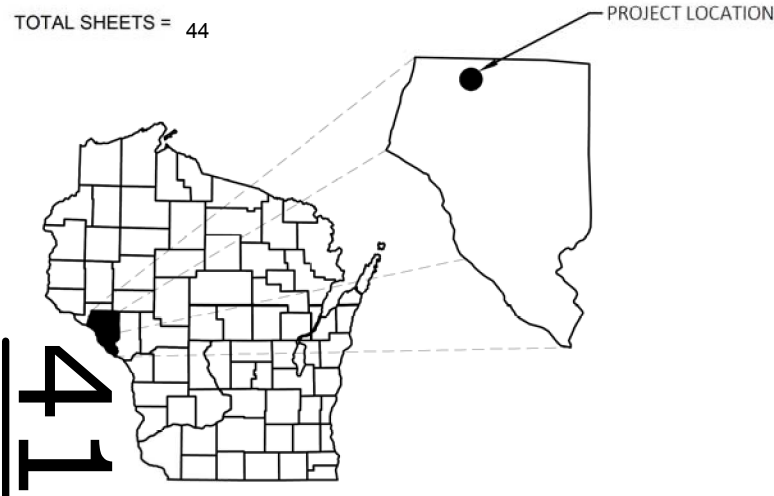


MARCH 2022  
ORDER OF SHEETS

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 Plat
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

## STH 37 - CTH JJ

TIFFANY CREEK BRIDGE B-06-0195

CTH J  
BUFFALO

STATE PROJECT NUMBER  
**7317-00-70**

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7317-00-70	WISC 2022258	1

ACCEPTED FOR  
BUFFALO COUNTY

8/3/21 *Blu Platte*  
Date (Signature of Title Official)  
Hwy Commissioner

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

WISCONSIN  
AARON B. PALMER  
E-35695  
RICHLAND CENTER, WI  
PROFESSIONAL ENGINEER

8-3-21 *Harvata*  
Date (Professional Engineer Signature)

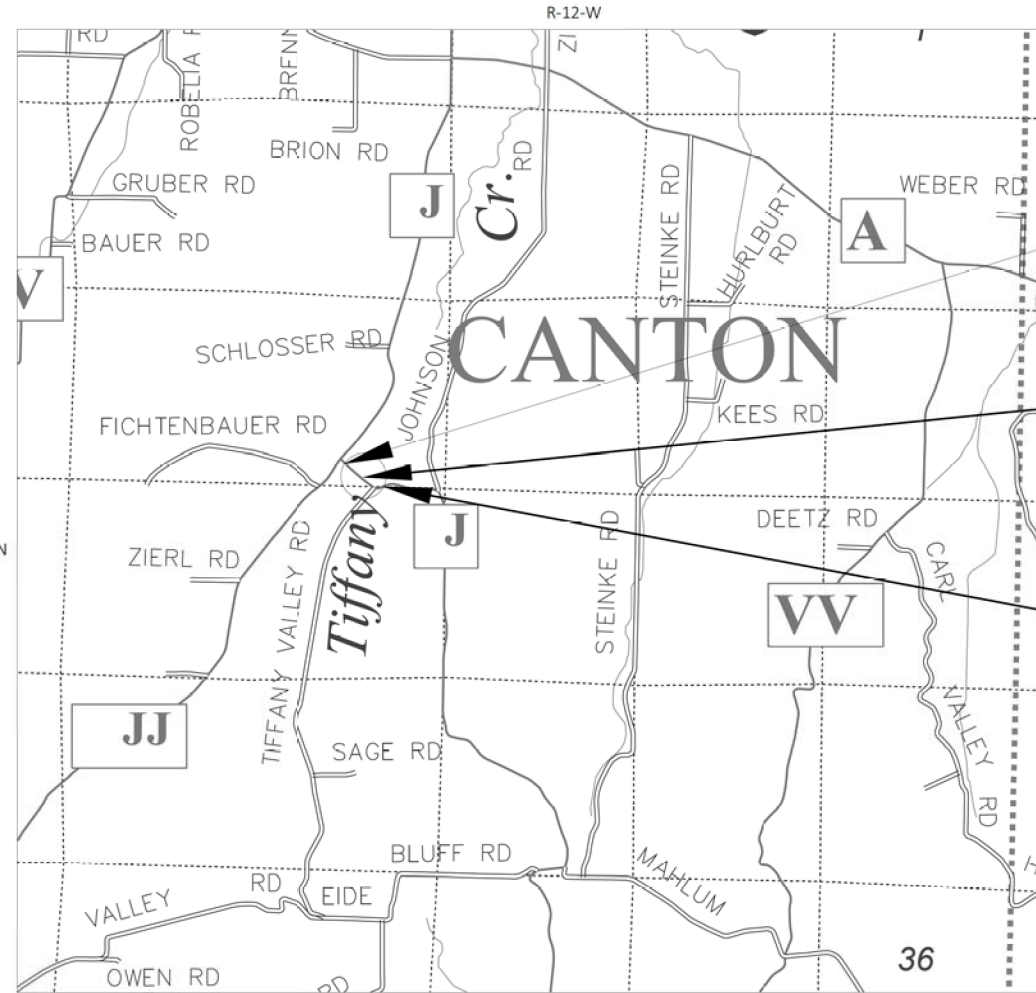
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor WESTBROOK ASSOCIATED ENGINEERS, INC  
Designer WESTBROOK ASSOCIATED ENGINEERS, INC  
Project Manager MATTHEW THORNSEN, PE  
Regional Examiner TOU YANG, PE  
Regional Supervisor TYLER RONGSTAD, PE

APPROVED FOR THE DEPARTMENT

DATE: 10/19/2021 *[Signature]*  
(Signature)



BEGIN PROJECT  
STA 9+38.06  
Y = 390 923.281  
X = 563 619.172

STRUCTURE  
B-06-0195

END PROJECT  
STA 10+76.60  
Y = 390 840.952  
X = 563 730.541

DESIGN DESIGNATION

A.A.D.T.	2022	=	87
A.A.D.T.	2042	=	91
D.H.V.		=	42
D.D.		=	60/40
T.		=	7.8
DESIGN SPEED		=	60
ESALS		=	15,000

CONVENTIONAL SYMBOLS

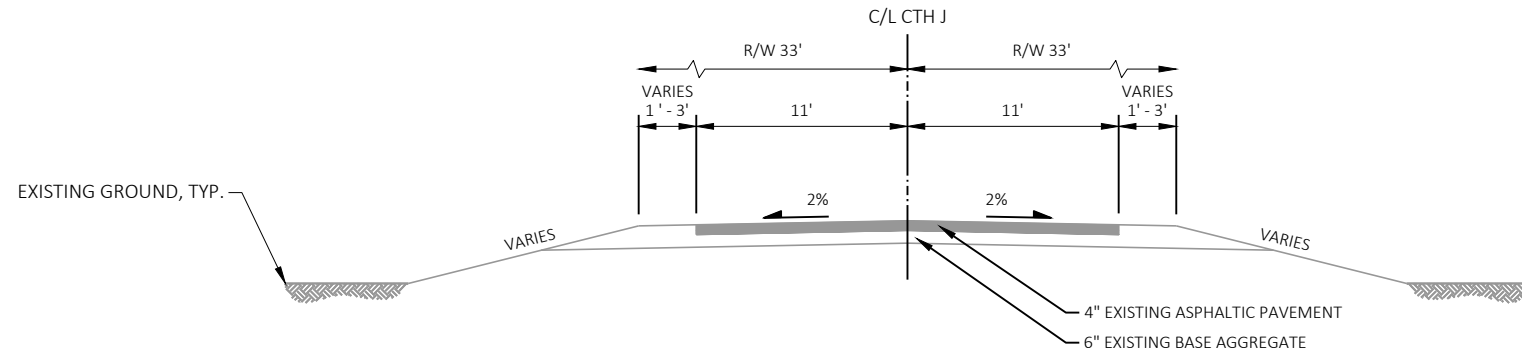
PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING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

LAYOUT

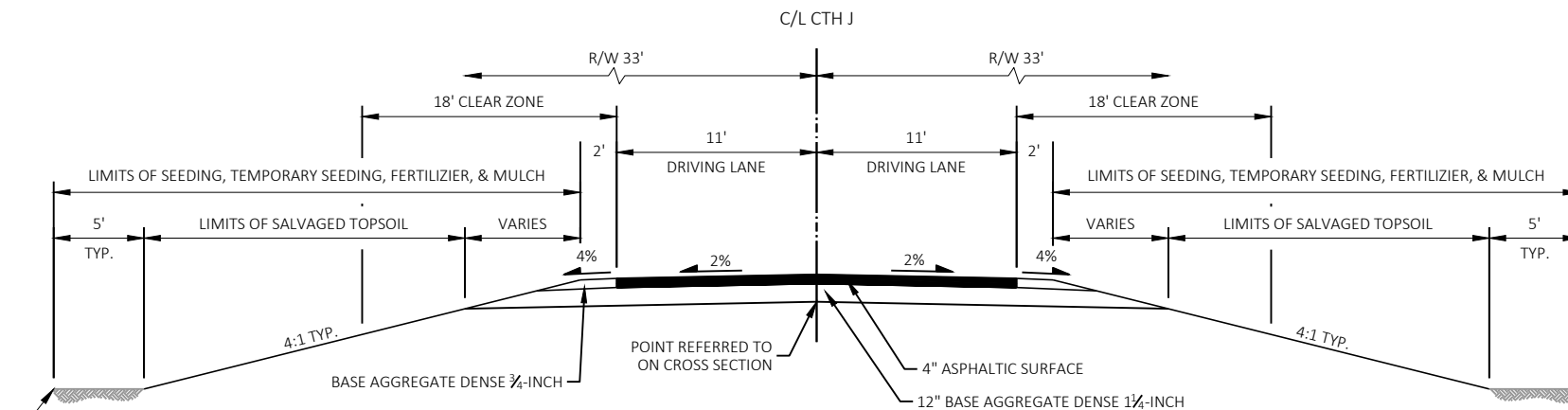
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.0262 MI

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



**EXISTING TYPICAL SECTION - CTH J**  
STA. 9+38.06 - 10+76.60



**PROPOSED TYPICAL SECTION - CTH J**  
STA. 9+38.06 - 10+76.60

**RUNOFF COEFFICIENT TABLE**

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

TOTAL PROJECT AREA = 0.21 ACRES  
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.18 ACRES

**GENERAL NOTES**

- EROSION CONTROL ITEMS TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. SILT FENCE AND TURBIDITY BARRIER SHALL BE IN PLACE PRIOR TO CONSTRUCTION.
- 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 AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, TEMPORARY SEEDED, AND MULCHED AS DIRECTED BY THE ENGINEER.
- NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEERS.
- ACCESS TO FIELD ENTRANCES SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT.
- WETLANDS ARE PRESENT IN THE LOCATIONS SHOWN ON THE PLANS. DO NOT STORE MATERIALS OR 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.
- 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.
- D.O.T. MONUMENT IS TO BE FURNISHED BY THE STATE AND PLACED BY THE CONTRACTOR IN THE SAME WING THAT THE PROPOSED NAME PLATE WILL BE PLACED, AS DIRECTED BY THE ENGINEER.
- COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), BUFFALO COUNTY, HORIZONTAL DATUM NAD83 (2011), ELEVATION DATUM NAVD88 (2012).
- THE 4-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED USING A 2 1/4-INCH LOWER LAYER OF 19 MM NOMINAL SIZE AGGREGATE AND A 1 3/4-INCH UPPER LAYER OF 12.5 MM NOMINAL SIZE AGGREGATE.
- ASPHALTIC SURFACE CALCULATIONS ARE BASED ON 112 LB/SY/IN.

**ORDER OF SECTION 2 SHEETS**

GENERAL NOTES & TYPICAL SECTIONS  
STREAM REALIGNMENT DETAILS  
TRAFFIC CONTROL PLAN

**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

**WDNR LIAISON**

DNR WEST CENTRAL REGION HQ  
1300 WEST CLAIREMONT AVENUE  
EAU CLAIRE, WI 54701

ATTN: AMY LESIK  
PH: (715) 836-6571  
AmyL.Lesik@wisconsin.gov

**COUNTY LIAISON**

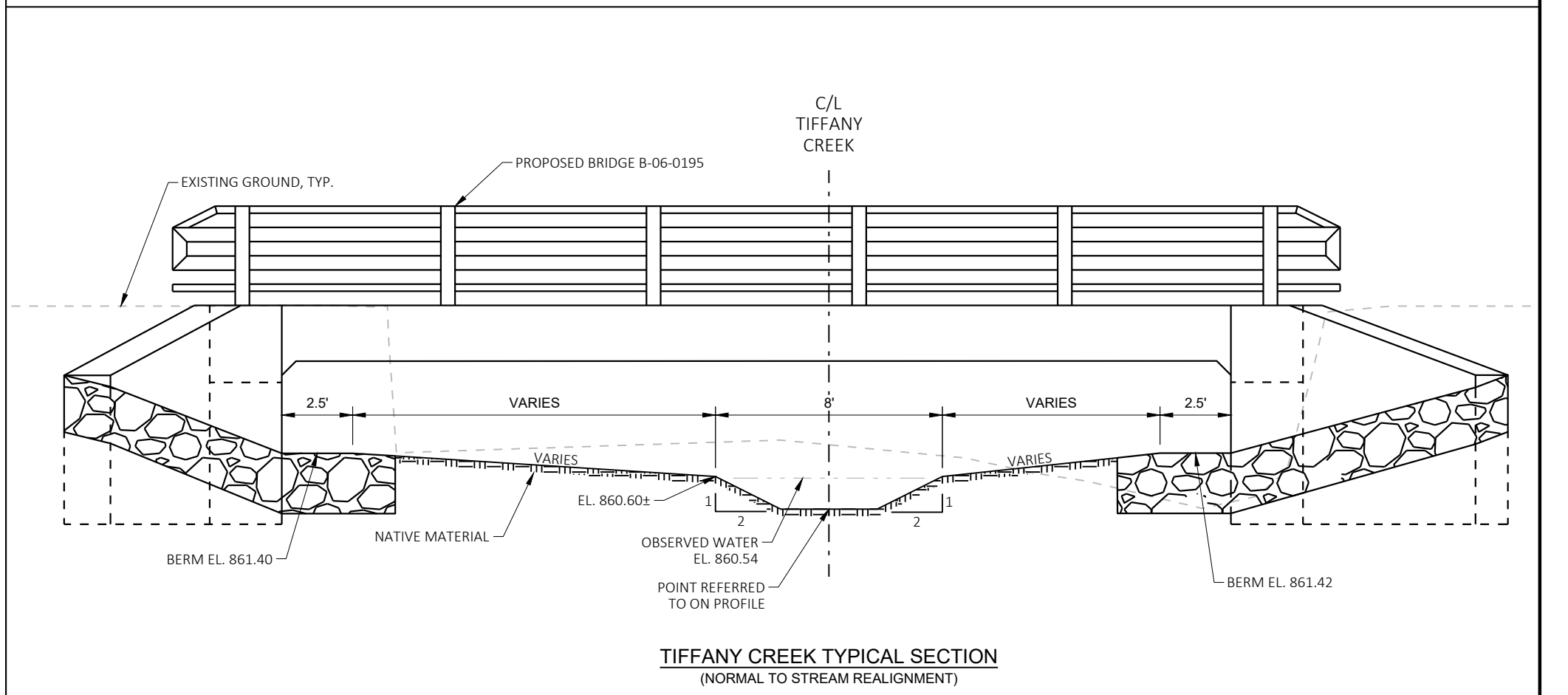
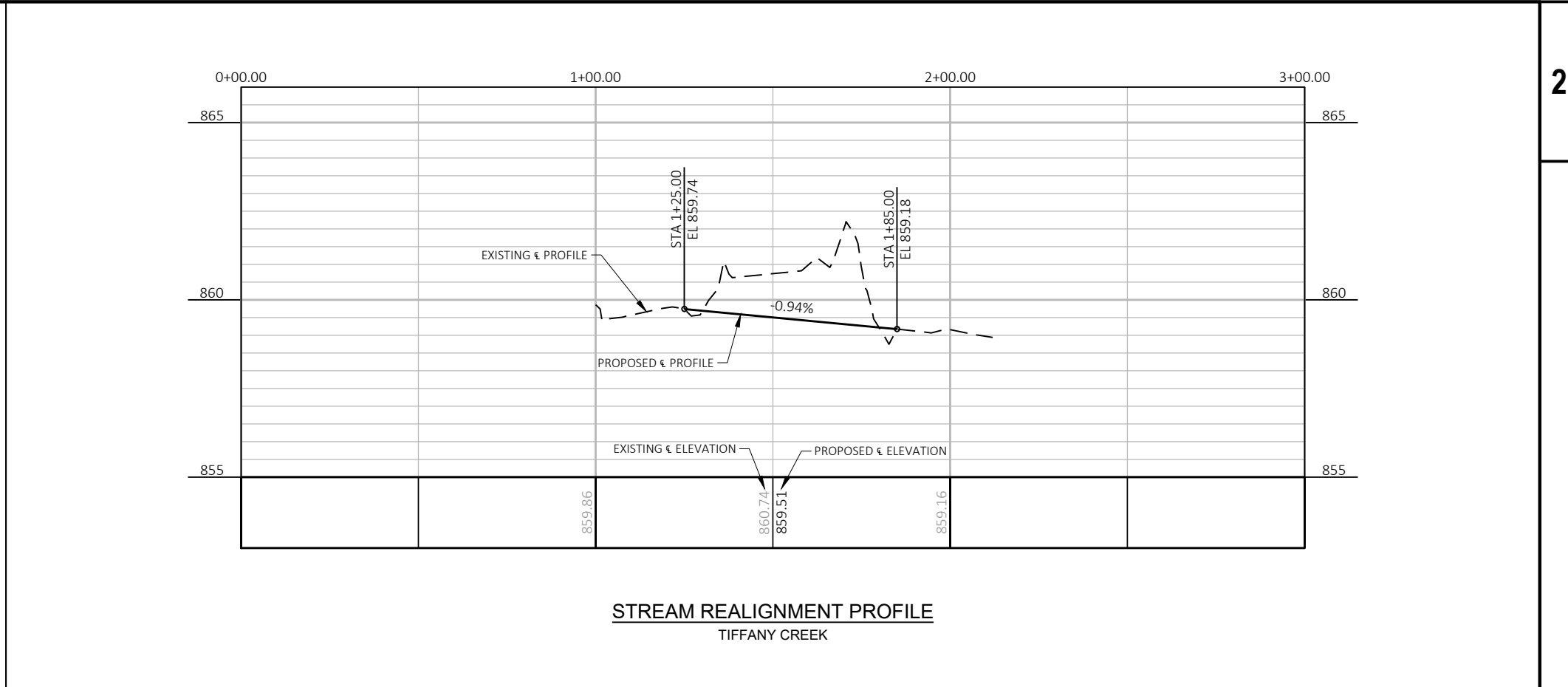
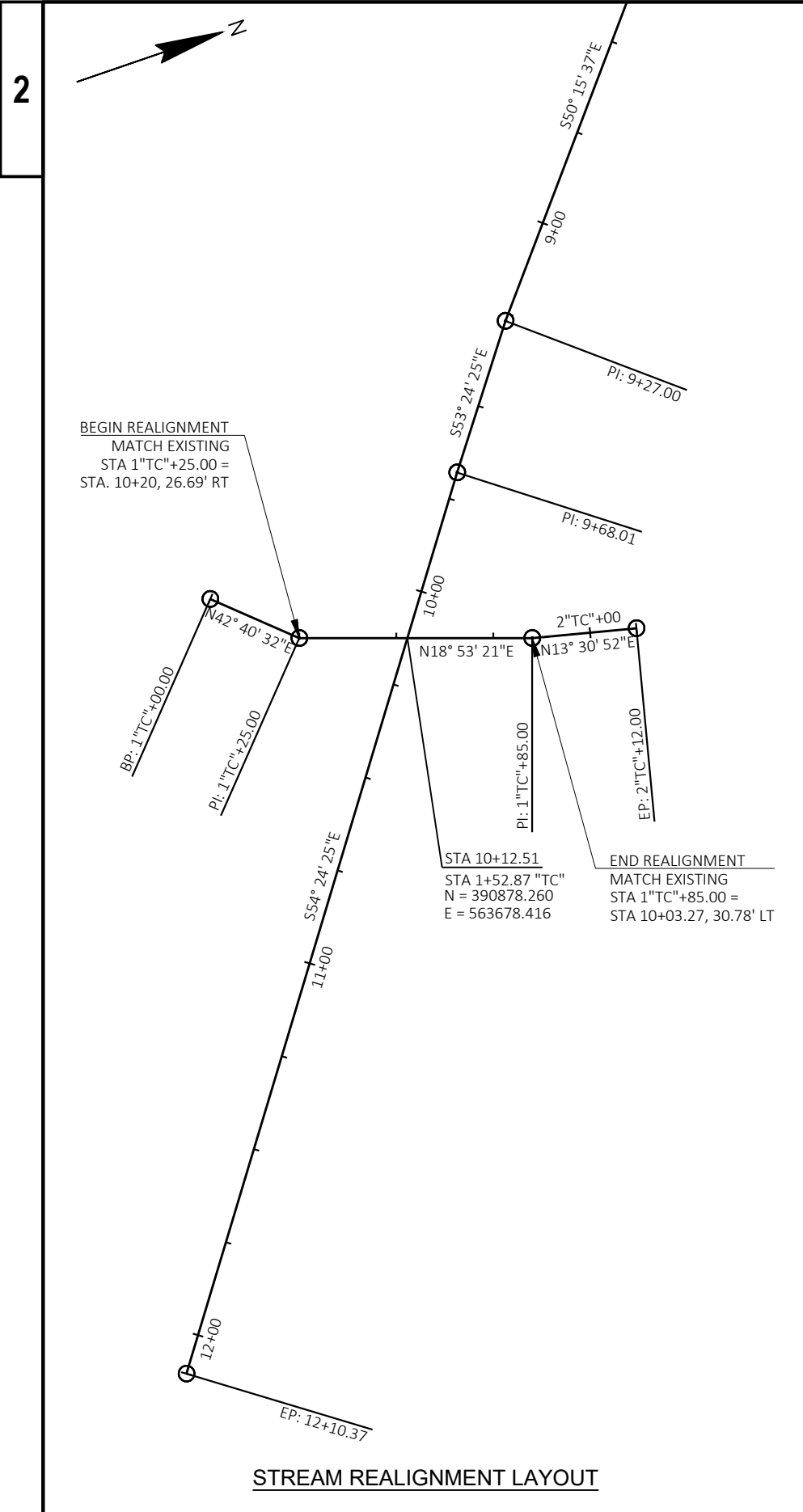
ALMA HIGHWAY SHOP  
S1672 STH 37  
ALMA, WI 54610

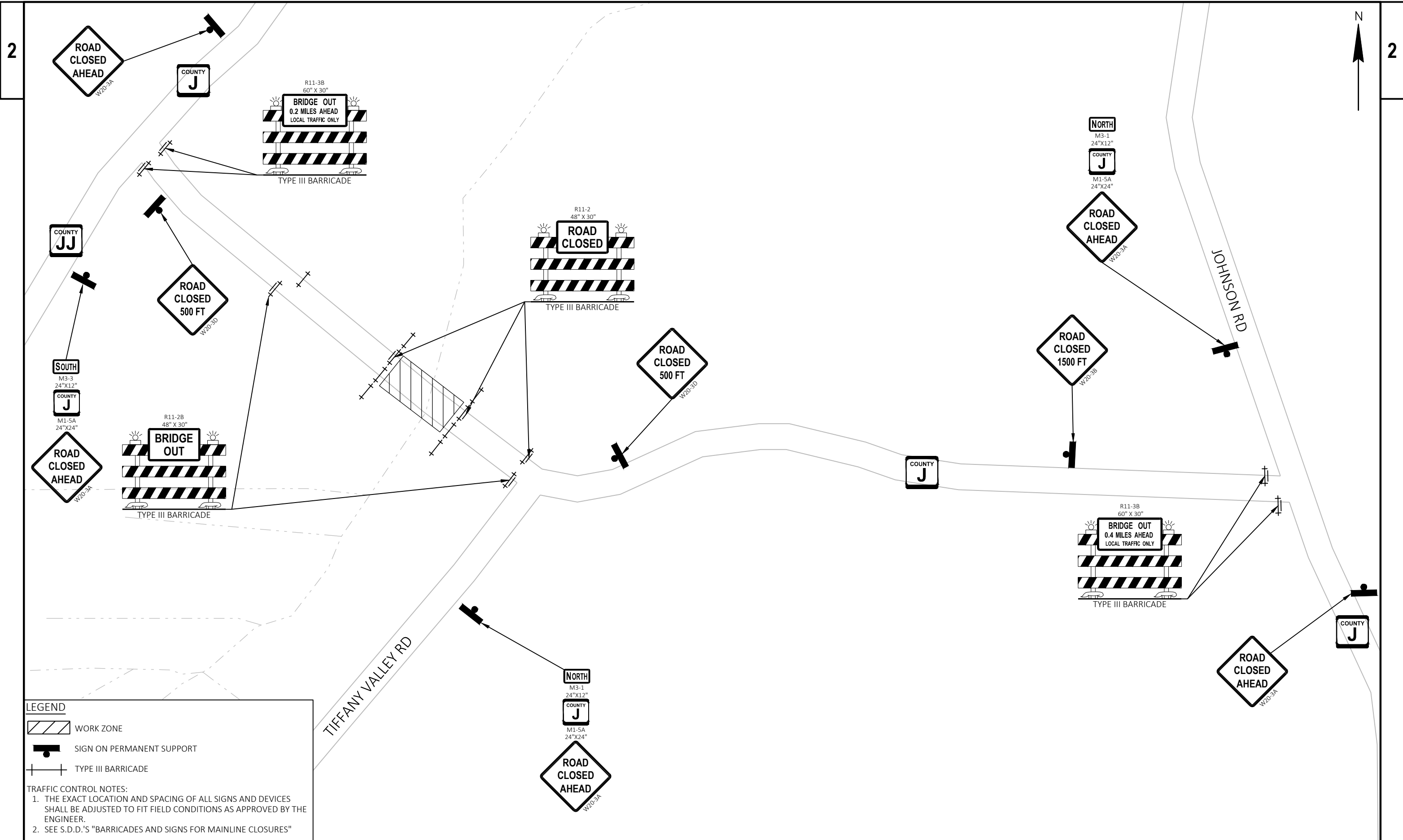
ATTN: BOB PLATTETER  
ATTO: (608) 685-6226  
Bob.Platteter@co.buffalo.wi.us

**STANDARD ABBREVIATIONS**

AADT	ANNUAL AVERAGE DAILY TRAFFIC	L.F.	LINEAR FEET	REQ'D	REQUIRED
AAG.	AGGREGATE	L.H.F.	LEFT HAND FORWARD	RT.	RIGHT
B.M.	BENCH MARK	L.S.	LUMP SUM	R/W	RIGHT-OF-WAY
C OR CL	CENTERLINE	LT.	LEFT	RD.	ROAD
CR.	CRUSHED	MAX.	MAXIMUM	RDWY.	ROADWAY
C.T.H.	COUNTY TRUNK HIGHWAY	MIN.	MINIMUM	S.	SOUTH
CWT.	HUNDREDWEIGHT	N.	NORTH	SE	SOUTHEAST
C.Y.	CUBIC YARD	NOR.	NORMAL	SE	SHRINKAGE
D.H.	DOUBLE HEADED	PAVT.	PAVEMENT	S.R.	SIDE ROAD
D.H.V.	DESIGN HOURLY VOLUME	P.C.	POINT OF CURVE	STD.	STANDARD
DIR.	DIRECTED	P.I.	POINT OF INTERSECTION	S.T.H.	STATE TRUNK HIGHWAY
E.	EAST	P.E.	PRIVATE ENTRANCE	STA.	STATION
COR.	CORNER	P.K.	PARKER-KALON NAIL	S.Y.	SQUARE YARD
EL. OR ELEV.	ELEVATION	P OR PL	PROPERTY LINE	T	TANGENT LENGTH OF CURVE
F.E.	FIELD ENTRANCE	P.P.	POWER POLE	T	TRANSIT LINE
FT.	FOOT (FEET)	PROJ.	PROJECT	UNCL.	UNCLASSIFIED EXCAVATION
GAL.	GALLON	P.T.	POINT OF TANGENCY	V.	DESIGN SPEED
H.W.	HIGH WATER	PVMT.	PAVEMENT	V.C.	VERTICAL CURVE
IN.	INCHES	R.	RADIUS	VAR.	VARIABLE
K	SIGHT DISTANCE	R.R.	RAILROAD	W.	WEST
L.	LENGTH OF CURVE	REINF.	REINFORCED		







**LEGEND**

WORK ZONE

SIGN ON PERMANENT SUPPORT

TYPE III BARRICADE

**TRAFFIC CONTROL NOTES:**

1. THE EXACT LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
2. SEE S.D.D.'S "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"

PROJECT NO: 7317-00-70	HWY: CTH J	COUNTY: BUFFALO	TRAFFIC CONTROL PLAN	SHEET	E
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Estimate Of Quantities

7317-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-06-0096	EACH	1.000	1.000
0004	205.0100	Excavation Common	CY	157.000	157.000
0006	206.1000	Excavation for Structures Bridges (structure) 01. B-06-195	LS	1.000	1.000
0008	210.1500	Backfill Structure Type A	TON	280.000	280.000
0010	213.0100	Finishing Roadway (project) 01. 7317-00-70	EACH	1.000	1.000
0012	305.0110	Base Aggregate Dense 3/4-Inch	TON	14.000	14.000
0014	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	250.000	250.000
0016	455.0605	Tack Coat	GAL	18.000	18.000
0018	465.0105	Asphaltic Surface	TON	58.000	58.000
0020	502.0100	Concrete Masonry Bridges	CY	129.000	129.000
0022	502.3200	Protective Surface Treatment	SY	178.000	178.000
0024	505.0400	Bar Steel Reinforcement HS Structures	LB	4,400.000	4,400.000
0026	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	16,590.000	16,590.000
0028	513.7084	Railing Steel Type NY4	LF	83.000	83.000
0030	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0032	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	770.000	770.000
0034	606.0300	Riprap Heavy	CY	50.000	50.000
0036	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	150.000	150.000
0038	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7317-00-70	EACH	1.000	1.000
0040	619.1000	Mobilization	EACH	1.000	1.000
0042	624.0100	Water	MGAL	2.600	2.600
0044	625.0500	Salvaged Topsoil	SY	310.000	310.000
0046	627.0200	Mulching	SY	430.000	430.000
0048	628.1504	Silt Fence	LF	355.000	355.000
0050	628.1520	Silt Fence Maintenance	LF	710.000	710.000
0052	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0054	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0056	628.2008	Erosion Mat Urban Class I Type B	SY	120.000	120.000
0058	628.6005	Turbidity Barriers	SY	113.000	113.000
0060	629.0210	Fertilizer Type B	CWT	0.380	0.380
0062	630.0130	Seeding Mixture No. 30	LB	12.000	12.000
0064	630.0200	Seeding Temporary	LB	18.000	18.000
0066	630.0500	Seed Water	MGAL	9.500	9.500
0068	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0070	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0072	638.2602	Removing Signs Type II	EACH	4.000	4.000
0074	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0076	642.5001	Field Office Type B	EACH	1.000	1.000
0078	643.0420	Traffic Control Barricades Type III	DAY	1,260.000	1,260.000
0080	643.0705	Traffic Control Warning Lights Type A	DAY	2,520.000	2,520.000
0082	643.0900	Traffic Control Signs	DAY	1,610.000	1,610.000
0084	643.5000	Traffic Control	EACH	1.000	1.000
0086	645.0111	Geotextile Type DF Schedule A	SY	66.000	66.000
0088	645.0120	Geotextile Type HR	SY	134.000	134.000
0090	650.4500	Construction Staking Subgrade	LF	100.000	100.000
0092	650.5000	Construction Staking Base	LF	100.000	100.000
0094	650.6500	Construction Staking Structure Layout (structure) 01. B-06-0195	LS	1.000	1.000
0096	650.9910	Construction Staking Supplemental Control (project) 01. 7317-00-70	LS	1.000	1.000
0098	650.9920	Construction Staking Slope Stakes	LF	100.000	100.000

Estimate Of Quantities

7317-00-70

Line	Item	Item Description	Unit	Total	Qty
0100	690.0150	Sawing Asphalt	LF	44.000	44.000
0102	715.0502	Incentive Strength Concrete Structures	DOL	774.000	774.000
0104	999.2005.S	Maintaining Bird Deterrent System (station) 01. 10+14	EACH	1.000	1.000
0106	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0108	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000
0110	SPV.0060	Special 01. Stream Realignment Structure B-06-0195	EACH	1.000	1.000

NOTE:  
ALL ITEMS CATEGORY 0010  
UNLESS OTHERWISE NOTED.

**EARTHWORK SUMMARY**

STATION - STATION	LOCATION	COMMON EXCAVATION (1) (ITEM # 205.0100)	SALVAGED / UNUSABLE PAVEMENT MATERIAL (3)	AVAILABLE MATERIAL (4)	UNEXPANDED FILL	EXPANDED FILL (5) FACTOR 1.25	MASS ORDINATE +/- (6)	COMMENT:
		CUT (2)						
9+38 - 9+88	WEST APPROACH	80	18	62	29	36	26	
10+27 - 10+77	EAST APPROACH	77	18	59	23	29	30	
TOTALS		157	36	121	52	65	56	

- 1) COMMON EXCAVATION IS THE CUT. ITEM # 205.0100.
- 2) SALVAGED/UNUSABLE MATERIAL IS INCLUDED IN CUT.
- 3) SALVAGED/UNUSABLE MATERIAL INCLUDES ASPHALTIC PAVEMENT.
- 4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE MATERIAL
- 5) EXPANDED FILL FACTOR = 1.25: EXPANDED FILL = (UNEXPANDED FILL)\*1.25
- 6) THE MASS ORDINATE + OR - CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL

**BASE AGGREGATE DENSE**

STATION - STATION	LOCATION	305.0110 3/4-INCH SHLD. (TON)	305.0120 1 1/4-INCH BASE (TON)	624.0100 WATER (MGAL)
		9+38 - 9+88	WEST APPROACH	7
10+27 - 10+77	EAST APPROACH	7	125	1.3
TOTALS		14	250	2.6

**ASPHALTIC ITEMS**

STATION - STATION	LOCATION	455.0600 TACK COAT (GAL)	465.0105 ASPHALTIC SURFACE (TON)
		9+38 - 9+88	MAINLINE
10+27 - 10+77	MAINLINE	9	29
TOTALS		18	58

**FINISHING ITEMS**

STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL (SY)	627.0200 MULCHING (SY)	628.2008 EROSION MAT URBAN CLASS I TYPE B (SY)	629.0210 FERTILIZER TYPE B (CWT)	630.0130 SEEDING MIX NO. 30 (LB)	630.0200 SEEDING TEMPORARY (LB)	630.0500 SEED WATER (MGAL)
		9+38 - 9+88	NORTHWEST	24	69	---	0.06	2
9+38 - 9+88	SOUTHWEST	54	101	---	0.06	2	3	1.8
10+27 - 10+77	NORTHEAST	30	88	---	0.06	2	3	1.5
10+27 - 10+77	SOUTHEAST	44	87	---	0.06	2	3	1.5
	STREAM REALIGNMENT	98	---	98	0.06	2	3	1.8
	UNDISTRIBUTED	60	85	22	0.08	2	4	1.7
TOTALS		310	430	120	0.38	12	18	9.5

**SILT FENCE**

STATION - STATION	LOCATION	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)
		9+38 - 9+88	MAINLINE, LT
9+38 - 9+88	MAINLINE, RT	85	170
10+27 - 10+77	MAINLINE, LT	75	150
10+27 - 10+77	MAINLINE, RT	60	120
	UNDISTRIBUTED	70	140
TOTALS		355	710

**TURBIDITY BARRIER**

LOCATION	628.6005 (SY)
WEST APPROACH	57
EAST APPROACH	56
TOTALS	113

**MOBILIZATIONS EROSION CONTROL**

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL (EACH)	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)
	ID 7317-00-70	4
TOTALS	4	2

**SIGNING**

STATION	LOCATION	SIGN CODE	634.0612 POSTS WOOD 4X6-INCH X 12-FT (EACH)	637.2230 SIGNS TYPE II REFLECTIVE TYPE F (SF)	638.2602 REMOVING SIGN TYPE II (EACH)	638.3000 REMOVING SMALL SIGN SUPPORTS (EACH)
			9+89	RT	W5-52R	1
9+83	LT	W5-52L	1	3	1	1
10+26	LT	W5-52L	1	3	1	1
10+31	RT	W5-52R	1	3	1	1
TOTAL			4	12	4	4

PROJECT NO: 7317-00-70

HWY: CTH J

COUNTY: BUFFALO

MISCELLANEOUS QUANTITIES

SHEET

E

NOTE:  
ALL ITEMS CATEGORY 0010  
UNLESS OTHERWISE NOTED.

3

3

TRAFFIC CONTROL

LOCATION	DURATION	643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0900 TRAFFIC CONTROL SIGNS		643.5000 TRAFFIC CONTROL (EACH)
		(NO.)	(DAY)	(NO.)	(DAY)	(NO.)	(DAY)	
PROJECT	---	---	---	---	---	---	---	1
WEST	70	8	560	16	1120	9	630	---
EAST	70	8	560	16	1120	14	980	---
UNDISTRIBUTED	70	2	140	4	280	---	---	---
TOTAL		18	1260	36	2520	23	1610	1

PLACE TRAFFIC CONTROL IN ACCORDANCE WITH SDD 15C02 "BARRICADES AND SIGNS FOR MAINLINE CLOSURES".  
PLACEMENT SUBJECT TO ENGINEER APPROVAL.

CONSTRUCTION STAKING

STATION	-	STATION	LOCATION	650.4500	650.5000	650.6500	650.9910	650.992
				SUBGRADE (LF)	BASE (LF)	STRUCTURE LAYOUT 01. B-06-0195 (LS)	SUPPLEMENTAL CONTROL (LS)	SLOPE STAKES (LF)
9+38	-	9+88	MAINLINE	50	50	---	---	50
10+27	-	10+77	MAINLINE	50	50	---	---	50
---	-	---	PROJECT	---	---	1	1	---
TOTALS				100	100	1*	1	100

\* CATEGORY 0020

SAWING ASPHALT

STATION	LOCATION	690.0150 (LF)
9+38	MAINLINE	22
10+77	MAINLINE	22
TOTAL		44

PROJECT NO: 7317-00-70

HWY: CTH J

COUNTY: BUFFALO

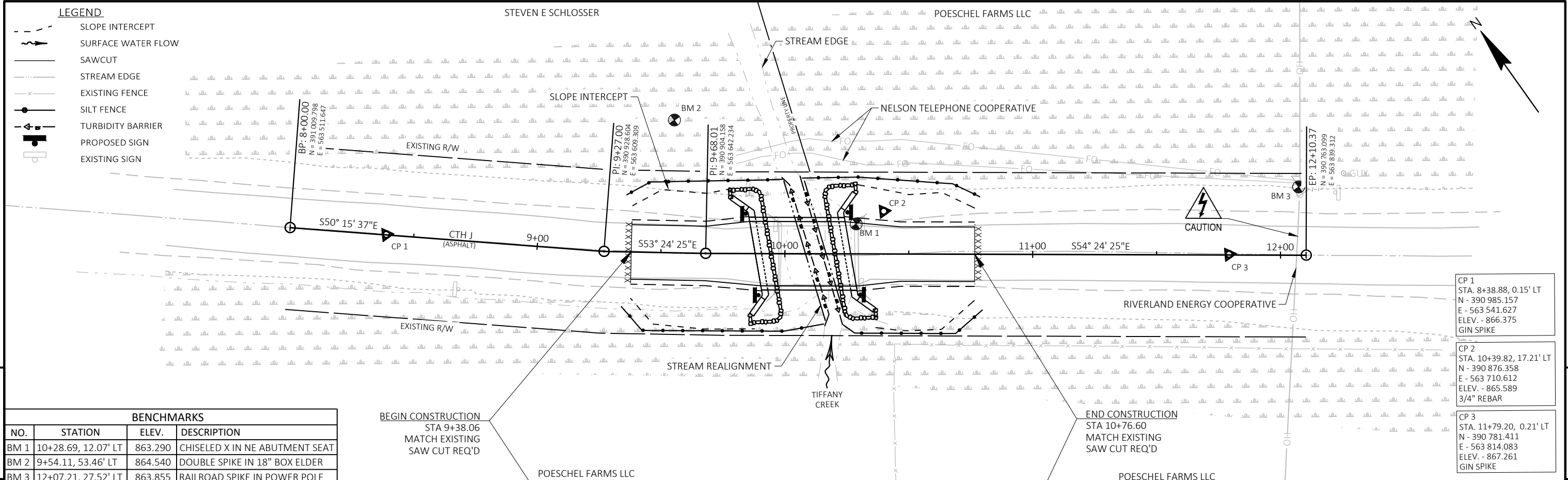
MISCELLANEOUS QUANTITIES

SHEET

E

**LEGEND**

- SLOPE INTERCEPT
- SURFACE WATER FLOW
- SAWCUT
- STREAM EDGE
- EXISTING FENCE
- SILT FENCE
- TURBIDITY BARRIER
- PROPOSED SIGN
- EXISTING SIGN



**BENCHMARKS**

NO.	STATION	ELEV.	DESCRIPTION
BM 1	10+28.69, 12.07' LT	863.290	CHISELED X IN NE ABUTMENT SEAT
BM 2	9+54.11, 53.46' LT	864.540	DOUBLE SPIKE IN 18" BOX ELDER
BM 3	12+07.21, 27.52' LT	863.855	RAILROAD SPIKE IN POWER POLE

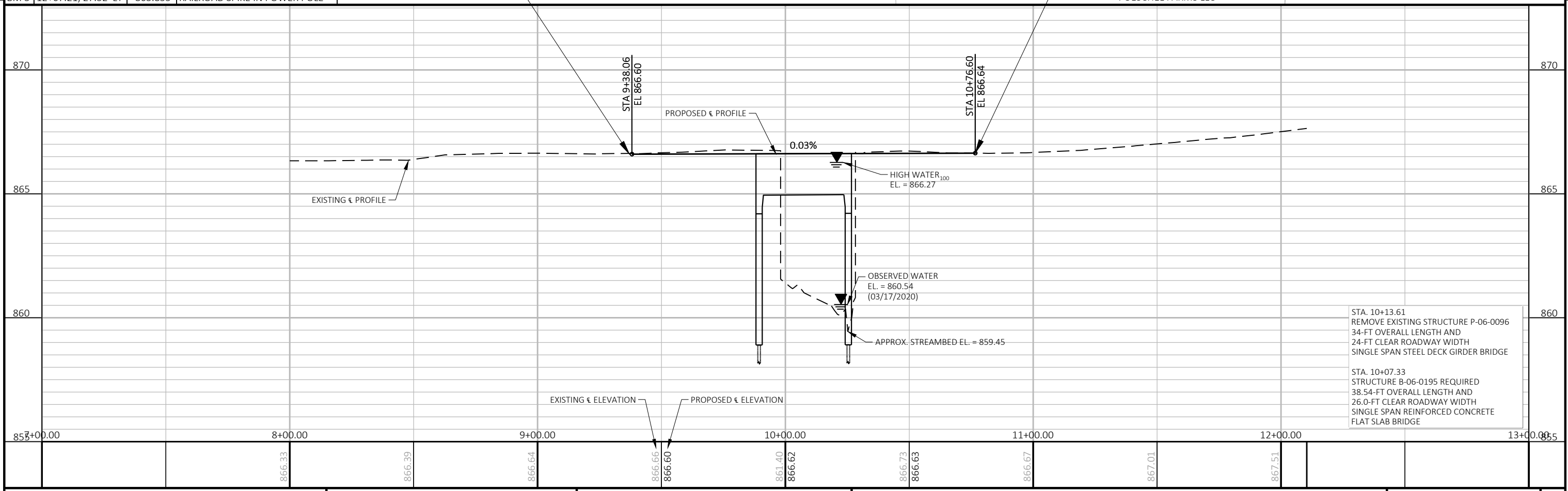
CP 1  
STA. 8+38.88, 0.15' LT  
N - 390 985.157  
E - 563 541.627  
ELEV. - 866.375  
GIN SPIKE

CP 2  
STA. 10+39.82, 17.21' LT  
N - 390 876.358  
E - 563 710.612  
ELEV. - 865.589  
3/4" REBAR

CP 3  
STA. 11+79.20, 0.21' LT  
N - 390 781.411  
E - 563 814.083  
ELEV. - 867.261  
GIN SPIKE

BEGIN CONSTRUCTION  
STA 9+38.06  
MATCH EXISTING  
SAW CUT REQ'D

END CONSTRUCTION  
STA 10+76.60  
MATCH EXISTING  
SAW CUT REQ'D



STA. 10+13.61  
REMOVE EXISTING STRUCTURE P-06-0096  
34-FT OVERALL LENGTH AND  
24-FT CLEAR ROADWAY WIDTH  
SINGLE SPAN STEEL DECK GIRDER BRIDGE

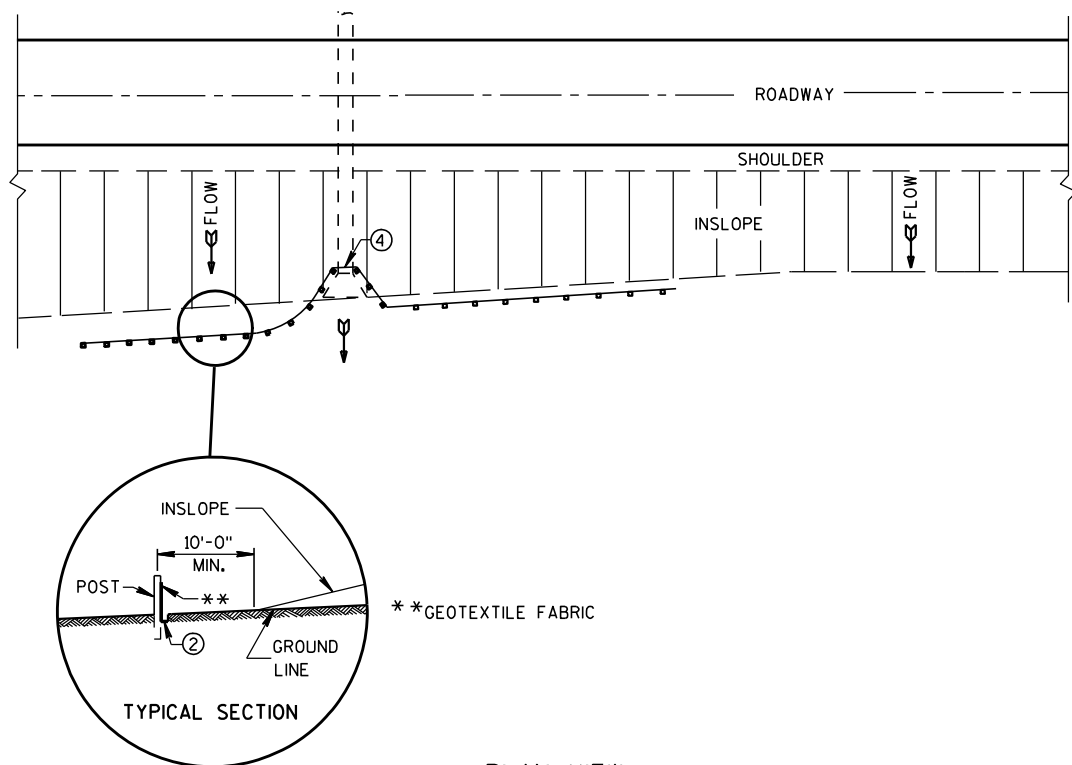
STA. 10+07.33  
STRUCTURE B-06-0195 REQUIRED  
38.54-FT OVERALL LENGTH AND  
26.0-FT CLEAR ROADWAY WIDTH  
SINGLE SPAN REINFORCED CONCRETE  
FLAT SLAB BRIDGE

PROJECT NO: 7317-00-70	HWY: CTH J	COUNTY: BUFFALO	PLAN AND PROFILE	SHEET	E
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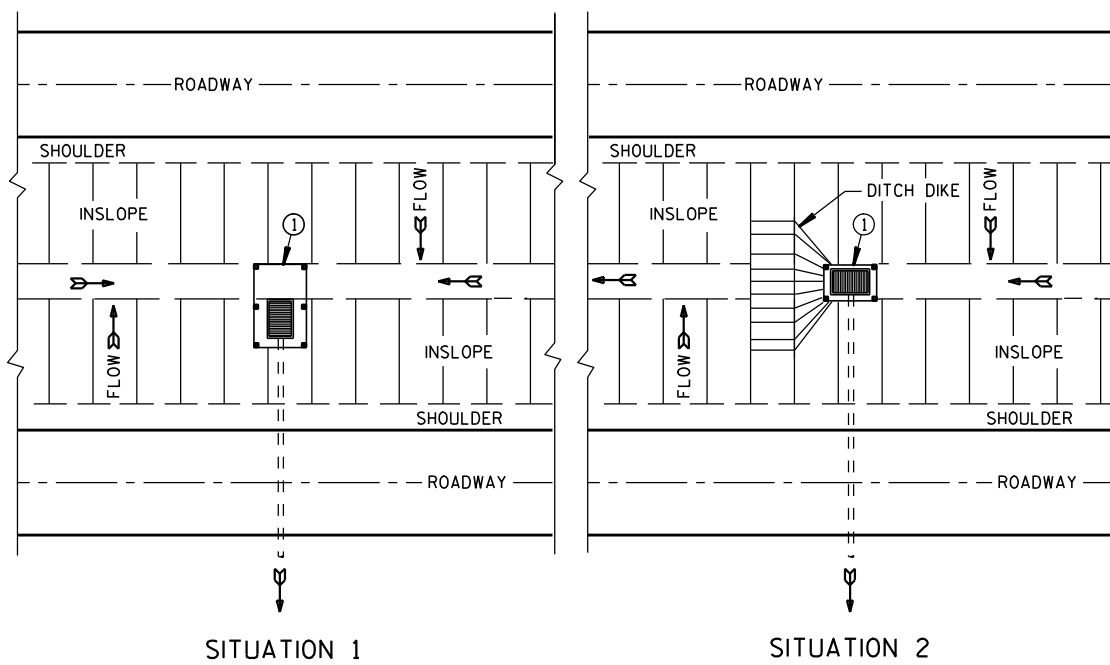
## Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS





PLAN VIEW  
TYPICAL APPLICATION OF SILT FENCE

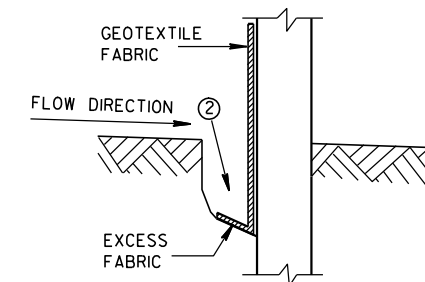


SITUATION 1      SITUATION 2  
PLAN VIEW  
SILT FENCE AT MEDIAN SURFACE DRAINS

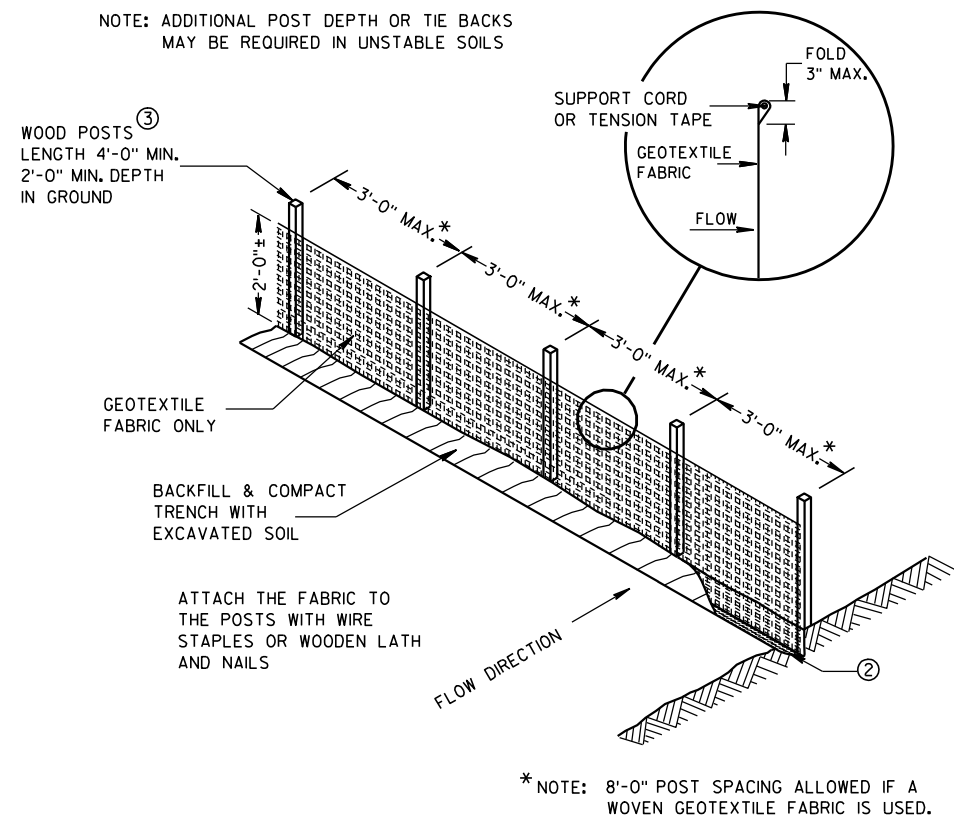
**GENERAL NOTES**

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

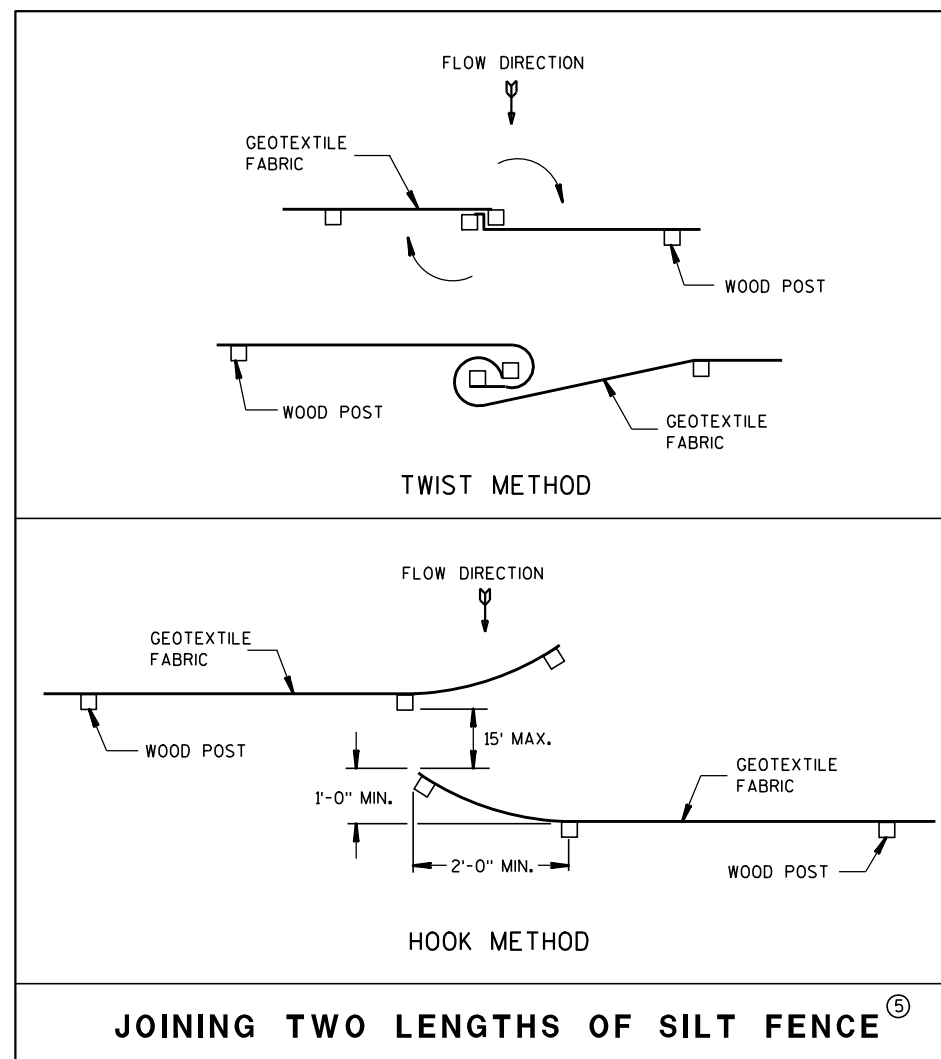
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



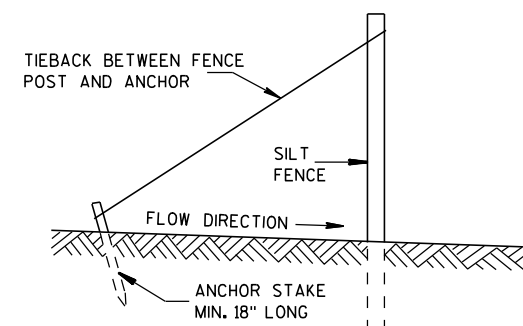
TRENCH DETAIL



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE ⑤

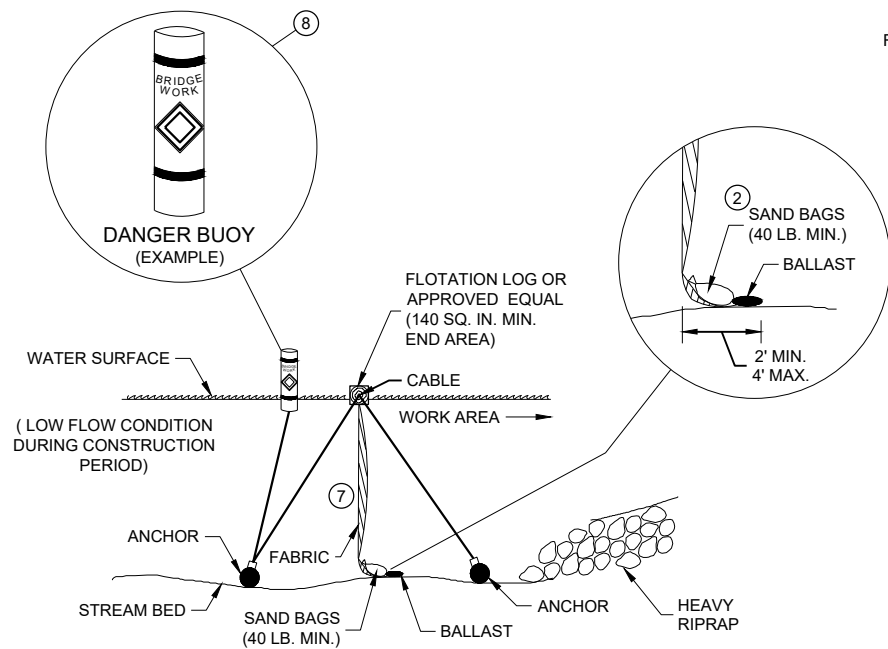


SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

**SILT FENCE**

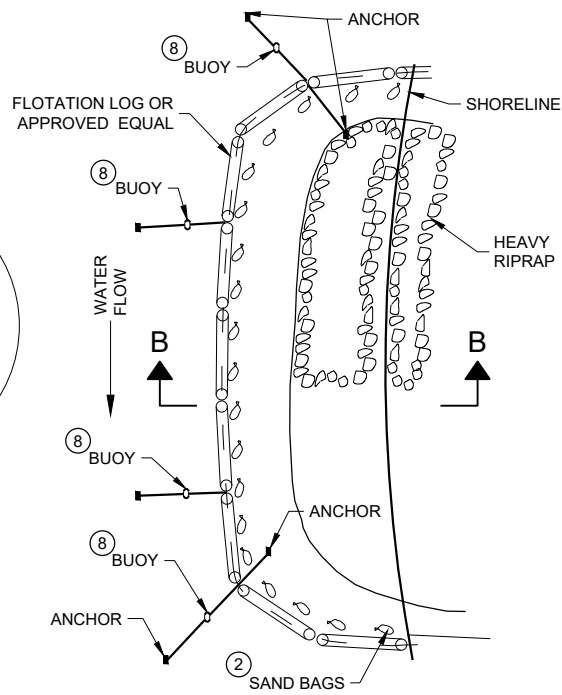
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

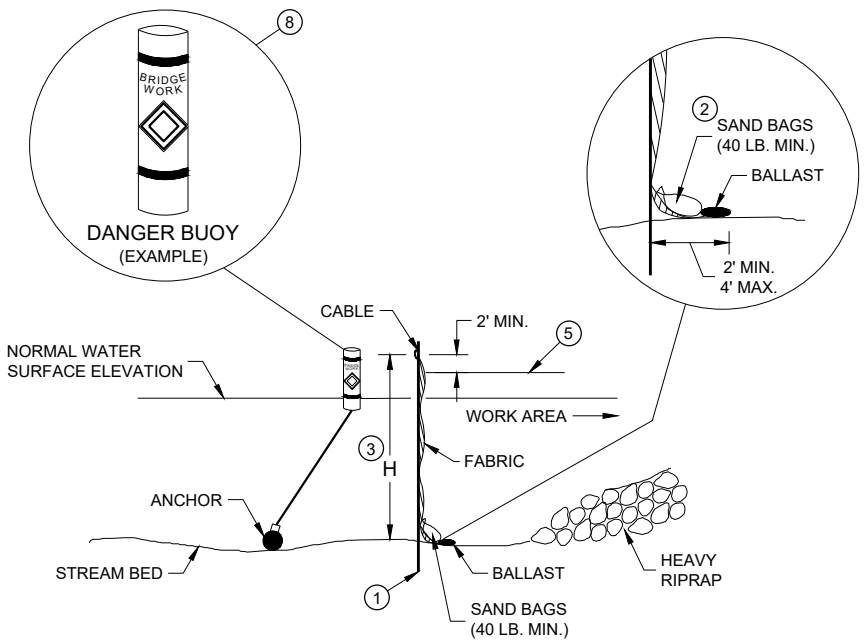


**SECTION B - B**

**TURBIDITY BARRIER - FLOAT ALTERNATIVE  
CAUTION - SEE NOTE 6**

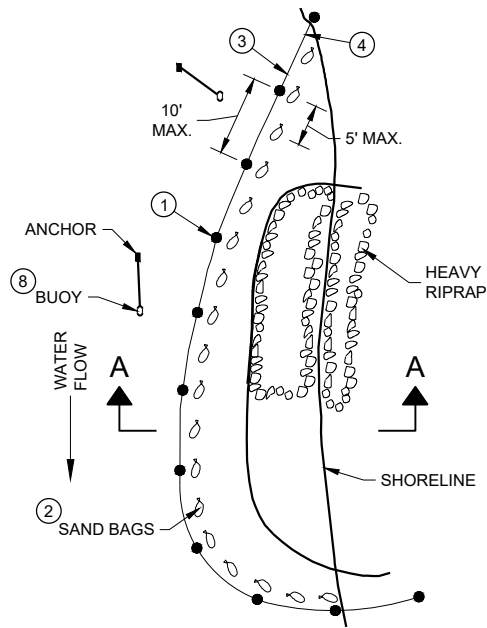


**PLAN VIEW**



**SECTION A - A**

**TURBIDITY BARRIER - STANDARD POST INSTALLATION**



**PLAN VIEW**

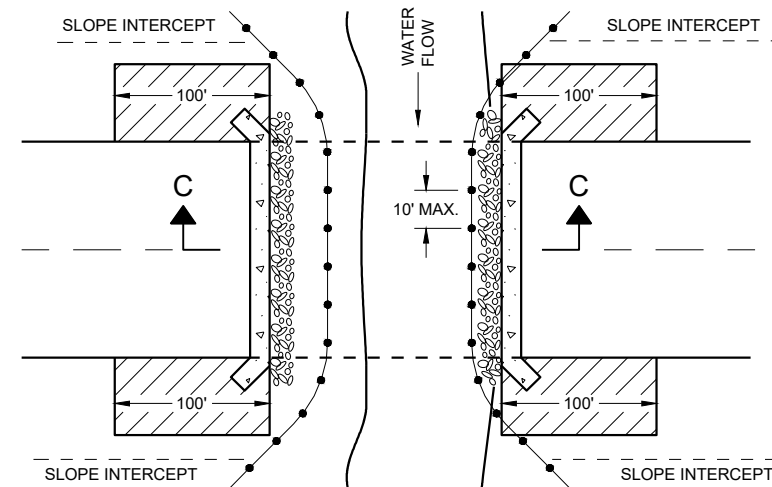
**TURBIDITY BARRIER PLACEMENT DETAILS**

**GENERAL NOTES**

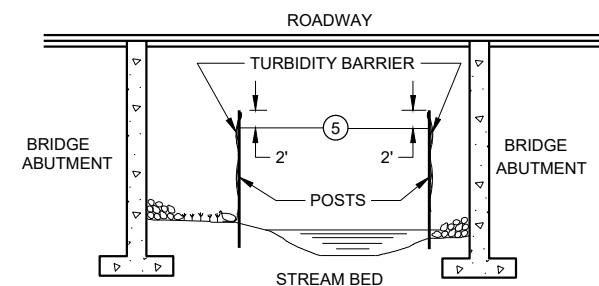
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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**

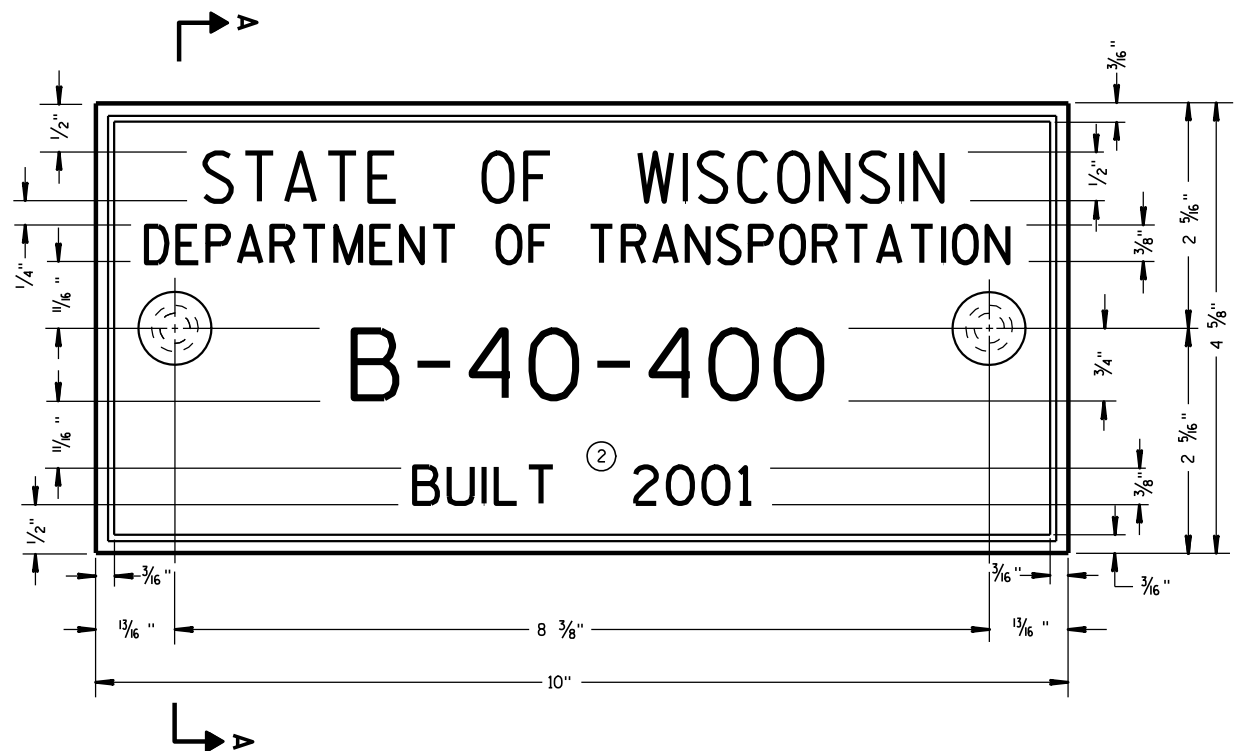
**TURBIDITY BARRIER DETAIL SHOWING  
TYPICAL PLACEMENT AT STRUCTURES**

**TURBIDITY BARRIER**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



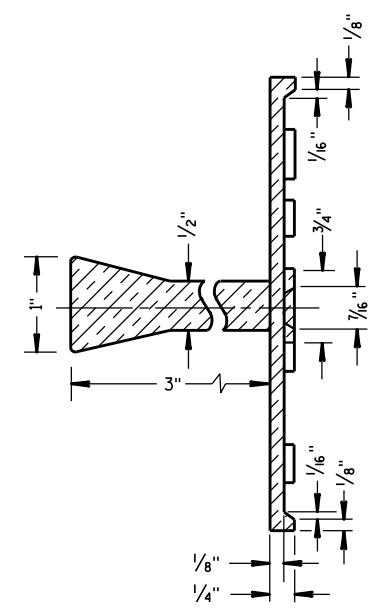
**TYPICAL NAME PLATE**  
(BRIDGES, CULVERTS, AND RETAINING WALLS)

**GENERAL NOTES**

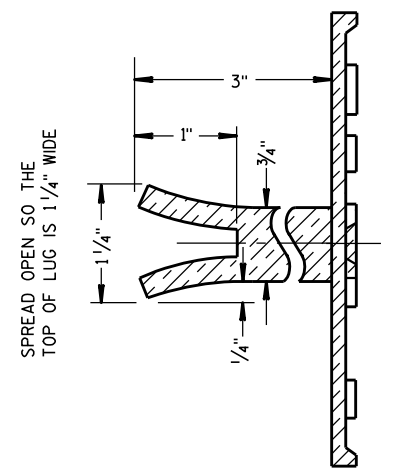
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.



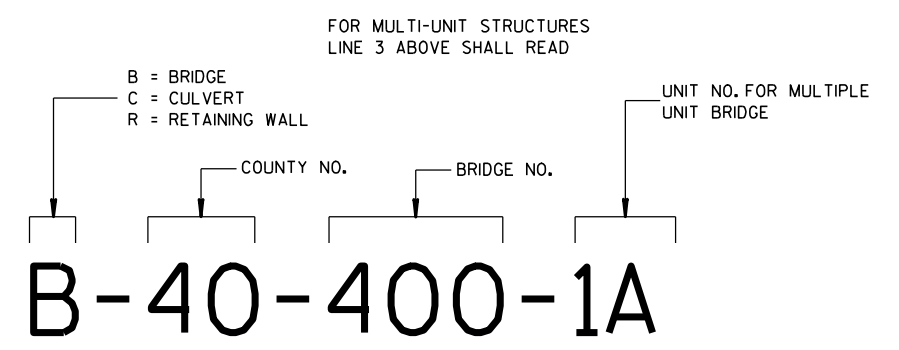
**SECTION A-A**



**ALTERNATE LUG**

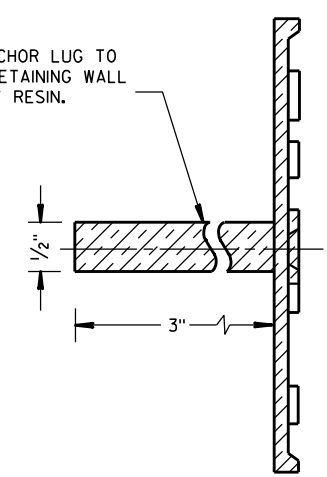
6

6



**NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES**

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

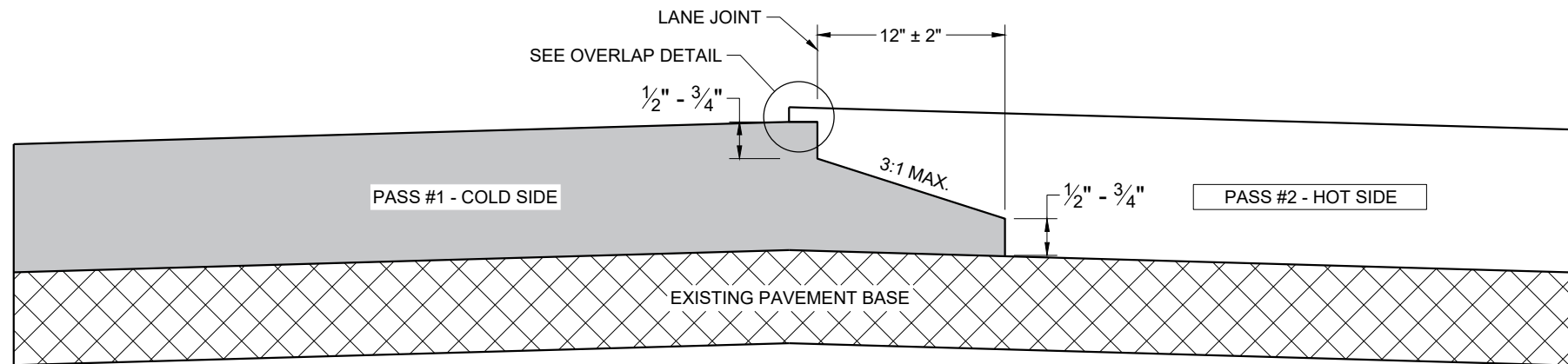


**ALTERNATE LUG**  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

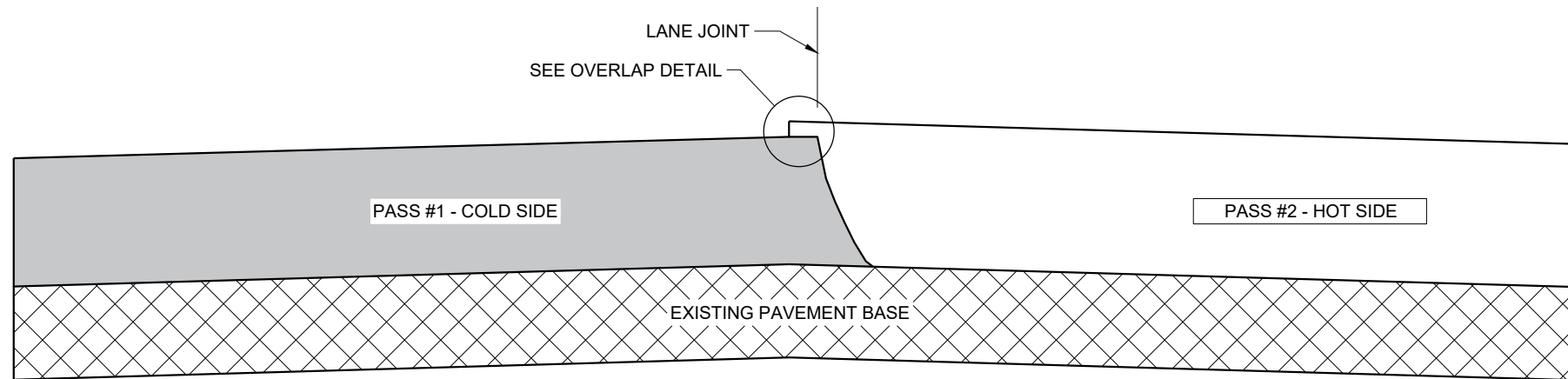
S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

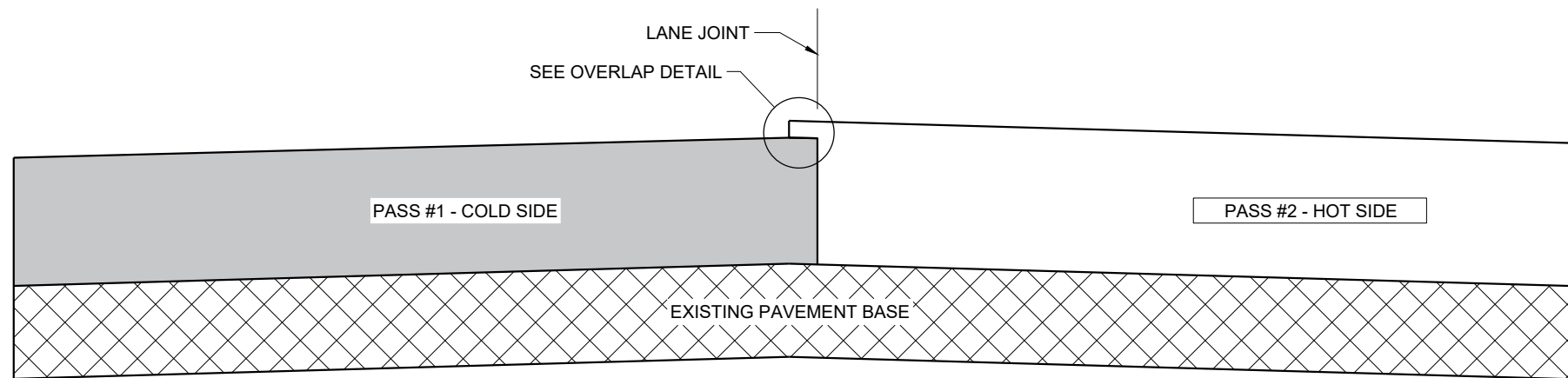
<b>NAME PLATE (STRUCTURES)</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	



**TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT (MILLED)**

**GENERAL NOTES**

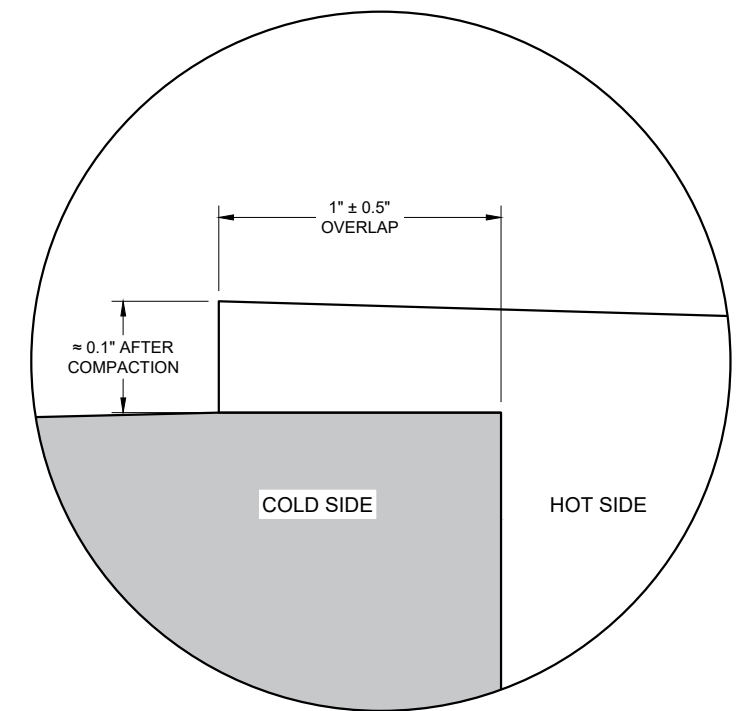
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY  $1" \pm 0.5"$  AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY 0.1" AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO 2" FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



**OVERLAP DETAIL (TYPICAL)**

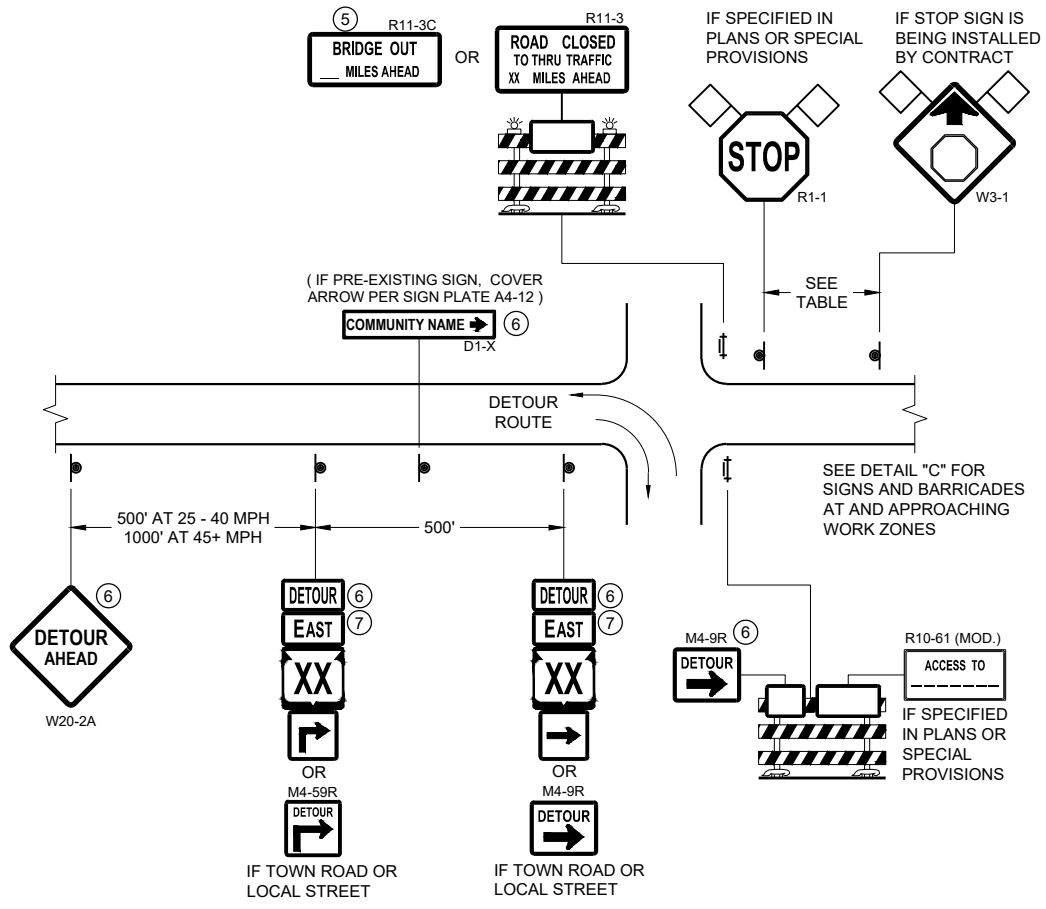
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SDD 13C19 - 03

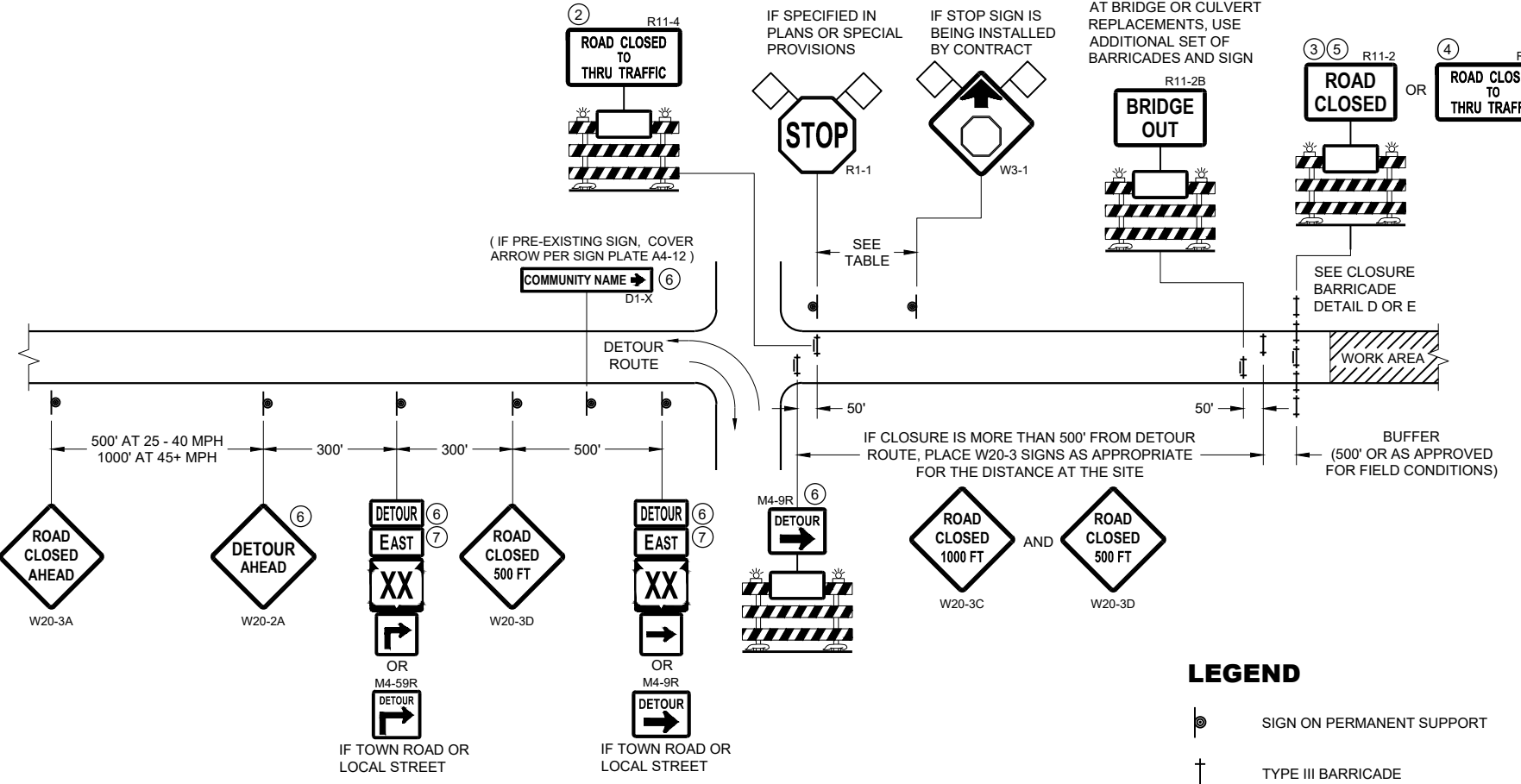
SDD 13C19 - 03

<b>HMA LONGITUDINAL JOINTS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Steven Hefel HMA PAVEMENT ENGINEER
FHWA	



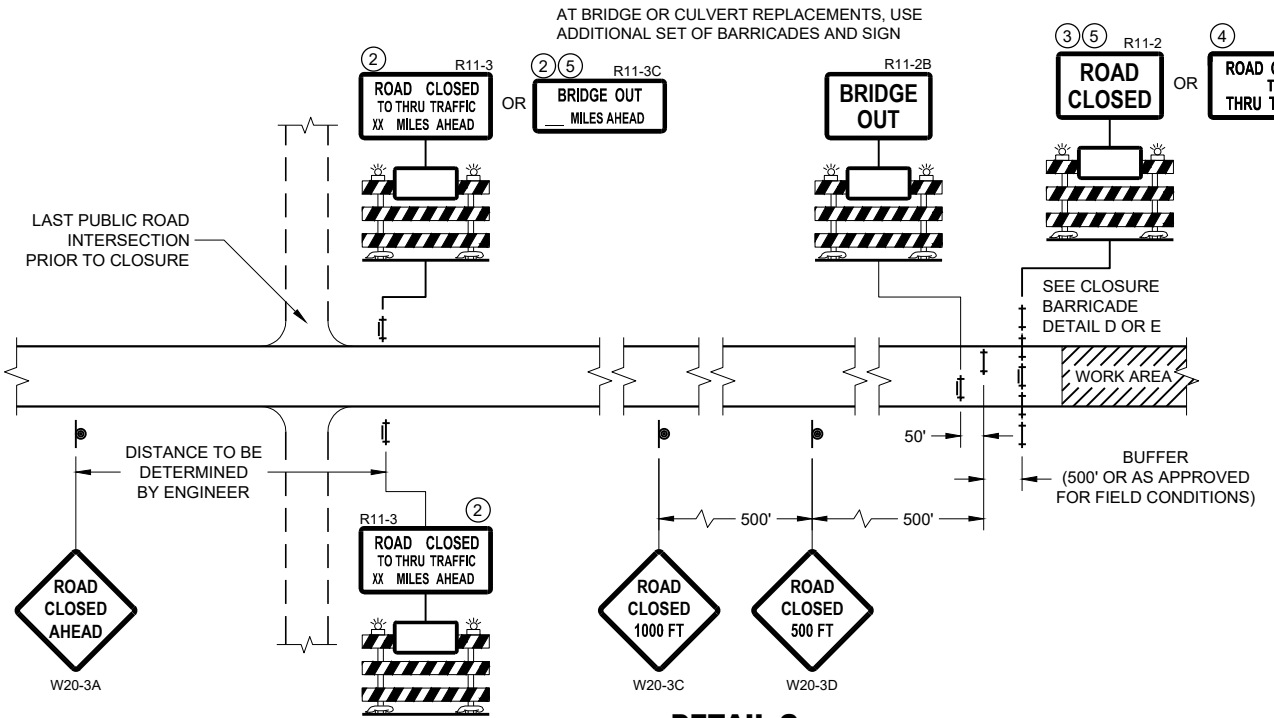
**DETAIL A  
MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE GREATER THAN OR EQUAL TO 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**

**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)
- M4 - 8
- M3 - X
- M1 - 4 OR M1 - 6 OR M1 - 5A
- M1 - 5A
- 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

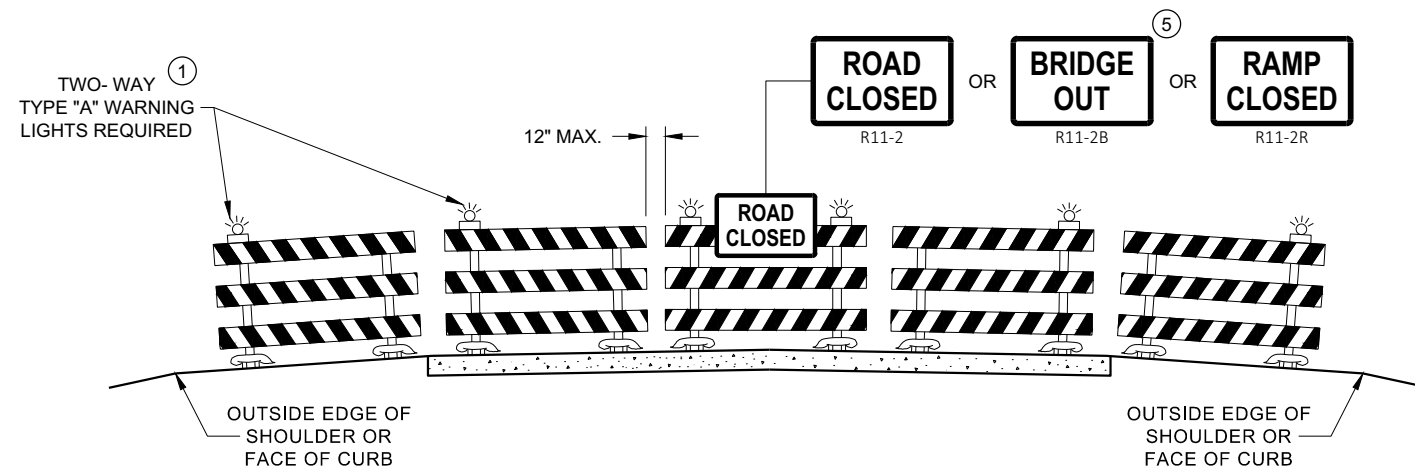
SEE SDD 15C2-SHEET "b"  
FOR GENERAL NOTES  
AND FOOTNOTES ① THROUGH ⑦

**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

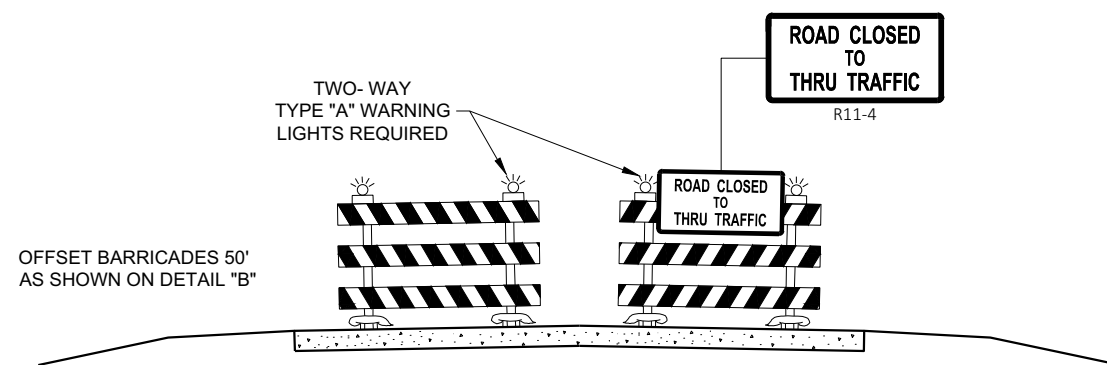
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



**DETAIL D  
ROAD CLOSURE BARRICADE DETAIL  
APPROACH VIEW**



**DETAIL E  
LANE CLOSURE BARRICADE DETAIL  
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

**GENERAL NOTES**

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

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

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

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

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

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

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

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

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

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

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

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

**BARRICADES AND SIGNS  
FOR  
VARIOUS CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



### GENERAL NOTES

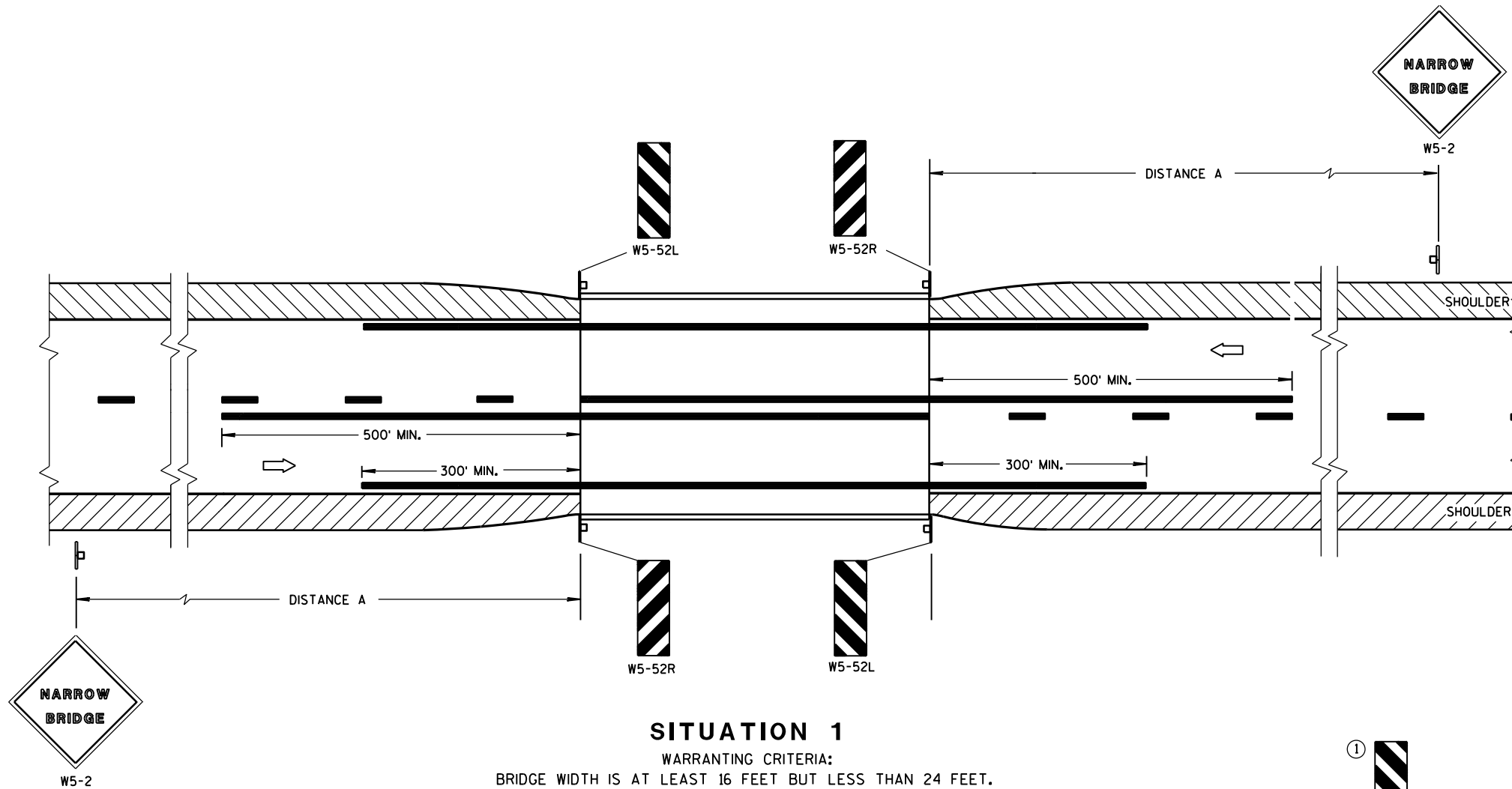
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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.

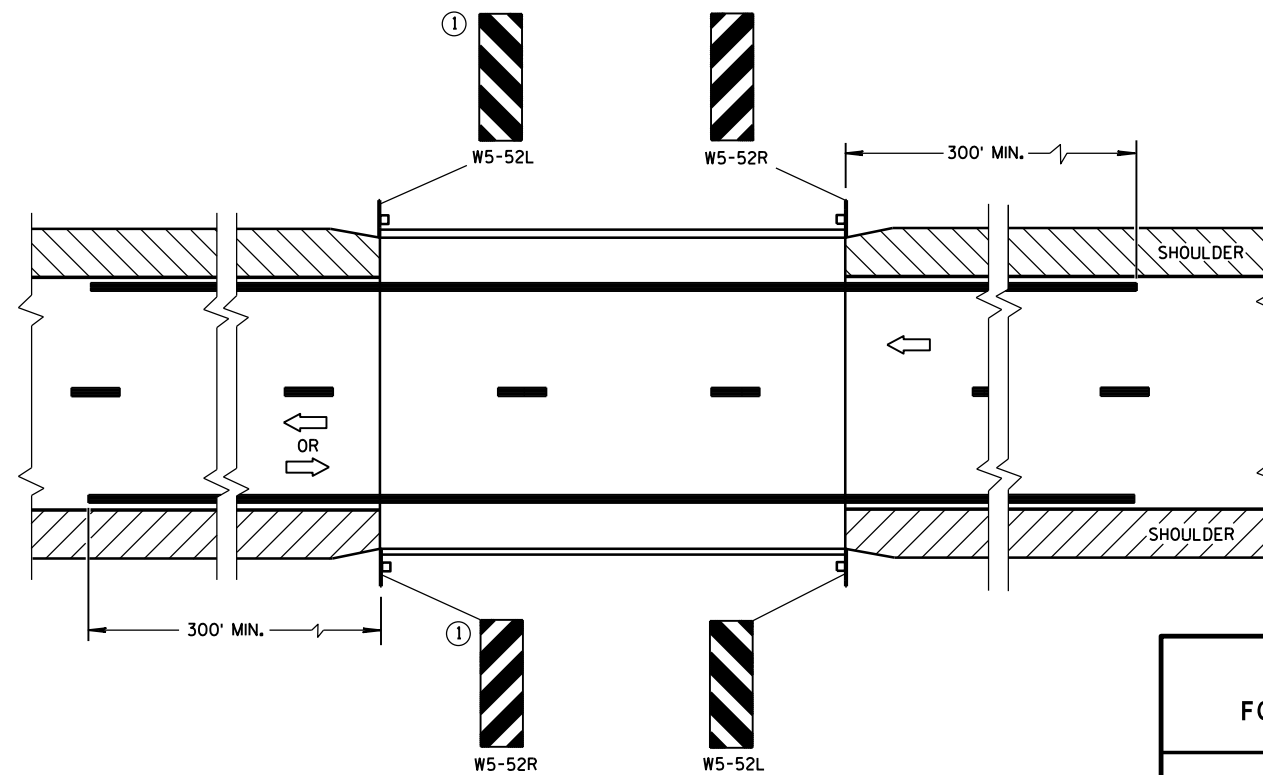
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



### SITUATION 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.

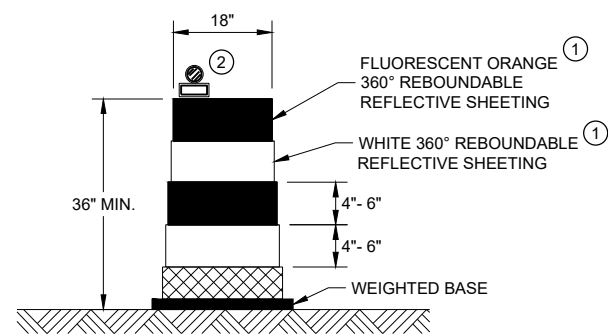
DISTANCE TABLE

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

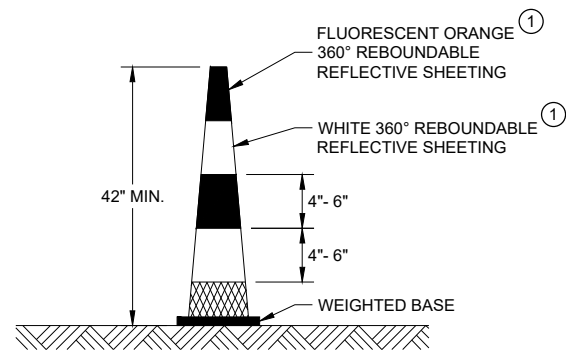
### SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



**DRUM**

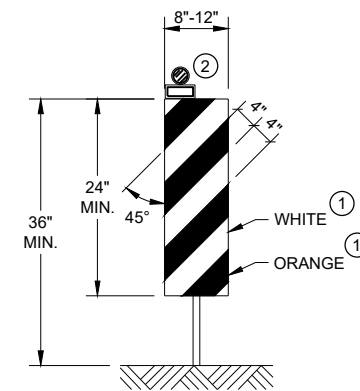


**42" CONE**

DO NOT USE IN TAPERS  
1/2 SPACING OF DRUMS

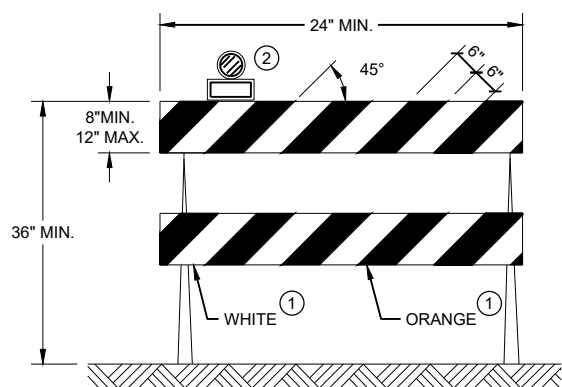
**GENERAL NOTES**

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



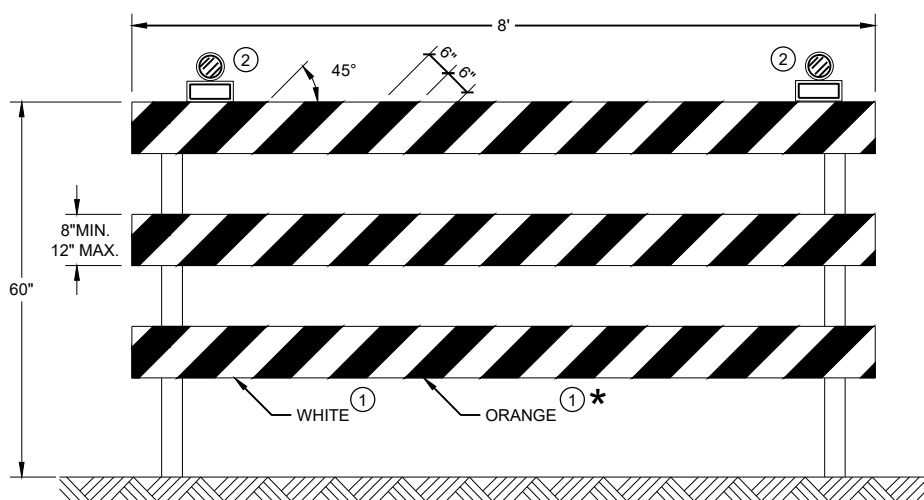
**VERTICAL PANEL**

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



**TYPE II BARRICADE**

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



**TYPE III BARRICADE**

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

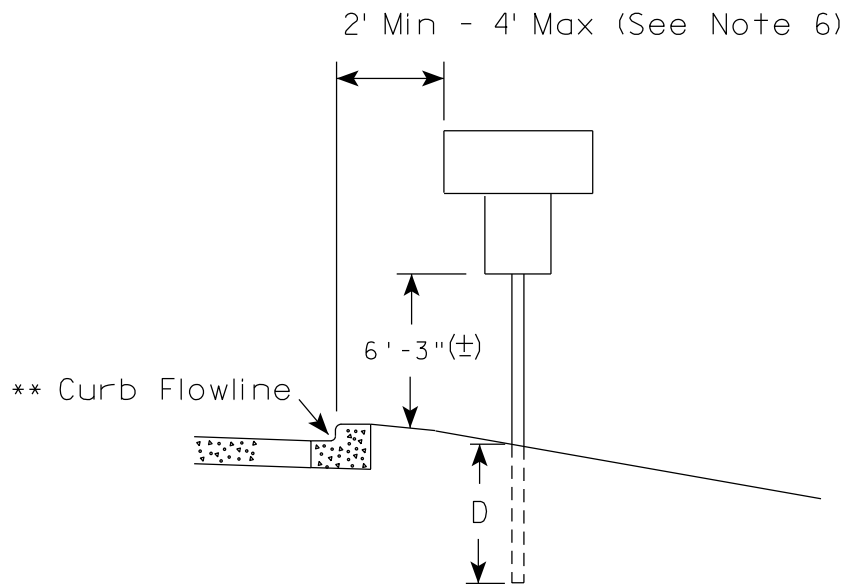
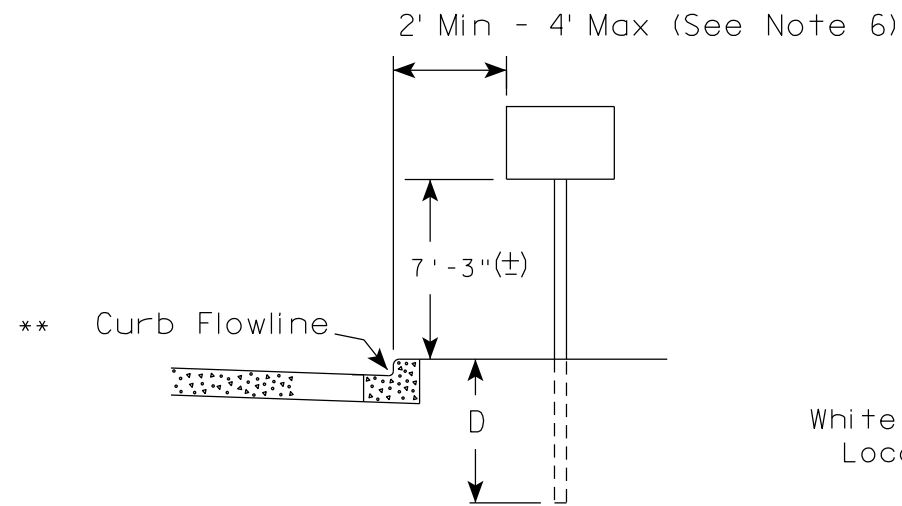
\* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

**CHANNELIZING DEVICES  
DRUMS, CONES, BARRICADES  
AND VERTICAL PANELS**

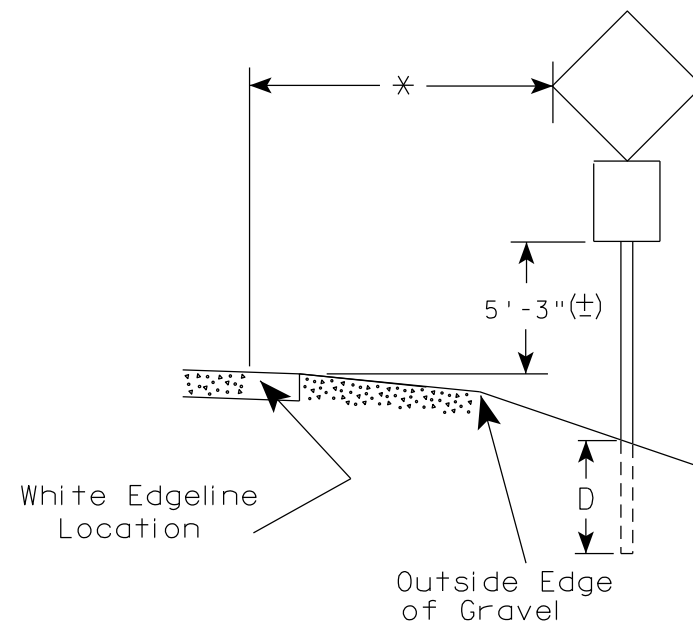
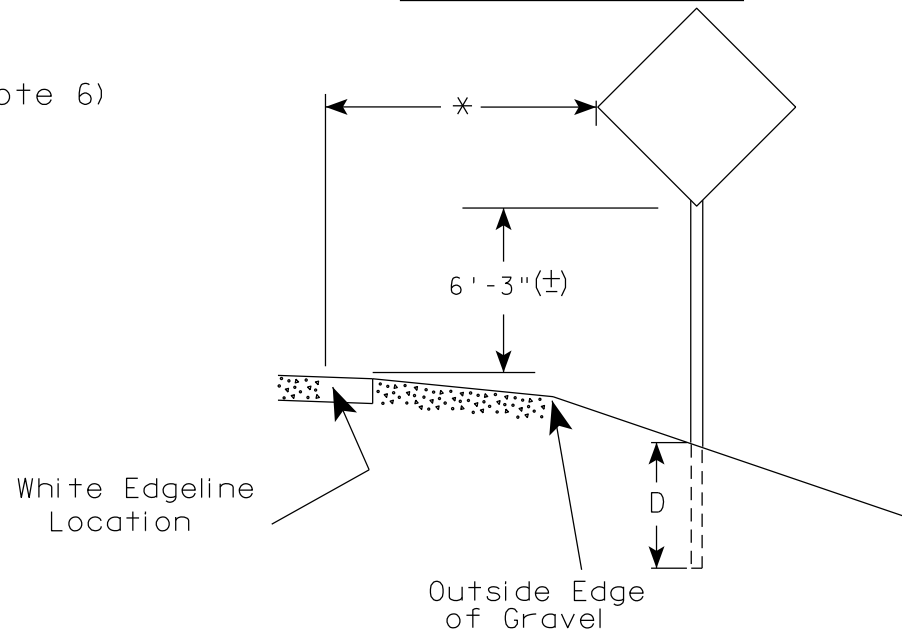
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2021 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

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 or behind barrier wall, see A4-10 sign plate.  
The Double Arrow sign (W12-1D) 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" (±).
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 signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.

POST EMBEDMENT DEPTH

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

\* \* 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.

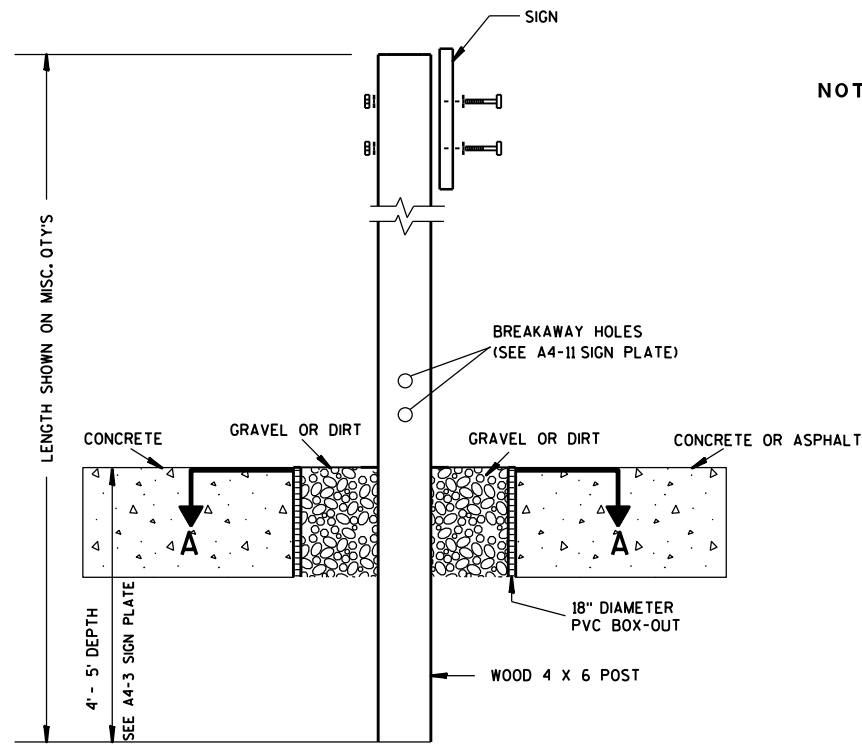
\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

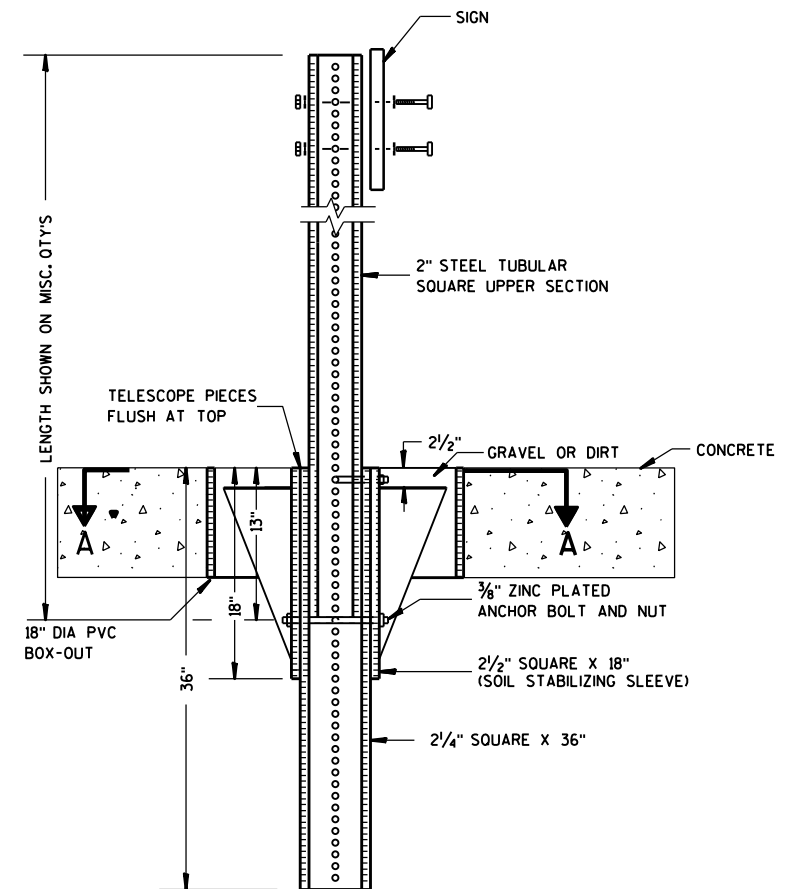
DATE 5/13/2020 PLATE NO. A4-3.22



**ELEVATION VIEW**

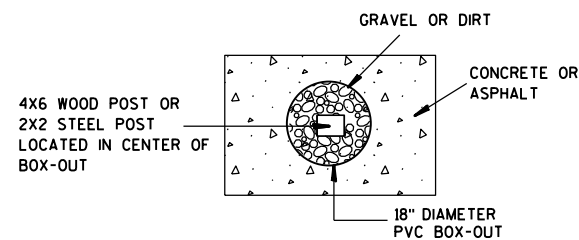
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

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



**ELEVATION VIEW**

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



**PLAN VIEW**

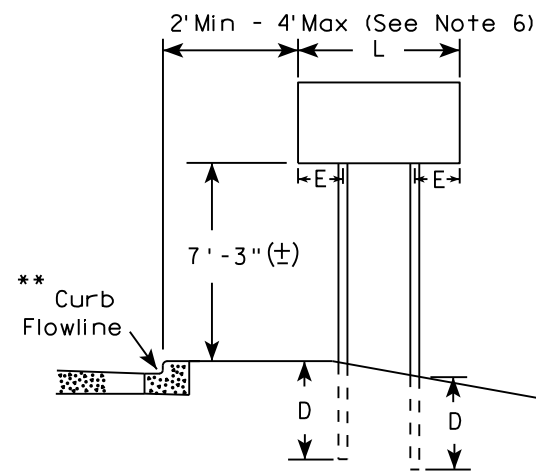
**FOR NEW CONCRETE/ ASPHALT INSTALLATIONS**

<b>SIGN POST BOX-OUTS A4-3B</b>	
<small>WISCONSIN DEPT OF TRANSPORTATION</small>	
APPROVED <i>Matthew R. Rauch</i> <small>for State Traffic Engineer</small>	
<small>DATE 1/27/14</small>	<small>PLATE NO. A4-3B.1</small>

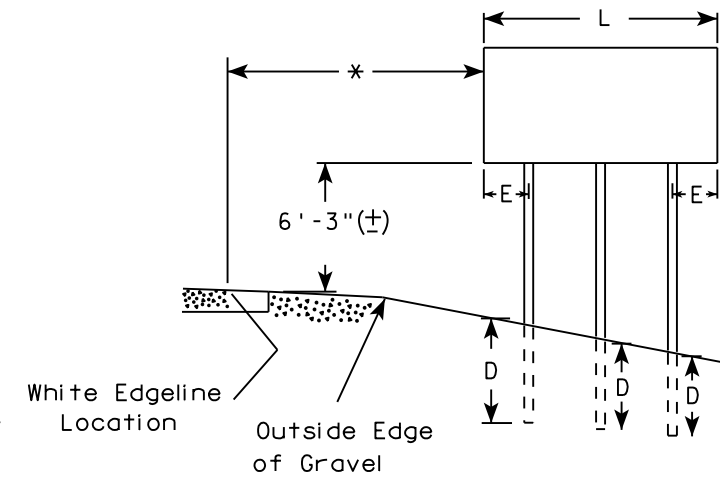
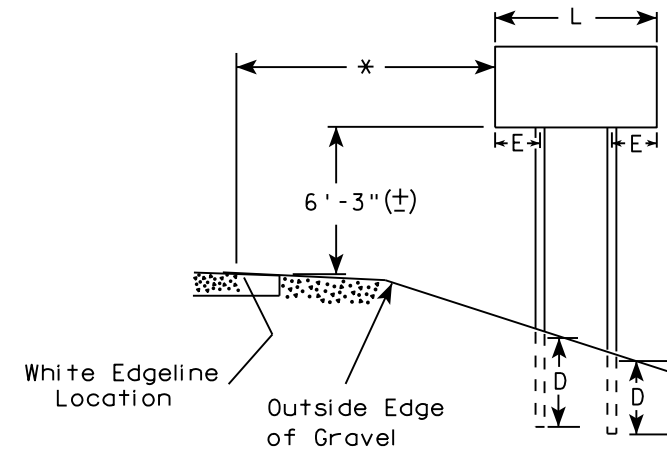
GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

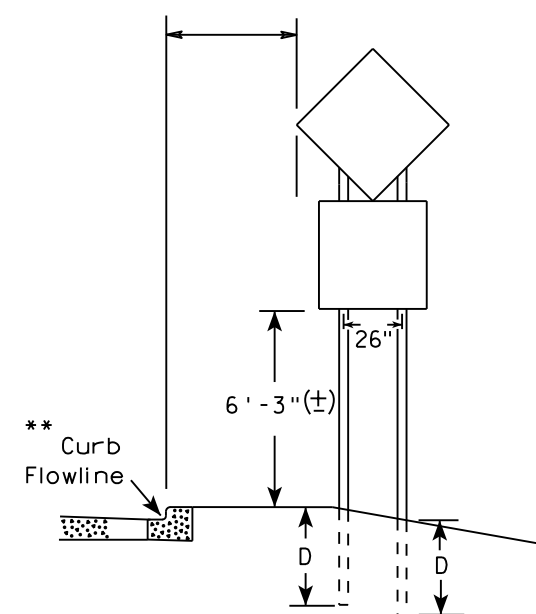
URBAN AREA



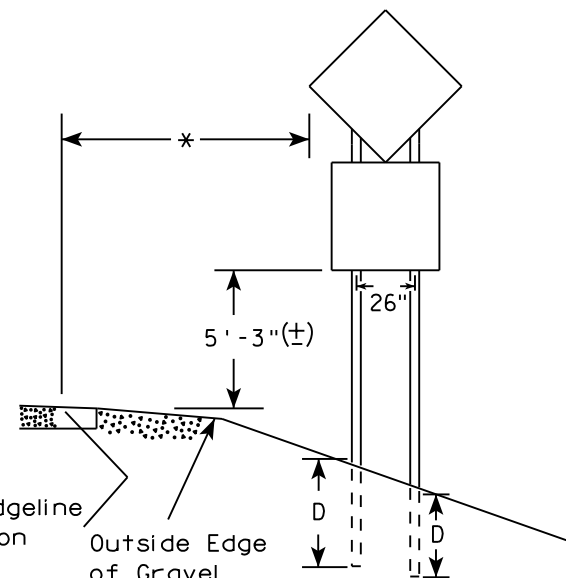
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

\* 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.

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

\*\*\*

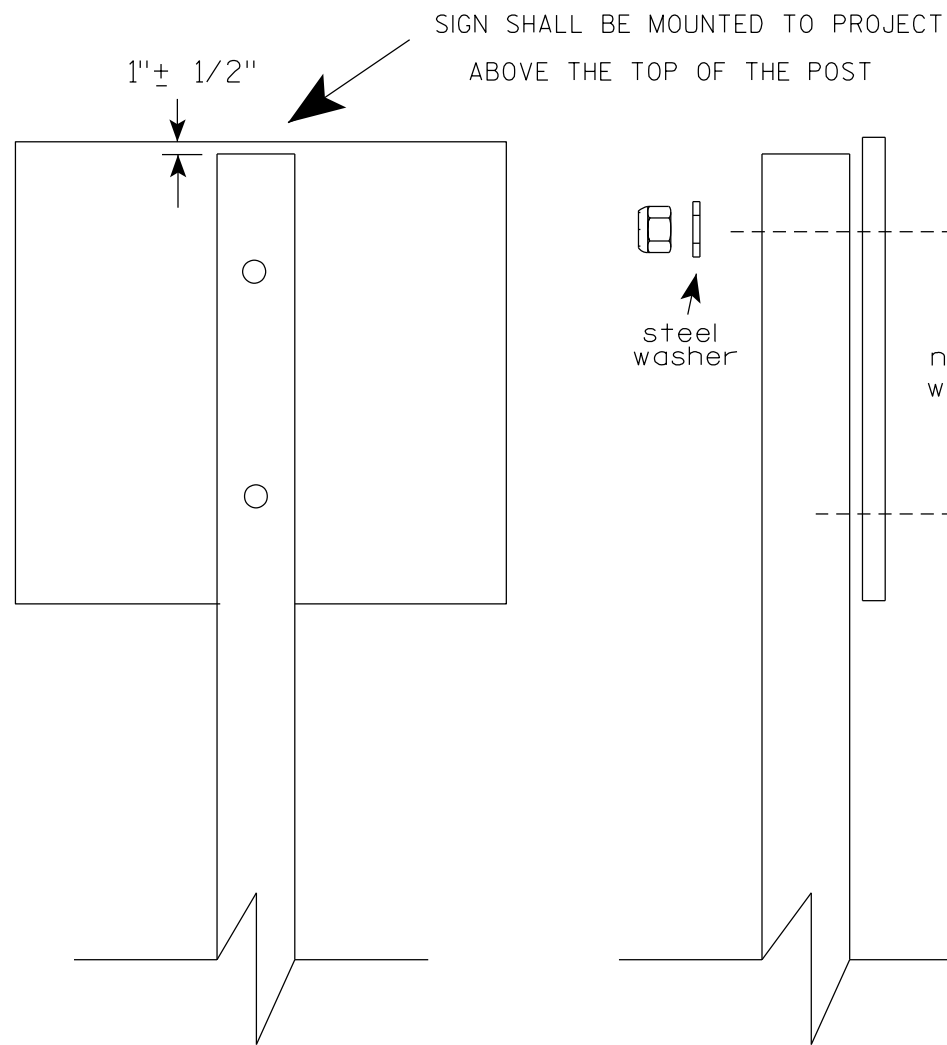
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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 8/21/17 PLATE NO. A4-4.15



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 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)  
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)  
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL  
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS  
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

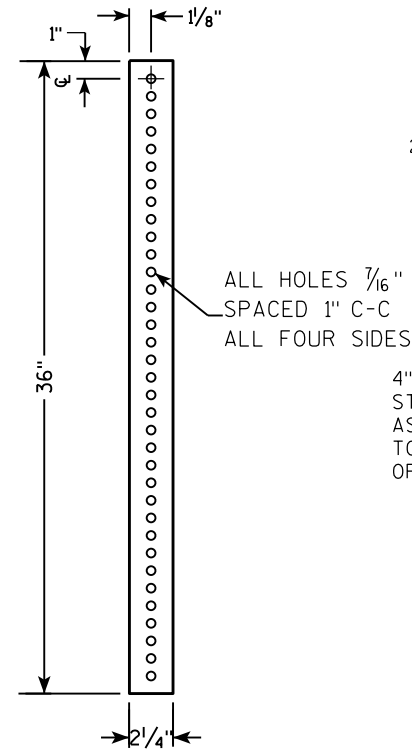
APPROVED *Matthew R Rauch*  
For State Traffic Engineer

DATE 4/1/2020 PLATE NO. A4-8.9



**TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM**

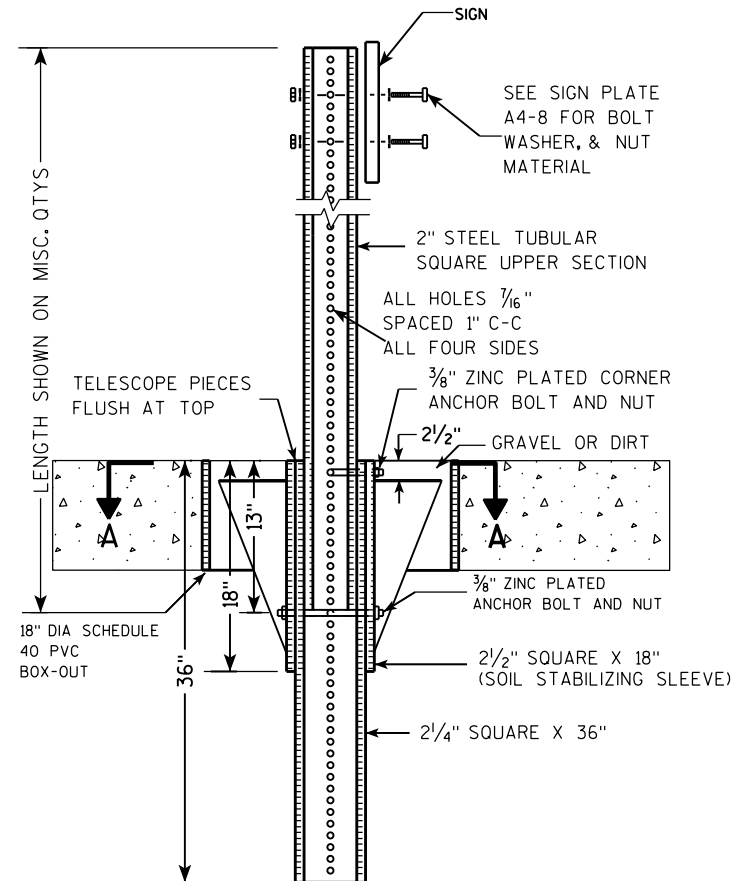
2 1/4" SQUARE  
12 GAUGE  
PERFORATED  
GALVANIZED FINISH



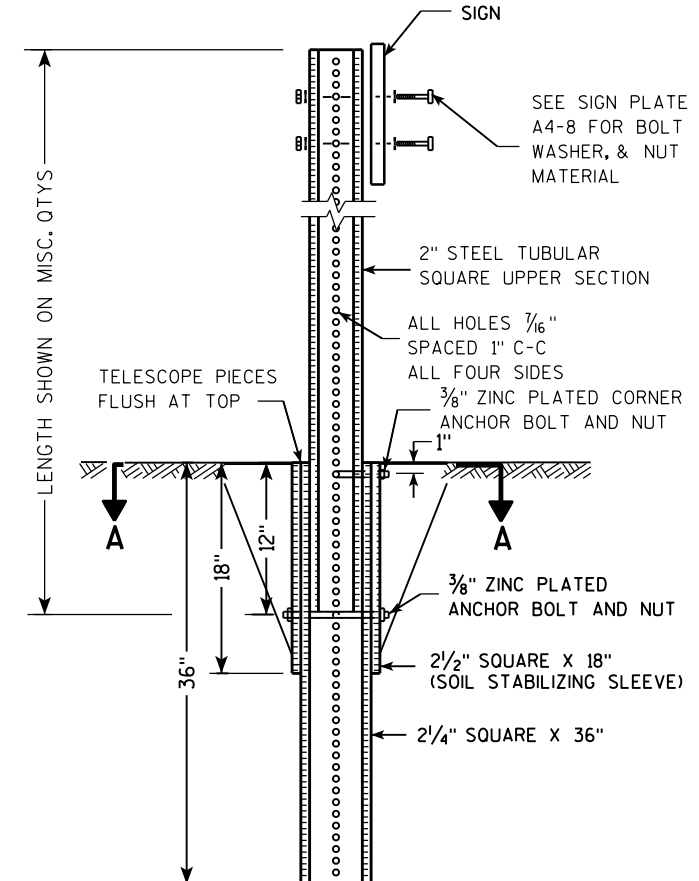
2 1/2" SQUARE  
12 GAUGE  
OMNI-DIRECTIONAL  
PERFORATED  
SOIL STABILIZING SLEEVE  
GALVANIZED FINISH



**DETAIL OF TUBULAR STEEL SIGN POST  
(IN POURED CONCRETE OR ASPHALT)**



**DETAIL OF TUBULAR STEEL SIGN POST  
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)**



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

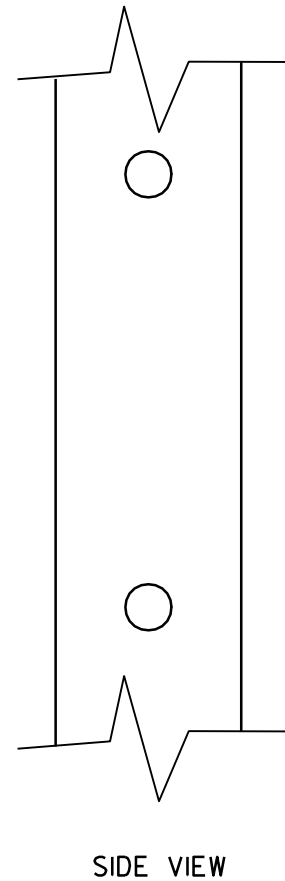
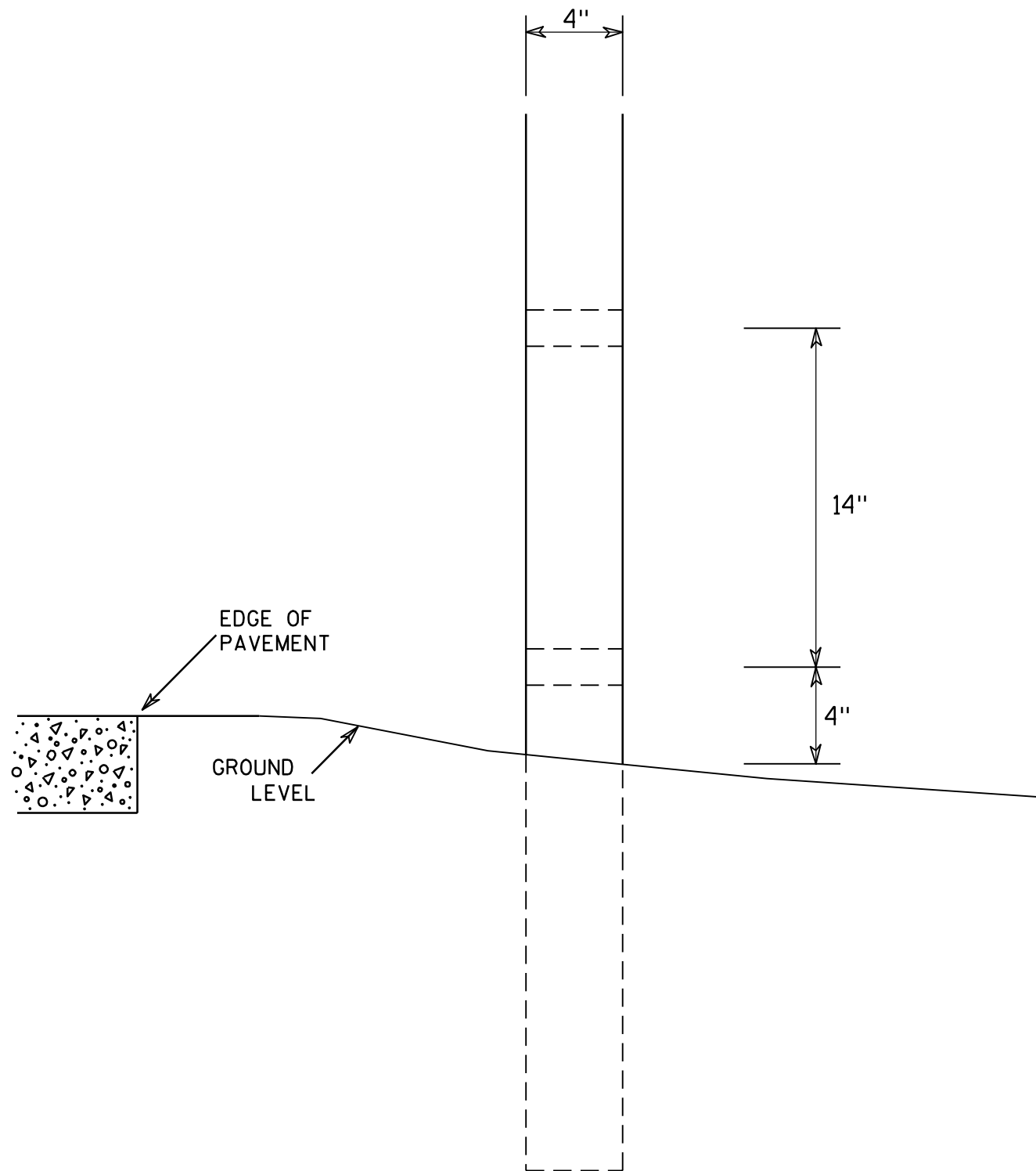
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL  
SIGN POST  
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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



GENERAL NOTES

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

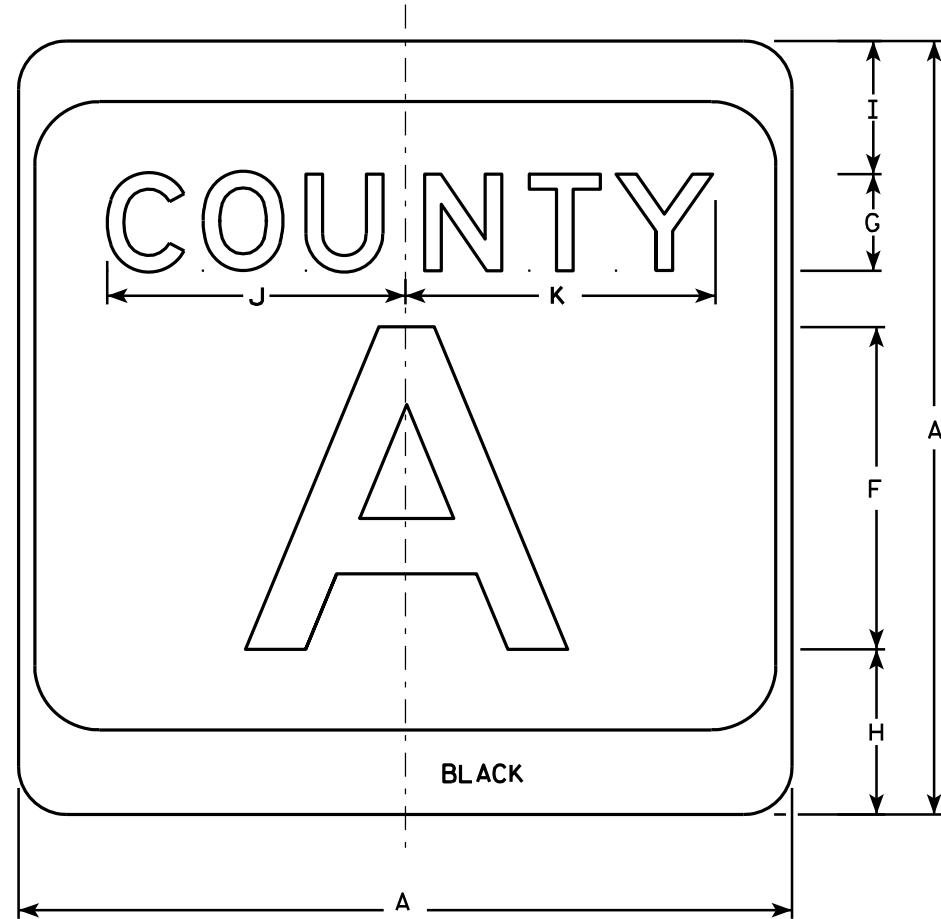
7

7

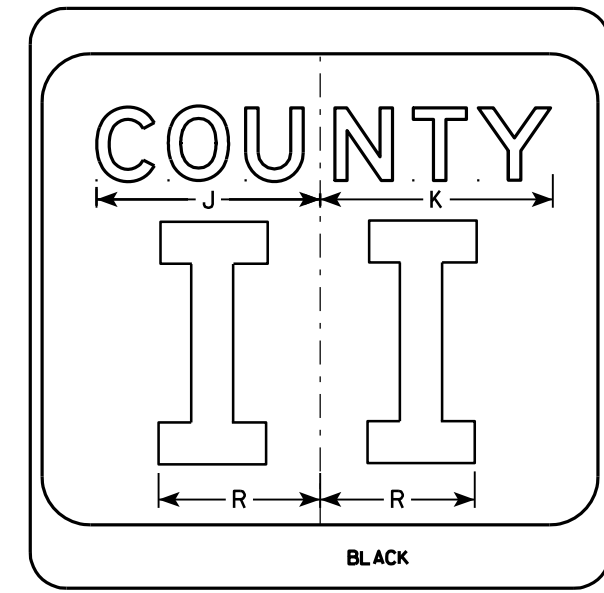
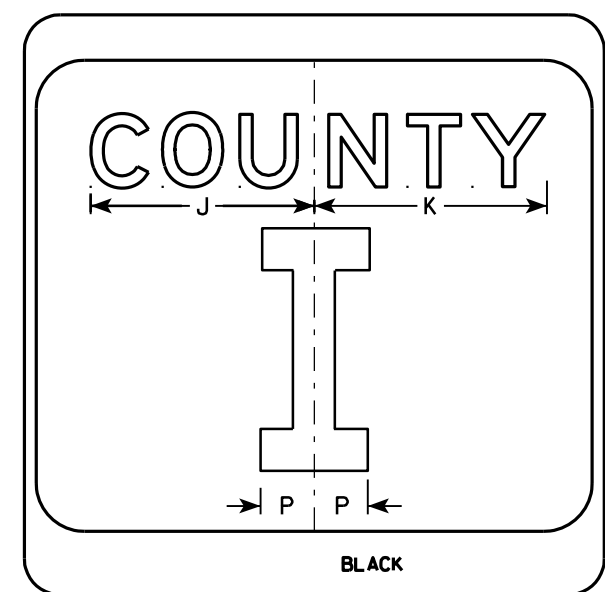
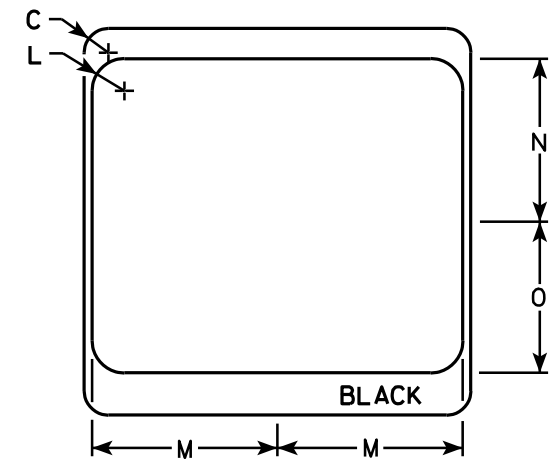
<b>4 X 6 WOOD POST MODIFICATIONS</b>	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

**NOTES**

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - White & Black - See Note 7  
Message - Black
3. Message Series - see Note 5
4. 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.
5. Message Series E for 1 letter.  
Message Series D for 2 letters unless message is too big then Series C.  
Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs  
Background - Type H Reflective  
Detour or temporary Signs  
Background - Reflective



M1-5A



7

7

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																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

**CTH MARKER**  
**M1-5A FOR ASSEMBLIES**

WISCONSIN DEPT OF TRANSPORTATION

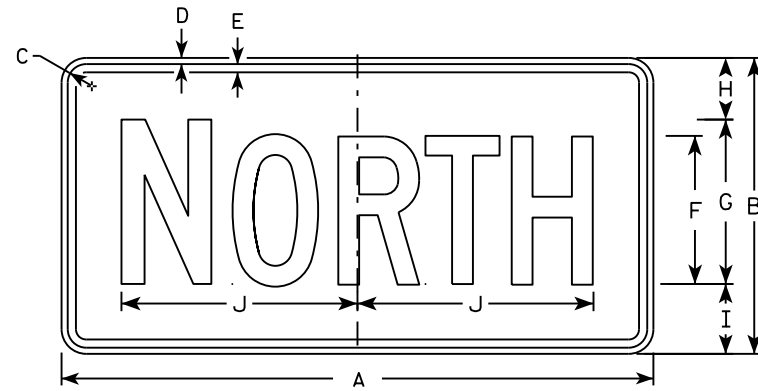
APPROVED *Matthew R. Raub*  
For State Traffic Engineer

DATE 9/27/11 PLATE NO. MI-5A.8

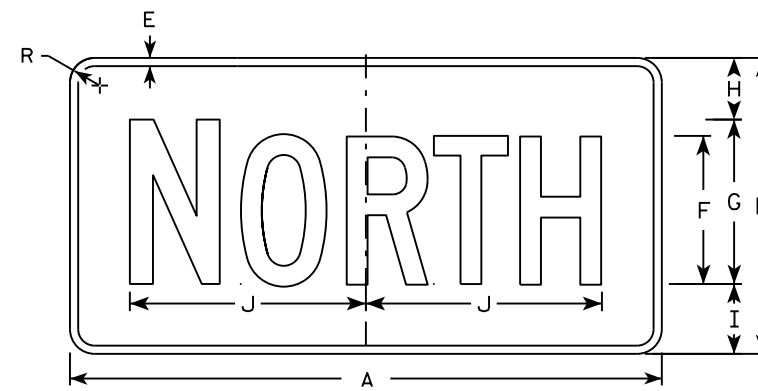
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

NOTES

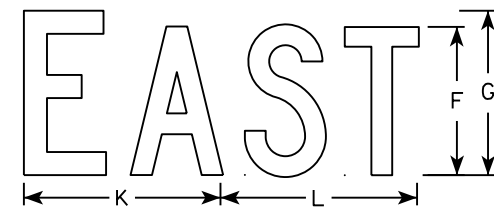
- All Signs Type II - Type H
- Color:
  - Background - See note 5
  - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4 Background - White  
 Message - Black  
 MB3-1 thru MB3-4 Background - Blue  
 Message - White  
 MK3-1 thru MK3-4 Background - Green  
 Message - White  
 MM3-1 thru MM3-4 Background - White  
 Message - Green  
 MN3-1 thru MN3-4 Background - Brown  
 Message - White  
 MP3-1 thru MP3-4 Background - White  
 Message - Blue
- Note the first letter of each direction is larger than the remainder of the message.



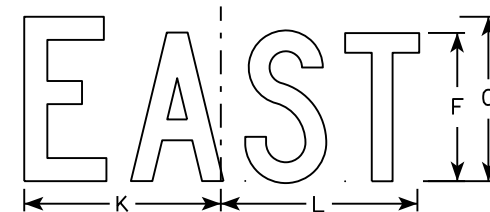
M3-1  
MM3-1  
MP3-1



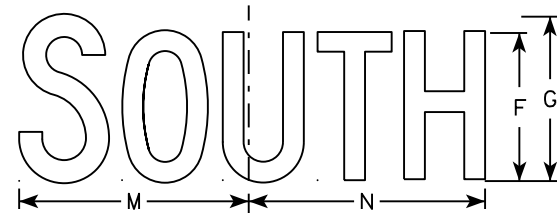
MB3-1  
MK3-1  
MN3-1



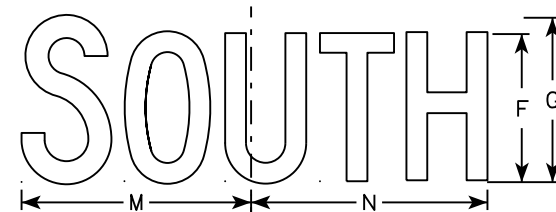
M3-2  
MM3-2  
MP3-2



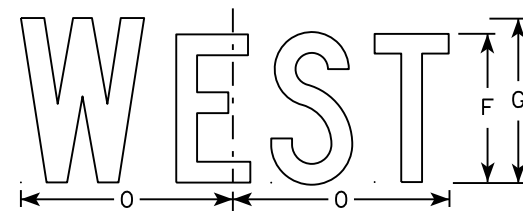
MB3-2  
MK3-2  
MN3-2



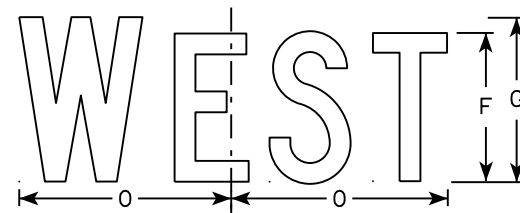
M3-3  
MM3-3  
MP3-3



MB3-3  
MK3-3  
MN3-3



M3-4  
MM3-4  
MP3-4



MB3-4  
MK3-4  
MN3-4

7

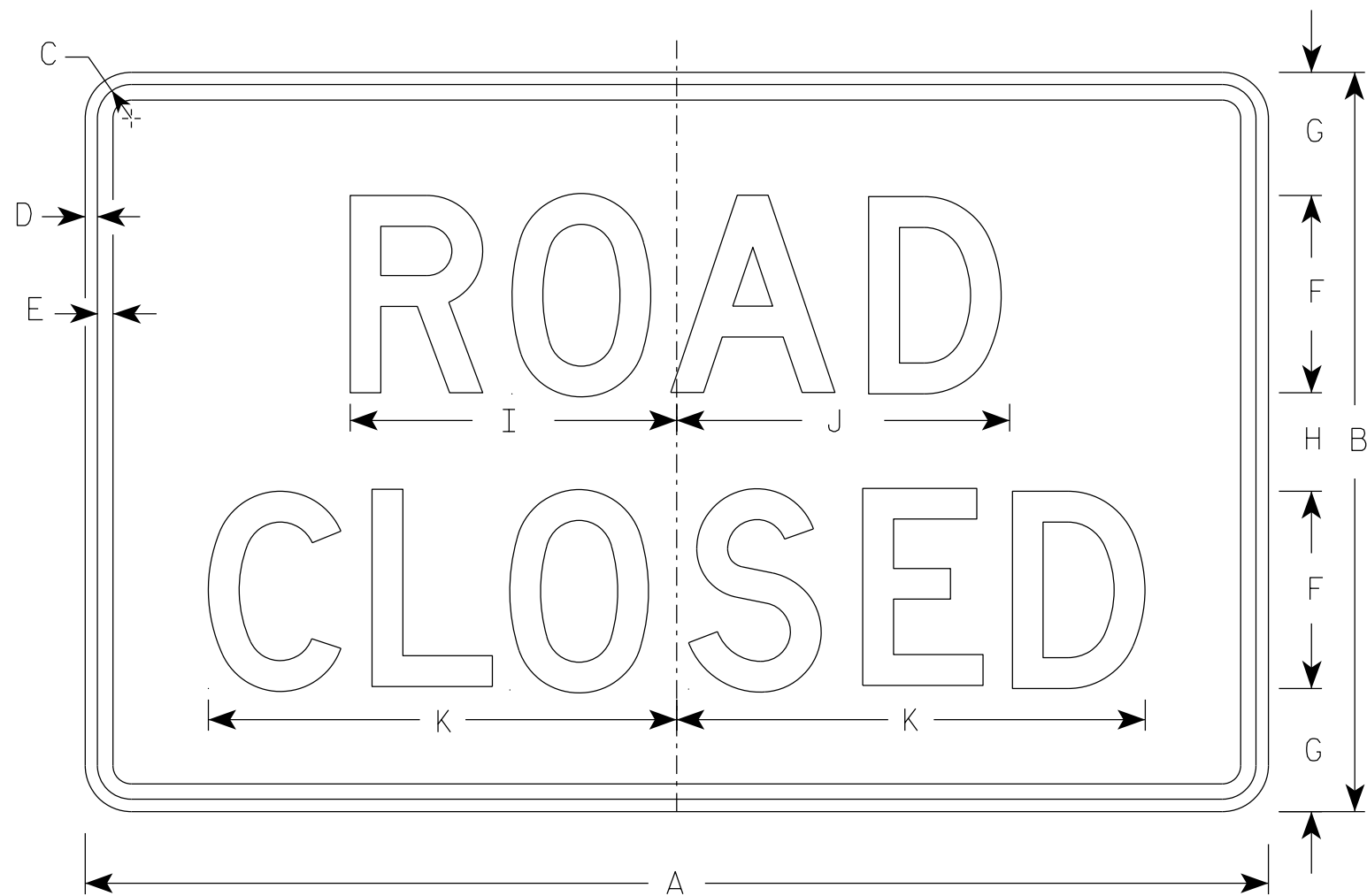
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS  
M3-1 thru M3-4  
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M3-1.14



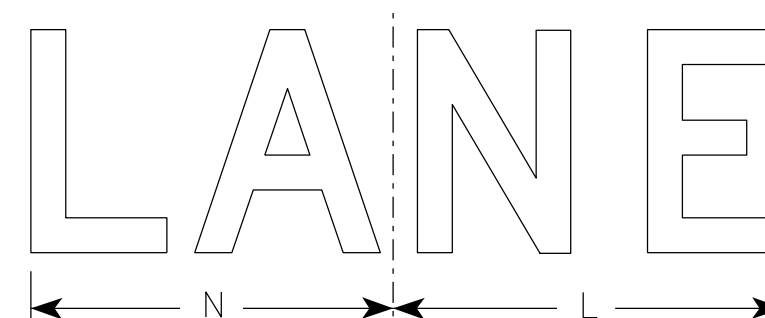
R11-2



R11-2R



R11-2T



R11-2L

NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - White  
Message - Black
3. Message Series - D
4. 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.
5. Modify the message as required.

7

7

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	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0

STANDARD SIGN  
R11-2

WISCONSIN DEPT OF TRANSPORTATION

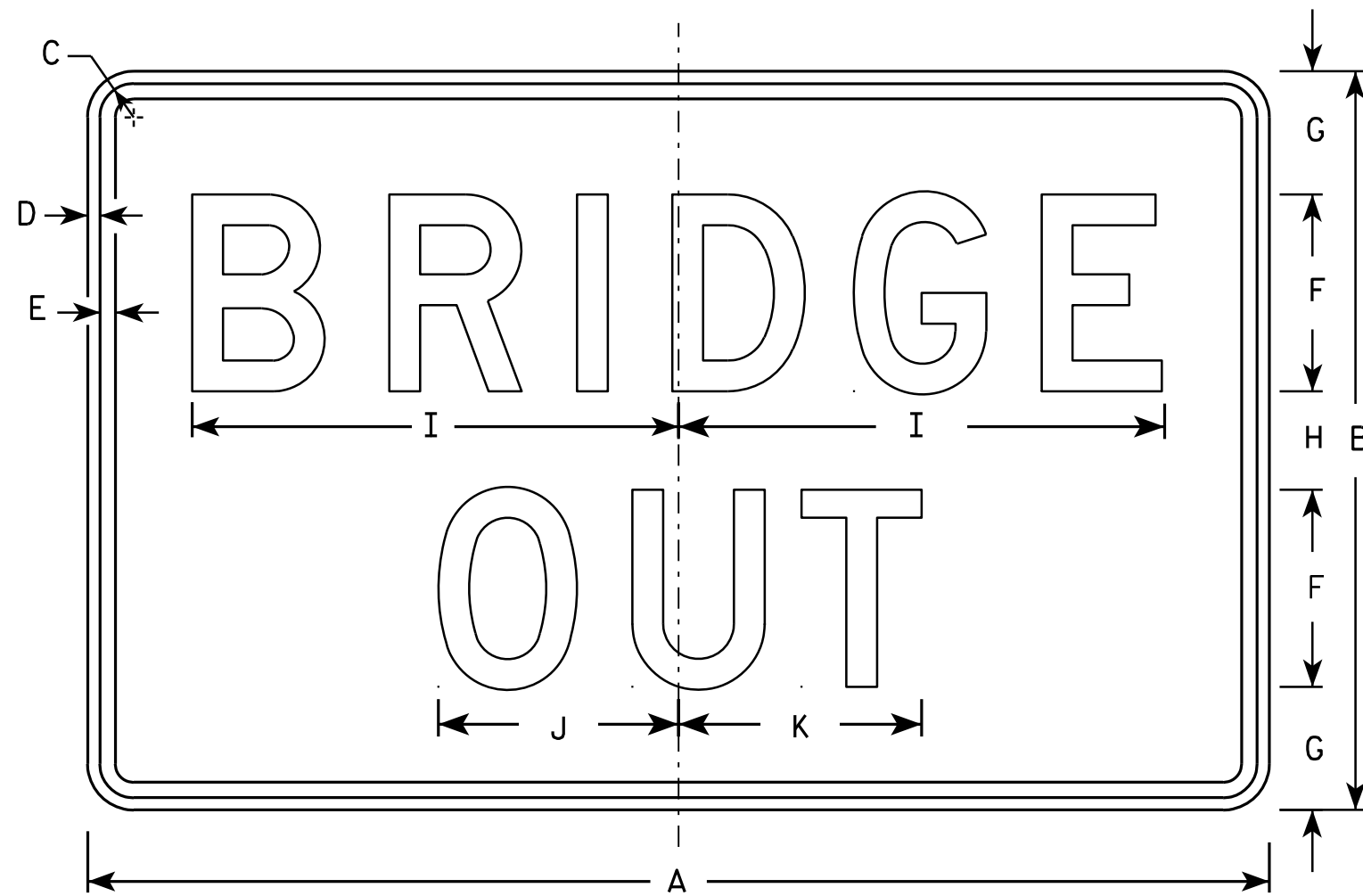
APPROVED *Matthew R Rauch*  
For State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ **E**

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - White  
Message - Black
3. Message Series - D
4. 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.



R11-2B

7

7

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	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

**STANDARD SIGN**  
R11-2B

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

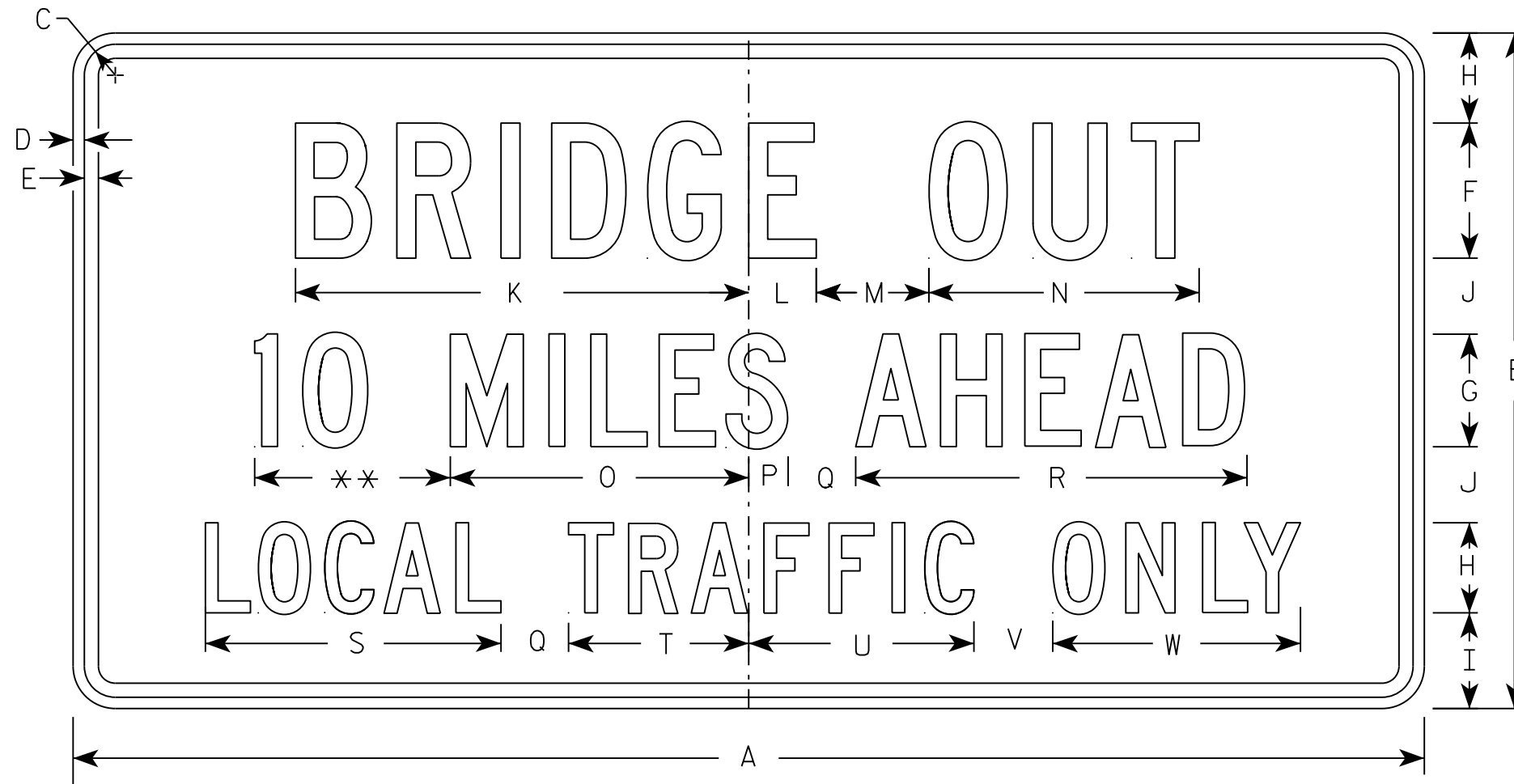
DATE 4/1/11 PLATE NO. R11-2B.2

PROJECT NO: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E



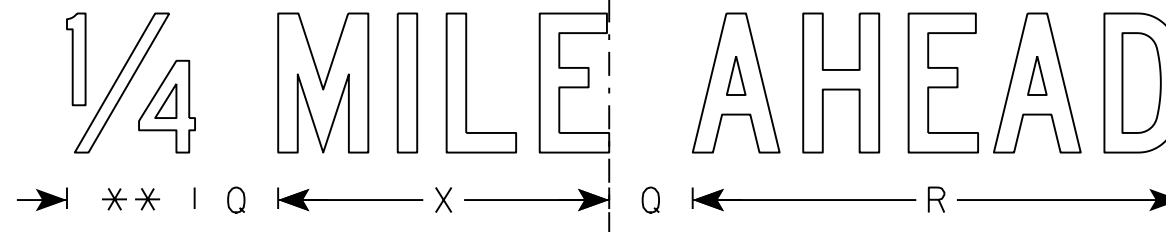
NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - White  
Message - Black
3. Message Series - C
4. 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.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



\*\* See Note 5

R11-3B



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	36	18	1 3/8	1/2	5/8	4	3	2 1/2	2	2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4	8 3/8	4 3/4	6 1/2	2	6 3/4	7 1/8		4.5	
2S	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11	11 7/8		12.5	
2M	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11	11 7/8		12.5	
3																											
4																											
5																											

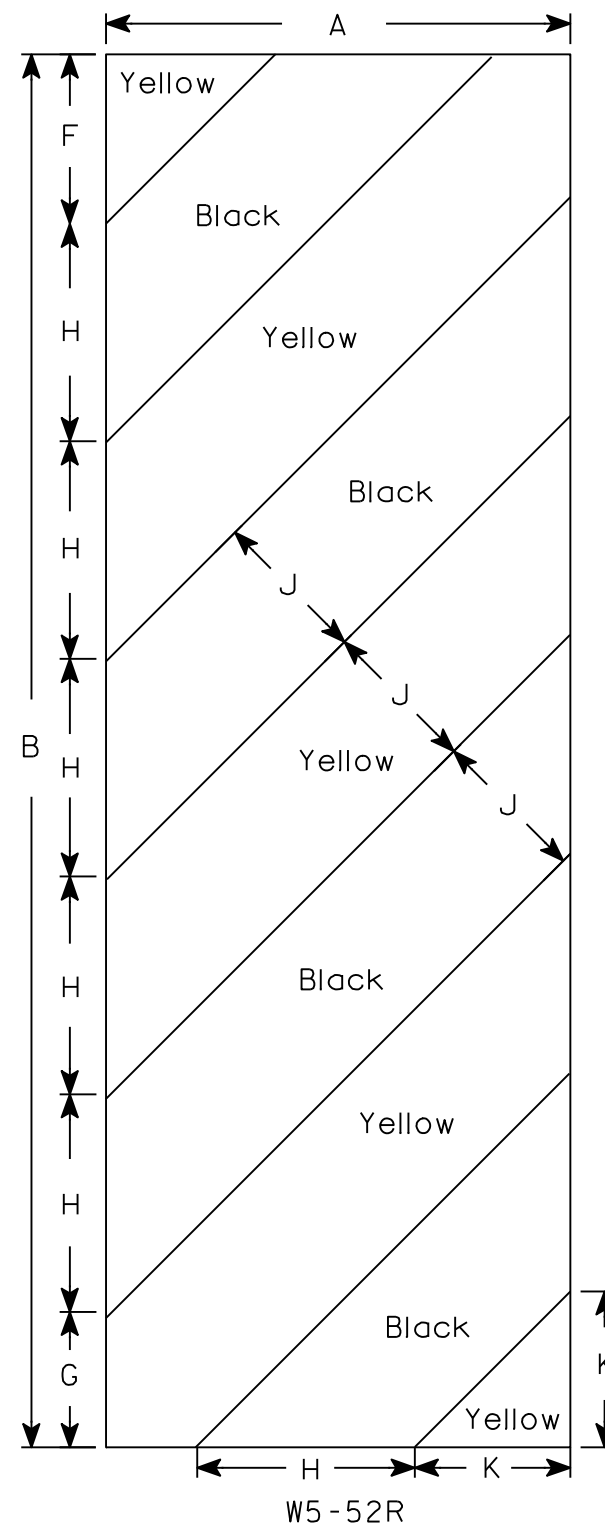
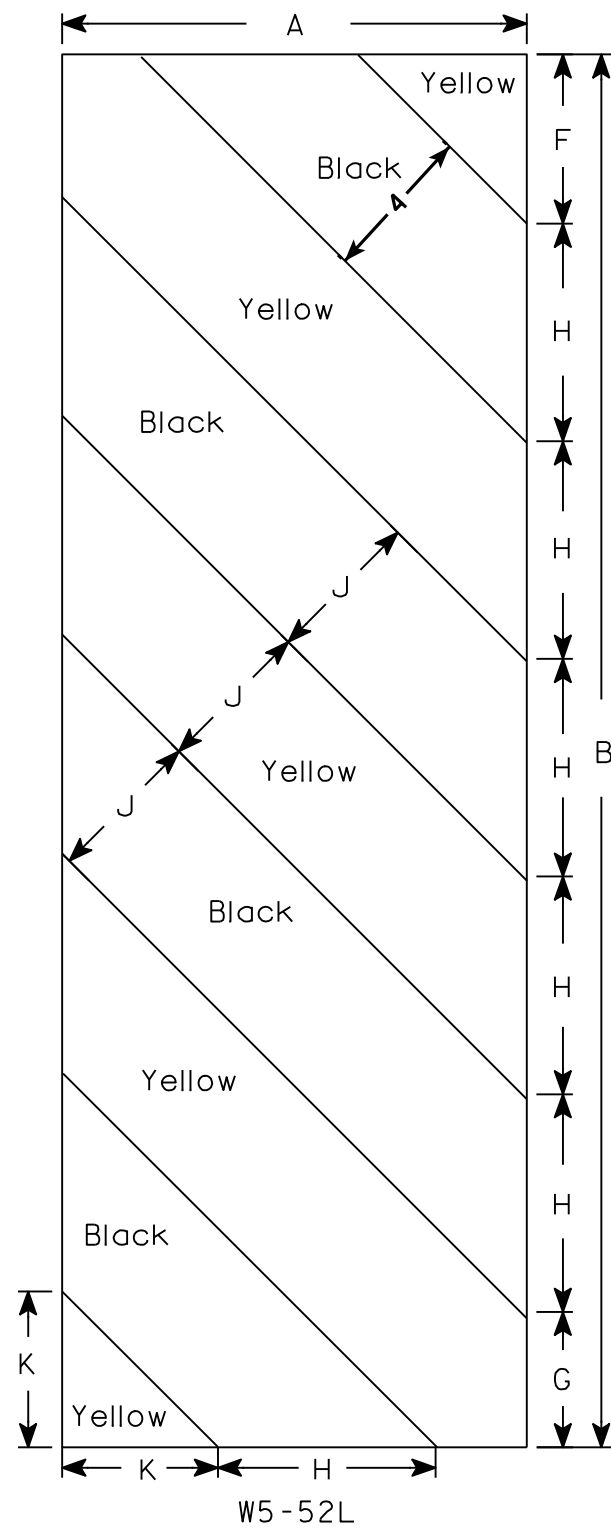
STANDARD SIGN  
R11-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/21/17 PLATE NO. R11-3B.3

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.

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

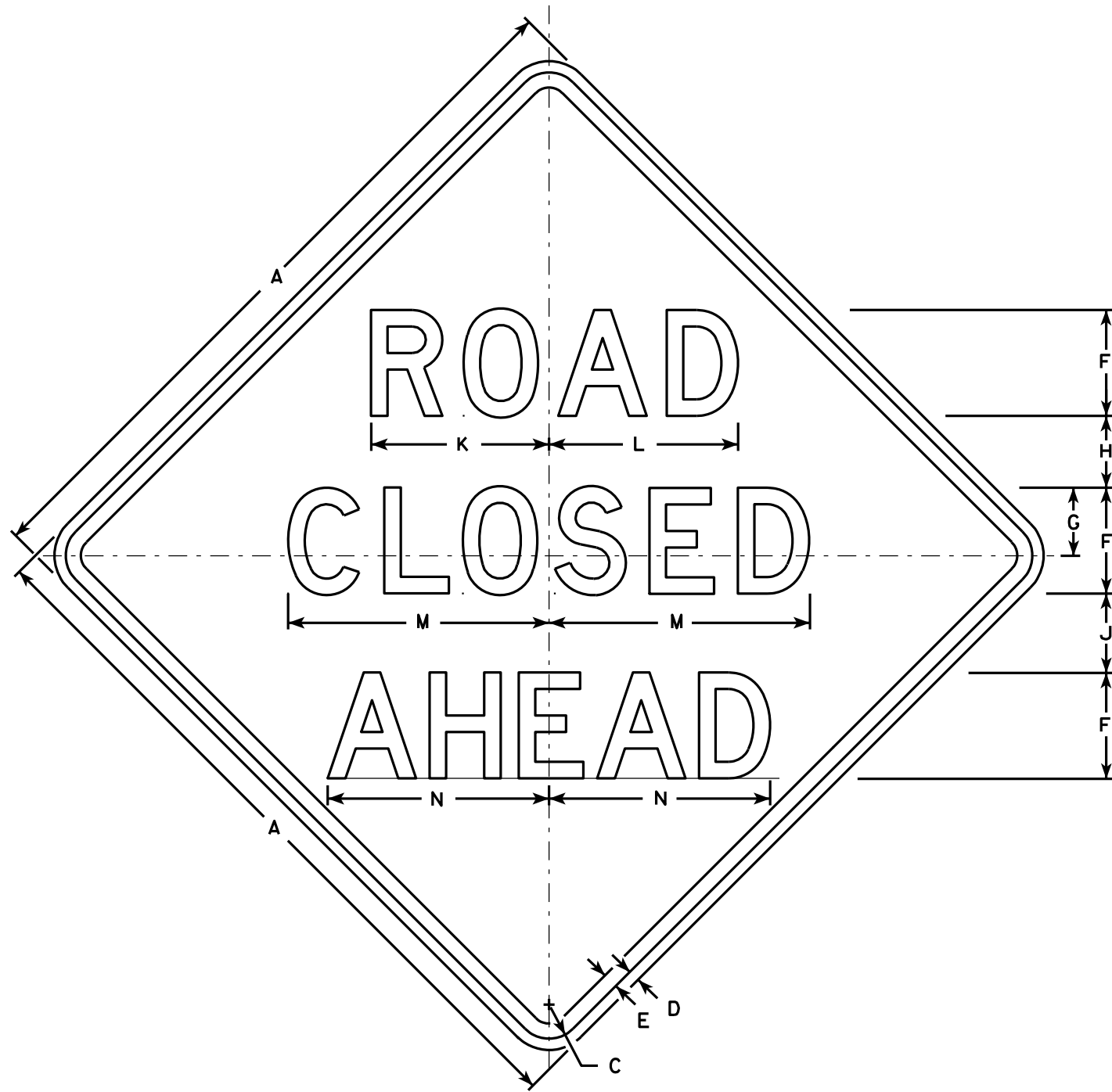
STANDARD SIGN  
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

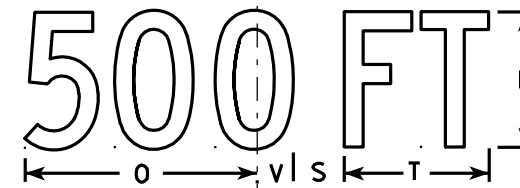
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

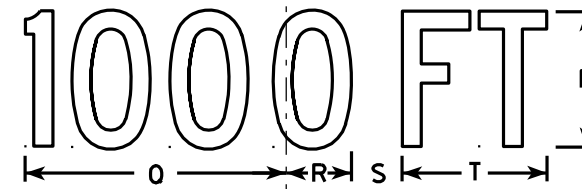
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E



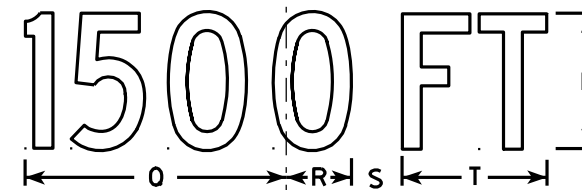
W20-3A



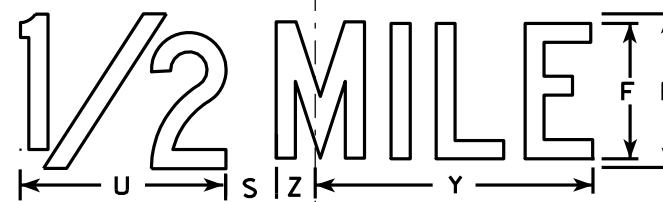
W20-3D



W20-3C



W20-3B



W20-3G



W20-3F

**NOTES**

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Orange  
Message - Black
3. Message Series - see note 5
4. 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.
5. Lines 1 and 2 are Series D.  
Line 3 is Series D for AHEAD and Series C for all other distances.

7

7

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	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN  
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

**NOTES**

- EXCAVATION AS INDICATED IN THE HATCH AREAS, TO BE INCLUDED IN THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-6-195".
- G01 BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCLUDED WITH THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-6-195". LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- G02 "GEOTEXTILE TYPE DF SCHEDULE A" LIMITS. EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT FOR THE ENTIRE ABUTMENT BODY LENGTH.
- G03 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED IN "ABUTMENT DETAILS" SHEET.
- G04 NAME PLATE REQUIRED AND BENCH MARK CAP (WHEN SUPPLIED). FOR LOCATION SEE "ABUTMENTS" SHEET.
- G05 SEE ROADWAY PLANS FOR STREAM RE-ALIGNMENT PLAN AND DETAILS
- INDICATES WING NUMBER

**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. RAILING STEEL TYPE NY4 DETAILS #1
9. RAILING STEEL TYPE NY4 DETAILS #2

**DESIGN DATA**

**LIVE LOAD:**  
 DESIGN LOADING HL-93  
 INVENTORY RATING FACTOR RF=1.24  
 OPERATING RATING FACTOR RF=1.61  
 WISCONSIN STANDARD PERMIT VEHICLE RATING (W.S.-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 HP 10-INCH X 42 LB STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 130 TONS PER PILE\*\* AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA AT W. ABUT. AND DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE\*\* AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA AT E. ABUT. ESTIMATED 55 FT PILE LENGTHS AT W. ABUT. AND 55 FT PILE LENGTHS AT E. 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 DYNAMIC FORMULA TO DETERMINE DRIVEN PILE CAPACITY.

**HYDRAULIC DATA:**

Q<sub>100</sub> 890 C.F.S.  
 Q<sub>100</sub> (THRU BRIDGE) 762 C.F.S.  
 Q<sub>100</sub> (ROAD) 128 C.F.S.  
 DRAINAGE AREA 3.9 SQ. MI.  
 BRIDGE WATER AREA 96 SQ. FT.  
 BRIDGE VELOCITY 7.90 F.P.S.  
 HIGH WATER<sub>100</sub> EL. 866.26 FT.  
 OVERTOPPING Q 620 C.F.S.  
 OVERTOPPING EL. 866.00  
 OVERTOPPING RDWY FREQ. 27 YEARS  
 SCOUR CRITICAL CODE 5  
 Q<sub>2</sub> 149 C.F.S.  
 Q<sub>2</sub> ELEVATION 863.46 FT.  
 Q<sub>2</sub> VELOCITY 3.28 F.P.S.

BRIDGE OFFICE CONTACT: AARON BONK, P.E. (608) 261-0261  
 CONSULTANT CONTACT: ANDY KNUTSON, P.E., S.E. (608) 588-7866

NO.	DATE	REVISION	BY

**WESTBROOK**  
 Associated Engineers, Inc.  
 619 EAST HOXIE STREET  
 P.O. BOX 429  
 SPRING GREEN, WI 53588  
 PHONE (608) 588-7866  
 FAX (608) 588-7954

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION  
 ACCEPTED: *[Signature]* SDR 11/29/21  
 CHIEF STRUCTURES DESIGN ENGINEER DATE

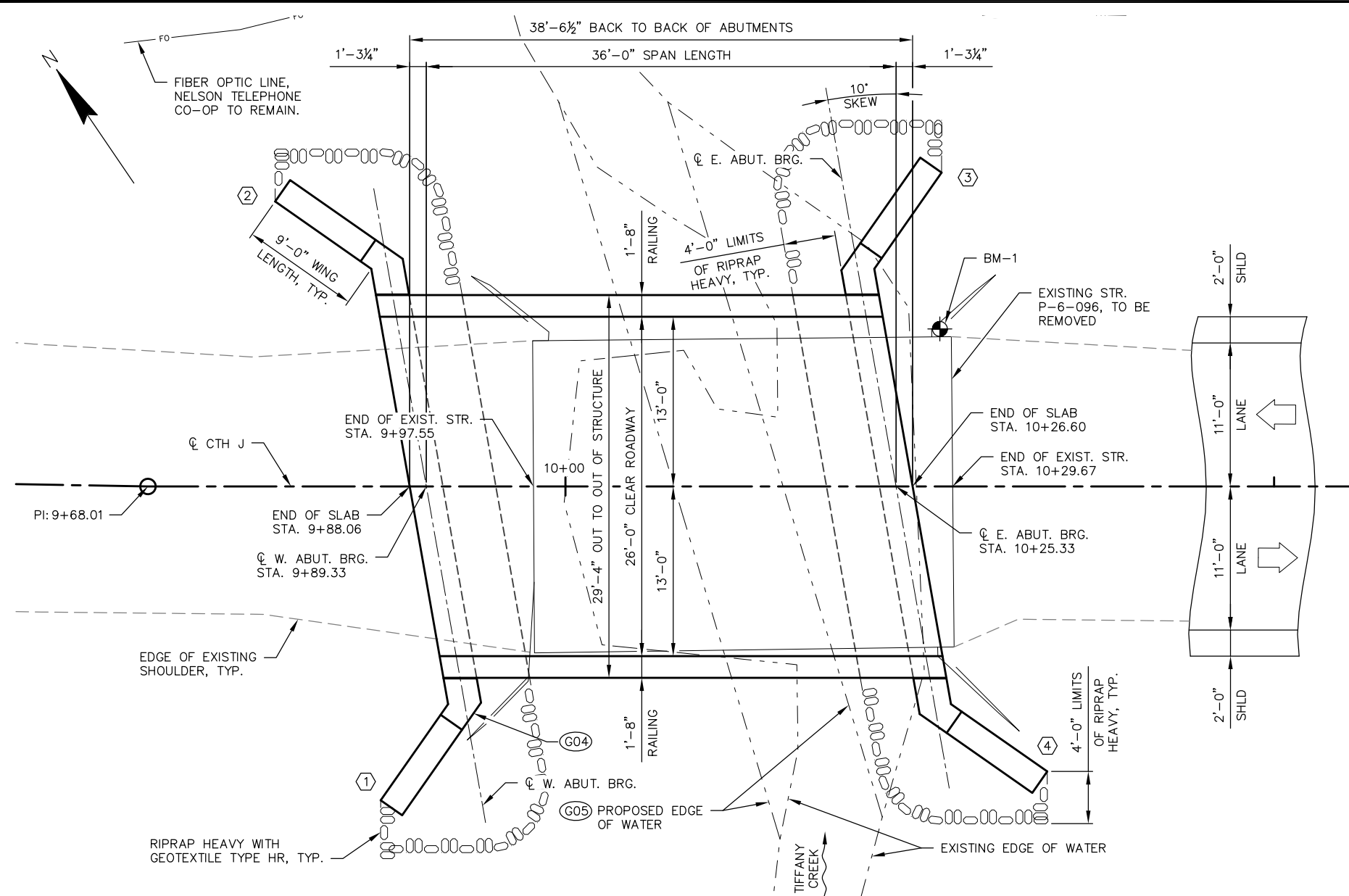
**STRUCTURE B-6-195**

CTH J OVER TIFFANY CREEK  
 COUNTY BUFFALO TOWN/CITY/VILLAGE CANTON

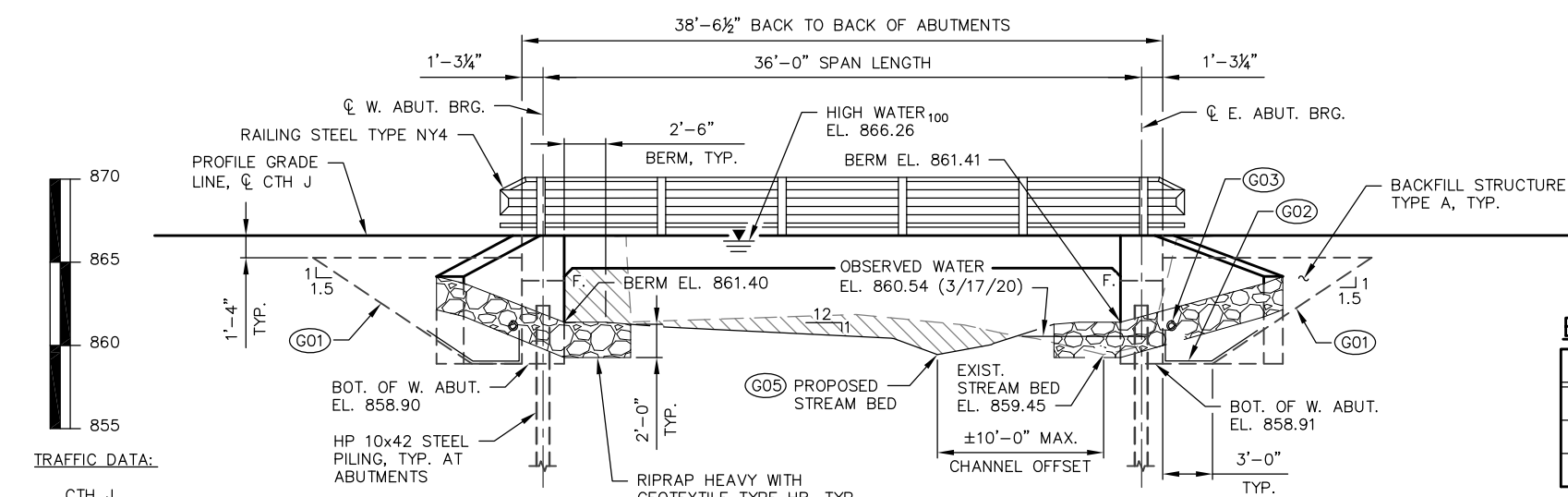
DESIGN SPEC. AASHTO LRFD DESIGN SPEC.  
 DESIGNED BY JDO DESIGN CK'D. CDS DRAWN BY JDO PLANS CK'D. ACK

**GENERAL PLAN**

SHEET 1 OF 9



**PLAN B-6-195**  
 (SINGLE SPAN CONCRETE FLAT SLAB BRIDGE)



**ELEVATION**  
 (NORMAL TO TIFFANY CREEK, LOOKING NORTH)

**TRAFFIC DATA:**

CTH J  
 A.A.D.T. (2022) 87  
 A.A.D.T. (2042) 91  
 DESIGN SPEED 60 M.P.H.

**BENCH MARKS**

NO.	STATION/OFFSET	DESCRIPTION	ELEVATION
BM-1	10+28.69, 12.07' LT.	CHIS X NE ABUT SEAT	863.29
BM-2	9+54.11, 53.46' LT.	DBL SPIKE 18" BOX ELDER	864.54
BM-3	12+07.21, 27.52' LT.	RAILROAD SPIKE IN POWER POLE	863.86

HORIZONTAL DATUM AND ADJUSTMENT: NAD 83 (2011)  
 VERTICAL DATUM AND ADJUSTMENT: NAVD 88 (2012)  
 COORDINATE REFERENCE SYSTEM: WCCS BUFFALO CO.



FILE: B060195\_01\_gen.dwg PLOT SCALE:

**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 THE BAR MARK SIGNIFIES THE BAR SIZE.

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

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE HR TO THE EXTENT SHOWN ON THE "GENERAL PLAN" SHEET AND THE ABUTMENT SHEETS.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCLUDED WITH THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-6-195".

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

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE SUPERSTRUCTURE SLAB PER THE STANDARD SPECIFICATION.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-6-195" SHALL BE THE EXISTING GROUND LINE.

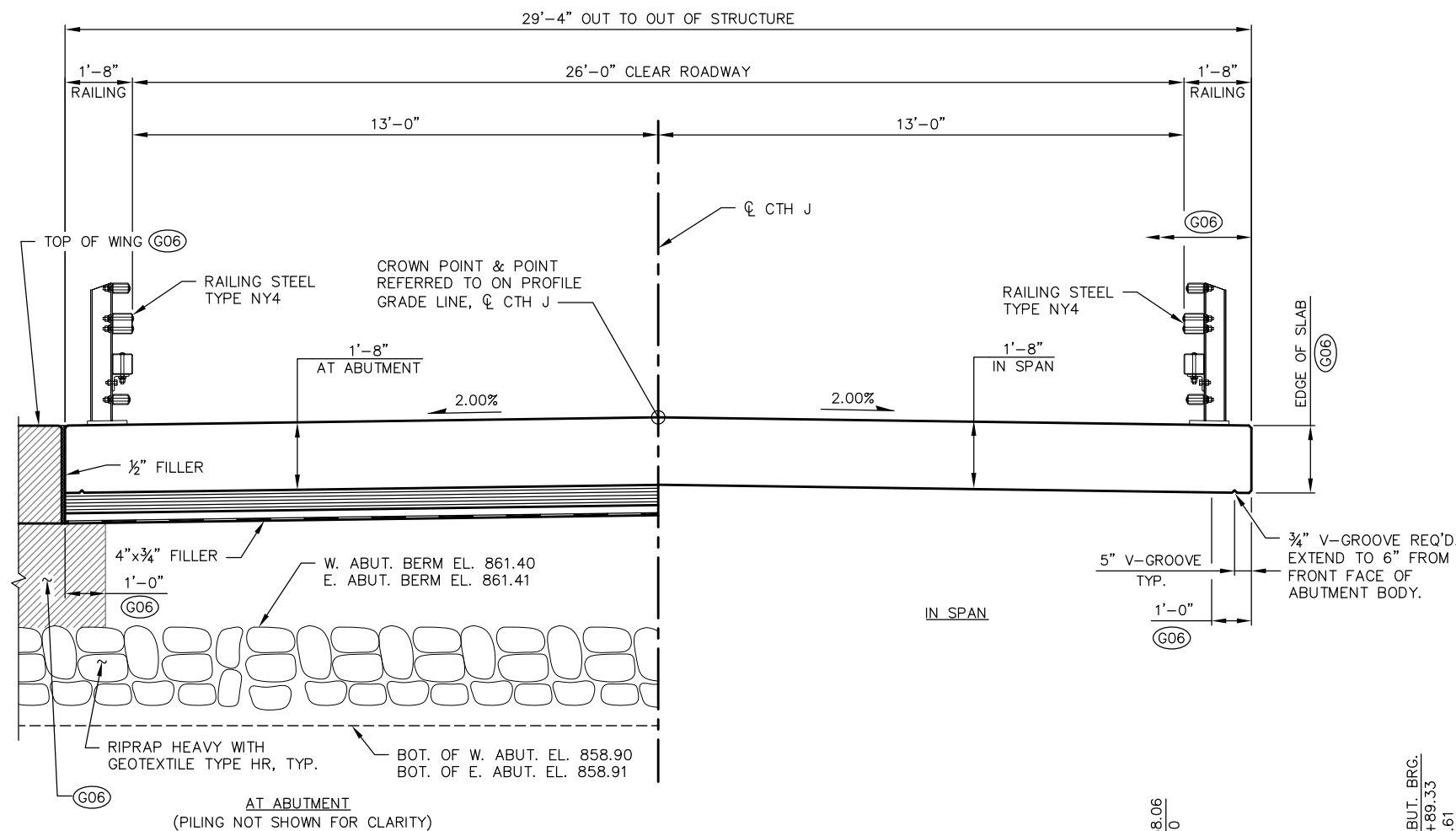
AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

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 STRUCTURE BACKFILL TYPE A.

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

THE EXISTING STRUCTURE (P-6-096) IS A SINGLE SPAN STEEL GIRDER WITH CONCRETE DECK BRIDGE WITH AN OVERALL LENGTH OF 34'-FT AND A DECK WIDTH OF 24.5'-FT AND IS TO BE REMOVED PER BID ITEM "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-6-096".



**NOTE**

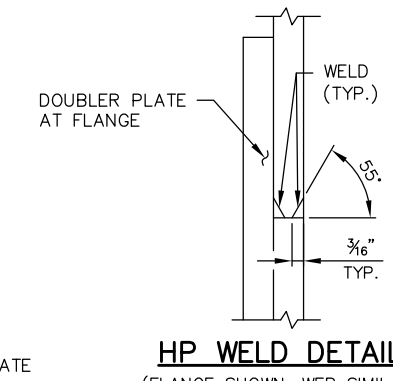
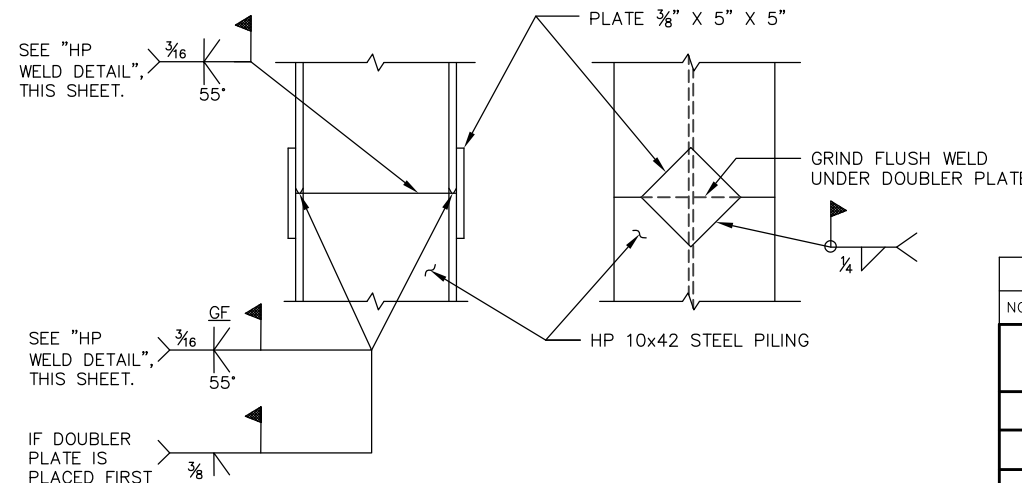
G06 COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATIONS. PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO ENTIRE EXPOSED TOP OF SLAB INCLUDING THE SLAB EDGES AND 1'-0" UNDER THE SLAB, THE TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND THE FRONT FACE OF THE ABUTMENTS TO 1'-0" PAST THE EDGE OF SLAB.

**CROSS SECTION THRU ROADWAY**  
(LOOKING EAST)

**PROFILE GRADE LINE, CTH J**

**TOTAL ESTIMATED QUANTITIES**

ITEM NO.	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER.	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-6-096	EACH	---	---	---	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-6-195	LS	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	140	140	---	280
502.0100	CONCRETE MASONRY BRIDGES	CY	27	27	75	129
502.3200	PROTECTIVE SURFACE TREATMENT	SY	16	16	146	178
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,200	2,200	---	4,400
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,400	1,400	13,790	16,590
513.7084	RAILING STEEL TYPE NY4	LF	---	---	83	83
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	6	6	---	12
550.1100	PIILING STEEL HP 10-INCH X 42 LB	LF	385	385	---	770
606.0300	RIPRAP HEAVY	CY	25	25	---	50
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	75	75	---	150
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	33	33	---	66
645.0120	GEOTEXTILE TYPE HR	SY	67	67	---	134
(NON-BID ITEM)	FILLER	SIZE				1/2" & 3/4"



**PILE SPLICE DETAILS**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-6-195</b>			
DRAWN BY: JDO		PLANS OK'D: ACK	
<b>CROSS SECTION, GENERAL NOTES &amp; QUANTITIES</b>			SHEET 2 OF 9

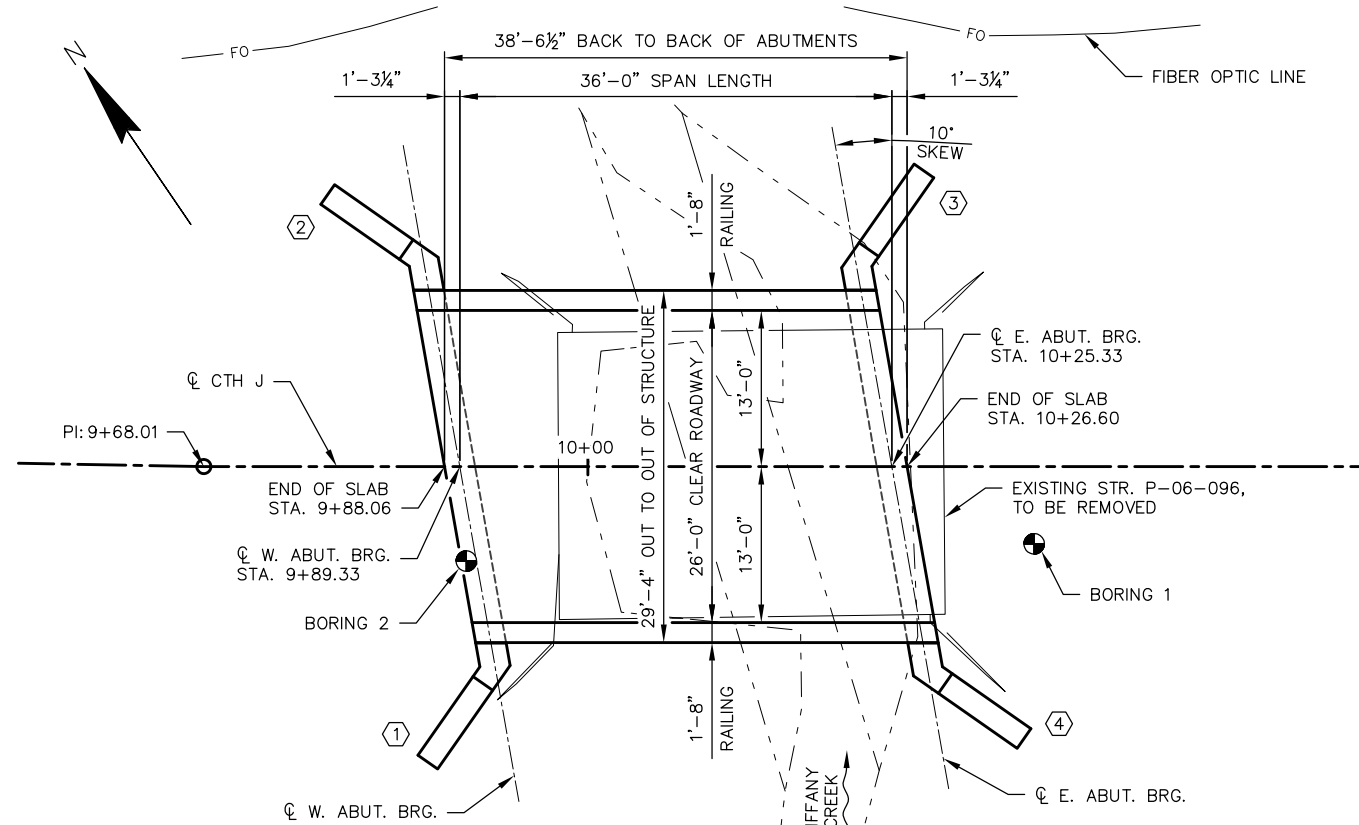
**B-6-195 BORINGS**

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
BORING 1	10/29/2019	390858.7	563694.8
BORING 2	10/29/2019	390885.0	563655.4

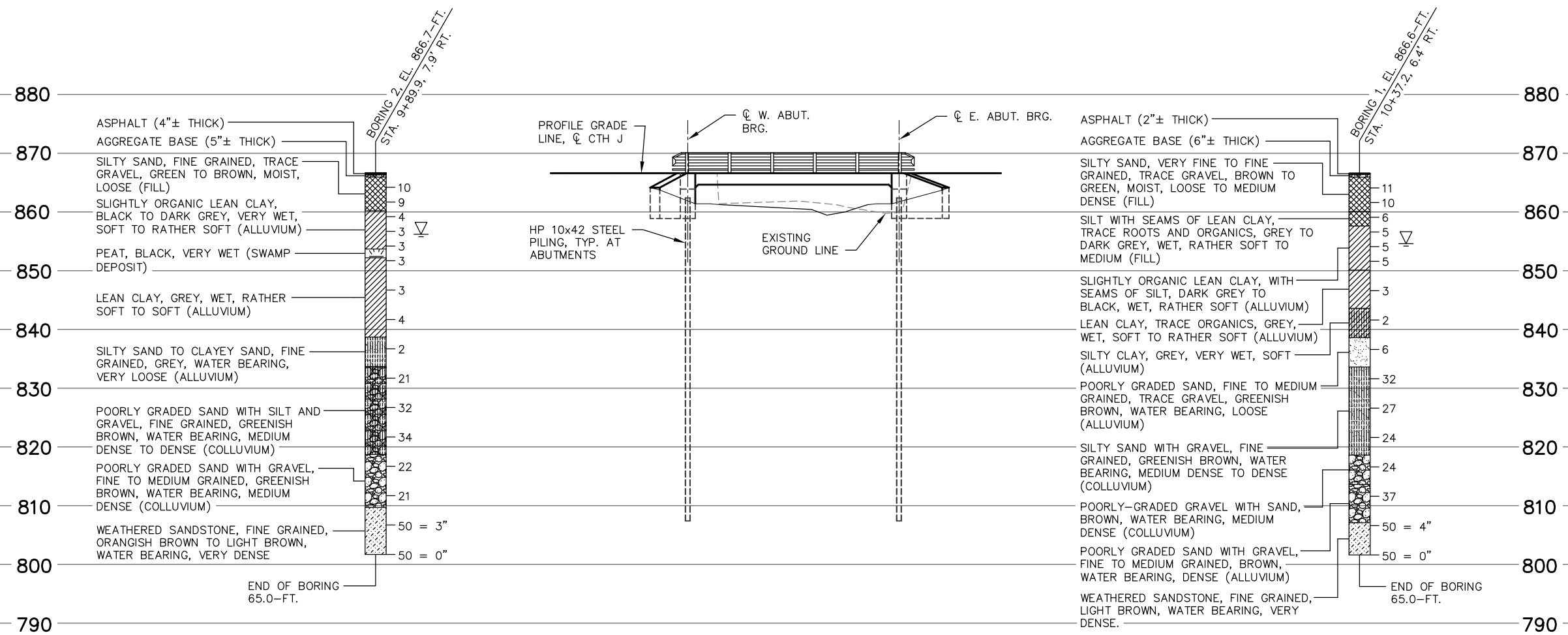
BORINGS COMPLETED BY: CHOSEN VALLEY TESTING, INC.  
 SUBSURFACE INVESTIGATION REPORT: CHOSEN VALLEY TESTING, INC.  
 ALL COORDINATES REFERENCED TO WCCS, BUFFALO COUNTY

**NOTE**

⊙ INDICATES WING NUMBER



**PLAN B-6-195**



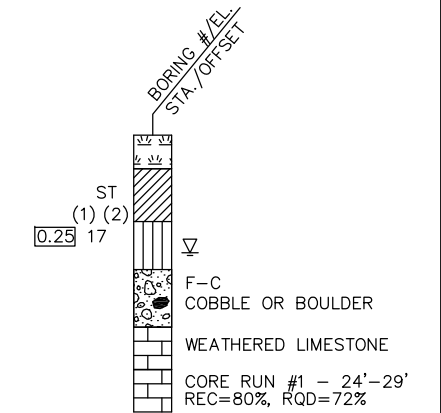
STATE PROJECT NUMBER

**7317-00-70**

**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**

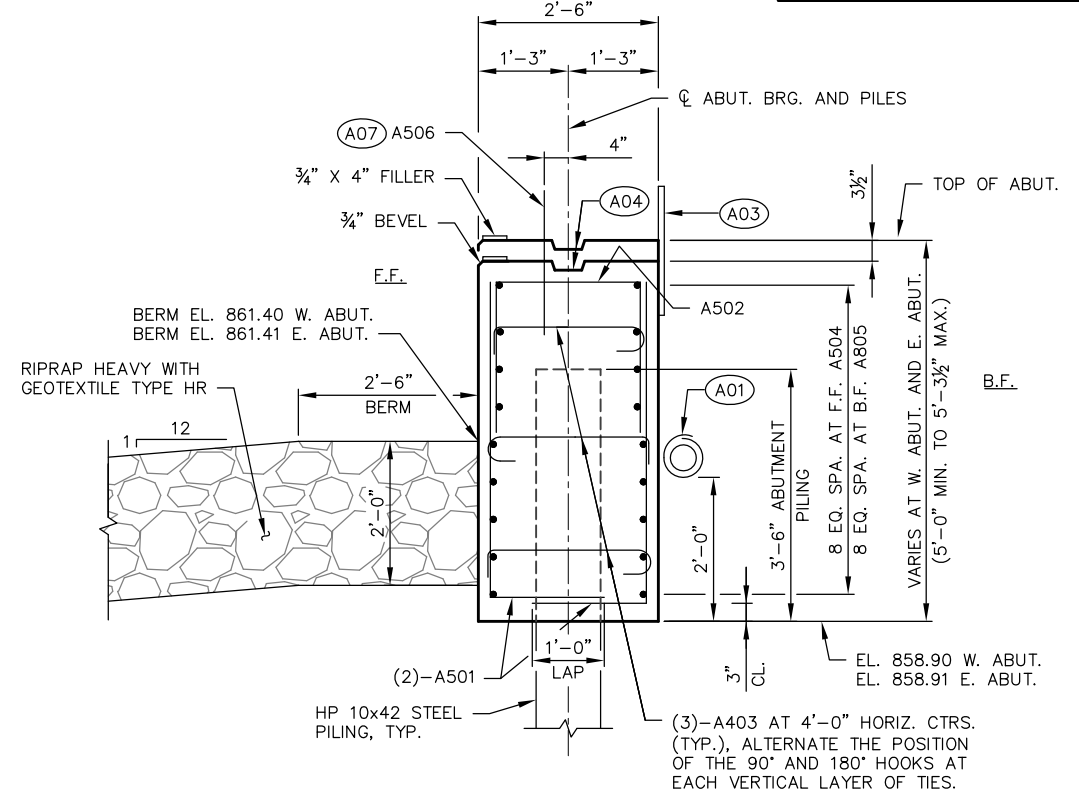
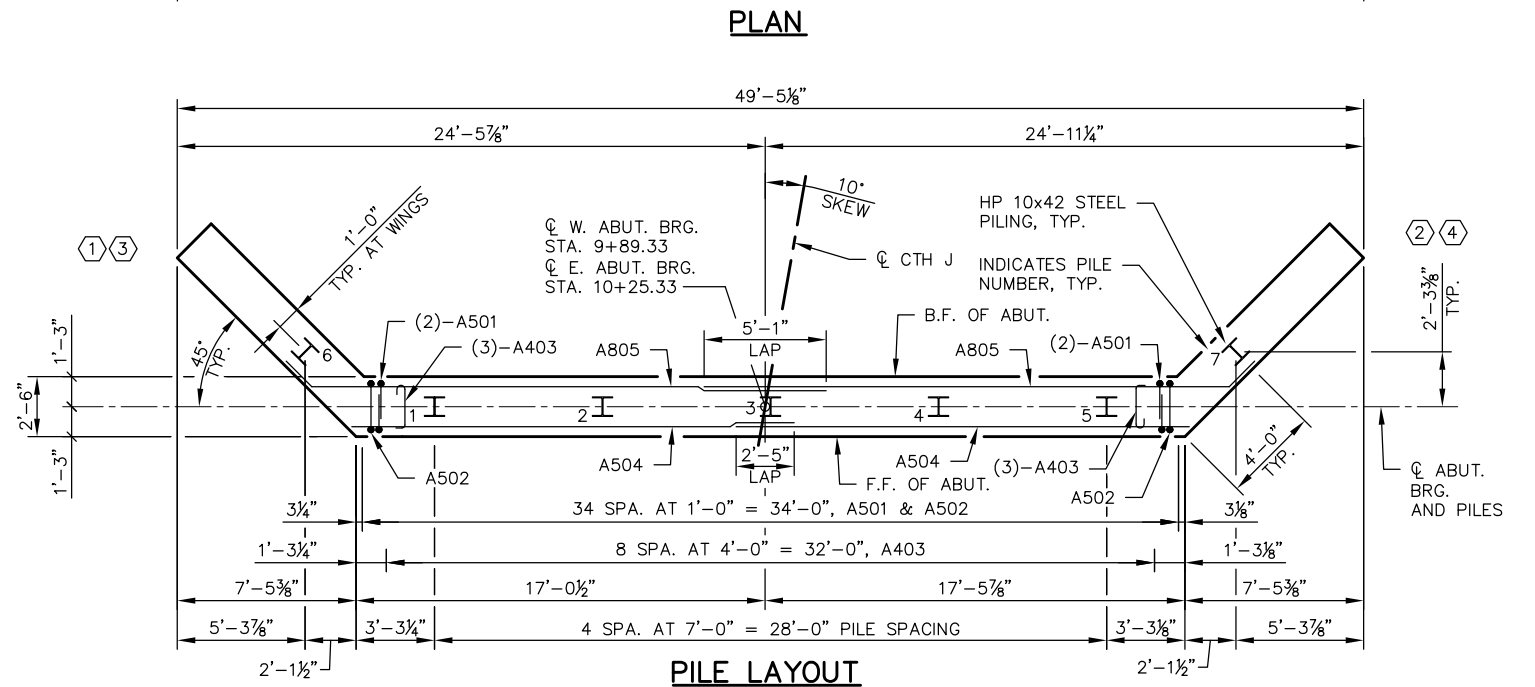
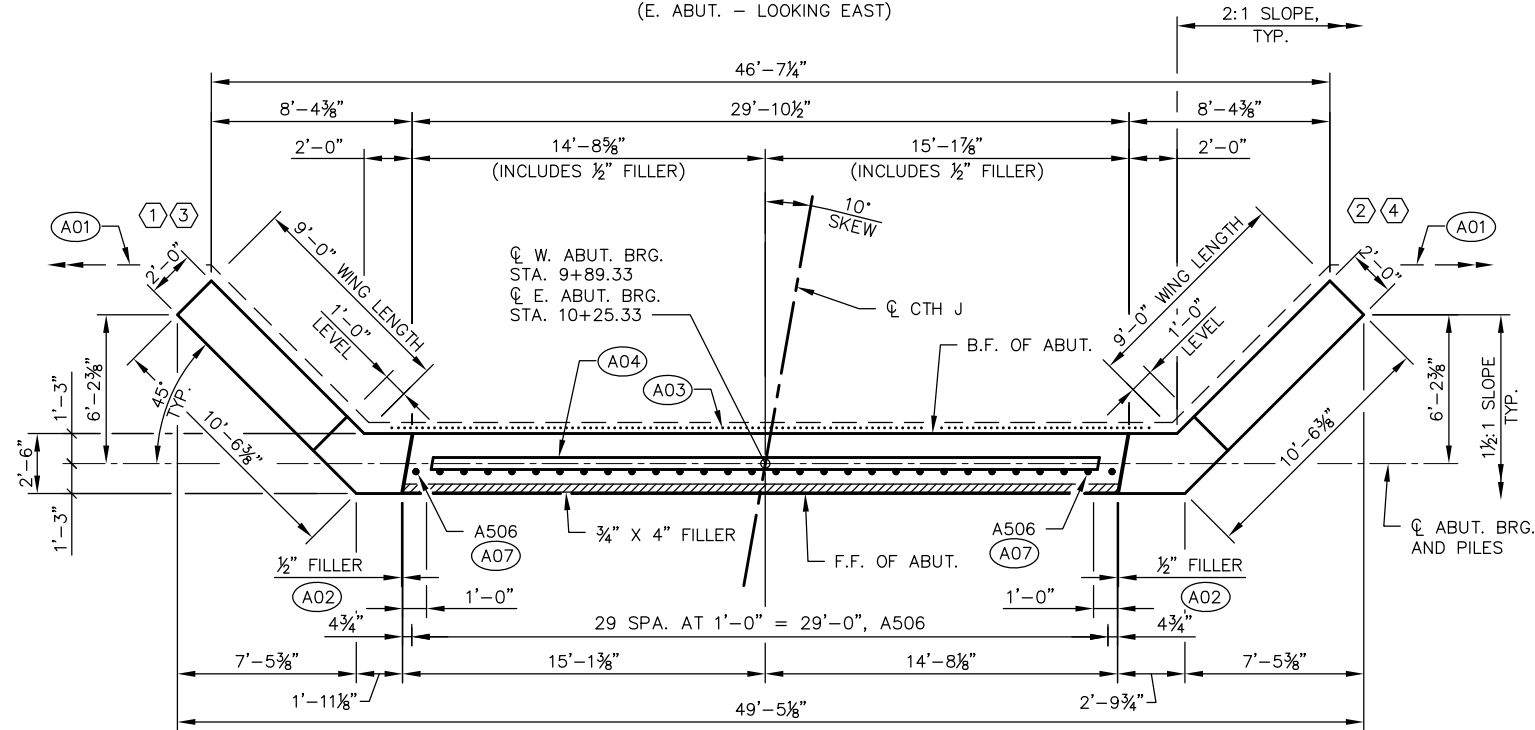
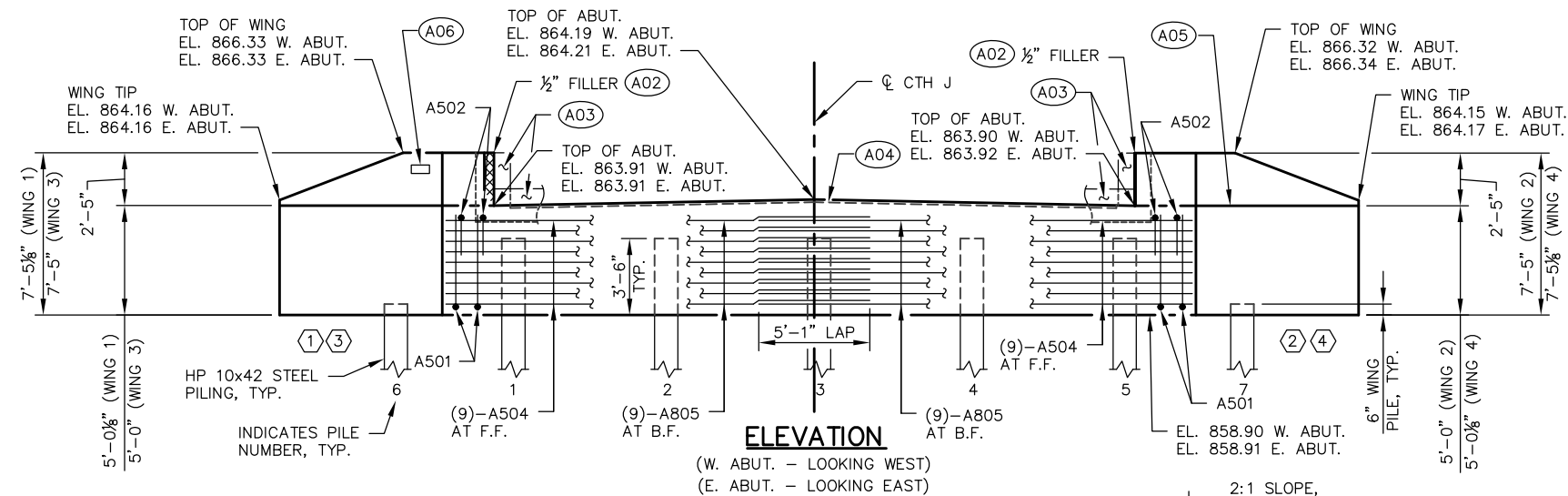
F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

**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.

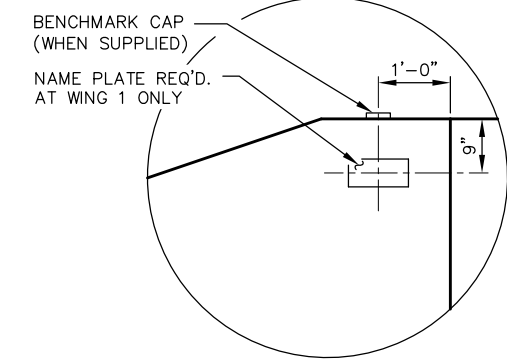
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-6-195</b>			
DRAWN BY JDO		PLANS OK'D ACK	
<b>SUBSURFACE EXPLORATION</b>		SHEET 3 OF 9	

FILE: B060195\_03\_bor.dwg PLOT SCALE:



**NOTES**

- DO NOT PLACE FILL ABOVE 3'-0" FROM THE BOTTOM OF THE ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.
- WEST AND EAST ABUTMENTS TO BE SUPPORTED ON HP 10-INCH X 42 LB STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 130 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA AT THE WEST ABUTMENT AND 140 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA AT THE EAST ABUTMENT. ESTIMATED 55 FT PILE LENGTHS AT THE WEST ABUTMENT AND 55 FT PILE LENGTHS AT THE EAST ABUTMENT.
- SEE "CROSS SECTION, GENERAL NOTES & QUANTITIES" SHEET FOR HP PILE SPLICE DETAILS.
- (A01) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON "ABUTMENT DETAILS" SHEET. RODENT SHIELD SHALL BE INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".
- (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). 1/2" FILLER TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.
- (A03) 18" RUBBERIZED MEMBRANE WATERPROOFING (R.M.W.), SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- (A04) KEYED CONST. JT. FORMED BY BEVELED 2 X 6
- (A05) OPTIONAL KEYED CONST. JT. FORMED BY BEVELED 2 X 6, TYP.
- (A06) NAME PLATE & BENCHMARK CAP (WHEN SUPPLIED) AT WING 1 ONLY. SEE "NAME PLATE DETAIL", THIS SHEET.
- (A07) A506 BARS MAY BE PLACED AFTER CONCRETE HAS BEEN POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. EMBED 1'-0" INTO ABUTMENT BODY.
- INDICATES WING NUMBER



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-6-195</b>			
DRAWN BY JDO		PLANS OK'D ACK	
<b>ABUTMENTS</b>			SHEET 4 OF 9

8

8

FILE: B060195\_04\_05\_abut.dwg PLOT SCALE:

COATED = 2,800 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. VERT.
A502		70	6'-7"	X		BODY - STIRRUP - TOP VERT.
A403		54	3'-1"	X		BODY - TIES HORIZ.
A504		36	18'-6"			BODY - F.F. HORIZ.
A805		36	23'-4"	X		BODY - B.F. HORIZ.
A506		60	2'-0"			BODY - TOP DOWELS VERT.
A407		96	8'-5"	X	▲	WINGS 1 THRU 4 - STIRRUP - F.F. & B.F. VERT.
A408		36	7'-0"			WINGS 1 THRU 4 - F.F. & B.F. VERT.
A509		36	11'-10"	X		WINGS 1 THRU 4 - F.F. HORIZ.
A410		4	9'-9"			WINGS 1 THRU 4 - F.F. HORIZ.
A411		4	7'-6"			WINGS 1 THRU 4 - F.F. HORIZ.
A412		4	5'-2"			WINGS 1 THRU 4 - F.F. HORIZ.
A413		4	10'-4"	X		WINGS 1 THRU 4 - F.F. - TOP HORIZ.
A814		36	13'-4"	X		WINGS 1 THRU 4 - B.F. HORIZ.
A415		4	8'-3"			WINGS 1 THRU 4 - B.F. HORIZ.
A416		4	5'-11"			WINGS 1 THRU 4 - B.F. HORIZ.
A417		4	3'-10"			WINGS 1 THRU 4 - B.F. HORIZ.
A418		4	8'-9"	X		WINGS 1 THRU 4 - B.F. - TOP HORIZ.
A419		8	3'-7"	X		WINGS 1 AND 3 - F.F. CORNER HORIZ.
A420		8	4'-7"	X		WINGS 2 AND 4 - F.F. CORNER HORIZ.
A421		16	2'-9"	X		WINGS 1 THRU 4 - B.F. CORNER HORIZ.

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.

**NOTES**

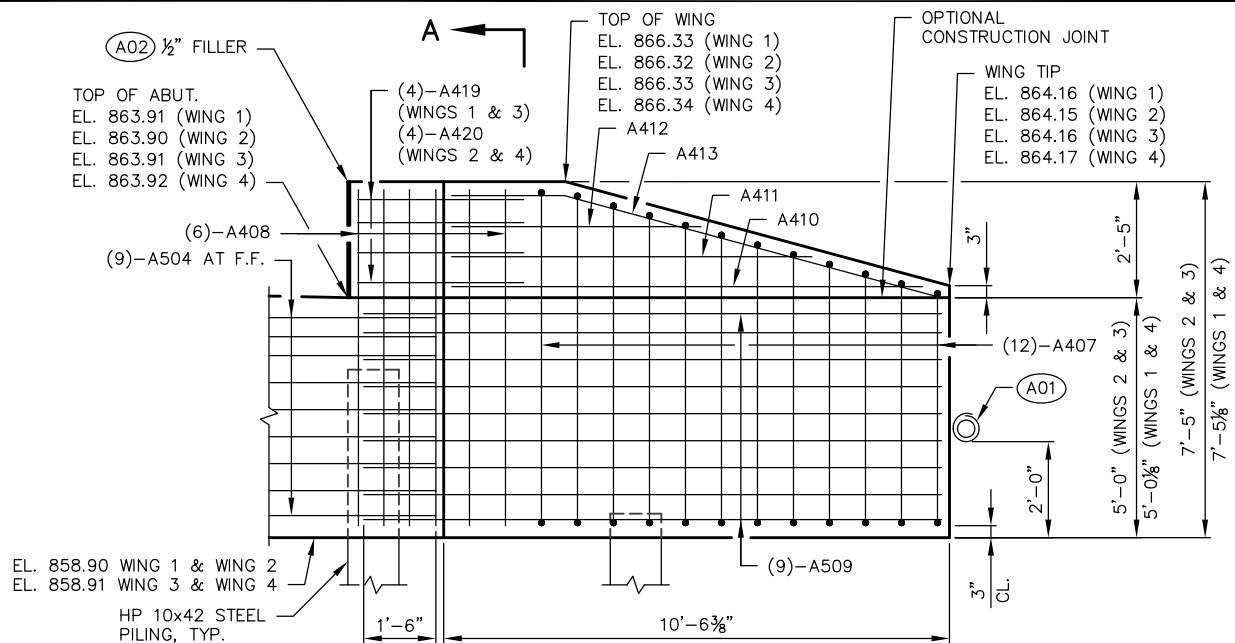
DO NOT PLACE FILL ABOVE 3'-0" FROM THE BOTTOM OF THE ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

WEST AND EAST ABUTMENT TO BE SUPPORTED ON HP 10-INCH X 42 LB STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 130 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA AT THE WEST ABUTMENT AND 140 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA AT THE EAST ABUTMENT. ESTIMATED 55 FT PILE LENGTHS AT THE WEST ABUTMENT AND 55 FT PILE LENGTHS AT THE EAST ABUTMENT.

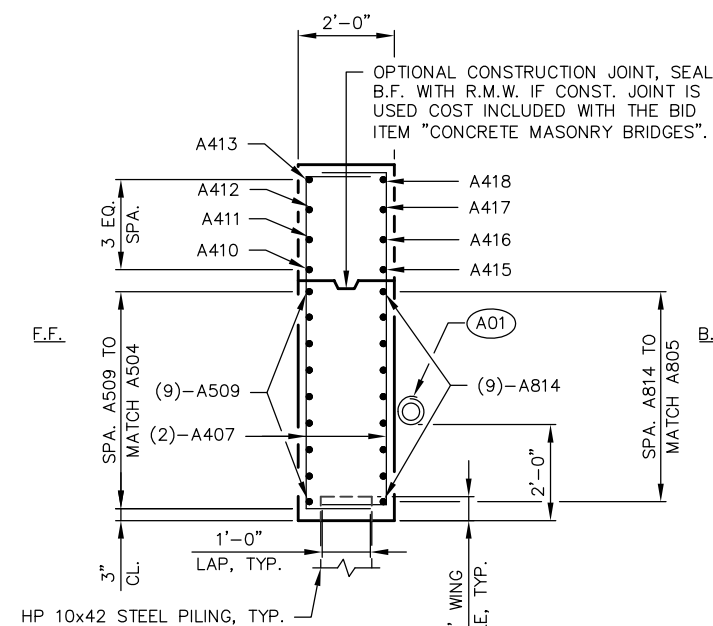
SEE "CROSS SECTION, GENERAL NOTES & QUANTITIES" SHEET FOR HP PILE SPLICE DETAILS.

(A01) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON THIS SHEET. RODENT SHIELD SHALL BE INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

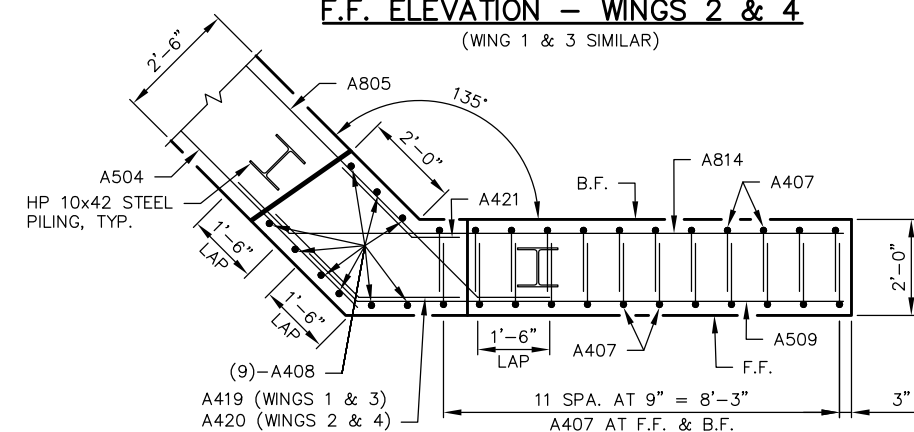
(A02) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.) 1/2" FILLER TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.



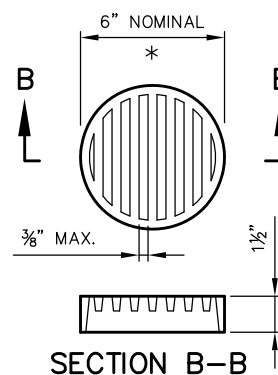
**F.F. ELEVATION - WINGS 2 & 4**  
(WING 1 & 3 SIMILAR)



**SECTION A-A**



**PLAN - WINGS 2 & 4**  
(WING 1 & 3 SIMILAR)



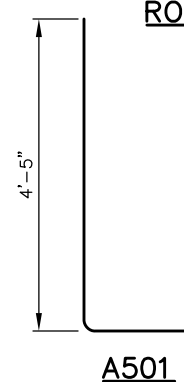
**SECTION B-B**

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

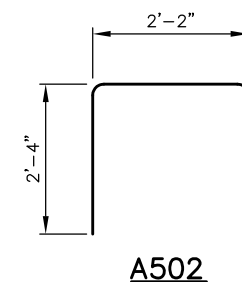
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH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

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

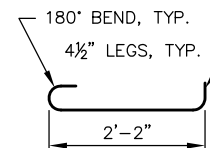
**RODENT SHIELD DETAIL**



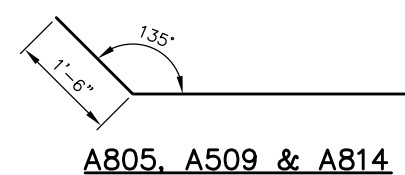
**A501**



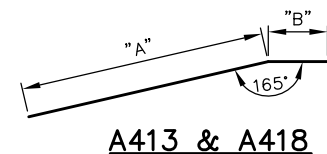
**A502**



**A403**



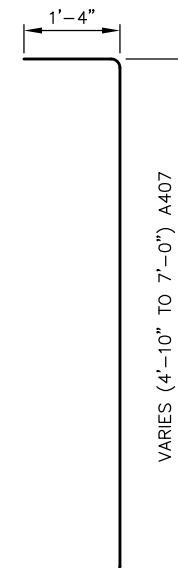
**A805, A509 & A814**



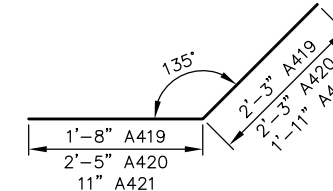
**A413 & A418**

**BAR BEND DIMENSIONS**

MARK	"A"	"B"
A413	8'-0"	2'-4"
A418	8'-0"	0'-9"



**A407**



**A419, A420, & A421**

**BAR SERIES TABLE**

MARK	NO. REQ'D	LENGTH
A407	8 SERIES OF 12	7'-4" TO 9'-6"

BUNDLE AND TAG EACH SERIES SEPARATELY.

F.F. - FRONT FACE  
B.F. - BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

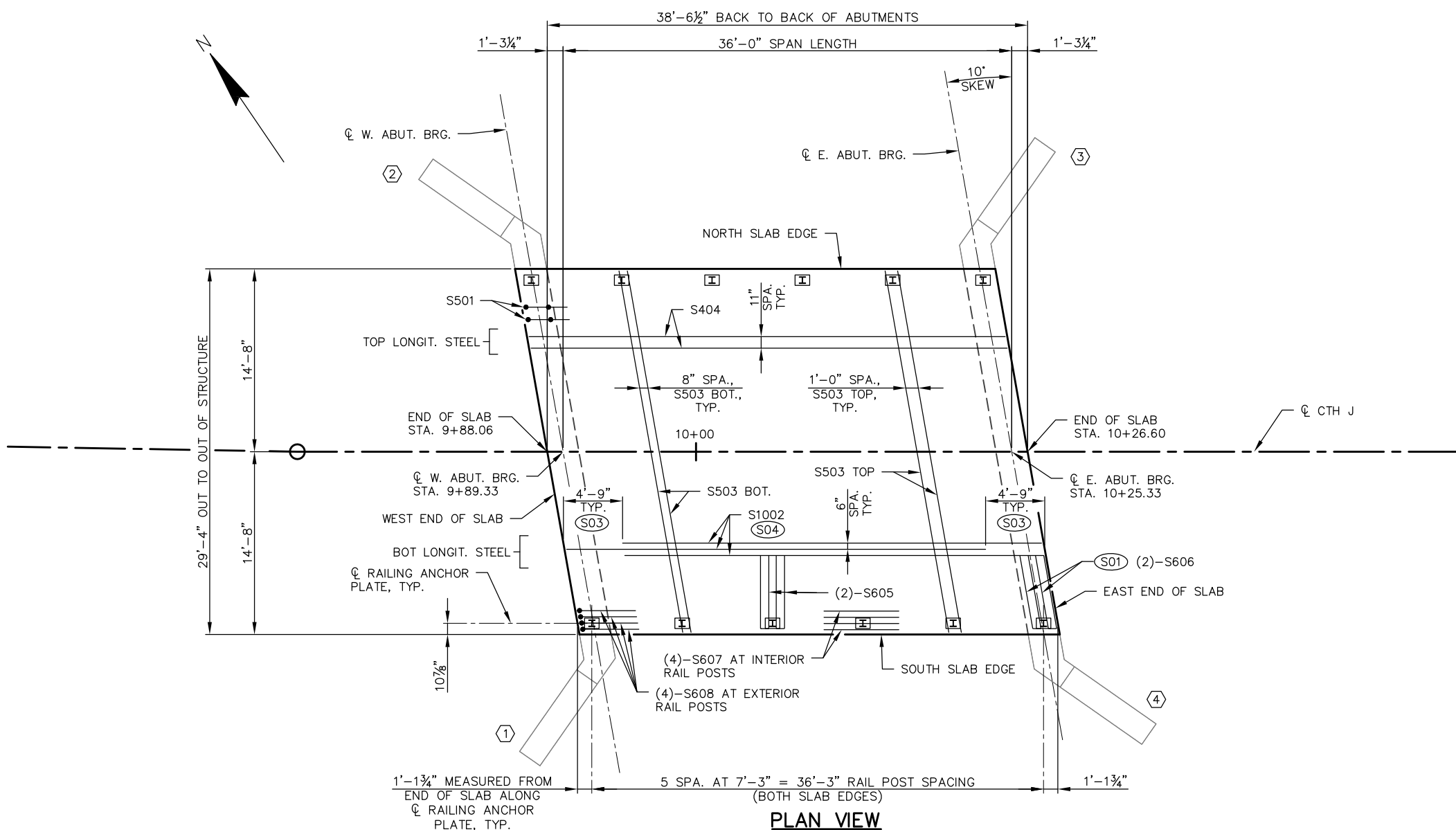
**STRUCTURE B-6-195**

DRAWN BY JDO PLANS OK'D ACK

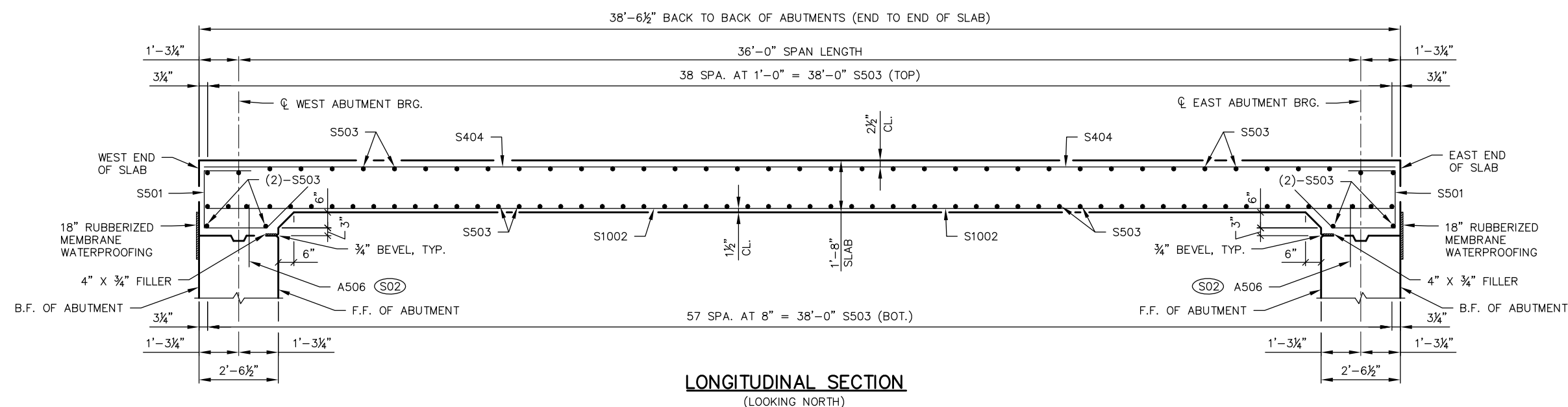
**ABUTMENT DETAILS**

SHEET 5 OF 9





- NOTES**
- TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY.
  - BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.
  - ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).
  - RAILING TO BE INSTALLED ON THE SLAB AFTER FALSEWORK HAS BEEN RELEASED.
  - (S01) ADJUST ORIENTATION OF S606 BARS AT END POSTS TO ENSURE CLEAR COVER AT END OF SLAB.
  - (S02) SEE "ABUTMENTS" SHEET FOR PLACEMENT OF A506 BARS.
  - (S03) MEASURED FROM END OF SLAB, PARALLEL WITH CL ROADWAY (CL CTH J).
  - (S04) ALTERNATE POSITION OF S1002 BARS TO EXTEND TO END OF SLAB AT EVERY OTHER ABUTMENT AS SHOWN.
  - INDICATES WING NUMBER

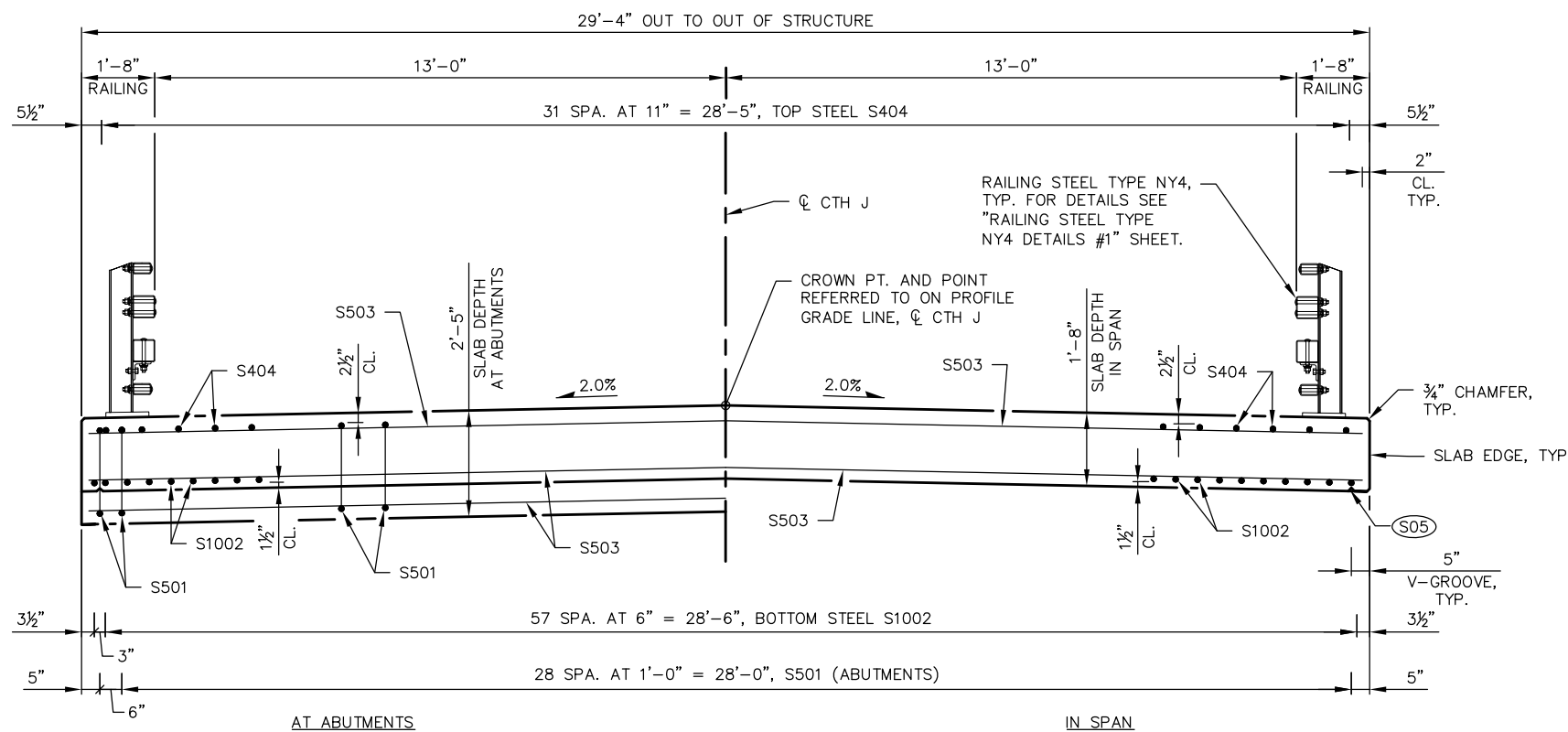


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-6-195</b>			
DRAWN BY JDO		PLANS OK'D ACK	
<b>SUPERSTRUCTURE</b>			SHEET 6 OF 9

8

8

FILE: B060195\_06\_07\_super.dwg PLOT SCALE:



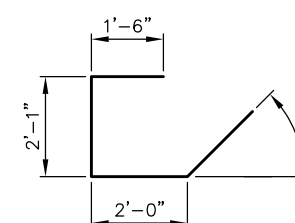
**CROSS SECTION THRU ROADWAY**  
(LOOKING EAST)

**BILL OF BARS SUPERSTRUCTURE**

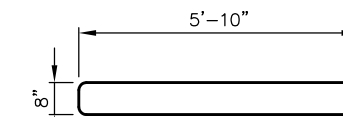
COATED = 13,790 LBS.

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
S501	60		7'-3"	X		SLAB AT ABUTMENT - TIES LONGIT.
S1002	59		33'-8"			SLAB - BOTTOM LONGIT.
S503	101		29'-5"			SLAB - TOP & BOTTOM TRANS.
S404	32		38'-2"			SLAB - TOP LONGIT.
S605	16		12'-0"	X		SLAB - TOP AT INTERIOR RAIL POSTS TRANS.
S606	8		12'-2"	X		SLAB - TOP AT EXTERIOR RAIL POSTS TRANS.
S607	32		6'-0"			SLAB - TOP AT INTERIOR RAIL POSTS LONGIT.
S608	16		6'-0"	X		SLAB - TOP AT EXTERIOR RAIL POSTS LONGIT.

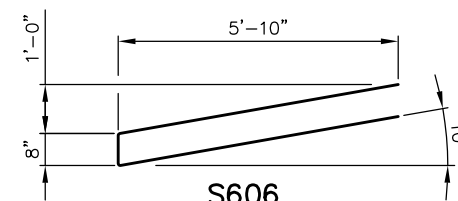
THE FIRST OR FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.  
ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.



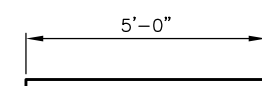
**S501**



**S605**



**S606**



**S608**

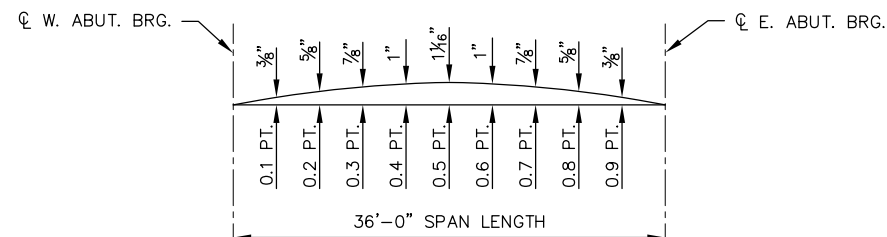
**SURVEY TOP OF SLAB ELEVATIONS**

	CL W. ABUT. BRG.	5/10 PT.	CL E. ABUT. BRG.
NORTH SLAB EDGE			
CL CTH J			
SOUTH SLAB EDGE			

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE CL 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.

**TOP OF SLAB ELEVATIONS**

SPAN PT	SOUTH SLAB EDGE	CL CTH J	NORTH SLAB EDGE
CL W. ABUT.	866.33	866.61	866.32
0.1	866.33	866.62	866.33
0.2	866.33	866.62	866.33
0.3	866.33	866.62	866.33
0.4	866.33	866.62	866.33
0.5	866.33	866.62	866.33
0.6	866.33	866.62	866.33
0.7	866.33	866.62	866.33
0.8	866.33	866.62	866.33
0.9	866.33	866.62	866.33
CL E. ABUT.	866.34	866.63	866.33



**SLAB CAMBER DIAGRAM**

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

LESS TOP OF SLAB ELEVATION AT FINAL GRADE  
 PLUS 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.

**NOTES**

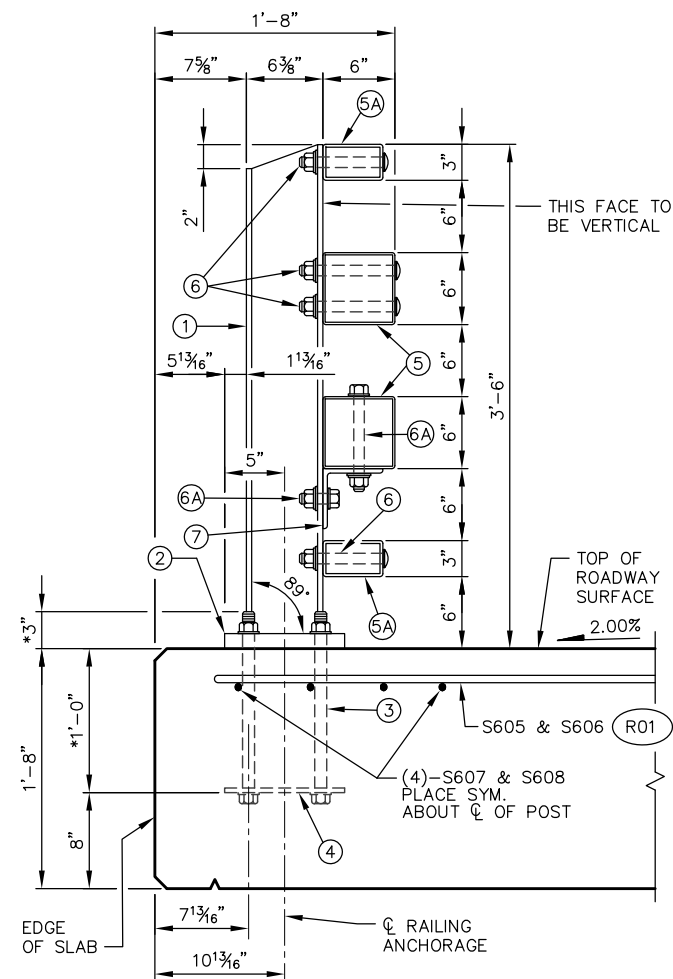
CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

(S05) 3/4" V-GROOVE. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT BODY. V-GROOVES ARE REQUIRED.

NO.	DATE	REVISION	BY
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<b>STRUCTURE B-6-195</b>			
DRAWN BY JDO		PLANS OK'D ACK	
<b>SUPERSTRUCTURE DETAILS</b>			SHEET 7 OF 9

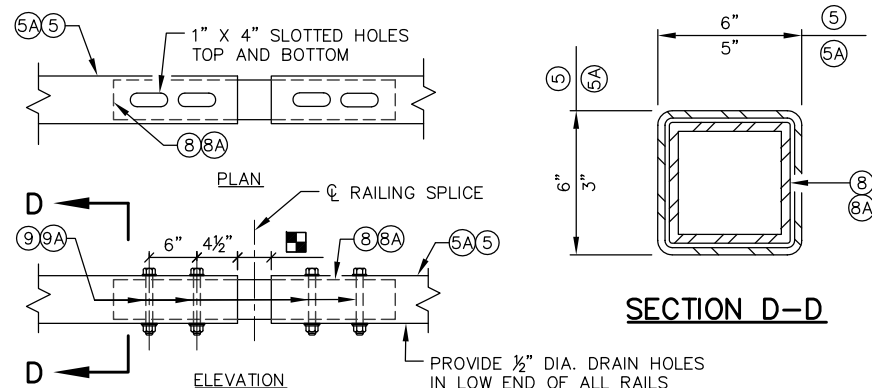
**LEGEND**

- ① W6 X 25 WITH 1 1/8" X 1 3/8" HORIZONTAL SLOTTED HOLES ON EACH SIDE OF POST FOR BOLT NO. 6 AT TOP TWO RAILS. USE 1" DIA. HOLES FOR BOLT NO. 6 AT BOTTOM NO. 5A & FOR BOLT NO. 6A AT NO. 7. 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 10" X 1'-2" WITH 1 1/8" X 1 1/4" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ③ ASTM A449 - 1" DIA. ANCHOR BOLTS WITH HEAVY HEX NUT AND 2" O.D. HARDENED WASHER (ALL GALVANIZED). 4 REQUIRED PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-3" LONG BOLT AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16".
- ④ 3/8" X 10" X 1'-2" ANCHOR PLATE (GALVANIZED) WITH 1 1/8" DIA. HOLES FOR ANCHOR BOLTS NO. 3.
- ⑤ TS 6 X 6 X 3/16" STRUCTURAL TUBING. USE 1" DIA. HOLES FOR BOLT NO. 6 (FRONT & BACK) & 1/8" DIA. HOLES FOR BOLT NO. 6A (TOP & BOTTOM).
- ⑤A TS 5 X 3 X 1/4" STRUCTURAL TUBING. USE 1" DIA. HOLES FOR BOLT NO. 6 IN TOP RAIL (FRONT & BACK). USE 1 1/8" X 1 3/8" HORIZONTAL SLOTTED HOLES FOR BOLT NO. 6 IN BOTTOM RAIL (FRONT & BACK) AND A 2" O.D. WASHER UNDER BOLT HEAD.
- ⑥ 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH HEX NUT, 3/16" X 1 3/4" X 1 3/4" WASHER, AND SPRING LOCK WASHER (2 REQUIRED AT RAIL TO POST LOCATIONS SHOWN).
- ⑥A 3/4" DIA. A325 BOLT WITH HEX NUT AND SPRING LOCK WASHER (1 REQUIRED AT RAIL TO ANGLE AND 2 REQUIRED AT ANGLE TO POST LOCATIONS SHOWN WITH 3/16" X 1 1/4" X 1 3/4" WASHER).
- ⑦ L 5 X 5 X 5/8" STRUCTURAL ANGLE. ATTACH TO NO. 1 AND NO. 5 AS SHOWN.
- ⑧ TS 5 X 5 X 5/16" X 2'-4" LONG SPLICE TUBE. 1 PER RAIL. USED IN NO. 5.
- ⑧A 4 1/4" X 2 1/8" X 2'-4" LONG SPLICE BAR. 1 PER RAIL. USED IN NO. 5A.
- ⑨ 3/4" DIA. A325 FULLY THREADED BOLTS, 7 1/2" LONG, WITH 2 WASHERS AND HEAVY HEX NUT ON EACH BOLT. NUT TO BE FINGER TIGHT. (4 REQUIRED PER SPLICE). USE 1" X 4" SLOTTED HOLES IN TOP AND BOTTOM OF NO. 5.
- ⑨A 3/4" DIA. A325 FULLY THREADED BOLTS, 4 1/2" LONG, WITH 2 WASHERS AND HEAVY HEX NUT ON EACH BOLT. NUT TO BE FINGER TIGHT. (4 REQUIRED PER SPLICE). USE 1" X 4" SLOTTED HOLES IN TOP AND BOTTOM OF NO. 5A.
- ⑩ SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- ▣ ROADWAY OPENING OR 2 1/2" MIN. FOR STRIP SEAL EXP. JOINT & 1/2" OPENING FOR A1 ABUTMENT. 1/2" AT FIXED JOINTS. SPLICES ARE REQUIRED IN ANY RAILING SPAN BETWEEN POSTS THAT CONTAINS A SUPERSTRUCTURE EXPANSION JOINT.
- ▲ PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE RAILS, SPLICE TUBES AND FILL PLATES.

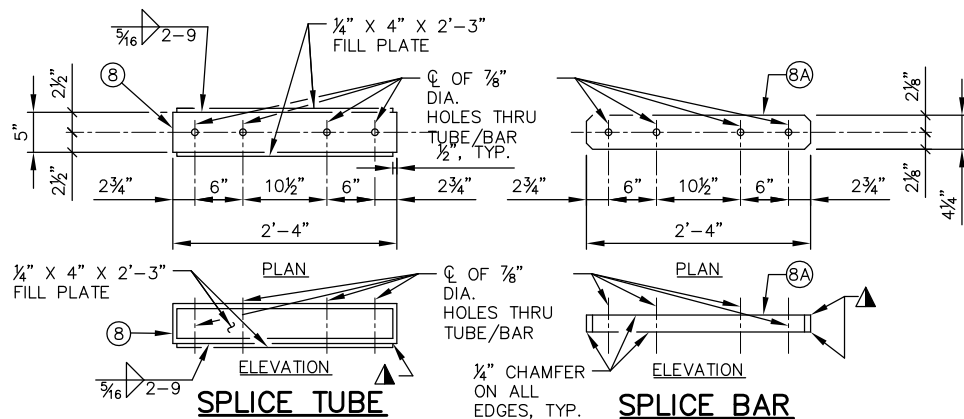


**SECTION THRU RAILING ON SLAB**

\* - NORMAL TO BASE PLATE

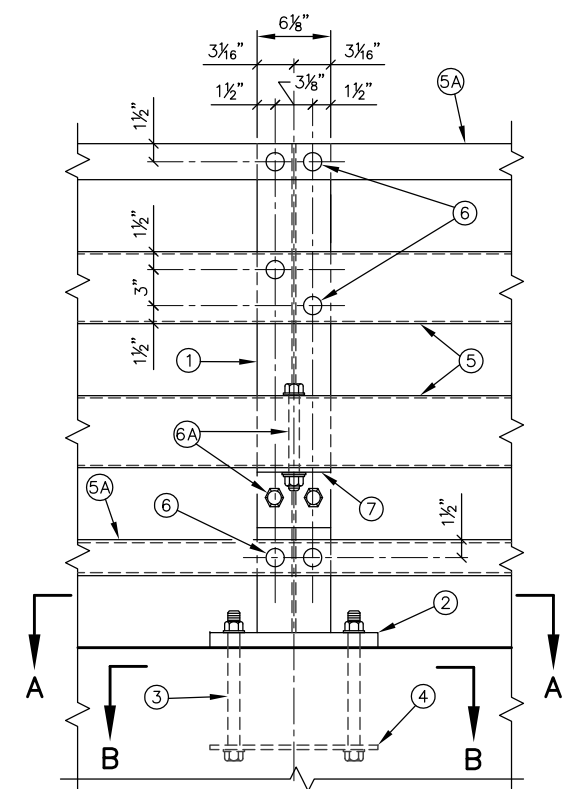


**FIELD ERECTION JOINT DETAIL**



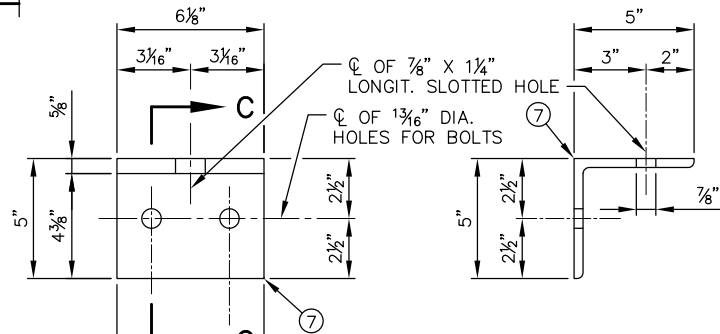
**SPLICE TUBE**

**SPLICE BAR**



**PART ELEVATION OF RAILING AT POST**

(INTERIOR ELEVATION)



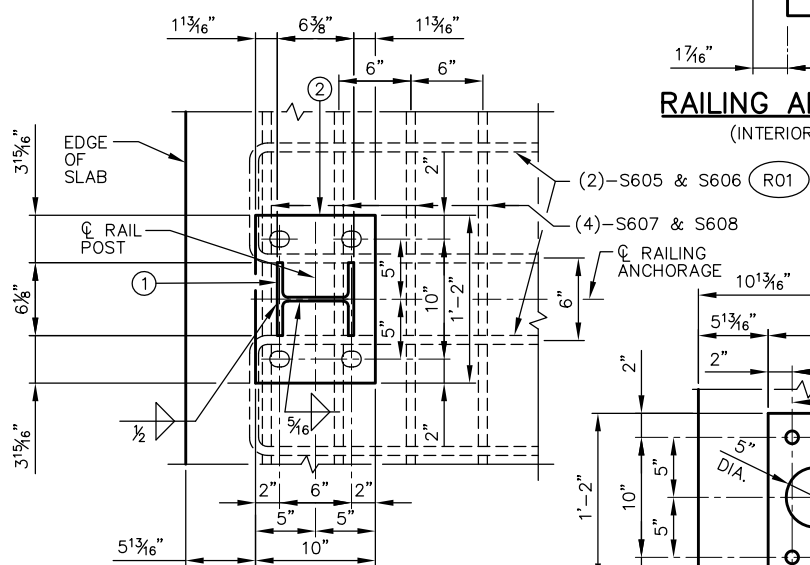
**RAILING ANGLE DETAIL**

(INTERIOR ELEVATION)

**SHOP RAIL SPLICE DETAIL**  
(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)

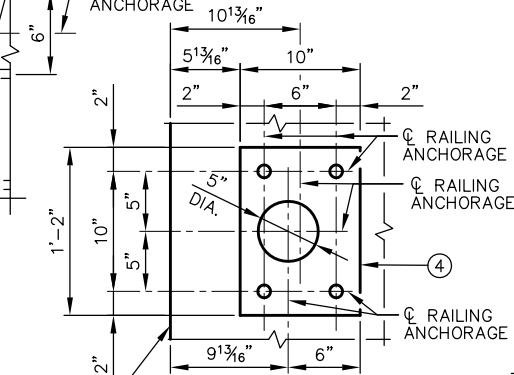
**SECTION C-C**

(ANGLE SECTION)



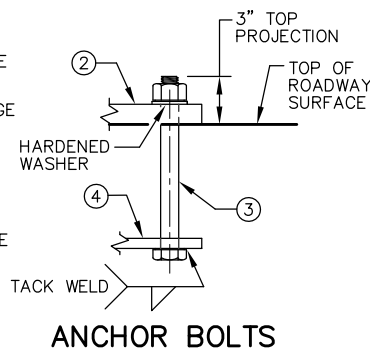
**SECTION A-A**

(BASE PLATE DETAILS)



**SECTION B-B**

(ANCHOR PLATE DETAIL)



**ANCHOR BOLTS**

**NOTES**

1. BID ITEM SHALL BE "RAILING STEEL TYPE NY4", WHICH INCLUDES ALL ITEMS SHOWN.
2. RAILING SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.
3. 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.
4. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS, ANGLES, SPLICE TUBES, SPLICE BARS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS.
5. RAIL POST, BASE PLATES, SPLICE BAR, ANGLES AND SPLICE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED  $f_y=50$  KSI. ANCHOR PLATES & SHIMS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
6. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. CAULK AROUND PERIMETER OF NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.
8. STEEL SHIMS SHALL BE PROVIDED & USED UNDER PLATE NO. 2 WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

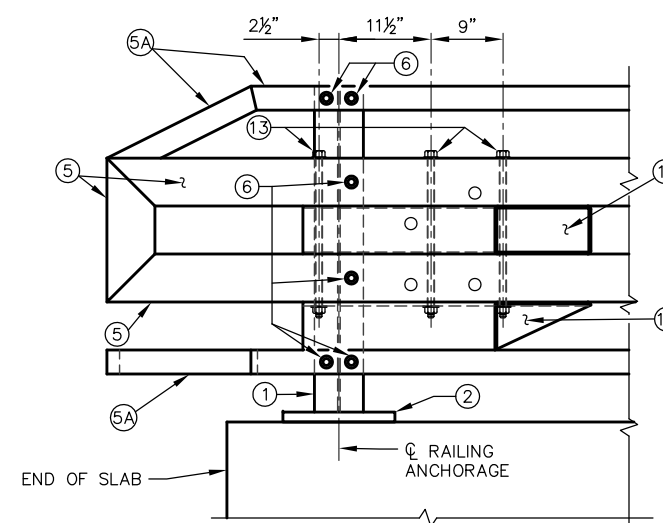
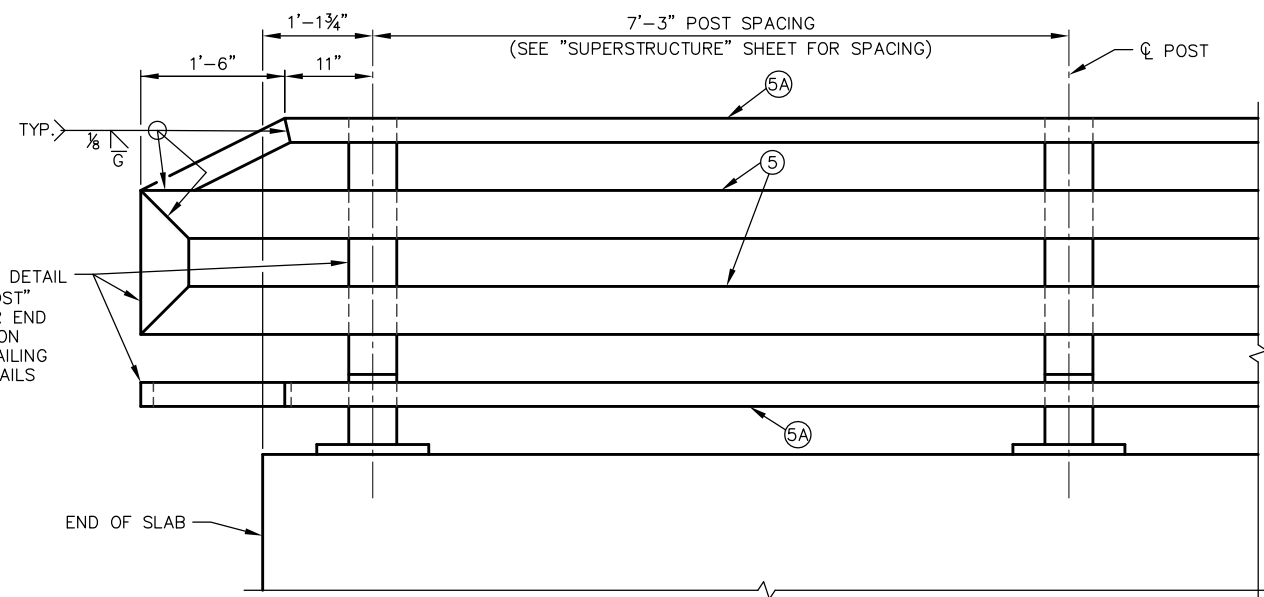
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-6-195</b>			
DRAWN BY: JDO		PLANS OK'D: ACK	
<b>RAILING STEEL TYPE NY4 DETAILS #1</b>			SHEET 8 OF 9

**LEGEND**

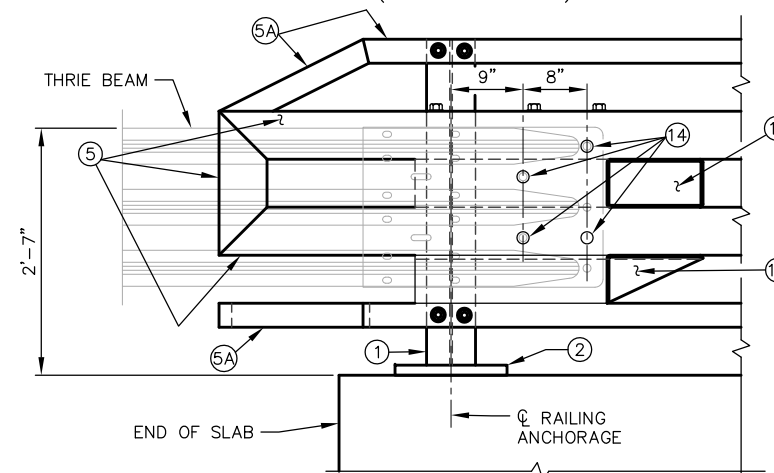
- ① W6 X 25 WITH 1 1/8" X 1 3/8" HORIZONTAL SLOTTED HOLES ON SIDE OF POST FOR BOLT NO. 6 AT NO. 5 AND TOP RAIL. USE 1" DIA. HOLES FOR BOLT NO. 6 AT NO. 5A BOTTOM RAIL. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1 1/4" X 10" X 1'-2". SEE "RAILING STEEL TYPE NY4 DETAILS #1" SHEET.
- ⑤ TS 6 X 6 X 3/16" STRUCTURAL TUBING. USE 7/8" DIA. HOLES IN TOP AND BOTTOM OF RAILS FOR BOLT NO. 13 AS SHOWN IN PLAN DETAILS. USE 1" DIA. HOLES IN FRONT AND BACK OF RAILS FOR BOLTS NO. 6 & NO. 14 AS SHOWN IN ELEVATION DETAILS.
- ⑤A TS 5 X 3 X 1/4" STRUCTURAL TUBING. USE 1" DIA. HOLES FOR BOLT NO. 6 IN TOP RAIL (FRONT & BACK). USE 1 1/8" X 1 3/8" HORIZONTAL SLOTTED HOLES FOR BOLT NO. 6 IN BOTTOM RAIL (FRONT & BACK) AND A 2" O.D. WASHER UNDER BOLT HEAD.
- ⑥ 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH HEX NUT, 3/16" X 1 3/4" X 1 3/4" WASHER, AND SPRING LOCK WASHER (1 REQUIRED AT RAIL NO. 5 TO POST NO. 1 CONNECTION LOCATIONS SHOWN. 2 REQUIRED AT RAIL NO. 5A TO POST NO. 1 CONNECTION LOCATIONS SHOWN).
- ⑪ TS 6 X 6 X 3/16" STRUCTURAL TUBING. USE 1" DIA. HOLES IN FRONT AND BACK FOR BOLT NO. 14 & 7/8" DIA. HOLES IN TOP & BOTTOM FOR BOLT NO. 13.
- ⑫ L 6" X 6" X 1/2" STRUCTURAL ANGLE. USE 7/8" DIA. HOLES IN TOP FLANGE FOR BOLT NO. 13.
- ⑬ 3/4" DIA. A325 FULLY THREADED BOLTS, 2 WASHERS AND A HEAVY HEX NUT, ON EACH BOLT. NUT TO BE FINGER TIGHT. 3 BOLTS AT EACH END POST.
- ⑭ 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH HEX NUT AND 3/16" X 2" X 2" WASHER FOR CONNECTION OF THRIE BEAM (4 REQUIRED)

**NOTE**

- 1. STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED  $f_u=50$  KSI, STRUCTURAL ANGLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50.

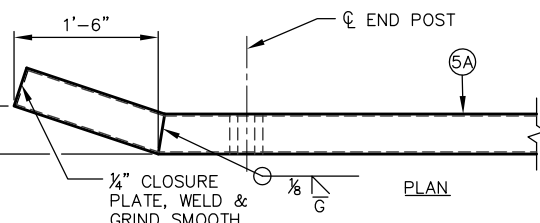
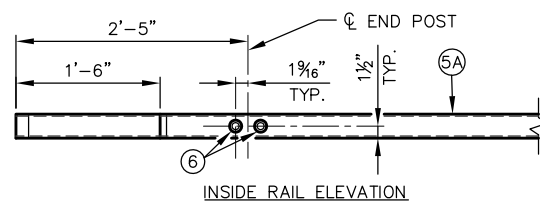


**ELEVATION DETAIL AT NY4 END POST**  
(INTERIOR ELEVATION)

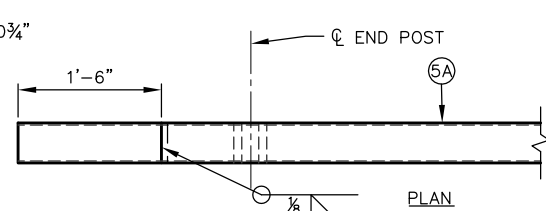
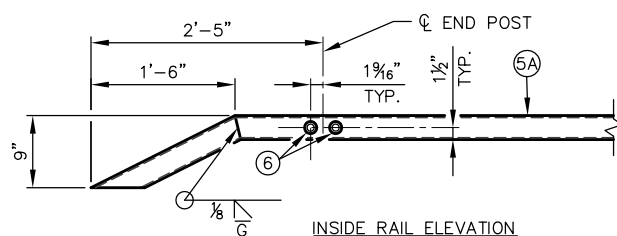


**ELEVATION OF DETAIL AT NY4 END POST**  
(THRIE BEAM RAIL ATTACHMENT)

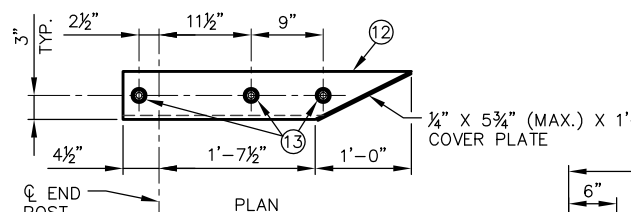
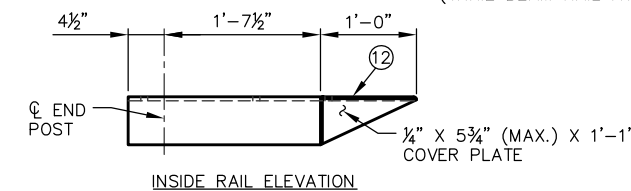
**PART ELEVATION OF RAILING**  
(INTERIOR ELEVATION)



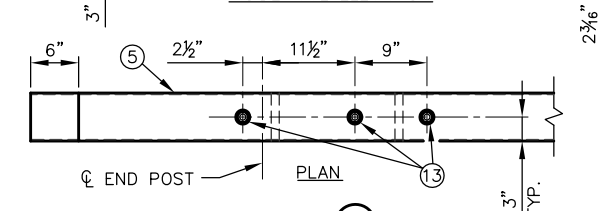
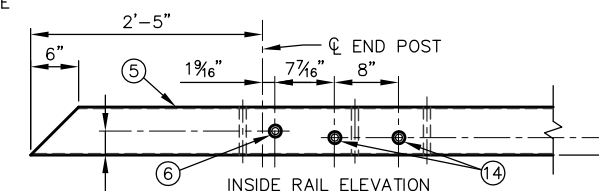
**BOTTOM RAIL ⑤A DETAILS**



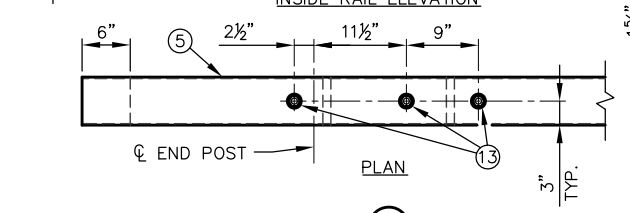
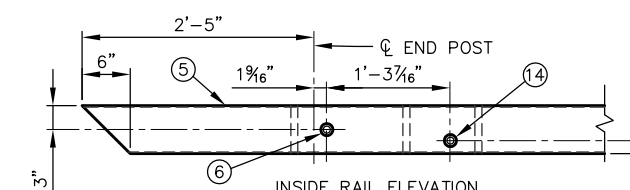
**TOP RAIL ⑤A DETAILS**



**ANGLE ⑫ DETAILS**

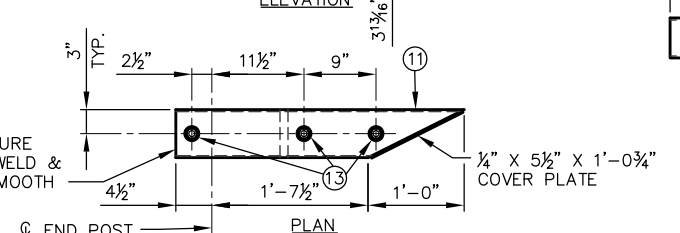
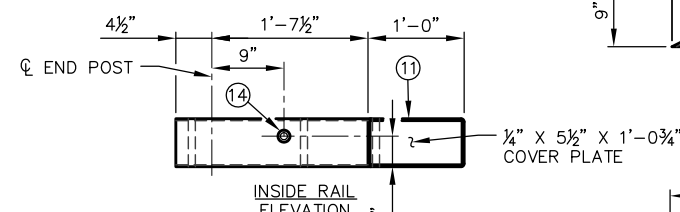
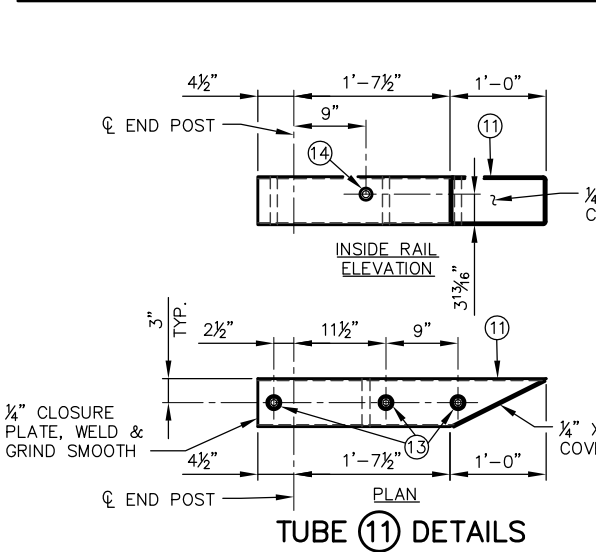


**BOTTOM RAIL ⑤ DETAILS**



**TOP RAIL ⑤ DETAILS**

**SECTION THRU NY4 RAILING END POST**



**TUBE ⑪ DETAILS**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-6-195</b>			
DRAWN BY JDO		PLANS OK'D ACK	
<b>RAILING STEEL TYPE NY4 DETAILS #2</b>			SHEET 9 OF 9

8

8

FILE: B060195\_08\_09\_ny4.dwg PLOT SCALE:

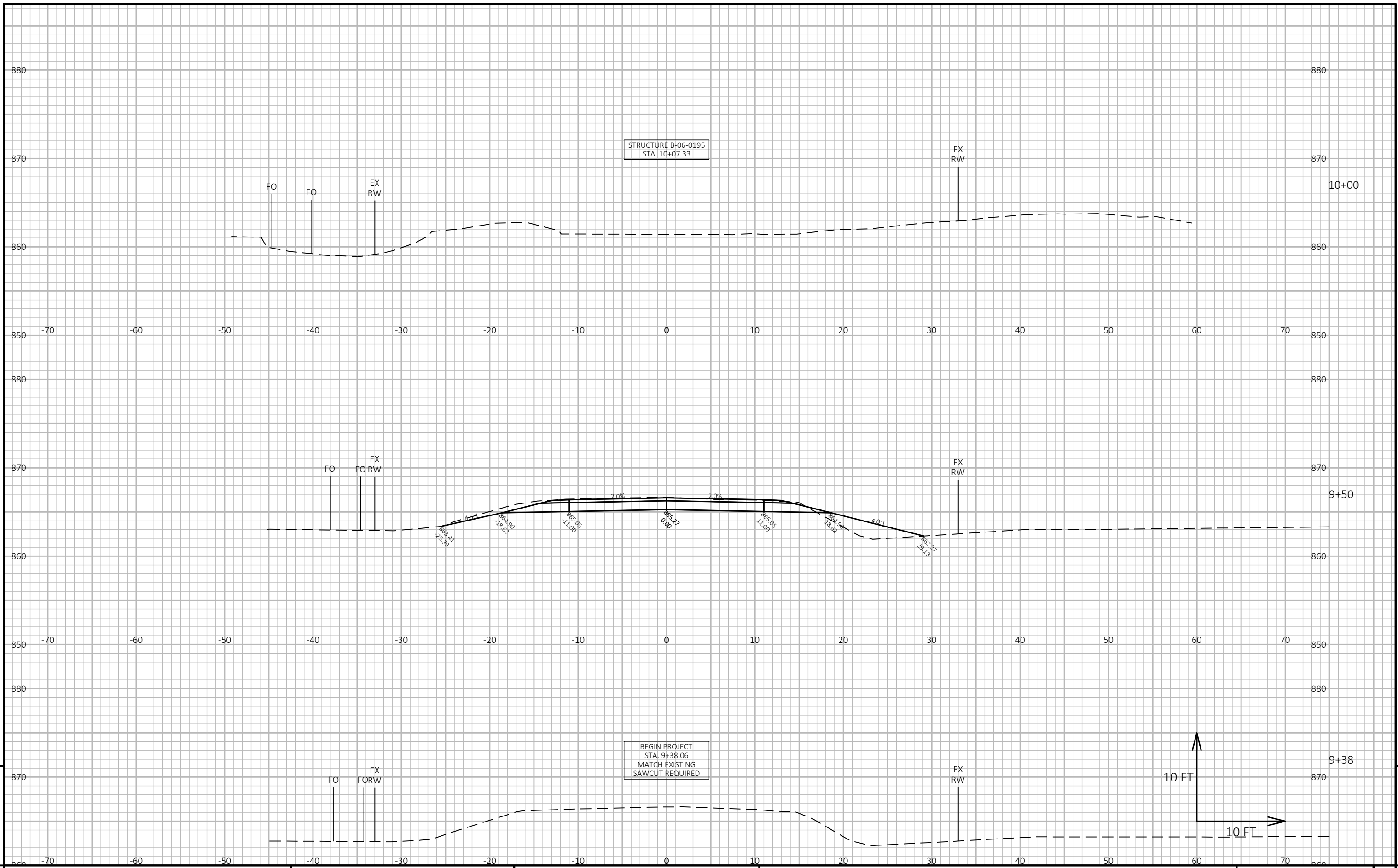
STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT 1.00	EXPANDED FILL 1.25	
				Note 1	Note 2	Note 3	Note 1		Note 4
09+38.06	41.18	9.78	0.00	0	0	0	0	0	0
09+50.00	46.50	9.78	12.94	19	4	3	19	4	12
09+75.00	42.69	9.78	28.10	41	9	19	60	28	20
09+88.06	41.15	9.78	0.00	20	5	7	80	36	27
STRUCTURE B-06-0195									
DIVISION 1 TOTALS				80	18	29			

STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT 1.00	EXPANDED FILL 1.25	
				Note 1	Note 2	Note 3	Note 1		Note 4
STRUCTURE B-06-0195									
10+26.60	30.57	9.78	8.06	0	0	0	0	0	0
10+50.00	44.66	9.78	17.59	33	8	11	33	14	11
10+75.00	44.08	9.78	8.56	41	9	12	74	29	28
10+76.60	41.12	9.78	0.00	3	1	0	77	29	29
DIVISION 2 TOTALS				77	18	23			
PROJECT TOTALS				157	36	52			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MAT	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - MASS ORDINATE	[(CUT) - (FILL * FILL FACTOR) - SALVAGED/UNUSABLE PAVEMENT MATERIAL]

9

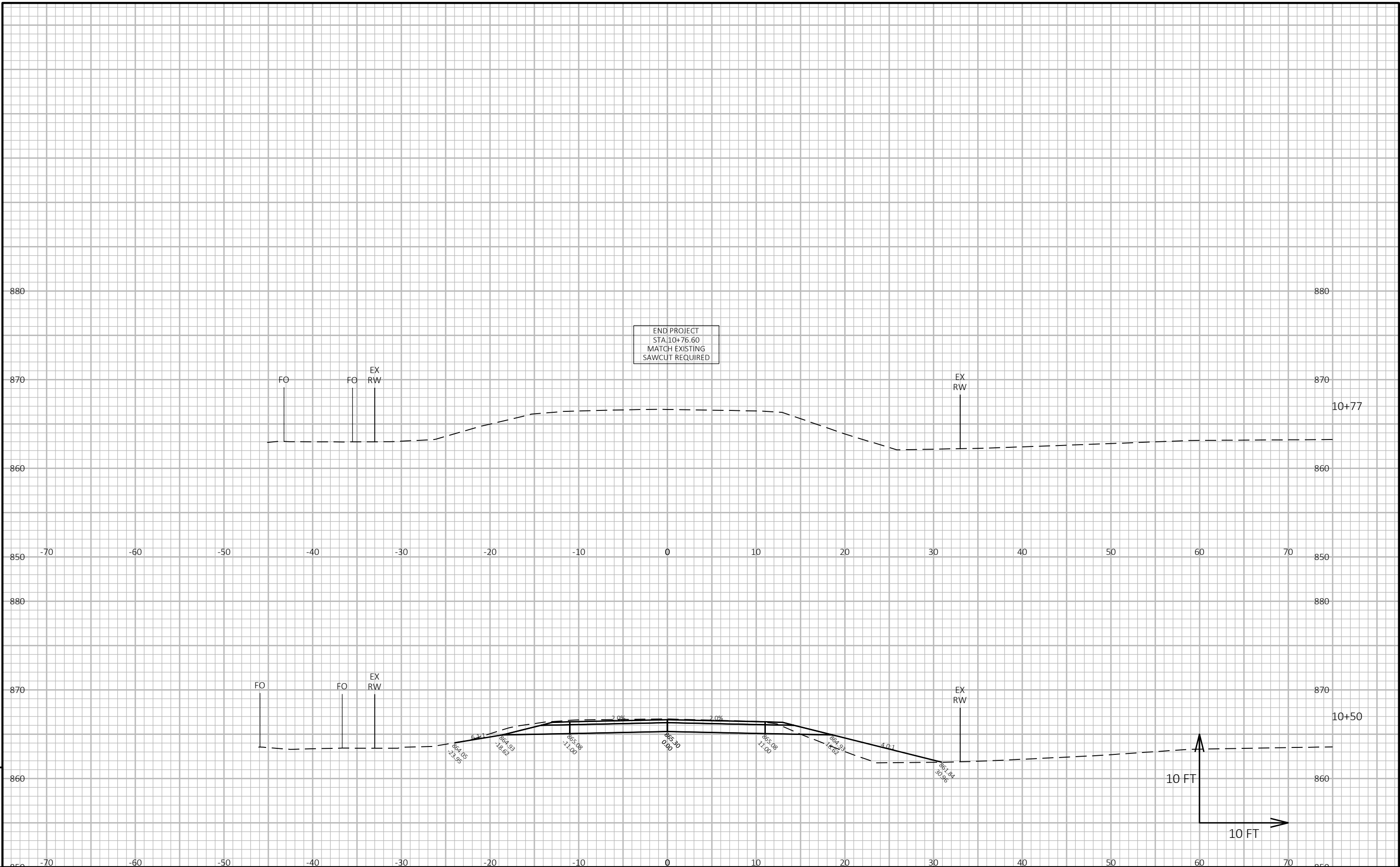
9



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9

PROJECT NO: 7317-00-70 HWY: CTH J COUNTY: BUFFALO CROSS SECTIONS: MAINLINE SHEET E



9

9

PROJECT NO: 7317-00-70	HWY: CTH J	COUNTY: BUFFALO	CROSS SECTIONS: MAINLINE	SHEET	E
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## ***Wisconsin Department of Transportation***

Dedicated people creating transportation solutions through innovation and exceptional service.

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