NCL DEC 2013

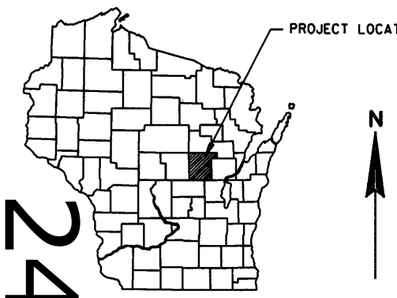
PROJECT ID: 6819-02-70

WITH:

COUNTY: WAUPACA

ORDER OF SHEETS

TOTAL SHEETS = 70



24

DESIGN DESIGNATION

A.A.D.T. 2014	=	560
A.A.D.T. 2034	=	670
D.H.V.	=	98
D.D.	=	62/38
T.	=	6.8%
DESIGN SPEED	=	60 MPH
ESALS	=	87,600

CONVENTIONAL SYMBOLS

PLAN

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH E - STH 110

N. BRANCH LITTLE WOLF RIVER BRIDGE B-68-0322

CTH C

WAUPACA COUNTY

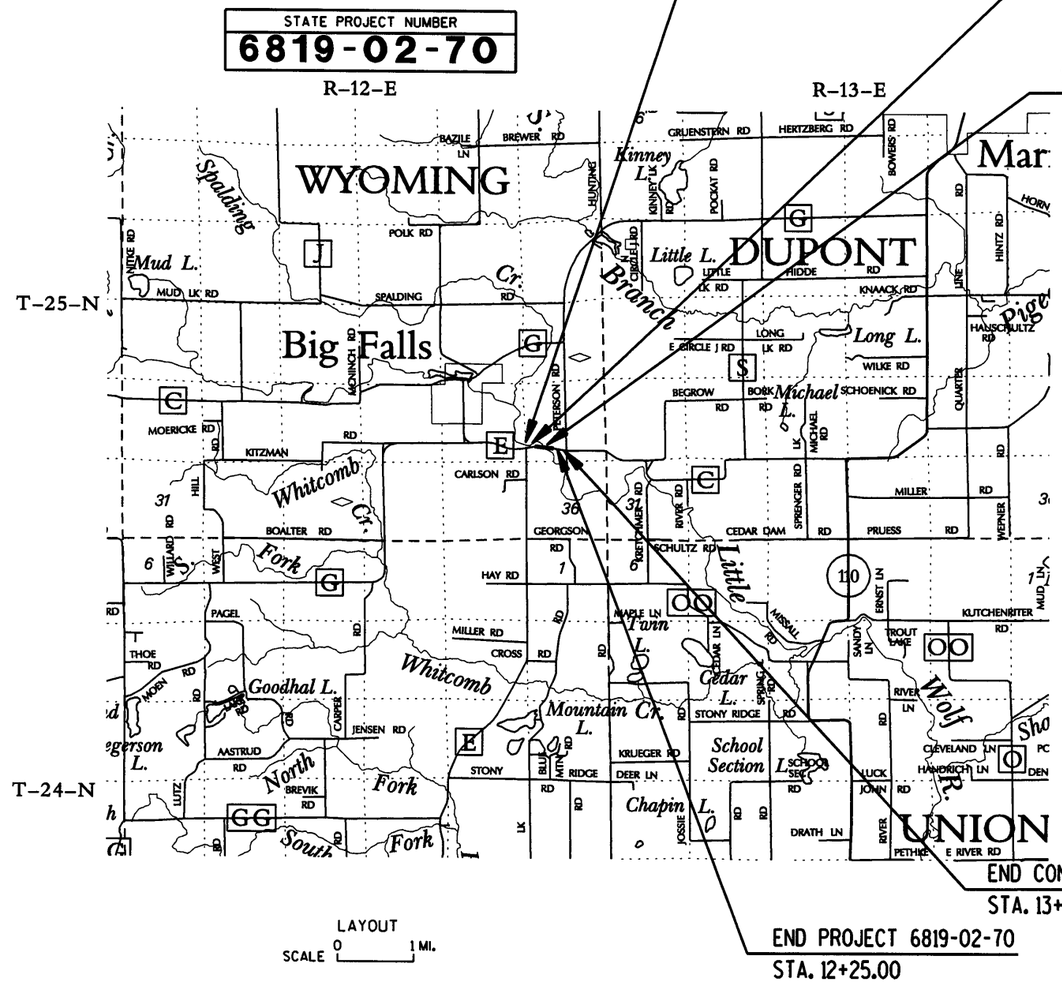
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6819-02-70	WISC 2013523	1

BEGIN PROJECT 6819-02-70
STA. 7+50.00
Y = 432879.369
X = 559869.651

BEGIN CONSTRUCTION
STA. 7+10.00

STRUCTURE B-68-132

STATE PROJECT NUMBER
6819-02-70



LAYOUT
SCALE 0 — 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.090 MI.

END CONSTRUCTION
STA. 13+36.00

END PROJECT 6819-02-70
STA. 12+25.00

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS) WAUPACA COUNTY NAD 1983 (2007)

ACCEPTED FOR WAUPACA COUNTY
DATE: 7/17/13
(Signature)
Highway Commissioner
TITLE

ORIGINAL PLANS PREPARED BY
OMNNI ASSOCIATES

WISCONSIN
JUDITH ANN WILSON
E-22940
NEENAH, WI
PROFESSIONAL ENGINEER
7/17/13

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	OMNNI ASSOCIATES
Designer	OMNNI ASSOCIATES
Management Consultant	CEDAR CORP

APPROVED FOR THE DEPARTMENT
DATE: 7-26-13
(Management Consultant Signature)

E

GENERAL NOTES

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

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

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

HMA PAVEMENT 4" DEPTH ASPHALTIC SURFACE
- 1 3/4" UPPER LAYER (12.5 mm NOMINAL SIZE AGGREGATE)
- 2 1/4" LOWER LAYER (19 mm NOMINAL SIZE AGGREGATE)

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

ALL DISTURBED AREAS, NOT OTHERWISE SURFACED ARE TO BE TOPSOILED, FERTILIZED, SEEDED AND MULCHED.

SEED MIXTURE NO. 20 SHALL BE USED ON ALL DISTURBED AREAS, EXCEPT WETLANDS SHALL BE SEEDED WITH MIXTURE NO. 60.

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

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

DISTANCES SHOWN ON THIS PLAN ARE GROUND DISTANCES.

PLAN ELEVATIONS = USGS DATUM, NAVD 88

THE WISCONSIN DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR A MONUMENT WHICH SHALL BE SET IN THE STRUCTURE AS DESIGNATED BY THE ENGINEER.

EROSION CONTROL NOTES

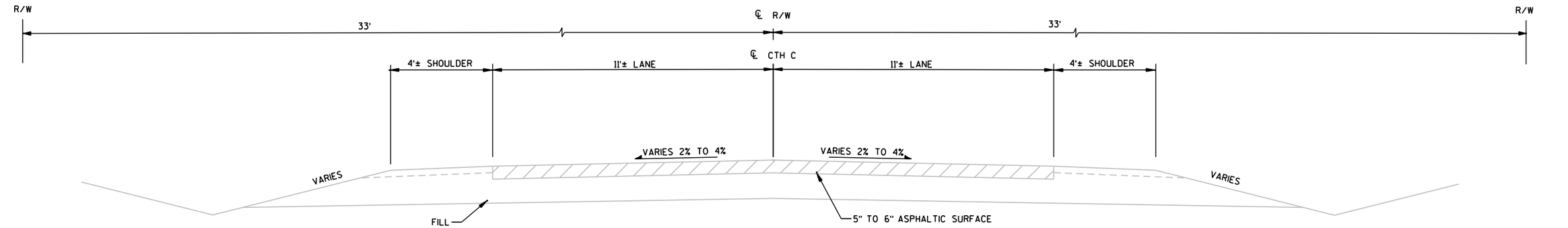
RUNOFF COEFFICIENTS FOR THIS PROJECT: EXISTING PAVEMENT 0.95, EXISTING SLOPES 0.30, NEW PAVEMENT 0.95, NEW SLOPES 0.30.

TOTAL PROJECT AREA = 1.198 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.759 ACRES

CONTACTS

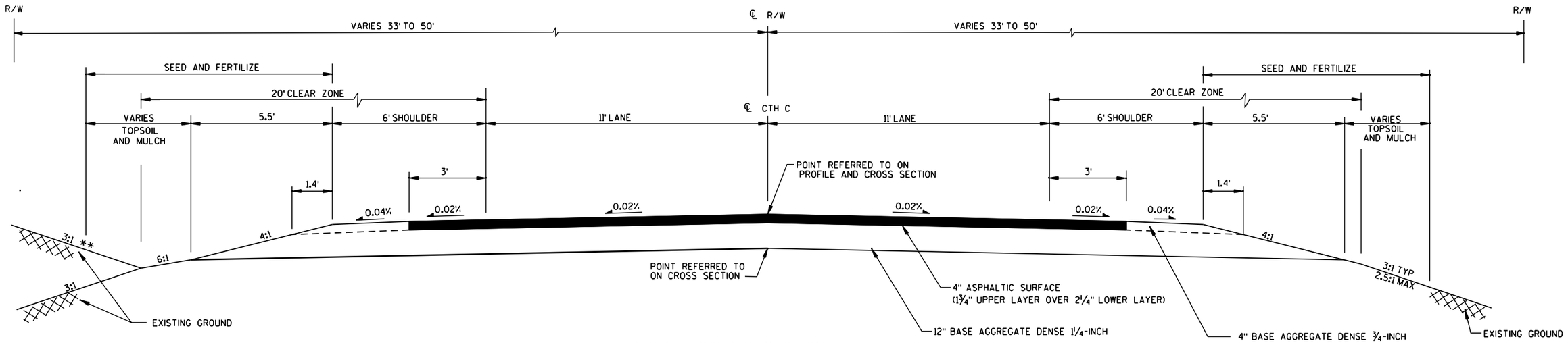
ELECTRIC	ALLIANT ENERGY 708 NE 7TH STREET MARION, WI 54950 ATTN: DAVE BERTRAM TELEPHONE: 715-754-4348 EMAIL: davebertram@alliantenergy.com
TELEPHONE	FRONTIER COMMUNICATIONS OF WISCONSIN, LLC 26 WEST 12TH STREET CLINTONVILLE, WI 54929 ATTN: JIM JASKOLSKI TELEPHONE: 715-823-1227 OFFICE TELEPHONE: 715-853-6843 CELL EMAIL: james.jaskolski@frontiercorp.com
WOOD COUNTY	DEAN STEINGRABER, HIGHWAY COMMISSIONER 515 EAST FULTON STREET WAUPACA, WI 54981 TELEPHONE: 715-258-7152 EMAIL: dean.steingraber@co.waupaca.wi.us
DESIGN CONSULTANT	JUDY WILSON, P.E. OMNNI ASSOCIATES, INC. ONE SYSTEMS DRIVE APPLETON, WI 54914 TELEPHONE: 920-830-6129 EMAIL: judy.wilson@omnni.com
DNR LIAISON	MATT SCHAEVE DEPARTMENT OF NATURAL RESOURCES NORTH EAST REGION HEADQUARTERS 2984 SHAWANO AVENUE GREEN BAY, WI 54313 TELEPHONE: 920-662-5472 EMAIL: matthew.schaeve@wisconsin.gov

DIGGERS HOTLINE
Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com



TYPICAL EXISTING SECTION

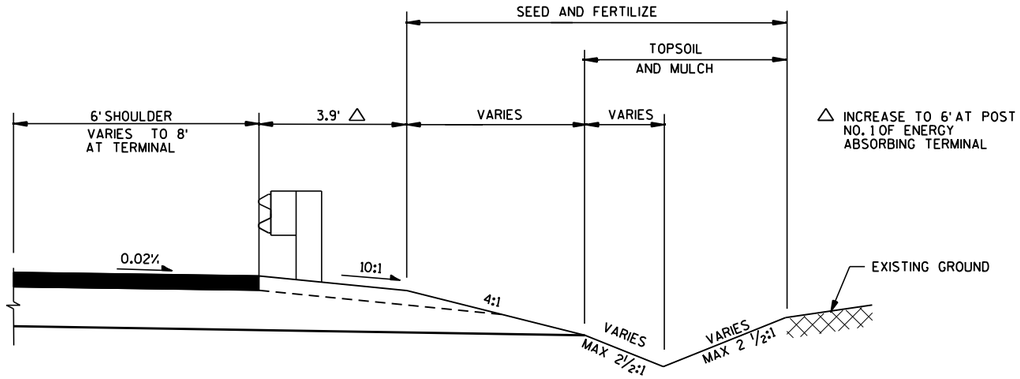
STA 7+50 TO STA 12+25



TYPICAL FINISHED SECTION FOR CTH C

STA 7+50 TO STA 9+30.21
STA 10+68.57 TO STA 12+25

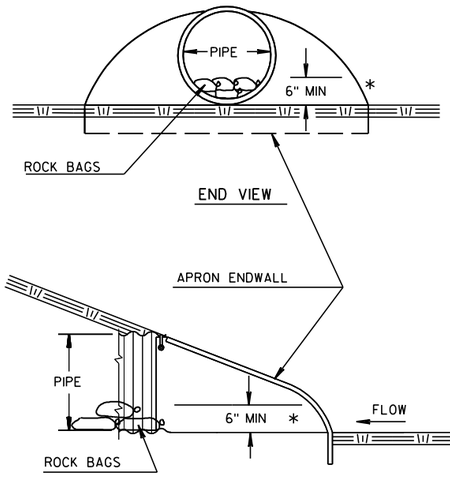
** 4:1 IF IN CLEAR ZONE



FINISHED TYPICAL SECTION AT BEAM GUARD

(APPLIES RIGHT AND LEFT)

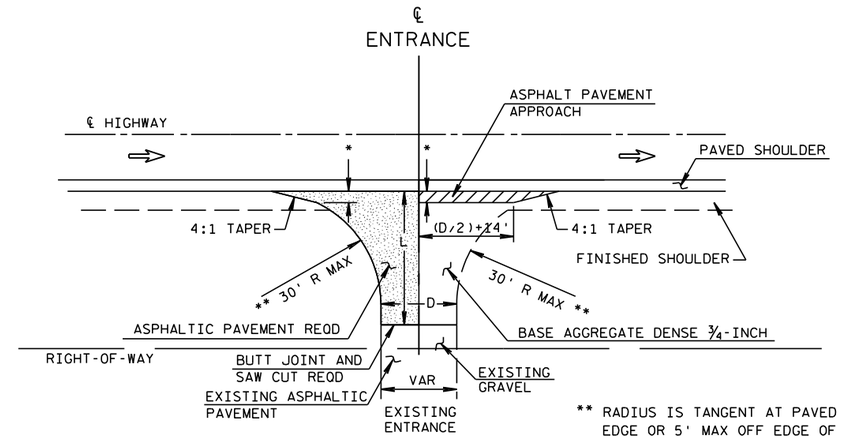
PROJECT NO: 6819-02-70	HWY: CTH C	COUNTY: WAUPACA	TYPICAL SECTIONS	SHEET 3	E	2.2



* OR AS DIRECTED BY THE ENGINEER.

CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)



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

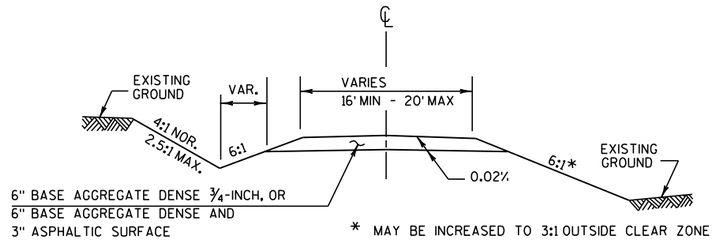
D=DRIVEWAY WIDTH
SEE PLAN AND PROFILE

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

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

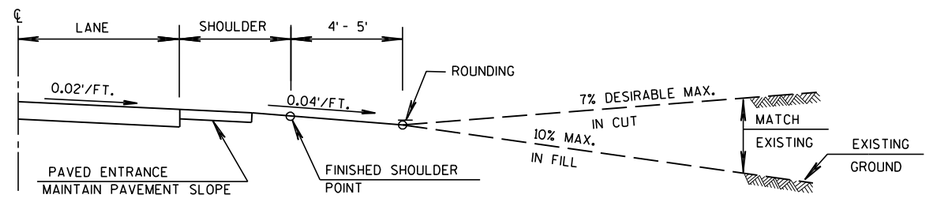
PLAN VIEW

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



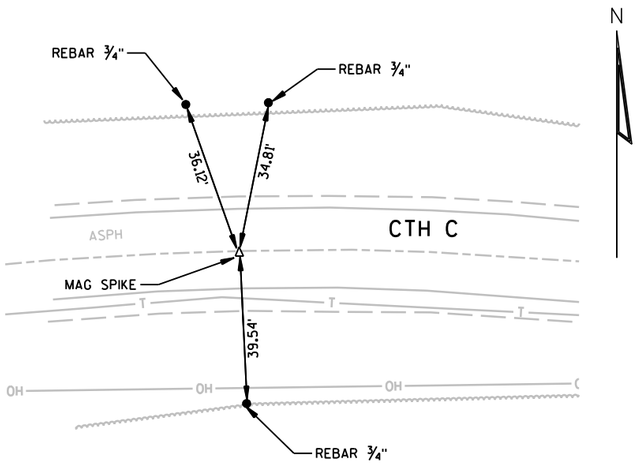
* MAY BE INCREASED TO 3:1 OUTSIDE CLEAR ZONE

TYPICAL CROSS SECTION

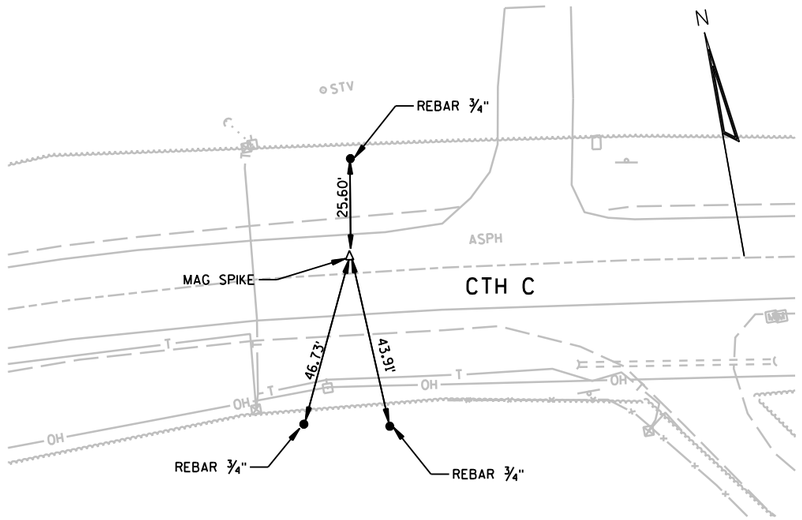


PROFILE VIEW

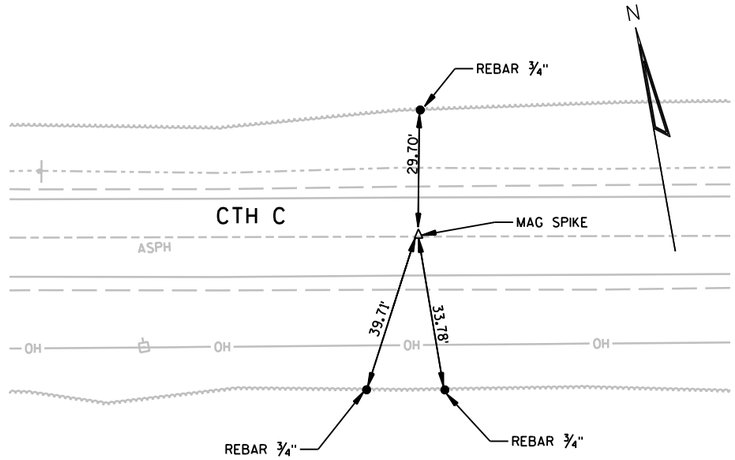
RURAL DRIVEWAY INTERSECTION DETAIL



PC STA. 5+48.48
N = 432894.784
E = 559668.857



PT STA. 6+73.98
N = 432893.072
E = 559794.347



PI STA. 14+01.42
N = 432769.770
E = 560511.774

2

2

2

LEGEND

- CULVERT PIPE CHECK
- TEMPORARY DITCH CHECK
- SILT FENCE
- TURBIDITY BARRIER
- EROSION MAT URBAN CLASS ITYPE B

N

EXIST R/W

R/W

PC = 7+98.97

8+00

9+00

CTH C

10+00

11+00

12+00

13+00

TLE

OH

ASPH

N. BRANCH LITTLE WOLF RIVER

PROJECT NO: 6819-02-70	HWY: CTH C	COUNTY: WAUPACA	EROSION CONTROL	SHEET 6	E	2.5

FILE NAME : F:\TR\JOBS\E2029A12\Sheets\PLAN\022001_ec.dgn PLOT DATE : 5/29/2013 1:56:36 PM PLOT BY : OMNNI - perryd PLOT NAME : PLOT SCALE : 40.0000 sf / IN.

WISDOT/CADDS SHEET 42

LEGEND

- POST MOUNTED SIGN
- SIGN MOUNTED ON TYPE III BARRICADE
- D3-01 SIGN NUMBER, REFER TO MISCELLANEOUS QUANTITY SHEET
- COVER SIGN

SIGN LEGEND

- M1-5A 24"X24"
- M3-1 24"X12"
- M3-2 24"X12"
- M3-3 24"X12"
- M3-4 24"X12"
- M4-8 24" X 12"
- M4-8A 24" X 18"
- M5-1L 21"X21"
- M5-1R 21"X21"
- M6-1 21"X21"
- M6-2 21"X21"
- M6-6 21"X21"

SEE DETAIL A

SEE DETAIL B

WORK ZONE

D1-01 D1-02 D1-03 D1-04 D1-05 D1-06 D1-07 D1-08 D1-09 D1-10 D1-11 D1-12 D1-13 D1-14 D1-15 D1-16 D1-17 D1-18 D1-19 D1-20 D1-21 D1-22 D1-23 D1-24 D1-25 D1-26 D1-27 D1-28 D1-29

R11-3B 60" X 30" BRIDGE OUT 4 MILES AHEAD LOCAL TRAFFIC ONL

TYPE III BARRICADE

R11-3B 60" X 30" M4-9R 30" X 24" BRIDGE OUT 5 MILES AHEAD LOCAL TRAFFIC ONL DETOUR

TYPE III BARRICADE

DETOUR AHEAD W20-2

DETOUR AHEAD W20-2

DETOUR NOTES

- VERIFY LOCATION OF EXISTING ROUTE ASSEMBLIES.
- SIGN LOCATION SHOWN ON PLAN IN APPROXIMATE. SIGN SPACING SHOW ON PLANE IS NOT TO SCALE. REFER TO S.D.D. "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" FOR DETOUR ROUTE SIGN LOCATION AND SPACING.

N

SCALE, FEET 0 1/2 MILE 1 MILE

CTH J CTH E CTH G CTH C CTH OO CTH T HUNTING RD TOWN HALL RD SPALDING RD PETERSON RD BECROW RD KRETCHMER RD STH 110 USH 45 MARION BIG FALLS

PROJECT NO:6819-02-70	HWY: CTH C	COUNTY:WAUPACA	DETOUR	SHEET 7	E

FILE NAME : F:\TR\JOBS\E2029A12\SHEETS\PLAN\027001_DT.DWG 6819-02-70 027001_dt PLOT DATE : 5/30/2013 8:40 AM PLOT BY : OMNNI ASSOCIATES, INC - DAVE PERRY

2

LEGEND

POST MOUNTED SIGN

SIGN MOUNTED ON TYPE III BARRICADE

D3-01 SIGN NUMBER, REFER TO MISCELLANEOUS QUANTITY SHEET

COVER SIGN

SIGN LEGEND

M1-5A 24"X24"

M3-1 24"X12" M3-2 24"X12"

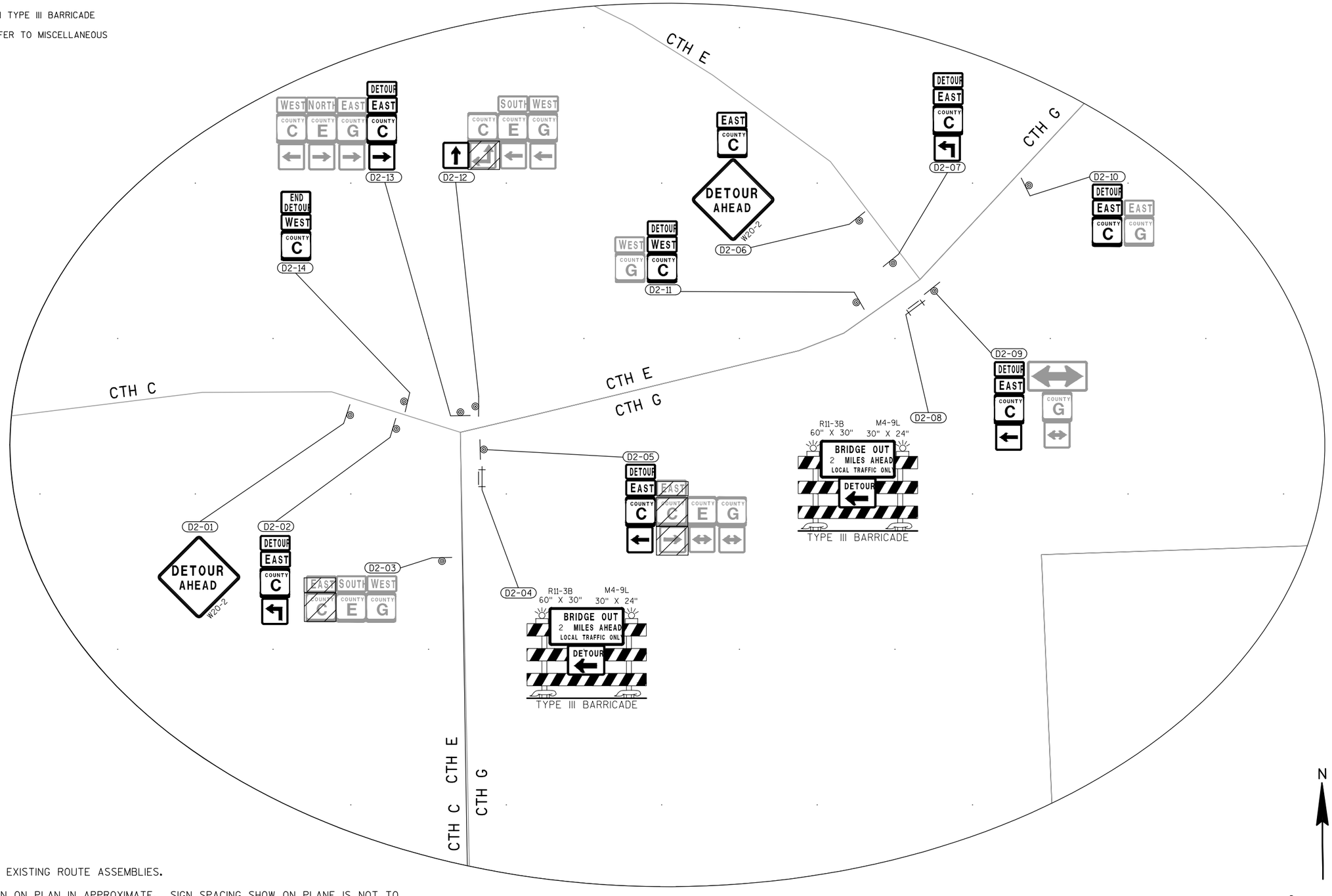
M3-3 24"X12" M3-4 24"X12"

M4-8 24" X 12" M4-8A 24" X 18"

M5-1L 21"X21" M5-1R 21"X21"

M6-1 21"X21" M6-2 21"X21"

M6-6 21"X21"



DETOUR NOTES

- VERIFY LOCATION OF EXISTING ROUTE ASSEMBLIES.
- SIGN LOCATION SHOWN ON PLAN IN APPROXIMATE. SIGN SPACING SHOW ON PLANE IS NOT TO SCALE. REFER TO S.D.D. "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" FOR DETOUR ROUTE SIGN LOCATION AND SPACING.

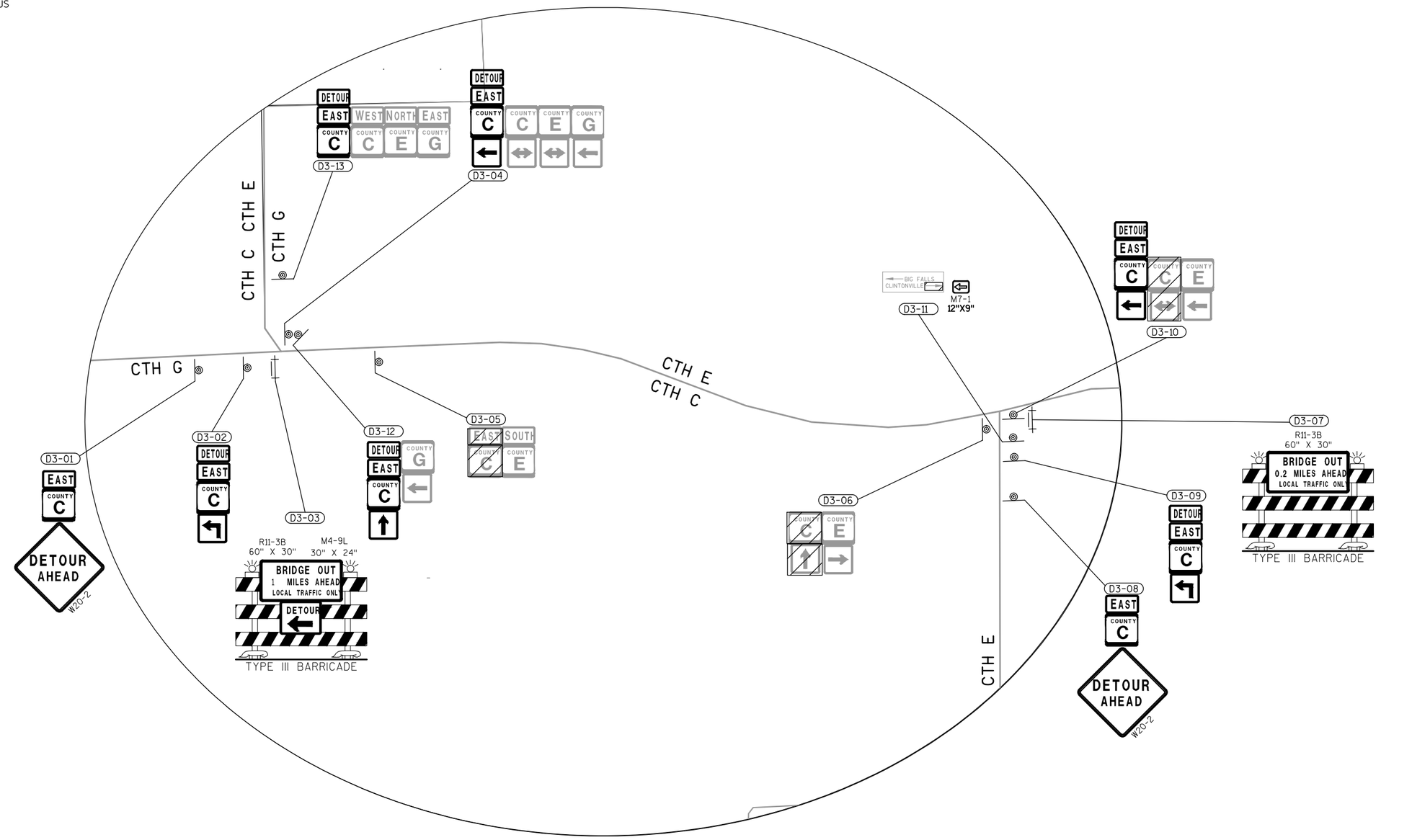
PROJECT NO:6819-02-70	HWY: CTH C	COUNTY:WAUPACA	DETOUR - DETAIL A	SHEET 8	E 2.7

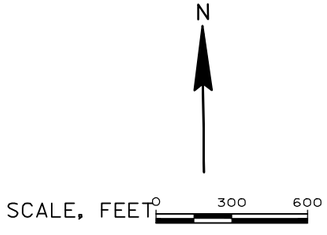
2

LEGEND

- POST MOUNTED SIGN
- SIGN MOUNTED ON TYPE III BARRICADE
- D3-01 SIGN NUMBER, REFER TO MISCELLANEOUS QUANTITY SHEET
- COVER SIGN

SIGN LEGEND





DETOUR NOTES

- VERIFY LOCATION OF EXISTING ROUTE ASSEMBLIES.
- SIGN LOCATION SHOWN ON PLAN IN APPROXIMATE. SIGN SPACING SHOW ON PLANE IS NOT TO SCALE. REFER TO S.D.D. "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" FOR DETOUR ROUTE SIGN LOCATION AND SPACING.

PROJECT NO:6819-02-70	HWY: CTH C	COUNTY:WAUPACA	DETOUR - DETAIL B	SHEET 9	E

FILE NAME : F:\TR\JOBS\E2029A12\SHEETS\PLAN\027001_DT.DWG 6819-02-70 027003_dt PLOT DATE : 5/30/2013 8:40 AM PLOT BY : OMNNI ASSOCIATES, INC - DAVE PERRY

DATE 23OCT13 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	6819-02-70 QUANTITY
0010	201.0105	CLEARING	STA	6.000	6.000
0020	201.0205	GRUBBING	STA	6.000	6.000
0030	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	1.000	1.000
0040	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 10+00	LS	1.000	1.000
0050	205.0100	EXCAVATION COMMON	CY	470.000	470.000
0060	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-68-132	LS	1.000	1.000
0070	208.0100	BORROW	CY	840.000	840.000
0080	210.0100	BACKFILL STRUCTURE	CY	260.000	260.000
0090	213.0100	FINISHING ROADWAY (PROJECT) 01. 6819-02-70	EACH	1.000	1.000
0100	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	190.000	190.000
0110	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	1,500.000	1,500.000
0120	415.0060	CONCRETE PAVEMENT 6-INCH	SY	56.000	56.000
0130	415.0410	CONCRETE PAVEMENT APPROACH SLAB	SY	102.000	102.000
0140	455.0605	TACK COAT	GAL	30.000	30.000
0150	465.0105	ASPHALTIC SURFACE	TON	285.000	285.000
0160	502.0100	CONCRETE MASONRY BRIDGES	CY	224.000	224.000
0170	502.3200	PROTECTIVE SURFACE TREATMENT	SY	430.000	430.000
0180	503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	570.000	570.000
0190	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	4,260.000	4,260.000
0200	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	23,320.000	23,320.000
0210	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	12.000	12.000
0220	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 01. B-68-132	EACH	10.000	10.000
0230	513.4060	RAILING TUBULAR TYPE M (STRUCTURE) 01. B-68-132	LS	1.000	1.000
0240	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	24.000	24.000
0250	520.0115	CULVERT PIPE CLASS III 15-INCH	LF	44.000	44.000
0260	520.1015	APRON ENDWALLS FOR CULVERT PIPE 15-INCH	EACH	2.000	2.000
0270	550.0500	PILE POINTS	EACH	18.000	18.000
0280	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	405.000	405.000
0290	606.0300	RIPRAP HEAVY	CY	190.000	190.000
0300	612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	30.000	30.000
0310	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	120.000	120.000
0320	614.2300	MGS GUARDRAIL 3	LF	75.000	75.000
0330	614.2500	MGS THRIE BEAM TRANSITION	LF	158.000	158.000
0340	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	4.000	4.000
0350	619.1000	MOBILIZATION	EACH	1.000	1.000
0360	624.0100	WATER	MGAL	10.000	10.000
0370	625.0100	TOPSOIL **P**	SY	1,900.000	1,900.000
0380	627.0200	MULCHING	SY	700.000	700.000
0390	628.1504	SILT FENCE	LF	600.000	600.000
0400	628.1520	SILT FENCE MAINTENANCE	LF	1,200.000	1,200.000
0410	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	4.000	4.000
0420	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000
0430	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	1,200.000	1,200.000
0440	628.6005	TURBIDITY BARRIERS	SY	190.000	190.000
0450	628.7504	TEMPORARY DITCH CHECKS	LF	60.000	60.000
0460	628.7555	CULVERT PIPE CHECKS	EACH	5.000	5.000
0470	629.0210	FERTILIZER TYPE B	CWT	2.000	2.000
0480	630.0120	SEEDING MIXTURE NO. 20 **P**	LB	70.000	70.000
0490	630.0160	SEEDING MIXTURE NO. 60	LB	10.000	10.000

3

DATE 23OCT13 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	6819-02-70 QUANTITY
0500	630.0200	SEEDING TEMPORARY	LB	10.000	10.000
0510	638.2102	MOVING SIGNS TYPE II	EACH	2.000	2.000
0520	638.2602	REMOVING SIGNS TYPE II	EACH	6.000	6.000
0530	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	6.000	6.000
0540	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0550	643.0100	TRAFFIC CONTROL (PROJECT) 01.6819-02-70	EACH	1.000	1.000
0560	643.0300	TRAFFIC CONTROL DRUMS	DAY	100.000	100.000
0570	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,200.000	1,200.000
0580	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	1,800.000	1,800.000
0590	643.0900	TRAFFIC CONTROL SIGNS	DAY	900.000	900.000
0600	643.0920	TRAFFIC CONTROL COVERING SIGNS TYPE II	EACH	19.000	19.000
0610	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 01. 6819-02-70	EACH	1.000	1.000
0620	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	11,400.000	11,400.000
0630	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	290.000	290.000
0640	646.0103	PAVEMENT MARKING PAINT 4-INCH	LF	1,900.000	1,900.000
0650	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	520.000	520.000
0660	650.5000	CONSTRUCTION STAKING BASE	LF	520.000	520.000
0670	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-68-132	LS	1.000	1.000
0680	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 6819-02-70	LS	1.000	1.000
0690	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	520.000	520.000
0700	690.0150	SAWING ASPHALT	LF	44.000	44.000
0710	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	500.000	500.000
0720	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	1,344.000	1,344.000
0730	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5. 00/HR	HRS	1,200.000	1,200.000
0740	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	600.000	600.000

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

CLEARING AND GRUBBING

STATION	LOCATION	201.0105 CLEARING STATION	201.0205 GRUBBING STATION
7+00 - 13+00	CTH C	6	6
	TOTALS	**6**	**6**

REMOVING SMALL PIPE CULVERTS

STATION	DIR	LOCATION	203.0100 EACH	REMARKS
7+65	RT	CTH C	1	15" CMP
		TOTAL	**1**	

CONCRETE PAVEMENT

STATION TO STATION	LOCATION	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY	415.0060 CONCRETE PAVEMENT 6-INCH SY
9+30.21 - STRUCTURE	CTH C	51	28
STRUCTURE - 10+68.57	CTH C	51	28
	TOTALS	**102**	**56**

BASE AGGREGATE DENSE AND WATER

STATION TO STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL
7+10 - STRUCTURE **	CTH C	90	760	5.0
STRUCTURE - 13+36	CTH C	100	740	5.0
	TOTALS	**190**	**1,500**	**10**

CULVERT PIPE CLASS III AND APRON ENDWALL

STATION	LOCATION	520.0115 CULVERT PIPE CLASS III 15-INCH LF	THICKNESS STEEL INCHES	THICKNESS ALUMINUM INCHES	INLET ELEVATION	DISCHARGE ELEVATION	520.1015 APRON ENDWALLS FOR CULVERT PIPE 15-INCH EACH
7+63, 31' RT	CTH C	44	0.064	0.060	872.43	871.99	2
	TOTALS	**44**					**2**

EARTHWORK SUMMARY

DIVISION	FROM/TO STATION	LOCATION	EXCAVATION COMMON 205.0100 (1) CUT	EXCAVATION COMMON 205.0100 (1) EBS EXCAVATION	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	AVAILABLE MATERIAL	UNEXPANDED FILL	EXPANDED FILL FACTOR 1.30	MASS ORDINATE +/- (14)	WASTE (15)	BORROW 208.0100
DIVISION 1	7+10 - 9+50	CTH C WEST	160	0	43	117	609	792	-675	43	680
	10+48 - 13+36	CTH C EAST	310	0	72	238	309	401	-163	72	160
DIVISION 1	**TOTALS**		**470**	0	115	355	918	1,193	-838	115	**840**

1) CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL

14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

15) THIS QUANTITY INCLUDES ASPHALT FROM THE EXISTING ROADWAY AND WAS NOT UTILIZED IN THE PROPOSED EMBANKMENT. IT IS CONSIDERED WASTE MATERIAL AND WILL NEED TO BE PROPERLY DISPOSED OF BY THE CONTRACTOR.

ASPHALTIC ITEMS

STATION TO STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
7+50 - STRUCTURE	CTH C	16	151
STRUCTURE - 12+25	CTH C	14	134
	TOTALS	**30**	**285**

STEEL PLATE BEAM GUARD

STATION TO STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
8+27.82 - STRUCTURE, LT	CTH C	12.5	39.4	1
8+31.17 - STRUCTURE, RT	CTH C	25	39.4	1
STRUCTURE - 11+67.60, LT	CTH C	25	39.4	1
STRUCTURE - 11+70.95, RT	CTH C	12.5	39.4	1
	TOTALS	75	157.6	4
	ROUNDED TOTALS	**75**	**158**	**4**

3

LANDSCAPING

STATION TO STATION	LOCATION	625.0100 TOPSOIL SY	627.0200 MULCHING SY	630.0200 SEEDING TEMPORARY LB	630.0120 SEEDING NO 20 LB	630.0160 SEEDING NO 60 LB	629.0210 FERTILIZER TYPE B CWT
7+10 - STRUCTURE, LT	CTH C	450	200	---	16	---	0.4
7+10- STRUCTURE, RT	CTH C	280	120	---	11	---	0.3
STRUCTURE - 13+36, LT	CTH C	400	120	---	15	---	0.4
STRUCTURE - 13+36, RT	CTH C	370	110	---	15	---	0.4
UNDISTRIBUTED	CTH C	400	150	10	13	10	0.5
TOTALS		**1,900**	**700**	**10**	**70**	**10**	**2.0**

EROSION CONTROL ITEMS

STATION TO STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH
7+10 - STRUCTURE, LT	CTH C	120	240	---	---	250	10	3
7+10- STRUCTURE, RT	CTH C	90	180	---	---	160	10	---
STRUCTURE - 13+36, LT	CTH C	120	240	---	---	280	10	---
STRUCTURE - 13+36, RT	CTH C	150	300	---	---	260	10	---
UNDISTRIBUTED	CTH C	120	240	4	2	250	20	2
TOTALS		**600**	**1,200**	**4**	**2**	**1,200**	**60**	**5**

REMOVING SIGNS TYPE II AND REMOVING SMALL SIGN SUPPORTS

STATION	LOCATION	DESCRIPTION	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
9+60, LT	CTH C	OBJECT MARKER	1	1
9+60, RT	CTH C	WEIGHT LIMIT	1	1
9+73, RT	CTH C	OBJECT MARKER	1	1
10+25, LT	CTH C	OBJECT MARKER	1	1
10+40, RT	CTH C	OBJECT MARKER	1	1
10+92, LT	CTH C	WEIGHT LIMIT	1	1
TOTALS			**6**	**6**

TURBIDITY BARRIER

STATION	LOCATION	628.6005 SY
9+80	CTH C	90
10+20	CTH C	100
TOTAL		**190**

3

MOVING SIGNS

FROM STATION	LOCATION	TO STATION	LOCATION	FACE DIR.	DESCRIPTION	638.2102 MOVING SIGNS TYPE II EACH	REMARKS
12+58 , RT	CTH C	12+60 , RT	LAWSON	EB	SPEED LIMIT	1	---
13+02 , LT	CTH C	13+00 , LT	LAWSON	WB	CURVE	1	---
					TOTALS	**2**	

PAVEMENT MARKING PAINT

		646.0103	
		4-INCH DOUBLE YELLOW	4-INCH WHITE EDGE LINE
STATION	LOCATION	LF	LF
7+50 - 12+25	CTH C	950	950
TOTAL		**1,900**	

CONSTRUCTION STAKING

		650.4500 SUBGRADE	650.5000 BASE	CATEGORY 0020 650.6500 STRUCTURE LAYOUT	650.9910 SUPPLEMENTAL CONTROL	650.9920 SLOPE STAKES
STATION TO STATION	LOCATION	LF	LF	LS	LS	LF
7+10 - STRUCTURE	CTH C	240	240	---	---	240
STRUCTURE B-68-132	CTH C	---	---	1	---	---
STRUCTURE - 13+36	CTH C	280	280	---	---	280
TOTALS		**520**	**520**	**1**	**1**	**520**

SAWING ASPHALT

		690.0150 SAWING ASPHALT
STATION	LOCATION	LF
7+50	CTH C	22
12+25	CTH C	22
TOTAL		**44**

TRAFFIC CONTROL

		643.0300		643.0420		643.0705		643.0900		
	SERVICE PERIOD		DRUMS		BARRICADES TYPE III		WARNING LIGHTS TYPE A		SIGNS	
STAGE / LOCATION	DAYS	NO	DAYS	NO	DAYS	NO	DAYS	NO	DAYS	REMARKS
CTH C BRIDGE CLOSURE	75		0	16	1,200	24	1,800	12	900	
UNDISTRIBUTED			100							
TOTALS			**100**		**1,200**		**1,800**		**900**	

TRAFFIC CONTROL DETOUR SIGNS

SIGN NO.	LOCATION	DIRECTION/ ROADWAY	SIGN CODE	SIZE W X H	NUMBER SIGNS IN SERVICE	643.3000 DETOUR SIGNS DAYS	643.0920 COVERING SIGNS TYPE II NUMBER OF CYCLES	643.0920 COVERING SIGNS TYPE II EACH	SIGN MESSAGE	REMARKS
D1-01	EAST OF TOWN HALL ROAD ADJACENT TO EXISTING EAST CTH C SIGN	EASTBOUND CTH G	MO 4-8 M3-1 M1-5A	24 X 12 24 X 12 24 X 24	1 1 1	75 75 75			DETOUR EAST CTH C	
D1-02	500 FT WEST OF STH 110	EASTBOUND CTH G	MO 4-8 M3-1 M 1-5A MO 5-1R	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR EAST CTH C ADVANCE ARROW RIGHT TURN	
D1-03	WEST OF STH 110	EASTBOUND CTH G	MO 4-8 M3-1 M 1-5A MO 6-1	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR EAST CTH C ARROW RIGHT	
D1-04	SOUTH OF CTH C ADJACENT TO EXISTING SOUTH STH 110 SIGN	SOUTHBOUND STH 110	MO 4-8 M3-1 M1-5A	24 X 12 24 X 12 24 X 24	1 1 1	75 75 75			DETOUR EAST CTH C	
D1-05	500 FT NORTH OF CTH C	SOUTHBOUND STH 110	MO 4-8 M3-1 M 1-5A MO 5-1R	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR EAST CTH C ADVANCE ARROW RIGHT TURN	
D1-06	AT INTERSECION OF STH 110 & CTH C	SOUTHBOUND STH 110	MO 6-1	21 X 21	1	75	1	1	ARROW LEFT	COVER LEFT / AHEAD ARROW UNDER CTH C SIGN
D1-07	EAST OF STH 110	EASTBOUND CTH C	M0 4-8A M 3-2 M 1-5A	24 X 12 24 X 12 24 X 24	1 1 1	75 75 75			END DETOUR EAST CTH C	
D1-08	AT INTERSECTION OF CTH C AND TOWN HALL ROAD	SOUTHBOUND CTH C	MO 6-1	21 X 21	1	75	1	1	ARROW LEFT	COVER LEFT / RIGHT ARROW UNDER CTH C SIGN
D1-09	500 FT WEST OF STH 110	EASTBOUND CTH C	MO 4-8 M3-4 M 1-5A MO 6-1	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR WEST CTH C AHEAD ARROW	
D1-10	WEST OF STH 110 ON CTH C	WESTBOUND CTH C					1	2		COVER CTH C AHEAD ARROW SIGNS
D1-11	WEST OF STH 110 ON CTH C	WESTBOUND CTH C	R11-3B	60 X 30	1	75			BRIDGE OUT 4 MILES AHEAD LOCAL TRAFFIC ONLY	ON TYPE III BARRICADE
D1-12	WEST OF STH 110 ON CTH C	WESTBOUND CTH C	M0 4-8 M 3-4 M 1-5A W20-2	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75	1	1	DETOUR WEST CTH C ARROW RIGHT	COVER LEFT / RIGHT ARROW UNDER CTH C SIGN
D1-13	SOUTH OF CTH EE ON CTH A LEFT SHOULDER	NORTHBOUND STH 110	M3-4 M 1-5A W 20-2	24 X 12 24 X 24 48 X 48	1 1 1	75 75 75			WEST CTH C DETOUR AHEAD	
D1-14	500' SOUTH OF CTH C	NORTHBOUND STH 110	MO 4-8 M3-4 M 1-5A MO 5-1R	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR WEST CTH C ADVANCE ARROW RIGHT TURN	
			PAGE SUBTOTAL			2,925		5		

TRAFFIC CONTROL DETOUR SIGNS - CONTINUED

SIGN NO.	LOCATION	DIRECTION/ ROADWAY	SIGN CODE	SIZE W X H	NUMBER SIGNS IN SERVICE	643.3000 DETOUR SIGNS DAYS	643.0920 COVERING SIGNS TYPE II NUMBER OF CYCLES	643.0920 COVERING SIGNS TYPE II EACH	SIGN MESSAGE	REMARKS
D1-15	EAST OF CTH C ADJACENT TO EXISTING NORTH STH 110 SIGN	WESTBOUND	MO 4-8 M3-4 M1-5A	24 X 12 24 X 12 24 X 24	1 1 1	75 75 75			DETOUR WEST CTH C	
D1-16	EAST OF CTH C ON STH 110	WESTBOUND STH 110					1	2		COVER CTH C AHEAD ARROW SIGNS
D1-17	SOUTH OF CTH C ADJACENT TO EXISTING CTH C / ARROW RIGHT SIGN	NORTHBOUND STH 110	MO 4-8 M3-4 M 1-5A MO 6-1	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR WEST CTH C AHEAD ARROW	
D1-18	1500 FT EAST OF STH 110	WESTBOUND CTH C	W 20-2	48 X 48 24 X 12	1 1	75 75			DETOUR AHEAD	
D1-19	500 FT EAST OF STH 110	WESTBOUND CTH C	MO 4-8 M3-4 M 1-5A MO 5-1R	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR WEST CTH C ADVANCE ARROW RIGHT TURN	
D1-20	ADJACENT TO EXISTING WEST CTH C ARROW LEFT SIGN	WESTBOUND CTH C	M0 4-8 M 3-4 M 1-5A MO 6-1	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75	1	1	DETOUR WEST CTH C ARROW RIGHT	COVER LEFT ARROW UNDER CTH C SIGN
D1-21	WEST OF STH 110 ON CTH C	WESTBOUND CTH C	R11-3B M4-9R	60 X 30 30 X 24	1 1	75 75			BRIDGE OUT 4 MILES AHEAD LOCAL TRAFFIC ONLY DETOUR RIGHT ARROW	ON TYPE III BARRICADE
D1-22	ADJACENT TO EXISTING NORTH STH 110 SIGN	NORTHBOUND STH 110	M0 4-8 M 3-4 M 1-5A	24 X 12 24 X 12 24 X 24	1 1 1	75 75 75			DETOUR WEST CTH C	
D1-23	500 FT SOUTH OF CTH G	NORTHBOUND STH 110	MO 4-8 M3-4 M 1-5A MO 5-1L	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR WEST CTH C ADVANCE ARROW LEFT TURN	
D1-24	ADJACENT TO EXISTING CTH G / ARROW LEFT SIGN	NORTHBOUND STH 110	M0 4-8 M 3-4 M 1-5A MO 6-1	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR WEST CTH C ARROW LEFT	
D1-25	1500 FT NORTH OF CTH G	SOUTHBOUND STH 110	M3-4 M 1-5A W 20-2	24 X 12 24 X 24 48 X 48	1 1 1	75 75 75			WEST CTH C DETOUR AHEAD	
D1-26	500 FT NORTH OF CTH G	SOUTHBOUND STH 110	MO 4-8 M 3-4 M 1-5A MO 5-1R	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR WEST CTH C ADVANCE ARROW RIGHT TURN	
D1-27	NORTH OF CTH G	SOUTHBOUND STH 110	M0 4-8 M 3-4 M 1-5A MO 6-1	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR WEST CTH C ARROW RIGHT	
D1-28	WEST OF STH 110 NEXT TO WEST CTH G SIGN	WESTBOUND CTH G	M0 4-8 M 3-4 M 1-5A	24 X 12 24 X 12 24 X 24	1 1 1	75 75 75			DETOUR WEST CTH C	
D1-29	WEST OF TOWN HALL ROAD NEXT TO WEST CTH G SIGN	WESTBOUND CTH G	M0 4-8 M 3-4 M 1-5A	24 X 12 24 X 12 24 X 24	1 1 1	75 75 75			DETOUR WEST CTH C	
	PAGE SUBTOTAL					3,525	3			

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

TRAFFIC CONTROL DETOUR SIGNS - CONTINUED

SIGN NO.	LOCATION	DIRECTION/ ROADWAY	SIGN CODE	SIZE W X H	NUMBER SIGNS IN SERVICE	643.3000 DETOUR SIGNS DAYS	643.0920 COVERING SIGNS TYPE II NUMBER OF CYCLES	643.0920 COVERING SIGNS TYPE II EACH	SIGN MESSAGE	REMARKS
D2-01	1000' FT WEST OF INTESECTION WITH CTH G & CTH E	EASTBOUND CTH C	W20-2	48 X 48	1	75			DETOUR AHEAD	
D2-02	1000' FT WEST OF INTESECTION WITH CTH G & CTH E	EASTBOUND CTH C	MO 4-8 M 3-2 M 1-5A MO 5-1L	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR EAST CTH C ADVANCE ARROW LEFT TURN	
D2-03	SOUTH OF INTERSECTION OF CTH C / E / G	SOUTHBOUND CTH C/E/G					1	2		EAST CTH C
D2-04	AT CTH C/E/G INTERSECTION	EASTBOUND CTH C	R11-3B M4-9L	60 X 30 30 X 24	1 1	75 75			BRIDGE OUT 2 MILES AHEAD LOCAL TRAFFIC ONLY DETOUR LEFT ARROW	ON TYPE III BARRICADE
D2-05	AT CTH C/E/G INTERSECTION	EASTBOUND CTH C	M0 4-8 M 3-2 M 1-5A MO 6-1	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75	1	3	DETOUR EAST CTH C ARROW LEFT	COVER EAST, CTH C, RIGH ARROW SIGNS
D2-06	1500 FT NORTH OF CTH E & CTH G INTERSECTION	SOUTHBOUND CTH E	M 3-2 M 1-5A W 20-2	24 X 12 24 X 24 48 X 48	1 1 1	75 75 75			EAST CTH C DETOUR AHEAD	
D2-07	500 FT NORTH OF CTH E & CTH G INTERSECTION	SOUTHBOUND CTH E	MO 4-8 M 3-2 M 1-5A MO 5-1L	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR EAST CTH C ADVANCE ARROW LEFT TURN	
D2-08	AT INTERSECTION OF CTH E & CTH G	SOUTHBOUND CTH E	R11-3B M4-9L	60 X 30 30 X 24	1 1	75 75			BRIDGE OUT 2 MILES AHEAD LOCAL TRAFFIC ONLY DETOUR LEFT ARROW	ON TYPE III BARRICADE
D2-09	AT INTERSECTION OF CTH E & CTH G	SOUTHBOUND CTH E	M0 4-8 M 3-2 M 1-5A MO 6-1	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR EAST CTH C ARROW LEFT	
D2-10	EAST OF CTH E ON CTH G	EASTBOUND CTH G	M0 4-8 M 3-2 M 1-5A	24 X 12 24 X 12 24 X 24	1 1 1	75 75 75			DETOUR EAST CTH C	
D2-11	WEST OF CTH E ON CTH G	WESTBOUND CTH G	M0 4-8 M 3-4 M 1-5A	24 X 12 24 X 12 24 X 24	1 1 1	75 75 75			DETOUR WEST CTH C	
D2-12	AT CTH C/E/G INTERSECTION	WESTBOUND CTH G	MO 6-1	21 X 21	1	75	1	1	AHEAD ARROW	COVER AHEAD / LEFT ARROW SIGNS
D2-13	AT CTH C/E/G INTERSECTION	NORTHBOUND CTH C/E/G	M0 4-8 M 3-2 M 1-5A MO 6-1	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR EAST CTH C ARROW RIGHT	
D2-14	WEST OF CTH C/E/G INTERSECTION	WESTBOUND CTH C	M0 4-8A M 3-4 M 1-5A	24 X 12 24 X 12 24 X 24	1 1 1	75 75 75			END DETOUR WEST CTH C	
D3-01	1500 FT WEST OF CTH C / E / G INTERSECTION	EASTBOUND CTH G	M 3-2 M 1-5A W 20-2	24 X 12 24 X 24 48 X 48	1 1 1	75 75 75			EAST CTH C DETOUR AHEAD	
D3-02	500 FT WEST OF CTH C / E / G INTERSECTION	EASTBOUND CTH G	MO 4-8 M 3-2 M 1-5A MO 5-1L	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR EAST CTH C ADVANCE ARROW LEFT TURN	
	PAGE SUBTOTAL					3,000		4		

TRAFFIC CONTROL DETOUR SIGNS - CONTINUED

SIGN NO.	LOCATION	DIRECTION/ ROADWAY	SIGN CODE	SIZE W X H	NUMBER SIGNS IN SERVICE	643.3000 DETOUR SIGNS DAYS	643.0920 COVERING SIGNS TYPE II NUMBER OF CYCLES	643.0920 COVERING SIGNS TYPE II EACH	SIGN MESSAGE	REMARKS
D3-03	AT CTH C/E/G INTERSECTION	EASTBOUND CTH G	R11-3B M4-9L	60 X 30 30 X 24	1 1	75 75			BRIDGE OUT 1 MILES AHEAD LOCAL TRAFFIC ONLY DETOUR LEFT ARROW	ON TYPE III BARRICADE
D3-04	AT CTH C/E/G INTERSECTION	EASTBOUND CTH G	M0 4-8 M 3-2 M 1-5A M0 6-1	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR EAST CTH C ARROW LEFT	
D3-05	EAST OF CTH C/E/G INTERSECTION	EASTBOUND CTH C/E					1	2		COVER EAST, CTH C SIGNS
D3-06	WEST OF CTH E INTERSECTION	EASTBOUND CTH C/E					1	2		COVER CTH C, AHEAD ARROW SIGNS
D3-07	EAST OF CTH C / E INTERSECTION	EASTBOUND CTH C	R11-3B	60 X 30	1	75			BRIDGE OUT 0.2 MILES AHEAD LOCAL TRAFFIC ONLY	ON TYPE III BARRICADE
D3-08	1500 FT SOUTH OF CTH C / E INTERSECTION	NORTHBOUND CTH E	M 3-2 M 1-5A W 20-2	24 X 12 24 X 24 48 X 48	1 1 1	75 75 75			EAST CTH C DETOUR AHEAD	
D3-09	500 FT WEST OF CTH C / E / G INTERSECTION	NORTHBOUND CTH E	MO 4-8 M 3-2 M 1-5A MO 5-1L	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR EAST CTH C ADVANCE ARROW LEFT TURN	COVER CTH C, ARROW RIGHT / LEFT
D3-10	AT CTH C/E INTERSECTION	NORTHBOUND CTH E	MO 4-8 M 3-2 M 1-5A MO 6-1	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75	1 1	1 1	DETOUR EAST CTH C ARROW LEFT	
D3-11	AT CTH C/E INTERSECTION	NORTHBOUND CTH E	M7-1	12'X9"	1	75	1	1	ARROW LIGHT	COVER ARROW RIGHT
D3-12	AT CTH C/E/G INTERSECTION	WESTBOUND CTH C/E	MO 4-8 M 3-2 M 1-5A MO 6-1	24 X 12 24 X 12 24 X 24 21 X 21	1 1 1 1	75 75 75 75			DETOUR EAST CTH C AHEAD ARROW	
D3-13	NORTH OF CTH C / E / G INTERSECTION	NORTHBOUND CTH C/E/G	MO 4-8 M 3-2 M 1-5A	24 X 12 24 X 12 24 X 24	1 1 1	75 75 75			DETOUR EAST CTH C	PLACE NEXT TO EXISTING WEST CTH C, NORTH CTH E EAST CTH G SIGNS
		PAGE SUBTOTAL				1,950		7		
		PROJECT TOTALS				**11,400**		**19**		

Conventional Signs and Abbreviations

SECTION LINE	AC	ACRES	R RADIUS
QUARTER LINE	Δ	CENTRAL ANGLE	R. RANGE
TOWNSHIP AND RANGE LINE	C/L	CENTERLINE	R/L REFERENCE LINE
PROPOSED OR NEW CENTERLINE	COR.	CORNER	R/W RIGHT OF WAY
PROPOSED OR NEW R/W LINE	CTH	COUNTY TRUNK HIGHWAY	1/4LINE QUARTER LINE
EXISTING R/W LINE	D	DEGREE OF CURVE	1/16LINE SIXTEENTH LINE
LOT LINE	E.	EAST	S. SOUTH
PROPERTY LINE	L	LENGTH OF CURVE	SEC SECTION
COUNTY LINE LIMITS	LC	LONG CHORD	SEC LINE SECTION LINE
SLOPE INTERCEPTS	LCB	LONG CHORD BEARING	STH STATE TRUNK HIGHWAY
FENCE	MI	MILE	SF SQUARE FEET
SECTION OR QUARTER CORNER	M\L	MEANDER LINE	STA STATION
POWER POLE	N.	NORTH	T. TOWN
TELEPHONE PEDESTAL	PC	POINT OF CURVATURE	T TANGENT LENGTH OF CURVE
UNDERGROUND TELEPHONE CABLE	PI	POINT OF INTERSECTION	TLE TEMPORARY LIMITED EASEMENT
NO ACCESS (BY ACQUISITION)	PT	POINT OF TANGENCY	USH UNITED STATES HIGHWAY
NO ACCESS (BY PREVIOUS PROJECT)	PLE	PERMANENT LIMITED EASEMENT	W. WEST
NO ACCESS (BY STATUTORY AUTHORITY)	P\L	PROPERTY LINE	

FEE INTEREST

TEMPORARY LIMITED EASEMENT

100 RIGHT OF WAY NUMBER

RIGHT-OF-WAY TYPE 2 MONUMENTS SET AT NEWLY ACQUIRED R/W ANGLE POINTS

SCHEDULE OF LANDS AND INTERESTS

PARCEL NO.	OWNER	INTEREST REQUIRED	RIGHT-OF-WAY EXISTING	RIGHT-OF-WAY NEW	RIGHT-OF-WAY TOTAL	TLE AREA
1	JIMMY L. MUCH AND DARHL M. MUCH, TRUSTEES OF THE JOINT LIVING TRUST	FEE	---	0.04 AC	0.04 AC	---
2	RONALD G. RADIES, PETER L. RADIES AND WILLIAM C. RADIES, CO-TRUSTEES OF THE BPRWT SUBTRUST DATED JANUARY 25, 1996	FEE TLE	---	0.15 AC	0.15 AC	200 S.F.
3	DAVID L. SCHMIDT AND MARJORIE SCHMIDT, HIS WIFE, AS JOINT TENANTS	FEE TLE	---	0.06 AC	0.06 AC	0.01 AC
90	FRONTIER COMMUNICATIONS OF WISCONSIN	RELEASE OF RIGHTS	---	---	---	---

"OWNERS" NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO THE COUNTY OF WAUPACA.

PLAT REVISIONS

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
6819-02-00	4.1	1
FEDERAL PROJECT NUMBER		

PLAT OF RIGHT OF WAY REQUIRED FOR

CTH E - STH 110

N BR LITTLE WOLF RVR BRIDG B68-0322

CTH C WAUPACA COUNTY

CONSTRUCTION PROJECT NUMBER 6819-02-70

0 25' 50' 100'

SCALE: 1"=50'

N

BEGIN RELOCATION ORDER

STATION 7+00

941.46' NORTH OF AND 778.50' EAST OF THE SOUTHWEST CORNER OF SECTION 25, T25N, R12E, TOWN OF WYOMING, WAUPACA COUNTY, WISCONSIN
Y 432885.55
X 559820.04

END RELOCATION ORDER

STATION 13+00

842.85' NORTH OF AND 1370.28' EAST OF THE SOUTHWEST CORNER OF SECTION 25, T25N, R12E, TOWN OF WYOMING, WAUPACA COUNTY, WISCONSIN
Y 432786.95
X 560411.82

TOWN OF WYOMING

CTH C

SW-SW SECTION 25

SE-SW SECTION 25

N. BRANCH LITTLE WOLF RIVER

JIMMY L. MUCH & DARHL M. MUCH TRUSTEES OF THE JOINT LIVING TRUST

RONALD G. RADIES, PETER L. RADIES AND WILLIAM C. RADIES, CO-TRUSTEES OF THE BPRWT SUBTRUST DATED JANUARY 25, 1996

FRONTIER COMMUNICATIONS OF WISCONSIN

DAVID L. SCHMIDT & MARJORIE SCHMIDT, HIS WIFE, AS JOINT TENANTS
LOT 1 CSM 497 VOL. 2, P 689, DOC. NO. 358204

5' TEMPORARY LIMITED EASEMENT FOR DRIVEWAY CONSTRUCTION GRADING AND SLOPING

5' TEMPORARY LIMITED EASEMENT FOR GRADING AND SLOPING

SLOPE INTERCEPT

EXISTING STRUCTURE

PROPOSED STRUCTURE

BLDG

P\L

R/L

7+00 PCC 7+00

8+05.00 34.23' R/W 46.23' R/W

PT 7+98.97

8+00 9+00 10+00 11+00 12+00

N80°01'02"W S80°01'02"E S80°14'53"E

CURVE A

7+20.56 29.55' R/W

7+24.15 36.77' R/W

7+28.14 42.54' TLE

8+00.00 38.75' TLE 43.75' TLE

8+50.00 38.95' R/W 43.95' R/W

11+03.73 44.98' TLE 49.98' TLE

11+43.73 45.14' TLE 50.14' TLE

12+18.93 44.56' R/W

12+21.12 32.55' R/W

12+35.25 45.51' R/W

12+33.16 33.50' R/W

413.93' 416.12' 903.36' 72.95' 501.03' 511.12' 385.35' 824.01' 34.05'

L-1 L-2 L-3 L-4 L-5

CURVE A

PI STA 7+49.50
Y 432880.20
X 559869.25
Δ = 03°32'39"
DA = 03°34'54"
T = 49.50'
R = 1600.00'
L = 98.97'
LC = 98.96'
LCB = S82°01'12.5"E

COORDINATE TABLE

POINT	Y	X
562	432853.86	559836.89
569	432946.19	559840.09
570	432824.78	559851.73
571	432818.85	559960.88
574	432753.05	560340.40
575	432944.60	560339.47
578	432936.35	559931.61
579	432804.83	559929.77
580	432716.26	560340.27
581	432832.39	560339.59

LAYOUT

SCALE 0 1/2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.114 MI.

LINE TABLE

LINE	BEARING	LENGTH
L-1	N00°34'54"W	12.21'
L-2	S22°37'08"E	8.31'
L-3	S09°45'07"W	5.00'
L-4	N00°34'54"W	12.21'
L-5	S09°45'07"W	12.00'

HARRISON MON FOUND
Y = 431944.090
X = 559041.542

HARRISON MON FOUND
Y = 431914.066
X = 561655.982

N89°20'31"W 1307.31'

N89°20'31"W 2614.62'

N00°34'54"W 1/16 LINE

ACCEPTED FOR WAUPACA COUNTY

3/21/2013 (Date) (Signature)

ORIGINAL PLANS PREPARED BY

OMNNI ASSOCIATES
APPLETON, WISCONSIN

WISCONSIN PAUL D. NORDWIG 2784 WRIGHTSTOWN WI LAND SURVEYOR

March 21, 2013 (Date) (Signature)

Notes:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES (WAUPACA COUNTY), NAD 83 (2007) IN U.S. SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES. GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT OF WAY MONUMENTS ARE TYPE 2 (TYPICALLY 3/4" X 24" REBAR) AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD. OTHER INFORMATION IS PROVIDED TO SUPPLEMENT THE BASIC PERIMETER DESCRIPTION AND SHALL NOT BE CONSTRUED TO PREVAIL OVER THE PERIMETER DESCRIPTION.

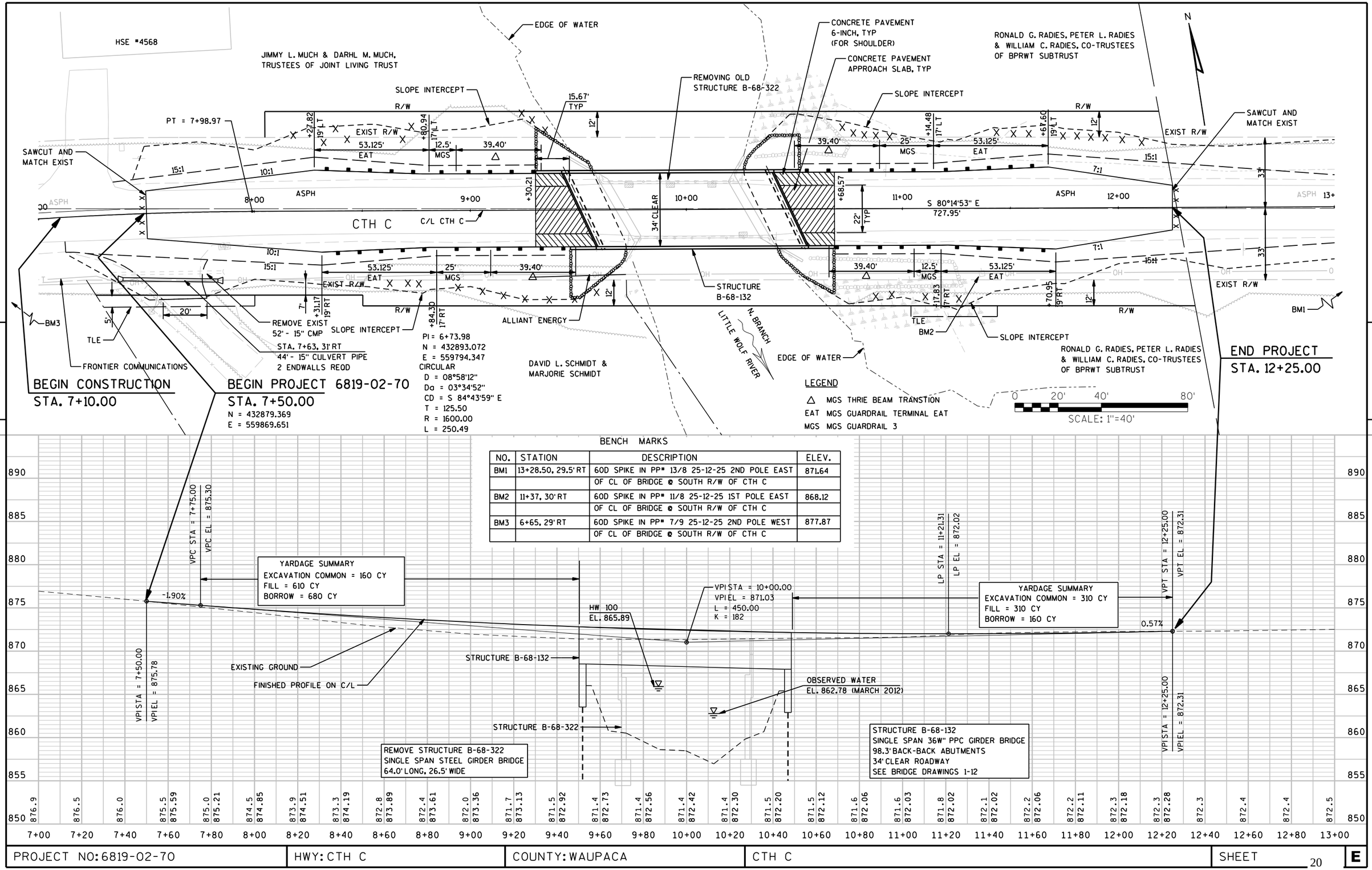
THE REFERENCE LINE SHOWN ON THIS PLAT IS INTENDED FOR CONSTRUCTION ONLY. THE RIGHT-OF-WAY IS BASED ON A CONVEYANCE OF LANDS FOR HIGHWAY PURPOSES DOCUMENT DATED SEPTEMBER 2, 1936 AND WAUPACA COUNTY CERTIFIED SURVEY MAP 497.

WAUPACA COUNTY

LEVELS ON = 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 51, 52, 53, 54, 55, 59, 62, 63

FILE NAME : F:\TR\JOBS\E2029A12\Sheets\PLAT\RWP.DGN PLOT DATE: 3/21/2013 12:43:13 PM ORG DATE : / /2000 PLOT SCALE : ORIGINATOR : OMNNI ASSOCIATES PLOT SCALE :

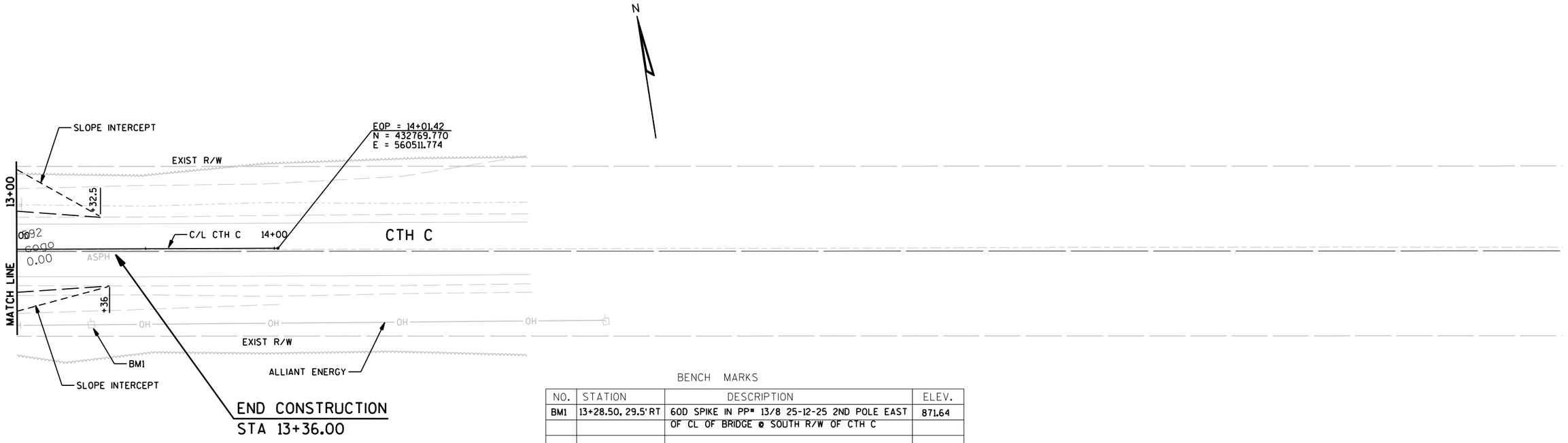
WISDOT/CADDS SHEET 50



BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
BM1	13+28.50, 29.5' RT	60D SPIKE IN PP# 13/8 25-12-25 2ND POLE EAST	871.64
		OF CL OF BRIDGE @ SOUTH R/W OF CTH C	
BM2	11+37, 30' RT	60D SPIKE IN PP# 11/8 25-12-25 1ST POLE EAST	868.12
		OF CL OF BRIDGE @ SOUTH R/W OF CTH C	
BM3	6+65, 29' RT	60D SPIKE IN PP# 7/9 25-12-25 2ND POLE WEST	877.87
		OF CL OF BRIDGE @ SOUTH R/W OF CTH C	

PROJECT NO: 6819-02-70	HWY: CTH C	COUNTY: WAUPACA	CTH C	SHEET 20	E	5.1

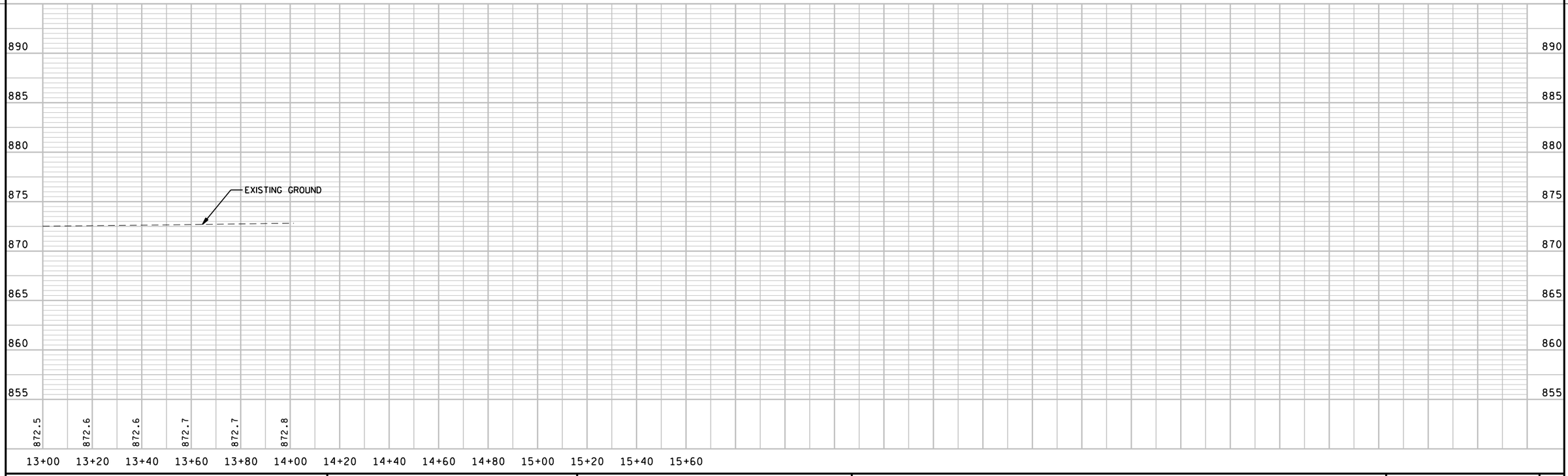


BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
BM1	13+28.50, 29.5' RT	60D SPIKE IN PP* 13/8 25-12-25 2ND POLE EAST	871.64
		OF CL OF BRIDGE @ SOUTH R/W OF CTH C	

0 20' 40' 80'

SCALE: 1"=40'



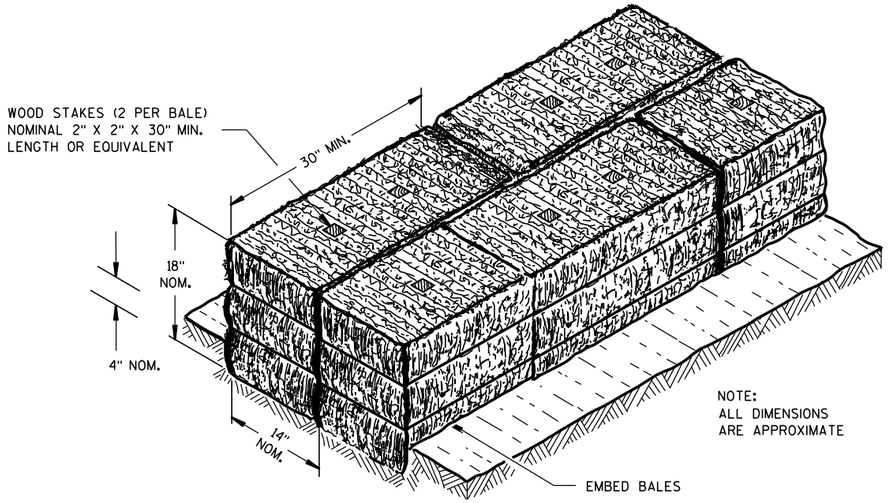
PROJECT NO: 6819-02-70	HWY: CTH C	COUNTY: WAUPACA	CTH C	SHEET 21	E

FILE NAME : F:\TR\JOBS\E2029A12\Sheets\PLAN\050102_pp.dgn PLOT DATE : 5/29/2013 2:08:04 PM PLOT BY : OMNNI - perryd PLOT NAME : PLOT SCALE : 2.0000 ft / IN.
WISDOT/CADDS SHEET 40

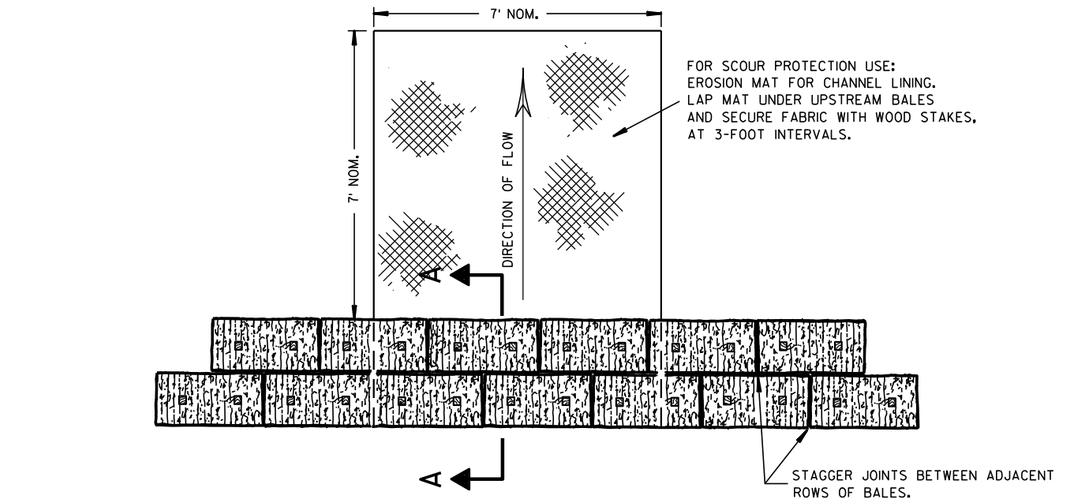
Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
12A03-10	NAME PLATE (STRUCTURES)
13A03-05	CONCRETE PAVEMENT SHOULDERS
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
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)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	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
15C06-06	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)

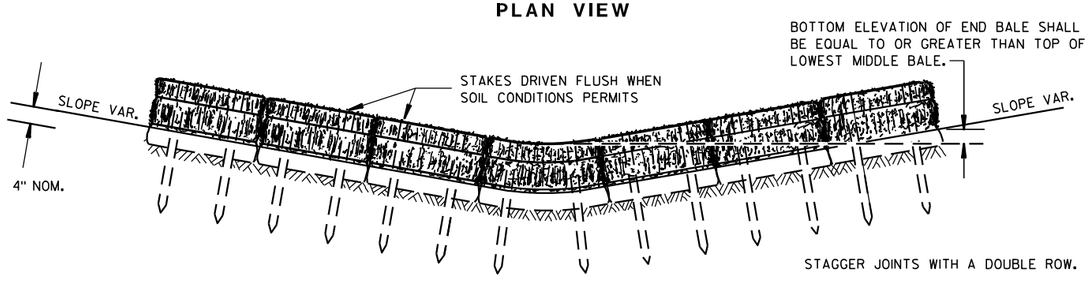
6



SECTION A-A



PLAN VIEW



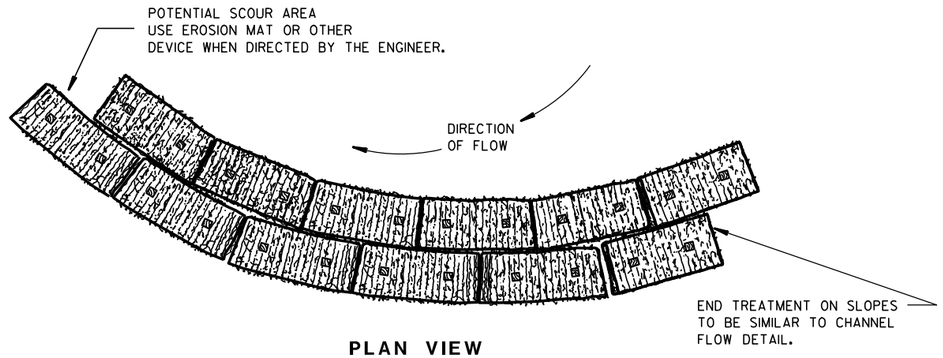
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

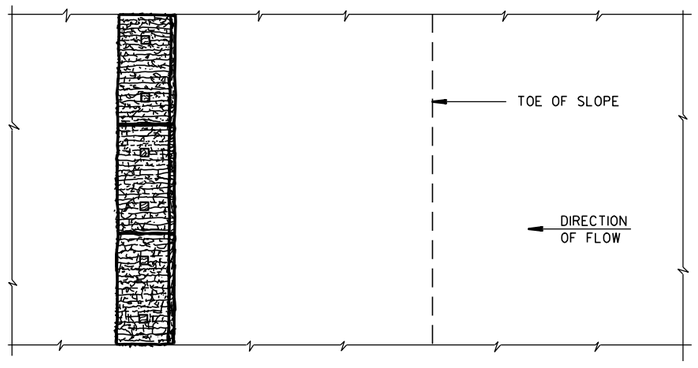
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

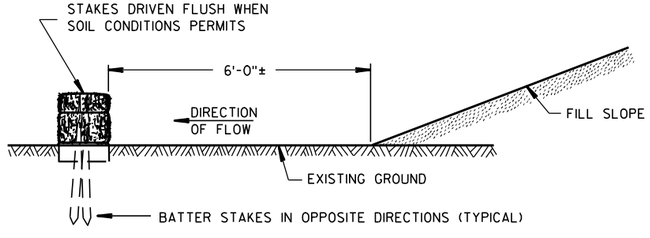


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

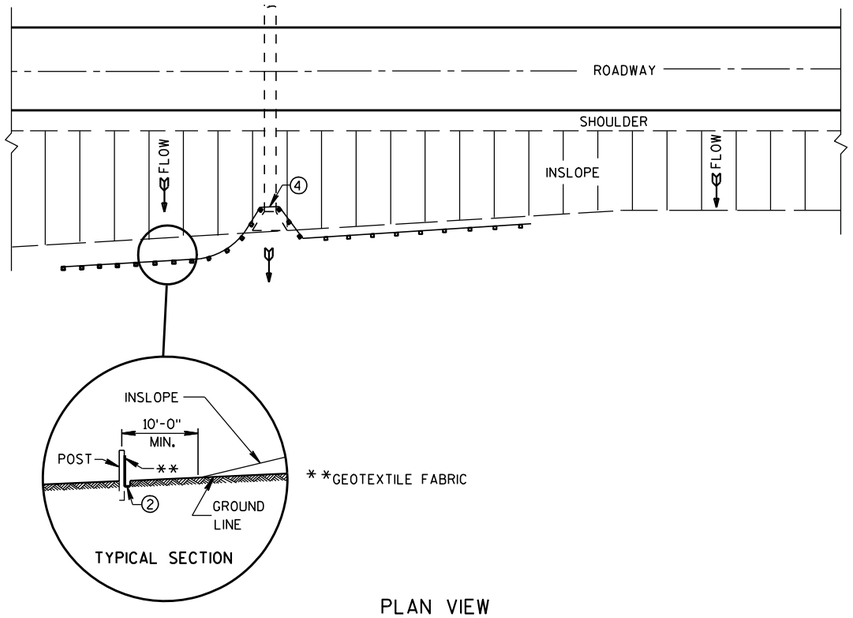
APPROVED

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

FHWA

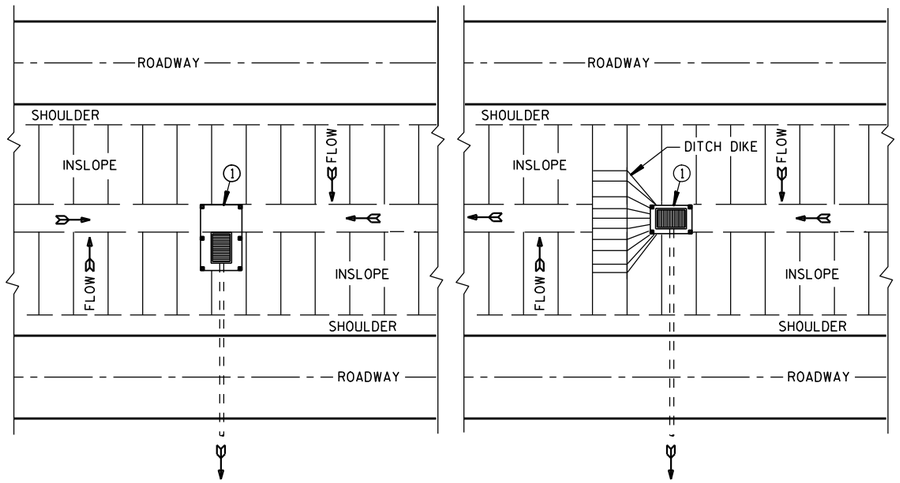
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

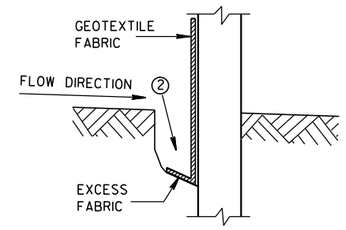
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

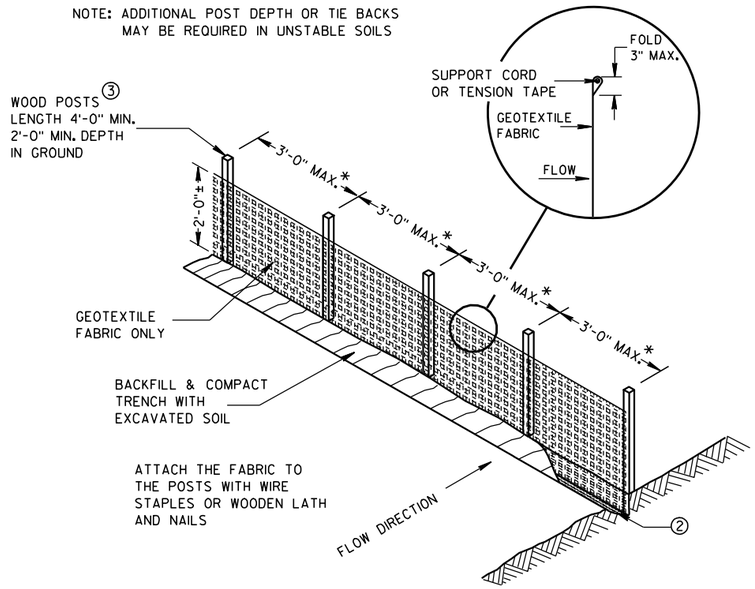
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

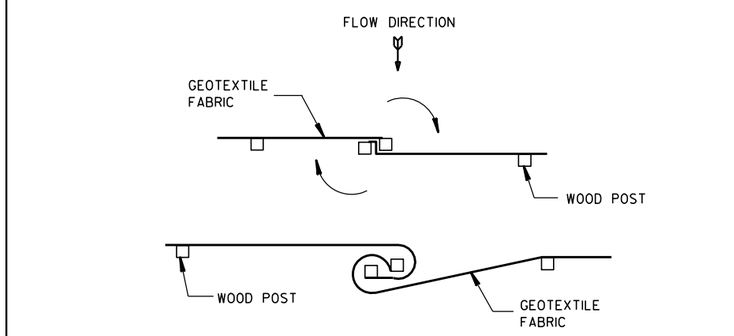
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



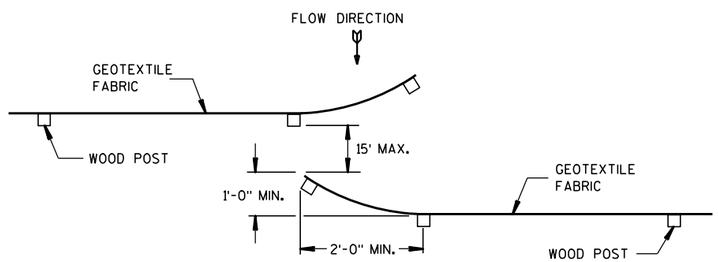
TRENCH DETAIL



SILT FENCE

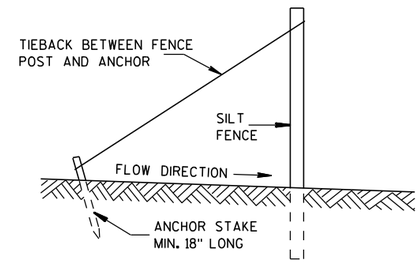


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

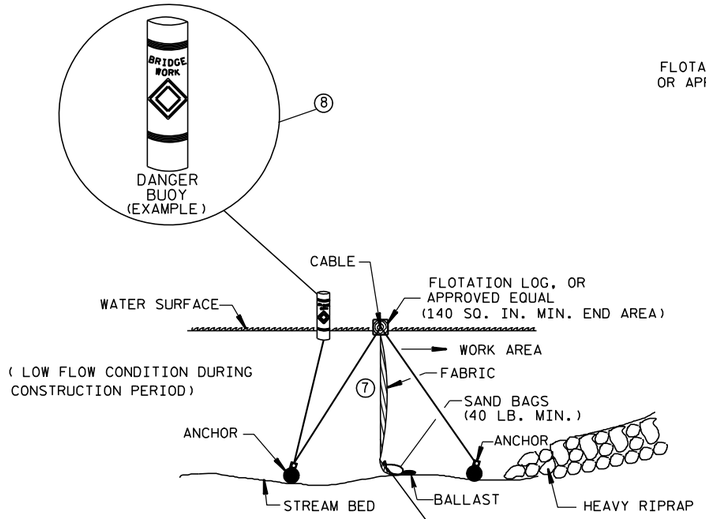
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

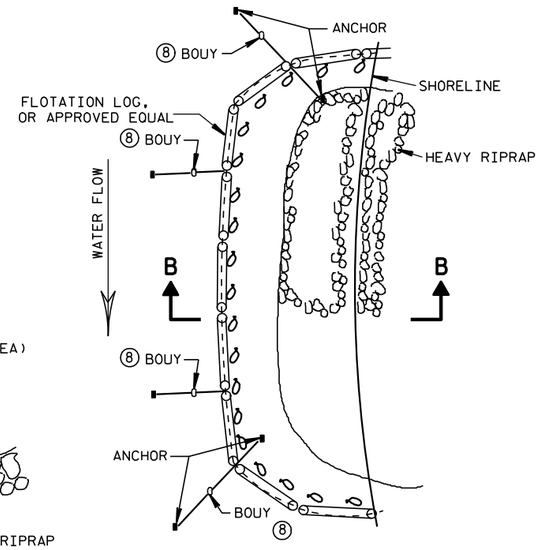
S.D.D. 8 E 9-6

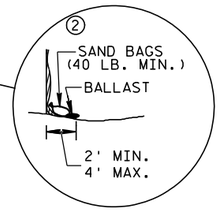
6

S.D.D. 8 E 9-6

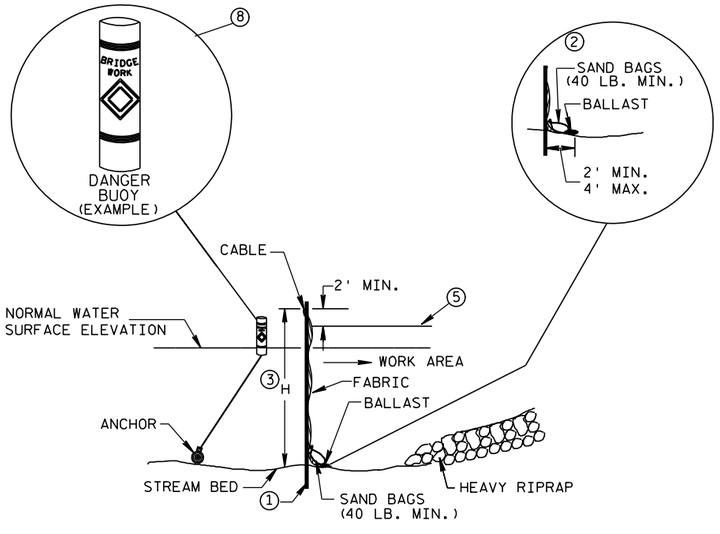


SECTION B-B

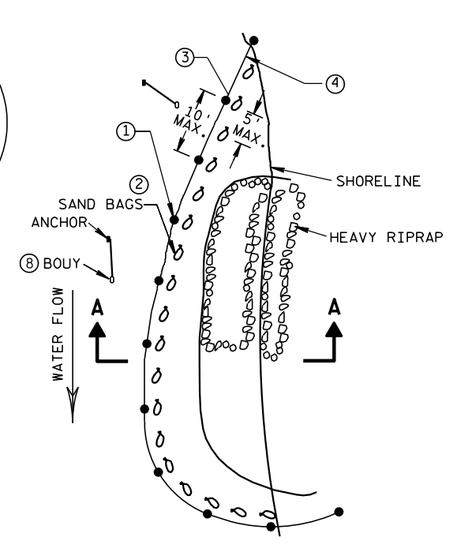




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



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.

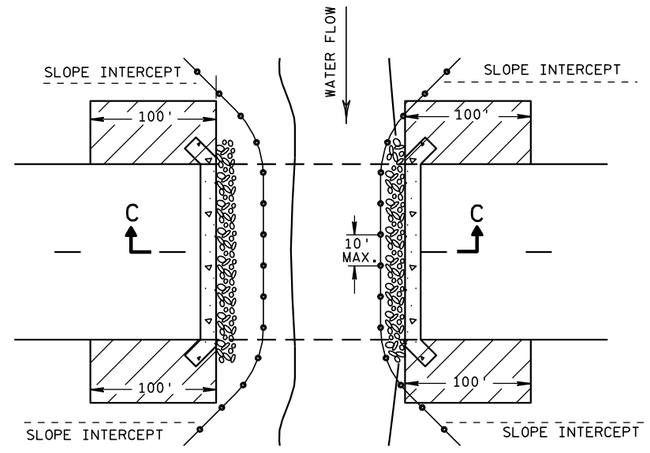
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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

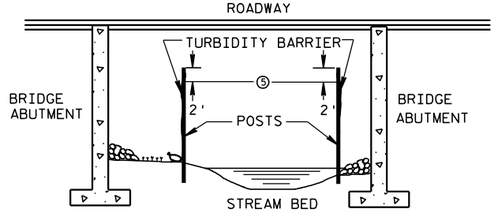
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 E 11-2

6

S.D.D. 8 E 11-2

METAL APRON ENDWALLS

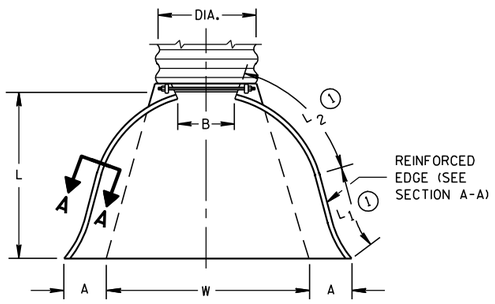
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

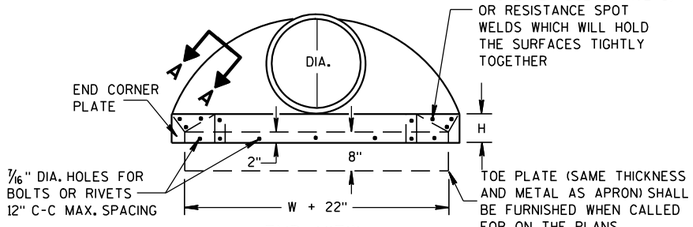
REINFORCED CONCRETE APRON ENDWALLS

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

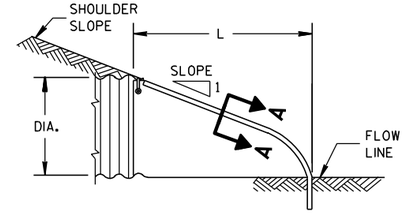
*MINIMUM
**MAXIMUM



PLAN VIEW

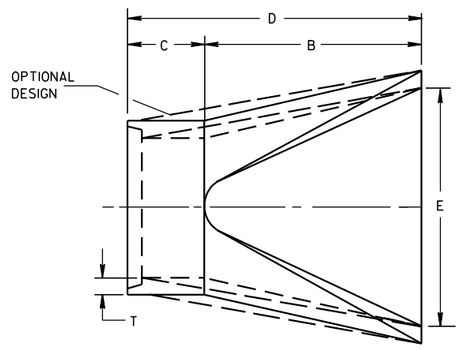


END VIEW

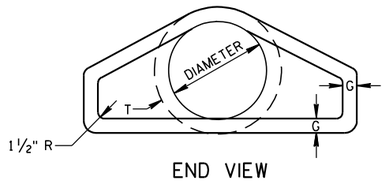


SIDE ELEVATION

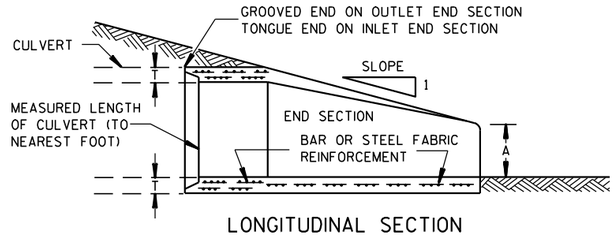
METAL ENDWALLS



PLAN

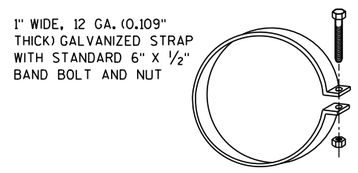


END VIEW



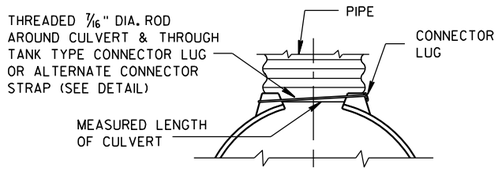
LONGITUDINAL SECTION

CONCRETE ENDWALLS

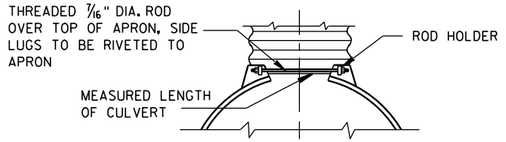


ALTERNATE FOR TYPE 1 CONNECTION

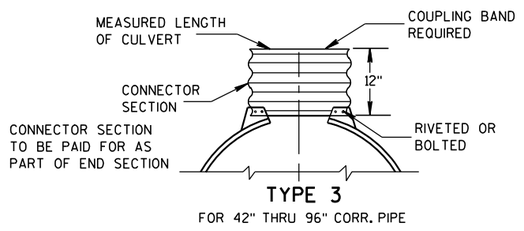
END SECTION CONNECTOR STRAP



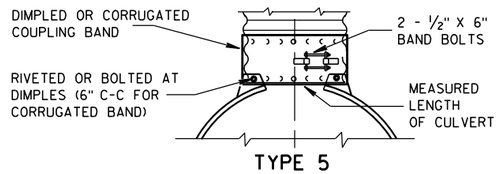
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

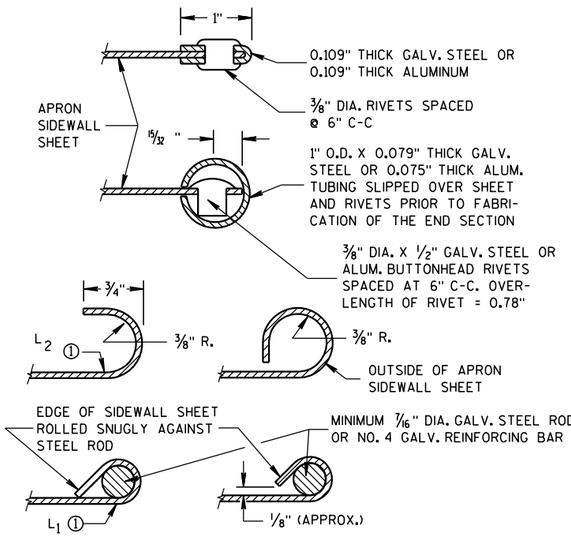
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

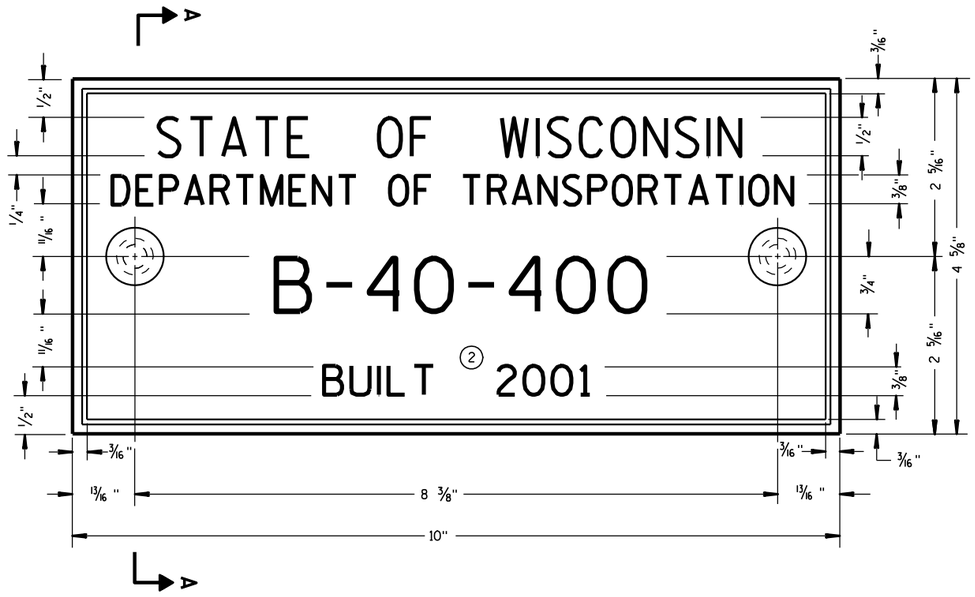
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 F 1-11



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

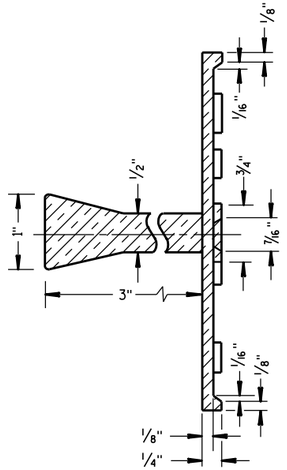
GENERAL NOTES

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.

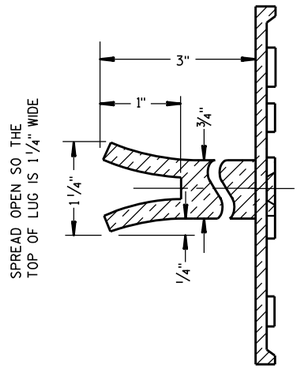
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

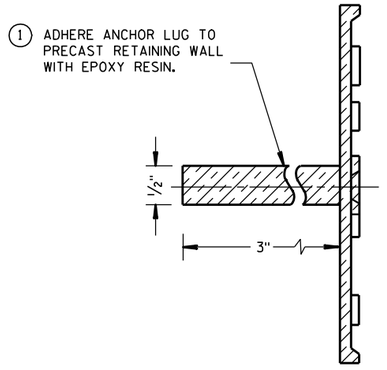
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



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

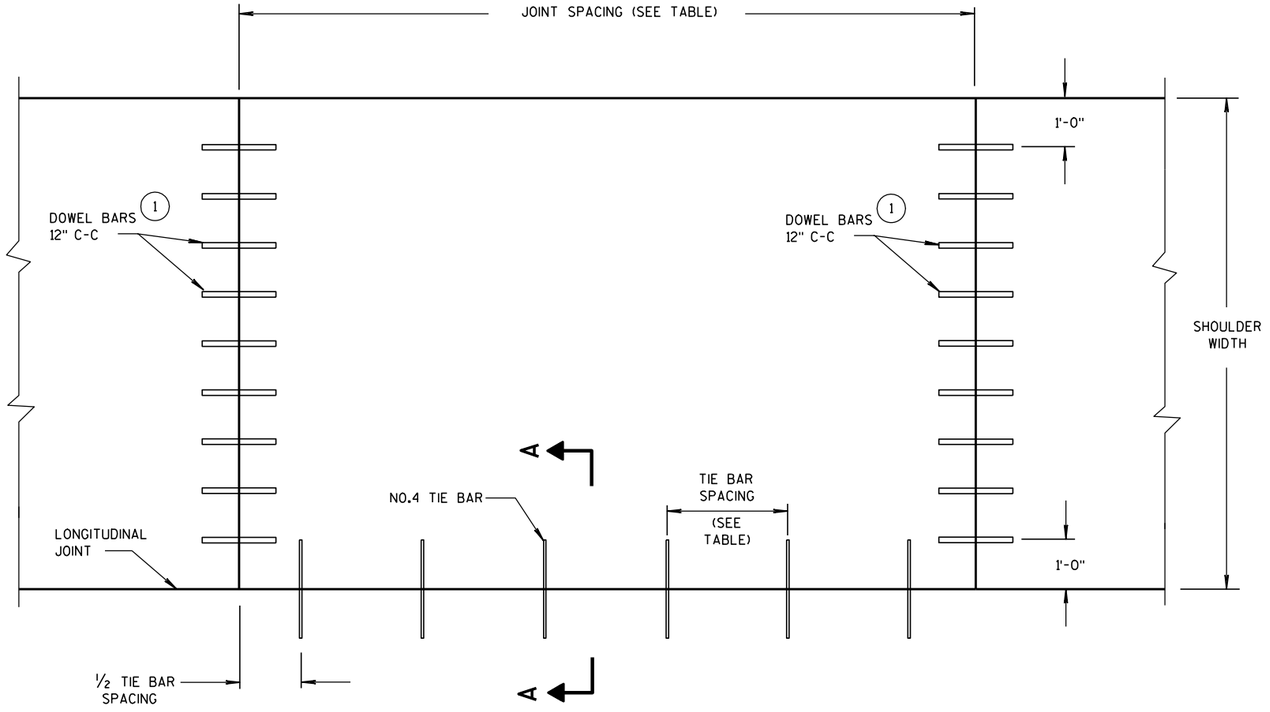
FHWA

6

S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10



PLAN VIEW

CONCRETE PAVEMENT SHOULDER

PAVEMENT TYPE OF TRAFFIC LANES	TIE BAR SPACING	SHOULDER JOINT SPACING
NON-REINFORCED	30"	MATCH JOINT SPACING OF ADJACENT TRAFFIC LANE
CONTINUOUSLY REINFORCED	30"	15' FOR 6' TO 10' WIDE SHOULDERS
CONTINUOUSLY REINFORCED	36"	12' FOR 3' WIDE SHOULDERS

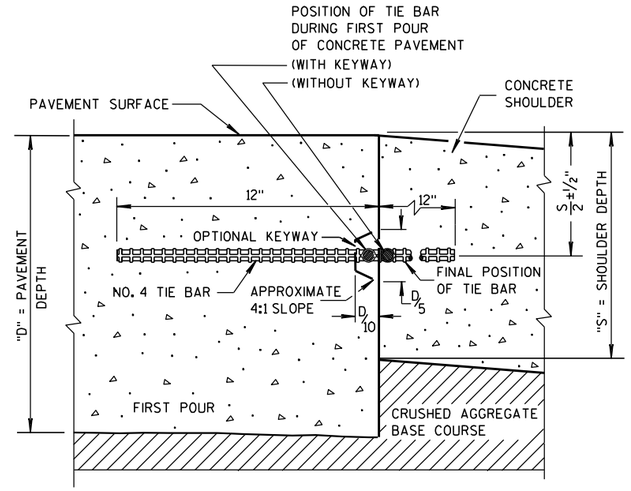
GENERAL NOTES

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.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A-A

LONGITUDINAL CONSTRUCTION JOINT

(1) **PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE**

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'

FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

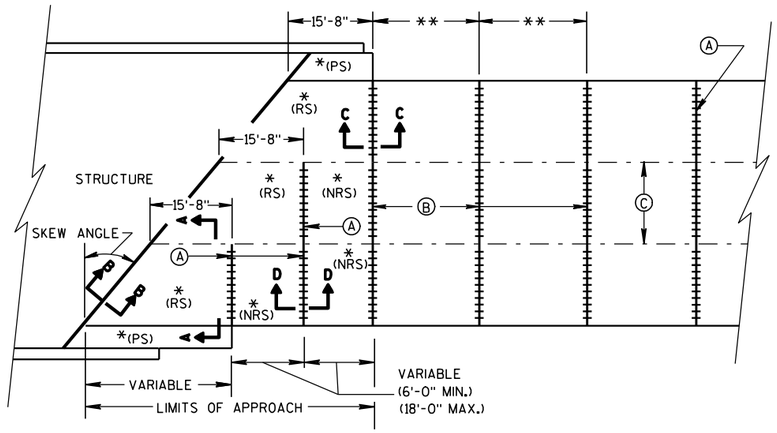
CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

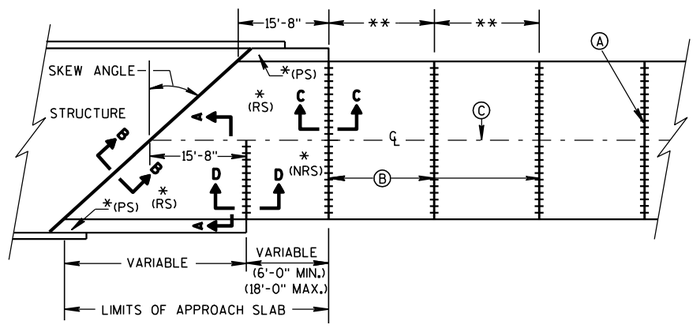
APPROVED
8/15/2011 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & D — INEER
FHWA

6

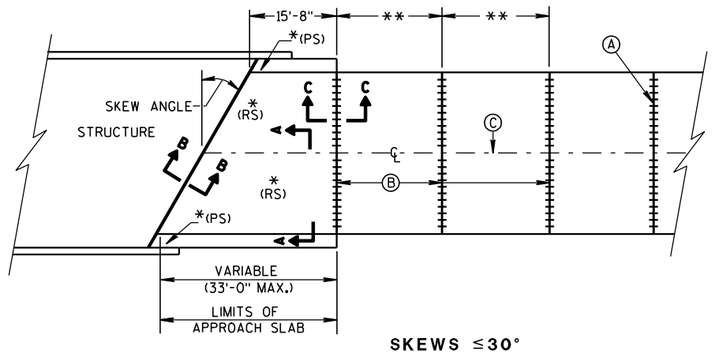
S.D.D. 13 A 3-5



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



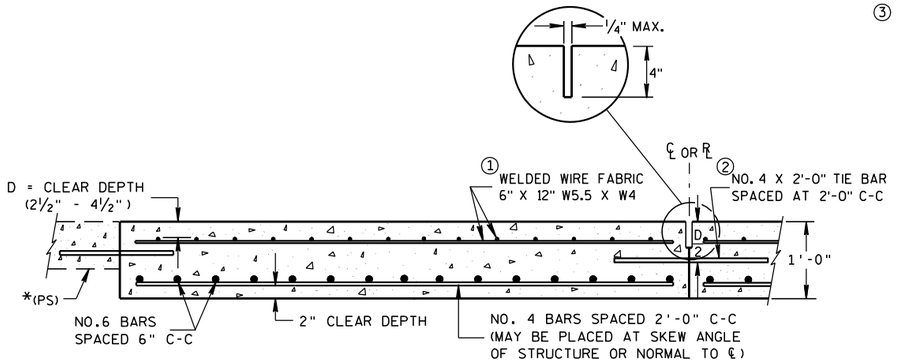
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

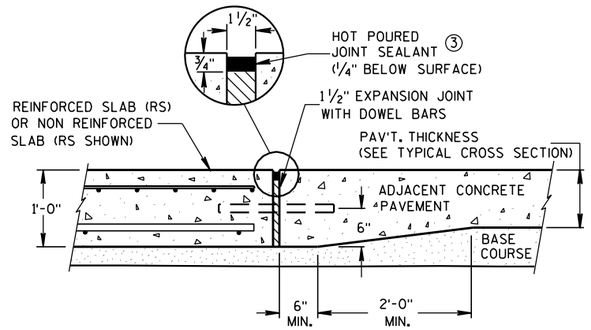
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING
(SEE SDD 13C4, SDD 13C11, & SDD 13C13)

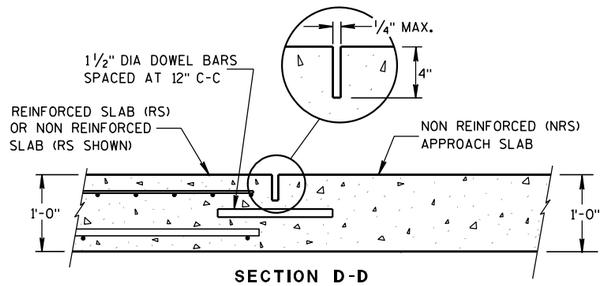
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄
(C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

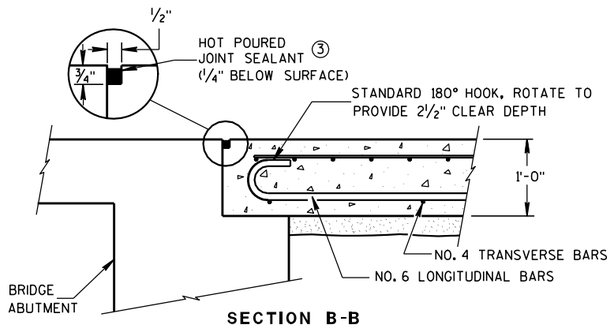
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

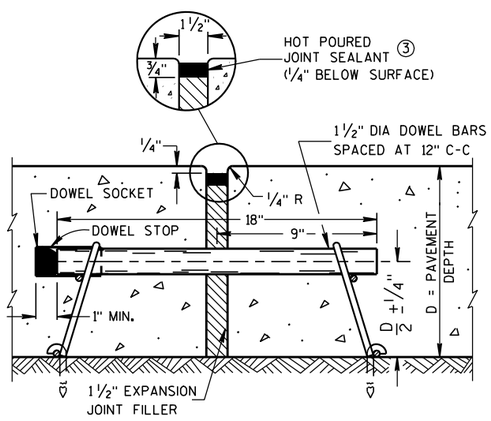
(1) THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

(2) THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

(3) USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/11/2009 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DESIGN ENGINEER
FHWA

6
S.D.D. 13 B 2-6

GENERAL NOTES

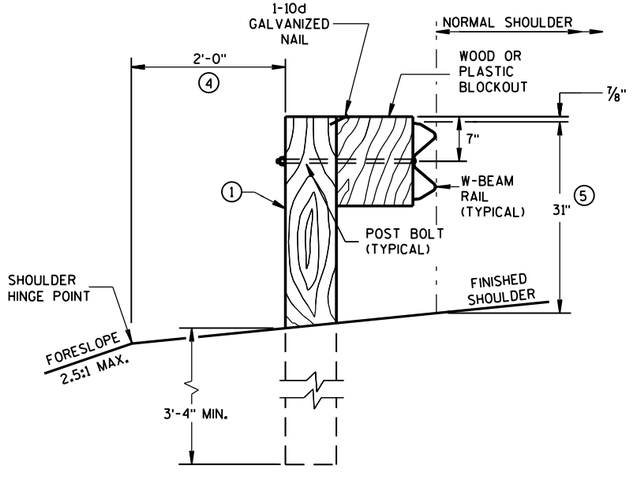
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

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.

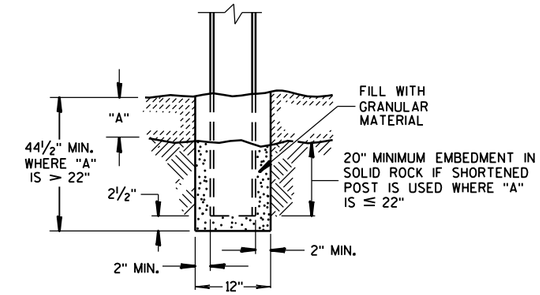
4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

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".



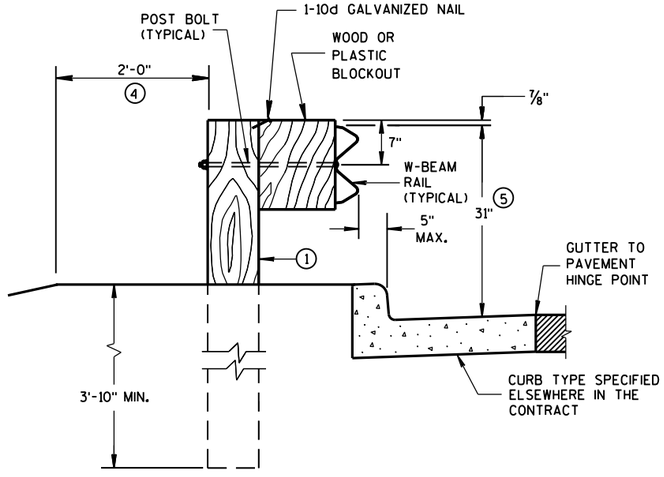
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



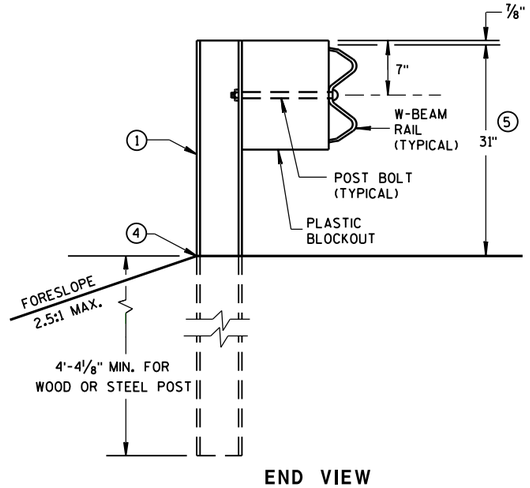
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



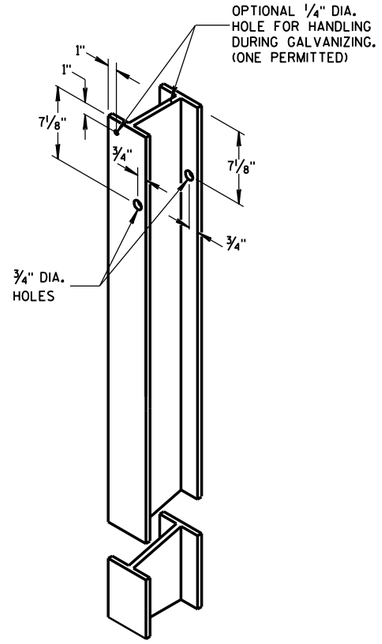
END VIEW

LOCATED ALONG A CURBED ROADWAY

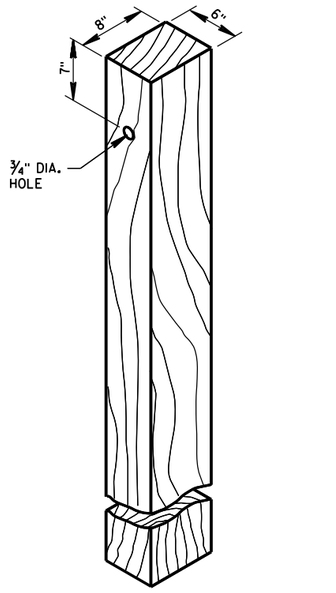


END VIEW

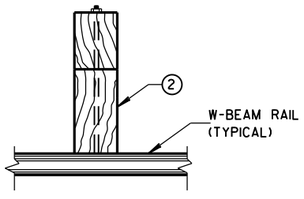
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



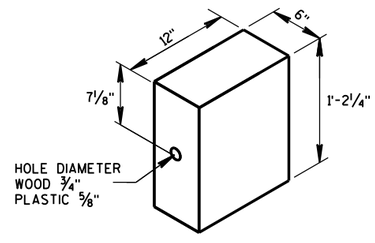
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



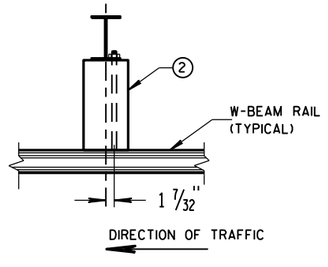
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②

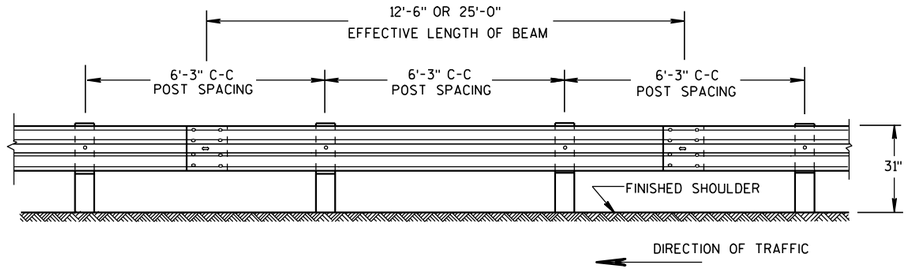


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

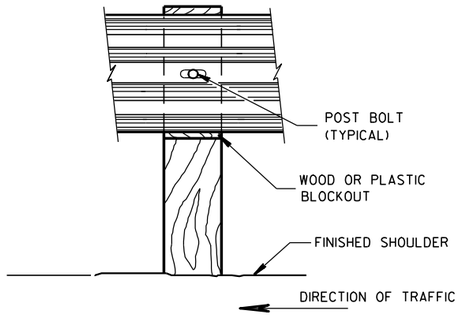
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6
S.D.D. 14 B 42-2a



FRONT VIEW

POST SPACING STANDARD INSTALLATION



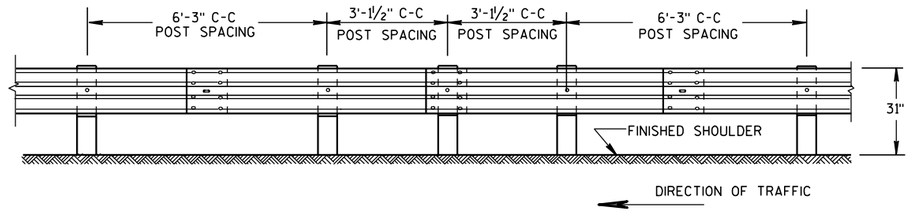
FRONT VIEW AT WOOD POST

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.

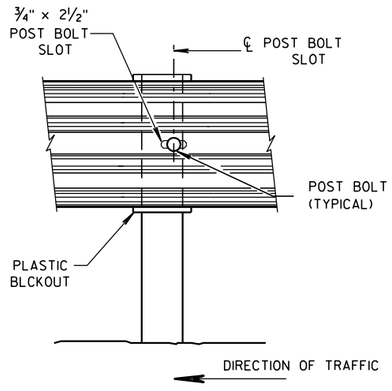
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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.

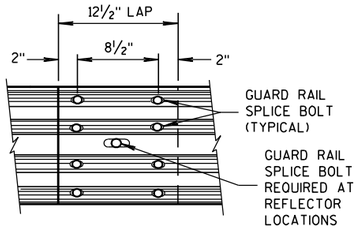


FRONT VIEW

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

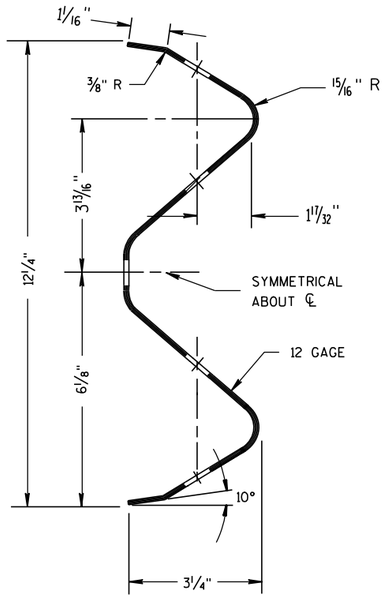


FRONT VIEW AT STEEL POST

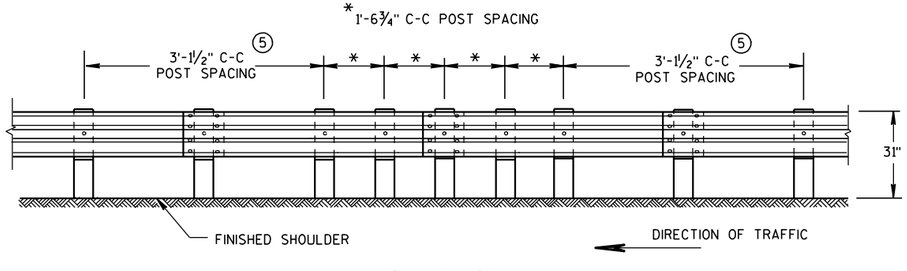


FRONT VIEW

MID-SPAN BEAM SPLICE

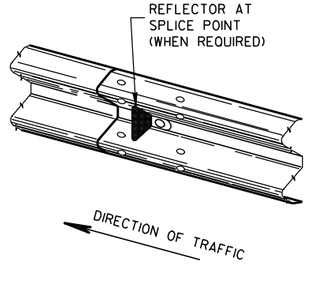


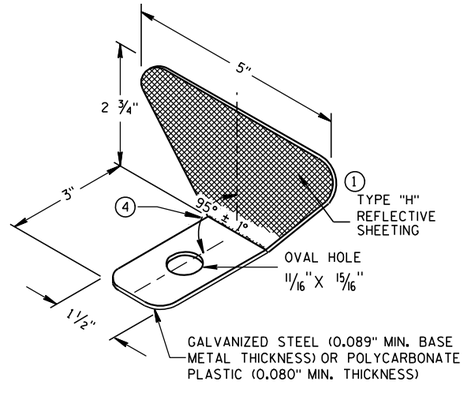
SECTION THRU W-BEAM RAIL



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 ③ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 ④ 2	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

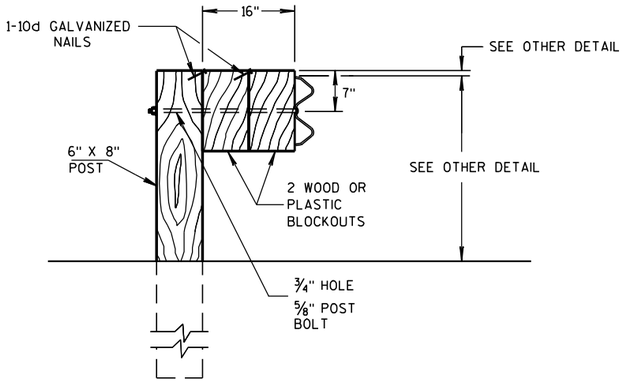
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

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

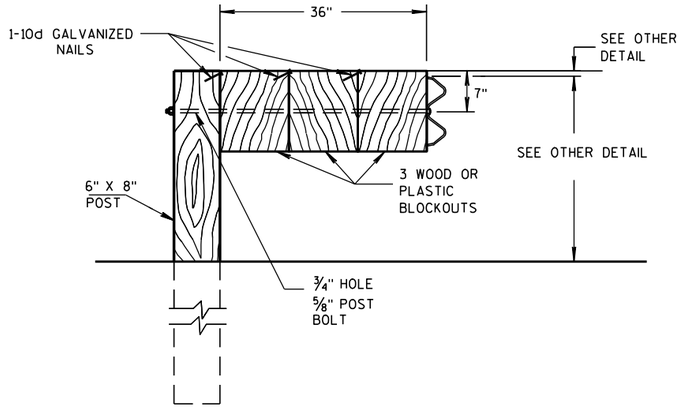
6

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



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.

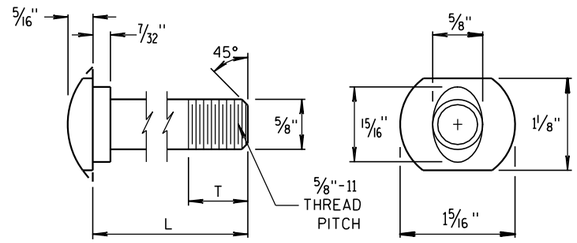


DETAIL FOR 36" BLOCKOUT DEPTH

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.

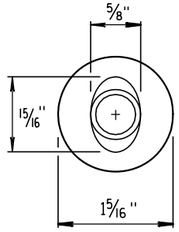
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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.

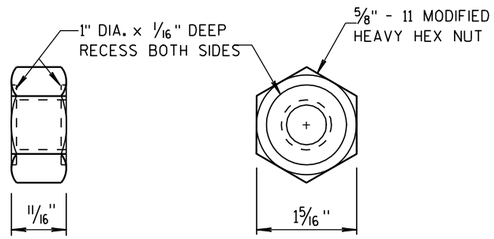


POST BOLT TABLE

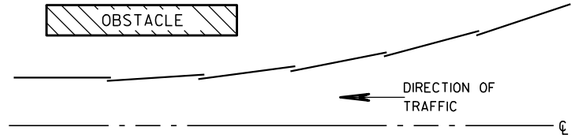
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

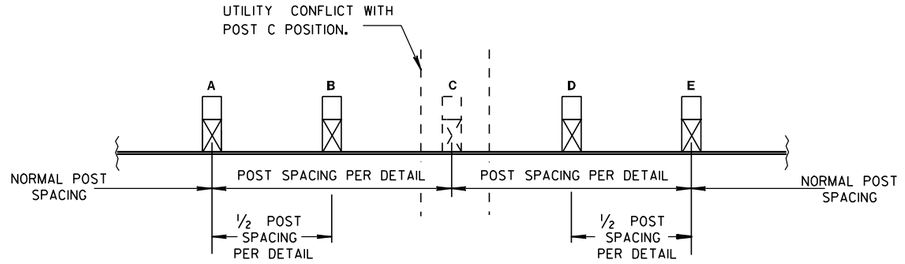


POST BOLT AND RECESS NUT

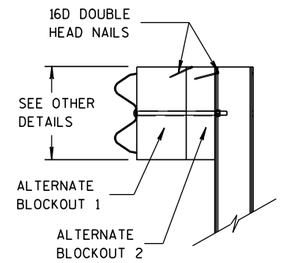


PLAN VIEW

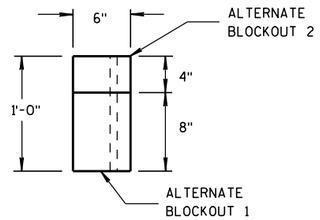
BEAM LAPPING DETAIL



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

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.

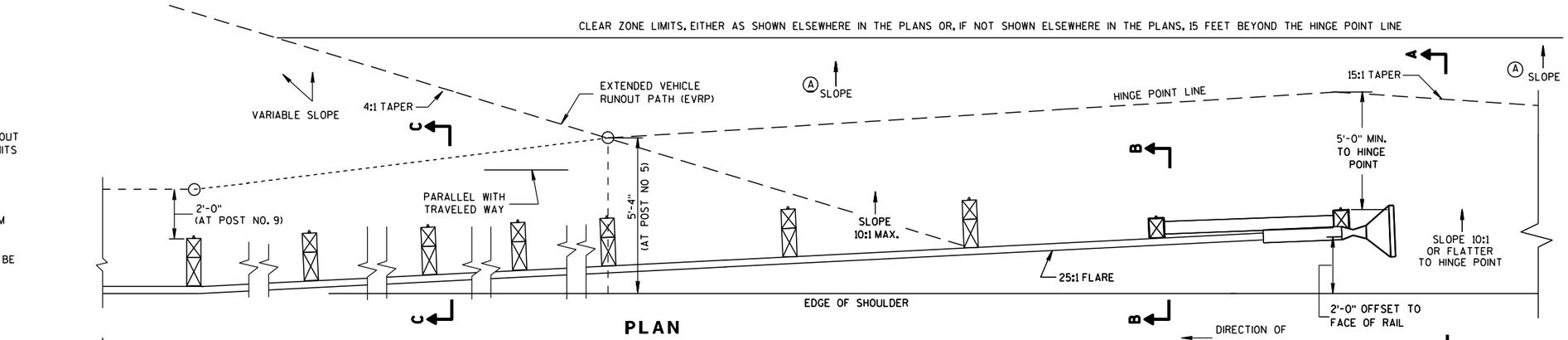
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

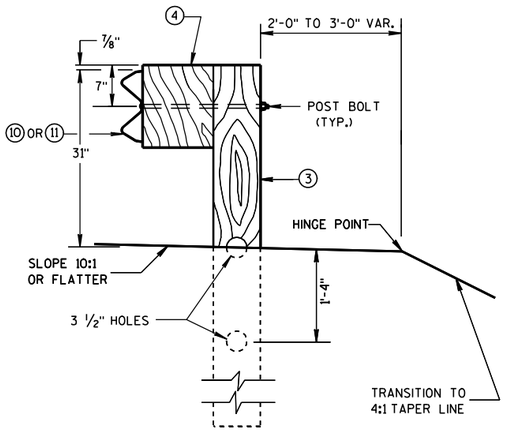
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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.

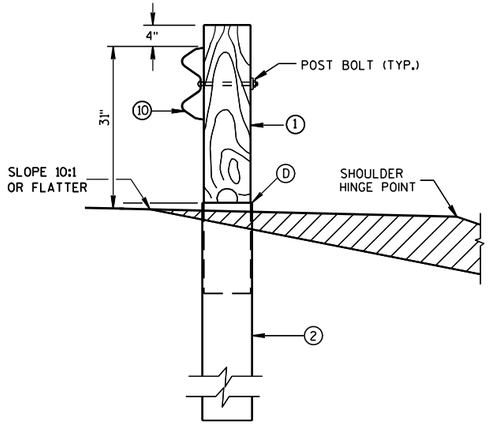
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

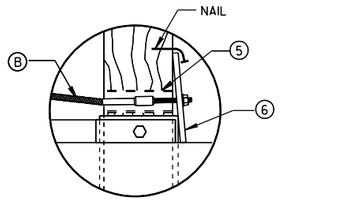




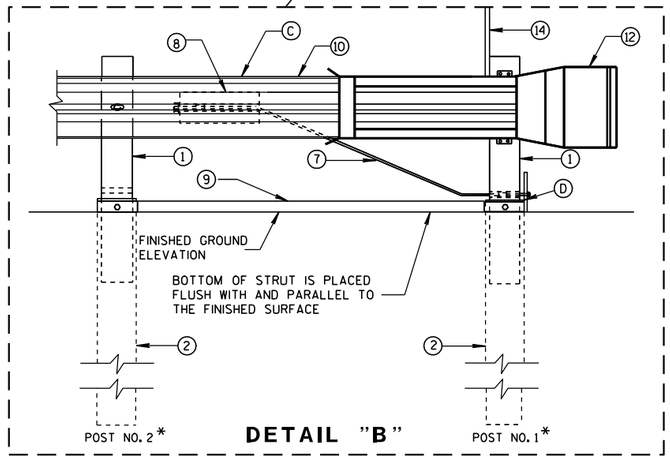
SECTION C-C
TYPICAL AT POST NOS. 3-9



SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

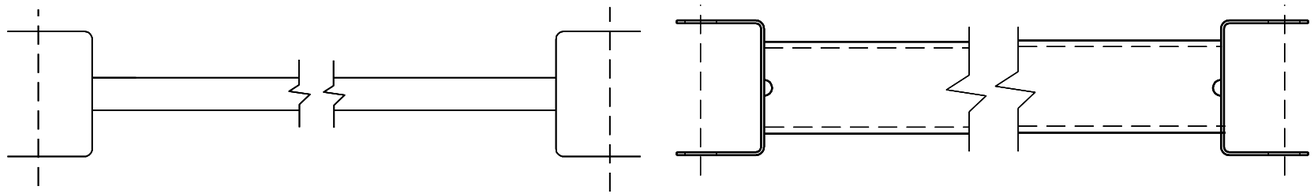
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

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

6

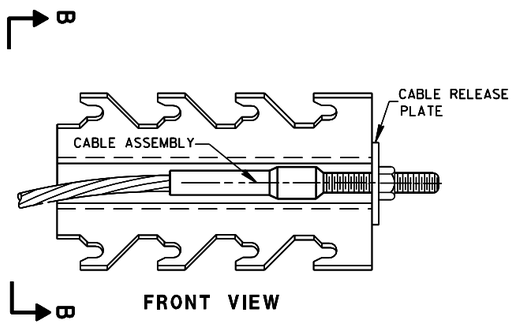
S.D.D. 14 B 44-1a



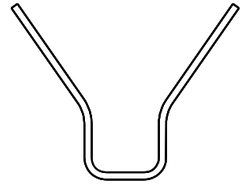
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

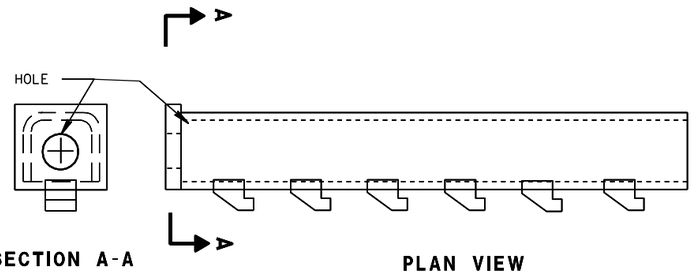
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR 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



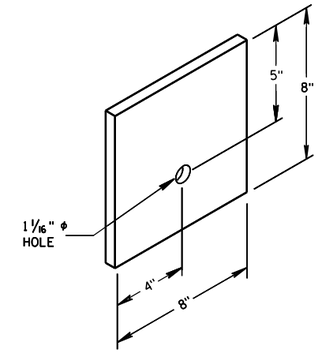
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



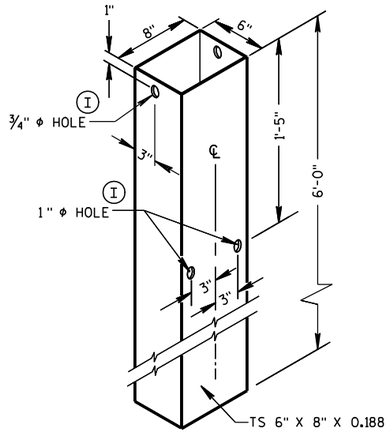
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

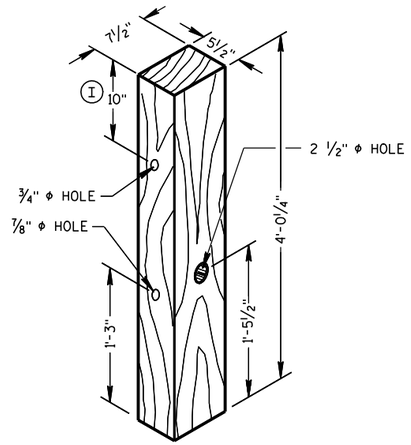
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

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

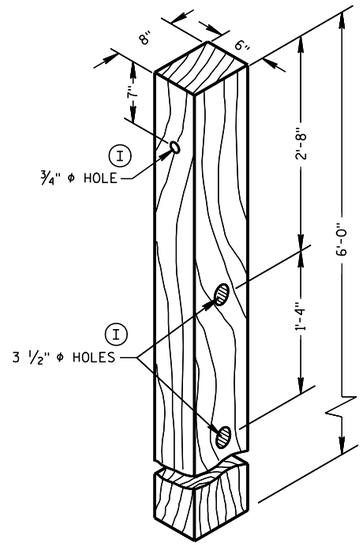


FOUNDATION TUBE (2)



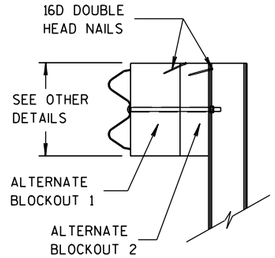
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

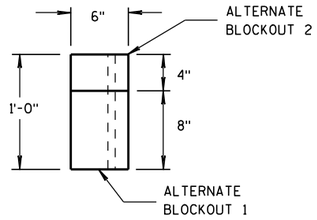


POSTS NUMBER 3-9

WOOD CRT POST (3)

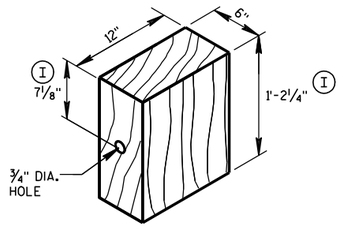


SIDE VIEW



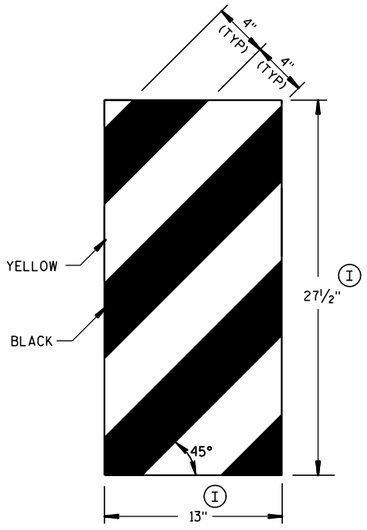
TOP VIEW

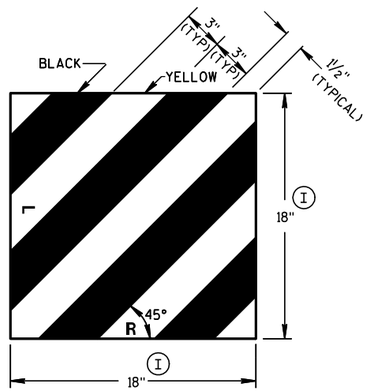
ALTERNATE WOOD BLOCKOUT DETAIL



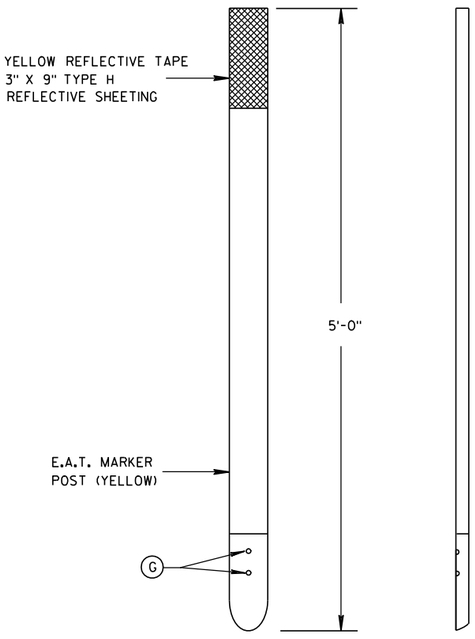
WOOD BLOCKOUT (4)

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





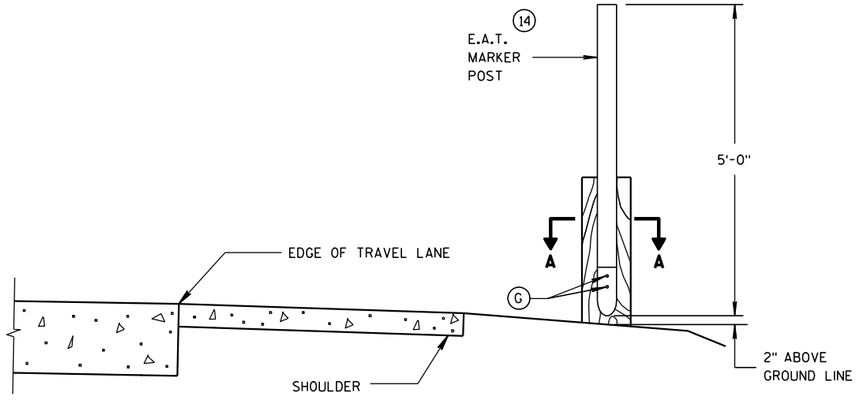
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

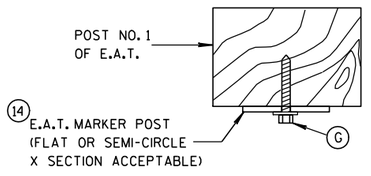
SIDE VIEW

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

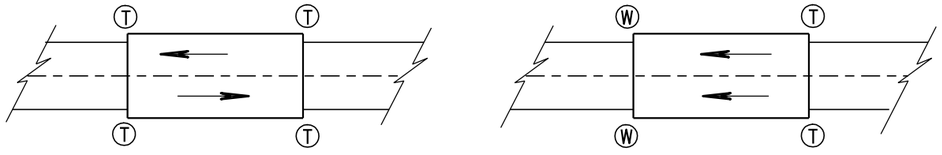
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2011 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
35
FHWA

6

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



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

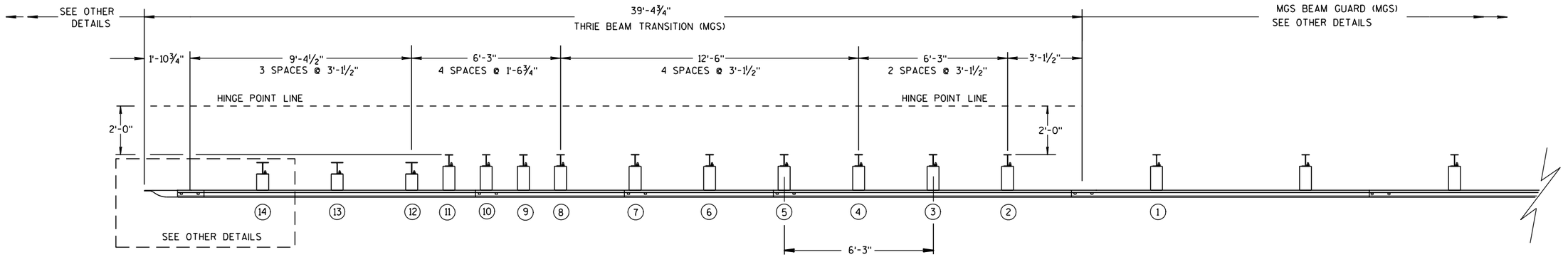
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

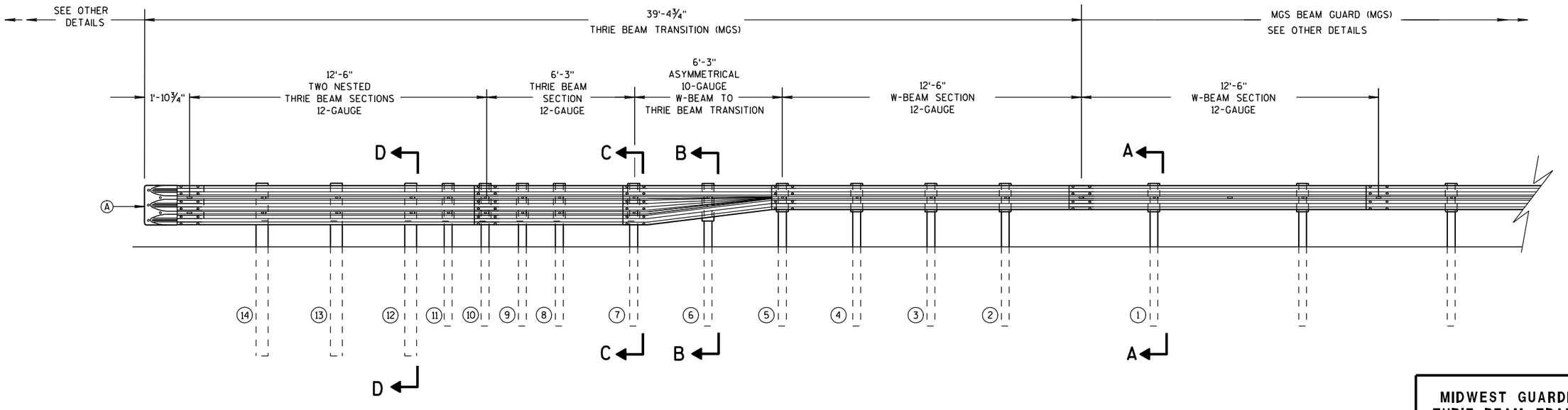
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

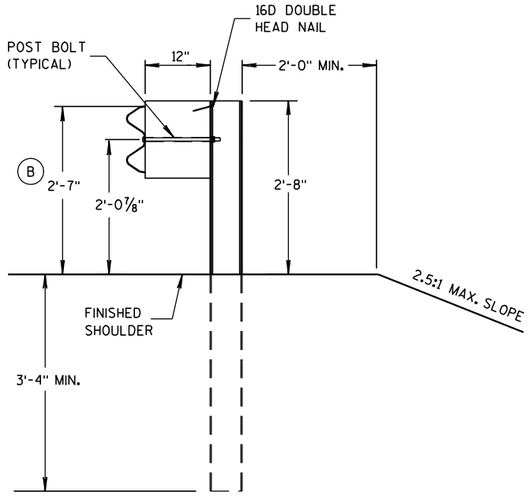
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-3a

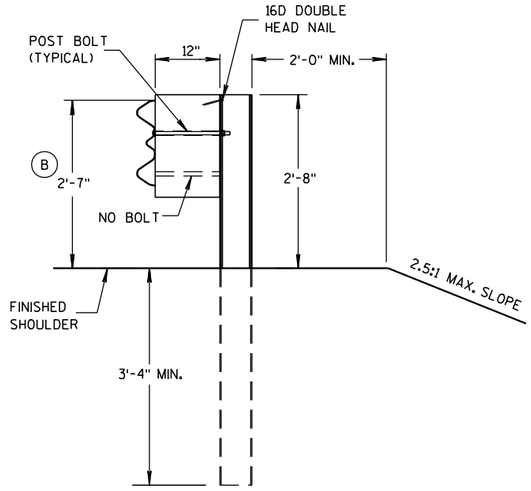
GENERAL NOTES

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



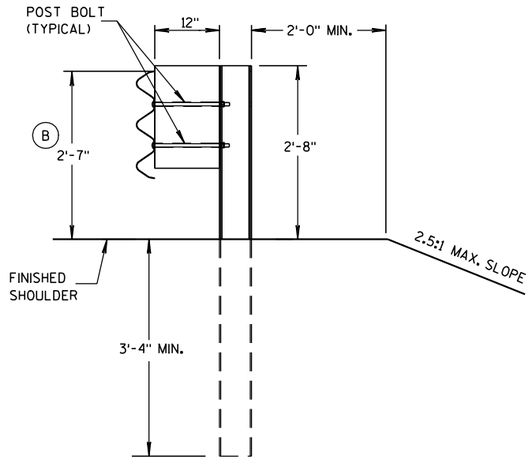
SECTION A-A

POSTS 1-5



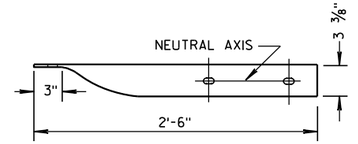
SECTION B-B

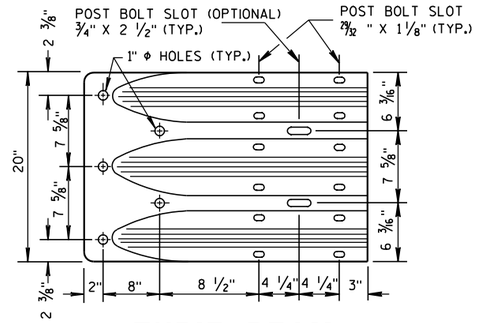
POST 6



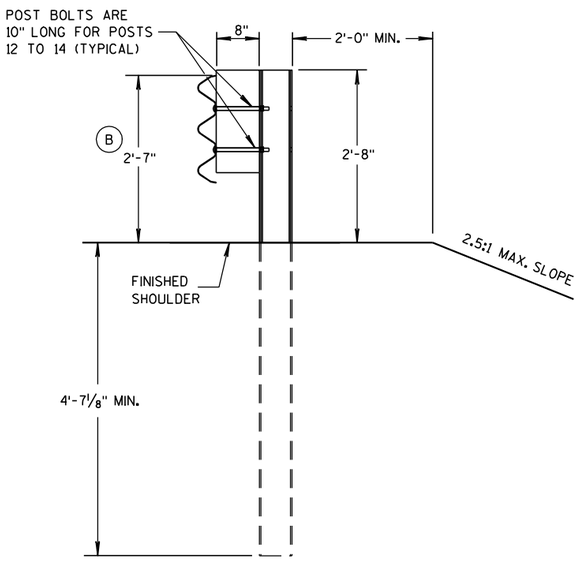
SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14

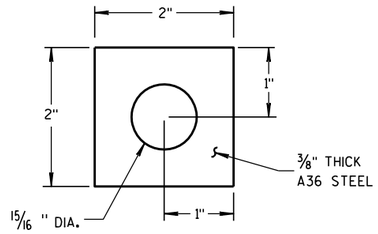
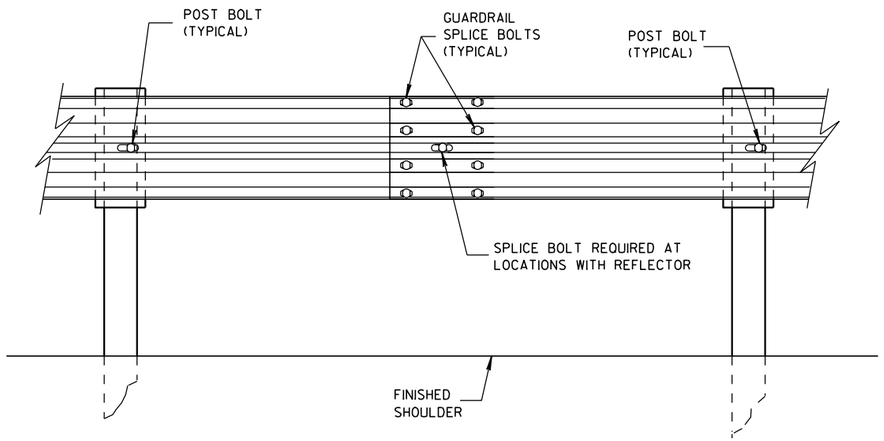
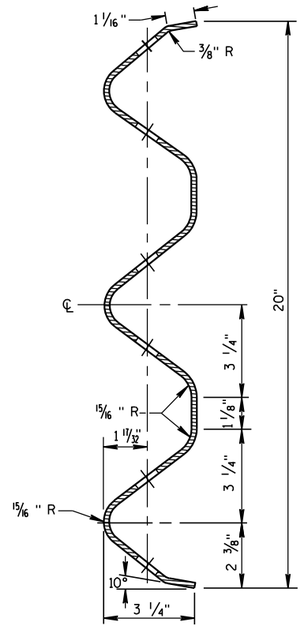


PLATE WASHER DETAIL



SPLICE DETAIL



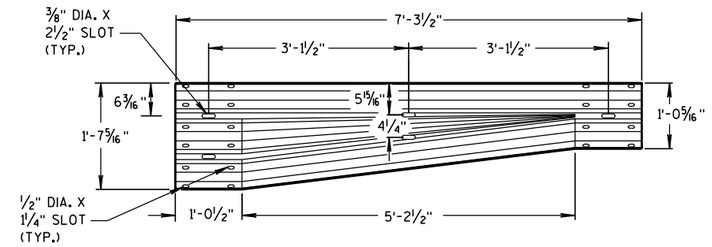
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

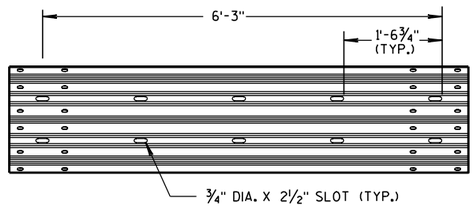
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

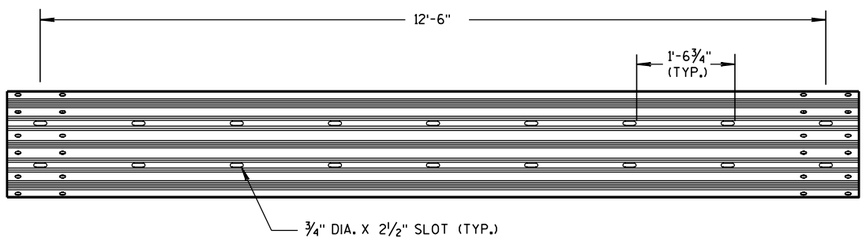
S.D.D. 14 B 45-3b



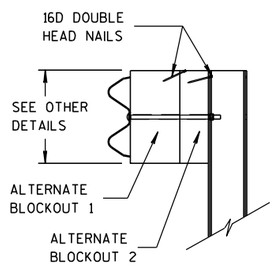
W-BEAM TO THRIE BEAM TRANSITION SECTION



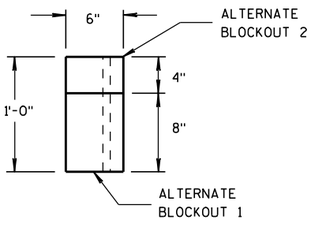
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

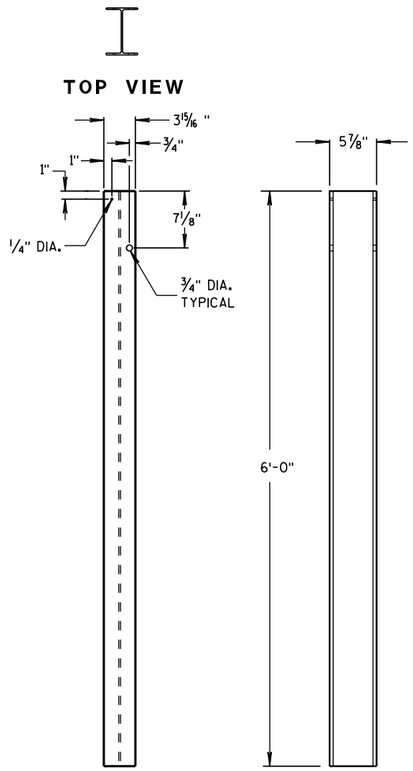


SIDE VIEW



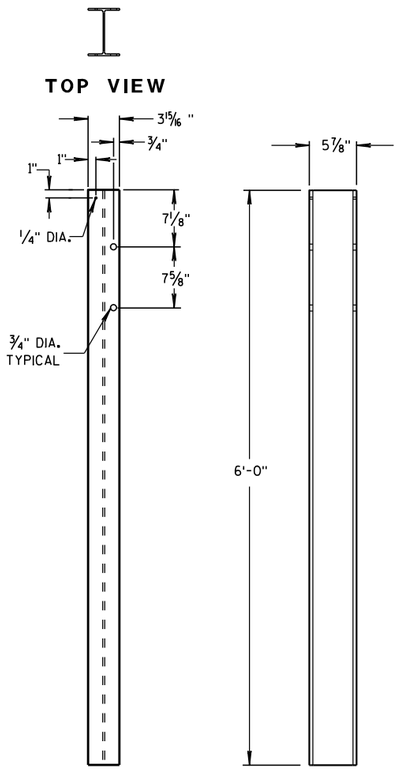
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



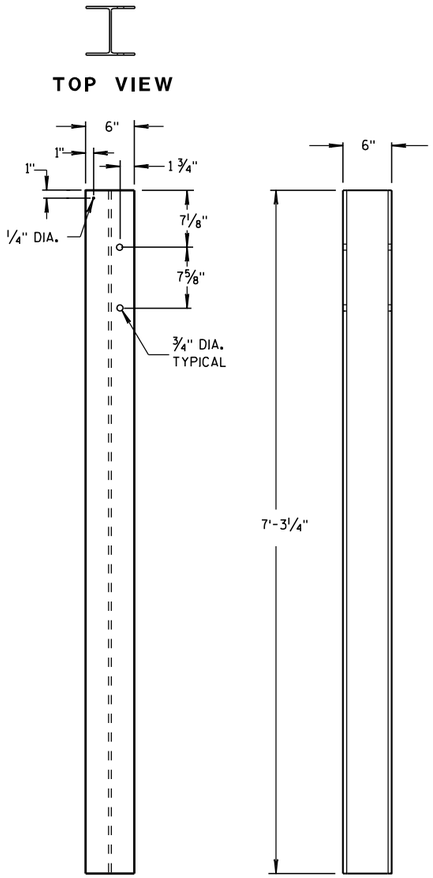
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5



FRONT VIEW SIDE VIEW

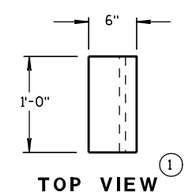
STEEL POSTS 6-11



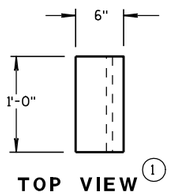
FRONT VIEW SIDE VIEW

STEEL POSTS 12-14

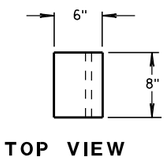
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



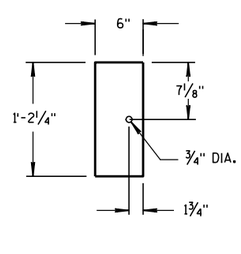
TOP VIEW (1)



TOP VIEW (1)

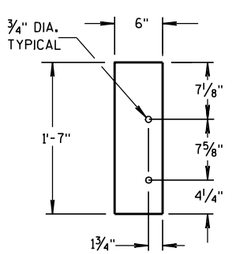


TOP VIEW



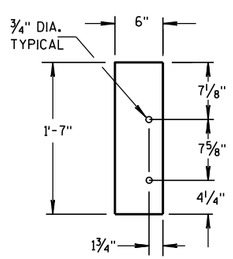
FRONT VIEW

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"

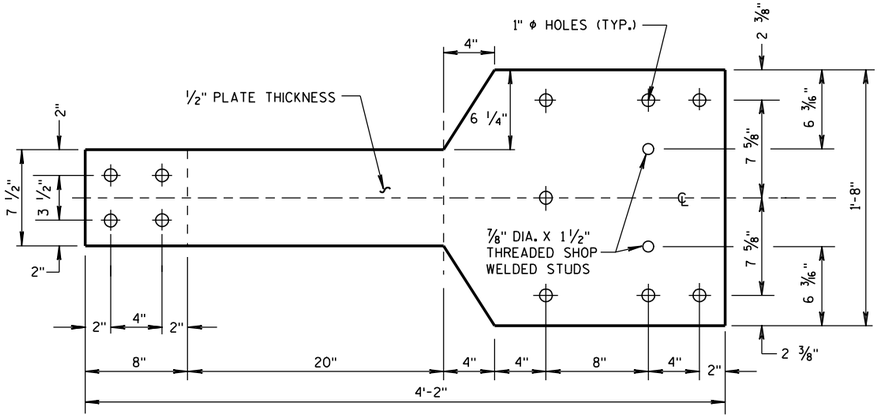
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

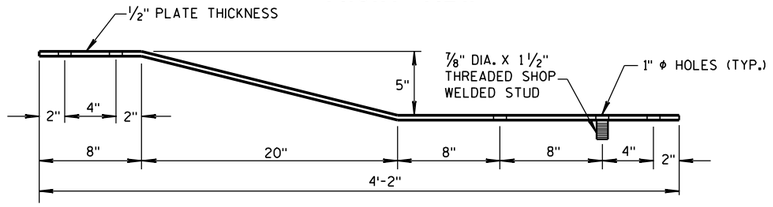
6
S.D.D. 14 B 45-3c

GENERAL NOTES

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

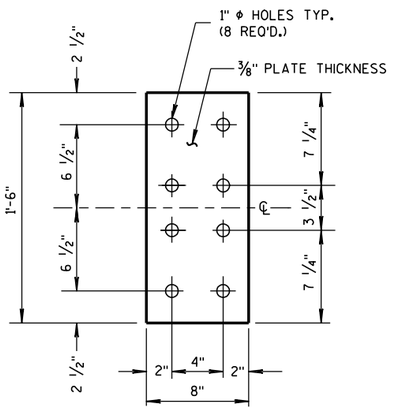


FRONT VIEW



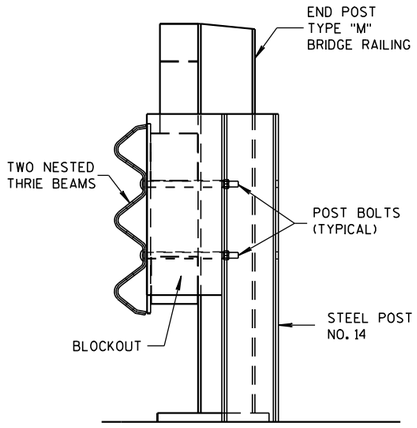
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

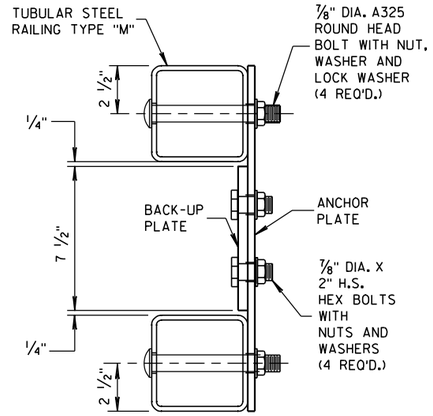


FRONT VIEW

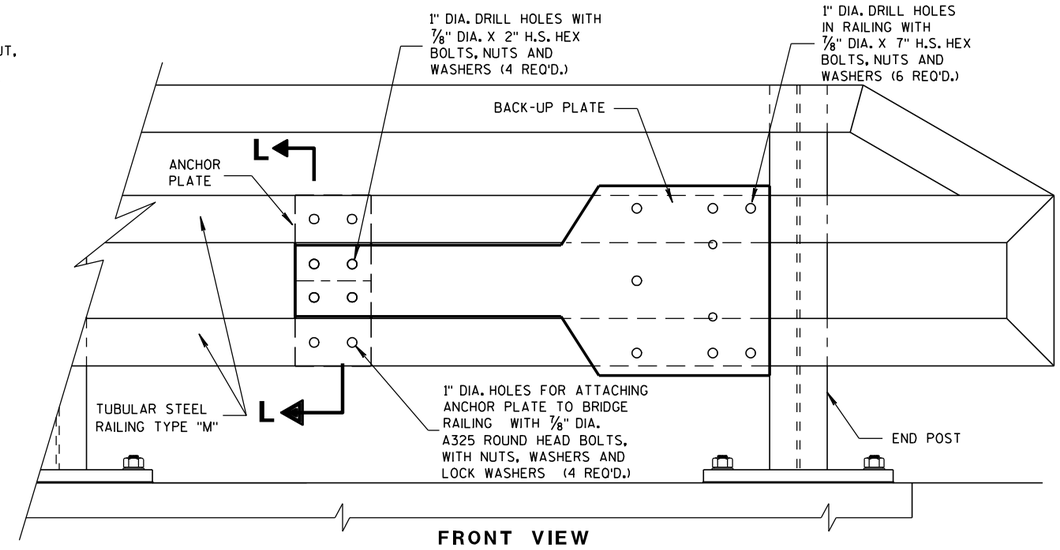
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

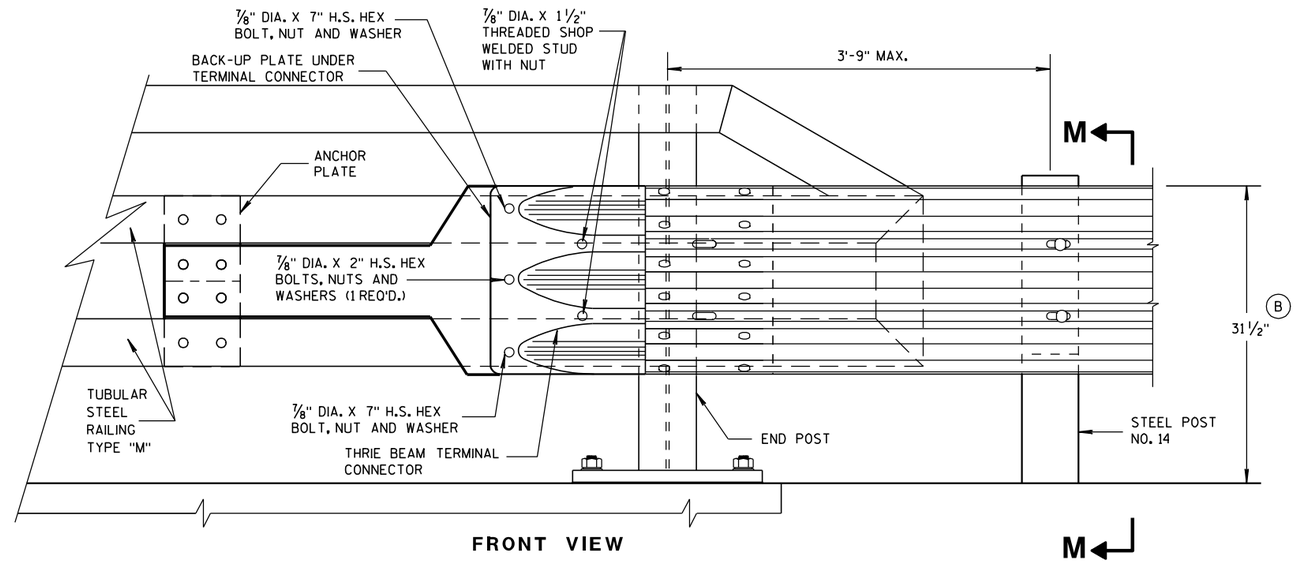


SECTION L-L

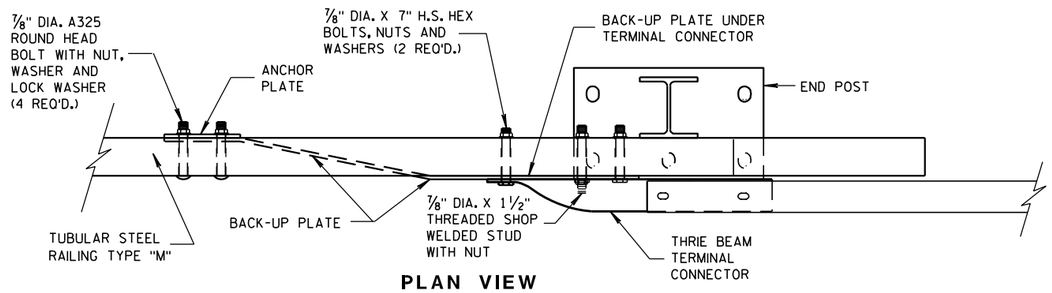


FRONT VIEW

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

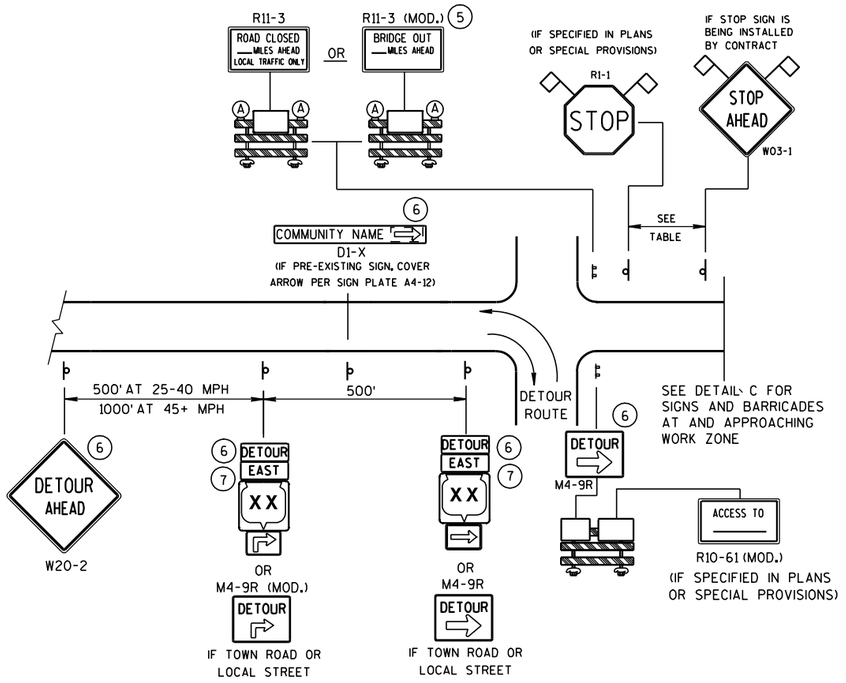
APPROVED
8-31-2012 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
39
ENT
FHWA

6

S.D.D. 14 B 45-3h

6

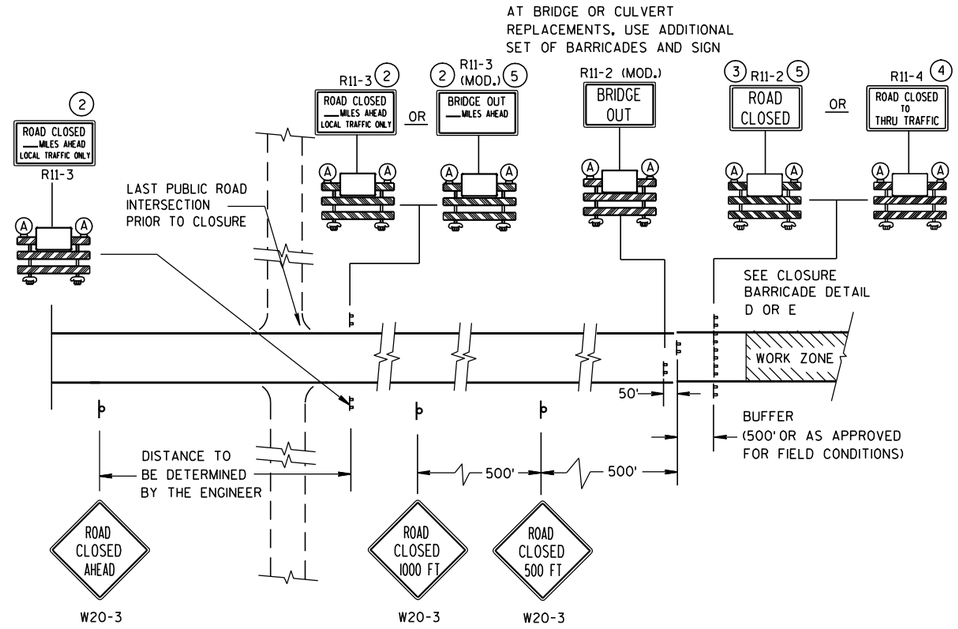
S.D.D. 14 B 45-3h



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

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

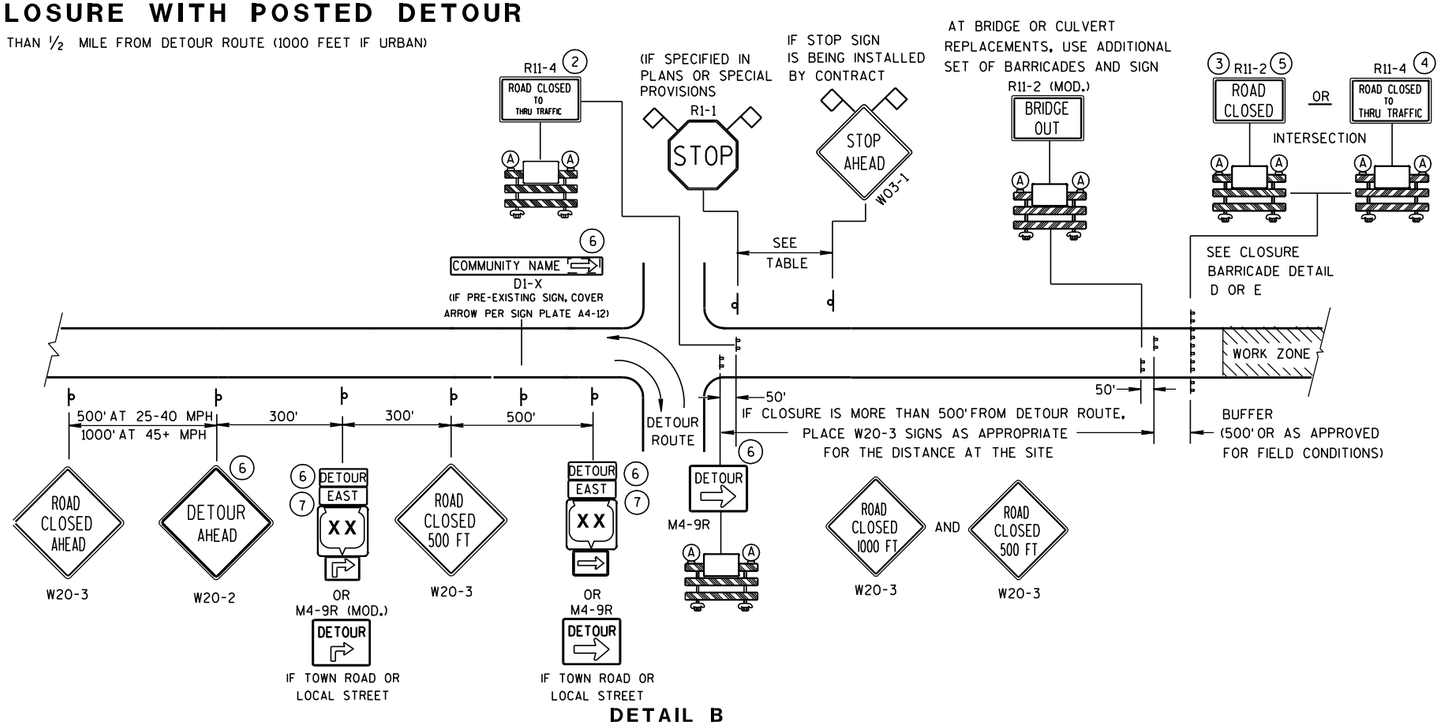


DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

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

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



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

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

LEGEND

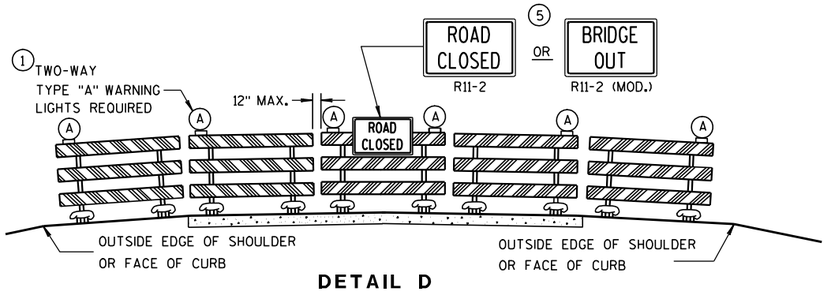
- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1; M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

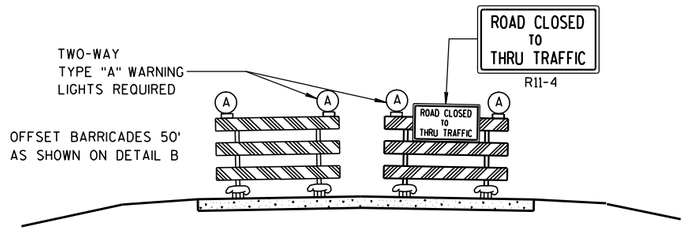
S.D.D. 15 C 2-4a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-4a FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/16/03
DATE

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

FHWA

6

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

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.

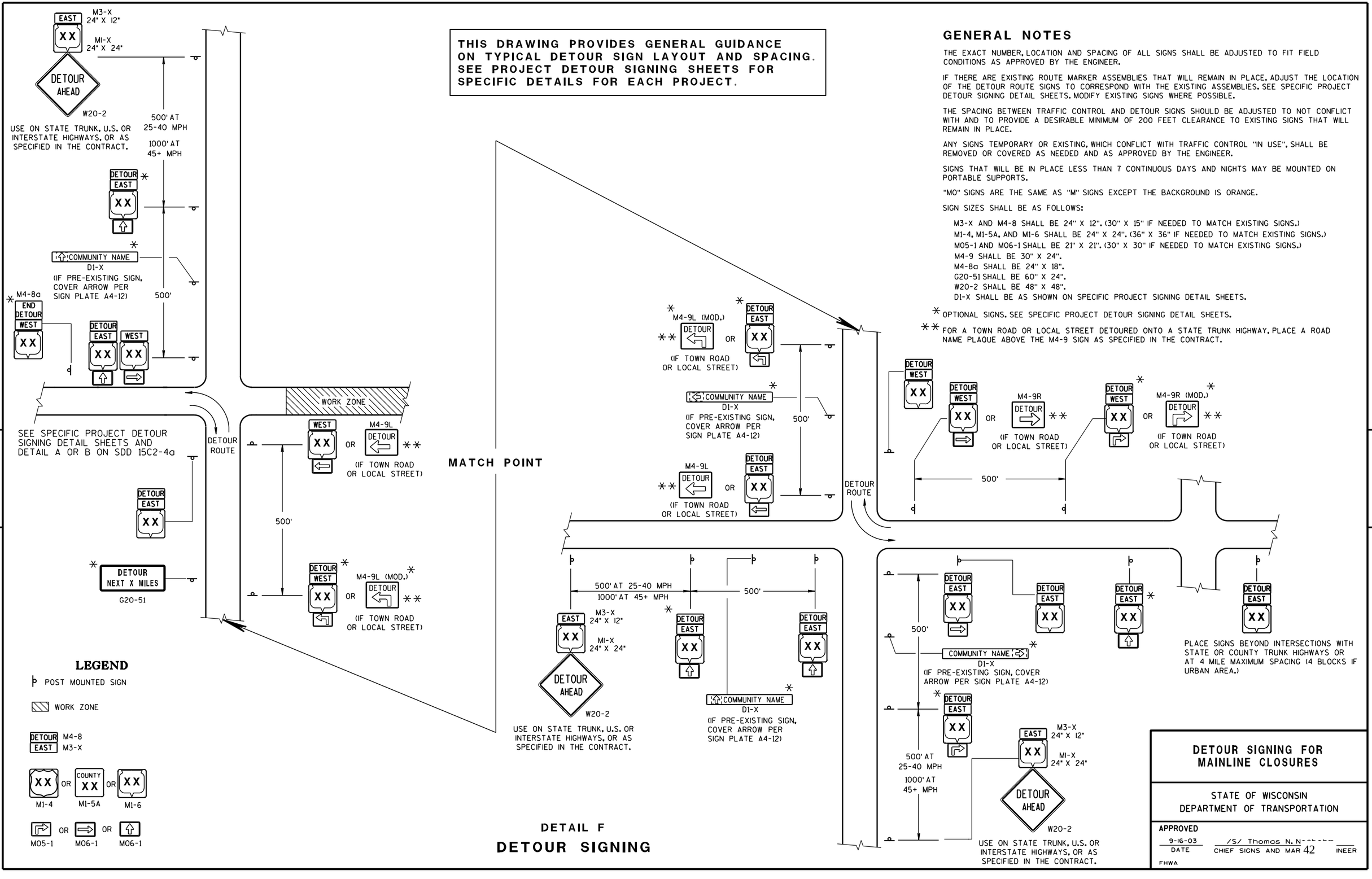
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.



DETAIL F

DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

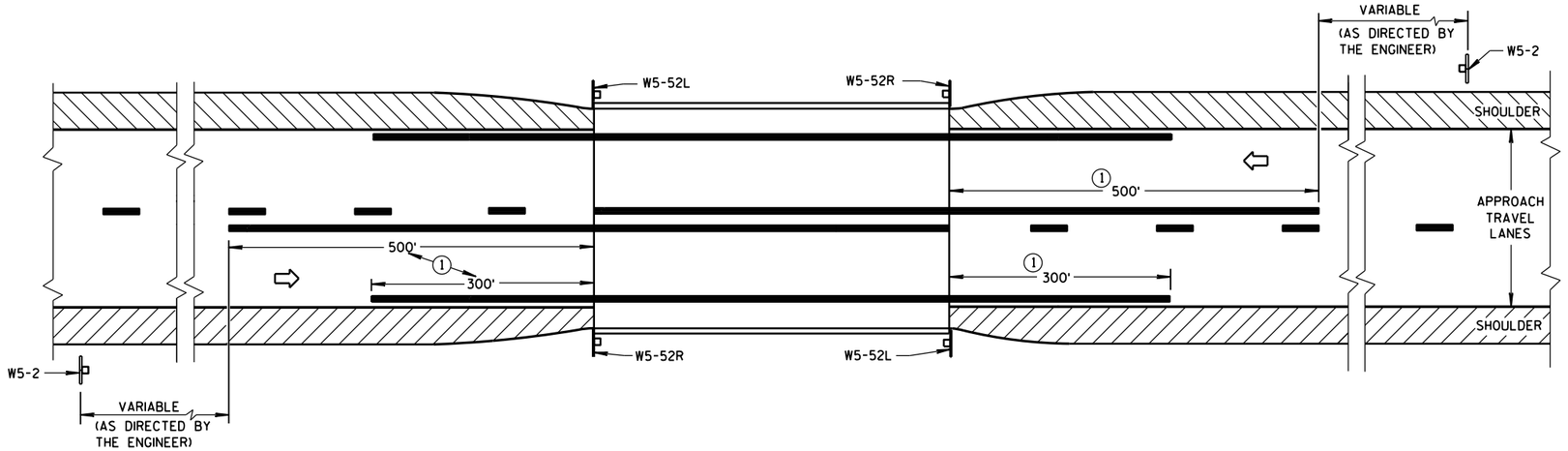
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

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

FHWA

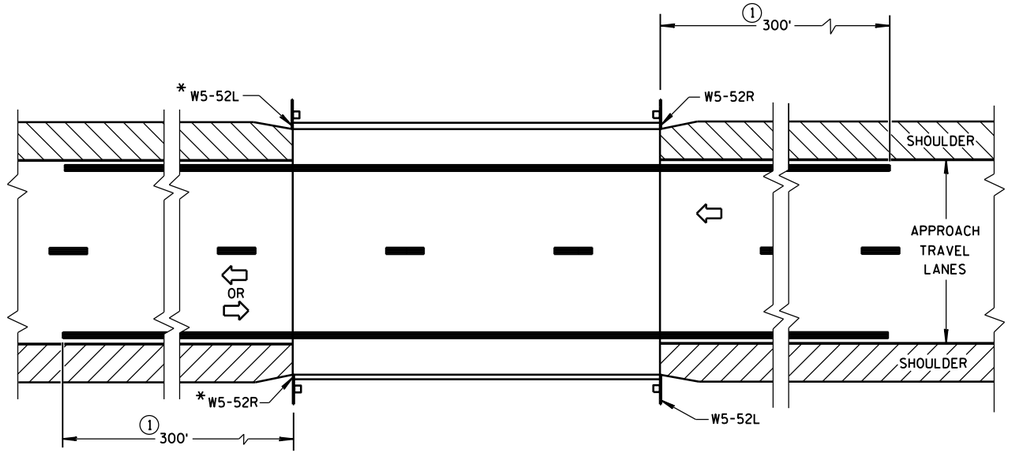
6 S.D.D. 15 C 2-4c



SITUATION 1

WARRANTING CRITERIA:

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.

GENERAL NOTES

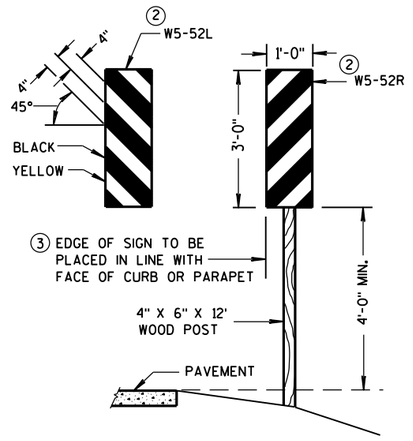
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

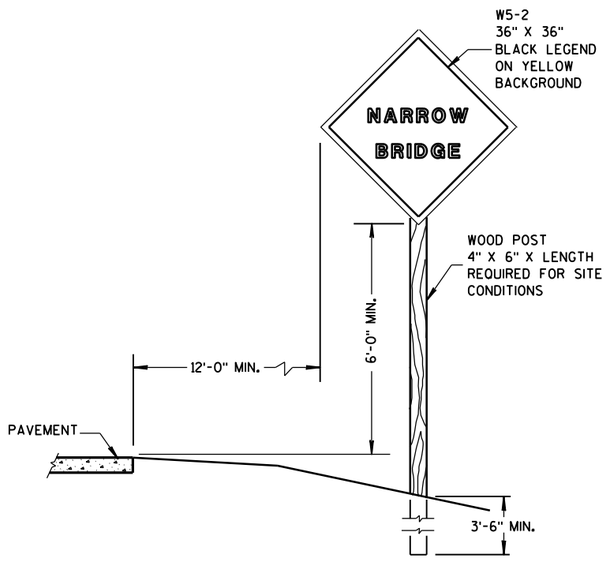
(1) MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

(2) FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.

(3) LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.



OBJECT MARKER PLACEMENT



SIGN PLACEMENT

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

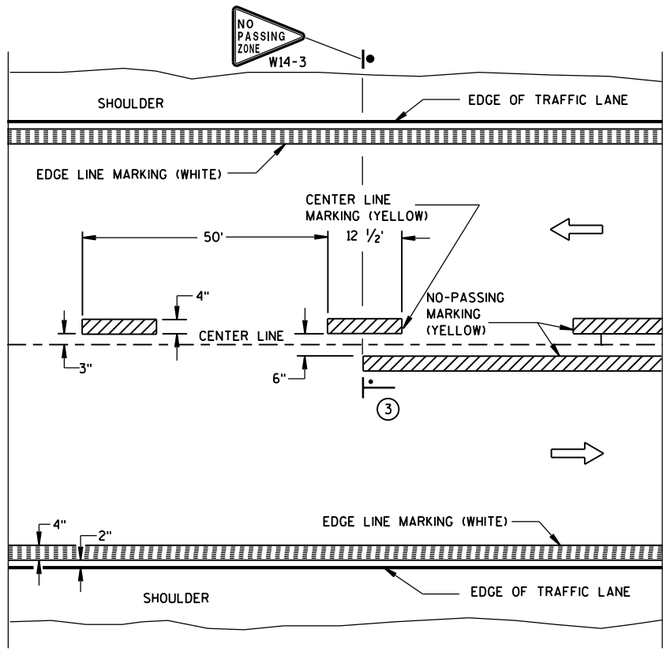
3/4/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

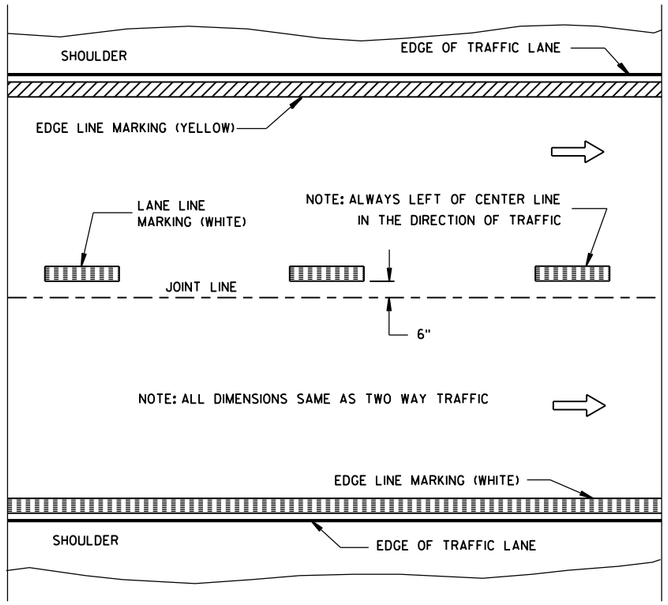
FHWA

6

S.D.D. 15 C 6-6

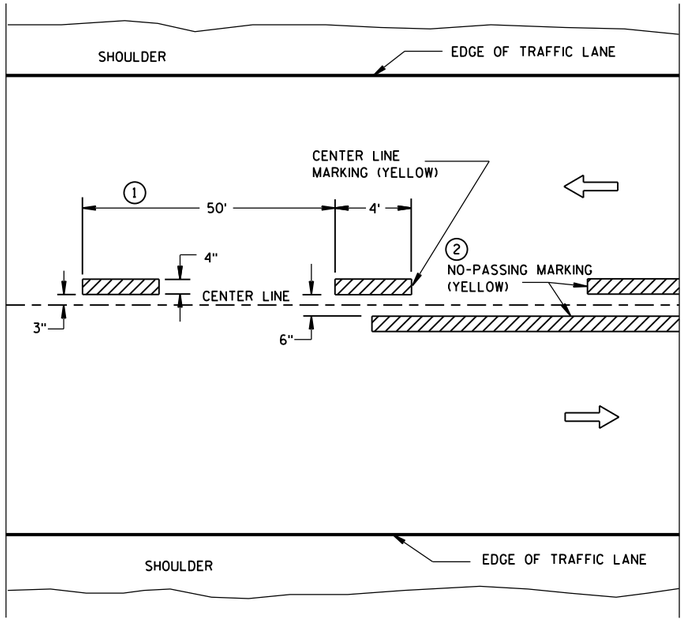


TWO WAY TRAFFIC

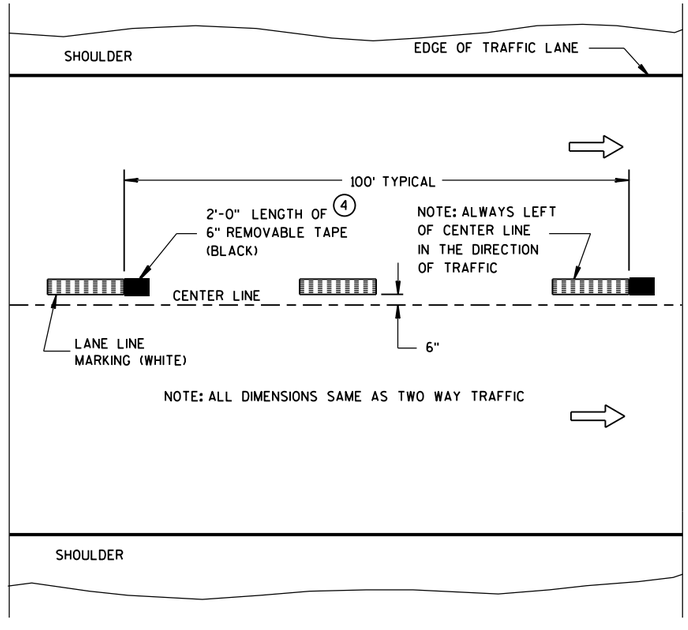


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

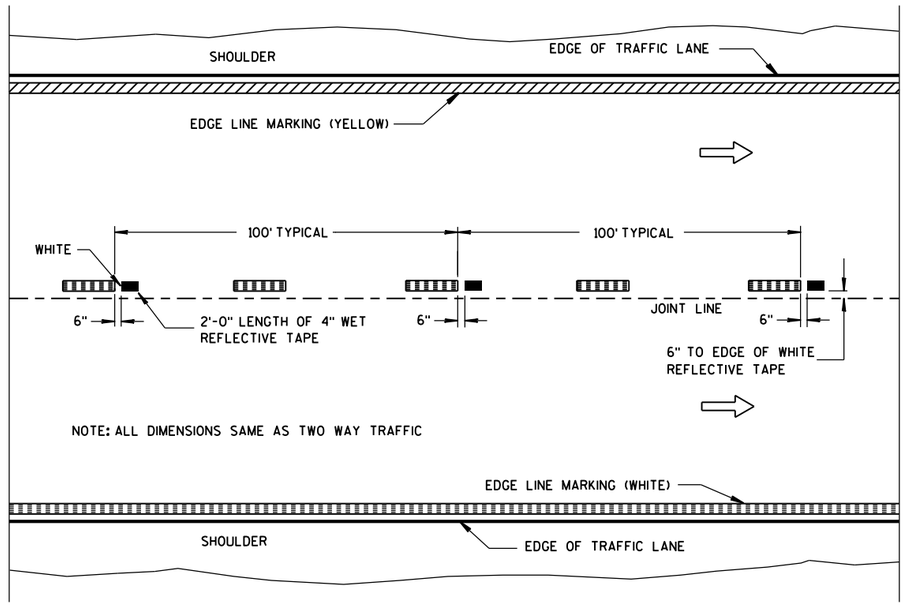
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



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

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013 DATE

/S/ Travis Feltes STATE TRAFFIC E

FHWA

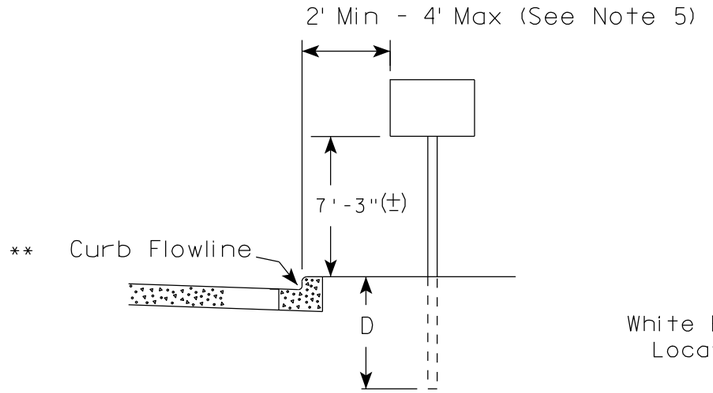
6

S.D.D. 15 C 8-16a

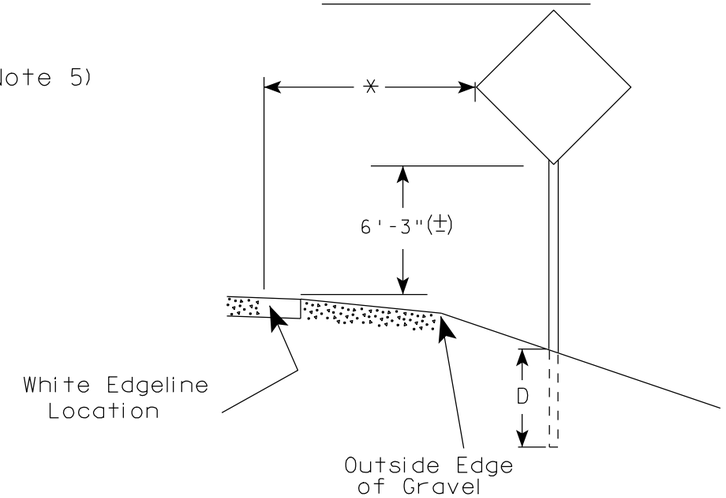
6

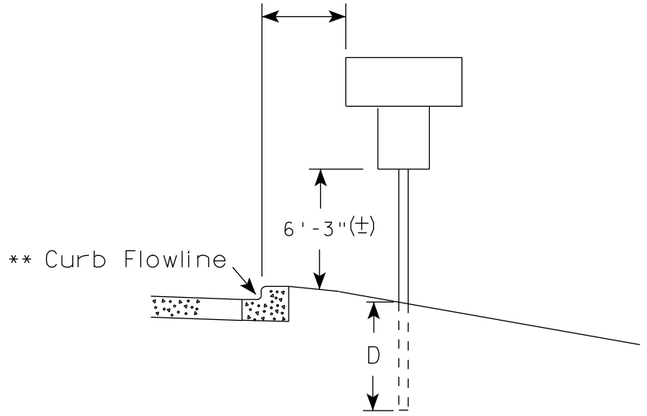
S.D.D. 15 C 8-16a

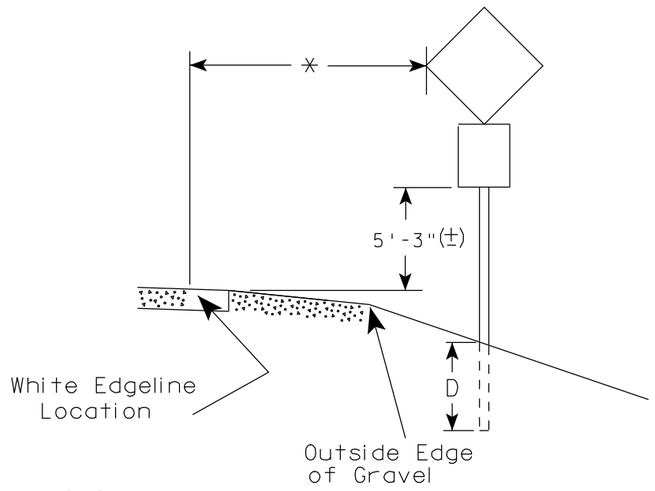
URBAN AREA



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

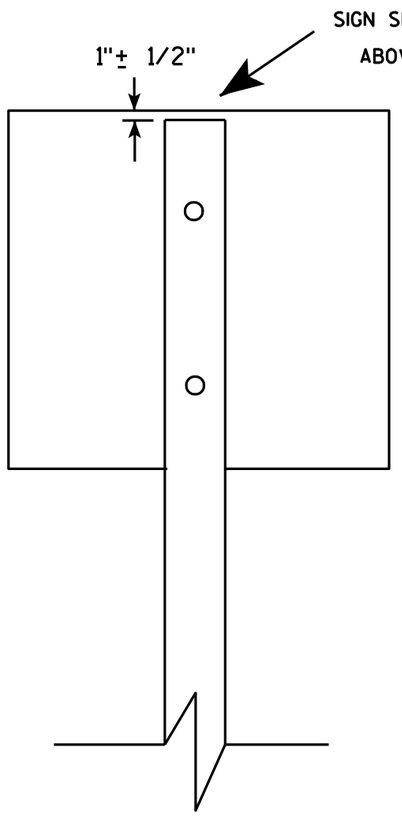
APPROVED Matthew R Rauch for State Traffic Engineer

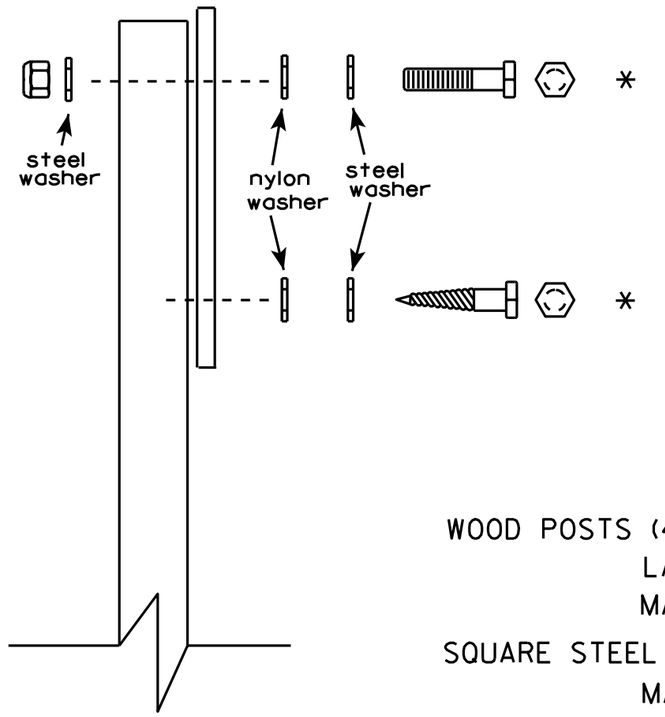
DATE 9/21/2011 PLATE NO. A4-3.16

7

7

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





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

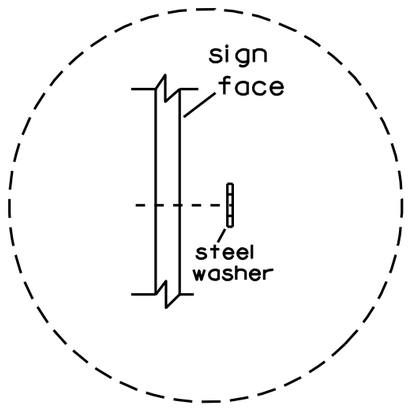
a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

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

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

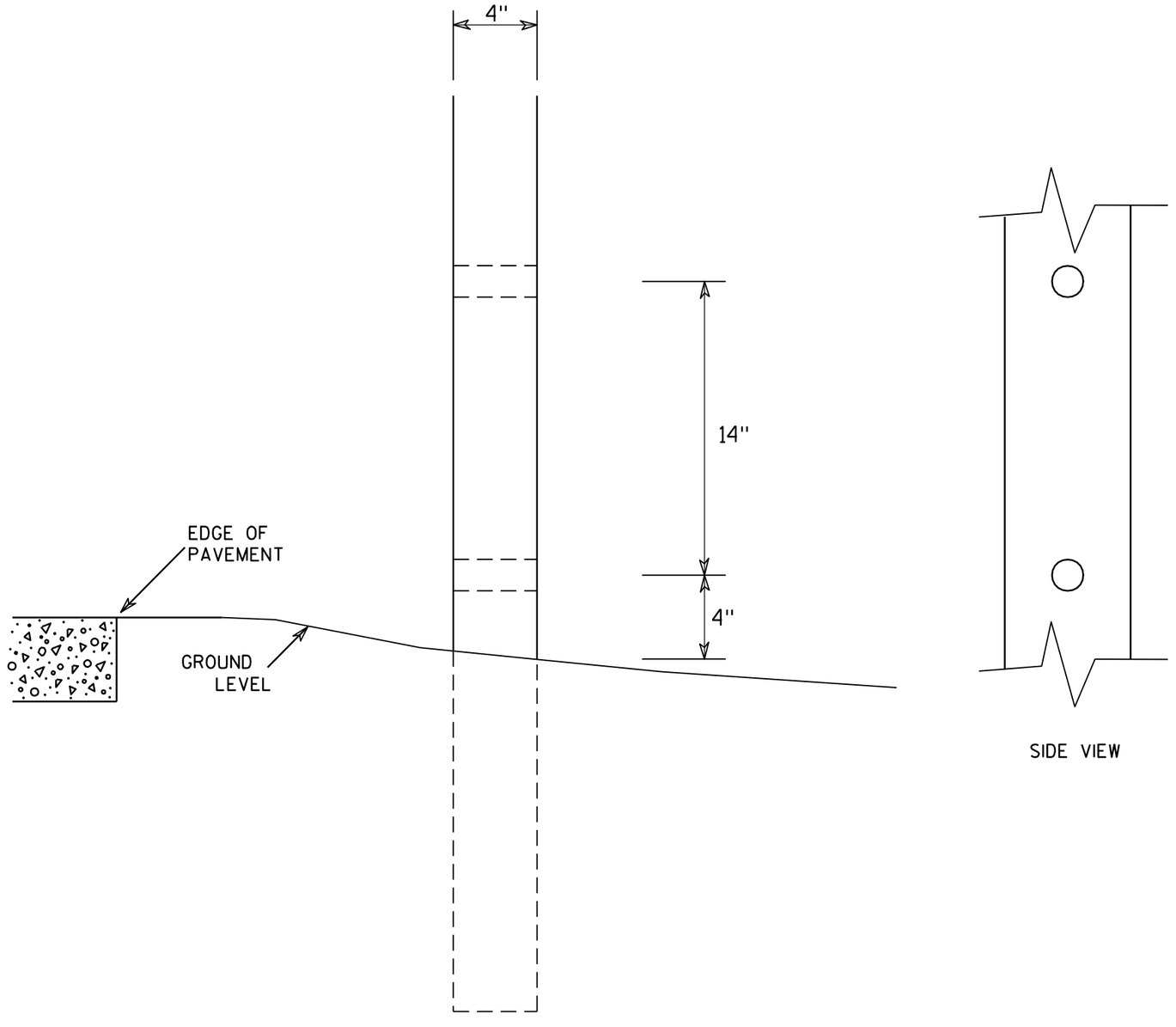
DATE 3/23/10 PLATE NO. A4-8.7

7

7

PROJECT NO:

SHEET NO: 46 E



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

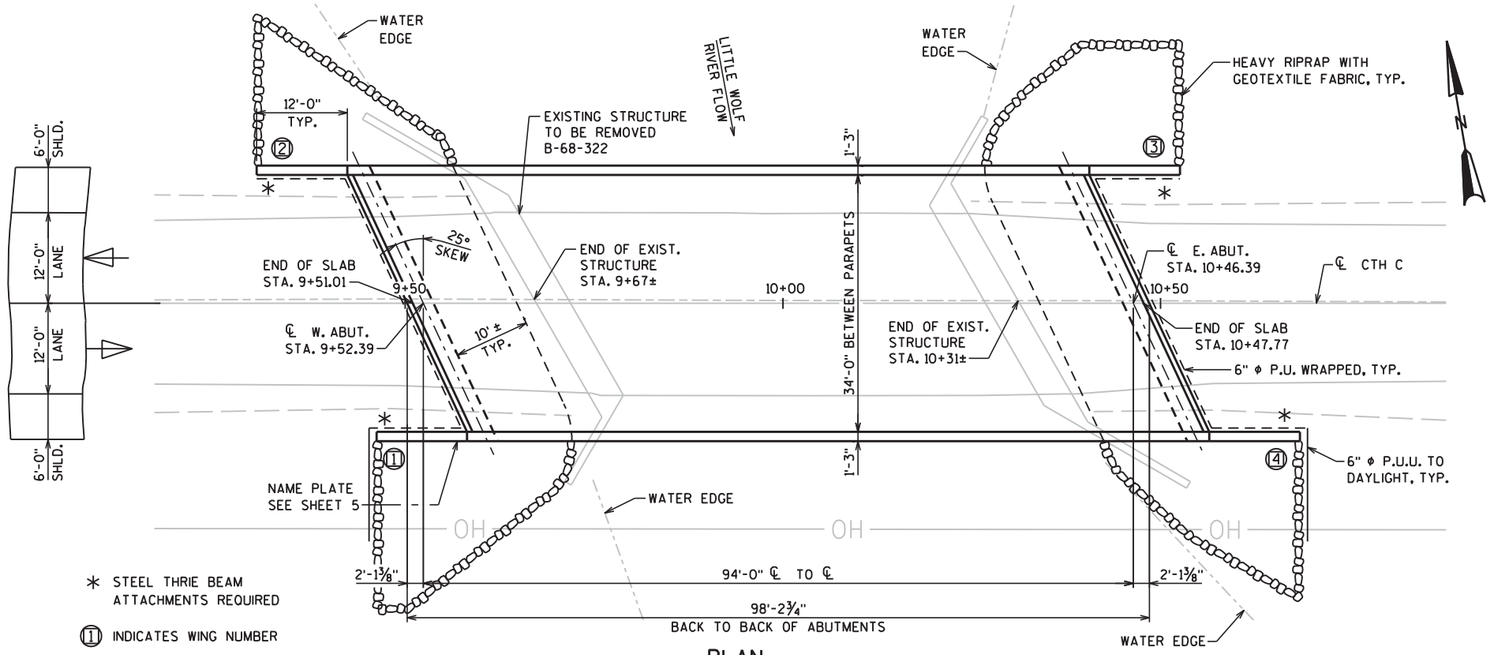
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

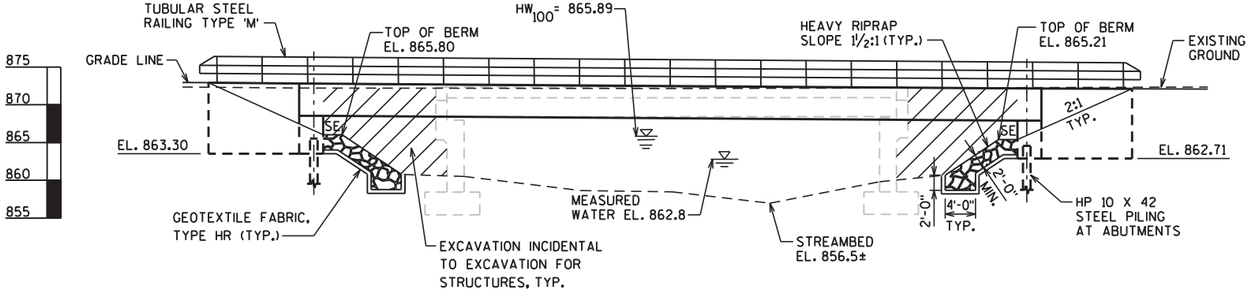
DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 47	E

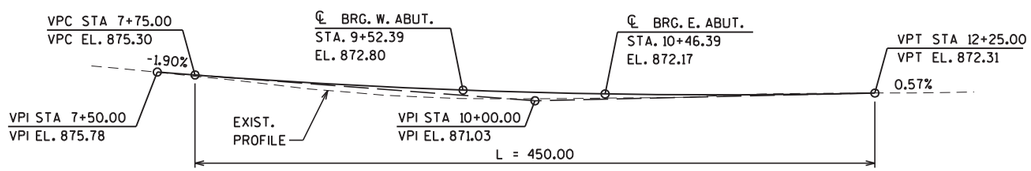


PLAN

SINGLE SPAN 36W" PRESTRESSED GIRDER BRIDGE



ELEVATION



PROFILE GRADE LINE

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. 36W" PRESTRESSED GIRDER DETAILS
9. STEEL DIAPHRAGMS
10. SUPERSTRUCTURE
11. SUPERSTRUCTURE DETAILS
12. RAILING TUBULAR TYPE 'M'

TRAFFIC DATA

ADT = 560 (2014)
670 (2034)
RDS = 60 M.P.H.

CONSULTANT CONTACT

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

BRIDGE OFFICE CONTACT

WILLIAM DREHER
(608) 266-8489

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

9/17/13

STATE PROJECT NUMBER
6819-02-70

DESIGN DATA

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

LIVE LOAD:

DESIGN LOADING	HL-93
INVENTORY RATING FACTOR	RF = 1.09
OPERATING RATING FACTOR	RF = 1.43
MAX. STD. PERMIT VEHICLE LOAD	220 KIPS

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SUPERSTRUCTURE	f'c = 4,000 PSI
ALL OTHER	f'c = 3,500 PSI
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy = 60,000 PSI
36W" PRESTRESSED GIRDERS CONCRETE MASONRY	f'c = 8,000 PSI
STRANDS, 0.6" ϕ ULTIMATE TENSILE STRENGTH	fy = 270,000 PSI

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS** PER PILE. ESTIMATED LENGTH = 25' AT THE WEST ABUTMENT AND 20' AT THE EAST ABUTMENT. ALL PILES SHALL BE FITTED WITH PILE POINTS.

** 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.

HYDRAULIC DATA

$Q_{REGULATORY}$	4,400 C.F.S.
Q_{100}	2,800 C.F.S.
VELOCITY	8.80 F.P.S.
HIGH WATER	867.84 (REGULATORY)
HIGH WATER	865.89 (100 YEAR)
HIGH WATER	863.35 (2 YEAR)
WATERWAY AREA	318 S.F.
DRAINAGE AREA	194 SQ. MILES

OVERTOPPING FREQUENCY = N/A
SCOUR CRITICAL CODE = 8

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
OMNNI ASSOCIATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED William C. Dreher 9/17/13
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-68-132

CTH C OVER LITTLE WOLF RIVER

COUNTY: WAUPACA	TOWN: WYOMING
DESIGN SPEC.: AASHTO LRFD BRIDGE DESIGN SPECIFICATION	LOAD: HL-93
DESIGNED BY: KRO	DESIGN CK'D.: JAW
DRAWN BY: BRE	PLANS CK'D.: KRO

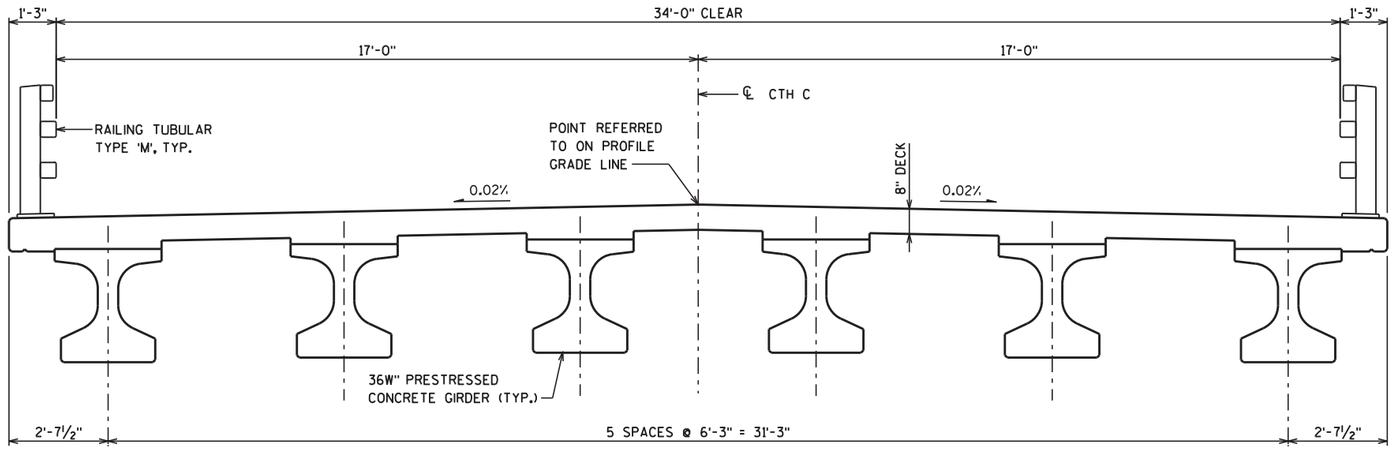
GENERAL PLAN

SHEET 1 OF 12

48

8

8



CROSS SECTION THRU ROADWAY

BENCH MARKS (NAVD 88)

NO.	STATION	DESCRIPTION	ELEV.
BM1	13+28.50, 29.5' RT	60D SPIKE IN PP= 13/8 25-12-25 2ND POLE EAST OF CL OF BRIDGE @ SOUTH R/W OF CTH C	871.64
BM2	11+37, 30' RT	60D SPIKE IN PP= 11/8 25-12-25 IST POLE EAST OF CL OF BRIDGE @ SOUTH R/W OF CTH C	868.12
BM3	6+65, 29' RT	60D SPIKE IN PP= 7/9 25-12-25 2ND POLE WEST OF CL OF BRIDGE @ SOUTH R/W OF CTH C	877.87

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STA 10+00)	LS	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-68-132)	LS	-----	-----	-----	1
210.0100	BACKFILL STRUCTURE	CY	-----	130	130	260
502.0100	CONCRETE MASONRY BRIDGES	CY	134	45	45	224
502.3200	PROTECTIVE SURFACE TREATMENT	SY	430	-----	-----	430
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	570	-----	-----	570
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	-----	2,130	2,130	4,260
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	19,860	1,730	1,730	23,320
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	-----	6	6	12
506.4000	STEEL DIAPHRAGMS (B-68-132)	EACH	10	-----	-----	10
513.4060	RAILING TUBULAR TYPE M (B-68-132)	LS	-----	-----	-----	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-----	12	12	24
550.0500	PILE POINTS	EACH	-----	9	9	18
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	-----	225	180	405
606.0300	RIPRAP HEAVY	CY	-----	95	95	190
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	-----	15	15	30
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	-----	60	60	120
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	-----	145	145	290
	NON-BID ITEMS					
	FILLER	SIZE	——	——	——	½"&¾"

STATE PROJECT NUMBER
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GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

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

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

THIS BRIDGE WILL REPLACE THE EXISTING STEEL GIRDER BRIDGE SUPPORTED ON CONCRETE RETAINING ABUTMENTS. THE STRUCTURE WAS BUILT IN 1937.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

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

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

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE PRESTRESSED GIRDER DETAILS SHEET, WHICH IS THE MAXIMUM HAUNCH QUANTITY FOR WHICH THE CONTRACTOR WILL BE PAID.

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

ALL VOIDS BETWEEN HEAVY RIPRAP FROM THE OBSERVED WATER SURFACE ELEVATION TO THE TOP OF BERM AND INCLUDING THE HORIZONTAL SURFACE OF THE BERM SHALL BE "FILLED" USING 1 TO 3 INCH STONE, INCIDENTAL TO HEAVY RIPRAP, IN ACCORDANCE WITH THE SPECIAL PROVISION.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-68-132

DRAWN BY BRE | PLANS CK'D. KRO

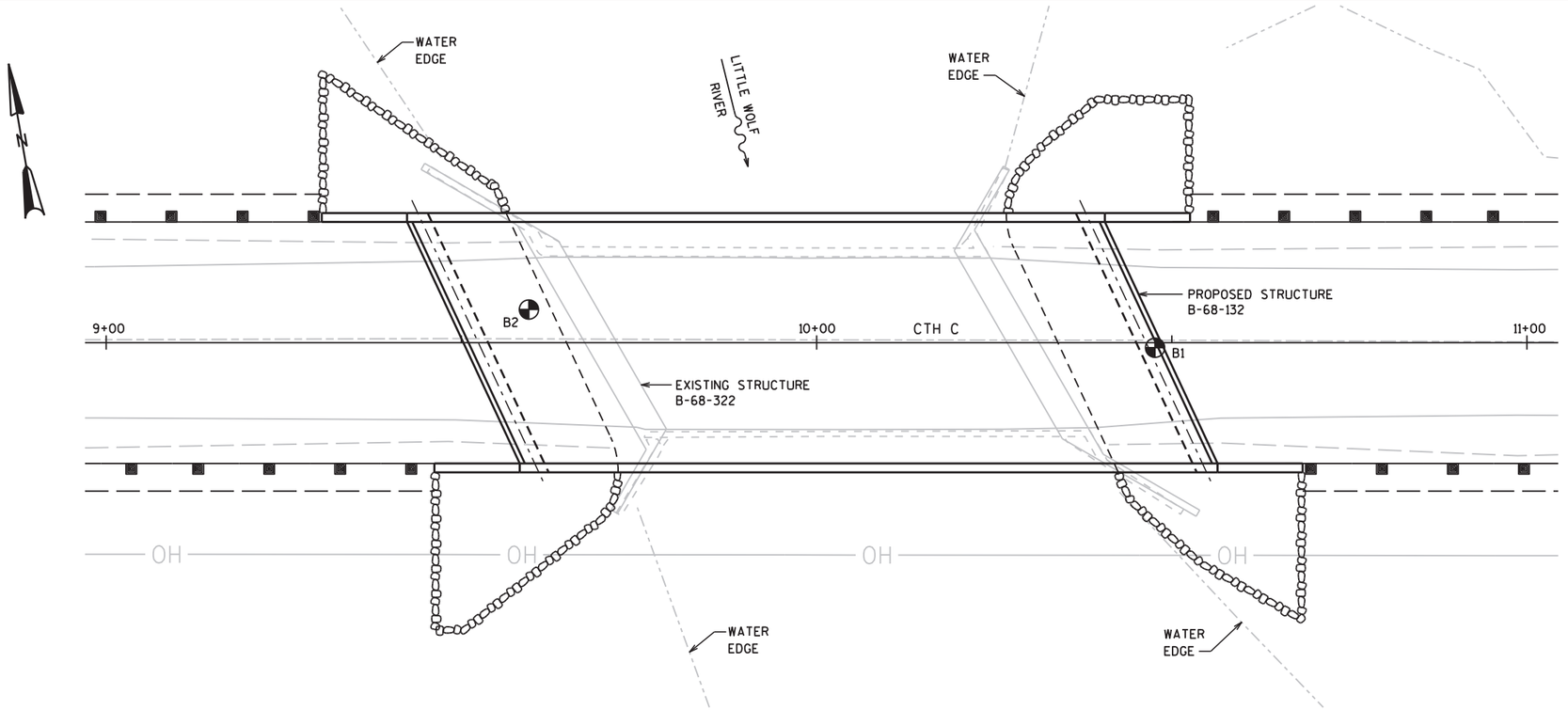
CROSS SECTION & QUANTITIES

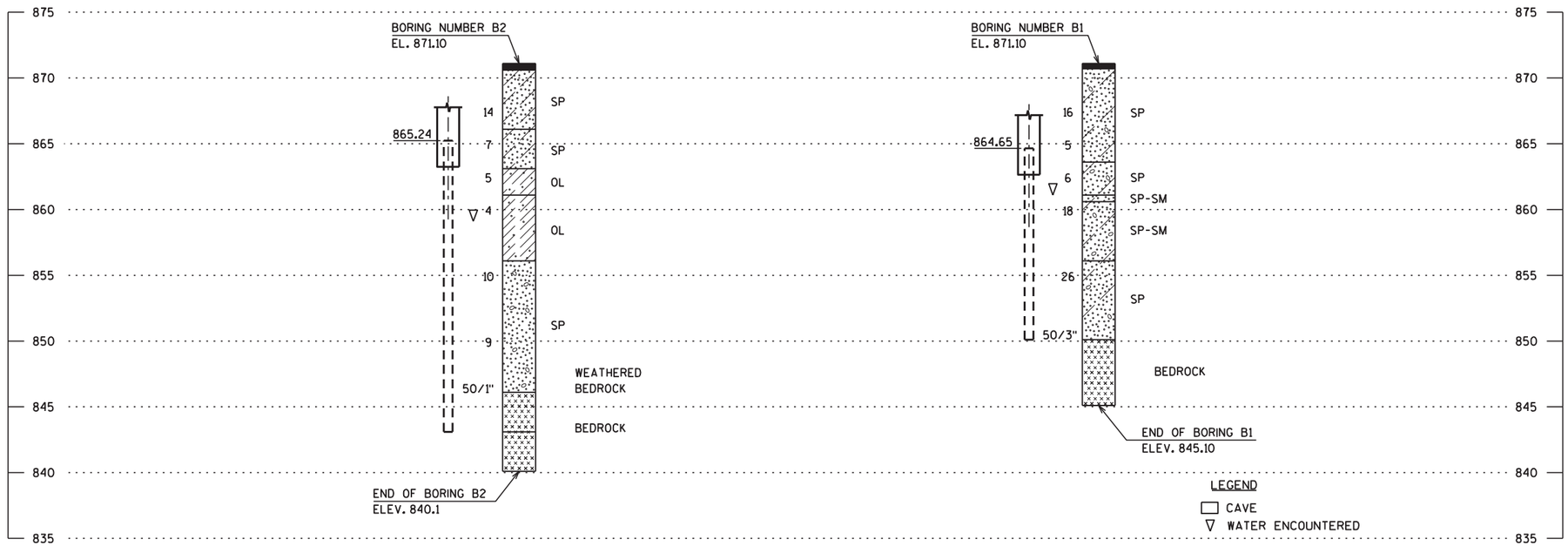
SHEET 2 OF 12

49

8

8





STATE PROJECT NUMBER

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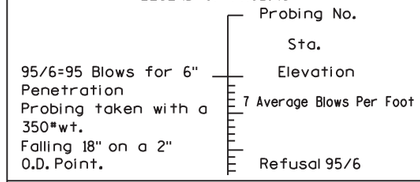
ABBREVIATIONS

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

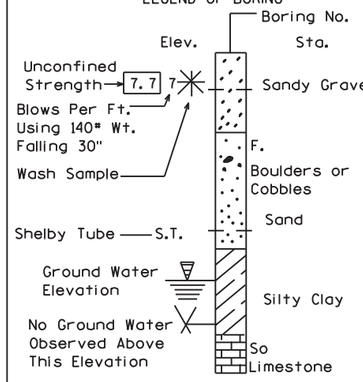
MATERIAL SYMBOLS

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

LEGEND OF PROBING



LEGEND OF BORING



Unless otherwise specified, the blows per foot at the locations indicated are based on driving a O.D. 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 Division of Highways does not warrant conditions below the depths investigated or that the classification of material encountered in these investigations is necessarily typical of the entire site.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-68-132

DRAWN BY BRE PLANS CK'D. KRO

SUBSURFACE EXPLORATION

SHEET 3 OF 12

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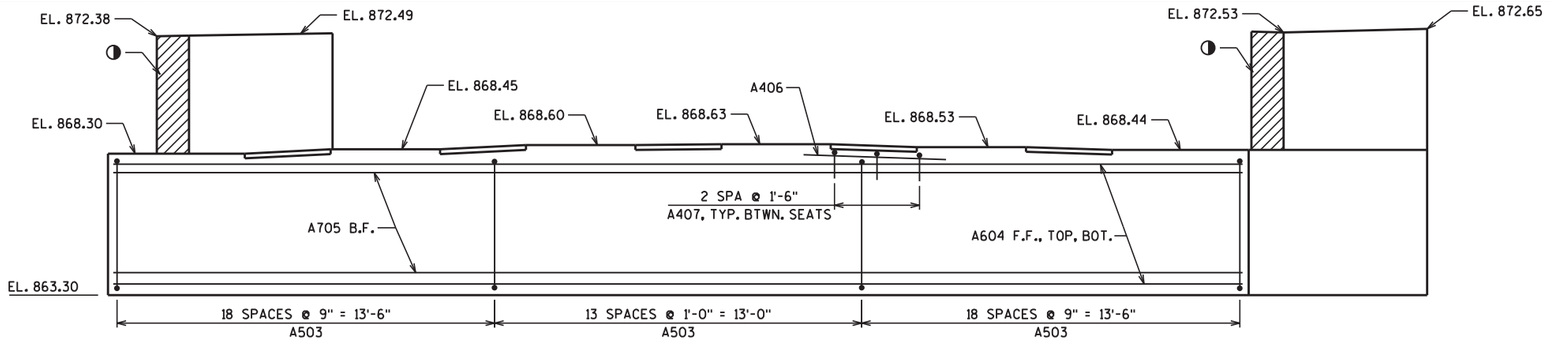
8

8

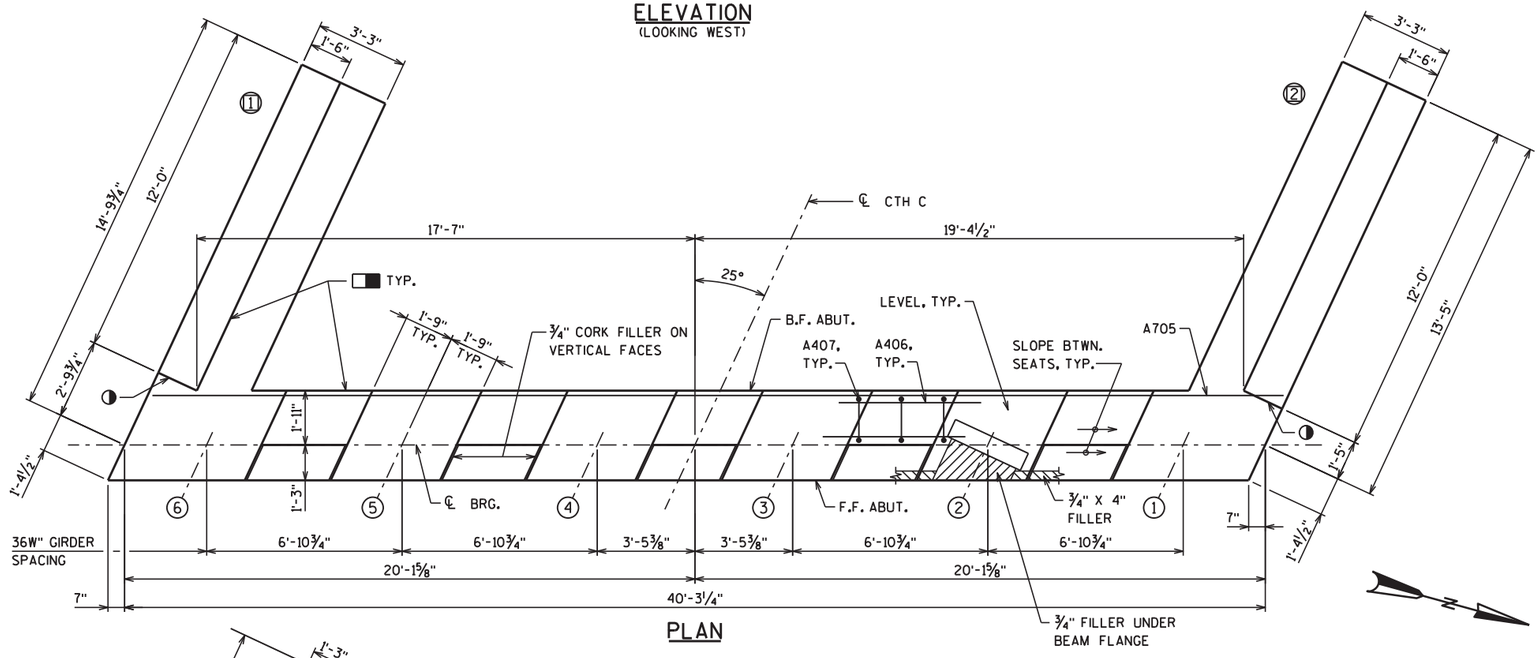
FILE NAME : F:±TR±JOBS±E2029A12±Sheets±BRIDGE±B-68-132 03 sub explr.dgn PLOT BY : epleyb PLOT DATE: 3/22/2013 12:31:36 PM

STATE PROJECT NUMBER
6819-02-70

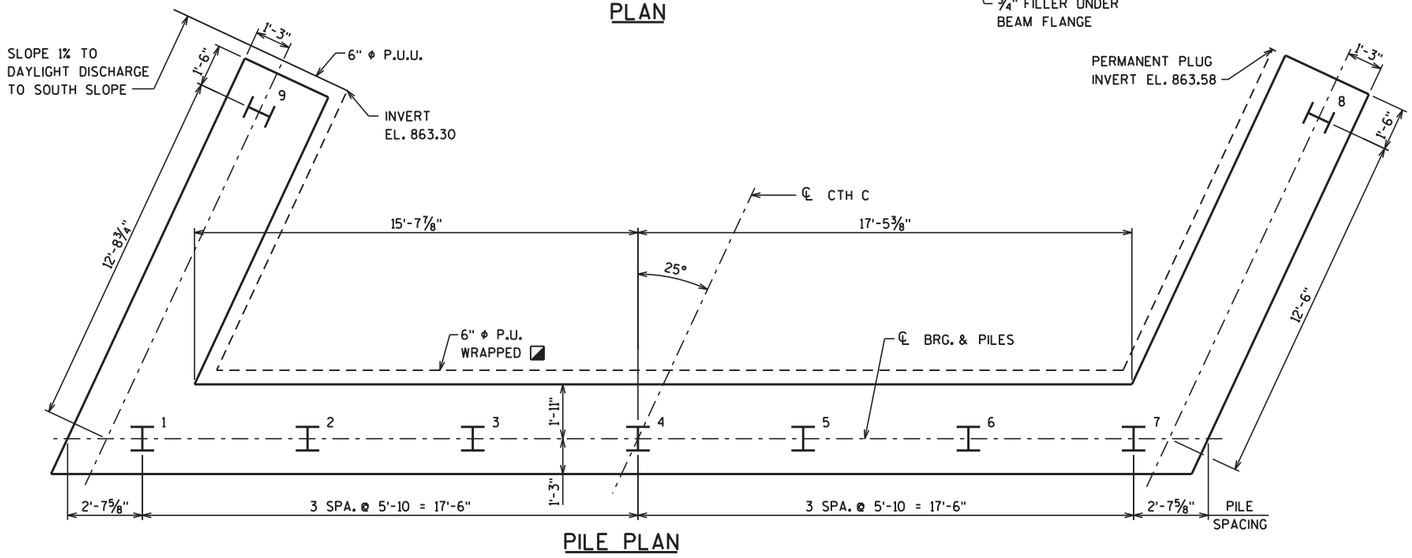


NOTE: SPACE A503 TO MISS PILING

ELEVATION
(LOOKING WEST)



PLAN



PILE PLAN

LEGEND

◑ ½" FILLER INCLUDED IN WING LENGTH. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)

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

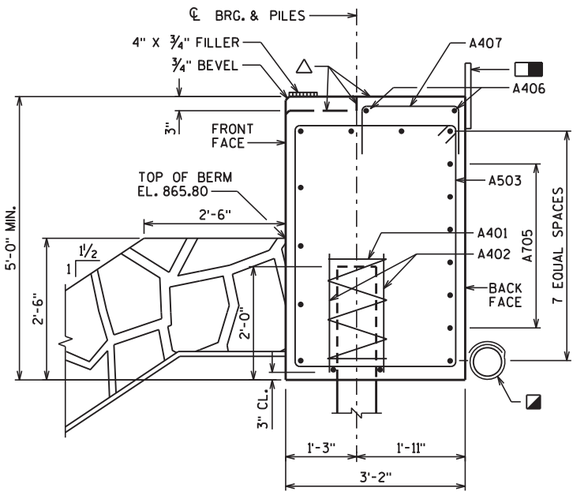
△ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

◪ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SOUTH SLOPES. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. ESTIMATED LENGTH = 25' AT THE WEST ABUTMENT.

SEE SHEET 5 FOR WINGWALL DETAILS, BILL OF BARS AND BAR BENDING DIAGRAMS.

Ⓧ DENOTES WING NUMBER.



SECTION THRU BODY

HORIZ. BARS NOT OTHERWISE IDENTIFIED ARE A604 BARS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-68-132

DRAWN BY BRE | PLANS CK'D. JAW

WEST ABUTMENT

SHEET 4 OF 12

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8

8

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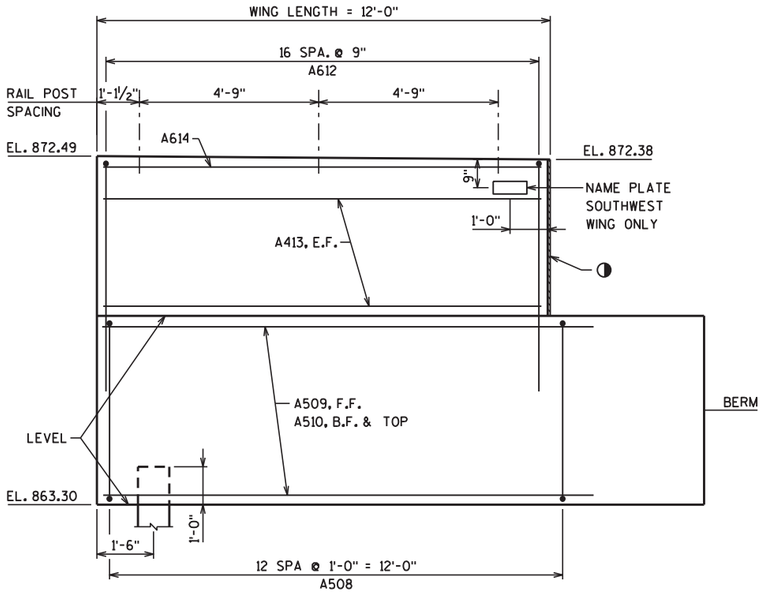
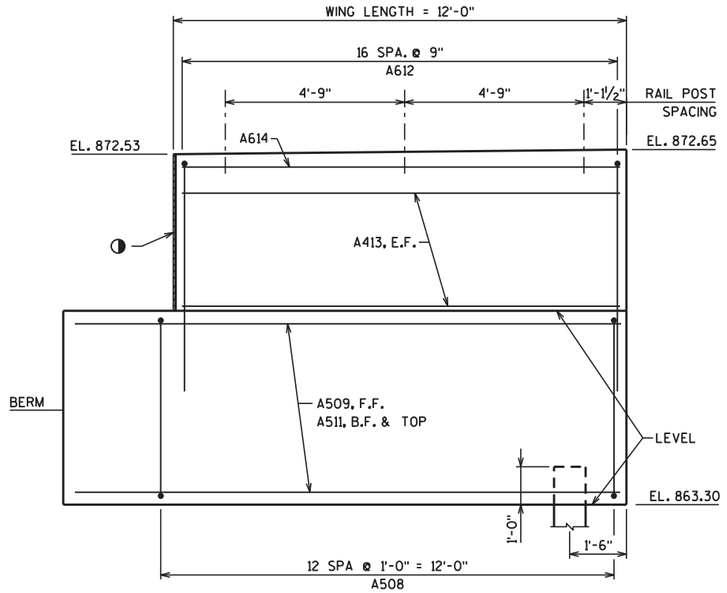


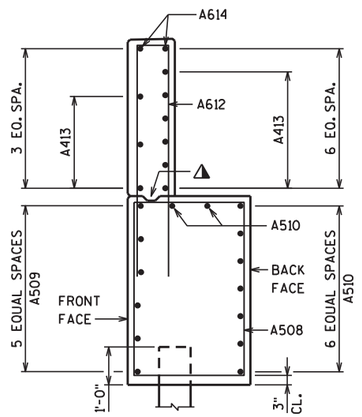
WING 1 ELEVATION



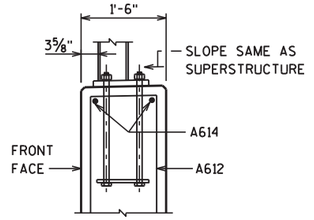
WING 2 ELEVATION

BILL OF BARS

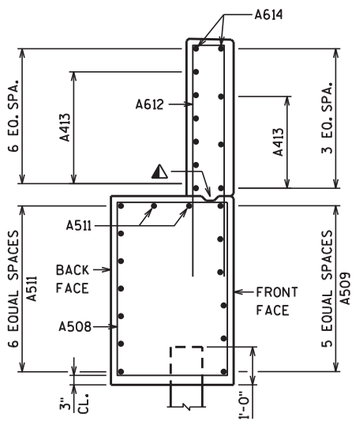
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
A401		7	28'-0"	X	BODY - ONE PER PILE
A402		14	2'-3"		BODY - TWO PER PILE
A503		50	14'-11"	X	BODY - STIRRUPS
A604		11	39'-11"		BODY - HORIZONTAL
A705		6	38'-8"		BODY - HORIZONTAL B.F.
A406		10	5'-0"		BODY - HORIZONTAL TOP
A407		15	3'-7"	X	BODY - VERTICAL, TOP
A508	X	26	15'-7"	X	WINGS - STIRRUPS
A509	X	12	14'-0"		WINGS - HORIZONTAL, F.F.
A510	X	9	12'-9"		WINGS - HORIZONTAL, B.F. & TOP, W1
A511	X	9	14'-5"		WINGS - HORIZONTAL, B.F. & TOP, W2
A612	X	34	13'-0"	X	WINGS - VERTICAL
A413	X	18	11'-8"		WINGS - HORIZONTAL
A614	X	4	11'-8"		WINGS - HORIZONTAL, TOP



WING 1 SECTION



TYPE 'M' RAIL AT TOP OF WING



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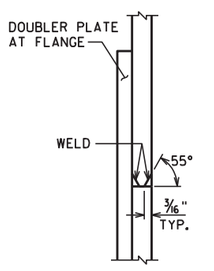
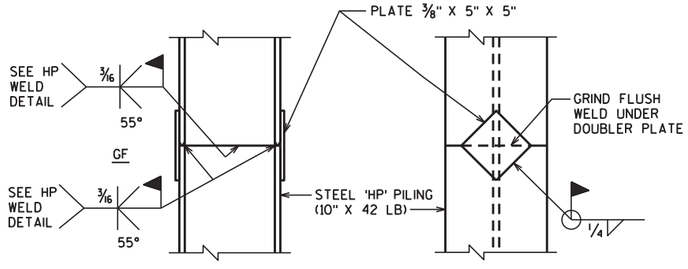


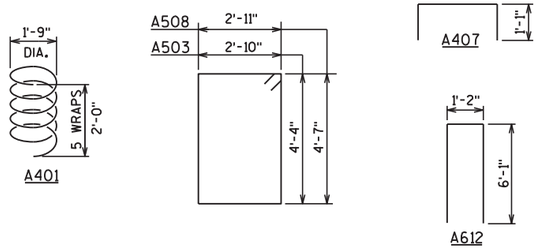
HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

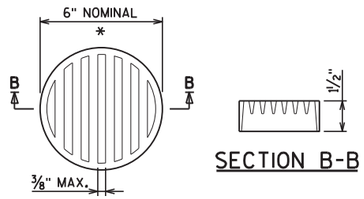


STEEL 'HP' SHAPES

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



BAR BENDING DIAGRAMS



SECTION B-B

RODENT SCREEN DETAIL

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

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

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

NOTES:

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

◑ ½" FILLER, SEALER (EXTEND TO TOP OF WING)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-68-132

DRAWN BY BRE | PLANS CK'D. JAW

WEST ABUTMENT DETAILS

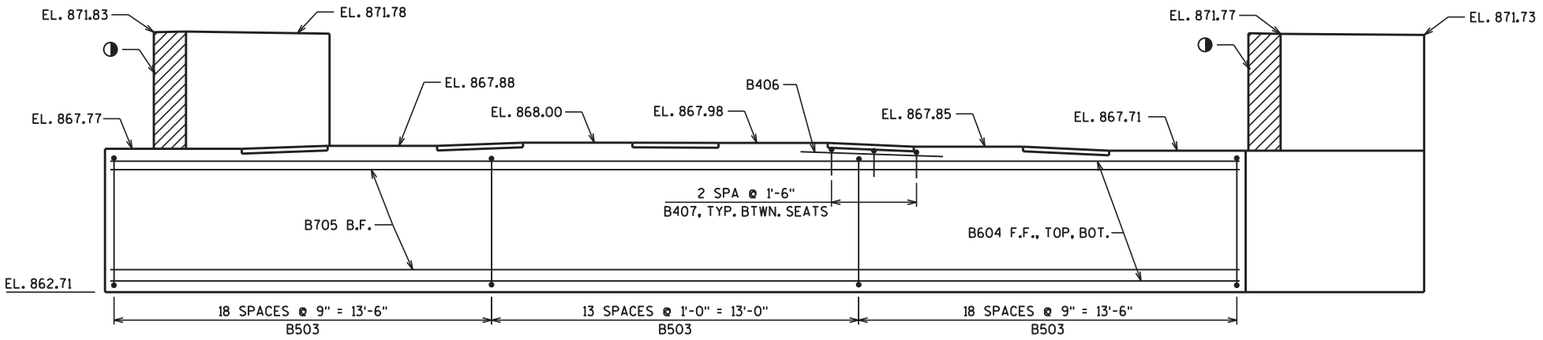
SHEET 5 OF 12

52

8

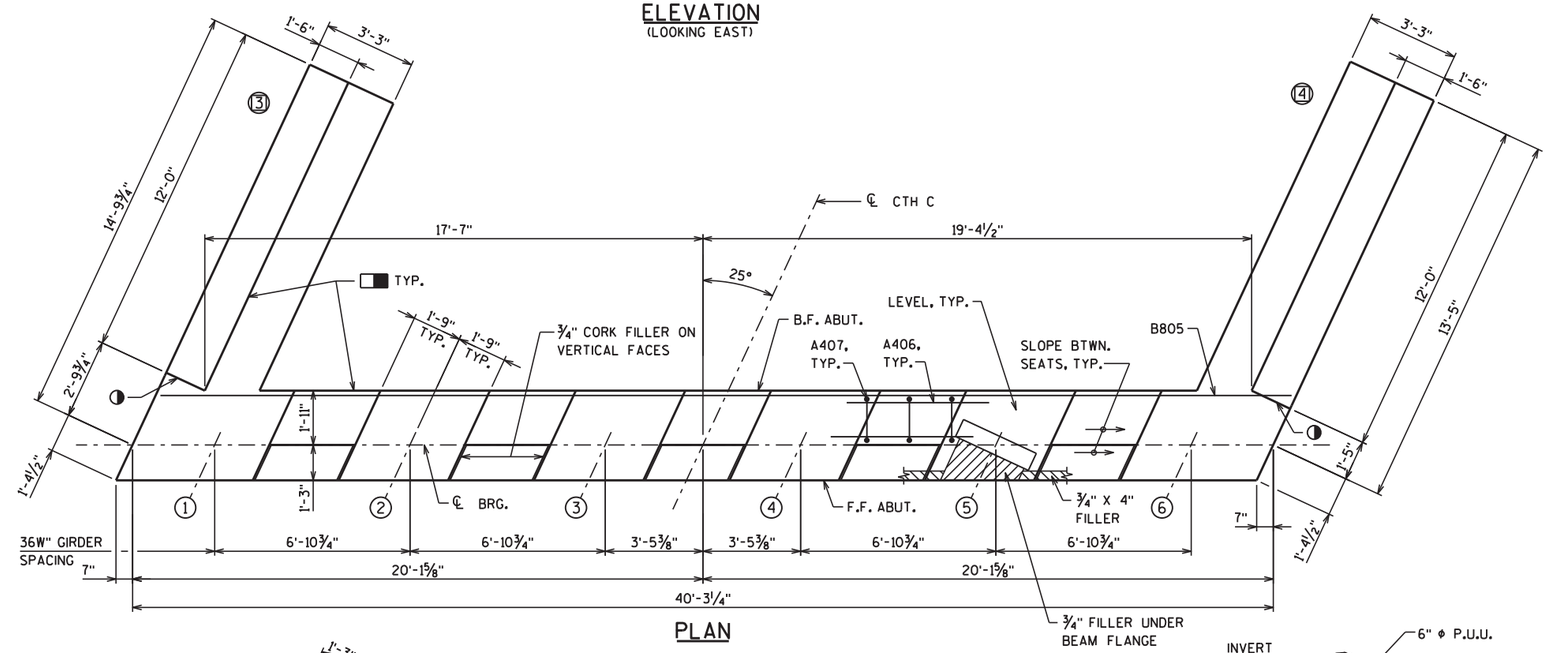
8

STATE PROJECT NUMBER
6819-02-70

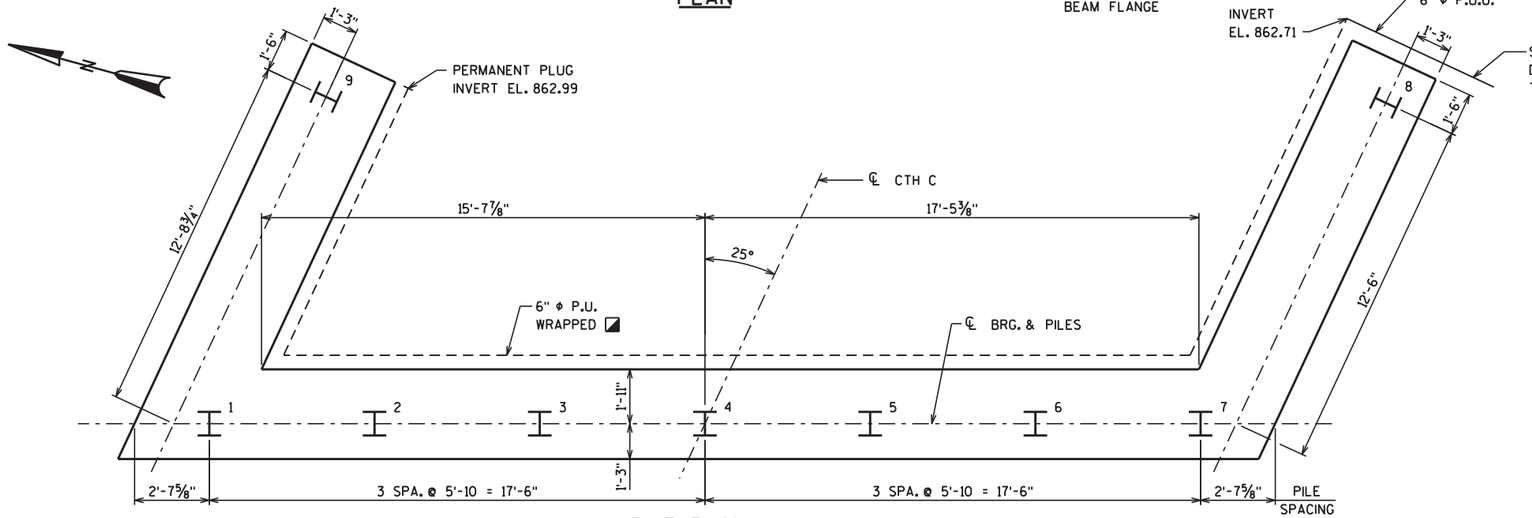


NOTE: SPACE B503 TO MISS PILING

ELEVATION
(LOOKING EAST)



PLAN



PILE PLAN

LEGEND

◑ ½" FILLER INCLUDED IN WING LENGTH, SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)

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

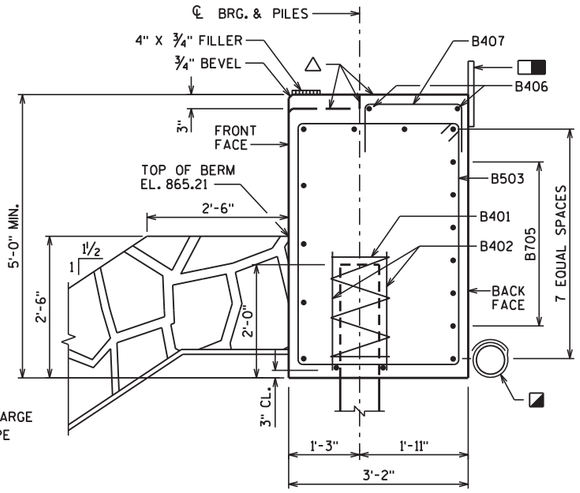
△ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

◪ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SOUTH SLOPES. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. ESTIMATED LENGTH = 20' AT THE EAST ABUTMENT.

SEE SHEET 7 FOR WINGWALL DETAILS, BILL OF BARS AND BAR BENDING DIAGRAMS.

Ⓧ DENOTES WING NUMBER.



SECTION THRU BODY

HORIZ. BARS NOT OTHERWISE IDENTIFIED ARE B604 BARS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-68-132

DRAWN BY BRE | PLANS CK'D. JAW

EAST ABUTMENT

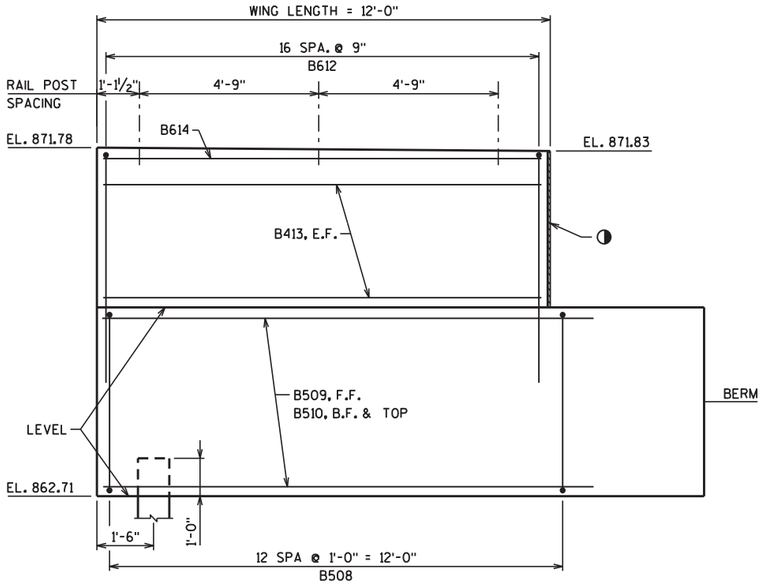
SHEET 6 OF 12

8

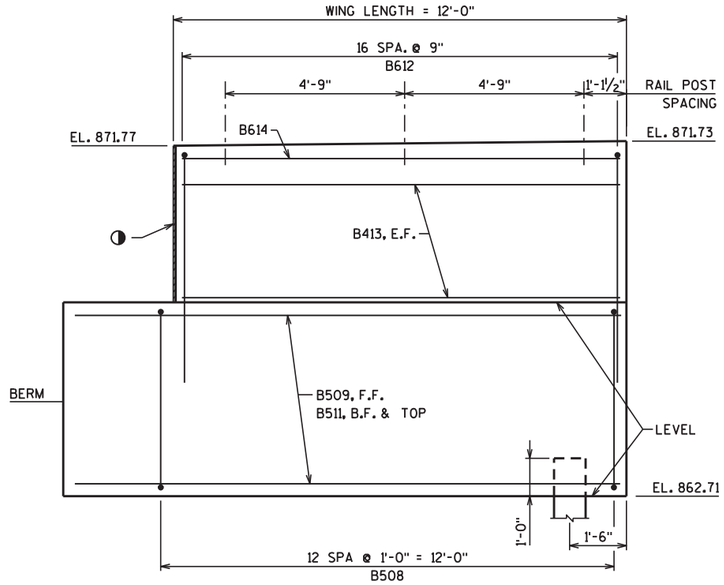
8

FILE NAME : F:±TR±JOBS±E2029A12±Sheets±BRIDGE±B-68-132 06 e abut.dgn PLOT BY : epleyb PLOT DATE: 8/21/2013 9:49:27 AM

STATE PROJECT NUMBER
6819-02-70



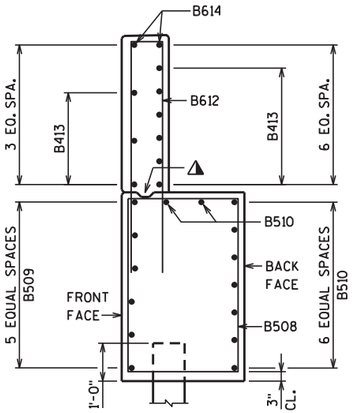
WING 3 ELEVATION



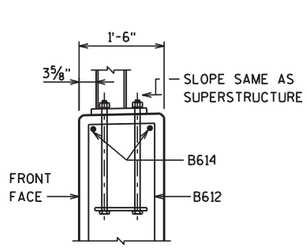
WING 4 ELEVATION

BILL OF BARS

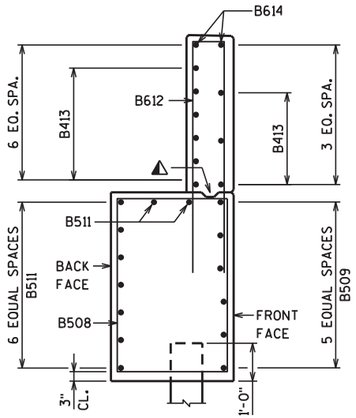
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
B401		7	28'-0"	X	BODY - ONE PER PILE
B402		14	2'-3"		BODY - TWO PER PILE
B503		50	14'-11"	X	BODY - STIRRUPS
B604		11	39'-11"		BODY - HORIZONTAL
B705		6	38'-8"		BODY - HORIZONTAL B.F.
B406		10	5'-0"		BODY - HORIZONTAL TOP
B407		15	3'-7"	X	BODY - VERTICAL, TOP
B508	X	26	15'-7"	X	WINGS - STIRRUPS
B509	X	12	14'-0"		WINGS - HORIZONTAL, F.F.
B510	X	9	12'-9"		WINGS - HORIZONTAL, B.F. & TOP, W3
B511	X	9	14'-5"		WINGS - HORIZONTAL, B.F. & TOP, W4
B612	X	34	13'-0"	X	WINGS - VERTICAL
B413	X	18	11'-8"		WINGS - HORIZONTAL
B614	X	4	11'-8"		WINGS - HORIZONTAL, TOP



WING 3 SECTION



TYPE 'M' RAIL AT TOP OF WING



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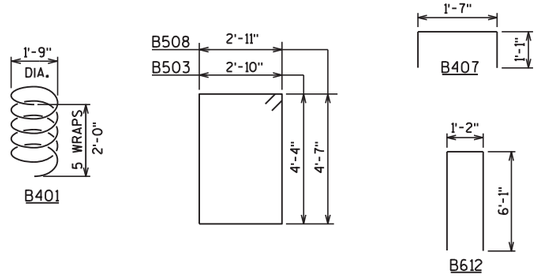
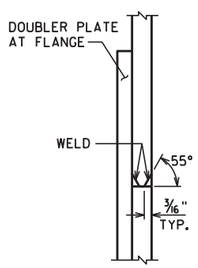
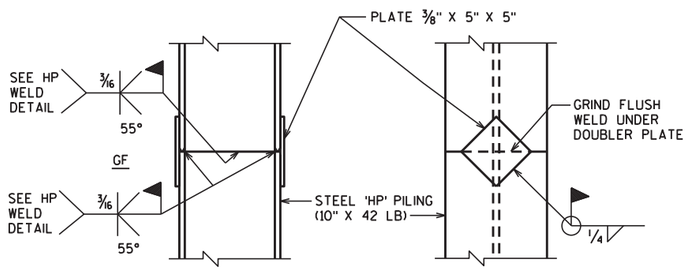


BAR BENDING DIAGRAMS



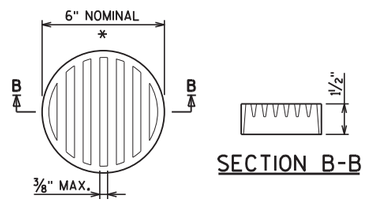
HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR



STEEL 'HP' SHAPES

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



SECTION B-B

ROD ENT SCREEN DETAIL

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

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

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

NOTES:

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

◑ ½" FILLER, SEALER (EXTEND TO TOP OF WING)

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-68-132

DRAWN BY BRE | PLANS CK'D. JAW

EAST ABUTMENT DETAILS

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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.

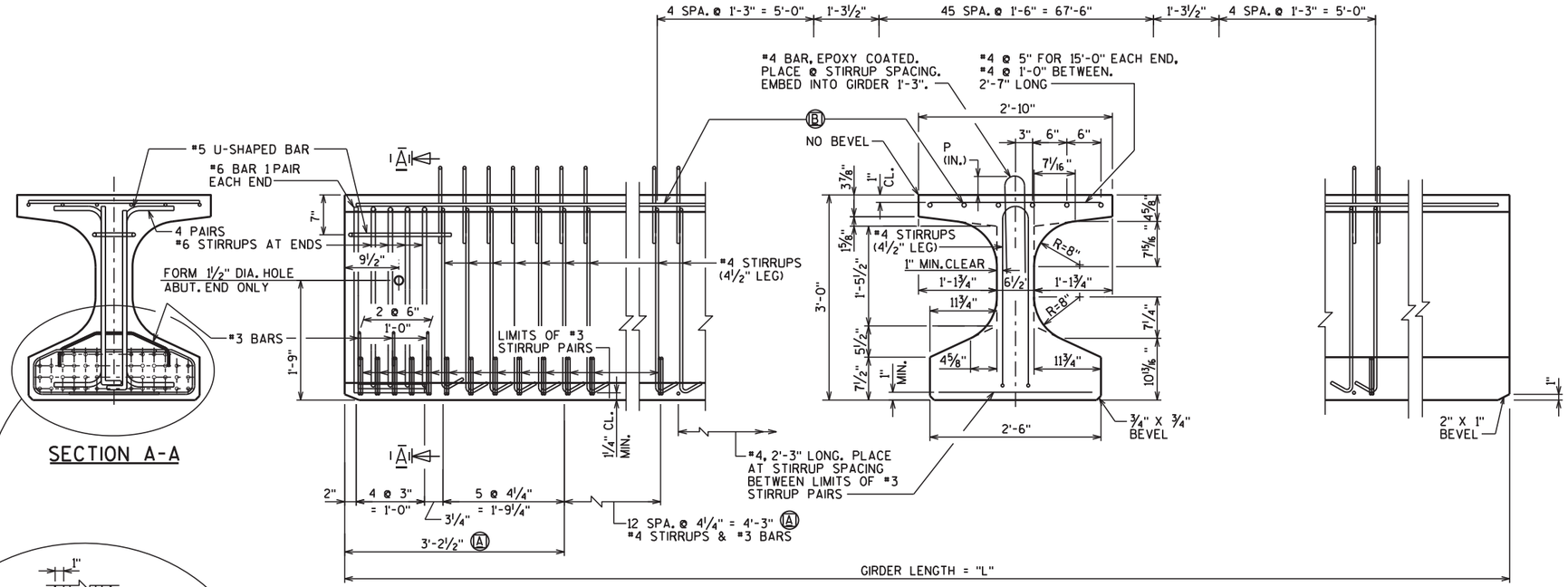
SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, ONE OPTION IS AVAILABLE:

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 SECTION.

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.

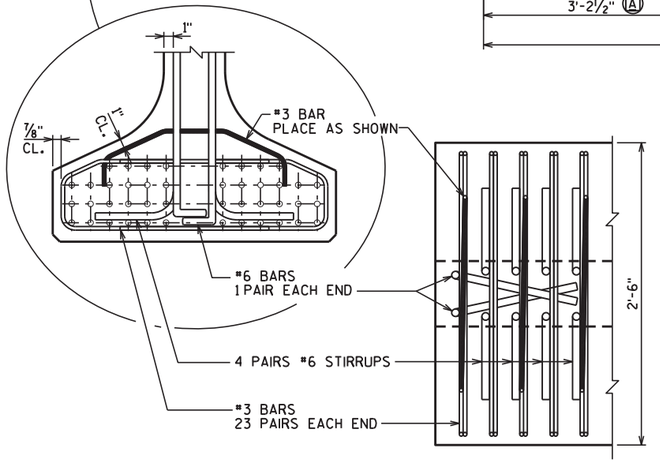


SECTION A-A

SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-11"

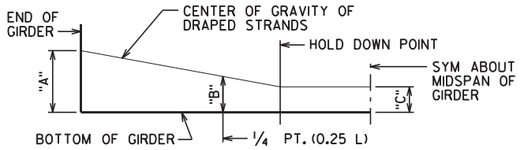


BOTTOM FLANGE

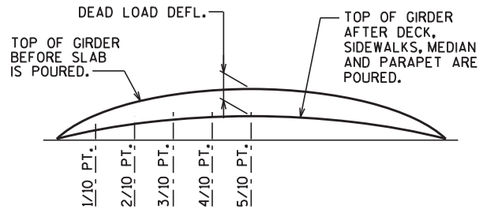
* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	3.7

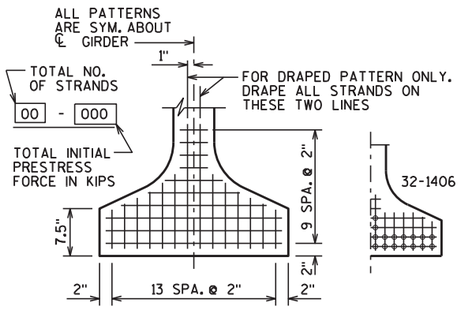
THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS. THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



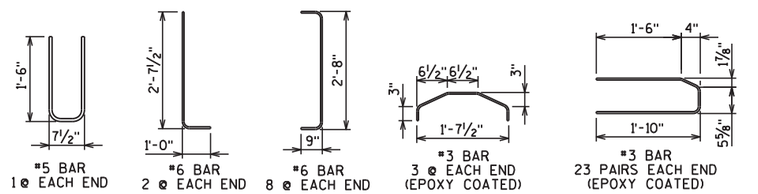
DRAPED STRAND PROFILE

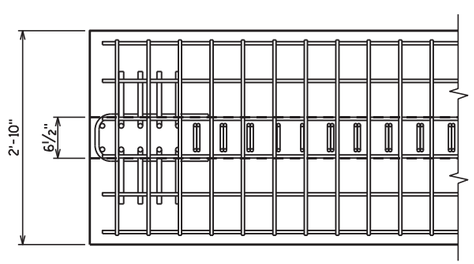


DEAD LOAD DEFLECTION DIAGRAM



TYP. STRAND PATTERN





TOP FLANGE

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

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	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 TOTAL NO. OF STRANDS	DRAPED PATTERN f'ci (P.S.I.) *	DRAPED PATTERN (IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	UNDRAPED PATTERN f'ci (P.S.I.) *
1	ALL	95.0'	0.6	1.2	1.7	2.0	2.1	2.0	1.7	1.2	0.6	8,000	8"	7"	8"	0.6	32	6,800	31	11½"	14½"	5	---	---

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STRUCTURE B-68-132

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36W" PRESTRESSED GIRDER DETAILS

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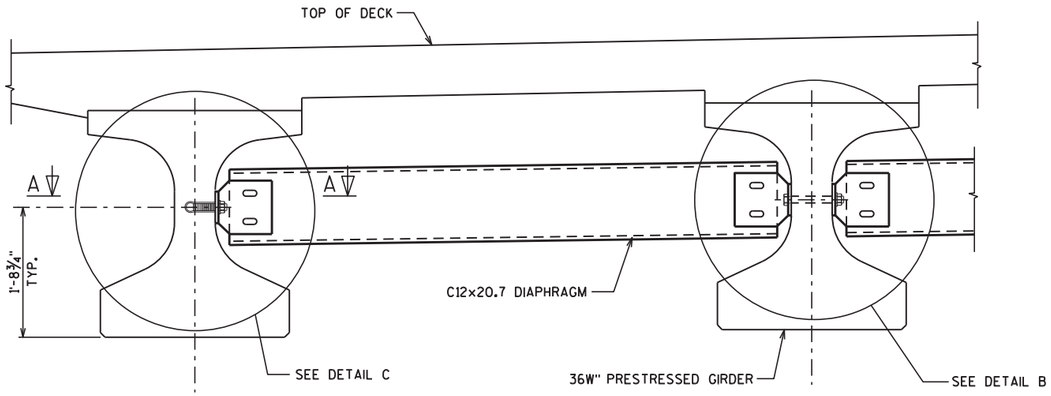


EXTERIOR GIRDER

INTERIOR GIRDER

NOTES

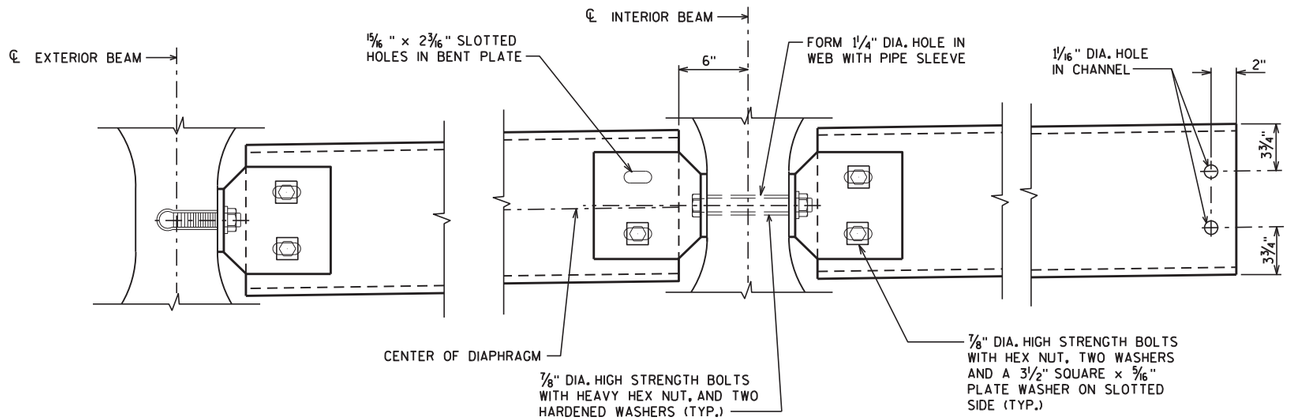
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-68-132", EACH.

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.

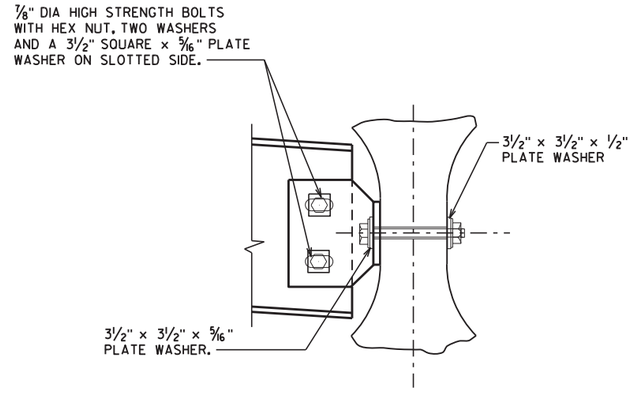
ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY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

PART TRANSVERSE SECTION AT DIAPHRAGM

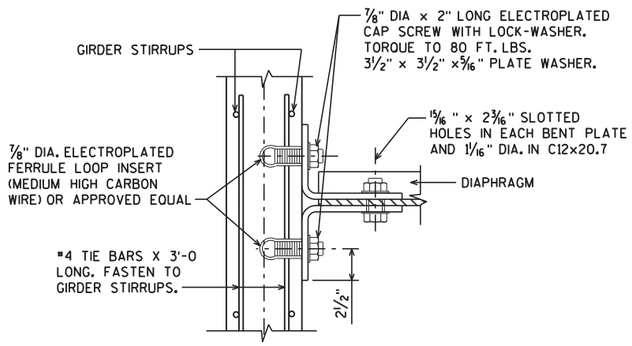


DETAIL C

DETAIL B

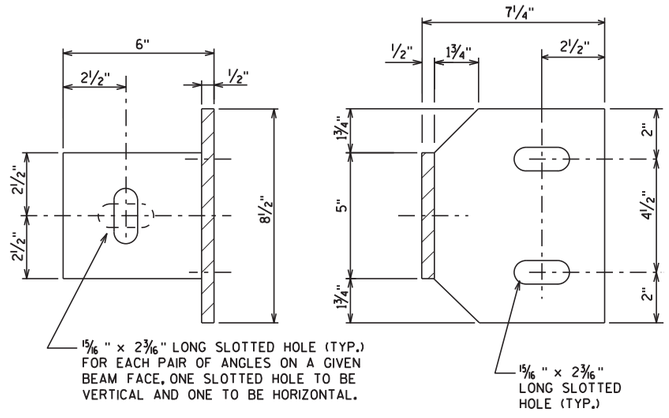


SECTION AT INTERIOR GIRDERS THRU DIAPHRAGM FOR SKEW ANGLES > 10°



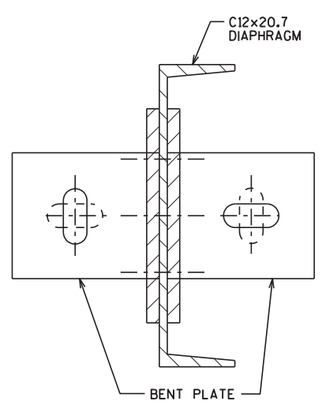
SECTION A-A

(FOR EXTERIOR ATTACHMENT)



BEAM FACE

DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

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STEEL DIAPHRAGMS

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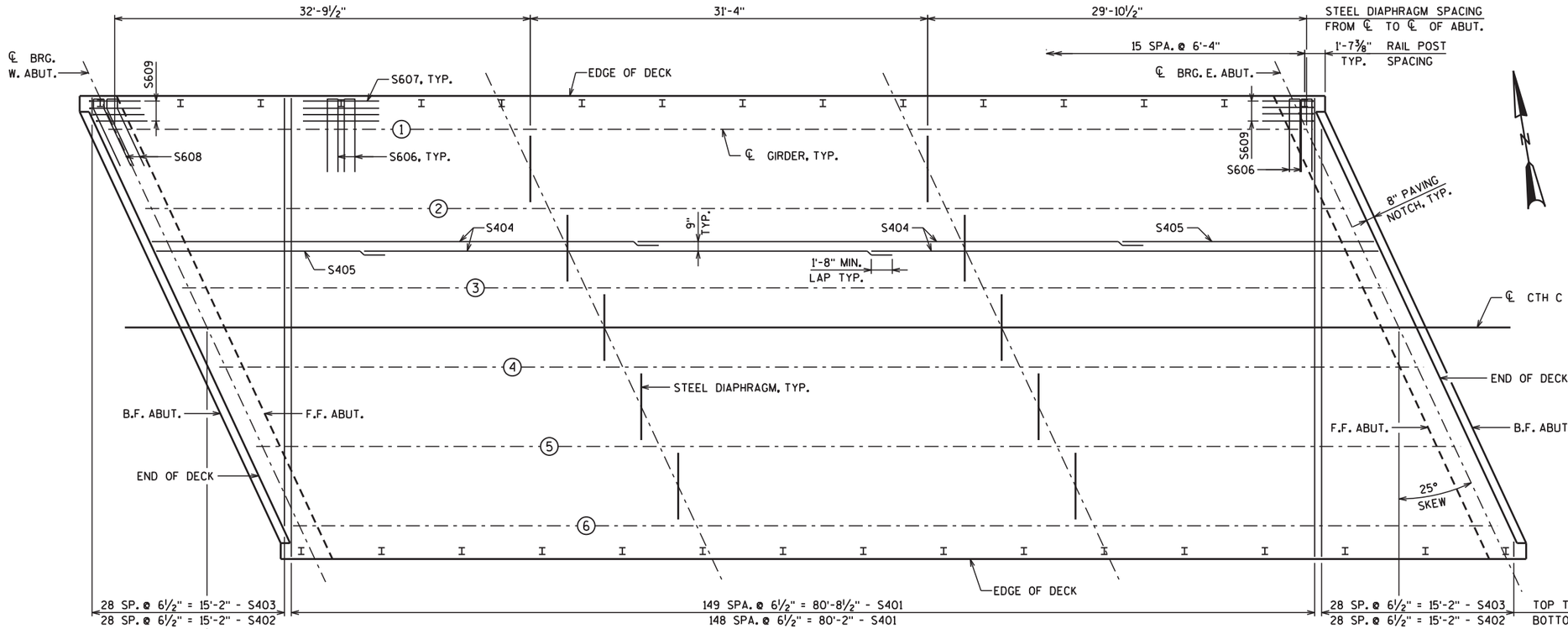
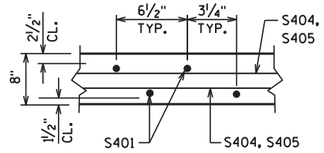
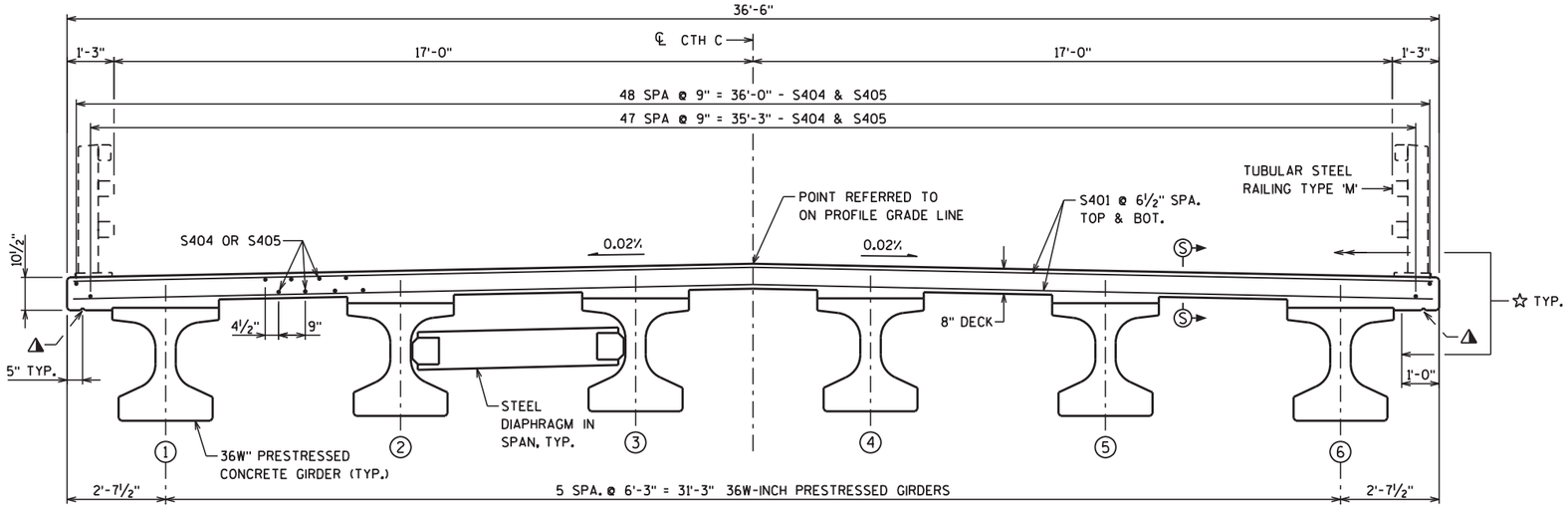


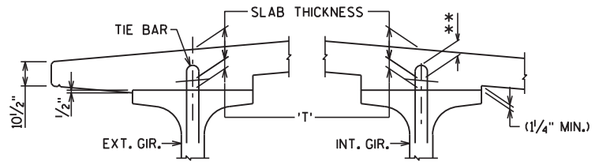
SUPERSTRUCTURE PLAN



SECTION S-S



CROSS SECTION THRU ROADWAY



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 3½" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

⚠ ¾" V-GROOVE. EXTEND V-GROOVE TO 3" FROM FRONT FACE OF ABUTMENT DIAPHRAGM.

☆ APPLY PROTECTIVE SURFACE TREATMENT.

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DRAWN BY BRE | PLANS CK'D. JAW

SUPERSTRUCTURE

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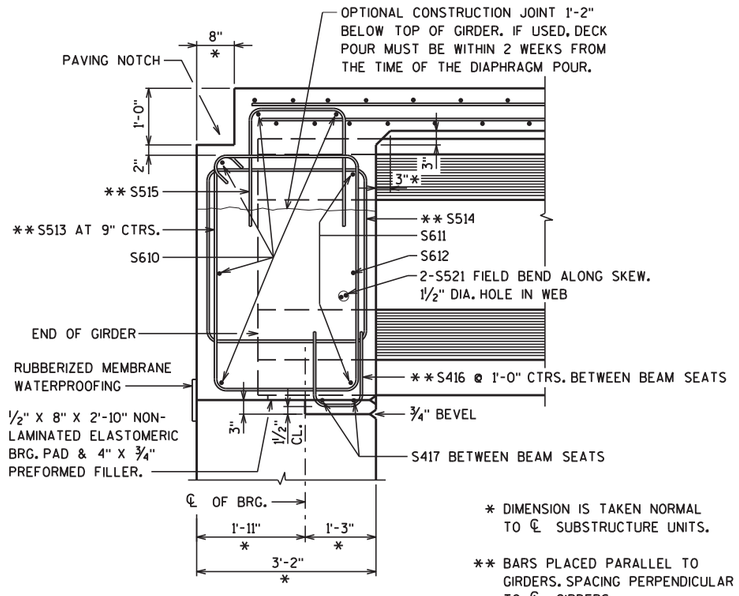
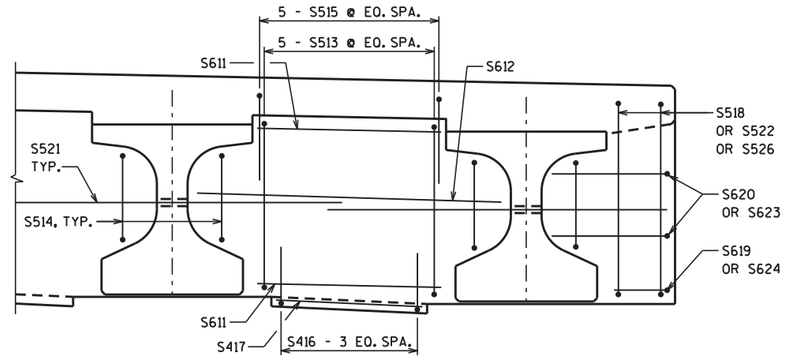
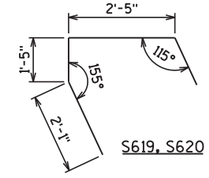


AT ABUTMENTS

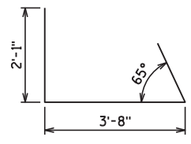
PART LONGIT. SECTION



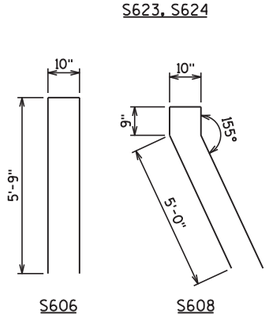
DIAPHRAGM DETAILS AT ABUTMENT



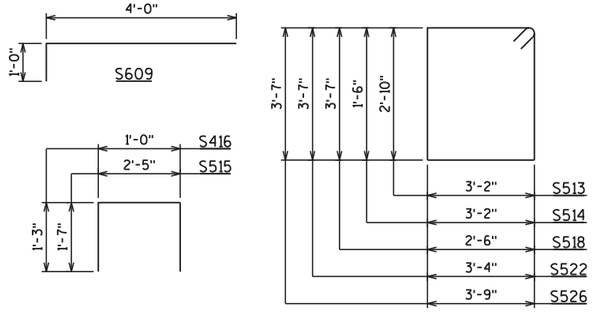
S619, S620



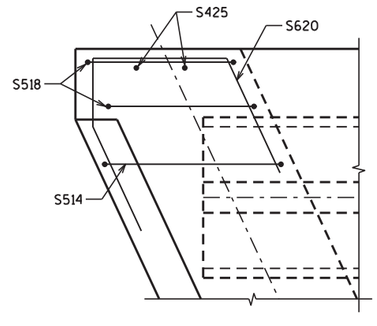
S623, S624



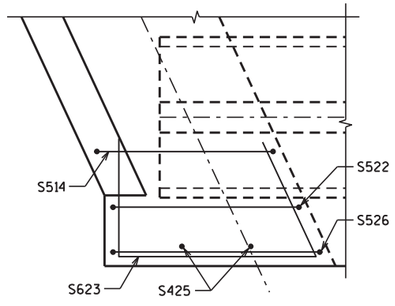
S606 S608



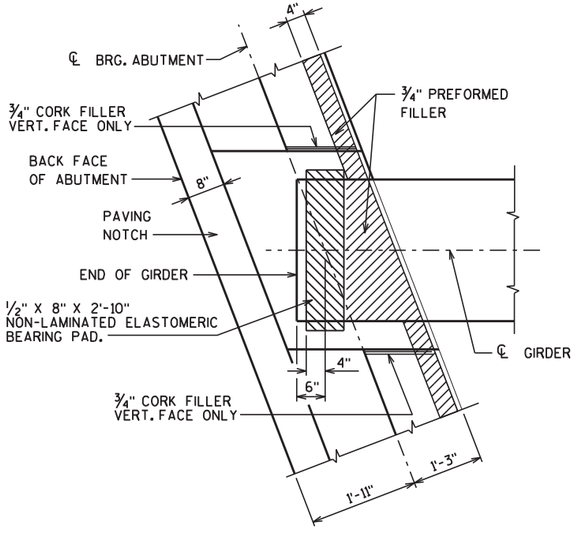
BAR BEND DIAGRAMS



DIAPHRAGM CORNER N.W. & S.E. DETAILS



DIAPHRAGM CORNER S.W. & N.E. DETAILS



BEARING PAD DETAIL

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	SERIES	LOCATION
S401	X	299	36'-2"			TRANS. TOP & BOT.
S402	X	58	18'-1"		△	TRANS. BOTTOM AT END OF SLAB
S403	X	58	17'-6"		△	TRANS. TOP AT END OF SLAB
S404	X	194	40'-0"			LONG. TOP & BOT.
S405	X	97	19'-10"			LONG. TOP & BOT.
S606	X	60	12'-0"	X		AT RAIL POST
S607	X	112	6'-0"			AT RAIL POST
S608	X	4	12'-0"	X		AT RAIL POST
S609	X	16	4'-10"	X		AT RAIL POST
S610	X	10	39'-11"			DIAPH. HORIZONTAL B.F.
S611	X	20	3'-5"			DIAPH. HORIZONTAL F.F.
S612	X	10	5'-11"			DIAPH. HORIZONTAL F.F.
S513	X	50	12'-7"	X		DIAPH. VERTICAL
S514	X	24	9'-11"	X		DIAPH. VERTICAL
S515	X	50	5'-4"	X		DIAPH. VERTICAL, TOP
S416	X	40	3'-4"	X		DIAPH. VERTICAL
S417	X	20	2'-5"			DIAPH. HORIZONTAL
S518	X	4	12'-9"	X		DIAPH. ENDS VERTICAL, N.W. & S.E.
S619	X	2	6'-8"	X		DIAPH. ENDS HORIZ., N.W. & S.E.
S620	X	4	7'-11"	X		DIAPH. ENDS HORIZ., N.W. & S.E.
S521	X	24	6'-0"			DIAPH. HORIZONTAL
S522	X	2	14'-5"	X		DIAPH. ENDS VERTICAL, S.W. & N.E.
S623	X	4	7'-7"	X		DIAPH. ENDS HORIZ., S.W. & N.E.
S624	X	2	6'-7"	X		DIAPH. ENDS HORIZ., S.W. & N.E.
S425	X	8	3'-4"			DIAPH. ENDS VERTICAL
S526	X	2	15'-3"	X		DIAPH. ENDS VERTICAL, S.W. & N.E.

BAR SERIES

BAR NO.	NO. REQ'D.	LENGTH
S402	2 SERIES OF 29	1'-10" TO 34'-4"
S403	2 SERIES OF 29	1'-3" TO 33'-9"

TOP OF DECK ELEVATIONS

LOCATION	W.ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	E. ABUT.
N. EDGE	872.51	872.42	872.34	872.26	872.19	872.12	872.05	871.99	871.94	871.89	871.84
GIRDER 1	872.55	872.47	872.38	872.30	872.23	872.16	872.10	872.04	871.98	871.93	871.89
GIRDER 2	872.65	872.56	872.48	872.41	872.33	872.27	872.20	872.14	872.09	872.04	872.00
GIRDER 3	872.75	872.66	872.58	872.51	872.44	872.37	872.31	872.25	872.20	872.15	872.11
GIRDER 4	872.72	872.64	872.56	872.48	872.42	872.35	872.29	872.24	872.19	872.14	872.10
GIRDER 5	872.57	872.49	872.41	872.34	872.27	872.21	872.15	872.10	872.05	872.00	871.96
GIRDER 6	872.42	872.34	872.26	872.19	872.12	872.06	872.01	871.95	871.91	871.87	871.83
S. EDGE	872.36	872.28	872.20	872.13	872.06	872.00	871.95	871.90	871.85	871.81	871.77

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DRAWN BY BRE | PLANS CK'D. KRO

SUPERSTRUCTURE DETAILS

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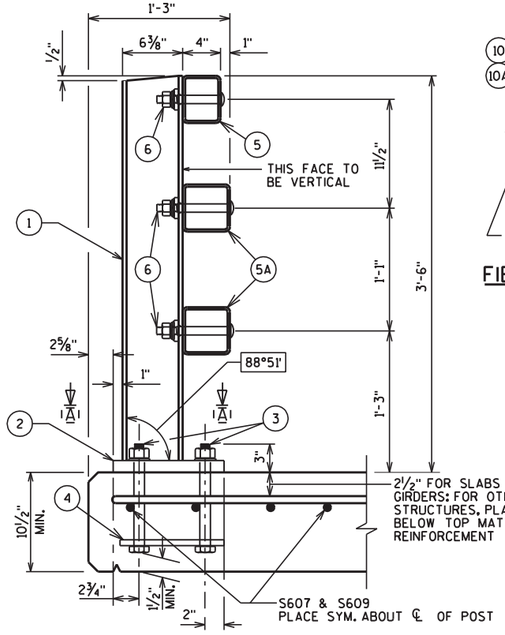
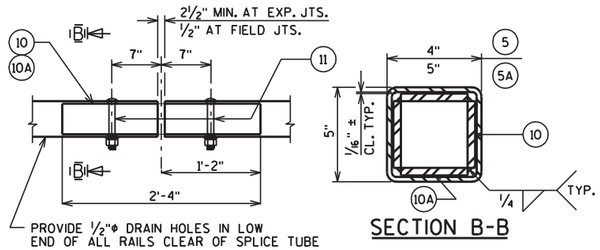
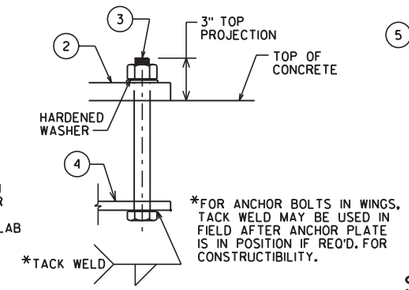


SECTION THRU RAILING ON DECK

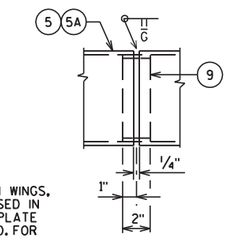


FIELD ERECTION JOINT DETAIL

SECTION B-B

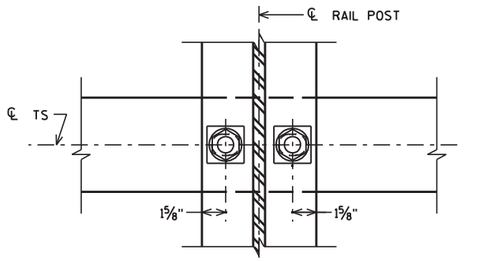


ANCHOR BOLTS

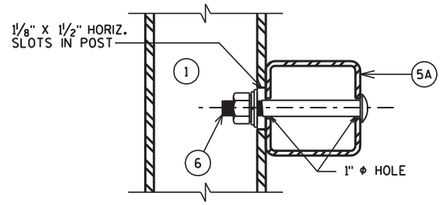


SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



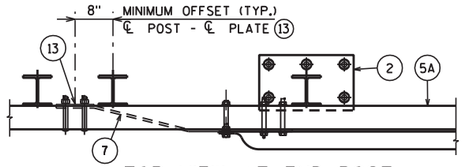
SECTION THRU POST WEB



SECTION THRU RAIL

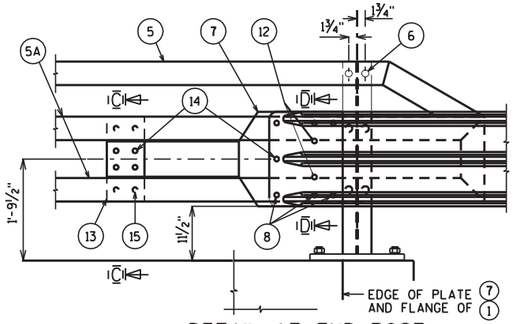
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS



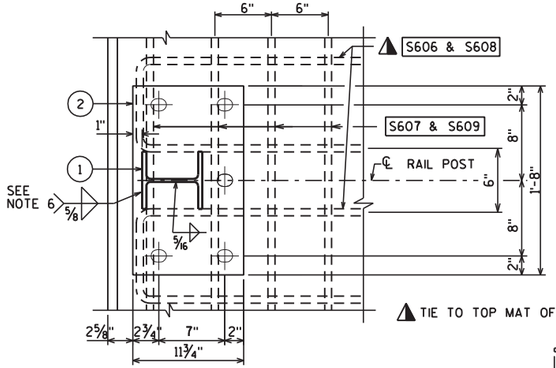
TOP VIEW AT END POST

(THRIE BEAM RAIL ATTACHMENT)

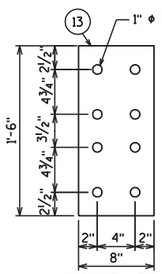


DETAIL AT END POST

(THRIE BEAM RAIL ATTACHMENT)

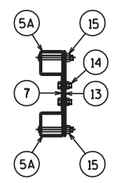


SECTION A-A

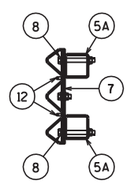


ANCHOR PLATE

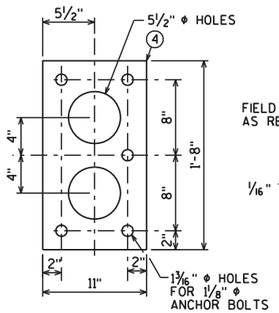
AT BEAM GUARD ATTACHMENT



SECTION C-C

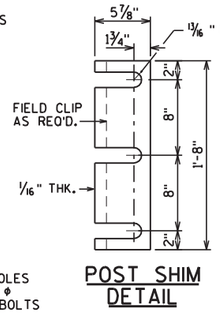


SECTION D-D

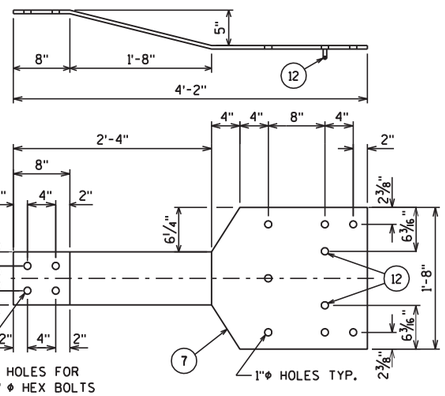


ANCHOR PLATE

AT RAIL TO DECK CONNECTION

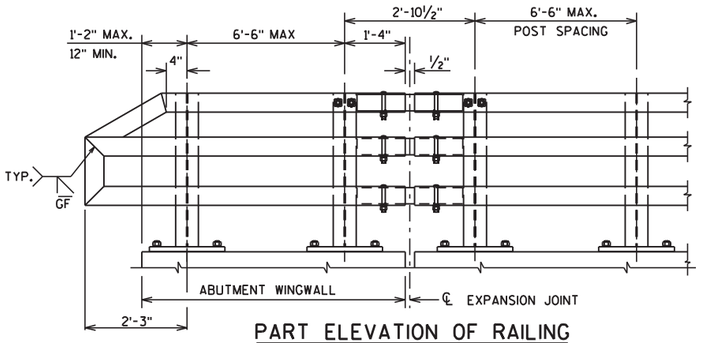


POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

LEGEND

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

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

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

(4) ⅝" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 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 (ITEM 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.

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

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

(10) ⅜" X 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 1⅝" X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 1⅝" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.

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

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

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

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

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M (B-68-132)" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ⅛ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
10. WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
12. PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-68-132

DRAWN BY BRE | PLANS CK'D. KRO

RAILING TUBULAR TYPE 'M'

SHEET 12 OF 12

59

8

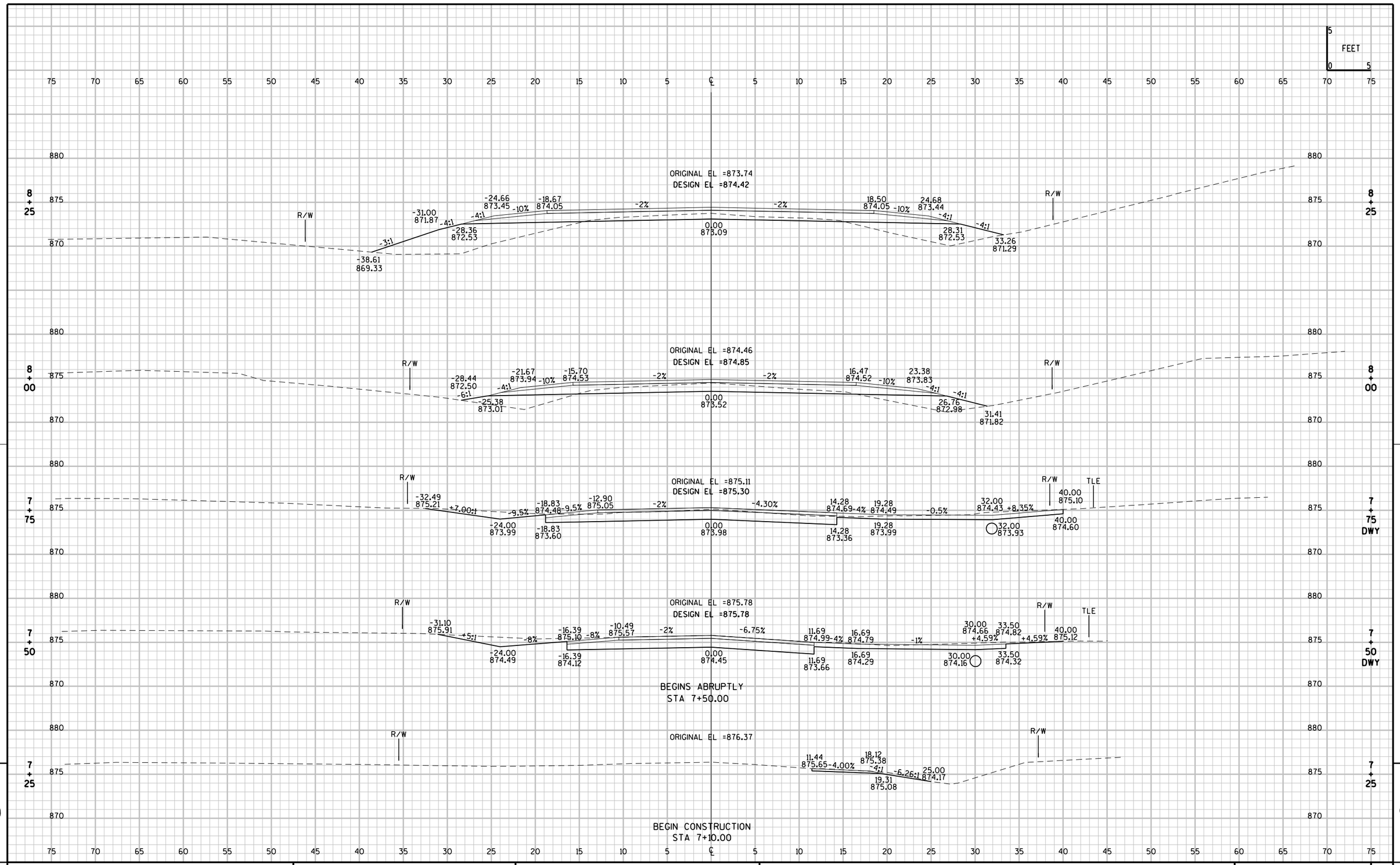
8

CTH C - WEST

STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
	Cut	Salvaged/ Unusable Pavement Material	Fill	Cut	Salvaged/ Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.3	
7+10.00	5	0	0	0	0	0	0	0	0
7+50.00	14	0	0	14	0	0	14	0	14
7+50.00	85	11	0	0	0	0	14	0	14
7+75.00	75	11	0	74	10	0	88	0	78
8+00.00	24	11	26	46	10	12	134	16	98
8+25.00	12	11	66	17	10	43	151	71	49
8+27.82	11	11	71	1	1	7	152	80	40
8+31.17	10	10	75	1	1	9	153	92	28
8+52.82	5	5	99	6	6	70	159	183	-63
8+56.17	5	5	102	1	1	12	160	199	-79
8+77.82	2	2	103	3	3	82	163	306	-186
8+81.17	1	1	106	0	0	13	163	323	-203
9+00.00	0	0	108	0	0	75	163	420	-300
9+25.00	0	0	169	0	0	128	163	586	-466
9+50.27	0	0	169	0	0	158	163	792	-672
STRUCTURE	0	0	0	0	0	0	163	792	-672
ENDS ABRUPTLY	0	0	0	0	0	0	163	792	-672

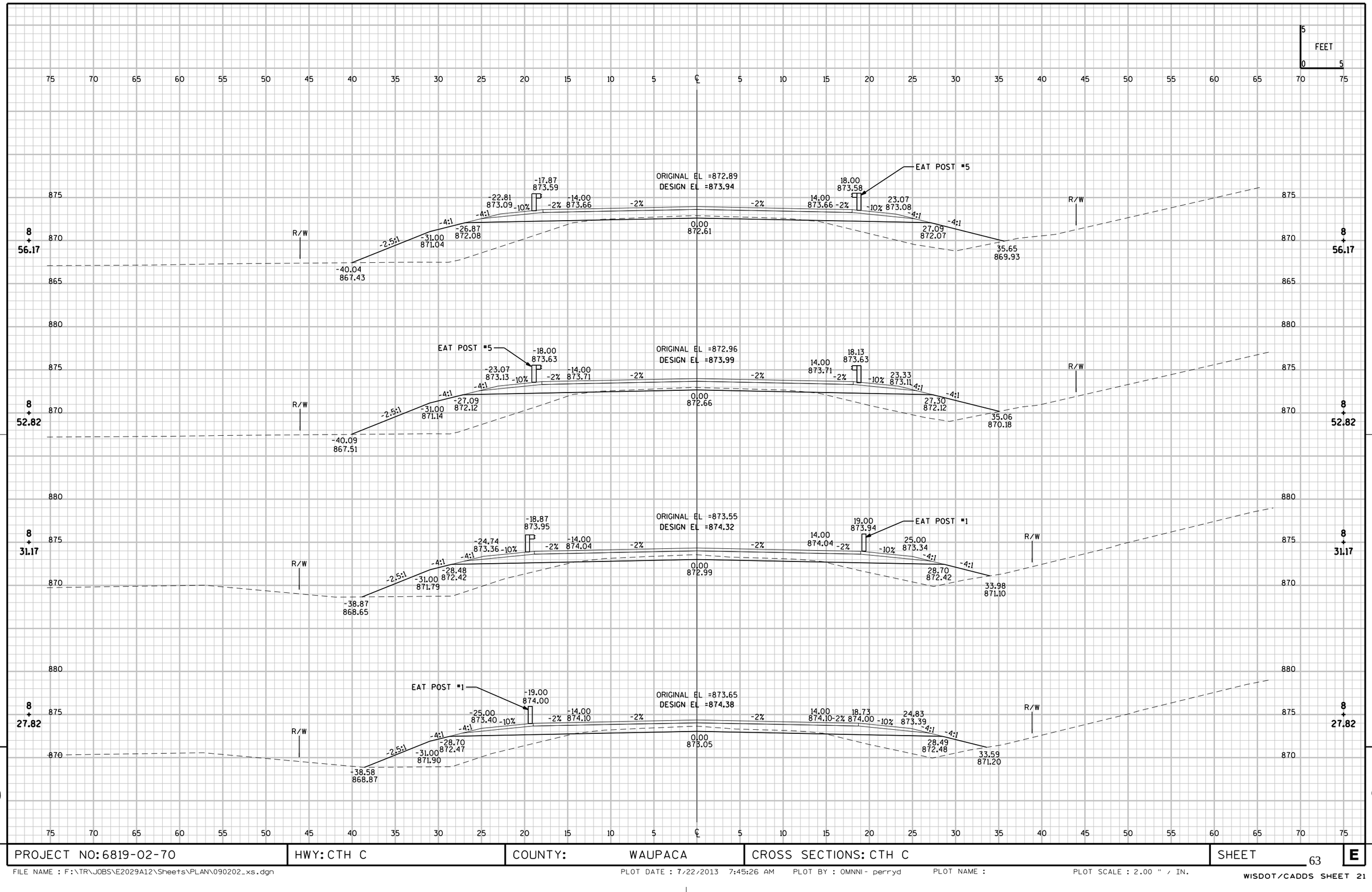
CTH C - EAST

STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
	Cut	Salvaged/ Unusable Pavement Material	Fill	Cut	Salvaged/ Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.3	
STRUCTURE	0	0	0	0	0	0	0	0	0
BEGINS ABRPUTLY	0	0	0	0	0	0	0	0	0
10+48.50	15	11	80	0	0	0	0	0	0
10+75.00	21	11	87	18	11	82	18	107	-100
11+00.00	25	11	61	21	10	69	39	196	-178
11+17.60	30	11	68	18	7	42	57	250	-222
11+20.95	31	11	68	4	1	8	61	261	-230
11+25.00	32	11	78	5	2	11	65	275	-241
11+42.60	39	11	41	23	7	39	89	326	-276
11+45.95	39	11	35	5	1	5	93	332	-278
11+67.60	45	11	21	34	9	22	127	361	-283
11+70.95	45	11	20	6	1	3	133	365	-282
11+75.00	45	11	18	7	2	3	139	368	-280
12+00.00	45	11	6	42	10	11	181	383	-263
12+25.00	46	11	1	42	10	3	223	387	-236
12+25.00	19	0	1	0	0	0	223	387	-236
12+50.00	19	0	0	18	0	0	241	387	-219
13+00.00	20	0	6	54	0	6	294	396	-173
13+36.00	0	0	0	13	0	4	308	401	-165



PROJECT NO: 6819-02-70	HWY: CTH C	COUNTY: WAUPACA	CROSS SECTIONS: CTH C	SHEET 62	E	9.3

FILE NAME : F:\TR\JOBS\E2029A12\Sheets\PLAN\090201_xs.dgn PLOT DATE : 7/22/2013 7:44:56 AM PLOT BY : OMNNI- perryd PLOT NAME : PLOT SCALE : 2.00 " / IN.
WISDOT/CADDS SHEET 21



PROJECT NO: 6819-02-70	HWY: CTH C	COUNTY: WAUPACA	CROSS SECTIONS: CTH C	SHEET	E	9.4

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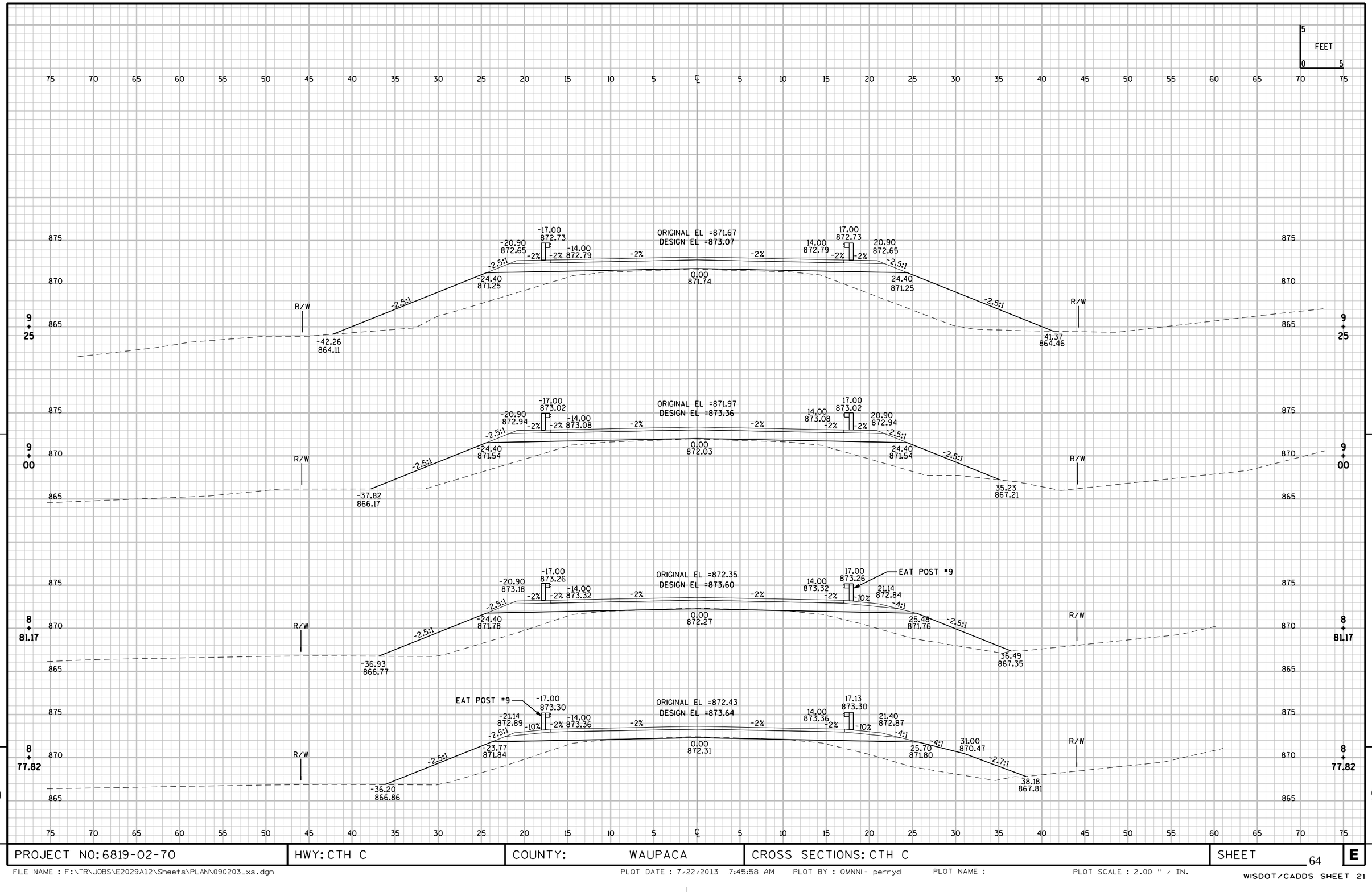
WISDOT/CADDS SHEET 21



PROJECT NO: 6819-02-70	HWY: CTH C	COUNTY: WAUPACA	CROSS SECTIONS: CTH C	SHEET 64	E	9.5

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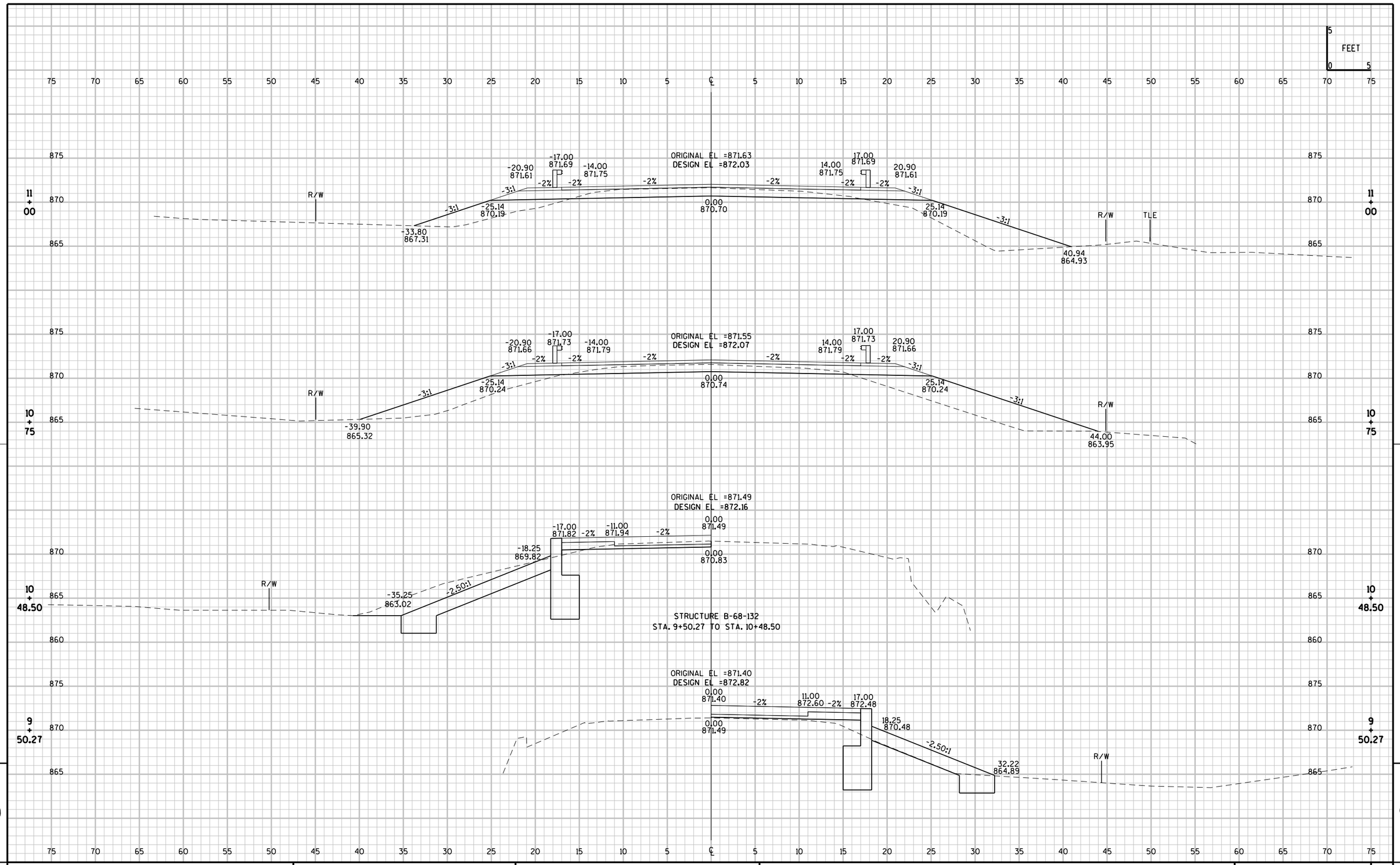
WISDOT/CADDS SHEET 21



9

9

PROJECT NO: 6819-02-70	HWY: CTH C	COUNTY: WAUPACA	CROSS SECTIONS: CTH C	SHEET 65	E	9.6

FILE NAME : F:\TR\JOBS\E2029A12\Sheets\PLAN\090204_xs.dgn PLOT DATE : 7/22/2013 7:46:26 AM PLOT BY : OMNNI - perryd PLOT NAME : PLOT SCALE : 2.00 " / IN.

WISDOT/CADDS SHEET 21

5 FEET 0 5

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 ℄ 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

875 870 865 860

11 + 42.60

EAT POST #5 -18.00 871.67
-23.07 871.16 -10% -14.00 871.75
ORIGINAL EL =872.09
DESIGN EL =872.03
17.87 871.67
14.00 871.75 -2% -10% 22.81 871.18
R/W
-37.35 869.82 -34.60 868.90 -27.09 870.16 0.00 870.70 26.87 870.16 31.00 869.13 38.40 866.66
+3:1 -6:1 -4:1 -2% -4:1 -3:1
R/W TLE

11 + 42.60

-17.30 871.67
-21.71 871.23 -10% -14.00 871.74
ORIGINAL EL =871.90
DESIGN EL =872.02
17.16 871.67
14.00 871.74 -2% -10% 21.45 871.24
R/W
-31.42 868.80 -25.96 870.17 0.00 870.69 25.74 870.17 31.00 868.86 46.80 862.54
-4:1 -2% -4:1 -2.50:1
R/W TLE

11 + 25

-17.13 871.67
-21.40 871.25 -10% -14.00 871.74
ORIGINAL EL =871.86
DESIGN EL =872.02
17.00 871.68
EAT POST #9
14.00 871.74 -2% -2% 21.14 871.59
R/W
-31.94 868.61 -25.70 870.17 0.00 870.69 25.39 870.18 45.24 862.24
-4:1 -2% -3:1 -2.50:1
R/W TLE

11 + 25

11 + 20.95

EAT POST #9 -17.00 871.68
-21.14 871.59 -14.00 871.74
ORIGINAL EL =871.82
DESIGN EL =872.02
17.00 871.68
14.00 871.74 -2% -2% 20.90 871.60
R/W
-30.71 868.40 -25.39 870.18 0.00 870.69 25.14 870.18 45.47 862.05
-3:1 -2% -3:1 -2.50:1
R/W TLE

11 + 20.95

11 + 17.60

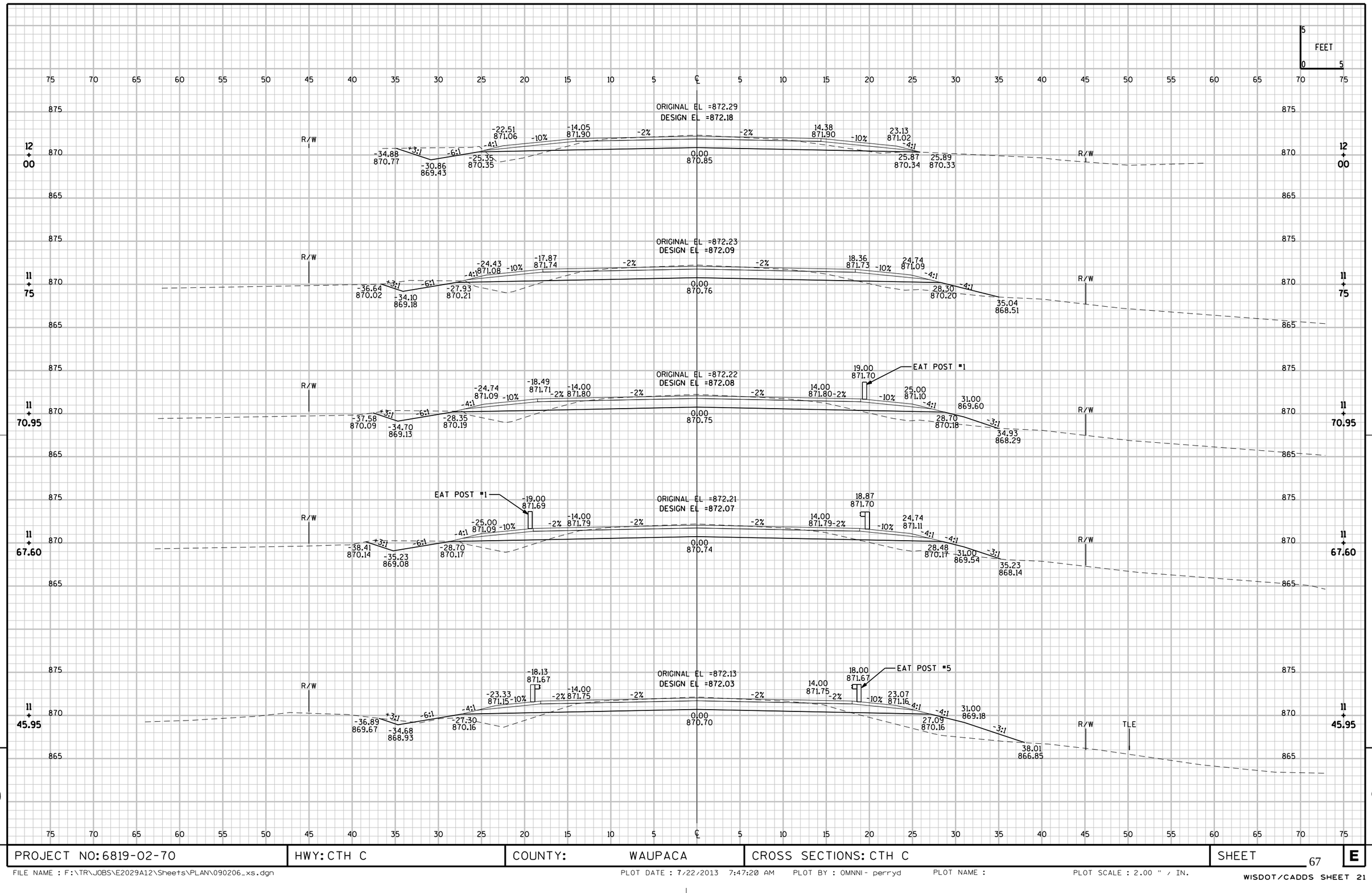
11 + 17.60

9 9

PROJECT NO: 6819-02-70	HWY: CTH C	COUNTY: WAUPACA	CROSS SECTIONS: CTH C	SHEET 66	E	9.7

FILE NAME : F:\TR\JOBS\E2029A12\Sheets\PLAN\090205_xs.dgn PLOT DATE : 7/22/2013 7:46:52 AM PLOT BY : OMNNI - perryd PLOT NAME : PLOT SCALE : 2.00 " / IN.

WISDOT/CADDS SHEET 21



PROJECT NO: 6819-02-70	HWY: CTH C	COUNTY: WAUPACA	CROSS SECTIONS: CTH C	SHEET 67	E	9.8

5 FEET 0 5

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 ℄ 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

880 875 870 865

14 + 00

ORIGINAL EL =872.80

13 + 50

R/W

ORIGINAL EL =872.64

R/W

R/W

END CONSTRUCTION
STA 13+36.00
ORIGINAL EL =872.52

-31.09 873.15 +4:1 -21.51 870.75 -14.61 871.90 -6:1 -10% -14.61 870.99 -9.78 872.38 -9.78 871.05

10.43 872.09 -10% 10.43 870.76 17.12 871.42 -6:1 17.12 870.48 24.05 870.26

R/W

13 + 00

R/W

ORIGINAL EL =872.33

-28.18 872.10 ±10:1 -18.83 870.45 -18.83 871.17 -10% -10.16 870.70 -10.16 872.03

10.45 872.06 -10% 10.45 870.73 20.36 871.07 ±10:1 20.36 870.47 28.40 871.87

R/W

12 + 50

ENDS ABRUPTLY
STA 12+25.00
ORIGINAL EL =872.31
DESIGN EL =872.31

-29.16 871.55 +4:1 -23.62 870.16 -20.59 870.92 -4:1 -10% -10.23 871.96 -3.46% 0.00 870.98 -3.85% 10.40 871.91 -10% 21.52 870.15 21.52 870.80 ±10:1 23.59 871.01

R/W

12 + 25

9

9

PROJECT NO: 6819-02-70	HWY: CTH C	COUNTY: WAUPACA	CROSS SECTIONS: CTH C	SHEET 68	E	9.9

Notes

Wisconsin Department of Transportation

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