SEL

MAR 13

PROJECT ID: 4881-00-72
WITH: N/A

COUNTY: OZAUKEE

ORDER OF SHEETS

TOTAL SHEETS = 64

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH A

BRIDGE OVER SAUK CREEK AND APPROACHES

CTH A
OZAUKEE COUNTY

STATE PROJECT NUMBER
4881-00-72

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4881-00-72		

ACCEPTED FOR
COUNTY OF OZAUKEE
10/11/12 (Date) Robert R Dreblow
ROBERT DREBLOW
HIGHWAY COMMISSIONER

N

DESIGN DESIGNATION

A.A.D.T.	(2013)	=	530 V.P.D.
A.A.D.T.	(2033)	=	545 V.P.D.
D.H.V.	(2033)	=	17 V.P.D.
D.D.		=	62/38
T.		=	4.0%
DESIGN SPEED		=	45 M.P.H.
ESALS		=	43,800 (HMA)

CONVENTIONAL SYMBOLS

PLAN

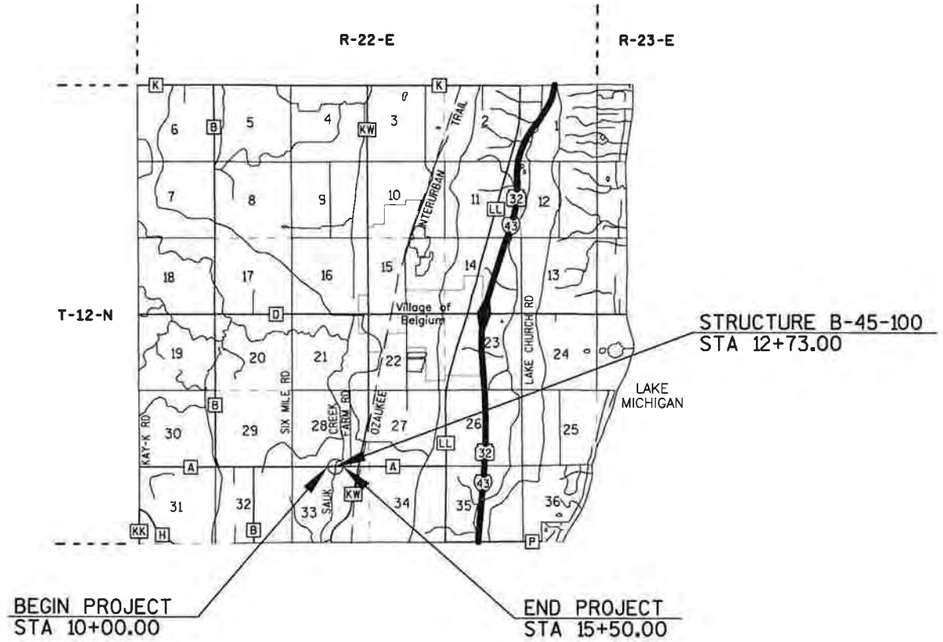
- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

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



LAYOUT
SCALE 0 1 MI.

"Coordinates on this plan are referenced to the Wisconsin State Plane Coordinate System (WSPCS), 'South' Zone."

TOTAL NET LENGTH OF CENTERLINE = 0.104 MI. (RURAL)

ORIGINAL PLANS PREPARED BY

GREMMER & ASSOCIATES, INC.
CONSULTING ENGINEERS
Stevens Point • Fond du Lac
93 South Pioneer Road, Suite 300 • Fond du Lac, WI 54935
(920) 924-5720 • fax (920) 924-5725

WISCONSIN
ANDREW L. KLEMP
E-33645
FOND DU LAC, WI
PROFESSIONAL ENGINEER

10/9/12 (Date) Andrew L Klemp
ANDREW L. KLEMP, PE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	GREMMER & ASSOCIATES, INC.
Designer	GREMMER & ASSOCIATES, INC.
Management Consultant	DAAR ENGINEERING, INC.
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 10/10/2012 (Management Consultant Signature)

E

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GENERAL NOTES

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

ALL DISTANCES AND STATIONING SHOWN ON THIS PLAN ARE GROUND VALUES.

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

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

A VERTICAL SAW CUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS AND PAVEMENTS AT THE REMOVAL LIMITS. SAWCUT SLURRY SHALL BE ACTIVELY MANAGED TO PREVENT RELEASE OF SLURRY INTO WATERWAY AND WETLANDS.

SAW CUT LOCATIONS SHOWN ON THE PLANS ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD.

THE EXACT LOCATION OF PRIVATE ENTRANCES IS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

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

TOPSOIL, FERTILIZER, SEED AND MULCH SHALL BE PLACED ON ALL DISTURBED AREAS, EXCLUSIVE OF THE AREA OCCUPIED BY THE NEW PAVEMENTS, ENTRANCES, AND RELATED STRUCTURES.

SECTIONS AS SHOWN ON THE CROSS-SECTIONS INCLUDE THE THICKNESS OF TOPSOIL WHERE REQUIRED.

EROSION CONTROL ITEMS SHOWN ARE APPROXIMATE, THE EXACT LOCATION SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD. EROSION CONTROL ITEMS TO BE INSTALLED PRIOR TO UPSLOPE WORK.

REMOVAL OF ASPHALTIC CONCRETE PAVEMENT SHALL BE MEASURED AND PAID FOR AS EXCAVATION COMMON.

DRAIN TILE MAY EXIST WITHIN THE PROJECT LIMITS. IF THE CONTRACTOR ENCOUNTERS DRAIN TILE, THE CONTRACTOR SHALL REATTACH AND MAINTAIN DRAINAGE PATTERNS, INCIDENTAL TO GRADING OPERATIONS.

WHEN THE QUANTITY OF THE ITEMS OF BASE AGGREGATE DENSE OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON, THE ASPHALTIC SURFACE DEPTH OR THICKNESS OF THE MATERIAL SHOWN ON THE PLAN IS APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

HMA PAVEMENT AND ASPHALTIC SURFACE WEIGHT CALCULATIONS ARE BASED ON 110 LBS/SY-INCH.

PLACE 4" ASPHALTIC SURFACE IN LAYERS OF THE FOLLOWING THICKNESSES:
UPPER LAYER THICKNESS = 1.75" GRADATION NOMINAL SIZE = 12.5 MM
LOWER LAYER THICKNESS = 2.25" GRADATION NOMINAL SIZE = 19.0 MM

ABBREVIATIONS

AEW	APRON ENDWALL
ASP OR ASPH	ASPHALT
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
C/L OR ℄	CENTER OR CONSTRUCTION LINE
CONC	CONCRETE
CPCM	CULVERT PIPE CORRUGATED METAL
CPCS	CULVERT PIPE CORRUGATED STEEL
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC YARD
DISCH	DISCHARGE
ELEV	ELEVATION
FE	FIELD ENTRANCE
HT	HEIGHT
INV	INVERT
MAX	MAXIMUM
MGS	MIDWEST GUARDRAIL SYSTEM
MIN	MINIMUM
NOM	NOMINAL
PAVT	PAVEMENT
PI	POINT OF INTERSECTION
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
REQ'D	REQUIRED
RT	RIGHT
SDD	STANDARD DETAIL DRAWING
SF	SQUARE FOOT
STA	STATION
SY	SQUARE YARD
TYP	TYPICAL

UTILITIES

* WE ENERGIES - CORPORATE
333 W EVERETT ST - A279
MILWAUKEE, WI 53203
PHONE: (414) 221-4578
ATTN: MR. DAN SANDE

* WE ENERGIES - ELECTRIC
245 SAND DRIVE
WEST BEND, WI 53095
PHONE: (262) 338-7662
ATTN: MR. AL SCHMITT

* FRONTIER COMMUNICATIONS
DESIGN: RYAN OSNESS
118 DIVISION ST.
PLYMOUTH, WI 53073
PHONE: (920) 893-7455
EMAIL: ryan.d.osness@ftr.com
CONST: RUSS RYAN
315 OAK ST
OAKFIELD, WI 53065
PHONE: (920) 737-9662
EMAIL: russell.w.ryan@ftr.com

* DENOTES MEMBER OF DIGGERS HOTLINE

DIGGERS HOTLINE

Call 811
Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

CALL DIGGERS HOTLINE
TO OBTAIN LOCATION OF
PARTICIPANTS' UNDERGROUND
FACILITIES BEFORE YOU DIG.

WISCONSIN STATUTE 182.0175
REQUIRES MINIMUM OF 3
WORK DAYS NOTICE BEFORE
YOU EXCAVATE.

PLANNED CONSTRUCTION SEQUENCE

1) PREVENT ACTIVE BIRD NESTING ON EXISTING BRIDGE PRIOR TO MAY 1
2) PLACE TURBIDITY BARRIER, SILT FENCE, AND ASSOCIATED ROCK BAGS
3) REMOVE EXISTING BRIDGE
4) EXCAVATE AND CONSTRUCT SUBSTRUCTURE
5) CONSTRUCT SUPERSTRUCTURE
6) INSTALL REMAINING SILT FENCE ADJACENT TO APPROACH WORK
7) GRADE ROADWAY APPROACHES
8) INSTALL DITCH CHECKS, RIPRAP, SEED, AND EROSION MAT
9) PAVE ROADWAY
10) INSTALL BEAMGUARD AND SHOULDER GRAVEL
11) FINAL LANDSCAPING AND FINISHING ITEMS
12) REMOVE EROSION CONTROL MEASURES AND RESTORE DAMAGE FROM REMOVALS

ORDER OF SECTION 2 SHEETS

DESIGN CONTACT

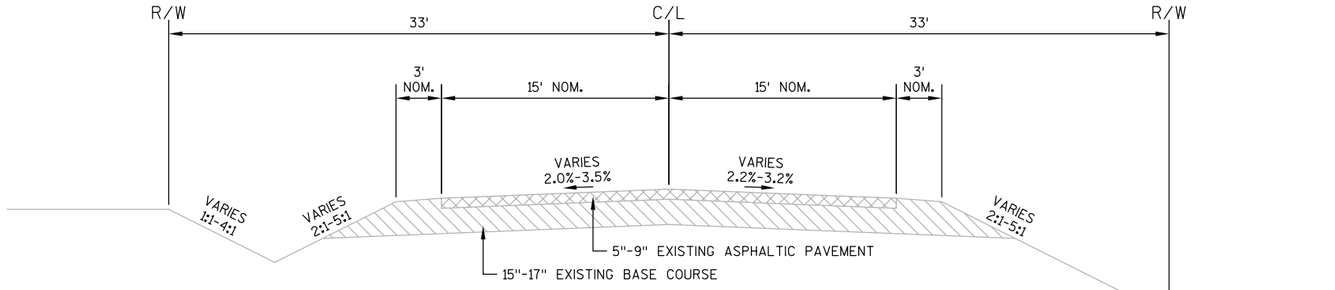
GREMMER & ASSOCIATES, INC.
93 S. PIONEER ROAD, SUITE 300
FOND DU LAC, WI 54935
PHONE: (920) 924-5720
ATTN: ANDREW KLEMP (APPROACH DESIGN)
EMAIL: a.klemp@gremmerassociates.com
ATTN: RYAN ARNDT (BRIDGE DESIGN)
EMAIL: r.arndt@gremmerassociates.com

OZAUKEE COUNTY CONTACT

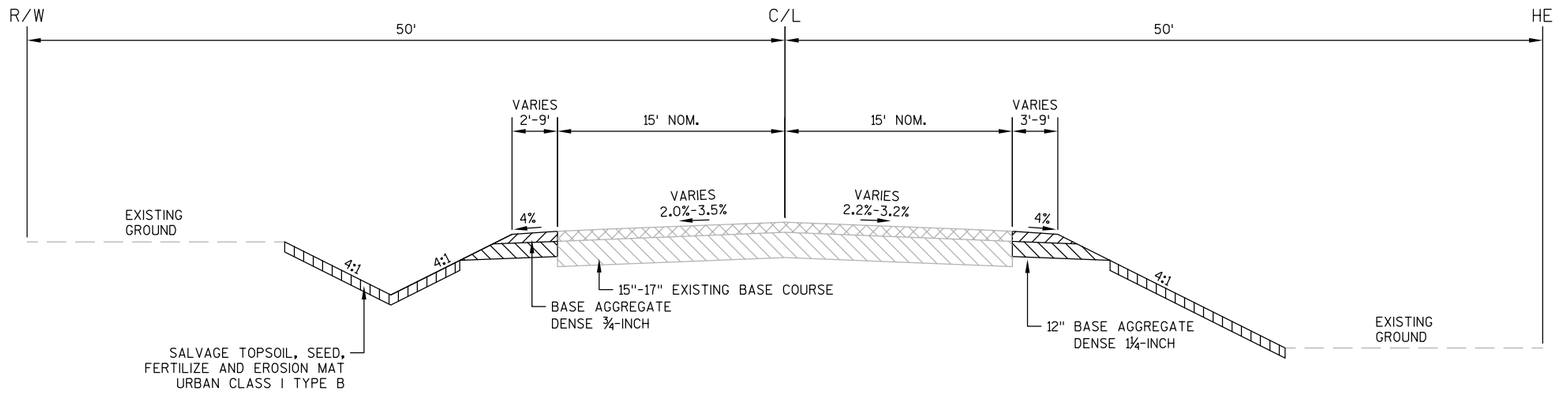
MR. ROBERT DREBLOW
HIGHWAY COMMISSIONER
OZAUKEE COUNTY HIGHWAY COMMISSION
410 SOUTH SPRING STREET
P.O. BOX 994
PORT WASHINGTON, WI 53074-0094
PHONE: (262) 284-8331
EMAIL: bdreblow@co.ozaukee.wi.us

DNR AREA LIAISON

WISCONSIN DEPT. OF NATURAL RESOURCES
2300 N. DR. M. L. KING JR. DRIVE
MILWAUKEE, WI 53212
PHONE: (414) 263-8756 (OFFICE)
PHONE: (414) 303-1271 (MOBILE)
ATTN: MS. JOANNE KLINE
EMAIL: joanne.kline@wisconsin.gov

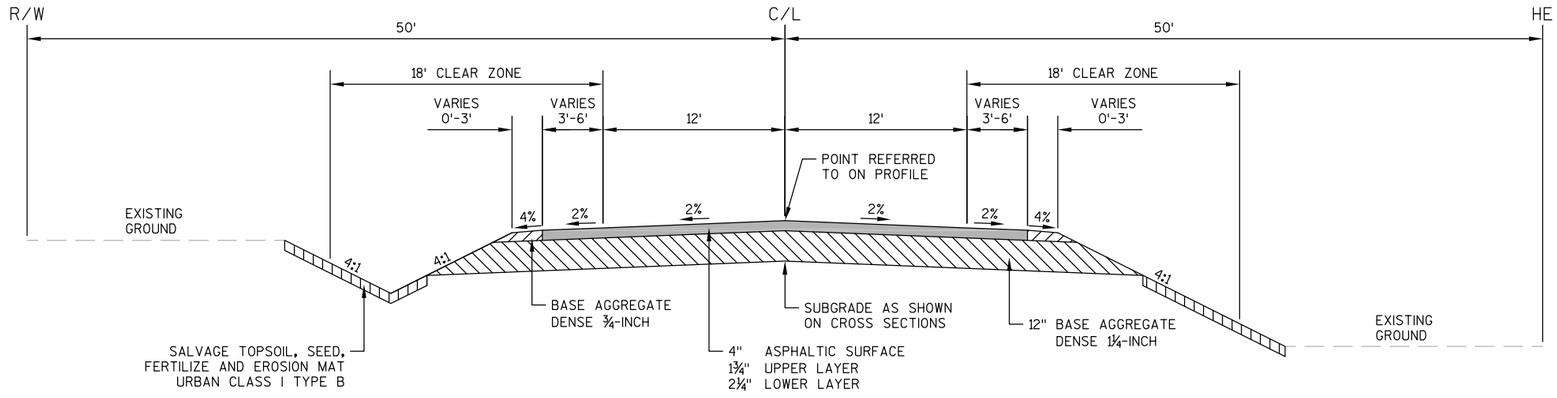


TYPICAL EXISTING SECTION
CTH A
STA 10+00.00 - STA 15+50.00



IN CUT IN FILL

TYPICAL FINISHED SECTION
CTH A
STA 10+00.00 - STA 11+00.00
STA 14+45.00 - STA 15+50.00

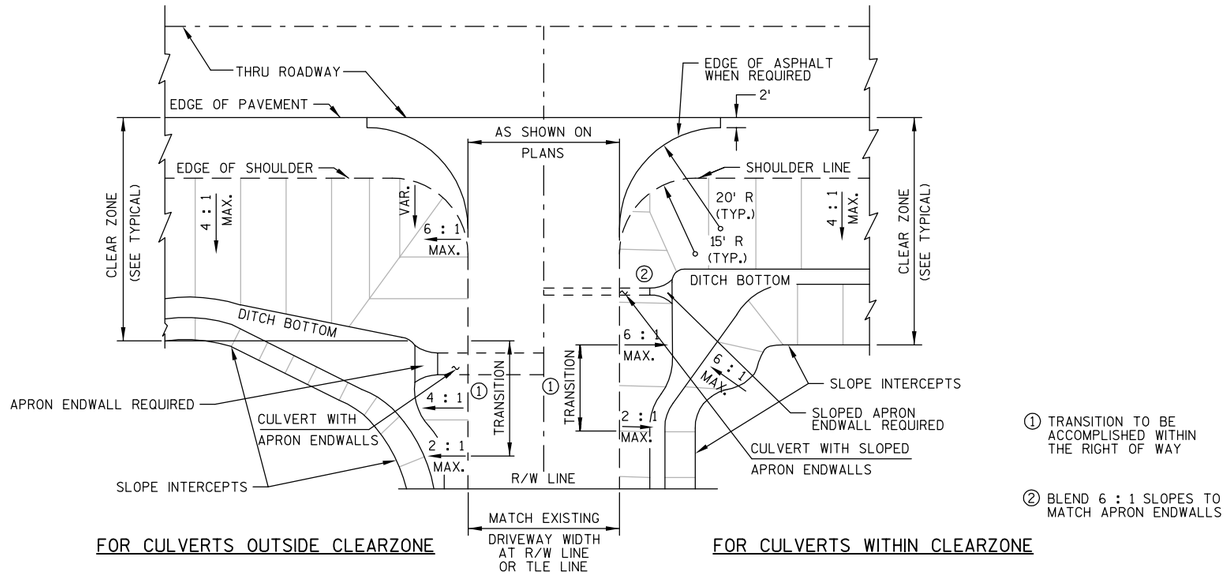


IN CUT IN FILL

TYPICAL FINISHED SECTION
CTH A
STA 11+00.00 - STA 12+35.75
STA 13+10.25 - STA 14+45.00

PROJECT NO: 4881-00-72	HWY: CTH A	COUNTY: OZAUKEE	TYPICAL SECTIONS	SHEET 3	E

2

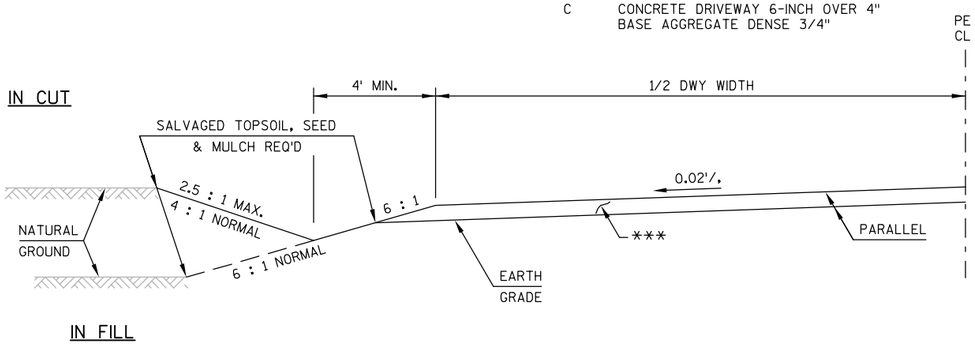


RURAL DRIVEWAY PLAN VIEW

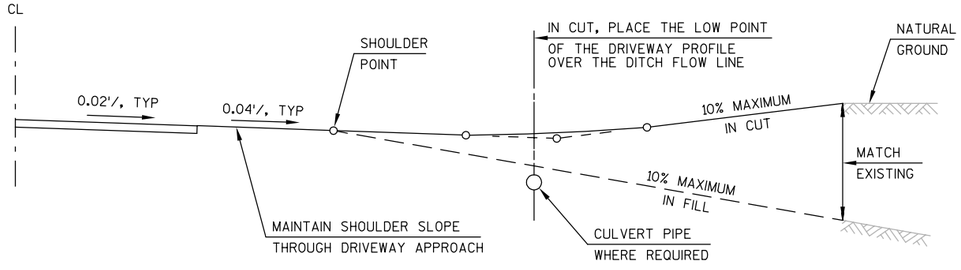
*** A 6" BASE AGGREGATE DENSE 3/4"

B 3" ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES OR SAME THICKNESS AS EXISTING OVER 4" BASE AGGREGATE DENSE 3/4"

C CONCRETE DRIVEWAY 6-INCH OVER 4" BASE AGGREGATE DENSE 3/4"



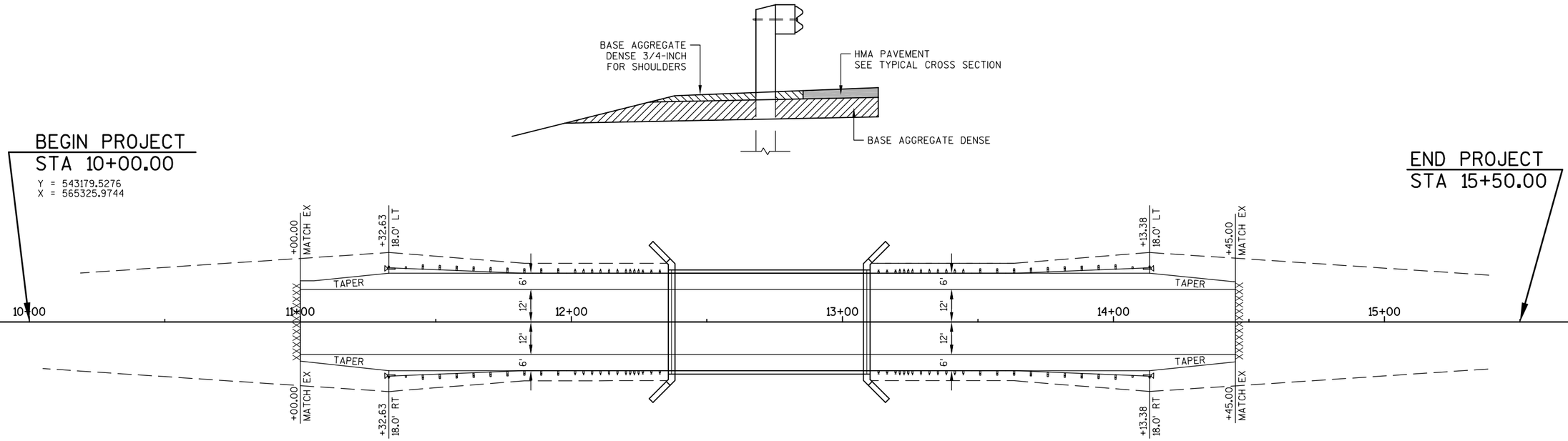
TYPICAL DRIVEWAY CROSS SECTION



TYPICAL DRIVEWAY PROFILE

PROJECT NO: 4881-00-72	HWY: CTH A	COUNTY: OZAUKEE	CONSTRUCTION DETAILS	SHEET 4	E

2



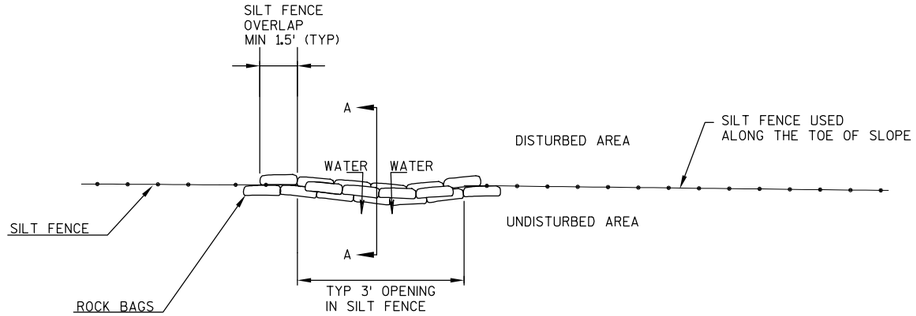
DETAIL FOR ASPHALT TAPERS

RUNOFF COEFFICIENT TABLE

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

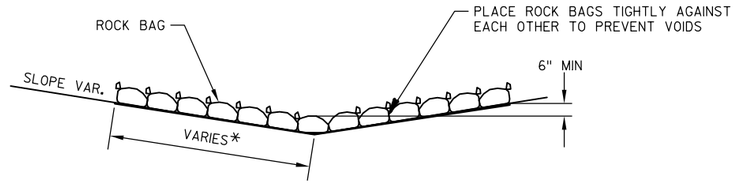
TOTAL PROJECT AREA = 1.26 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.06 ACRES

SECTION A-A

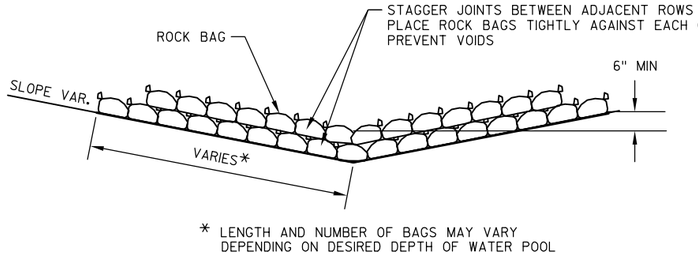


PLAN VIEW

ROCK BAGS USED FOR SILT FENCE RELIEF POINT



SIDE VIEW (SINGLE LAYER)

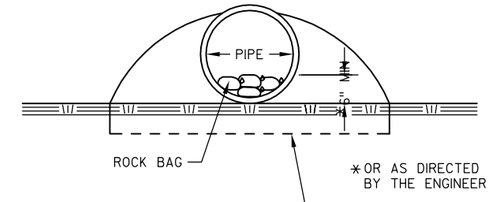


* LENGTH AND NUMBER OF BAGS MAY VARY
DEPENDING ON DESIRED DEPTH OF WATER POOL

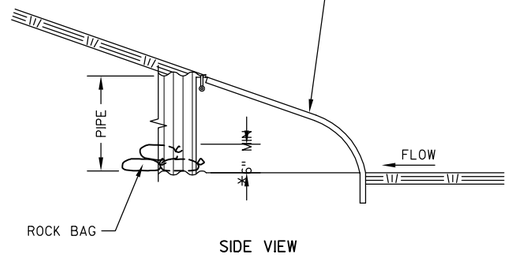
SIDE VIEW (MULTIPLE LAYER)

ROCK BAGS USED FOR DITCH CHECKS

ROCK BAGS DETAIL



END VIEW



SIDE VIEW

CULVERT PIPE CHECKS DETAIL

2

2

N

0 20 40

LEGEND

- SLOPE INTERCEPT
- SILT FENCE
- TURBIDITY BARRIER
- CULVERT PIPE CHECKS
- ROCK BAGS
- RIPRAP MEDIUM
- SURFACE WATER FLOW PROPOSED
- SURFACE WATER FLOW EXISTING

FINISHING ITEMS FOR TOPSOIL, SEED, FERTILIZER, AND EROSION MAT ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

SAUK CREEK

CAUTION

WETLAND LIMITS, TYP.

END PROJECT
STA 15+50.00

GRAVEL
F.E.

15" CPCM

PP

TLE
PROPOSED R/W

EXISTING R/W

OH

10+00 11+00 CTH A 12+00 13+00 14+00 15+00

1

1"IP

EXISTING R/W

GRAVEL
F.E.

15" CPCM

PROPOSED HE
TLE

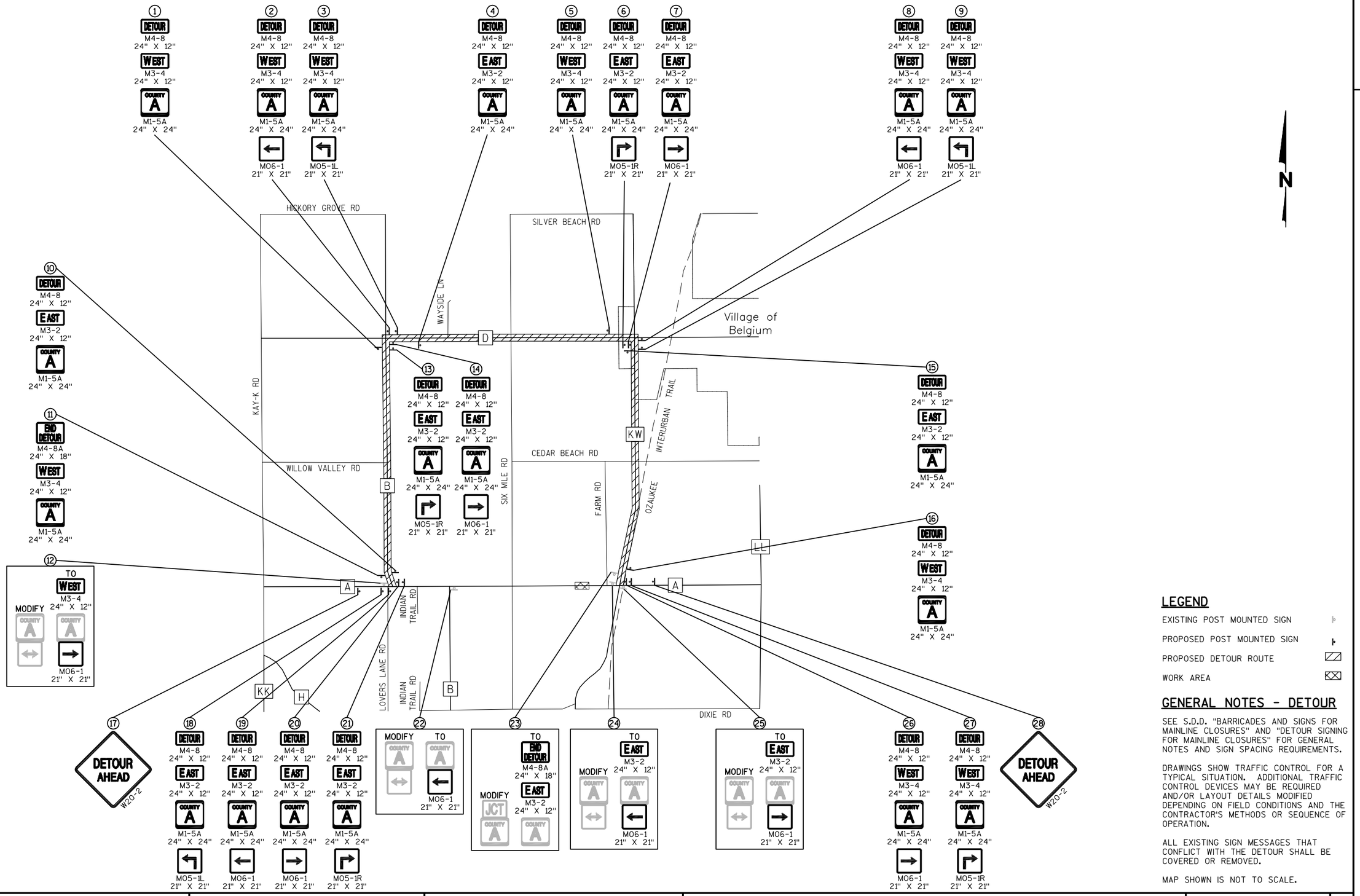
EXISTING R/W

BEGIN PROJECT
STA 10+00.00

Y = 543179.5276
X = 565325.9744

PROJECT NO: 4881-00-72	HWY: CTH A	COUNTY: OZAUKEE	EROSION CONTROL PLAN	SHEET 7	E

2



LEGEND

EXISTING POST MOUNTED SIGN

PROPOSED POST MOUNTED SIGN

PROPOSED DETOUR ROUTE

WORK AREA

GENERAL NOTES - DETOUR

SEE S.D.D. "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" AND "DETOUR SIGNING FOR MAINLINE CLOSURES" FOR GENERAL NOTES AND SIGN SPACING REQUIREMENTS.

DRAWINGS SHOW TRAFFIC CONTROL FOR A TYPICAL SITUATION. ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE REQUIRED AND/OR LAYOUT DETAILS MODIFIED DEPENDING ON FIELD CONDITIONS AND THE CONTRACTOR'S METHODS OR SEQUENCE OF OPERATION.

ALL EXISTING SIGN MESSAGES THAT CONFLICT WITH THE DETOUR SHALL BE COVERED OR REMOVED.

MAP SHOWN IS NOT TO SCALE.

PROJECT NO: 4881-00-72	HWY: CTH A	COUNTY: OZAUKEE	DETOUR PLAN	SHEET 8	E

DATE 10JAN13 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	4881-00-72 QUANTITY
0010	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	2.000	2.000
0020	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 12+75	LS	1.000	1.000
0030	204.0165	REMOVING GUARDRAIL	LF	500.000	500.000
0040	205.0100	EXCAVATION COMMON **P**	CY	742.000	742.000
0050	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-45-100	LS	1.000	1.000
0060	208.0100	BORROW **P**	CY	1,187.000	1,187.000
0070	213.0100	FINISHING ROADWAY (PROJECT) 01. 4881-00-72	EACH	1.000	1.000
0080	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	200.000	200.000
0090	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	1,400.000	1,400.000
0100	455.0605	TACK COAT	GAL	29.000	29.000
0110	465.0105	ASPHALTIC SURFACE	TON	255.000	255.000
0120	502.0100	CONCRETE MASONRY BRIDGES **P**	CY	171.000	171.000
0130	502.3200	PROTECTIVE SURFACE TREATMENT	SY	348.000	348.000
0140	503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	365.000	365.000
0150	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES **P**	LB	5,086.000	5,086.000
0160	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES **P**	LB	21,913.000	21,913.000
0170	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	10.000	10.000
0180	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 01. B-45-100	EACH	4.000	4.000
0190	513.4060	RAILING TUBULAR TYPE M (STRUCTURE) 01. B-45-100	LS	1.000	1.000
0200	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	16.000	16.000
0210	521.0115	CULVERT PIPE CORRUGATED STEEL 15-INCH	LF	78.000	78.000
0220	521.1015	APRON ENDWALLS FOR CULVERT PIPE STEEL 15-INCH	EACH	4.000	4.000
0230	550.0500	PILE POINTS	EACH	16.000	16.000
0240	550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	520.000	520.000
0250	606.0200	RIPRAP MEDIUM	CY	50.000	50.000
0260	606.0300	RIPRAP HEAVY	CY	233.000	233.000
0270	612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	40.000	40.000
0280	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	125.000	125.000
0290	614.2300	MGS GUARDRAIL 3	LF	50.000	50.000
0300	614.2500	MGS THRIE BEAM TRANSITION	LF	157.600	157.600
0310	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	4.000	4.000
0320	619.1000	MOBILIZATION	EACH	1.000	1.000
0330	624.0100	WATER	MGAL	22.000	22.000
0340	625.0500	SALVAGED TOPSOIL **P**	SY	2,800.000	2,800.000
0350	628.1504	SILT FENCE	LF	830.000	830.000
0360	628.1520	SILT FENCE MAINTENANCE	LF	415.000	415.000
0370	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	5.000	5.000
0380	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	3.000	3.000
0390	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	2,800.000	2,800.000
0400	628.6005	TURBIDITY BARRIERS	SY	260.000	260.000
0410	628.7555	CULVERT PIPE CHECKS	EACH	4.000	4.000
0420	628.7560	TRACKING PADS	EACH	2.000	2.000
0430	628.7570	ROCK BAGS	EACH	265.000	265.000
0440	629.0210	FERTILIZER TYPE B **P**	CWT	2.000	2.000
0450	630.0110	SEEDING MIXTURE NO. 10 **P**	LB	40.000	40.000
0460	630.0200	SEEDING TEMPORARY **P**	LB	40.000	40.000
0470	634.0612	POSTS WOOD 4X6-INCH X 12-FT	EACH	4.000	4.000
0480	637.0202	SIGNS REFLECTIVE TYPE II	SF	12.000	12.000

3

DATE 10JAN13 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	4881-00-72 QUANTITY
0490	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0500	643.0100	TRAFFIC CONTROL (PROJECT) 01. 4881-00-72	EACH	1.000	1.000
0510	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	2,160.000	2,160.000
0520	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	3,600.000	3,600.000
0530	643.0900	TRAFFIC CONTROL SIGNS	DAY	1,890.000	1,890.000
0540	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 01. 4881-00-72	EACH	1.000	1.000
0550	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	7,920.000	7,920.000
0560	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	483.000	483.000
0570	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	1,380.000	1,380.000
0580	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	271.000	271.000
0590	650.5000	CONSTRUCTION STAKING BASE	LF	271.000	271.000
0600	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-45-100	LS	1.000	1.000
0610	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 4881-00-72	LS	1.000	1.000
0620	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	476.000	476.000
0630	690.0150	SAWING ASPHALT	LF	60.000	60.000
0640	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	1,026.000	1,026.000
0650	SPV.0035	SPECIAL 01. BACKFILL SLURRY **P**	CY	313.000	313.000

3

REMOVING SMALL PIPE CULVERTS

STATION	LOCATION	203.0100 EACH	COMMENTS
CATEGORY CODE 0010			
10+78	RT	1	REMOVE 24 LF OF CPCM 15-INCH
11+41	LT	1	REMOVE 24 LF OF CPCM 15-INCH
	TOTAL	**2**	

REMOVING GUARDRAIL

STATION - STATION	LOCATION	204.0165 LF
CATEGORY CODE 0010		
11+55 - 14+15	RT	260
11+70 - 14+10	LT	240
	TOTAL	**500**

BASE AGGREGATE DENSE ITEMS

STATION - STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON
CATEGORY CODE 0010			
10+00 - 12+36	LT & RT	128	700
13+10 - 15+00	LT & RT	72	700
	TOTALS	**200**	**1,400**

3

EARTHWORK SUMMARY

DIVISION	FROM/TO STATION	LOCATION	EXCAVATION COMMON (ITEM #205.0100) **P**	SALVAGED / UNUSABLE PAVEMENT MATERIAL (NOTE 2)	AVAILABLE MATERIAL (NOTE 3)	UNEXPANDED FILL	EXPANDED FILL (NOTE 4)	MASS ORDINATE +/- (NOTE 5)	WASTE (NOTE 6)	BORROW (ITEM #208.0100) (NOTE 7) **P**	COMMENTS
			CUT (NOTE 1)				FACTOR 1.30			FACTOR 1.15	
1	10+00.00 - 12+35.75	CTH A	481	88	0	339	441	-441	481	390	
DIVISION 1 SUBTOTAL			481	88	0	339	441	-441	481	390	
2	13+10.25 - 15+50.00	CTH A	261	87	0	693	901	-901	261	797	
DIVISION 2 SUBTOTAL			261	87	0	693	901	-901	261	797	
GRAND TOTAL			742	175	0	1,032	1,342	-1,342	742	1,187	
		TOTAL EXCAVATION COMMON	742								

1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
2) SALVAGED/UNUSABLE PAVEMENT MATERIAL = LENGTH * TYPICAL WIDTH (30') * TYPICAL DEPTH (7")
3) EXCAVATION COMMON IS ASSUMED TO BE UNSUITABLE MATERIAL FOR FILL.
4) EXPANDED FILL. FACTOR = 1.30. EXPANDED FILL = (UNEXPANDED FILL) * FILL FACTOR
5) 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.
6) WASTE = EXCAVATION COMMON.
7) BORROW = MASS ORDINATE / FILL FACTOR * BORROW FACTOR

ASPHALTIC ITEMS

STATION - STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
CATEGORY CODE 0010			
11+00 - 12+36	LT & RT	15	128
13+10 - 14+45	LT & RT	14	127
	TOTALS	**29**	**255**

CULVERT PIPE ITEMS

STATION	LOCATION	PIPE THICKNESS INCHES	521.0115 CULVERT PIPE CORRUGATED STEEL 15-INCH LF	521.1015 APRON ENDWALLS FOR CULVERT PIPE STEEL 15-INCH EACH
CATEGORY CODE 0010				
10+75	RT	0.064	44	2
10+76	LT	0.064	34	2
		TOTALS	**78**	**4**

RIPRAP AND GEOTEXTILE FABRIC ITEMS

STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE FABRIC TYPE HR SY
CATEGORY CODE 0010			
10+95 - 11+83	LT	20	39
10+99 - 11+83	RT	19	37
UNDISTRIBUTED		11	19
	TOTALS	**50**	**95**

STEEL PLATE BEAM GUARD ITEMS

STATION - STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
CATEGORY CODE 0010				
11+33 - 12+36	RT	12.5	39.4	1
11+33 - 12+36	LT	12.5	39.4	1
13+10 - 14+13	RT	12.5	39.4	1
13+10 - 14+13	LT	12.5	39.4	1
TOTALS		**50.0**	**157.6**	**4**

WATER

STATION - STATION	LOCATION	624.0100 MGAL
CATEGORY CODE 0010		
10+00 - 12+36	LT & RT	11
13+10 - 15+00	LT & RT	11
TOTAL		**22**

LANDSCAPING ITEMS

STATION - STATION	LOCATION	625.0500 **P** SALVAGED TOPSOIL SY	629.0210 **P** FERTILIZER TYPE B CWT	630.0110 **P** SEED MIX NO. 10 LBS	630.0200 **P** SEED TEMPORARY LBS
CATEGORY CODE 0010					
10+00 - 12+52	LT	541	0.3	7	7
10+00 - 12+52	RT	535	0.3	7	7
12+97 - 15+50	LT	586	0.4	8	8
12+97 - 15+50	RT	572	0.4	8	8
UNDISTRIBUTED		566	0.6	10	10
TOTALS		**2,800**	**2.0**	**40**	**40**

* SEED TEMPORARY IS APPLIED AT 1/2 THE NORMAL SEED RATE OF 3LBS / 1000 SF WHEN PLACED IN CONJUCTION WITH OTHER SEED MIXTURES

SILT FENCE ITEMS

STATION - STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 MAINTENANCE LF
CATEGORY CODE 0010			
11+82 - 12+64	LT	84	42
11+82 - 12+52	RT	72	36
12+92 - 15+50	RT	260	130
13+06 - 15+50	LT	248	124
UNDISTRIBUTED		166	83
TOTALS		**830**	**415**

EROSION MAT ITEMS

STATION - STATION	LOCATION	628.2008 URBAN CLASS I TYPE B SY
CATEGORY CODE 0010		
10+00 - 12+52	LT	541
10+00 - 12+52	RT	535
12+97 - 15+50	LT	586
12+97 - 15+50	RT	572
UNDISTRIBUTED		566
TOTALS		**2,800**

TURBIDITY BARRIERS

STATION - STATION	LOCATION	628.6005 SY
CATEGORY CODE 0010		
12+52 - 12+64	LT & RT	98
12+83 - 13+06	LT & RT	111
UNDISTRIBUTED		51
TOTAL		**260**

CULVERT PIPE CHECKS

STATION	LOCATION	628.7555 EACH
CATEGORY CODE 0010		
10+51	RT	2
10+57	LT	2
TOTAL		**4**

TRACKING PADS

STATION	LOCATION	628.7560 EACH
CATEGORY CODE 0010		
10+00	LT & RT	1
15+50	LT & RT	1
TOTAL		**2**

ROCK BAGS

STATION	LOCATION	628.7570 EACH
CATEGORY CODE 0010		
10+30 - 11+83	LT	60
10+30 + 11+83	RT	90
12+47	RT	15
12+59	LT	15
12+97	RT	15
13+10	LT	15
UNDISTRIBUTED		55
TOTAL		**265**

SIGNING ITEMS

STATION	LOCATION	SIGN CODE	SIZE	634.0612 POSTS WOOD 4X6X12 EACH	637.0202 SIGNS REFLECTIVE TYPE II SF
CATEGORY CODE 0010					
12+35	15.5' LT	W5-52L	12 X 36	1	3.00
12+35	15.5' RT	W5-52R	12 X 36	1	3.00
13+11	15.5' LT	W5-52R	12 X 36	1	3.00
13+11	15.5' RT	W5-52L	12 X 36	1	3.00
TOTALS				**4**	**12.00**

DETOUR ITEMS

SIGN NUMBER	LOCATION	SIGN CODE	SIZE	643.3000 DETOUR SIGN DAYS
CATEGORY CODE 0010				
1	SOUTHBOUND CTH B SOUTH OF CTH D INT.	M4-8	24X12	90
"	"	M3-4	24X12	90
"	"	M1-5A	24X24	90
2	WESTBOUND CTH D EAST OF CTH B INT.	M4-8	24X12	90
"	"	M3-4	24X12	90
"	"	M1-5A	24X24	90
"	"	MO6-1L	21X21	90
3	WESTBOUND CTH D 500' EAST OF CTH B INT.	M4-8	24X12	90
"	"	M3-4	24X12	90
"	"	M1-5A	24X24	90
"	"	MO5-1L	21X21	90
4	EASTBOUND CTH D EAST OF CTH B INT.	M4-8	24X12	90
"	"	M3-2	24X12	90
"	"	M1-5A	24X24	90
5	WESTBOUND CTH B WEST OF CTH KW INT.	M4-8	24X12	90
"	"	M3-4	24X12	90
"	"	M1-5A	24X24	90
6	EASTBOUND CTH D 500' WEST OF CTH KW INT.	M4-8	24X12	90
"	"	M3-2	24X12	90
"	"	M1-5A	24X24	90
"	"	MO5-1R	21X21	90
7	EASTBOUND CTH D WEST OF CTH KW INT.	M4-8	24X12	90
"	"	M3-2	24X12	90
"	"	M1-5A	24X24	90
"	"	MO6-1R	21X21	90
8	NORTHBOUND CTH KW SOUTH OF CTH D INT.	M4-8	24X12	90
"	"	M3-4	24X12	90
"	"	M1-5A	24X24	90
"	"	MO6-1L	21X21	90
9	NORTHBOUND CTH KW 500' SOUTH OF CTH D INT.	M4-8	24X12	90
"	"	M3-4	24X12	90
"	"	M1-5A	24X24	90
"	"	MO5-1L	21X21	90
10	NORTHBOUND CTH B NORTH OF CTH A INT.	M4-8	24X12	90
"	"	M3-2	24X12	90
"	"	M1-5A	24X24	90
11	SOUTHBOUND CTH B 500' NORTH OF CTH A INT.	M4-8A	24X18	90
"	"	M3-4	24X12	90
"	"	M1-5A	24X24	90
12	SOUTHBOUND CTH B NORTH OF CTH A INT.	M3-4	24X12	90
"	"	MO6-1	21X21	90
13	NORTHBOUND CTH B 500' SOUTH OF CTH D INT.	M4-8	24X12	90
"	"	M3-2	24X12	90
"	"	M1-5A	24X24	90
"	"	MO5-1R	21X21	90
14	NORTHBOUND CTH B SOUTH OF CTH D INT.	M4-8	24X12	90
"	"	M3-2	24X12	90
"	"	M1-5A	24X24	90
"	"	MO6-1R	21X21	90
15	SOUTHBOUND CTH KW SOUTH OF CTH D INT.	M4-8	24X12	90
"	"	M3-2	24X12	90
"	"	M1-5A	24X24	90
16	NORTHBOUND CTH KW NORTH OF CTH A INT.	M4-8	24X12	90

DETOUR ITEMS (CONTINUED)

SIGN NUMBER	LOCATION	SIGN CODE	SIZE	643.3000 DETOUR SIGN DAYS
CATEGORY CODE 0010				
"	"	M3-4	24X12	90
"	"	M1-5A	24X24	90
17	WESTBOUND CTH A 1500' EAST OF CTH B INT.	W20-2	48x48	90
18	WESTBOUND CTH A 500' EAST OF CTH B INT.	M4-8	24X12	90
"	"	M3-2	24X12	90
"	"	M1-5A	24X24	90
"	"	MO5-1L	21X21	90
19	WESTBOUND CTH A EAST OF CTH B INT.	M4-8	24X12	90
"	"	M3-2	24X12	90
"	"	M1-5A	24X24	90
"	"	MO6-1L	21X21	90
20	EASTBOUND CTH A EAST OF CTH B INT.	M4-8	24X12	90
"	"	M3-2	24X12	90
"	"	M1-5A	24X24	90
"	"	MO6-1R	21X21	90
21	EASTBOUND CTH A 500' EAST OF CTH B INT.	M4-8	24X12	90
"	"	M3-2	24X12	90
"	"	M1-5A	24X24	90
"	"	MO5-1R	21X21	90
22	NORTHBOUND CTH B SOUTH OF CTH A INT.	MO6-1L	21X21	90
23	SOUTHBOUND CTH KW 500' NORTH OF CTH A INT.	M4-8A	24X18	90
"	"	M3-2	24X12	90
24	SOUTHBOUND CTH KW NORTH OF CTH A INT.	M3-2	24X12	90
"	"	MO6-1L	21X21	90
25	NORTHBOUND CTH KW SOUTH OF CTH A INT.	M3-2	24X12	90
"	"	MO6-1R	21X21	90
26	WESTBOUND CTH A EAST OF CTH KW INT.	M4-8	24X12	90
"	"	M3-4	24X12	90
"	"	M1-5A	24X24	90
"	"	MO6-1R	21X21	90
27	WESTBOUND CTH A 500' EAST OF CTH KW INT.	M4-8	24X12	90
"	"	M3-4	24X12	90
"	"	M1-5A	24X24	90
"	"	MO5-1R	21X21	90
28	WESTBOUND CTH A 1500' EAST OF CTH KW INT.	W20-2	48x48	90

TOTALS 7,920

3

TRAFFIC CONTROL ITEMS

LOCATION	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.0900 SIGNS DAYS
CATEGORY CODE 0010			
CTH A/ CTH B	180	360	180
CTH A/ CTH B	180	360	180
CTH A/ SIX MILE RD	180	360	180
CTH A AT CONSTRUCTION	630	900	450
CTH A AT CONSTRUCTION	630	900	360
CTH A/ FARM RD	180	360	180
CTH A/ CTH KW	180	360	360
TOTALS	**2,160**	**3,600**	**1,890**

PAVEMENT MARKING ITEMS

STATION - STATION	LOCATION	646.0106 EPOXY 4-INCH WHITE LF	646.0106 EPOXY 4-INCH YELLOW LF
CATEGORY CODE 0010			
11+00 - 14+45	LT & RT	690	690
TOTALS		**690**	**690**
		1,380	

SAWING PAVEMENT ITEMS

STATION - STATION	LOCATION	690.0150 ASPHALT LF
CATEGORY CODE 0010		
11+00	LT & RT	30
14+45	LT & RT	30
TOTAL		**60**

CONSTRUCTION STAKING ITEMS

STATION - STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.6500 STRUCTURE LAYOUT LS	650.9910 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
CATEGORY CODE 0010						
4881-00-72		--	--	--	1	--
10+00 - 12+36	LT & RT	136	136	--	--	236
13+10 - 15+50	LT & RT	135	135	--	--	240
		271	271	--	1	476
CATEGORY CODE 0020						
B-45-100		--	--	1	--	--
		--	--	1	--	--
TOTALS		**271**	**271**	**1**	**1**	**476**

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
4881-00-02		
FEDERAL PROJECT NUMBER	4.01	4

PLAT OF RIGHT OF WAY REQUIRED FOR

CTH A
BRIDGE OVER SAUK CREEK

CTH A — OZAUKEE COUNTY

CONSTRUCTION PROJECT NUMBER
4881-00-72

4

CONVENTIONAL SIGNS AND ABBREVIATIONS

SECTION LINE		AC.	ACRES
QUARTER LINE		A.P.	ACCESS POINT
SIXTEENTH LINE		BLDG.	BUILDING
NEW REFERENCE LINE		C/L	CENTERLINE
NEW R/W LINE		CONC.	CONCRETE
EXISTING R/W LINE		CSM	CERTIFIED SURVEY MAP
PROPERTY LINE		D	DEGREE OF CURVE
CORPORATE LIMITS		DOC#	DOCUMENT NUMBER
LOT AND TIE LINES		E	EAST
SLOPE INTERCEPT		E	ELECTRIC CABLE
UNDERGROUND FACILITY	T (TYPE)	ETAL	AND OTHERS
FENCE	X X	FM	FORCE MAIN
LIMITED EASEMENT		FO	FIBER OPTIC CABLE
BUILDING		FT.	FEET
IRON PIN	o	GAR.	GARAGE
R/W MONUMENT	•	G	GAS MAIN
MANHOLE	○	H.	HOUSE
BUSHES		I.P.	IRON PIPE
TREES (DECIDUOUS)		L	LENGTH OF CURVE
TREES (CONIFEROUS)		LC	LAND CONTRACT
POWER POLE (COMPENSABLE)		LC	LONG CHORD
SIGN		LCB	LONG CHORD BEARING
POWER POLE		LT.	LEFT
UTILITY PEDESTAL		MI.	MILE
GUY ANCHOR	×	MON.	MONUMENT
CATCH BASIN		N	NORTH
VALVE		OL	OUTLOT
HYDRANT		P.C.	POINT OF CURVE
LIGHT POLE		PERM.	PERMANENT
POINT NUMBER		P.I.	POINT OF INTERSECTION
RECORDED AS	*SLANTED*	P.L.	PROPERTY LINE
SAME OWNERSHIP	N	P.L.E.	PERMANENT LIMITED EASEMENT
NO ACCESS (BY ACQUISITION)		P.T.	POINT OF TANGENT
NO ACCESS (PREVIOUS)		R	RADIUS
TEMPORARY LIMITED EASEMENT		R	RANGE
SECTION CORNER		R/L	REFERENCE LINE
		REM.	REMAINING
		RT.	RIGHT
		R/W	RIGHT OF WAY
		S	SOUTH
		SAN	SANITARY SEWER
		SQ.FT.	SQUARE FEET
		SS	STORM SEWER
		STA.	STATION
		T	TELEPHONE
		T	TANGENT
		T	TOWNSHIP
		TEMP.	TEMPORARY
		TLE	TEMPORARY LIMITED EASEMENT
		V/P	VOLUME/PAGE OF RECORDS
		VAR.	VARIES
		W	WATER MAIN
		W	WEST
		X	EAST COORDINATE
		Y	NORTH COORDINATE

NOTES

COORDINATES AND BEARINGS ON THIS PLAT ARE REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM, (WSPCS), SOUTH ZONE, 1927 ADJUSTMENT. ALL PLAT DISTANCES ARE GROUND LENGTH AND MAY BE CONVERTED TO GRID LENGTH BY MULTIPLYING BY A GRID FACTOR OF 0.99989584

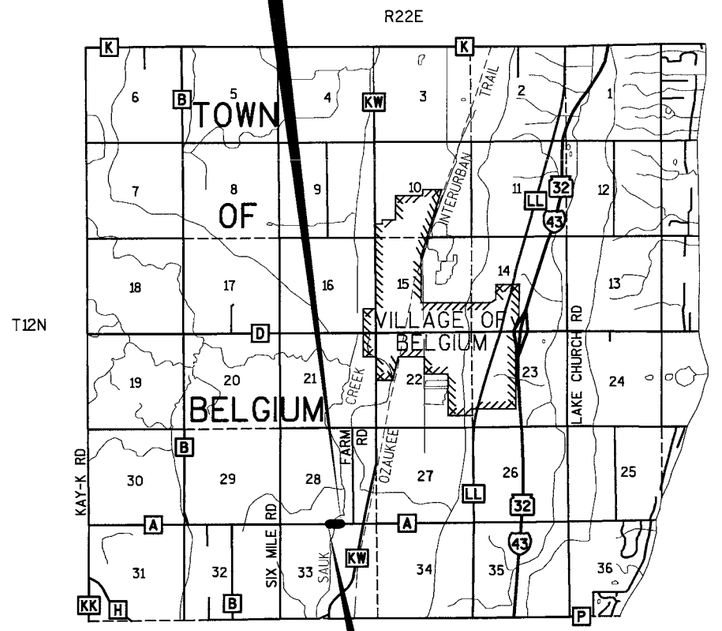
RIGHT OF WAY MONUMENTS ARE TYPE 2 AND ARE PLACED PRIOR TO OR AT THE TIME OF LAND TITLE TRANSFER. TYPE 2 MONUMENTS PLACED ARE 1.32" O.D. x 24" IRON PIPES WEIGHING 1.68 LBS/FT., UNLESS OTHERWISE NOTED.

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.

SHEET 1 OF 4 SHEETS

REVISED: 5/17/12

END RELOCATION ORDER
STA. 15+50.00
12.72' NORTH AND 549.85' EAST OF THE SOUTH QUARTER CORNER OF SECTION 28, T12N, R22E
Y 543192.25
X 565875.83



BEGIN RELOCATION ORDER
STA. 10+00.00
BEING THE SOUTH QUARTER CORNER OF SECTION 28, T12N, R22E
Y 543179.53
X 565325.97

GN

LAYOUT

0 1 2 MILES
SCALE

TOTAL NET LENGTH OF CENTERLINE = 0.104 MILES

REVISION DATE	
10/5/12	N.C.

ACCEPTED FOR
OZAUKEE COUNTY
6/21/2012 Robert R Dreblow
DATE
ROBERT DREBLOW
HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY

GREMMER & ASSOCIATES, INC.
CONSULTING ENGINEERS
Stevens Point • Fond du Lac
85 South Pioneer Road, Suite 300 • Fond du Lac, WI 54935
(920) 924-5720 • fax (920) 924-5725

WISCONSIN
JAY W. PANETTI
S-2747
WAUPUN, WI
LAND SURVEYOR

5/17/2012
DATE
JAY W. PANETTI, RLS

E

SCHEDULE OF LANDS & INTERESTS REQUIRED

AREAS SHOWN ON THE TOTAL ACRES COLUMN MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED. OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT.

PARCEL NUMBER	SHEET NUMBER	OWNER(S)	INTEREST REQUIRED	TOTAL ACRES (EXISTING)	R/W ACRES REQUIRED NEW	R/W ACRES REQUIRED EXISTING	R/W ACRES REQUIRED TOTAL	TOTAL ACRES REMAINING	HIGHWAY EASEMENT ACRES PERM.	T.L.E. ACRES TEMP.	TAX KEY NUMBER
1	4.04	MILTON F. DECKER AND DIANE DECKER AND DAVID F. DECKER AND MARY DECKER	FEE, TLE	126.06	0.21	0.42	0.63	125.43	0	0.06	01-023-13-001.00
2	4.04	DA LARGE, LLC	HIGHWAY EASEMENT, TLE	70.00	0	0	0	70.00	0.21	0.06	01-033-02-001.00
91	4.04	FRONTIER NORTH, INC.	RELEASE OF RIGHTS								

4

4

SHEET 2 OF 4 SHEETS

REVISED: 10/4/12

REVISION DATE	10/5/2012		

DATE: 5/17/2012

HWY: CTH A

COUNTY: OZAUKEE

STATE R/W PROJECT NUMBER 4881-00-02

CONSTRUCTION PROJECT NUMBER 4881-00-72

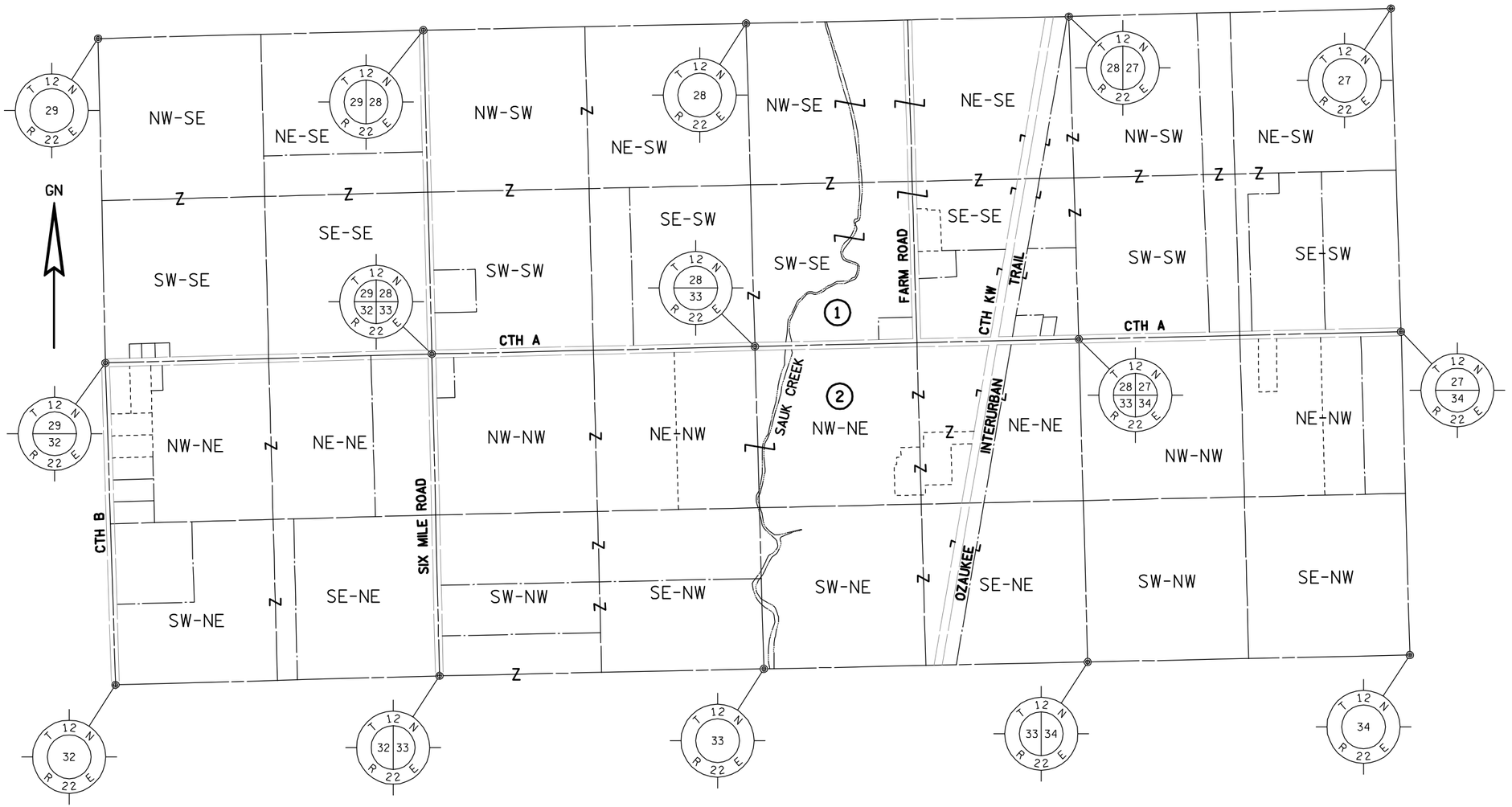
PLAT SHEET NO: 4.02

PS&E SHEET: 16

E

TOWN OF BELGIUM

OZAUKEE COUNTY, WISCONSIN



SHEET 3 OF 4 SHEETS

REVISED: 10/4/12

REVISION DATE 10/5/2012 N.C.	DATE: 5/17/2012	HWY: CTH A	STATE R/W PROJECT NUMBER 4881-00-02
	SCALE, FEET 0 250 500 1000	COUNTY: OZAUKEE	CONSTRUCTION PROJECT NUMBER 4881-00-72

PLAT SHEET NO: 4.03

PS&E SHEET: 17 E

FILE NAME: 040103_RW PATH: S:±CURRPROJ±OZAUKEECO±CTH A BRIDGE±ACAD±RW_PLAT± PLOTTED ON 10 OCT 2012 AT 12:06:03 BY GAJWP PLOTSCALE 1 = 1000.0

TOWN OF BELGIUM
OZAUKEE COUNTY, WISCONSIN

SE-SW
SEC. 28, T12N, R22E

SW-SE
SEC. 28, T12N, R22E

NE-NW
SEC. 33, T12N, R22E

NW-NE
SEC. 33, T12N, R22E

4

4

BRASS CAP IN CONCRETE FOUND

T 12 N R 22 E — 6 — 28

QUARTER LINE N01°33'14"W 2653.90'

GN

PARCEL 1 - FEE

FROM POINT	TO POINT	BEARING	DISTANCE
1	301	N01°33'14"W	33.00'
301	302	N01°33'14"W	17.00'
302	303	N88°40'30"E	550.20'
303	304	S01°19'30"E	17.00'
304	300	S01°19'30"E	33.00'
300	1	S88°40'30"W	550.00'

PARCEL 1 - TLE

FROM POINT	TO POINT	BEARING	DISTANCE
302	401	N01°33'14"W	5.00'
401	402	N88°40'30"E	550.22'
402	303	S01°19'30"E	5.00'
303	302	S88°40'30"W	550.20'

COORDINATE TABLE

POINT	NORTH	EAST
1	543179.5276	565325.9744
2	543241.0340	567985.2113
6	545832.4539	565254.0069
7	540532.8519	565399.7220
300	543192.2453	565875.8273
301	543212.5157	565325.0795
302	543229.5096	565324.6185
303	543242.2320	565874.6712
304	543225.2365	565875.0643
305	543159.2542	565876.5904
306	543142.2587	565876.9835
307	543129.5464	565327.3671
308	543146.5400	565326.8936
401	543234.5078	565324.4829
402	543247.2306	565874.5556
403	543137.2600	565877.0991
404	543124.5483	565327.5064

1

01-028-13-001.00
MILTON F. DECKER AND DIANE DECKER
AND
DAVID F. DECKER AND MARY DECKER
V289/P562
V289/P564

BEGIN RELOCATION ORDER
STA. 10+00.00
Y 543179.53
X 565325.97
BEING THE SOUTH QUARTER CORNER OF SECTION 28, T12N, R22E

END RELOCATION ORDER
STA. 15+50.00
Y 543192.25
X 565875.83
12.72' NORTH AND 549.85' EAST OF THE SOUTH QUARTER CORNER OF SECTION 28, T12N, R22E

301 — 9+99.87 33' FEE
302 — 9+99.80 50' FEE
401 — 9+99.78 55' TLE
402 — 15+50 55' TLE
303 — 15+50 50' FEE
304 — 15+50 33' FEE

SLOPE INTERCEPT, TYP.
TLE FOR SLOPES AND DRIVEWAY 0.06 ACRES
N88°40'30"E 550.20' ALONG PROPOSED R/W
PROPOSED R/W
TLE
5'
33' 50' 17'

EXISTING R/W
5 6 P.L. 7 8 CTH A 9 10 11 12 13 14 15 300 16 CTH A 17 18 P.L. 19 20
SECTION LINE N88°40'19"E
R/L = SECTION LINE
PI: 10+00.00
N88°40'30"E 2659.95'
P.L. SECTION LINE
66' 33' 33'
1"IP
PROPOSED HIGHWAY EASEMENT
33' UTILITY EASEMENT V280/P162

10+00.16 33' HE — 308
10+00.24 50' HE — 307
10+00.26 55' TLE — 404
MAG NAIL FOUND 10+00.00, 0.00' RT
FRONTIER NORTH, INC. V280/P162 1 TELEPHONE LINE (COMPENSABLE) — 91
TLE FOR SLOPES AND DRIVEWAY 0.06 ACRES
S88°40'30"W 549.76' ALONG PROPOSED HIGHWAY EASEMENT
15+50 55' TLE — 403
15+50 50' HE — 306
15+50 33' HE — 305
MAG NAIL FOUND

T 12 N R 28 E — 1 — 28 33
T 12 N R 22 E — 7 — 33
T 12 N R 22 E — 2 — 28 27 33 34

QUARTER LINE N01°35'46"W 2647.70'
BRASS CAP IN CONCRETE FOUND
SAUK CREEK

2

01-033-02-001.00
DA LARGE, LLC
DOC. *0871827

LOT 1
CSM #3685
DOC. *0870213

LOT 1
CSM #3835
DOC. *0870213

BASIS FOR EXISTING R/W

ROUTE	BASIS
CTH A	CH. 82.18. WIS. SS, CSM #3685

NOTE - PROPERTY LINE STATIONS ARE COMPUTED FROM INFORMATION OF RECORD AND ARE APPROXIMATE ONLY.

SHEET 4 OF 4 SHEETS

PARCEL 2 - FEE

FROM POINT	TO POINT	BEARING	DISTANCE
1	300	N88°40'30"E	550.00'
300	305	S01°19'30"E	33.00'
305	306	S01°19'30"E	17.00'
306	307	S88°40'30"W	549.76'
307	308	N01°35'46"W	17.00'
308	1	N01°35'46"W	33.00'

PARCEL 2 - TLE

FROM POINT	TO POINT	BEARING	DISTANCE
306	403	S01°19'30"E	5.00'
403	404	S88°40'30"W	549.74'
404	307	N01°35'46"W	5.00'
307	306	N88°40'30"E	549.76'

REVISED: 10/4/12

REVISION DATE			
10/5/2012			

DATE: 5/17/2012

SCALE, FEET
0 25 50 100

HWY: CTH A | STATE R/W PROJECT NUMBER 4881-00-02 | PLAT SHEET NO: 4.04

COUNTY: OZAUKEE | CONSTRUCTION PROJECT NUMBER 4881-00-72 | PS&E SHEET:

E

FILE NAME: 040104_RW PATH: S:±CURRPROJ±OZAUKEECO±CTH A BRIDGE±ACAD±RW_PLAT± PLOTTED ON 10 OCT 2012 AT 10:48:07 BY GAJWP PLOTSCALE 1 = 100.0

CONTROL POINTS

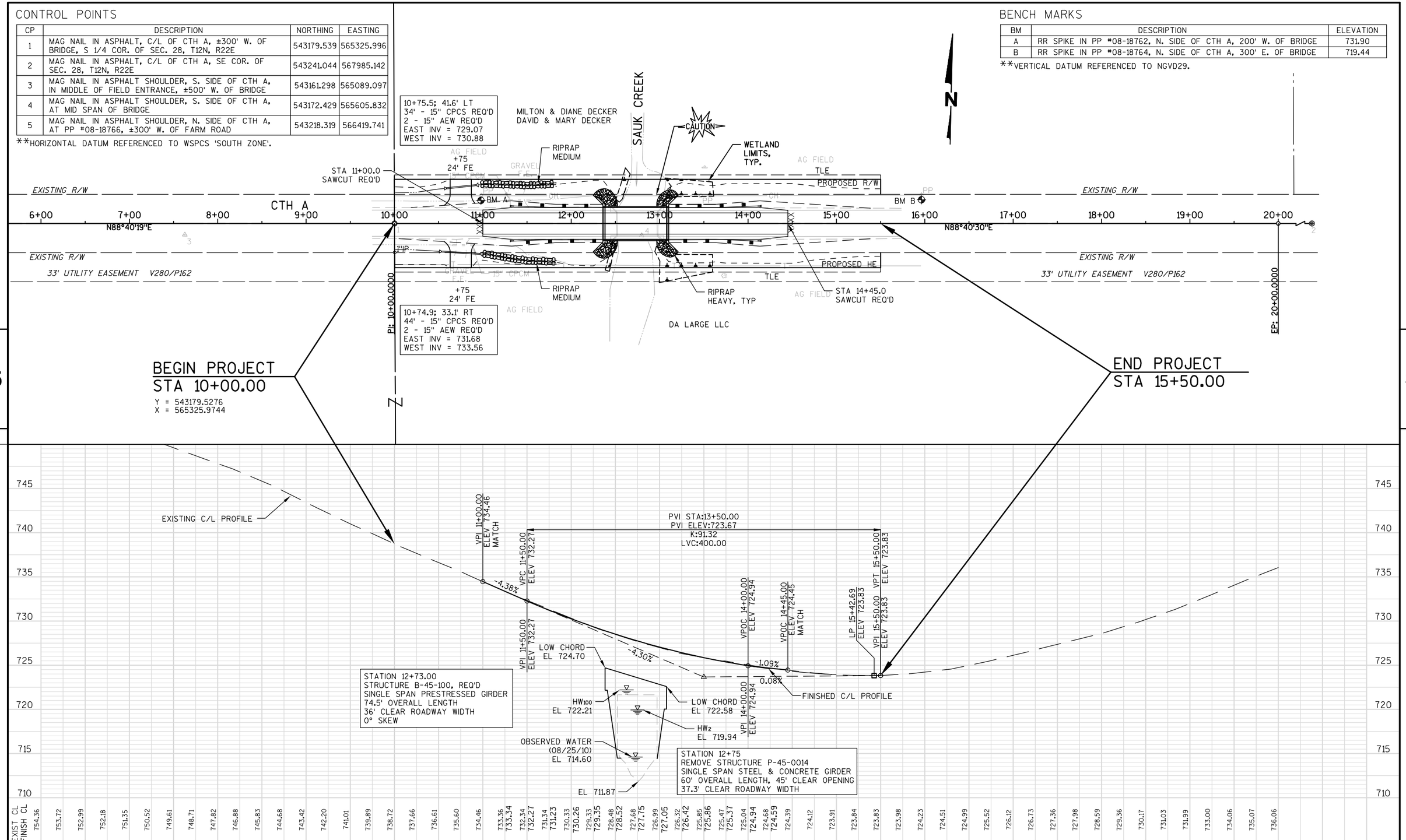
CP	DESCRIPTION	NORTHING	EASTING
1	MAG NAIL IN ASPHALT, C/L OF CTH A, ±300' W. OF BRIDGE, S 1/4 COR. OF SEC. 28, T12N, R22E	543179.539	565325.996
2	MAG NAIL IN ASPHALT, C/L OF CTH A, SE COR. OF SEC. 28, T12N, R22E	543241.044	567985.142
3	MAG NAIL IN ASPHALT SHOULDER, S. SIDE OF CTH A, IN MIDDLE OF FIELD ENTRANCE, ±500' W. OF BRIDGE	543161.298	565089.097
4	MAG NAIL IN ASPHALT SHOULDER, S. SIDE OF CTH A, AT MID SPAN OF BRIDGE	543172.429	565605.832
5	MAG NAIL IN ASPHALT SHOULDER, N. SIDE OF CTH A, AT PP #08-18766, ±300' W. OF FARM ROAD	543218.319	566419.741

**HORIZONTAL DATUM REFERENCED TO WSPCS 'SOUTH ZONE'.

BENCH MARKS

BM	DESCRIPTION	ELEVATION
A	RR SPIKE IN PP #08-18762, N. SIDE OF CTH A, 200' W. OF BRIDGE	731.90
B	RR SPIKE IN PP #08-18764, N. SIDE OF CTH A, 300' E. OF BRIDGE	719.44

**VERTICAL DATUM REFERENCED TO NGVD29.



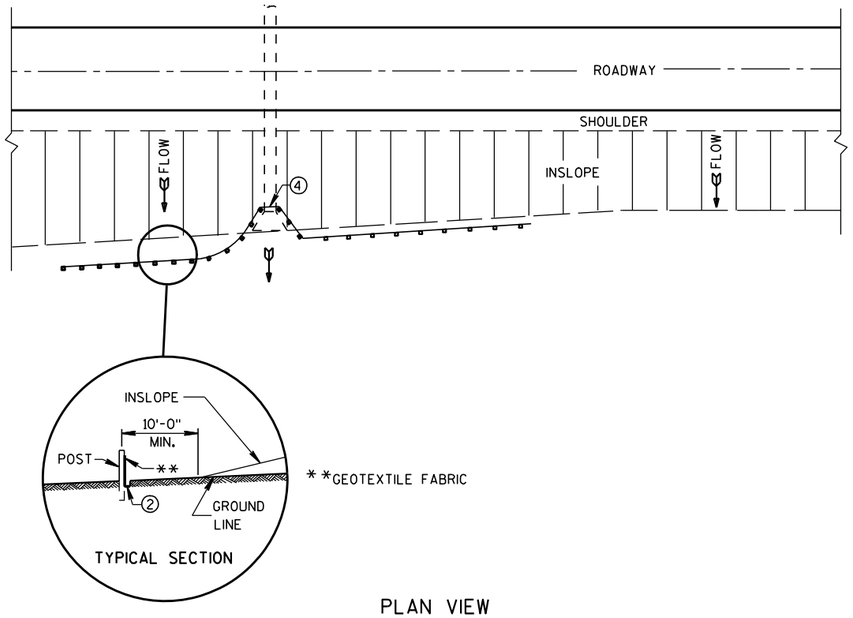
PROJECT NO: 4881-00-72	HWY: CTH A	COUNTY: OZAUKEE	PLAN & PROFILE	SHEET 19	E

FILE NAME : 48810072_050101_PP PLOT DATE : 04 OCT 2012 11:33:27 PLOT BY : GAAJS PLOT NAME : PLOT SCALE : 1:1

Standard Detail Drawing List

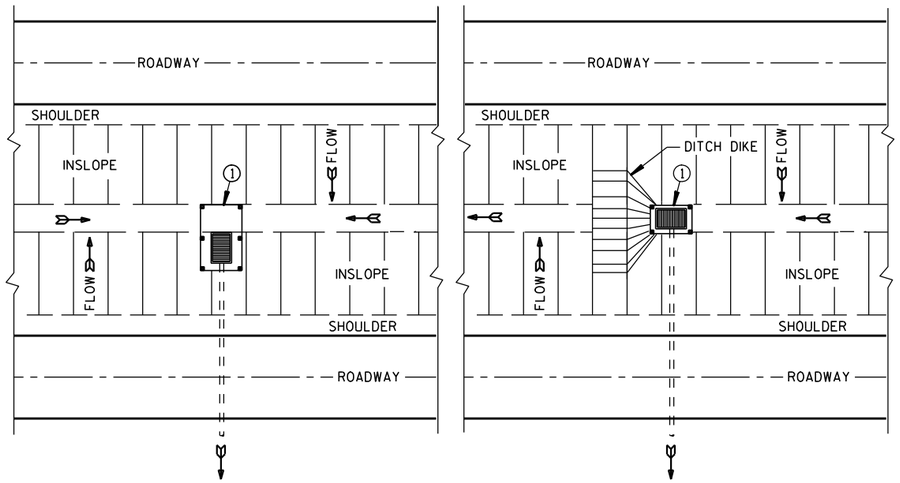
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
12A03-10	NAME PLATE (STRUCTURES)
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-02A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-02H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-05	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-14A	PAVEMENT MARKING (MAINLINE)

6



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.

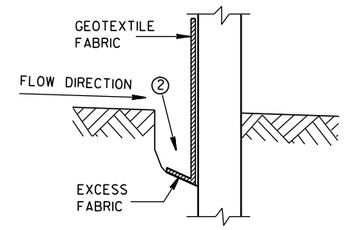
(1) HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

(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.

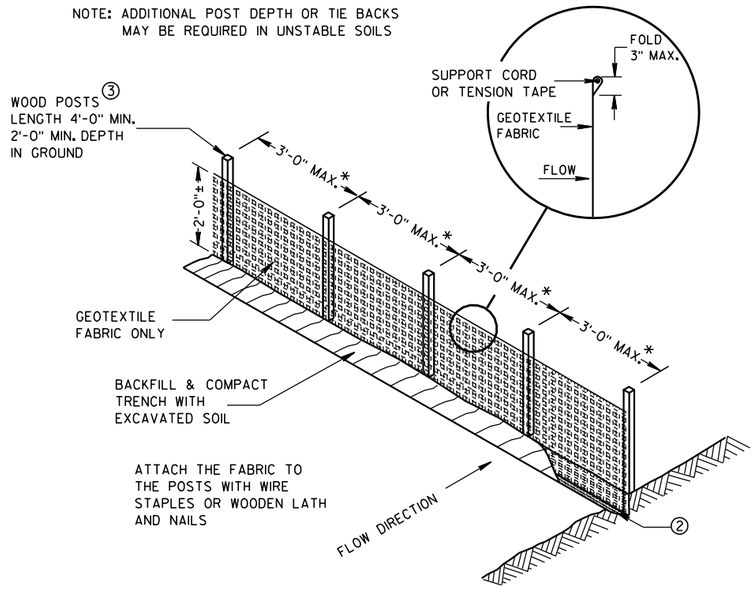
(3) WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

(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.

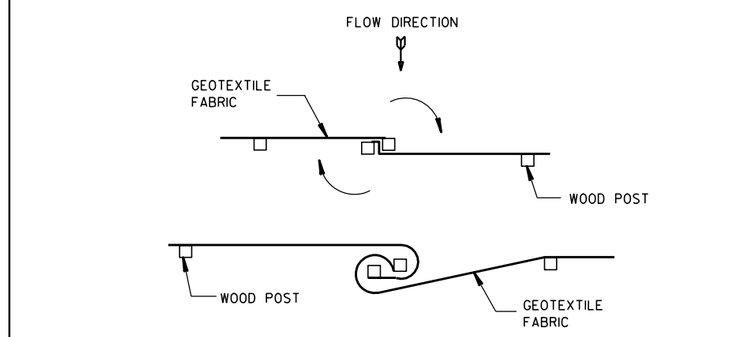


TRENCH DETAIL

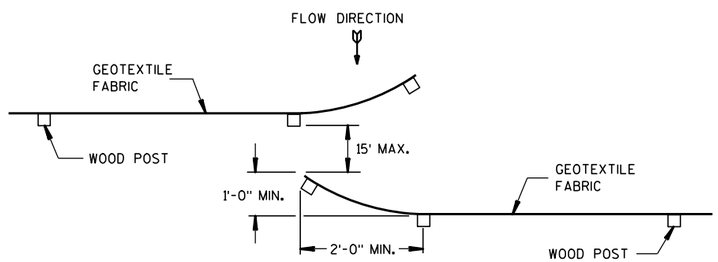


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

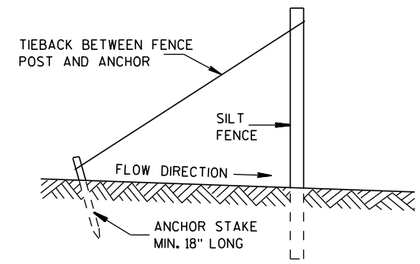


TWIST METHOD



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

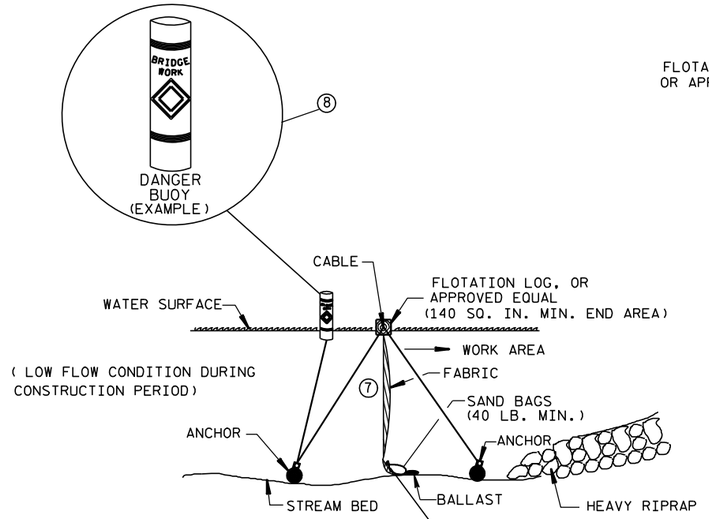
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

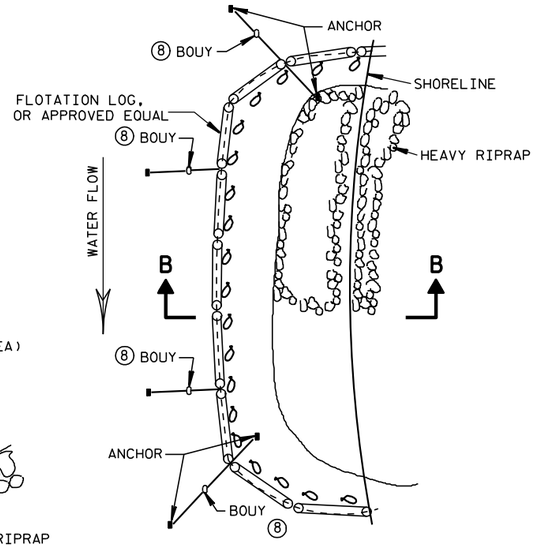
S.D.D. 8 E 9-6

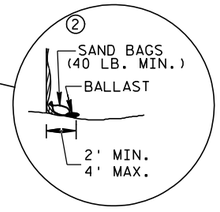
6

S.D.D. 8 E 9-6

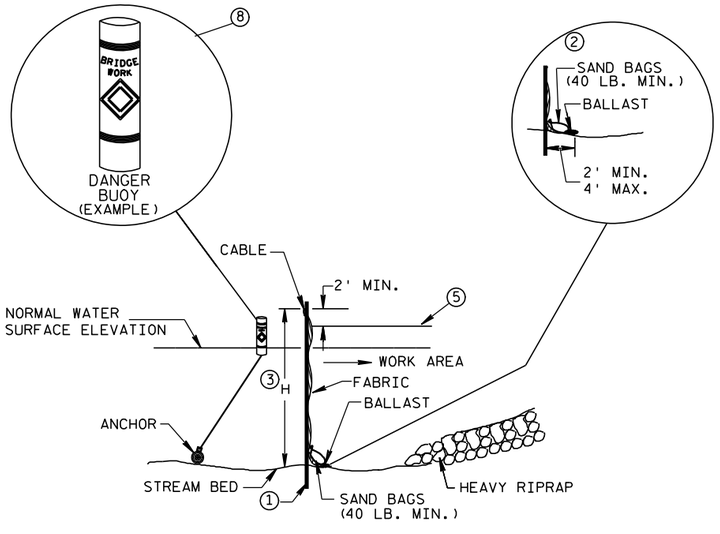


SECTION B-B

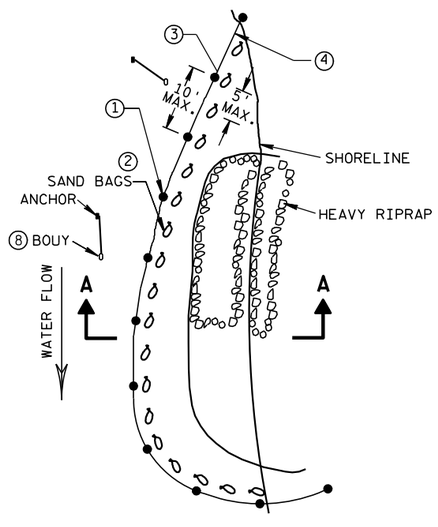




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



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.

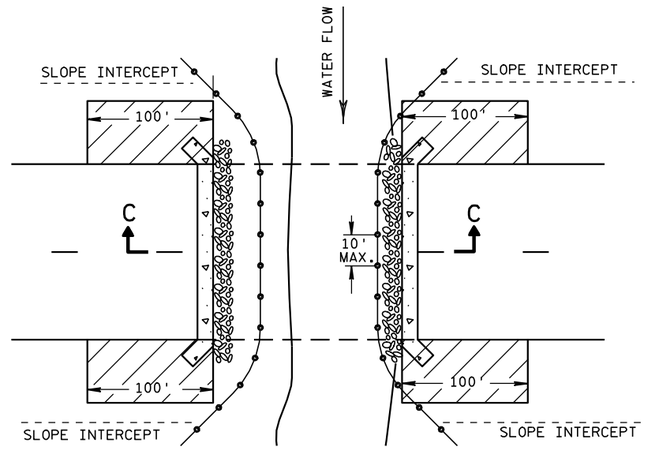
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

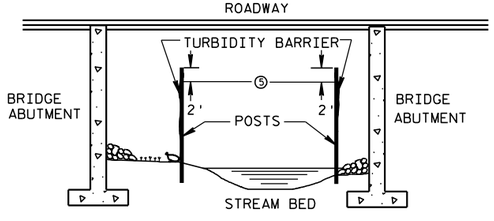
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

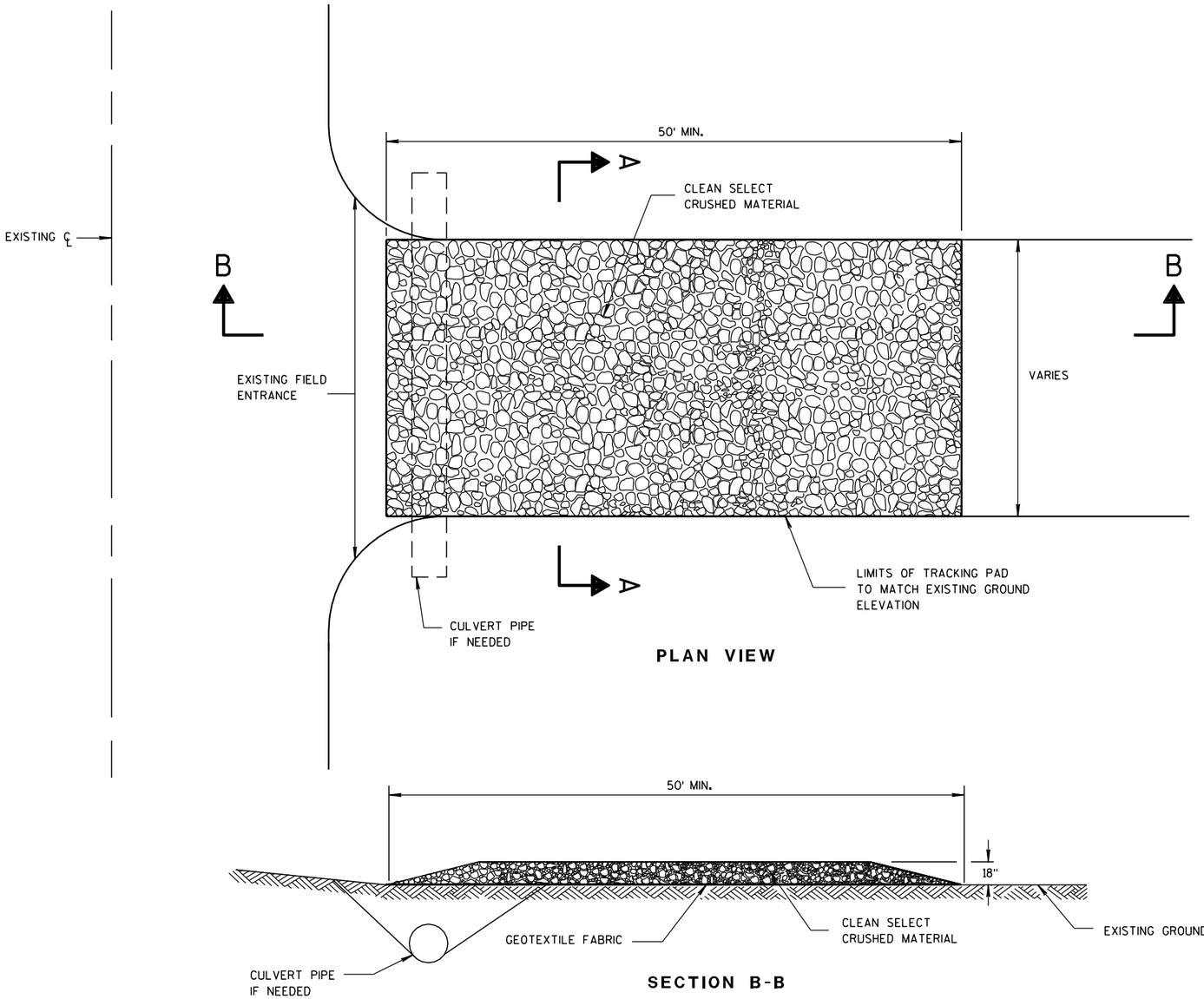
TURBIDITY BARRIER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
6/04/02 DATE	/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

6

S.D.D. 8 E 11-2

6

S.D.D. 8 E 11-2



PLAN VIEW

SECTION B-B

GENERAL NOTES

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

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

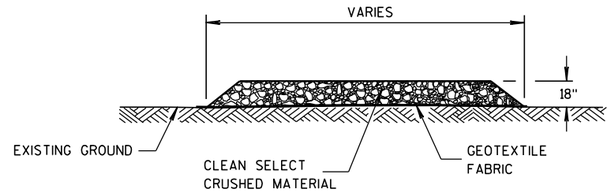
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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

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

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

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



SECTION A-A

TRACKING PAD

TRACKING PAD	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/24/2011 DATE FHWA	/S/ Jerry H. Zoda ROADWAY STANDARDS ENGINEER
	23
	ENT

6

S.D.D. 8 E 14-1

6

S.D.D. 8 E 14-1

METAL APRON ENDWALLS

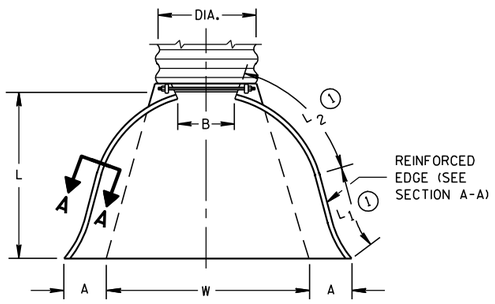
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	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

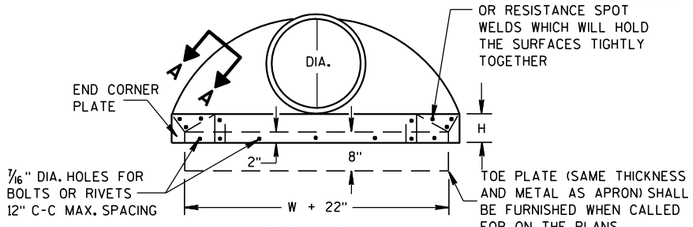
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
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

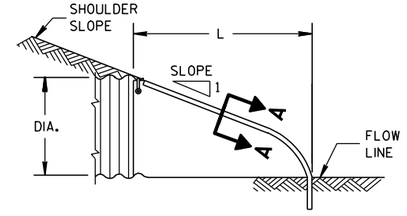
*MINIMUM
**MAXIMUM



PLAN VIEW

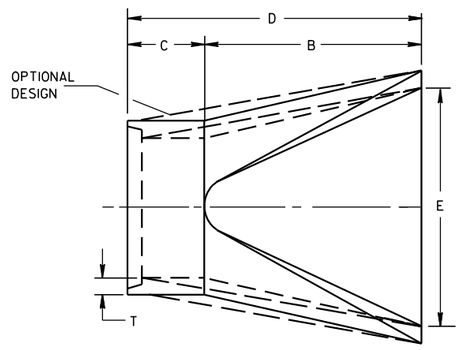


END VIEW

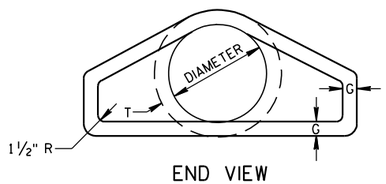


SIDE ELEVATION

METAL ENDWALLS



PLAN



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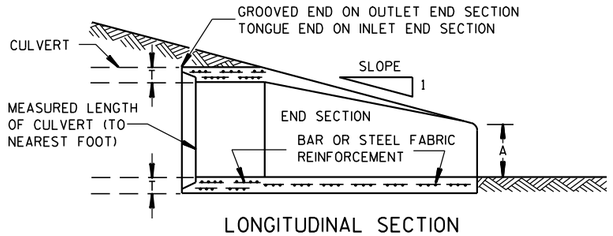
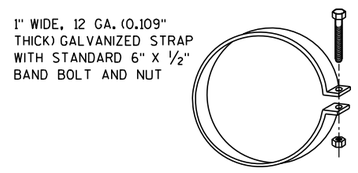


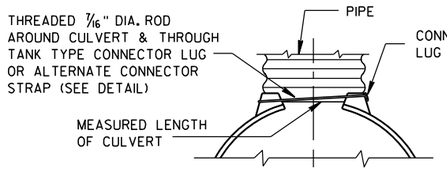
LONGITUDINAL SECTION

CONCRETE ENDWALLS

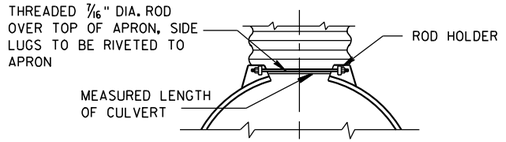


ALTERNATE FOR TYPE 1 CONNECTION

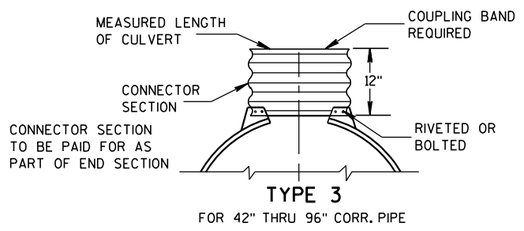
END SECTION CONNECTOR STRAP



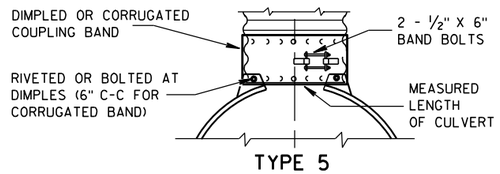
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

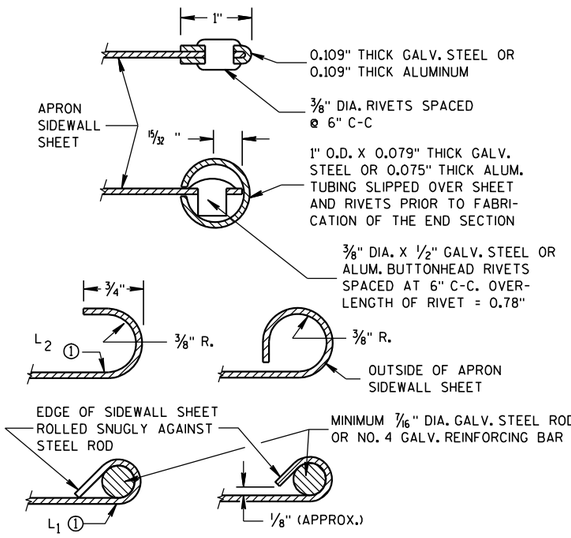
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

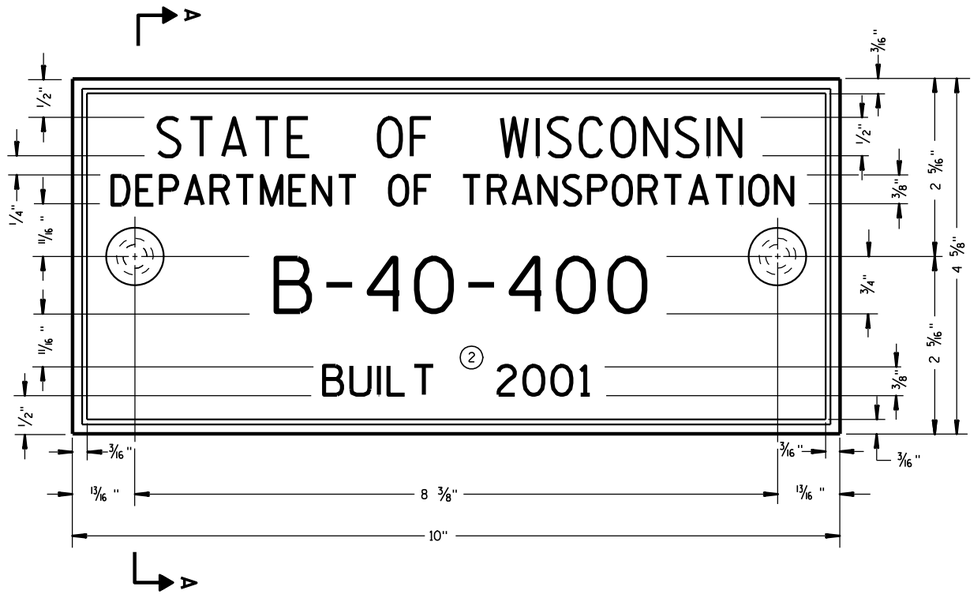
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

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



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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

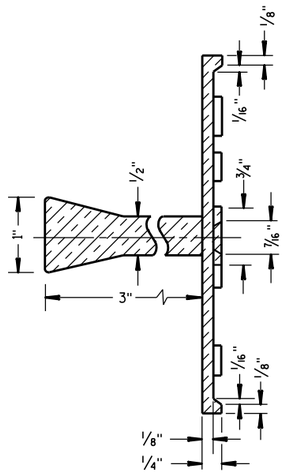
GENERAL NOTES

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.

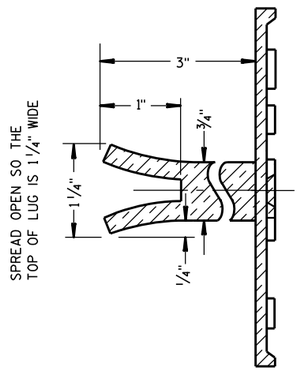
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

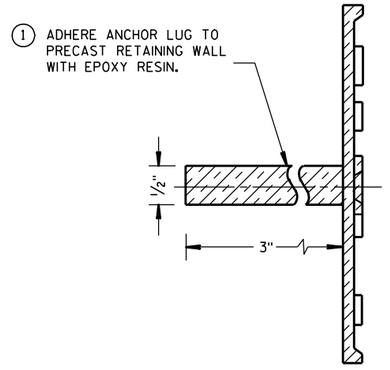
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



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

6

S.D.D. 12 A 3-10

GENERAL NOTES

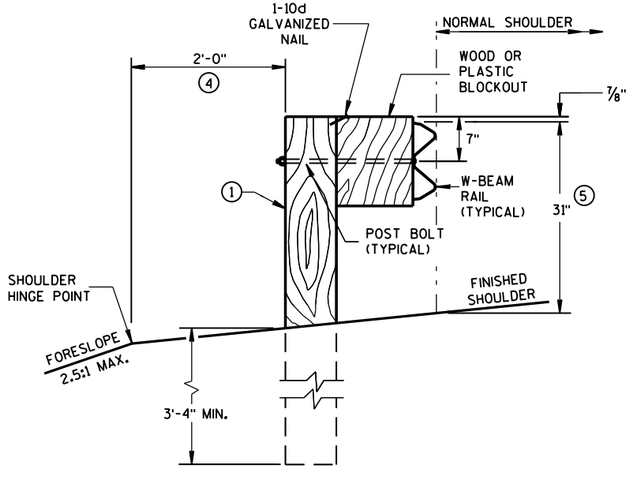
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

2. USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

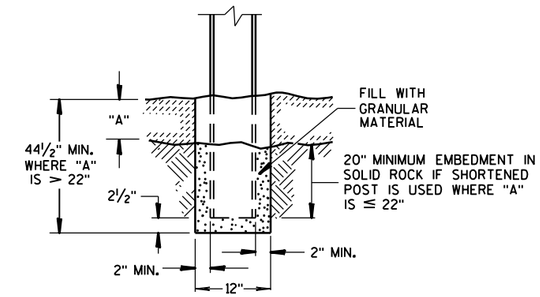
4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".



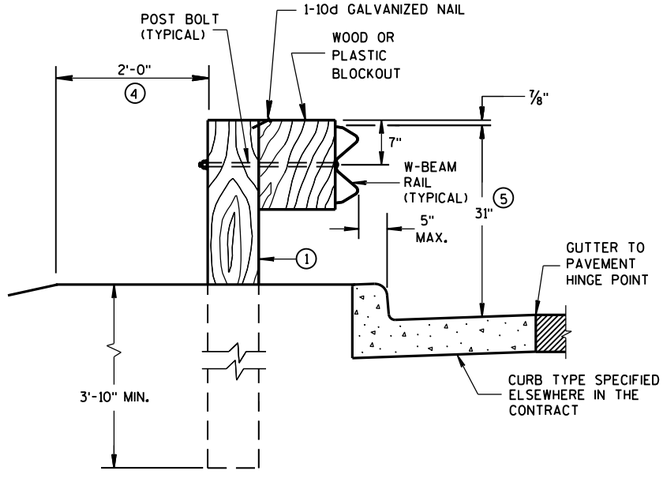
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



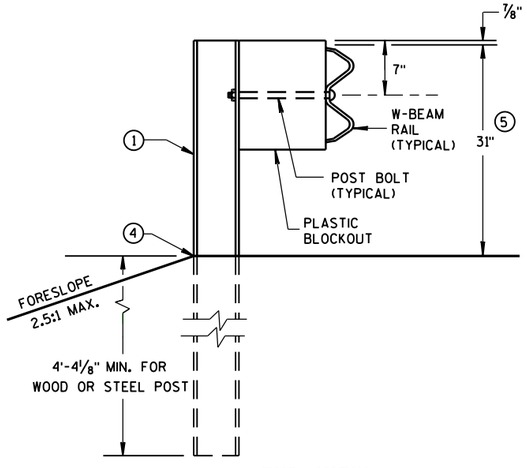
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



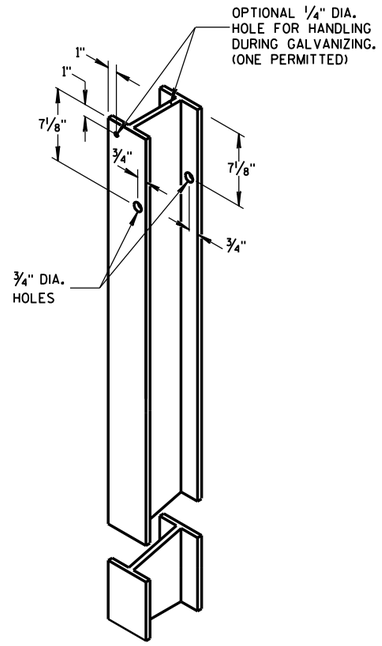
END VIEW

LOCATED ALONG A CURBED ROADWAY

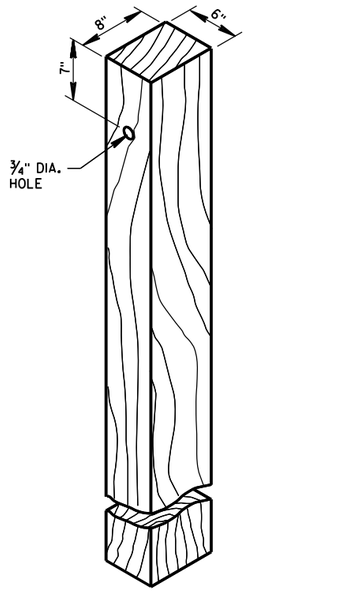


END VIEW

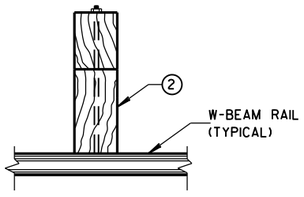
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



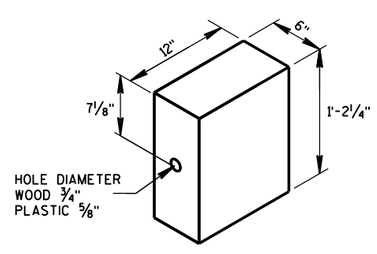
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



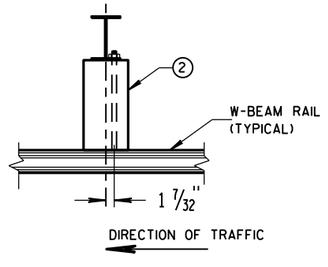
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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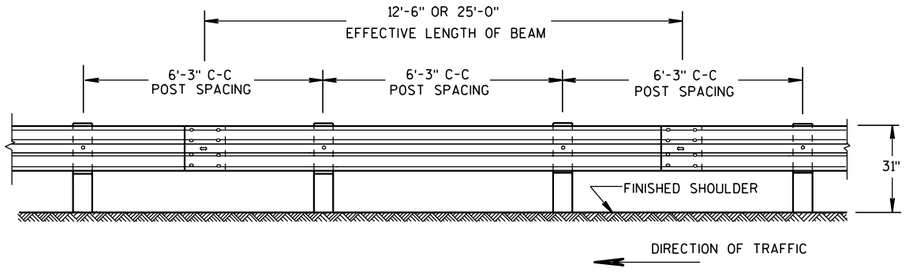
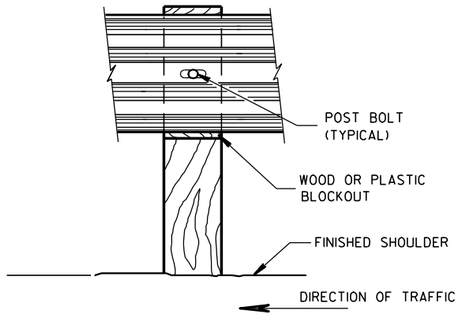
S.D.D. 14 B 42-2a



FRONT VIEW

POST SPACING STANDARD INSTALLATION



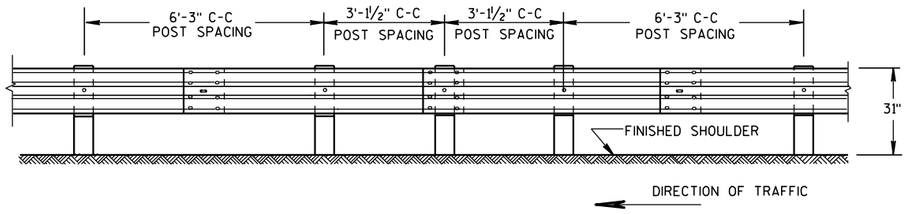
FRONT VIEW AT WOOD POST

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. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
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. 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

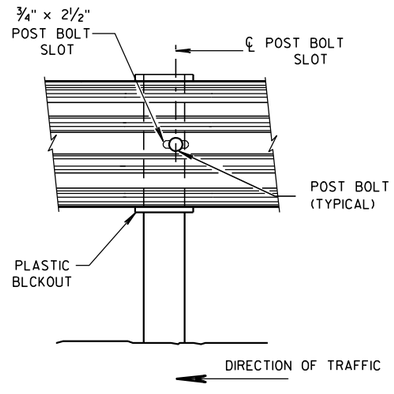
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

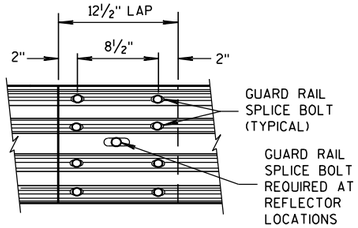


FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

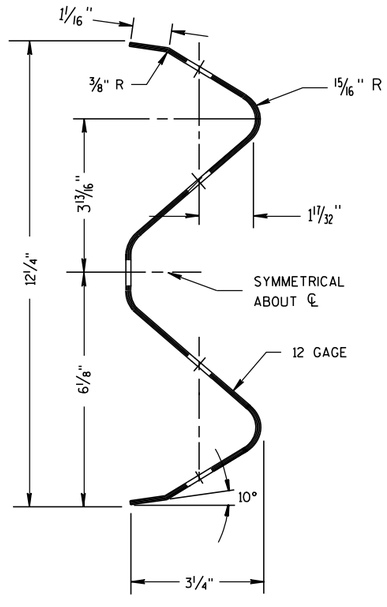


FRONT VIEW AT STEEL POST

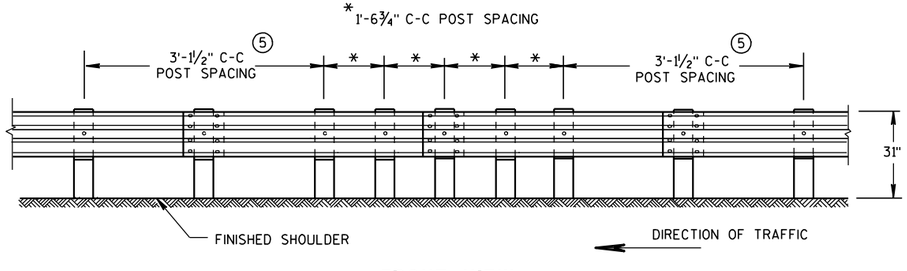


FRONT VIEW

MID-SPAN BEAM SPLICE

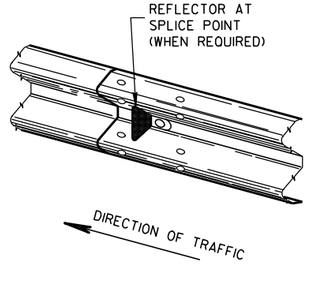


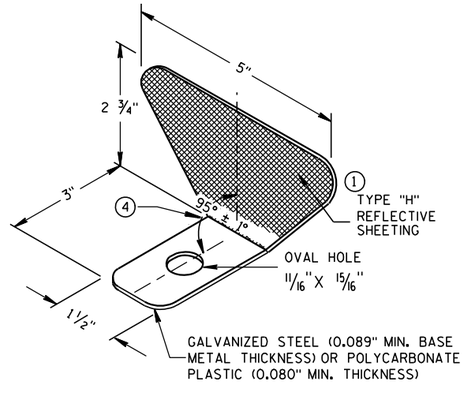
SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①

REFLECTOR SPACING ②

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

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14 B 42-2b

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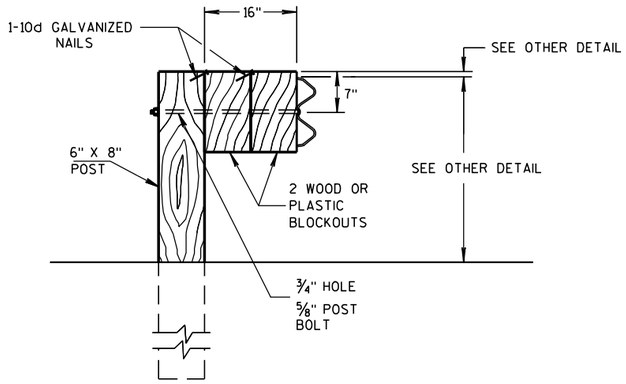
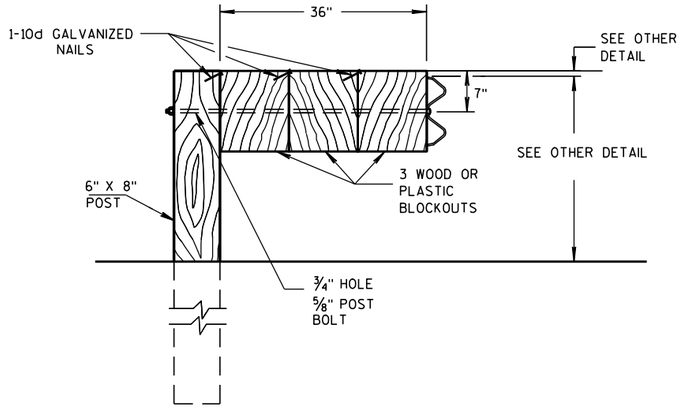


DETAIL FOR 16" BLOCKOUT DEPTH

IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

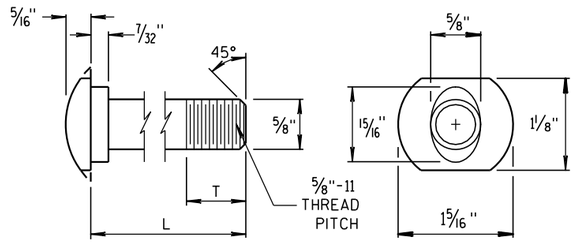


DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

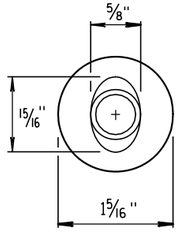
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

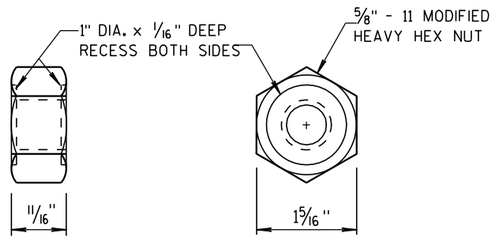


POST BOLT TABLE

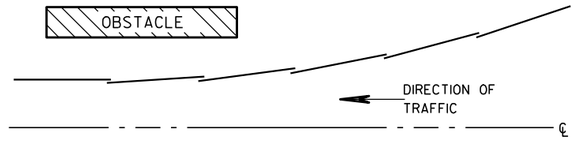
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

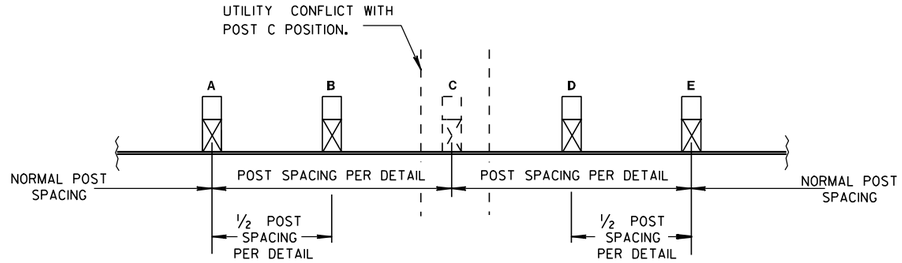


POST BOLT AND RECESS NUT

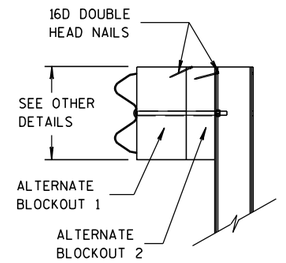


PLAN VIEW

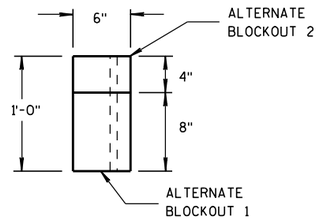
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/15/2011
DATE

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

FHWA

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S.D.D. 14 B 42-2c

6

S.D.D. 14 B 42-2c

GENERAL NOTES

(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) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

(D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(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.

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

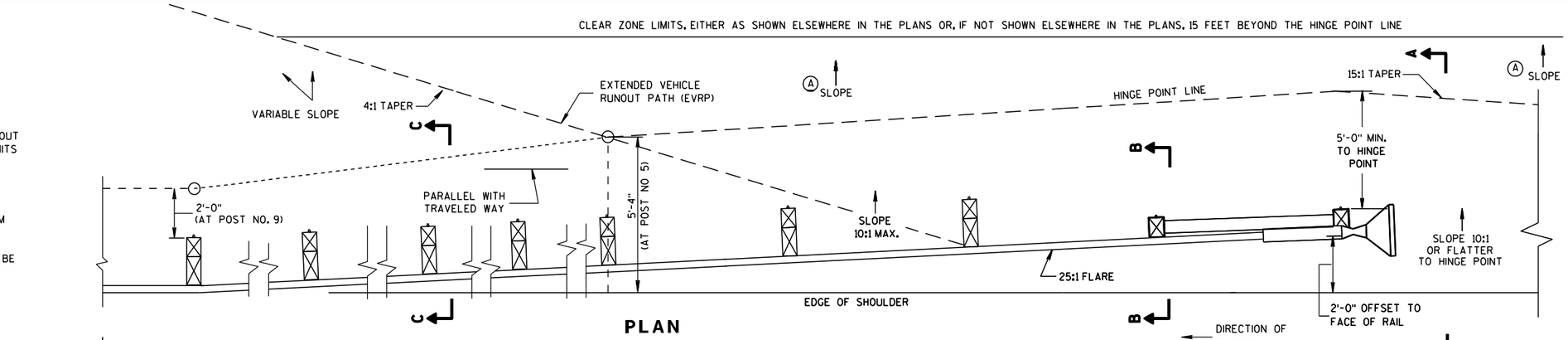
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

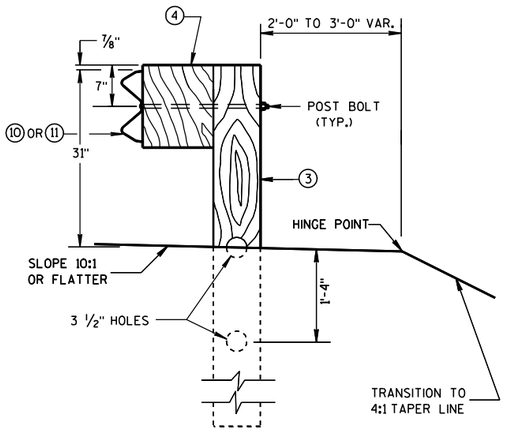
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

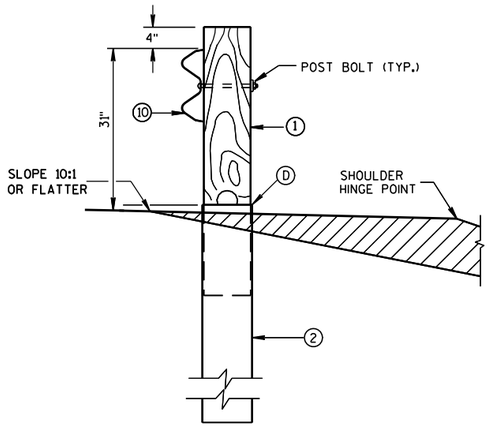
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (± ¾")

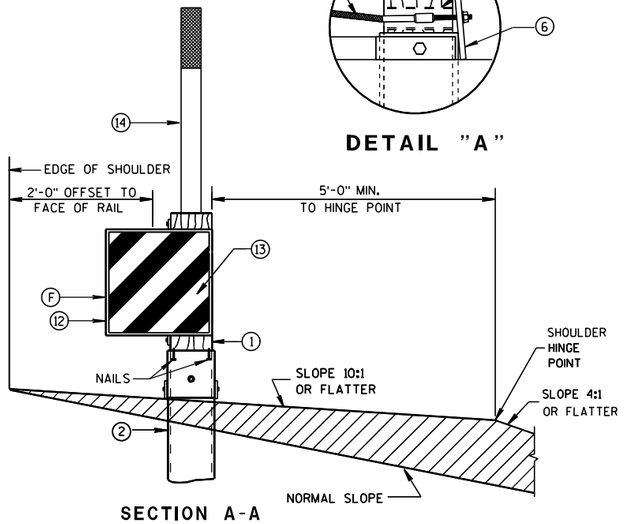




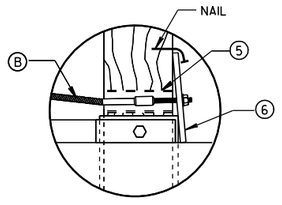
SECTION C-C
TYPICAL AT POST NOS. 3-9



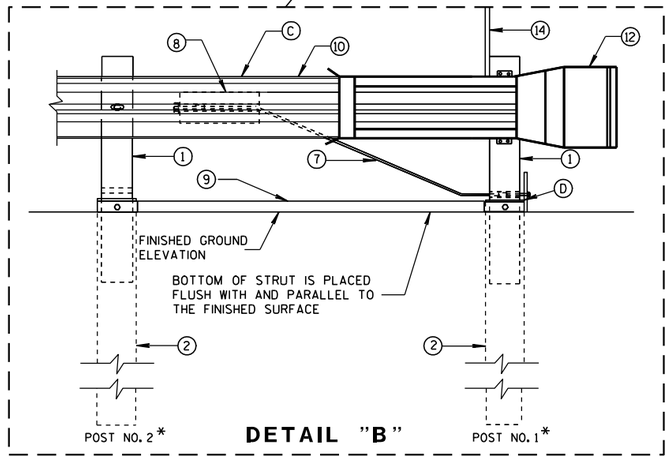
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"

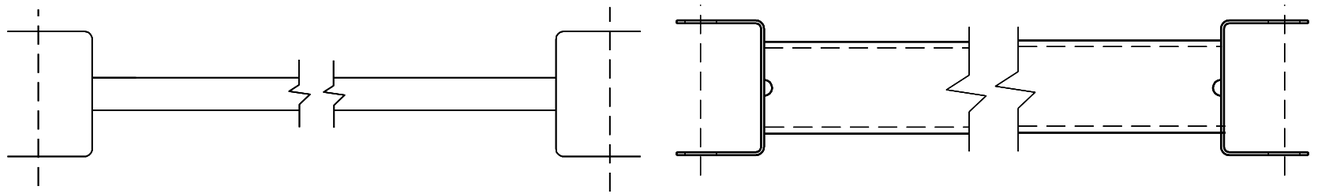


DETAIL "B"

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

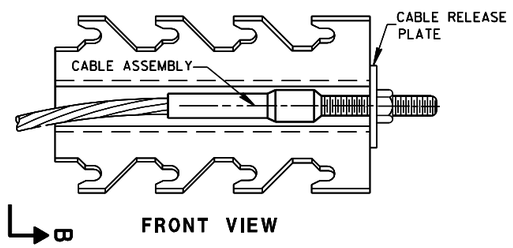
6
S.D.D. 14 B 44-1a



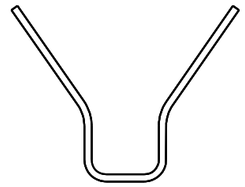
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

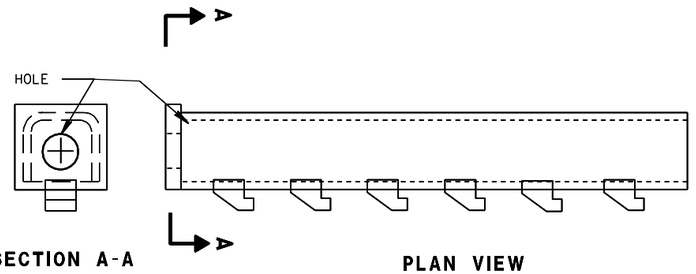
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND STRUT
(10)	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
(11)	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
(12)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



FRONT VIEW



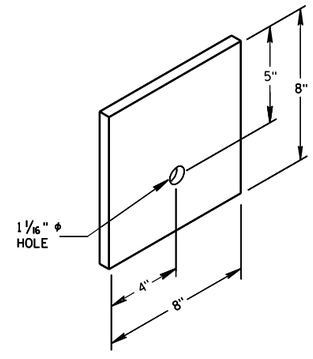
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



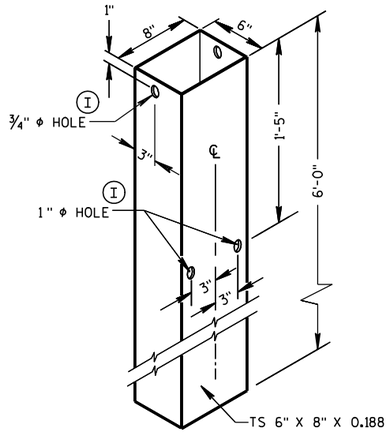
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

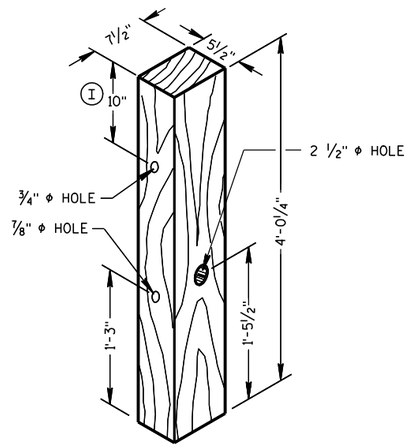
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 44-1b

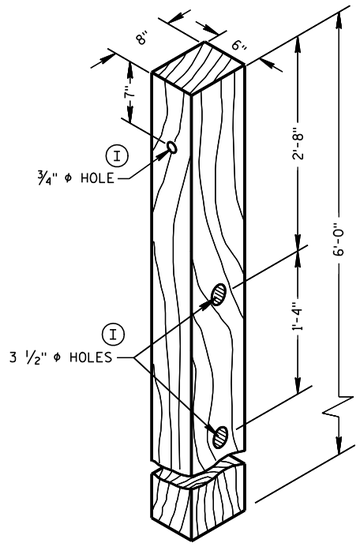


FOUNDATION TUBE (2)



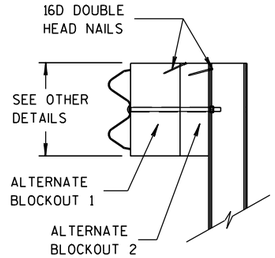
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

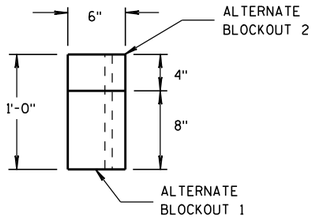


POSTS NUMBER 3-9

WOOD CRT POST (3)

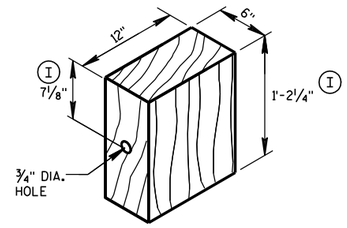


SIDE VIEW



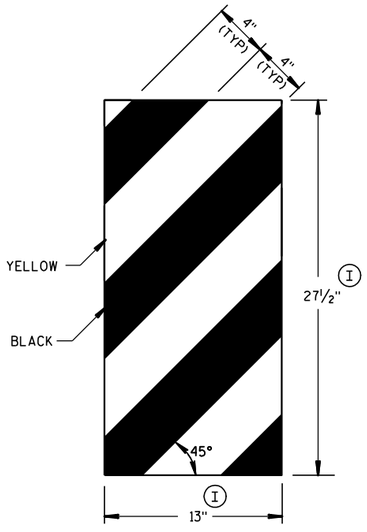
TOP VIEW

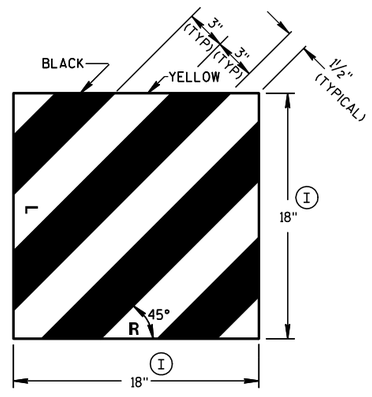
ALTERNATE WOOD BLOCKOUT DETAIL



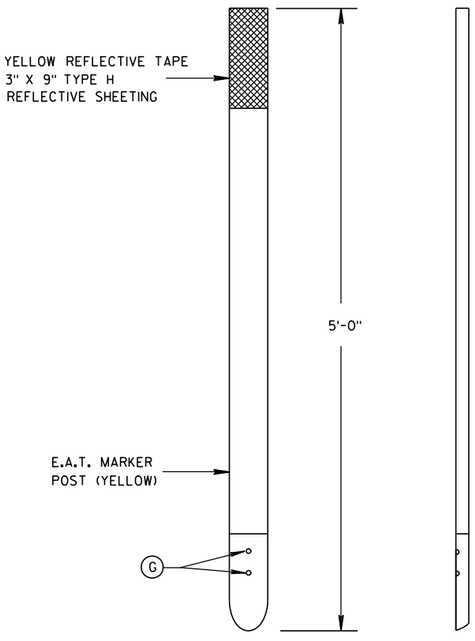
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



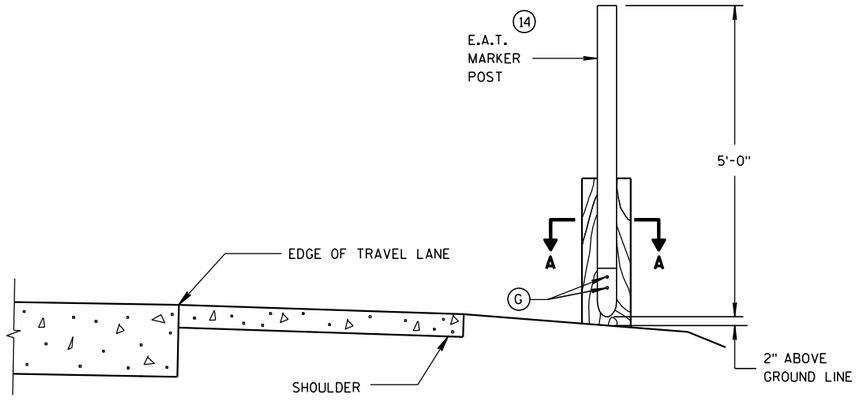


GENERIC REFLECTIVE SHEETING (13) (H)



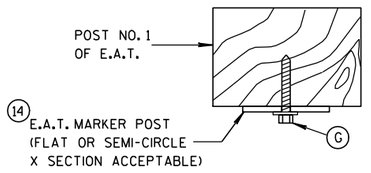
FRONT VIEW **SIDE VIEW**

E.A.T. MARKER POST (14)



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

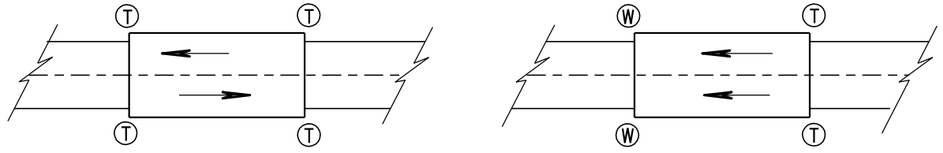
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2011 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 44-1c



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

GENERAL NOTES

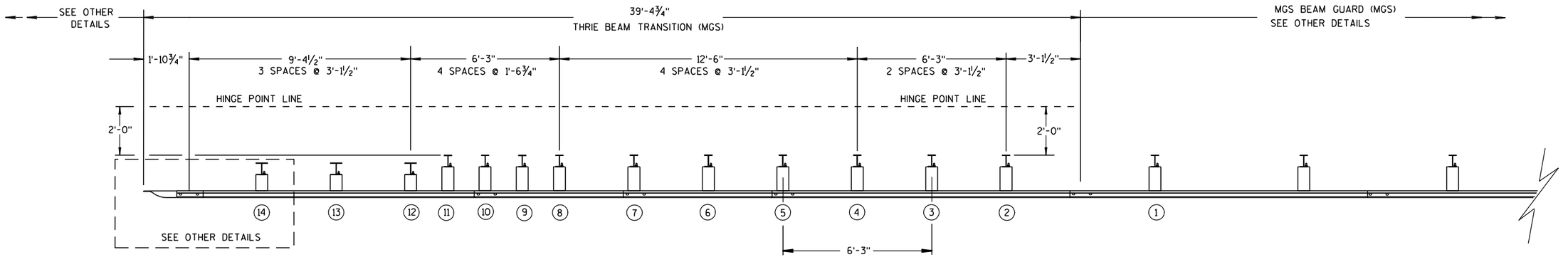
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

IF ROCK IS ENCOUNTERED DURING EXCAVATION, SEE STANDARD DETAIL DRAWING 14 B 42.

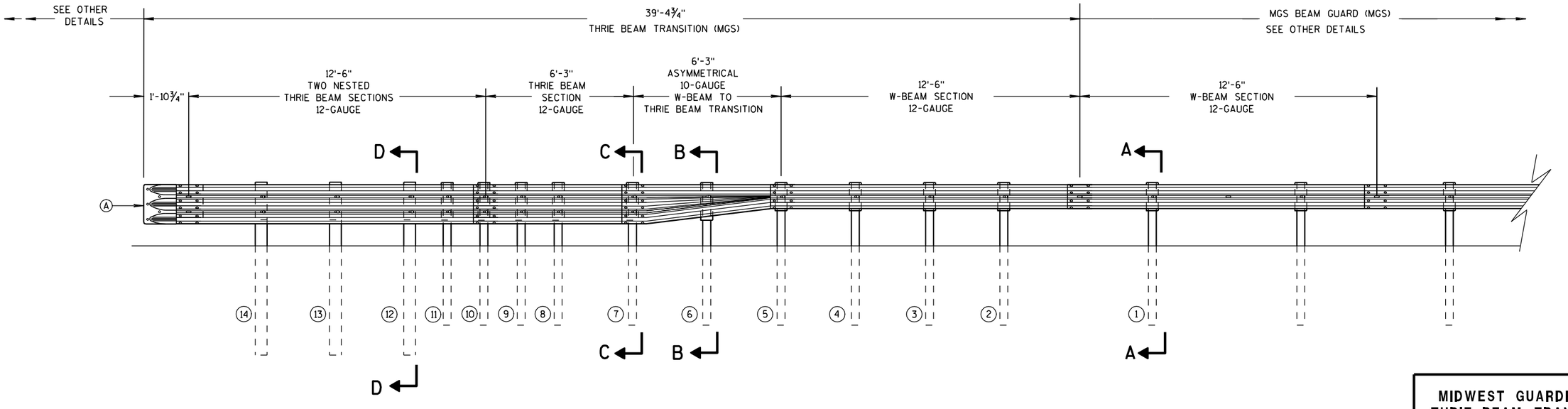
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

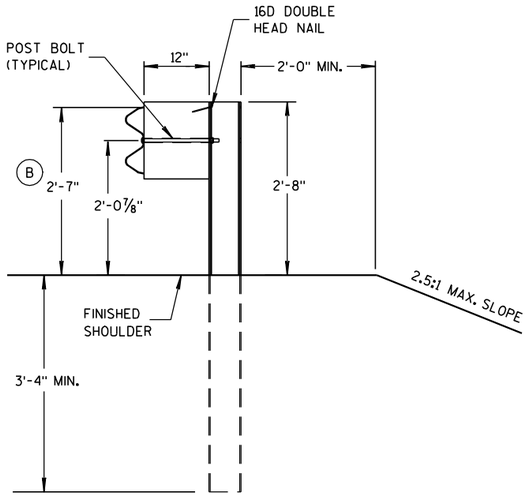
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-2a

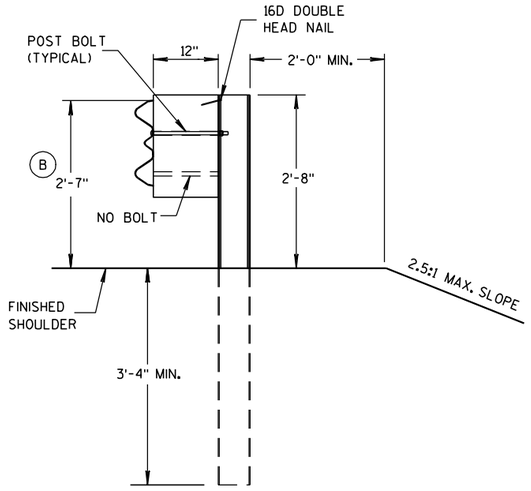
GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



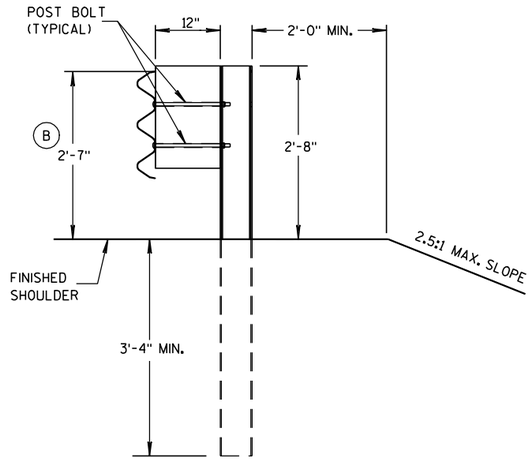
SECTION A-A

POSTS 1-5



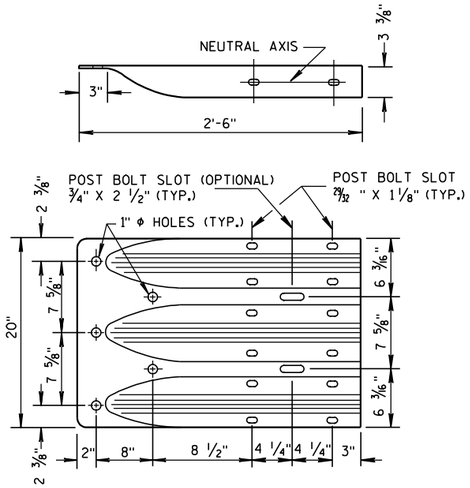
SECTION B-B

POST 6

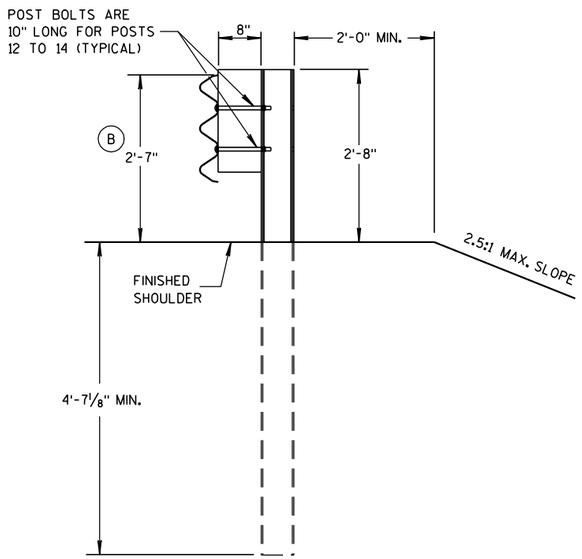


SECTION C-C

POSTS 7-11

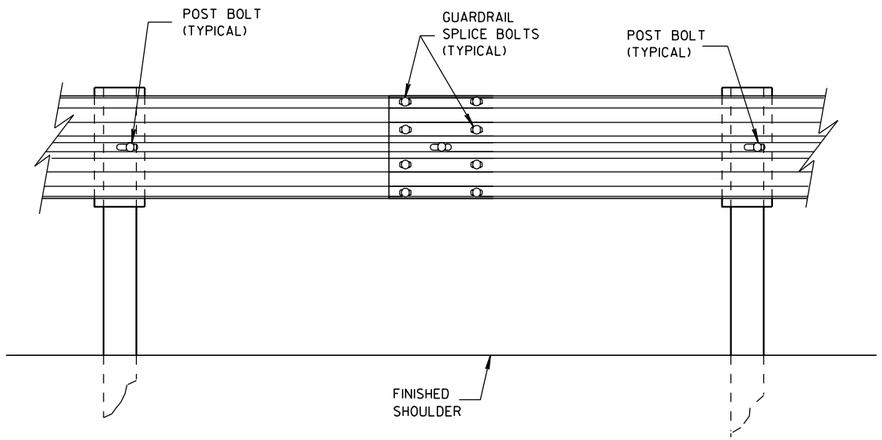


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14



SPLICE DETAIL

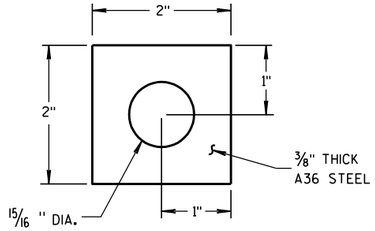
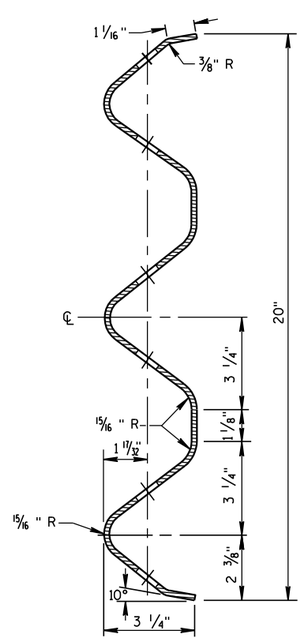


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

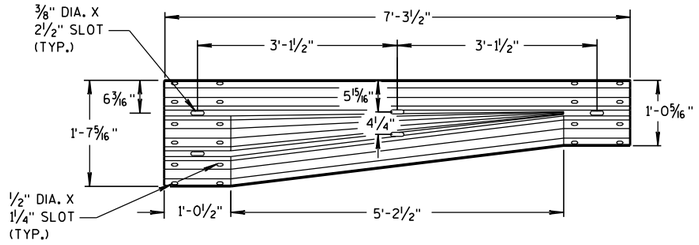
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

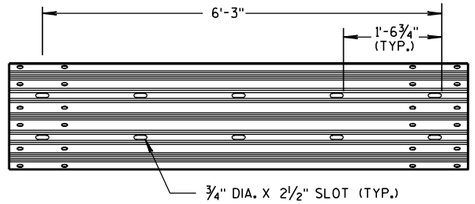
S.D.D. 14 B 45-2b

6

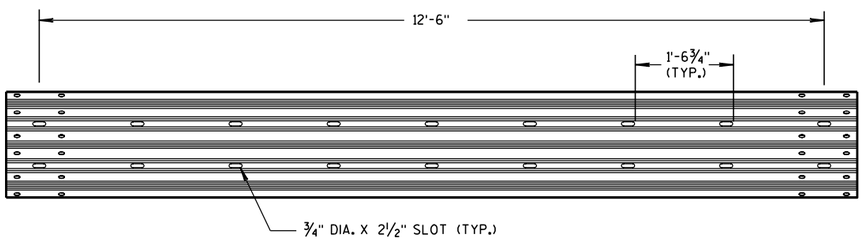
S.D.D. 14 B 45-2b



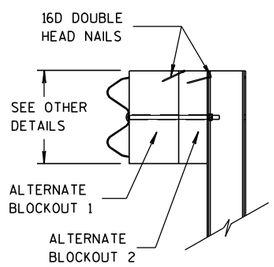
W-BEAM TO THRIE BEAM TRANSITION SECTION



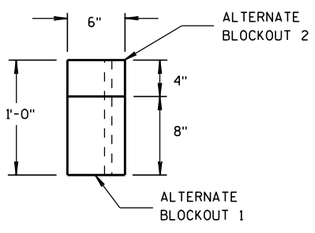
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

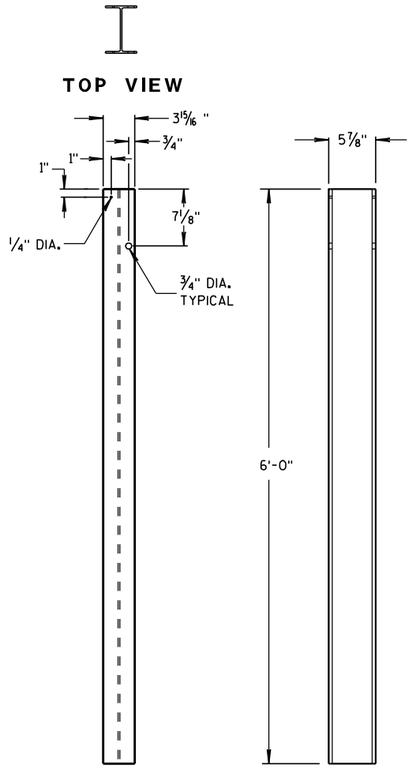


SIDE VIEW



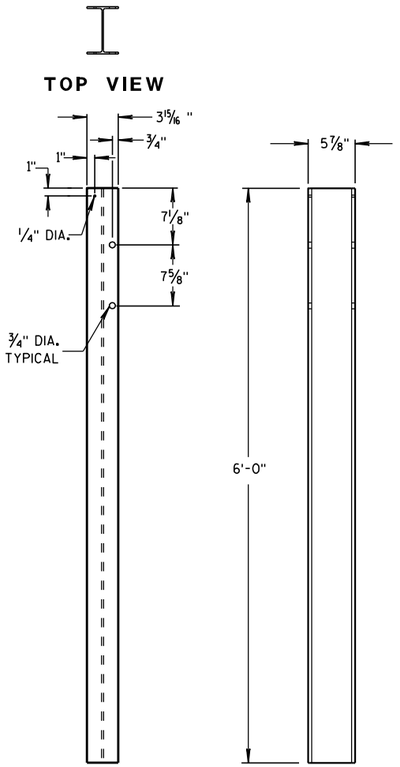
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



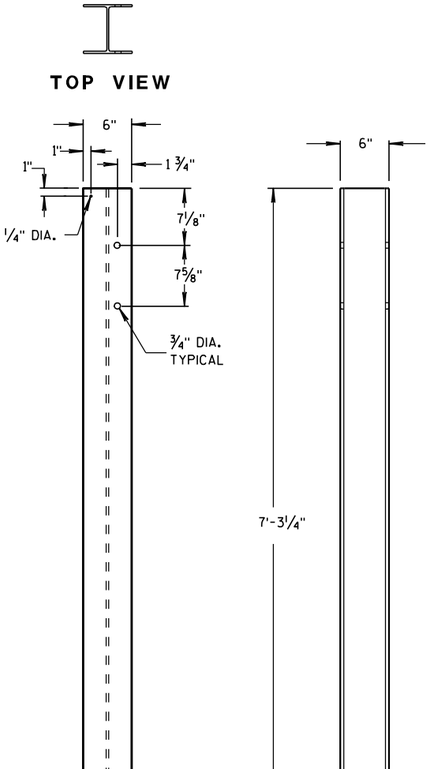
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5



FRONT VIEW SIDE VIEW

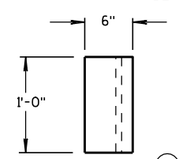
STEEL POSTS 6-11



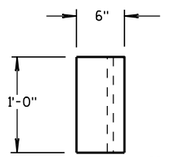
FRONT VIEW SIDE VIEW

STEEL POSTS 12-14

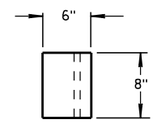
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



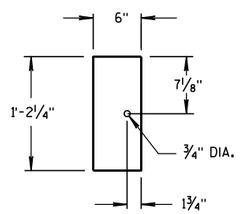
TOP VIEW (1)



TOP VIEW (1)

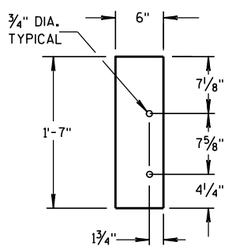


TOP VIEW



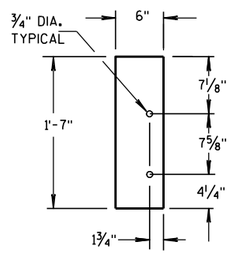
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

POST NUMBER	SECTION TYPE	LENGTH
1	W6x9	72"
2	W6x9	72"
3	W6x9	72"
4	W6x9	72"
5	W6x9	72"
6	W6x9	72"
7	W6x9	72"
8	W6x9	72"
9	W6x9	72"
10	W6x9	72"
11	W6x9	72"
12	W6x15	87 1/8"
13	W6x15	87 1/8"
14	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

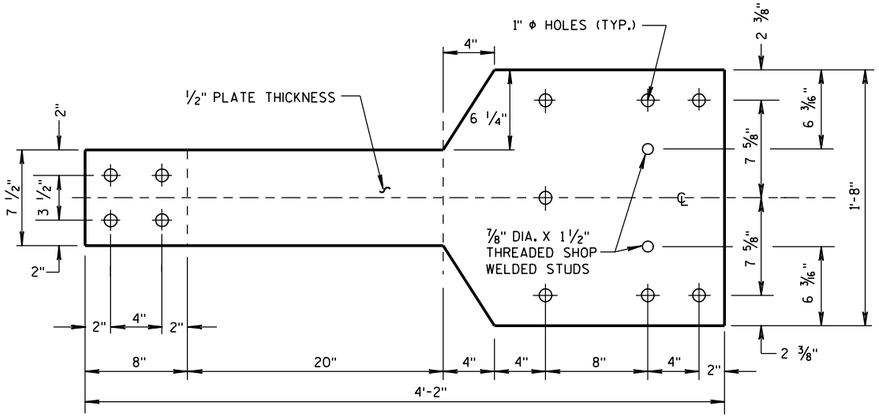
S.D.D. 14 B 45-2c

6

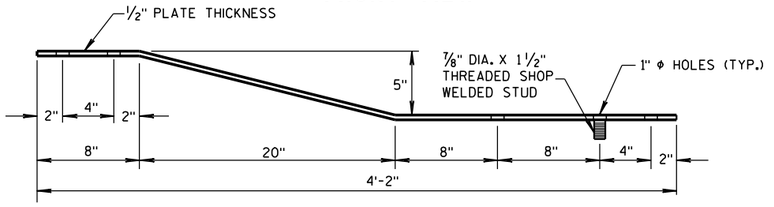
S.D.D. 14 B 45-2c

GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

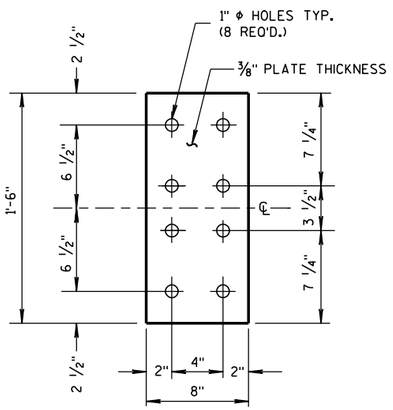


FRONT VIEW



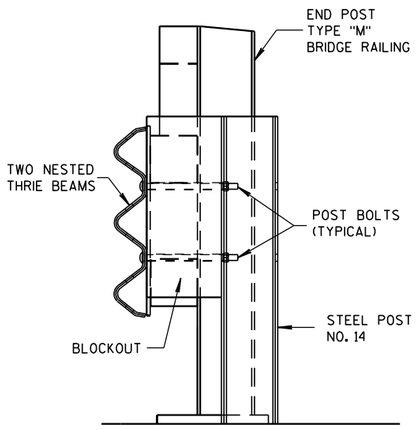
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

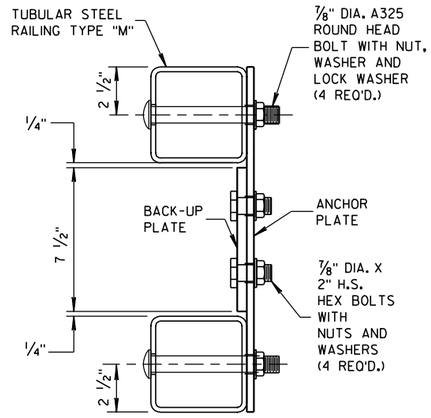


FRONT VIEW

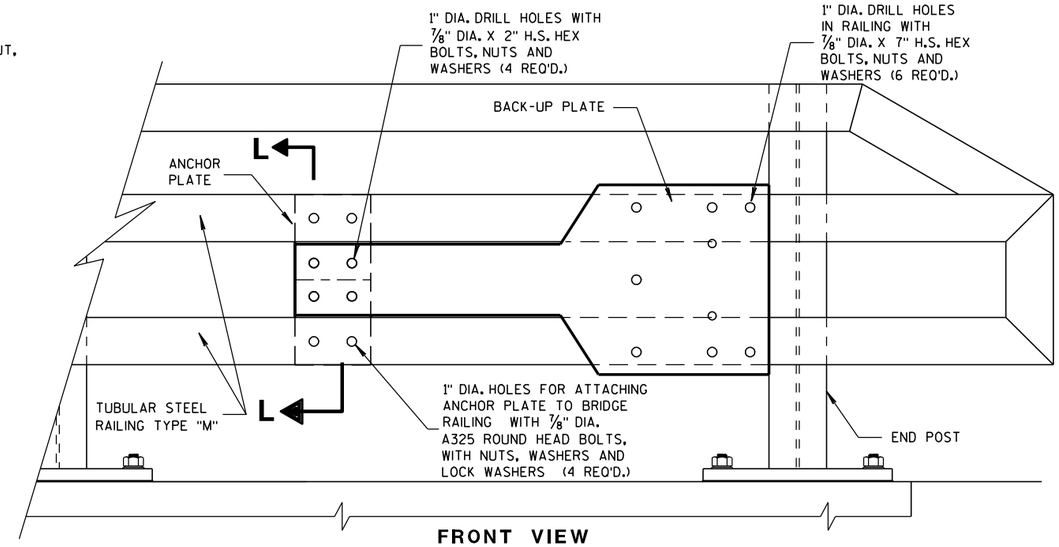
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

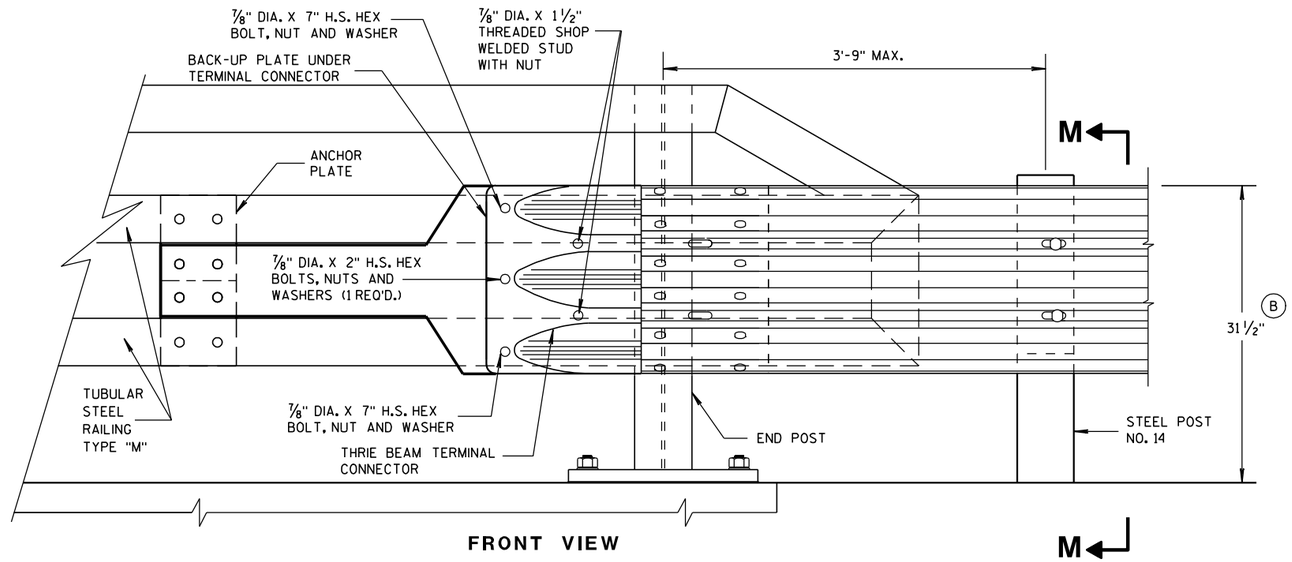


SECTION L-L

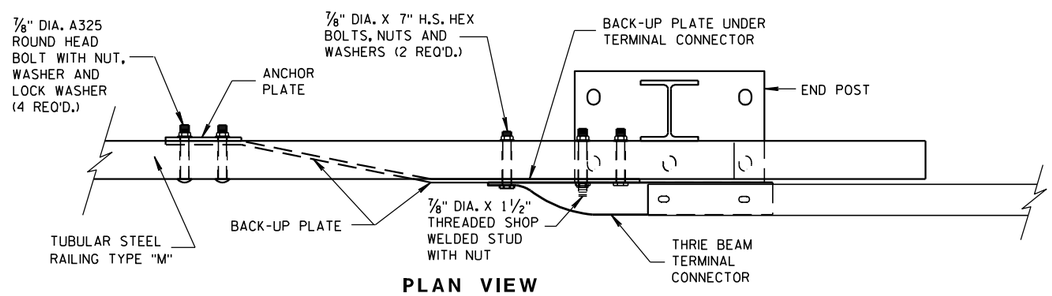


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-8-2012 DATE

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

35

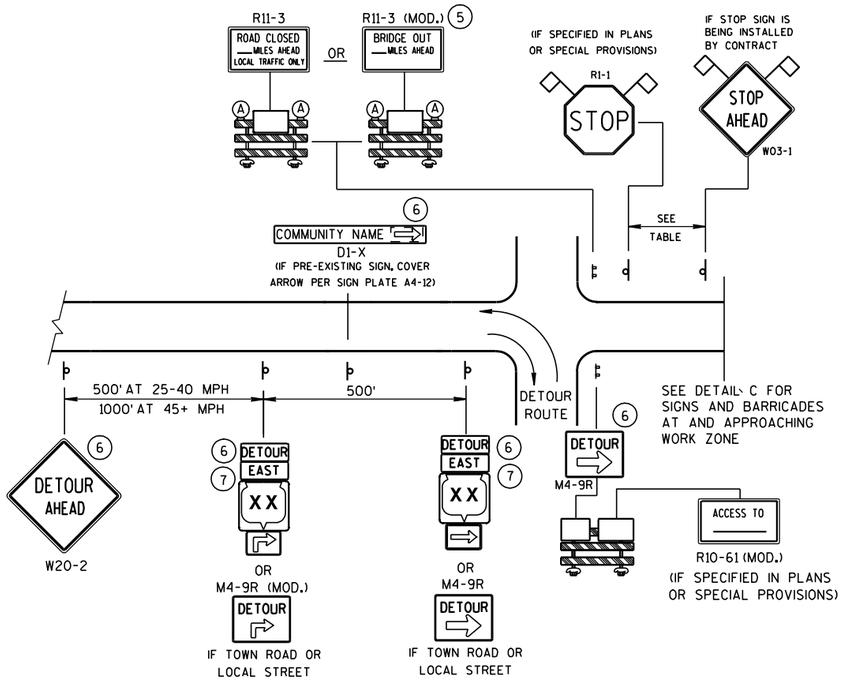
FHWA

6

S.D.D. 14 B 45-2h

6

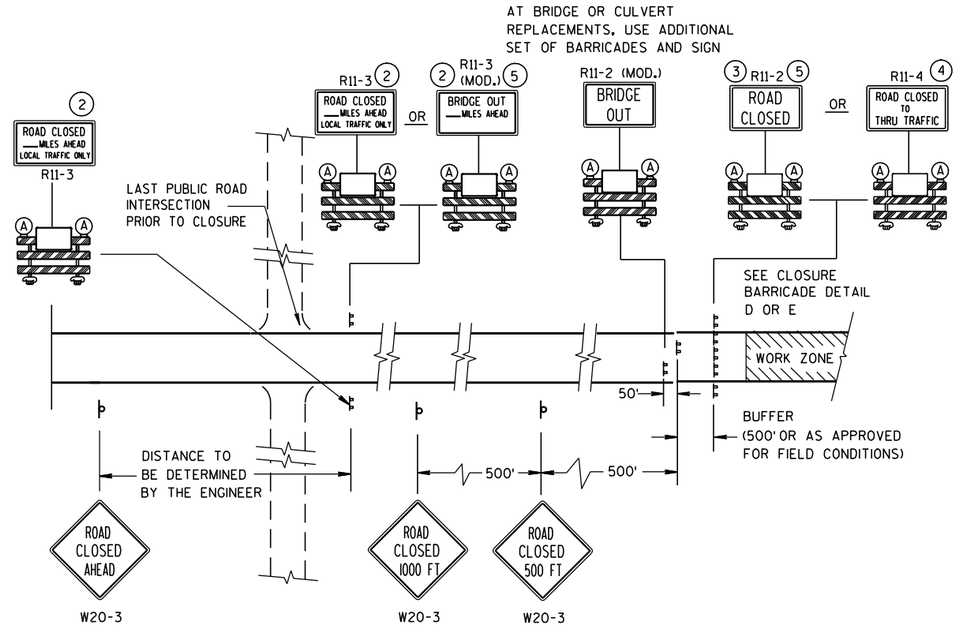
S.D.D. 14 B 45-2h



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

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

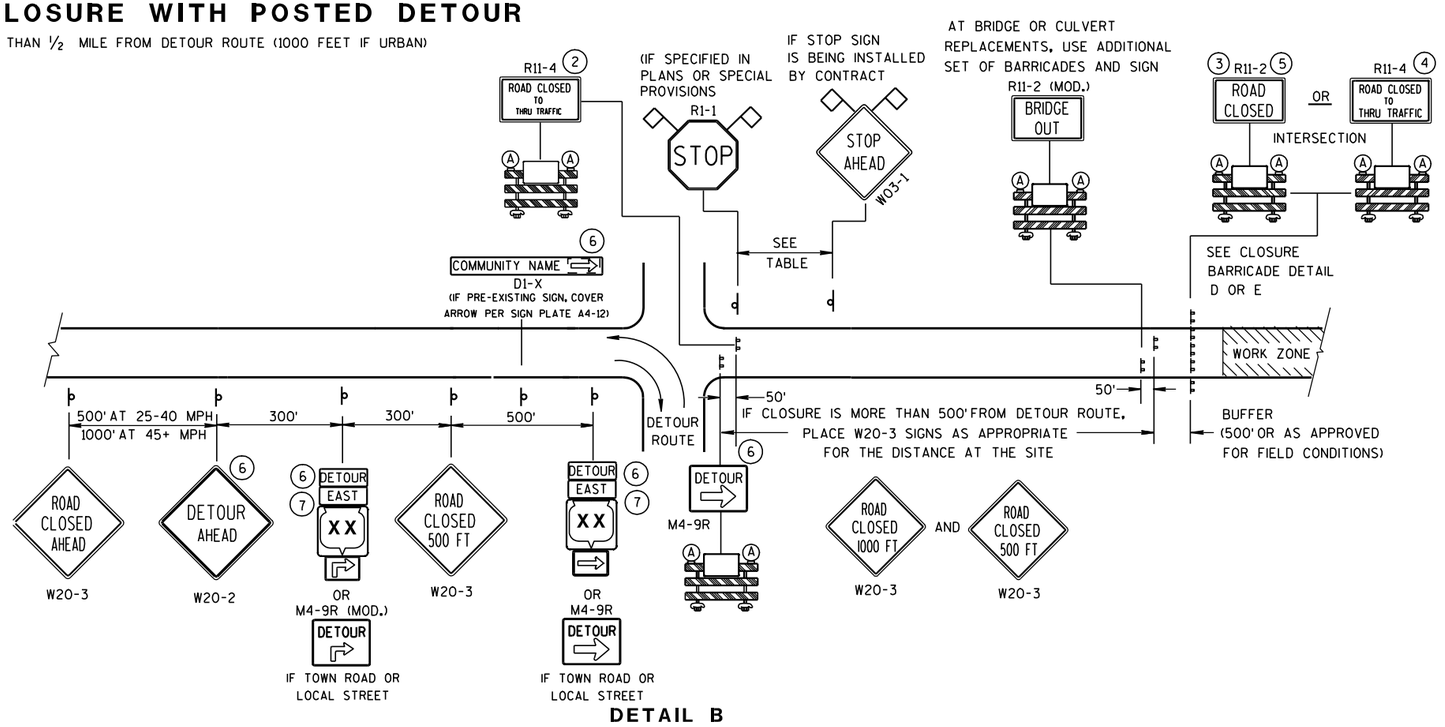


DETAIL C

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

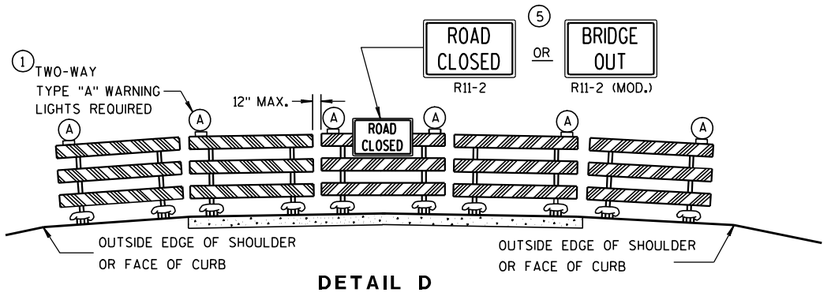
- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1; M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

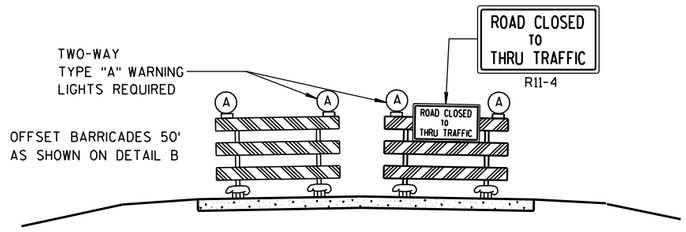
S.D.D. 15 C 2-4a



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 MAR[illegible]INEER

FHWA

6

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

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

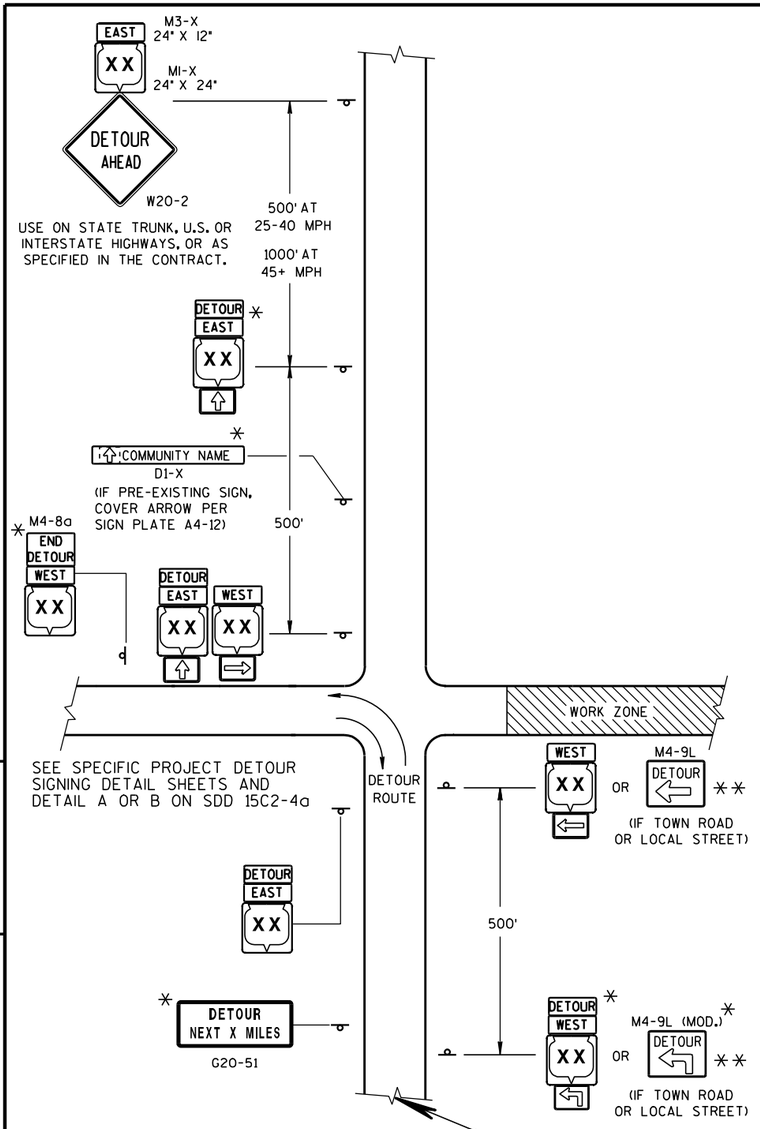
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

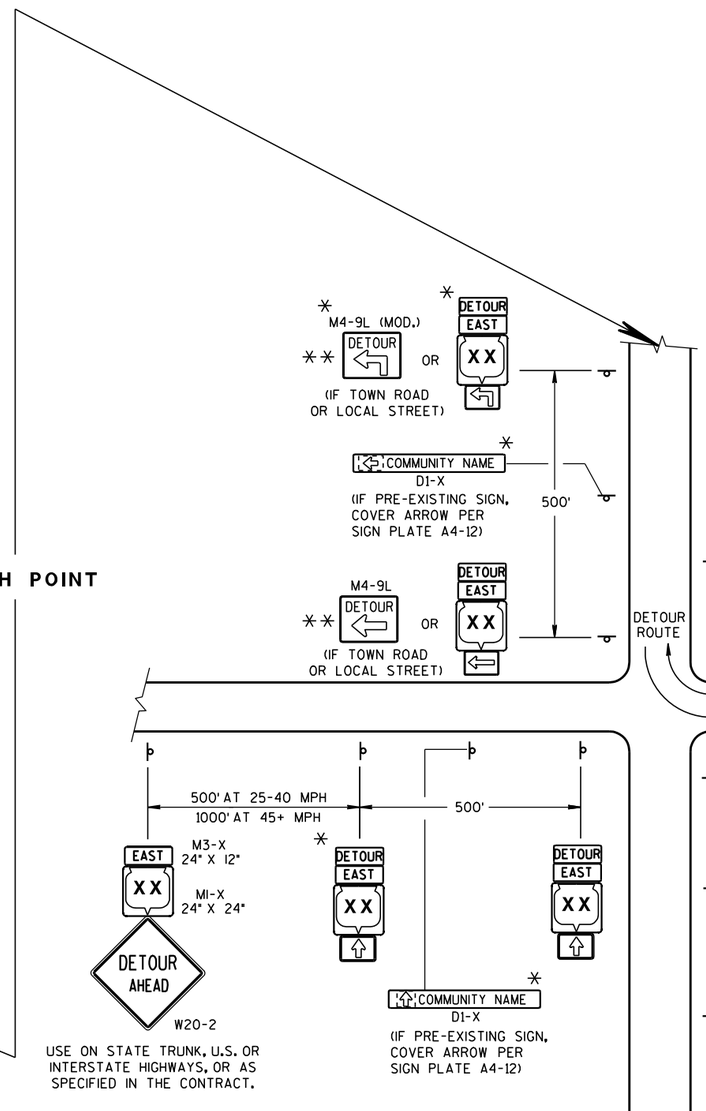
SIGN SIZES SHALL BE AS FOLLOWS:

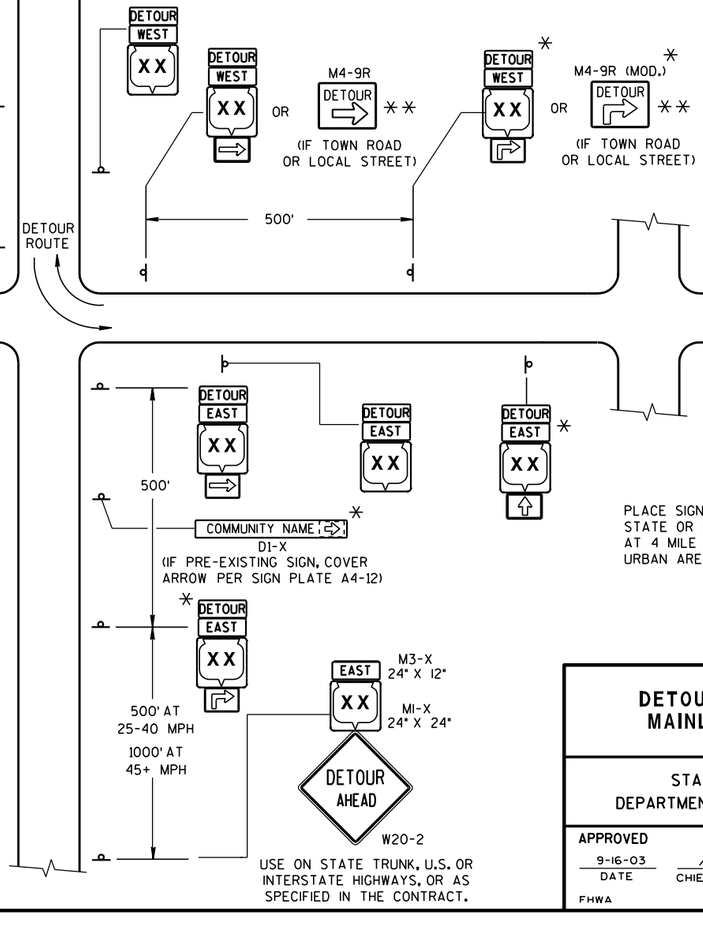
M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
M4-9 SHALL BE 30" X 24".
M4-8a SHALL BE 24" X 18".
G20-51 SHALL BE 60" X 24".
W20-2 SHALL BE 48" X 48".
D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.







LEGEND

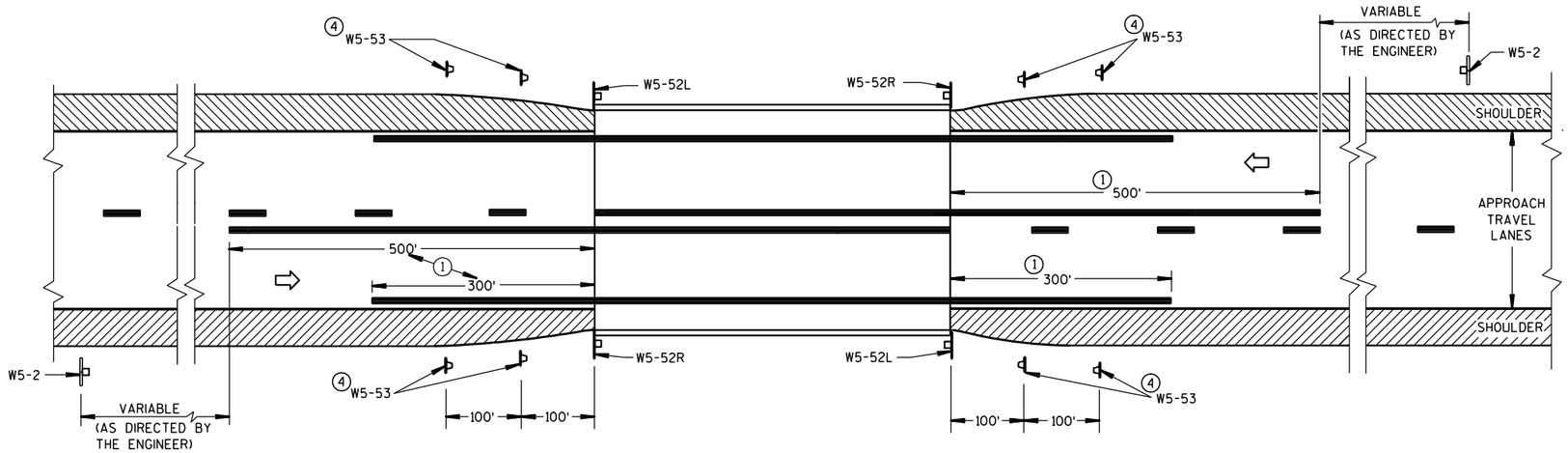
- POST MOUNTED SIGN
- WORK ZONE
- DETOUR EAST — M4-8 / M3-X
- XX OR COUNTY XX OR XX — M1-4 / M1-5A / M1-6
- MO5-1 OR MO6-1 OR MO6-1

DETAIL F
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

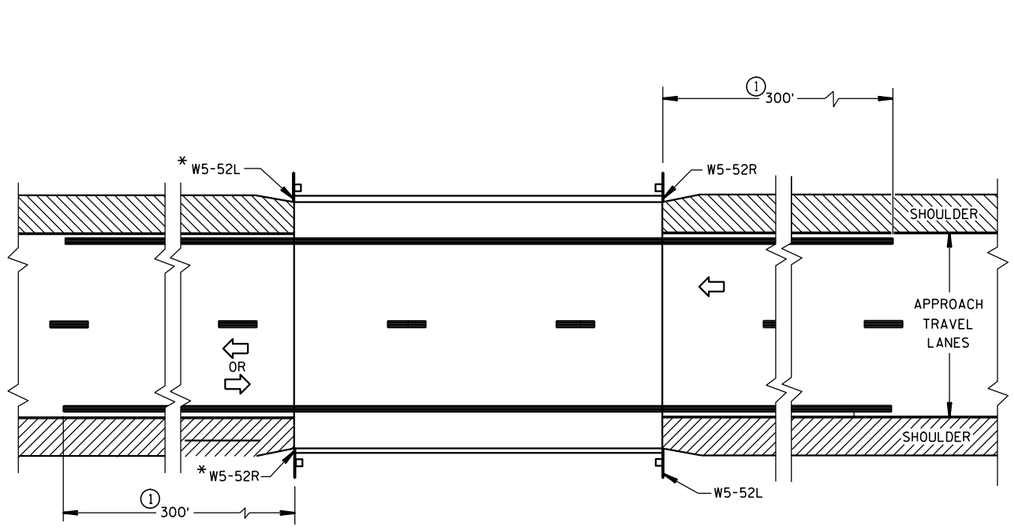
APPROVED
9-16-03 DATE
/S/ Thomas N. [illegible] CHIEF SIGNS AND MAR[illegible] INEER
FHWA



SITUATION 1

WARRANTING CRITERION:

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

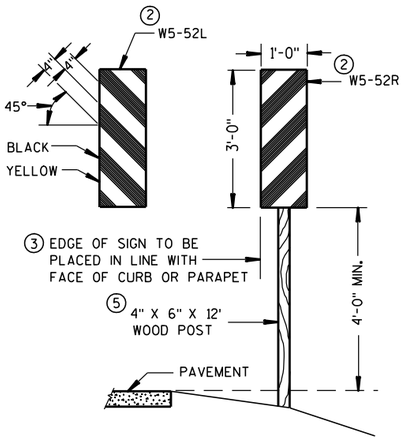


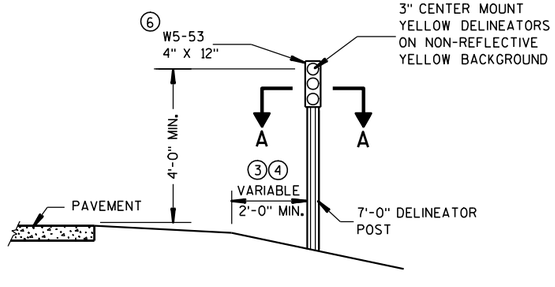
*OMIT ON ONE-WAY TRAVELLED WAYS

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.





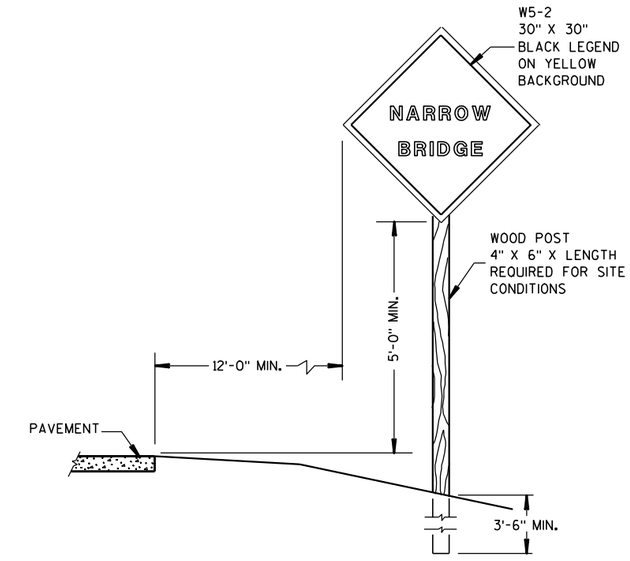
OBJECT MARKER PLACEMENT

GENERAL NOTES

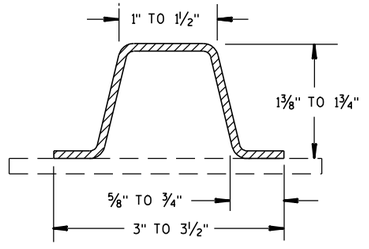
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

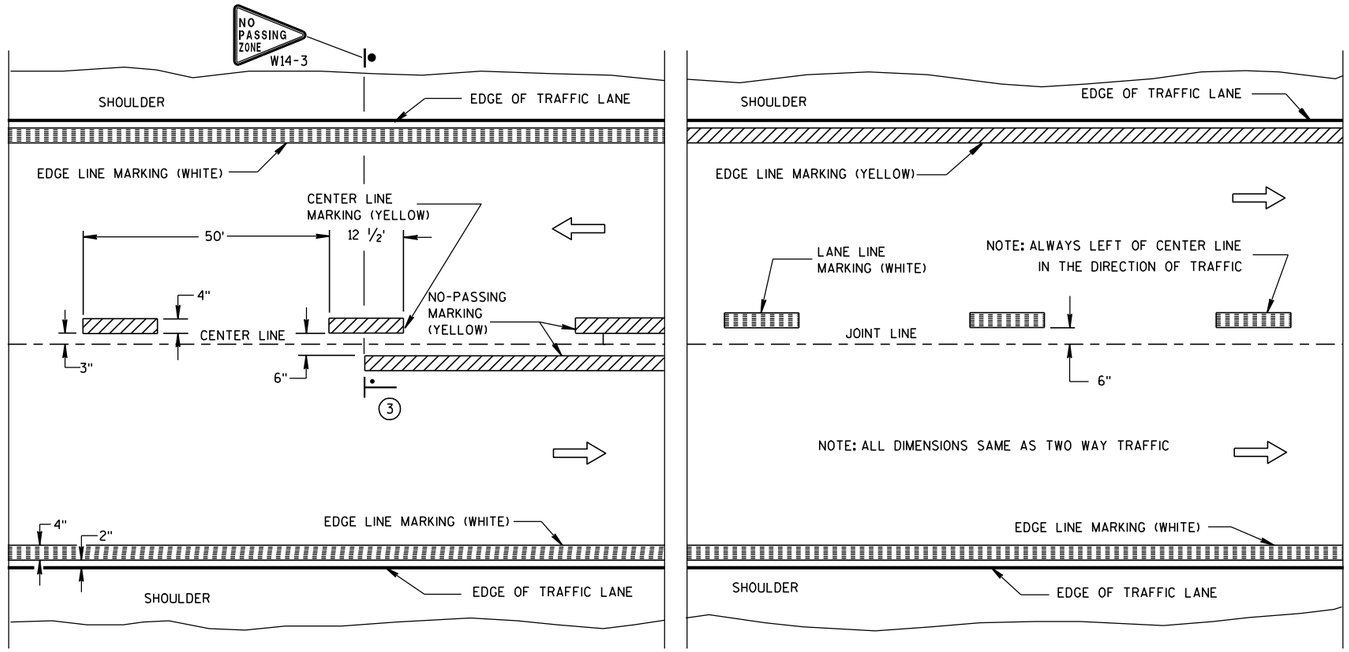
FHWA

6

S.D.D. 15 C 6-5

6

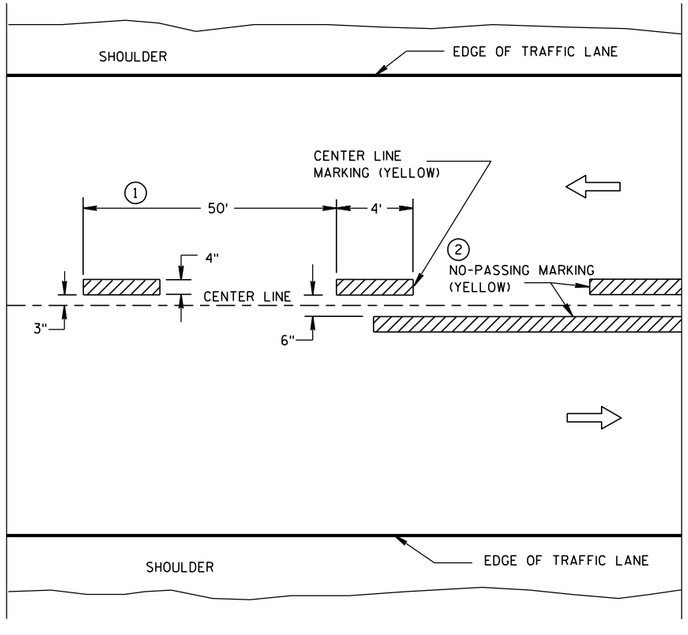
S.D.D. 15 C 6-5



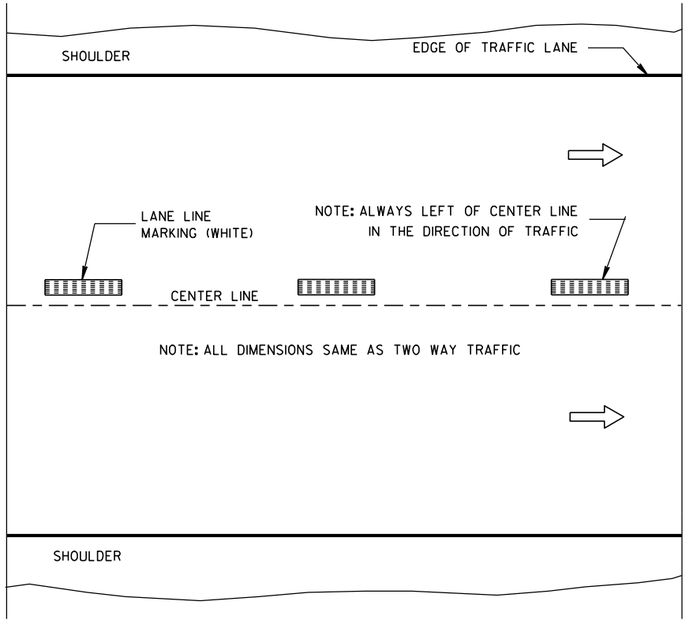
TWO WAY TRAFFIC

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)

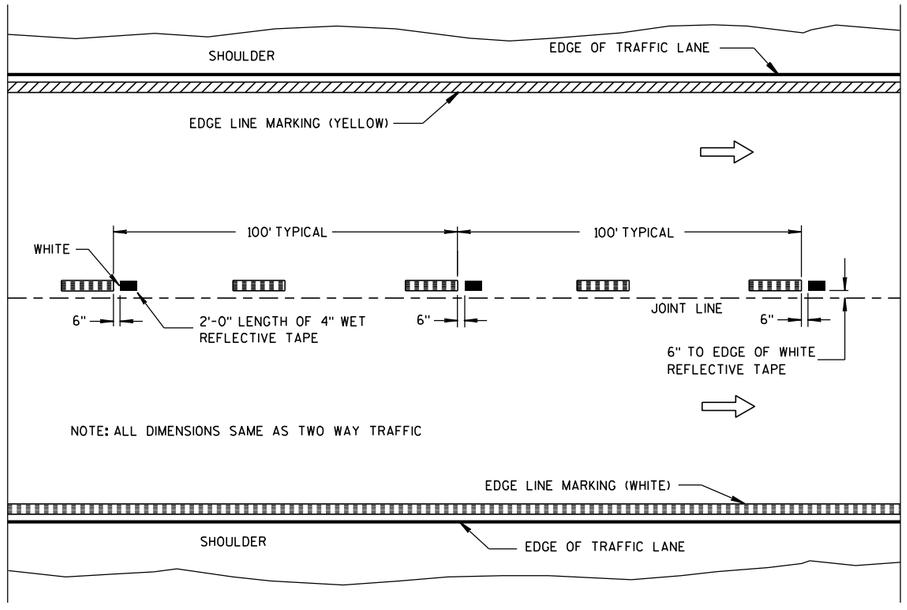
GENERAL NOTES

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)

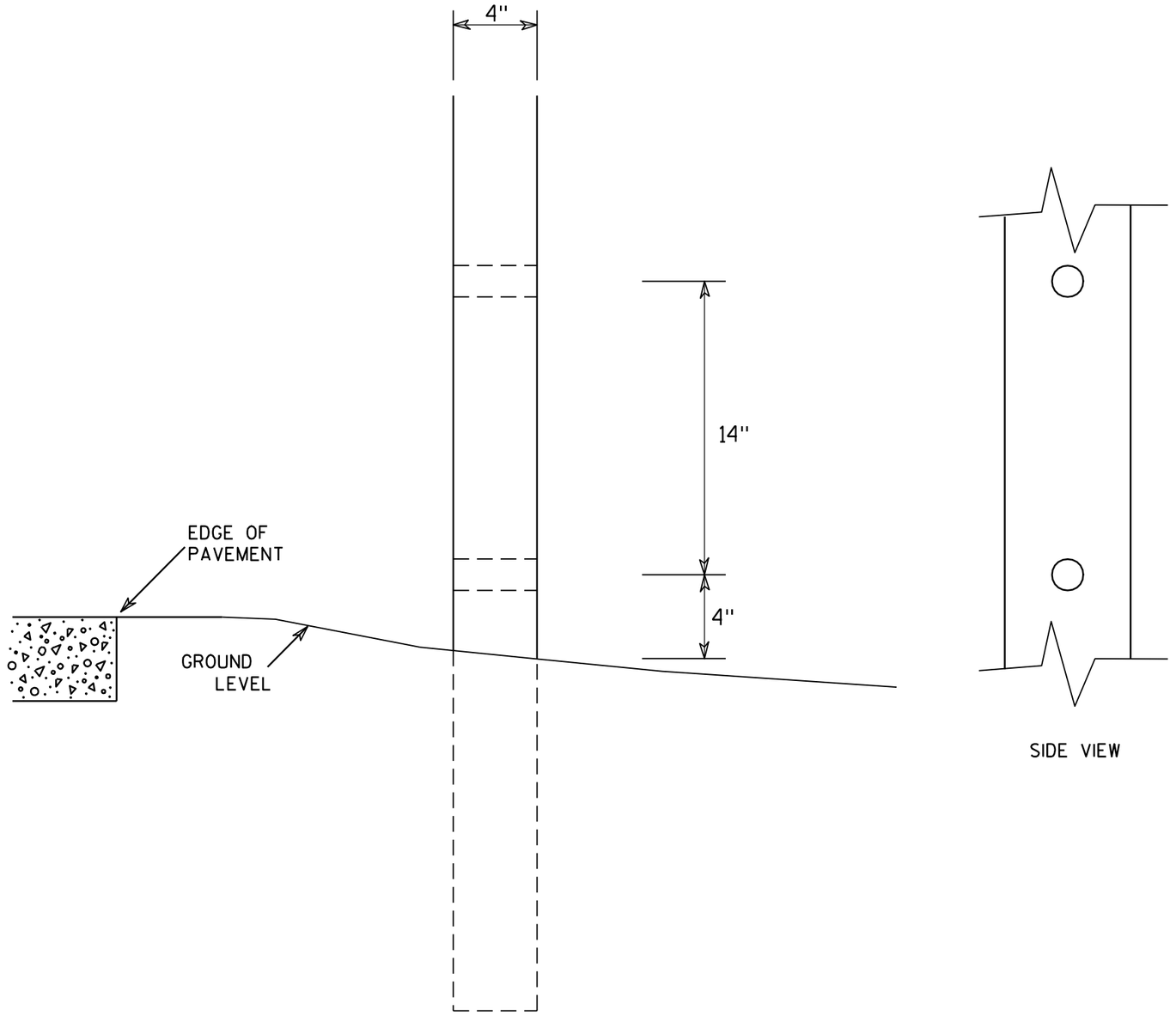
FHWA

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

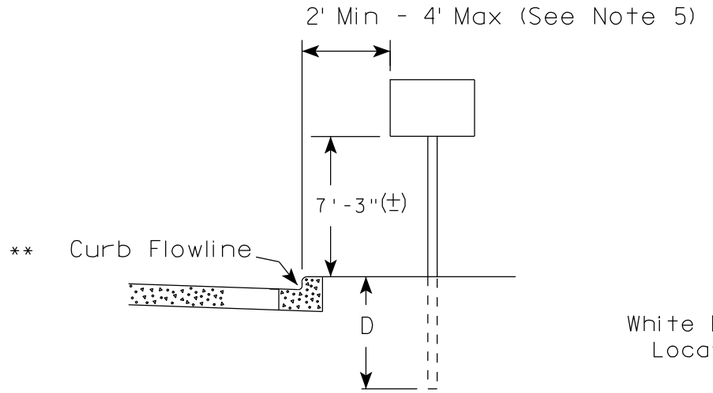
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

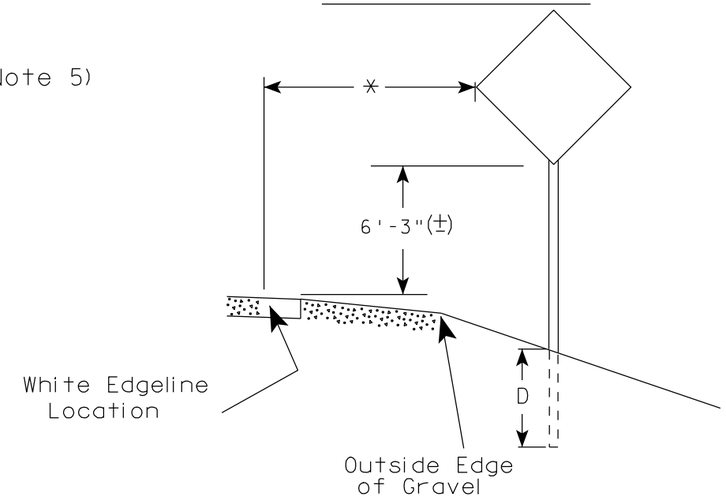
DATE 3/27/97 PLATE NO. A4-11.2

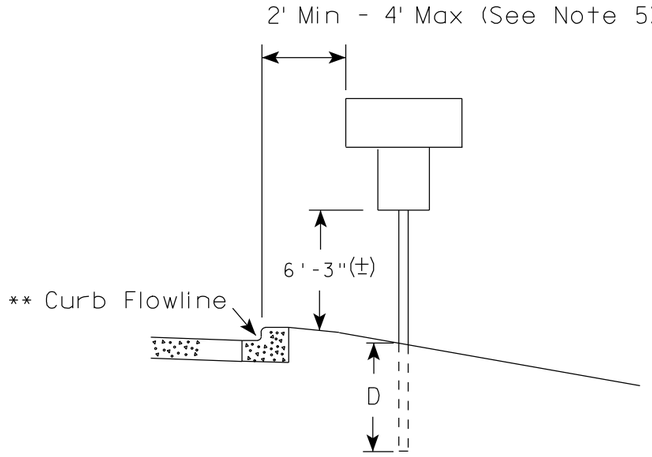
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 41	E

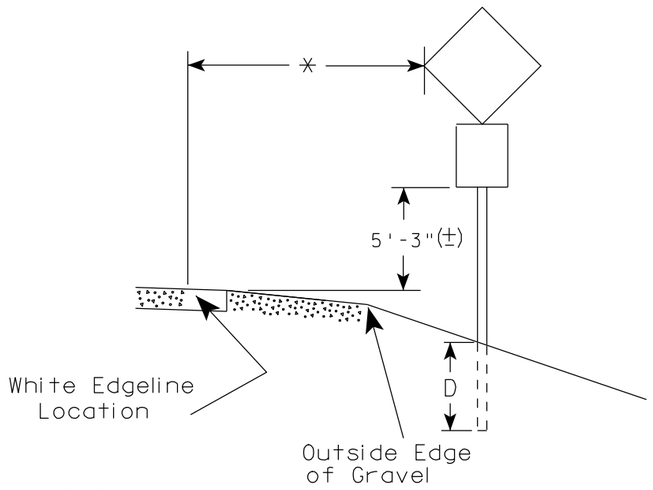
URBAN AREA



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

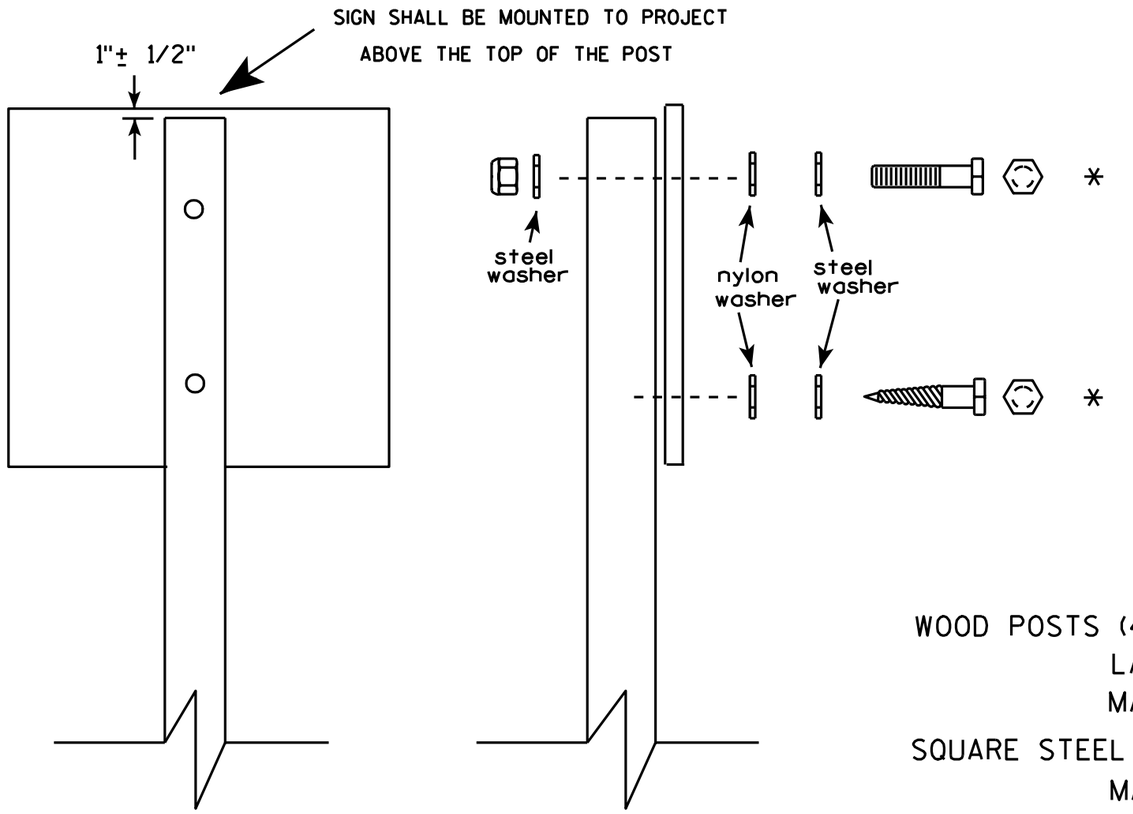
APPROVED Matthew R Rauch for State Traffic Engineer

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

7

7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 42 | 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

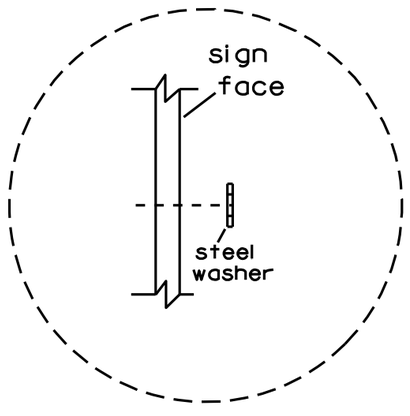
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

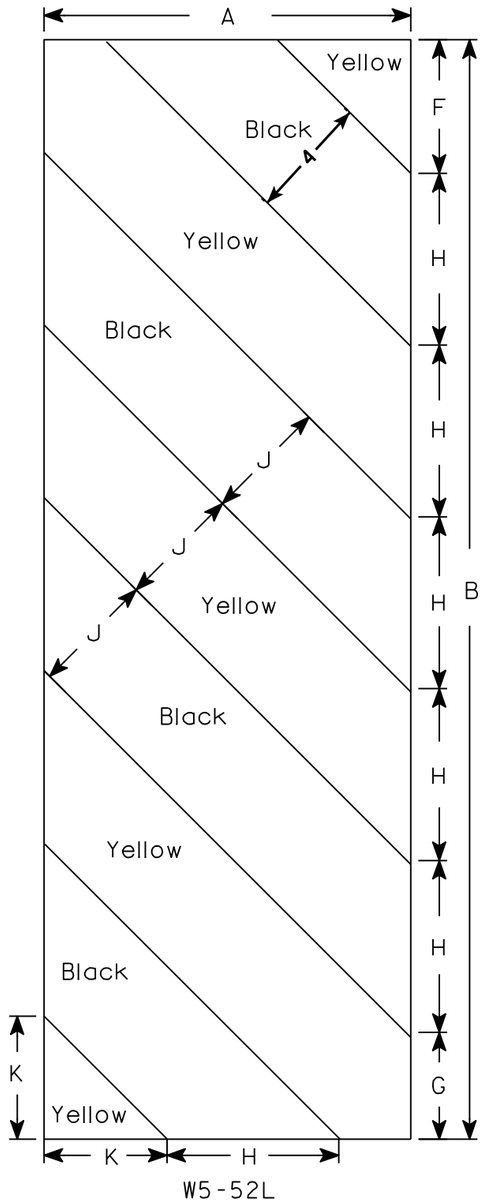
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

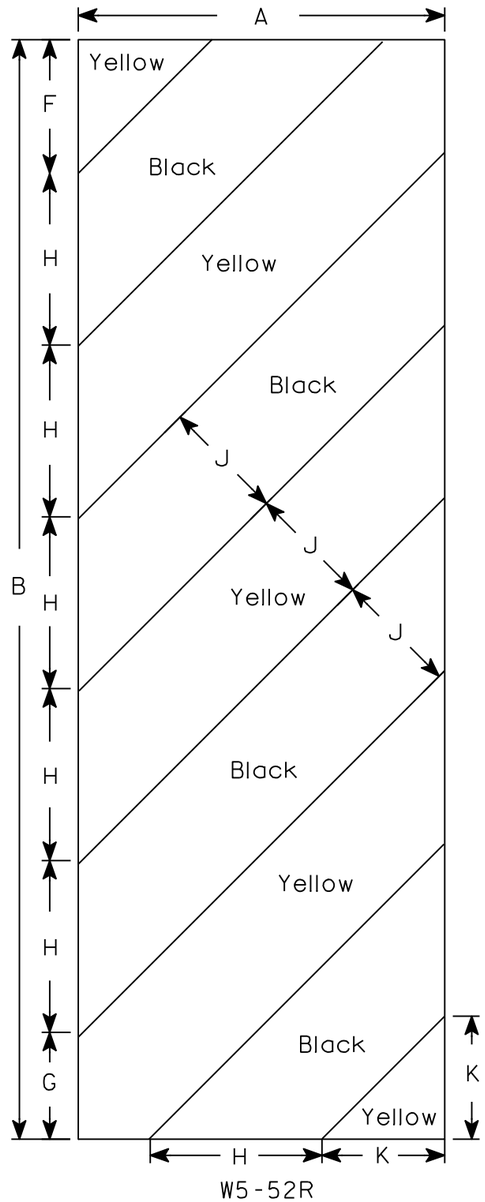
DATE 3/23/10 PLATE NO. A4-8.7

7

7



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

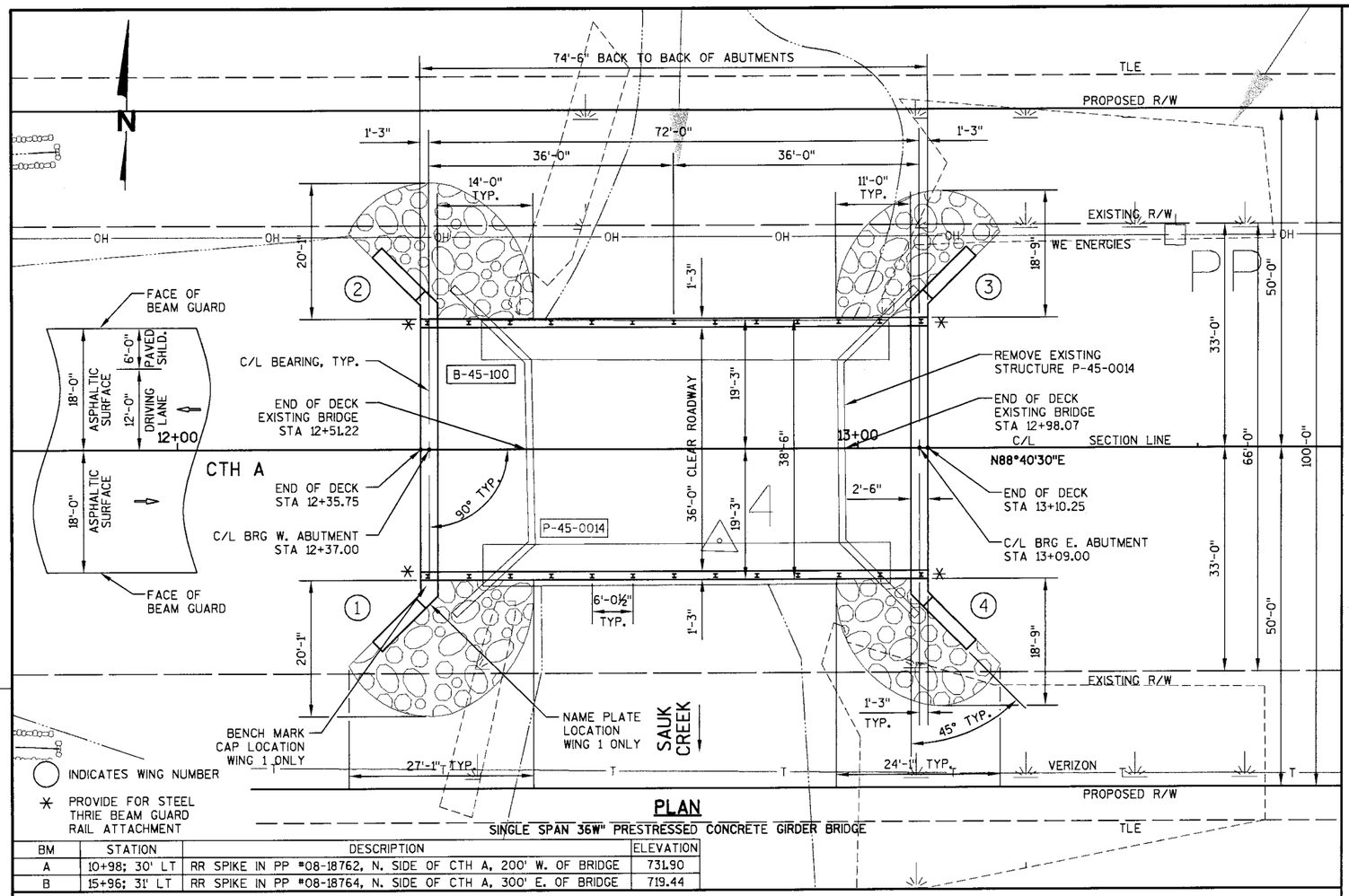
APPROVED Matthew R Rauch
for State Traffic Engineer

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

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

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W552.DGN PLOT DATE : 29-MAY-2012 13:03 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 4.961899:1.000000

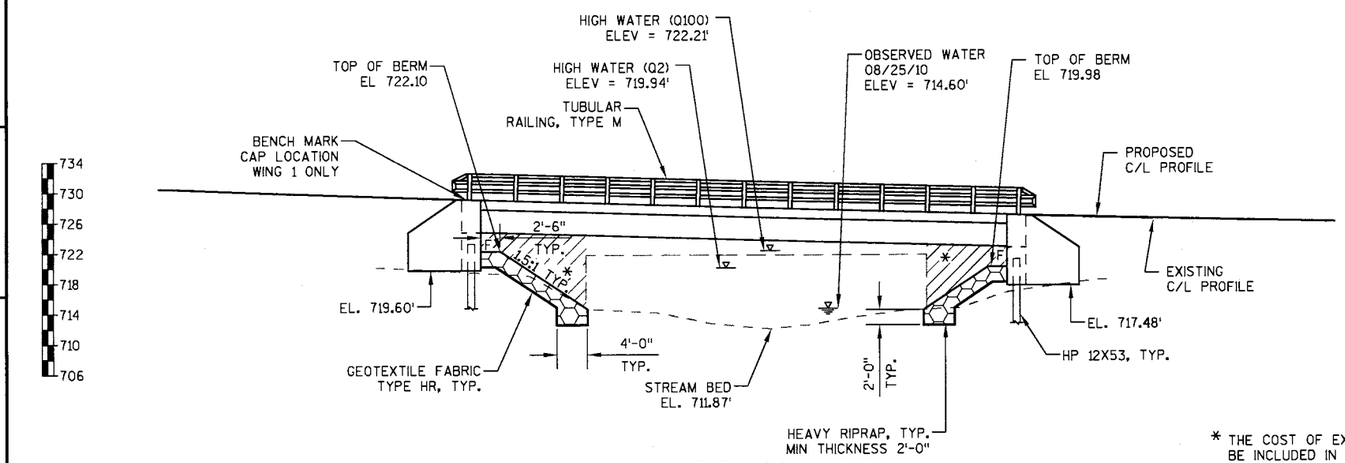
7



PLAN

SINGLE SPAN 36W" PRESTRESSED CONCRETE GIRDER BRIDGE

BM	STATION	DESCRIPTION	ELEVATION
A	10+98; 30' LT	RR SPIKE IN PP #08-18762, N. SIDE OF CTH A, 200' W. OF BRIDGE	731.90
B	15+96; 31' LT	RR SPIKE IN PP #08-18764, N. SIDE OF CTH A, 300' E. OF BRIDGE	719.44



ELEVATION

NORMAL TO SUBSTRUCTURE UNITS

* THE COST OF EXCAVATION SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-45-100"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL DIMENSIONS ARE IN INCHES (IN) EXCEPT AS NOTED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET (FT).

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO NGVD29.

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

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

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

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION: M153, TYPE I,II OR III; OR M213.

THE EXISTING GROUND LINE AT THE ABUTMENTS SHALL BE THE UPPER LIMIT OF EXCAVATION FOR STRUCTURE.

AT THE BACKFACE OF THE ABUTMENTS ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL SLURRY.

THIS STRUCTURE WILL REPLACE A SINGLE SPAN STEEL AND CONCRETE GIRDER BRIDGE (P-45-0014).

ALL REINFORCING BARS ARE ENGLISH AND THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFY THE BAR SIZE.

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED TO THE LIMITS SHOWN IN THE DETAIL ON SHEET 2.

DESIGN DATA

DESIGN LOAD	HL-93
INVENTORY RATING FACTOR	RF 1.35
OPERATING RATING FACTOR	RF 1.78
MAX STD PERMIT VEHICLE (WIS SPV)	250 KIPS

STRUCTURE WILL BE DESIGNED FOR A FUTURE WEARING SURFACE OF 20 LBS PER SQ FT

ULTIMATE DESIGN STRESSES

CONCRETE:	SLAB	f'c = 4,000 psi
	ALL OTHER	f'c = 3,500 psi
	PRESTRESSED	f'c = 8,000 psi
REINFORCING STEEL GRADE 60		fy = 60,000 psi
STRUCTURAL STEEL GRADE 36		fy = 36,000 psi
P.S. STRANDS - 0.6"ϕ WITH ULTIMATE TENSILE STRENGTH OF 270,000 psi		

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 12-INCH X 53 LB STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS */PILE. AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED PILE LENGTH FOR WEST ABUTMENT IS 30 FT. ESTIMATED PILE LENGTH FOR EAST ABUTMENT IS 35 FT.

HYDRAULIC DATA

FOR PROPOSED CONDITION

Q100	= 2,000 cfs
VELOCITY-THRU BRIDGE	= 4.9 FT/s
HIGH WATER (Q100)	= 722.21 FT
REGULATORY HW_{100}	= 723.51 FT
Q2	= 520 cfs
HIGH WATER (Q2)	= 719.94 FT
WATERWAY AREA-THRU BRIDGE	= 412 ft^2
DRAINAGE AREA	= 20.8 mi^2
CRITICAL SCOUR CODE	= 8
ROADWAY OVERTOPPING	= N/A

TRAFFIC DATA

(CTH A)

ADT (2013)	530	vpd
ADT (2033)	545	vpd
V	45	MPH

STATE PROJECT NUMBER

4881-00-72

WISCONSIN
RYAN T. ARNDT
E-41765
FOND DU LAC, WI
PROFESSIONAL ENGINEER
11-28-12

LIST OF DRAWINGS

* 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.

BRIDGE OFFICE CONTACT:
BILL DREHER 608-266-8489

CONSULTANT CONTACT:
THOMAS LANSER 920-924-5720

NO.	DATE	REVISION	BY

GREMMER & ASSOCIATES, INC.
CONSULTING ENGINEERS
Stevens Point • Fond du Lac

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher KAR 12/06/12
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-45-100

CTH A BRIDGE OVER SAUK CREEK

COUNTY	TOWN/~~CITY/VILLAGE~~
OZAUKEE	BELGIUM

DESIGN SPEC
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

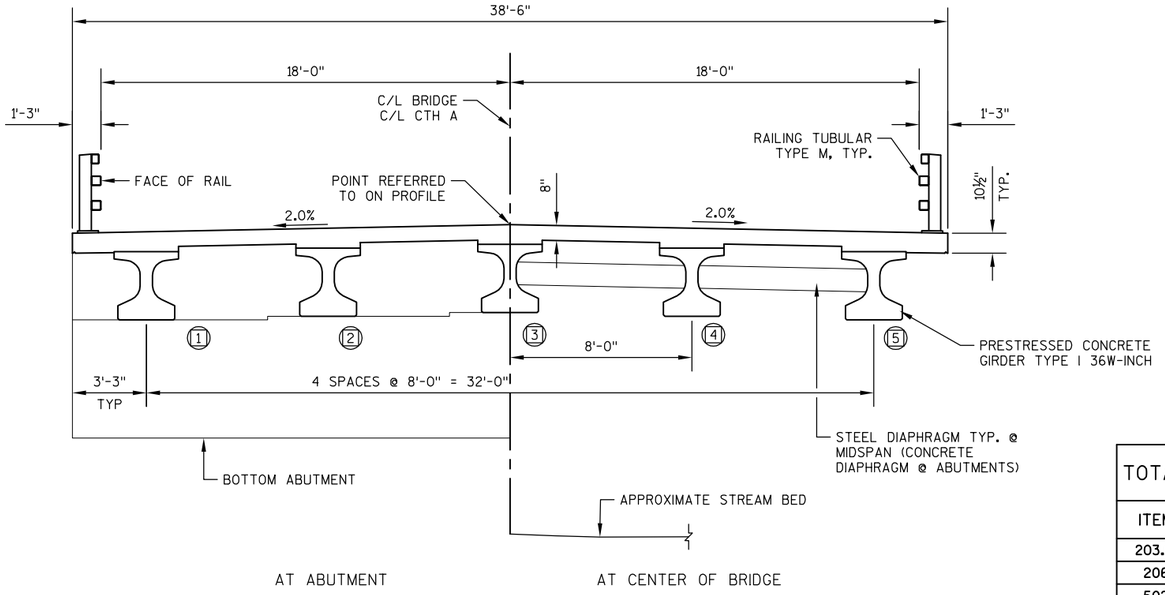
DESIGNED BY	DESIGN CK'D	DRAWN BY	PLANS CK'D
RTA	CPM	AJS	ALK

GENERAL PLAN

SHEET 1 OF 12

FILE NAME : 48810072_080101_BR PLOT DATE : 28 NOV 2012 14:27:45 PLOT BY : GAAJS PLOT NAME : PLOT SCALE : 1:1

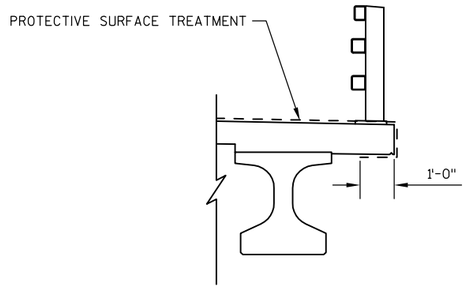
STATE PROJECT NUMBER
4881-00-72



INDICATES GIRDER NUMBER

CROSS-SECTION THROUGH STRUCTURE

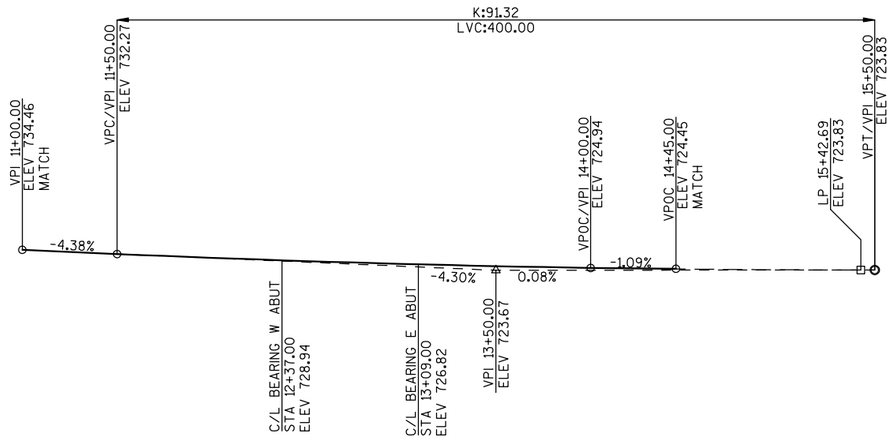
LOOKING EAST



PROTECTIVE SURFACE TREATMENT DETAIL

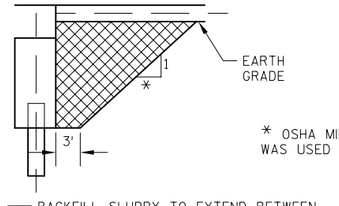
TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	W ABUT	E ABUT	SUPER	TOTAL
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA 12+75	LS	---	---	---	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-45-100	LS	---	---	---	1
502.0100	CONCRETE MASONRY BRIDGES	CY	36	35	100	171
502.3200	PROTECTIVE SURFACE TREATMENT	SY	---	---	348	348
503.0137	PRESTRESSED CONCRETE GIRDER TYPE I 36W-INCH	LF	---	---	365	365
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2543	2543	---	5,086
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1634	1629	18650	21,913
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	5	5	---	10
506.4000	STEEL DIAPHRAGMS B-45-100	EACH	---	---	4	4
513.4060	RAILING TUBULAR TYPE M B-45-100	LS	---	---	---	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	8	8	---	16
550.0500	PILE POINTS	EACH	8	8	---	16
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	240	280	---	520
606.0300	RIPRAP HEAVY	CY	126	107	---	233
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	20	20	---	40
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	63	62	---	125
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	208	180	---	388
SPV.0035.01	BACKFILL SLURRY	CY	157	156	---	313
	NON-BID ITEMS					
-----	JOINT FILLER	SIZE				1/2" & 3/4"



FINISHED REFERENCE LINE PROFILE

CTH A



* OSHA MINIMUM REQUIREMENT, A 1.5:1 SLOPE WAS USED FOR QUANTITY CALCULATION

BACKFILL SLURRY TO EXTEND BETWEEN WINGWALLS AT BACKFACE OF ABUTMENTS

BACKFILL SLURRY DETAIL

(TYPICAL AT BOTH ABUTMENTS)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-100

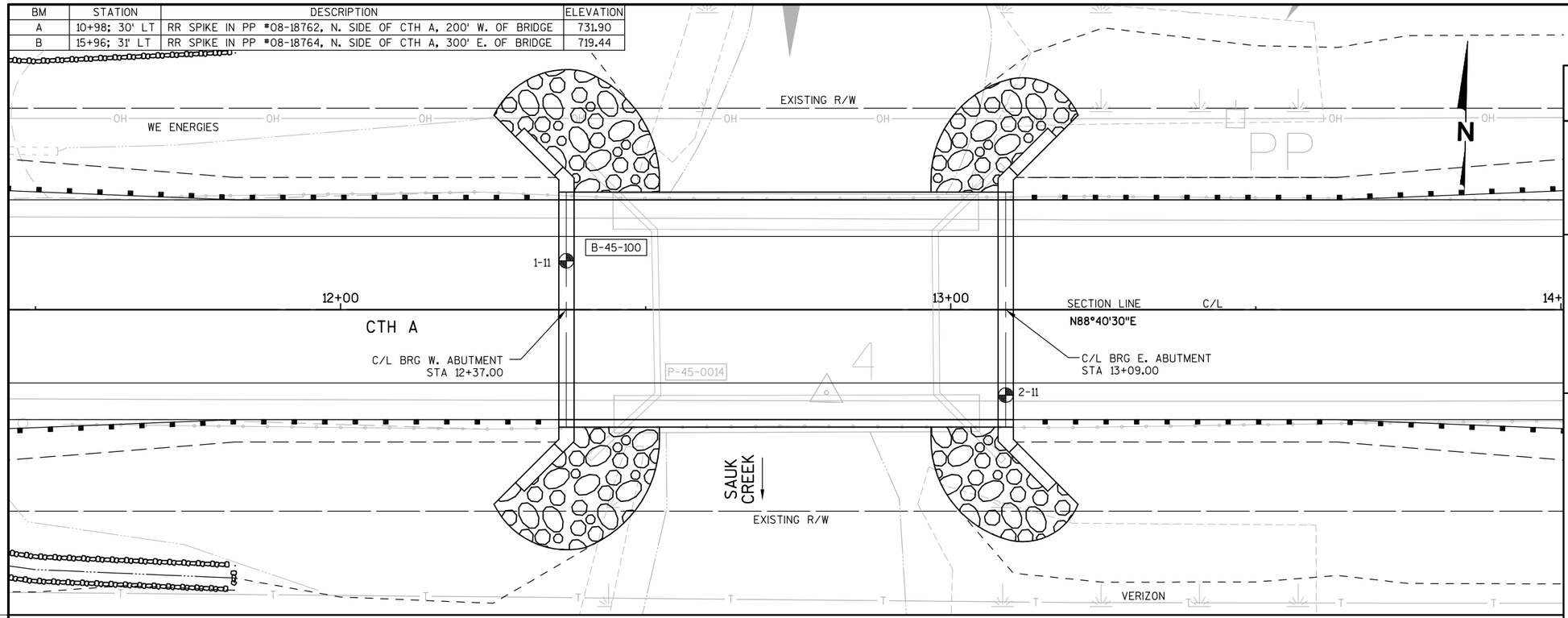
DRAWN BY AJS | PLANS CK'D ALK

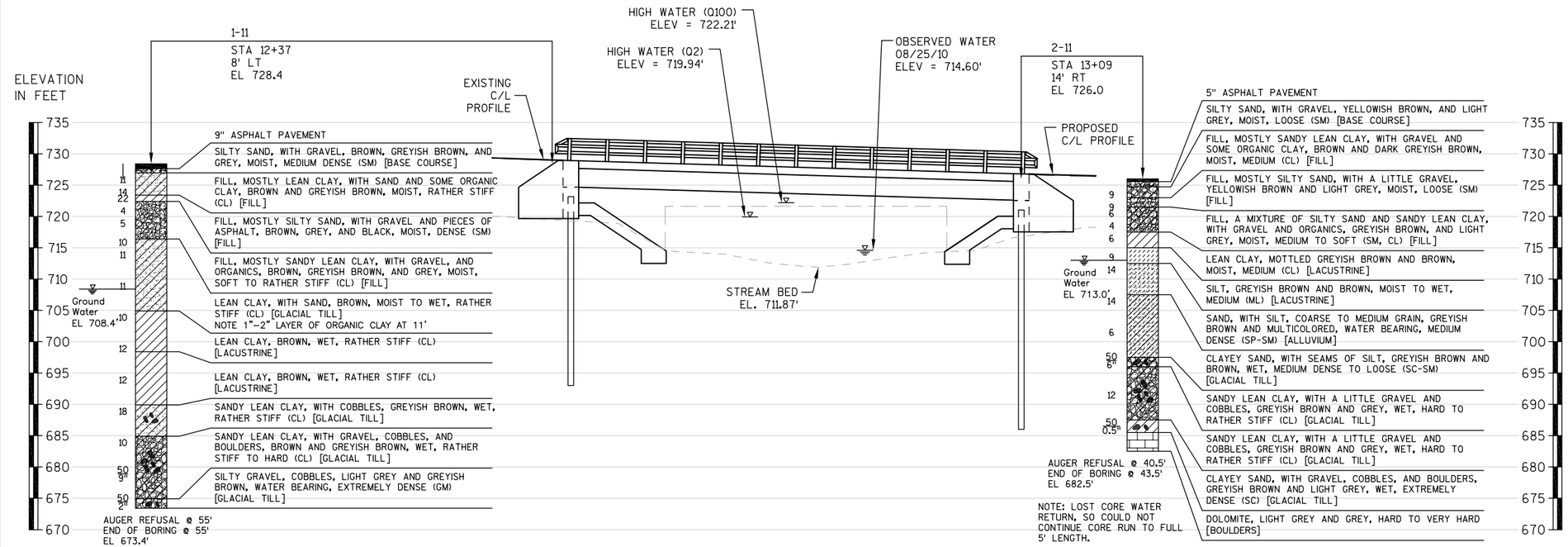
QUANTITIES AND CROSS SECTIONS

SHEET 2

FILE NAME : 48810072_080102_BR PLOT DATE : 28 NOV 2012 12:29:23 PLOT BY : GAAJS PLOT NAME : PLOT SCALE : 1:1

BM	STATION	DESCRIPTION	ELEVATION
A	10+98; 30' LT	RR SPIKE IN PP #08-18762, N. SIDE OF CTH A, 200' W. OF BRIDGE	731.90
B	15+96; 31' LT	RR SPIKE IN PP #08-18764, N. SIDE OF CTH A, 300' E. OF BRIDGE	719.44





STATE PROJECT NUMBER

4881-00-72

ABBREVIATIONS

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

MATERIAL SYMBOLS

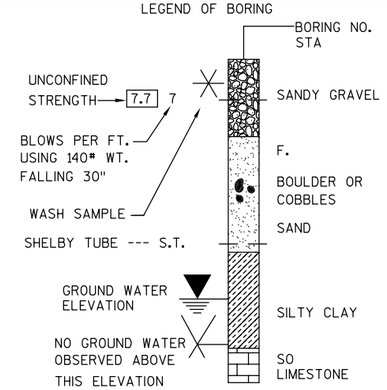
TOPSOIL, SILT, SANDSTONE, SAND, PEAT, LIMESTONE, GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING

95/6=95 BLOWS FOR 6" PENETRATION PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

PROBING NO.
STA.
ELEVATION
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

LEGEND OF BORING



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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-100

DRAWN BY AJS | PLANS CK'D ALK

SUBSURFACE EXPLORATION

SHEET 3

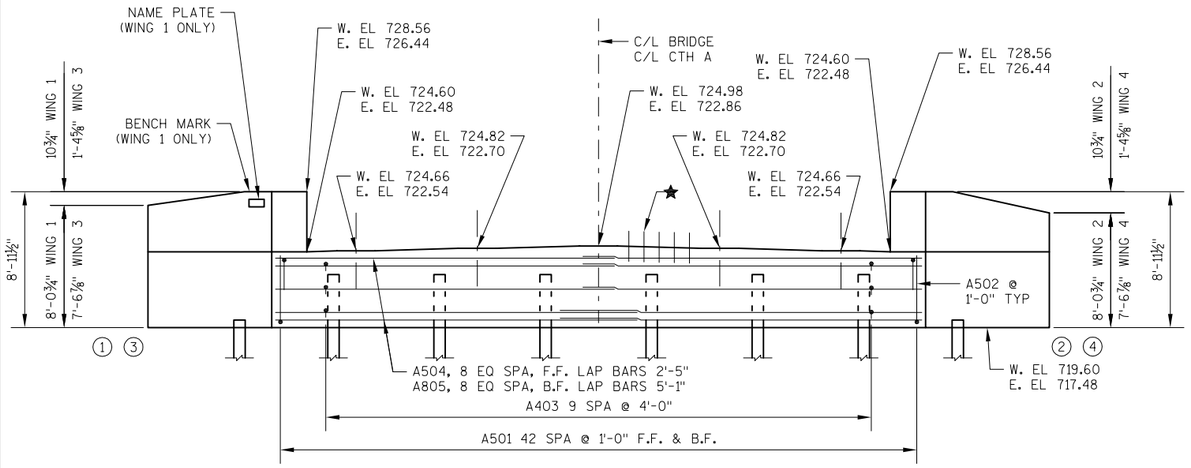
47

8

8

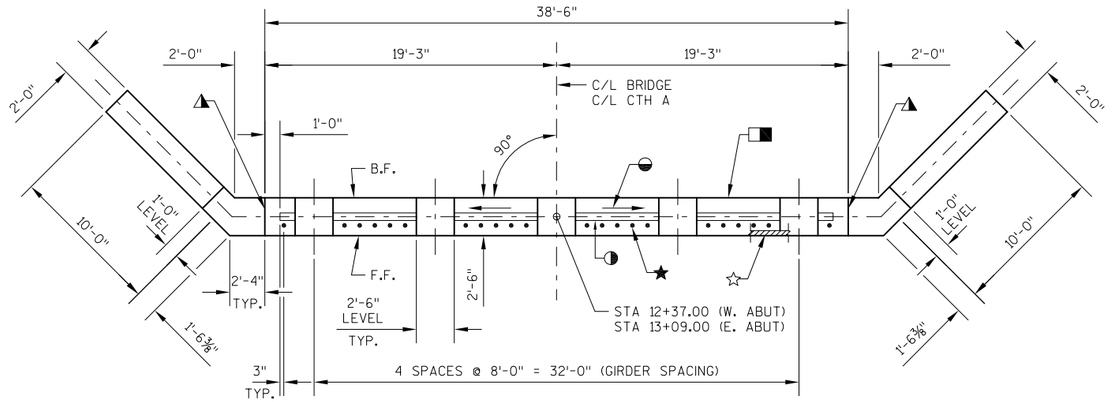
STATE PROJECT NUMBER

4881-00-72

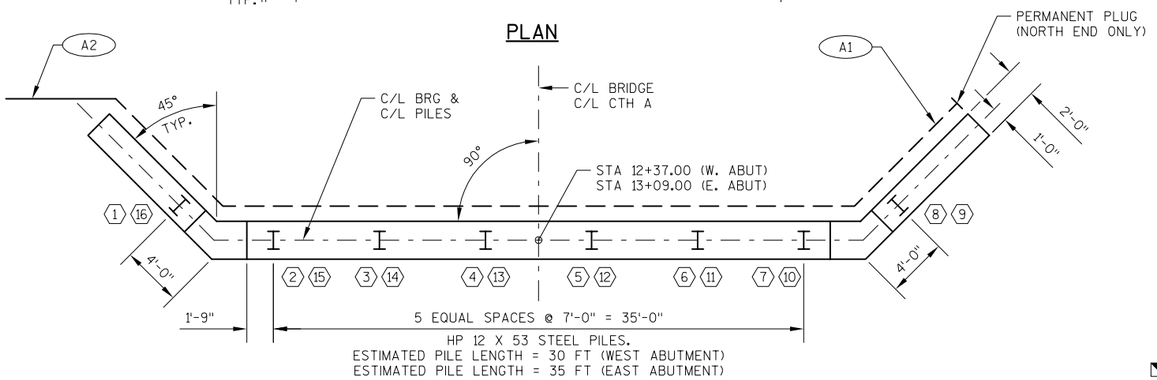


ELEVATION

(LOOKING WEST FOR WEST ABUTMENT)
(LOOKING EAST FOR EAST ABUTMENT)



PLAN

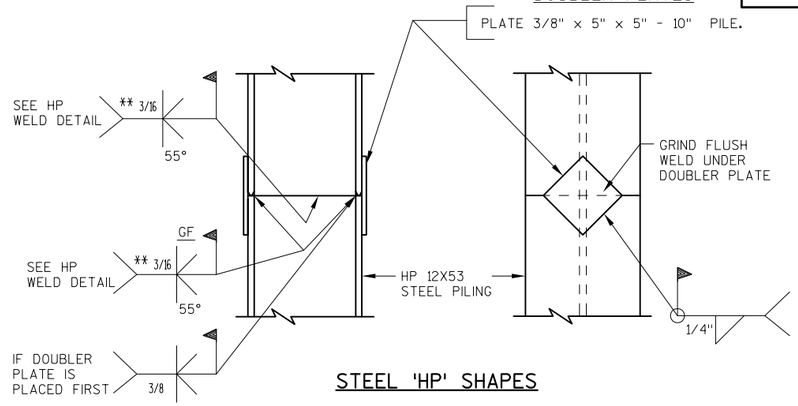


PILE PLAN

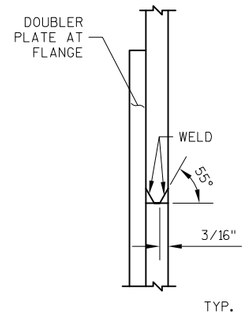
A1 PIPE UNDERDRAIN WRAPPED, 6 INCH, SLOPED 0.5% MIN. TO SUITABLE DRAINAGE. PERMANENT PLUG ON UPSTREAM END TO BE INCLUDED IN BID PRICE FOR "PIPE UNDERDRAIN WRAPPED 6-INCH".

A2 PIPE UNDERDRAIN UNPERFORATED, 6 INCH. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT OUTLET END AS DETAILED ON ABUTMENT DETAIL SHEET. RODENT SHIELD TO BE INCLUDED IN BID PRICE FOR "PIPE UNDERDRAIN UNPERFORATED 6-INCH"

DOUBLER PLATES

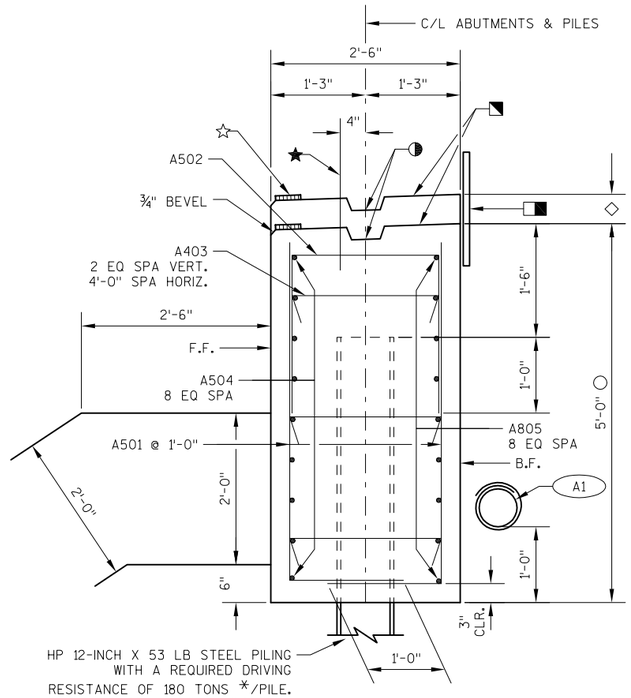


STEEL 'HP' SHAPES



HP WELD DETAIL

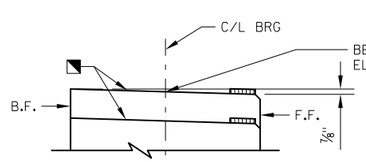
FLANGE SHOWN, WEB SIMILAR



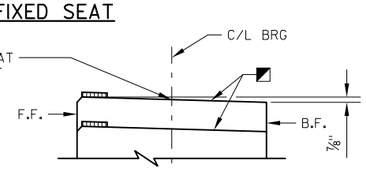
TYPE A5 WITH FIXED SEAT

LEGEND

- (1) INDICATES WING NUMBER
- ⟨1⟩ INDICATES PILE NUMBER
- F.F. FRONT FACE
- B.F. BACK FACE
- RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND CONTINUOUS BETWEEN CORNERS AND FROM SEAT TO TOP OF WINGS, TO BE PLACED FLUSH WITH SURFACE OF CONCRETE.
- ½" PREFORMED FILLER TO EXTEND FROM TOP OF ABUTMENT BODY TO TOP OF WINGS, SEAL ALL EXPOSED SURFACES OF FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONC.).
- CONSTRUCTION JOINT KEYWAY FORMED WITH A SURFACED BEVELED 2"X6".
- ★ A518 BARS COATED AT 1'-0" (2'-0" LONG). THESE BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.
- ☆ 4" X ¾" CORK FILLER.
- ○ DIMENSION IS FROM BOTTOM OF ABUTMENT TO LOW BEAM SEAT OR LOW SIDE OF SLAB TYPE SUPERSTRUCTURE.
- ◇ VARIES 0" - 4⅝"
- SLOPE TOP OF ABUTMENTS BETWEEN THE LEVEL BEAM SEATS.
- SLOPE BEAM SEATS 7⁄8" FOR WEST ABUTMENT, ⅞" FOR EAST ABUTMENT. (SEE DETAILS)



SLOPED BEAM SEAT (WEST ABUTMENT)



SLOPED BEAM SEAT (EAST ABUTMENT)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

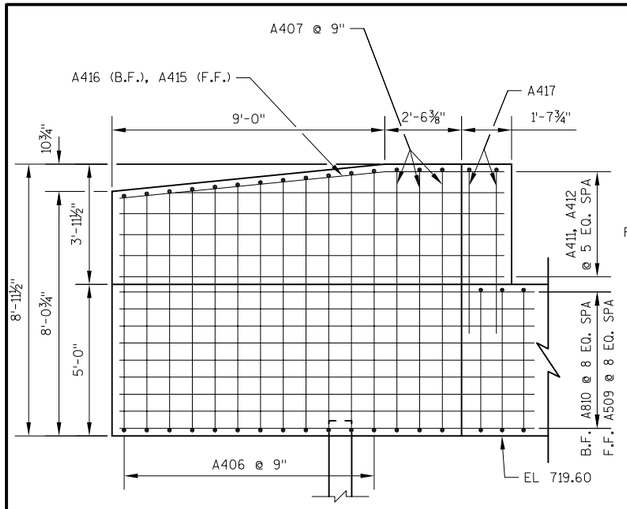
STRUCTURE B-45-100

DRAWN BY AJS | PLANS CK'D ALK

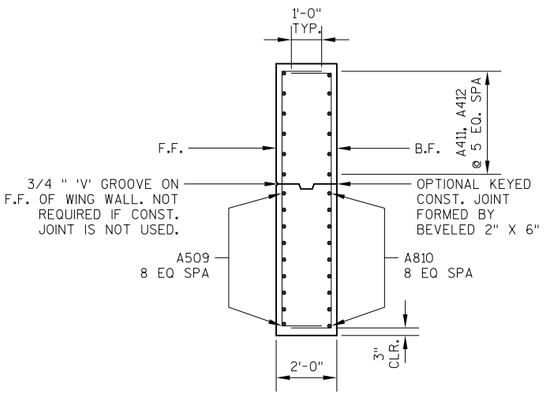
ABUTMENTS

SHEET 4

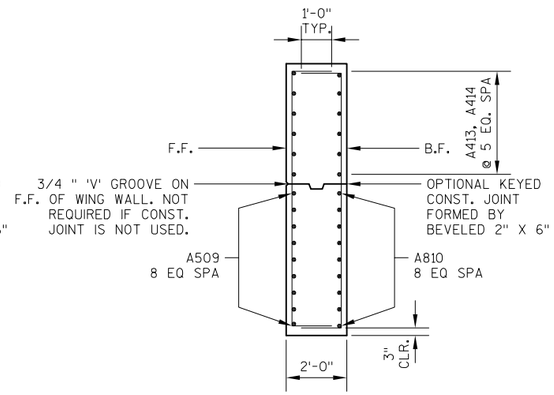
FILE NAME : 48810072_080104_BR PLOT DATE : 28 NOV 2012 12:30:44 PLOT BY : GAAJS PLOT NAME : PLOT SCALE : 1:1



WINGS 1 & 2 ELEVATION



WINGS 1 & 2 SECTION



WINGS 3 & 4 SECTION

LEGEND

F.F. FRONT FACE

B.F. BACK FACE

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

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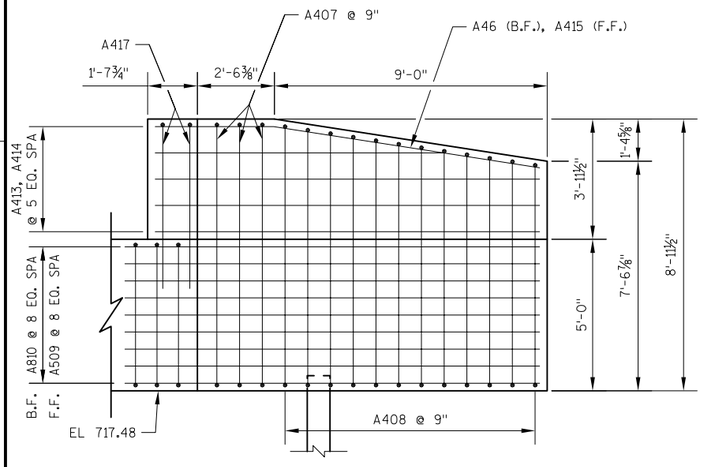
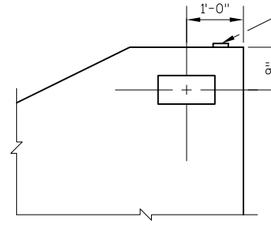
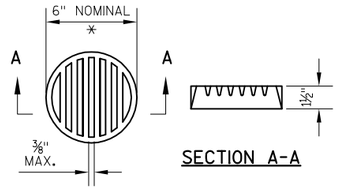


WINGS 3 & 4 ELEVATION



NAME PLATE DETAIL
(WING 1 ONLY)



SECTION A-A

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

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN UNPERFORATED".

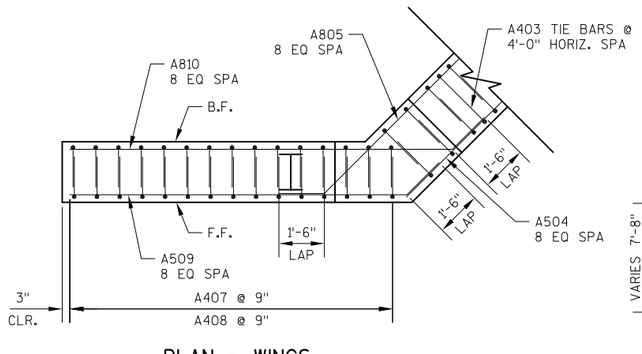
THE RODENT SHIELD SHALL BE PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH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

RODENT SHIELD DETAIL

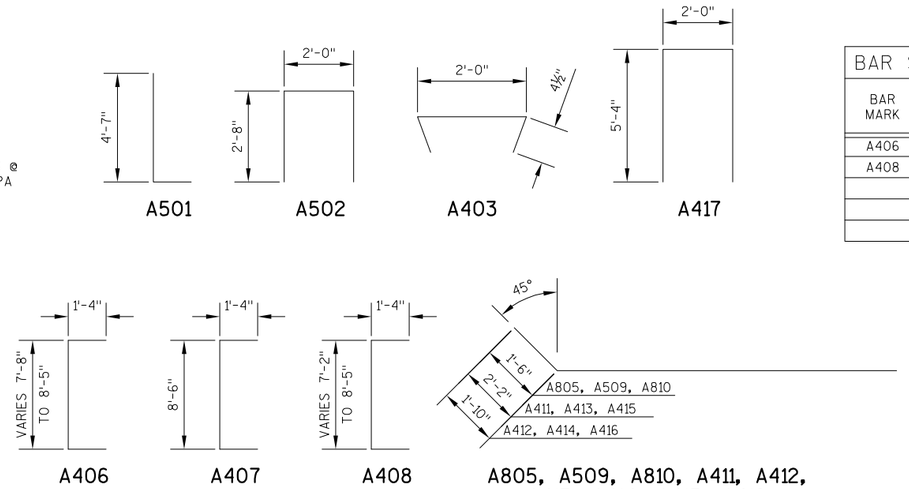
BILL OF BARS - BOTH ABUTMENTS

	BAR MARK	COAT	NO. REQUIRED	LENGTH	BENT	BENT	LOCATION
	A501		172	6'-0"	X		BODY - VERTICAL
	A502		86	7'-1"	X		BODY - TOP - VERTICAL
	A403		60	2'-7"	X		BODY - TIES
	A504		36	22'-8"			BODY - HORIZONTAL - F.F.
	A805		36	25'-2"	X		BODY - HORIZONTAL - B.F.
△	A406	X	48	10'-6"	X	X	WINGS 1 & 2 - VERTICAL
	A407	X	24	11'-0"	X		WINGS - VERTICAL AT BODY
△	A408	X	48	10'-4"	X	X	WINGS 3 & 4 - VERTICAL
	A509	X	36	12'-7"	X		LOWER WINGS - HORIZONTAL - F.F.
	A810	X	36	14'-5"	X		LOWER WINGS - HORIZONTAL - B.F.
	A411	X	16	13'-6"	X		UPPER WINGS - HORIZONTAL - F.F.
	A412	X	16	11'-8"	X		UPPER WINGS - HORIZONTAL - B.F.
	A413	X	4	13'-0"	X		UPPER WINGS - HORIZONTAL - F.F.
	A414	X	4	11'-2"	X		UPPER WINGS - HORIZONTAL - B.F.
*	A415	X	4	13'-7"	X		UPPER WINGS - HORIZONTAL - TOP - F.F.
*	A416	X	4	11'-9"	X		UPPER WINGS - HORIZONTAL - TOP - B.F.
	A417	X	8	12'-6"	X		UPPER WINGS - VERTICAL - OVER ABUT BODY
	A518	X	44	2'-0"			DOWELS

* AN ADDITIONAL FIELD BEND WILL BE REQUIRED TO FIT THESE BARS IN THE WINGS, OVER THE ABUTMENT BODY



PLAN - WINGS



A501 A502 A403 A417

A406 A407 A408 A805, A509, A810, A411, A412, A413, A414, A415, A416

BAR SERIES - ABUTMENTS

BAR MARK	NO. REQUIRED	LENGTH
A406	4 SERIES OF 12	10'-2" TO 10'-11"
A408	4 SERIES OF 12	9'-8" TO 10'-11"

NOTES:

1. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.
2. FILL/EXCAVATE TO BOTTOM OF FOOTING ELEVATION BEFORE DRIVING PILING.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-100

DRAWN BY AJS | PLANS CK'D ALK

ABUTMENT DETAILS

SHEET 5

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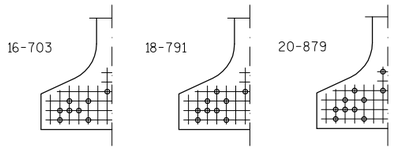
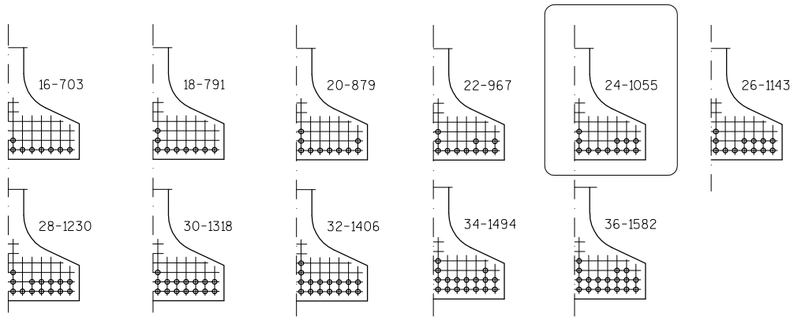


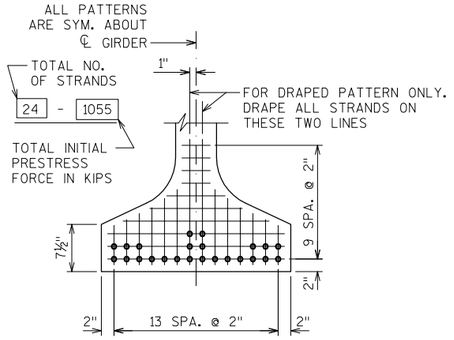
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6"ϕ STRANDS

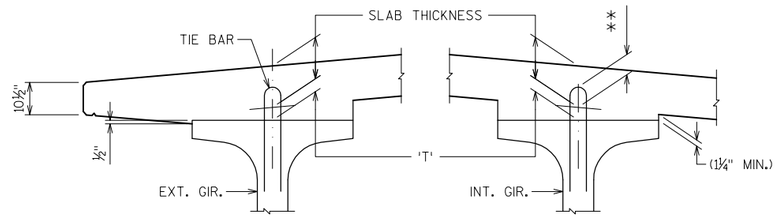


ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6"ϕ STRANDS



TYP. STRAND PATTERN



SLAB HAUNCH DETAIL

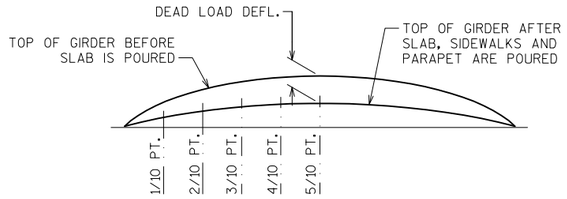
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 3" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM

* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	1⅞"

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-100

DRAWN BY AJS | PLANS CK'D ALK

36W" PRESTRESSED GIRDER DETAILS-1

SHEET 6

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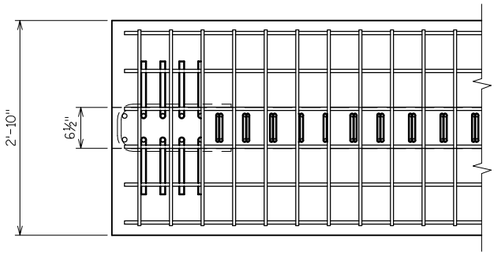
4881-00-72



TOP FLANGE

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO THE SLAB, EXCEPT THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

STRANDS SHALL BE FLUSH WITH THE END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO APPLICATION OF THE SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

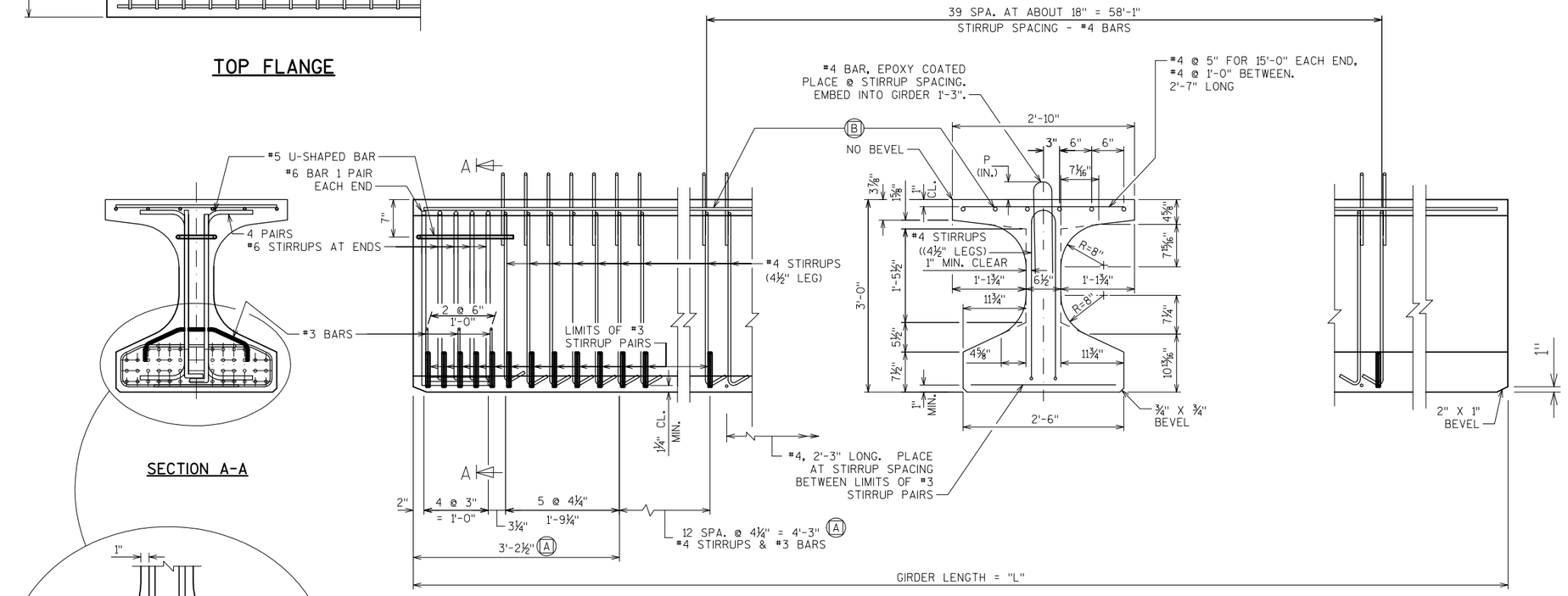
SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, ONE OPTION IS AVAILABLE:

USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.

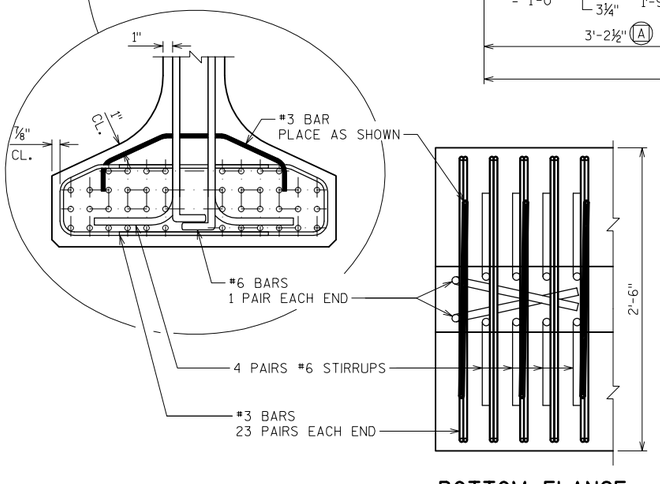
AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT CHIEF, (608)266-5161.

PRESTRESSING STRANDS SHALL BE 0.6" DIA. -7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 psi.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.



SECTION A-A

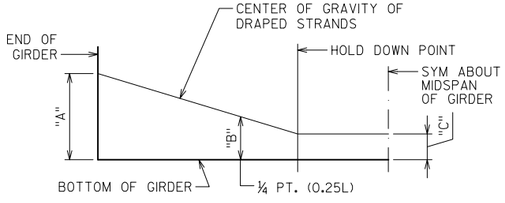


BOTTOM FLANGE

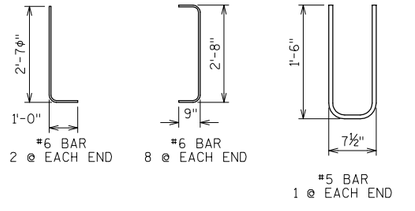
SIDE VIEW & TYP. SECTION IN SPAN

(A) DETAIL TYP. AT EACH END

(B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 2'-4"



DRAPED STRAND PROFILE



⁎ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.)									CONC. STRGTH. F'C (P.S.I.)	"P" 1ST ⅓ OF GIRDER	"P" MID ⅓ OF GIRDER	"P" END ⅓ OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN						UNDRAPED PATTERN	
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10						TOTAL NO. OF STRANDS	F'CI (P.S.I.) ⁎	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	TOTAL NO. OF STRANDS	F'CI (P.S.I.) ⁎
1	1,5	73'-0"	3/8"	½"	7/8"	1"	1⅛"	1"	⅞"	½"	3/8"	8000	7	7	7	0.6	24	6800	32	11	14	4	---	---
1	2-4	73'-0"	3/8"	5/8"	1"	1"	1⅛"	1"	1"	5/8"	3/8"	8000	7	7	7	0.6	24	6800	32	11	14	4	---	---

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

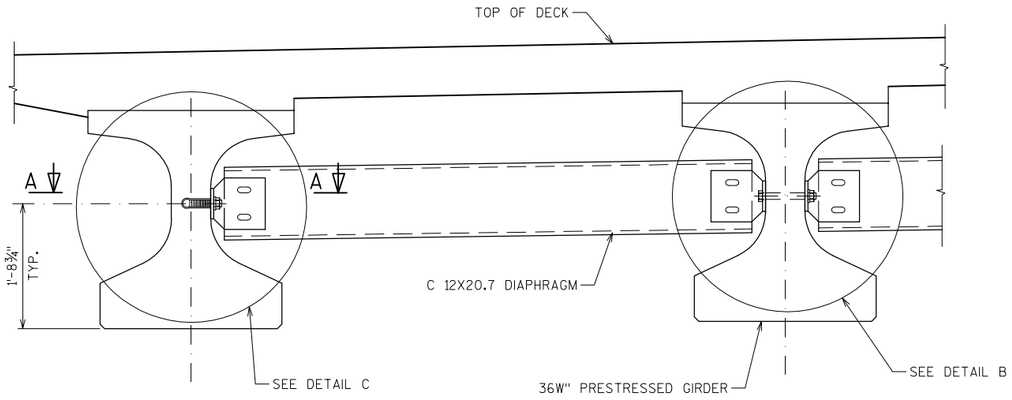
STRUCTURE B-45-100

DRAWN BY AJS | PLANS CK'D ALK

36W" PRESTRESSED GIRDER DETAILS-2

SHEET 7

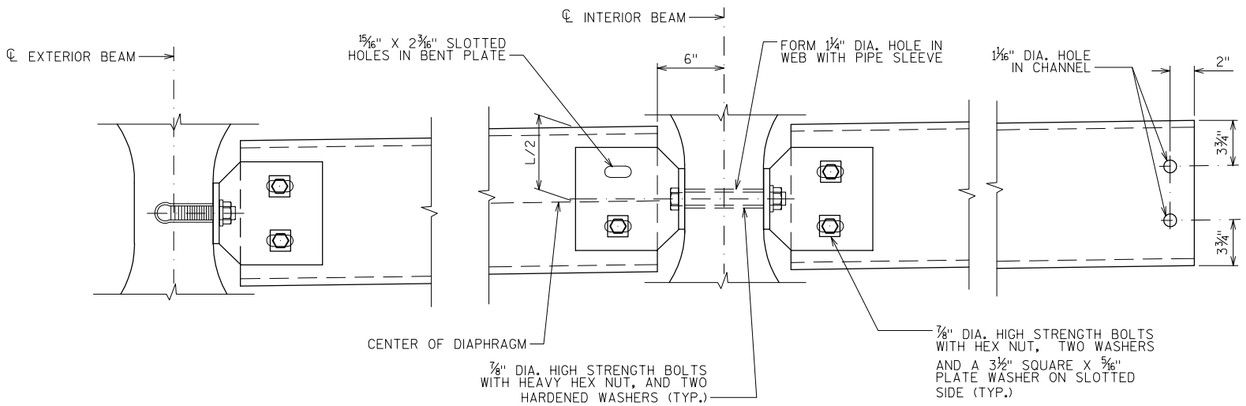
STATE PROJECT NUMBER
4881-00-72



EXTERIOR GIRDER

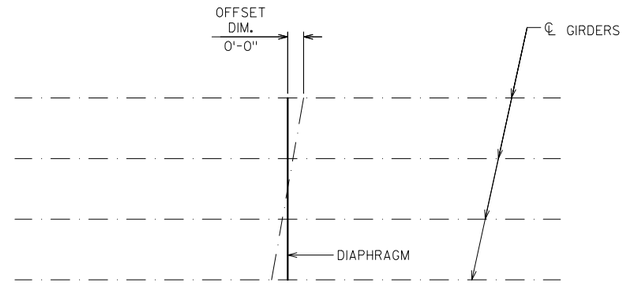
INTERIOR GIRDER

PART TRANSVERSE SECTION AT DIAPHRAGM

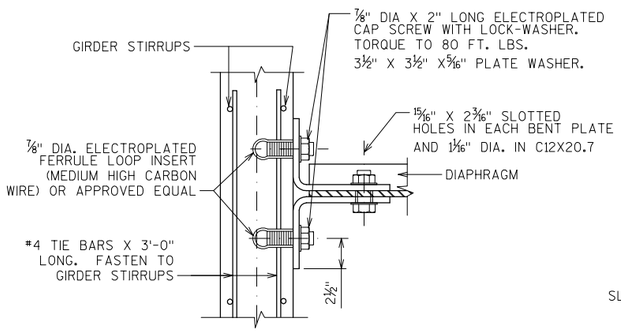


DETAIL C

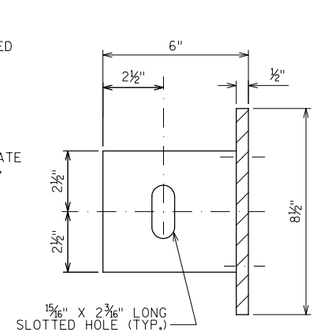
DETAIL B



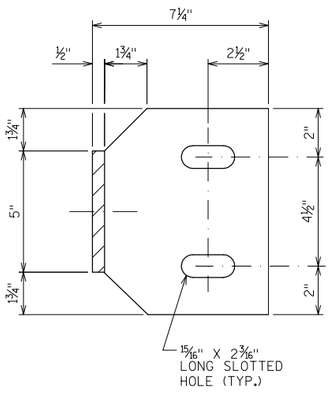
PLAN FOR SKEW ANGLES ≤ 10°



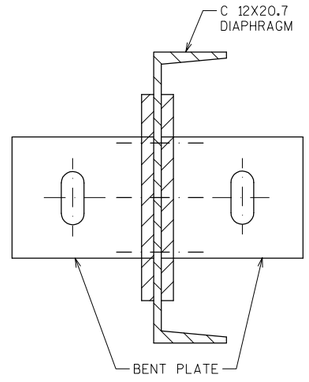
SECTION A-A
(FOR EXTERIOR ATTACHMENT)



BEAM FACE



DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-45-100", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

FOR SPANS EQUAL TO OR LESS THAN 80'-0", PLACE ONE DIAPHRAGM AT MID-LENGTH OF GIRDER. FOR SPANS OVER 80'-0", PLACE AT ⅓ AND ⅔ POINTS.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-100

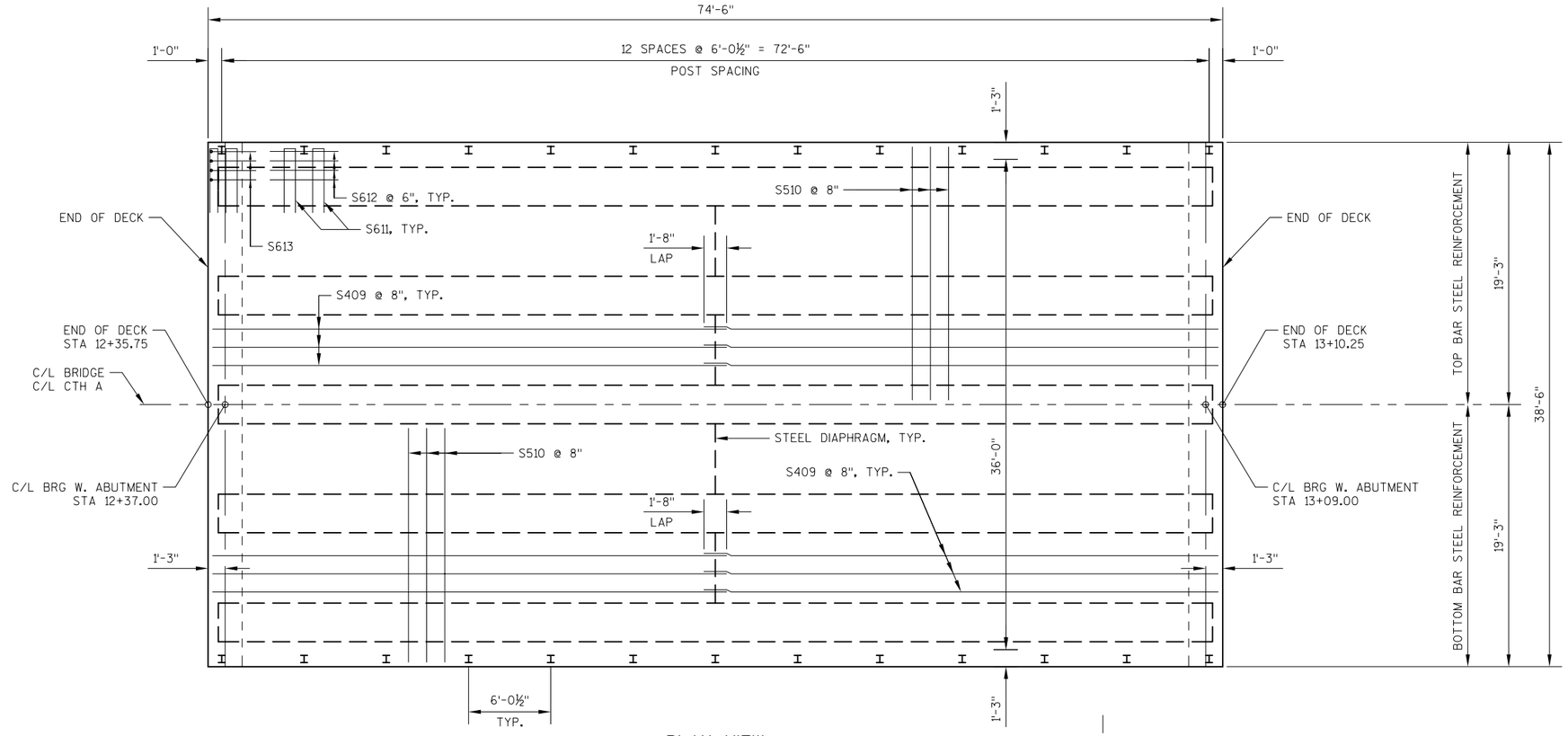
DRAWN BY	AJS	PLANS CK'D	ALK

STEEL DIAPHRAGM

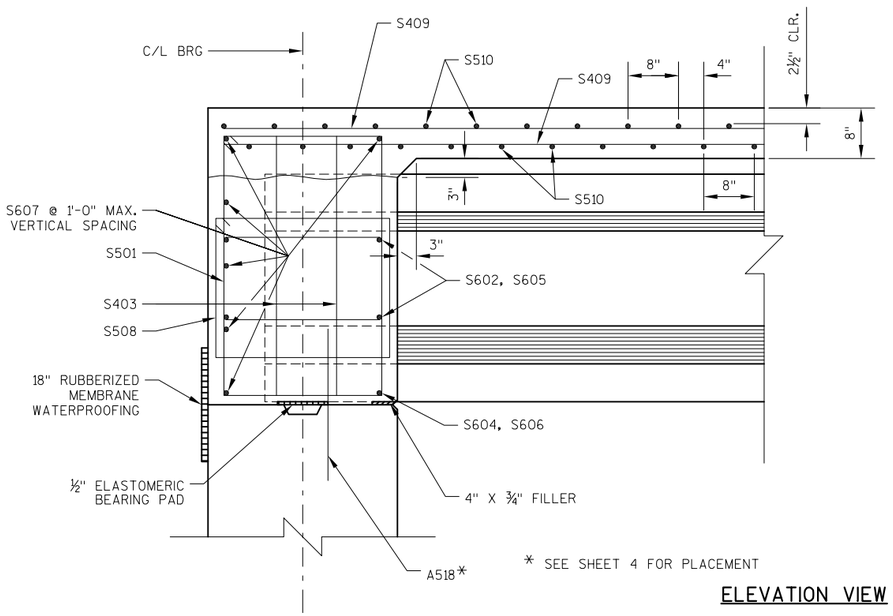
SHEET 8

FILE NAME : 48810072_080108_BR
PLOT DATE : 28 NOV 2012 12:39:44
PLOT BY : GAAJS
PLOT NAME :
PLOT SCALE : 1:1

STATE PROJECT NUMBER
4881-00-72

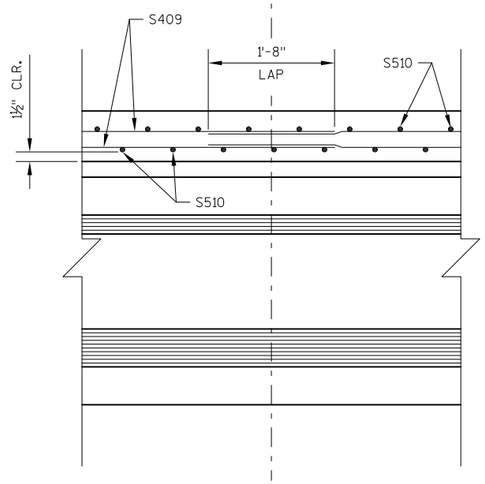


PLAN VIEW



* SEE SHEET 4 FOR PLACEMENT

ELEVATION VIEW



NOTES

SEE SUPERSTRUCTURE DETAILS-1
FOR BILL OF BARS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-100

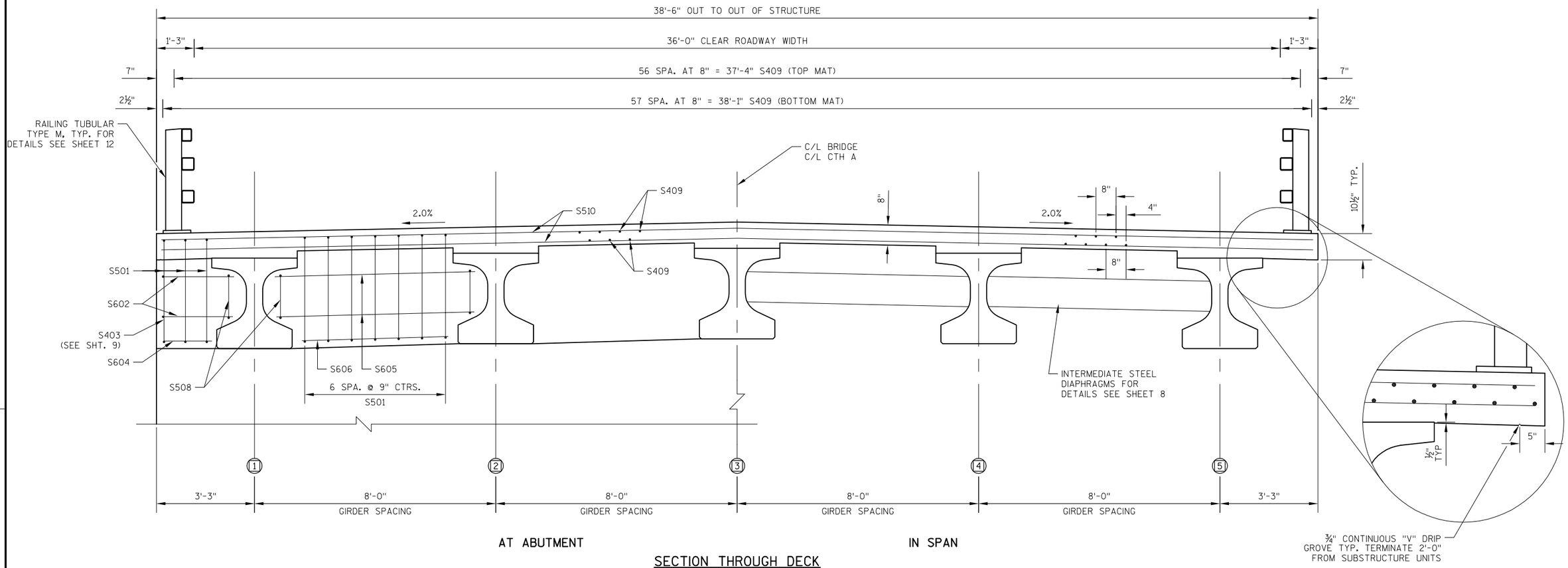
DRAWN BY	AJS	PLANS CK'D	ALK

SUPERSTRUCTURE

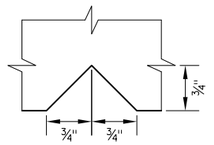
SHEET 9

FILE NAME : 48810072_080109_BR
PLOT DATE : 28 NOV 2012 12:36:02
PLOT BY : GAAJS
PLOT NAME :
PLOT SCALE : 1:1

STATE PROJECT NUMBER
4881-00-72



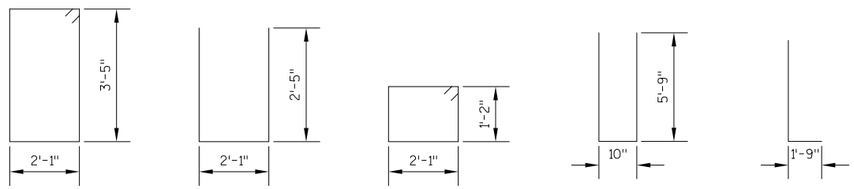
SECTION THROUGH DECK



DRIP GROOVE DETAIL

BILL OF BARS - SUPERSTRUCTURE

BAR MARK	COAT	NO. REQUIRED	LENGTH	BENT	BAR SERIES	LOCATION
S501	X	68	11'-6"	X		DIAPHRAGM AT ABUTMENTS - VERTICAL
S602	X	8	6'-8"	X		DIAPHRAGM AT ABUTMENT CORNERS - HORIZONTAL
S403	X	8	3'-5"			DIAPHRAGM AT ABUTMENT ENDS - VERTICAL
S604	X	4	1'-8"			DIAPHRAGM AT ABUTMENT ENDS - HORIZONTAL - F.F.
S605	X	16	7'-2"			DIAPHRAGM AT ABUTMENT BETWEEN GIRDERS - HORIZONTAL - F.F.
S606	X	8	5'-2"			DIAPHRAGM AT ABUTMENT BETWEEN GIRDERS - HORIZONTAL - F.F.
S607	X	12	38'-2"			DIAPHRAGM AT ABUTMENTS HORIZONTAL - B.F. & TOP
S508	X	20	7'-0"	X		DIAPHRAGM BETWEEN GIRDER WEBS - VERTICAL
S409	X	230	37'-11"			DECK - LONGITUDINAL - TOP & BOTTOM
S510	X	225	38'-2"			DECK - TRANSVERSE - TOP & BOTTOM
S611	X	52	12'-0"	X		RAIL POST - TRANSVERSE - 2 PER POST
S612	X	88	6'-0"			RAIL POST - LONGITUDINAL
S613	X	16	6'-0"	X		CORNER POST - LONGITUDINAL



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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-100

DRAWN BY AJS | PLANS CK'D ALK

SUPERSTRUCTURE DETAILS-1

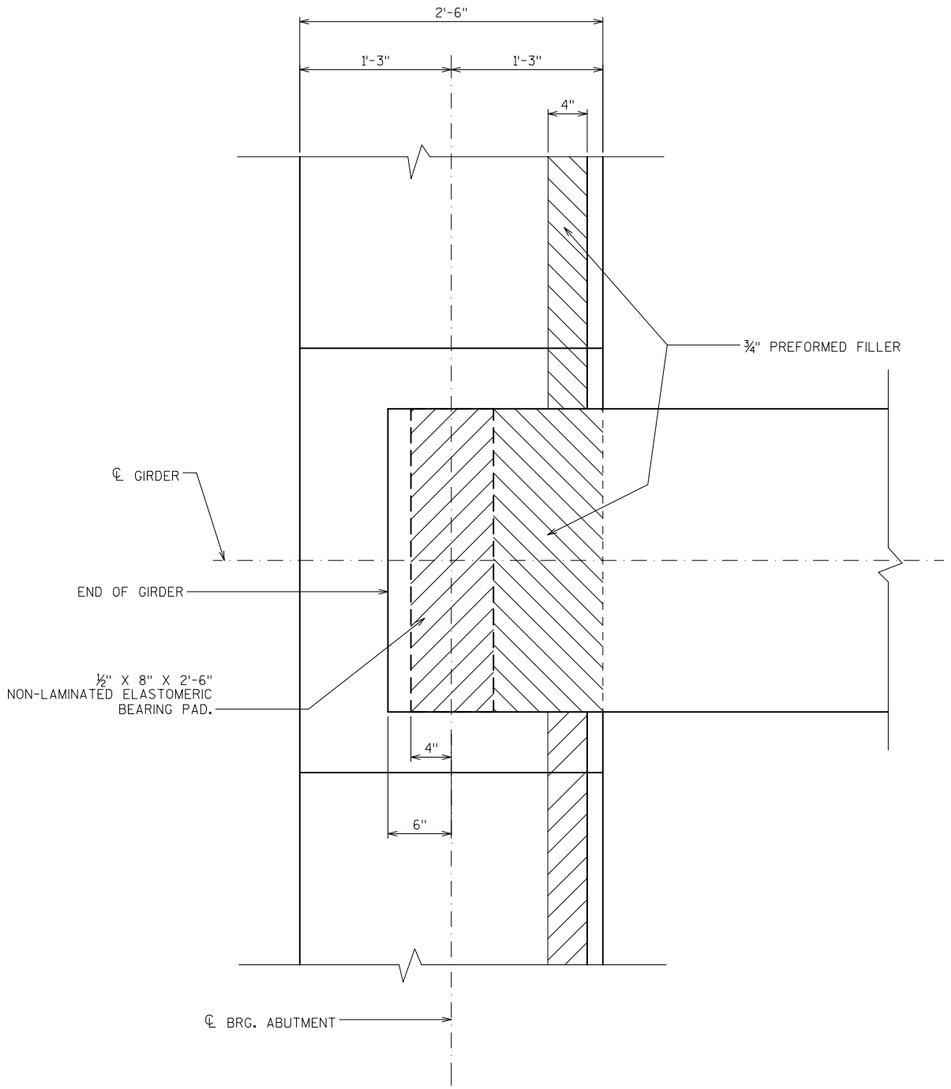
SHEET 10

FILE NAME : 48810072_080110_BR
PLOT DATE : 28 NOV 2012 12:36:29
PLOT BY : GAAJS
PLOT NAME :
PLOT SCALE : 1:1

STATE PROJECT NUMBER
4881-00-72

TOP OF DECK ELEVATIONS

	NORTH EDGE OF DECK	GIRDER 1	GIRDER 2	GIRDER 3	GIRDER 4	GIRDER 5	SOUTH EDGE OF DECK
C/L BRG. W. ABUT.	728.56	728.62	728.78	728.94	728.78	728.62	728.56
1/10	728.33	728.39	728.55	728.71	728.55	728.39	728.33
2/10	728.11	728.17	728.33	728.49	728.33	728.17	728.11
3/10	727.85	727.91	728.07	728.23	728.07	727.91	727.85
4/10	727.64	727.70	727.86	728.02	727.86	727.70	727.64
5/10	727.43	727.49	727.65	727.81	727.65	727.49	727.43
6/10	727.23	727.29	727.45	727.61	727.45	727.29	727.23
7/10	727.03	727.09	727.25	727.41	727.25	727.09	727.03
8/10	726.81	726.87	727.03	727.19	727.03	726.87	726.81
9/10	726.62	726.68	726.84	727.00	726.84	726.68	726.62
C/L BRG. E. ABUT.	726.44	726.50	726.66	726.82	726.66	726.50	726.44



BEARING PAD DETAIL

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

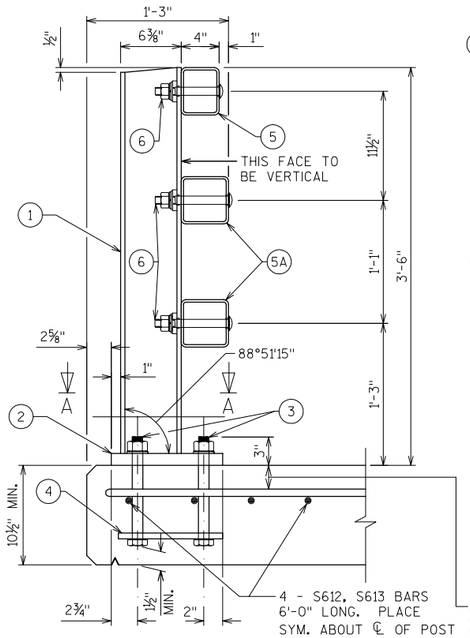
STRUCTURE B-45-100

DRAWN BY AJS | PLANS CK'D ALK

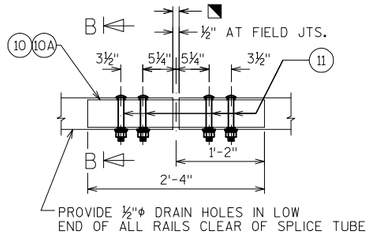
SUPERSTRUCTURE DETAILS-2

SHEET 11

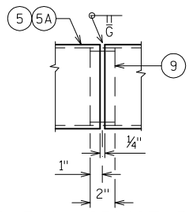
FILE NAME : 48810072_080111_BR PLOT DATE : 16 NOV 2012 16:03:12 PLOT BY : GAAJS PLOT NAME : PLOT SCALE : 1:1



SECTION THRU RAILING ON DECK

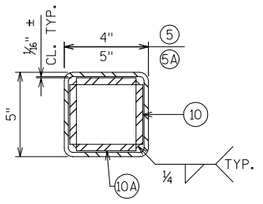


FIELD ERECTION JOINT DETAIL

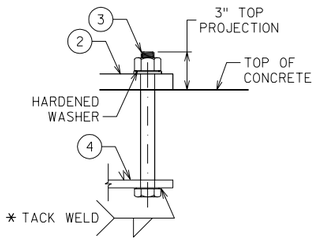


SHOP RAIL SPLICE DETAIL

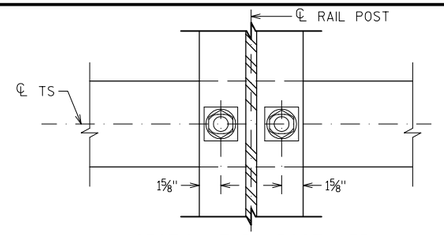
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



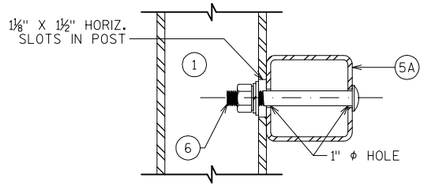
SECTION B-B



ANCHOR BOLTS



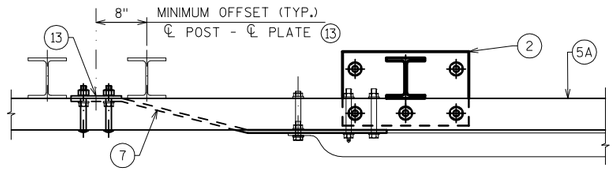
SECTION THRU POST WEB



SECTION THRU RAIL

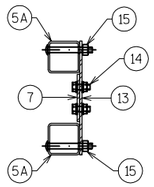
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

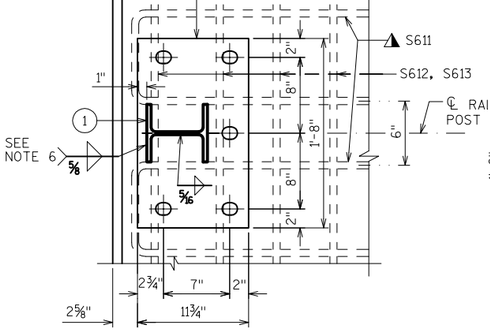


TOP VIEW AT END POST

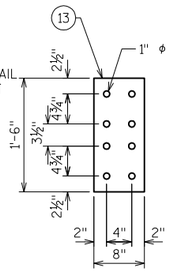
THRIE BEAM RAIL ATTACHMENT



SECTION C-C

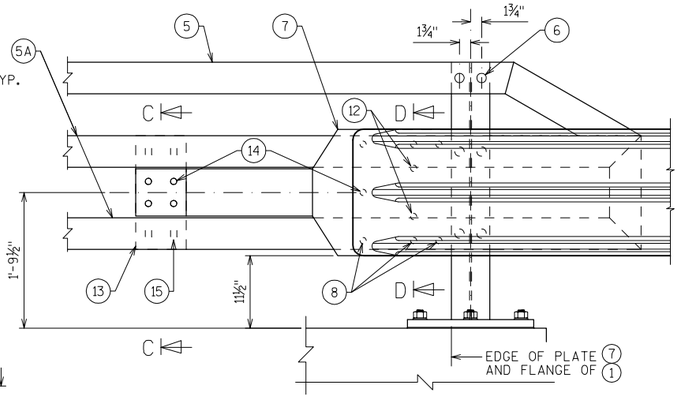


SECTION A-A



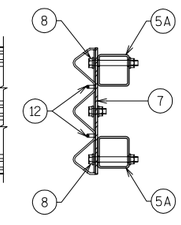
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT

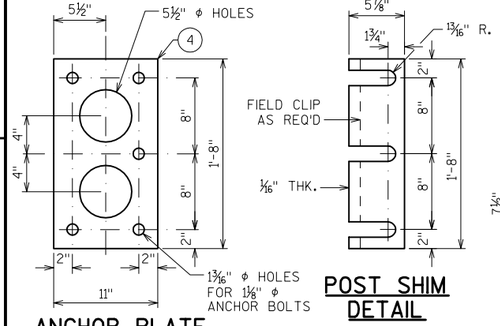


DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT



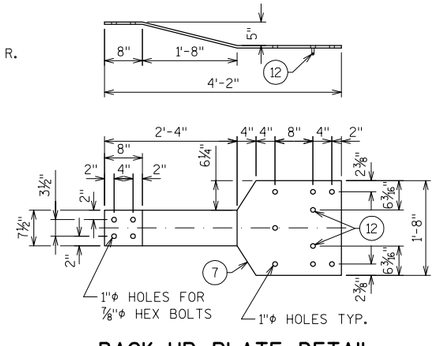
SECTION D-D



ANCHOR PLATE

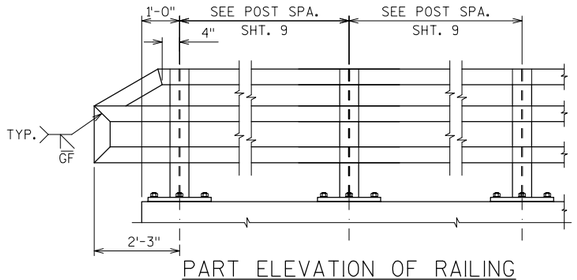
AT RAIL TO DECK CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

LEGEND

1. W6 X 25 WITH 1⅛" X 1½" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
2. PLATE 1¼" X 11¾" X 1'-8" WITH 1⅝" X 1⅝" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
3. ASTM A449 - 1⅛" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10¾" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTABILITY.)
4. ⅝" X 11" X 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1³⁄₁₆" DIA. HOLES FOR ANCHOR BOLTS NO. 3
5. TS 5 X 4 X 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
5A. TS 5 X 5 X 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
6. 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 (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
8. 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
9. SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".
10. ⅜" X 3⅝" 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 15⁄16" X 1¼" 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. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
14. ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
15. 1" ϕ HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-45-100" 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 SSPC 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).
12. PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

⚠ TIE TO TOP MAT OF STEEL.

STATE PROJECT NUMBER

4881-00-72

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-45-100

DRAWN BY AJS | PLANS CK'D ALK

TUBULAR STEEL RAILING TYPE M

SHEET 12

FILE NAME : 48810072_080112_BR
PLOT DATE : 28 NOV 2012 12:37:43
PLOT BY : GAAJS
PLOT NAME :
PLOT SCALE : 1:1

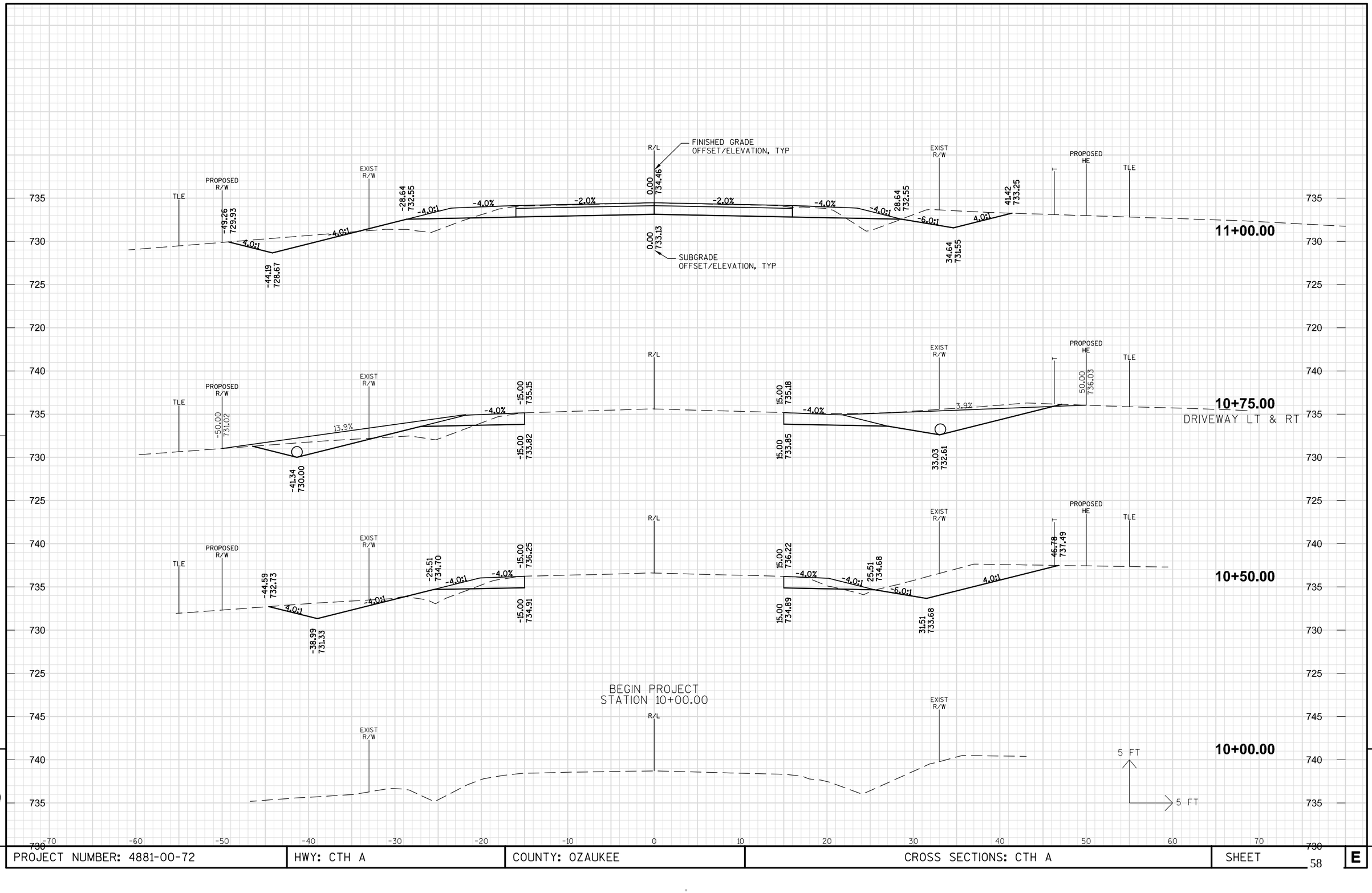
DIVISION 1 - CTH A

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.30	MASS ORDINATE NOTE 3
10+00	1000		0	0	0	0	0	0	0
10+50	1050	50	59	7	54	6	54	8	46
10+75	1075	25	70	9	59	7	113	18	96
11+00	1100	25	78	16	68	12	182	33	149
11+33	1133	33	73	17	91	20	273	58	214
11+50	1150	17	64	30	44	15	317	78	239
11+83	1183	33	50	80	69	67	386	165	221
12+00	1200	17	48	113	32	62	417	246	171
12+36	1236	36	48	113	63	149	481	440	41
				COLUMN TOTALS	481	339			

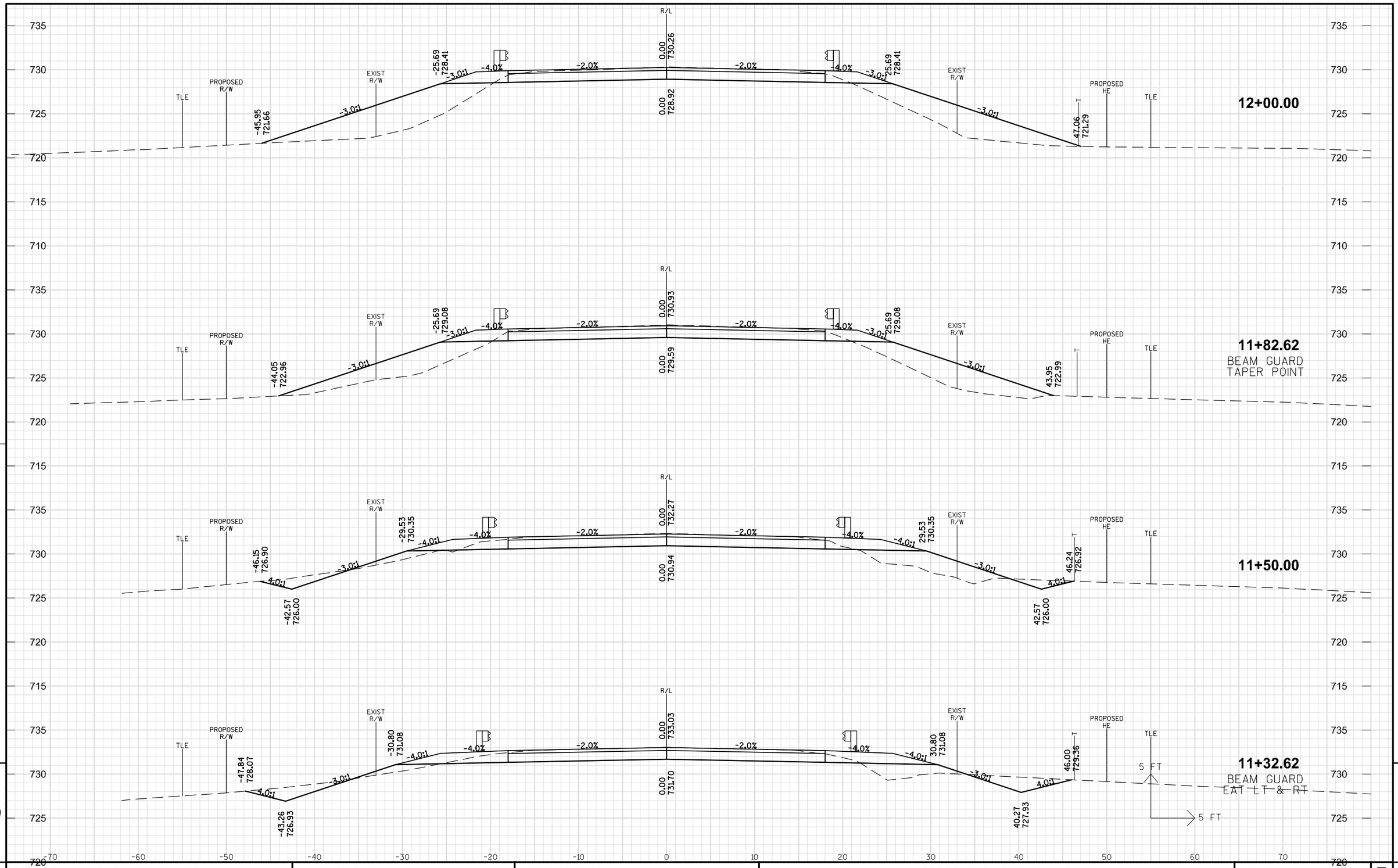
DIVISION 2 - CTH A

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.30	MASS ORDINATE NOTE 3
13+10	1310		49	104	0	0	0	0	0
13+50	1350	40	49	104	72	153	72	198	-126
13+63	1363	13	49	91	24	48	97	261	-164
14+00	1400	37	51	106	68	134	165	435	-270
14+13	1413	13	52	107	26	53	191	504	-313
14+50	1450	37	10	87	42	131	232	675	-442
15+00	1500	50	10	50	19	127	251	840	-589
15+50	1550	50	0	0	10	46	261	900	-639
				COLUMN TOTALS	261	693			

NOTES	
1 - CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
2 - FILL	DOES NOT INCLUDE PAVEMENT EXCAVATION VOLUME.
3 - MASS ORDINATE	[(CUT) - ((FILL) * FILL FACTOR)]

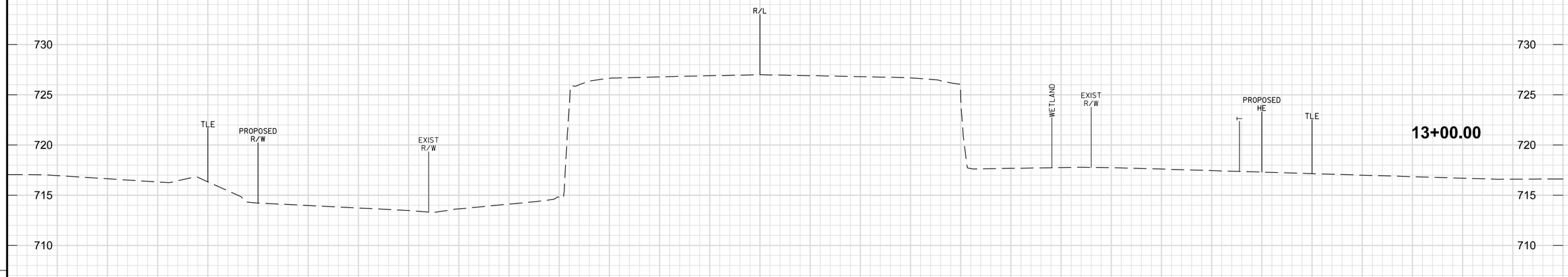


PROJECT NUMBER: 4881-00-72	HWY: CTH A	COUNTY: OZAUKEE	CROSS SECTIONS: CTH A	SHEET 58	E

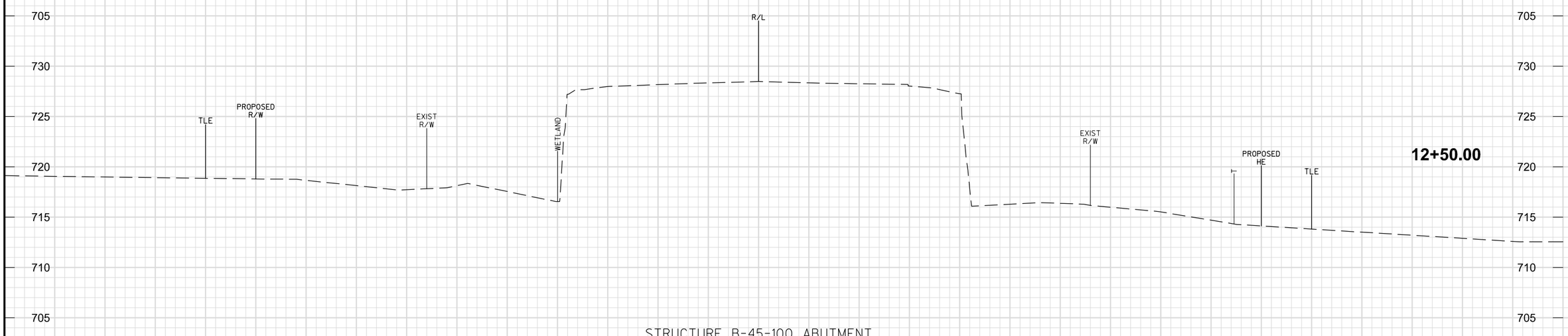


PROJECT NUMBER: 4881-00-72	HWY: CTH A	COUNTY: OZAUKEE	CROSS SECTIONS: CTH A	SHEET 59 E

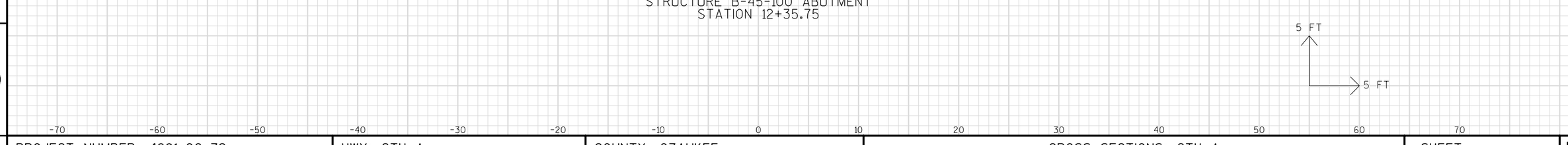
STRUCTURE B-45-100 ABUTMENT
STATION 13+10.25



STRUCTURE B-45-100 ABUTMENT
STATION 12+50.00



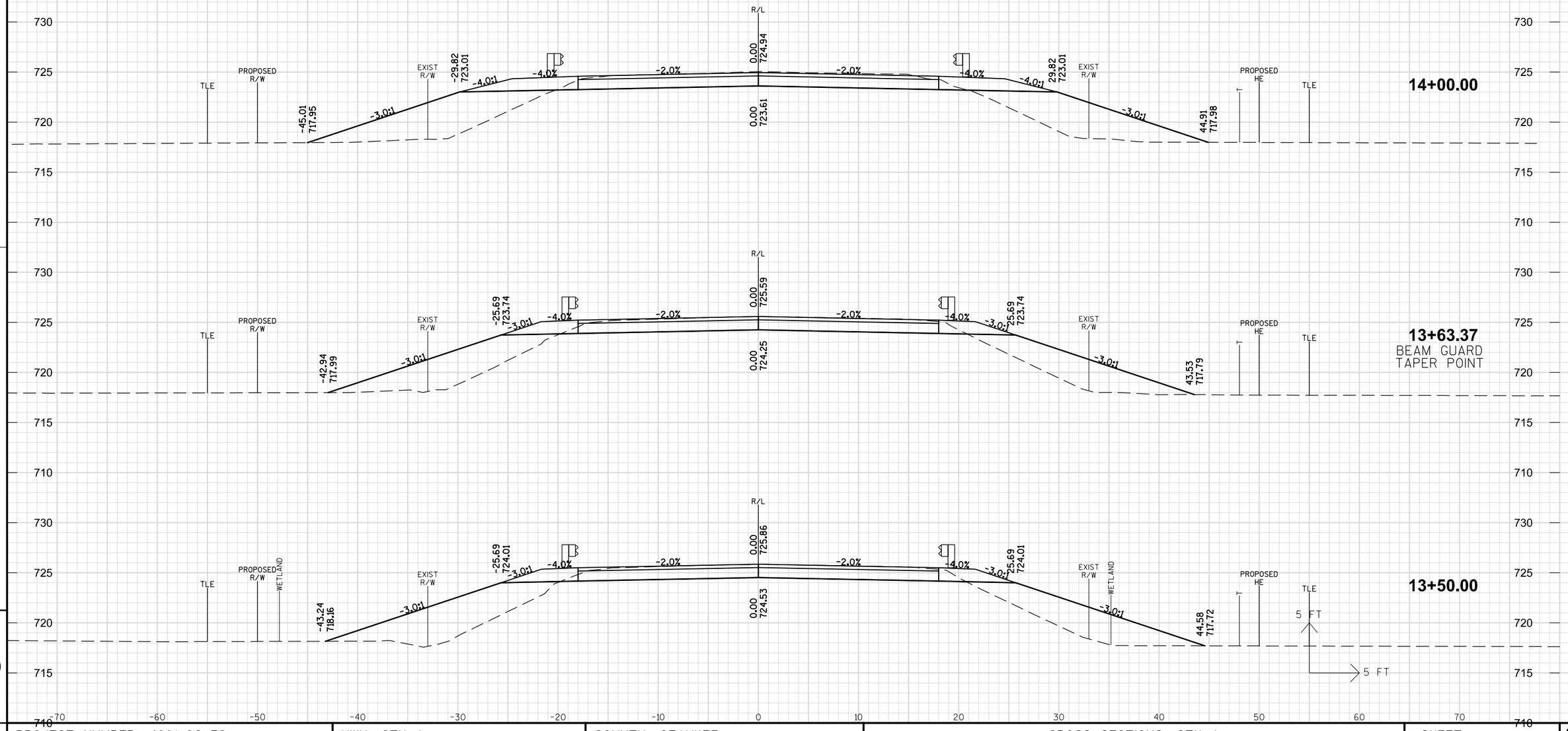
STRUCTURE B-45-100 ABUTMENT
STATION 12+35.75



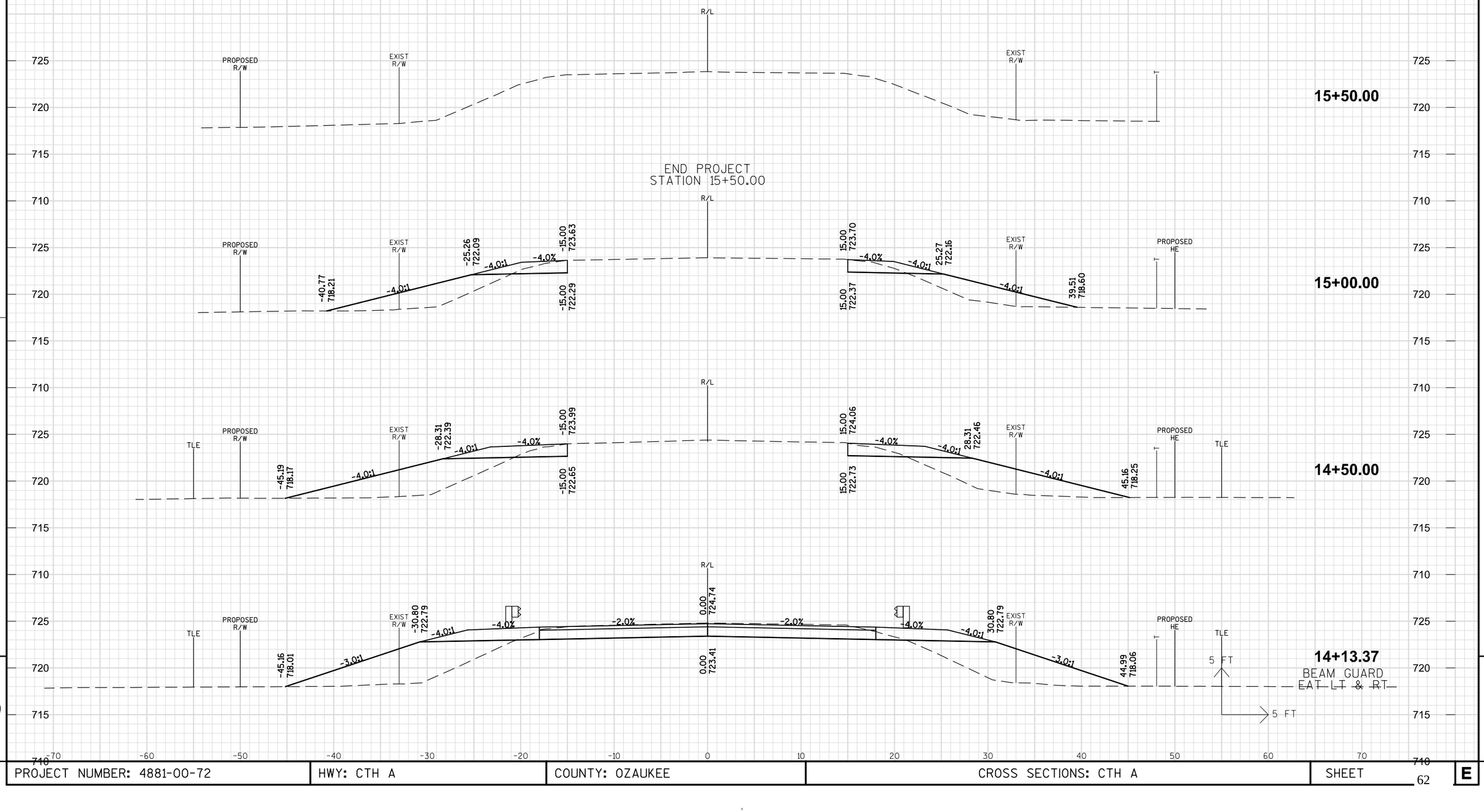
9

9

PROJECT NUMBER: 4881-00-72	HWY: CTH A	COUNTY: OZAUKEE	CROSS SECTIONS: CTH A	SHEET 60	E



PROJECT NUMBER: 4881-00-72	HWY: CTH A	COUNTY: OZAUKEE	CROSS SECTIONS: CTH A	SHEET 61	E



PROJECT NUMBER: 4881-00-72	HWY: CTH A	COUNTY: OZAUKEE	CROSS SECTIONS: CTH A	SHEET 62 E

Notes

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