NEL FEB 13

PROJECT ID: 6275-02-71/72
WITH: NA

COUNTY: FOND DU LAC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

TOWN OF WAUPUN, OAK CENTER RD

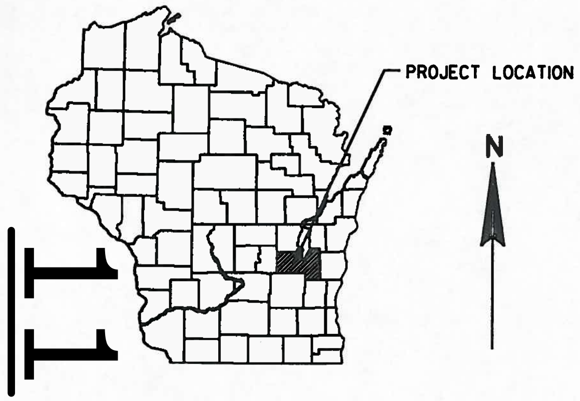
WEST BRANCH ROCK RIVER BRIDGE B-20-0674	WEST BRANCH ROCK RIVER BRIDGE P-20-0920
TOWN ROAD	TOWN ROAD
FOND DU LAC COUNTY	FOND DU LAC COUNTY
STATE PROJECT NUMBER 6275-02-71	STATE PROJECT NUMBER 6275-02-72

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6275-02-71		
6275-02-72		

ORDER OF SHEETS

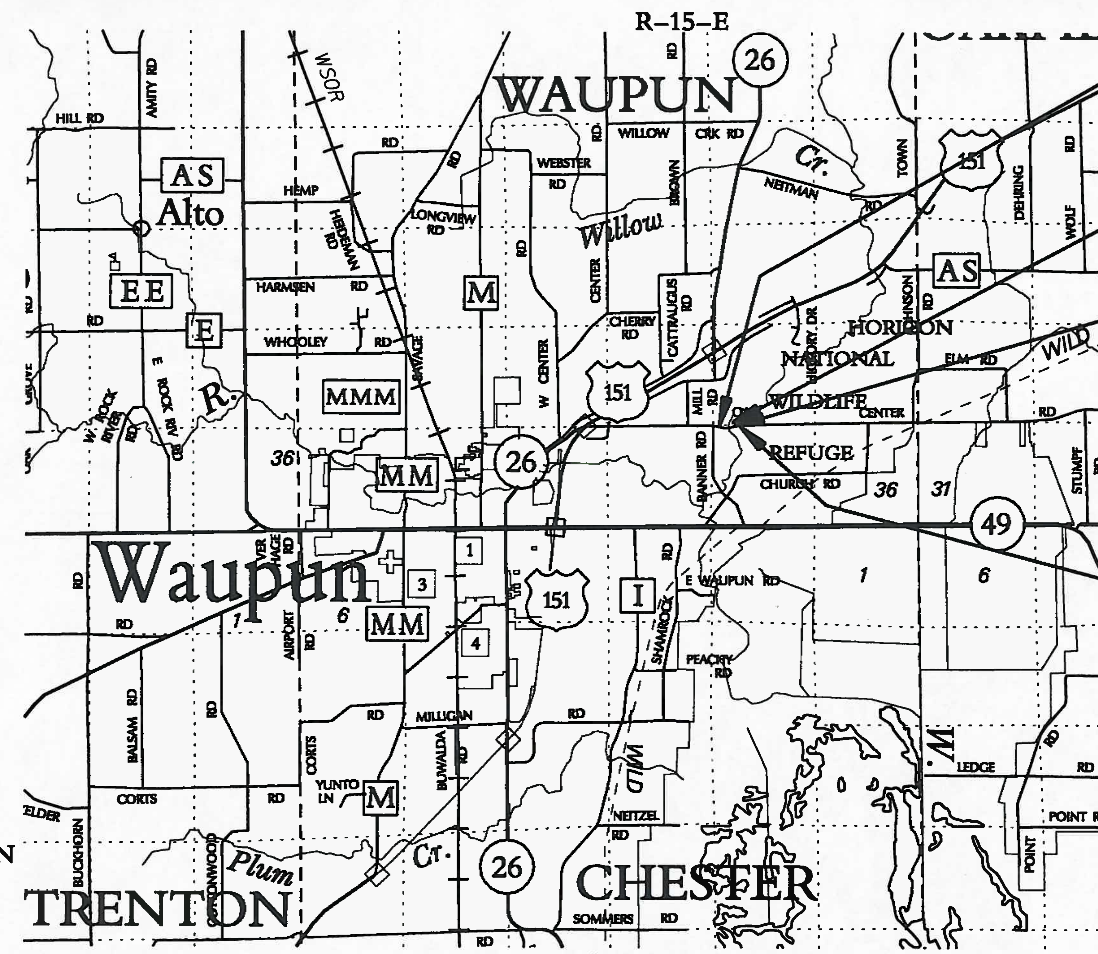
Section No.	1	Title
Section No.	2	Typical Sections and Details (Includes Erosion Control)
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section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

TOTAL SHEETS = 62



DESIGN DESIGNATION

A.A.D.T. 2013	=	330
A.A.D.T. 2033	=	430
D.H.V.	=	63
D.D.	=	62/38
T.	=	4.4%
DESIGN SPEED	=	40 MPH
ESALS	=	36,500



BEGIN PROJECT 6275-02-72
STA. 18+50.00
Y = 338215.788
X = 754858.639

STRUCTURE B-20-228

END PROJECT 6275-02-72
BEGIN PROJECT 6275-02-71
STA. 21+00.00
Y = 338226.437
X = 755107.861

END PROJECT 6275-02-71
STA. 22+50.00

LAYOUT
SCALE 0 1 MI.

CONVENTIONAL SYMBOLS

PLAN
- CORPORATE LIMITS
- PROPERTY LINE (PL + 58.1)
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH OR WETLAND AREA
- WOODED OR SHRUB AREA

PROFILE
- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

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

TOTAL NET LENGTH OF CENTERLINE = 0.047 MI. 6275-02-72
TOTAL NET LENGTH OF CENTERLINE = 0.028 MI. 6275-02-71

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS) FOND DU LAC COUNTY. PLAN ELEVATIONS ARE USGS DATUM, NAVD 88

ACCEPTED FOR TOWN OF WAUPUN
DATE: 7/16/12 Randy Vande Slunt (Signature)
Chairman
TITLE

ORIGINAL PLANS PREPARED BY
OMNI ASSOCIATES

WISCONSIN JUDITH ANN WILSON E-22940 NEENAH, WI PROFESSIONAL ENGINEER
Judith Ann Wilson 7/13/12

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	OMNNI ASSOCIATES
Designer	OMNNI ASSOCIATES
Management Consultant	SEH INC
C.O. Examiner	Cyle Haag

APPROVED FOR THE DEPARTMENT
DATE: 7/24/12 Robert Buffone (Management Consultant Signature)
SEH- NE Region LAMC

E

GENERAL NOTES

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

DIMENSIONS GIVEN FOR EXISTING FEATURES SHALL BE CONSIDERED AS APPROXIMATE AND MEASURED IN THE FIELD FOR MATCHING PURPOSES.

FILL AS SHOWN ON THE PLANS PERTAINS TO EMBANKMENTS CONSTRUCTED FROM COMMON EXCAVATION. THE ALLOWANCE USED FOR EXPANDING THE FILLS TO COMPUTE THE VOLUME OF MATERIAL REQUIRED IS 30 PERCENT. ALL FILL VOLUMES SHOWN ARE THE ACTUAL VOLUMES.

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

ALL DISTURBED AREAS, NOT OTHERWISE SURFACED ARE TO BE TOPSOILED, FERTILIZED, TEMPORARY SEEDED, SEEDED AND COVERED WITH MULCH OR EROSION MAT.

WETLAND AREAS SHALL BE SEEDED WITH MIXTURE NO. 60. SEED MIXTURE NO. 20 SHALL BE USED ON ALL OTHER DISTRUBED AREAS FOR PROJECT ID 6275-02-71. SEED MIXTURE NO. 40 SHALL BE USED ON ALL OTHER DISTURBED AREAS FOR PROJECT ID 6275-02-72.

WETLAND AREAS ARE SHOWN ON THE PLANS. CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO WORK WITHIN THE SLOPE INTERCEPTS IN THE WETLAND AREAS.

NO ASPHALT OR ASPHALT MILLINGS SHALL BE USED AS FILL IN WETLAND AREAS.

THE EXACT LOCATIONS OF ALL EROSION CONTROL ITEMS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

DISTANCES SHOWN ON THIS PLAN ARE GROUND DISTANCES.

ASBESTOS IS LOCATED IN THE SILVER PAINT ON THE GUARDRAILS AND STRUCTURAL BEAMS OF EXISTING STRUCTURES B-20-0673 AND P-20-0920. THE ASBESTOS WILL BE REMOVED UNDER THE BID ITEM 203.0210.S.

PRIOR TO ORDERING DRAINAGE PIPES AND STRUCTURES, THE CONTRACTOR SHALL VERIFY RELATED DRAINAGE INFORMATION IN THE PLAN WITH FIELD CONDITIONS. PIPE ELEVATIONS AS SHOWN ON THE PLANS MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.

INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES SHOWN ON THE PLAN MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.

REINFORCED CONCRETE APRON ENDWALLS AND ALL SECTIONS OF CONCRETE PIPE SHALL BE TIED TOGETHER AS SHOWN IN THE STANDARD DETAIL DRAWING.

EROSION CONTROL NOTES

RUNOFF COEFFICIENTS FOR THIS PROJECT: EXISTING PAVEMENT 0.95, EXISTING SLOPES 0.30, NEW PAVEMENT 0.95, NEW SLOPES 0.30.

TOTAL PROJECT AREA = 1.88 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.08 ACRES

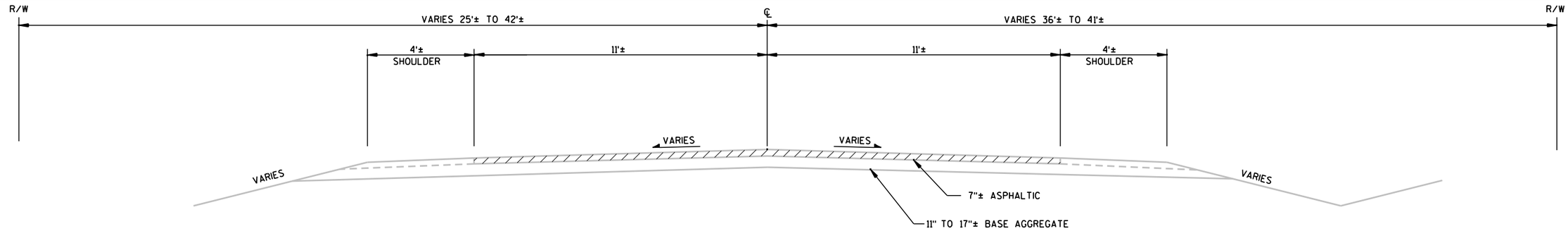
CONTACTS

ELECTRIC	ALLIANT ENERGY 120 EAST MAPLE AVENUE BEAVER DAM, WI 53916 ATTN: PAUL WORTH TELEPHONE: (920) 887-6030 CELL PHONE: (920) 948-2059 EMAIL: paulworth@alliantenergy.com
TELEPHONE	AT&T WISCONSIN 70 EAST DIVISION STREET FOND DU LAC, WI 54935 LOCAL CONTACT: WALLY WELK TELEPHONE: (920) 929-1016 EMAIL: ww5363@att.com
CABLE	CHARTER COMMUNICATIONS W7185 STATE ROAD 49, SUITE 1 WAUPUN, WI 53963 LOCAL CONTACT: TONY KLATT TELEPHONE: (920) 263-0062 CELL PHONE: (920) 345-1118 EMAIL: tony.klatt@chartercom.com
COMMUNICATIONS	WINDSTREAM COMPANIES ATTN: JOHN LOUIS 713 N. JACKSON STREET, SUITE 410 MILWAUKEE, WI 53202 TELEPHONE: (414) 831-5041 CELL PHONE: (414) 305-0332 EMAIL: john.louis@windstream.com
TOWN OF WAUPUN	RANDY VANDE SLUNT, TOWN CHAIRPERSON N3335 SAVAGE ROAD WAUPUN, WI 53963 TELEPHONE: (920) 324-5145 EMAIL: chairman@townofwaupun.com
FOND DU LAC COUNTY	TOM JANKE, HIGHWAY COMMISSIONER 301 DIXIE STREET, PO BOX 1234 FOND DU LAC, WI 54936 TELEPHONE: (920) 929-3488 EMAIL: tom.janke@fdlco.wi.gov
DNR LIAISON	BOBBI JO FISCHER DEPARTMENT OF NATURAL RESOURCES 427 EAST TOWER DRIVE, SUITE 100 WAUTOMA, WI 54982 TELEPHONE: (920) 787-4686 EMAIL: bobbi.fischer@wisconsin.gov

DIGGERS HOTLINE
Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

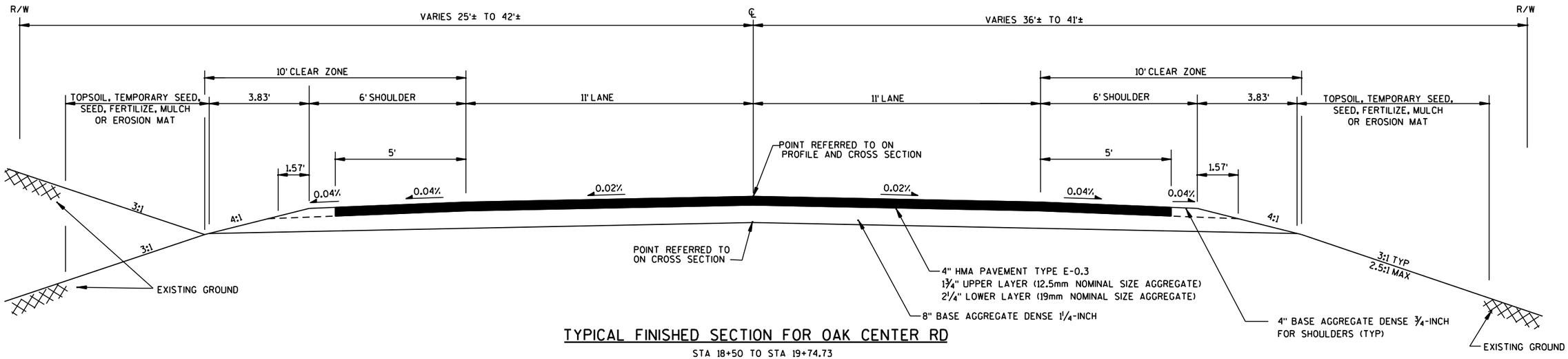
LIST OF STANDARD ABBREVIATIONS

ABUT	ABUTMENT	PU	PIPE UNDERDRAIN
BF	BACK FACE	PUU	PIPE UNDERDRAIN UNPERFORATED
BRG	BEARING	LB	POUND
BM	BENCH MARK	RT	RIGHT
BOT	BOTTOM	R/W	RIGHT-OF-WAY
CY or CUYD	CUBIC YARD	RD	ROAD
DIA	DIAMETER	SF or SQ FT	SQUARE FEET
EA	EACH	SY or SQ YD	SQUARE YARD
EL OR ELEV	ELEVATION	STA	STATION
FF	FRONT FACE	TEL	TELEPHONE
CWT	HUNDREDWEIGHT	TLE	TEMPORARY LIMITED EASEMENT
IN	INCH	MGAL	THOUSAND GALLONS
LT	LEFT	TYP	TYPICAL
LF OR LIN FT	LINEAR FOOT	VPC	VERTICAL POINT OF CURVE
LS	LUMP SUM	VPI	VERTICAL POINT OF INTERSECTION
MIN	MINIMUM	VPT	VERTICAL POINT OF TANGENCY



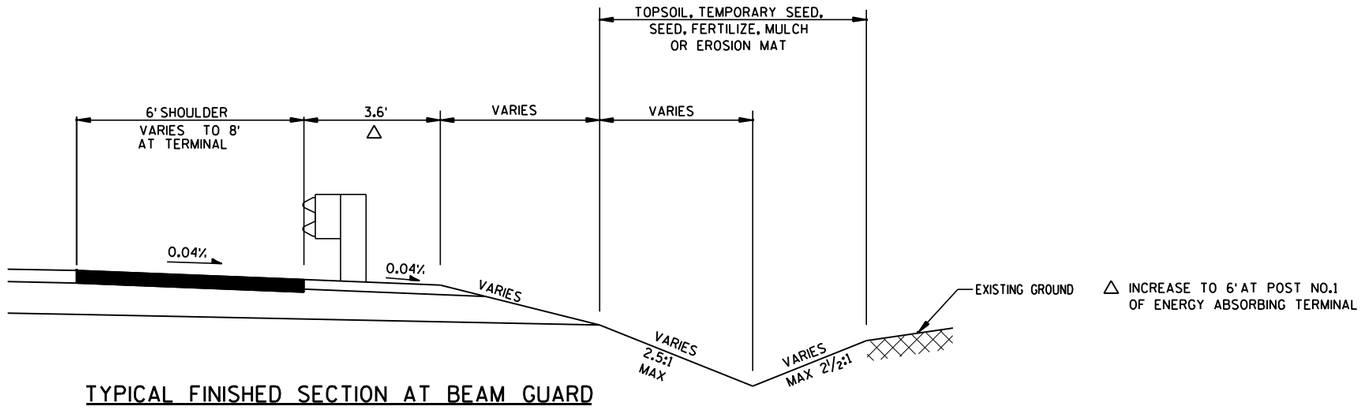
TYPICAL EXISTING SECTION

STA 18+50 TO STA 22+50



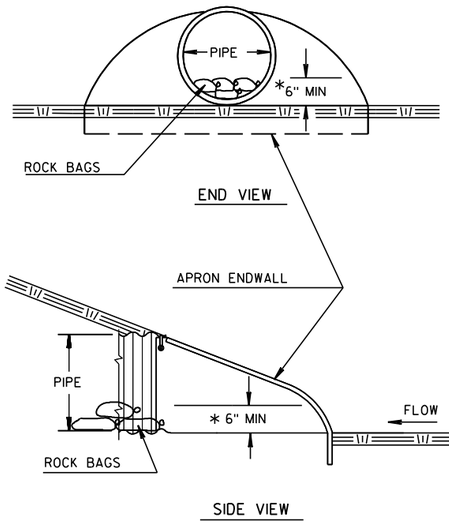
TYPICAL FINISHED SECTION FOR OAK CENTER RD

STA 18+50 TO STA 19+74.73
STA 20+25.35 TO STA 22+50



TYPICAL FINISHED SECTION AT BEAM GUARD

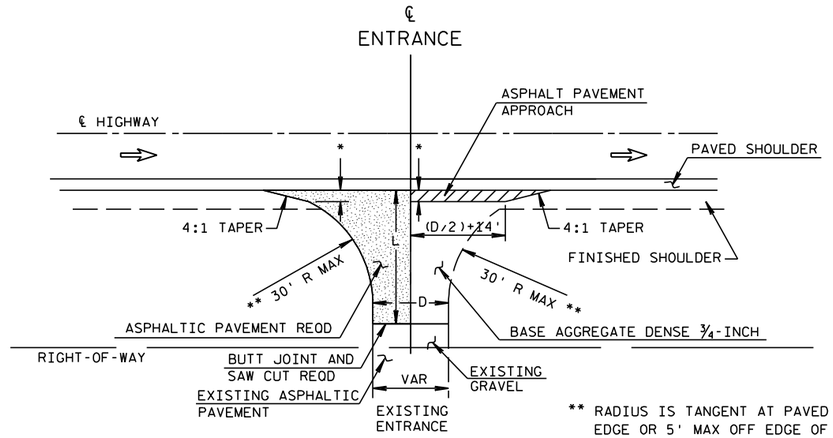
PROJECT NO: 6275-02-71/72	HWY: OAK CENTER ROAD	COUNTY: FOND DU LAC	TYPICAL SECTIONS	SHEET 3	E	2.2



* OR AS DIRECTED BY THE ENGINEER.

CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)
PROJECT 6275-02-72



L=VARIABLE. EXACT LENGTH TO BE DETERMINED IN THE FIELD BY THE ENGINEER. BLEND BACK ON THE ENTRANCE FAR ENOUGH TO GET A SMOOTH PROFILE.

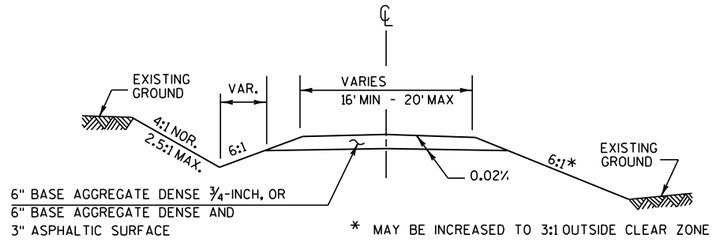
D=DRIVEWAY WIDTH
SEE PLAN AND PROFILE

** RADIUS IS TANGENT AT PAVED SHOULDER EDGE OR 5' MAX OFF EDGE OF MAIN LINE PAVEMENT WHICH EVER IS LESS.

* 3' MAX OR TO FINISHED SHOULDER WHICH EVER IS LESS.

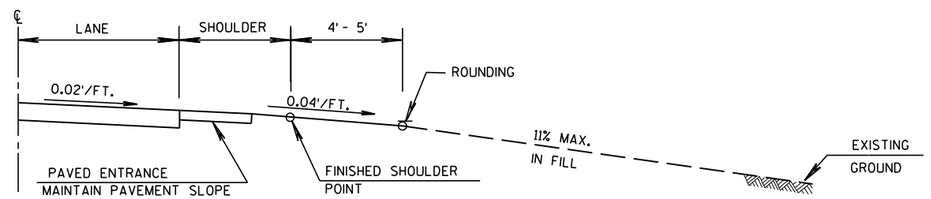
PLAN VIEW

NOTE: ONLY THE BASE AGGREGATE DENSE DRIVEWAY USED IN THIS CONTRACT



* MAY BE INCREASED TO 3:1 OUTSIDE CLEAR ZONE

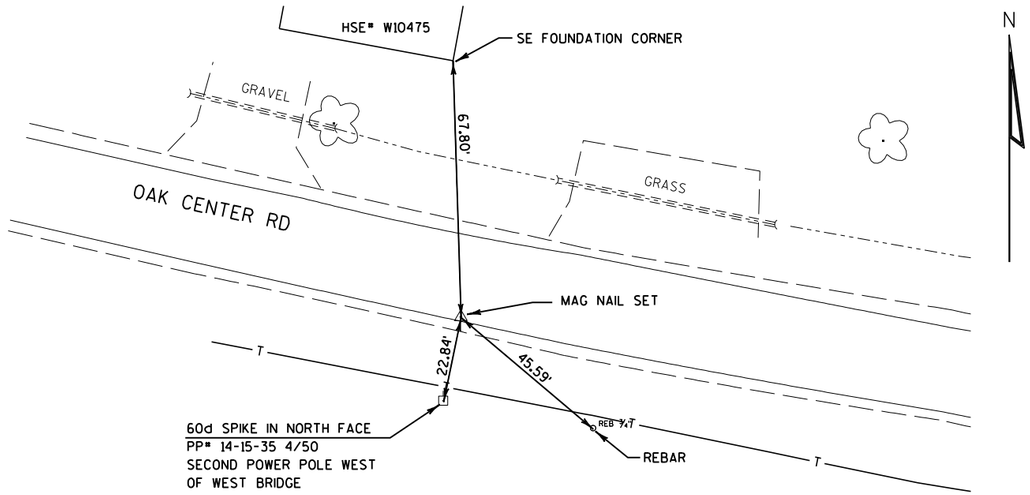
TYPICAL CROSS SECTION



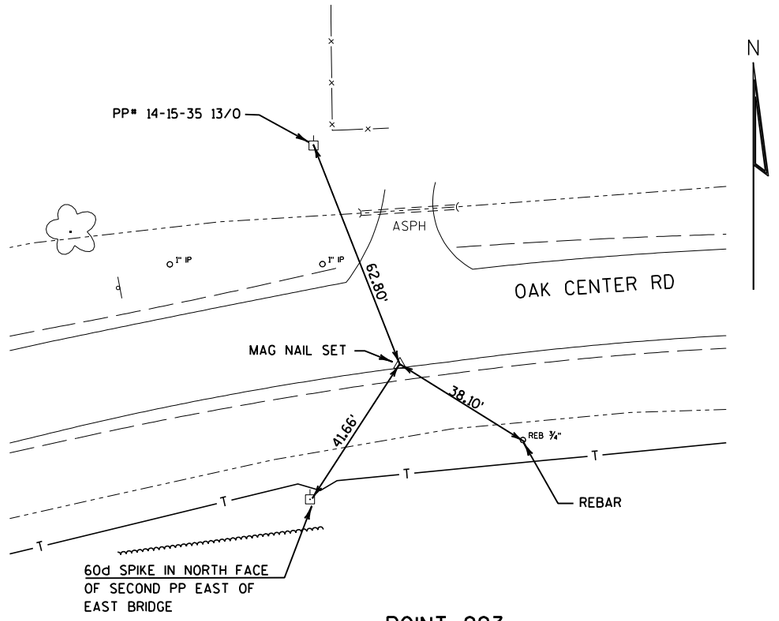
PROFILE VIEW

RURAL DRIVEWAY INTERSECTION DETAIL

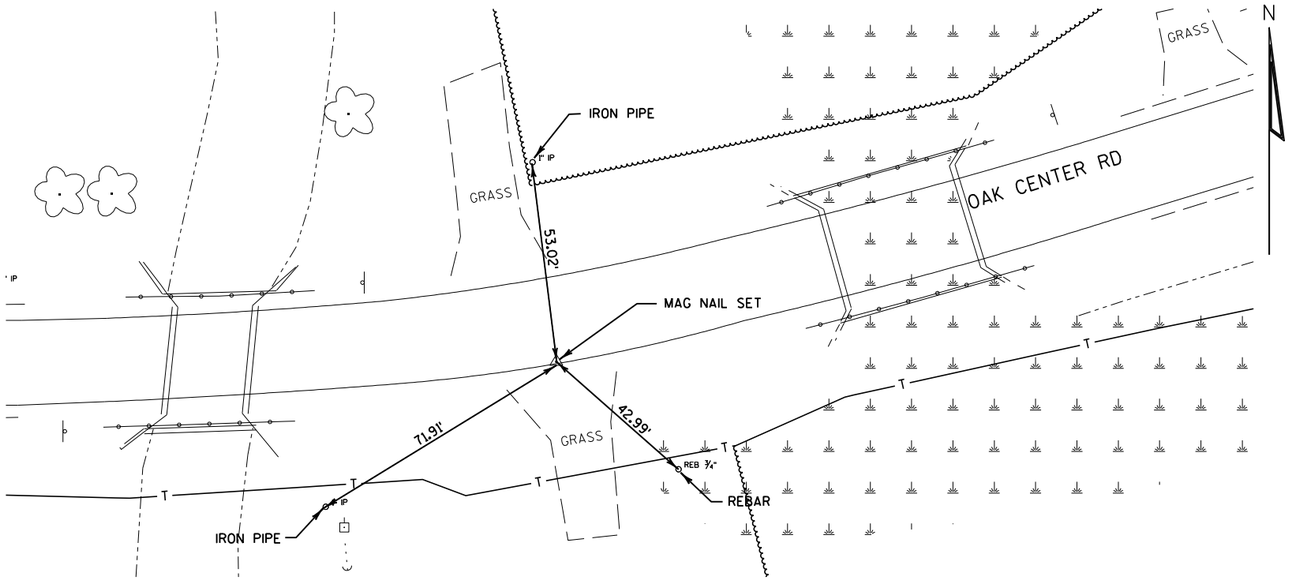
PROJECT 6275-02-72



POINT 995



POINT 993



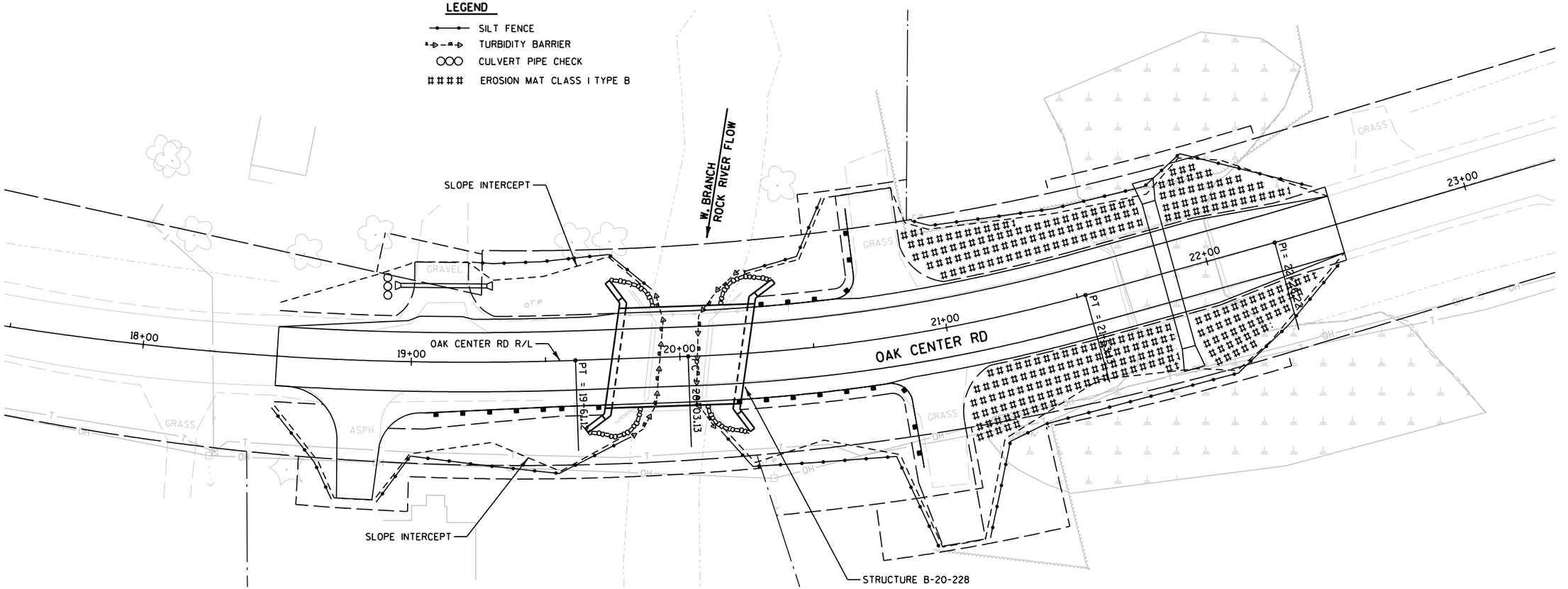
POINT 994

POINT	NORTHING	EASTING
993	338334.357	755571.790
994	338214.001	755099.686
995	338241.002	754631.474

2

LEGEND

- SILT FENCE
- TURBIDITY BARRIER
- CULVERT PIPE CHECK
- EROSION MAT CLASS I TYPE B



PROJECT NO:6275-02-71/72	HWY:OAK CENTER RD	COUNTY:FOND DU LAC	EROSION CONTROL	SHEET 6	E

2.5

DATE 17DEC12 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	6275-02-71 QUANTITY	6275-02-72 QUANTITY
0010	201.0105	CLEARING	STA	3.000	2.000	1.000
0020	201.0205	GRUBBING	STA	3.000	2.000	1.000
0030	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	1.000		1.000
0040	203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL (STRUCTURE) 01. P-20-920	LS	1.000		1.000
0050	203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL (STRUCTURE) 02. B-20-674	LS	1.000	1.000	
0060	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 20+00	LS	1.000		1.000
0070	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 02. 21+85	LS	1.000	1.000	
0080	205.0100	EXCAVATION COMMON	CY	260.000	90.000	170.000
0090	205.0400	EXCAVATION MARSH	CY	171.000	171.000	
0100	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-20-228	LS	1.000		1.000
0110	208.0100	BORROW	CY	2,020.000	1,790.000	230.000
0120	209.0100	BACKFILL GRANULAR	CY	256.000	256.000	
0130	210.0100	BACKFILL STRUCTURE	CY	320.000		320.000
0140	213.0100	FINISHING ROADWAY (PROJECT) 01. 6275-02-71	EACH	1.000	1.000	
0150	213.0100	FINISHING ROADWAY (PROJECT) 02. 6275-02-72	EACH	1.000		1.000
0160	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	210.000	20.000	190.000
0170	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	770.000	310.000	460.000
0180	455.0105	ASPHALTIC MATERIAL PG58-28	TON	17.000	7.000	10.000
0190	455.0605	TACK COAT	GAL	33.000	13.000	20.000
0200	460.1100	HMA PAVEMENT TYPE E-0.3	TON	300.000	120.000	180.000
0210	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	200.000	80.000	120.000
0220	465.0120	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	TON	12.000		12.000
0230	502.0100	CONCRETE MASONRY BRIDGES	CY	232.000		232.000
0240	502.3200	PROTECTIVE SURFACE TREATMENT	SY	243.000		243.000
0250	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	5,460.000		5,460.000
0260	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	28,320.000		28,320.000
0270	513.4060	RAILING TUBULAR TYPE M (STRUCTURE) 01. B-20-228	LS	1.000		1.000
0280	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	22.000		22.000
0290	520.0118	CULVERT PIPE CLASS III 18-INCH	LF	36.000		36.000
0300	520.1018	APRON ENDWALLS FOR CULVERT PIPE 18-INCH	EACH	2.000		2.000
0310	522.0160	CULVERT PIPE REINFORCED CONCRETE CLASS III 60-INCH	LF	56.000	56.000	
0320	522.1060	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 60-INCH	EACH	2.000	2.000	
0330	550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	160.000		160.000
0340	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	272.000		272.000
0350	606.0300	RIPRAP HEAVY	CY	100.000		100.000
0360	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	140.000		140.000
0370	614.0200	STEEL THRIE BEAM STRUCTURE APPROACH	LF	62.000		62.000
0380	614.0305	STEEL PLATE BEAM GUARD CLASS A	LF	50.000		50.000
0390	614.0345	STEEL PLATE BEAM GUARD SHORT RADIUS	LF	50.000		50.000
0400	614.0370	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	EACH	1.000		1.000
0410	614.0390	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	EACH	2.000		2.000

3

DATE 17DEC12 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	6275-02-71 QUANTITY	6275-02-72 QUANTITY
0420	619.1000	MOBILIZATION	EACH	1.000	0.200	0.800
0430	624.0100	WATER	MGAL	6.000	2.000	4.000
0440	625.0100	TOPSOIL **P**	SY	1,825.000	550.000	1,275.000
0450	627.0200	MULCHING	SY	1,275.000		1,275.000
0460	628.1504	SILT FENCE	LF	865.000	440.000	425.000
0470	628.1520	SILT FENCE MAINTENANCE	LF	1,730.000	880.000	850.000
0480	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	6.000	2.000	4.000
0490	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	4.000	2.000	2.000
0500	628.2004	EROSION MAT CLASS I TYPE B	SY	550.000	550.000	
0510	628.6005	TURBIDITY BARRIERS	SY	150.000		150.000
0520	628.7504	TEMPORARY DITCH CHECKS	LF	100.000	50.000	50.000
0530	628.7555	CULVERT PIPE CHECKS	EACH	4.000		4.000
0540	629.0210	FERTILIZER TYPE B	CWT	1.200	0.400	0.800
0550	630.0120	SEEDING MIXTURE NO. 20 **P**	LB	15.000	15.000	
0560	630.0140	SEEDING MIXTURE NO. 40 **P**	LB	34.000		34.000
0570	630.0160	SEEDING MIXTURE NO. 60	LB	13.000	13.000	
0580	630.0200	SEEDING TEMPORARY	LB	25.000	8.000	17.000
0590	633.5200	MARKERS CULVERT END	EACH	2.000	2.000	
0600	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	6.000	1.000	5.000
0610	637.0202	SIGNS REFLECTIVE TYPE II	SF	29.000	8.500	20.500
0620	638.2602	REMOVING SIGNS TYPE II	EACH	14.000	7.000	7.000
0630	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	12.000	6.000	6.000
0640	642.5001	FIELD OFFICE TYPE B	EACH	1.000	0.300	0.700
0650	643.0100	TRAFFIC CONTROL (PROJECT) 01. 6275-02-71	EACH	1.000	1.000	
0660	643.0100	TRAFFIC CONTROL (PROJECT) 02. 6275-02-72	EACH	1.000		1.000
0670	643.0300	TRAFFIC CONTROL DRUMS	DAY	200.000	100.000	100.000
0680	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,480.000	740.000	740.000
0690	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	2,368.000	1,184.000	1,184.000
0700	643.0900	TRAFFIC CONTROL SIGNS	DAY	1,184.000	592.000	592.000
0710	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	150.000		150.000
0720	646.0103	PAVEMENT MARKING PAINT 4-INCH	LF	1,600.000	600.000	1,000.000
0730	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	350.000	150.000	200.000
0740	650.5000	CONSTRUCTION STAKING BASE	LF	350.000	150.000	200.000
0750	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	1.000	1.000	
0760	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-20-228	LS	1.000		1.000
0770	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 6275-02-71	LS	1.000	1.000	
0780	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 02. 6275-02-72	LS	1.000		1.000
0790	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	350.000	150.000	200.000
0800	690.0150	SAWING ASPHALT	LF	59.000	22.000	37.000
0810	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	1,392.000		1,392.000
0820	999.1500.S	CRACK AND DAMAGE SURVEY	LS	1.000		1.000

3

3

3

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

CLEARING AND GRUBBING

STATION	TO	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
PROJECT 6275-02-72					
20+90	-	21+00	OAK CENTER ROAD	1	1
			TOTALS	**1**	**1**
PROJECT 6275-02-71					
21+00	-	22+50	OAK CENTER ROAD	2	2
			TOTALS	**2**	**2**

REMOVING SMALL PIPE CULVERTS

STATION	TO	STATION	DIR	LOCATION	203.0100 EACH	REMARKS
PROJECT 6275-02-72						
18+96	-	19+25	LT	OAK CENTER RD	1	18" CMP
				TOTAL	**1**	

BASE AGGREGATE DENSE

STATION	TO	STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	624.0100 WATER MGAL
PROJECT 6275-02-72						
18+50	-	STRUCTURE	OAK CENTER ROAD**	75	285	2
STRUCTURE	-	21+00	OAK CENTER ROAD**	115	175	2
			TOTALS	**190**	**460**	**4**
PROJECT 6275-02-71						
21+00	-	22+50	OAK CENTER ROAD	20	310	2
			TOTALS	**20**	**310**	**2**

** - INCLUDES DRIVEWAYS

ASPHALTIC ITEMS

STATION	TO	STATION	LOCATION	455.0105 ASPHALTIC MATERIAL PG58-28 TON	455.0605 TACK COAT GAL	460.1100 HMA PAVEMENT TYPE E-0.3 TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON
PROJECT 6275-02-72							
18+50	-	STRUCTURE	OAK CENTER ROAD	6	12	110	12
STRUCTURE	-	21+00	OAK CENTER ROAD	4	8	70	---
			TOTALS	**10**	**20**	**180**	**12**
PROJECT 6275-02-71							
21+00	-	22+50	OAK CENTER ROAD	7	13	120	---
			TOTALS	**7**	**13**	**120**	**0**

15) THE EXISTING ASPHALT FROM THE EXISTING ROADWAY WAS NOT UTILIZED IN THE PROPOSED EMBANKMENT AND IS CONSIDERED WASTE MATERIAL WHICH WILL NEED TO BE PROPERLY DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO WISDOT.

EARTHWORK SUMMARY

DIVISION	FROM/TO STATION	LOCATION	EXCAVATION COMMON 205.0100 CY		EXCAVATION MARSH 205.0400 CY	SALVAGED/ UNUSABLE PAVEMENT MATERIAL CY	AVAILABLE MATERIAL CY	UNEXPANDED FILL CY	EXPANDED FILL CY	EXPANDED MARSH BACKFILL (10) CY	MASS ORDINATE +/- (14) CY	WASTE (15) CY	BORROW 208.0100 CY	BACKFILL GRANULAR 209.0100 (10) CY
			CUT	EBS EXCAVATION					Factor 1.30	Factor 1.50				
PROJECT 6275-02-72														
DIVISION 1	18+50 - 19+74.73	OAK CENTER ROAD WEST	110	0	0	59	51	115	150	0	-99	59	100	0
	20+25.27 - 21+00	OAK CENTER ROAD CENTER	60	0	0	36	24	118	153	0	-129	36	130	0
DIVISION 1	**TOTALS**		**170**	0	**0**	95	75	233	303	0	-228	95	**230**	**0**
PROJECT 6275-02-71														
DIVISION 1	21+00 - 22+50	OAK CENTER ROAD EAST	90	0	171	43	47	1,410	1,832	256	-1,785	214	1,790	256

10) EXPANDED MARSH BACKFILL - THIS IS TO BE FILLED WITH BACKFILL GRANULAR MATERIAL. MARSH BACKFILL FACTOR = 1.5.

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.

15) THE EXISTING ASPHALT FROM THE EXISTING ROADWAY WAS NOT UTILIZED IN THE PROPOSED EMBANKMENT AND IS CONSIDERED WASTE MATERIAL WHICH WILL NEED TO BE PROPERLY DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO WISDOT.

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

CULVERT PIPE REINFORCED CONCRETE

STATION	OFFSET	LOCATION	522.0160 CLASS III 60-INCH LF	522.1060 APRON ENDWALLS, 60-INCH EACH	PIPE TIES REQUIRED (FOR INFORMATION ONLY) EACH	633.5200 MARKERS CULVERT END EACH	REMARKS
PROJECT 6275-02-71							
21+85	27' LT - 29' RT	OAK CENTER RD	56	2	16	2	NOTE 1
		TOTALS	**56**	**2**	**16**	**2**	

NOTE 1: EACH JOINT OF THE CULVERT PIPE, INCLUDING ENDWALLS, SHALL BE TIED.

CULVERT PIPE CLASS III AND APRON ENDWALLS

STATION	OFFSET	LOCATION	520.0118 CULVERT PIPE CLASS III 18-INCH LF	THICKNESS STEEL INCHES	THICKNESS ALUMINUM INCHES	INLET ELEVATION	DISCHARGE ELEVATION	520.1018 APRON ENDWALLS FOR CULVERT PIPE 18-INCH EACH
PROJECT 6275-02-72								
19+11	27.5' LT	OAK CENTER RD	36	0.064	0.060	870.30	870.10	2
		TOTALS	**36**					**2**

STEEL PLATE BEAMGUARD ITEMS

STATION	TO	STATION	DIR	LOCATION	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF	614.0305 CLASS A LF	614.0345 SHORT RADIUS LF	614.0370 ENERGY ABSORBING TERMINAL EACH	614.0390 SHORT RADIUS TERMINAL EACH
PROJECT 6275-02-72									
19+05.19	-	19+74.91	RT	OAK CENTER ROAD	20.65	---	---	1	---
20+18.74	-	20+83.39	RT	OAK CENTER ROAD	20.65	37.5	25	---	1
20+25.8	-	20+68.31	LT	OAK CENTER ROAD	20.65	12.5	25	---	1
				TOTALS	**62**	**50**	**50**	**1**	**2**

LANDSCAPING ITEMS

STATION	TO	STATION	DIR	LOCATION	625.0100 TOPSOIL SY	627.0200 MULCHING SY	628.2004 EROSION MAT CLASS 1 TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0140 SEEDING MIXTURE NO. 40 LB	630.0160 SEEDING MIXTURE NO. 60 LB	630.0200 SEEDING TEMPORARY LB
PROJECT 6275-02-72												
18+50	-	STRUCTURE	LT	OAK CENTER ROAD	230	230	---	0.14	---	6.2	---	3.1
18+50	-	STRUCTURE	RT	OAK CENTER ROAD	190	190	---	0.12	---	5.1	---	2.6
STRUCTURE	-	21+00	LT	OAK CENTER ROAD	270	270	---	0.17	---	7.3	---	3.6
STRUCTURE	-	21+00	RT	OAK CENTER ROAD	330	330	---	0.21	---	8.9	---	4.5
UNDISTRIBUTED					255	255	---	0.16	---	6.9	---	3.4
				TOTALS	**1275**	**1275**	**0**	**0.8**	**0**	**34**	**0**	**17**
PROJECT 6275-02-71												
21+00	-	22+50	LT	OAK CENTER ROAD	210	---	210	0.13	5.7	---	5	2.8
21+00	-	22+50	RT	OAK CENTER ROAD	230	---	230	0.14	6.2	---	5	3.1
UNDISTRIBUTED					110	---	110	0.07	3.0	---	3	1.5
				TOTALS	**550**	**0**	**550**	**0.4**	**15**	**0**	**13**	**8**

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

TURBIDITY BARRIERS

LOCATION		628.6005 SY
PROJECT 6275-02-72		
WEST ABUTMENT/BANK	OAK CENTER ROAD	75
EAST ABUTMENT/BANK	OAK CENTER ROAD	75
	TOTAL	**150**

EROSION CONTROL

STATION	TO	STATION	DIR	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH
PROJECT 6275-02-72										
18+50	-	STRUCTURE	LT	OAK CENTER ROAD	75	150	---	---	---	3
18+50	-	STRUCTURE	RT	OAK CENTER ROAD	110	220	---	---	---	---
STRUCTURE	-	21+00	LT	OAK CENTER ROAD	45	90	---	---	---	---
STRUCTURE	-	21+00	RT	OAK CENTER ROAD	110	220	---	---	---	---
UNDISTRIBUTED					85	170	4	2	50	1
				TOTALS	**425**	**850**	**4**	**2**	**50**	**4**
PROJECT 6275-02-71										
21+00	-	22+50	LT	OAK CENTER ROAD	160	320	---	---	---	---
21+00	-	22+50	RT	OAK CENTER ROAD	190	380	---	---	---	---
UNDISTRIBUTED					90	180	2	2	50	---
				TOTALS	**440**	**880**	**2**	**2**	**50**	**0**

REMOVING SIGNS TYPE II AND REMOVING SMALL SIGN SUPPORTS

STATION	DIR	LOCATION	DESCRIPTION	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
PROJECT 6275-02-72						
19+61	RT	OAK CENTER ROAD	WEIGHT LIMIT 12 TONS	1	1	
19+61	RT	OAK CENTER ROAD	BUMP	1		ON SAME POST AS WEIGHT LIMIT SIGN
19+75	RT	OAK CENTER ROAD	OBJECT MARKER	1	1	
19+82	LT	OAK CENTER ROAD	OBJECT MARKER	1	1	
20+14	RT	OAK CENTER ROAD	OBJECT MARKER	1	1	
20+22	LT	OAK CENTER ROAD	OBJECT MARKER	1	1	
20+42	LT	OAK CENTER ROAD	WEIGHT LIMIT 12 TONS	1	1	
			TOTALS	**7**	**6**	
PROJECT 6275-02-71						
21+47	RT	OAK CENTER ROAD	WEIGHT LIMIT 12 TONS	1	1	
21+57	LT	OAK CENTER ROAD	OBJECT MARKER	1	1	
21+59	RT	OAK CENTER ROAD	OBJECT MARKER	1	1	
22+13	LT	OAK CENTER ROAD	OBJECT MARKER	1	1	
22+15	RT	OAK CENTER ROAD	OBJECT MARKER	1	1	
22+33	LT	OAK CENTER ROAD	WEIGHT LIMIT 12 TONS	1	1	
22+33	LT	OAK CENTER ROAD	BUMP	1		ON SAME POST AS WEIGHT LIMIT SIGN
			TOTALS	**7**	**6**	

3

SIGNS REFLECTIVE TYPE II AND POSTS WOOD

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

STATION	DIR	LOCATION	CODE	DESCRIPTION	SIGN SIZE H IN	X	SIGN SIZE V IN	634.0614 POSTS WOOD 4X6-INCH X 14-FT EACH	637.0202 SIGNS REFLECTIVE TYPE II SF
PROJECT 6275-02-72									
14+50	RT	OAK CENTER ROAD	W1-2L	LEFT CURVE	30	X	30	1	6.25
			W13-1	ADVISORY SPEED 35 MPH	18	X	18		2.25
19+72	RT	OAK CENTER ROAD	W5-52R	CLEARANCE STRIPER DOWN LEFT	12	X	36	1	3
19+78	LT	OAK CENTER ROAD	W5-52L	CLEARANCE STRIPER DOWN RIGHT	12	X	36	1	3
20+22	RT	OAK CENTER ROAD	W5-52R	CLEARANCE STRIPER DOWN LEFT	12	X	36	1	3
20+29	LT	OAK CENTER ROAD	W5-52L	CLEARANCE STRIPER DOWN RIGHT	12	X	36	1	3
				TOTALS				5	20.50
PROJECT 6275-02-71									
27+50	LT	OAK CENTER ROAD	W1-2R	RIGHT CURVE	30	X	30	1	6.25
			W13-1	ADVISORY SPEED 35 MPH	18	X	18		2.25
				TOTALS				**1**	**8.50**

TRAFFIC CONTROL

STAGE / LOCATION	SERVICE PERIOD DAYS	643.0300 DRUMS NO	DRUMS DAYS	643.0420 BARRICADES TYPE III NO	BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A NO	WARNING LIGHTS TYPE A DAYS	643.0900 SIGNS NO	SIGNS DAYS
PROJECT 6275-02-72									
OAK CENTER ROAD BRIDGE CLOSURE, WEST APPROACH	74		0	10	740	16	1184	8	592
UNDISTRIBUTED			100						
TOTALS			**100**		**740**		**1184**		**592**
PROJECT 6275-02-71									
OAK CENTER ROAD BRIDGE CLOSURE, EAST APPROACH	74		0	10	740	16	1184	8	592
UNDISTRIBUTED			100						
TOTALS			**100**		**740**		**1184**		**592**

PAVEMENT MARKING PAINT

STATION	TO	STATION	LOCATION	643.0103 4-INCH DOUBLE YELLOW CENTERLINE LF	4-INCH WHITE EDGLINES LF
PROJECT 6275-02-72					
18+50	-	21+00	OAK CENTER ROAD	500	500
			SUBTOTAL	500	500
			TOTAL	**1000**	
PROJECT 6275-02-71					
21+00	-	22+50	OAK CENTER ROAD	300	300
			SUBTOTAL	300	300
			TOTAL	**600**	

CONSTRUCTION STAKING

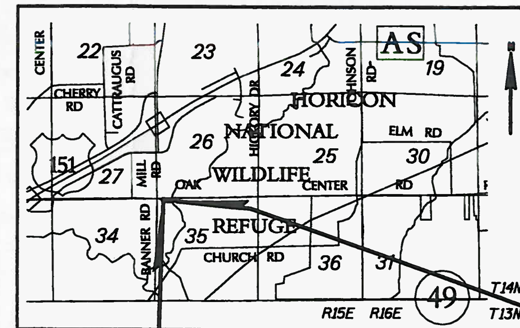
STATION	TO	STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.6000 PIPE CULVERTS EACH	CATEGORY 0020 650.6500 STRUCTURE LAYOUT LS	650.9910 SUPPLEMENTAL CONTROL LS	650.6620 SLOPE STAKES LF
PROJECT 6275-02-72									
18+50	-	STRUCTURE	OAK CENTER ROAD	125	125	---	---	---	125
STRUCTURE B-20-228			OAK CENTER ROAD	---	---	---	1	---	---
STRUCTURE	-	21+00	OAK CENTER ROAD	75	75	---	---	---	75
			TOTALS	**200**	**200**	**0**	**1**	**1**	**200**
PROJECT 6275-02-71									
21+00	-	22+50	OAK CENTER ROAD	150	150	1	---	---	150
			TOTALS	**150**	**150**	**1**	**0**	**1**	**150**

SAWING ASPHALT

STATION	DIR	LOCATION	690.0150 LF	REMARKS
PROJECT 6275-02-72				
18+50		OAK CENTER ROAD	22	BOP
18+82	RT	OAK CENTER ROAD	15	DWY
		TOTAL	**37**	
PROJECT 6275-02-71				
22+50		OAK CENTER ROAD	22	EOP
		TOTAL	**22**	

Conventional Signs and Abbreviations

Symbol / Abbreviation	Meaning	Abbreviation	Meaning	Abbreviation	Meaning
(line)	SECTION LINE	AC	ACRES	R	RADIUS
(line)	QUARTER LINE	Δ	CENTRAL ANGLE	R.	RANGE
(line)	TOWNSHIP AND RANGE LINE	C/L	CENTERLINE	R/L	REFERENCE LINE
(line)	PROPOSED OR NEW CENTERLINE	COR.	CORNER	R/W	RIGHT OF WAY
(line)	PROPOSED OR NEW R/W LINE	CTH	COUNTY TRUNK HIGHWAY	1/4 LINE	QUARTER LINE
(line)	EXISTING R/W LINE	D	DEGREE OF CURVE	1/16 LINE	SIXTEENTH LINE
P.L.	LOT LINE	E.	EAST	S.	SOUTH
(line)	PROPERTY LINE	L	LENGTH OF CURVE	SEC	SECTION
(hatch)	COUNTY LINE LIMITS	LC	LONG CHORD	SEC LINE	SECTION LINE
(line)	SLOPE INTERCEPTS	LCB	LONG CHORD BEARING	STH	STATE TRUNK HIGHWAY
o	R/W POINT	MI	MILE	SF	SQUARE FEET
—X—X—	FENCE	N.	NORTH	STA	STATION
(symbol)	SECTION OR QUARTER CORNER	PC	POINT OF CURVATURE	T.	TOWN
(symbol)	POWER POLE	PI	POINT OF INTERSECTION	T	TANGENT LENGTH OF CURVE
(symbol)	TELEPHONE PEDESTAL	PT	POINT OF TANGENCY	TI	TEMPORARY INTEREST
—T—T—	UNDERGROUND TELEPHONE CABLE	PLE	PERMANENT LIMITED EASEMENT	USH	UNITED STATES HIGHWAY
(symbol)	NO ACCESS (BY ACQUISITION)	P\L	PROPERTY LINE	W.	WEST
(symbol)	NO ACCESS (BY STATUTORY AUTHORITY)				
(symbol)	NO ACCESS (BY PREVIOUS PROJECT)				
(pattern)	TEMPORARY INTEREST				
(pattern)	PERMANENT LIMITED EASEMENT				
(symbol)	RIGHT-OF-WAY TYPE 2 MONUMENTS SET AT NEWLY ACQUIRED R/W ANGLE POINTS				
o REB 3/4" o 1" IP	EXISTING PROPERTY MONUMENTS FOUND TYPE OF MONUMENT FOUND				



PLE CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD DIR.	CHORD LENGTH
C-1	897.36'	41.16'	S82°06'41"W	41.15'
C-2	912.36'	39.40'	N82°11'37"E	39.40'
C-3	1015.36'	77.57'	N82°26'13"E	77.55'
C-4	992.36'	80.48'	S82°35'56"W	80.46'

PLE LINE TABLE

LINE	BEARING	LENGTH
L-1	S06°14'47"E	15.00'
L-2	N00°22'48"E	15.21'
L-3	S17°57'26"E	23.58'
L-4	N10°55'29"W	23.00'

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
6275-02-00	4.1	1

FEDERAL PROJECT NUMBER

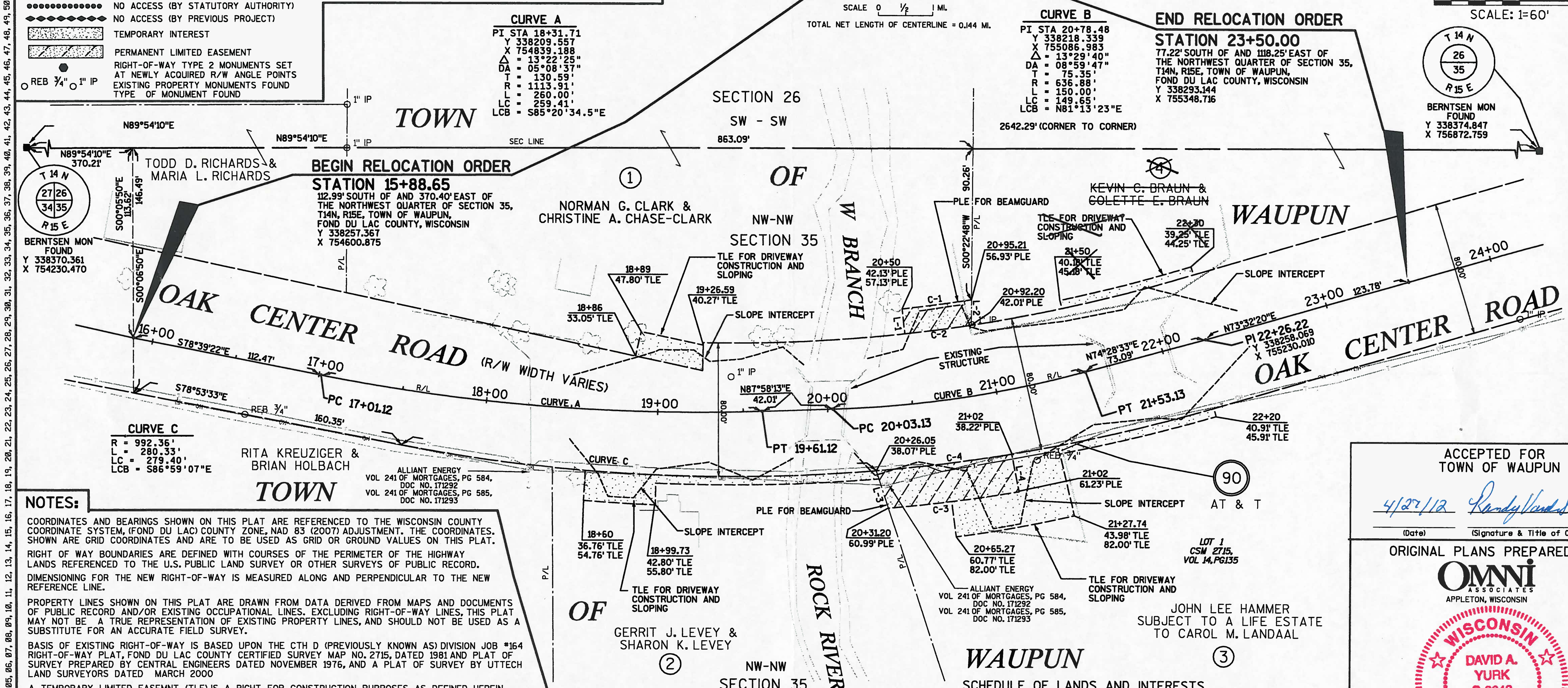
PLAT OF RIGHT-OF-WAY REQUIRED FOR

OAK CENTER ROAD

WEST BRANCH OF THE ROCK RIVER BRIDGE

TOWN OF WAUPUN FOND DU LAC COUNTY

CONSTRUCTION PROJECT NUMBER 6275-02-71/72



NOTES:

COORDINATES AND BEARINGS SHOWN ON THIS PLAT ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, (FOND DU LAC) COUNTY ZONE, NAD 83 (2007) ADJUSTMENT. THE COORDINATES SHOWN ARE GRID COORDINATES AND ARE TO BE USED AS GRID OR GROUND VALUES ON THIS PLAT.

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

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINE.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. EXCLUDING RIGHT-OF-WAY LINES, THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

BASIS OF EXISTING RIGHT-OF-WAY IS BASED UPON THE CTH D (PREVIOUSLY KNOWN AS) DIVISION JOB #164 RIGHT-OF-WAY PLAT, FOND DU LAC COUNTY CERTIFIED SURVEY MAP NO. 2715, DATED 1981 AND PLAT OF SURVEY PREPARED BY CENTRAL ENGINEERS DATED NOVEMBER 1976, AND A PLAT OF SURVEY BY UTTECH LAND SURVEYORS DATED MARCH 2000

A TEMPORARY LIMITED EASEMNT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, ASLONG AS REQUIRED FOR SUCH PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE. ALL TLE'S EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

A PERMANENT LIMITED EASEMENT (PLE) IS A RIGHT FOR CONSTRUCTION AND MAINTENANCE PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE THE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE, BUT WITHOUT PREJUDICE TO THE OWNER'S RIGHT TO MAKE OR CONSTRUCT IMPROVEMENTS ON SAID LANDS OR TO FLATTEN THE SLOPES, PROVIDING SAID ACTIVITIES WILL NOT IMPAIR OR OTHERWISE ADVERSELY AFFECT THE HIGHWAY FACILITIES.

PARCEL 4 IS NOT REQUIRED AND NOT ACQUIRED FOR THIS PROJECT

SCHEDULE OF LANDS AND INTERESTS

PARCEL NO.	OWNER	INTEREST REQUIRED	TLE AREA	PLE AREA
1	NORMAN G. CLARK & CHRISTINE A. CHASE-CLARK	TLE PLE	0.02 AC	0.01 AC
2	GERRIT J. LEVEY & SHARON K. LEVEY	TLE	0.03 AC	----
3	JOHN LEE HAMMER SUBJECT TO A LIFE ESTATE TO CAROL M. LANDAAL	TLE PLE	0.04 AC	0.04 AC
~~4~~	~~KEVIN C. BRAUN & COLETTE E. BRAUN~~	~~TLE~~	~~0.01 AC~~	----
90	AT & T	RELEASE OF RIGHTS	----	----

"OWNERS" NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO THE TOWN OF WAUPUN

ACCEPTED FOR TOWN OF WAUPUN

4/27/12 Randy VandeSlunt

(Date) (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY

OMNNI ASSOCIATES APPLETON, WISCONSIN

WISCONSIN DAVID A. YURK S-2648 OSHKOSH, WI LAND SURVEYOR

REV 8-1-12

3-1-12 David Yurk

(Date) (Signature)

LEVELS ON = 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63

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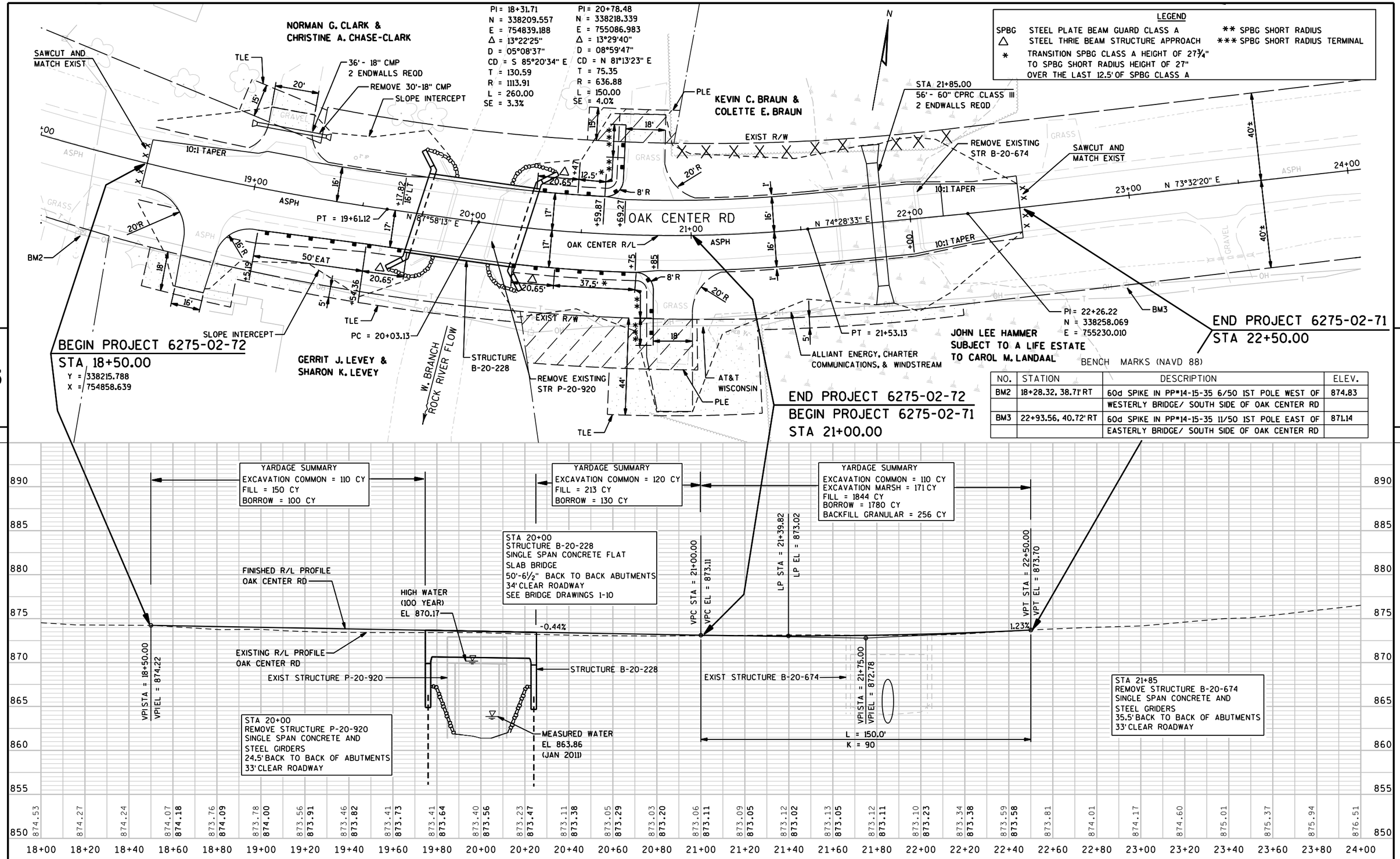
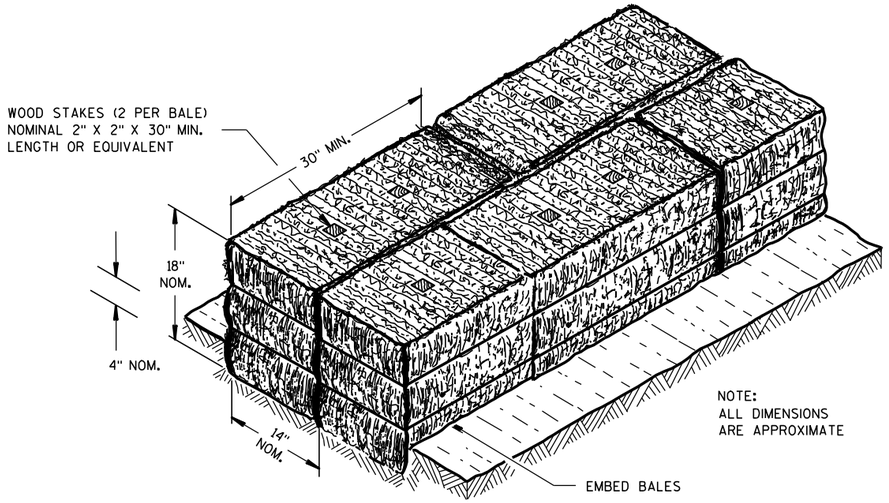
WISDOT/CADDS SHEET 50C



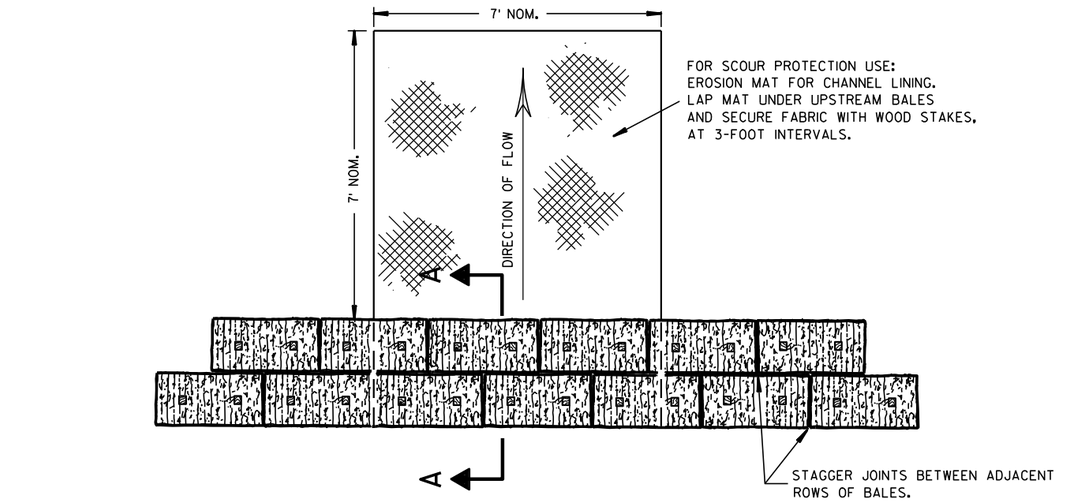
PROJECT NO: 6275-02-71/72	HWY: OAK CENTER RD	COUNTY: FOND DU LAC CO	PLAN AND PROFILE: OAK CENTER RD	SHEET 14	E

Standard Detail Drawing List

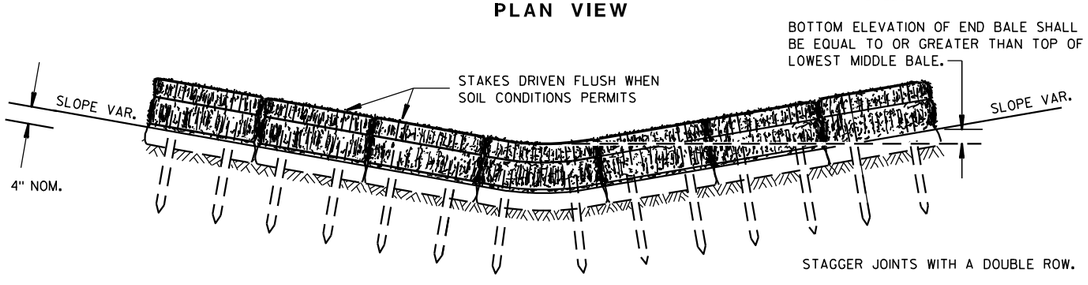
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-06	JOINT TIES FOR CONCRETE PIPE
12A03-10	NAME PLATE (STRUCTURES)
14B15-07A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20-10A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-10F	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"
14B24-07A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
15A03-01	MARKER POSTS, FLEXIBLE, FOR CULVERT END
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-05	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-14A	PAVEMENT MARKING (MAINLINE)



SECTION A-A



PLAN VIEW



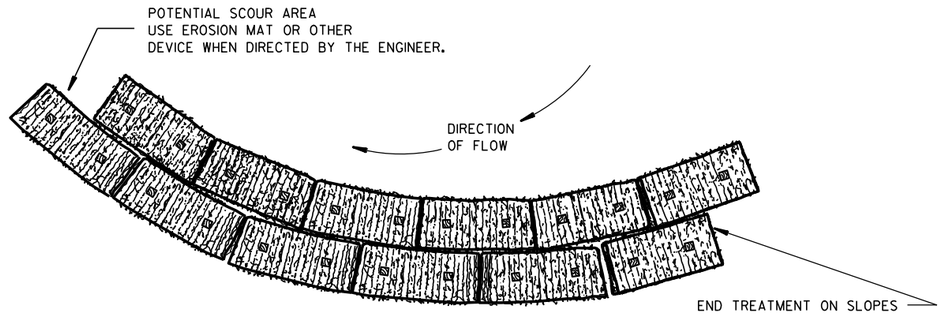
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

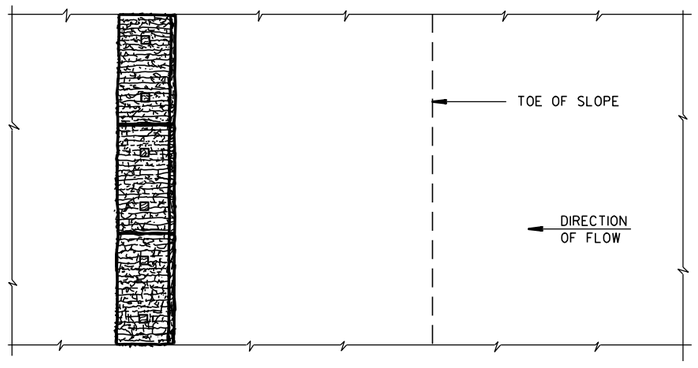
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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.

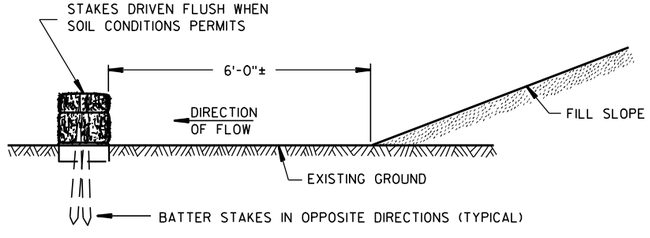


PLAN VIEW

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

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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S.D.D. 8 E 8-3

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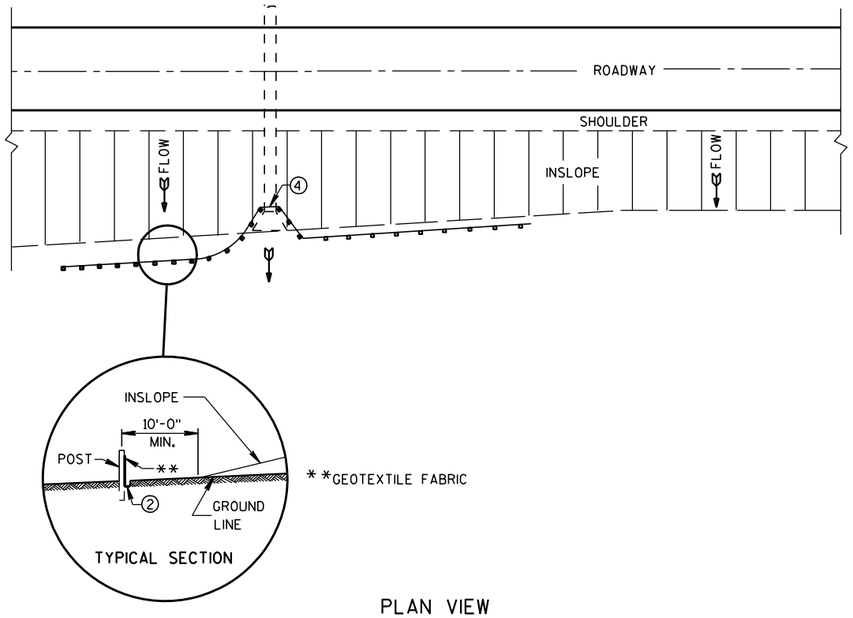
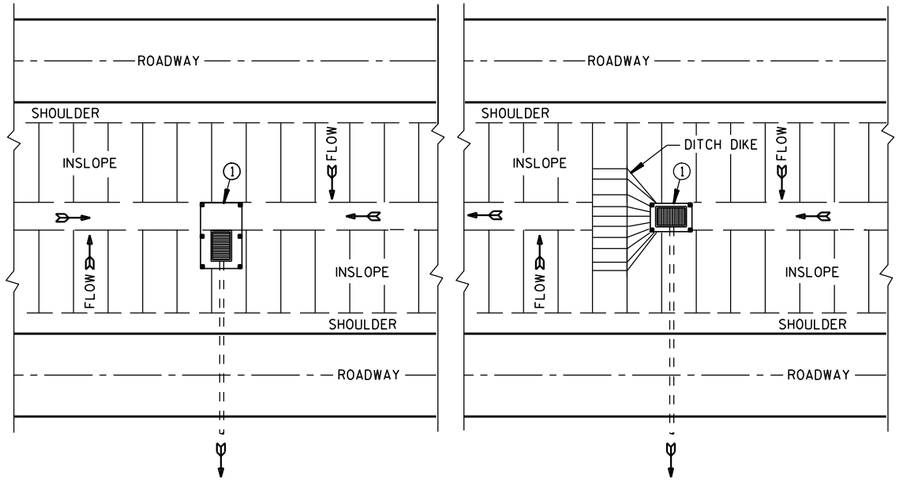
S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



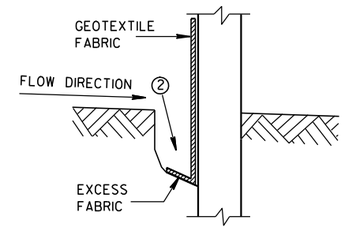
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

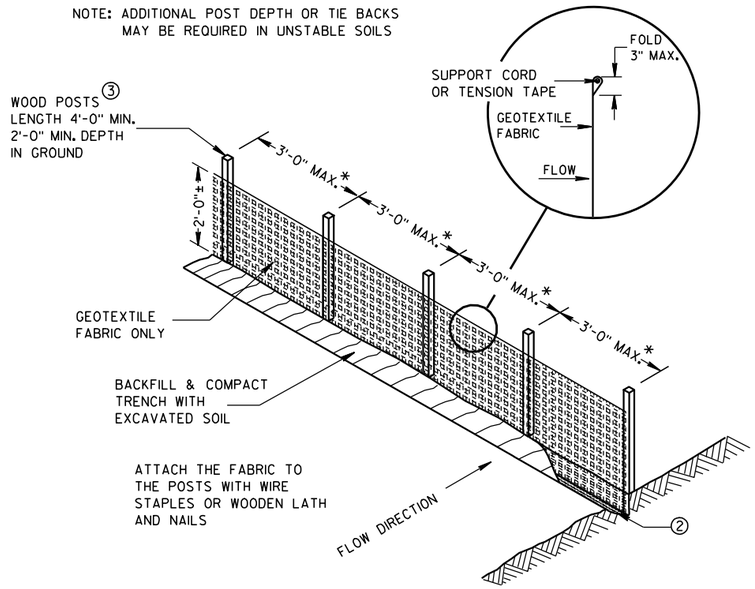
GENERAL NOTES

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

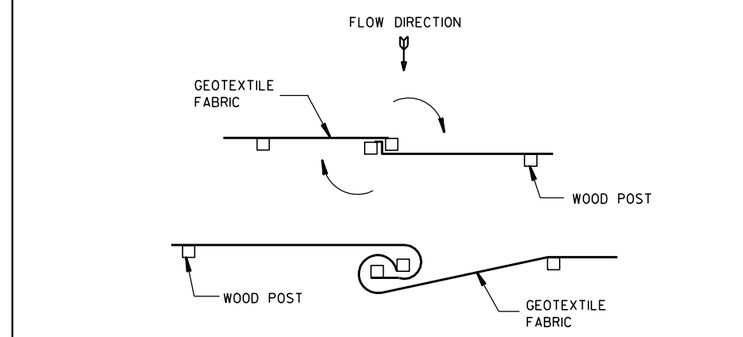
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



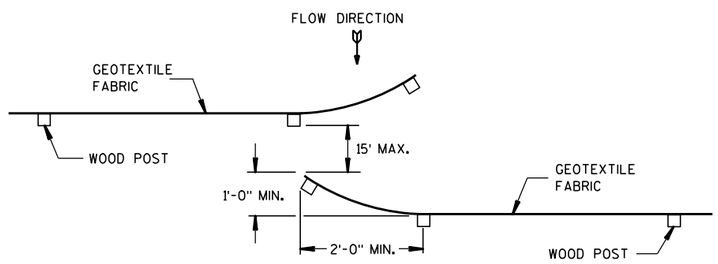
TRENCH DETAIL



SILT FENCE

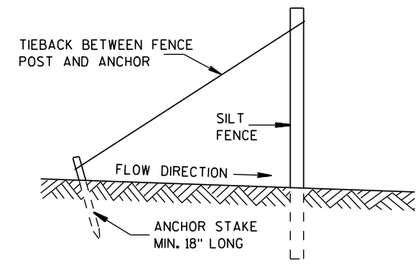


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 8 E 9-6

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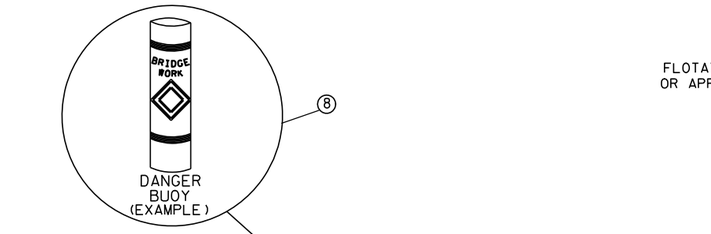
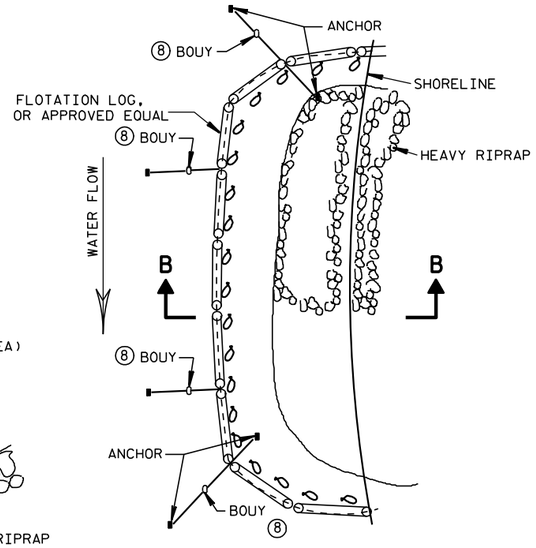
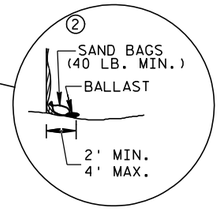
S.D.D. 8 E 9-6

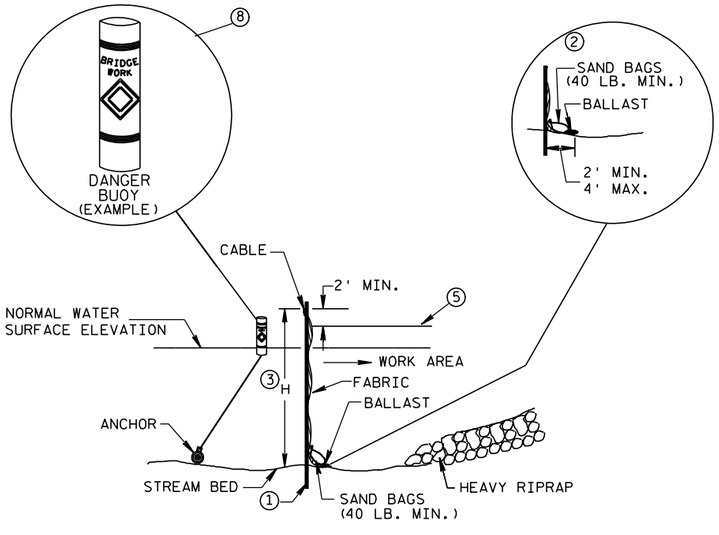


SECTION B-B

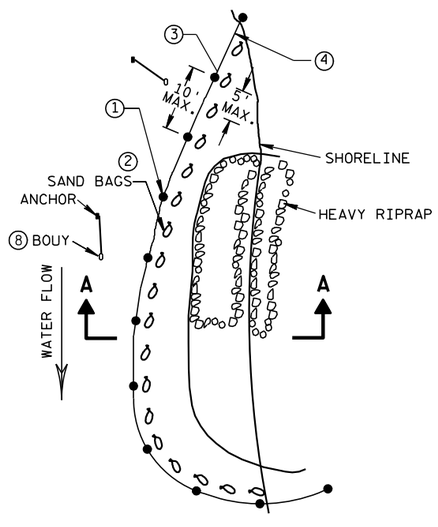




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② 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.

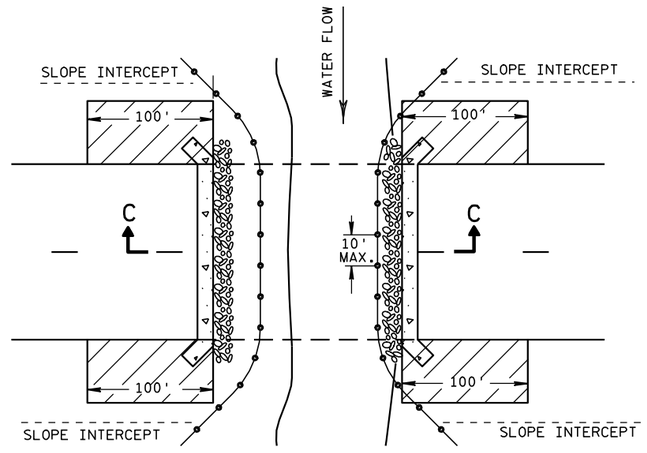
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

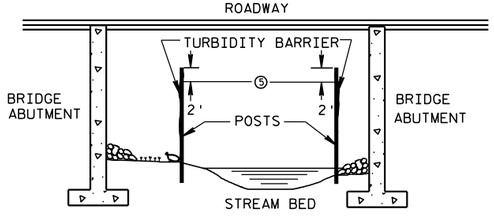
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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.



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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S.D.D. 8 E 11-2

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S.D.D. 8 E 11-2

METAL APRON ENDWALLS

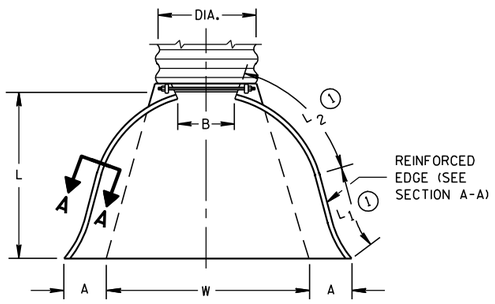
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

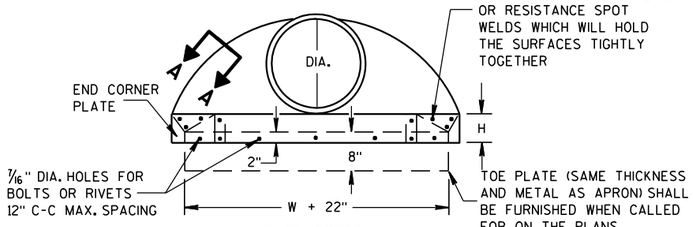
REINFORCED CONCRETE APRON ENDWALLS

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 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

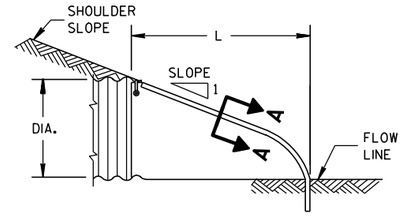
* MINIMUM
** MAXIMUM



PLAN VIEW

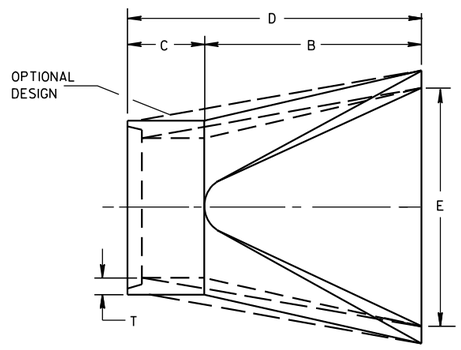


END VIEW

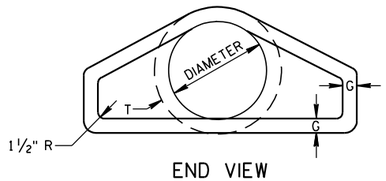


SIDE ELEVATION

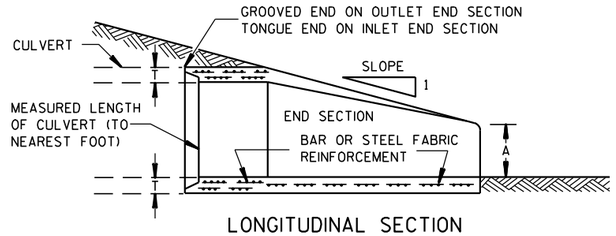
METAL ENDWALLS



PLAN

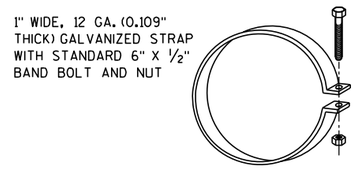


END VIEW



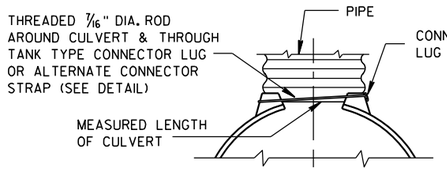
LONGITUDINAL SECTION

CONCRETE ENDWALLS

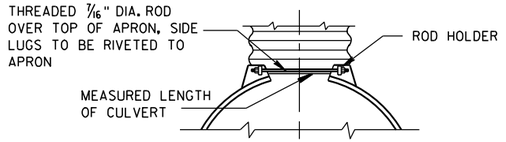


ALTERNATE FOR TYPE 1 CONNECTION

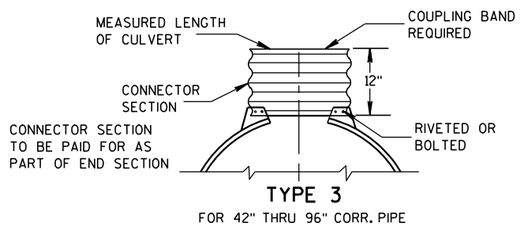
END SECTION CONNECTOR STRAP



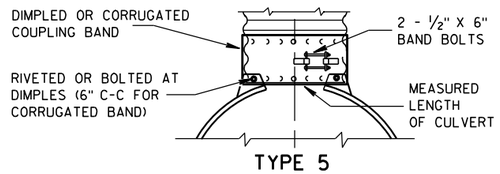
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

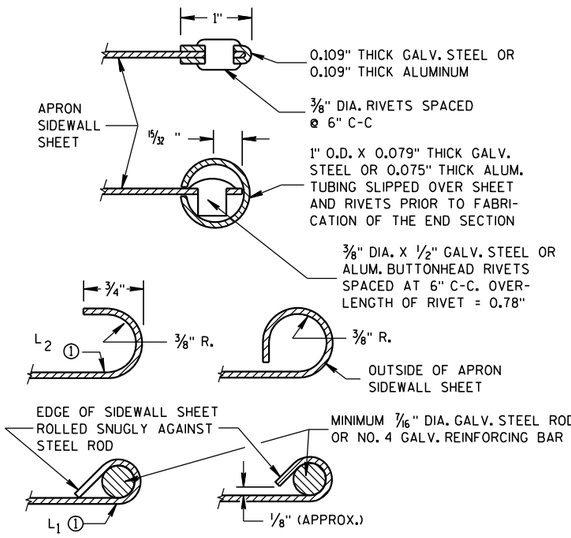
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

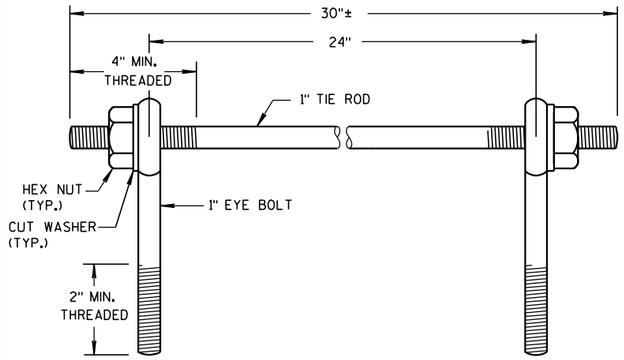
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

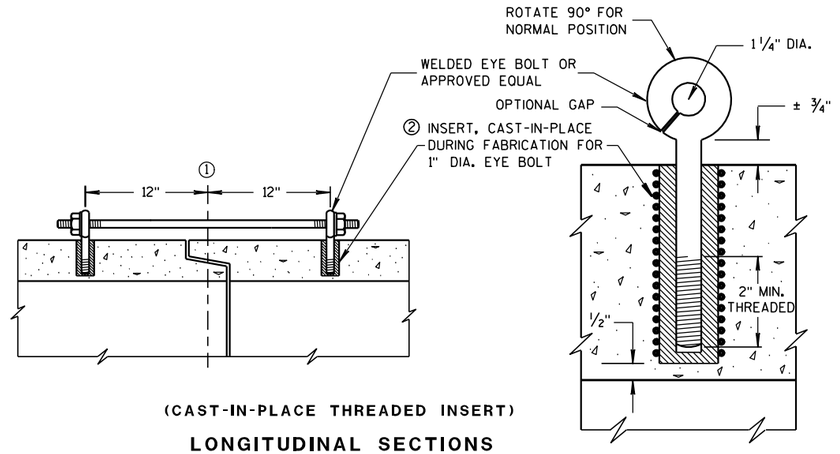
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

GENERAL NOTES

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

CONCRETE CULVERT PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED ON THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES. UNLESS OTHERWISE STATED IN THE CONTRACT THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE CULVERT PIPE AS INDICTED ON THE PLANS AND BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO CILVERT PIPE, REINFORCED CONCRETE CULVERT PIPE, OR REINFORCED CONCRETE PIPE CATTLE PASS.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

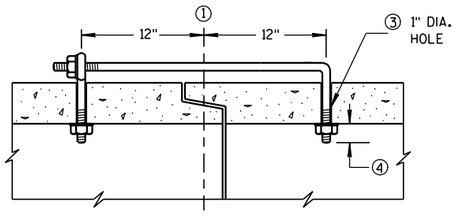
③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

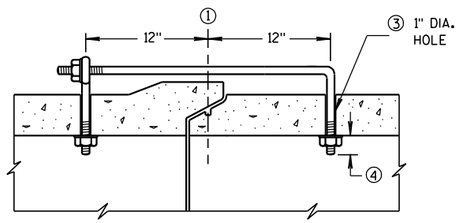
⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)



(TONGUE & GROOVE PIPE)



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

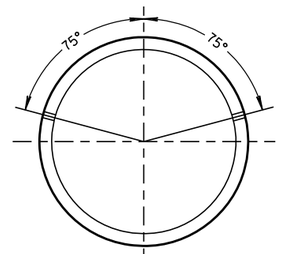
EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	

ADJUSTABLE TIE ROD TABLE

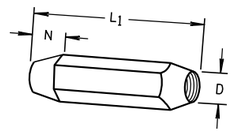
PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 7/16

DIMENSIONS SHOWN ARE IN INCHES

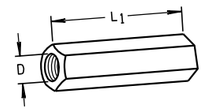


PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



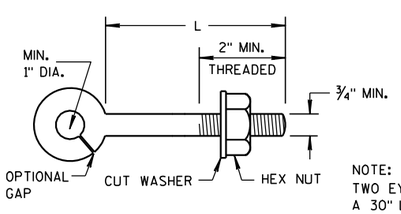
TAPERED



PLAIN

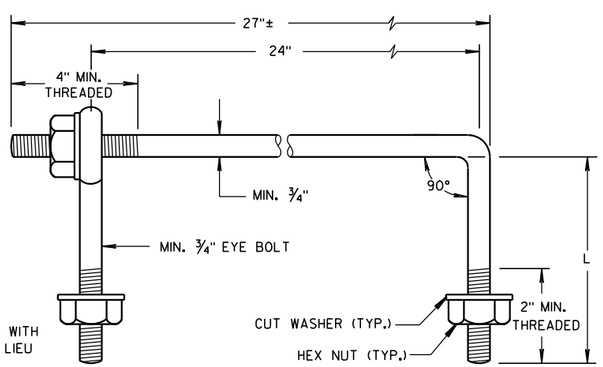
RIGHT AND LEFT THREADS

SLEEVE NUTS



EYE BOLT

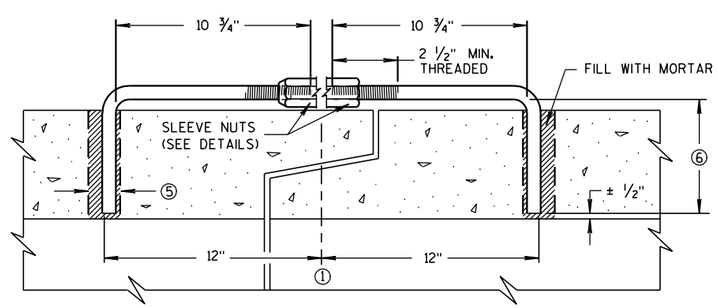
NOTE:
TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)



LONGITUDINAL SECTION

(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)

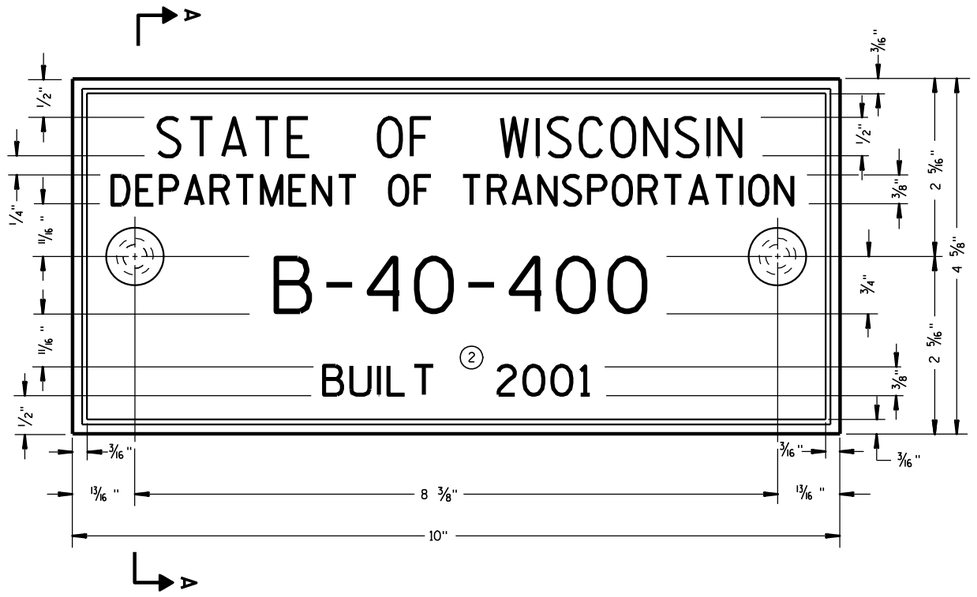
JOINT TIES FOR CONCRETE PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

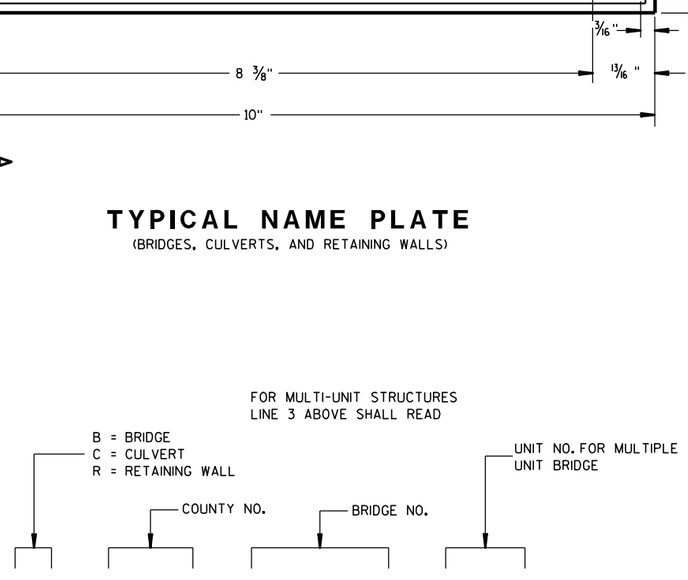
APPROVED
12/17/07 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 F 4-6



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



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

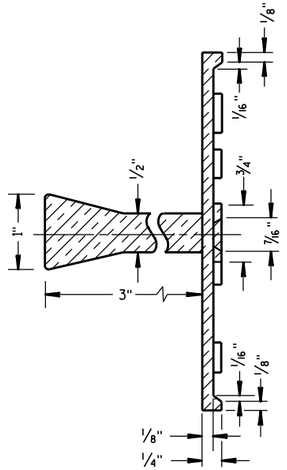
GENERAL NOTES

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.

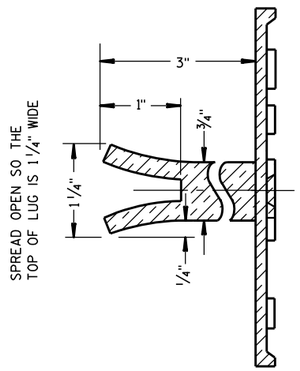
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

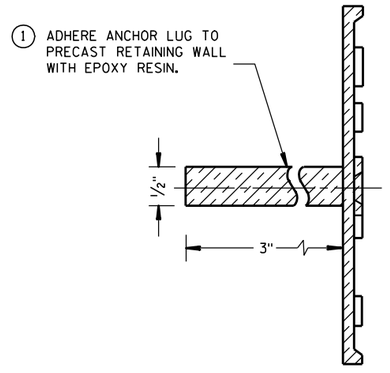
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck CHIEF STRUCTURAL DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 12 A 3-10

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) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

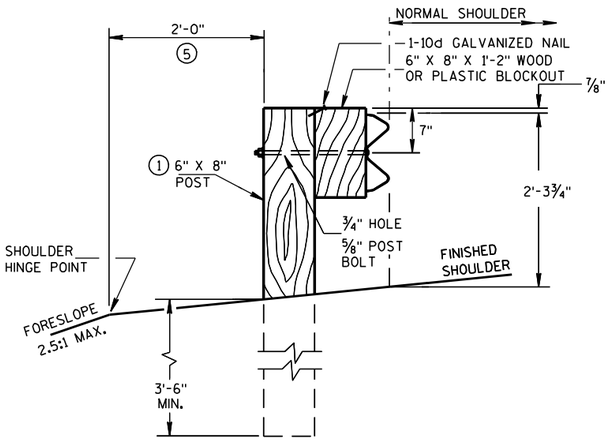
(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

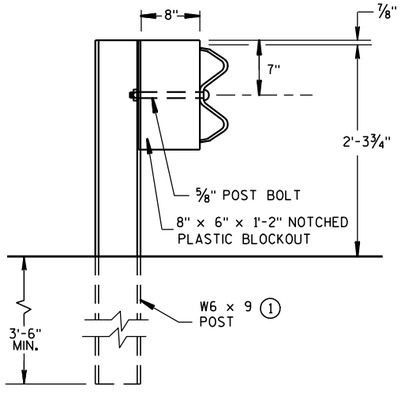
(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

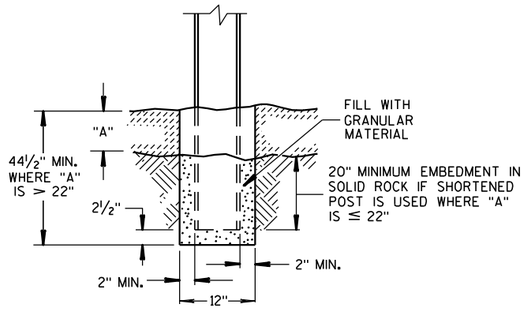
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



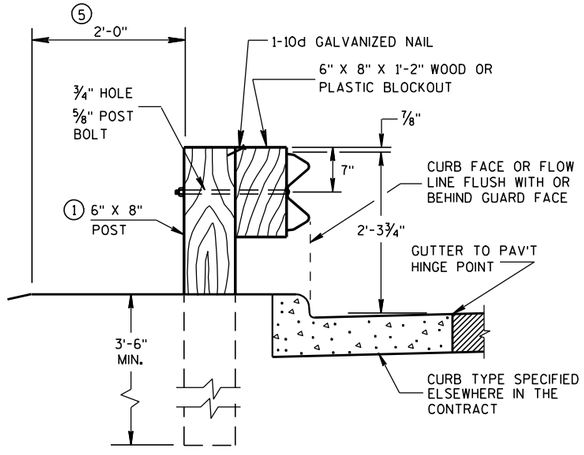
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



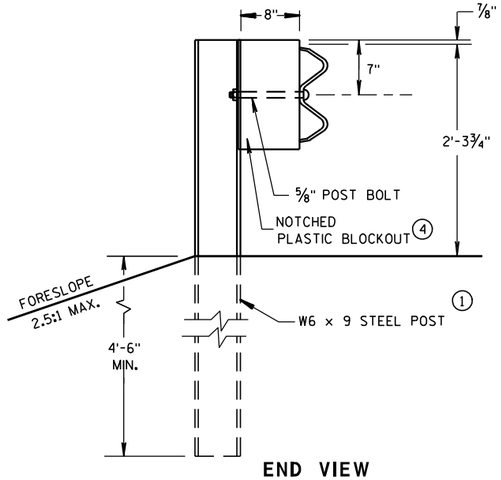
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



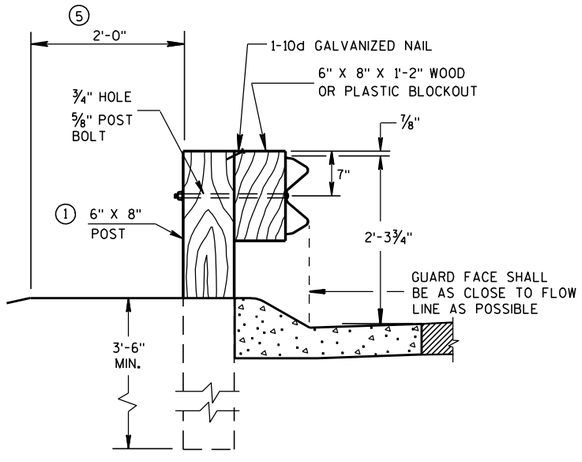
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)



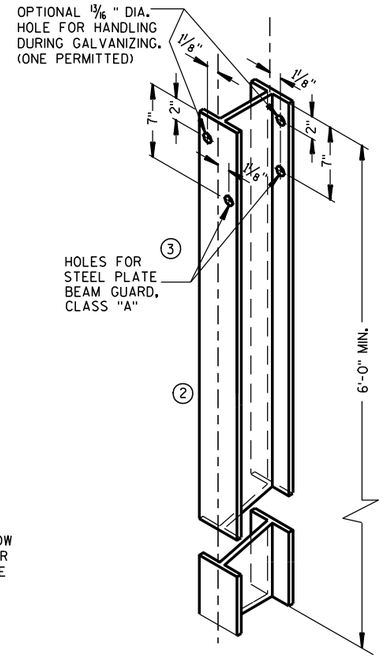
END VIEW
LOCATED ALONG A CURBED ROADWAY



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)

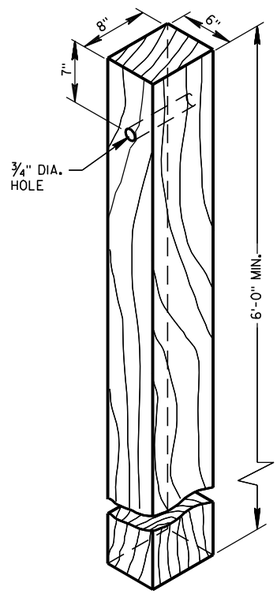


END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

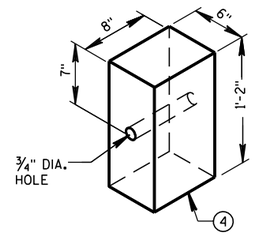


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

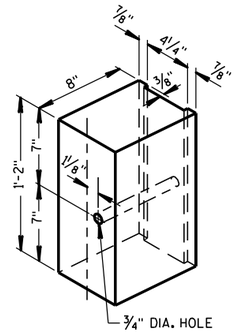
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



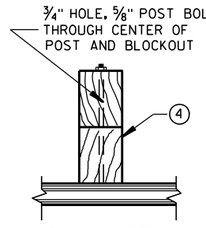
WOOD POST
(6"X8") NOMINAL



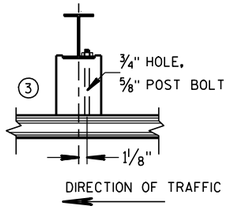
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



TYPICAL NOTCHED (1)
PLASTIC BLOCKOUT
FOR STEEL POSTS



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



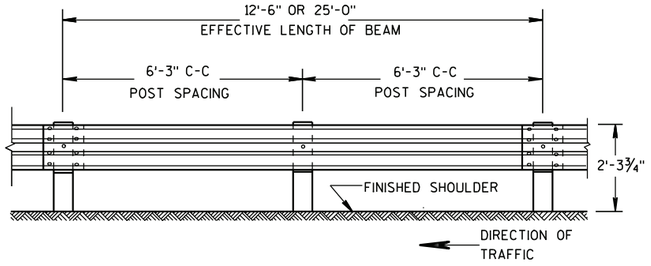
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

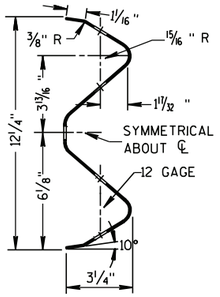
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 15-7a

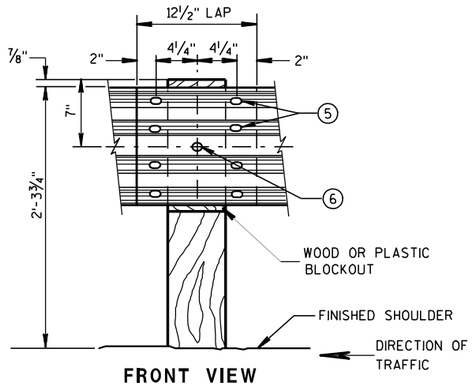


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM

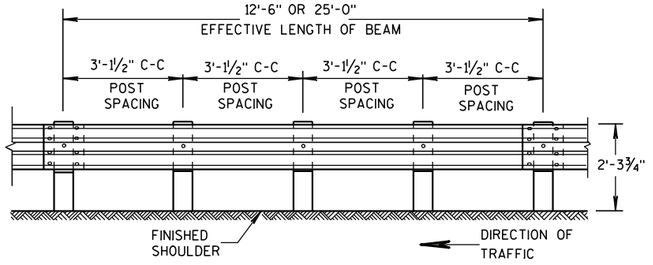


FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

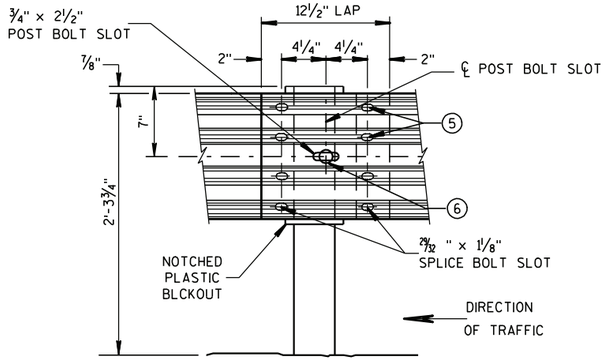
GENERAL NOTES

1. PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 8 - 5/8" Φ X 2 " BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
6. 5/8" Φ X 1'-6" BUTTON HEAD BOLT AND AND RECESS NUT WITH ROUND WASHER UNDER NUT.



FRONT VIEW

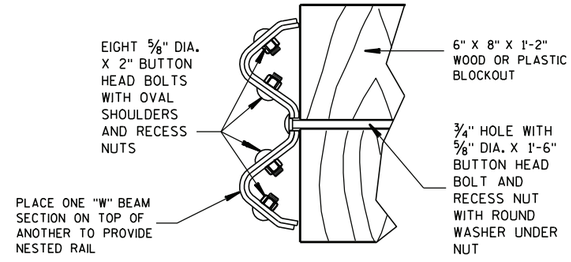
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

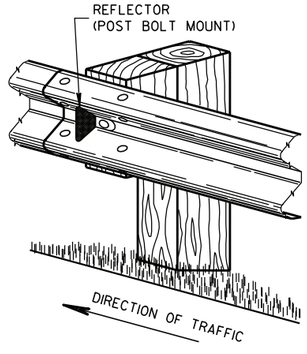


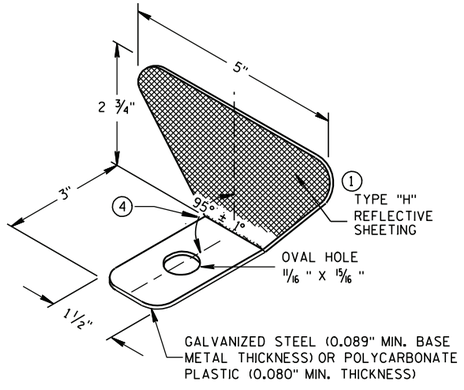
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING (2)

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 (3)	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2 (4)	



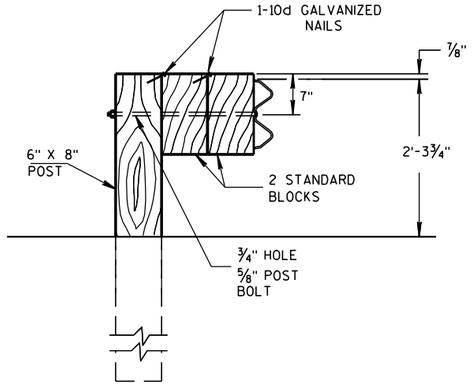


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (1)

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

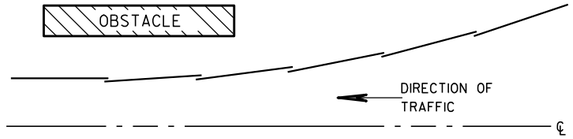
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

6
S.D.D. 14 B 15-7b

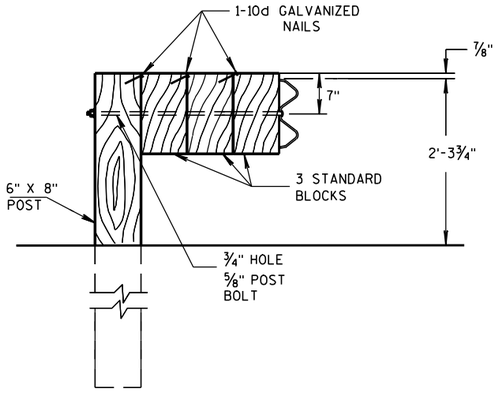


DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

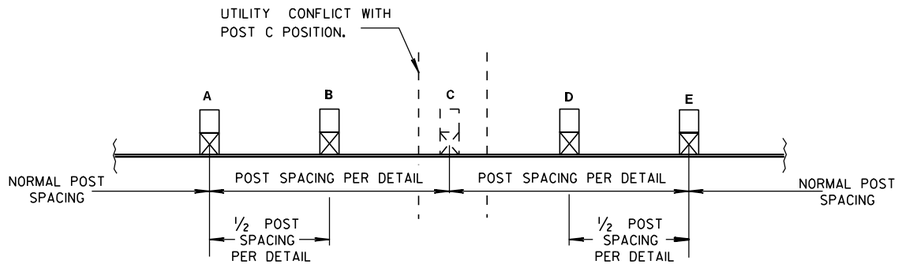


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/23/11	/S/ Jerry H. Zogg	
DATE	ROADWAY STANDARDS ENGINEER	ENT

FHWA

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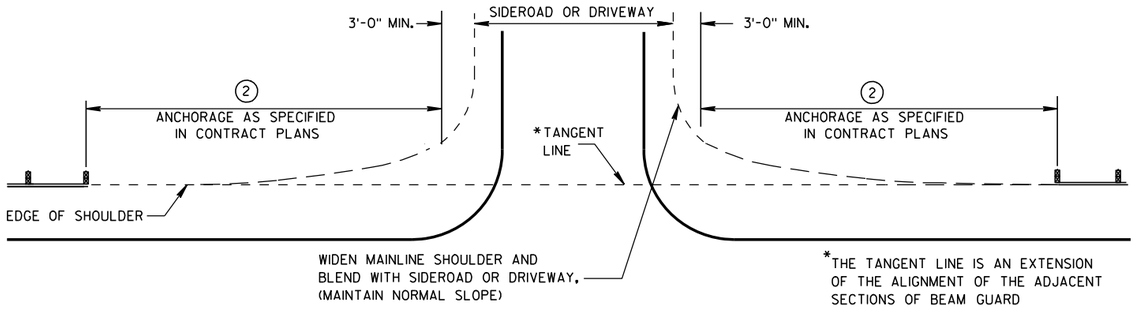
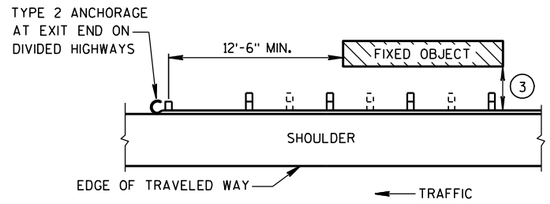
S.D.D. 14 B 15-7c



BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

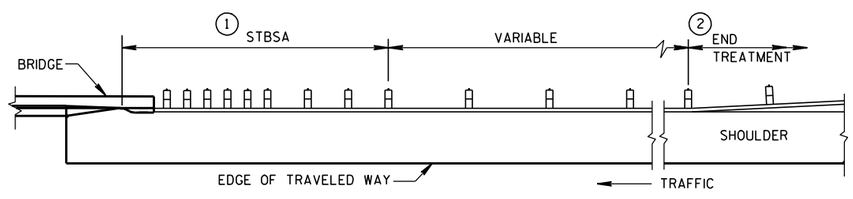
THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

(1) STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.

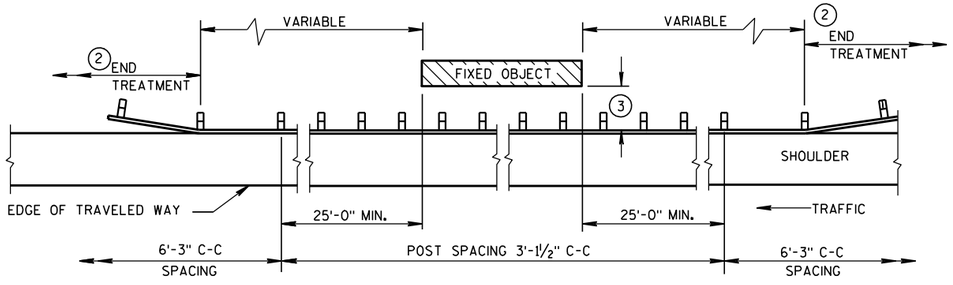
(2) USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

(3)

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1½"
4'-6"	6' - 3"

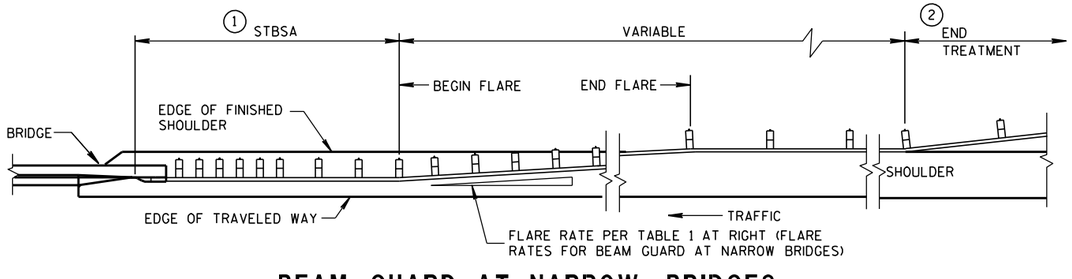


BEAM GUARD AT FULL WIDTH BRIDGES



BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")



BEAM GUARD AT NARROW BRIDGES
(FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

TABLE 1
FLARE RATES FOR BEAM GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1

STEEL PLATE BEAM GUARD CLASS "A" AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-21-07 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

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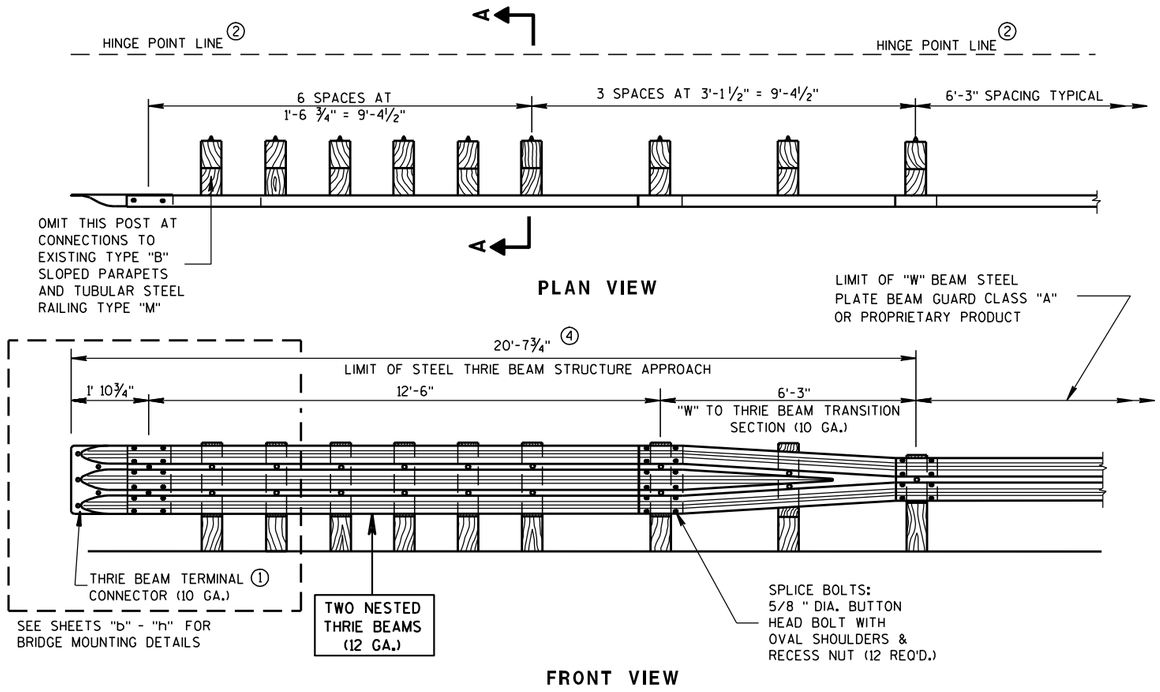
S.D.D. 14 B 18-6a



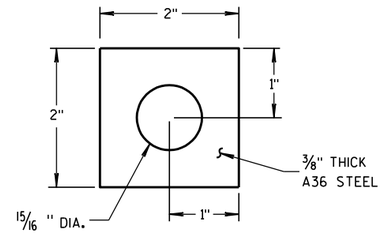


PLATE WASHER DETAIL

GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

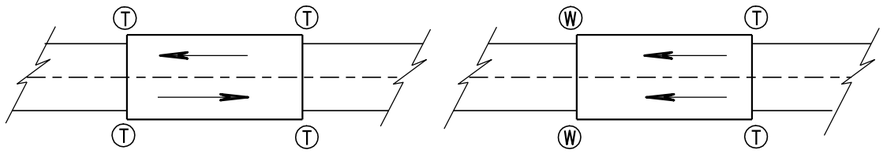
IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATELY, (SEE SDD 14 B 15 - a).

① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



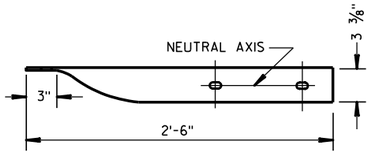
TWO WAY TRAFFIC

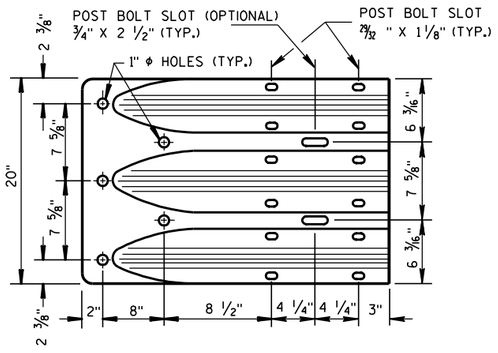
ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

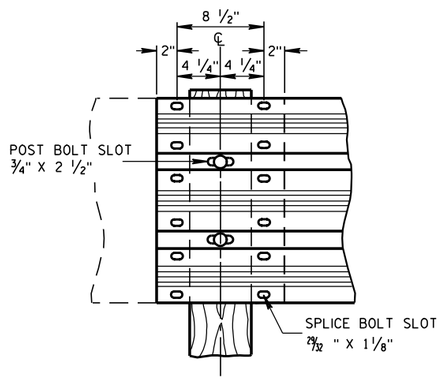
(W) W-BEAM CONNECTION WHEN REQUIRED

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

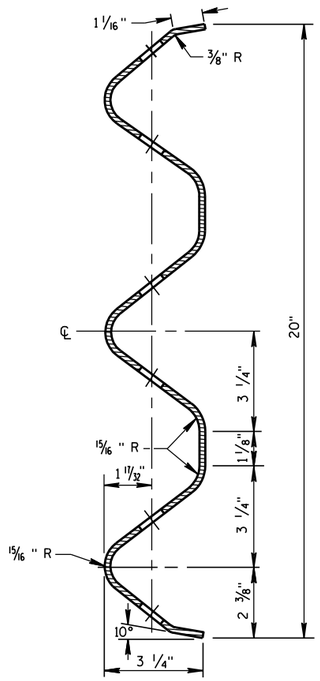




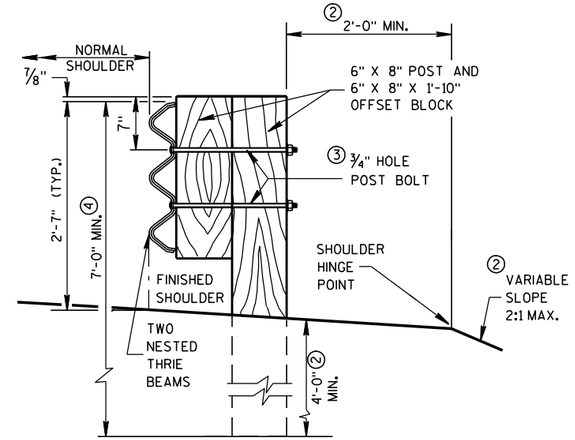
THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE



SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION A-A

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-8-2012 DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS [illegible]26 ENGINEER

FHWA

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S.D.D. 14 B 20-10a

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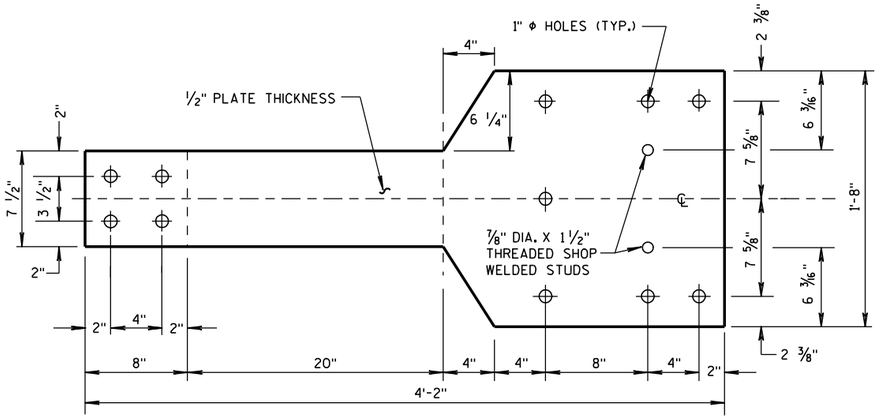
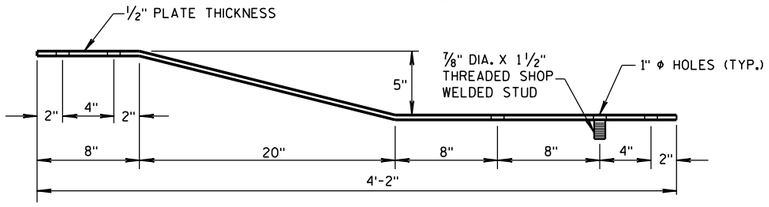
S.D.D. 14 B 20-10a

GENERAL NOTES

① VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL BE AS CLOSE AS FEASIBLE TO THE STEEL END POST.

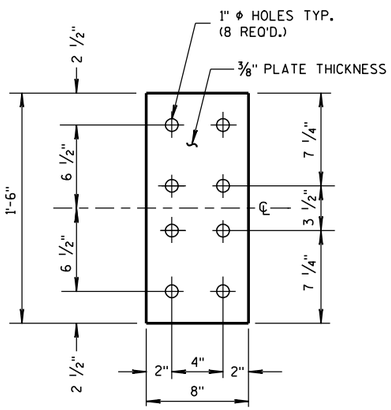


FRONT VIEW



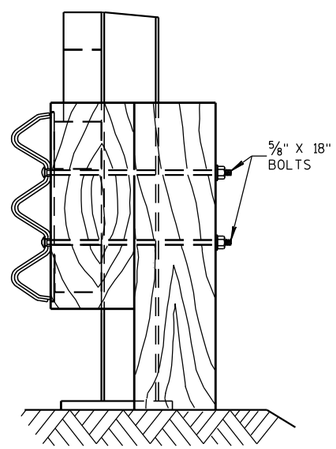
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

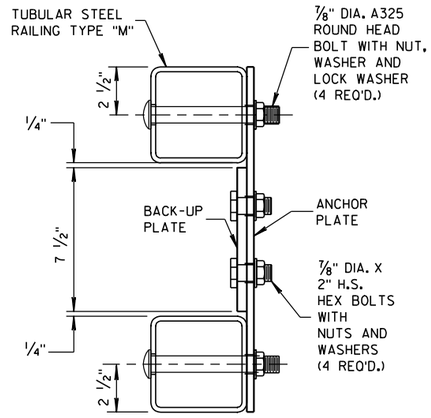


FRONT VIEW

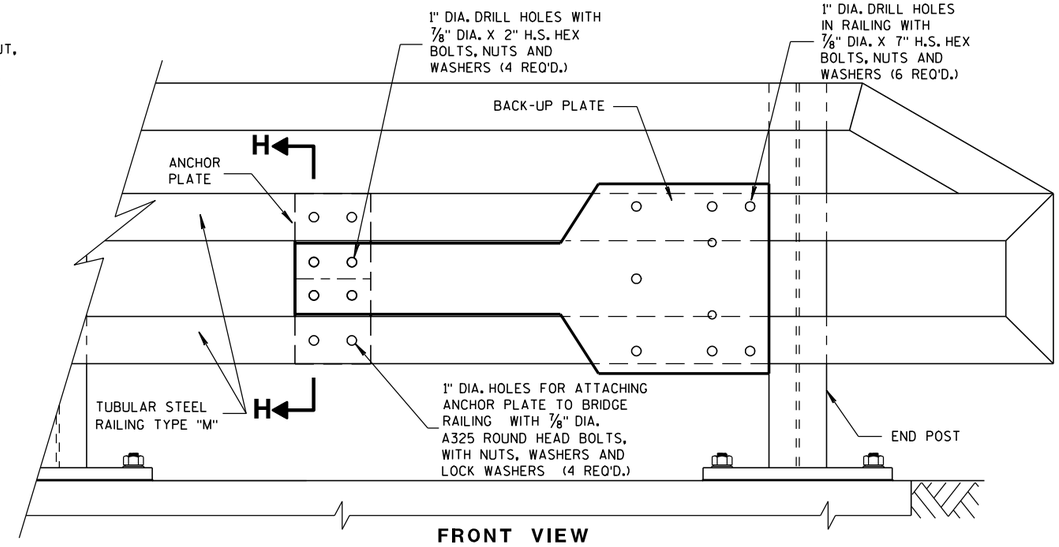
ANCHOR PLATE DETAIL, TYPE "M"



SECTION I-I

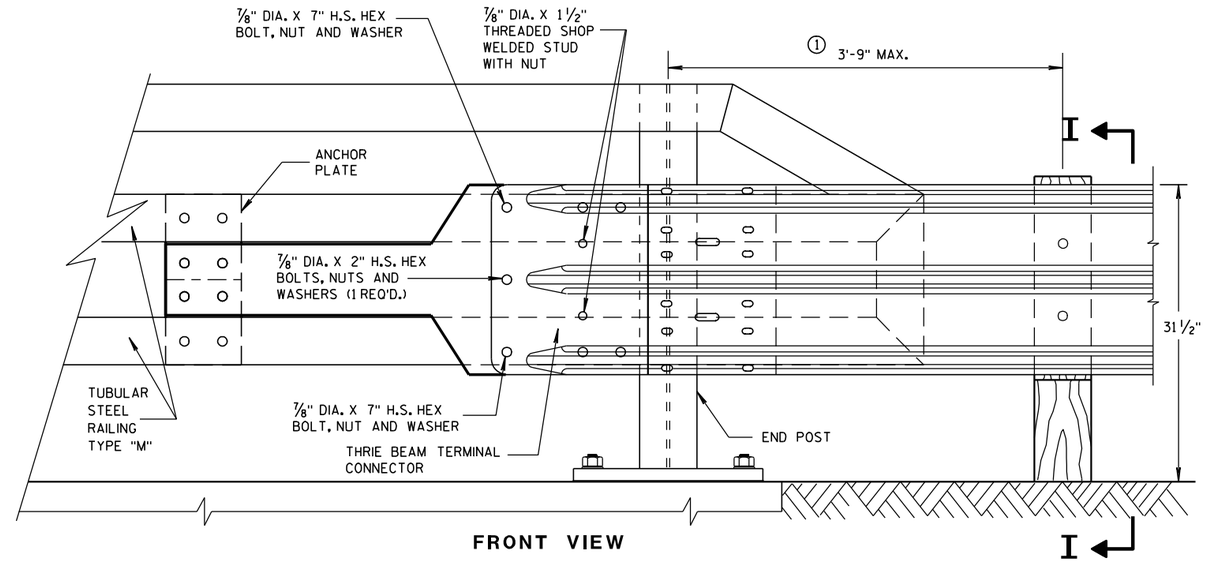


SECTION H-H

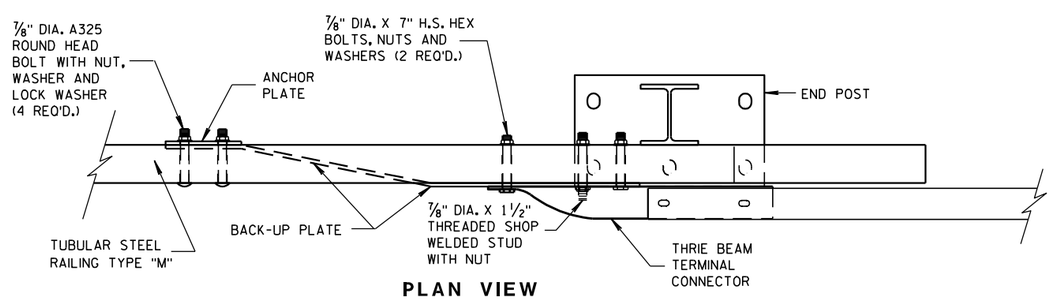


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2-8-2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER 27 ENT
FHWA

6

S.D.D. 14 B 20-10f

6

S.D.D. 14 B 20-10f

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
(1)	4	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
(2)	**	STEEL TUBE: OPTION 1 - QUANITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
(3)	2	SOIL PLATE: 2'-0" X 1'-6" X ¼" **
(4)	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
(5)	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
(6)	1	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
(7)	1	BEARING PLATE
(8)	1	BCT CABLE ASSEMBLY
(9)	1	CABLE ANCHOR BOX
(10)	1	STRUT & YOKE
(11)	1	STEEL PLATE BEAM, END PANEL 12 GA. 13'-6½" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
(12)	3	STEEL PLATE BEAM: 12 GA. 13'-6½"
(13)	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
(14)	1	REFLECTIVE SHEETING TYPE H: 18" X 18"
(15)	1	E.A.T. MARKER POST

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS. IF NONE ARE AVAILABLE, INSTALL ⅝" ϕ X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL),AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

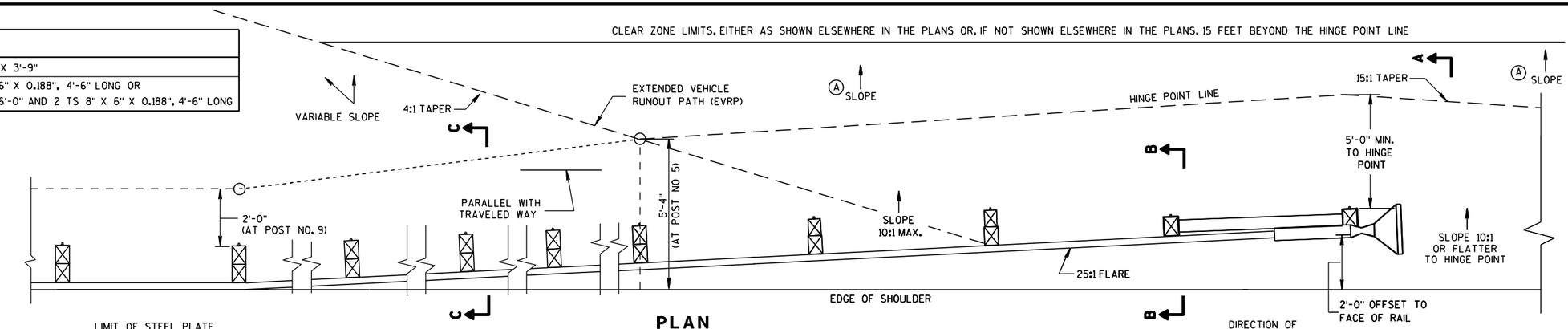
(F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

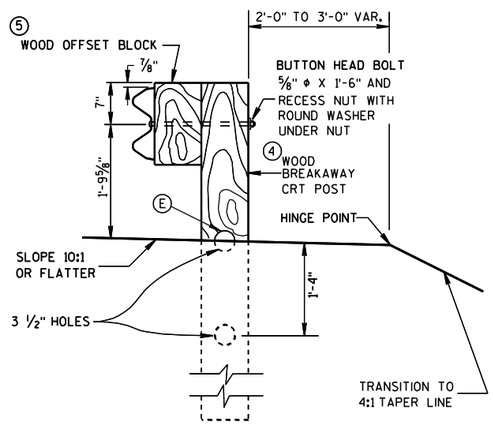
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

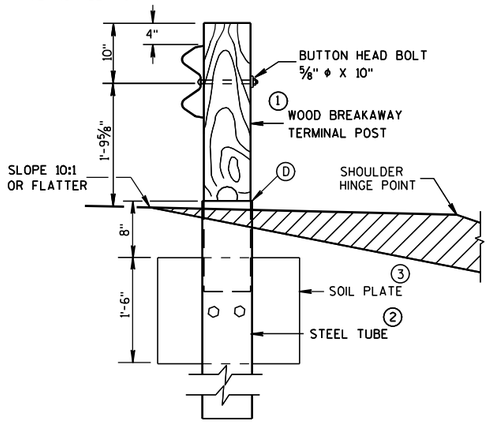
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.

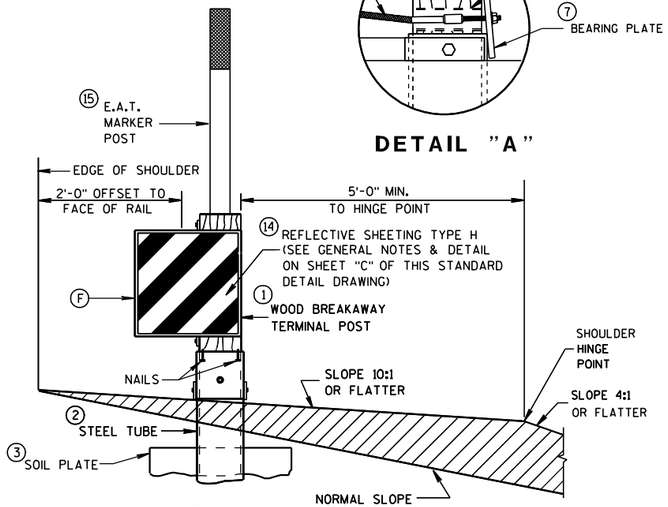




SECTION C-C
TYPICAL AT POST NOS. 6, 8

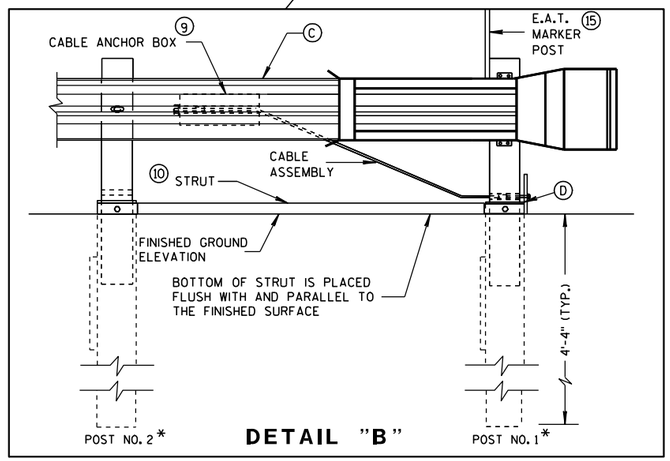


SECTION B-B
TYPICAL AT POST NO. 2*



DETAIL "A"

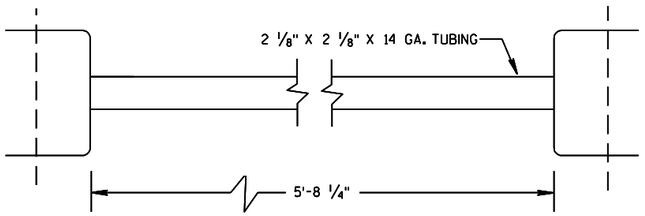
SECTION A-A
TYPICAL AT POST NO. 1*



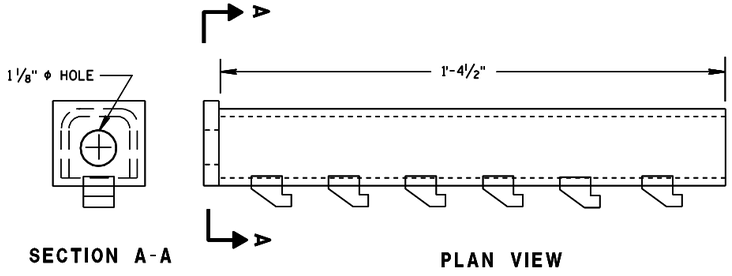
DETAIL "B"

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

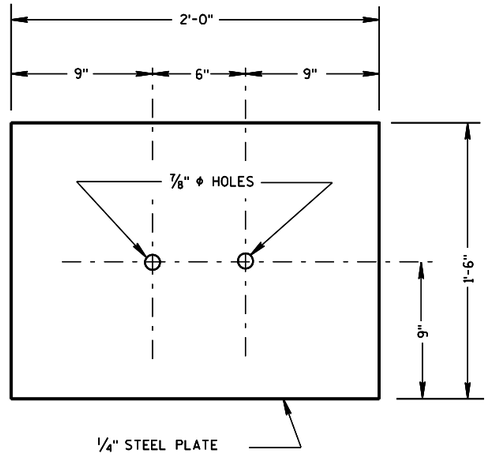
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



⑩ STRUT DETAIL (SKT-350)

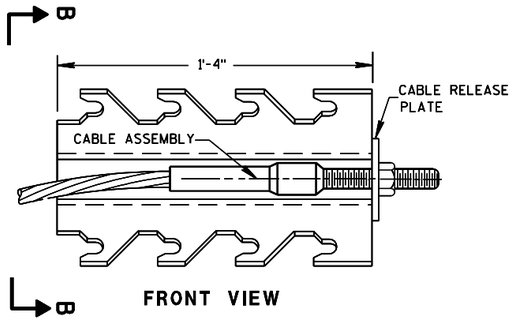


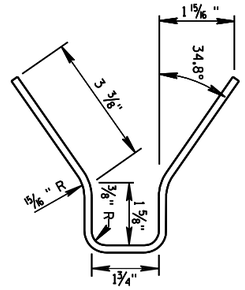
⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



③ SOIL PLATE

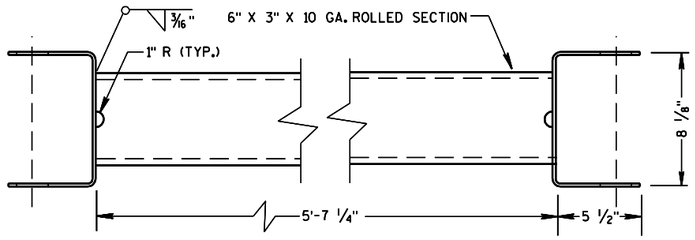
(SKT-350, ET-2000/ET-2000 PLUS)





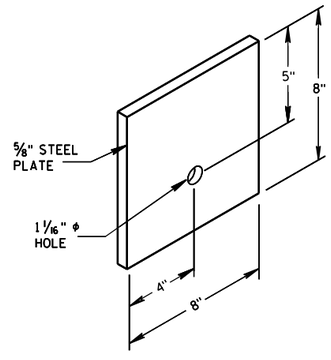
⑨ CABLE ANCHOR BOX (SKT-350)

(SKT-350)



⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)



⑦ STEEL BEARING PLATE

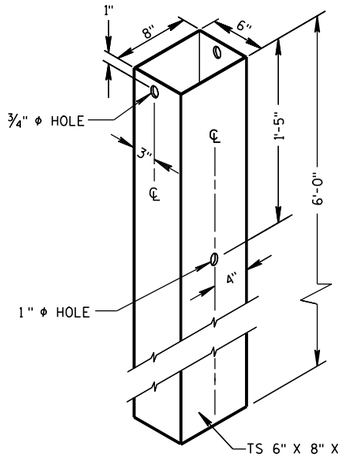
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

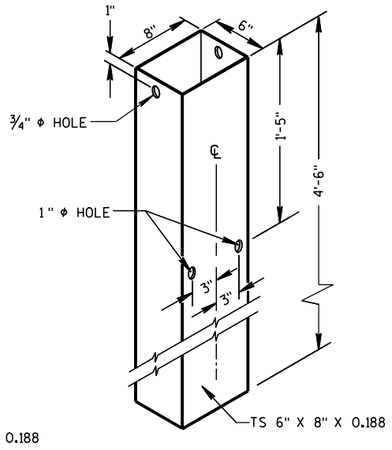
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

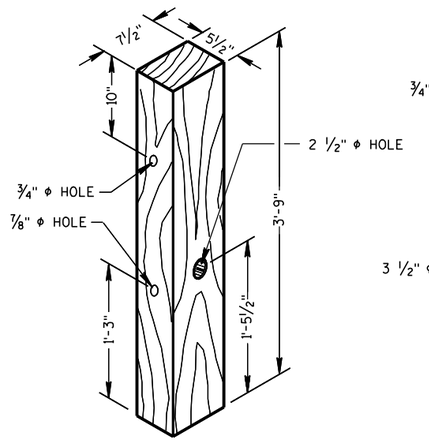
S.D.D. 14 B 24-7b



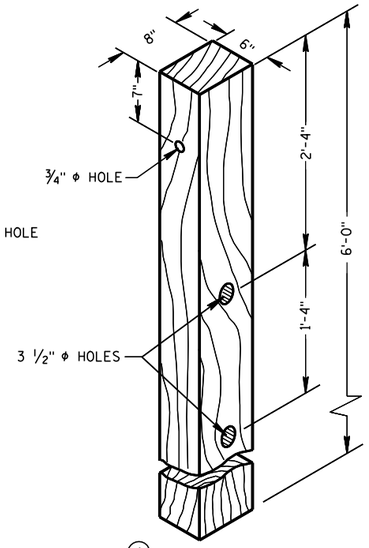
(2) 72" STEEL TUBE
(POSTS NO. 1-4



(2) 54" STEEL TUBE
(POSTS NO. 1-4



(1) TERMINAL POST
(POSTS NO. 1-4



(4) CRT POST
(POSTS NO'S 5-8

WOOD BREAKAWAY POSTS

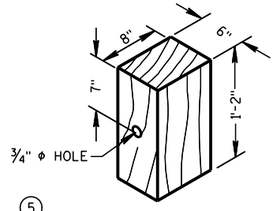
GENERAL NOTES

STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH, WHICH SHALL INCLUDE HARDWARE, STEEL PLATE BEAM GUARD, POSTS, REFLECTIVE SHEETING AND INSTALLATION AS SHOWN.

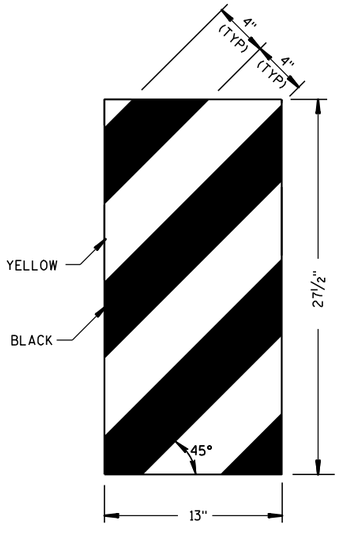
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.

SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

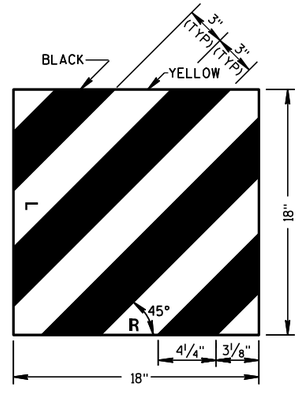
(G) ½" DIA. X 3" LAG BOLT WITH WASHER.



(5) WOOD OFFSET BLOCK
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

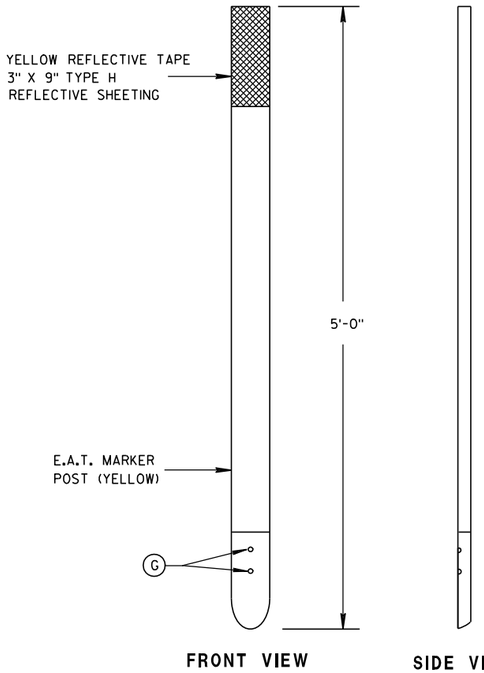


ET-2000 PLUS ONLY



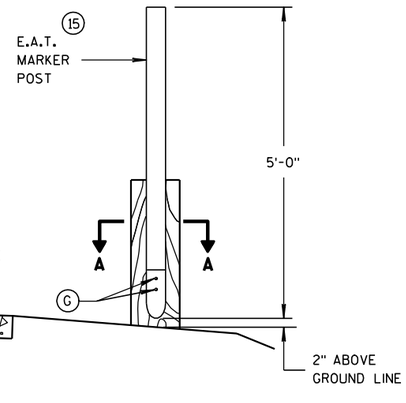
ET-2000 AND SKT-350

(14) REFLECTIVE SHEETING DETAILS

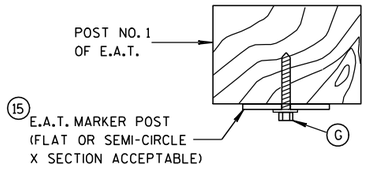


FRONT VIEW SIDE VIEW

(15) E.A.T. MARKER POST



TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

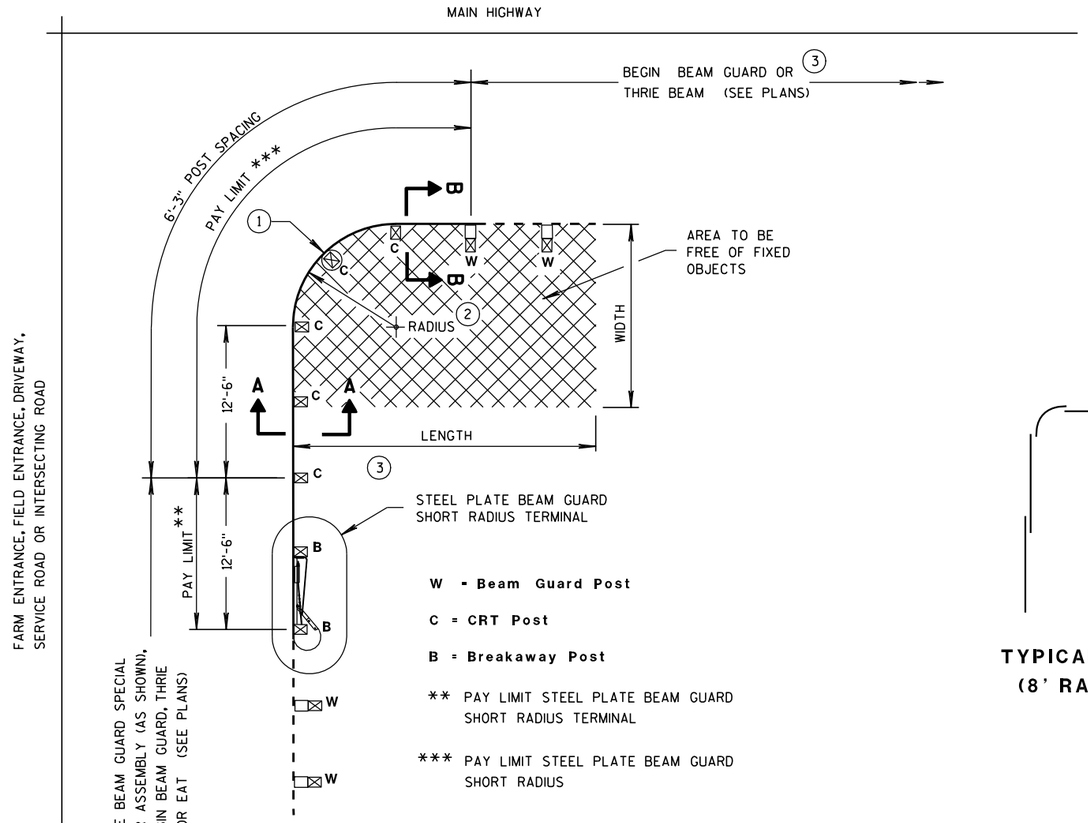
APPROVED
4-12-10 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
[illegible]ENT
FHWA

6

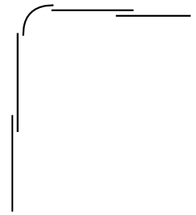
S.D.D. 14 B 24-7c

6

S.D.D. 14 B 24-7c



TYPICAL LAYOUT
(8' RADIUS SHOWN)



TYPICAL LAP SPLICES
(8' RADIUS SHOWN)

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2. UNLESS NOTED OTHERWISE.

SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

(1) ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.

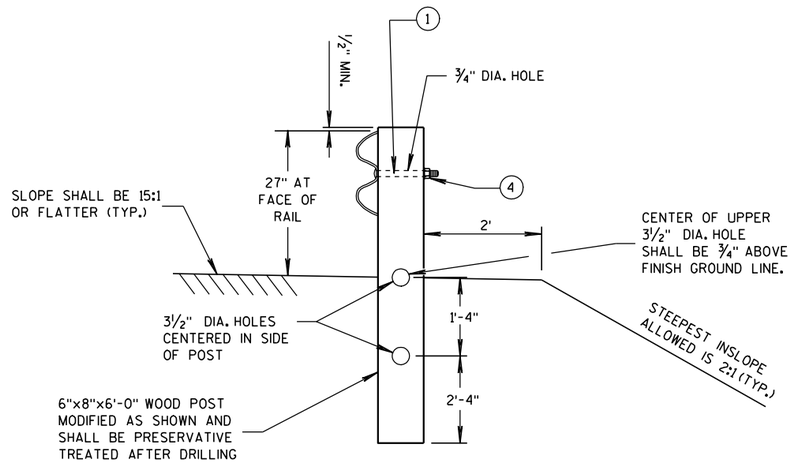
(2) RADIUS FROM 8' - 36'. SEE PLAN.

(3) HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.

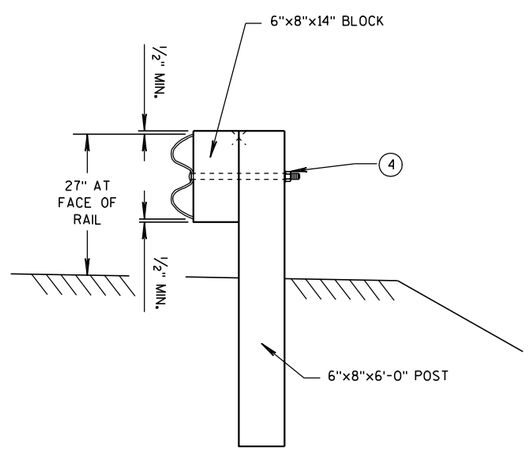
(4) 5/8" ø X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



SECTION A-A
(CRT POST)



SECTION B-B
(BEAM GUARD POST)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

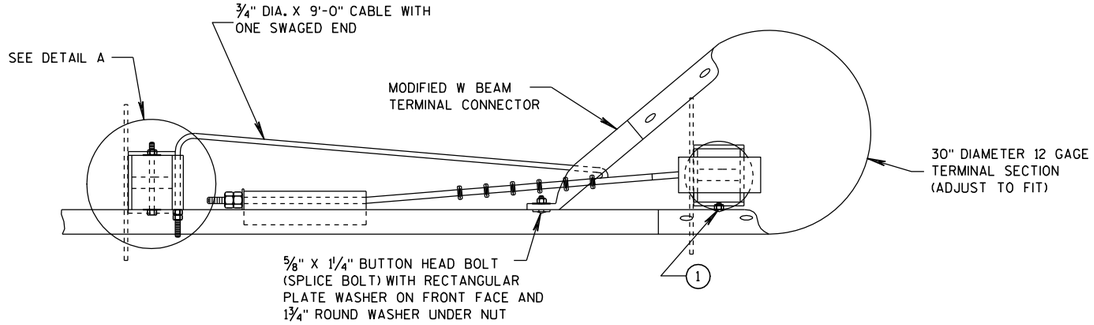
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

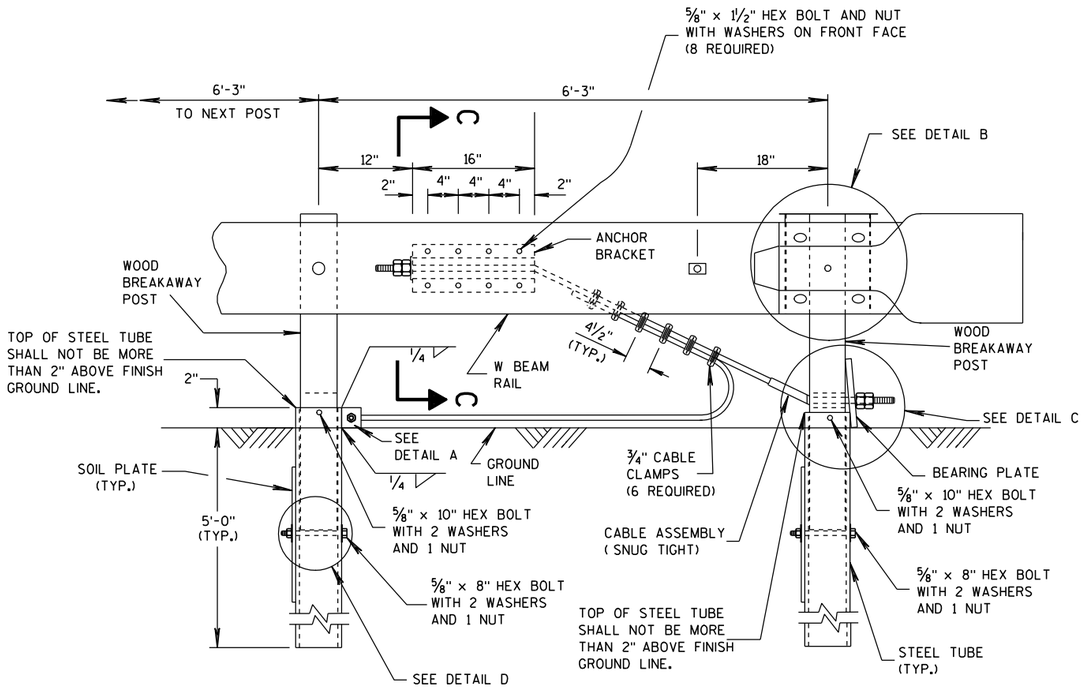
S.D.D. 14 B 27-1a

6

S.D.D. 14 B 27-1a



PLAN VIEW



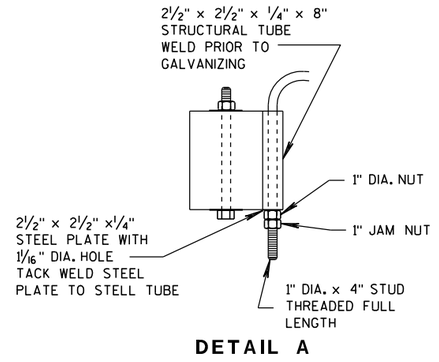
ELEVATION VIEW

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

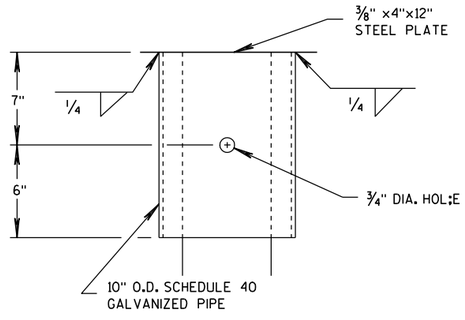
GENERAL NOTES

(1) ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A ⅝" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.

INSTALL GALVANIZED ¾" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



DETAIL A



DETAIL B

(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

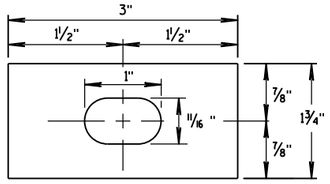
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

6

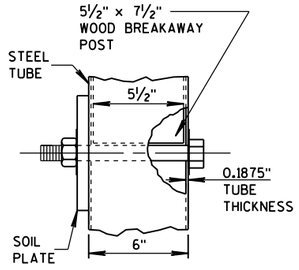
S.D.D. 14 B 27-1b

6

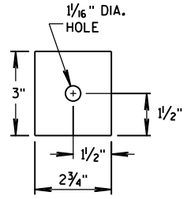
S.D.D. 14 B 27-1b



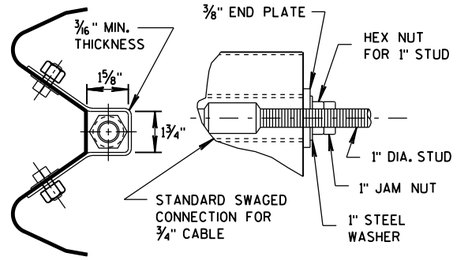
RECTANGULAR PLATE WASHER



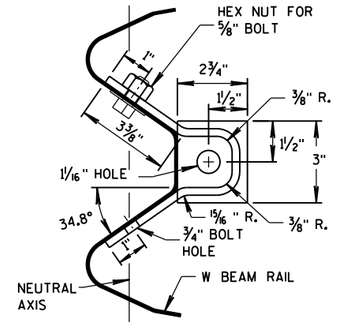
DETAIL D



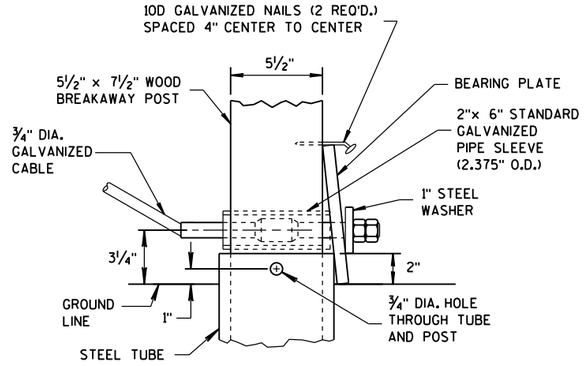
END PLATE



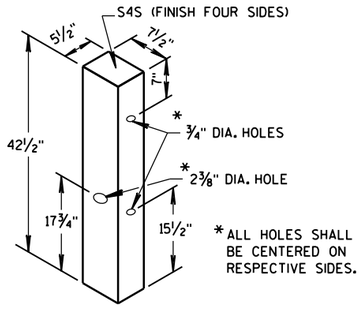
SECTION C-C
(END PLATE REMOVED)



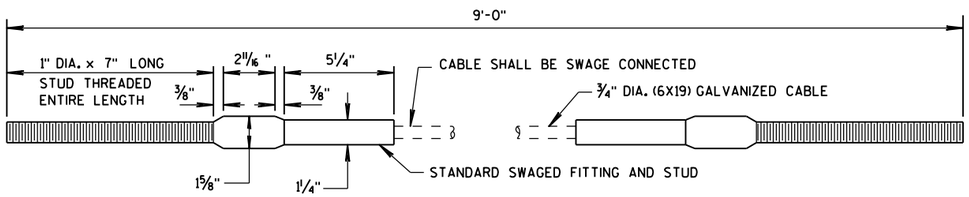
ANCHOR BRACKET



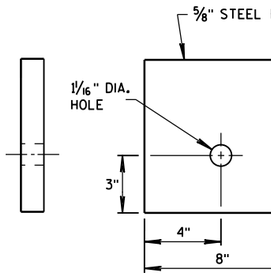
DETAIL C



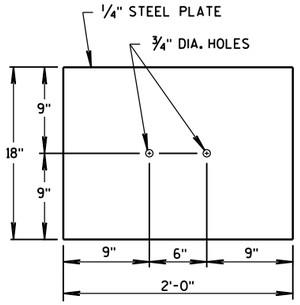
WOOD BREAKAWAY POST



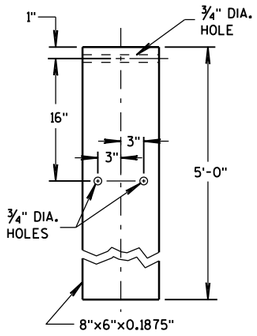
CABLE ASSEMBLY



BEARING PLATE



SOIL PLATE



STEEL TUBE

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/18/08 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

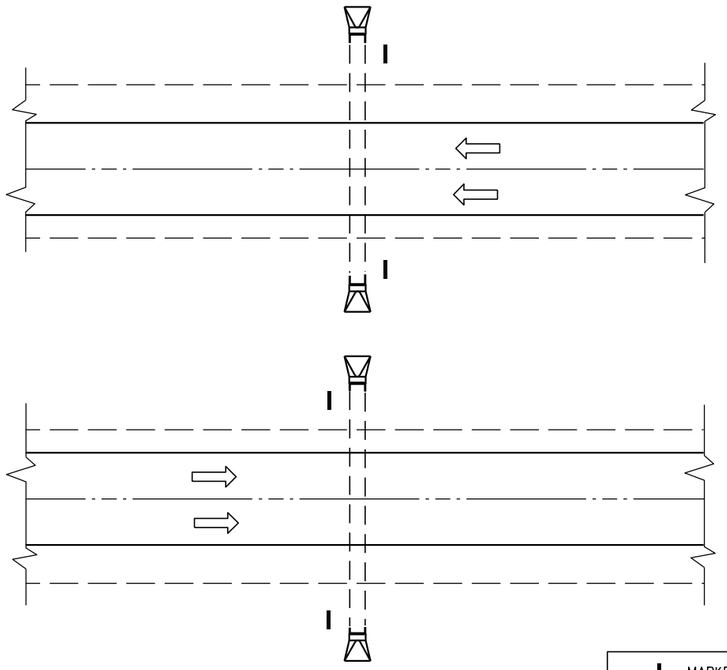
S.D.D. 14 B 27-1c

6

S.D.D. 14 B 27-1c

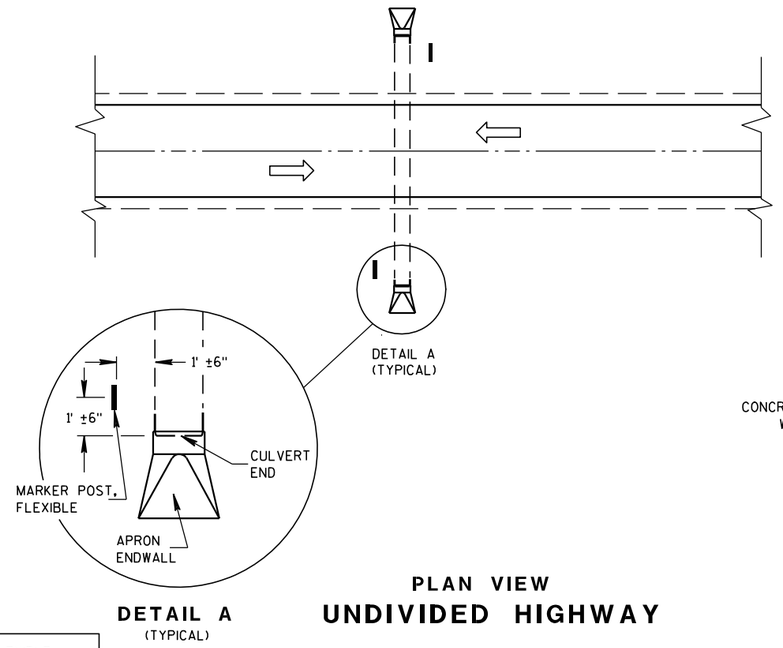
GENERAL NOTES

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.



PLAN VIEW

DIVIDED HIGHWAY

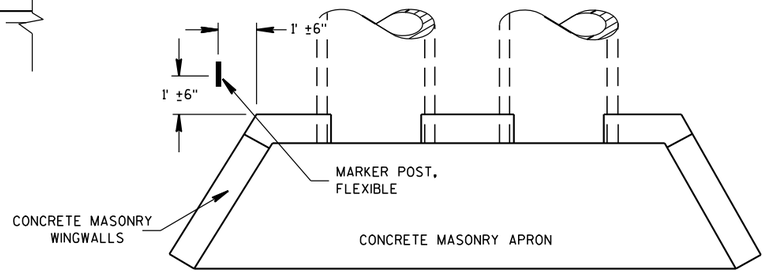


DETAIL A
(TYPICAL)

PLAN VIEW

UNDIVIDED HIGHWAY

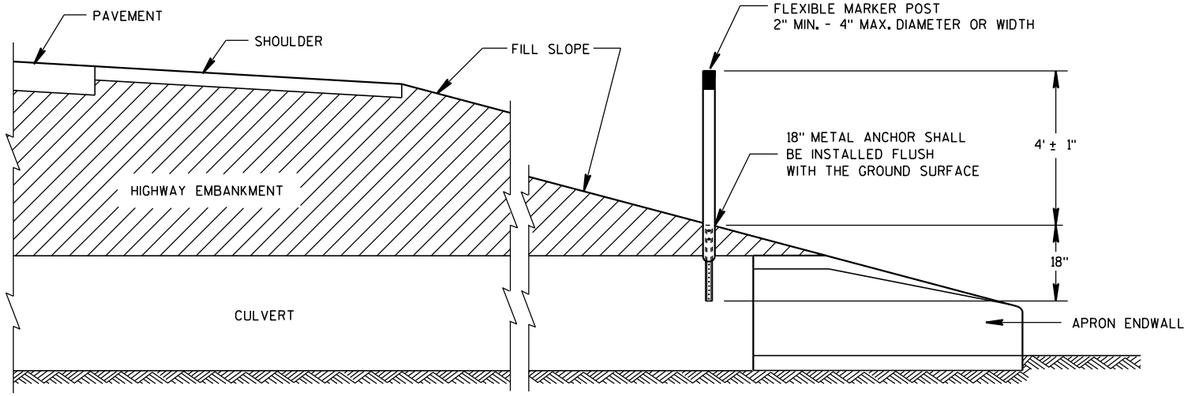
	MARKER POST, FLEXIBLE
	DIRECTION OF TRAFFIC FLOW



PLAN VIEW

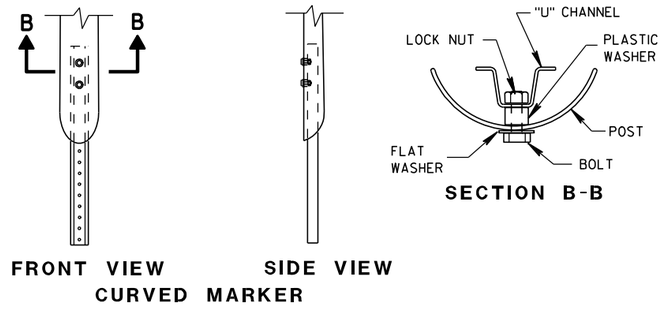
CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION

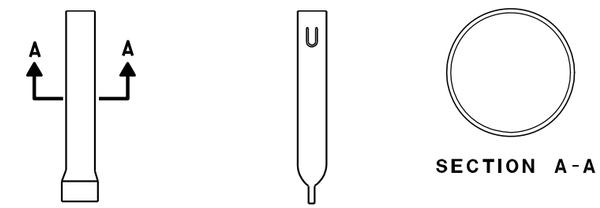


CROSS SECTION

FLEXIBLE MARKER POST

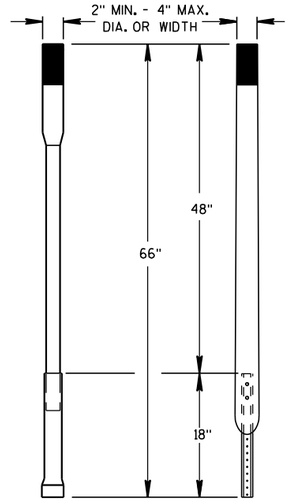


FRONT VIEW SIDE VIEW
CURVED MARKER



FRONT VIEW SIDE VIEW
ROUND MARKER

FLEXIBLE MARKER POST ANCHORS



ALTERNATE 1 ALTERNATE 2

FLEXIBLE MARKER POST

MARKER POST, FLEXIBLE, FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/1/98
DATE

/S/ Rory L. Rhinesmith
CHEIF ROADWAY DEVELOP ENGINEER

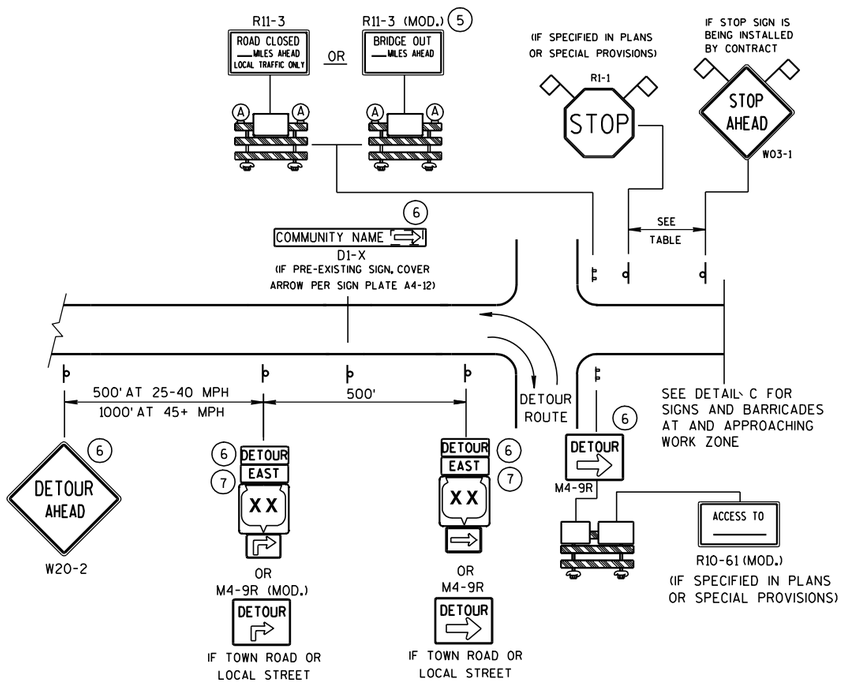
FHWA

6

S.D.D. 15 A 3-1

6

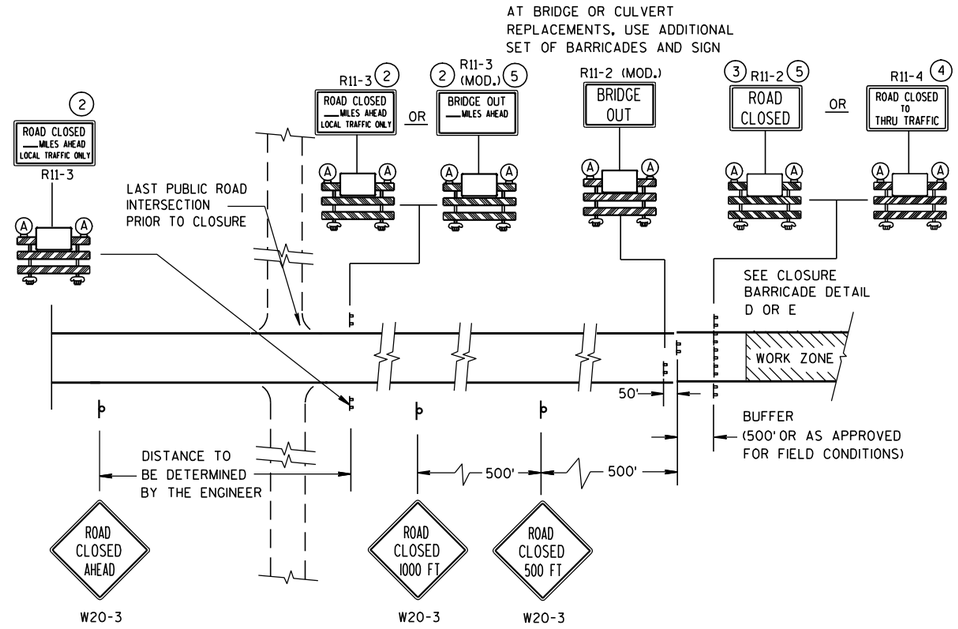
S.D.D. 15 A 3-1



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

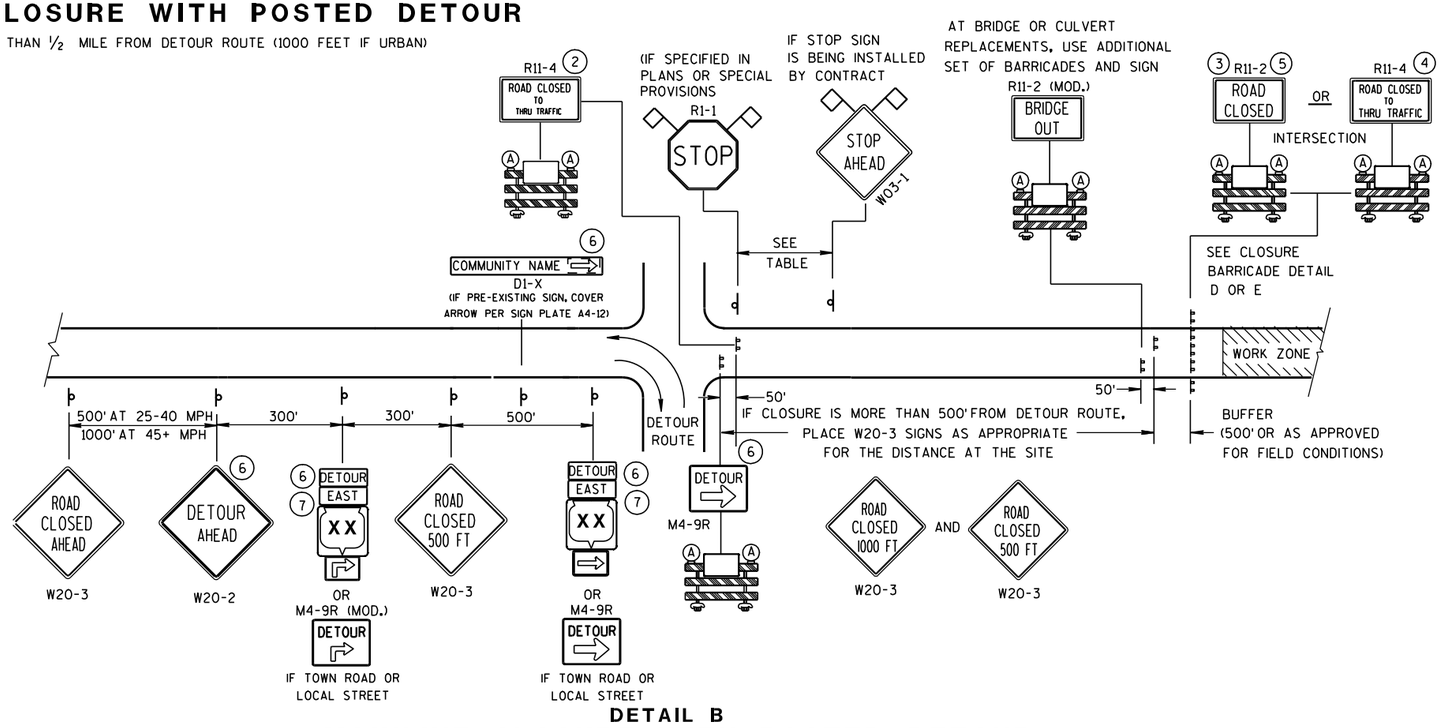


DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

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

SEE SDD 15C2-4b
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

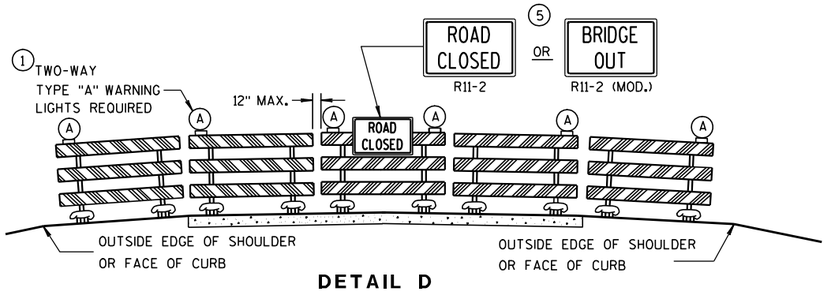
- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1; M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

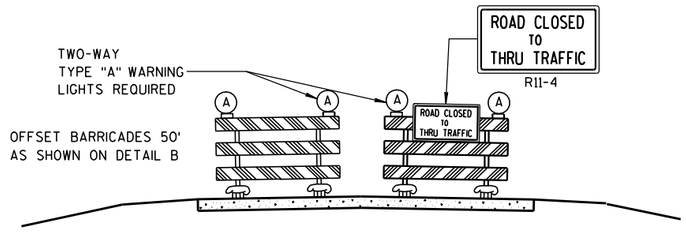
S.D.D. 15 C 2-4a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-4a 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.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

"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 AND 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

APPROVED

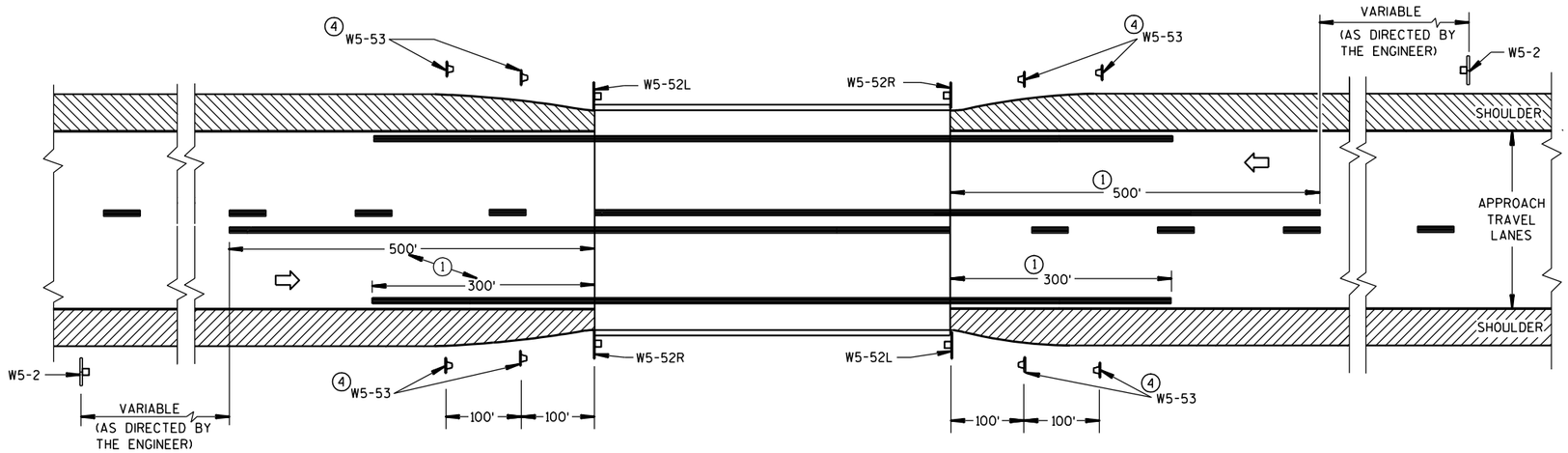
9/16/03
DATE

/S/ Thomas N. N[illegible]
CHIEF SIGNS AND MARKINGS ENGINEER

FHWA

6

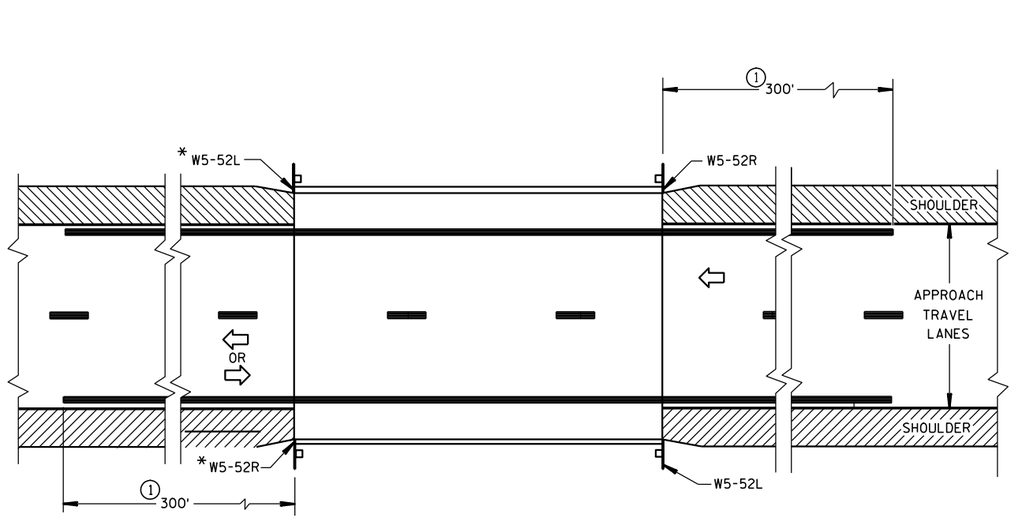
S.D.D. 15 C 2-4b



SITUATION 1

WARRANTING CRITERION:

BRIDGE WIDTH IS AT LEAST 18 FEET BUT LESS THAN 24 FEET

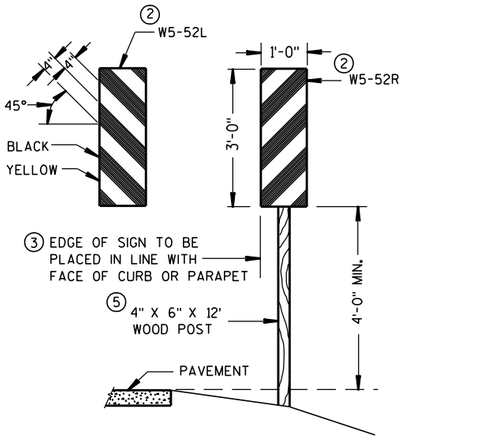


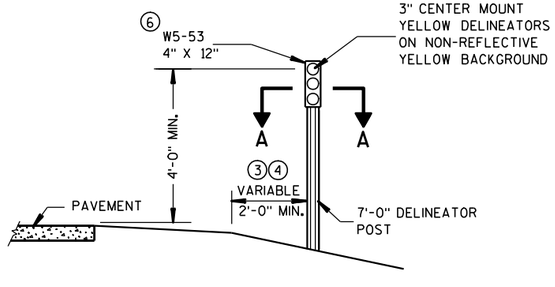
*OMIT ON ONE-WAY TRAVELLED WAYS

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.





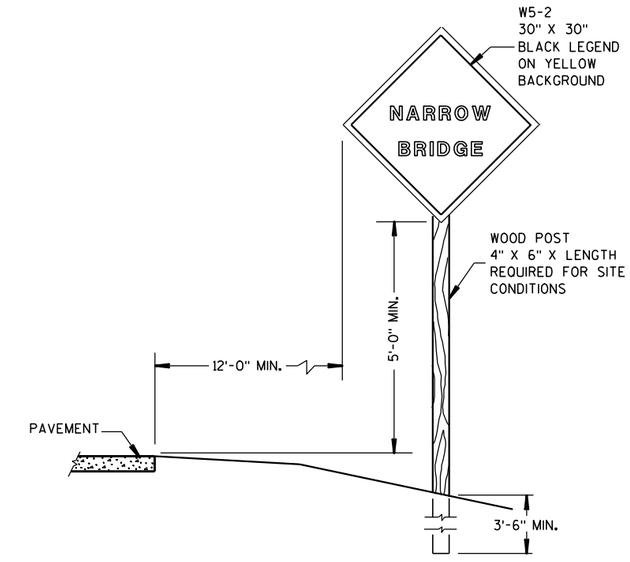
OBJECT MARKER PLACEMENT

GENERAL NOTES

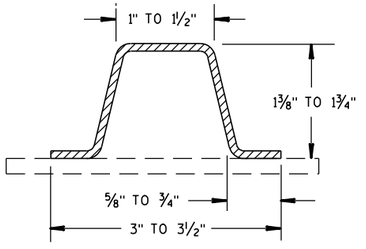
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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 H REFLECTIVE SHEETING.
3. LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.
4. OBJECT MARKERS (W5-53) SHALL BE LOCATED ALONG A LINE FLARED AWAY FROM THE BRIDGE CORNER TO DELINEATE THE NARROWING OF THE SHOULDER OR BERM.
5. A 12 FOOT DELINEATOR POST MAY BE USED INSTEAD OF A WOOD POST.
6. NON-BID ITEM. INCIDENTAL TO OTHER ITEMS.



SIGN PLACEMENT



SECTION A-A

(MINIMUM WEIGHT 1.9 LBS. PER FT. AFTER GALVANIZING)

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/5/06 — DATE

/S/ Thomas N. [illegible] — STATE TRAFFIC ENGINEER

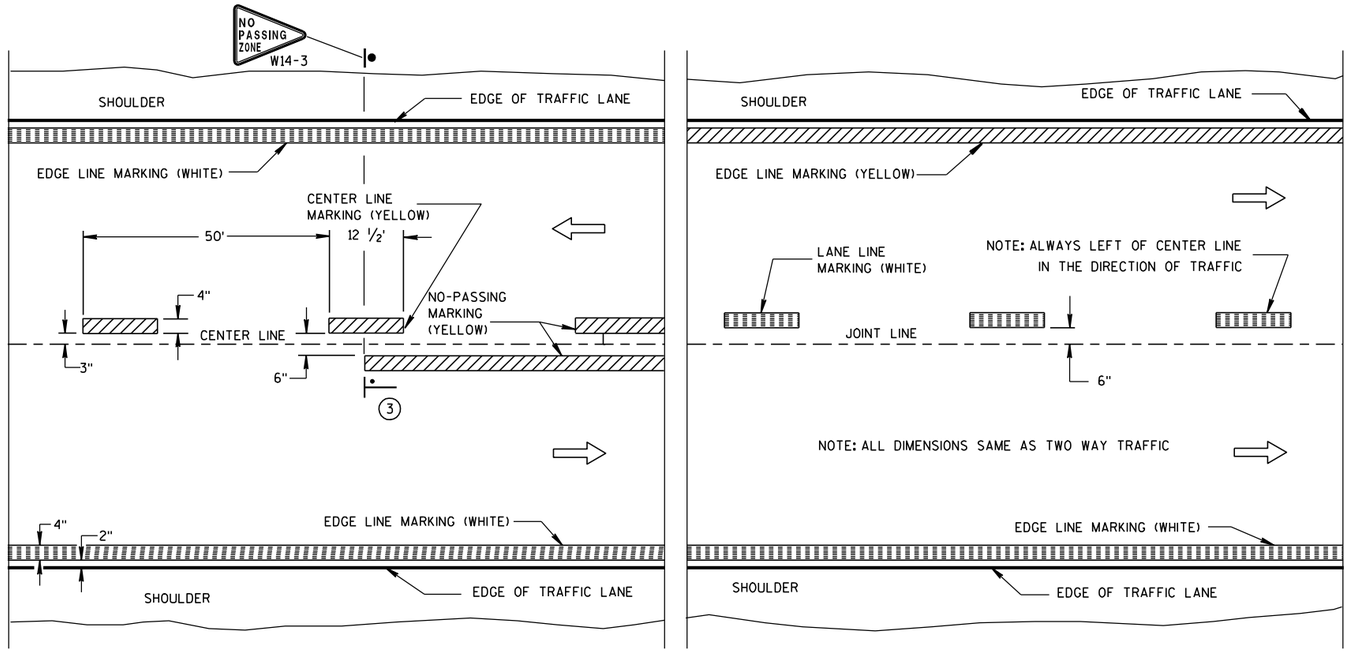
FHWA

6

S.D.D. 15 C 6-5

6

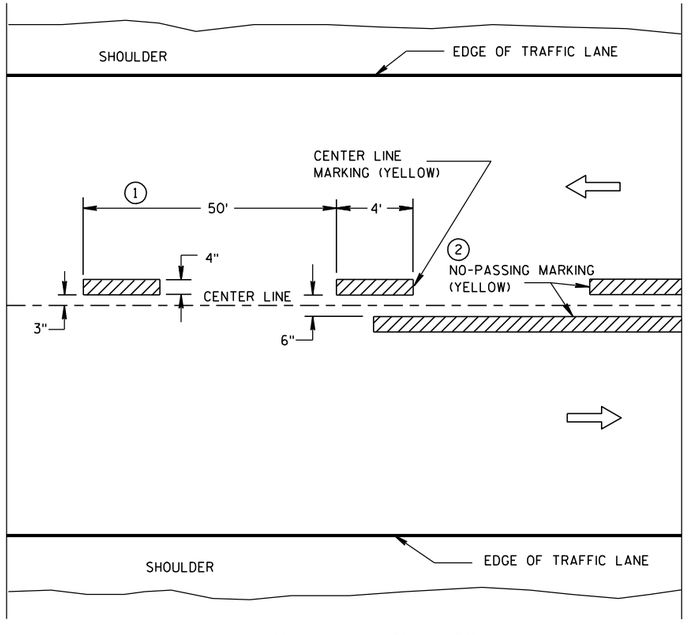
S.D.D. 15 C 6-5



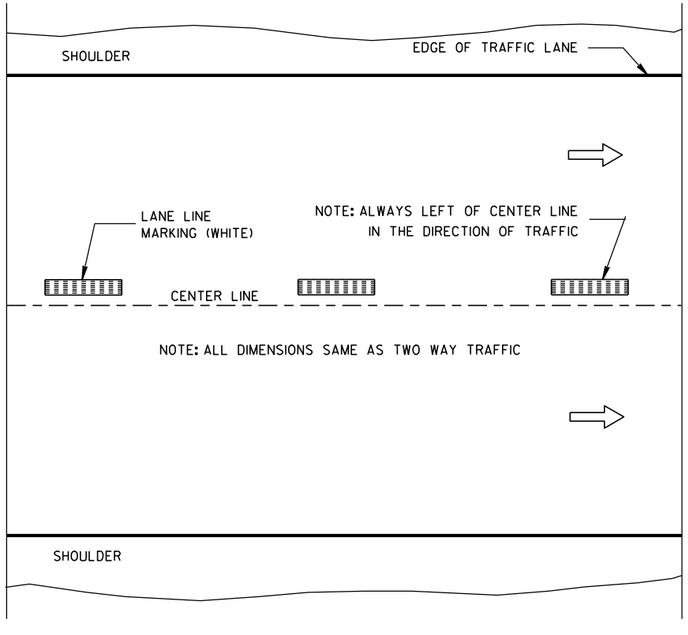
TWO WAY TRAFFIC

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)

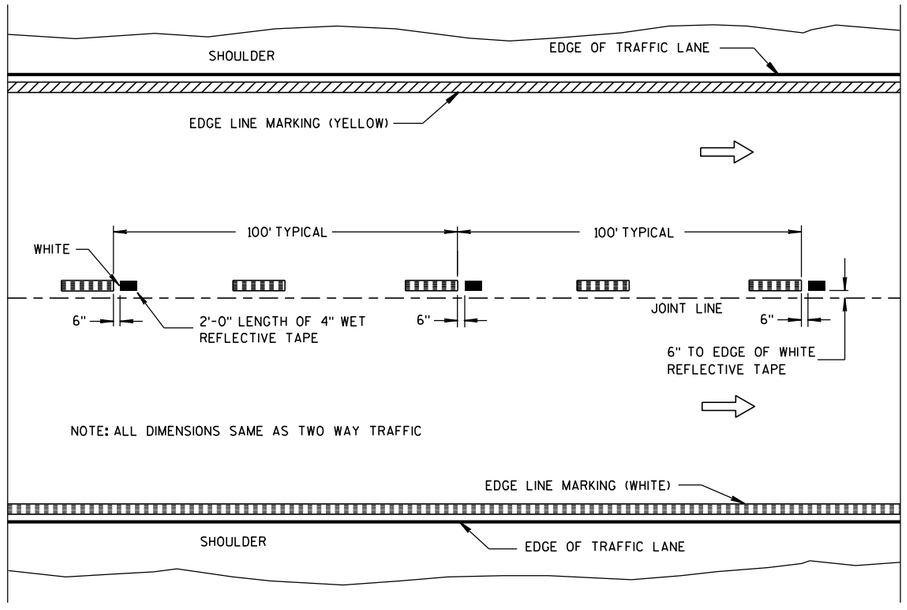
GENERAL NOTES

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.

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
6-23-11 (DATE) /S/ Thomas N. Notbohm (STATE TRAFFIC ENGINEER)

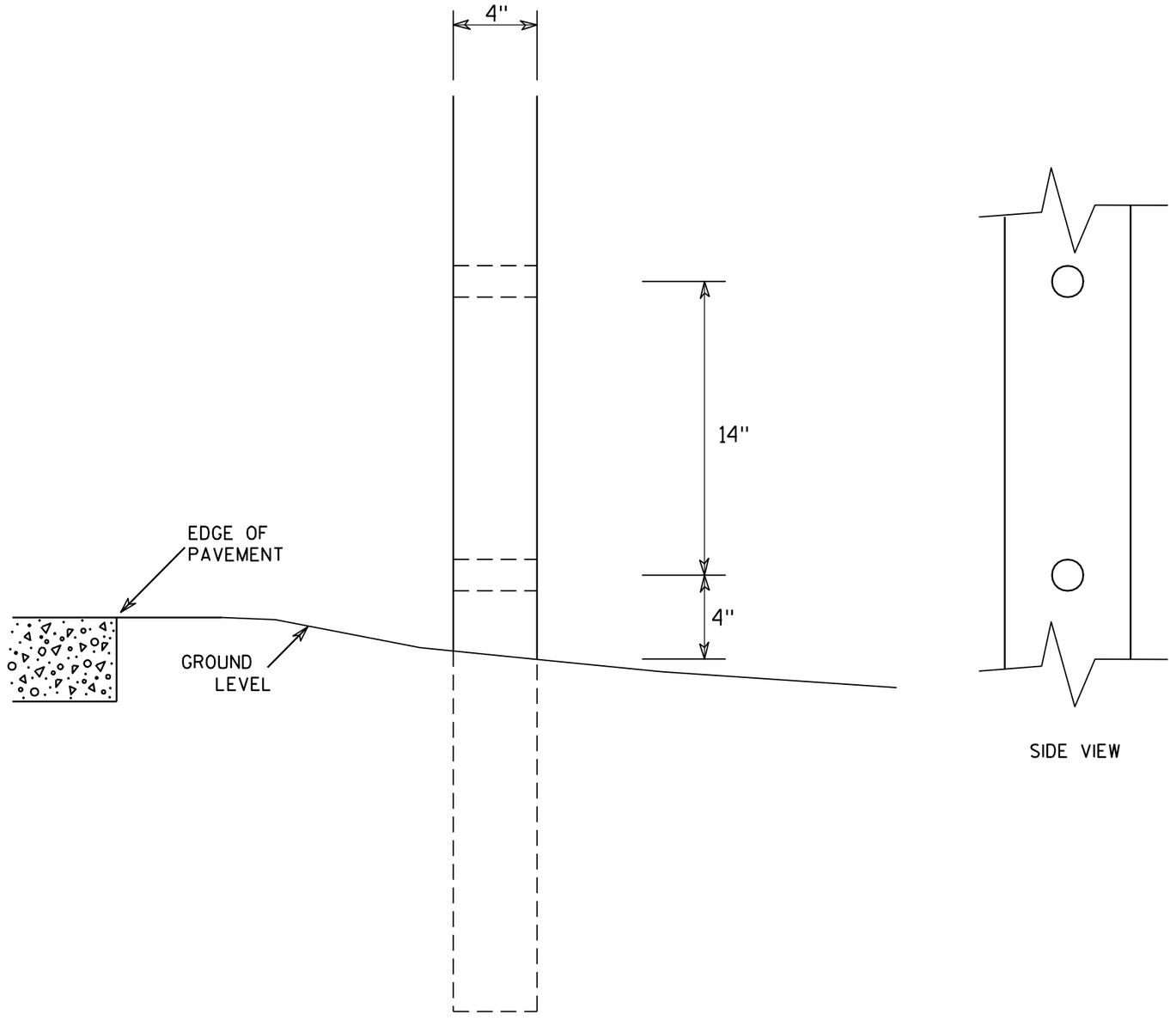
FHWA

6

S.D.D. 15 C 8-14a

6

S.D.D. 15 C 8-14a



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.

7

7

4 X 6 WOOD POST MODIFICATIONS

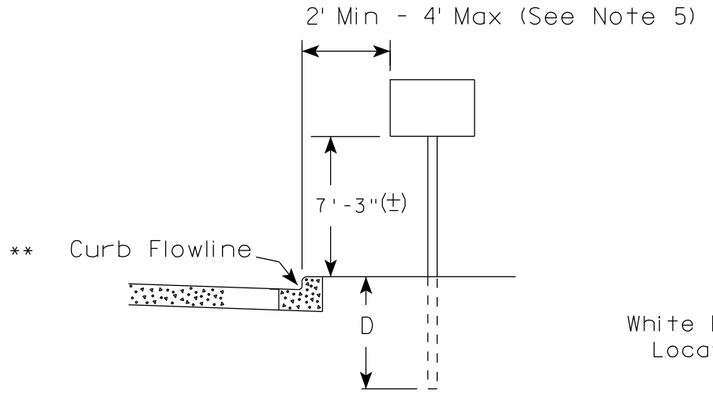
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

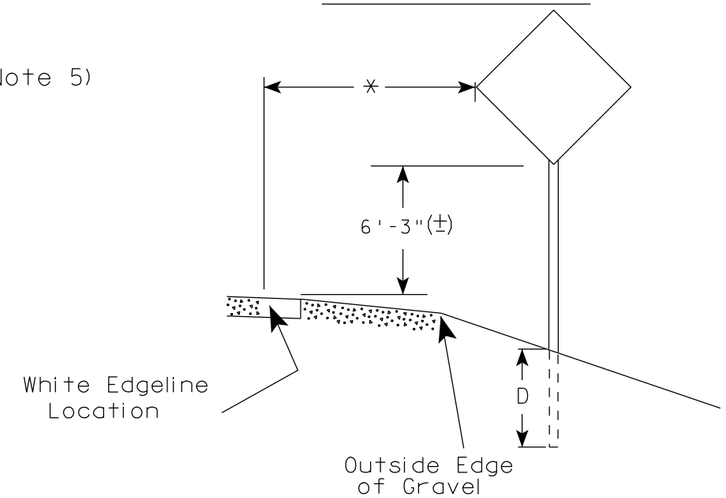
DATE 3/27/97 PLATE NO. A4-11.2

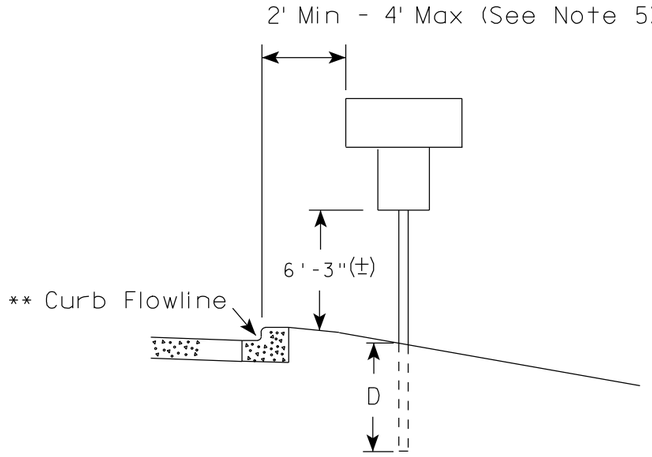
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 39	E

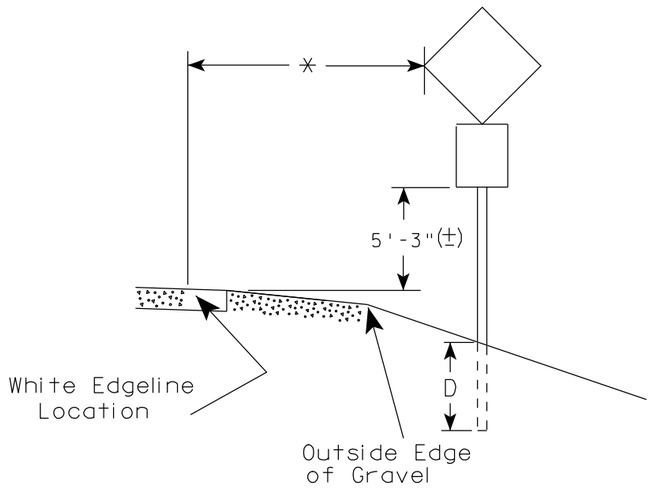
URBAN AREA



RURAL AREA (See Note 2)







** 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.

GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. 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), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road 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'

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

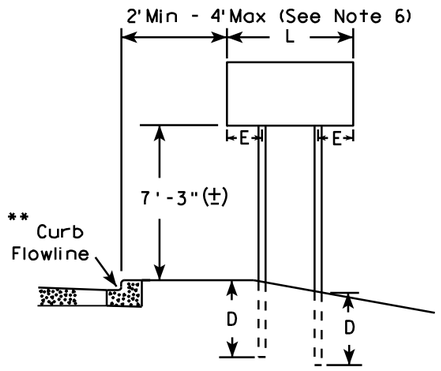
DATE 9/21/2011 PLATE NO. A4-3.16

7

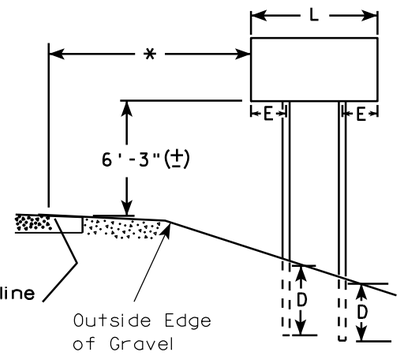
7

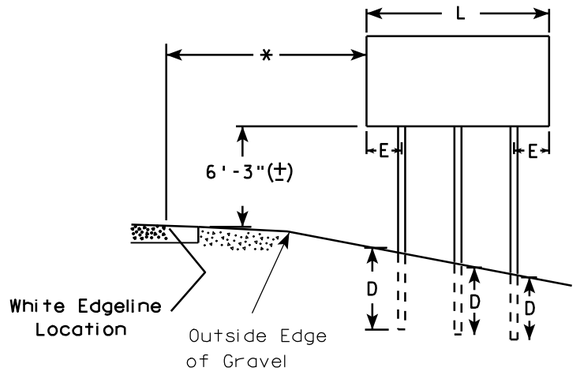
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 40 | E

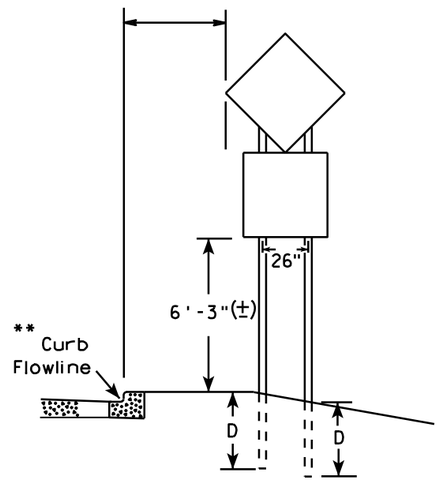
URBAN AREA



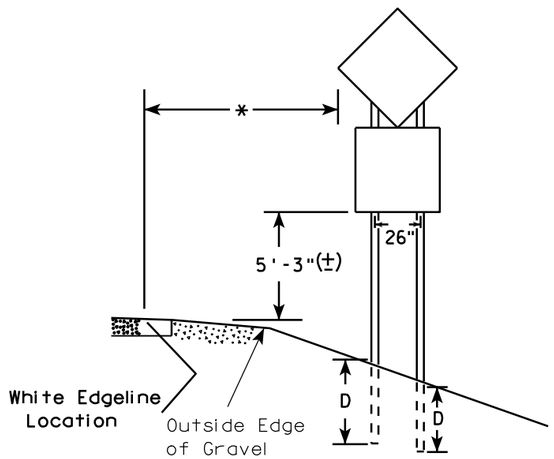
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
*** Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. For multiple post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4"-3" (±).

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

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

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

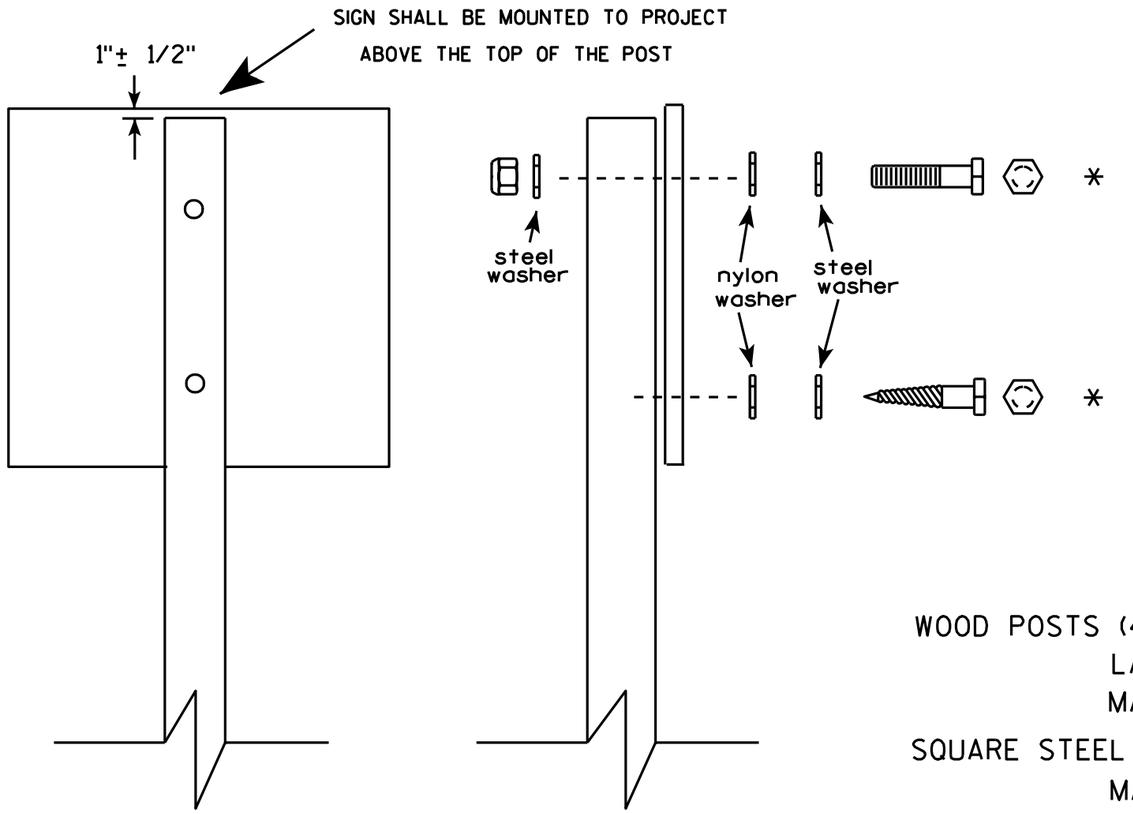
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 41	E



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

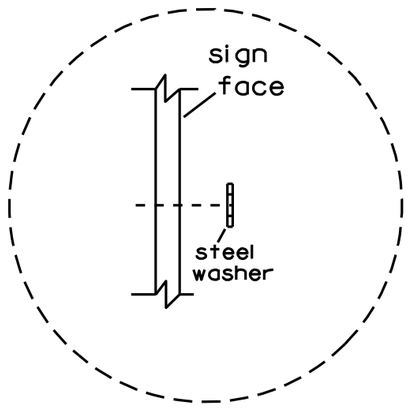
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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 - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON 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 Matthew R Rauch
for State Traffic Engineer

DATE 3/23/10 PLATE NO. A4-8.7

7

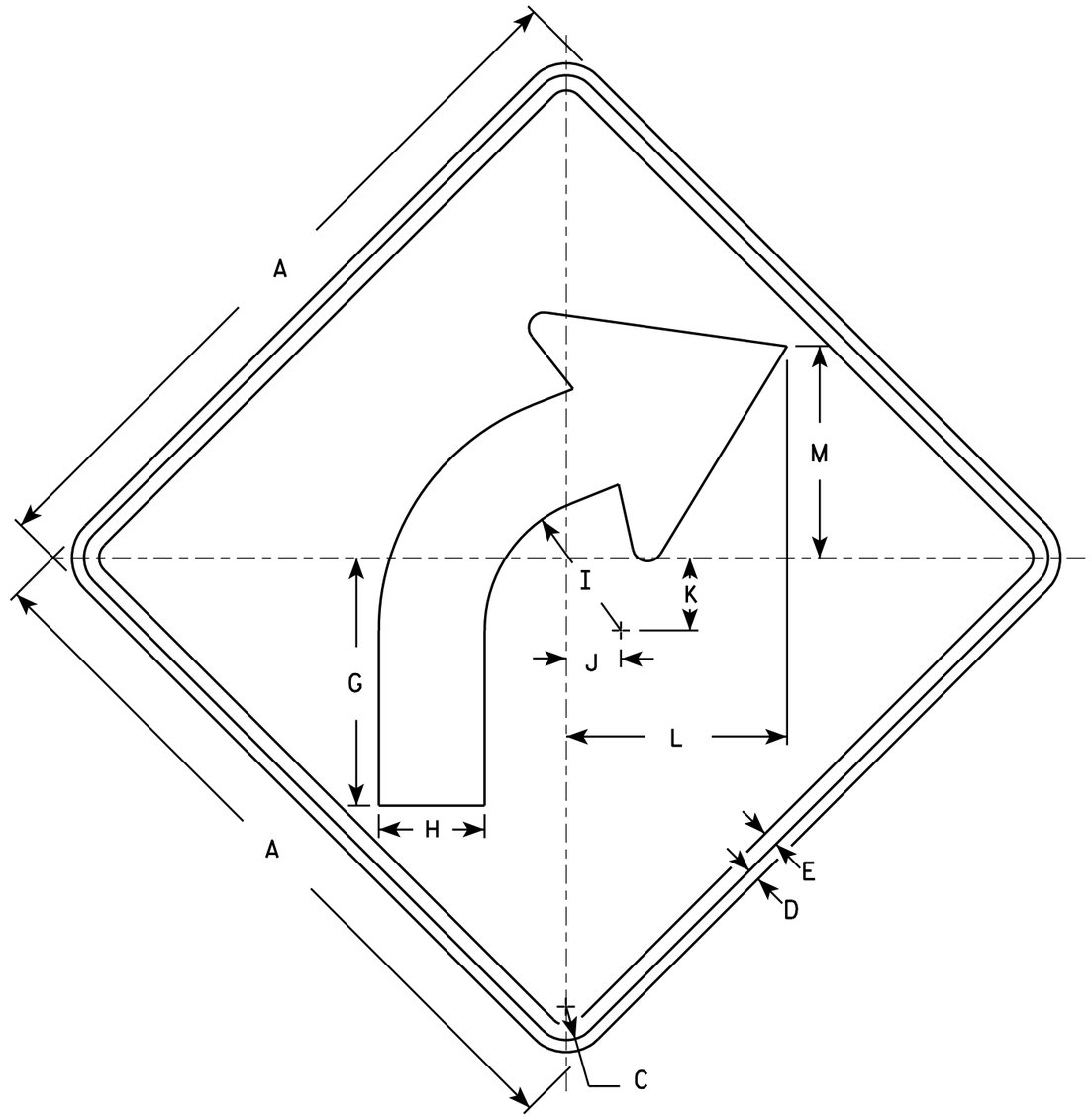
7

PROJECT NO:

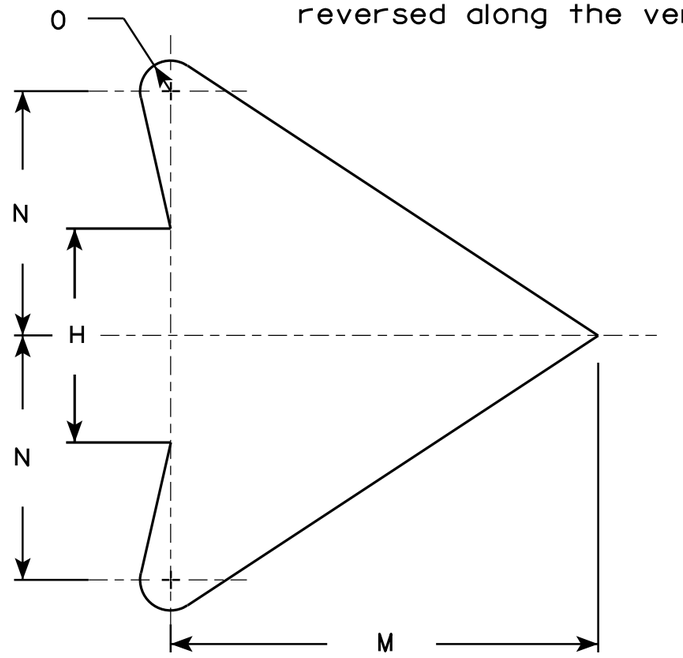
SHEET NO: 42 E

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. 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

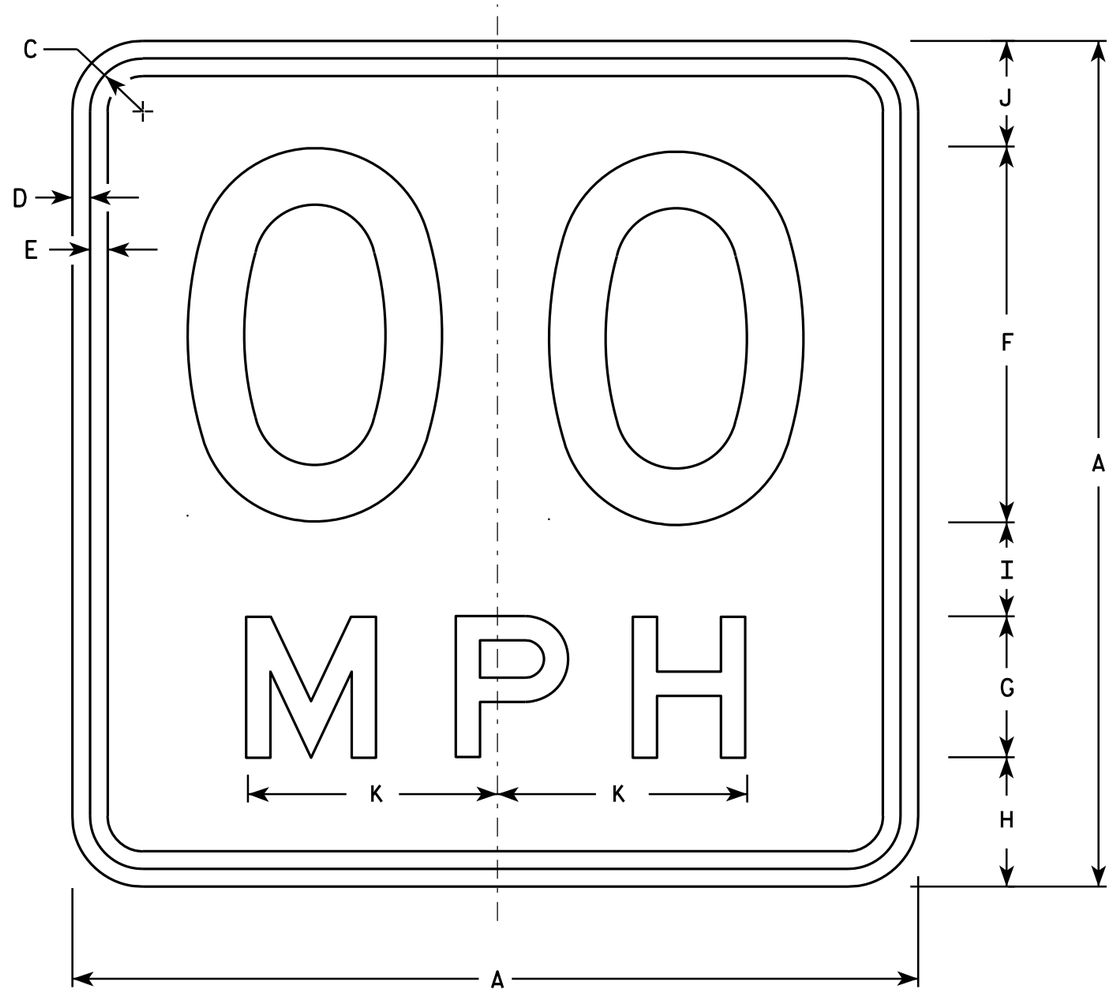
STANDARD SIGN
W1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 43	E



W13-1

* For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

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. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
   Line 2 is Series E

	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	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
	3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
	4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
	5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

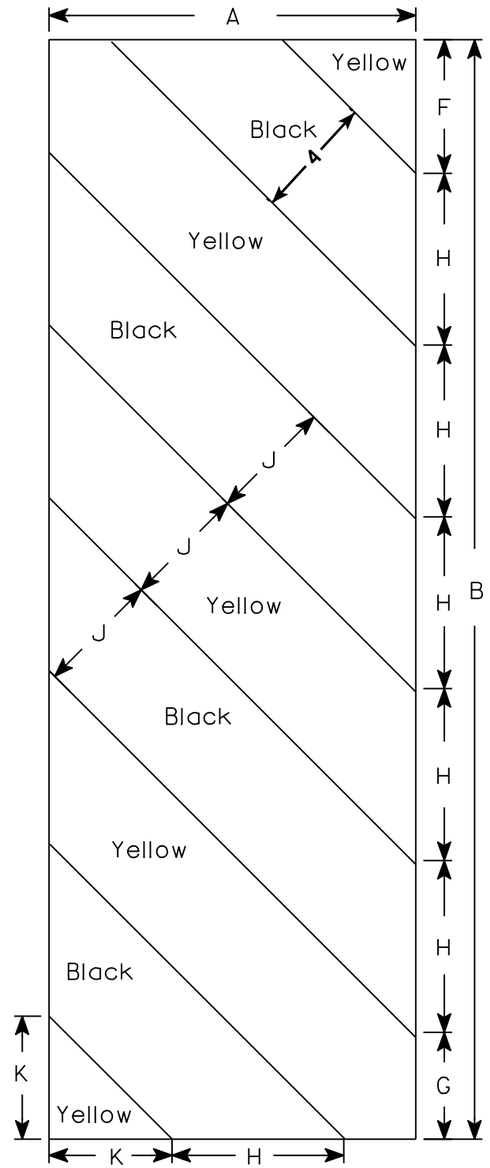
STANDARD SIGN
W13-1

WISCONSIN DEPT OF TRANSPORTATION

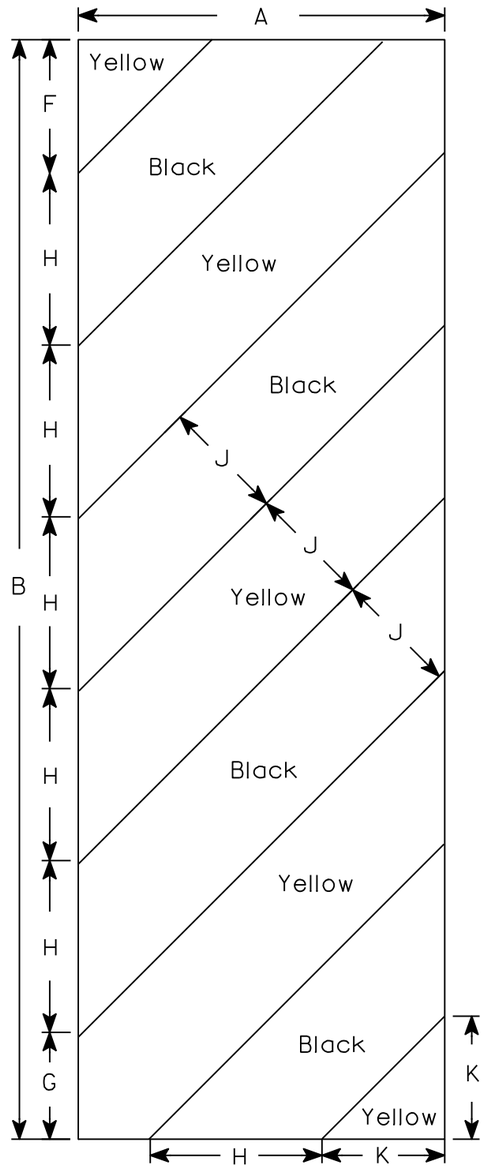
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 44	E



W5-52L



W5-52R

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

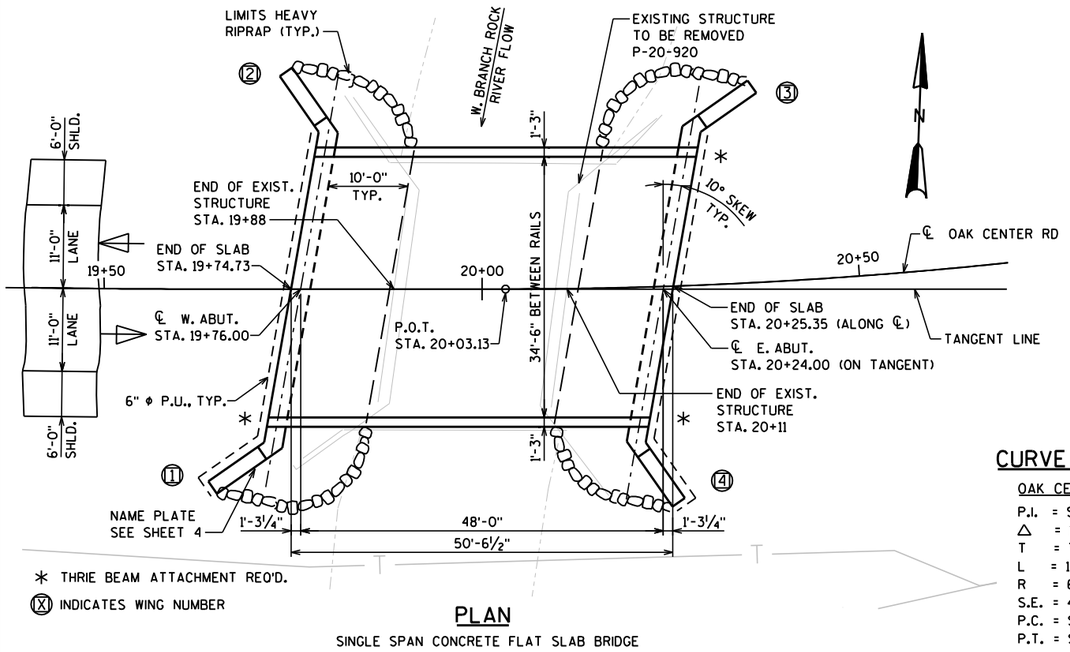
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

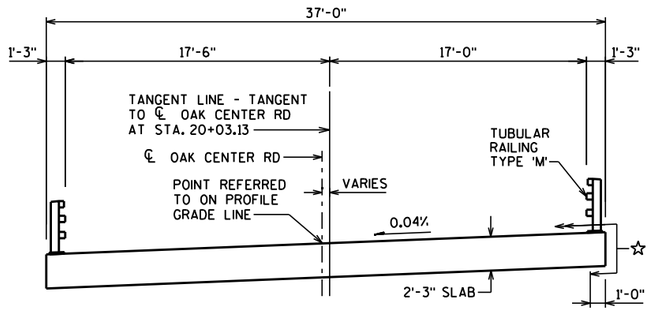
DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 45	E



PLAN

SINGLE SPAN CONCRETE FLAT SLAB BRIDGE



CROSS SECT. THRU RDWY.

LOOKING UPSTATION

☆ APPLY PROTECTIVE SURFACE TREATMENT

CURVE DATA

OAK CENTER RD

P.I. = STA 20+78.48
△ = 13°29'40"
T = 75.35
L = 150.00
R = 636.88
S.E. = 4.0%
P.C. = STA 20+03.13
P.T. = STA 21+53.13

LIST OF DRAWINGS

1. GENERAL PLAN
2. SUBSURFACE EXPLORATION
3. WEST ABUTMENT
4. WEST ABUTMENT DETAILS
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. EAST ABUTMENT DETAILS
9. SUPERSTRUCTURE
10. TUBULAR RAILING TYPE M

TRAFFIC DATA

ADT = 330 (2013)
430 (2033)
RDS = 40 M.P.H.

CONSULTANT CONTACT

KRISTOFER OLSON
OMNNI ASSOCIATES, INC.
(920) 735-6900

BRIDGE OFFICE CONTACT

WILLIAM DREHER
(608) 266-8489

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

THE SLOPE OF FILL AT THE UPSTREAM FACE OF BRIDGE SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TO THE EXTENT SHOWN ON THIS SHEET AND IN THE ABUTMENT DETAILS.

THIS BRIDGE WILL REPLACE THE EXISTING CONCRETE GIRDER BRIDGE SUPPORTED ON CONCRETE RETAINING ABUTMENTS. THE STRUCTURE WAS BUILT IN 1925 AND WIDENED IN 1940 WITH STEEL BEAMS.

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

BENDING DIMENSIONS FOR REINFORCING ARE OUT TO OUT.

AT THE BACKFACE OF ABUTMENTS, ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION.

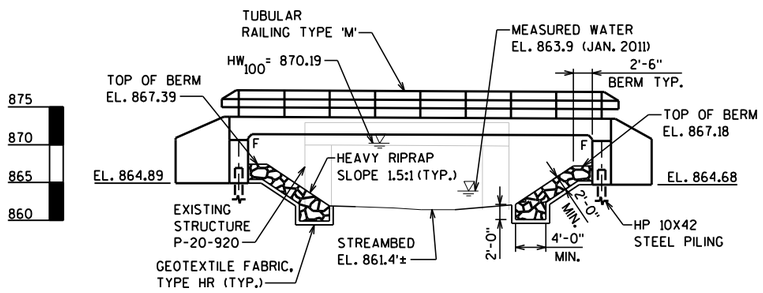
PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP, SIDES, AND 1'-0" OF THE UNDERSIDE OF THE DECK.

FOUNDATION DATA

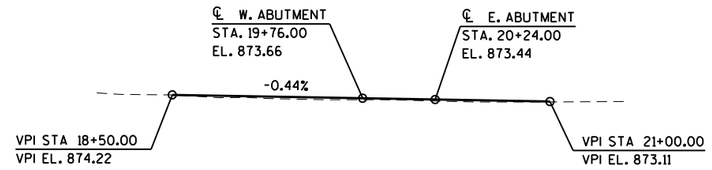
ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING. PILES SHALL BE PREBORED A MINIMUM 10' AND THEN DRIVEN TO PRACTICAL REFUSAL OR TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ** PER PILE. FOLLOWING DRIVING, THE SHAFTS SHALL BE FILLED WITH CONCRETE TO THE BOTTOM OF THE FOOTING ELEVATION. ESTIMATED LENGTH = 17'.

PREBORING MAY BE ELIMINATED IF PILES CAN BE DRIVEN TO A TIP ELEVATION OF 854.0 OR LOWER AND A REQUIRED DRIVING RESISTANCE OF 180 TONS ** PER PILE.

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



ELEVATION



PROFILE GRADE LINE

DESIGN DATA

STRUCTURE IS DESIGNED FOR FUTURE WEARING SURFACE OF 20#/SQ. FT.

LIVE LOAD:

DESIGN LOADING — HL-93
INVENTORY RATING FACTOR — RF = 1.08
OPERATING RATING FACTOR — RF = 1.40
MAX. STD. PERMIT VEHICLE LOAD — 250 KIPS

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY
SUPERSTRUCTURE — f'c = 4,000 PSI
ALL OTHER — f'c = 3,500 PSI
HIGH STRENGTH BAR STEEL
REINFORCEMENT, GRADE 60 — fy = 60,000 PSI

WISCONSIN
KRISTOFER R. OLSON
E-35236
APPLETON, WI
PROFESSIONAL ENGINEER

7/20/12

BENCH MARKS (NAVD 88)

NO.	STATION	DESCRIPTION	ELEV.
BM1	16+21.6 , 33' RT	60D SPIKE IN PP# 14-15-35 4/50	875.22
BM2	18+28.3 , 39' RT	60D SPIKE IN PP# 14-15-35 6/50	874.83
BM3	22+93.5 , 41' RT	60D SPIKE IN PP# 14-15-35 11/50	871.14
BM4	25+49.5 , 42' RT	60D SPIKE IN PP# (NO POLE NUMBER)	881.17

HYDRAULIC DATA

Q_{100} — 1,930 C.F.S.
Q_{100} BRIDGE — 1,850 C.F.S.
Q_{100} SUPP. STRUCTURE — 80 C.F.S.
$Q_{REGULATORY}$ — 2,889 C.F.S.
VELOCITY — 8.61 F.P.S.
HIGH WATER — EL. 870.19 (100 YEAR)
HIGH WATER — EL. 865.63 (2 YEAR)
HIGH WATER — EL. 872.18 (REGULATORY)
WATERWAY AREA — 215 S.F.
DRAINAGE AREA — 47.1 SQ. MILES
OVERTOPPING FREQUENCY = N/A
SCOUR CRITICAL CODE = 8

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	TOTALS
203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL STRUCTURE (P-20-920)	LS	---	---	---	1
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STA 20+00)	LS	---	---	---	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-20-228)	LS	---	---	---	1
210.0100	BACKFILL STRUCTURE	CY	---	160	160	320
502.0100	CONCRETE MASONRY BRIDGES	CY	161.6	35.2	35.2	232
502.3200	PROTECTIVE SURFACE TREATMENT	SY	243	---	---	243
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	---	2,730	2,730	5,460
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	25,560	1,390	1,370	28,320
513.4060	RAILING TUBULAR TYPE M (B-20-228)	LS	---	---	---	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	LF	---	11	11	22
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	---	80	80	160
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	---	136	136	272
606.0300	RIPRAP HEAVY	CY	---	50	50	100
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	---	70	70	140
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	---	75	75	150
	NON-BID ITEMS					
	FILLER	SIZE	---	---	---	½"&¾"

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY OMNNI ASSOCIATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED William C. Dreher KAR 12/12/12
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-20-228

OAK CENTER ROAD OVER W. BRANCH ROCK RIVER

COUNTY FOND DU LAC | TOWN WAUPUN

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 4th EDITION | LOAD HL-93

DESIGNED BY KRO | DESIGN CK'D. JAW | DRAWN BY BRE | PLANS CK'D. KRO

GENERAL PLAN

SHEET 1 OF 10

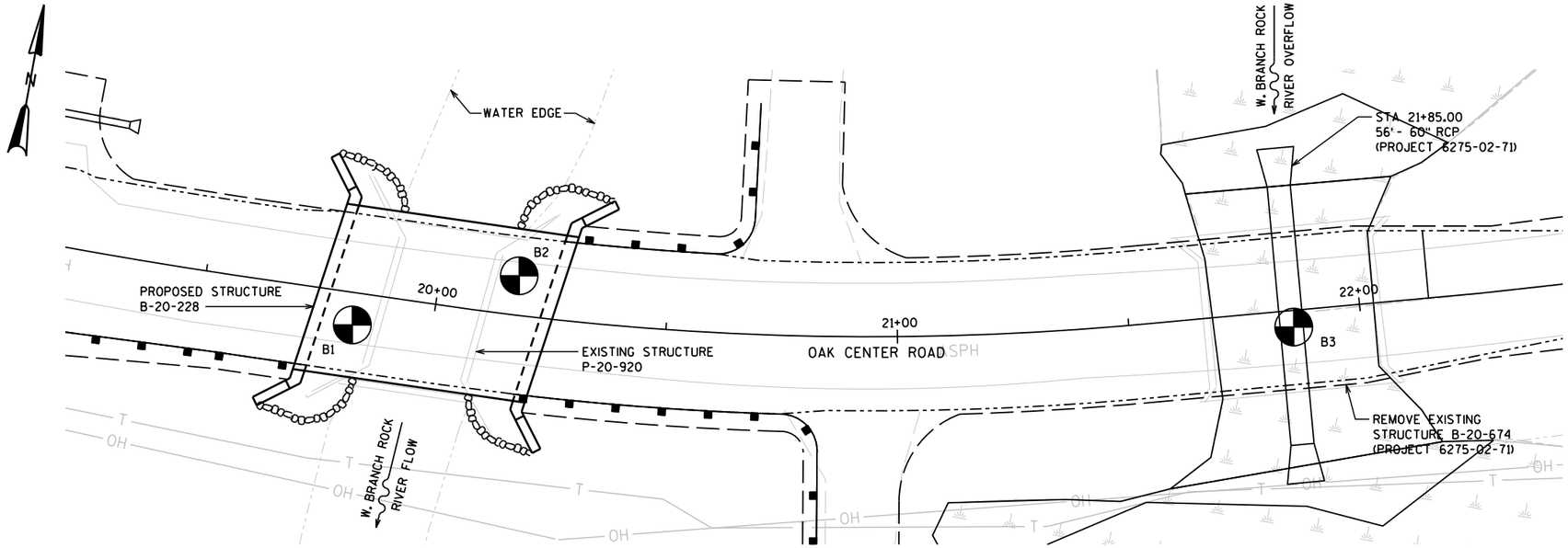
46

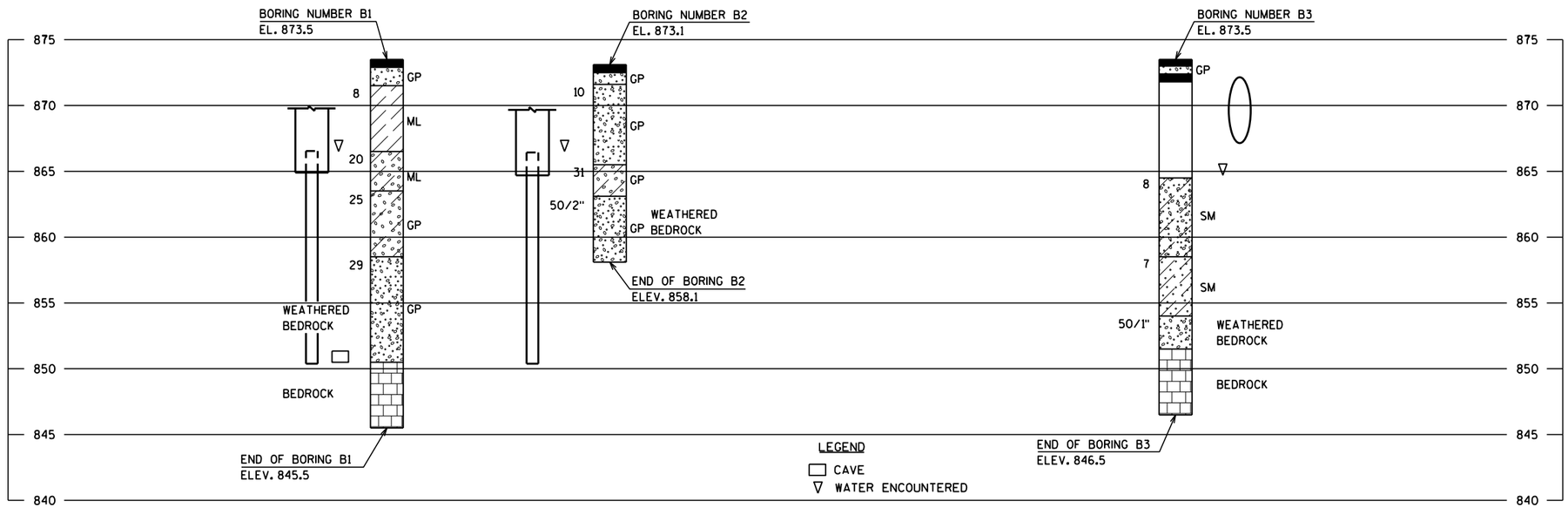
STATE PROJECT NUMBER
6275-02-72

8

8

STATE PROJECT NUMBER
6275-02-72





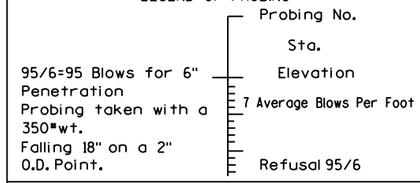
ABBREVIATIONS

F — Fine M — Medium C — Coarse
Ws — Weathered So — Sound

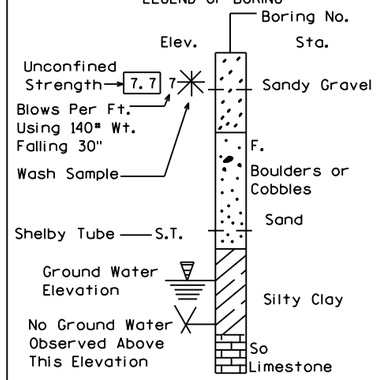
MATERIAL SYMBOLS

Topsoil, Silt, Sandstone
Sand, Peat, Limestone
Gravel, Clay, Igneous Rock

LEGEND OF PROBING



LEGEND OF BORING



Unless otherwise specified, the blows per foot at the locations indicated are based on driving a O.D.x1.4" 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 Division of Highways 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
STRUCTURES DESIGN SECTION

STRUCTURE B-20-228

DRAWN BY BRE | PLANS CK'D. KRO

SUBSURFACE EXPLORATION

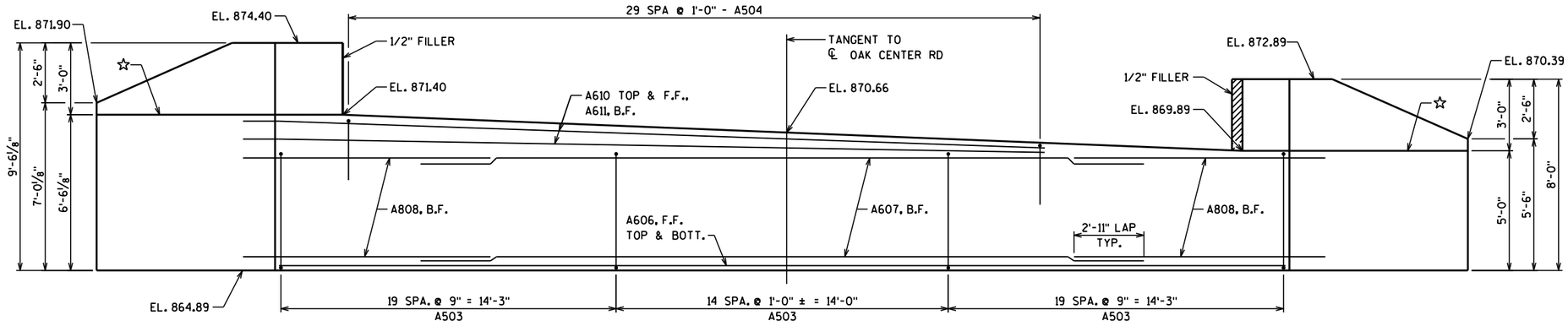
SHEET 2 OF 10

47

8

8

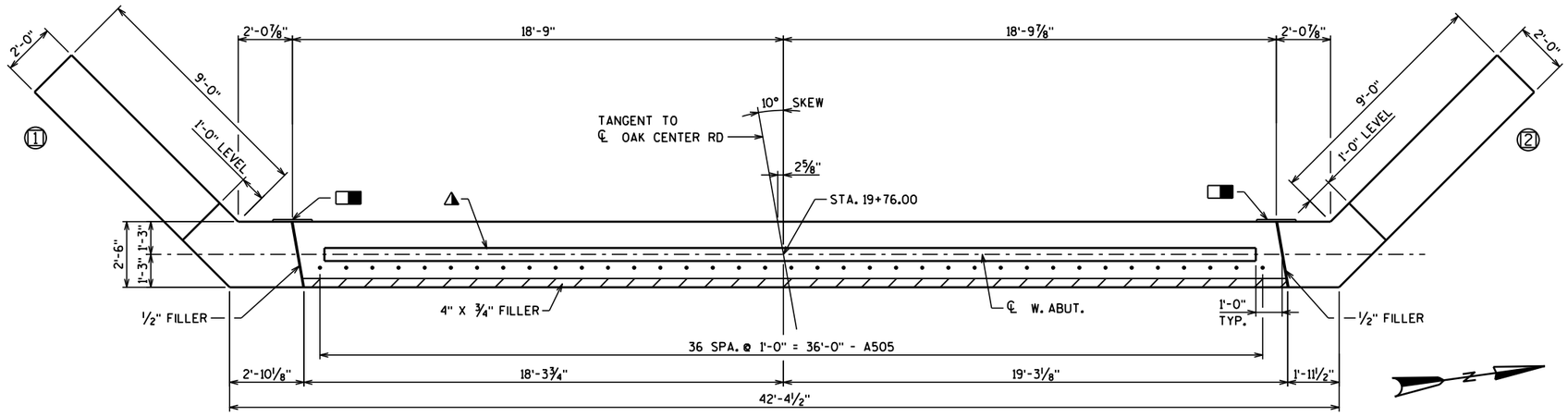
STATE PROJECT NUMBER
6275-02-72



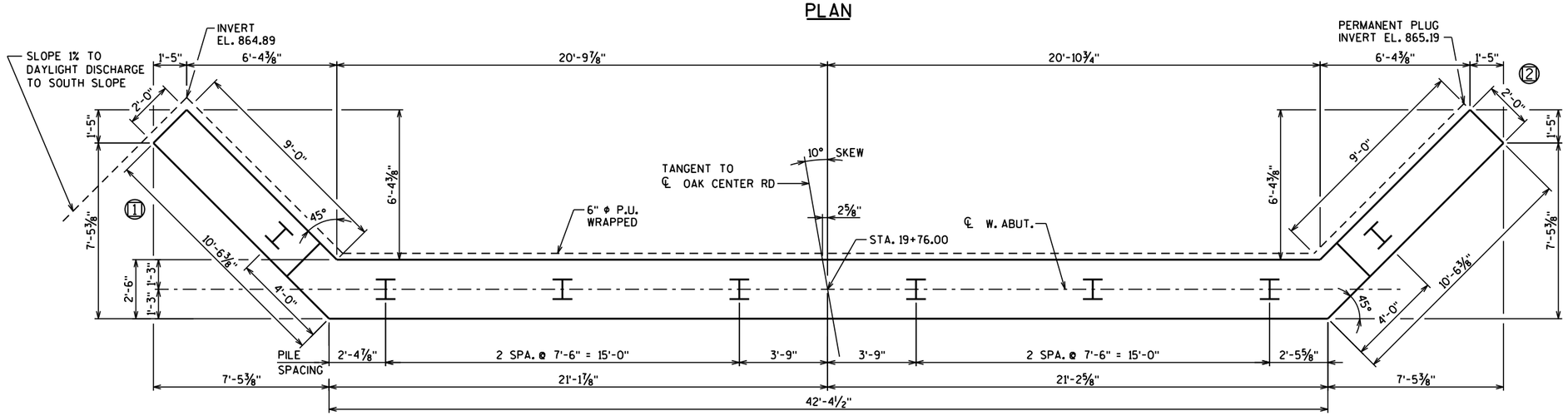
NOTE: SPACE A503 TO MISS PILING.

ELEVATION

(LOOKING WEST)



PLAN



PILE LAYOUT

NOTES

☆ OPTIONAL KEYED CONST. JOINT - FORMED BY A BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

◭ KEYED CONST. JOINT - FORMED BY A BEVELED 2" X 6".

▬ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

(X) DENOTES WING NUMBER

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. 1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING. PILES SHALL BE PREBORED A MINIMUM 10' AND THEN DRIVEN TO PRACTICAL REFUSAL OR TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. FOLLOWING DRIVING, THE SHAFTS SHALL BE FILLED WITH CONCRETE TO THE BOTTOM OF THE FOOTING ELEVATION. ESTIMATED LENGTH = 17'.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-20-228

DRAWN BY BRE | PLANS CK'D. KRO

WEST ABUTMENT

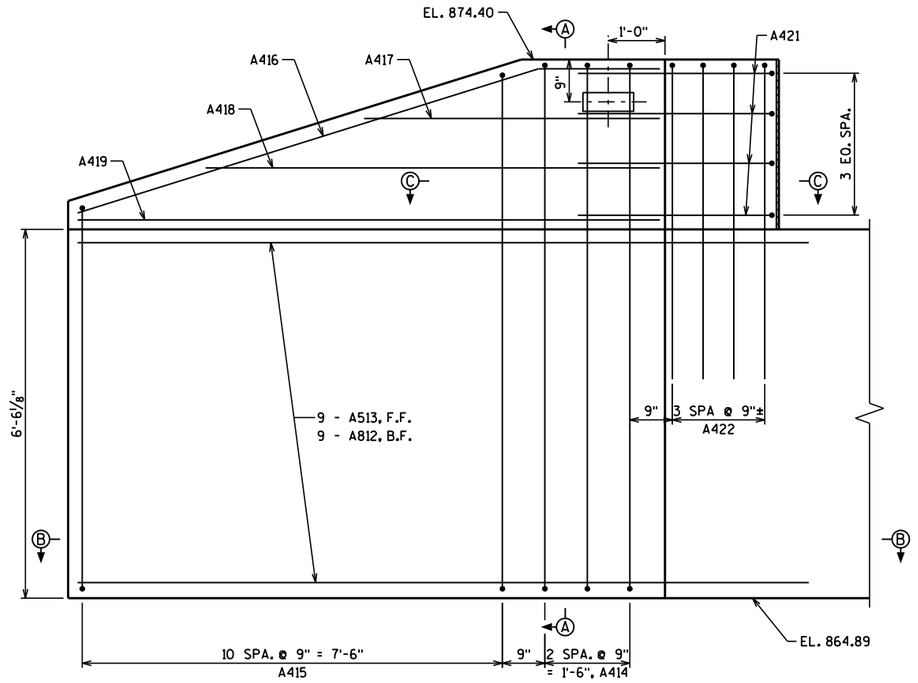
SHEET 3 OF 10

48

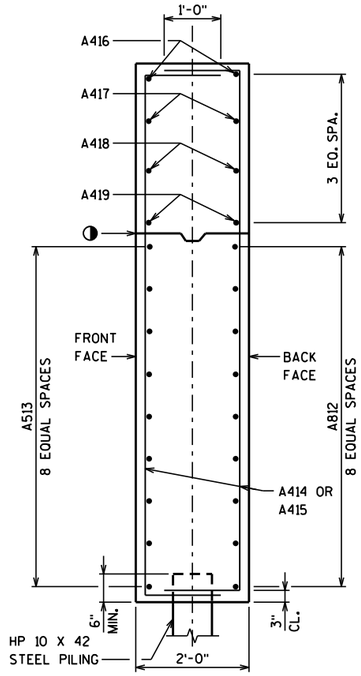
8

8

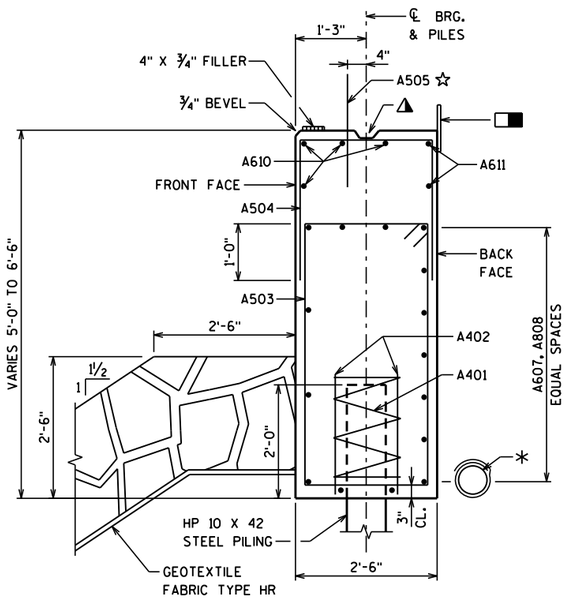
STATE PROJECT NUMBER
6275-02-72



ELEVATION - WING 1

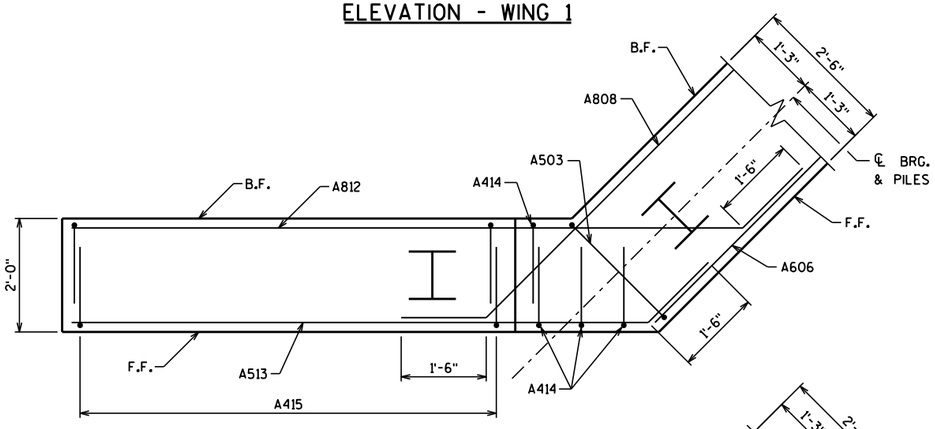


SECTION A-A

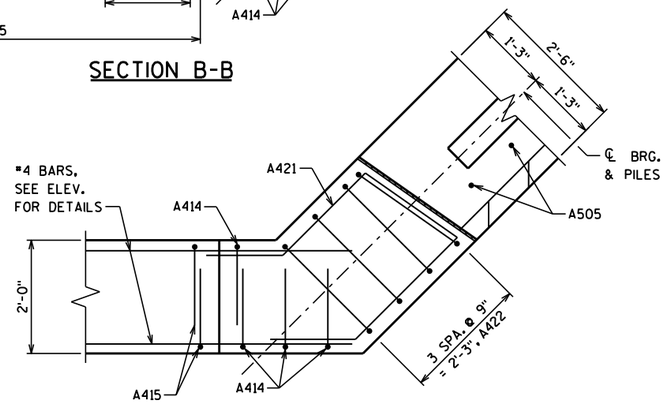


SECTION THRU ABUTMENT BODY

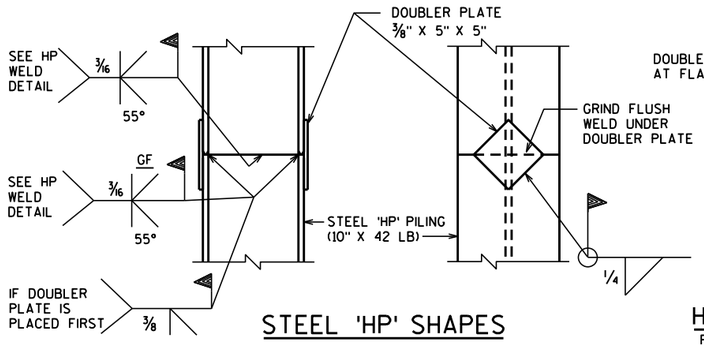
HORIZ. BARS NOT OTHERWISE
IDENTIFIED ARE A606 BARS



SECTION B-B

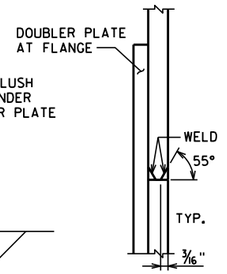


SECTION C-C



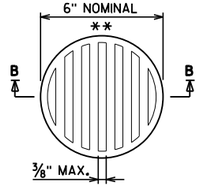
STEEL 'HP' SHAPES

STEEL 'HP' PILE MATERIAL SHALL BE A.S.T.M. DESIGNATION A36.

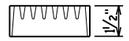


HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR



RODENT SCREEN DETAIL



SECTION B-B

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

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

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

NOTES

☆ A505 BARS AT 1'-0". THESE BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

◭ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

◨ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

* PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN. SEE RODENT SCREEN DETAIL.

◑ OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" X 6". (18" R.M.W. @ B.F. & ¾" "V" GROOVE @ F.F. IF JOINT IS USED.)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-20-228

DRAWN BY BRE | PLANS CK'D. KRO

WEST ABUTMENT DETAILS

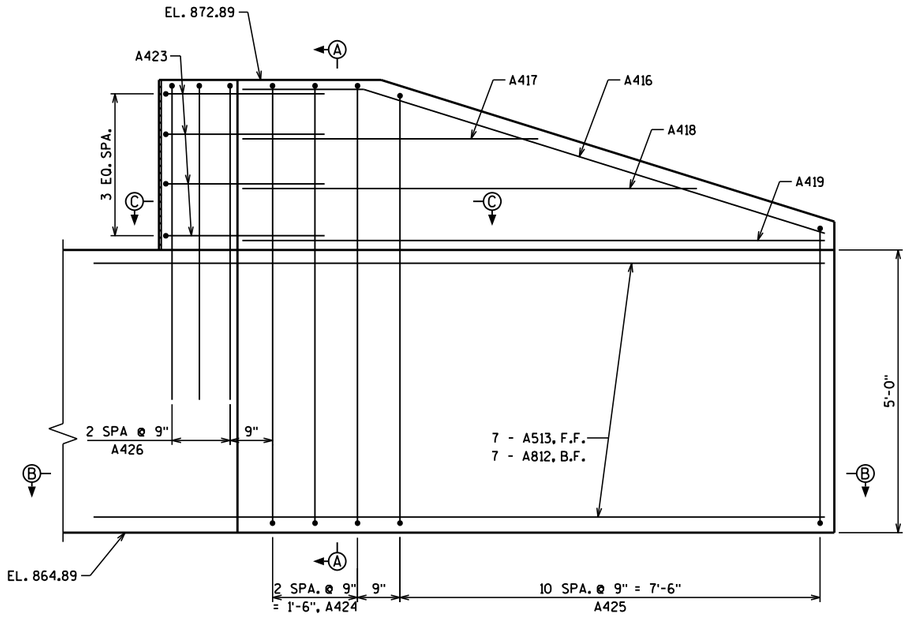
SHEET 4 OF 10

8

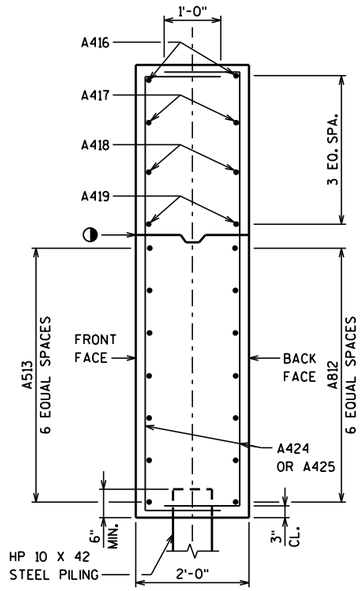
8

FILE NAME : F:±TR±JOBS±E1924A09±Sheets±Bridge±B-20-228 04 sw abut det.dgn PLOT BY : epleyb PLOT DATE: 5/15/2012 12:21:25 PM

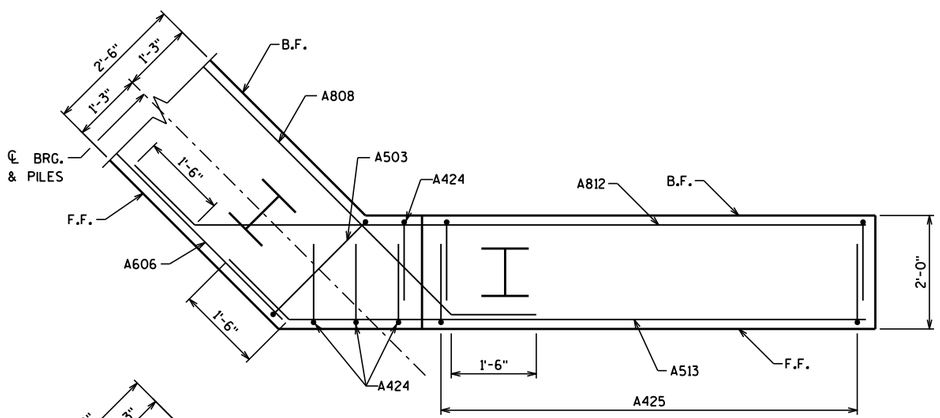
STATE PROJECT NUMBER
6275-02-72



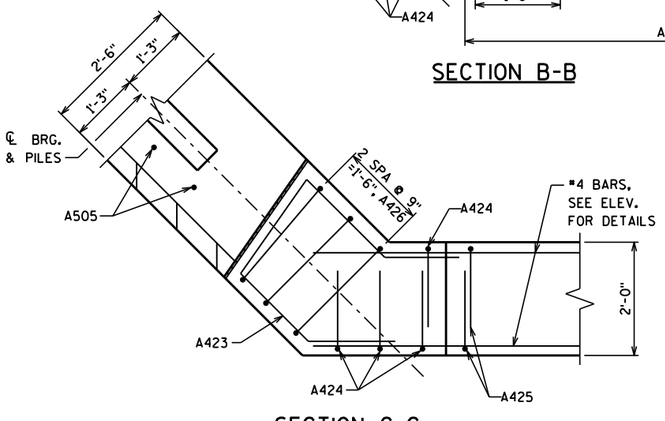
ELEVATION - WING 2



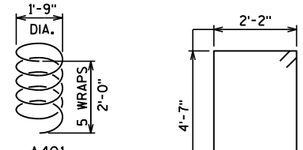
SECTION A-A



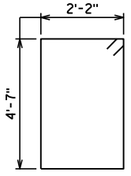
SECTION B-B



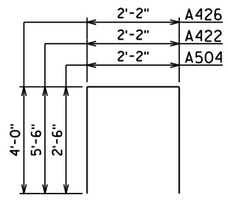
SECTION C-C

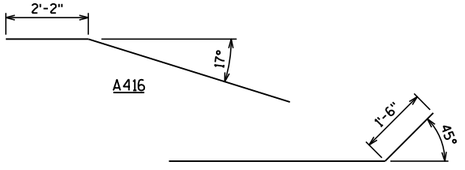


A401

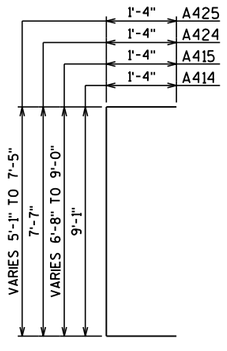


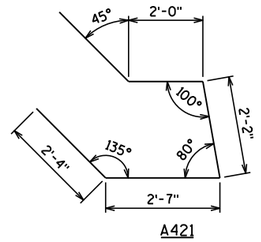
A503



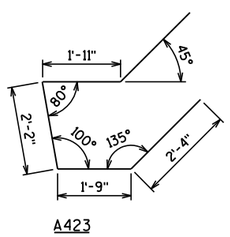


A808, A611, A812, A513





A421



A423

BAR BENDING DIAGRAMS

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	SERIES	BENT	LOCATION
A401		6	28'-0"		X	BODY - ONE PER PILE
A402		12	2'-3"			BODY - TWO PER PILE
A503		53	14'-1"		X	BODY - STIRRUPS
A504		30	6'-11"		X	BODY - VERTICAL, TOP
A505	X	37	2'-0"			BODY - VERTICAL, DOWEL
A606		8	42'-3"			BODY - HORIZONTAL, F.F., TOP & BOTT.
A607		7	29'-9"			BODY - HORIZONTAL, B.F.
A808		14	12'-11"		X	BODY - HORIZONTAL, B.F.
A610		4	32'-0"			BODY - VERTICAL, TOP & F.F.
A611		2	35'-9"		X	BODY - HORIZONTAL, B.F.
A812	X	16	13'-6"		X	WINGS - HORIZONTAL, B.F.
A513	X	16	11'-9"		X	WINGS - HORIZONTAL, F.F.
A414	X	4	11'-7"		X	WINGS - VERTICAL, F.F. & B.F., WING 1
A415	X	22	10'-4"	△	X	WINGS - VERTICAL, F.F. & B.F., WING 1
A416	X	4	10'-5"		X	WINGS - TOP
A417	X	4	5'-3"			WINGS - HORIZONTAL, F.F. & B.F.
A418	X	4	8'-0"			WINGS - HORIZONTAL, F.F. & B.F.
A419	X	4	10'-3"			WINGS - HORIZONTAL, F.F. & B.F.
A421	X	4	11'-3"		X	WINGS - HORIZONTAL, WING 1
A422	X	4	13'-0"		X	WINGS - VERTICAL, WING 1
A423	X	4	10'-4"		X	WINGS - HORIZONTAL, WING 2
A424	X	4	10'-1"		X	WINGS - VERTICAL, F.F. & B.F., WING 2
A425	X	22	8'-9"	△	X	WINGS - VERTICAL, F.F. & B.F., WING 2
A426	X	3	10'-0"		X	WINGS - VERTICAL, WING 2

BAR SERIES

BAR MARK	NO. REQ'D.	LENGTH
A415	2 SERIES OF 11	9'-2" TO 11'-6"
A425	2 SERIES OF 11	7'-7" TO 9'-11"

NOTES

◑ OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" X 6". (18" R.M.W. @ B.F. & ¾" "V" GROOVE @ F.F. IF JOINT IS USED.)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-20-228

DRAWN BY: BRE | PLANS CK'D.: KRO

WEST ABUTMENT DETAILS

SHEET 5 OF 10

50

8

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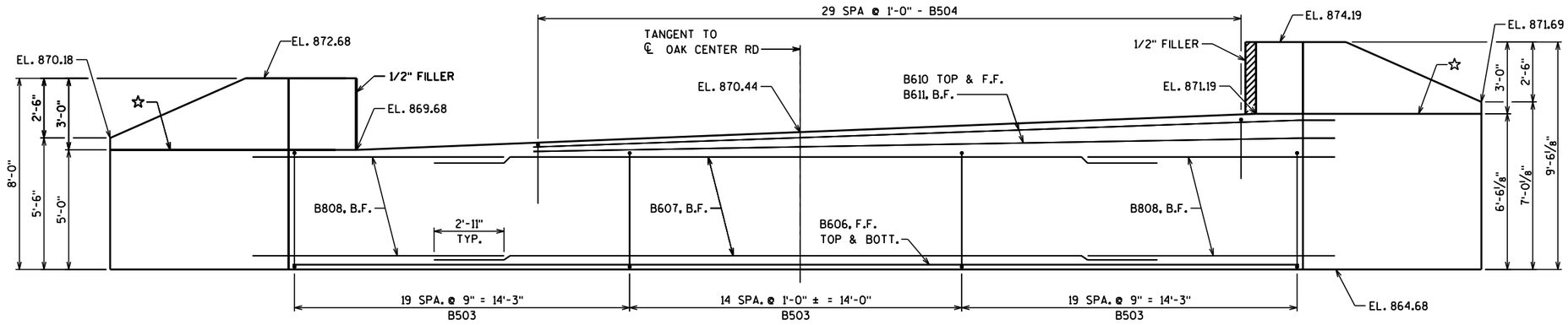
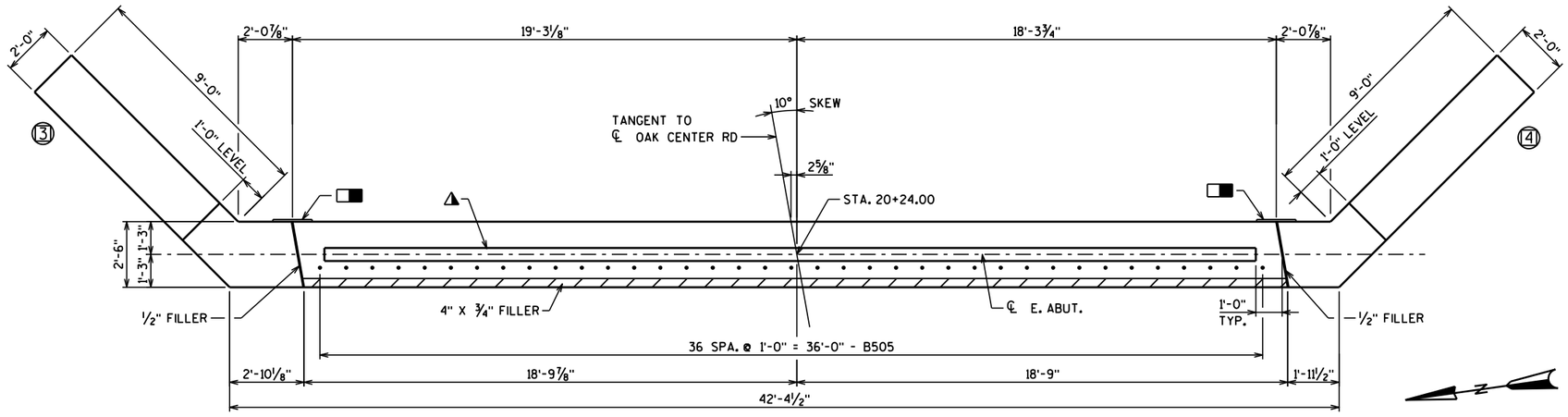
STATE PROJECT NUMBER
6275-02-72



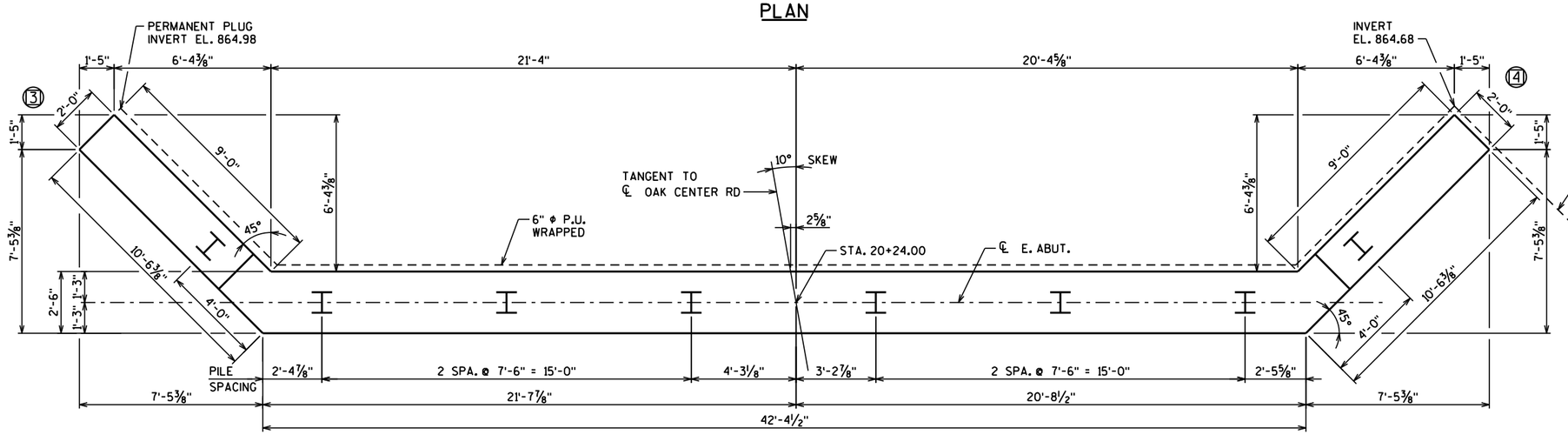
NOTE: SPACE B503 TO MISS PILING.

ELEVATION

(LOOKING EAST)



PLAN



PILE LAYOUT

NOTES

☆ OPTIONAL KEYED CONST. JOINT - FORMED BY A BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

◭ KEYED CONST. JOINT - FORMED BY A BEVELED 2" X 6".

▬ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

(X) DENOTES WING NUMBER

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. 1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING. PILES SHALL BE PREBORED A MINIMUM 10' AND THEN DRIVEN TO PRACTICAL REFUSAL OR TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. FOLLOWING DRIVING, THE SHAFTS SHALL BE FILLED WITH CONCRETE TO THE BOTTOM OF THE FOOTING ELEVATION. ESTIMATED LENGTH = 17'.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-20-228

DRAWN BY BRE | PLANS CK'D. KRO

EAST ABUTMENT

SHEET 6 OF 10

51

8

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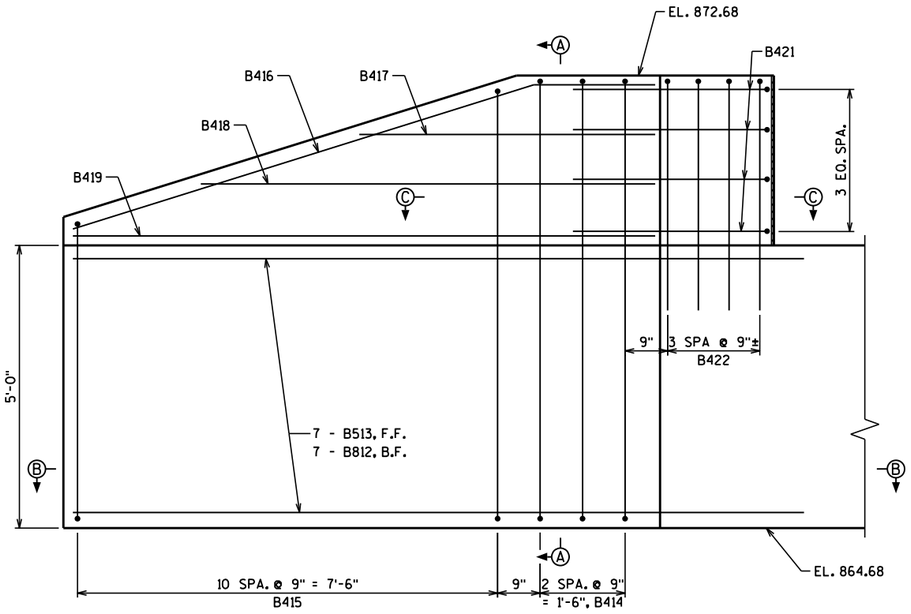
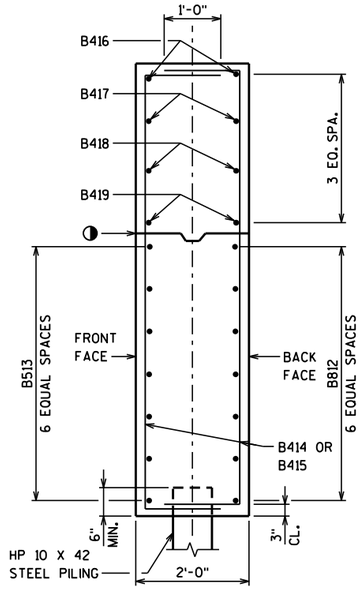
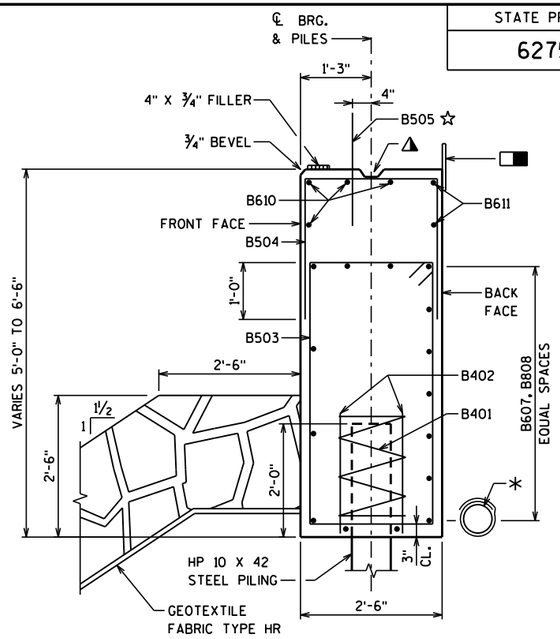


ELEVATION - WING 3

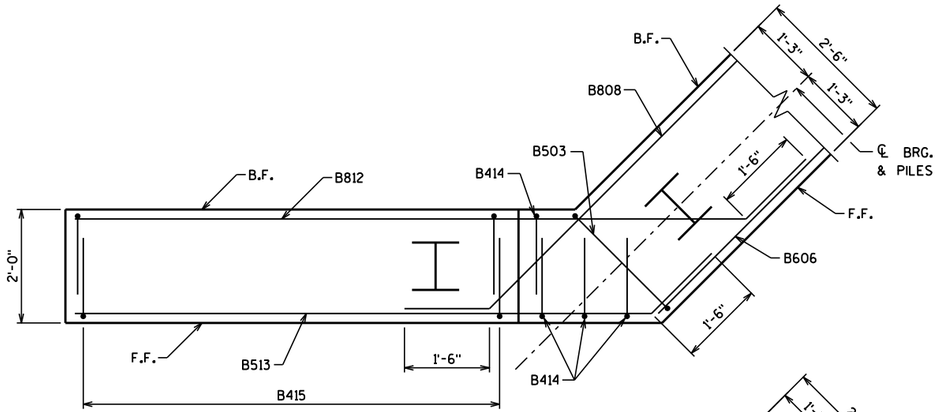


SECTION A-A

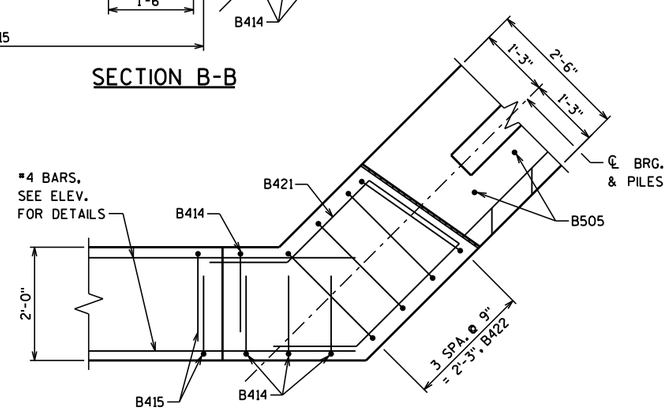


SECTION THRU ABUTMENT BODY

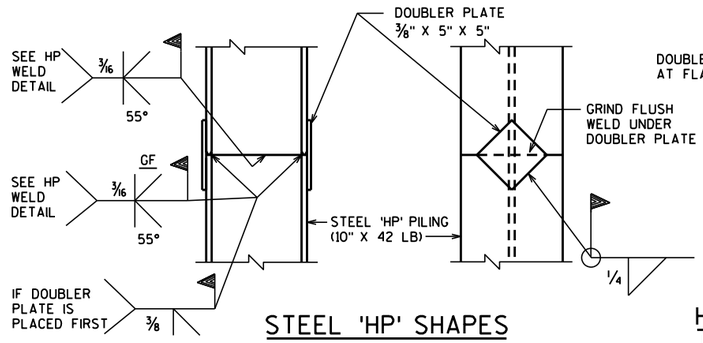
HORIZ. BARS NOT OTHERWISE IDENTIFIED ARE B606 BARS



SECTION B-B

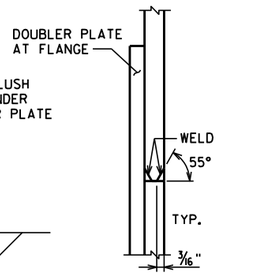


SECTION C-C



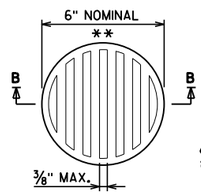
STEEL 'HP' SHAPES

STEEL 'HP' PILE MATERIAL SHALL BE A.S.T.M. DESIGNATION A36.

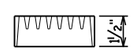


HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR



RODENT SCREEN DETAIL



SECTION B-B

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

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

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

NOTES

☆ B505 BARS AT 1'-0". THESE BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

◭ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

◨ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

* PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN, SEE RODENT SCREEN DETAIL.

◑ OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" X 6". (18" R.M.W. @ B.F. & ¾" "V" GROOVE @ F.F. IF JOINT IS USED.)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-20-228

DRAWN BY BRE | PLANS CK'D. KRO

EAST ABUTMENT DETAILS

SHEET 7 OF 10

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STATE PROJECT NUMBER
6275-02-72

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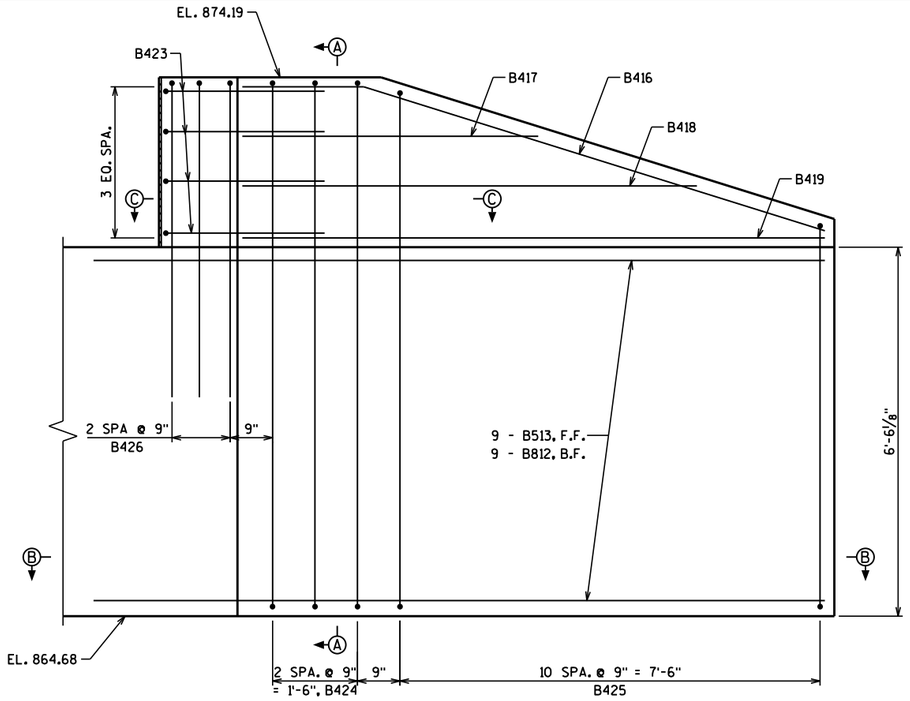
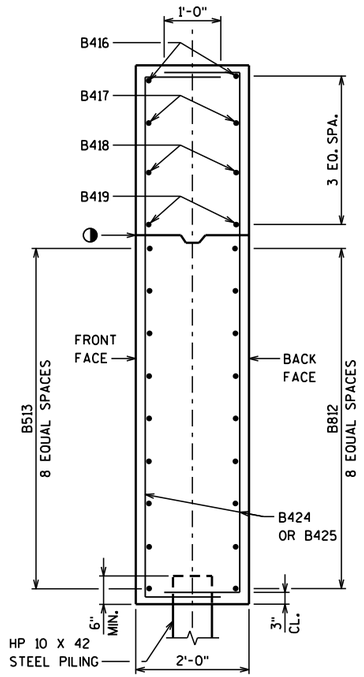
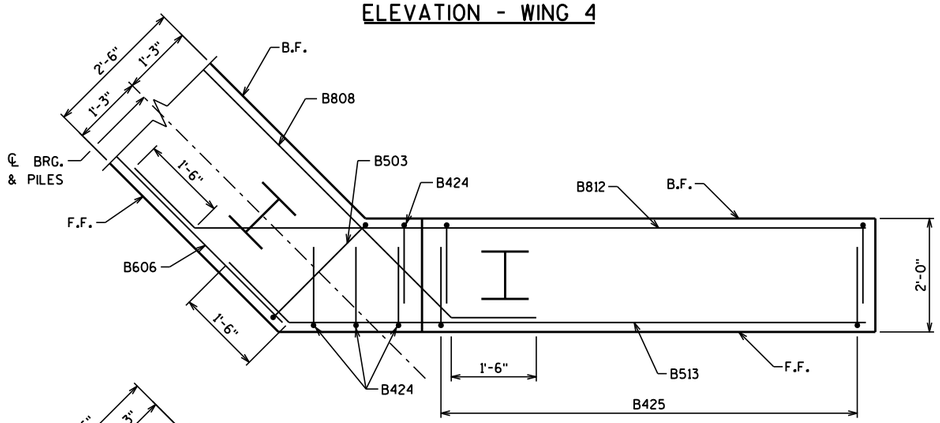
STATE PROJECT NUMBER
6275-02-72



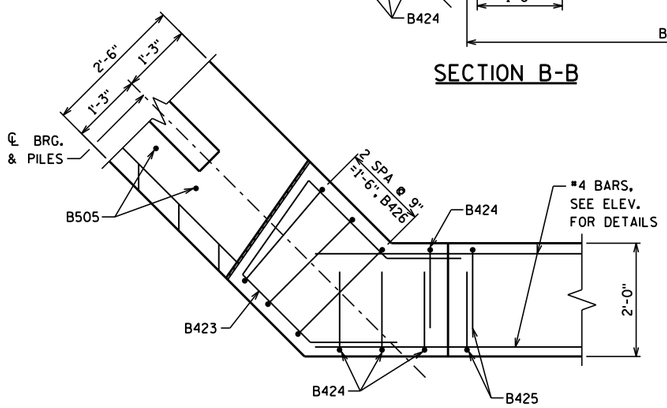
ELEVATION - WING 4



SECTION A-A



SECTION B-B



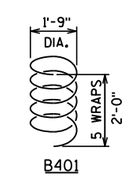
SECTION C-C

BILL OF BARS

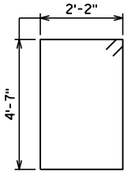
BAR MARK	COAT	NO. REQ'D.	LENGTH	SERIES	BENT	LOCATION
B401		6	28'-0"		X	BODY - ONE PER PILE
B402		12	2'-3"			BODY - TWO PER PILE
B503		53	14'-1"		X	BODY - STIRRUPS
B504		30	6'-11"		X	BODY - VERTICAL, TOP
B505	X	37	2'-0"			BODY - VERTICAL, DOWEL
B606		8	42'-3"			BODY - HORIZONTAL, F.F., TOP & BOTT.
B607		7	29'-9"			BODY - HORIZONTAL, B.F.
B808		14	12'-11"		X	BODY - HORIZONTAL, B.F.
B610		4	32'-0"			BODY - VERTICAL, TOP & F.F.
B611		2	35'-9"		X	BODY - HORIZONTAL, B.F.
B812	X	16	13'-6"		X	WINGS - HORIZONTAL, B.F.
B513	X	16	10'-4"		X	WINGS - HORIZONTAL, F.F.
B414	X	4	10'-1"		X	WINGS - VERTICAL, F.F. & B.F., WING 3
B415	X	22	8'-9"	△	X	WINGS - VERTICAL, F.F. & B.F., WING 3
B416	X	4	10'-5"		X	WINGS - TOP
B417	X	4	5'-3"			WINGS - HORIZONTAL, F.F. & B.F.
B418	X	4	8'-0"			WINGS - HORIZONTAL, F.F. & B.F.
B419	X	4	10'-3"			WINGS - HORIZONTAL, F.F. & B.F.
B421	X	4	11'-3"		X	WINGS - HORIZONTAL, WING 3
B422	X	4	10'-0"		X	WINGS - VERTICAL, WING 3
B423	X	4	10'-4"		X	WINGS - HORIZONTAL, WING 4
B424	X	4	11'-8"		X	WINGS - VERTICAL, F.F. & B.F., WING 4
B425	X	22	10'-4"	△	X	WINGS - VERTICAL, F.F. & B.F., WING 4
B426	X	3	13'-0"		X	WINGS - VERTICAL, WING 4

BAR SERIES

BAR MARK	NO. REQ'D.	LENGTH
B415	2 SERIES OF 11	7'-7" TO 9'-11"
B425	2 SERIES OF 11	9'-2" TO 11'-6"



B401



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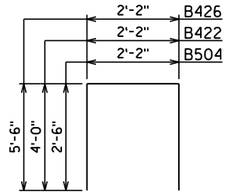
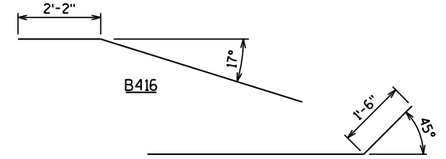
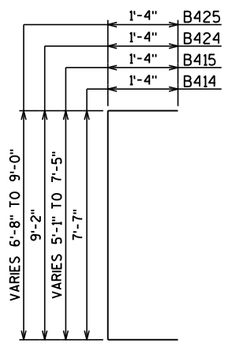
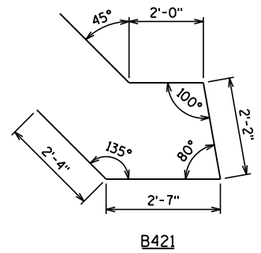




B808, B611, B812, B513





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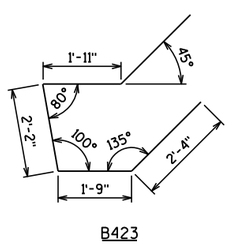


B423

BAR BENDING DIAGRAMS

NOTES

◑ OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" X 6". (18" R.M.W. @ B.F. & ¾" "V" GROOVE @ F.F. IF JOINT IS USED.)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-20-228

DRAWN BY: BRE | PLANS CK'D.: KRO

EAST ABUTMENT DETAILS

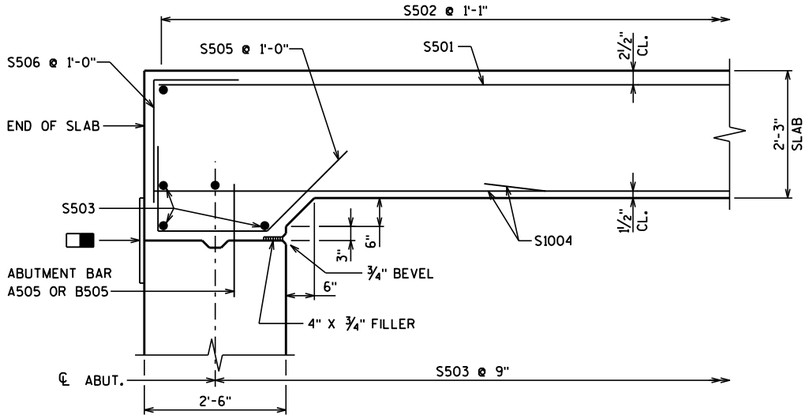
SHEET 8 OF 10

53

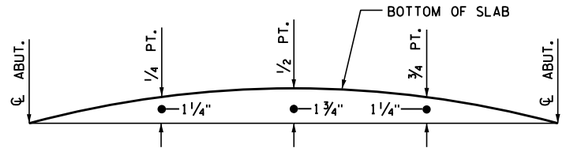
8

8

STATE PROJECT NUMBER
6275-02-72



LONG. SECTION THRU RDWY.



CAMBER DIAGRAM

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

LEGEND

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 CHARIS AT APPROXIMATELY 4'-0" CENTERS.

TRANSVERSE BARS SHALL BE PLACED PARALLEL TO THE C/L OF SUBSTRUCTURE UNITS.

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

■ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

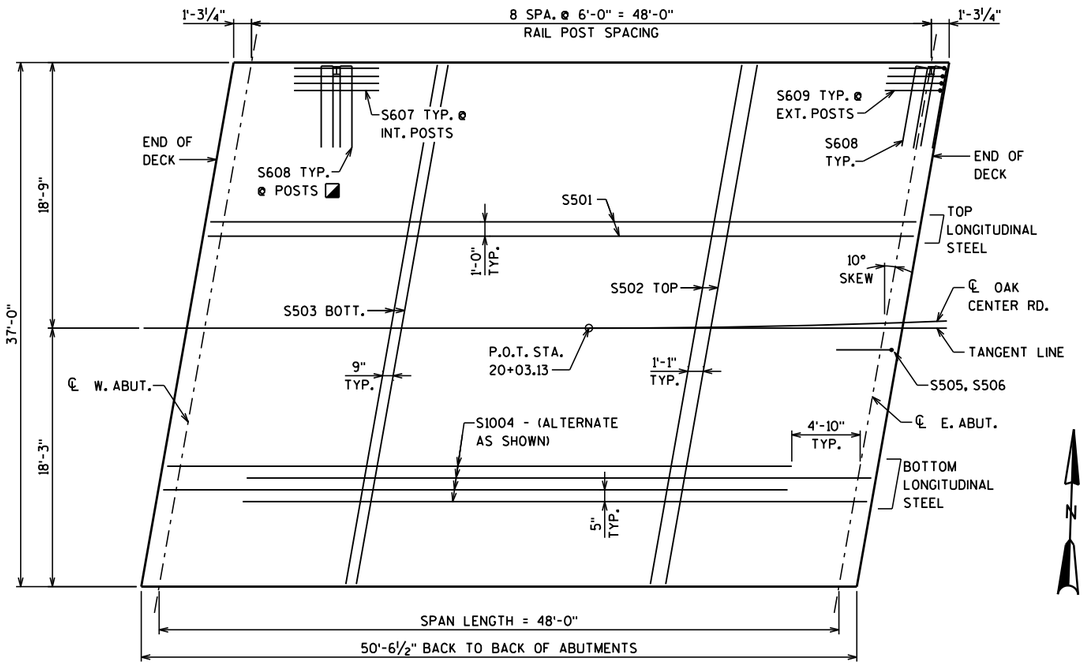
◪ PLACE BELOW AND TIE TO TOP MAT OF STEEL.

BILL OF BARS

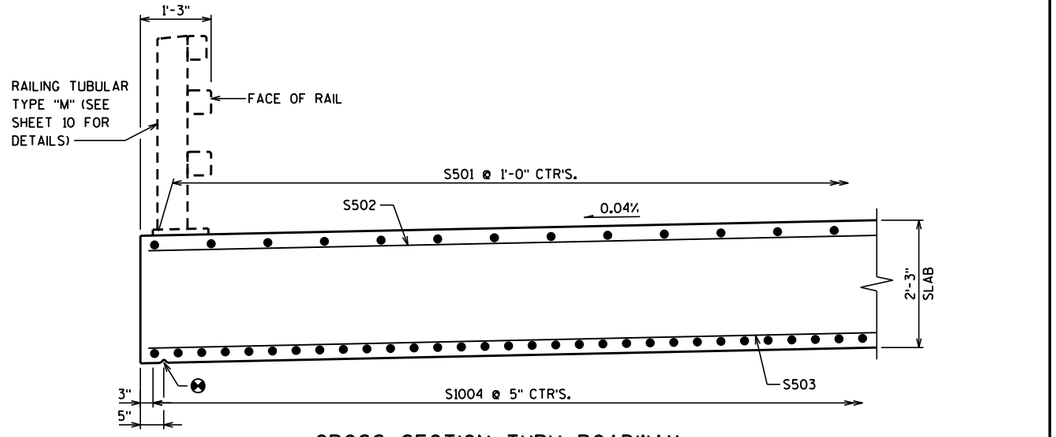
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
S501	X	38	50'-2"		LONGITUDINAL TOP
S502	X	48	37'-2"		TRANSVERSE TOP
S503	X	71	37'-2"		TRANSVERSE BOTTOM
S1004	X	89	44'-4"		LONGITUDINAL BOTTOM
S505	X	76	5'-5"	X	AT END OF SLAB
S506	X	76	3'-7"	X	AT END OF SLAB
S607	X	56	6'-0"		AT INTERIOR RAIL POSTS
S608	X	36	12'-0"	X	AT RAIL POSTS
S609	X	16	4'-11"	X	AT END RAIL POSTS

TOP OF DECK ELEVATIONS

LOCATION	W.ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	E.ABUT.
W. EDGE	872.89	872.87	872.85	872.83	872.81	872.79	872.76	872.74	872.72	872.70	872.68
C/L	873.66	873.63	873.61	873.59	873.57	873.55	873.53	873.51	873.49	873.47	873.44
E. EDGE	874.40	874.38	874.36	874.34	874.32	874.29	874.27	874.25	874.23	874.21	874.19

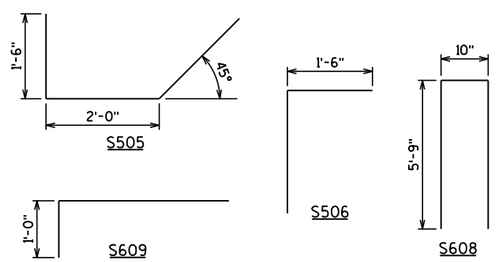


PLAN



CROSS SECTION THRU ROADWAY

⊗ ¾" V-GROOVE. EXTEND V-GROOVE TO THE FILLET ADJACENT TO THE ABUTMENTS.



BAR BEND DIAGRAMS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-20-228

DRAWN BY BRE | PLANS CK'D. KRO

SUPERSTRUCTURE

SHEET 9 OF 10

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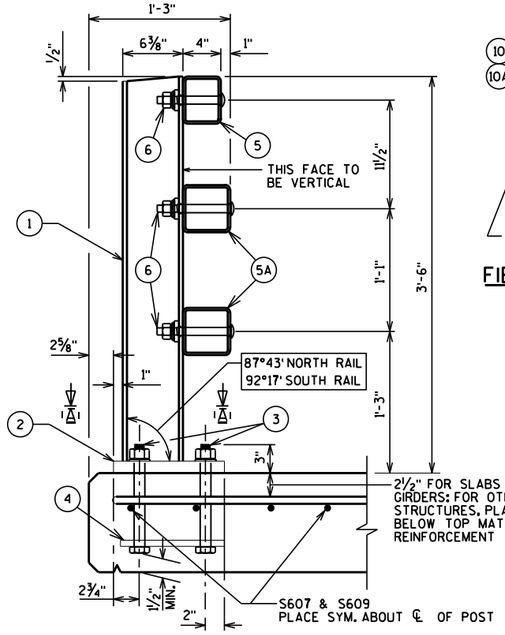
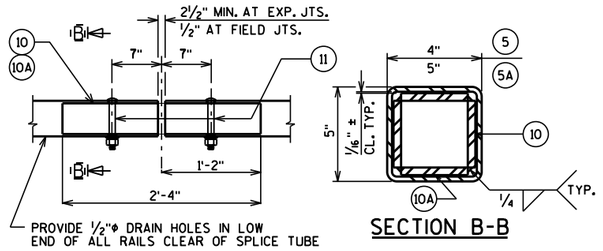
FILE NAME : F:±TR±JOBS±E1924A09±Sheets±Bridge±B-20-228 09 super.dgn PLOT BY : epleyb PLOT DATE: 6/1/2012 1:41:45 PM

STATE PROJECT NUMBER
6275-02-72

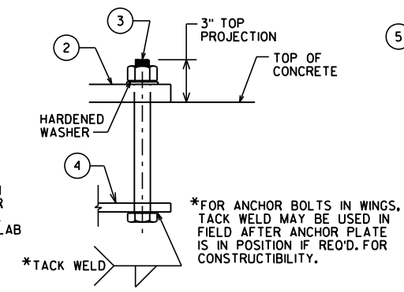


SECTION THRU RAILING ON DECK

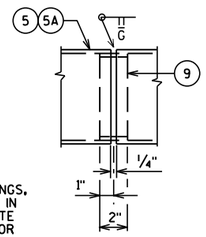


FIELD ERECTION JOINT DETAIL

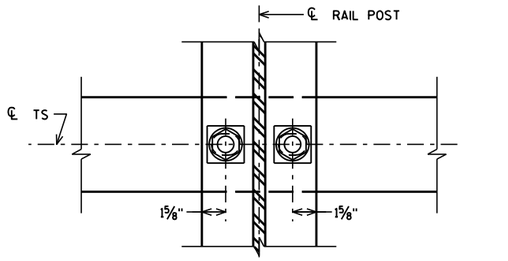
SECTION B-B



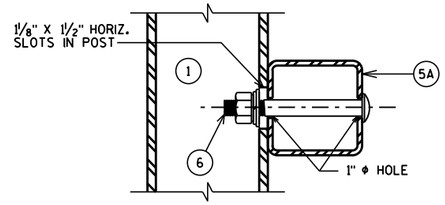
ANCHOR BOLTS



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



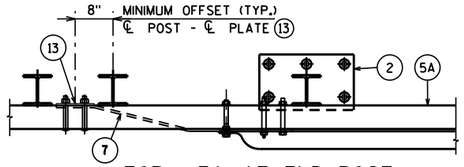
SECTION THRU POST WEB



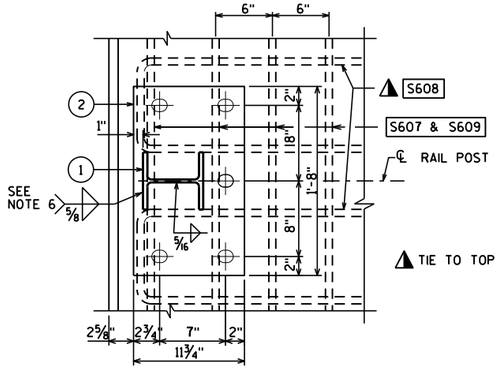
SECTION THRU RAIL

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

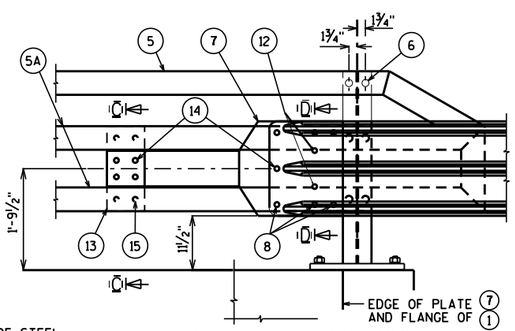
TYPICAL RAIL TO POST CONNECTIONS



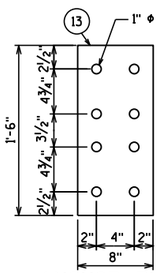
TOP VIEW AT END POST
(THRIE BEAM RAIL ATTACHMENT)



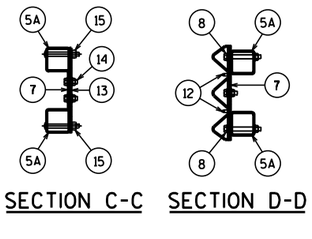
SECTION A-A



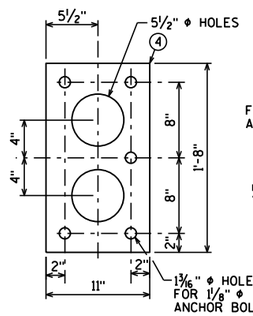
DETAIL AT END POST
(THRIE BEAM RAIL ATTACHMENT)



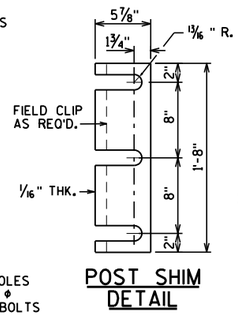
ANCHOR PLATE
AT BEAM GUARD ATTACHMENT



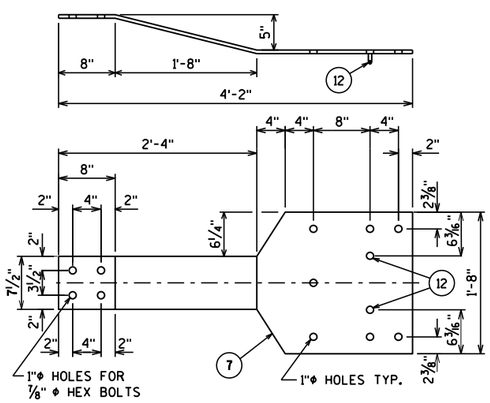
SECTION C-C SECTION D-D



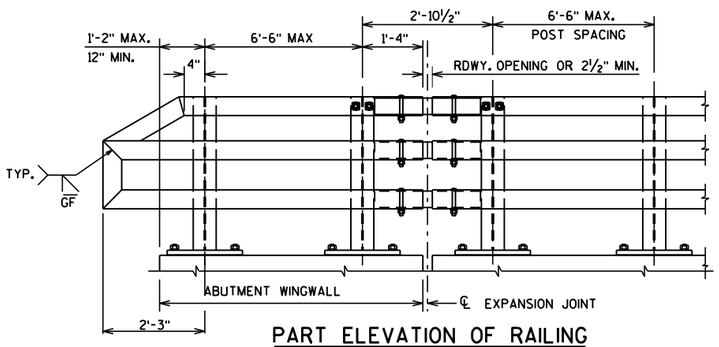
ANCHOR PLATE
AT RAIL TO DECK CONNECTION



POST SHIM DETAIL



BACK-UP PLATE DETAIL
AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

LEGEND

(1) W6 x 25 WITH 1⅛" X 1½" HORIZONTAL SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

(2) PLATE 1¼" x 11¾" x 1'-8" WITH 1⅝" X 1⅝" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE

(3) ASTM A449 - ⅞" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10¾" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)

(4) ⅝" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1⅜" DIA. HOLES FOR ANCHOR BOLTS NO. 3

(5) TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

(5A) TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

(6) ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1⅝" X 1⅝" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)

(7) ½" THK. BACK-UP PLATE WITH 2 - ⅞" X 1½" THREADED SHOP WELDED STUDS (ITEM 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.

(8) 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.

(9) SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".

(10) ⅜" X 3⅜" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.

(10A) ⅜" X 2⅝" X 2'-4" PLATE USED IN NO. 5, ⅜" X 3⅝" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.

(11) ⅞" ϕ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 5/8" X 1½" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 15/16" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.

(12) ⅞" DIA. X 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).

(13) ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.

(14) ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER.

(15) 1" ϕ HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-20-228 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 ⅛ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
10. WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-20-228

DRAWN BY	BRE	PLANS CK'D.	KRO

TUBULAR RAILING TYPE M

SHEET 10 OF 10

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OAK CENTER ROAD - WEST

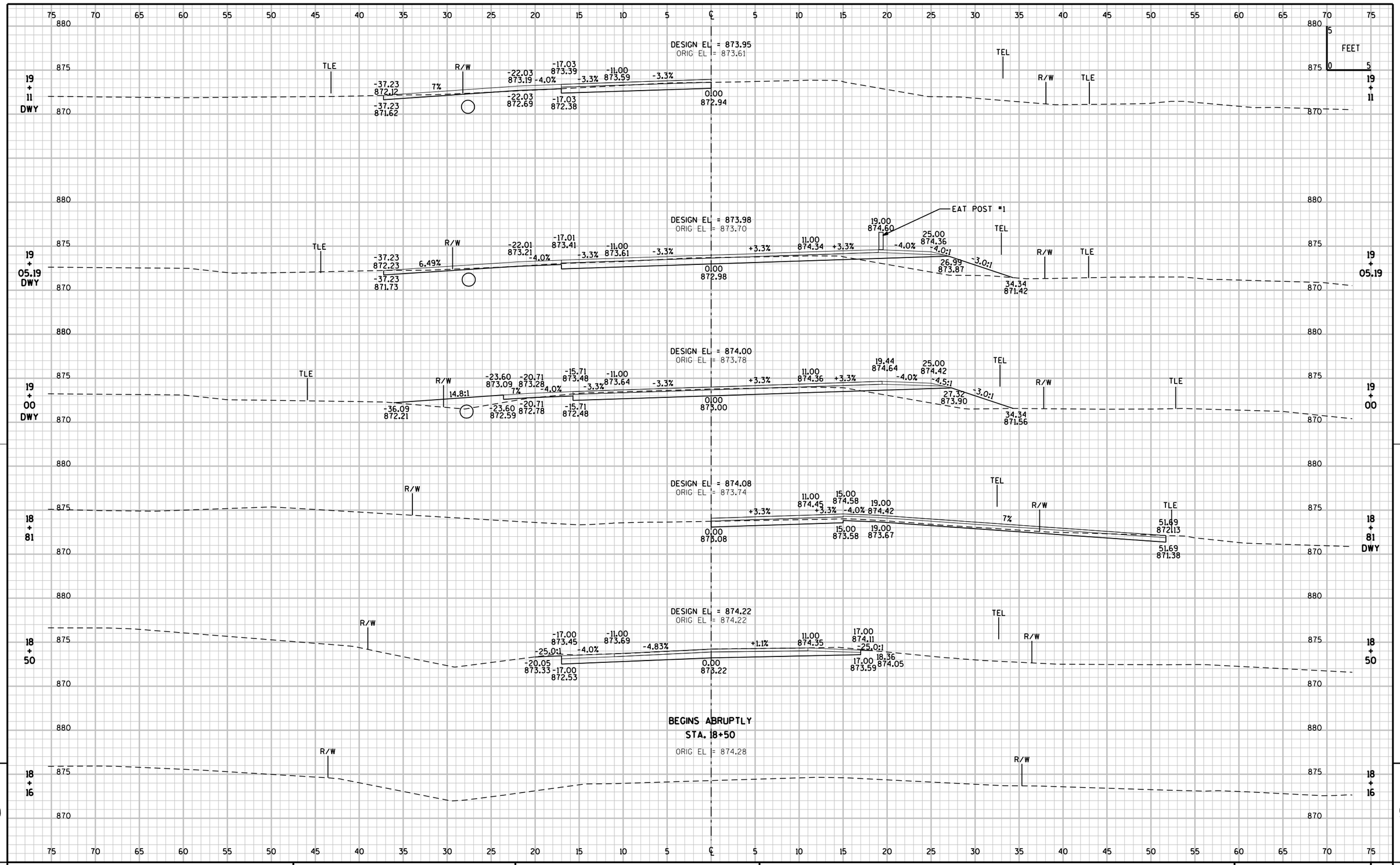
STATION	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
		Cut	Salvaged/ Unusable Pavement Material	Fill	Cut	Salvaged/ Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.3	
PROJECT 6275-02-72										
BEGINNING OF PROJECT										
18+50.	---	32	12.83	0	0	0	0	0	0	0
19+00.	50.00	23	12.83	30	50	24	28	50	36	-10
19+54.36	54.36	17	12.83	35	40	26	66	90	122	-82
19+74.73	20.37	34	12.83	21	19	10	21	109	150	-100
ENDS ABRUPTLY	0.00	0	0.00	0	0	0	0	109	150	-100
STRUCTURE	0.00	0		0	0	0	0	109	150	-100

OAK CENTER ROAD - MIDDLE

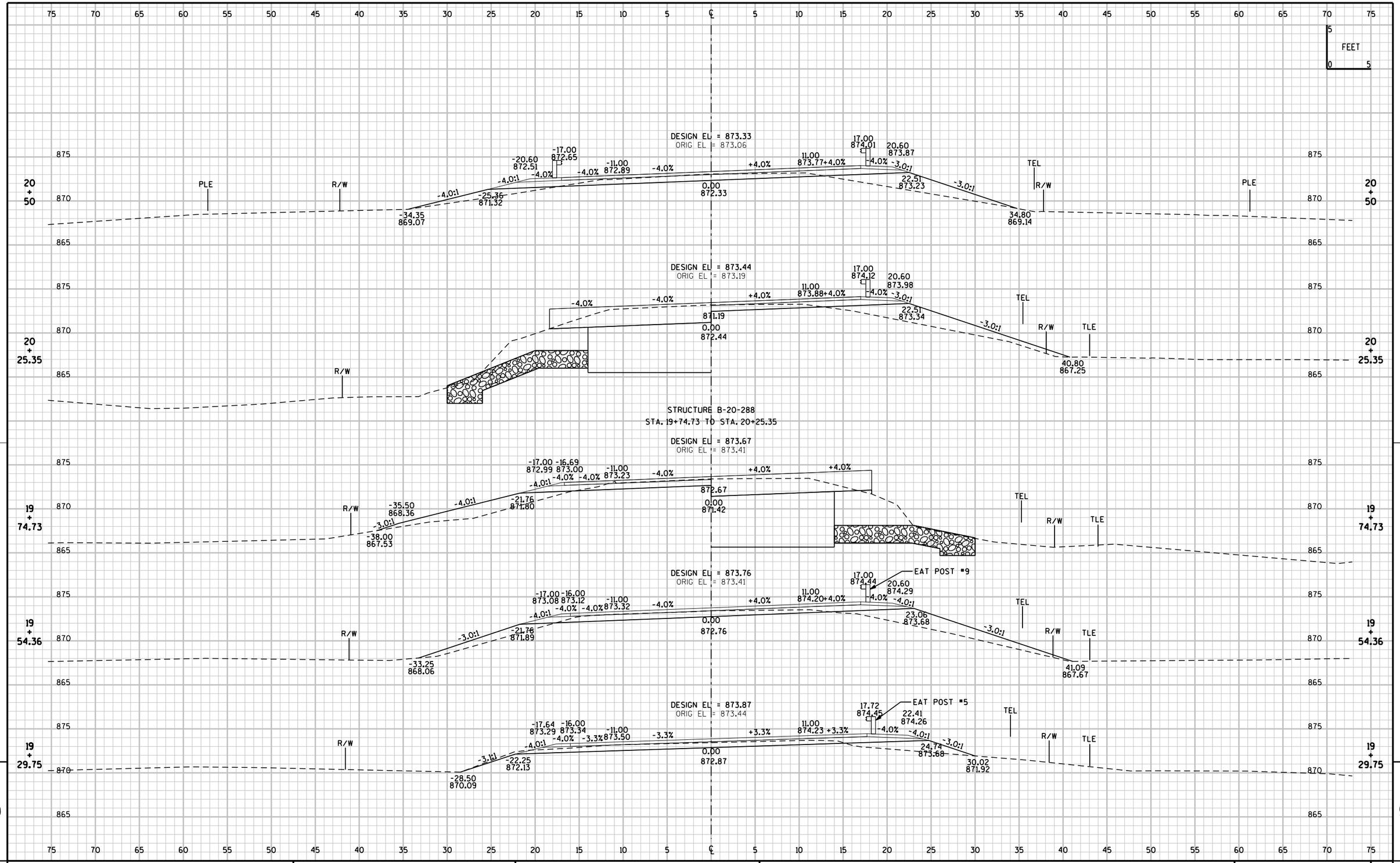
STATION	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
		Cut	Salvaged/ Unusable Pavement Material	Fill	Cut	Salvaged/ Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.3	
PROJECT 6275-02-72										
STRUCTURE	---	0	0.00	0	0	0	0	0	0	0
BEGINS ABRUPTLY	0.00	0	0.00	0	0	0	0	0	0	0
20+25.35	0.00	36	12.83	28	0	0	0	0	0	0
20+50.	24.65	16	12.83	30	24	12	27	24	35	-23
21+00.	50.00	26	12.83	65	39	24	91	63	153	-126
END OF PROJECT										

OAK CENTER ROAD - EAST

STATION	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			Mass Ordinate
		Cut	Salvaged/ Unusable Pavement Material	Fill	Marsh Exc	Cut	Salvaged/ Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.3	Expanded Marsh Backfill 1.50	
PROJECT 6275-02-71												
BEGINNING OF PROJECT												
21+00.	0.00	26	13	65	0	0	0	0	0	0	0	0
21+50.	50.00	31	13	12	0	53	24	71	53	93	0	-63
21+55.	5.00	31	13	12	0	6	2	2	59	96	0	-63
21+55.	0.00	0	0	454	0	0	0	0	59	96	0	-63
21+68.	13.00	0	0	454	107	0	0	219	59	380	15	-347
21+85.	35.00	0	0	458	113	0	0	591	59	1148	101	-1116
22+00.	15.00	0	0	454	120	0	0	253	59	1478	197	-1445
22+03.	3.00	0	0	454	117	0	0	50	59	1543	217	-1511
22+15.	12.00	0	0	454	0	0	0	202	59	1805	256	-1773
22+15.	0.00	26	13	32	0	0	0	0	59	1805	256	-1773
22+50.	35.00	23	13	0	0	32	17	21	91	1832	256	-1785
END OF PROJECT												



PROJECT NO: 6275-02-71/72	HWY: OAK CENTER ROAD	COUNTY: FOND DU LAC	CROSS SECTIONS: OAK CENTER ROAD	SHEET 58	E	9.3



PROJECT NO: 6275-02-71/72	HWY: OAK CENTER ROAD	COUNTY: FOND DU LAC	CROSS SECTIONS: OAK CENTER ROAD	SHEET 59	E	9.4

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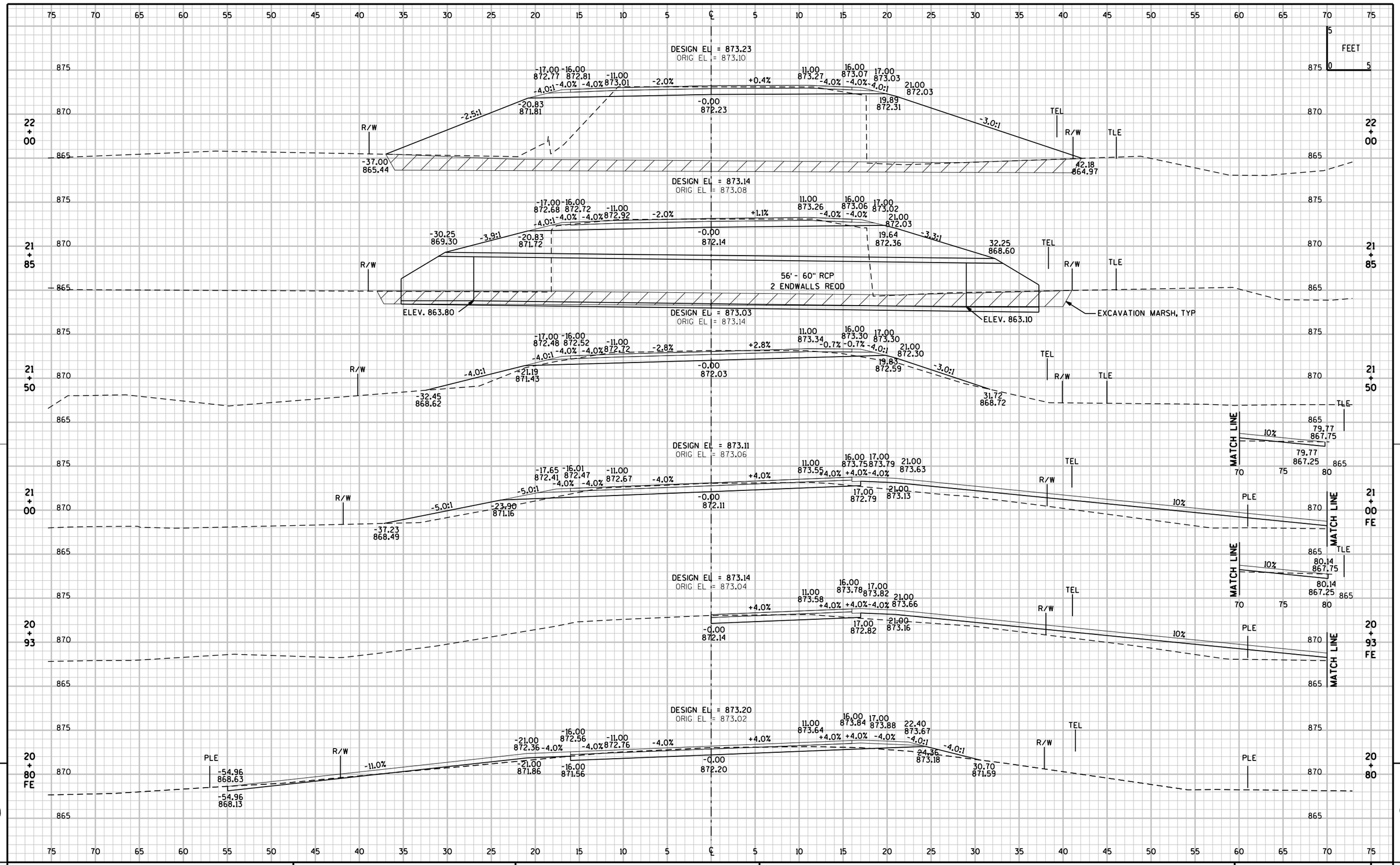
WISDOT/CADDS SHEET 21



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PROJECT NO: 6275-02-71/72	HWY: OAK CENTER ROAD	COUNTY: FOND DU LAC	CROSS SECTIONS: OAK CENTER ROAD	SHEET 60	E	9.5

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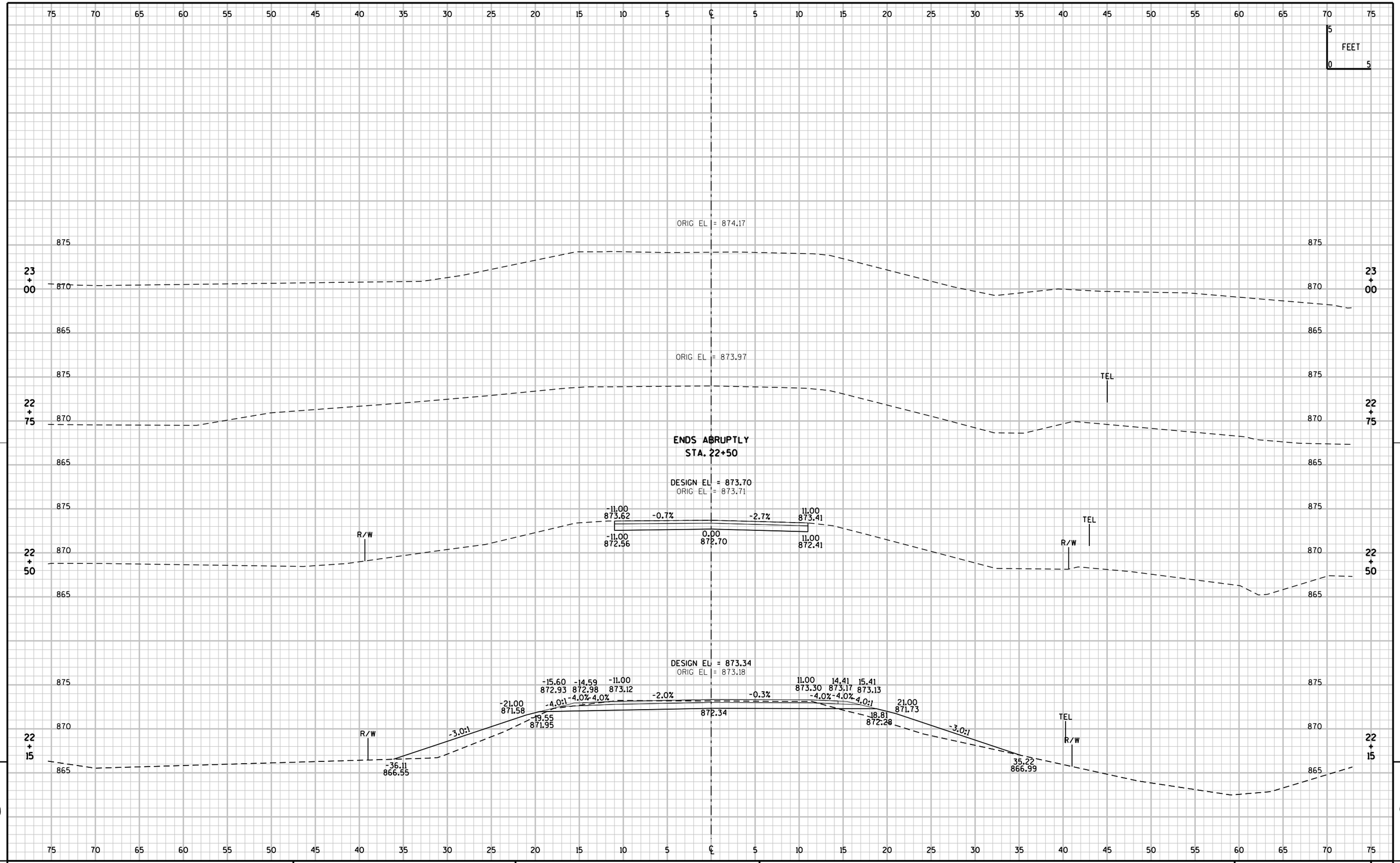
WISDOT/CADDS SHEET 21



PROJECT NO: 6275-02-71/72	HWY: OAK CENTER ROAD	COUNTY: FOND DU LAC	CROSS SECTIONS: OAK CENTER ROAD	SHEET 61	E	9.6

FILE NAME : F:\TR\JOBS\E1924A09\Sheets\Plan\090204_xs.dgn PLOT DATE : 5/10/2012 2:01:41 PM PLOT BY : OMNNI - perryd PLOT NAME : PLOT SCALE : 2.00 " / IN.

WISDOT/CADDS SHEET 21

Wisconsin Department of Transportation

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