NEL

MAY 2014

PROJECT ID: 9022-03-71

WITH:

COUNTY: OCONTO

ORDER OF SHEETS

TOTAL SHEETS = 62

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9022-03-71	WISC 2014198	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

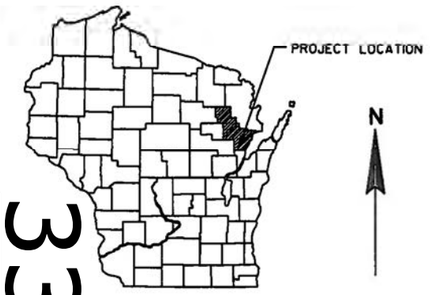
PLAN OF PROPOSED IMPROVEMENT

TOWN OF CHASE, SCHWARTZ ROAD

LITTLE SUAMICO RIVER BRIDGE & APPROACHES

LOCAL STREET

OCONTO COUNTY



33

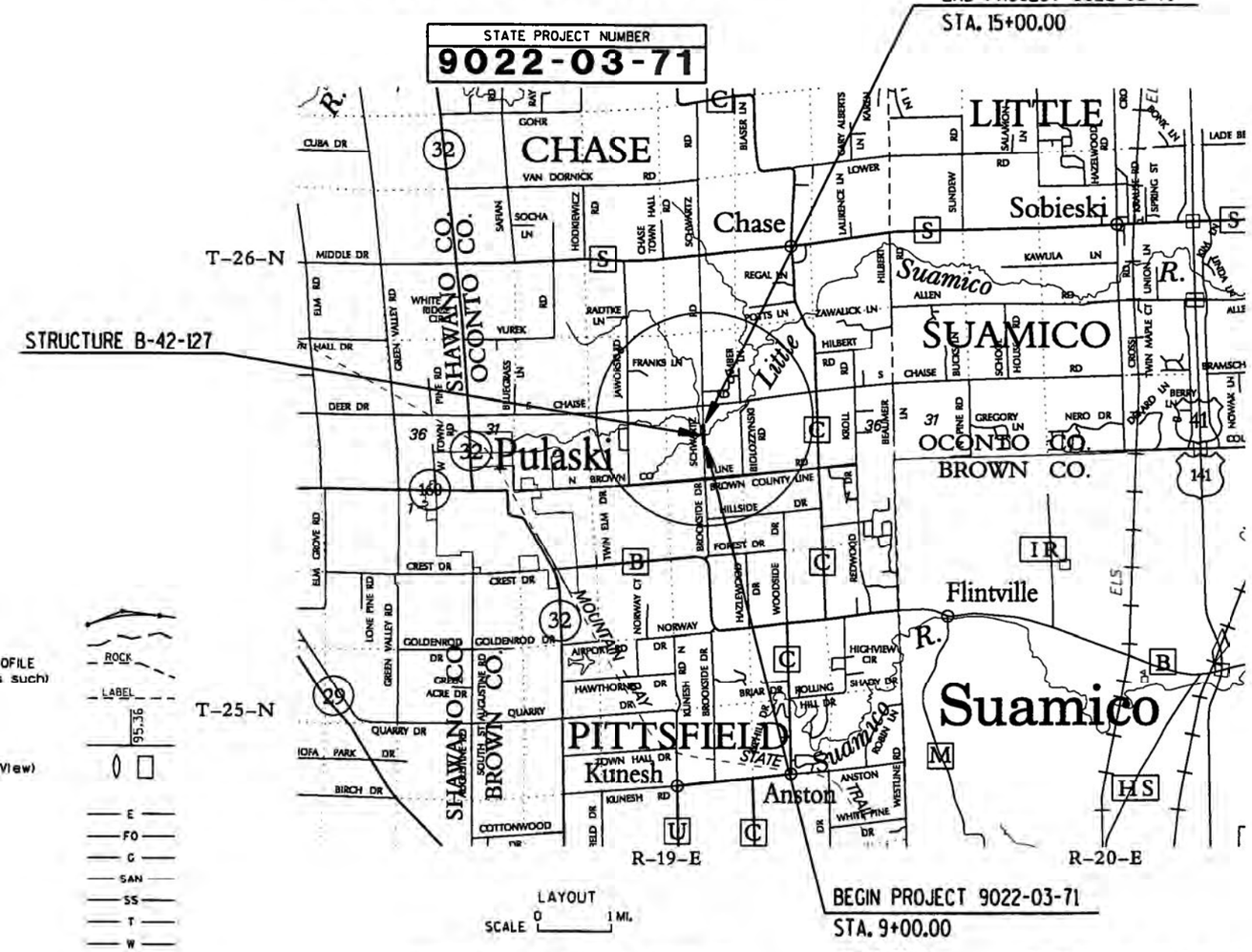
33

DESIGN DESIGNATION

A.A.D.T. 2014	=	560
A.A.D.T. 2034	=	680
D.H.V.	=	83
D.D.	=	60/40
T.	=	4.0%
DESIGN SPEED	=	50 MPH
ESALS	=	51,100

CONVENTIONAL SYMBOLS

PLAN		PROFILE	
CORPORATE LIMITS		GRADE LINE	
PROPERTY LINE	PL + SB.L	ORIGINAL GROUND	
LOT LINE		MARSH OR ROCK PROFILE (To be noted as such)	ROCK
LIMITED HIGHWAY EASEMENT		SPECIAL DITCH	LABEL
EXISTING RIGHT OF WAY		GRADE ELEVATION	95.36
PROPOSED OR NEW R/W LINE		CULVERT (Profile View)	
SLOPE INTERCEPT		UTILITIES	
REFERENCE LINE		ELECTRIC	E
EXISTING CULVERT		FIBER OPTIC	FO
PROPOSED CULVERT (Box or Pipe)		GAS	G
COMBUSTIBLE FLUIDS	CAUTION	SANITARY SEWER	SAN
		STORM SEWER	SS
		TELEPHONE	T
MARSH AREA		WATER	W
		UTILITY PEDESTAL	
		POWER POLE	
WOODED OR SHRUB AREA		TELEPHONE POLE	



LAYOUT SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.114 MI.

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

ACCEPTED FOR OCONTO COUNTY

DATE: 1-23-2014 Patrick J. Scanlan (Signature)

Highway Commissioner TITLE

ACCEPTED FOR TOWN OF CHASE

DATE: 1-17-14 (Signature)

Chairman TITLE

ORIGINAL PLANS PREPARED BY

OMNI ASSOCIATES

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

1/16/14

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	OMNNI ASSOCIATES
Designer	OMNNI ASSOCIATES
Management Consultant	SEH INC.

APPROVED FOR THE DEPARTMENT

DATE: 1/28/14 (Management Consultant Signature)

SEH-NE Region LPMC

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 TYPE E-0.3
- 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, TEMPORARY SEEDED, 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.

ALIGN THE FRONT FACE OF THE EAT END SECTION AT 1-FOOT BEHIND THE FRONT FACE OF CURB. DO NO FLARE THE EAT THE FULL 2 FEET AS SHOWN ON THE STANDARD DETAIL DRAWING FOR MGS EAT

PROVIDE DRIVEWAY CURB CUT FROM STA. 9+05 TO STA. 9+48.

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 = 1.33 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.00 ACRES

LIST OF STANDARD ABBREVIATIONS

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

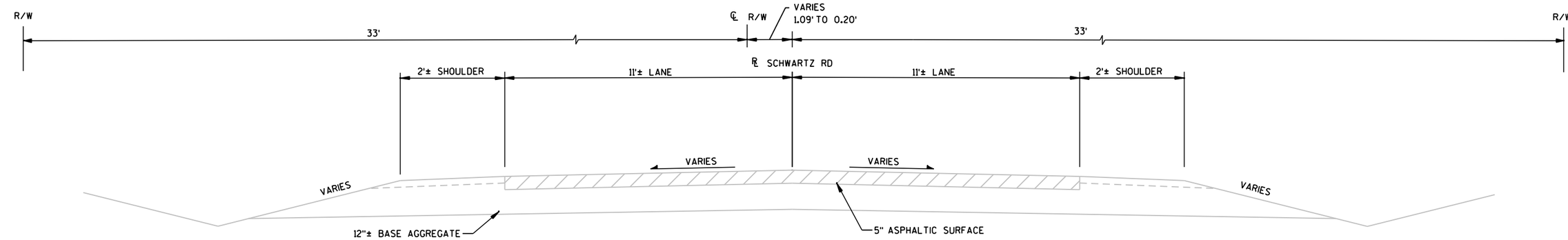
CONTACTS

ELECTRIC	WISCONSIN PUBLIC SERVICE 700 NORTH ADAMS STREET, PO BOX 19001 GREEN BAY, WI 54307-9001 ATTN: LORI BUTRY TELEPHONE: 920-433-1703 EMAIL: LAButry@integrysgroup.com LOCAL CONTACT: RANDY STEIER TELEPHONE: 920-617-5167 EMAIL: RDSteier@wisconsinpublicservice.com
TELEPHONE	NORTHEAST TELEPHONE COMPANY, LLC PO BOX 860 PULASKI, WI 54162 ATTN: DENNIS BAER TELEPHONE: 920-822-8895 EMAIL: dennis.baer@nsight.com
OCONTO COUNTY	PAT SCANLAN, HIGHWAY COMMISSIONER PO BOX 138 TRACTOR STREET OCONTO, WI 54153 TELEPHONE: 920-834-6885 EMAIL: pat.scanlan@co.oconto.wi.us
DNR LIAISON	JIM DOPERALSKI DEPARTMENT OF NATURAL RESOURCES NORTH EAST REGION HEADQUARTERS 2984 SHAWANO AVENUE GREEN BAY, WI 54313 TELEPHONE: 920-662-5119 EMAIL: james.doperalski@wisconsin.gov

DIGGERS HOTLINE

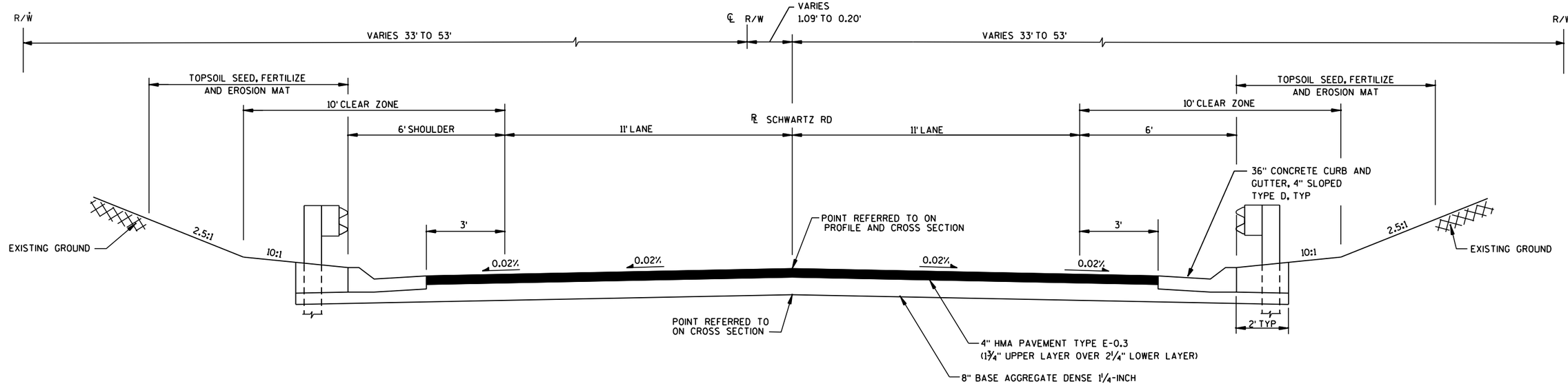
Dial 811 or (800)242-8511

www.DiggersHotline.com



TYPICAL EXISTING SECTION

STA 9+00 TO STA 15+00

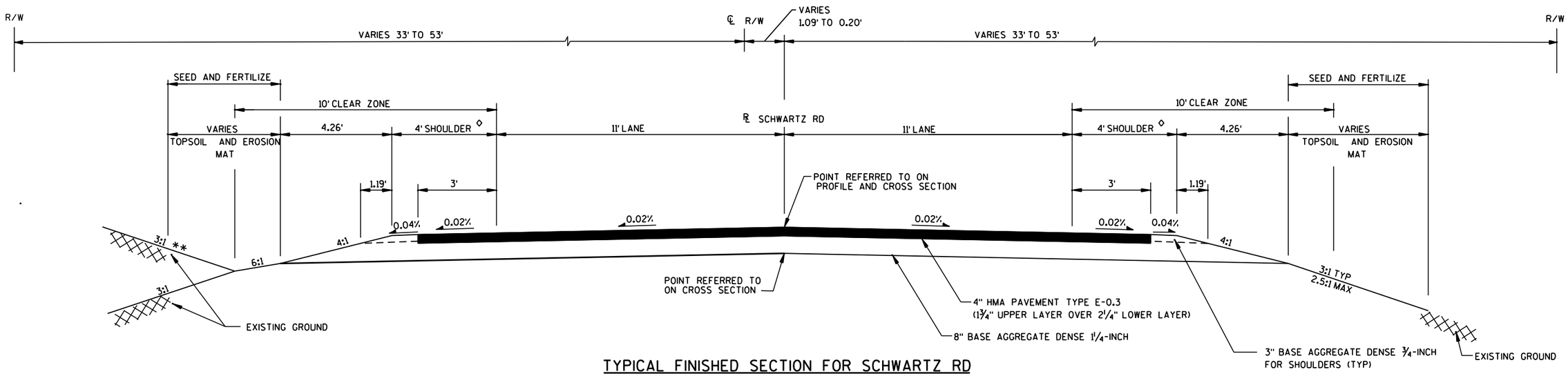


TYPICAL FINISHED SECTION FOR SCHWARTZ RD

STA 9+00 TO STA 9+89

PROJECT NO: 9022-03-71	HWY: SCHWARTZ RD	COUNTY: OCONTO	TYPICAL SECTIONS	SHEET 4	E	2.3

2

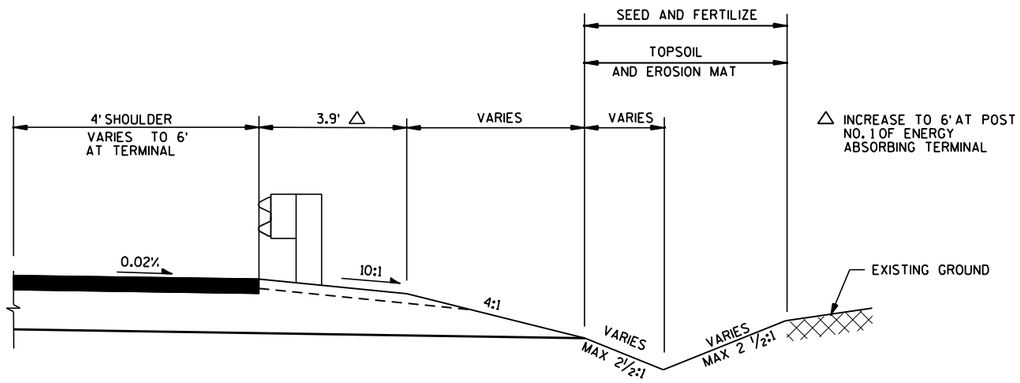


TYPICAL FINISHED SECTION FOR SCHWARTZ RD

STA 9+89 TO STA 10+63.47
STA 11+44.97 TO STA 15+00.00

** 4:1 IF IN CLEAR ZONE

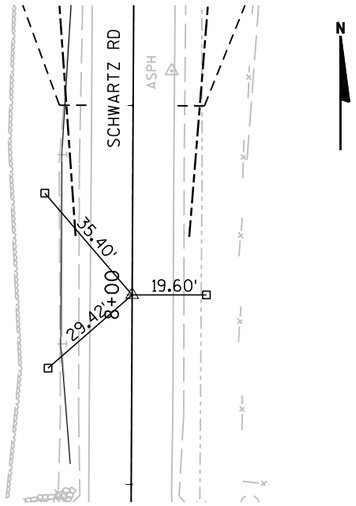
◇ 3' SHOULDER AT MGS THRIE BEAM TRANSITION



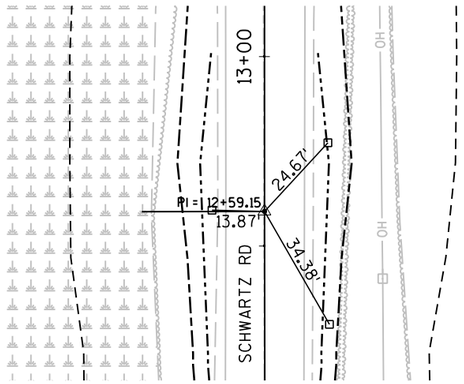
FINISHED TYPICAL SECTION AT BEAM GUARD

PROJECT NO: 9022-03-71	HWY: SCHWARTZ RD	COUNTY: OCONTO	TYPICAL SECTIONS	SHEET 5	E	2.4

FILE NAME : F:\TR\JOBS\E2050A12\Sheets\Plan\90220371_020302_ts.dgn PLOT DATE : 1/27/2014 2:20:10 PM PLOT BY : OMNNI - backusb PLOT NAME : PLOT SCALE : 4.0000 ' / IN.
WISDOT/CADDS SHEET 42



POINT 915
STA. 8+00



POINT 913
STA. 12+59.15

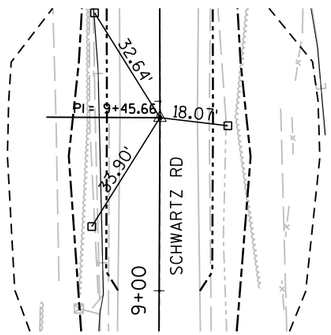
SURVEY REFERENCE POINTS

POINT	NORTHING	EASTING
911	103930.11	528933.00
912	104584.45	528932.52
913	104243.61	528932.51
915	103784.46	528932.24

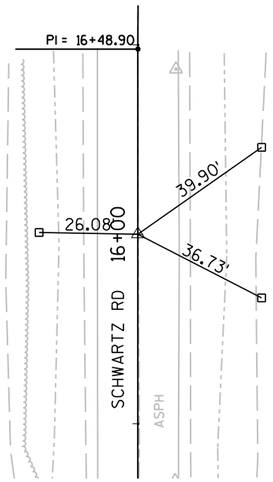
LEGEND

△ 2" MAG NAIL

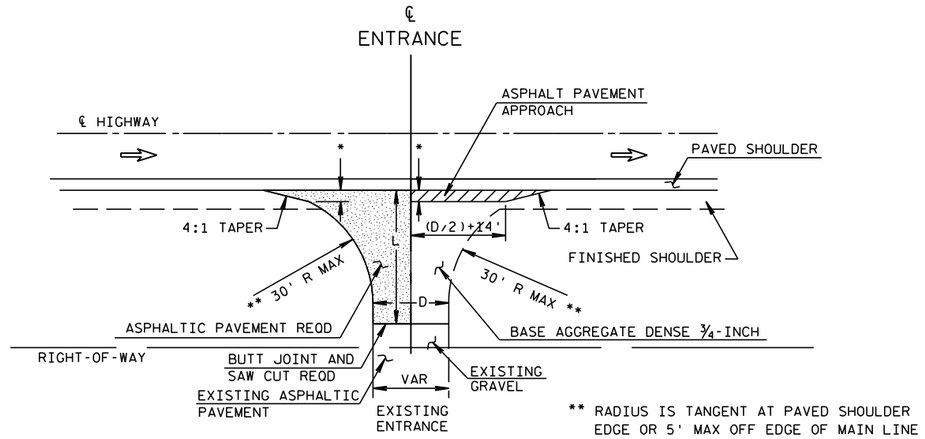
□ REBAR



POINT 911
STA. 9+45.66



POINT 912
STA. 16+00



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.

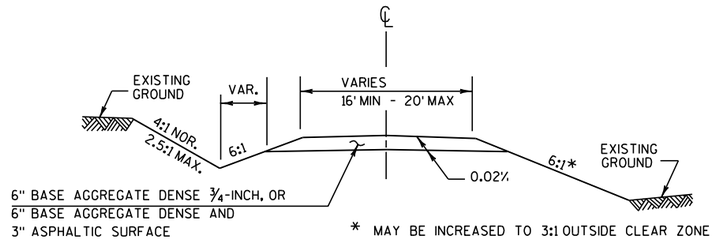
D=DRIVEWAY WIDTH
SEE PLAN AND PROFILE

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

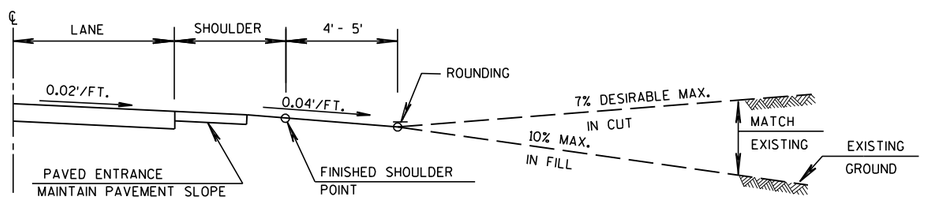
* 3' MAX OR TO FINISHED SHOULDER WHICH EVER IS LESS.

PLAN VIEW

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



TYPICAL CROSS SECTION



PROFILE VIEW

RURAL DRIVEWAY INTERSECTION DETAIL

PROJECT 9022-03-71

PROJECT NO: 9022-03-71	HWY: SCHWARTZ ROAD	COUNTY: OCONTO	CONSTRUCTION DETAILS	SHEET 6	E

2

N

EXIST R/W

R/W

R/W

EXIST R/W

8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00

SCHWARTZ RD

PI 9+45.66

PI 12+59.15

EXIST R/W

R/W

TLE

R/W

EXIST R/W

LITTLE SUAMICO RIVER

LEGEND

- EROSION MAT URBAN CLASS I TYPE B
- TEMPORARY DITCH CHECK
- SILT FENCE
- TURBIDITY BARRIER

PROJECT NO: 9022-03-71	HWY: SCHWARTZ ROAD	COUNTY: OCONTO	EROSION CONTROL PLAN	SHEET 7	E	2.5

FILE NAME : F:\TR\JOBS\E2050A12\Sheets\Plan\90220371_022001_ec.dgn PLOT DATE : 12/16/2013 10:22:28 AM PLOT BY : OMNNI - epleyb PLOT NAME : PLOT SCALE : 50.0000 sf / in.

WISDOT/CADDS SHEET 42

DATE 26MAR14 — 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	9022-03-71 QUANTITY
0010	201.0105	CLEARING	STA	6.000	6.000
0020	201.0205	GRUBBING	STA	6.000	6.000
0030	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 11+00	LS	1.000	1.000
0040	205.0100	EXCAVATION COMMON	CY	480.000	480.000
0050	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-42-127	LS	1.000	1.000
0060	208.0100	BORROW	CY	3,940.000	3,940.000
0070	210.0100	BACKFILL STRUCTURE	CY	200.000	200.000
0080	213.0100	FINISHING ROADWAY (PROJECT) 01. 9022-03-71	EACH	1.000	1.000
0090	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	110.000	110.000
0100	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	1,210.000	1,210.000
0110	416.1010	CONCRETE SURFACE DRAINS	CY	1.000	1.000
0120	455.0105	ASPHALTIC MATERIAL PG58-28	TON	21.000	21.000
0130	455.0605	TACK COAT	GAL	41.000	41.000
0140	460.1100	HMA PAVEMENT TYPE E-0.3	TON	380.000	380.000
0150	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	250.000	250.000
0160	502.0100	CONCRETE MASONRY BRIDGES	CY	161.000	161.000
0170	502.3200	PROTECTIVE SURFACE TREATMENT	SY	346.000	346.000
0180	503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	324.000	324.000
0190	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	3,520.000	3,520.000
0200	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	19,420.000	19,420.000
0210	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	8.000	8.000
0220	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 01. B-42-127	EACH	3.000	3.000
0230	513.4060	RAILING TUBULAR TYPE M (STRUCTURE) 01. B-42-127	LS	1.000	1.000
0240	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	12.000	12.000
0250	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	350.000	350.000
0260	601.0553	CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE D	LF	168.000	168.000
0270	606.0200	RIPRAP MEDIUM	CY	4.000	4.000
0280	606.0300	RIPRAP HEAVY	CY	245.000	245.000
0290	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	130.000	130.000
0300	614.2300	MGS GUARDRAIL 3	LF	100.000	100.000
0310	614.2500	MGS THRIE BEAM TRANSITION	LF	158.000	158.000
0320	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	4.000	4.000
0330	619.1000	MOBILIZATION	EACH	1.000	1.000
0340	624.0100	WATER	MGAL	7.000	7.000
0350	625.0100	TOPSOIL **P**	SY	3,400.000	3,400.000
0360	628.1504	SILT FENCE	LF	1,100.000	1,100.000
0370	628.1520	SILT FENCE MAINTENANCE	LF	2,200.000	2,200.000
0380	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	4.000	4.000
0390	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000
0400	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	2,780.000	2,780.000
0410	628.6005	TURBIDITY BARRIERS	SY	270.000	270.000
0420	628.7504	TEMPORARY DITCH CHECKS	LF	30.000	30.000
0430	629.0210	FERTILIZER TYPE B	CWT	4.000	4.000
0440	630.0120	SEEDING MIXTURE NO. 20 **P**	LB	120.000	120.000
0450	630.0160	SEEDING MIXTURE NO. 60	LB	10.000	10.000
0460	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	4.000	4.000
0470	637.2230	SIGNS TYPE II REFLECTIVE F	SF	12.000	12.000
0480	638.2602	REMOVING SIGNS TYPE II	EACH	6.000	6.000

3

DATE 26MAR14 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	9022-03-71 QUANTITY
0490	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	5.000	5.000
0500	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0510	643.0100	TRAFFIC CONTROL (PROJECT) 01.9022-03-71	EACH	1.000	1.000
0520	643.0300	TRAFFIC CONTROL DRUMS	DAY	100.000	100.000
0530	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,540.000	1,540.000
0540	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	3,640.000	3,640.000
0550	643.0900	TRAFFIC CONTROL SIGNS	DAY	1,400.000	1,400.000
0560	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	373.000	373.000
0570	646.0103	PAVEMENT MARKING PAINT 4-INCH	LF	1,200.000	1,200.000
0580	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	520.000	520.000
0590	650.5000	CONSTRUCTION STAKING BASE	LF	520.000	520.000
0600	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-42-127	LS	1.000	1.000
0610	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 9022-03-71	LS	1.000	1.000
0620	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	520.000	520.000
0630	690.0150	SAWING ASPHALT	LF	44.000	44.000
0640	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	966.000	966.000
0650	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5. 00/HR	HRS	300.000	300.000
0660	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	150.000	150.000

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

CLEARING AND GRUBBING

STATION	LOCATION	201.0105 CLEARING STATION	201.0205 GRUBBING STATION
9+00 - 15+00	SCHWARTZ RD	6	6
	TOTALS	**6**	**6**

EARTHWORK SUMMARY

DIVISION	FROM/TO STATION	LOCATION	EXCAVATION COMMON 205.0100 (1)		SALVAGED/ UNUSABLE PAVEMENT MATERIAL	AVAILABLE MATERIAL	UNEXPANDED FILL	EXPANDED FILL	MASS ORDINATE +/- (14)	WASTE (15)	BORROW 208.0100
			CUT	EBS EXCAVATION				FACTOR 1.30			
DIVISION 1	8+50 - 10+62	SCHWARTZ RD SOUTH	450	0	59	391	141	183	208	59	0
	11+45 - 15+00	SCHWARTZ RD NORTH	30	0	145	-115	2,940	3,823	-3,937	145	3,940
DIVISION 1	**TOTALS**		**480**	0	204	276	3,081	4,006	-3,729	204	**3,940**

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.

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
9+00 - STRUCTURE	SCHWARTZ RD	20	350	2.0
STRUCTURE - 15+00**	SCHWARTZ RD	90	860	5.0
	TOTALS	**110**	**1,210**	**7**

** INCLUDES DRIVEWAY

ASPHALTIC ITEMS

STATION TO STATION	LOCATION	455.0105 ASPHALTIC MATERIAL PG58-28 TON	455.0605 TACK COAT GAL	460.1100 HMA PAVEMENT TYPE E-0.3 TON
9+00 - STRUCTURE	SCHWARTZ RD	7	13	120
STRUCTURE - 15+00	SCHWARTZ RD	14	28	260
	TOTALS	**21**	**41**	**380**

CONCRETE CURB & GUTTER

STATION TO STATION	LOCATION	601.0553 4-INCH SLOPED 36-INCH TYPE D LF
9+05 - 9+89, LT & RT	SCHWARTZ RD	168
		168

CONCRETE SURFACE DRAINS

STATION	LOCATION	416.1010 CY
9+82.54, LT	SCHWARTZ RD	0.5
9+82.54, RT	SCHWARTZ RD	0.5
	TOTAL	**1**

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
9+35.66 - STRUCTURE, TT	SCHWARTZ RD	25	39.4	1
9+35.66 - STRUCTURE, RT	SCHWARTZ RD	25	39.4	1
STRUCTURE - 12+71.78, LT	SCHWARTZ RD	25	39.4	1
STRUCTURE - 12+71.78, RT	SCHWARTZ RD	25	39.4	1
	TOTALS	100	157.6	4
	ROUNDED TOTALS	**100**	**158**	**4**

TURBIDITY BARRIER

STATION	LOCATION	628.6005 SY
10+90	SCHWARTZ RD	140
11+20	SCHWARTZ RD	130
	TOTAL	**270**

EROSION CONTROL ITEMS

STATION TO STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	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	645.0120 GEOTEXTILE FABRIC TYPE HR SY
9+50 - STRUCTURE, LT	SCHWARTZ RD	1.5	70	140	---	---	260	10	3
9+50- STRUCTURE, RT	SCHWARTZ RD	1.5	90	180	---	---	250	10	3
STRUCTURE - 15+00, LT	SCHWARTZ RD	---	310	620	---	---	940	---	---
STRUCTURE - 15+00, RT	SCHWARTZ RD	---	380	760	---	---	830	---	---
UNDISTRIBUTED	SCHWARTZ RD	1	250	500	4	2	500	10	2
	TOTALS	**4**	**1,100**	**2,200**	**4**	**2**	**2,780**	**30**	**8**

LANDSCAPING

STATION TO STATION	LOCATION	625.0100 TOPSOIL SY	630.0120 SEEDING NO 20 LB	630.0160 SEEDING NO 60 LB	629.0210 FERTILIZER TYPE B CWT
8+50 - STRUCTURE, LT	SCHWARTZ RD	400	15	---	0.5
8+50 - STRUCTURE, RT	SCHWARTZ RD	400	15	---	0.5
STRUCTURE - 15+00, LT	SCHWARTZ RD	1,030	35	---	1.0
STRUCTURE - 15+00, RT	SCHWARTZ RD	870	30	---	1.0
UNDISTRIBUTED	SCHWARTZ RD	700	25	10	1.0
	TOTALS	**3,400**	**120**	**10**	**4.0**

3

SIGNS REFLECTIVE TYPE II & POSTS WOOD

STATION	LOCATION	CODE	SIGN SIZE HORIZ X VERT IN X IN	634.0614 POSTS WOOD 4X6-INCH X 14-FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF
10+48, LT	SCHWARTZ RD	W5-52R	12 X 36	1	3
10+48, RT	SCHWARTZ RD	W5-52L	12 X 36	1	3
11+59, LT	SCHWARTZ RD	W5-52L	12 X 36	1	3
11+59, RT	SCHWARTZ RD	W5-52R	12 X 36	1	3
			TOTALS	**4**	**12**

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
10+75, LT	SCHWARTZ RD	OBJECT MARKER	1	1
10+75, RT	SCHWARTZ RD	OBJECT MARKER & WEIGHT LIMIT	2	1
11+34, LT	SCHWARTZ RD	OBJECT MARKER	1	1
11+34, RT	SCHWARTZ RD	OBJECT MARKER	1	1
11+70, LT	SCHWARTZ RD	WEIGHT LIMIT	1	1
		TOTALS	**6**	**5**

CONSTRUCTION STAKING

STATION TO STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	CATEGORY 0020 650.6500 STRUCTURE LAYOUT LS	650.9910 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
9+00 - 10+62.47	SCHWARTZ RD	165	165	---	---	165
STRUCTURE B-42-127	SCHWARTZ RD	---	---	1	---	---
11+44.97 - 15+00	SCHWARTZ RD	355	355	---	---	355
	TOTALS	**520**	**520**	**1**	**1**	**520**

TRAFFIC CONTROL

LOCATION	EST. SERVICE PERIOD DAYS	643.0100 TRAFFIC CONTROL 9022-03-71 EACH	643.0300 DRUMS NO	643.0300 DRUMS DAYS	643.0420 BARRICADES TYPE III NO	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A NO	643.0705 WARNING LIGHTS TYPE A DAYS	643.0900 SIGNS NO	643.0900 SIGNS DAYS
PROJECT 9022-03-71	70	1	0	0	18	1,260	36	2,520	14	980
UNDISTRIBUTED	70	0		100	4	280	16	1,120	6	420
TOTALS		**1**		**100**		**1,540**		**3,640**		**1,400**

PAVEMENT MARKING PAINT

STATION	LOCATION	646.0103 4-INCH DOUBLE YELLOW LF
9+00 - 15+00	SCHWARTZ RD	1,200
	TOTAL	**1,200**

SAWING ASPHALT

STATION	LOCATION	690.0150 SAWING ASPHALT LF
9+00	SCHWARTZ RD	22
12+25	SCHWARTZ RD	22
	TOTAL	**44**

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
9022-03-00		
FEDERAL PROJECT NUMBER	4.1	1

PLAT OF RIGHT-OF-WAY REQUIRED FOR

TOWN OF CHASE, SCHWARTZ ROAD

LITTLE SUAMICO BRIDGE AND APPROACHES

TOWN OF CHASE OCONTO COUNTY

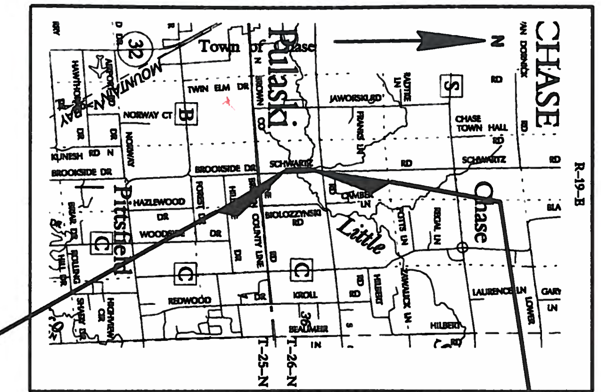
CONSTRUCTION PROJECT NUMBER 9022-03-71

Conventional Signs and Abbreviations

SECTION LINE
QUARTER LINE
TOWNSHIP AND RANGE LINE
PROPOSED OR NEW CENTERLINE
PROPOSED OR NEW R/W LINE
EXISTING R/W LINE
LOT LINE
P.L. PROPERTY LINE

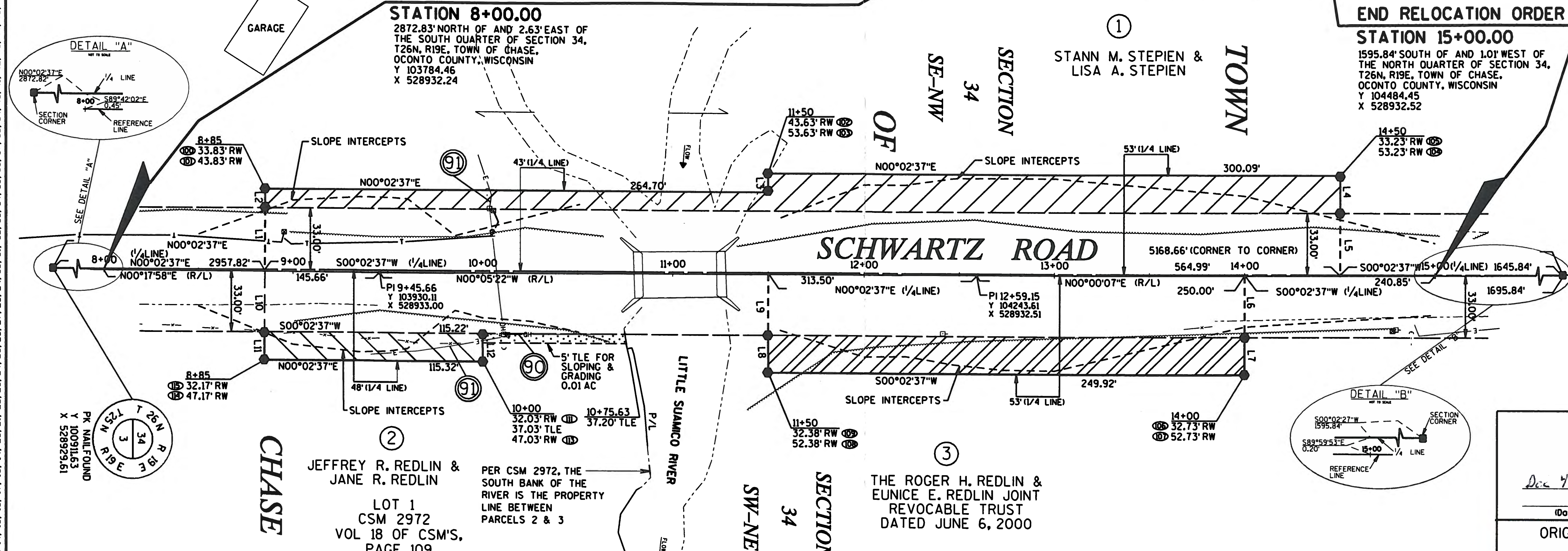
COUNTY LINE LIMITS
SLOPE INTERCEPTS
R/W POINT
FENCE
SECTION OR QUARTER CORNER
POWER POLE
TELEPHONE PEDESTAL
UNDERGROUND TELEPHONE CABLE
NO ACCESS (BY ACQUISITION)
NO ACCESS (BY STATUTORY AUTHORITY)
NO ACCESS (BY PREVIOUS PROJECT)
TEMPORARY INTEREST
FEE INTEREST
RIGHT-OF-WAY TYPE 2 MONUMENTS SET AT NEWLY ACQUIRED R/W ANGLE POINTS
RIGHT-OF-WAY NUMBER

AC	ACRES	R	RADIUS
Δ	CENTRAL ANGLE	R.	RANGE
C/L	CENTERLINE	R/L	REFERENCE LINE
COR.	CORNER	R/W	RIGHT OF WAY
CTH	COUNTY TRUNK HIGHWAY	1/4 LINE	QUARTER LINE
D	DEGREE OF CURVE	1/16 LINE	SIXTEENTH LINE
E.	EAST	S.	SOUTH
L	LENGTH OF CURVE	SEC	SECTION
LC	LONG CHORD	SEC LINE	SECTION LINE
LCB	LONG CHORD BEARING	STH	STATE TRUNK HIGHWAY
MI	MILE	SF	SQUARE FEET
N.	NORTH	STA	STATION
PC	POINT OF CURVATURE	T.	TOWN
PI	POINT OF INTERSECTION	T	TANGENT LENGTH OF CURVE
PT	POINT OF TANGENCY	TI	TEMPORARY INTEREST
PLE	PERMANENT LIMITED EASEMENT	USH	UNITED STATES HIGHWAY
P\L	PROPERTY LINE	W.	WEST



TOTAL NET LENGTH OF CENTERLINE = 0.133 MI.

SCALE: 1"=60'



OCONTO COUNTY

LINE TABLE

LINE	BEARING	LENGTH
L1	N89°42'02"W	33.00'
L2	N89°42'02"W	10.00'
L3	S89°54'38"W	10.00'
L4	S89°59'53"E	20.00'
L5	S89°59'53"E	33.00'
L6	S89°59'53"E	33.00'
L7	S89°59'53"E	20.00'
L8	S89°54'38"W	20.00'
L9	S89°54'38"W	33.00'
L10	S89°42'02"E	33.00'
L11	S89°42'02"E	15.00'
L12	S89°54'38"W	15.00'

ACCEPTED FOR TOWN OF CHASE

Dec 4-2013 (signature)

(Date) (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY

OMNI ASSOCIATES
APPLETON, WISCONSIN

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

12-2-2013 David a. Yurk

(Date) (Signature)

Notes:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES (OCONTO 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 AND NOT R/W CENTERLINE.

THE RIGHT-OF-WAY IS BASED ON A OCONTO COUNTY CERTIFIED SURVEY MAPS 2972 AND 4145, BEING 66' FOOT R/W WIDE CENTERED ON 1/4 LINE.

ON PARCEL 2, BEING LOT 1, CSM 2972, THE EXISITNG RIGHT-OF-WAY WAS DEDICATED PER THE CSM

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

SCHEDULE OF LANDS AND INTERESTS

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

PARCEL NO.	OWNER	INTEREST REQUIRED	RIGHT-OF-WAY NEW	RIGHT-OF-WAY EXISTING	RIGHT-OF-WAY TOTAL	TLE AREA
1	STANN M. STEPIEN & LISA A. STEPIEN	FEE	0.20 AC	0.43 AC	0.63 AC	----
2	JEFFREY R. REDLIN & JANE R. REDLIN	FEE TLE	0.04 AC	----	0.04 AC	0.01 AC
3	THE ROGER H. REDLIN & EUNICE E. REDLIN JOINT REVOCABLE TRUST DATED JUNE 6, 2000	FEE	0.11 AC	0.19 AC	0.30 AC	----

UTILITY INTEREST REQUIRED

UTILITY NO.	OWNER	INTEREST REQUIRED
90	NORTHEAST TELEPHONE	RELEASE OF RIGHTS
91	WISCONSIN PUBLIC SERVICE CORPORATION	RELEASE OF RIGHTS

COORDINATE TABLE

POINT	Y	X
100	103869.63	528898.85
101	103869.68	528888.85
102	104134.39	528889.05
103	104134.37	528879.05
104	104434.46	528879.28
105	104434.45	528899.28
106	104384.45	528965.24
107	104384.45	528985.24
108	104134.54	528985.05
109	104134.50	528965.05
111	103984.50	528964.94
113	103984.53	528979.94
114	103869.21	528979.85
115	103869.29	528964.85

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
BM2	12+41, 31' RT	60D SPIKE IN PP#2619 34E13/ 1ST POLE	742.12
		N OF STRUCTURE E SIDE SCHWARTZ RD	
BM3	14+79, 29' RT	60D SPIKE IN PP#2619 34E22/ 2ND POLE	751.22
		N OF STRUCTURE E SIDE SCHWARTZ RD	

BEGIN PROJECT 9022-03-71
STA 9+00
Y=103884.454
X=528932.759

LEGEND

X X X	SAWCUT
Δ	MGS THRIE BEAM TRANSITION
MGS	MIDWEST GUARDRAIL SYSTEM

YARDAGE SUMMARY
EXCAVATION COMMON = 450 CY
FILL = 141 CY
WASTE = 59 CY

YARDAGE SUMMARY
EXCAVATION COMMON = 30 CY
FILL = 2940 CY
BORROW = 3940 CY
WASTE = 145 CY

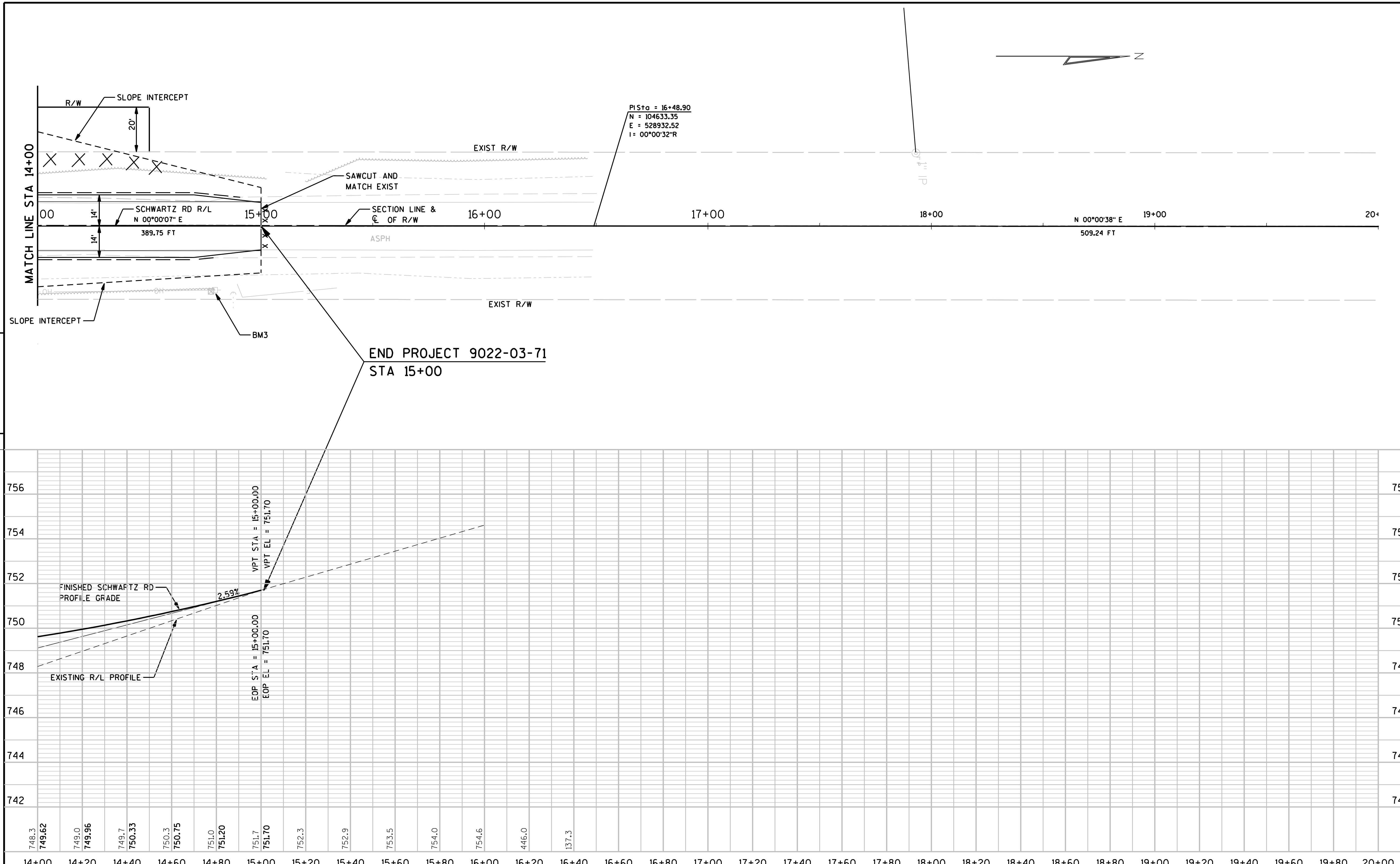
STA 11+00
REMOVE STRUCTURE P-42-95
SINGLE SPAN PPC BOX BEAM

STA 11+03.72
STRUCTURE B-42-127
SINGLE SPAN PPC GIRDER BRIDGE
82.5' BACK TO BACK ABUTMENTS
28' CLEAR WIDTH
SEE BRIDGE DRAWINGS 1-12

PROJECT NO: 9022-03-71	HWY: SCHWARTZ ROAD	COUNTY: OCONTO	SCHWARTZ ROAD	SHEET 14	E

5.1

FILE NAME : F:\TR\JOBS\E2050A12\Sheets\Plan\90220371_050101_pp.dgn PLOT DATE : 1/27/2014 3:16:38 PM PLOT BY : OMNNI- backusb PLOT NAME : PLOT SCALE : 2.0000 ft / IN.



MATCH LINE STA 14+00
R/W
SLOPE INTERCEPT
20'
14'
SCHWARTZ RD R/L
N 00°00'07" E
389.75 FT
15+00
SAWCUT AND
MATCH EXIST
SECTION LINE &
℄ OF R/W
ASPH
EXIST R/W
16+00
PISta = 16+48.90
N = 104633.35
E = 528932.52
I= 00°00'32"R
17+00
18+00
N 00°00'38" E
509.24 FT
19+00
BM3
END PROJECT 9022-03-71
STA 15+00
FINISHED SCHWARTZ RD
PROFILE GRADE
2.59%
EXISTING R/L PROFILE
VPT STA = 15+00.00
VPT EL = 751.70
EOP STA = 15+00.00
EOP EL = 751.70
756
754
752
750
748
746
744
742
748.3
749.62
749.0
749.96
749.7
750.33
750.3
750.75
751.0
751.20
751.7
751.70
752.3
752.9
753.5
754.0
754.6
446.0
137.3
14+00
14+20
14+40
14+60
14+80
15+00
15+20
15+40
15+60
15+80
16+00
16+20
16+40
16+60
16+80
17+00
17+20
17+40
17+60
17+80
18+00
18+20
18+40
18+60
18+80
19+00
19+20
19+40
19+60
19+80
20+00

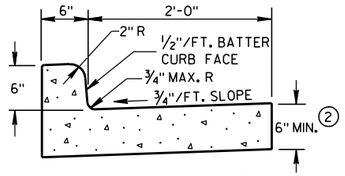
PROJECT NO:9022-03-71	HWY:SCHWARTZ ROAD	COUNTY:OCONTO	SCHWARTZ ROAD	SHEET 15	E

5.2

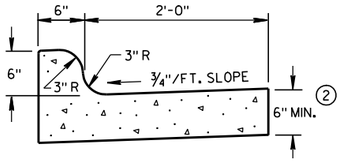
Standard Detail Drawing List

08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	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)
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C06-06	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)

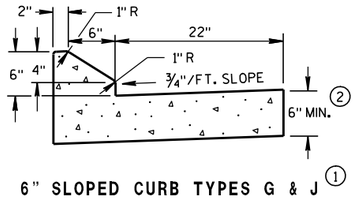
6



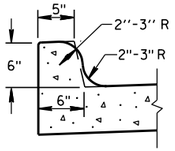
TYPES A & D (1)



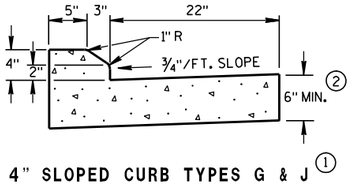
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

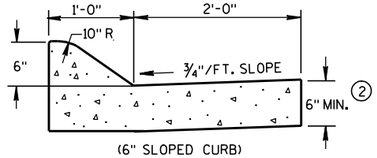


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

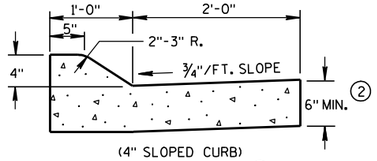


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

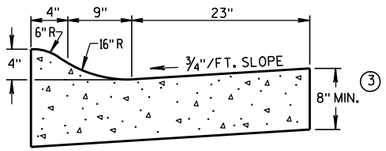


(6" SLOPED CURB)



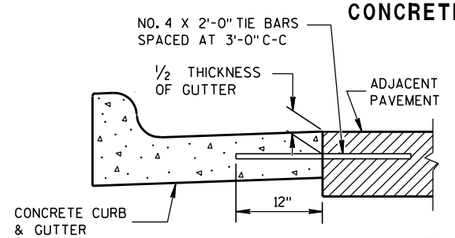
(4" SLOPED CURB)

TYPES A & D (1)

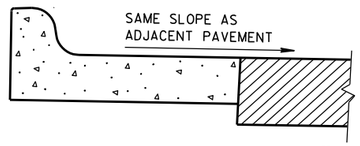


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"



TYPICAL TIE BAR LOCATION (1)



REVERSE SLOPE GUTTER (5)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

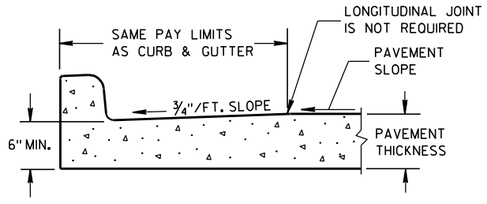
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

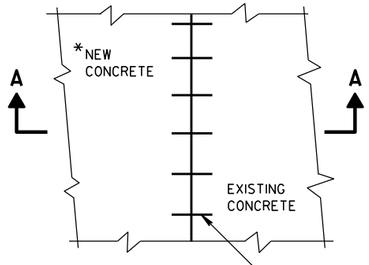
(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(4) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(5) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

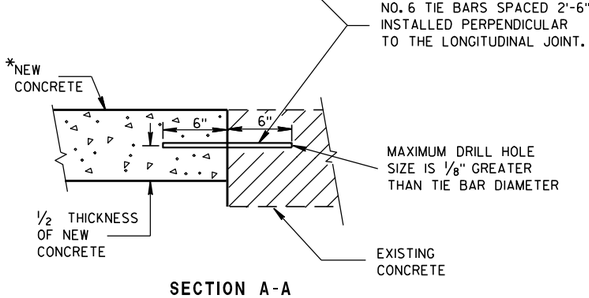


PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



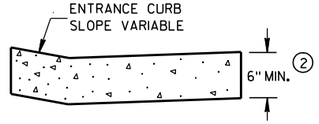
PLAN VIEW

*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

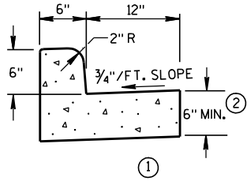


SECTION A-A

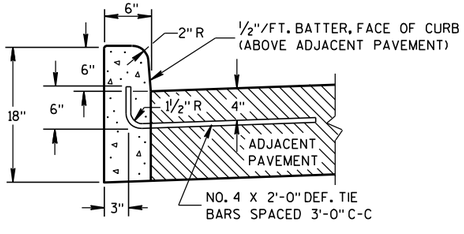
TIE BARS DRILLED INTO EXISTING PAVEMENT



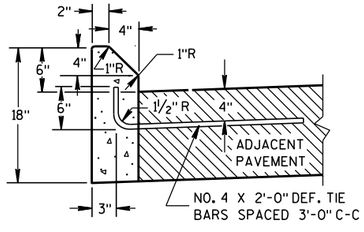
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



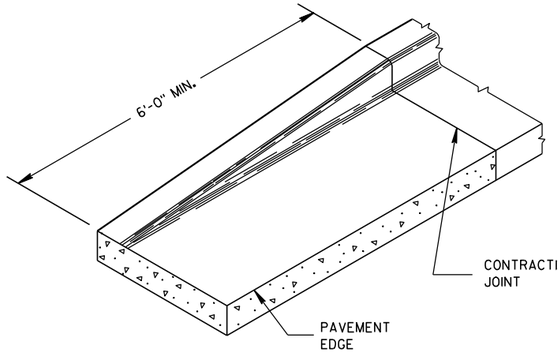
(1)
TYPES A & D
CONCRETE CURB & GUTTER 18"



(1)
TYPES A & D



(1)
TYPES G & J



END SECTION CURB & GUTTER

CONCRETE CURB

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 DATE
/S/ Jerry H. [illegible] ROADWAY STANDARDS ENGINEER
FHWA

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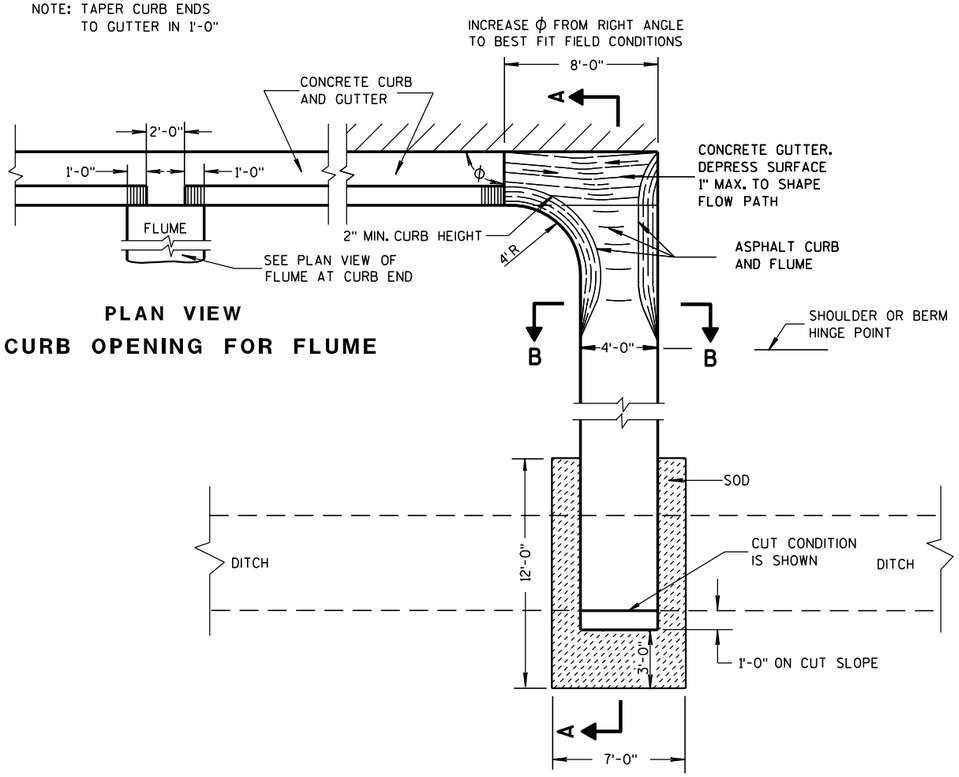
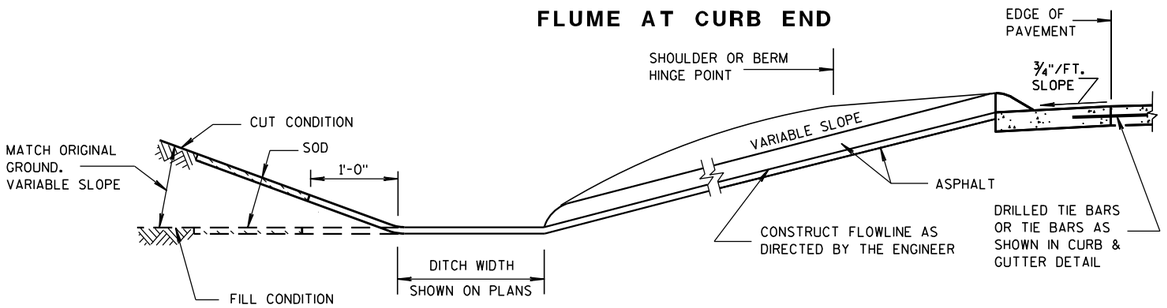
S.D.D. 8 D 1-17

ASPHALTIC FLUME

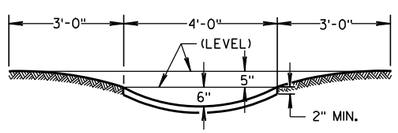


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

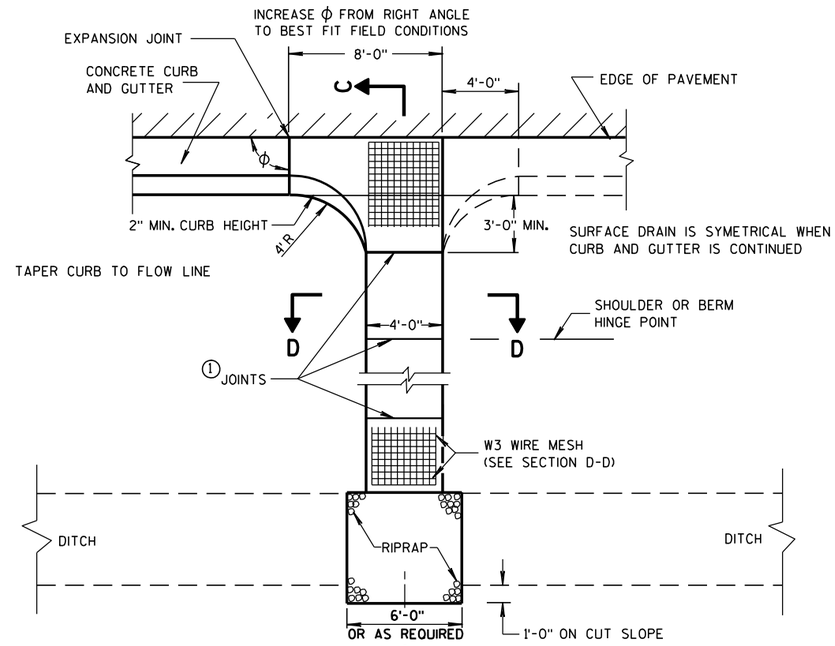
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

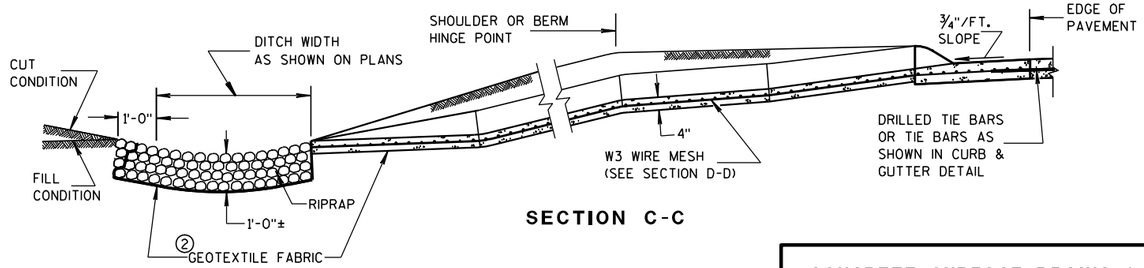
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

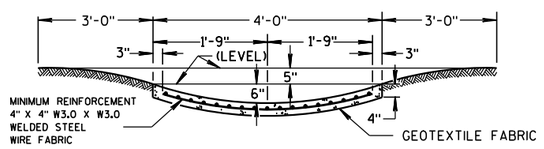
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C

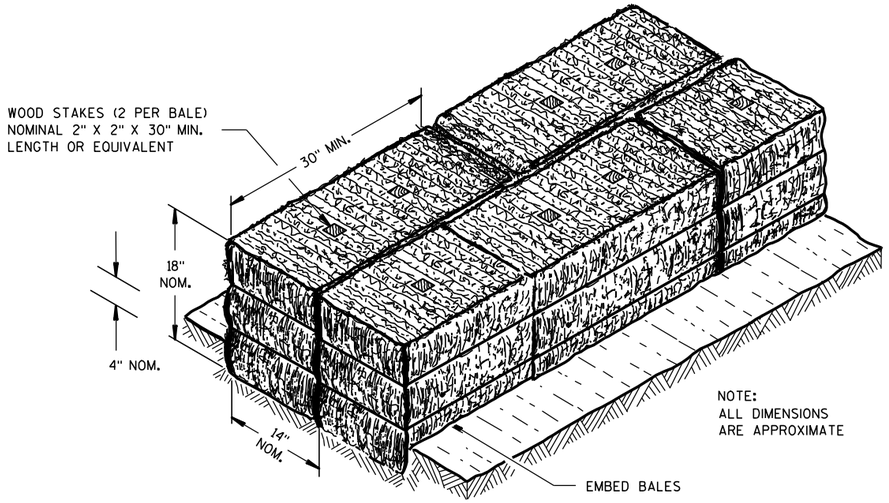


SECTION D-D

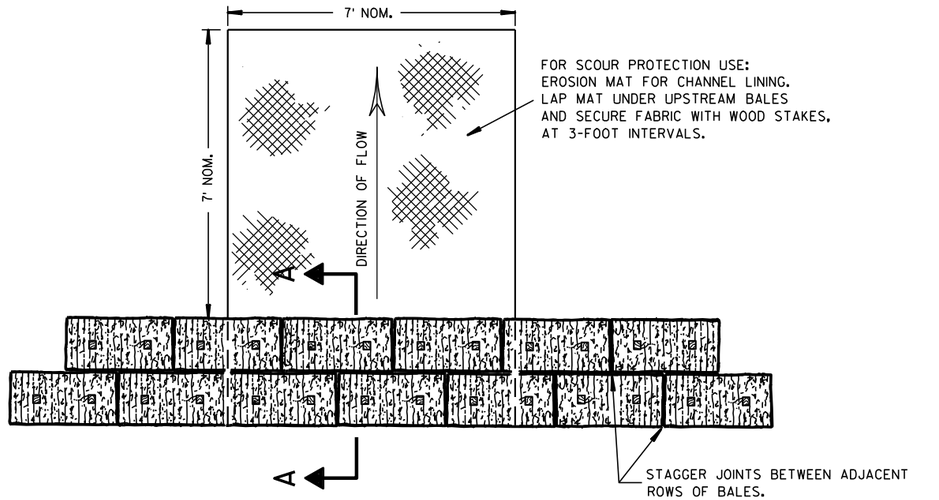
CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

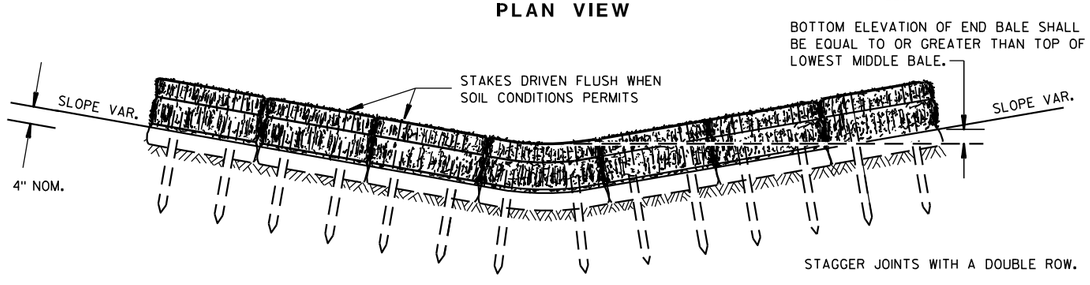
APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
MENT
FHWA



SECTION A-A



PLAN VIEW



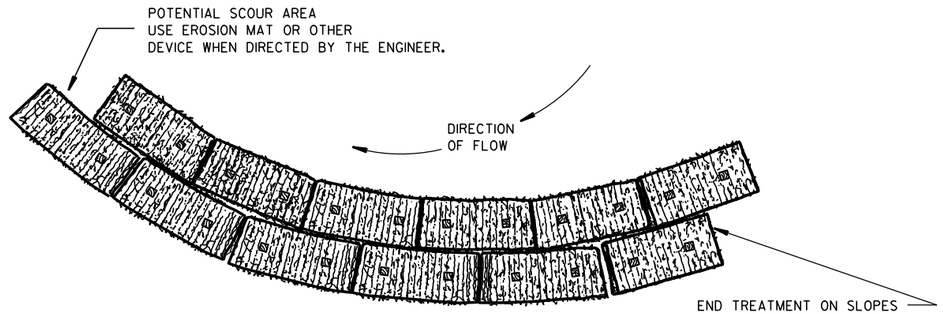
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

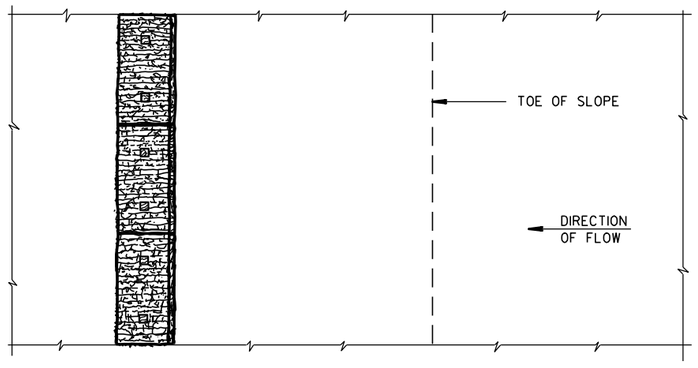
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

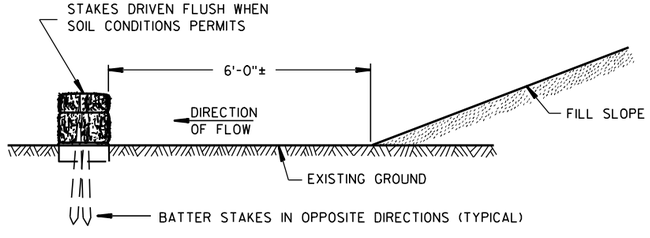


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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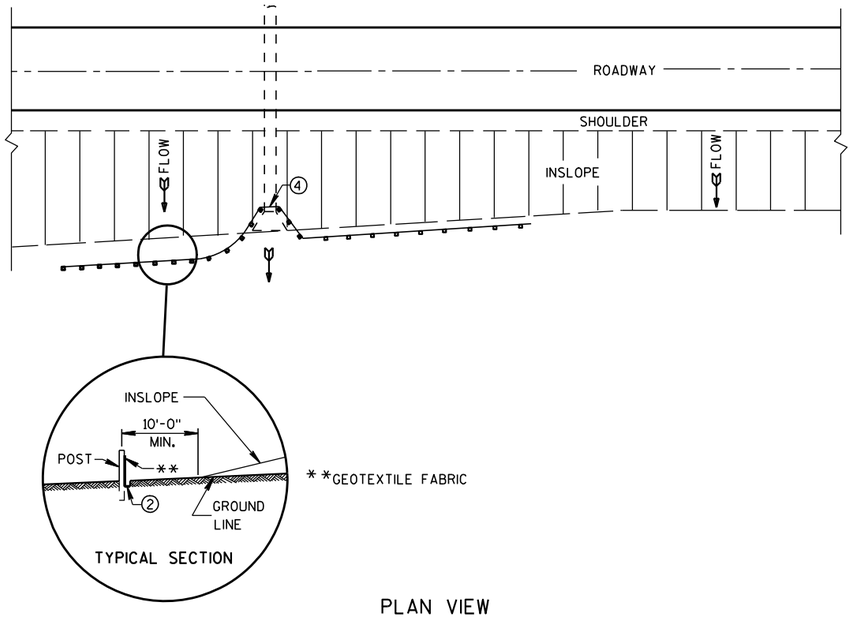
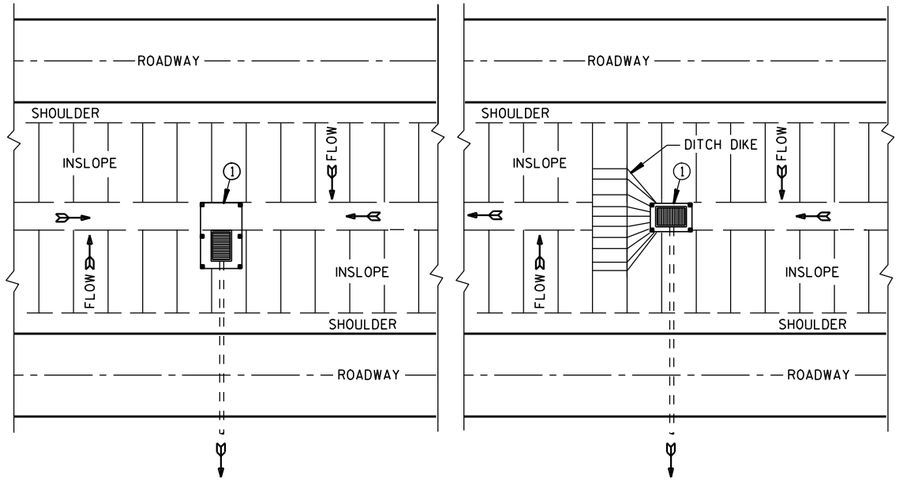
S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



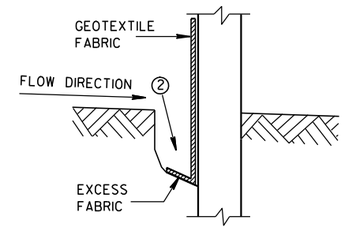
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

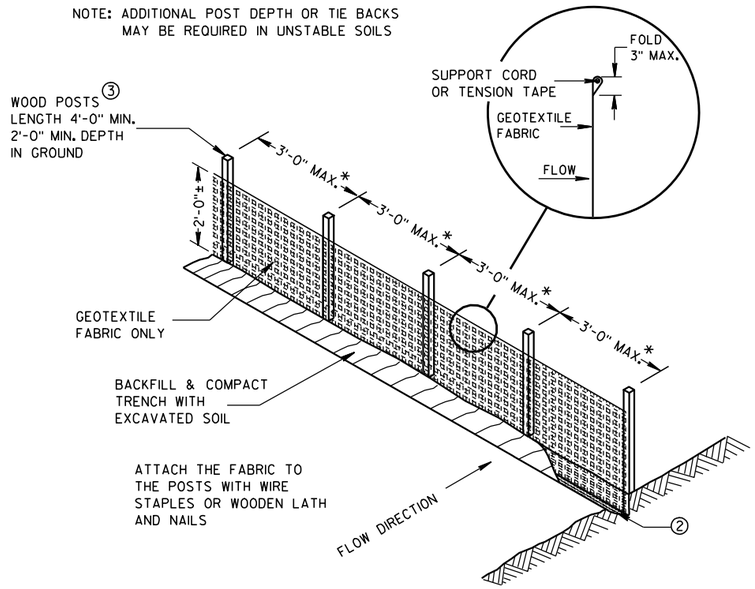
GENERAL NOTES

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

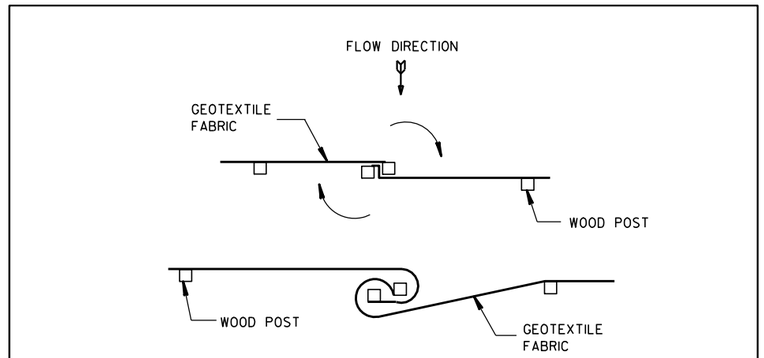
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL 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.



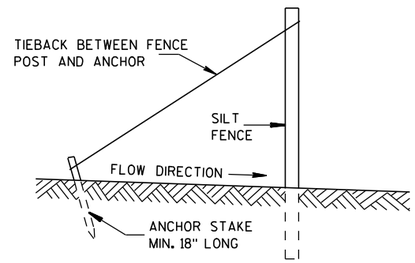
TRENCH DETAIL



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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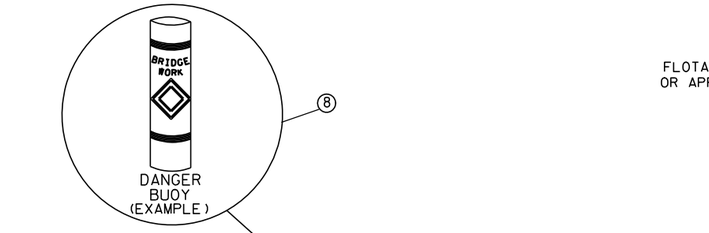
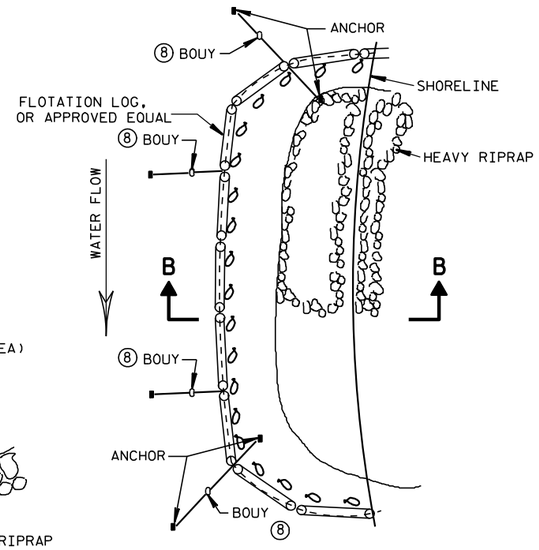
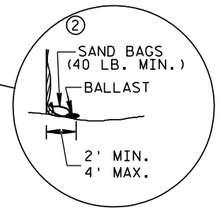
S.D.D. 8 E 9-6

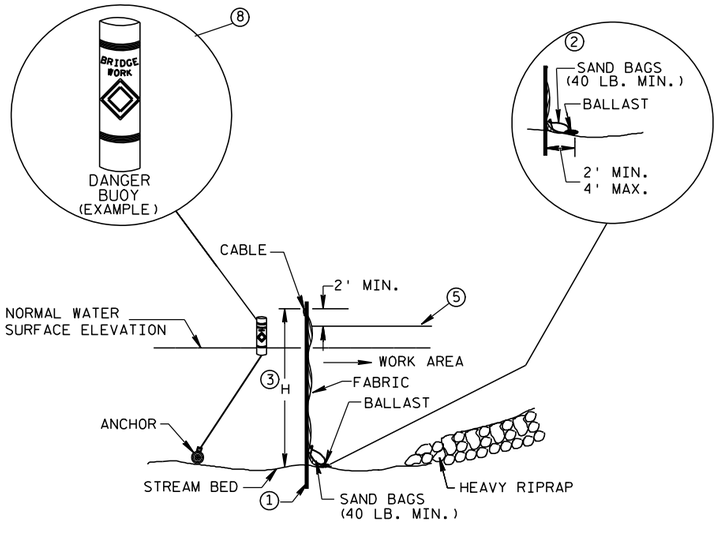


SECTION B-B

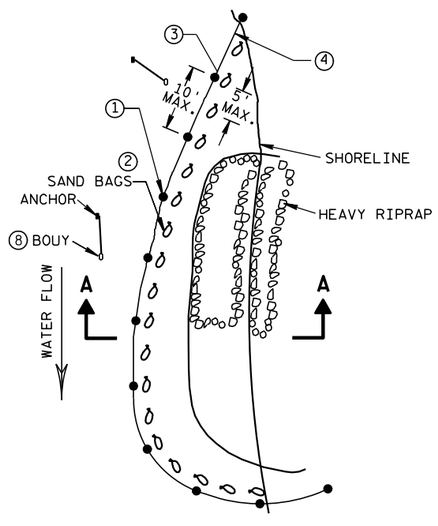


TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6





SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

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.

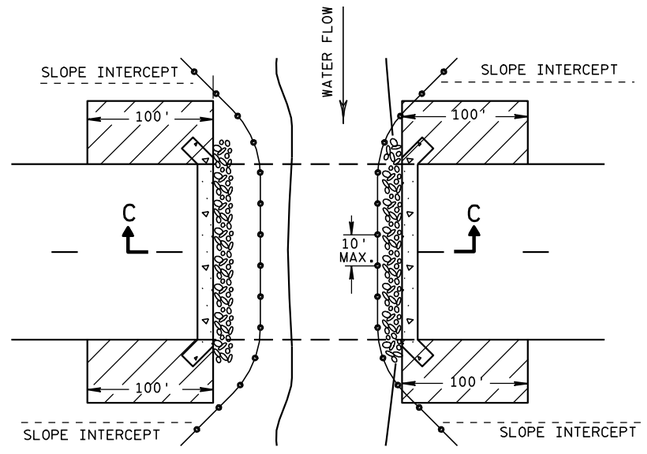
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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.

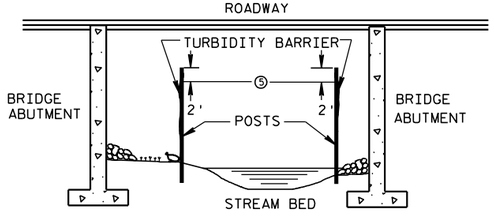
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

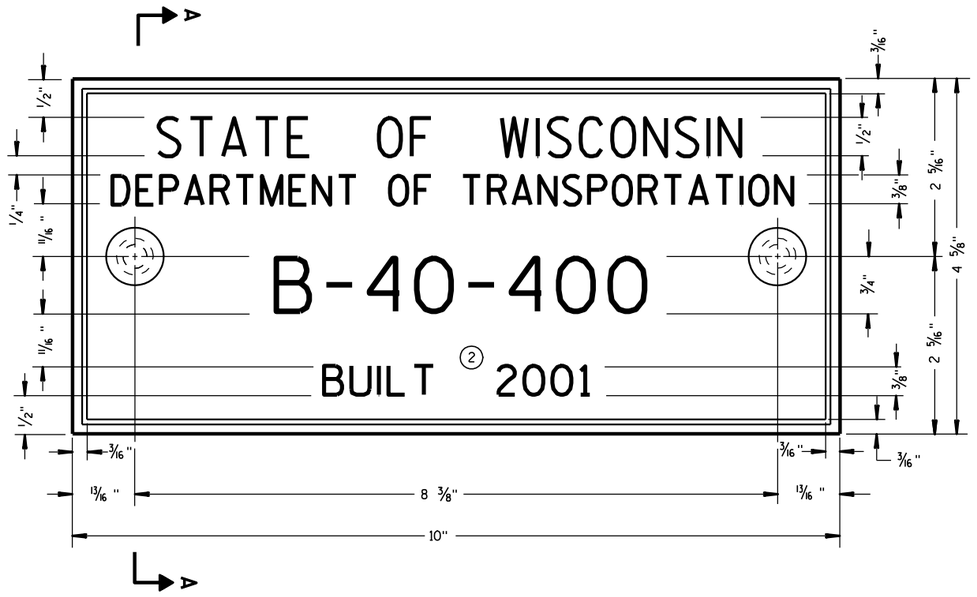
TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

TURBIDITY BARRIER PLACEMENT DETAILS



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)

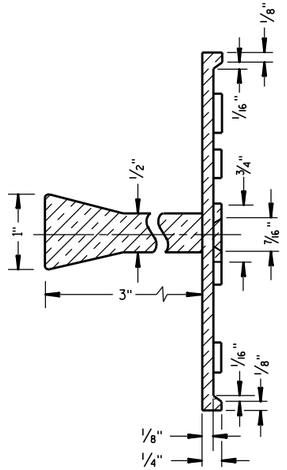
GENERAL NOTES

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

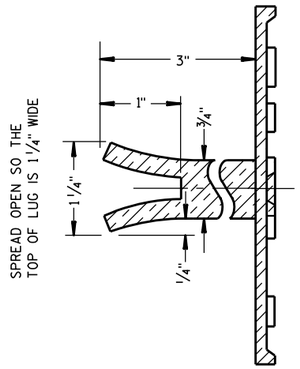
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

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



SECTION A-A



ALTERNATE LUG

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

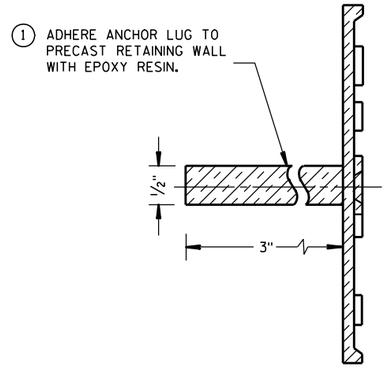
COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION MULTI-UNIT STRUCTURES



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 DEVELOP ENGINEER

FHWA

6

S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10

GENERAL NOTES

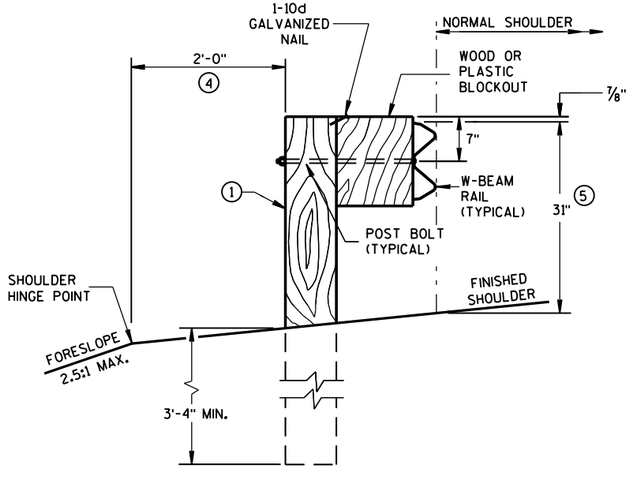
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

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

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

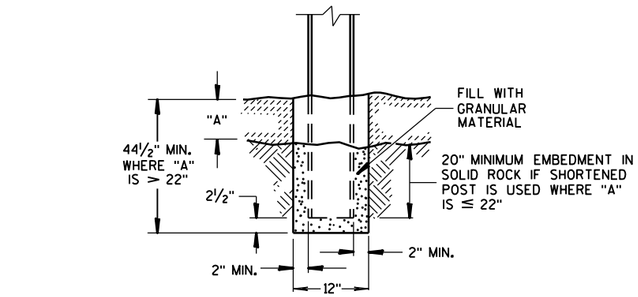
4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

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



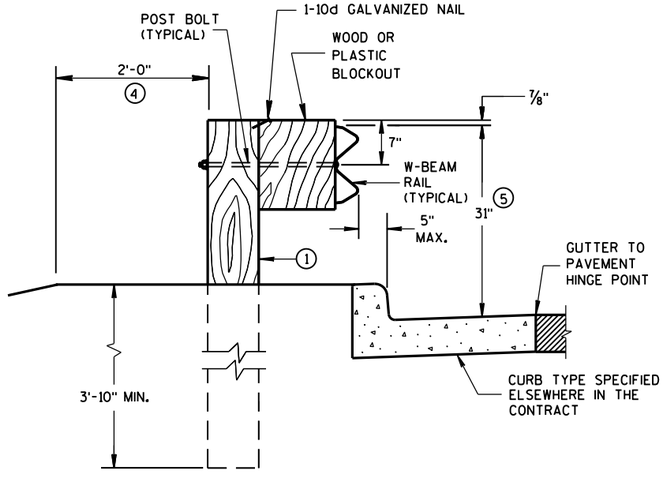
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



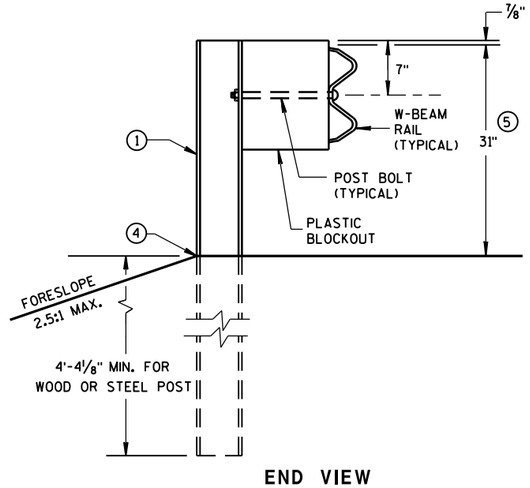
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



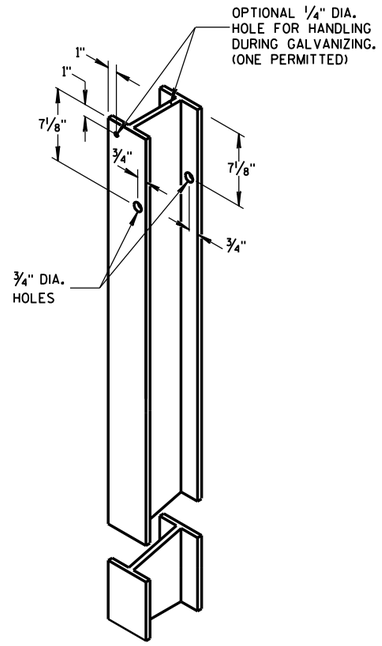
END VIEW

LOCATED ALONG A CURBED ROADWAY

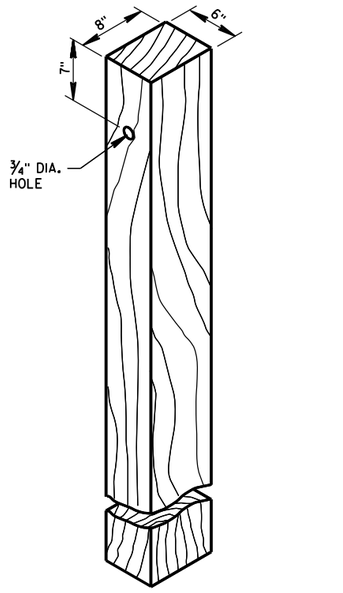


END VIEW

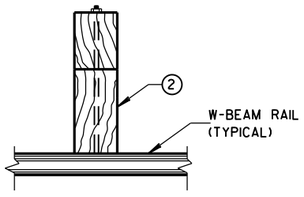
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



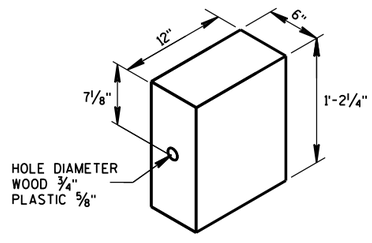
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



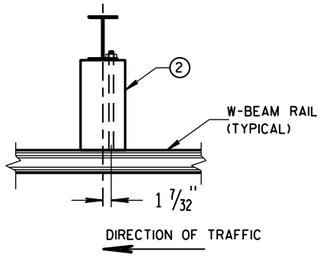
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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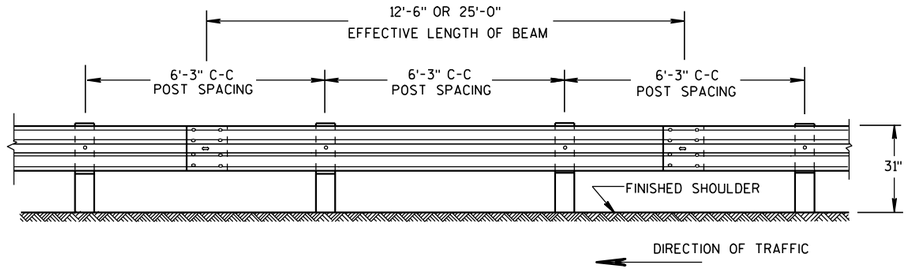
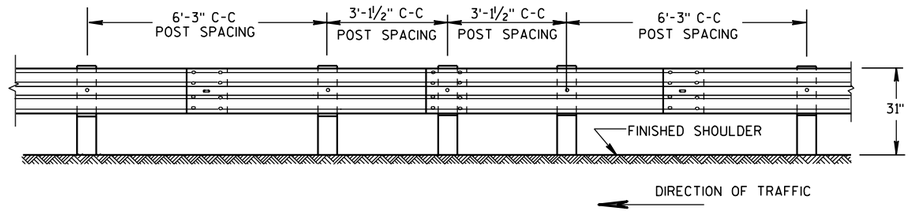
S.D.D. 14 B 42-2a



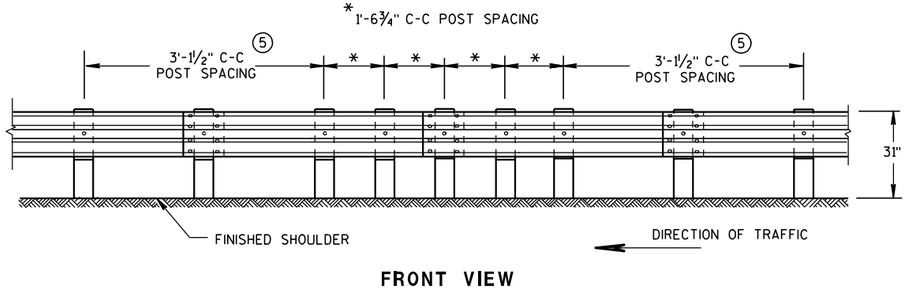
FRONT VIEW

POST SPACING STANDARD INSTALLATION



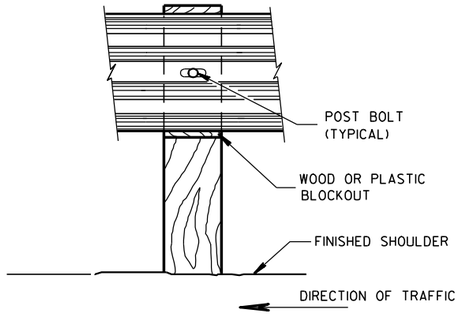
FRONT VIEW

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

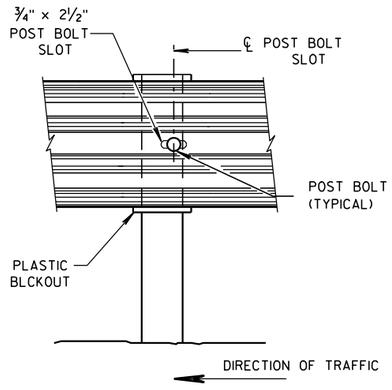


FRONT VIEW

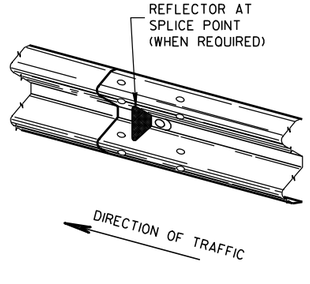
QUARTER POST SPACING (QS)

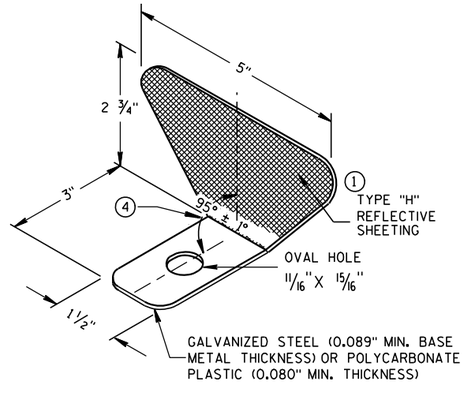


FRONT VIEW AT WOOD POST

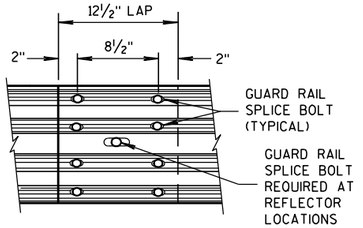


FRONT VIEW AT STEEL POST



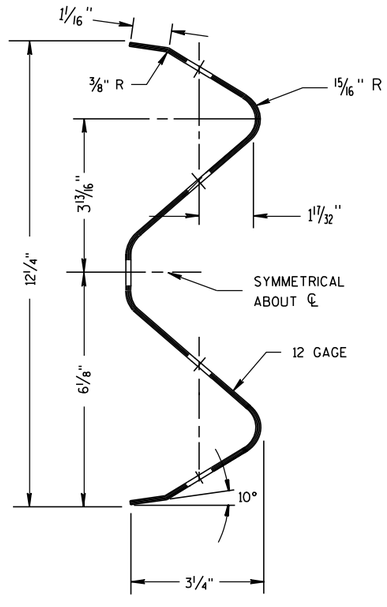


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①



FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL

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 ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING ②

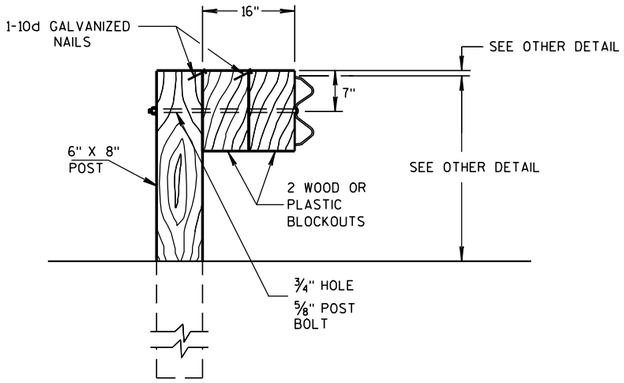
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ③ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 ④ 2	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

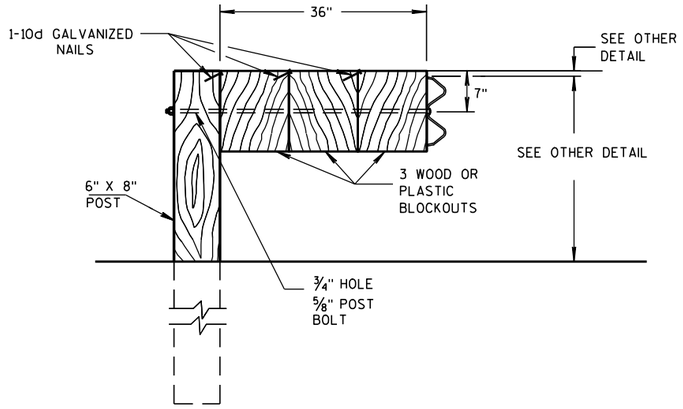
S.D.D. 14 B 42-2b

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.

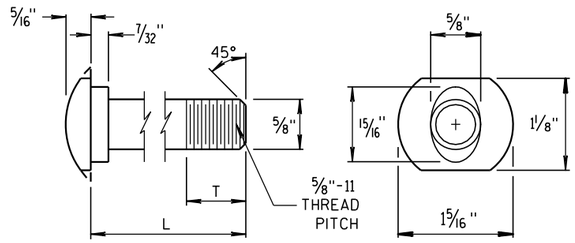


DETAIL FOR 36" BLOCKOUT DEPTH

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.

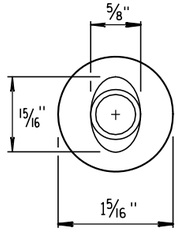
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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.

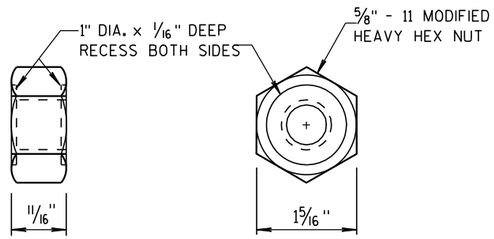


POST BOLT TABLE

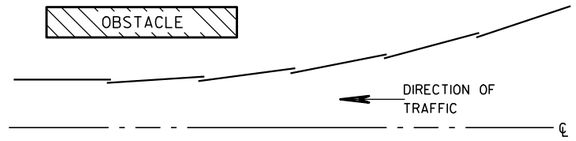
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

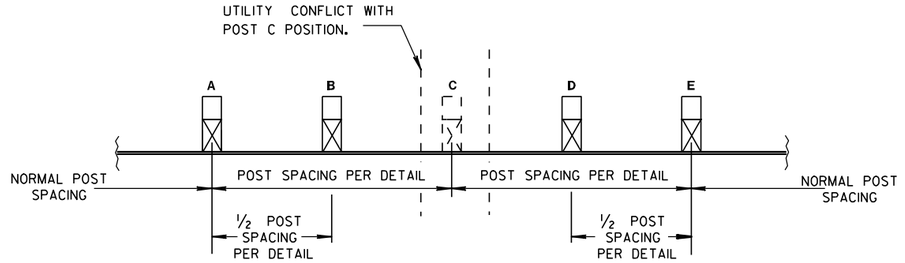


POST BOLT AND RECESS NUT

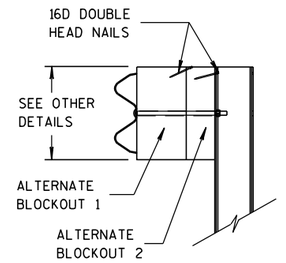


PLAN VIEW

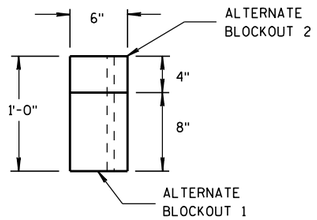
BEAM LAPPING DETAIL



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

25

ENT

6

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

6

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

GENERAL NOTES

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

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

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

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

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

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

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

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

SEE SDD 14B42 FOR MORE INFORMATION.

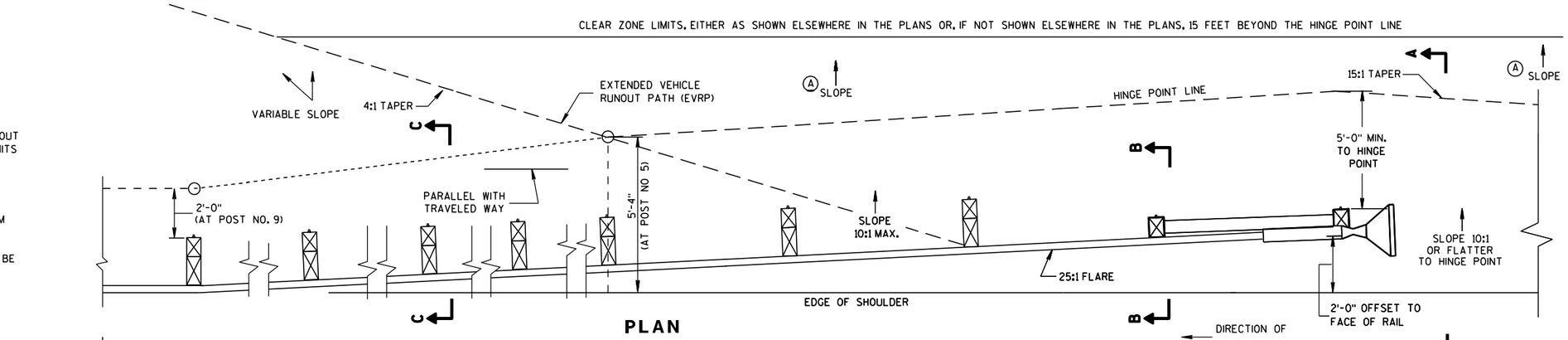
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

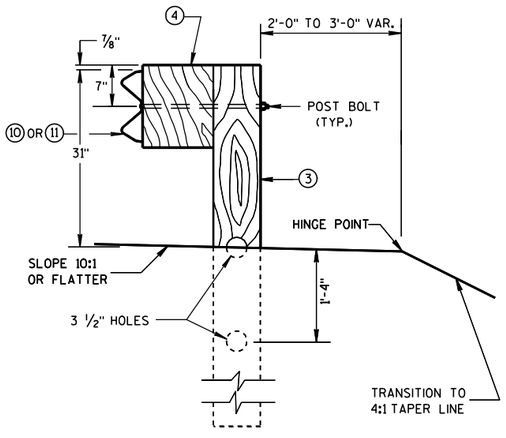
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

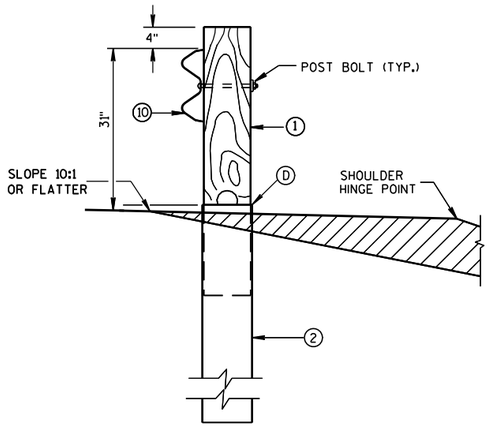
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

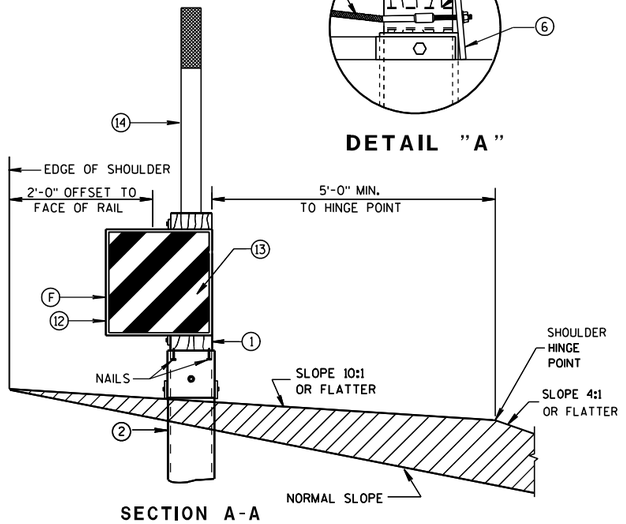




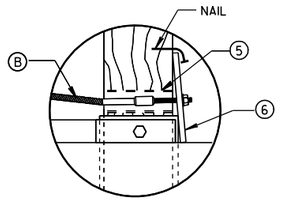
SECTION C-C
TYPICAL AT POST NOS. 3-9



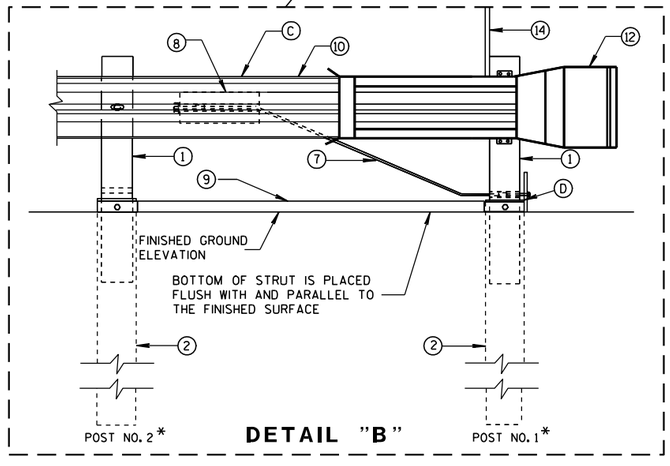
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



DETAIL "B"

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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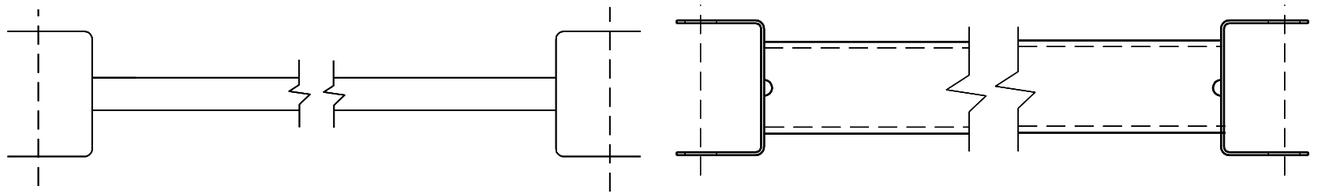
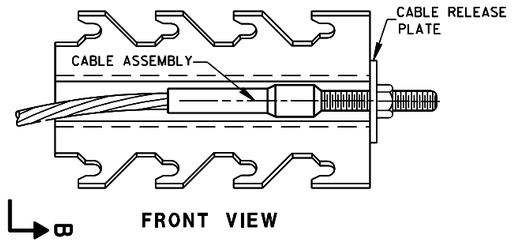
S.D.D. 14 B 44-1a



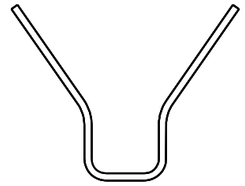
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

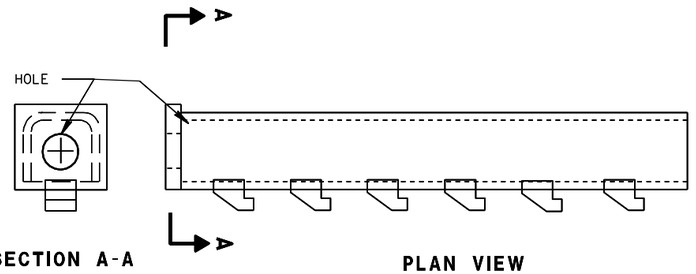
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR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



FRONT VIEW



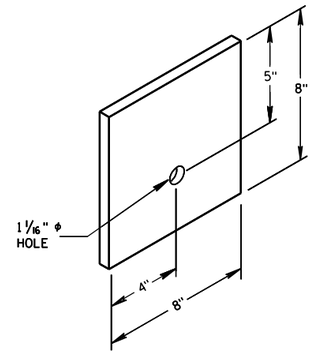
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



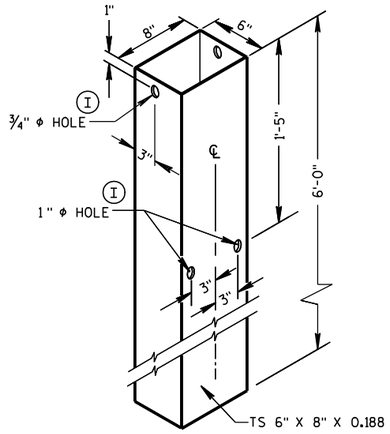
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

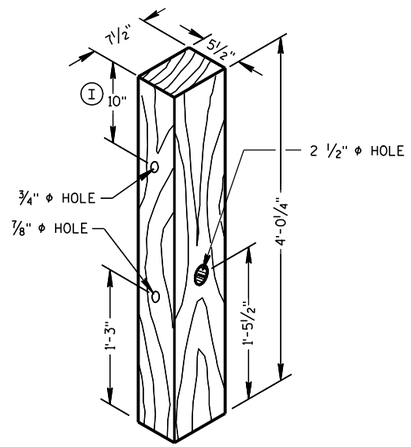
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

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

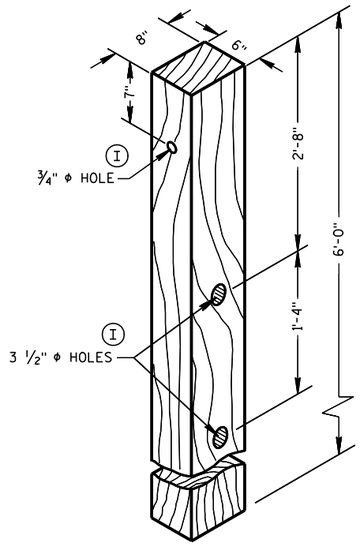


FOUNDATION TUBE (2)



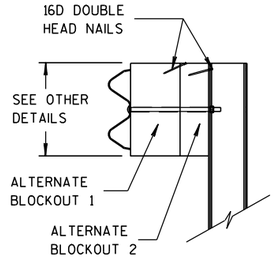
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

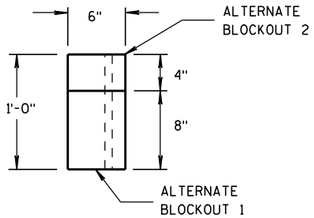


POSTS NUMBER 3-9

WOOD CRT POST (3)

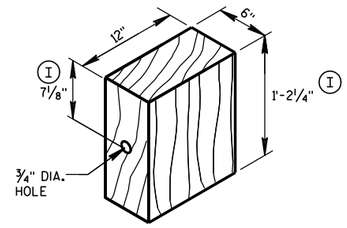


SIDE VIEW



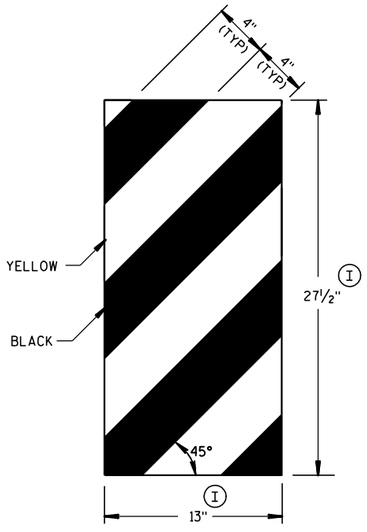
TOP VIEW

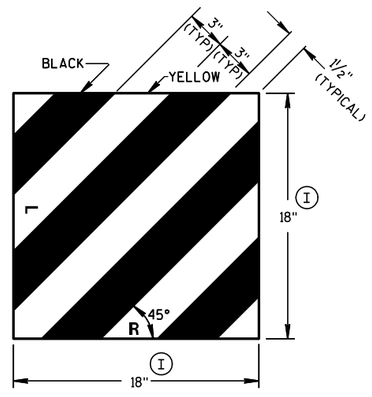
ALTERNATE WOOD BLOCKOUT DETAIL



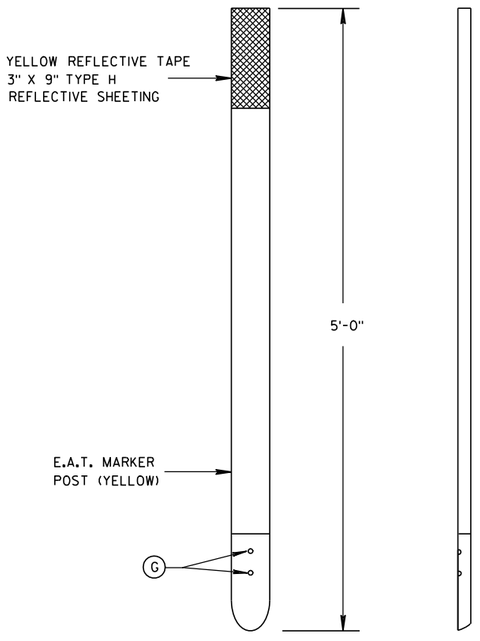
WOOD BLOCKOUT (4)

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



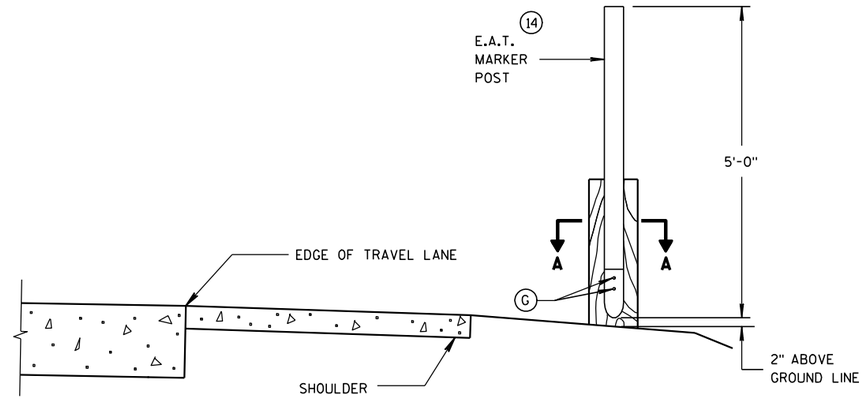


GENERIC REFLECTIVE SHEETING (13) (H)



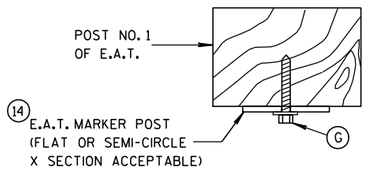
FRONT VIEW **SIDE VIEW**

E.A.T. MARKER POST (14)



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

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



SECTION A-A

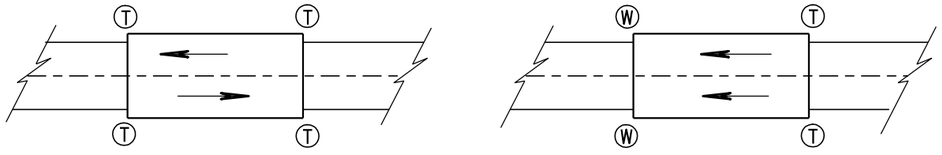
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

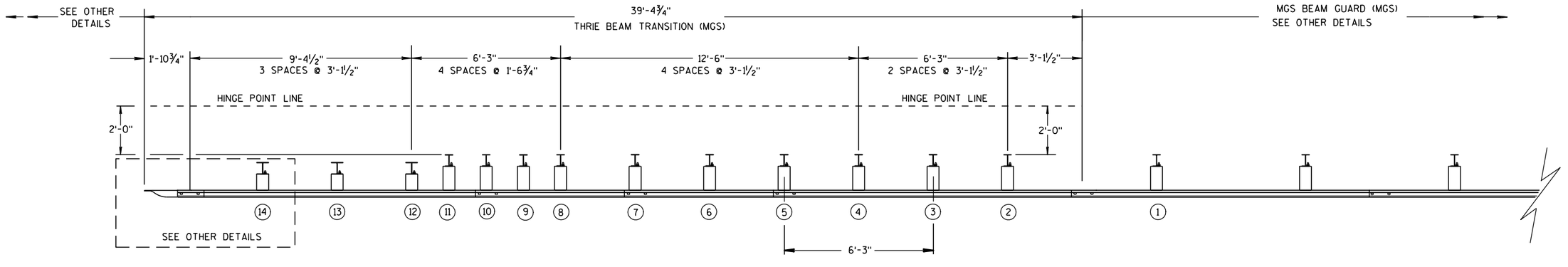
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

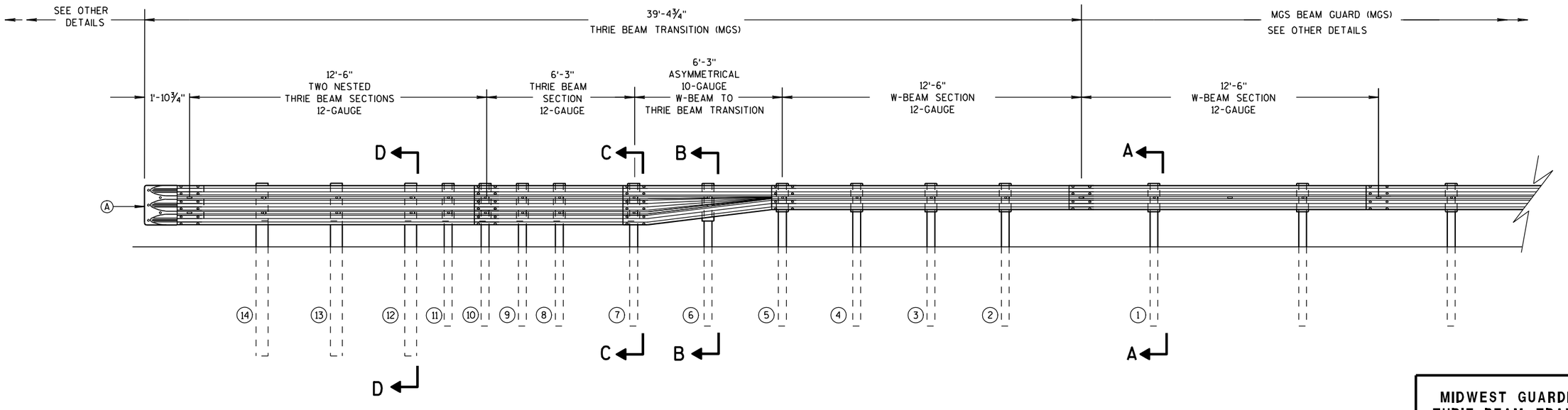
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

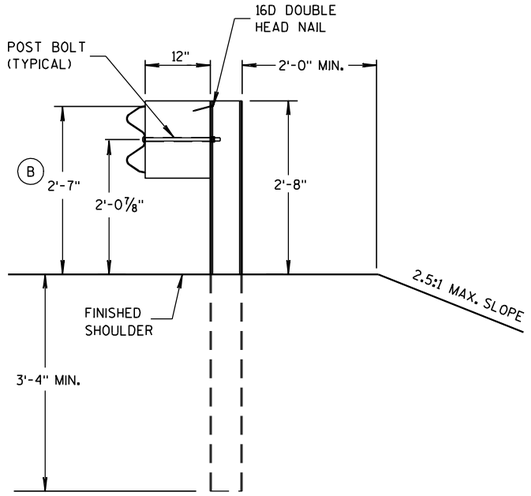
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

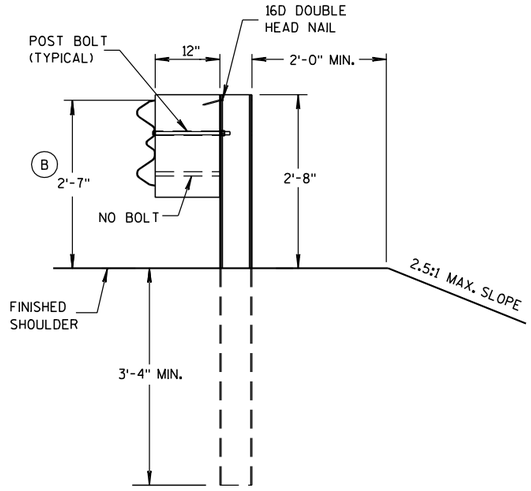
GENERAL NOTES

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



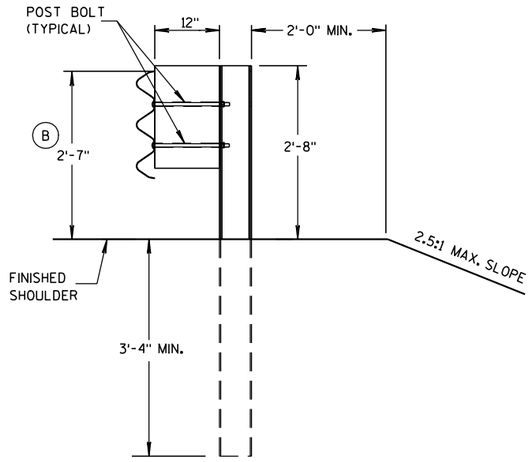
SECTION A-A

POSTS 1-5



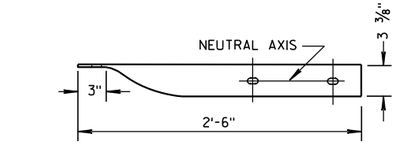
SECTION B-B

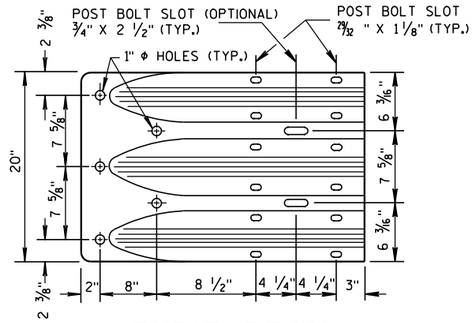
POST 6



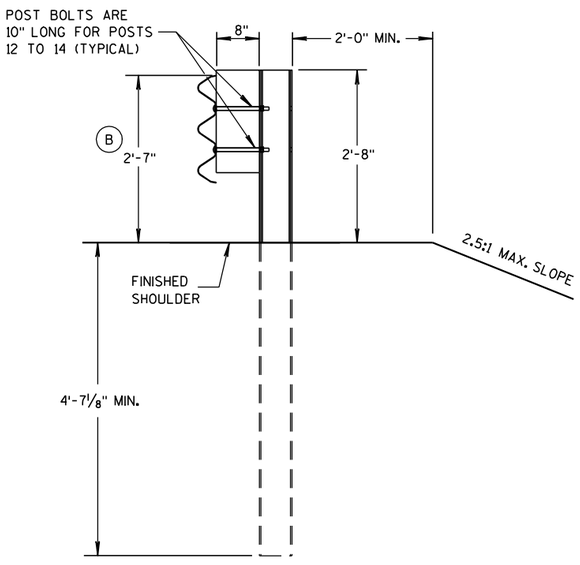
SECTION C-C

POSTS 7-11



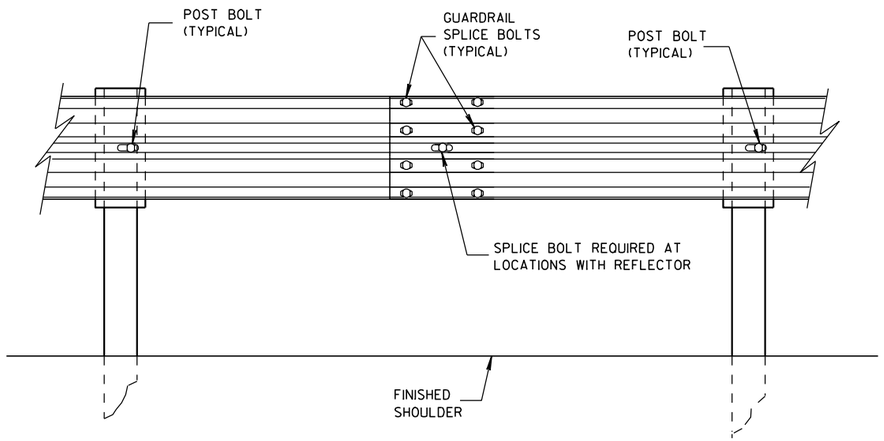


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14



SPLICE DETAIL

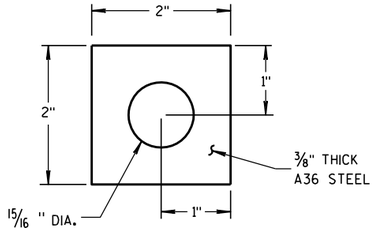
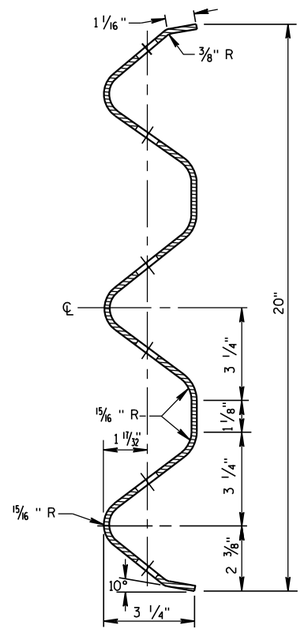


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

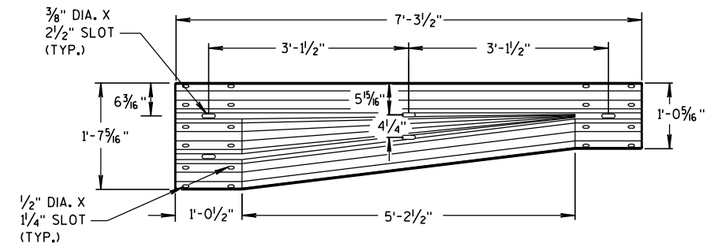
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

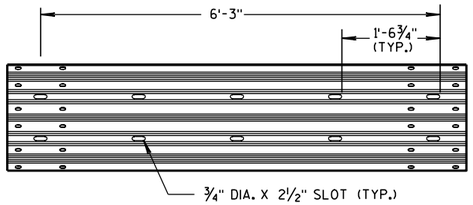
S.D.D. 14 B 45-3b

6

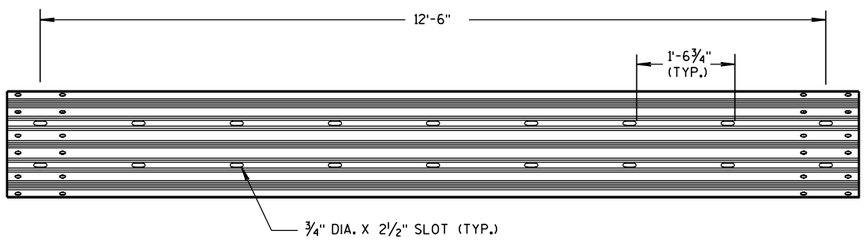
S.D.D. 14 B 45-3b



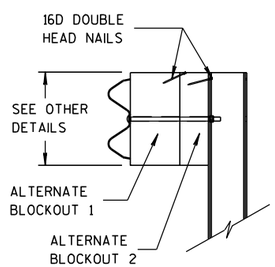
W-BEAM TO THRIE BEAM TRANSITION SECTION



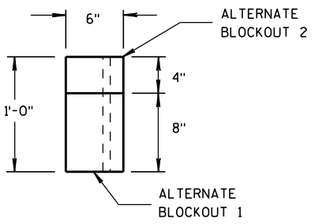
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

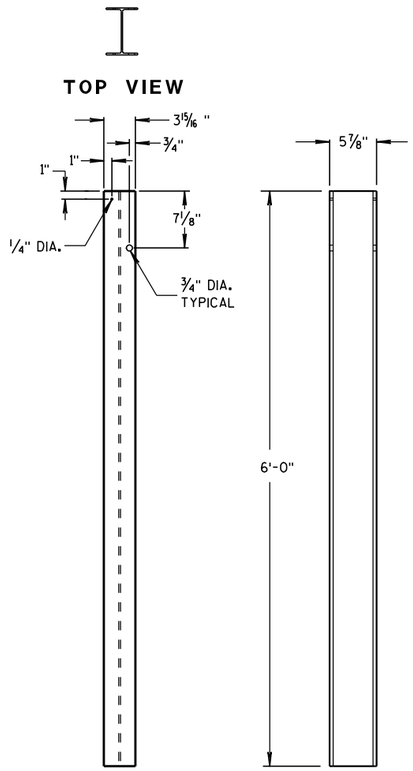


SIDE VIEW

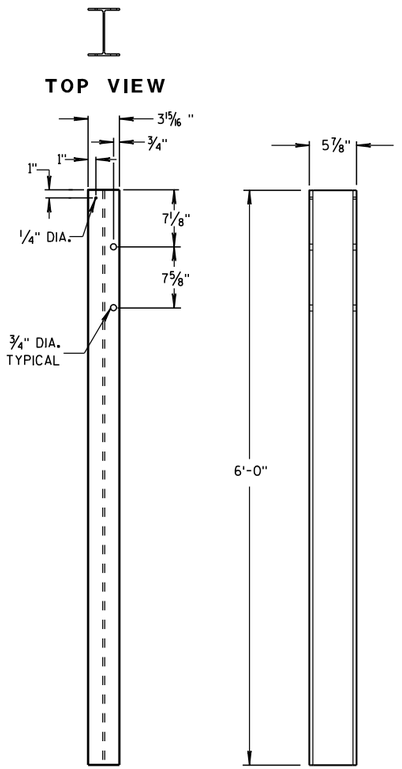


TOP VIEW

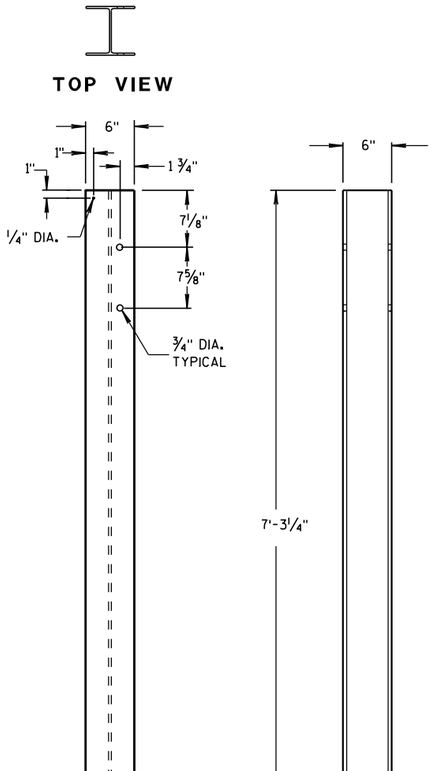
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

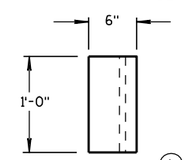


STEEL POSTS 6-11

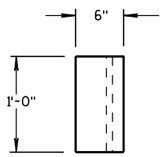


STEEL POSTS 12-14

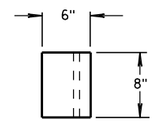
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



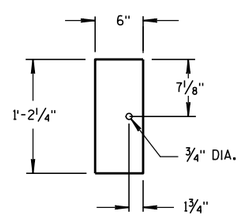
TOP VIEW (1)



TOP VIEW (1)

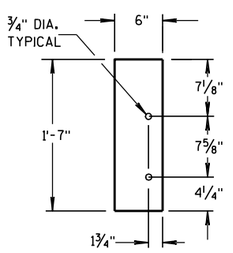


TOP VIEW



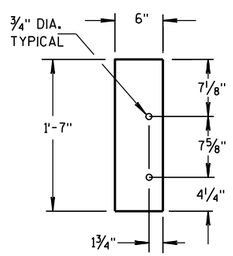
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

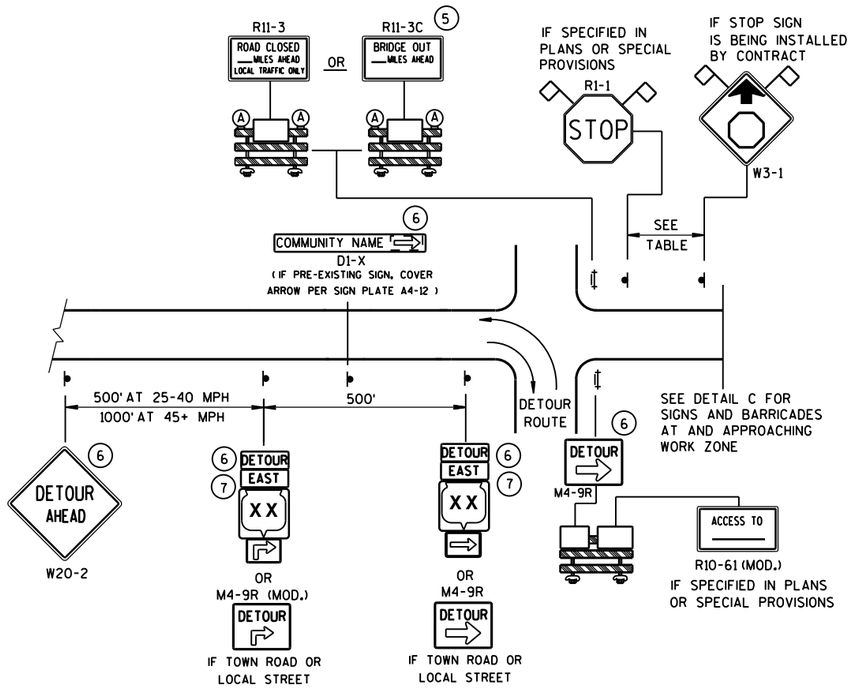
STEEL POST SIZES

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)

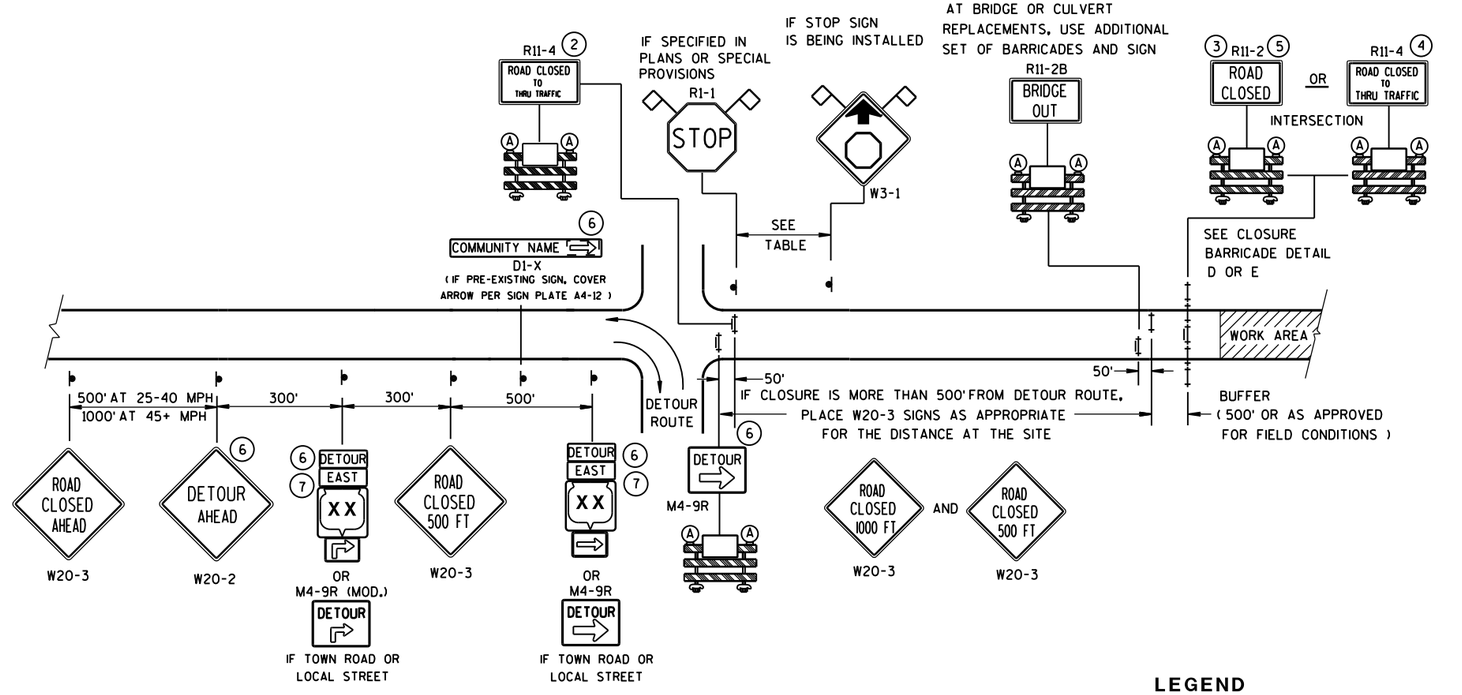
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



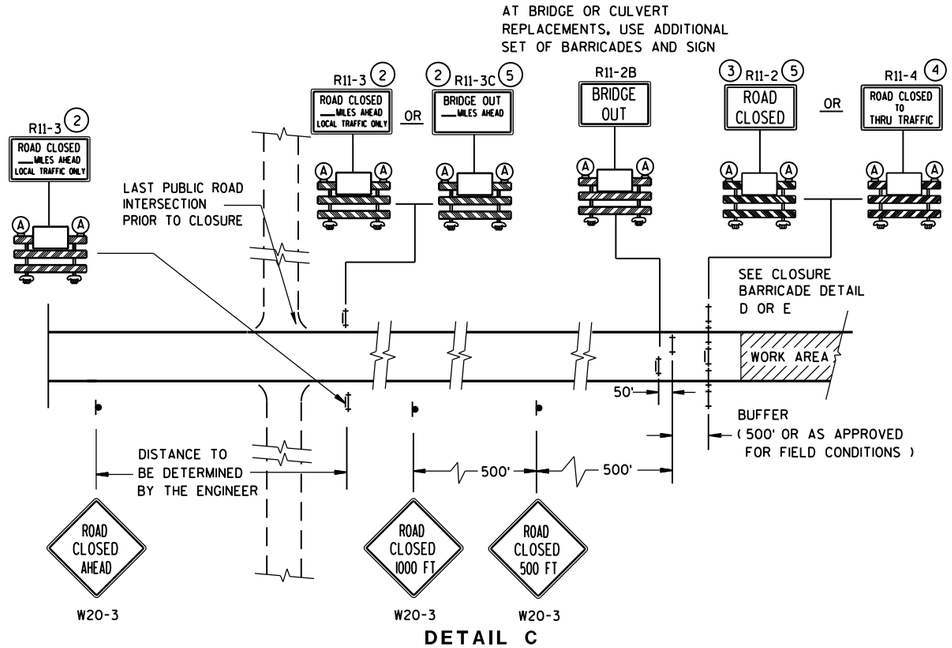
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS 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-SHEET "**b**" FOR GENERAL NOTES AND FOOTNOTES (1) THROUGH (7)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

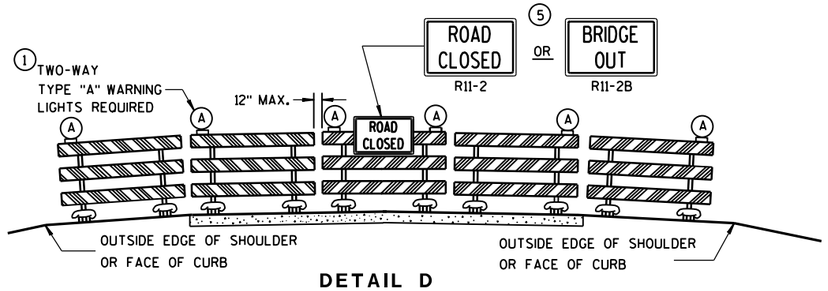
8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

6

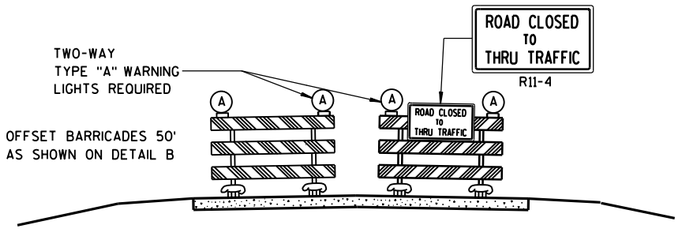
S.D.D. 15 C 2-5a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

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

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

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

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

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

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

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

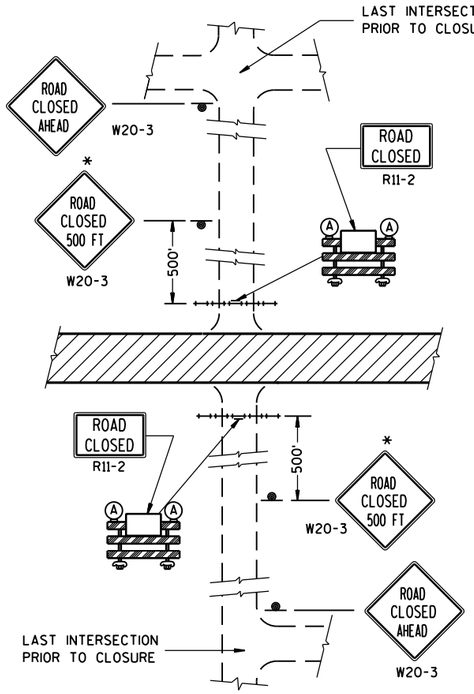
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

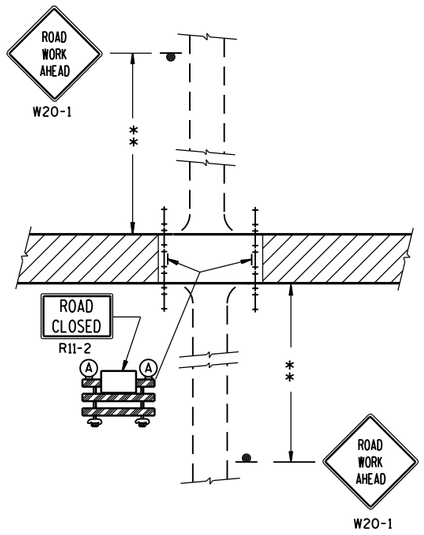
6

S.D.D. 15 C 2-5b



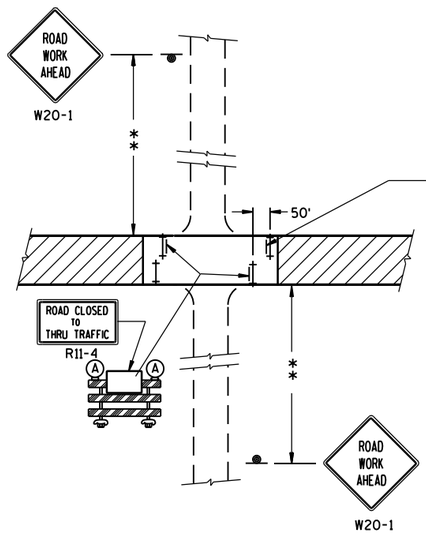
DETAIL 1

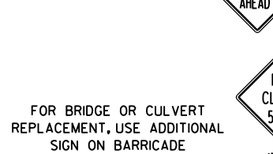
(NO ACCESS TO PROJECT)



DETAIL 2

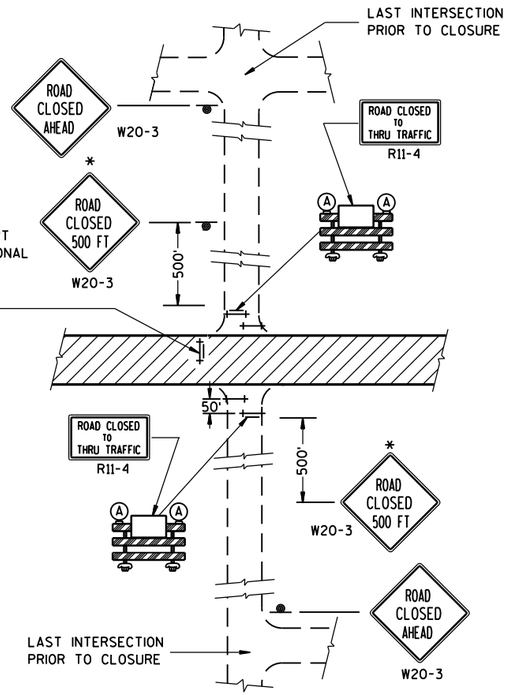
(PUBLIC CROSS-TRAFFIC MAINTAINED. NO ACCESS TO PROJECT).





DETAIL 3

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

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.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

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 AND R11-4 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.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

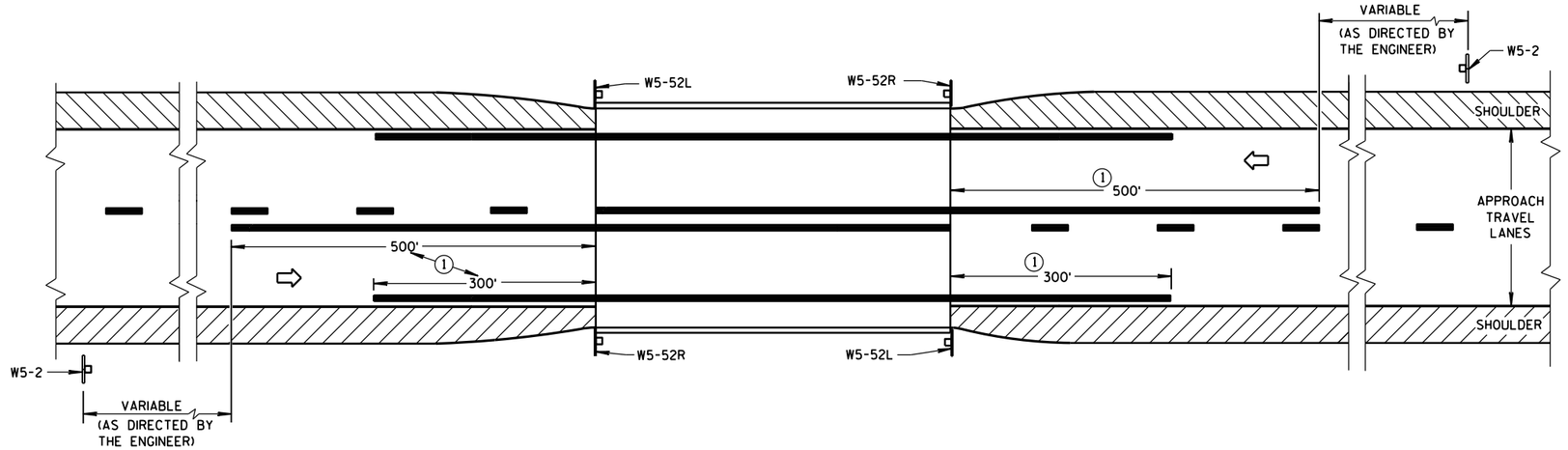
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 C 3-2

6

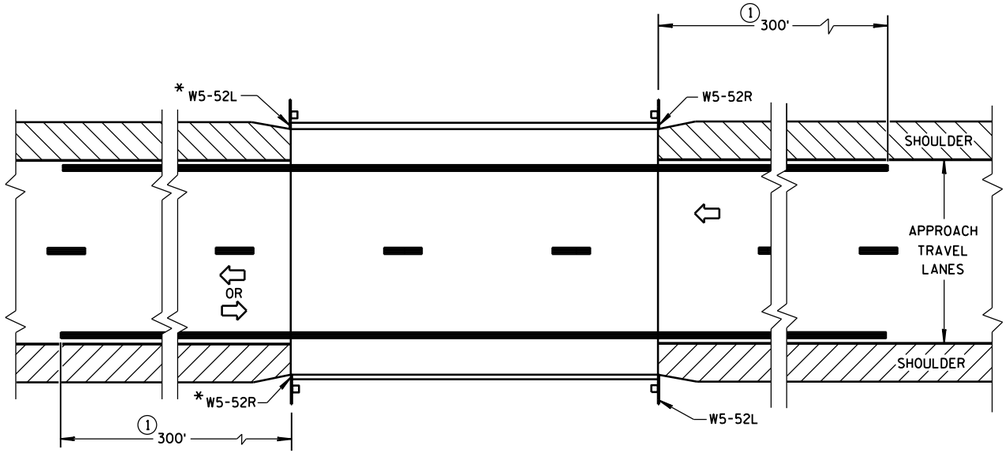
S.D.D. 15 C 3-2



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

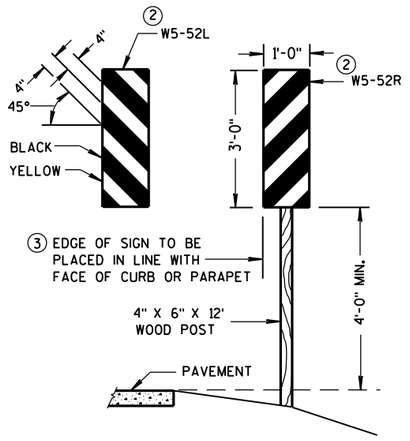
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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.

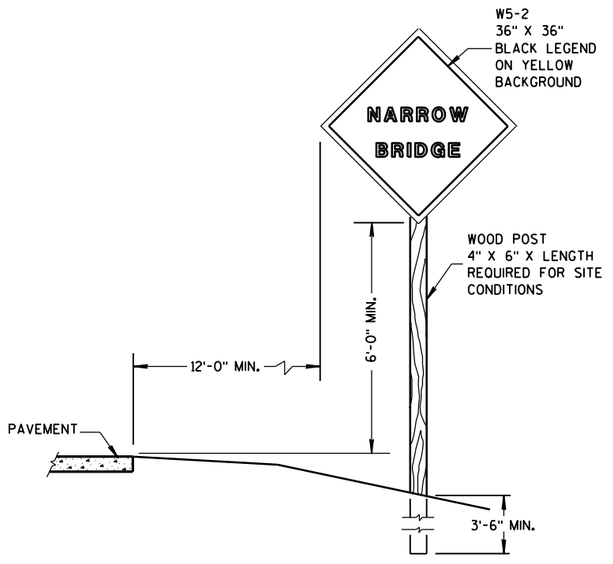
(1) MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

(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

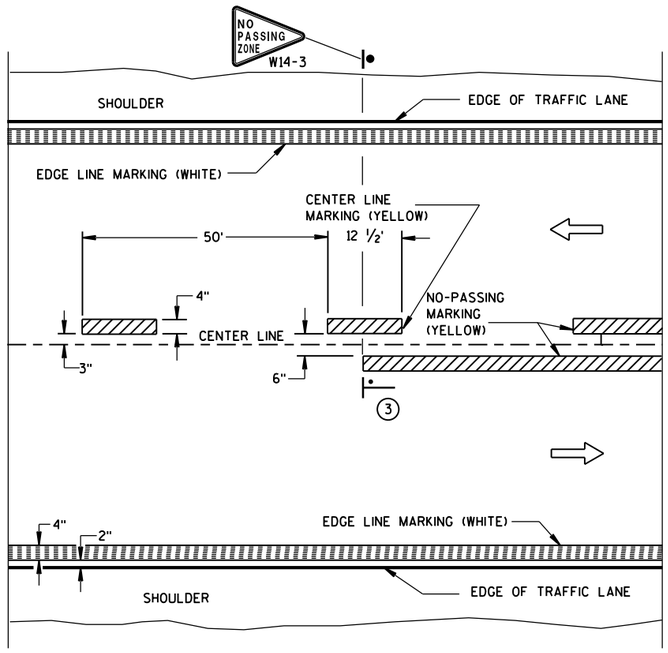
3/4/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

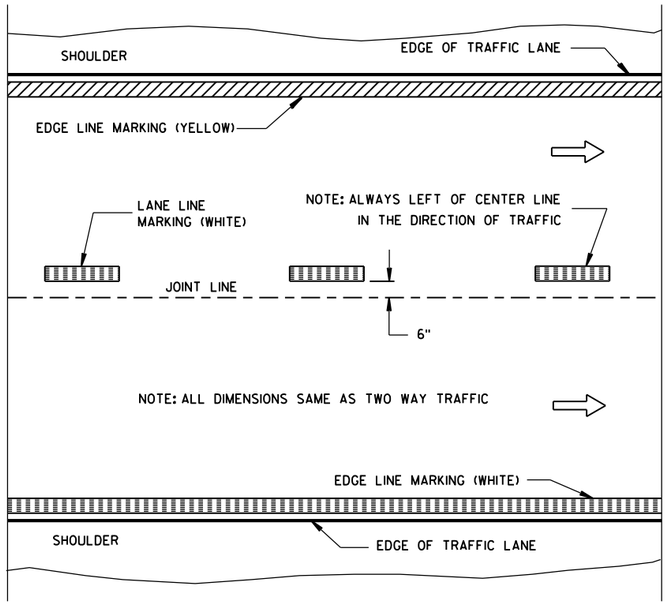
FHWA

6

S.D.D. 15 C 6-6

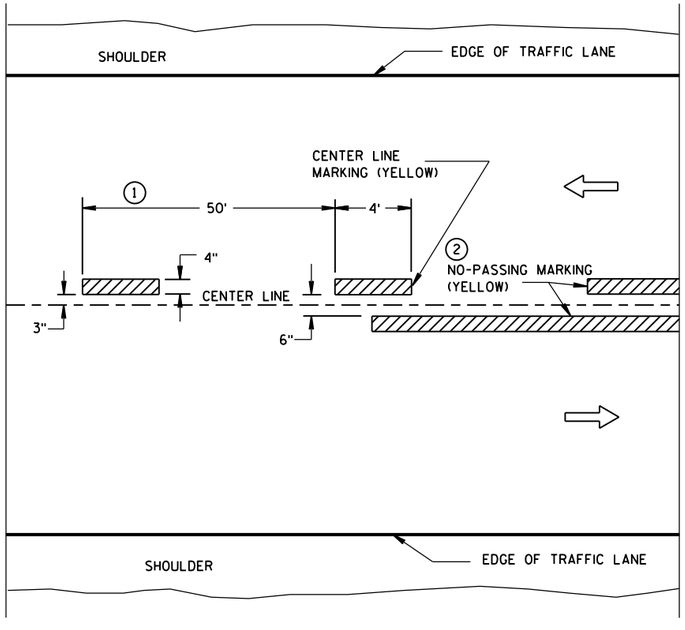


TWO WAY TRAFFIC

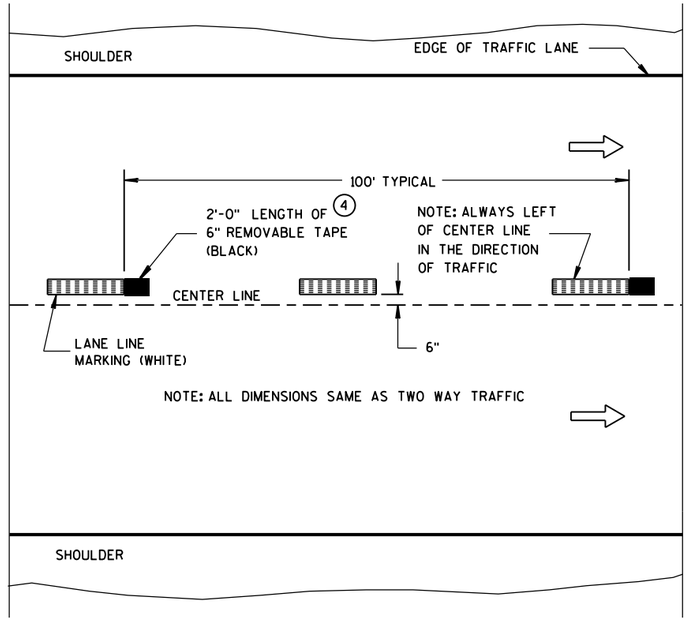


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

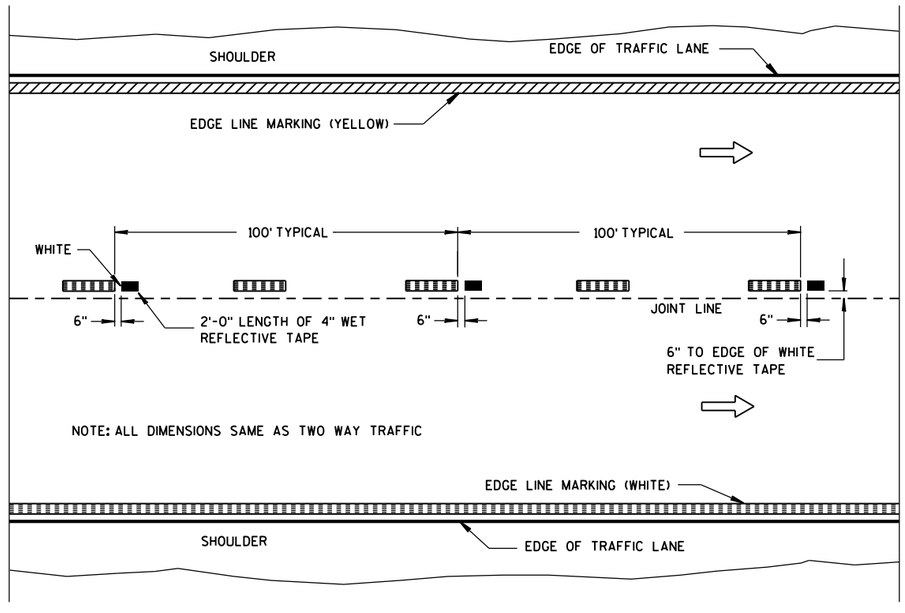
GENERAL NOTES

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

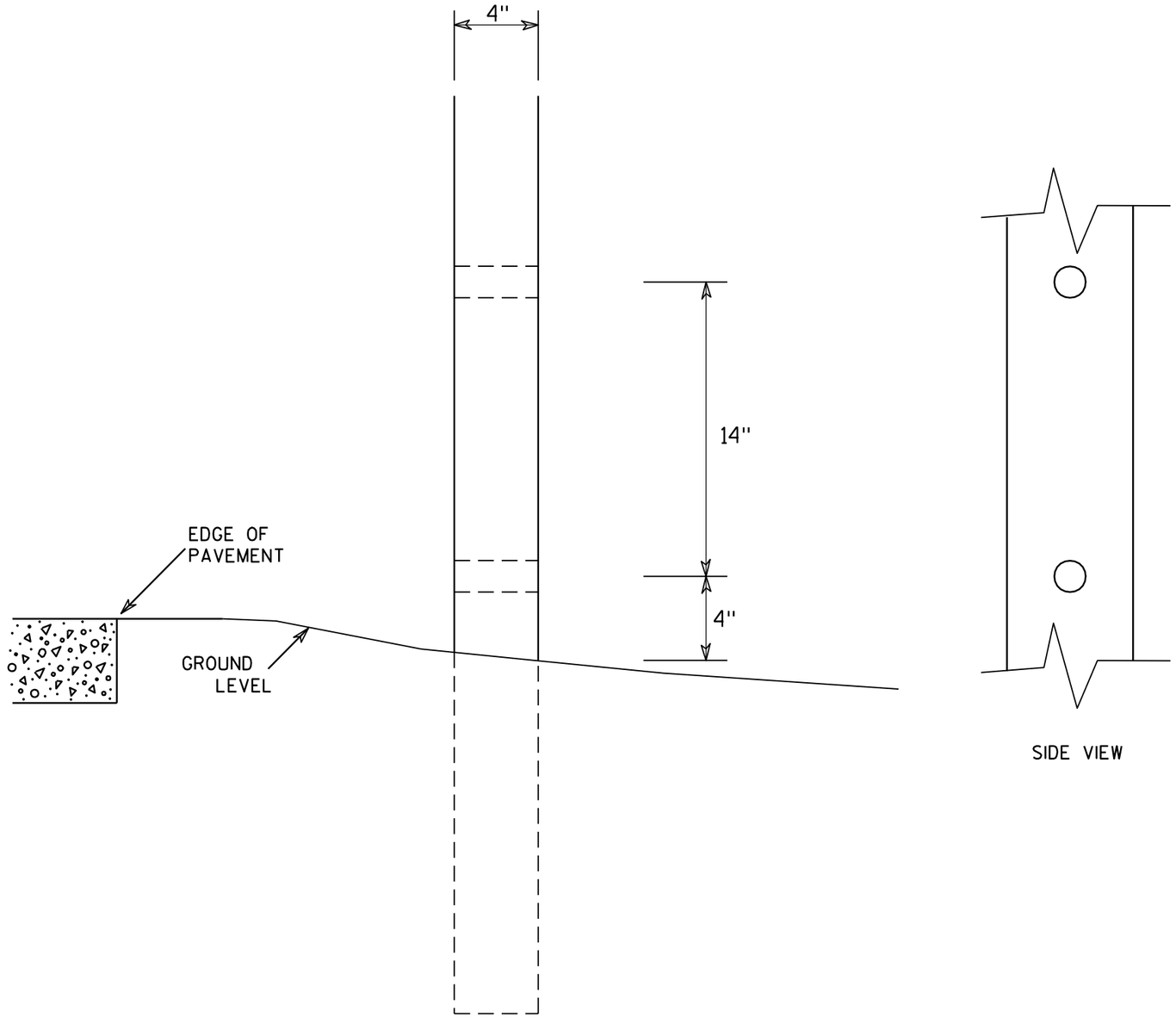
FHWA

6

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

6

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



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

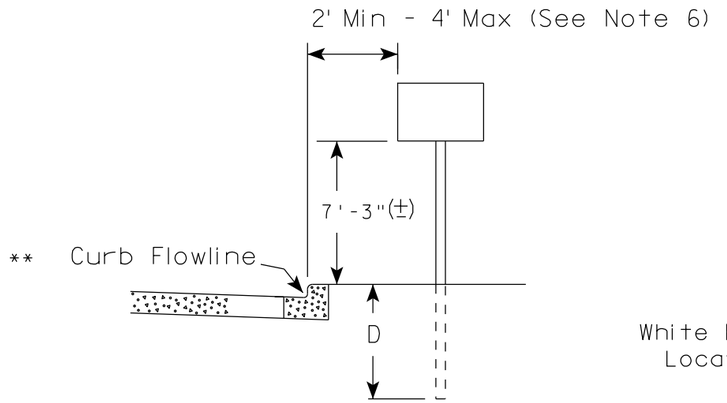
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

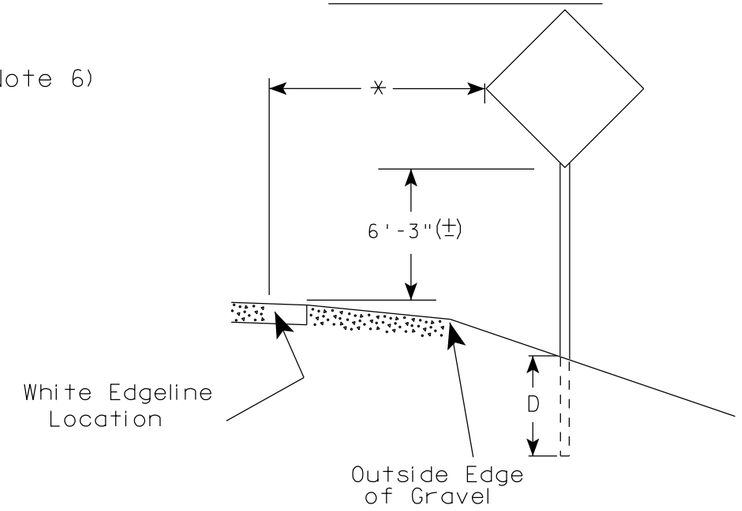
DATE 3/27/97 PLATE NO. A4-11.2

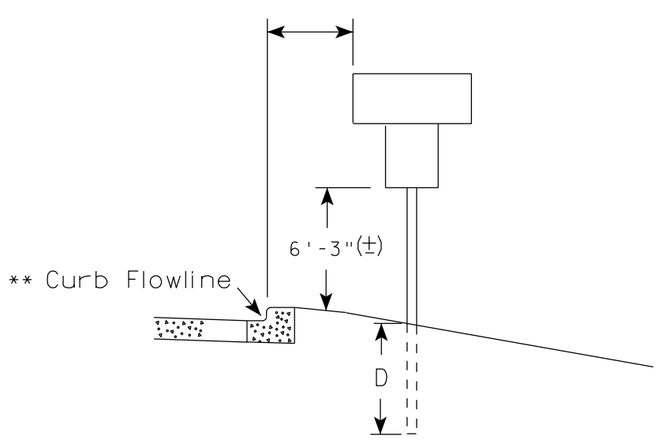
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 37	E

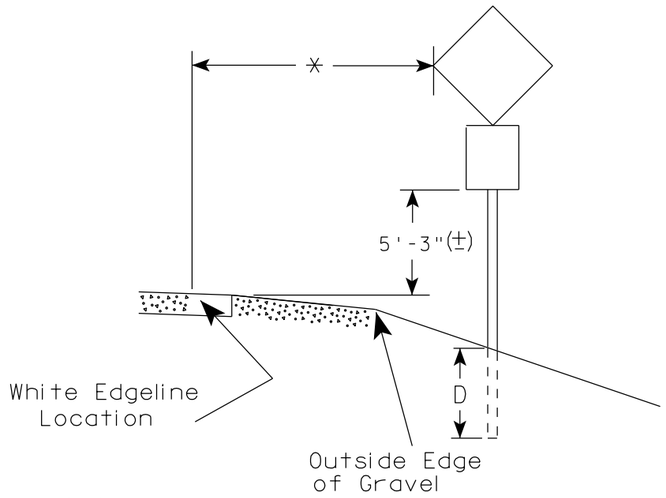
URBAN AREA



RURAL AREA (See Note 2)







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

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

GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

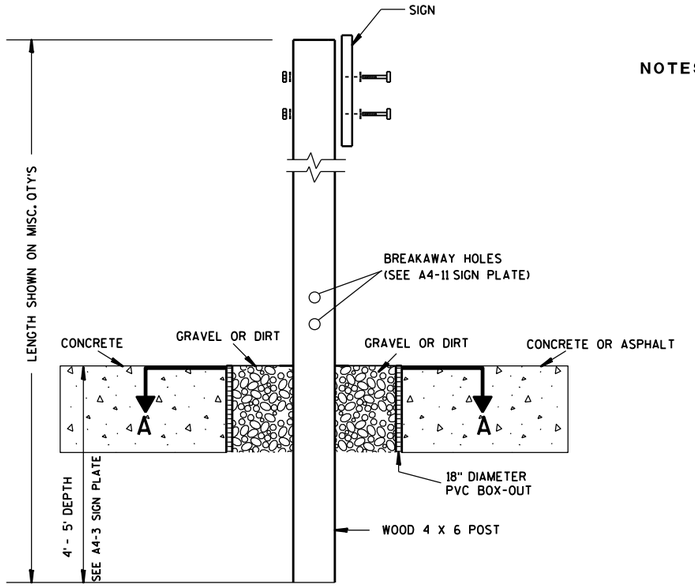
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

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

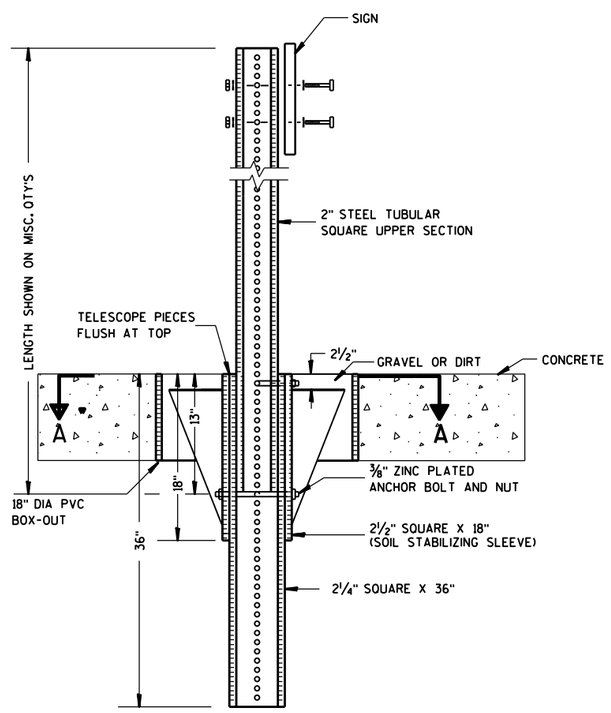
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

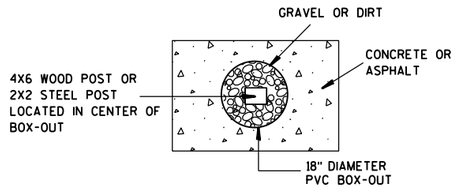
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

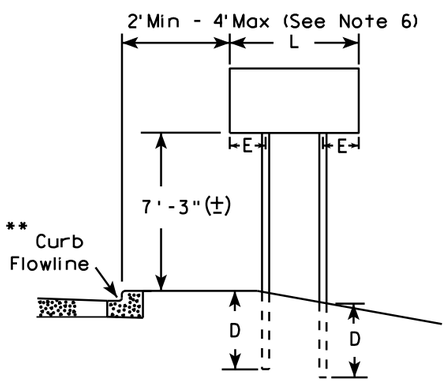
APPROVED Matthew R Rauch
for State Traffic Engineer

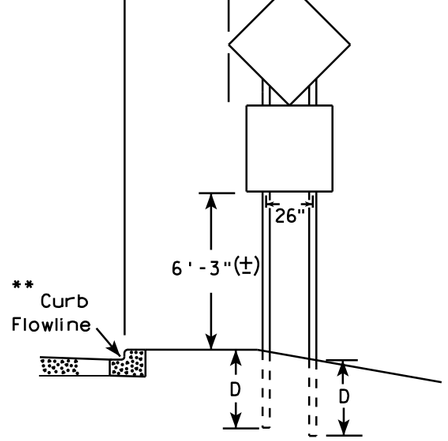
DATE 1/27/14 PLATE NO. A4-3B.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

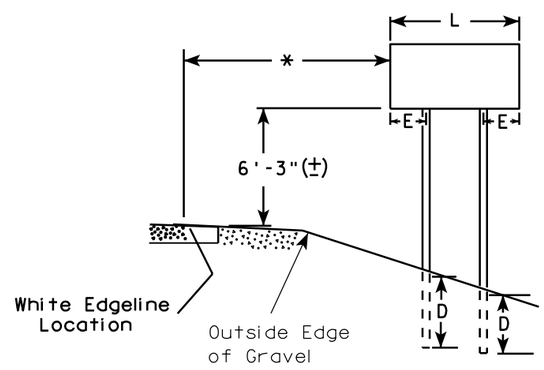
URBAN AREA

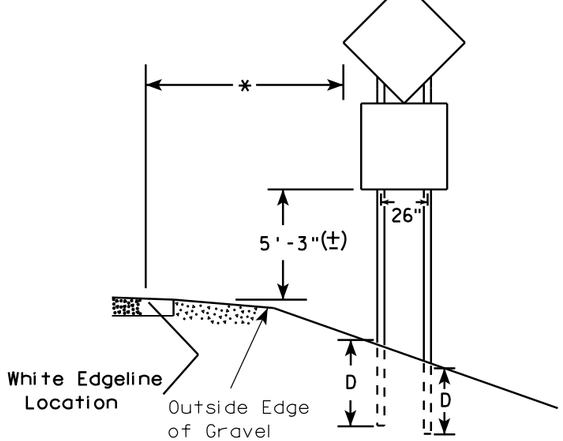




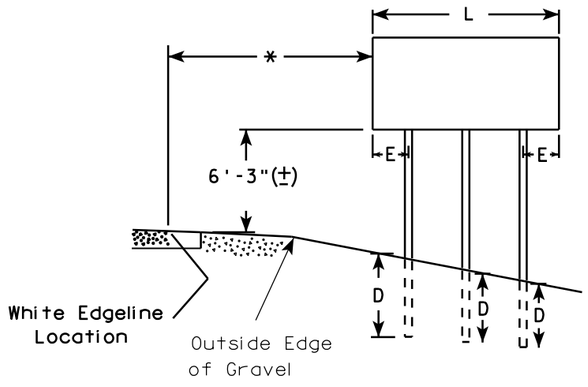
48" DIAMOND WARNING SIGN

RURAL AREA (See Note 3)





48" DIAMOND WARNING SIGN



GENERAL NOTES

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

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

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

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

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

***

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

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

POST EMBEDMENT DEPTH

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

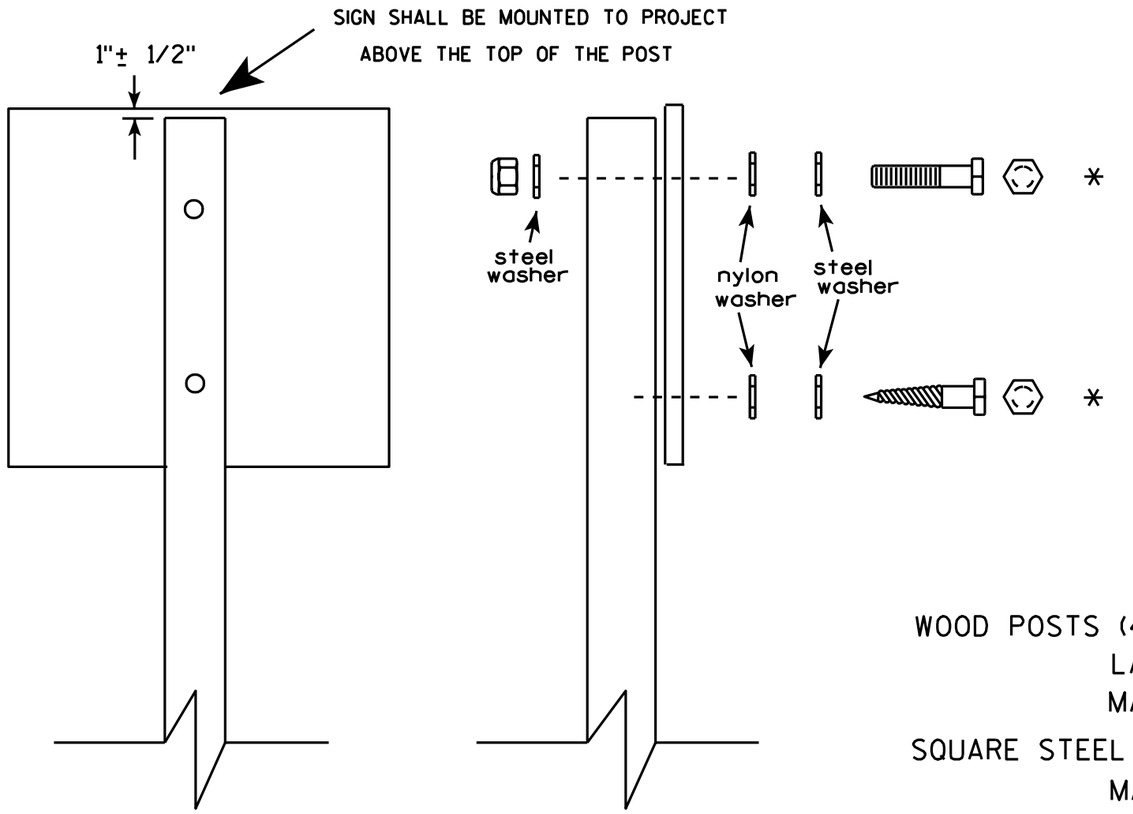
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-4 12

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	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

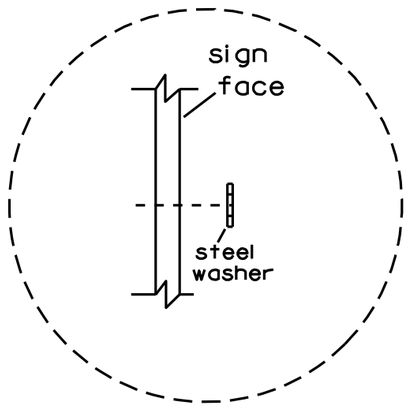
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

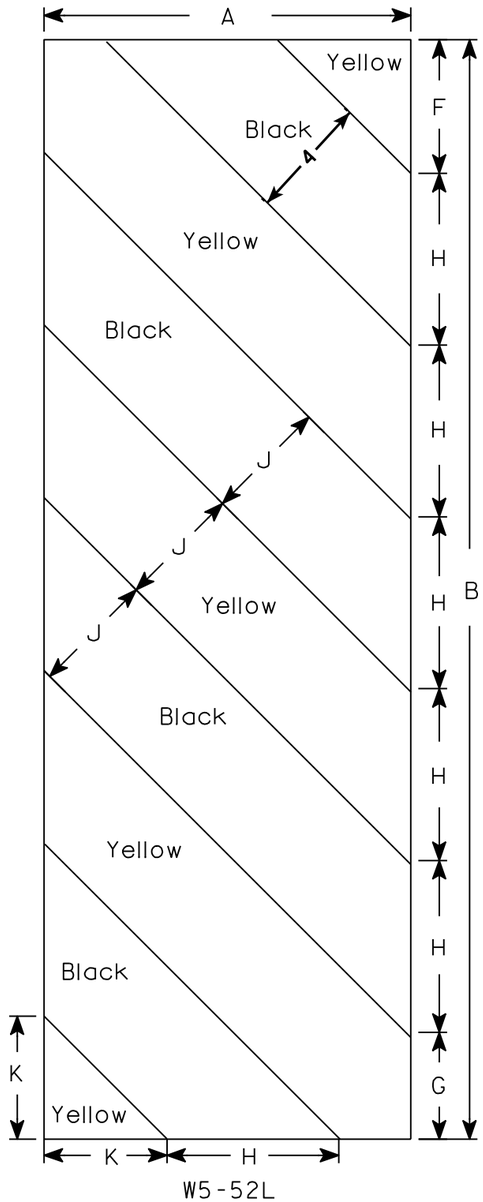
DATE 3/23/10 PLATE NO. A4-8.7

PROJECT NO:

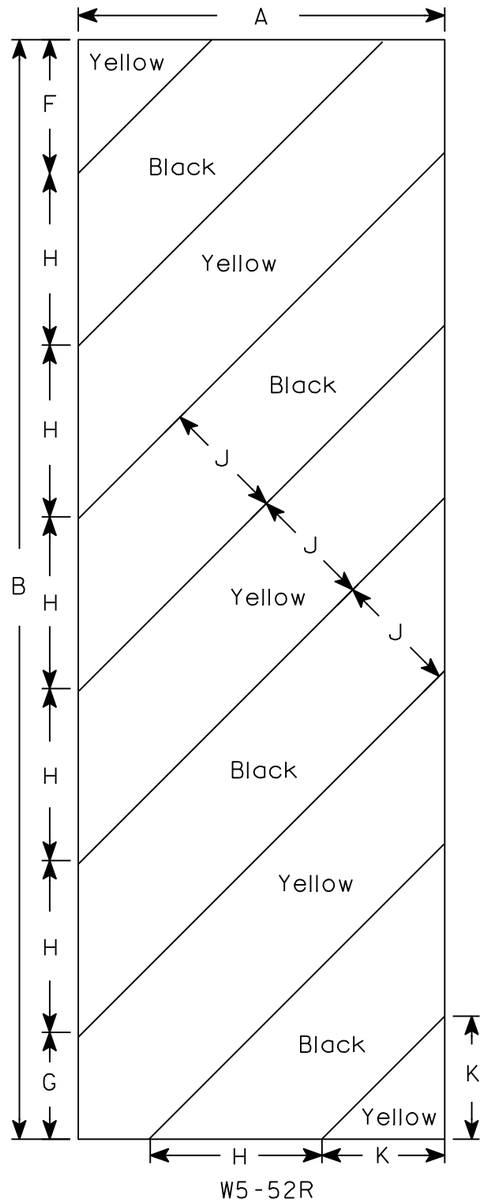
SHEET NO: 41 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\A48.DGN PLOT DATE : 23-MAR-2010 10:15 PLOT BY : ditjph

WISDOT/CADDS SHEET 42



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

W5-52L & W5-52R

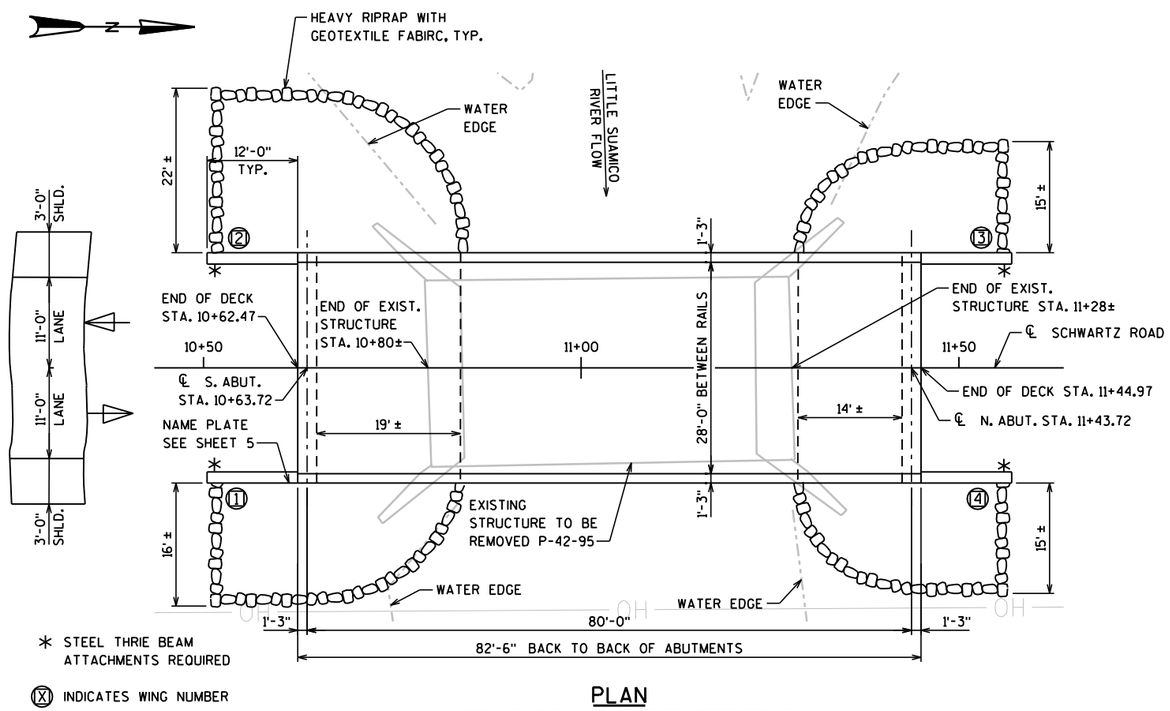
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

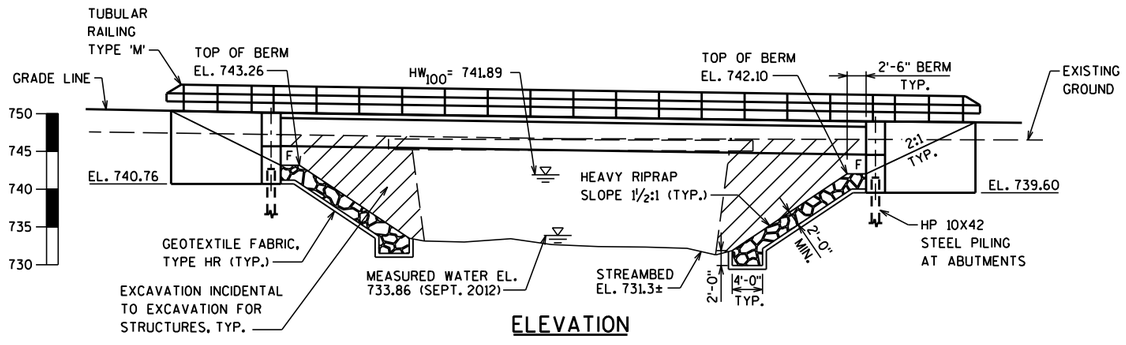
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 42	E

STATE PROJECT NUMBER
9022-03-71

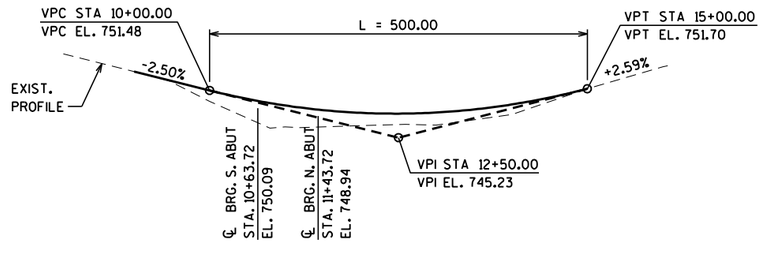


PLAN

SINGLE SPAN 36W" PRESTRESSED GIRDER BRIDGE



ELEVATION



PROFILE GRADE LINE

DESIGN DATA

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

LIVE LOAD:

DESIGN LOADING ——— HL-93
INVENTORY RATING FACTOR ——— RF = 1.12
OPERATING RATING FACTOR ——— RF = 1.64
MAX. STD. PERMIT VEHICLE LOAD —— 250 KIPS

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY
SUPERSTRUCTURE ——— f'c = 4,000 PSI
ALL OTHER ——— f'c = 3,500 PSI
HIGH STRENGTH BAR STEEL
REINFORCEMENT, GRADE 60 ——— fy = 60,000 PSI
36W" PRESTRESSED GIRDERS
CONCRETE MASONRY ——— f'c = 8,000 PSI
STRANDS, 0.5" ϕ ULTIMATE
TENSILE STRENGTH ——— fy = 270,000 PSI

HYDRAULIC DATA

Q_{100} ——— 2050 C.F.S.
$Q_{REGULAROTY}$ ——— 3800 C.F.S.
VELOCITY ——— 6.49 F.P.S.
HIGH WATER ——— EL. 741.89 (100 YEAR)
HIGH WATER ——— EL. 744.61 (REGULATORY)
HIGH WATER ——— EL. 739.05 (2 YEAR)
WATERWAY AREA ——— 315.71 S.F.
DRAINAGE AREA ——— 26.4 SQ. MILES
OVERTOPPING FREQUENCY = N/A
SCOUR CRITICAL CODE = 8

TRAFFIC DATA

ADT = 560 (2014)
680 (2034)
RDS = 50 M.P.H.

LIST OF DRAWINGS

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 = 35' AT EACH ABUTMENT.

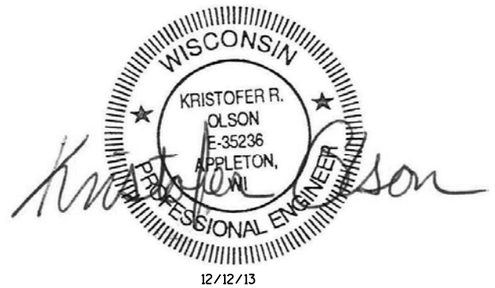
** THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

CONSULTANT CONTACT

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

BRIDGE OFFICE CONTACT

WILLIAM DREHER
(608) 266-8489



12/12/13

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
OMNNI ASSOCIATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED William C. Dreher KAR 02/18/14
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-42-127

SCHWARTZ ROAD OVER LITTLE SUAMICO RIVER

COUNTY	TOWN
OCONTO	CHASE

DESIGN SPEC.	LOAD
AASHTO LRFD BRIDGE DESIGN SPECIFICATION	HL-93

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

GENERAL PLAN

SHEET 1 OF 12

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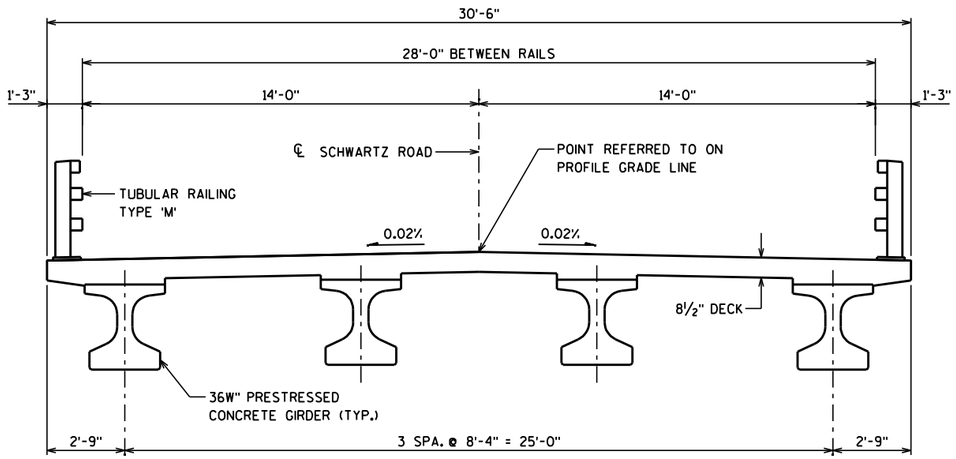
8

8



CROSS SECTION THRU ROADWAY

(LOOKING NORTH)

BENCH MARKS (NAVD 88)

NO.	STATION	DESCRIPTION	ELEV.
BM1	10+02 , 40' LT	60D SPIKE IN PP* 2619 34W18	750.45
BM2	12+41 , 35' RT	60D SPIKE IN PP* 2619 34E13	742.12
BM3	14+78 , 33' RT	60D SPIKE IN PP* 2619 34E22	751.22

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SUPER.	SOUTH ABUT.	NORTH ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STA 11+00)	LS	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES, BRIDGES B-42-127	LS	-----	-----	-----	1
210.0100	BACKFILL STRUCTURE	CY	-----	100	100	200
502.0100	CONCRETE MASONRY BRIDGES	CY	93	34	34	161
502.3200	PROTECTIVE SURFACE TREATMENT	SY	346	-----	-----	346
503.0137	PRESTRESSED GIRDER TYPE I36W-INCH	LF	324	-----	-----	324
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	-----	1,760	1,760	3,520
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	15,680	1,880	1,860	19,420
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	-----	4	4	8
506.4000	STEEL DIAPHRAGMS B-42-127	EACH	3	-----	-----	3
513.4060	RAILING TUBULAR TYPE M B-42-127	LS	1	-----	-----	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-----	6	6	12
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	-----	175	175	350
606.0300	RIPRAP HEAVY	CY	-----	145	100	245
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	-----	65	65	130
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	-----	215	150	365
	NON-BID ITEMS					
	FILLER	SIZE	-----	-----	-----	½"&¾"

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 SINGLE SPAN PPC BOX BEAM BRIDGE SUPPORTED ON CONCRETE RETAINING ABUTMENTS. THE SUPER-STRUCTURE WAS BUILT IN 1968. THE ABUTMENTS WERE BUILT AT AN UNKNOWN EARLIER DATE.

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 SUPERSTRUCTURE SHEET, WHICH IS THE MAXIMUM HAUNCH QUANTITY FOR WHICH THE CONTRACTOR WILL BE PAID.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP, SIDES, AND 1'-0" OF THE UNDERSIDE OF THE DECK, THE ENDS OF ABUTMENT DIAPHRAGMS, THE TOP OF WINGS AND THE FRONT FACE OF WINGS ABOVE FINISHED GROUND.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-42-127

DRAWN BY BRE | PLANS CK'D. KRO

CROSS SECTION & QUANTITIES

SHEET 2 OF 12

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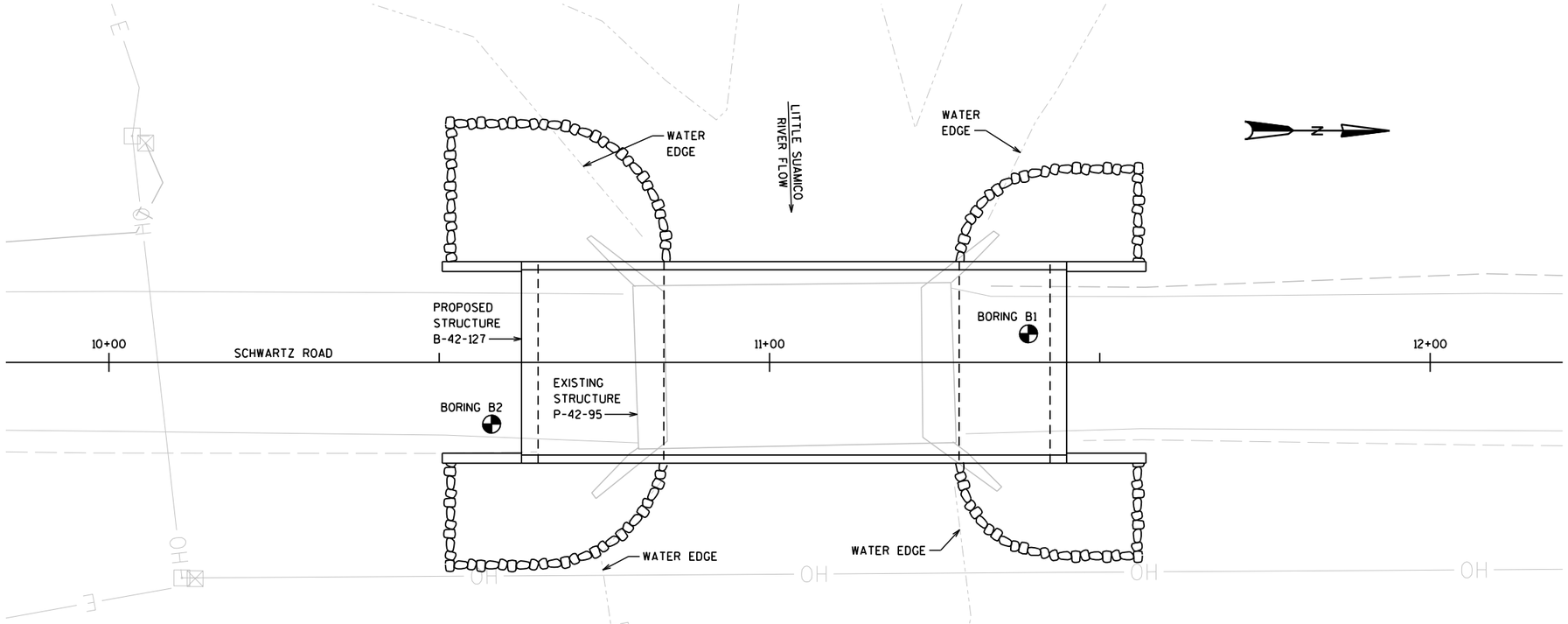
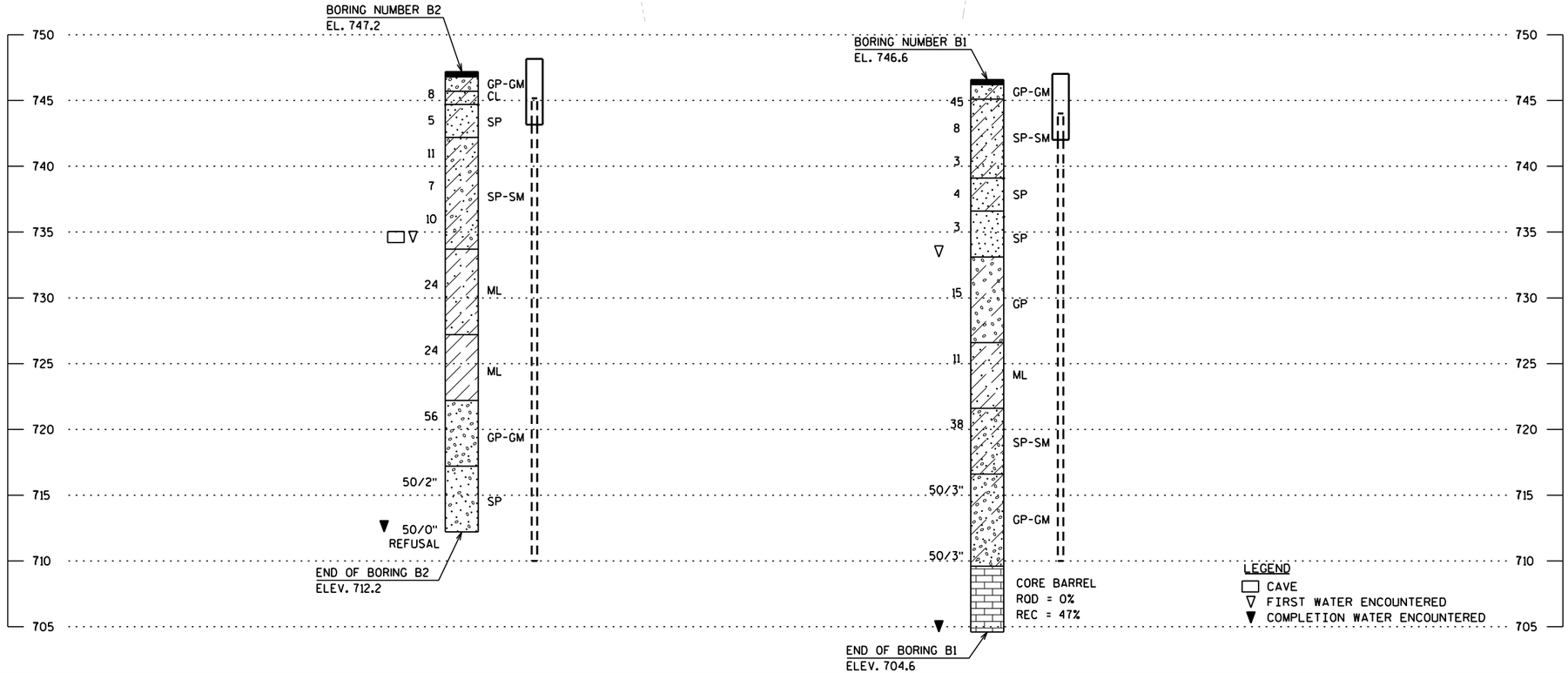
8

STATE PROJECT NUMBER
9022-03-71





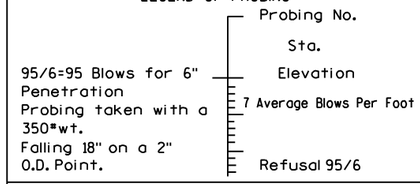
ABBREVIATIONS

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

MATERIAL SYMBOLS

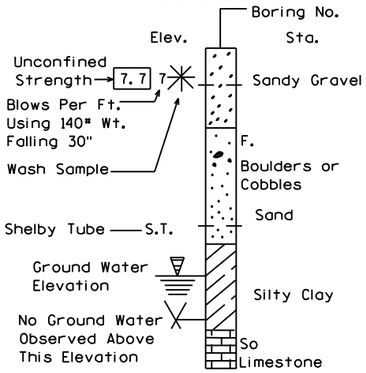
Topsoil, Silt, Sandstone
Sand, Peat, Limestone
Gravel, Clay, Igneous Rock

LEGEND OF PROBING



95/6=95 Blows for 6" Penetration
Probing taken with a 350#wt.
Falling 18" on a 2" O.D. Point.

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

STRUCTURE B-42-127

DRAWN BY BRE | PLANS CK'D. KRO

SUBSURFACE EXPLORATION

SHEET 3 OF 12

45

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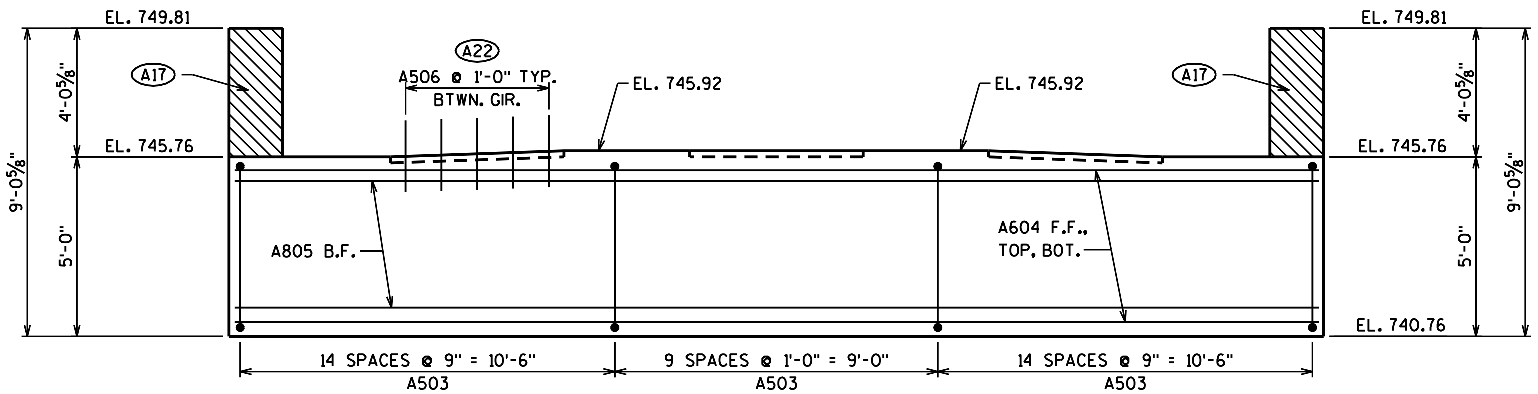
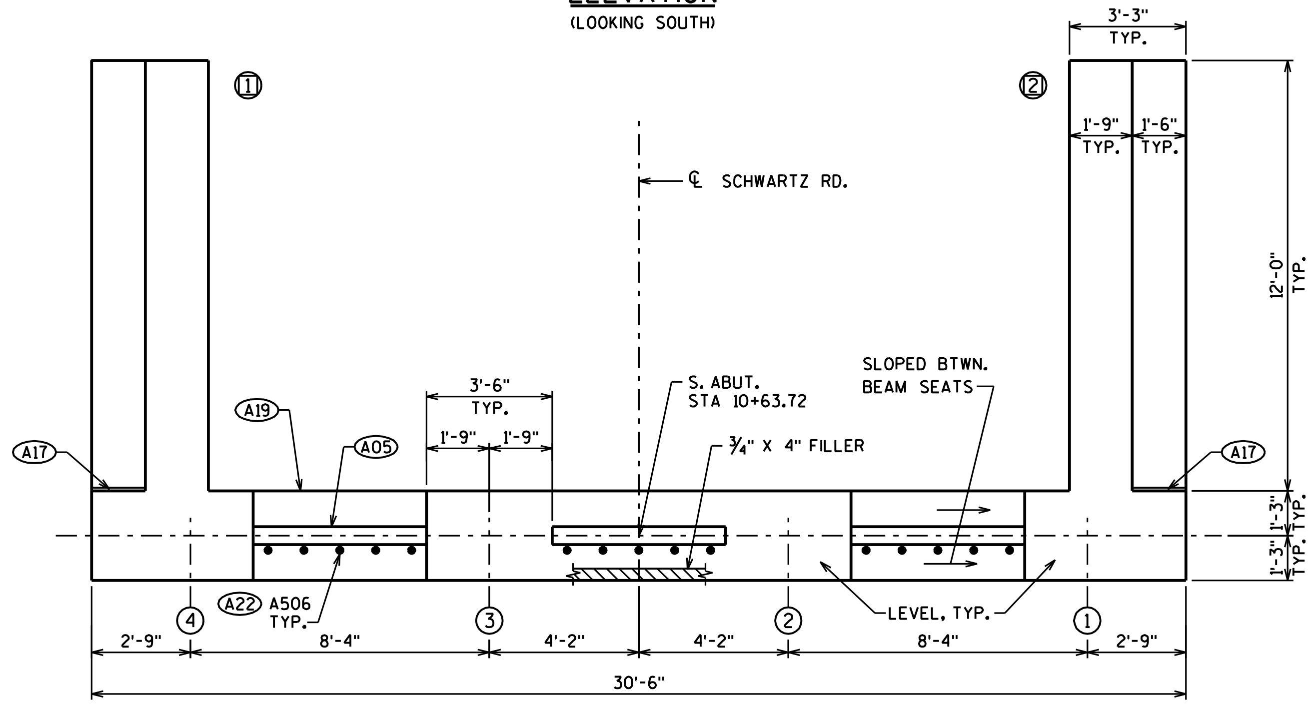
8

STATE PROJECT NUMBER
9022-03-71

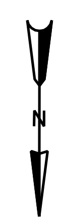


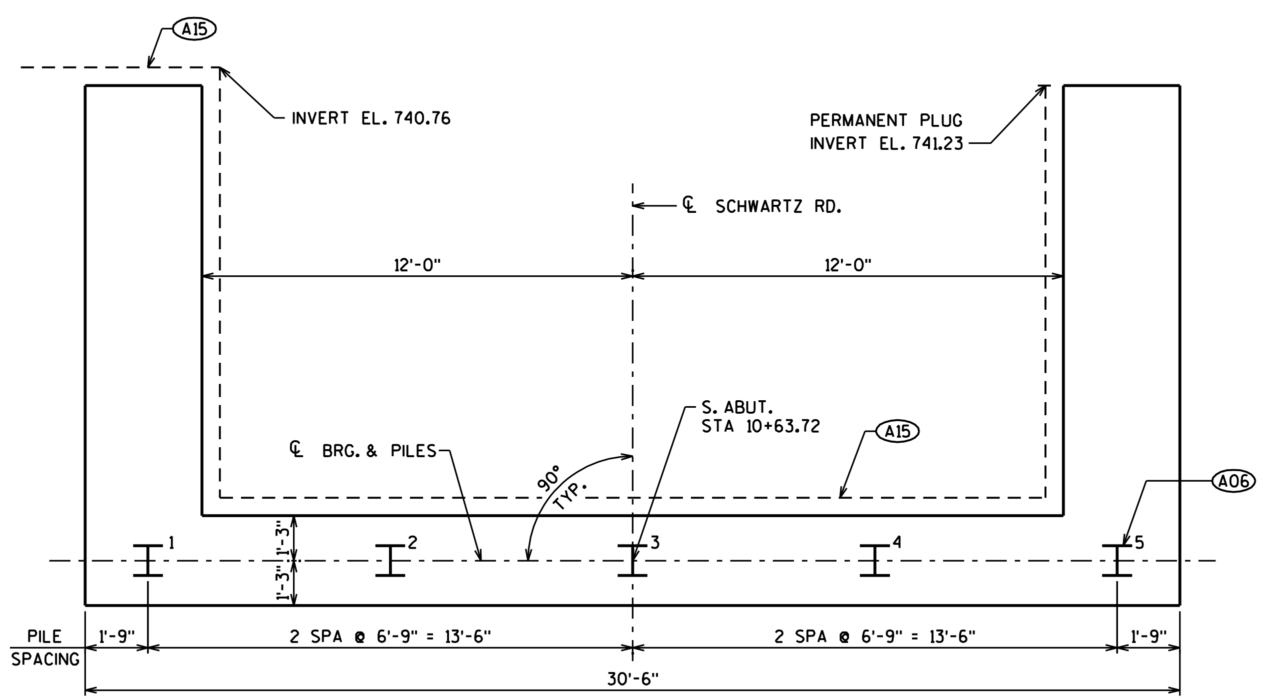
NOTE: SPACE A503 TO MISS PILING

ELEVATION
(LOOKING SOUTH)



PLAN





PILE PLAN

LEGEND

(A05) CONSTRUCTION JOINT-FORMED BY BEVELED 2 x 6 BETWEEN BEAM SEATS.

(A06) ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. ESTIMATED LENGTH = 35' AT THE SOUTH ABUTMENT.

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO EAST SLOPES. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

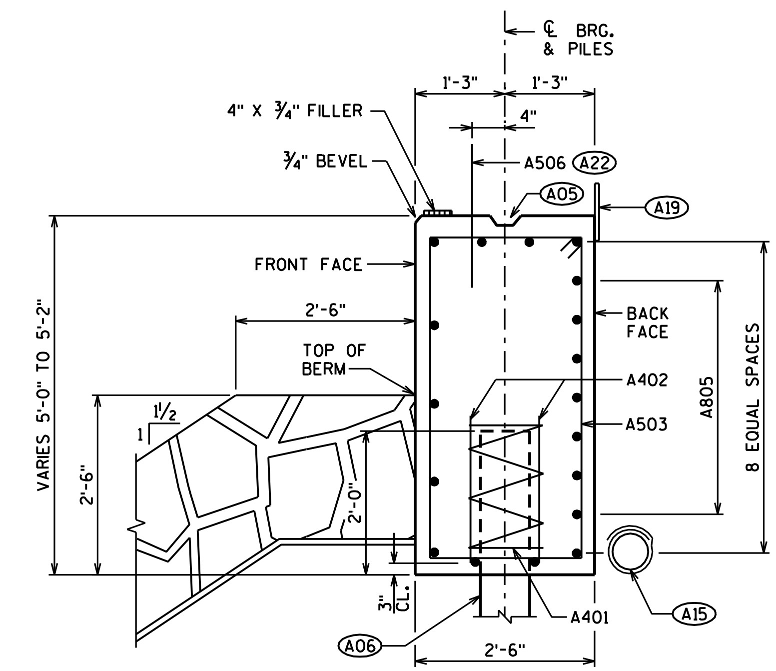
(A17) ½" FILLER INCLUDED IN WING LENGTH, SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.) EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

(A22) A506 BARS SPACED @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

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

(X) DENOTES WING NUMBER



SECTION THRU BODY
HORIZ. BARS NOT OTHERWISE IDENTIFIED ARE A604 BARS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-42-127

DRAWN BY BRE | PLANS CK'D. KRO

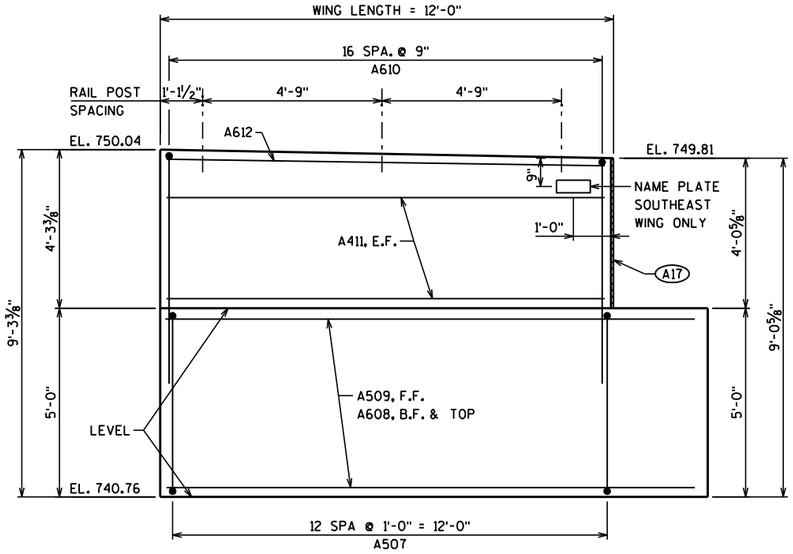
SOUTH ABUTMENT | SHEET 4 OF 12

8

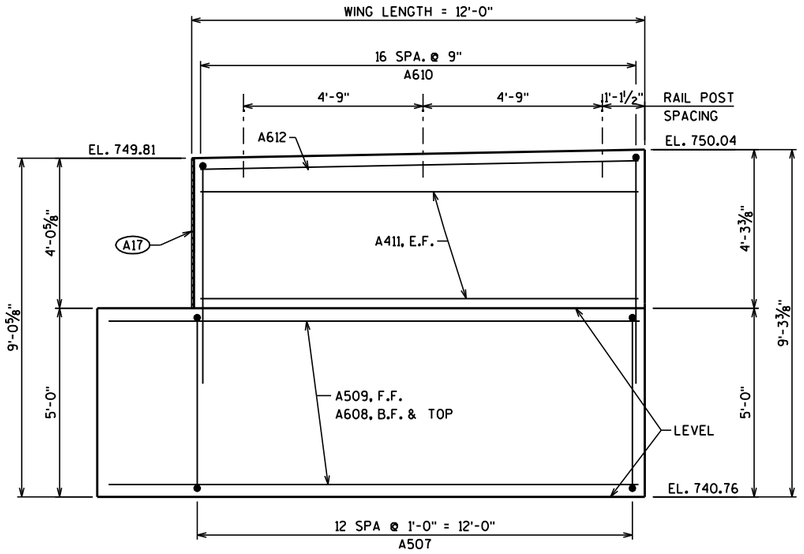
8

FILE NAME : F:±TR±JOBS±E2050A12±Sheets±Bridge±B-42-127 04 s abut.dgn   PLOT BY : olsonk   PLOT DATE: 12/11/2013   3:22:44 PM

STATE PROJECT NUMBER
9022-03-71



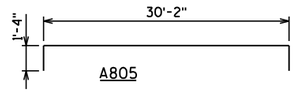
WING 1 ELEVATION

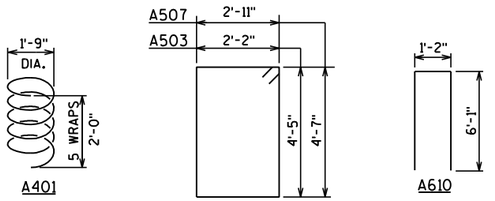


WING 2 ELEVATION

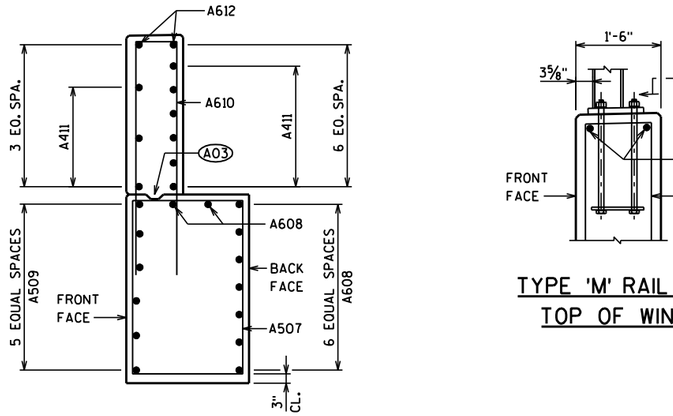
BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
A401		5	28'-0"	X	BODY - ONE PER PILE
A402		10	2'-3"		BODY - TWO PER PILE
A503		38	13'-9"	X	BODY - STIRRUPS
A604		11	30'-2"		BODY - HORIZONTAL
A805		7	32'-5"	X	BODY - HORIZONTAL B.F.
A506	X	15	2'-0"		BODY - VERTICAL, DOWEL
A507	X	26	15'-7"	X	WING - STIRRUPS
A608	X	18	13'-11"		WINGS - HORIZONTAL, B.F. & TOP
A509	X	12	14'-2"		WINGS - HORIZONTAL, F.F.
A610	X	34	13'-0"	X	WINGS - VERTICAL
A411	X	18	11'-8"		WINGS - HORIZONTAL
A612	X	4	11'-8"		WINGS - HORIZONTAL, TOP

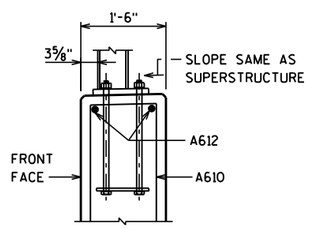




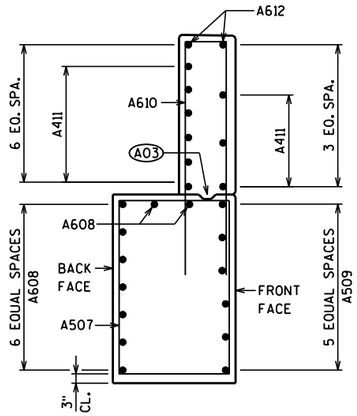
BAR BENDING DIAGRAMS



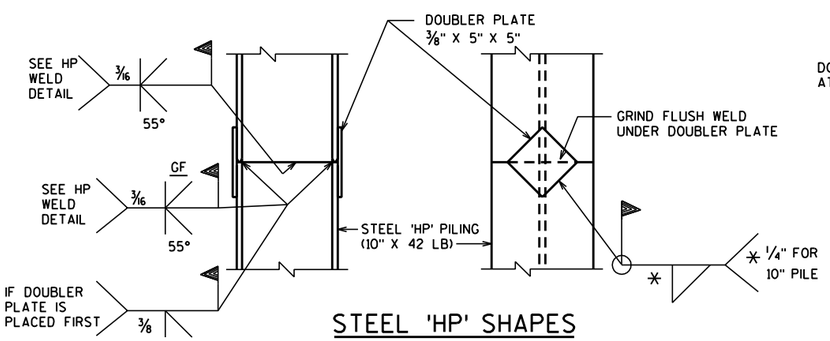
WING 1 SECTION



TYPE 'M' RAIL AT TOP OF WING

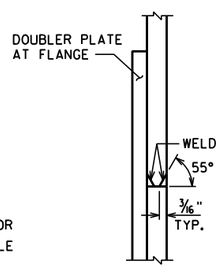


WING 2 SECTION

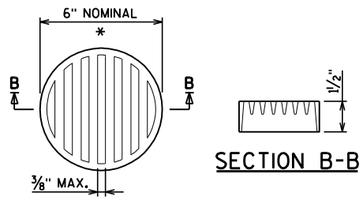


STEEL 'HP' SHAPES

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



HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR



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:

(A03) 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.)

(A17) 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.) EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-42-127

DRAWN BY BRE | PLANS CK'D. KRO

SOUTH ABUTMENT DETAILS

SHEET 5 OF 12

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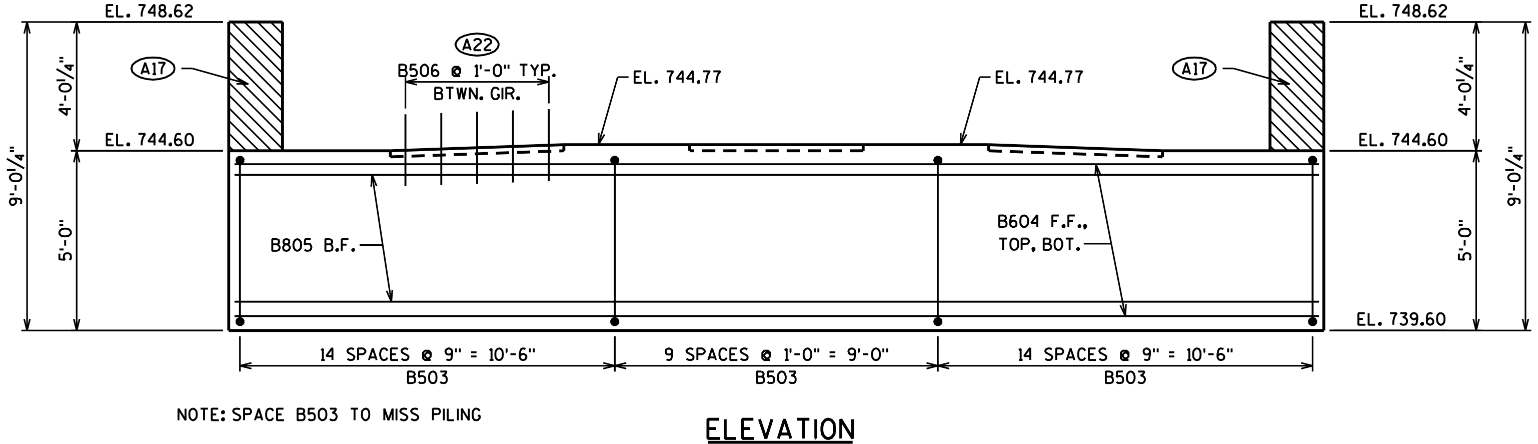
8

8

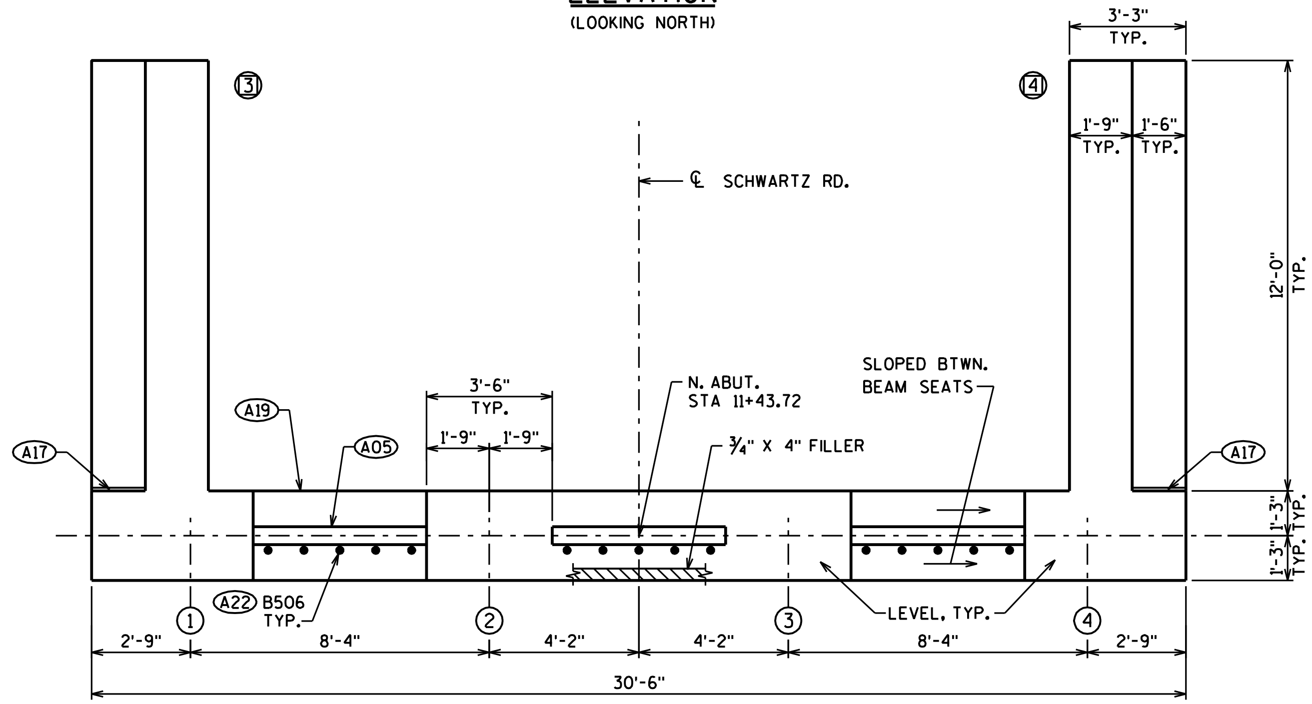
STATE PROJECT NUMBER

9022-03-71

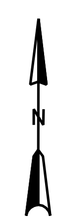


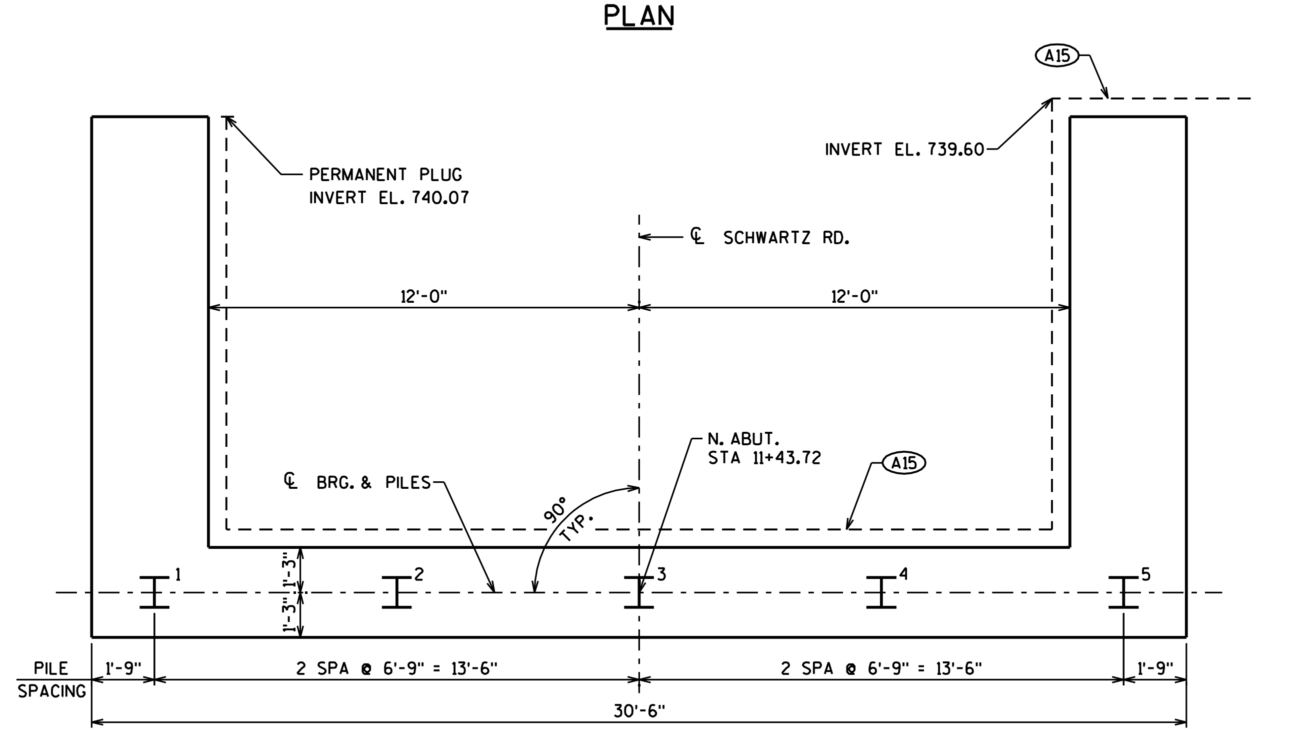
ELEVATION

(LOOKING NORTH)



PLAN





PILE PLAN

LEGEND

A05 CONSTRUCTION JOINT-FORMED BY BEVELED 2 x 6 BETWEEN BEAM SEATS.

A06 ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. ESTIMATED LENGTH = 35' AT THE NORTH ABUTMENT.

A15 PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO EAST SLOPES. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

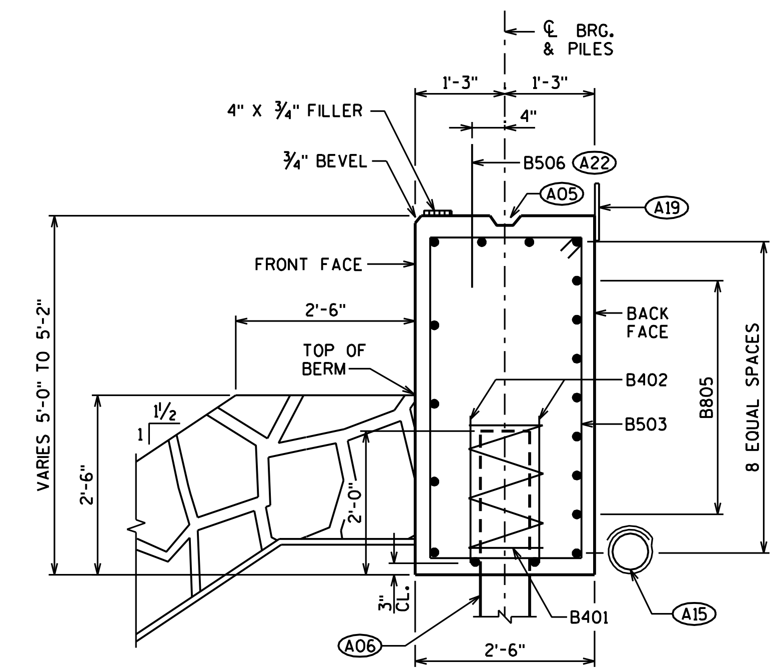
A17 ½" FILLER INCLUDED IN WING LENGTH, SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.) EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

A19 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

A22 B506 BARS SPACED @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

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

(X) DENOTES WING NUMBER



SECTION THRU BODY

HORIZ. BARS NOT OTHERWISE IDENTIFIED ARE B604 BARS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURE B-42-127

DRAWN BY BRE | PLANS CK'D. KRO

NORTH ABUTMENT

SHEET 6 OF 12

8

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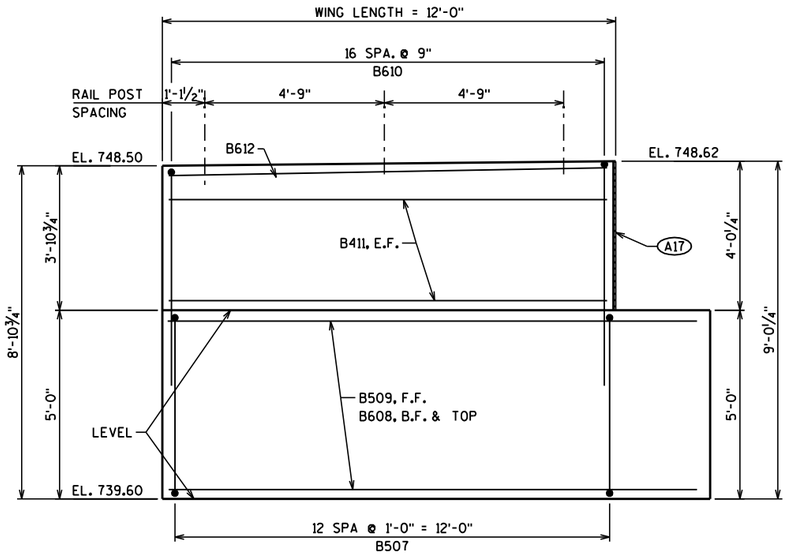
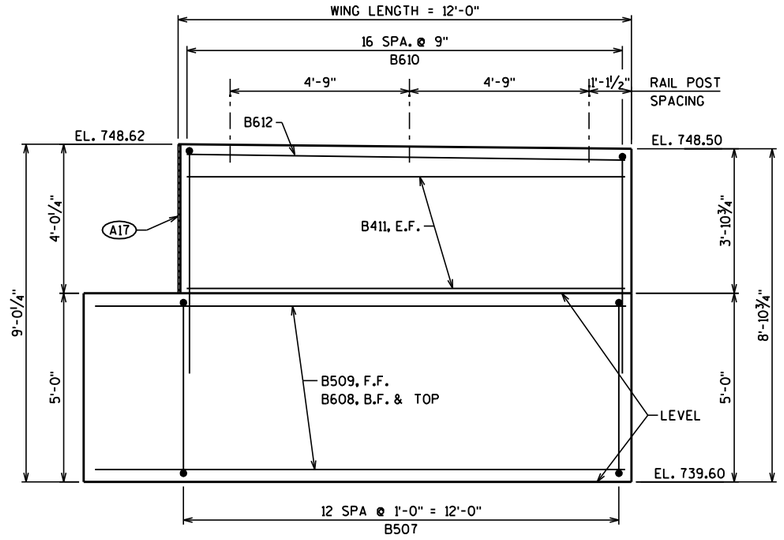
FILE NAME : F:±TR±JOBS±E2050A12±Sheets±Bridge±B-42-127 06 n abut.dgn   PLOT BY : olsonk   PLOT DATE: 12/11/2013   3:35:43 PM

STATE PROJECT NUMBER
9022-03-71



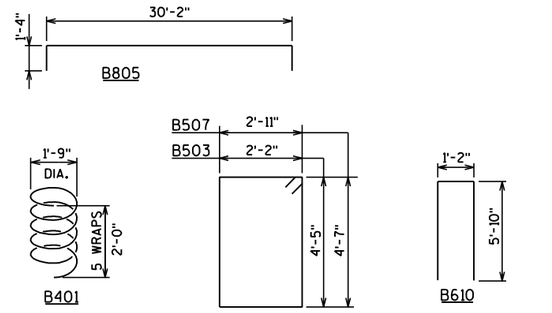
WING 3 ELEVATION



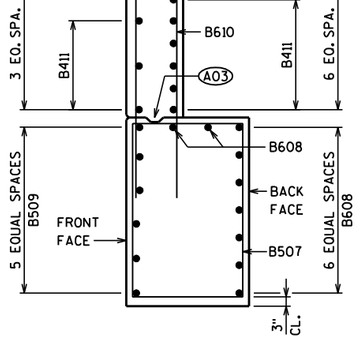
WING 4 ELEVATION

BILL OF BARS

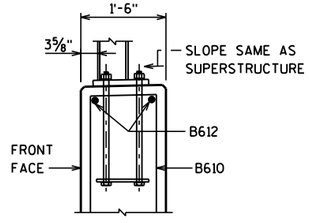
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
B401		5	28'-0"	X	BODY - ONE PER PILE
B402		10	2'-3"		BODY - TWO PER PILE
B503		38	13'-9"	X	BODY - STIRRUPS
B604		11	30'-2"		BODY - HORIZONTAL
B805		7	32'-5"	X	BODY - HORIZONTAL B.F.
B506	X	15	2'-0"		BODY - VERTICAL, DOWEL
B507	X	26	15'-7"	X	WINGS - STIRRUPS
B608	X	18	13'-11"		WINGS - HORIZONTAL, B.F. & TOP
B509	X	12	14'-2"		WINGS - HORIZONTAL, F.F.
B610	X	34	12'-6"	X	WINGS - VERTICAL
B411	X	18	11'-8"		WINGS - HORIZONTAL
B612	X	4	11'-8"		WINGS - HORIZONTAL, TOP



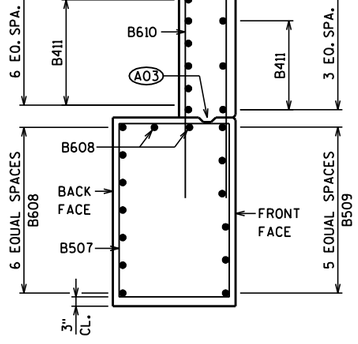
BAR BENDING DIAGRAMS



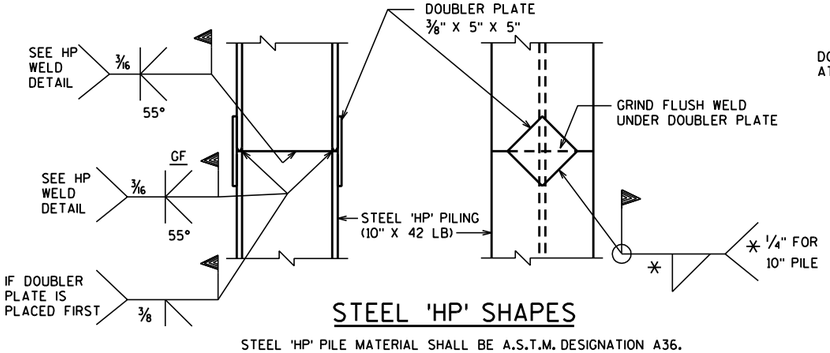
WING 3 SECTION



TYPE 'M' RAIL AT TOP OF WING

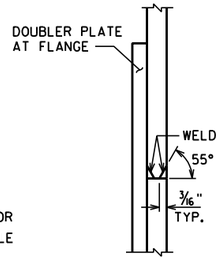


WING 4 SECTION

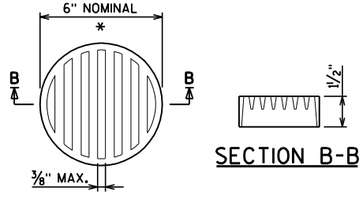


STEEL 'HP' SHAPES

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



HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR



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:

(A03) 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.)

(A17) 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.) EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

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STATE OF WISCONSIN
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STRUCTURE B-42-127

DRAWN BY BRE | PLANS CK'D. KRO

NORTH ABUTMENT DETAILS

SHEET 7 OF 12

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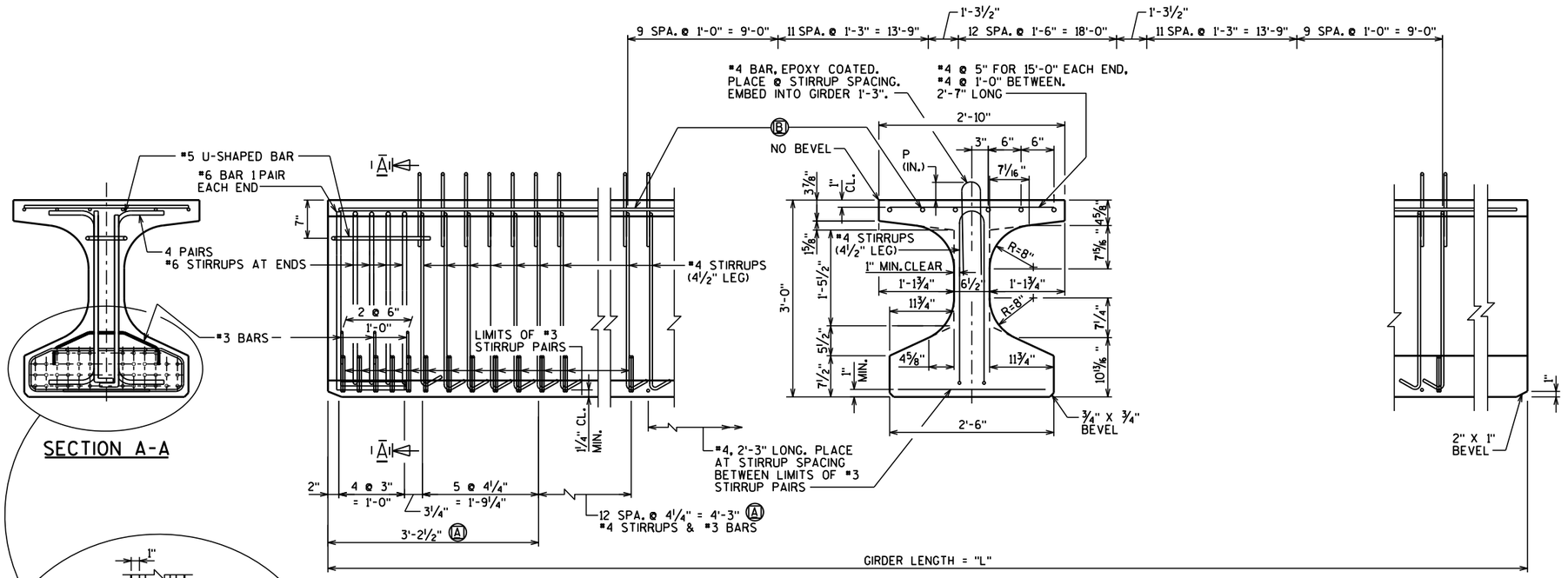
FILE NAME : F:±TR±JOBS±E2050A12±Sheets±Bridge±B-42-127 07 n abut det.dgn
PLOT BY : olsonk PLOT DATE: 12/11/2013 3:40:06 PM

STATE PROJECT NUMBER
9022-03-71

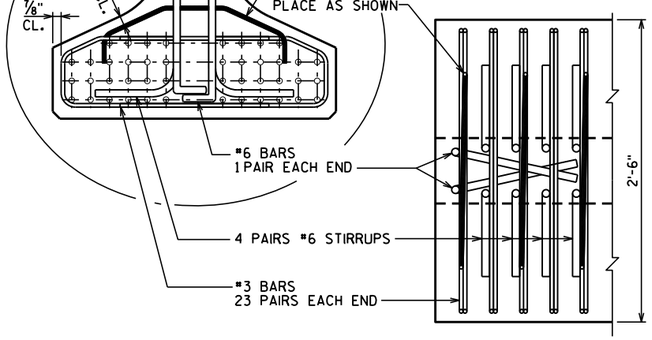


SECTION A-A

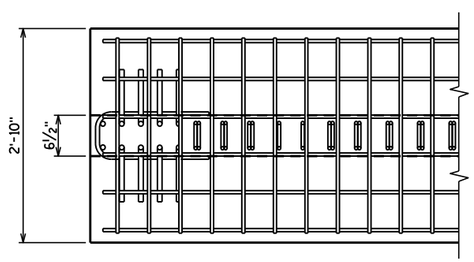
SIDE VIEW & TYP. SECTION IN SPAN

(A) DETAIL TYP. AT EACH END

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



BOTTOM FLANGE

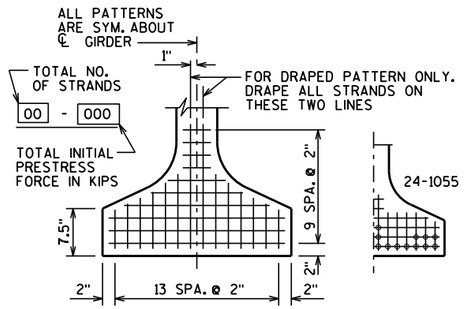


TOP FLANGE

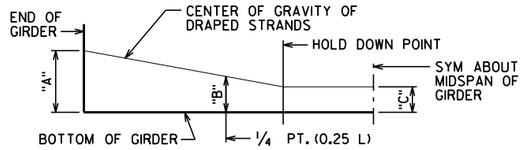
* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	2.14

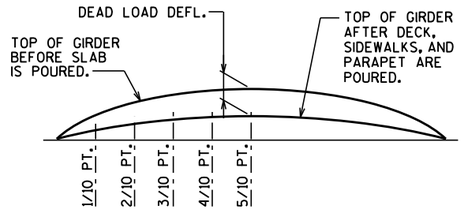
THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS. THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



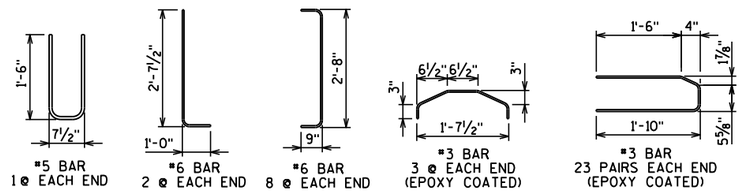
TYP. STRAND PATTERN



DRAPED STRAND PROFILE



DEAD LOAD DEFLECTION DIAGRAM



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.

* 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	81.0'	0.43	0.83	1.15	1.36	1.42	1.36	1.15	0.83	0.43	8,000	7"	7"	7"	0.6	24	6,800	32	11"	14"	4	---	---

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-42-127

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36W" PRESTRESSED GIRDER DETAILS

SHEET 8 OF 12

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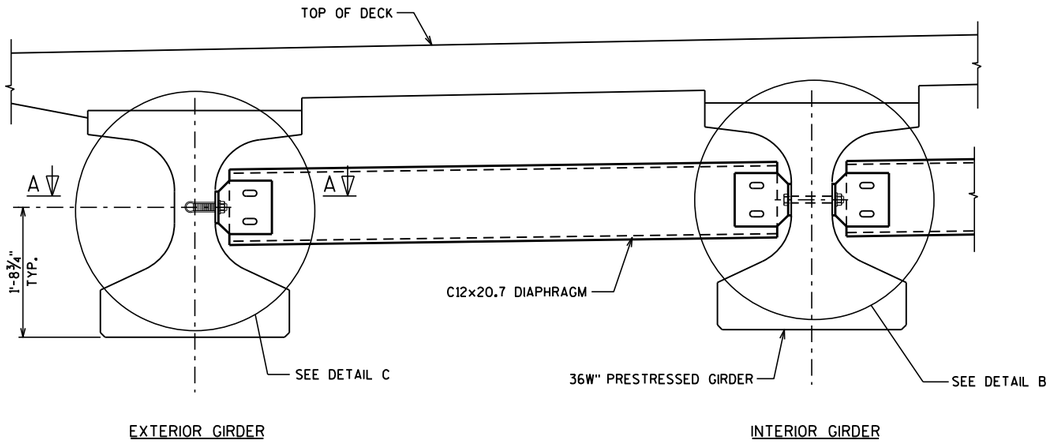
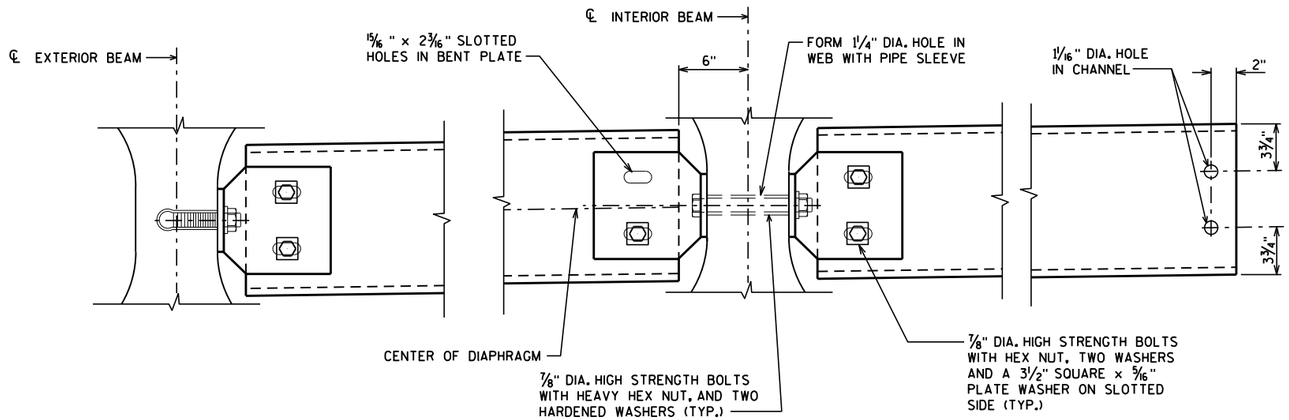


EXTERIOR GIRDER

INTERIOR GIRDER

PART TRANSVERSE SECTION AT DIAPHRAGM



DETAIL C

DETAIL B

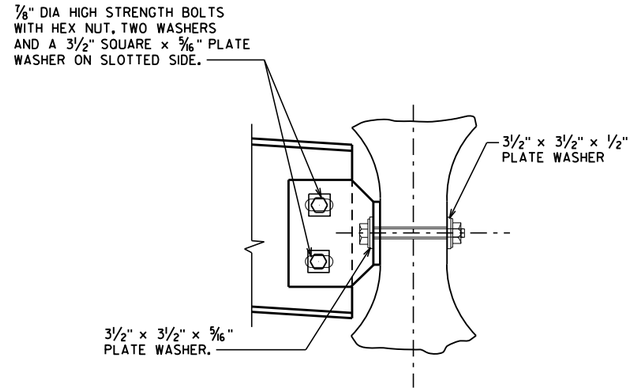
NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-42-127", EACH.

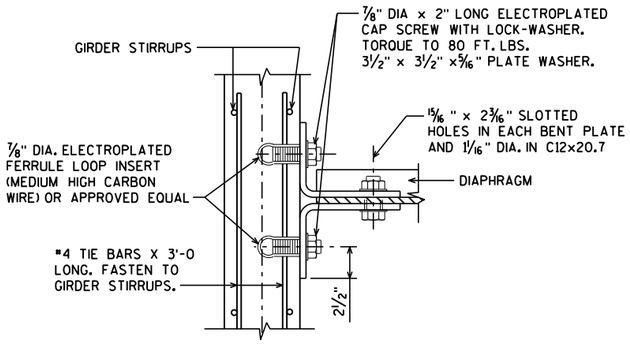
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

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.

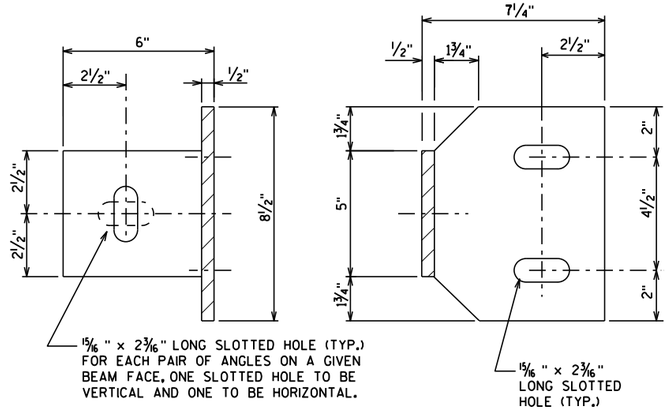


SECTION AT INTERIOR GIRDERS THRU DIAPHRAGM FOR SKEW ANGLES > 10°



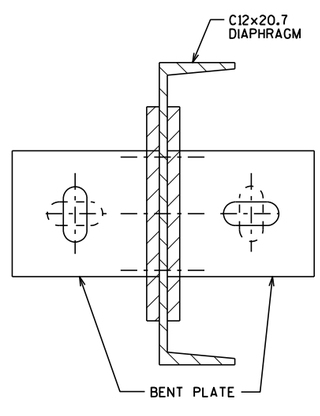
SECTION A-A

(FOR EXTERIOR ATTACHMENT)



BEAM FACE

DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-42-127

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STEEL DIAPHRAGMS

SHEET 9 OF 12

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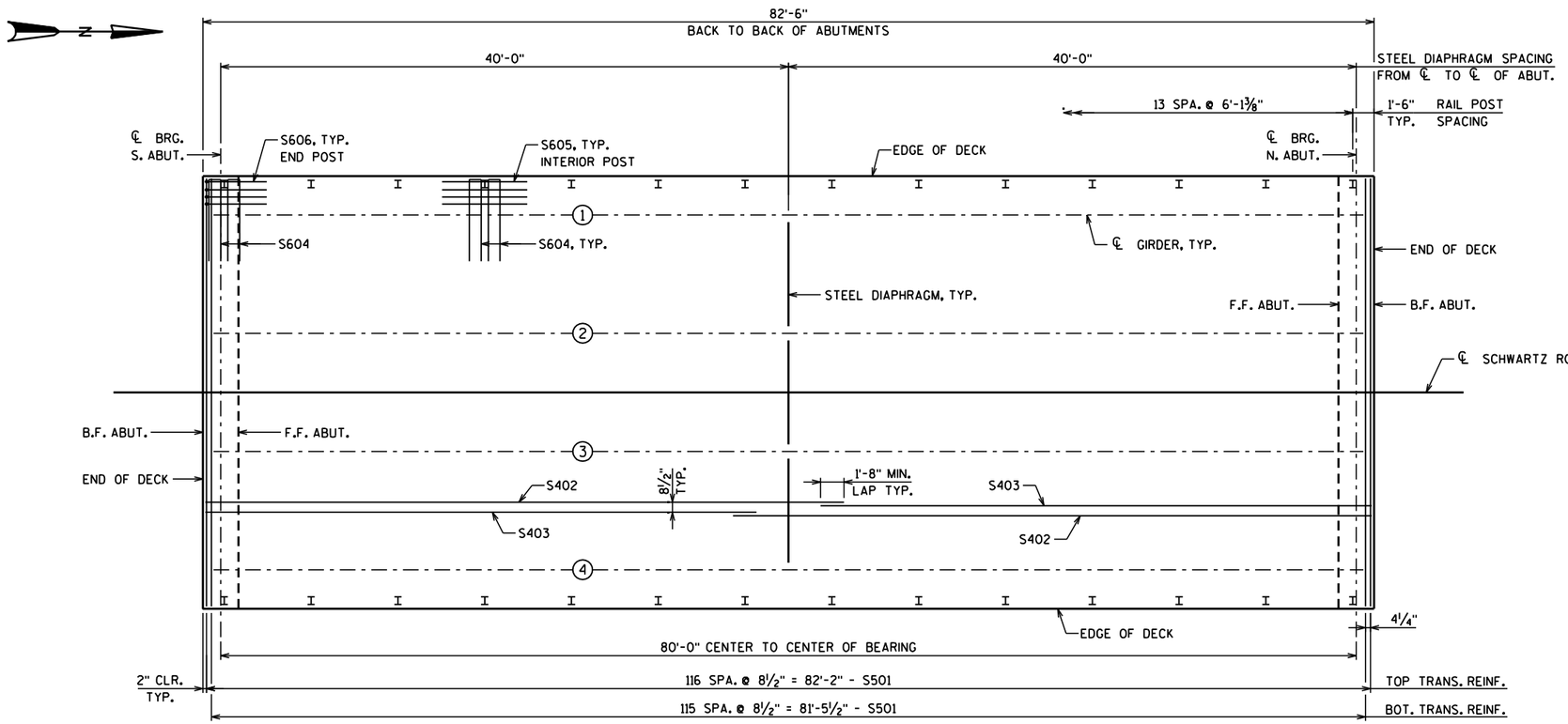
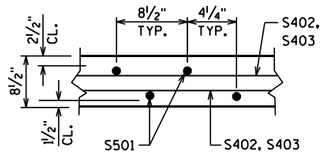
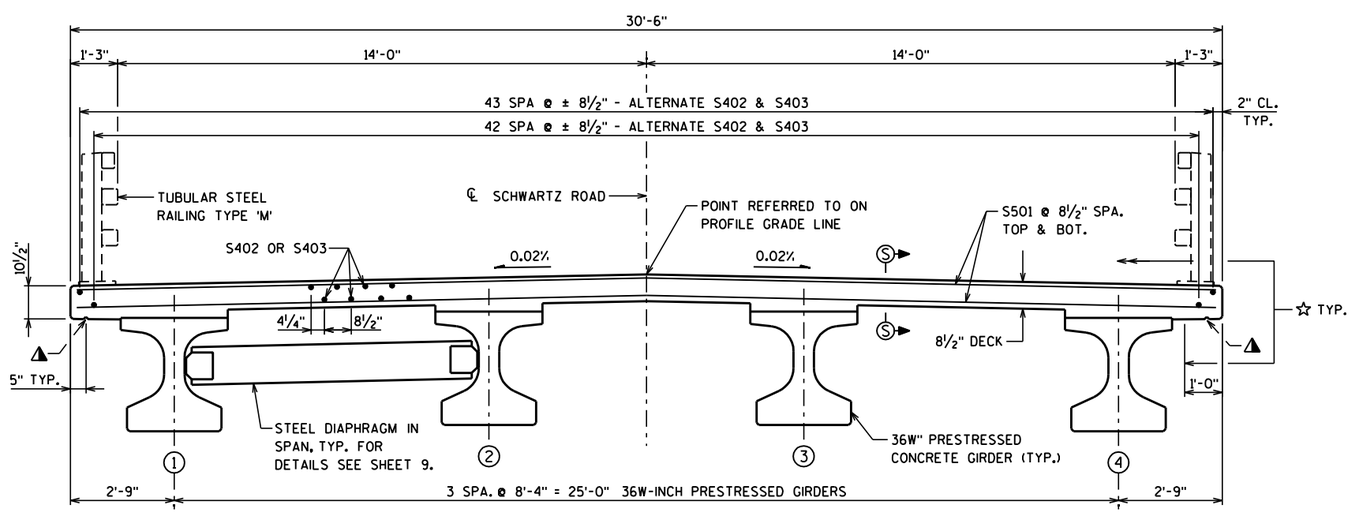


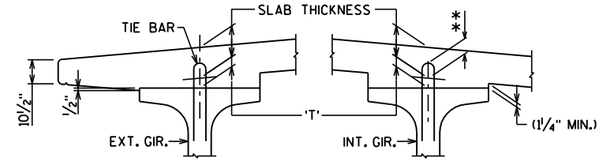
SUPERSTRUCTURE PLAN



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 3" 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.

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-42-127

DRAWN BY BRE | PLANS CK'D. KRO

SUPERSTRUCTURE

SHEET 10 OF 12

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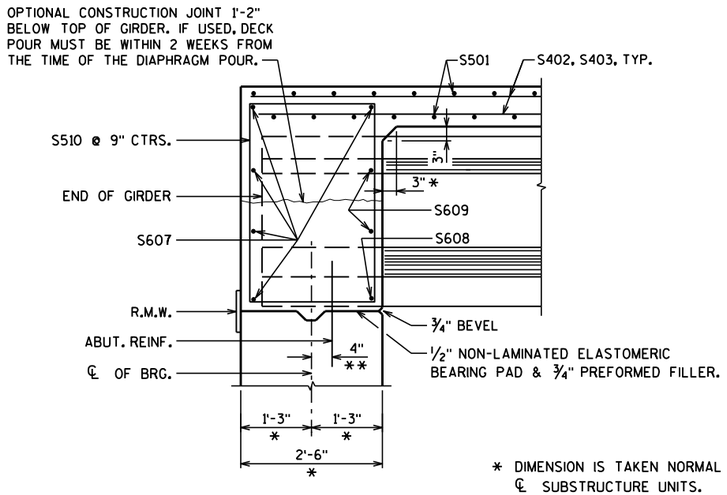
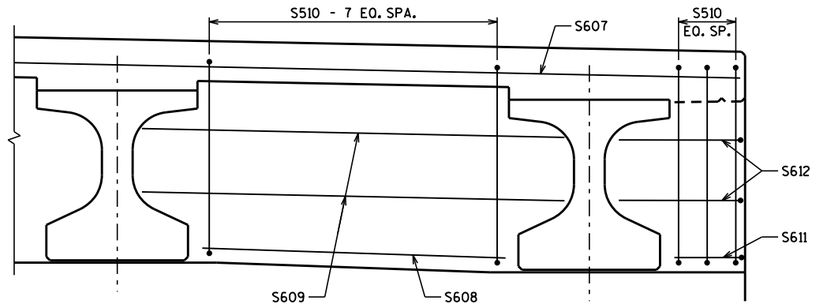


PART LONGIT. SECTION

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

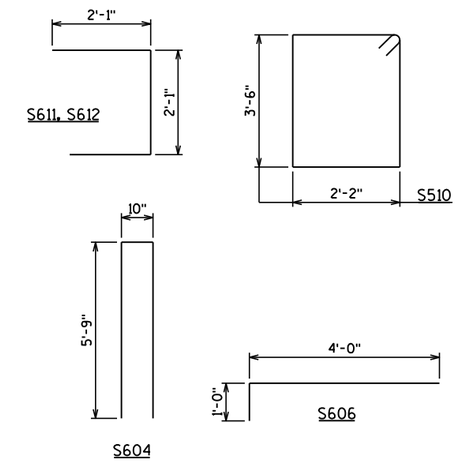
** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.



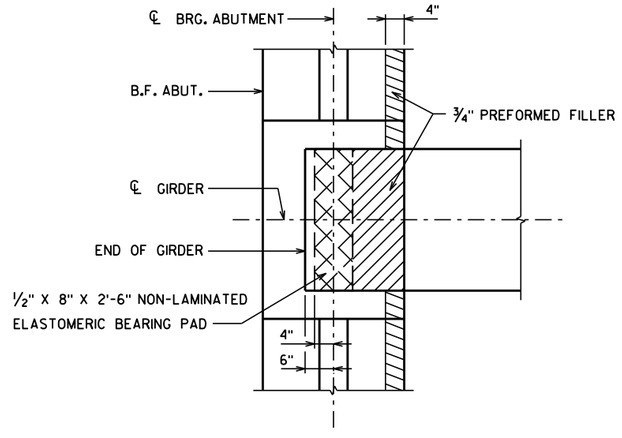
DIAPHRAGM DETAILS AT ABUTMENT

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
S501	X	233	30'-2"		TRANS. TOP & BOT.
S402	X	87	45'-0"		LONG. TOP & BOTTOM
S403	X	87	38'-10"		LONG. TOP & BOTTOM
S604	X	56	12'-0"	X	AT RAIL POST
S605	X	96	6'-0"		AT INTERIOR RAIL POST
S606	X	16	4'-10"	X	AT END RAIL POST
S607	X	10	30'-2"		DIAPH. HORIZONTAL, B.F. & TOP
S608	X	6	5'-6"		DIAPH. HORIZONTAL, F.F.
S609	X	12	7'-5"		DIAPH. HORIZONTAL, F.F.
S510	X	60	11'-11"	X	DIAPH. STIRRUPS VERTICAL
S611	X	4	5'-0"	X	DIAPH. HORIZONTAL, ENDS
S612	X	8	5'-11"	X	DIAPH. HORIZONTAL, ENDS



BAR BEND DIAGRAMS



BEARING PAD DETAIL

TOP OF DECK ELEVATIONS

LOCATION	S.ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	N. ABUT.
W. EDGE	749.79	749.64	749.51	749.37	749.25	749.13	749.02	748.91	748.81	748.72	748.63
GIRDER 1	749.84	749.70	749.56	749.43	749.30	749.18	749.07	748.97	748.87	748.77	748.69
GIRDER 2	750.01	749.87	749.73	749.60	749.47	749.35	749.24	749.13	749.03	748.94	748.85
GIRDER 3	750.01	749.87	749.73	749.60	749.47	749.35	749.24	749.13	749.03	748.94	748.85
GIRDER 4	749.84	749.70	749.56	749.43	749.30	749.18	749.07	748.97	748.87	748.77	748.69
E. EDGE	749.79	749.64	749.51	749.37	749.25	749.13	749.02	748.91	748.81	748.72	748.63

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-42-127

DRAWN BY BRE | PLANS CK'D. KRO

SUPERSTRUCTURE DETAILS

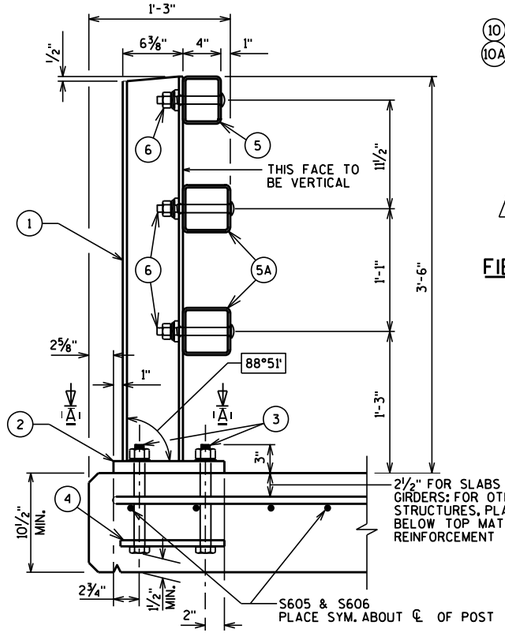
SHEET 11 OF 12

53

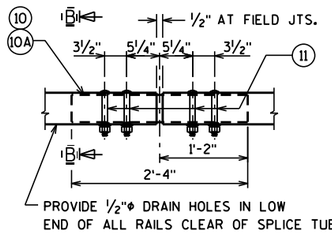
8

8

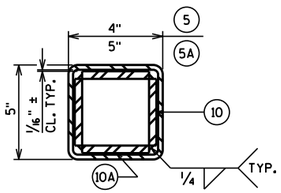
STATE PROJECT NUMBER
9022-03-71



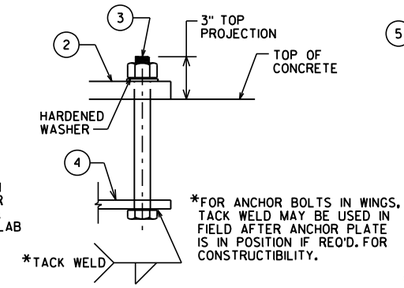
SECTION THRU RAILING ON DECK



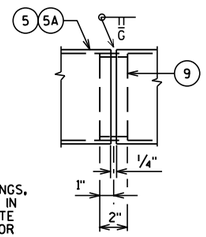
FIELD ERECTION JOINT DETAIL



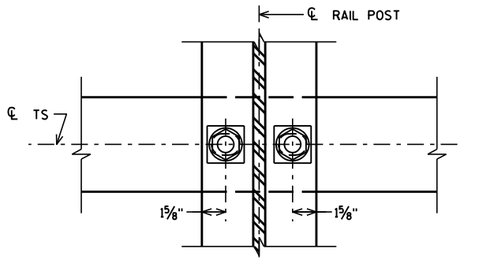
SECTION B-B



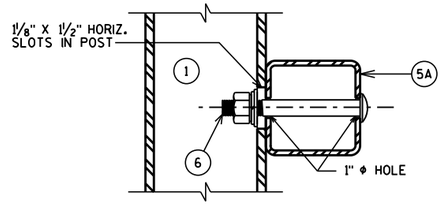
ANCHOR BOLTS



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



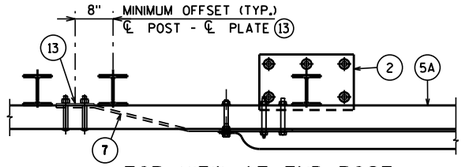
SECTION THRU POST WEB



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)

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 1'-1¼" x 1'-1¾" x 1'-8" WITH 1⅝" X 1⅝" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE

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

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

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

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

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

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

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

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

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

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

(11) ⅞" ϕ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16" X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 15/16" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.

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

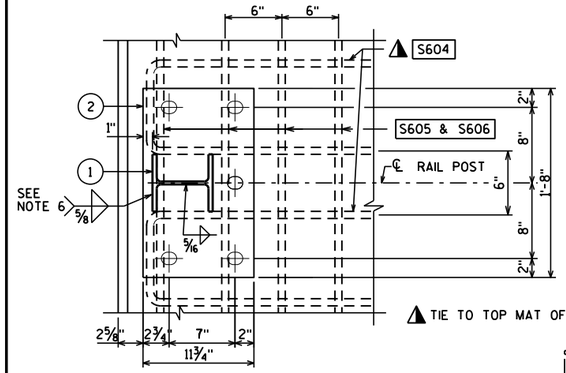
(13) ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.

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

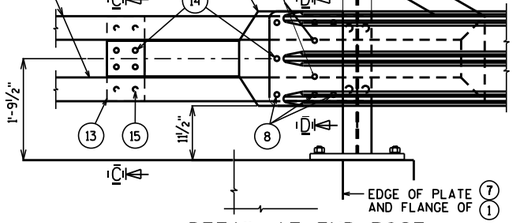
(15) 1" ϕ HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. 4 HOLES IN TUBES.

GENERAL NOTES

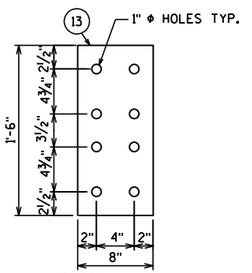
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M (B-42-127)" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR 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.



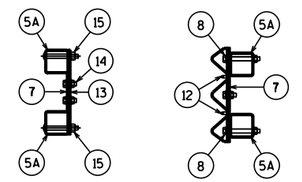
SECTION A-A



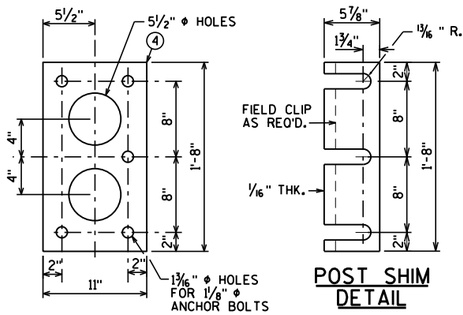
DETAIL AT END POST
(THRIE BEAM RAIL ATTACHMENT)



ANCHOR PLATE
AT BEAM GUARD ATTACHMENT

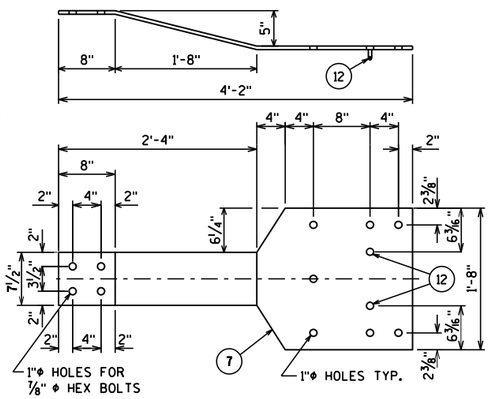


SECTION C-C SECTION D-D

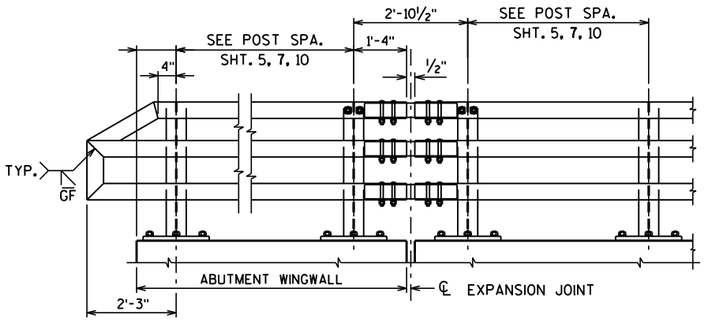


ANCHOR PLATE
AT RAIL TO DECK CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL
AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-42-127

DRAWN BY BRE | PLANS CK'D. KRO

RAILING TUBULAR TYPE 'M'

SHEET 12 OF 12

54

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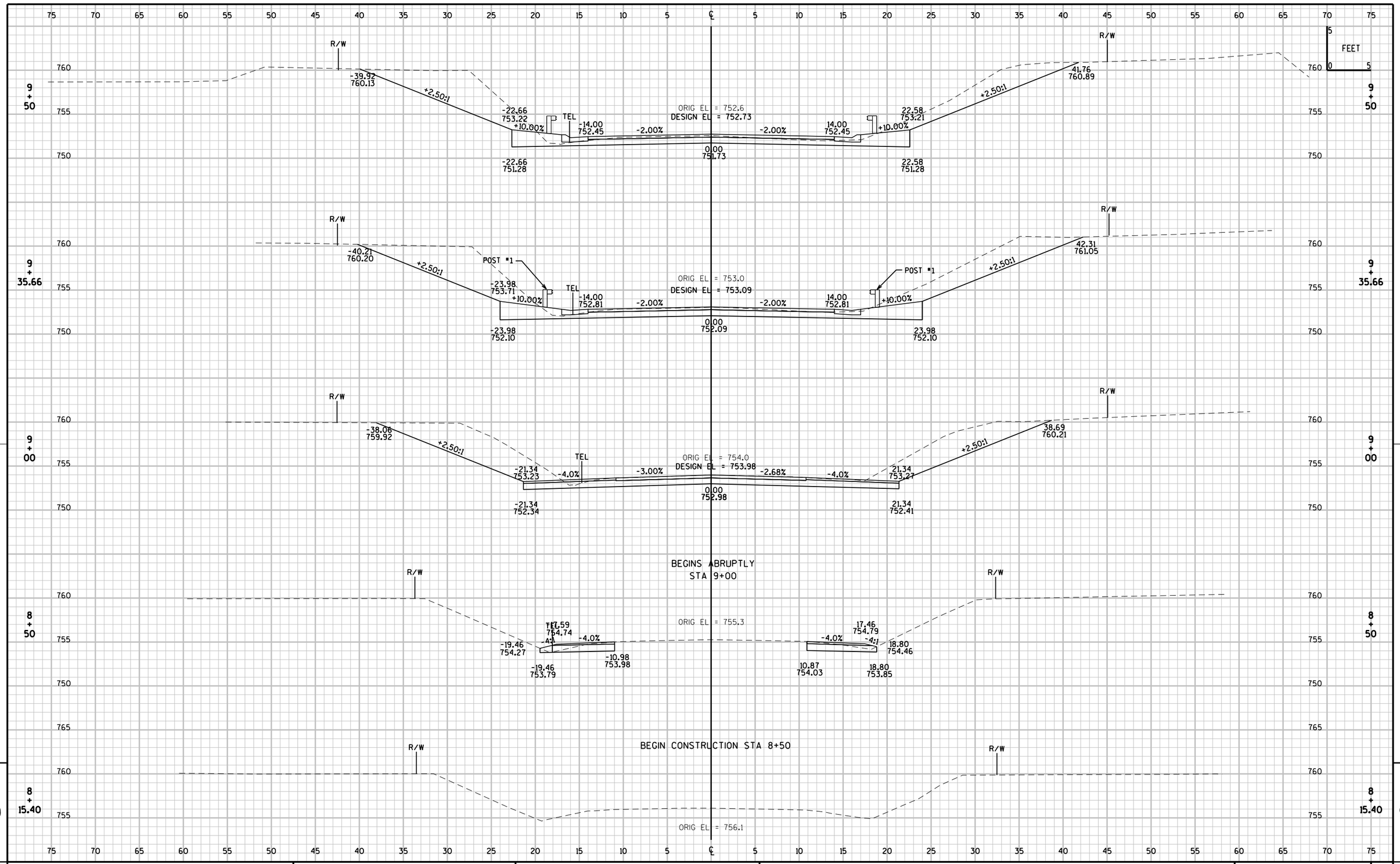
SCHWARTZ ROAD - SOUTH

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	
8+50.00	11	0	0	0	0	0	0	0	0
9+00.00	131	0	0	131	0	0	131	0	131
9+35.66	131	11	0	173	7	0	304	0	297
9+50.00	96	11	0	60	6	0	365	0	352
9+60.66	96	11	0	38	4	0	403	0	385
9+85.66	1	11	9	45	10	4	448	5	415
10+00.00	0	11	27	0	6	10	448	18	397
10+25.00	0	11	62	0	10	41	448	71	333
10+62.47	0	11	62	0	15	86	448	183	206
STRUCTURE	0	0	0	0	0	0	448	183	206
ENDS ABRUPTLY	0	0	0	0	0	0	448	183	206

SCHWARTZ ROAD - NORTH

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
11+44.97	0	11	233	0	0	0	0	0	0
12+00.00	0	11	233	0	22	475	0	617	-640
12+21.79	0	11	238	0	9	190	0	864	-896
12+46.79	0	11	280	0	10	240	0	1176	-1218
12+71.78	0	11	297	0	10	267	0	1523	-1575
13+00.00	0	11	312	0	11	318	0	1937	-2000
13+70.00	0	11	180	0	29	638	0	2766	-2858
14+00.00	0	11	111	0	12	162	0	2976	-3080
14+50.00	0	11	296	0	20	377	0	3466	-3591
15+00.00	30	11	0	28	20	274	28	3823	-3939



PROJECT NO: 9022-03-71	HWY: SCHWARTZ RD	COUNTY: OCONTO	CROSS SECTIONS: SCHWARTZ ROAD	SHEET E

FILE NAME : F:\TR\JOBS\E2050A12\Sheets\Plan\90220371_090201_xs.dgn PLOT DATE : 3/6/2014 1:41:21 PM PLOT BY : OMNNI - olsonk PLOT NAME : PLOT SCALE : 2.00 " / IN.
WISDOT/CADDS SHEET 21

FEET 0 5

10 + 25

ORIG EL = 748.7
DESIGN EL = 750.89

-14.00 750.61
-17.90 750.45
-4:1
-4.00%
-2.00%
-2.00%
14.00 750.61
17.89 750.45
-4.00%
-4:1
-2.50:1
-2.50:1
R/W
TLE
-21.91 749.45
21.90 749.45
-30.07 746.18
25.49 748.01
0.00 749.89

10 + 00

ORIG EL = 750.0
DESIGN EL = 751.48

R/W
ELEC
R/W
-14.17 751.20
-18.09 751.04
TEL
-4:1
-3:1
-4.00%
-2.00%
-2.00%
14.17 751.20
18.10 751.04
-4.00%
-4:1
+2.00:1
-23.56 749.55
-22.10 750.04
22.11 750.04
23.72 750.84
0.00 750.48

9 + 85.66

ORIG EL = 750.8
DESIGN EL = 751.84

R/W
POST "9
ELEC
R/W
TEL
POST "9
-19.90 751.42
-11.64%
-14.00 751.56
-2.00%
-2.00%
14.00 751.56
19.90 751.19
-18.91%
-19.90 750.44
0.00 750.84
19.90 750.44
EXISTING PAVEMENT TO BE REMOVED AS EXCAVATION COMMON, TYP

9 + 60.66

ORIG EL = 752.0
DESIGN EL = 752.47

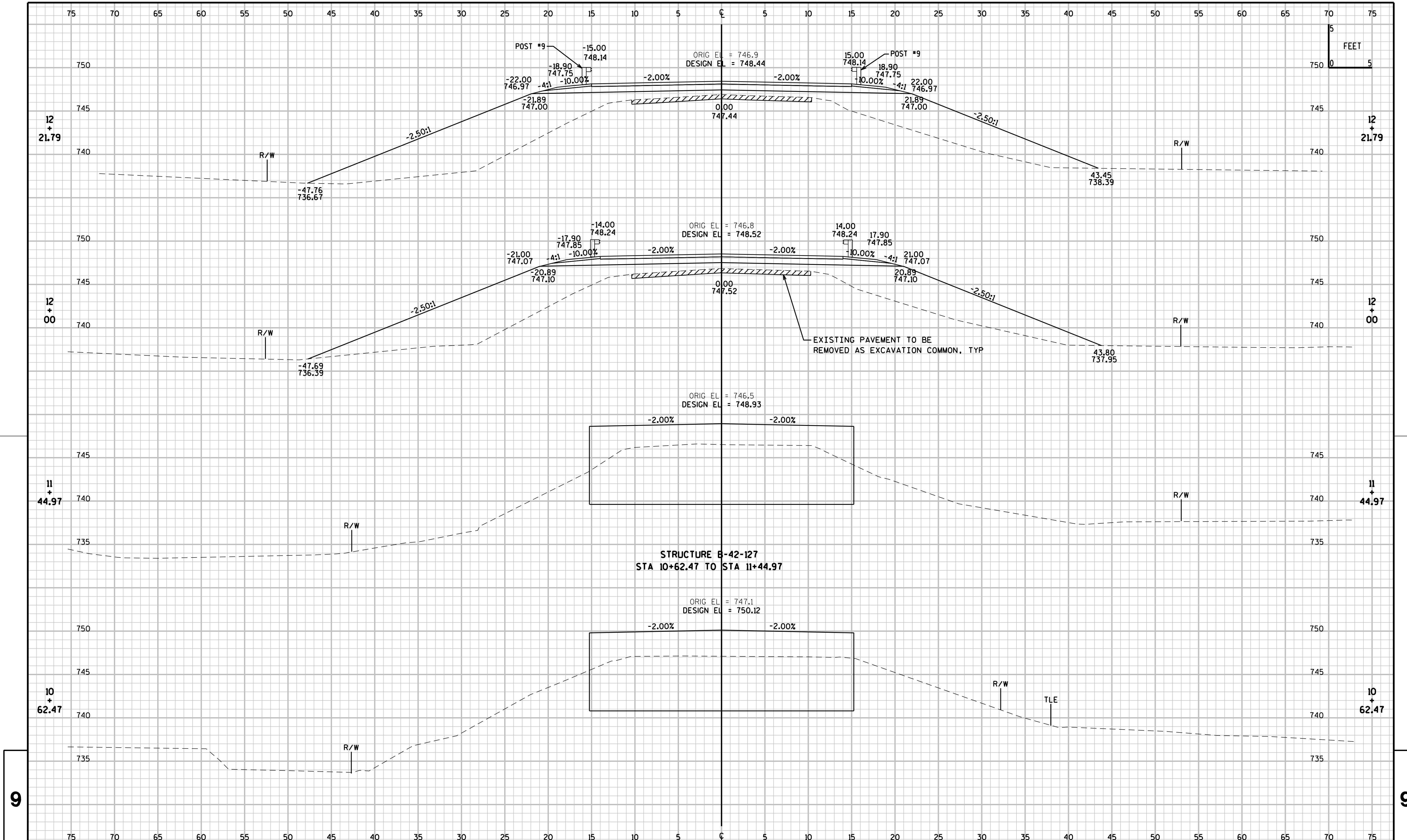
R/W
-39.25 759.98
+2.50:1
POST "5
ELEC
R/W
+2.50:1
TEL
POST "5
-21.36 752.82
+10.00%
-14.00 752.18
-2.00%
-2.00%
14.00 752.18
21.28 752.82
+10.00%
40.30 760.43
-21.36 751.04
0.00 751.46
21.28 751.04

9

PROJECT NO: 9022-03-71	HWY: SCHWARTZ RD	COUNTY: OCONTO	CROSS SECTIONS: SCHWARTZ ROAD	SHEET 57 E

FILE NAME : F:\TR\JOBS\E2050A12\Sheets\Plan\90220371_090202_xs.dgn PLOT DATE : 3/6/2014 1:45:27 PM PLOT BY : OMNNI- olsonk PLOT NAME : PLOT SCALE : 2.00 " / IN.

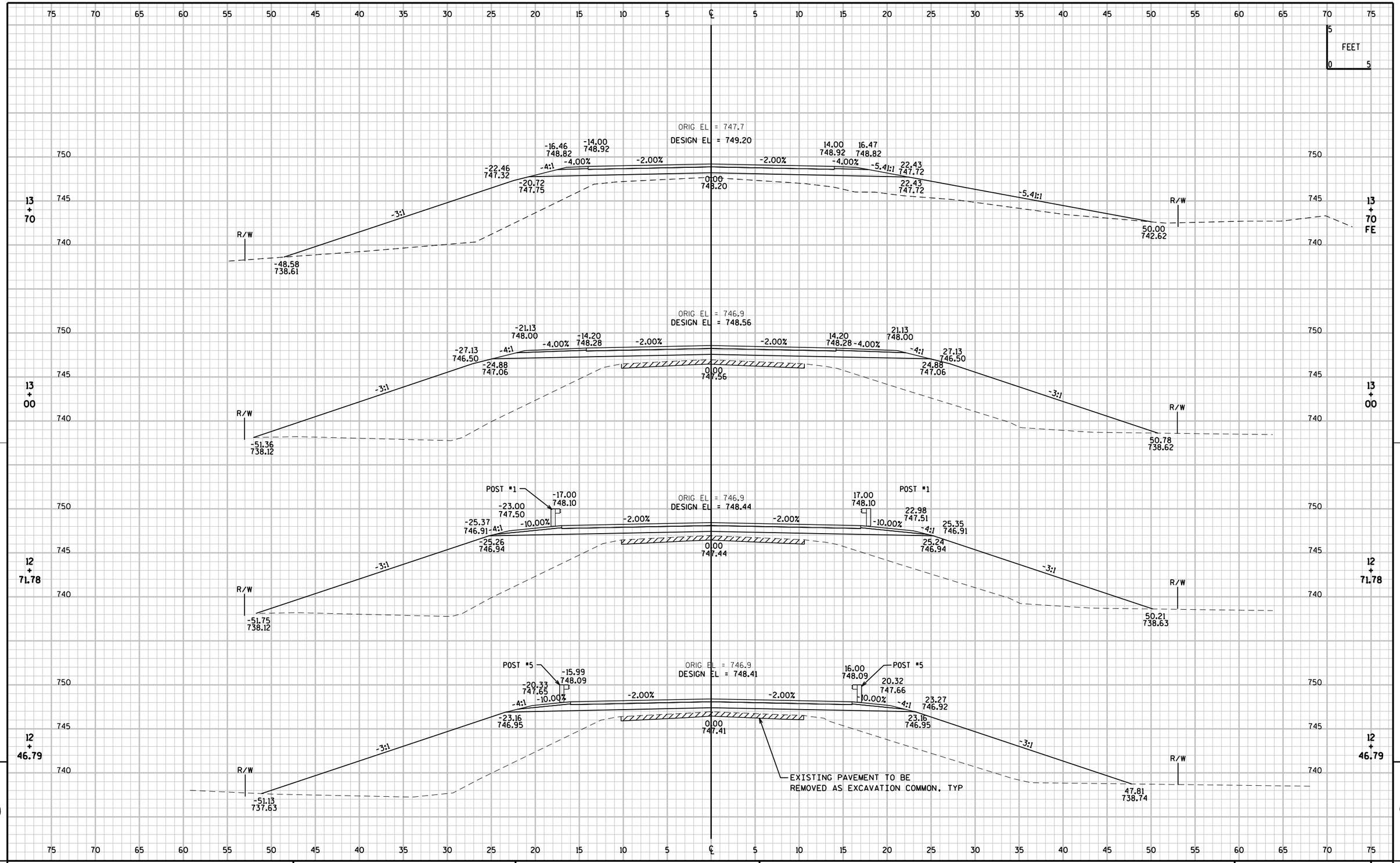
WISDOT/CADDS SHEET 21



PROJECT NO: 9022-03-71	HWY: SCHWARTZ RD	COUNTY: OCONTO	CROSS SECTIONS: SCHWARTZ ROAD	SHEET 58	E

FILE NAME : F:\TR\JOBS\E2050A12\Sheets\Plan\90220371_090203_xs.dgn PLOT DATE : 12/20/2013 2:24:00 PM PLOT BY : OMNNI- perryd PLOT NAME : PLOT SCALE : 2.00 " / IN.

WISDOT/CADDS SHEET 21



PROJECT NO: 9022-03-71	HWY: SCHWARTZ RD	COUNTY: OCONTO	CROSS SECTIONS: SCHWARTZ ROAD	SHEET 59 E

FEET 0 5

15 + 50

ORIG EL = 753.6

ENDS ABRUPTLY
STA 15+00

ORIG EL = 751.7
DESIGN EL = 751.70

R/W

-11.60 751.48 -4:1 -10.60 751.52 -4.00% -1.66% -3.56% 10.60 751.32 -4.00% 11.60 751.28 -4:1 -50.00:1

-17.25 750.35 -15.86 750.42 0.00 750.70 15.86 750.22 20.95 750.12

15 + 00

14 + 50

ORIG EL = 749.7
DESIGN EL = 750.53

-15.00 750.21 -14.00 750.25 -4.00% -2.00% -2.00% 14.00 750.25 15.00 750.21 -4.00%

-21.00 748.71 -4:1 -3:1 -19.26 749.15 0.00 749.53 19.26 749.15 21.00 748.71 -3:1

-29.56 745.86 23.78 747.79

14 + 50

ORIG EL = 748.3
DESIGN EL = 749.62

-15.00 749.30 -14.00 749.34 -4.00% -2.00% -2.00% 14.00 749.34 15.00 749.30 -4.00%

-21.00 747.80 -4:1 -3:1 -19.26 748.24 0.00 748.62 19.26 748.24 21.00 747.80 -3:1

-42.23 740.73 27.18 745.74

14 + 00

9

PROJECT NO: 9022-03-71	HWY: SCHWARTZ RD	COUNTY: OCONTO	CROSS SECTIONS: SCHWARTZ ROAD	SHEET E

FILE NAME : F:\TR\JOBS\E2050A12\Sheets\Plan\90220371_090205_xs.dgn PLOT DATE : 12/20/2013 2:24:36 PM PLOT BY : OMNNI - perryd PLOT NAME : PLOT SCALE : 2.00 " / IN.
WISDOT/CADDS SHEET 21

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov