SWL MAY 2014

PROJECT ID: 5268-00-70

COUNTY: VERNON

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5268-00-70	WISC 2014181	1

CTH MM - STH 82

(BEAR CREEK BRIDGE B-62-0138)

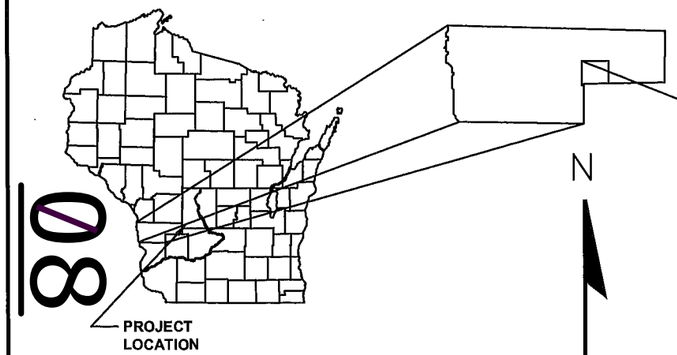
CTH D
VERNON COUNTY

STATE PROJECT NUMBER
5268-00-70

ORDER OF SHEETS

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

TOTAL SHEETS = 50

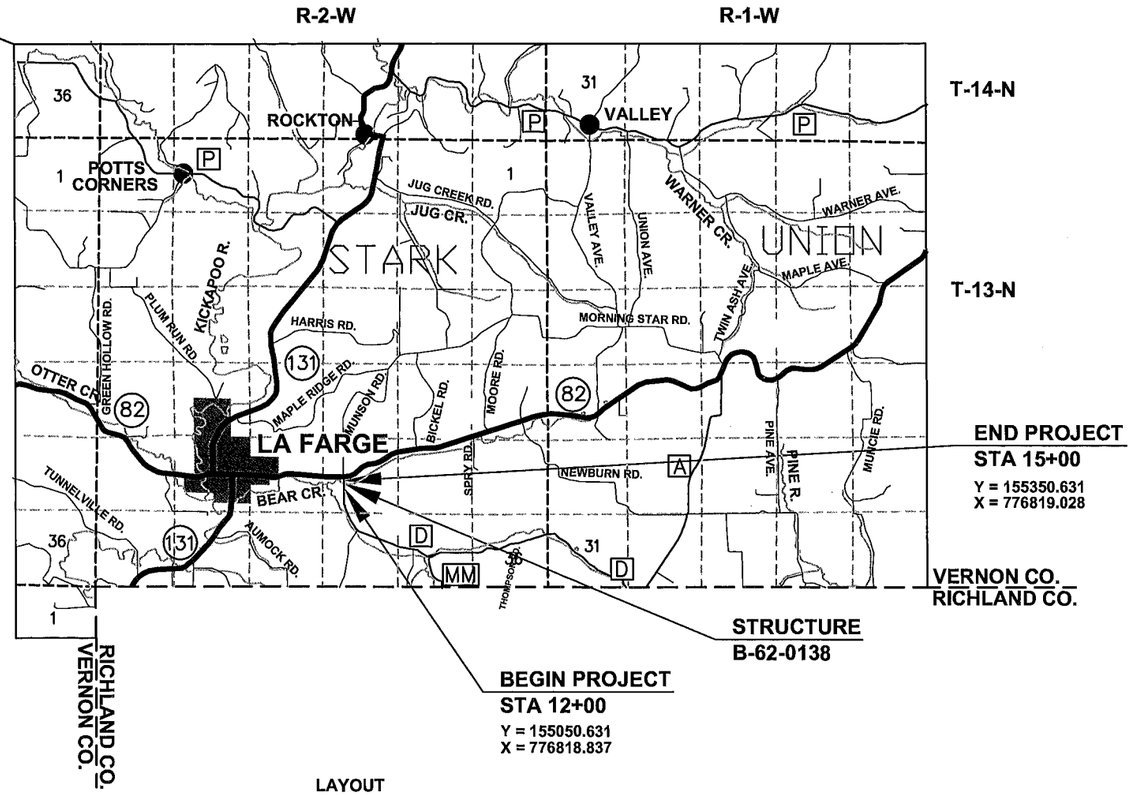


DESIGN DESIGNATION

A.D.T. (2014)	=	540
A.D.T. (2034)	=	700
D.H.V.	=	6.2
D.	=	60/40
T.	=	7.4%
DESIGN SPEED	=	50 MPH
ESALS	=	90,973

CONVENTIONAL SYMBOLS

PLAN		PROFILE	
CORPORATE LIMITS		GRADE LINE	
PROPERTY LINE	P.L. ± 58.1	ORIGINAL GROUND	
LOT LINE		MARSH OR ROCK PROFILE (To be noted as such)	ROCK
LIMITED EASEMENT		SPECIAL DITCH	LABEL
EXISTING RIGHT OF WAY		GRADE ELEVATION	
PROPOSED OR NEW R/W LINE		CULVERT (Profile View)	
SLOPE INTERCEPT		UTILITIES	
REFERENCE LINE		GAS	G
COMBUSTIBLE FLUIDS	CAUTION	ELECTRIC	E
EXISTING CULVERT		TELEPHONE	T
PROPOSED CULVERT (Box or Pipe)		FIBER OPTIC	FO
MARSH AREA		SANITARY SEWER	SAN
		STORM SEWER	SS
WOODED OR SHRUB AREA		WATER	W
		UTILITY PEDESTAL	
		POWER POLE	
		TELEPHONE POLE	



LAYOUT

SCALE 0 1 MI. 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.057 MI.

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

ACCEPTED FOR

COUNTY OF VERNON

1-24-14 (Date) Chad Hewitt HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY

TEAM Engineering

WISCONSIN JAMES L. BRANDT E-37727 FREDERIC, WI PROFESSIONAL ENGINEER

1/24/2014 (Date) James Brandt (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	TEAM ENGINEERING
Designer	TEAM ENGINEERING
Management Consultant	KJOHNSON ENGINEERS, INC.
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

1/28/14 (Date) Kirsty A. Johnson (Management Consultant Signature)

E

LIST OF STANDARD ABBREVATIONS

ABUT.	Abutment	JT	Joint	SEC	Section
AC	Acre	JCT	Junction	SHLDR	Shoulder
AGG.	Aggregate	LHF	Left–Hand Forward	SHR	Shrinkage
AH	Ahead	L	Length of Curve	SW	Sidewalk
<	Angle	LIN FT OR LF	Linear Foot	S	South
ASPH	Asphaltic	LC	Long Chord of Curve	SQ	Square
AVG.	Average	MH	Manhole	SF OR SQ FT	Square feet
A.D.T.	Average Daily Traffic	MB	Mailbox	SY OR SQ YD	Square Yard
BAD	Base Aggregate Dense	ML OR M/L	Match Line	STD	Standard
BK.	Back	N	North	SDD	Standard Detail Drawings
BF	Back Face	Y	North Grid Coordiante	STH	State Trunk Highways
B.M	Bench Mark	OD	Outside Diameter	STA	Station
BR.	Bridge	PLE	Permanent Limited Easement	SS	Storm Sewer
C/L	Center Line	PT	Point	SG	Subgrade
CC	Center to Center	PC	Point of Curvature	SE	Superelevation
CTH	County Trunk Highway	PI	Point of Intersection	SL OR S/L	Survey Line
CR.	Creek	PRC	Point of Reverse Curvature	SV	Septic Vent
CY OR CU YD	Crushed	PT	Point of Tangency	T	Tangent
CP	Cubic Yard	POC	Point on curve	TEL	Telephone
C & G	Culvert Pipe	POT	Point on Tangent	TEMP	Temporary
D	Curb and Gutter	PVC	Polyvinyl Chloride	TI	Temporary Interest
DHV	Degree of Curve	PCC	Portland Cement Concrete	TLE	Temporary Limited Easement
DIA	Design Hour Volume	LB	Pound	t	Ton
E	Diameter	PSI	Pounds Per Square Inch	T OR TN	Town
X	East	PE	Private Entrance	TRANS	Transition
ELEC	East Grid Coordinate	R	Radius	TL OR T/L	Transit Line
EL OR ELEV	Electric	RR	Railroad	T	Trucks (percent of)
ESALS	Elevation	RL OR R/L	Reference Line	TYP	Typical
EBS	Equivalent Single Axle Loads	RP	Reference Point	UNCL	Unclassified
FF	Excavation Below Subgrade	RCCP	Reinforced Concrete Culvert Pipe	UG	Underground Cable
FE	Face to Face	REQD	Required	USH	United States Highway
F	Field Entrance	RES	Residence or Residential	VAR	Variable
FG	Fill	RW	Retaining Wall	V	Velocity or Design Speed
FL OR F/L	Finished Grade	RT	Right	VERT	Vertical
FT	Flow Line	RHF	Right–Hand Forward	VC	Vertical Curve
FTG	Foot	R/W	Right–of–Way	VOL	Volume
GN	Footing	R	River	WM	Water Main
HT	Grid North	RD	Road	WV	Water Valve
CWT	Height	RDWY	Roadway	W	West
HYD	Hundredweight	SALV	Salvaged	WB	Westbound
INL	Hydrant	SAN S	Sanitary Sewer	YD	Yard
ID	Inlet				
INV	Inside Diameter				
IP	Invert				
IRS	Iron Pipe or Pin				
	Iron Rod Set				

DESIGNER

TEAM ENGINEERING, INC.
240 MAIN STREET
LOGANVILLE, WI 53943
ATTN: JAMIE BRANDT, P.E.
PH: (608) 727–2146
jbrandt@teamenginc.com

DNR CONTACT

DEPARTMENT OF NATURAL RESOURCES
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
ATTN: KAREN KALVELAGE
ENVIRONMENTAL ANALYSIS & REVIEW SPECIALIST
PH: (608) 785–9115
karen.kalvelage@wisconsin.gov

MUNICIPALITY CONTACT

VERNON COUNTY HIGHWAY DEPARTMENT
602 N. MAIN ST.
VIROQUA, WI 54665
ATTN: PHIL HEWITT, COMMISSIONER
PH: (608) 637–5452
phil.hewitt@vernoncounty.org

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

UTILITIES

LA FARGE MUNICIPAL UTILITIES
105 W. MAIN STREET
LA FARGE, WI 54639
ATTN: WAYNE CARPENTER
PH: 608–625–2333
lafutil@mwt.net

VERNON TELEPHONE COOPERATIVE
103 N. MAIN STREET
WESTBY, WI 54667
ATTN: TODD TUNKS
PH: (608) 634–3136
todd.tunks@vernontel.com

* – NOT A MEMBER OF DIGGER'S HOTLINE.

GENERAL NOTES

MULCH ALL SLOPES AS DIRECTED BY THE ENGINEER IN THE FIELD.

FINISHING ITEMS SHALL BE PLACED TO THE SLOPE INTERCEPT WITH THE ORIGINAL GROUND AS SHOWN ON THE CROSS SECTIONS AND ON ALL DISTRUBED AREAS.

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD.

EXCAVATION BELOW SUBRGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS, BUT IS MEASURED AND PAID FOR AS EXCAVATION COMMON. THE LOCATION OF EBS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

FILL EXPANSION IS ESTIMATED AT 30%.

DISTURBED AREAS SHOWN WITHIN THE RIGHT–OF–WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE FERTILIZED (TYPE B), SEEDED (USE SEEDING MIXTURE #20 AND SEEDING TEMPORARY), AND MULCHED AS DIRECTED BY THE ENGINEER IN THE FIELD.

THE LOCATIONS OF SILT FENCE, SALVAGED TOPSOIL, SEEDING MIX #20 AND SEEDING TEMPORARY, MULCH ARE APPROXIMATE. LOCATIONS ARE TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

REMOVAL OF ASPHALTIC SURFACES WHERE AN ABUTTING ASPHALTIC SURFACE IS TO REMAIN IN PLACE SHALL REQUIRE A SAWCUT MEETING THE APPROVAL OF THE ENGINEER IN THE FIELD.

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

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

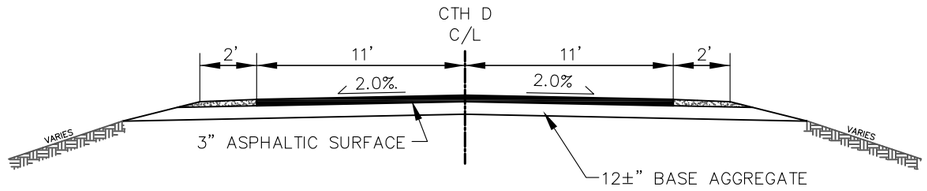
BEARINGS ON THE PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, VERNON COUNTY.

EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO CONSTRUCTION. EROSION CONTROL ITEMS ON THE PLAN ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS AND DIMENSIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD. ALL EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER IN THE FIELD DEEMS THE DEVICES NO LONGER NECESSARY.

4–INCH ASPHALTIC SURFACE SHALL BE PLACED WITH A 2 1/4–INCH LOWER LAYER AND A 1 3/4–INCH UPPER LAYER. THE NOMINAL SIZE OF AGGREGATE USED FOR THE LOWER LAYER SHALL BE 19.0 MM AND THE UPPER LAYER SHALL BE 12.5 MM.

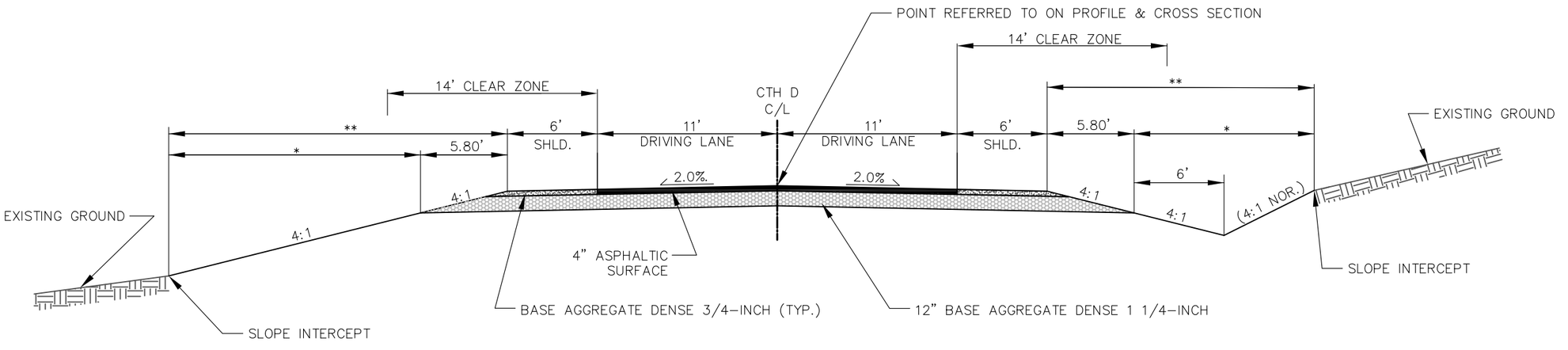
EXACT DIMENSIONS OF ANY PART ITEM CONTAINING THE WORK "RIPRAP" SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE PROJECT SITE IS AN ENVIRONMENTALLY SENSITIVE AREA WHICH INCLUDES WETLANDS. DO NOT DISTURB ANYTHING OUTSIDE THE SLOPE INTERCEPT, INCLUDING STAGING, STOCKPILING OF MATERIAL AND STORING EQUIPMENT.



TYPICAL EXISTING SECTION

CTH D



FILL

TYPICAL FINISHED SECTION

CTH D
STA. 12+00 – STA. 12+37.95
STA. 14+71.53 – STA. 15+00

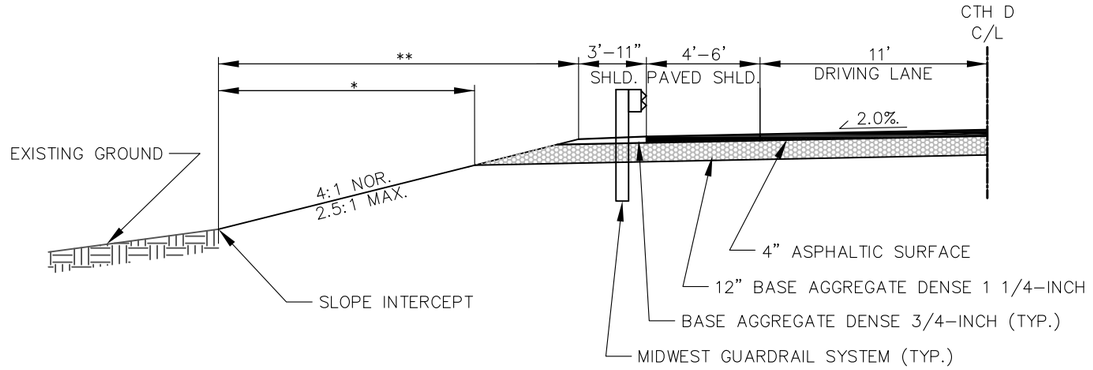
CUT

** LIMITS OF SEEDING, TEMPORARY SEEDING & FERTILIZER

* LIMITS OF SALVAGED TOPSOIL, EROSION MAT AND MULCH

PROJECT NO: 5268-00-70	HWY: CTH D	COUNTY: VERNON	TYPICAL SECTIONS	SHEET 3	E

2

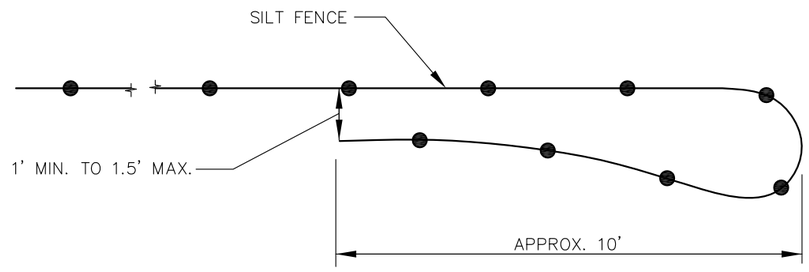


TYPICAL FINISHED BEAM GUARD HALF SECTION

CTH D
STA. 12+37.95 – STA. 13+29.59
STA. 13+80.08 – STA. 14+71.53

** LIMITS OF SEEDING, TEMPORARY SEEDING & FERTILIZER

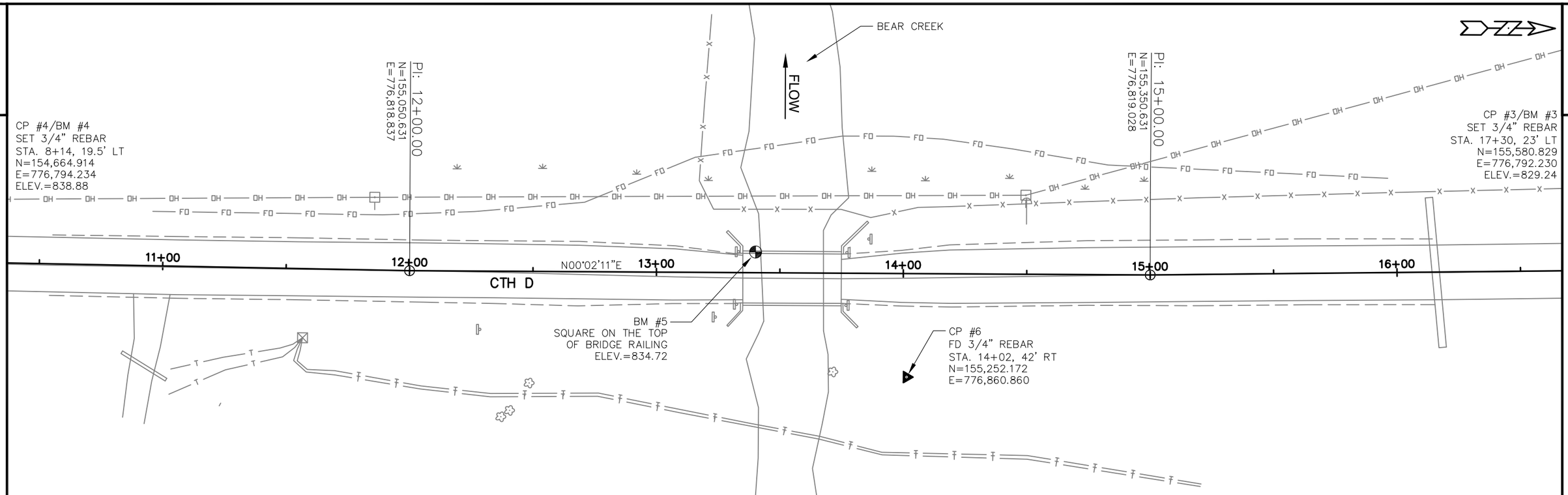
* LIMITS OF SALVAGED TOPSOIL, EROSION MAT AND MULCH

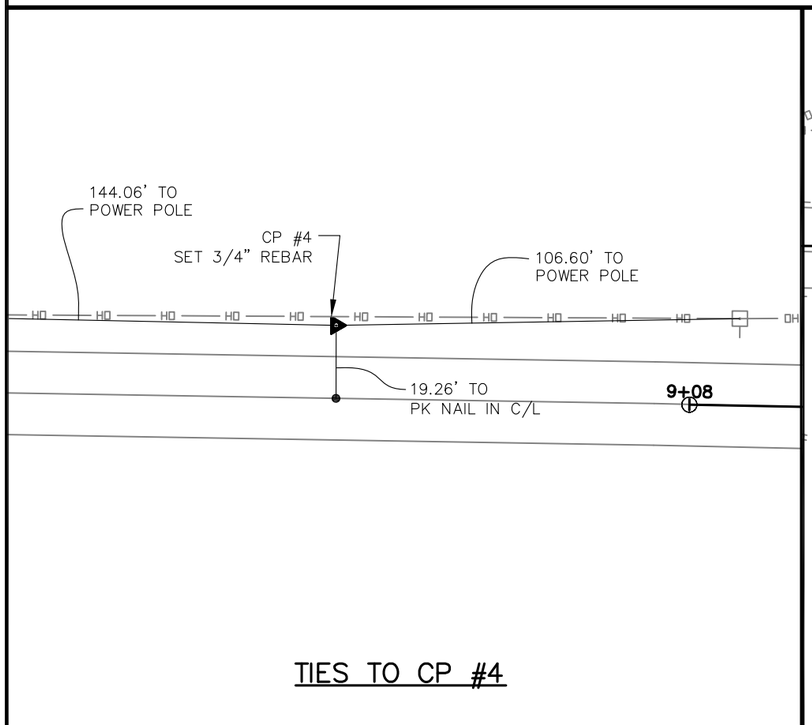


SILT FENCE END DETAIL

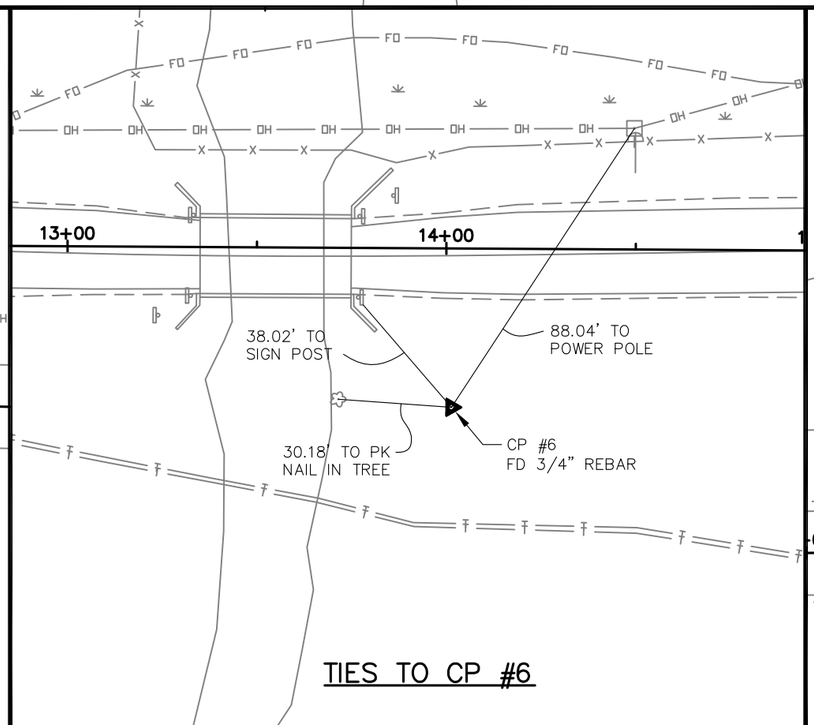
(TURNAROUNDS – TO REDIRECT AMPHIBIANS AND REPTILIES AWAY FROM CONSTRUCTION ZONE)

2

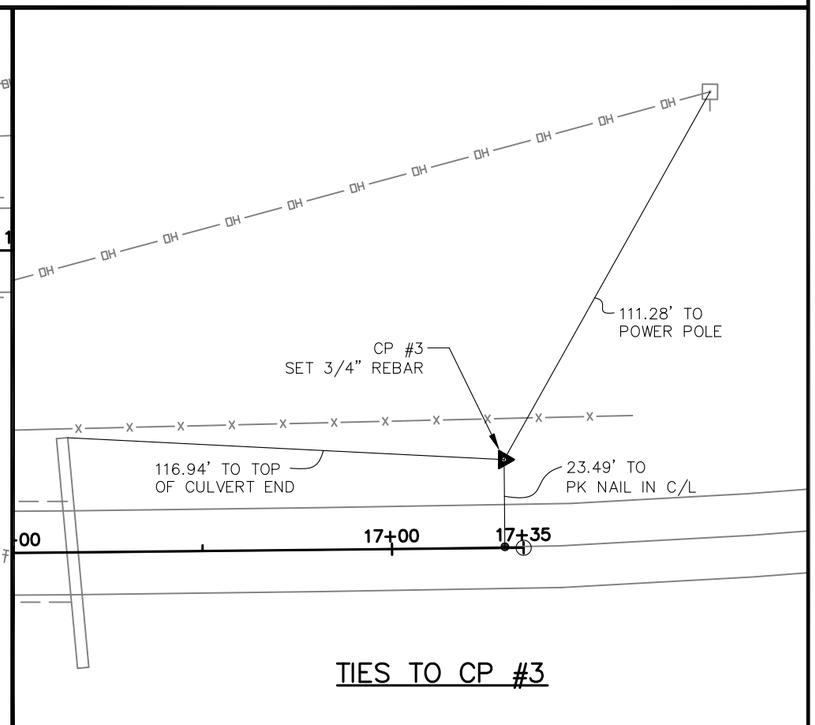




TIES TO CP #4



TIES TO CP #6



TIES TO CP #3

DATE 04MAR14 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	5268-00-70 QUANTITY
0010	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 13+55	LS	1.000	1.000
0020	205.0100	EXCAVATION COMMON **P**	CY	420.000	420.000
0030	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-62-0138	LS	1.000	1.000
0040	210.0100	BACKFILL STRUCTURE	CY	440.000	440.000
0050	213.0100	FINISHING ROADWAY (PROJECT) 01. 5268-00-70	EACH	1.000	1.000
0060	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	70.000	70.000
0070	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	870.000	870.000
0080	455.0605	TACK COAT	GAL	25.000	25.000
0090	465.0105	ASPHALTIC SURFACE	TON	195.000	195.000
0100	502.0100	CONCRETE MASONRY BRIDGES	CY	217.000	217.000
0110	502.3200	PROTECTIVE SURFACE TREATMENT	SY	221.000	221.000
0120	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	4,768.000	4,768.000
0130	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	24,508.000	24,508.000
0140	513.4060	RAILING TUBULAR TYPE M (STRUCTURE) 01. B-62-0138	LS	1.000	1.000
0150	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	14.000	14.000
0160	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	440.000	440.000
0170	606.0300	RIPRAP HEAVY	CY	105.000	105.000
0180	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	184.000	184.000
0190	614.2500	MGS THRIE BEAM TRANSITION	LF	160.000	160.000
0200	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	4.000	4.000
0210	619.1000	MOBILIZATION	EACH	1.000	1.000
0220	625.0500	SALVAGED TOPSOIL **P**	SY	610.000	610.000
0230	627.0200	MULCHING **P**	SY	420.000	420.000
0240	628.1504	SILT FENCE	LF	665.000	665.000
0250	628.1520	SILT FENCE MAINTENANCE	LF	665.000	665.000
0260	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	2.000	2.000
0270	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	1.000	1.000
0280	628.2023	EROSION MAT CLASS II TYPE B	SY	200.000	200.000
0290	629.0210	FERTILIZER TYPE B	CWT	0.500	0.500
0300	630.0120	SEEDING MIXTURE NO. 20 **P**	LB	20.000	20.000
0310	630.0200	SEEDING TEMPORARY **P**	LB	10.000	10.000
0320	633.5100	MARKERS ROW	EACH	4.000	4.000
0330	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	5.000	5.000
0340	637.2230	SIGNS TYPE II REFLECTIVE F	SF	18.250	18.250
0350	638.2602	REMOVING SIGNS TYPE II	EACH	7.000	7.000
0360	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	7.000	7.000
0370	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0380	643.0100	TRAFFIC CONTROL (PROJECT) 01. 5268-00-70	EACH	1.000	1.000
0390	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	230.000	230.000
0400	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	1,200.000	1,200.000
0410	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	250.000	250.000
0420	650.5000	CONSTRUCTION STAKING BASE	LF	250.000	250.000
0430	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-62-0138	LS	1.000	1.000
0440	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 5268-00-70	LS	1.000	1.000
0450	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	250.000	250.000
0460	690.0150	SAWING ASPHALT	LF	44.000	44.000
0470	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	1,736.000	1,736.000

3

BASE AGGREGATE DENSE

STATION–STATION	LOCATION	(305.0110) 3/4–INCH (TON)	(305.0120) 1 1/4–INCH (TON)
12+00.00–13+29.58	MAINLINE	37	454
12+80.08–15+00.00	MAINLINE	33	416
	TOTALS	70	870

EARTHWORK SUMMARY

STATION–STATION	LOCATION	(205.0100) EXCAVATION COMMON (CY)	UNEXPANDED FILL (CY)	EXPANDED FILL (30%) (CY)	WASTE (CY)
12+00.00–13+29.58	CTH D	225	64	83	142
13+80.08–15+00.00	CTH D	195	82	107	88
	TOTALS	420	146	190	230

ASPHALTIC ITEMS

STATION–STATION	LOCATION	(455.0600) TACK COAT (GAL)	(465.0105) ASPHALTIC SURFACE (TON)
12+00.00–13+29.58	MAINLINE	13	100
12+80.08–15+00.00	MAINLINE	12	95
	TOTALS	25	195

FINISHING ITEMS

STATION–STATION	LOCATION	(625.0500) SALVAGED TOPSOIL (SY)	(627.0200) MULCHING (SY)	(629.0210) FERTILIZER TYPE B (CWT)	(630.0120) SEEDING MIXTURE NO. 20 (LB)	(630.0200) SEEDING TEMPORARY (LB)
12+00.00–13+29.58	MAINLINE	329	290	0.25	11	6
13+80.08–15+00.00	MAINLINE	281	130	0.25	9	4
	TOTALS	610	420	0.5	20	10

MGS THRIE BEAM TRANSITION
MGS GUARDRAIL TERMINAL EAT

STATION–STATION	LOCATION	(614.2500) (LF)	(614.2610) (LF)
1289.60–13+29.60	MAINLINE, LT	40	1
12+89.60–13+29.60	MAINLINE, RT	40	1
13+80.10–14+20.10	MAINLINE, LT	40	1
13+80.10–14+20.10	MAINLINE, RT	40	1
	TOTALS	160	4

EROSION MAT CLASS II TYPE B

STATION–STATION	LOCATION	(628.2023) (SY)
13+00–13+30	CTH D, RT	42
13+80–14+00	CTH D, RT	28
13+80–14+20	CTH D, LT	57
14+20–14+70	CTH D, LT	73
	TOTALS	200

SILT FENCE & SILT FENCE MAINTENANCE

STATION–STATION	LOCATION	(628.1504) (LF)	(628.1520) (LF)
12+00.00–13+29.58	MAINLINE	345	345
13+80.08–15+00.00	MAINLINE	320	320
	TOTALS	665	665

REMOVING SIGNS TYPE II & REMOVING SMALL SIGN SUPPORTS

STATION	LOCATION	DESCRIPTION	(638.2602) (EACH)	(638.3000) (EACH)
12+29	23' RT	STOP AHEAD	1	1
13+24	18' RT	45 TON	1	1
13+33	13' LT	W5–52	1	1
13+33	8' LT	W5–52	1	1
13+77	13' RT	W5–52	1	1
13+77	8' LT	W5–52	1	1
13+86	14' LT	45 TON	1	1
	TOTALS		7	7

NOTE: UNLESS NOTED, ALL ITEMS ARE IN CATEGORY 0010.

3

PERMANENT SIGNING

STATION	LOCATION	SIGN CODE	(634.0614) POSTS WOOD 4X6-INCH X 14-FT (EACH)	(637.0202) SIGNS REFLECTIVE TYPE II (SF)
12+29	RT	W3-1	1	6.25
13+29	LT	W5-52	1	3
13+29	RT	W5-52	1	3
13+81	LT	W5-52	1	3
13+81	RT	W5-52	1	3
TOTALS			5	18.25

PAVEMENT MARKING

STATION-STATION	LOCATION	(646.0103) PAVEMENT MARKING EPOXY 4-INCH (LF)
12+00.00-15+00.00	CENTERLINE-DOUBLE YELLOW	600
12+00.00-15+00.00	EDGELINE, RT-WHITE	300
12+00.00-15+00.00	EDGELINE, LT-WHITE	300
	TOTAL	1200

3

MARKERS ROW

NO.	STATION	LOCATION	(633.5100) (EACH)
100	12+00.00	30.99', LT	1
101	12+00.00	45.00', LT	1
102	15+00.00	45.00', LT	1
103	15+00.00	33.29', LT	1

SAWING ASPHALT

STATION	LOCATION	(690.0150) (LF)
12+00	MAINLINE	22
15+00	MAINLINE	22
	TOTALS	44

CONSTRUCTION STAKING

STATION-STATION	LOCATION	(650.4500) SUBGRADE (LF)	(650.5000) BASE (LF)	(650.6500) STRUCTURE LAYOUT (LS)	(650.9910) SUPPLEMENTAL CONTROL (LS)	(650.9920) SLOPE STAKING (LF)
12+00.00-13+29.58	MAINLINE	130	130	-	0.5	130
13+80.08-15+00.00	MAINLINE	120	120	-	0.5	120
	TOTALS	250	250	1 *	1	250

* CATEGORY 0020

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
5268-00-00	4.01	2
FEDERAL PROJECT NUMBER		

PLAT OF RIGHT-OF-WAY REQUIRED FOR

CTH MM – STH 82

(BEAR CREEK BRIDGE B-62-0138)

CTH D — VERNON COUNTY

CONSTRUCTION PROJECT NUMBER
5268-00-70

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	REFERENCE LINE	R/L
ACRES	AC.	RELEASE OF RIGHTS	ROR
AND OTHERS	ET. AL.	REMAINING	REM.
CENTERLINE	C/L	RIGHT-OF-WAY	R/W
CERTIFIED SURVEY MAP	CSM	SECTION	SEC.
CORNER	COR.	STATION	STA.
DOCUMENT	DOC.	TEMPORARY LIMITED EASEMENT	TLE
EASEMENT	EASE.	VOLUME	V.
HIGHWAY EASEMENT	H.E.	**CURVE DATA**	
LAND CONTRACT	LC	LONG CHORD	LCH
MONUMENT	MON.	LONG CHORD BEARING	LCB
PAGE	P.	RADIUS	R
PERMANENT LIMITED EASEMENT	PLE	DEGREE OF CURVE	D
PROPERTY LINE	P.L.	CENTRAL ANGLE OR DELTA	DELTA
RECORDED AS	(100')	LENGTH OF CURVE	L
		TANGENT	TAN

CONVENTIONAL SYMBOLS

FOUND IRON PIPE/PIN	PROPOSED R/W LINE
R/W MONUMENT	EXISTING H.E. LINE
R/W STANDARD	PROPERTY LINE
SIGN	LOT & TIE LINES
SECTION CORNER MONUMENT	SLOPE INTERCEPT
SECTION CORNER SYMBOL	CORPORATE LIMITS
FEE (HATCH VARIES)	ACCESS RESTRICTED (BY PREVIOUS ACQUISITION/CONTROL)
TEMPORARY LIMITED EASEMENT	ACCESS RESTRICTED (BY ACQUISITION/CONTROL)
PERMANENT LIMITED EASEMENT	NO ACCESS (BY STATUTORY AUTHORITY)
R/W BOUNDARY POINT	SECTION LINE
PARCEL NUMBER	QUARTER LINE
UTILITY INTEREST	SIXTEENTH LINE
SIGN NUMBER (OFF PREMISE)	EXISTING CENTERLINE
BUILDING	PROPOSED REFERENCE LINE
	PARALLEL OFFSET

CONVENTIONAL UTILITY SYMBOLS

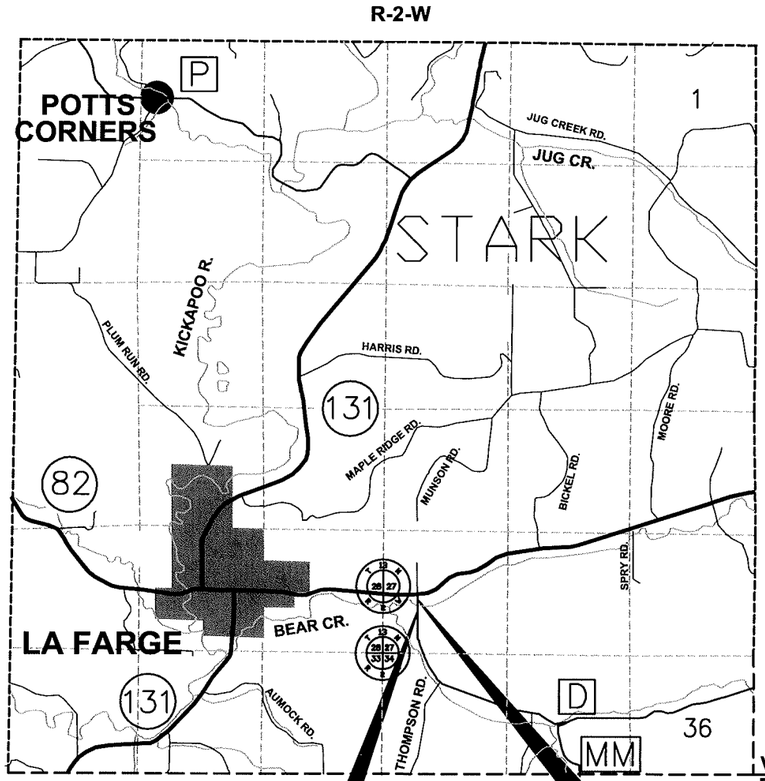
WATER	W	
GAS	G	
TELEPHONE	T	
OVERHEAD	OH	
TRANSMISSION LINES ELECTIC	E	
CABLE TELEVISION	TV	
FIBER OPTIC	FO	
SANITARY SEWER	SAN	
STORM SEWER	SS	

	NON COMPENSABLE	COMPENSABLE
POWER POLE		
TELEPHONE POLE		
TELEPHONE PEDISTAL		
ELECTRIC TOWER		

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, VERNON 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 MONUMENTS (TYPICALLY $\frac{3}{4}$" 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 SYSTEM OR OTHER SURVEYS OF PUBLIC RECORD.



BEGIN RELOCATION ORDER
STA 12+00.00

1319.35' EAST AND 1947.34' NORTH OF THE SOUTHWEST QUARTER CORNER OF SECTION 27, T13N, R2W
Y = 155050.631
X = 776818.837

END RELOCATION ORDER
STA 15+00.00

1319.35' EAST AND 2247.33' NORTH OF THE SOUTHWEST QUARTER CORNER OF SECTION 37, T13N, R2W
Y = 155350.631
X = 776819.028

N

SCALE
SCALE 0 0.5 MI. 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.057 MI.

REVISION DATE

ACCEPTED FOR

COUNTY OF VERNON

1-24-14 (Date) — HIGHWAY COMMISSIONER

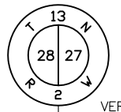
ORIGINAL PLAT PREPARED BY

TEAM Engineering

WISCONSIN
THEODORE J. GREENHECK
S-2431
SPRING GREEN
WI
LAND SURVEYOR

1/23/14 (Date) — (Signature)

NOTE:
EXISTING HIGHWAY R/W ESTABLISHED FROM THE 1/16TH LINE AND COUNTY RECORDS.



VERNON COUNTY
FD. 3/4" IRON BAR
Y = 155715.480
X = 775496.881

R/W COURSE TABLE

COURSE	BEARING	DISTANCE
100–101	N89°57'49"W	14.01'
101–102	N00°02'11"E	300.00'
102–103	S89°57'49"E	11.71'

R/W POINT COORDINATES

POINT NUMBER	Y	X
100	155,050.651	776,787.849
101	155,050.659	776,773.837
102	155,350.659	776,774.028
103	155,350.652	776,785.736

EASEMENTS

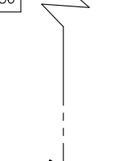
RIGHT OF WAY EASEMENT (BLANKET)
VERNON TELEPHONE COOPERATIVE VOL. 192 PG. 6 DOC. #249100

WISCONSIN NONPOINT SOURCE WATER POLLUTION ABATEMENT PROGRAM (BLANKET)
VOL. 365 PG. 655 DOC. #332510

AMENDED VOL. 372 PG. 376 DOC. #334944
AMENDED VOL. 378 PG. 411 DOC. #337169
AMENDED VOL. 386 PG. 741 DOC. #340136
AMENDED VOL. 415 PG. 287 DOC. #350520
AMENDED VOL. 415 PG. 739 DOC. #350710

STREAM ACCESS EASEMENTS VERNON COUNTY (BLANKET) VOL. 671 PG. 334 DOC. #419625

N00°31'45"W 2619.60'
SECTION LINE



VERNON COUNTY
FD. 1 1/4" IRON PIPE
Y = 153095.992
X = 775521.076

S89°57'49"E 45.00'
FROM RL TO R/W

103 15+00.00
33.29'

102 15+00.00
45.00'

PI: 15+00.00

N89°57'49"W 3.53'
FROM RL TO 1/16 LINE

END RELOCATION ORDER
STA. 15+00
Y = 155350.631
X = 776819.028

LA FARGE MUNICIPAL UTILITIES (2)

1/16 LINE N00°38'07"W
REFERENCE LINE N00°02'11"E

1/16 LINE
300.00'

66'

15+00
14+00
13+00
12+00
11+00

CTH D

N00°02'11"E

FLOW

NW1/4–SW1/4
SEC. 27

NE1/4–SW1/4
SEC. 27

BEAR CREEK

P.L.

VERNON TELEPHONE COOPERATIVE (3)

(1)
JACK & NANCY LETZRING

SLOPE INTERCEPT

ERNEST L. & CAROL J. MEYER

N89°57'49"W 0.01'
FROM RL TO 1/16 LINE

PI: 12+00.00

101 12+00.00
45.00'

100 12+00.00
30.99'

N33°34'54"E 2346.23'
FROM MON. TO RL

N89°57'49"W 45.00'
FROM RL TO R/W

BEGIN RELOCATION ORDER
STA. 12+00
Y = 155050.631
X = 776818.837

TOWN OF

STARK

SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NUMBER	OWNER (S)	INTERESTS REQUIRED	R/W REQUIRED ACRES		
			NEW	EXISTING	TOTAL
1	JACK & NANCY LETZRING	FEE	0.09	0.21	0.30
2	LA FARGE MUNICIPAL UTILITIES	RELEASE OF RIGHTS	–	–	–
3	VERNON TELEPHONE COOPERATIVE	RELEASE OF RIGHTS	–	–	–

OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTEREST TO VERNON COUNTY

4

4

REVISION DATE	DATE: JANUARY 23, 2014	SCALE, FEET 0 25 50	HWY: CTH D	R/W PROJECT NUMBER: 5268–00–00	PLAT SHEET NO: 4.02	
	GRID FACTOR: N/A		COUNTY: VERNON	CONSTRUCTION PROJECT NUMBER: 5268–00–70	PS&E SHEET 10	E

LEGEND

- WETLAND IMPACT AREAS
- WETLAND BOUNDARY
- SILT FENCE
- EROSION MAT CLASS II TYPE B

NOTES:
WETLAND IMPACT AREAS OCCUR WHERE SLOPE INTERCEPT ASSOCIATED WITH GRADING ARE LOCATED WITHIN THE WETLAND BOUNDARY.

SILT FENCE IN WETLAND AREAS WILL BE INSTALLED AT THE TOE OF THE PROPOSED SLOPE.

JACK & NANCY LETZRING

VERNON TELEPHONE COOPERATIVE

BEAR CREEK

LA FARGE MUNICIPAL UTILITIES

PROPOSED C/L CTH D

PI: 12+00.00

PI: 15+00.00

EXISTING ENCROACHING FENCE TO BE REMOVED PRIOR TO CONSTRUCTION BY THE LAND OWNER

FLOW

WETLAND IMPACT 0.011 AC.

WETLAND IMPACT 0.009 AC.

R/W

SAWCUT REQ'D.

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+

CTH D

BM #5

EXISTING C/L CTH D

SLOPE INTERCEPTS

VERNON TELEPHONE COOPERATIVE

ERNEST L. & CAROL J. MEYER

BEGIN PROJECT
STA. 12+00

END PROJECT
STA. 15+00

BENCHMARKS		NAVD 88	
NO.	STA./OFFSET	DESCRIPTION	ELEV.
3	17+30, 23' LT.	3/4-INCH REBAR	829.24
4	8+14, 19.5' LT.	3/4-INCH REBAR	838.88
5	13+40, 6' LT.	TOP OF BRIDGE RAILING	834.72

PI STA = 12+00.00
ELEV = 831.58

PI STA = 15+00.00
ELEV = 830.99

-0.20%

PROPOSED C/L PROFILE CTH D

EXISTING C/L PROFILE CTH D

REMOVING OLD STRUCTURE
STA. 13+55 STRUCTURE B-62-0990
SINGLE SPAN STEEL GIRDER BRIDGE
19' CLEAR ROADWAY WIDTH 40' O.A.L.

STA. 13+55
STRUCTURE B-62-0138 REQ'D.
SINGLE SPAN CONCRETE FLAT SLAB BRIDGE
30' CLEAR ROADWAY WIDTH 50'-6" O.A.L.
0° SKEW

EXISTING C/L ELEVATION

PROPOSED C/L ELEVATION

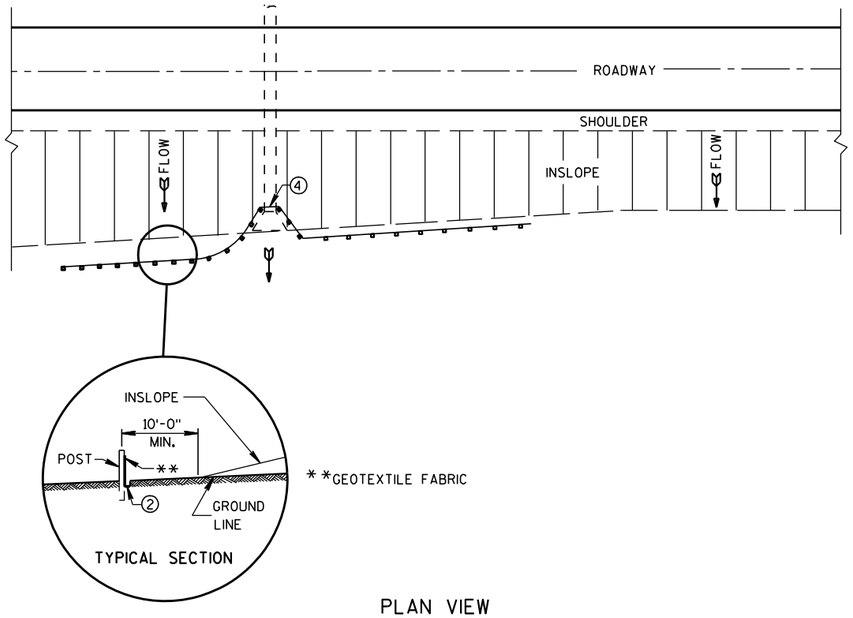
850 845 840 835 830 825 820 815 810

9+25	9+50	9+75	10+00	10+25	10+50	10+75	11+00	11+25	11+50	11+75	12+00	12+25	12+50	12+75	13+00	13+25	13+50	13+75	14+00	14+25	14+50	14+75	15+00	15+25	15+50	15+75	16+00	16+25	16+50	16+75
				834.73	834.07	833.53	833.03	832.52	832.02	831.77	831.58	831.49	831.47	831.47	831.47	831.40	821.05	830.58	831.13	831.13	831.09	831.05	830.99	830.95	830.97	830.98	831.00			
											831.58	**831.53**	**831.48**	**831.43**	**831.38**	**831.33**	**831.28**	**831.23**	**831.18**	**831.14**	**831.09**	**831.04**								

PROJECT NO: 5268-00-70	HWY: CTH D	COUNTY: VERNON	PLAN & PROFILE - CTH D	SHEET 11	E

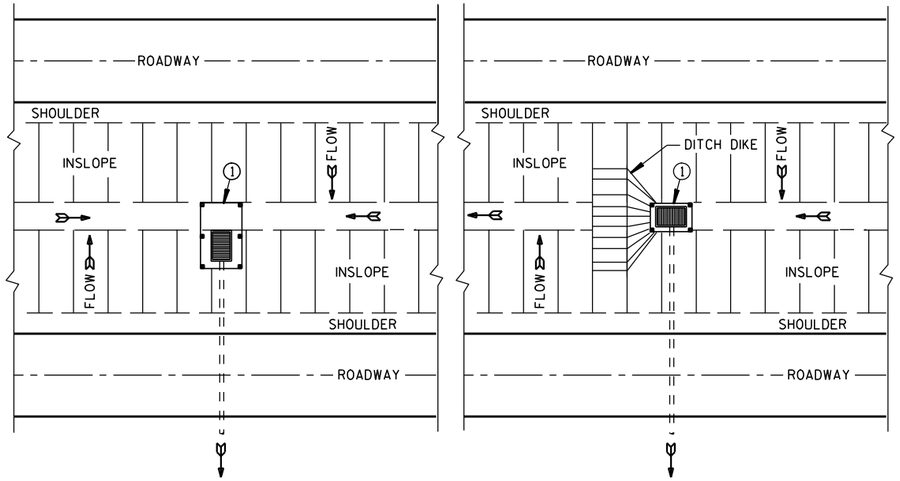
Standard Detail Drawing List

08E09-06	SILT FENCE
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)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A01-11	MARKER POST FOR RIGHT-OF-WAY
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-06	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

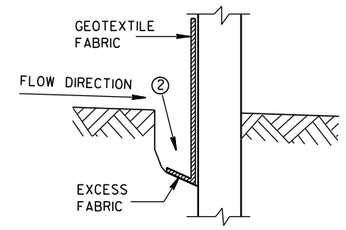
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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

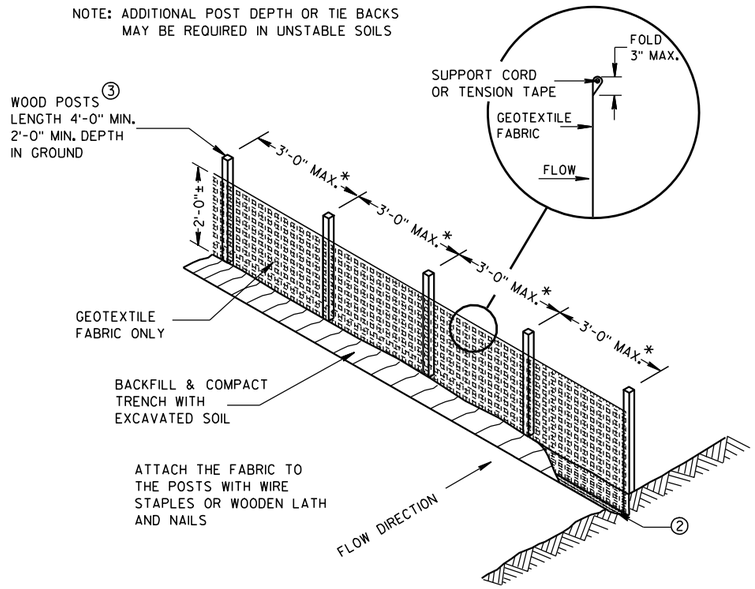
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

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

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

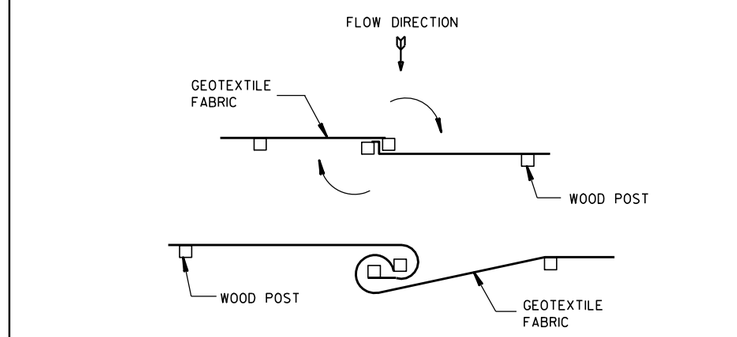


TRENCH DETAIL

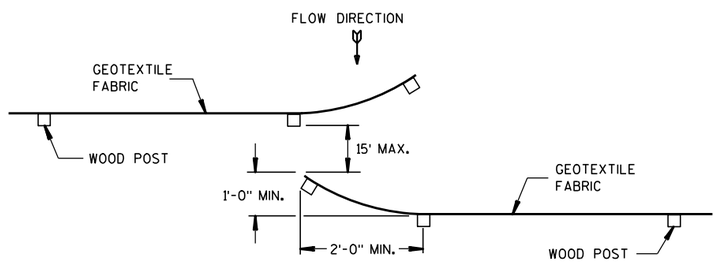


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

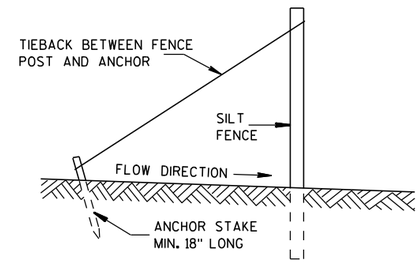


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

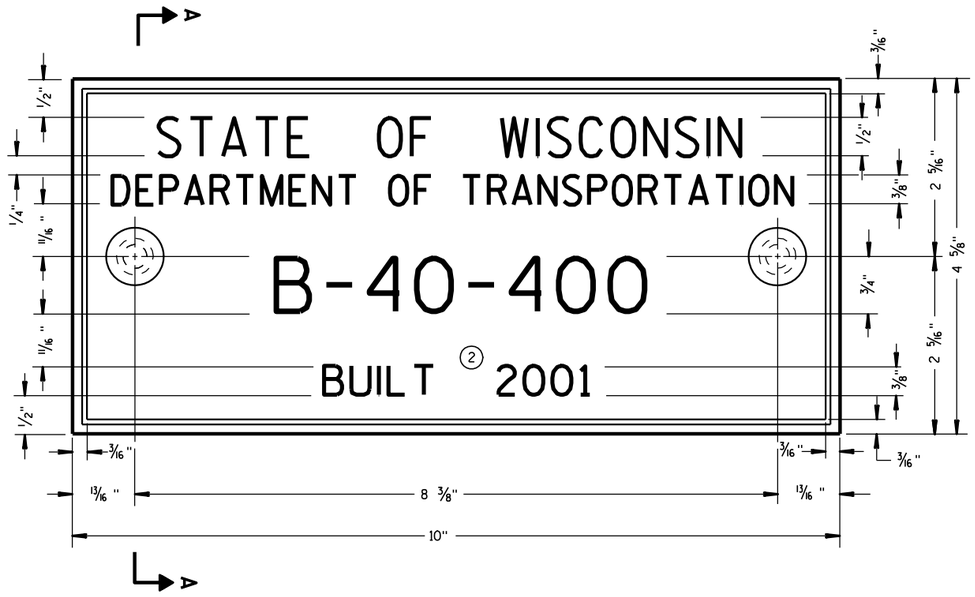
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6



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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

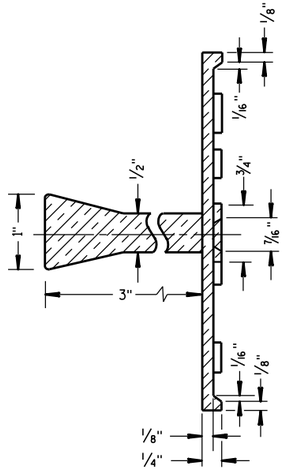
GENERAL NOTES

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

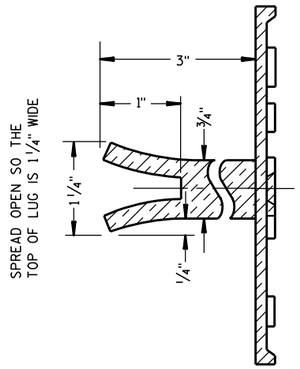
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

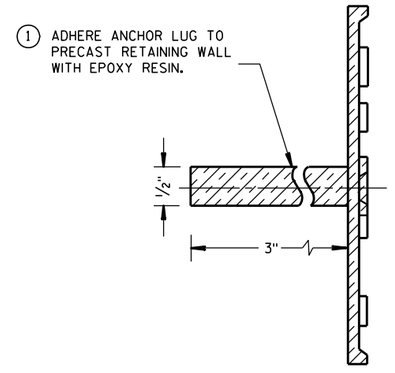
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck CHIEF STRUCTURAL DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 12 A 3-10

GENERAL NOTES

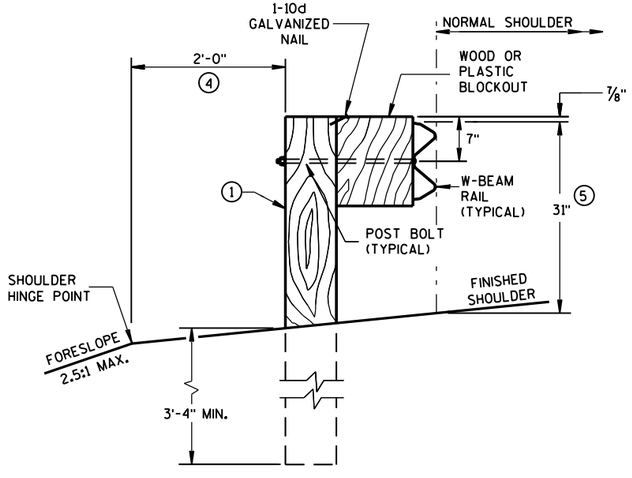
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

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.

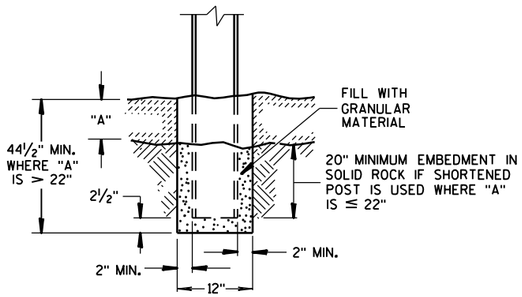
4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

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".



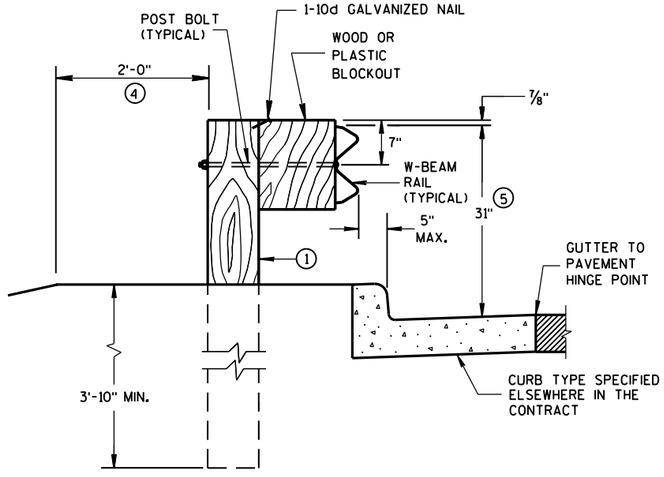
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



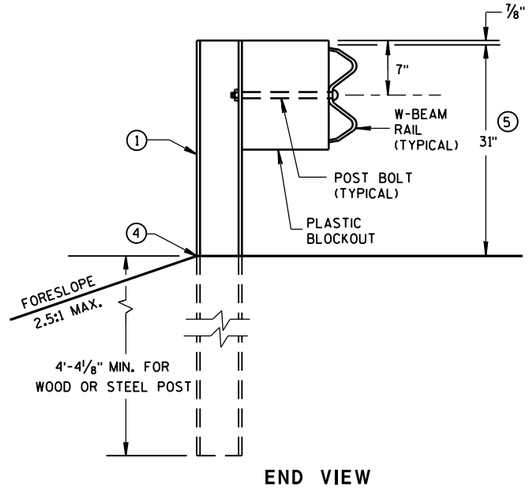
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



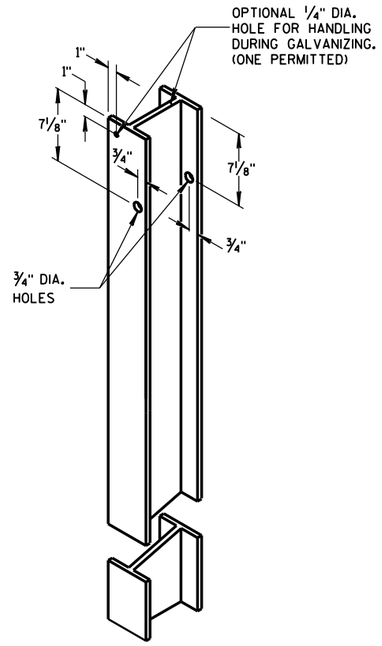
END VIEW

LOCATED ALONG A CURBED ROADWAY

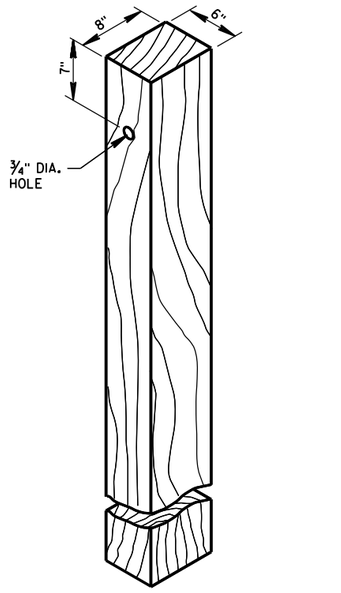


END VIEW

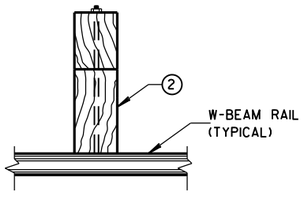
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



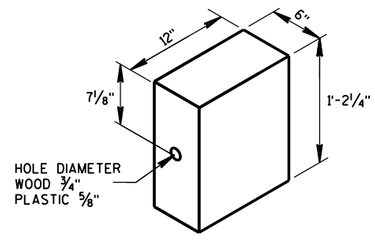
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



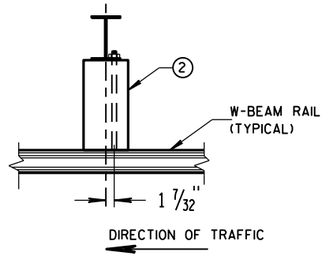
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②

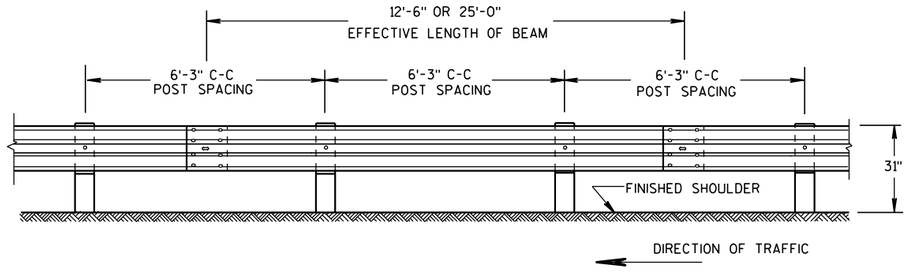


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

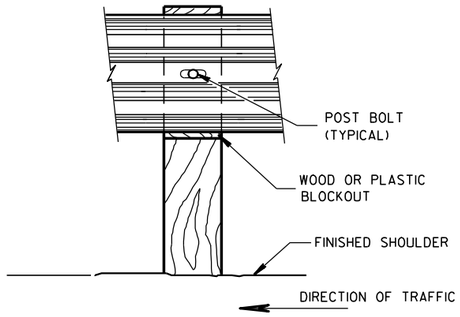
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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



FRONT VIEW

POST SPACING STANDARD INSTALLATION



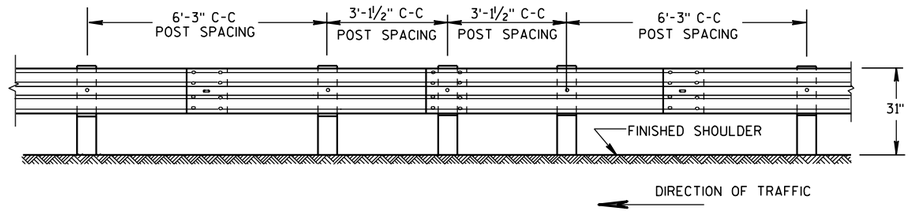
FRONT VIEW AT WOOD POST

GENERAL NOTES

1. PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

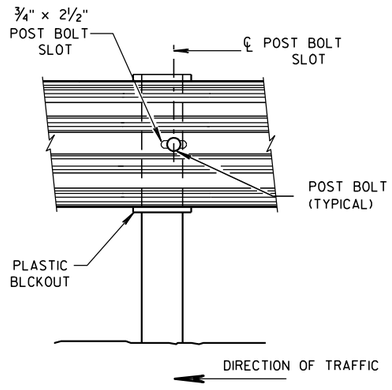
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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

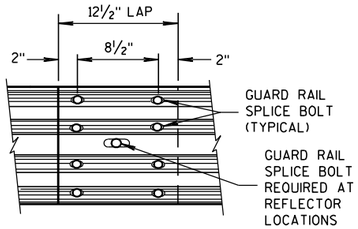


FRONT VIEW

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

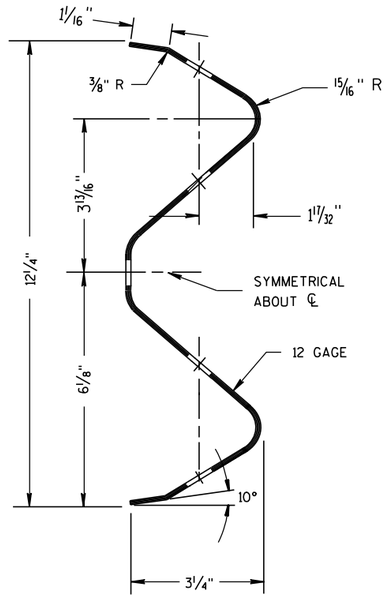


FRONT VIEW AT STEEL POST

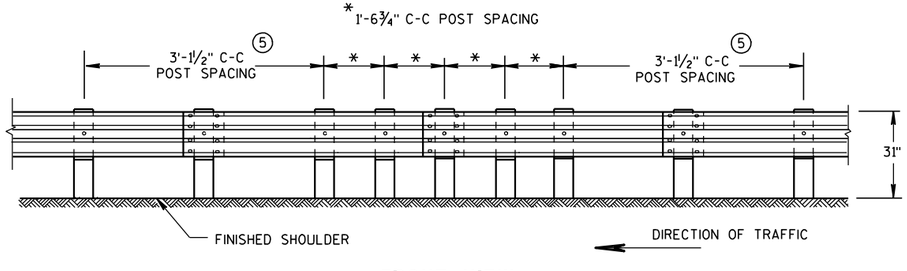


FRONT VIEW

MID-SPAN BEAM SPLICE

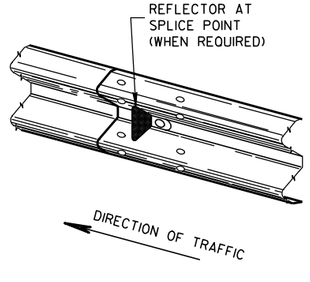


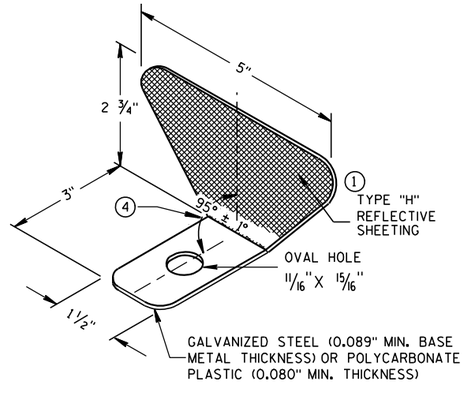
SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①

REFLECTOR SPACING ②

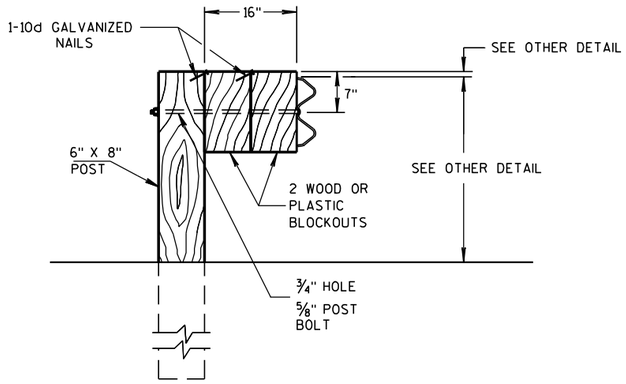
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ③	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ④	3
	> 200'	100' C-C	2	

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

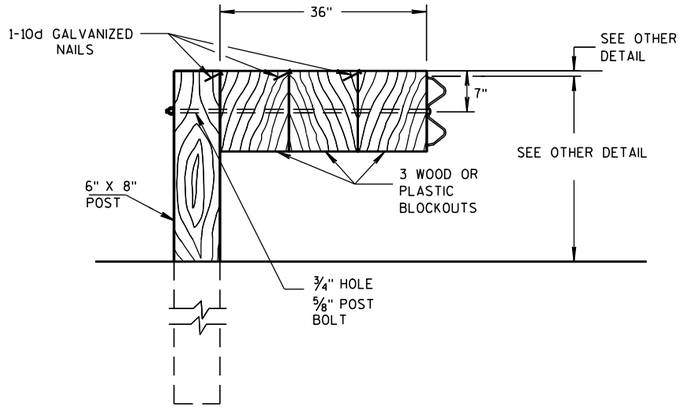
S.D.D. 14 B 42-2b

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.

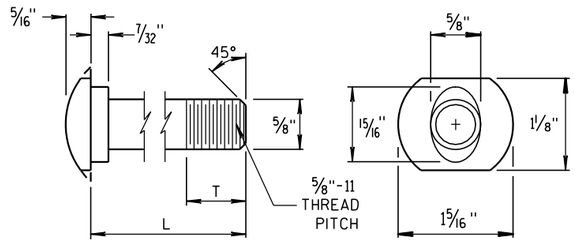


DETAIL FOR 36" BLOCKOUT DEPTH

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.

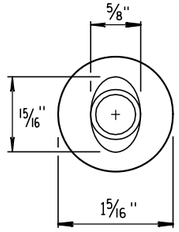
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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.

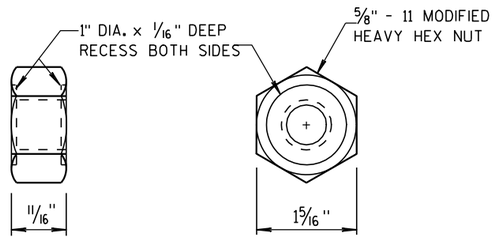


POST BOLT TABLE

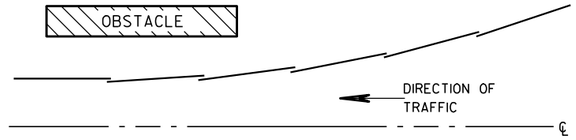
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

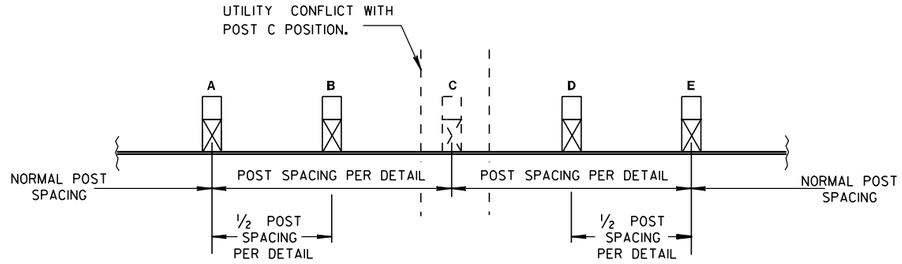


POST BOLT AND RECESS NUT

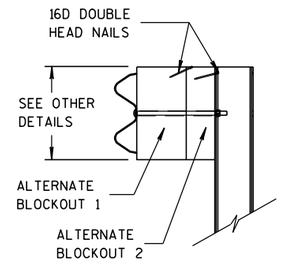


PLAN VIEW

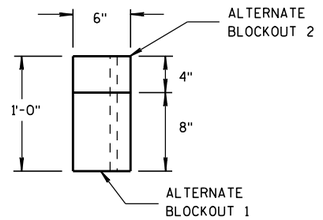
BEAM LAPPING DETAIL



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

ENT

6

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

GENERAL NOTES

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

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

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

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

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

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

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

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

SEE SDD 14B42 FOR MORE INFORMATION.

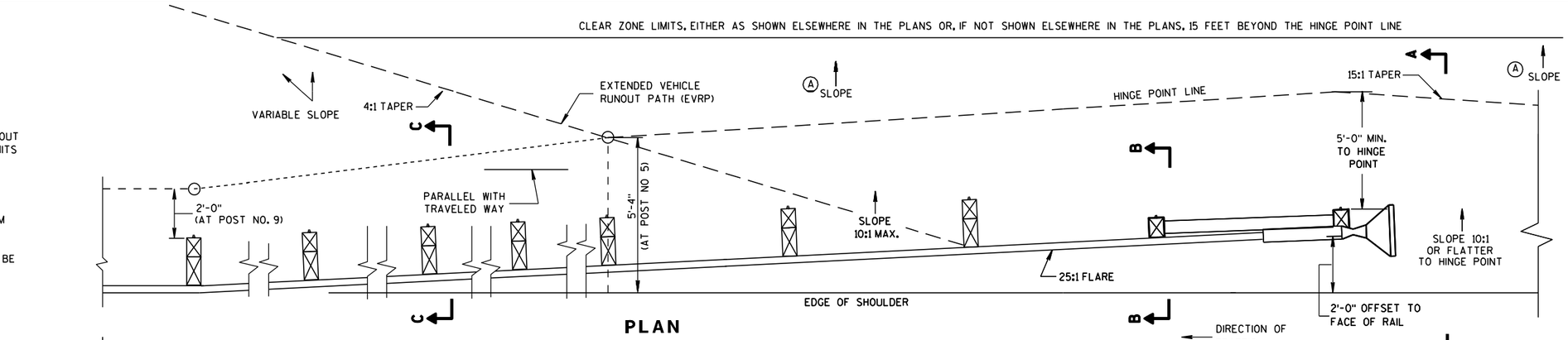
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

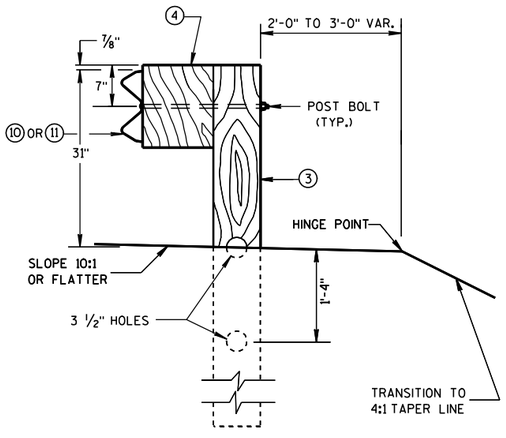
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

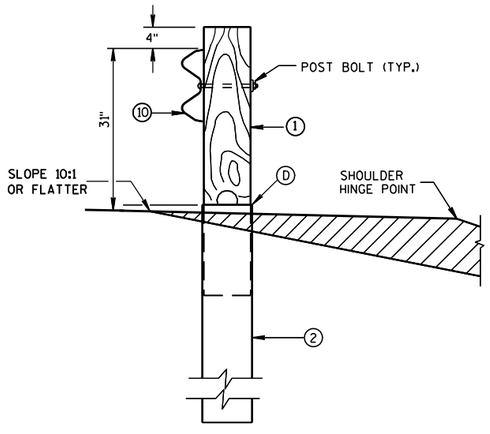
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

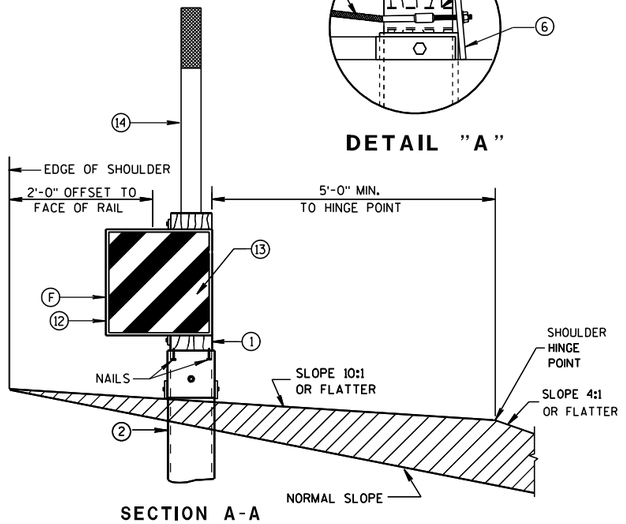




SECTION C-C
TYPICAL AT POST NOS. 3-9

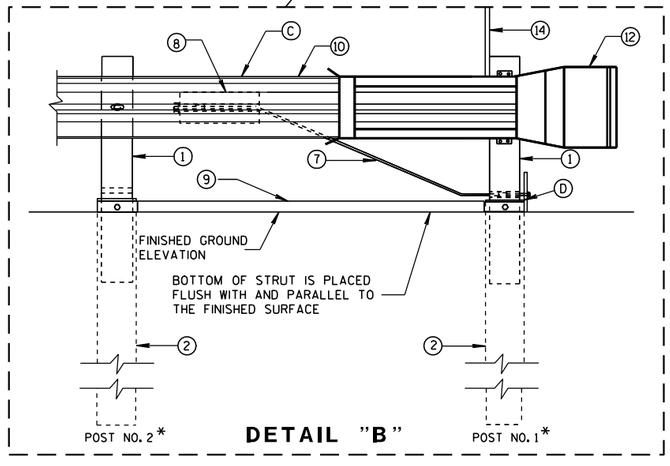


SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*

DETAIL "A"

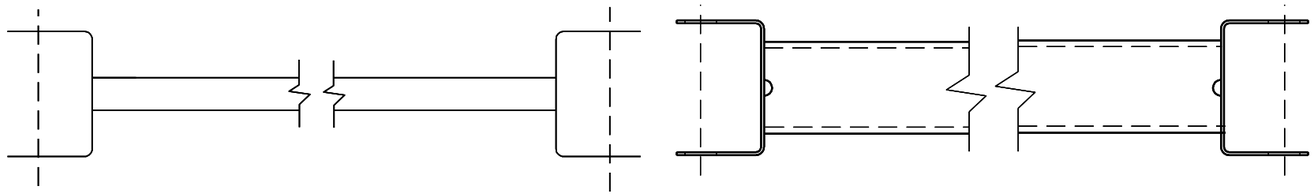


DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

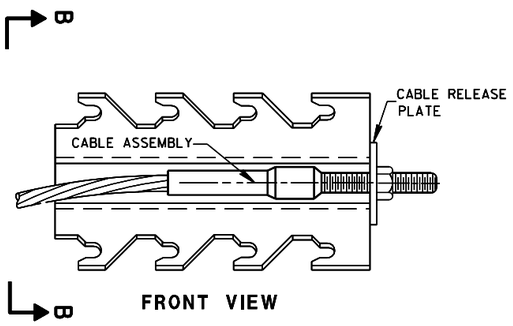
6
S.D.D. 14 B 44-1a



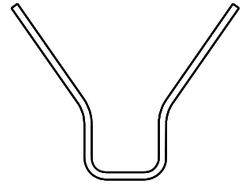
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

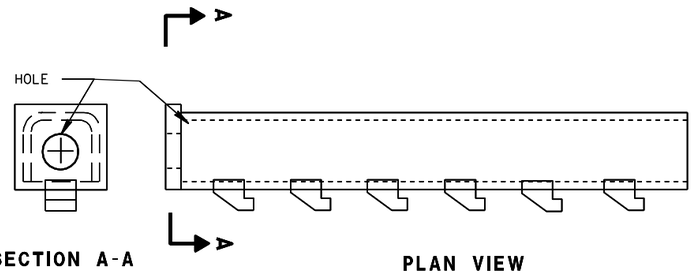
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR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



FRONT VIEW



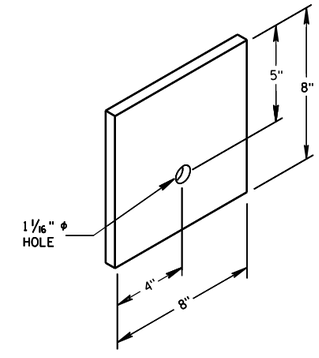
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



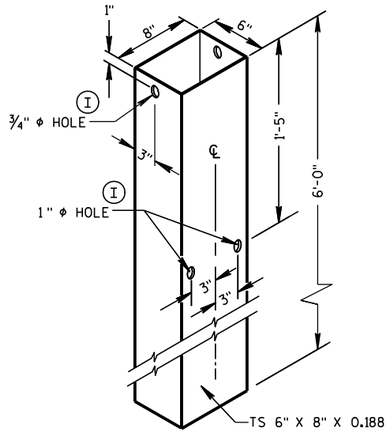
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

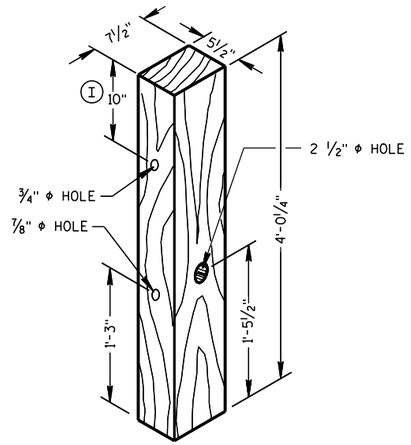
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

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

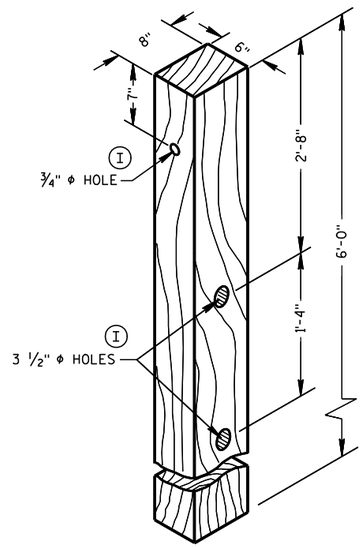


FOUNDATION TUBE (2)



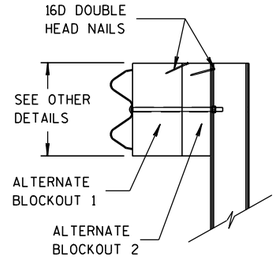
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

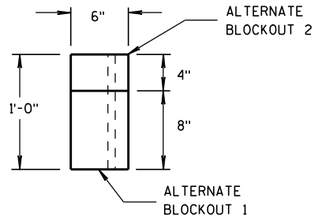


POSTS NUMBER 3-9

WOOD CRT POST (3)

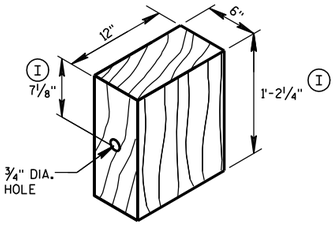


SIDE VIEW



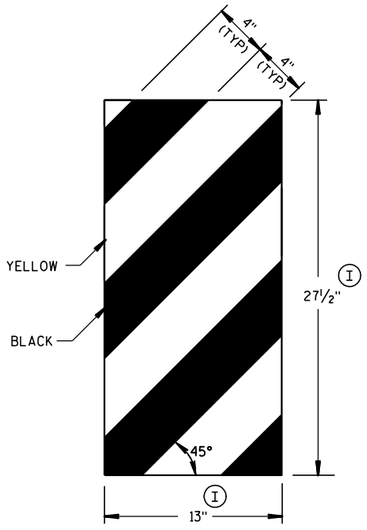
TOP VIEW

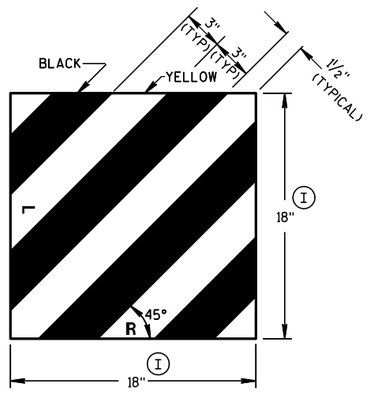
ALTERNATE WOOD BLOCKOUT DETAIL



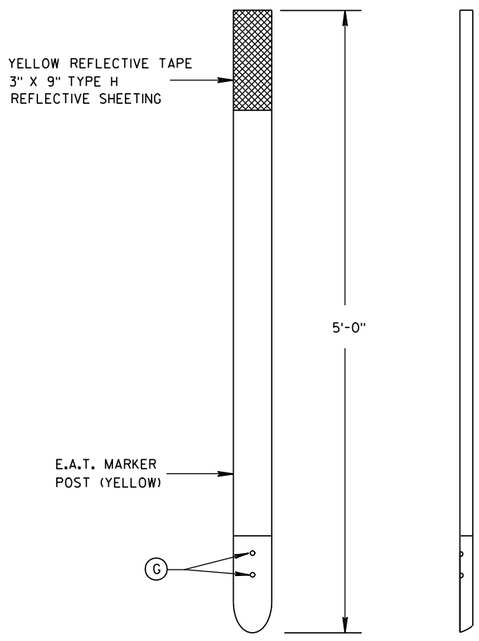
WOOD BLOCKOUT (4)

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





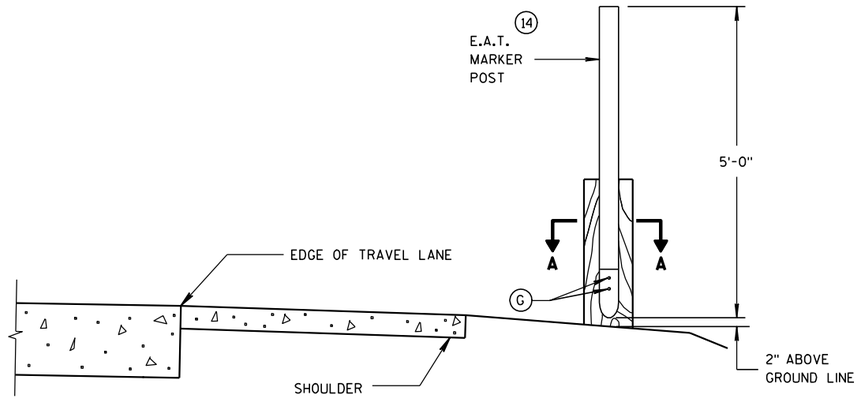
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

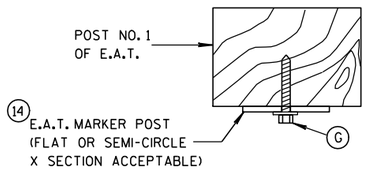
SIDE VIEW

E.A.T. MARKER POST (14)



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

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



SECTION A-A

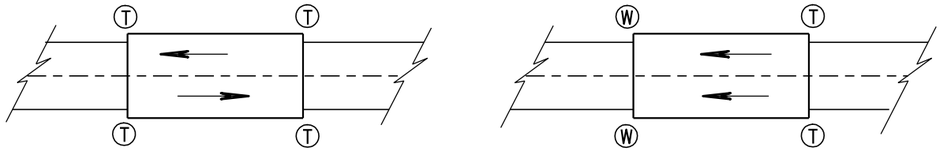
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

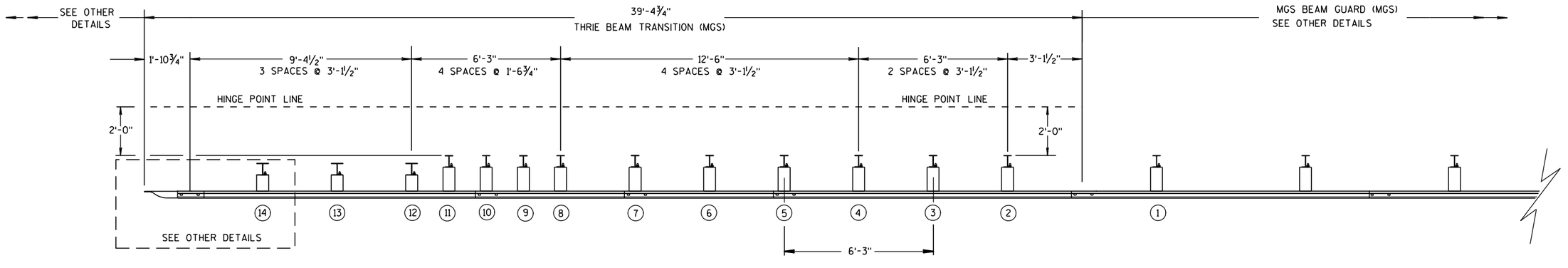
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

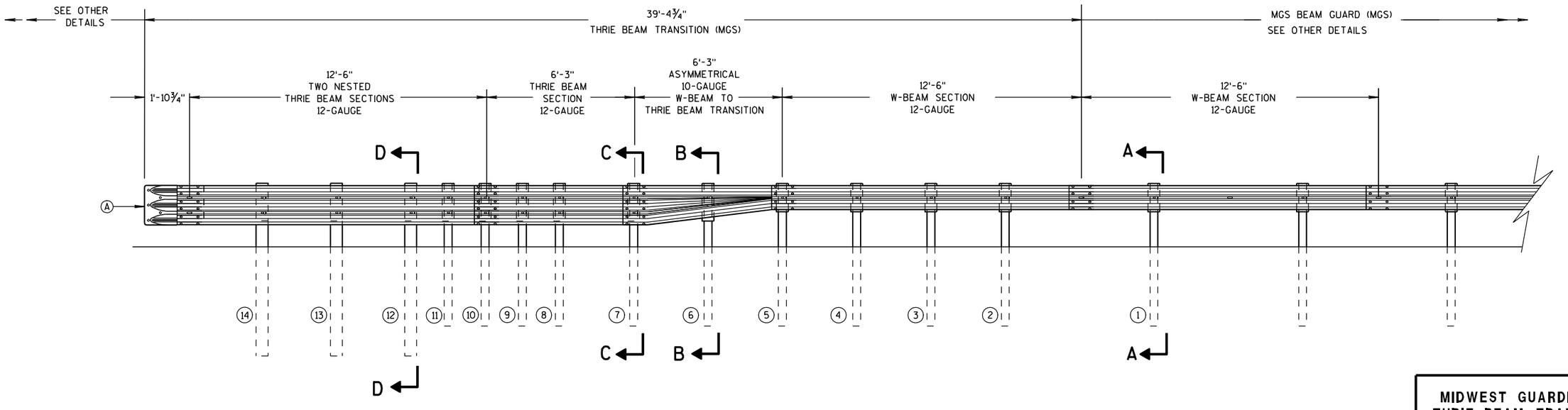
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

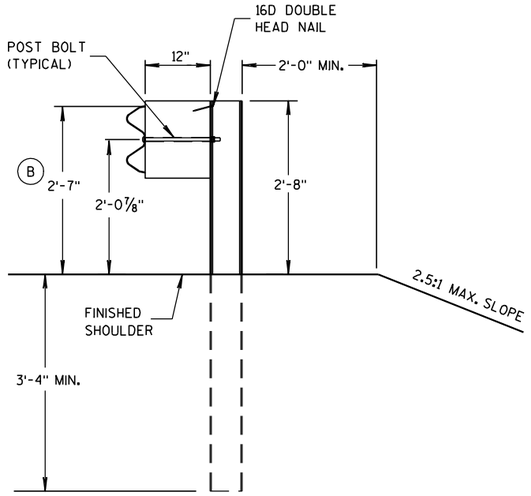
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

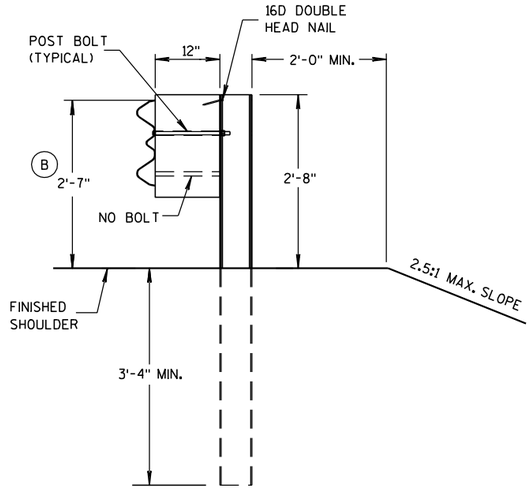
GENERAL NOTES

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



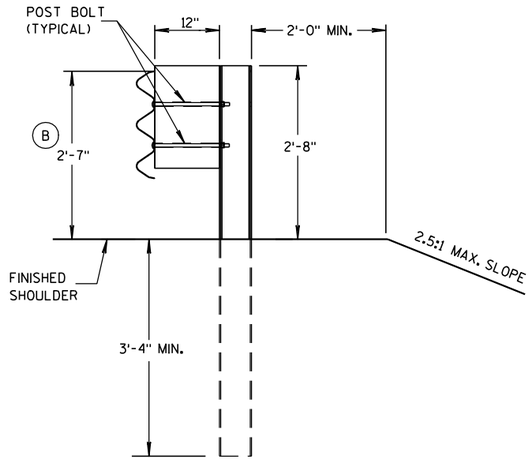
SECTION A-A

POSTS 1-5



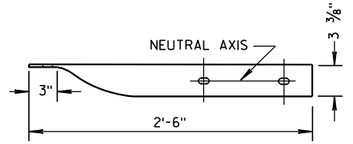
SECTION B-B

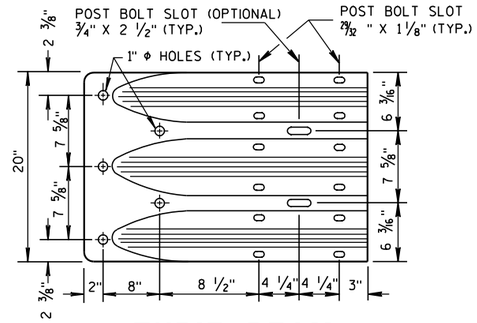
POST 6



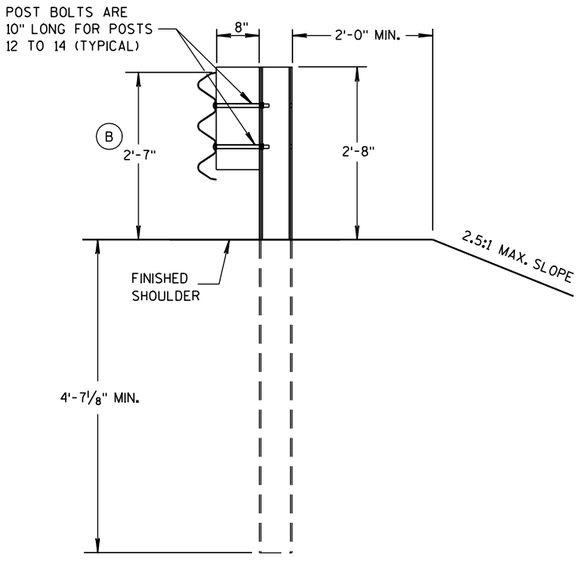
SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14

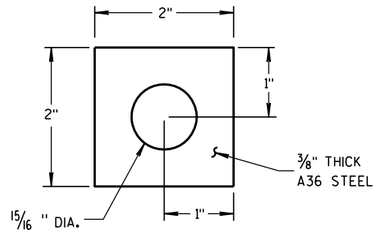
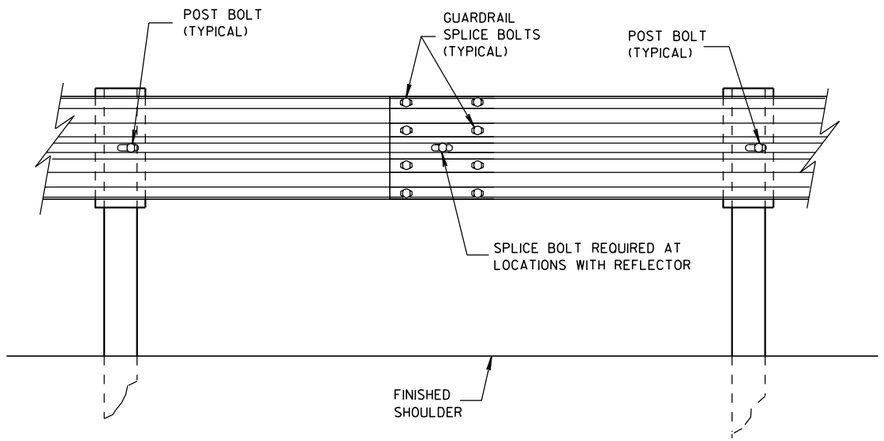
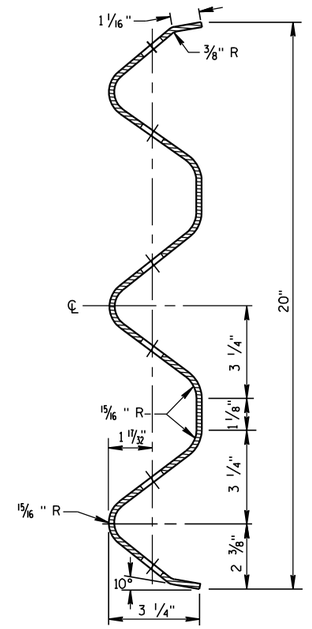


PLATE WASHER DETAIL



SPLICE DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO.....T

6

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

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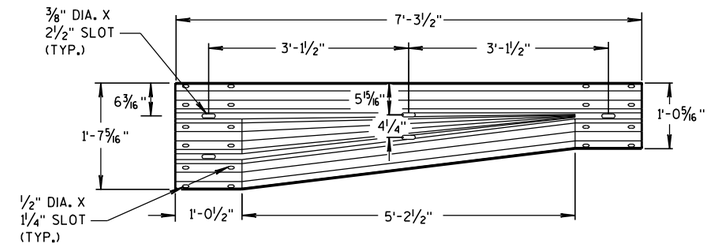
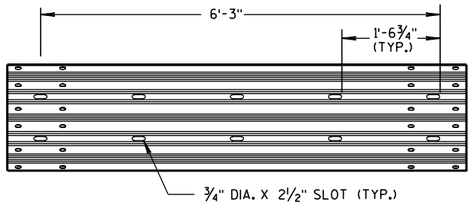
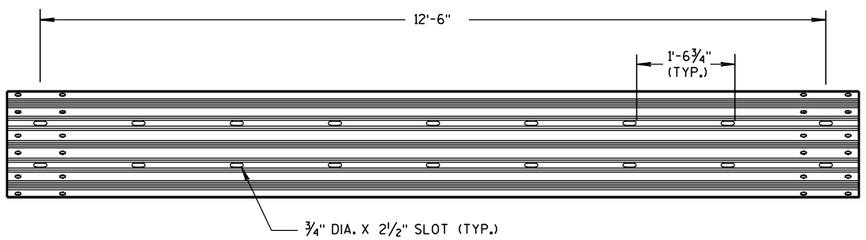
S.D.D. 14 B 45-3b



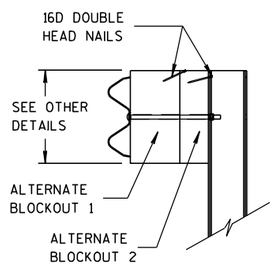
W-BEAM TO THRIE BEAM TRANSITION SECTION



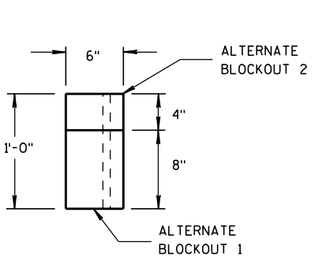
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

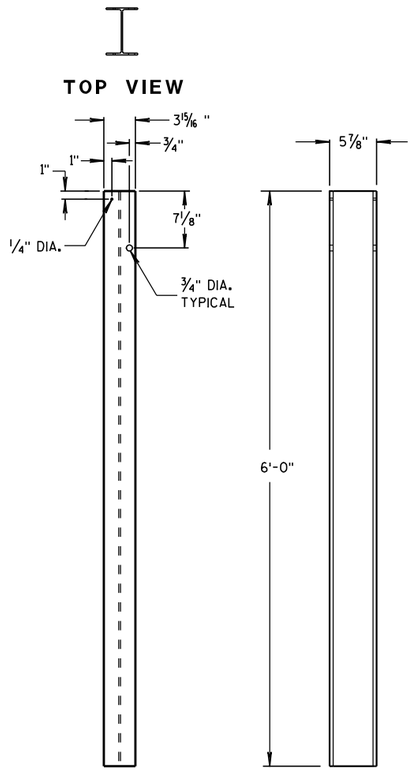


SIDE VIEW

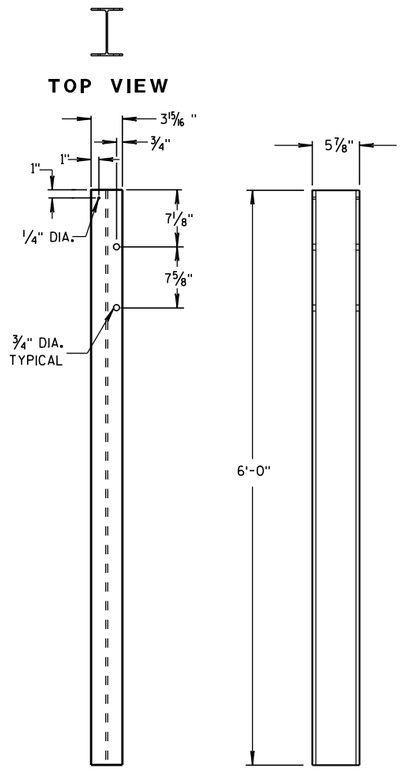


TOP VIEW

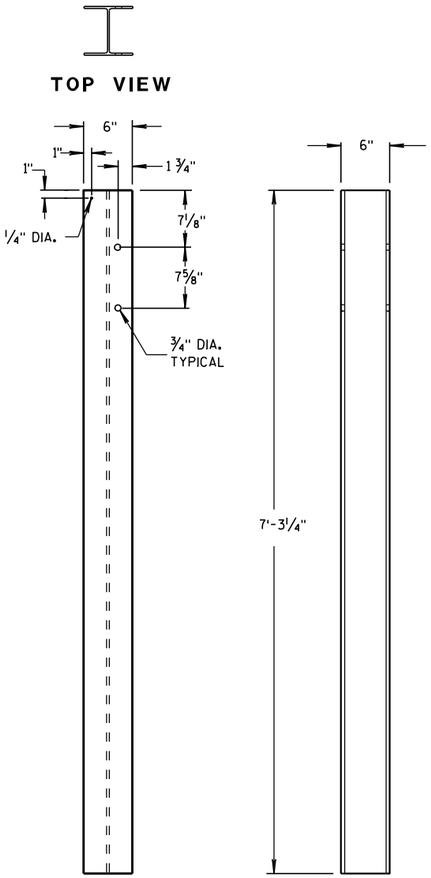
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

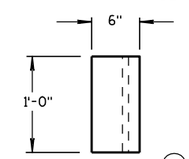


STEEL POSTS 6-11

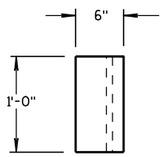


STEEL POSTS 12-14

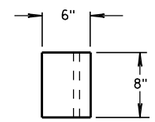
1 WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



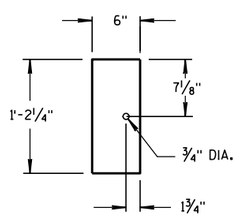
TOP VIEW (1)



TOP VIEW (1)

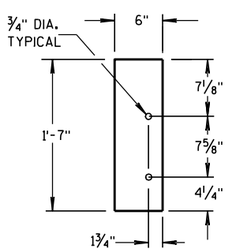


TOP VIEW



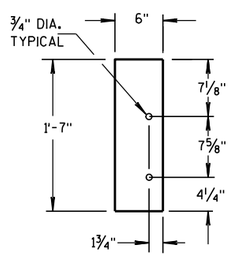
FRONT VIEW

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"

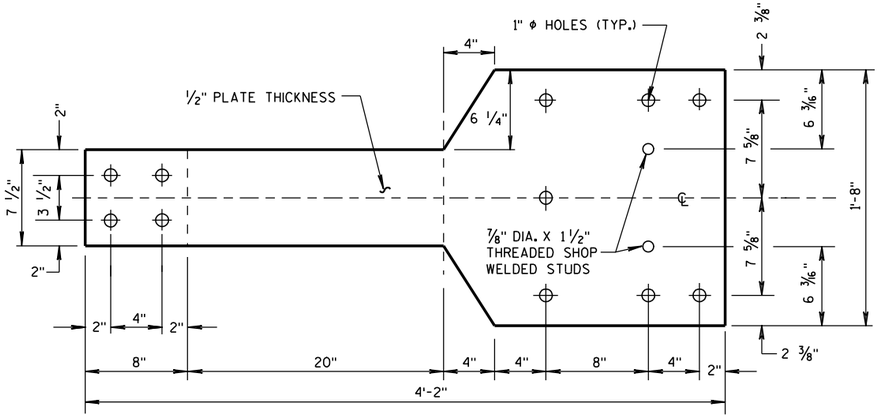
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

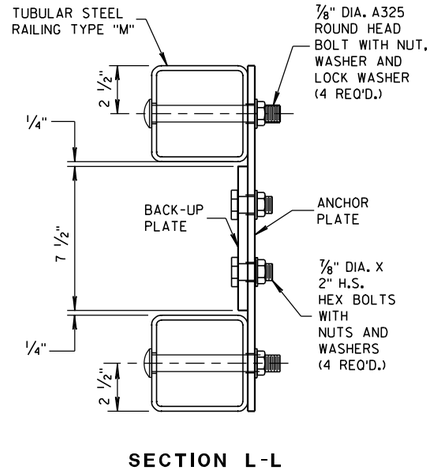
6
S.D.D. 14 B 45-3c

GENERAL NOTES

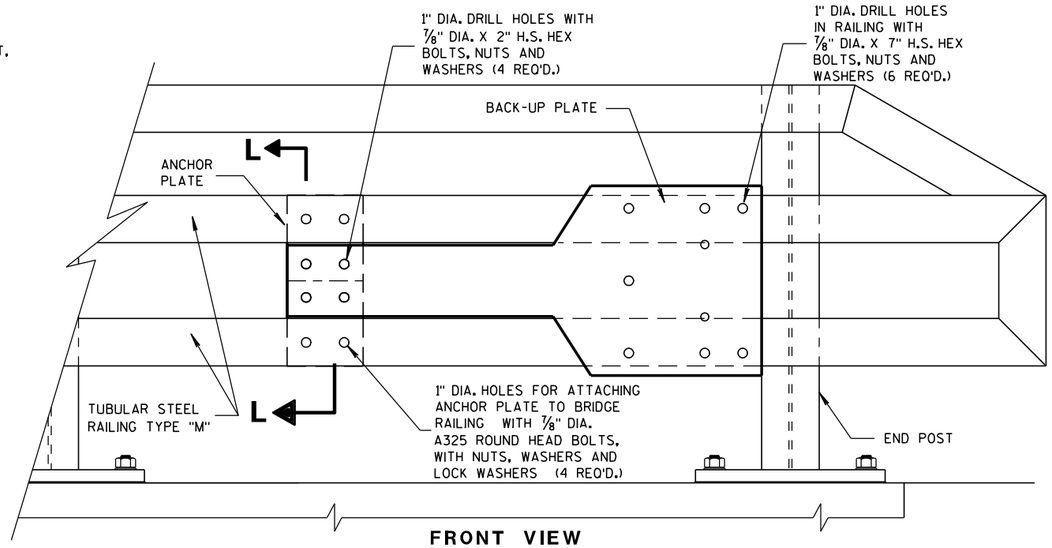
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



FRONT VIEW

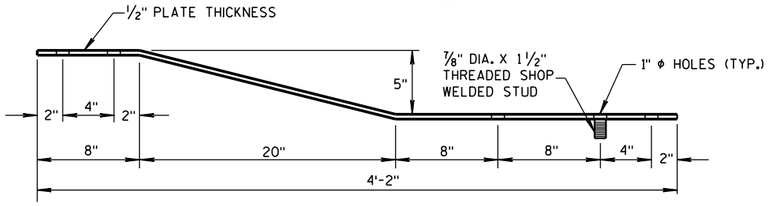


SECTION L-L



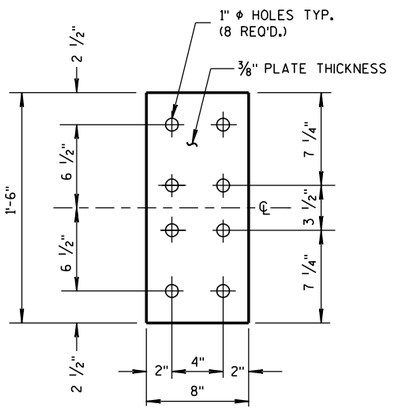
FRONT VIEW

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



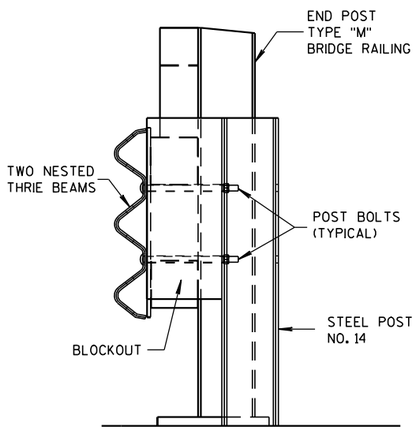
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

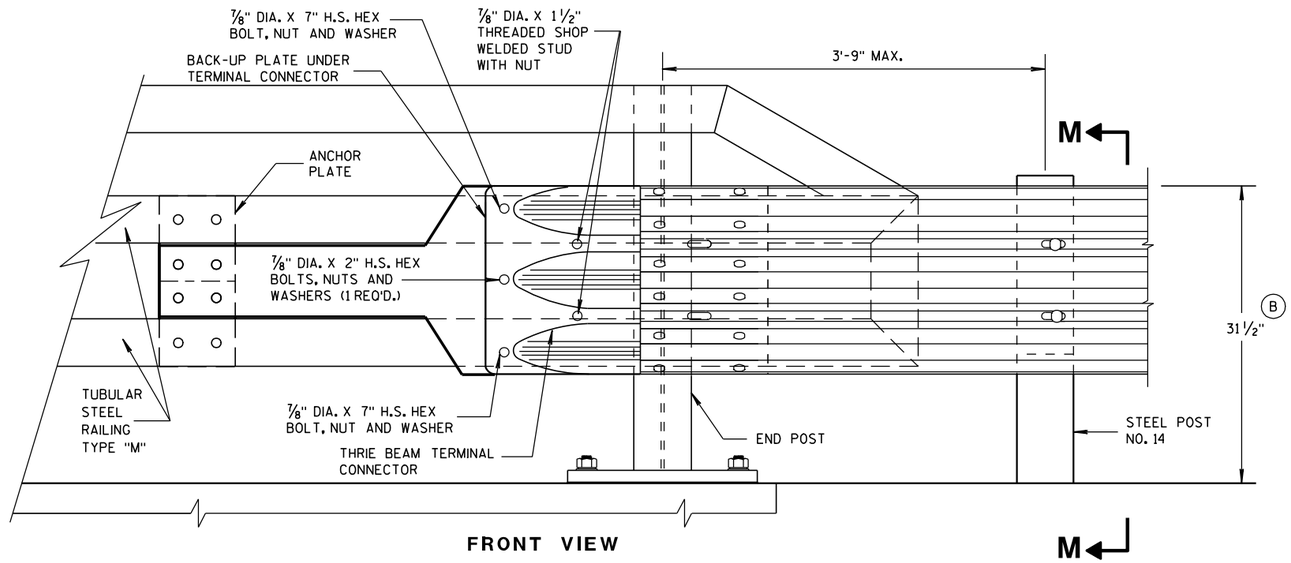


FRONT VIEW

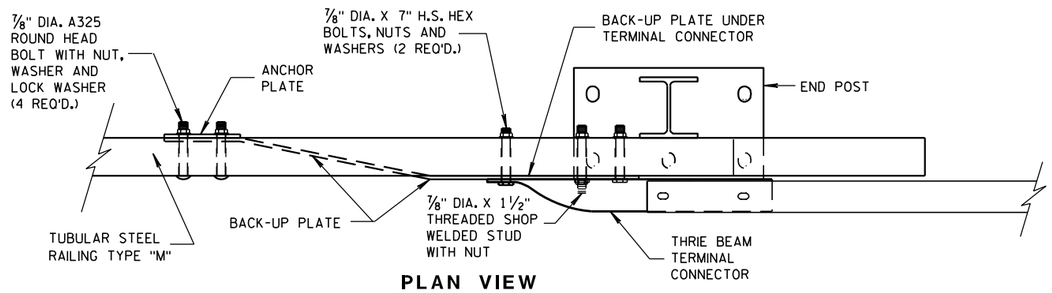
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-31-2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

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FHWA

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S.D. 14 B 45-3h

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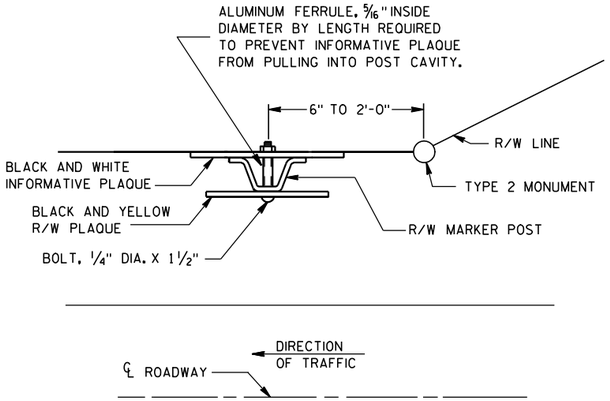
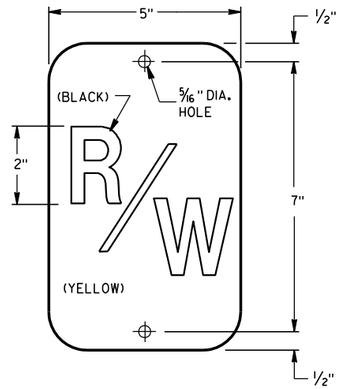
S.D. 14 B 45-3h

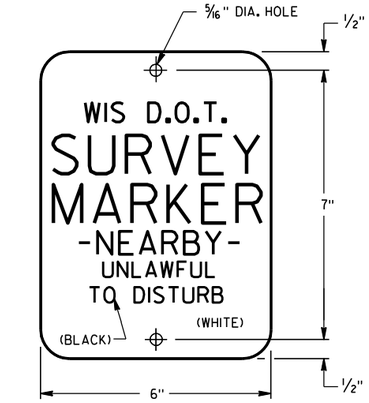


PLAN VIEW



R/W PLAQUE

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



INFORMATIVE PLAQUE

GENERAL NOTES

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

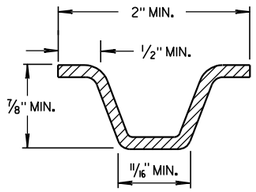
A STEEL MARKER POST FOR RIGHT-OF-WAY SHALL BE PLACED IN THE RIGHT-OF-WAY, WITH THE BACK OF THE POST ON THE LONGER RIGHT-OF-WAY TANGENT, 6 INCHES TO 24 INCHES FROM EACH TYPE 2 MONUMENT TO SERVE AS A GUARD POST, AND AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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

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

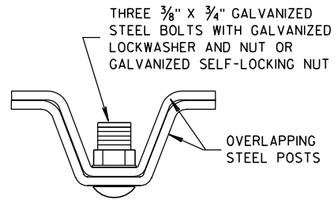
(1) IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK TO A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 3' 10" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR.

FILL THE BORE HOLE WITH CEMENT GROUT, OR EQUIVALENT, DEPENDING ON THE STABILITY OF THE ROCK.

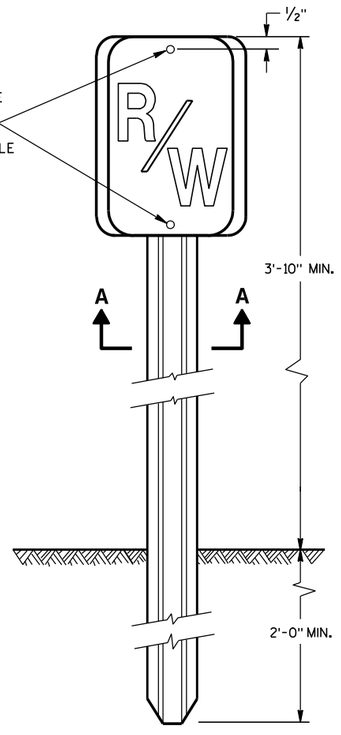


MIN. WEIGHT 1.12 LB./FT.

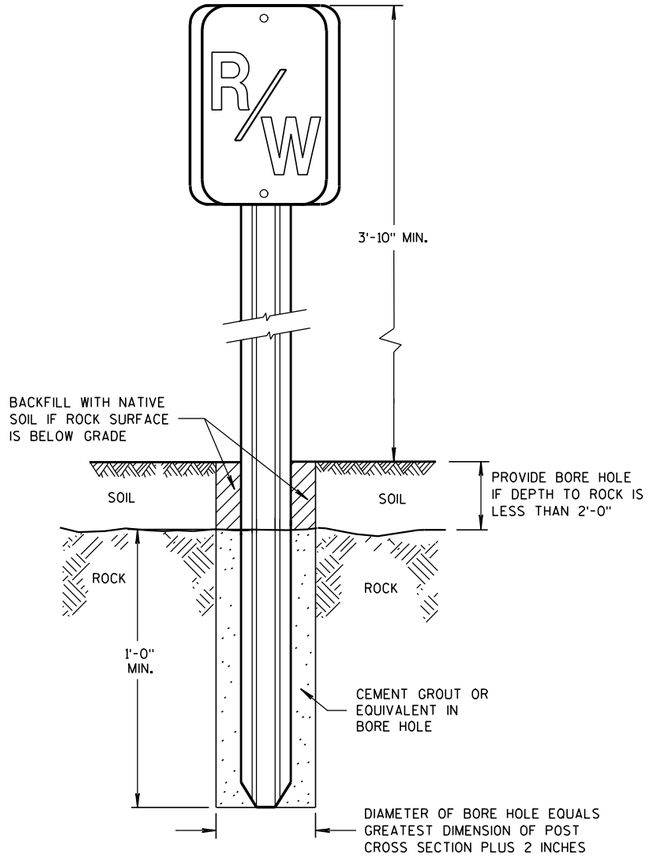
SECTION A-A



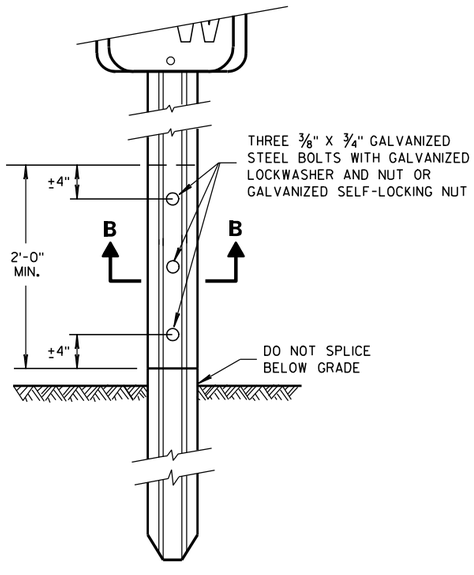
SECTION B-B



FRONT VIEW
STEEL MARKER POST



FRONT VIEW
ROCK INSTALLATION (1)



FRONT VIEW
SPLICE DETAIL

MARKER POST FOR RIGHT-OF-WAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 15 A 1-11

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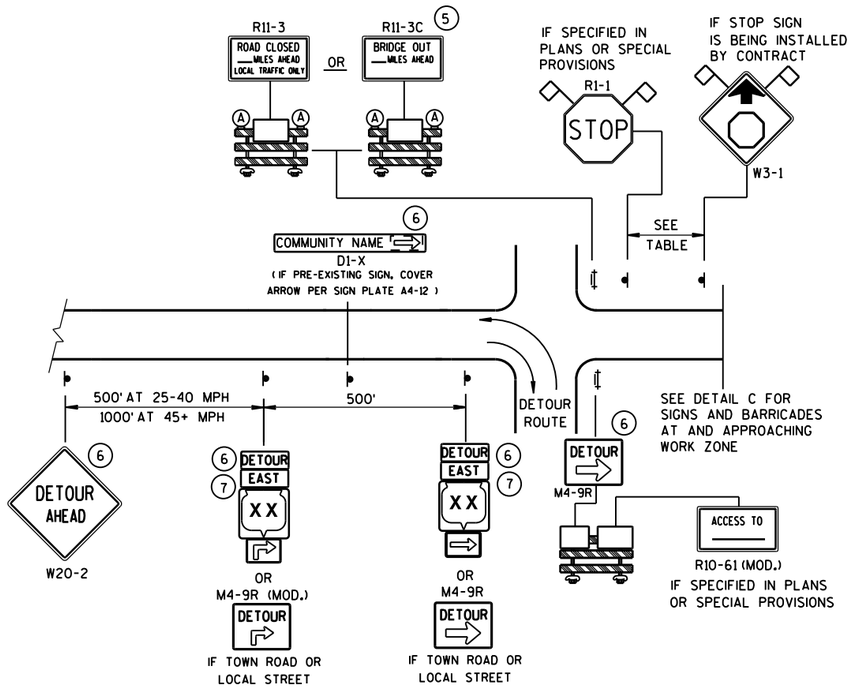
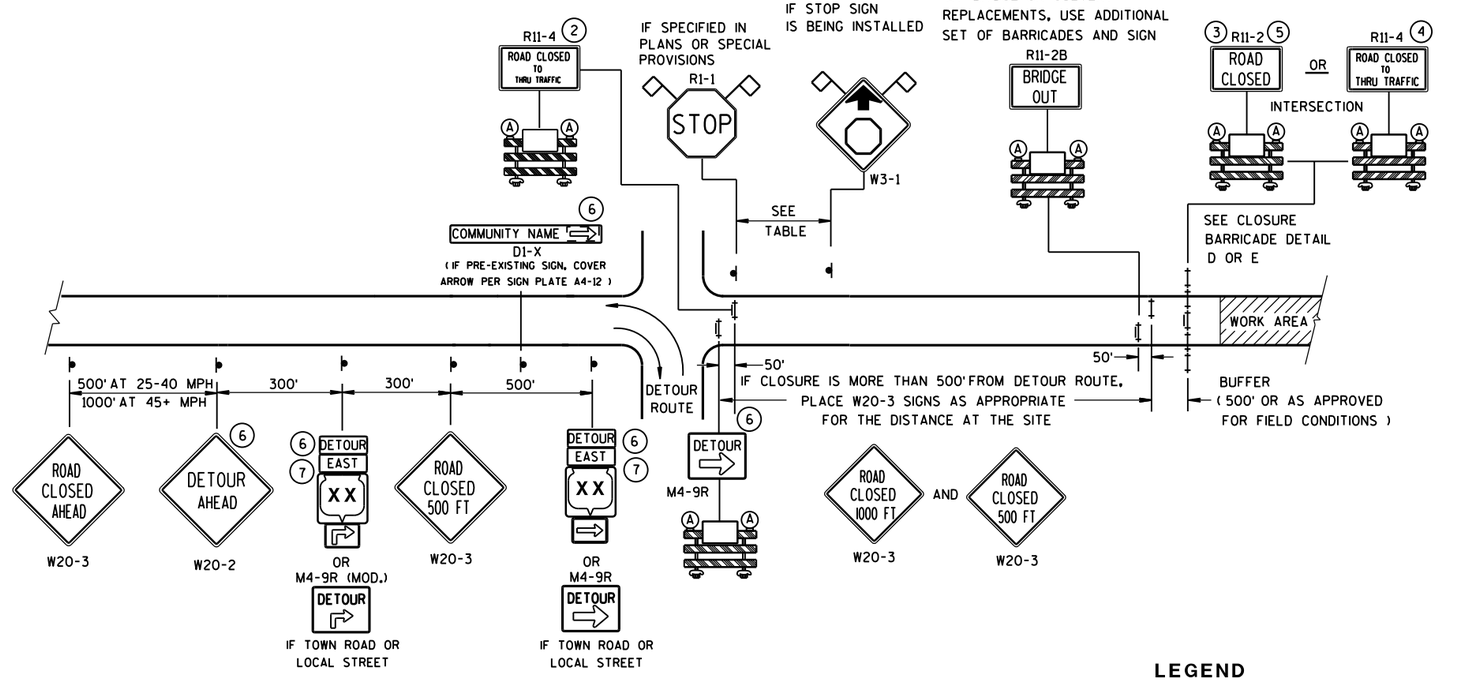
S.D.D. 15 A 1-11



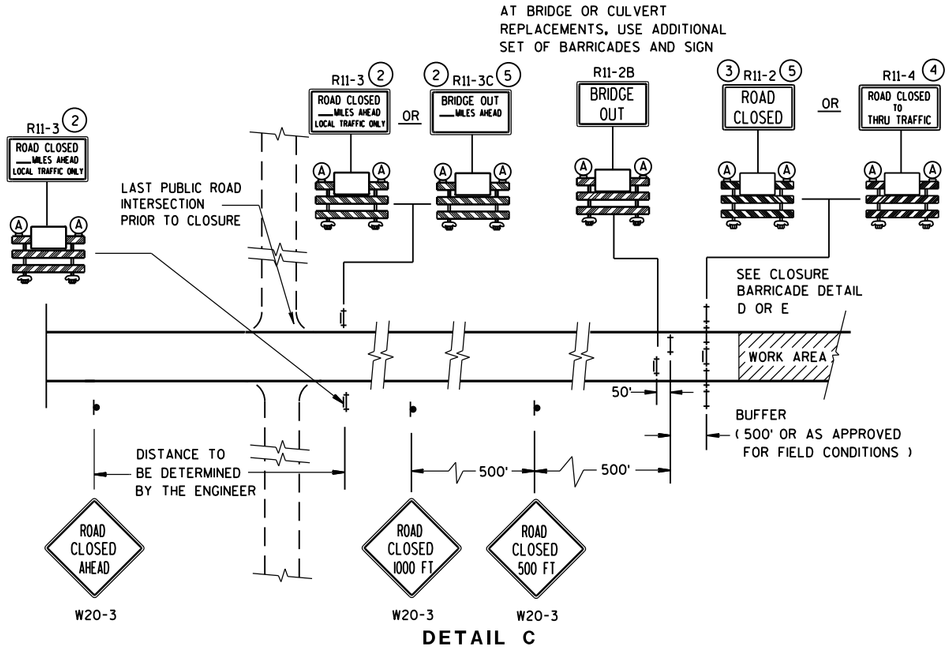
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

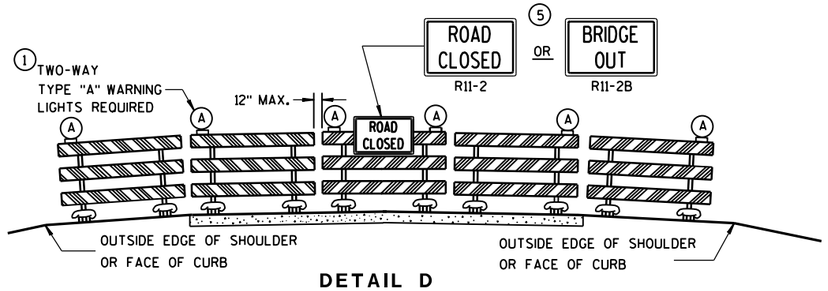
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

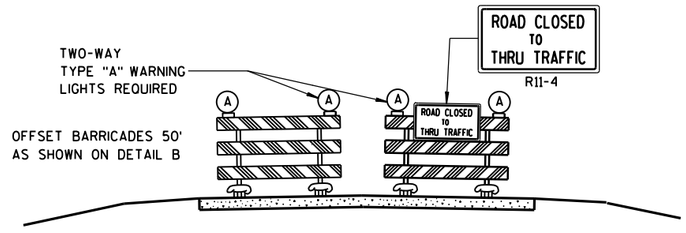
S.D.D. 15 C 2-5a



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.

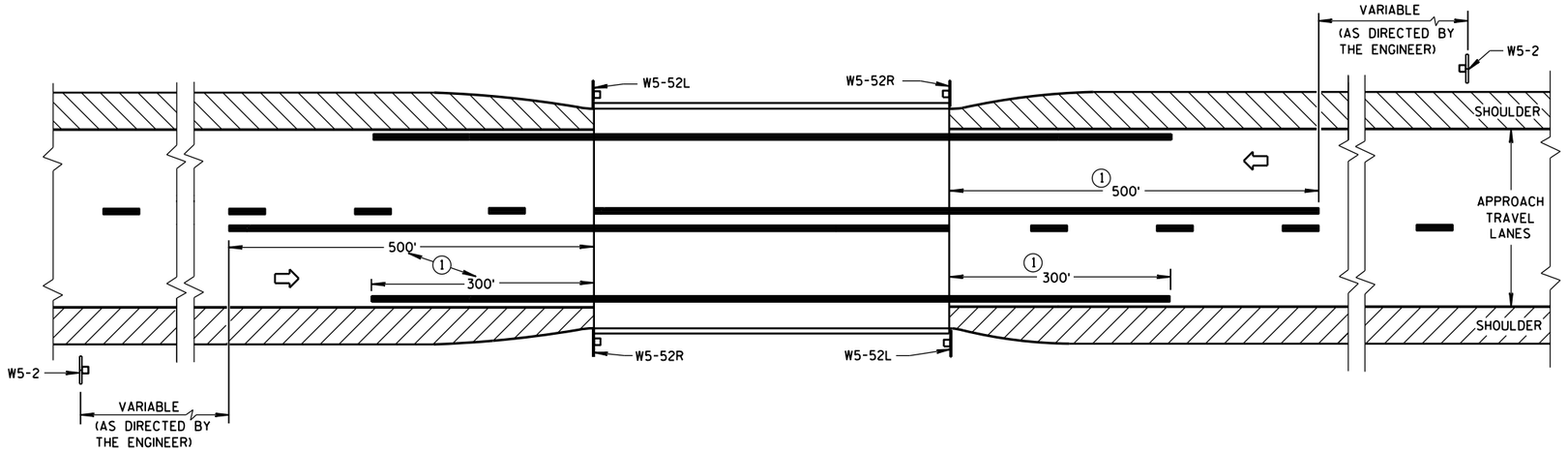
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

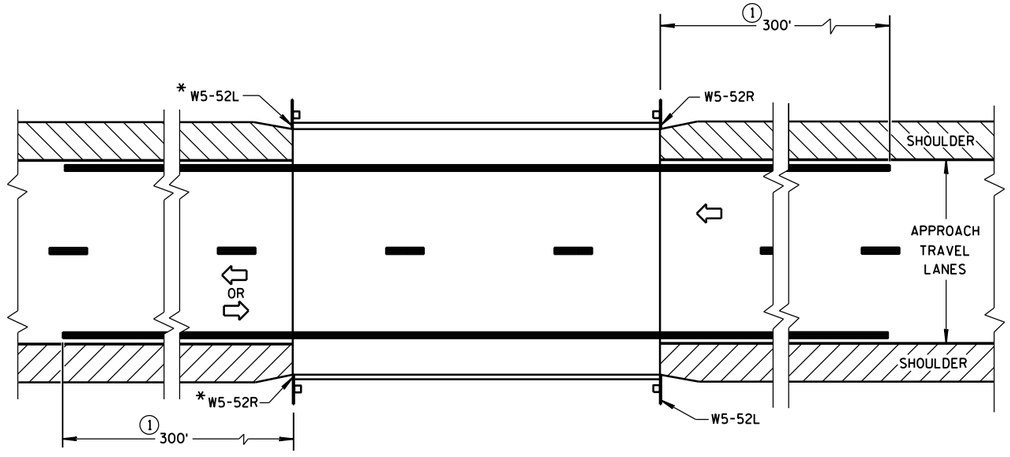
S.D.D. 15 C 2-5b



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

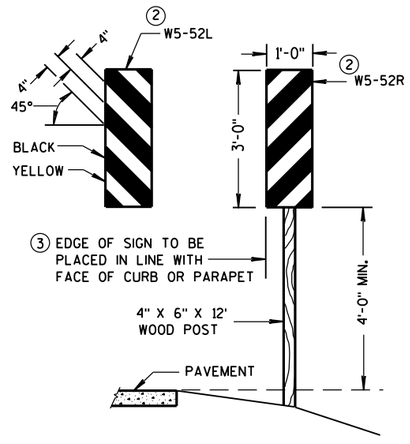
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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.

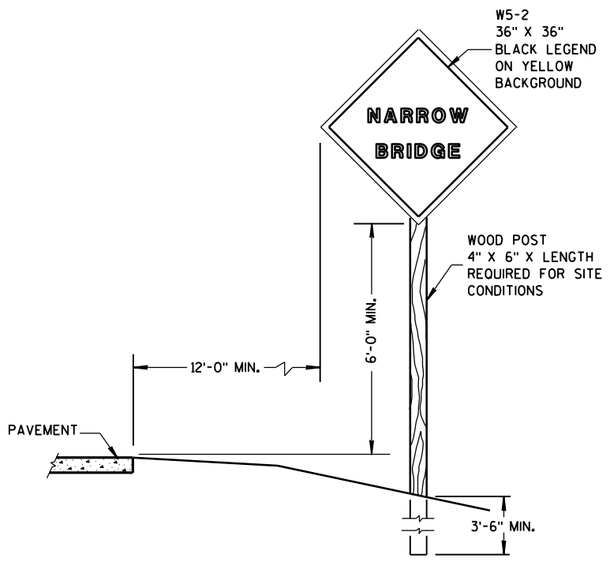
(1) MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

(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

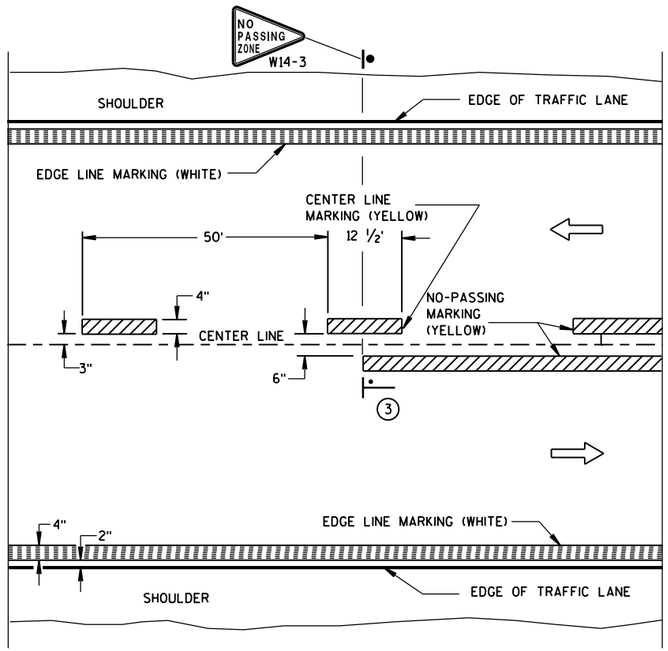
3/4/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

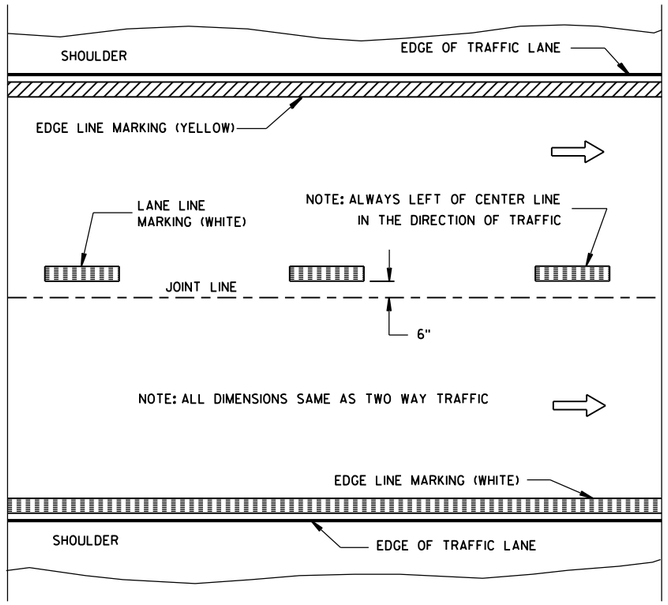
FHWA

6

S.D.D. 15 C 6-6



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

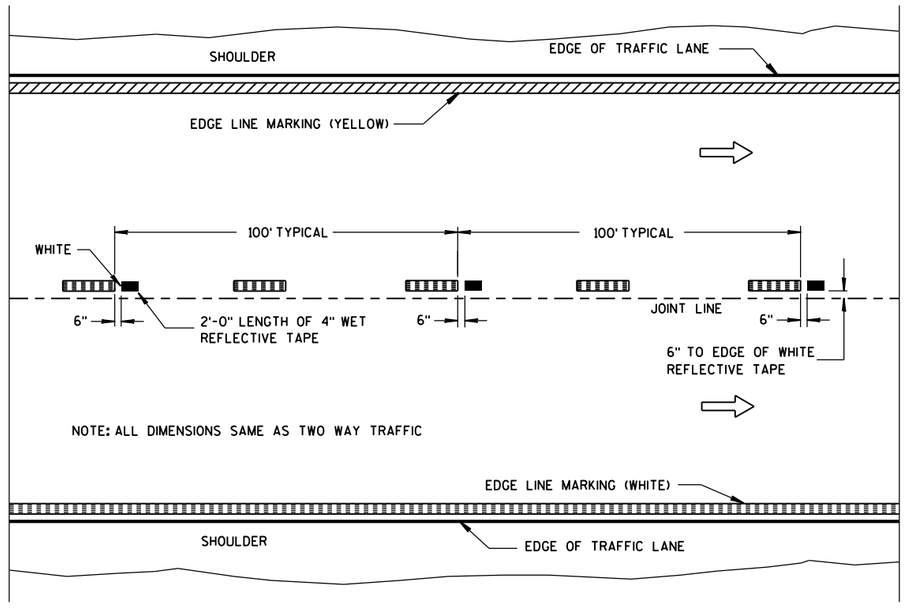
GENERAL NOTES

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

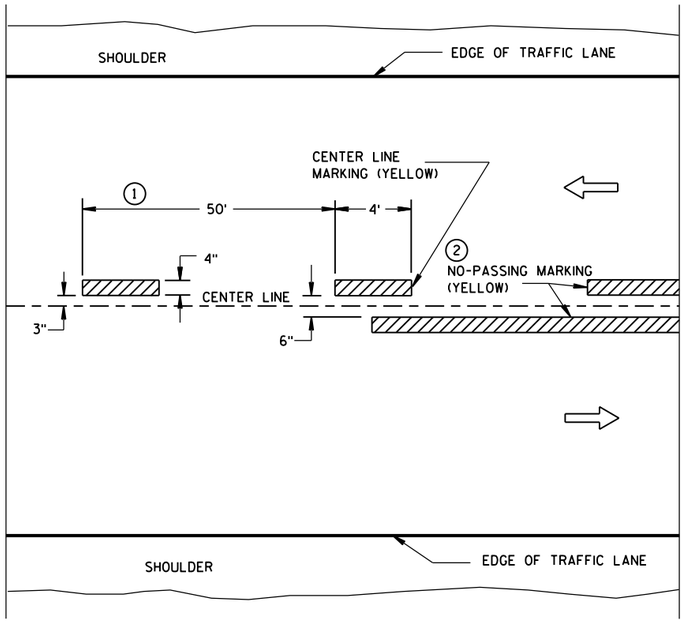
1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING 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

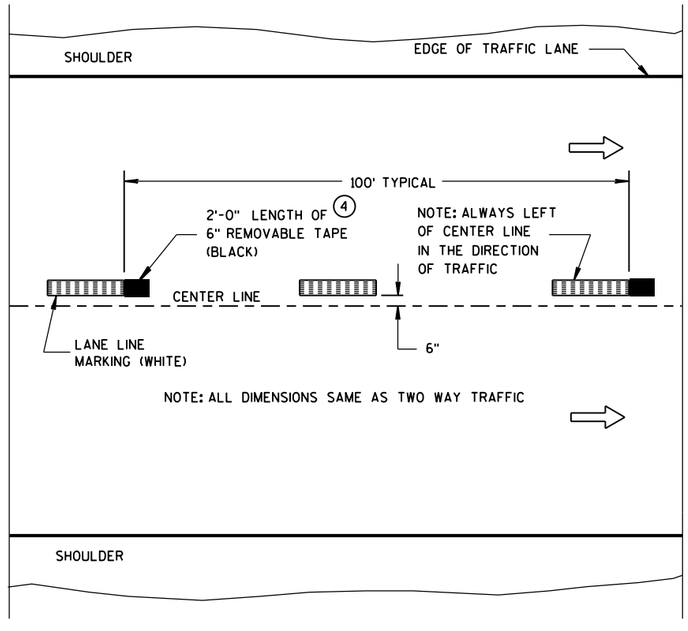
ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



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



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

FHWA

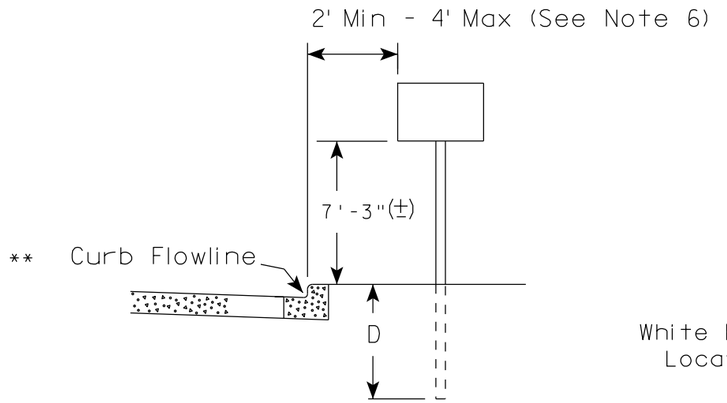
6

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

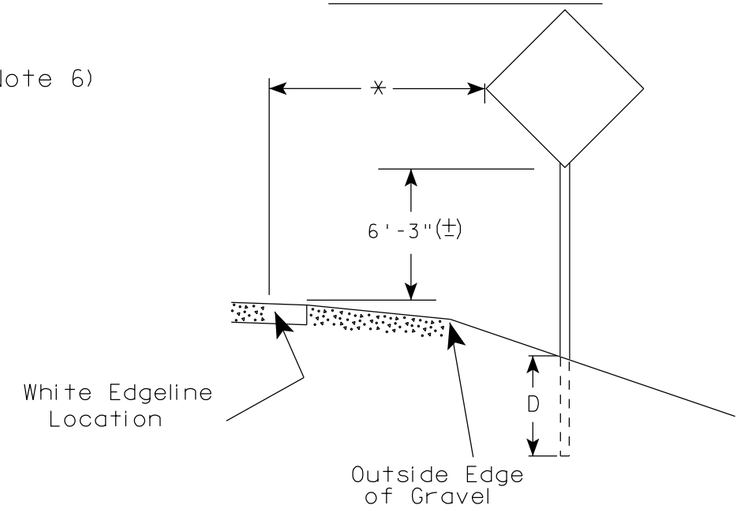
6

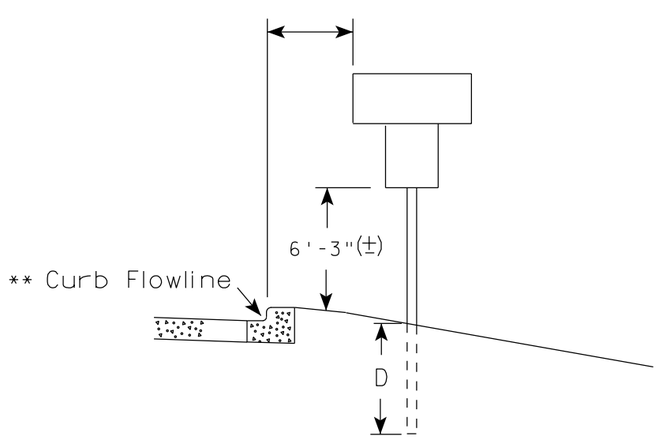
S.D.D. 15 C 8-16a

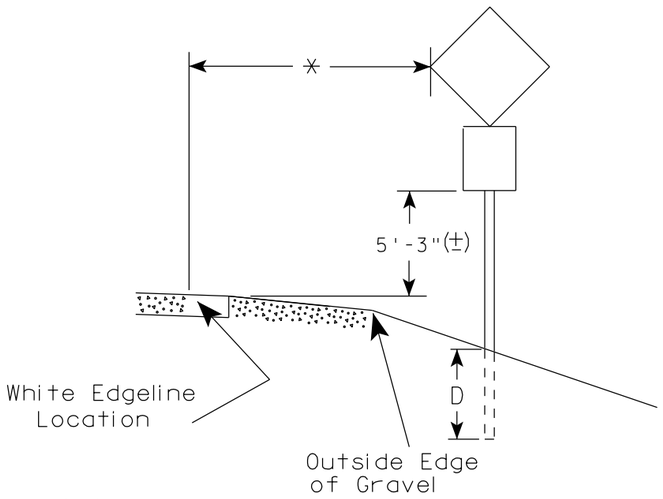
URBAN AREA



RURAL AREA (See Note 2)







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

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

GENERAL NOTES

1. Signs wider than 4 feet, 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

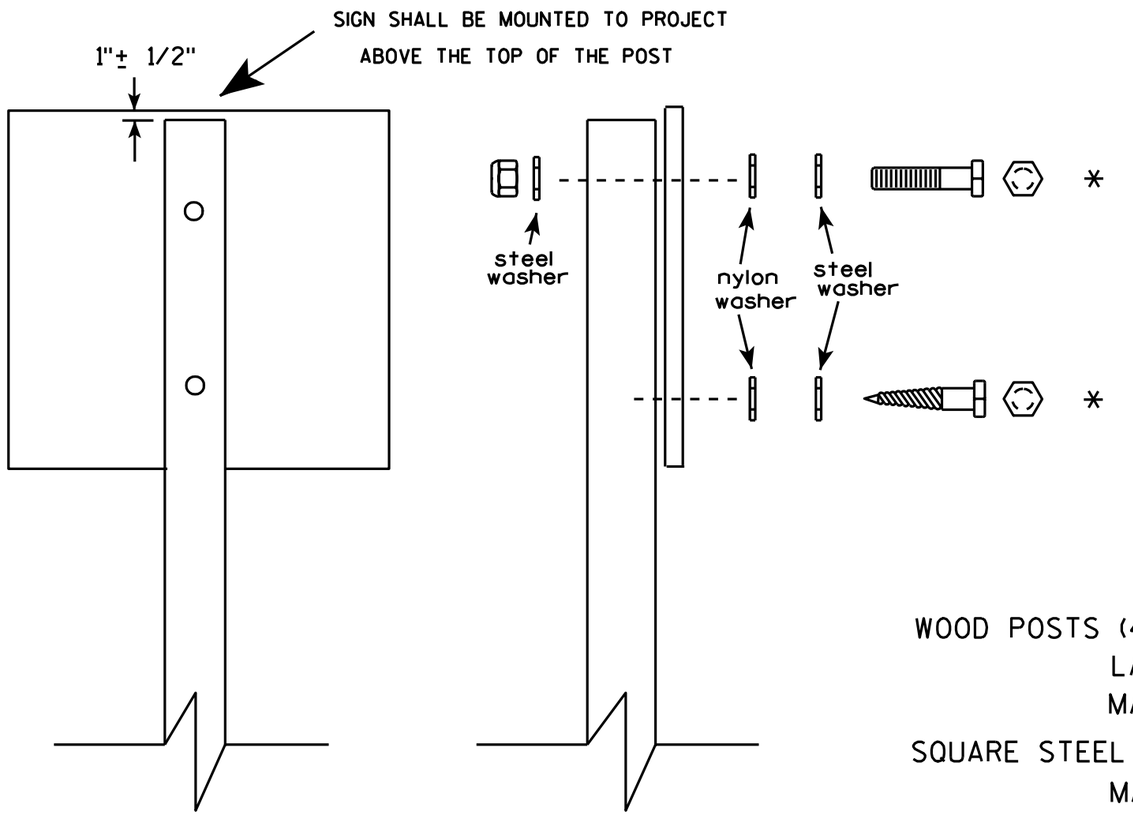
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

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

PROJECT NO: 5268-00-70 | HWY: CTH D | COUNTY: VERNON | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A43.DGN PLOT DATE : 30-SEP-2013 13:25 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 99.237937:1.000000 WISDOT/CADDS SHEET 42



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

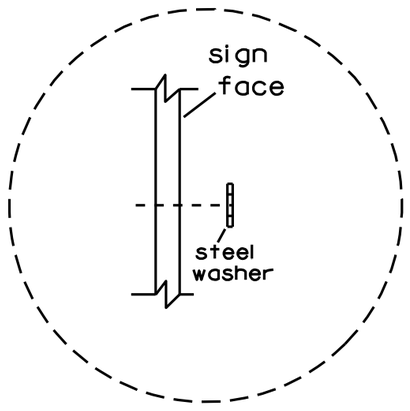
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

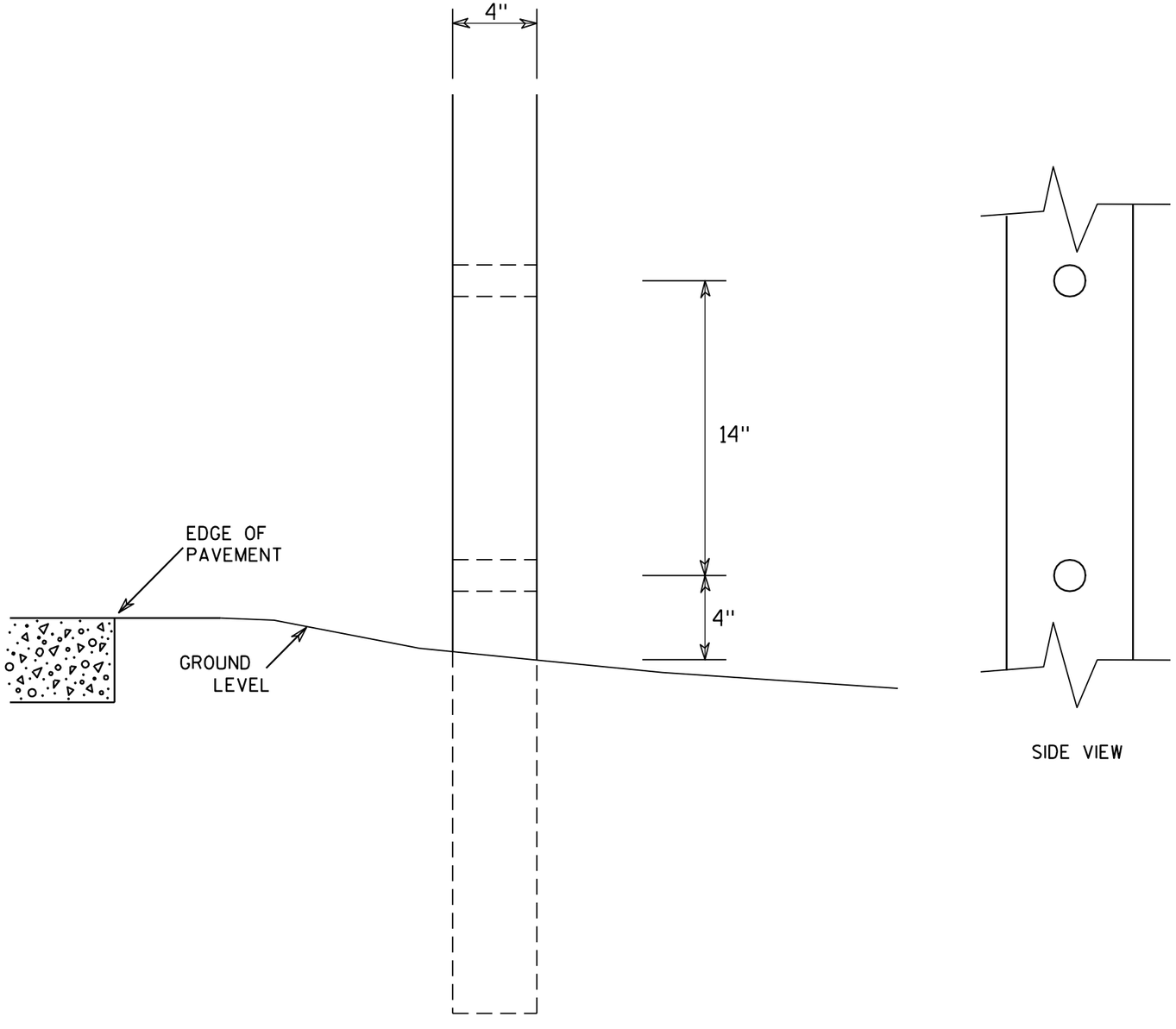
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: 5268-00-70	CTH D	VERNON		SHEET NO: 31	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\A48.DGN PLOT DATE : 23-MAR-2010 10:15 PLOT BY : ditjph
WISDOT/CADDS SHEET 42



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

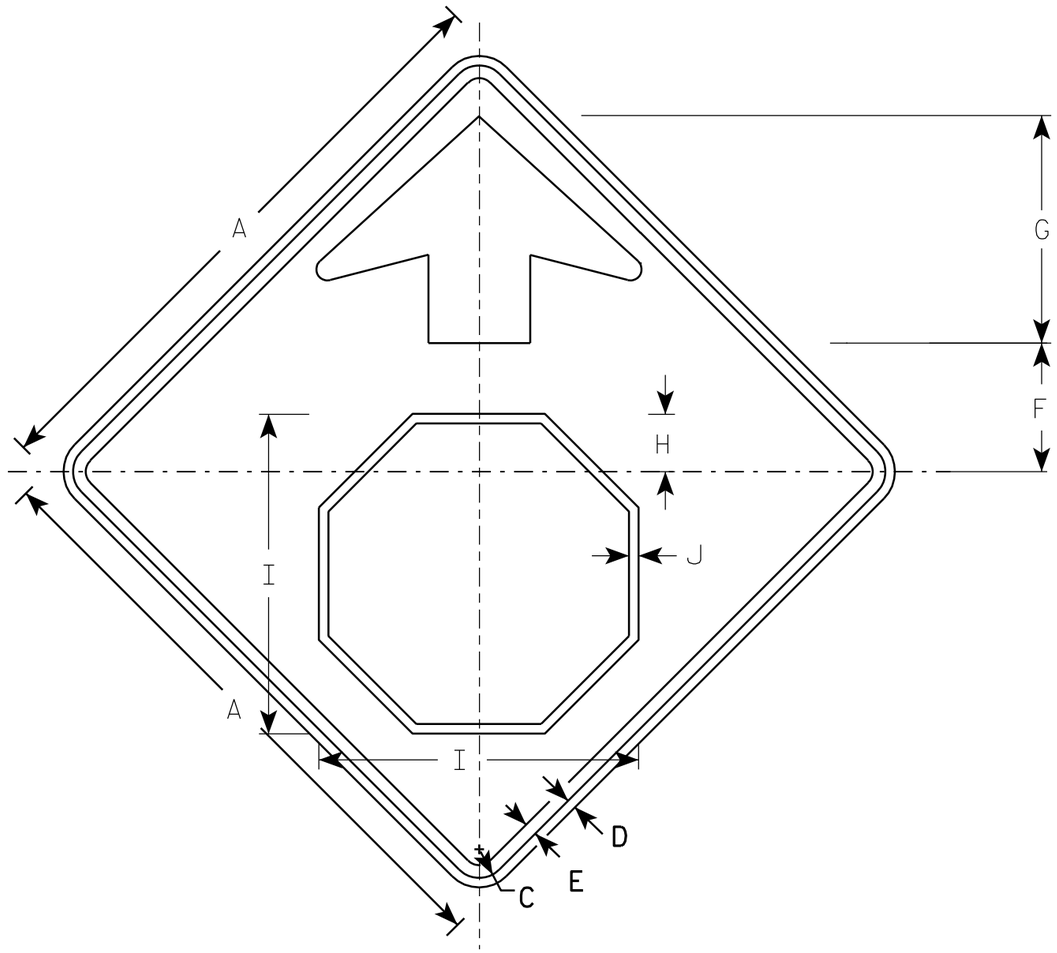
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

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

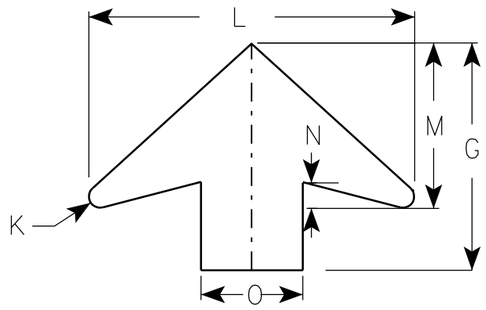
PROJECT NO: 5268-00-70	HWY: CTH D	COUNTY: VERNON		SHEET NO: 32	E



W3-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - YELLOW
   Arrow & Border - BLACK
   Stop Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

STANDARD SIGN
W3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-1.12

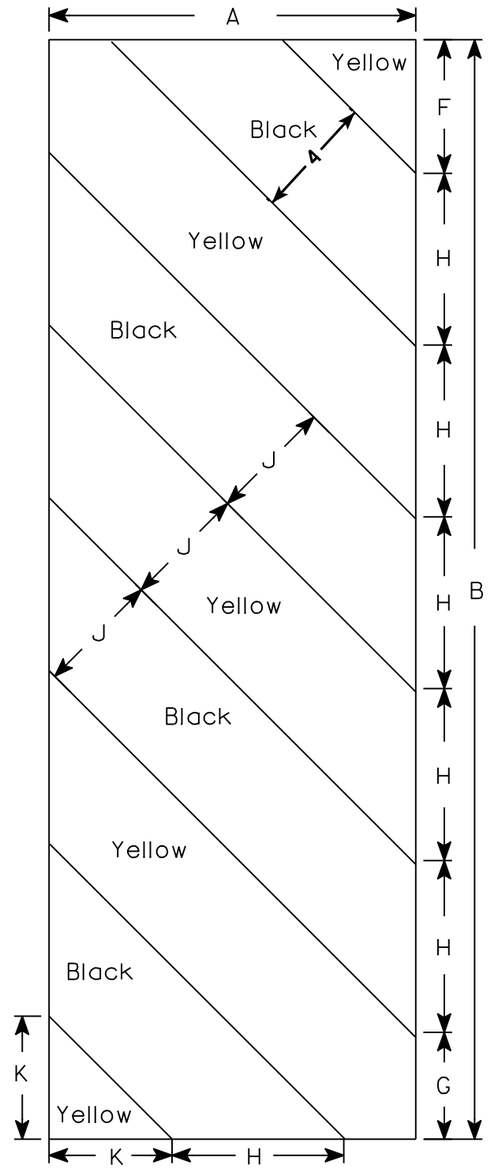
PROJECT NO: 5268-00-70 | CTH D | VERNON | SHEET NO: 33 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W31.DGN PLOT DATE : 07-JUN-2010 12:59 PLOT BY : ditjph

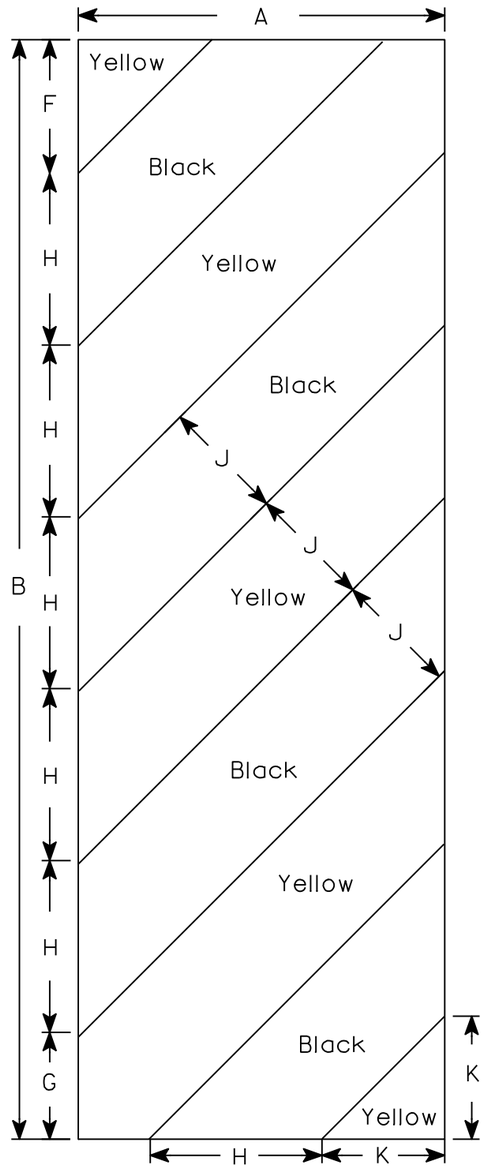
WISDOT/CADDS SHEET 42

7

7



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

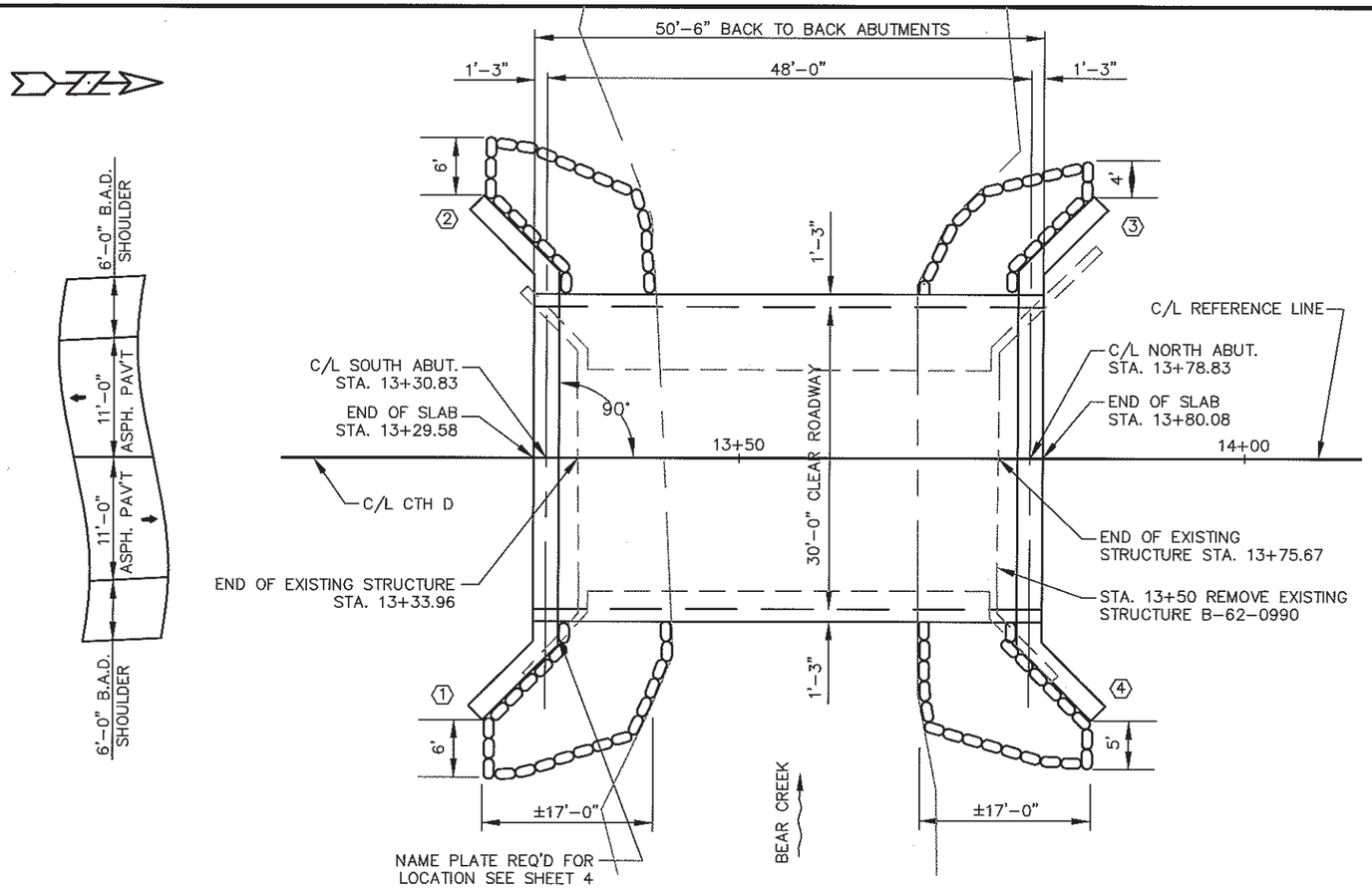
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

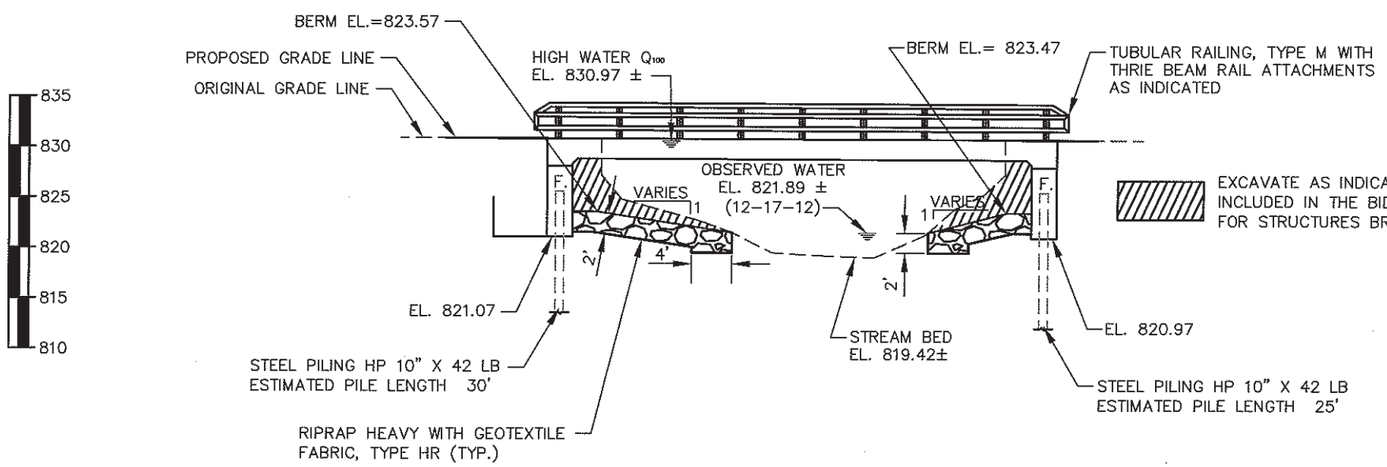
DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO: 5268-00-70 | HWY: CTH D | COUNTY: VERNON | SHEET NO: 34 | E



PLAN B-62-0138

(SINGLE SPAN REINFORCED CONCRETE FLAT SLAB)



ELEVATION

(NORMAL TO C/L CTH D)

STATE PROJECT NUMBER
5268-00-70

DESIGN DATA

LIVE LOAD:

DESIGN LOAD	HL-93
INVENTORY RATING FACTOR	1.23
OPERATING RATING FACTOR	1.59
WISCONSIN STANDARD PERMIT VEHICLE RATING	250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY, SLAB	f'c = 4,000 p.s.i
ALL OTHER	f'c = 3,500 p.s.i
HIGH STRENGTH BAR STEEL REINFORCEMENT	fy = 60,000 p.s.i

FOUNDATION DATA:

ABUTMENTS SHALL BE SUPPORTED ON PILING STEEL 10-INCH X 42 LB. PILE DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATE 30 FT PILE LENGTHS AT SOUTH ABUTMENT, AND 25 FT PILE LENGTHS AT NORTH 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 THE MODIFIED GATES DYNAMIC FORMULA TO DETERMINE THE DRIVEN PILE CAPACITY.

TRAFFIC DATA:

A.A.D.T (2014)	540
A.A.D.T (2034)	700
DESIGN SPEED	50 M.P.H.

HYDRAULIC DATA:

Q_{100}	2,500 c.f.s.
Q_{100} (THRU BRIDGE)	2,500 c.f.s.
Q_{100} (ROAD)	N/A c.f.s.
DRAINAGE AREA	9.5 SQ. MI.
WATERWAY AREA @ Q_{100}	235 SQ. FT.
VELOCITY	10.63 f.p.s.
HIGH WATER 100 ELEVATION	830.97 FT.
SCOUR CRITICAL CODE	8
Q_2	371 c.f.s.
Q_2 ELEVATION	824.99 FT.
REQULATORY FLOW	3,400 c.f.s.
REQULATORY HIGH WATER	831.55 FT.

LIST OF DRAWINGS

GENERAL PLAN	1.
CROSS SECTION AND QUANTITIES	2.
SUBSURFACE EXPLORATION	3.
ABUTMENTS	4 & 5.
ABUTMENT DETAILS	6 & 7.
SUPERSTRUCTURE	8.
SUPERSTRUCTURE DETAILS	9.
TUBULAR STEEL RAILING, TYPE M	10.

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608) 266-8489

CONSULTANT CONTACT:
JAMIE BRANDT, P.E.
(608) 727-2146

WISCONSIN PROFESSIONAL ENGINEER
JAMIE L. BRANDT
E-37727
REEDSBURG, WI

Jamie Brandt 12/10/2013

NO	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY: TEAM Engineering

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED William C Dreher 12/13/13
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-62-0138

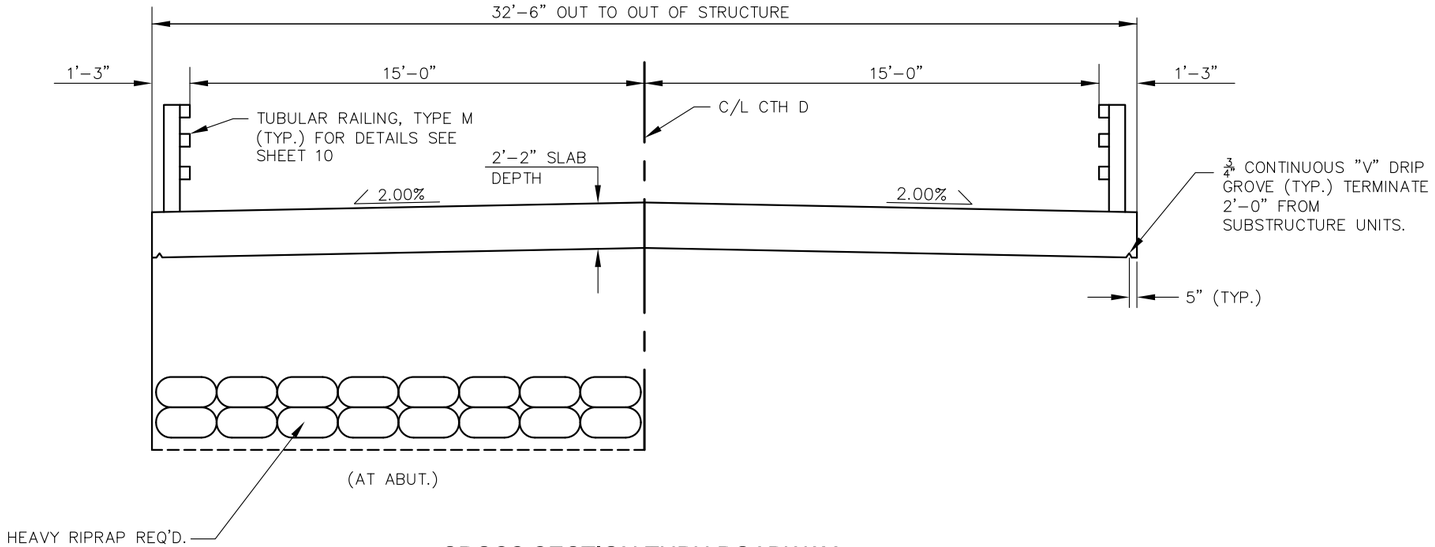
CTH D OVER BEAR CREEK

COUNTY VERNON	TOWN STARK
DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION	
DESIGNED BY JLB / DESIGN CHECKED TJK / DRAWN BY BAS / PLANS CHECKED JLB	

GENERAL PLAN

SHEET 1 OF 10

STATE PROJECT NUMBER
5268-00-70



CROSS SECTION THRU ROADWAY
(LOOKING NORTH)

GENERAL NOTES

DRAWING SHALL NOT BE SCALED.

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

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

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

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

THE EXISTING GROUND LINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR SUBSTRUCTURES.

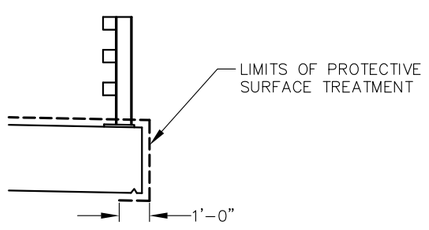
AT THE BACKFACE OF THE ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE.

THE EXISTING STRUCTURE (B–62–0990) IS A SINGLE SPAN CONCRETE DECK, STEEL GIRDER STRUCTURE ON CONCRETE ABUTMENTS. THE OVERALL LENGTH IS 40' AND THE OVERALL WIDTH IS 22'.

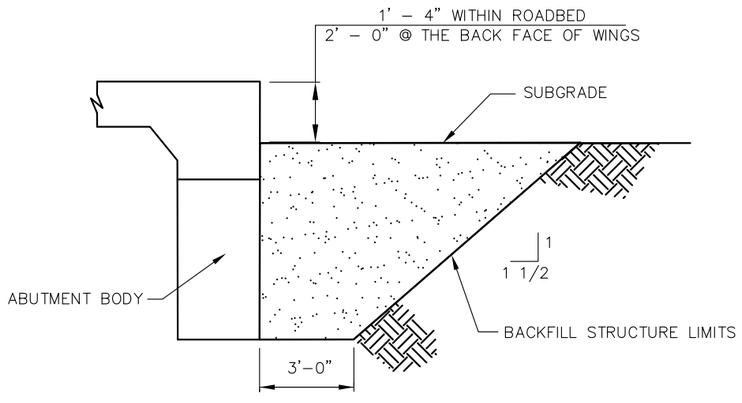
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	S. ABUT.	N. ABUT.	SUPER.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 13+55	LS	–	–	–	1
206.1000	EXCAVATION FOR STRUCTURE BRIDGES B–62–0138	LS	–	–	–	1
210.0100	BACKFILL STRUCTURE	CY	220	220	–	440
502.0100	CONCRETE MASONRY BRIDGES	CY	40	40	137	217
502.3200	PROTECTIVE SURFACE TREATMENT	SY	–	–	221	221
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2384	2384	–	4768
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1317	1317	21874	24508
513.4060	RAILING TUBULAR TYPE M	LS	–	–	–	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	7	7	–	14
550.1100	PILING STEEL HP 10–INCH X 42 LB	LF	240	200	–	440
606.0300	RIPRAP HEAVY	CY	55	50	–	105
612.0406	PIPE UNDERDRAIN WRAPPED 6–INCH	LF	92	92	–	184
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	120	110	–	230
	NON–BID ITEMS					
	FILLER	SIZE				½" & ¾"

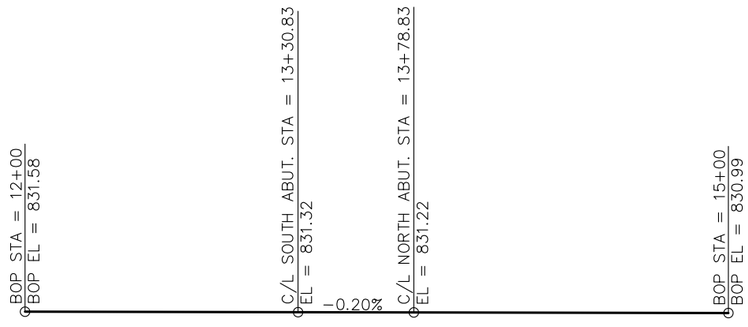
BENCHMARKS ⊕ NAVD 88			
NO.	STA./OFFSET	DESCRIPTION	ELEV.
3	17+30, 23' LT.	3/4–INCH REBAR	829.24
4	8+14, 19.5' LT.	3/4–INCH REBAR	838.88
5	13+40, 6' LT.	TOP OF BRIDGE RAILING	834.72



PROTECTIVE SURFACE TREATMENT DETAIL



STRUCTURE BACKFILL DETAIL
(TYPICAL AT BOTH ABUTMENTS)



PROFILE GRADE LINE, C/L CTH D

NO	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORATION
STRUCTURES DESIGN SECTION

STRUCTURE B-62-0138

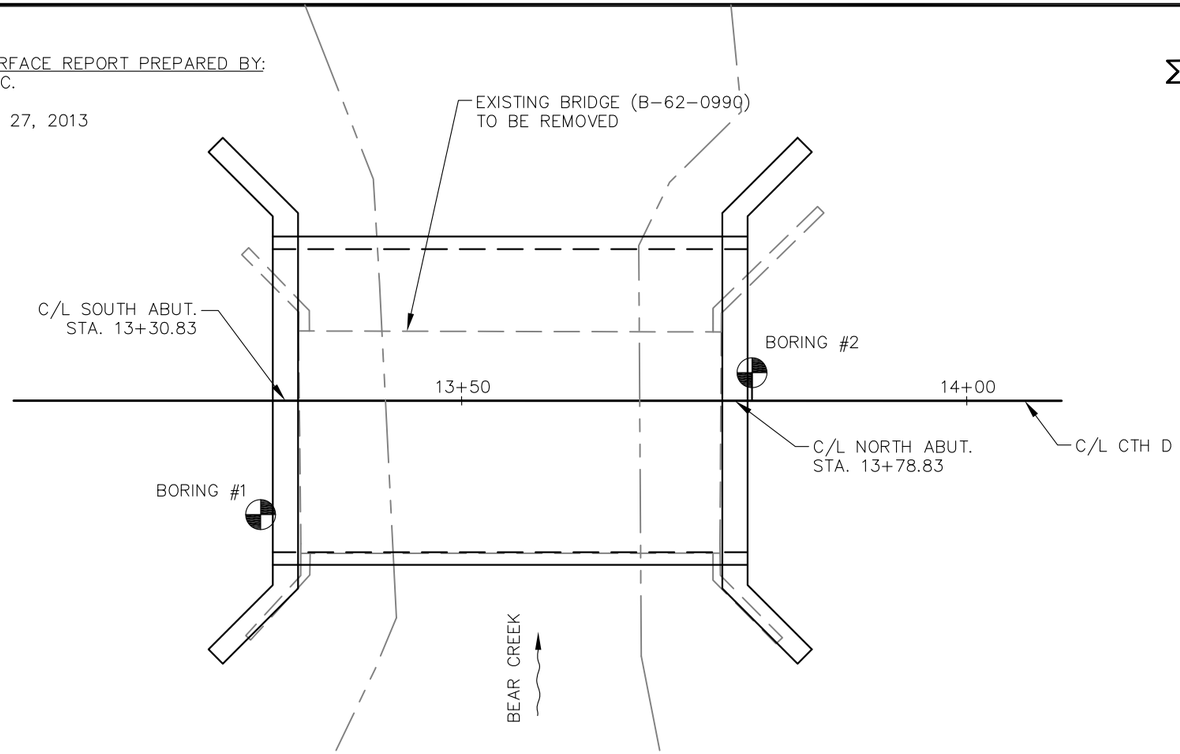
DRAWN BY BAS | PLANS CHECKED JLB

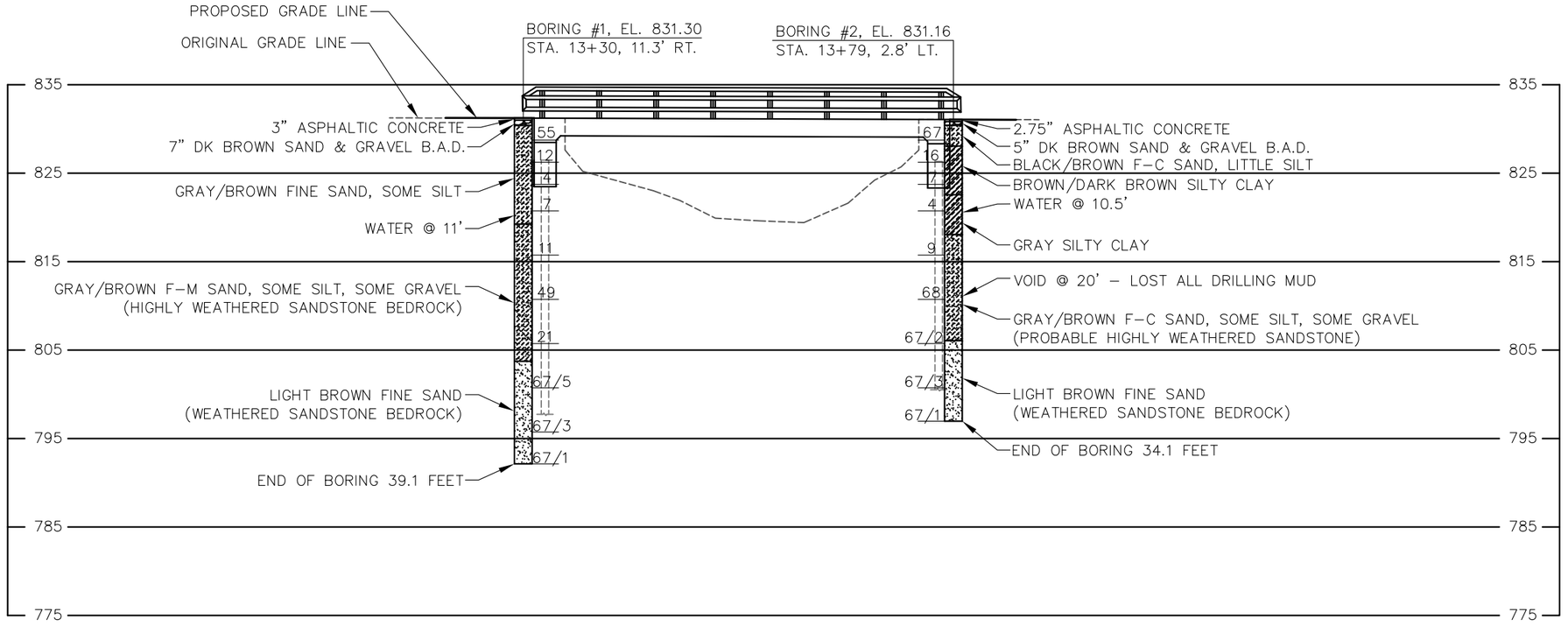
CROSS SECTION & QUANTITIES

SHEET 2 OF 10

BORINGS PERFORMED BY AND SUBSURFACE REPORT PREPARED BY:
NUMMELIN TESTING SERVICES, INC.
WAUNAKEE, WISCONSIN
BORINGS COMPLETED ON MARCH 27, 2013

PLANS PREPARED BY:
TEAM ENGINEERING, INC.
LOGANVILLE, WISCONSIN





STATE PROJECT NUMBER

5268-00-70

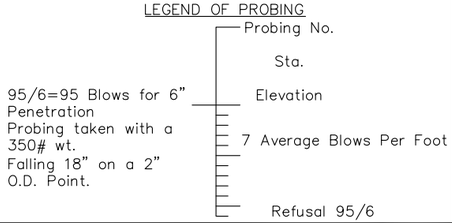
ABBREVIATIONS

VF – Very Fine F – Fine M – Medium C – Coarse
Ws – Weathered So – Sound

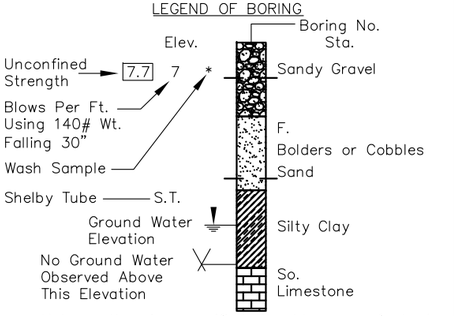
MATERIAL SYMBOLS

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

LEGEND OF PROBING



LEGEND OF BORING



Unless otherwise specified, the blows per foot at the locations indicated are based on driving a 2" O.D. x 1.4" I.D. split spoon sampler with a 140# hammer having a free fall of 30". The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side fraiction 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 TRANSPORATION
STRUCTURES DESIGN SECTION

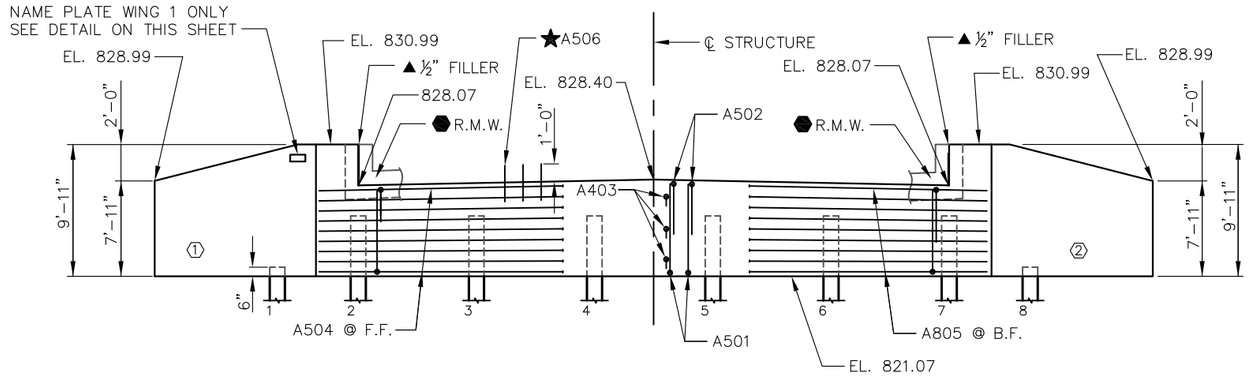
STRUCTURE B-62-0138

DRAWN BY BAS | PLANS CHECKED JLB

SUBSURFACE EXPLORATION

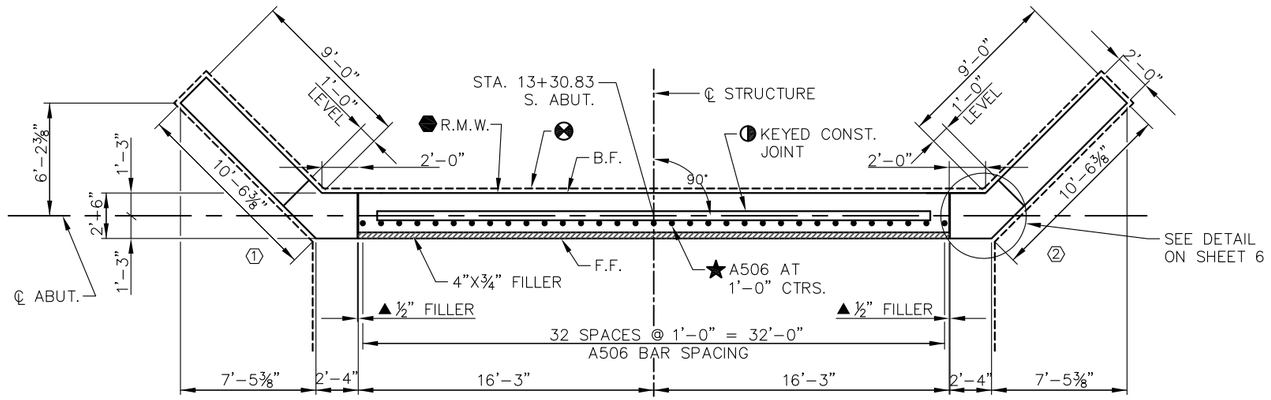
SHEET 3 OF 10

STATE PROJECT NUMBER
5268-00-70

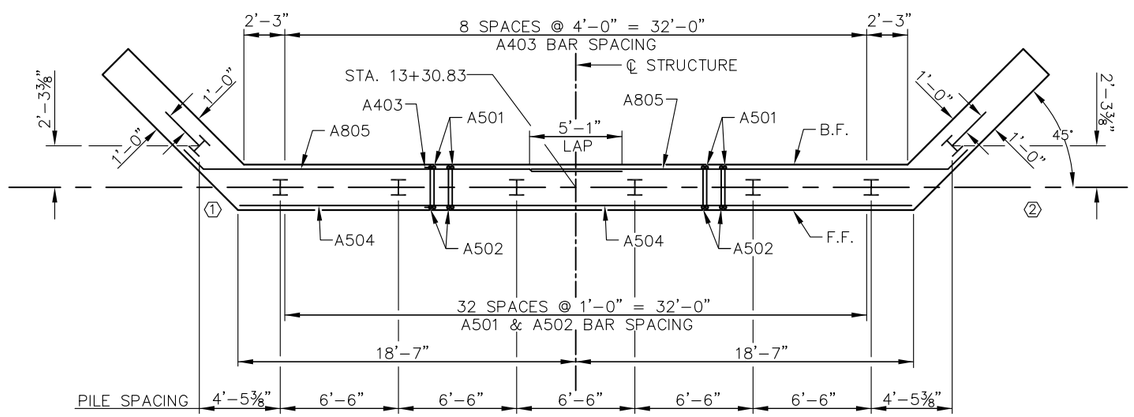


ELEVATION

(S. ABUT. – LOOKING SOUTH)

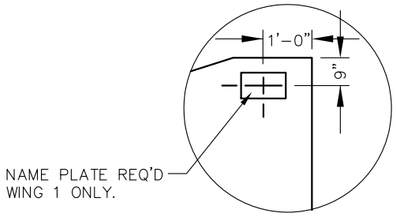


PLAN

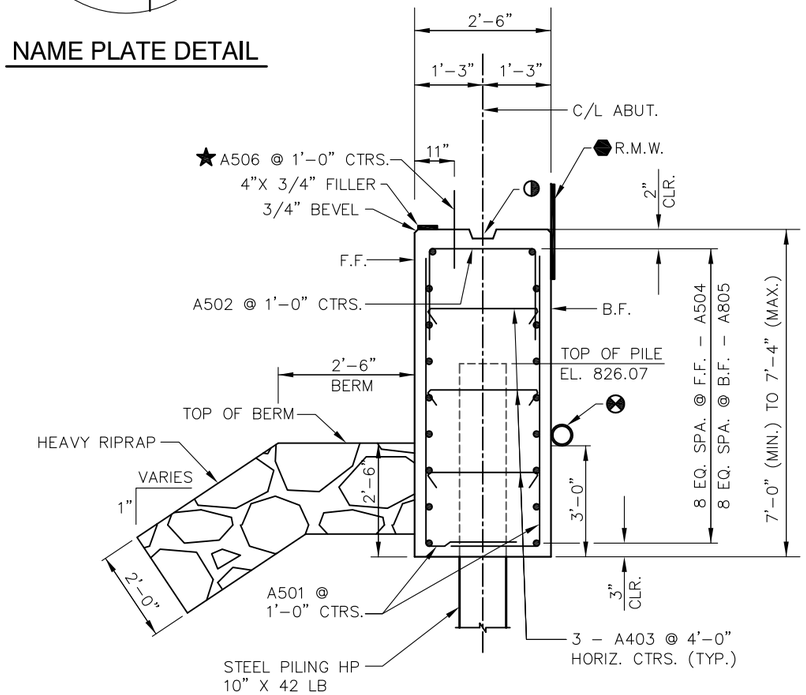


LAYOUT

- KEYED CONSTRUCTION JOINT FORMED BY A SURFACED, BEVELED 2"X6"
- 18" RUBBERIZED MEMBRANE WATERPROOFING (HORIZONTAL)
- ▲ 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON–STAINING GRAY, NON–BITUMINUOS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE)
- ★ A506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE IT HAS TAKEN ITS INITIAL SET. EMBED BAR 1'–0".
- ⊗ PIPE UNDERDRAIN WRAPPED (6–INCH). EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE.



NAME PLATE DETAIL



TYPICAL SECTION THROUGH ABUTMENT BODY

NO	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORATION
STRUCTURES DESIGN SECTION

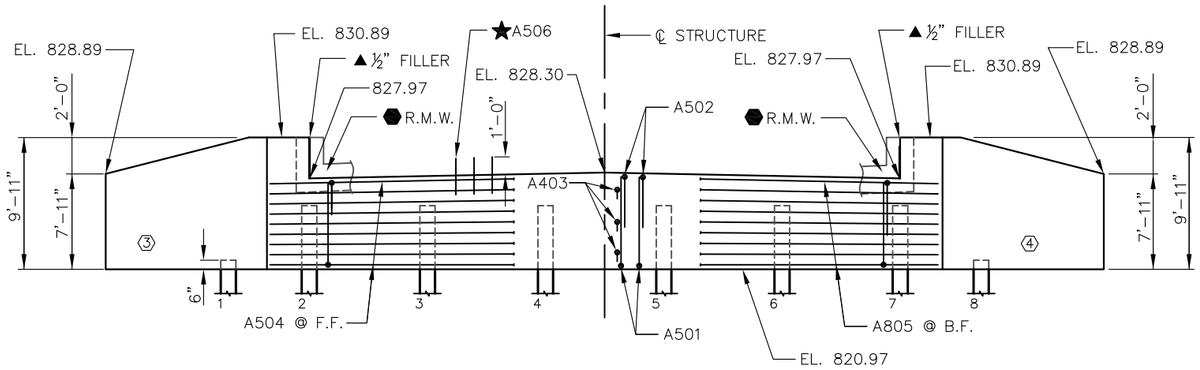
STRUCTURE B-62-0138

DRAWN BY BAS | PLANS CHECKED JLB

SOUTH ABUTMENT

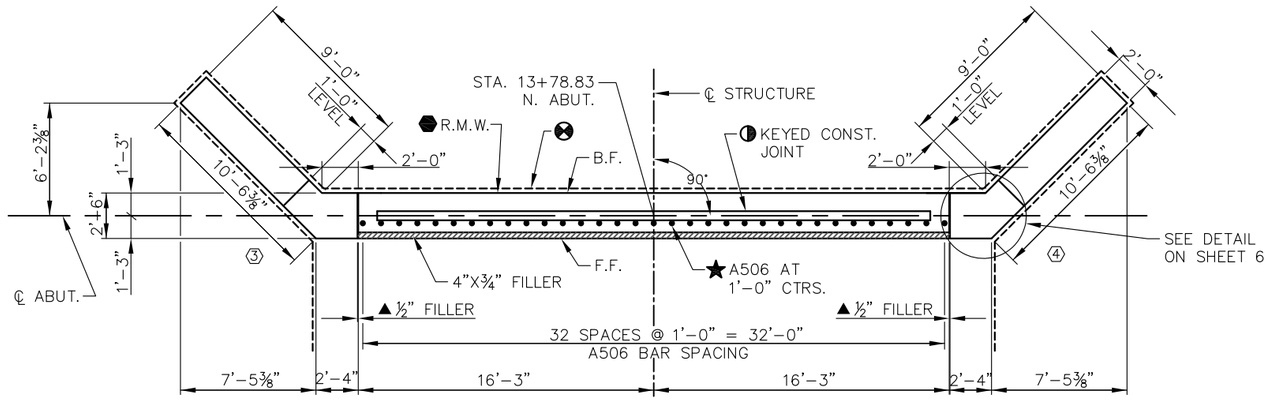
SHEET 4 OF 10

STATE PROJECT NUMBER
5268-00-70

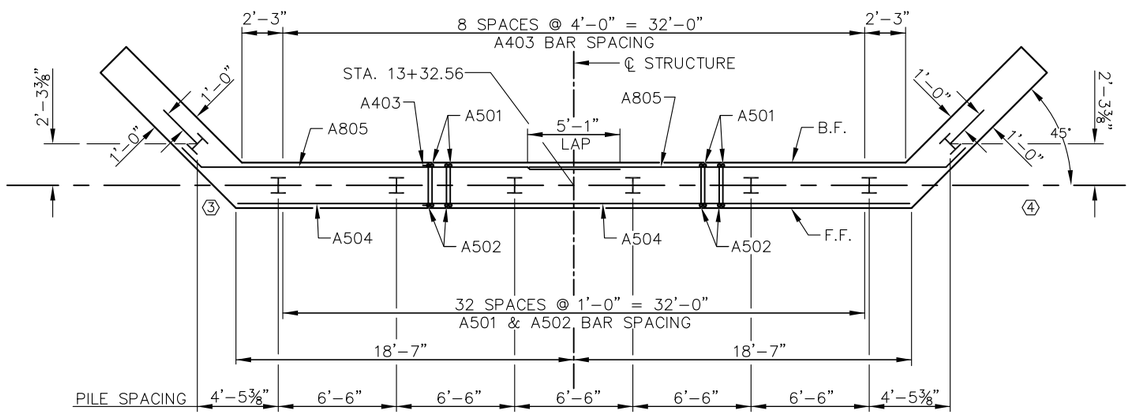


ELEVATION

(N. ABUT. – LOOKING NORTH)



PLAN



LAYOUT

- KEYED CONSTRUCTION JOINT FORMED BY A SURFACED, BEVELED 2"X6"
- 18" RUBBERIZED MEMBRANE WATERPROOFING (HORIZONTAL)
- ▲ 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON–STAINING GRAY, NON–BITUMINUOS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE)
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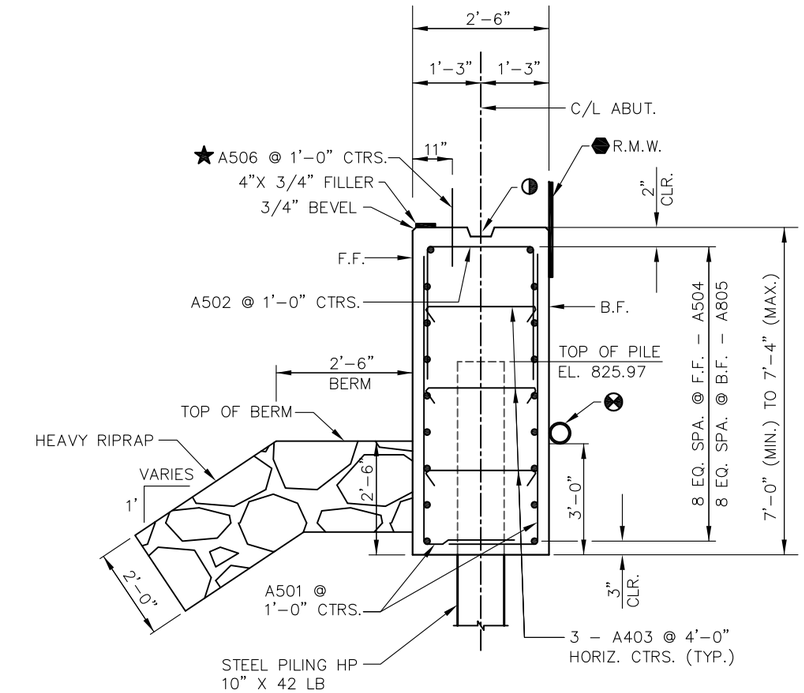


TYPICAL SECTION THROUGH ABUTMENT BODY

NO	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORATION
STRUCTURES DESIGN SECTION

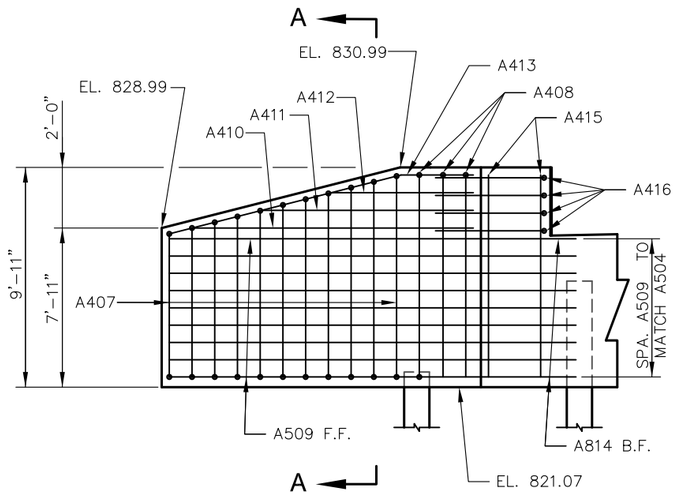
STRUCTURE B-62-0138

DRAWN BY BAS | PLANS CHECKED JLB

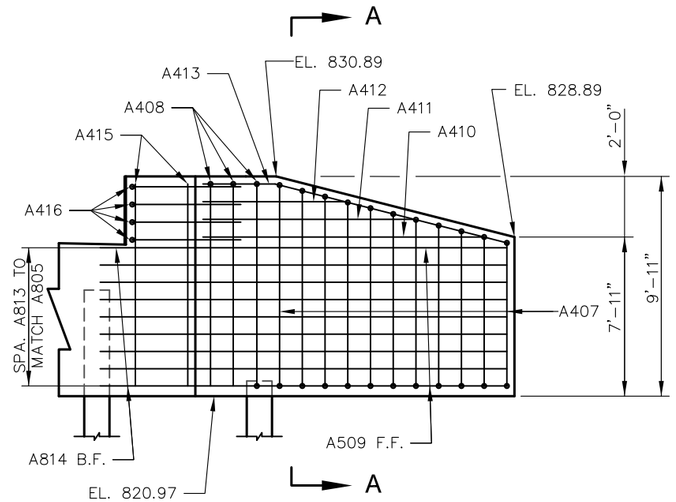
NORTH ABUTMENT

SHEET 5 OF 10

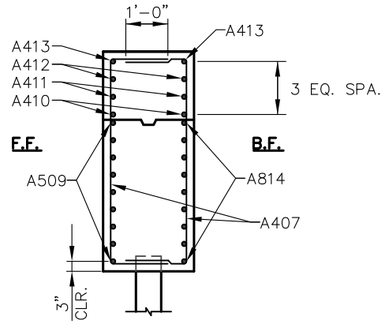
STATE PROJECT NUMBER
5268-00-70



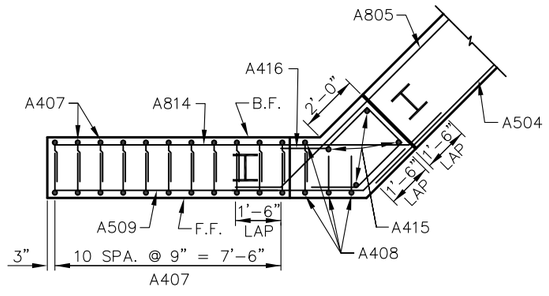
F.F. ELEVATION - WING 1 & 2



F.F. ELEVATION - WING 3 & 4



SECTION A-A
WINGS 1 THRU 4



PLAN - WINGS 1 THRU 4

NO	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORATION
STRUCTURES DESIGN SECTION

STRUCTURE B-62-0138

DRAWN BY	PLANS CHECKED
BAS	JLB

ABUTMENT DETAILS

SHEET 6 OF 10

STATE PROJECT NUMBER

5268-00-70

THE FIRST DIGIT OF A 3 DIGIT MARK SIGNIFIES THE BAR SIZE

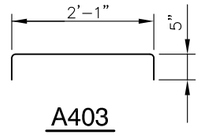
ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

BILL OF BARS (ABUTMENTS)

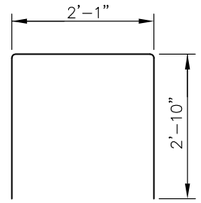
COATED 2,634 LBS.
UNCOATED 4,767 LBS.

MARK	NO. REQ'D	COAT	LENGTH	BENT	LENGTH
A501	132		8'–1"	X	BODY F.F. & B.F. – VERT.
A502	66		7'–6"	X	BODY TIES @ TOP. – VERT.
A403	54		2'–9"	X	BODY TIES – HORIZ.
A504	18		36'–10"		BODY F.F. – HORIZ.
A805	36		24'–5"	X	BODY B.F. – HORIZ.
A506	66	X	2'–0"		BODY – F.F. – DOWELS – VERT.
◨ A407	44	X	10'–10"	X	WINGS 1 THRU 4 – STIRRUPS – VERT.
A408	16	X	11'–9"	X	WINGS 1 THRU 4 – F.F. & B.F. – VERT.
A509	36	X	11'–8"	X	WINGS 1 THRU 4 – F.F. – HORIZ.
A410	8	X	9'–4"		WINGS 1 THRU 4 – F.F. & B.F. – HORIZ.
A411	8	X	7'–0"		WINGS 1 THRU 4 – F.F. & B.F. – HORIZ.
A412	8	X	4'–8"		WINGS 1 THRU 4 – F.F. & B.F. – HORIZ.
A413	8	X	10'–3"	X	WINGS 1 THRU 4 – F.F. & B.F. – HORIZ.
A814	36	X	13'–2"	X	WINGS 1 THRU 4 – B.F. – HORIZ.
A415	16	X	8'–8"		WINGS 1 THRU 4 – VERT.
A416	16	X	8'–4"	X	WINGS 1 THRU 4 – HORIZ.

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



A403



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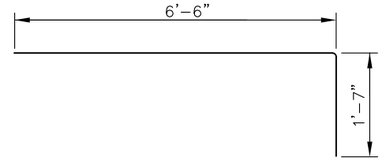

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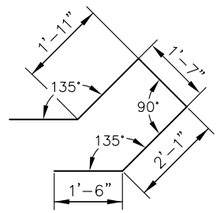

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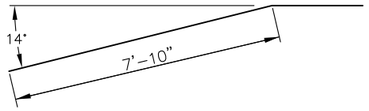
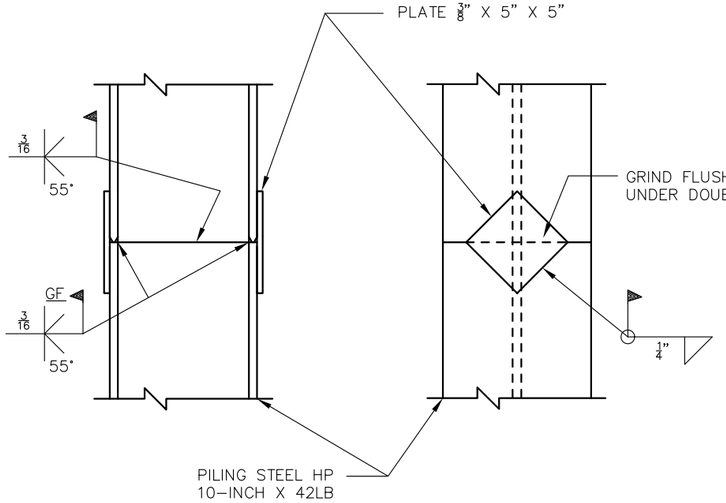
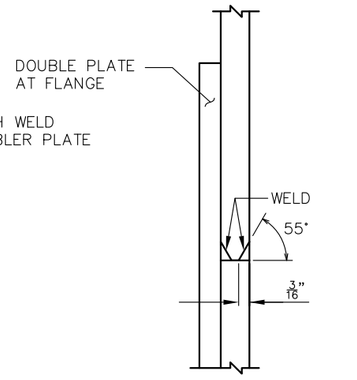


A413

A805, A509, A814

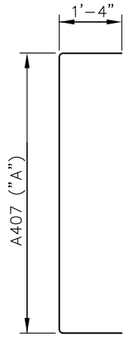


PILE SPLICE DETAIL



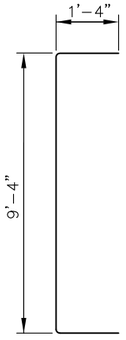
HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR



A407

MARK	"A"
A407	7'–5"
	7'–7"
	7'–9"
	8'–0"
	8'–2"
	8'–4"
	8'–6"
	8'–9"
	8'–11"
	9'–1"
	9'–5"



A408

BAR SERIES TABLE

MARK	NO. REQ'D	LENGTH
A407	4 SERIES OF 11	9'–10" TO 11'–10"

NO	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORATION
STRUCTURES DESIGN SECTION

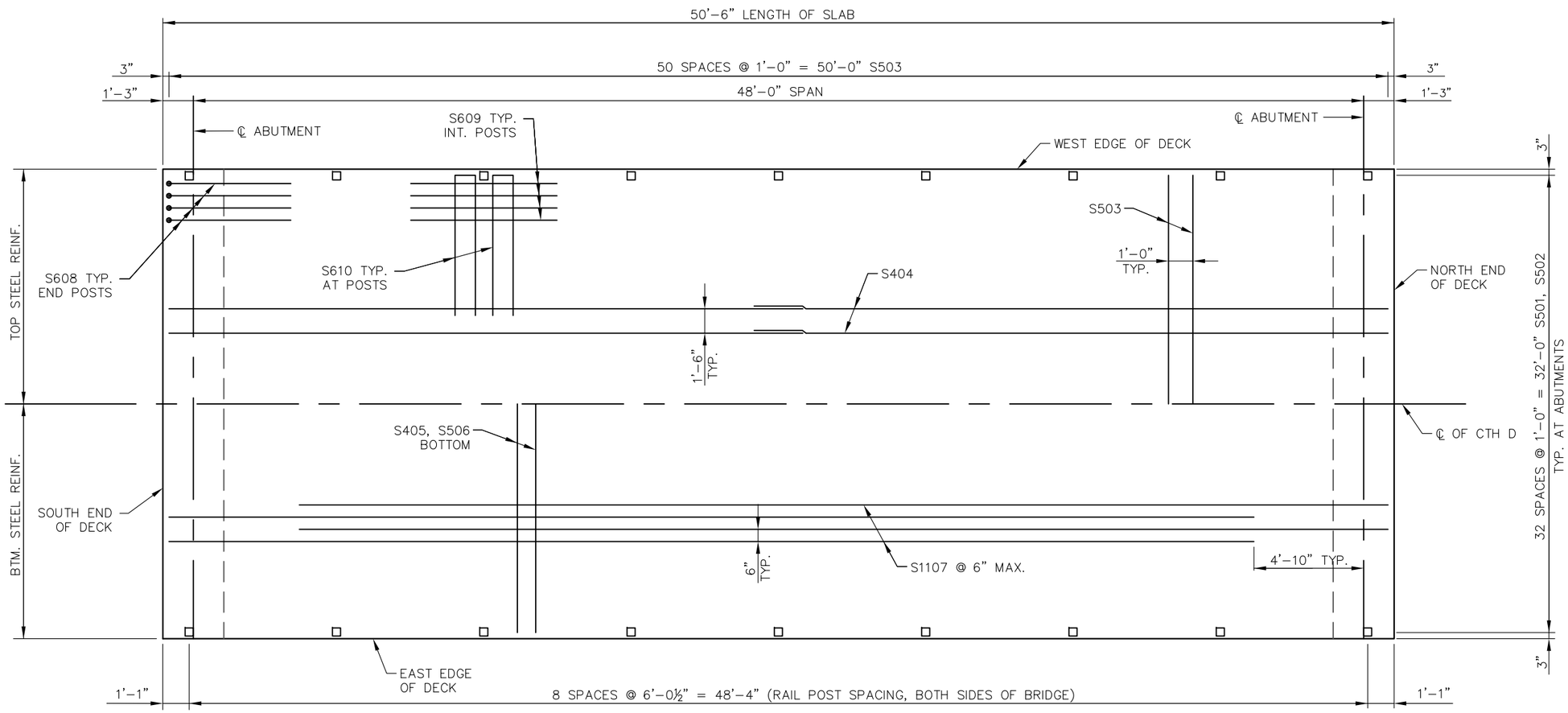
STRUCTURE B-62-0138

DRAWN BY BAS | PLANS CHECKED JLB

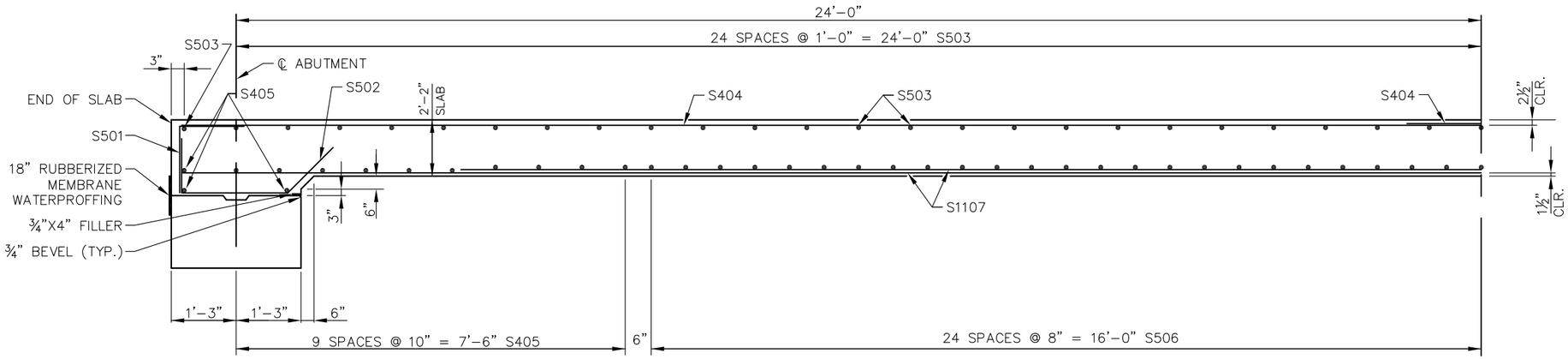
ABUTMENT DETAILS

SHEET 7 OF 10

STATE PROJECT NUMBER
5268-00-70



PLAN



PARTIAL LONGITUDINAL SECTION

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'–0" CENTERS.

BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'–0" CENTERS.

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

NO	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORATION
STRUCTURES DESIGN SECTION

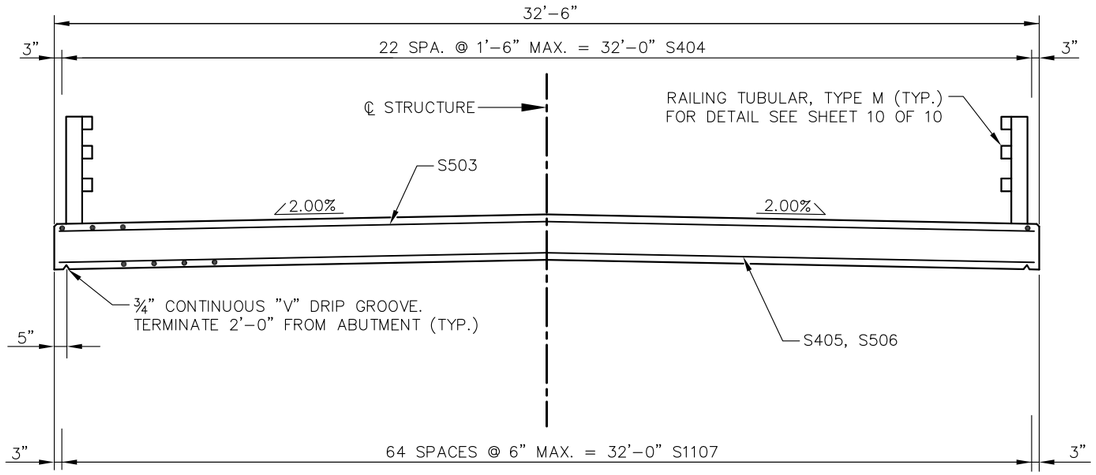
STRUCTURE B-62-0138

DRAWN BY BAS | PLANS CHECKED JLB

SUPERSTRUCTURE

SHEET 8 OF 10

STATE PROJECT NUMBER
5268-00-70



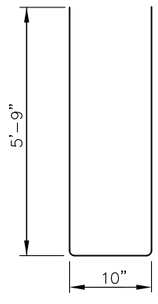
CROSS SECTION THRU ROADWAY

THE FIRST DIGIT OF A 3 DIGIT MARK OR THE FIRST TWO DIGITS OF A 4 DIGIT MARK SIGNIFIES THE BAR SIZE

ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

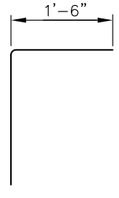
BILL OF BARS (SUPERSTRUCTURE) COATED 21,874 LBS.

MARK	NO. REQ'D	LENGTH	BENT	DESCRIPTION
S501	66	3'-9"	X	SLAB AT END OF DECK
S502	66	5'-10"	X	SLAB AT END OF DECK
S503	51	32'-0"		SLAB TOP TRANSVERSE
S404	46	26'-0"		SLAB TOP LONGIT.
S405	26	32'-0"		SLAB BOTTOM TRANSVERSE
S506	49	32'-0"		SLAB BOTTOM TRANSVERSE
S1107	65	44'-2"		SLAB BOTTOM LONGIT.
S608	16	6'-0"	X	AT END RAIL POSTS
S609	56	6'-0"		AT INTERIOR RAIL POSTS
S610	36	12'-0"	X	AT RAIL POSTS

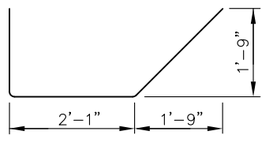


S610

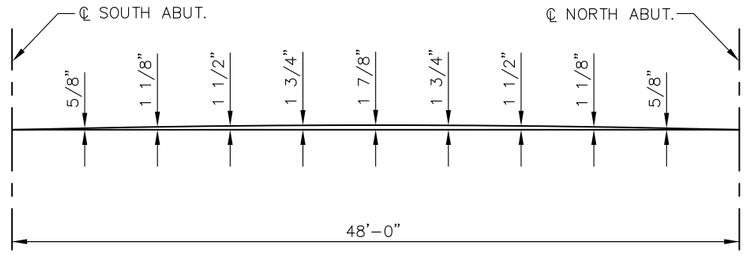
S608



S501



S502



SLAB CAMBER DIAGRAM

CAMBER SPAN AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

TOP OF DECK ELEVATIONS

	℄ BRG. S. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	℄ BRG. N. ABUT.
L/E.O.D.	830.99	830.98	830.97	830.96	830.95	830.94	830.93	830.92	830.91	830.90	830.89
C CTH D	831.32	831.31	831.30	831.29	831.28	831.27	831.26	831.25	831.24	831.23	831.22
R/E.O.D.	830.99	830.98	830.97	830.96	830.95	830.94	830.93	830.92	830.91	830.90	830.89

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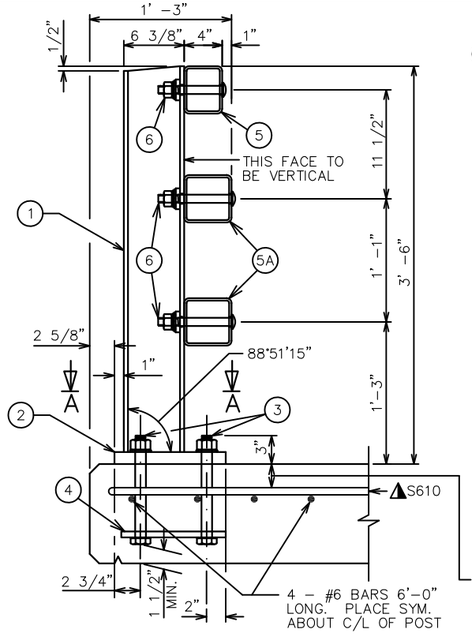
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORATION
STRUCTURES DESIGN SECTION

STRUCTURE B-62-0138

DRAWN BY BAS | PLANS CHECKED JLB

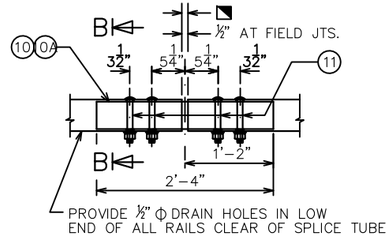
SUPERSTRUCTURE DETAIL

SHEET 9 OF 10

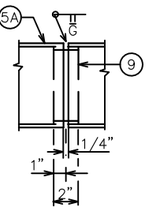


SECTION THRU RAILING ON DECK

2½" FOR SLABS ON GIRDERS; FOR OTHER STRUCTURES, PLACE BELOW TOP MAT SLAB REINFORCEMENT.

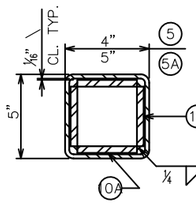


FIELD ERECTION JOINT DETAIL

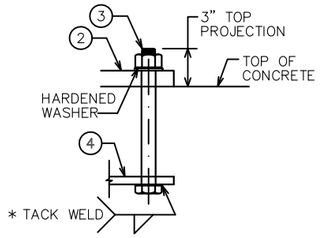


SHOP RAIL SPLICE DETAIL

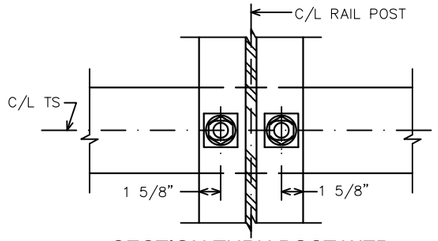
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



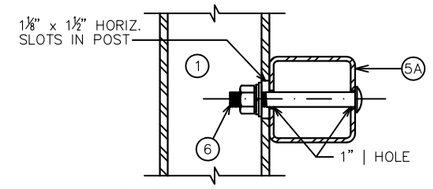
SECTION B-B



ANCHOR BOLTS



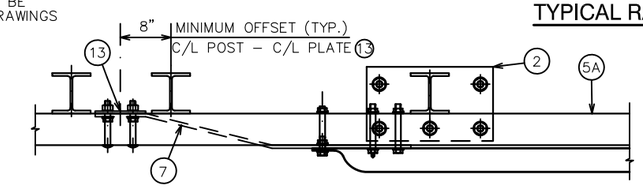
SECTION THRU POST WEB



SECTION THRU RAIL

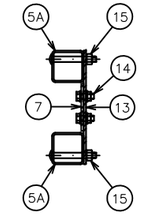
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

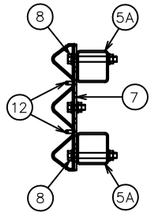
TYPICAL RAIL TO POST CONNECTIONS

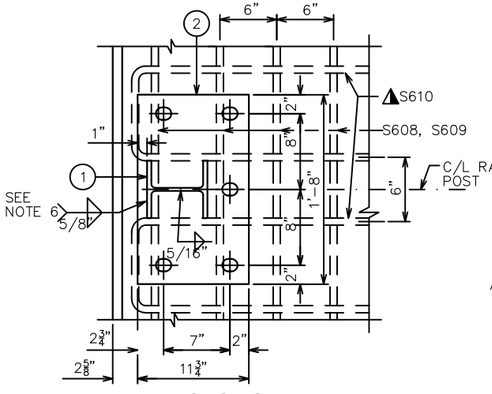


TOP VIEW AT END POST

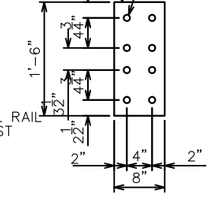
THRIE BEAM RAIL ATTACHMENT





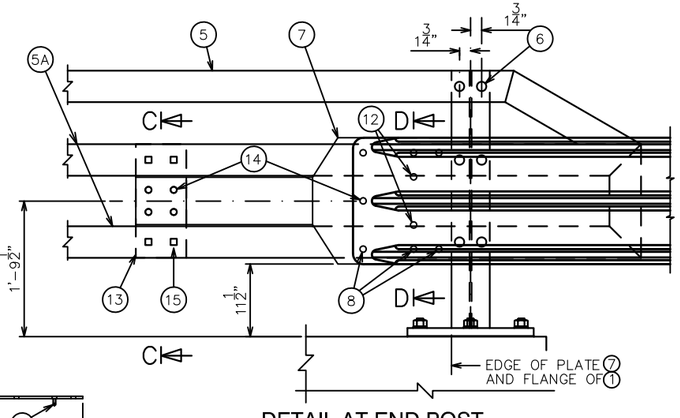


SECTION A-A



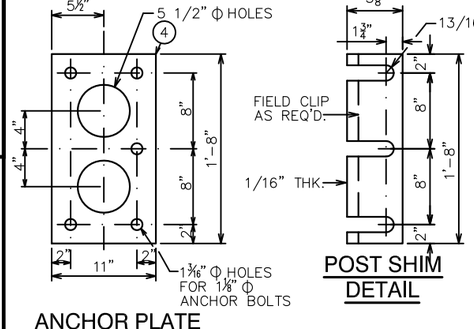
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT



DETAIL AT END POST

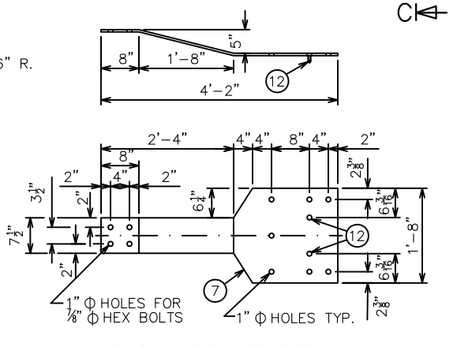
THRIE BEAM RAIL ATTACHMENT



ANCHOR PLATE

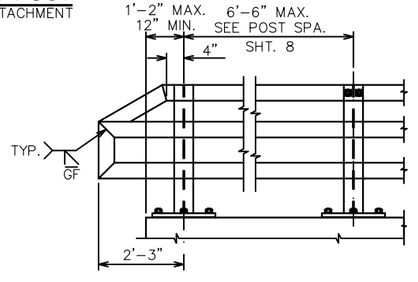
AT RAIL TO DECK CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

LEGEND

1. W6 x 25 WITH 1⅛" X 1½" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
2. PLATE 1¼" x 11¾" x 1'–8" WITH 1⅜" X 1⅝" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
3. ASTM A449 – 1⅛" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'–9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'–3" LONG. USE 10¾" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)
4. ⅝" x 11" x 1'–8" ANCHOR PLATE (GALVANIZED) WITH 1³⁄₁₆" DIA. HOLES FOR ANCHOR BOLTS NO. 3
5. TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
5A. TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
6. ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, ³⁄₁₆" X 1⅝" X 1⅝" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
7. ½" THK. BACK–UP PLATE WITH 2 – ⅞" X 1½" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
8. 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
9. SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".
10. ⅜" X 3⅝" X 2'–4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
10A. ⅜" X 2⅝" X 2'–4" PLATE USED IN NO. 5, ⅜" X 3⅝" X 2'–4" PLATE USED IN NO. 5A. 2 PER RAIL.
11. ⅞" | A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1⁵⁄₁₆" X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 1⁵⁄₁₆" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.
12. ⅞" DIA. X 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
13. ⅜" X 8" X 1'–6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
14. ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
15. 1" | HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B–62–0138" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 ksi. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ⅛ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON–STAINING GRAY NON–BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.
10. WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL–4).
12. PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

▲ TIE TO TOP MAT OF STEEL.

* FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTIBILITY.

◥ RDWY. OPENING OR 2½" MIN. FOR STRIP SEAL EXP. JOINT & ½" OPENING FOR A1 ABUTMENT.

STATE PROJECT NUMBER

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORATION
STRUCTURES DESIGN SECTION

STRUCTURE B-62-0138

DRAWN BY BAS | PLANS CHECKED JLB

TUBULAR STEEL RAILING TYPE M

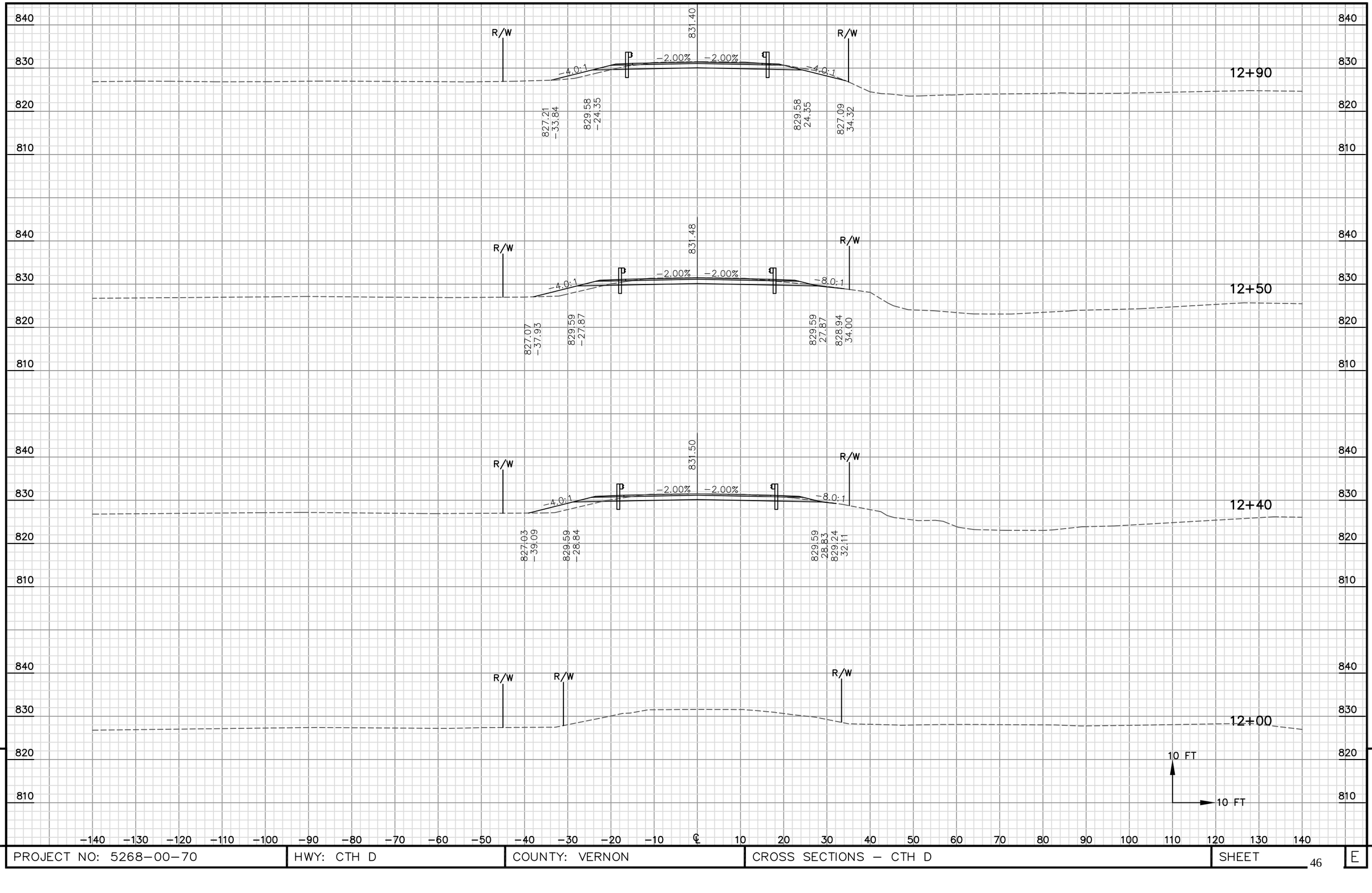
SHEET 10 OF 10

CTH D

STATION		AREA (SF)		INCREMENTAL VOL (CY)		CUMULATIVE VOL (CY)		MASS HAUL
	FEET	COMMON	FILL	COMMON	FILL	COMMON	FILL*	
12+00		0.0	0.0					
	40.0			39.9	11.5	39.9	15.0	24.9
12+40		53.8	15.5					
	10.0			19.8	5.4	59.7	22.0	37.7
12+50		53.2	13.6					
	40.0			82.3	16.6	142.0	43.6	98.4
12+90		57.9	8.8					
	10.0			21.6	3.4	163.6	48.0	115.6
13+00		59.0	9.8					
	30.0			56.9	24.8	220.5	80.2	140.3
13+30		43.4	34.8					
				220.5	61.7			

STATION		AREA (SF)		INCREMENTAL VOL (CY)		CUMULATIVE VOL (CY)		MASS HAUL
	FEET	COMMON	FILL	COMMON	FILL	COMMON	FILL*	
13+80		38.4	90.5					
	20.0			32.5	40.5	32.5	52.7	-20.2
14+00		49.4	18.8					
	20.0			38.1	9.8	70.6	65.4	5.2
14+20		53.6	7.7					
	30.0			56.9	11.7	127.5	80.6	46.9
14+50		48.8	13.3					
	20.0			36.6	9.4	164.1	92.8	71.3
14+70		50.0	12.0					
	30.0			27.8	6.7	191.6	101.5	90.1
15+00		0.0	0.0					
				191.9	78.1			

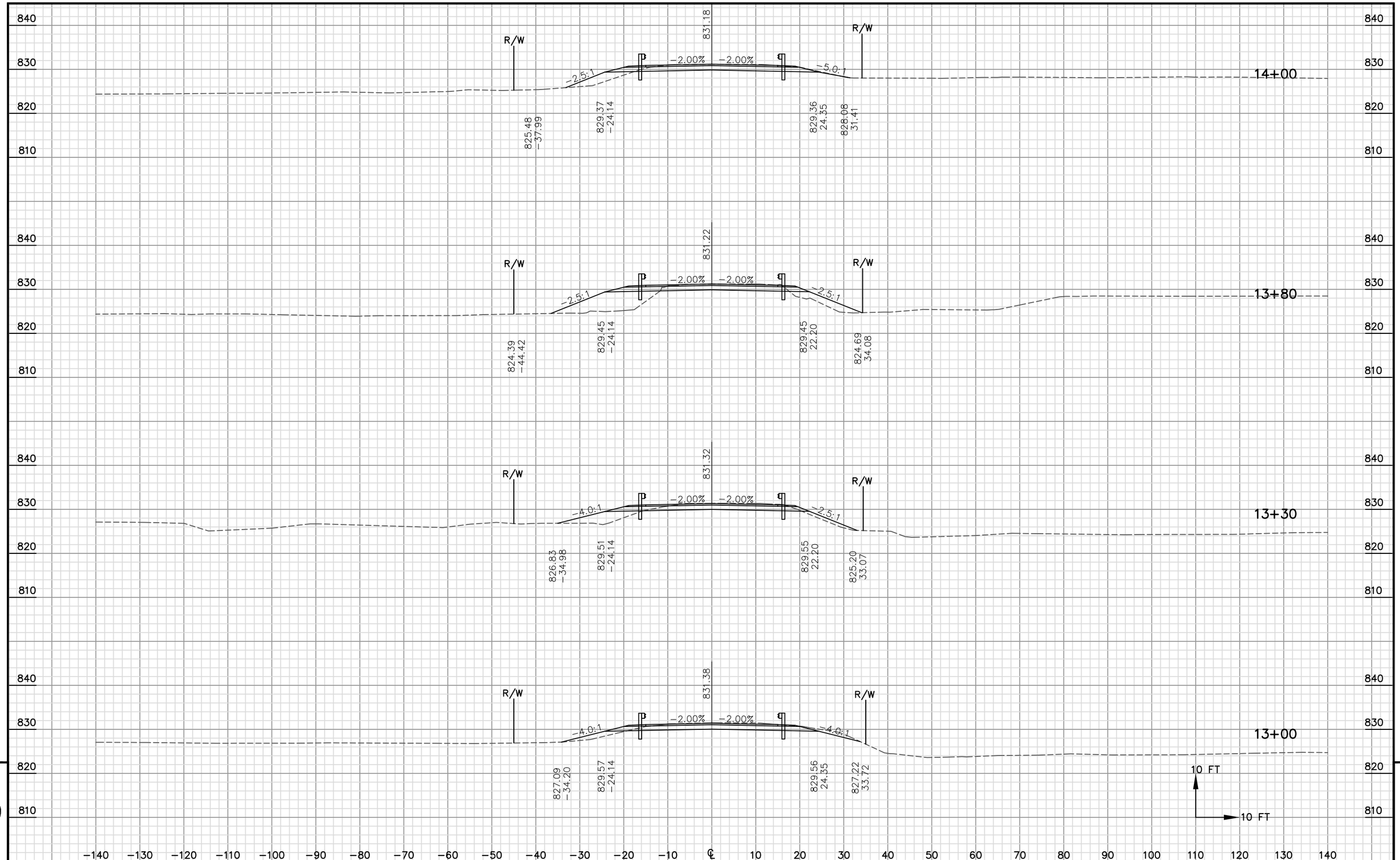
* EXPANDED FILL FACTOR = 1.30



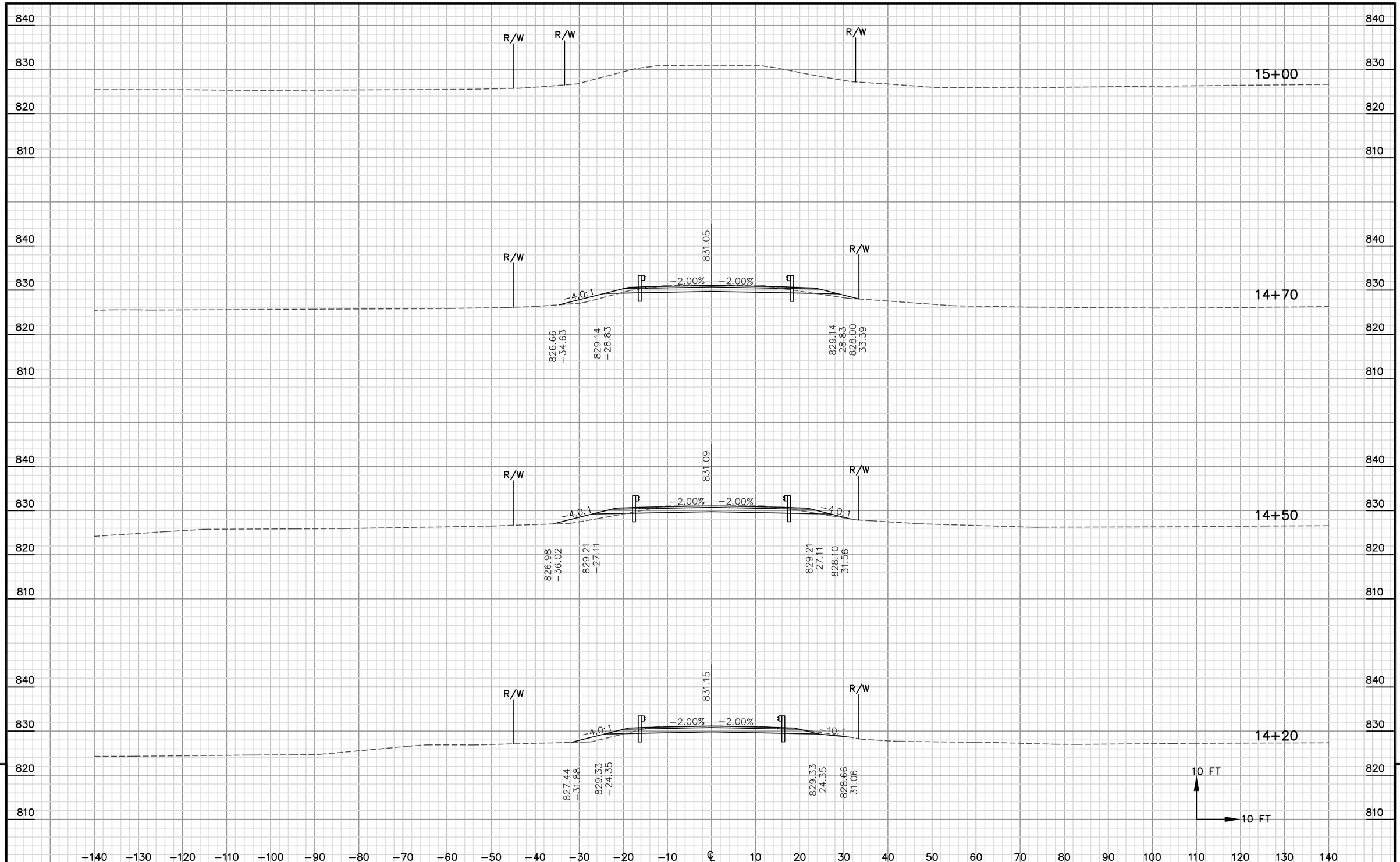
9

PROJECT NO: 5268-00-70	HWY: CTH D	COUNTY: VERNON	CROSS SECTIONS – CTH D	SHEET 46	E

9



PROJECT NO: 5268-00-70	HWY: CTH D	COUNTY: VERNON	CROSS SECTIONS – CTH D	SHEET 47	E



PROJECT NO: 5268-00-70	HWY: CTH D	COUNTY: VERNON	CROSS SECTIONS – CTH D	SHEET 48 E

Notes

Wisconsin Department of Transportation

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