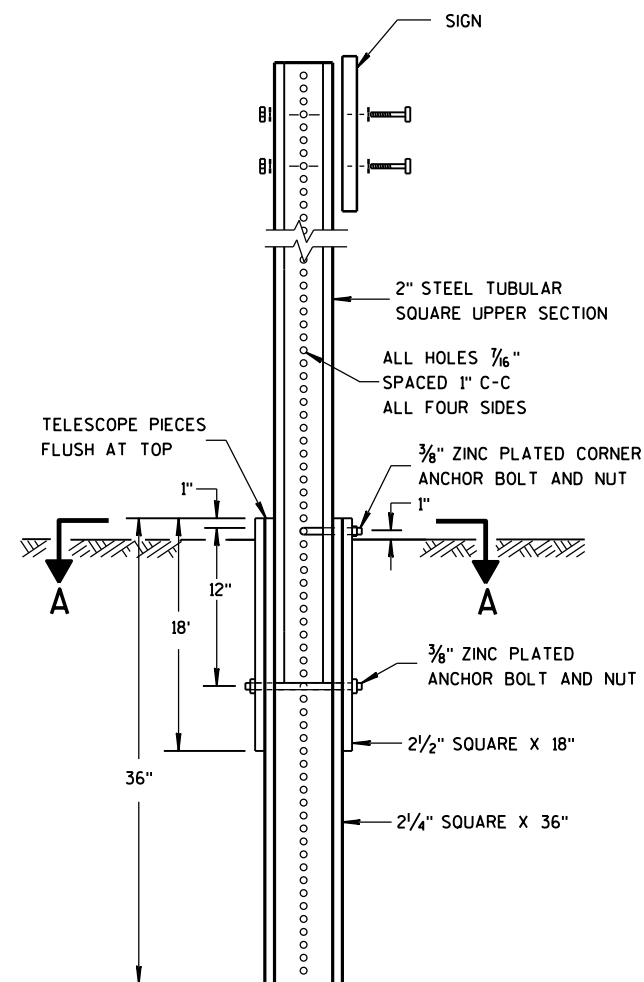
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

FHWA

/S/ Andrew Heidtke
WORK ZONE ENGINEER

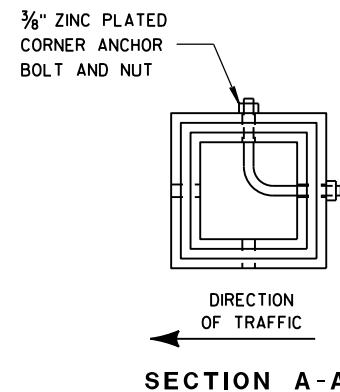


DETAIL OF TUBULAR
STEEL SIGN POST

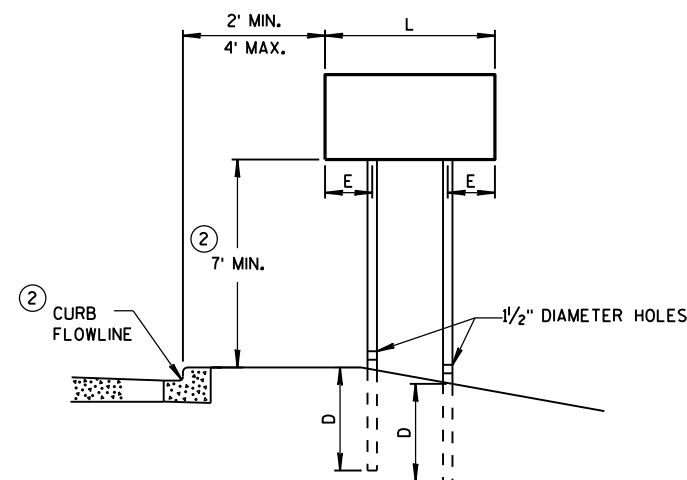
TUBULAR STEEL POSTS

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.



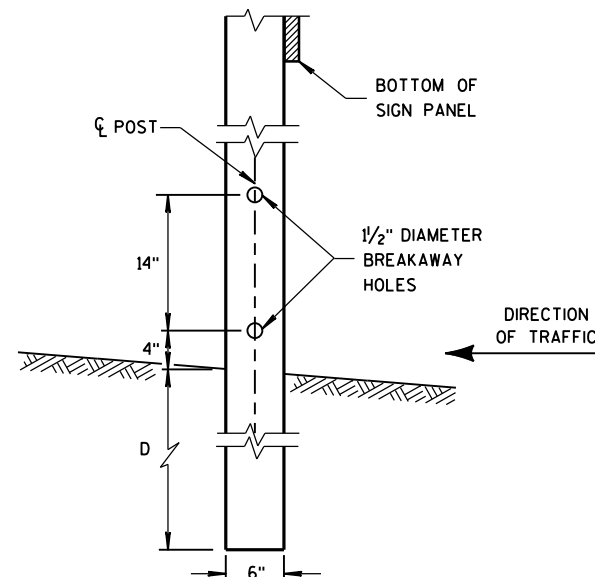
SECTION A-A



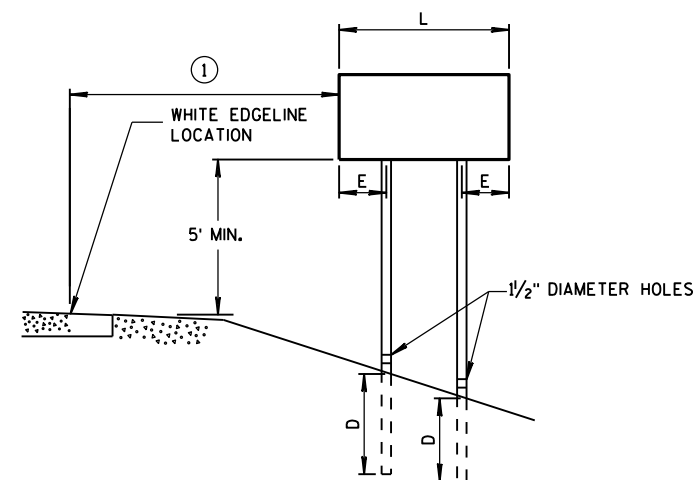
URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

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



4 "x6 " WOOD POST
MODIFICATION



RURAL AREA

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

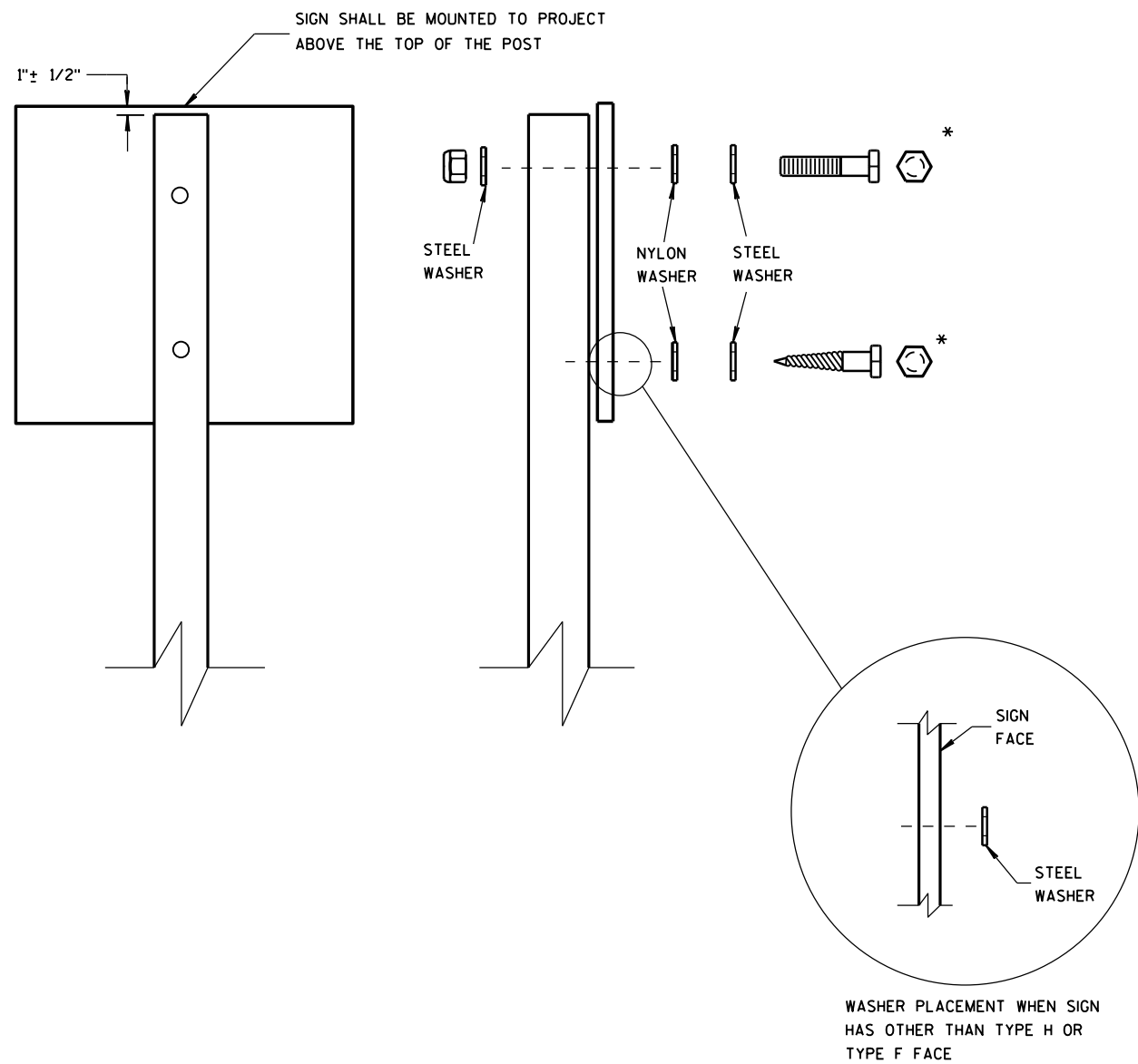
SEE NOTE ③

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.

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

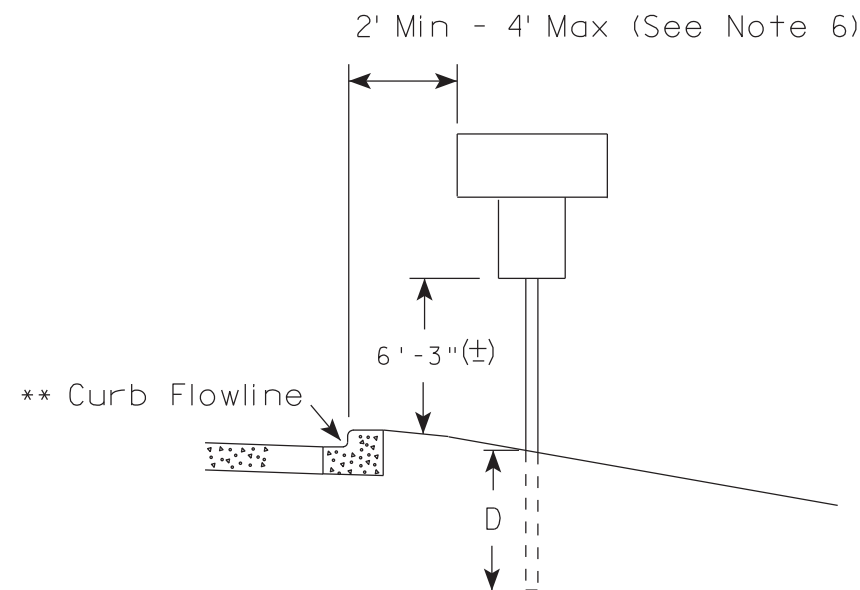
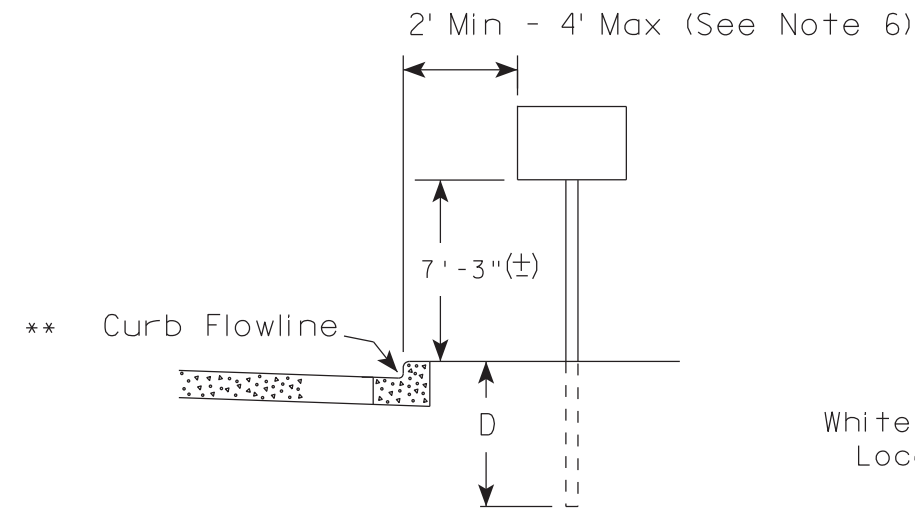
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

- 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

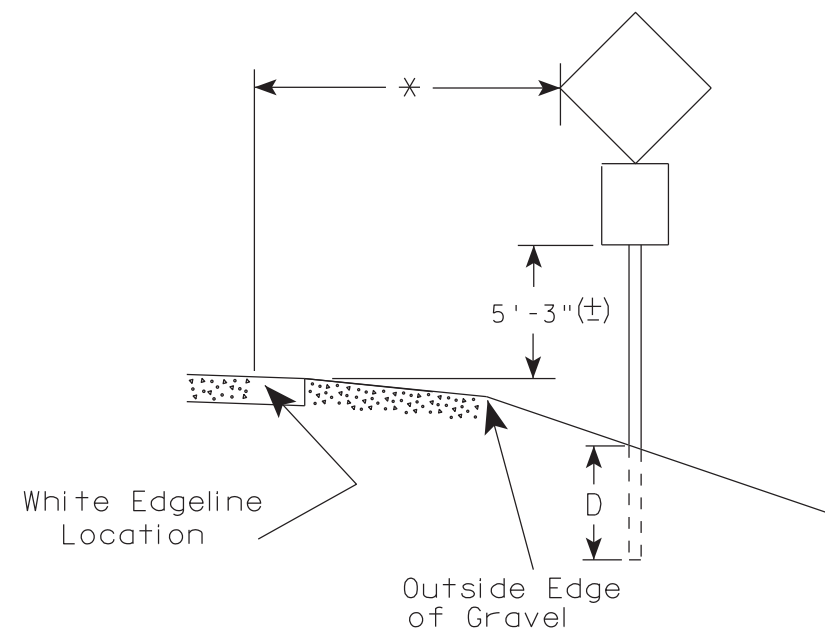
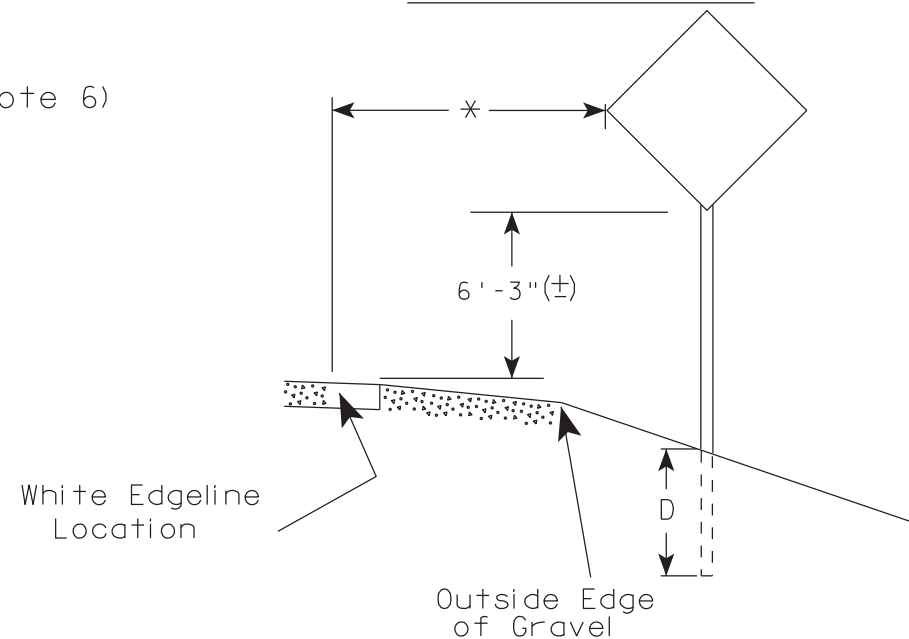
* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
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. 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 directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

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.

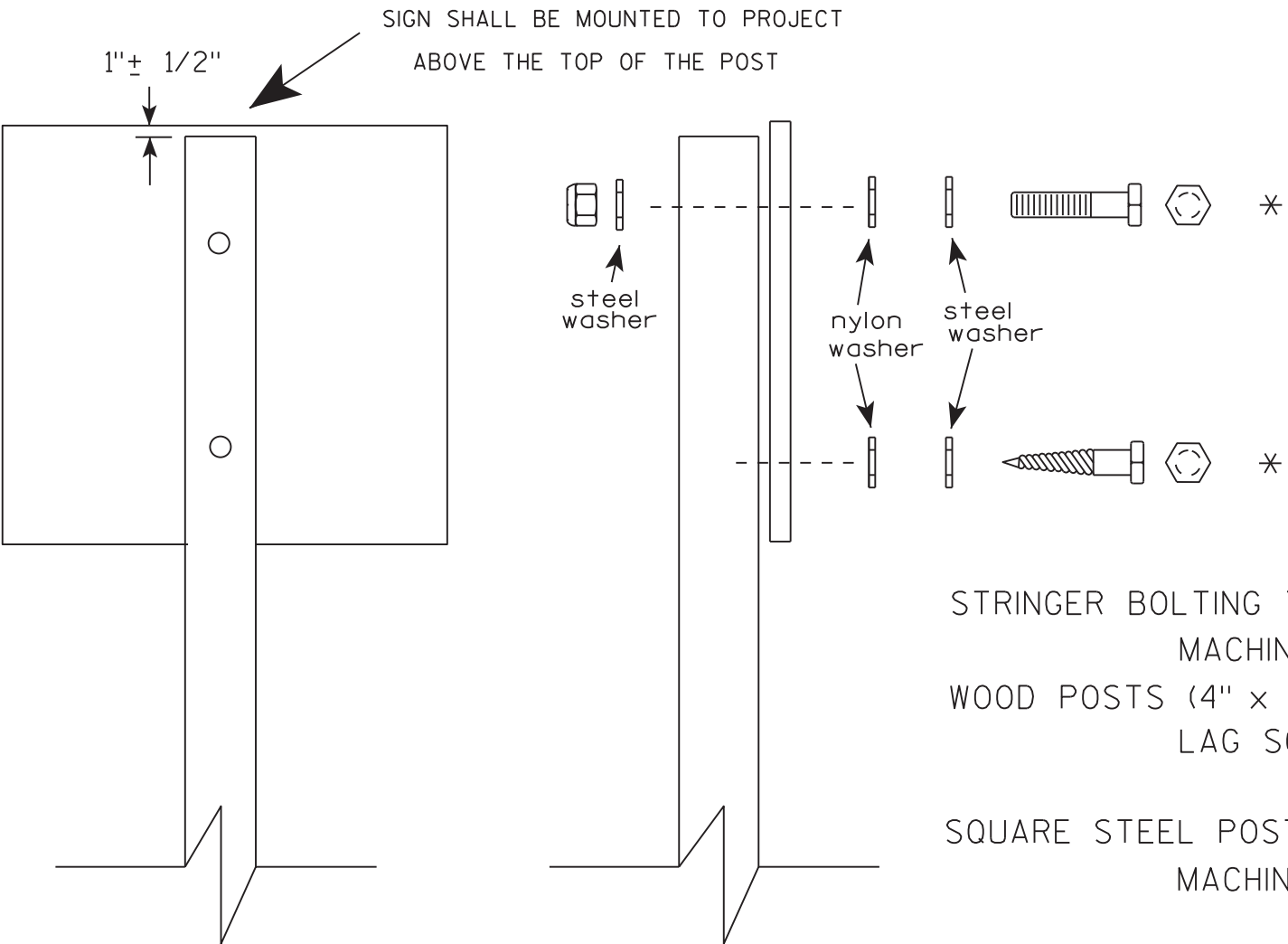
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

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



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

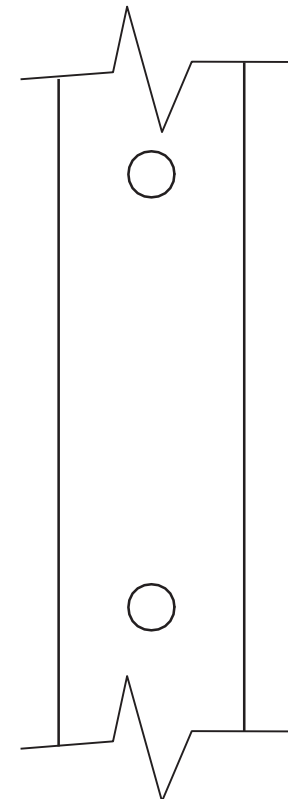
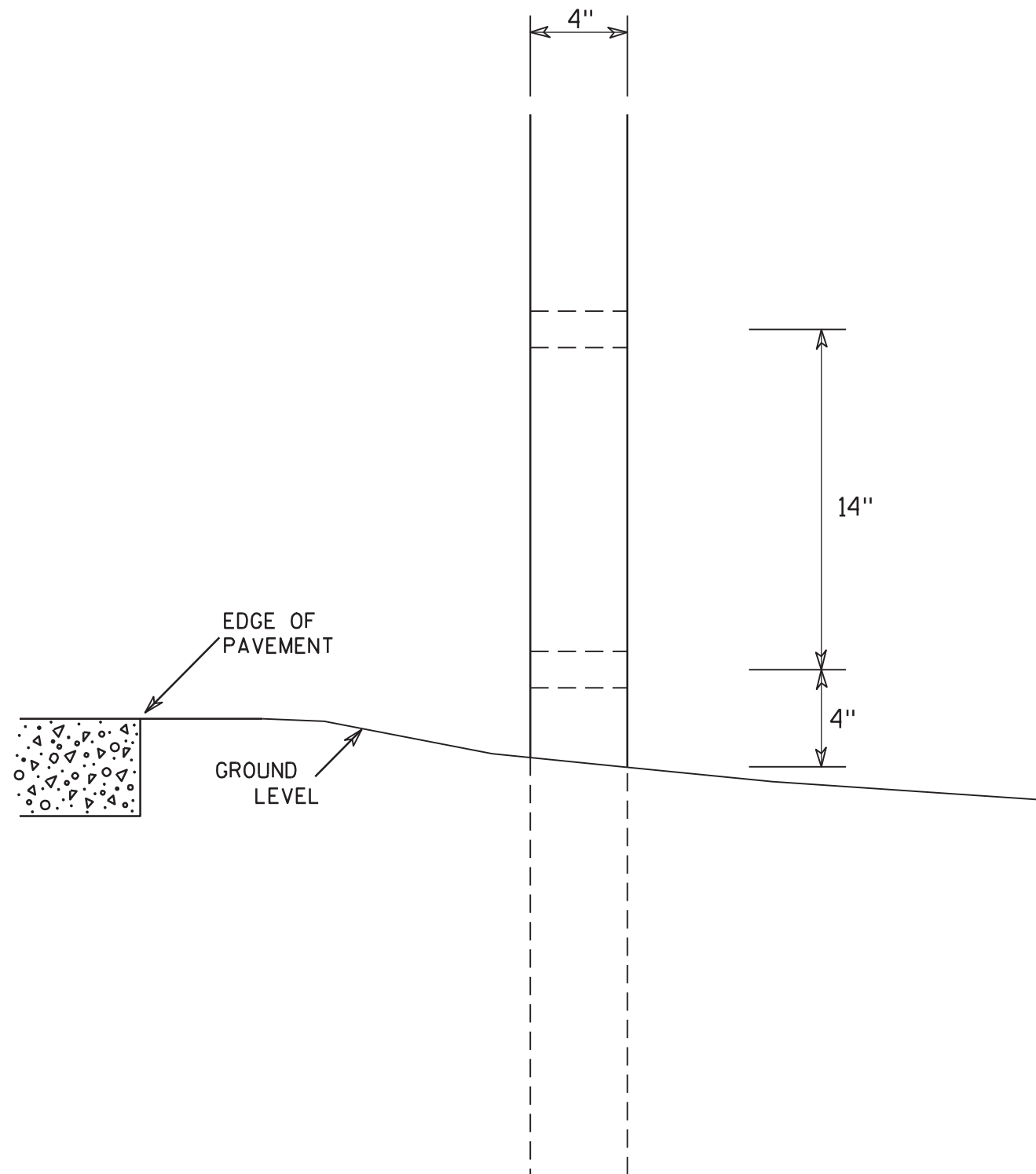
- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8



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.

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

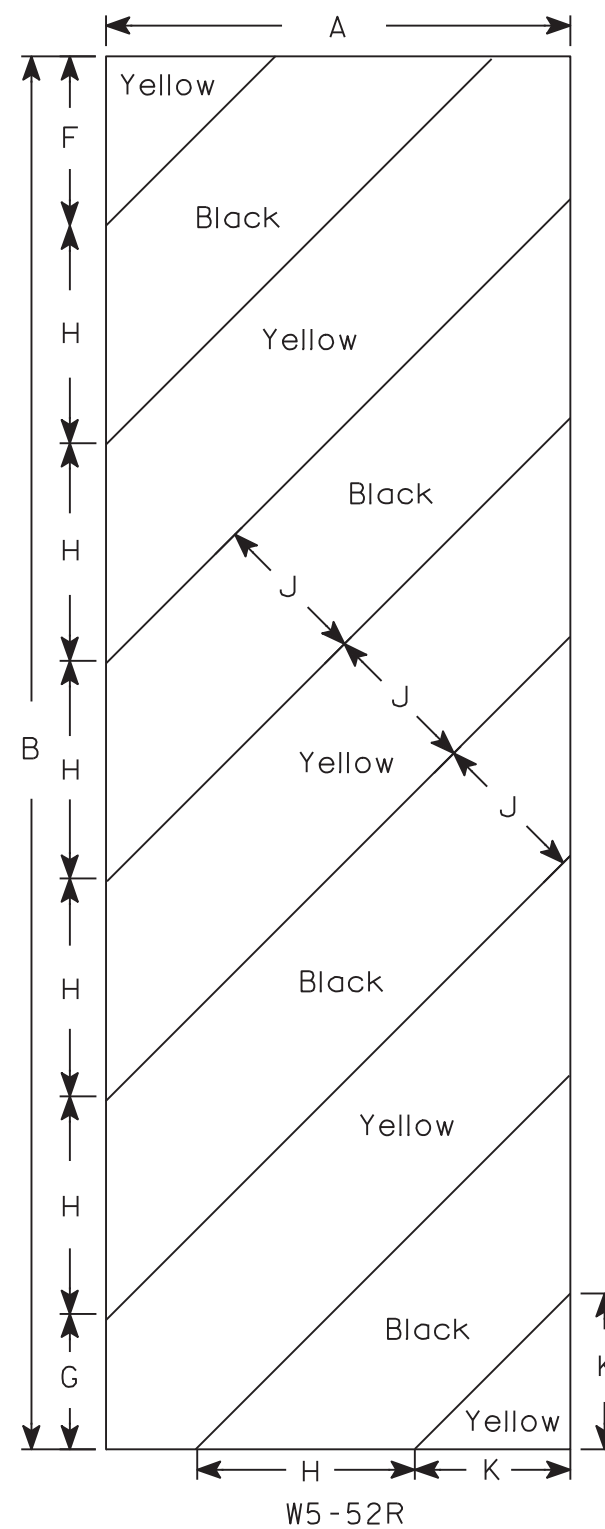
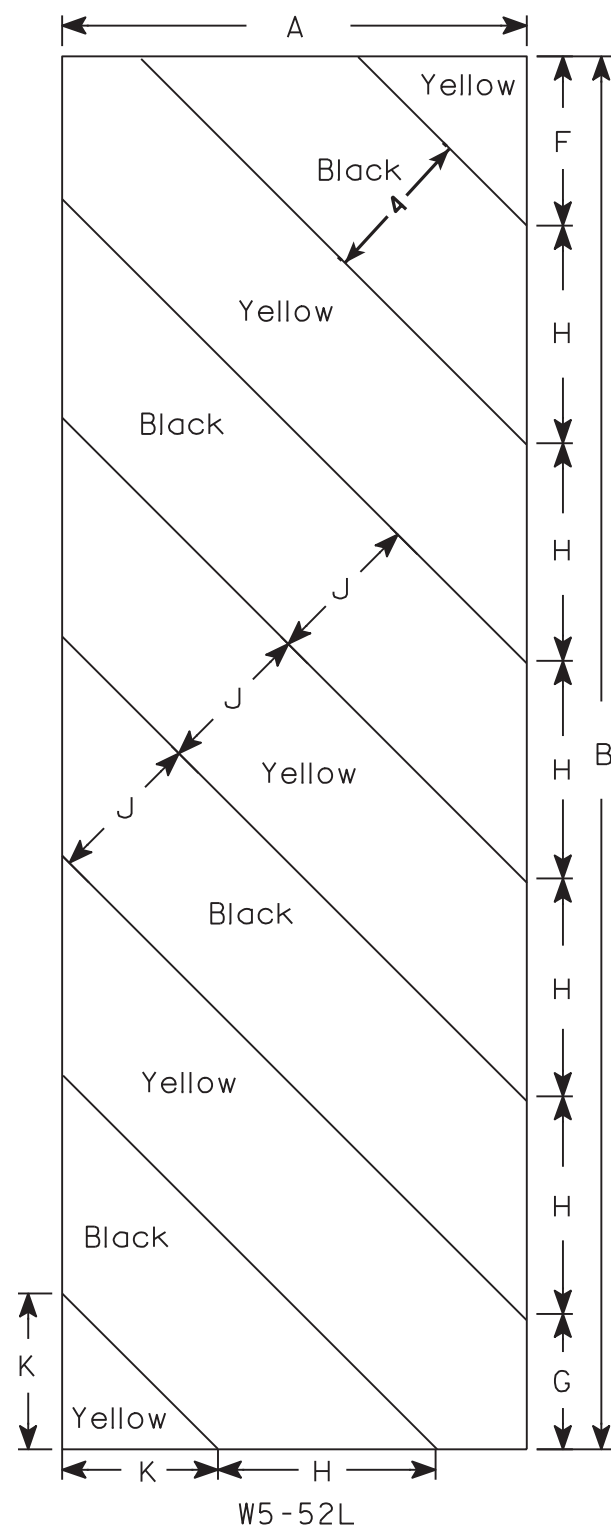
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

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

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 5/29/12 PLATE NO. W5-52.9

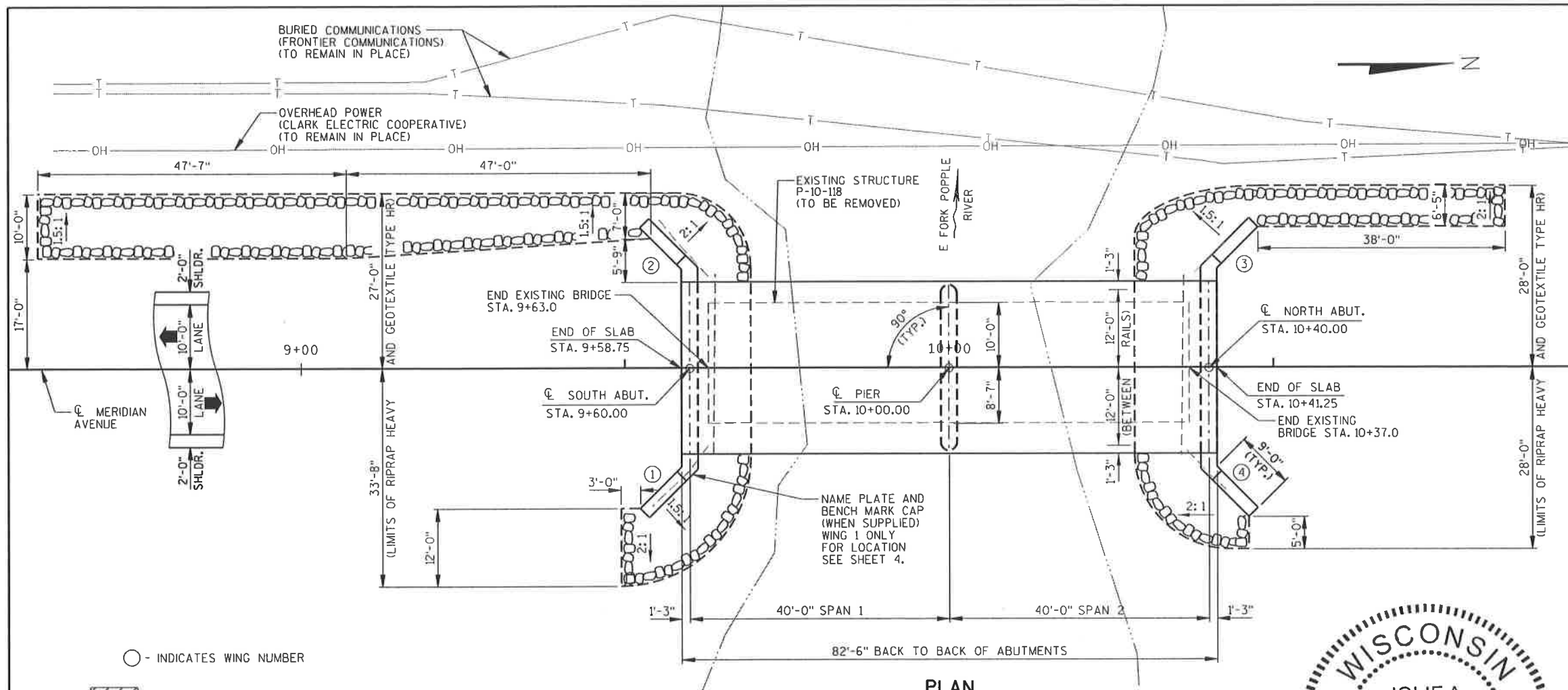
PROJECT NO:

HWY:

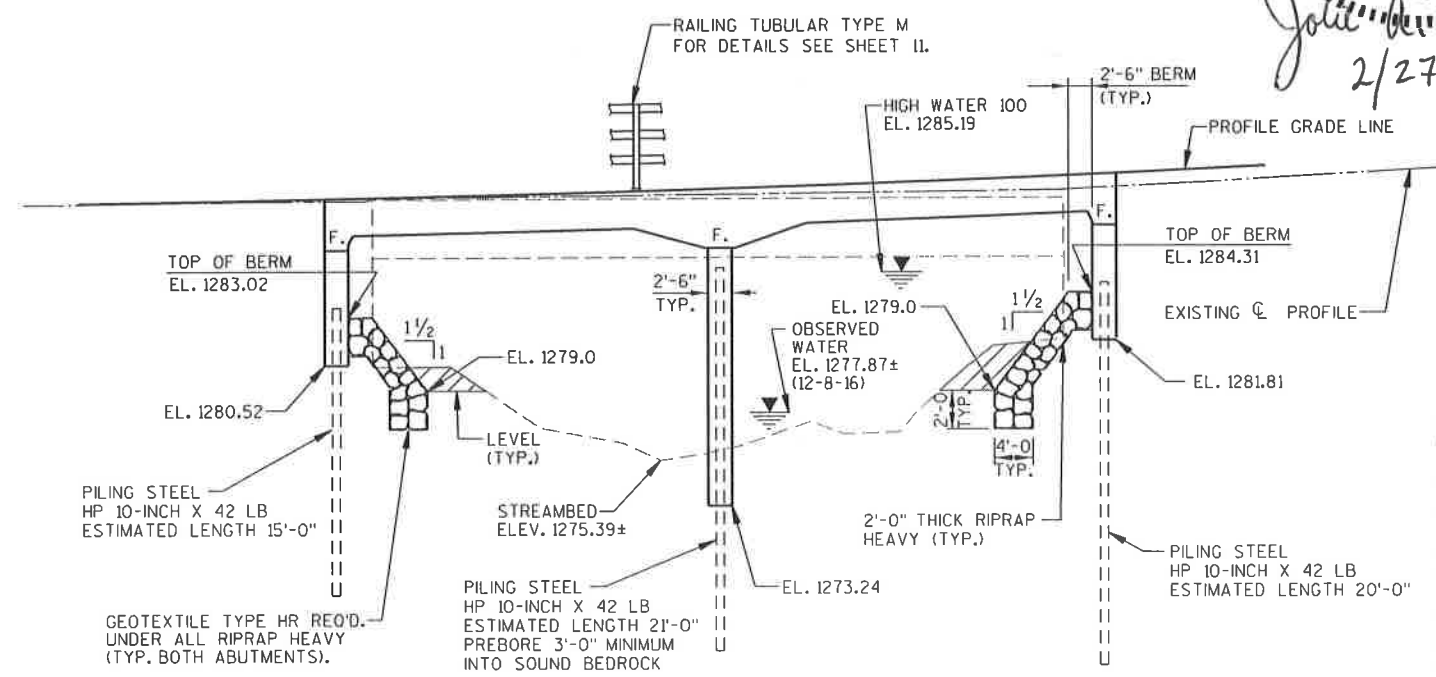
COUNTY:

SHEET NO:

E



PLAN
(TWO SPAN HAUNCHED CONCRETE SLAB)



ELEVATION
(LOOKING WEST)



LIST OF DRAWINGS

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

STATE PROJECT NUMBER

7836-00-70

BENCH MARKS NAVD 88

NO.	STATION	DESCRIPTION	ELEV.
1	10+35.82, 10.1' LT	CHIS. CROSS BOLT ON NW WINGWALL	1290.35
2	8+46.11, 42.6' RT	2 POLE NAILS, 12" POPPLE TREE	1284.43
3	11+05.73, 40.9' RT	2 POLE NAILS, 12" POPPLE TREE	1290.67

DESIGN DATA

LIVE LOAD:
DESIGN LOADING : HL-93
INVENTORY RATING FACTOR : 1.11
OPERATIONAL RATING FACTOR : 1.44
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS.
STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

TRAFFIC DATA:
A.A.D.T. (2019) = 120
A.A.D.T. (2039) = 180
R.D.S. = 40 MPH

MATERIAL PROPERTIES:

CONCRETE MASONRY, SLAB $f'_c = 4,000$ P.S.I.
ALL OTHER $f'_c = 3,500$ P.S.I.
HIGH-STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 $f_y = 60,000$ P.S.I.

FOUNDATION DATA:

ABUTMENTS AND PIER TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB. ABUTMENT PILING TO BE DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 110 TONS * PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. PIER PILING SHALL BE PREBORED 3'-0" MINIMUM INTO SOUND BEDROCK. SEAT PREBORED PILING BY TAPPING IN PLACE, DRIVING NOT REQUIRED. THE BEARING RESISTANCE OF THE SEATED PILES IS TO BE 180 TONS. ESTIMATED PILE LENGTHS ARE 15'-0" AT THE SOUTH ABUTMENT, 21'-0" AT THE PIER AND 20'-0" AT THE NORTH ABUTMENT. ESTIMATED "PREBORING ROCK OR CONSOLIDATED MATERIALS" IS 10'-0" PER PILE AT THE PIER.

* 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.

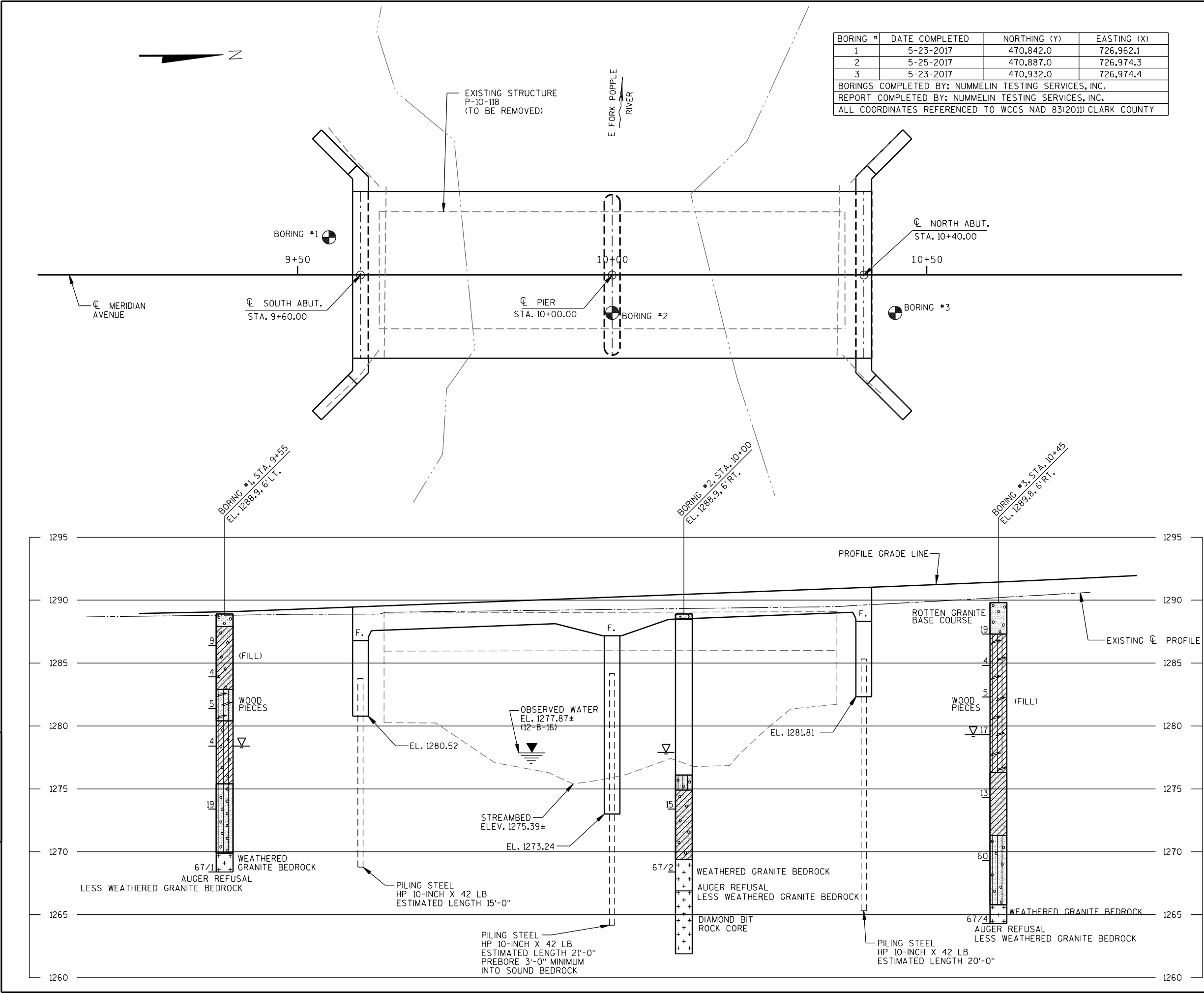
HYDRAULIC DATA:

100 YEAR FREQUENCY
DRAINAGE AREA 19.5 SQ. MI.
Q₁₀₀ 3,100 C.F.S.
VELOCITY 7.42 FT./SEC.
WATERWAY AREA 418 SQ. FT.
SCOUR CRITICAL CODE 5
HIGH WATER 100 ELEVATION 1285.19
Q₂ ELEVATION (820 C.F.S.) 1280.85
Q₂ VELOCITY 5.52 FT./SEC.

ROADWAY OVERFLOW DESIGN FREQUENCY
OVERTOPPING FREQUENCY > 100 YEARS

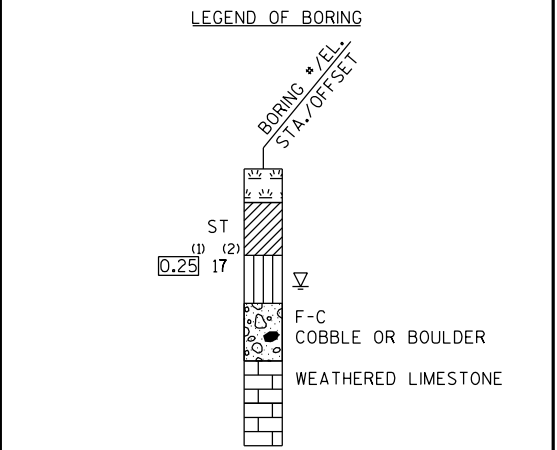
CONSULTANT DESIGN CONTACT: JOLIE SNYDER (608) 355-8912
BRIDGE OFFICE CONTACT: WILLIAM DREHER (608) 266-8489

NO.	DATE	REVISION	BY
MSA TRANSPORTATION • MUNICIPAL DEVELOPMENT • ENVIRONMENTAL 1230 South Boulevard • Baraboo, WI 53913 608-356-2771 1-800-362-4595 Fax: 608-356-2770			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED <i>William C. Dreher</i> 05/15/18 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-10-231			
MERIDIAN AVENUE OVER E FORK POPPLE RIVER			
COUNTY	CLARK	TOWN/CITY/VILLAGE	GREEN GROVE
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY JAS	DESIGN CK'D. DHW	DRAWN BY RLR	PLANS CK'D. JAS
GENERAL PLAN			SHEET 1 OF 11



BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	5-23-2017	470,842.0	726,962.1
2	5-25-2017	470,887.0	726,974.3
3	5-23-2017	470,932.0	726,974.4
BORINGS COMPLETED BY: NUMMELIN TESTING SERVICES, INC.			
REPORT COMPLETED BY: NUMMELIN TESTING SERVICES, INC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2011) CLARK COUNTY			

STATE PROJECT NUMBER		
7836-00-70		
MATERIAL SYMBOLS		
ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META



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

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

GROUND WATER ELEVATION			
▽	AT TIME OF DRILLING		
▽	END OF DRILLING		
▽	AFTER DRILLING		
ABBREVIATIONS			
F-FINE	M-MEDIUM	C-COARSE	ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-10-231	
DRAWN BY		RLR	PLANS CK'D. JAS
SUBSURFACE EXPLORATION		SHEET 3 OF 11	



- — INDICATES WING NUMBER
- — INDICATES CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
- ▲ — 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE).
- ▲ — 4"x 3/4" FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN EDGES OF SLAB.
- ★ — VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM 9" BELOW BRIDGE SEAT TO TOP OF WINGS.
- ◆ — HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WINGS.
- ◻ — OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2 X 6. IF JOINT IS USED, PLACE ◆ ON B.F. OF WING. COST OF ◆ INCLUDED IN BID ITEM "CONCRETE MASONRY BRIDGES".
- ◻ — 3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.
- — PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE TYPE HR AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE. FOR RODENT SHIELD DETAILS, SEE SHEET 5.

F.F.—FRONT FACE B.F.—BACK FACE CL.—CLEAR



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-10-231	
DRAWN BY		RLR	PLANS CK'D. JAS
SOUTH ABUTMENT		SHEET 4 OF	

UNCOATED 2170 LBS.
COATED 1465 LBS.

BILL OF BARS (SOUTH ABUT.)

MARK	NUMBER COATED	REQUIRED UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION
A801	-	18	21'-6"	X		ABUTMENT BODY - B.F. - HORIZ.
A502	-	9	31'-0"			ABUTMENT BODY - F.F. - HORIZ.
A503	-	64	7'-0"	X		ABUTMENT BODY - F.F. & B.F. - VERT.
A404	-	24	2'-9"	X		ABUTMENT BODY - TIES - HORIZ.
A505	-	32	10'-1"	X		ABUTMENT BODY - TOP - VERT.
A506	25	-	2'-0"			ABUTMENT BODY - TOP - DOWEL - VERT.
A807	18	-	13'-2"	X		WINGS - B.F. - HORIZ.
A408	8	-	7'-0"	X	⬡	WINGS - B.F. - HORIZ.
A409	4	-	10'-5"	X		WINGS - F.F. & B.F. - TOP - HORIZ.
A410	56	-	11'-0"	X		WINGS - TOP & BOTTOM - VERT.
A411	6	-	10'-0"	X		WINGS - TOP - VERT.
A512	18	-	11'-8"	X	⬡	WINGS - F.F. - HORIZ.
A413	8	-	8'-6"	X	⬡	WINGS - F.F. - HORIZ.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

⬡ - LENGTH SHOWN FOR BAR IS AN AVERAGE AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

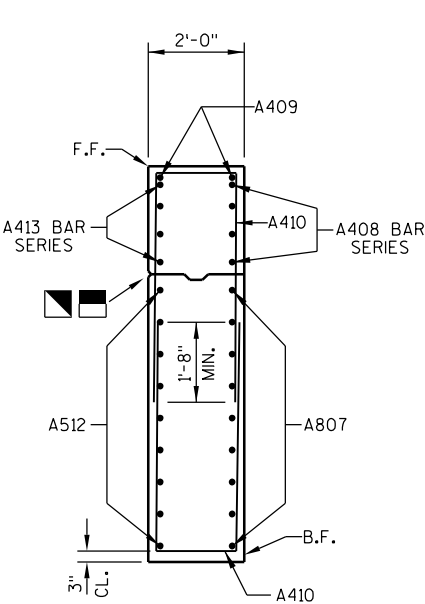
BENT BARS IF USED IN BAR SERIES TABLE SHALL BE BENT AFTER CUTTING.

BAR MARK	NO. REQ'D.	LENGTH
A408	2 SERIES OF 4	3'-3" TO 10'-9"
A413	2 SERIES OF 4	4'-9" TO 12'-3"

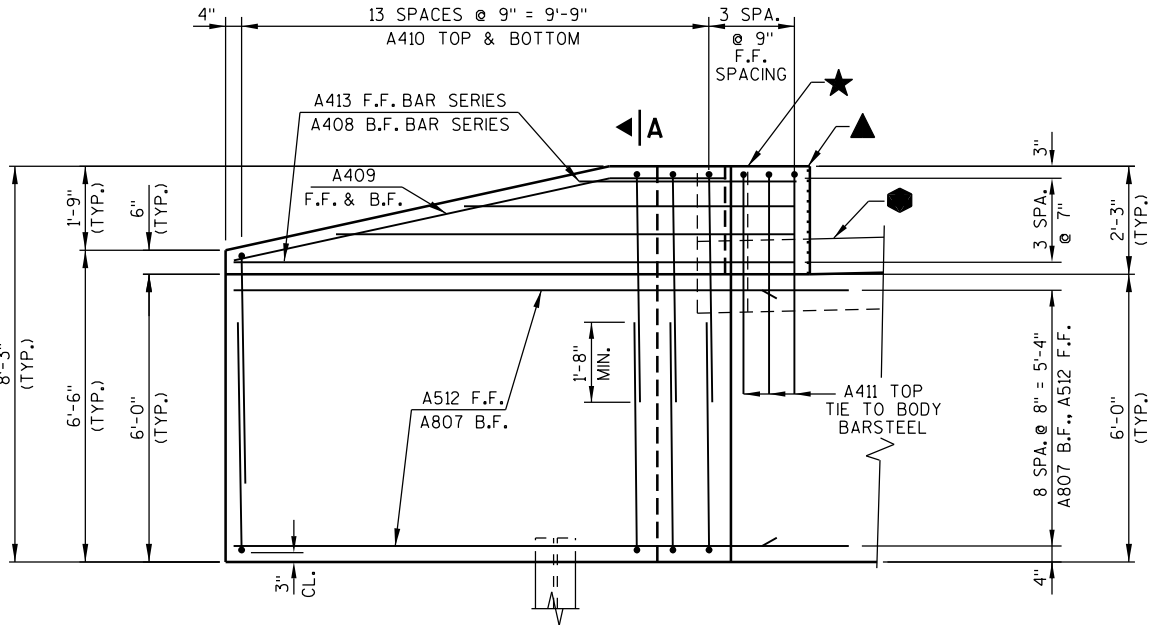
BAR SERIES TABLE

MARK	A	B
A801 A807 A512	1'-6"	45°
A408	1'-10"	45°
A409	2'-5"	13°
A413	2'-0"	45°

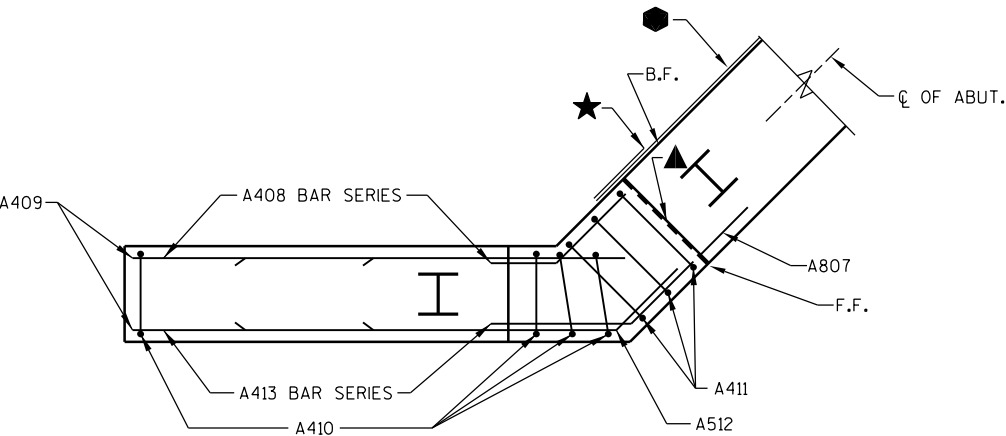
MARK	C	D
A404	4 1/2"	2'-2"
A505	4'-1"	2'-2"
A410	4'-9"	1'-8"
A411	4'-0"	2'-2"



SECTION A-A THRU WING

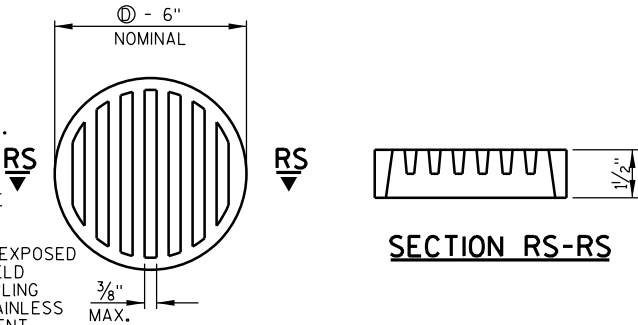


ELEVATION
(LOOKING AT F.F. OF WING)



PLAN

NOTE:
WING 1 SHOWN,
WING 2 SIMILAR.



SECTION RS-RS

RODENT SHIELD

Ⓢ - DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

RODENT SHIELD NOTES:

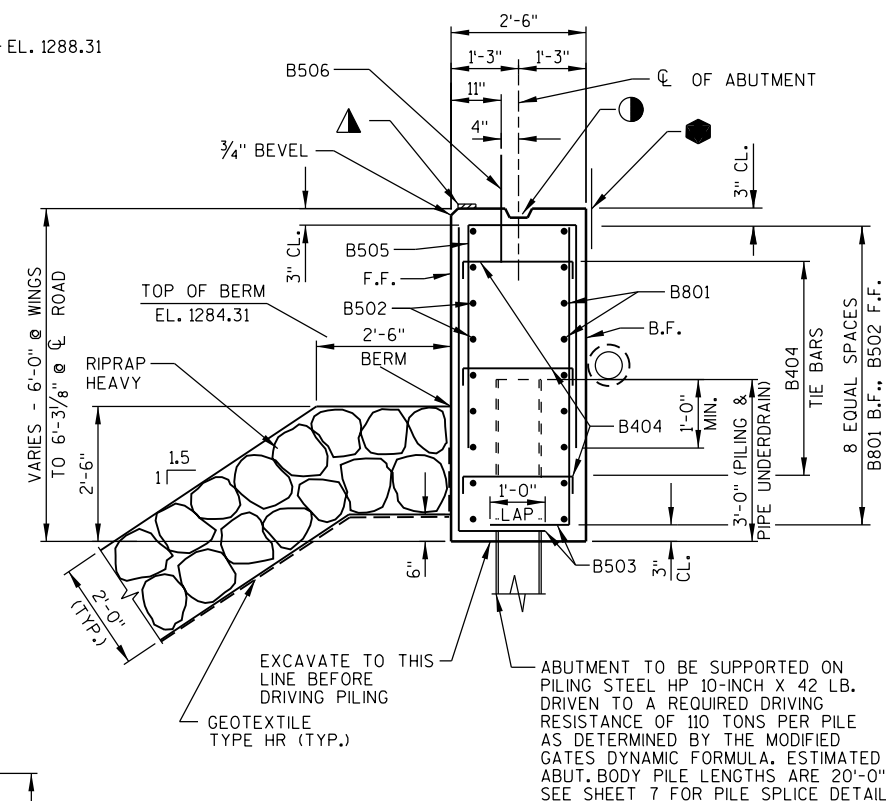
ORIENT SHIELD SO SLOTS ARE VERTICAL.

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHEMENT 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. THE RODENT SHIELD, PIPE COUPLING AND SCREWS, SHALL BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

SEE LEGEND ON SHEET 6 FOR DESCRIPTION OF



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-10-231	
DRAWN BY		RLR	PLANS CK'D. JAS
SOUTH ABUTMENT DETAILS		SHEET 5 OF 11	



TYPICAL SECTION THRU ABUTMENT

LEGEND

- — **INDICATES WING NUMBER**
- ◐ — **INDICATED CONSTRUCTION JOIN FORMED BY BEVELED 2x6.**
- ▲ — **1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE).**
- ▲ — **4"x 3/4" FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN EDGES OF SLAB.**
- ★ — **VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM 9" BELOW BRIDGE SEAT TO TOP OF WINGS.**
- ◆ — **HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WINGS.**
- ◻ — **OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2 X 6. IF JOINT IS USED, PLACE ◆ ON B.F. OF WING. COST OF ◆ INCLUDED IN BID ITEM "CONCRETE MASONRY BRIDGES".**
- ◼ — **3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.**
- ⊙ — **PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE TYPE HR AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE. FOR RODENT SHIELD DETAILS, SEE SHEET 5.**

F.F.—FRONT FACE B.F.—BACK FACE CL.—CLEAR

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-10-231	
DRAWN BY		RLR	PLANS CK'D. JAS
NORTH ABUTMENT		SHEET 6 OF	

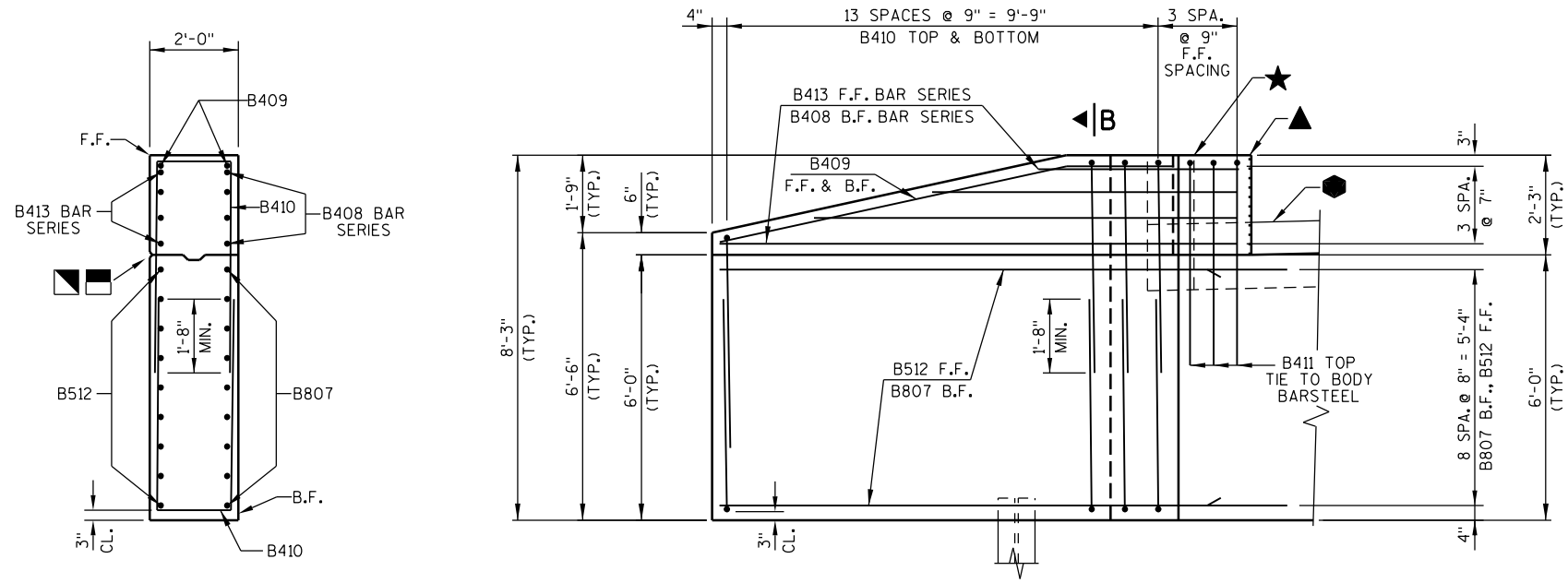
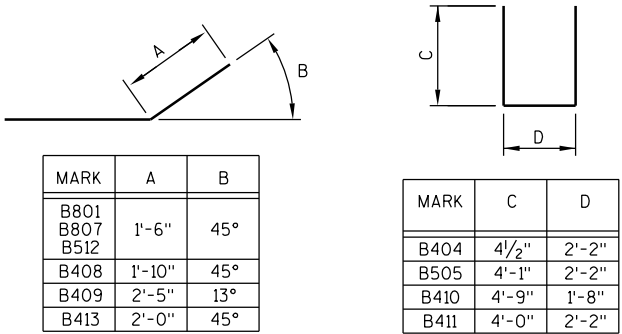
BILL OF BARS (NORTH ABUT.)

MARK	NUMBER COATED	REQUIRED UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION
B801	-	18	21'-6"	X		ABUTMENT BODY - B.F. - HORIZ.
B502	-	9	31'-0"			ABUTMENT BODY - F.F. - HORIZ.
B503	-	64	7'-0"	X		ABUTMENT BODY - F.F. & B.F. - VERT.
B404	-	24	2'-9"	X		ABUTMENT BODY - TIES - HORIZ.
B505	-	32	10'-1"	X		ABUTMENT BODY - TOP - VERT.
B506	25	-	2'-0"			ABUTMENT BODY - TOP - DOWEL - VERT.
B807	18	-	13'-2"	X		WINGS - B.F. - HORIZ.
B408	8	-	7'-0"	X	◊	WINGS - B.F. - HORIZ.
B409	4	-	10'-5"	X		WINGS - F.F. & B.F. - TOP - HORIZ.
B410	56	-	11'-0"	X		WINGS - TOP & BOTTOM - VERT.
B411	6	-	10'-0"	X		WINGS - TOP - VERT.
B512	18	-	11'-8"	X		WINGS - F.F. - HORIZ.
B413	8	-	8'-6"	X	◊	WINGS - F.F. - HORIZ.

⑤ - LENGTH SHOWN FOR BAR IS AN AVERAGE AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR MARK	NO. REQ'D.	LENGTH
B408	2 SERIES OF 4	3'-3" TO 10'-9"
B413	2 SERIES OF 4	4'-9" TO 12'-3"

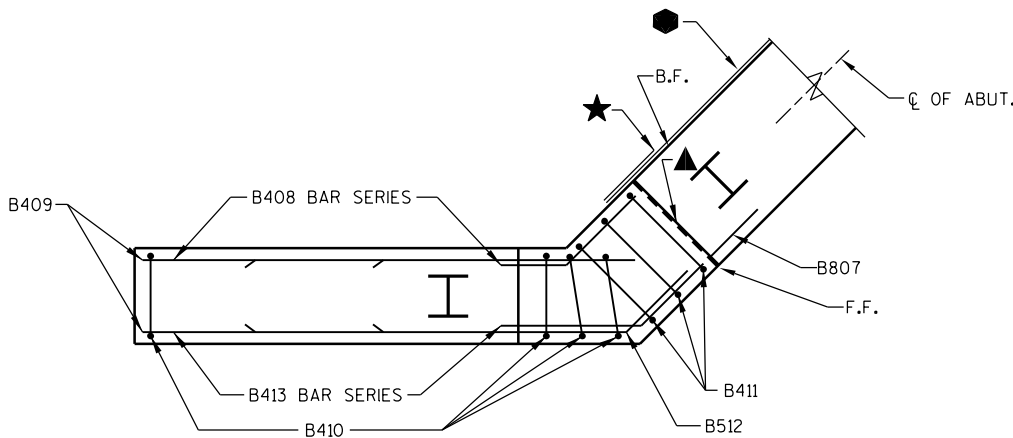
BAR SERIES TABLE



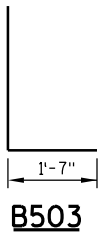
SECTION B-B THRU WING

◀|B
ELEVATION

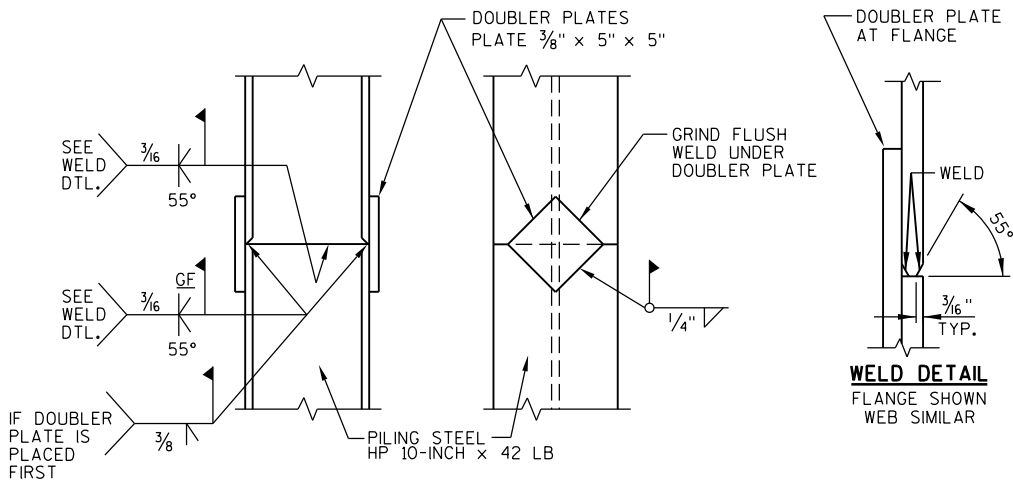
(LOOKING AT F.F. OF WING)



PLAN



NOTE:
WING 3 SHOWN,
WING 4 SIMILAR.



PILE SPLICE DETAILS

SEE LEGEND ON SHEET
6 FOR DESCRIPTION OF



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-10-231	
		DRAWN BY RLR	PLANS CK'D. JAS
NORTH ABUTMENT DETAILS		SHEET 7 OF 11	

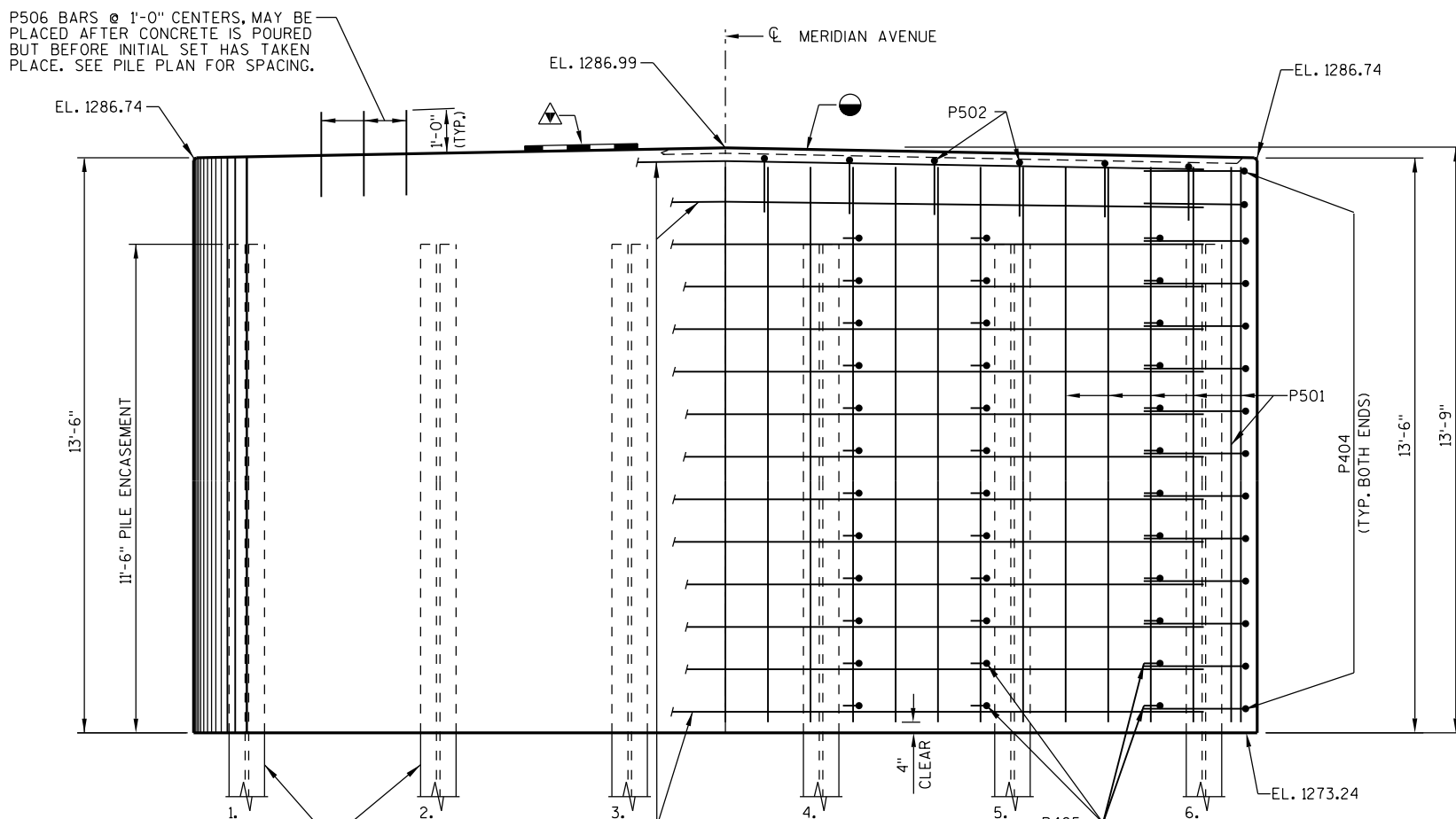
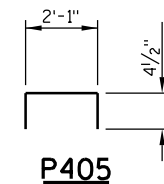
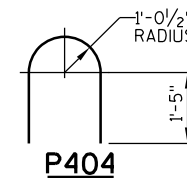
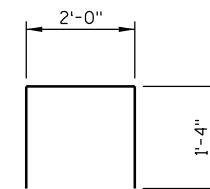
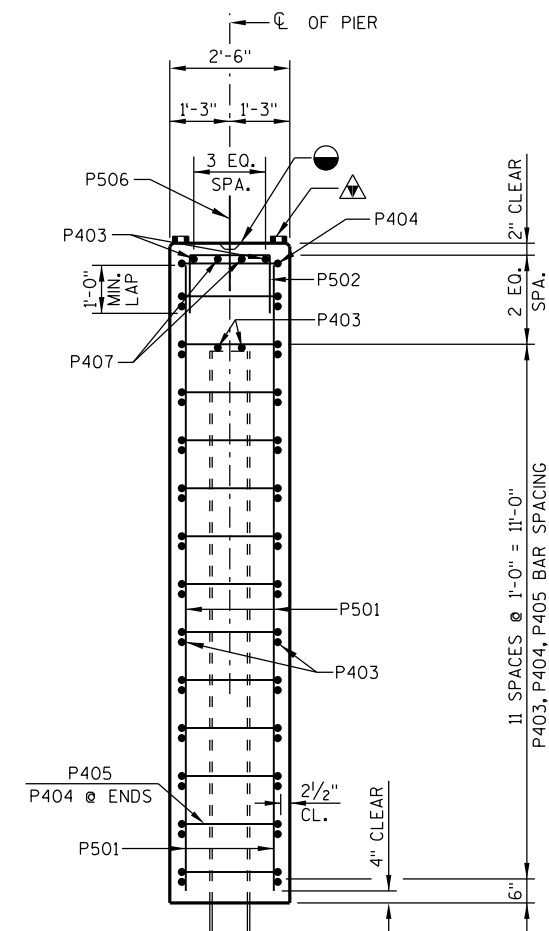
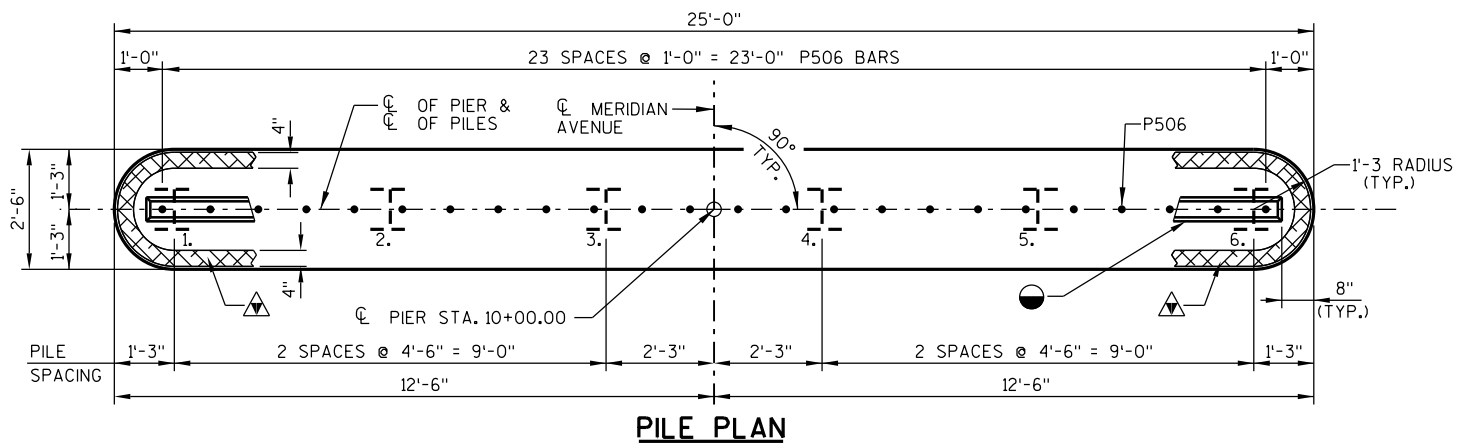
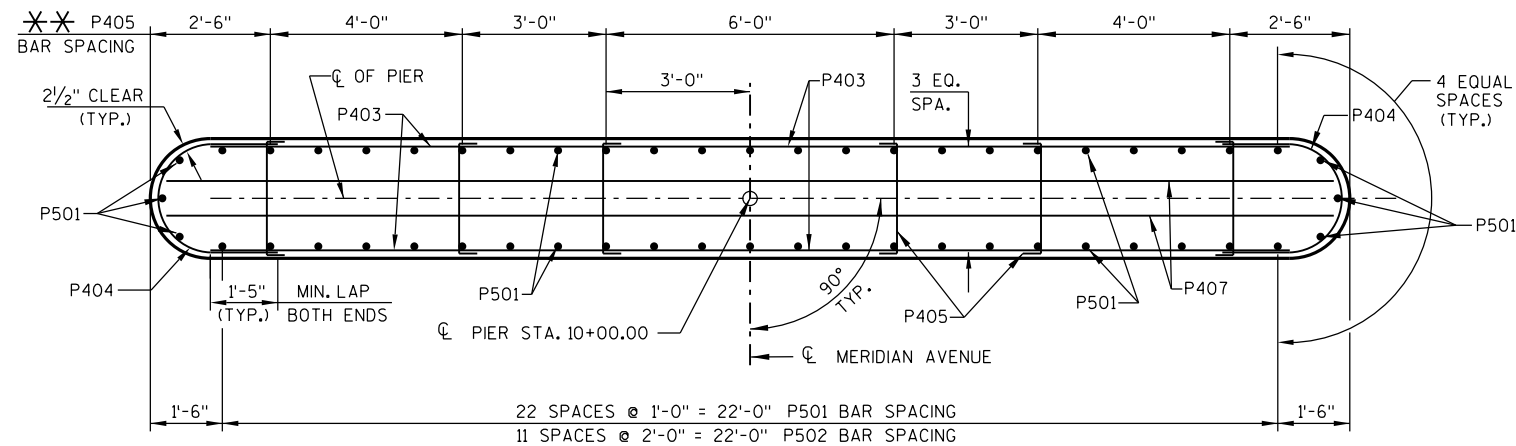
UNCOATED 1490 LBS.
COATED 50 LBS.

BILL OF BARS

MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
P501	52	13'-0"		PIER - VERT.
P502	12	4'-5"	X	PIER - STIRRUPS - TOP - VERT.
P403	30	22'-6"		PIER - TOP & SIDES - HORIZ.
P404	28	6'-1"	X	PIER - AT ENDS - HORIZ.
P405	72	2'-8"	X	PIER - TIES - HORIZ.
P506	24	2'-0"		PIER - DOWELS @ TOP - VERT.
P407	2	24'-4"		PIER - TOP - HORIZ.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

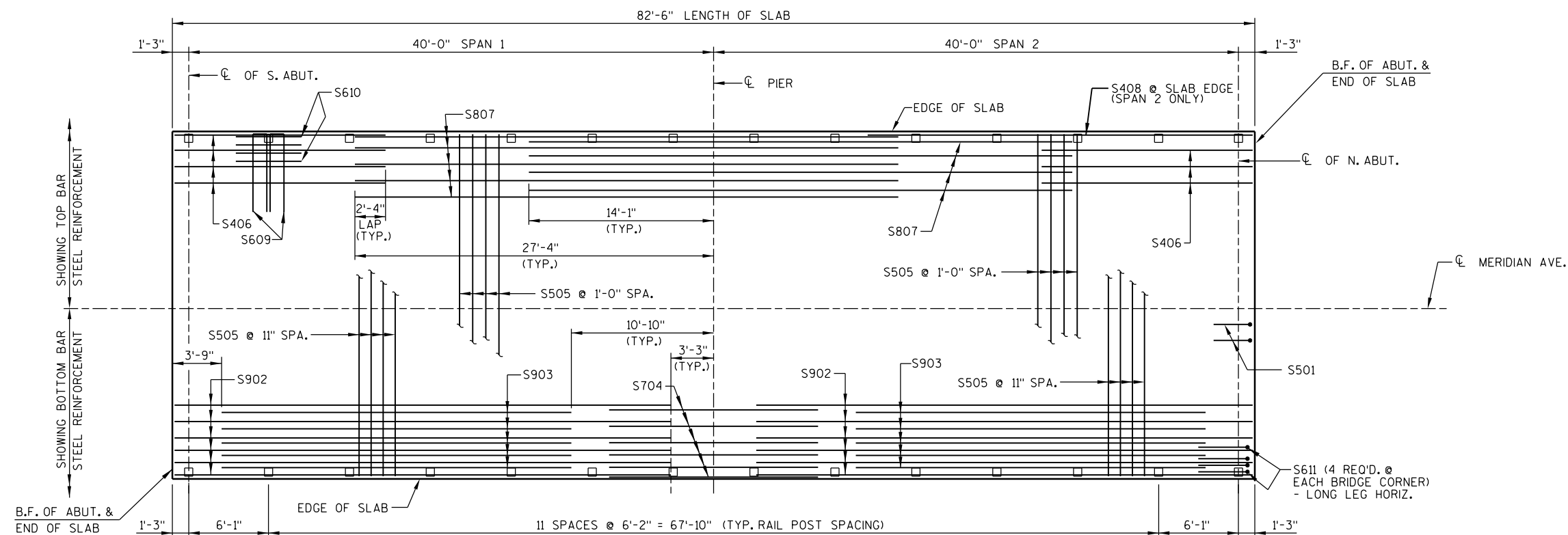
Ⓒ - THESE BARS SHALL BE EPOXY COATED.

PILING STEEL HP 10-INCH x 42 LB
ESTIMATED PILE LENGTHS 21'-0".**LEGEND**▲ - 4"x 3/4" FILLER, TYPICAL
ALL AROUND TOP EDGES
OF PIER.

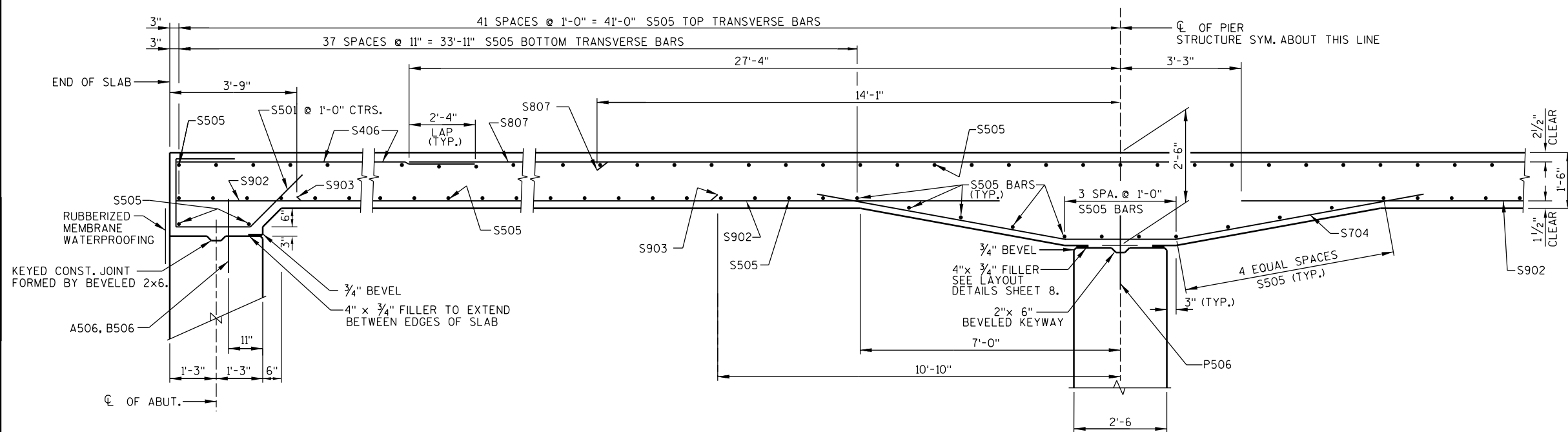
● - 2"x 6" BEVELED KEYWAY.

✱✱ - ADJACENT TO EACH
PILE ONE SIDE ONLY.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-231			
DRAWN BY RLR		PLANS CK'D. JAS	
PIER			SHEET 8 OF 11



PLAN



PART LONGITUDINAL SECTION

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-231			
DRAWN BY RLR		PLANS CK'D. JAS	
SUPERSTRUCTURE			SHEET 9 OF 11

GENERAL NOTES

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

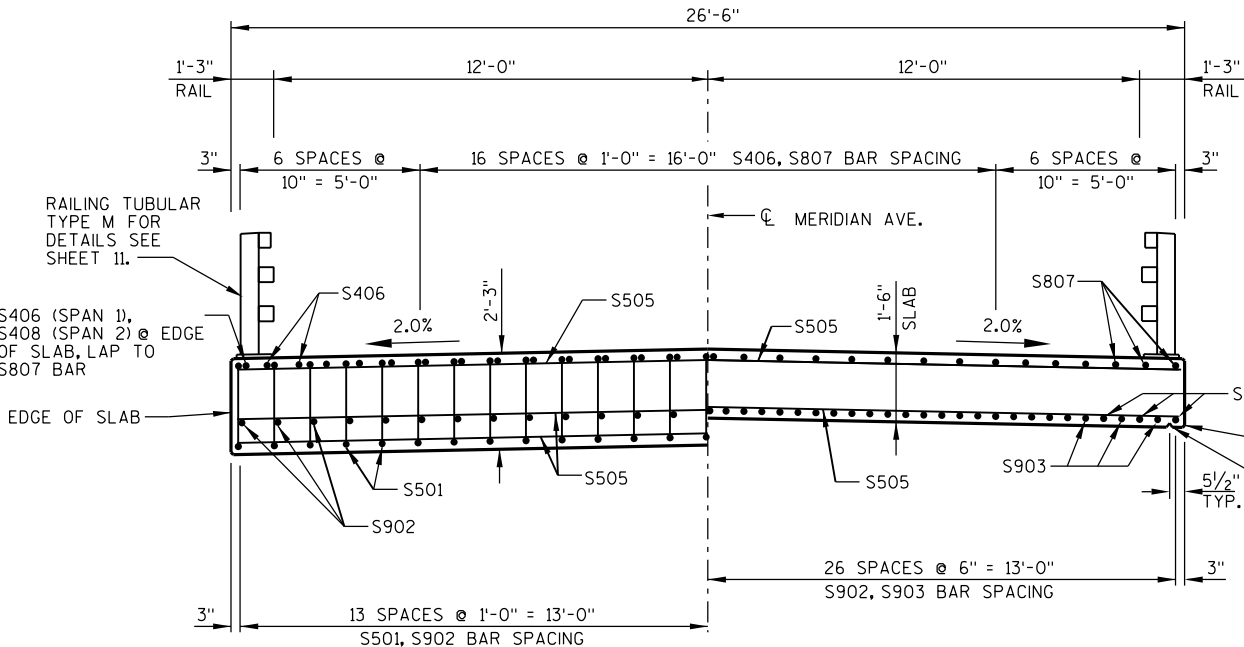
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

BILL OF BARS (COATED) 26,670 LBS.

MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
S501	54	7'-3"	X	HAUNCH @ ABUTS. - VERT.
S902	54	37'-10"		SLAB - BOTTOM - @ ABUTS. & IN SPAN - LONGIT.
S903	52	26'-8"		SLAB - BOTTOM - IN SPAN - LONGIT.
S704	27	16'-8"	X	HAUNCH OVER PIER - LONGIT.
S505	173	26'-2"		SLAB - TOP & BOTTOM - TRANS.
S406	56	16'-1"		SLAB - TOP - @ ABUTS. - LONGIT.
S807	57	41'-5"		SLAB - TOP - IN SPAN & OVER PIER - LONGIT.
S408	2	29'-4"		SLAB - TOP - EDGE OF SLAB - SPAN 2 - LONGIT.
S609	56	12'-0"	X	SLAB @ RAIL POST, 2 PER POST
S610	96	6'-0"		SLAB @ RAIL POST, 4 PER POST
S611	16	6'-0"	X	SLAB @ RAIL POST, 4 PER CORNER POST

EPOXY COAT ALL SUPERSTRUCTURE BAR STEEL.

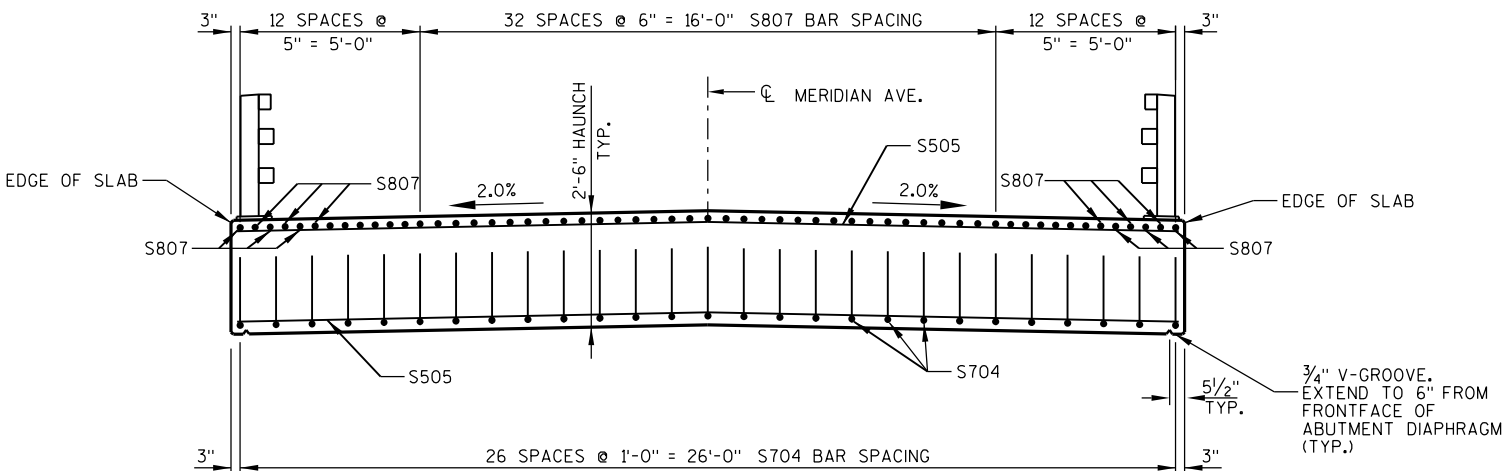
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



AT ABUTMENTS

IN SPAN

CROSS SECTION THRU BRIDGE
(LOOKING NORTH)

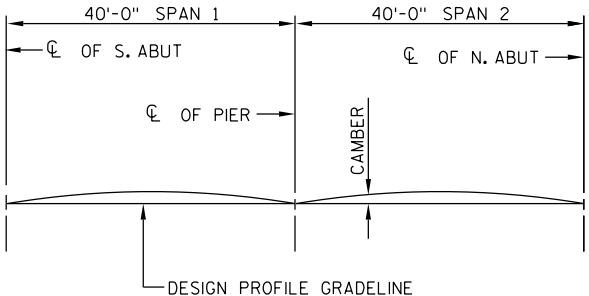


SECTION THRU BRIDGE AT PIER
(LOOKING NORTH)

SURVEY TOP OF SLAB ELEVATIONS

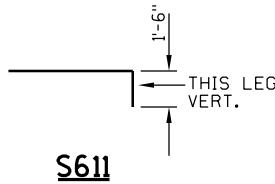
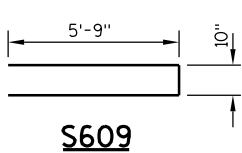
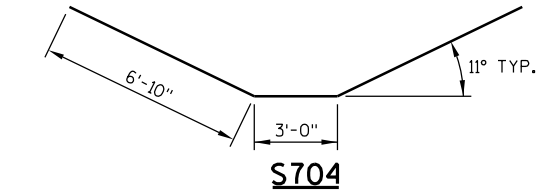
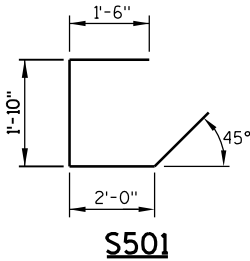
LOCATION	SPAN POINT	EAST SLAB EDGE	C/L MERIDIAN AVE	WEST SLAB EDGE
S. ABUT	1.0			
	1.5			
PIER	2.0			
	2.5			
N. ABUT	3.0			

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE C/L OF ABUTMENTS AND AT THE 0.5 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR C/L. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN ABOVE AND IN THE TABLE OF VALUES TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. DEAD LOAD DEFLECTION APPROXIMATES 1/3 OF CAMBER VALUES SHOWN.



TOP OF SLAB ELEVATIONS
AND CAMBER VALUES

LOCATION	EAST EDGE OF SLAB ELEV.	CL MERIDIAN AVENUE ELEV.	WEST EDGE OF SLAB ELEV.	CAMBER VALUE (INCHES)
S. ABUT.	1288.77	1289.03	1288.77	0.0
1/10	1288.81	1289.07	1288.81	0.2
2/10	1288.85	1289.12	1288.85	0.4
3/10	1288.90	1289.16	1288.90	0.5
4/10	1288.95	1289.21	1288.95	0.6
5/10	1289.00	1289.26	1289.00	0.5
6/10	1289.05	1289.31	1289.05	0.4
7/10	1289.10	1289.37	1289.10	0.3
8/10	1289.16	1289.43	1289.16	0.1
9/10	1289.22	1289.49	1289.22	0.0
PIER	1289.29	1289.55	1289.29	0.0
1/10	1289.35	1289.62	1289.35	0.0
2/10	1289.42	1289.69	1289.42	0.1
3/10	1289.49	1289.76	1289.49	0.3
4/10	1289.56	1289.83	1289.56	0.4
5/10	1289.64	1289.91	1289.64	0.5
6/10	1289.72	1289.98	1289.72	0.6
7/10	1289.80	1290.06	1289.80	0.5
8/10	1289.88	1290.15	1289.88	0.4
9/10	1289.97	1290.23	1289.97	0.2
N. ABUT.	1290.06	1290.32	1290.06	0.0

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE, FOLLOW THIS PROCEDURE:

- TOP OF SLAB ELEVATION AT FINAL GRADE
- SLAB THICKNESS
- + CAMBER
- + FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
- = TOP OF SLAB FALSEWORK ELEVATION

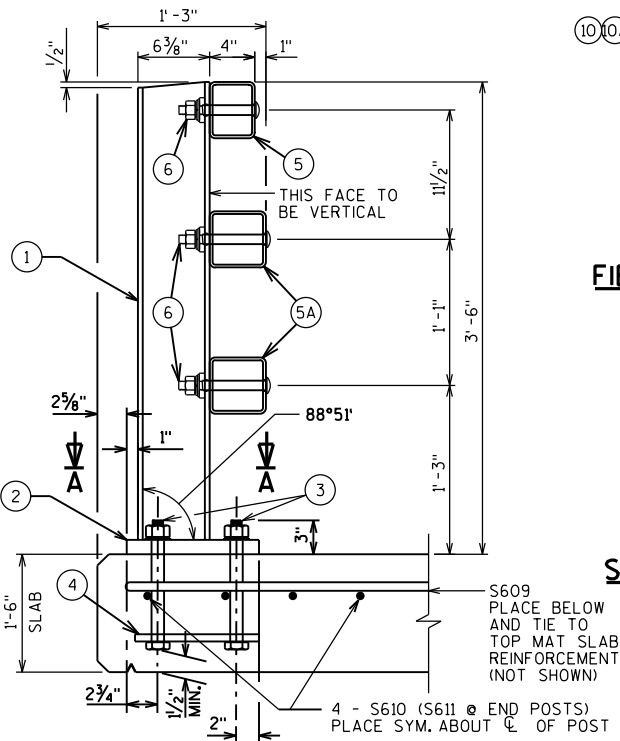
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-231			
DRAWN BY RLR		PLANS CK'D. JAS	
SUPERSTRUCTURE DETAILS		SHEET 10 OF 11	

LEGEND

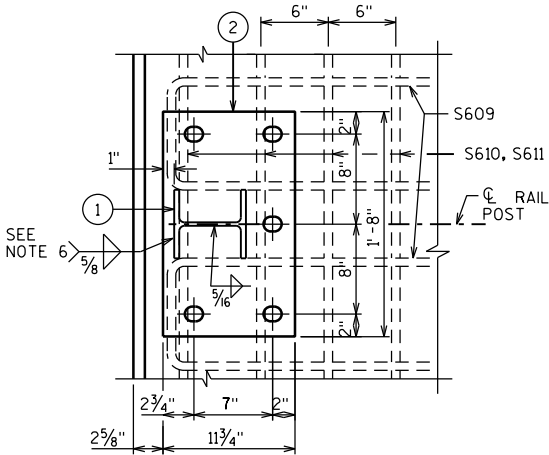
- ① W6 x 25 WITH 1/8" X 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1/4" X 11 3/4" X 1'-8" WITH 1 5/8" X 1 5/8" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ③ ASTM A449 - 1/6" 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'-3" LONG.
- ④ 5/8" X 11" X 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/8" DIA. HOLES FOR ANCHOR BOLTS NO. 3.
- ⑤ TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑤A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑥ 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/8" X 1 5/8" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION).
- * ⑦ 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" X 1 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT 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 1 5/8" X 1 1/4" LONGIT. SLOTTED HOLES AT FIELD 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" ANCHOR 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 REQUIRED).
- * 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

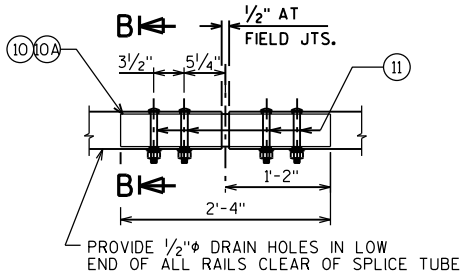
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-10-231" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR 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.
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 S.S.P.C. SPECIFICATIONS.
10. PAINTING IS NOT REQUIRED.
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
- * ⑫. DO NOT FURNISH ITEMS ⑦ ⑧ ⑫ ⑬ ⑭ AND ⑮. THRIE BEAM RAIL ATTACHMENT IS NOT INCLUDED.



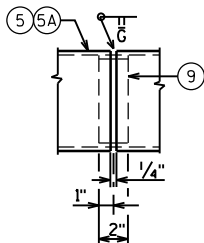
SECTION THRU RAILING ON SLAB



SECTION A-A

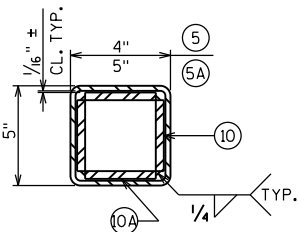


FIELD ERECTION JOINT DETAIL

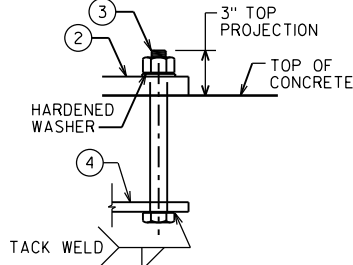


SHOP RAIL SPLICE DETAIL

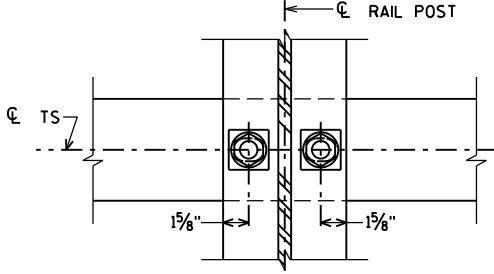
(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



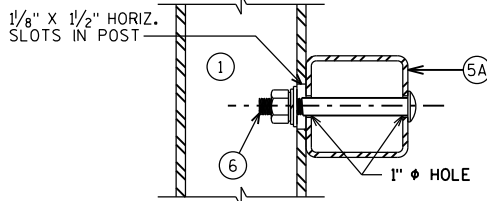
SECTION B-B



ANCHOR BOLTS



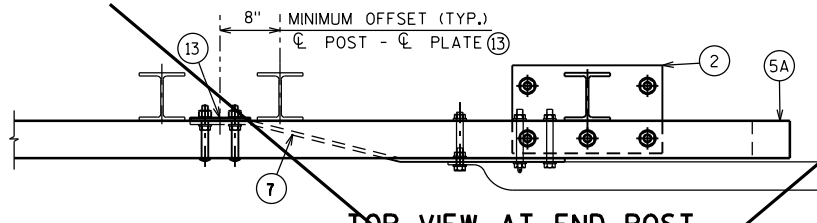
SECTION THRU POST WEB



SECTION THRU RAIL

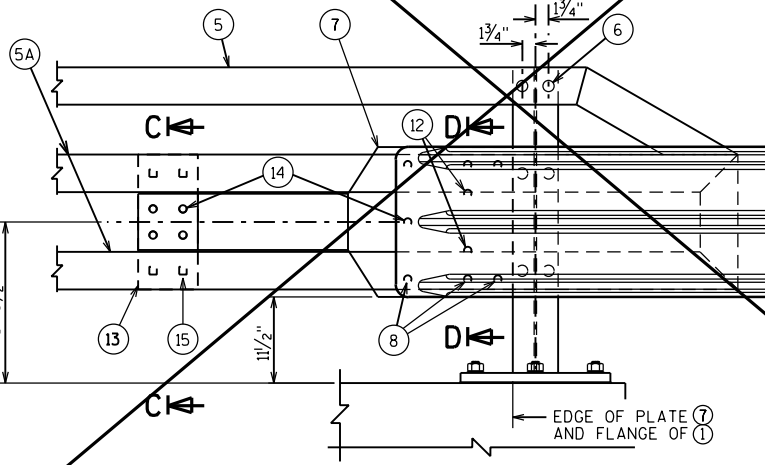
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

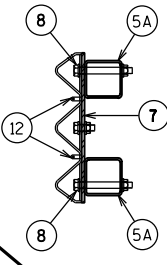


TOP VIEW AT END POST

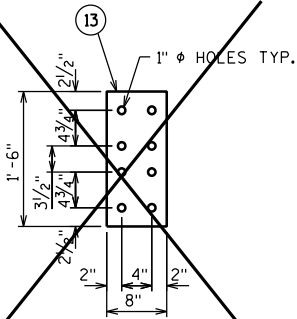
(THRIE BEAM RAIL ATTACHMENT)



SECTION C-C



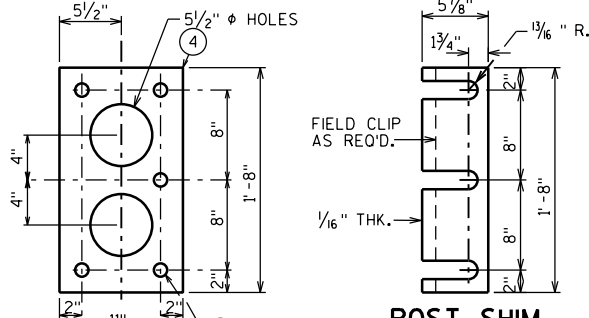
SECTION D-D



ANCHOR PLATE
AT BEAM GUARD ATTACHMENT

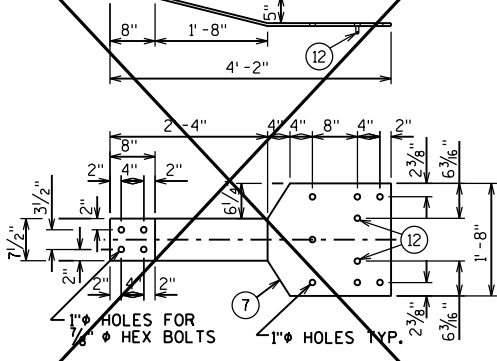
DETAIL AT END POST

(THRIE BEAM RAIL ATTACHMENT)



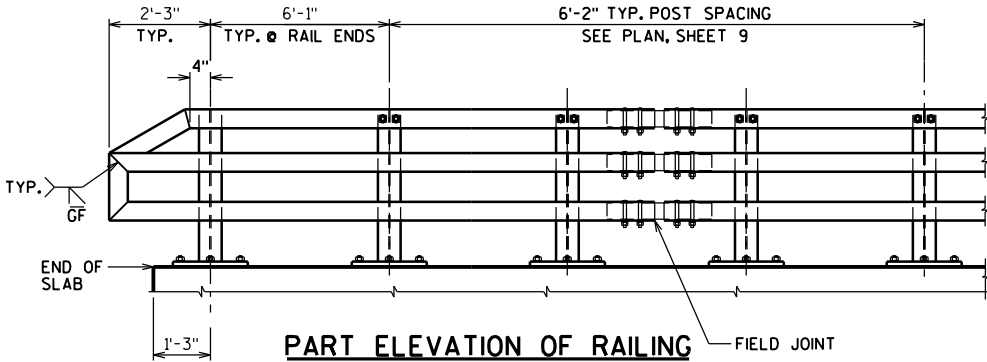
POST SHIM
DETAIL

ANCHOR PLATE
AT RAIL TO DECK ATTACHMENT



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

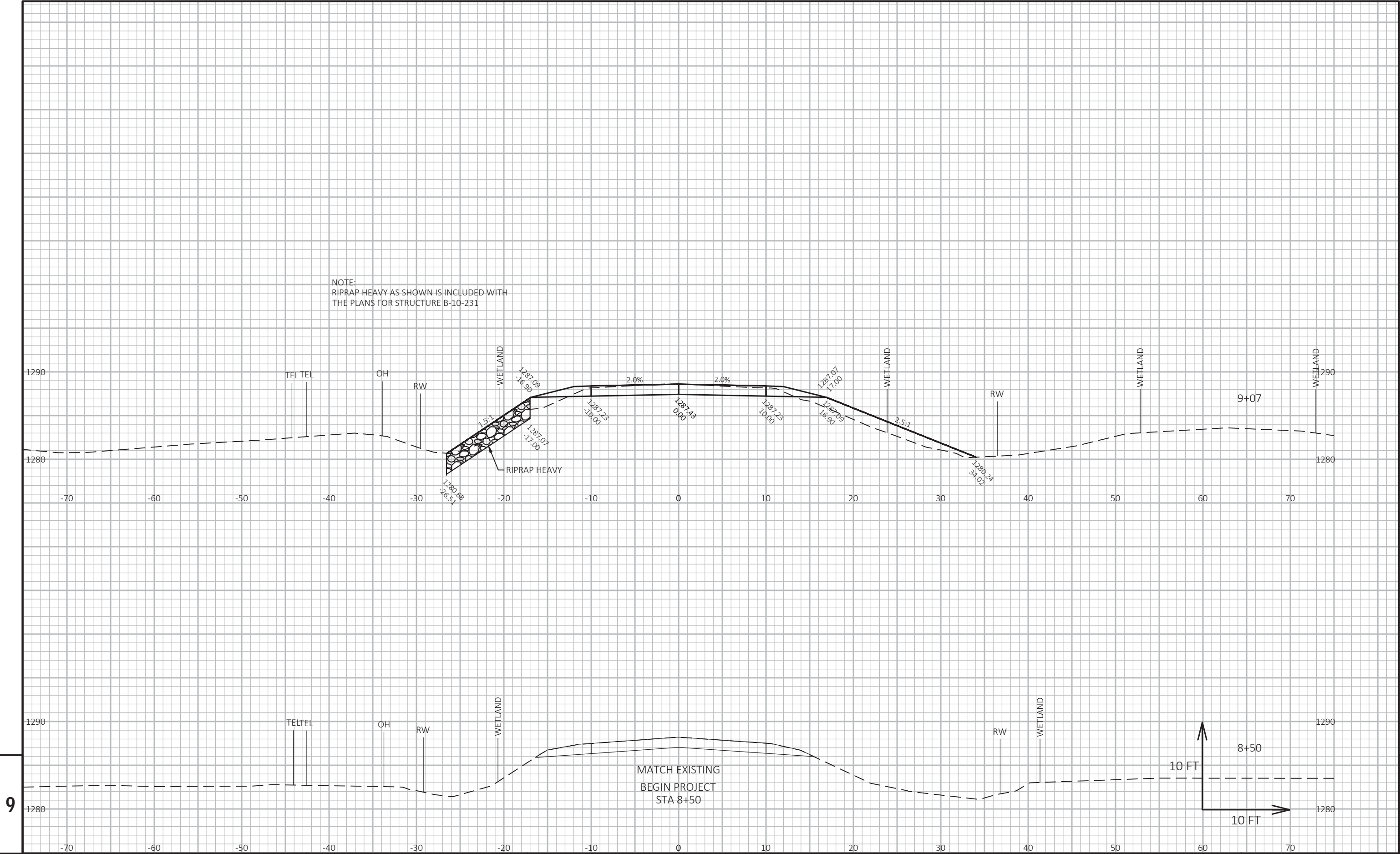
FIELD JOINT

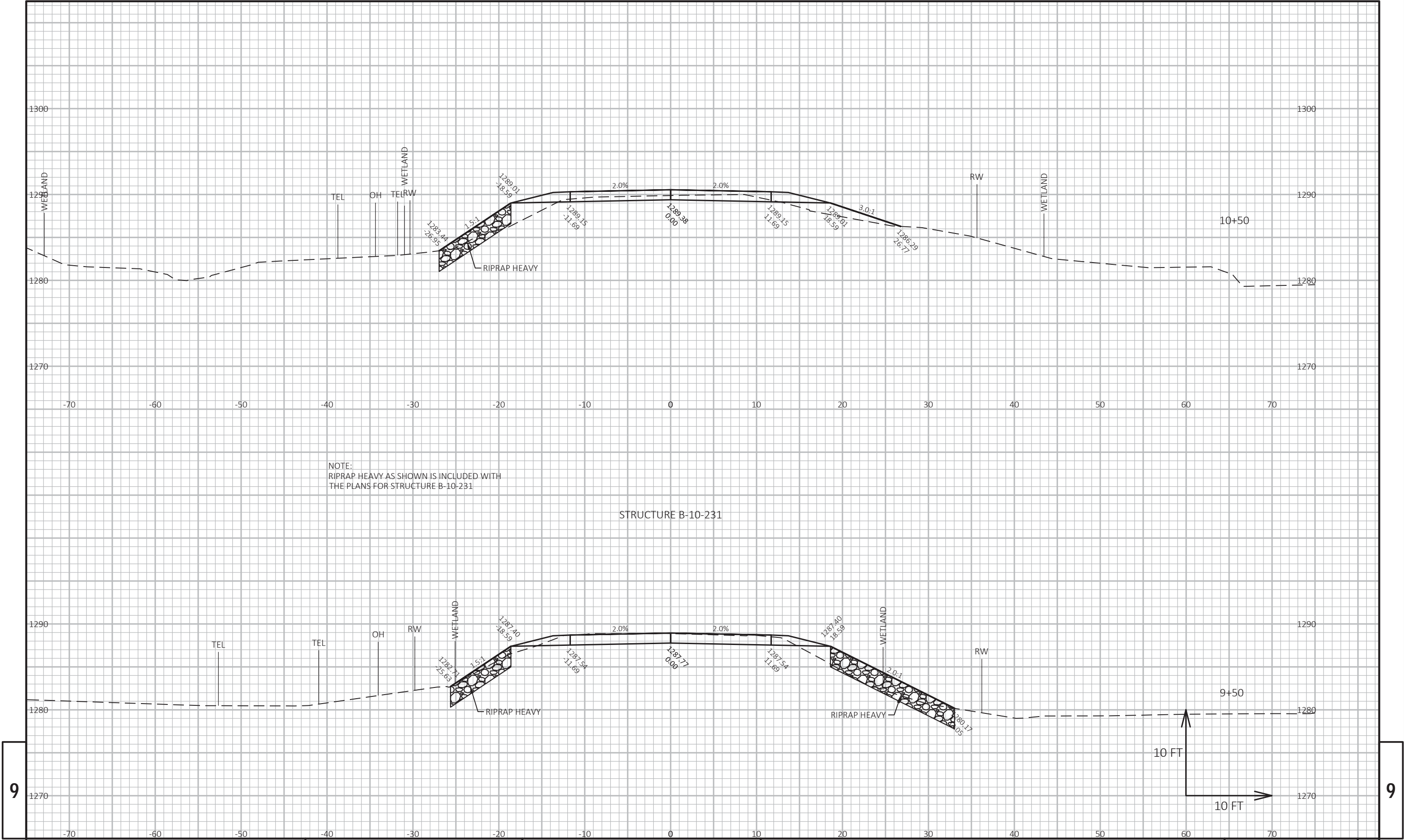
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-10-231	
DRAWN BY		RLR	PLANS CK'D. JAS
RAILING TUBULAR TYPE M		SHEET 11 OF 11	

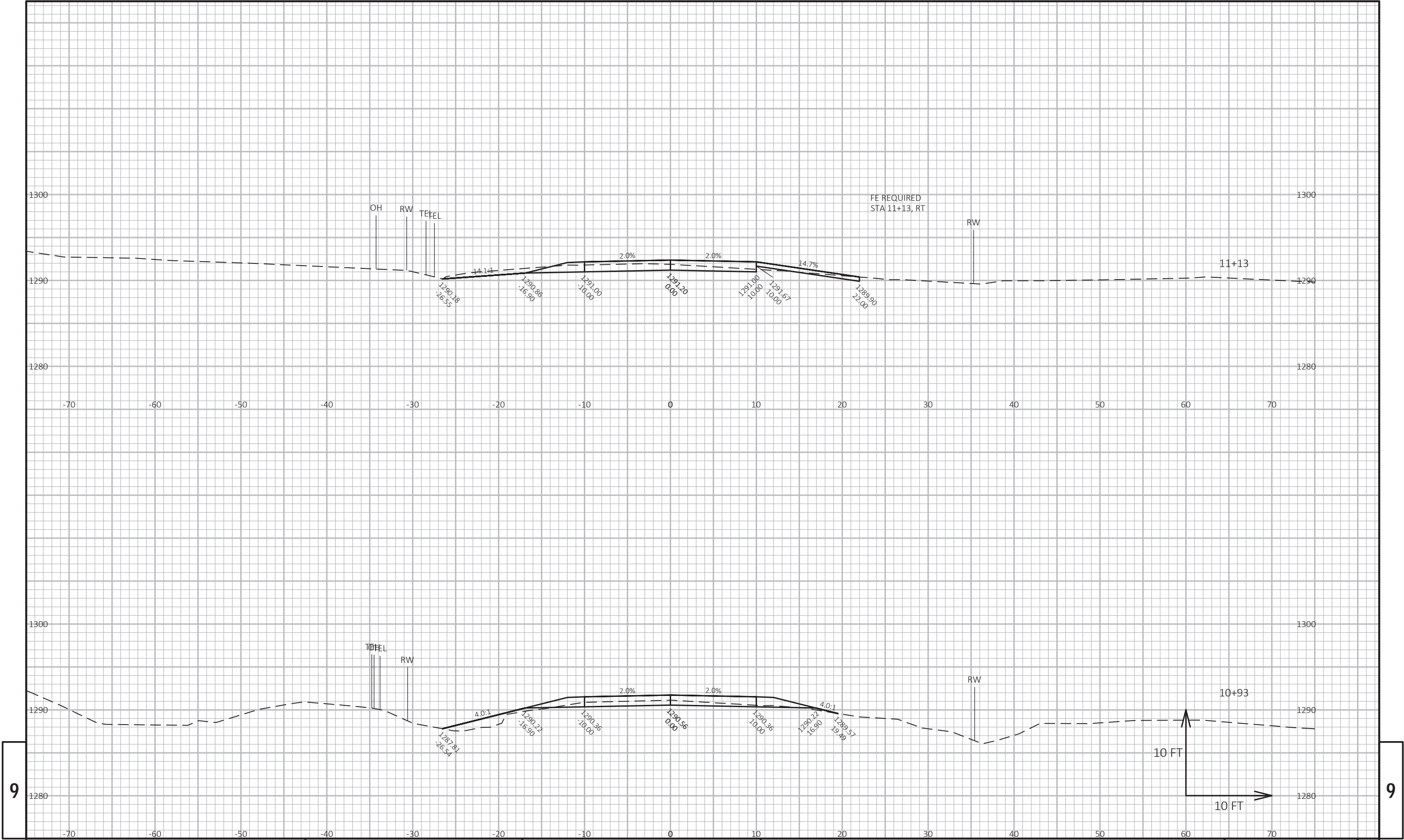
EARTHWORK PROJECT I.D. 7836-00-70

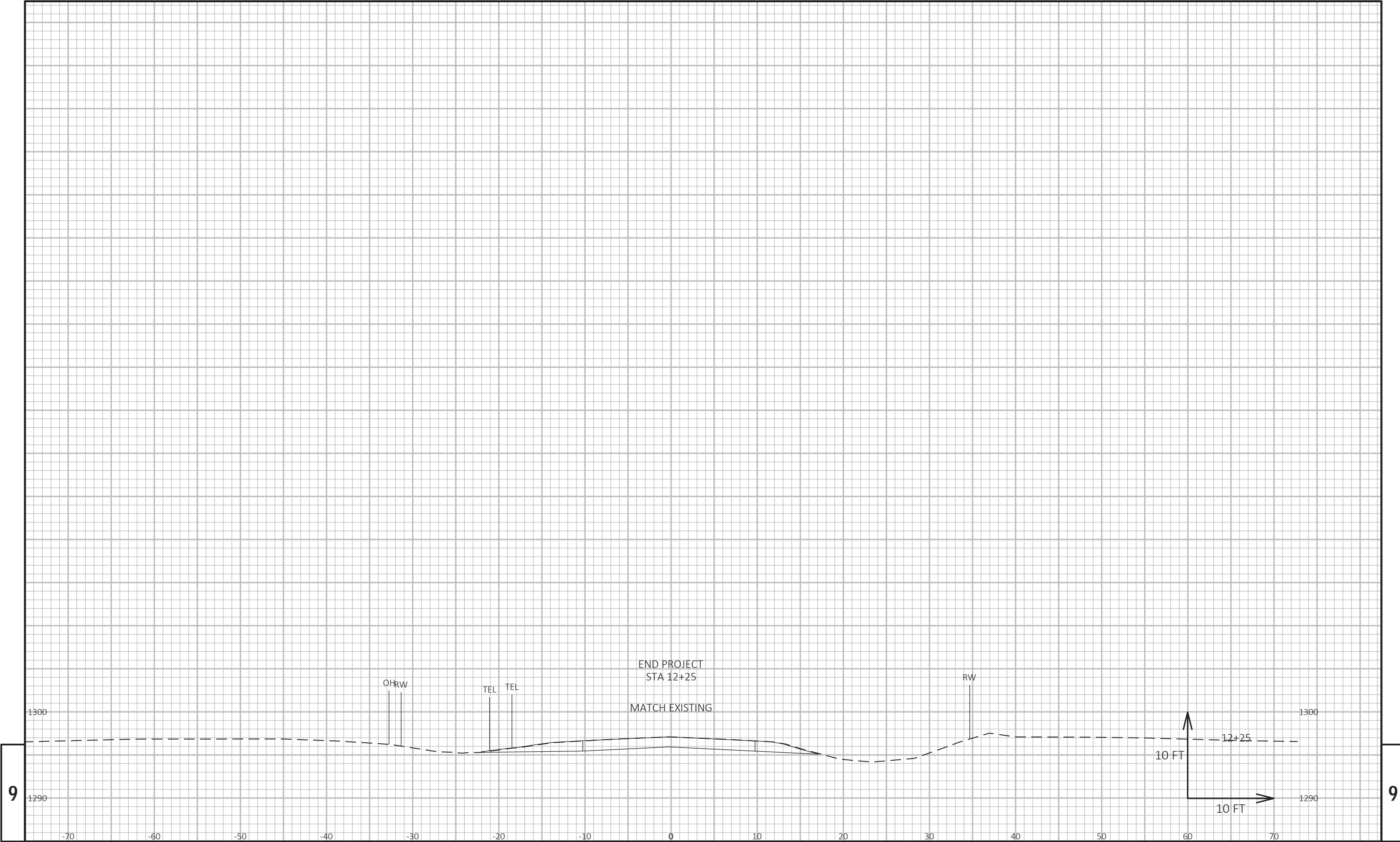
STATION	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
		Cut	Rock Exc	Fill	Cut	Rock Exc	Fill (1)	Cut 1.00	Expanded Fill 1.3	
8+50.00		33	0	0	0	0	0	0	0	0
9+07.00	57.00	25	0	24	61	0	25	61	33	28
9+50.00	43.00	31	0	5	45	0	23	106	63	43
9+58.75	8.75	31	0	5	10	0	2	116	65	51
STRUCTURE B-10-231										
10+41.25		18	0	18	0	0	0	0	0	0
10+50.00	8.75	22	0	18	7	0	6	7	8	-1
10+93.00	43.00	11	0	8	26	0	21	33	35	-2
11+13.00	20.00	22	0	1	12	0	3	45	39	6
11+64.00	51.00	26	0	1	45	0	2	90	42	49
12+00.00	36.00	31	0	1	38	0	1	128	43	85
12+25.00	25.00	38	0	0	32	0	0	160	44	117
					276	0	84			

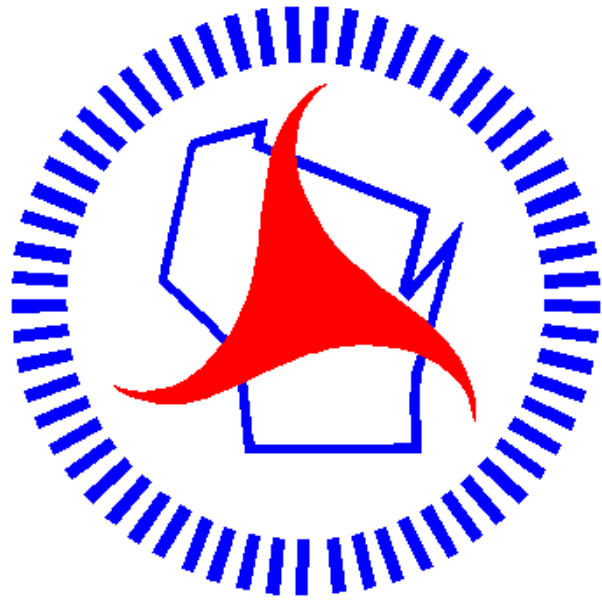
(1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSE ONLY











Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

<http://www.dot.wisconsin.gov>