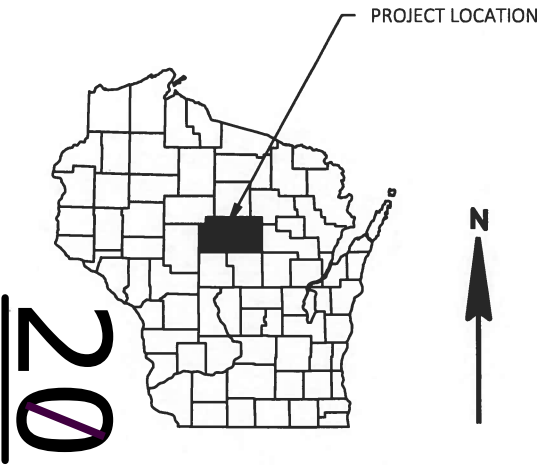


RHI
PROJECT ID: 9517-04-71
COUNTY: MARATHON

MAR 09, 2021
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 Plot
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 46



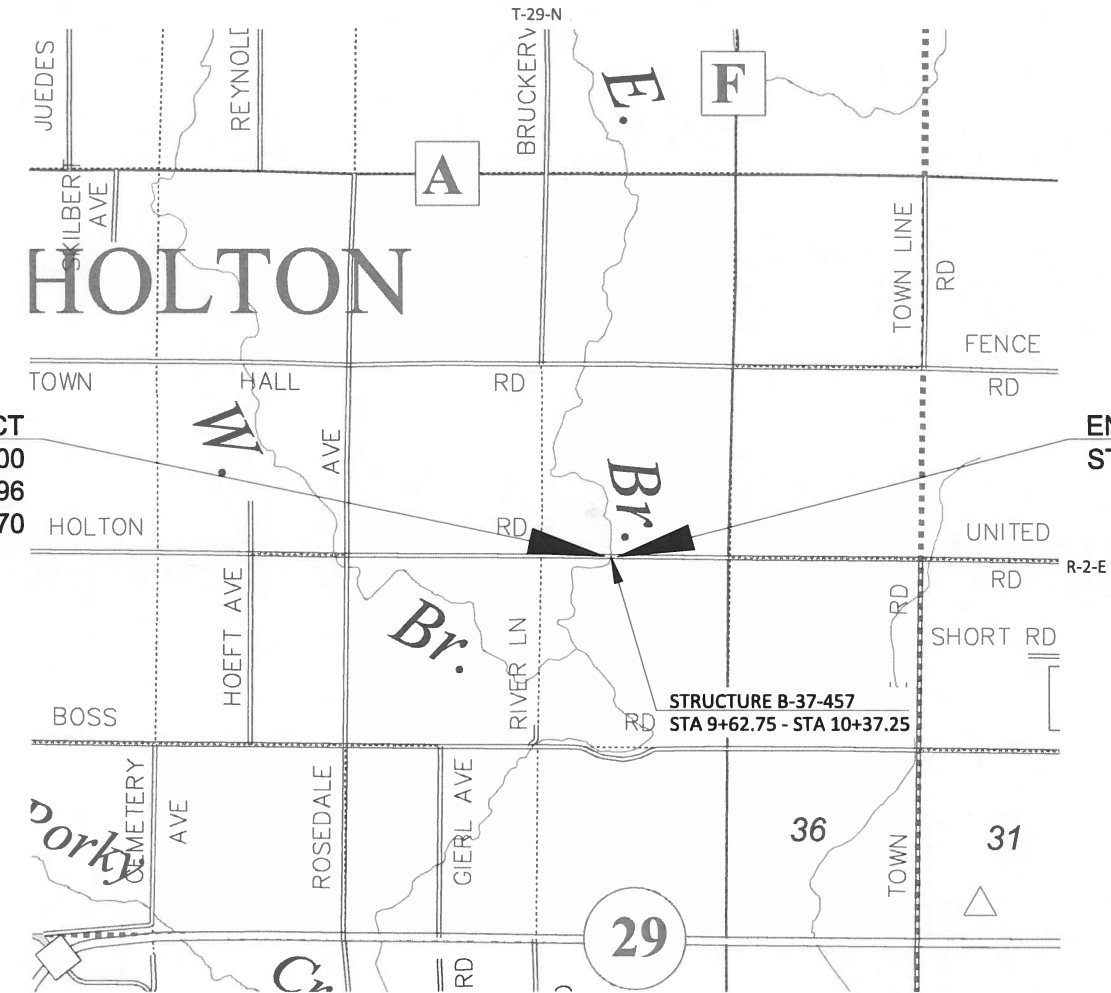
DESIGN DESIGNATION	9517-04-71
A.A.D.T.	2021 = 190
A.A.D.T.	2041 = 205
D.H.V.	= <10
D.D.	= 50/50
T.	= 6.6%
DESIGN SPEED	= 45 MPH
ESALS	= 30,000

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

BEGIN PROJECT
STA 9+25.00
Y=207,782.496
X=125,588.270



LAYOUT
SCALE 0 1 MI
TOTAL NET LENGTH OF CENTERLINE = 0.028

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT

STH 13 - CTH F
EAST BR BIG EAU PLEINE RIVER BRIDGE
LOC STR
MARATHON

STATE PROJECT NUMBER
9517-04-71

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9517-04-71	WISC 2021235	1

ACCEPTED FOR
TOWN OF HOLTON

Richard Gumz
Date: 10/20/2020
(Signature and Title of Official)
Town Chairman

ORIGINAL PLANS PREPARED BY
AECOM

Michelle M. Guoin
DATE: 10/1/2020
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor: DONALD BUZA
Designer: AECOM
Project Manager: MICHAEL GRAGE, P.E.
Regional Examiner: NA
Regional Supervisor: DAN ERVA, P.E.

APPROVED FOR THE DEPARTMENT
DATE: 10/23/2020
(Signature)

E

GENERAL NOTES

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

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

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS. IF EBS IS REQUIRED, IT SHALL BE MEASURED AND PAID FOR AS EXCAVATION COMMON. LOCATION FOR EBS WILL BE DETERMINED BY THE ENGINEER.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, AND EROSION MAT SHALL BE PLACED.

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 WITH ADJUSTMENT NAVD88 2011.

DISTANCES SHOWN ON THIS PLAN ARE GROUND DISTANCES.

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

THE WISCONSIN DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR AN ALUMINUM MONUMENT TO SET IN THE STRUCTURE AS DESIGNATED BY THE ENGINEER.

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL C (MAINLINE CLOSURE, NO POSTED DETOUR) FOR TRAFFIC CONTROL.

ASPHALTIC SURFACE SHALL BE CONSTRUCTED IN TWO 2-INCH LIFTS.

UTILITY CONTACTS

CAL KLADE
FRONTIER COMMUNICATIONS OF WI LLC
COMMUNICATION
521 4TH ST
WAUSAU, WI 54403
PHONE: 715-573-2110
EMAIL: calvin.klade@ftr.com

WADE MATYKA
TAYLOR ELECTRIC COOPERATIVE
OVERHEAD ELECTRIC
N1831 STATE HWY 13
MEDFORD, WI 54451
PHONE: 715-678-2411
EMAIL: wade@taylorelectric.org

WDNR CONTACT

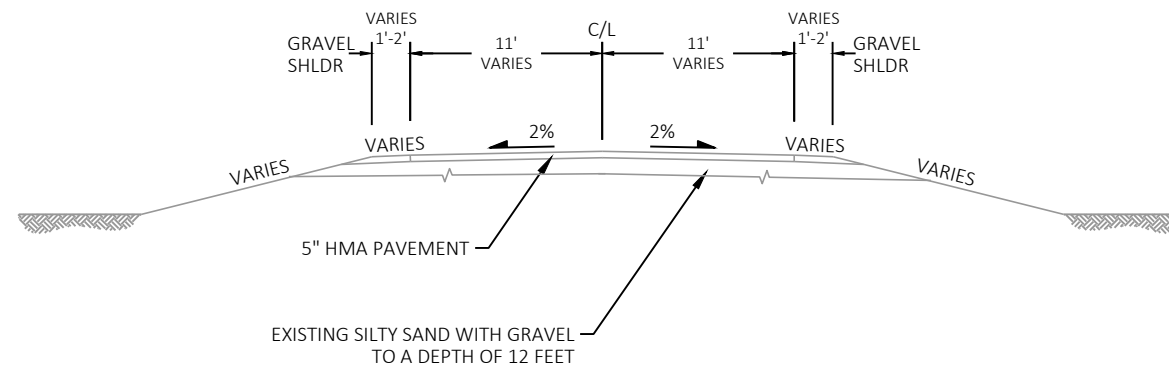
CASEY JONES
473 GRIFFITH AVE
WISCONSIN RAPIDS, WI 54494
PHONE: 715-213-6571
EMAIL: Casey.Jones@wisconsin.gov



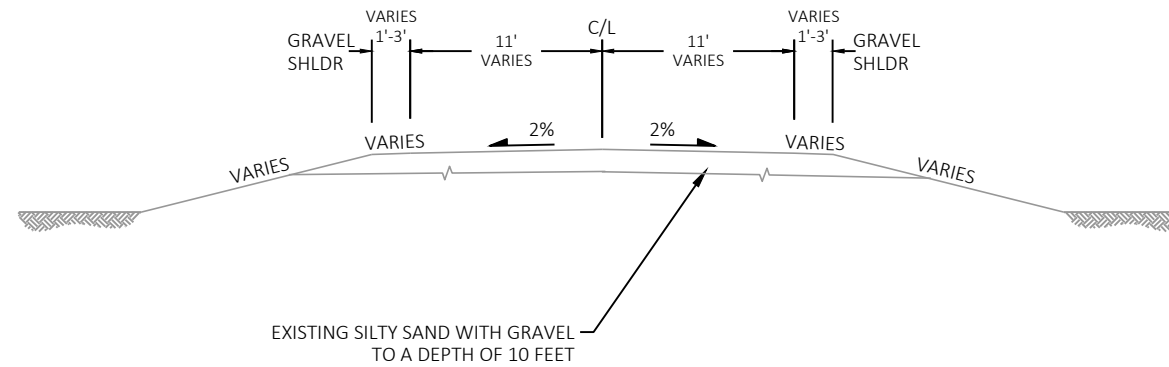
RUNOFF COEFFICIENT TABLE

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

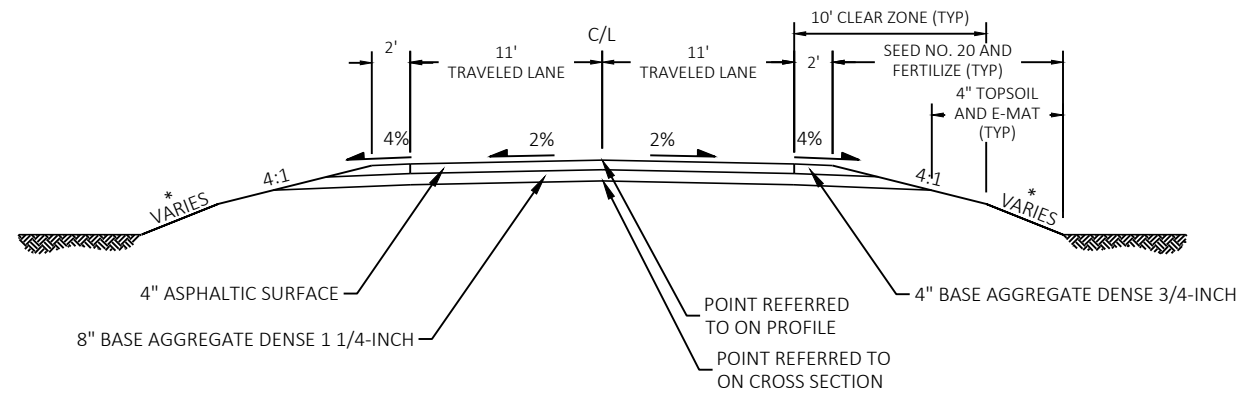
TOTAL PROJECT AREA = 0.227 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.138 ACRES



TYPICAL EXISTING SECTION
STA 9+25.00 - STA 9+74.03



TYPICAL EXISTING SECTION
STA 10+25.96 - STA 10+75.00



TYPICAL PROPOSED SECTION
STA 9+25.00 - STA 9+62.75
STA 10+37.25 - STA 10+75.00

* VARIES TO MATCH EXISTING DITCH
SLOPE OUTSIDE OF CLEAR ZONE

Estimate Of Quantities

9517-04-71					
Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	2.000	2.000
0004	201.0205	Grubbing	STA	2.000	2.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+00	LS	1.000	1.000
0008	205.0100	Excavation Common	CY	88.000	88.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-37-457	LS	1.000	1.000
0012	208.0100	Borrow	CY	106.000	106.000
0014	210.1500	Backfill Structure Type A	TON	280.000	280.000
0016	213.0100	Finishing Roadway (project) 01. 9517-04-71	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	15.000	15.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	135.000	135.000
0022	455.0605	Tack Coat	GAL	14.000	14.000
0024	465.0105	Asphaltic Surface	TON	44.000	44.000
0026	502.0100	Concrete Masonry Bridges	CY	193.000	193.000
0028	502.3200	Protective Surface Treatment	SY	315.000	315.000
0030	505.0400	Bar Steel Reinforcement HS Structures	LB	5,710.000	5,710.000
0032	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	27,410.000	27,410.000
0034	513.4061	Railing Tubular Type M	LF	150.000	150.000
0036	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0038	550.0020	Pre-Boring Rock or Consolidated Materials	LF	192.000	192.000
0040	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	330.000	330.000
0042	606.0300	Riprap Heavy	CY	140.000	140.000
0044	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	140.000	140.000
0046	618.0100	Maintenance And Repair of Haul Roads (project) 01. 9517-04-71	EACH	1.000	1.000
0048	619.1000	Mobilization	EACH	1.000	1.000
0050	624.0100	Water	MGAL	2.400	2.400
0052	625.0100	Topsoil	SY	400.000	400.000
0054	628.1504	Silt Fence	LF	365.000	365.000
0056	628.1520	Silt Fence Maintenance	LF	365.000	365.000
0058	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0060	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0062	628.2027	Erosion Mat Class II Type C	SY	400.000	400.000
0064	628.6005	Turbidity Barriers	SY	345.000	345.000
0066	628.7504	Temporary Ditch Checks	LF	15.000	15.000
0068	629.0210	Fertilizer Type B	CWT	0.250	0.250
0070	630.0120	Seeding Mixture No. 20	LB	8.500	8.500
0072	630.0500	Seed Water	MGAL	9.000	9.000
0074	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000

Estimate Of Quantities

9517-04-71					
Line	Item	Item Description	Unit	Total	Qty
0076	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0078	638.2602	Removing Signs Type II	EACH	4.000	4.000
0080	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0082	642.5001	Field Office Type B	EACH	1.000	1.000
0084	643.0420	Traffic Control Barricades Type III	DAY	1,404.000	1,404.000
0086	643.0705	Traffic Control Warning Lights Type A	DAY	2,808.000	2,808.000
0088	643.0900	Traffic Control Signs	DAY	1,092.000	1,092.000
0090	643.5000	Traffic Control	EACH	1.000	1.000
0092	645.0111	Geotextile Type DF Schedule A	SY	100.000	100.000
0094	645.0120	Geotextile Type HR	SY	320.000	320.000
0096	650.4500	Construction Staking Subgrade	LF	76.000	76.000
0098	650.5000	Construction Staking Base	LF	76.000	76.000
0100	650.6500	Construction Staking Structure Layout (structure) 01. B-37-457	LS	1.000	1.000
0102	650.9910	Construction Staking Supplemental Control (project) 01. 9517-04-71	LS	1.000	1.000
0104	650.9920	Construction Staking Slope Stakes	LF	76.000	76.000
0106	690.0150	Sawing Asphalt	LF	22.000	22.000
0108	715.0502	Incentive Strength Concrete Structures	DOL	1,158.000	1,158.000
0110	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0112	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/ UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (6)	MASS ORDINATE +/- (7)	208.0100 BORROW	COMMENT
			CUT (2)	EBS EXCAVATION				FACTOR 1.25			
MAINLINE											
	9+25 to 10+75	Mainline	88	0	0	88 0 0 0	155	194 0 0 0	-106 0 0 0	-106	
DIVISION 1 SUBTOTAL			88	0	0	88	155	194	-106		
GRAND TOTAL			88	0	0	88	155	194	-106	106	
TOTAL COMMON EXC			88								

NOTES:
(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
(2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
(3) EBS EXCAVATION TO BE BACKFILLED WITH SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL.
(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
(5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
(6) EXPANDED FILL FACTOR = 1.25
DEPENDING ON SELECTIONS: **EXPANDED FILL = (UNEXPANDED FILL) * FILL FACTOR**
(7) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

3

3

CLEARING AND GRUBBING

				201.0150 CLEARING	201.0205 GRUBBING
STATION	-	STATION	LOCATION	STA	STA
9+25	-	9+63	LT	1	1
10+37	-	10+75	LT	1	1
PROJECT 9517-04-71 TOTAL				2	2

FINISHING ROADWAY

		213.0100 FINISHING ROADWAY
PROJECT		EACH
9517-04-71		1
PROJECT 9517-04-71 TOTAL		1

SAWING ASPHALT

		690.0150 SAWING ASPHALT
STATION - STATION	LOCATION	LF
9+25	HOLTON ROAD, BEGIN PROJECT	22
PROJECT 9517-04-71 TOTAL		22

BASE AGGREGATE DENSE

				305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	624.0100 WATER MGAL
STATION - STATION		LOCATION				
9+25 - 9+63		HOLTON RD, MAINLINE		5	60	0.7
10+37 - 10+75		HOLTON RD, MAINLINE		5	60	0.7
9517-04-71		UNDISTRIBUTED		5	15	1.0
PROJECT 9517-04-71 TOTAL				15	135	2.4

ASPHALTIC ITEMS

				455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
STATION - STATION		LOCATION			
9+25 - 9+63		HOLTON RD, MAINLINE		7	22
10+37 - 10+75		HOLTON RD, MAINLINE		7	22
PROJECT 9517-04-71 TOTAL				14	44

MAINTENANCE AND REPAIR OF HAUL ROADS

		(CAT 0030) 618.0100 MAINTENANCE AND REPAIR OF HAUL ROADS EACH
PROJECT		
9517-04-71		1
PROJECT 9517-04-71 TOTAL		1

MOBILIZATION

		619.1000 MOBILIZATION EACH
PROJECT		
9517-04-71		1
PROJECT 9517-04-71 TOTAL		1

EROSION CONTROL MOBILIZATION

		628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL EACH
PROJECT			
9517-04-71		2	2
UNDISTRIBUTED		1	1
PROJECT 9517-04-71 TOTAL		3	3

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

3

CONSTRUCTION STAKING

			650.4500	650.5000	(CAT 0020) 650.6500	650.9910	650.9920
			CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING BASE	CONSTRUCTION STAKING STRUCTURE LAYOUT B-37-457	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL 9517-04-71	CONSTRUCTION STAKING SLOPE STAKES
STATION	-	STATION	LF	LF	LS	LS	LF
9+25	-	9+63	38	38	---	---	38
10+37	-	10+75	38	38	---	---	38
PROJECT			---	---	1	1	0
PROJECT 9517-04-71 TOTAL			76	76	1	1	76

TRAFFIC CONTROL

		643.0420		643.0705		643.0900	
		TRAFFIC CONTROL BARRICADES		TRAFFIC CONTROL WARNING LIGHTS		TRAFFIC CONTROL SIGNS	
		TYPE III		TYPE A			
LOCATION	DAYS IN SERVICE	NO.	DAY	NO.	DAY	NO.	DAY
9517-04-71	78	18	1,404	36	2,808	14	1,092
PROJECT 9517-04-71 TOTAL			1,404		2,808		1,092

3

LANDSCAPING

				625.0100	628.0207	629.0210	630.0120	630.0500
				TOPSOIL	EROSION MAT	FERTILIZER	SEEDING	SEED
					CLASS II TYPE C	TYPE B	MIXTURE NO. 20	WATER
STATION	-	STATION	LOCATION	SY	SY	CWT	LB	MGAL
9+25	-	9+63	LT	88	88	0.05	2.4	2.0
9+25	-	9+63	RT	79	79	0.05	2.2	1.8
10+37	-	10+75	LT	78	78	0.05	2.1	1.8
10+37	-	10+75	RT	69	69	0.04	0.1	1.5
9517-04-71		UNDISTRIBUTED		86	86	0.05	1.7	1.9
PROJECT 9517-04-71 TOTAL				400	400	0.25	8.5	9.0

EROSION CONTROL

				628.1504	628.1520	628.6005	628.7504
				SILT FENCE	SILT FENCE	TURBIDITY BARRIERS	TEMPORARY DITCH CHECKS
				MAINTENANCE			
STATION	-	STATION	OFFSET	LF	LF	SY	LF
9+25	-	9+63	LT	79	79	---	---
9+25	-	9+63	RT	85	85	---	10
10+37	-	10+75	LT	78	78	---	---
10+37	-	10+75	RT	86	86	---	---
WEST APPROACH				---	---	100	---
PIER				---	---	98	---
EAST APPROACH				---	---	113	---
UNDISTRIBUTED				37	37	34	5
PROJECT 9517-04-71 TOTAL				365	365	345	15

PERMANENT SIGNING

			634.0614	637.2230	638.2602	638.3000	REMARKS
			POSTS WOOD 4X6-INCH 14-FT EACH	SIGNS TYPE II REFLECTIVE F SF	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
STATION	OFFSET	SIGN CODE					
9+64	RT	W5-52R	1	3.00	1	1	BRIDGE HASH MARKS
9+64	LT	W5-52L	1	3.00	1	1	BRIDGE HASH MARKS
10+36	RT	W5-52R	1	3.00	1	1	BRIDGE HASH MARKS
10+36	LT	W5-52L	1	3.00	1	1	BRIDGE HASH MARKS
PROJECT 9517-04-71 TOTAL			4	12.00	4	4	

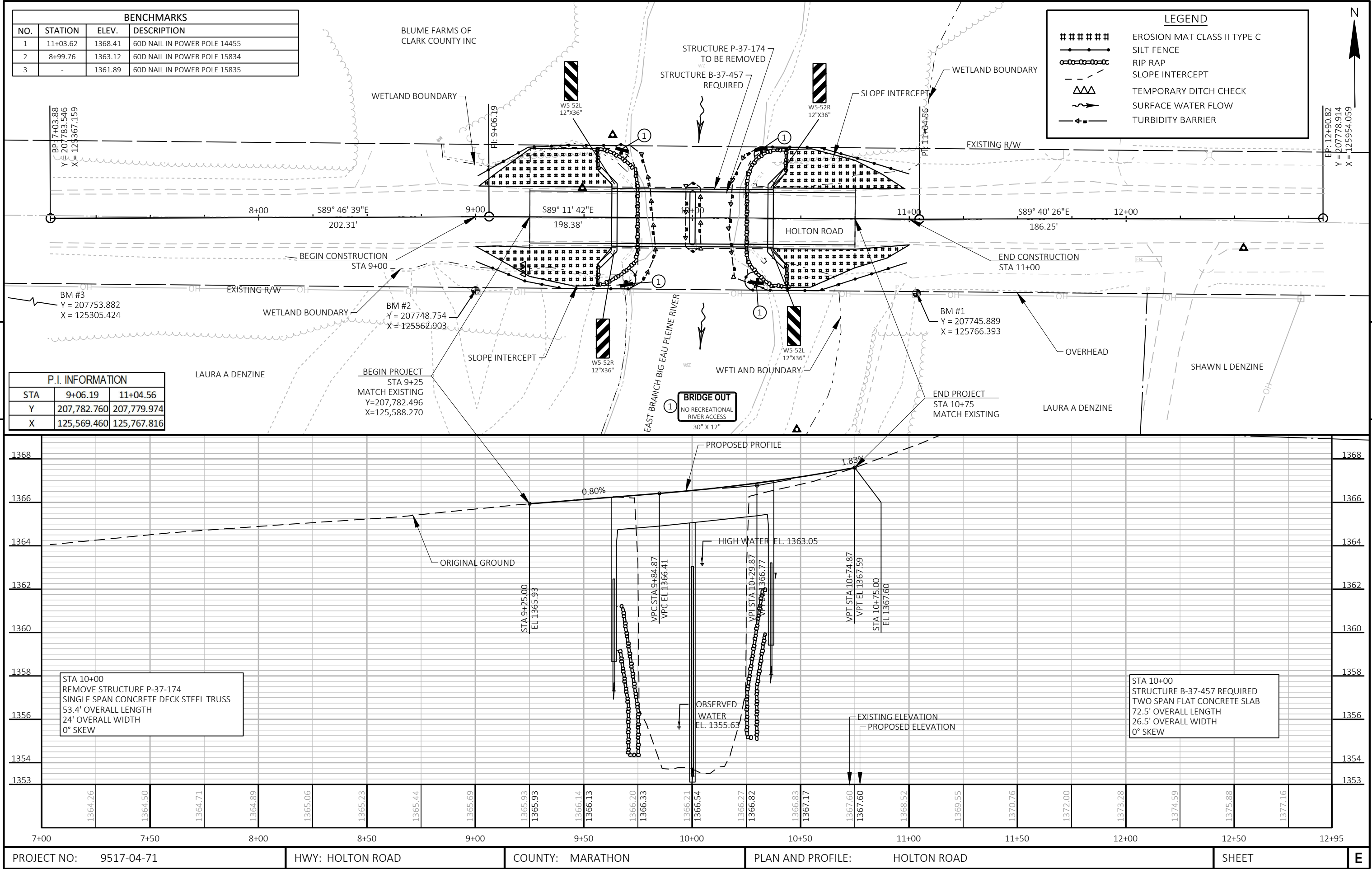
TRAFFIC CONTROL

		643.5000
		TRAFFIC CONTROL EACH
PROJECT		
9517-04-71		1
PROJECT 9517-04-71 TOTAL		1

FIELD OFFICE

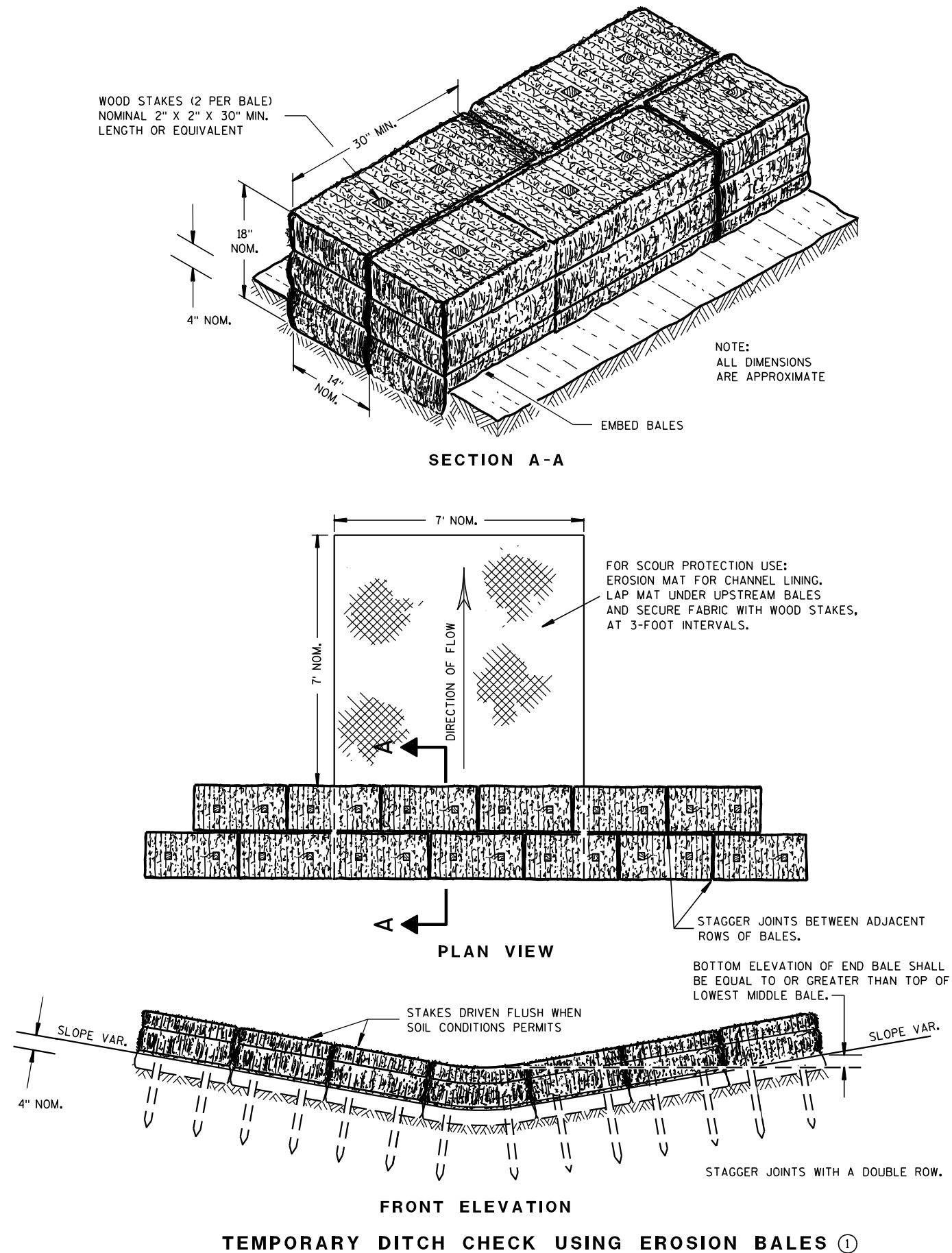
		642.5001
		TYPE B EACH
PROJECT		
9517-04-71		1
PROJECT 9517-04-71 TOTAL		1

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.



Standard Detail Drawing List

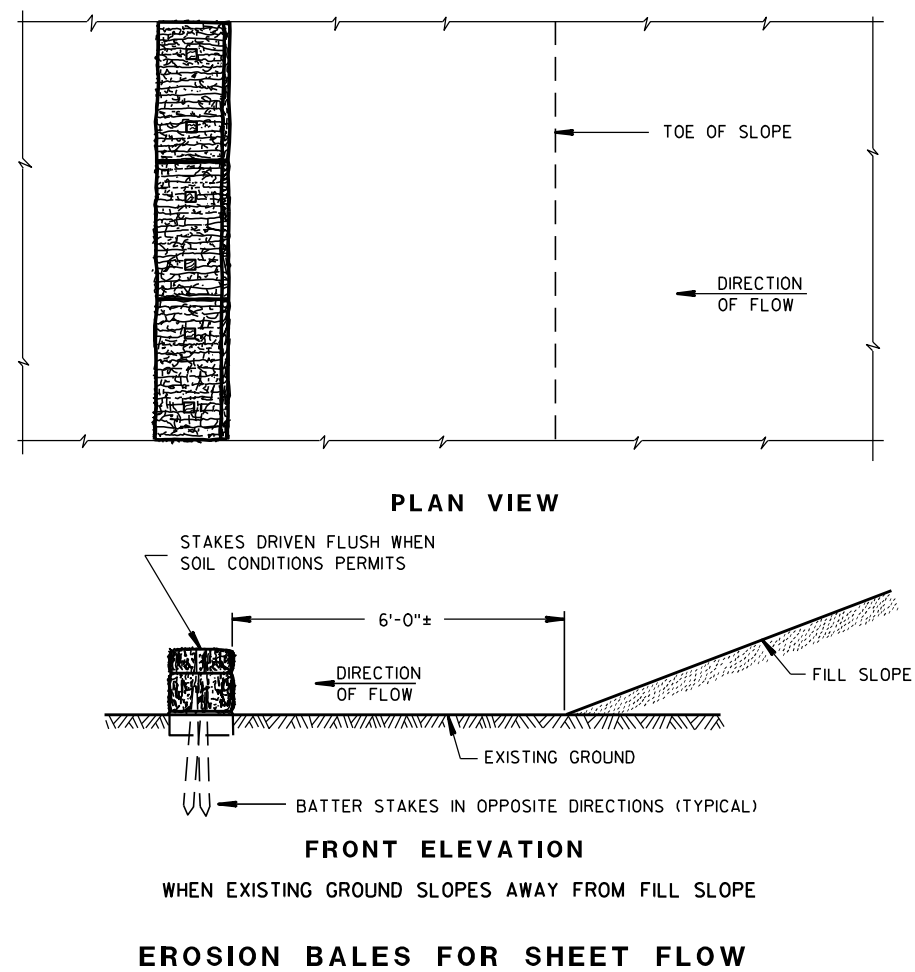
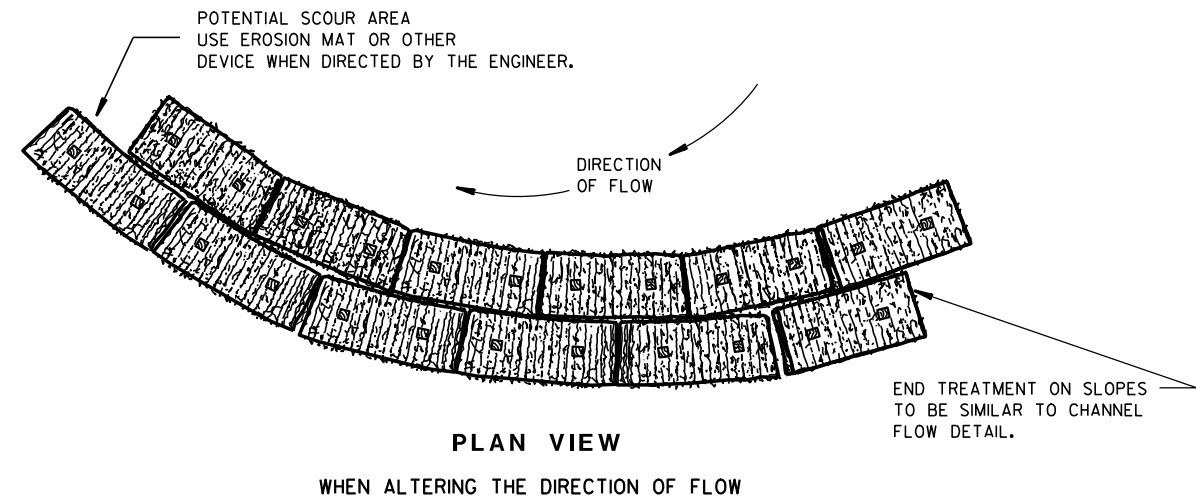
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES



GENERAL NOTES

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

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

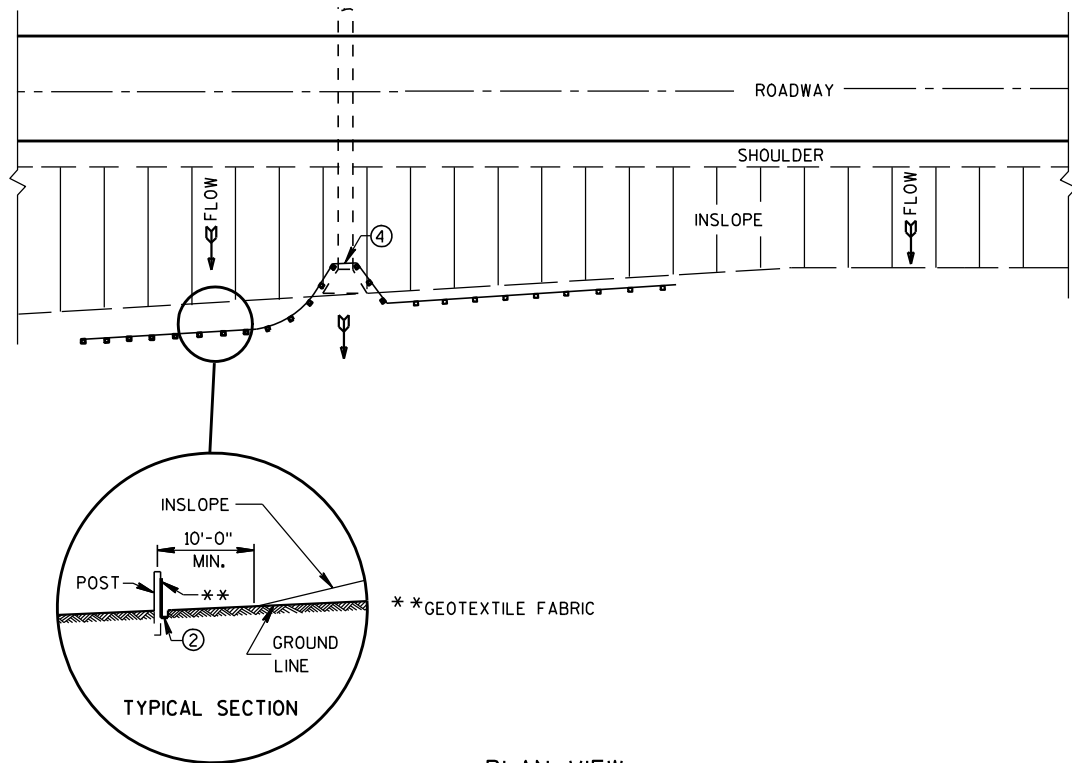
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

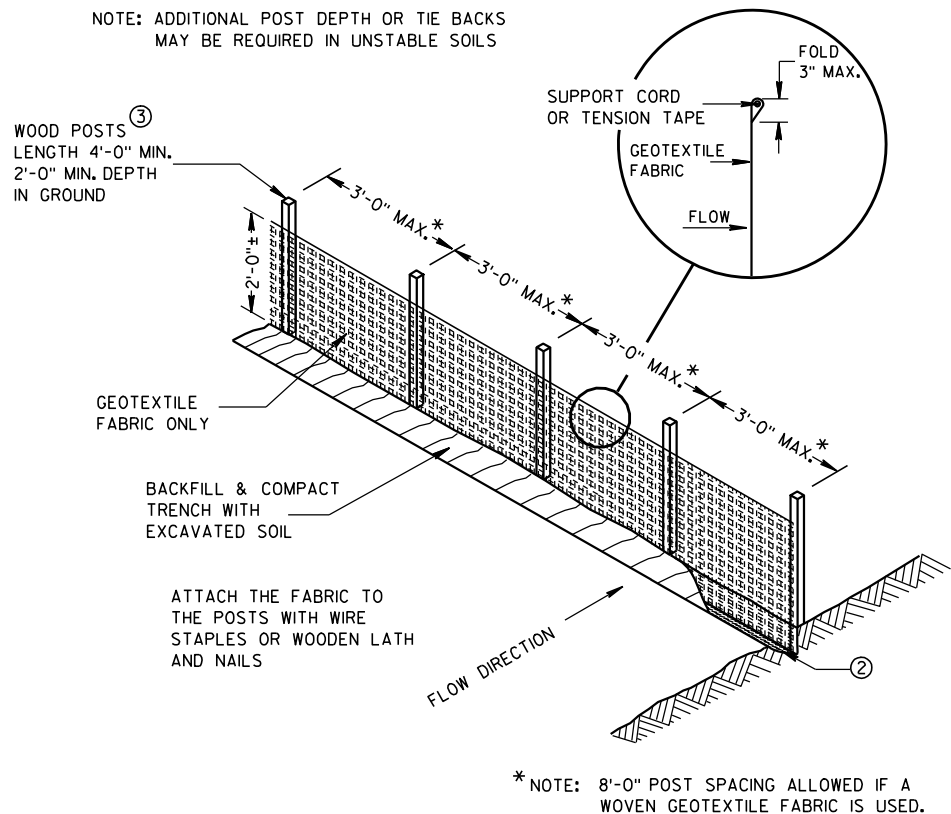
APPROVED

6/04/02
DATE/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

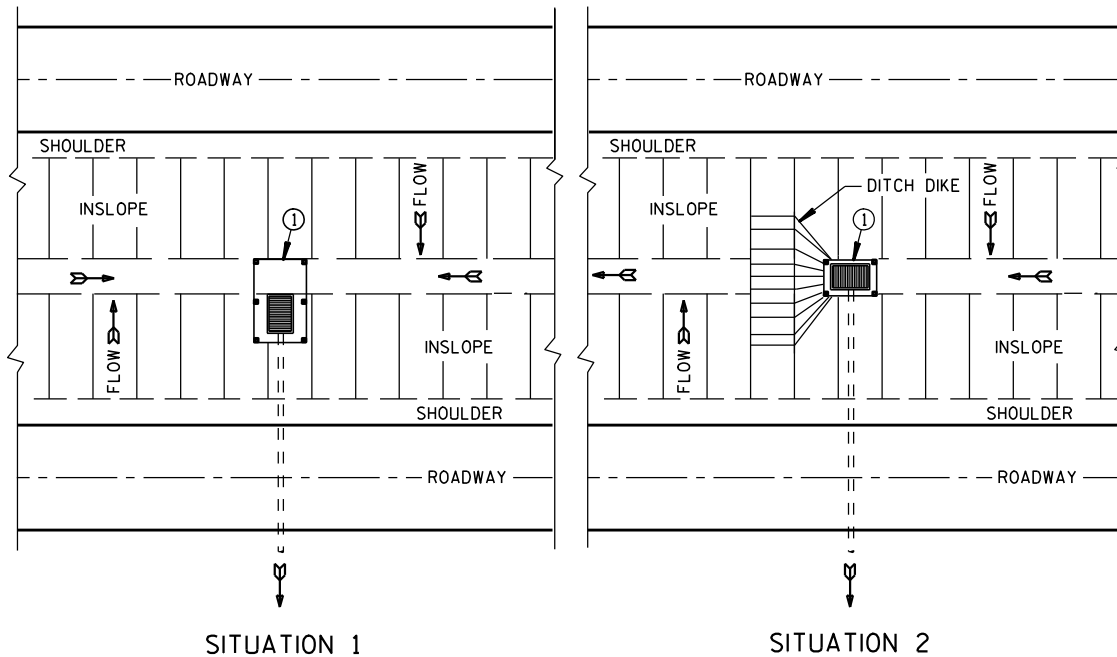
FHWA



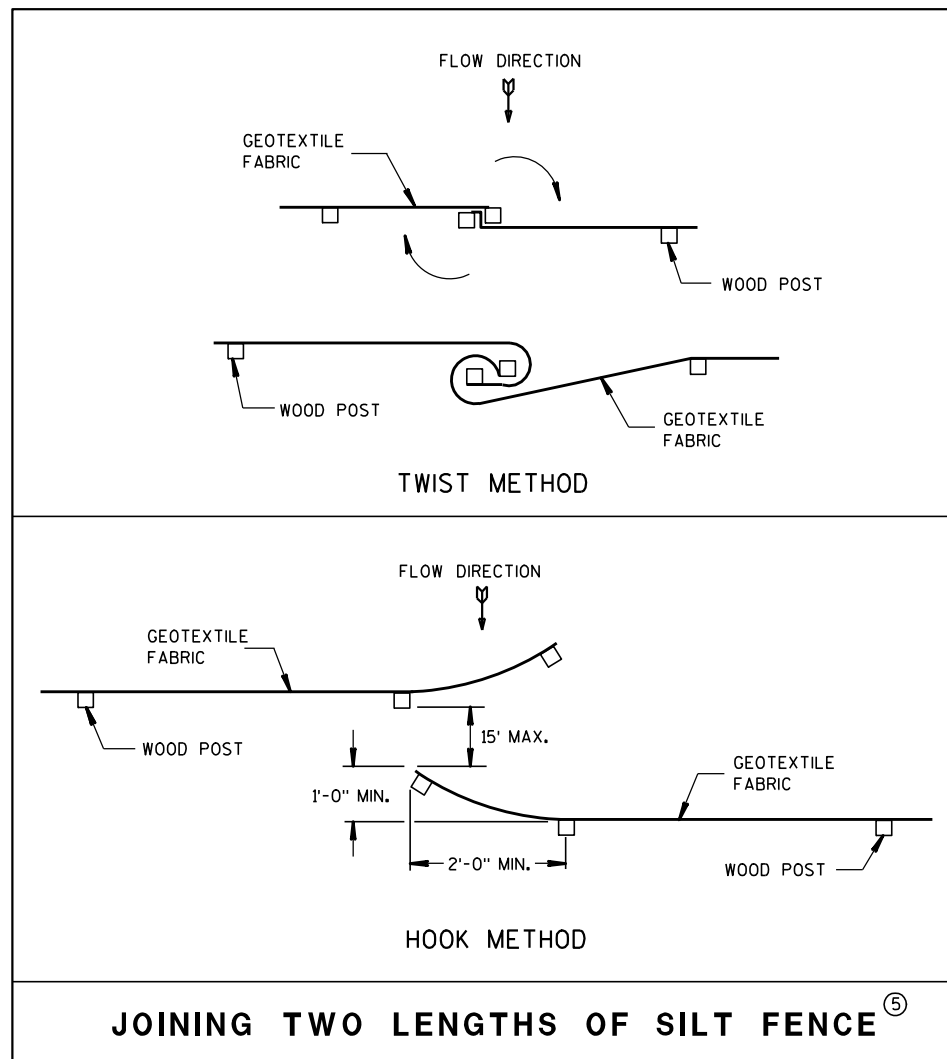
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

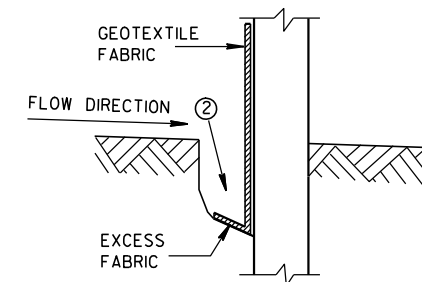


JOINING TWO LENGTHS OF SILT FENCE^⑤

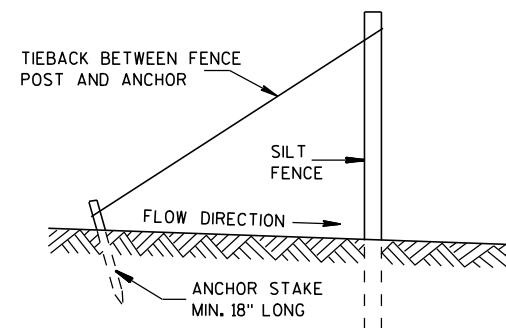
GENERAL NOTES

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 1 1/8" X 1 1/8" 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.

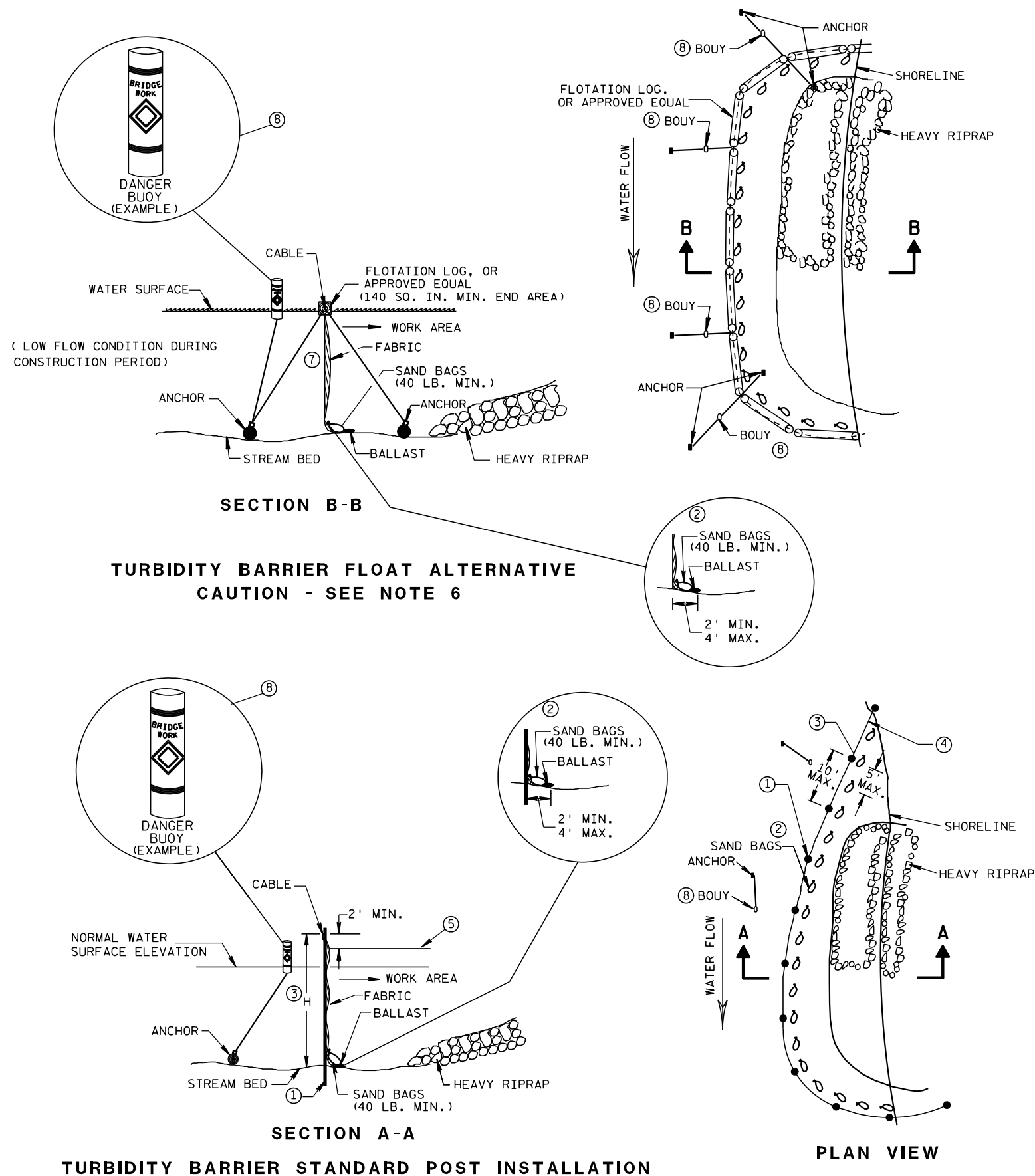


TRENCH DETAIL



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	

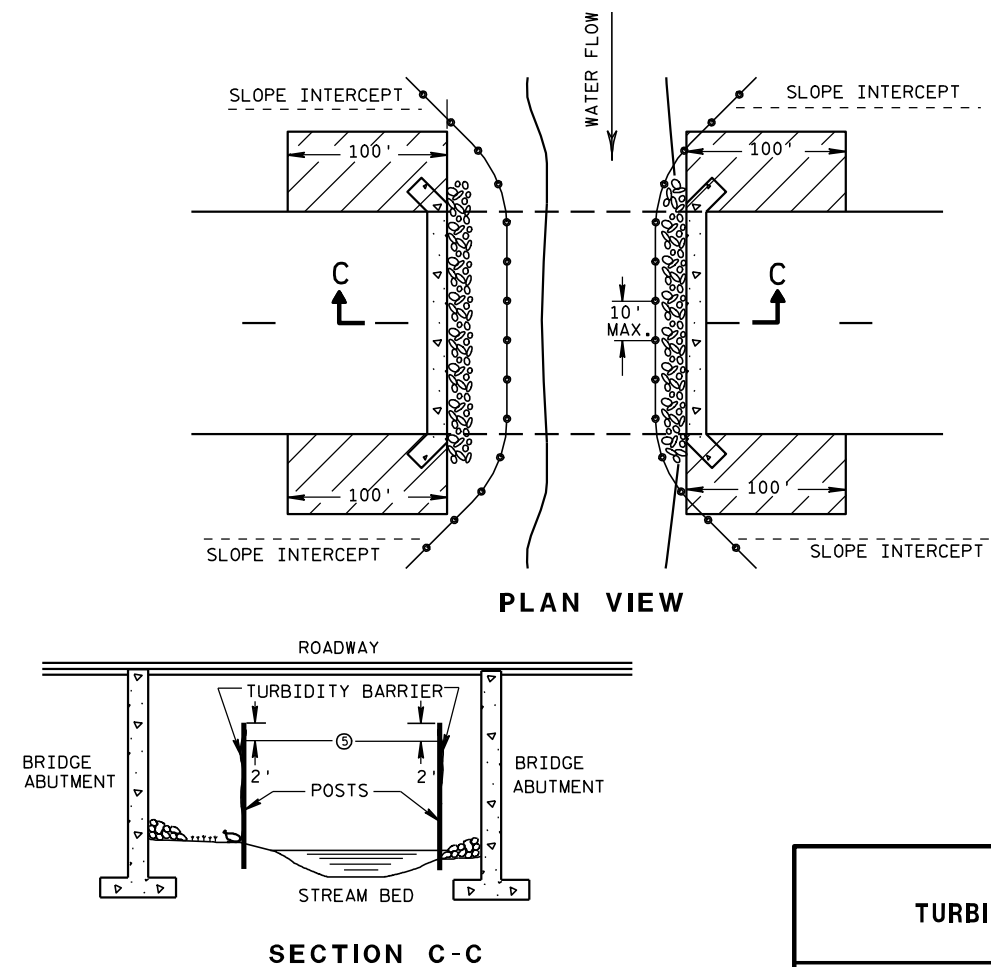


GENERAL NOTES

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

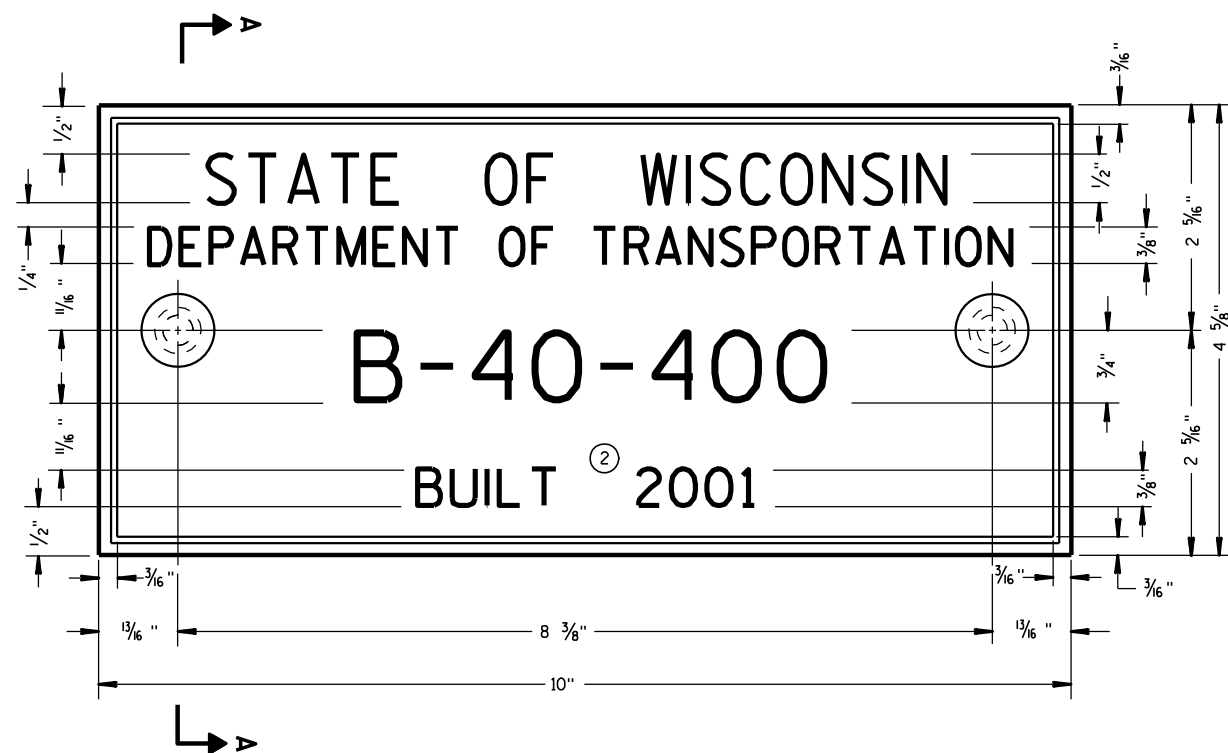
APPROVED

6/04/02

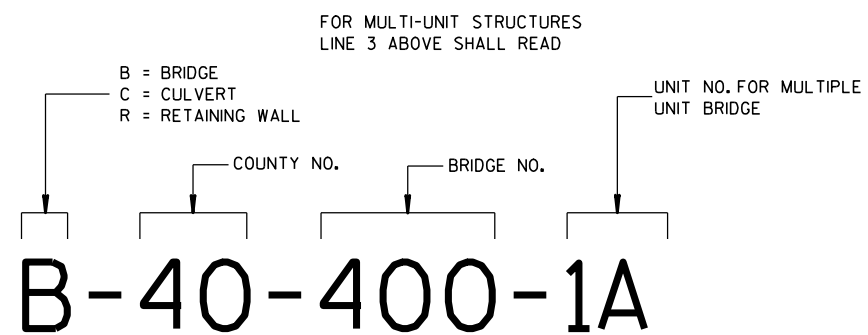
DATE

FHWA

/S/ Beth Connestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



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



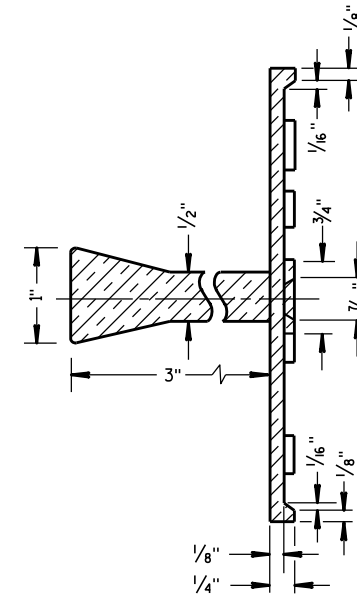
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

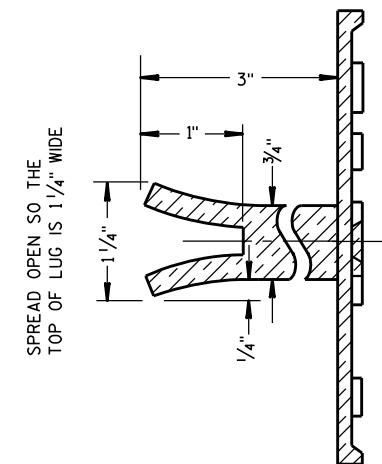
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

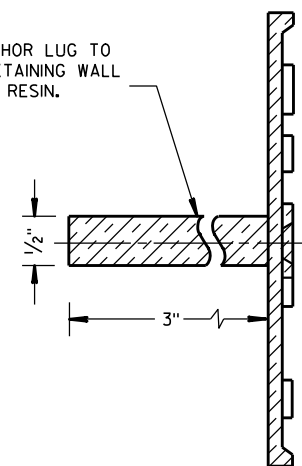


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

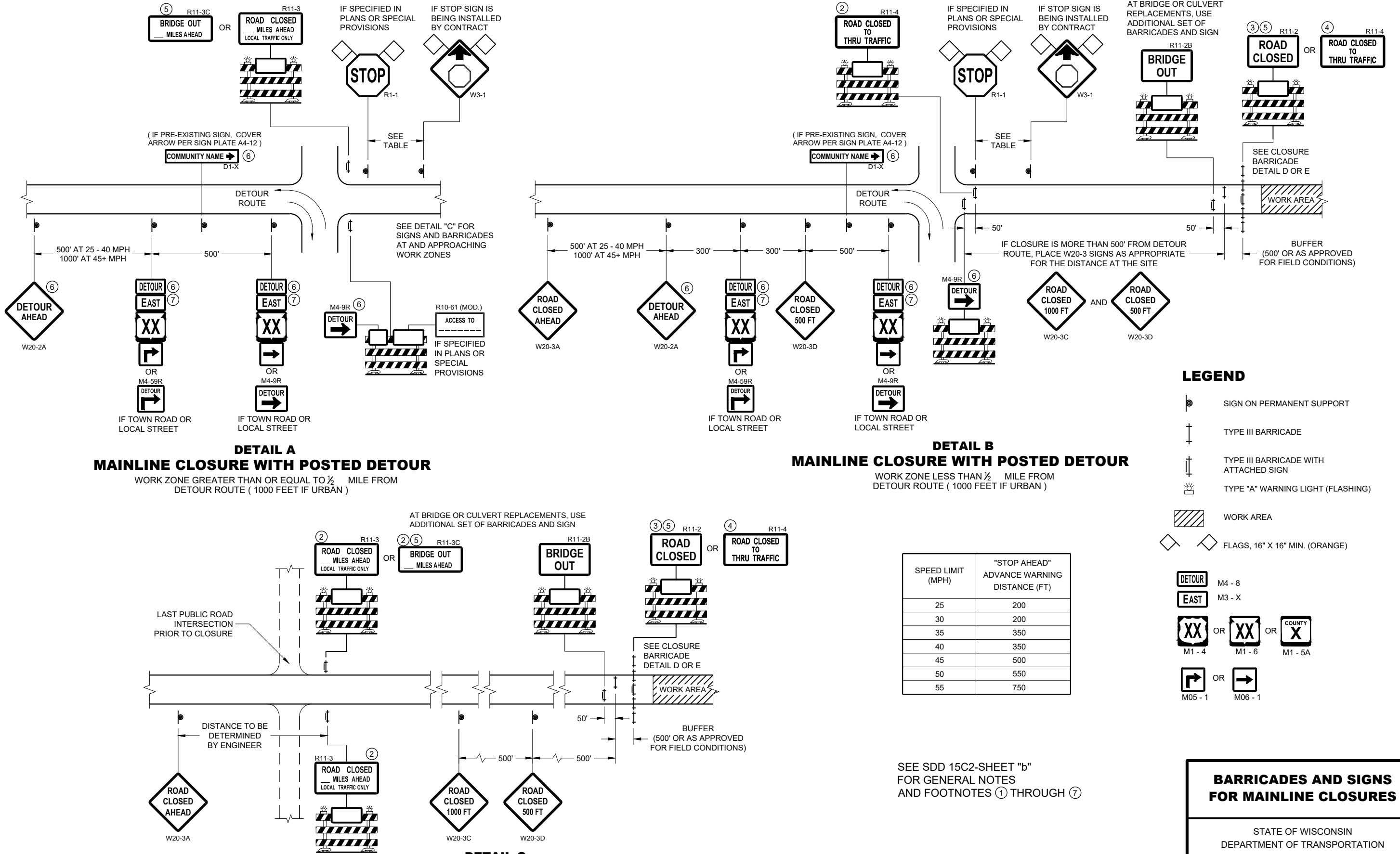
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10
DATE

FHWA

/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER

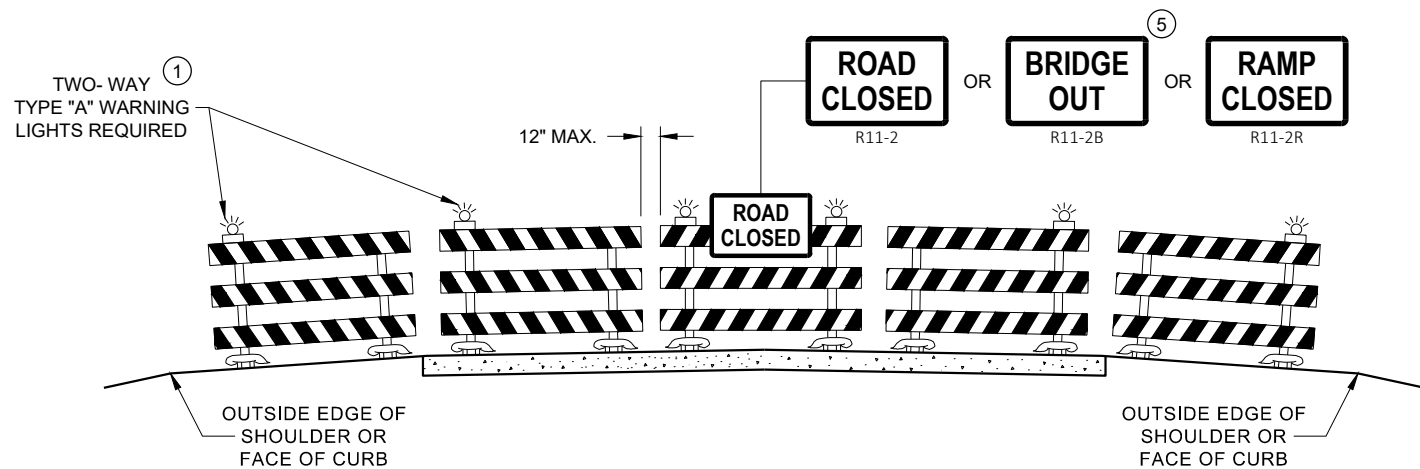


**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

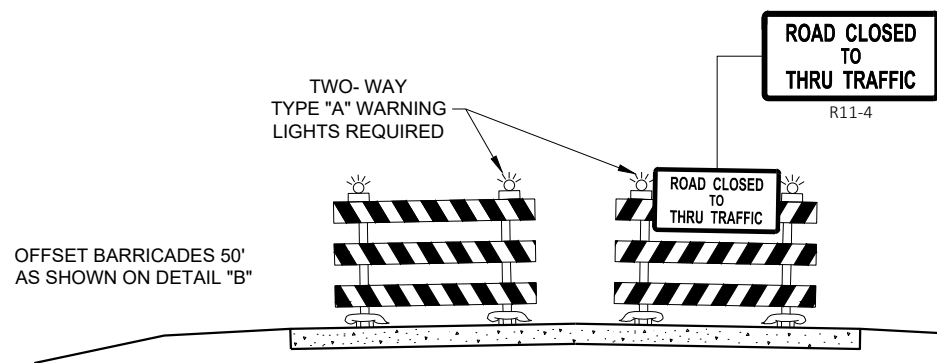
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

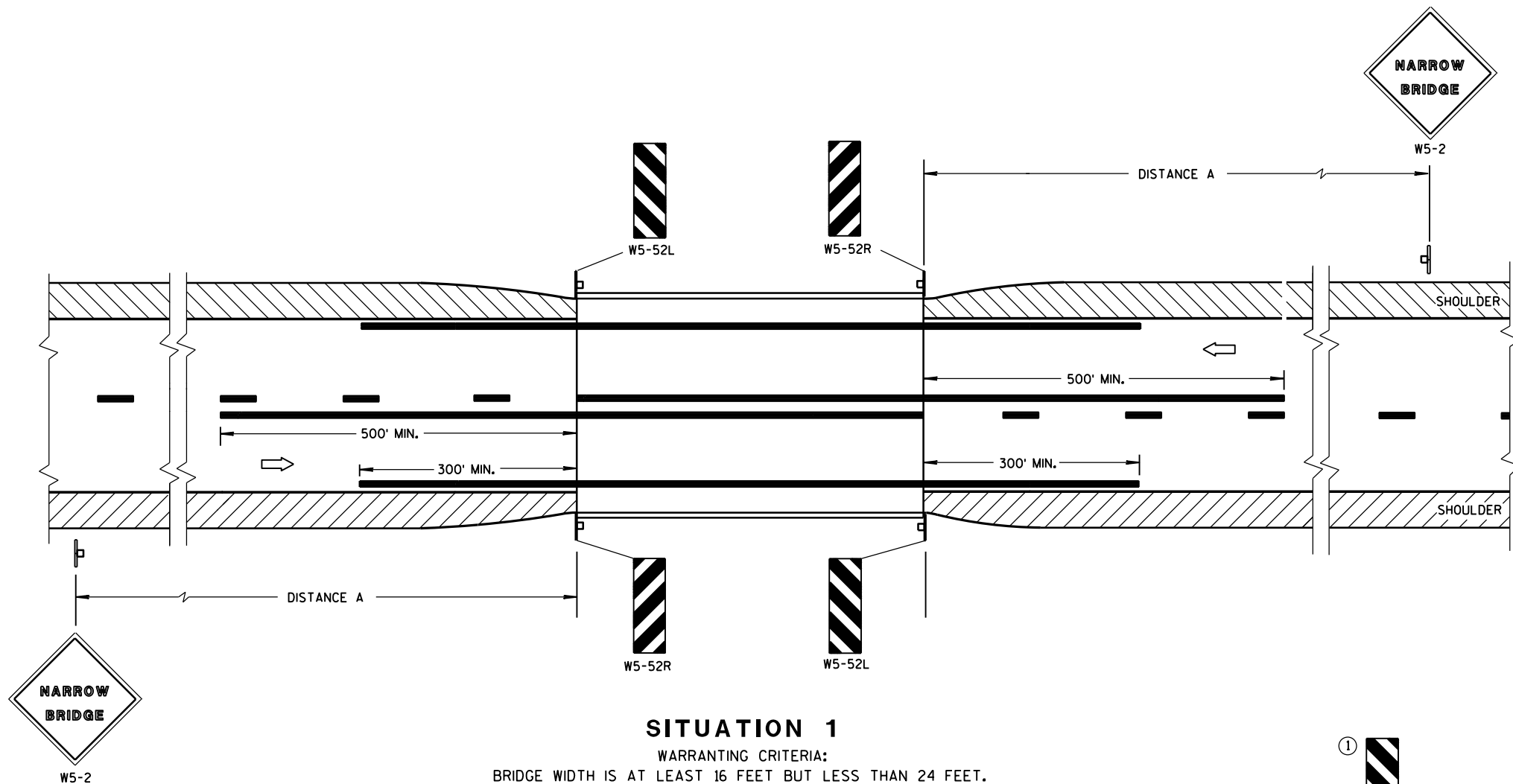
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- 3 FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- 4 FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- 5 FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- 6 INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- 7 "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

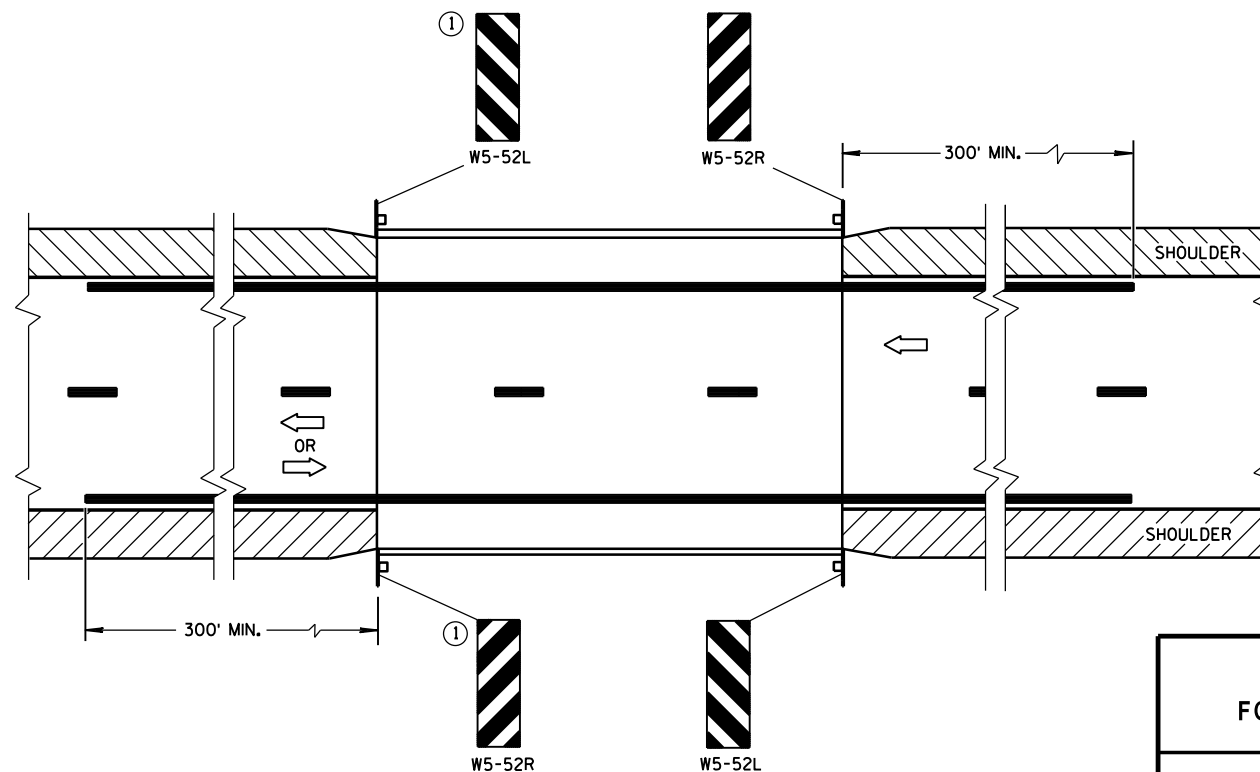
APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



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

SIGNING & MARKING
FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

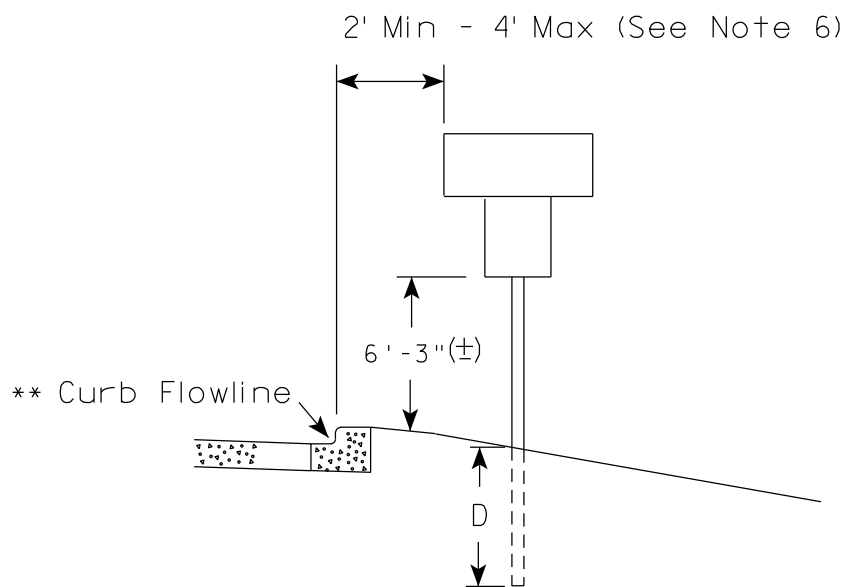
APPROVED

June 2017
DATE

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

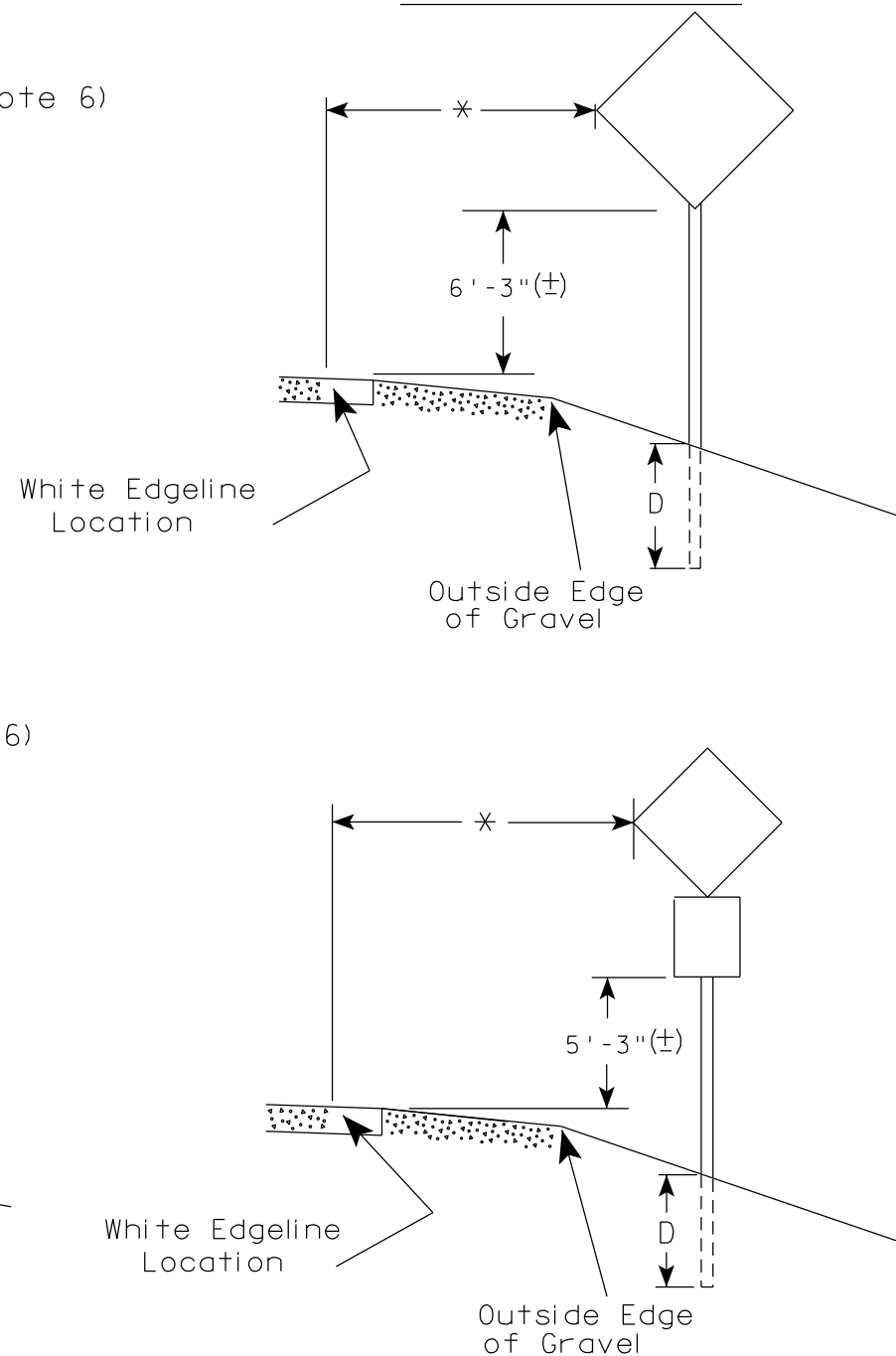
FHWA

7



* * 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.

7



* 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.

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 or behind barrier wall, see A4-10 sign plate.

The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (\pm). 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" (\pm).
3. For expressways and freeways, mounting height is 7'- 3" (\pm) or 6'-3" (\pm) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (\pm).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (\pm) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (\pm) or as directed by the Engineer.

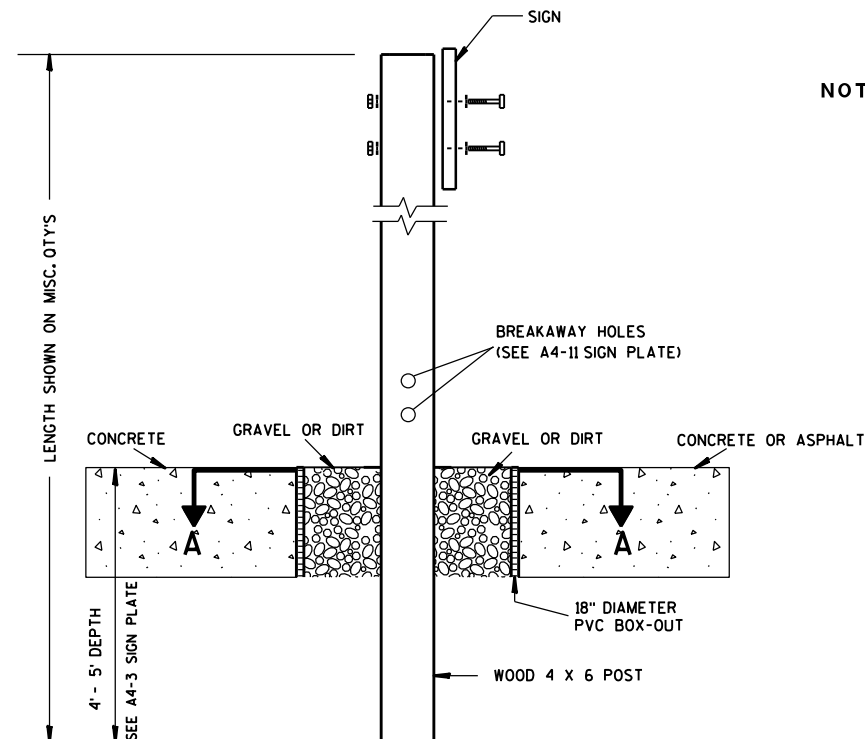
POST EMBEDMENT DEPTH	
Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4"
Greater than 20	5'

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

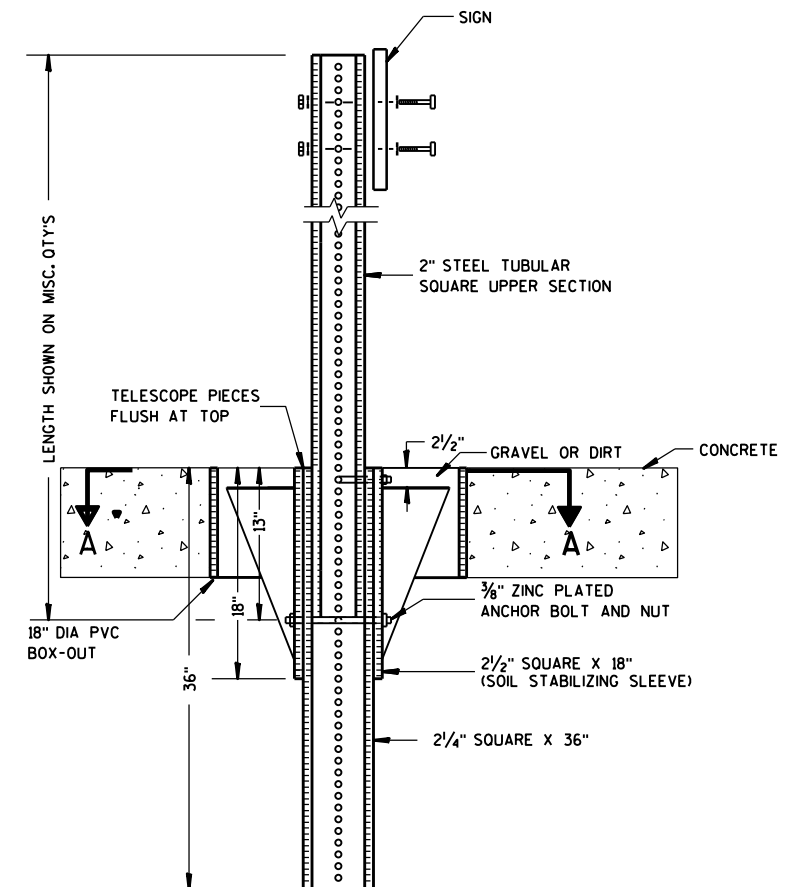
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

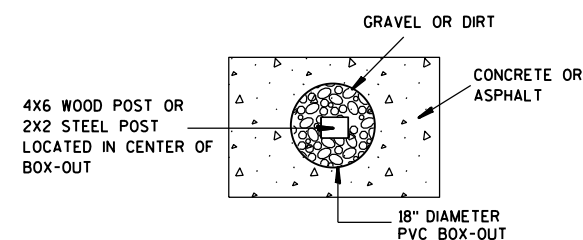
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES: 1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

**SIGN POST
BOX-OUTS
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

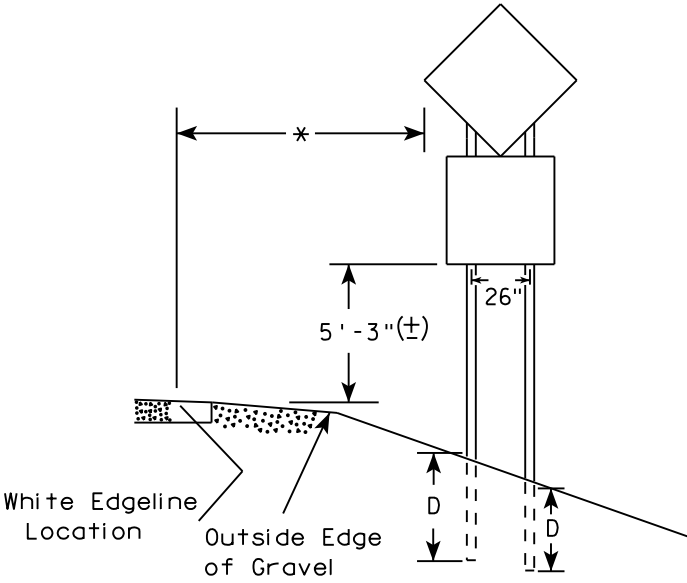
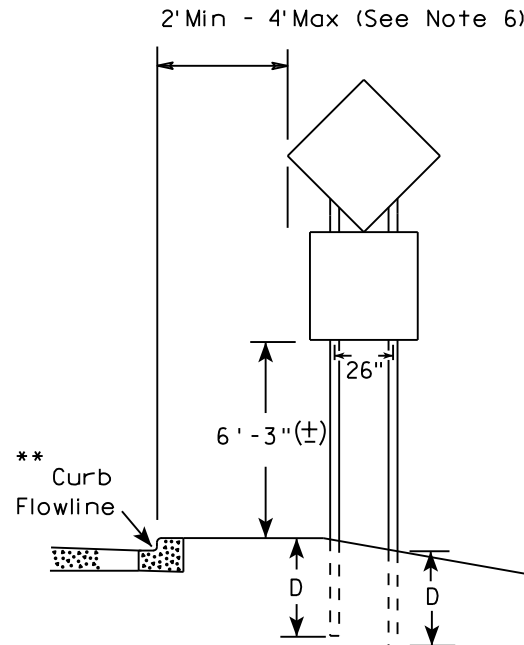
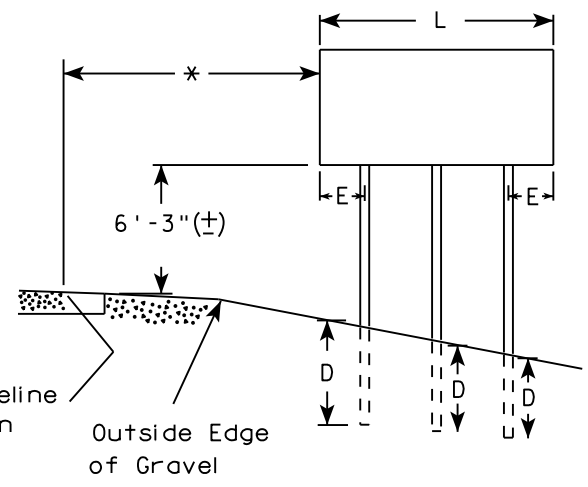
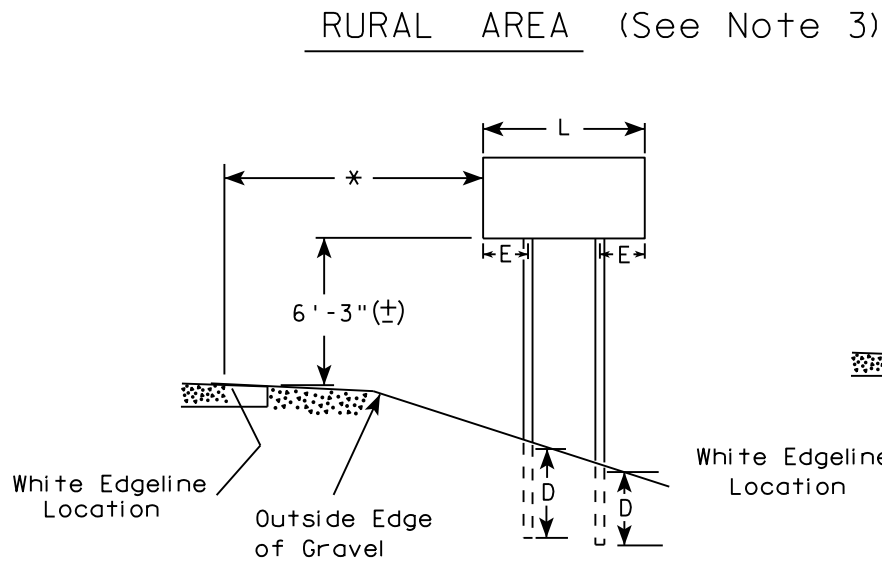
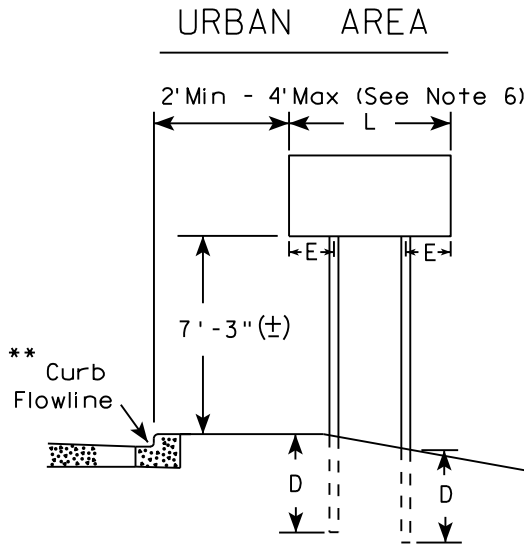
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

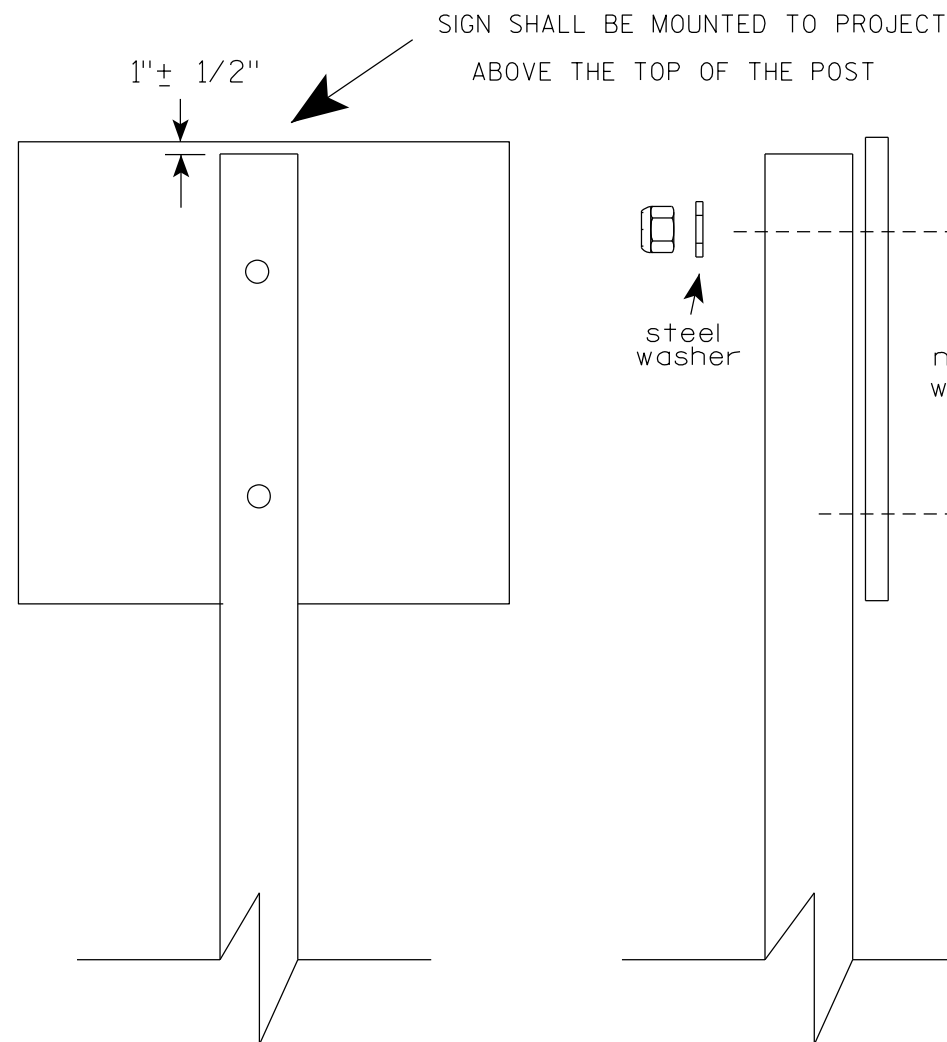
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 8/21/17	PLATE NO. A4-4.15

- GENERAL NOTES
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. J-Assemblies are considered to be one sign for mounting height.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. 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), 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" (±).

- * 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.
- ** 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.
- *** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.



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.

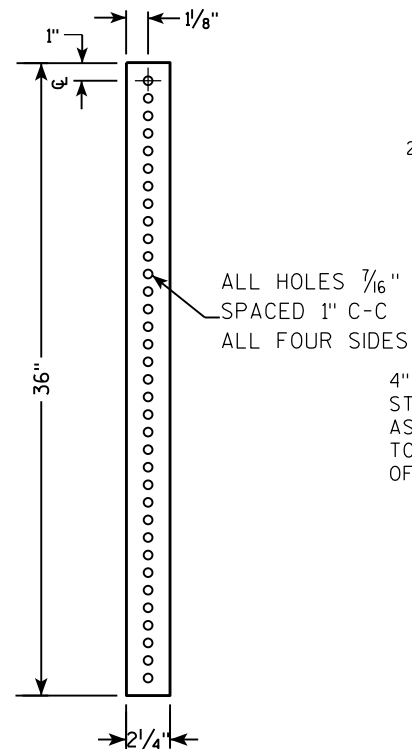
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (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 $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

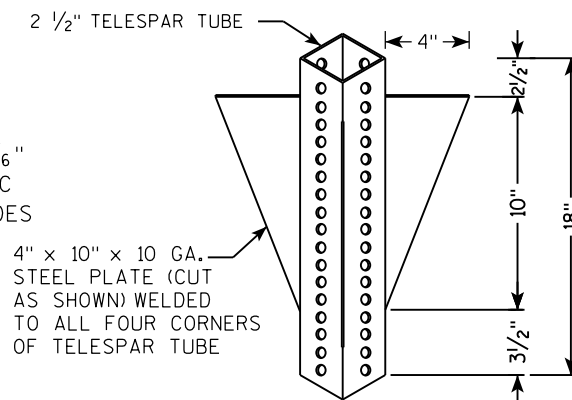
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require 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 4/1/2020	PLATE NO. A4-8.9

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



LENGTH SHOWN ON MISC. QTY'S

SIGN

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

TELESCOPE PIECES FLUSH AT TOP

2 1/2" GRAVEL OR DIRT

18" DIA SCHEDULE 40 PVC BOX-OUT

36"

18"

13"

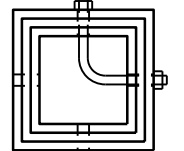
2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

[illegible]

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



DIRECTION
OF TRAFFIC

SECTION A-A

Area of Sign Installation (Sq. Ft.)	Number of Required 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

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthieu R. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

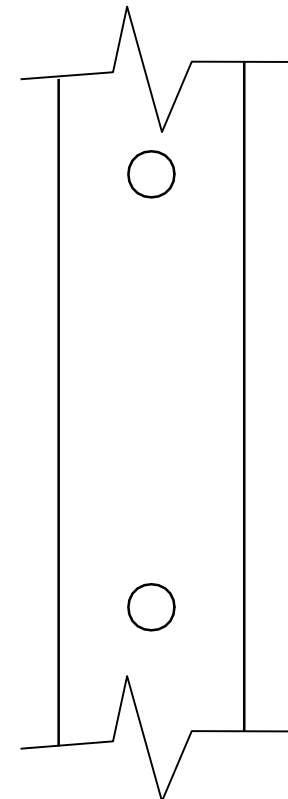
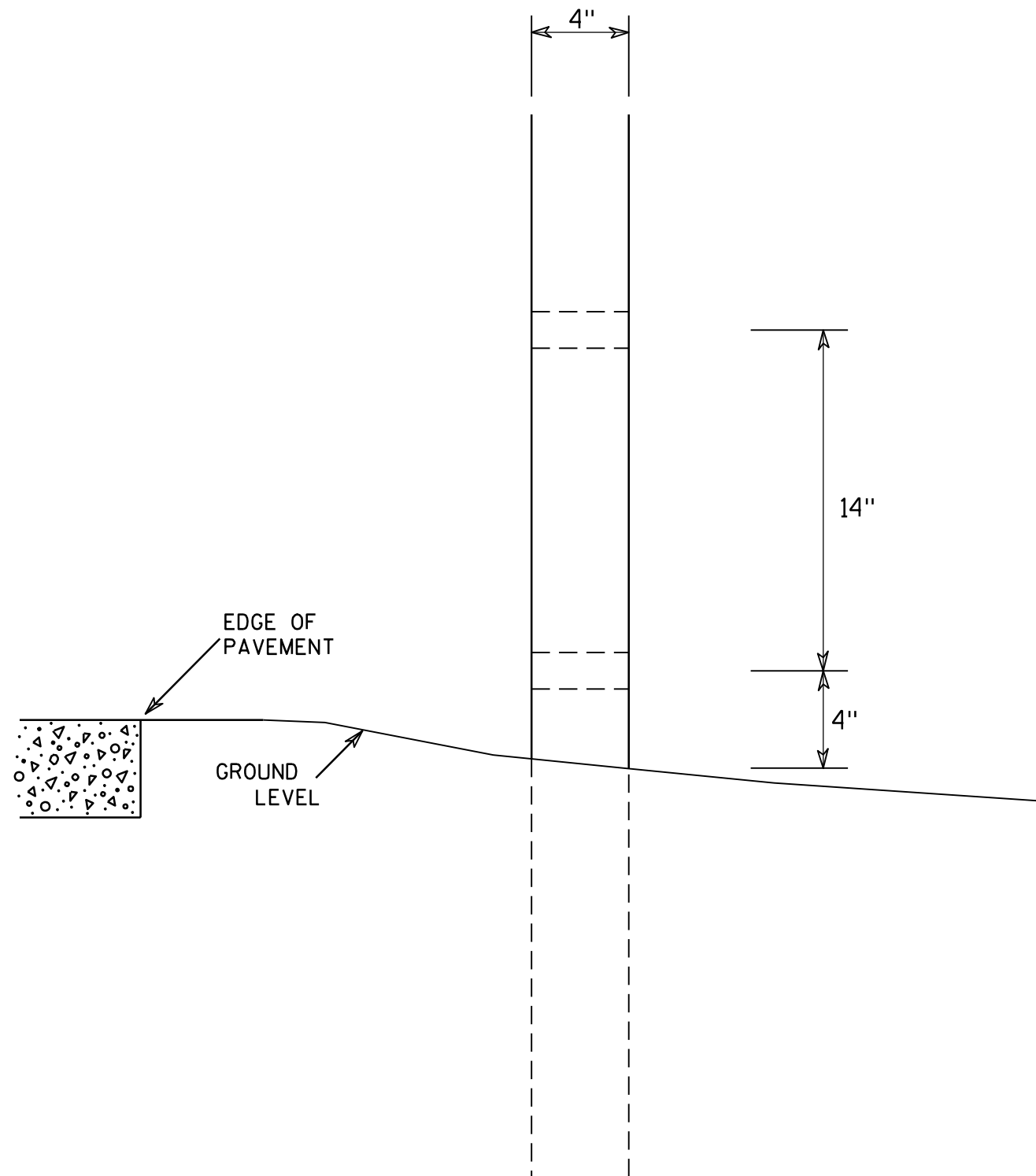
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

11



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" 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:

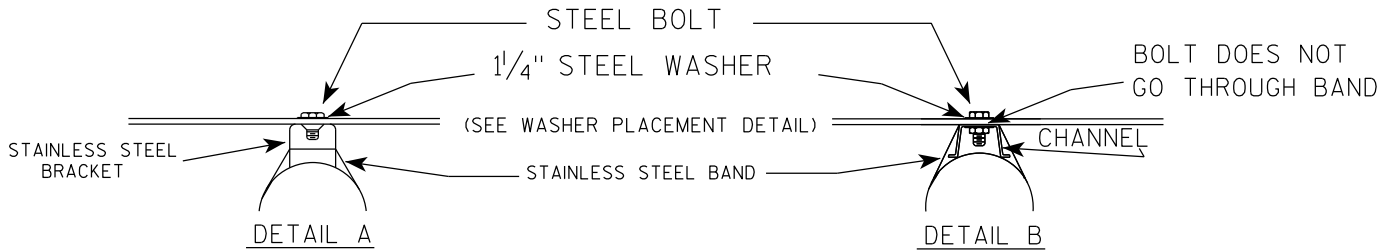
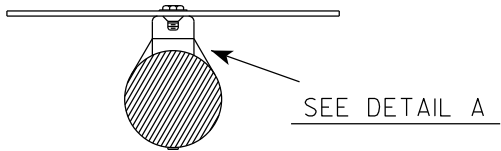
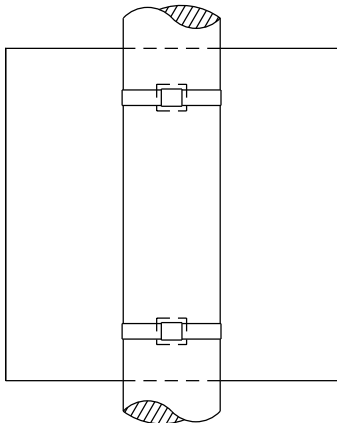
COUNTY:

SHEET NO:

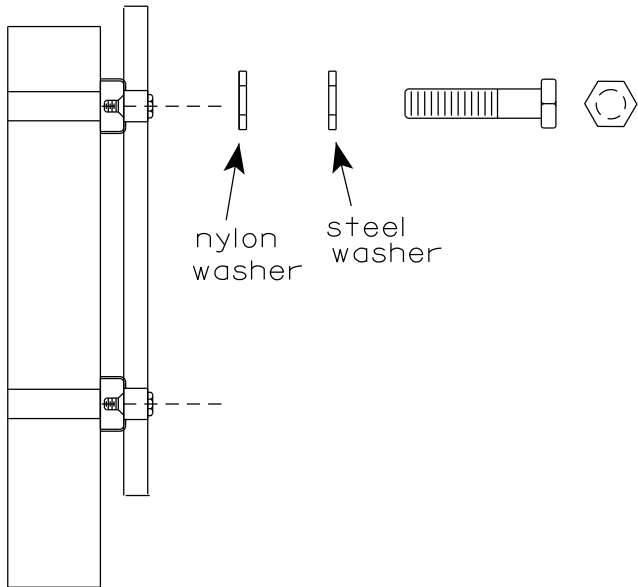
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

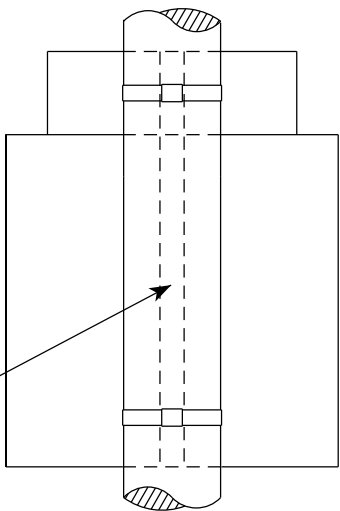


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

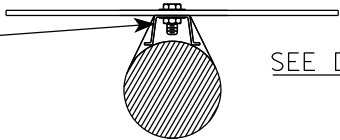
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

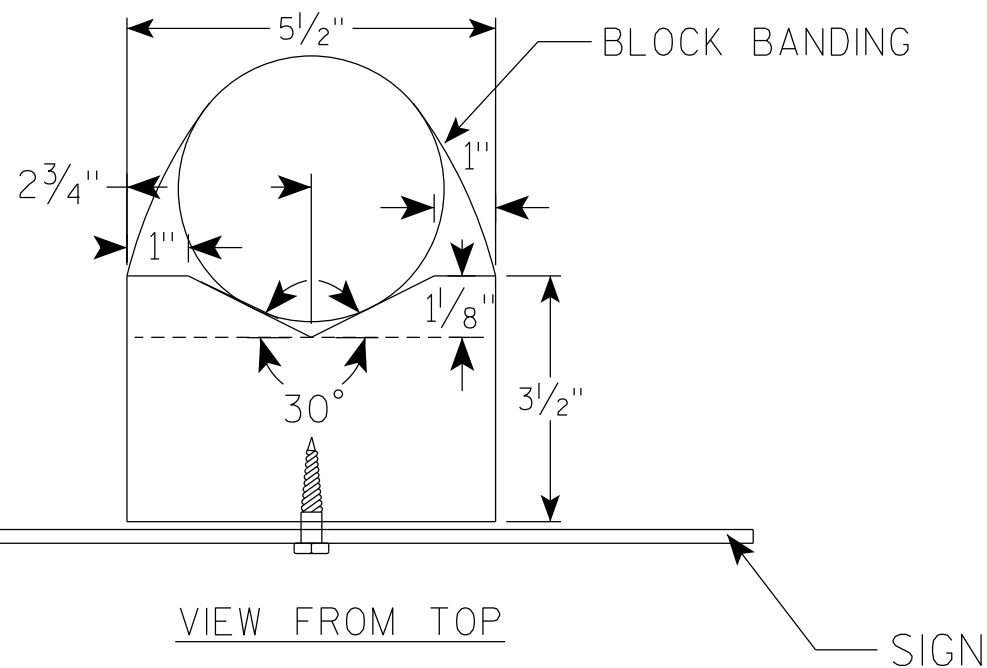
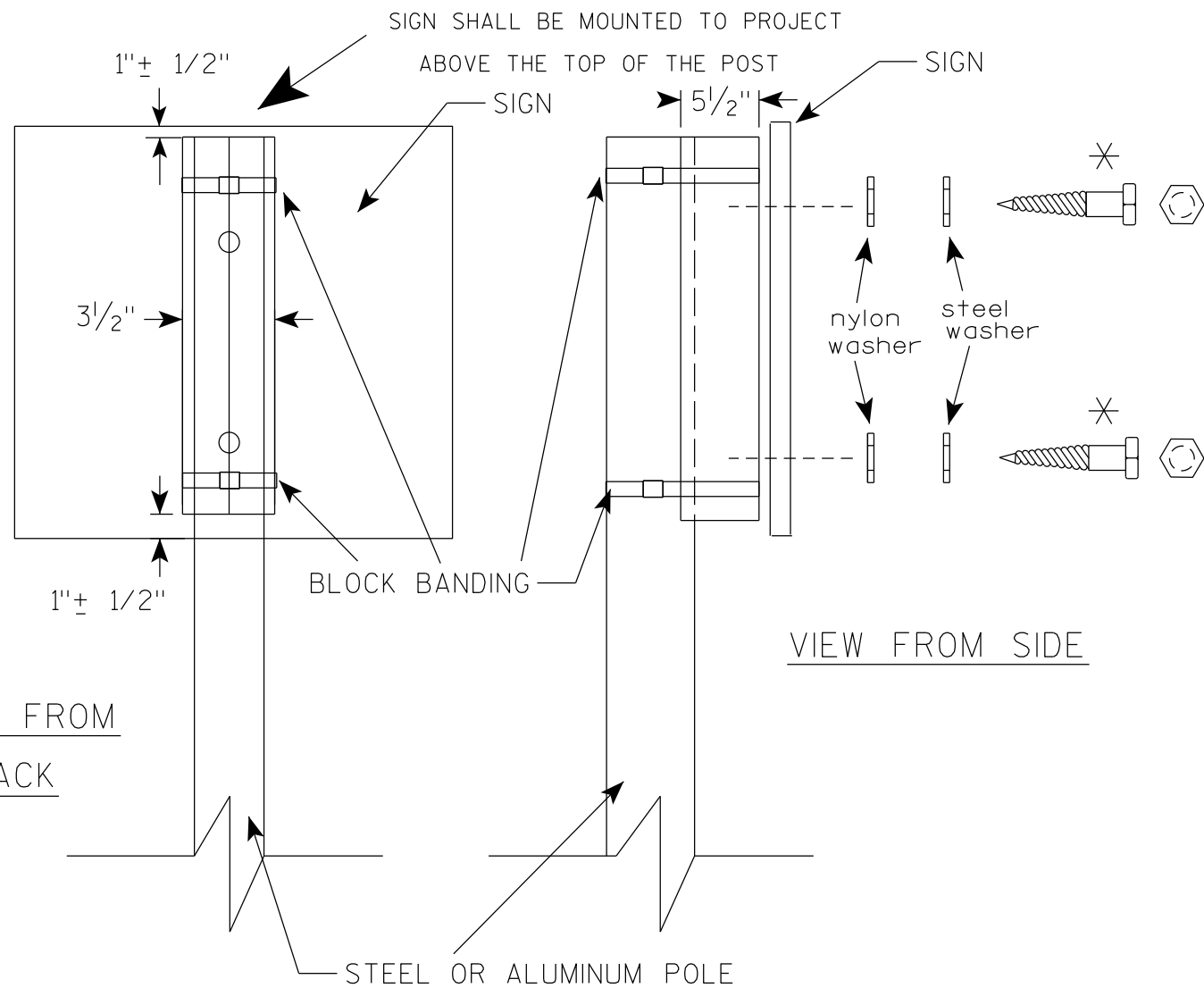


STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4

VIEW FROM
BACK



GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $1\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $1\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

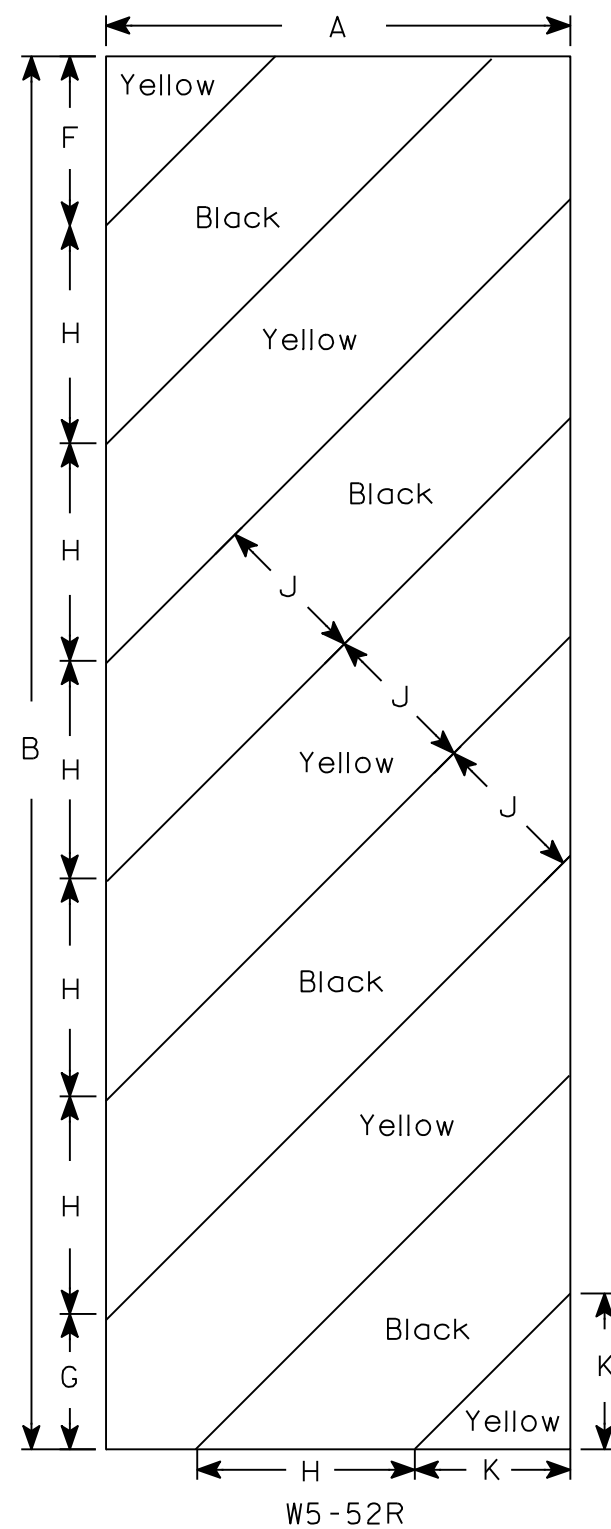
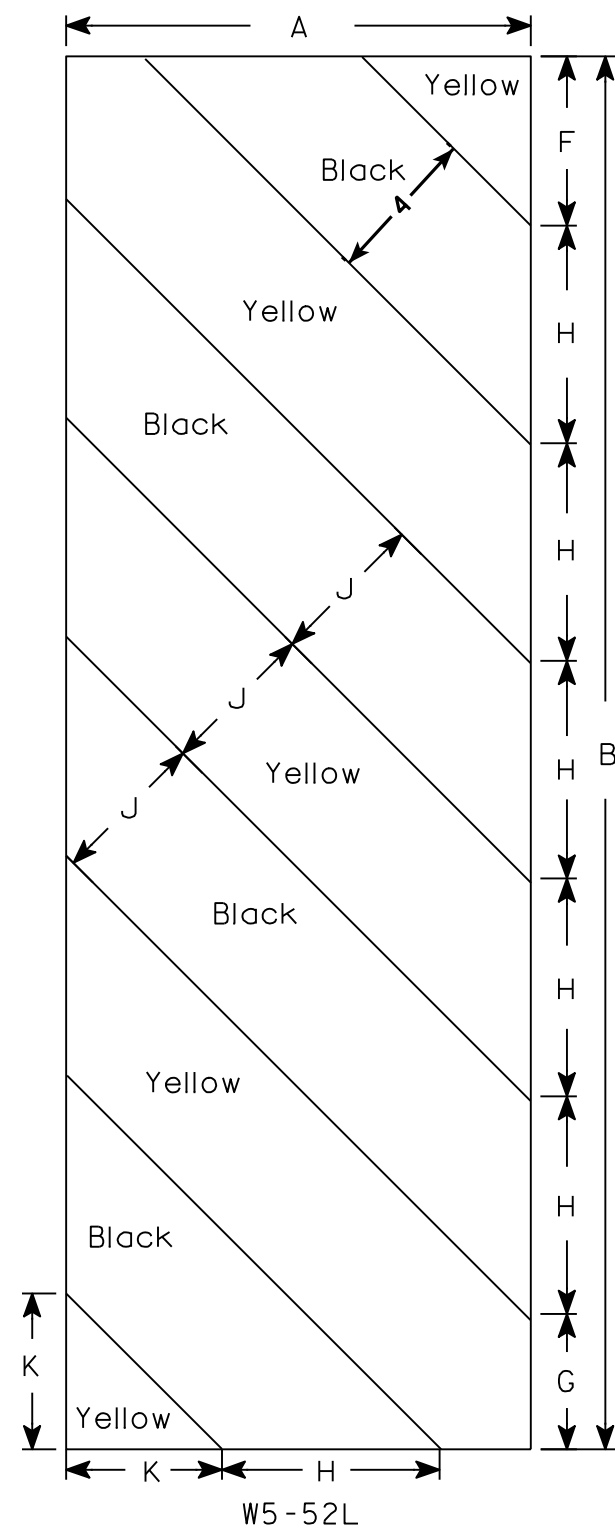
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO:

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.

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

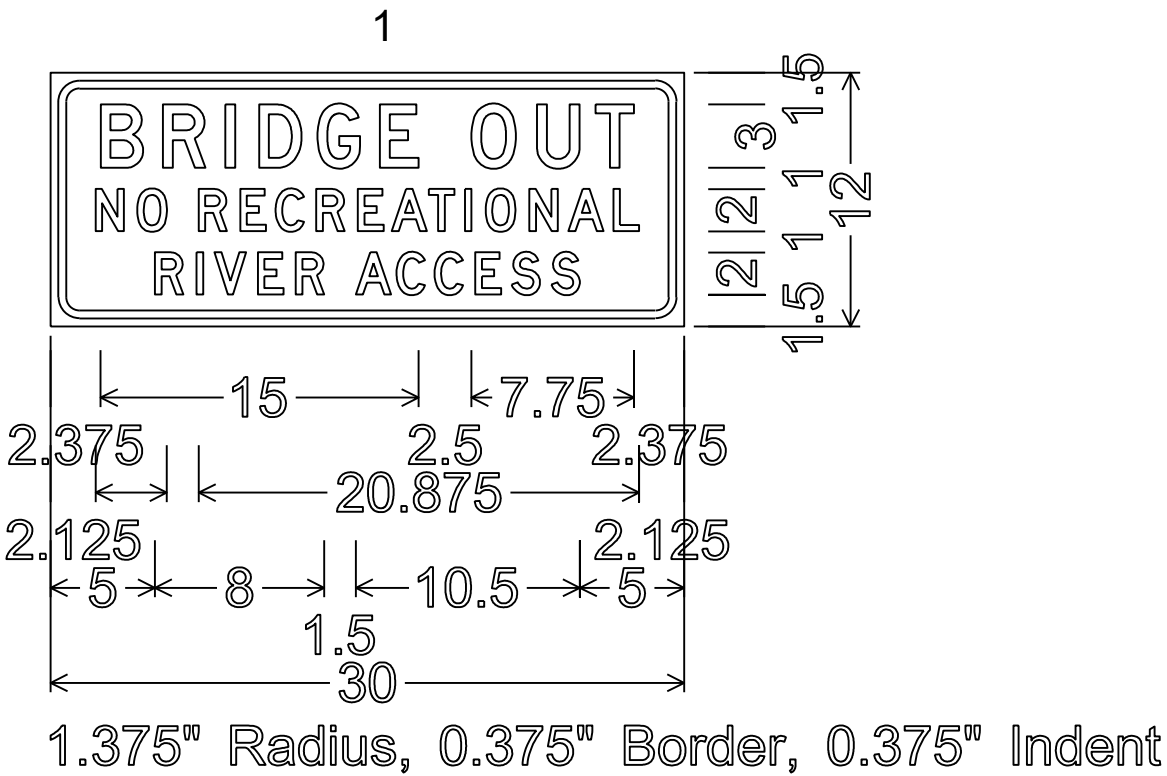
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

NOTES

- 1. All Signs Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - D



7

7

9517-04-71

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING FACTOR = 1.13
OPERATIONAL RATING FACTOR = 1.46
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

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

MATERIAL PROPERTIES:

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

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10-INCH x 42 LB. PLACED IN PRE-BORED HOLES CORED 3'-0" INTO COMPETENT ROCK AND DO NOT REQUIRE DRIVING. PILING SHALL BE FIRMLY SEATED AFTER PLACEMENT. ESTIMATED 15'-0" LONG FOR THE EAST AND WEST ABUT.

PIER TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB. PILING SHALL BE PLACED IN PRE-BORED HOLES. PREBORED HOLES SHALL EXTEND A MINIMUM OF 10'-0" BELOW THE BOTTOM OF PIER ELEVATION AND BE EMBEDDED A MINIMUM OF 3'-0" INTO COMPETENT ROCK. PILING SHALL BE FIRMLY SEATED AFTER PLACEMENT. ESTIMATED 25 FEET LONG.

TRAFFIC VOLUME

HOLTON ROAD
A.D.T. (2021) = 90
A.D.T. (2041) = 100
DESIGN SPEED = 45 MPH

HYDRAULIC DATA

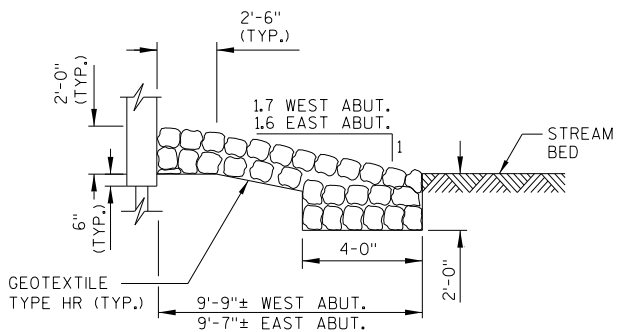
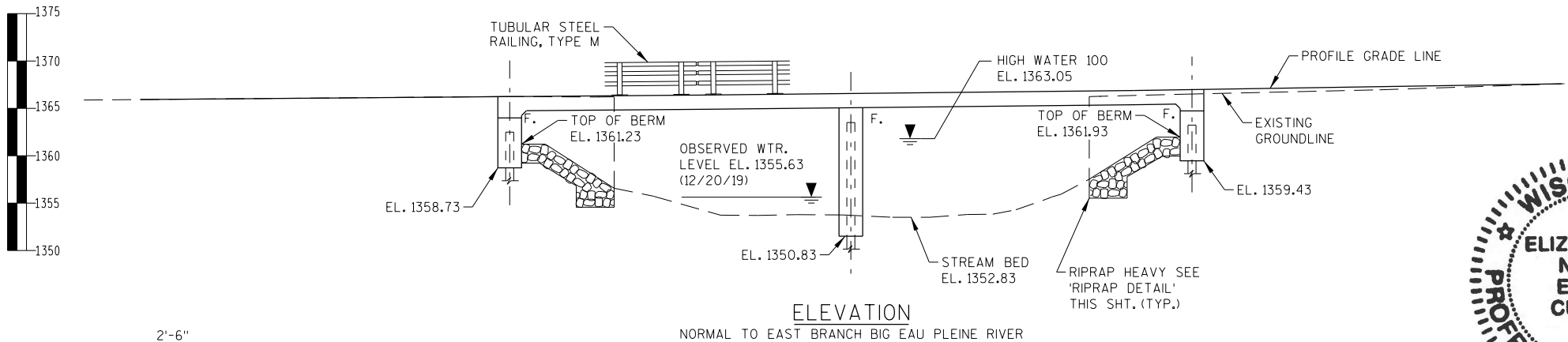
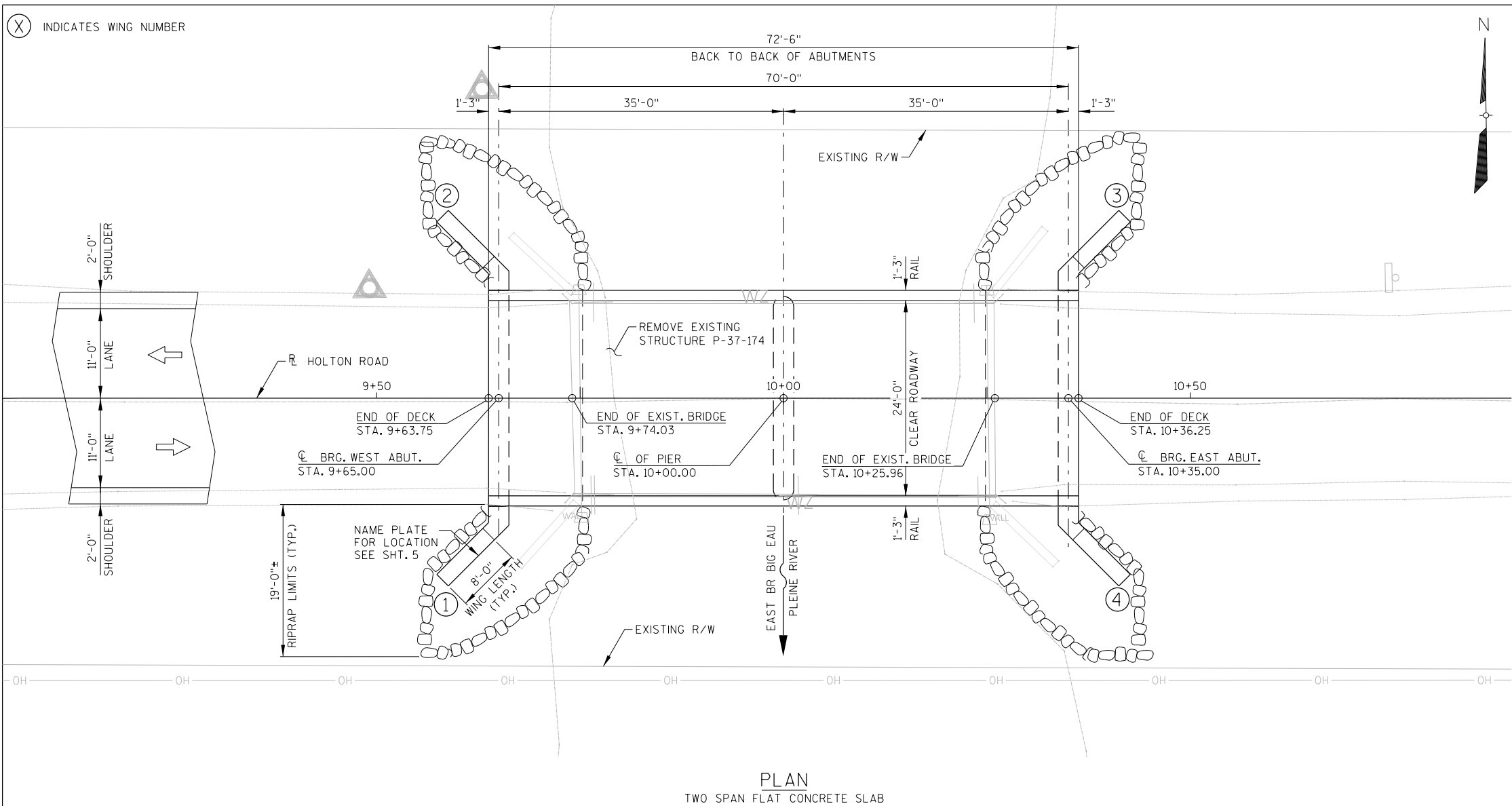
<u>100 YEAR FREQUENCY</u>	
Q100	2,400 CFS
VELOCITY	6.0 FPS
HIGH WATER ELEVATION	1363.05
WATERWAY AREA	398 SQ. FT.
DRAINAGE AREA	20.4 SQ. MI.
ROAD OVERTOPPING	N/A
SCOUR CRITICAL CODE	5

2 YEAR FREQUENCY

Q2	710 CFS
HIGH WATER 2 ELEVATION	1359.65
VELOCITY	3.2 FPS

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. CONSTRUCTION DETAILS
4. SUBSURFACE EXPLORATION
5. WEST ABUTMENT
6. WINGS 1 & 2
7. EAST ABUTMENT
8. WINGS 3 & 4
9. ABUTMENT DETAILS
10. PIER
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE DETAILS
13. TUBULAR STEEL RAILING TYPE M



⊙ BENCH MARK TABLE



NO.	STATION	DESCRIPTION	ELEVATION
1	11+03.62	60D NAIL IN POWER POLE 14455	1368.41
2	8+99.76	60D NAIL IN POWER POLE 15834	1363.12



STRUCTURES DESIGN CONTACTS

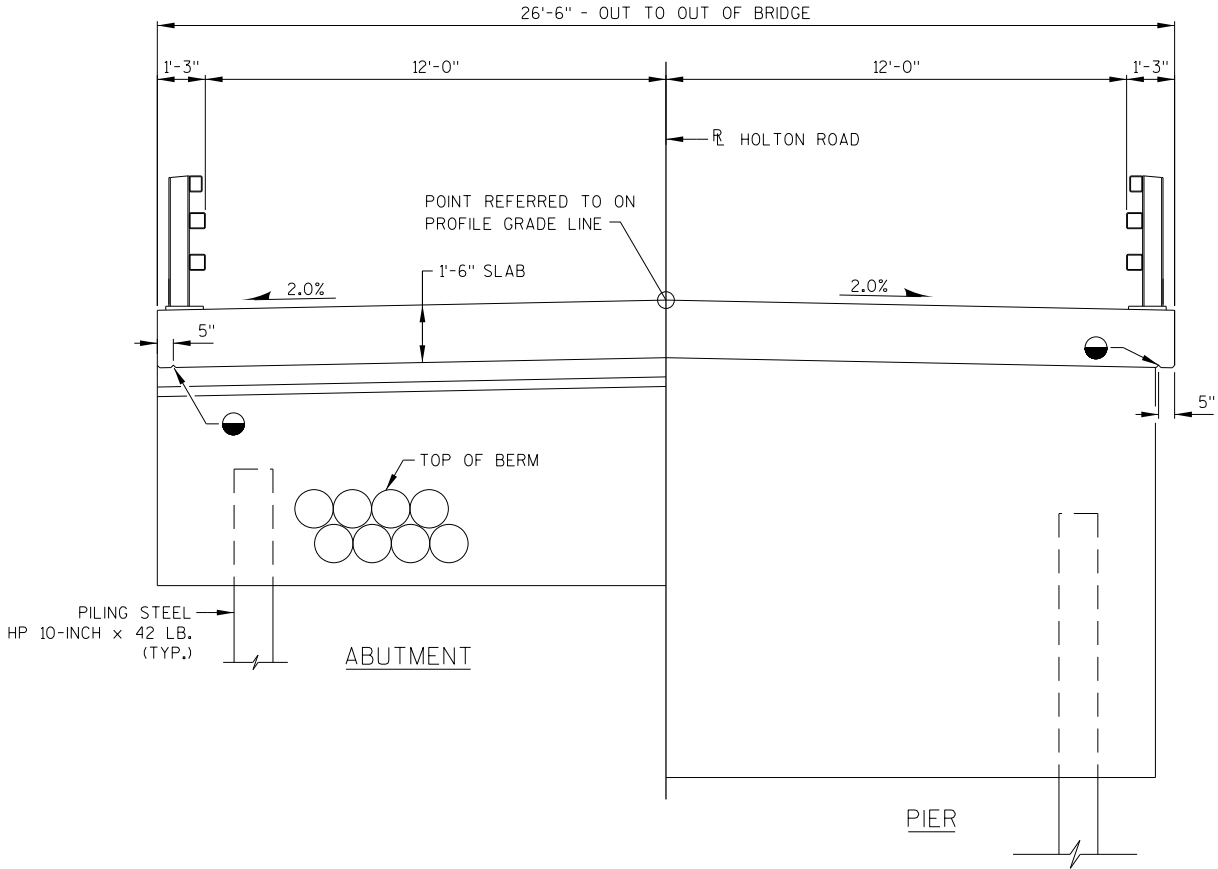
BRIDGE OFFICE:
AARON BONK (608) 261-0261

CONSULTANT:
ELIZABETH NEMEC (715) 342-3069

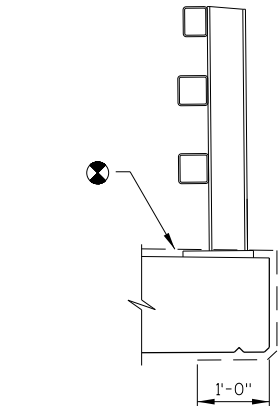
NO.	DATE	REVISION	BY
			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	 CHIEF STRUCTURES DESIGN ENGINEER		SDR 11/23/20 DATE
STRUCTURE B-37-457			
HOLTON ROAD OVER EAST BR BIG EAU PLEINE RIVER			
COUNTY	MARATHON	TOWN CITY/VILLAGE	HOLTON
DESIGN SPEC.			
AASHTO LRFD	BRIDGE DESIGN	SPECIFICATIONS	
DESIGNED BY	EA N	DESIGN CK'D.	CAB
DRAWN BY	MES	PLANS CK'D.	EA N
GENERAL PLAN		SHEET 1 OF 13	

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PLOT DATE: 9/11/2020
PLOT TIME: 2:42:01 PM

BATCH PRINT SHEET 1 OF 1



CROSS-SECTION THRU ROADWAY
(LOOKING EAST)



SURFACE PROTECTION DETAIL

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE FABRIC TYPE 'HR' WITHIN THE LIMITS SHOWN ON SHEET 1, ON THE ABUTMENT SHEETS OR AS DIRECTED BY THE ENGINEER.

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

THE EXISTING STRUCTURE (P-37-0174) IS A STEEL GIRDER BRIDGE, 53' LONG x 24' WIDE, TO BE REMOVED.

ALL REQUIRED REMOVAL OF THE EXISTING SUBSTRUCTURES IS INCLUDED IN THE BID ITEM "REMOVING OLD STRUCTURE, STA. 10+00".

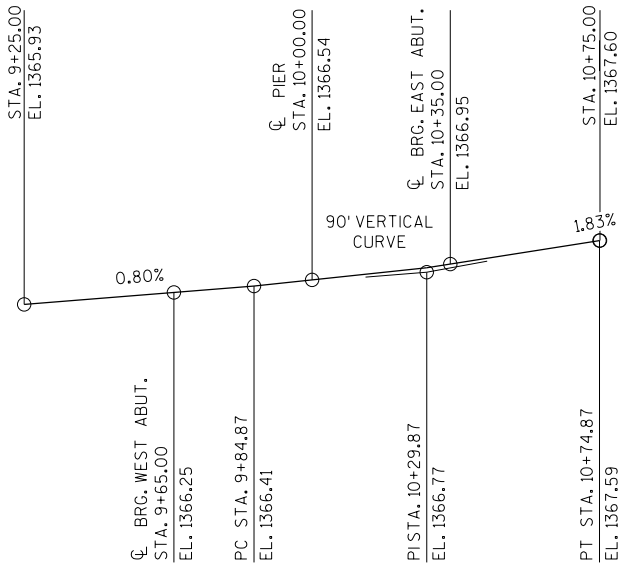
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATIVE METHOD IS APPROVED BY THE ENGINEER.

EXCAVATION REQUIRED UNDER THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-37-457" IS NOT USED TO BALANCE THE EARTHWORK.

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

LEGEND

- 3/4" V-GROOVE REQ'D. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUT. DIAPHRAGM.
- ⊗ COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER STANDARD SPECIFICATIONS.



PROFILE GRADE LINE - HOLTON ROAD

TOTAL ESTIMATED QUANTITIES

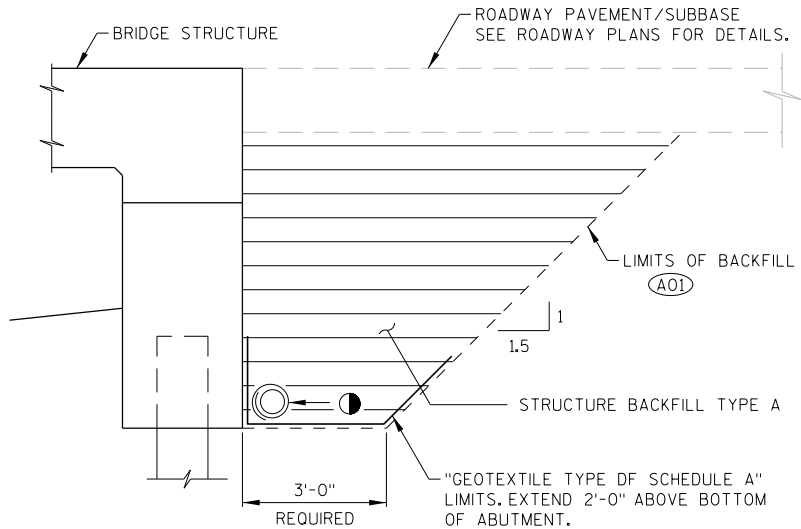
ITEM NUMBER	BID ITEM	UNIT	WEST ABUTMENT	PIER	EAST ABUTMENT	SUPER.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00	LS					1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-37-457	LS					1
210.1500	BACKFILL STRUCTURE TYPE A	TON	140		140		280
502.0100	CONCRETE MASONRY BRIDGES	CY	25	32	25	111	193
502.3200	PROTECTIVE SURFACE TREATMENT	SY	30		30	255	315
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,045	1,620	2,045		5,710
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,405	60	1,405	24,540	27,410
513.4061	RAILING TUBULAR TYPE M	LF				150	150
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	6		6		12
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	66	60	66		192
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	90	150	90		330
606.0300	RIPRAP HEAVY	CY	70		70		140
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	70		70		140
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	50		50		100
645.0120	GEOTEXTILE TYPE HR	SY	160		160		320
	NON-BID ITEMS						
	FILLER	SIZE					1/2" & 3/4"

STATE PROJECT NUMBER

9517-04-71

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-457			
	DRAWN BY	MES	PLANS CKD. EAN
CROSS SECTION & QUANTITIES		SHEET 2 OF 13	

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 PLOT DATE: 9/11/2020 PLOT TIME: 2:25:01 PM



SECTION THRU ABUTMENT

BACKFILL STRUCTURE LIMITS

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-37-457" SHALL BE THE EXISTING GROUNDLINE.

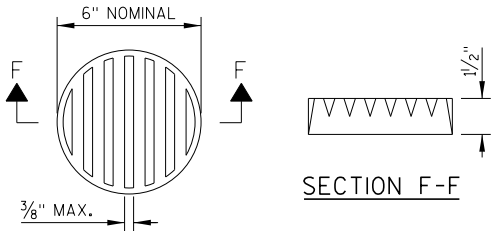
(A01) BACKFILL PAY LIMITS, BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

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

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

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

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO "EXCAVATION FOR STRUCTURES BRIDGES B-37-457".

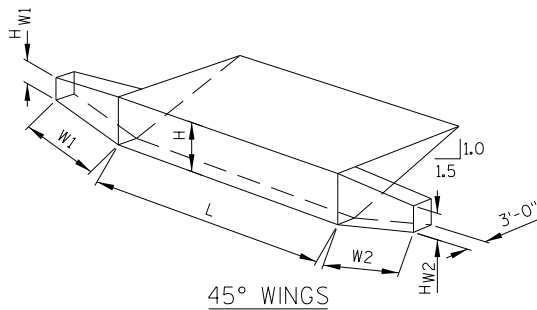


RODENT SHIELD DETAIL

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

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

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



ABUTMENT BACKFILL DIAGRAM

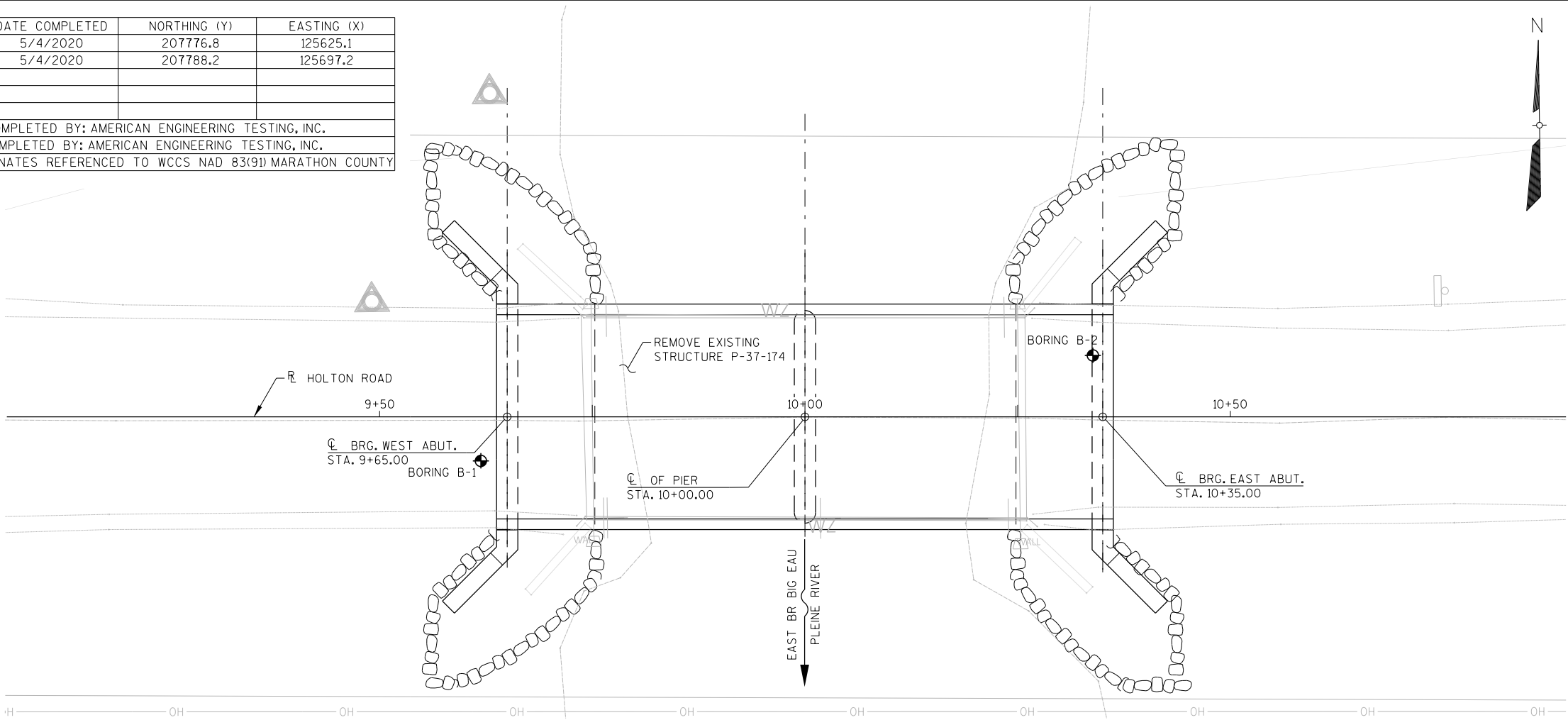
(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)

L = OUT TO OUT OF ABUTMENT BODY (FT)
 H = AVERAGE ABUTMENT FILL HEIGHT (FT)
 W1 = WING 1 LENGTH (FT)
 W2 = WING 2 LENGTH (FT)
 EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS, AND 1.00 FOR TON BID ITEMS)
 $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (3.0')(0.5)(Wx)(H+Hwx)$
 $V_{CY} = V_{CF} (EF)/27$
 $V_{TON} = V_{CY} (2.0)$

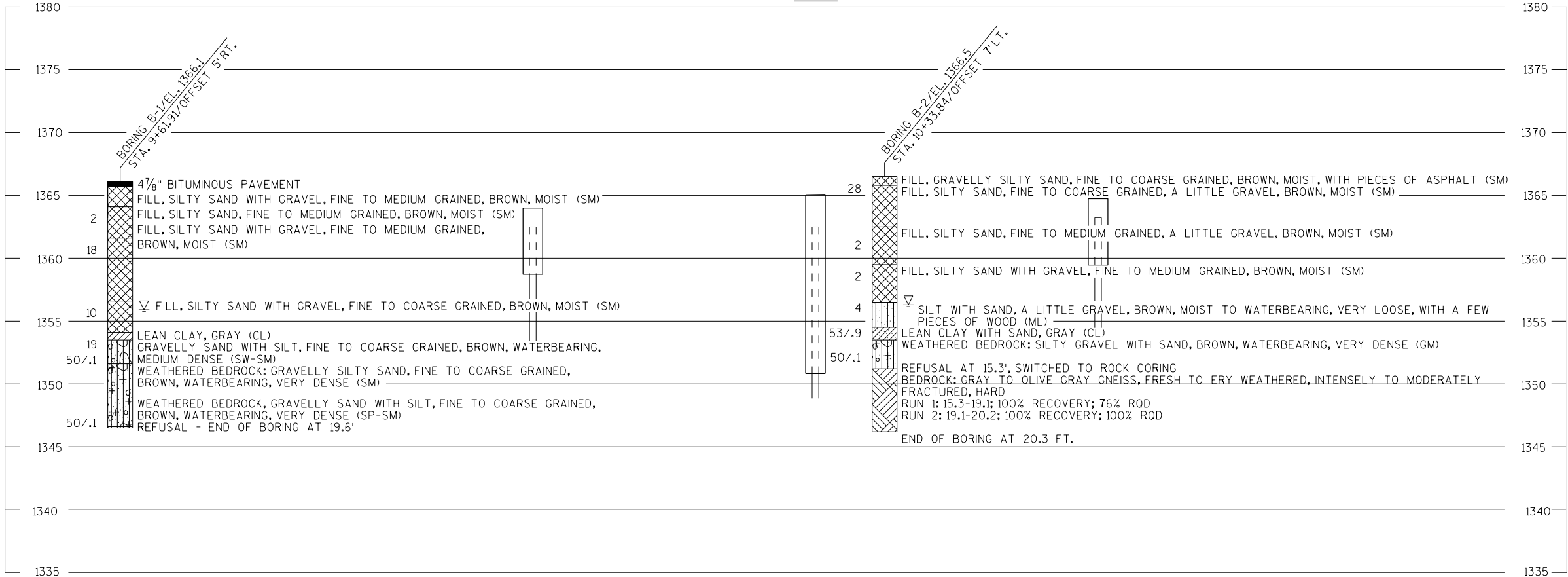
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-457			
DRAWN BY		MES	PLANS CK'D. EAN
CONSTRUCTION DETAILS		SHEET 3 OF 13	

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	5/4/2020	207776.8	125625.1
2	5/4/2020	207788.2	125697.2

BORINGS COMPLETED BY: AMERICAN ENGINEERING TESTING, INC.
REPORT COMPLETED BY: AMERICAN ENGINEERING TESTING, INC.
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MARATHON COUNTY



PLAN



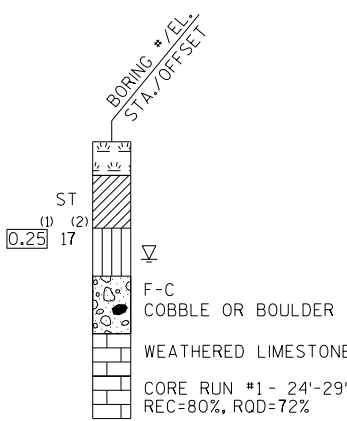
STATE PROJECT NUMBER

9517-04-71

MATERIAL SYMBOLS

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

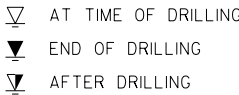
LEGEND OF BORING



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

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

GROUND WATER ELEVATION



ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

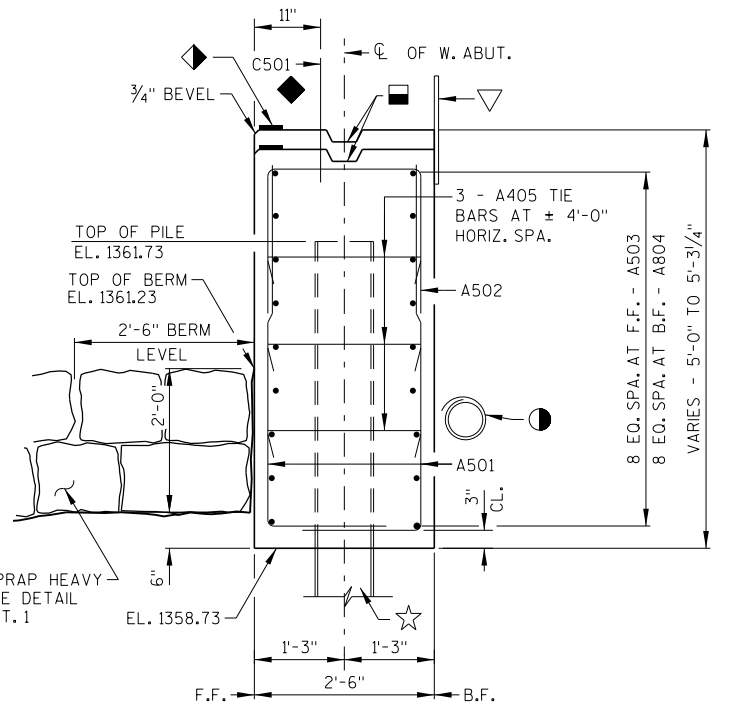
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-37-457			
DRAWN BY		MES	PLANS EAN
SUBSURFACE EXPLORATION		SHEET 4 OF 13	

SCALE =



LEGEND

- ☆ SUPPORT ABUTMENTS ON PILING STEEL HP 10-INCH x 42 LB. SEE FOUNDATION DATA ON THIS SHEET AND PILE SPLICE DETAIL ON SHEET 9.
- PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE, DRAIN BOTH ABUTMENTS TO DOWNSTREAM SIDE OF BRIDGE. ATTACH RODENT SHIELD AT ENDS OF PIPE. SEE SHT. 3.
- 1/2" FILLER TO EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)
- ◆ C501 OR P511 AT 1'-0". BARS MAY BE PLACED AFTER CONCRETE HAS BEEN POURED BUT PRIOR TO ITS INITIAL SET. EMBED 1'-0".
- ▽ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ◈ 4"x3/4" FILLER - TO EXTEND BETWEEN EDGES OF SLAB AT ABUTMENTS AND AROUND ENTIRE PERIMETER AT TOP OF PIER.
- KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"x6".
- OPTIONAL CONSTRUCTION JOINT KEYWAY FORMED BY A BEVELED 2"x6", WITH RUBBERIZED MEMBRANE WATERPROOFING ON BACKFACE.
(COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES")



TYPICAL SECTION THRU BODY



NOTES

FOR WING DETAILS AND ELEVATIONS SEE SHEET 6.

DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF
ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

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

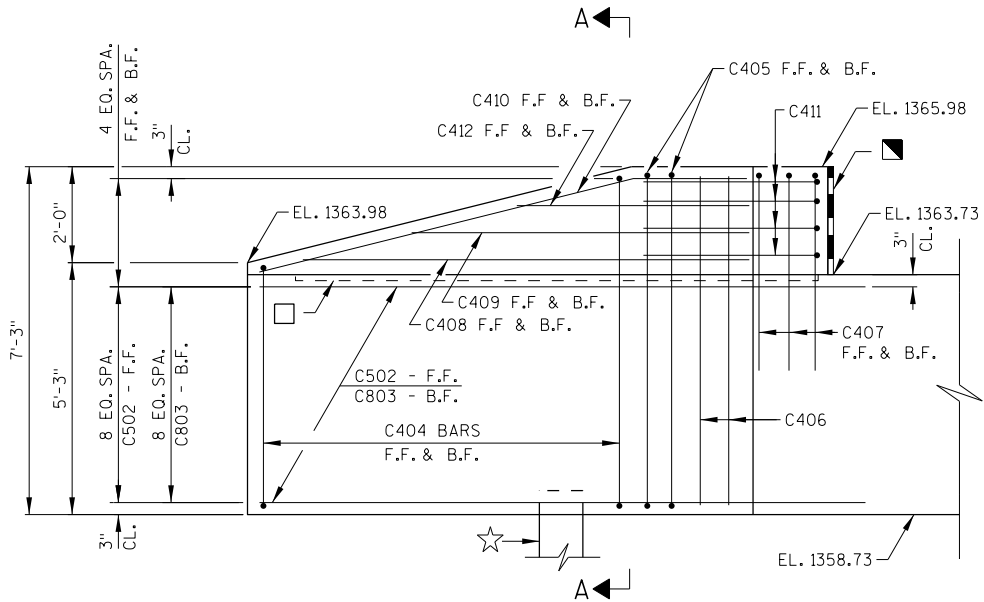
ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS
AT EACH VERTICAL LAYER OF TIES.

FOUNDATION DATA

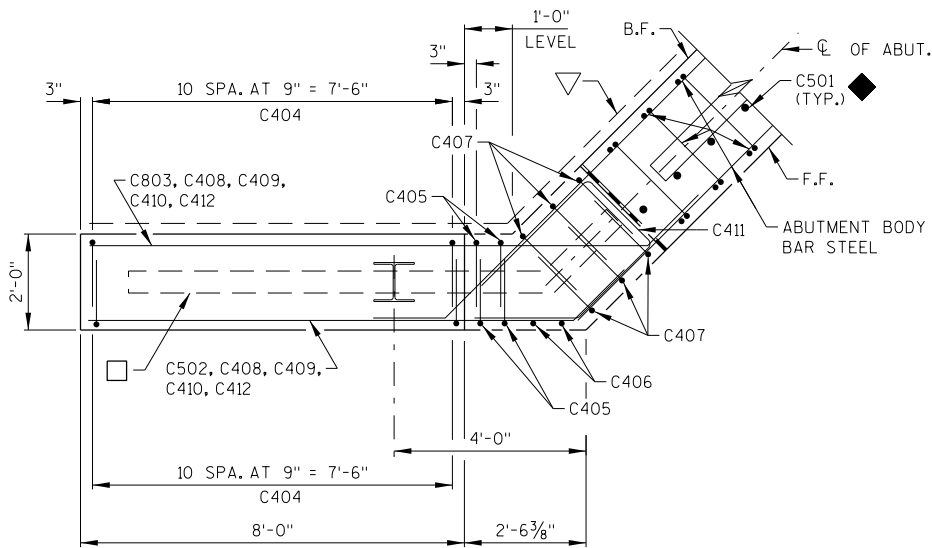
WEST ABUTMENT TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB. PLACED IN PRE-BORED HOLES CORED 3'-0" INTO COMPETENT ROCK AND DO NOT REQUIRE DRIVING. PILING SHALL BE FIRMLY SEATED AFTER PLACEMENT. ESTIMATED 15'-0" LONG.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-457			
DRAWN BY KAM		PLANS CK'D. EAN	
WEST ABUTMENT		SHEET 5 OF 13	

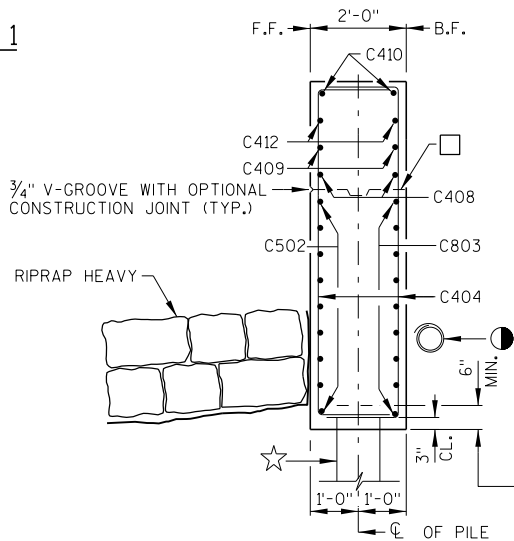
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PLOT DATE: 9/10/2020 PLOT TIME: 5:40:17 PM



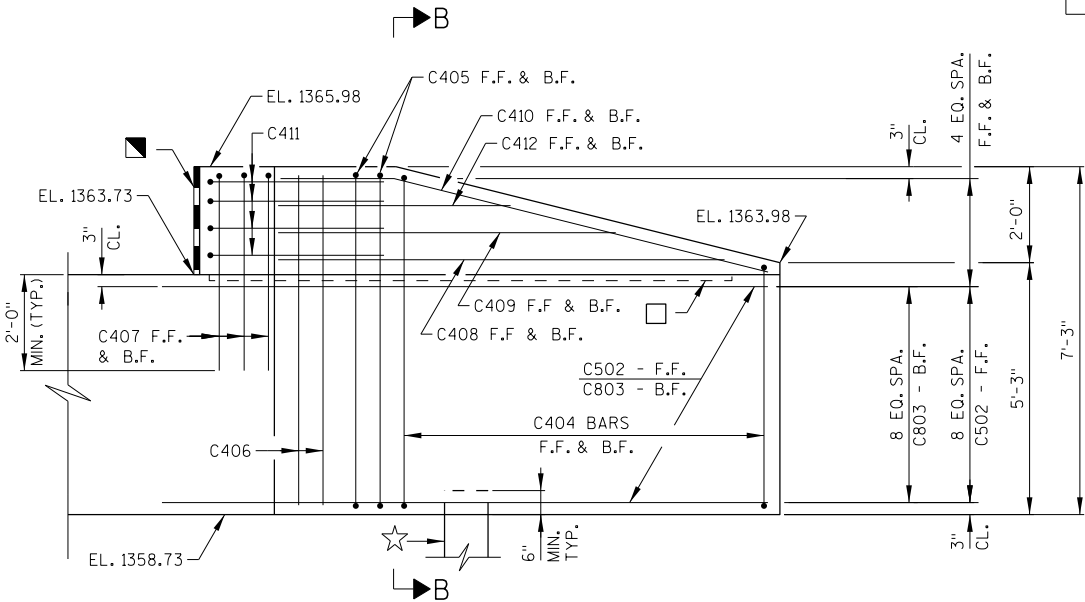
ELEVATION - WING 1



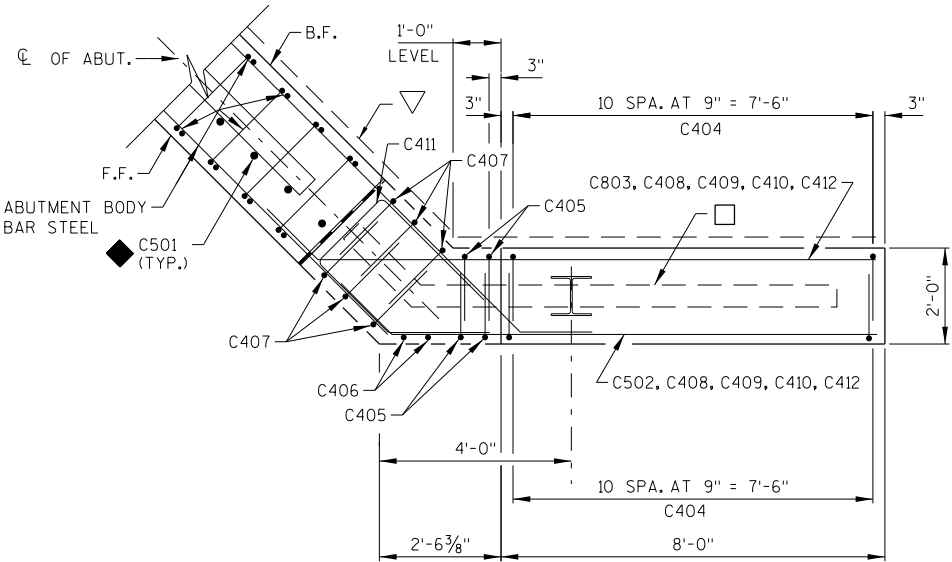
PLAN - WING 1



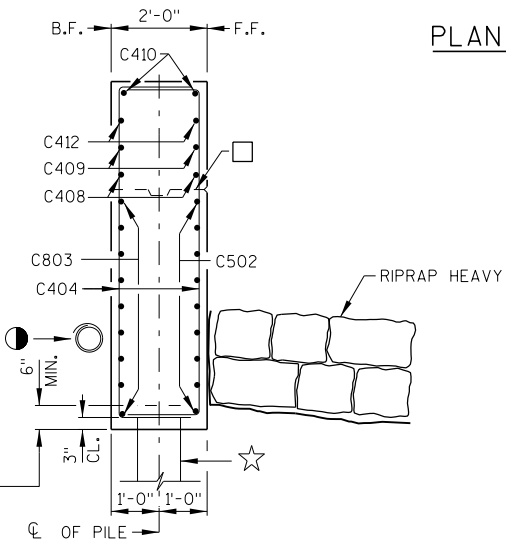
SECTION A-A



ELEVATION - WING 2



PLAN - WING 2



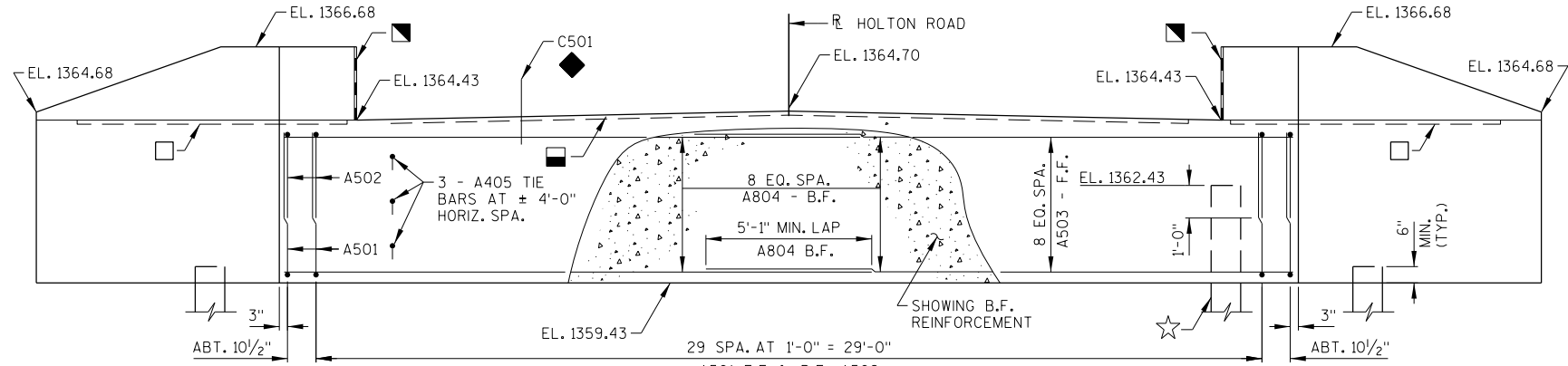
SECTION B-B

NOTE
ADJUST C404 BARS TO MISS PILING.

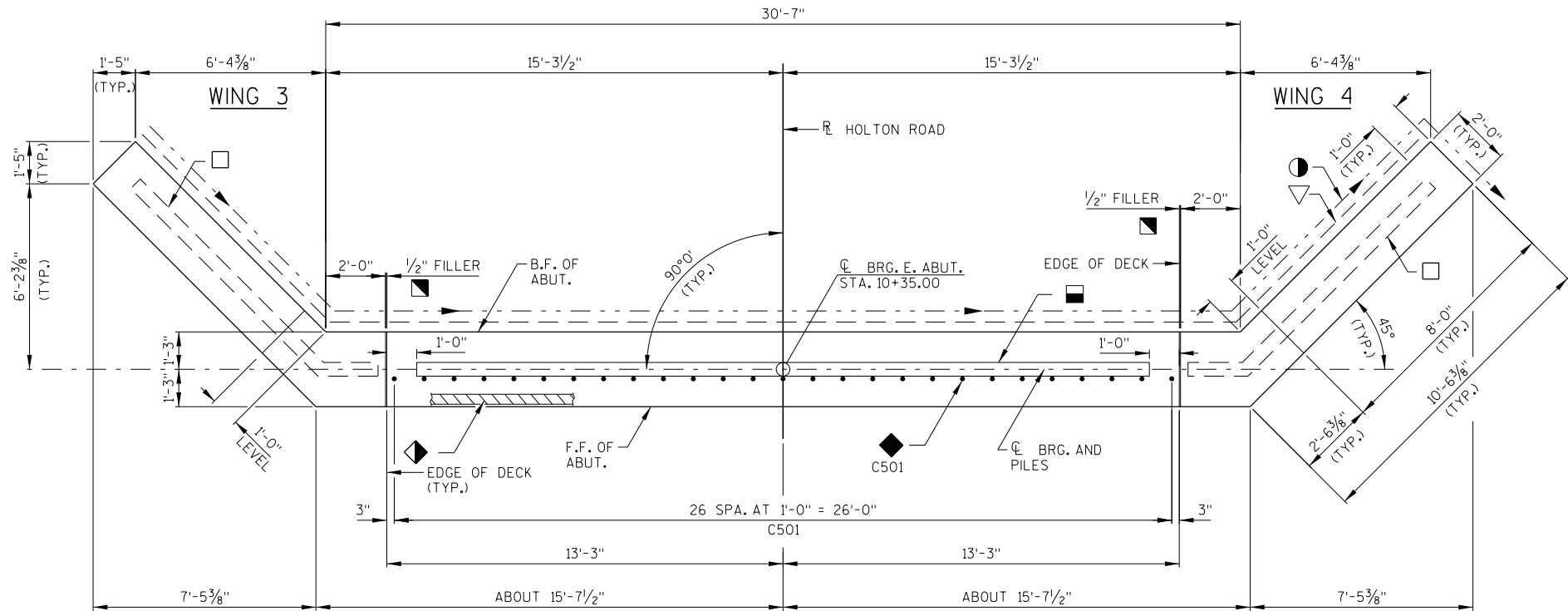
LEGEND
FOR SYMBOL DESCRIPTIONS SEE SHT. 5.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-457			
DRAWN BY KAM		PLANS CK'D. EAN	
WINGS 1 & 2		SHEET 6 OF 13	

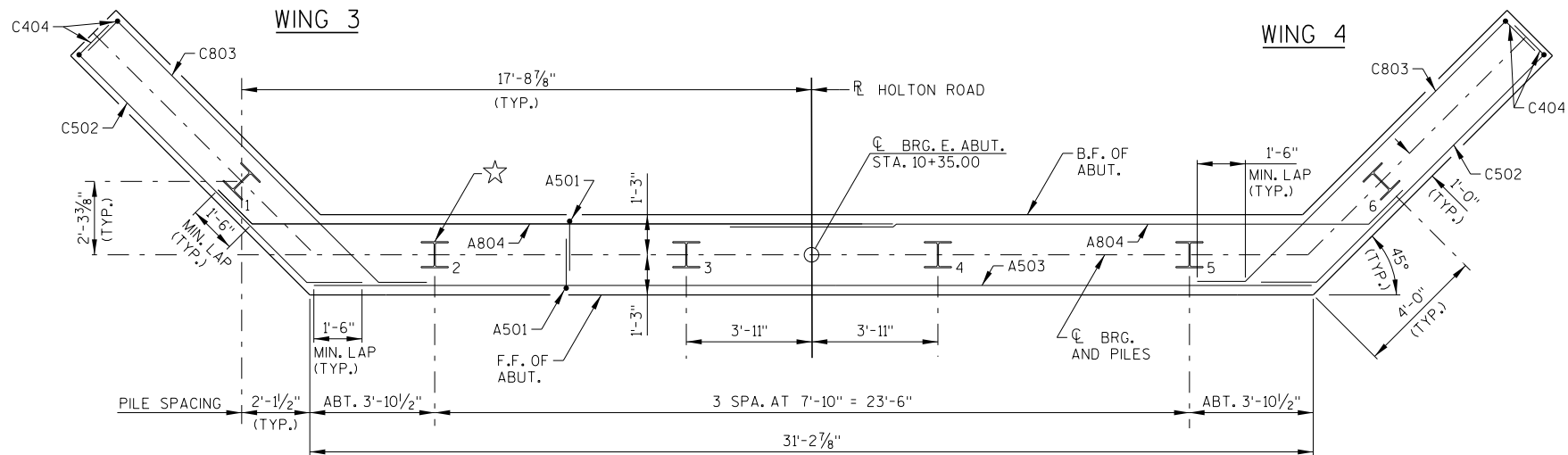
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PLOT DATE: 9/10/2020 PLOT TIME: 5:40:29 PM



ELEVATION
(LOOKING EAST AT EAST ABUTMENT)



PLAN



PILE PLAN

NOTES

FOR WING DETAILS AND ELEVATIONS SEE SHEET 8.

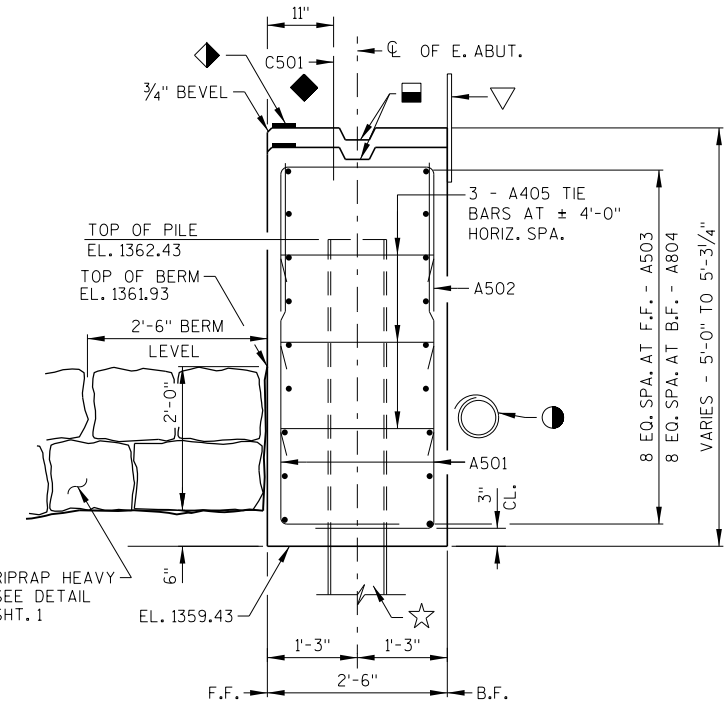
DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF ABUTMENT UNTIL SUPERSTUCTURE IS IN PLACE.

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

ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES

FOUNDATION DATA

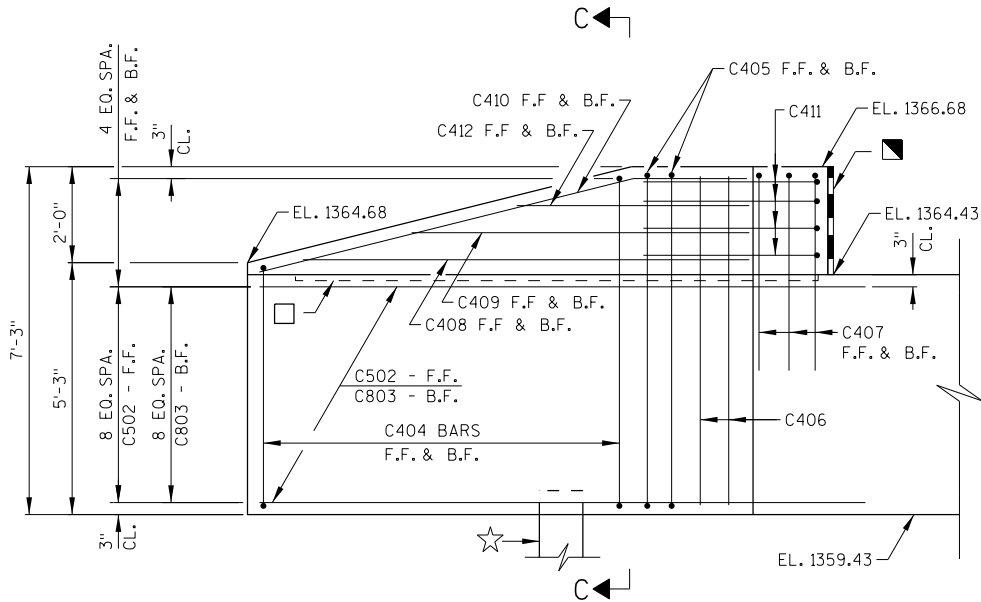
EAST ABUTMENT TO BE SUPPORTED ON PILING STEEL HP 10-INCH x 42 LB. PLACED IN PRE-BORED HOLES CORED 3'-0" INTO COMPETENT ROCK AND DO NOT REQUIRE DRIVING. PILING SHALL BE FIRMLY SEATED AFTER PLACEMENT. ESTIMATED 15'-0" LONG.



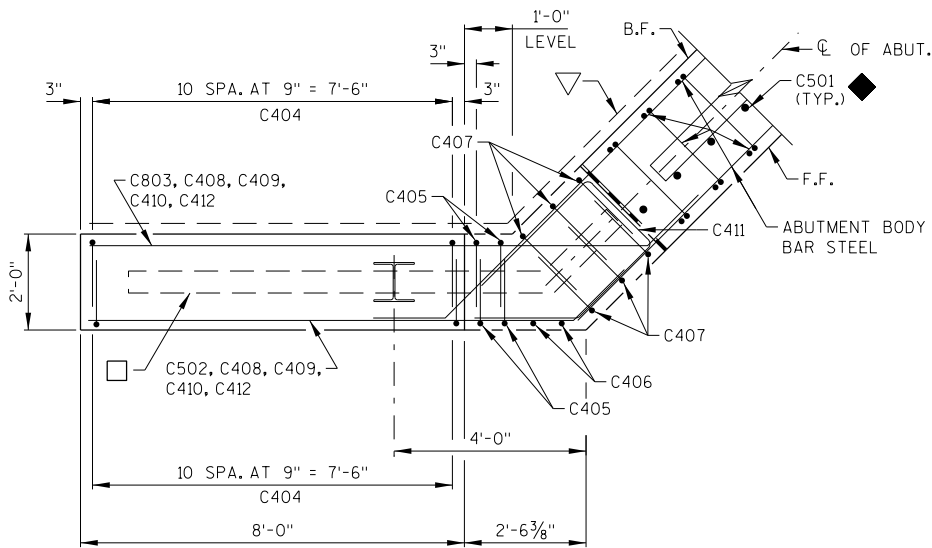
TYPICAL SECTION THRU BODY

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-457			
DRAWN BY KAM		PLANS CK'D. EAN	
EAST ABUTMENT		SHEET 7 OF 13	

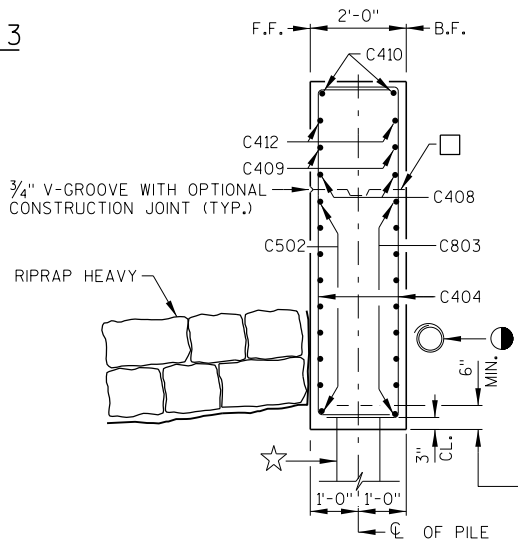
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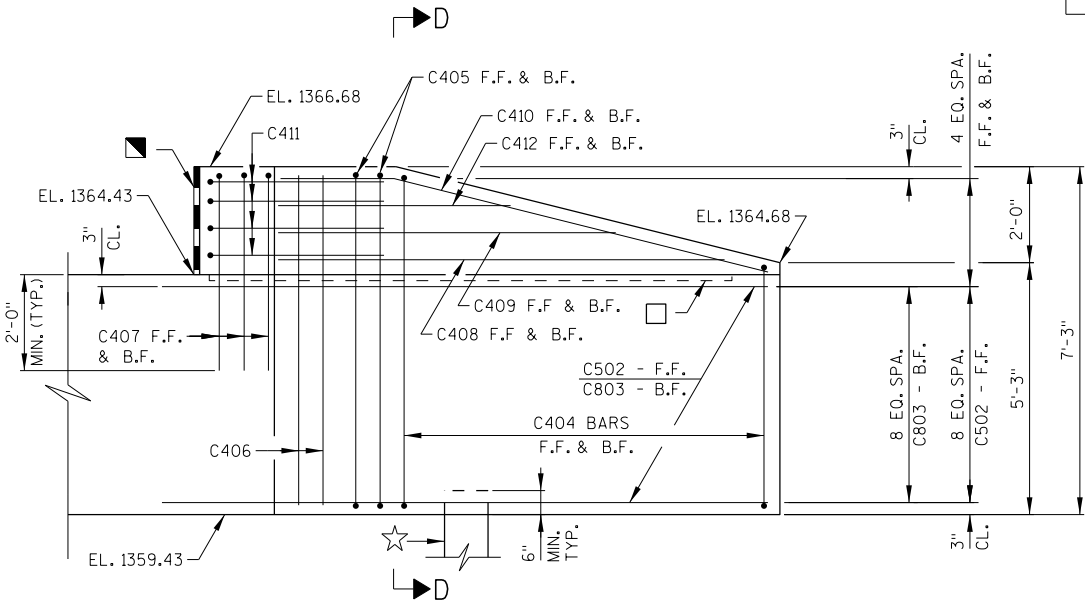
ELEVATION - WING 3



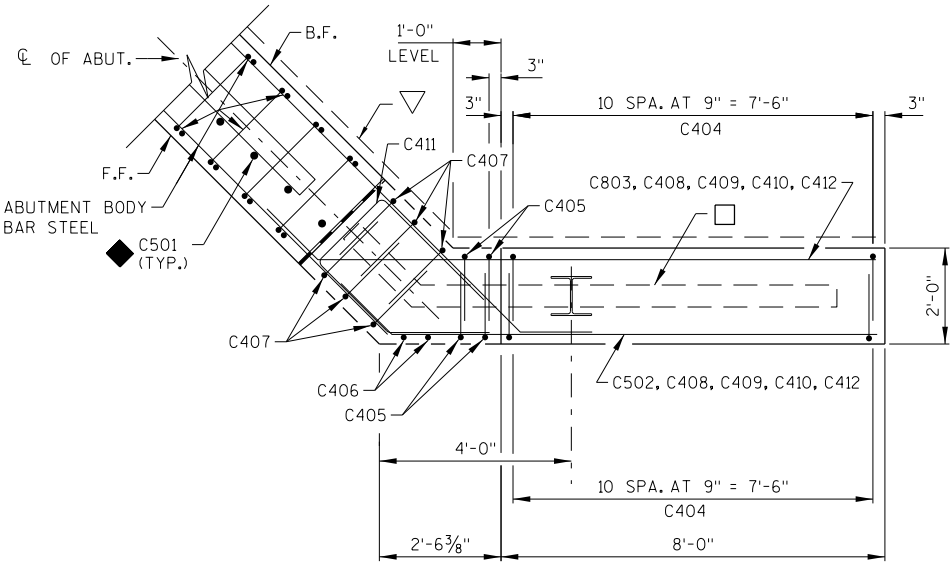
PLAN - WING 3



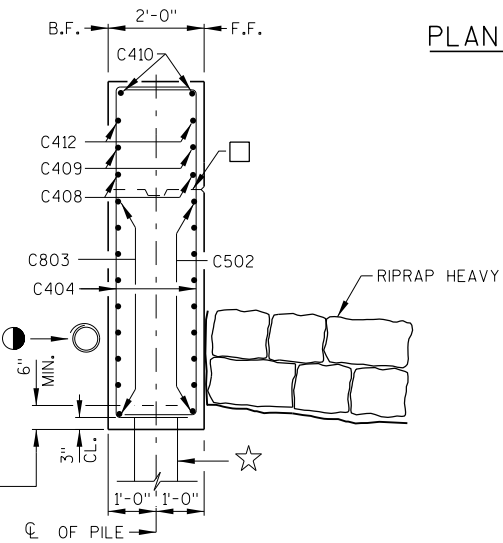
SECTION C-C



ELEVATION - WING 4



PLAN - WING 4



SECTION D-D

NOTE
ADJUST C404 BARS TO MISS PILING.

LEGEND
FOR SYMBOL DESCRIPTIONS SEE SHT. 5.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-457			
DRAWN BY KAM		PLANS CK'D. EAN	
WINGS 3 & 4		SHEET 8 OF 13	

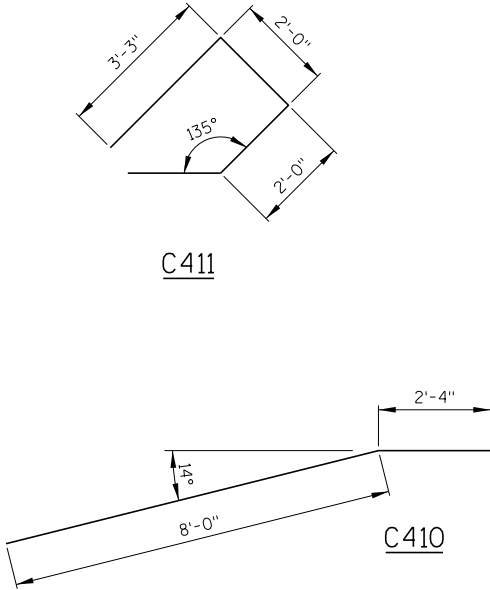
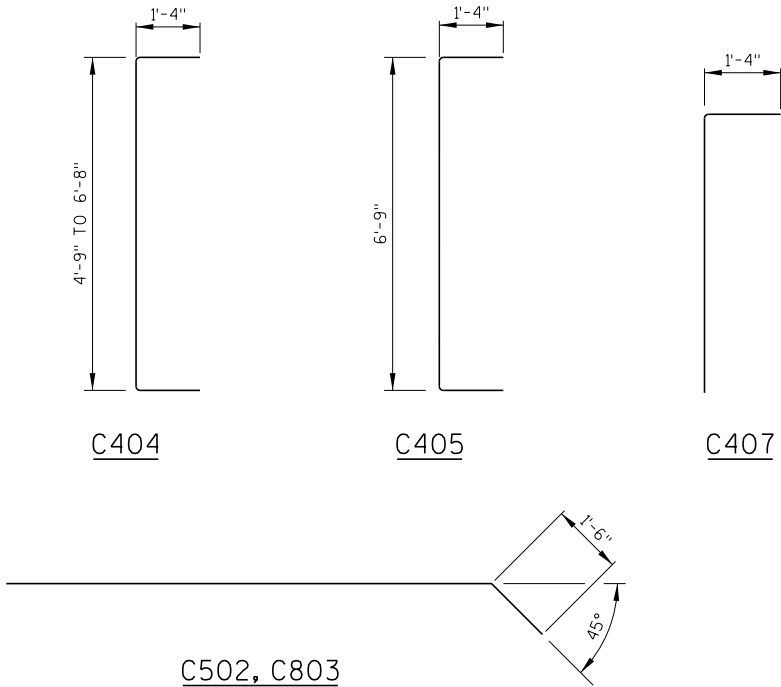
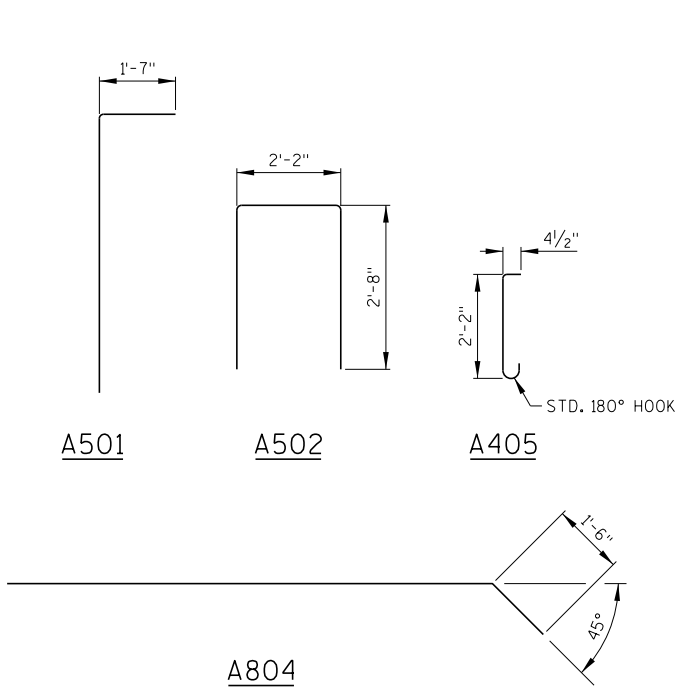
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 PLOT DATE: 9/10/2020

BATCH PRINT SHEET 1 OF 1

8

STATE PROJECT NUMBER

9517-04-71



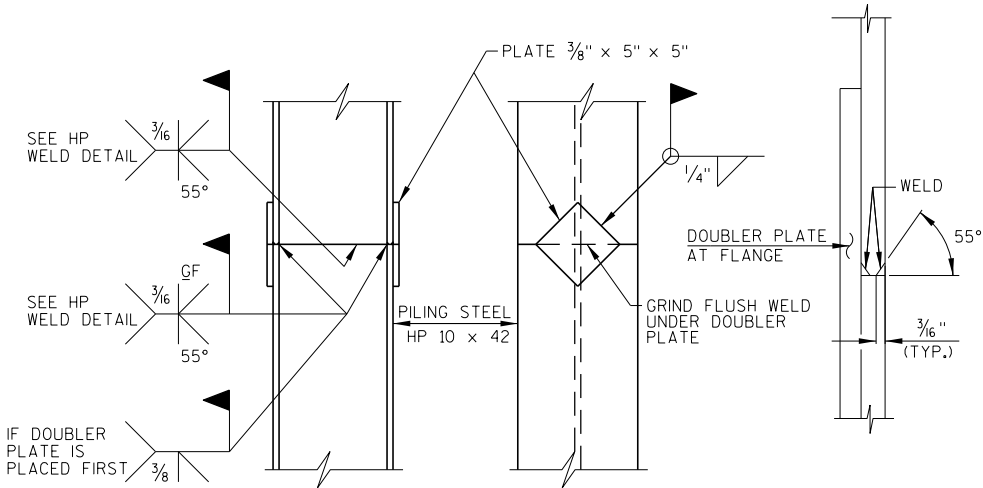
BAR SERIES

MARK	NO. REQ'D	LENGTH
C404	8 SERIES OF 11	7'-3" TO 9'-2"

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
 Δ LENGTH SHOWN FOR BAR IS AN AVG. LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.
 BOTH ABUTMENTS INCLUDED IN THIS BILL OF BARS

MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
NON-COATED BARS				TOTAL WEIGHT = 4,090 LBS	
A501	128	6'-0"	X		ABUTMENTS - F.F. & B.F. VERT.
A502	64	7'-3"	X		ABUTMENTS - TOP VERT.
A503	18	30'-11"			ABUTMENTS - F.F. HORIZ.
A804	36	21'-11"	X		ABUTMENTS - B.F. HORIZ.
A405	54	3'-3"	X		ABUTMENTS - TIES HORIZ.
COATED BARS				TOTAL WEIGHT = 2,810 LBS	
C501	54	2'-0"			ABUTMENTS - DOWEL VERT.
C502	36	11'-9"			WINGS - F.F. HORIZ.
C803	36	13'-5"			WINGS - B.F. HORIZ.
C404	88	8'-3"	X	Δ	WINGS - F.F. & B.F. VERT.
C405	16	9'-3"	X		WINGS - F.F. & B.F. VERT.
C406	8	6'-9"			WINGS - F.F. VERT.
C407	24	5'-3"	X		WINGS - F.F. & B.F. VERT.
C408	8	9'-1"			WINGS - F.F. & B.F. HORIZ.
C409	8	6'-10"			WINGS - F.F. & B.F. HORIZ.
C410	8	10'-4"	X		WINGS - F.F. & B.F. HORIZ.
C411	16	8'-7"	X		WINGS - TIE HORIZ.
C412	8	4'-7"			WINGS - F.F. & B.F. HORIZ.



PILE SPLICE DETAIL

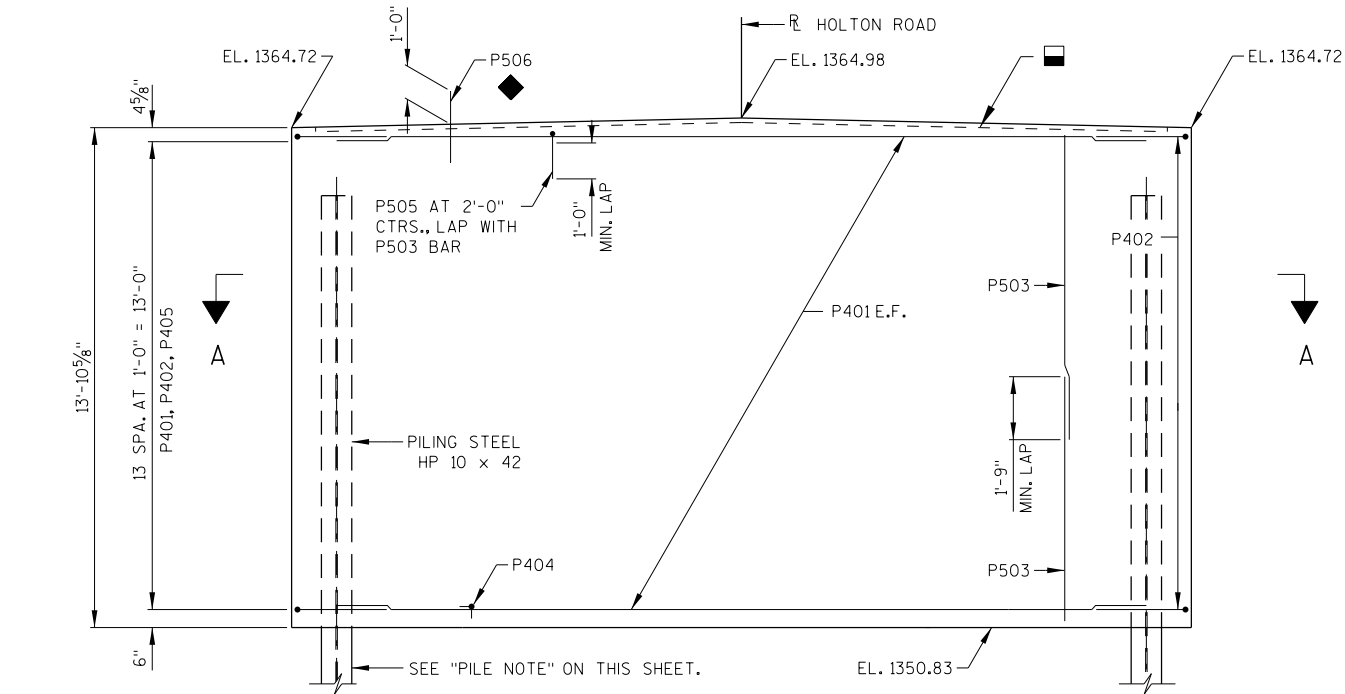
HP WELD DETAIL
(FLANGE SHOWN, WEB SIMILAR)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-457			
DRAWN BY KAM		PLANS CK'D. EAN	
ABUTMENT DETAILS		SHEET 9 OF 13	

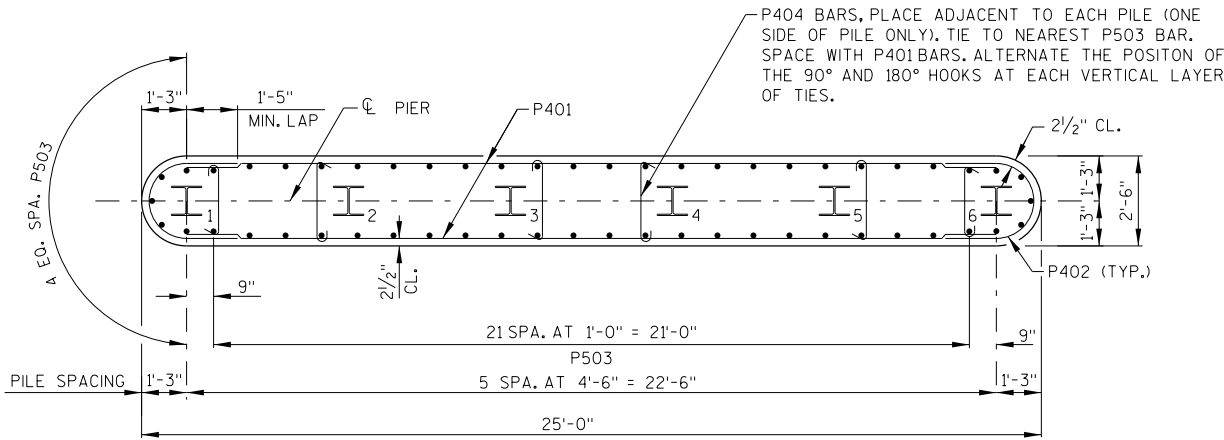
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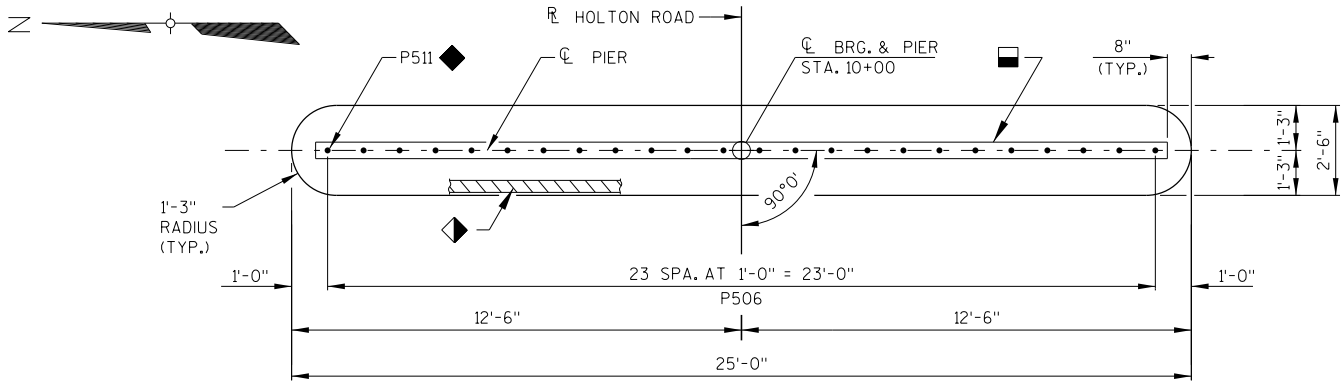
BATCH PRINT SHEET 1 OF 1



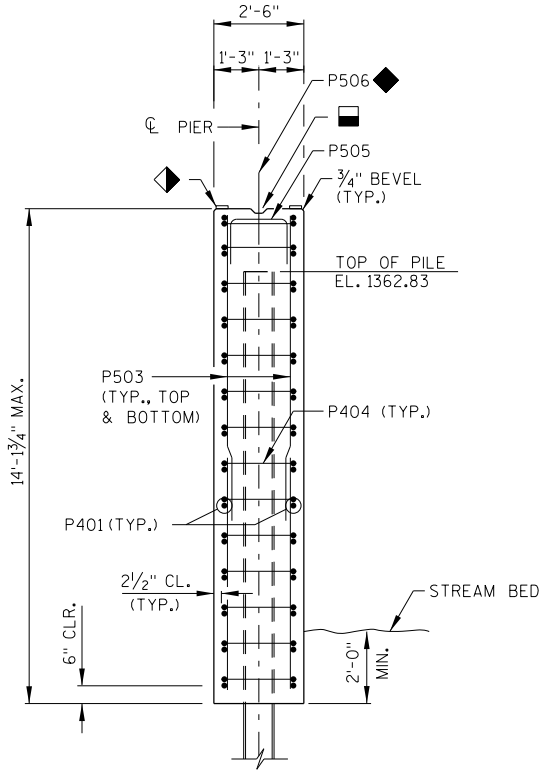
ELEVATION
 LOOKING EAST



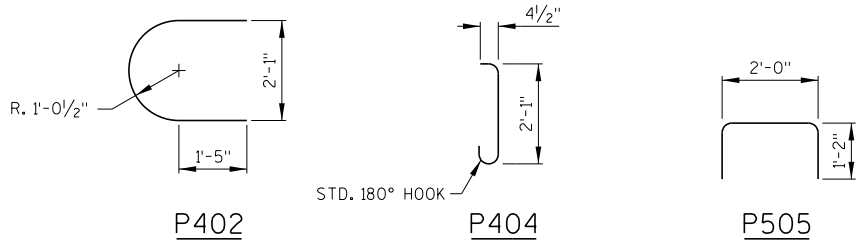
SECTION A-A



PLAN



TYPICAL SECTION
 THRU PIER



BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
NON-COATED BARS					TOTAL WEIGHT = 1,620 LBS
P401	28	22 - 6			PIER BODY HORIZ.
P402	28	6 - 2	X		PIER BODY - ENDS HORIZ.
P503	108	7 - 8			PIER BODY VERT.
P404	84	2 - 11	X		PIER BODY - TIES HORIZ.
P505	12	4 - 3	X		PIER BODY - TOP VERT.
COATED BARS					TOTAL WEIGHT = 60 LBS
P506	24	2 - 0			PIER BODY - DOWELS - TOP VERT.

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHEET 5.

PILE NOTE

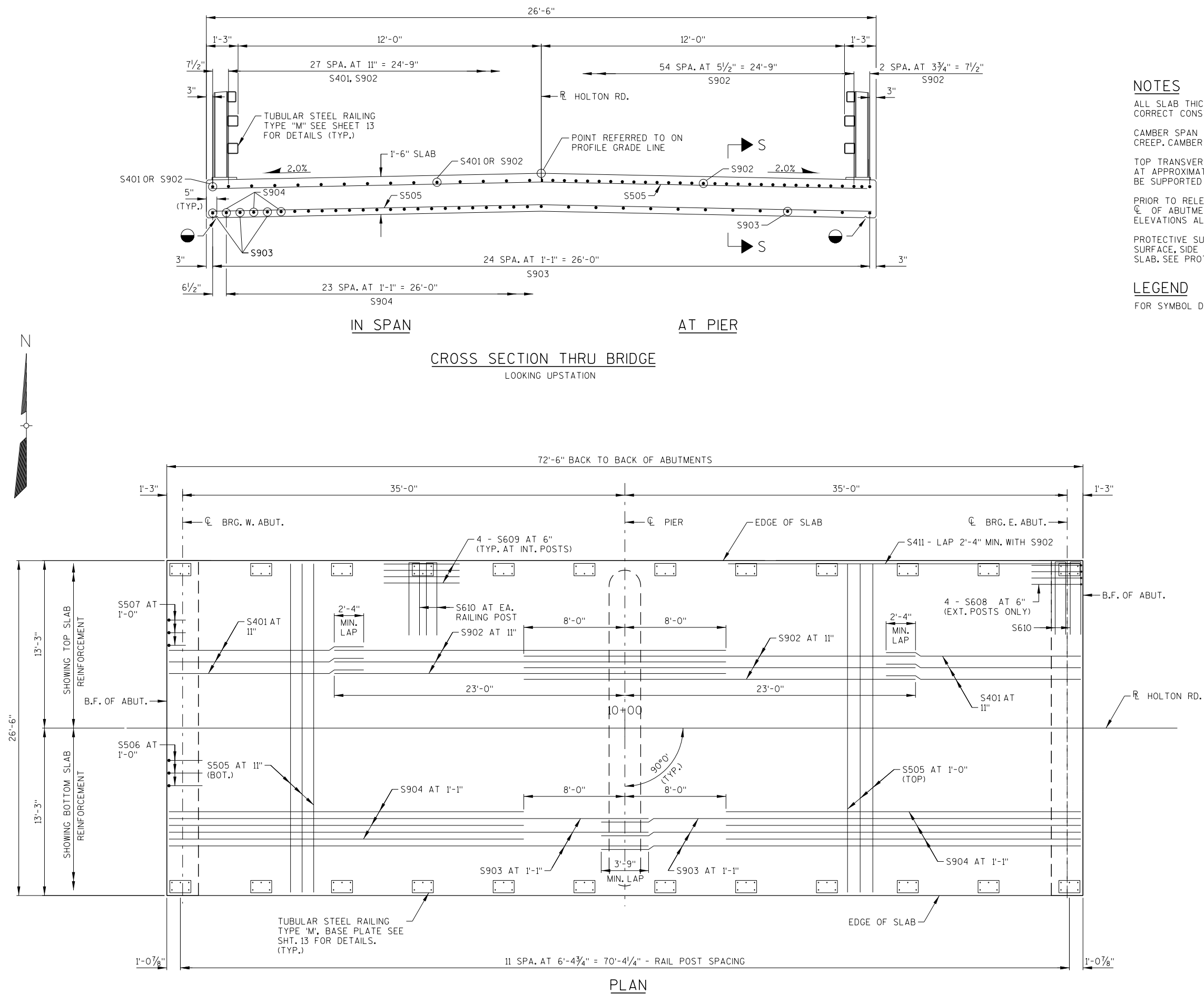
PIER TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB. PILING SHALL BE PLACED IN PRE-BORED HOLES. PRE-BORED HOLES SHALL EXTEND A MINIMUM OF 10'-0" BELOW THE BOTTOM OF PIER ELEVATION AND BE EMBEDDED A MINIMUM OF 3'-0" INTO COMPETENT ROCK. PILING SHALL BE FIRMLY SEATED AFTER PLACEMENT. ESTIMATED 25 FEET LONG.

STATE PROJECT NUMBER

9517-04-71

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-457			
DRAWN BY		TAW	PLANS CK'D. EAN
PIER		SHEET 10 OF 13	

PRINTER DRIVER: C:\Program Files (x86)\Common Files\InterPlot\IPL0T\bin\iplotd-vn.plt
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PLOT DATE: 9/10/2020 PLOT TIME: 5:40:18 PM



STATE PROJECT NUMBER

9517-04-71

NOTES

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

CAMBER SPAN AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

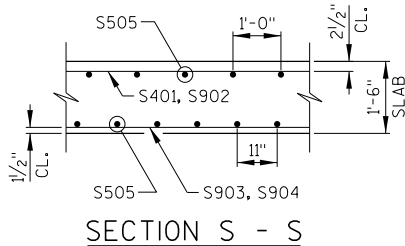
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

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

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF SLAB SURFACE, SIDE OF SLAB AND UNDERSIDE OF SLAB TO 1'-0" FROM THE EDGE OF SLAB. SEE PROTECTIVE SURFACE TREATMENT DETAIL SHT. 2.

LEGEND

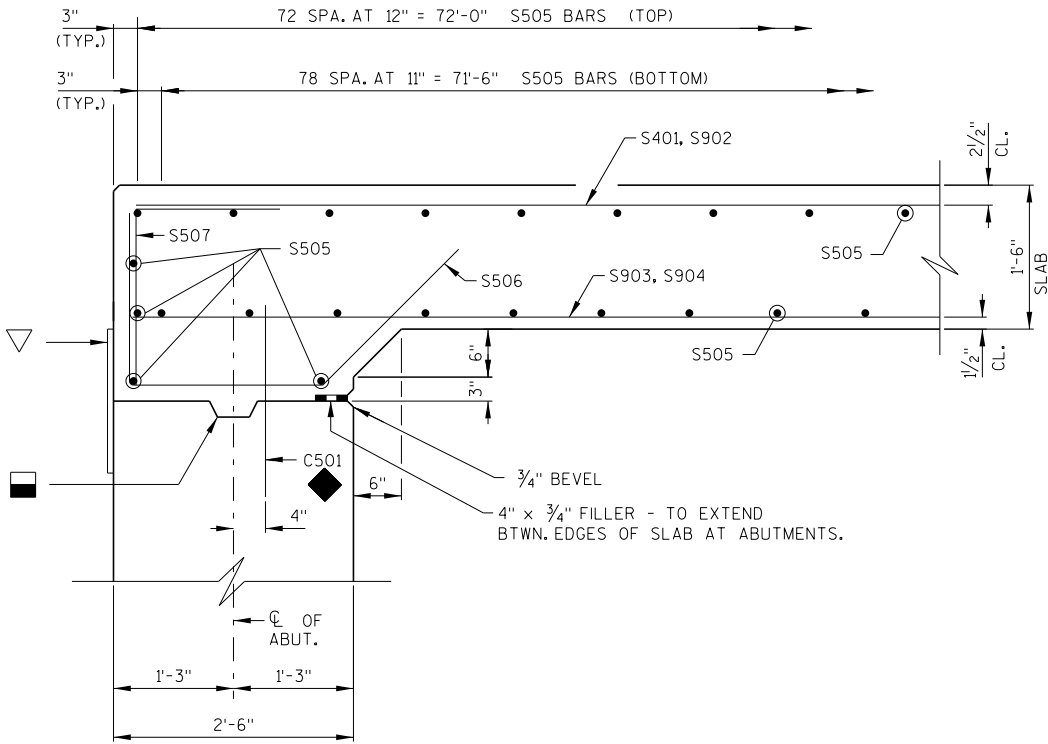
FOR SYMBOL DESCRIPTIONS SEE SHT. 2.



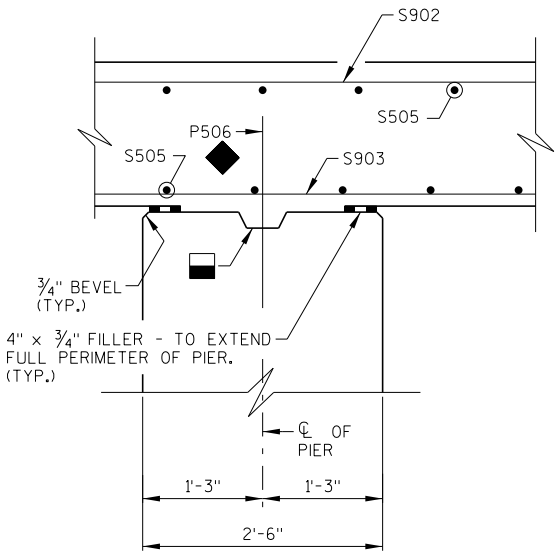
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-457			
DRAWN BY		TRA	PLANS CKD. CAB
SUPERSTRUCTURE		SHEET 11 OF 13	

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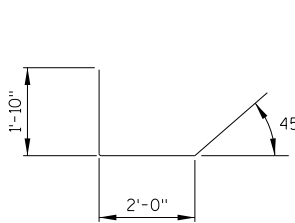
BATCH PRINT SHEET 1 OF 1



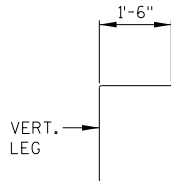
ABUTMENT DETAIL



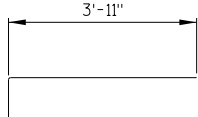
PIER DETAIL



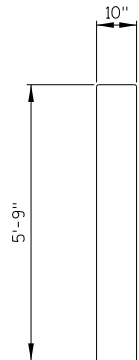
S506



S507

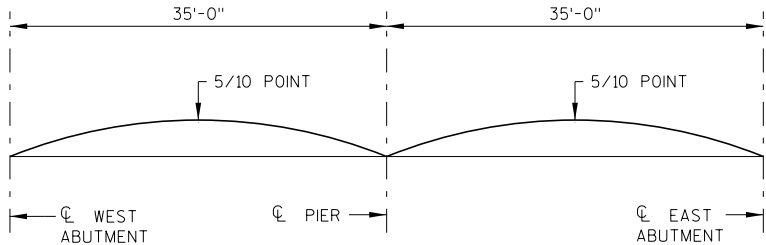


S608



S610

PARTIAL LONGITUDINAL SECTION



CAMBER DIAGRAM

SPAN 1	CL BRG. W. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL BRG. PIER
CAMBER (IN.)	0.0	0.2	0.4	0.5	0.5	0.5	0.4	0.3	0.2	0.1	0.0
SPAN 2	CL BRG. PIER	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL BRG. E. ABUT.
CAMBER (IN.)	0.0	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.4	0.2	0.0

TOP OF DECK ELEVATIONS & OFFSETS

	CL BRG. W. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL BRG. PIER	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL BRG. E. ABUT
NORTH EDGE OF DECK	1365.98	1366.01	1366.04	1366.07	1366.09	1366.12	1366.15	1366.18	1366.21	1366.24	1366.27	1366.31	1366.35	1366.38	1366.42	1366.46	1366.50	1366.55	1366.59	1366.64	1366.68
CL OF DECK	1366.25	1366.28	1366.31	1366.34	1366.36	1366.39	1366.42	1366.45	1366.48	1366.51	1366.54	1366.58	1366.62	1366.65	1366.69	1366.73	1366.77	1366.82	1366.86	1366.91	1366.95
SOUTH EDGE OF DECK	1365.98	1366.01	1366.04	1366.07	1366.09	1366.12	1366.15	1366.18	1366.21	1366.24	1366.27	1366.31	1366.35	1366.38	1366.42	1366.46	1366.50	1366.55	1366.59	1366.64	1366.68

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 5.

STATE PROJECT NUMBER

9517-04-71

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

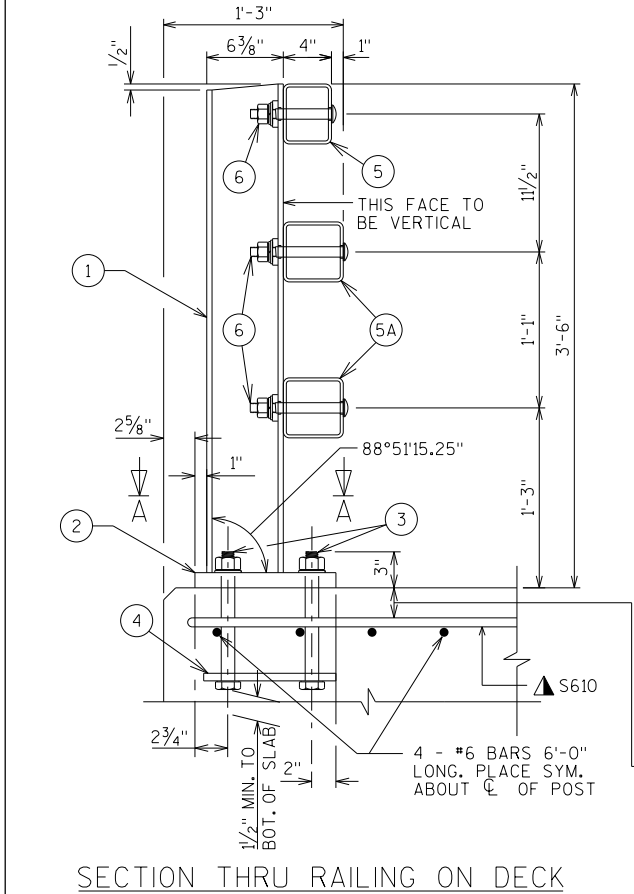
MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
COATED BARS					TOTAL WEIGHT = 24,540 LBS
S401	59	15 - 5			SLAB - TOP AT ENDS LONGIT.
S902	59	31 - 0			SLAB - TOP LONGIT.
S903	50	38 - 0			SLAB - BOTTOM LONGIT.
S904	48	28 - 1			SLAB - BOTTOM LONGIT.
S505	160	26 - 2			SLAB - TOP & BOTTOM TRANS.
S506	54	5 - 9	X		SLAB AT ABUT LONGIT.
S507	54	3 - 3	X		SLAB AT ABUT LONGIT.
S608	16	4 - 9	X		SLAB AT CORNER RAILING POSTS LONGIT.
S609	80	6 - 0			SLAB AT INTERIOR RAILING POSTS LONGIT.
S610	48	12 - 0	X		SLAB AT RAILING POSTS TRANS.
S411	2	30 - 5			SLAB - TOP AT EDGES OF SPAN 2 LONGIT.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-457			
DRAWN BY		TRA	PLANS CKD. CAB
SUPERSTRUCTURE DETAILS			SHEET 12 OF 13

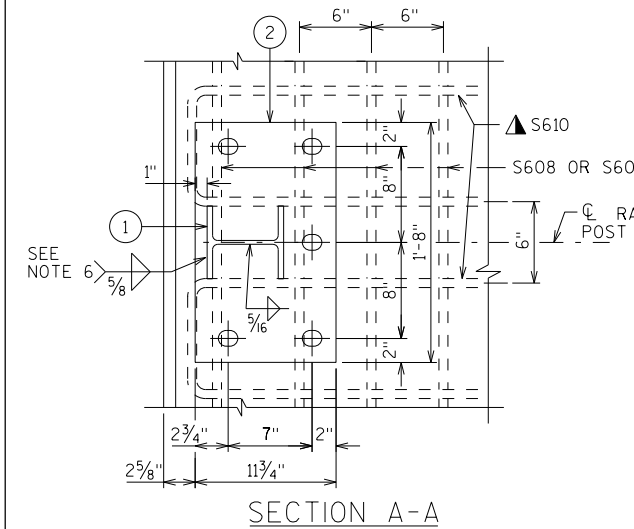
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PLOT TIME: 5:40:26 PM

BATCH PRINT SHEET 1 OF 1

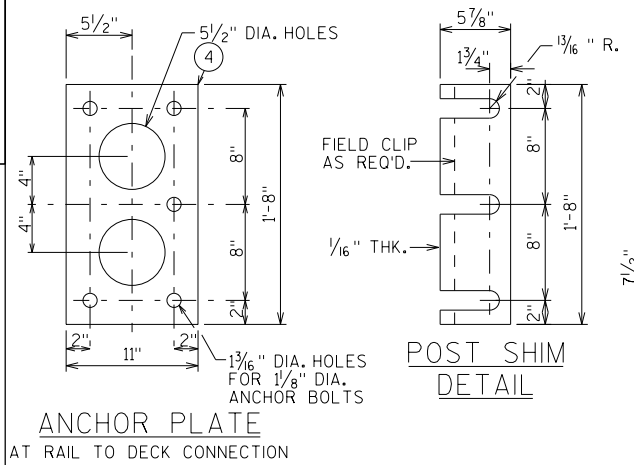
8



SECTION THRU RAILING ON DECK

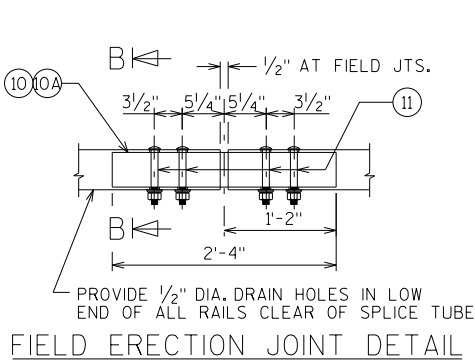


SECTION A-A

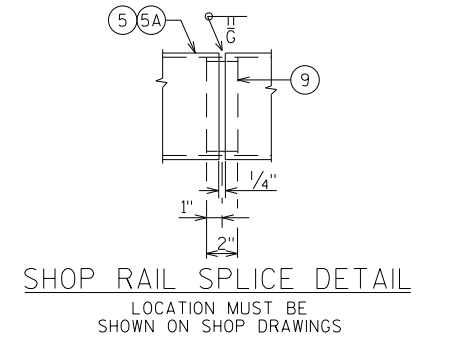


ANCHOR PLATE

AT RAIL TO DECK CONNECTION



FIELD ERECTION JOINT DETAIL

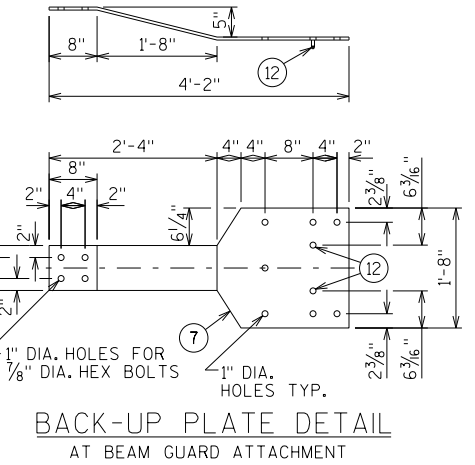


SHOP RAIL SPLICE DETAIL

LOCATION MUST BE SHOWN ON SHOP DRAWINGS

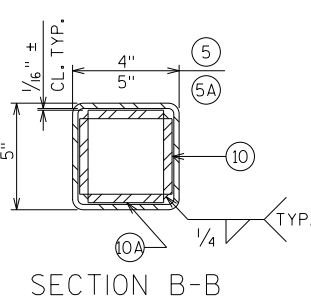


ANCHOR PLATE AT BEAM GUARD ATTACHMENT

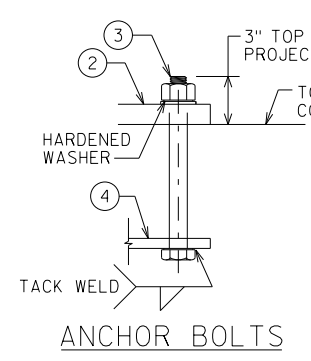


BACK-UP PLATE DETAIL

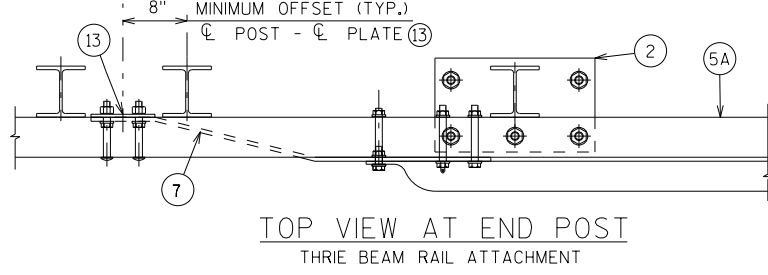
AT BEAM GUARD ATTACHMENT



SECTION B-B

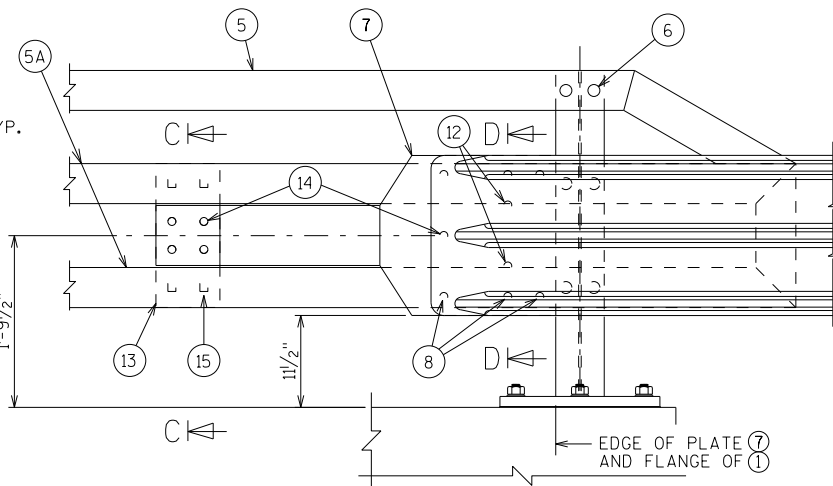


ANCHOR BOLTS



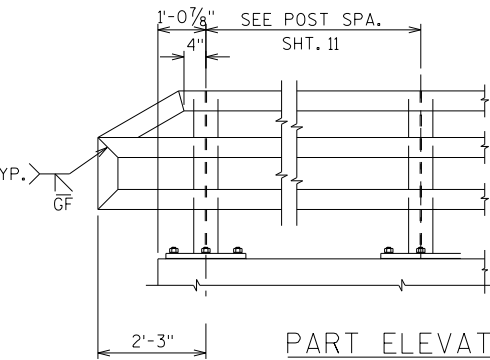
TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT

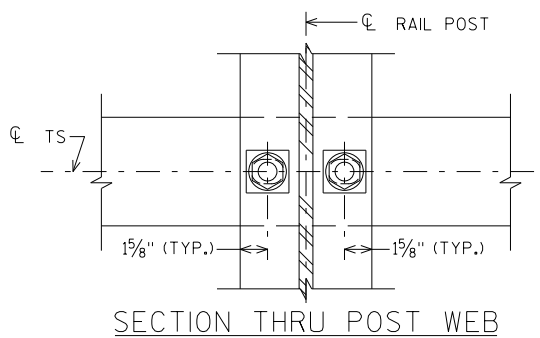


DETAIL AT END POST

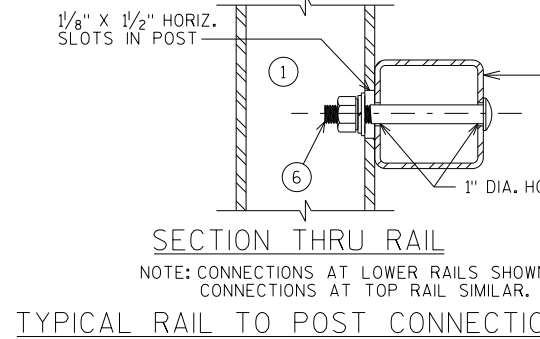
THRIE BEAM RAIL ATTACHMENT



PART ELEVATION OF RAILING



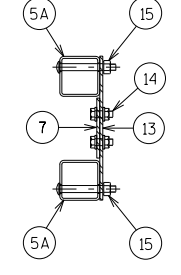
SECTION THRU POST WEB



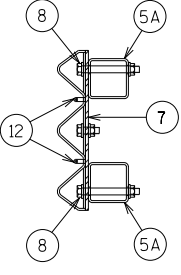
SECTION THRU RAIL

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

TYPICAL RAIL TO POST CONNECTIONS



SECTION C-C



SECTION D-D

LEGEND

- 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.
- 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.
- ASTM A449 - 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'-3" LONG (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)
- 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/8" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 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.)
- 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" x 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.
- 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.
- SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- 3/8" x 3 5/8" x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- 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.
- 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/8" x 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 1 5/8" x 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.
- 7/8" DIA. x 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D.).
- 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.
- 7/8" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- 1" DIA. 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

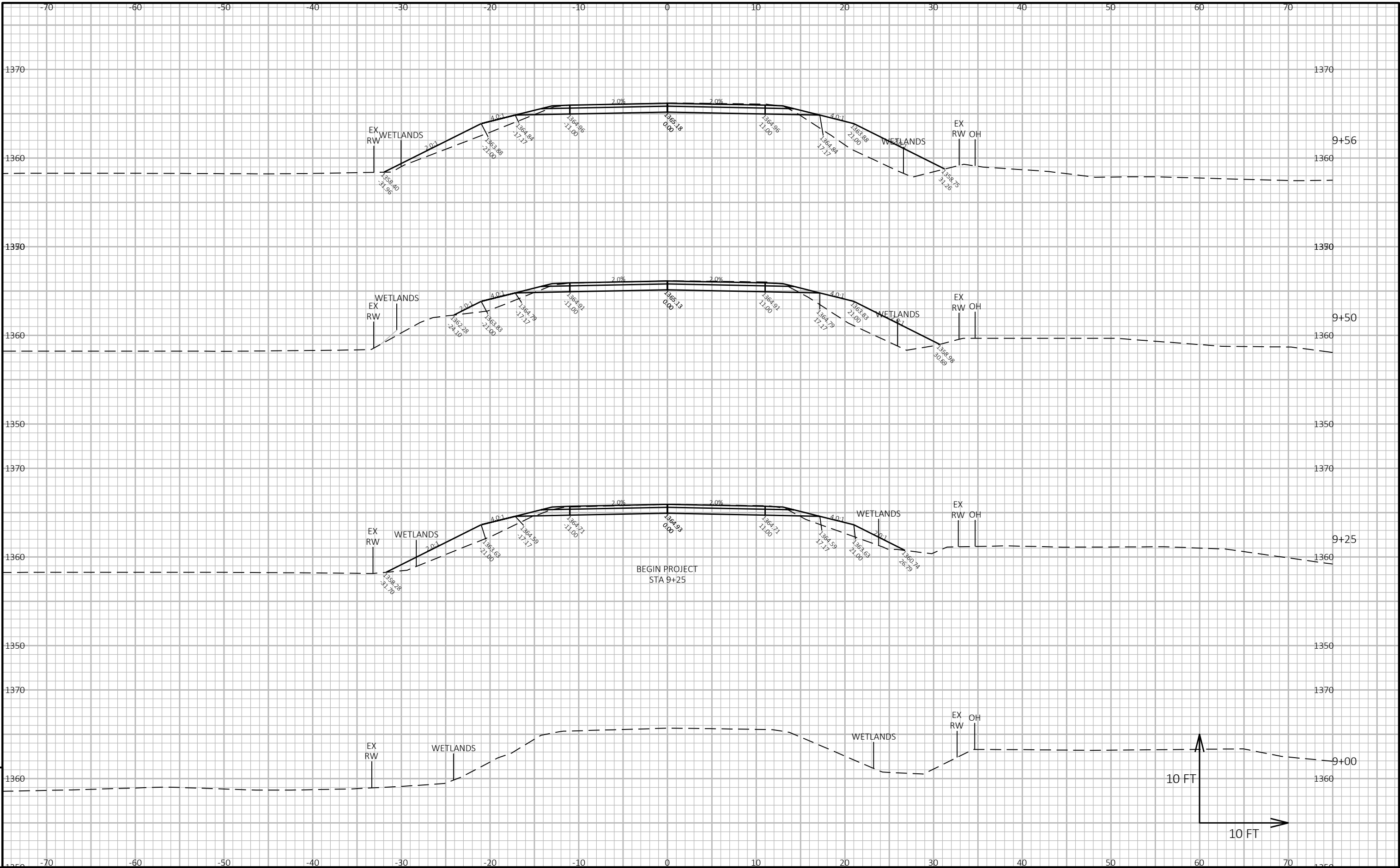
- BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
- RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
- THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
- 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.
- ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
- WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
- 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.
- 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.
- ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.

▲ TIE TO TOP MAT OF STEEL.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-457			
DRAWN BY		TRA	PLANS CAB
TUBULAR STEEL RAILING TYPE 'M'		SHEET 13 OF 13	

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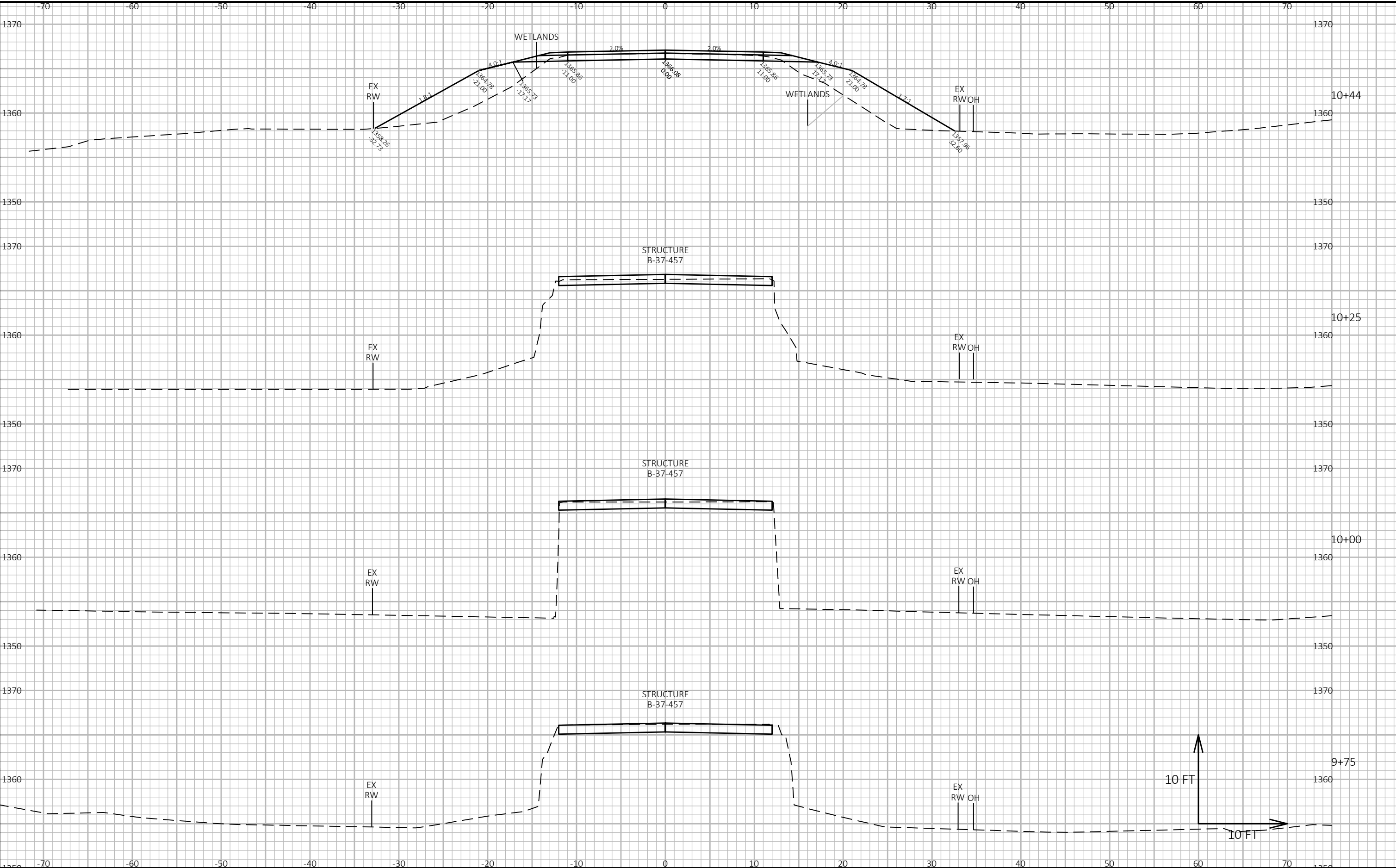
STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL 1.25	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	NOTE 1		NOTE 8
9+25.00	925	10	27	0	29	0	0	0	0	0	0
9+50.00	950	25	34	0	37	10	0	11	0	13	-3
9+56.39	956	6	30	0	48	29	0	30	0	51	-13
9+75.00	975	19	0	0	0	8	0	10	0	64	-18
10+00.00	1000	25	0	0	0	10	0	16	0	84	-28
10+25.00	1025	25	0	0	0	0	0	0	0	84	-28
10+43.61	1044	19	0	0	0	0	0	0	0	85	-28
10+75.00	1075	31	17	0	90	6	0	31	0	123	-61
			27	0	8	26	0	57	0	194	-106
							0				
							0				
COLUMN TOTALS						88	0	155			

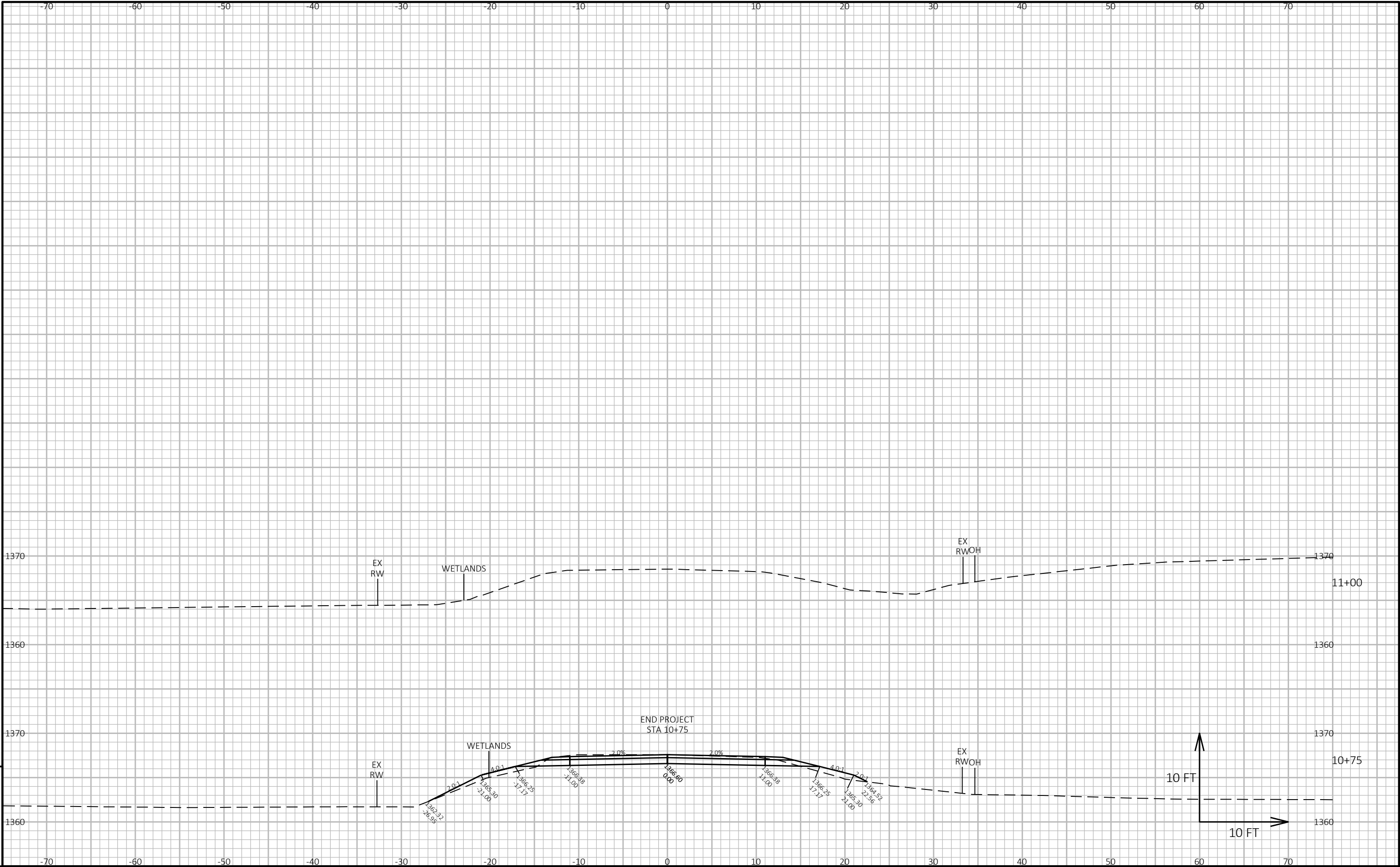


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PROJECT NO: 9517-04-71	HWY: HOLTON ROAD	COUNTY: MARATHON	CROSS SECTIONS: HOLTON ROAD	SHEET E
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Notes



Wisconsin Department of Transportation

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