

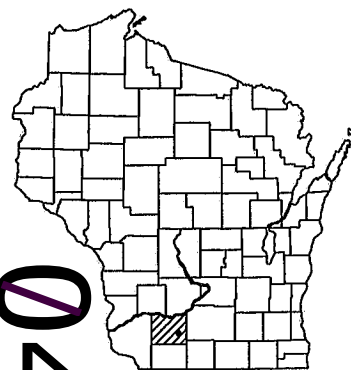
SEL

NOV 2015

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 (Includes Erosion Control)
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS = 42



DESIGN DESIGNATION

A.A.D.T. 2014	= 55
A.A.D.T. 2034	= 70
D.H.V.	= 15
D.D.	= 50/50
T.	= 8.4%
DESIGN SPEED	= 50 MPH
ESALS	= 21,900

CONVENTIONAL SYMBOLS

PLAN
CORPORATE LIMITS
PROPERTY LINE
LOT LINE
LIMITED HIGHWAY EASEMENT
EXISTING RIGHT OF WAY
PROPOSED OR NEW R/W LINE

SLOPE INTERCEPT
REFERENCE LINE

EXISTING CULVERT
PROPOSED CULVERT
(Box or Pipe)

COMBUSTIBLE FLUIDS

MARSH AREA

WOODED OR SHRUB AREA

PROFILE

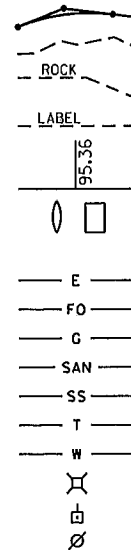
GRADE LINE
ORIGINAL GROUND
MARSH OR ROCK PROFILE
(To be noted as such)
SPECIAL DITCH

GRADE ELEVATION

CULVERT (Profile View)

UTILITIES

ELECTRIC
FIBER OPTIC
GAS
SANITARY SEWER
STORM SEWER
TELEPHONE
WATER
UTILITY PEDESTAL
POWER POLE
TELEPHONE POLE



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH K - CTH H

(EAST BRANCH PECATONICA RIVER BRIDGE B-25-0172)

CTH HK

IOWA COUNTY

STATE PROJECT NUMBER

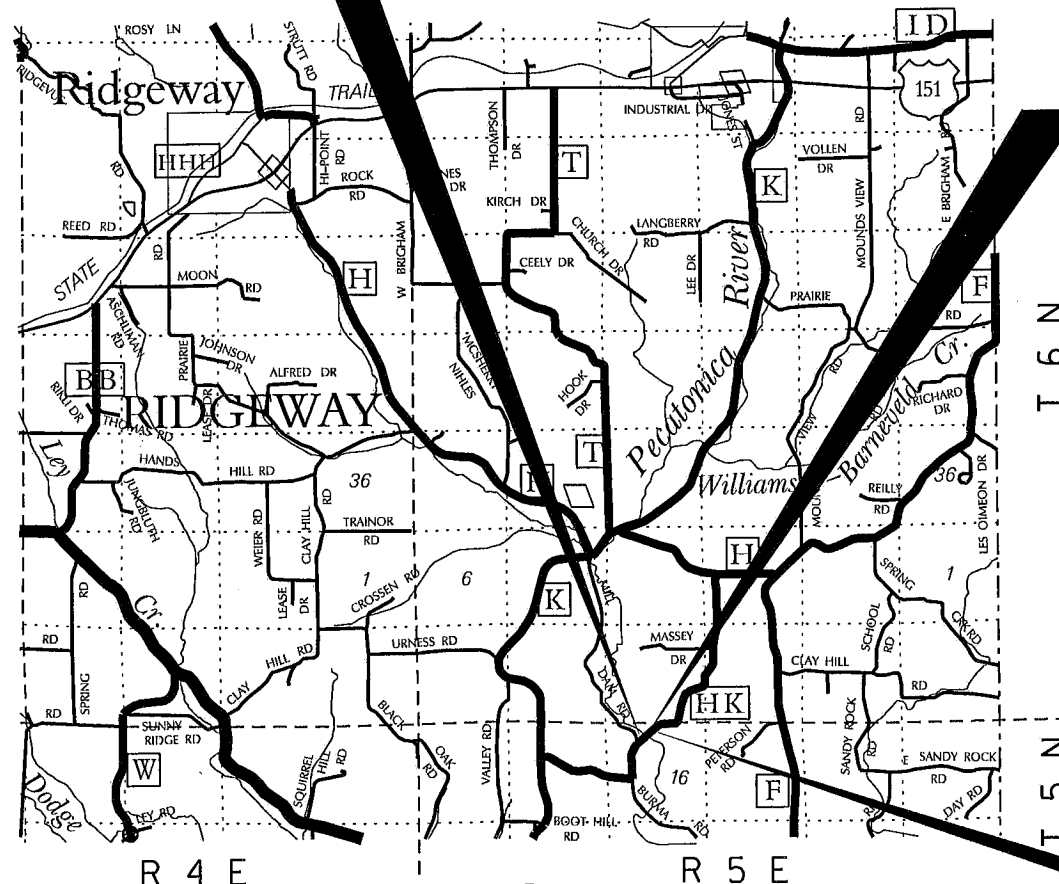
5106-00-75

BEGIN PROJECT

STA. 8+00.00

Y = 136,542.53

X = 438,212.28

STRUCTURE
B-25-0172END PROJECT
STA. 12+00.00LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.076 MI.

"COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY
COORDINATE SYSTEM (WCCS), IOWA COUNTY."

STATE PROJECT

5106-00-75

FEDERAL PROJECT

PROJECT

WISC 2015180

CONTRACT

1

ACCEPTED FOR

COUNTY of IOWA

4/22/2015
(Date)

Carly F. [Signature]
(HIGHWAY COMMISSIONER)

ORIGINAL PLANS PREPARED BY

MSAPROFESSIONAL SERVICES
TRANSPORTATION • MUNICIPAL • REMEDIATION
DEVELOPMENT • ENVIRONMENTAL2801 International Lane, Suite 300 Madison, WI 53704-3133
608-242-7779 1-800-445-0879 Fax: 608-242-5864

★
PROFESSIONAL ENGINEER
★

MICHAEL J. STATZ
E-31249
MADISON
WI

4-21-15
(Date)

Michael J. Statz
(Professional Engineer)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor MSA PROFESSIONAL SERVICES

Designer MSA PROFESSIONAL SERVICES

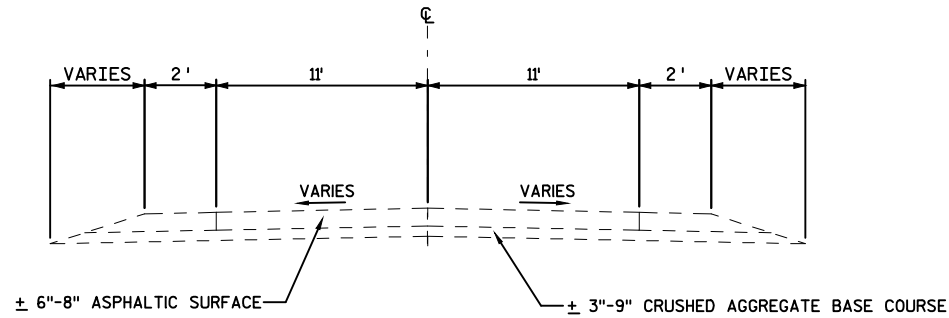
Management Consultant KJOHNSON ENGINEERS, INC.

APPROVED FOR THE DEPARTMENT

DATE: 4/30/15
(Date)

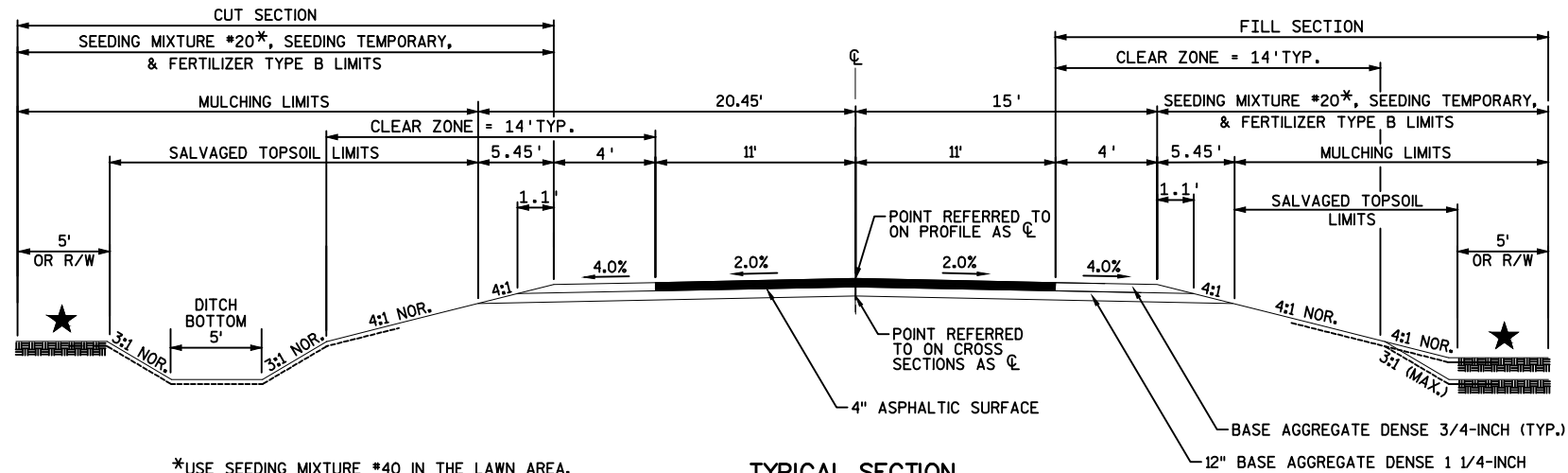
Jeff M. [Signature]
(Management Consultant Signature)

E



EXISTING TYPICAL SECTION

CTH HK



TYPICAL SECTION

CTH HK

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 0.86 ACRES

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.76 ACRES

GENERAL NOTES

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

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

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

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO NAVD88 BENCHMARK WITH ELEVATION OF 1064.80 LOCATED ADJACENT TO CLAY HILL ROAD, 2.1 MILES NORTHEAST OF THE EXISTING BRIDGE, THE STATION IS A BRONZE WISDOT GEODETIC SURVEY CONTROL STATION DALEYVILLE GPS "DH5236".

THE 4" ASPHALTIC SURFACE SHALL BE CONSTRUCTED USING A 2.25" LOWER LAYER AND A 1.75" UPPER LAYER.

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

TEMPORARY DITCH CHECKS, IF NEEDED, SHALL BE PLACED AS DIRECTED BY THE ENGINEER.

THE ASPHALTIC SURFACE SHALL TAPER FROM 30.5 FEET AT THE END OF THE BRIDGE TO 22.0 FEET AT ± 30 FEET FROM THE BRIDGE ENDS.

IOWA COUNTY WILL REMOVE EXISTING SIGNS AND POSTS INSIDE THE PROJECT AREA. CONTRACTOR TO NOTIFY IOWA COUNTY 5 WORKING DAYS BEFORE SIGNS NEED TO BE REMOVED.

★ WETLANDS EXIST AT STA. 9+00 TO STA. 12+00, RT AND STA. 10+00 TO STA. 12+00, LT. THE CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE THE SLOPE INTERCEPT IN THESE AREAS.

UTILITIES

TELEPHONE:
FRONTIER
ATTN: DANA GILLET
301 DIVISION STREET
DODGEVILLE, WI 53533
PHONE: (608) 837-1605
EMAIL: dana.gillett@ftr.com

DESIGN CONTACT

MSA PROFESSIONAL SERVICES, INC.
ATTN: MICHAEL J. STATZ, P.E.
2901 INTERNATIONAL LANE, SUITE 300
MADISON, WI 53704-3133
PHONE: (608) 242-7779
EMAIL: MSTATZ@MSA-PS.COM

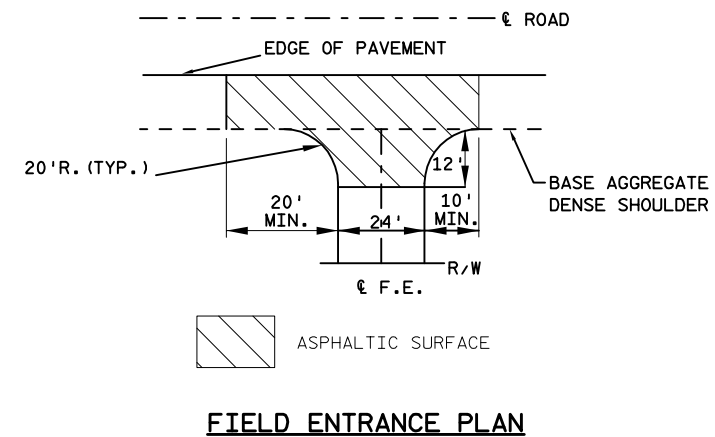
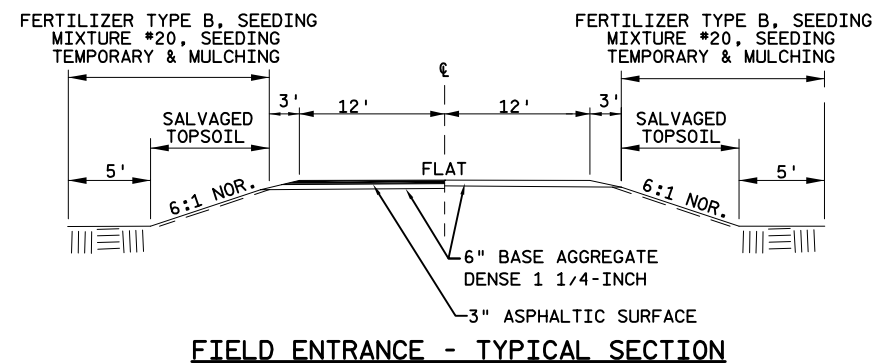
IOWA COUNTY
ATTN: CRAIG HARDY, COMMISSIONER
1215 NORTH BEQUETTE STREET
DODGEVILLE, WI 53533
PHONE: (608) 935-3381
EMAIL: CRAIG.HARDY@IOWACOUNTY.ORG

DNR LIAISON

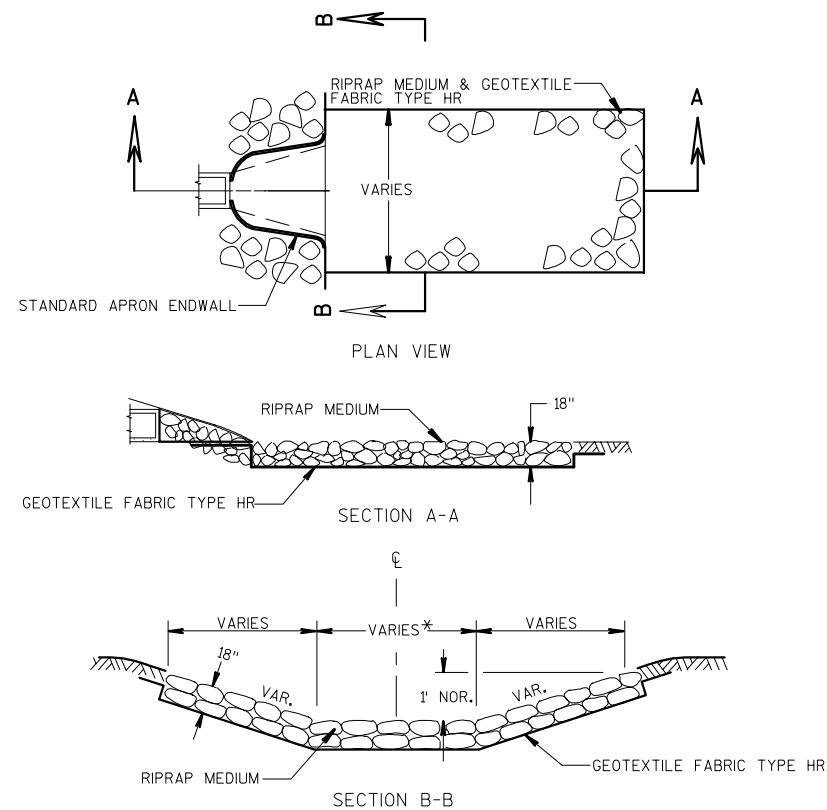
DEPARTMENT OF NATURAL RESOURCES
ATTN: ANDY BARTA
ENVIRONMENTAL REVIEW AND ANALYSIS SPECIALIST
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711-5397
PHONE: (608) 275-3308
EMAIL: ANDREW.BARTA@WISCONSIN.GOV

**-DENOTES UTILITIES THAT ARE NOT
DIGGERS HOTLINE MEMBERS

DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com



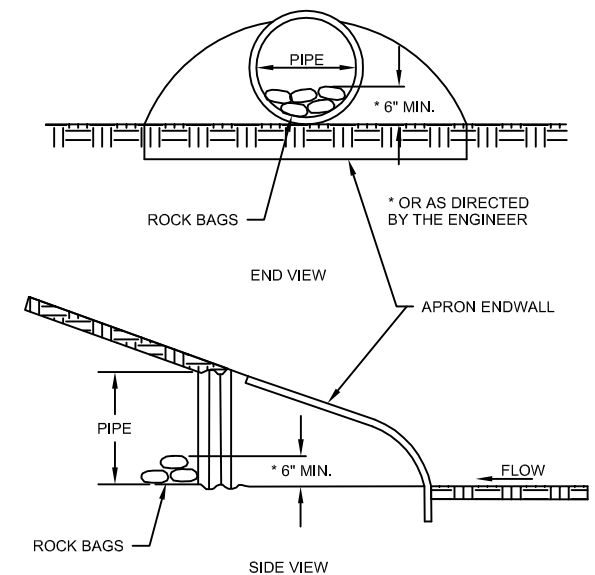
FIELD ENTRANCE DETAILS



*WIDTH IS FIVE FEET IN ROAD SIDE DITCH AND ZERO FEET AT RIPRAP FLUME.

**RIPRAP MEDIUM AND GEOTEXTILE FABRIC HR DITCH
DETAIL AND AT APRON ENDWALLS**

ESTIMATED BAG SIZE = 24" x 12" x 6"	
PIPE SIZE	ESTIMATED NO. OF BAGS
12"	1
18"	2
24"	3
30"	5
48"	10
54"	10
60"	13
72"	16

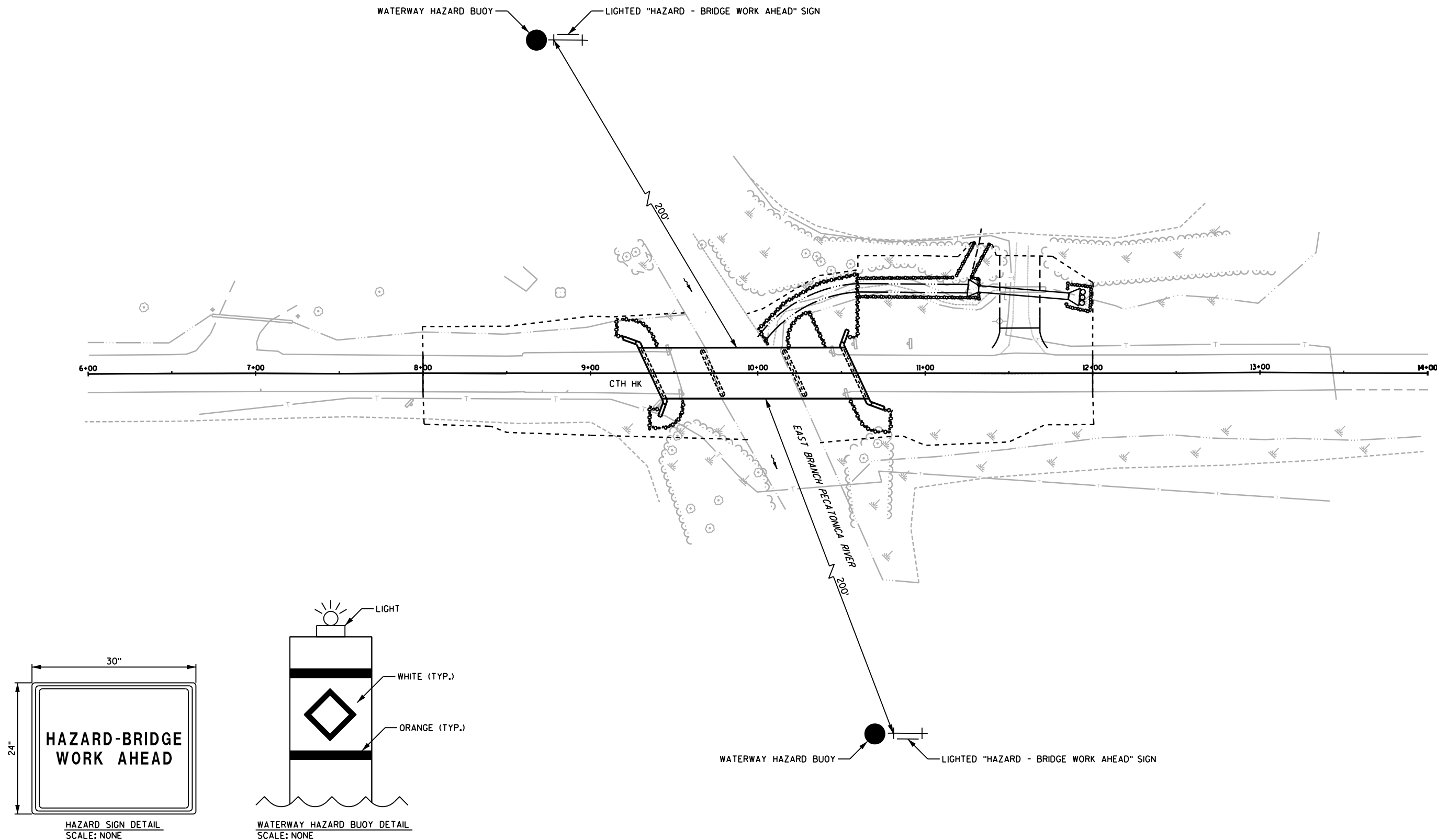


CULVERT PIPE CHECKS
INSTALL ON INLET PIPE

NOTES:

1. CONTRACTOR SHALL INSTALL HAZARD BUOYS PRIOR TO THE START OF BRIDGE CONSTRUCTION/BRIDGE DEMOLITION. HAZARD BUOYS ARE TO REMAIN IN PLACE UNTIL COMPLETION OF BRIDGE CONSTRUCTION.

2. CONTRACTOR SHALL INSTALL HAZARD SIGNS PRIOR TO THE START OF CONSTRUCTION PER THE HAZARD SIGN DETAIL SUCH THAT IT IS VISIBLE TO WATERWAY TRAFFIC PRIOR TO REACHING THE HAZARD BUOYS.



DATE 24AUG15		E S T I M A T E O F Q U A N T I T I E S			
LINE					5106-00-75
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0105	Clearing	STA	3.000	3.000
0020	201.0205	Grubbing	STA	3.000	3.000
0030	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0050	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 02. 10+00, 5106-00-75	LS	1.000	1.000
0060	205.0100	Excavation Common	CY	514.000	514.000
0080	206.1000	Excavation for Structures Bridges (structure) 02. B-25-0172	LS	1.000	1.000
0090	208.0100	Borrow	CY	184.000	184.000
0100	210.0100	Backfill Structure	CY	260.000	260.000
0120	213.0100	Finishing Roadway (project) 02. 5106-00-75	EACH	1.000	1.000
0130	305.0110	Base Aggregate Dense 3/4-Inch	TON	60.000	60.000
0140	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	820.000	820.000
0150	311.0110	Breaker Run	TON	180.000	180.000
0160	455.0605	Tack Coat	GAL	40.000	40.000
0170	465.0105	Asphaltic Surface	TON	180.000	180.000
0180	502.0100	Concrete Masonry Bridges	CY	406.000	406.000
0190	502.3200	Protective Surface Treatment	SY	526.000	526.000
0200	505.0405	Bar Steel Reinforcement HS Bridges	LB	9,920.000	9,920.000
0210	505.0605	Bar Steel Reinforcement HS Coated Bridges	LB	50,200.000	50,200.000
0230	513.4060	Railing Tubular Type M (structure) 02. B-25-0172	LS	1.000	1.000
0240	516.0500	Rubberized Membrane Waterproofing	SY	14.000	14.000
0260	520.0148	Culvert Pipe Class III 48-Inch	LF	54.000	54.000
0280	520.1048	Apron Endwalls for Culvert Pipe 48-Inch	EACH	2.000	2.000
0290	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	670.000	670.000
0300	606.0200	Riprap Medium	CY	70.000	70.000
0310	606.0300	Riprap Heavy	CY	340.000	340.000
0320	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	180.000	180.000
0330	619.1000	Mobilization	EACH	0.550	0.550
0340	624.0100	Water	MGAL	20.000	20.000
0350	625.0500	Salvaged Topsoil **P**	SY	1,170.000	1,170.000
0360	627.0200	Mulching **P**	SY	1,430.000	1,430.000
0370	628.1504	Silt Fence	LF	800.000	800.000
0380	628.1520	Silt Fence Maintenance	LF	1,600.000	1,600.000
0390	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0400	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0410	628.2004	Erosion Mat Class I Type B	SY	50.000	50.000
0420	628.2006	Erosion Mat Urban Class I Type A	SY	50.000	50.000
0430	628.6005	Turbidity Barriers	SY	320.000	320.000
0440	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0450	628.7555	Culvert Pipe Checks	EACH	12.000	12.000
0460	628.7560	Tracking Pads	EACH	2.000	2.000
0470	629.0210	Fertilizer Type B	CWT	1.200	1.200
0480	630.0120	Seeding Mixture No. 20 **P**	LB	50.000	50.000
0490	630.0140	Seeding Mixture No. 40 **P**	LB	10.000	10.000
0500	630.0200	Seeding Temporary **P**	LB	30.000	30.000
0510	631.1100	Sod Erosion Control	SY	50.000	50.000
0520	633.5100	Markers Row	EACH	13.000	13.000
0530	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0540	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	1.000	1.000
0550	637.2210	Signs Type II Reflective H	SF	18.250	18.250

DATE 24AUG15			E S T I M A T E O F Q U A N T I T I E S			
LINE					5106-00-75	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	
0560	642.5001	Field Office Type B	EACH	0.500	0.500	
0580	643.0100	Traffic Control (project) 02.	5106-00-75	EACH	1.000	1.000
0590	645.0120	Geotextile Fabric Type HR	SY	890.000	890.000	
0600	646.0103	Pavement Marking Paint 4-Inch	LF	800.000	800.000	
0610	650.4500	Construction Staking Subgrade	LF	277.000	277.000	
0620	650.5000	Construction Staking Base	LF	277.000	277.000	
0630	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000	
0650	650.6500	Construction Staking Structure Layout (structure) 02. B-25-0172	LS	1.000	1.000	
0670	650.9910	Construction Staking Supplemental Control (project) 02.	5106-00-75	LS	1.000	1.000
0680	650.9920	Construction Staking Slope Stakes	LF	277.000	277.000	
0690	690.0150	Sawing Asphalt	LF	44.000	44.000	
0700	715.0502	Incentive Strength Concrete Structures	DOL	2,436.000	2,436.000	
0710	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	225.000	225.000	
0720	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	155.000	155.000	

CLEARING AND GRUBBING					
CATEGORY	STATION	TO STATION	LOCATION	(201.0105)	(201.0205)
				CLEARING STA	GRUBBING STA
0010	9+00	12+00	LT & RT	3	3
PROJECT TOTALS				3	3

REMOVING SMALL PIPE CULVERTS						
CATEGORY	STATION	LOCATION	TYPE	DIAMETER	LENGTH	(203.0100)
						EACH
0010	11+57	LT	CMP	36"	27'	1
PROJECT TOTAL						1

BASE AGGREGATE DENSE					
CATEGORY	STATION	TO STATION	LOCATION	(305.0110)	(305.0120)
				3/4-INCH TON	1 1/4-INCH TON
0010	8+00	9+35.62	RT & LT	30	380
	10+59.38	12+00	RT & LT	30	380
	FE 11+57		LT	-	60
PROJECT TOTALS				60	820

BREAKER RUN				
CATEGORY	STATION	TO STATION	LOCATION	(311.0110)
				TON
0010			UNDISTRIBUTED	180
PROJECT TOTAL				180

ASPHALTIC SURFACE				
CATEGORY	STATION	TO STATION	(455.0605)	(465.0105)
			TACK COAT GAL	TON
0010	8+00	9+35.62	18	80
	10+59.38	12+00	22	100
PROJECT TOTALS			40	180

NOTE: QUANTITIES INCLUDE F.E. AT STATION 11+57, LT

CULVERT PIPE								
CATEGORY	STATION	LOCATION	(520.0148)	THICKNESS		(520.1048)	(650.6000)	JOINT TIES * EACH
			CULVERT PIPE CLASS III 48-INCH LF	STEEL IN	ALUM IN	APRON ENDWALLS FOR CULVERT PIPE 48-INCH EACH	CONSTRUCTION STAKING PIPE CULVERTS EACH	
010	11+57	LT	54	0.109	0.105	2	1	8
PROJECT TOTALS			54			2	1	8

* JOINT TIES INCIDENTAL TO CULVERT PIPE CLASS III

RIPRAP OVER GEOTEXTILE FABRIC						
CATEGORY	STATION	TO STATION	LOCATION	(606.0200)	(645.0120)	
				RIPRAP MEDIUM CY	GEOTEXTILE FABRIC TYPE HR SY	
010	10+60	11+38	LT	60	170	
	11+85	12+00	LT	10	40	
PROJECT TOTALS				70	210	

*ADDITIONAL QUANTITIES FOUND ELSEWHERE

EARTHWORK PROJECT I.D. 5106-00-75

Division	From/To Station	Location	Common Excavation (1)		Salvaged/ Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	Borrow	Comment:
			Cut (2)	EBS Excavation (3)				Factor				
1	8+00.00- 9+35.62	South CTH HK	198	0	0	198	196	245	-46	-46	46	
2	10+59.38 - 12+00	North CTH HK	230	0	0	230	295	368	-138	-138	138	
	STRUCTURE B-25-0172		0	0	0	0	0	0	0	0	0	
	UNDISTRIBUTED EBS		0	86	0	0	0	0	0	0	0	
Grand Total			428	86	0	429	490	613	-184	-184	184	
514												

- 1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
- 2) Salvaged/Unsuable Pavement Material is included in Cut.
- 3) EBS Excavation to be backfilled with Breaker Run material.
- 4) Salvaged/Unusable Pavement Material
- 5) Available Material = Cut - Salvaged/Unusuable Pavement Material
- 13) Expanded Fill. Factor = 1.25
- 14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

3

FINISHING ITEMS									
CATEGORY	STATION	TO STATION	LOCATION	(625.0500)	(627.0200)	(629.0210)	(630.0120)	(630.0140)	(630.0200)
				* SALVAGED TOPSOIL	* MULCHING	FERTILIZER TYPE B	* SEEDING MIXTURE NO. 20	* SEEDING MIXTURE NO. 40	* SEEDING TEMPORARY
				SY	SY	CWT	LB	LB	LB
0010	8+00	9+67	LT	130	200	0.2	-	10	5
	8+40	9+97	RT	260	330	0.3	15	-	7.5
	9+90	12+00	LT	470	530	0.4	20	-	10
	10+25	12+00	RT	310	370	0.3	15	-	7.5
PROJECT TOTALS				1,170	1,430	1.2	50	10	30
* DENOTES TO PAY PLAN QUANTITY WITHOUT MEASURE									

SILT FENCE					
CATEGORY	STATION	STATION	LOCATION	(628.1504) LF	(628.1520) MAINTENANCE LF
				LF	LF
0010	8+00	9+50	LT	150	300
	8+00	9+85	RT	185	370
	9+50	9+85	LT & RT	85	170
	9+90	10+60	LT	80	160
	10+20	10+50	LT & RT	65	130
	10+50	12+00	RT	155	310
UNDISTRIBUTED				80	160
PROJECT TOTALS				800	1,600

EROSION MAT					
CATEGORY	STATION	STATION	LOCATION	(628.2004) CLASS I TYPE B	(628.2006) URBAN CLASS I TYPE A
				SY	SY
0010		UNDISTRIBUTED		50	50
PROJECT TOTALS				50	50

TEMPORARY DITCH CHECKS			
CATEGORY	STATION	LOCATION	(628.7504) LF
0010		UNDISTRIBUTED	50
PROJECT TOTAL			50

TRACKING PADS			
CATEGORY	STATION	(628.7560) EACH	
		EACH	EACH
0010	8+00	1	
	12+00	1	
PROJECT TOTAL			2

PAVEMENT MARKING PAINT 4-INCH						
CATEGORY	STATION	STATION	LOCATION	(646.0103) YELLOW LF	NOTES	
				LF		
0010	8+00	12+00	CENTERLINE	800	SOLID DOUBLE YELLOW CENTERLINE	
PROJECT TOTAL				800		

MOBILIZATIONS EROSION CONTROL			
CATEGORY	DESCRIPTION	(628.1905) EACH	(628.1910) EMERGENCY EACH
		EACH	EACH
0010	PROJECT 5106-00-75	2	2
PROJECT TOTALS		2	2

TURBIDITY BARRIERS			
CATEGORY	STATION	LOCATION	(628.6005) SY
			SY
0010	9+85	LT & RT	160
	10+10	LT & RT	160
PROJECT TOTAL			320

CULVERT PIPE CHECKS			
CATEGORY	STATION	LOCATION	(628.7555) EACH
			EACH
0010	11+92	LT	12
PROJECT TOTAL			12

SOD EROSION CONTROL			
CATEGORY	STATION	LOCATION	(631.1100) SY
0010		UNDISTRIBUTED	50
PROJECT TOTAL			50

MARKERS ROW				
CATEGORY	POINT NUMBER	STATION	LOCATION	(633.5100) EACH
				EACH
0010	1	8+35.00	32.23' LT	1
	2	8+99.00	34.83' LT	1
	3	10+00.00	40.00' LT	1
	4	10+29.88	57.43' LT	1
	5	10+60.00	75.00' LT	1
	6	11+25.00	80.00' LT	1
	7	12+10.00	68.67' LT	1
	8	12+10.00	34.35' LT	1
	9	12+10.00	31.65' RT	1
	10	11+50.00	45.00' RT	1
	11	11+00.00	45.41' RT	1
	12	8+55.00	40.00' RT	1
	13	8+35.00	33.77' RT	1
PROJECT TOTAL				13

PERMANENT SIGNING						
CATEGORY	CODE	STATION	LOCATION	(637.2210) SIGNS TYPE II REFLECTIVE H SF	(634.0612) POSTS WOOD 4x6-INCH x 12-FT EACH	(634.0616) POSTS WOOD 4x6-INCH x 16-FT EACH
				SF	EACH	EACH
0010	W5-52L	9+28	LT	3.0	1	-
	W5-52R	9+42	RT	3.0	1	-
	W5-52R	10+52	LT	3.0	1	-
	W5-52L	10+66	RT	3.0	1	-
	W1-2L	10+90	LT	6.25	-	1
PROJECT TOTALS				18.25	4	1

WATER		
CATEGORY	DESCRIPTION	(624.0100) MGAL
		MGAL
0010	COMPACTION	9
	DUST CONTROL	4
	UNDISTRIBUTED	7
PROJECT TOTAL		20

SAWING ASPHALT			
CATEGORY	STATION	LOCATION	(690.0150) LF
			LF
0010	8+00	LT & RT	22
	12+00	LT & RT	22
PROJECT TOTAL			44

CONSTRUCTION STAKING								
				(650.4500) SUBGRADE	(650.5000) BASE	(650.6500) STRUCTURE LAYOUT	(650.9910) SUPPLEMENTAL CONTROL	(650.9920) SLOPE STAKES
CATEGORY	STATION	TO STATION	LOCATION	LF	LF	LS	LS	LF
0010	8+00	9+36	LT & RT	136	136	-	-	136
	10+59	12+00	LT & RT	141	141	-	-	141
PROJECT 5106-00-75				-	-	-	1	-
CATEGORY 0010 SUBTOTALS				277	277	0	1	277
0020	STRUCTURE B-25-0172			-	-	1	-	-
CATEGORY 0020 SUBTOTALS				0	0	1	0	0
PROJECT TOTALS				277	277	1	1	277

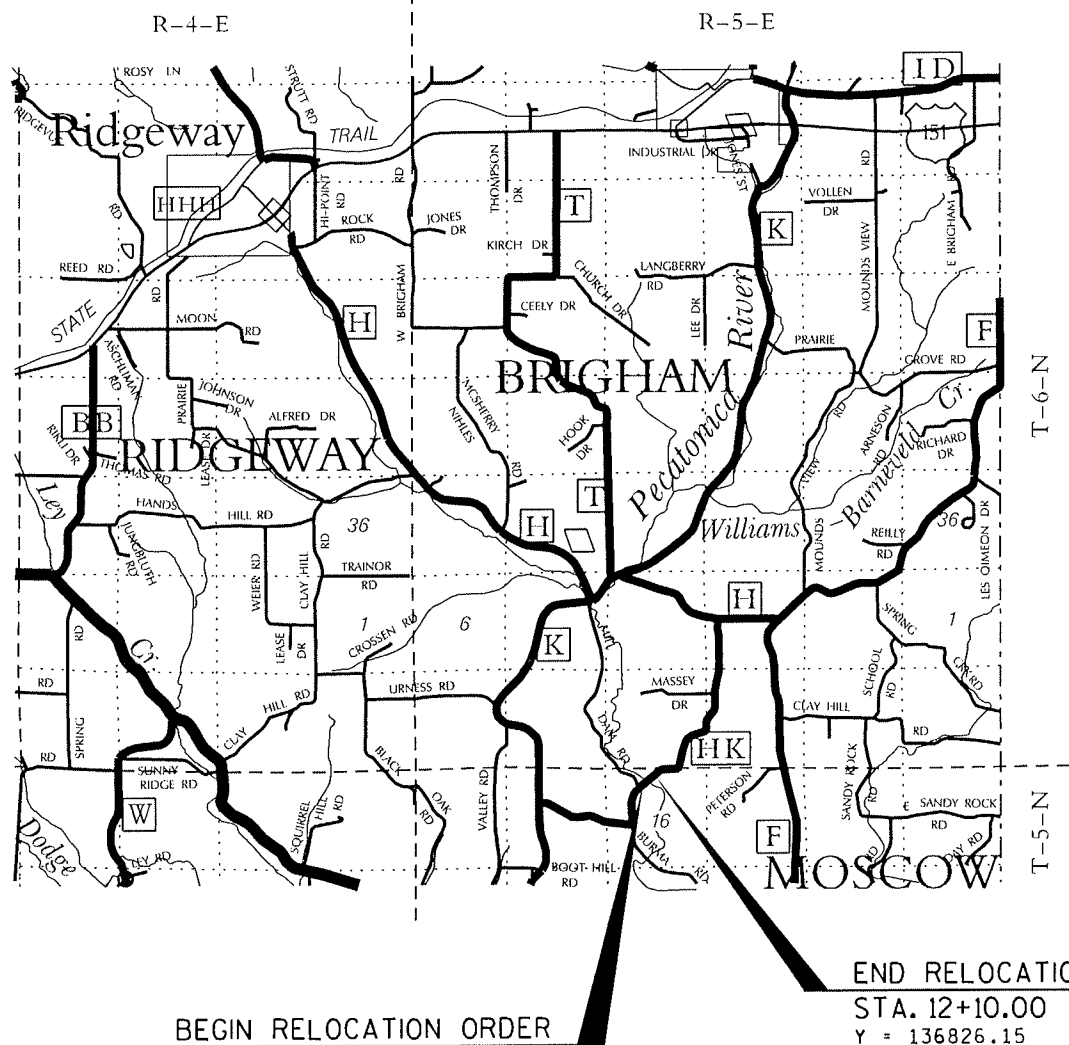
CONVENTIONAL SYMBOLS AND ABBREVIATIONS			
STATE, COUNTY, or TOWN LINE	----	ACCESS POINT / DRIVEWAY CONNECTION	AP
SECTION LINE	----	ACCESS RIGHTS	AR
QUARTER LINE	----	ACRES	AC.
SIXTEENTH LINE	----	AND OTHERS	ET.AL.
PROPOSED REFERENCE LINE	----	CENTERLINE	C/L
PROPOSED R/W LINE	----	CERTIFIED SURVEY MAP	CSM
EXISTING H.E. LINE	----	DOCUMENT	DOC.
PROPERTY LINE	----	HIGHWAY EASEMENT	H.E.
EASEMENT LINE	----	LAND CONTRACT	LC
CORPORATE LIMITS	----	MONUMENT	MON.
EXISTING CENTERLINE	----	PAGE	P.
LOT & TIE LINES	----	PERMANENT LIMITED EASEMENT	PLE
UTILITIES	----	PROPERTY LINE	PL
(TELEPHONE, GAS, ELECTRIC, CABLE, TV, FIBER, OPTIC)	----	RECORDED AS	(100')
NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL)	----	REFERENCE LINE	R/L
NO ACCESS (BY ACQUISITION)	----	REMAINING	REM.
NO ACCESS (BY STATUTORY AUTHORITY)	----	RIGHT-OF-WAY	R/W
FEE (HATCH VARIES)	----	SECTION	SEC.
TEMPORARY LIMITED EASEMENT	----	SQUARE FOOT	SO.FT.
PERMANENT LIMITED EASEMENT	----	STATION	STA.
PARCEL NUMBER	----	TEMPORARY LIMITED EASEMENT	TLE
UTILITY PARCEL NUMBER	----	VOLUME	V.
SIGN NUMBER (OFF PREMISE)	----	CURVE DATA	
BUILDING	----	LONG CHORD	LCH
FOUND IRON PIPE/PIN	----	LONG CHORD BEARING	LCB
R/W MONUMENT	----	RADIUS	R
R/W STANDARD	----	DEGREE OF CURVE	D
SIGN	----	CENTRAL ANGLE OR DELTA	DELTA
SECTION CORNER SYMBOL	----	LENGTH OF CURVE	L
		TANGENT	TAN
		POWER POLE	+
		TELEPHONE POLE	+
		TELEPHONE PEDESTAL	+

NOTES

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, IOWA COUNTY ZONE, NAD 83 (2011) ADJUSTMENT. THE COORDINATES SHOWN ARE GRID COORDINATES AND ARE TO BE USED AS GRID OR GROUND VALUES ON THIS PLAT.

RIGHT-OF-WAY MONUMENTS SHALL BE TYPE 2 AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER SURVEYS OF PUBLIC RECORD.



BEGIN RELOCATION ORDER
STA. 8+35.00
Y = 136566.74
X = 438237.56

817.96' SOUTH OF AND
1,996.00' EAST OF THE
NORTHWEST CORNER OF
SECTION 16, TOWN-5-NORTH,
RANGE-5-EAST.

END RELOCATION ORDER
STA. 12+10.00
Y = 136826.15
X = 438508.38

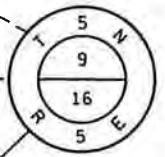
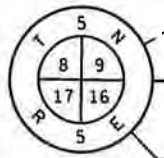
523.71' SOUTH OF AND
384.84' WEST OF THE
NORTH QUARTER CORNER OF
SECTION 16, TOWN-5-NORTH,
RANGE-5-EAST.

LAYOUT
SCALE 0 1 MI.
TOTAL NET LENGTH OF CENTERLINE = 0.071 MI.

R/W PROJECT NUMBER 5106-00-05	SHEET NUMBER 4.01	TOTAL SHEETS 2
FEDERAL PROJECT NUMBER ---		
PLAT OF RIGHT-OF-WAY REQUIRED FOR CTH K - CTH H (EAST BRANCH PECATONICA RIVER BRIDGE B-25-0172)		
CTH HK		IOWA COUNTY
CONSTRUCTION PROJECT NUMBER 5106-00-75		



ACCEPTED FOR	
COUNTY	IOWA
12/26/13 (Date)	Greg E. Higgins (Highway Commissioner)
ORIGINAL PLAT PREPARED BY	
MSA PROFESSIONAL SERVICES TRANSPORTATION • MUNICIPAL • REMEDIATION DEVELOPMENT • ENVIRONMENTAL 2901 International Lane, Suite 300, Madison, WI 53704-3133 608-242-7774 P: 608-446-0879 F: 608-242-5664	
WISCONSIN LAND SURVEYOR DANIEL R. HIGGS S-2878 MADISON WI	
11/26/13 (Date)	Daniel R. Higgins (Registered Land Surveyor)



TOWN

GN

(82)

ALLIANT ENERGY BLANKET
EASEMENT N1/2-NW1/4 16-5-5
V.123 P.642

(2)

MARGUERITE SEVDE, TRUSTEE
OF THE MARGUERITE SEVDE
REVOCABLE TRUST

NE-NW
16-5-5

R/W POINTS				
POINT NUMBER	STATION	OFFSET	Y	X
1	8+35.00	32.23 L	136590.02	438215.26
2	8+99.00	34.83 L	136636.16	438259.68
3	10+00.00	40.00 L	136709.77	438329.04
4	10+29.88	57.43 L	136743.02	438338.56
5	10+60.00	75.00 L	136776.55	438348.15
6	11+25.00	80.00 L	136825.12	438391.64
7	12+10.00	68.67 L	136875.73	438460.86
8	12+10.00	34.35 L	136850.95	438484.60
9	12+10.00	31.65 R	136803.29	438530.26
10	11+50.00	45.00 R	136752.15	438496.16
11	11+00.00	45.41 R	136717.26	438460.33
12	8+55.00	40.00 R	136551.69	438279.67
13	8+35.00	33.77 R	136542.36	438260.91

(1)

WILLIAM MABIN AND JODIE MABIN

BEGIN RELOCATION
ORDER STA. 8+35.00
Y = 136566.74
X = 438237.56

EXISTING RIGHT-OF-WAY IS BASED ON THE EXISTING
CENTERLINE OF CTH HK AND STATE STATUTE 82.31
COMPLIMENTED BY:

- PLAT OF SURVEY BY JAMES R. OLSON,
RLS NO. 1698, DATED SEPTEMBER 21, 1984,
FOR MS. MARGUERITE SEVDE & MR. NORM
RULE FILED ON SEPTEMBER 26, 1984.
- PLAT OF SURVEY BY LAURENCE E. SCHMIT,
RLS NO. 1312, DATED JANUARY 5, 1994, FOR
MAXINE STRATMAN, BILL AND JODY MABIN
AND FILED ON MARCH 25, 1994.

STA 6+00.00
Y=136403.89
X=438068.13

SECTION
LINE

S89°14'50"E
2,651.89'

ANTHONY KIRCH AND
RHONDA KIRCH (ONE HALF)
TYLER KIRCH (ONE HALF)

FRONTIER COMMUNICATIONS (81)

BURIED TELEPHONE
(FRONTIER)

ONE ROD FRONTIER
COMMUNICATIONS
UNDERGROUND
CABLE EASEMENT
DOC. NO. 903326

OF

STRUCTURE
P-25-0131

SLOPE INTERCEPT

ANTHONY KIRCH AND
RHONDA KIRCH (ONE HALF)
TYLER KIRCH (ONE HALF)

250200057.D

FRONTIER COMMUNICATIONS
V.268 P.114 DOC. NO. 112315

FOUND ALUM. MON.
Y=137349.86
X=438893.21

END RELOCATION ORDER

STA. 12+10.00
Y = 136826.15
X = 438508.38

SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES
ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE
TRANSFER OF LAND INTERESTS TO IOWA COUNTY.

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	EXISTING R/W HIGHWAY EASEMENT (HE)	NEW R/W HIGHWAY EASEMENT (HE)	TOTAL R/W HIGHWAY EASEMENT (HE)
1	WILLIAM MABIN AND JODIE MABIN	HE	0.06 ACRES	0.01 ACRES	0.07 ACRES
2	MARGUERITE SEVDE, TRUSTEE OF THE MARGUERITE SEVDE REVOCABLE TRUST	HE	0.09 ACRE	0.02 ACRES	0.11 ACRE
3	ANTHONY KIRCH AND RHONDA KIRCH (ONE HALF) TYLER KIRCH (ONE HALF)	HE	0.41 ACRE	0.25 ACRES	0.66 ACRE
81	FRONTIER COMMUNICATIONS	CONVEYANCE OF RIGHTS	--	--	--
82	ALLIANT ENERGY	CONVEYANCE OF RIGHTS	--	--	--
TOTALS			0.56 ACRES	0.28 ACRES	0.84 ACRES

MOSCOW

REVISION DATE

DATE

SCALE, FEET

HWY: CTH HK

STATE R/W PROJECT NUMBER 5106-00-05

PLAT SHEET 4.02

GRID FACTOR

N/A

0 20' 40'

COUNTY: IOWA

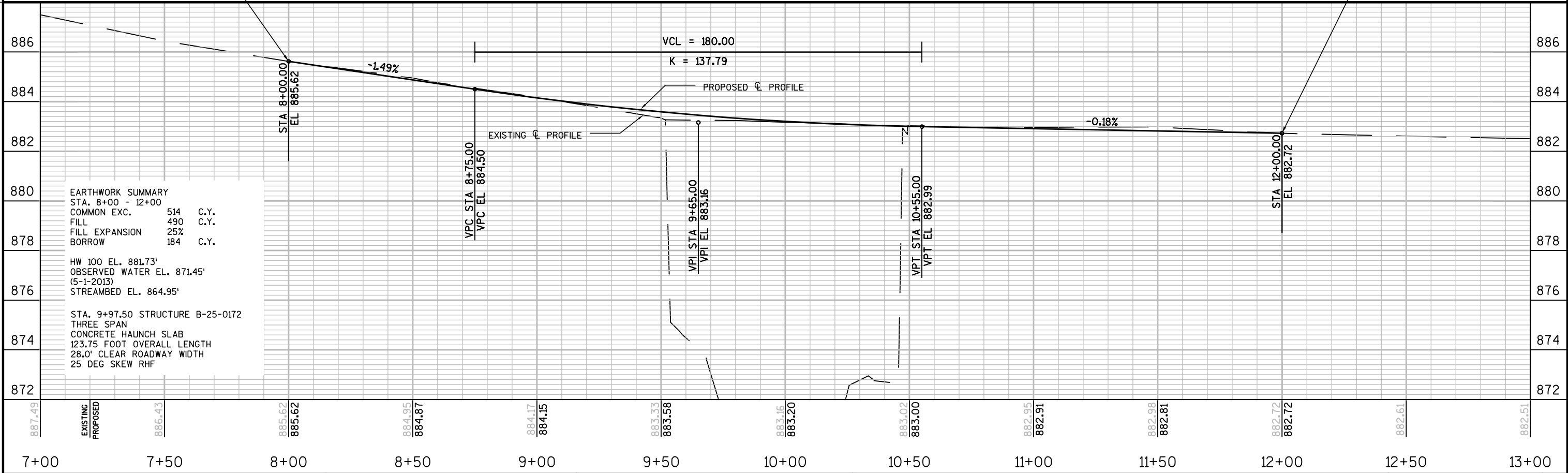
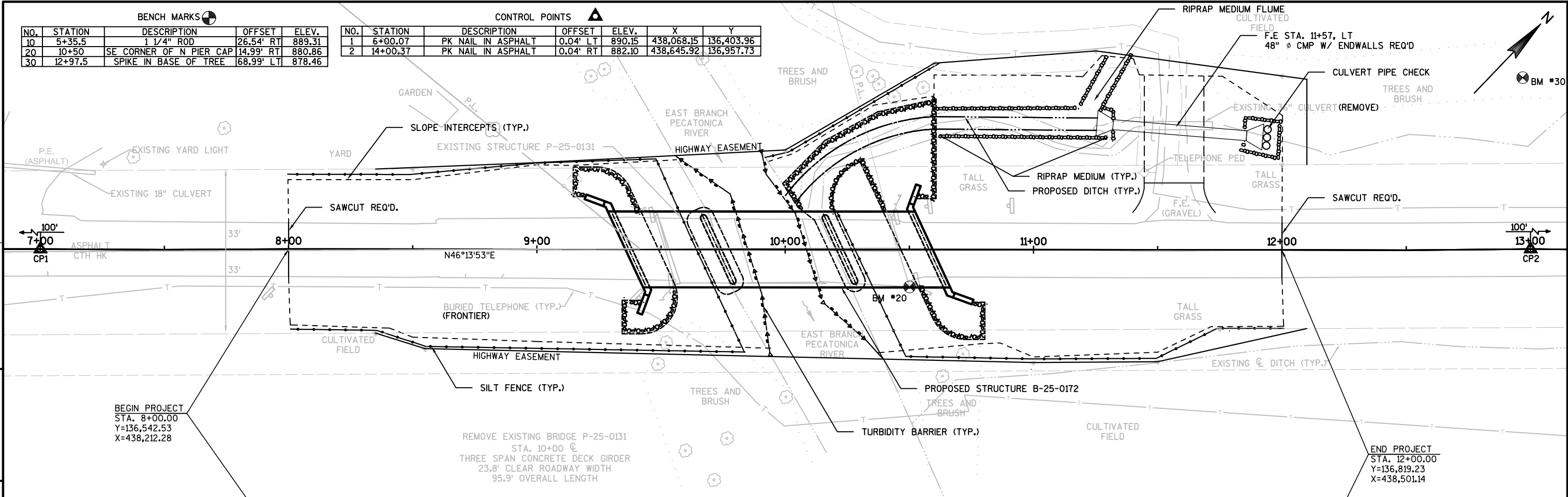
CONSTRUCTION PROJECT NUMBER 5106-00-75

PS&E SHEET

E

BENCH MARKS				
NO.	STATION	DESCRIPTION	OFFSET	ELEV.
10	5+35.5	1 1/4" ROD	26.54' RT	889.31
20	10+50	SE CORNER OF N PIER CAP	14.99' RT	880.86
30	12+97.5	SPIKE IN BASE OF TREE	68.99' LT	878.46

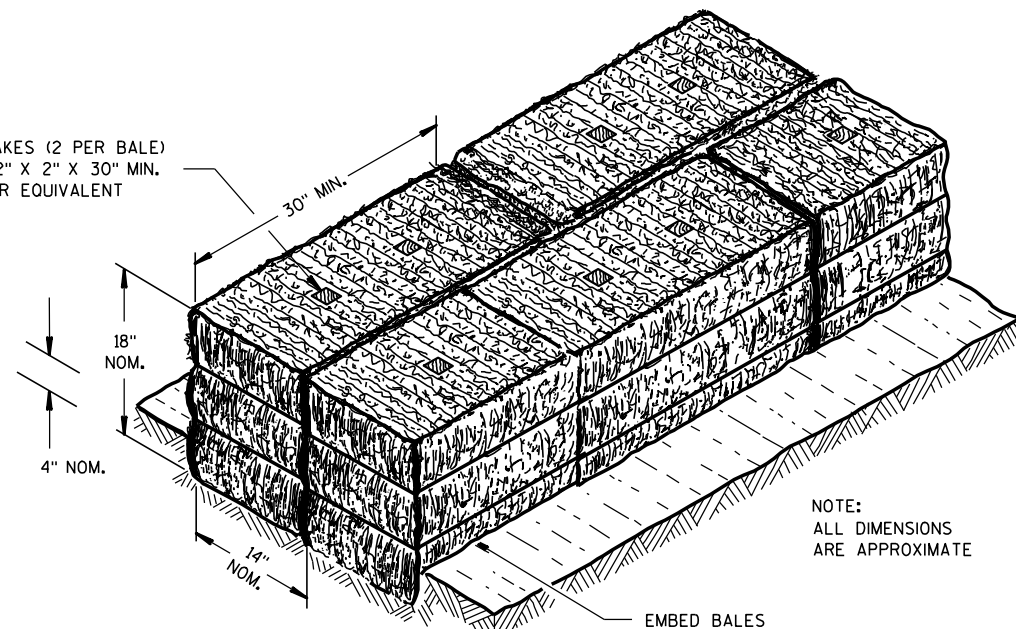
CONTROL POINTS						
NO.	STATION	DESCRIPTION	OFFSET	ELEV.	X	Y
1	6+00.07	PK NAIL IN ASPHALT	0.04' LT	890.15	438,068.15	136,403.96
2	14+00.37	PK NAIL IN ASPHALT	0.04' RT	882.10	438,645.92	136,957.73



Standard Detail Drawing List

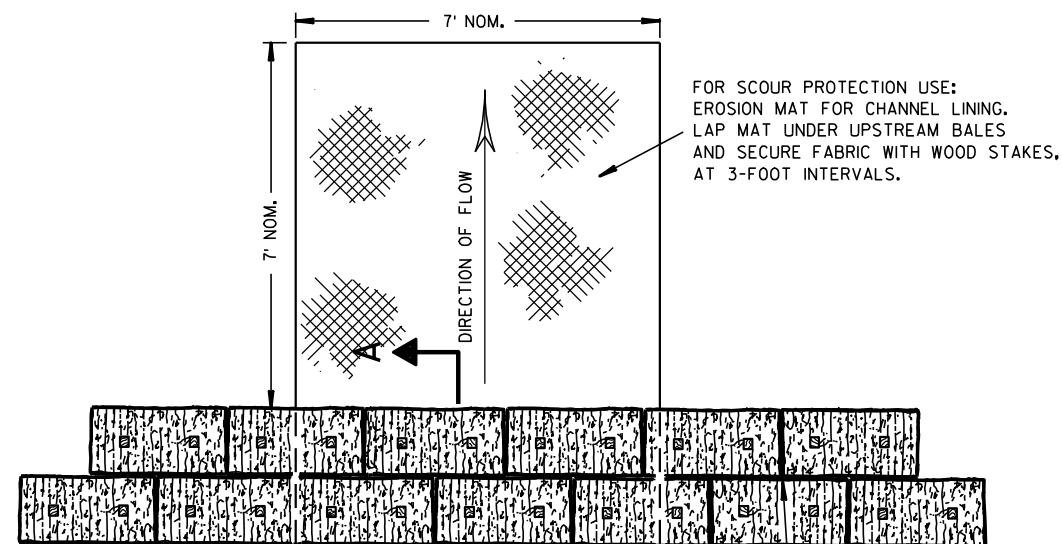
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
12A03-10	NAME PLATE (STRUCTURES)
15A01-11	MARKER POST FOR RIGHT-OF-WAY
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)

WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

SECTION A-A

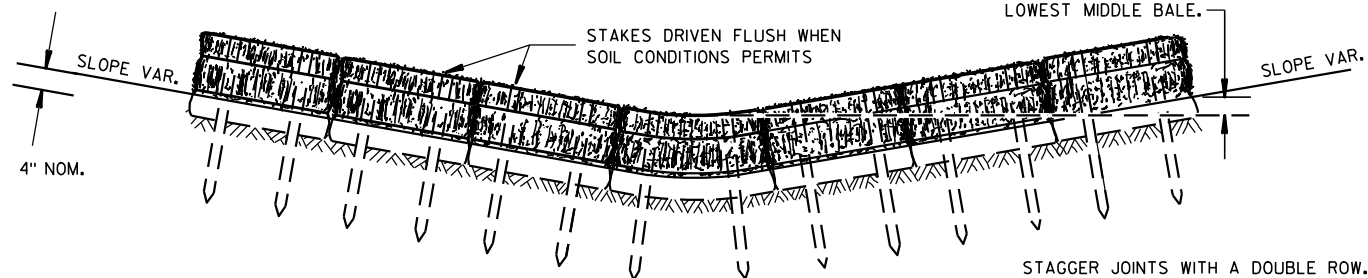


FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.

PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



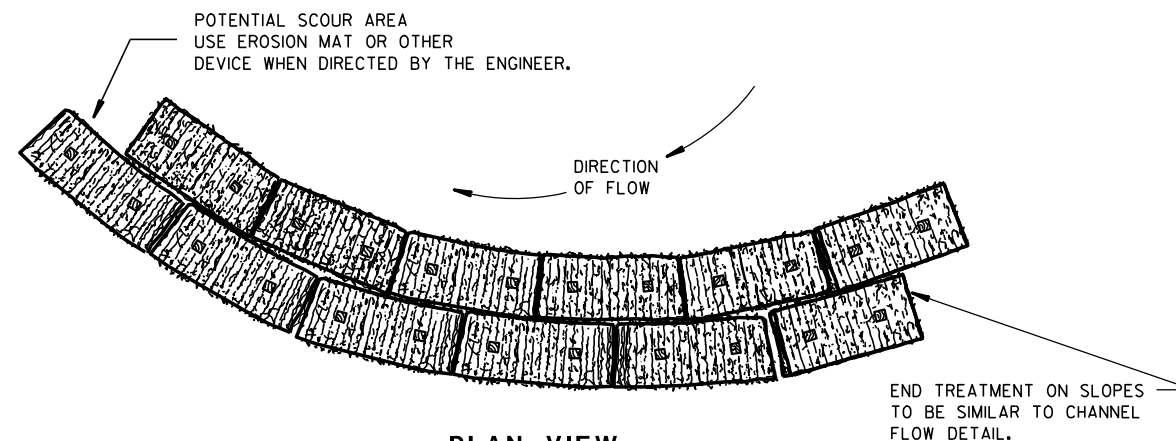
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

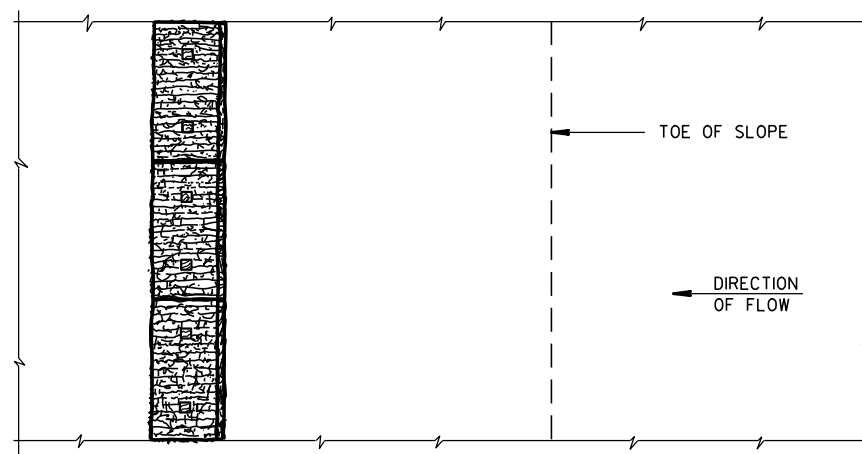
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

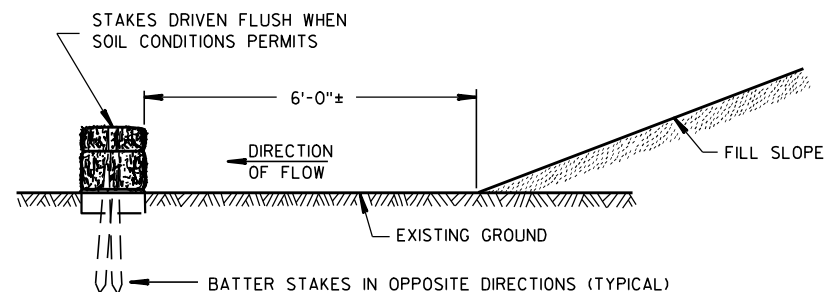


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

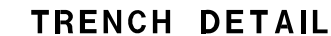
6/04/02
DATE

FHWA

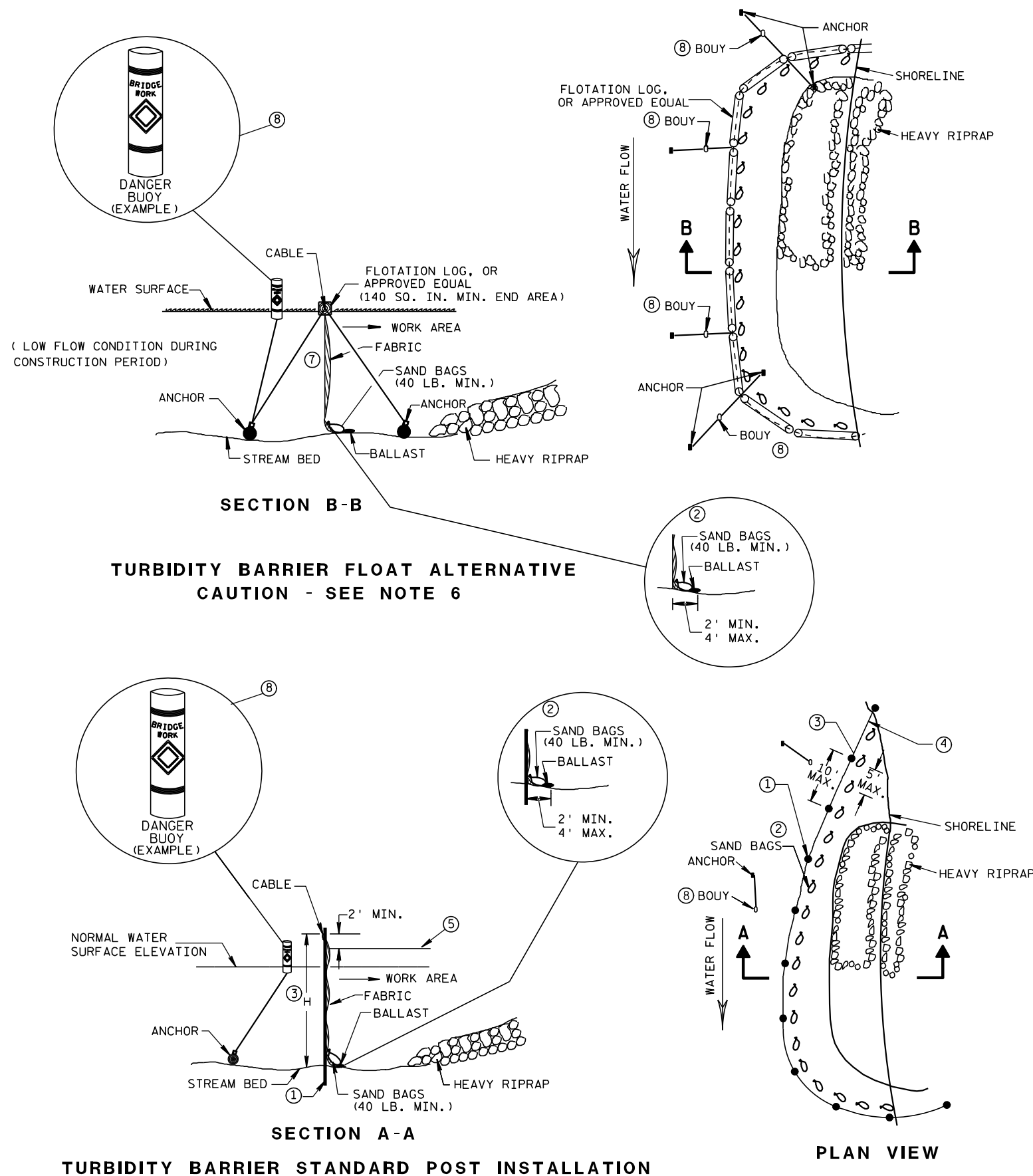
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



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



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

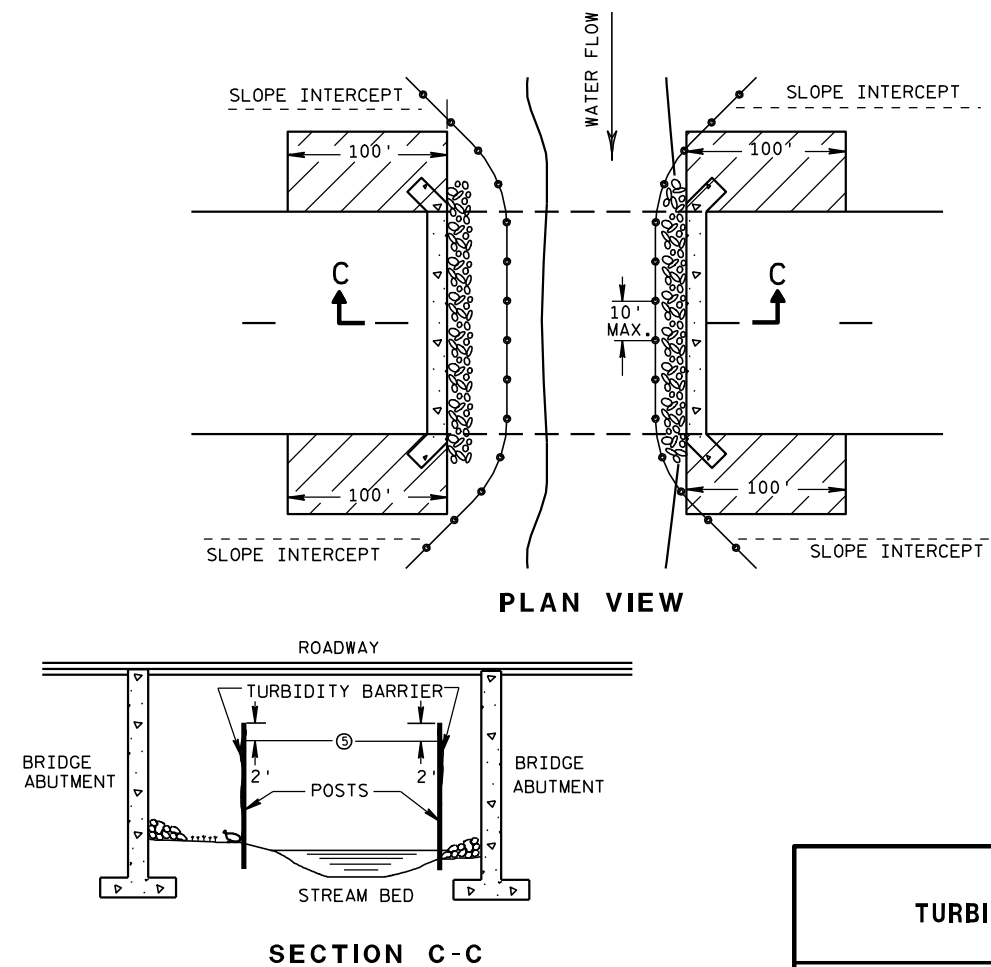


GENERAL NOTES

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

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

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



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

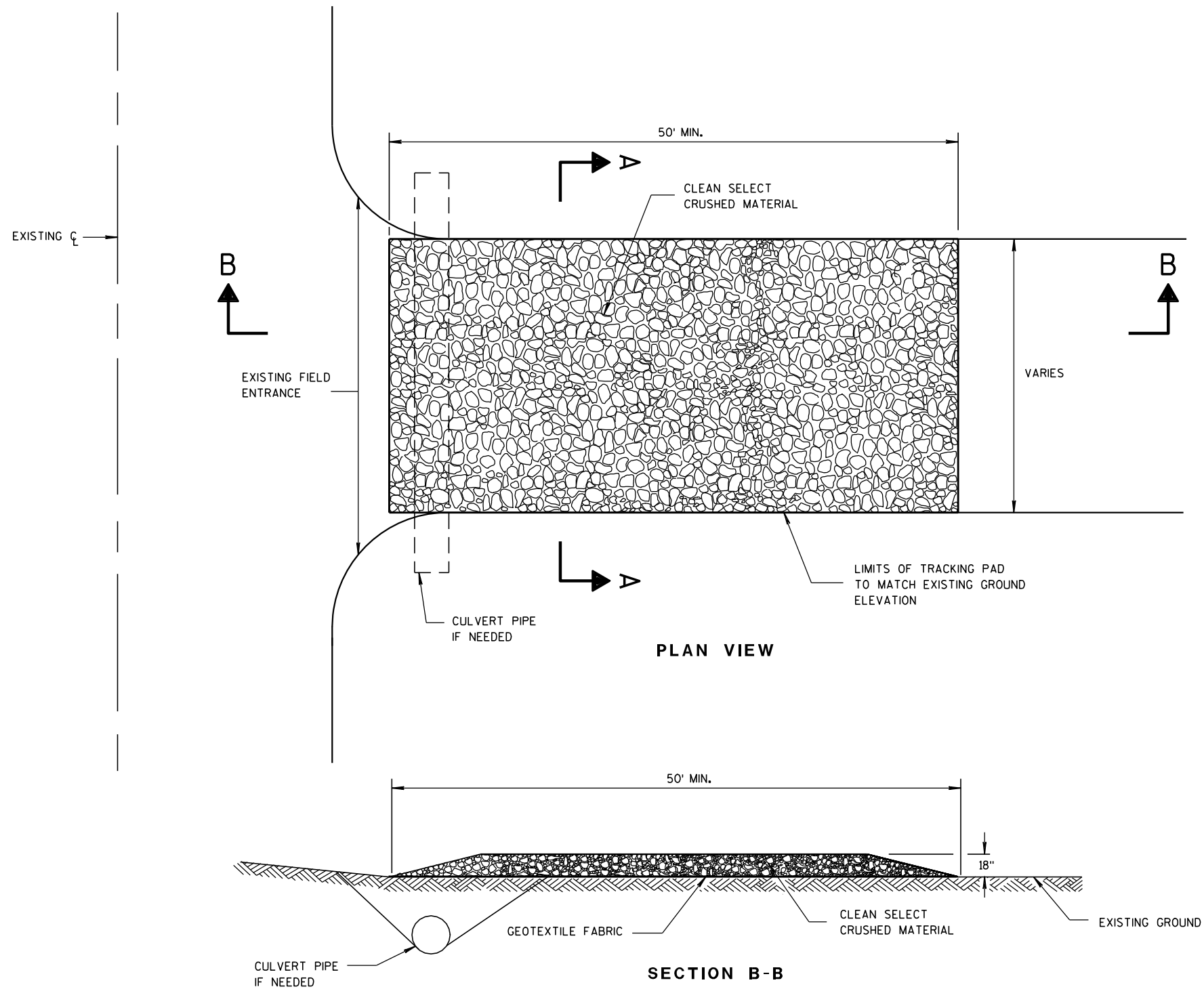
APPROVED

6/04/02

DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



TRACKING PAD

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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

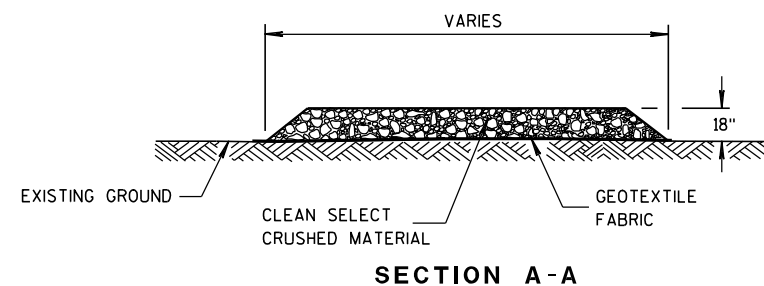
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/24/2011

DATE

FHWA

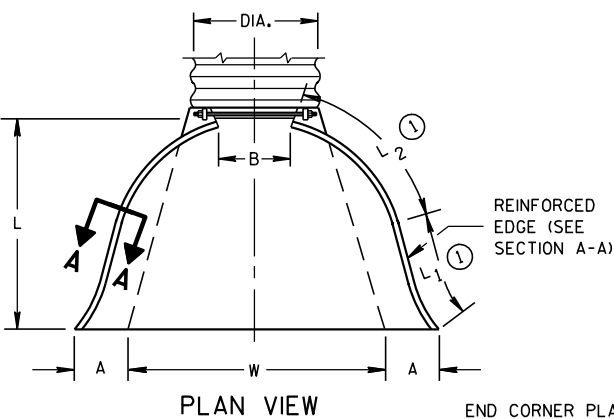
/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

ENGINEER

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

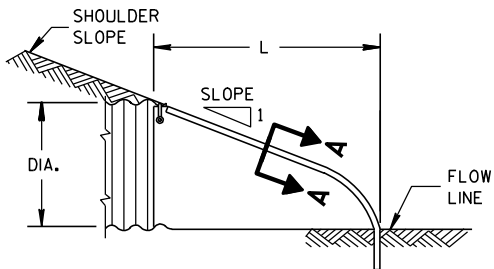
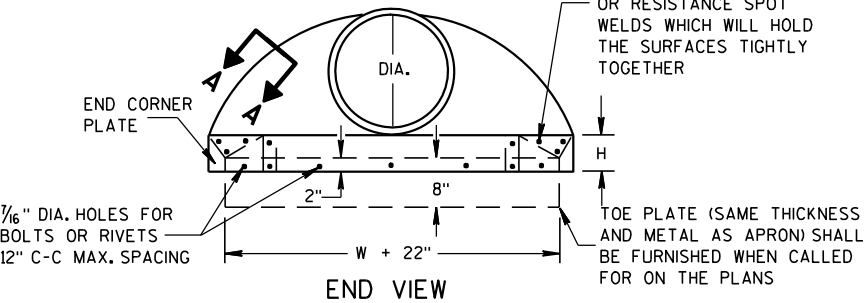
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



REINFORCED
EDGE (SEE
SECTION A-A)

END CORNER PLATES MAY
BE FASTENED TO APRON
PROPER BY BOLTS, RIVETS,
OR RESISTANCE SPOT
WELDS WHICH WILL HOLD
THE SURFACES TIGHTLY
TOGETHER

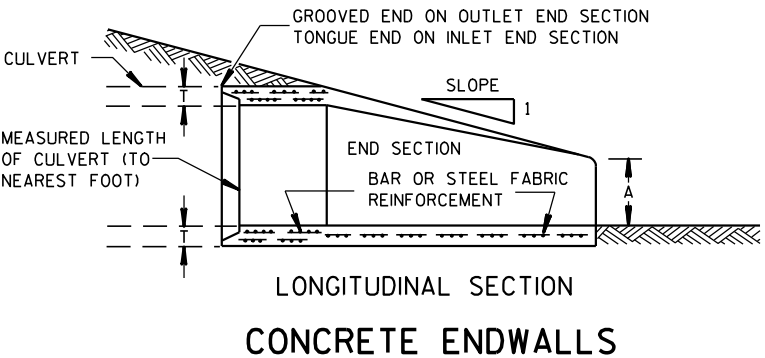
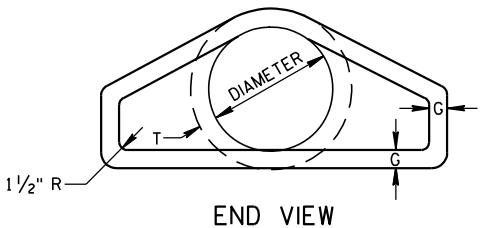
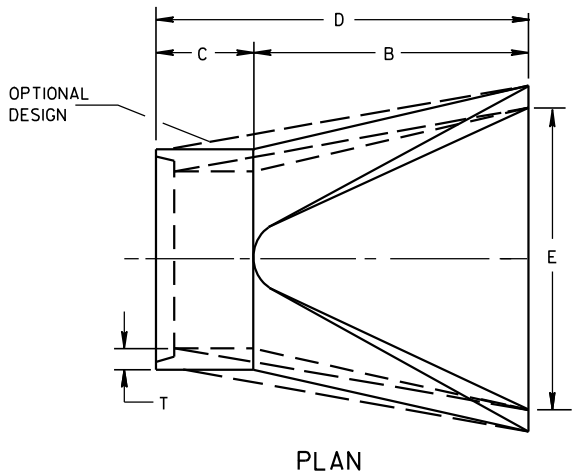
TOE PLATE (SAME THICKNESS
AND METAL AS APRON) SHALL
BE FURNISHED WHEN CALLED
FOR ON THE PLANS



SIDE ELEVATION
METAL ENDWALLS

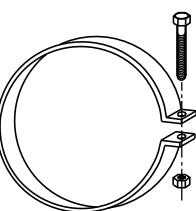
REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ⁷ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43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

*MINIMUM
**MAXIMUM

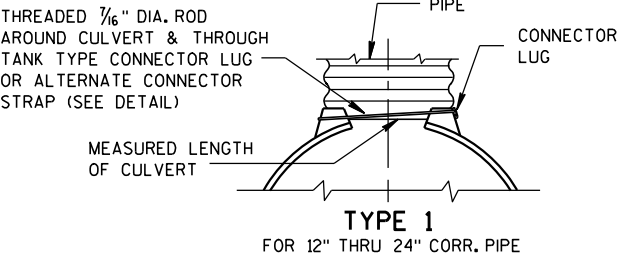


LONGITUDINAL SECTION
CONCRETE ENDWALLS

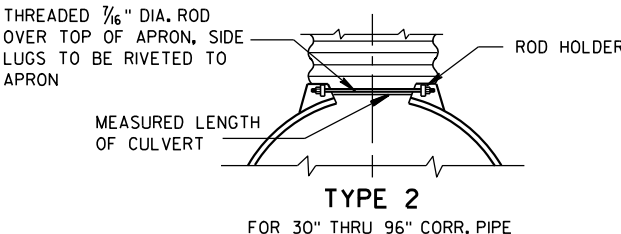
1" WIDE, 12 GA. (0.109"
THICK) GALVANIZED STRAP
WITH STANDARD 6" X 1/2"
BAND BOLT AND NUT



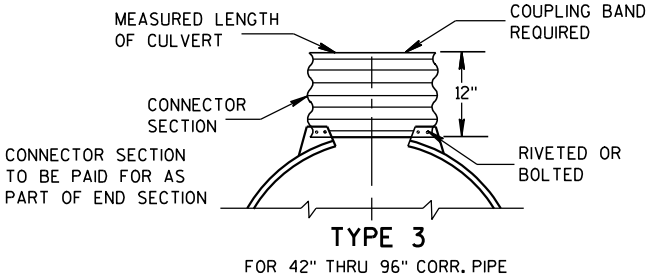
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



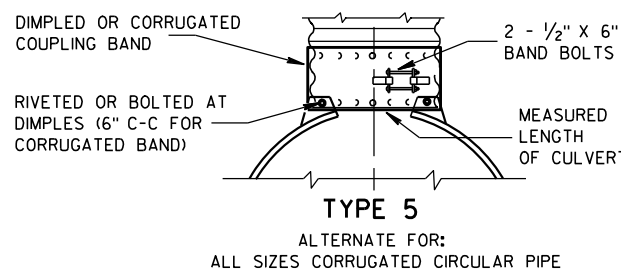
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

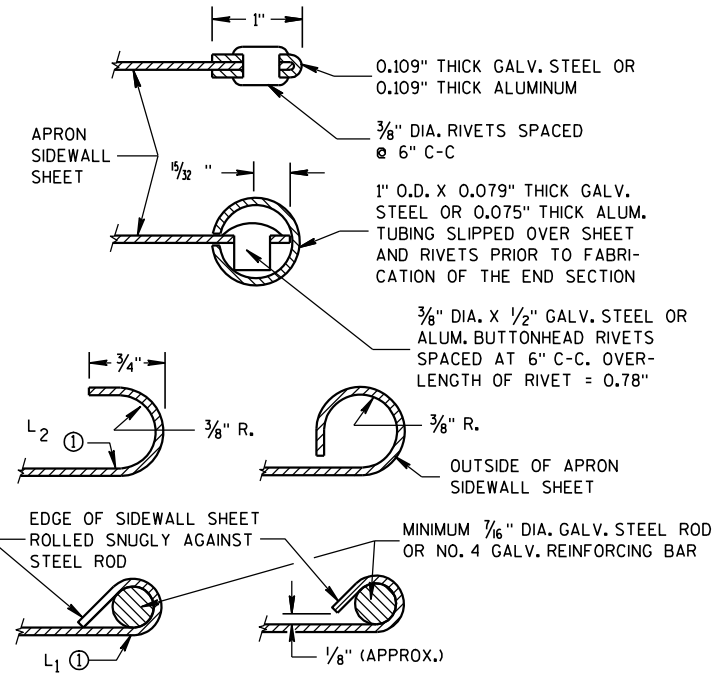
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.
DIMPLED BAND MAY BE USED WITH HELICALLY
CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE
ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5
AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL
CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO
CIRCUMFERENTIAL CORRUGATIONS AT EACH END
USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

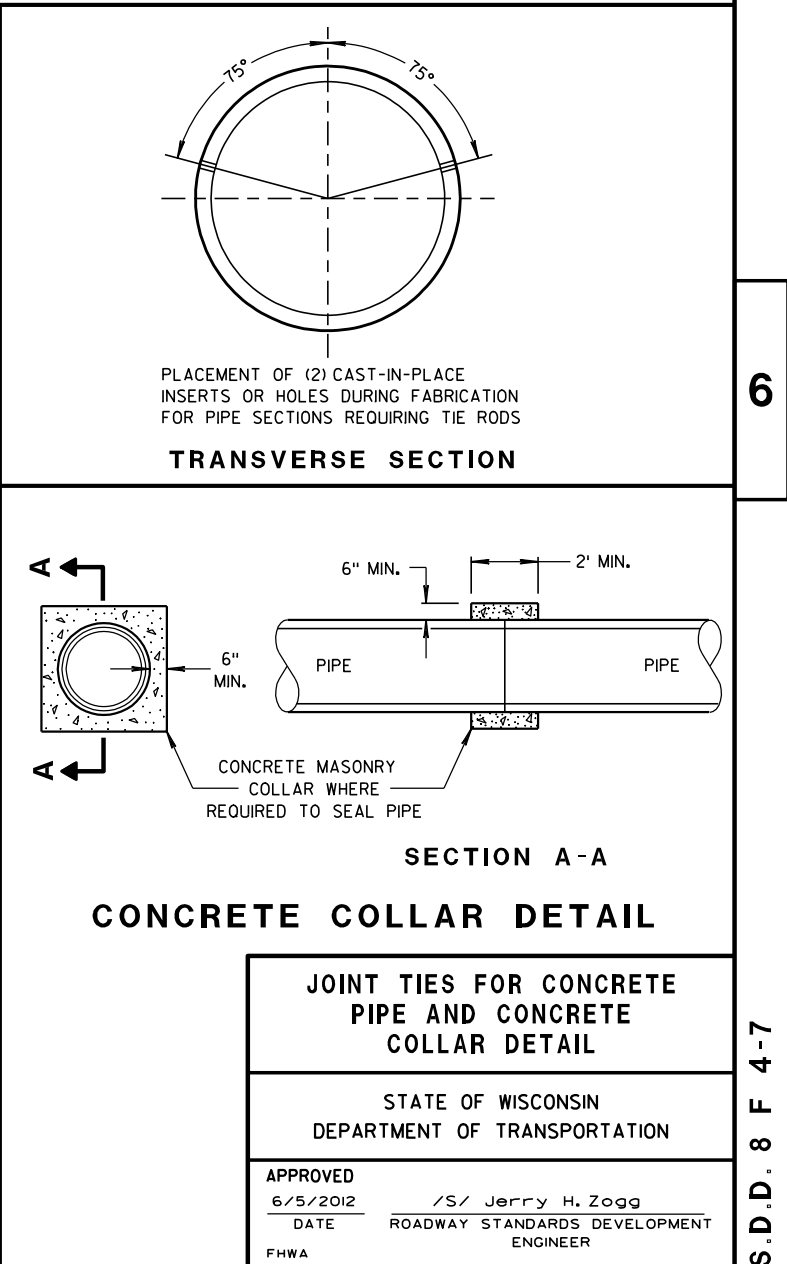
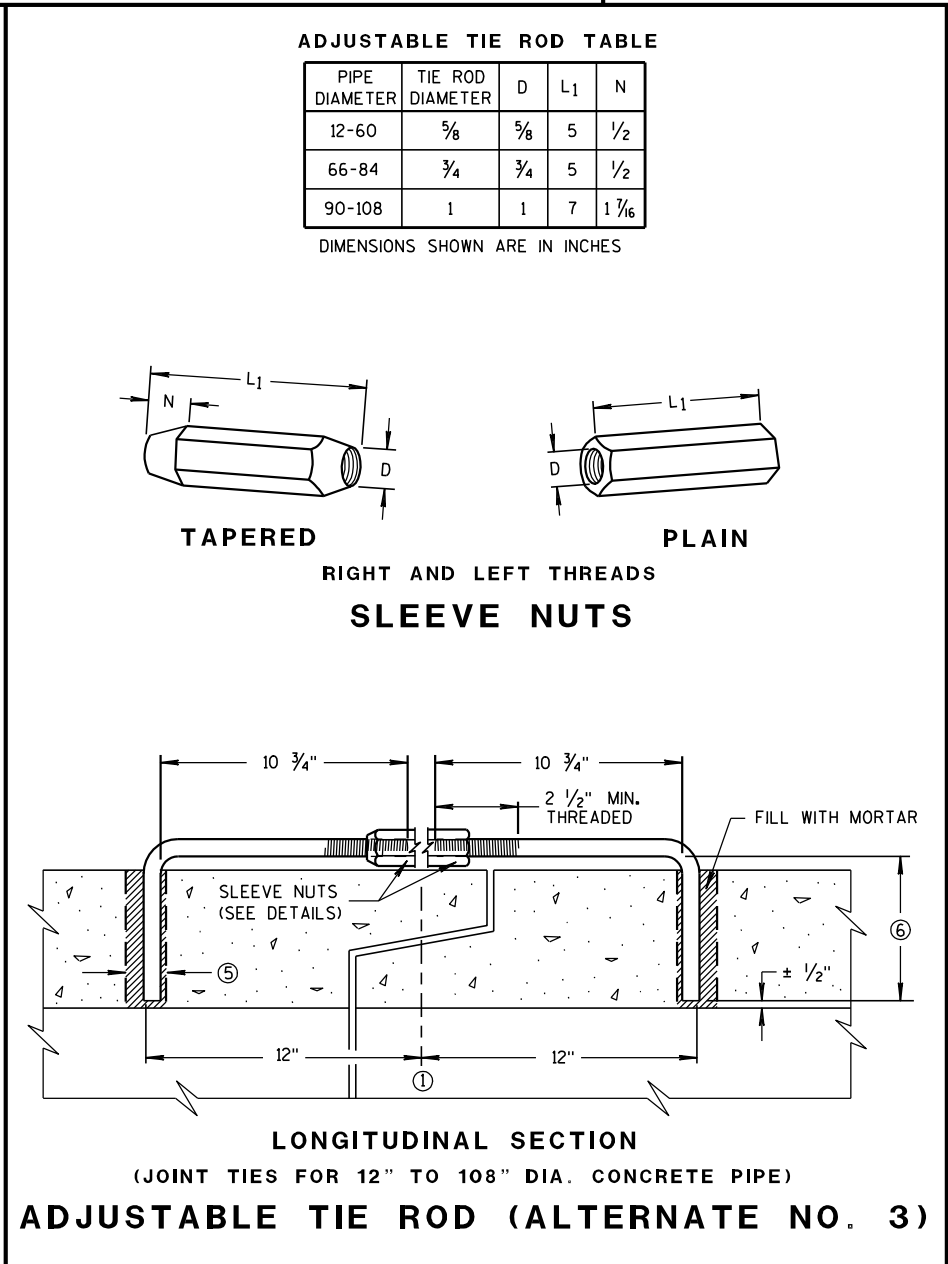
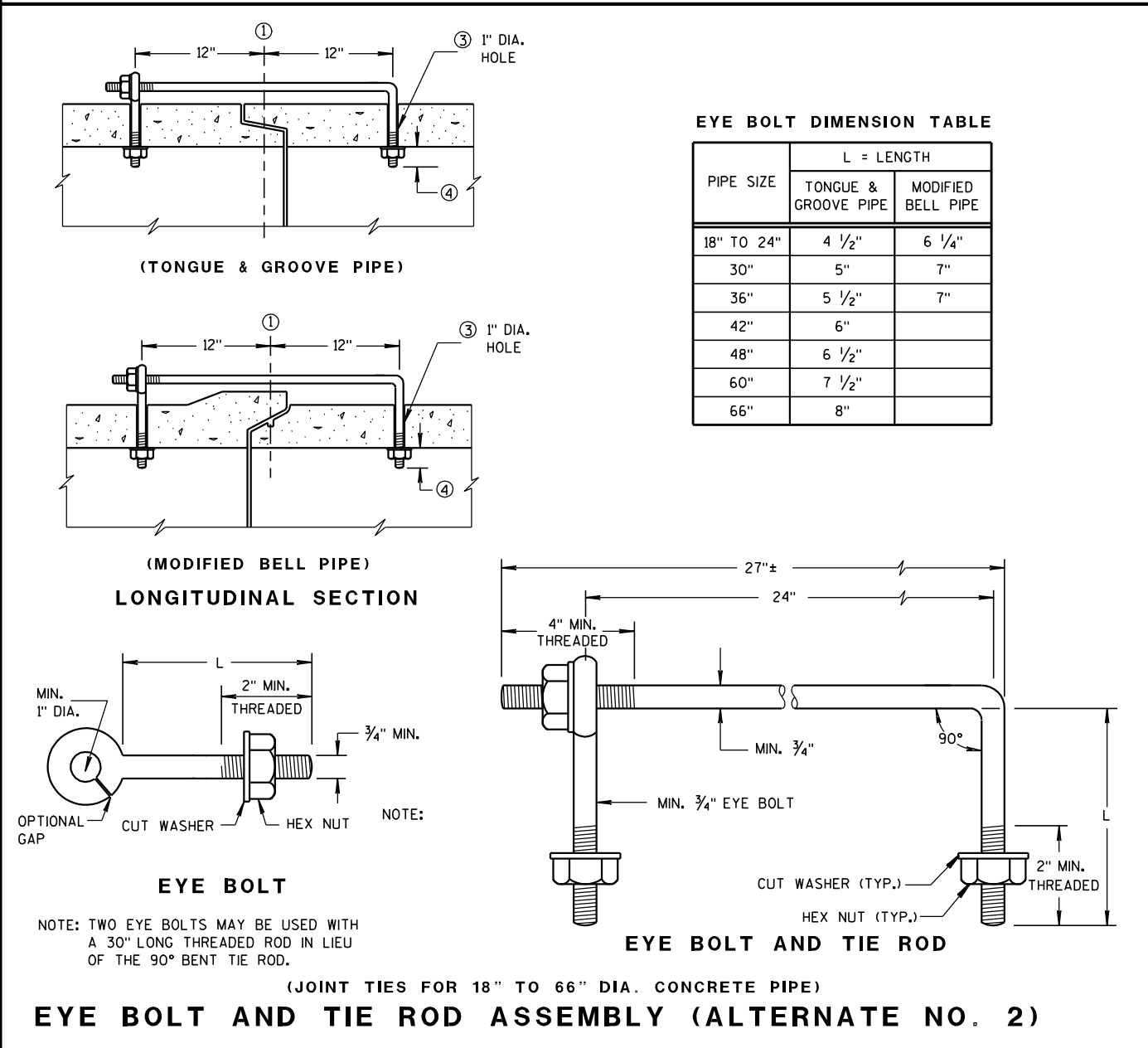
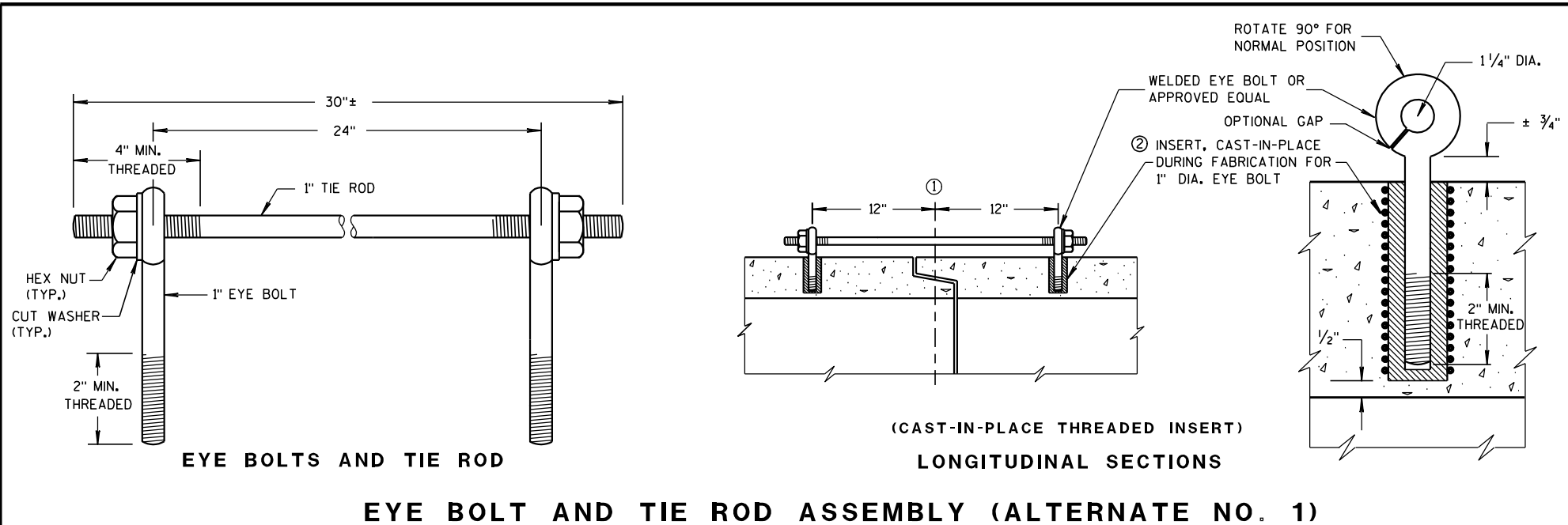
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT
TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT
TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

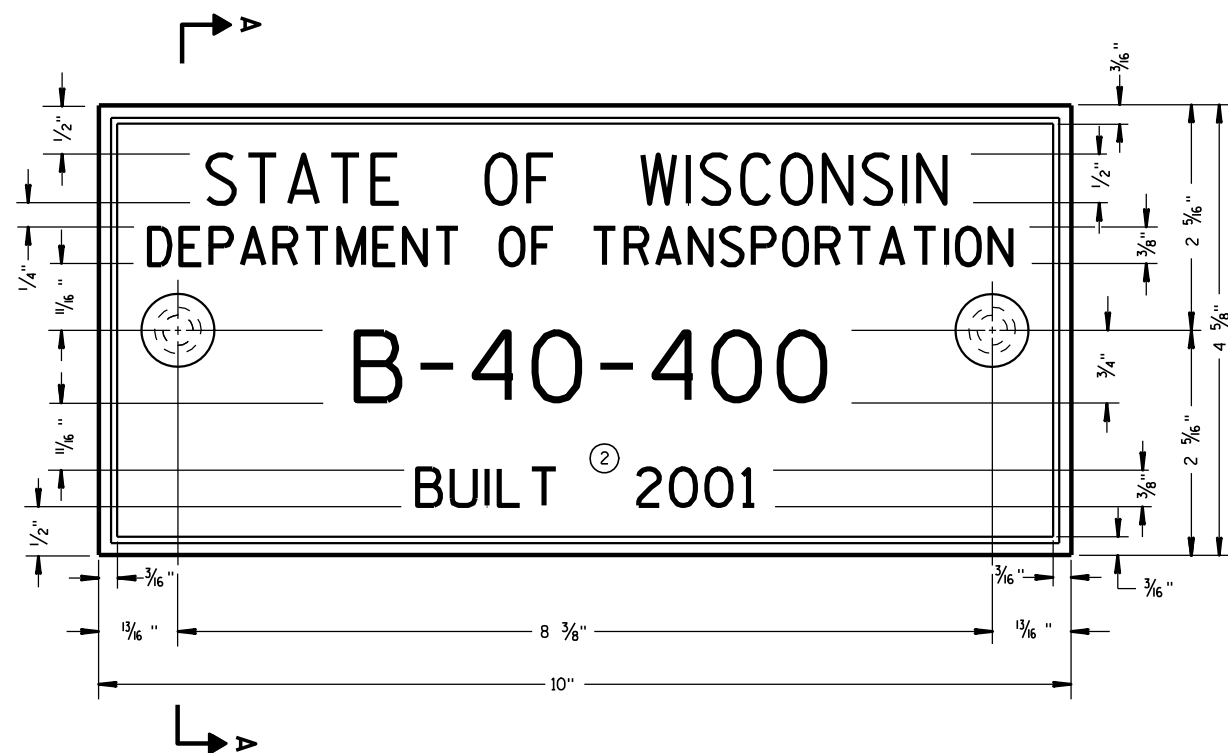
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED
INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR
CULVERT PIPE

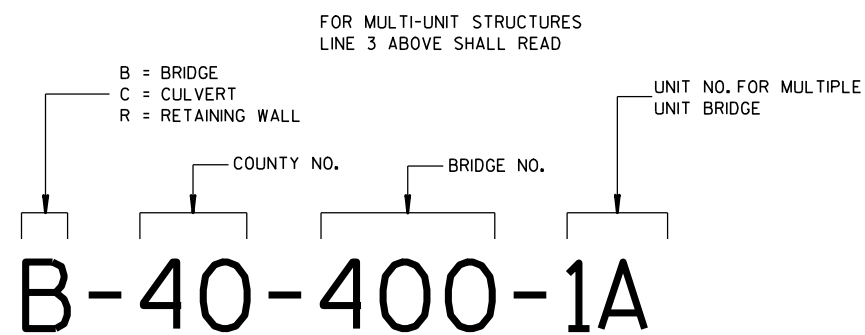
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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





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



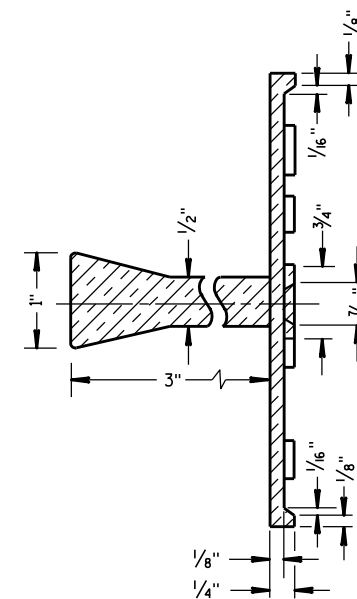
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

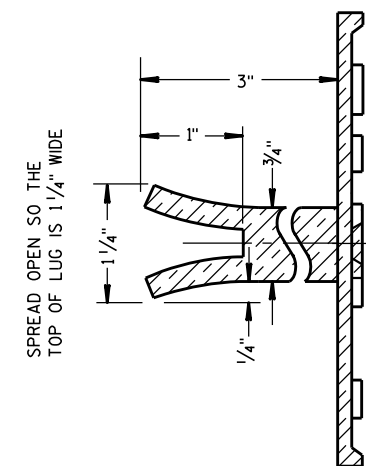
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.

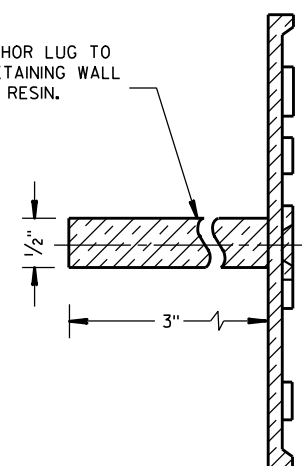


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

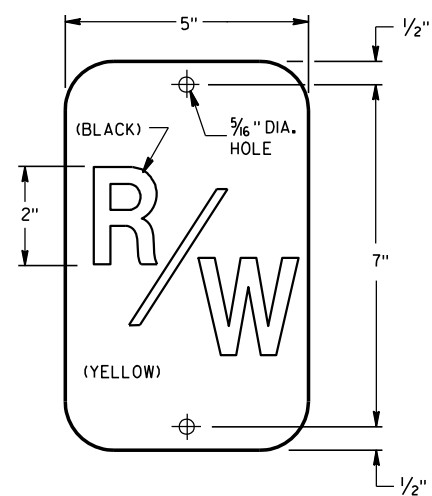
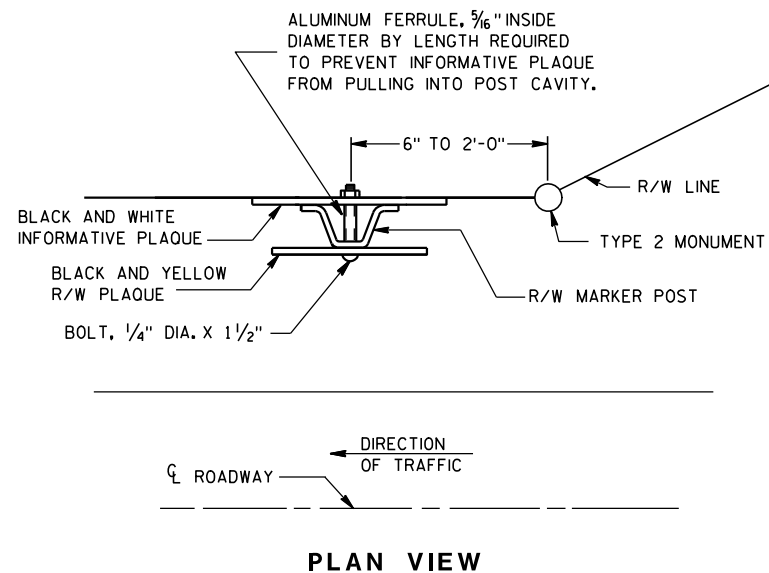
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

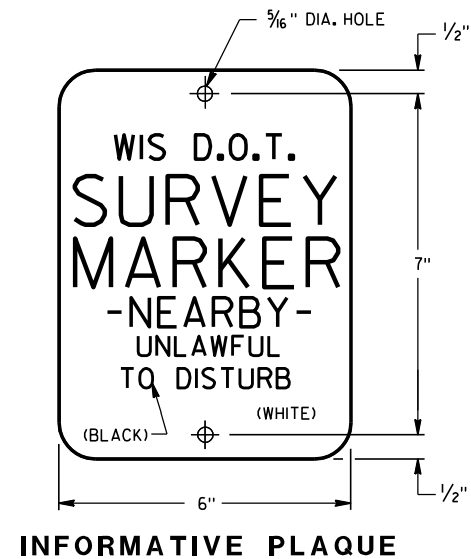
3/26/10
DATE

FHWA

/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



THE RIGHT-OF-WAY PLAQUE AND INFORMATIVE PLAQUE WILL BE FURNISHED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.



GENERAL NOTES

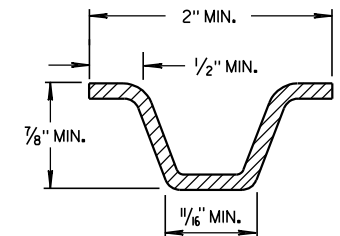
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

A STEEL MARKER POST FOR RIGHT-OF-WAY SHALL BE PLACED IN THE RIGHT-OF-WAY, WITH THE BACK OF THE POST ON THE LONGER RIGHT-OF-WAY TANGENT, 6 INCHES TO 24 INCHES FROM EACH TYPE 2 MONUMENT TO SERVE AS A GUARD POST, AND AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

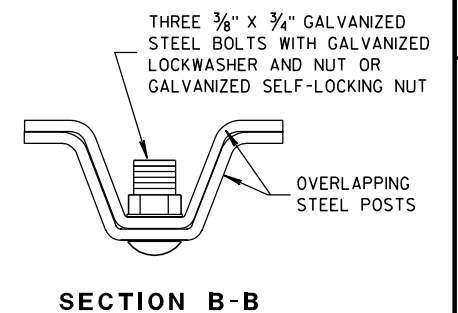
THE "R/W" PLAQUE SHALL FACE THE ROADWAY AND THE INFORMATIVE PLAQUE SHALL FACE AWAY FROM THE ROADWAY. R/W AND INFORMATIVE PLAQUES WILL BE FURNISHED BY THE DEPARTMENT OF TRANSPORTATION.

STEEL MARKER POSTS SHALL MEET THE MINIMUM MATERIAL REQUIREMENTS FOR STEEL DELINEATOR POSTS; EXCEPT POSTS PAINTED WITH FEDERAL YELLOW ENAMEL NEED NOT BE ZINC COATED.

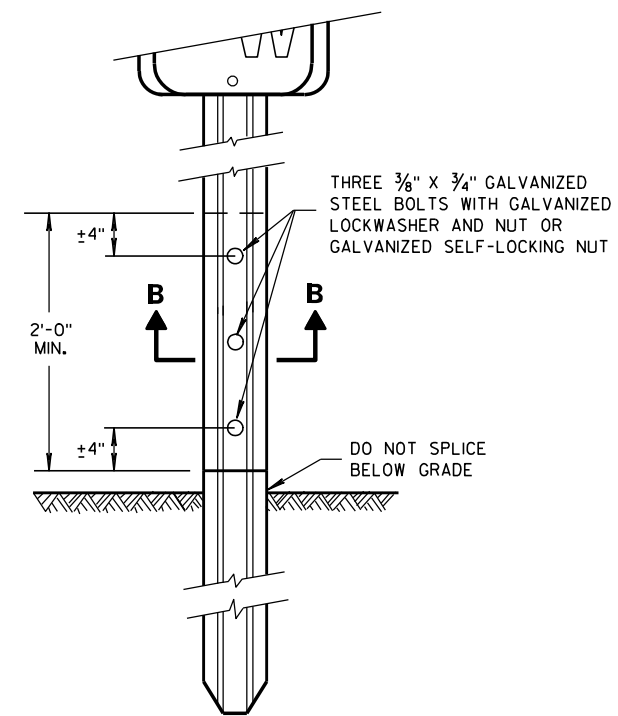
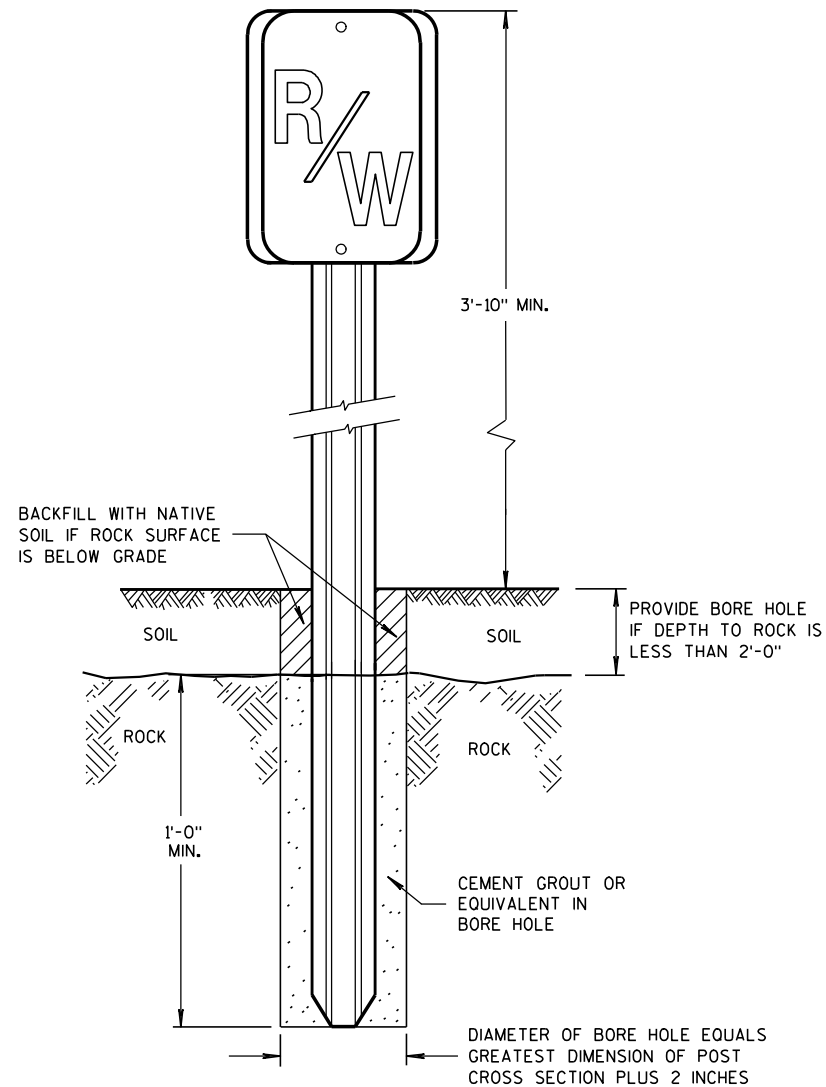
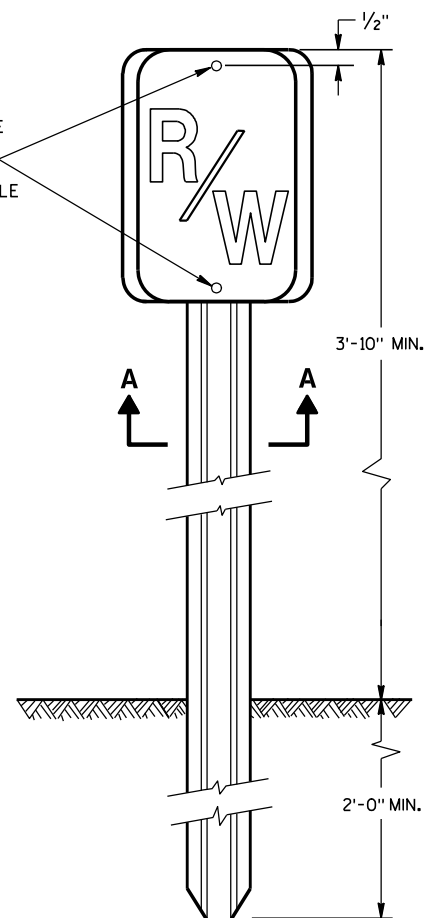
- ① IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK TO A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 3'-10" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR. FILL THE BORE HOLE WITH CEMENT GROUT, OR EQUIVALENT, DEPENDING ON THE STABILITY OF THE ROCK.



MIN. WEIGHT 1.12 LB./FT.
SECTION A-A



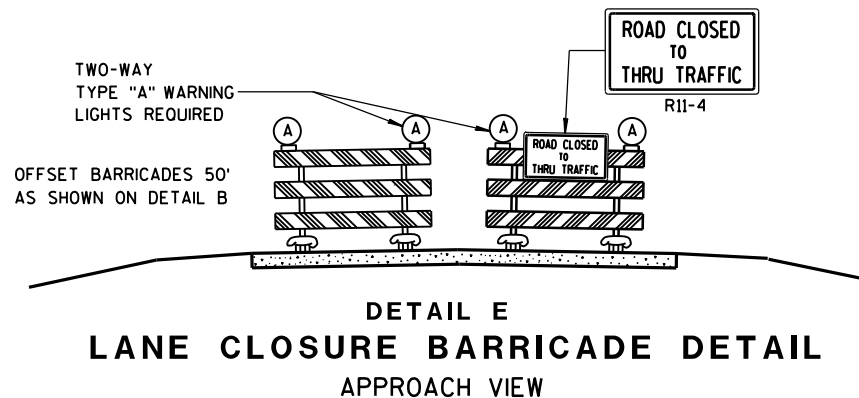
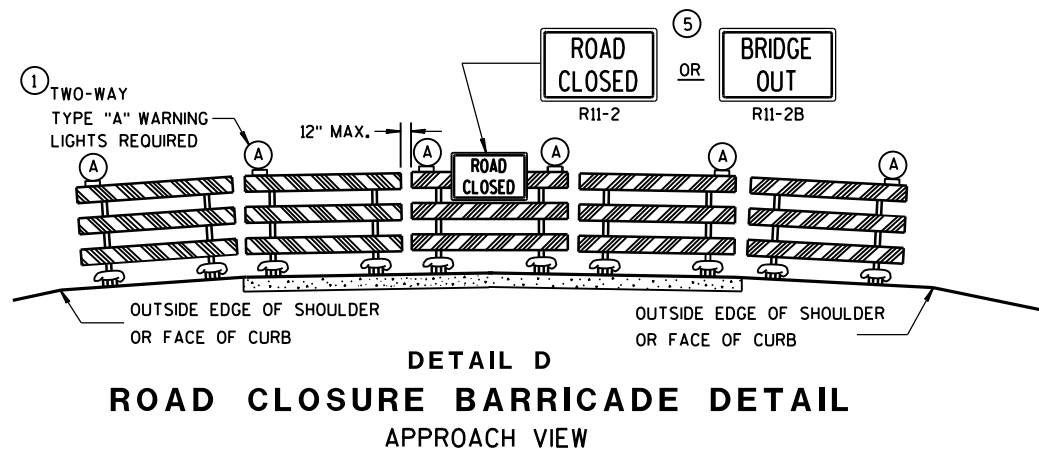
STEEL POSTS SHALL HAVE 2 - $\frac{3}{8}$ " HOLES 7" APART. POST WITH ADDITIONAL HOLES WILL BE ACCEPTABLE



**MARKER POST
FOR RIGHT-OF-WAY**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/27/09 /S/ Ray Kumapayi
DATE CHIEF SURVEYING AND MAPPING ENGINEER
FHWA



SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

R11-2 SHALL BE 48" X 30".

R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".

M4-9 SHALL BE 30" X 24".

M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)

M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)

M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)

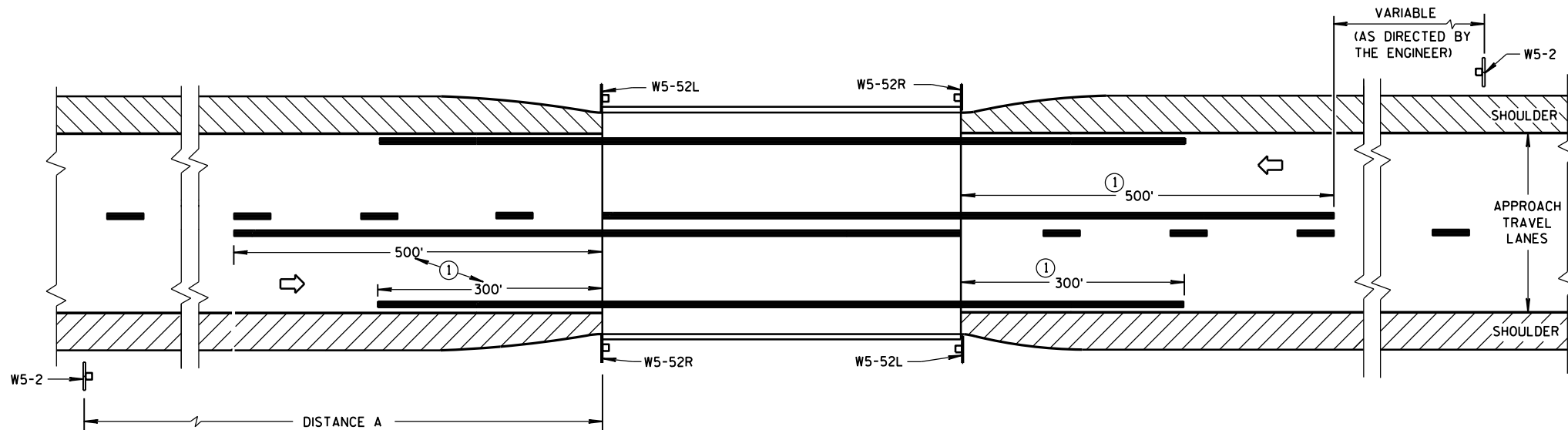
M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

R1-1 SHALL BE 36" X 36".

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



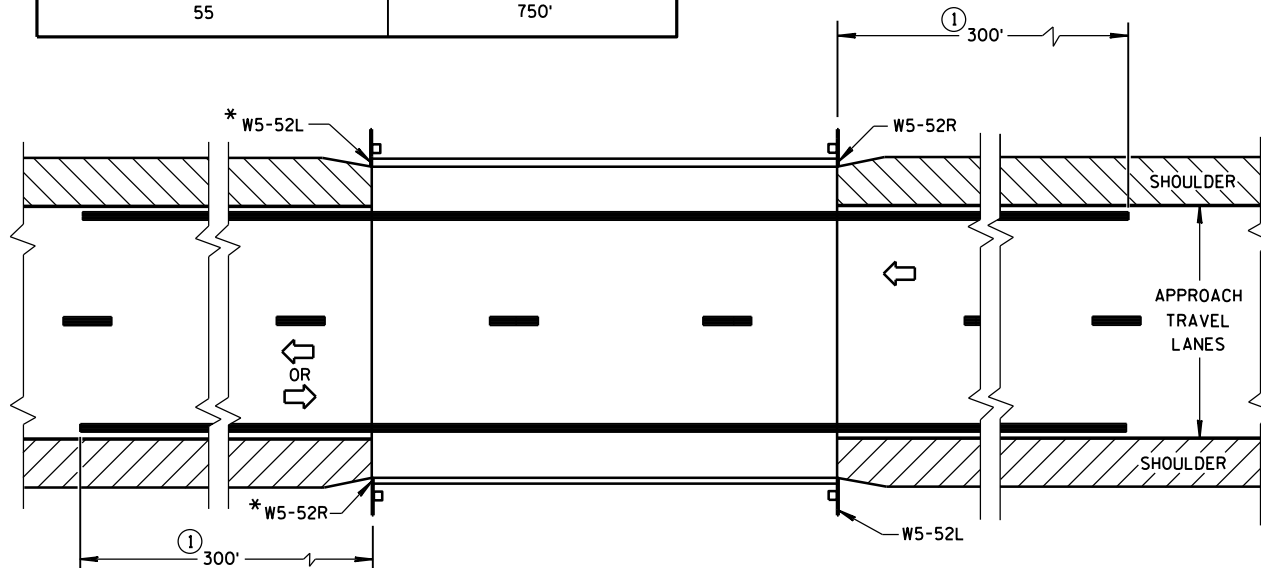
SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET

DISTANCE TABLE

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

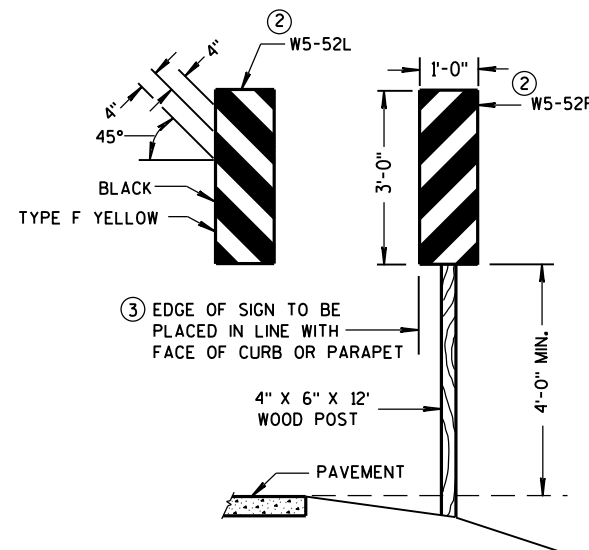


*OMIT ON ONE-WAY TRAVELLED WAYS

SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.



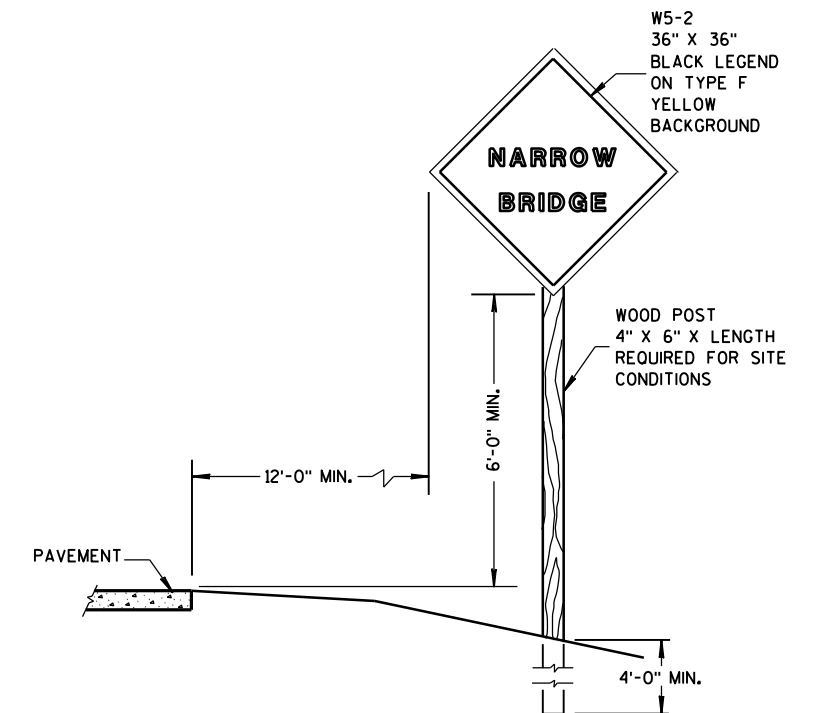
OBJECT MARKER PLACEMENT

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.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

- ① MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.
- ② FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.
- ③ LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.

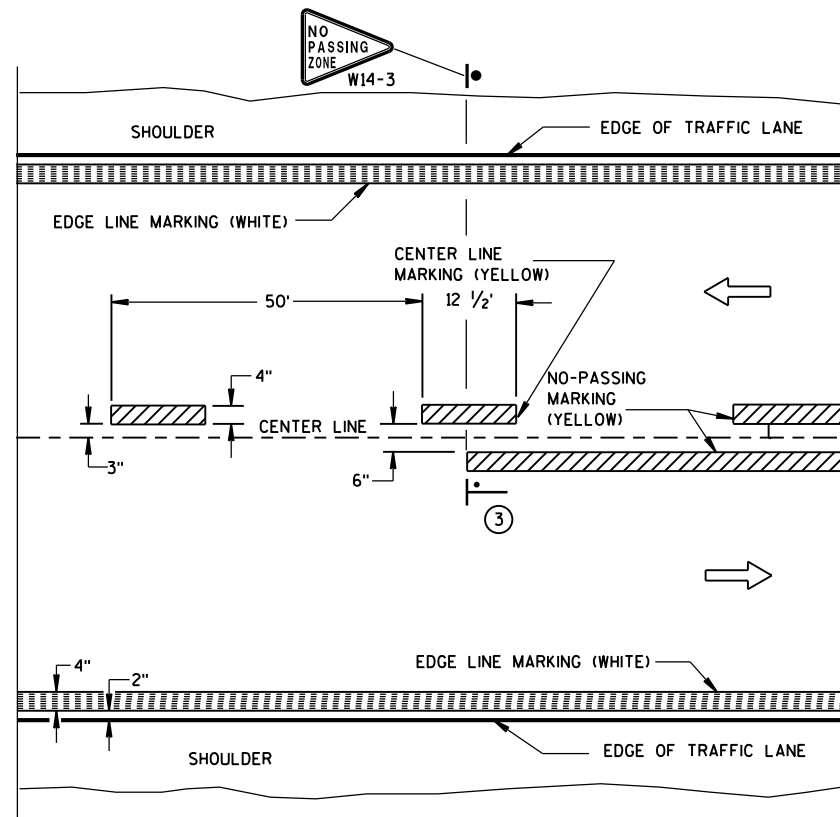


SIGN PLACEMENT

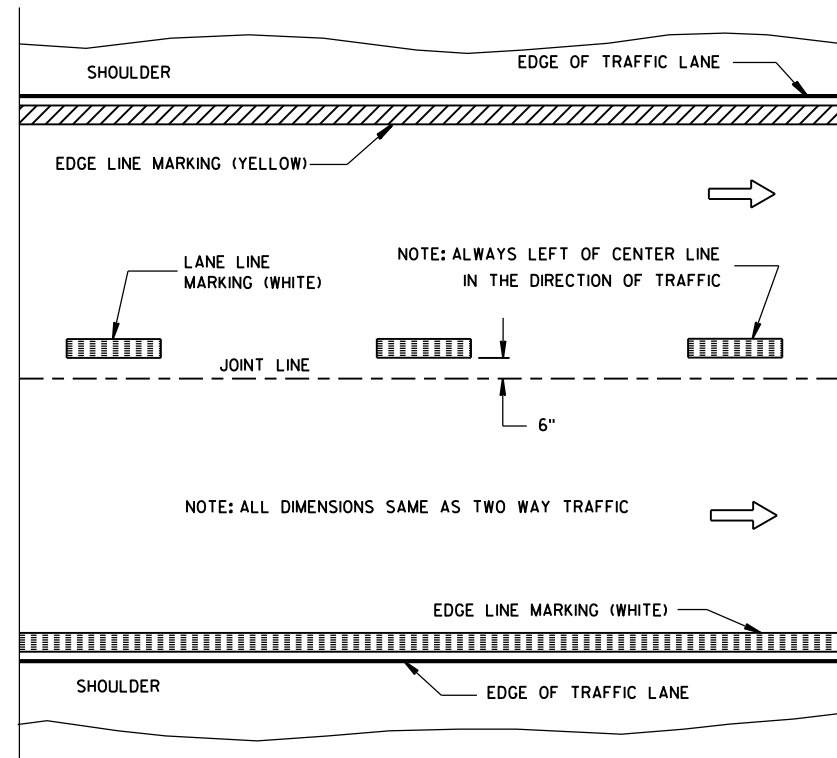
SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3-2014 DATE /S/ Travis Fettes
STATE TRAFFIC ENGINEER OF DESIGN
FHWA

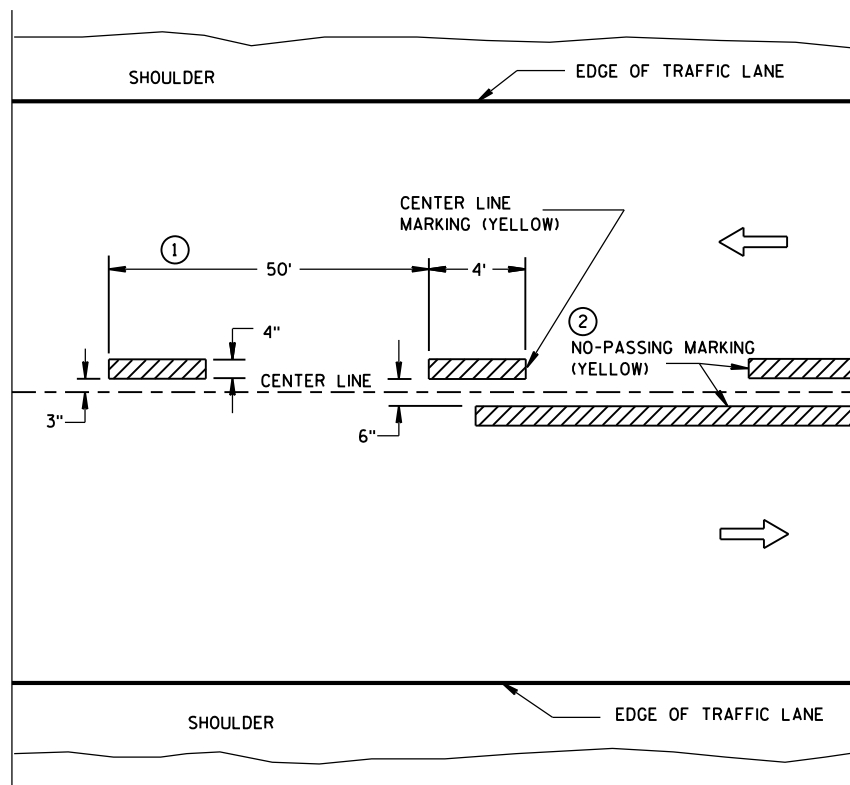


TWO WAY TRAFFIC

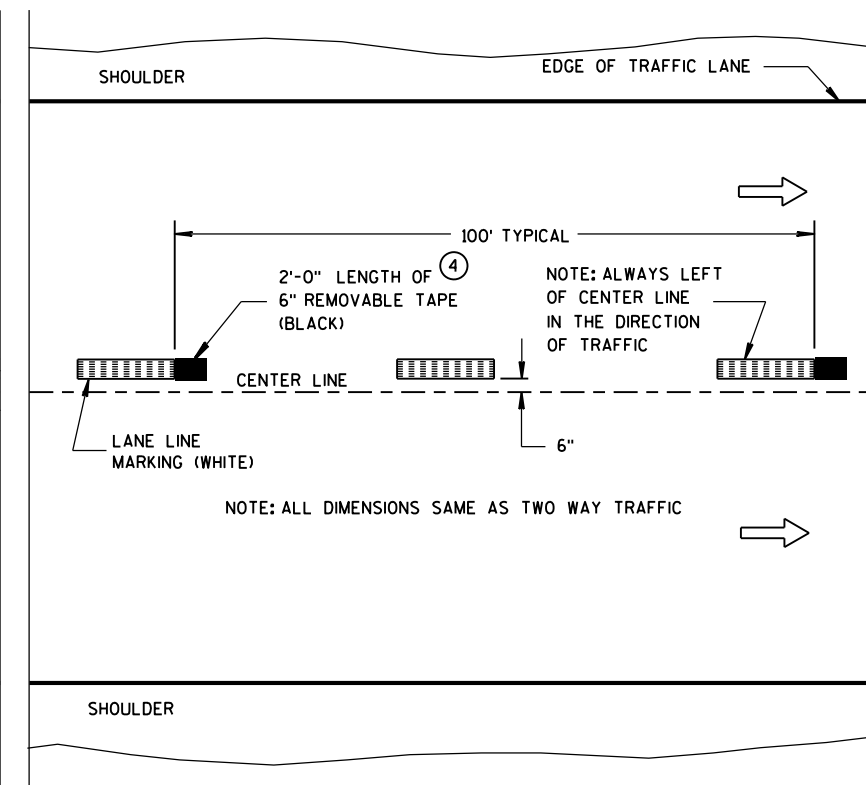


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING
(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

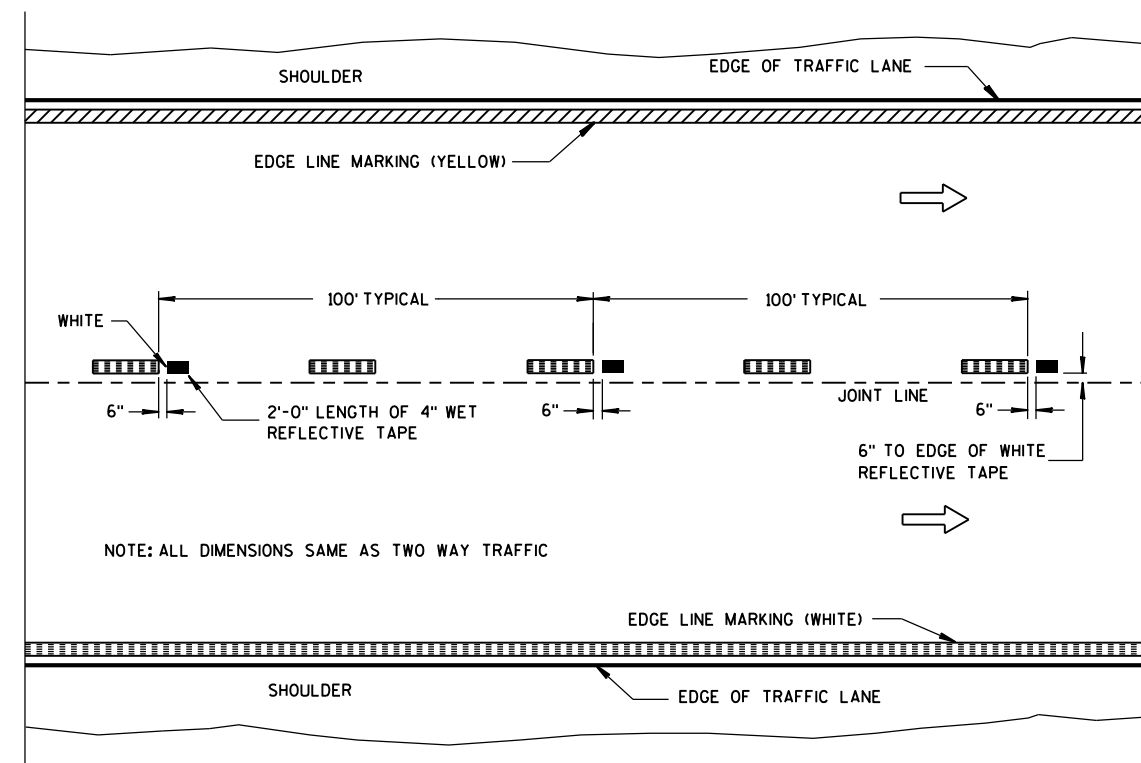
GENERAL NOTES

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

- ① HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- ② NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
- ③ NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
- ④ CONCRETE ONLY.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

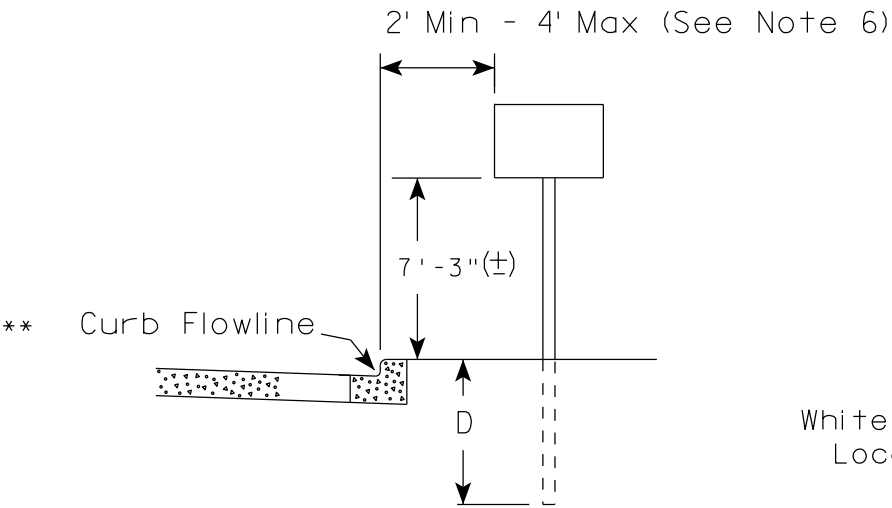
PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

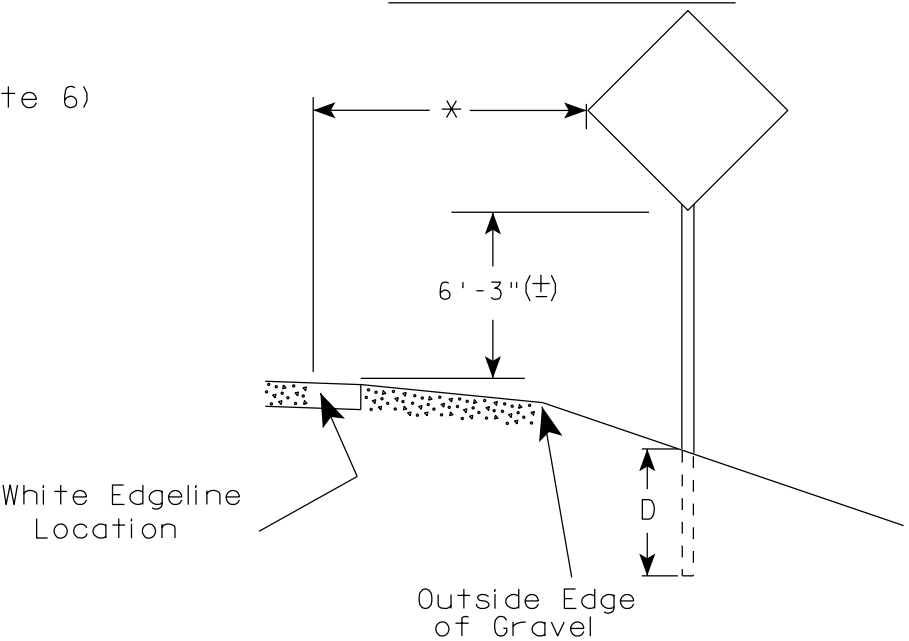
APPROVED
5-13-2013
DATE
FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series) & End of Rod Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (+).

POST EMBEDMENT DEPTH

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

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

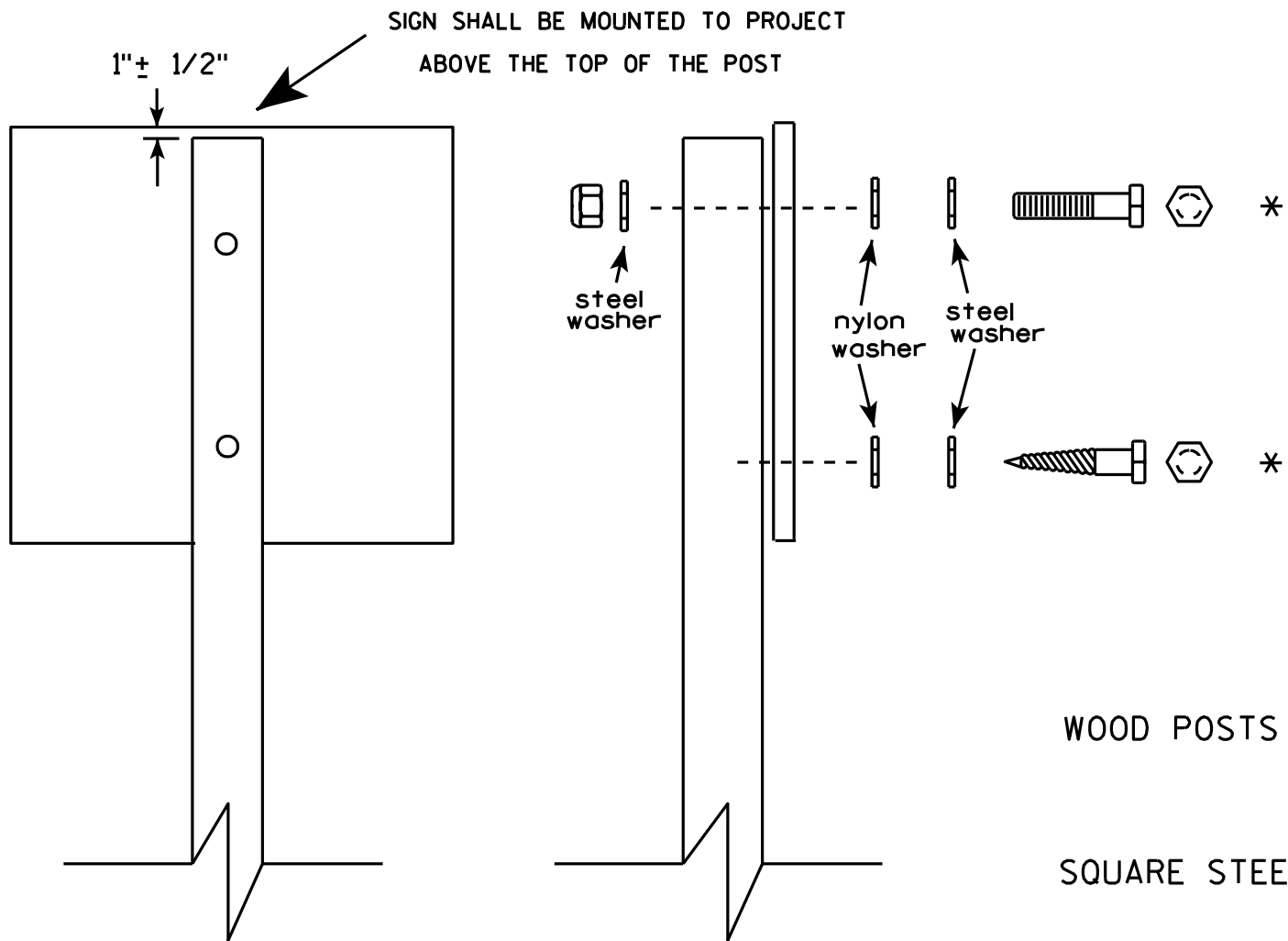
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-3.18

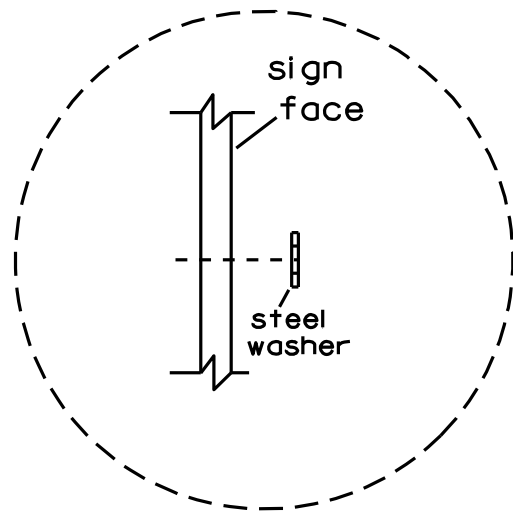


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

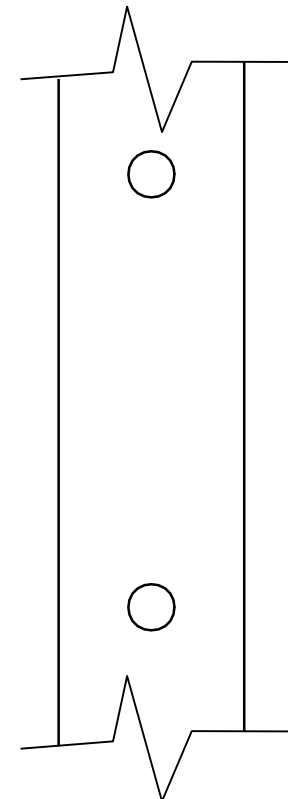
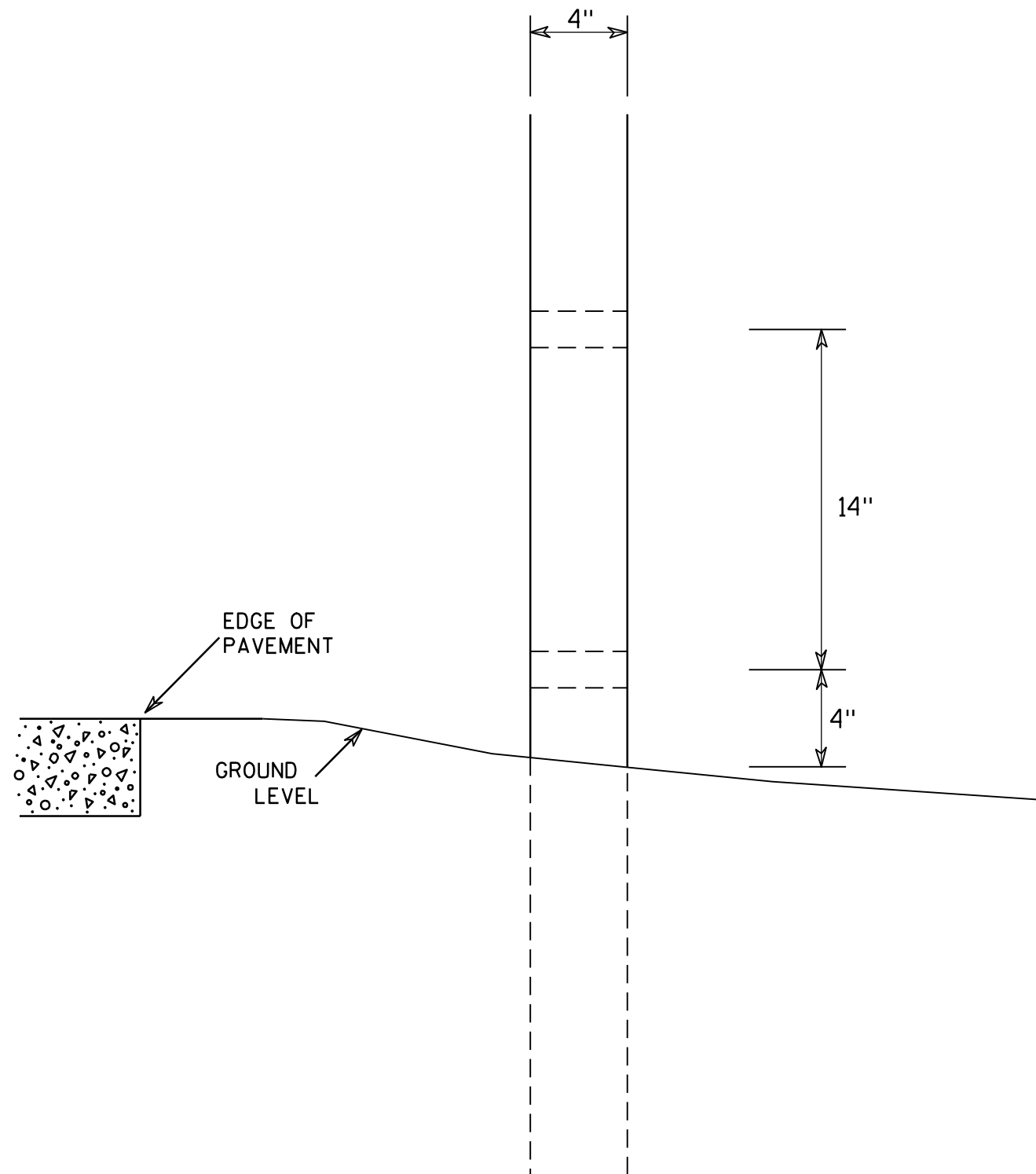
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3"
- MACHINE BOLTS - $\frac{5}{16}$ " X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts
- RIVETS - $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" diameter holes drilled perpendicular to the roadway centerline.

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO: 5106-00-75

HWY: CTH HK

COUNTY: IOWA COUNTY

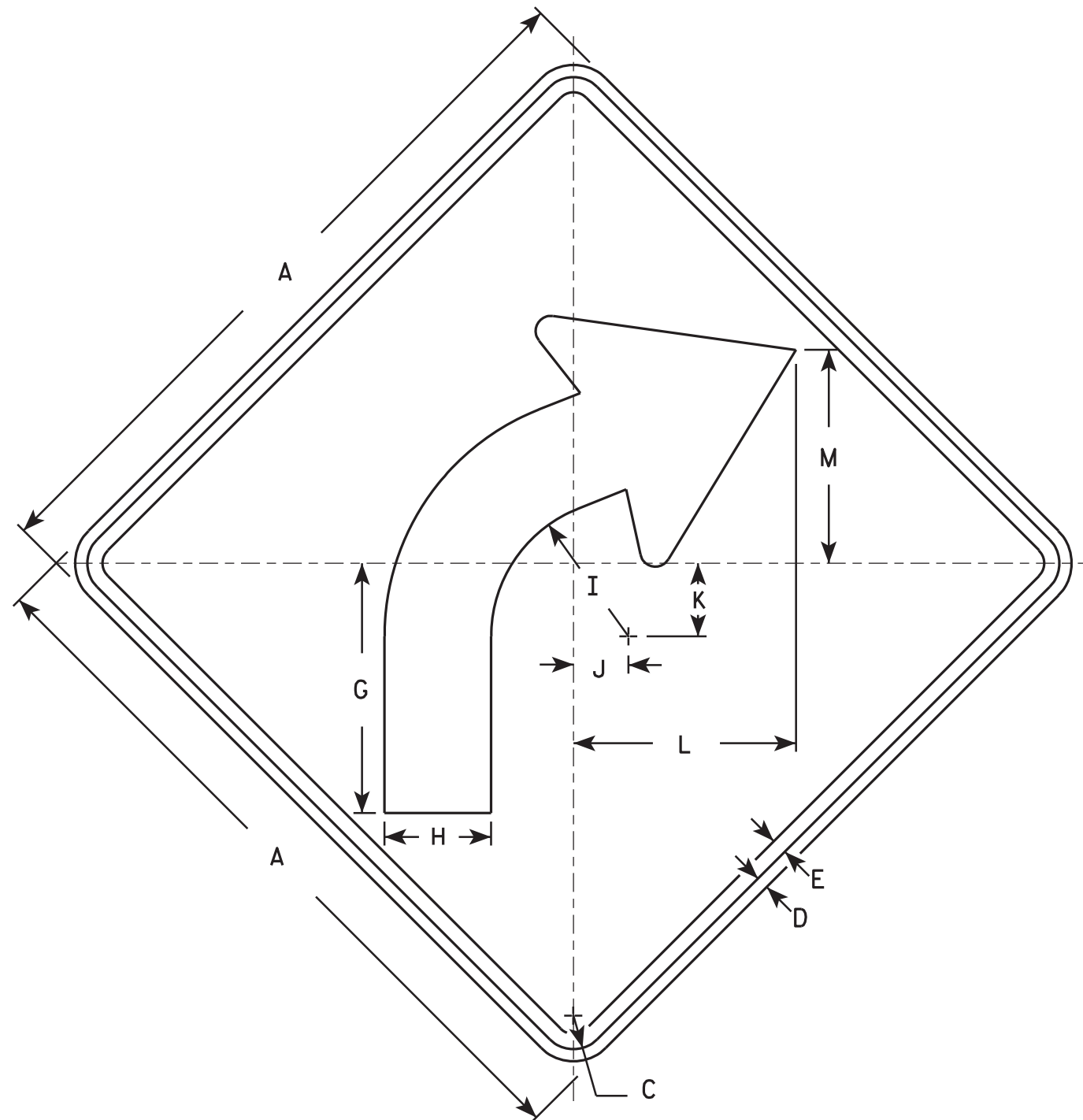
SIGN PLATES

SHEET NO:

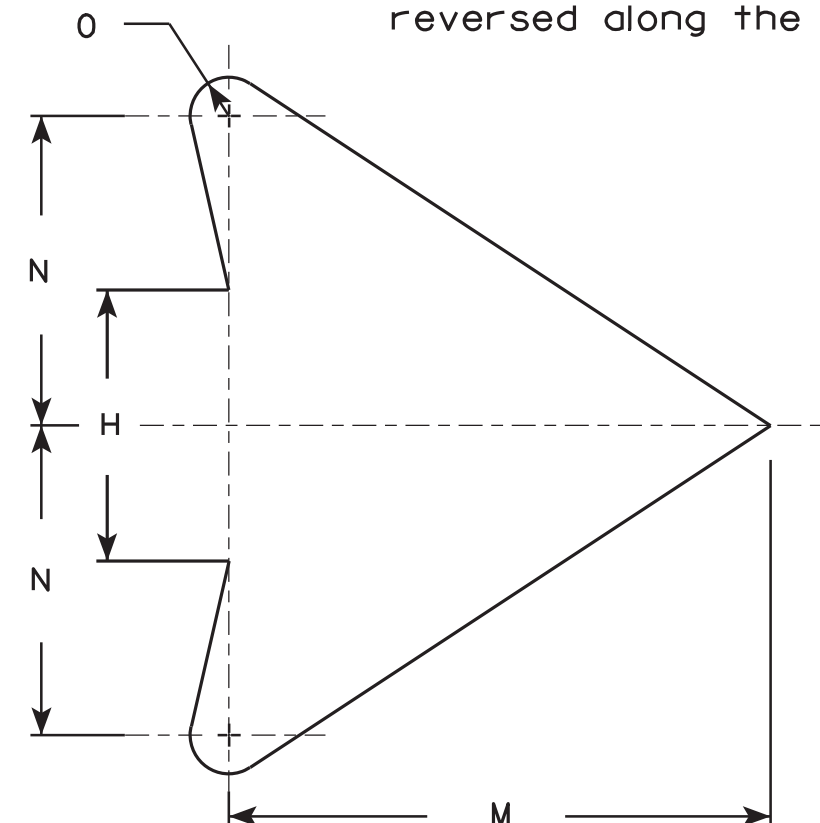
E

NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Yellow
Message - Black
- 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.
- W1-2L is the same as W1-2R except the arrow is reversed along the vertical centerline.



W1-2R



ARROW DETAIL

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	24		1 1/8	3/8	1/2		8 1/4	3 1/2	4 1/2	1 3/4	2 3/8	7 1/4	7	4	1/2												4.0
2S	30		1 3/8	1/2	5/8		10 1/4	4 3/8	5 5/8	2 1/4	3	9 1/8	8 3/4	5	5/8												6.25
2M	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
3	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
4	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
5	48		2 1/4	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0

STANDARD SIGN

W1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-2.10

PROJECT NO: 5106-00-75

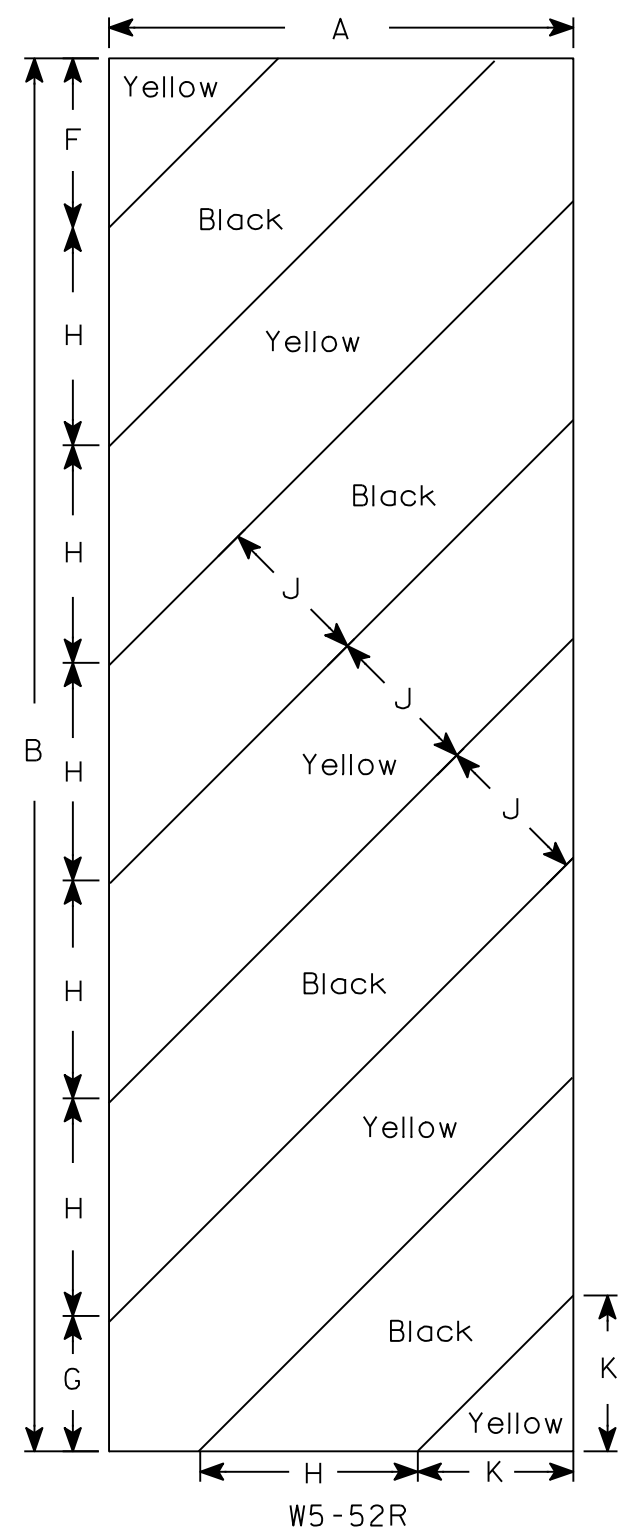
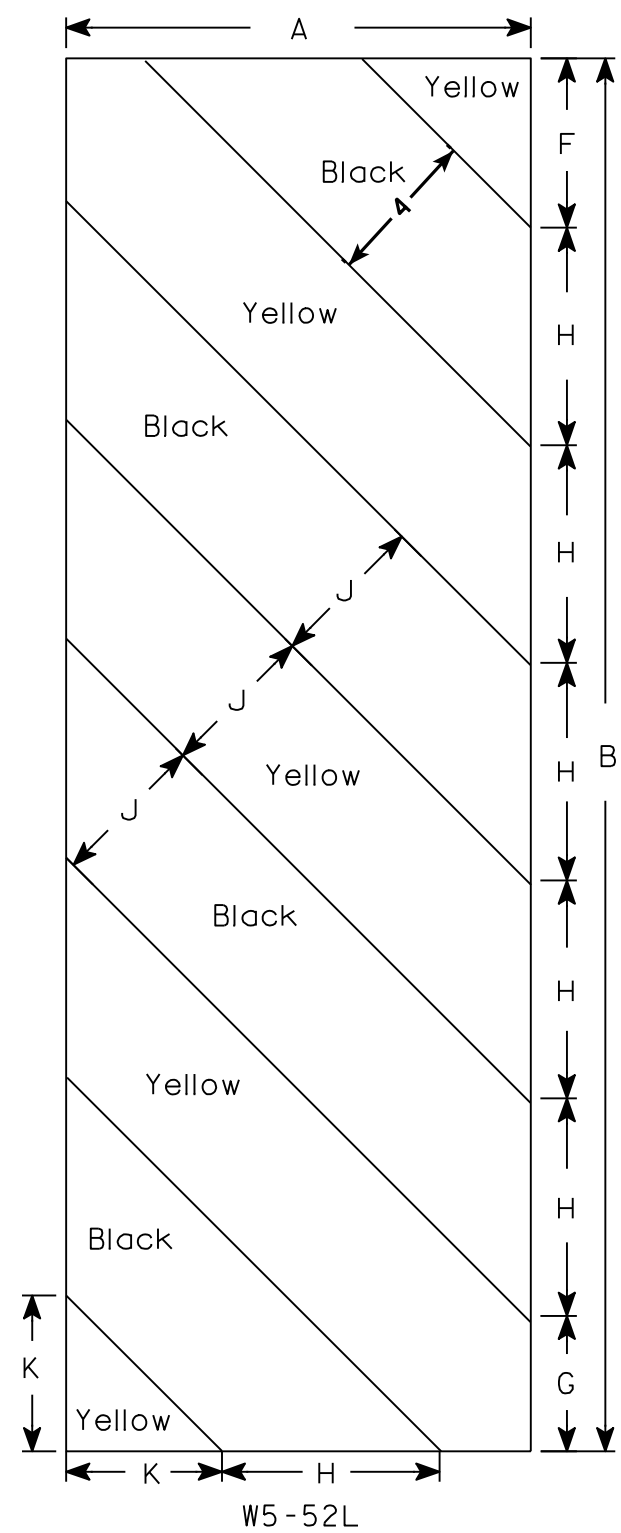
HWY: CTH HK

COUNTY: IOWA

SIGN PLATES

SHEET NO:

E



NOTES

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

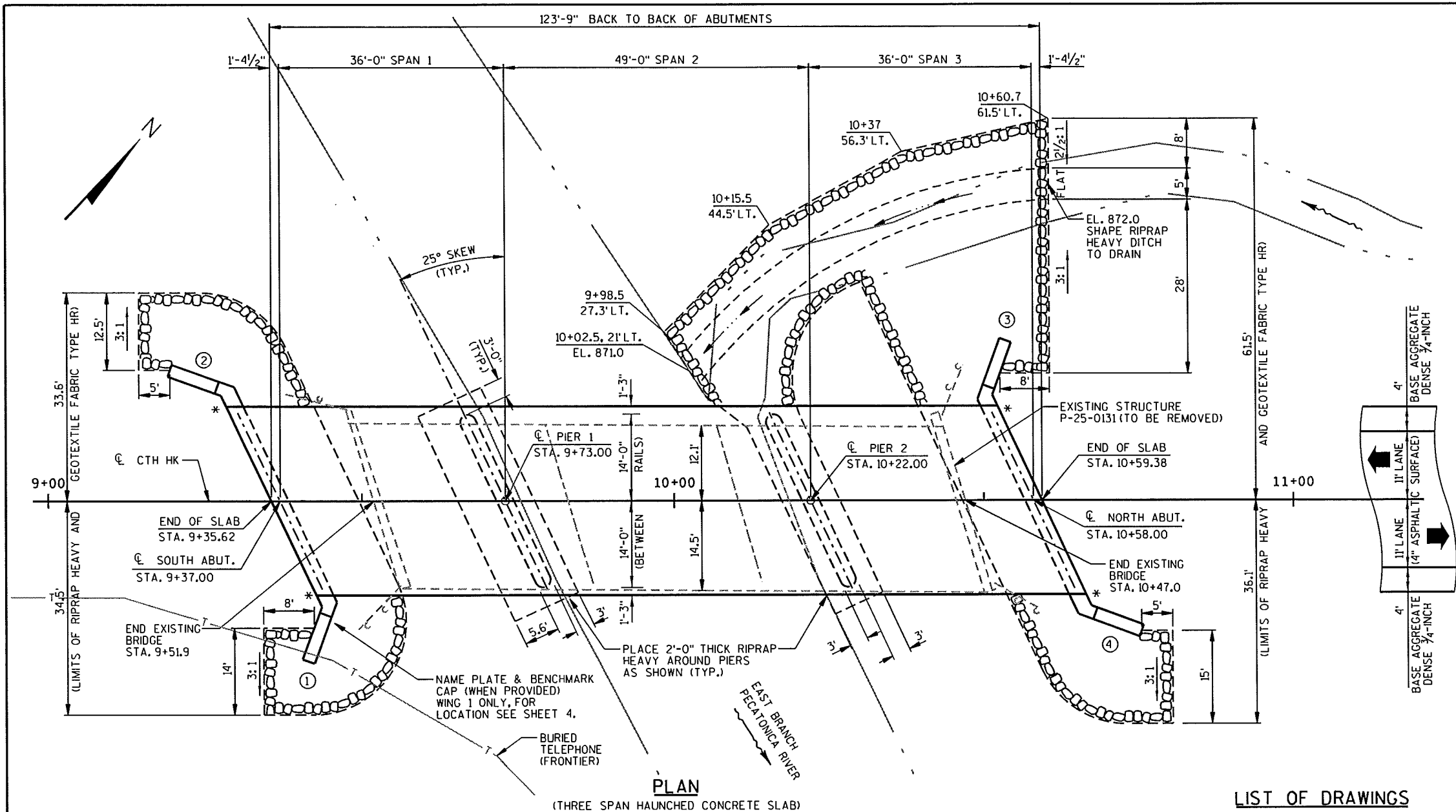
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
2M	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
3	18	54				6	5 1⁄2	8 1⁄2	45°	6	6 9⁄16																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



- - INDICATES WING NUMBER
- * - INDICATES LOCATION OF PROVISION FOR FUTURE THREE BEAM GUARD ATTACHMENT AT WINGS.
- - NORMAL TO C. OF ABUTMENT OR PIER.
- ▨ - REMOVAL OF THIS MATERIAL IS INCLUDED IN THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-25-0172".

PLAN
(THREE SPAN HAUNCHED CONCRETE SLAB)

LIST OF DRAWINGS

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

STATE PROJECT NUMBER			
5106-00-75			
BENCH MARKS NAVD 88			
NO.	STATION/OFFSET	DESCRIPTION	ELEV.
10	5+35.5, 26.54' RT.	1 1/4" ROD	889.31
20	10+50, 14.99' RT.	SE CORNER OF N PIER CAP	880.86
30	12+97.5, 68.99' LT.	SPIKE IN BASE OF TREE	878.46

DESIGN DATA

LIVE LOAD:
DESIGN LOADING : HL-93
INVENTORY RATING FACTOR : 1.14
OPERATIONAL RATING FACTOR : 1.48
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS.
STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

TRAFFIC DATA:
A.A.D.T. (2014) = 55
A.A.D.T. (2034) = 70
R.D.S. = 50 MPH

MATERIAL PROPERTIES:

CONCRETE MASONRY, SLAB $f'_c = 4,000$ P.S.I.
ALL OTHER $f'_c = 3,500$ P.S.I.

HIGH-STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 $f_y = 60,000$ P.S.I.

PILING STEEL HP $f_y = 50,000$ P.S.I.

FOUNDATION DATA:

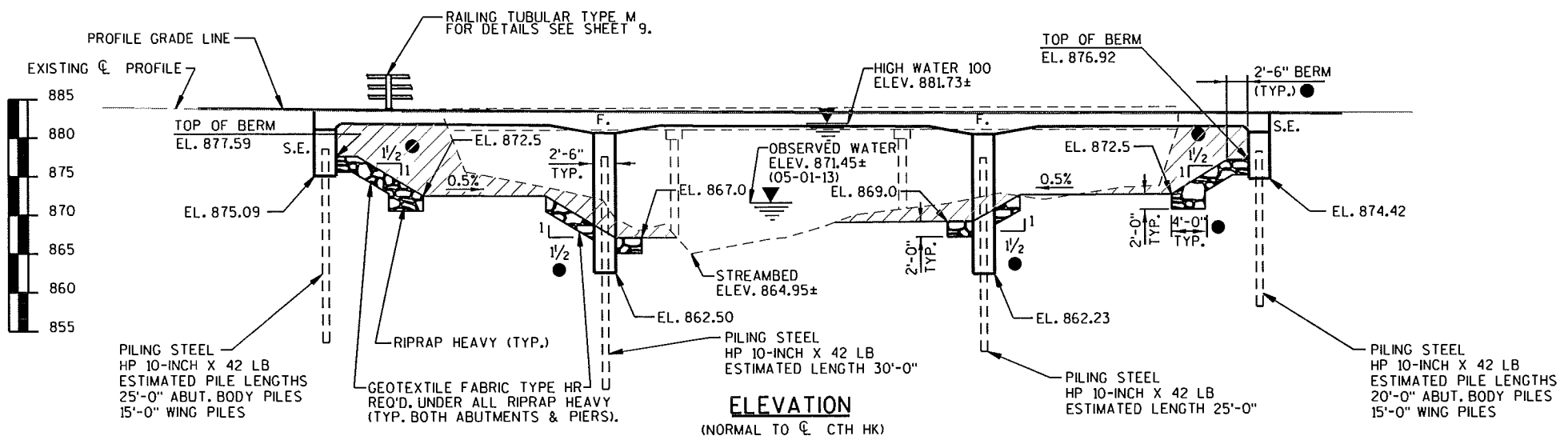
ABUTMENTS AND PIERS TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 110 TONS PER ABUT. BODY PILE, 80 TONS PER WING PILE, AND 180 TONS PER PIER PILE, AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED PILE LENGTHS ARE 25'-0" AT THE SOUTH ABUT. BODY, 20'-0" AT THE NORTH ABUT. BODY, 15'-0" AT ALL WINGS, AND 30'-0" AT PIER 1 AND 25'-0" AT PIER 2. ALL WING PILES TO BE DRIVEN TO A MINIMUM OF 10'-0" BELOW BOTTOM OF ABUTMENT.

THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5.

HYDRAULIC DATA:

100 YEAR FREQUENCY
DRAINAGE AREA 48.3 SQ. MI.
0 100 8,050 C.F.S.
VELOCITY 8.58 F.P.S.
WATERWAY AREA 939 SQ. FT.
HIGH WATER 100 ELEVATION 881.73 ±
ROADWAY OVERFLOW DESIGN FREQUENCY N/A
SCOUR CRITICAL CODE 5
HIGH WATER 2 ELEVATION 874.18 ±
0 2 1,200 C.F.S.

CONSULTANT DESIGN CONTACT: DANIEL WAGNER (608) 355-8952
BRIDGE OFFICE CONTACT: WILLIAM DREHER (608) 266-8489

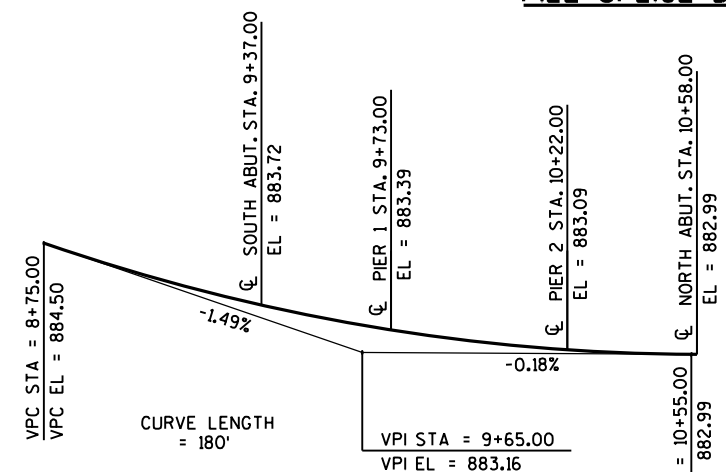


ELEVATION
(NORMAL TO C. CTH HK)

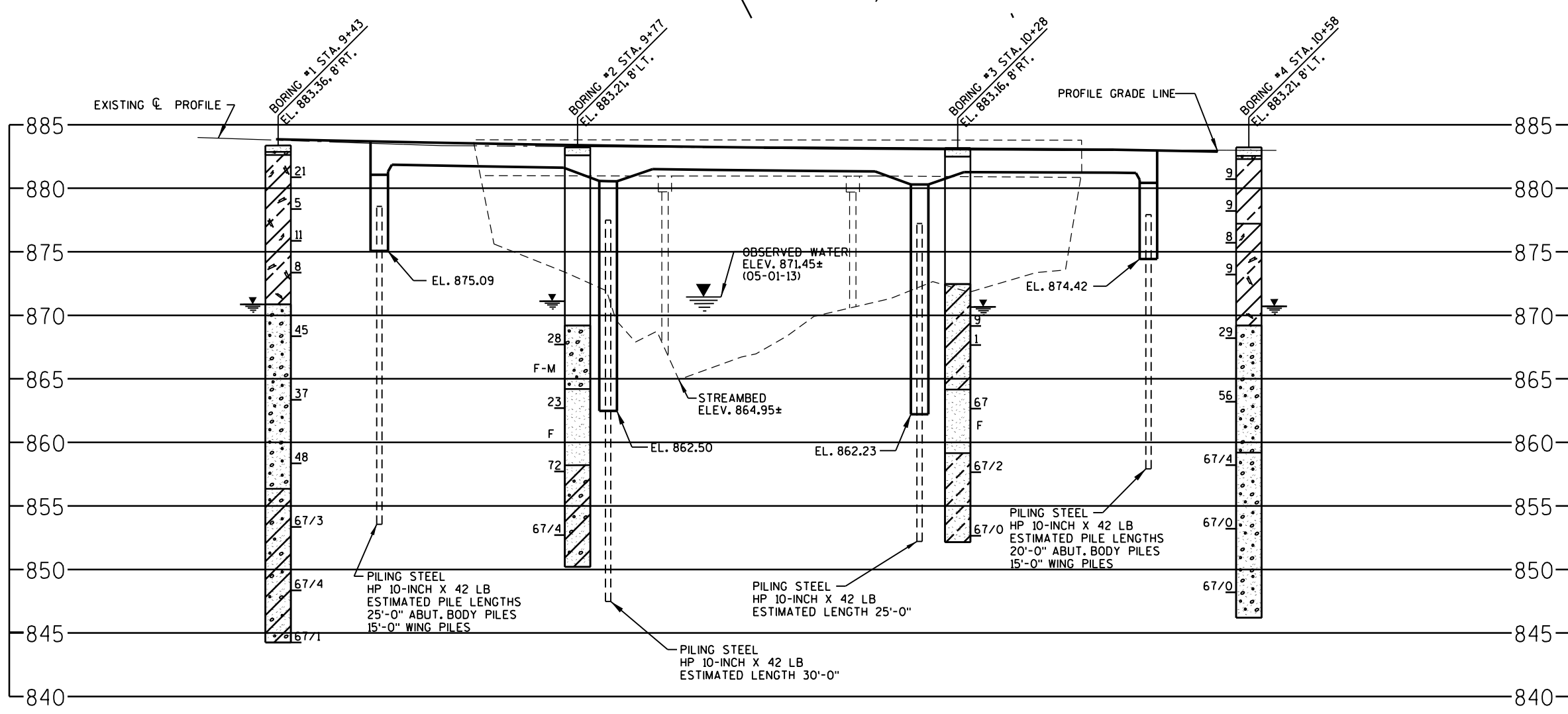
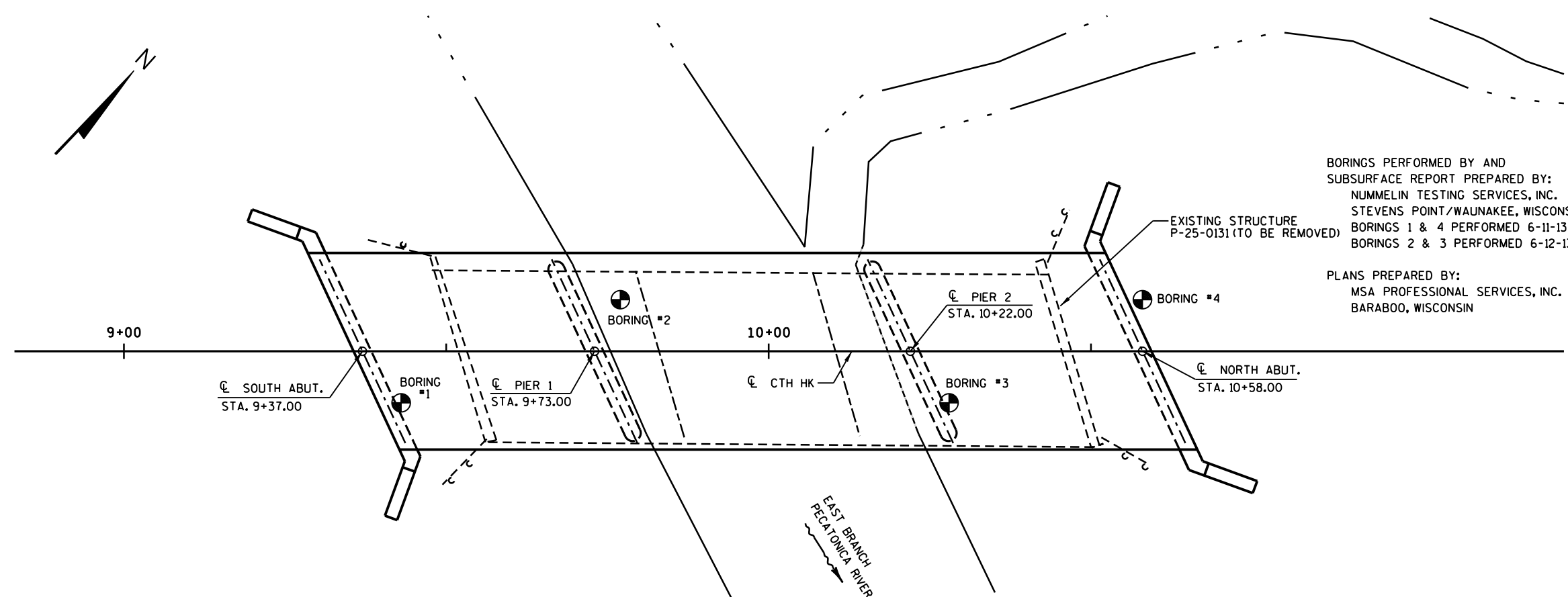


NO.	DATE	REVISION	BY
MSA TRANSPORTATION • MUNICIPAL DEVELOPMENT • ENVIRONMENTAL 1230 South Boulevard • Baraboo, WI 53913 608-356-2771 1-800-362-4505 Fax: 608-356-2770			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED <i>William C. Dreher</i> 06/24/15 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-25-0172			
CTH HK OVER EAST BRANCH PECATONICA RIVER			
COUNTY	IOWA	TOWN/CITY/VILLAGE	MOSCOW
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	MLH	DESIGN CK'D.	DHW
DRAWN BY	RLR	PLANS CK'D.	JRS
GENERAL PLAN			SHEET 1 OF 9

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND EDGES OF SLAB, TO THE OUTSIDE 1'-0" OF THE UNDERSIDE OF SLAB, TO THE TOPS OF WINGS, AND TO THE EXPOSED FRONT FACES OF WINGS.

[illegible]

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-25-0172	
		DRAWN BY RLR	PLANS CKD. JRS
CROSS SECTION & QUANTITIES		SHEET 2 OF 9	



STATE PROJECT NUMBER

5106-00-75

ABBREVIATIONS

F— FINE M— MEDIUM C— COARSE
WS— WEATHERED SO— SOUND

MATERIAL SYMBOLS

TOPSOIL SILT SANDSTONE
SAND PEAT LIMESTONE
GRAVEL CLAY IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
95/6=95 BLOWS FOR 6"
PENETRATION
PROBING TAKEN WITH
A 350# WT.
FALLING 18" ON A 2"
O.D. POINT.
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

LEGEND OF BORING

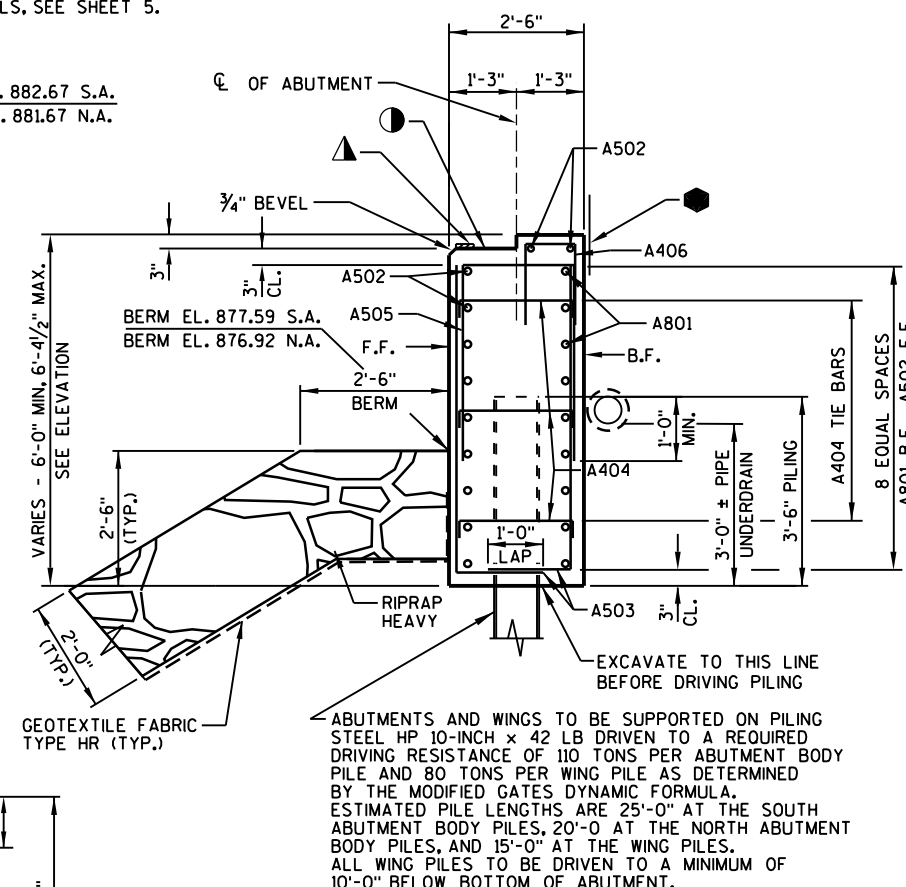
BORING NO.
STA.
ELEV.
UNCONFINED STRENGTH → 7.7
BLOWS PER FT. USING 140# WT. FALLING 30"
WASH SAMPLE
SHELBY TUBE — S.T.
GROUND WATER ELEVATION
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION
SANDY GRAVEL
F. BOULDERS OR COBBLES
SAND
SILTY CLAY
SO
LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

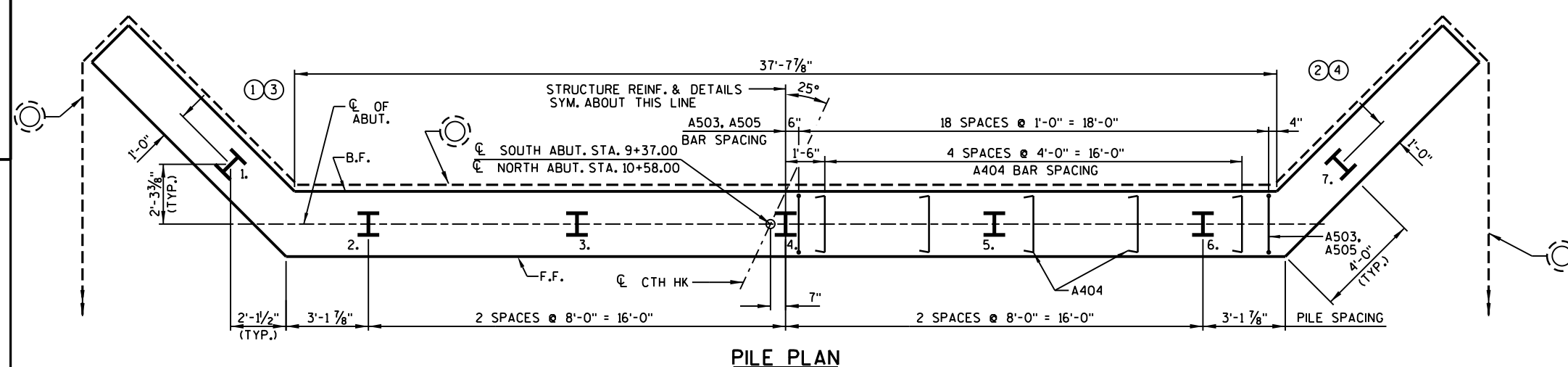
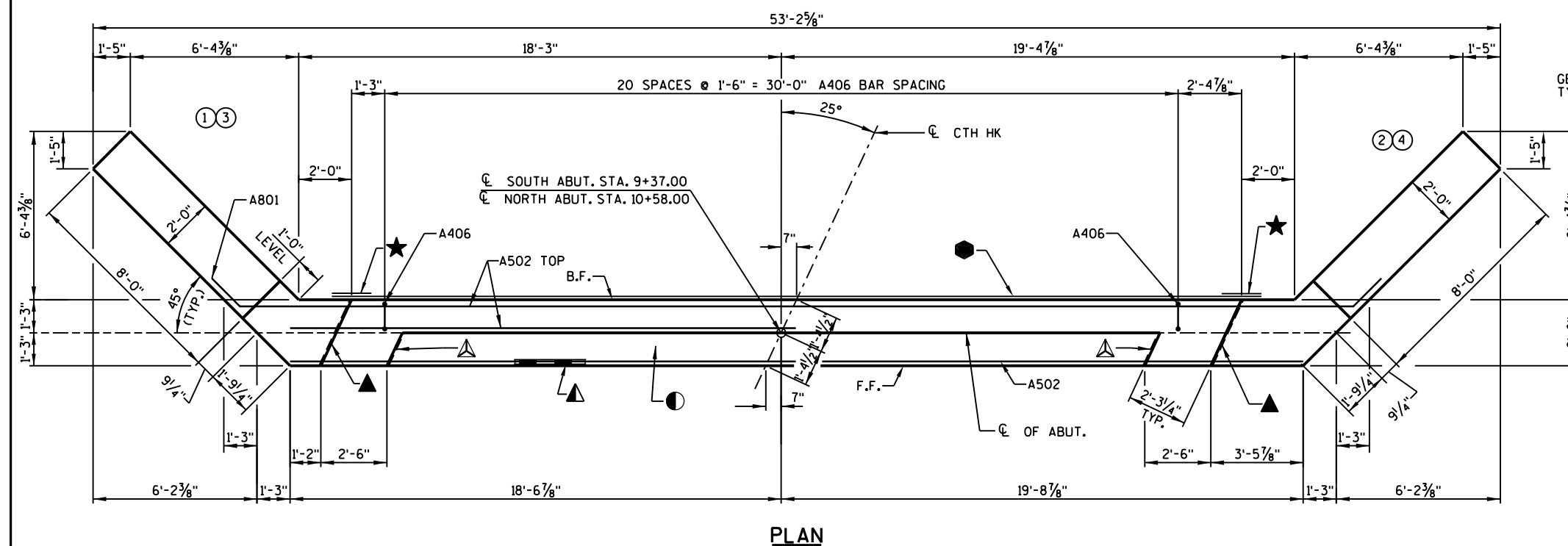
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-25-0172			
DRAWN BY		RLR	PLANS CKD. JRS
SUBSURFACE EXPLORATION		SHEET 3 OF 9	

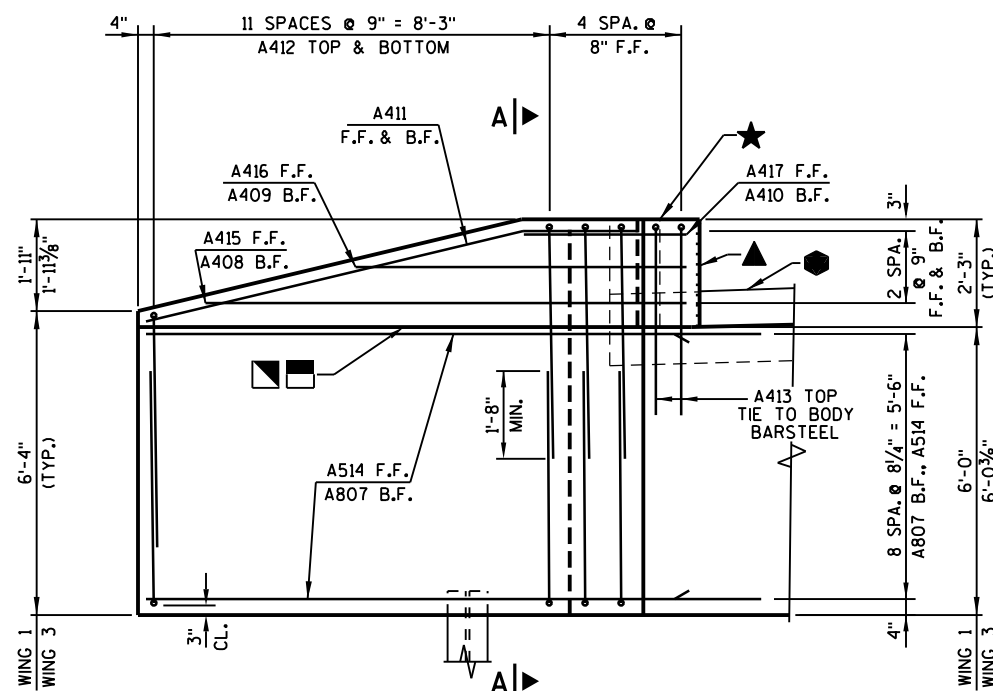


TYPICAL SECTION THRU ABUTMENT

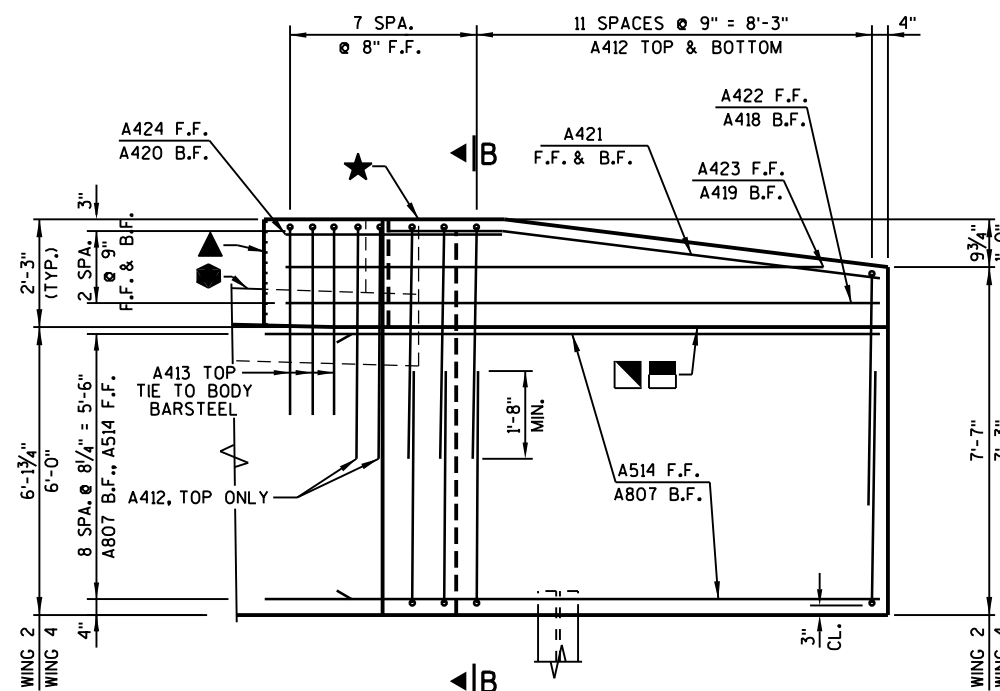
LEGEND

- | | | | | |
|---------------------------|------------------------------|------|----------|----|
| ○ — INDICATES WING NUMBER | | | | |
| F.F. — FRONT FACE | NO. | DATE | REVISION | BY |
| B.F. — BACK FACE | STATE OF WISCONSIN | | | |
| CL. — CLEAR | DEPARTMENT OF TRANSPORTATION | | | |

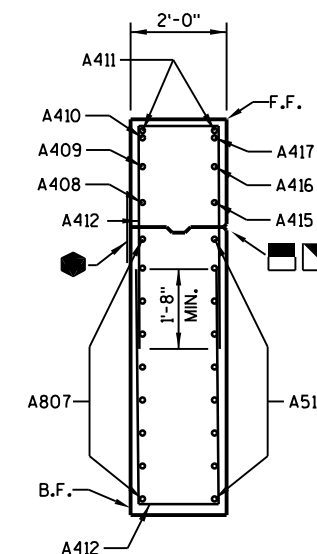




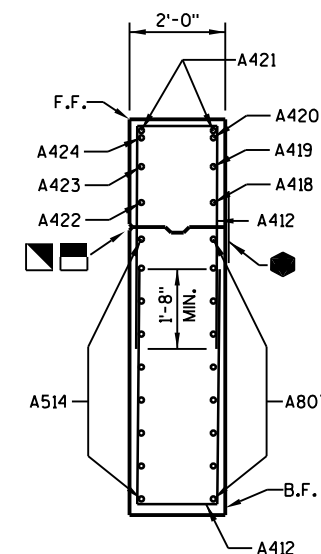
ELEVATION - WINGS 1 & 3
(LOOKING AT F.F. OF WING)



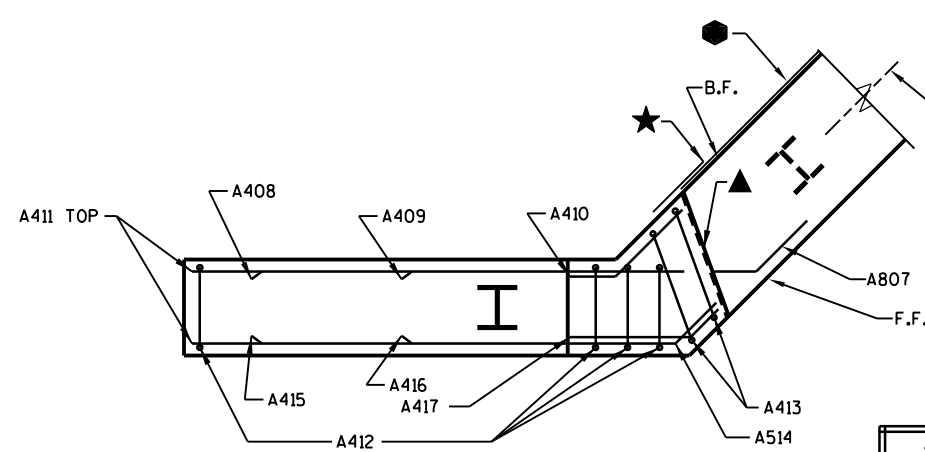
ELEVATION - WINGS 2 & 4
(LOOKING AT F.F. OF WING)



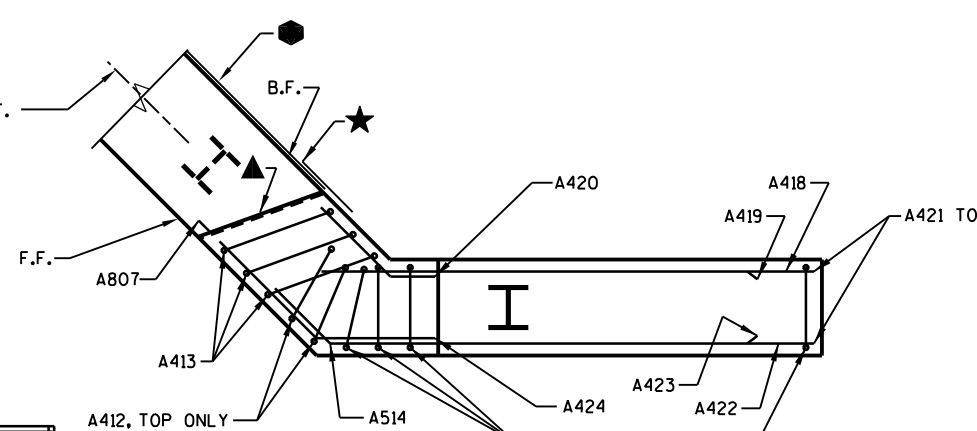
SECTION A-A
THRU WINGS 1 & 3



SECTION B-B
THRU WINGS 2 & 4



PLAN - WINGS 1 & 3



PLAN - WINGS 2 & 4

SEE LEGEND ON SHEET 4 FOR DESCRIPTION OF



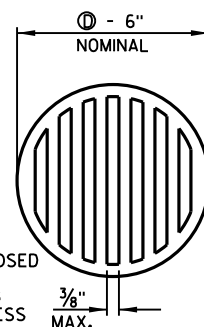
8

RODENT SHIELD NOTES:

ORIENT SHIELD SO SLOTS ARE VERTICAL.

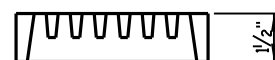
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER.

A PIPE COUPLING IS REQUIRED FOR THE 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 IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

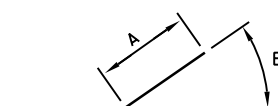


RODENT SHIELD

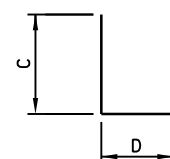
① - DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.



SECTION C-C



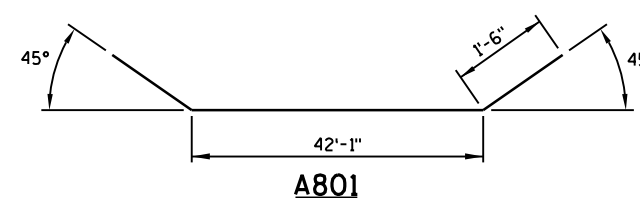
MARK	A	B
A807	1'-6"	45°
A514	1'-10"	45°
A408	1'-10"	45°
A409	1'-10"	45°
A410	1'-10"	45°
A411	2'-5"	14°
A415	1'-0"	45°
A416	1'-0"	45°
A417	1'-0"	45°
A418	1'-10"	45°
A419	1'-10"	45°
A420	1'-10"	45°
A421	2'-5"	8°
A422	3'-0"	45°
A423	3'-0"	45°
A424	3'-0"	45°



STIRRUPS AND TIES

MARK	C	D
A404	4 1/2"	2'-2"
A505	3'-8 1/2"	2'-2"
A406	1'-6"	11"
A412	4'-10"	1'-8"
A413	3'-11"	2'-4"

A503



A801

BILL OF BARS (1 ABUTMENT)

UNCOATED 2555 LBS.
COATED 1415 LBS.

MARK	NUMBER	REQUIRED	LENGTH	BENT	LOCATION
	COATED	UNCOATED			
A801	-	9	44'-10"	X	ABUTMENT BODY - B.F. - HORIZ.
A502	-	11	38'-3"		ABUTMENT BODY - F.F. & TOP - HORIZ.
A503	-	76	7'-1"	X	ABUTMENT BODY - F.F. & B.F. - VERT.
A404	-	30	2'-9"	X	ABUTMENT BODY - TIES - HORIZ.
A505	-	38	9'-4"	X	ABUTMENT BODY - TOP - VERT.
A406	-	21	3'-9"	X	ABUTMENT BODY - TOP BACKWALL - VERT.
A807	18	-	13'-3"	X	WINGS - B.F. - HORIZ.
A408	1	-	9'-6"	X	WINGS 1 & 3 - B.F. - HORIZ.
A409	1	-	6'-4"	X	WINGS 1 & 3 - B.F. - HORIZ.
A410	1	-	2'-10"	X	WINGS 1 & 3 - B.F. - HORIZ.
A411	2	-	10'-6"	X	WINGS 1 & 3 - F.F. & B.F. - TOP - HORIZ.
A412	58	-	11'-2"	X	WINGS - TOP & BOTTOM - VERT.
A413	5	-	10'-0"	X	WINGS - TOP - VERT.
A514	18	-	11'-9"	X	WINGS - F.F. - HORIZ.
A415	1	-	10'-0"	X	WINGS 1 & 3 - F.F. - HORIZ.
A416	1	-	6'-10"	X	WINGS 1 & 3 - F.F. - HORIZ.
A417	1	-	3'-4"	X	WINGS 1 & 3 - F.F. - HORIZ.
A418	1	-	10'-9"	X	WINGS 2 & 4 - B.F. - HORIZ.
A419	1	-	9'-7"	X	WINGS 2 & 4 - B.F. - HORIZ.
A420	1	-	2'-10"	X	WINGS 2 & 4 - B.F. - HORIZ.
A421	2	-	10'-4"	X	WINGS 2 & 4 - F.F. & B.F. - TOP - HORIZ.
A422	1	-	13'-3"	X	WINGS 2 & 4 - F.F. - HORIZ.
A423	1	-	12'-1"	X	WINGS 2 & 4 - F.F. - HORIZ.
A424	1	-	5'-5"	X	WINGS 2 & 4 - F.F. - HORIZ.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

BAR MARKS FOR SOUTH ABUTMENT ARE SHOWN.
LABEL AND BUNDLE NORTH ABUTMENT BARS WITH B MARK (B801 THRU B424).

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ABUTMENT DETAILS		SHEET 5 OF 9	

**BILL OF BARS
(1 PIER)****COATED 60 LBS.
UNCOATED 2405 LBS.**

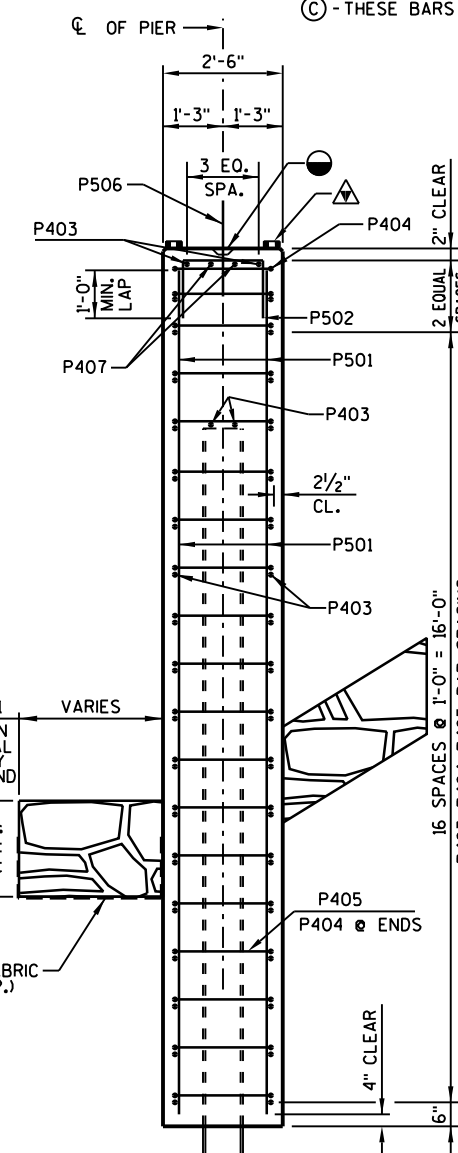
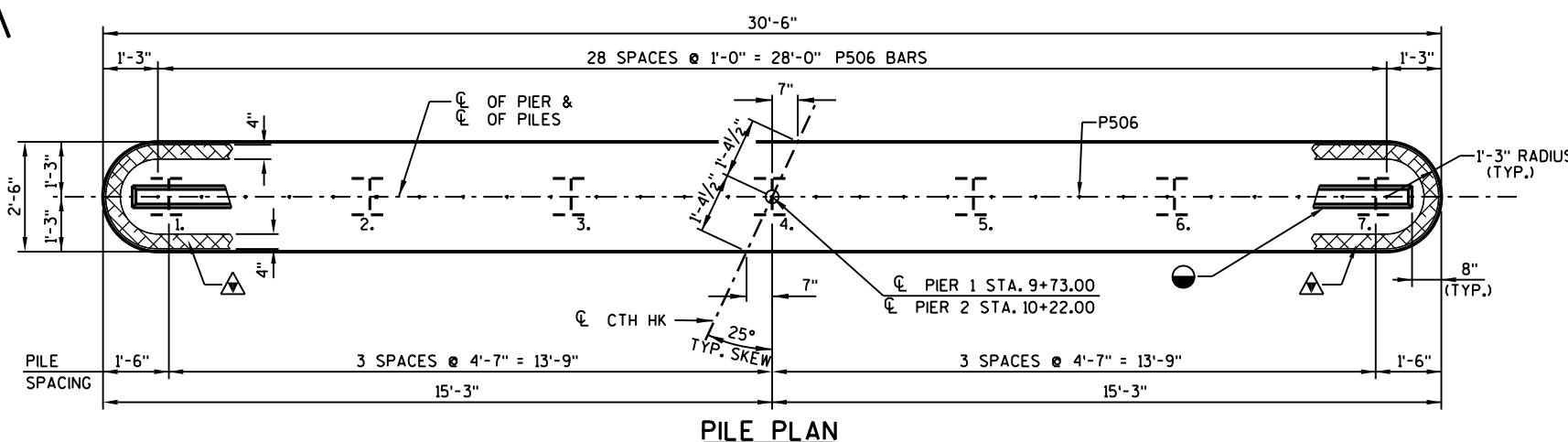
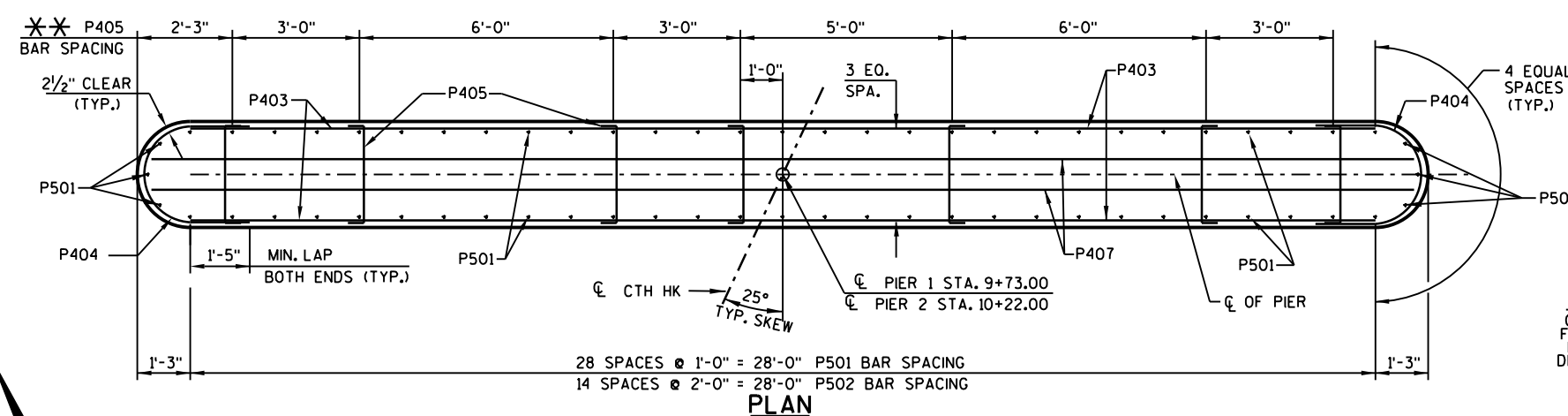
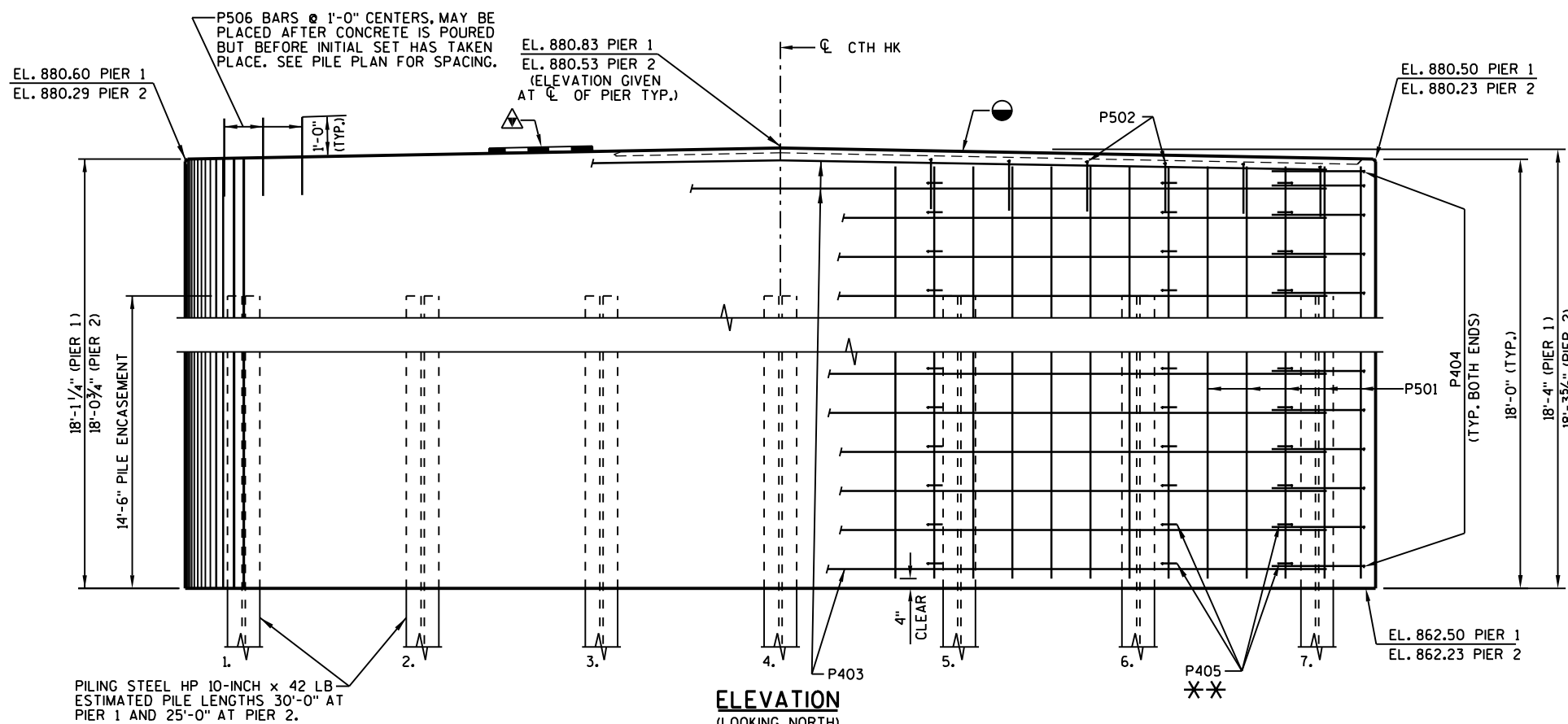
MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
P501	64	17'-6"		PIER - VERT
P502	15	4'-5"	X	PIER - STIRRUPS - TOP - VERT.
P403	40	28'-0"		PIER - TOP & SIDES - HORIZ.
P404	38	6'-1"	X	PIER - AT ENDS - HORIZ.
P405	126	2'-8"	X	PIER - TIES - HORIZ.
P506	29	2'-0"		PIER - DOWELS @ TOP - VERT.
P407	2	29'-10"		PIER - TOP - HORIZ.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

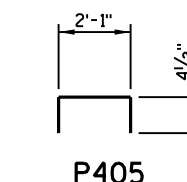
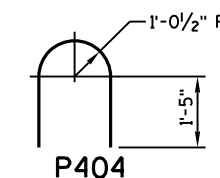
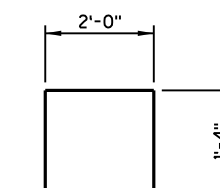
BAR MARKS FOR PIER 1 (SOUTH PIER) ARE SHOWN.

LABEL AND BUNDLE PIER 2 (NORTH PIER) BARS WITH N MARK (N501 THRU N407).

C - THESE BARS SHALL BE EPOXY COATED.



PIERS SUPPORTED ON
PILING STEEL HP 10-INCH x 42 LB.
DRIVEN TO A REQUIRED DRIVING RESISTANCE
OF 180 TONS PER PIER PILE, AS DETERMINED
BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED PILE LENGTHS ARE 30'-0" AT
PIER 1 AND 25'-0" AT PIER 2.

**LEGEND**

▲ - 4"x 3/4" FILLER, TYPICAL
ALL AROUND TOP EDGES
OF PIER.

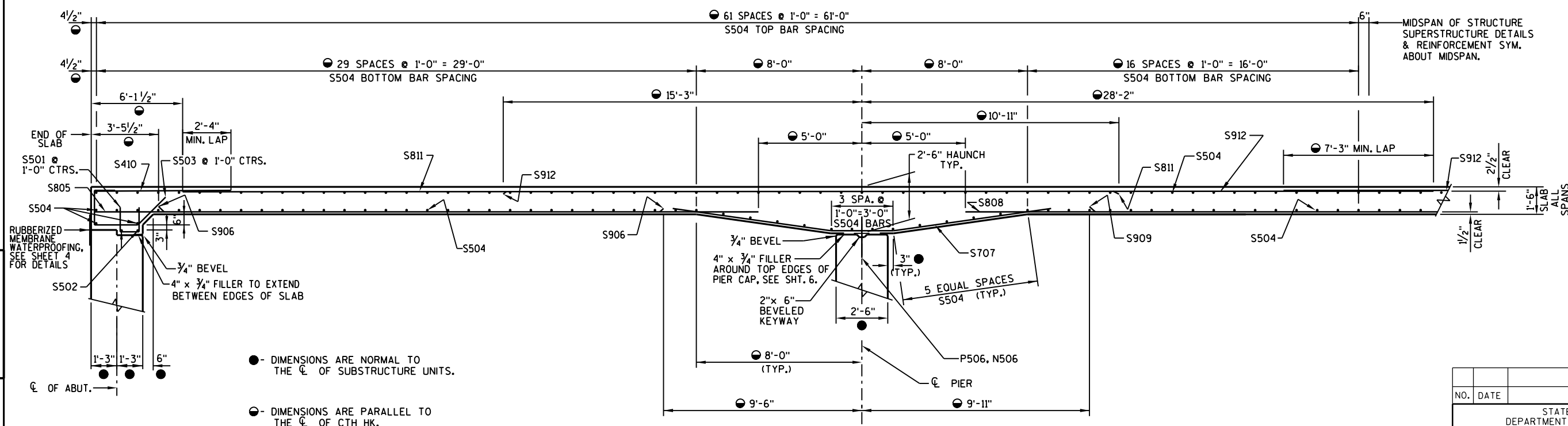
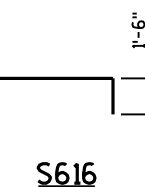
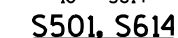
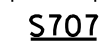
● - 2"x 6" BEVELED KEYWAY.

✱✱ - ADJACENT TO EACH
PILE ONE SIDE ONLY.

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PIERS		SHEET 6 OF 9	

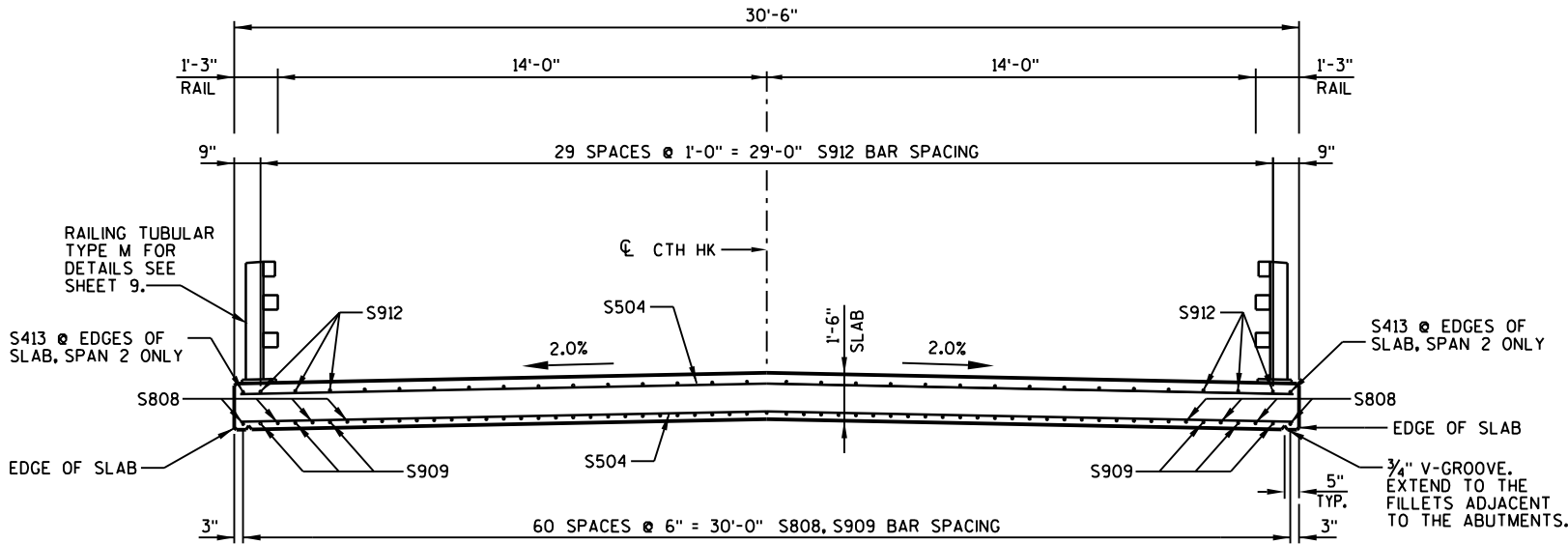
MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
S501	52	3'-9"	X	DIAPHRAGM @ ABUTS. - SEMI-EXP. POCKET STIRRUP - VERT.
S502	4	28'-2"		DIAPHRAGM @ ABUTS. - SEMI-EXP. POCKET - TRANS.
S503	62	7'-0"	X	DIAPHRAGM @ ABUTS. - LONGIT.
S504	246	33'-3"		SUPERSTRUCTURE - TRANS.
S805	62	32'-3"		SLAB BOTTOM - SPANS 1 & 3 - LONGIT.
S906	60	24'-5"		SLAB BOTTOM - SPANS 1 & 3 - LONGIT.
S707	62	18'-3"	X	HAUNCH OVER PIERS - LONGIT.
S808	31	39'-0"		SLAB BOTTOM - SPAN 2 - LONGIT.
S909	30	29'-2"		SLAB BOTTOM - SPAN 2 - LONGIT.
S410	62	8'-4"		SLAB TOP - @ ABUT. - LONGIT.
S811	62	42'-2"		SLAB TOP - SPANS 1 & 3 & OVER PIERS - LONGIT.
S912	60	43'-5"		SLAB TOP - SPAN 2 & OVER PIERS - LONGIT.
S413	2	31'-10"		SLAB TOP - SPAN 2 @ EDGE OF SLAB - LONGIT.
S614	80	12'-0"	X	SLAB @ RAIL POST, TWO PER POST
S615	144	6'-0"		SLAB @ RAIL POST, FOUR PER POST
S616	16	6'-0"	X	SLAB @ RAIL CORNER POSTS AS NOTED

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

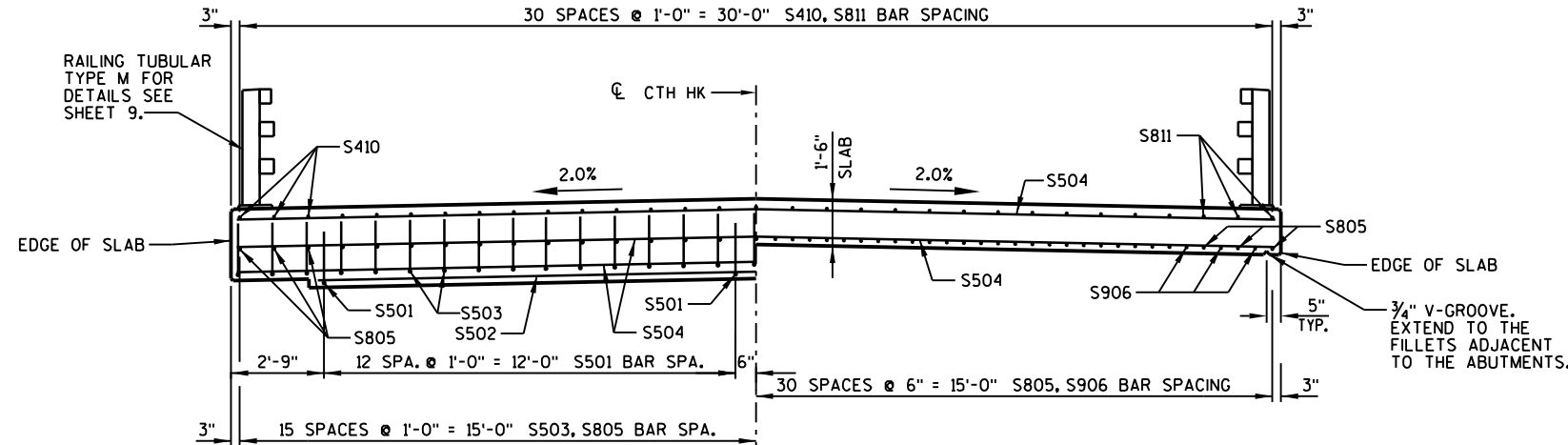


PART LONGITUDINAL SECTION

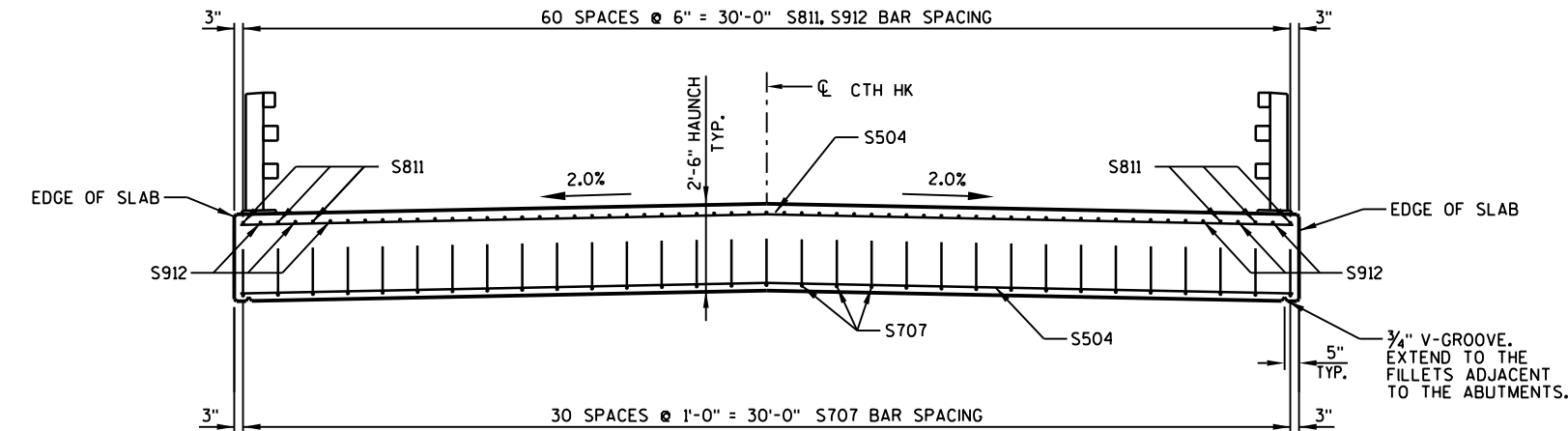
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-25-0172	
DRAWN BY		RLR	PLANS CK'D. JRS
SUPERSTRUCTURE		SHEET 7 OF	



CROSS SECTION THRU BRIDGE - SPAN 2
(LOOKING NORTH)



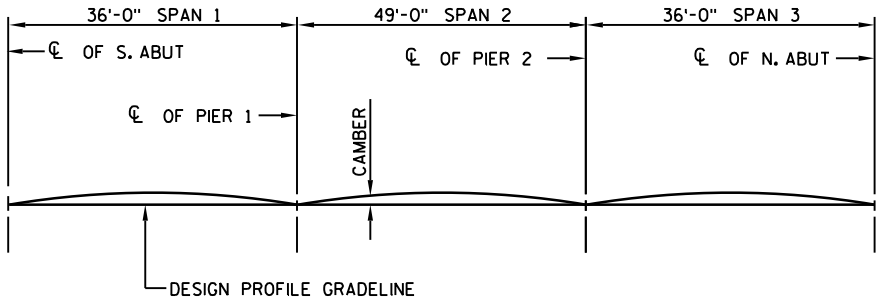
CROSS SECTION THRU BRIDGE - SPANS 1 & 3
(LOOKING NORTH)



SECTION THRU BRIDGE AT PIERS
(LOOKING NORTH)

TOP OF SLAB ELEVATIONS
AND CAMBER VALUES

LOCATION	SPAN POINT	EAST SLAB EDGE	C/L CTH HK	WEST SLAB EDGE	CAMBER VALUE (INCHES)
SOUTH ABUT.	1.0	883.34	883.72	883.49	0.00
	1.1	883.30	883.68	883.45	0.13
	1.2	883.27	883.64	883.41	0.24
	1.3	883.24	883.61	883.37	0.30
	1.4	883.20	883.57	883.34	0.31
	1.5	883.17	883.54	883.30	0.27
	1.6	883.14	883.51	883.27	0.19
	1.7	883.11	883.48	883.24	0.10
	1.8	883.08	883.45	883.20	0.03
	1.9	883.06	883.42	883.17	0.00
PIER 1	2.0	883.03	883.39	883.14	0.00
	2.1	883.00	883.35	883.10	0.06
	2.2	882.96	883.32	883.06	0.20
	2.3	882.93	883.28	883.03	0.38
	2.4	882.90	883.25	882.99	0.52
	2.5	882.87	883.22	882.96	0.57
	2.6	882.85	883.19	882.93	0.52
	2.7	882.82	883.16	882.90	0.38
	2.8	882.80	883.14	882.87	0.20
	2.9	882.78	883.12	882.85	0.06
PIER 2	3.0	882.76	883.09	882.82	0.00
	3.1	882.75	883.08	882.80	0.00
	3.2	882.74	883.07	882.79	0.03
	3.3	882.73	883.05	882.77	0.10
	3.4	882.72	883.04	882.76	0.19
	3.5	882.71	883.03	882.75	0.27
	3.6	882.70	883.02	882.74	0.31
	3.7	882.69	883.01	882.72	0.30
	3.8	882.68	883.00	882.71	0.24
	3.9	882.68	883.00	882.71	0.13
NORTH ABUT.	4.0	882.67	882.99	882.70	0.00



CAMBER DIAGRAM

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

GENERAL NOTES

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

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

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE CL OF ABUTMENTS, THE CL OF PIERS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGES OF SLAB AND STRUCTURE CL.

ALL TRANSVERSE BAR REINFORCEMENT SHALL BE PLACED ON THE SKEW.

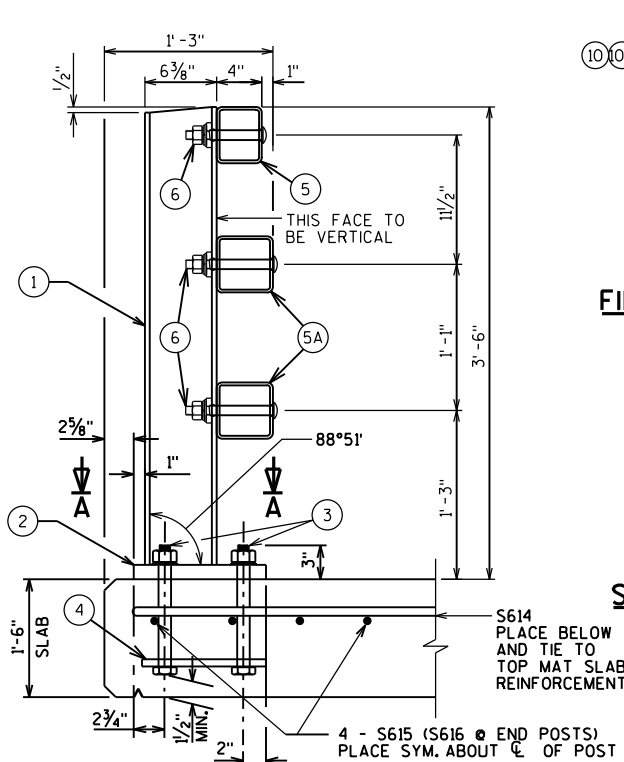
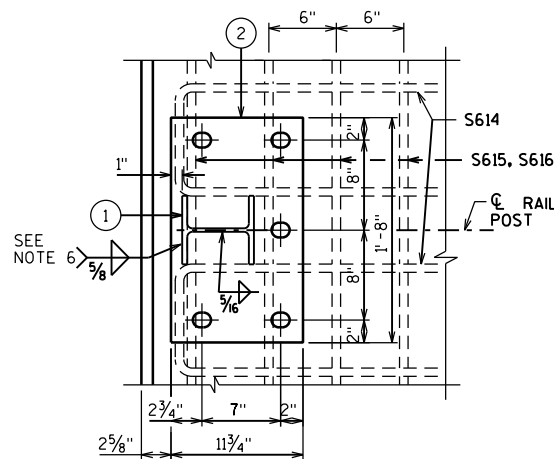
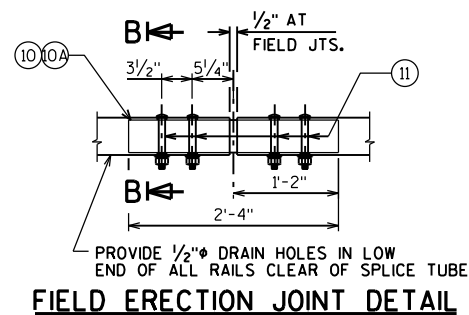
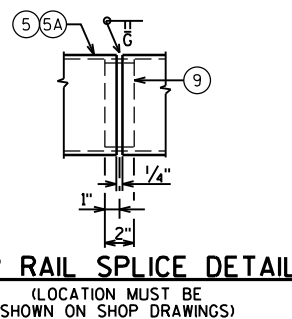
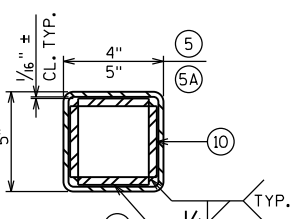
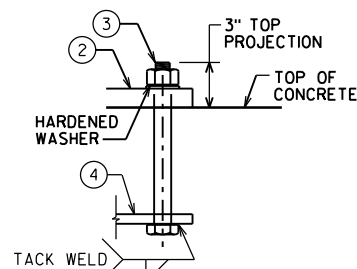
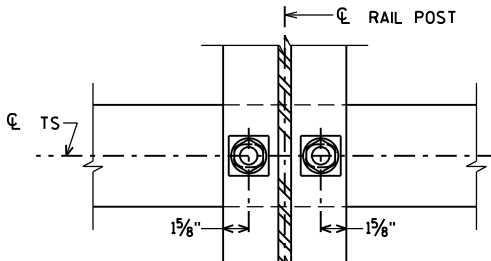
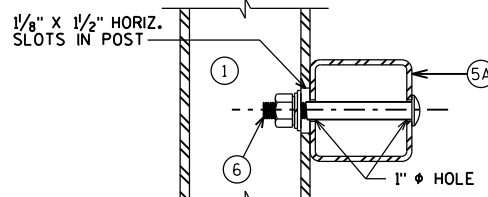
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-25-0172	
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SUPERSTRUCTURE DETAILS		SHEET 8 OF 9	

LEGEND

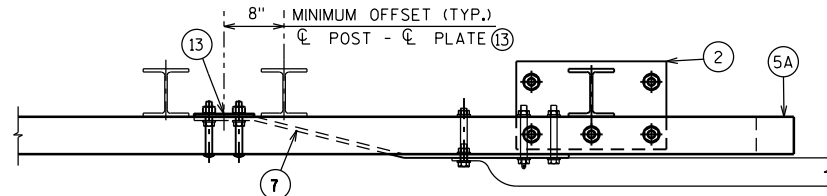
- ① W6 x 25 WITH $1/8"$ x $1/2"$ HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE $1/4"$ x $11/4"$ x 1'-8" WITH $1/8"$ x $1/8"$ SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ③ ASTM A449 - $1/4"$ DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-3" LONG.
- ④ $5/8"$ x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH $1/8"$ DIA. HOLES FOR ANCHOR BOLTS NO. 3.
- ⑤ TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑤A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑥ $7/8"$ DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, $3/16"$ x $1/8"$ x $1/8"$ WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION).
- ⑦ $1/2"$ THK. BACK-UP PLATE WITH 2 - $7/8"$ x $1/2"$ THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- ⑧ $1"$ DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR $7/8"$ DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- ⑨ SPLICE SLEEVE FABRICATED FROM $1/4"$ PLATE. PROVIDE "SLIDING FIT".
- ⑩ $3/8"$ x $3/8"$ x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- ⑩A $3/8"$ x $2 5/8"$ x 2'-4" PLATE USED IN NO. 5, $3/8"$ x $3/8"$ x 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- ⑪ $7/8"$ x $1/2"$ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE $5/16"$ x $1/4"$ LONGIT. SLOTTED HOLES AT FIELD JOINTS IN PLATE NO. 10A.
- ⑫ $7/8"$ DIA. x $1/2"$ LONG THREADED SHOP WELDED STUDS (2 REQ'D).
- ⑬ $3/8"$ x 8" x 1'-6" ANCHOR PLATE, BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- ⑭ $7/8"$ DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQUIRED).
- ⑮ $1"$ DIA. HOLES IN TUBES NO. 5A FOR $7/8"$ DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

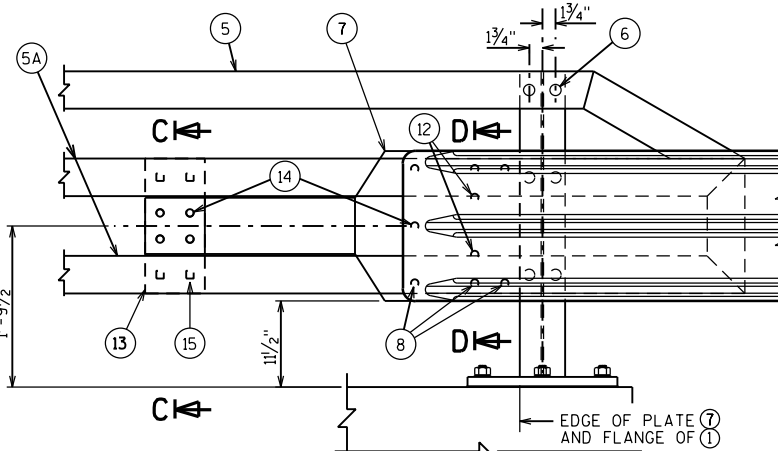
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-25-0172" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL $1/8$ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
10. PAINTING IS NOT REQUIRED.
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
12. THRIE BEAM RAIL ATTACHMENT IS INCLUDED FOR FUTURE USE. ENSURE PROPER FIT BUT DO NOT MOUNT TO RAILING.

**SECTION THRU RAILING ON SLAB****SECTION A-A****FIELD ERECTION JOINT DETAIL****SHOP RAIL SPLICE DETAIL****SECTION B-B****ANCHOR BOLTS****SECTION THRU POST WEB****SECTION THRU RAIL**

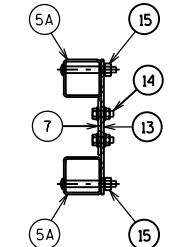
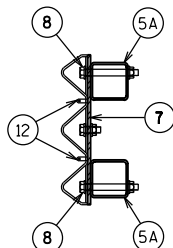
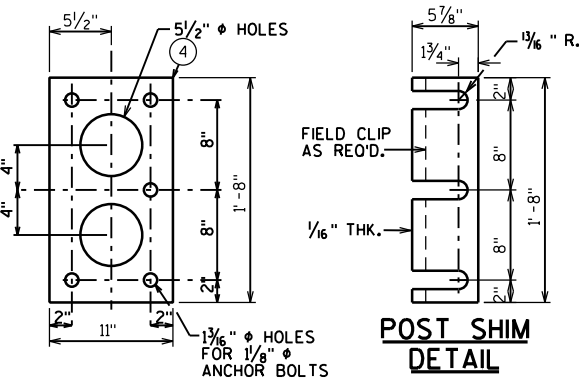
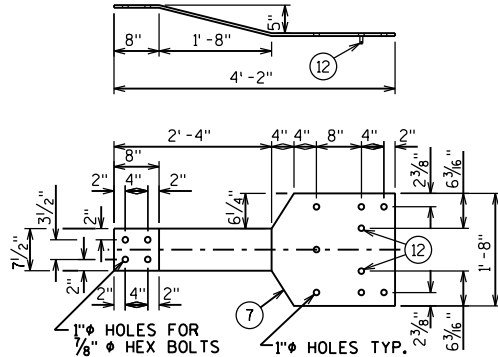
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS**TOP VIEW AT END POST**

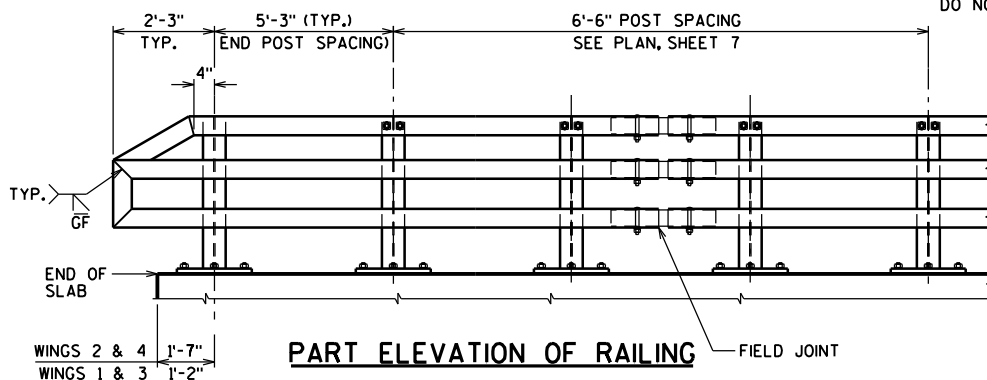
(THRIE BEAM RAIL ATTACHMENT)

**DETAIL AT END POST**

(THRIE BEAM RAIL ATTACHMENT)

**SECTION C-C****SECTION D-D****ANCHOR PLATE AT ANCHOR BOLTS****POST SHIM DETAIL****BACK-UP PLATE DETAIL**

AT BEAM GUARD ATTACHMENT

**PART ELEVATION OF RAILING**

FIELD JOINT

NO.	DATE	REVISION	BY
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DRAWN BY		RLR	PLANS CK'D. JRS
RAILING TUBULAR TYPE M		SHEET 9 OF 9	

EARTHWORK PROJECT I.D. 5106-00-75

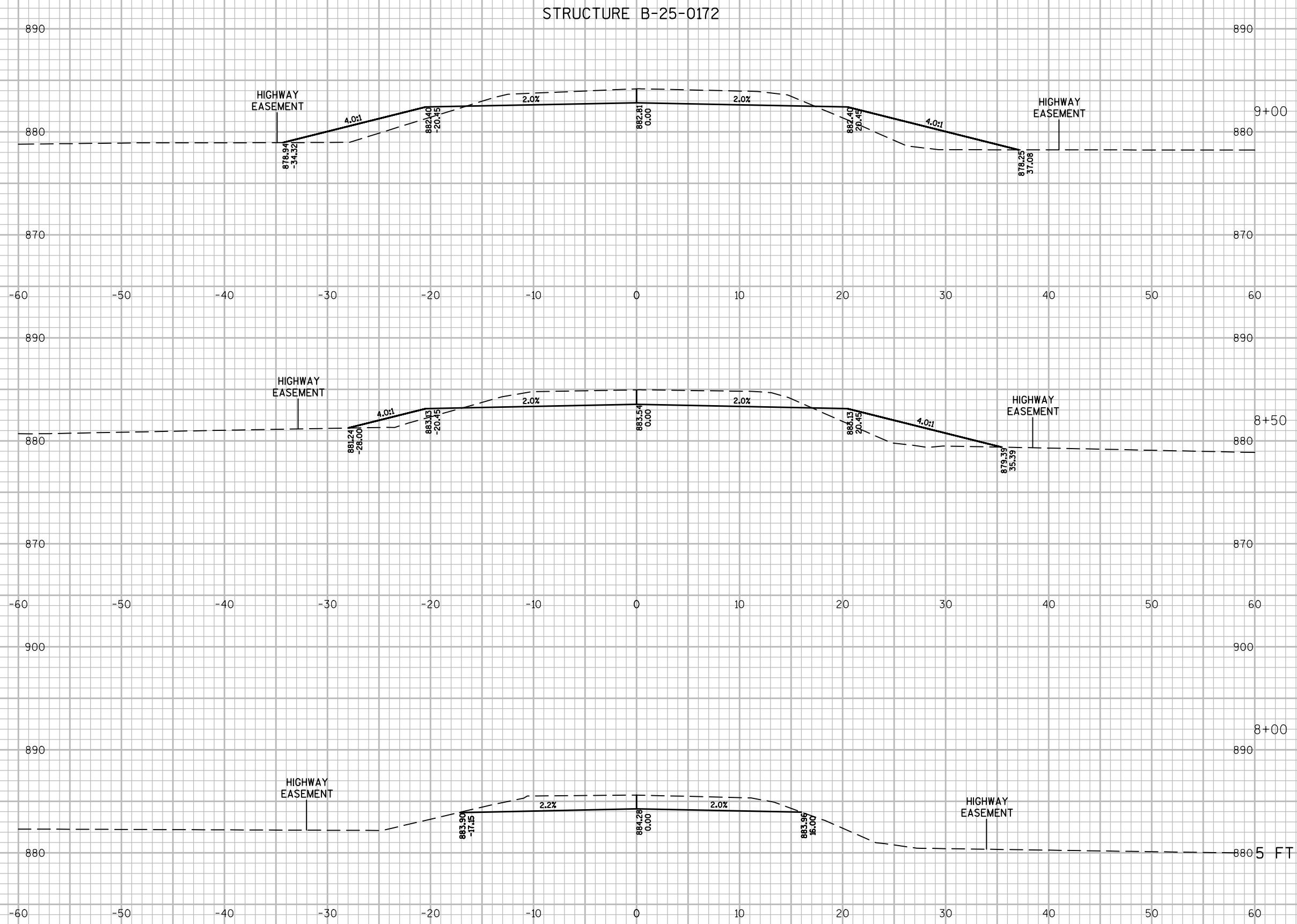
STATION	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
		Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00 Note 1	Expanded Fill 1.25	
8+00		38	0	0	0	0	0	0	0	0
8+50	50	42	0	31	74	0	57	74	71	3
9+00	50	38	0	44	74	0	81	148	172	-24
9+35.62	35.62	38	0	44	50	0	58	198	245	-46
B-25-0171										
					198	0	196			

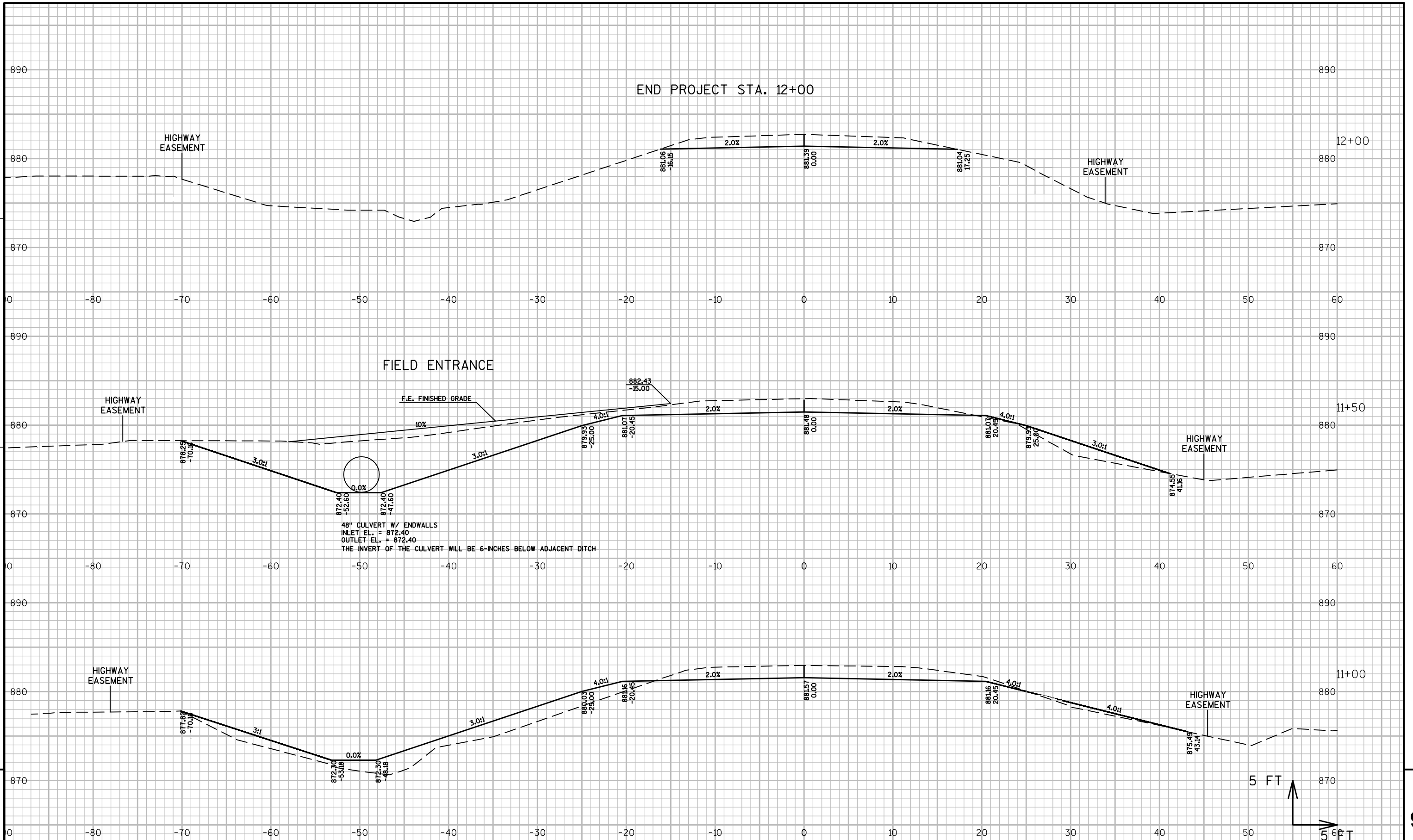
- 1) CUT - CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
- 2) SALVAGED/UNUSABLE PAVEMENT MATERIAL - THIS DOES NOT SHOW UP IN CROSS SECTIONS
- 3) FILL - DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
- 8) MASS ORDINATE - IF MARSH OR EBS TO BE BACKFILLEDWITH GRANULAR: (CUT + EBS + MARSH EXC) - (FILL - (REDUCED MARSH IN FILL) - (REDUCED EBS IN FILL) - (EXPANDED ROCK)) * FILL FACTOR

EARTHWORK PROJECT I.D. 5106-00-75

STATION	Distance	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	
B-25-0171										
10+59.38		46	0	69	0	0	0	0	0	0
11+00	40.62	46	0	69	70	0	103	70	129	-59
11+50	50	46	0	69	86	0	127	155	288	-133
12+00	50	35	0	0	75	0	64	230	368	-138
					230	0	295			

- 1) CUT - CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
- 2) SALVAGED/UNUSABLE PAVEMENT MATERIAL - THIS DOES NOT SHOW UP IN CROSS SECTIONS
- 3) FILL - DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
- 8) MASS ORDINATE - IF MARSH OR EBS TO BE BACKFILLEDWITH GRANULAR: (CUT + EBS + MARSH EXC) - (FILL - (REDUCED MARSH IN FILL) - (REDUCED EBS IN FILL) - (EXPANDED ROCK)) * FILL FACTOR





PROJECT NO: 5106-00-75

HWY: CTH HK

COUNTY: IOWA

CROSS SECTIONS

SHEET

E

FILE NAME : P:\5900S\5900S\5908\05908005\CADD\C3D\DESIGN\CORRIDORS\CROSS SECTIONS.DWG

PLOT DATE : 4/24/2015 9:48 AM

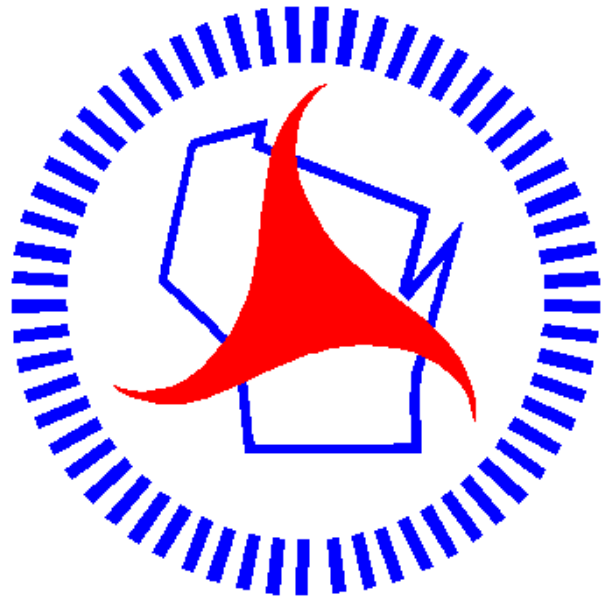
PLOT BY : JAIME KURTEN

PLOT NAME :

PLOT SCALE : 1" = 10'-XREF

WISDOT/CADDs SHEET 49

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
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<http://www.dot.wisconsin.gov>

SEL

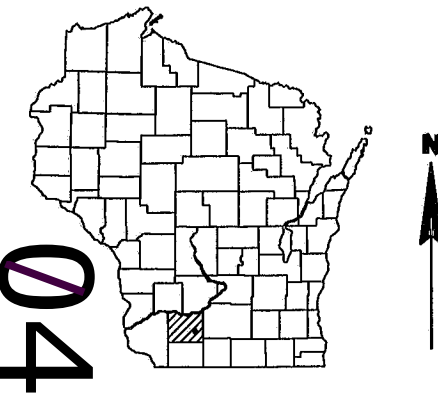
NOV 2015

ORDER OF SHEETS

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

TOTAL SHEETS = 40

PROJECT ID: 5626-00-72
WITH: 5106-00-75



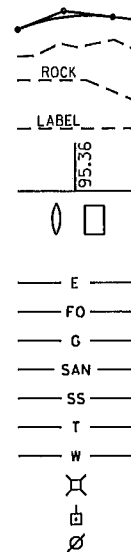
DESIGN DESIGNATION

- A.A.D.T. 2014 = 60
A.A.D.T. 2034 = 100
D.H.V. = 18
D.D. = 50/50
T. = 6%
DESIGN SPEED = 25 MPH
ESALS = 14,600

CONVENTIONAL SYMBOLS

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

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



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

TOWN OF BRIGHAM, CLAY HILL ROAD

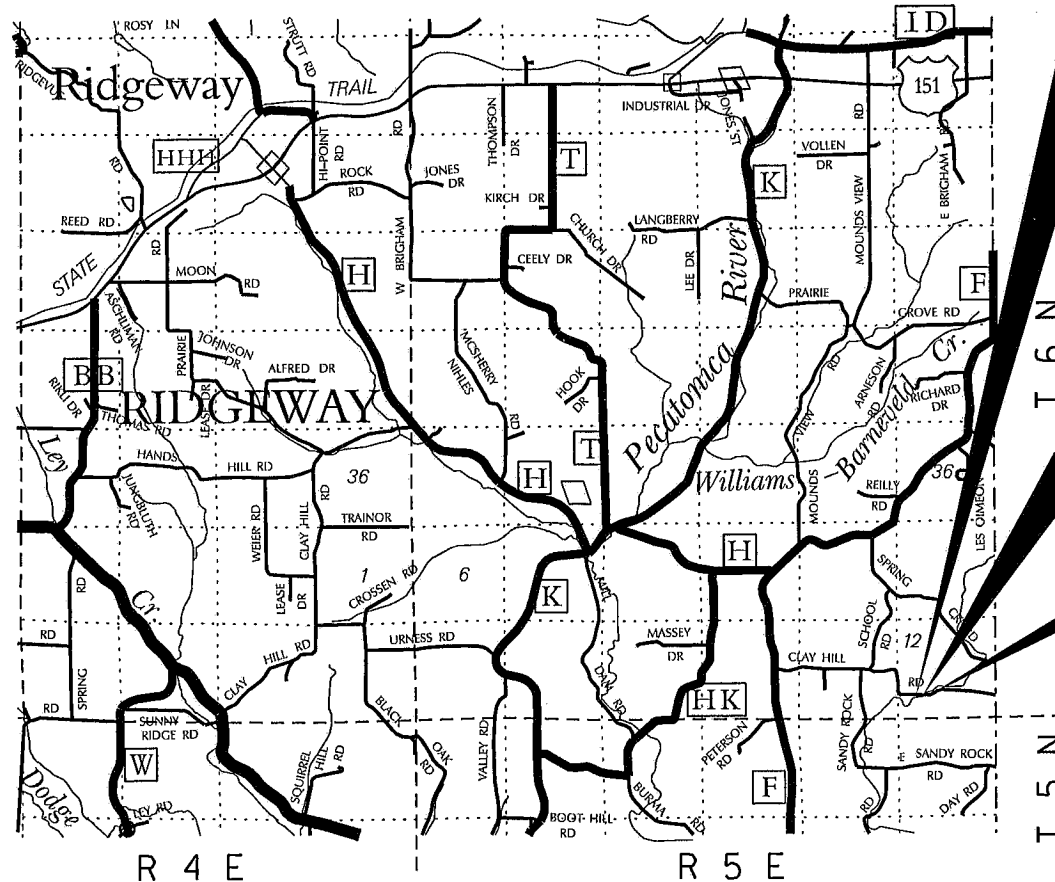
(GORDON CREEK BRIDGE B-25-0171)

TOWN ROAD

IOWA COUNTY

STATE PROJECT NUMBER

5626-00-72



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.061 MI.

BEGIN PROJECT

STA. 8+40.00

Y = 138,678.824

X = 453,534.565

STRUCTURE

B-25-0171

END PROJECT

STA. 11+60.00

STATE PROJECT

5626-00-72

FEDERAL PROJECT

PROJECT

WISC 2015186

CONTRACT

1

ACCEPTED FOR

TOWN of BRIGHAM

4/22/2015
(Date) Jason Carlen
(Signature of Official)

ACCEPTED FOR

COUNTY of IOWA

4/22/2015
(Date) [Signature]
(Signature of Highway Commissioner)

ORIGINAL PLANS PREPARED BY

MSA

PROFESSIONAL SERVICES
TRANSPORTATION • MUNICIPAL • REMEDIATION
DEVELOPMENT • ENVIRONMENTAL

2901 International Lane, Suite 300 Madison, WI 53704-3133
608-242-7779 1-800-446-0679 Fax: 608-242-5084

MICHAEL J. STATZ
E 3124
MADISON
WI

4-21-15
(Date) Michael Statz
(Professional Engineer)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor MSA PROFESSIONAL SERVICES

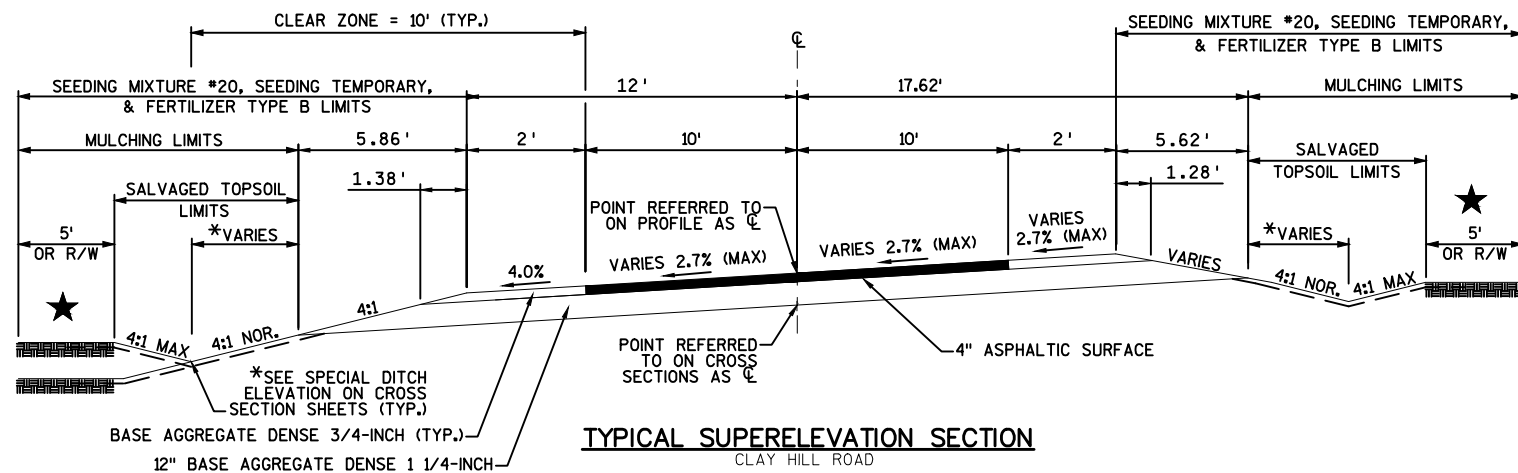
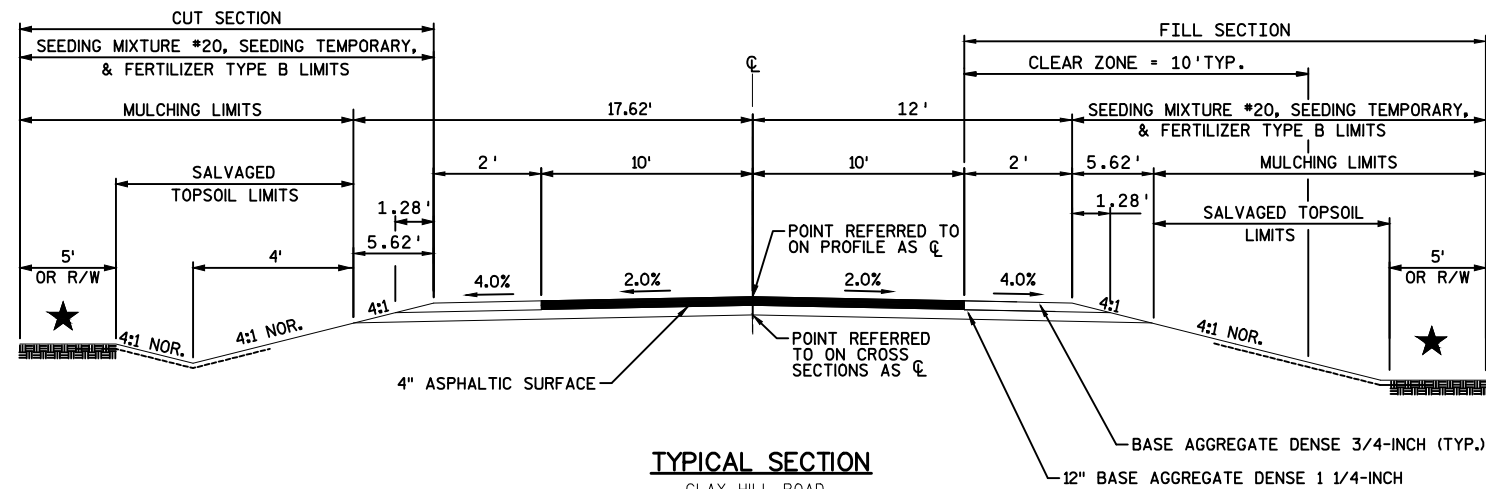
Designer MSA PROFESSIONAL SERVICES

Management Consultant K. JOHNSON ENGINEERS, INC.

APPROVED FOR THE DEPARTMENT

DATE: 4/30/15
(Signature) (Management Consultant Signature)

E



RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 0.56 ACRES

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.46 ACRES

GENERAL NOTES

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

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

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

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO NAVD88 BENCHMARK WITH ELEVATION OF 1064.80 LOCATED 1.0 MILES NORTHWEST OF THE EXISTING BRIDGE, THE STATION IS A BRONZE WISDOT GEODETIC SURVEY CONTROL STATION .

THE 4" ASPHALTIC SURFACE SHALL BE CONSTRUCTED USING A 2.25" LOWER LAYER AND A 1.75" UPPER LAYER.

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

TEMPORARY DITCH CHECKS, IF NEEDED, SHALL BE PLACED AS DIRECTED BY THE ENGINEER.

THE ASPHALTIC SURFACE SHALL TAPER FROM 26.83 FEET AT THE END OF THE BRIDGE TO 20.0 FEET AT ± 30 FEET FROM THE BRIDGE ENDS.

TOWN OF BRIGHAM WILL REMOVE EXISTING SIGNS AND POSTS INSIDE THE PROJECT AREA. CONTRACTOR TO NOTIFY TOWN OF BRIGHAM 5 WORKING DAYS BEFORE SIGNS NEED TO BE REMOVED.

★ WETLANDS EXIST AT STA. 9+91 TO 10+14, LT, STA. 10+11 TO STA. 10+40, LT, STA. 10+15 TO STA. 10+30, RT AND STA. 9+66 TO STA. 9+90, RT. THE CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE THE SLOPE INTERCEPT IN THESE AREAS.

DESIGN CONTACT

MSA PROFESSIONAL SERVICES, INC.
ATTN: MICHAEL J. STATZ, P.E.
2901 INTERNATIONAL LANE, SUITE 300
MADISON, WI 53704-3133
PHONE: (608) 242-7779
EMAIL: MSTATZ@MSA-PS.COM

IOWA COUNTY
ATTN: CRAIG HARDY, COMMISSIONER
1215 NORTH BEQUETTE STREET
DODGEVILLE, WI 53533
PHONE: (608) 935-3381
EMAIL: CRAIG.HARDY@IOWACOUNTY.ORG

TOWN OF BRIGHAM
ATTN: DOUG REESON, CHAIRMAN
407 E CTH ID
BARNEVELD, WI 53507
PHONE: (608) 924-1345

DNR LIAISON

DEPARTMENT OF NATURAL RESOURCES
ATTN: ANDY BARTA
ENVIRONMENTAL REVIEW AND ANALYSIS SPECIALIST
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711-5397
PHONE: (608) 275-3308
EMAIL: ANDREW.BARTA@WISCONSIN.GOV

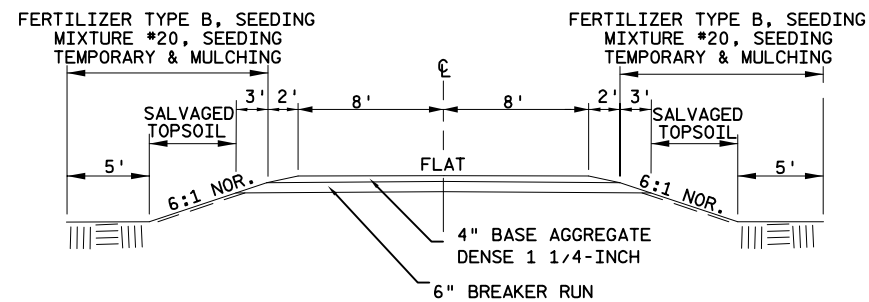
UTILITIES

TELEPHONE:
MOUNT HOREB TELEPHONE COMPANY
ATTN: KEVIN MAYNE
305 NORTH IOWA STREET
DODGEVILLE, WI 53533
PHONE: (608) 930-9985
KEVIN.MAYNE@MHTCINC.COM

ELECTRIC:
WISCONSIN POWER & LIGHT
ATTN: JASON HEMING
490 SHAKERAG STREET
MINERAL POINT, WI 53565
PHONE: (608) 987-4242
EMAIL: JASON.HEMING@ALLIANTENERGY.COM

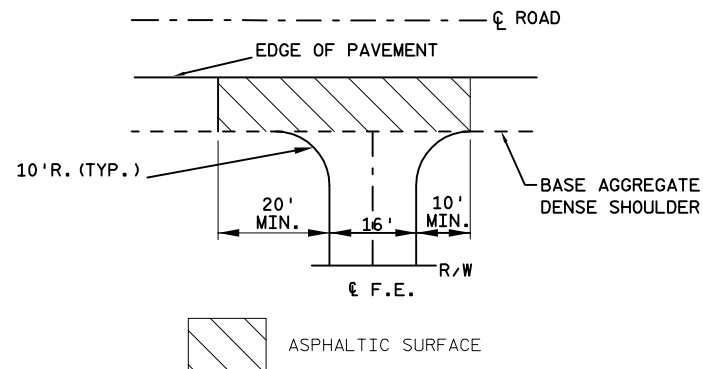
**-DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

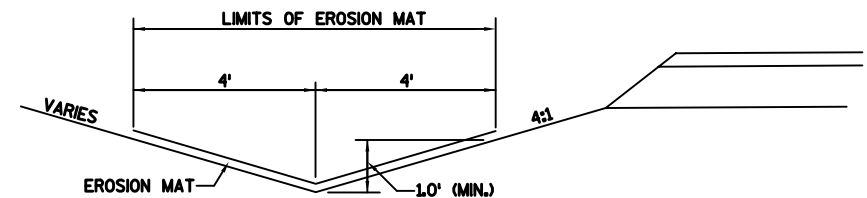


FIELD ENTRANCE - TYPICAL SECTION

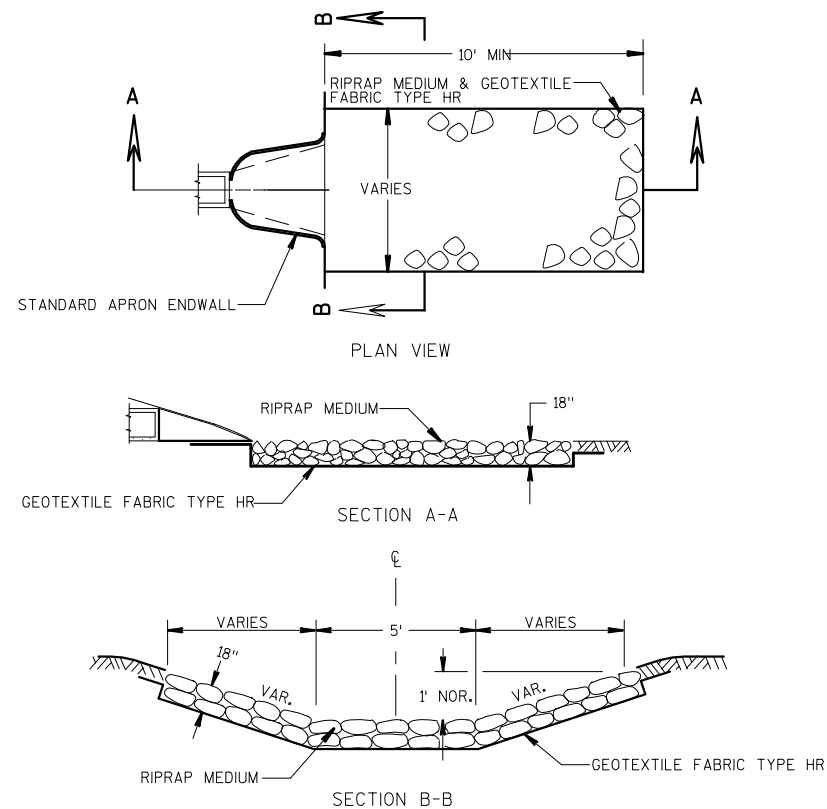
FIELD ENTRANCE DETAILS



FIELD ENTRANCE PLAN

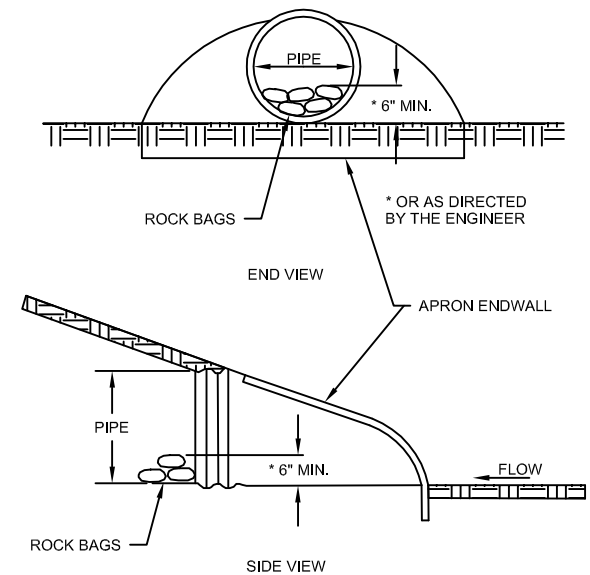


EROSION MAT DITCH DETAIL



RIPRAP MEDIUM AND GEOTEXTILE FABRIC
DETAIL AT APRON ENDWALLS

ESTIMATED BAG SIZE = 24" x 12" x 6"	
PIPE SIZE	ESTIMATED NO. OF BAGS
12"	1
18"	2
24"	3
30"	5
48"	10
54"	10
60"	13
72"	16



CULVERT PIPE CHECKS
INSTALL ON INLET PIPE

DATE 24AUG15		E S T I M A T E O F Q U A N T I T I E S			
LINE				5626-00-72	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0105	Clearing	STA	1.000	1.000
0020	201.0205	Grubbing	STA	1.000	1.000
0030	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0040	203.0600. S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+00, 5626-00-72	LS	1.000	1.000
0060	205.0100	Excavation Common	CY	670.000	670.000
0070	206.1000	Excavation for Structures Bridges (structure) 01. B-25-0171	LS	1.000	1.000
0100	210.0100	Backfill Structure	CY	260.000	260.000
0110	213.0100	Finishing Roadway (project) 01. 5626-00-72	EACH	1.000	1.000
0130	305.0110	Base Aggregate Dense 3/4-Inch	TON	35.000	35.000
0140	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	670.000	670.000
0150	311.0110	Breaker Run	TON	220.000	220.000
0160	455.0605	Tack Coat	GAL	35.000	35.000
0170	465.0105	Asphaltic Surface	TON	155.000	155.000
0180	502.0100	Concrete Masonry Bridges	CY	140.000	140.000
0190	502.3200	Protective Surface Treatment	SY	180.000	180.000
0200	505.0405	Bar Steel Reinforcement HS Bridges	LB	4,410.000	4,410.000
0210	505.0605	Bar Steel Reinforcement HS Coated Bridges	LB	15,490.000	15,490.000
0220	513.4060	Railing Tubular Type M (structure) 01. B-25-0171	LS	1.000	1.000
0240	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0250	520.0118	Culvert Pipe Class III 18-Inch	LF	37.000	37.000
0270	520.1018	Apron Endwalls for Culvert Pipe 18-Inch	EACH	2.000	2.000
0290	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	280.000	280.000
0300	606.0200	Riprap Medium	CY	14.000	14.000
0310	606.0300	Riprap Heavy	CY	150.000	150.000
0320	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	170.000	170.000
0330	619.1000	Mobilization	EACH	0.450	0.450
0340	624.0100	Water	MGAL	15.000	15.000
0350	625.0500	Salvaged Topsoil **P**	SY	890.000	890.000
0360	627.0200	Mulching **P**	SY	800.000	800.000
0370	628.1504	Silt Fence	LF	200.000	200.000
0380	628.1520	Silt Fence Maintenance	LF	400.000	400.000
0390	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0400	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0410	628.2004	Erosion Mat Class I Type B	SY	300.000	300.000
0420	628.2006	Erosion Mat Urban Class I Type A	SY	50.000	50.000
0430	628.6005	Turbidity Barriers	SY	280.000	280.000
0440	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0450	628.7555	Culvert Pipe Checks	EACH	6.000	6.000
0460	628.7560	Tracking Pads	EACH	2.000	2.000
0470	629.0210	Fertilizer Type B	CWT	0.800	0.800
0480	630.0120	Seeding Mixture No. 20 **P**	LB	40.000	40.000
0500	630.0200	Seeding Temporary **P**	LB	20.000	20.000
0510	631.1100	Sod Erosion Control	SY	50.000	50.000
0520	633.5100	Markers Row	EACH	6.000	6.000
0530	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0550	637.2210	Signs Type II Reflective H	SF	12.000	12.000
0560	642.5001	Field Office Type B	EACH	0.500	0.500
0570	643.0100	Traffic Control (project) 01. 5626-00-72	EACH	1.000	1.000
0590	645.0120	Geotextile Fabric Type HR	SY	360.000	360.000

DATE 24AUG15		E S T I M A T E O F Q U A N T I T I E S				
LINE					5626-00-72	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	
0610	650.4500	Construction Staking Subgrade	LF	282.000	282.000	
0620	650.5000	Construction Staking Base	LF	282.000	282.000	
0630	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000	
0640	650.6500	Construction Staking Structure Layout (structure) 01. B-25-0171	LS	1.000	1.000	
0660	650.9910	Construction Staking Supplemental Control (project) 01. 5626-00-72	LS	1.000	1.000	
0680	650.9920	Construction Staking Slope Stakes	LF	282.000	282.000	
0690	690.0150	Sawing Asphalt	LF	40.000	40.000	
0700	715.0502	Incentive Strength Concrete Structures	DOL	840.000	840.000	
0710	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	175.000	175.000	
0720	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	120.000	120.000	

3

CLEARING AND GRUBBING					
CATEGORY	STATION	TO STATION	LOCATION	(201.0105)	(201.0205)
				CLEARING STA	GRUBBING STA
0010	10+00	11+00	LT & RT	1	1
PROJECT TOTALS				1	1

REMOVING SMALL PIPE CULVERTS						
CATEGORY	STATION	LOCATION	TYPE	DIAMETER	LENGTH	(203.0100)
						EACH
0010	10+60	RT	CMP	18"	17'	1
PROJECT TOTAL						1

BASE AGGREGATE DENSE					
CATEGORY	STATION	TO STATION	LOCATION	(305.0110)	(305.0120)
				3/4-INCH TON	1 1/4-INCH TON
0010	8+40	9+87.69	RT & LT	20	345
	10+26.46	11+60	RT & LT	15	310
	FE 10+60		RT	-	15
PROJECT TOTALS				35	670

BREAKER RUN				
CATEGORY	STATION	TO STATION	LOCATION	(311.0110)
				TON
0010	10+53	10+69	RT	24
		UNDISTRIBUTED		196
		PROJECT TOTAL		220

EARTHWORK PROJECT I.D. 5626-00-72

Division	From/To Station	Location	Common Excavation (1)	(item # 205.0100)	Salvaged/ Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	Comment:
			Cut (2)	EBS Excavation (3)				Factor 1.25			
1	8+40 - 9+87.69	West Clay Hill Road	373	0	0	373	0	0	373	373	
2	10+26.46 - 11+60	East Clay Hill Road	185	0	0	185	8	10	174	174	
	STRUCTURE B-25-0171		0	0	0	0	0	0	0	0	
	UNDISTRIBUTED EBS		0	112	0	0	0	0	0	0	
Grand Total			558	112	0	557	8	10	547	547	
			670								

- 1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
- 2) Salvaged/Unsuable Pavement Material is included in Cut.
- 3) EBS Excavation to be backfilled with Breaker Run material.
- 4) Salvaged/Unusable Pavement Material
- 5) Available Material = Cut - Salvaged/Unusuable Pavement Material
- 13) Expanded Fill. Factor = 1.25
- 14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

ASPHALTIC SURFACE				
CATEGORY	STATION	TO STATION	(455.0605)	(465.0105)
			TACK COAT GAL	TON
0010	8+40	9+87.69	18	80
	10+26.46	11+60	17	75
PROJECT TOTALS			35	155

CULVERT PIPE							
CATEGORY	STATION	LOCATION	(520.0118)	THICKNESS		(520.1018)	(650.6000)
			CULVERT PIPE CLASS III 18-INCH LF	STEEL IN	ALUM IN	APRON ENDWALLS FOR CULVERT PIPE 18-INCH EACH	CONSTRUCTION STAKING PIPE CULVERTS EACH
010	10+60	RT	37	0.064	0.060	2	1
PROJECT TOTALS			37			2	1

* JOINT TIES INCIDENTAL TO CULVERT PIPE CLASS III

RIPRAP OVER GEOTEXTILE FABRIC				
CATEGORY	STATION	LOCATION	(606.0200)	(645.0120)
			RIPRAP MEDIUM CY	GEOTEXTILE FABRIC TYPE HR SY
010	10+40	RT	7	20
	10+79	RT	7	20
PROJECT TOTALS			14	40

*ADDITIONAL QUANTITIES FOUND ELSEWHERE

FINISHING ITEMS								
CATEGORY	STATION	TO STATION	LOCATION	(625.0500)	(627.0200)	(629.0210)	(630.0120)	(630.0200)
				* SALVAGED TOPSOIL	* MULCHING	FERTILIZER TYPE B	* SEEDING MIXTURE NO. 20	* SEEDING TEMPORARY
0010	8+40	10+25	LT	SY	SY	CWT	LB	LB
				290	250	0.2	10	5
	8+40	9+85	RT		200	0.2	10	5
	10+05	11+60	RT		200	0.2	10	5
	10+35	11+60	LT		150	0.2	10	5
PROJECT TOTALS				890	800	0.8	40	20
* - DENOTES TO PAY PLAN QUANTITY WITHOUT MEASURE								

SILT FENCE					
CATEGORY	STATION	STATION	LOCATION	(628.1504)	(628.1520)
				LF	MAINTENANCE LF
0010	10+40	11+60	LT	120	240
		UNDISTRIBUTED		80	160
	PROJECT TOTALS			200	400

MOBILIZATIONS EROSION CONTROL			
CATEGORY	DESCRIPTION	(628.1905)	(628.1910)
		EACH	EMERGENCY EACH
0010	PROJECT 5626-00-72	2	2
	PROJECT TOTALS	2	2

EROSION MAT					
CATEGORY	STATION	STATION	LOCATION	(628.2004)	(628.2006)
				CLASS I TYPE B SY	URBAN CLASS I TYPE A SY
0010	8+40	9+83	LT	120	-
	8+40	9+67	RT	105	-
	10+48	11+00	LT	45	-
		UNDISTRIBUTED		30	50
	PROJECT TOTALS			300	50

WATER		
CATEGORY	DESCRIPTION	(624.0100)
		MGAL
0010	COMPACTION	7
	DUST CONTROL	3
	UNDISTRIBUTED	5
PROJECT TOTAL		15

TEMPORARY DITCH CHECKS			
CATEGORY	STATION	LOCATION	(628.7504)
			LF
0010	UNDISTRIBUTED		50
	PROJECT TOTAL		50

TURBIDITY BARRIERS			
CATEGORY	STATION	LOCATION	(628.6005)
			SY
0010	9+95	LT & RT	140
	10+10	LT & RT	140
PROJECT TOTAL			280

CULVERT PIPE CHECKS			
CATEGORY	STATION	LOCATION	(628.7555)
			EACH
0010	10+80	RT	6
	PROJECT TOTAL		6

TRACKING PADS		
CATEGORY	STATION	(628.7560)
		EACH
0010	8+40	1
	11+60	1
PROJECT TOTAL		2

SOD EROSION CONTROL			
CATEGORY	STATION	LOCATION	(631.1100)
			SY
0010	UNDISTRIBUTED		50
	PROJECT TOTAL		50

MARKERS ROW				
CATEGORY	POINT NUMBER	STATION	LOCATION	(633.5100)
				EACH
0010	1	8+75	31.02' LT	1
	2	9+50	40' LT	1
	3	10+50	40' LT	1
	4	11+15	29.85' LT	1
	5	11+15	36.17' RT	1
	7	8+75	35.05' RT	1
PROJECT TOTAL				6

PERMANENT SIGNING					
CATEGORY	CODE	STATION	LOCATION	(637.2210)	(634.0612)
				SIGNS TYPE II REFLECTIVE H SF	POSTS WOOD 4x6-INCH x 12-FT EACH
0010	W5-52R	9+81	RT	3.0	1
	W5-52L	9+94	LT	3.0	1
	W5-52L	10+20	RT	3.0	1
	W5-52R	10+33	LT	3.0	1
PROJECT TOTALS				12.0	4

SAWING ASPHALT			
CATEGORY	STATION	LOCATION	(690.0150)
			LF
0010	8+40	LT & RT	20
	11+60	LT & RT	20
PROJECT TOTAL			40

CONSTRUCTION STAKING								
				(650.4500) SUBGRADE	(650.5000) BASE	(650.6500) STRUCTURE LAYOUT	(650.9910) SUPPLEMENTAL CONTROL	(650.9920) SLOPE STAKES
CATEGORY	STATION	TO STATION	LOCATION	LF	LF	LS	LS	LF
0010	8+40	9+88	LT & RT	148	148	-	-	148
	10+26	11+60	LT & RT	134	134	-	-	134
	PROJECT 5626-00-72			-	-	-	1	-
CATEGORY 0010 SUBTOTALS				282	282	0	1	282
0020	STRUCTURE B-25-0171			-	-	1	-	-
CATEGORY 0020 SUBTOTALS				0	0	1	0	0
PROJECT TOTALS				282	282	1	1	282

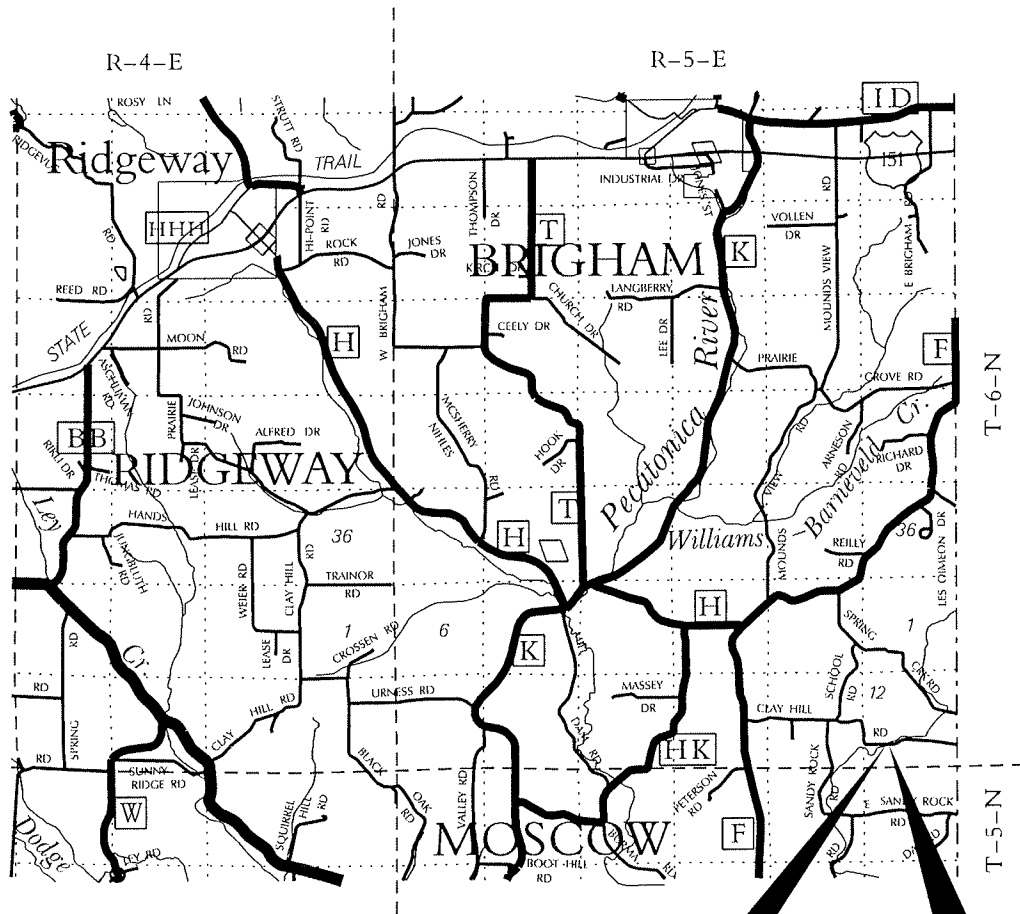
CONVENTIONAL SYMBOLS AND ABBREVIATIONS			
STATE, COUNTY, or TOWN LINE	----	ACCESS POINT/ DRIVEWAY CONNECTION	AP
SECTION LINE	----	ACCESS RIGHTS	AR
QUARTER LINE	----	ACRES	AC.
SIXTEENTH LINE	----	AND OTHERS	ET.AL.
PROPOSED REFERENCE LINE	----	CENTERLINE	C/L
PROPOSED R/W LINE	----	CERTIFIED SURVEY MAP	CSM
EXISTING H.E. LINE	----	DOCUMENT	DOC.
PROPERTY LINE	----	HIGHWAY EASEMENT	H.E.
EASEMENT LINE	----	LAND CONTRACT	LC
CORPORATE LIMITS	////	MONUMENT	MON.
EXISTING CENTERLINE	----	PAGE	P.
LOT & TIE LINES	----	PERMANENT LIMITED EASEMENT	PLE
UTILITIES	----	PROPERTY LINE	PL
(TELEPHONE, GAS, ELECTRIC, CABLE TV, FIBER OPTIC)	----	RECORDED AS	(100')
NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL)	----	REFERENCE LINE	R/L
NO ACCESS (BY ACQUISITION)	----	REMAINING	REM.
NO ACCESS (BY STATUTORY AUTHORITY)	----	RIGHT-OF-WAY	R/W
FEE (HATCH VARIES)	----	SECTION	SEC.
TEMPORARY LIMITED EASEMENT	----	SQUARE FEET	SO.FT.
PERMANENT LIMITED EASEMENT	----	STATION	STA.
PARCEL NUMBER	102	TEMPORARY LIMITED EASEMENT	TLE
UTILITY PARCEL NUMBER	92	VOLUME	V.
SIGN NUMBER (OFF PREMISE)	21-1	CURVE DATA	
BUILDING	----	LONG CHORD	LCH
FOUND IRON PIPE/PIN	LP	LONG CHORD BEARING	LCB
R/W MONUMENT	o (SET)	RADIUS	R
R/W STANDARD	o (SET)	DEGREE OF CURVE	D
SIGN	ISIGN	CENTRAL ANGLE OR DELTA	DELTA
SECTION CORNER SYMBOL	----	LENGTH OF CURVE	L
		TANGENT	TAN
		POWER POLE	o
		TELEPHONE POLE	o
		TELEPHONE PEDESTAL	o
		NON COMPENSABLE	o
		COMPENSABLE	o

NOTES

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, IOWA COUNTY ZONE, NAD 83 (2011) ADJUSTMENT. THE COORDINATES SHOWN ARE GRID COORDINATES AND ARE TO BE USED AS GRID OR GROUND VALUES ON THIS PLAT.

RIGHT-OF-WAY MONUMENTS SHALL BE TYPE 2 AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER SURVEYS OF PUBLIC RECORD.



BEGIN RELOCATION
ORDER STA. 8+75.00
Y = 138676.77
X = 453569.51

1,304.83' NORTH OF AND
1,432.51' EAST OF THE
SOUTHWEST CORNER OF
SECTION 12, TOWN-5-NORTH,
RANGE-5-EAST.

END RELOCATION ORDER
STA. 11+15.00
Y = 138669.89
X = 453809.24

1,271.80' NORTH OF AND
1,015.04' WEST OF THE
SOUTH QUARTER CORNER OF
SECTION 12, TOWN-5-NORTH,
RANGE-5-EAST.

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.045 MI.

R/W PROJECT NUMBER	5626-00-02	SHEET NUMBER	TOTAL SHEETS
FEDERAL PROJECT NUMBER	---	4.01	2
PLAT OF RIGHT-OF-WAY REQUIRED FOR TOWN OF BRIGHAM, CLAY HILL ROAD (GORDON CREEK BRIDGE B-25-0171)			
TOWN ROAD		IOWA COUNTY	
CONSTRUCTION PROJECT NUMBER			
5626-00-72			



ACCEPTED FOR	
TOWN	BRIGHAM
12-4-13 (Date)	<i>Don Vassar</i> (Signature/Title)
ORIGINAL PLAT PREPARED BY	
MSA PROFESSIONAL SERVICES TRANSPORTATION • MUNICIPAL • REMEDIATION DEVELOPMENT • ENVIRONMENTAL 2901 International Lane, Suite 300 Madison, WI 53704-3183 608-242-7779 1-800-445-0679 Fax: 608-242-5664	
WISCONSIN DANIEL R. HIGGS S-2878 MADISON WI LAND SURVEYOR 11/26/13 (Date)	

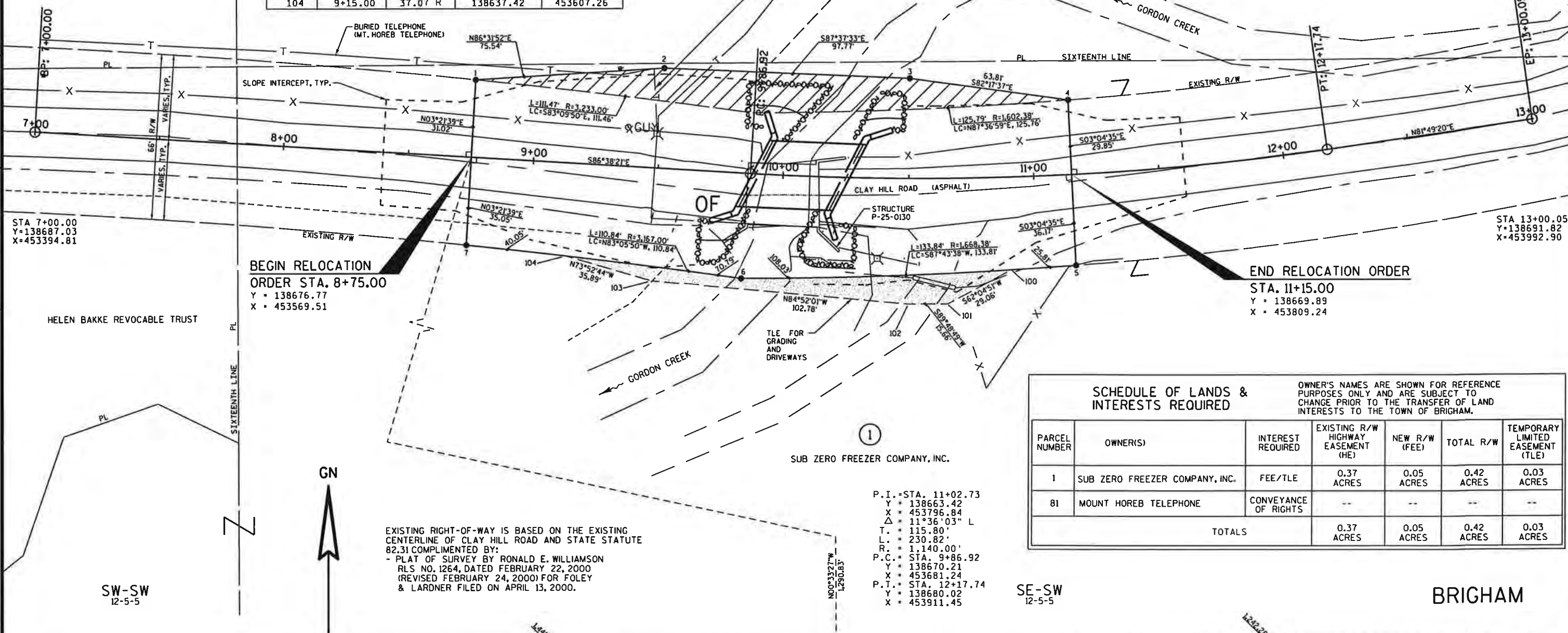
TOWN

NW-SW
12-5-5

JOHN F. CARMODY AND LISA A. CARMODY

NE-SW
12-5-5

R/W POINT	STATION	OFFSET	Y	X
1	8+75.00	31.02 L	138707.74	453571.32
2	9+50.00	40.00 L	138712.31	453646.72
3	10+50.00	40.00 L	138708.26	453744.41
4	11+15.00	29.85 L	138699.70	453807.64
5	11+15.00	36.17 R	138633.77	453811.19
6	9+85.63	41.89 R	138628.47	453677.49
7	8+75.00	35.05 R	138641.79	453567.45
TLE POINT	STATION	OFFSET	Y	X
100	10+90.00	36.93 R	138631.91	453785.44
101	10+65.00	50.00 R	138618.31	453759.77
102	10+50.00	50.00 R	138618.26	453744.11
103	9+50.00	45.00 R	138627.45	453641.74
104	9+15.00	37.07 R	138637.42	453607.26

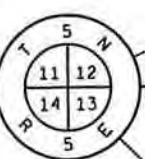
SCHEDULE OF LANDS &
INTERESTS REQUIREDOWNER'S NAMES ARE SHOWN FOR REFERENCE
PURPOSES ONLY AND ARE SUBJECT TO
CHANGE PRIOR TO THE TRANSFER OF LAND
INTERESTS TO THE TOWN OF BRIGHAM.

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	EXISTING R/W HIGHWAY EASEMENT (HE)	NEW R/W (FEE)	TOTAL R/W	TEMPORARY LIMITED EASEMENT (TLE)
1	SUB ZERO FREEZER COMPANY, INC.	FEE/TLE	0.37 ACRES	0.05 ACRES	0.42 ACRES	0.03 ACRES
81	MOUNT HOREB TELEPHONE	CONVEYANCE OF RIGHTS	--	--	--	--
TOTALS			0.37 ACRES	0.05 ACRES	0.42 ACRES	0.03 ACRES

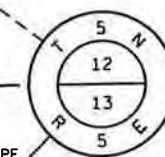
EXISTING RIGHT-OF-WAY IS BASED ON THE EXISTING CENTERLINE OF CLAY HILL ROAD AND STATE STATUTE 82.31 COMPLEMENTED BY:
- PLAT OF SURVEY BY RONALD E. WILLIAMSON
RLS NO. 1264, DATED FEBRUARY 22, 2000
(REVISED FEBRUARY 24, 2000) FOR FOLEY & LARDNER FILED ON APRIL 13, 2000.

P.I. = STA. 11+02.73
Y = 138663.42
X = 453796.84
Δ = 11°36'03" L
T. = 115.80'
L. = 230.82'
R. = 1,140.00'
P.C. = STA. 9+86.92
Y = 138670.21
X = 453681.24
P.T. = STA. 12+17.74
Y = 138680.02
X = 453911.45

BRIGHAM



FOUND 1 1/2" IP
Y=137371.94
X=452136.99



FOUND 1 1/2" PIPE
Y=137398.10
X=454824.29

REVISION DATE

DATE

SCALE, FEET

HWY: CLAY HILL ROAD

STATE R/W PROJECT NUMBER 5626-00-02

PLAT SHEET 4.02

GRID FACTOR

N/A

COUNTY: IOWA

CONSTRUCTION PROJECT NUMBER 5626-00-72

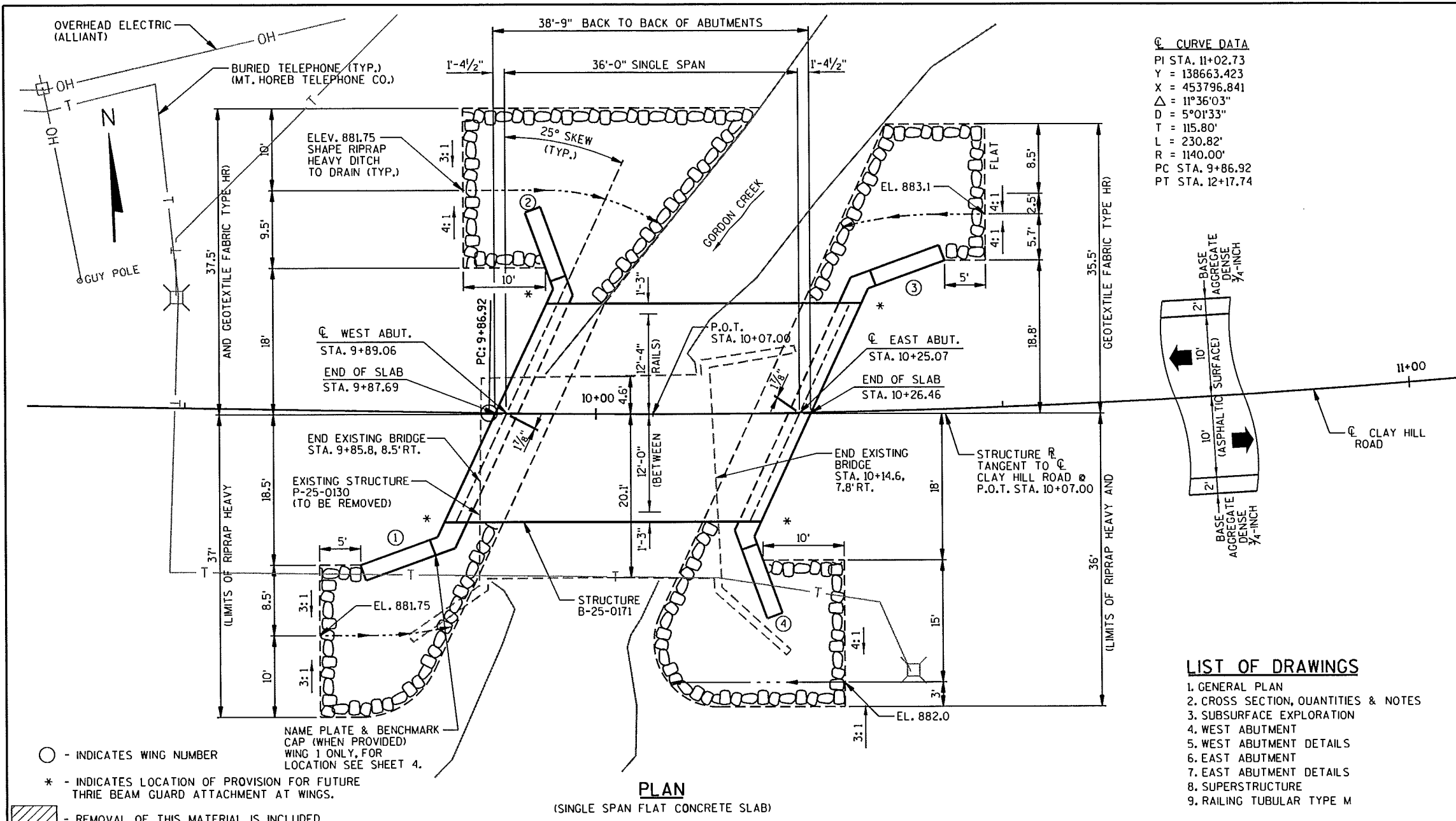
PS&E SHEET

E

0 20' 40'

Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
12A03-10	NAME PLATE (STRUCTURES)
15A01-11	MARKER POST FOR RIGHT-OF-WAY
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES



CL. CURVE DATA
PI STA. 11+02.73
Y = 138663.423
X = 453796.841
Δ = 11°36'03"
D = 5°01'33"
T = 115.80'
L = 230.82'
R = 1140.00'
PC STA. 9+86.92
PT STA. 12+17.74

STATE PROJECT NUMBER			
5626-00-72			
BENCHMARKS		NAVD 88	
NO.	STA./OFFSET	DESCRIPTION	ELEV.
10	9+22.36, 113.24' RT.	SPIKE IN FOOT OF TREE	884.97
20	10+12.98, 6.83' LT.	NE WING WALL CORNER	886.02
30	10+72.33, 31.05' LT.	SPIKE IN BASE OF TREE	885.81

DESIGN DATA

LIVE LOAD: DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.12
OPERATIONAL RATING FACTOR: 1.45
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS.
STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

TRAFFIC DATA: A.A.D.T. (2014) = 60
A.A.D.T. (2034) = 100
R.D.S. = 25 MPH

MATERIAL PROPERTIES: CONCRETE MASONRY, SLAB $f_c = 4,000$ P.S.I.
ALL OTHER $f_c = 3,500$ P.S.I.
HIGH-STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 $f_y = 60,000$ P.S.I.
PILING STEEL HP $f_y = 50,000$ P.S.I.

FOUNDATION DATA: ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED PILE LENGTHS ARE 20'-0" AT ALL PILES.
THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5.

HYDRAULIC DATA: 100 YEAR FREQUENCY
DRAINAGE AREA 23.7 SQ. MI.
Q100 - TOTAL 4,840 C.F.S.
- THRU BRIDGE 503 C.F.S.
- OVERTOPPING ROADWAY 4,337 C.F.S.
VELOCITY - THRU BRIDGE 3.07 FT./SEC.
WATERWAY AREA - THRU BRIDGE 164 SQ. FT.
- OVER ROAD 2,411 SQ. FT.
SCOUR CRITICAL CODE 8
HIGH WATER 100 ELEVATION 886.72 ±
O2 ELEVATION (780 CFS) 884.39 ±

ROADWAY OVERFLOW DESIGN
OVERTOPPING FREQUENCY <2 YEARS
OVERTOPPING DISCHARGE 600 C.F.S.
OVERTOPPING ELEVATION 882.95 ±

CONSULTANT DESIGN CONTACT: DANIEL WAGNER (608) 355-8952
BRIDGE OFFICE CONTACT: WILLIAM DREHER (608) 266-8489

LIST OF DRAWINGS

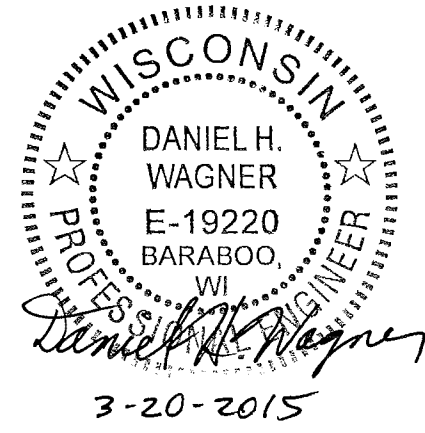
1. GENERAL PLAN
2. CROSS SECTION, QUANTITIES & NOTES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. SUPERSTRUCTURE
9. RAILING TUBULAR TYPE M

PLAN

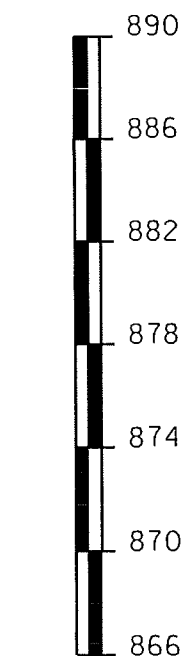
(SINGLE SPAN FLAT CONCRETE SLAB)

ELEVATION

(NORMAL TO CLAY HILL ROAD)



NO.	DATE	REVISION	BY
MSA TRANSPORTATION • MUNICIPAL DEVELOPMENT • ENVIRONMENTAL PROFESSIONAL SERVICES 1230 South Boulevard Baraboo, WI 53913 608-356-2771 T-800-362-4505 Fax: 608-356-2770			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED <i>William C. Dierker</i> 06/24/15 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-25-0171 CLAY HILL ROAD OVER GORDON CREEK			
COUNTY	IOWA	TOWN/CITY/VILLAGE	BRIGHAM
DESIGN SPEC.	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS		
DESIGNED BY	DHW	DESIGN CK'D.	JRS
DRAWN BY	RLR	PLANS CK'D.	DHW
GENERAL PLAN			SHEET 1 OF 9



GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE FABRIC TYPE HR TO THE LIMITS SHOWN ON SHEET 1 AND ON THE ABUTMENT SHEETS OR AS DIRECTED BY THE ENGINEER. SUPPORT RIPRAP HEAVY BERM AT VOID AREA NEAR CENTER OF WEST ABUTMENT WITH ADDITIONAL RIPRAP HEAVY. 5 CY ADDED TO DETAILED QUANTITY.

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES" FOR THE ABUTMENTS.

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

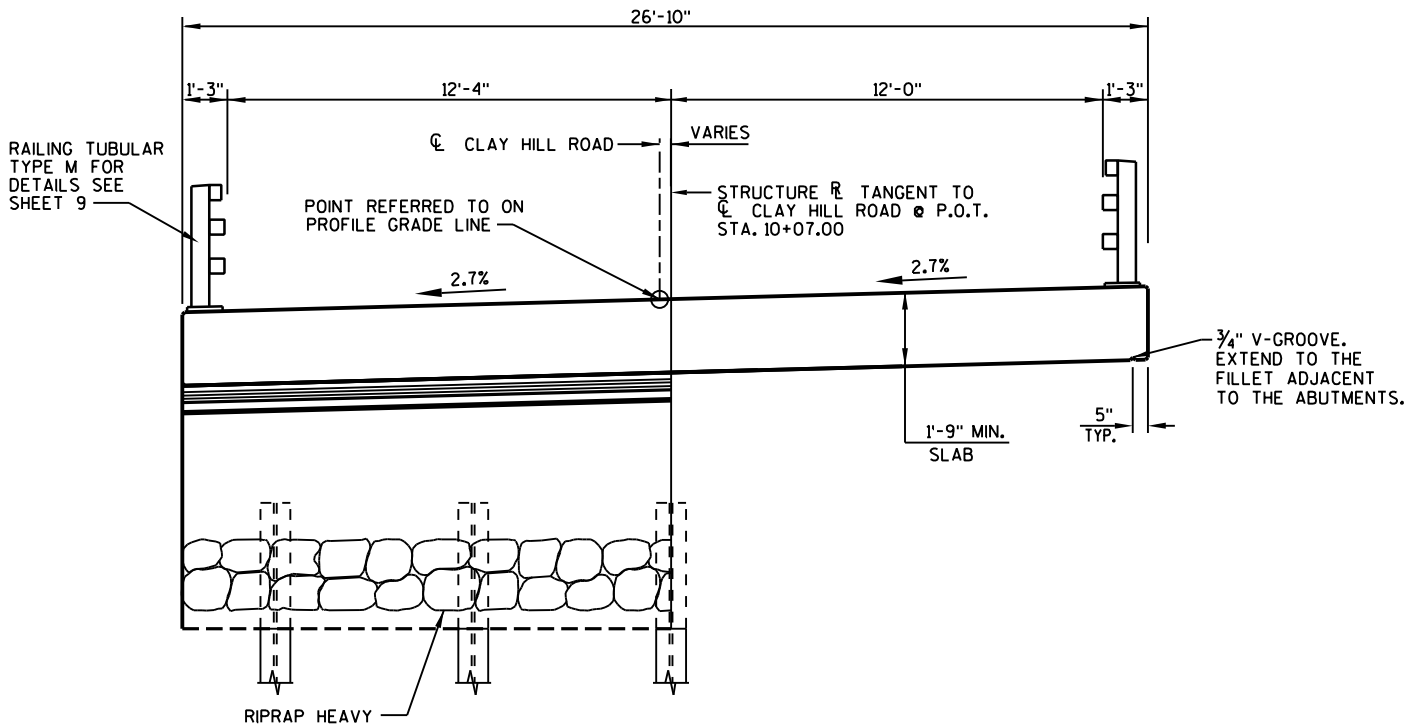
THIS STRUCTURE WILL REPLACE EXISTING BRIDGE, P-25-0130, A 29.5 FT. LONG SINGLE SPAN STEEL DECK GIRDER BRIDGE ON FULL RETAINING CONCRETE ABUTMENTS.

AT THE ABUTMENTS ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE. THE BACKFILL STRUCTURE ESTIMATED QUANTITIES ASSUMED A 1½:1 EXCAVATION SLOPE AT THE ABUTMENTS.

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

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND EDGES OF SLAB, TO THE OUTSIDE 1'-0" OF THE UNDERSIDE OF SLAB, TO THE TOPS OF WINGS AND TO THE EXPOSED FRONT FACES OF WINGS.

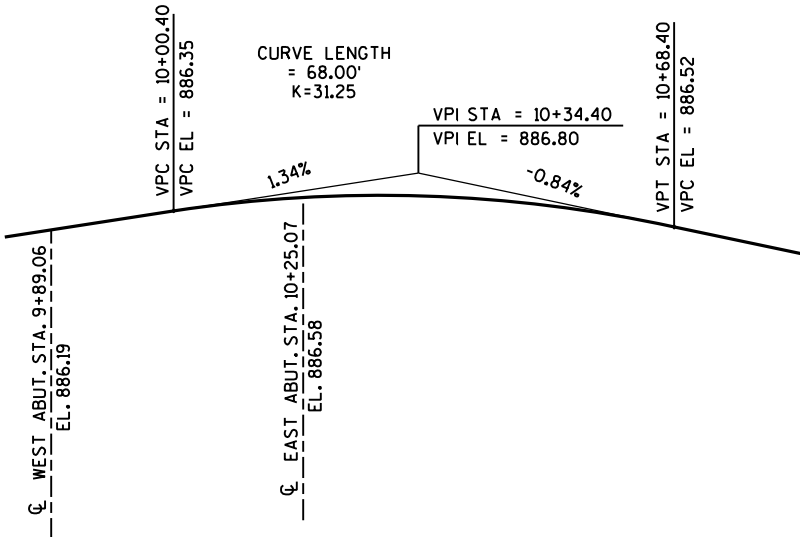
ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO NAVD 88 BENCHMARK LOCATED APPROXIMATELY 1.0 MILE NORTHWEST OF THE EXISTING BRIDGE SITE. THE STATION IS A BRONZE WISDOT GEODETIC SURVEY CONTROL STATION, DALEYVILLE, ELEVATION 1064.80 .



AT ABUTMENTS IN SPAN
CROSS SECTION THRU BRIDGE
(LOOKING EAST)

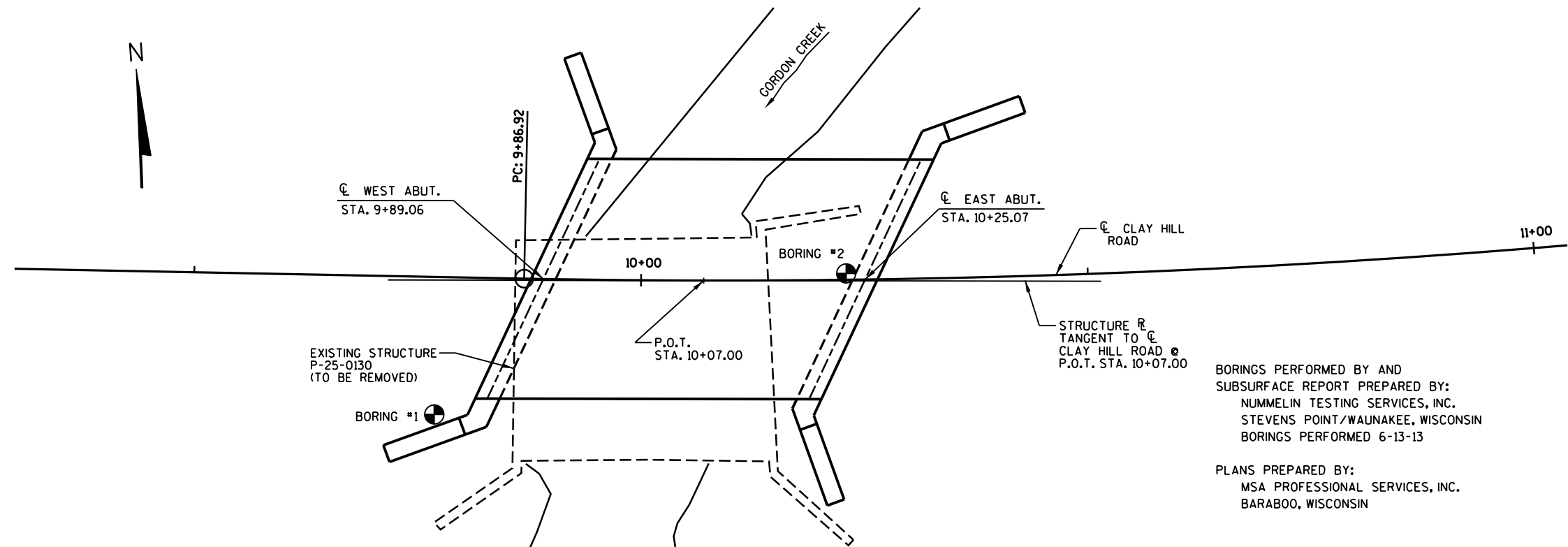
TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNIT	WEST ABUT.	EAST ABUT.	SUPER	TOTAL
203.0600.S.01	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00	LS	-	-	-	1
206.1000.01	EXCAVATION FOR STRUCTURES BRIDGES B-25-0171	LS	-	-	-	1
210.0100	BACKFILL STRUCTURE	CY	130	130	-	260
502.0100	CONCRETE MASONRY BRIDGES	CY	34	34	72	140
502.3200	PROTECTIVE SURFACE TREATMENT	SY	20	20	140	180
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2200	2210	-	4410
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1620	1630	12240	15490
513.4060.01	RAILING TUBULAR TYPE M B-25-0171	LS	-	-	-	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	6	6	-	12
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	140	140	-	280
606.0300	RIPRAP HEAVY	CY	85	65	-	150
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	85	85	-	170
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	175	145	-	320
	NON-BID ITEMS					
	PREFORMED FILLER	SIZE	-	-	-	½", ¾"



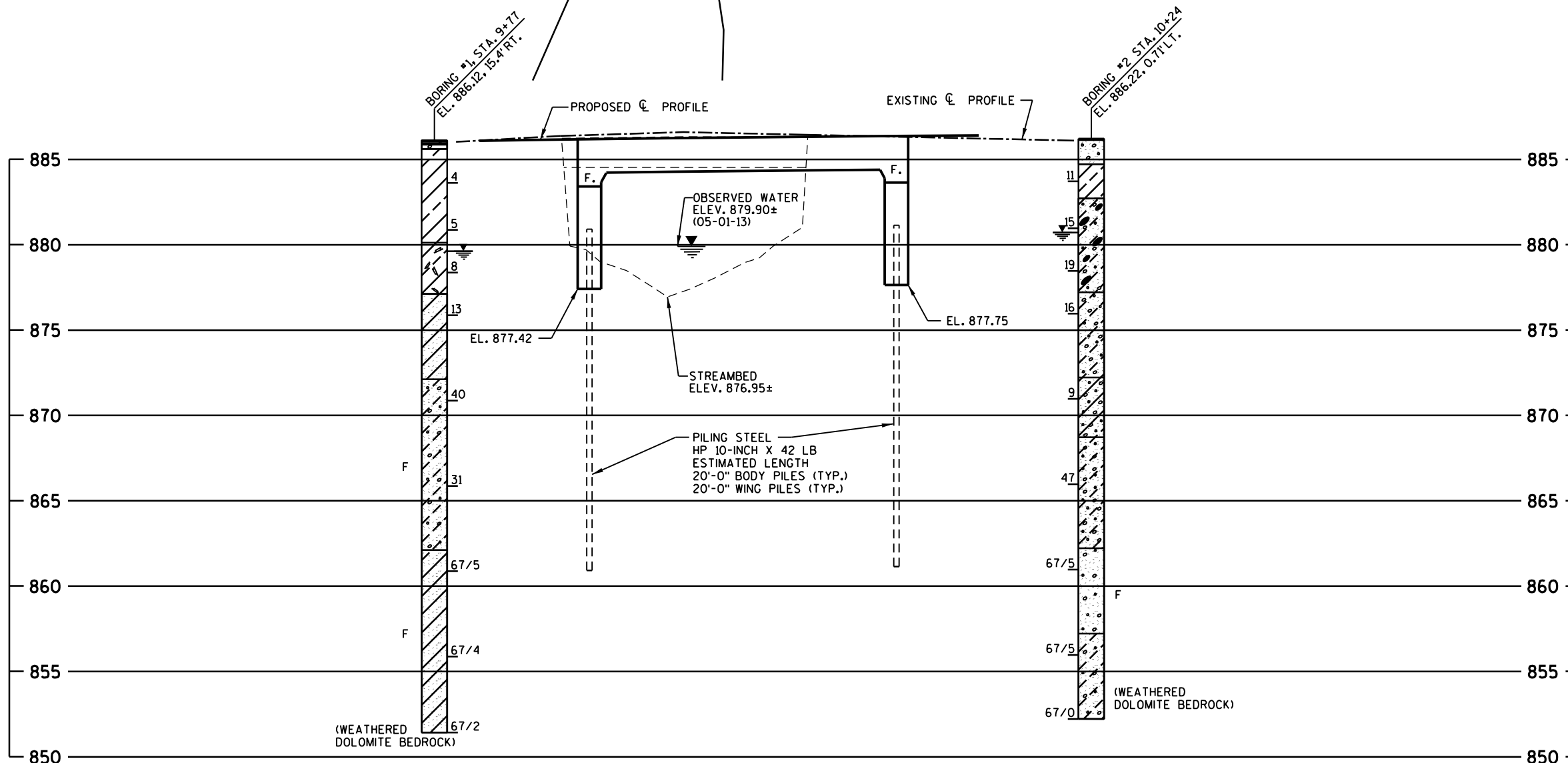
PROFILE GRADE LINE - CLAY HILL ROAD

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-25-0171	
DRAWN BY		RLR	PLANS CK'D. DHW
CROSS SECTION, QUANTITIES & NOTES		SHEET 2 OF 9	



BORINGS PERFORMED BY AND
SUBSURFACE REPORT PREPARED BY:
NUMMELIN TESTING SERVICES, INC.
STEVENS POINT/WAUNAKEE, WISCONSIN
BORINGS PERFORMED 6-13-13

PLANS PREPARED BY:
MSA PROFESSIONAL SERVICES, INC.
BARABOO, WISCONSIN



STATE PROJECT NUMBER

5626-00-72

ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

TOPSOIL SILT SANDSTONE
SAND PEAT LIMESTONE
GRAVEL CLAY IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
95/6=95 BLOWS FOR 6"
PENETRATION
PROBING TAKEN WITH
A 350# WT.
FALLING 18" ON A 2"
O.D. POINT.
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

LEGEND OF BORING

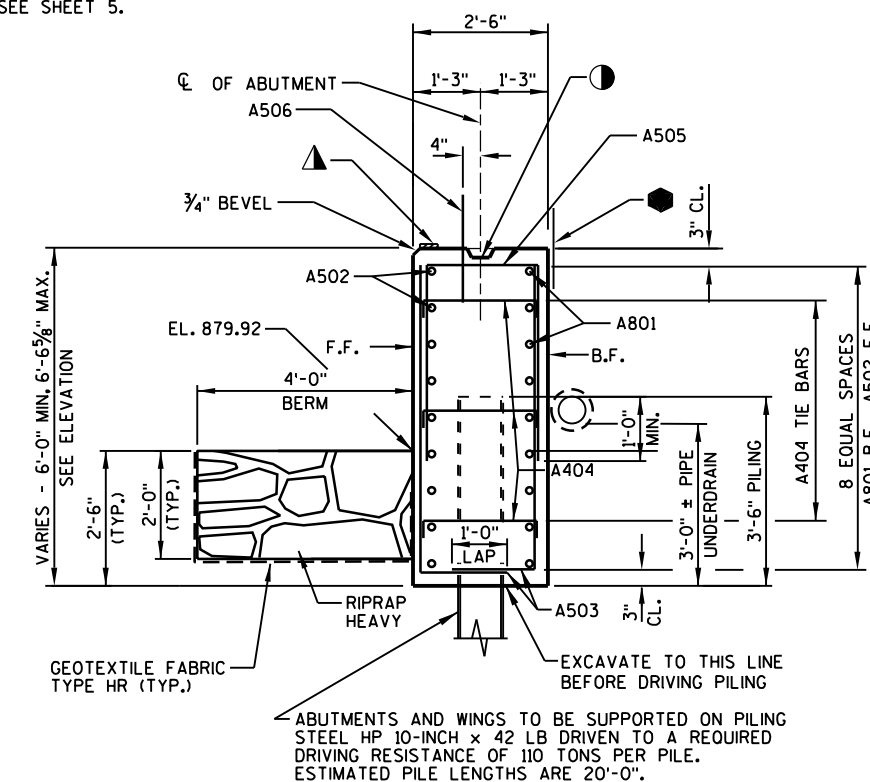
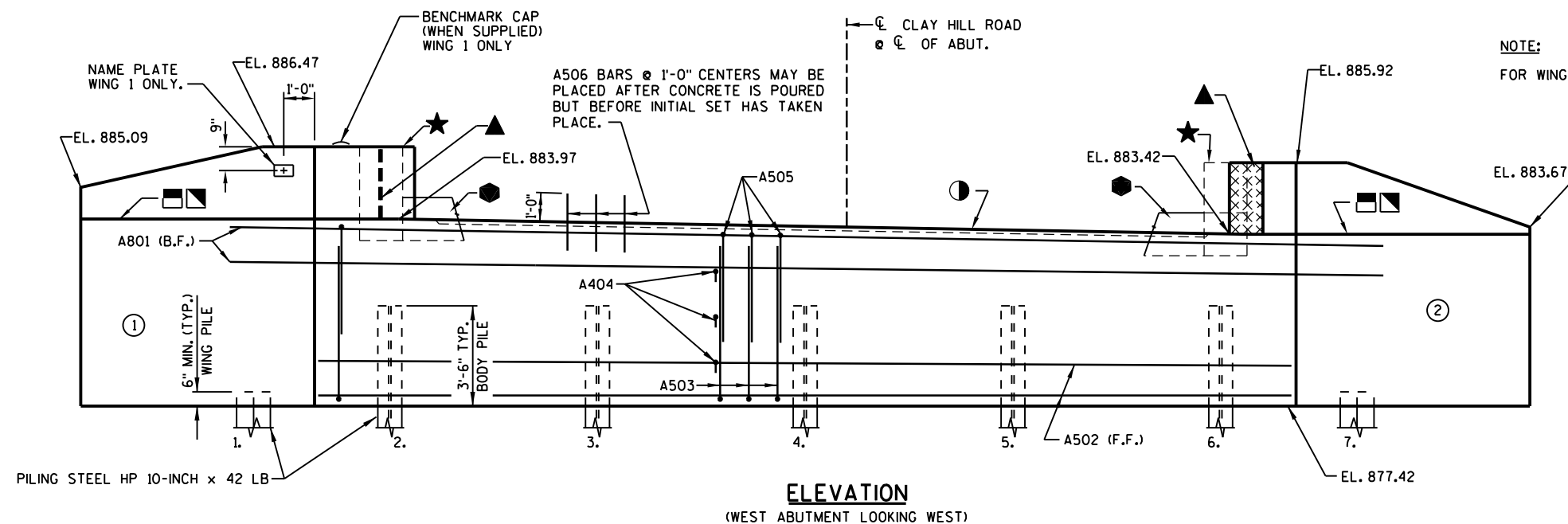
BORING NO.
STA.
ELEV.
UNCONFINED
STRENGTH → 7.7
BLOWS PER FT.
USING 140# WT.
FALLING 30"
WASH SAMPLE
SHELBY TUBE — S.T.
GROUND WATER
ELEVATION
NO GROUND WATER
OBSERVED ABOVE
THIS ELEVATION
SANDY GRAVEL
F. BOULDERS OR
COBBLES
SAND
SILTY CLAY
SO
LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT
THE LOCATIONS INDICATED ARE BASED ON DRIVING A
2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140#
HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT
IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A
CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON
THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION
DESIGN AND BIDDERS INFORMATION

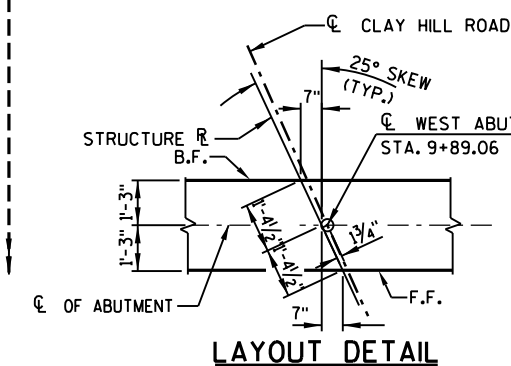
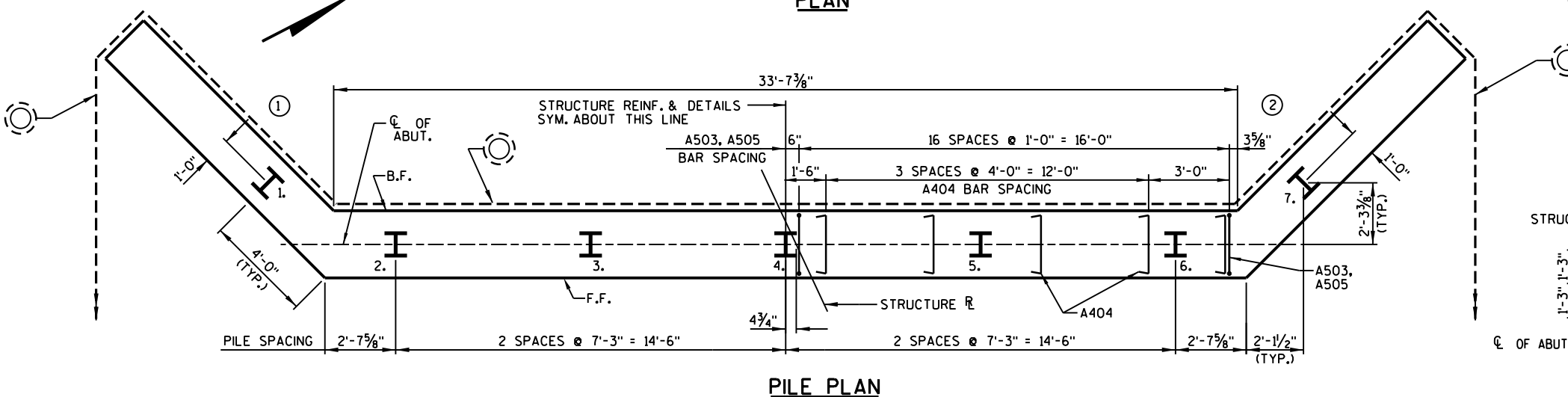
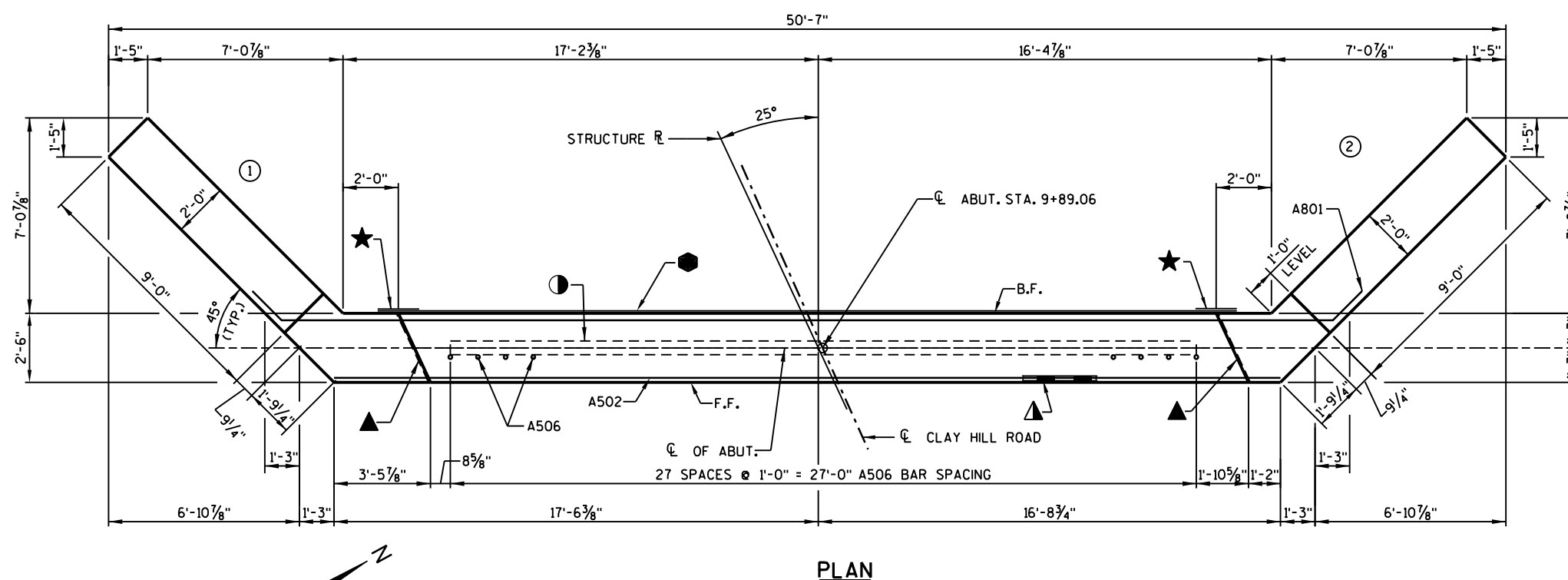
TO OBTAIN RELATIVE DATA CONCERNING THE
CHARACTER OF MATERIAL IN AND UPON WHICH THE
FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS
WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON
THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS
THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE.
HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE
LIMITED AND THE AREA OF THE BORINGS AND/OR
SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE
AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION
DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS
INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL
ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY
TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-25-0171			
DRAWN BY		RLR	PLANS CKD. JRS
SUBSURFACE EXPLORATION		SHEET 3 OF 9	

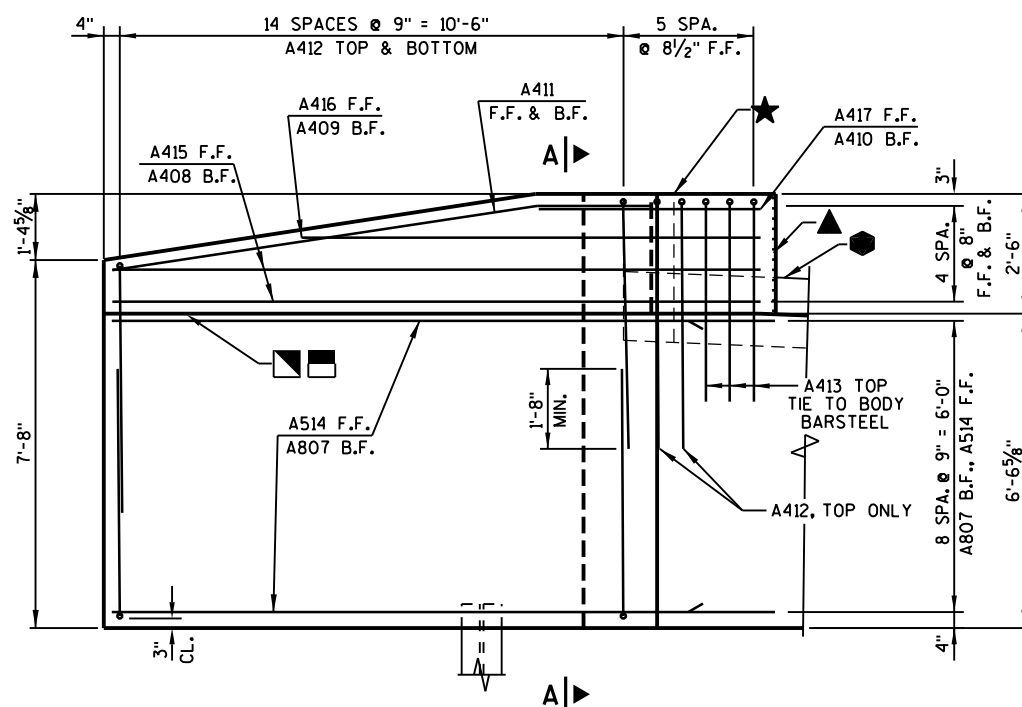


LEGEND

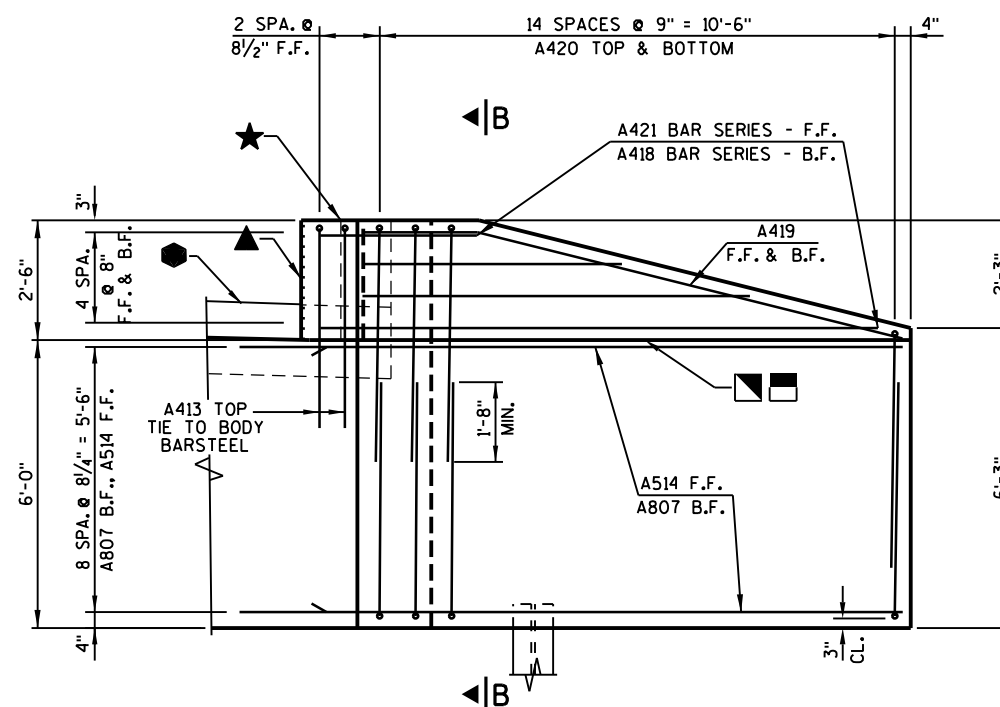
- — KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
- ▲ — 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE).
- ▲ — 4"x 3/4" FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN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



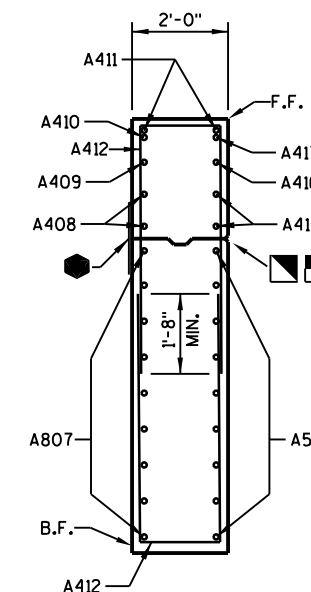
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-25-0171		DRAWN BY RLR PLANS CK'D. DHW	
WEST ABUTMENT		SHEET 4 OF 9	



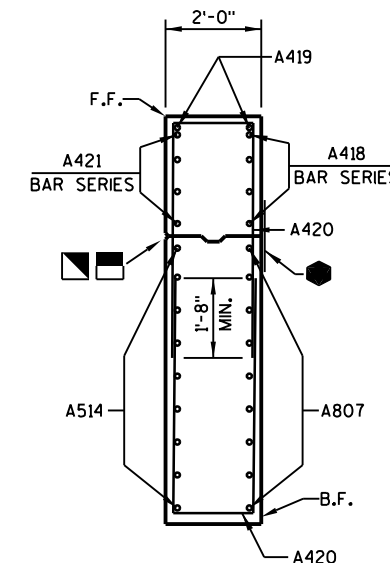
ELEVATION - WING 1
(LOOKING AT F.F. OF WING)



ELEVATION - WING 2
(LOOKING AT F.F. OF WING)



**SECTION A-A
THRU WING 1**



**SECTION B-B
THRU WING 2**

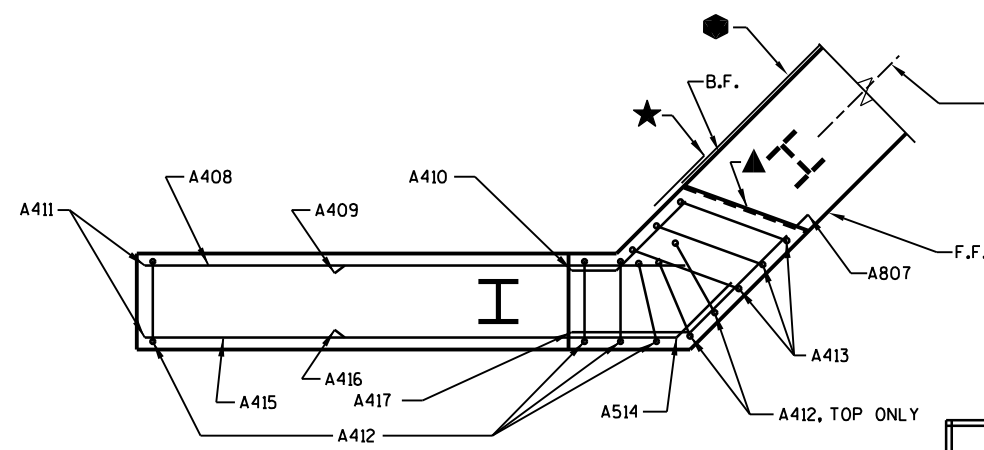
**UNCOATED 2200 LBS.
COATED 1620 LBS.**

BILL OF BARS (1 ABUTMENT)

MARK	NUMBER COATED	REQUIRED UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION
A801	-	9	40'-10"	X		ABUTMENT BODY - B.F. - HORIZ.
A502	-	9	34'-3"			ABUTMENT BODY - F.F. - HORIZ.
A503	-	68	7'-1"	X		ABUTMENT BODY - F.F. & B.F. - VERT.
A404	-	30	2'-9"	X		ABUTMENT BODY - TIES - HORIZ.
A505	-	34	9'-7"	X		ABUTMENT BODY - TOP - VERT.
A506	28	-	2'-0"			ABUTMENT BODY - TOP DOWELS - VERT.
A807	18	-	14'-3"	X		WINGS - B.F. - HORIZ.
A408	2	-	11'-10"	X		WING 1 - B.F. - HORIZ.
A409	1	-	7'-10"	X		WING 1 - B.F. - HORIZ.
A410	1	-	2'-10"	X		WING 1 - B.F. - HORIZ.
A411	2	-	11'-4"	X		WING 1 - F.F. & B.F. - TOP - HORIZ.
A412	32	-	11'-10"	X		WING 1 - TOP & BOTTOM - VERT.
A413	5	-	10'-6"	X		WINGS - TOP - VERT.
A514	18	-	12'-9"	X		WINGS - F.F. - HORIZ.
A415	2	-	14'-3"	X		WING 1 - F.F. - HORIZ.
A416	1	-	10'-3"	X		WING 1 - F.F. - HORIZ.
A417	1	-	5'-5"	X		WING 1 - F.F. - HORIZ.
A418	4	-	7'-0"	X	⊙	WING 2 - B.F. - HORIZ.
A419	2	-	11'-7"	X		WING 2 - F.F. & B.F. - TOP - HORIZ.
A420	30	-	11'-4"	X		WING 2 - TOP & BOTTOM - VERT.
A421	4	-	7'-6"	X	⊙	WING 2 - F.F. - HORIZ.

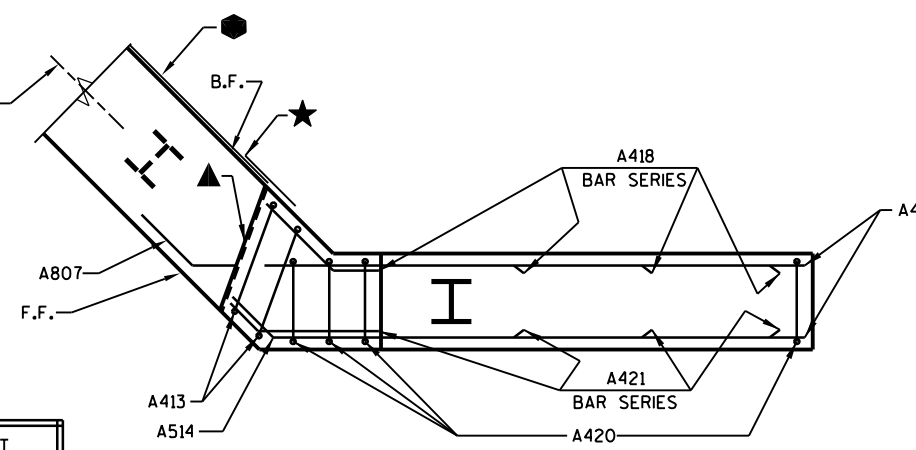
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

⊙ - LENGTH SHOWN FOR BAR IS AN AVERAGE AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS. BENT BARS USED IN BAR SERIES TABLE SHALL BE BENT AFTER CUTTING.



PLAN - WING 1

SEE LEGEND ON SHEET 4 FOR DESCRIPTION OF
★ ● ▣ ▢ ▲



PLAN - WING 2

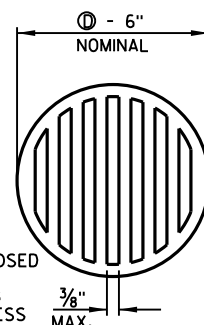
8

RODENT SHIELD NOTES:

ORIENT SHIELD SO SLOTS ARE VERTICAL.

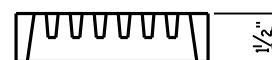
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER.

A PIPE COUPLING IS REQUIRED FOR THE 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 IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".



RODENT SHIELD

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



SECTION C-C

MARK	A	B
A807	1'-6"	45°
A514	1'-10"	45°
A408	1'-10"	45°
A409	1'-10"	45°
A410	1'-10"	45°
A411	2'-5"	9°
A415	3'-0"	45°
A416	3'-0"	45°
A417	3'-0"	45°
A418	1'-9"	45°
A419	2'-5"	14°
A421	1'-0"	45°

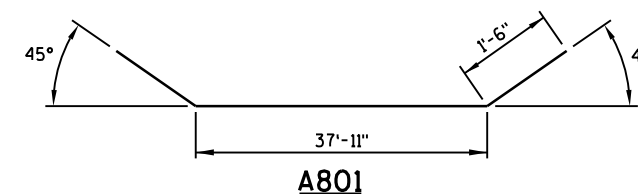
STIRRUPS AND TIES

MARK	C	D
A404	4 1/2"	2'-2"
A505	3'-10"	2'-2"
A412	5'-2"	1'-8"
A413	4'-2"	2'-4"
A420	4'-11"	1'-8"

A503

BAR MARK	NO. REQ'D.	LENGTH
A418	1 SERIES OF 4	2'-10" TO 11'-2"
A421	1 SERIES OF 4	3'-4" TO 11'-8"

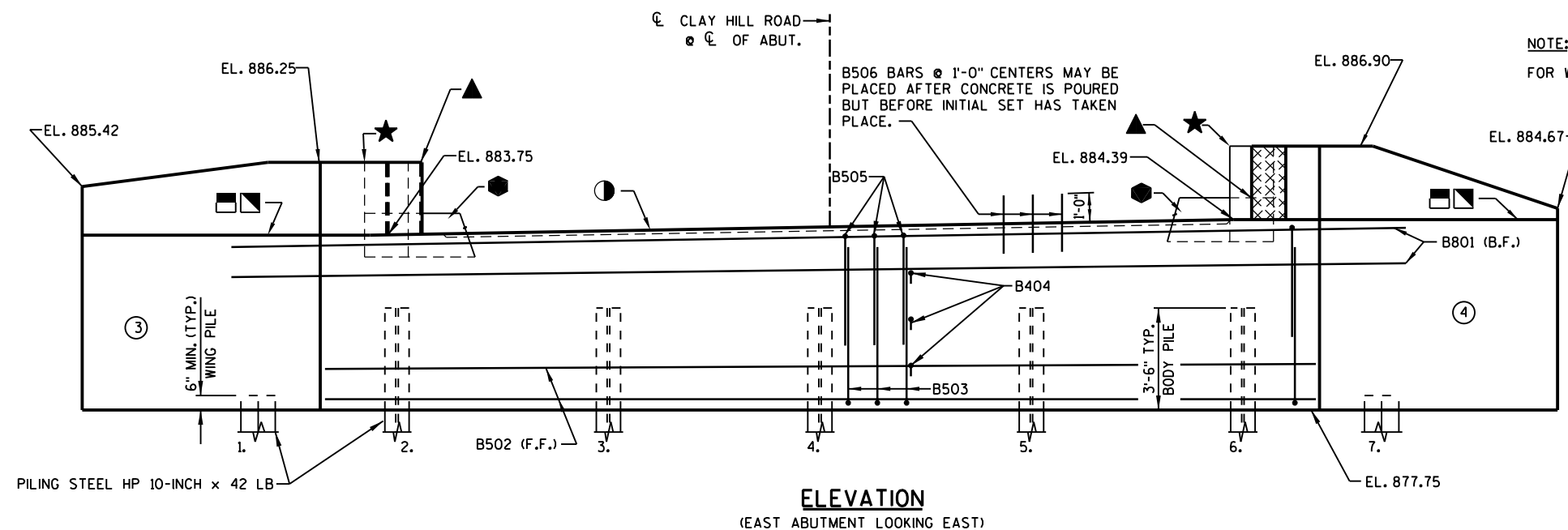
BAR SERIES TABLE



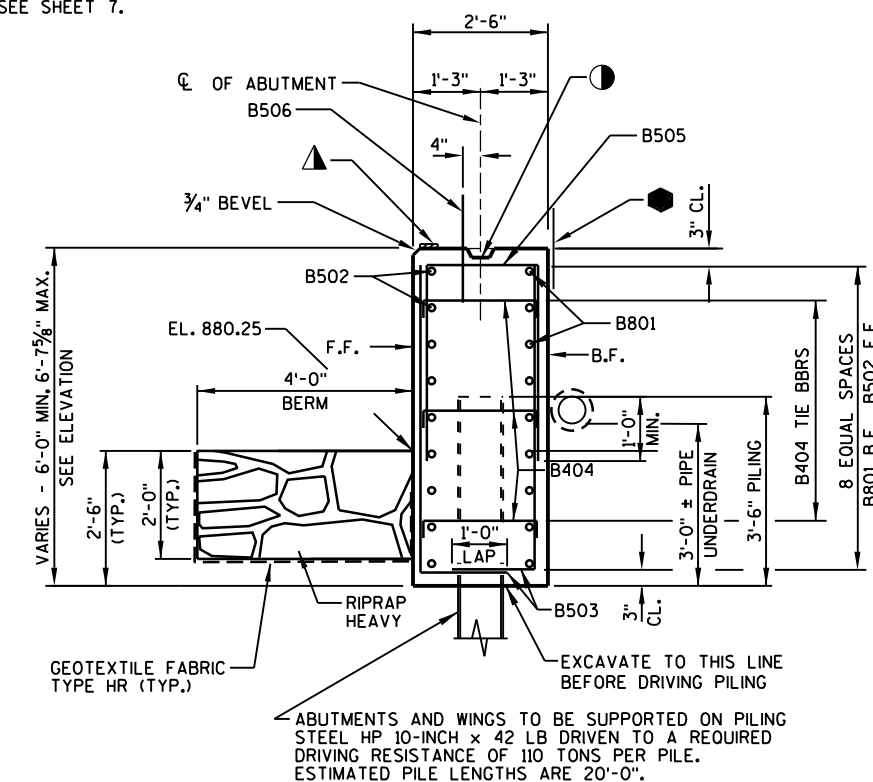
A801

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-25-0171	
DRAWN BY		RLR	PLANS CK'D. DHW
WEST ABUTMENT DETAILS		SHEET 5 OF 9	



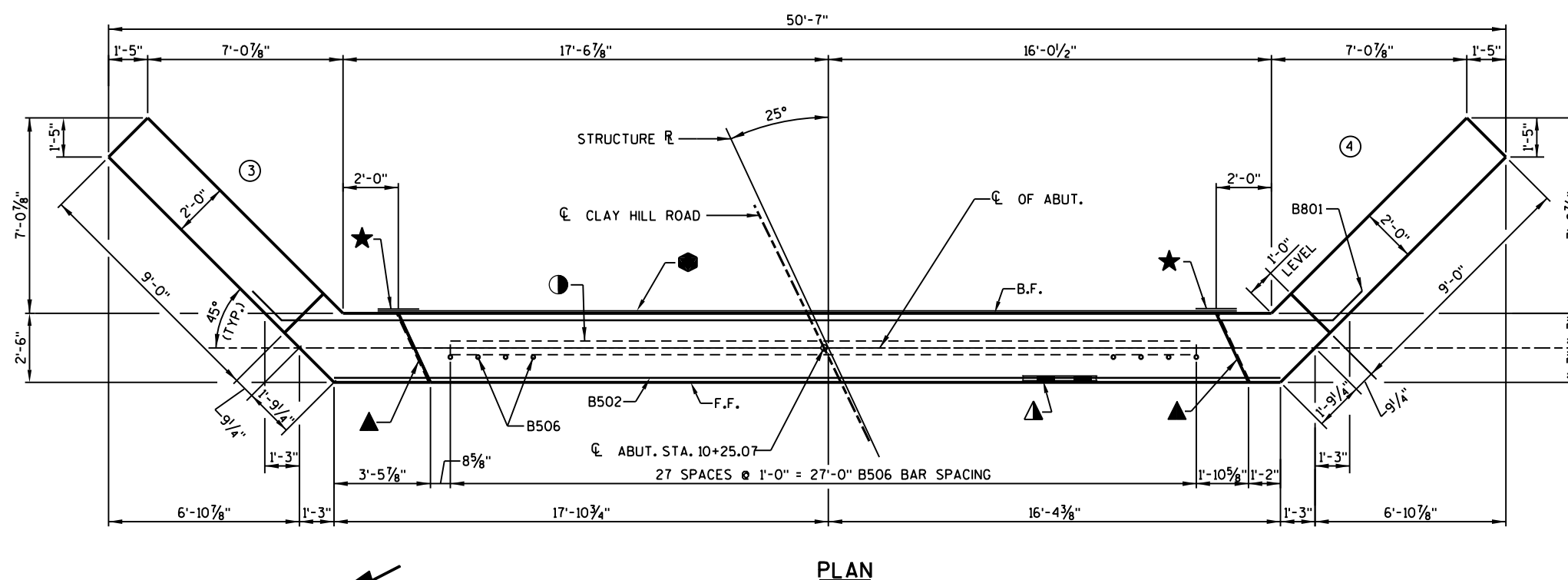
NOTE:
FOR WING DETAILS, SEE SHEET 7.



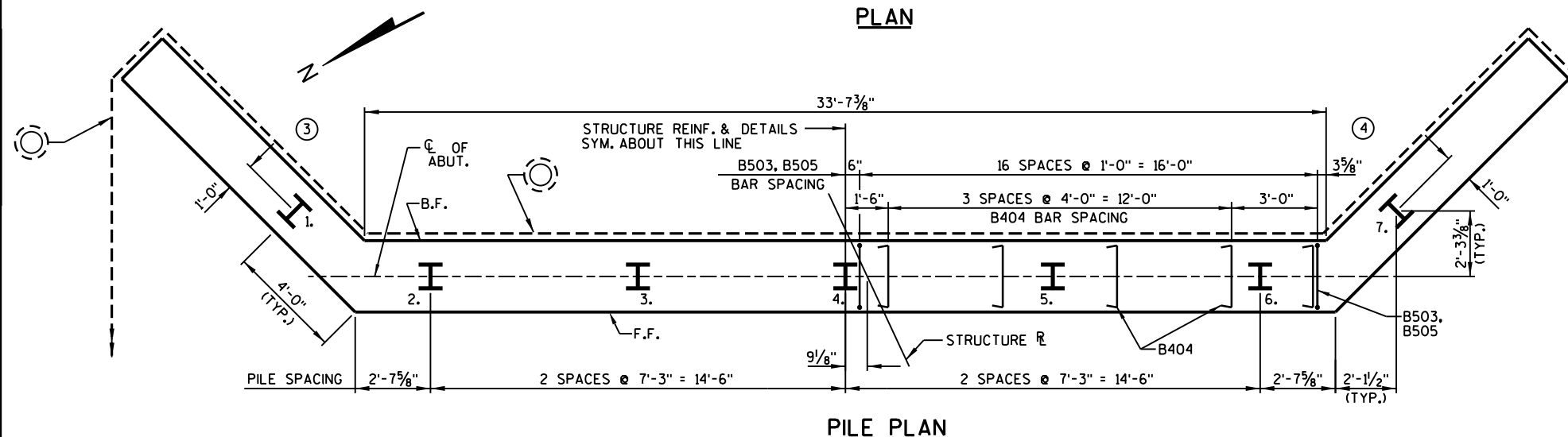
TYPICAL SECTION THRU ABUTMENT

LEGEND

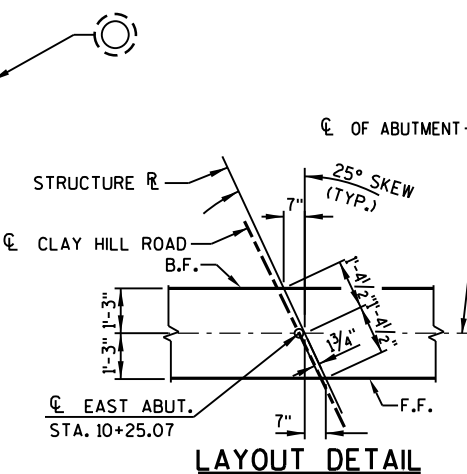
- — KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
- ▲ — 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE).
- ▲ — 4"x 3/4" FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN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



PLAN

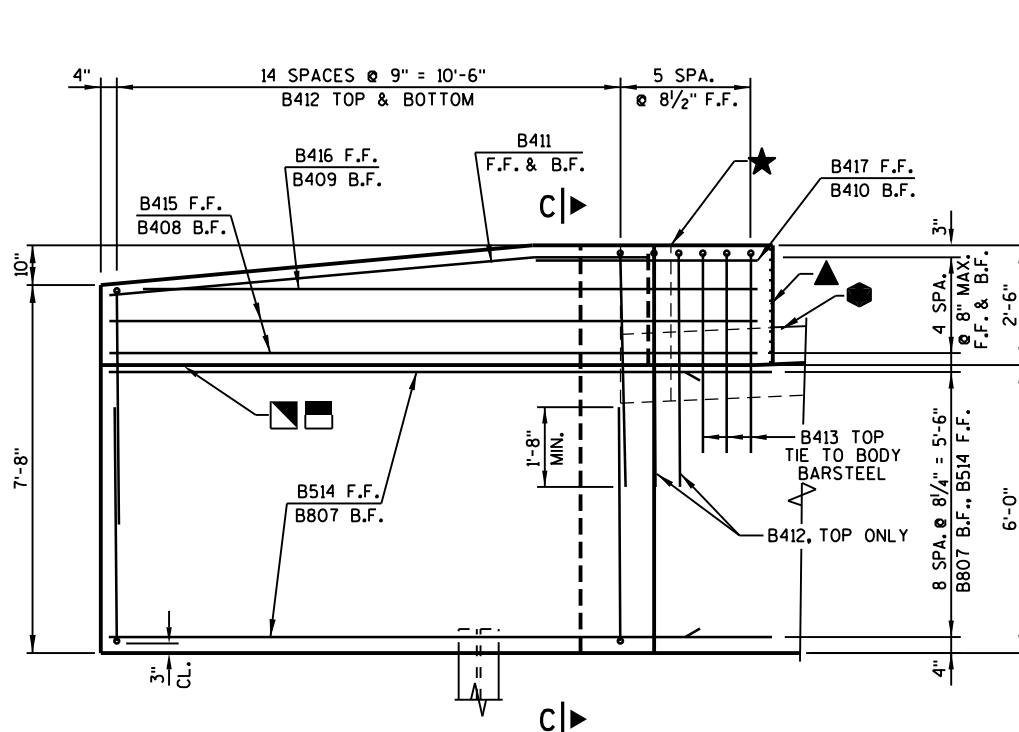


PILE PLAN

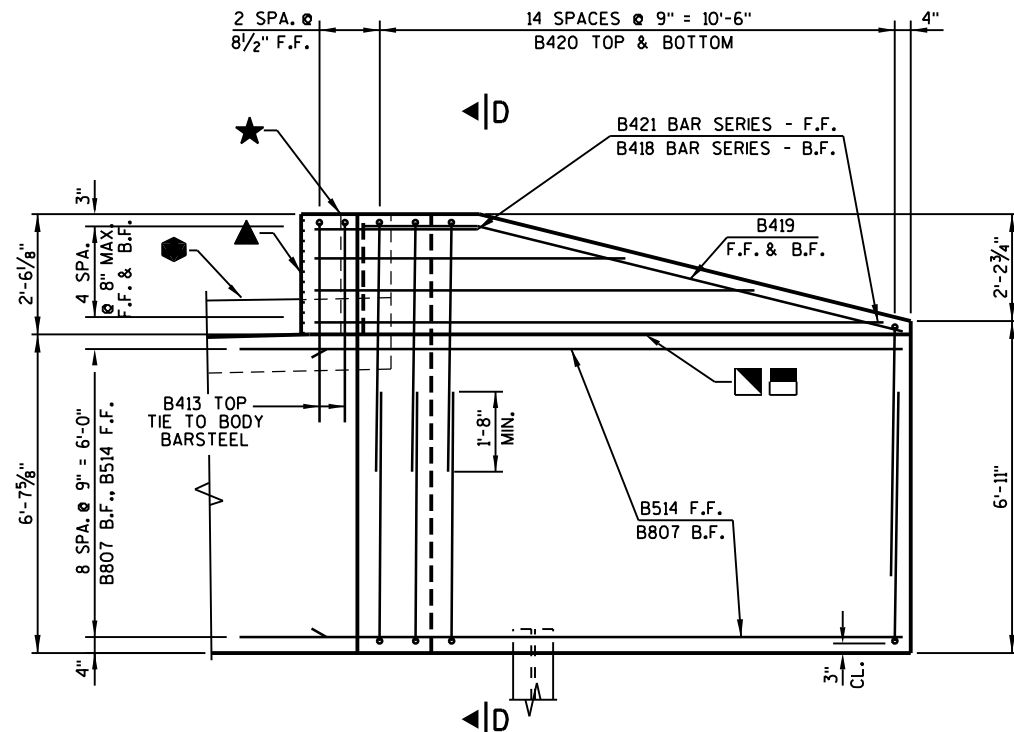


LAYOUT DETAIL

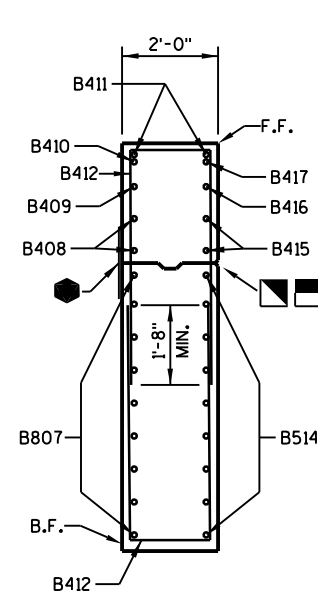
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-25-0171	
DRAWN BY		RLR	PLANS CK'D. DHW
EAST ABUTMENT		SHEET 6 OF 9	



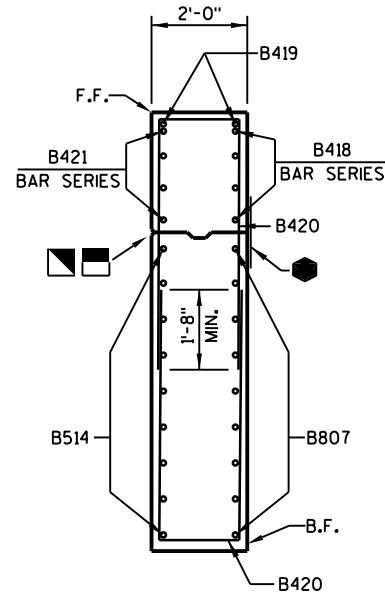
ELEVATION - WING 3
(LOOKING AT F.F. OF WING)



ELEVATION - WING 4
(LOOKING AT F.F. OF WING)



**SECTION C-C
THRU WING 3**



**SECTION D-D
THRU WING 4**

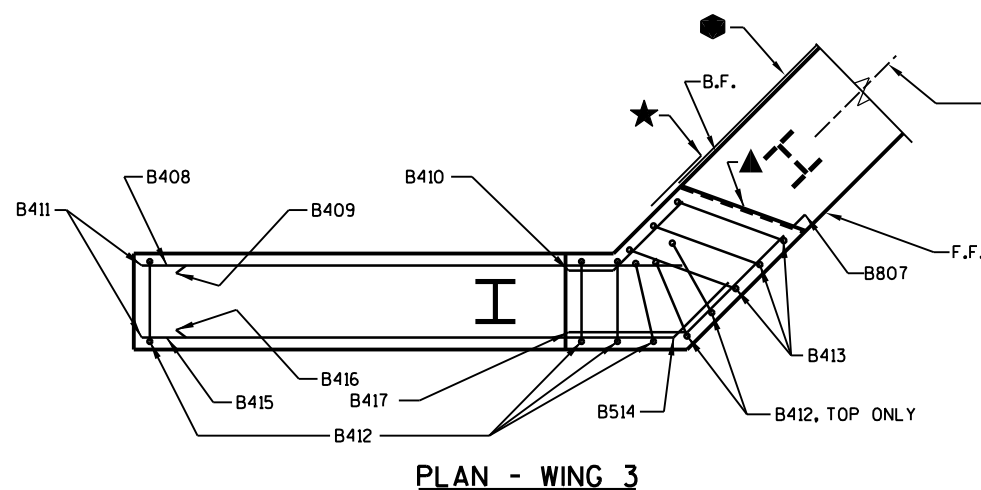
**UNCOATED 2210 LBS.
COATED 1630 LBS.**

BILL OF BARS (1 ABUTMENT)

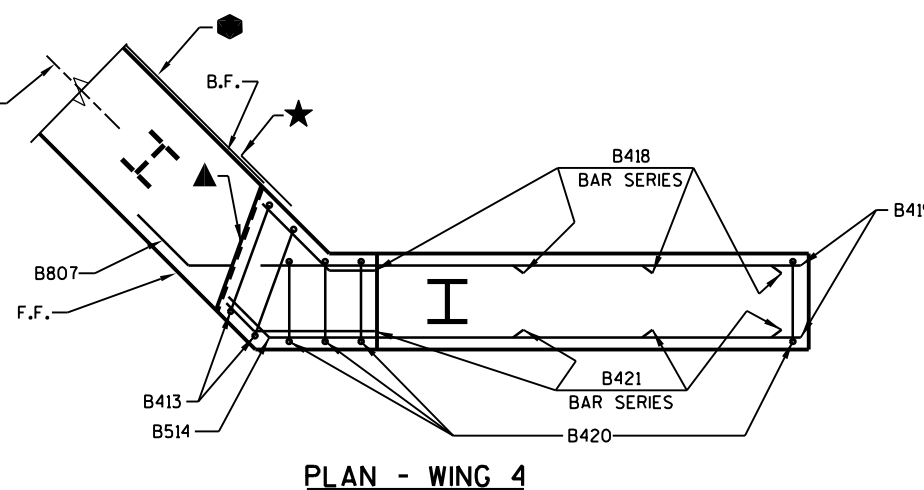
MARK	NUMBER COATED	REQUIRED UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION
B801	-	9	40'-10"	X		ABUTMENT BODY - B.F. - HORIZ.
B502	-	9	34'-3"			ABUTMENT BODY - F.F. - HORIZ.
B503	-	68	7'-1"	X		ABUTMENT BODY - F.F. & B.F. - VERT.
B404	-	30	2'-9"	X		ABUTMENT BODY - TIES - HORIZ.
B505	-	34	9'-9"	X		ABUTMENT BODY - TOP - VERT.
B506	28	-	2'-0"			ABUTMENT BODY - TOP DOWELS - VERT.
B807	18	-	14'-3"	X		WINGS - B.F. - HORIZ.
B408	2	-	11'-10"	X		WING 3 - B.F. - HORIZ.
B409	1	-	11'-1"	X		WING 3 - B.F. - HORIZ.
B410	1	-	2'-10"	X		WING 3 - B.F. - HORIZ.
B411	2	-	11'-2"	X		WING 3 - F.F. & B.F. - TOP - HORIZ.
B412	32	-	11'-4"	X		WING 3 - TOP & BOTTOM - VERT.
B413	5	-	10'-6"	X		WINGS - TOP - VERT.
B514	18	-	12'-9"	X		WINGS - F.F. - HORIZ.
B415	2	-	14'-3"	X		WING 3 - F.F. - HORIZ.
B416	1	-	13'-6"	X		WING 3 - F.F. - HORIZ.
B417	1	-	5'-5"	X		WING 3 - F.F. - HORIZ.
B418	4	-	7'-1"	X	⊙	WING 4 - B.F. - HORIZ.
B419	2	-	11'-5"	X		WING 4 - F.F. & B.F. - TOP - HORIZ.
B420	30	-	12'-0"	X		WING 4 - TOP & BOTTOM - VERT.
B421	4	-	7'-7"	X	⊙	WING 4 - F.F. - HORIZ.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

⊙ - LENGTH SHOWN FOR BAR IS AN AVERAGE AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS. BENT BARS USED IN BAR SERIES TABLE SHALL BE BENT AFTER CUTTING.

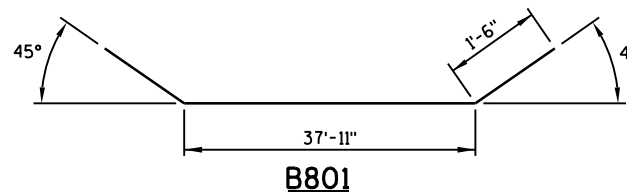


PLAN - WING 3



PLAN - WING 4

SEE LEGEND ON SHEET
6 FOR DESCRIPTION OF

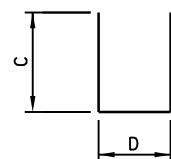


B801



B503

MARK	A	B
B807 B514	1'-6"	45°
B408 B409 B410	1'-10"	45°
B411	2'-5"	6°
B415 B416 B417	3'-0"	45°
B418	1'-9"	45°
B419	2'-5"	14°
B421	1'-0"	45°



STIRRUPS AND TIES

MARK	C	D
B404	4 1/2"	2'-2"
B505	3'-11"	2'-2"
B412	4'-11"	1'-8"
B413	4'-2"	2'-4"
B420	5'-3"	1'-8"

BAR MARK	NO. REQ'D.	LENGTH
B418	1 SERIES OF 4	2'-10" TO 11'-4"
B421	1 SERIES OF 4	3'-4" TO 11'-10"

BAR SERIES TABLE

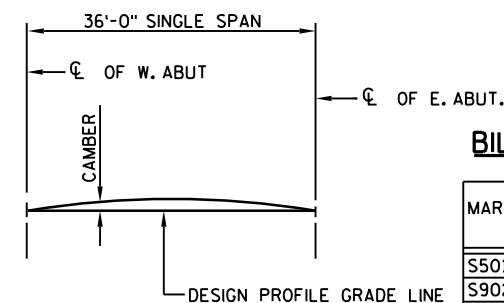
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-25-0171	
DRAWN BY		RLR	PLANS CHK'D. DHW
EAST ABUTMENT DETAILS		SHEET 7 OF 9	

GENERAL NOTES

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

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

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ϕ OF ABUTMENTS AND AT THE 5/10 POINT TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGES OF SLAB AND STRUCTURE \mathcal{R} .



CAMBER DIAGRAM

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

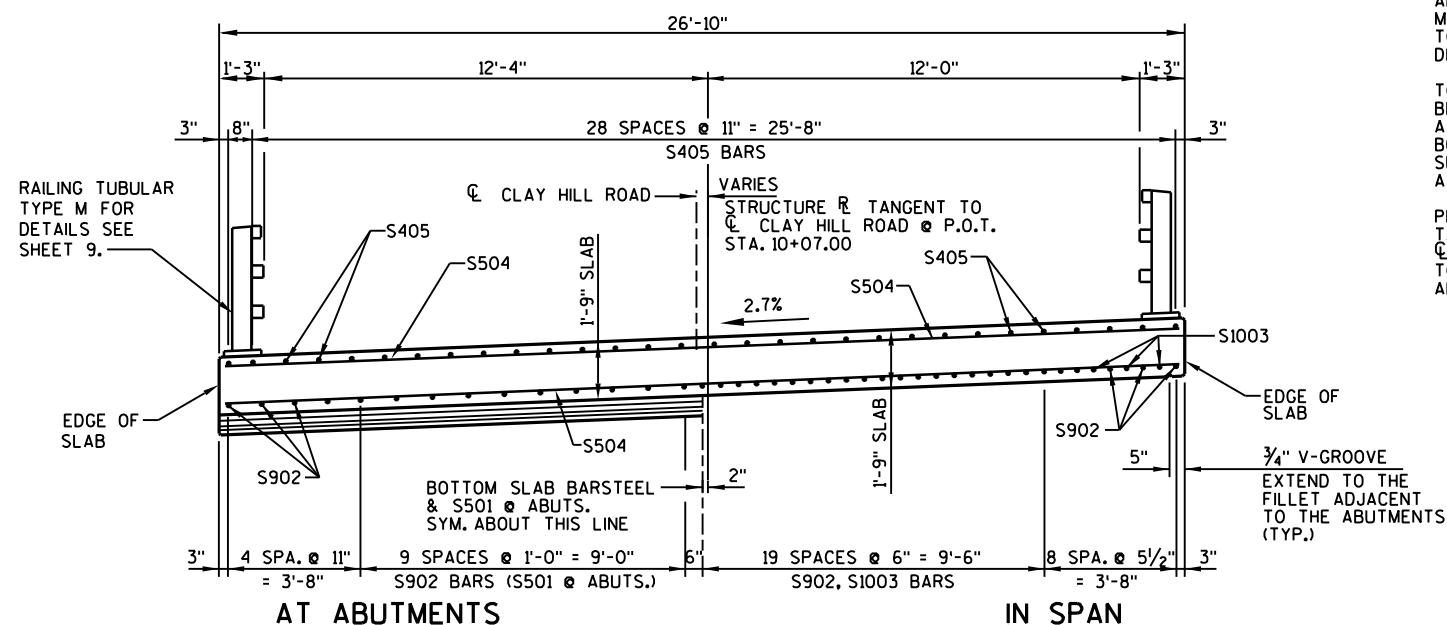
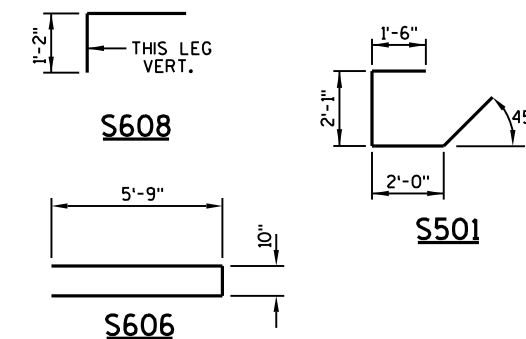
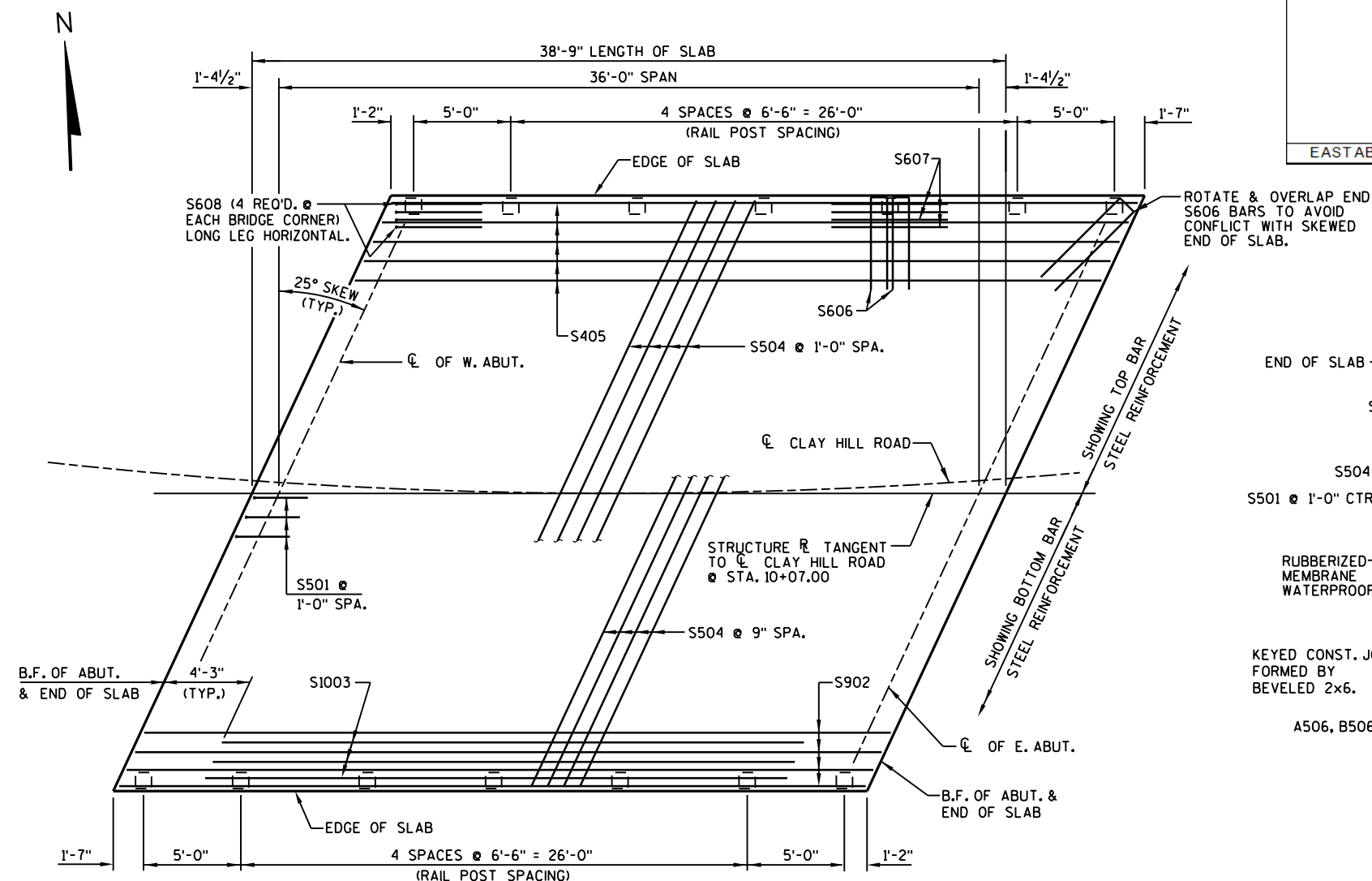
BILL OF BARS (COATED) 12,240 LBS.

MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
S501	56	7'-3"	X	DIAPHRAGM @ ABUTS. - LONGIT.
S902	28	38'-4"		SLAB BOTTOM - LONGIT.
S1003	27	30'-4"		SLAB BOTTOM - LONGIT.
S504	94	29'-3"		SLAB TOP & BOTTOM - TRANS.
S405	30	38'-4"		SLAB TOP - LONGIT.
S606	28	12'-0"	X	SLAB TOP @ RAIL POST, 2 PER POST
S607	40	6'-0"		SLAB TOP @ RAIL POST, 4 PER POST
S608	16	6'-0"	X	SLAB TOP @ RAIL END POST AS NOTED

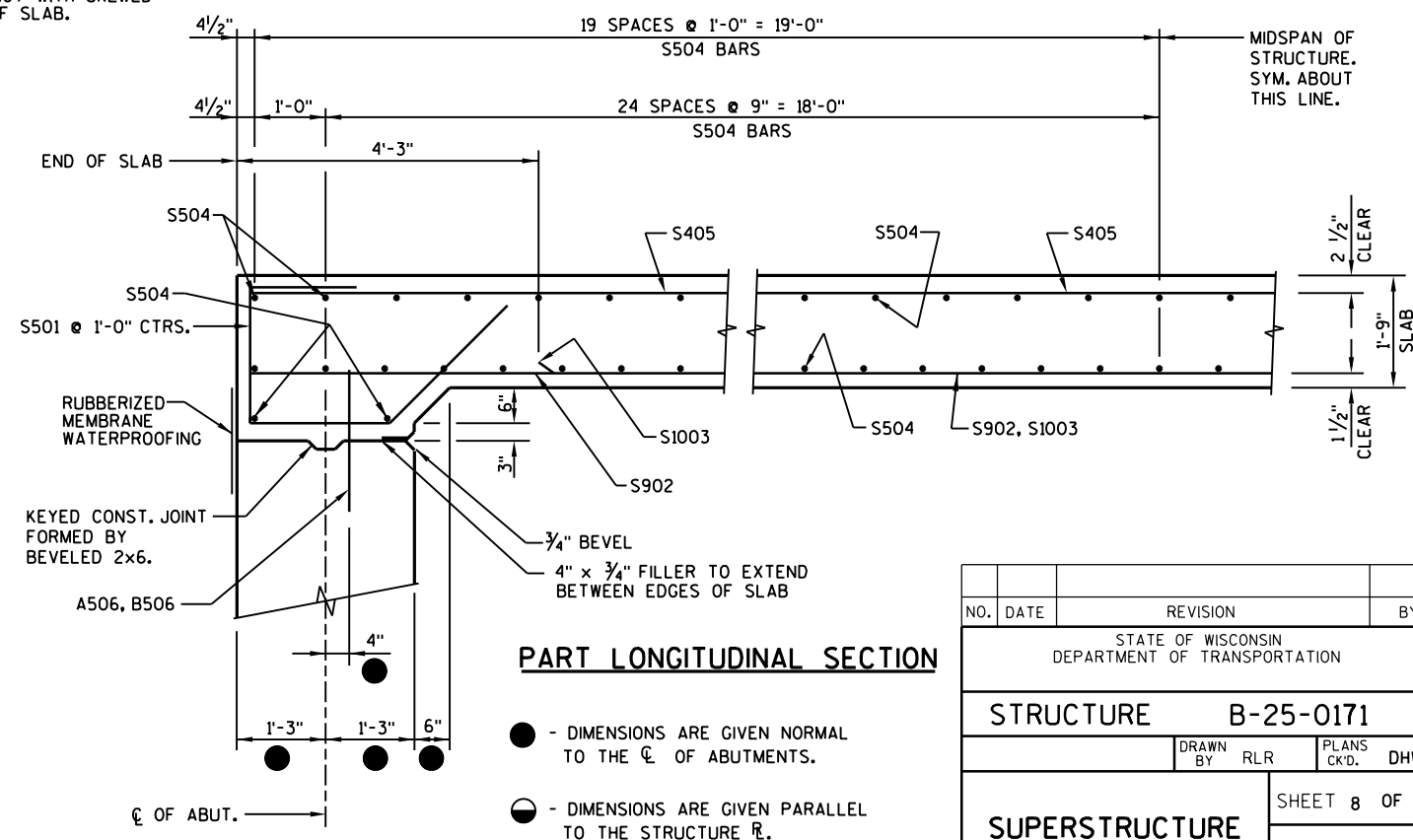
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR. EPOXY COAT ALL SUPERSTRUCTURE BAR STEEL REINFORCEMENT.

TOP OF SLAB ELEVATIONS AND CAMBER VALUES

LOCATION	SPAN POINT	SOUTH SLAB EDGE	C/L CLAY HILL ROAD	NORTH SLAB EDGE	CAMBER VALUE (INCHES)
WEST ABUT.	1.0	886.47	886.19	885.92	0.0
	1.1	886.52	886.24	885.97	0.29
	1.2	886.56	886.29	886.01	0.55
	1.3	886.61	886.34	886.06	0.75
	1.4	886.66	886.38	886.10	0.88
	1.5	886.71	886.43	886.13	0.93
	1.6	886.75	886.46	886.16	0.88
	1.7	886.80	886.50	886.19	0.75
	1.8	886.83	886.53	886.21	0.55
EAST ABUT.	1.9	886.87	886.56	886.23	0.29
	2.0	886.90	886.58	886.25	0.0

CROSS SECTION THRU BRIDGE
(LOOKING EAST)

PLAN



PART LONGITUDINAL SECTION

- - DIMENSIONS ARE GIVEN NORMAL TO THE ϕ OF ABUTMENTS.
- - DIMENSIONS ARE GIVEN PARALLEL TO THE STRUCTURE \mathcal{R} .

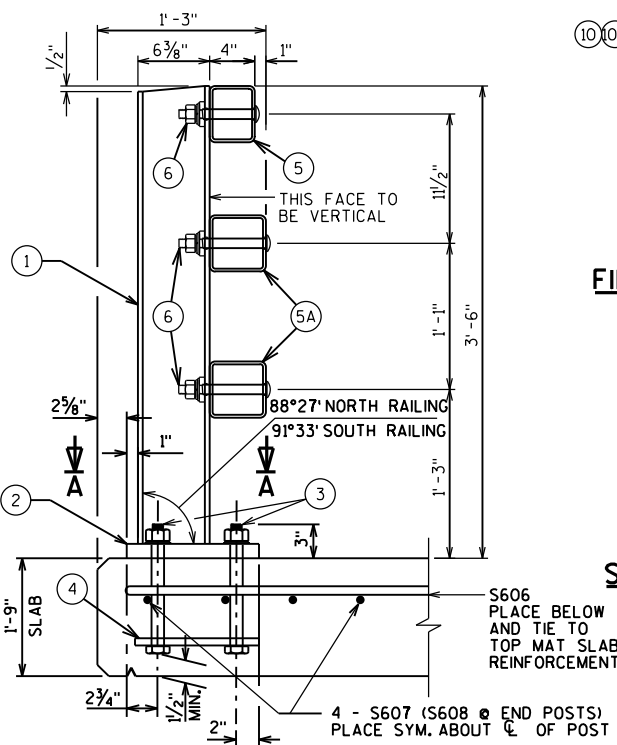
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-25-0171			
DRAWN BY RLR		PLANS CK'D. DHW	
SUPERSTRUCTURE		SHEET 8 OF 9	

LEGEND

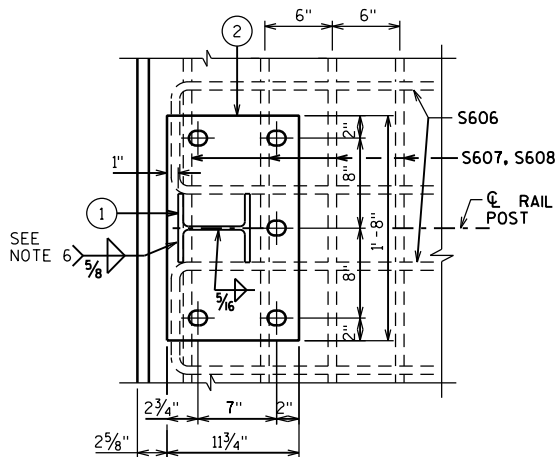
- ① W6 x 25 WITH $1\frac{1}{8}$ " x $1\frac{1}{2}$ " HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE $1\frac{1}{4}$ " x $11\frac{3}{4}$ " x 1'-8" WITH $1\frac{1}{8}$ " x $1\frac{1}{8}$ " SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ③ ASTM A449 - $1\frac{1}{4}$ " DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-3" LONG.
- ④ $\frac{5}{8}$ " x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH $1\frac{1}{8}$ " DIA. HOLES FOR ANCHOR BOLTS NO. 3.
- ⑤ TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑤A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑥ $\frac{7}{8}$ " DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, $\frac{3}{16}$ " x $1\frac{1}{8}$ " x $1\frac{1}{8}$ " WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION).
- ⑦ $\frac{1}{2}$ " THK. BACK-UP PLATE WITH 2 - $\frac{7}{8}$ " x $1\frac{1}{2}$ " THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- ⑧ 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR $\frac{7}{8}$ " DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- ⑨ SPLICE SLEEVE FABRICATED FROM $\frac{1}{4}$ " PLATE. PROVIDE "SLIDING FIT".
- ⑩ $\frac{3}{8}$ " x $3\frac{5}{8}$ " x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- ⑩A $\frac{3}{8}$ " x $2\frac{5}{8}$ " x 2'-4" PLATE USED IN NO. 5, $\frac{3}{8}$ " x $3\frac{5}{8}$ " x 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- ⑪ $\frac{7}{8}$ " ϕ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE $\frac{5}{16}$ " x $1\frac{1}{4}$ " LONGIT. SLOTTED HOLES AT FIELD JOINTS IN PLATE NO. 10A.
- ⑫ $\frac{7}{8}$ " DIA. x $1\frac{1}{2}$ " LONG THREADED SHOP WELDED STUDS (2 REQ'D).
- ⑬ $\frac{3}{8}$ " x 8" x 1'-6" ANCHOR PLATE, BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- ⑭ $\frac{7}{8}$ " DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQUIRED).
- ⑮ 1" ϕ HOLES IN TUBES NO. 5A FOR $\frac{7}{8}$ " DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

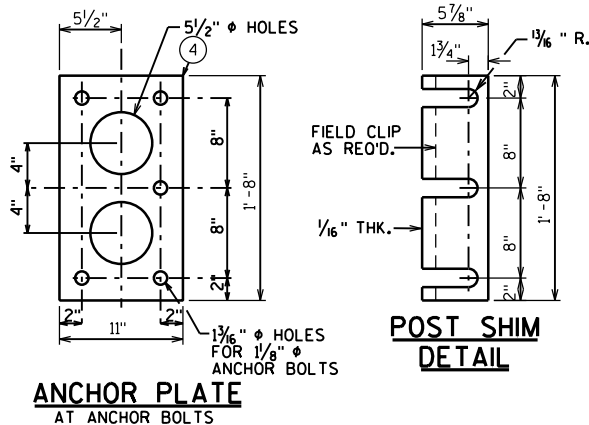
- BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-25-0171" WHICH INCLUDES ALL ITEMS SHOWN.
- RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
- THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL $\frac{1}{8}$ TURN.
- RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.
- ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
- WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
- FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
- POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
- ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
- PAINTING IS NOT REQUIRED.
- THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
- THRIE BEAM RAIL ATTACHMENT IS INCLUDED FOR FUTURE USE. ENSURE PROPER FIT BUT DO NOT MOUNT TO RAILING.



SECTION THRU RAILING ON SLAB

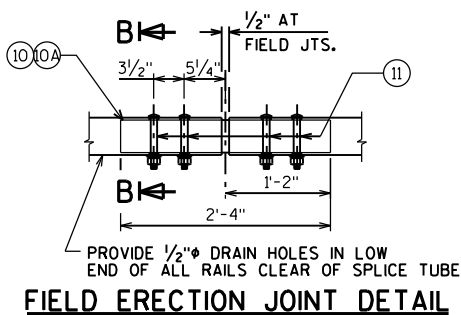


SECTION A-A

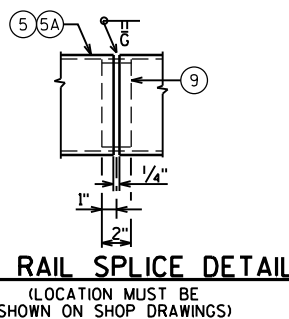


ANCHOR PLATE AT ANCHOR BOLTS

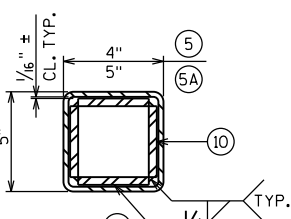
POST SHIM DETAIL



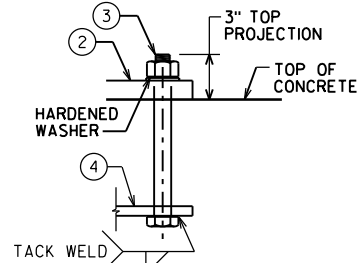
FIELD ERECTION JOINT DETAIL



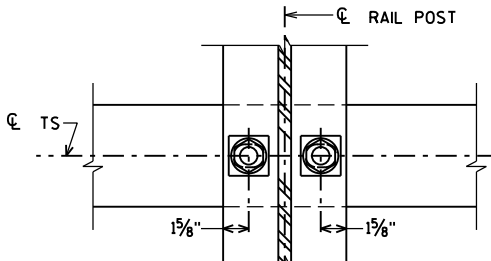
SHOP RAIL SPLICE DETAIL



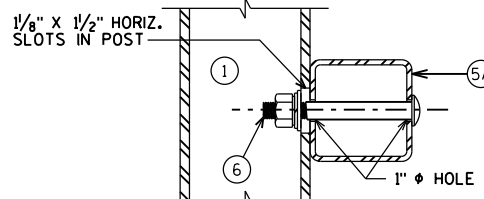
SECTION B-B



ANCHOR BOLTS

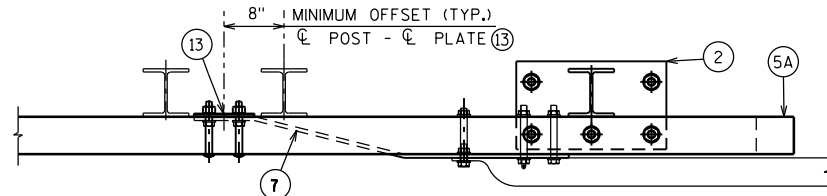


SECTION THRU POST WEB



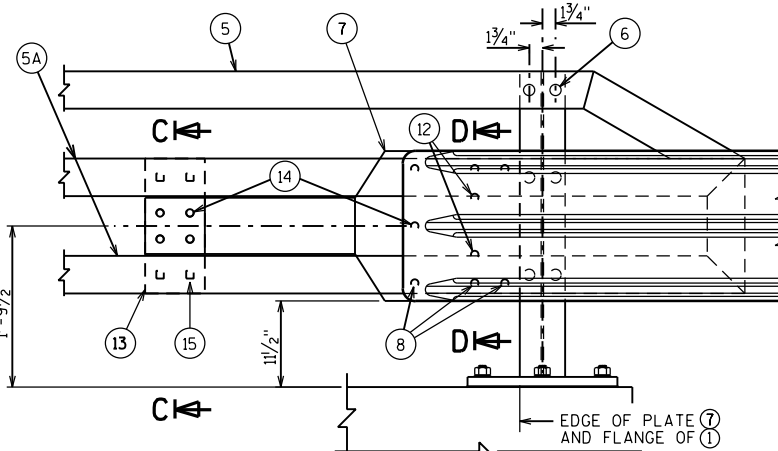
SECTION THRU RAIL

TYPICAL RAIL TO POST CONNECTIONS



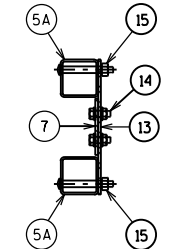
TOP VIEW AT END POST

(THRIE BEAM RAIL ATTACHMENT)

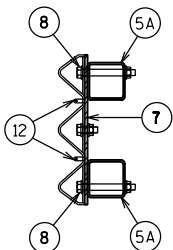


DETAIL AT END POST

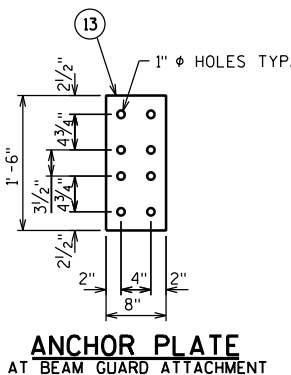
(THRIE BEAM RAIL ATTACHMENT)



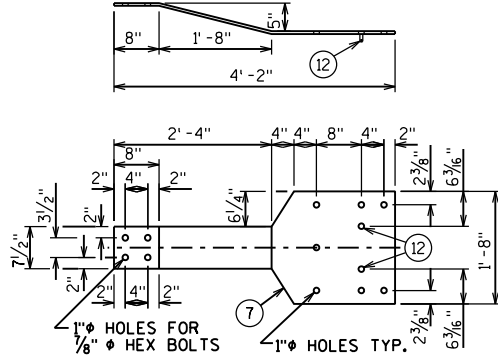
SECTION C-C



SECTION D-D

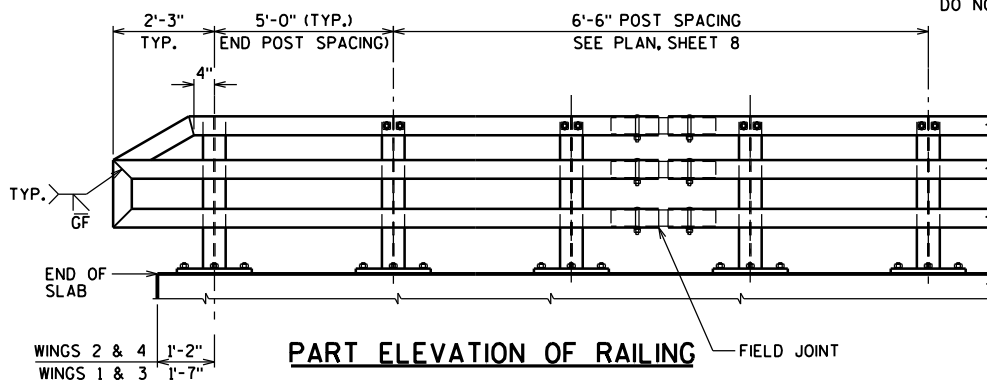


ANCHOR PLATE AT BEAM GUARD ATTACHMENT



BACK-UP PLATE DETAIL

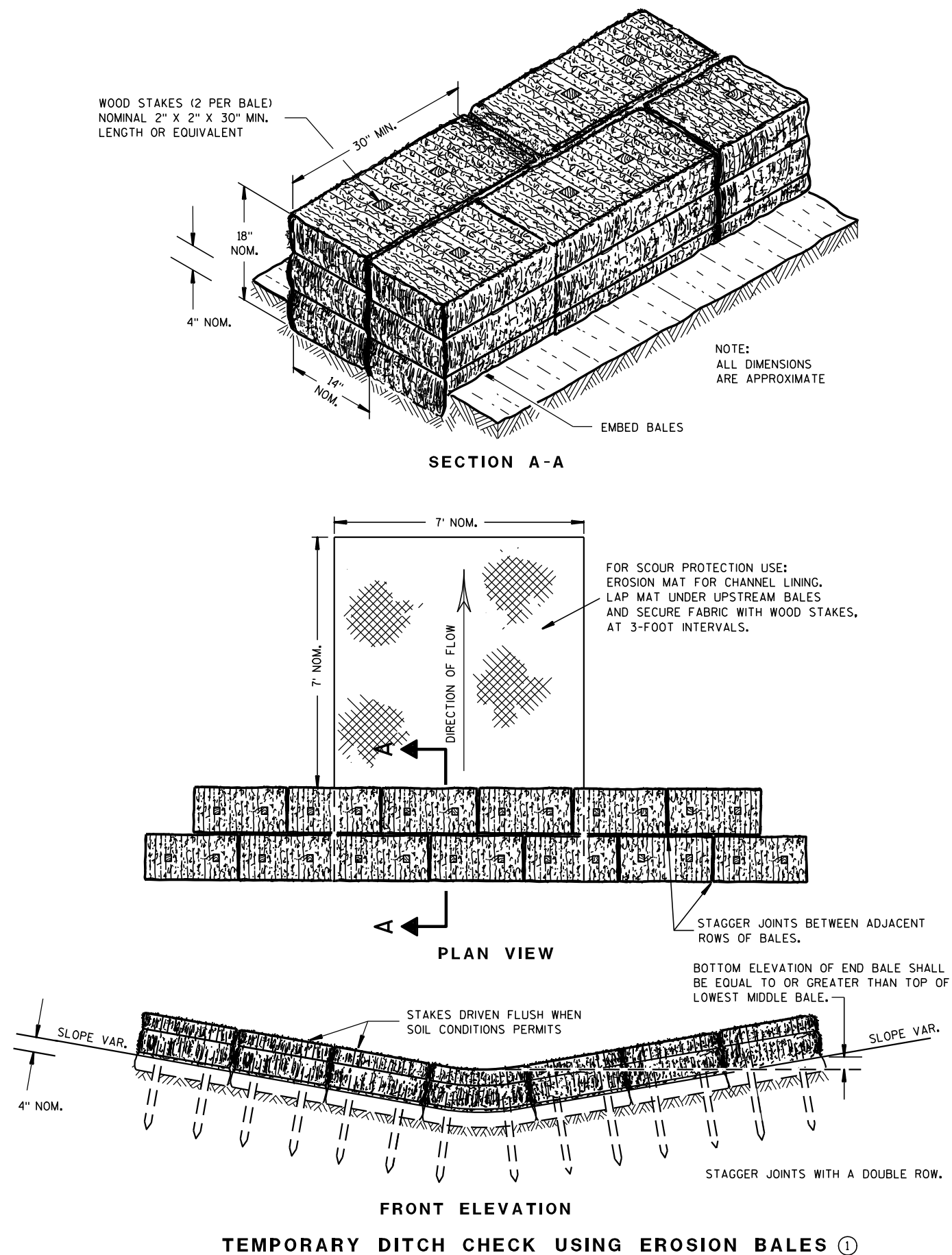
AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

FIELD JOINT

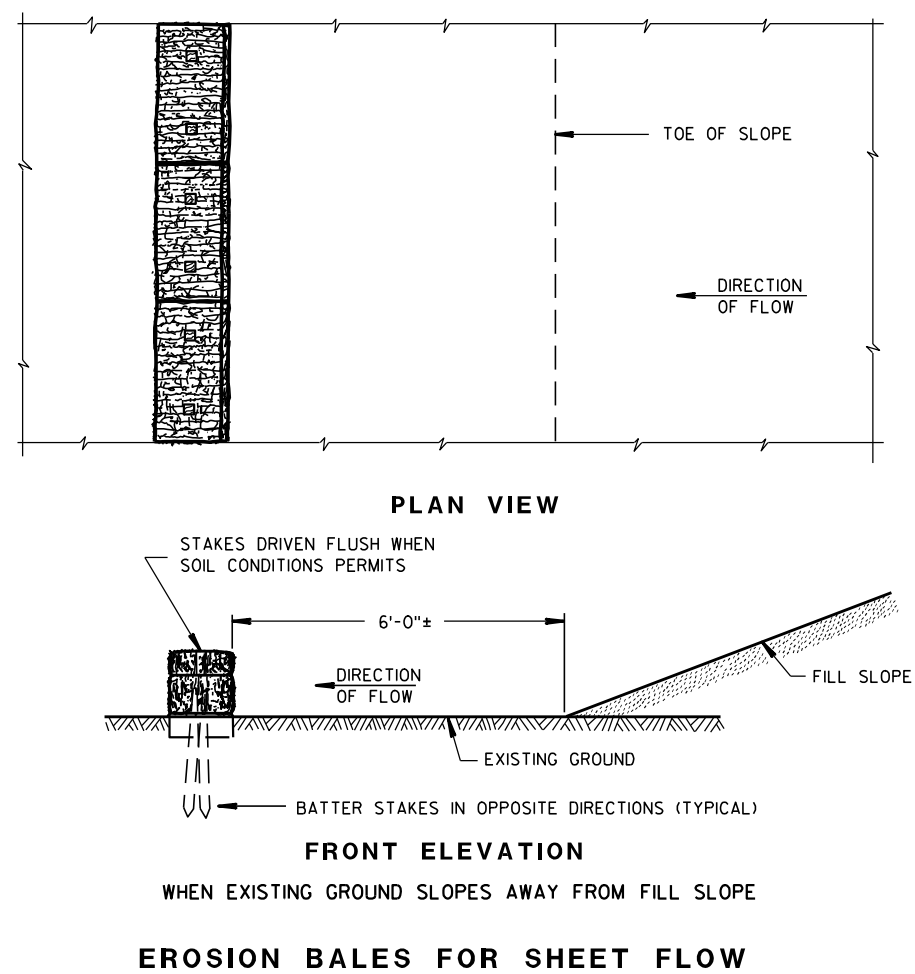
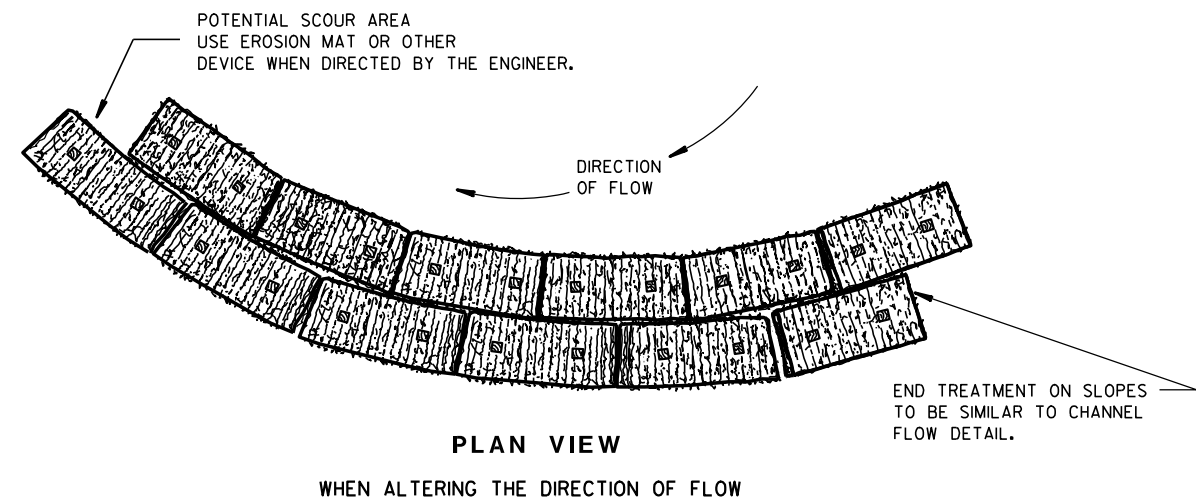
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-25-0171	
DRAWN BY		RLR	PLANS CK'D. DHW
RAILING TUBULAR TYPE M		SHEET 9 OF 9	



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

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

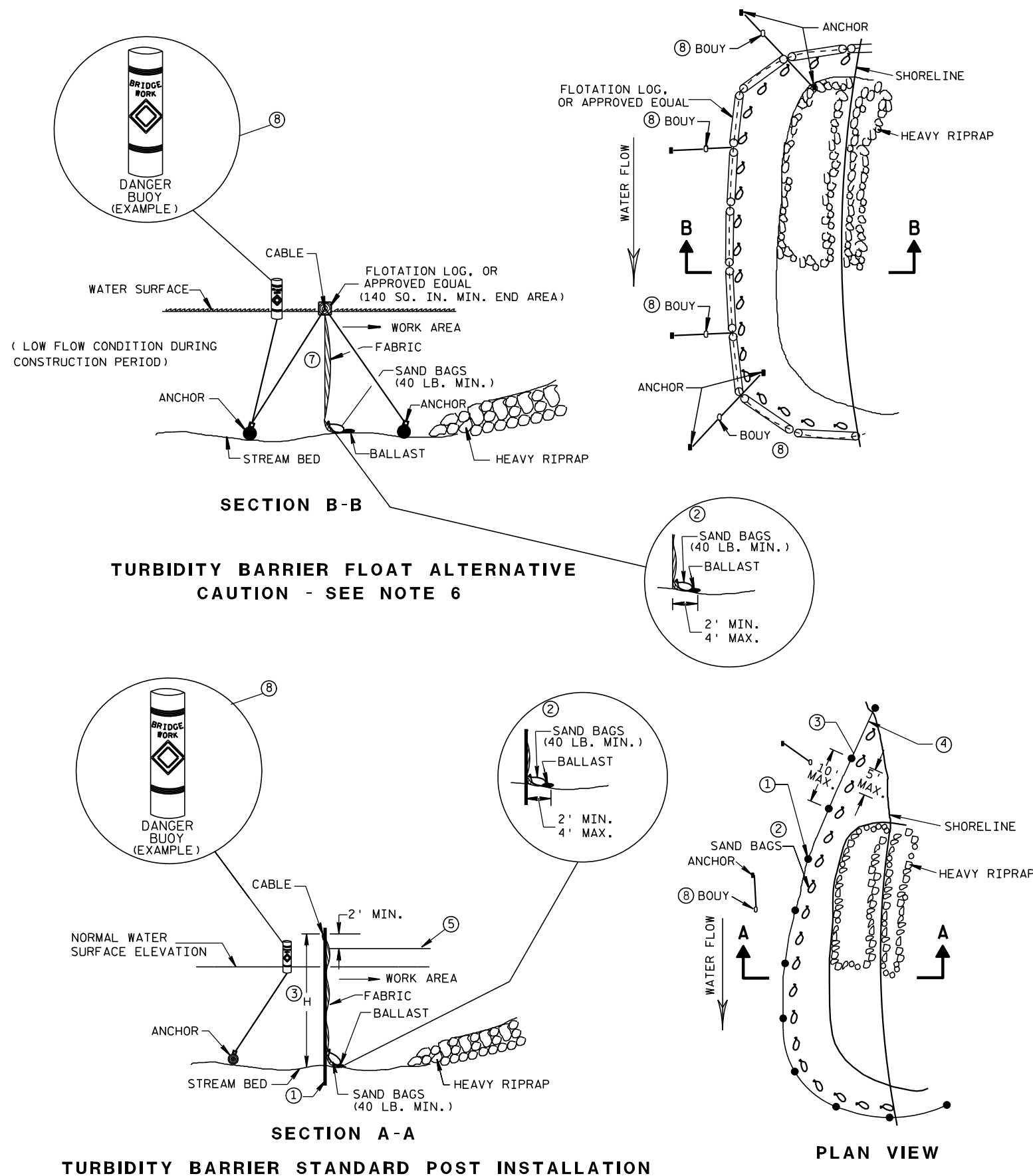
FHWA



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



SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>4-29-05</u> DATE	<u>/S/ Beth Cannestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER

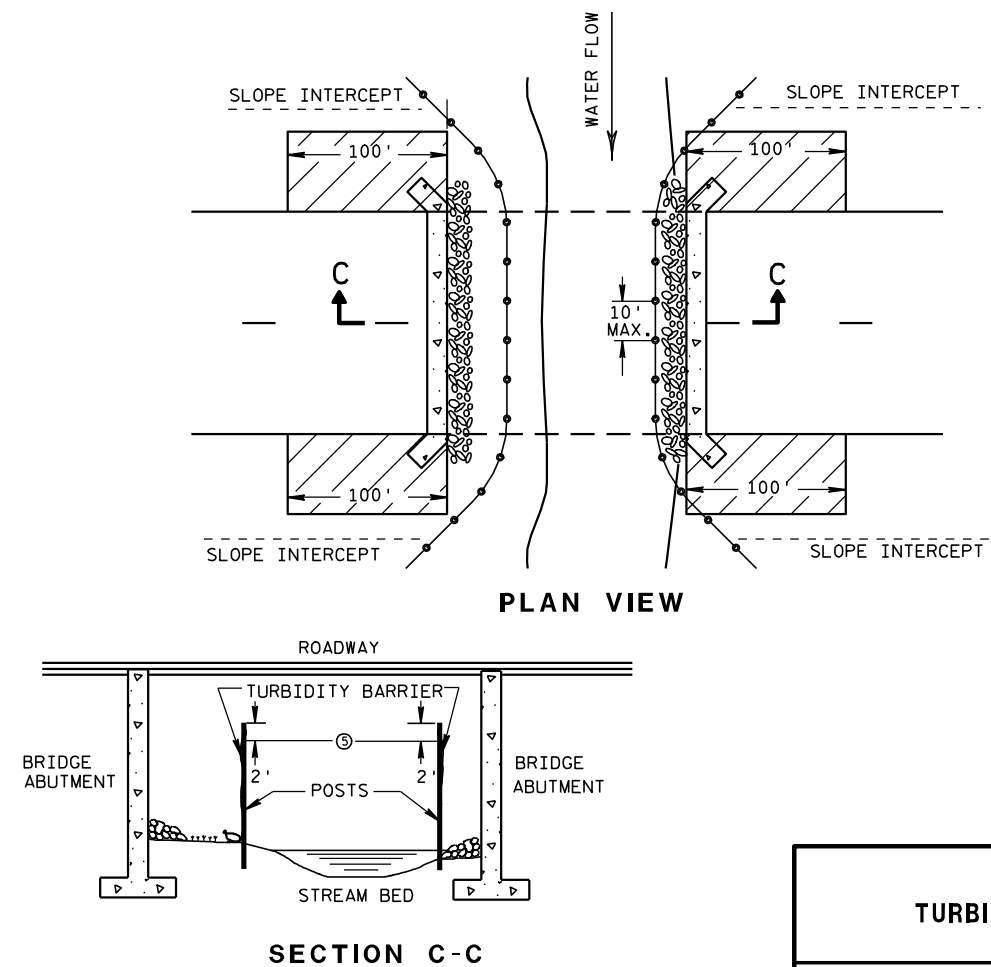


GENERAL NOTES

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

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

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



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

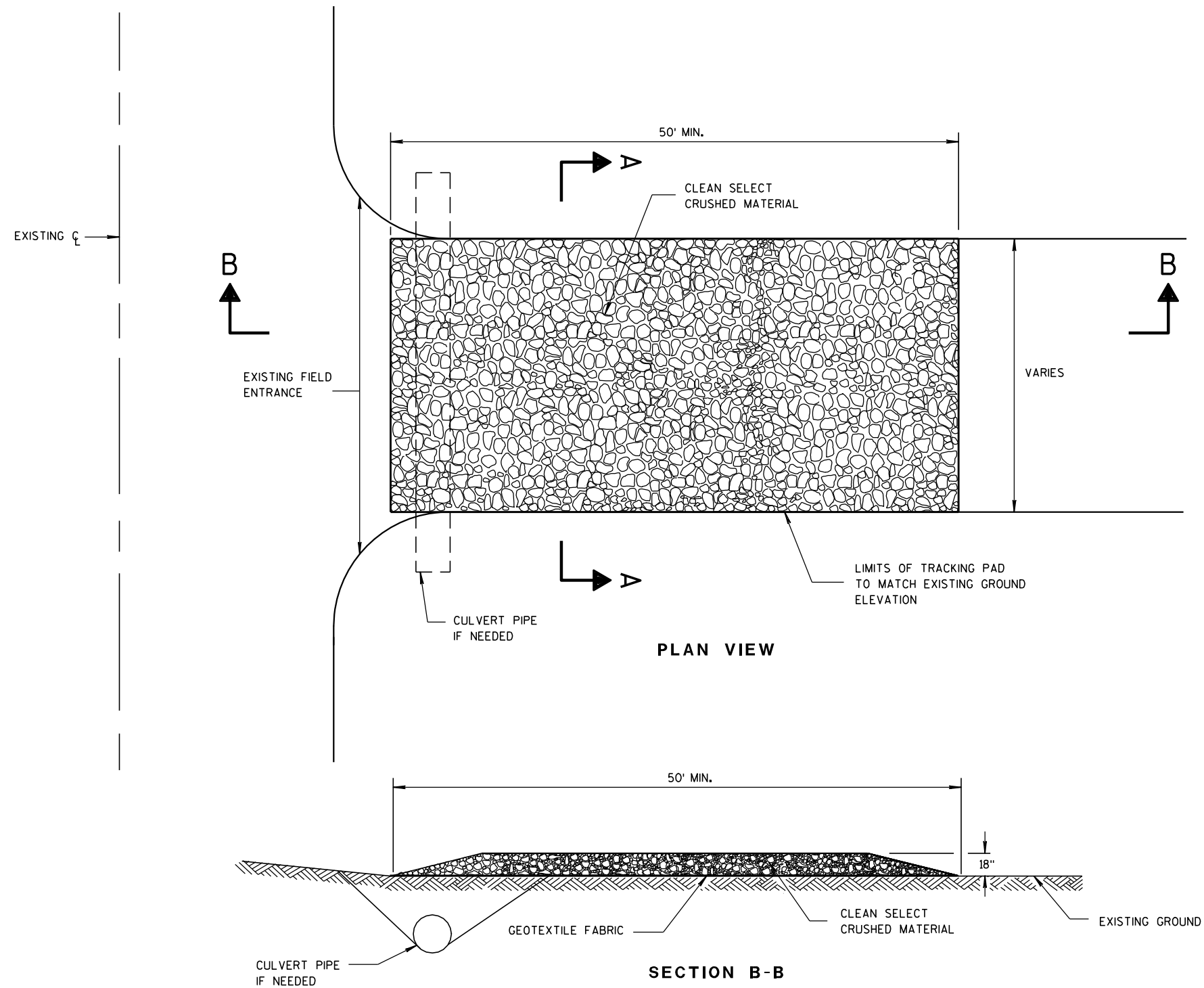
APPROVED

6/04/02

DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



TRACKING PAD

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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

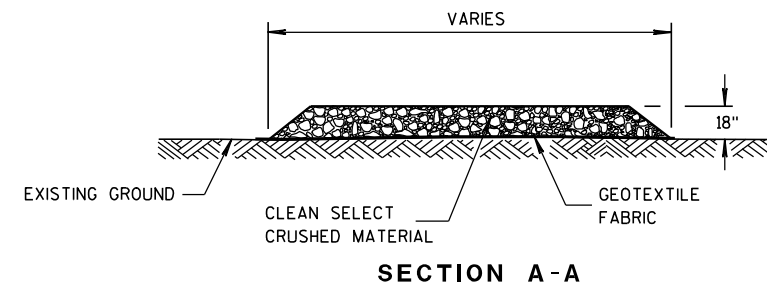
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.

**TRACKING PAD**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/24/2011

DATE

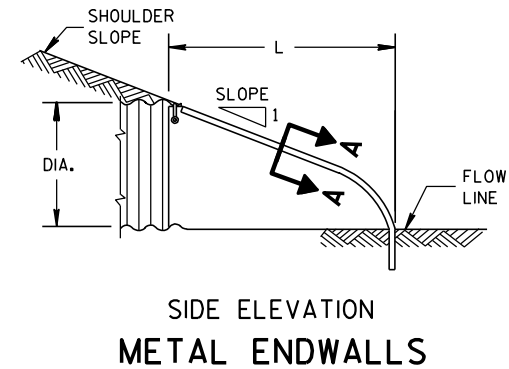
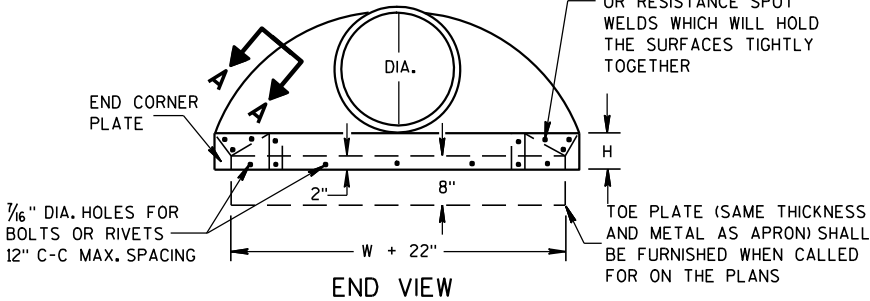
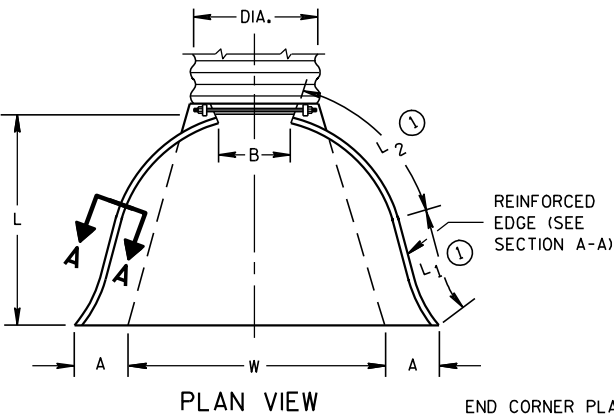
FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT
ENGINEER

METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1½")	L ₁ ①	L ₂ ①	W (±2")			
12	.064	.060	6	6	6	21	12	17½	24	2½ to 1	1 Pc.	
15	.064	.060	7	8	6	26	14	21¾	30	2½ to 1	1 Pc.	
18	.064	.060	8	10	6	31	15	28¼	36	2½ to 1	1 Pc.	
21	.064	.060	9	12	6	36	18	29⅝	42	2½ to 1	1 Pc.	
24	.064	.075	10	13	6	41	18	37¼	48	2½ to 1	1 Pc.	
30	.079	.075	12	16	8	51	18	52¼	60	2½ to 1	1 Pc.	
36	.079	.105	14	19	9	60	24	59¾	72	2½ to 1	2 Pc.	
42	.109	.105	16	22	11	69	24	75⅝	84	2½ to 1	2 Pc.	
48	.109	.105	18	27	12	78	24	81	90	2¼ to 1	3 Pc.	
54	.109	.105	18	30	12	84	30	85½	102	2¼ to 1	3 Pc.	
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.	
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.	
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.	
78	.109x	.105x	18	42	12	87	—	—	132	1½ to 1	3 Pc.	
84	.109x	.105x	18	45	12	87	—	—	138	1½ to 1	3 Pc.	
90	.109x	.105x	18	37	12	87	—	—	144	1½ to 1	3 Pc.	
96	.109x	.105x	18	35	12	87	—	—	150	1½ to 1	3 Pc.	

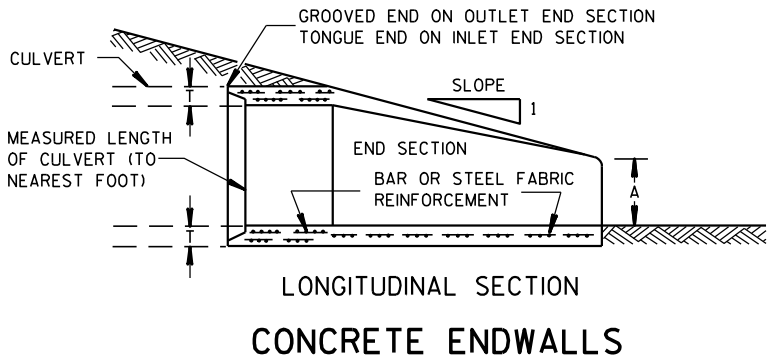
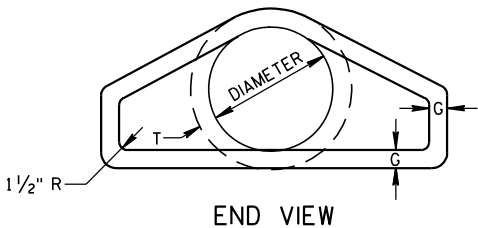
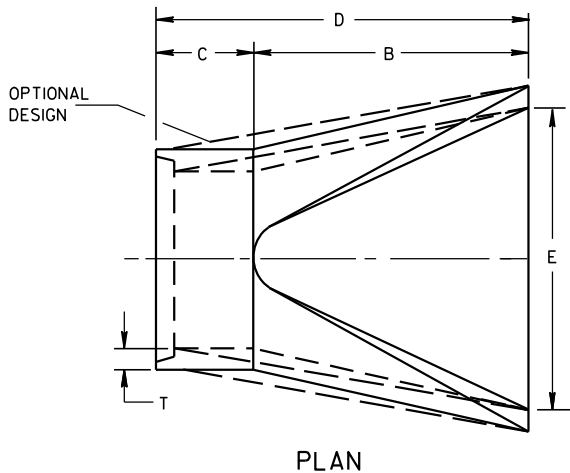
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



METAL ENDWALLS

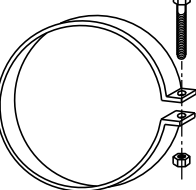
REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ¹ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43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

* MINIMUM
** MAXIMUM

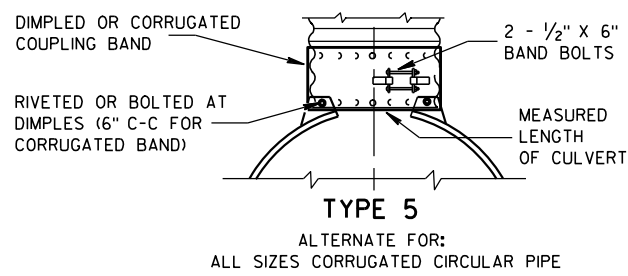
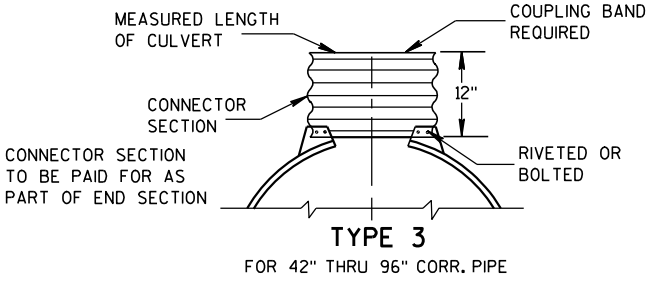
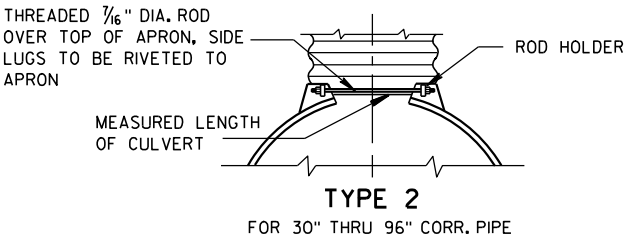
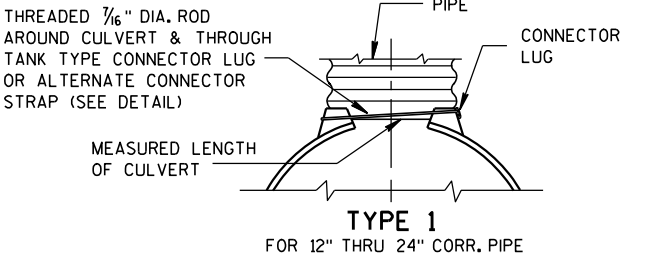


CONCRETE ENDWALLS

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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



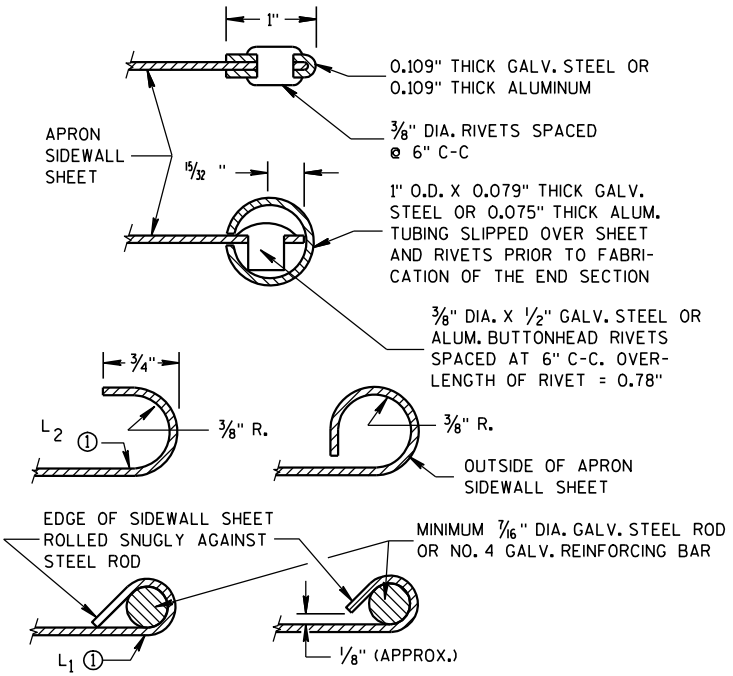
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

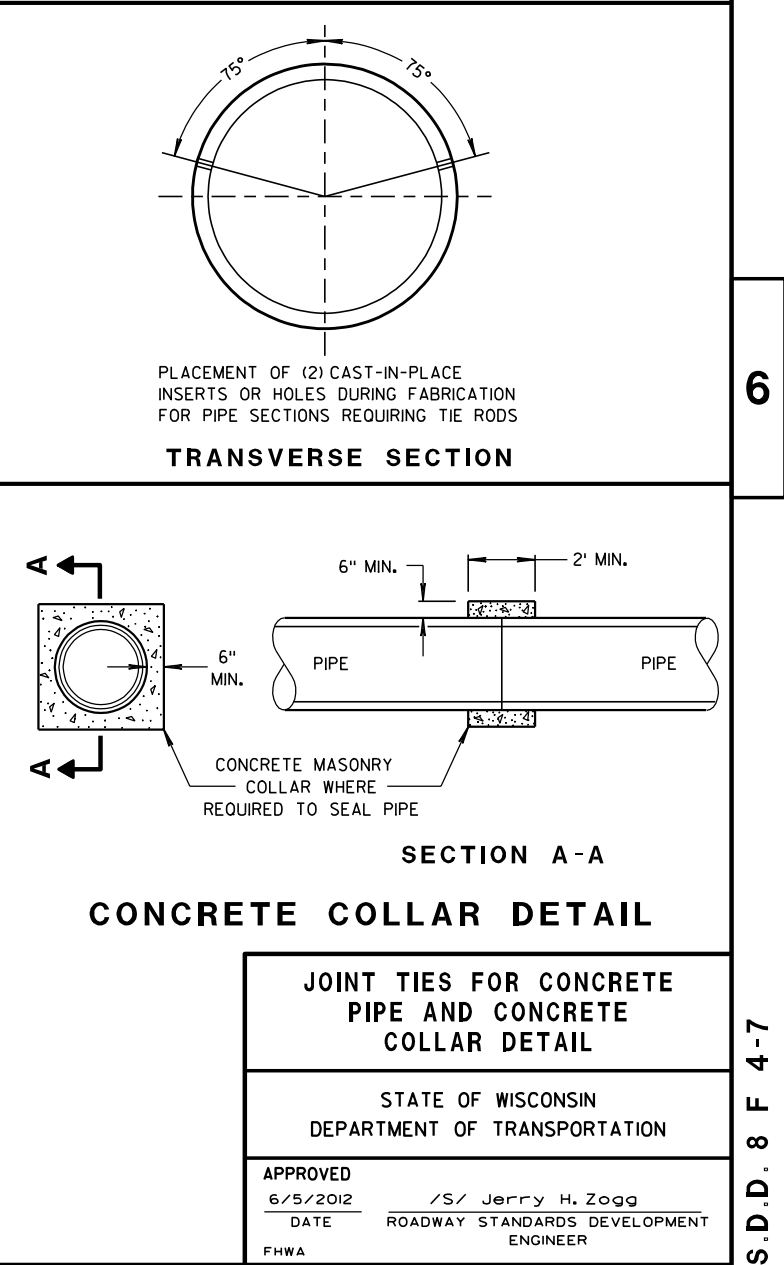
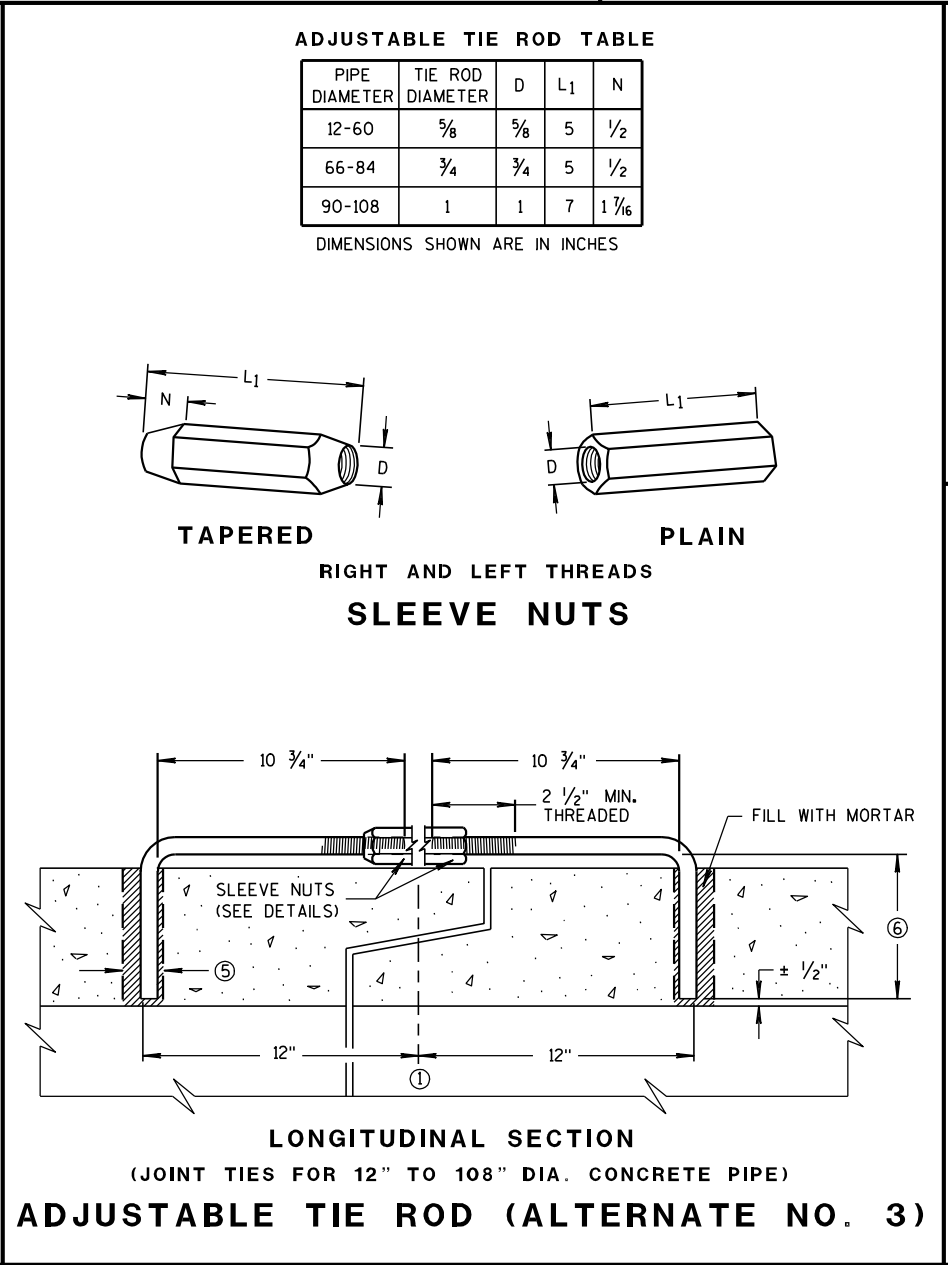
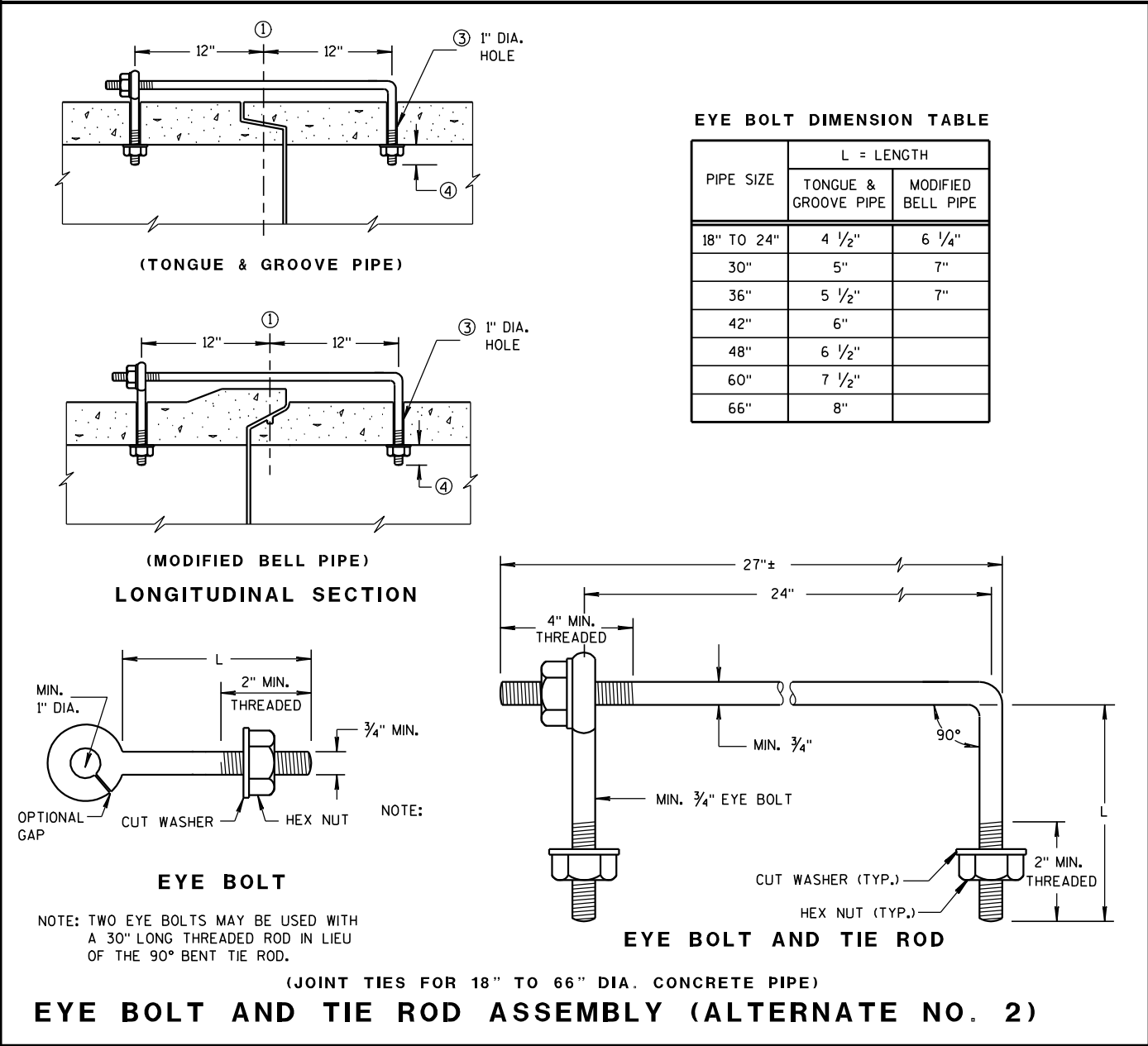
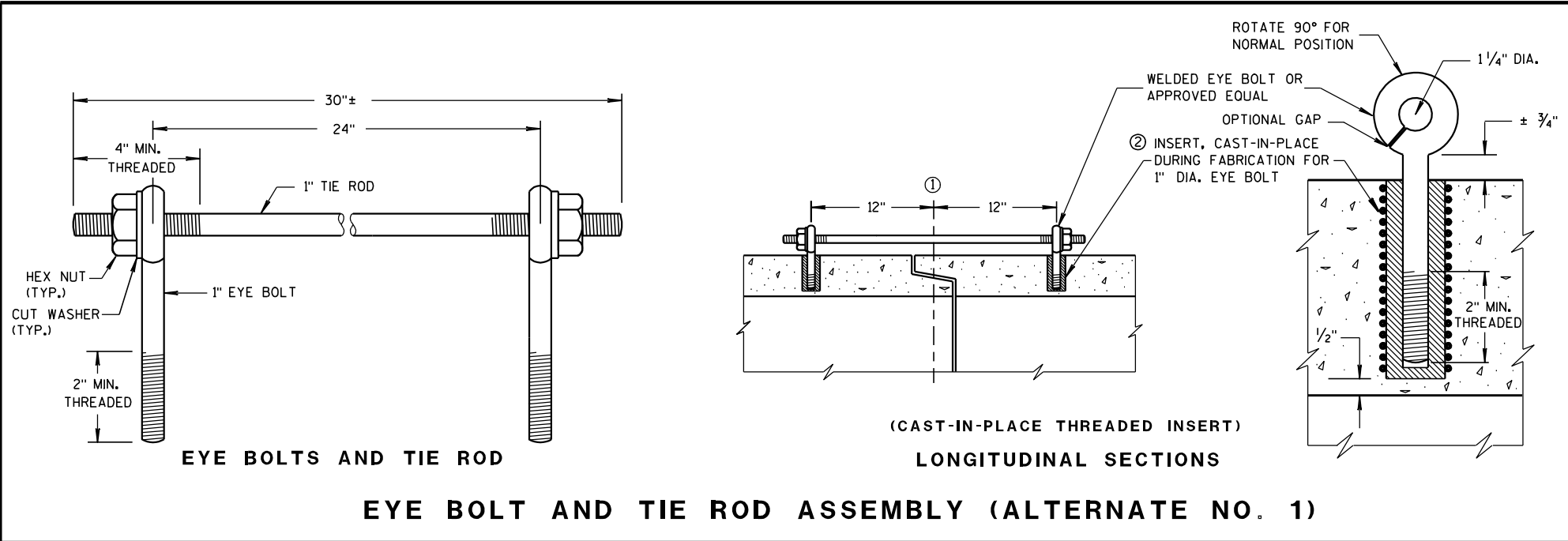
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

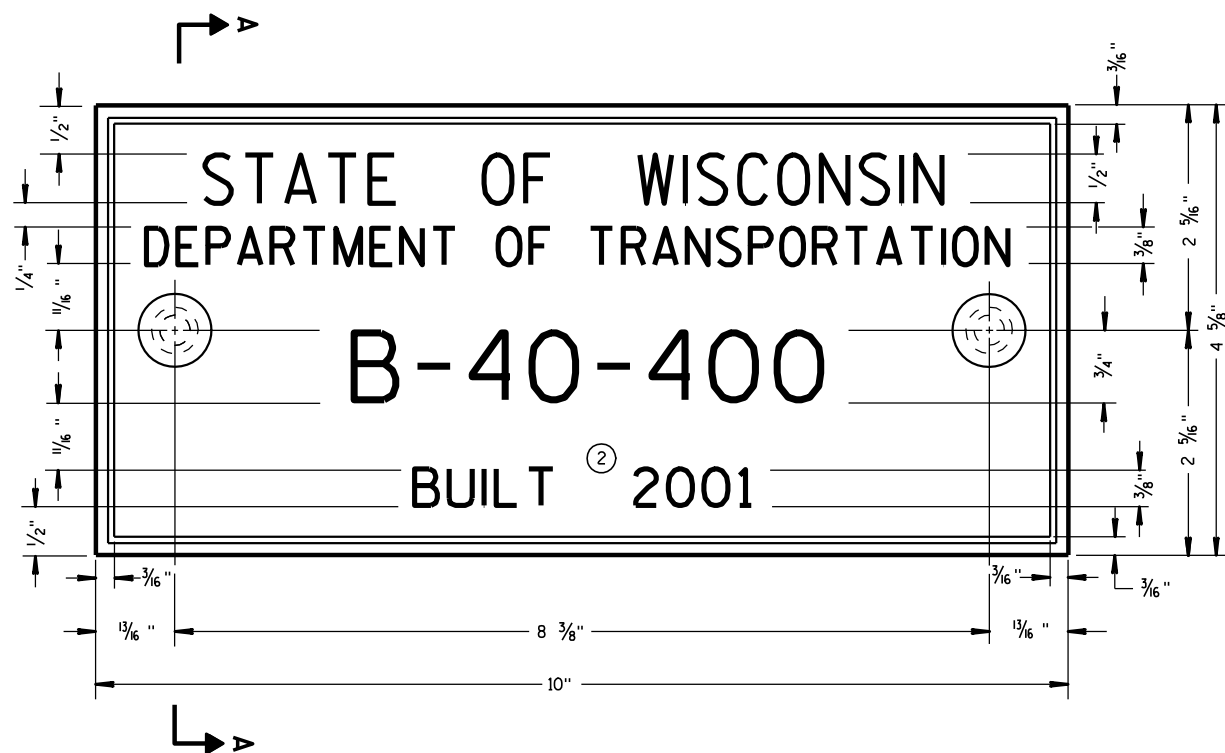
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR
CULVERT PIPE

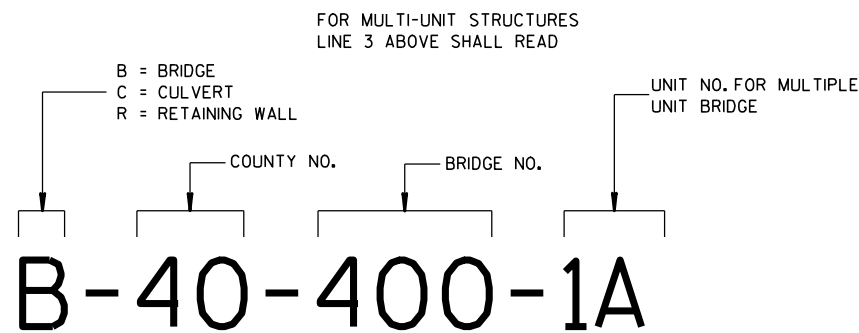
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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





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



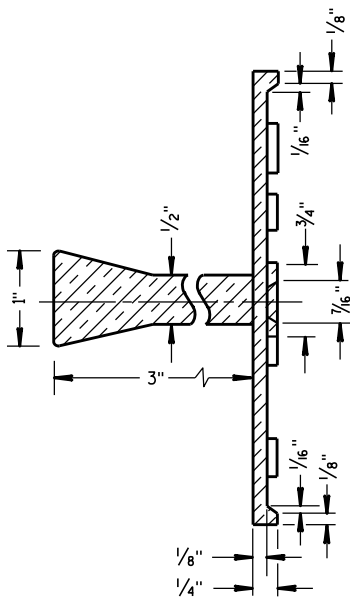
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

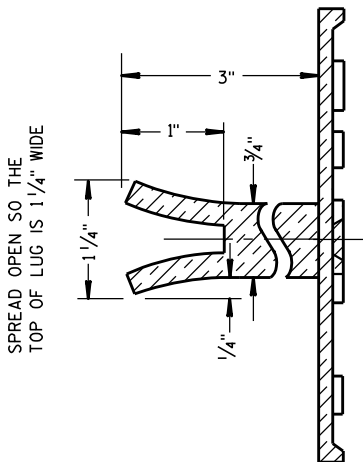
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.

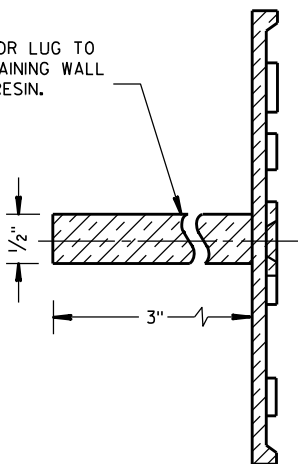


SECTION A-A



ALTERNATE LUG

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

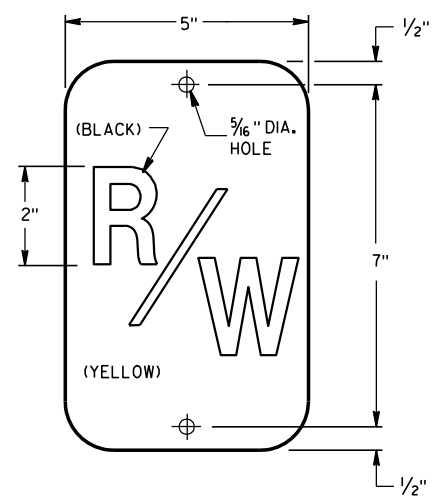
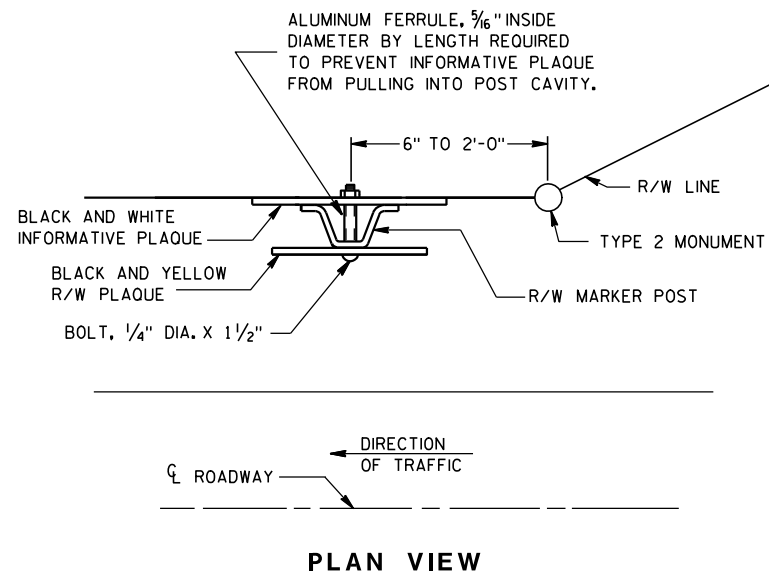


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

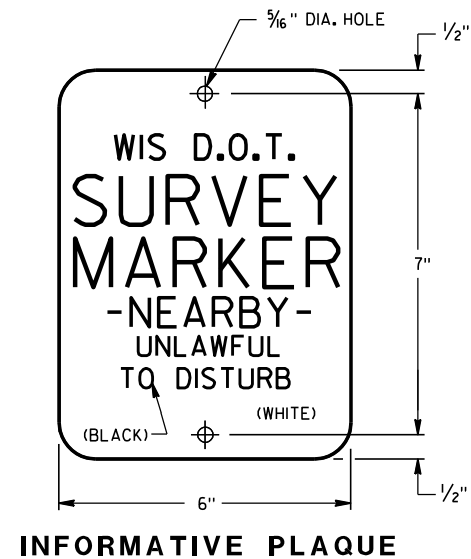
**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/26/10
DATE
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA



THE RIGHT-OF-WAY PLAQUE AND INFORMATIVE PLAQUE WILL BE FURNISHED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.



GENERAL NOTES

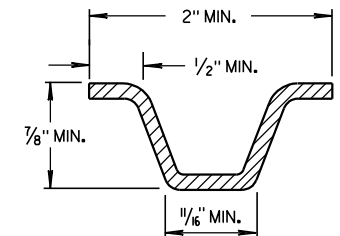
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

A STEEL MARKER POST FOR RIGHT-OF-WAY SHALL BE PLACED IN THE RIGHT-OF-WAY, WITH THE BACK OF THE POST ON THE LONGER RIGHT-OF-WAY TANGENT, 6 INCHES TO 24 INCHES FROM EACH TYPE 2 MONUMENT TO SERVE AS A GUARD POST, AND AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

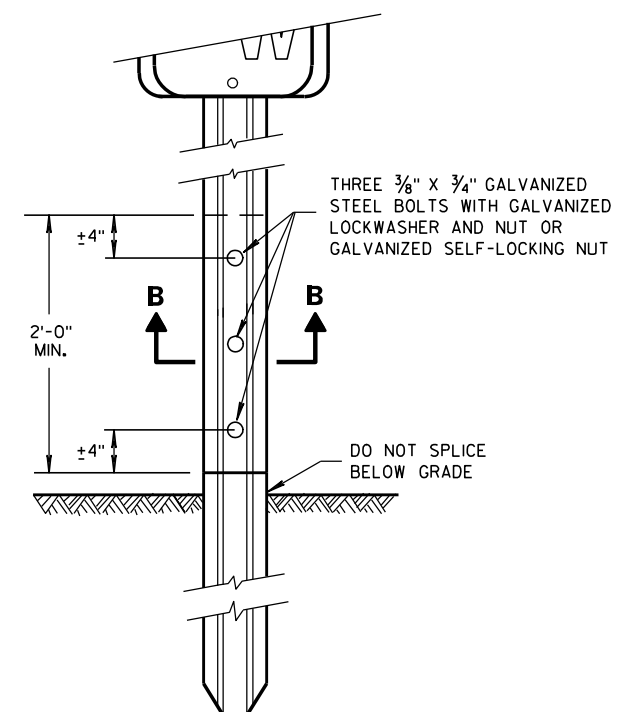
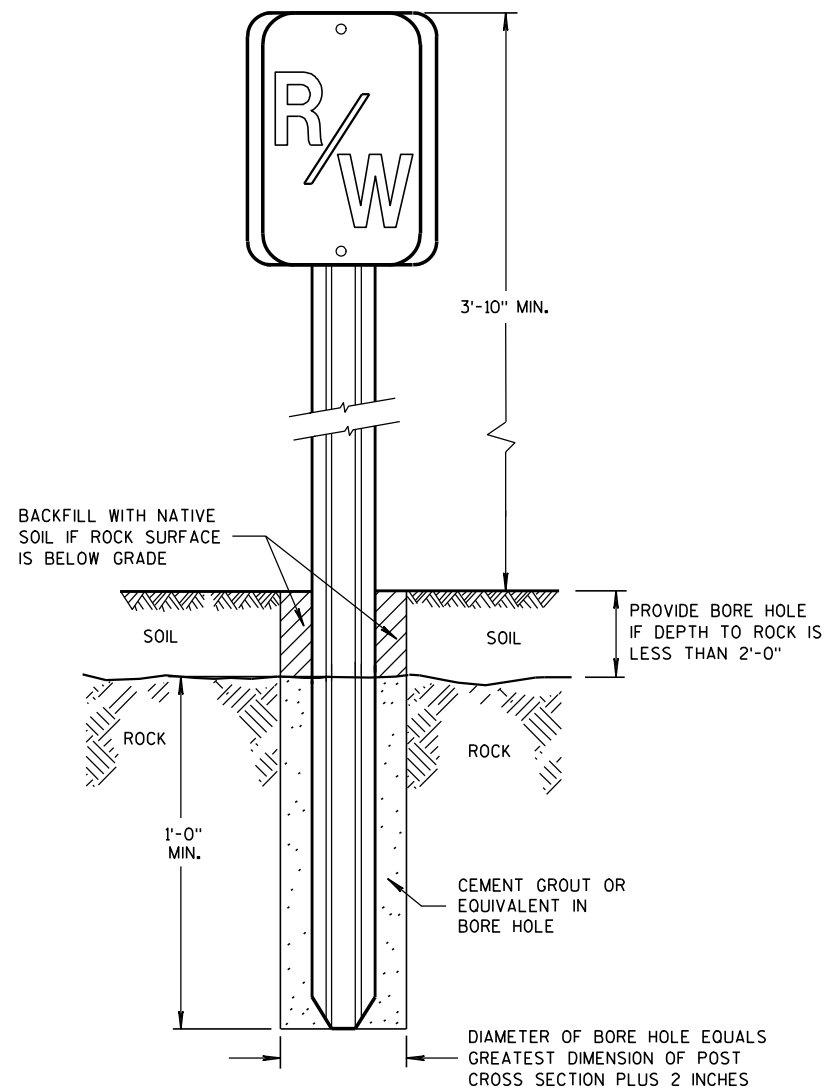
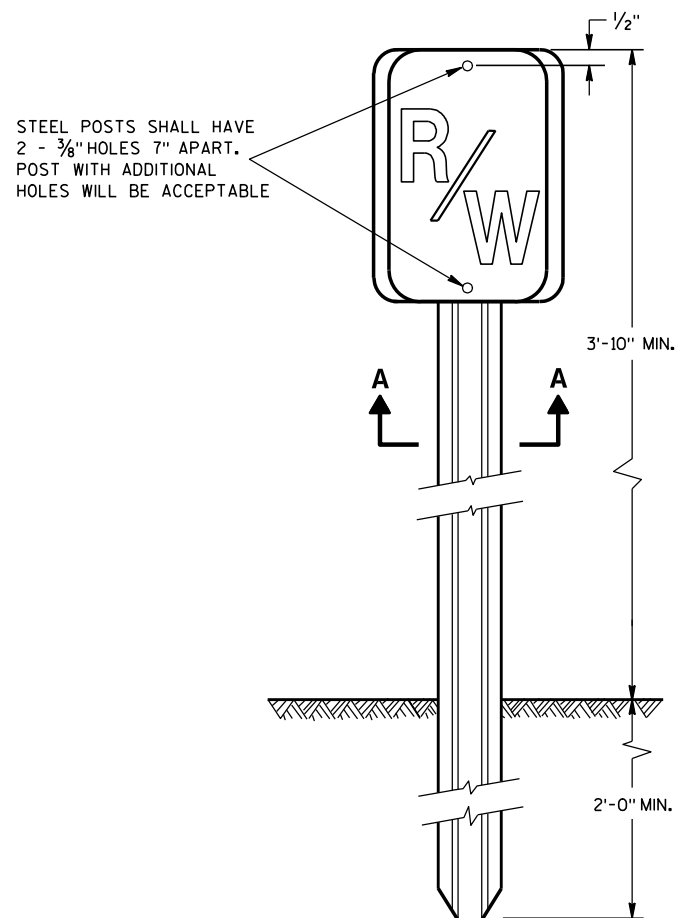
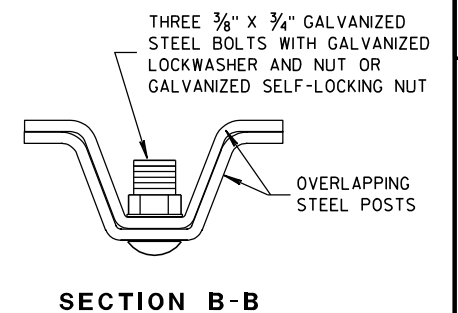
THE "R/W" PLAQUE SHALL FACE THE ROADWAY AND THE INFORMATIVE PLAQUE SHALL FACE AWAY FROM THE ROADWAY. R/W AND INFORMATIVE PLAQUES WILL BE FURNISHED BY THE DEPARTMENT OF TRANSPORTATION.

STEEL MARKER POSTS SHALL MEET THE MINIMUM MATERIAL REQUIREMENTS FOR STEEL DELINEATOR POSTS; EXCEPT POSTS PAINTED WITH FEDERAL YELLOW ENAMEL NEED NOT BE ZINC COATED.

- ① IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK TO A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 3'-10" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR. FILL THE BORE HOLE WITH CEMENT GROUT, OR EQUIVALENT, DEPENDING ON THE STABILITY OF THE ROCK,



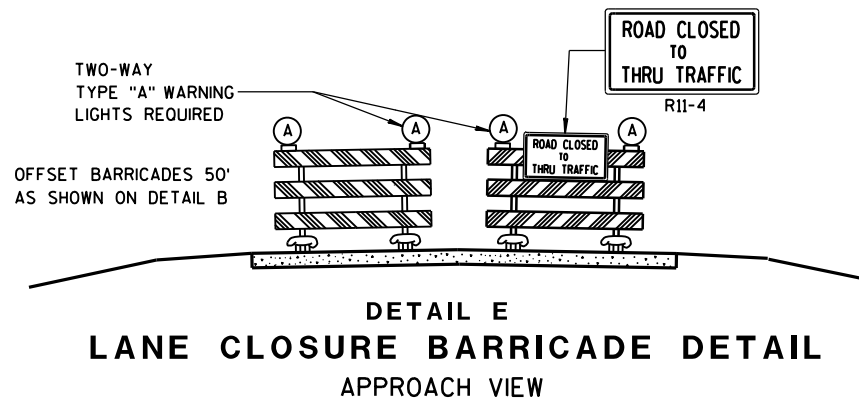
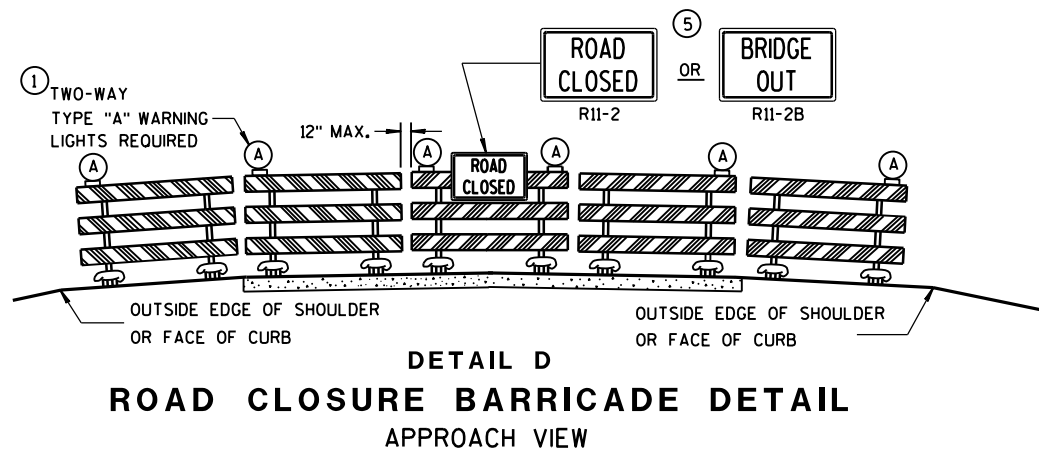
MIN. WEIGHT 1.12 LB./FT.
SECTION A-A



MARKER POST FOR RIGHT-OF-WAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/27/09 /S/ Ray Kumapayi
DATE CHIEF SURVEYING AND MAPPING ENGINEER
FHWA



SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

R11-2 SHALL BE 48" X 30".

R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".

M4-9 SHALL BE 30" X 24".

M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)

M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)

M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)

M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

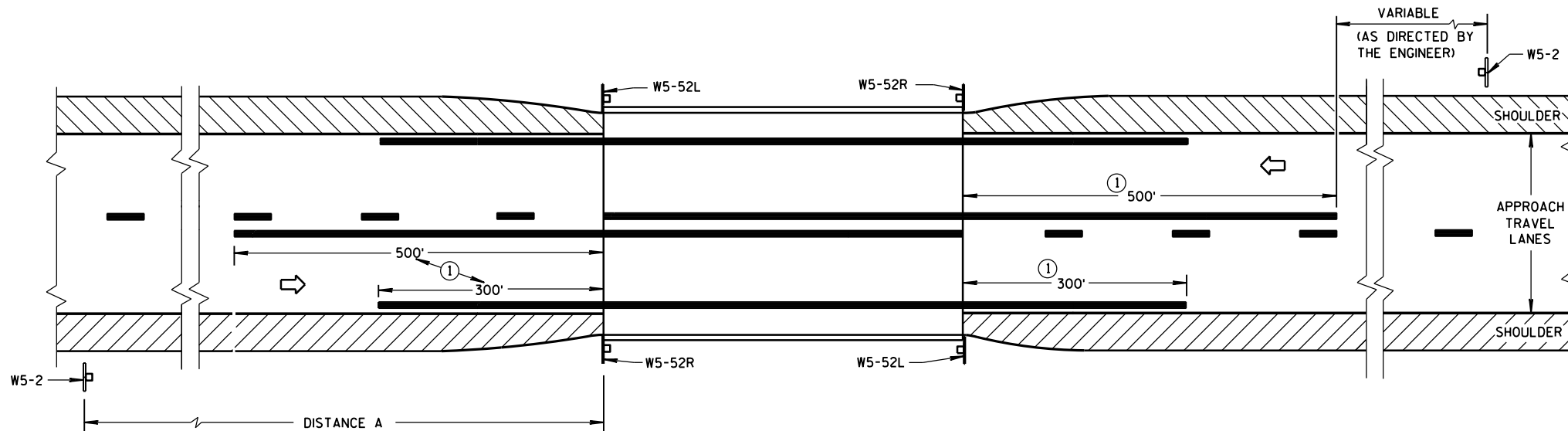
R1-1 SHALL BE 36" X 36".

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



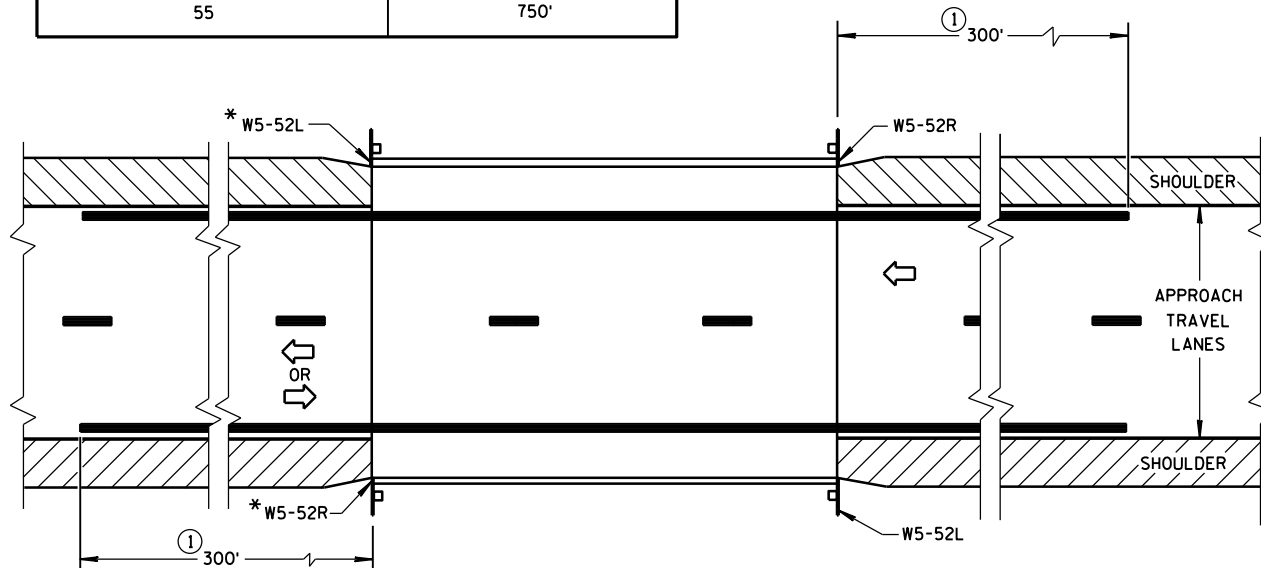
SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET

DISTANCE TABLE

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

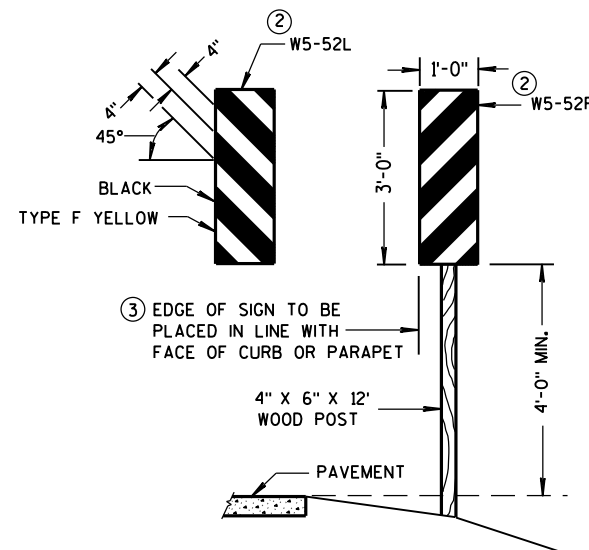


*OMIT ON ONE-WAY TRAVELLED WAYS

SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.



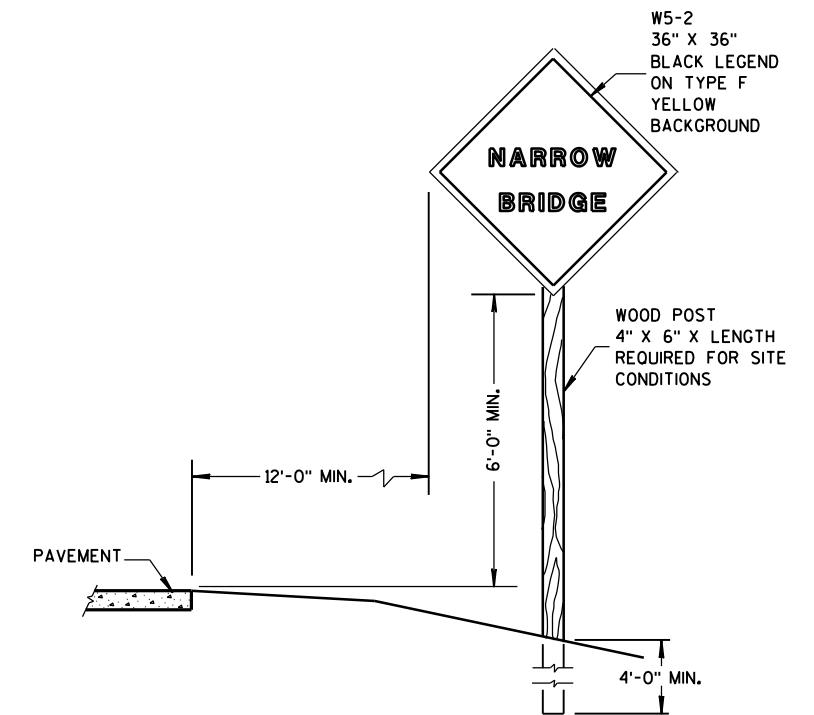
OBJECT MARKER PLACEMENT

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.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

- ① MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.
- ② FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.
- ③ LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.



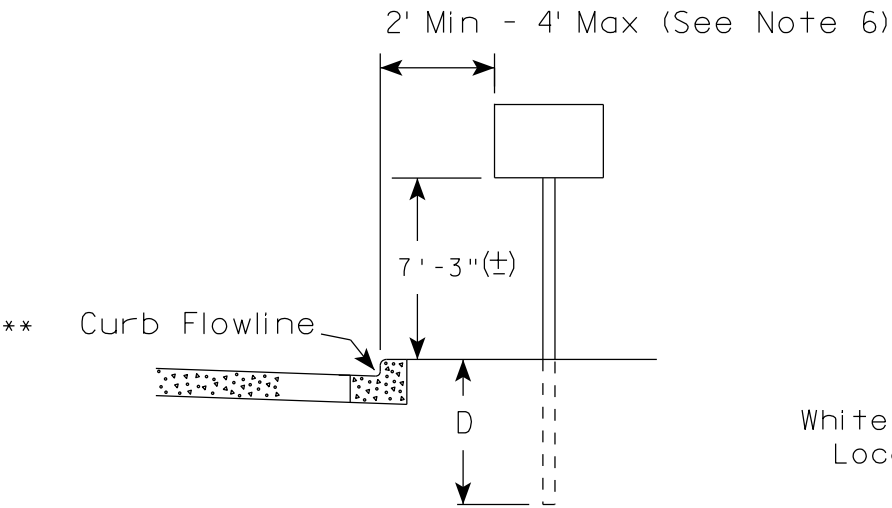
SIGN PLACEMENT

SIGNING & MARKING FOR TWO LANE BRIDGES

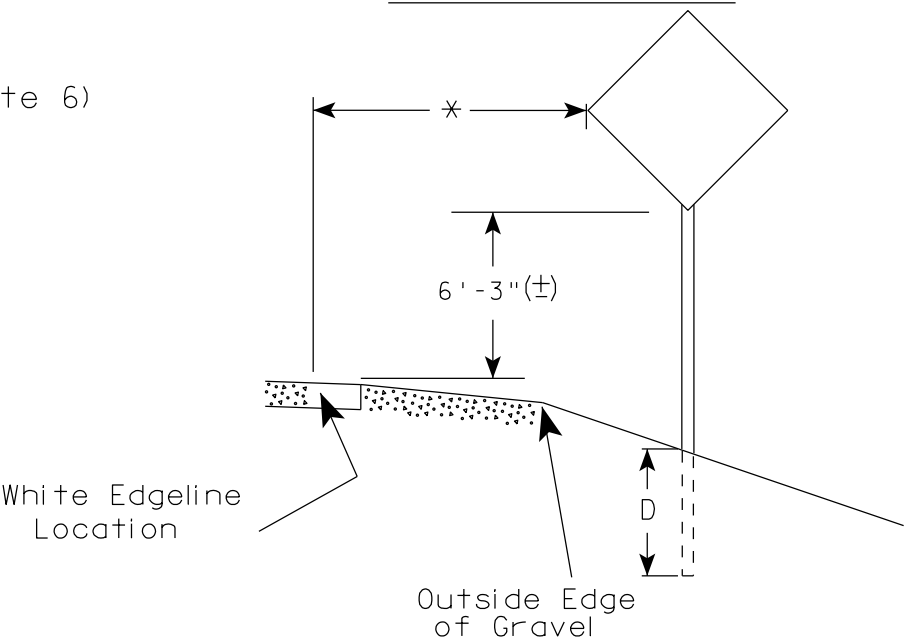
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3-2014 DATE /S/ Travis Fettes
STATE TRAFFIC ENGINEER OF DESIGN
FHWA

URBAN AREA



RURAL AREA (See Note 2)



- GENERAL NOTES
1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
 2. If signs are mounted on barrier wall, see A4-10 sign plate.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
 4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
 5. Minimum mounting height for signs mounted on traffic signal poles is 5'-3" (±).
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. The (±) tolerance for mounting height is 3 inches.
 8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
 9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series) & End of Rod Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

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

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

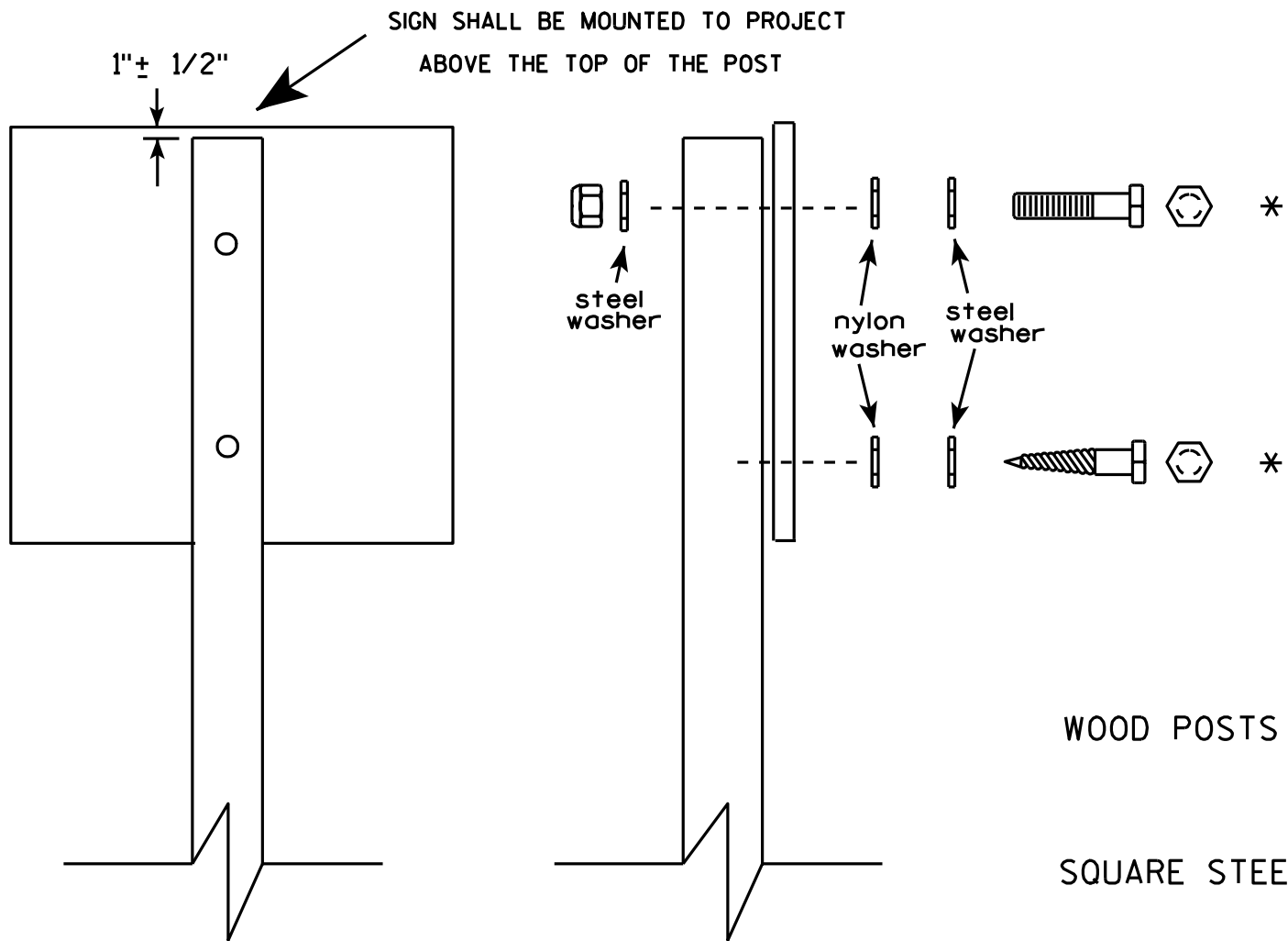
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-3.18

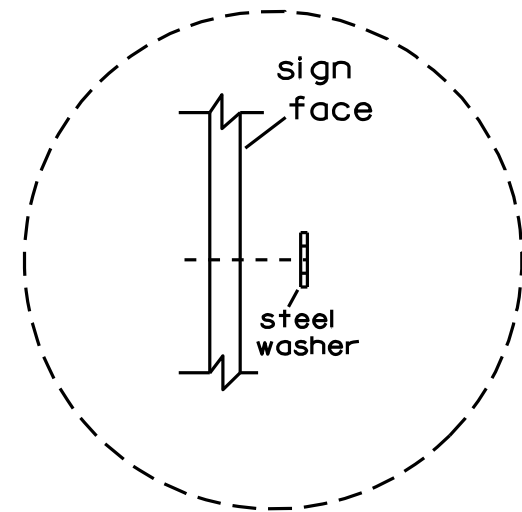


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

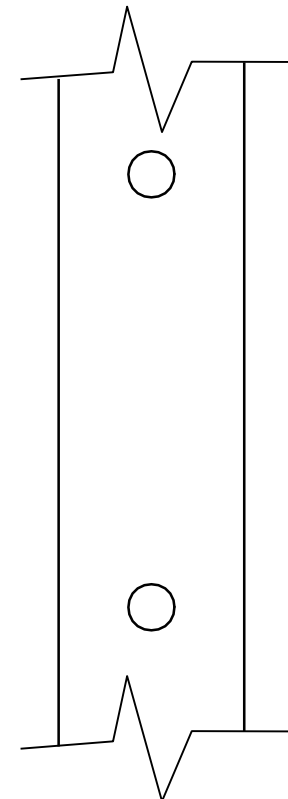
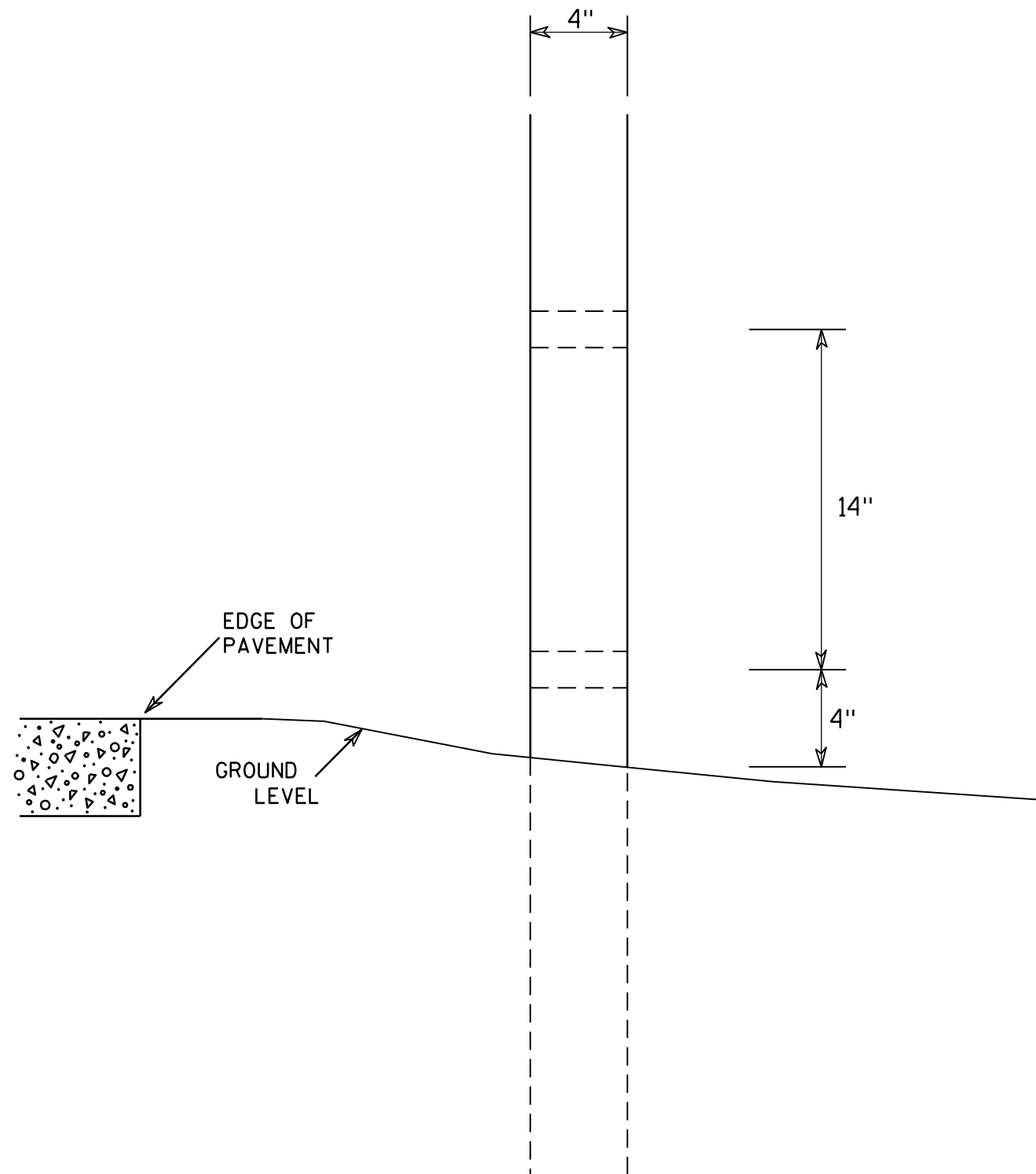
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3"
- MACHINE BOLTS - $\frac{5}{16}$ " X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts
- RIVETS - $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO: 5626-00-72

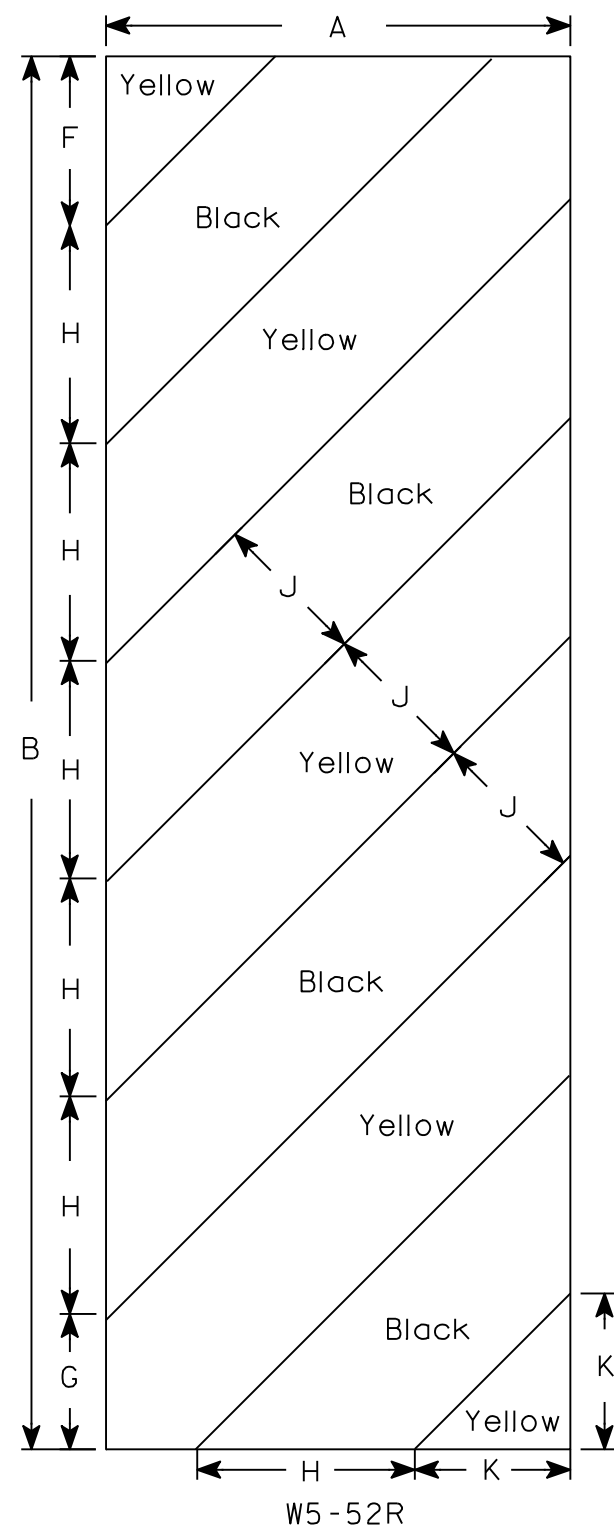
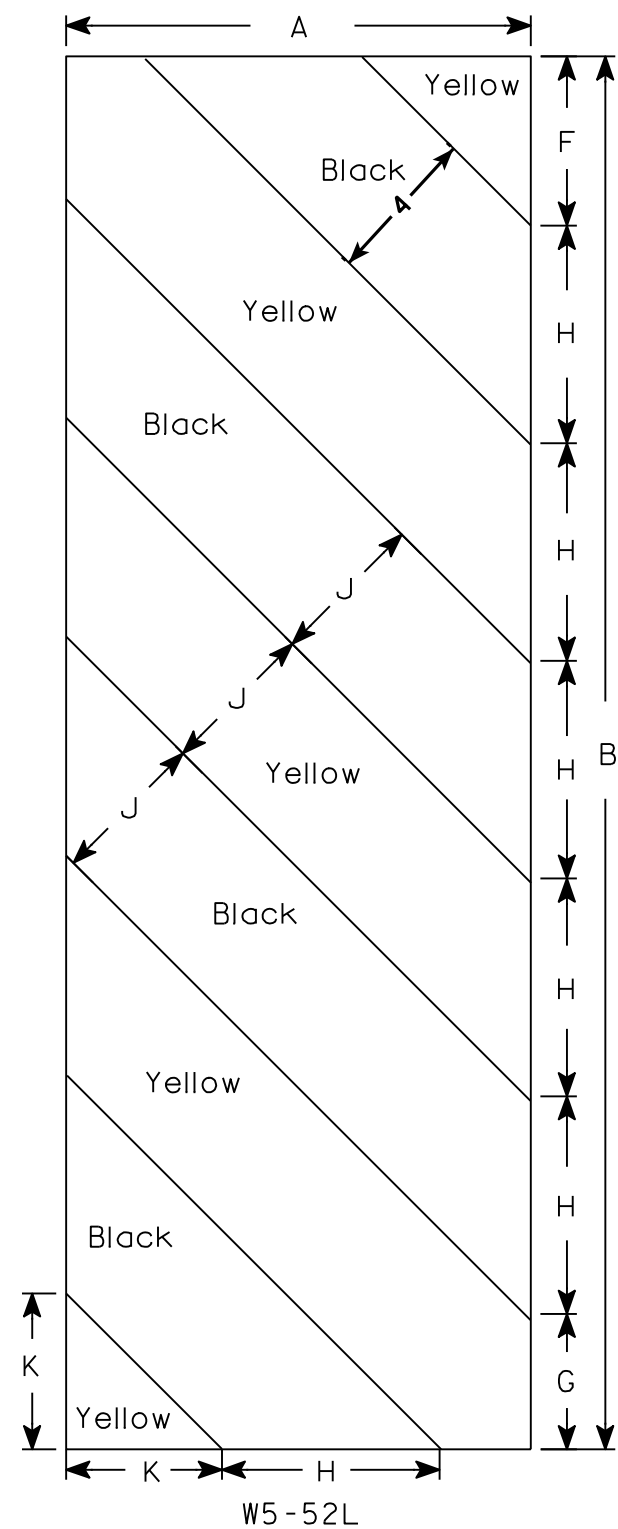
HWY: CLAY HILL ROAD

COUNTY: IOWA COUNTY

SIGN PLATES

SHEET NO:

E



NOTES

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

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

EARTHWORK PROJECT I.D. 5626-00-72

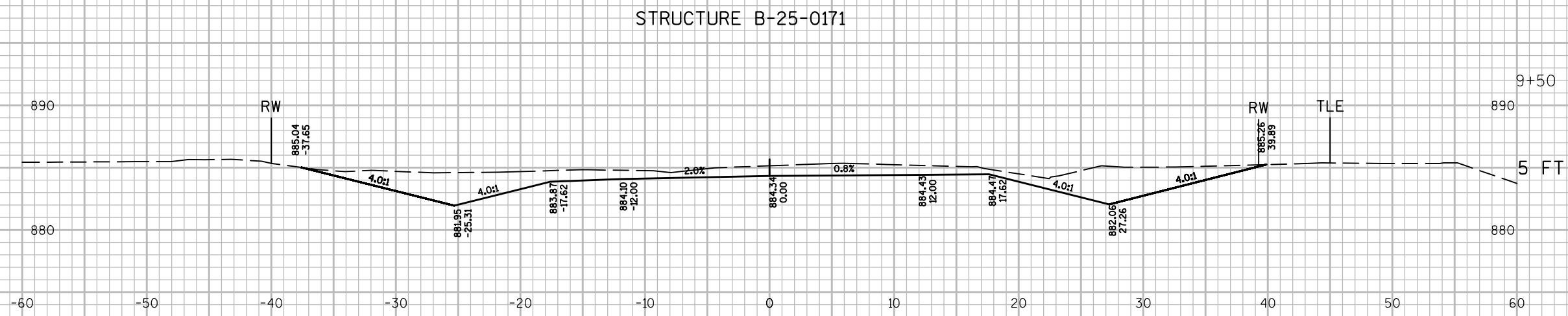
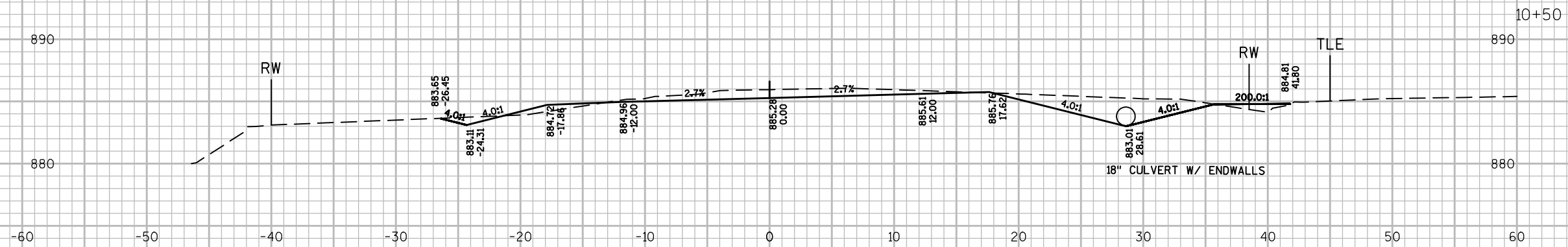
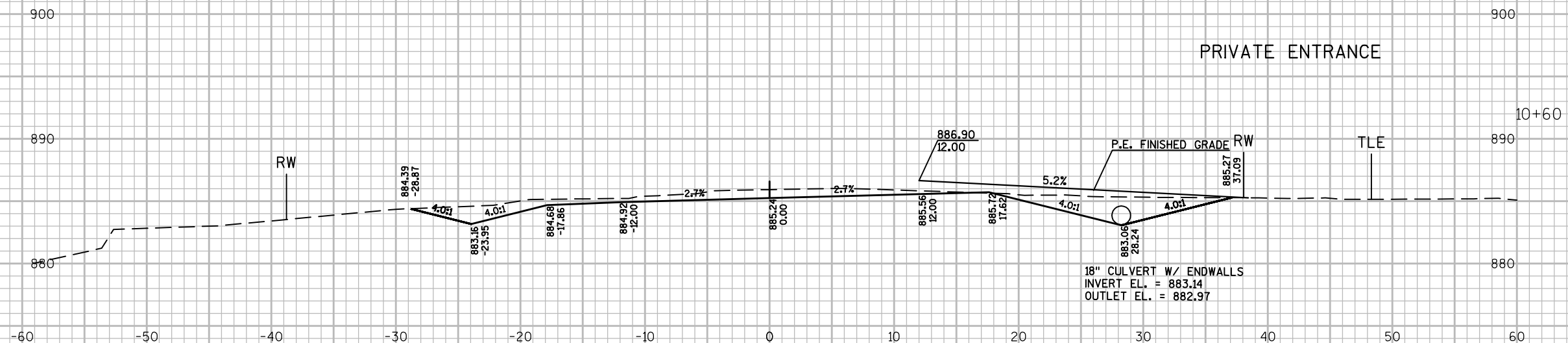
STATION	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
		Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	
					Note 1	Note 2	Note 3	Note 1		Note 8
8+40		31	0	0	0	0	0	0	0	0
9+00	60	64	0	0	106	0	0	106	0	106
9+50	50	90	0	0	142	0	0	248	0	248
9+87.69	37.69	90	0	0	125	0	0	373	0	373
B-25-0171										
					373	0	0			

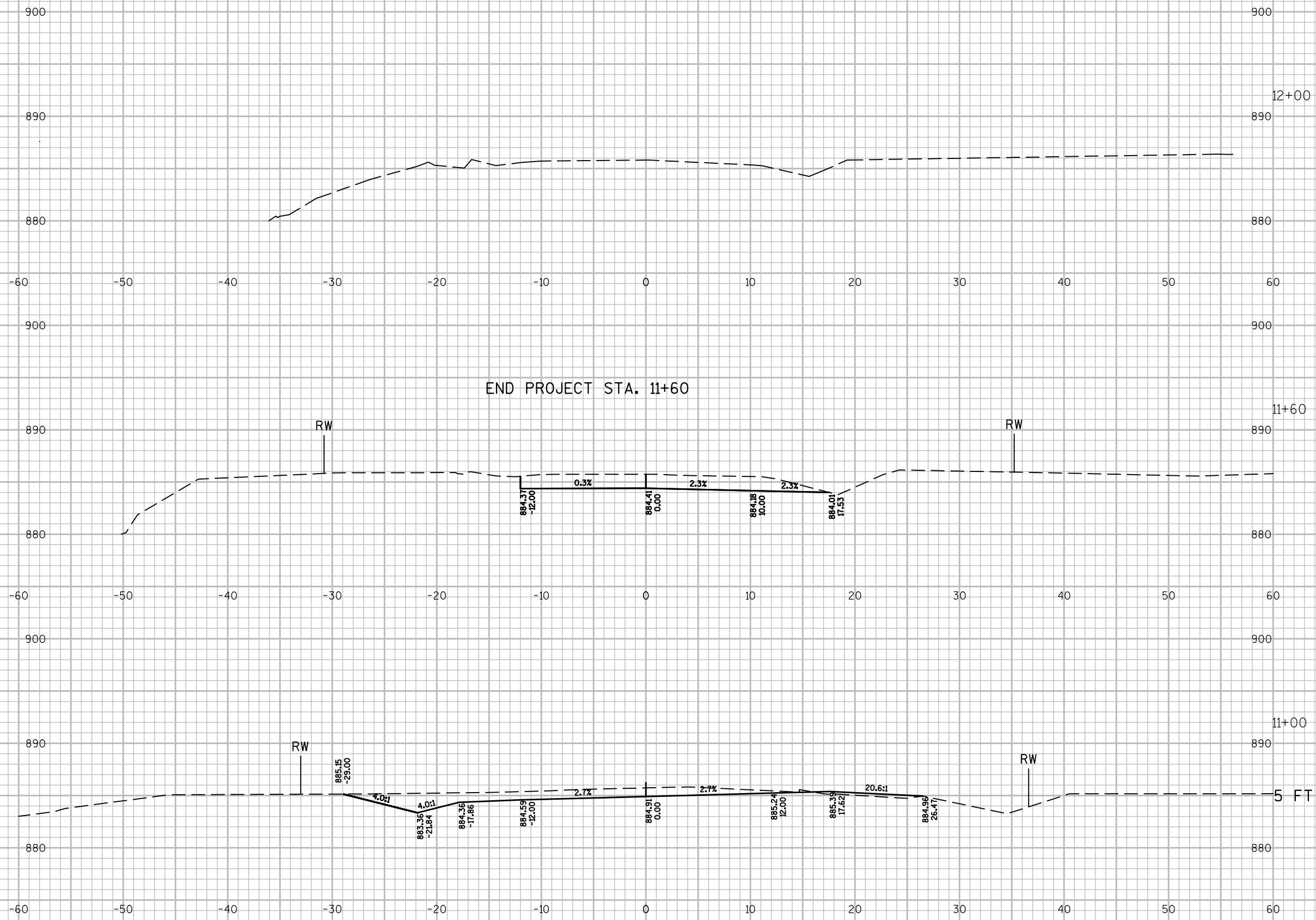
- 1) CUT - CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
- 2) SALVAGED/UNUSABLE PAVEMENT MATERIAL - THIS DOES NOT SHOW UP IN CROSS SECTIONS
- 3) FILL - DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
- 8) MASS ORDINATE - IF MARSH OR EBS TO BE BACKFILLEDWITH GRANULAR: (CUT + EBS + MARSH EXC) - (FILL - (REDUCED MARSH IN FILL) - (REDUCED EBS IN FILL) - (EXPANDED ROCK)) * FILL FACTOR

EARTHWORK PROJECT I.D. 5626-00-72

STATION	Distance	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		
B-25-0171										
10+26.46		35	0	4	0	0	0	0	0	0
10+50	23.54	35	0	4	31	0	3	31	4	27
10+60	10	47	0	1	15	0	1	46	5	41
11+00	40	35	0	2	60	0	2	106	8	98
11+60	60	36	0	0	78	0	2	185	10	174
					185	0	8			

- 1) CUT - CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
- 2) SALVAGED/UNUSABLE PAVEMENT MATERIAL - THIS DOES NOT SHOW UP IN CROSS SECTIONS
- 3) FILL - DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
- 8) MASS ORDINATE - IF MARSH OR EBS TO BE BACKFILLEDWITH GRANULAR: (CUT + EBS + MARSH EXC) - (FILL - (REDUCED MARSH IN FILL) - (REDUCED EBS IN FILL) - (EXPANDED ROCK)) * FILL FACTOR

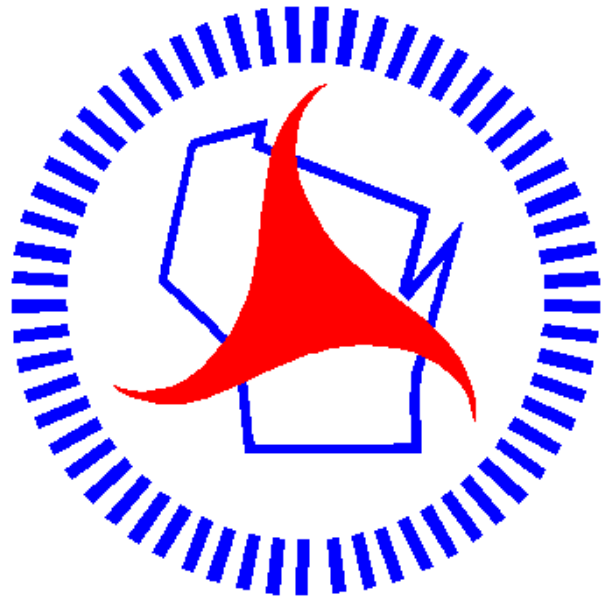




9

9

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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