

LAX  
PROJECT ID: 5025-00-72  
WITH: N/A  
COUNTY: MONROE

JANUARY 2026  
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 = 44

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

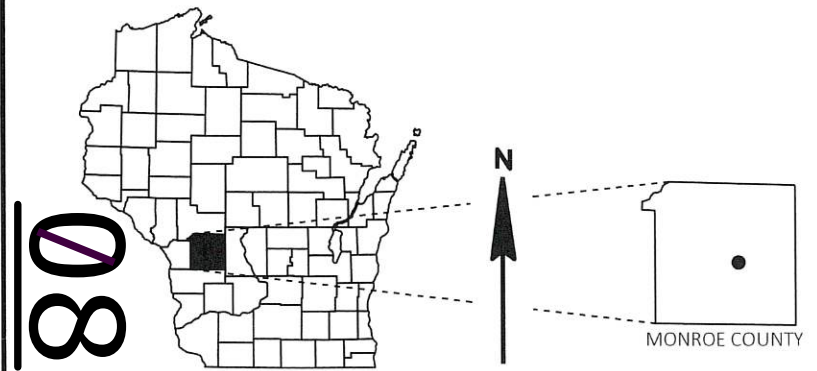
T TOMAH, INTERIOR ROAD

LEMONWEIR CREEK BRIDGE, B-41-0339

LOC STR  
MONROE COUNTY

STATE PROJECT NUMBER  
5025-00-72

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5025-00-72	WISC 2026128	1

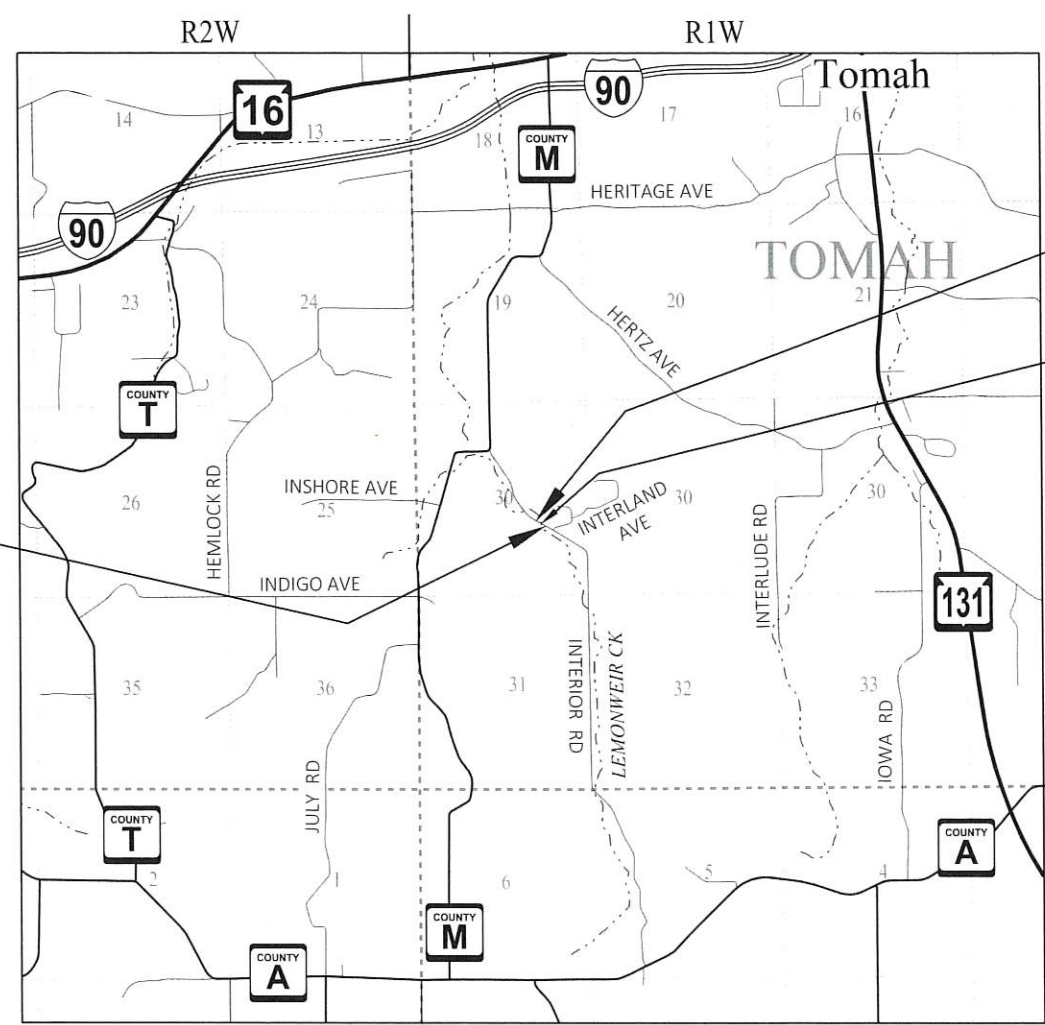


DESIGN DESIGNATION 5025-00-02

A.A.D.T.	2026	=	200
A.A.D.T.	2046	=	210
D.H.V.		=	
D.D.		=	
T.		=	19.1%
DESIGN SPEED		=	40 MPH
ESALS		=	

CONVENTIONAL SYMBOLS

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



LAYOUT  
SCALE 0 1 MI  
TOTAL NET LENGTH OF CENTERLINE = 0.038 MILES

END PROJECT 5025-00-72  
STA 11+00.00'IR'  
Y = 370,591.778  
X = 697,959.644  
REPLACE BRIDGE STRUCTURE P-41-0180

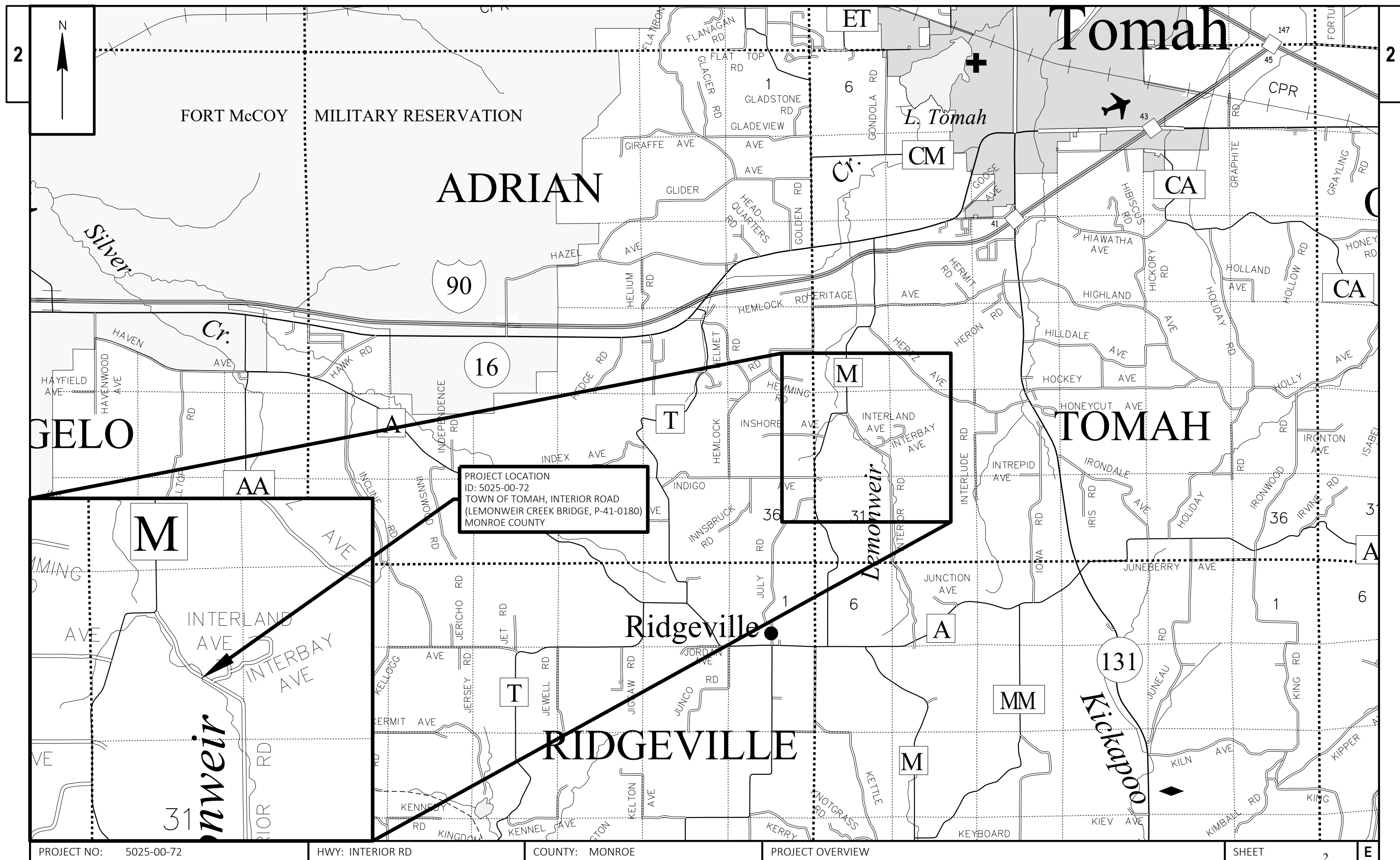
HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), MONROE COUNTY, NAD83 ( 2011 ), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.  
ELEVATIONS ARE REFERENCED TO NAVD 88 ( 2012 ). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18.

ACCEPTED FOR  
TOWN OF TOMAH  
Date: 2/26/2025  
TOWN CHAIRMAN

ORIGINAL PLANS PREPARED BY  
AYRES  
WISCONSIN  
AMANDA M. INMAN  
44690 OREGON WI  
PROFESSIONAL ENGINEER  
8/27/2025  
DATE: (Professional Engineer Signature)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
PREPARED BY  
Surveyor AYRES  
Designer AYRES  
Project Manager JOSH SCHOENMANN  
Regional Examiner REGIONAL EXAMINER  
Regional Supervisor KYLE HEMP

APPROVED FOR THE DEPARTMENT  
DATE: 8/12/25  
(Signature)



GENERAL NOTES

NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT LOCATION THAT ARE NOT SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING ALL UTILITIES.

A SAWED JOINT WILL BE REQUIRED WHERE NEW PAVEMENT IS TO MEET AN EXISTING PAVED SURFACE.

EXACT TRAFFIC CONTROL LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ALL SIGN LOCATIONS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.

NO TREES OR SHRUBS SHALL BE REMOVED UNLESS DESIGNATED FOR REMOVAL BY THE ENGINEER.

PROTECT FROM DAMAGE AND COMPLETE SHOULDER WORK AROUND ANY EXISTING SIGNS OR MAILBOXES THAT ARE TO REMAIN IN PLACE.

RESTORATION OF EXPOSED SLOPES AND DITCHES SHALL TAKE PLACE WITHIN 7 CALENDAR DAYS AFTER FINISHED GRADING IS COMPLETE.

WETLANDS ARE PRESENT IN THE PROJECT AREA. DO NOT DISTURB WETLANDS OUTSIDE THE PROPOSED SLOPE INTERCEPTS.

IF AN EXISTING SIGN IS TO BE REMOVED AND REPLACED WITH A NEW SIGN, DO NOT REMOVE THE EXISTING SIGN PRIOR TO INSTALLATION OF THE NEW SIGN.

THE LOCATIONS OF EROSION CONTROL ITEMS SHALL BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

HMA UNIT WEIGHT: 112 LB/SY/IN

ABBREVIATIONS

A.D.T.	AVERAGE DAILY TRAFFIC
ATMS	ARTERIAL TRAFFIC MANAGEMENT SYSTEM
BM	BENCHMARK
BOC	BACK OF CURB
BTWN	BETWEEN
C&G	CURB AND GUTTER
C.E.	COMMERCIAL ENTRANCE
CONST	CONSTRUCTION
CP	CONTROL POINT
CTR.	CENTER
D.D.	DIRECTIONAL DISTRIBUTION
D.H.V.	DESIGN HOURLY VOLUME
DMS	DYNAMIC MESSAGE SIGN
EB	EASTBOUND
EXIST	EXISTING
GALV.	GALVANIZED
HMA	HOT MIX ASPHALT
H.S.	HIGH STRENGTH
ITS	INTELLIGENT TRAFFIC SYSTEM
MAX	MAXIMUM
MIN	MINIMUM
NB	NORTHBOUND
NOR	NORMAL
PC	POINT OF CURVATURE
PCC	POINT OF COMMON CURVATURE
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
PVT	PAVEMENT
R/L	REFERENCE LINE
REQ'D	REQUIRED
SB	SOUTHBOUND
SYM	SYMMETRICAL
T.	PERCENT TRUCKS
TCC	TRAFFIC CONDITION CAMERA
TYP	TYPICAL
VAR	VARIABLE
WB	WESTBOUND
Wt.	WEIGHT
X-WALK	CROSS WALK

CONTACTS

MONROE COUNTY HIGHWAY DEPARTMENT

DAVID OHNSTAD  
HIGHWAY COMMISSIONER  
803 WASHINGTON STREET  
SPARTA, WI 54656  
P: (608) 269-8740  
E: HIGHWAYS@CO.MONROE.WI.US

DESIGNER

AMANDA INMAN, PE  
AYRES ASSOCIATES  
5201 EAST TERRACE DRIVE, SUITE 200  
MADISON, WI 53718  
P: (608) 443-1239  
E: INMANA@AYRESASSOCIATES.COM

UTILITIES

OAKDALE ELECTRIC CO-OP  
MATT RIGGS  
PO BOX 40  
OAKDALE, WI 54649  
P: (608) 372-8828  
C: (608) 343-3669  
E: MRIGGS@OAKDALEREC.COOP

TOWN OF TOMAH

TODD SPARKS  
CHAIRMAN  
17871 HOLBROOK ROAD  
TOMAH, WI 54660  
P: (608) 372-4847  
E: TOWNOFTOMAH@CENTURYTEL.NET

WISCONSIN DEPARTMENT OF TRANSPORTATION

PEGGY WISCHHOFF, PE  
2101 WRIGHT ST  
MADISON, WI 53704  
P: (608) 246-5328  
E: PEGGYF.WISCHHOFF@DOT.WI.GOV

BRIGHTSPEED  
TOM L. MURRAY  
333 N FRONT STREET  
LA CROSSE, WI 54601  
P: 980-376-1555  
E: TOM.L.MURRAY@BRIGHTSPEED.COM

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

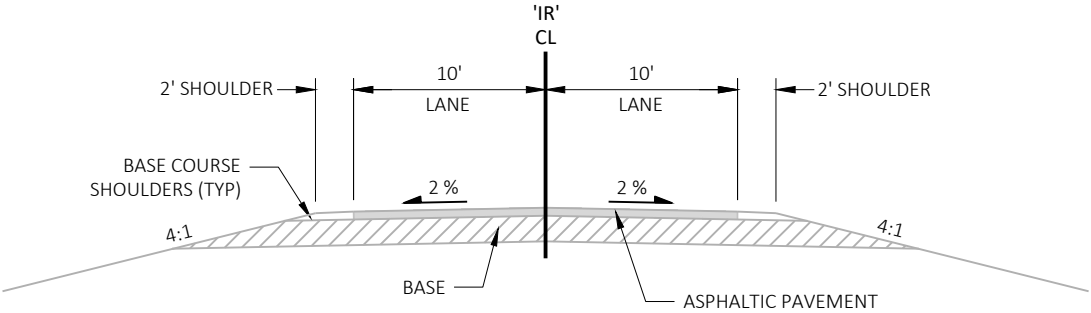
KAREN KALVELAGE  
DNR WEST REGION HEADQUARTERS  
3550 MORMON COULEE RD  
LA CROSSE, WI 54601  
P: (608) 785-9115  
E: KAREN.KALVELAGE@WISCONSIN.GOV



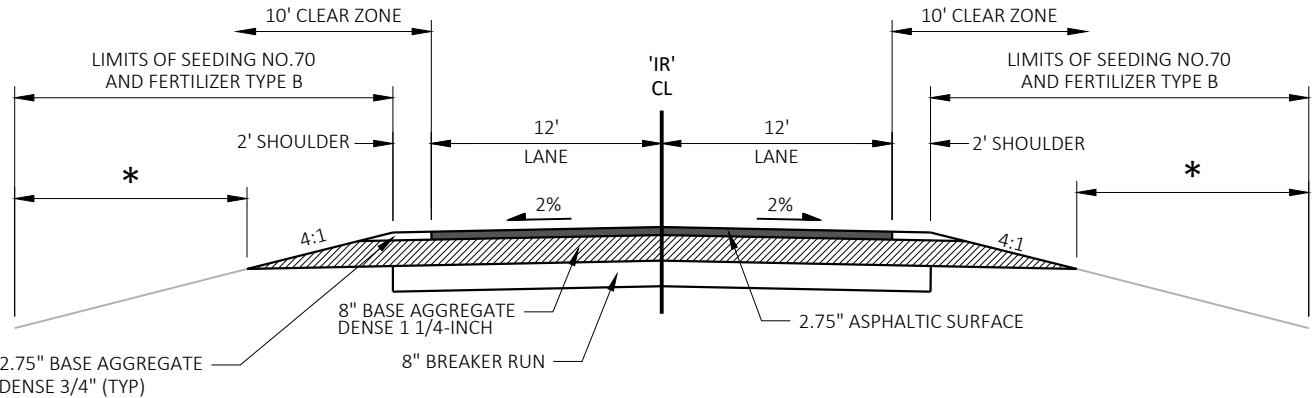
Dial 811 or (800)242-8511

www.DiggersHotline.com

\*\* DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS



EXISTING TYPICAL SECTION  
STA. 9+00'IR' TO STA. 11+00'IR'



FINISHED TYPICAL SECTION  
STA. 9+00'IR' TO STA. 11+00'IR'

\* LIMITS OF EROSION MAT AND SALVAGED TOPSOIL. SEE PLAN AND PROFILE SHEET FOR EROSION MAT TYPES.

Estimate Of Quantities

5025-00-72

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	203.0250	Removing Structure Over Waterway Remove Debris (structure) 01. P-41-0180	EACH	1.000	1.000
0008	204.0170	Removing Fence	LF	200.000	200.000
0010	205.0100	Excavation Common	CY	184.000	184.000
0012	206.1001	Excavation for Structures Bridges (structure) 01. B-41-0339	EACH	1.000	1.000
0014	210.1500	Backfill Structure Type A	TON	285.000	285.000
0016	213.0100	Finishing Roadway (project) 01. 5025-00-72	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	13.000	13.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	190.000	190.000
0022	311.0110	Breaker Run	TON	180.000	180.000
0024	415.0410	Concrete Pavement Approach Slab	SY	138.000	138.000
0026	465.0105	Asphaltic Surface	TON	40.000	40.000
0028	502.0100	Concrete Masonry Bridges	CY	135.000	135.000
0030	502.3200	Protective Surface Treatment	SY	176.000	176.000
0032	505.0400	Bar Steel Reinforcement HS Structures	LB	4,500.000	4,500.000
0034	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	18,160.000	18,160.000
0036	513.4061	Railing Tubular Type M	LF	88.800	88.800
0038	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0040	550.0020	Pre-Boring Rock or Consolidated Materials	LF	140.000	140.000
0042	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	315.000	315.000
0044	606.0300	Riprap Heavy	CY	130.000	130.000
0046	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	160.000	160.000
0048	618.0100	Maintenance and Repair of Haul Roads (project) 01. 5025-00-72	EACH	1.000	1.000
0050	619.1000	Mobilization	EACH	1.000	1.000
0052	624.0100	Water	MGAL	4.000	4.000
0054	625.0500	Salvaged Topsoil	SY	210.000	210.000
0056	628.1504	Silt Fence	LF	600.000	600.000
0058	628.1520	Silt Fence Maintenance	LF	1,190.000	1,190.000
0060	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0062	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0064	628.2008	Erosion Mat Urban Class I Type B	SY	260.000	260.000
0066	628.6005	Turbidity Barriers	SY	350.000	350.000
0068	629.0210	Fertilizer Type B	CWT	0.300	0.300
0070	630.0130	Seeding Mixture No. 30	LB	19.000	19.000
0072	630.0200	Seeding Temporary	LB	11.000	11.000
0074	630.0500	Seed Water	MGAL	9.500	9.500
0076	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0078	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0080	638.2602	Removing Signs Type II	EACH	4.000	4.000
0082	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0084	642.5001	Field Office Type B	EACH	1.000	1.000
0086	643.0420	Traffic Control Barricades Type III	DAY	1,620.000	1,620.000
0088	643.0705	Traffic Control Warning Lights Type A	DAY	2,520.000	2,520.000
0090	643.0900	Traffic Control Signs	DAY	1,260.000	1,260.000
0092	643.5000	Traffic Control	EACH	1.000	1.000
0094	645.0111	Geotextile Type DF Schedule A	SY	100.000	100.000
0096	645.0120	Geotextile Type HR	SY	260.000	260.000
0098	650.4500	Construction Staking Subgrade	LF	157.000	157.000



Estimate Of Quantities

5025-00-72					
Line	Item	Item Description	Unit	Total	Qty
0100	650.5000	Construction Staking Base	LF	112.000	112.000
0102	650.6501	Construction Staking Structure Layout (structure) 01. B-41-0339	EACH	1.000	1.000
0104	650.7000	Construction Staking Concrete Pavement	LF	45.000	45.000
0106	650.9911	Construction Staking Supplemental Control (project) 01. 5025-00-72	EACH	1.000	1.000
0108	650.9920	Construction Staking Slope Stakes	LF	157.000	157.000
0110	690.0150	Sawing Asphalt	LF	38.000	38.000
0112	715.0502	Incentive Strength Concrete Structures	DOL	810.000	810.000
0114	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0116	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 10+00	EACH	1.000	1.000

INTERIOR ROAD EARTHWORK SUMMARY									
From/To Station	Location	Common Excavation (1) (Item 205.0100)		Unexpan ded Fill	Expanded Fill (2)	Mass Ordinate +/- (3)	Waste	Borrow (Item 208.010 0)	Comment:
		Cut	Unusable		Factor 1.30				
9+00 to 11+00	Interior Rd	151	33	88	114	37		0	Mass ordinate is positive, no borrow
TOTAL		184		114					

- 1) Common Excavation is the Cut. Unusable excavation is existing pavement. Item number 205.0100.
- 2) Expanded Fill. Factor = 1.30; Expanded Fill = Unexpanded Fill \* Fill Factor
- 3) The Mass Ordinate + (waste) or - (borrow)
- 4) All quantities shown in CY.

CONCRETE PAVEMENT APPROACH SLABS						
CATEGORY	STATION	TO	STATION	LOCATION	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY	REMARKS
0010	9+53	-	9+83	SE approach	69	
0010	10+11	-	10+41	NW approach	69	
TOTAL 0010					138	

TRAFFIC CONTROL										
CATEGORY	LOCATION	DURATION		643.0420 TRAFFIC CONTROL BARRICADES TYPE		643.0705 TRAFFIC CONTROL WARNING LIGHTS		643.0900 TRAFFIC CONTROL SIGNS		643.5000 TRAFFIC CONTROL EACH
		DAYS	NO.	III DAY	NO.	TYPE A DAY	NO.	DAY	NO.	REMARKS
0010	Per SDD 15C2	90.00	18.00	1,620	28	2,520	14	1,260	-	DETAILS C, D, AND E
0010	Interior Road	-	-	-	-	-	-	-	1	
TOTAL 0010				1,620		2,520		1,260	1	

ASPHALTIC PAVEMENT AND AGGREGATE BASE

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH	311.0110 BREAKER RUN	465.0105 ASPHALTIC SURFACE	624.0100 WATER	REMARKS
					TON	TON	TON	TON	MGAL	
0010	9+00	-	9+83	SE of Bridge	7	90	90	19	2.1	
0010	10+11	-	11+00	NW of Bridge	6	100	90	21	1.9	
TOTAL 0010					13	190	180	40	4.0	

SAWCUT ASPHALT

CATEGORY	STATION	LOCATION	690.0150 SAWING ASPHALT LF	REMARKS
0010	9+00	Interior Road (SE)	19	
0010	11+00	Interior Road (NW)	19	
TOTAL 0010			38	

REMOVING SIGNS

CATEGORY	LOCATION	638.2602 REMOVING SIGNS TYPE II	638.3000 REMOVING SMALL SIGN SUPPORTS	REMARKS
		EACH	EACH	
0010	Interior Road	4	4	BRIDGE HASH MARKS
TOTAL 0010		4	4	

SIGNS

CATEGORY	SIGN CODE	SIZE		LOCATION	634.0612 POSTS WOOD 4X6- INCH X 12-FT	637.2230 SIGNS TYPE II REFLECTIVE F	REMARKS
		(IN)	(IN)		EACH	SF	
0010	W5-52L	12.00	0+36	LT	1	3	BRIDGE HASH MARKS
0010	W5-52R	12.00	0+36	RT	1	3	BRIDGE HASH MARKS
0010	W5-52R	12.00	0+36	LT	1	3	BRIDGE HASH MARKS
0010	W5-52L	12.00	0+36	RT	1	3	BRIDGE HASH MARKS
TOTAL 0010					4	12	

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

CLEARING & GRUBBING

CATEGORY	STATION	TO	STATION	LOCATION	201.0105	201.0205	REMARKS
					CLEARING STA	GRUBBING STA	
0010	9+00	-	11+00	Interior Road	2	2	
TOTAL 0010					2	2	

FENCE REMOVAL

CATEGORY	LOCATION	204.0170	REMARKS
		REMOVING FENCE LF	
0010	South of Interior Road	100	BARBED WIRE FENCE WITH STAKES
0010	North of Interior Road	100	OWNER INDICATED FENCE EXISTS AND IS NOT NEEDED
TOTAL 0010		200	

STAKING

CATEGORY	STATION	TO	STATION	LOCATION	650.4500	650.5000	650.6501.01	650.7000	650.9911.01	650.9920	REMARKS
					CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) (01. B-14-0339) EACH	CONSTRUCTION STAKING CONCRETE PAVEMENT LF	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 5025-00-72) EACH	CONSTRUCTION STAKING SLOPE STAKES LF	
0010	7+00	-	11+00	Interior Road	157	112	-	45	1	157	
TOTAL 0010					157	112	0	45	1	157	
0020	9+77	-	10+17		-	-	1	-	-	-	
TOTAL 0020					0	0	1	0	0	0	
PROJECT TOTAL					157	112	1	45	1	157	

EROSION CONTROL

CATEGORY	STATION	TO	STATION	LOCATION	625.0500	628.1504	628.1520	628.2008	628.6005	629.0210	630.0130	630.0200	630.0500	REMARKS
					SALVAGED TOPSOIL SY	SILT FENCE LF	SILT FENCE MAINTENANCE LF	EROSION MAT URBAN CLASS I TYPE B SY	TURBIDITY BARRIERS SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 30 LB	SEEDING TEMPORARY LB	SEED WATER MGAL	
0010	9+00	-	11+00	Interior Road	210	477	954	210	280	0.2	15	9	7.6	
0010				UNDISTRIBUTED		119	239	50	70	0.1	4	2	1.9	
TOTAL 0010					210	600	1,190	260	350	0.3	19	11	9.5	

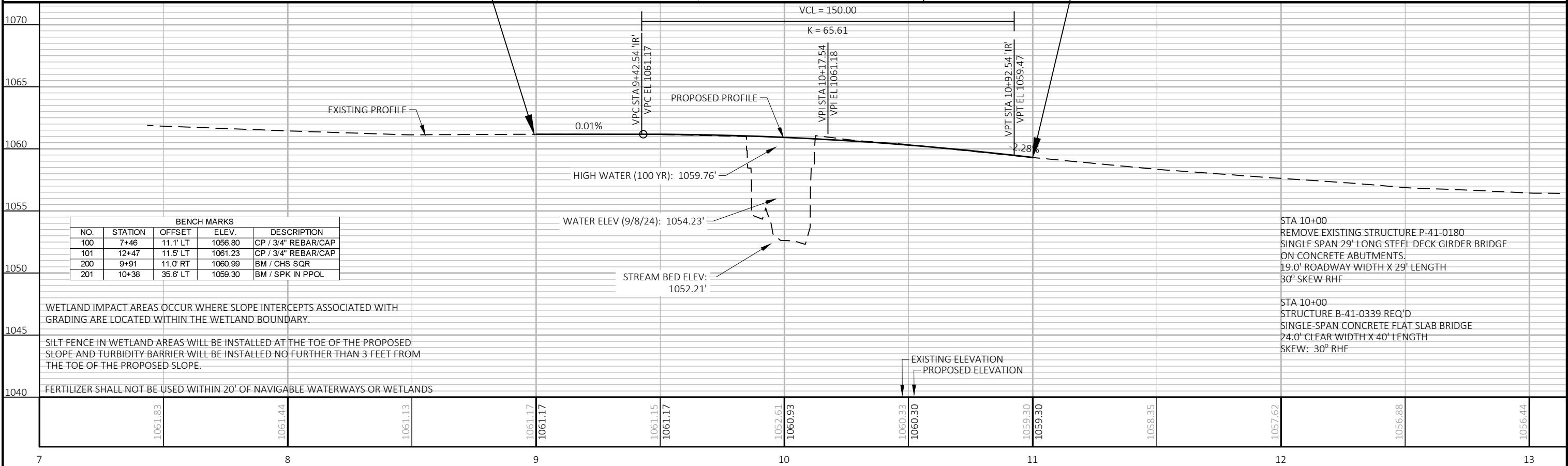
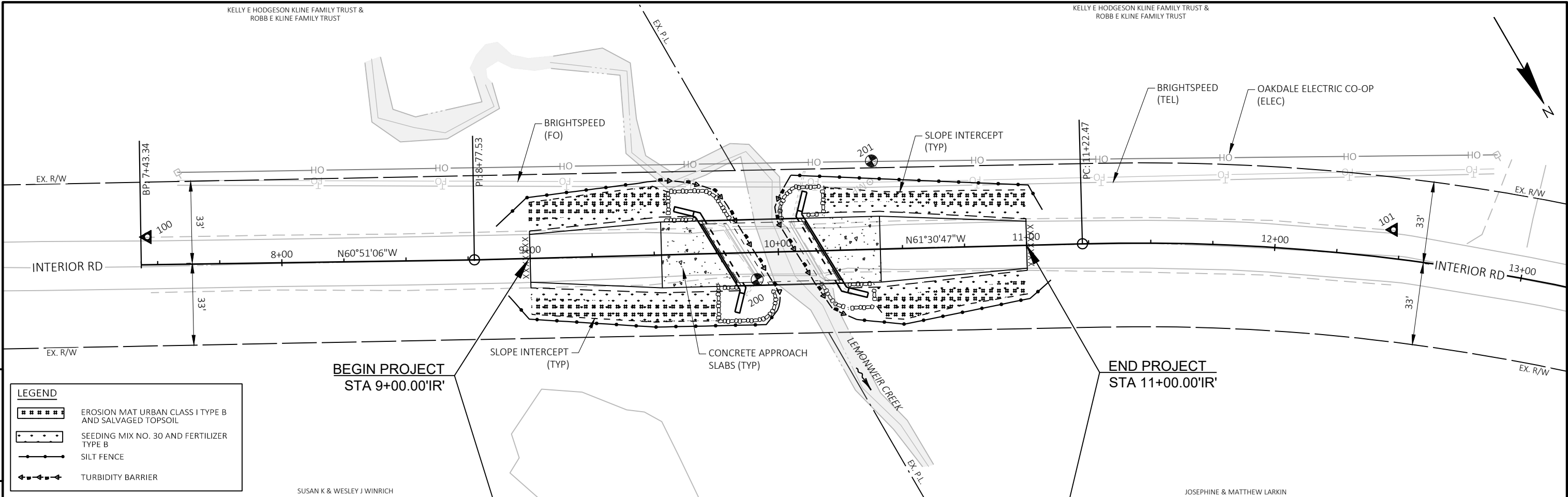
PROJECT WIDE ITEMS

CATEGORY	LOCATION	213.0100.01	619.1000	628.1905	628.1910	642.5001	REMARKS
		FINISHING ROADWAY (PROJECT) (01. 5025-00-72) EACH	MOBILIZATION EACH	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EROSION CONTROL EACH	FIELD OFFICE TYPE B EACH	
0010	Interior Road	1	1	4	4	1	
TOTAL 0010		1	1	4	4	1	

HAUL ROADS

CATEGORY	LOCATION	618.0100.01	REMARKS
		MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) (01. 5025-00-72) EACH	
0030	Interior Road	1	
TOTAL 0030		1	

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED





Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES



- 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.

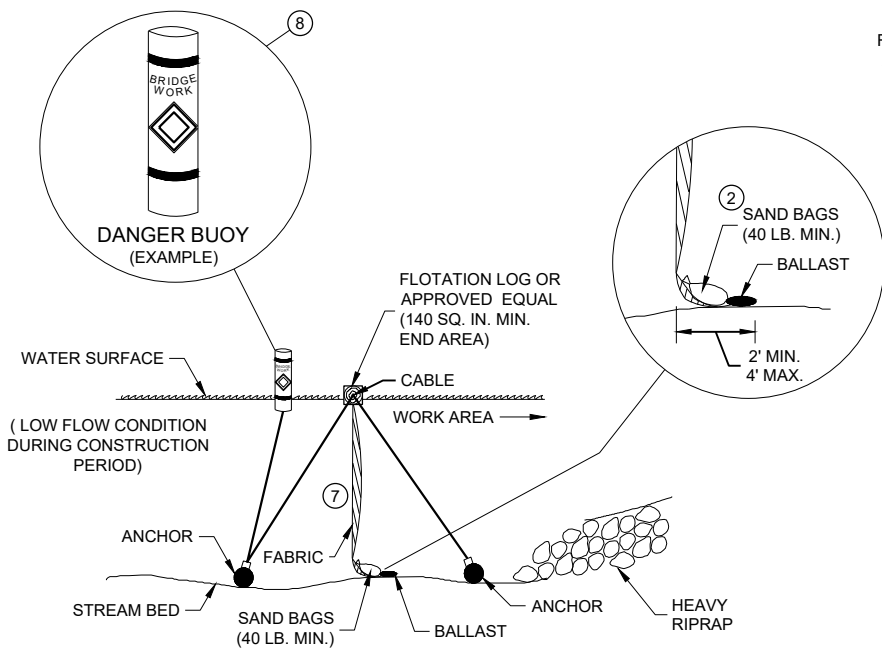


SILT FENCE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

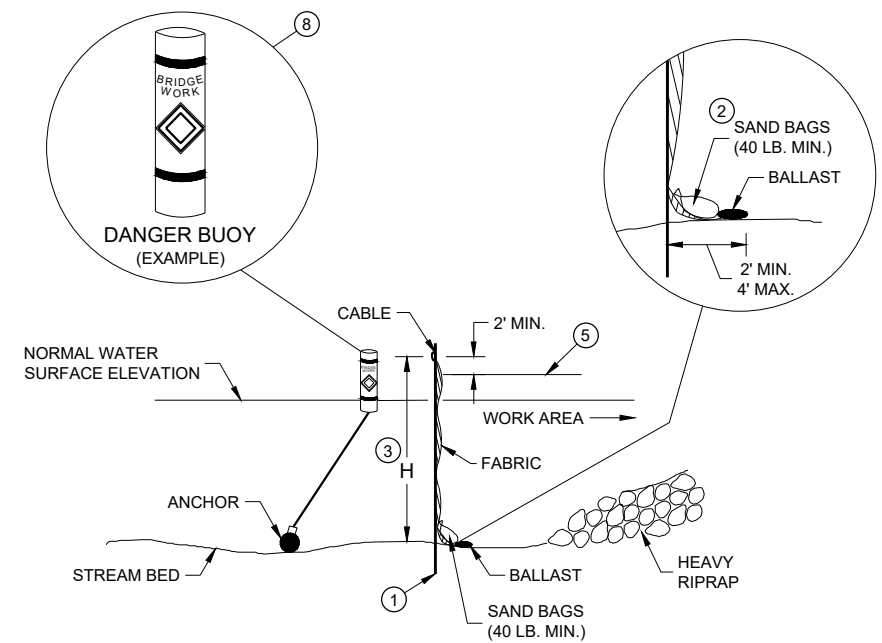
APPROVED  
4-29-05 /S/ Beth Connolly  
DATE CHIEF ROADWAY DEVELOPER 10 INCHES

FHWA



SECTION B - B

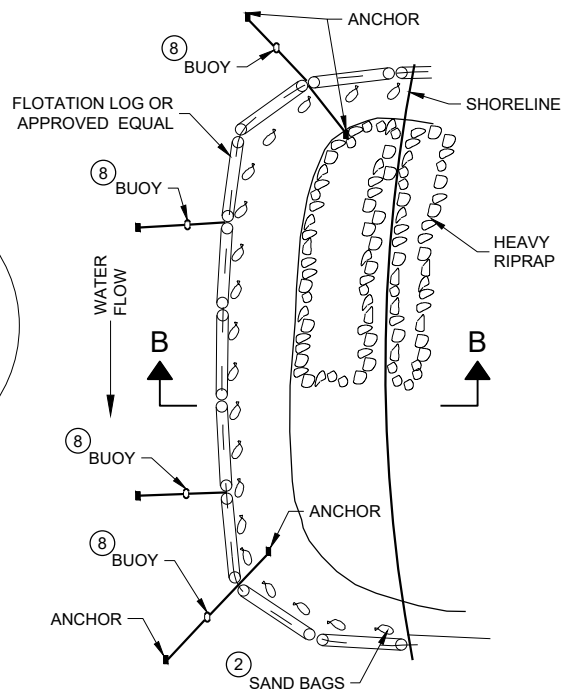
TURBIDITY BARRIER - FLOAT ALTERNATIVE  
CAUTION - SEE NOTE 6



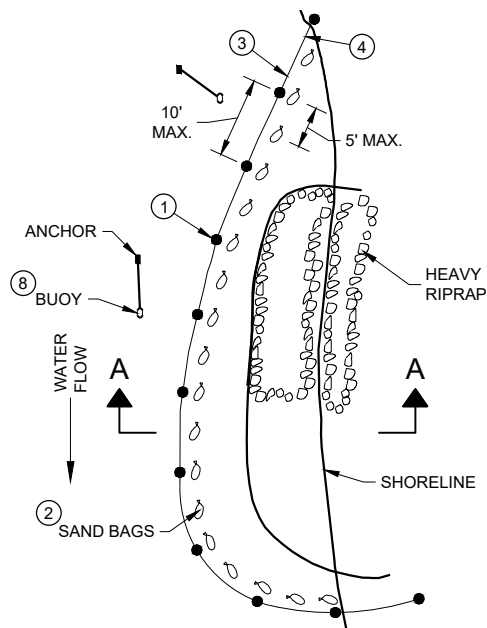
SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS



PLAN VIEW



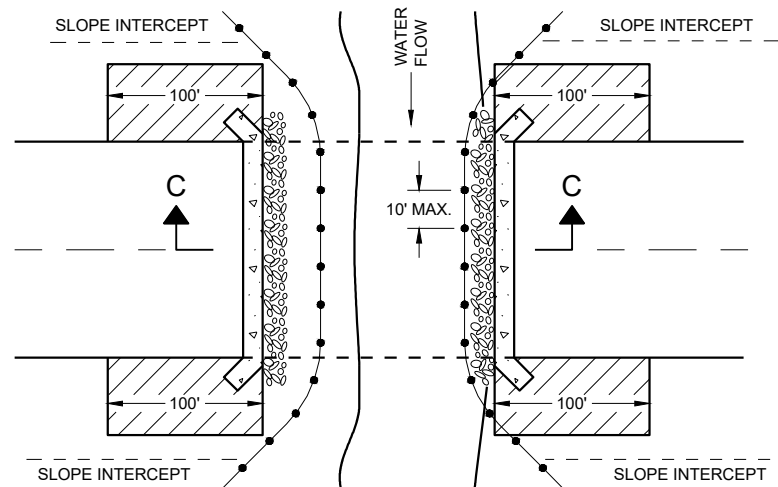
PLAN VIEW

### GENERAL NOTES

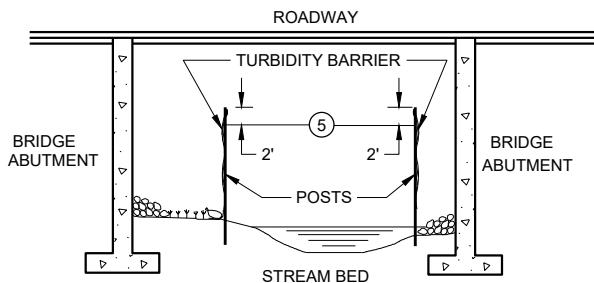
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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 SAND BAGS 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 FEET, 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 Q2 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 BEDROCK PREVENTS THE INSTALLATION OF POSTS.
- 7 ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- 8 USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



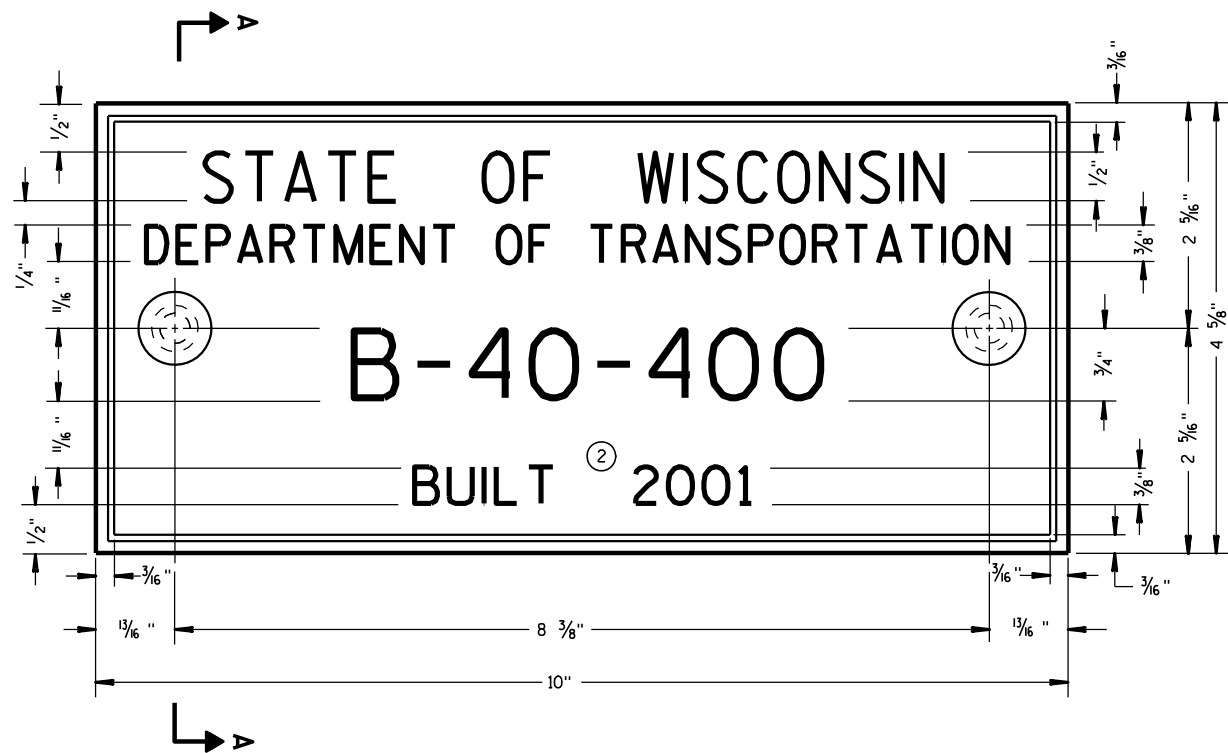
SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING  
TYPICAL PLACEMENT AT STRUCTURES

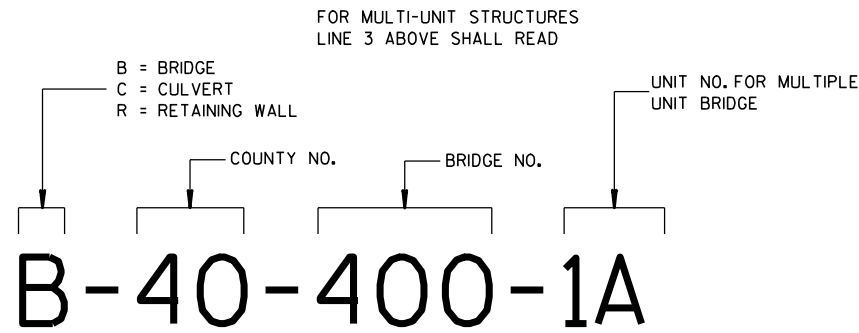
### TURBIDITY BARRIER

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
6/4/02 DATE /S/ Beth Cannestra  
CHIEF ROADWAY DEVELOPMENT ENGINEER 11  
FHWA



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



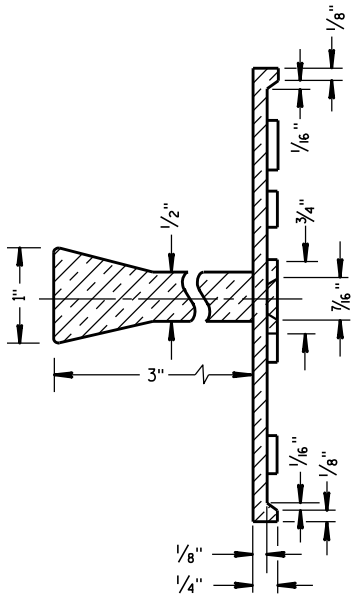
NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES

GENERAL NOTES

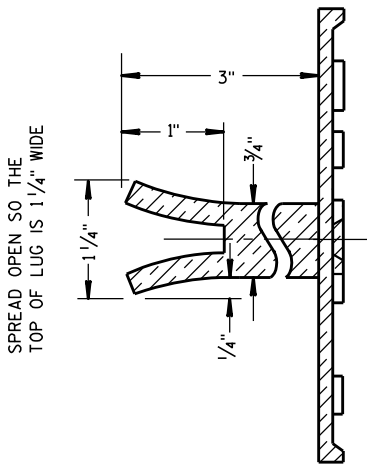
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

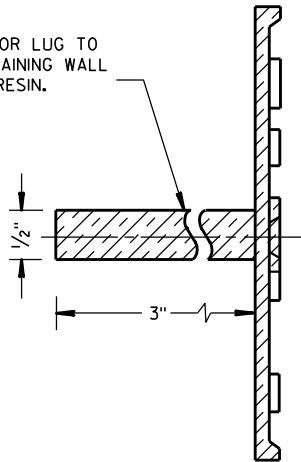


SECTION A-A



ALTERNATE LUG

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



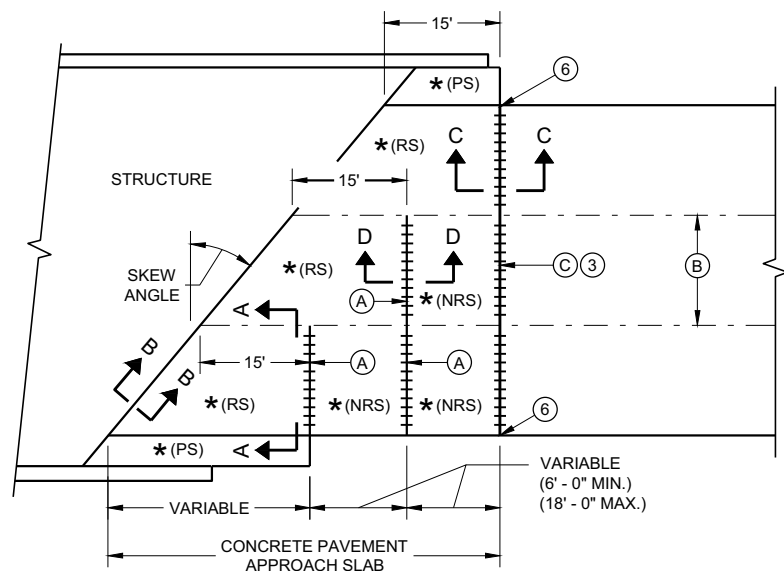
ALTERNATE LUG  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE  
(STRUCTURES)

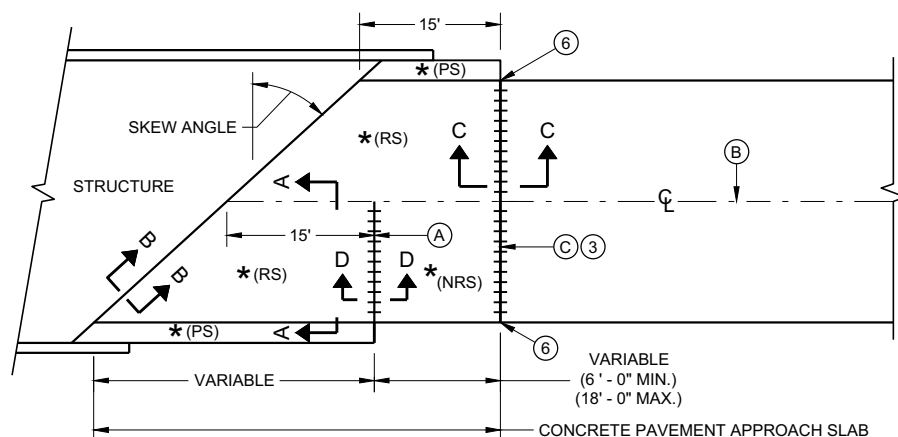
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE 3/26/10  
/S/ Scot Beck  
CHIEF STRUCTURAL DEVELOPER  
12  
JEER  
FHWA

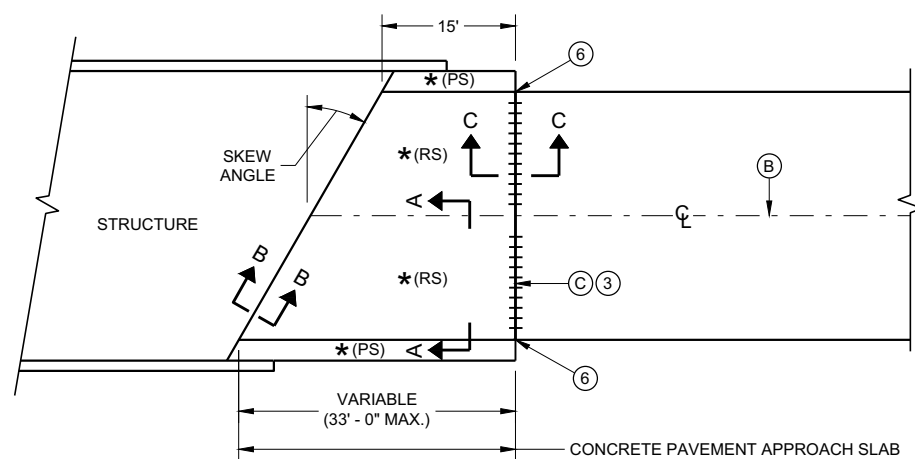




**SKewed APPROACH  
(PAVEMENT MORE THAN TWO LANES)**



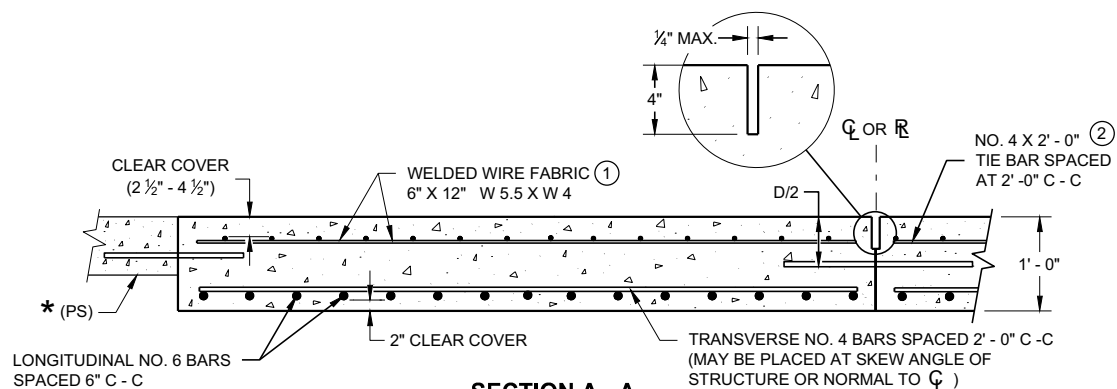
**SKews > 20°  
(PAVEMENT WIDTH ≤ 30')**



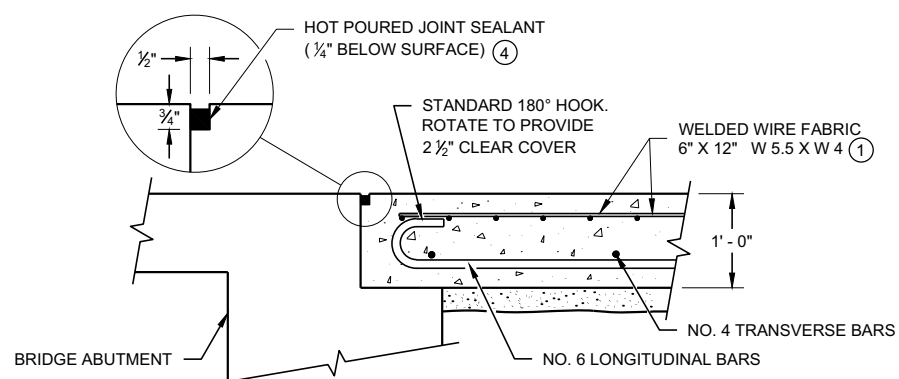
**SKews ≤ 20°  
(PAVEMENT WIDTH ≤ 30')**

**APPROACH SLAB AND ADJACENT PAVEMENT**

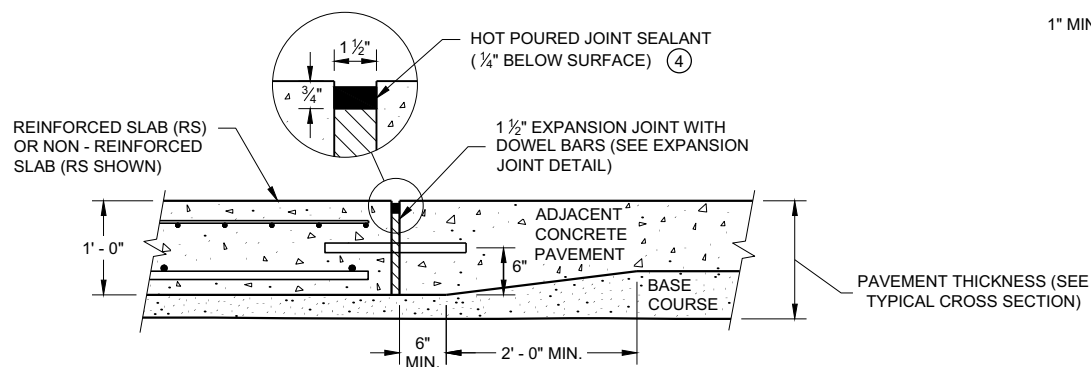
- \* (RS) = REINFORCED CONCRETE SLAB
- \* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- \* (NRS) - NON - REINFORCED CONCRETE SLAB
- \*\*\* STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A  
REINFORCEMENT POSITIONING DETAIL**



**SECTION B - B  
BEND DETAIL  
BOTTOM REINFORCEMENT**



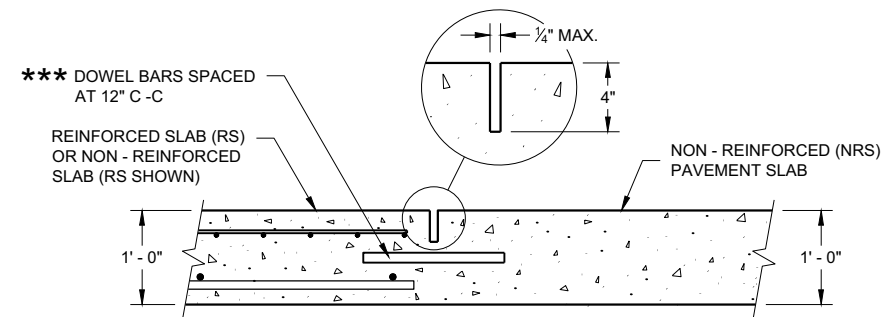
**SECTION C - C  
TRANSITION DETAIL  
APPROACH SLAB TO ADJACENT PAVEMENT**

## GENERAL NOTES

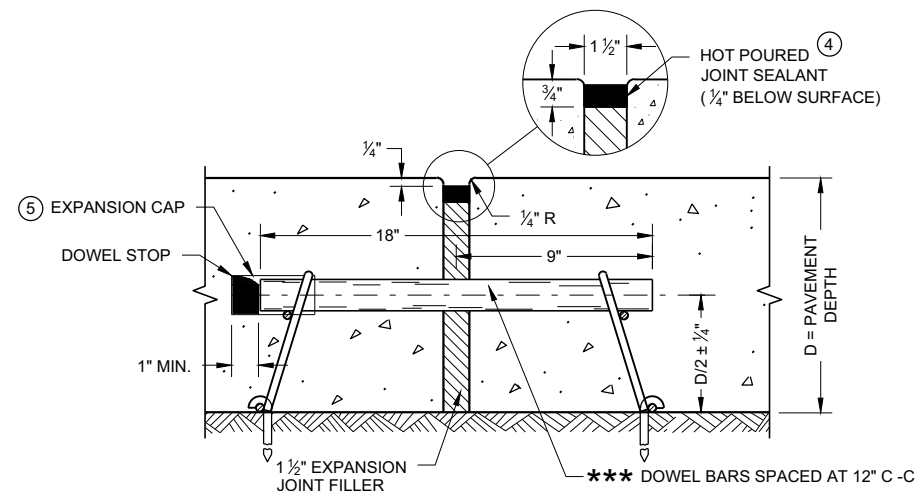
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
- ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- (A) STANDARD CONTRACTION JOINT NORMAL TO  $\mathcal{C}$  OR  $\mathcal{R}$ .
- (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO  $\mathcal{C}$  OR  $\mathcal{R}$ .



**SECTION D - D  
CONTRACTION JOINT**



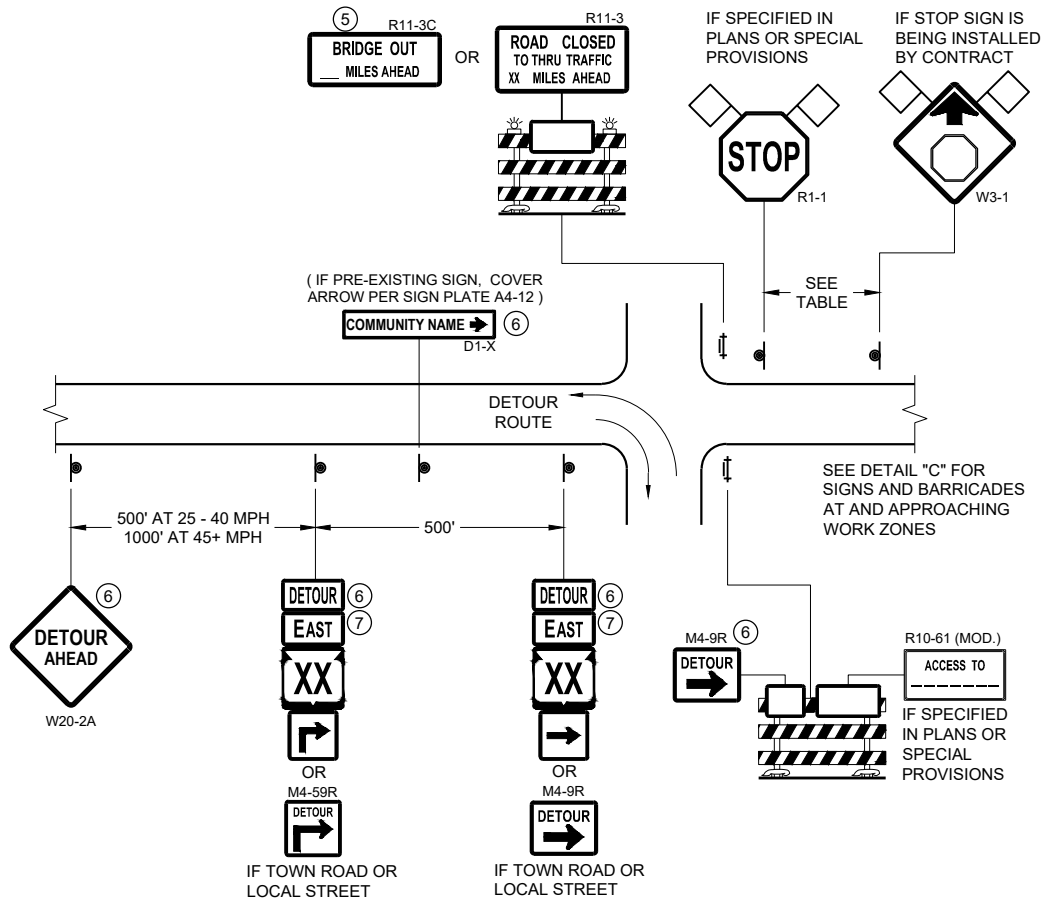
**EXPANSION JOINT DETAIL**

## CONCRETE PAVEMENT APPROACH SLAB

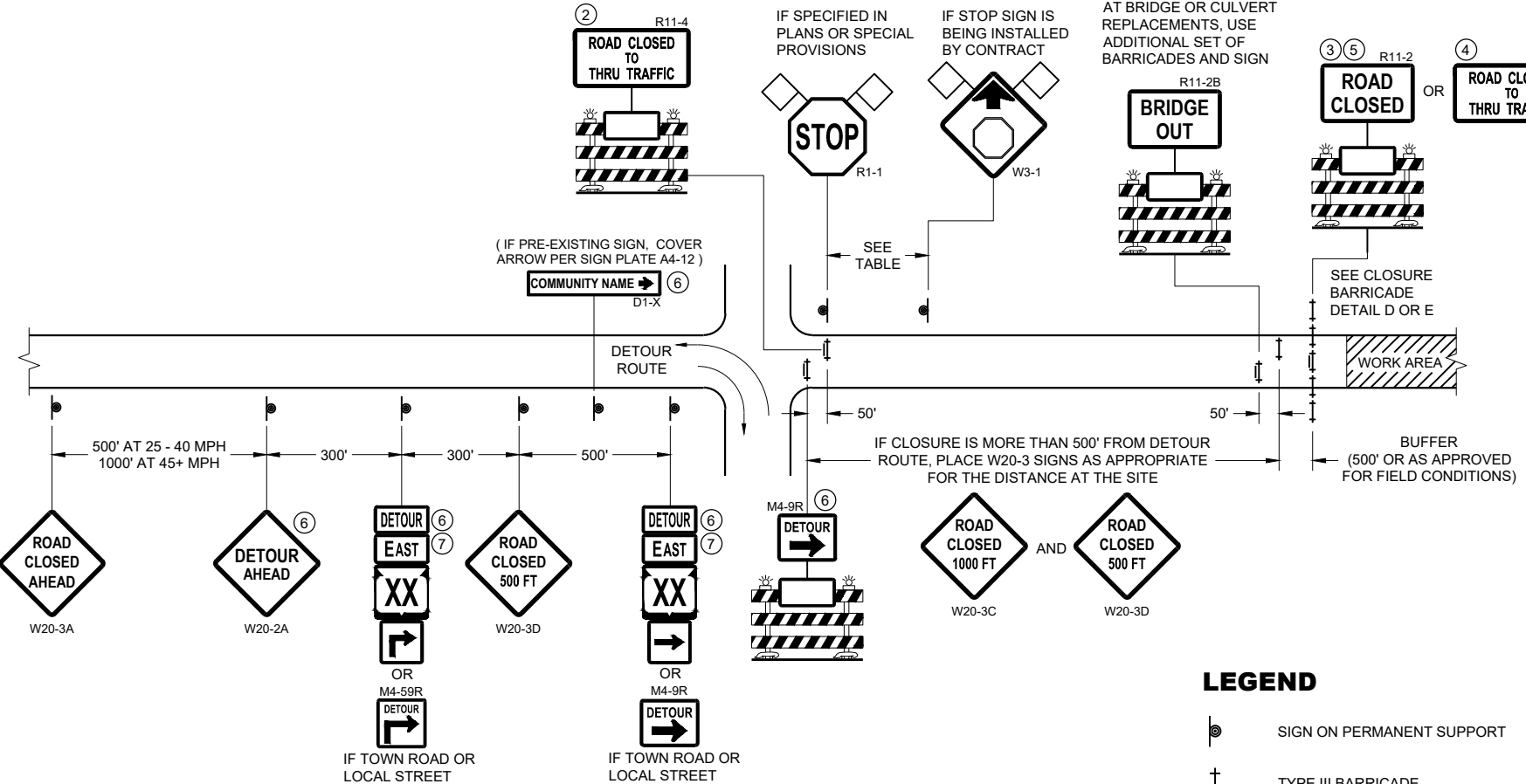
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2018 /S/ Peter Kemp, P.E.  
DATE PAVEMENT SUPERVISOR 13

FHWA



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



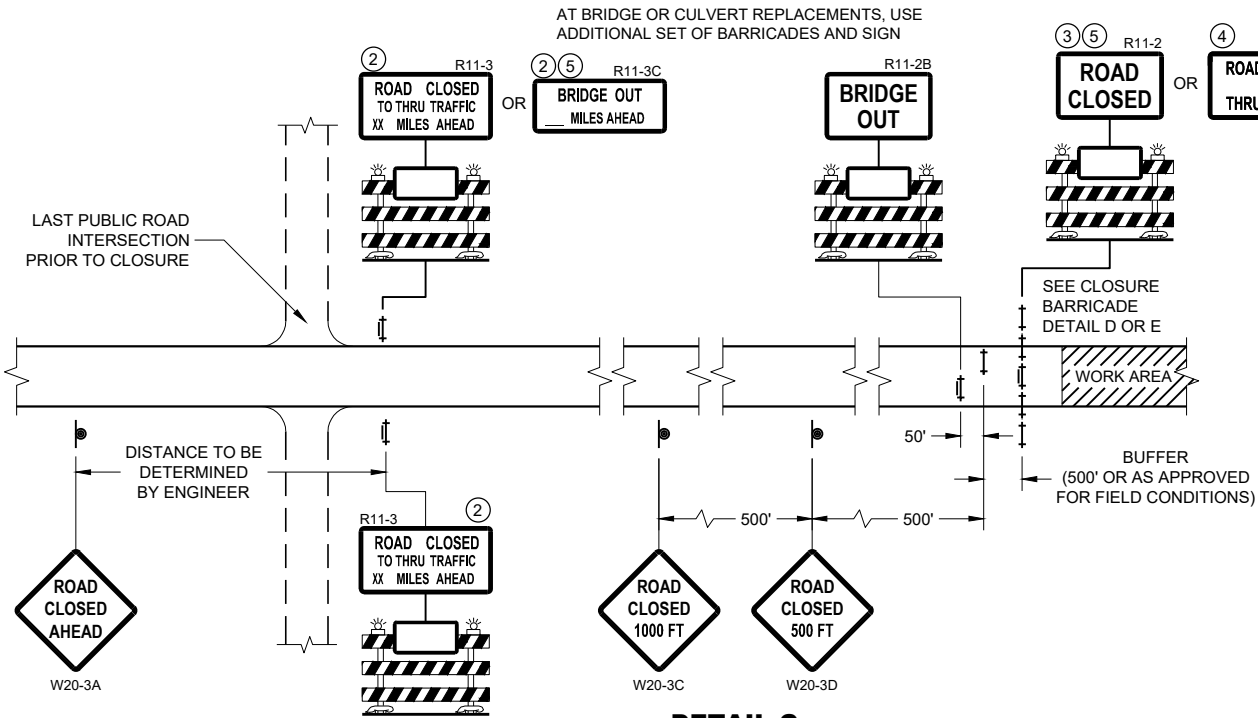
**DETAIL B**  
**MAINLINE CLOSURE WITH POSTED DETOUR**  
WORK ZONE LESS THAN ½ MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )

- LEGEND**
- SIGN ON PERMANENT SUPPORT
  - TYPE III BARRICADE
  - TYPE III BARRICADE WITH ATTACHED SIGN
  - TYPE "A" WARNING LIGHT (FLASHING)
  - WORK AREA
  - FLAGS, 16" X 16" MIN. (ORANGE)

- DETOUR M4 - 8
- EAST M3 - X
- XX M1 - 4 OR XX M1 - 6 OR COUNTY M1 - 5A
- OR M05 - 1 OR M06 - 1

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

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



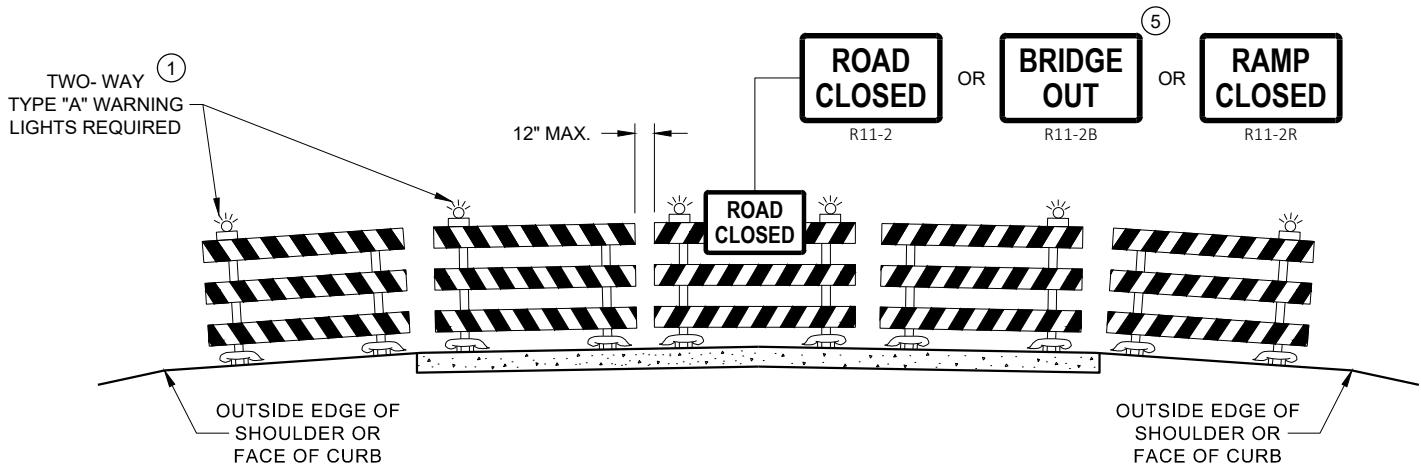
**DETAIL C**  
**MAINLINE CLOSURE, NO POSTED DETOUR**

**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

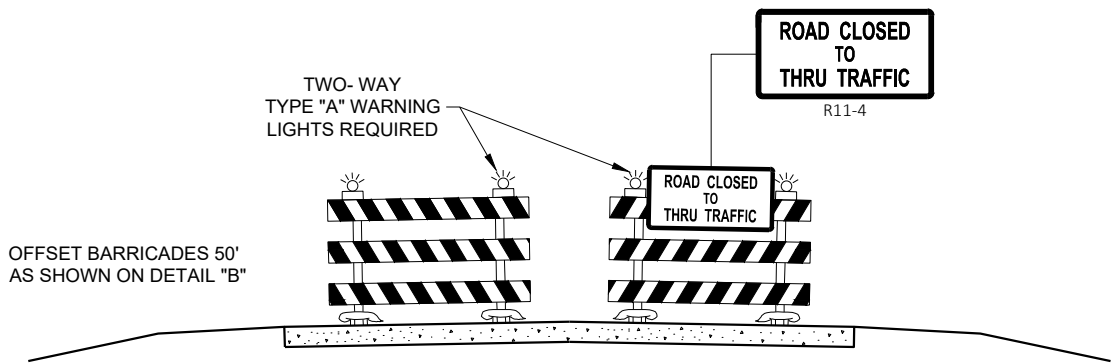
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 14

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"

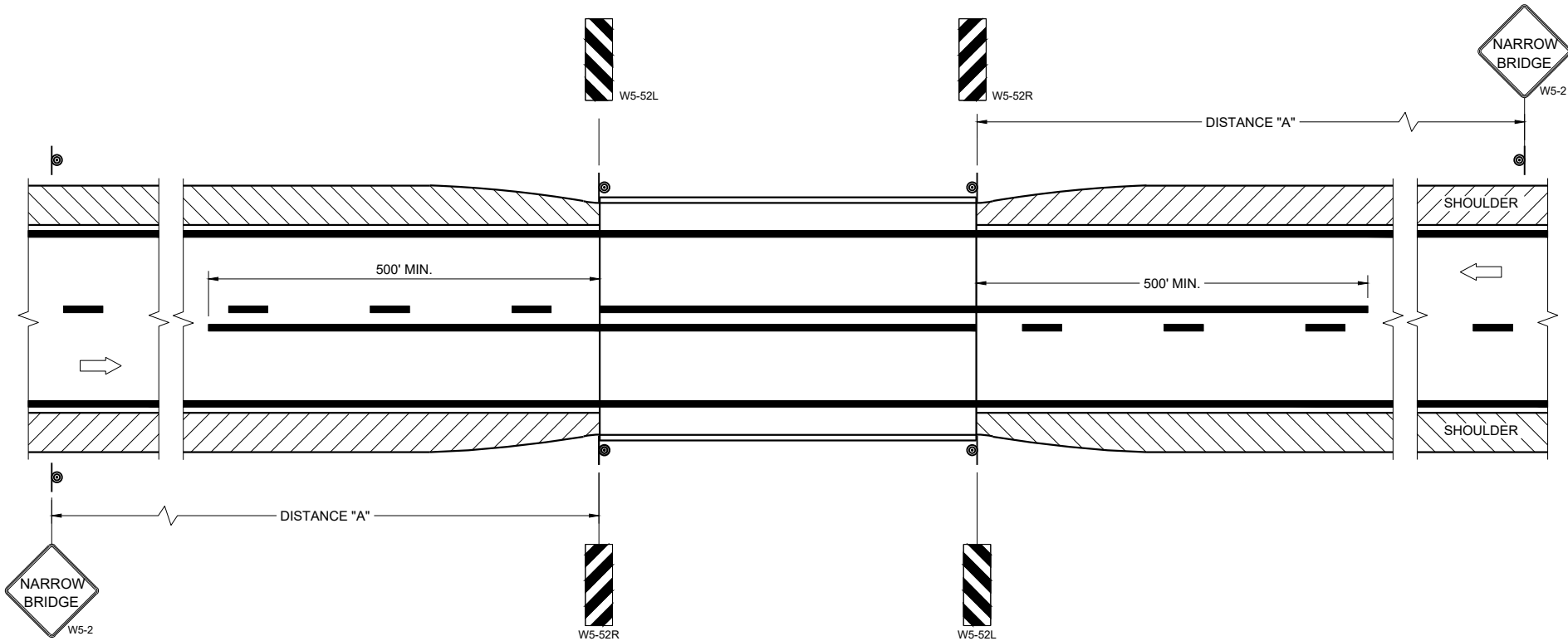
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS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

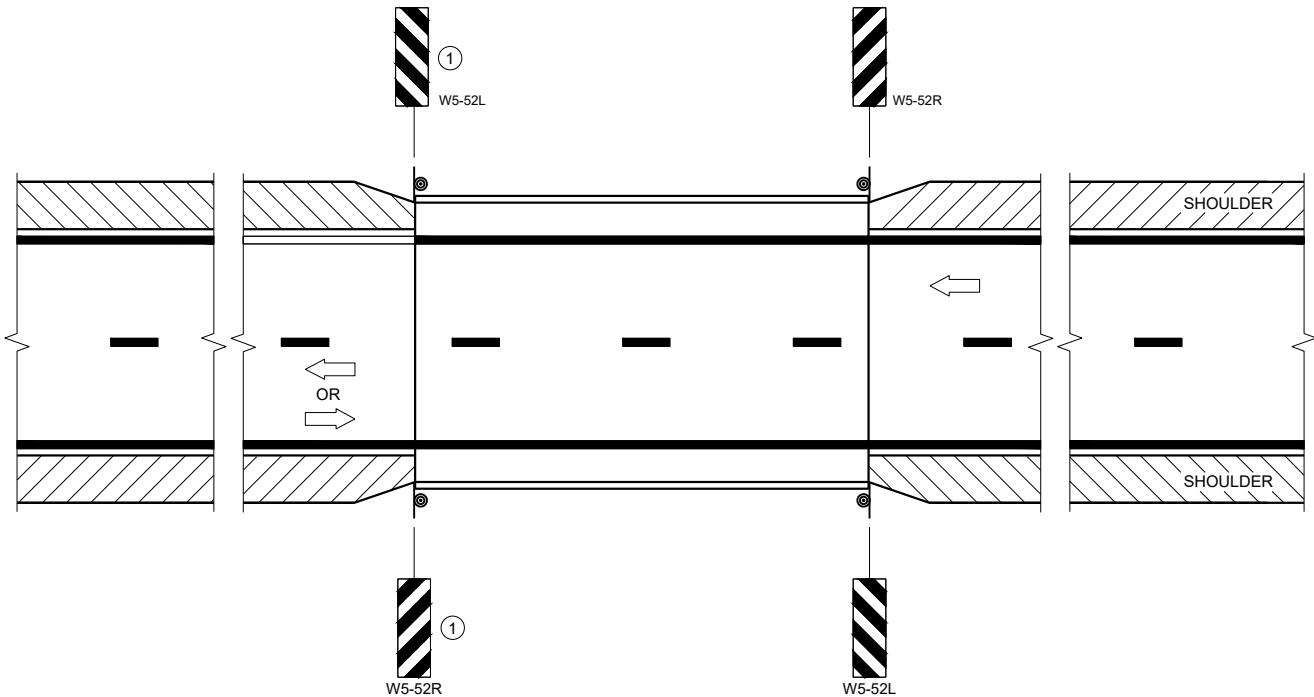
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 15

FHWA



**SITUATION 1**  
WARRANTING CRITERIA:  
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.



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

**GENERAL NOTES**

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THE 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.

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

**LEGEND**

⊙ SIGN ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

**DISTANCE TABLE**

POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	700'

**SIGNING AND MARKING  
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

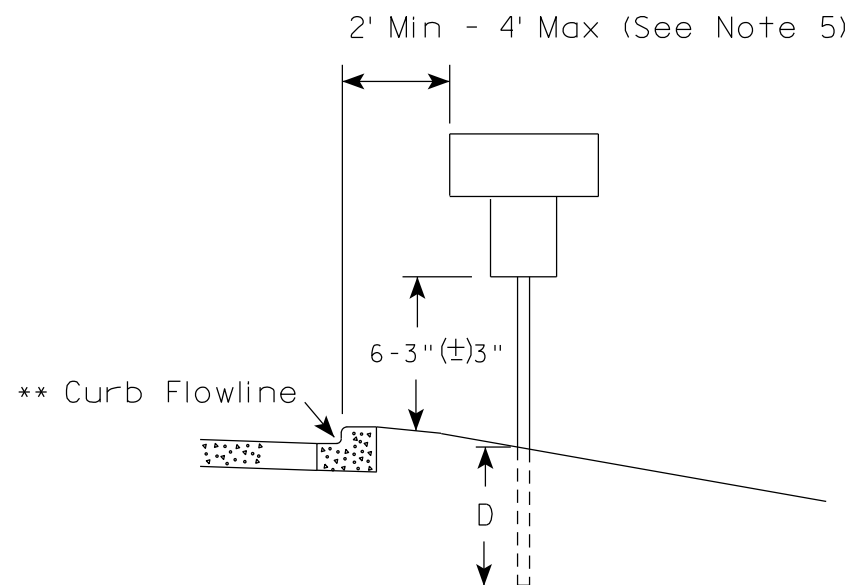
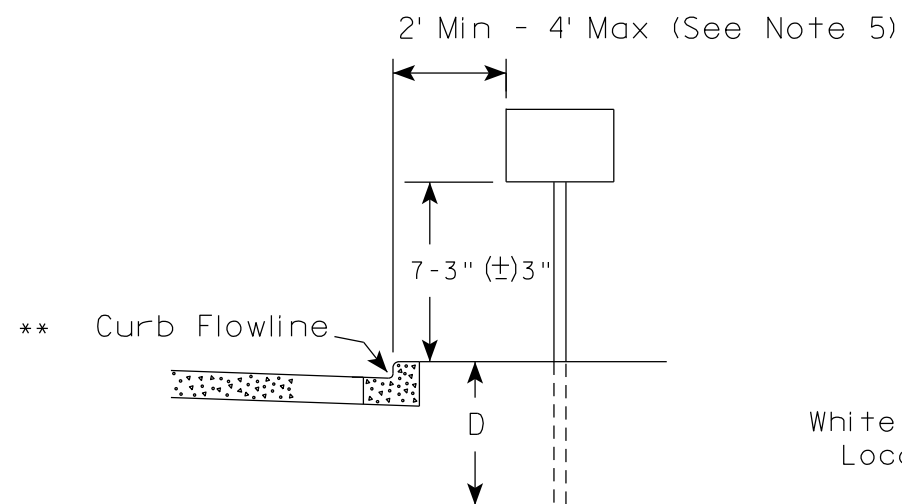
APPROVED  
May 2023  
DATE

/S/ Jeannie Silver  
Statewide Pavement Marking Engineer

FHWA 16

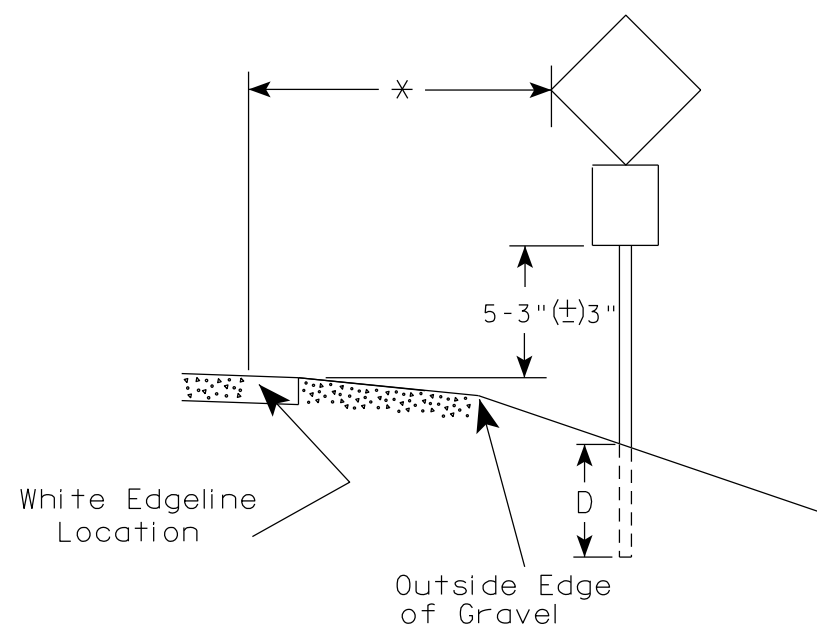
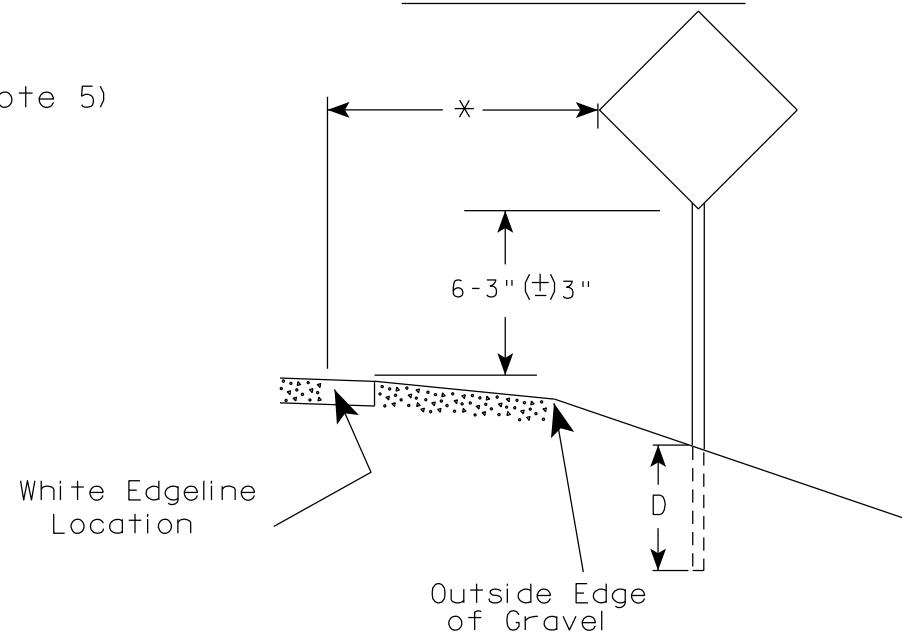


## URBAN AREA



\* \* 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.

## RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

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

## GENERAL NOTES

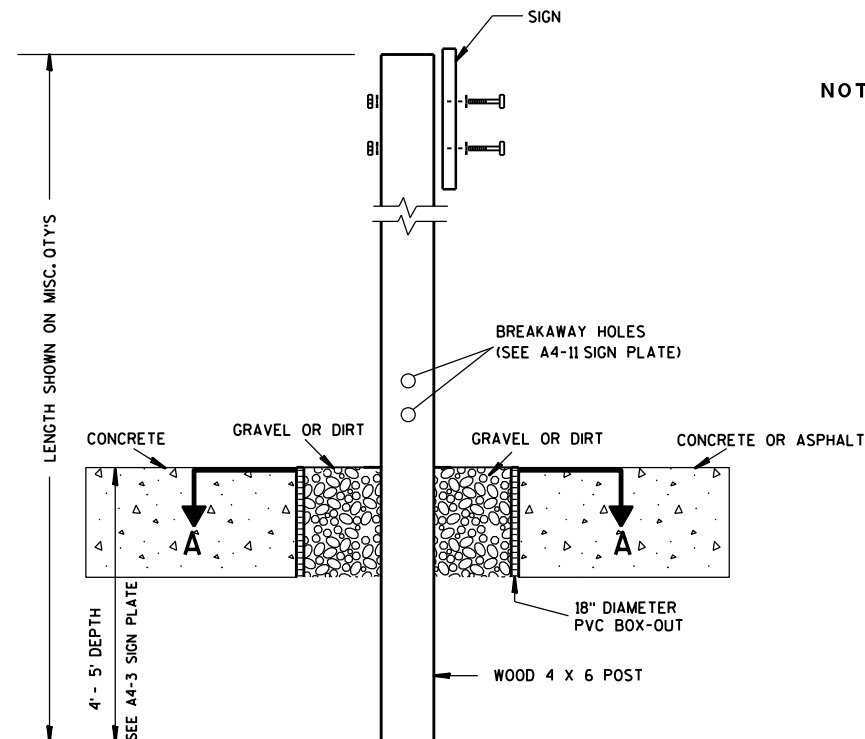
- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- If signs are mounted on or behind barrier wall, see A4-10 sign plate.  
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron 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" (±) 3".
- For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
- Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

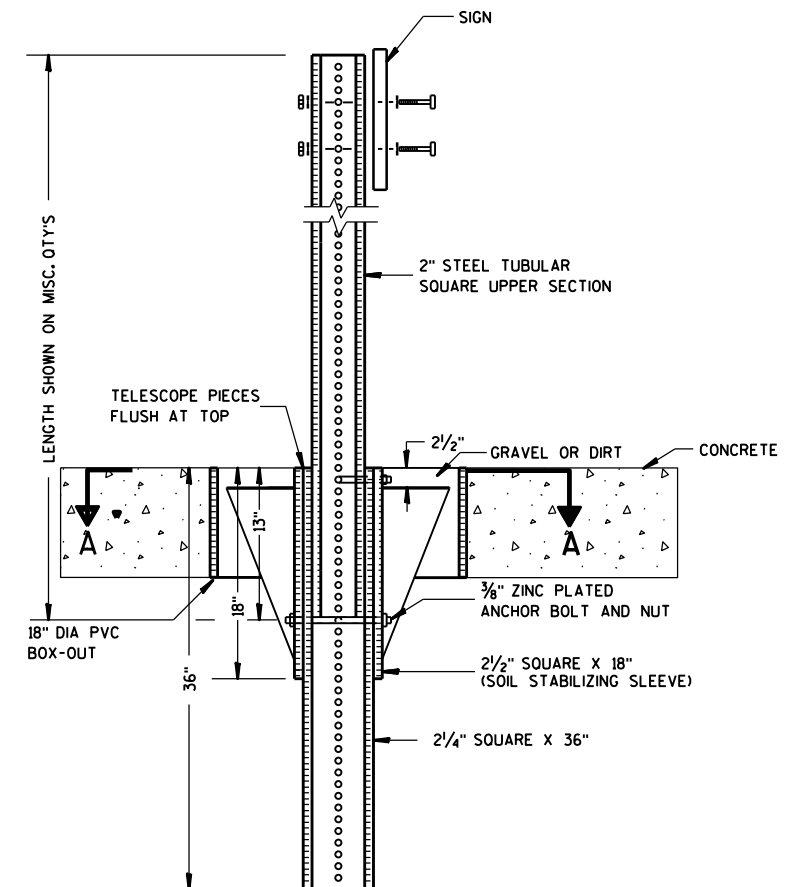
DATE 12/6/23 PLATE NO. A4-3.23



### ELEVATION VIEW

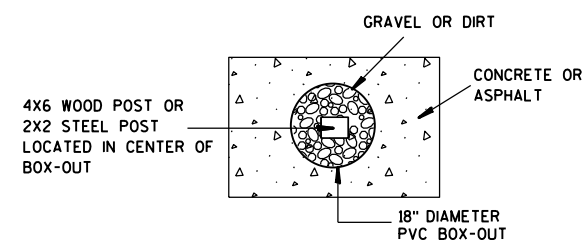
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 PLAT 18 A4-3B.1

PROJECT NO:

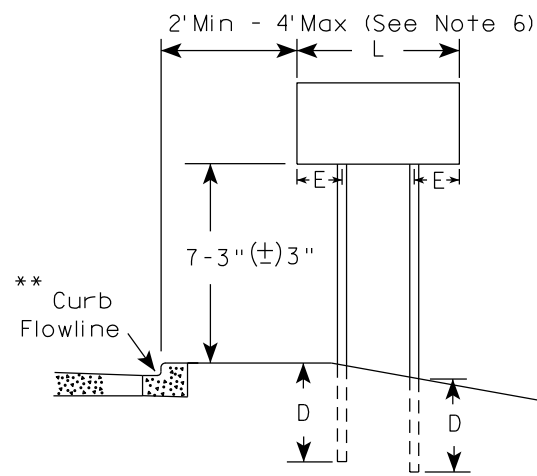
HWY:

COUNTY:

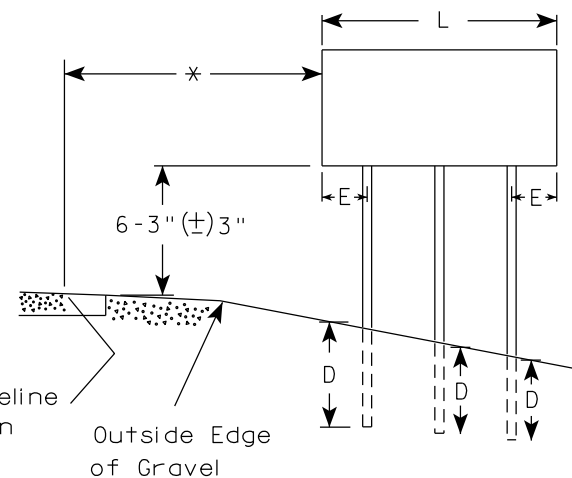
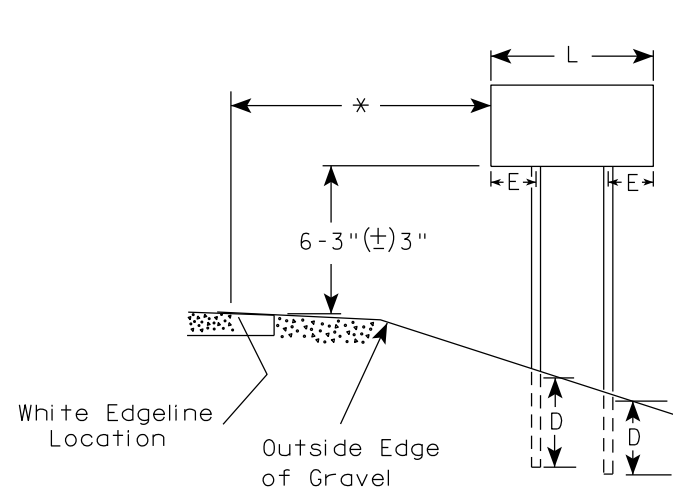
SHEET NO:

E

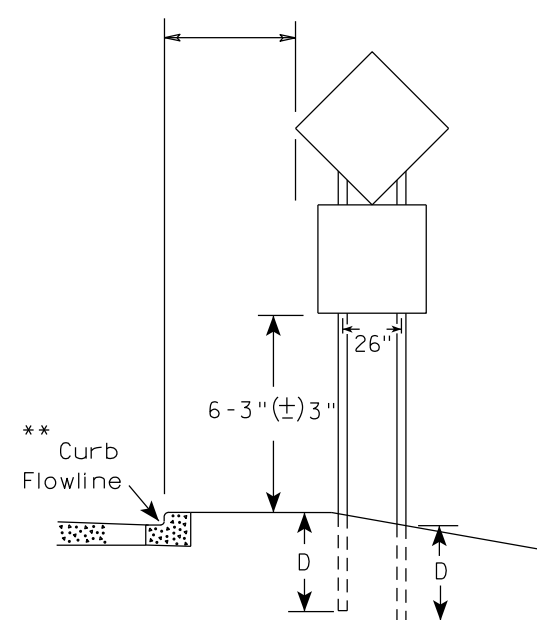
URBAN AREA



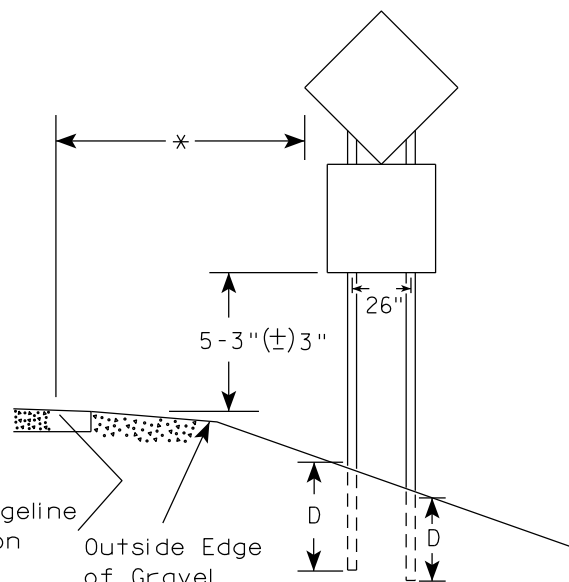
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

\*\*\*

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 *Matthew R. Rauch*  
for State Traffic Engineer

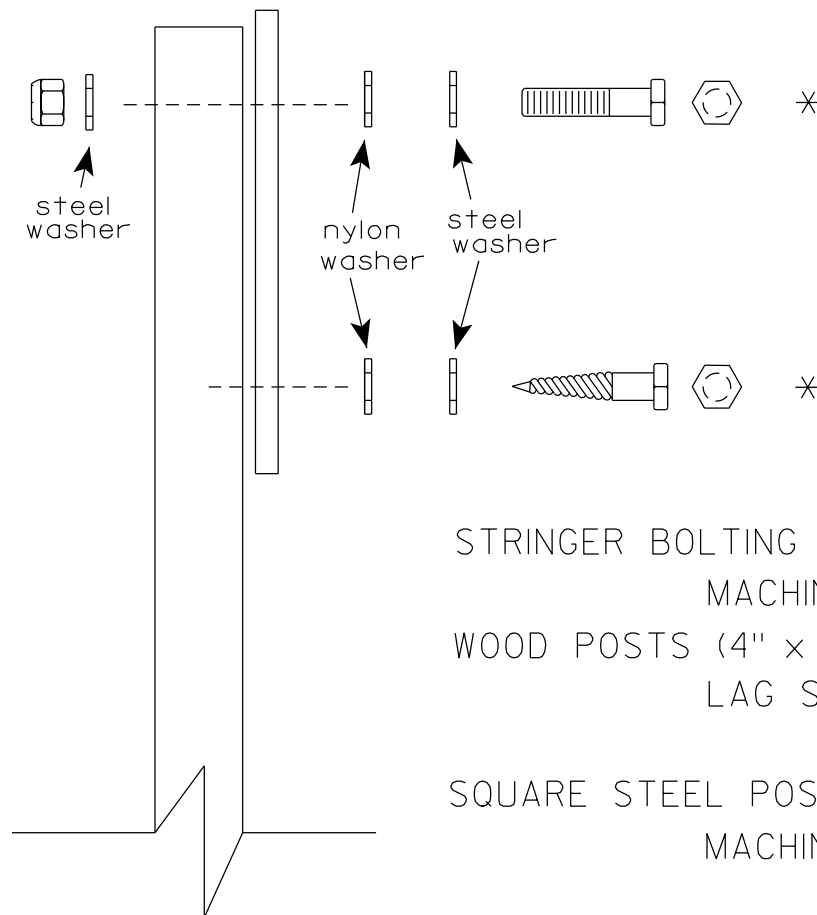
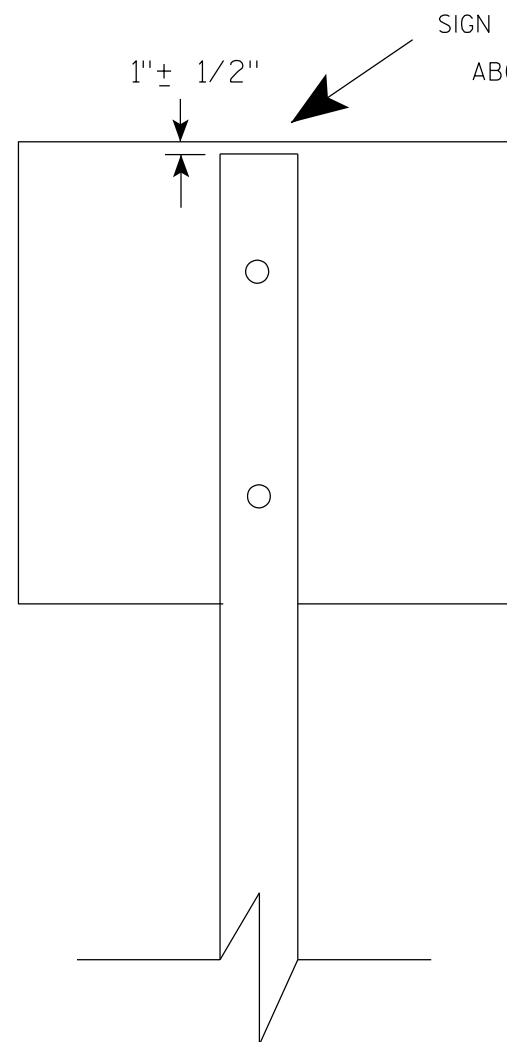
DATE 12/6/23 PLATE NO. A4-4.16

- GENERAL NOTES
- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
  - See tables below for required number of posts.
  - For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of sub-sign.
  - The (±) tolerance for mounting height is 3 inches.
  - J-Assemblies are considered to be one sign for mounting height.
  - Offset distance shall be consistent with existing signs or consistent throughout length of project.
  - Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the engineer.
  - The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 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" (±) 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.

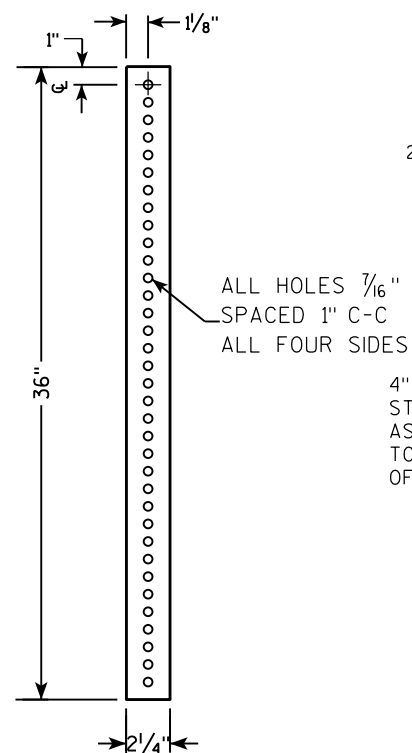
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS -  $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS -  $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)  
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
-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

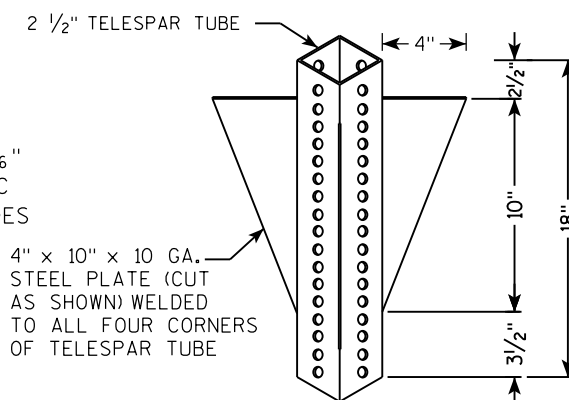
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9



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



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



**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

2 1/2" GRAVEL OR DIRT

TELESCOPE PIECES  
FLUSH AT TOP

18" DIA SCHEDULE  
40 PVC  
BOX-OUT

36"

18"

13"

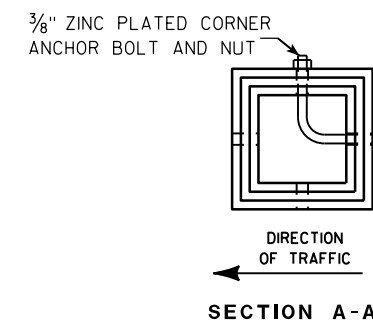
2 1/2" SQUARE X 18"  
(SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

3/8" ZINC PLATED  
ANCHOR BOLT AND NUT

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY:

- TELESCOPE PIECES FLUSH AT TOP**: Indicated by a dimension line on the left.
- 2" STEEL TUBULAR SQUARE UPPER SECTION**: The main vertical support.
- ALL HOLES  $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES**: Specification for the perforations in the tubular section.
- SIGN**: Attached to the top of the post.
- SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL**: Reference to a separate plate for hardware details.
- 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT**: Hardware used to secure the post to the base.
- 1"**: Dimension for the offset of the anchor bolt from the post face.
- 3/8" ZINC PLATED ANCHOR BOLT AND NUT**: Hardware used to secure the base plate to the ground.
- 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)**: The base plate of the post.
- 2 1/4" SQUARE X 36"**: The main base plate.
- 36"**: Dimension for the height of the main base plate.
- 18"** and **12"**: Dimensions for the offset of the anchor bolt from the post face.
- A**: Downward arrows indicating load or weight.



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

**Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).**

TUBULAR STEEL  
SIGN POST  
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Ranch

for State Traffic Engineer

DATE 2/05/15 PLAT 21 14-9.9

SHEET NO:	E
-----------	---

PROJECT NO:

HWY:

COUNTY:

FILE NAME : C:\CAEFiles\Projects\tr\_stdplate\A49.DGN

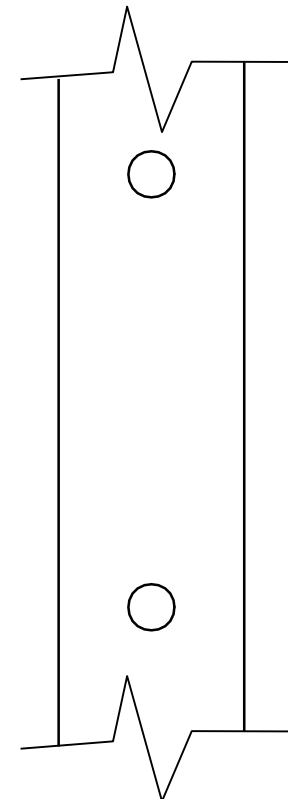
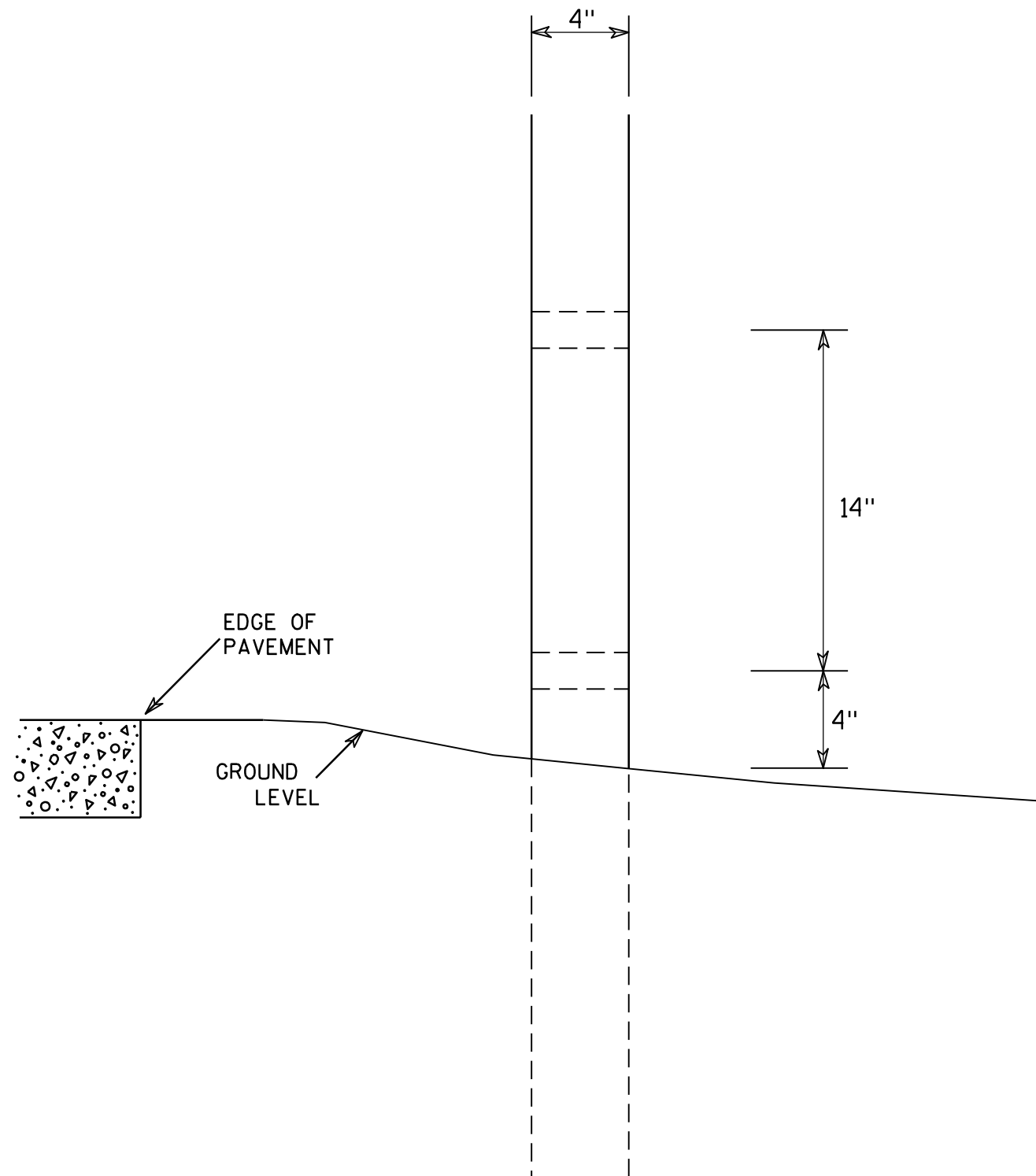
PLOT DATE : 05-FEB-2015 17:09

PLOT BY : mscs\_ja

PLOT NAME :

PLOT SCALE : 13.659812:1.000000

WISDOT/CADDS SHEET 42



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:

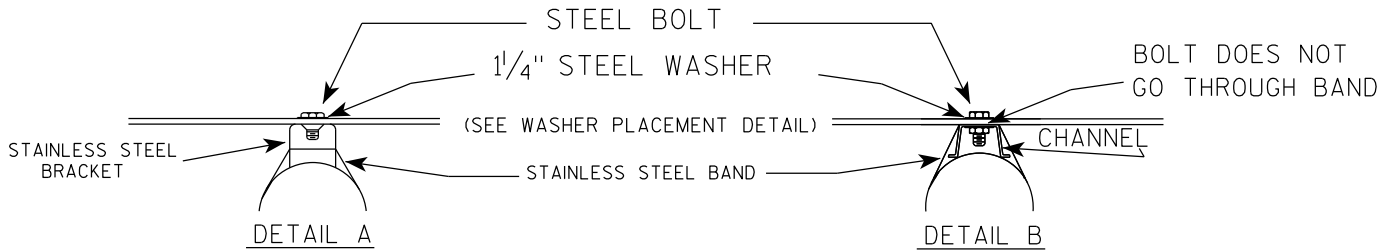
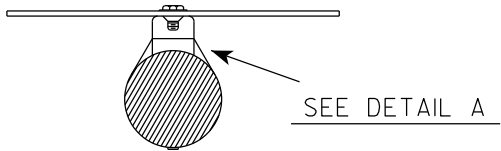
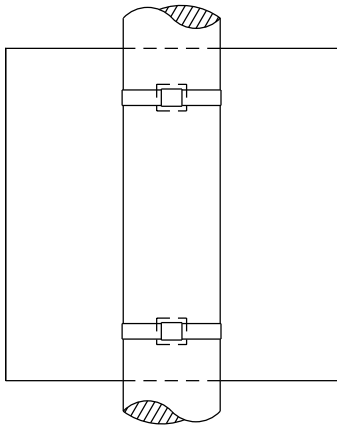
COUNTY:

SHEET NO: 22

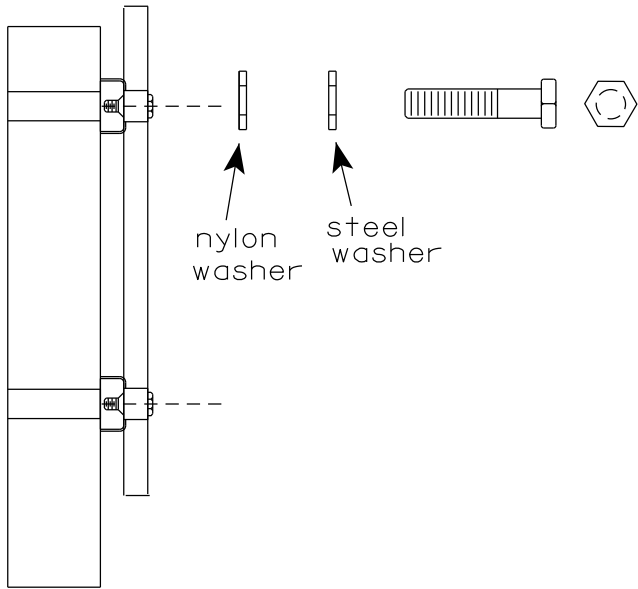
E

BANDING

SINGLE SIGN



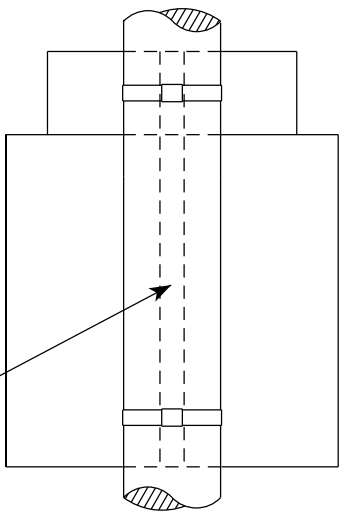
WASHER PLACEMENT



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

CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET

"J" ASSEMBLY



SEE DETAIL B

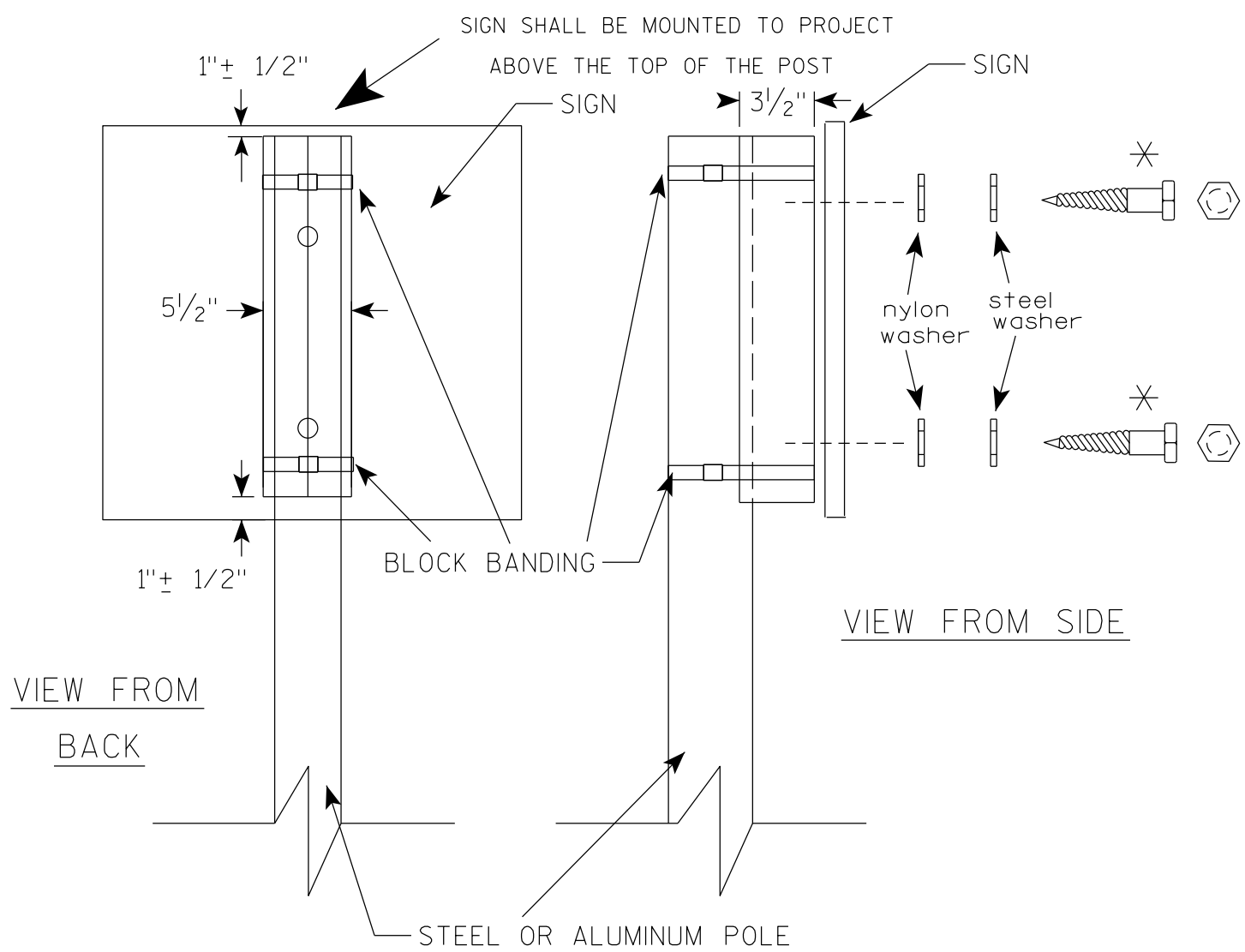
GENERAL NOTES

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

STANDARD SIGN  
SIGN BANDING DETAILS

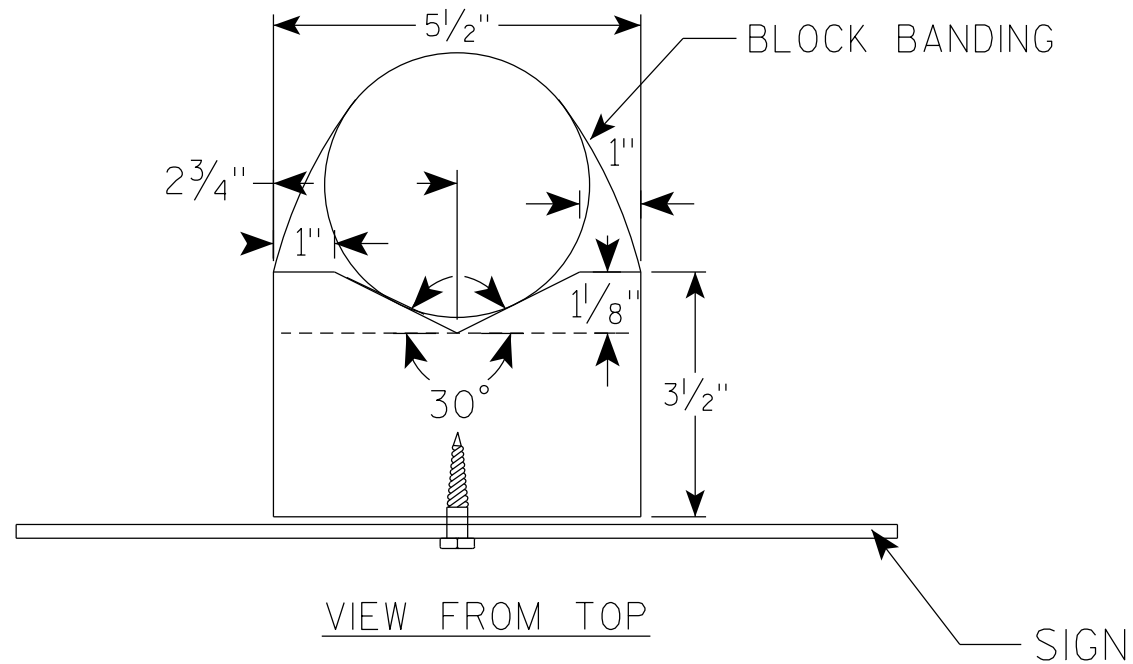
WISCONSIN DEPT OF TRANSPORTATION

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



VIEW FROM  
BACK

VIEW FROM SIDE



VIEW FROM TOP

## 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  $\frac{1}{4}$ " O.D. X  $\frac{3}{8}$ " I.D. X  $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE  $\frac{1}{4}$ " 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

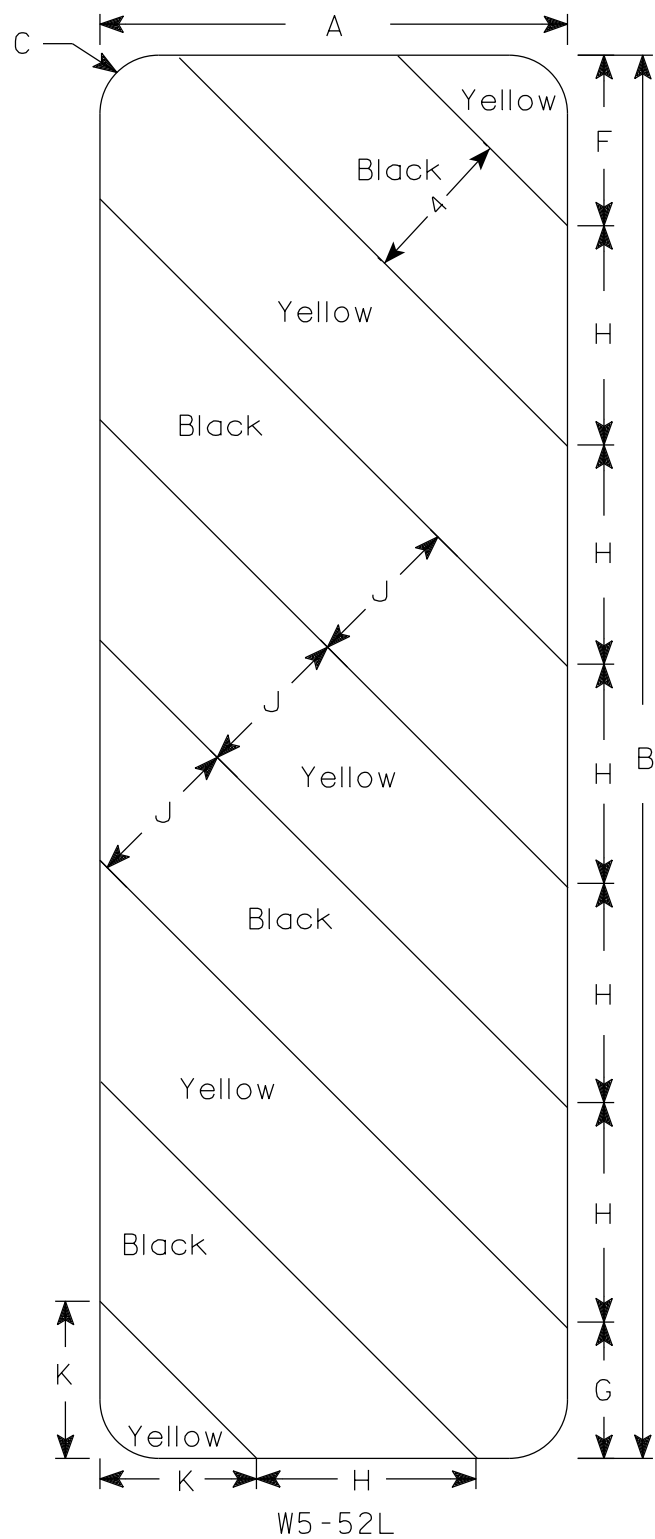
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 4/19/2022 PLATE NO. A5-10.3

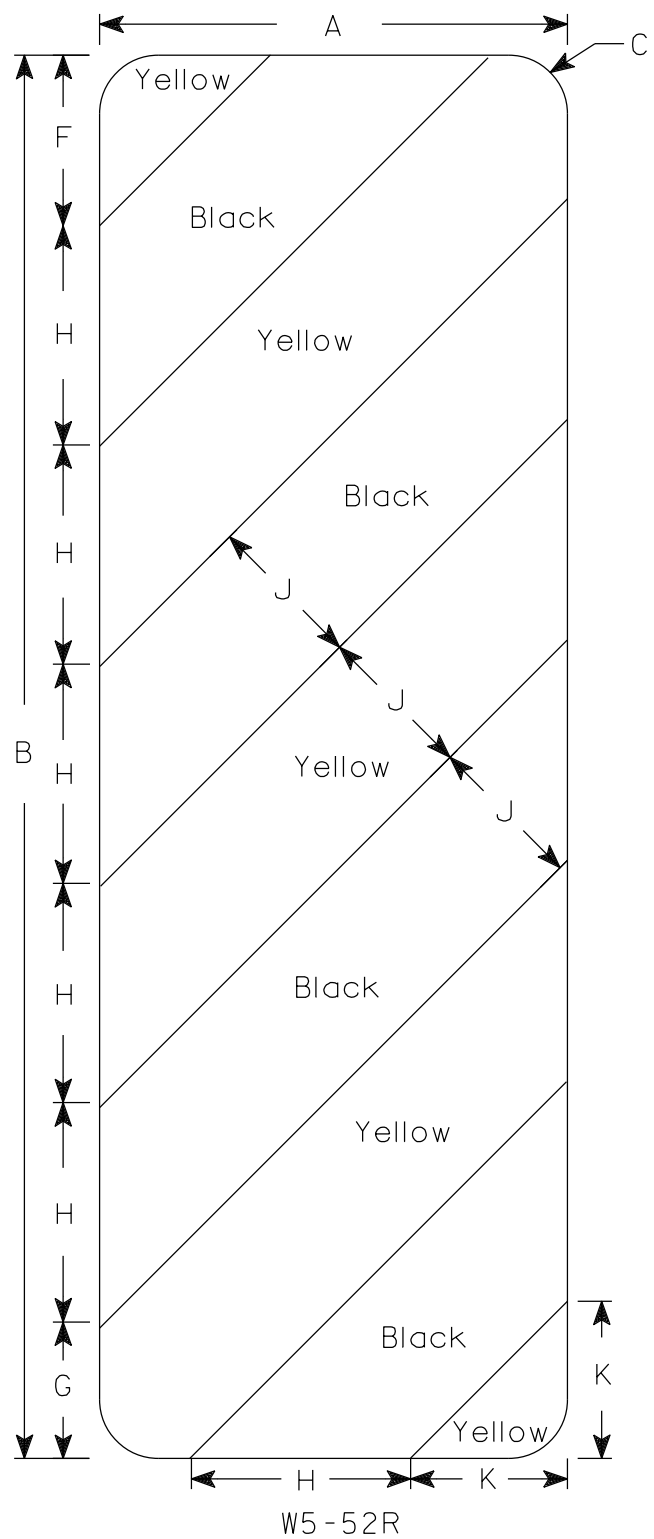
PROJECT NO:

SHEET NO: 24

E



W5-52L



W5-52R

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
  - Background - Yellow
  - Message - Black
- 3. 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	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54	1 1/2			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 3/4/2024 PLATE NO. W5-52.10

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93  
INVENTORY RATING: RF = 1.11  
OPERATING RATING: RF = 1.45  
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

MATERIAL PROPERTIES:

CONCRETE MASONRY:  
SUPERSTRUCTURE & STRUCTURAL APPROACH SLAB  $f'_c = 4,000$  PSI  
ALL OTHER  $f'_c = 3,500$  PSI

BAR STEEL REINFORCEMENT  
GRADE 60  $f_y = 60,000$  PSI

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS \*\* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. TO BE PRE-BORED 10'-0" PRIOR TO DRIVING.

ESTIMATED 25'-0" LONG AT E. ABUT.  
ESTIMATED 20'-0" LONG AT W. ABUT.

\*\*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 PILE CAPACITY.

HYDRAULIC DATA

100-YEAR FREQUENCY:

$Q_{100} = 1,090$  C.F.S.  
 $Q_{BRIDGE} = 503$  C.F.S.  
 $Q_{ROADWAY} = 587$  C.F.S.  
 $V_{100} = 3.5$  F.P.S.  
 $HW_{100} = EL. 1059.30$   
WATERWAY AREA = 142 SQ. FT.  
DRAINAGE AREA = 3.05 SQ. MI.  
SCOUR CRITICAL CODE = 5

2-YEAR FREQUENCY:

$Q_2 = 195$  C.F.S.  
 $V_2 = 3.4$  F.P.S.  
 $HW_2 = EL. 1056.16$

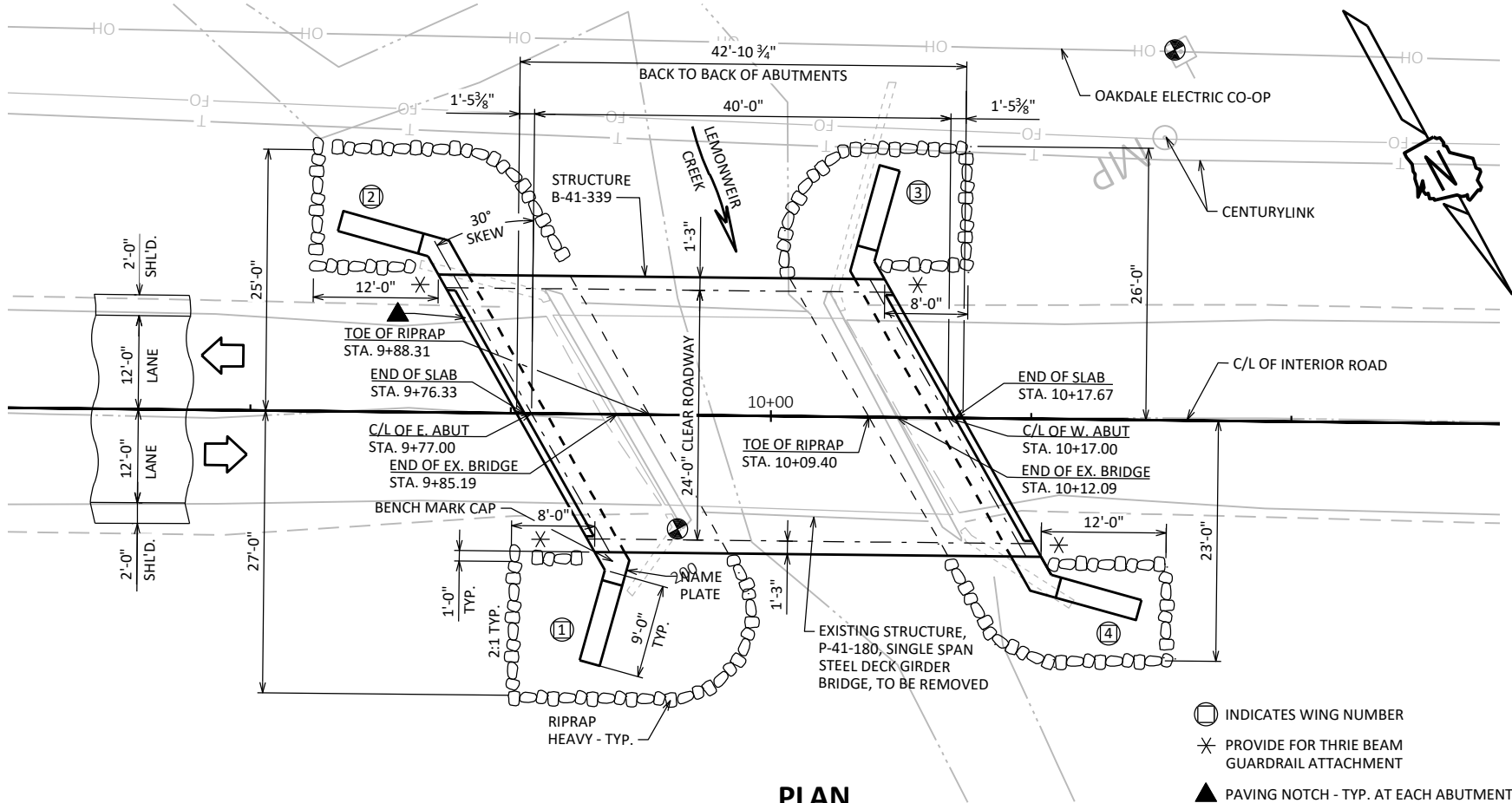
ROADWAY OVERTOPPING

FREQUENCY = 12 YEARS  
 $Q_{12} = 590$  C.F.S.  
 $HW_{12} = EL. 1059.3$

TRAFFIC DATA

FEATURE ON: INTERIOR ROAD

ADT = 200 (2026)  
ADT = 210 (2046)  
R.D.S. = 55 MPH



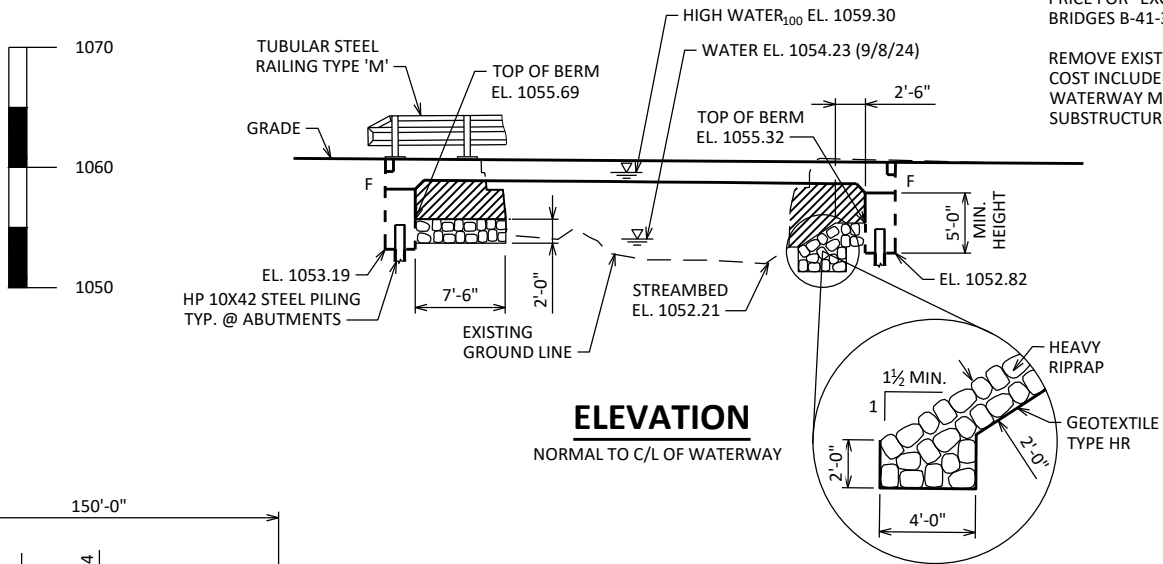
PLAN

SINGLE-SPAN FLAT SLAB BRIDGE

- INDICATES WING NUMBER
- PROVIDE FOR THRIE BEAM GUARDRAIL ATTACHMENT
- PAVING NOTCH - TYP. AT EACH ABUTMENT

COST OF EXCAVATION OR FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-41-339".

REMOVE EXISTING STRUCTURE AS NEEDED. COST INCLUDED IN "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS" ITEM. TYPICAL AT ALL SUBSTRUCTURES.

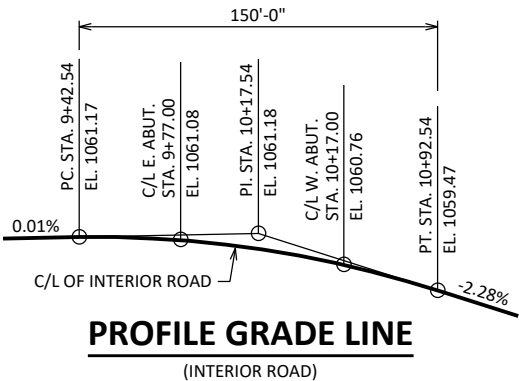


ELEVATION

NORMAL TO C/L OF WATERWAY

BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
200	9+91	LHS SQR, 11' RT. C/L	1060.99
201	10+38	SPK IN PPOL, 36' LT. C/L	1059.30



PROFILE GRADE LINE

(INTERIOR ROAD)

LIST OF DRAWINGS:

- GENERAL PLAN
- QUANTITIES AND NOTES
- STRUCTURE DETAILS
- SUBSURFACE EXPLORATION
- EAST ABUTMENT
- EAST ABUTMENT WING 1 DETAILS
- EAST ABUTMENT WING 2 DETAILS
- EAST ABUTMENT BILL OF BARS
- WEST ABUTMENT
- WEST ABUTMENT WING 3 DETAILS
- WEST ABUTMENT WING 4 DETAILS
- WEST ABUTMENT BILL OF BARS
- SUPERSTRUCTURE
- SUPERSTRUCTURE PLAN
- TUBULAR STEEL RAILING TYPE "M"



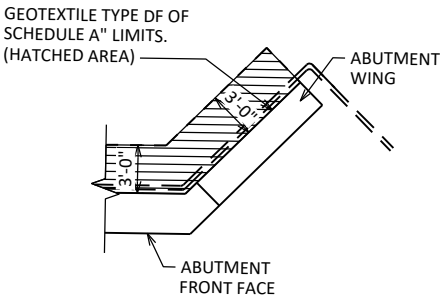
08/14/2025

STRUCTURE DESIGN CONTACTS:

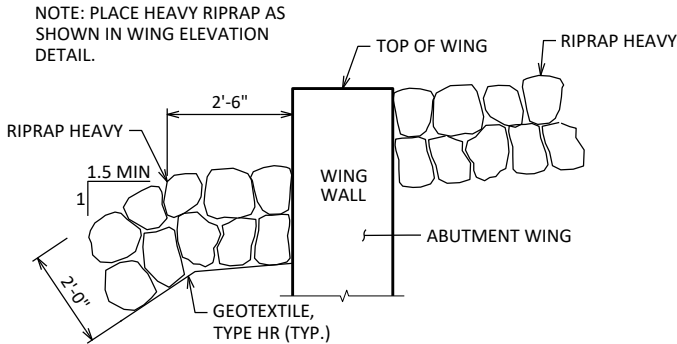
AARON BONK 608-261-0261  
ARLEN BEAUDETTE 715-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
<b>AYRES</b> 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	JLR CHIEF STRUCTURES DESIGN ENGINEER		08/21/25 DATE
<b>STRUCTURE B-41-339</b>			
INTERIOR ROAD OVER LEMONWEIR CREEK			
COUNTY	MONROE	TOWN	TOMAH
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION			
DESIGNED BY	DRS	DESIGN CK'D	NBE
DRAWN BY	CLP	PLANS CK'D	AEB
<b>GENERAL PLAN</b>			SHEET 1 OF 15 26

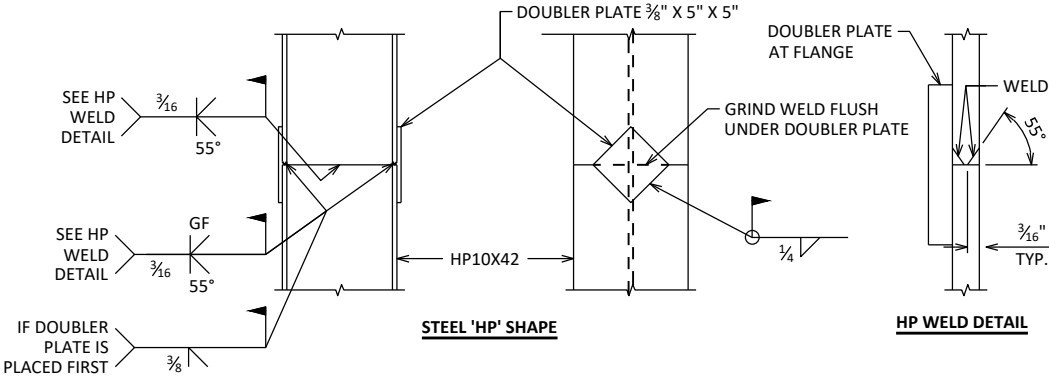




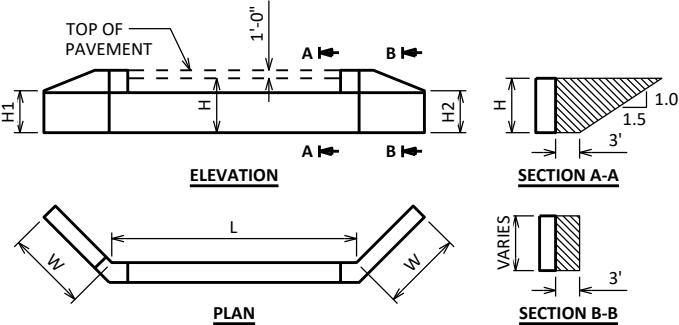
**BACKFILL STRUCTURE LIMITS**  
**ABUTMENT PLAN WITH WING**



**TYPICAL FILL SECTION AT WING**

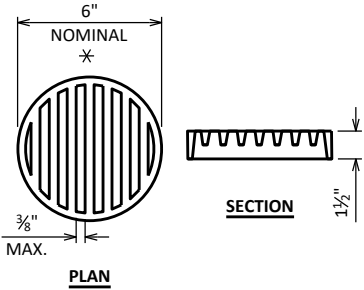


**'HP' PILE DETAILS**  
FLANGE SHOWN, WEB SIMILAR



**ABUTMENT BACKFILL DIAGRAM**

- L = ABUTMENT BODY LENGTH AT BACKFACE (FT)  
H = AVERAGE ABUTMENT FILL HEIGHT (FT)  
H1 = WING 1 HEIGHT AT TIP (FT)  
H2 = WING 2 HEIGHT AT TIP (FT)  
W = WING LENGTH (FT)  
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)  
 $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (3')(0.5)(H1+H2+H+H)(W)$   
 $V_{CY} = V_{CF}/27$   
 $V_{TON} = V_{CY}(2.0)$



**RODENT SHIELD DETAIL**

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

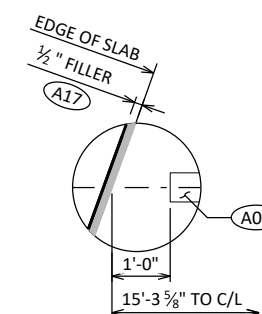
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-339			
DRAWN BY		CLP	PLANS CK'D DRS
STRUCTURE DETAILS		SHEET 3 OF 15 28	



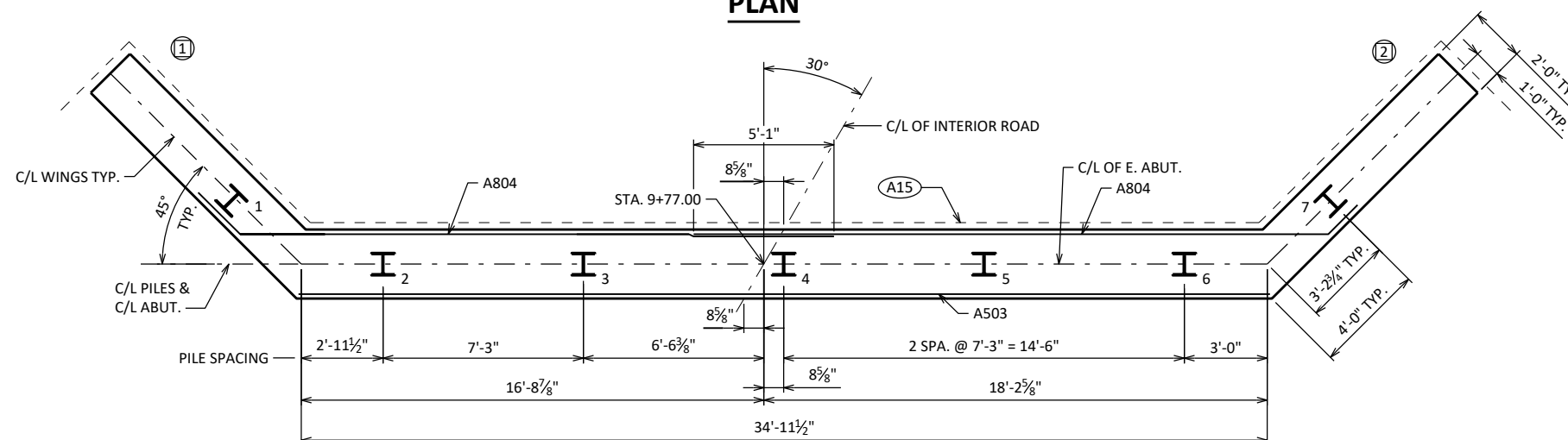





### DETAIL A



## PLAN



## PILE PLAN

- A01** CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6.
- A06** SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING. ESTIMATED 25' LONG WITH A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE. TO BE PRE-BORED 10'-0" PRIOR TO DRIVING.
- A15** PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17** ½" FILLER: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ¾" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ½" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- A19** 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- A22** A506 BARS SPACED @ 1'-0" CNTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
-  ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE</b>		<b>B-41-339</b>	
	DRAWN BY	CLP	PLANS CK'D DRS
<b>EAST ABUTMENT</b>		SHEET 5 OF 15 <b>30</b>	



SHOWING F.F. WING



SHOWING UPPER WING REINFORCEMENT

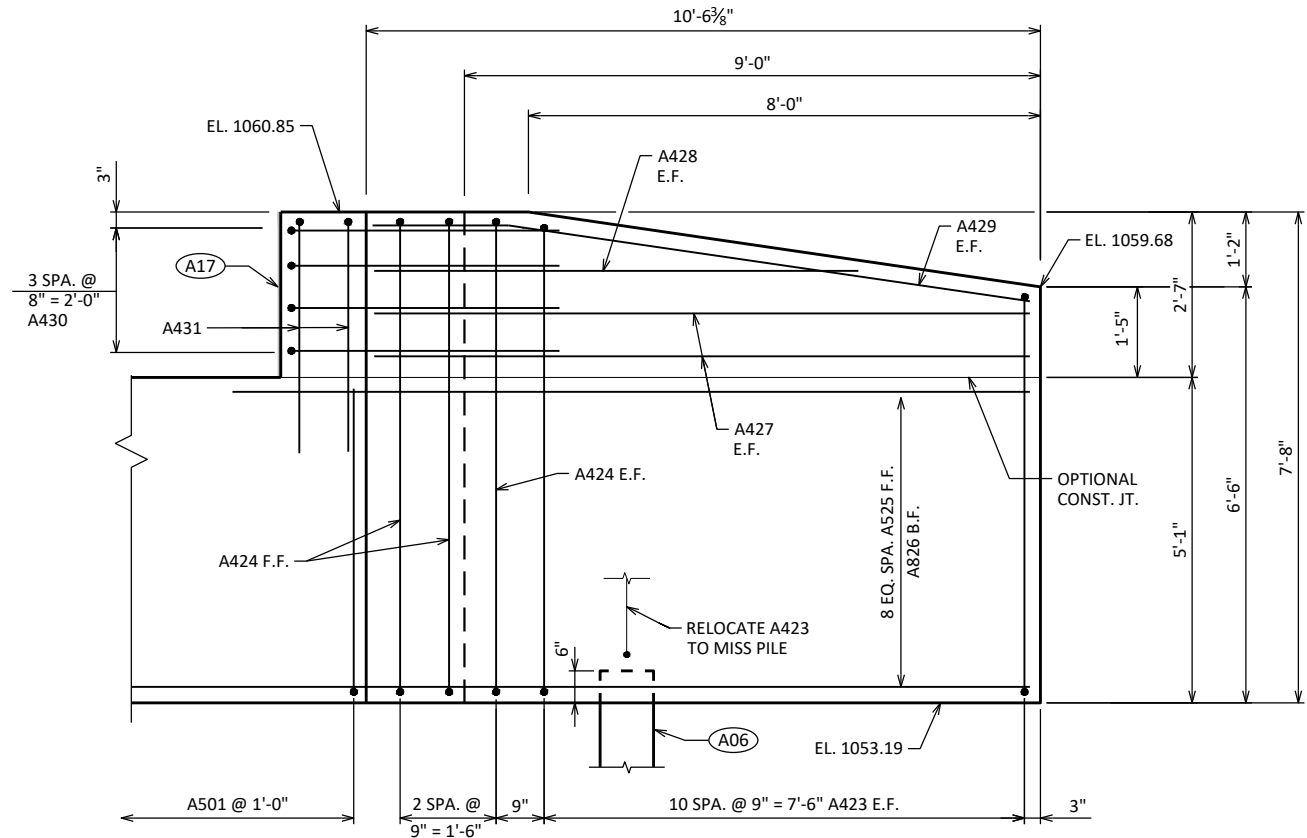


SHOWING LOWER WING REINFORCEMENT



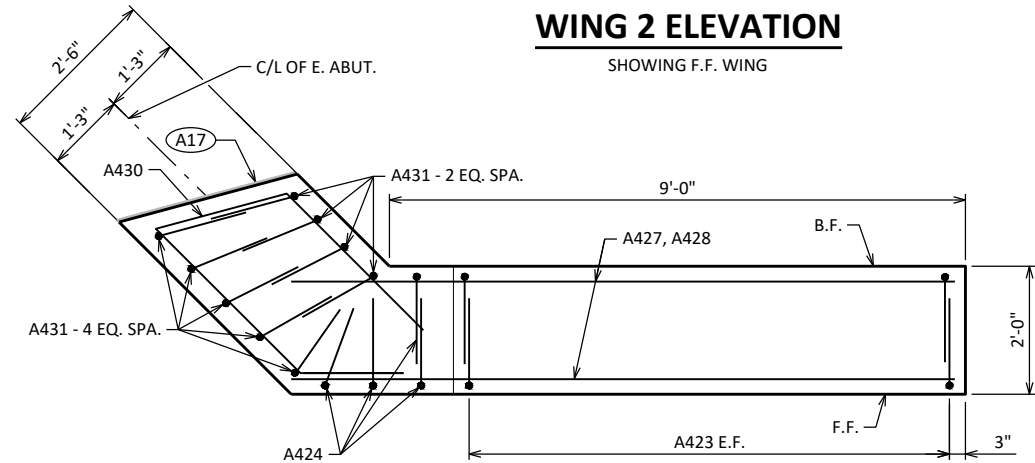
- A01. OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE  $\frac{3}{4}$ " "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
- A06. SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING. ESTIMATED 25' LONG WITH A REQUIRED DRIVING RESISTANCE OF 40 TONS PER PILE. TO BE PRE-BORED 10'-0" PRIOR TO DRIVING.
- A15. PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17.  $\frac{1}{2}$ " FILLER: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF  $\frac{1}{2}$ " FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD  $\frac{1}{8}$ " BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- A19. 18" RUBBERIZED MEMBRANE WATERPROOFING, ONLY IF OPTIONAL CONSTRUCTION JOINT IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY STRUCTURES".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-41-339</b>			
DRAWN BY		CLP	PLANS CK'D DRS
<b>EAST ABUTMENT WING 1 DETAILS</b>		SHEET 6 OF 15 <b>31</b>	



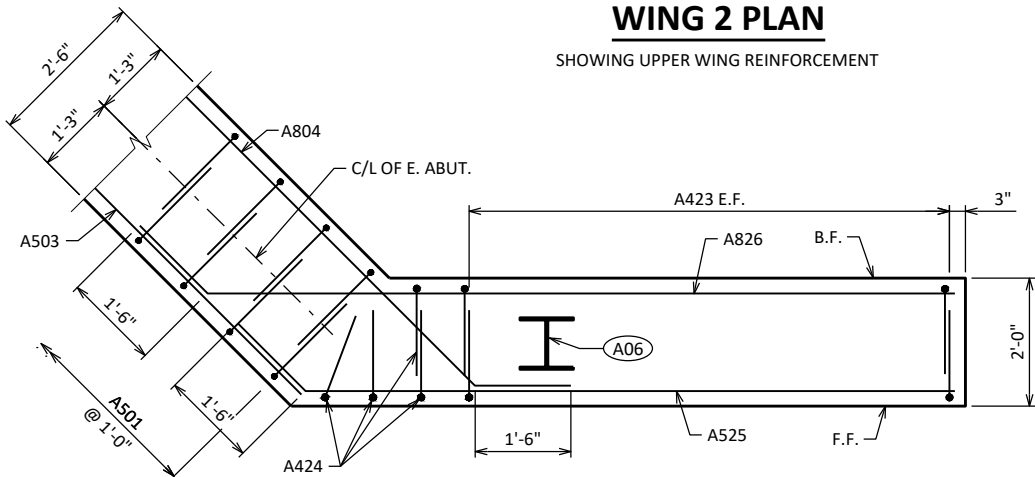
WING 2 ELEVATION

SHOWING F.F. WING



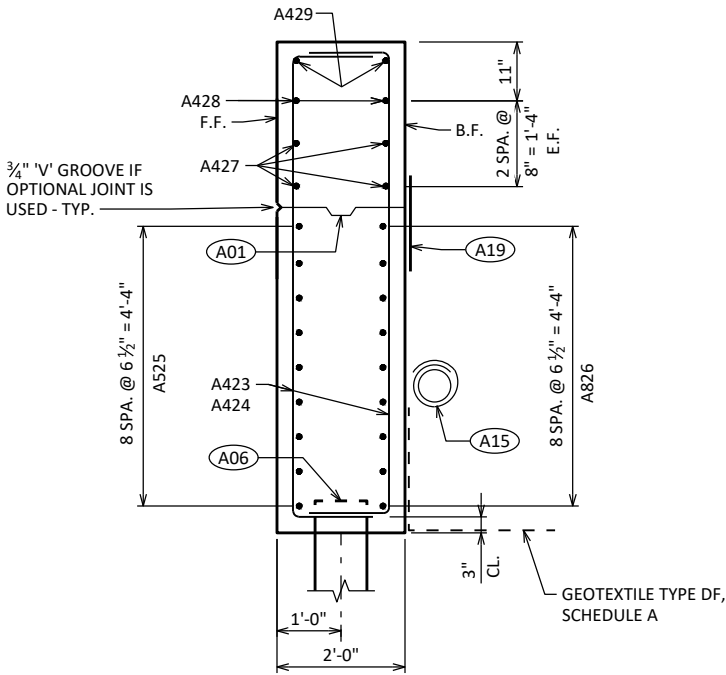
WING 2 PLAN

SHOWING UPPER WING REINFORCEMENT



WING 2 PLAN

SHOWING LOWER WING REINFORCEMENT



SECTION THRU WING 2

- (A01) OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE 3/4" "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
- (A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING. ESTIMATED 25' LONG WITH A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE. TO BE PRE-BORED 10'-0" PRIOR TO DRIVING.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 3/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING, ONLY IF OPTIONAL CONSTRUCTION JOINT IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY STRUCTURES".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-339			
DRAWN BY		CLP	PLANS CK'D DRS
EAST ABUTMENT WING 2 DETAILS		SHEET 7 OF 15 32	

## BILL OF BARS

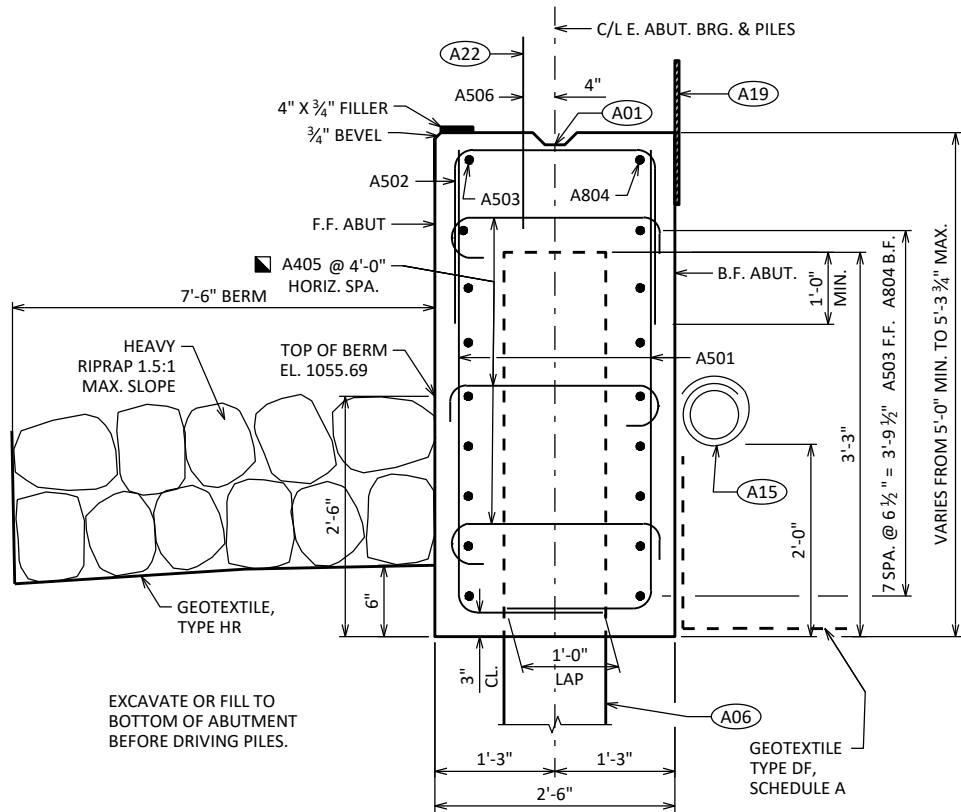
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		72	6'-1"	X		ABUT BODY STIRRUPS
A502		36	7'-3"	X		ABUT BODY STIRRUPS - TOP U-BAR
A503		9	34'-10"			ABUT BODY HORIZ. - F.F.
A804		18	23'-9"	X		ABUT BODY HORIZ. - B.F.
A405		27	2'-11"	X		ABUT BODY TIE BARS
A506	X	29	2'-0"			ABUT BODY DOWEL BARS
A407	X	22	7'-5"	X	▲	WING 1 STIRRUPS
A408	X	4	9'-8"	X		WING 1 STIRRUPS
A509	X	6	11'-9"	X		WING 1 LOWER HORIZ. - F.F.
A810	X	6	13'-5"	X		WING 1 LOWER HORIZ. - B.F.
A511	X	1	10'-10"	X		WING 1 LOWER HORIZ. - F.F.
A812	X	1	12'-6"	X		WING 1 LOWER HORIZ. - B.F.
A513	X	1	9'-10"	X		WING 1 LOWER HORIZ. - F.F.
A814	X	1	11'-6"	X		WING 1 LOWER HORIZ. - B.F.
A515	X	1	8'-9"	X		WING 1 LOWER HORIZ. - F.F.
A816	X	1	10'-5"	X		WING 1 LOWER HORIZ. - B.F.
A417	X	2	10'-4"			WING 1 UPPER HORIZ.
A418	X	2	9'-1"			WING 1 UPPER HORIZ.
A419	X	2	7'-10"			WING 1 UPPER HORIZ.
A420	X	2	11'-4"	X		WING 1 UPPER DIAG.
A421	X	4	7'-0"	X		WING 1 TOP HORIZ. CORNER
A422	X	5	5'-2"	X		WING 1 TOP VERT. CORNER
A423	X	22	9'-2"	X	▲	WING 2 STIRRUPS
A424	X	4	9'-9"	X		WING 2 STIRRUPS
A525	X	9	11'-9"	X		WING 2 LOWER HORIZ. - F.F.
A826	X	9	13'-5"	X		WING 2 LOWER HORIZ. - B.F.
A427	X	4	10'-3"			WING 2 UPPER HORIZ.
A428	X	2	7'-7"			WING 2 UPPER HORIZ.
A429	X	2	10'-3"	X		WING 2 UPPER DIAG.
A430	X	4	9'-11"	X		WING 2 TOP HORIZ. CORNER
A431	X	9	5'-2"	X		WING 2 TOP VERT. CORNER

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

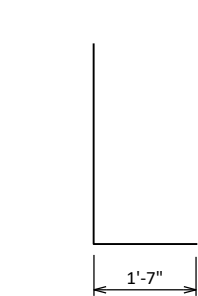
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

## SECTION THRU BODY

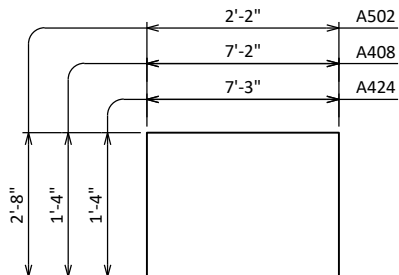


- (A01) CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6.
- (A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING. ESTIMATED 25' LONG WITH A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE. TO BE PRE-BORED 10'-0" PRIOR TO DRIVING.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A22) A506 BARS SPACED @ 1'-0" CNTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

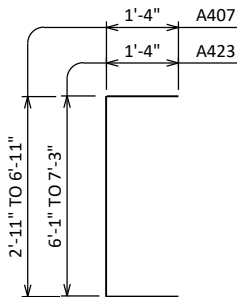
## A501



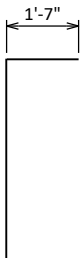
## A502, A408, A424



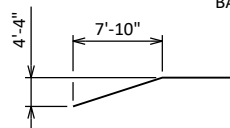
## A407, A423



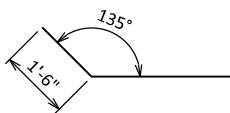
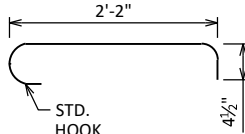
## A422, A431



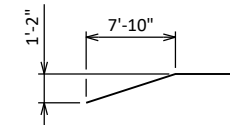
## A420



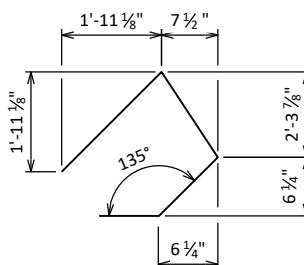
## A804, A509, A810

A511, A812, A513, A814  
A515, A816, A525, A826

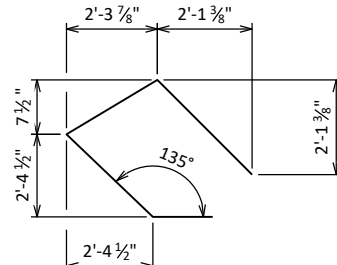
## A429



## A421



## A430

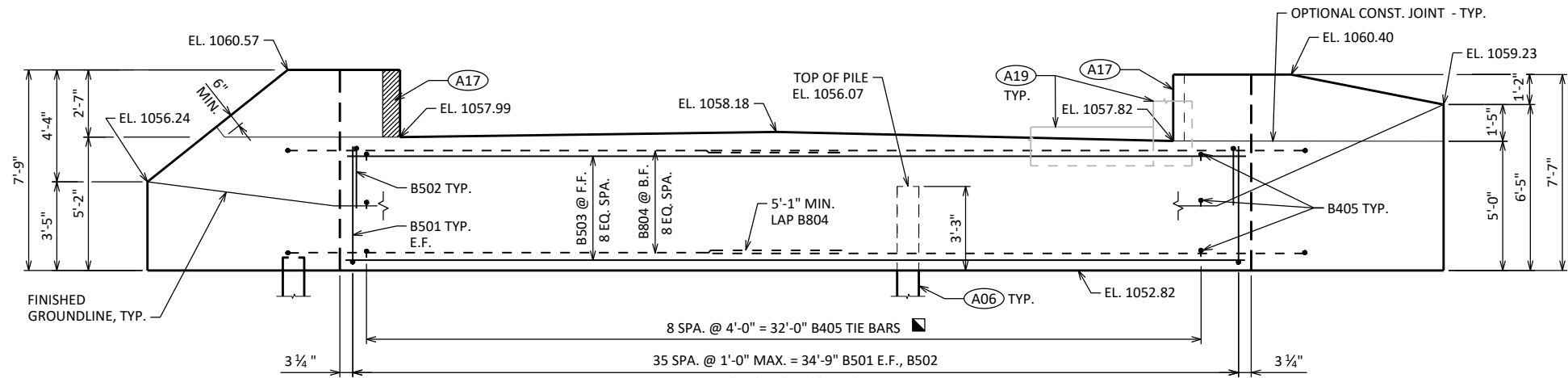


## BAR SERIES TABLE

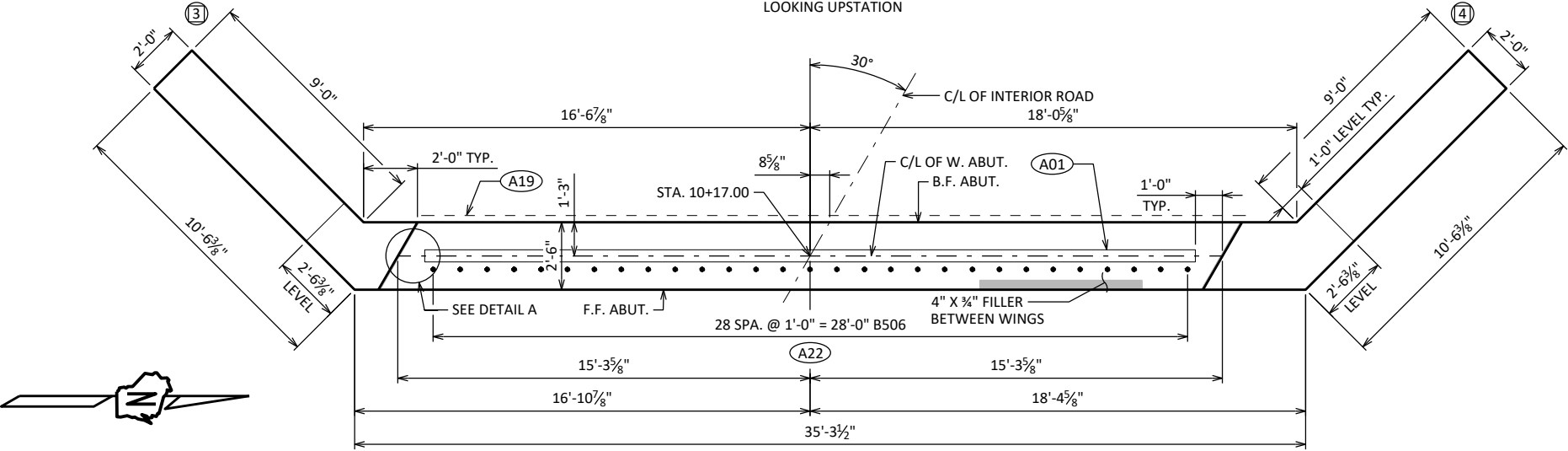
BUNDLE AND TAG EACH SERIES SEPARATELY.

BAR MARK	NO. REQ'D.	LENGTH
A407	2 SERIES OF 11	5'-5" TO 9'-5"
A423	2 SERIES OF 11	8'-7" TO 9'-9"

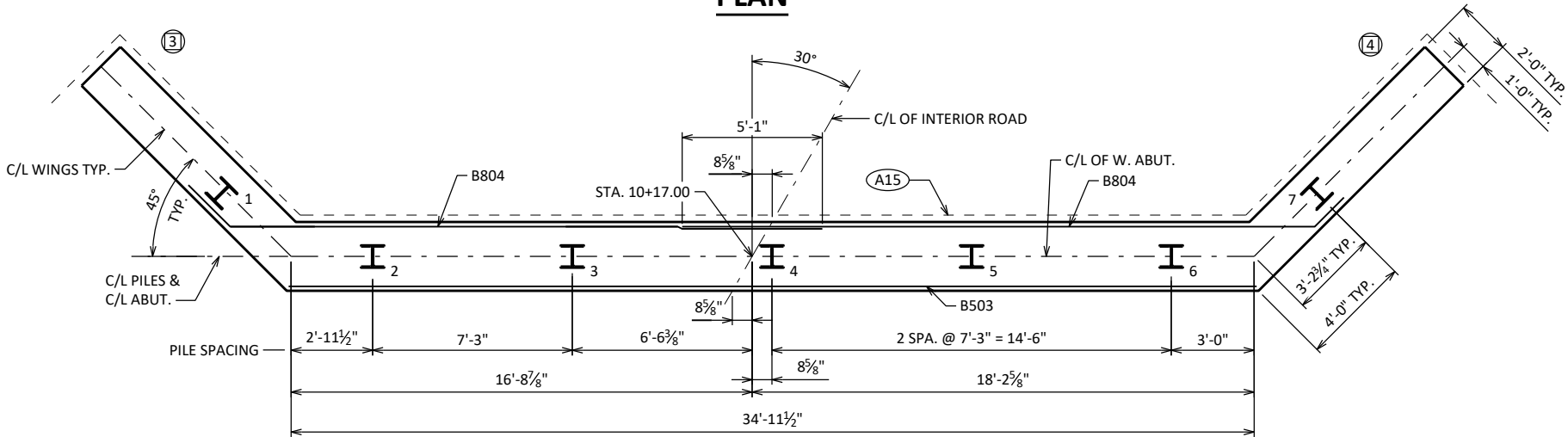
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-339			
DRAWN BY		CLP	PLANS CK'D DRS
EAST ABUTMENT BILL OF BARS		SHEET 8 OF 15 33	



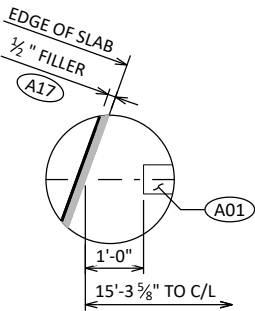
**ELEVATION**  
LOOKING UPSTATION



**PLAN**



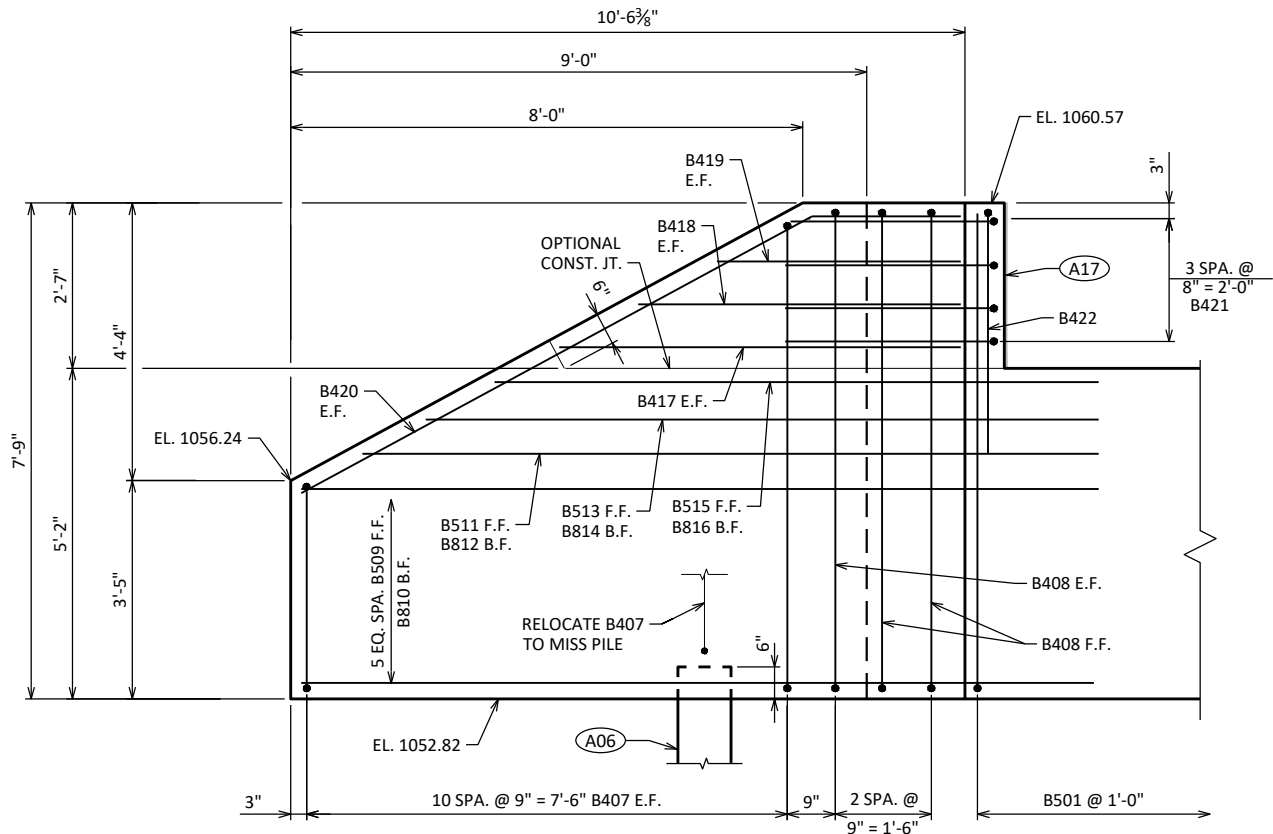
**PILE PLAN**



**DETAIL A**

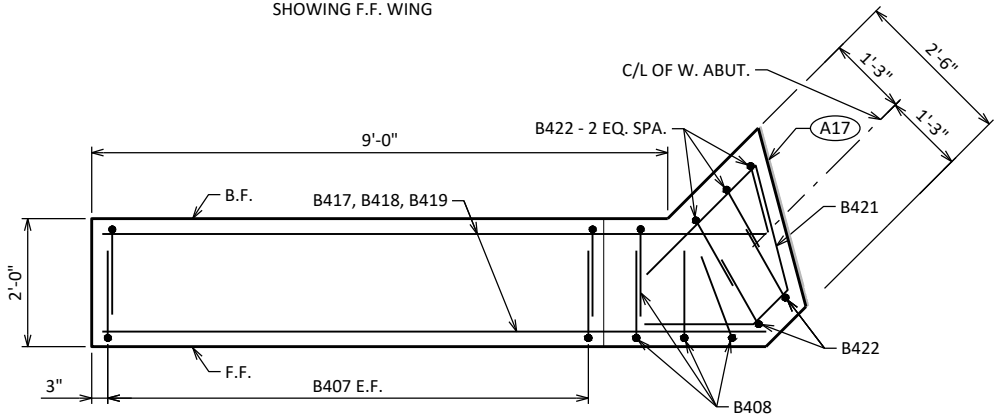
- (A01) CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6.
- (A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING. ESTIMATED 20' LONG WITH A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE. TO BE PRE-BORED 10'-0" PRIOR TO DRIVING.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A22) B506 BARS SPACED @ 1'-0" CNTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-339			
DRAWN BY		CLP	PLANS CK'D DRS
WEST ABUTMENT		SHEET 9 OF 15 34	



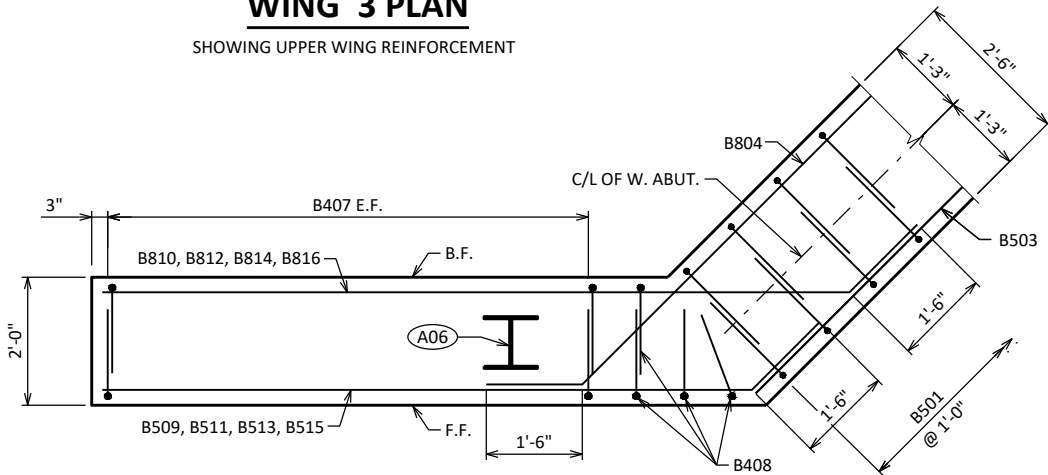
WING 3 ELEVATION

SHOWING F.F. WING



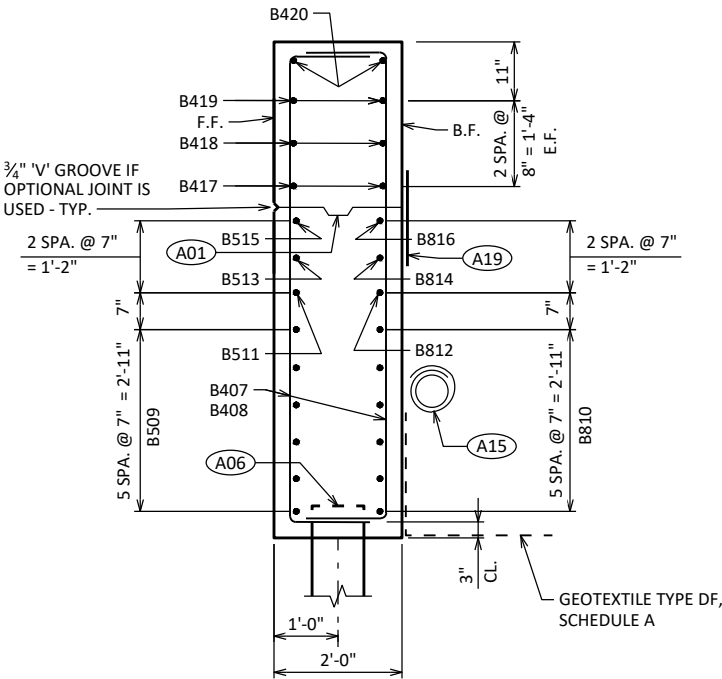
WING 3 PLAN

SHOWING UPPER WING REINFORCEMENT



WING 3 PLAN

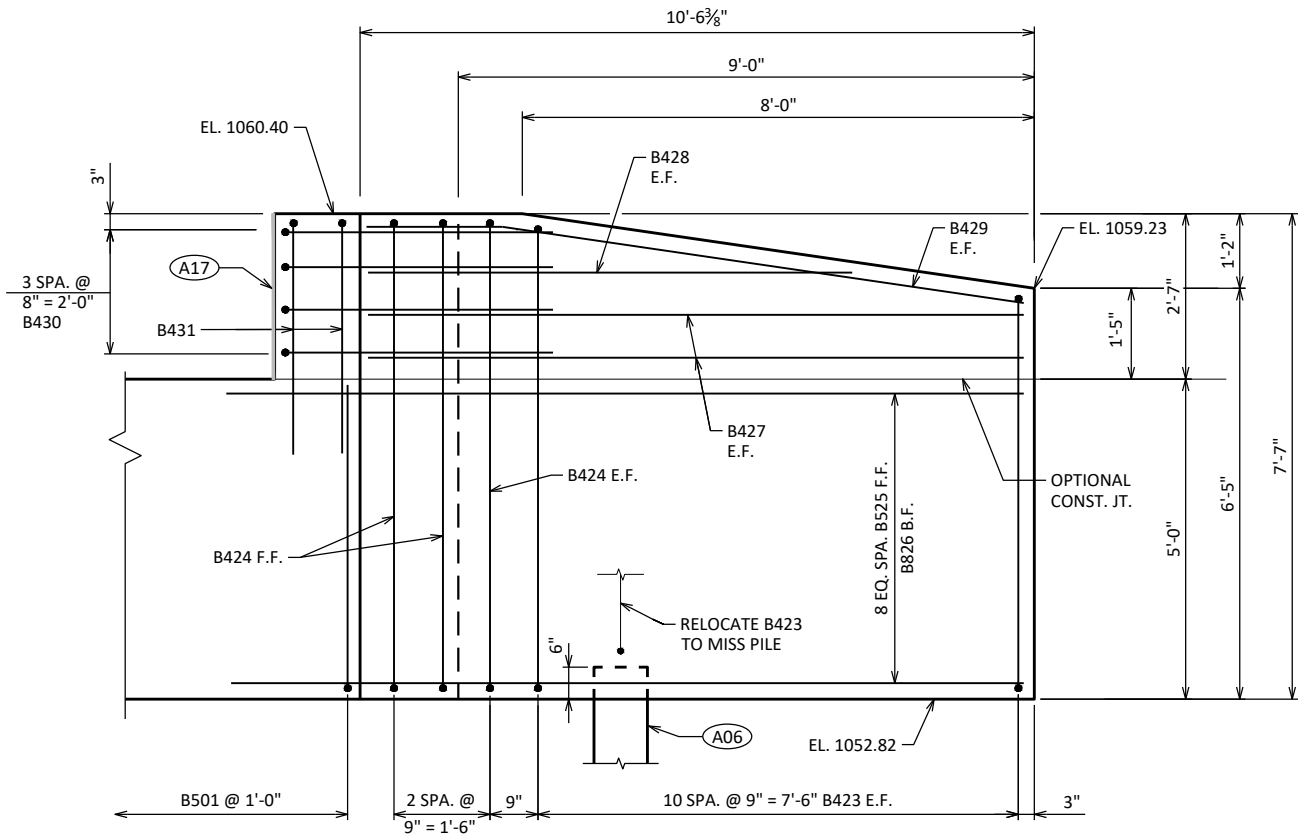
SHOWING LOWER WING REINFORCEMENT



SECTION THRU WING 3

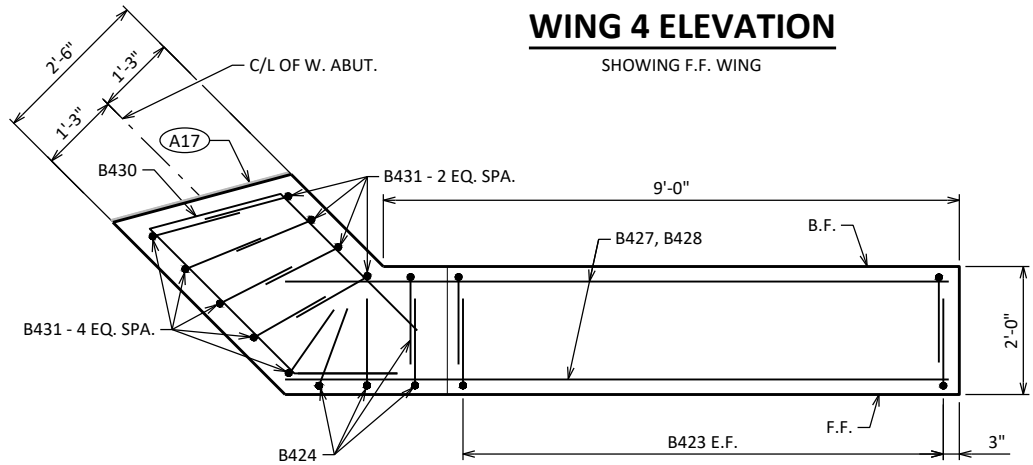
- (A01) OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE 3/4" "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
- (A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING. ESTIMATED 20' LONG WITH A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE. TO BE PRE-BORED 10'-0" PRIOR TO DRIVING.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING, ONLY IF OPTIONAL CONSTRUCTION JOINT IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY STRUCTURES".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-339			
DRAWN BY		CLP	PLANS CK'D DRS
WEST ABUTMENT WING 3 DETAILS		SHEET 10 OF 15 35	



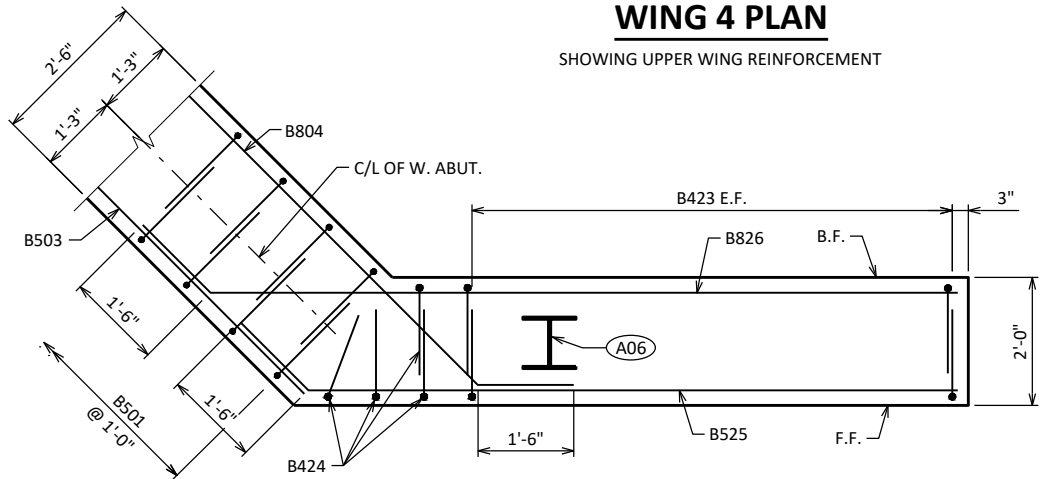
WING 4 ELEVATION

SHOWING F.F. WING



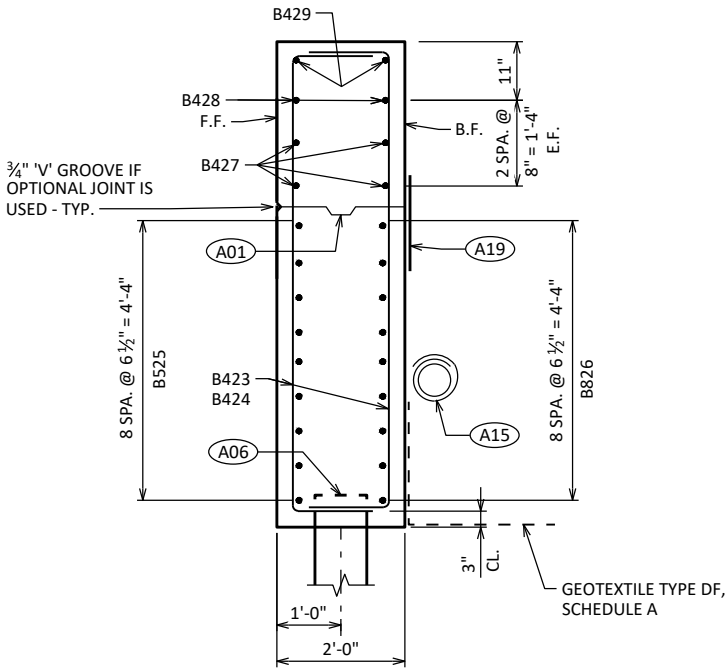
WING 4 PLAN

SHOWING UPPER WING REINFORCEMENT



WING 4 PLAN

SHOWING LOWER WING REINFORCEMENT



SECTION THRU WING 4

- A01** OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE 3/4" "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
- A06** SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING. ESTIMATED 20' LONG WITH A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE. TO BE PRE-BORED 10'-0" PRIOR TO DRIVING.
- A15** PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17** 1/2" FILLER: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 3/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- A19** 18" RUBBERIZED MEMBRANE WATERPROOFING, ONLY IF OPTIONAL CONSTRUCTION JOINT IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY STRUCTURES".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-339			
DRAWN BY		CLP	PLANS CK'D DRS
WEST ABUTMENT WING 4 DETAILS		SHEET 11 OF 15 36	



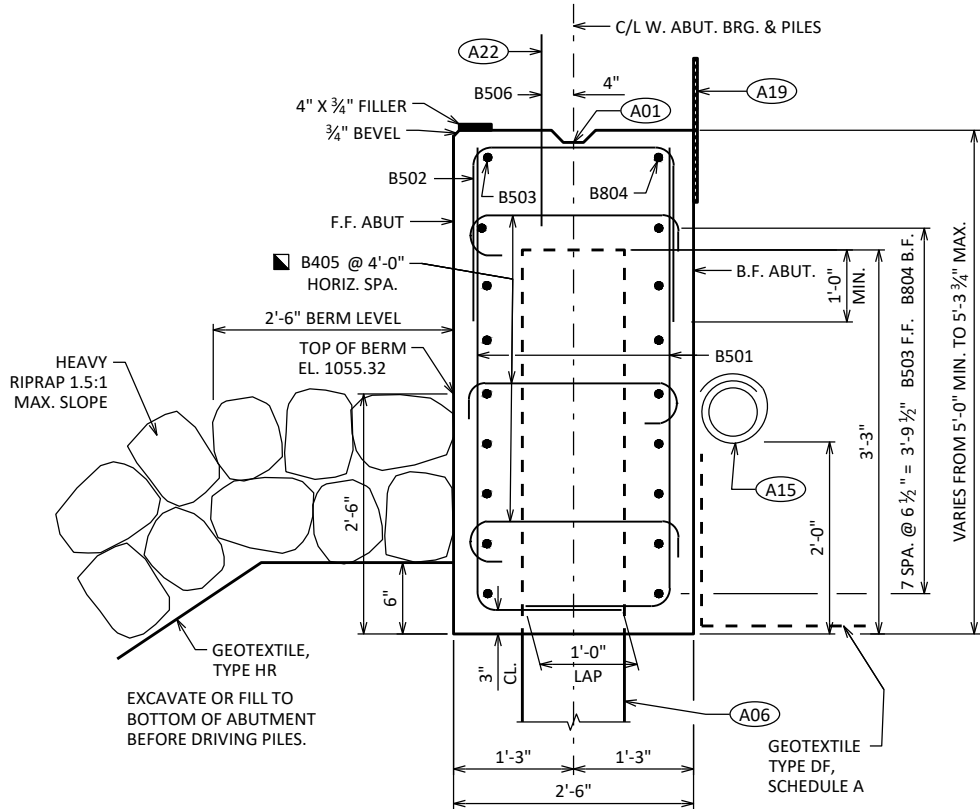
BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		72	6'-1"	X		ABUT BODY STIRRUPS
B502		36	7'-3"	X		ABUT BODY STIRRUPS - TOP U-BAR
B503		9	34'-10"			ABUT BODY HORIZ. - F.F.
B804		18	23'-9"	X		ABUT BODY HORIZ. - B.F.
B405		27	2'-11"	X		ABUT BODY TIE BARS
B506	X	29	2'-0"			ABUT BODY DOWEL BARS
B407	X	22	7'-7"	X	▲	WING 3 STIRRUPS
B408	X	4	9'-6"	X		WING 3 STIRRUPS
B509	X	6	11'-9"	X		WING 3 LOWER HORIZ. - F.F.
B810	X	6	13'-5"	X		WING 3 LOWER HORIZ. - B.F.
B511	X	1	10'-10"	X		WING 3 LOWER HORIZ. - F.F.
B812	X	1	12'-6"	X		WING 3 LOWER HORIZ. - B.F.
B513	X	1	9'-9"	X		WING 3 LOWER HORIZ. - F.F.
B814	X	1	11'-5"	X		WING 3 LOWER HORIZ. - B.F.
B515	X	1	8'-8"	X		WING 3 LOWER HORIZ. - F.F.
B816	X	1	10'-4"	X		WING 3 LOWER HORIZ. - B.F.
B417	X	2	10'-4"			WING 3 UPPER HORIZ.
B418	X	2	9'-1"			WING 3 UPPER HORIZ.
B419	X	2	7'-10"			WING 3 UPPER HORIZ.
B420	X	2	11'-4"	X		WING 3 UPPER DIAG.
B421	X	4	7'-0"	X		WING 3 TOP HORIZ. CORNER
B422	X	5	5'-2"	X		WING 3 TOP VERT. CORNER
B423	X	22	9'-0"	X	▲	WING 4 STIRRUPS
B424	X	4	9'-8"	X		WING 4 STIRRUPS
B525	X	9	11'-9"	X		WING 4 LOWER HORIZ. - F.F.
B826	X	9	13'-5"	X		WING 4 LOWER HORIZ. - B.F.
B427	X	4	10'-3"			WING 4 UPPER HORIZ.
B428	X	2	7'-7"			WING 4 UPPER HORIZ.
B429	X	2	10'-3"	X		WING 4 UPPER DIAG.
B430	X	4	9'-11"	X		WING 4 TOP HORIZ. CORNER
B431	X	9	5'-2"	X		WING 4 TOP VERT. CORNER

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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

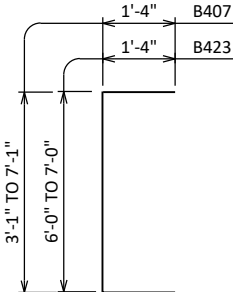


SECTION THRU BODY

- A01 CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6.
- A06 SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING. ESTIMATED 20' LONG WITH A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE. TO BE PRE-BORED 10'-0" PRIOR TO DRIVING.
- A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A19 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- A22 B506 BARS SPACED @ 1'-0" CNTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

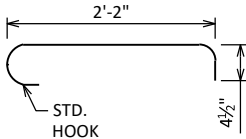
B501

B502, B408, B424

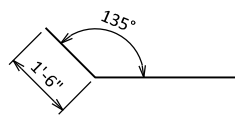


B407, B423

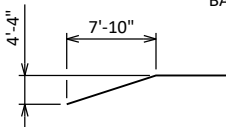
B422, B431



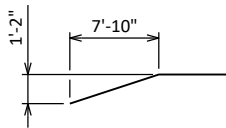
B405



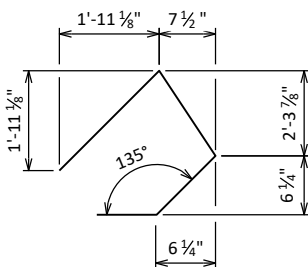
B804, B509, B810  
B511, B812, B513, B814  
B515, B816, B525, B826



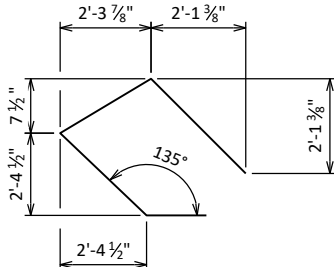
B420



B429



B421



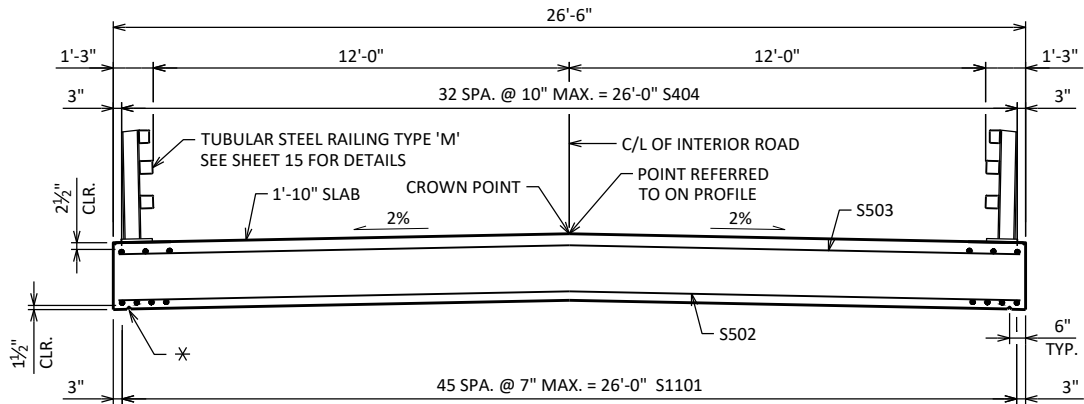
B430

BAR SERIES TABLE

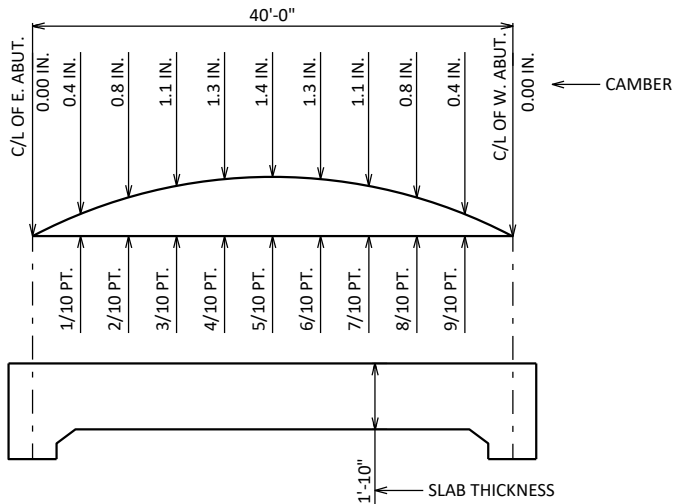
BUNDLE AND TAG EACH SERIES SEPARATELY.

BAR MARK	NO. REQ'D.	LENGTH
B407	2 SERIES OF 11	5'-7" TO 9'-7"
B423	2 SERIES OF 11	8'-6" TO 9'-6"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-339			
DRAWN BY		CLP	PLANS CK'D DRS
WEST ABUTMENT BILL OF BARS		SHEET 12 OF 15 37	



TYPICAL SECTION THRU BRIDGE



CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

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

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

TOP OF SLAB ELEVATIONS

LOCATION	C/L E. 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.	C/L W. ABUT.
N. EDGE OF SLAB	1060.85	1060.84	1060.82	1060.79	1060.77	1060.74	1060.71	1060.68	1060.65	1060.61	1060.57
C/L OF INTERIOR RD	1061.08	1061.06	1061.04	1061.01	1060.98	1060.95	1060.92	1060.88	1060.84	1060.80	1060.76
S. EDGE OF SLAB	1060.77	1060.75	1060.72	1060.69	1060.65	1060.62	1060.58	1060.54	1060.49	1060.45	1060.40

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

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

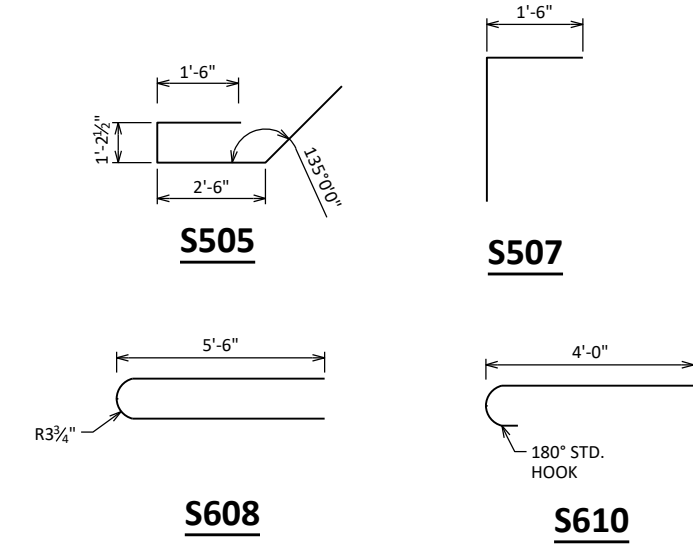
\* 3/4" V-GROOVE. EXTEND V-GROOVE TO 6" FROM F.F. OF ABUT.

BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S1101	x	46	36'-11"			SLAB LONG. BOT.
S502	x	58	30'-2"			SLAB TRANS. BOT.
S503	x	56	30'-2"			SLAB TRANS. TOP
S404	x	33	40'-11"			SLAB LONG. TOP
S505	x	54	6'-10"	X		SLAB @ ABUT. DIAPHRAGM STIRRUPS
S506	x	6	30'-2"			SLAB @ ABUT. DIAPHRAGM TRANS.
S507	x	54	3'-4"	X		SLAB @ ABUT.
S608	x	32	11'-3"	X		SLAB @ RAIL POSTS
S609	x	48	6'-0"			SLAB @ INT. RAIL POSTS
S610	x	16	4'-8"	X		SLAB @ END RAIL POSTS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



SURVEY TOP OF SLAB ELEVATIONS

	ABUTMENT	5/10 PT.	ABUTMENT
N. EDGE OF SLAB			
C/L OF INTERIOR RD			
S. EDGE OF SLAB			

PRIOR TO RELEASING SLAB FORMWORK, TAKE TOP OF SLAB ELEVATIONS AT THE C/L OF SUBSTRUCTURES, AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND C/L. . RECORD ELEVATIONS IN THE TABLE ABOVE FOR THE "AS BUILT" PLANS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-339			
		DRAWN BY	PLANS CK'D DRS
SUPERSTRUCTURE		SHEET 13 OF 15 38	



**A22** A506, B506 BARS SPACED @ 1'-0" CNTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

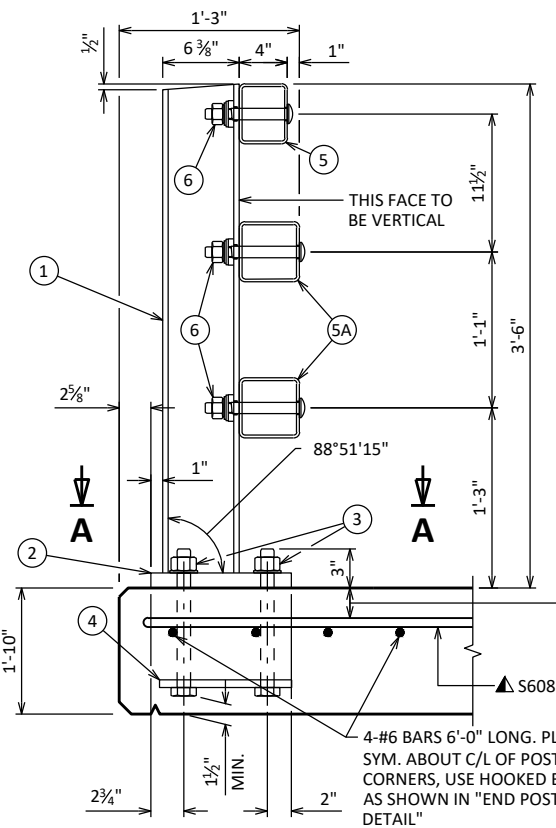
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-41-339</b>			
DRAWN BY		CLP	PLANS CK'D DRS
<b>SUPERSTRUCTURE PLAN</b>		SHEET 14 OF 15 39	

LEGEND

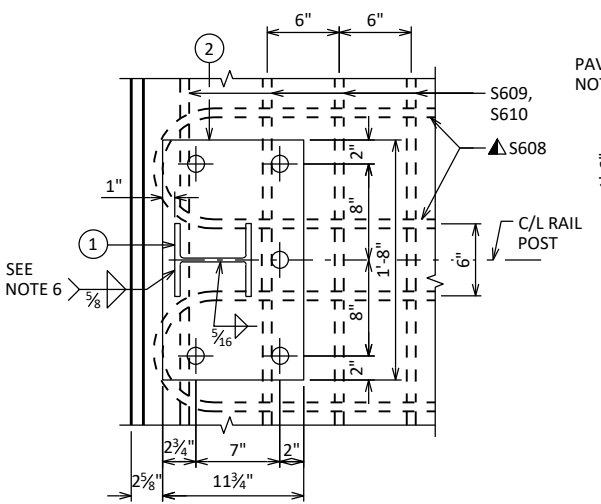
- 1 W6 X 25 WITH 1 1/8" X 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- 2 PLATE 1 1/4" X 11 3/4" X 1'-8" WITH 1 1/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
- 3 ASTM A449 - 1 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10 3/4" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTABILITY.)
- 4 5/8" X 11" X 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- 5 TS 5 X 4 X 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 5A TS 5 X 5 X 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 6 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/8" X 1 5/8" MIN. 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" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/16" X 1 1/4" LONGIT. SLOTTED HOLES IN PLATE NO. 10A. AT FIELD JOINTS AND 1 5/16" X 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A. PROVIDE 1 5/16" DIA. ROUND HOLES IN TUBES NO. 5 AND NO. 5A.
- 12 7/8" DIA. X 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D.).
- 13 3/8" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- 14 7/8" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- 15 1" 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

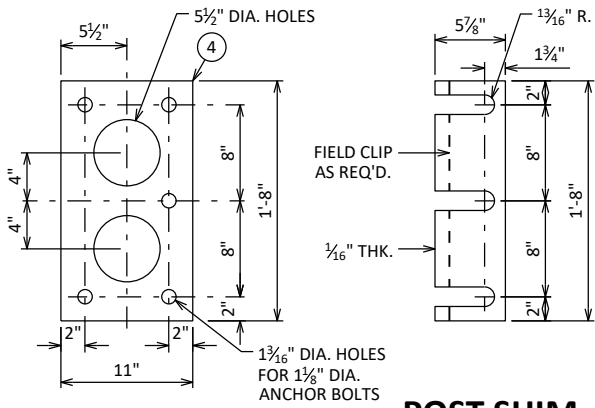
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES,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



SECTION THRU RAILING ON DECK

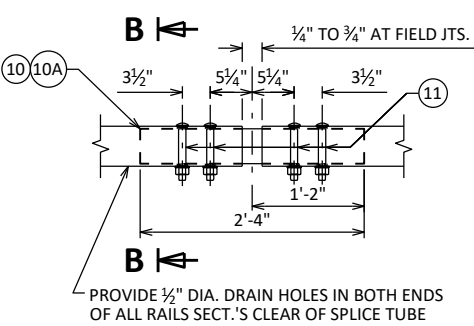


SECTION A-A

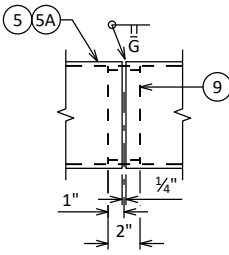


ANCHOR PLATE  
AT RAIL TO DECK CONNECTION

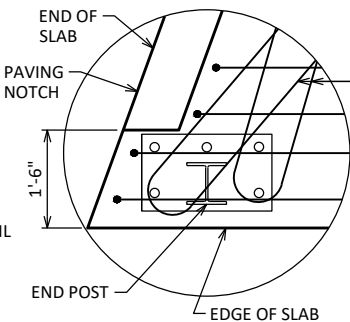
POST SHIM  
DETAIL



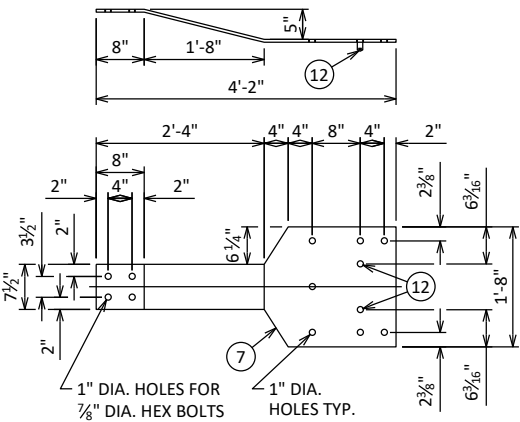
FIELD ERECTION JOINT DETAIL



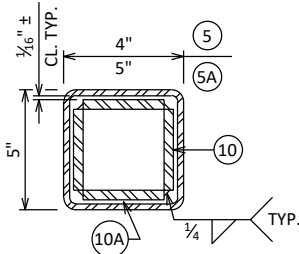
SHOP RAIL SPLICE DETAIL



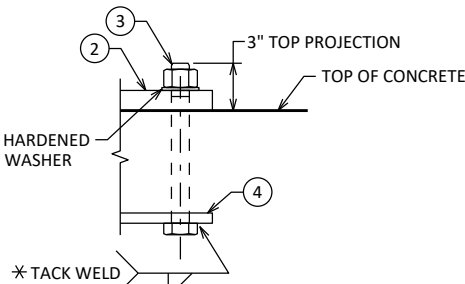
END POST DETAIL  
REINFORCEMENT AT CORNERS



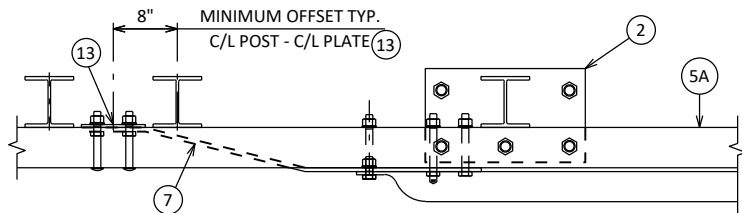
BACK-UP PLATE DETAIL  
AT BEAM GUARD ATTACHMENT



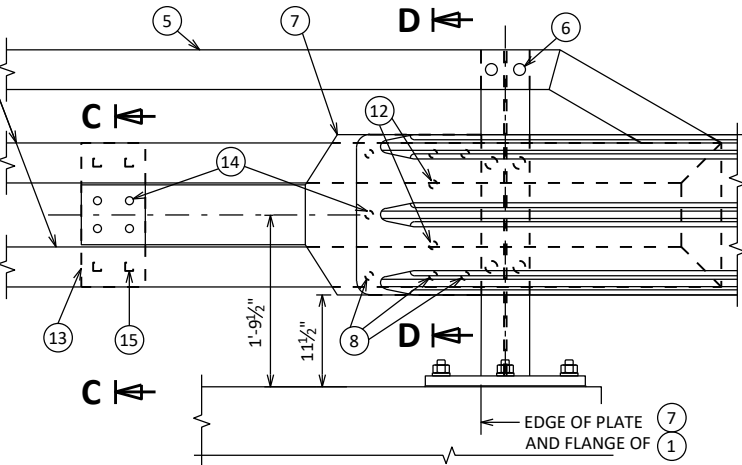
SECTION B-B



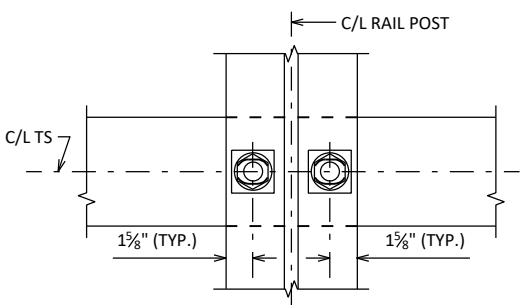
ANCHOR BOLTS



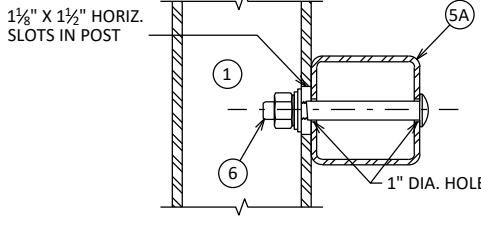
TOP VIEW AT END POST  
THRIE BEAM RAIL ATTACHMENT



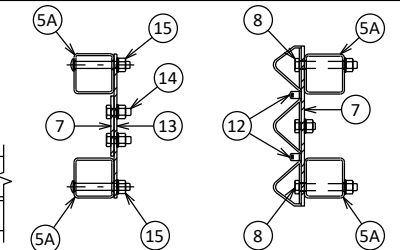
DETAIL AT END POST  
THRIE BEAM RAIL ATTACHMENT



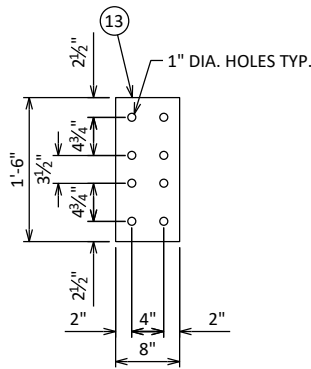
SECTION THRU POST WEB



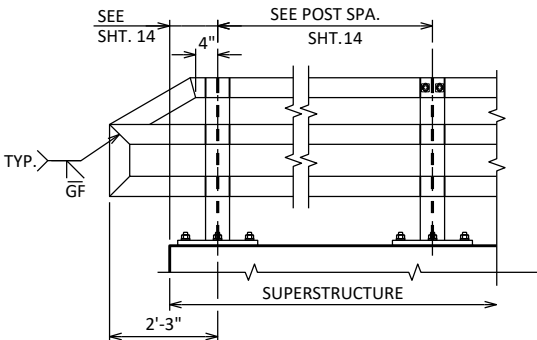
SECTION THRU RAIL  
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.



SECTION C-C SECTION D-D



ANCHOR PLATE  
AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

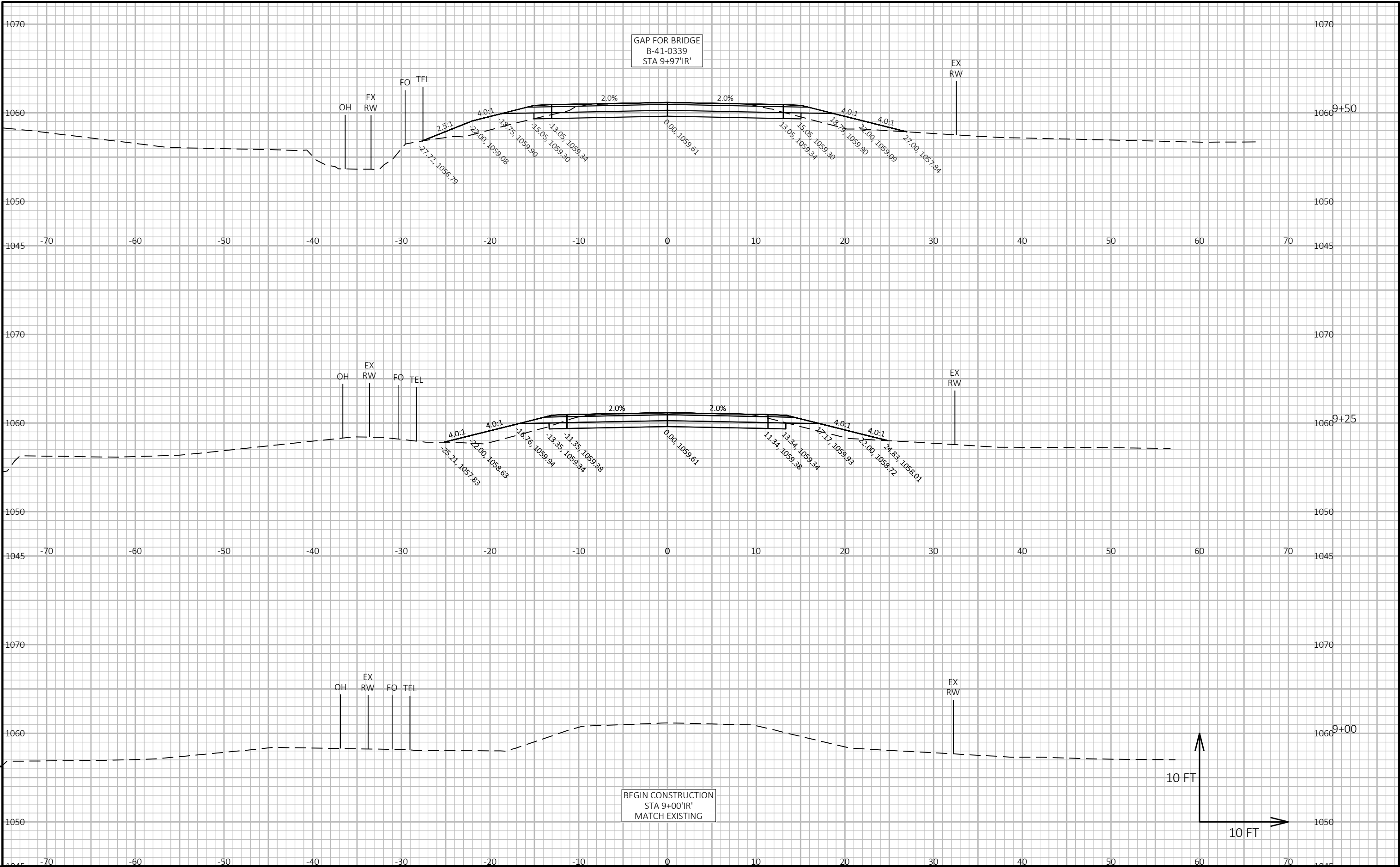
- ▲ TIE TO TOP MAT OF STEEL.
- \* ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.

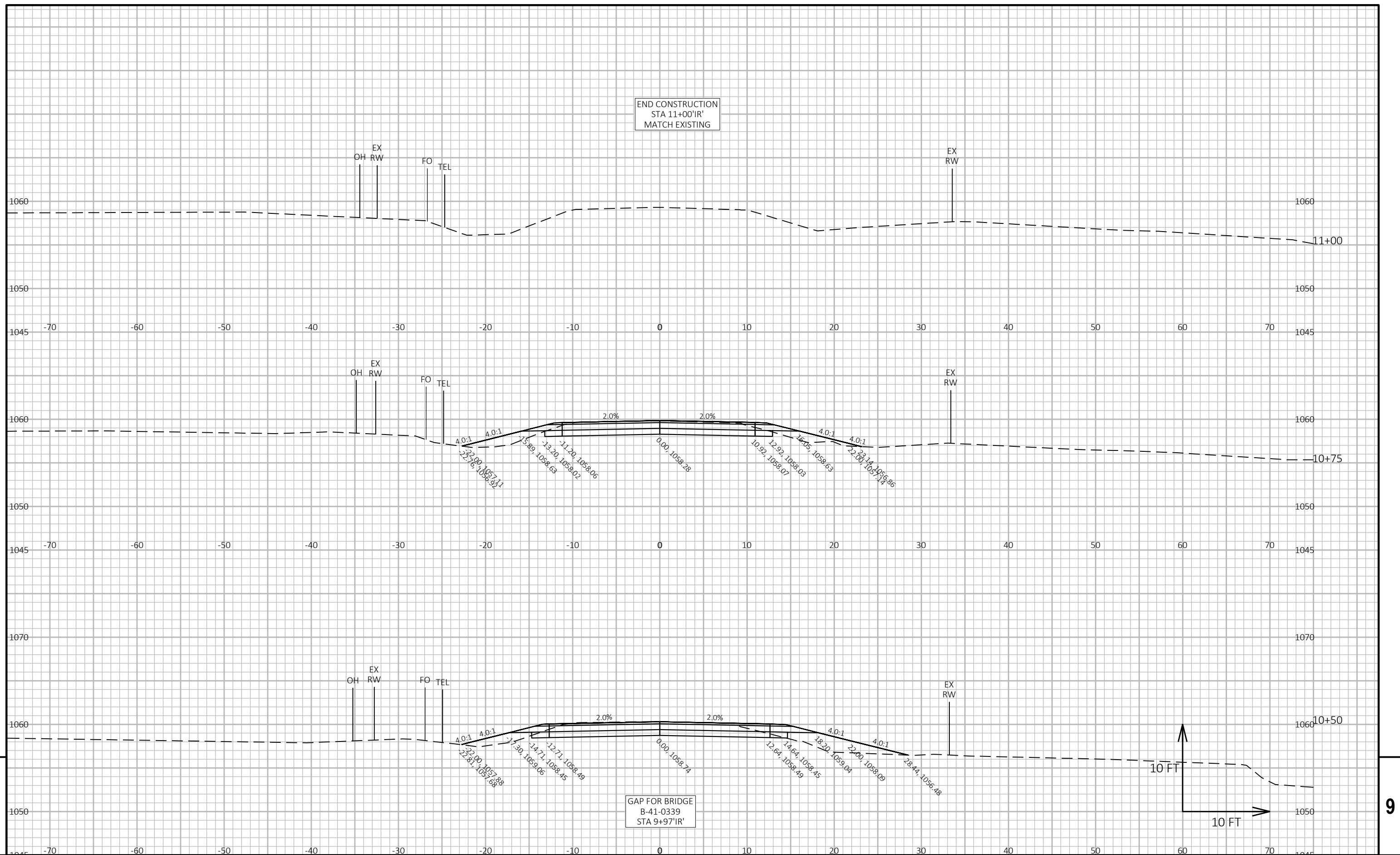
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-339			
DRAWN BY		CLP	PLANS CK'D DRS
TUBULAR STEEL RAILING TYPE "M"		SHEET 15 of 15 40	

INTERIOR ROAD COMPUTER EARTHWORK											
Station	Distance	Area (SF)			Elemental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			Mass Ordinate
		Cut	Unusable Cut	Fill	Cut	Unusable Cut	Fill	Cut	Unusable Cut	Expanded Fill	
Note 1	Note 2		Note 1	Note 2	Note 3	Note 4					
9+00	--	0.0	0.0	0.0	--	--	--				
9+25	25	30.3	6.7	17.2	14	3	8	14	3	10	4
9+76	51	30.9	6.7	23.0	58	13	38	72	16	60	12
Structure	--	--	--	--	--	--	--	--	--	--	--
10+18	--	31.9	6.7	20.9	--	--	--	--	--	--	--
10+75	57	29.7	6.7	12.7	65	14	36	137	30	107	30
11+00	25	0.0	0.0	0.0	14	3	6	151	33	114	37
					151	33	88				

Note 1 - Cut	Usable cut only
Note 2 - Unusable Cut	Existing asphalt pavement. Not to be used inside the 1:1 road core
Note 3 - Expanded Fill	Volume needed to be filled = Fill * 1.30
Note 4 - Mass Ordinate	(Cut - Unusable Cut) - (Expanded Fill)

PROJECT NO: 5025-00-72	HWY: INTERIOR ROAD	COUNTY: MONROE	COMPUTER EARTHWORK DATA	SHEET NO: 41	E
------------------------	--------------------	----------------	-------------------------	--------------	---







## ***Wisconsin Department of Transportation***

Dedicated people creating transportation solutions through innovation and exceptional service.

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

Place Sheet Numbers