

LAX DECEMBER 2018
ORDER OF SHEETS

PROJECT ID: 5539-00-70

WITH: N/A

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 Plat
Section No. 5	Plan and Profile (Includes Erosion Control)
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 = 34



DESIGN DESIGNATION 5539-00-70

A.A.D.T.	2019	=	200
A.A.D.T.	2039	=	230
D.H.V.		=	34
D.D.		=	60/40
T.		=	5.0%
DESIGN SPEED		=	40 M.P.H.
ESALS		=	22,000

CONVENTIONAL SYMBOLS

PLAN	
CORPORATE LIMITS	////
PROPERTY LINE	----
LOT LINE	----
LIMITED HIGHWAY EASEMENT	----
EXISTING RIGHT OF WAY	----
PROPOSED OR NEW R/W LINE	----
SLOPE INTERCEPT	300'ER
REFERENCE LINE	----
EXISTING CULVERT	----
PROPOSED CULVERT (Box or Pipe)	----
COMBUSTIBLE FLUIDS	CAUTION
HIGH VOLTAGE	CAUTION
MARSH AREA	----
WOODED OR SHRUB AREA	----

PROFILE	
GRADE LINE	----
ORIGINAL GROUND	----
MARSH OR ROCK PROFILE (To be noted as such)	----
SPECIAL DITCH	----
GRADE ELEVATION	95.36
CULVERT (Profile View)	----
UTILITIES	
ELECTRIC	----
OVERHEAD UTILITY	----
FIBER OPTIC	----
GAS	----
SANITARY SEWER	----
STORM SEWER	----
TELEPHONE	----
WATER	----
UTILITY PEDESTAL	----
POWER POLE	----
TELEPHONE POLE	----

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

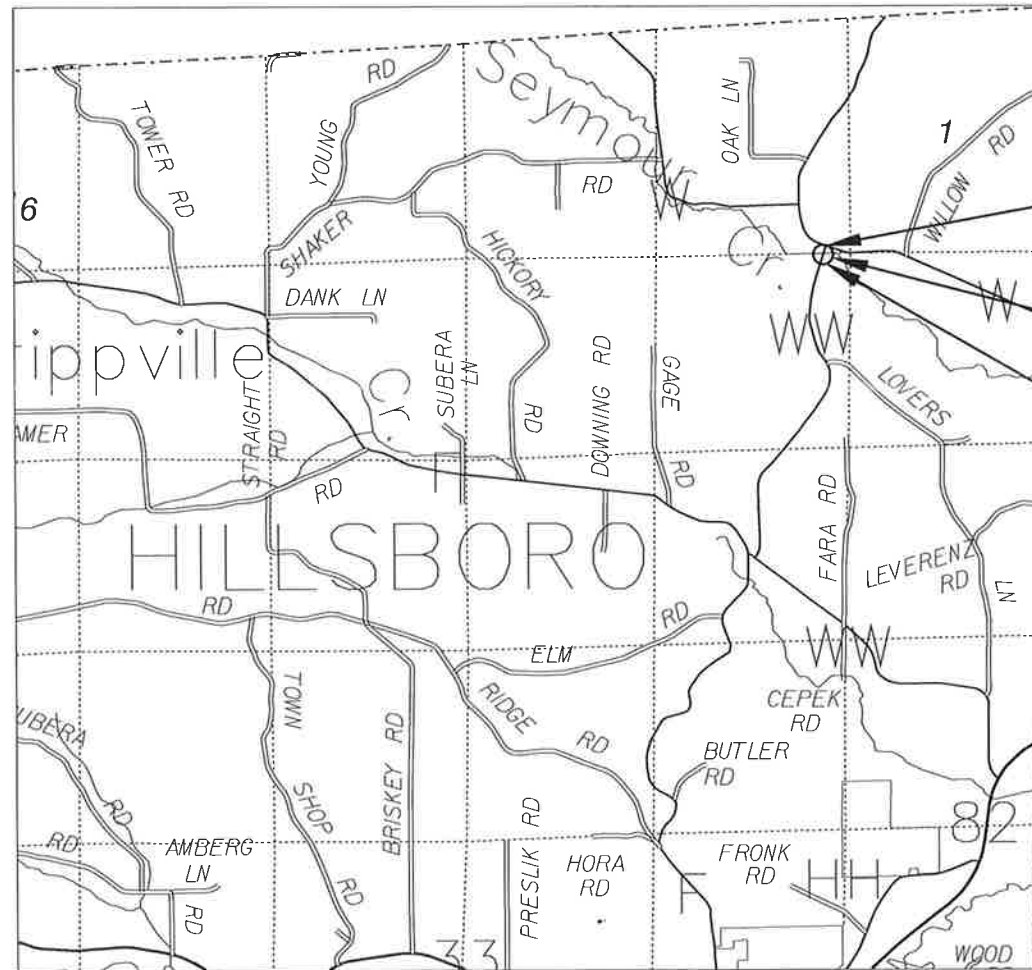
CTH WW - CTH W

(SEYMOUR CREEK BRIDGE B-62-0257)

CTH WW

VERNON COUNTY

STATE PROJECT NUMBER
5539-00-70



END PROJECT
STA. 14+00
Y = 206 648.512
X = 848 676.466

PROJECT LOCATION
B-62-0257

BEGIN PROJECT
STA. 12+00
Y = 206 456.345
X = 848 621.044

TOTAL NET LENGTH OF CENTERLINE = 0.0038 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, VERNON COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

STATE PROJECT

5539-00-70

FEDERAL PROJECT

PROJECT

CONTRACT

ACCEPTED FOR

COUNTY of VERNON

Hwy. Comm.
7-5-18
(Date) Phil Heavitt
(Signature & Title of Official)

ORIGINAL PLANS PREPARED BY

WESTBROOK
Associated Engineers, Inc.

619 EAST HOXIE STREET
P.O. BOX 429
SPRING GREEN, WISCONSIN 53588
PHONE (608) 588-7866
FAX (608) 588-7954



7-7-18
(Date) Aaron B. Palmer
(Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor WESTBROOK

Designer WESTBROOK

Management Consultant KL ENGINEERING, INC.

APPROVED FOR THE DEPARTMENT

DATE: 7/25/18
Management Consultant Signature

GENERAL NOTES

EROSION CONTROL ITEMS TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. SILT FENCE SHALL BE IN PLACE PRIOR TO CONSTRUCTION. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NEEDED.

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE DRIVING LANES AND THE SHOULDERS ARE TO BE FERTILIZED, SEEDED, TEMPORARY SEEDED, AND MULCHED AS DIRECTED BY THE ENGINEER.

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

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

WETLANDS ARE PRESENT AT THE LOCATIONS SHOWN IN THE PLANS. DO NOT OPERATE MACHINERY OUTSIDE OF THE SLOPE INTERCEPTS IN THESE LOCATIONS.

REMOVAL OF ASPHALTIC SURFACES WHERE AN ABUTTING ASPHALTIC SURFACE IS TO REMAIN IN PLACE SHALL REQUIRE A SAWCUT MEETING THE APPROVAL OF THE ENGINEER IN THE FIELD.

EXACT LOCATION AND WIDTH OF ALL DRIVEWAY ENTRANCES TO BE DETERMINED BY THE ENGINEER. DRIVEWAYS SHALL BE REPLACED IN KIND.

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 AREA THAT ARE NOT SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING ALL UTILITIES.

ASPHALTIC SURFACE LAYERS:
- UPPER: 1¾"
- LOWER: 2¼"

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 0.30 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.24 ACRES

CONTACTS

CONSULTANT LIAISON

WESTBROOK ASSOCIATED ENGINEERS, INC.
619 EAST HOXIE STREET
SPRING GREEN, WI 53588

ATTN: AARON PALMER, P.E.
PH: (608) 588-7866
FAX: (608) 588-7954
apalmer@westbrookeng.com

COUNTY LIAISON

VERNON COUNTY HIGHWAY DEPARTMENT
602 NORTH MAIN STREET
P.O. BOX 232
VIROQUA, WI 54665

ATTN: PHIL HEWITT
PH: (608) 637-5452
phil.hewitt@vernoncounty.org

WisDNR LIAISON

DNR SERVICE CENTER
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601

ATTN: KAREN KALVELAGE
PH: (608) 785-9115
karen.kalvelage@wisconsin.gov

UTILITIES

ELECTRIC
VERNON ELECTRIC COOP
ATTN: COLE CARY
110 SAUGSTAD RD.
WESTBY, WI 54667
(608)-634-3121
ccary@vernonelectric.com

COMMUNICATIONS
CENTURYLINK
ATTN: BRET CLARK
311 SOUTH COURT STREET
SPARTA, WI 54656
(608)-269-0819
bret.clark@centurylink.com



Dial 811 or (800)242-8511

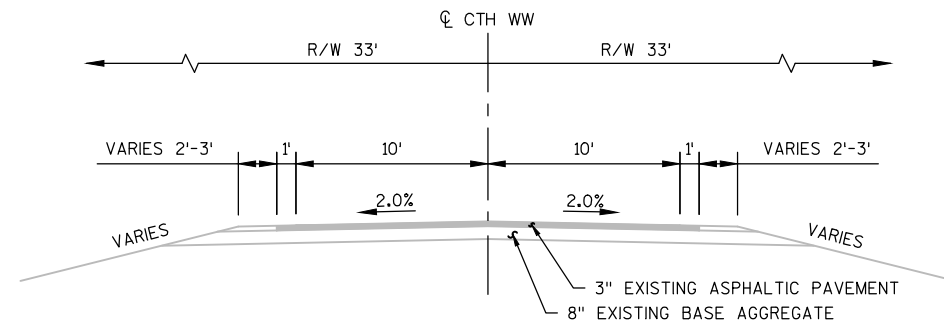
www.DiggersHotline.com

* DENOTES UTILITY IS NOT A MEMBER OF DIGGERS HOTLINE

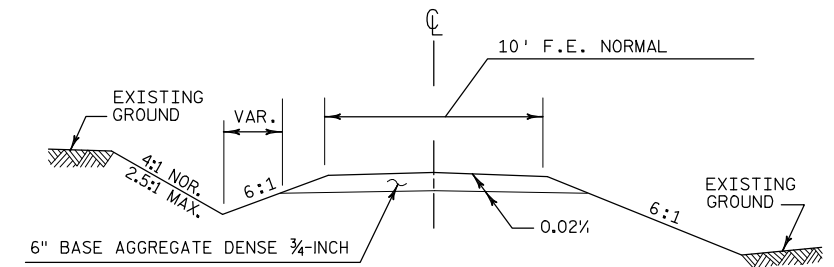
STANDARD ABBREVIATIONS

ABUT.	Abutment	JT	Joint	SEC	Section
AC	Acre	JCT	Junction	SHLDR	Shoulder
AGG.	Aggregate	LHF	Left-Hand Forward	SHR	SHRINKAGE
AH	Ahead	L	Length of Curve	SW	Sidewalk
<	Angle	LN FT OR LF	Linear Foot	S	South
ASPH	Asphaltic	LC	Long Chord of Curve	SQ	Square
AVG.	Average	MH	Manhole	SF OR SQ FT	Square Feet
A.D.T	Average Daily Traffic	MB	Mailbox	SY or SQ YD	Square Yard
BAD	Base Aggregate Dense	ML OR M/L	Match Line	STD	Standard
BK	Back	N	North	SDD	Standard Detail Drawings
BF	Back Face	Y	North Grid Coordinate	STH	State Trunk Highway
B.M.	Bench Mark	OD	Outside Diameter	STA	Station
BR.	Bridge	PLE	Permanent Limited Easement	SS	Storm Sewer
C/L	Center Line	PT	Point	SG	Subgrade
CC	Center to Center	PC	Point of Curvature	SE	Superelevation
CTH	County Trunk Highway	PI	Point of Intersection	SL or S/L	Survey Line
CR.	Creek	PRC	Point of Reverse Curvature	SV	Septic Vent
CY or CU YD	Cubic Yard	PT	Point of Tangency	T	Tangent
CP	Culvert Pipe	POC	Point on Curve	TEL	Telephone
C & G	Curb and Gutter	PVC	Polyvinyl Chloride	TEMP	Temporary
D	Degree of Curve	PCC	Portland Cement Concrete	TI	Temporary Interest
DHV	Design Hour Volume	LB	Pound	t	Ton
DIA	Diameter	PSI	Pounds Per Square Inch	T or TN	Town
E	East	PE	Private Entrance	TRANS	Transition
X	East Grid Coordinate	R	Radius	TL OR T/L	Transit Line
ELEC	Electric	RR	Railroad	T	Trucks (percent of)
EL OR ELEV	Elevation	RL OR R/L	Reference Line	TYP	Typical
ESALS	Equivalent Single Axle Loads	RP	Reference Point	UNCL	Unclassified
EBS	Excavation Below Subgrade	RCCP	Reinforced Concrete Culvert Pipe	UG	Underground Cable
FF	Face to Face	REQD	Required	USH	United States Highway
FE	Field Entrance	RES	Residence or Residential	VAR	Variable
F	Fill	RW	Retaining Wall	V	Velocity or Design Speed
FG	Finished Grade	RT	Right	VERT	Vertical
FL or F/L	Flow Line	RHF	Right-Hand Forward	VC	Vertical Curve
FT	Foot	R/W	Right-of-Way	VOL	Volume
FTG	Footing	R	River	WM	Water Main
GN	Grid North	RD	Road	WV	Water Valve
HT	Height	RDWY	Roadway	W	West
CWT	Hundredweight	SALV	Salvaged	WB	Westbound
HYD	Hydrant	SAN S	Sanitary Sewer	YD	Yard
INL	inlet				
ID	Inside Diameter				
INV	Invert				
IP	Iron Pipe or Pin				
IRS	Iron Rod Set				

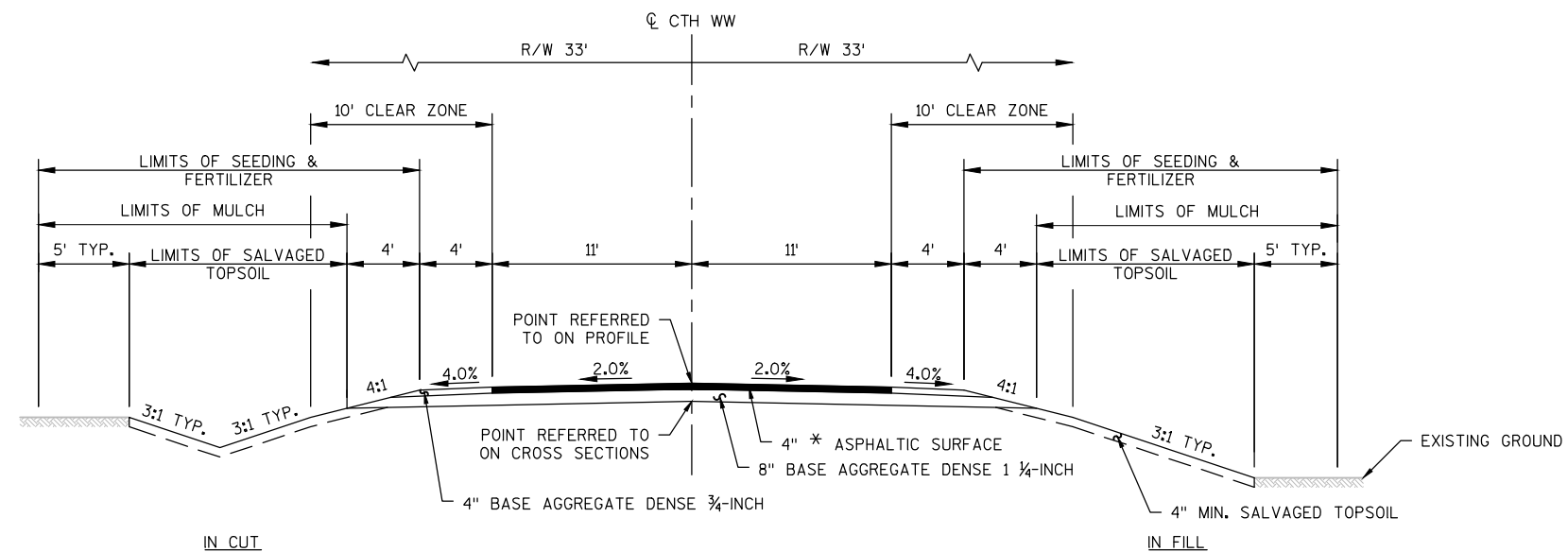
2



TYPICAL EXISTING SECTION

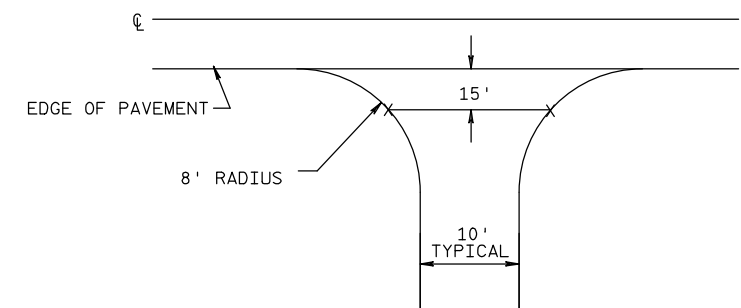


FIELD ENTRANCE - TYPICAL CROSS SECTION



TYPICAL FINISHED SECTION
STA. 12+00 - 14+00

* ASPHALT TO TAPER FROM BRIDGE
WIDTH TO 22' AT 50' FROM BRIDGE
ENDS.



TYPICAL FIELD ENTRANCE DETAIL

PROJECT NO:5539-00-70

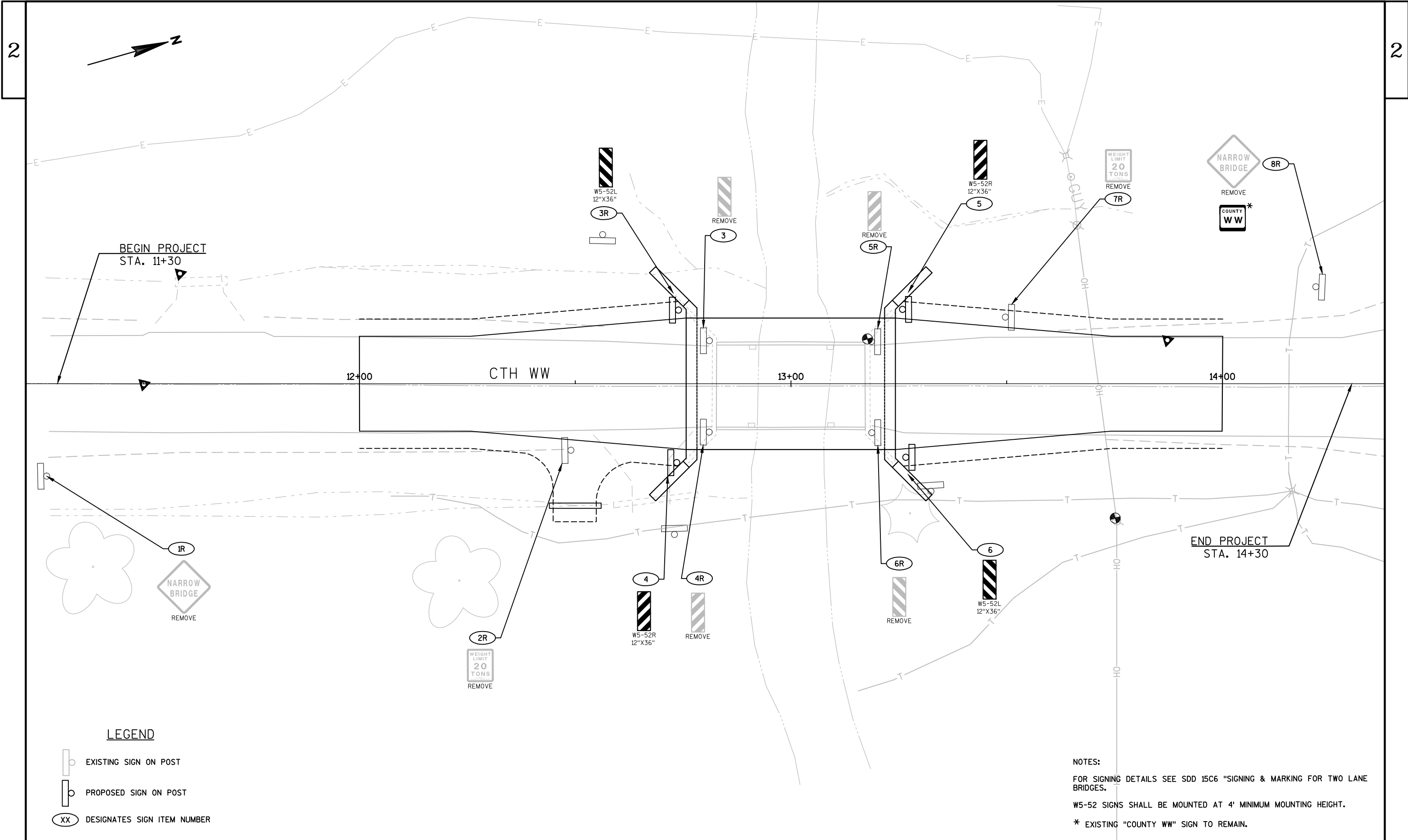
HWY: CTH WW

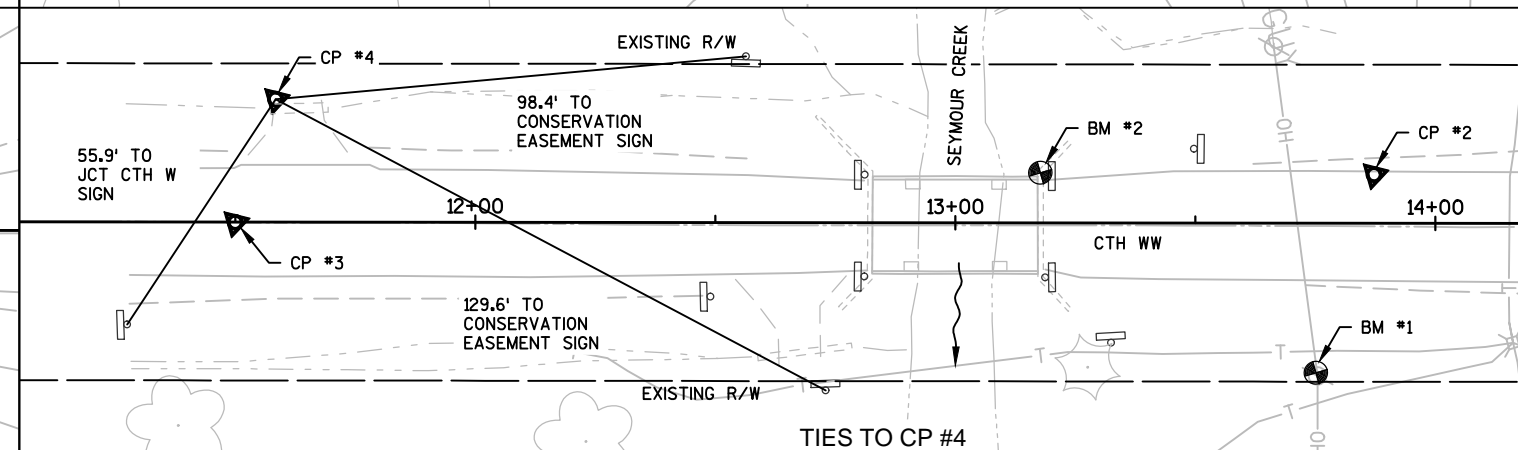
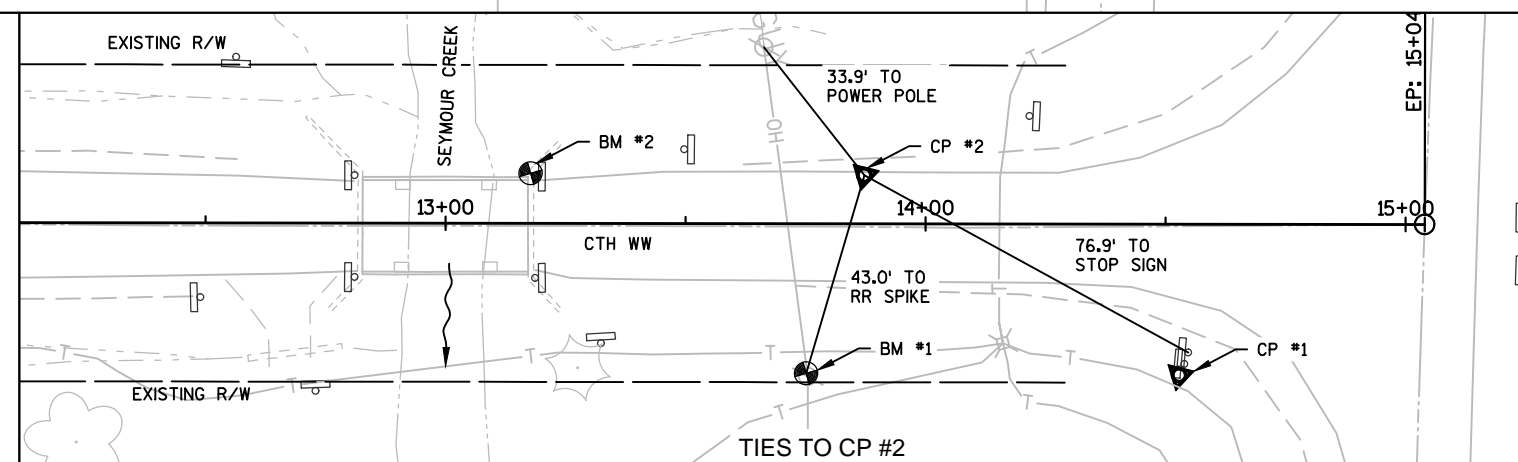
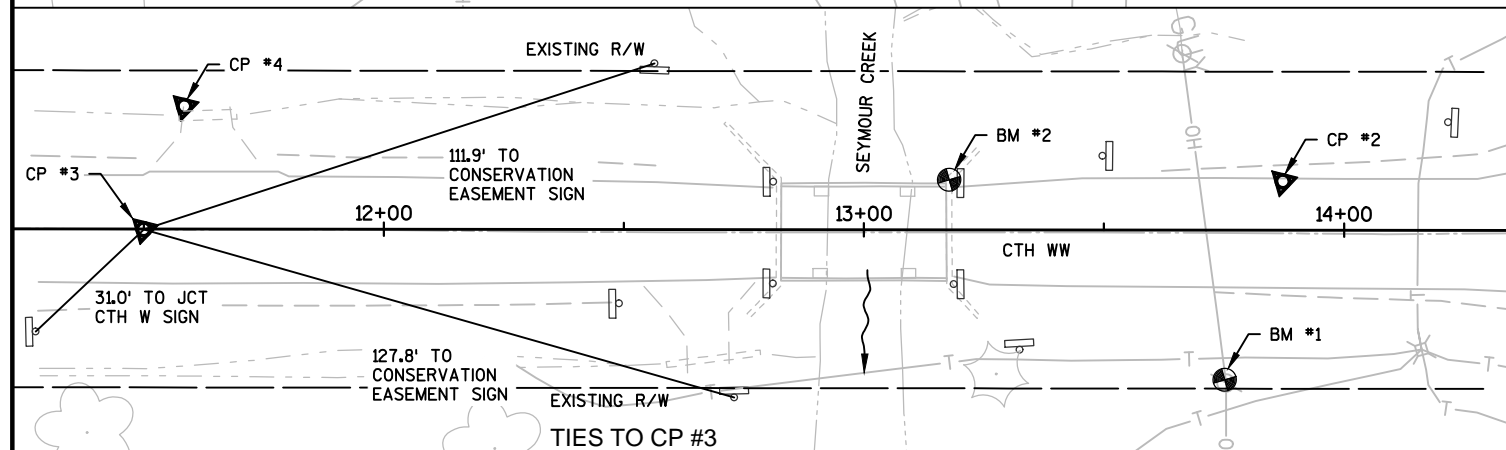
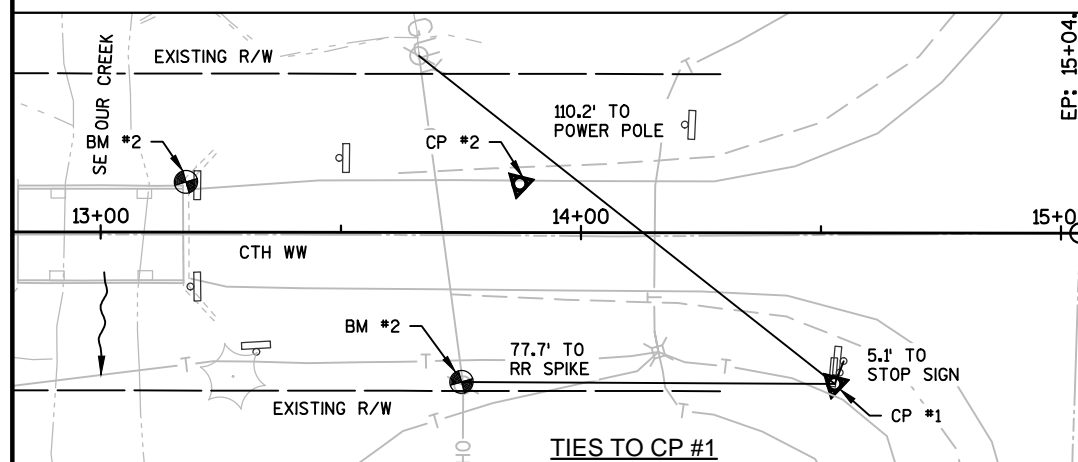
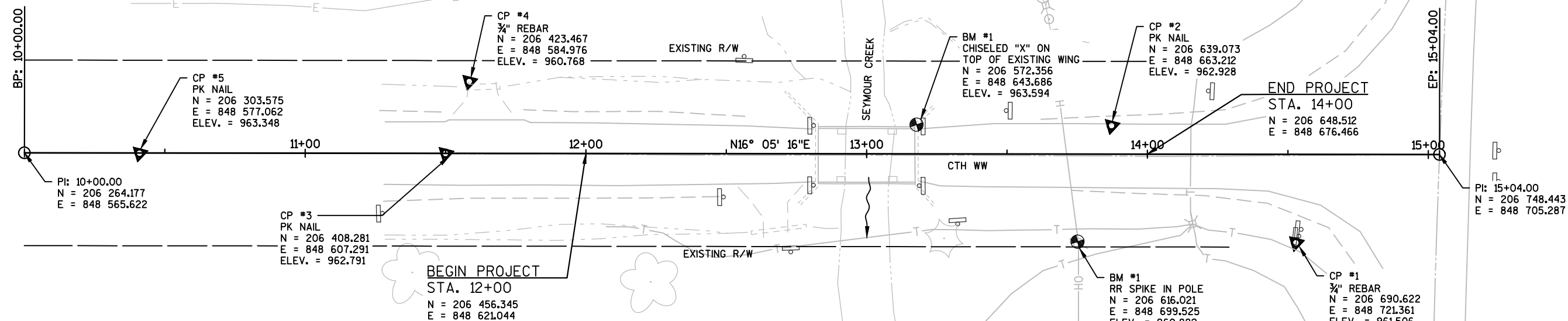
COUNTY: VERNON

TYPICAL SECTIONS

SHEET

[E]





PROJECT NO:5539-00-70

HWY:CTH WW

COUNTY:VERNON

ALIGNMENT DETAILS & CONTROL POINTS

SHEET

E

FILE NAME : G:\00-PROJECT FILES\2016\16150 CTH WW, VERNON, SEYMOUR CREEK BRIDGE B-62-0995\CAD\SHEETS\PLAN\027201-AD.DWG
LAYOUT NAME - ****

PLOT DATE : 4/26/2018 1:58 PM

PLOT BY : LUKE C. SANDER

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADDs SHEET 42

Estimate Of Quantities

5539-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0004	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 13+00	LS	1.000	1.000
0006	205.0100	Excavation Common **P**	CY	200.000	200.000
0008	206.1000	Excavation for Structures Bridges (structure) 01. B-62-0257	LS	1.000	1.000
0010	210.1500	Backfill Structure Type A	TON	300.000	300.000
0012	213.0100	Finishing Roadway (project) 01. 5539-00-70	EACH	1.000	1.000
0014	305.0110	Base Aggregate Dense 3/4-Inch	TON	43.000	43.000
0016	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	270.000	270.000
0018	455.0605	Tack Coat	GAL	22.000	22.000
0020	465.0105	Asphaltic Surface	TON	95.000	95.000
0022	502.0100	Concrete Masonry Bridges	CY	180.000	180.000
0024	502.3200	Protective Surface Treatment	SY	220.000	220.000
0026	505.0400	Bar Steel Reinforcement HS Structures	LB	4,400.000	4,400.000
0028	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	25,920.000	25,920.000
0030	513.4061	Railing Tubular Type M 01. B-62-0257	LF	102.000	102.000
0032	516.0500	Rubberized Membrane Waterproofing	SY	14.000	14.000
0034	521.1015	Apron Endwalls for Culvert Pipe Steel 15-Inch	EACH	2.000	2.000
0036	521.3115	Culvert Pipe Corrugated Steel 15-Inch	LF	12.000	12.000
0038	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	455.000	455.000
0040	606.0300	Riprap Heavy	CY	159.000	159.000
0042	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	150.000	150.000
0044	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5539-00-70	EACH	1.000	1.000
0046	619.1000	Mobilization	EACH	1.000	1.000
0048	624.0100	Water	MGAL	15.000	15.000
0050	625.0500	Salvaged Topsoil	SY	240.000	240.000
0052	627.0200	Mulching	SY	390.000	390.000
0054	628.1504	Silt Fence	LF	240.000	240.000
0056	628.1520	Silt Fence Maintenance	LF	240.000	240.000
0058	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0060	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0062	628.6005	Turbidity Barriers	SY	135.000	135.000
0064	629.0210	Fertilizer Type B	CWT	0.450	0.450
0066	630.0120	Seeding Mixture No. 20	LB	16.000	16.000
0068	630.0200	Seeding Temporary	LB	16.000	16.000
0070	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0072	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0074	638.2602	Removing Signs Type II	EACH	4.000	4.000

Estimate Of Quantities

5539-00-70					
Line	Item	Item Description	Unit	Total	Qty
0076	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0078	642.5001	Field Office Type B	EACH	1.000	1.000
0080	643.0420	Traffic Control Barricades Type III	DAY	1,278.000	1,278.000
0082	643.0705	Traffic Control Warning Lights Type A	DAY	1,988.000	1,988.000
0084	643.0900	Traffic Control Signs	DAY	994.000	994.000
0086	643.5000	Traffic Control	EACH	1.000	1.000
0088	645.0111	Geotextile Type DF Schedule A	SY	92.000	92.000
0090	645.0120	Geotextile Type HR	SY	284.000	284.000
0092	646.1020	Marking Line Epoxy 4-Inch	LF	800.000	800.000
0094	650.4500	Construction Staking Subgrade	LF	152.000	152.000
0096	650.5000	Construction Staking Base	LF	152.000	152.000
0098	650.6500	Construction Staking Structure Layout (structure) 01. B-62-0257	LS	1.000	1.000
0100	650.9910	Construction Staking Supplemental Control (project) 01. 5539-00-70	LS	1.000	1.000
0102	650.9920	Construction Staking Slope Stakes	LF	152.000	152.000
0104	690.0150	Sawing Asphalt	LF	44.000	44.000
0106	715.0502	Incentive Strength Concrete Structures	DOL	1,080.000	1,080.000

3

3

REMOVING SMALL PIPE CULVERTS

		203.0100	
STATION	LOCATION	(EACH)	REMARKS
12+50	RT	1	15" CMCP
TOTAL		1	

EARTHWORK SUMMARY

		P			
		205.0100	EXPANDED	MASS	
		EXCAVATION	FILL (2)	ORDINATE	
		COMMON (1)	(25%)	+/- (3)	
STATION - STATION	LOCATION	(CY)	(CY)	(CY)	(CY)
12+00.00 - 12+75.75	MAINLINE	103	67	87	16
13+24.25 - 14+00.00	MAINLINE	97	0	0	97
TOTALS		200	67	87	113

NOTES:
1) EBS IS NOT INCLUDED IN DIVISIONS
2) EXPANDED FILL FACTOR = 1.30; EXPANDED FILL = UNEXPANDED FILL * 1.30
P - PAY PLAN QUANTITY

BASE AGGREGATE DENSE

		305.0120	305.0110	624.0100	
		1 1/4-INCH	3/4-INCH		
		BASE	SHLD	WATER*	
STATION - STATION	LOCATION	(TON)	(TON)	(MGAL)	
12+00.00 - 12+75.75	MAINLINE	135	21	3	
13+24.25 - 14+00.00	MAINLINE	135	19	3	
12+50	FE, RT	—	3	—	
TOTALS		270	43	6	

*ADDITIONAL QUANTITY INCLUDED WITH EROSION CONTROL ITEMS

ASPHALTIC ITEMS

		465.0105	455.0600	
		ASPHALTIC	TACK	
		SURFACE	COAT	
STATION - STATION	LOCATION	(TON)	(GAL)	
12+00.00 - 12+75.75	MAINLINE	48	11	
13+24.25 - 14+00.00	MAINLINE	47	11	
TOTALS		95	22	

PIPE CULVERTS

		521.1015	521.3115	
		APRON ENDWALLS FOR	CULVERT PIPE	
		CULVERT PIPE STEEL	CORRUGATED STEEL	
		15-INCH	15-INCH	
STATION	LOCATION	(EACH)	(LF)	
12+50	RT	2	12	
TOTAL		2	12	

MAINTENANCE AND REPAIR OF HAUL ROADS

		618.0100**	
		ID 5539-00-70	
		(EACH)	
LOCATION			
PROJECT		1	
TOTAL		1	

**CATEGORY 0030 ITEM

FINISHING ITEMS

		625.0500	627.0200	629.0210	630.0200	630.0120	624.0100
		SALVAGED	FERTILIZER	SEEDING	SEEDING,		
		TOPSOIL	MULCHING	TEMPORARY	MIXTURE		
		(SY)	(SY)	(LB)	NO. 20	WATER*	
STATION - STATION	LOCATION	(CY)	(CY)	(CWT)	(LB)	(MGAL)	
12+00.00 - 12+75.75	MAINLINE	115	180	0.20	7	4	
13+24.25 - 14+00.00	MAINLINE	100	175	0.20	6	4	
	UNDISTRIBUTED	25	35	0.05	3	1	
TOTALS		240	390	0.45	16	9	

*ADDITIONAL QUANTITY INCLUDED WITH BASE AGGREGATE ITEMS

MOBILIZATIONS EROSION CONTROL

		628.1905	629.1905
		MOBILIZATIONS	MOBILIZATIONS
		EROSION CONTROL	EMERGENCY
		(EACH)	EROSION CONTROL
		(EACH)	(EACH)
ID 5539-00-70		2	2
TOTALS		2	2

SILT FENCE

		628.1504	628.1520
		SILT	SILT FENCE
		FENCE	MAINTENANCE
		(LF)	(LF)
13+24.25 - 14+00.00	RT	95	95
13+24.25 - 14+00.00	LT	95	95
	UNDISTRIBUTED	50	50
TOTALS		240	240

TURBIDITY BARRIERS

		628.6005	
		(SY)	
LOCATION			
SOUTH ABUT		65	
NORTH ABUT		70	
TOTALS		135	

PERMANENT SIGNING

					634.0612	637.2230	
					POSTS WOOD	SIGNS TYPE II	
					4X6-INCH X 12 FT	F E F L E C T I V E F	
					(EACH)	(SF)	
STATION	LOCATION	SIGN NUMBER	SIGN CODE	SIZE			SIGN MESSAGE
12+75	LT	3	W5-52L	12 "X 36"	1	3	TIGER STRIPE MARKER
12+75	RT	4	W5-52R	12 "X 36"	1	3	TIGER STRIPE MARKER
13+25	LT	5	W5-52L	12 "X 36"	1	3	TIGER STRIPE MARKER
13+25	RT	6	W5-52R	12 "X 36"	1	3	TIGER STRIPE MARKER
TOTAL					4	12	

ALL ITEMS CATEGORY 0010 UNLESS NOTED OTHERWISE.

REMOVING SIGNS & SUPPORTS

		638.2602	638.3000	
		REMOVING	REMOVING	
		SIGNS	SMALL SIGN	
		TYPE II	SUPPORTS	
		(EACH)	(EACH)	
STATION	SIGN	SIGN		COMMENTS
	NUMBER	CODE		
11+30, RT	1R	W5-2	—	TO BE REMOVED BY COUNTY
12+49, RT	2R	R12-1	—	TO BE REMOVED BY COUNTY
12+81, LT	3R	W5-52L	1	EXISTING TIGER STRIPE MARKER
12+81, RT	4R	W5-52R	1	EXISTING TIGER STRIPE MARKER
13+19, LT	5R	W5-52L	1	EXISTING TIGER STRIPE MARKER
13+19, RT	6R	W5-52R	1	EXISTING TIGER STRIPE MARKER
13+50, LT	7R	R12-1	—	TO BE REMOVED BY COUNTY
12+22, LT	8R	W5-2	—	TO BE REMOVED BY COUNTY
TOTAL			4	

TRAFFIC CONTROL ITEMS

		643.0420	643.0705	643.0900	643.5000
		TRAFFIC CONTROL	TRAFFIC CONTROL	TRAFFIC CONTROL	TRAFFIC
		BARRICADES, TYPE	WARNING LIGHTS,	SIGNS	CONTROL
		III	TYPE A	(NO.)	EACH
LOCATION	DURATION	(NO.)	(DAYS)	(NO.)	(DAYS)
AS DIRECTED BY ENGINEER	71	18	1278	28	1988
CTH WW	—	—	—	—	994
		18	1278	28	1988
				14	994
					1

PLACE TRAFFIC CONTROL IN ACCORDANCE WITH SDD 15C2

MARKING LINE EPOXY 4-INCH

		646.1020	
		(LF)	
STATION - STATION	LOCATION		COMMENTS
12+00 - 14+00	CENTERLINE	400	DBL YELLOW
12+00 - 14+00	PAVEMENT EDGE	400	WHITE
TOTAL		800	

STAKING ITEMS

		650.4500	650.5000	650.6500	650.9910	650.9920
		CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION
		STAKING	STAKING	STAKING	STAKING	STAKING
		SUBGRADE	BASE	STRUCTURE LAYOUT	SUPPLEMENTAL CONTROL	SLOPE
		(LF)	(LF)	(B-62-0257)	(5539-00-70)	STAKES
				(LS)	(LS)	(LF)
0010	12+00 - 14+00	152	152	—	1	152
0020	B-62-0257	—	—	1	—	—
TOTALS		152	152	0	1	152

SAWING EXISTING PAVEMENT

		690.0150	
		(L.F.)	
STATION	LOCATION		
12+00	MAINLINE	22	
14+00	MAINLINE	22	
TOTAL		44	

PROJECT NO:5539-00-70

HWY:CTH WW

COUNTY:VERNON

MISCELLANEOUS QUANTITIES

SHEET

E

Standard Detail Drawing List

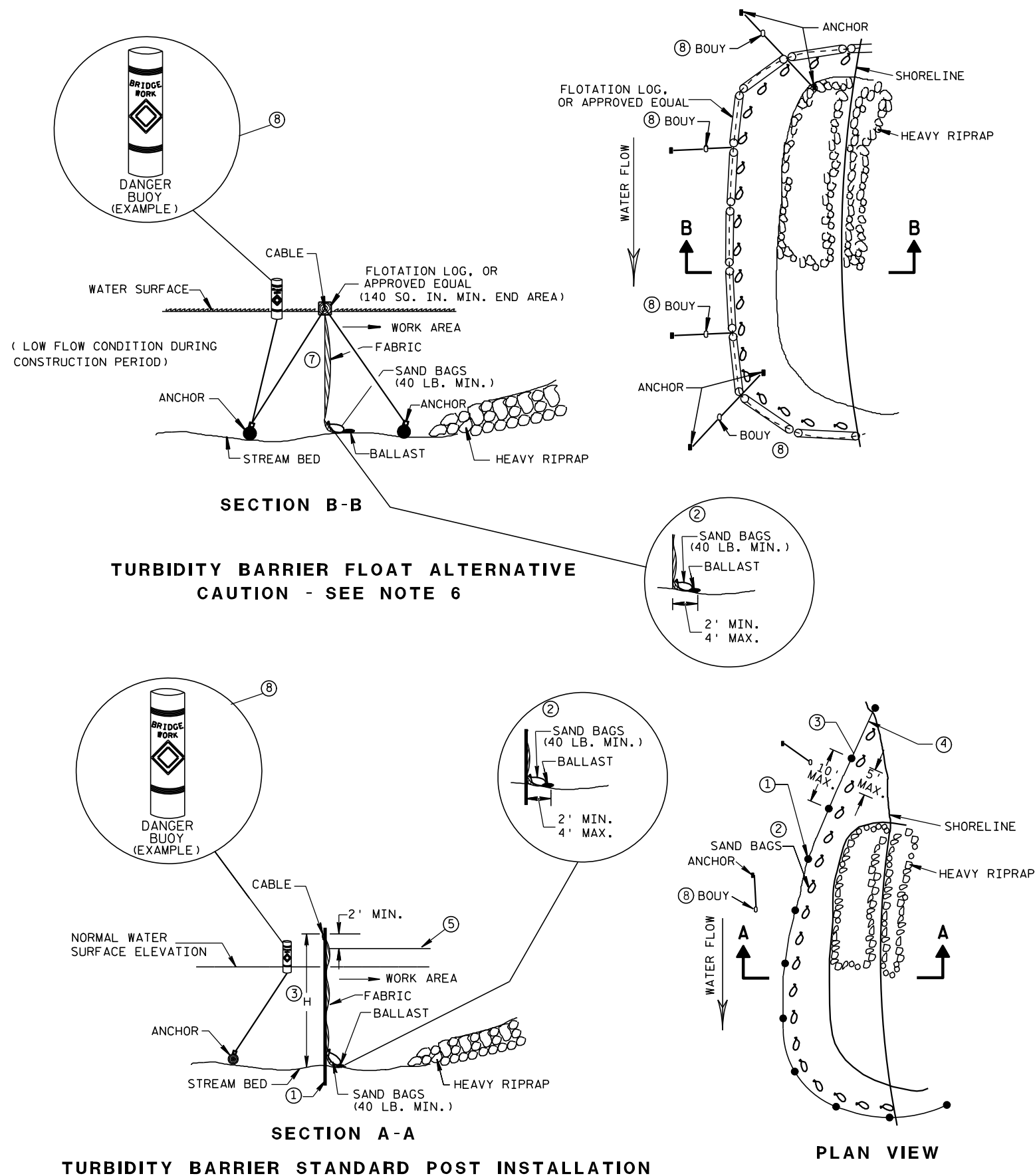
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
12A03-10	NAME PLATE (STRUCTURES)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-18A	LONGITUDINAL MARKING (MAINLINE)



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



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

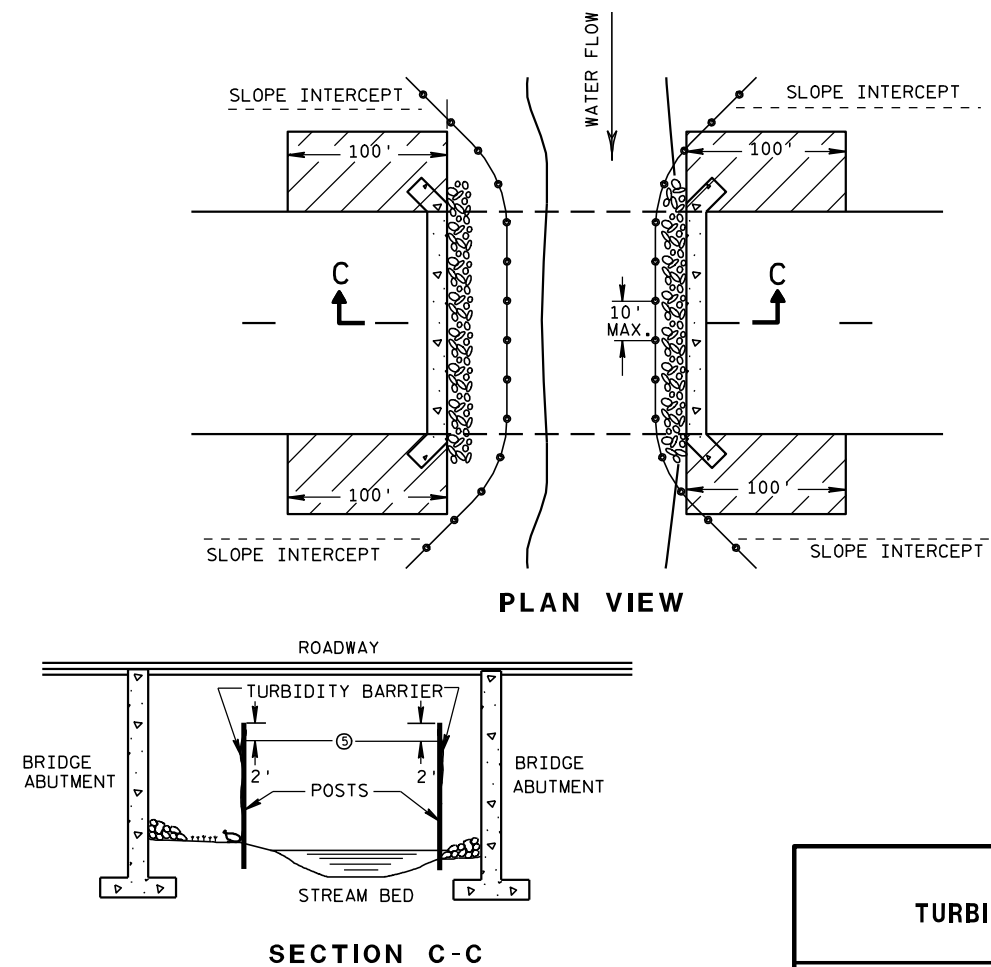


GENERAL NOTES

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

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

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



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02

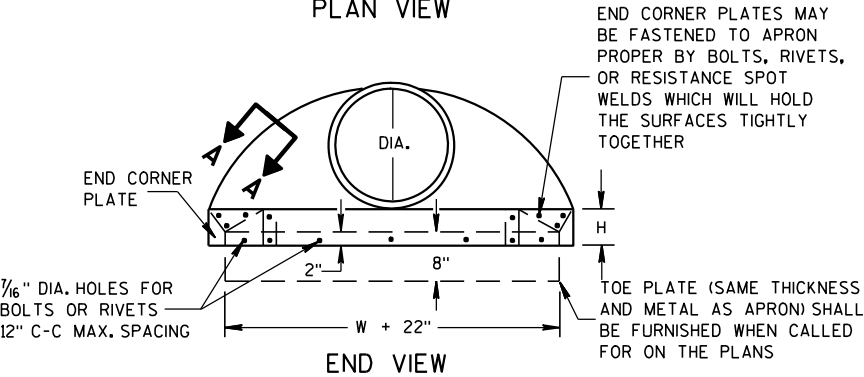
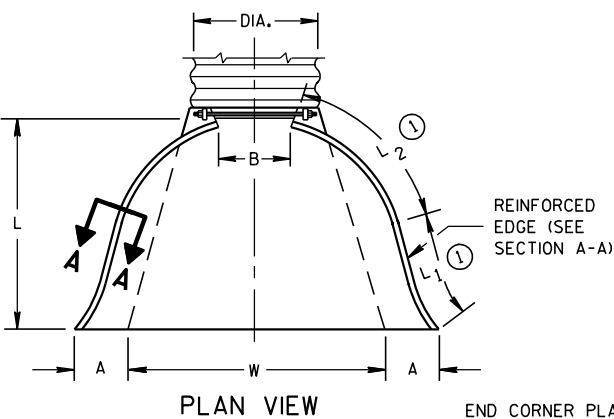
DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

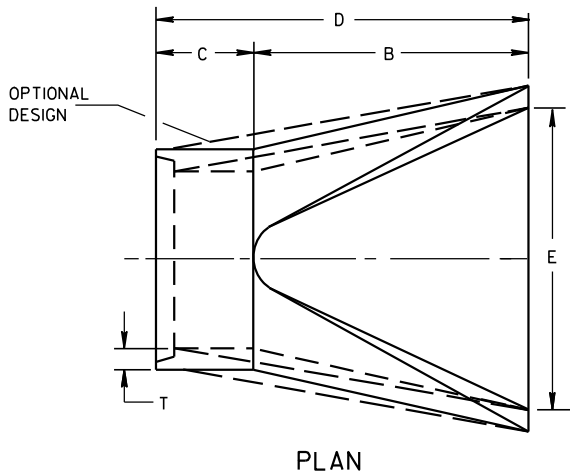
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



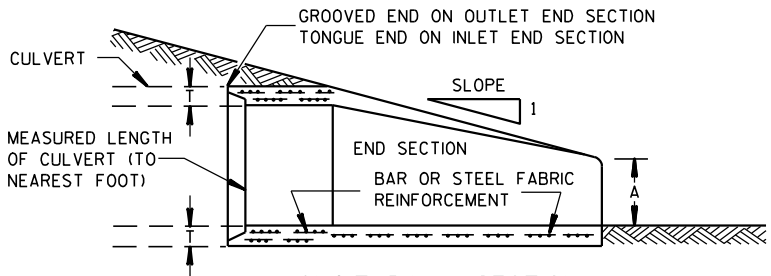
METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS											
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE			
	T	A	B	C	D	E	G				
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1			
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1			
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1			
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1			
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1			
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1			
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1			
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1			
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1			
48	5	24	72	26	98	84	5	3 to 1			
54	5 1/2	27	65	33 1/4-35	98 1/4-100	90	5 1/2	2 1/2 to 1			
60	6	30-35	60	39	99	96	5	2 to 1			
66	6 1/2	24-30	72-78	21-27	99	102	5 1/2	2 to 1			
72	7	24-36	78	21	99	108	6	2 to 1			
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1			
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1			
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1			

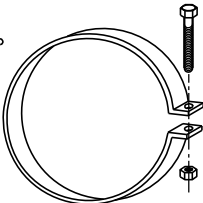
* MINIMUM
** MAXIMUM



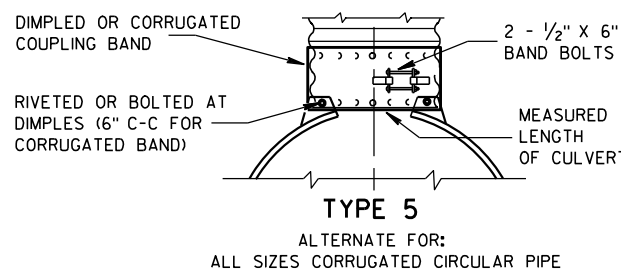
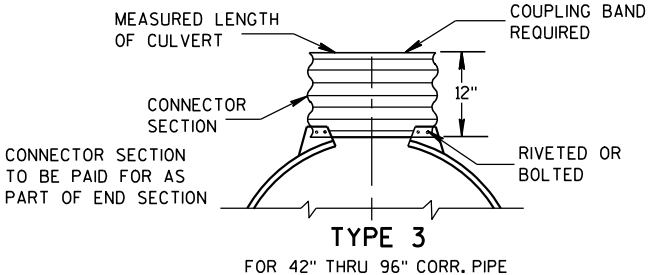
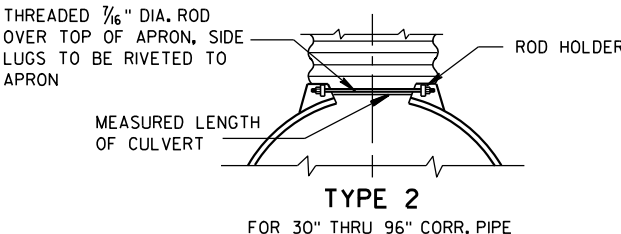
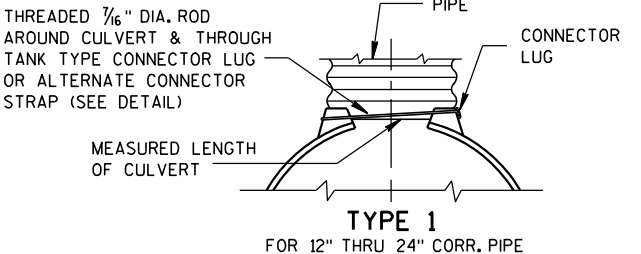
CONCRETE ENDWALLS



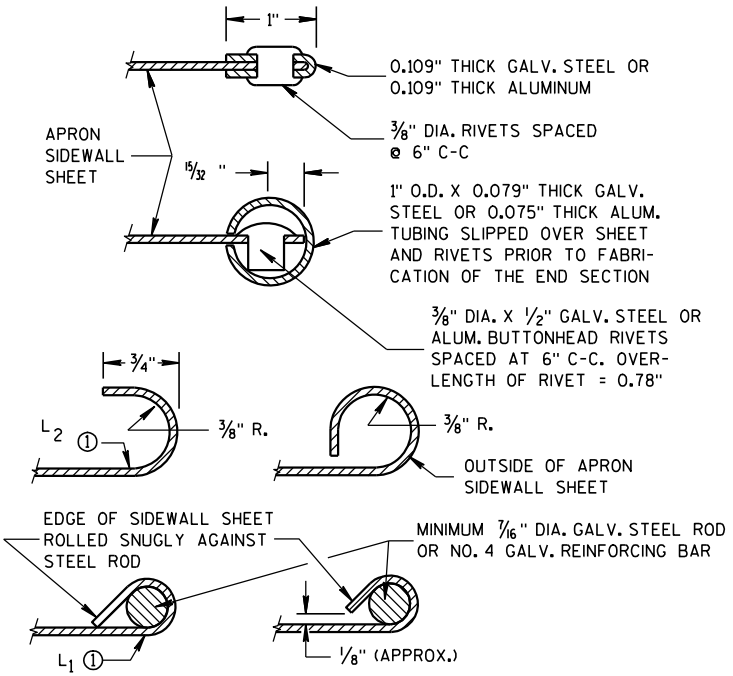
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



CONNECTION DETAILS



GENERAL NOTES

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

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

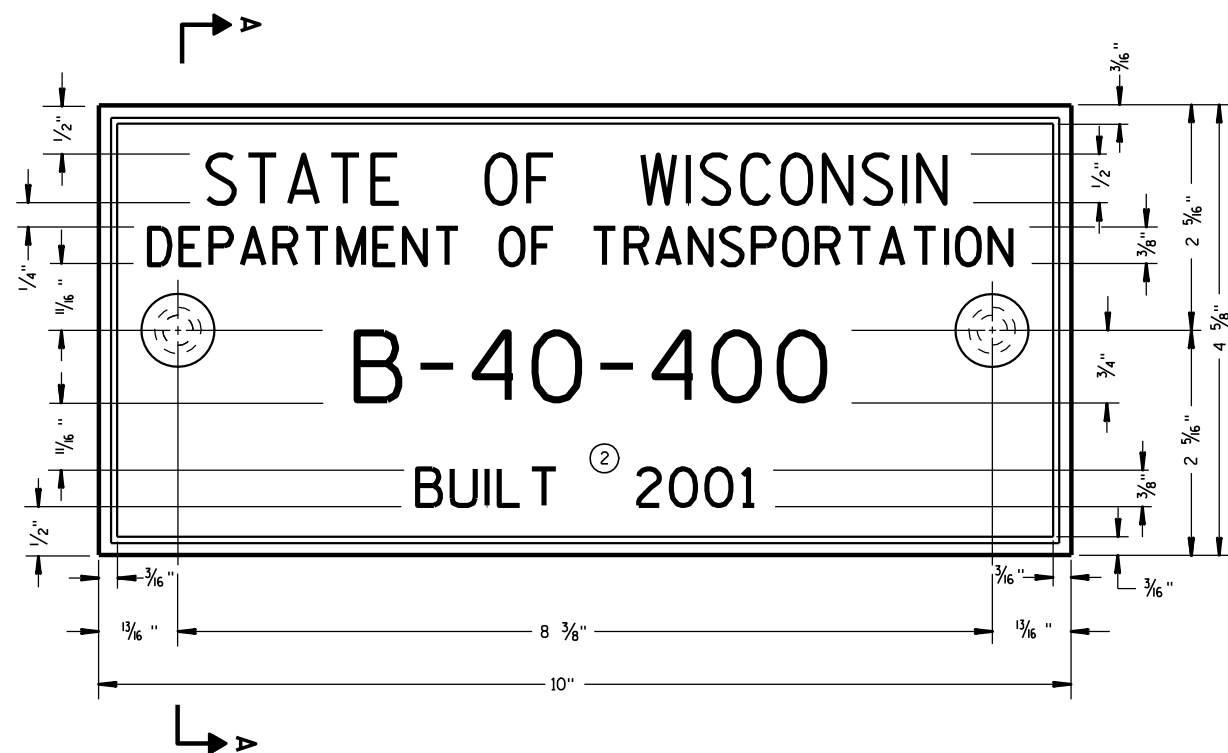
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

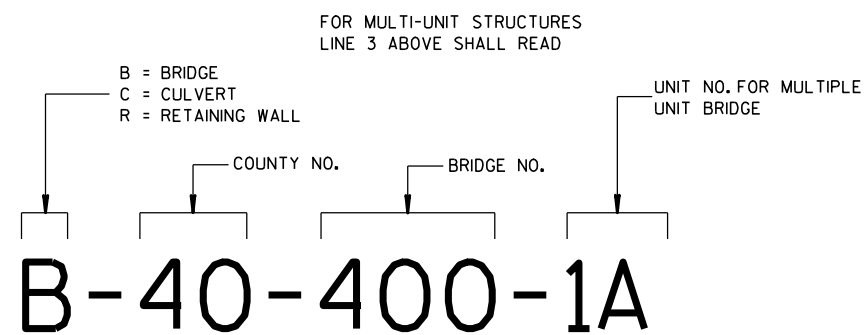
APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



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



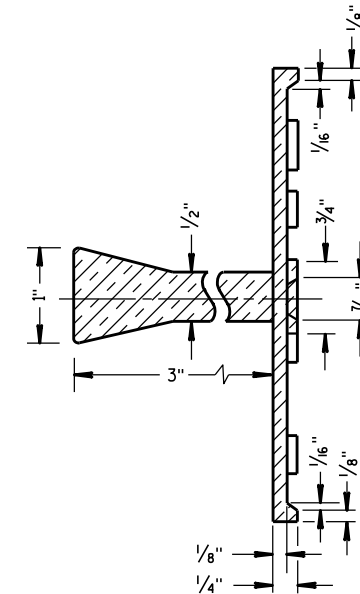
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

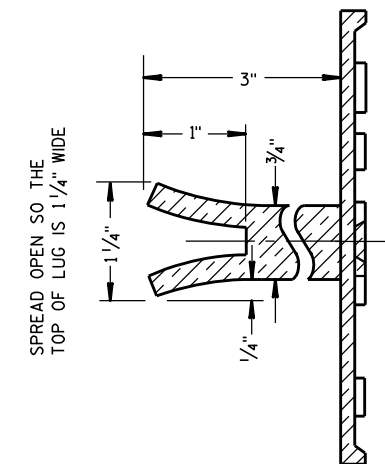
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

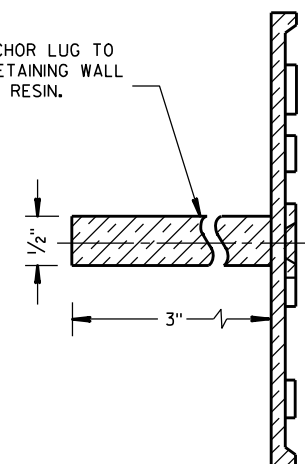


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

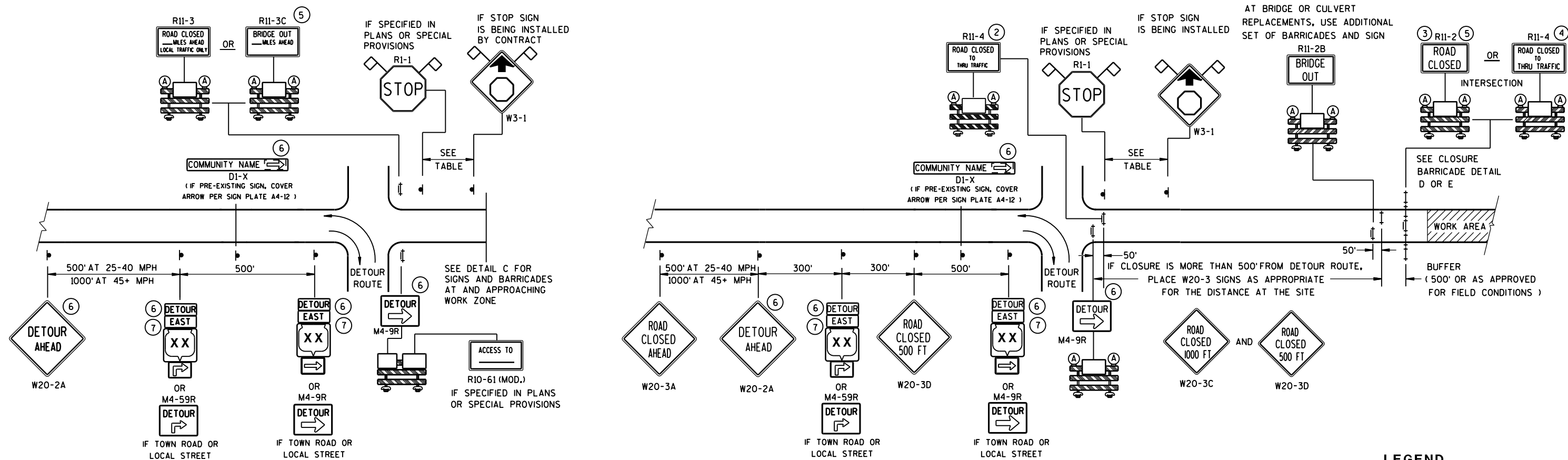
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10
DATE

FHWA

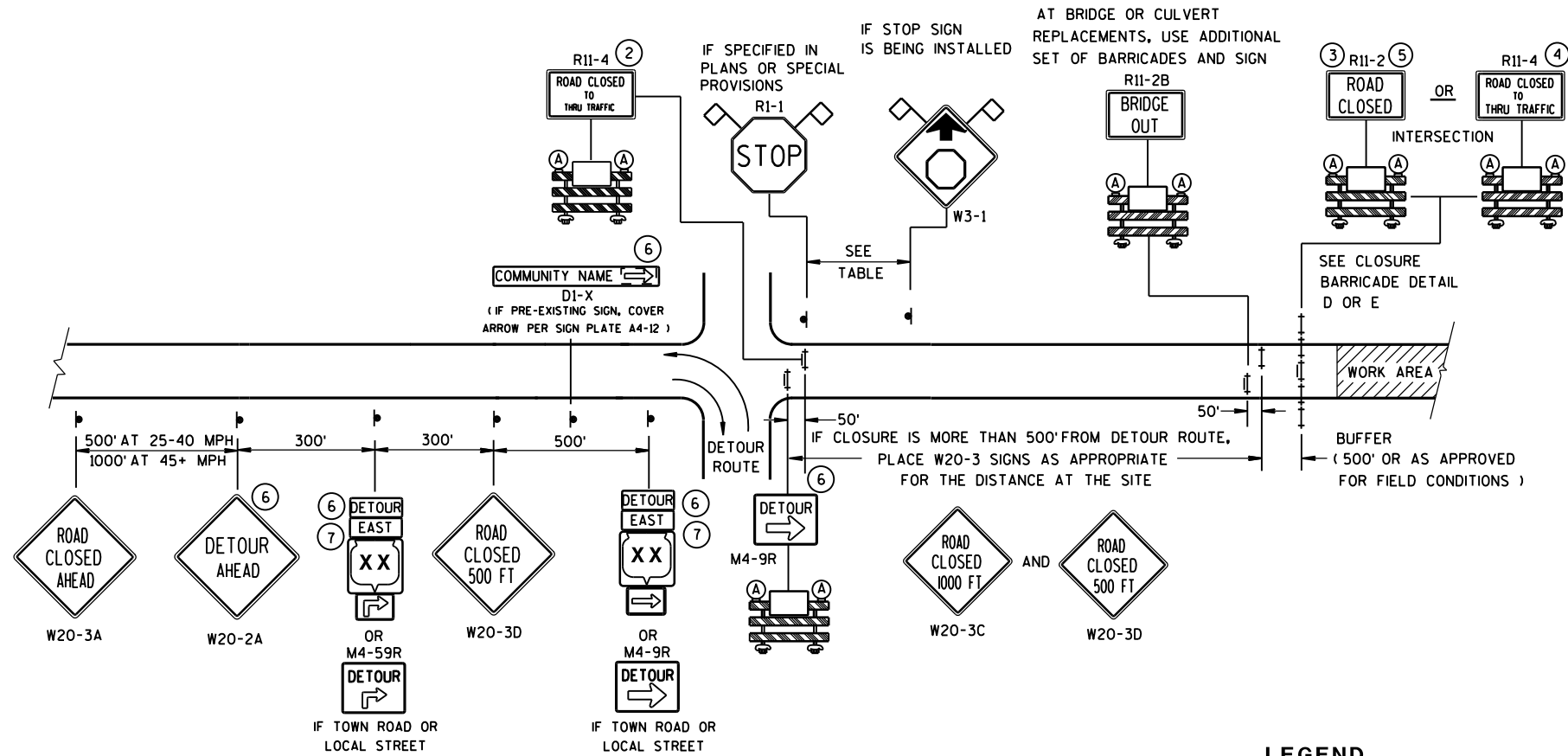
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

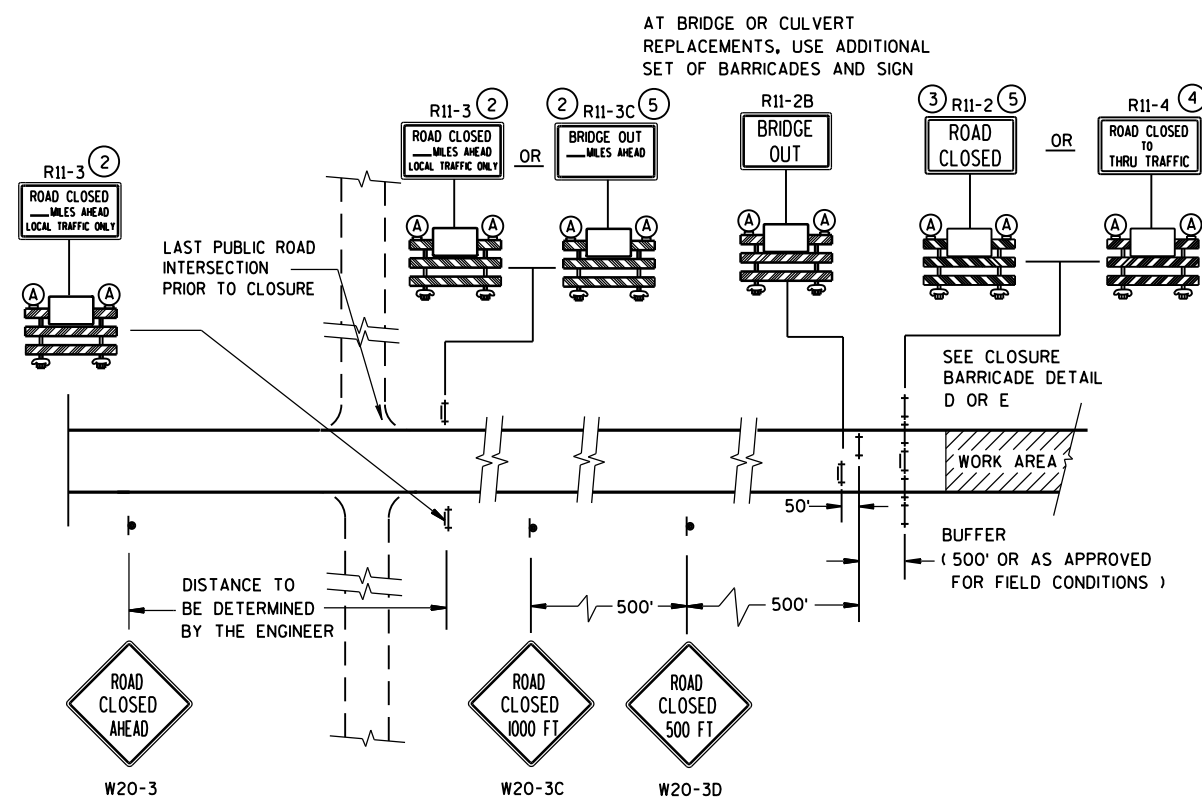
WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR














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



DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

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

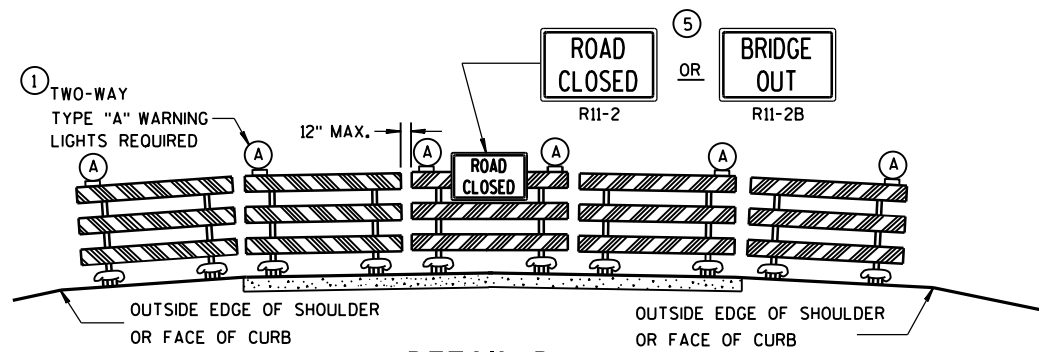
- # LEGEND
-  SIGN ON PERMANENT SUPPORT
-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  WORK AREA
-  M4-8
 M3-X
-  M1-4 OR  M1-5A OR  M1-6
-  M05-1 OR  M06-1
-  FLAGS, 16" X 16" MIN., (ORANGE)

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

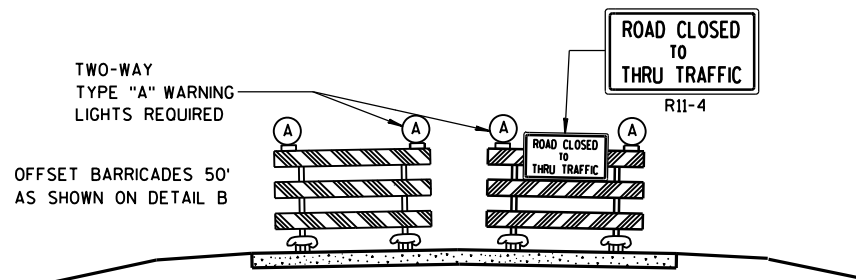
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

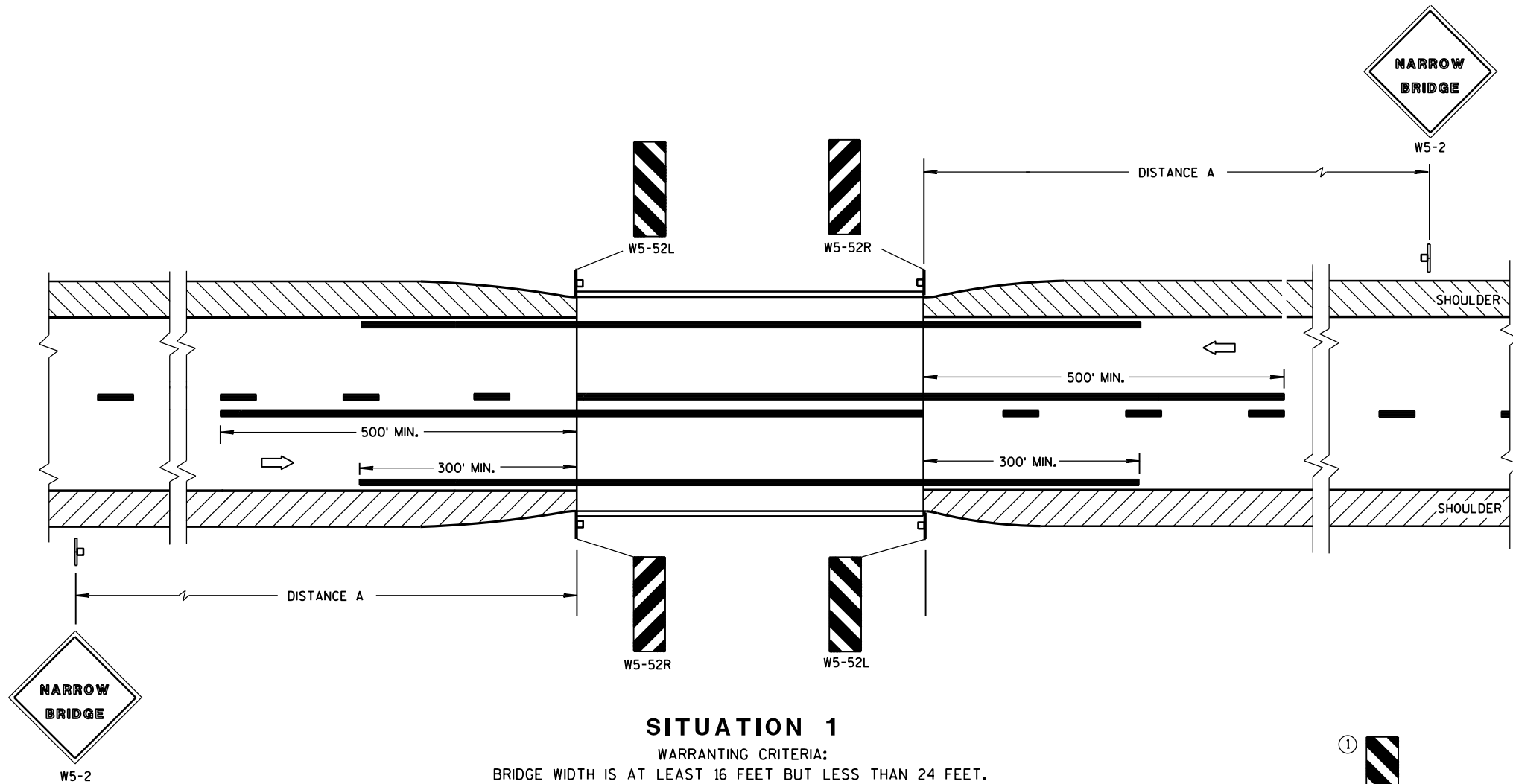
"WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
Sept. 2015 DATE	/S/ Peter Amokobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



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

GENERAL NOTES

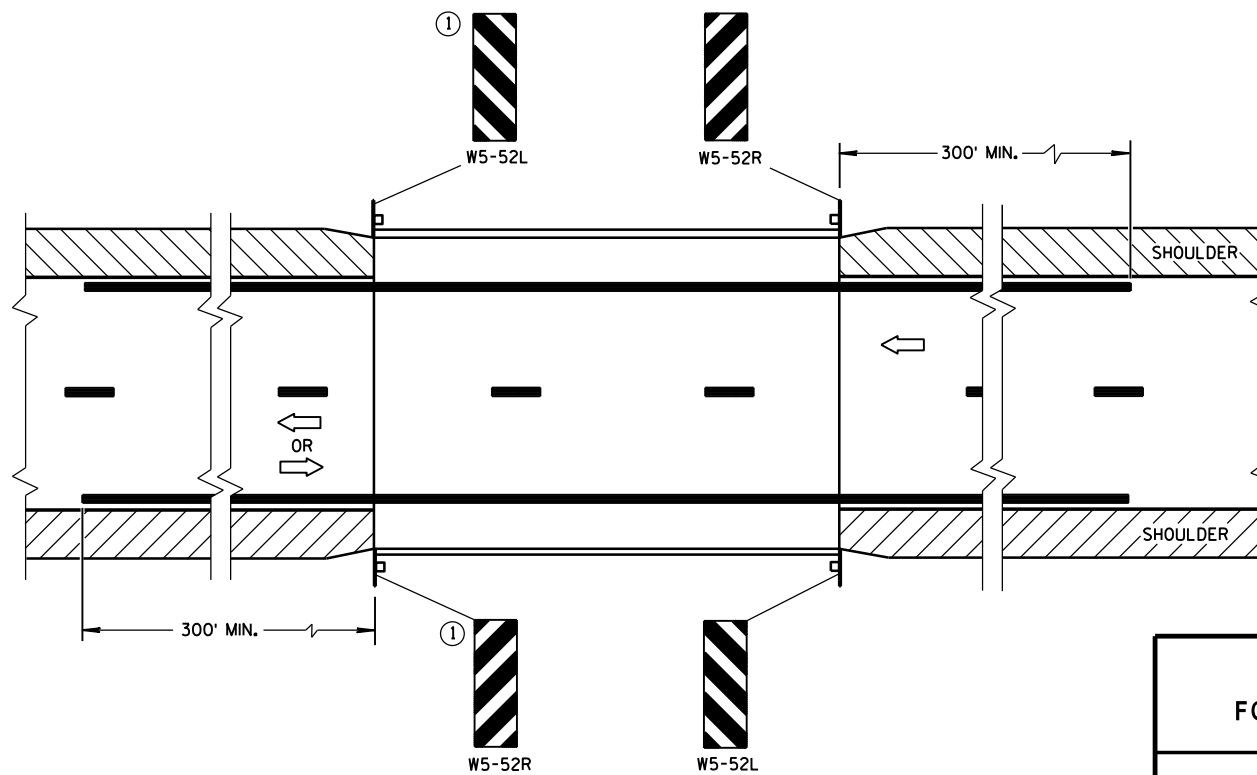
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

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

SIGNING & MARKING FOR TWO LANE BRIDGES

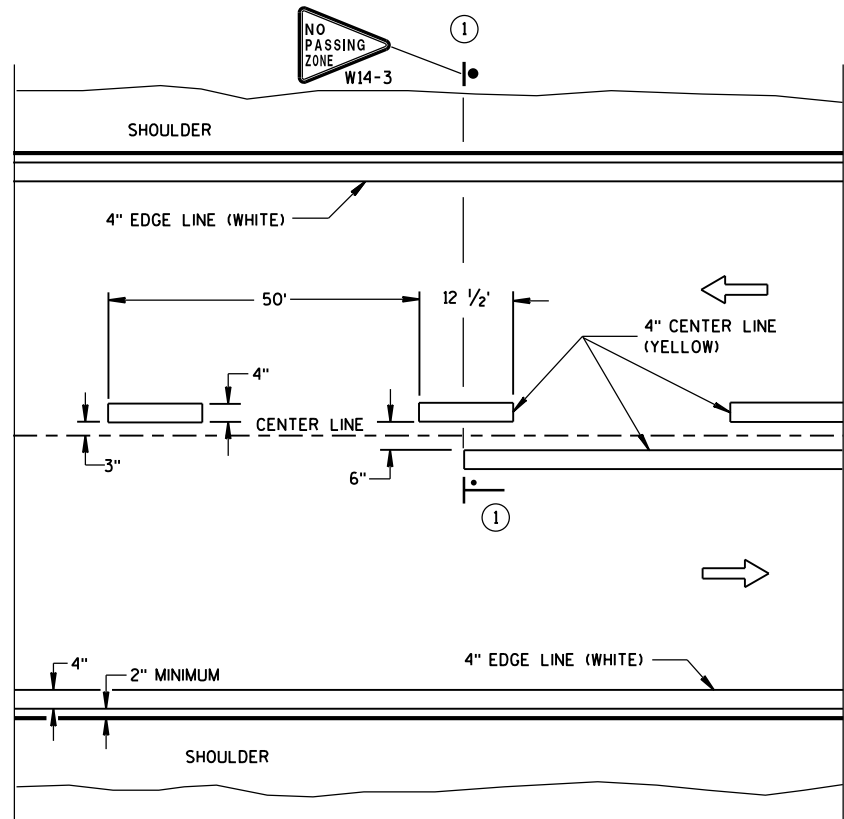
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

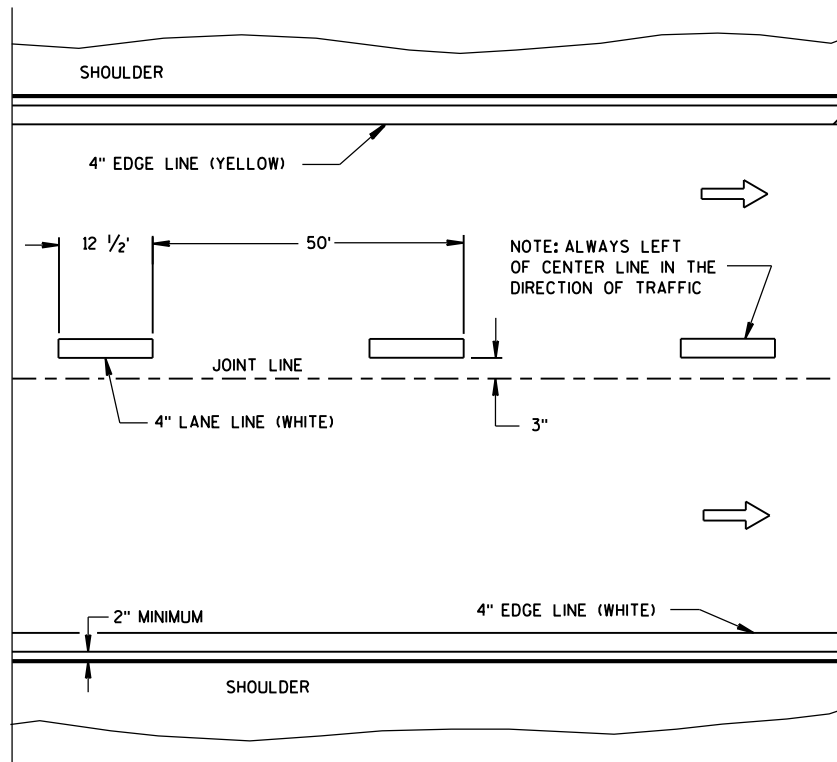
June 2017
DATE

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

FHWA

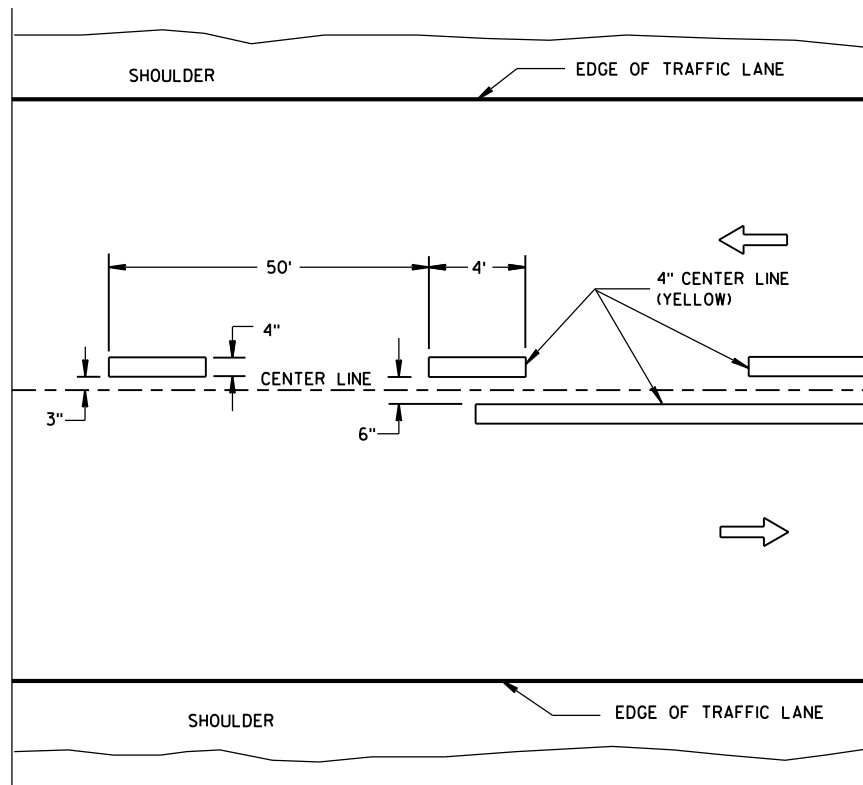


TWO WAY TRAFFIC

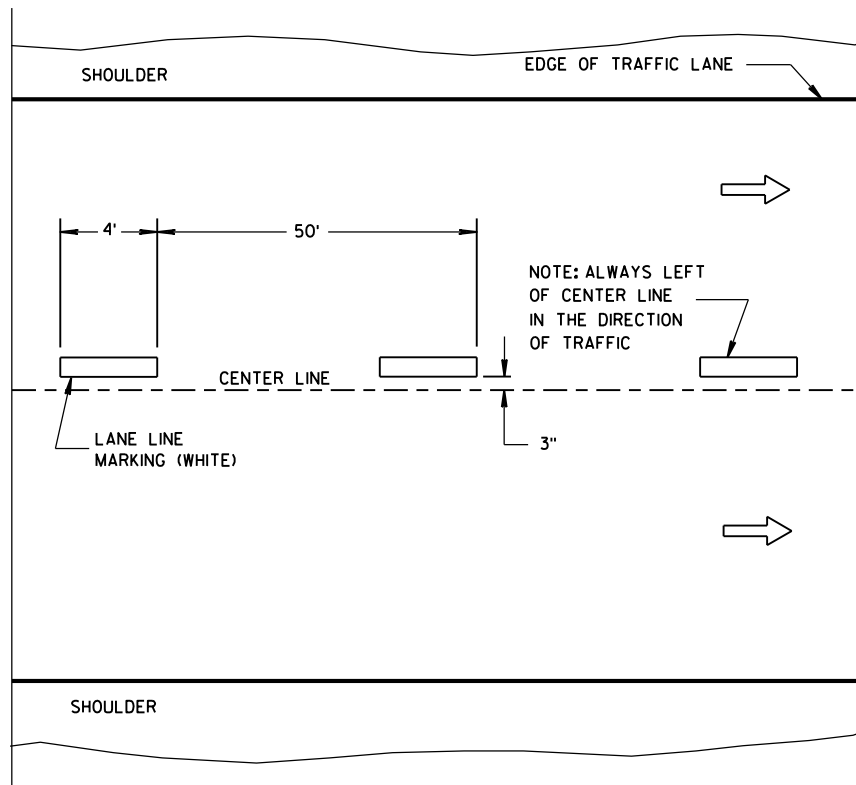


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

—•— "T" MARKING

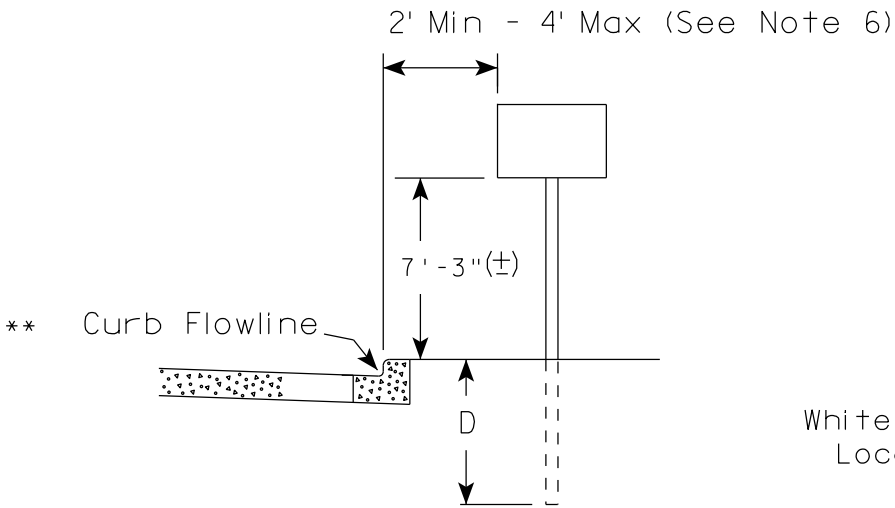
● POST MOUNTED SIGN

LONGITUDINAL MARKING
(MAINLINE)

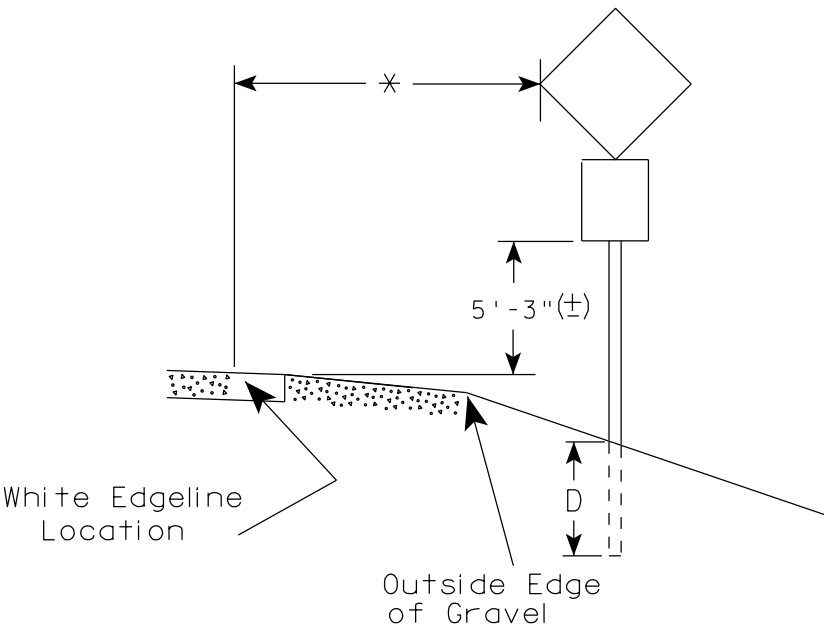
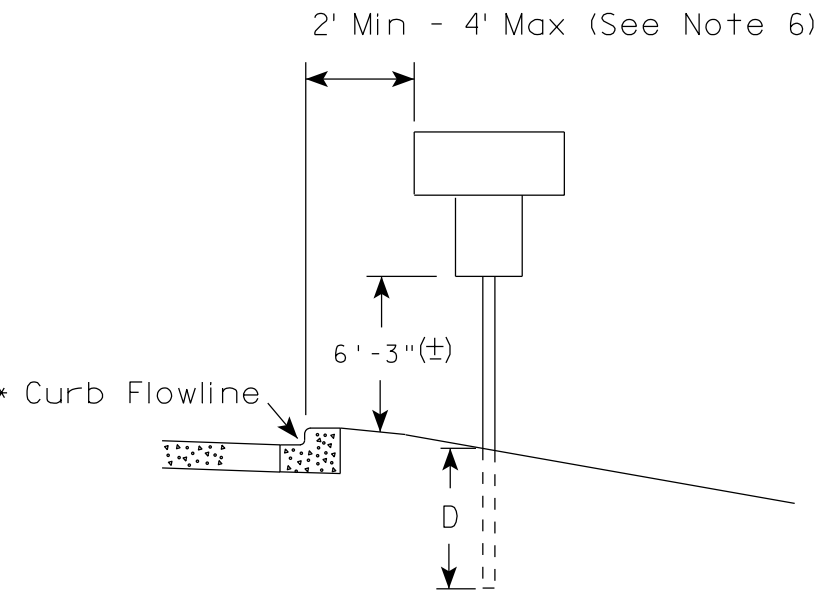
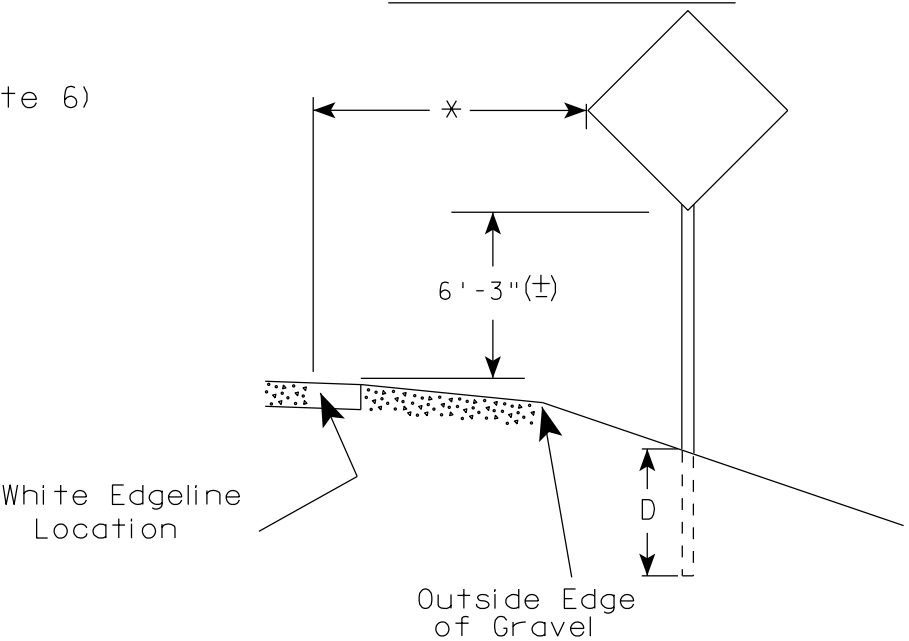
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

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

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

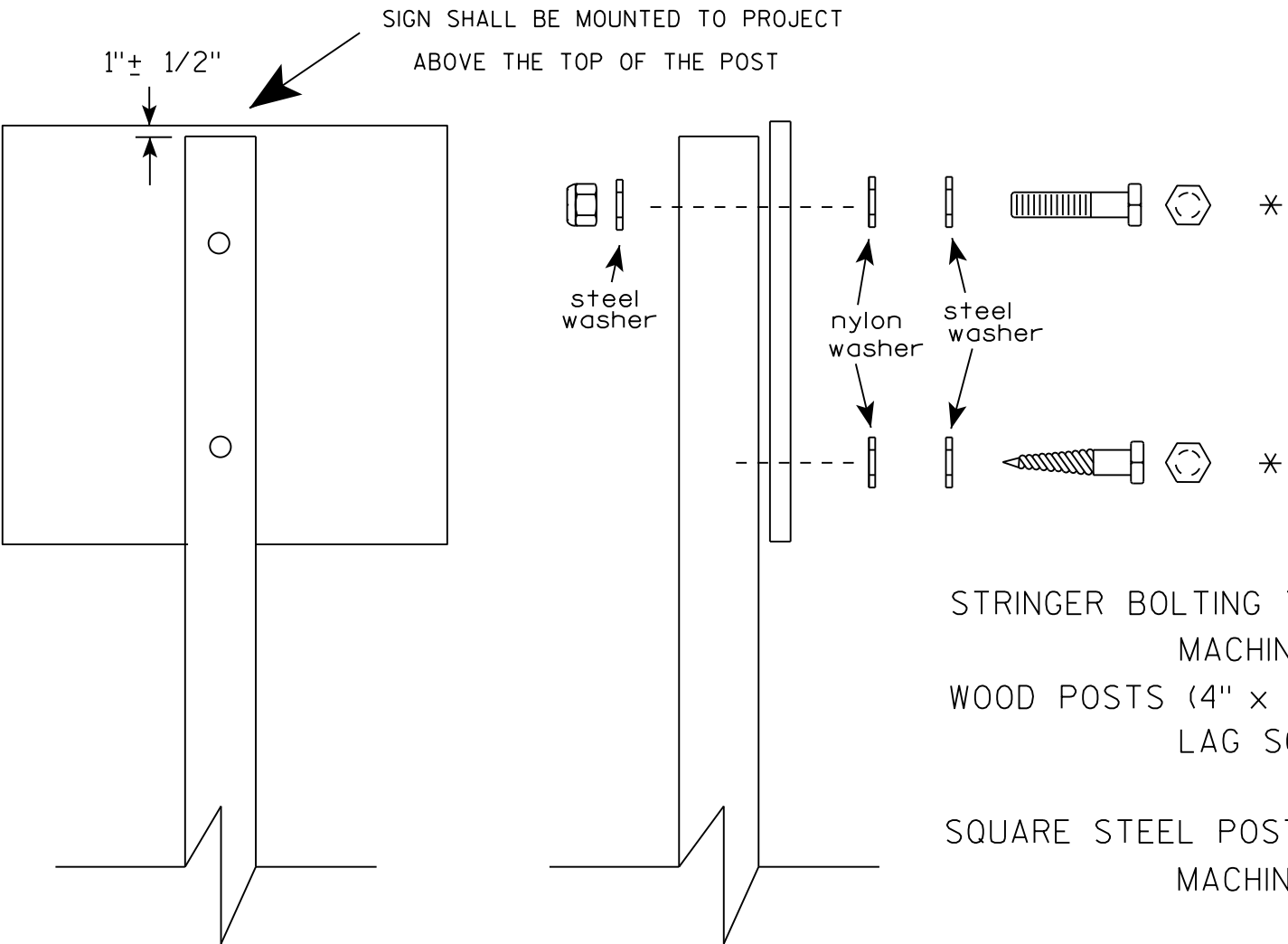
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

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



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

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

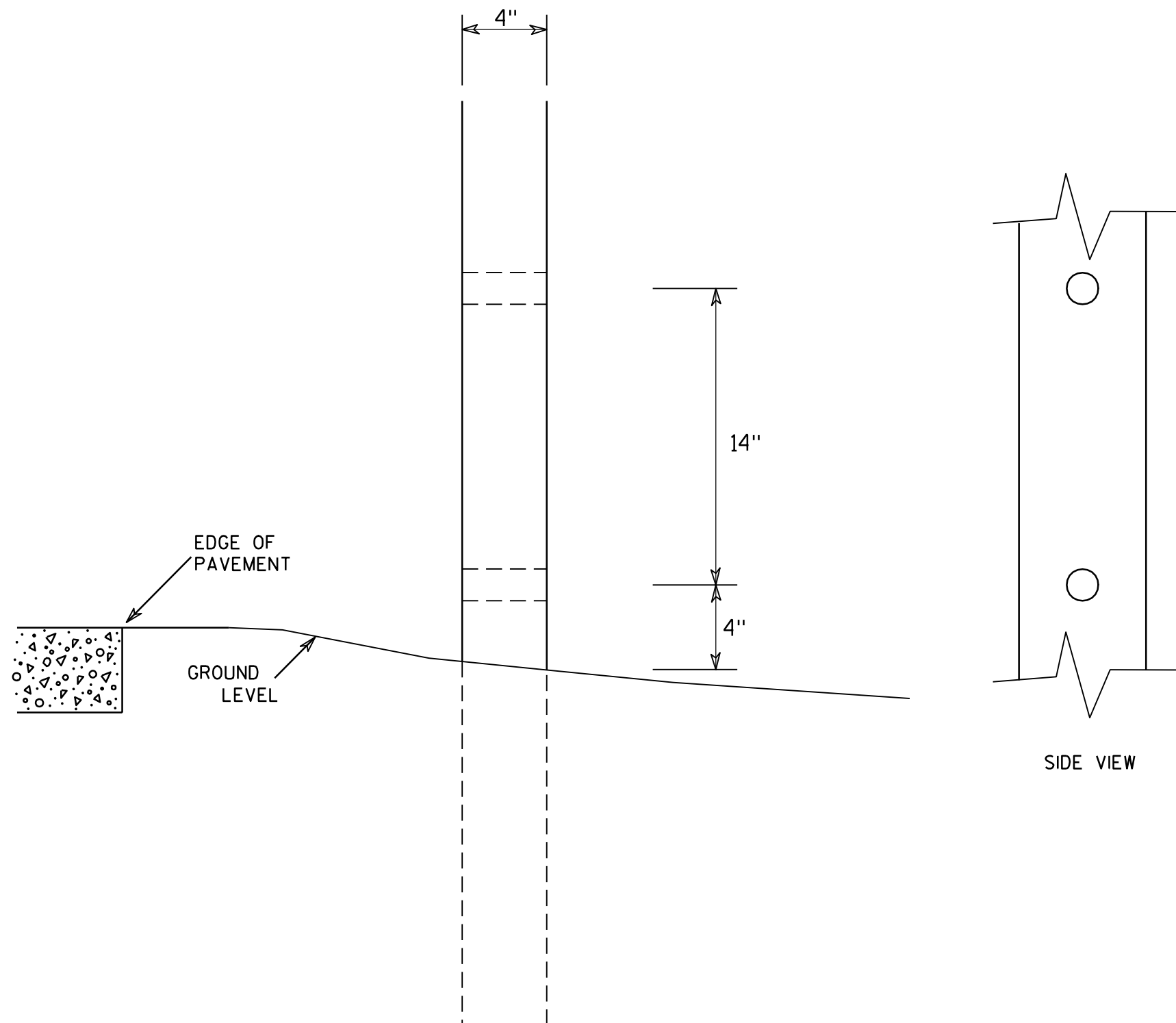
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
 - 3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - 3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 - 1-1/4" O.D. X 3/8" I.D. X .080 NYLON

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8

7



GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

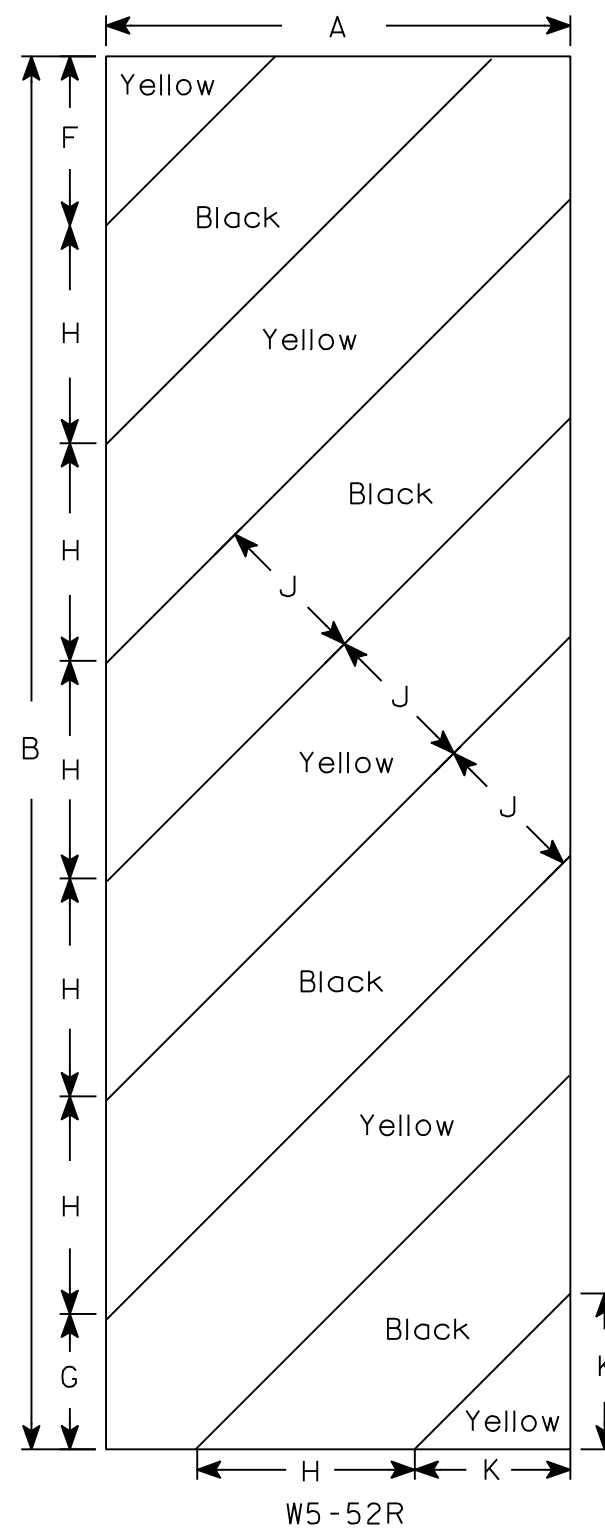
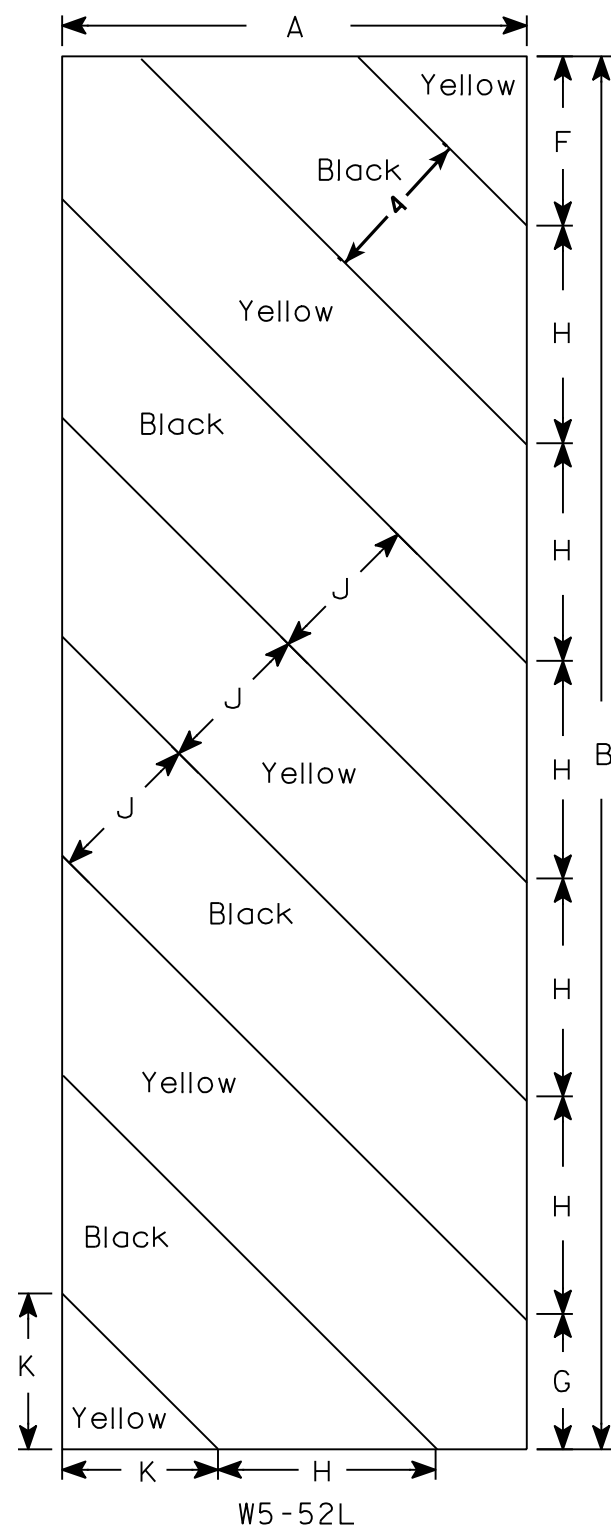
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

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

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

⬡ - INDICATES WING NUMBER

5539-00-70

LIVE LOAD:

DESIGN LOADING	HL-93
INVENTORY RATING FACTOR	RF=1.28
OPERATING RATING FACTOR	RF=1.66
WISCONSIN STANDARD PERMIT VEHICLE RATING (WIS.-SPV):	250 KIPS

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

MATERIAL PROPERTIES:

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

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON 10-INCH X 42 LB STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 160 TONS* PER PILE AT THE SOUTH ABUTMENT AND 160 TONS* PER PILE AT THE NORTH ABUTMENT AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 35 FT PILE LENGTHS AT SOUTH ABUTMENT AND 30 FT PILE LENGTHS AT NORTH ABUTMENT.

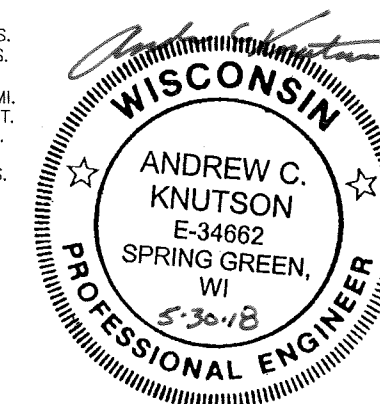
*THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES DYNAMIC FORMULA TO DETERMINE DRIVEN PILE CAPACITY.

HYDRAULIC DATA:

Q ₁₀₀	2500 C.F.S.
Q ₁₀₀ (THRU BRIDGE)	1905 C.F.S.
Q ₁₀₀ (ROAD)	595 C.F.S.
DRAINAGE AREA	14.4 SQ. MI.
BRIDGE WATER AREA	266 SQ. FT.
BRIDGE VELOCITY	7.20 F.P.S.
HIGH WATER ₁₀₀ EL.	963.54
OVERTOPPING Q	1625 C.F.S.
OVERTOPPING EL.	962.77 FT
OVERTOPPING RDWY	40 YR
SCOUR CRITICAL CODE	5
Q ₂	770 C.F.S
Q ₂ ELEVATION	958.96 FT
Q ₂ VELOCITY	4.4 F.P.S

TRAFFIC DATA:

A.A.D.T. (2019) ————— 200
A.A.D.T. (2039) ————— 230
DESIGN SPEED ————— 40 M.P.H.



BENCH MARKS

NO.	STATION	DESCRIPTION	ELEVATION
BM #1	13+75.17	RAILROAD SPIKE, 31.16' RT.	960.88
BM #2	13+11.25	CHISELED CROSS ON NW WING WALL, 10.39' LT.	963.55

HORIZONTAL DATUM AND ADJUSTMENT: NAD 83 (2007)

VERTICAL DATUM AND ADJUSTMENT: NAVD 88 (2007)

COORDINATE REFERENCE SYSTEM: VERNON COUNTY

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION, GENERAL NOTES
& QUANTITIES
3. SUBSURFACE EXPLORATION
4. ABUTMENTS
5. ABUTMENT DETAILS
6. SUPERSTRUCTURE
7. SUPERSTRUCTURE DETAILS
8. TUBULAR STEEL RAILING TYPE M

NO.	DATE	REVISION	B
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WESTBROOK
Associated Engineers, Inc.

619 EAST HOXIE STREET
P.O. BOX 429
SPRING GREEN, WI 53588
PHONE (608) 588-7861
FAX (608) 588-7954

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/15/18
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-62-257

CTH WW OVER SEYMOUR CREEK	
COUNTY VERNON	TOWN/CITY/VILLAGE HILLSBORO

DESIGN SPEC.	
AASHTO LRFD BRIDGE DESIGN SPEC	

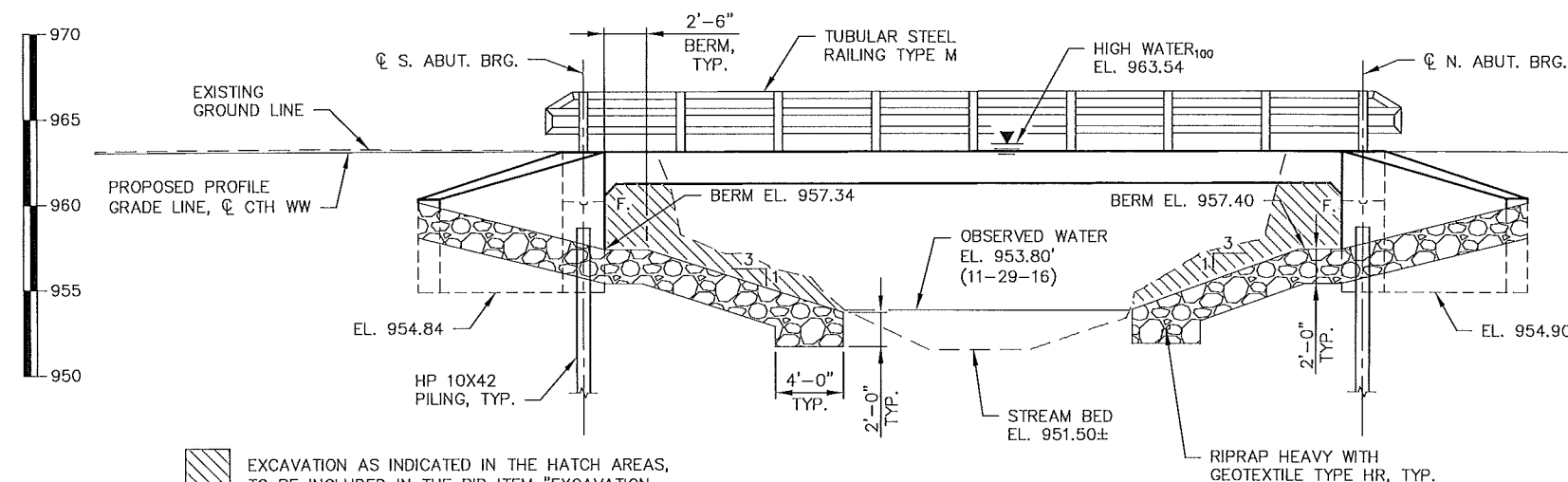
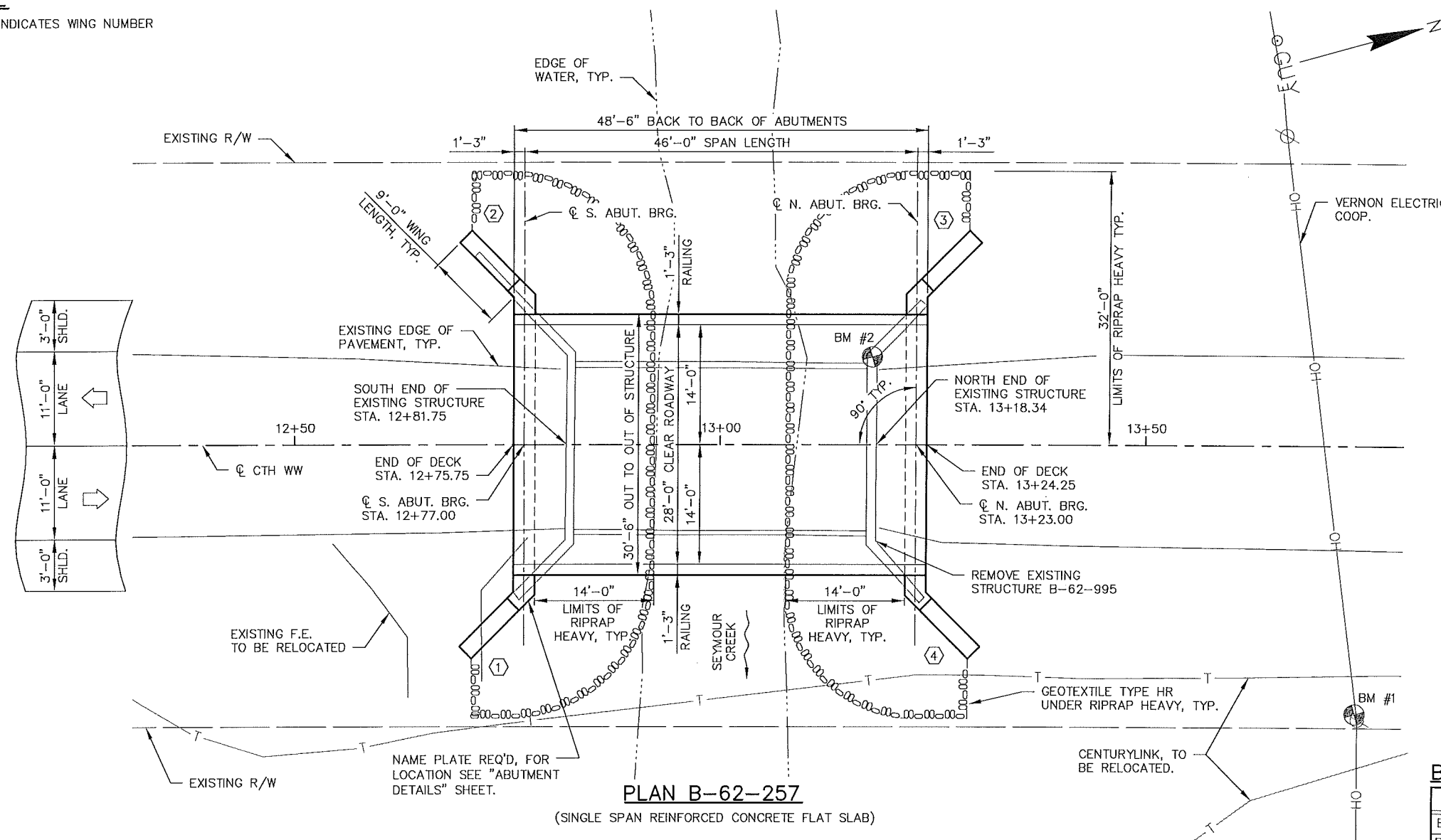
DESIGNED BY	JDO	DESIGN CK'D.	CDS	DRAWN BY	JDO	PLANS CK'D.	CDS
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GENERAL PLAN

SHEET 1 OF 8

BRIDGE OFFICE CONTACT
WILLIAM DREHER, P.E.
(608) 266-8489

CONSULTANT CONTACT
ANDY KNUTSON, P.E., S.E.
(608) 588-7866



ELEVATION

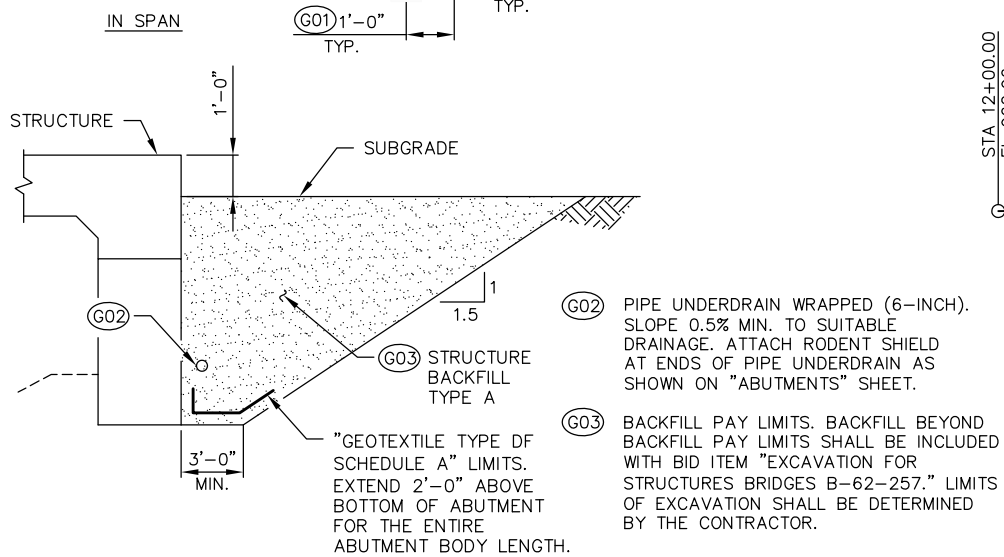
(NORMAL TO SEYMOUR CREEK, LOOKING WEST)

EXCAVATION AS INDICATED IN THE HATCH AREAS, TO BE INCLUDED IN THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-62-257".

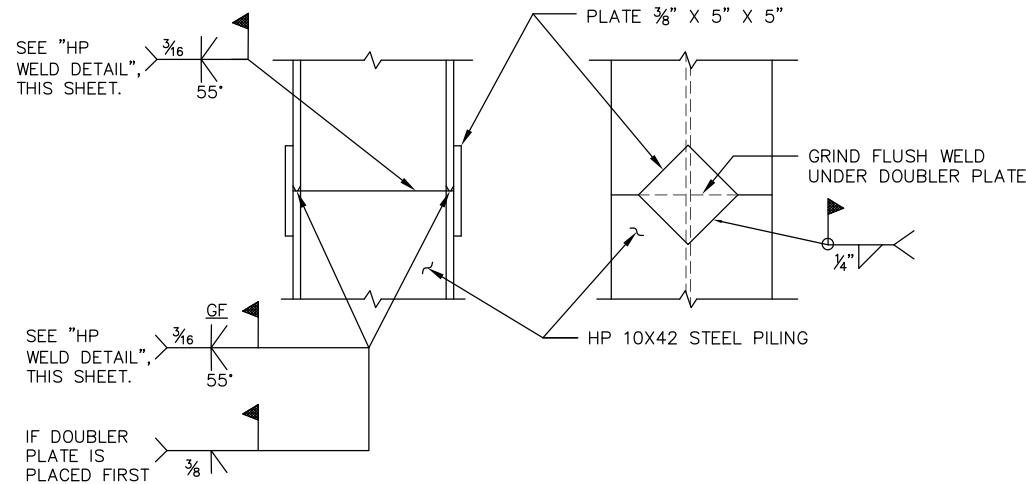
TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	S. ABUT.	N. ABUT.	SUPER.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 13+00	LS	---	---	---	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-62-257	LS	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	170	170	---	300
502.0100	CONCRETE MASONRY BRIDGES	CY	28	28	124	180
502.3200	PROTECTIVE SURFACE TREATMENT	SY	12	12	196	220
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2200	2200	---	4400
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1420	1420	23080	25920
513.4061	RAILING TUBULAR TYPE M B-62-257	LF	---	---	102	102
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	7	7	---	14
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	245	210	---	455
606.0300	RIPRAP HEAVY	CY	78	81	---	159
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	75	75	---	150
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	46	46	---	92
645.0120	GEOTEXTILE TYPE HR	SY	140	144	---	284
(NON-BID ITEM)	FILLER	SIZE	---	---	---	1/2" & 3/4"

STRUCTURAL BACKFILL DETAIL



PILE SPLICE DETAILS

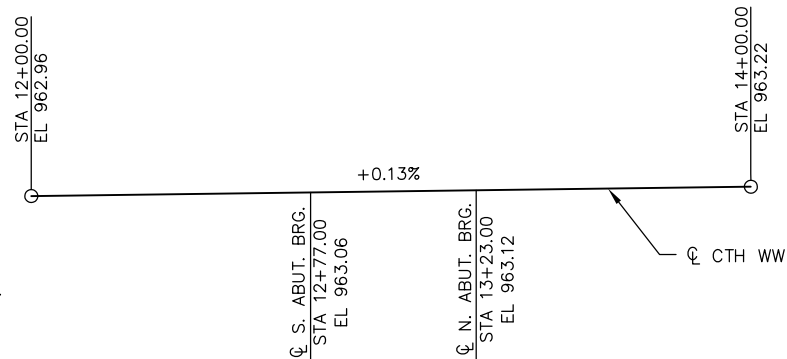


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-62-257			
DRAWN BY JDO		PLANS CK'D CDS	
CROSS SECTION, GENERAL NOTES & QUANTITIES			SHEET 2 OF 8

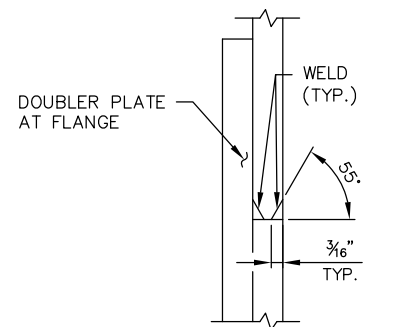
GENERAL NOTES

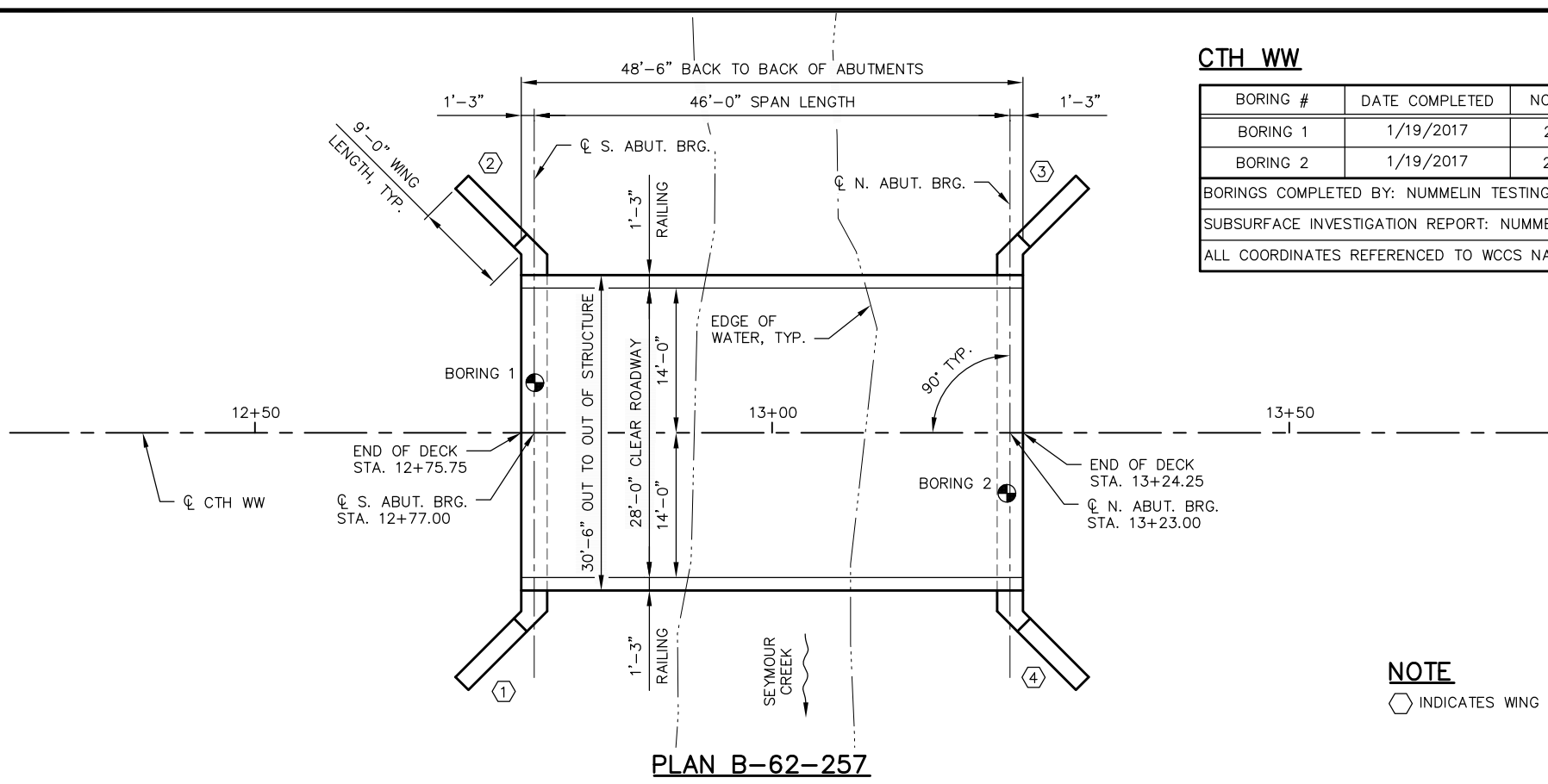
- DRAWINGS SHALL NOT BE SCALED.
- BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
- THE FIRST OR FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.
- BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.
- THE SLOPE IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE "GENERAL PLAN" SHEET AND THE "ABUTMENTS" SHEET.
- THE FINISHED GRADED SECTION SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.
- AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.
- SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
- AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.
- THE EXISTING STRUCTURE (B-62-995) IS A SINGLE SPAN STEEL GIRDER CONCRETE DECK STRUCTURE WITH AN OVERALL LENGTH OF 36-FT AND A CLEAR ROADWAY WIDTH OF 19-FT TO BE REMOVED IN ACCORDANCE WITH THE SPECIFICATIONS.
- DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

PROFILE GRADE LINE, C CTH WW



HP WELD DETAIL





CTH WW

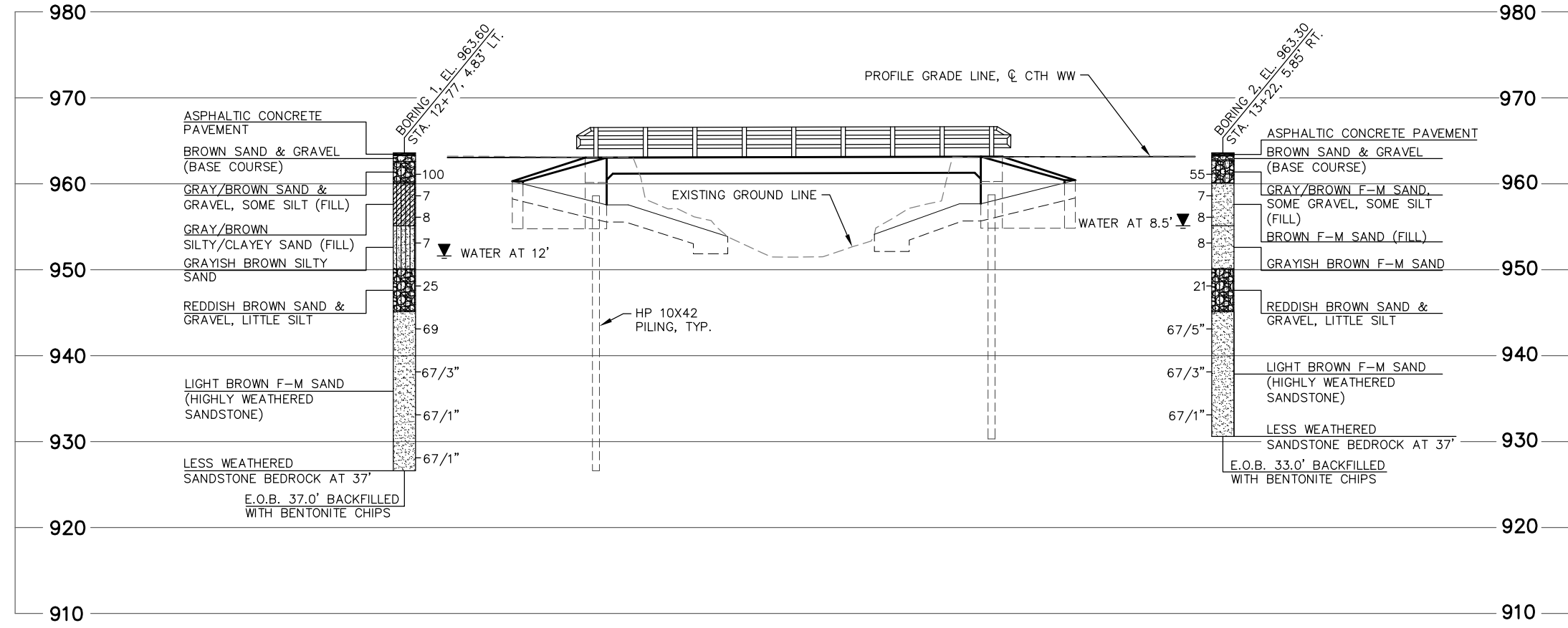
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
BORING 1	1/19/2017	206531.52	848638.27
BORING 2	1/19/2017	206572.47	848661.09

BORINGS COMPLETED BY: NUMMELIN TESTING SERVICES, INC.
SUBSURFACE INVESTIGATION REPORT: NUMMELIN TESTING SERVICES, INC.
ALL COORDINATES REFERENCED TO WCCS NAD 83(07) VERNON COUNTY

NOTE

⬡ INDICATES WING NUMBER

PLAN B-62-257



STATE PROJECT NUMBER
5539-00-70

MATERIAL SYMBOLS

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

LEGEND OF BORING

(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)
(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

▽ AT TIME OF DRILLING
▼ END OF DRILLING
▼ AFTER DRILLING

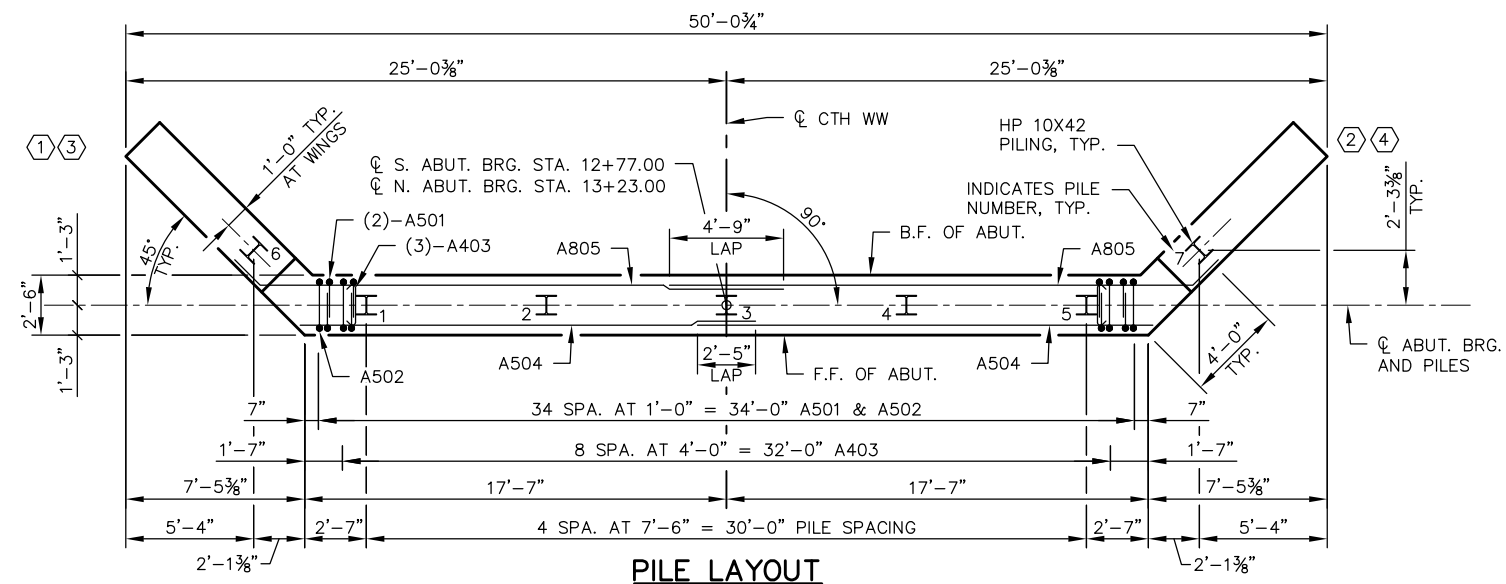
ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-62-257			
DRAWN BY JDO		PLANS CK'D CDS	
SUBSURFACE EXPLORATION			SHEET 3 OF 8



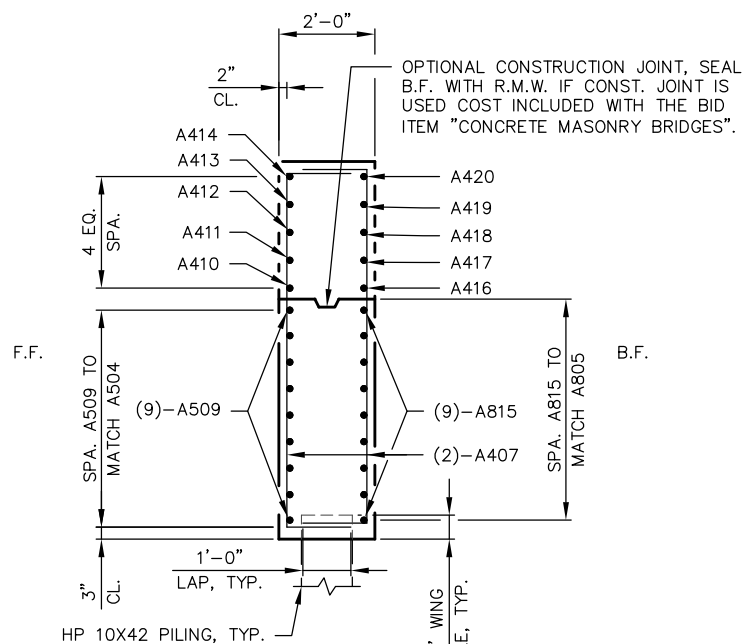
COATED = 2,840 LBS.
UNCOATED = 4,400 LBS.BILL OF BARS
BOTH ABUTMENTS

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
A501		140	5'-11"	X		BODY STIRRUP - F.F. & B.F.
A502		70	6'-7"	X		BODY STIRRUP - TOP
A403		54	2'-11"	X		BODY - TIES
A504		36	18'-10"			BODY - F.F.
A805		36	23'-4"	X		BODY - B.F.
A506	62		2'-0"			BODY - DOWELS
A407	96		8'-8"	X		WINGS 1 THRU 4 - STIRRUP - F.F. & B.F.
A408	32		7'-6"			WINGS 1 THRU 4 - F.F. & B.F.
A509	36		11'-9"	X		WINGS 1 THRU 4 - F.F.
A410	4		9'-8"			WINGS 1 THRU 4 - F.F.
A411	4		7'-10"			WINGS 1 THRU 4 - F.F.
A412	4		6'-0"			WINGS 1 THRU 4 - F.F.
A413	4		4'-2"			WINGS 1 THRU 4 - F.F.
A414	4		10'-7"	X		WINGS 1 THRU 4 - F.F. - TOP
A815	36		13'-3"	X		WINGS 1 THRU 4 - B.F.
A416	4		8'-2"			WINGS 1 THRU 4 - B.F.
A417	4		6'-3"			WINGS 1 THRU 4 - B.F.
A418	4		4'-5"			WINGS 1 THRU 4 - B.F.
A419	4		2'-7"			WINGS 1 THRU 4 - B.F.
A420	4		9'-0"	X		WINGS 1 THRU 4 - B.F. - TOP
A421	20		4'-2"	X		WINGS 1 THRU 4 - F.F. CORNER
A422	20		2'-9"	X		WINGS 1 THRU 4 - B.F. CORNER

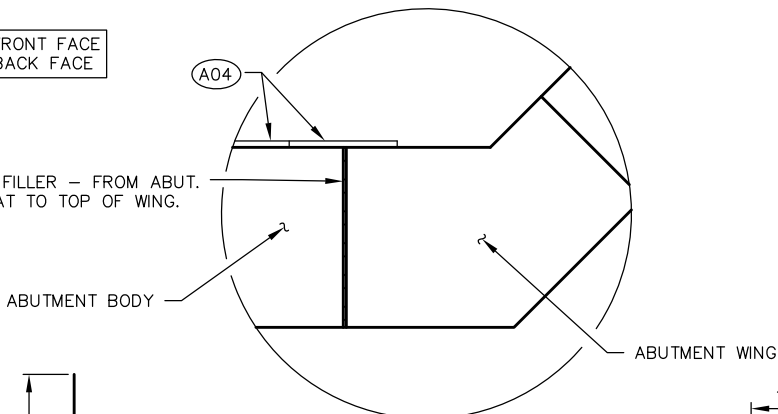
THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

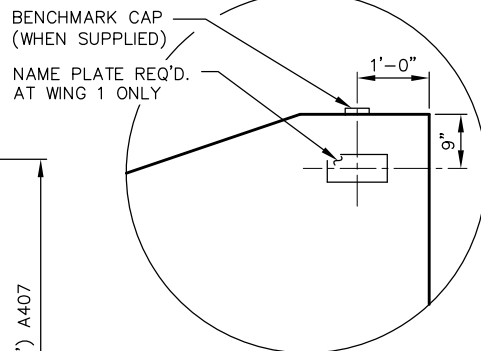
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE "BAR SERIES TABLE" FOR ACTUAL LENGTHS.



SECTION A-A

F.F. - FRONT FACE
B.F. - BACK FACE(A02) 1/2" FILLER - FROM ABUT.
SEAT TO TOP OF WING.

R.M.W. DETAIL

NAME PLATE
DETAIL

NOTES

(A02) SEAL ALL EXPOSED HORIZONTAL
AND VERTICAL SURFACES OF 1/2"
FILLER WITH NON-STAINING
GRAY NON-BITUMINOUS JOINT
SEALER. (1" DEEP AND HOLD 1/8"
BELOW SURFACE OF CONCRETE.)(A04) 18" RUBBERIZED MEMBRANE
WATERPROOFING (R.M.W.). SEAL
ALL VERTICAL AND HORIZONTAL
JOINTS ON BACK FACE.

BAR SERIES TABLE

MARK	NO. REQ'D	LENGTH
A407	8 SERIES OF 12	7'-4" TO 10'-0"

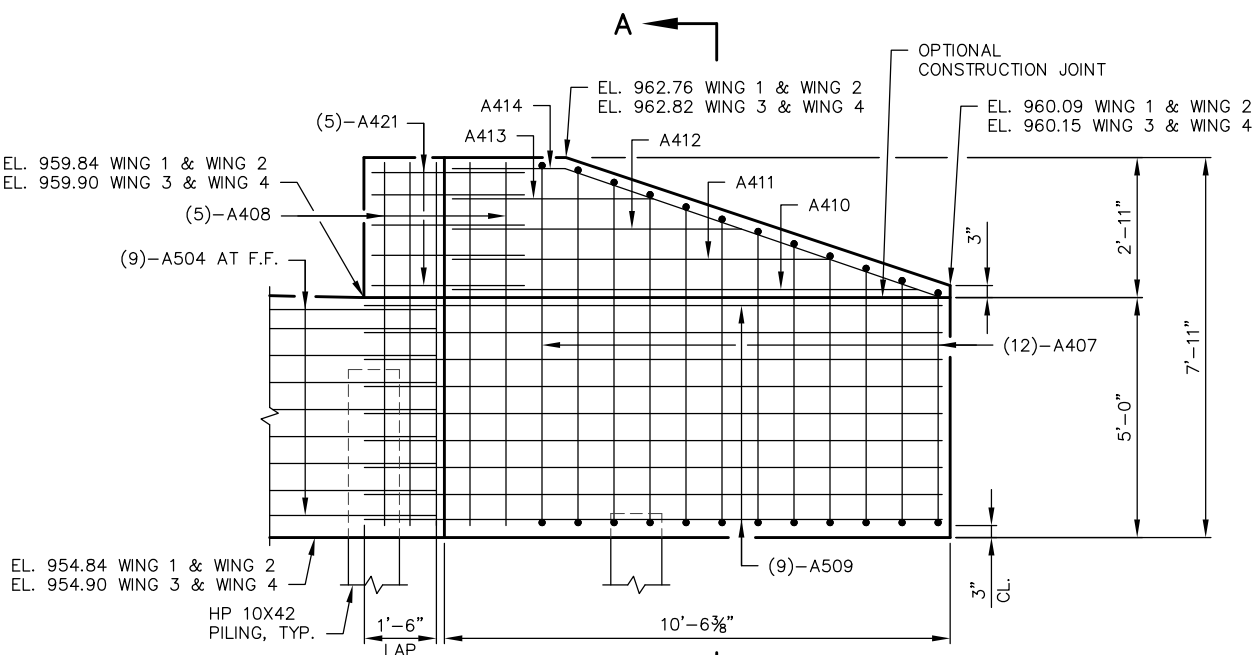
BUNDLE AND TAG EACH SERIES SEPARATELY.

BAR BEND DIMENSIONS

MARK	"A"	"B"
A414	8'-3"	2'-4"
A420	8'-3"	0'-9"

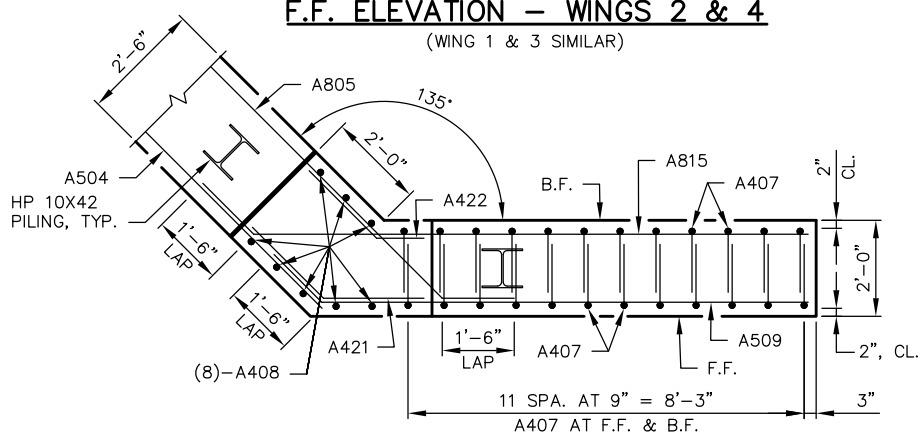
A414 & A420

A421 & A422



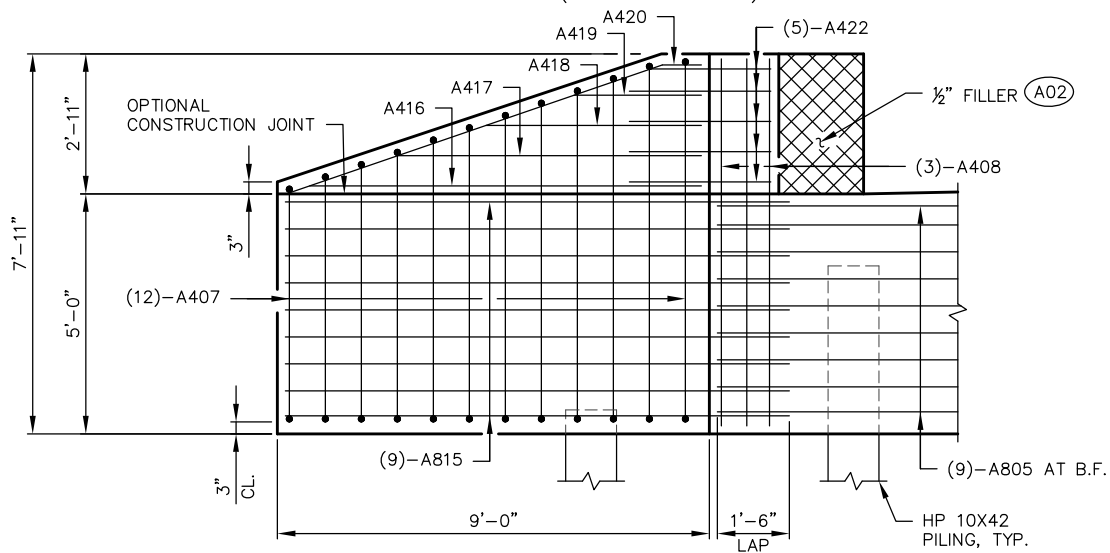
F.F. ELEVATION - WINGS 2 & 4

(WING 1 & 3 SIMILAR)



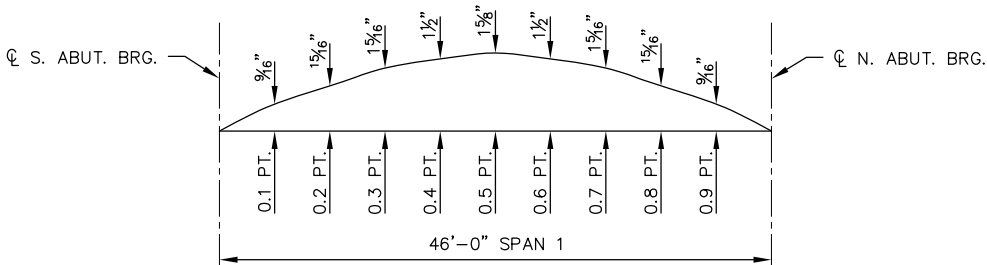
PLAN - WINGS 2 & 4

(WING 1 & 3 SIMILAR)



B.F. ELEVATION - WINGS 2 & 4

(WING 1 & 3 SIMILAR)



SLAB CAMBER DIAGRAM

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.

SURVEY TOP OF SLAB ELEVATIONS

	☐ S. ABUT. BRG.	5/10 PT.	☐ N. ABUT. BRG.
WEST SLAB EDGE			
☐ CTH WW			
EAST SLAB EDGE			

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF DECK ELEVATIONS AT THE ☐ OF ABUTMENTS AND AT 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND REFERENCE LINE. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

BILL OF BARS
SUPERSTRUCTURE

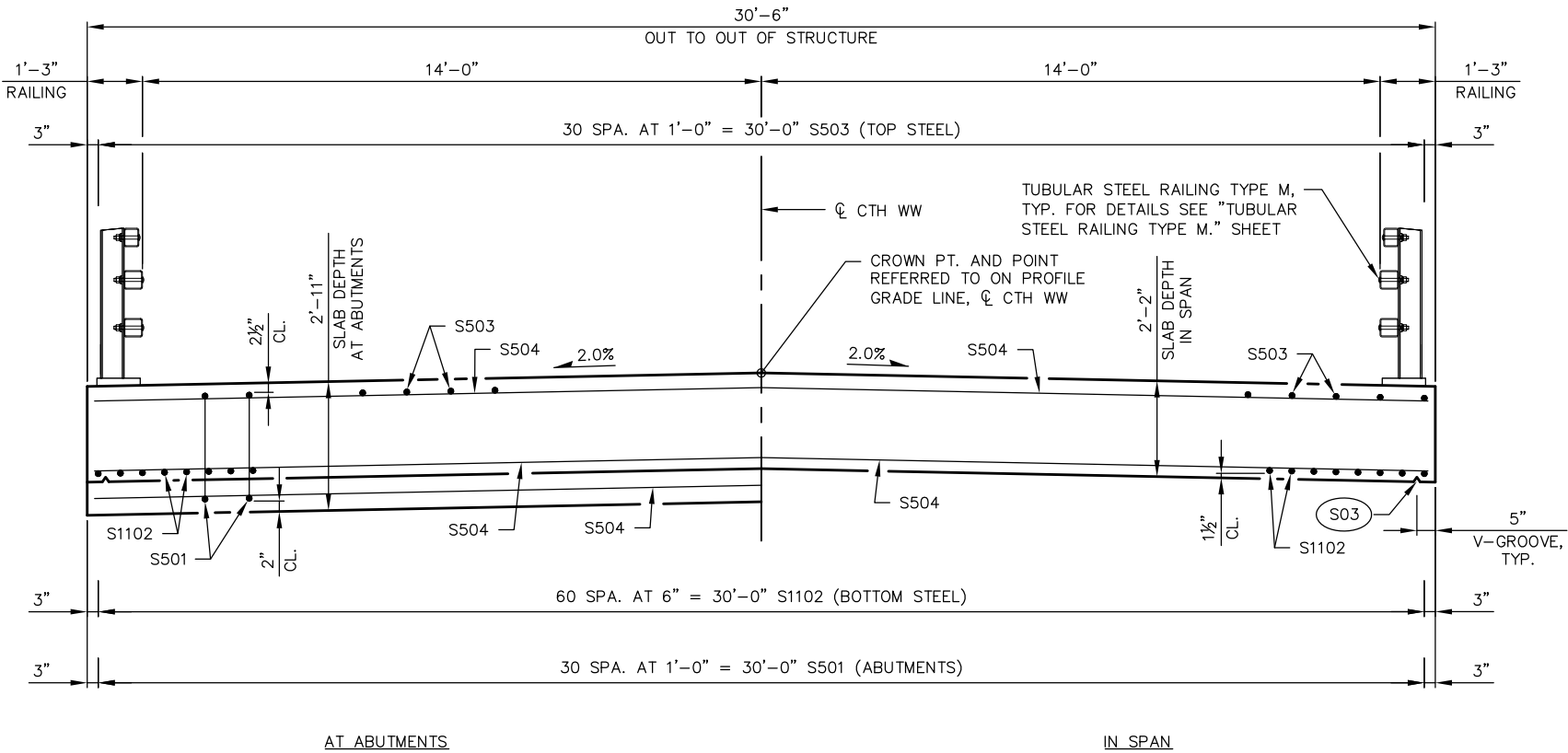
COATED = 23,080 LBS.

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
S501	62		7'-9"	X		SLAB AT ABUTMENT - TIES LONGIT.
S1102	61		48'-2"			SLAB - BOTTOM LONGIT.
S503	31		48'-2"			SLAB - TOP LONGIT.
S504	126		30'-2"			SLAB - TOP & BOTTOM TRANS.
① S605	64		6'-0"			RAILING ANCHORS - INTERIOR POSTS LONGIT.
① S606	40		12'-0"	X		RAILING ANCHORS TRANS.
① S607	16		5'-10"	X		RAILING ANCHORS - END POSTS LONGIT.

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

ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

- ① SEE "SUPERSTRUCTURE" SHEET AND "TUBULAR STEEL RAILING TYPE M" SHEET FOR PLACEMENT.



AT ABUTMENTS

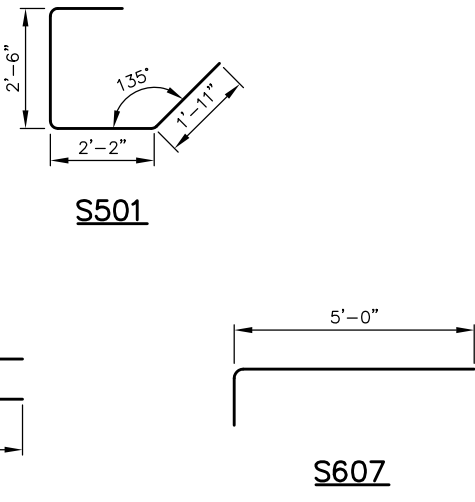
IN SPAN

CROSS SECTION THRU ROADWAY
(LOOKING NORTH)

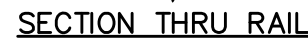
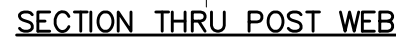
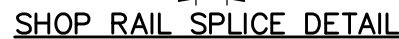
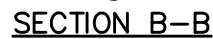
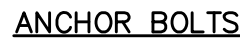
NOTES

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

- ① S03 3/4" V-GROOVE REQUIRED. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-62-257			
DRAWN BY JDO		PLANS CK'D CDS	
SUPERSTRUCTURE DETAILS			SHEET 7 OF 8



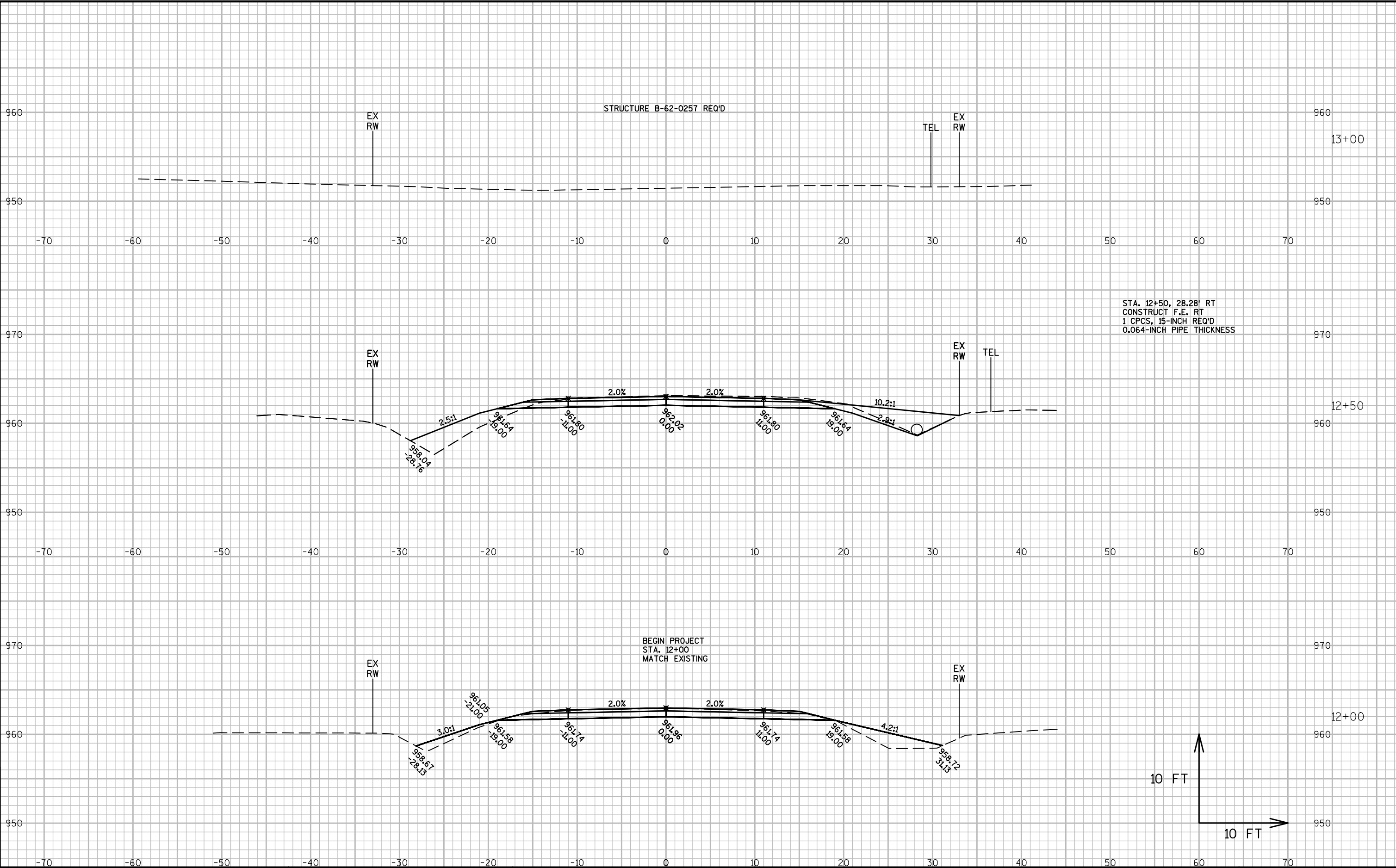
TYPICAL RAIL TO POST CONNECTIONS

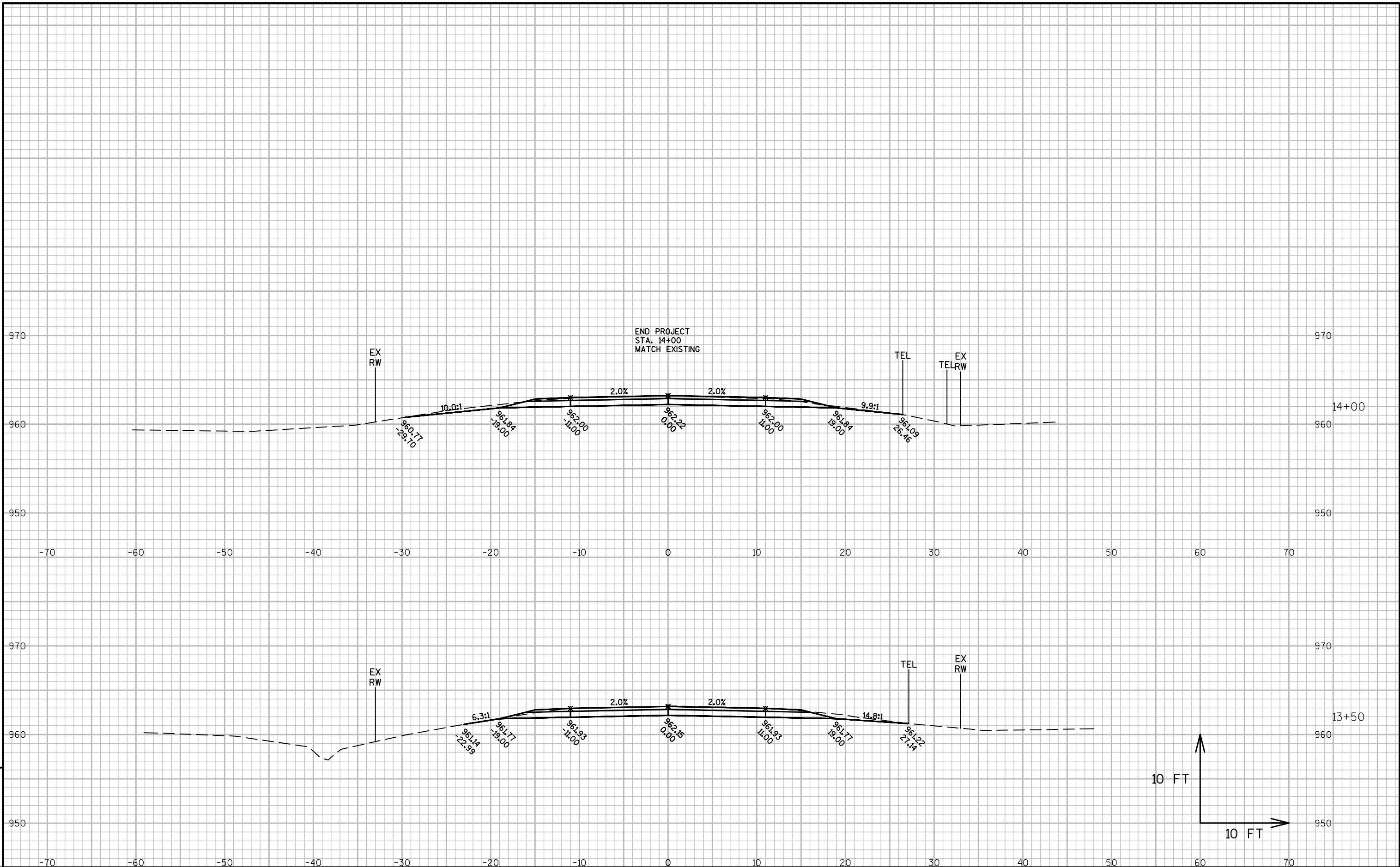


- ① W6 x 25 WITH 1½" x 1½" x 1½" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1¼" x 11¾" x 1'-8" WITH 1⅝" x 1⅝" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ③ ASTM A449 - 1½" 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 10¾" 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 ⅝" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1⅝" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- ⑤ TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑤A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑥ ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, ¾" x 1⅝" x 1⅝" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- ⑦ ½" THK. BACK-UP PLATE WITH 2 - ⅞" x 1½" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- ⑧ 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- ⑨ SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".
- ⑩ ⅝" x 3⅝" x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- ⑩A ⅝" x 2⅞" x 2'-4" PLATE USED IN NO. 5, ⅝" x 3⅝" x 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- ⑪ ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER. USE 1⅝" x 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 1⅝" x 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.
- ⑫ ⅞" DIA. x 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
- ⑬ ⅝" x 8" x 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- ⑭ ⅞" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- ⑮ 1" DIA. HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-62-257" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
10. SEE BRIDGE MANUAL 30.2 FOR ALLOWED USE.

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DRAWN BY		JDO	PLANS CK'D CDS
TUBULAR STEEL RAILING TYPE M			SHEET 8 OF 8





Notes



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