GRE JANUARY 2021

PROJECT ID: 4850-01-71

WITH: N/A

ORDER OF SHEETS

TOTAL SHEETS = 78

25

COUNTY: FOND DU LAC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

T ASHFORD, CTH H

EAST BRANCH OF ROCK RIVER BRIDGE B-20-240

CTH H
FOND DU LAC COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4850-01-71		

STATE PROJECT NUMBER
4850-01-71

DESIGN DESIGNATION

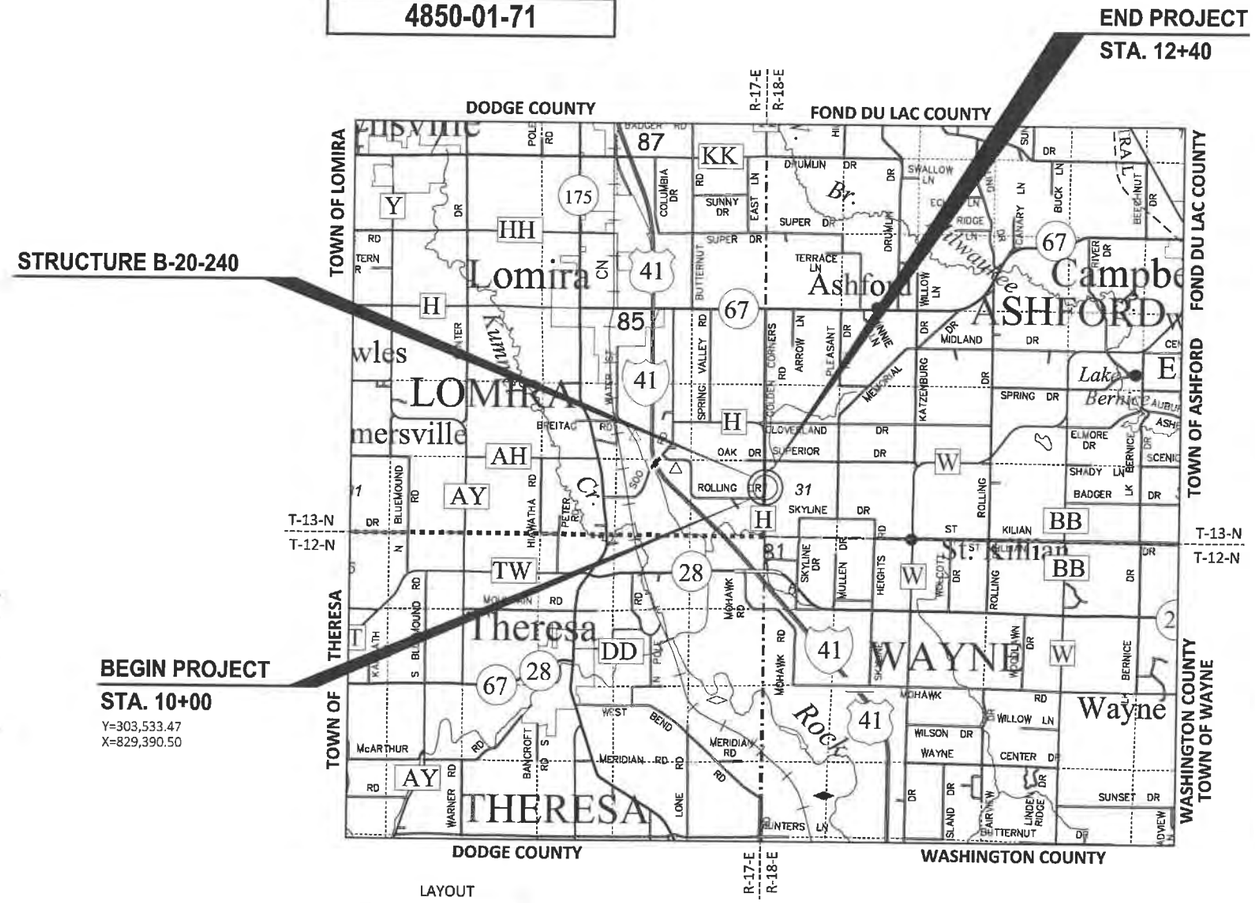
A.A.D.T.	(2022)	=	285
A.A.D.T.	(2042)	=	425
D.H.V.	(2042)	=	38
D.D.		=	60/40
T.		=	10% (ASSUMED)
DESIGN SPEED		=	40 MPH
ESALS		=	129,575

CONVENTIONAL SYMBOLS

PLAN
- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE (300'EB')
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

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

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



LAYOUT
SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 0.045 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, FOND DU LAC COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCE MAY BE USED AS GROUND DISTANCES.

ELEVATION SHOWN ON THIS PLAN ARE REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD (2012).

ACCEPTED FOR
COUNTY OF FOND DU LAC
Date 7-14-20 Highway Commissioner

ORIGINAL PLANS PREPARED BY

JEWELL associates engineers, inc
Engineers - Architects - Surveyors

WISCONSIN
ANGELA L. CLARY
E-32243
LONE ROCK, WI
PROFESSIONAL ENGINEER

6/24/20 Angela L Clary

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	JEWELL ASSOCIATES ENGINEERS INC
Designer	JEWELL ASSOCIATES ENGINEERS, INC
Project Manager	BRIAN EDWARDS, P.E.
Regional Examiner	NE REGION
Regional Supervisor	JAMES THOMPSON, P.E.

APPROVED FOR THE DEPARTMENT
DATE: 7/15/2020 (Signature)

E

FILE NAME : S:\PROJECTS\W1159S WISDOT - CTH H BRIDGE, FOND DU LAC CO\SHEETSPLAN\TITLE.DWG
PLOT DATE : 5/5/2020 1:14:12 PM
PLOT BY : JONAH DRAKE
PLOT SCALE : 1" = 1'
LAYOUT : TITLE SHEET 1 IN EQ 2 MI

LIST OF STANDARD ABBREVIATIONS

ABUT	Abutment	INV	Invert	SALV	Salvaged
AC	Acre	IP	Iron Pipe or Pin	SAN S	Sanitary Sewer
AGG	Aggregate	IRS	Iron Rod Set	SEC	Section
AH	Ahead	JT	Joint	SHLDR	Shoulder
<	Angle	JCT	Junction	SHR	Shrinkage
ASPH	Asphaltic	LHF	Left-Hand Forward	SW	Sidewalk
AVG	Average	L	Length of Curve	S	South
ADT	Average Daily Traffic	LIN FT or LF	Linear Foot	SQ	Square
BAD	Base Aggregate Dense	LC	Long Chord of Curve	SF or SQ FT	Square Feet
BK	Back	MH	Manhole	SY or SQ YD	Square Yard
BF	Back Face	MB	Mailbox	STD	Standard
BM	Bench Mark	ML or M/L	Match Line	SDD	Standard Detail Drawings
BR	Bridge	N	North	STH	State Trunk Highways
C or C/L	Center Line	Y	North Grid Coordinate	STA	Station
CC	Center to Center	OD	Outside Diameter	SS	Storm Sewer
CTH	County Trunk Highway	PLE	Permanent Limited Easement	SG	Subgrade
CR	Creek		Point	SE	Superelevation
CR	Crushed	PT	Point of Curvature	SL or S/L	Survey Line
CY or CU YD	Cubic Yard	PC	Point of Intersection	SV	Septic Vent
CP	Culvert Pipe	PI	Point of Reverse Curvature	T	Tangent
C & G	Curb and Gutter	PRC	Point of Tangency	TEL	Telephone
D	Degree of Curve	PT	Point On Curve	TEMP	Temporary
DHV	Design Hour Volume	POC	Point on Tangent	TI	Temporary Interest
DIA	Diameter	POT	Polyvinyl Chloride	TLE	Temporary Limited Easement
E	East	PVC	Portland Cement Concrete		Ton
X	East Grid Coordinate	PCC	Pound	t	Town
ELEC	Electric (al)	LB	Pounds Per Square Inch	T or TN	Transition
EL or ELEV	Elevation	PSI	Private Entrance	TRANS	Transit Line
ESALS	Equivalent Single Axle Loads	PE	Radius	TL or T/L	Trucks (percent of)
	Excavation Below Subgrade	R	Railroad	T	Typical
EBS	Face to Face	RR	Range	TYP	Unclassified
FF	Field Entrance	R	Reference Line	UNCL	Underground Cable
FE	Fill	RL or R/L	Reference Point	UG	United States Highway
F	Finished Grade	RP	Reinforced Concrete Culvert	USH	Variable
FG	Flow Line	RCCP	Pipe	VAR	Velocity or Design Speed
FL or F/L	Foot		Required	V	Vertical
FT	Footing	REQ'D	Residence or Residential	VERT	Vertical Curve
FTG	Grid North	RES	Retaining Wall	VC	Volume
GN	Height	RW	Right	VOL	Water Main
HT	Hundredweight	RT	Right-Hand Forward	WM	Water Valve
CWT	Hydrant	RHF	Right-of-Way	WV	West
HYD	Inlet	R/W	River	W	Westbound
INL	Inside Diameter	R	Road	WB	Yard
ID		RD	Roadway	YD	
		RDWY			

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

TOTAL PROJECT AREA= 1.04 ACRES

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.68 ACRES

GENERAL NOTES

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.

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 SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE, AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION. EXACT LOCATIONS OF EBS WILL BE DETERMINED BY THE ENGINEER.

DISTURBED AREAS SHOWN WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS ARE TO BE FERTILIZED (TYPE B), SEEDED (USE SEED MIX NO. 20), AND EROSION MATTED AS DIRECTED BY THE ENGINEER. ALL POST CONSTRUCTION WET AREAS SHALL BE SEEDED WITH SEEDING MIXTURE NO. 60. AVIOD PLACING FERTILIZER TYPE B NEAR WET AREAS.

WHEN THE QUANITY OF THE ITEM OF BASE AGGREGATE DENSE, OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON. THE DEPTH OR THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF MATERIAL AS DIRECTED BY THE ENGINEER IN THE FIELD.

SILT FENCE, TEMPORARY DITCH CHECKS AND CULVERT PIPE CHECKS SHALL BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER IN THE FIELD. SILT FENCE SHALL BE PLACED PRIOR TO CONSTRUCTION AND IN PLACE PRIOR TO STRUCTURE REMOVAL.

EROSION MAT ALL MAINLINE SLOPES AS DIRECTED BY THE ENGINEER IN THE FIELD.

FILL EXPANSION IS VARIABLE AND IS ESTIMATED AT 25%.

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 LOCATION OF ALL PERMANENT SIGNING SHALL BE VERIFIED BY THE ENGINEER IN THE FIELD PRIOR TO PLACEMENT.

WETLANDS ARE PRESENT IN THE PROJECT LIMITS. THE CONTRACTOR SHALL NOT OPERATE EQUIPMENT OR STOCKPILE MATERIALS BEYOND THE EXISTING TOE OF SLOPE FROM STA. 9+98 - STA. 11+06, LT., STA. 11+28 - STA. 11+66, RT.

ADJUST DITCH GRADING AS NECESSARY TO FIT FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER.

ASPHALTIC SURFACE QUANTITIES WERE CALCULATED USING 115 LB/SY/IN. 4-INCHES OF ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A 2 ¼-INCH LOWER LAYER AND A 1 ¾-INCH UPPER LAYER.

INLET & OUTLET ELEVATIONS FOR CULVERT PIPES AS SHOWN ON THE PLAN MAY BE ADJUSTED BY THE ENGINEER TO FIT EXISTING FIELD CONDITIONS.

EXISTING DRIVEWAYS SHALL BE RESTORED IN KIND AND THEIR LOCATION VERIFIED BY THE ENGINEER IN THE FIELD.

CURVE DATA IS BASED ON THE ARC DEFINITION.

CONTACTS

DESIGN CONSULTANT

JEWELL ASSOCIATES ENGINEERS, INC.
560 SUNRISE DRIVE
SPRING GREEN, WI 53588
ATTN: ELLERY SCHAFFER, P.E.
PH: (608) 459-6027
CELL: (608) 341-8159
EMAIL: ellery.schaffer@jewellassoc.com

FOND DU LAC COUNTY HIGHWAY DEPARTMENT

301 DIXIE ST
FOND DU LAC, WI 54936
ATTN: TOM JANKE, P.E., COMMISSIONER
PH: (920) 929-3485
EMAIL: tom.janke@fdlco.wi.gov

DNR LIAISON

STATE OF WISCONSIN
DNR NORTH EAST REGIONAL HQ
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
ATTN: JAY SCHIEFELBEIN
PHONE: (920) 360-3784
EMAIL: jeremiah.schiefelbein@wisconsin.gov

UTILITIES

ELECTRIC

WE ENERGIES
500 S. 116TH STREET
WEST ALLIS, WI 53214
ATTN: Gregory Boerner
CELL: (618) 409-5861
EMAIL: gregory.boerner@we-energies.com

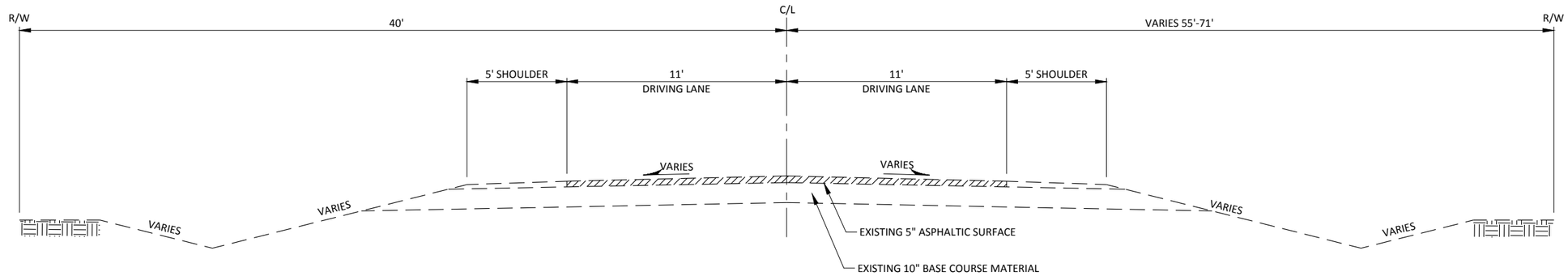
TELEPHONE

FRONTIER COMMUNICATIONS
118 DIVISION STREET
PLYMOUTH, WI 53703
ATTN: RUSSELL RYAN
CELL: (920) 737-9662
EMAIL: russell.w.ryan@ftr.com

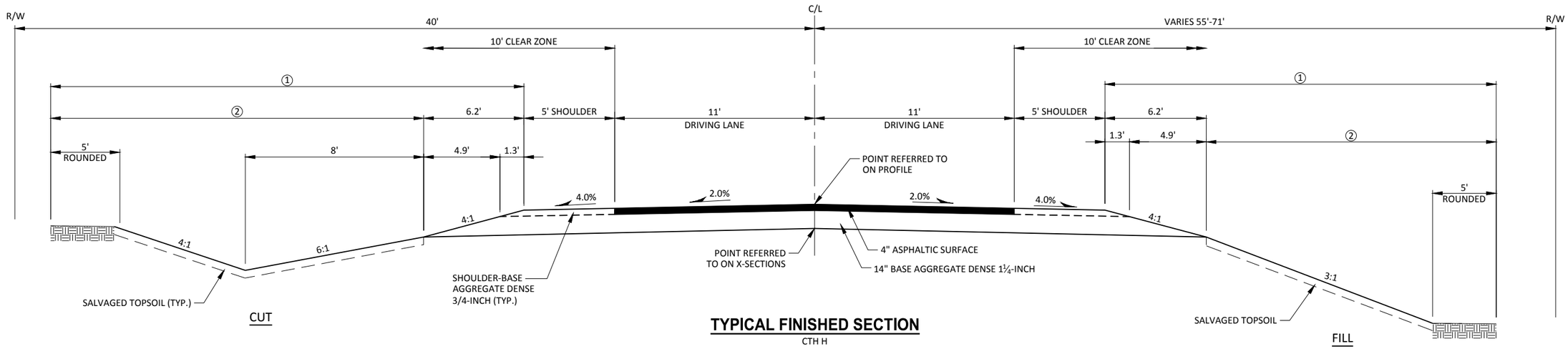
DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

* DENOTES UTILITY IS NOT A MEMBER OF DIGGERS HOTLINE

2



TYPICAL EXISTING SECTION
CTH H

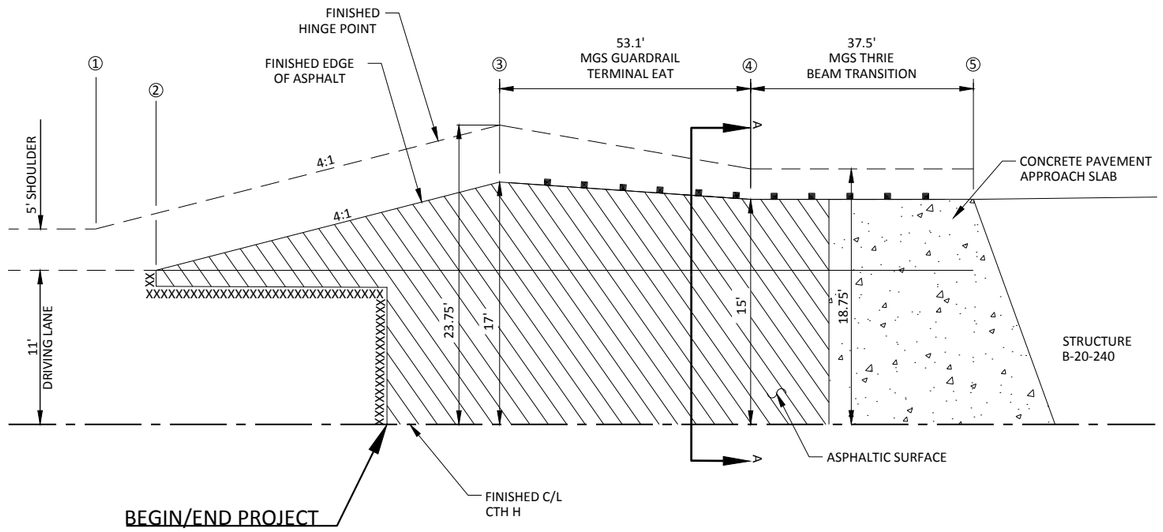


TYPICAL FINISHED SECTION
CTH H

① LIMITS OF SEEDING MIXTURE NO. 20 OR NO. 60 & FERTILIZER TYPE B (AS DIRECTED BY THE ENGINEER)

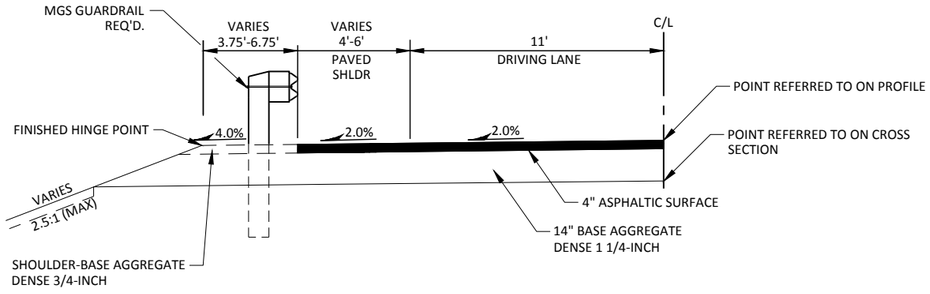
② LIMITS OF SALVAGED TOPSOIL & EROSION MAT CLASS I TYPE B (AS DIRECTED BY THE ENGINEER)

PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	TYPICAL SECTIONS	SHEET 3	E

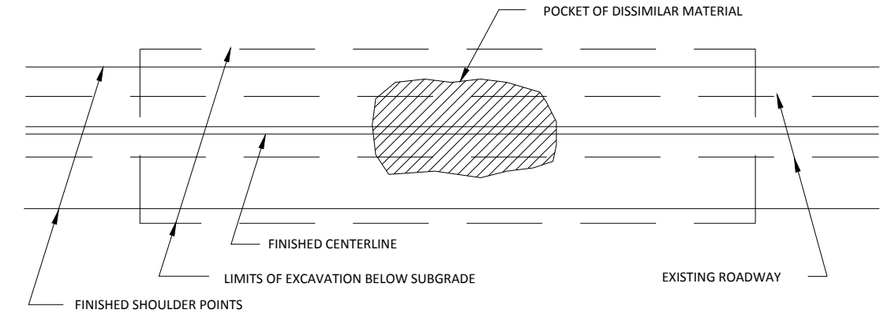


		STATION				
QUADRANT	LOCATION	①	②	③	④	⑤
SOUTHWEST	MAINLINE, LT.	9+75	9+81	10+02	10+55	10+93
SOUTHEAST	MAINLINE, RT.	9+94	9+96	10+19	10+72	11+10
NORTHWEST	MAINLINE, LT.	12+64	12+66	12+41	11+88	11+50
NORTHEAST	MAINLINE, RT.	12+87	12+80	12+58	12+05	11+67

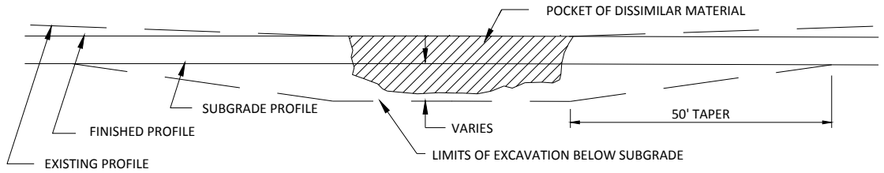
BEAMGUARD LAYOUT DETAIL



SECTION A-A

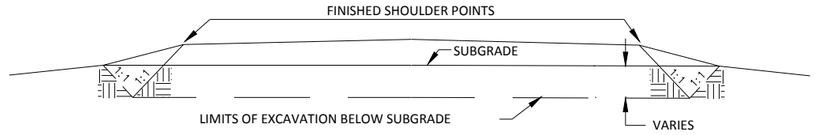


PLAN VIEW



PROFILE VIEW

RURAL EXCAVATION BELOW SUBGRADE (E.B.S.)



CROSS SECTION VIEW

1. EXACT LOCATION OF E.B.S. (EXCAVATION BELOW SUBGRADE) SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

2. E.B.S. AREA TO BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE ENGINEER. BACKFILL MUST BE HOMOGENEOUS WITH ADJOINING FILL MATERIAL.

3. THE FILL SECTION WITHIN 100' OF THE MOUTH OF THE CUT MUST BE KEPT 2' BELOW SUBGRADE UNTIL E.B.S. IS COMPLETED. LATERAL LIMITS OF EXCAVATION SHALL BE THE SUBGRADE SHOULDER POINTS.

CURVE 1
PI STA. = 1+68.33
Y = 303,517.02
X = 829,458.50
R = 60.00
D = 95°29'35"
DELTA = 79°19'22"
L = 83.07
T = 49.74
C = 76.59
PC STA. = 1+18.59
Y = 303,518.08
X = 829,408.77
PT STA. = 2+01.66
Y = 303,565.70
X = 829,468.75

CURVE 2
PI STA. = 2+25.35
Y = 303,588.90
X = 829,473.64
R = 500.00
D = 11°27'33"
DELTA = 5°25'47"
L = 47.38
T = 23.71
C = 47.37
PC STA. = 2+01.66
Y = 303,565.70
X = 829,468.75
PT STA. = 2+49.04
Y = 303,611.53
X = 829,480.70

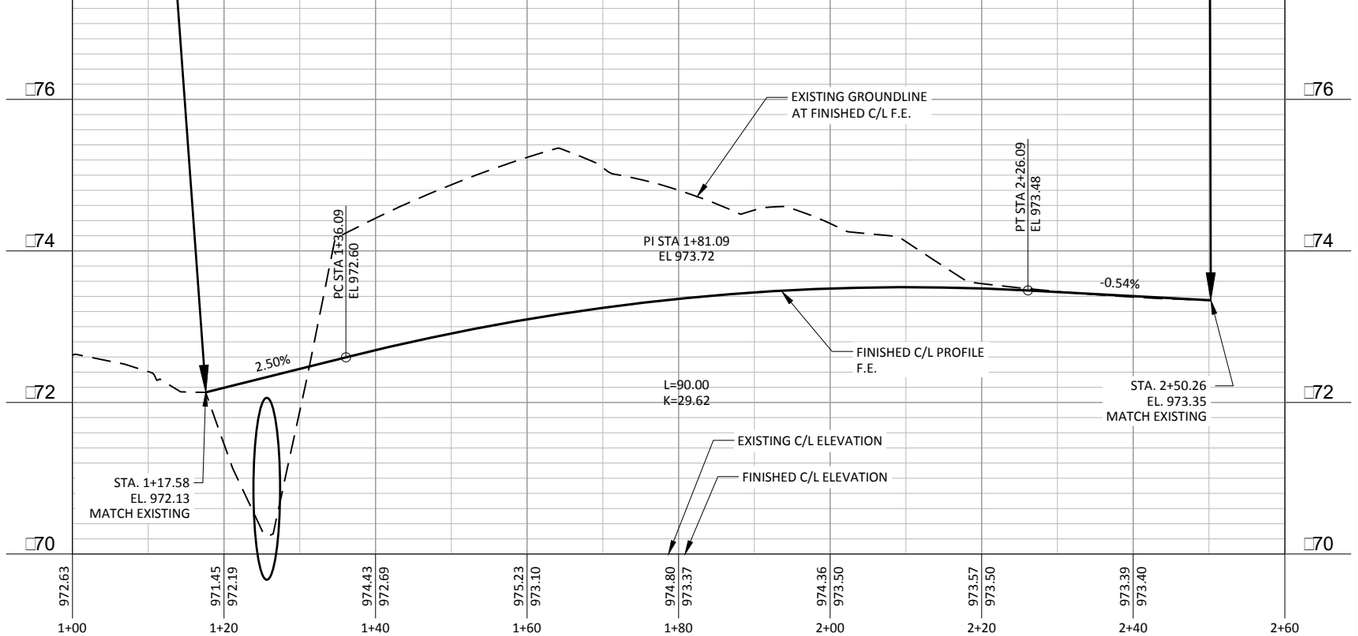
STA. 1+39
(1) CULVERT PIPE CLASS-III 30-INCH
(2) APRON ENDWALLS CULVERT PIPE 30-INCH
S. INV. = 968.90
N INV. = 967.82
SKEW = 30° LHF

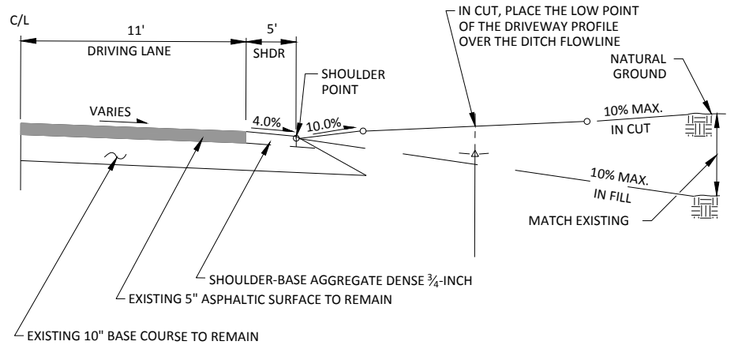
FINISHED C/L CTH H
C/L STA 9+85 CTH H = C/L STA 1+00 F.E.
EXISTING C/L F.E.
PT STA 2+49.04
(B.A.D.)
N17°19'25"E
CURVE 2
PRC 2+01.66
2+00
PC 1+18.59
R10'
Y = 303,535.32
X = 829,420.49
100.00
90°
S88°47'00"E
CURVE 1
R10'
Y = 303,502.40
X = 829,417.23
SHOULDER HINGE POINT (TYP.)
FINISHED C/L F.E.
TLE REQ'D (TYP.)
EXISTING C/L CTH H

END CONSTRUCTION
STA. 2+50.26
Y = 303,612.70
X = 829,481.06

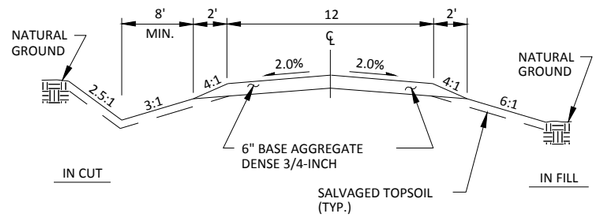
BEGIN CONSTRUCTION
STA. 1+17.58
Y = 303,518.10
X = 829,407.76

REMOVING SMALL PIPE CULVERTS
STA. 1+34, LT.
REMOVE 18" CMP
SLOPE INTERCEPT (TYP.)

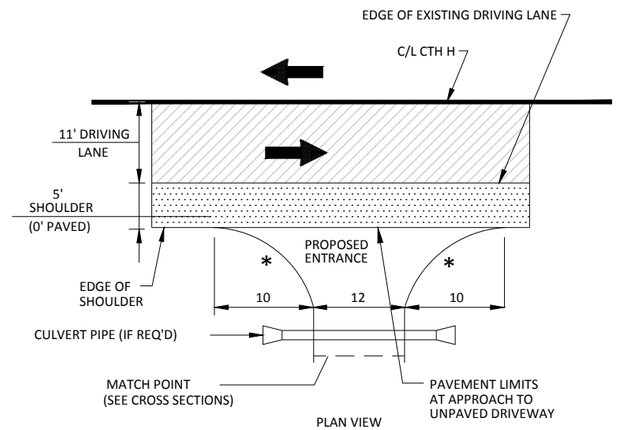




TYPICAL F.E. PROFILE



TYPICAL CROSS-SECTION FOR F.E.



APPROACH AT F.E.

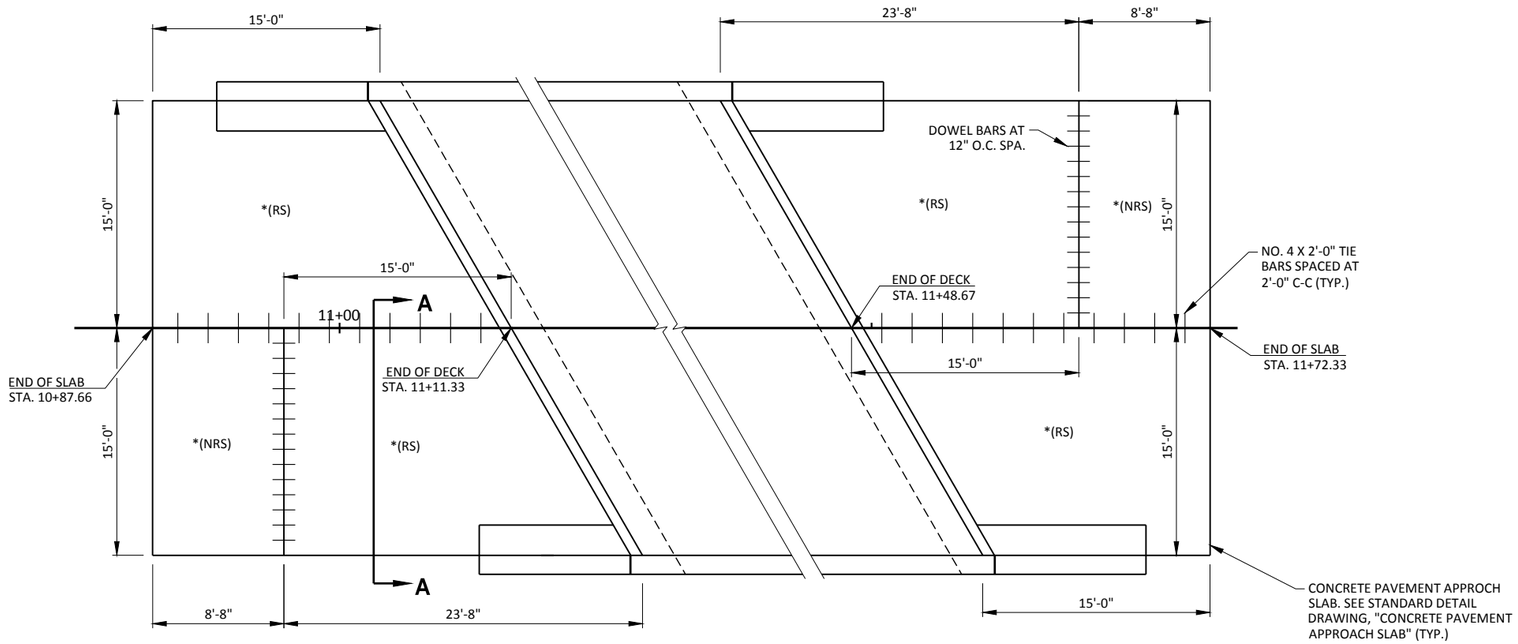
TYPICAL FIELD ENTERANCE (F.E.) DETAILS

LIMITS OF EXISTING ASPHALTIC SURFACE
* RADIUS = 10'

PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	CONSTRUCTION DETAILS	SHEET 5	E

FILE NAME : S:\PROJECTS\W11595 WISDOT - CTH H BRIDGE, FOND DU LAC CO\SHEETSPLAN\DETAILS\CONSTRUCTION DETAILS.DWG
PLOT DATE : 5/5/2020 1:14:49 PM
PLOT BY : JONAH DRAKE
PLOT SCALE : 1" = 1'
LAYOUT : LAYOUT2

2

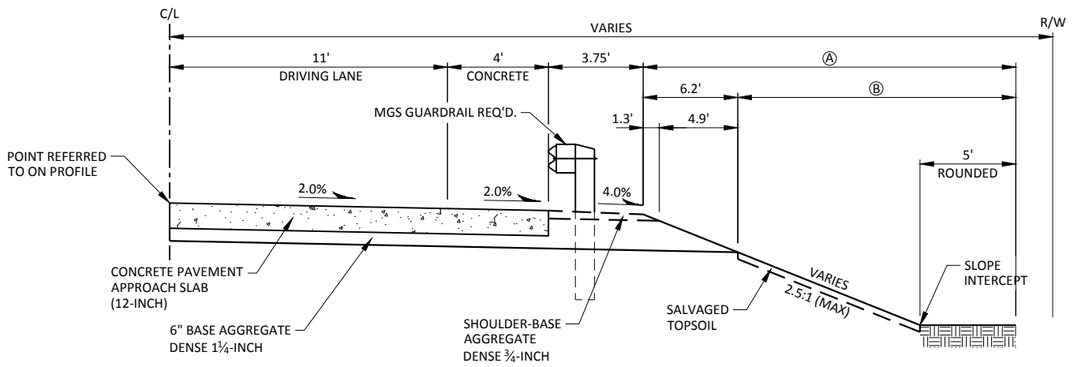


LEGEND

*(RS) = REINFORCED CONCRETE SLAB

*(NRS) = NON-REINFORCED CONCRETE SLAB

STRUCTURE APPROACH DETAILS



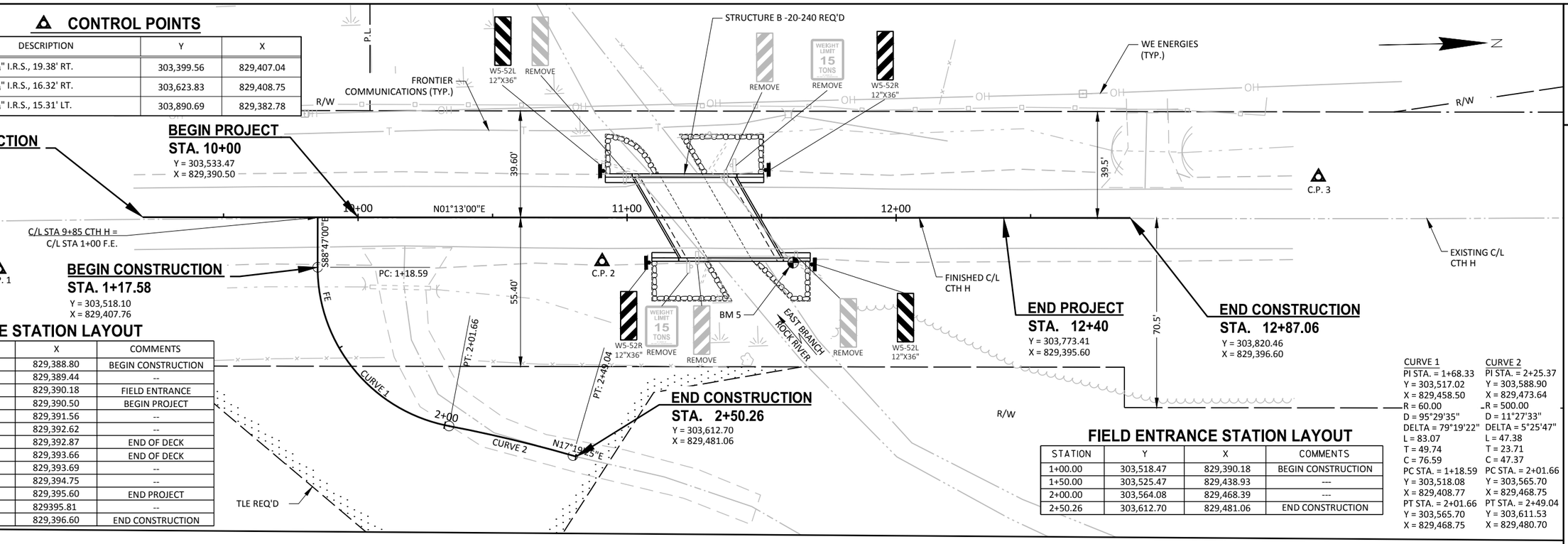
SECTION A-A

Ⓐ LIMITS OF SEEDING MIXTURE NO. 20 OR NO. 60 AND FERTILIZER TYPE B (AS DIRECTED BY ENGINEER)

Ⓑ LIMITS OF SALVAGED TOPSOIL & EROSION MAT CLASS I TYPE B (AS DIRECTED BY ENGINEER)

CONTROL POINTS

NO.	STA.	DESCRIPTION	Y	X
1	8+66.47	¾" I.R.S., 19.38' RT.	303,399.56	829,407.04
2	10+90.73	¾" I.R.S., 16.32' RT.	303,623.83	829,408.75
3	13+56.98	¾" I.R.S., 15.31' LT.	303,890.69	829,382.78



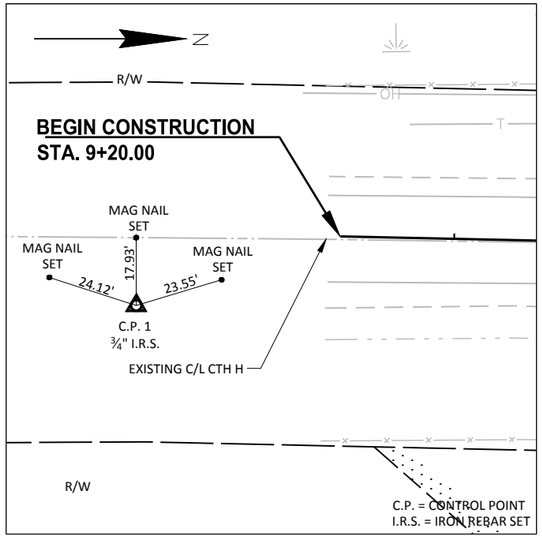
MAINLINE STATION LAYOUT

STATION	Y	X	COMMENTS
9+20.00	303,453.48	829,388.80	BEGIN CONSTRUCTION
9+50.00	303,483.48	829,389.44	--
9+85.00	303,518.47	829,390.18	FIELD ENTRANCE
10+00.00	303,533.47	829,390.50	BEGIN PROJECT
10+50.00	303,583.46	829,391.56	--
11+00.00	303,633.44	829,392.62	--
11+11.33	303,644.77	829,392.87	END OF DECK
11+48.67	303,682.10	829,393.66	END OF DECK
11+50.00	303,683.43	829,393.69	--
12+00.00	303,733.42	829,394.75	--
12+40.00	303,773.41	829,395.60	END PROJECT
12+50.00	303,783.41	829395.81	--
12+87.06	303,820.46	829,396.60	END CONSTRUCTION

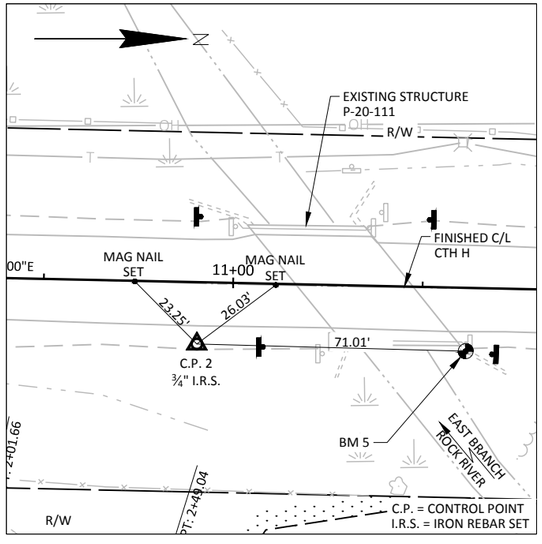
FIELD ENTRANCE STATION LAYOUT

STATION	Y	X	COMMENTS
1+00.00	303,518.47	829,390.18	BEGIN CONSTRUCTION
1+50.00	303,525.47	829,438.93	---
2+00.00	303,564.08	829,468.39	---
2+50.26	303,612.70	829,481.06	END CONSTRUCTION

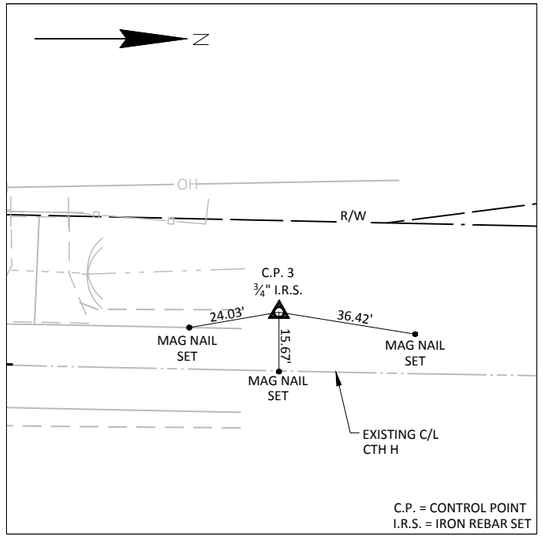
CURVE 1	CURVE 2
PI STA. = 1+68.33	PI STA. = 2+25.37
Y = 303,517.02	Y = 303,588.90
X = 829,458.50	X = 829,473.64
R = 60.00	R = 500.00
D = 95°29'35"	D = 11°27'33"
DELTA = 79°19'22"	DELTA = 5°25'47"
L = 83.07	L = 47.38
T = 49.74	T = 23.71
C = 76.59	C = 47.37
PC STA. = 1+18.59	PC STA. = 2+01.66
Y = 303,518.08	Y = 303,565.70
X = 829,408.77	X = 829,468.75
PT STA. = 2+01.66	PT STA. = 2+49.04
Y = 303,565.70	Y = 303,611.53
X = 829,468.75	X = 829,480.70



TIES TO C.P. #1
STA. 8+66.47; 19.38' RT.
Y = 303,399.56
X = 829,407.04



TIES TO C.P. #2
STA. 10+90.73; 16.32' RT.
Y = 303,623.83
X = 829,408.75



TIES TO C.P. #3
STA. 13+56.98; 15.31' LT.
Y = 303,890.69
X = 829,382.78

PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	ALIGNMENT AND TIES	SHEET 7	E

4850-01-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	1.000	1.000
0004	201.0205	Grubbing	STA	1.000	1.000
0006	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0008	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 11+32	LS	1.000	1.000
0010	205.0100	Excavation Common	CY	1,255.000	1,255.000
0012	206.1000	Excavation for Structures Bridges (structure) 01. B-20-240	LS	1.000	1.000
0014	210.1500	Backfill Structure Type A	TON	290.000	290.000
0016	213.0100	Finishing Roadway (project) 01. 4850-01-71	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	160.000	160.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	950.000	950.000
0022	415.0410	Concrete Pavement Approach Slab	SY	146.000	146.000
0024	455.0605	Tack Coat	GAL	41.000	41.000
0026	465.0105	Asphaltic Surface	TON	145.000	145.000
0028	502.0100	Concrete Masonry Bridges	CY	170.000	170.000
0030	502.3200	Protective Surface Treatment	SY	125.000	125.000
0032	502.3210	Pigmented Surface Sealer	SY	60.000	60.000
0034	505.0400	Bar Steel Reinforcement HS Structures	LB	4,590.000	4,590.000
0036	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	20,690.000	20,690.000
0038	516.0500	Rubberized Membrane Waterproofing	SY	14.000	14.000
0040	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	2.000	2.000
0042	520.3330	Culvert Pipe Class III-A 30-Inch	LF	36.000	36.000
0044	550.0500	Pile Points	EACH	12.000	12.000
0046	550.2104	Piling CIP Concrete 10 3/4 X 0.25-Inch	LF	180.000	180.000
0048	606.0300	Riprap Heavy	CY	165.000	165.000
0050	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	200.000	200.000
0052	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0054	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0056	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0058	619.1000	Mobilization	EACH	1.000	1.000
0060	624.0100	Water	MGAL	20.000	20.000
0062	625.0500	Salvaged Topsoil	SY	2,540.000	2,540.000
0064	628.1504	Silt Fence	LF	270.000	270.000
0066	628.1520	Silt Fence Maintenance	LF	540.000	540.000
0068	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0070	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0072	628.2004	Erosion Mat Class I Type B	SY	2,540.000	2,540.000
0074	628.6005	Turbidity Barriers	SY	375.000	375.000
0076	628.7504	Temporary Ditch Checks	LF	72.000	72.000

4850-01-71

Line	Item	Item Description	Unit	Total	Qty
0078	628.7555	Culvert Pipe Checks	EACH	1.000	1.000
0080	629.0210	Fertilizer Type B	CWT	2.000	2.000
0082	630.0120	Seeding Mixture No. 20	LB	80.000	80.000
0084	630.0160	Seeding Mixture No. 60	LB	3.000	3.000
0086	630.0200	Seeding Temporary	LB	80.000	80.000
0088	630.0500	Seed Water	MGAL	70.000	70.000
0090	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0092	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0094	638.2602	Removing Signs Type II	EACH	8.000	8.000
0096	638.3000	Removing Small Sign Supports	EACH	8.000	8.000
0098	642.5001	Field Office Type B	EACH	1.000	1.000
0100	643.0420	Traffic Control Barricades Type III	DAY	1,080.000	1,080.000
0102	643.0705	Traffic Control Warning Lights Type A	DAY	1,680.000	1,680.000
0104	643.0900	Traffic Control Signs	DAY	840.000	840.000
0106	643.5000	Traffic Control	EACH	1.000	1.000
0108	645.0111	Geotextile Type DF Schedule A	SY	80.000	80.000
0110	645.0120	Geotextile Type HR	SY	300.000	300.000
0112	646.1020	Marking Line Epoxy 4-Inch	LF	871.000	871.000
0114	650.4500	Construction Staking Subgrade	LF	462.000	462.000
0116	650.5000	Construction Staking Base	LF	462.000	462.000
0118	650.6500	Construction Staking Structure Layout (structure) 01. B-20-240	LS	1.000	1.000
0120	650.9910	Construction Staking Supplemental Control (project) 01. 4850-01-71	LS	1.000	1.000
0122	650.9920	Construction Staking Slope Stakes	LF	462.000	462.000
0124	690.0150	Sawing Asphalt	LF	134.000	134.000
0126	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0128	715.0502	Incentive Strength Concrete Structures	DOL	1,020.000	1,020.000

ALL ITEMS 010 UNLESS OTHERWISE NOTED

3

CLEARING & GRUBBING

STATION-STATION	LOCATION	201.0105 CLEARING (STA)	201.0205 GRUBBING (STA)
11+75 - 12+25	MAINLINE, RT.	1	1
	TOTALS =	1	1

REMOVING SMALL PIPE CULVERT

STATION	LOCATION	DESCRIPTION	203.0100 (EACH)
1+34	F.E., LT	18" CMP, L = 25'	1
	TOTALS =		1

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH (TON)	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH (TON)
9+75 - 11+10	MAINLINE	40	505
11+50 - 12+87	MAINLINE	40	445
1+18 - 2+50	FIELD ENTRANCE	80	-
	TOTALS =	160	950

CONCRETE PAVEMENT APPROACH SLAB

STATION - STATION	LOCATION	415.041 (SY)
10+88 - 11+18	MAINLINE	73
11+42 - 11+72	MAINLINE	73
	TOTALS =	146

3

ASPHALTIC SURFACE

STATION - STATION	LOCATION	455.0605 TACK COAT (GAL)	465.0105 ASPHALTIC SURFACE (TON)
9+81 - 10+88	MAINLINE	22	78
11+72 - 12+80	MAINLINE	19	67
	TOTALS =	41	145

CULVERT PIPE

STATION	LOCATION	520.1030 APRON ENDWALLS FOR CULVERT PIPE 30-INCH (EACH)	520.3330 CULVERT PIPE CLASS III-A 30-INCH (LF)
1+39	FIELD ENTRANCE	2	36
	TOTALS =	2	36

PIPE SIZE	MINIMUM THICKNESS (IN.) STEEL	ALUMINUM
30-INCH	0.079	0.075

BEAM GUARD

STATION - STATION	LOCATION	614.2500 MGS THRIE BEAM TRANSITION (LF)	614.2610 MGS GUARDRAIL TERMINAL EAT (EACH)
10+02 - 10+93	MAINLINE, LT.	40	1
10+19 - 11+10	MAINLINE, RT.	40	1
11+50 - 12+41	MAINLINE, RT.	40	1
11+67 - 12+58	MAINLINE, LT.	40	1
	TOTALS =	160	4

WATER

PROJECT	624.0100 (MGAL)
4850-01-71	20
TOTAL =	20

FINISHING ITEMS

STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL (SY)	628.2004 EROSION MAT CLASS I TYPE B (SY)	629.0210 FERTILIZER TYPE B (CWT)	630.0120 SEEDING MIXTURE NO. 20 (LB)	630.0160 SEEDING MIXTURE NO. 60 (LB)	630.0200 SEEDING TEMPORARY (LB)	630.0500 SEED WATER (MGAL)
9+20 - 12+87	MAINLINE	1,270	1,270	1.00	40	*2.0	-	37
1+18 - 2+50	FIELD ENTRANCE	760	760	0.50	28	-	-	17
-	UNDISTRIBUTED	510	510	0.50	12	1.0	80	16
	TOTALS =	2,540	2,540	2.0	80	3.0	80	70

* STA. 9+98 - STA. 11+06, LT.
STA. 11+28 - STA. 11+66, RT.

MOBILIZATION EROSION CONTROL

PROJECT	628.1905 MOBILIZATION EROSION CONTROL (EACH)	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL (EACH)
4850-01-71	4	2
TOTALS =	4	2

SILT FENCE

STATION - STATION	LOCATION	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)
9+72 - 10+92	MAINLINE, LT.	140	280
11+68 - 12+87	MAINLINE, RT.	70	140
-	UNDISTRIBUTED	60	120
TOTALS =		270	540

TURBIDITY BARRIER

LOCATION	628.6005 (SY)
SOUTH RIVER BANK	145
NORTH RIVER BANK	155
UNDISTRIBUTED	75
TOTALS =	375

TEMPORARY DITCH CHECKS

STATION	LOCATION	628.7504 (LF)
10+45	MAINLINE, RT.	8
10+94	MAINLINE, RT.	8
11+25	MAINLINE, RT.	8
11+53	MAINLINE, LT.	8
11+60	MAINLINE, RT.	8
11+98	MAINLINE, LT.	8
12+35	MAINLINE, LT.	8
	UNDISTRIBUTED	16
	TOTALS =	72

CULVERT PIPE CHECKS

STATION	LOCATION	628.7555 (EACH)
1+31	FIELD ENTRANCE, RT.	1
	TOTALS =	1

ALL ITEMS 010 UNLESS OTHERWISE NOTED

3

PERMANENT SIGNING

APPROX. STATION	POSITION	LOCATION	SIGN CODE	SIGN DESCRIPTION	SIGN SIZE	634.0612 POSTS WOOD 4X6-INCH X 12-FT (EACH)	637.2230 SIGNS TYPE II REFLECTIVE F (SF)	638.2602 REMOVING SIGNS TYPE II (EACH)	638.3000 REMOVING SMALL SIGN SUPPORTS (EACH)
5+23	RIGHT	AT ROLLING DR	R12-55	15 TON BRDGE __ MILES AHEAD	48X18	---	---	1	1
10+90	LEFT	MAINLINE	W5-52L	BRIDGE HASH MARKS	12X36	1	3.00	---	---
11+00	LEFT	MAINLINE	W5-52L	BRIDGE HASH MARKS	12X36	---	---	1	1
11+08	RIGHT	MAINLINE	W5-52R	BRIDGE HASH MARKS	12X36	1	3.00	---	---
11+24	RIGHT	MAINLINE	R12-1	WEIGHT LIMIT 15 TONS	24X30	---	---	1	1
11+27	RIGHT	MAINLINE	W5-52R	BRIDGE HASH MARKS	12X36	---	---	1	1
11+36	LEFT	MAINLINE	W5-52L	BRIDGE HASH MARKS	12X36	---	---	1	1
11+39	LEFT	MAINLINE	R12-1	WEIGHT LIMIT 15 TONS	24X30	---	---	1	1
11+52	LEFT	MAINLINE	W5-52L	BRIDGE HASH MARKS	12X36	1	3.00	---	---
11+62	RIGHT	MAINLINE	W5-52R	BRIDGE HASH MARKS	12X36	---	---	1	1
11+70	RIGHT	MAINLINE	W5-52R	BRIDGE HASH MARKS	12X36	1	3.00	---	---
31+52	LEFT	AT SUPERIOR DR	R12-55	15 TON BRDGE __ MILES AHEAD	48X18	---	---	1	1
					TOTALS =	4	12	8	8

TRAFFIC CONTROL

	TRAFFIC CONTROL			
LOCATION	643.0420 BARRICADES TYPE III (DAY)	643.0705 WARNING LIGHTS TYPE A (DAY)	643.0900 TRAFFIC CONTROL SIGNS (DAY)	643.5000 TRAFFIC CONTROL (EACH)
PROJECT	1,080	1,680	840	1
TOTALS =	1,080	1,680	840	1

3

MARKING LINE EPOXY 4-INCH

STATION - STATION	LOCATION	DESCRIPTION	646.1020 (LF)
9+80 - 12+66	MAINLINE	WHITE EDGELINE	286
9+95 - 12+80	MAINLINE	WHITE EDGELINE	285
10+00 - 12+40	MAINLINE	CL SINGLE SOLID YELLOW	240
10+00 - 12+40	MAINLINE	CL SINGLE DASHSED YELLOW	60
		TOTAL =	871

CONSTRUCTION STAKING

STATION -STATION	LOCATION	650.4500 SUBGRADE (L.F.)	650.5000 BASE (L.F.)	*650.6500 STRUCTURE LAYOUT (L.S.)	650.9910 SUPPLEMENTAL CONTROL (4850-01-71) (L.S.)	650.9920 SLOPES STAKES (L.F.)
9+20 - 11+11	MAINLINE	191	191	-	-	191
11+48 - 12+87	MAINLINE	139	139	-	-	139
1+18 - 2+50	FIELD ENTRANCE	132	132	-	-	132
-	MAINLINE	-	-	1	1	-
	TOTAL =	462	462	1	1	462

*CATEGORY 020

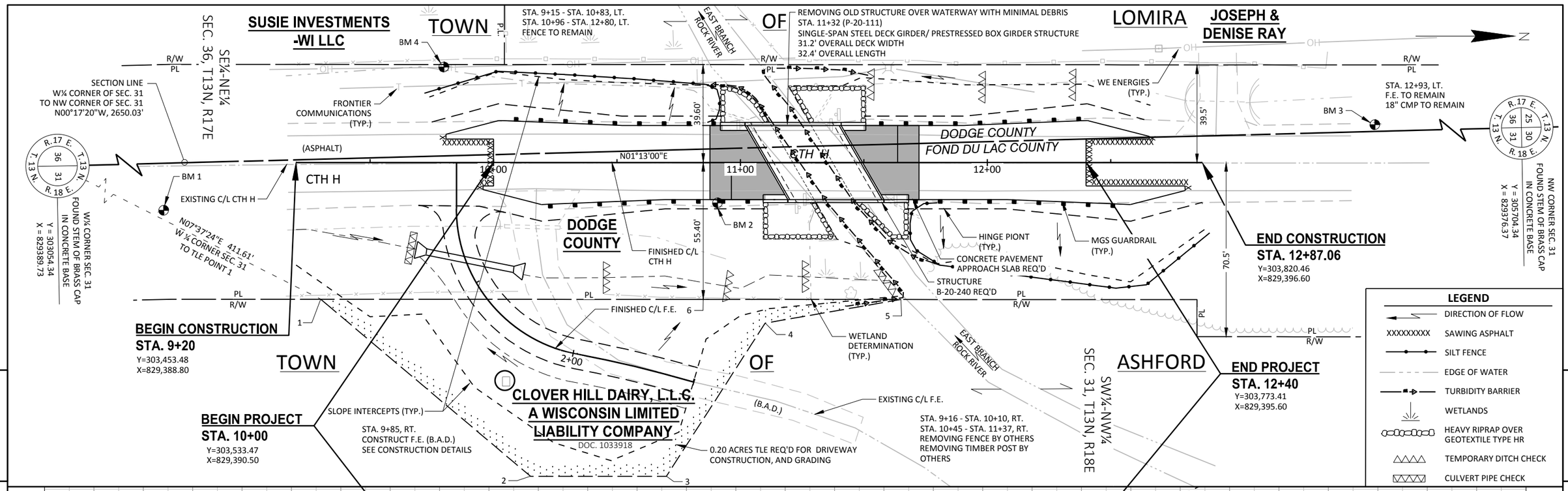
SAWING ASPHALT

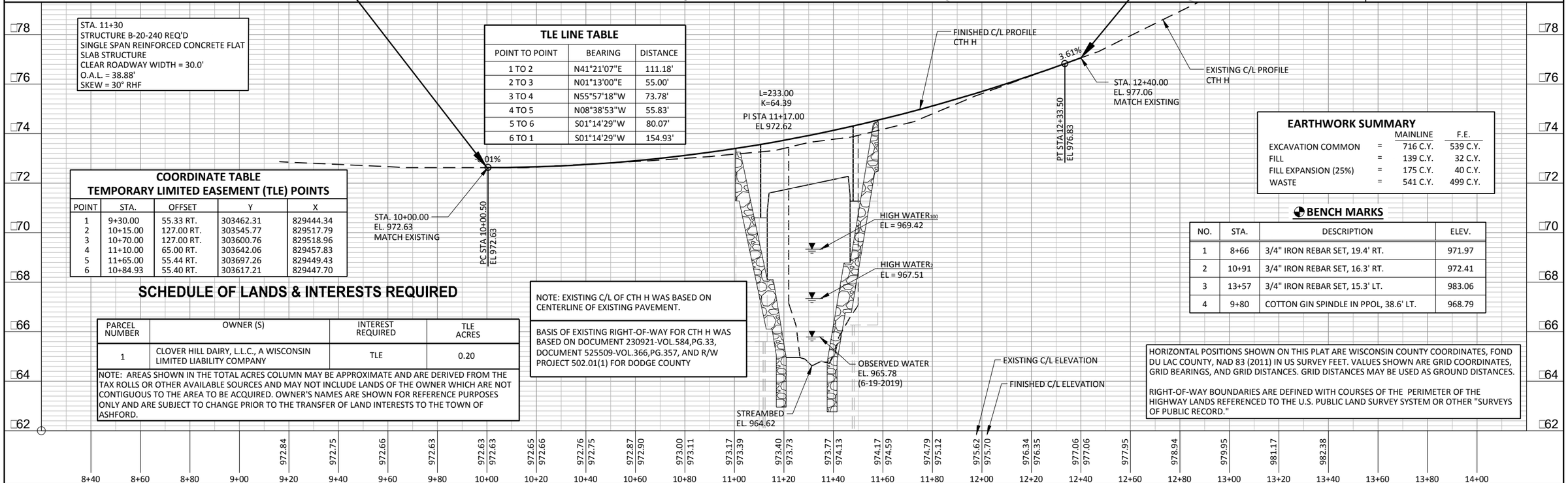
STATION	LOCATION	690.0150 (LF)
9+80 - 10+00	MAINLINE	46
12+40 - 12+80	MAINLINE	88
	TOTAL =	134

EARTHWORK SUMMARY

CATEGORY	FROM/TO STA	LOCATION	205.0100 COMMON EXCAVATION CUT (2) (CY)	AVAILABLE MATERIAL (CY) (1)	UNEXPANDED FILL (CY)	EXPANDED FILL (CY) FACTOR 1.25 (2)	MASS ORDINATE +/- (CY) (3)	WASTE (CY)
010	9+20 - 12+87	MAINLINE	716	716	139	175	541	541
010	1+18 - 2+50	F.E.	539	539	32	40	499	499
		TOTALS =	1255	1255	171	215	1040	1040

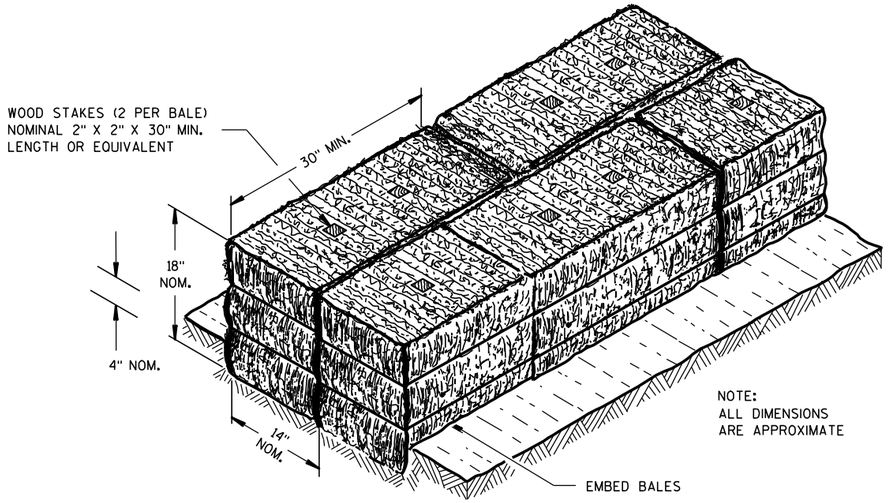
NOTES:
1.) AVAILABLE MATERIAL=CUT
2.) EXPANDED FILL FACTOR 1.25: EXPANDED FILL = (UNEXPANDED FILL)*1.25
3.) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE CATEGORY.
MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE CATEGORY.


SUSIE INVESTMENTS -WI LLC
TOWN OF LOMIRA
JOSEPH & DENISE RAY
SEC. 36, T13N, R17E
SE¼-NE¼
STA. 9+15 - STA. 10+83, LT.
STA. 10+96 - STA. 12+80, LT.
FENCE TO REMAIN
REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS
STA. 11+32 (P-20-111)
SINGLE-SPAN STEEL DECK GIRDER/ PRESTRESSED BOX GIRDER STRUCTURE
31.2' OVERALL DECK WIDTH
32.4' OVERALL LENGTH
EAST BRANCH ROCK RIVER
SECTION LINE
W¼ CORNER OF SEC. 31
TO NW CORNER OF SEC. 31
N00°17'20"W, 2650.03'
FRONTIER COMMUNICATIONS (TYP.)
WE ENERGIES (TYP.)
STA. 12+93, LT.
F.E. TO REMAIN
18" CMP TO REMAIN
BM 1
BM 2
BM 3
BM 4
EXISTING C/L CTH H
CTH H
DODGE COUNTY
FOND DU LAC COUNTY
N01°13'00"E
N07°37'24"E 411.61'
W ¼ CORNER SEC. 31
TO TLE POINT 1
W¼ CORNER SEC. 31
FOUND STEM OF BRASS CAP
IN CONCRETE BASE
Y = 303054.34
X = 829389.73
NW CORNER SEC. 31
FOUND STEM OF BRASS CAP
IN CONCRETE BASE
Y = 305704.34
X = 829376.37
FINISHED C/L CTH H
FINISHED C/L F.E.
HINGE PIONT (TYP.)
MGS GUARDRAIL (TYP.)
CONCRETE PAVEMENT APPROACH SLAB REQ'D
STRUCTURE B-20-240 REQ'D
WETLAND DETERMINATION (TYP.)
39.6'
55.40'
39.5'
70.5'
BEGIN CONSTRUCTION
STA. 9+20
Y=303,453.48
X=829,388.80
END CONSTRUCTION
STA. 12+87.06
Y=303,820.46
X=829,396.60
END PROJECT
STA. 12+40
Y=303,773.41
X=829,395.60
BEGIN PROJECT
STA. 10+00
Y=303,533.47
X=829,390.50
SLOPE INTERCEPTS (TYP.)
STA. 9+85, RT.
CONSTRUCT F.E. (B.A.D.)
SEE CONSTRUCTION DETAILS
CLOVER HILL DAIRY, L.L.C. A WISCONSIN LIMITED LIABILITY COMPANY
DOC. 1033918
(B.A.D.)
EXISTING C/L F.E.
STA. 9+16 - STA. 10+10, RT.
STA. 10+45 - STA. 11+37, RT.
REMOVING FENCE BY OTHERS
REMOVING TIMBER POST BY OTHERS
0.20 ACRES TLE REQ'D FOR DRIVEWAY CONSTRUCTION, AND GRADING
SW¼-NW¼
SEC. 31, T13N, R18E
ASHFORD
LEGEND
DIRECTION OF FLOW
SAWING ASPHALT
SILT FENCE
EDGE OF WATER
TURBIDITY BARRIER
WETLANDS
HEAVY RIPRAP OVER GEOTEXTILE TYPE HR
TEMPORARY DITCH CHECK
CULVERT PIPE CHECK

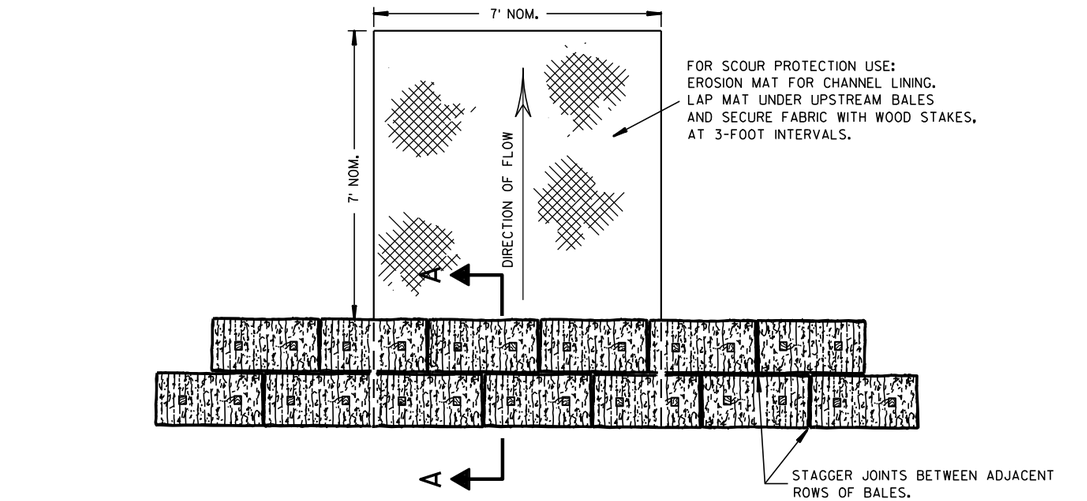

STA. 11+30
STRUCTURE B-20-240 REQ'D
SINGLE SPAN REINFORCED CONCRETE FLAT SLAB STRUCTURE
CLEAR ROADWAY WIDTH = 30.0'
O.A.L. = 38.88'
SKEW = 30° RHF
TLE LINE TABLE
POINT TO POINT | BEARING | DISTANCE
1 TO 2 | N41°21'07"E | 111.18'
2 TO 3 | N01°13'00"E | 55.00'
3 TO 4 | N55°57'18"W | 73.78'
4 TO 5 | N08°38'53"W | 55.83'
5 TO 6 | S01°14'29"W | 80.07'
6 TO 1 | S01°14'29"W | 154.93'
FINISHED C/L PROFILE CTH H
EXISTING C/L PROFILE CTH H
L=233.00
K=64.39
PI STA 11+17.00
EL 972.62
3.61%
5.01%
STA. 12+40.00
EL. 977.06
MATCH EXISTING
PT STA 12+33.50
EL 976.83
STA. 10+00.00
EL. 972.63
MATCH EXISTING
PC STA 10+00.50
EL 972.63
HIGH WATER100
EL = 969.42
HIGH WATER2
EL = 967.51
OBSERVED WATER
EL. 965.78
(6-19-2019)
STREAMBED
EL. 964.62
EXISTING C/L ELEVATION
FINISHED C/L ELEVATION
EARTHWORK SUMMARY
MAINLINE | F.E.
EXCAVATION COMMON = 716 C.Y. | 539 C.Y.
FILL = 139 C.Y. | 32 C.Y.
FILL EXPANSION (25%) = 175 C.Y. | 40 C.Y.
WASTE = 541 C.Y. | 499 C.Y.
BENCH MARKS
NO. | STA. | DESCRIPTION | ELEV.
1 | 8+66 | 3/4" IRON REBAR SET, 19.4' RT. | 971.97
2 | 10+91 | 3/4" IRON REBAR SET, 16.3' RT. | 972.41
3 | 13+57 | 3/4" IRON REBAR SET, 15.3' LT. | 983.06
4 | 9+80 | COTTON GIN SPINDLE IN PPOL, 38.6' LT. | 968.79
COORDINATE TABLE
TEMPORARY LIMITED EASEMENT (TLE) POINTS
POINT | STA. | OFFSET | Y | X
1 | 9+30.00 | 55.33 RT. | 303462.31 | 829444.34
2 | 10+15.00 | 127.00 RT. | 303545.77 | 829517.79
3 | 10+70.00 | 127.00 RT. | 303600.76 | 829518.96
4 | 11+10.00 | 65.00 RT. | 303642.06 | 829457.83
5 | 11+65.00 | 55.44 RT. | 303697.26 | 829449.43
6 | 10+84.93 | 55.40 RT. | 303617.21 | 829447.70
SCHEDULE OF LANDS & INTERESTS REQUIRED
PARCEL NUMBER | OWNER (S) | INTEREST REQUIRED | TLE ACRES
1 | CLOVER HILL DAIRY, L.L.C., A WISCONSIN LIMITED LIABILITY COMPANY | TLE | 0.20
NOTE: AREAS SHOWN IN THE TOTAL ACRES COLUMN MAY BE APPROXIMATE AND ARE DERIVED FROM THE TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED. OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE TOWN OF ASHFORD.
NOTE: EXISTING C/L OF CTH H WAS BASED ON CENTERLINE OF EXISTING PAVEMENT.
BASIS OF EXISTING RIGHT-OF-WAY FOR CTH H WAS BASED ON DOCUMENT 230921-VOL.584,PG.33, DOCUMENT 525509-VOL.366,PG.357, AND R/W PROJECT 502.01(1) FOR DODGE COUNTY
HORIZONTAL POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, FOND DU LAC COUNTY, NAD 83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.
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."
8+40 8+60 8+80 9+00 9+20 9+40 9+60 9+80 10+00 10+20 10+40 10+60 10+80 11+00 11+20 11+40 11+60 11+80 12+00 12+20 12+40 12+60 12+80 13+00 13+20 13+40 13+60 13+80 14+00

Standard Detail Drawing List

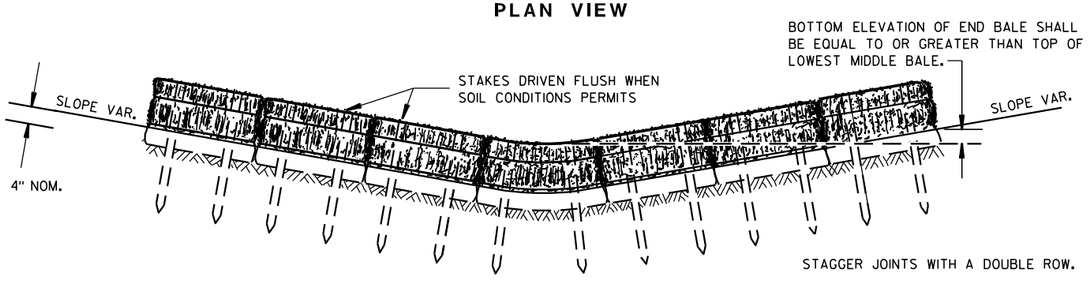
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



SECTION A-A



PLAN VIEW



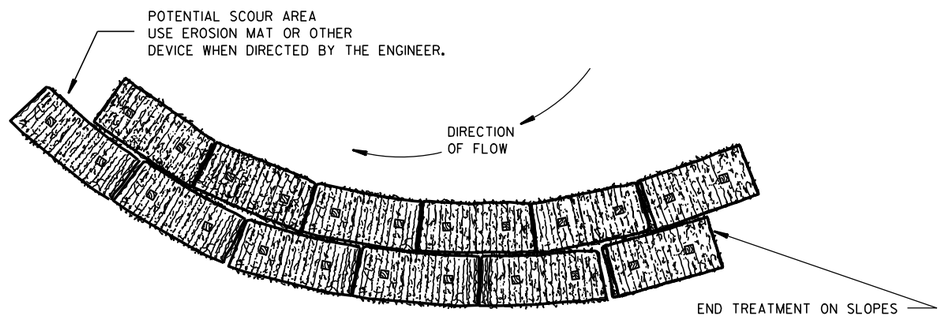
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

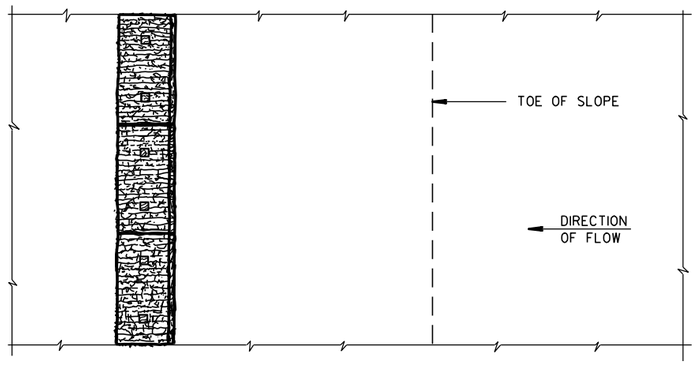
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

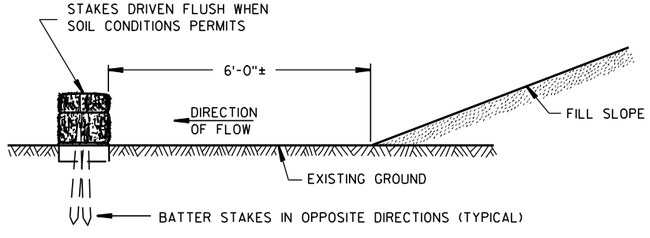


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

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

FHWA

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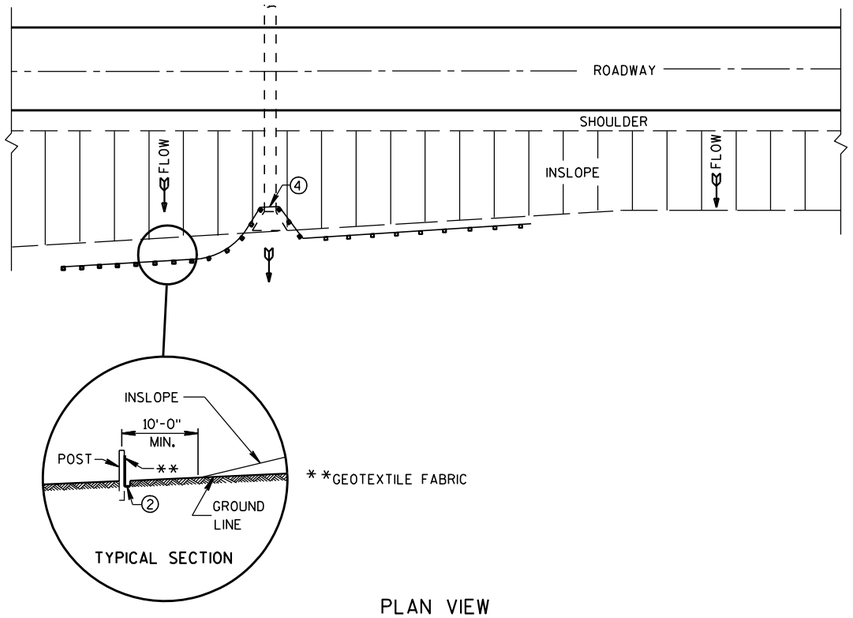
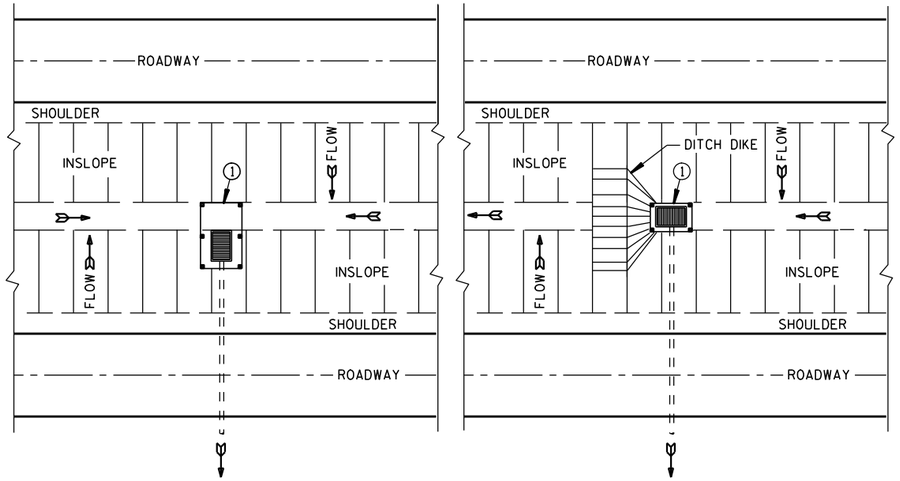
S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

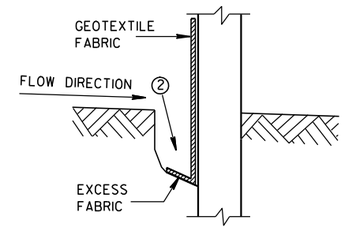
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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

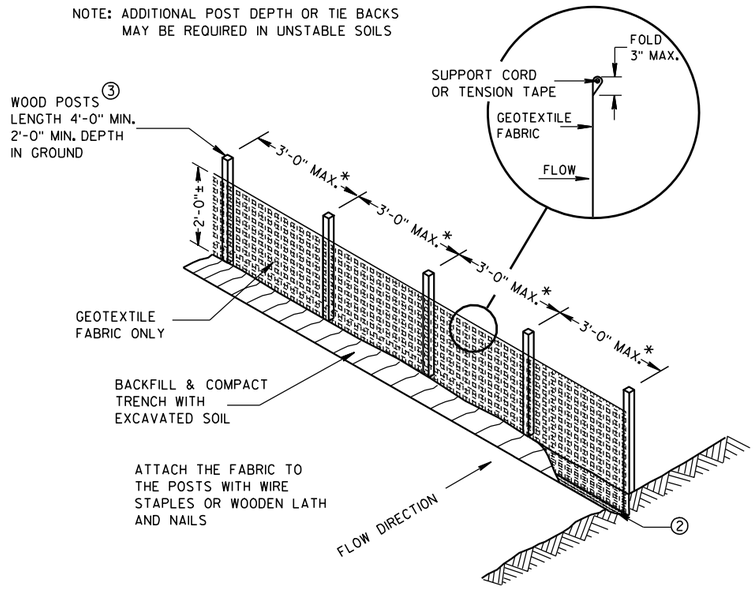
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

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

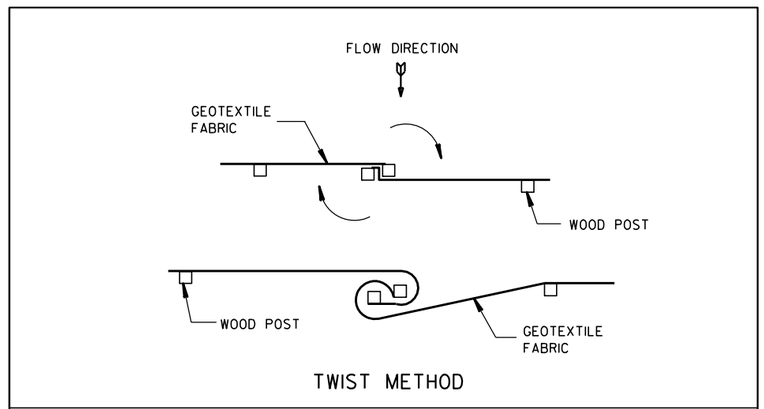
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



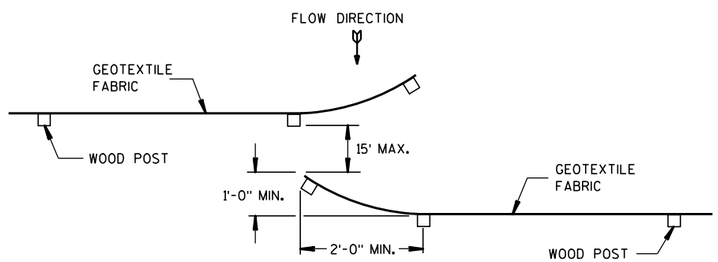
TRENCH DETAIL



SILT FENCE

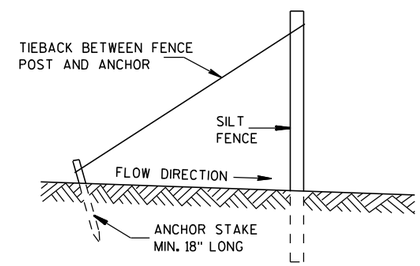


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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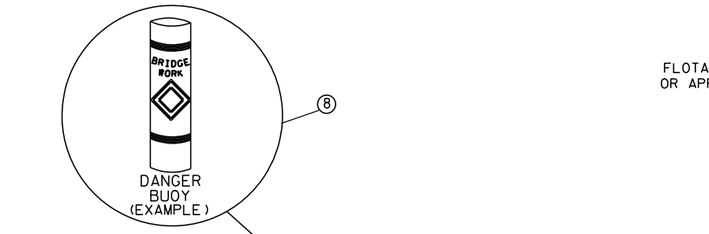
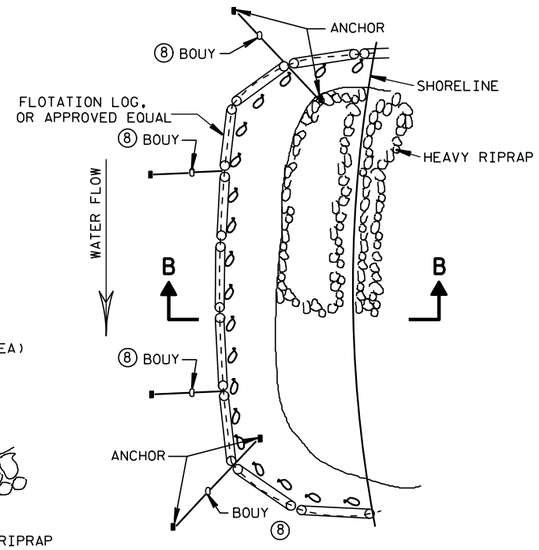
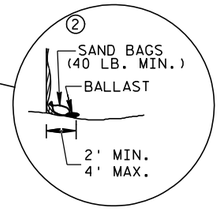
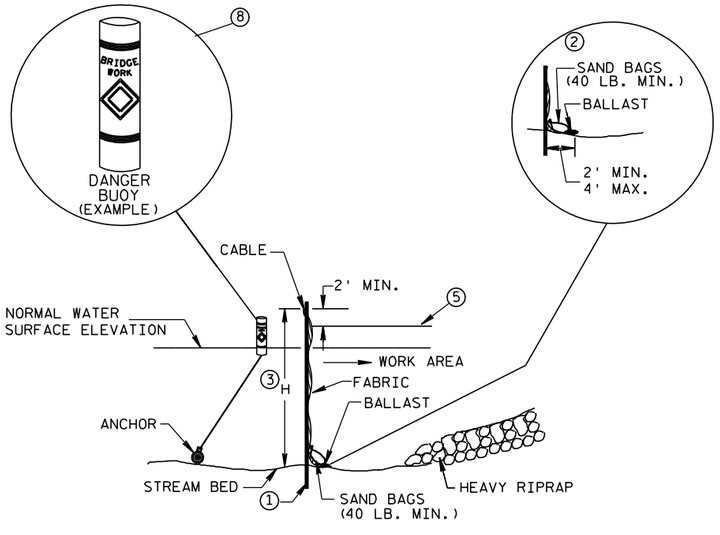


SECTION B-B

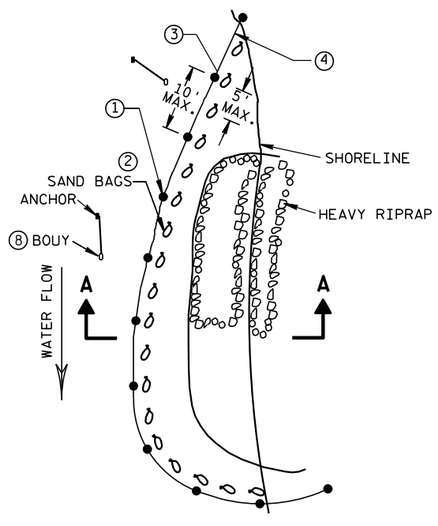




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

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

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

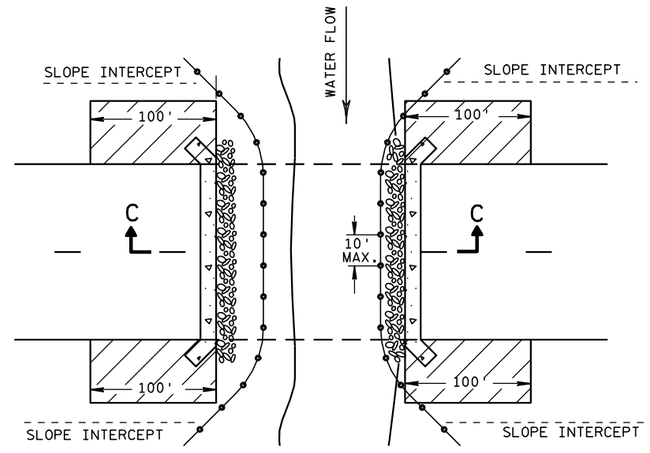
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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

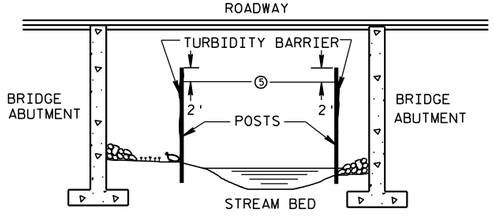
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

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



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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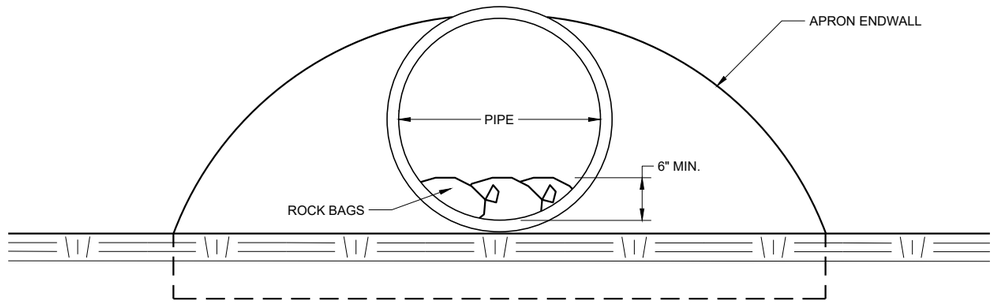
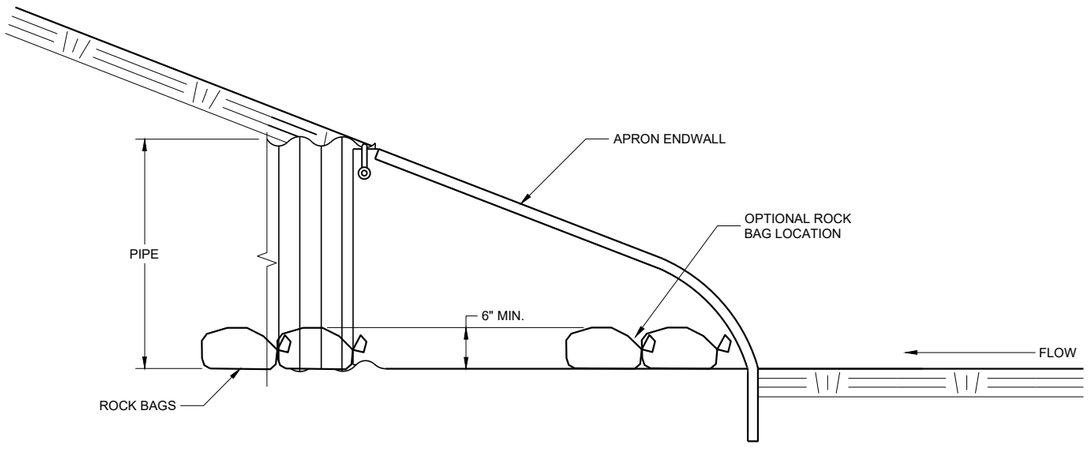


END VIEW



SIDE VIEW

CULVERT PIPE CHECK

□INSTALL ON INLET END ONLY□

CULVERT PIPE CHECK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

M□□201□ — DATE

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METAL APRON ENDWALLS

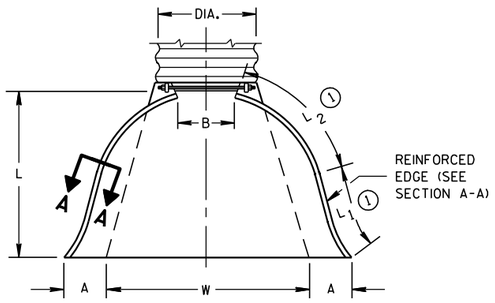
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

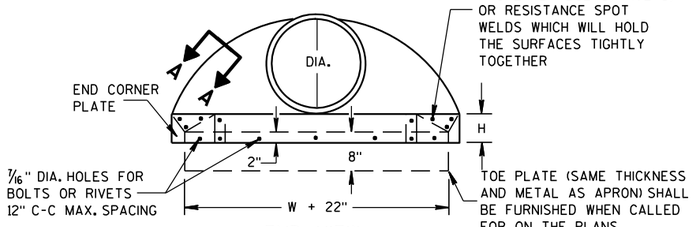
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 7/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	* 33 1/4 - ** 35	* 98 1/4 - ** 100	90	5 1/2	2 2/5 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24 - ** 30	* 72 - ** 78	* 21 - ** 27	99	102	5 1/2	2 to 1
72	7	* 24 - ** 36	78	21	99	108	6	2 to 1
78	7 1/2	* 24 - ** 36	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

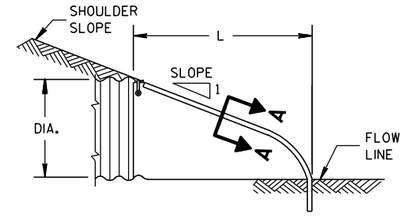
* MINIMUM
** MAXIMUM



PLAN VIEW

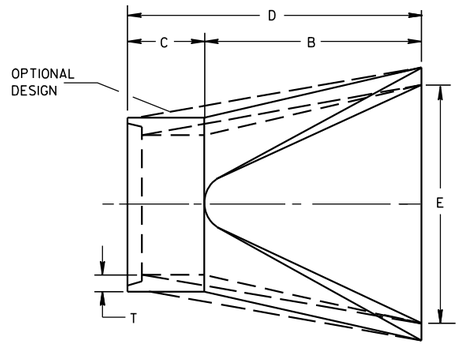


END VIEW

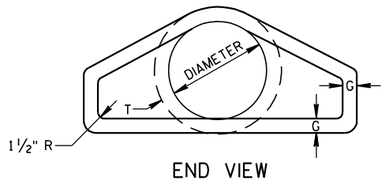


SIDE ELEVATION

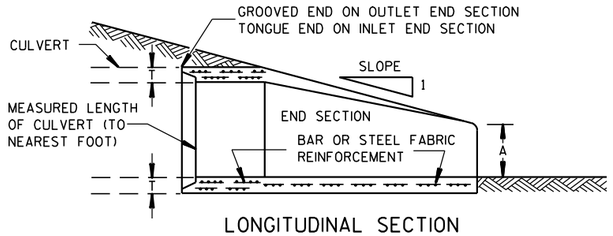
METAL ENDWALLS



PLAN

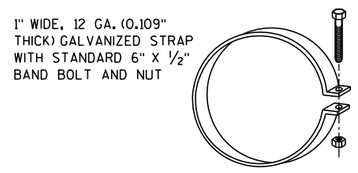


END VIEW



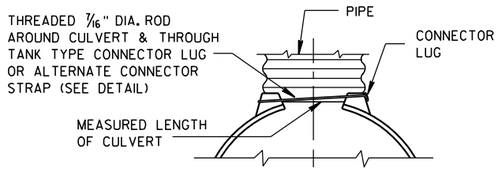
LONGITUDINAL SECTION

CONCRETE ENDWALLS

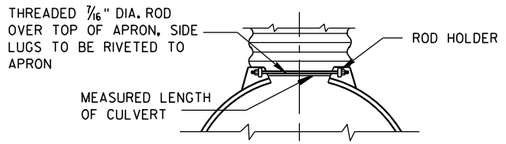


ALTERNATE FOR TYPE 1 CONNECTION

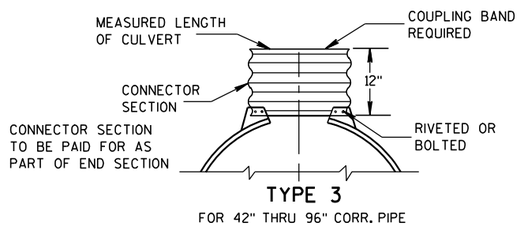
END SECTION CONNECTOR STRAP



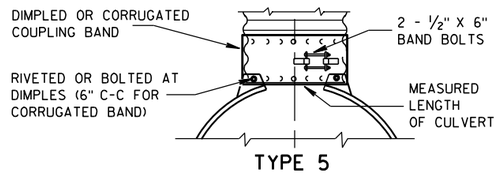
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

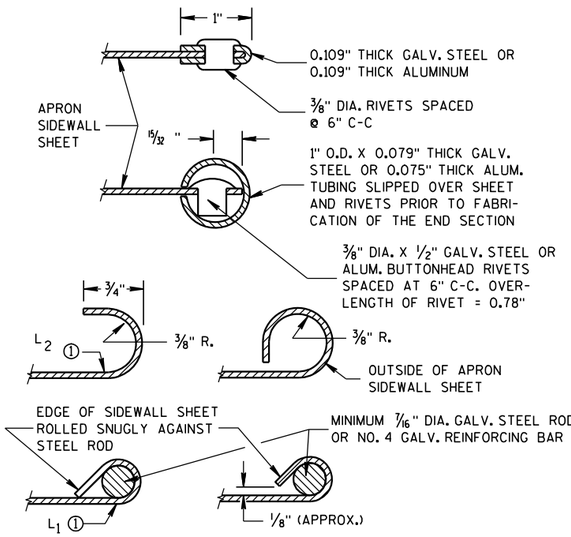
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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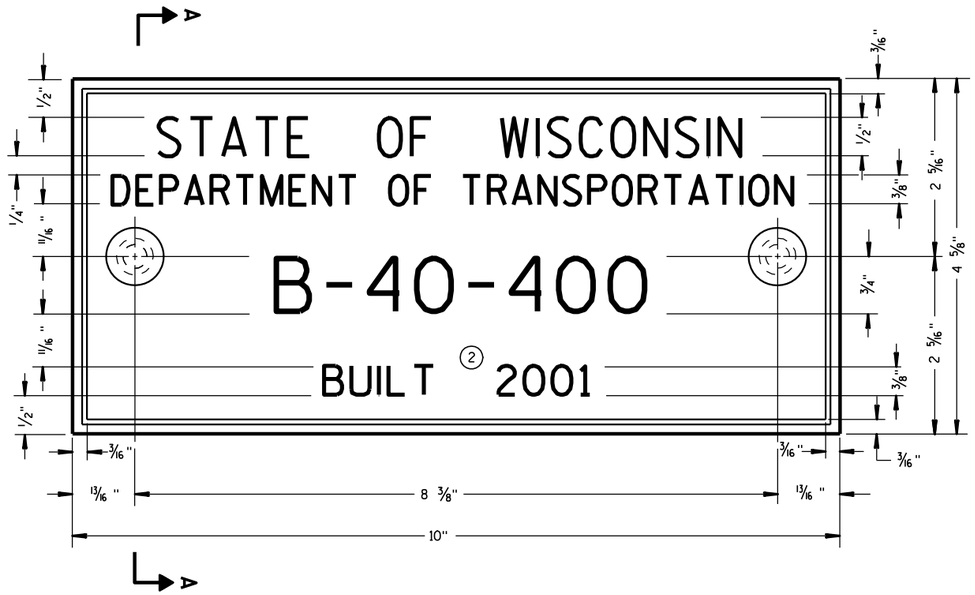
S.D.D. 8 F 1-11



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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

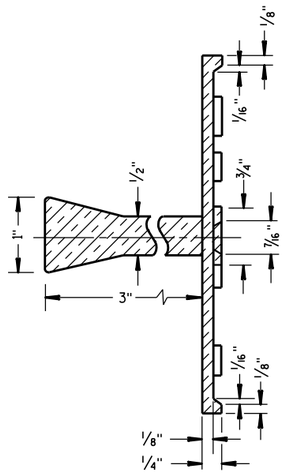
GENERAL NOTES

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

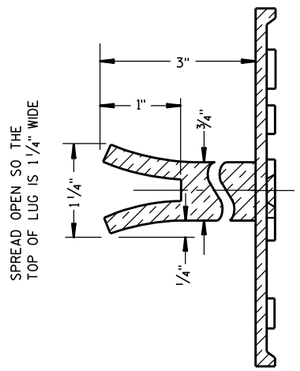
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

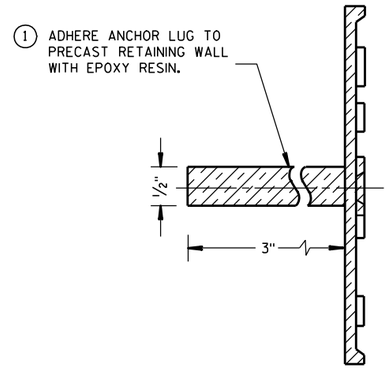
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

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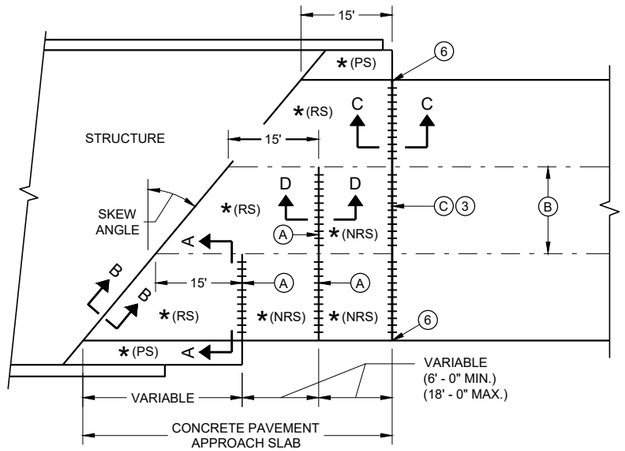
S.D.D. 12 A 3-10



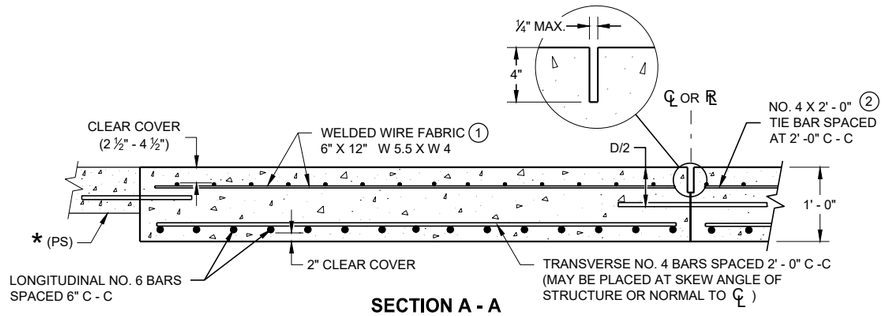
SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)

(RS) = REINFORCED CONCRETE SLAB

(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

(NRS) - NON - REINFORCED CONCRETE SLAB

*** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



SECTION A - A
REINFORCEMENT POSITIONING DETAIL

GENERAL NOTES

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

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

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

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

(3) DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

(4) USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.

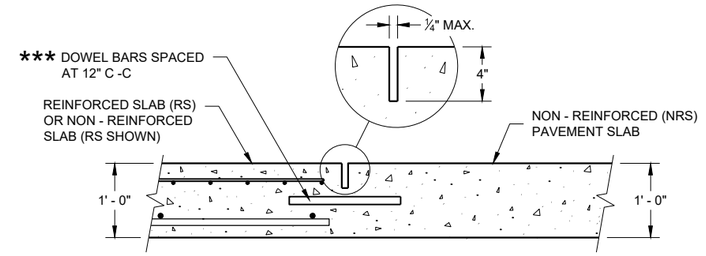
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

(6) EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.

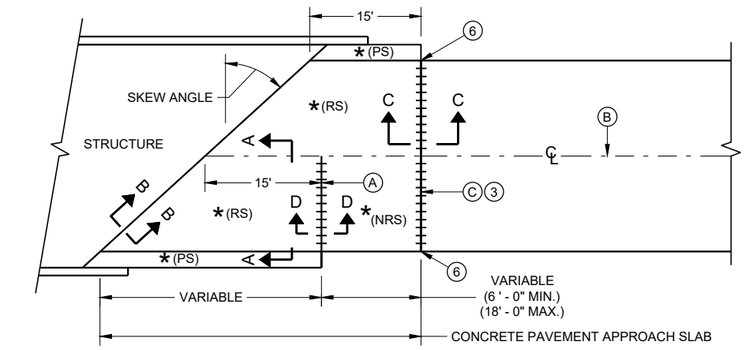
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.

(C) 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℞ .

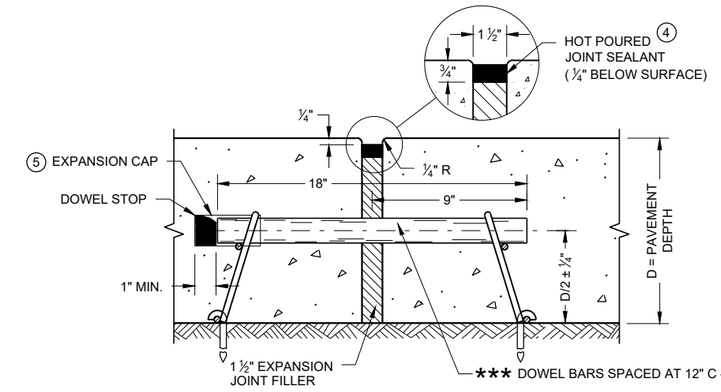


SECTION D - D
CONTRACTION JOINT

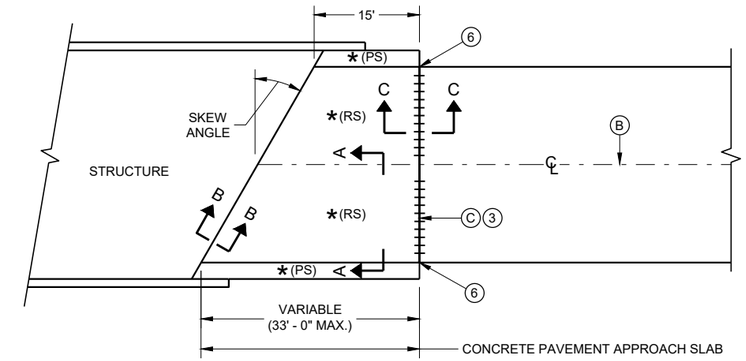


SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')

SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT

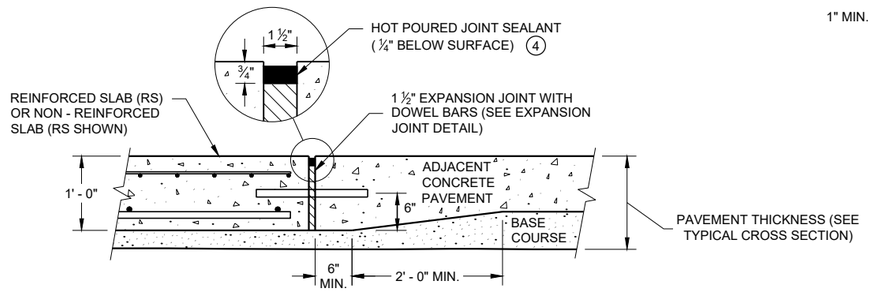


EXPANSION JOINT DETAIL



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

APPROACH SLAB AND ADJACENT PAVEMENT



SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Peter Kemp, P.E.
PAVEMENT SUPERVISO

FHWA

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SDD 13B02 - 09a

(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.

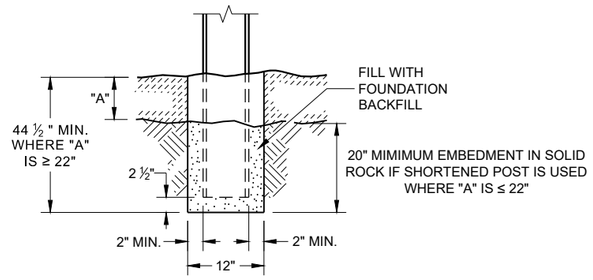
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL 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).

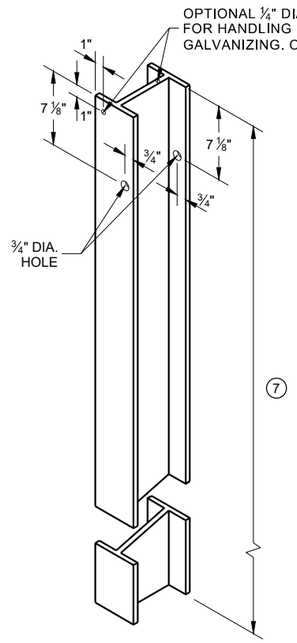
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(6) WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

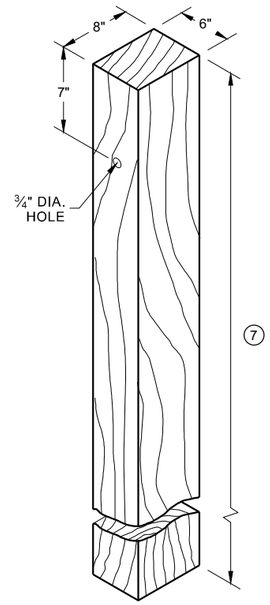
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



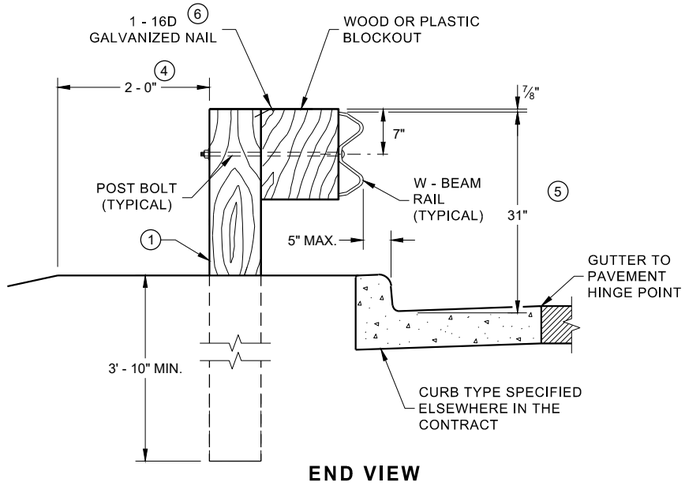
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



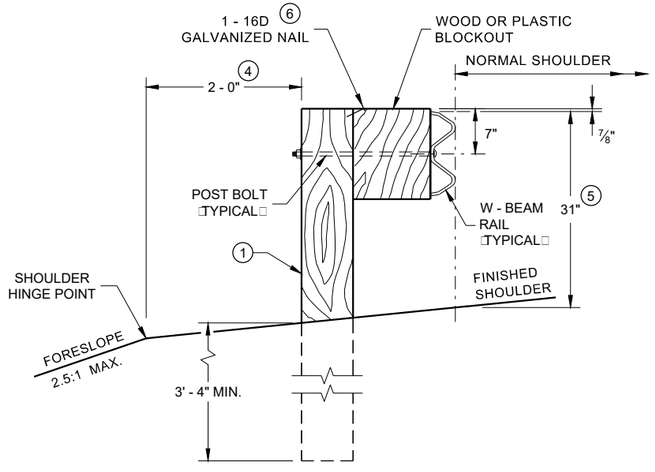
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



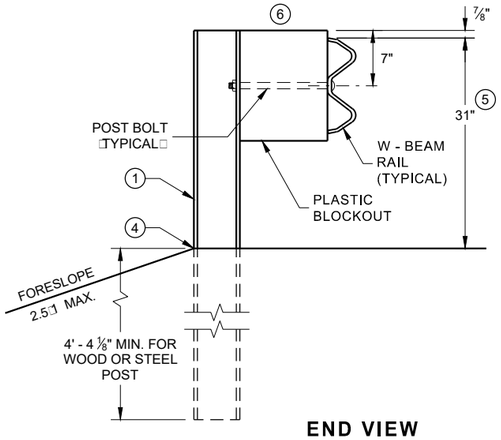
WOOD POST (6" X 8") NOMINAL (1)



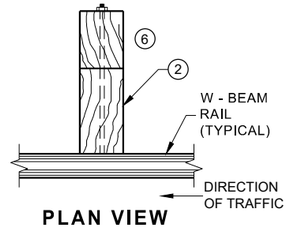
END VIEW
LOCATED ALONG A CURBED ROADWAY



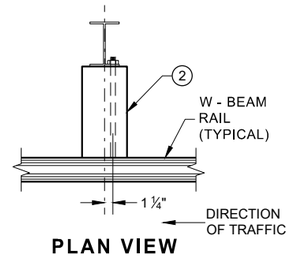
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



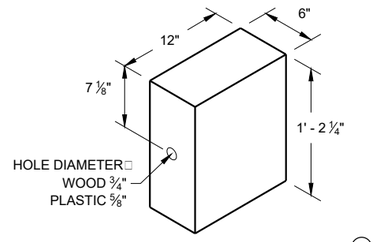
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

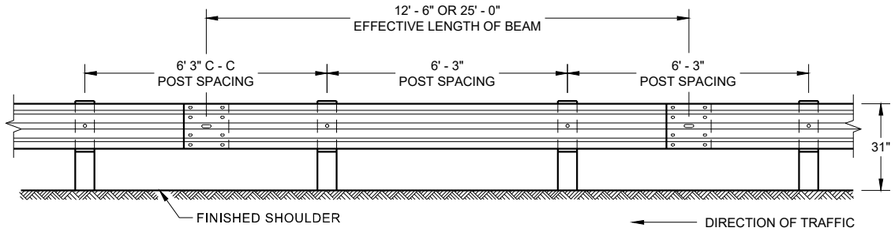
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

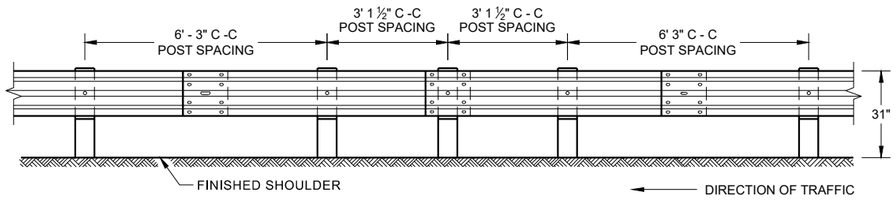
SDD 14B42 - 06a

6

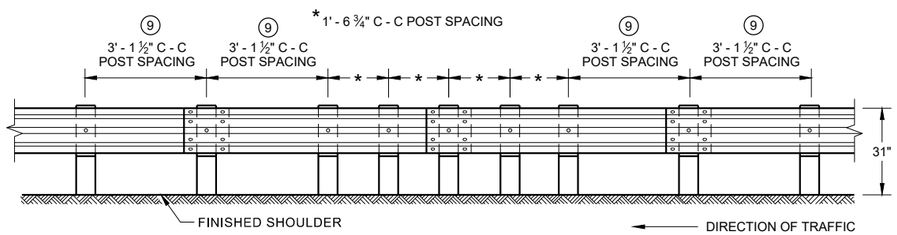
SDD 14B42 - 06a



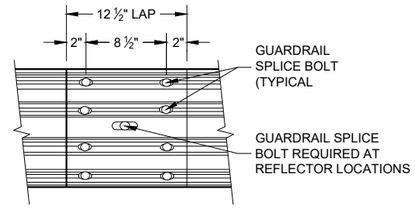
FRONT VIEW
POST SPACING STANDARD INSTALLATION



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



FRONT VIEW
QUARTER POST SPACING (QS)



FRONT VIEW
MID-SPAN BEAM SPLICE

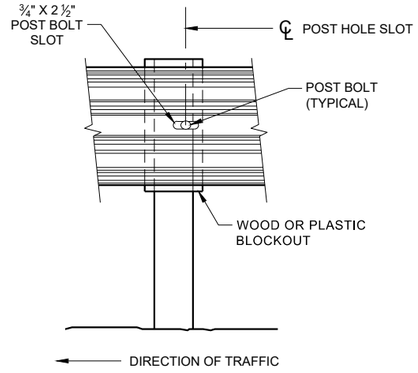
GENERAL NOTES

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

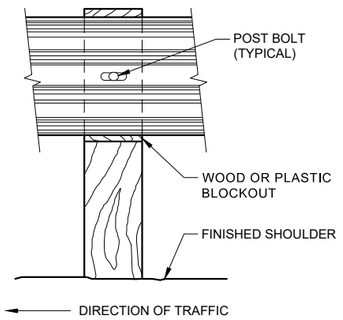
⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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

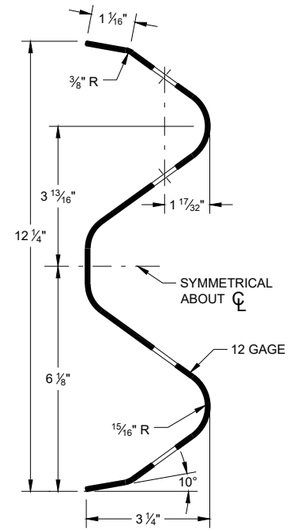
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



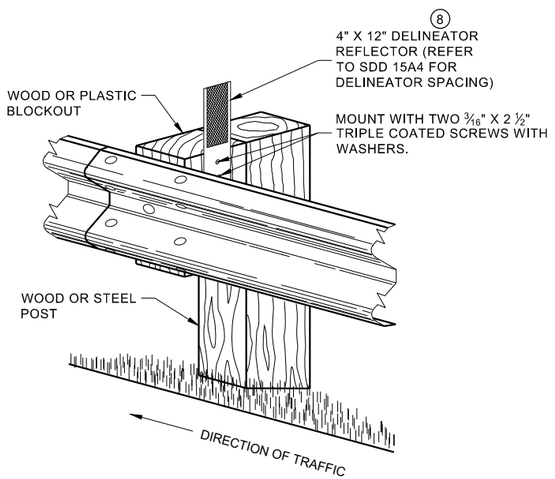
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL

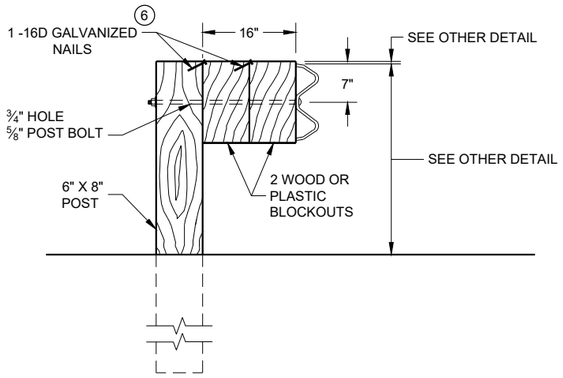


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

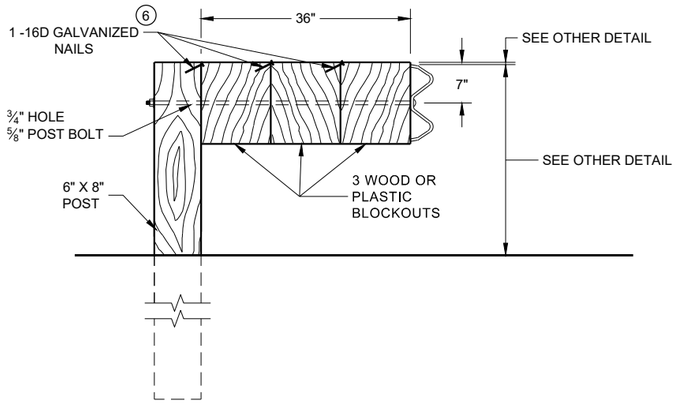
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B42 - 06b



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.



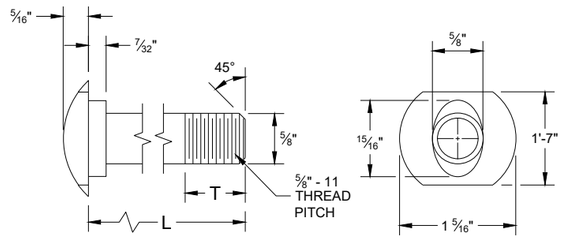
DETAIL FOR 36" BLOCKOUT DEPTH

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.

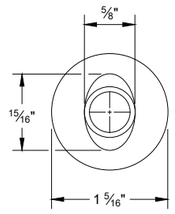
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3⁄16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

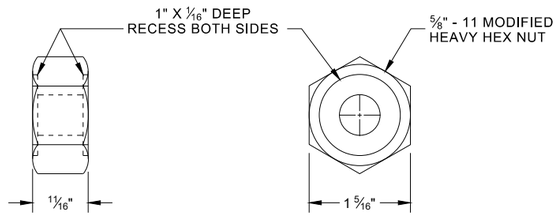


POST BOLT TABLE

L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"

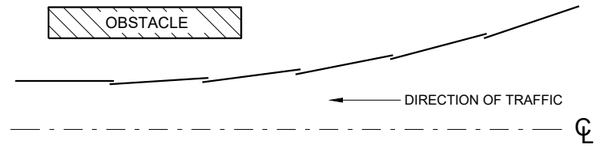


ALTERNATE BOLT HEAD

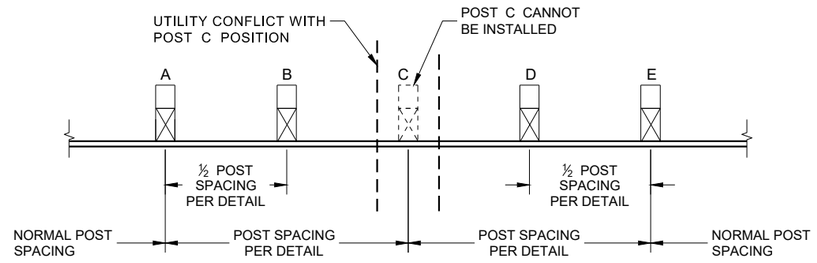


POST BOLT, SPLICE BOLT AND RECESS NUT

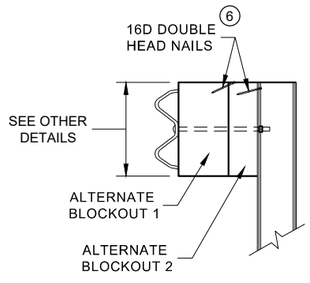
(6) WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



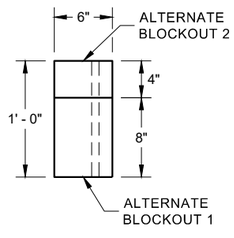
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

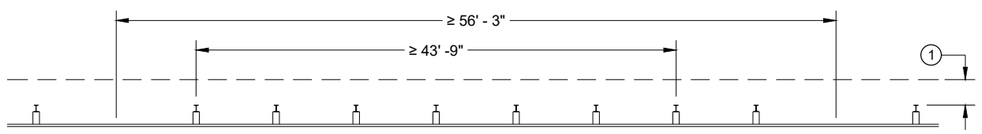
6

SDD 14B42 - 06c

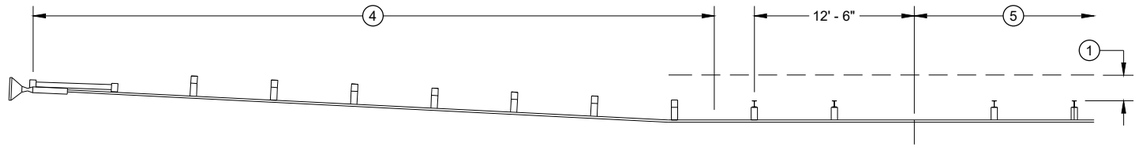
6

SDD 14B42 - 06c

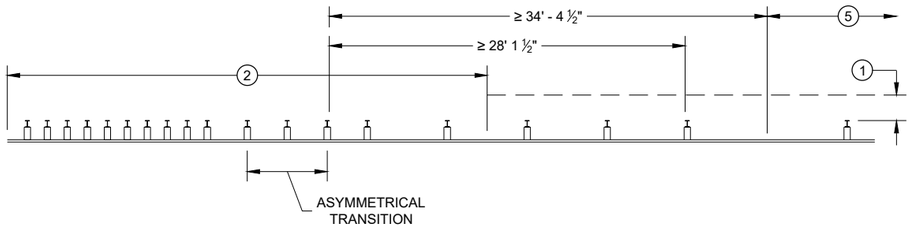
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL



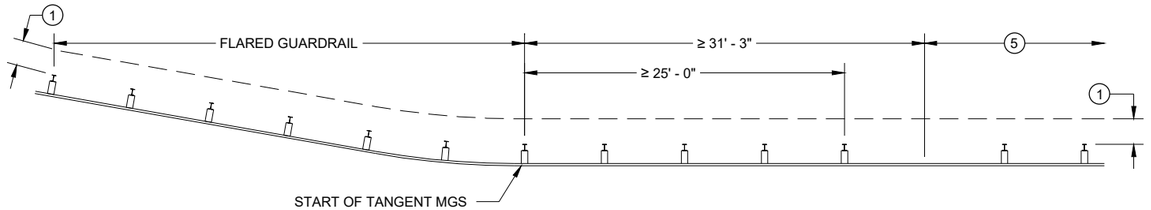
MISSING POST IN NORMAL BEAM GUARD RUN



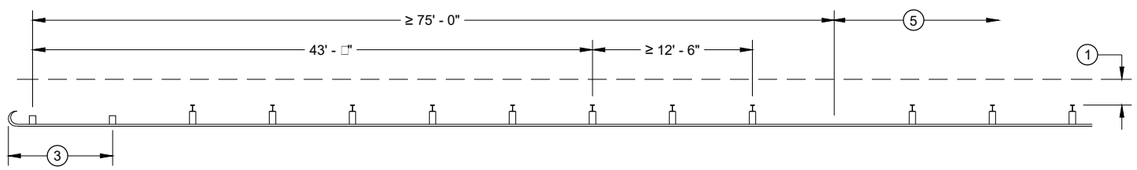
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



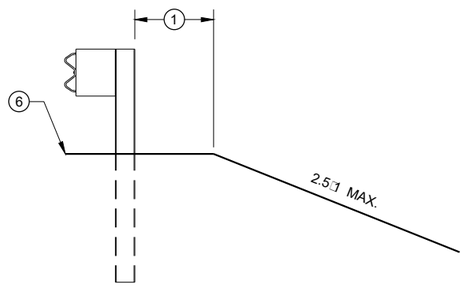
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

1. MINIMUM OF 2 FEET OF GRADING BEHIND POST.
2. SEE SDD 14B45 FOR MORE DETAILS.
3. SEE SDD 14B47 FOR MORE DETAILS.
4. SEE SDD 14B44 FOR MORE DETAILS.
5. SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
6. SEE PLAN FOR SHOULDER DESIGN.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018
DATE

/S/ R□dne□T□□□r
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

FHWA

6

SDD 14B42 - 06d

6

SDD 14B42 - 06d

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, 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 MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.

(D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.

(E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

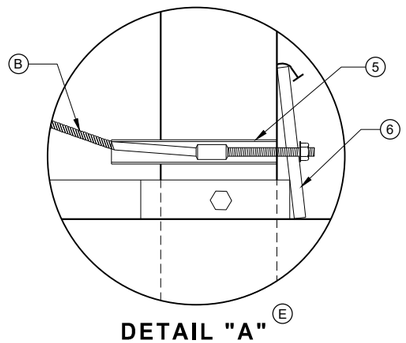
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

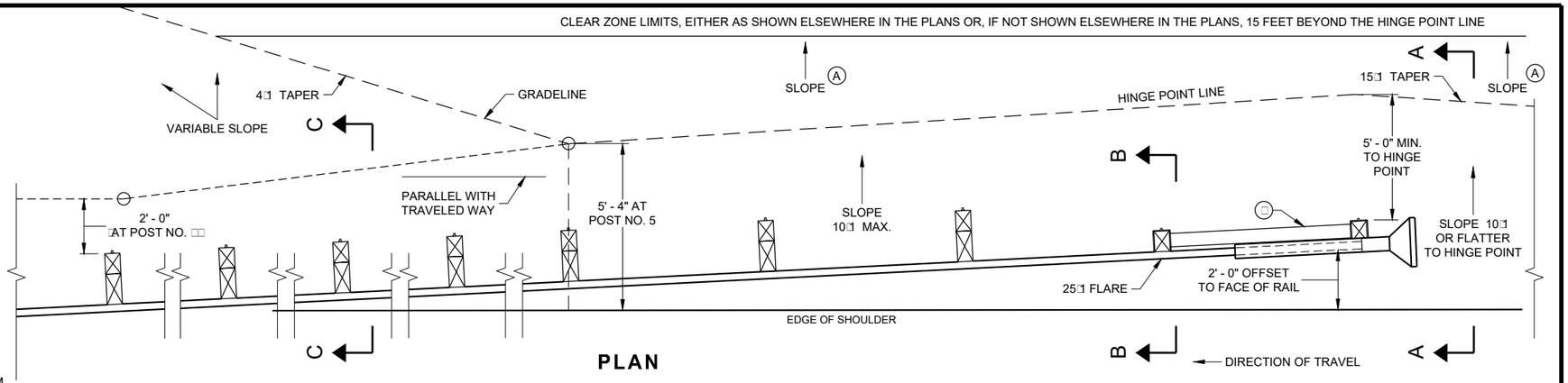
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

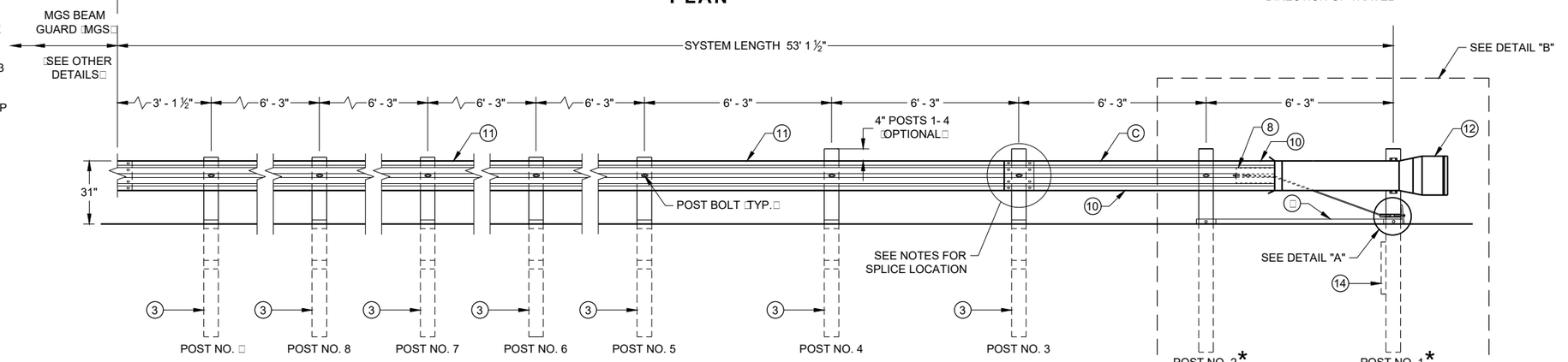
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST □ IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH □MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



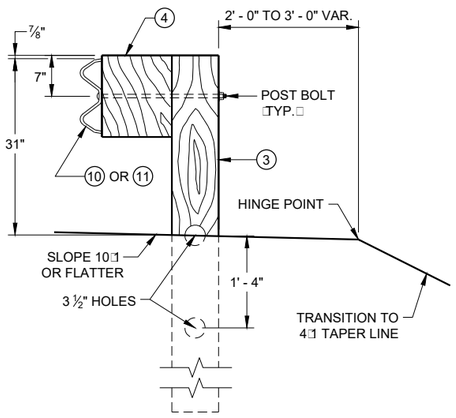
DETAIL "A" (E)



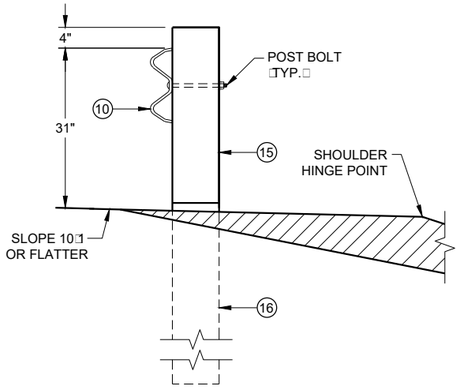
PLAN



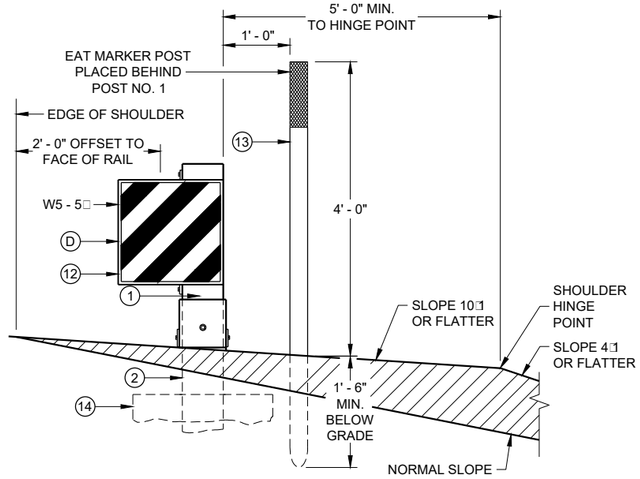
ELEVATION



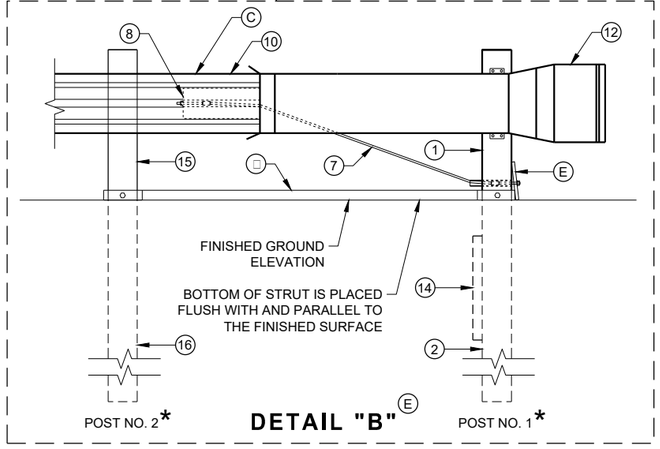
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



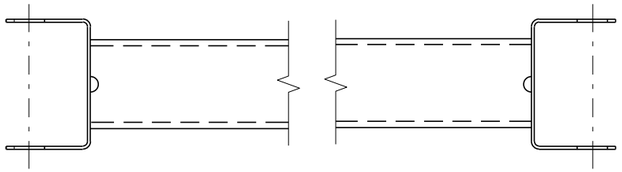
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

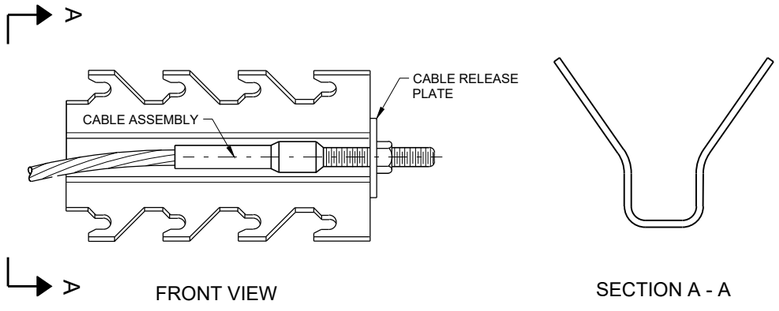
SDD 14B44 - 04a



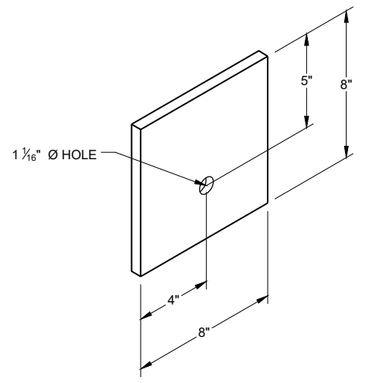
GENERIC GROUND STRUT □ Ⓔ

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUGACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
□	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	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW □SEE APPROVED PRODUCTS LIST□
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



GENERIC ANCHOR CABLE BOX □ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

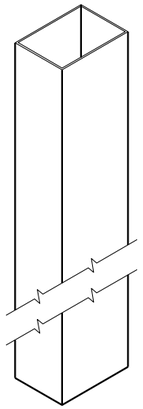
6

SDD 14B44 - 04b

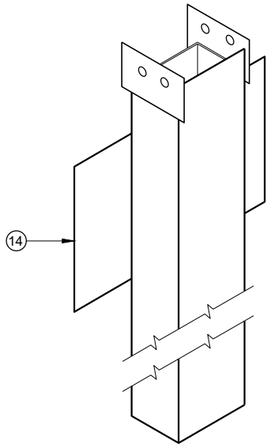
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

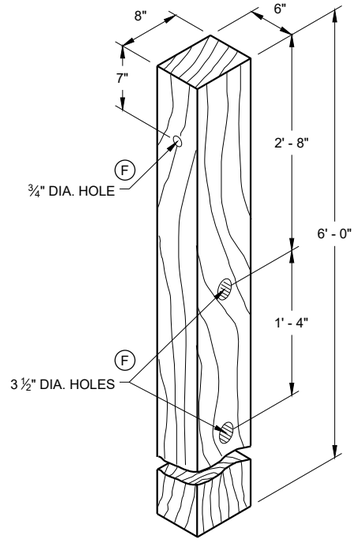
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



UPPER POST NO. 1 ① Ⓔ

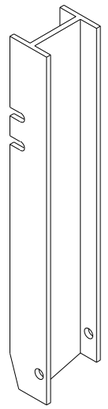


LOWER POST NO. 1 ② Ⓔ

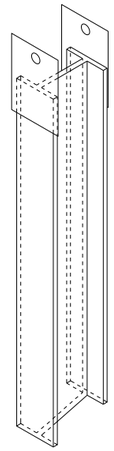


WOOD CRT POST ③ Ⓔ

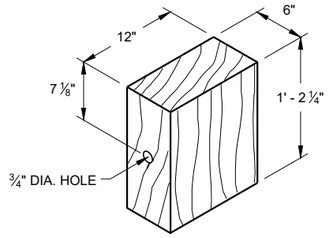
POSTS NUMBER 3-□



UPPER POST NO. 2 ⑮ Ⓔ

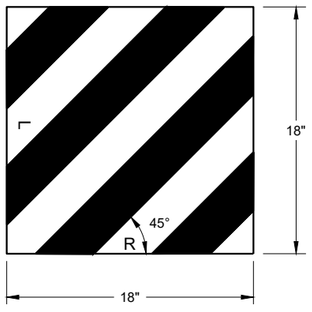


LOWER POST NO. 2 ⑯ Ⓔ



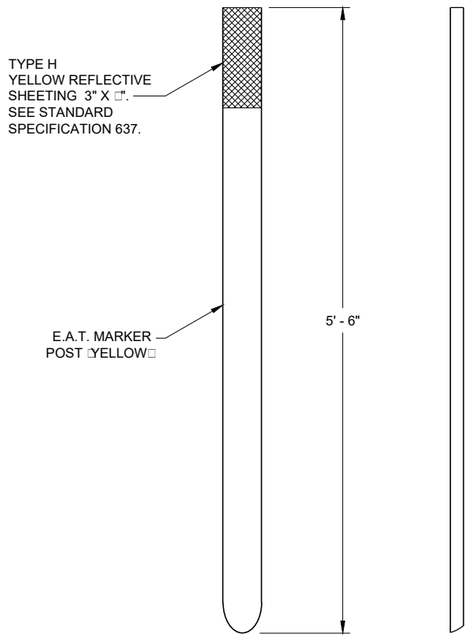
WOOD BLOCKOUT ④

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



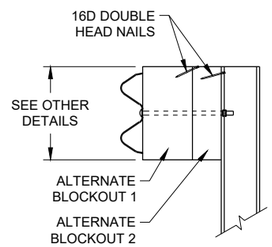
W5 - 5□

REFLECTIVE SHEETING DETAIL Ⓔ

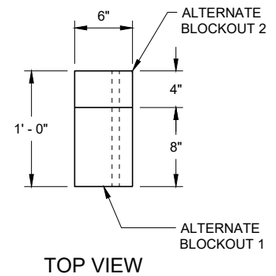


FRONT VIEW SIDE VIEW

E.A.T. MARKER POST ⑬



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

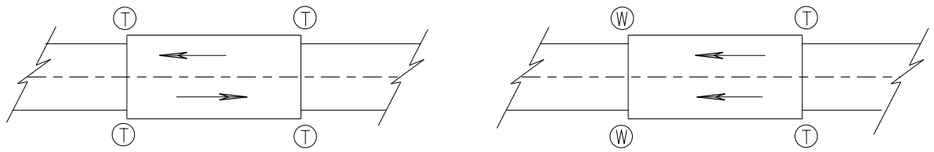
7/2018
DATE

/S/ R□dne□T□□□r
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

FHWA

6

SDD 14B44 - 04c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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.

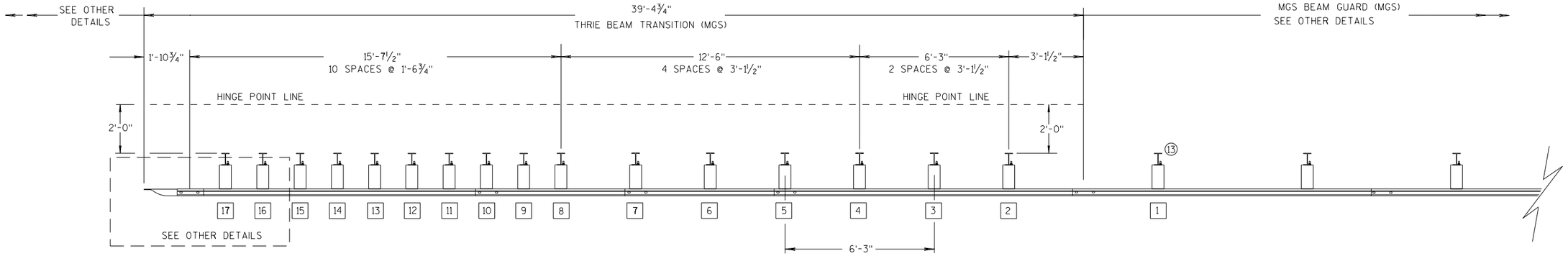
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

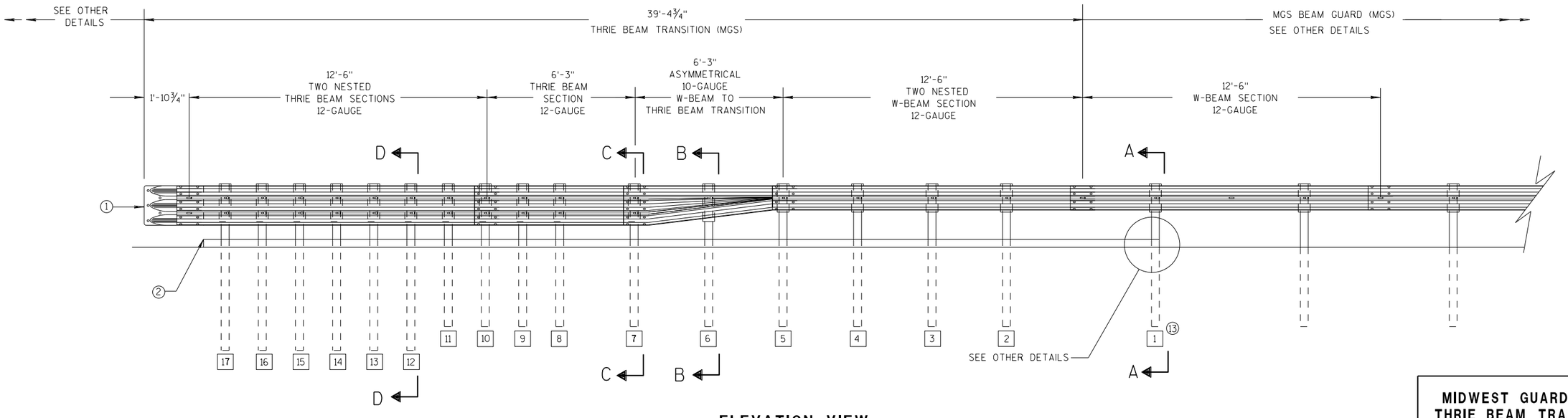
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 45-5a

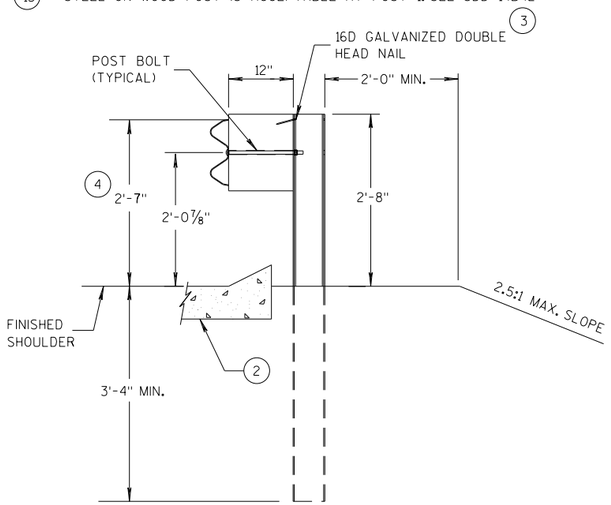
GENERAL NOTES

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

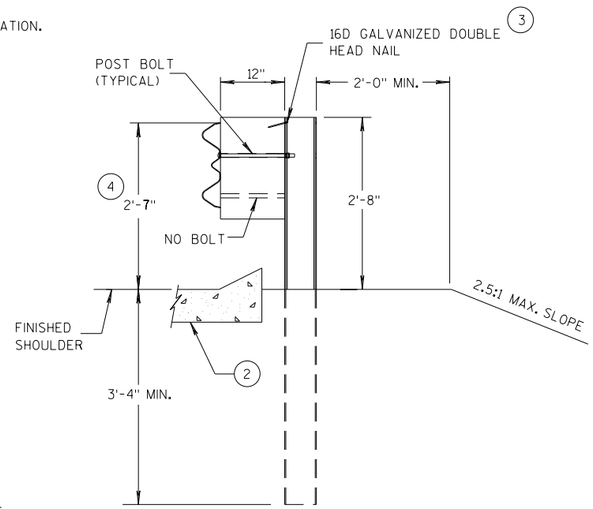
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



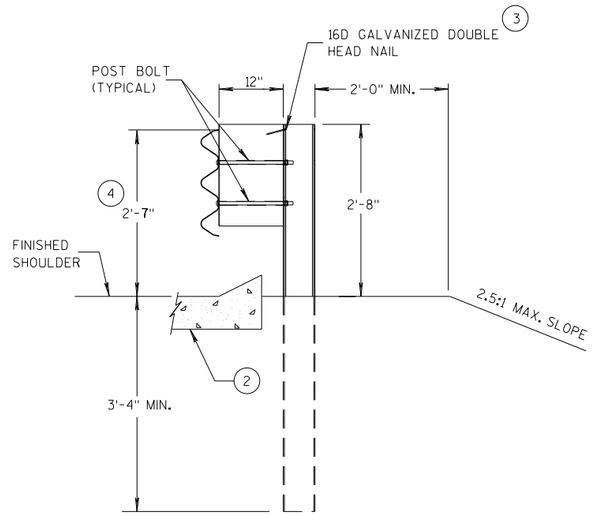
SECTION A-A (13)

POSTS 1-5



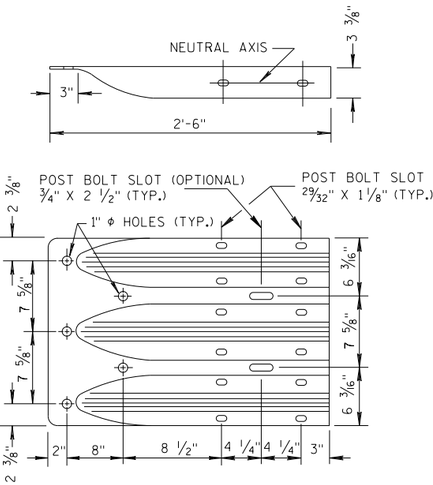
SECTION B-B

POST 6

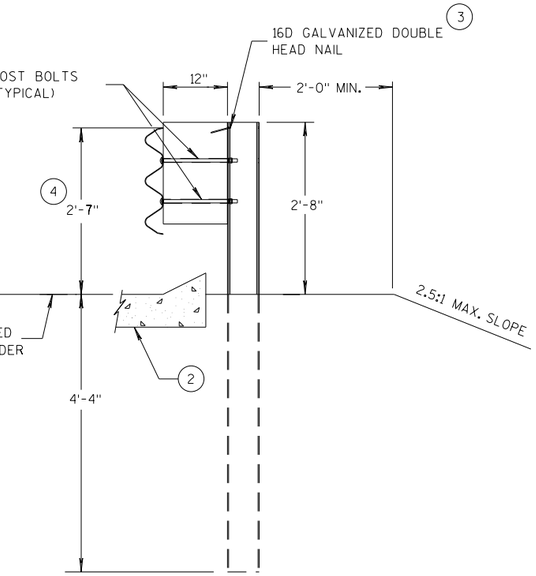


SECTION C-C

POSTS 7-11

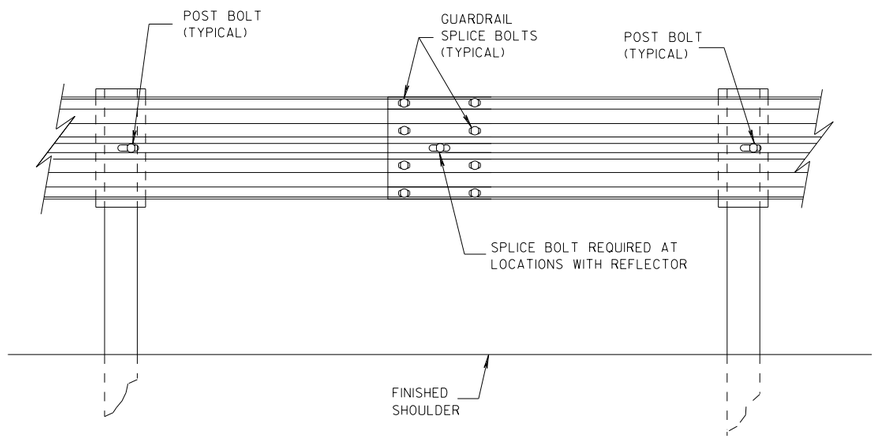


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

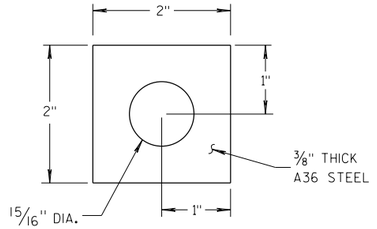
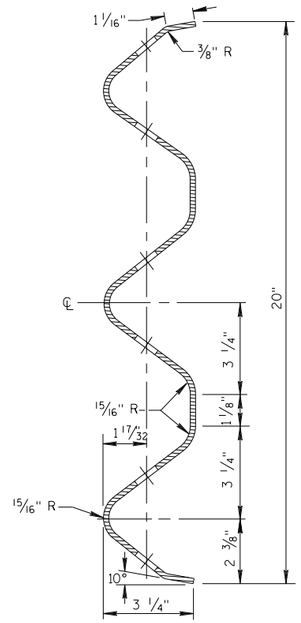


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

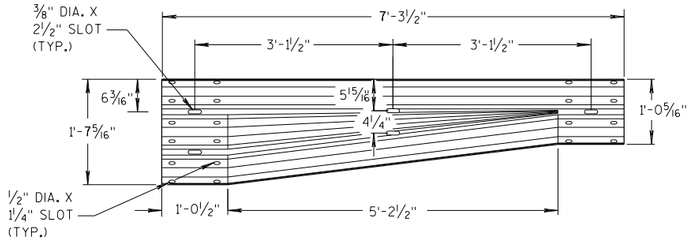
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 29

6

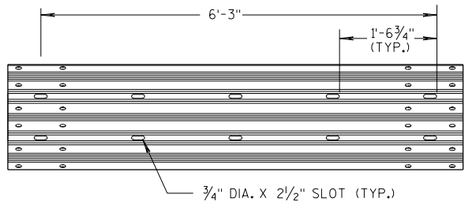
S.D.D. 14 B 45-5b

6

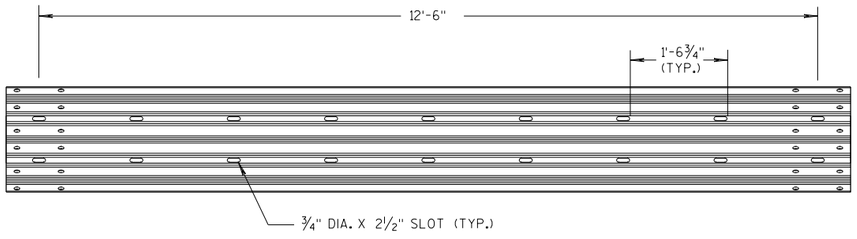
S.D.D. 14 B 45-5b



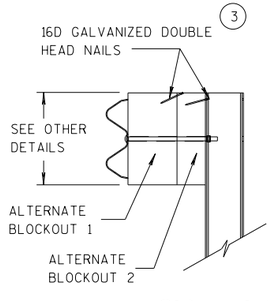
W-BEAM TO THRIE BEAM TRANSITION SECTION



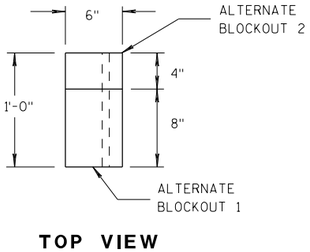
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

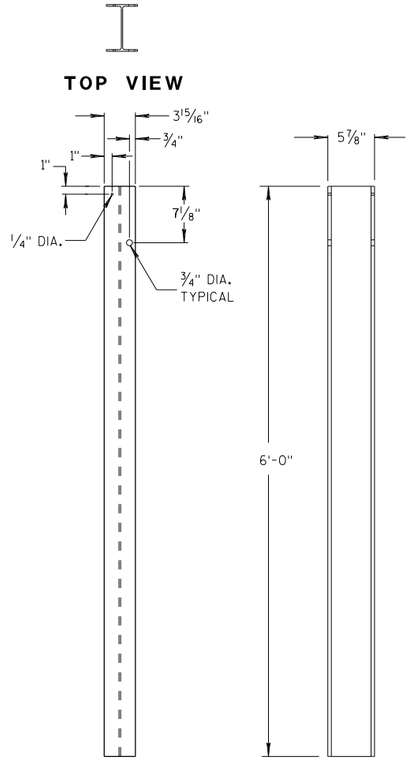


SIDE VIEW



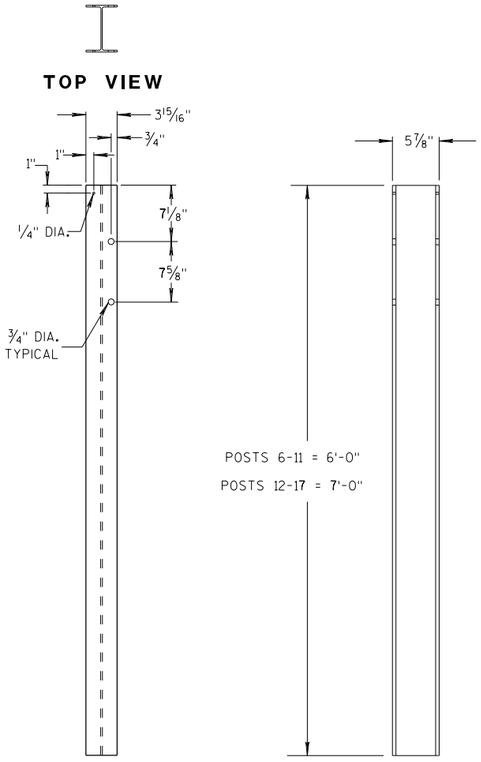
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



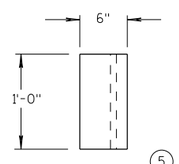
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

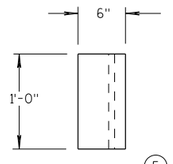


FRONT VIEW SIDE VIEW

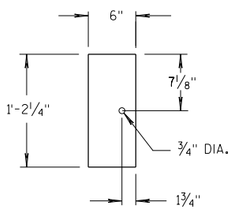
STEEL POSTS 6-17



TOP VIEW (5)

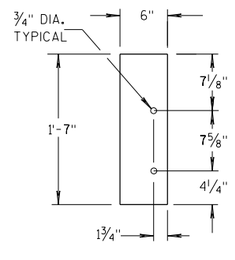


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

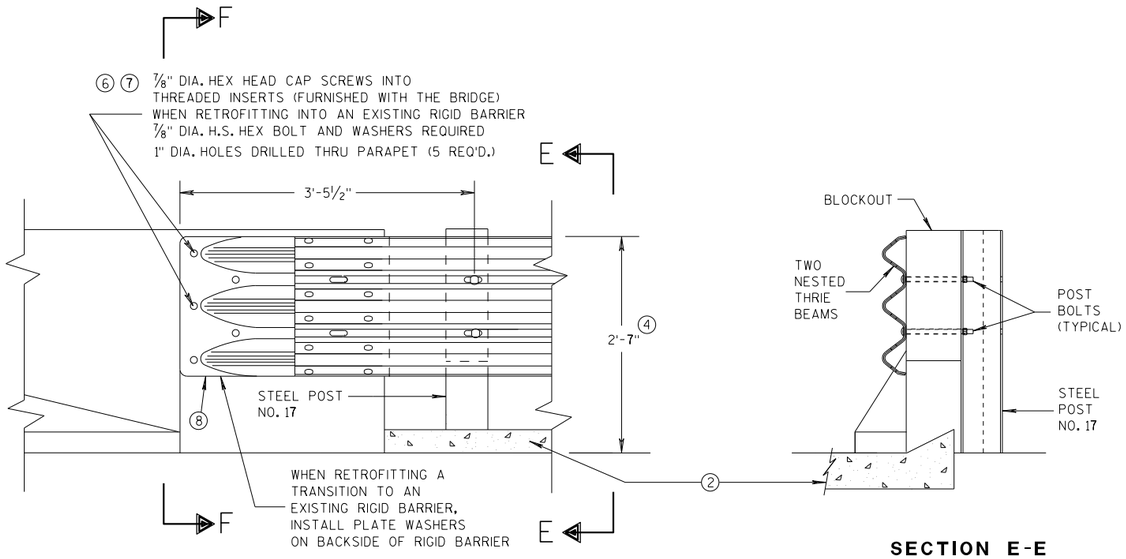
(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 45-5c



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

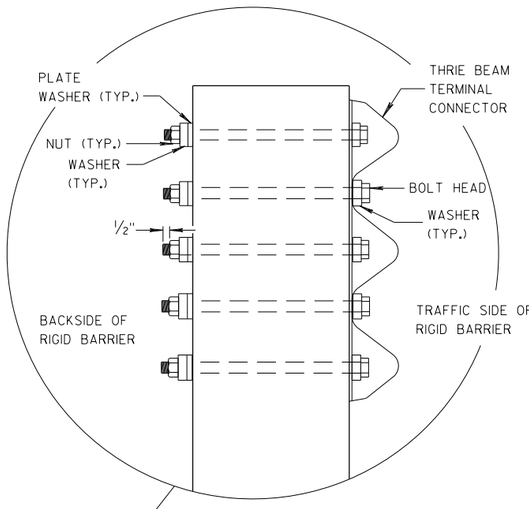
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

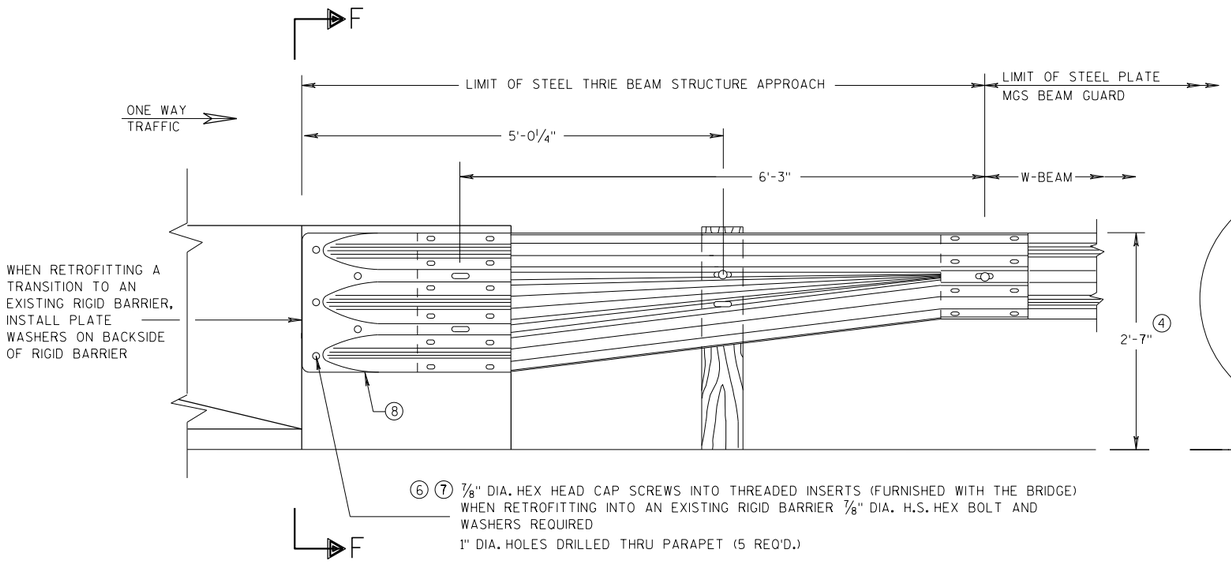
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

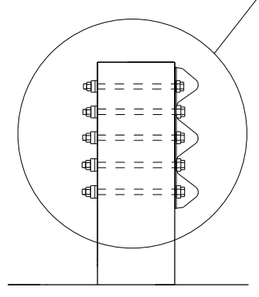
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

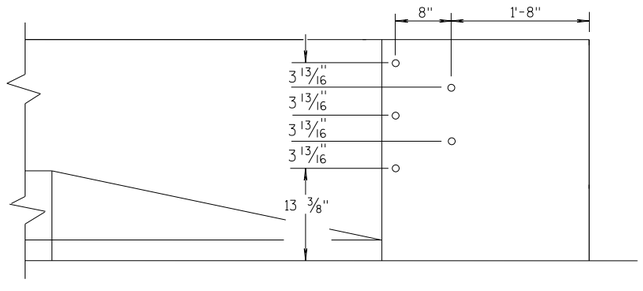




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS D[illegible] UNIT SUPERVIS[illegible]
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FHWA

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GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

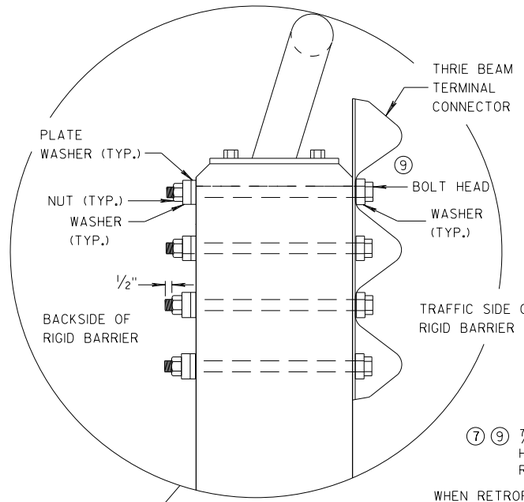
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

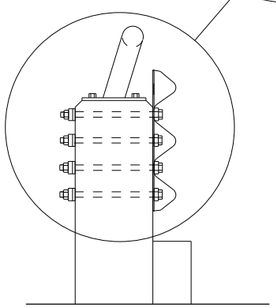
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

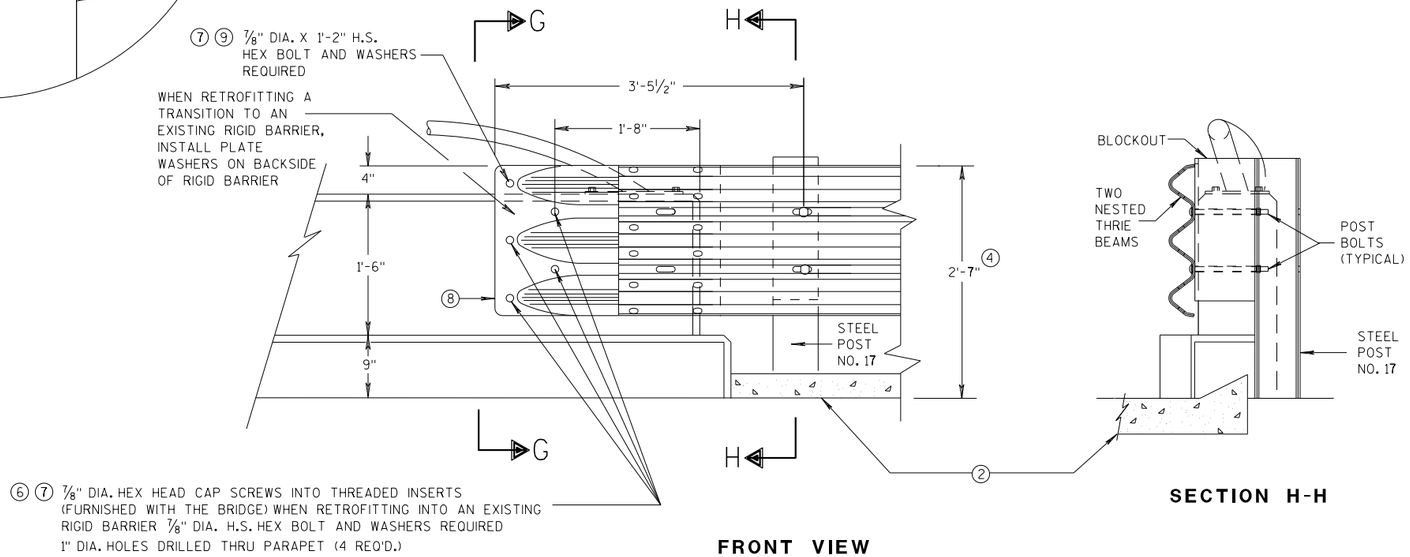
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

(9) BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.





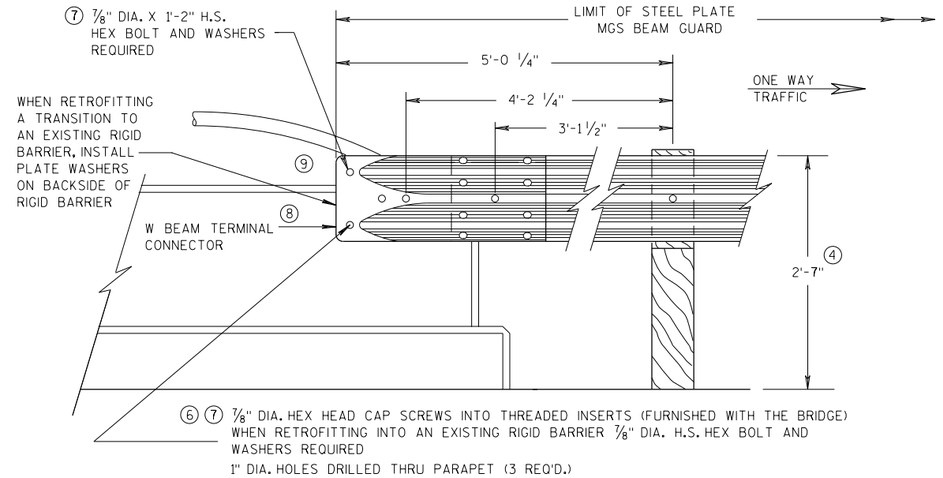
SECTION G-G



FRONT VIEW

SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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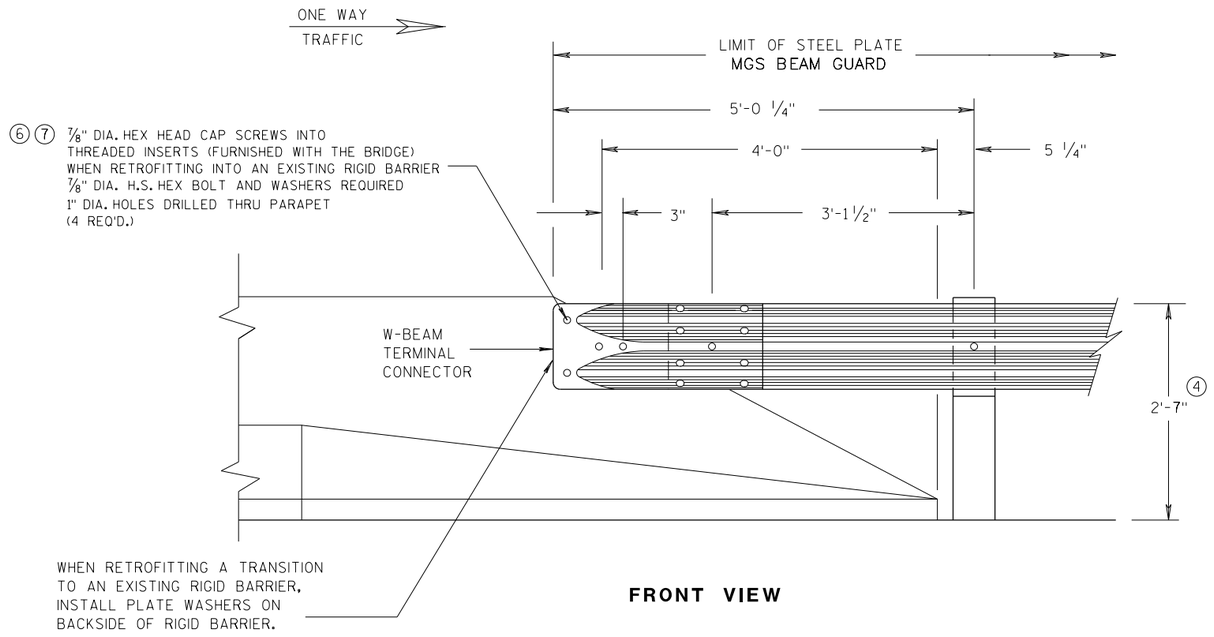


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

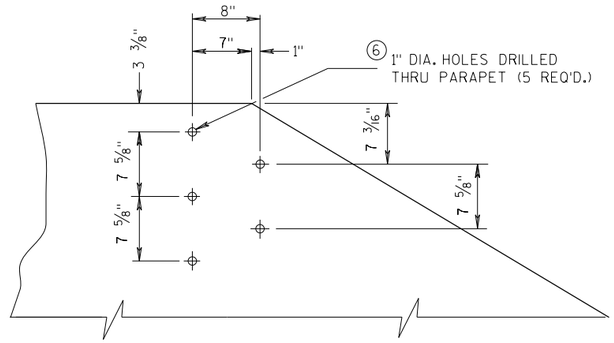
GENERAL NOTES

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

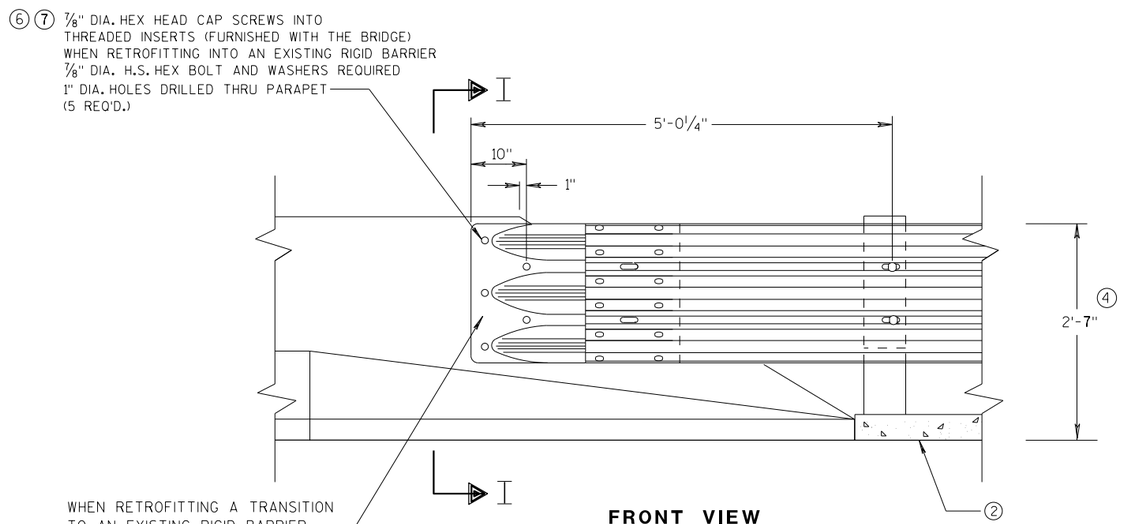
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

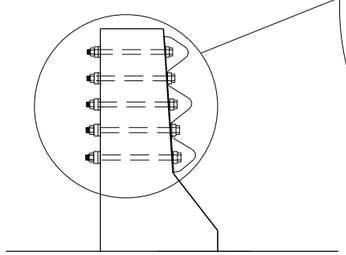
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



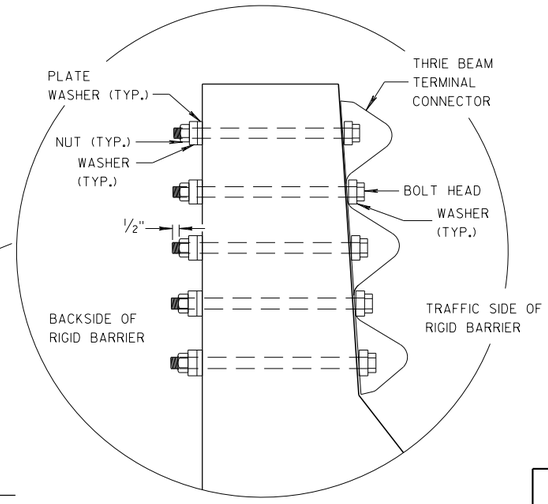
DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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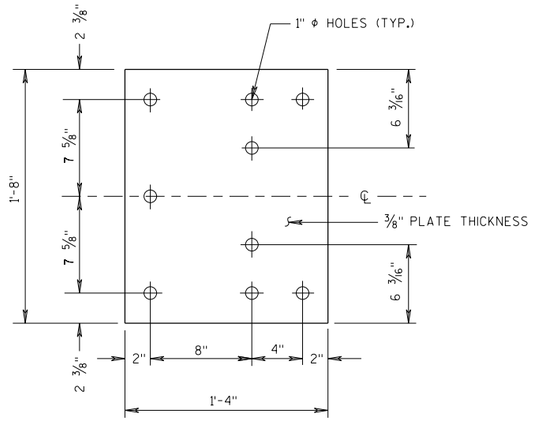
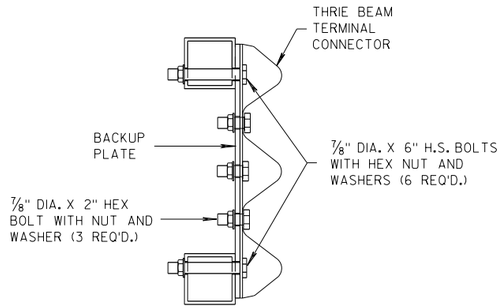
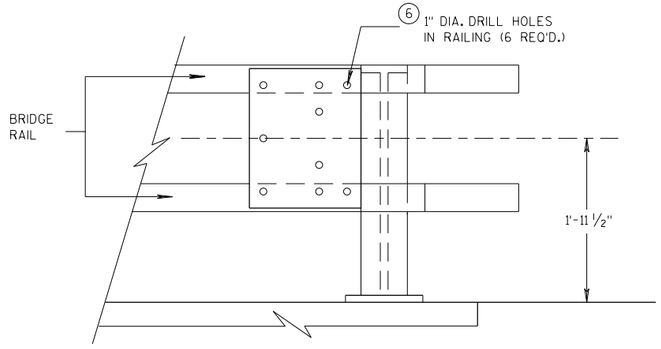


BACK-UP PLATE DETAIL



SECTION J-J

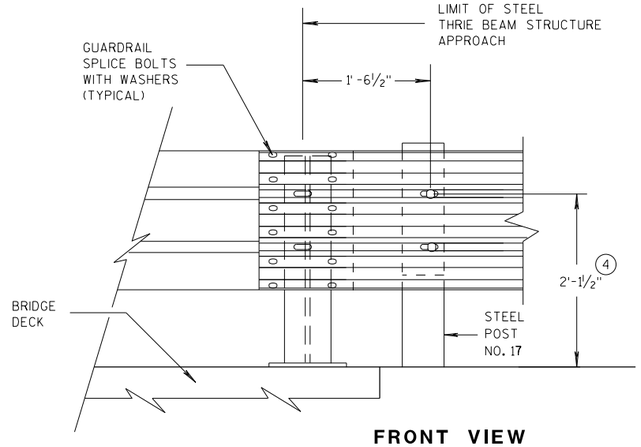


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

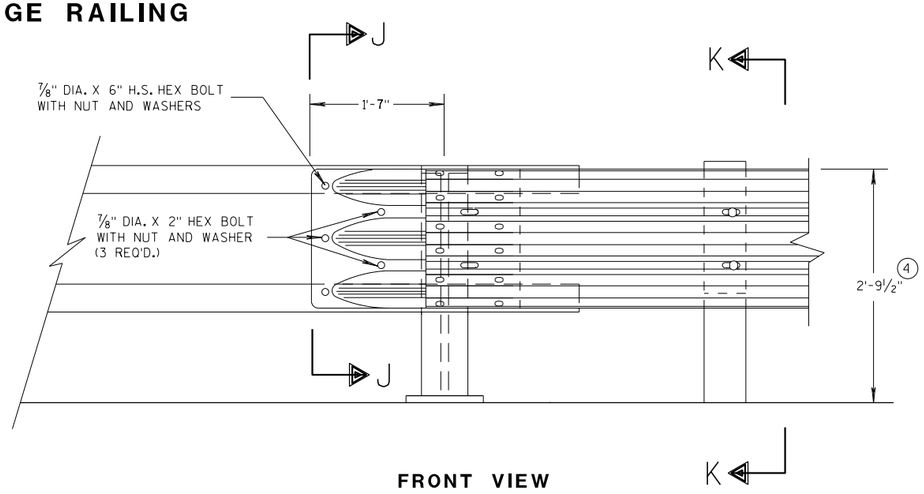
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING HOLES THROUGH THE PAPRPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

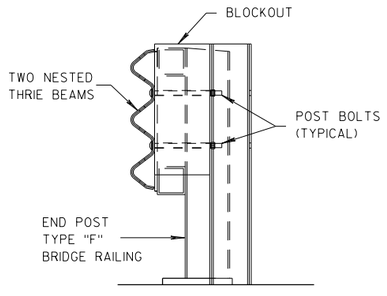


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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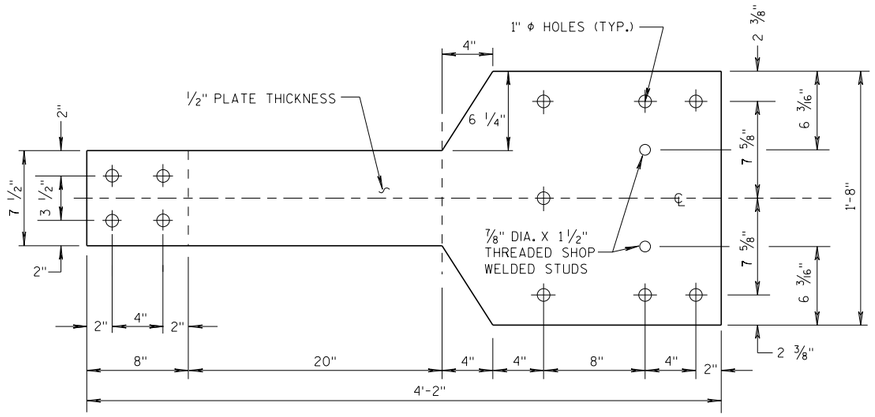
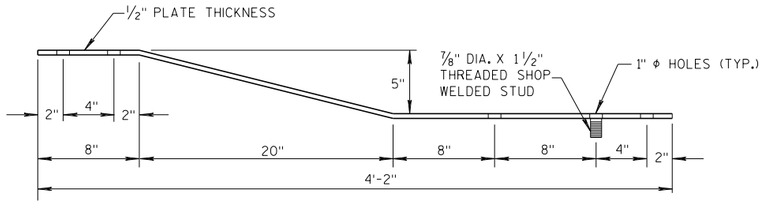
GENERAL NOTES

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

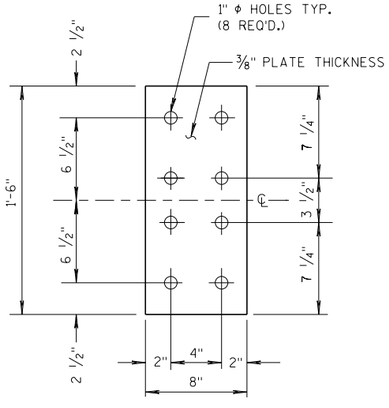


FRONT VIEW

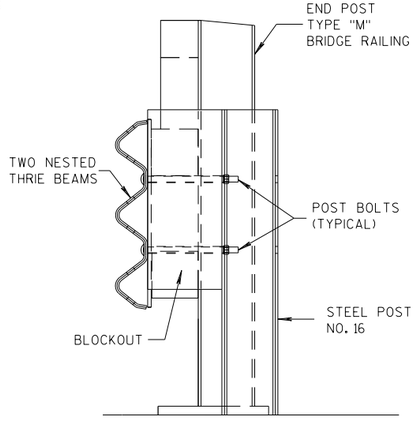


PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

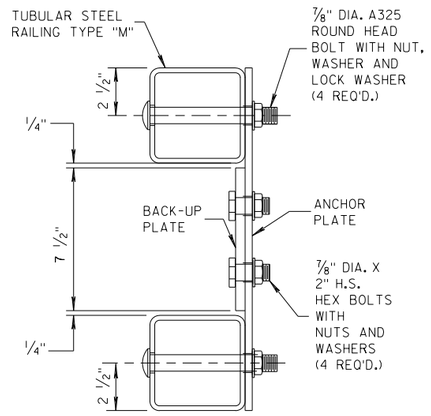


FRONT VIEW

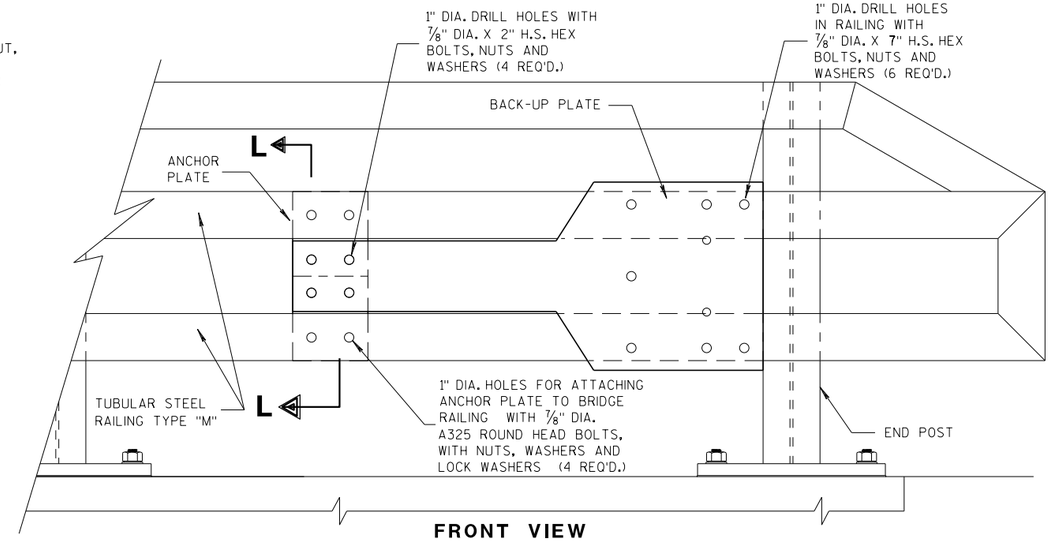


SECTION M-M

ANCHOR PLATE DETAIL, TYPE "M"

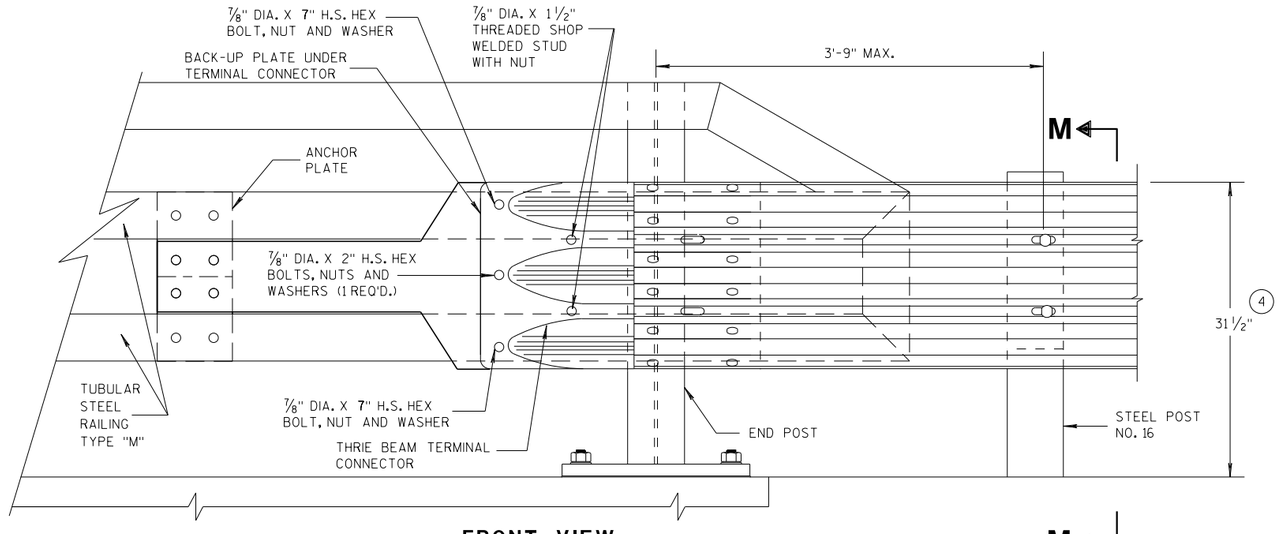


SECTION L-L

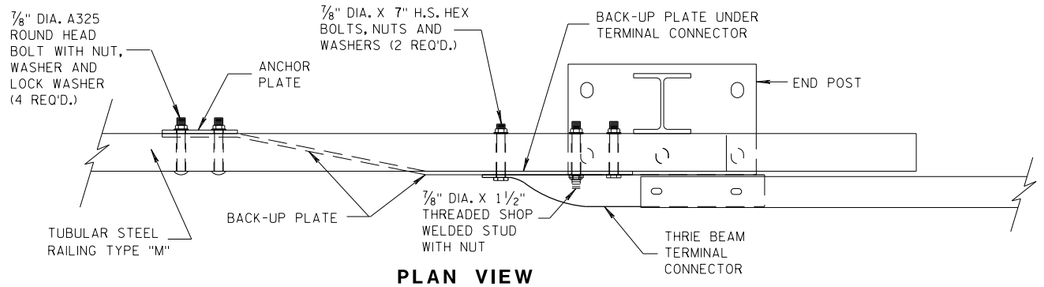


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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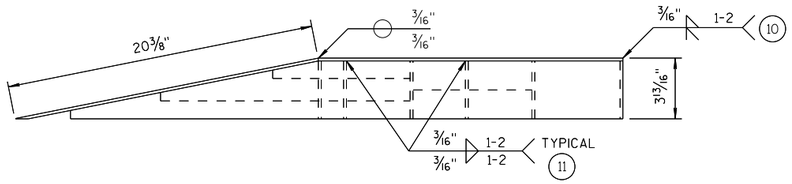

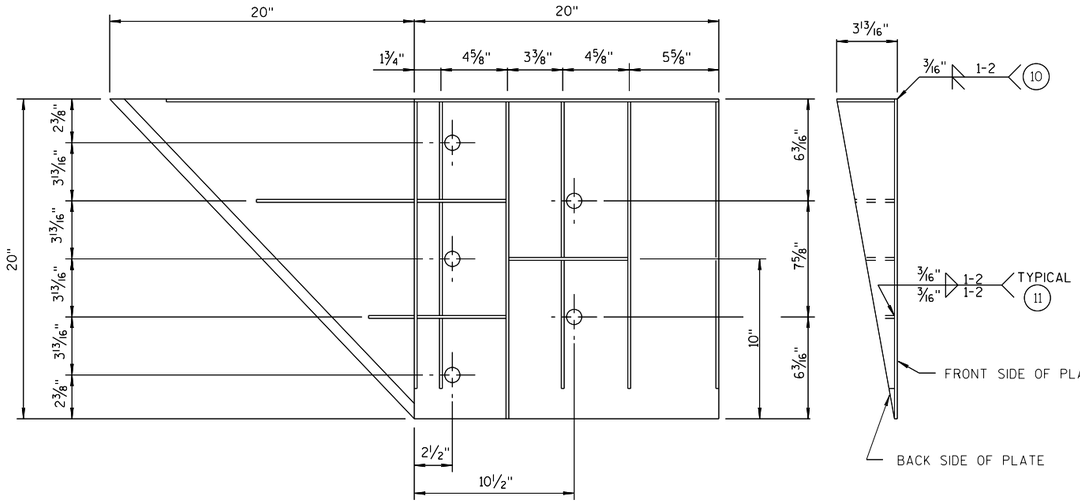

WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

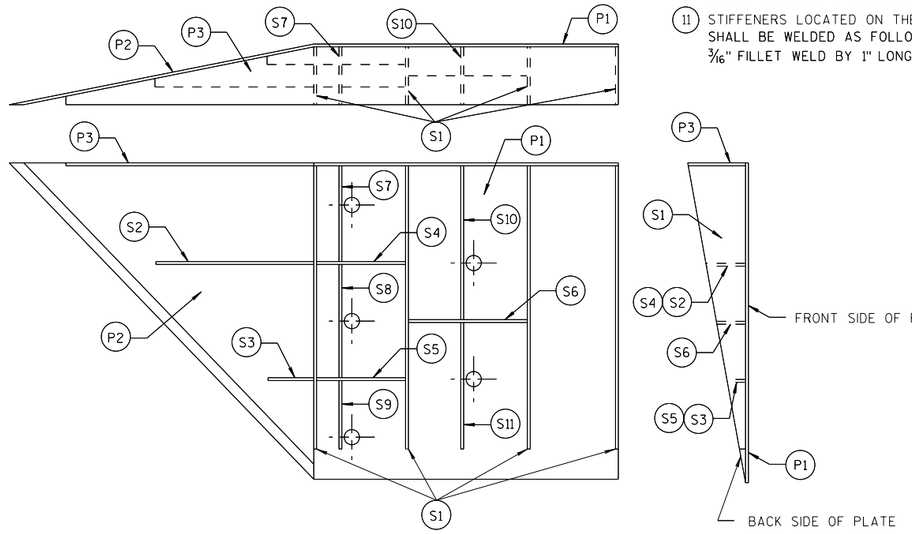

PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(10) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(11) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS I
UNIT SUPERVI

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S.D.D. 14 B 45-5i

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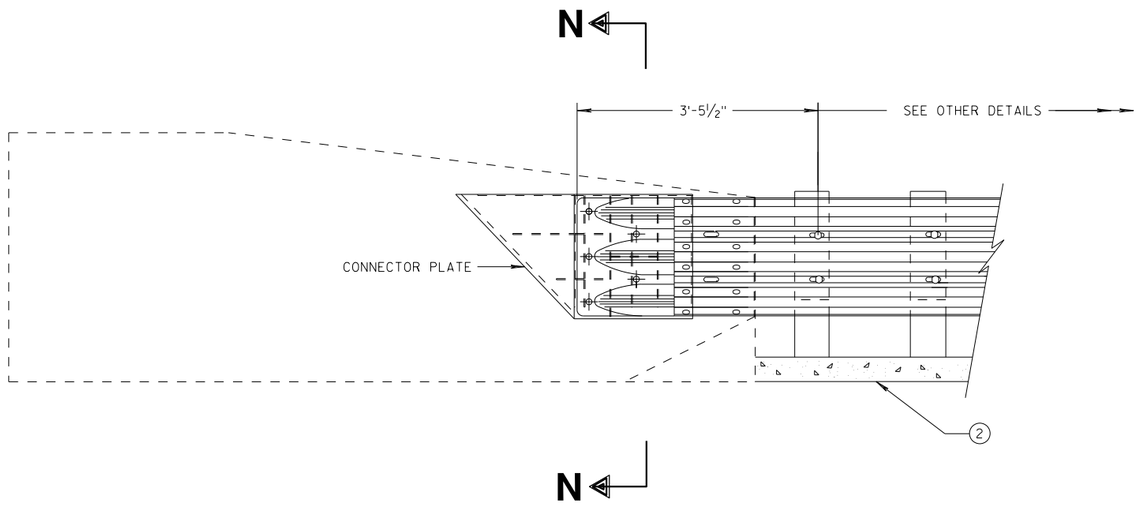
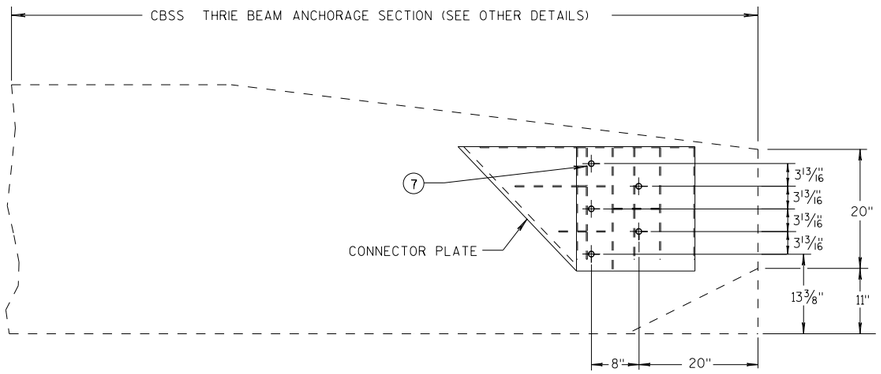
S.D.D. 14 B 45-5i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



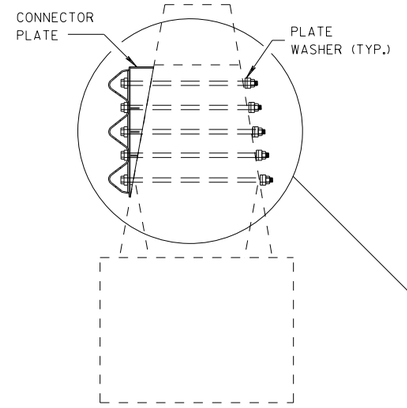
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

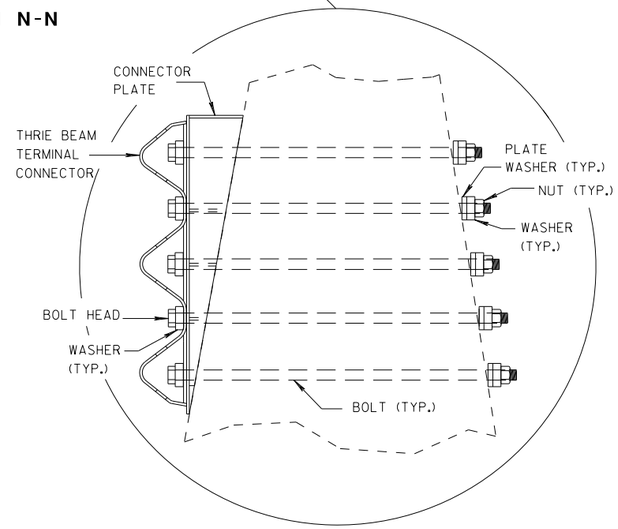
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
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FHWA

/S/ Rodney Taylor
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S.D.D. 14 B 45-5j

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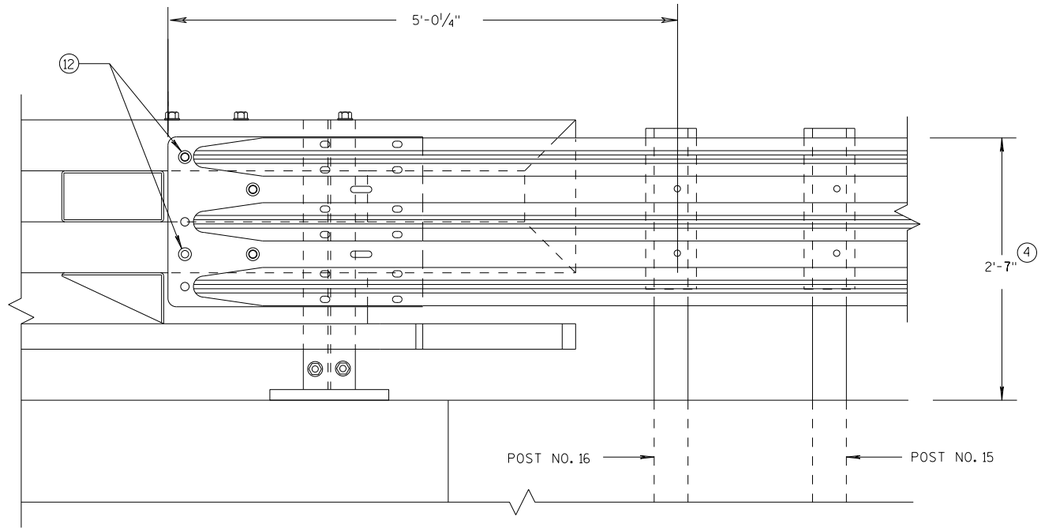
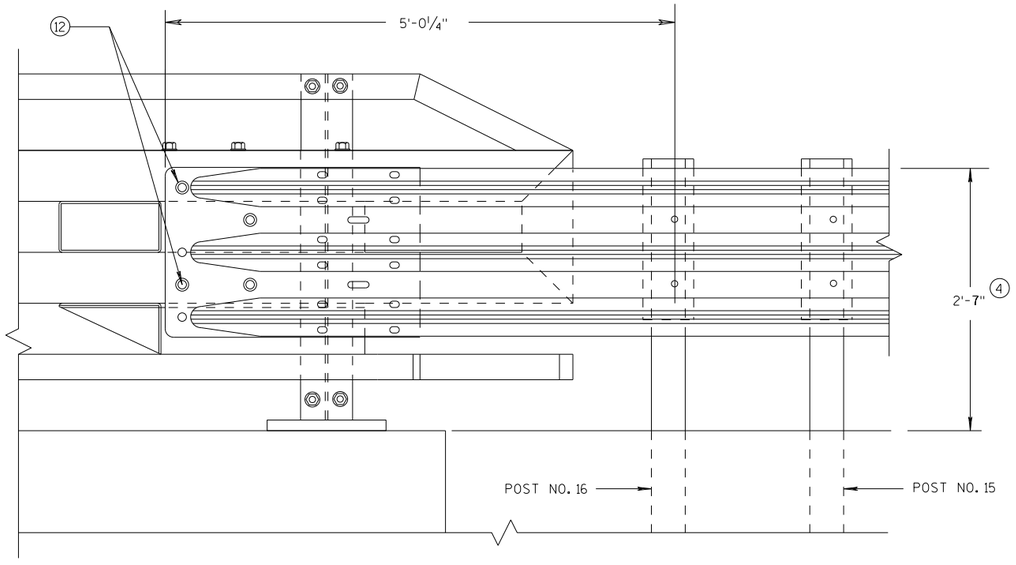


ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

GENERAL NOTES

(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

(12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND 1/2-INCH BEYOND NUT.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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7/2018
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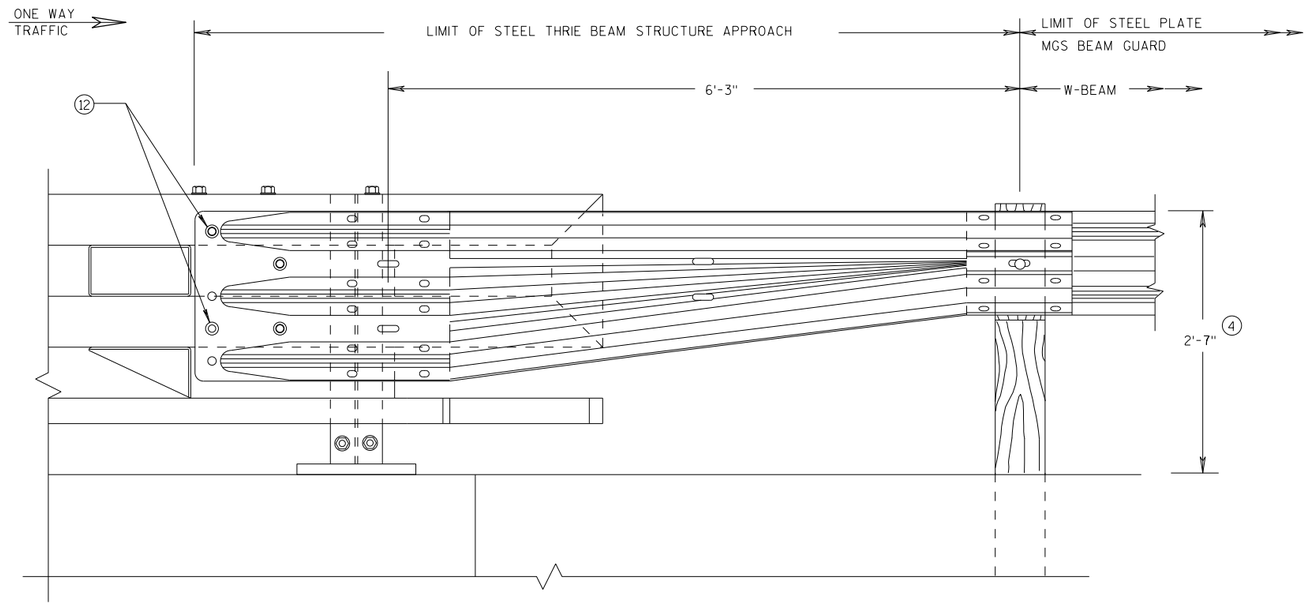


FRONT VIEW

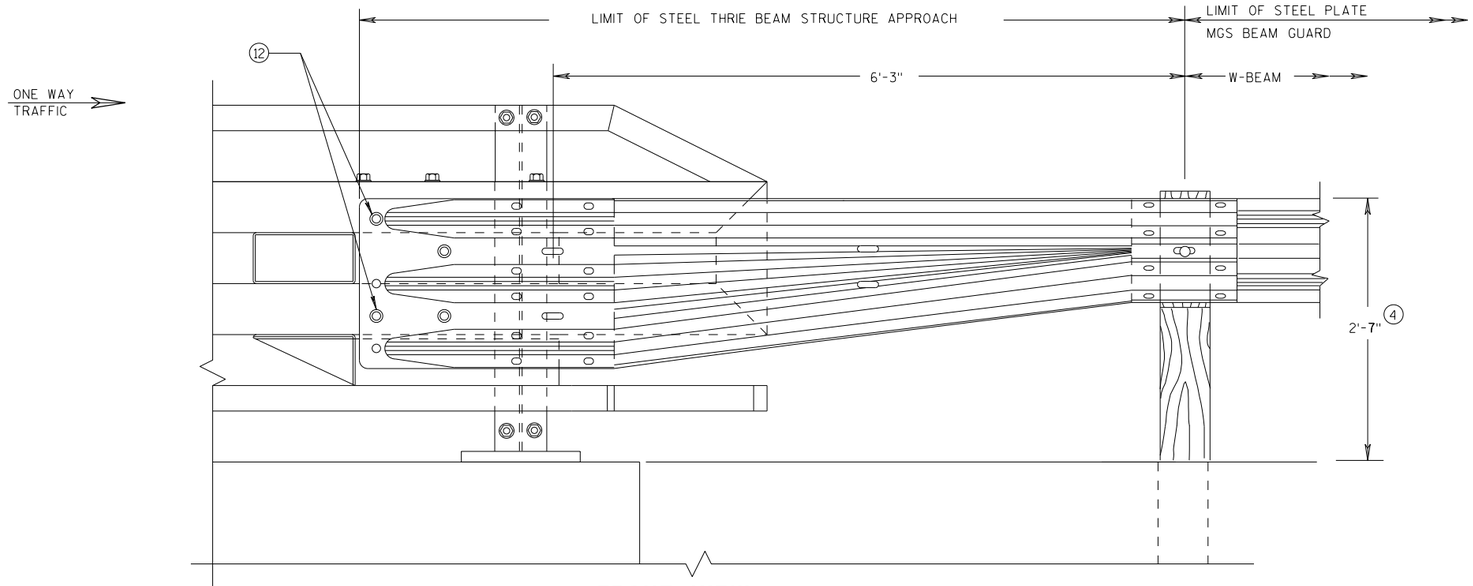
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

GENERAL NOTES

(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

(12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND 1/2-INCH BEYOND NUT.



FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY4"

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE
/S/ Rodney Taylor
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UNIT SUPERVIS
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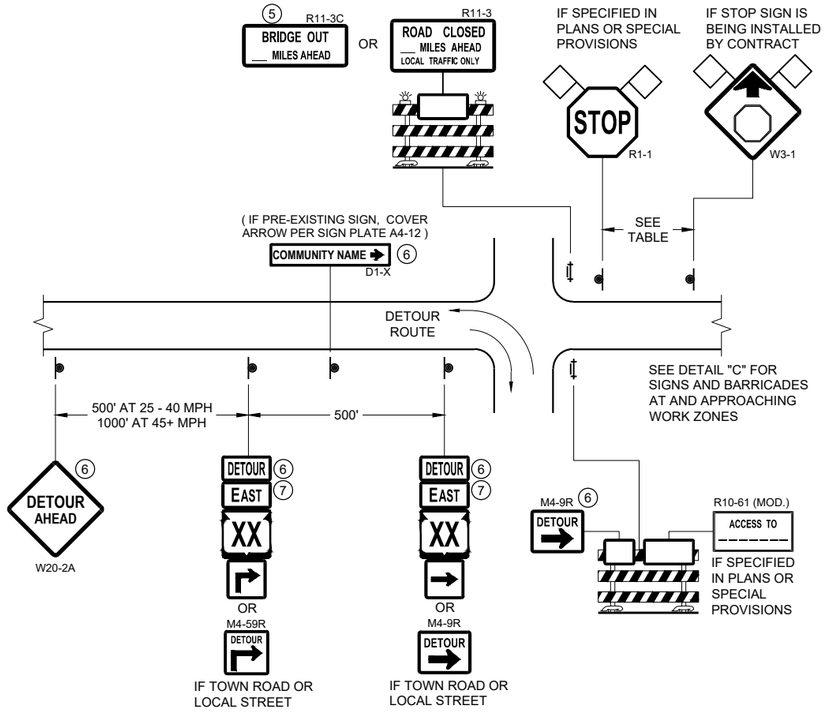
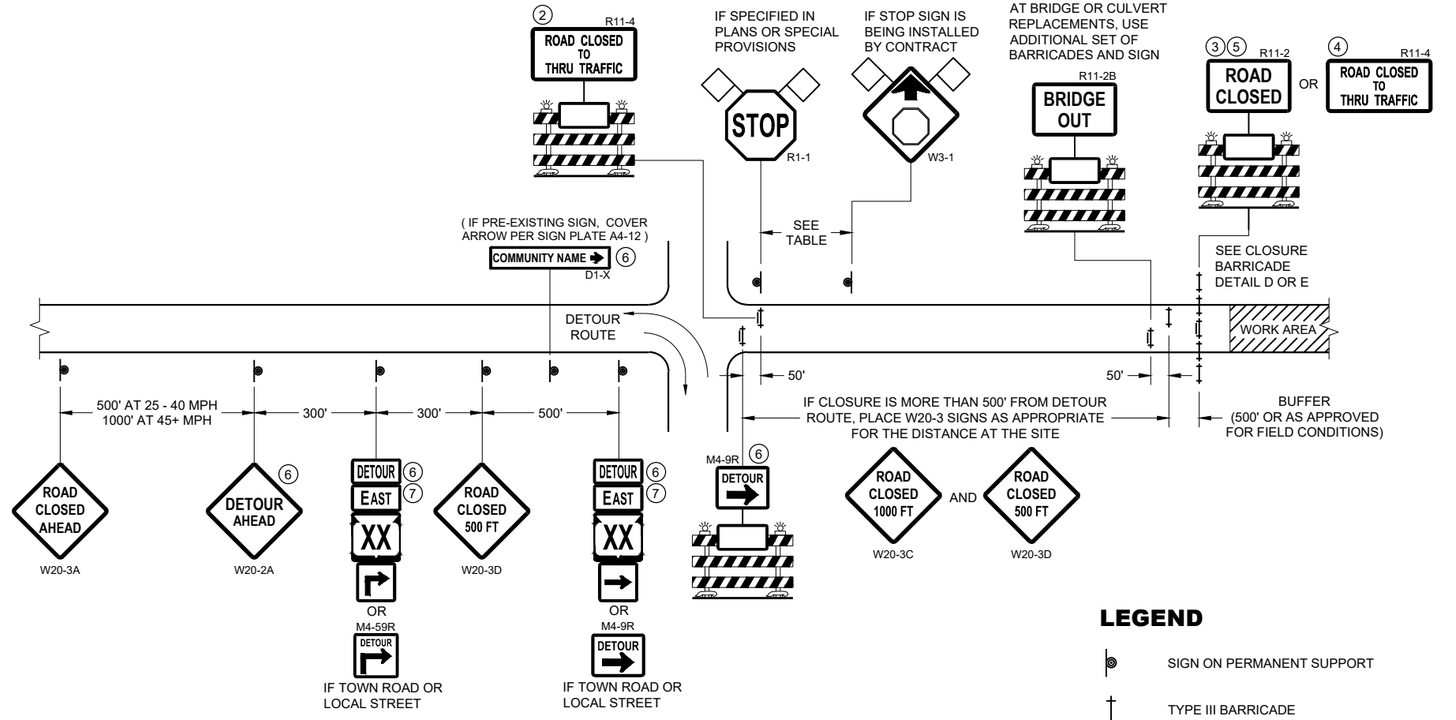
S.D.D. 14 B 45-5L



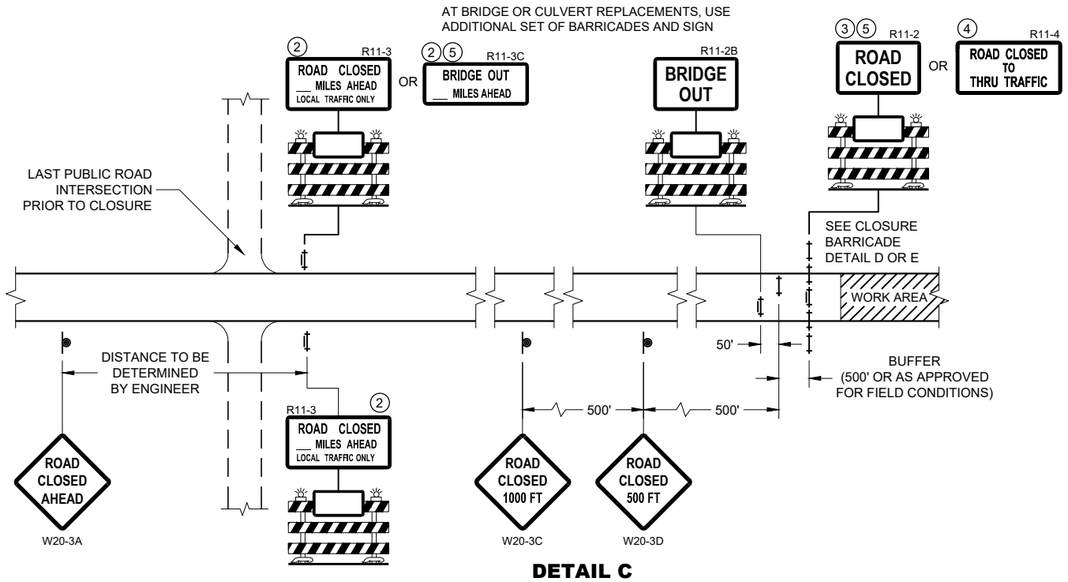


DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO 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
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)
- DETOUR — M4 - 8
- EAST — M3 - X
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- M05 - 1 OR M06 - 1

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

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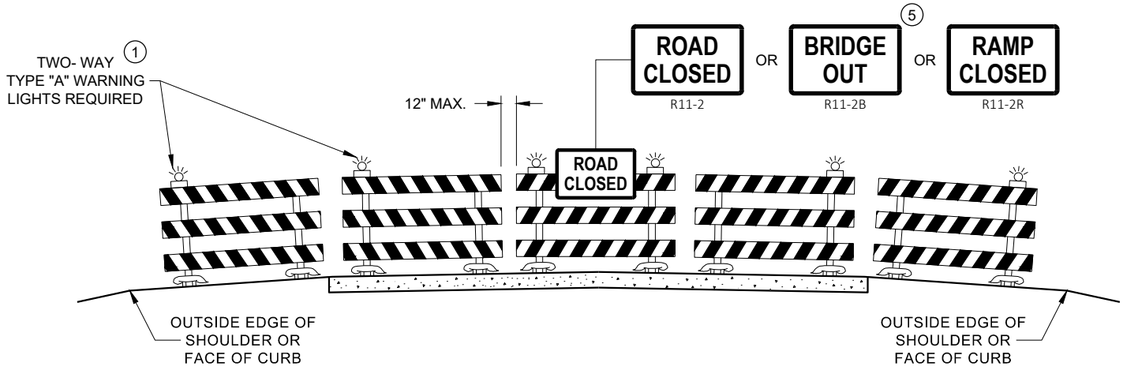
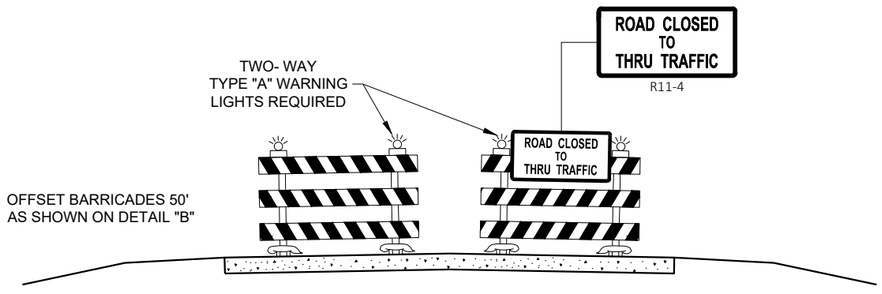
SDD 15C02 - 08a

SDD 15C02 - 08a



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 THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL 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 SHALL, 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" (36" X 18" 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)
- MO5 - 1 AND MO6 - 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 AN 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 ROAD 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 VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA

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SDD 15C02 - 08b

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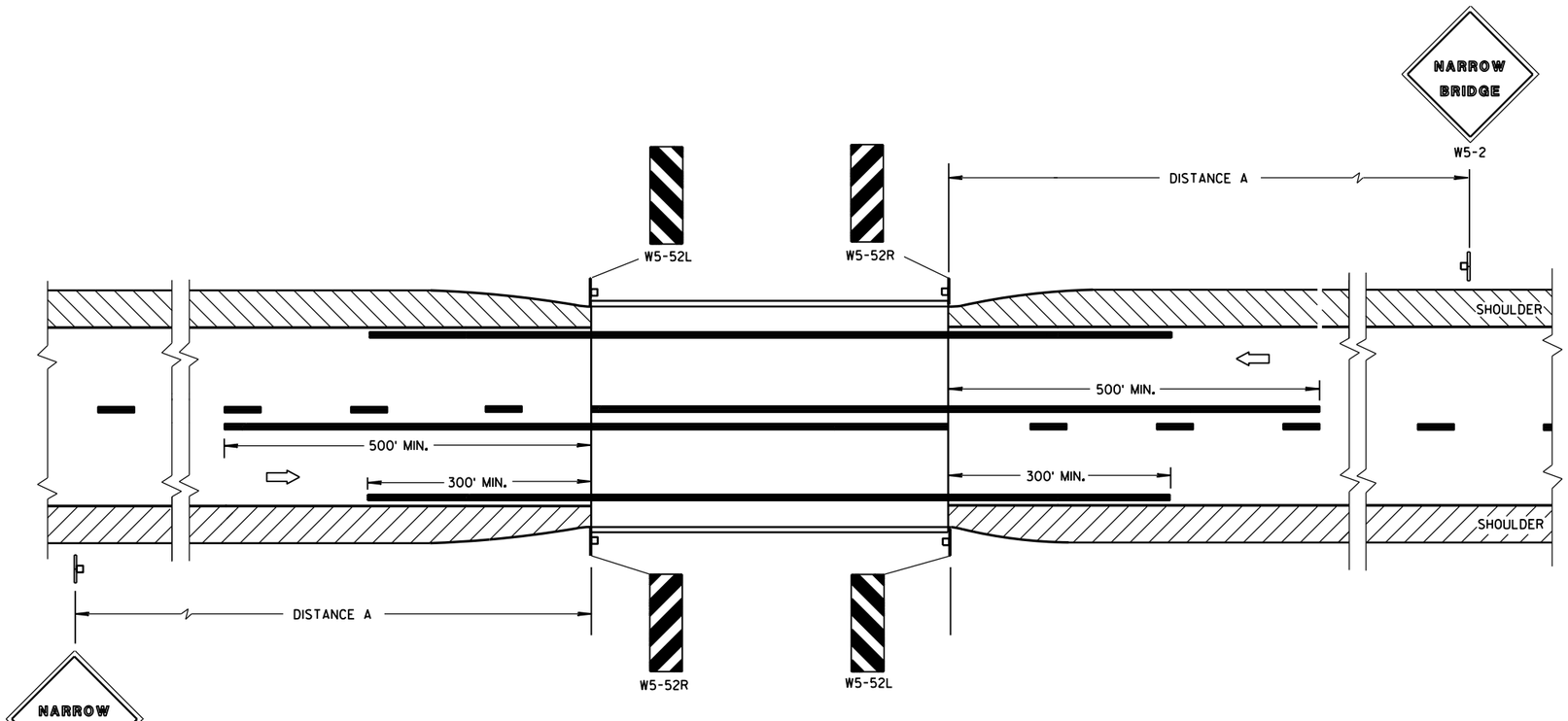
SDD 15C02 - 08b



SITUATION 1

WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

GENERAL NOTES

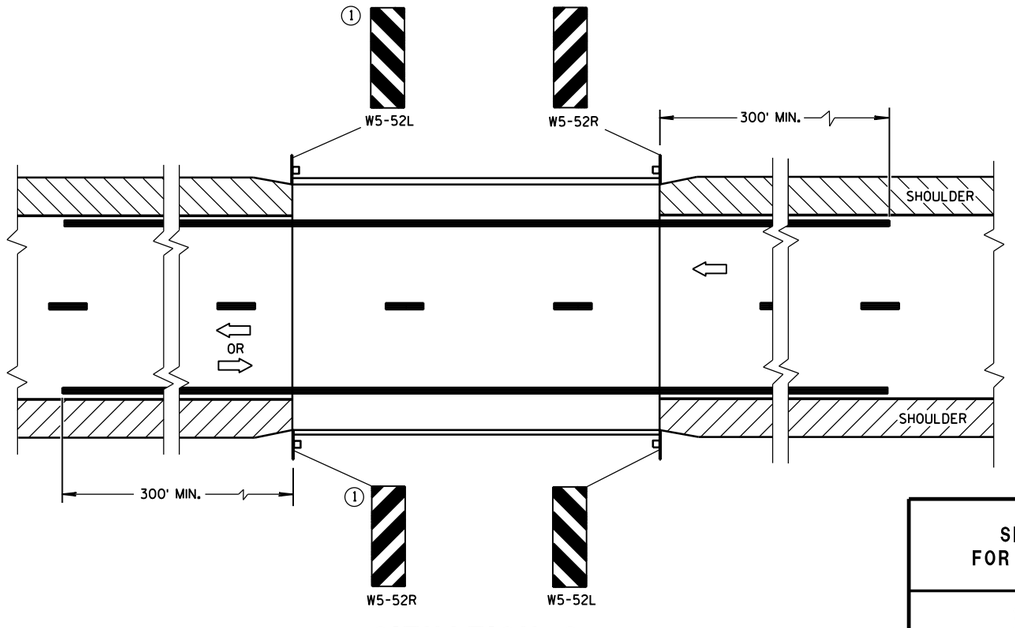
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET.

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

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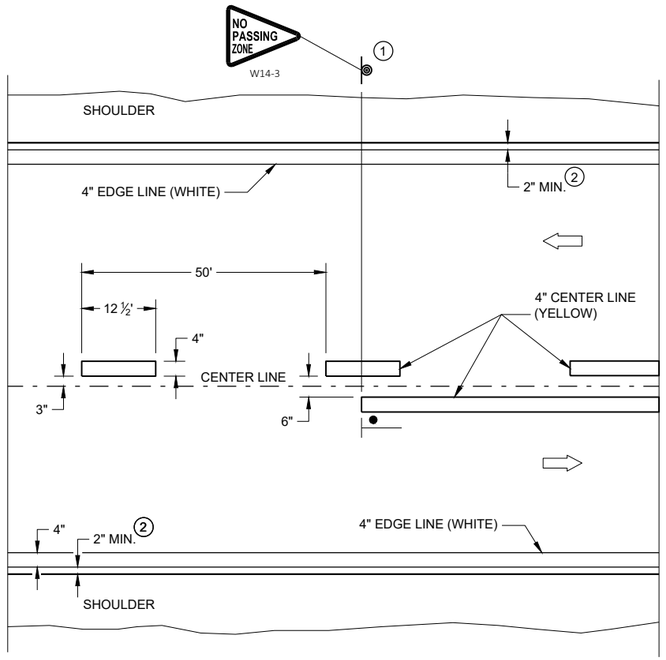
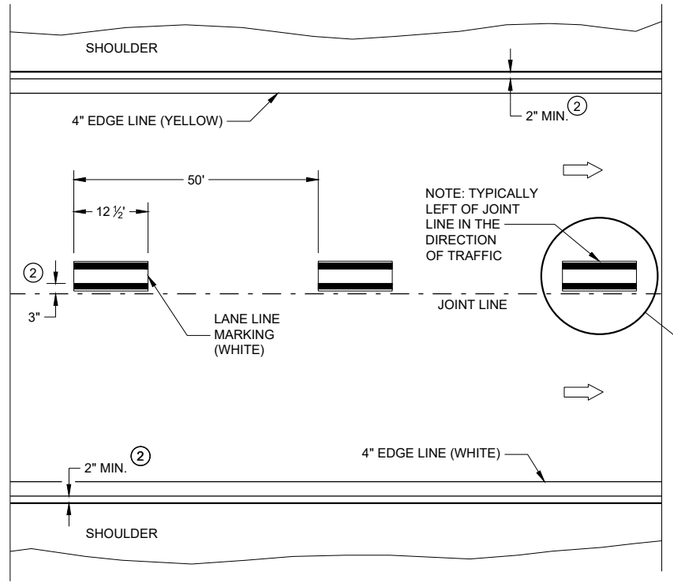
S.D.D. 15 C 6-9

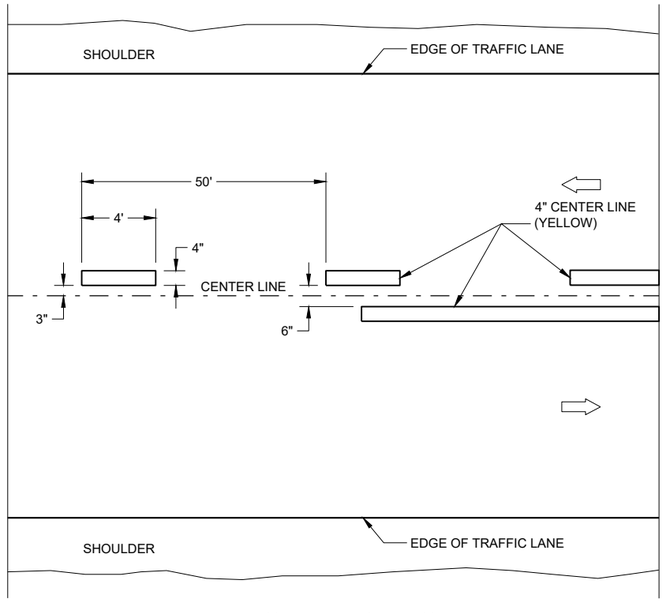


TWO WAY TRAFFIC

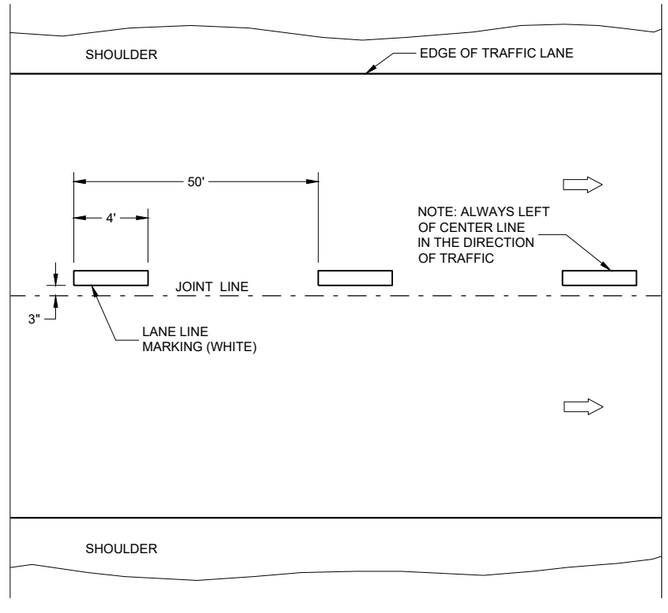


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

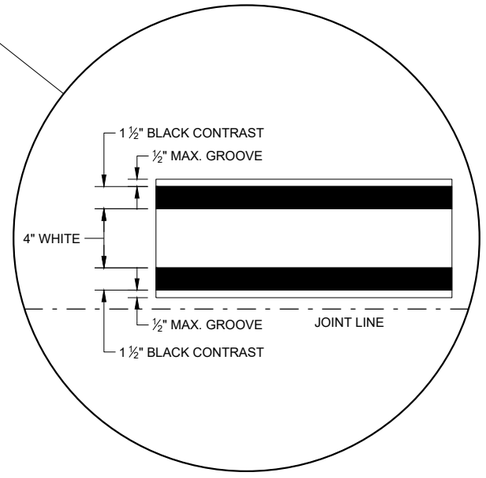
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITH 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 — DATE
/S/ Matthew Rauch — STATEWIDE SIGNING AND M ENGINEER

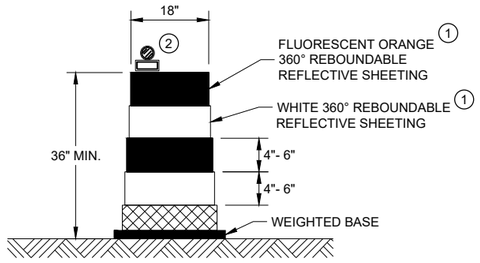
FHWA

SDD 15C08 - 20a

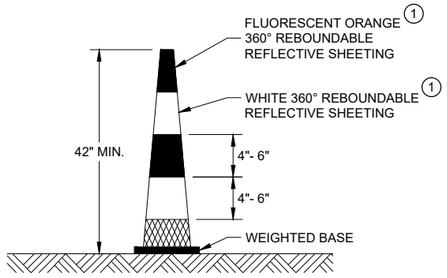
SDD 15C08 - 20a

GENERAL NOTES

1. REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
2. LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

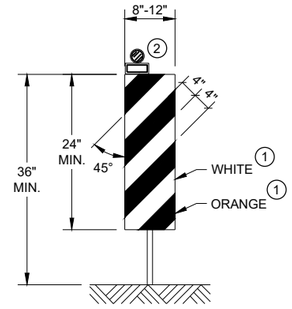


DRUM



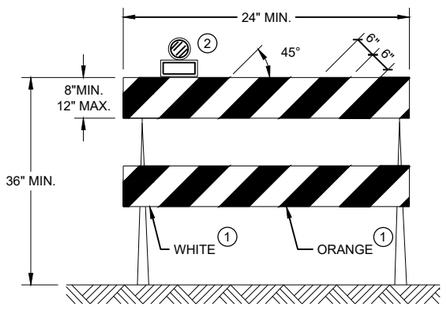
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



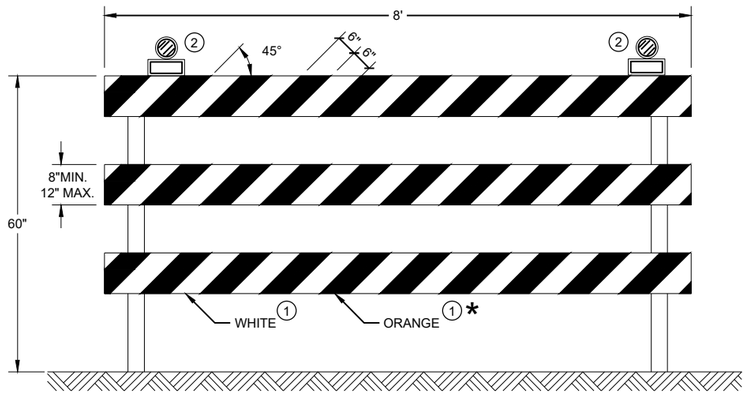
VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO
THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES
MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD
TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE III BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

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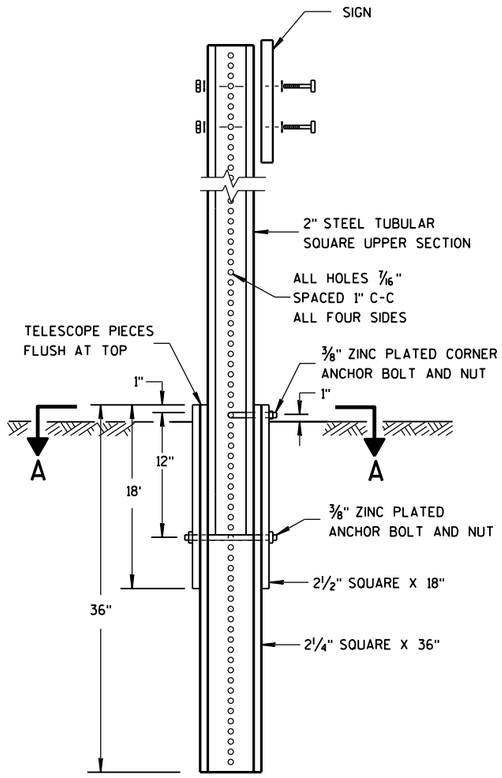
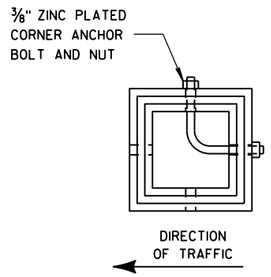
SDD 15C11 - 07b

6

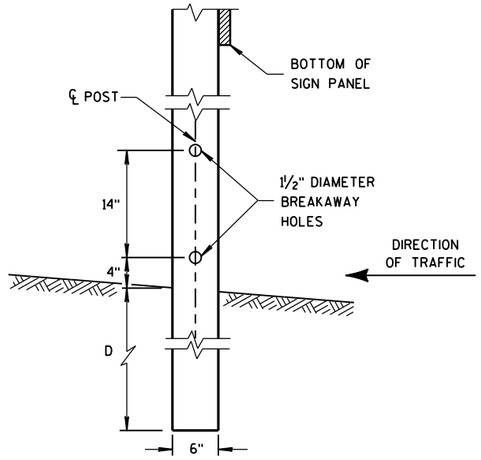
SDD 15C11 - 07b



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



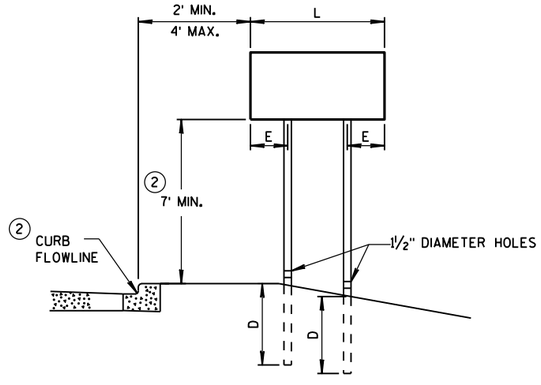
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

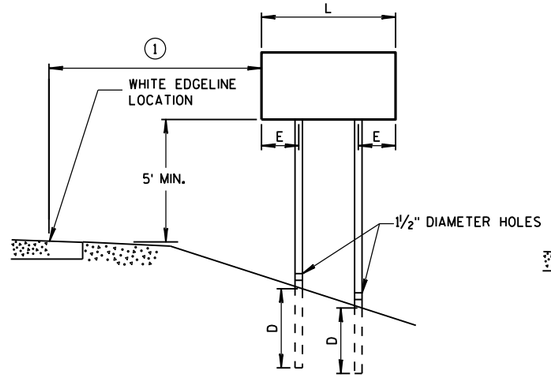
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

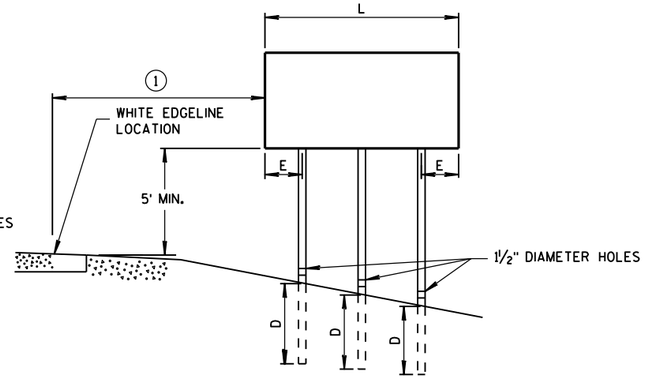
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

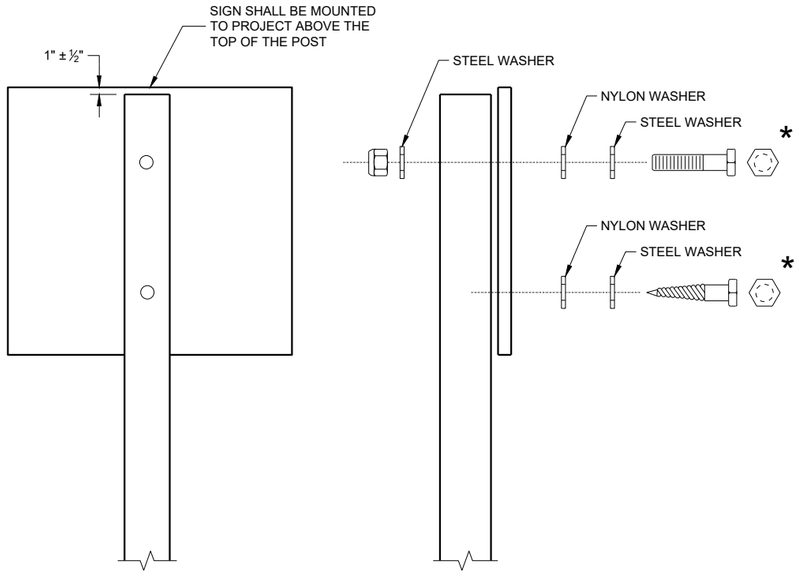
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 D 38-2a
S.D.D. 15 D 38-2a



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 POST (4" x 6")
LAG SCREWS - ⅜" x 3"
MACHINE BOLTS - 5/16" x 6 ½" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - ⅜" x 3 ¼" LENGTH W/NUTS
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH, GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -
1 ¼" O.D. x ⅜" I.D. x 1/16" STEEL
1 ¼" O.D. x ⅜" I.D. x 0.080 NYLON

* 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

SDD 15D38 - 02b

SDD15D38 - 02b

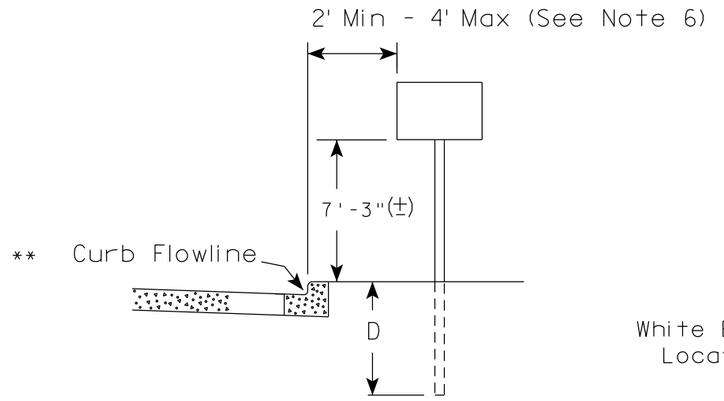
ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

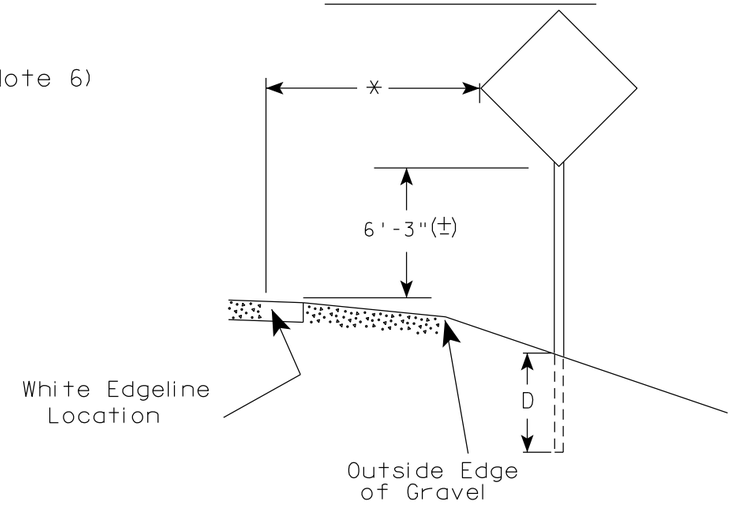
APPROVED
June 2017
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE

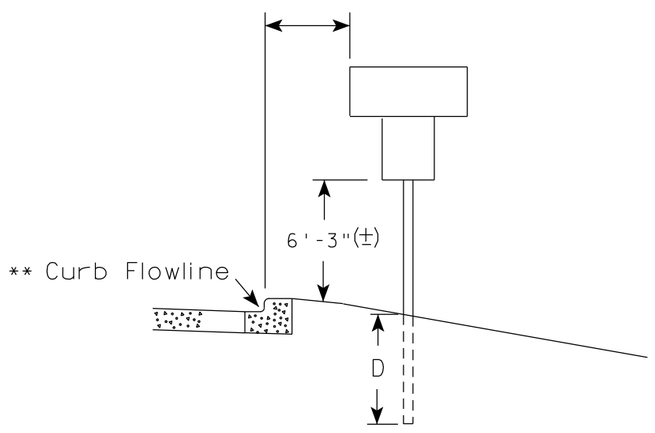
FHWA

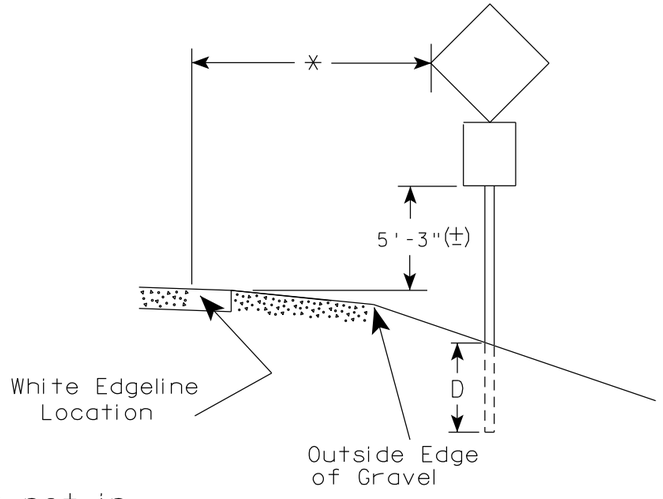
URBAN AREA



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.

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
   The Double Arrow sign (W12-1D) 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), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).
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 signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.

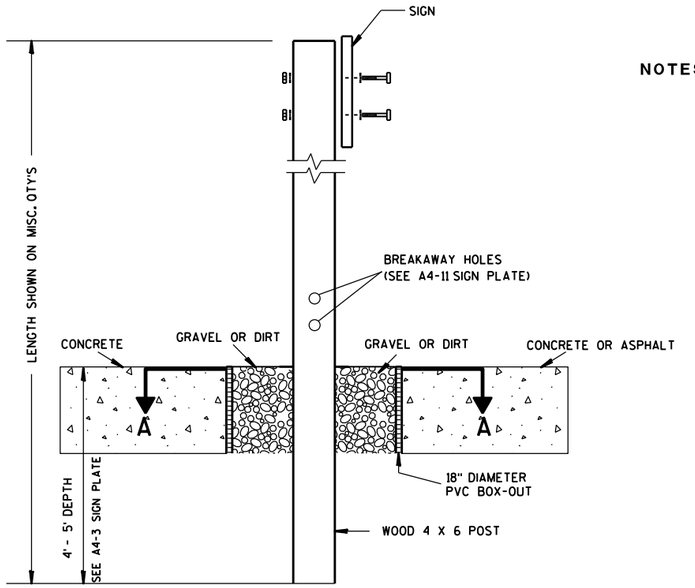
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

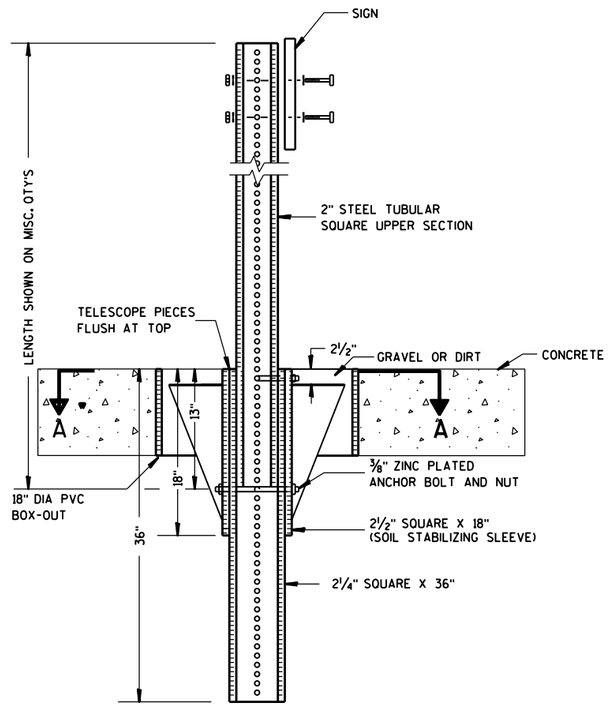
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 47	E



ELEVATION VIEW

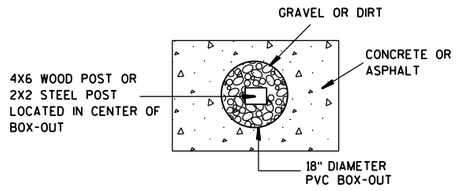
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

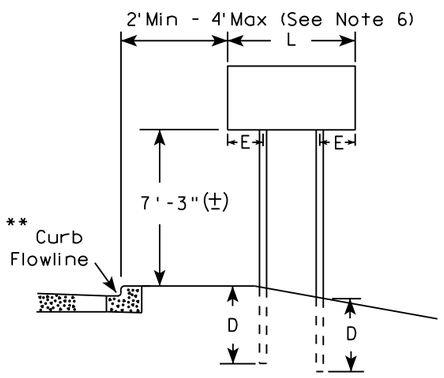
APPROVED Matthew R Rauch
for State Traffic Engineer

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

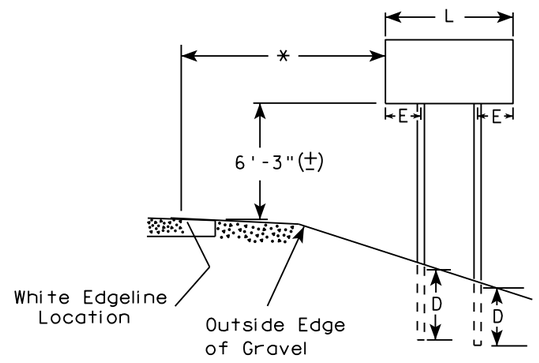
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

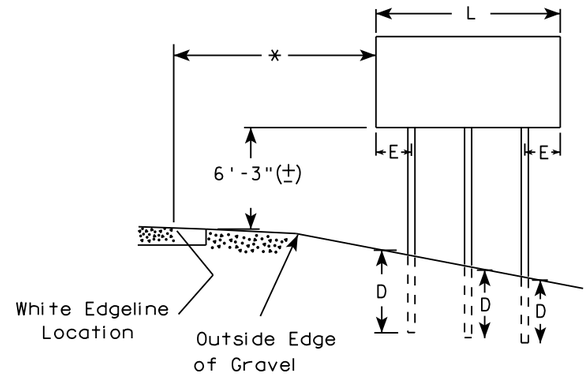
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

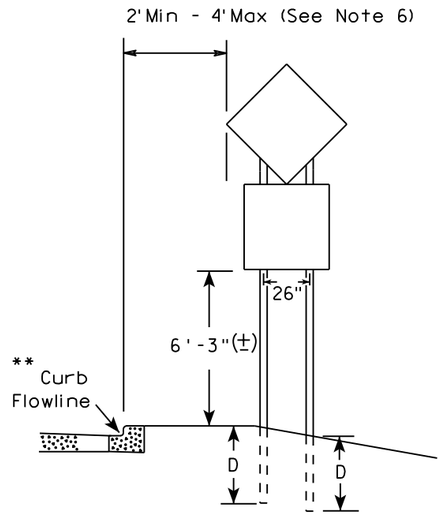
URBAN AREA



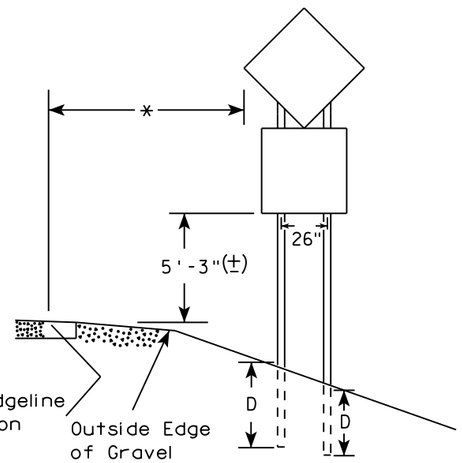
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

***	SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
	L	E
	Greater than 48" Less than 60"	12"
	60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

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

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

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

POST EMBEDMENT DEPTH

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

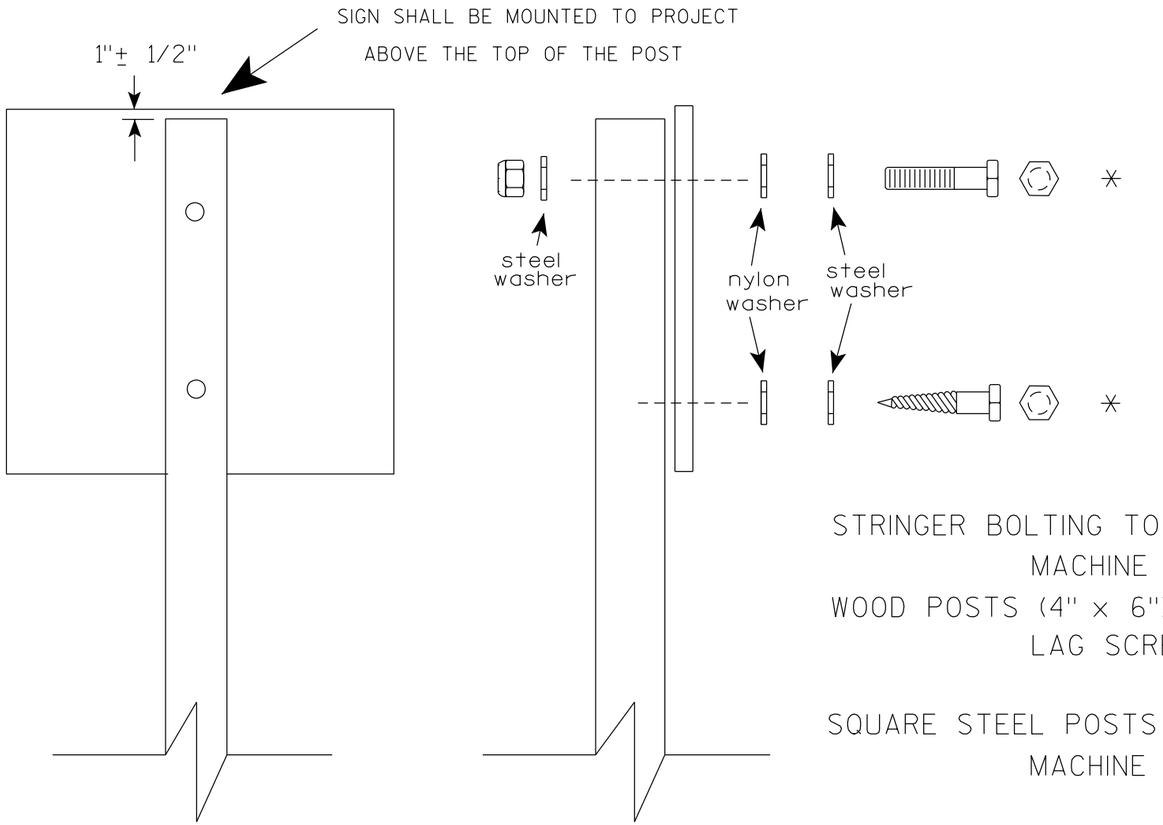
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 49	E



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

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

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

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

* 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

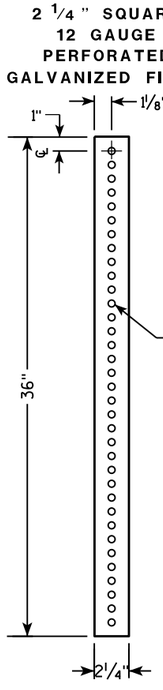
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

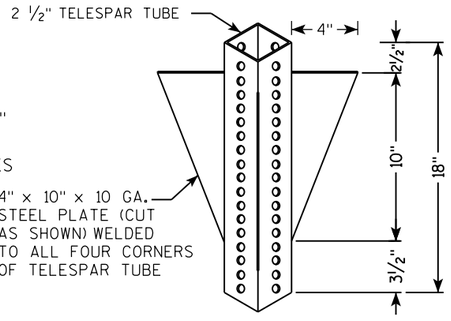
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

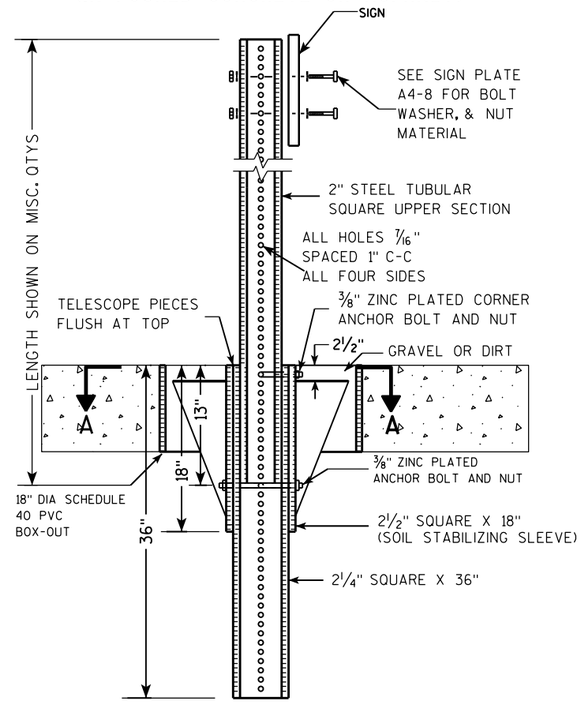
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



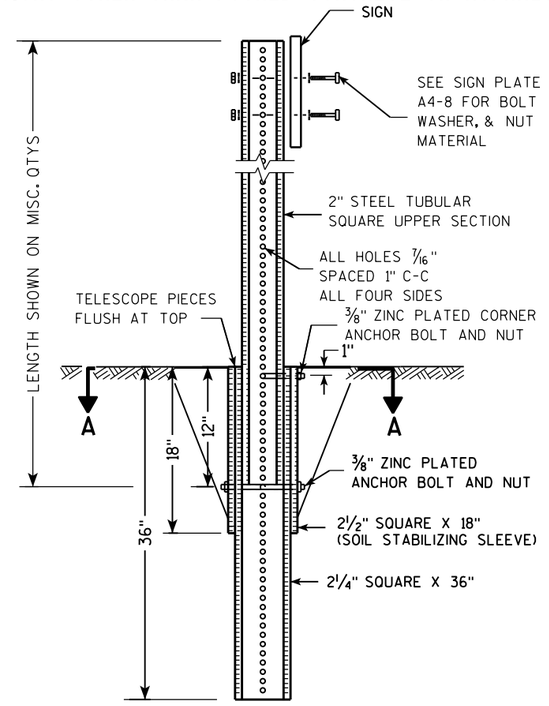
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

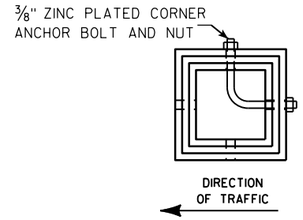


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)





SECTION A-A

Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

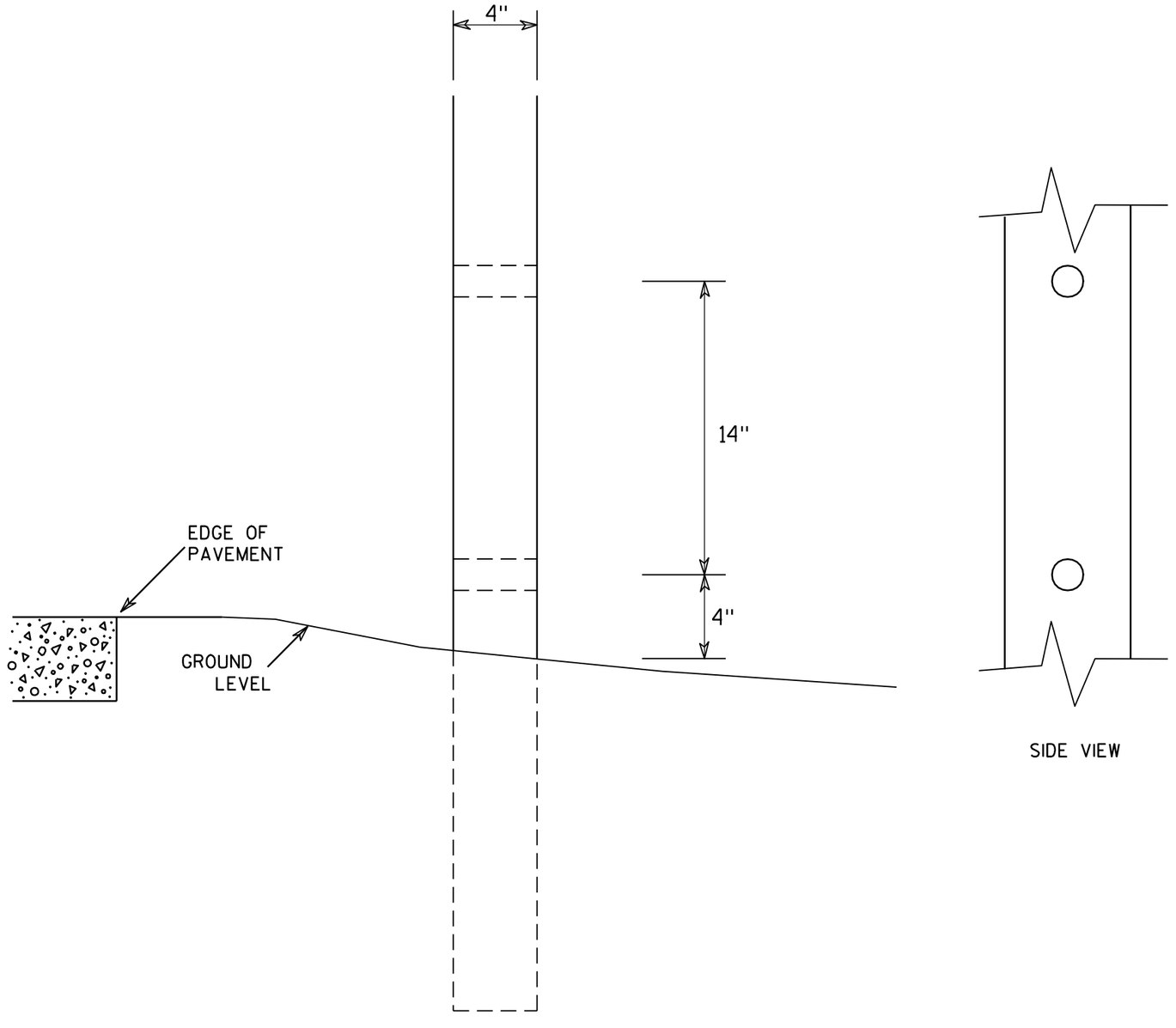
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000
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

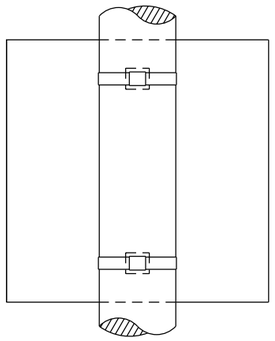
APPROVED Chester J Spang for State Traffic Engineer

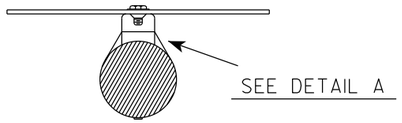
DATE 3/27/97 PLATE NO. A4-11.2

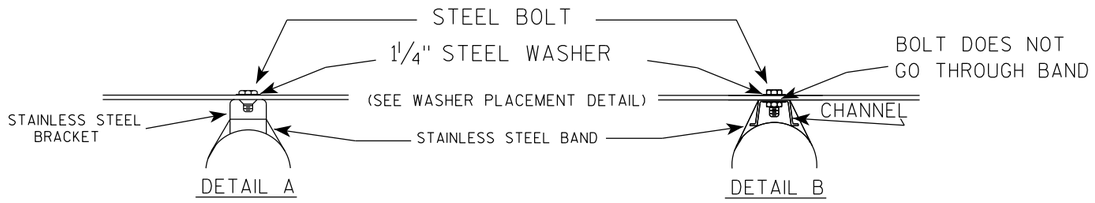
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 52	E

BANDING

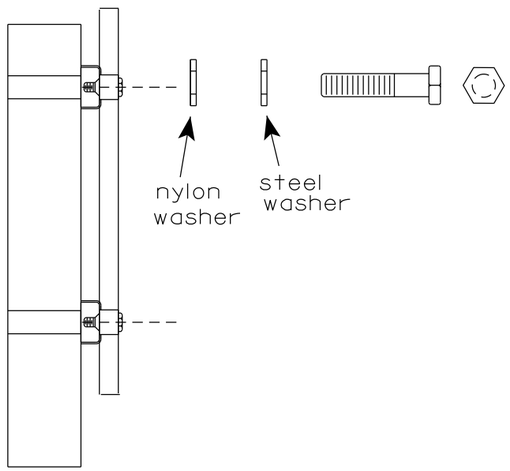
SINGLE SIGN







WASHER PLACEMENT

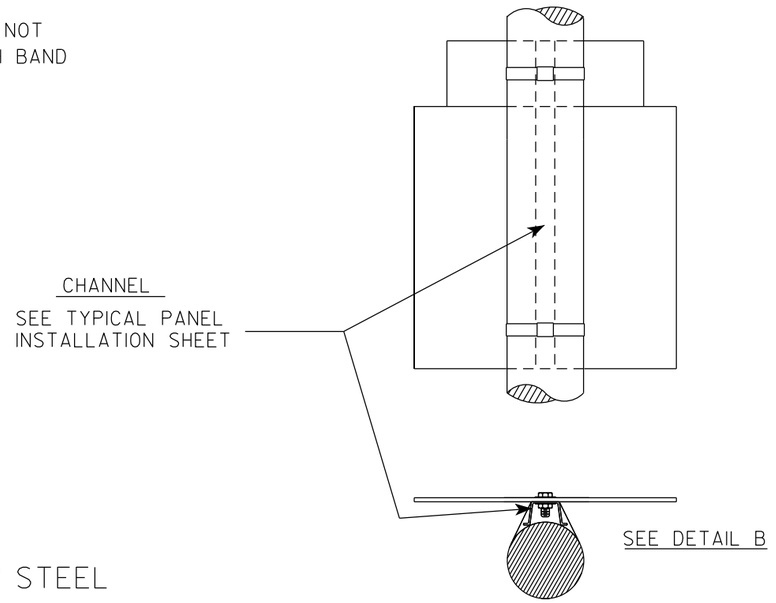


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

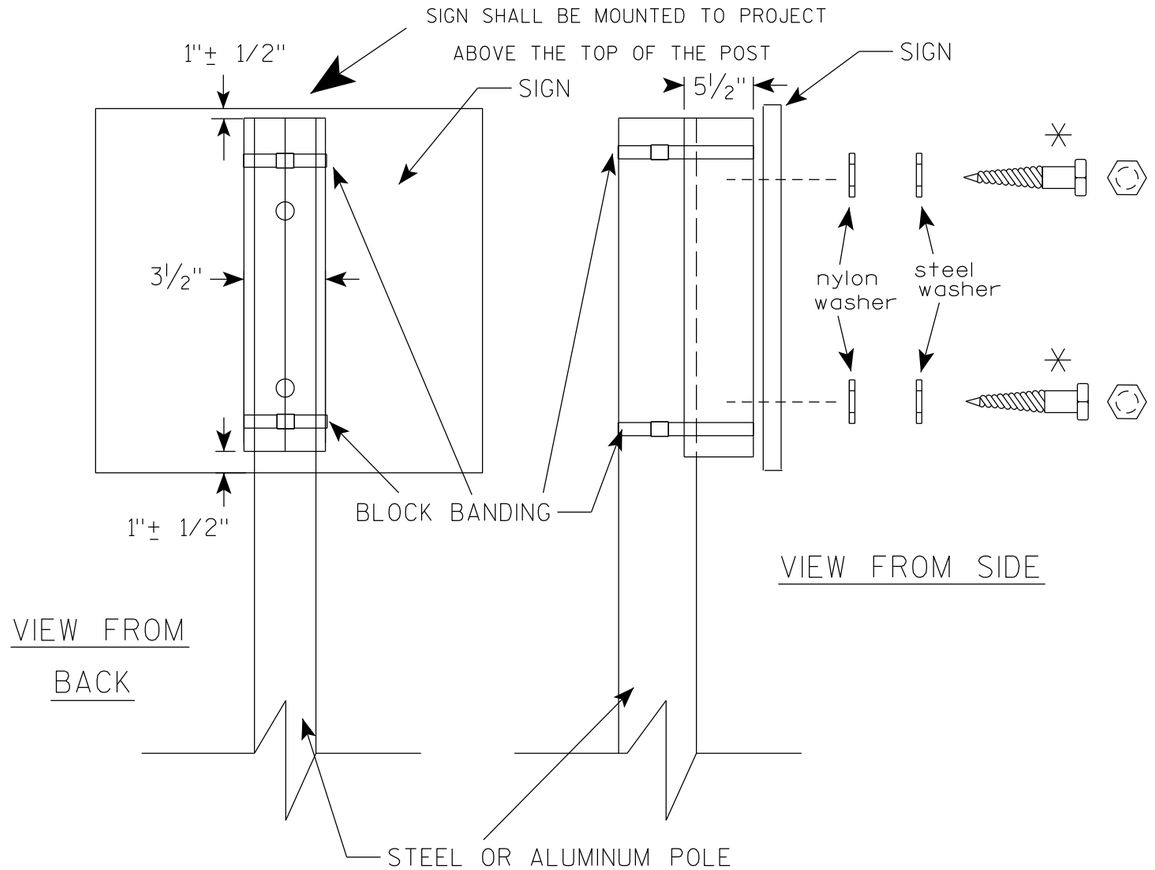
DATE 6/10/19 PLATE NO. A5-9.4

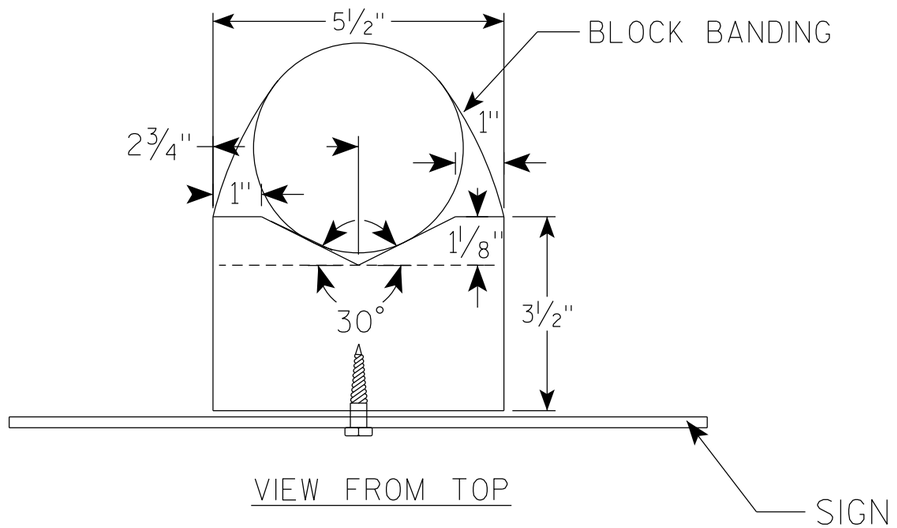
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 53	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A59.dgn PLOT DATE : 10-JUN 2019 4:10 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

7

7





GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, ¾" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

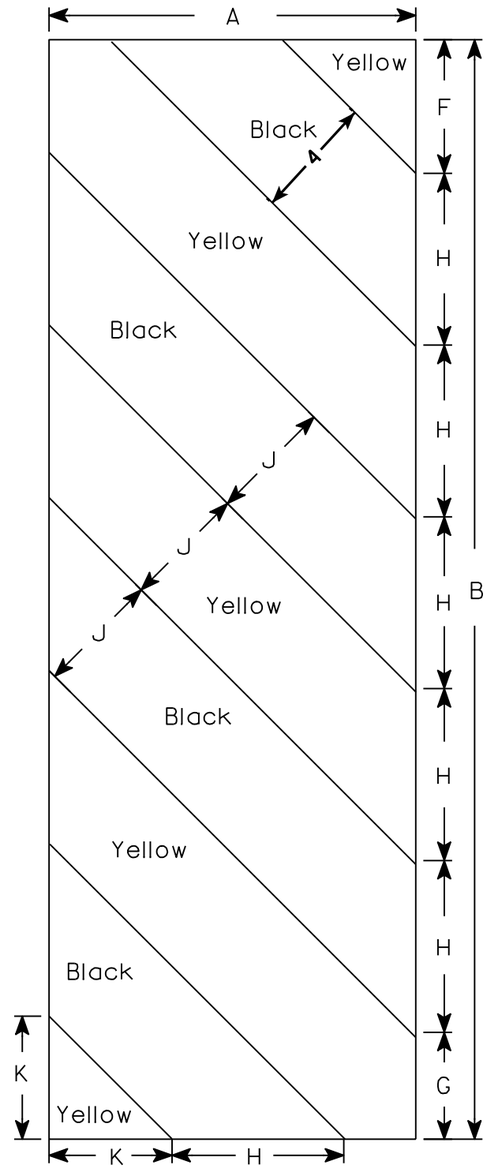
BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

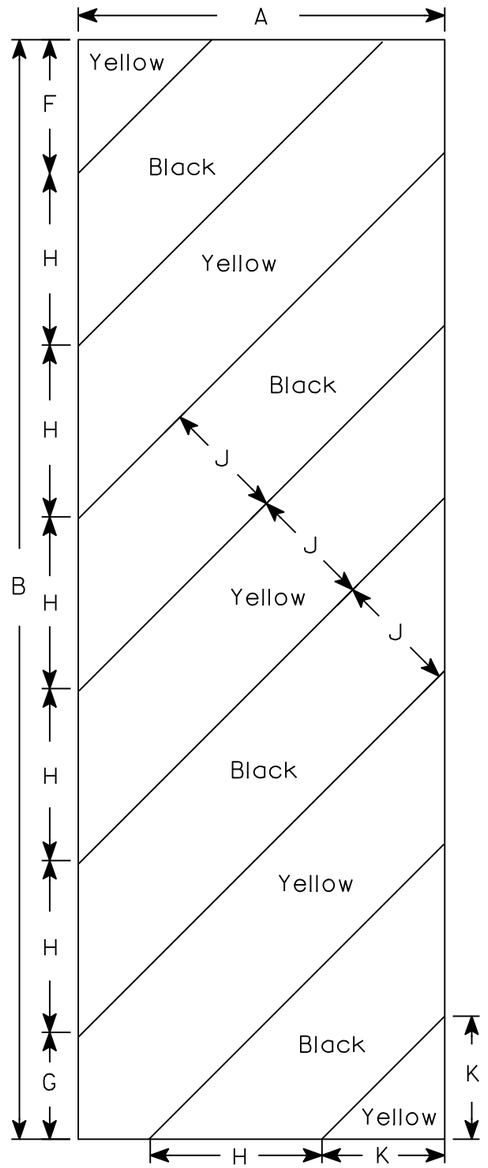
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO:				SHEET NO: 54	E



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

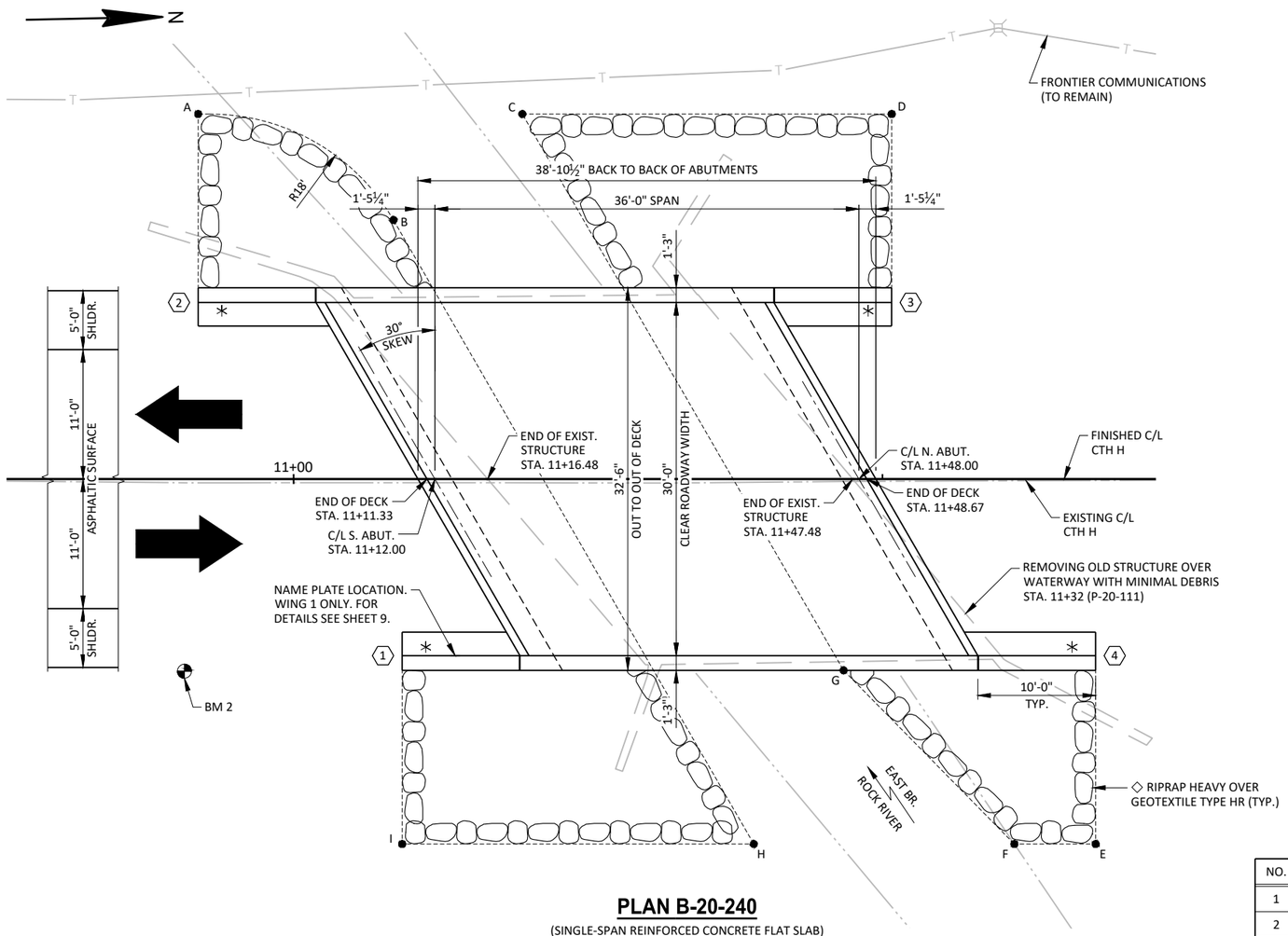
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 55	E



PLAN B-20-240

(SINGLE-SPAN REINFORCED CONCRETE FLAT SLAB)

⬡ INDICATES WING NUMBER

✳ ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD

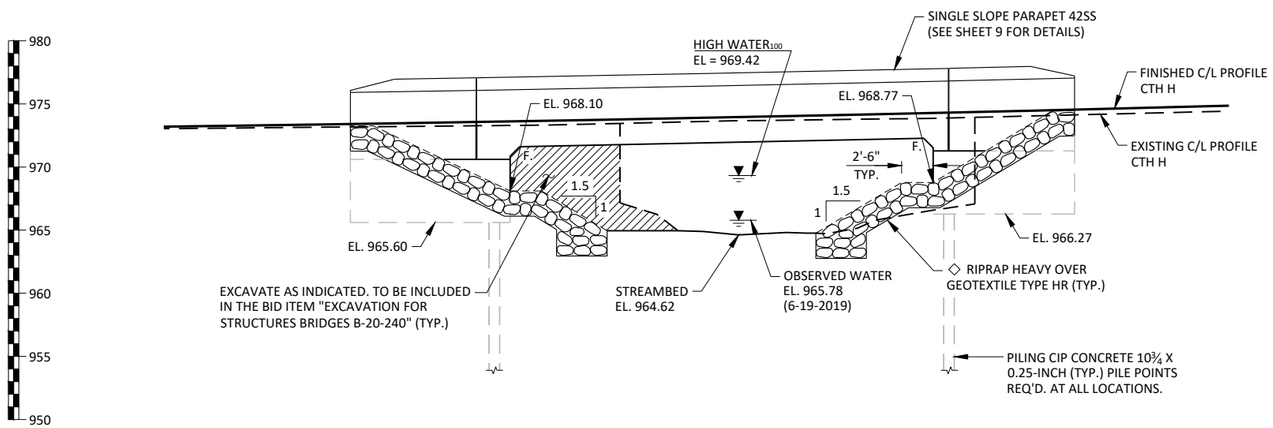
◇ VOIDS IN THE RIPRAP HEAVY SHALL BE FILLED WITH 6" STONE

RIPRAP HEAVY LAYOUT

POINT	STATION	OFFSET
A	10+92	31' LT.
B	11+08	22' LT.
C	11+19	31' LT.
D	11+51	31' LT.
E	11+68	31' RT.
F	11+61	31' RT.
G	11+47	16' RT.
H	11+39	31' RT.
I	11+09	31' RT.

BENCH MARKS

NO.	STA.	DESCRIPTION	ELEV.
1	8+66	3/4" IRON REBAR SET, 19.4' RT.	971.97
2	10+91	3/4" IRON REBAR SET, 16.3' RT.	972.41
3	13+57	3/4" IRON REBAR SET, 15.3' LT.	983.06
4	9+80	STAR SPIKE IN PPOL, 38.6' LT.	968.79



ELEVATION

(NORMAL TO EAST BRANCH OF ROCK RIVER)

STATE PROJECT NUMBER

4850-01-71

DESIGN DATA

LIVE LOAD:

DESIGN LOADING — HL-93
INVENTORY RATING FACTOR — RF=1.29
OPERATING RATING FACTOR — RF=1.67
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) — 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 P.S.F.

MATERIAL PROPERTIES:

CONCRETE MASONRY, SUPERSTRUCTURE — f'c = 4,000 P.S.I.
ALL OTHER — f'c = 3,500 P.S.I.
HIGH-STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 10¾ X 0.25-INCH DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATE 15 FT PILE LENGTHS AT BOTH ABUTMENTS. PILE POINTS REQ'D. AT ALL LOCATIONS.

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

TRAFFIC DATA

A.D.T. (2022) — 285
A.D.T. (2042) — 425
DESIGN SPEED — 40 M.P.H.

HYDRAULIC DATA

100 YEAR FREQUENCY
DRAINAGE AREA — 5.56 SQ. MI.
Q_{100} TOTAL — 360 C.F.S.
THROUGH STRUCTURE — 360 C.F.S.
OVERTOPPING ROADWAY — N/A
VELOCITY - THROUGH STRUCTURE — 5.0 F.P.S.
WATERWAY AREA - THROUGH STRUCTURE — 72.6 SQ. FT.
HIGH WATER$_{100}$ ELEVATION — 969.42
SCOUR CRITICAL CODE — 5

EROSION CONTROL
Q_2 — 90 C.F.S.
VELOCITY$_2$ — 2.4 F.P.S.
HIGH WATER$_2$ ELEVATION — 967.51

LIST OF DRAWINGS

WISCONSIN PROFESSIONAL ENGINEER
PATRICK T. BOLAND
E-36303
HILLPOINT WIS.
Patrick T. Boland 7-13-20

NO.	DATE	REVISION	BY

JEWELL associates engineers, inc.
Engineers - Architects - Surveyors
560 SUNRISE DRIVE
SPRING GREEN, WI 53588
OFFICE: (608) 588-7484
www.jewellassoc.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED — SDR — 08/03/20
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-20-240

CTH H OVER EAST BRANCH OF ROCK RIVER

COUNTY	TOWN/~~CITY/VILLAGE~~
FOND DU LAC	ASHFORD

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

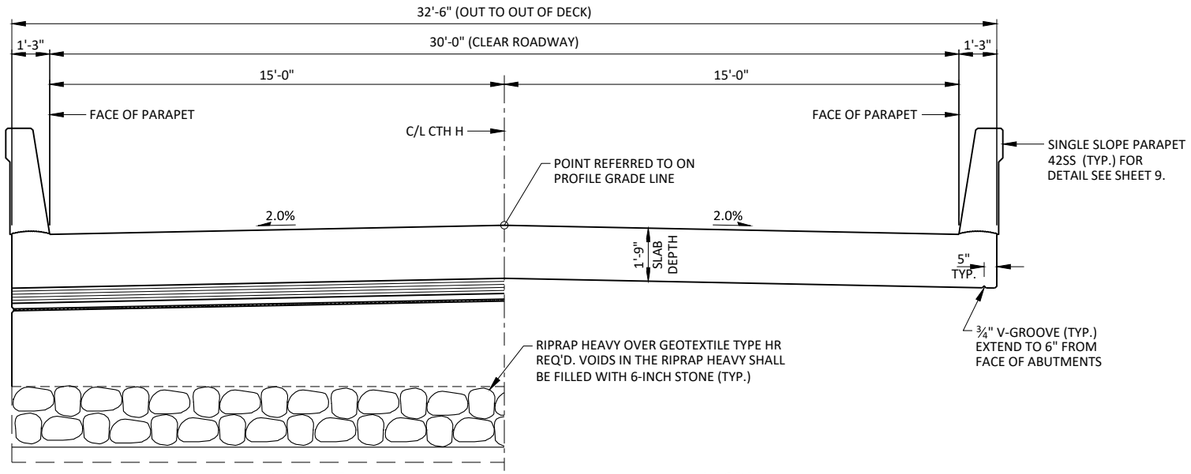
DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
PMF	PTB	PMF	PTB

GENERAL PLAN

SHEET 1 OF 9
56

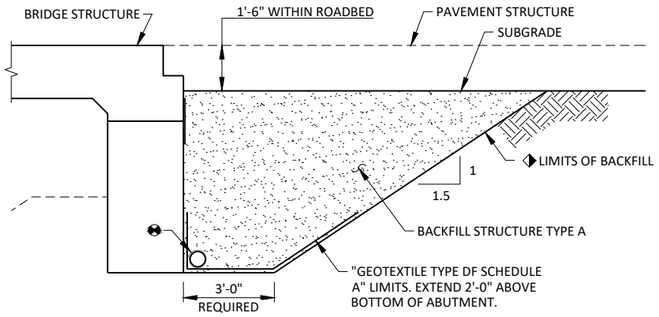
DESIGN CONSULTANT
PATRICK BOLAND, PE
(608) 588-7484

BRIDGE OFFICE CONTACT
AARON BONK, PE
(608) 261-0261



PROPOSED CROSS-SECTION THROUGH ROADWAY

LOOKING NORTH

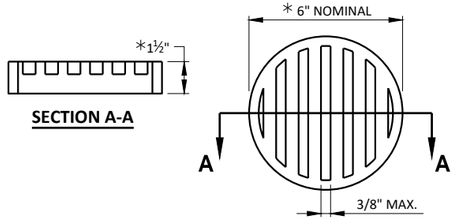


BACKFILL STRUCTURE DETAIL

(TYPICAL AT ABUTMENTS. ABUTMENT BODY SHOWN - WING WALLS SIMILAR)

◆ BACKFILL STRUCTURE TYPE A PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO THE BID ITEM "EXCAVATION FOR STRUCTURES B-20-240". LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

◆ PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPED 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON THIS SHEET. RODENT SCREEN TO BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH."



RODENT SCREEN

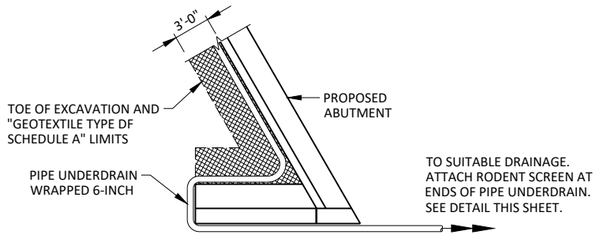
NOTES:

∗ DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

ORIENT SCREEN SO SLOTS ARE VERTICAL.

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

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



PIPE UNDERDRAIN DETAIL

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICA VERTICAL DATUM OF 1988 (NAVD 88).

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

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

JOINT FILLER SHALL CONFORM TO A.A.S.H.T.O. DESIGNATION MI53, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M213.

THE SLOPE OF FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS, OR AS DIRECTED BY THE ENGINEER IN THE FIELD. VOIDS IN THE RIPRAP HEAVY SHALL BE FILLED WITH 6-INCH STONE. COST OF THE 6-INCH STONE IS INCLUDED IN THE RIPRAP HEAVY BID ITEM.

AT THE BACK FACE OF ABUTMENTS, ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A. SEE THIS SHEET FOR DETAIL.

ANY EXCAVATION BELOW THE ABUTMENT AND ASSOCIATED ABUTMENT BEDDING MATERIALS REQUIRE THE APPROVAL OF THE ENGINEER IN THE FIELD.

APPLY PROTECTIVE SURFACE TREATMENT TO THE TOP OF THE DECK (FINISHED AREAS ONLY).

APPLY PIGMENTED SURFACE SEALER TO THE INSIDE, TOP, AND END FACES OF PARAPETS (CONCRETE MATERIAL ONLY), INCLUDING PARAPETS ON ABUTMENT WINGS.

THE EXISTING STRUCTURE (P-20-111) IS A STEEL DECK GIRDER/PRESTRESSED CONCRETE BOX GIRDER STRUCTURE WITH A CONCRETE DECK SUPPORTED ON CONCRETE ABUTMENTS. THE STRUCTURE HAS A ROADWAY WIDTH BETWEEN RAILINGS OF 29.5 FEET AND SHALL BE REMOVED.

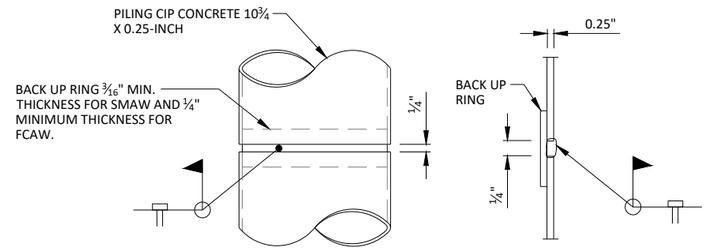
ALL STATIONS AND ELEVATIONS SHOWN ARE IN FEET.

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

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

TOTAL ESTIMATED QUANTITIES

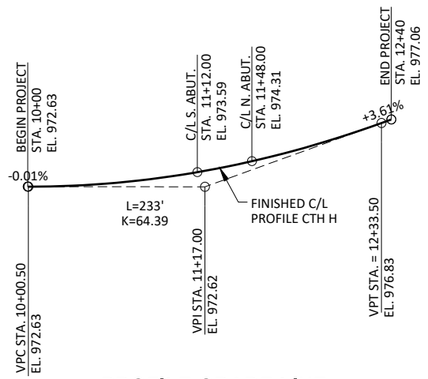
ITEM NUMBER	ITEM DESCRIPTION	UNIT	S. ABUT.	SUPER	N. ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 11+32	LS	--	--	--	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-20-240	LS	--	--	--	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	145	--	145	290
502.0100	CONCRETE MASONRY BRIDGES	CY	36	97	37	170
502.3200	PROTECTIVE SURFACE TREATMENT	SY	--	125	--	125
502.3210	PIGMENTED SURFACE SEALER	SY	--	60	--	60
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,290	--	2,300	4,590
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,230	18,200	1,260	20,690
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	7	--	7	14
550.0500	PILE POINTS	EACH	6	--	6	12
550.2104	PILING CIP CONCRETE 10¾ X 0.25-INCH	LF	90	--	90	180
606.0300	RIPRAP HEAVY	CY	75	--	90	165
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	100	--	100	200
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	--	4	--	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	40	--	40	80
645.0120	GEOTEXTILE TYPE HR	SY	145	--	155	300
	NON-BID ITEMS					
	FILLER	SIZE				½" & ¾"
	NAME PLATE					



CAST-IN-PLACE 'PIPE PILE' C.I.P. PILE WELD DETAIL

NOTES:

CAST-IN-PLACE PILE SHELL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS



PROFILE GRADE LINE

CTH H

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-240

DRAWN BY PMF | PLANS CK'D. PTB

CROSS SECTION & QUANTITIES

SHEET 2 OF 9

57

8

8

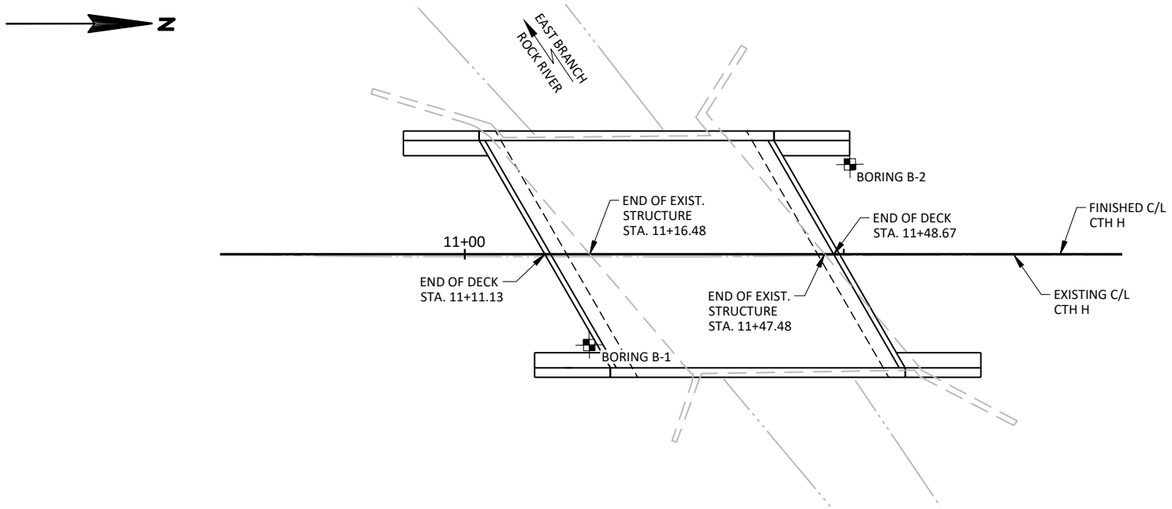
STATE PROJECT NUMBER

4850-01-71

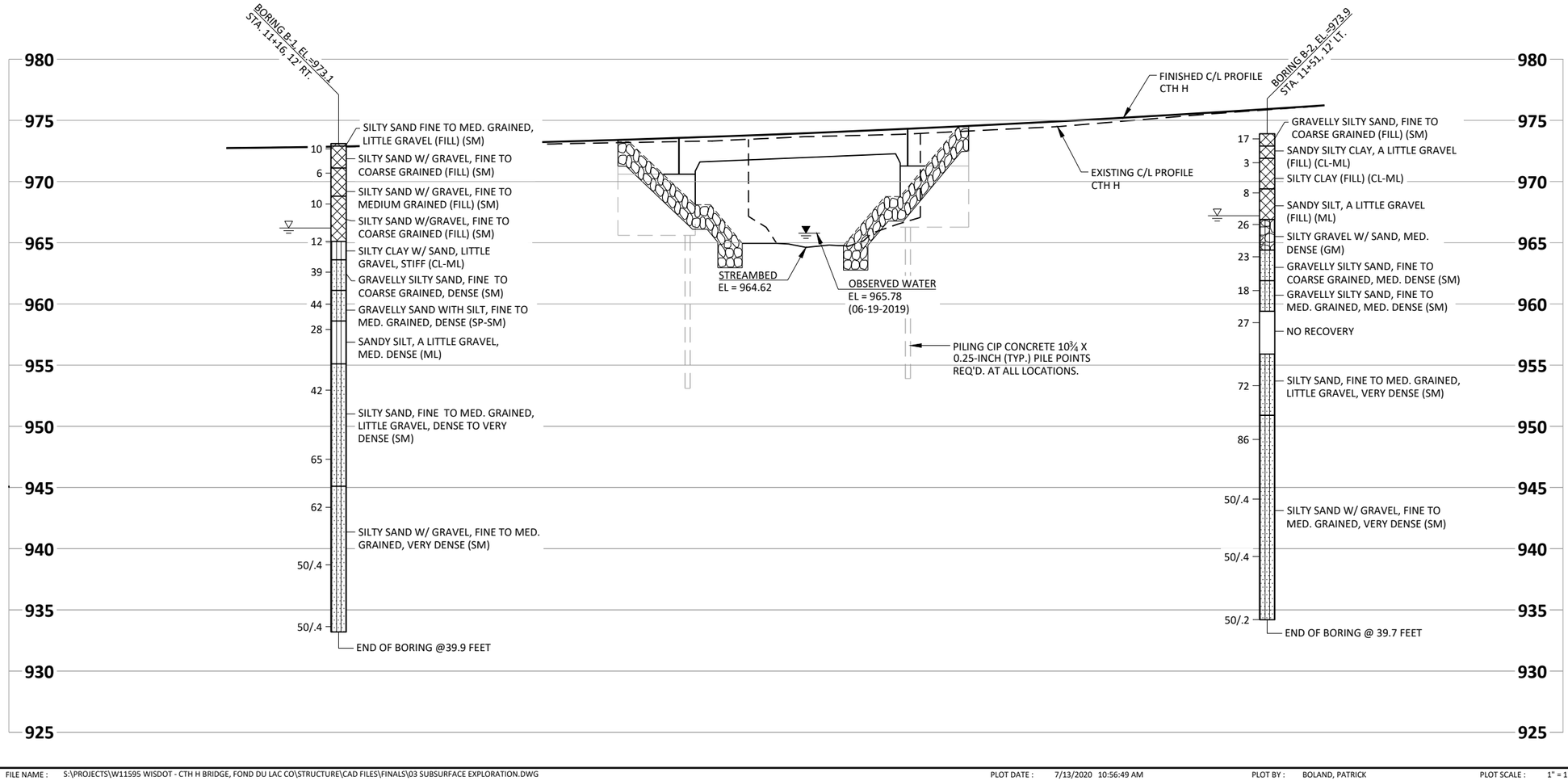
SOIL BORINGS

BORING NUMBER	NORTHING (Y)	EASTING (X)	DATE COMPLETED
B-1	303,649.60	829,404.96	09/17/19
B-2	303,684.50	829,381.86	09/17/19

BORINGS & REPORT COMPLETED BY: AMERICAN ENGINEERING TESTING, INC
4203 SCHOFIED AVE, SUITE 1
SCHOFIELD, WI 54476



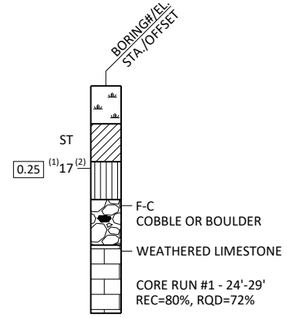
PLAN B-20-240



MATERIAL SYMBOLS

Asphalt · Topsoil · Peat
Concrete · Fill · Gravel
Sand · Clay · Silt
Boulders or Cobbles · Limestone · Bedrock (unknown)
Shale · Sandstone · Igneous/ meta

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE SPECIFIED, THE SPT 'N' VALUE IS BASED ON AASHTO T-206 STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATIONS

AT TIME OF DRILLING
END OF DRILLING
AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COURSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-240

DRAWN BY PMF | PLANS CK'D. PTB

SUBSURFACE EXPLORATION

SHEET 3 OF 9

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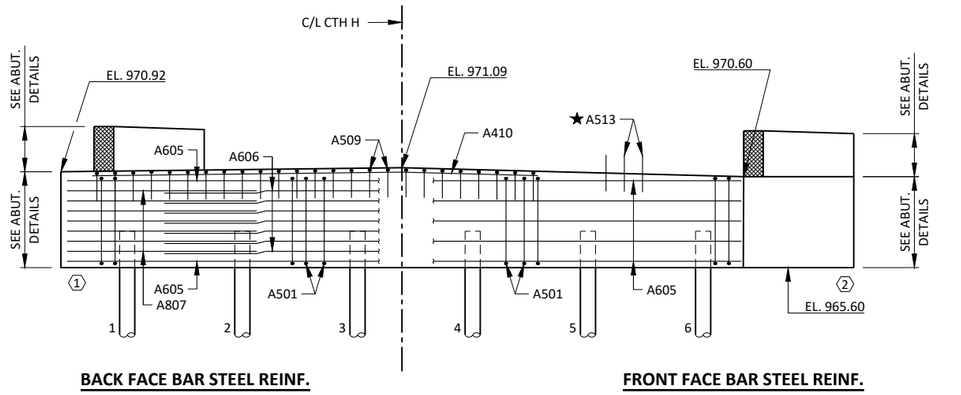
8

8

STATE PROJECT NUMBER

4850-01-71

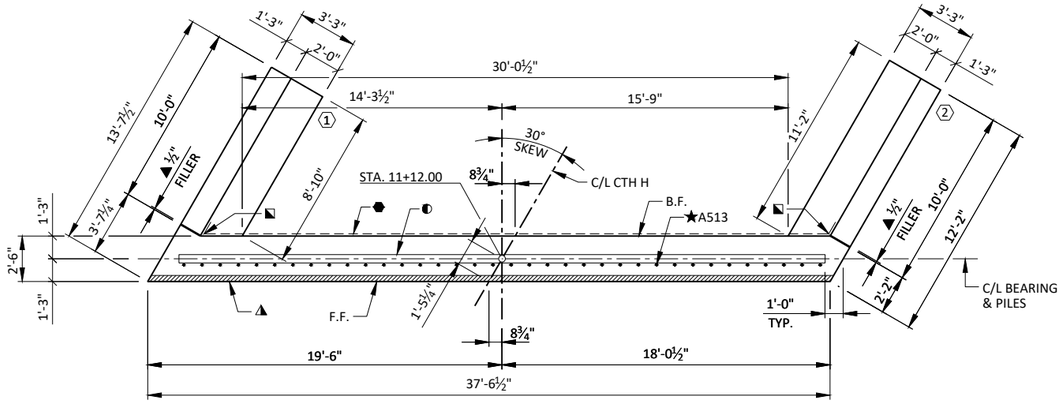


BACK FACE BAR STEEL REINF.

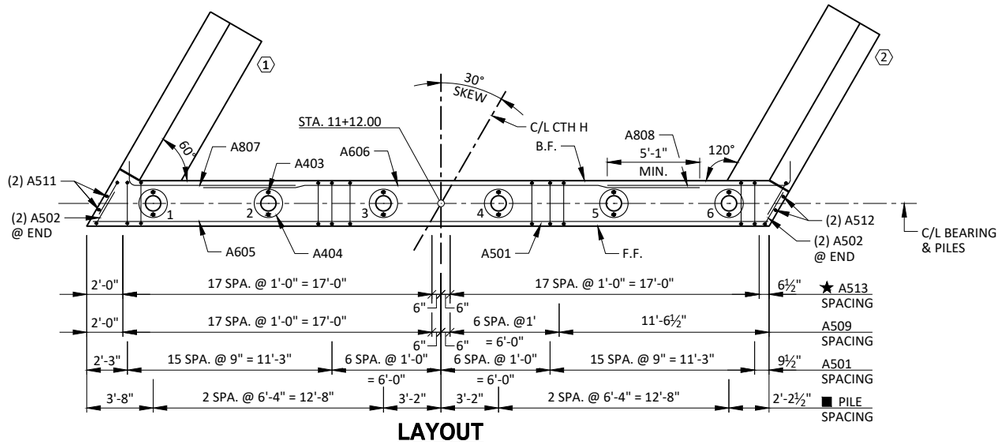
FRONT FACE BAR STEEL REINF.

ELEVATION

(SOUTH ABUTMENT LOOKING SOUTH)



PLAN



LAYOUT

NOTES

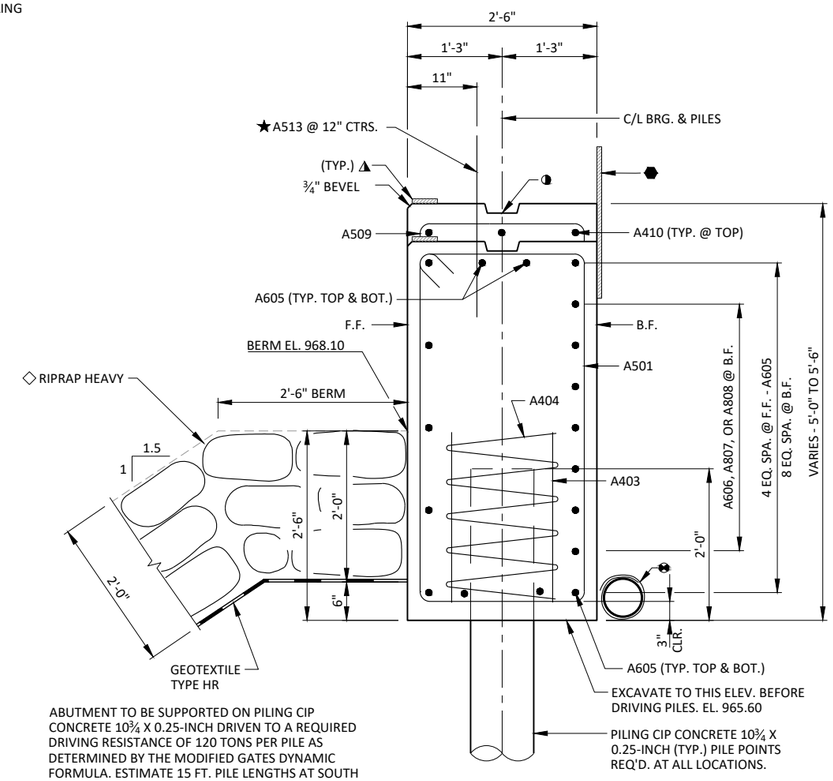
SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE SHEET 5 FOR BILL OF BARS.

SEAT ELEVATIONS SHOWN IN THE ELEVATION VIEW ARE TAKEN AT THE C/L OF BEARING (NEGLECTING THE KEYED CONSTRUCTION JOINT).

SPACE REINFORCEMENT TO MISS PILING

F.F. - FRONT FACE

B.F. - BACK FACE



ABUTMENT TO BE SUPPORTED ON PILING CIP CONCRETE 10¾ X 0.25-INCH DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATE 15 FT. PILE LENGTHS AT SOUTH ABUTMENT. PILE POINTS REQUIRED AT ALL LOCATIONS.

TYPICAL SECTION THROUGH ABUTMENT BODY

LEGEND

- ◑ KEYED CONSTRUCTION JOINT FORMED BY SURFACED & BEVELED 2x6.
- ◪ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING EXTEND FROM 9" BELOW BRIDGE SEAT TO 1" BELOW TOP OF WINGS.
- ⬣ 18" RUBBERIZED MEMBRANE WATERPROOFING. (HORIZONTAL)
- ▲ ½" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINUOS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE)
- ◭ ¾" x 4" PREFORMED FILLER, EXTEND FULL LENGTH OF ABUTMENTS BETWEEN EDGES OF SLAB.
- ★ A513 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE IT HAS TAKEN ITS INITIAL SET. EMBED BAR 1'-0".
- ■ PILE SPACING MEASURED AT BASE OF ABUTMENT BODY.
- ◓ PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPED 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. RODENT SCREEN TO BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH."
- ◇ VOIDS IN THE RIPRAP HEAVY SHALL BE FILLED WITH 6-INCH STONE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-240

DRAWN BY PMF | PLANS CK'D. PTB

SOUTH ABUTMENT

SHEET 4 OF 9

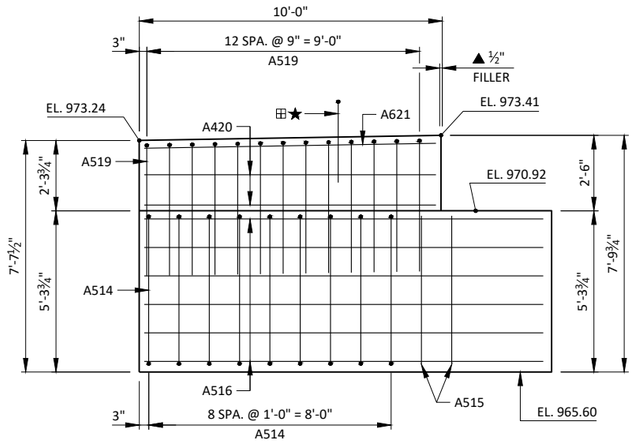
59

8

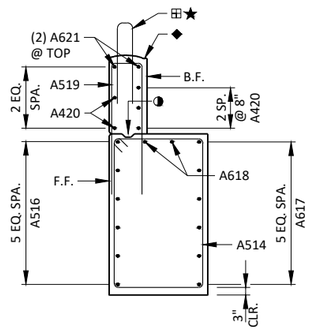
8

STATE PROJECT NUMBER

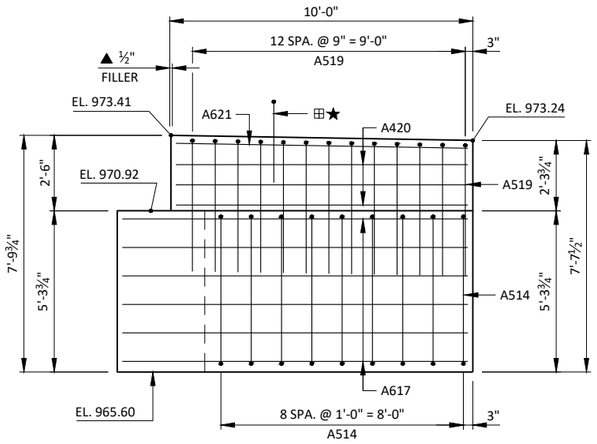
4850-01-71



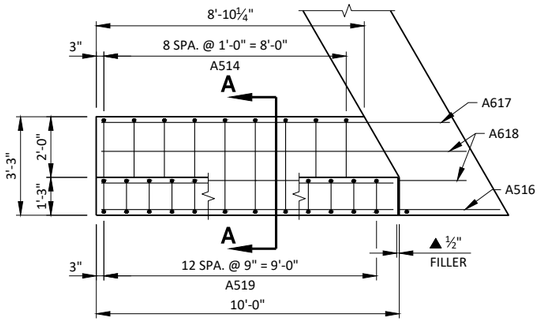
F.F. ELEVATION - WING 1



SECTION A-A



B.F. ELEVATION - WING 1



PLAN VIEW - WING 1

LEGEND

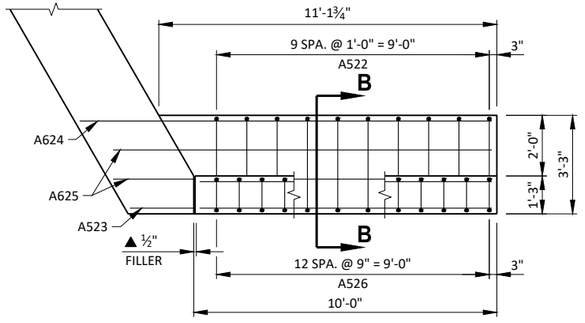
◐ OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY SURFACED & BEVELED 2x6. ¾-INCH "V" GROOVE AT FRONT FACE OF WING WALL AND HORIZONTAL 18" RUBBERIZED MEMBRANE WATERPROOFING AT BACK FACE IF CONSTRUCTION JOINT IS USED. COST IS INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY BRIDGES".

▲ ½" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINUOS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE)

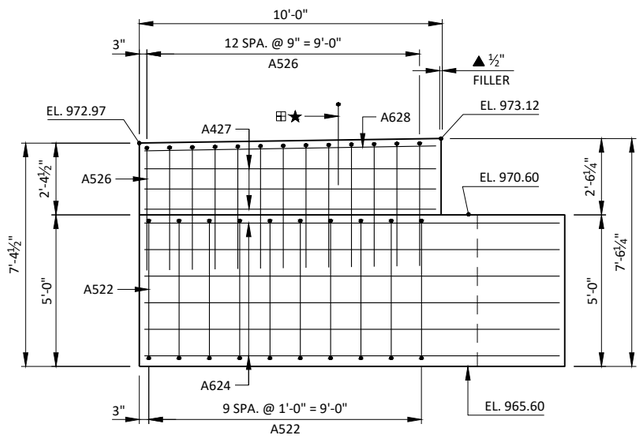
⊞ S510 AND S511 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED. SEE SHEET 9 FOR PLACEMENT.

★ S512 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE S512 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

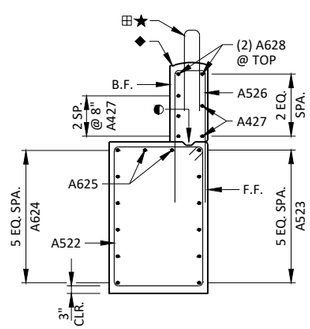
◆ STRIKE OFF AS SHOWN AND LEAVE ROUGH. FINISH SURFACE NOT COVERED BY PARAPET SAME AS ROADWAY.



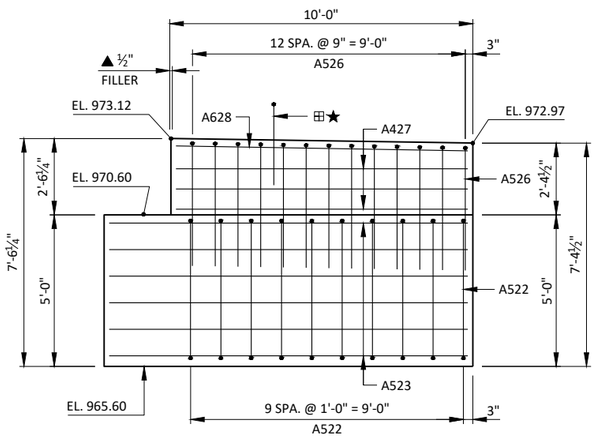
PLAN VIEW - WING 2



B.F. ELEVATION - WING 2



SECTION B-B



F.F. ELEVATION - WING 2

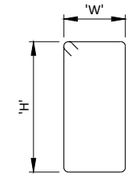
BILL OF BARS
SOUTH ABUTMENT

1,230 LB (COATED)
2,290 LB (UNCOATED)

BAR MARK	NO. REQ'D.	LENGTH	BENT	COAT	LOCATION
A501	43	14-0	X		BODY -VERT. - STIRRUP
A502	4	8-4	X		BODY - VERT. - STIRRUP AT ENDS
A403	12	2-3			BODY - VERT. - 2 PER PILE
A404	6	28-0	X		BODY - SPIRAL - 1 PER PILE
A605	11	37-1			BODY - HORIZ. - F.F. & TOP
A606	7	27-4			BODY - HORIZ. - B.F.
A807	7	10-4	X		BODY - HORIZ. - B.F. - END
A808	7	11-3	X		BODY - HORIZ. - B.F. - END
A509	25	4-11	X		BODY - VERT. - TOP
A410	3	24-6			BODY - HORIZ. - TOP
A511	2	4-10			BODY - VERT. - END
A512	2	4-7			BODY - VERT. - END
A513	36	2-0		X	BODY - VERT. - DOWELS
A514	9	16-0	X	X	WING 1- VERT. - STIRRUP
A515	2	4-10		X	WING 1- VERT. - F.F.
A516	6	13-2		X	WING 1- HORIZ. - F.F.
A617	6	11-6		X	WING 1 - HORIZ. - B.F.
A618	2	12-1		X	WING 1- HORIZ. - TOP
A519	13	9-4	X	X	WING 1 - VERT. - TOP
A420	5	9-7		X	WING 1 - HORIZ. - F.F. & B.F. - TOP
A621	2	9-7		X	WING 1 - HORIZ. - TOP
A522	10	15-6	X	X	WING 2 - VERT. - STIRRUP
A523	6	11-11		X	WING 2 - HORIZ. - F.F.
A624	6	13-7		X	WING 2 - HORIZ. - B.F.
A625	2	12-6		X	WING 2 - HORIZ. - TOP
A526	13	9-4	X	X	WING 2 - VERT. - TOP
A427	5	9-7		X	WING 2 - HORIZ. - F.F. & B.F. - TOP
A628	2	9-7		X	WING 2 - HORIZ. - TOP

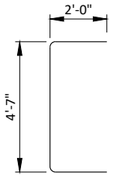
NOTES: THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

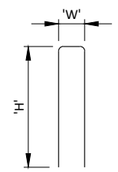


A501, A514, A522

BAR MARK	'W'	'H'
A501	2-2	4-7
A514	2-11	4-10
A522	2-11	4-7



A502



A509, A519, A526

BAR MARK	'W'	'H'
A509	2-2	1-6
A519	0-11	4-4
A526	0-11	4-4

A807, A808

A404

NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE THIS SHEET FOR BILL OF BARS.

SPACE REINFORCEMENT TO MISS PILING

F.F. - FRONT FACE

B.F. - BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-240

DRAWN BY PMF | PLANS CK'D. PTB

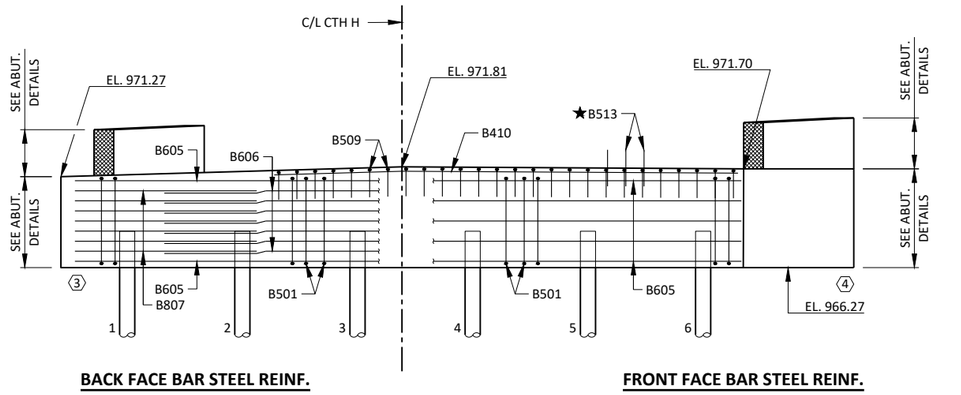
SOUTH ABUTMENT DETAILS

SHEET 5 OF 9

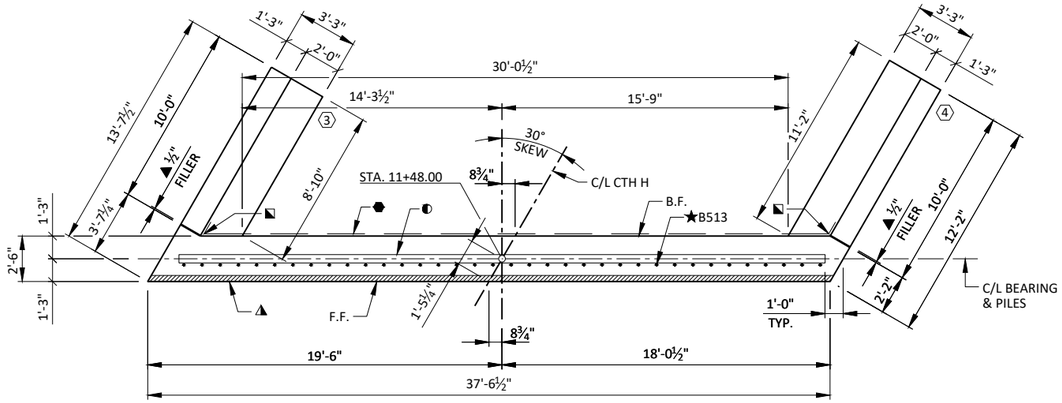
60

8

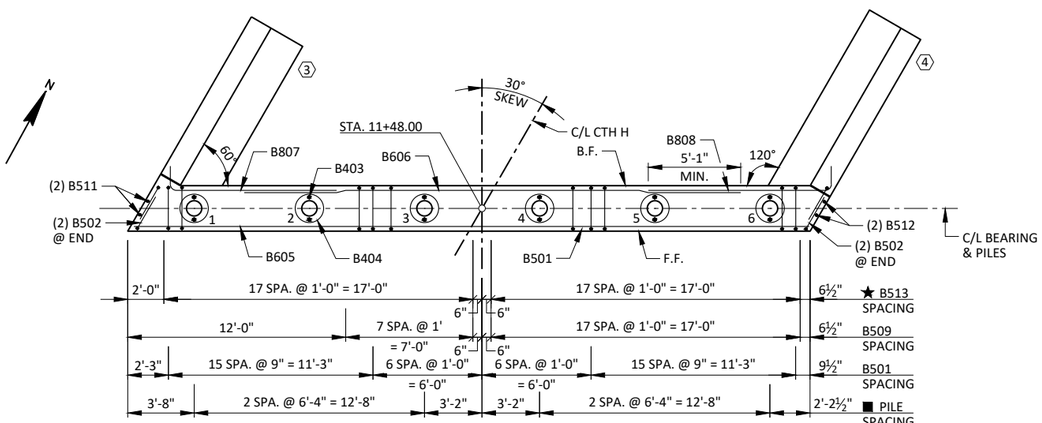
8



ELEVATION
(NORTH ABUTMENT LOOKING NORTH)



PLAN



LAYOUT

NOTES

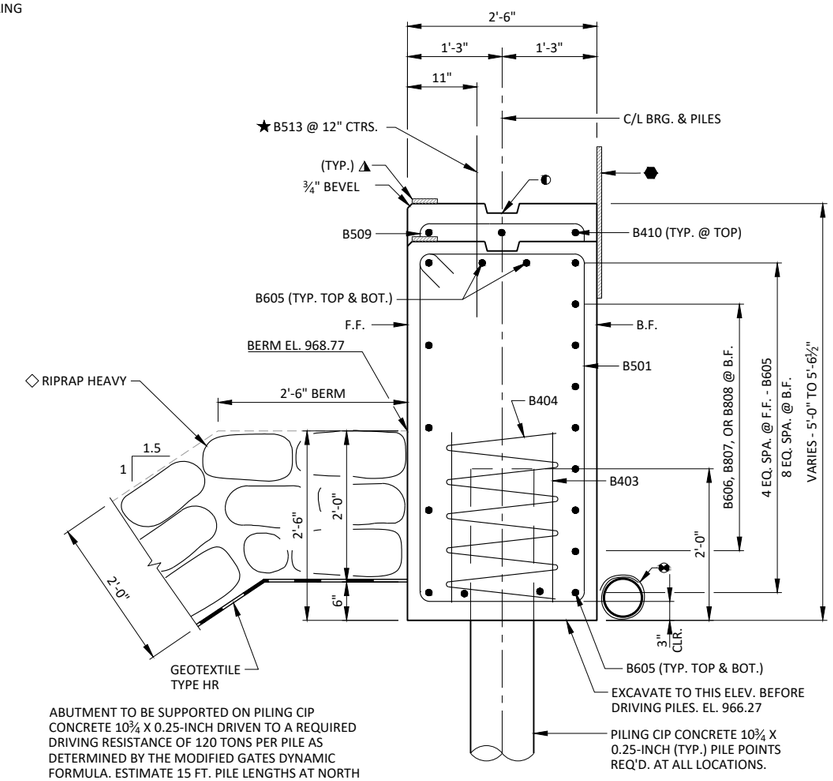
SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE SHEET 7 FOR BILL OF BARS.

SEAT ELEVATIONS SHOWN IN THE ELEVATION VIEW ARE TAKEN AT THE C/L OF BEARING (NEGLECTING THE KEYED CONSTRUCTION JOINT).

SPACE REINFORCEMENT TO MISS PILING

F.F. - FRONT FACE

B.F. - BACK FACE



ABUTMENT TO BE SUPPORTED ON PILING CIP CONCRETE 10¾ X 0.25-INCH DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATE 15 FT. PILE LENGTHS AT NORTH ABUTMENT. PILE POINTS REQUIRED AT ALL LOCATIONS.

TYPICAL SECTION THROUGH ABUTMENT BODY

LEGEND

- ◐ KEYED CONSTRUCTION JOINT FORMED BY SURFACED & BEVELED 2x6.
- ◪ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING EXTEND FROM 9" BELOW BRIDGE SEAT TO 1" BELOW TOP OF WINGS.
- ⬣ 18" RUBBERIZED MEMBRANE WATERPROOFING. (HORIZONTAL)
- ▲ ½" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINUOS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE)
- ◭ ¾" x 4" PREFORMED FILLER, EXTEND FULL LENGTH OF ABUTMENTS BETWEEN EDGES OF SLAB.
- ★ B513 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE IT HAS TAKEN ITS INITIAL SET. EMBED BAR 1'-0".
- ■ PILE SPACING MEASURED AT BASE OF ABUTMENT BODY.
- ◓ PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPED 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. RODENT SCREEN TO BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH."
- ◇ VOIDS IN THE RIPRAP HEAVY SHALL BE FILLED WITH 6-INCH STONE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-240

DRAWN BY PMF | PLANS CK'D. PTB

NORTH ABUTMENT

SHEET 6 OF 9
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FILE NAME : S:\PROJECTS\W11595 WISDOT - CTH H BRIDGE, FOND DU LAC CO\STRUCTURE\CAD FILES\FINALS\04 ABUTMENTS.DWG
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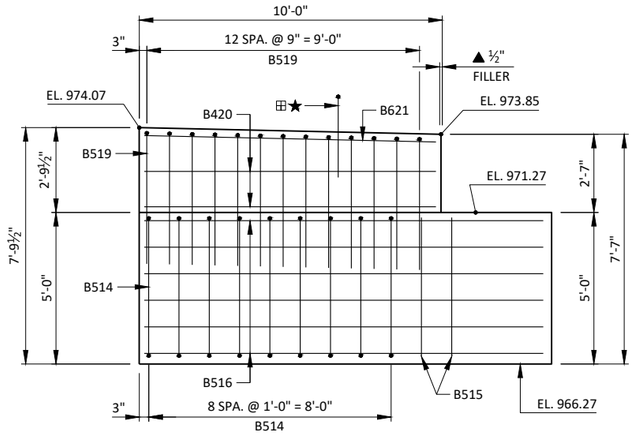
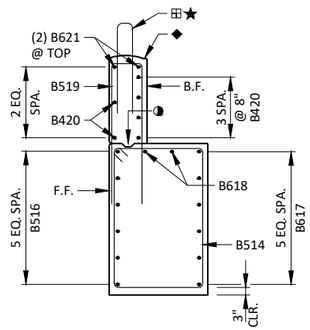
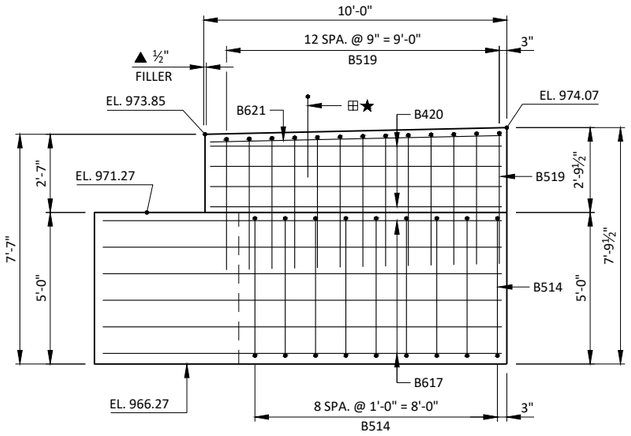
PLOT BY : BOLAND, PATRICK
PLOT SCALE : 1" = 1'
LAYOUT : NORTH



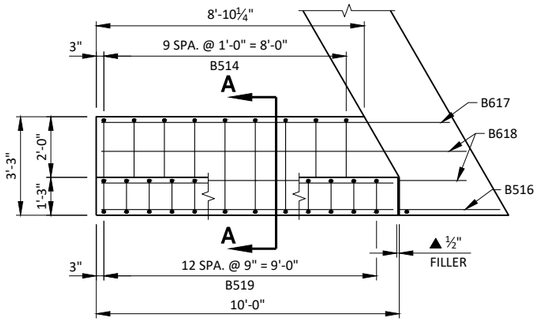
F.F. ELEVATION - WING 3



SECTION A-A



B.F. ELEVATION - WING 3



PLAN VIEW - WING 3

LEGEND

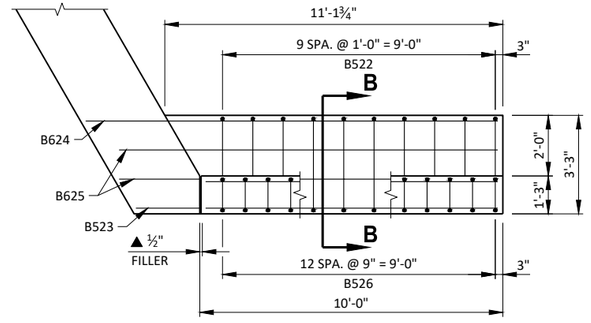
◐ OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY SURFACED & BEVELED 2x6. ¾-INCH "V" GROOVE AT FRONT FACE OF WING WALL AND HORIZONTAL 18" RUBBERIZED MEMBRANE WATERPROOFING AT BACK FACE IF CONSTRUCTION JOINT IS USED. COST IS INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY BRIDGES".

▲ ½" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINUOS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE)

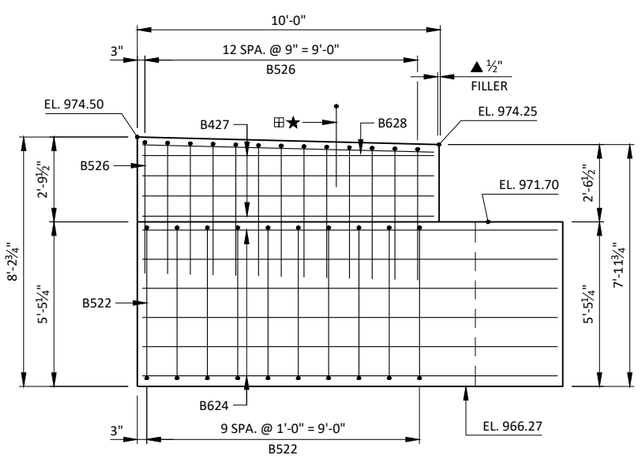
⊞ S510 AND S511 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED. SEE SHEET 9 FOR PLACEMENT.

★ S512 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE S512 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

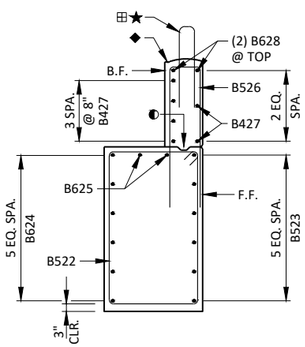
◆ STRIKE OFF AS SHOWN AND LEAVE ROUGH. FINISH SURFACE NOT COVERED BY PARAPET SAME AS ROADWAY.



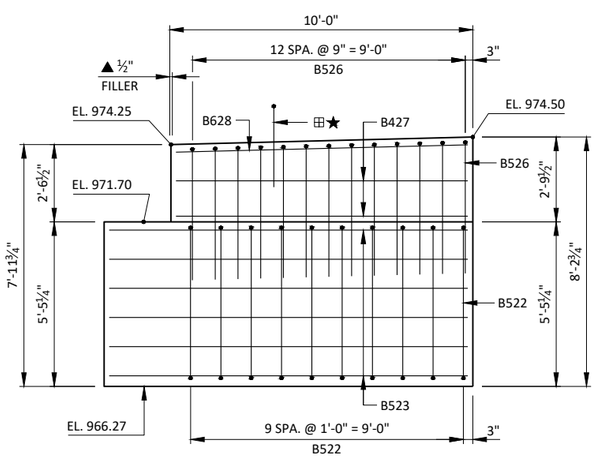
PLAN VIEW - WING 4



B.F. ELEVATION - WING 4



SECTION B-B



F.F. ELEVATION - WING 4

STATE PROJECT NUMBER

4850-01-71

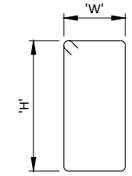
BILL OF BARS
NORTH ABUTMENT

1,260 LB (COATED)
2,300 LB (UNCOATED)

BAR MARK	NO. REQ'D.	LENGTH	BENT	COAT	LOCATION
B501	43	14-0	X		BODY -VERT. - STIRRUP
B502	4	8-4	X		BODY - VERT. - STIRRUP AT ENDS
B403	12	2-3			BODY - VERT. - 4 PER PILE
B404	6	28-0	X		BODY - SPIRAL - 3 PER PILE
B605	11	37-1			BODY - HORIZ. - F.F. & TOP
B606	7	27-4			BODY - HORIZ. - B.F.
B807	7	10-4	X		BODY - HORIZ. - B.F. - END
B808	7	11-3	X		BODY - HORIZ. - B.F. - END
B509	26	4-11	X		BODY - VERT. - TOP
B410	3	24-6			BODY - HORIZ. - TOP
B511	2	4-7			BODY - VERT. - END
B512	2	5-0			BODY - VERT. - END
B513	36	2-0		X	BODY - VERT. - DOWELS
B514	9	15-6	X	X	WING 3- VERT. - STIRRUP
B515	2	4-10		X	WING 3- VERT. - F.F.
B516	6	13-2		X	WING 3- HORIZ. - F.F.
B617	6	11-6		X	WING 3 - HORIZ. - B.F.
B618	2	12-1		X	WING 3- HORIZ. - TOP
B519	13	10-0	X	X	WING 3 - VERT. - TOP
B420	6	9-7		X	WING 3 - HORIZ. - F.F. & B.F. - TOP
B621	2	9-7		X	WING 3 - HORIZ. - TOP
B522	10	16-4	X	X	WING 4 - VERT. - STIRRUP
B523	6	11-11		X	WING 4 - HORIZ. - F.F.
B624	6	13-7		X	WING 4 - HORIZ. - B.F.
B625	2	12-6		X	WING 4 - HORIZ. - TOP
B526	13	10-0	X	X	WING 4 - VERT. - TOP
B427	6	9-7		X	WING 4 - HORIZ. - F.F. & B.F. - TOP
B628	2	9-7		X	WING 4 - HORIZ. - TOP

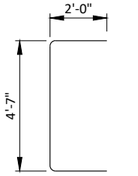
NOTES: THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.

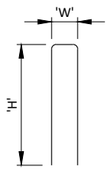


B501, B514, B522

BAR MARK	'W'	'H'
B501	2-2	4-7
B514	2-11	4-7
B522	2-11	5-0



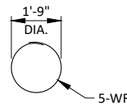
B502



B509, B519, B526

BAR MARK	'W'	'H'
B509	2-2	1-6
B519	0-11	4-8
B526	0-11	4-8

B807, B808



B404

NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE THIS SHEET FOR BILL OF BARS.

SPACE REINFORCEMENT TO MISS PILING

F.F. - FRONT FACE

B.F. - BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-240

DRAWN BY PMF | PLANS CK'D. PTB

NORTH ABUTMENT DETAILS

SHEET 7 OF 9

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8

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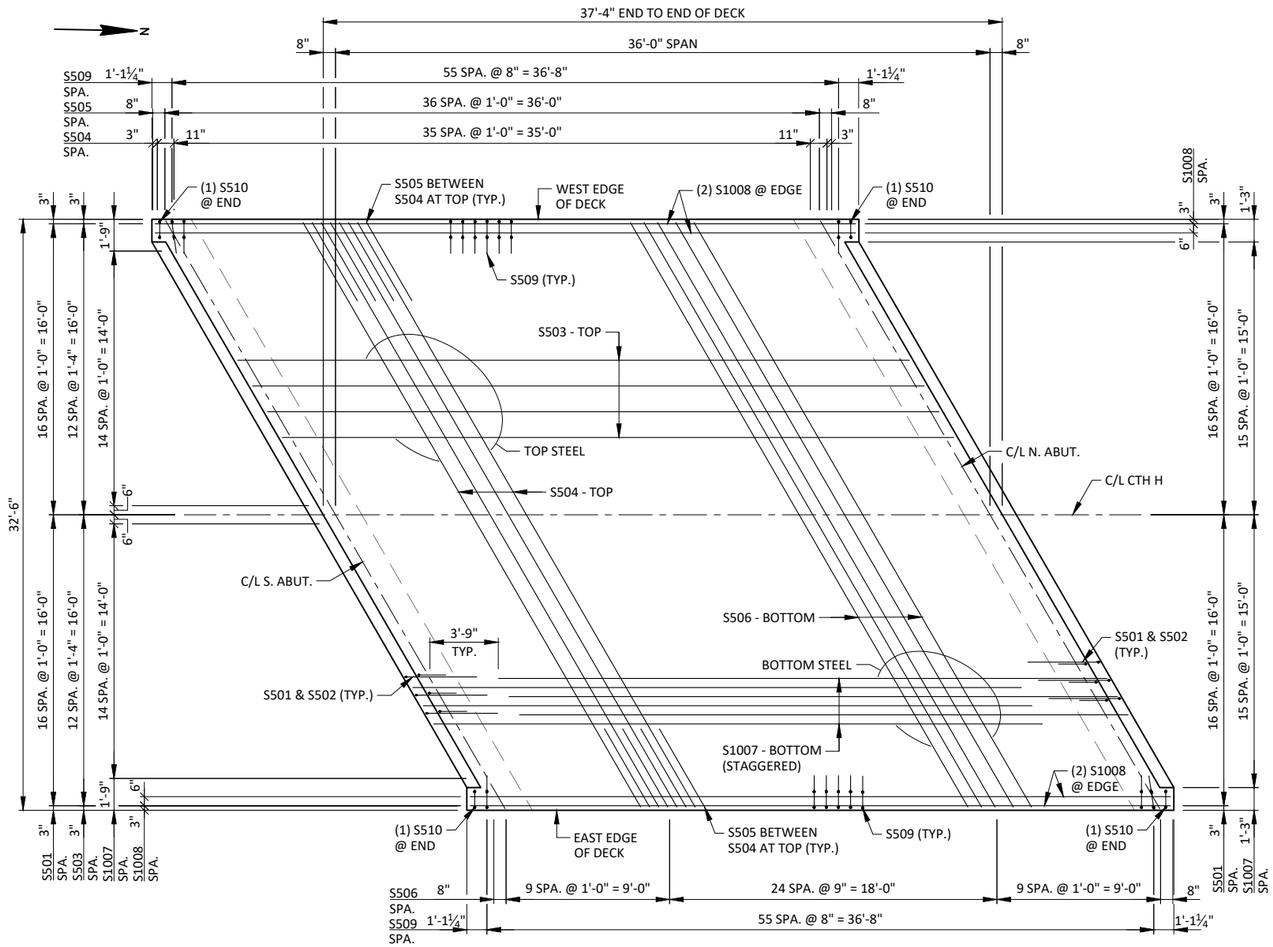
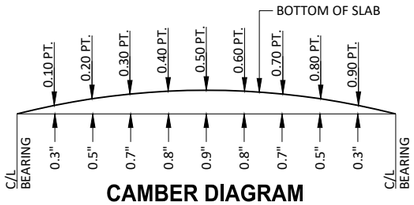


PLAN



CAMBER DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPAN AS SHOWN TO PROVIDE FOR THEORETICAL DEADLOAD DEFLECTION AND FUTURE PLASTIC FLOW. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB OR CENTER LINE FOLLOW THIS PROCEDURE:

TOP OF SLAB ELEVATION AT FINAL GRADE
-SLAB THICKNESS
+CAMBER
+FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (COMPUTED BY CONTRACTOR)
=TOP OF SLAB FALSEWORK ELEVATION.

SURVEY TOP OF DECK ELEVATIONS

	S. ABUT.	0.50 PT.	N. ABUT.
W. FACE OF RAIL			
CENTER LINE			
E. FACE OF RAIL			

PRIOR TO RELEASING SLAB FASLEWORK, TAKE TOP OF DECK ELEVATIONS AT THE C/L OF THE ABUTMENTS AND AT 0.50 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG THE EDGE OF DECK AND CENTER LINE. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE THIS SHEET FOR BILL OF BARS.

SUPPORT ALTERNATE TOP TRANSVERSE BARS IN SLAB BY INDIVIDUAL BAR CHAIRS AT APPROX. 3'-0" CENTERS. SUPPORT BOTTOM LONGITUDINAL BARS BY CONTINUOUS BAR CHAIRS AT APPROX. 4'-0" CENTERS.

PLACE TRANSVERSE BARS PARALLEL TO THE CENTERLINE OF SUBSTRUCTURE UNITS.

THE SLAB THICKNESS DIMENSION IS MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

STATE PROJECT NUMBER

4850-01-71

BILL OF BARS SUPERSTRUCTURE

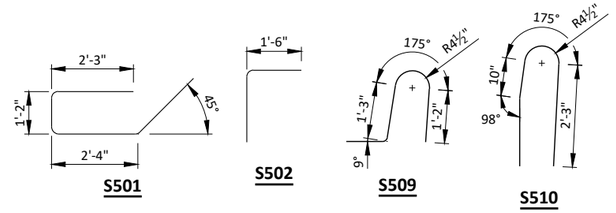
17,200 LB (COATED)

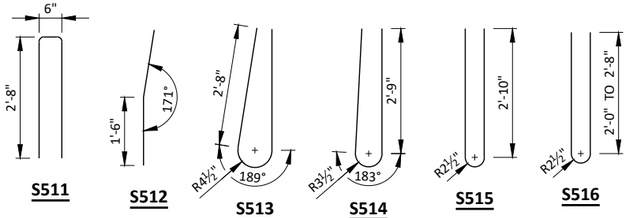
BAR MARK	NO. REQ'D.	LENGTH	BENT	COAT	BAR SERIES	LOCATION
S501	66	7-9	X	X		ENDS OF DECK
S502	66	3-4	X	X		ENDS OF DECK
S503	25	36-11		X		SLAB - TOP - LONGIT.
S504	44	37-1		X		SLAB - TOP - TRANS.
S505	74	5-0		X		SLAB - TOP - TRANS. AT EDGES
S506	45	37-1		X		SLAB - BOTTOM - TRANS.
S1007	61	32-9		X		SLAB - BOTTOM - LONGIT.
S1008	4	38-6		X		SLAB - BOTTOM - LONGIT. - EDGES
S509	112	4-5	X	X		PARAPET - VERT.
S510	12	5-10	X	X		PARAPET - VERT.
S511	68	5-7	X	X		PARAPET - VERT.
S512	48	3-0	X	X		PARAPET - VERT.
S513	124	6-8	X	X		PARAPET - VERT.
S514	24	6-6	X	X		PARAPET - VERT.
S515	20	6-5	X	X		PARAPET - VERT.
S516	24	5-5	X	X	✳	PARAPET - VERT.
S517	16	38-6		X		PARAPET - HORIZ.
S518	4	9-4	X	X		PARAPET - HORIZ.
S519	20	9-6		X		PARAPET - HORIZ.
S520	8	9-6	X	X		PARAPET - HORIZ.

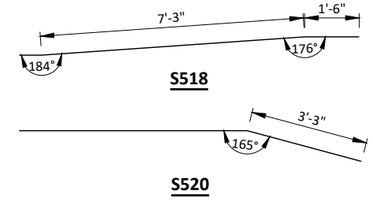
NOTES: THE FIRST DIGIT OF A THREE DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

✳ LENGTH SHOWN IS AN AVERAGE LENGTH ONLY. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.



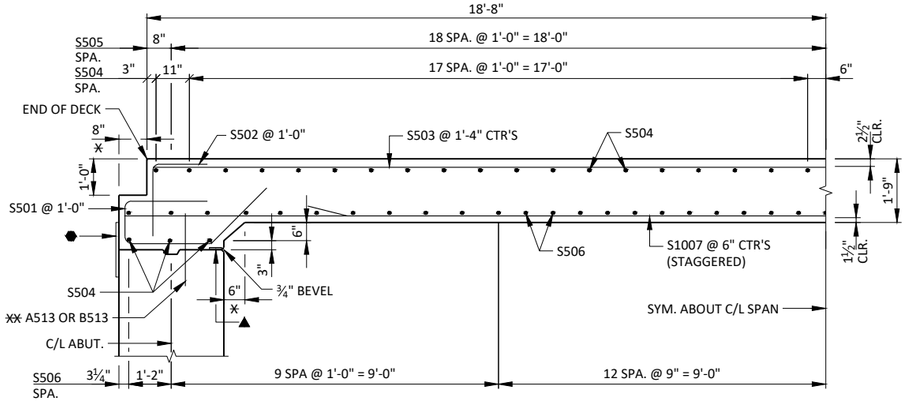




BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
S516	4 SERIES OF 6	4-9 TO 6-1

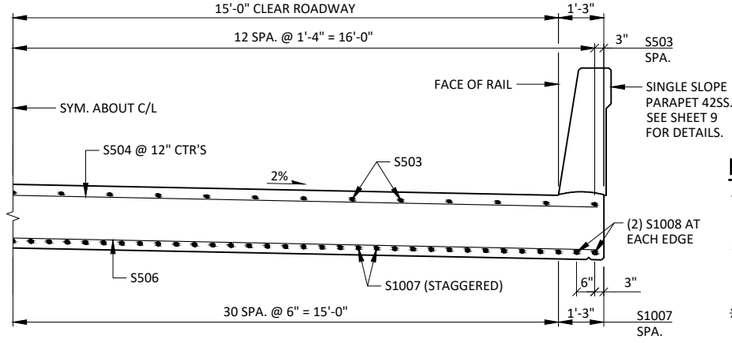
BUNDLE AND TAG EACH SERIES SEPARATELY



PARTIAL LONGITUDINAL SECTION THROUGH ROADWAY

TOP OF DECK ELEVATIONS

	C/L S. ABUT.	0.10 PNT.	0.20 PNT.	0.30 PNT.	0.40 PNT.	0.50 PNT.	0.60 PNT.	0.70 PNT.	0.80 PNT.	0.90 PNT.	C/L N. ABUT.
W. FACE RAIL	973.14	973.20	973.26	973.32	973.39	973.45	973.52	973.59	973.66	973.74	973.82
C/L	973.59	973.65	973.71	973.78	973.85	973.92	973.99	974.07	974.15	974.23	974.31
E. FACE RAIL	973.44	973.51	973.58	973.65	973.72	973.80	973.88	973.96	974.04	974.12	974.21



PARTIAL CROSS SECTION THROUGH ROADWAY

LEGEND

- ⬢ 18" RUBBERIZED MEMBRANE WATERPROOFING. (HORIZONTAL)
- ▲ ¾" x 4" PREFORMED FILLER, EXTEND FULL LENGTH OF ABUTMENTS BETWEEN EDGES OF SLAB.
- ✳ DIMENSION IS NORMAL TO THE C/L OF SUBSTRUCTURE UNITS.
- ✳✳ SEE SHEET 4 OR SHEET 6 FOR PLACEMENT OF ABUTMENT BARS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-240

DRAWN BY PMF | PLANS CK'D. PTB

SUPERSTRUCTURE

SHEET 8 OF 9

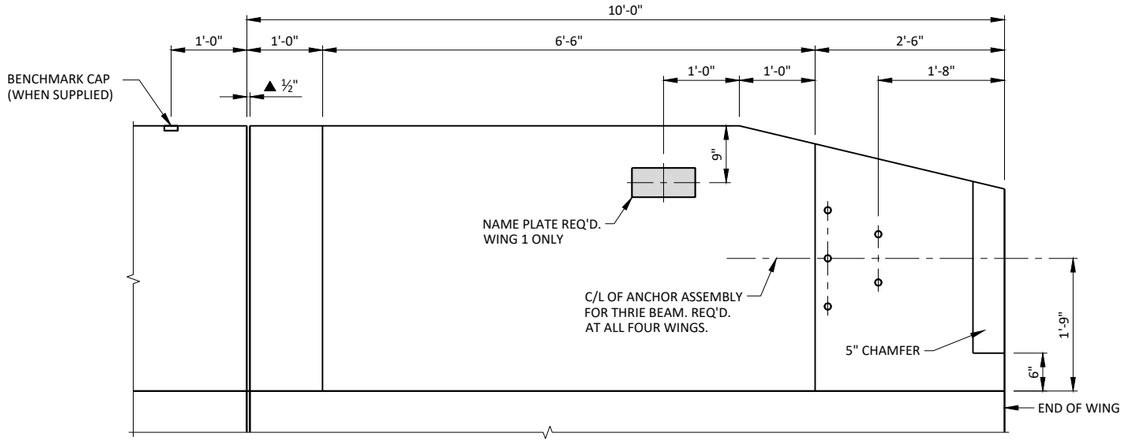
63

8

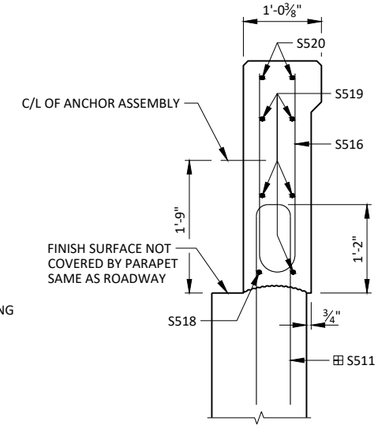
8

STATE PROJECT NUMBER

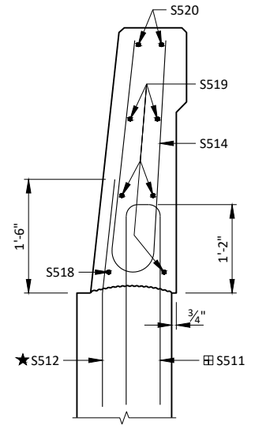
4850-01-71



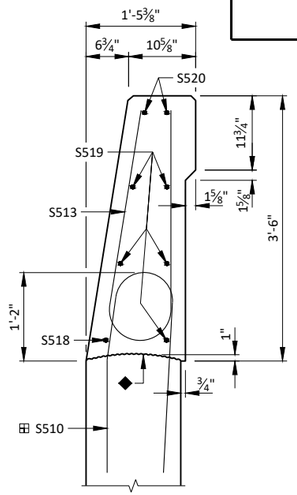
INSIDE ELEVATION



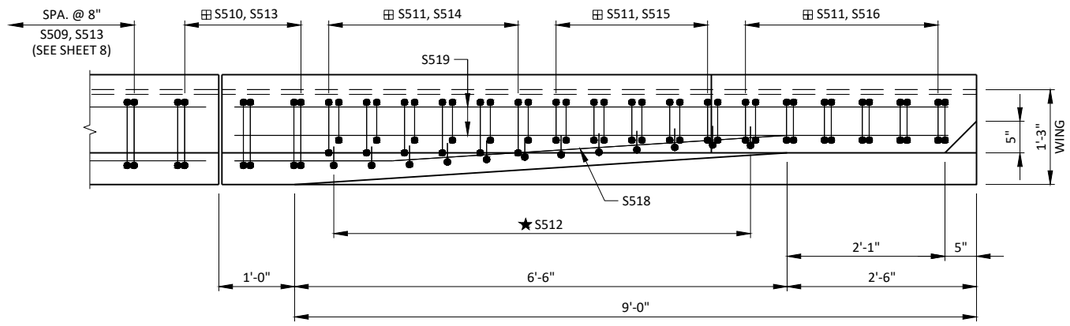
SECTION A



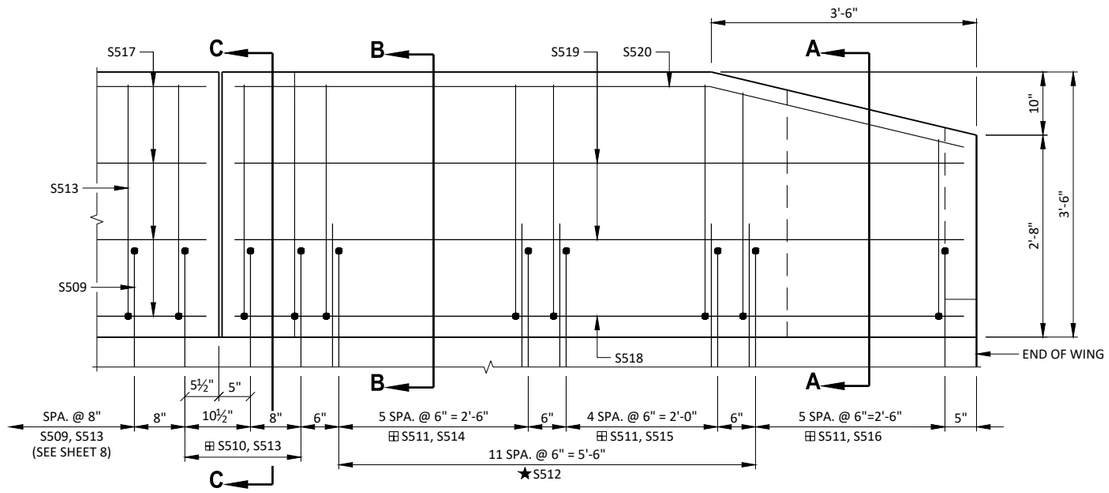
SECTION B



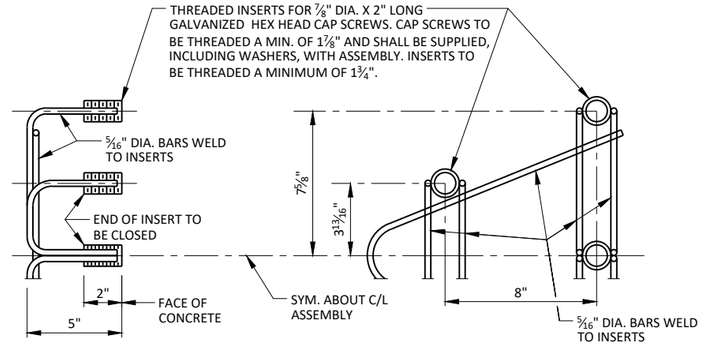
SECTION C



PLAN



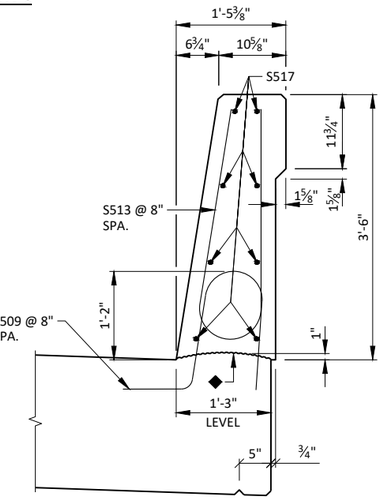
STEEL LAYOUT



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS AND WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232, CLASS C.

ASSEMBLY BID ITEM SHALL BE "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.



SECTION THROUGH PARAPET ON BRIDGE

LEGEND

- ◆ CONSTRUCTION JOINT. STRIKE OFF AS SHOWN.
- ▲ ½" 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).
- ★ S512 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE S515 BARS CORRECTLY ALONG TRANSITION OF PARAPET.
- ⊞ S510 AND S511 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE SHEET 6 FOR BILL OF BARS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-240

DRAWN BY PMF | PLANS CK'D. PTB

SINGLE SLOPE PARAPET 42SS

SHEET 9 OF 9

64

8

8

EARTHWORK - MAINLINE

STATION	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOLUME (CY) CUT NOTE 1	INCREMENTAL VOLUME (CY) FILL NOTE 2	INCREMENTAL VOLUME (CY) FILL (25%) NOTE 3	CUMULATIVE VOLUME (CY) CUT 1.00 NOTE 1	CUMULATIVE VOLUME (CY) FILL NOTE 2	CUMULATIVE VOLUME (CY) FILL (25%) NOTE 3	CUMULATIVE VOLUME (CY) MASS ORDINATE NOTE 4
09+20	0	0	0	0	0	0	0	0	0
09+50	86	1	48	1	1	48	1	1	47
10+00	28	10	106	10	13	154	11	14	140
10+50	148	8	163	17	21	317	28	35	282
11+00	68	7	200	14	18	517	42	53	464
11+11	68	7	28	3	4	545	45	57	488
11+11	0	0	0	0	0	545	45	57	488
11+49	0	0	0	0	0	545	45	57	488
11+49	48	18	0	0	0	545	45	57	488
12+00	48	18	91	34	43	636	79	100	536
12+40	27	29	56	35	44	692	114	144	548
12+87	0	0	24	25	31	716	139	175	541
	COLUMN SUBTOTALS =		716	139	175				

EARTHWORK - FIELD ENTRANCE

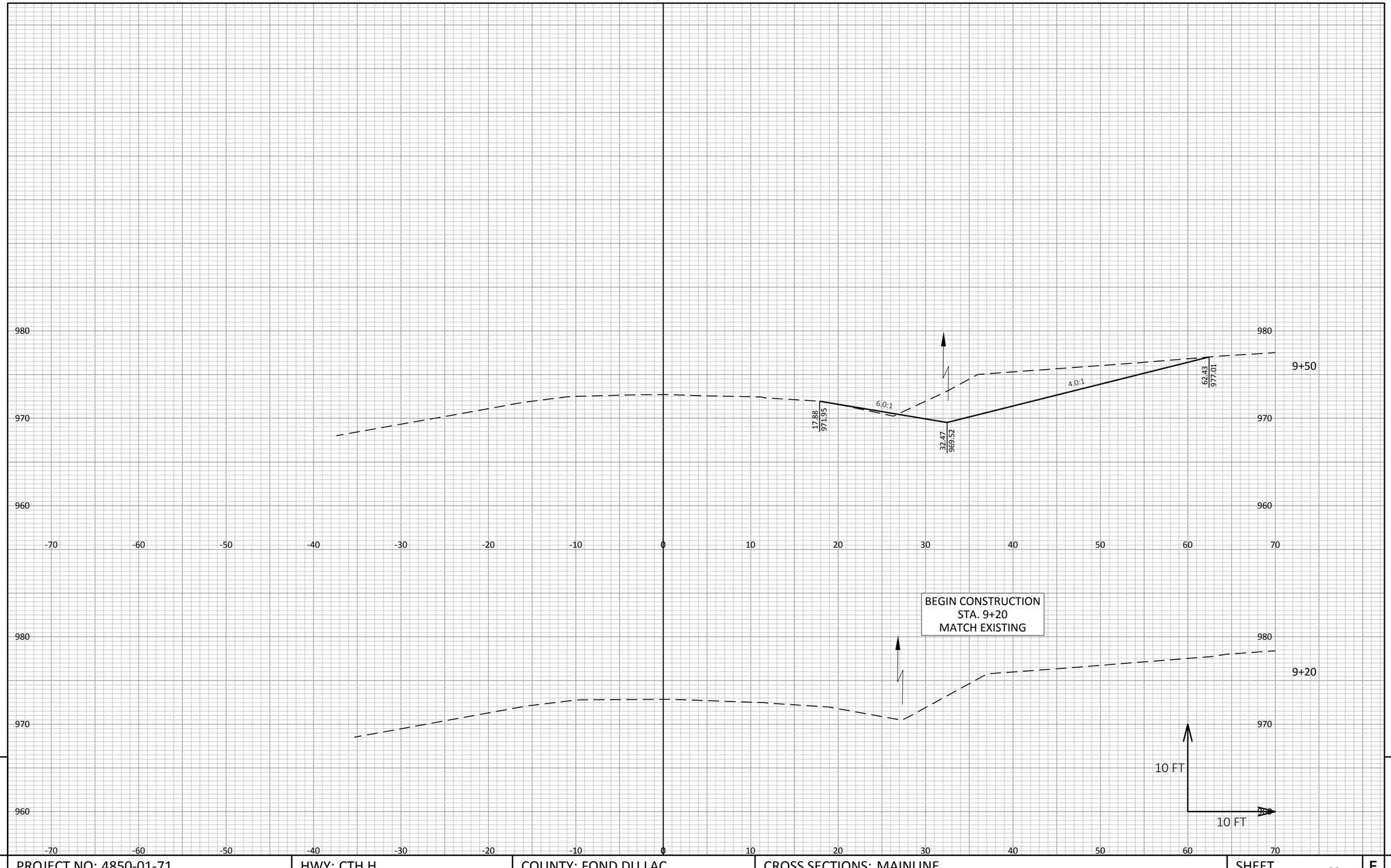
STATION	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOLUME (CY) CUT NOTE 1	INCREMENTAL VOLUME (CY) FILL NOTE 2	INCREMENTAL VOLUME (CY) FILL (25%) NOTE 3	CUMULATIVE VOLUME (CY) CUT 1.00 NOTE 1	CUMULATIVE VOLUME (CY) FILL NOTE 2	CUMULATIVE VOLUME (CY) FILL (25%) NOTE 3	CUMULATIVE VOLUME (CY) MASS ORDINATE NOTE 4
01+18	0	0	0	0	0	0	0	0	0
01+25	7	39	1	5	6	1	5	6	-5
01+50	131	0	64	18	23	65	23	29	36
01+75	107	0	110	0	0	175	23	29	146
02+00	197	9	141	4	5	316	27	34	282
02+25	143	1	157	5	6	473	32	40	433
02+50	0	0	66	0	0	539	32	40	499
	COLUMN SUBTOTALS =		539	32	40				
	MAINLINE		716	139	175				
	FIELD ENTRANCE		539	32	40				
	PROJECT TOTALS		1255	171	215				1040

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
3 - FILL (25%)	FILL 25%: (UNEXPANDED FILL)*1.25
4 - MASS ORDINATE	(CUT - FILL (25%))

9

9

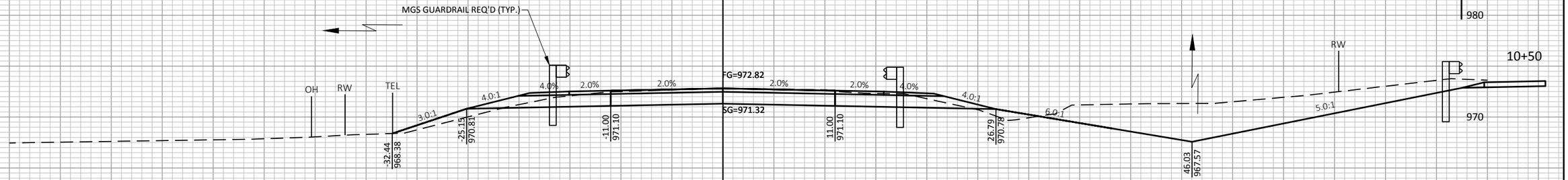
PROJECT NO: 4850-01-71 | HWY: CTH H | COUNTY: FOND DU LAC | EARTHWORK | SHEET 65 | E



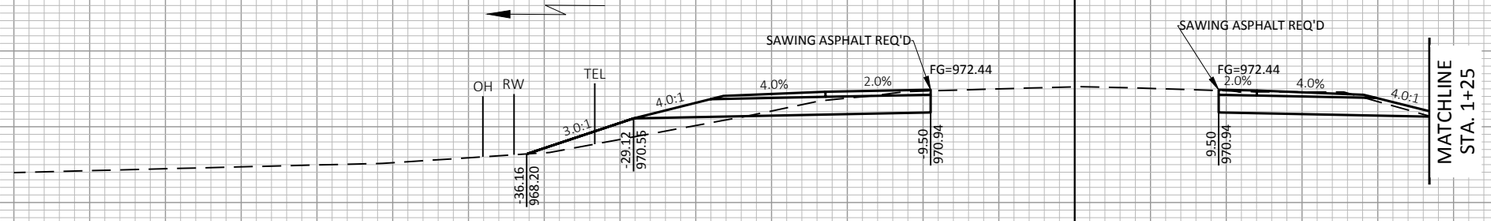
PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	CROSS SECTIONS: MAINLINE	SHEET	E

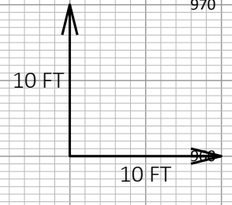
FILE NAME : S:\PROJECTS\W11595 WISDOT - CTH H BRIDGE, FOND DU LAC CO\DESIGN\CORRIDORS\CTH H CORRIDOR.DWG PLOT DATE : 5/5/2020 1:17:35 PM PLOT BY : JONAH DRAKE PLOT SCALE : 1" = 1' LAYOUT : MAINLINE 1

FOR INFORMATION ONLY
USE FIELD ENTRANCE
CROSS SECTIONS FOR
EARTHWORK QUANTITIES



BEGIN PROJECT
STA. 10+00
MATCH EXISTING





-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

9

9

PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	CROSS SECTIONS: MAINLINE	SHEET 67	E

FILE NAME : S:\PROJECTS\W11595 WISDOT - CTH H BRIDGE, FOND DU LAC CO\DESIGN\CORRIDORS\CTH H CORRIDOR.DWG PLOT DATE : 5/5/2020 1:17:36 PM PLOT BY : JONAH DRAKE PLOT SCALE : 1" = 1' LAYOUT : MAINLINE 2

STRUCTURE
B-20-240
REQ'D

11+11

980
970
960

OH
RW
TEL
2.0%
FG=973.56
2.0%
VARIES
4.0:1
RW
-18.40
964.85
HEAVY RIPRAP OVER GEOTEXTILE
TYPE HR (TYP.)
47.75
967.27
59.18
970.13

-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

11+00

980
970
960

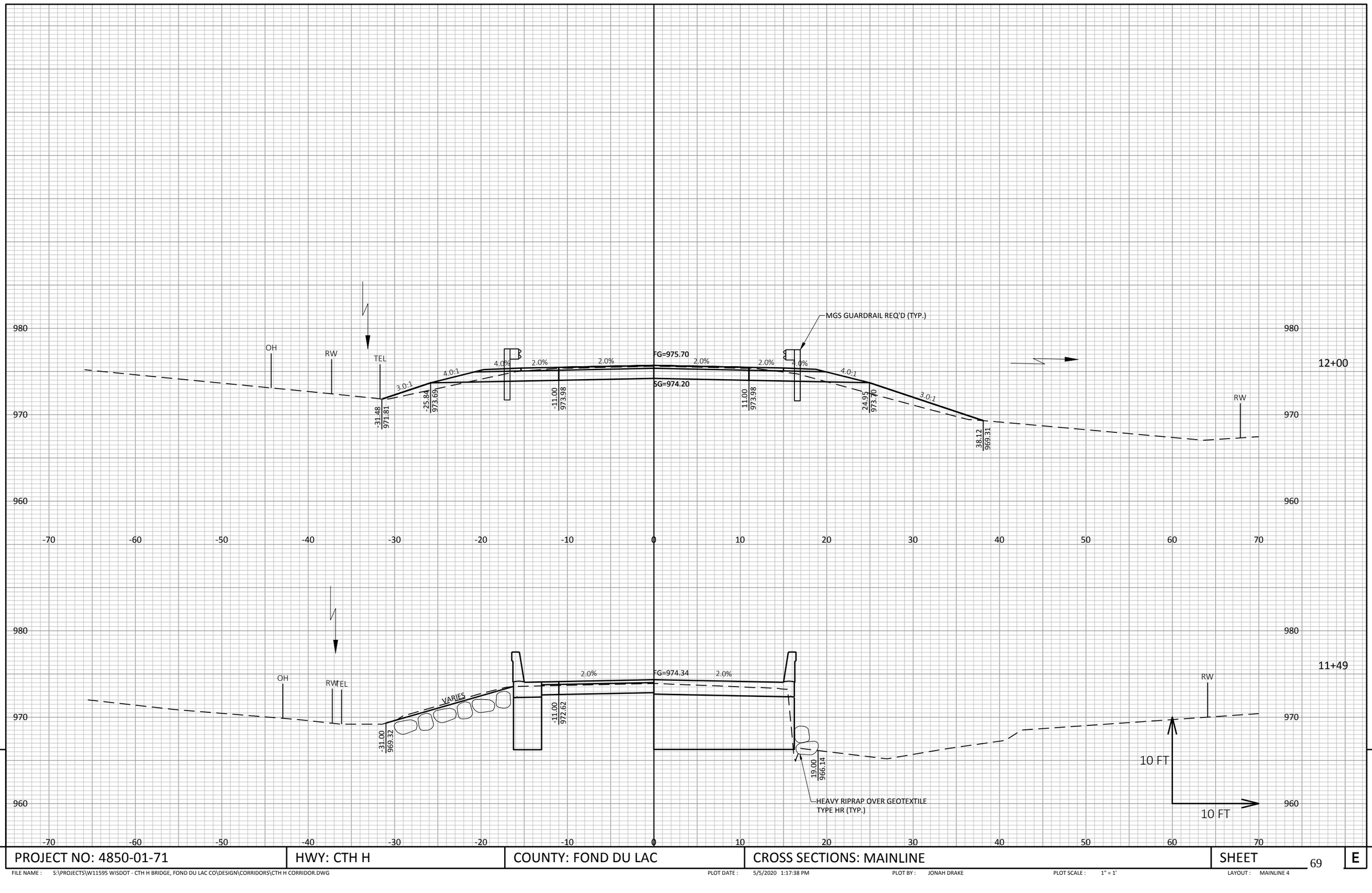
MGS GUARDRAIL REQ'D (TYP.)
OH
RW
TEL
VARIES
2.0%
FG=973.39
2.0%
2.0%
4.0%
4.0:1
SG=971.89
6.0:1
4.0:1
RW
-11.00
971.67
11.00
971.67
24.95
971.39
-29.50
965.63
HEAVY RIPRAP OVER GEOTEXTILE
TYPE HR (TYP.)
49.37
967.32
61.91
970.45
10 FT
10 FT

-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

9 9

PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	CROSS SECTIONS: MAINLINE	SHEET	E

FILE NAME : S:\PROJECTS\W11595 WISDOT - CTH H BRIDGE, FOND DU LAC CO\DESIGN\CORRIDORS\CTH H CORRIDOR.DWG
PLOT DATE : 5/5/2020 1:17:37 PM
PLOT BY : JONAH DRAKE
PLOT SCALE : 1" = 1'
LAYOUT : MAINLINE 3



PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	CROSS SECTIONS: MAINLINE	SHEET	E

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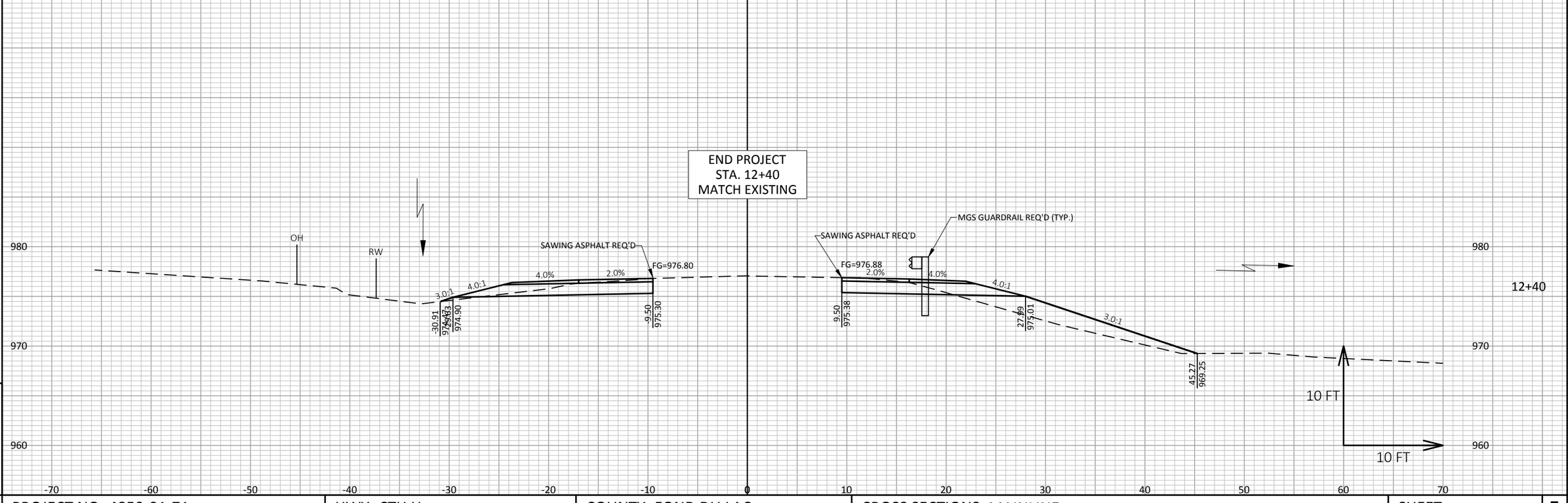
END CONSTRUCTION
STA. 12+87.06
MATCH EXISTING

END PROJECT
STA. 12+40
MATCH EXISTING



9

9

PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	CROSS SECTIONS: MAINLINE	SHEET 70	E

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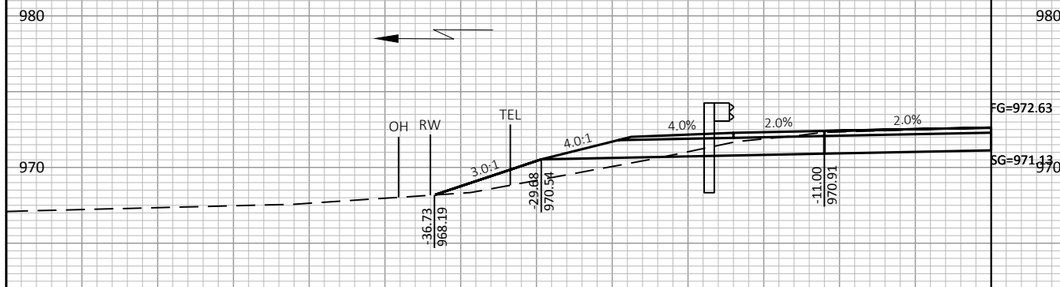
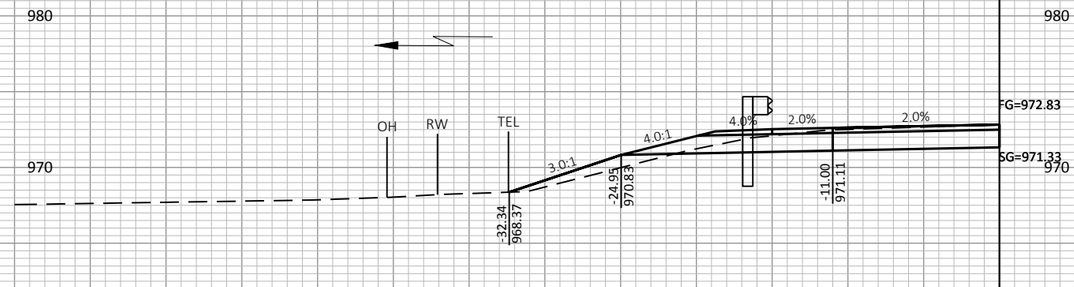
POST 1



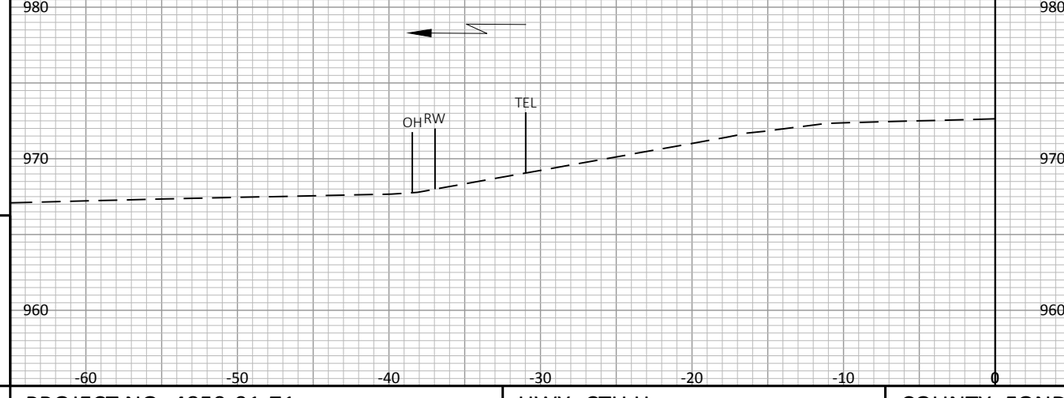
10+02

POST 9



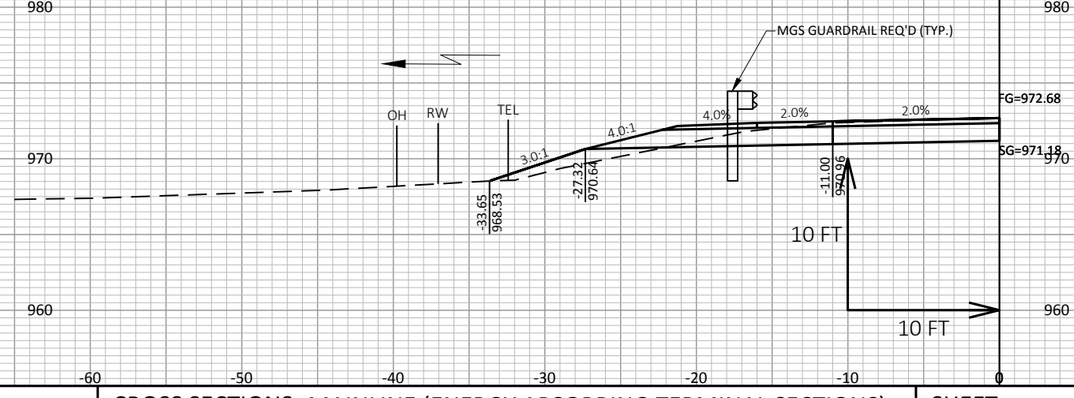
10+52

END TAPER



9+75

POST 5



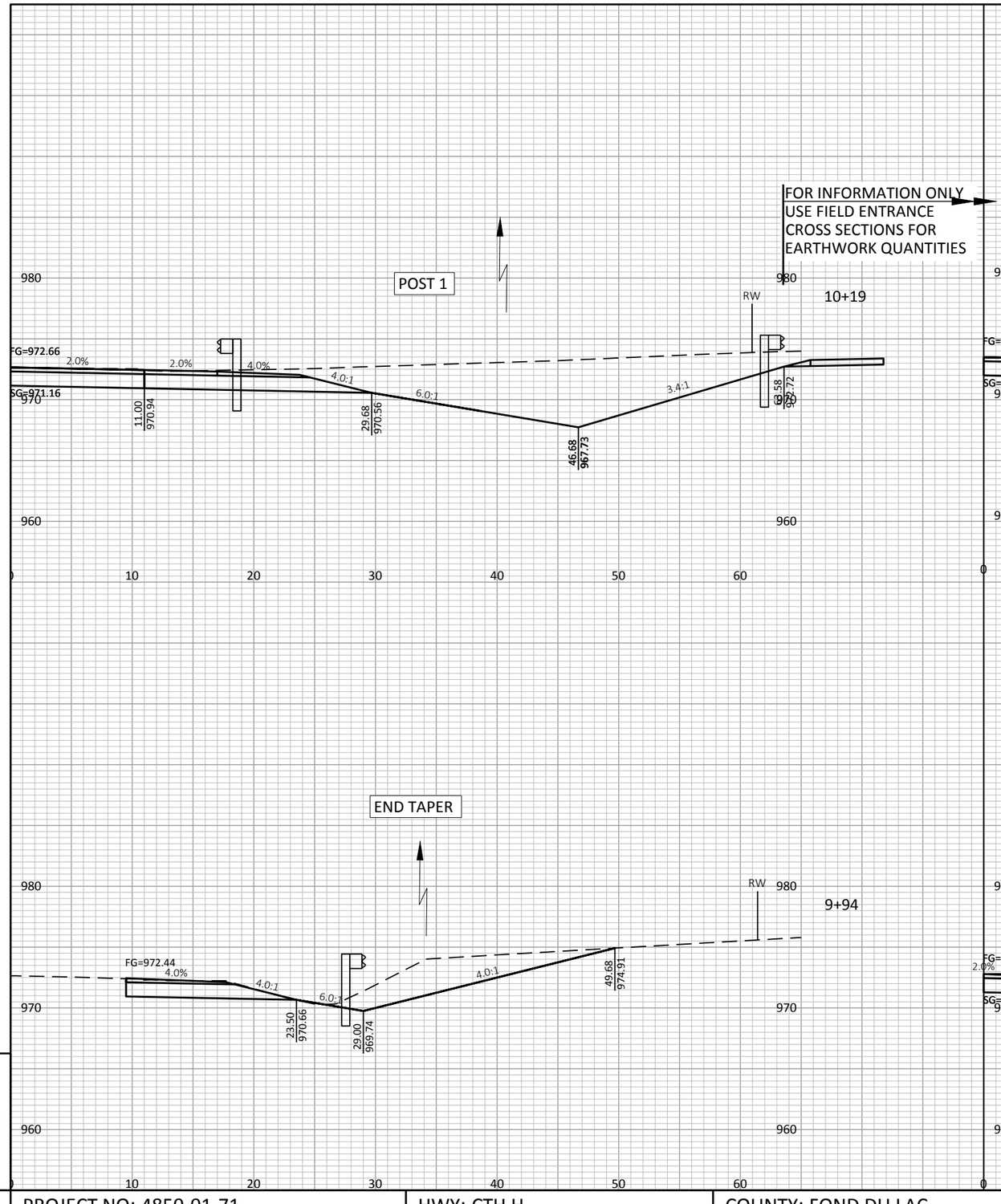
10+27

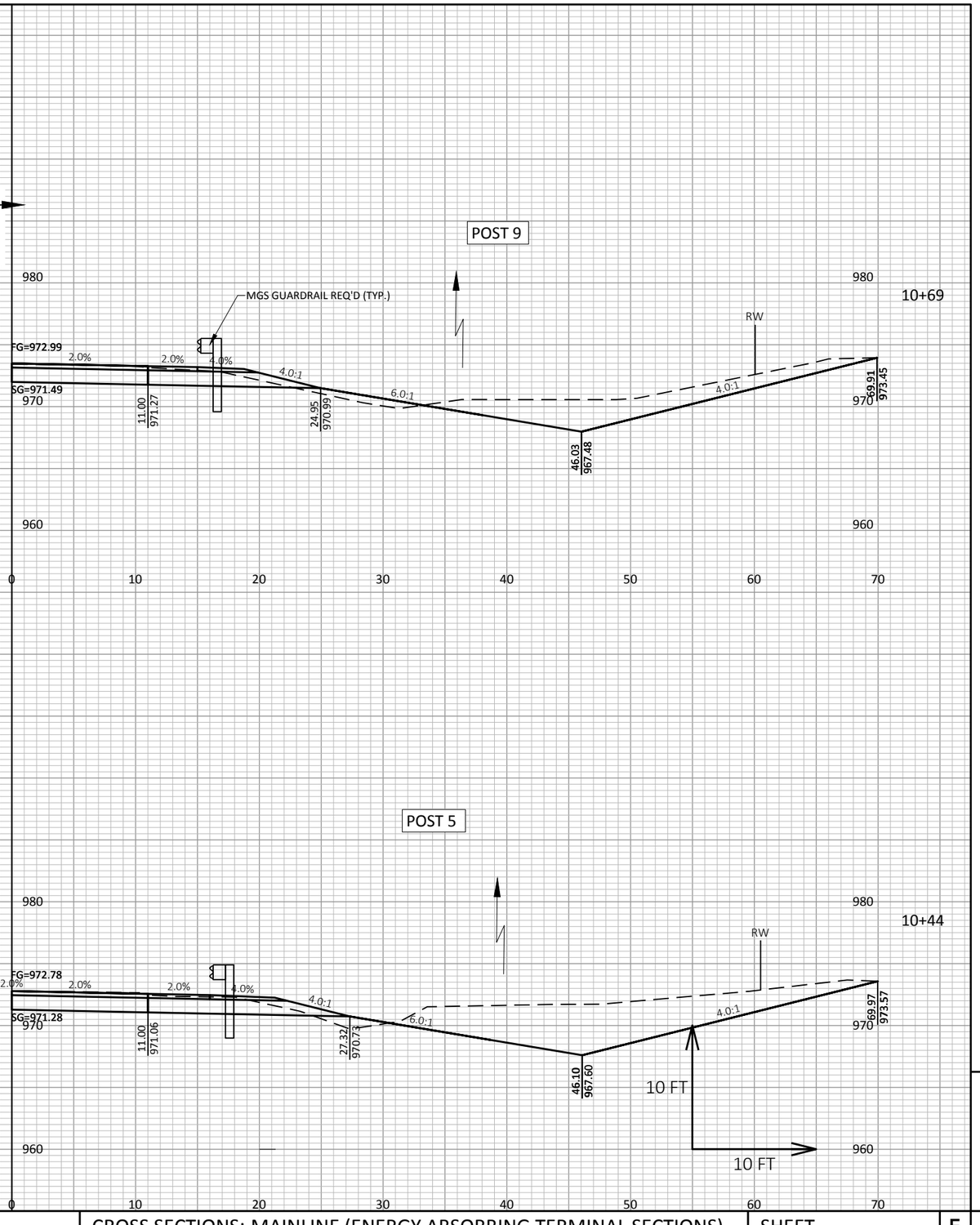
9

9

PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	CROSS SECTIONS: MAINLINE (ENERGY ABSORBING TERMINAL SECTIONS)	SHEET	E

FILE NAME : S:\PROJECTS\W11595 WISDOT - CTH H BRIDGE, FOND DU LAC CO\DESIGN\CORRIDORS\CTH H CORRIDOR.DWG PLOT DATE : 5/5/2020 1:17:40 PM PLOT BY : JONAH DRAKE PLOT SCALE : 1" = 1' LAYOUT : SW BEAMGUARD1



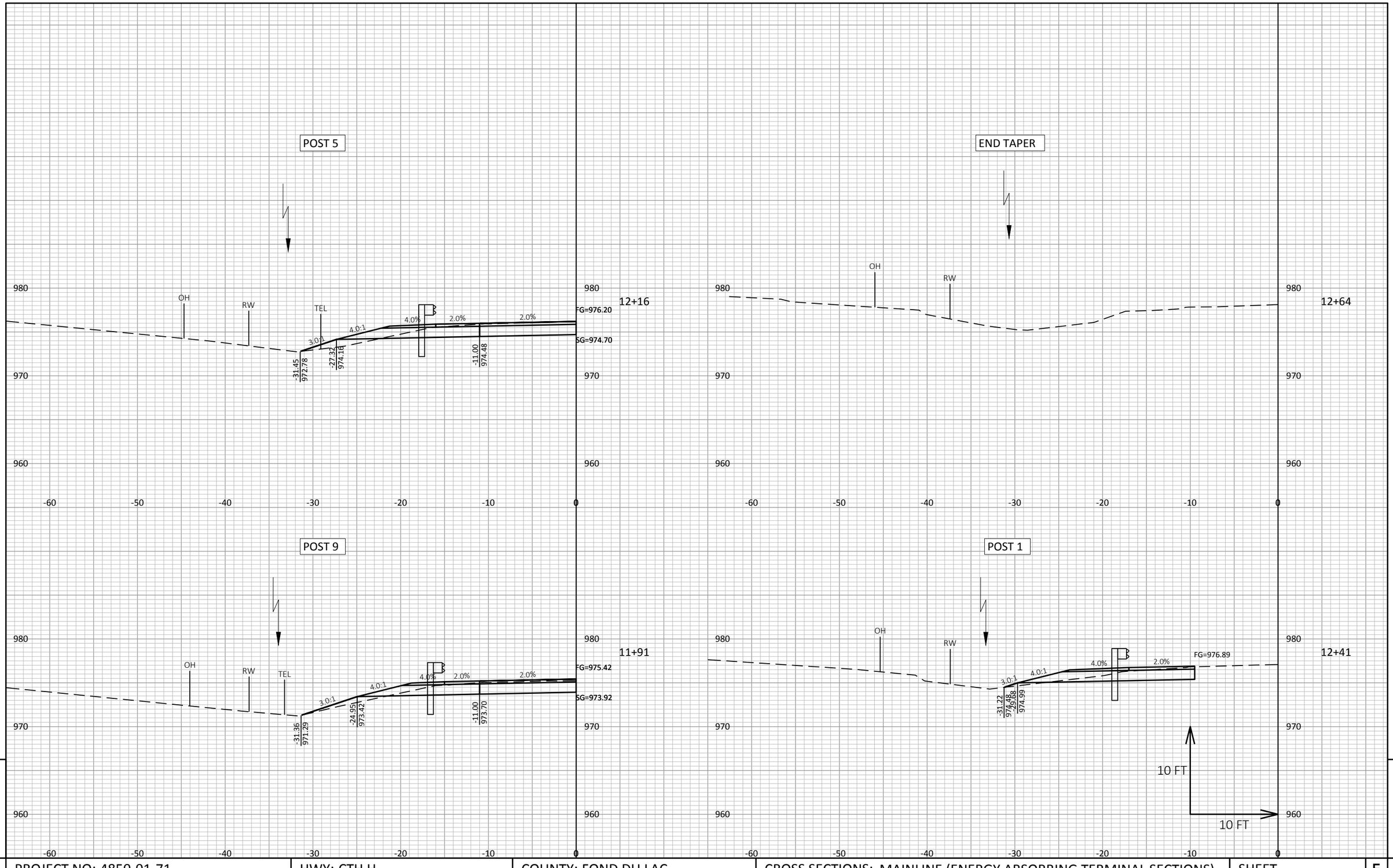


9

9

PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	CROSS SECTIONS: MAINLINE (ENERGY ABSORBING TERMINAL SECTIONS)	SHEET	E

FILE NAME : S:\PROJECTS\W11595 WISDOT - CTH H BRIDGE, FOND DU LAC CO\DESIGN\CORRIDORS\CTH H CORRIDOR.DWG PLOT DATE : 5/5/2020 1:17:41 PM PLOT BY : JONAH DRAKE PLOT SCALE : 1" = 1' LAYOUT : SE BEAMGUARD1



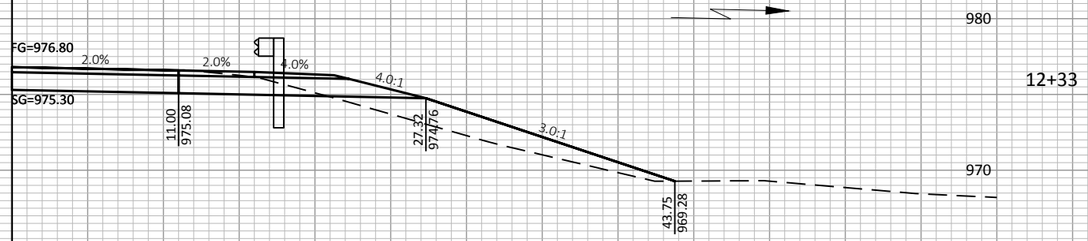
9

PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	CROSS SECTIONS: MAINLINE (ENERGY ABSORBING TERMINAL SECTIONS)	SHEET	E

9

FILE NAME : S:\PROJECTS\W11595 WISDOT - CTH H BRIDGE, FOND DU LAC CO\DESIGN\CORRIDORS\CTH H CORRIDOR.DWG PLOT DATE : 5/5/2020 1:17:43 PM PLOT BY : JONAH DRAKE PLOT SCALE : 1" = 1' LAYOUT : NW BEAMGUARD1

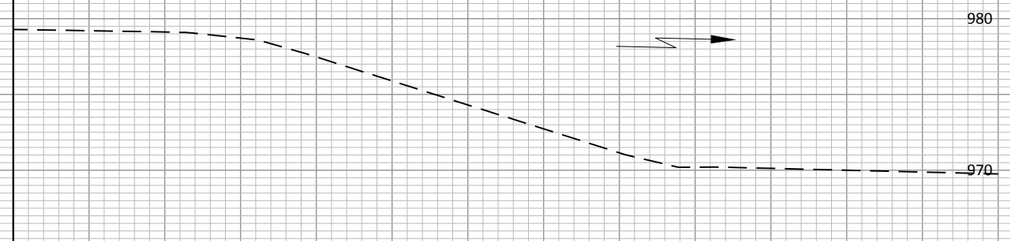
POST 5



12+33

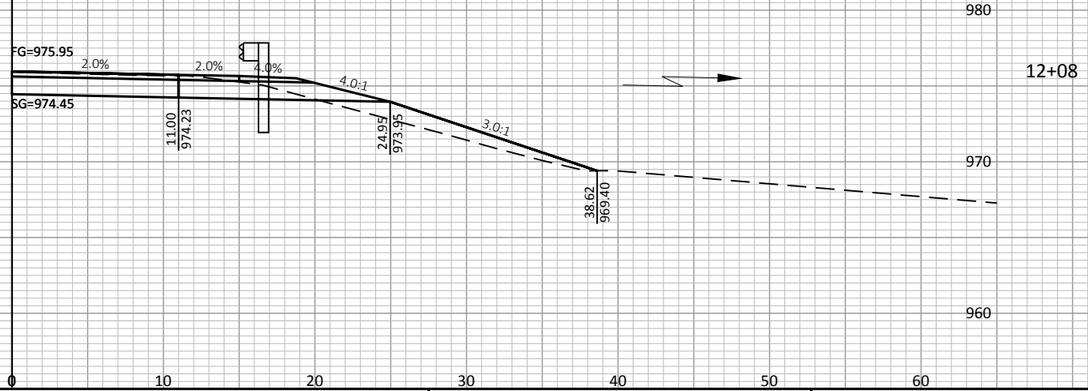
END TAPER

END CONSTRUCTION
STA. 12+87.06
MATCH EXISTING



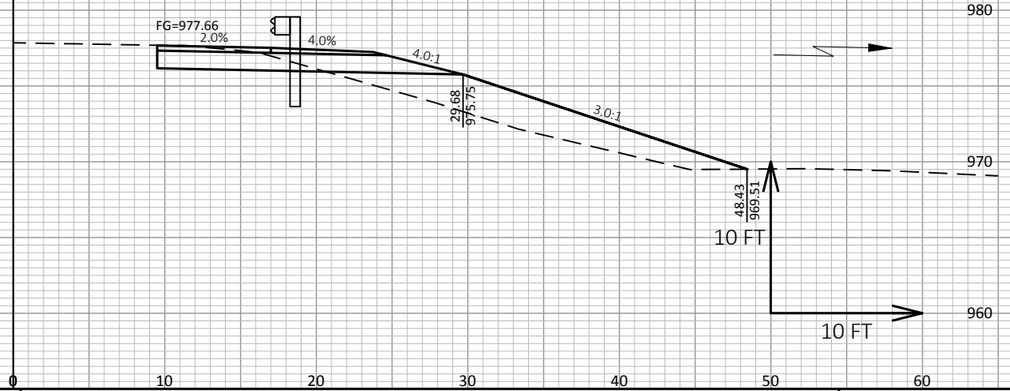
12+87

POST 9



12+08

POST 1



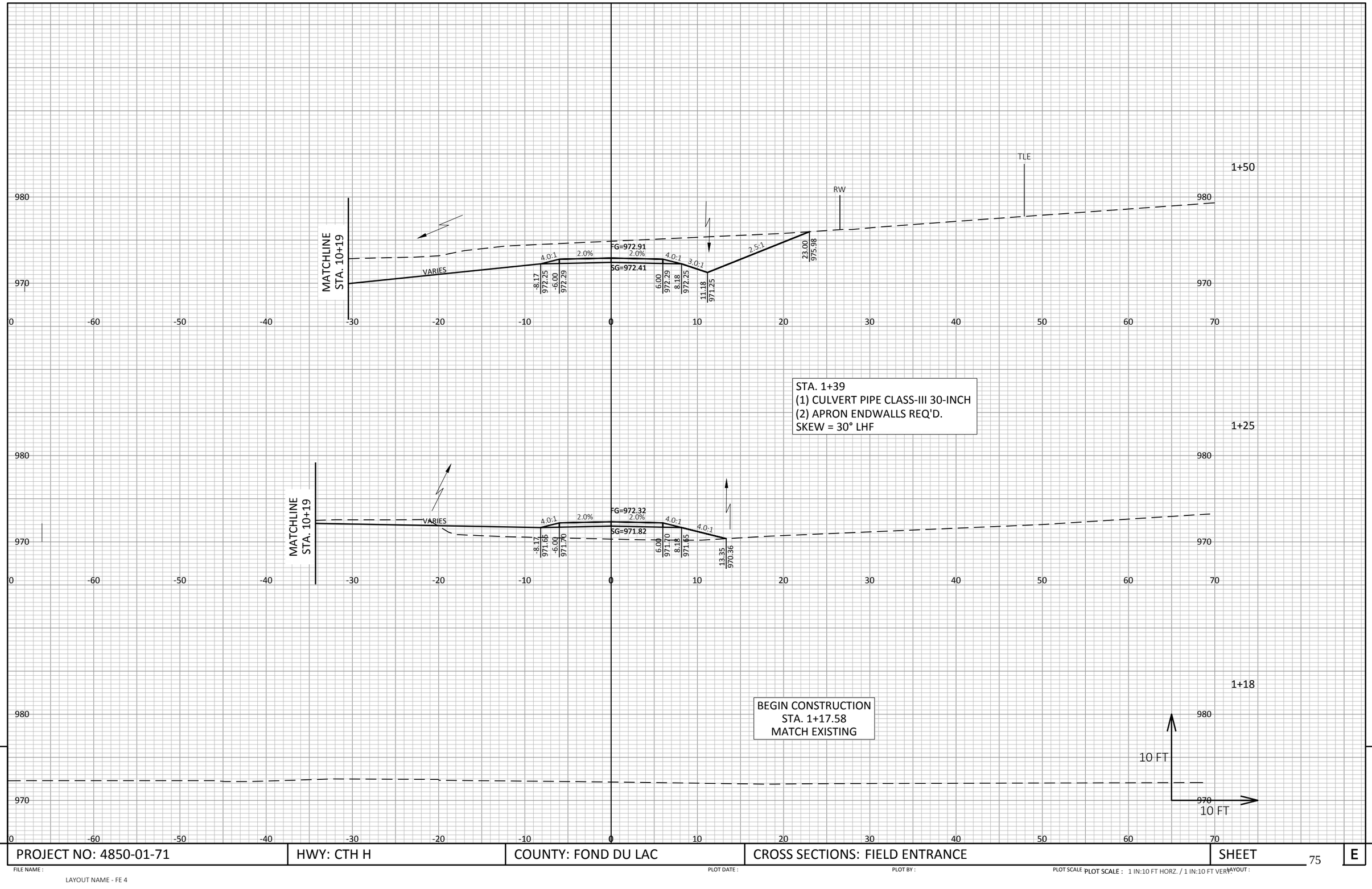
12+58

9

9

PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	CROSS SECTIONS: MAINLINE (ENERGY ABSORBING TERMINAL SECTIONS)	SHEET 74	E

FILE NAME : S:\PROJECTS\W11595 WISDOT - CTH H BRIDGE, FOND DU LAC CO\DESIGN\CORRIDORS\CTH H CORRIDOR.DWG PLOT DATE : 5/5/2020 1:17:44 PM PLOT BY : JONAH DRAKE PLOT SCALE : 1" = 1' LAYOUT : NE 1



9

9

PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	CROSS SECTIONS: FIELD ENTRANCE	SHEET	E

FILE NAME :

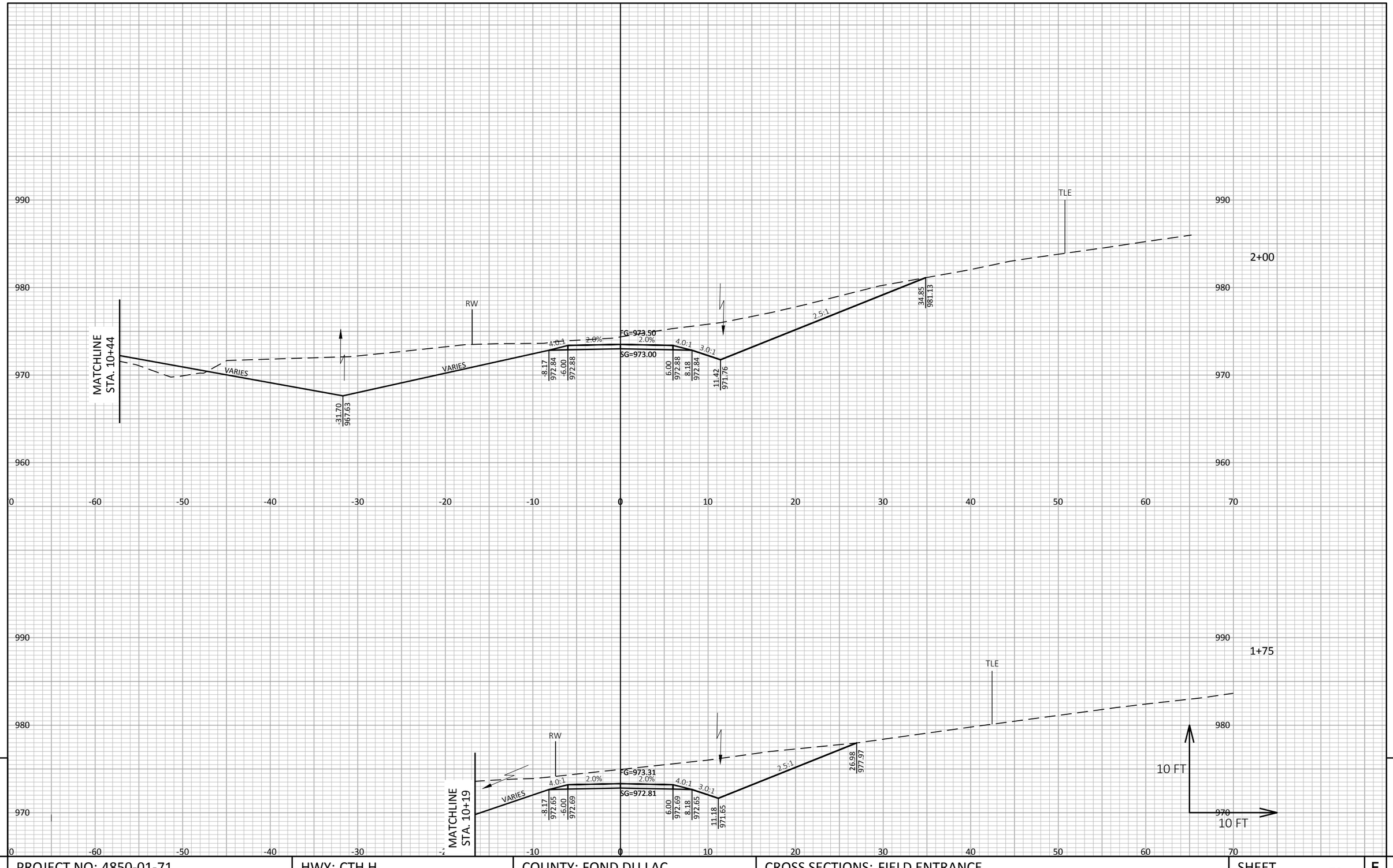
LAYOUT NAME - FE 4

PLOT DATE :

PLOT BY :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

LAYOUT :



9

9

PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	CROSS SECTIONS: FIELD ENTRANCE	SHEET	E

FILE NAME :

LAYOUT NAME - FE 5

PLOT DATE :

PLOT BY :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

LAYOUT :

END CONSTRUCTION
STA. 2+50.26
MATCH EXISTING

RW

TLE

2+50

990
980
970
960

0 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

MATCHLINE
STA. 10+69

RW

TLE

2+25

VARIES
VARIES
VARIES

-45.90
967.50

4.0:1
2.0%
FG=973.48
SG=972.98
2.0%
4.0:1
3.0:1
2.5:1

-8.17
972.82
-6.00
972.86
6.00
972.86
8.18
972.82
11.18
971.82
38.27
982.66

10 FT
10 FT

9

9

PROJECT NO: 4850-01-71	HWY: CTH H	COUNTY: FOND DU LAC	CROSS SECTIONS: FIELD ENTRANCE	SHEET	E

FILE NAME :
LAYOUT NAME - FE 6
PLOT DATE :
PLOT BY :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
LAYOUT :

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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