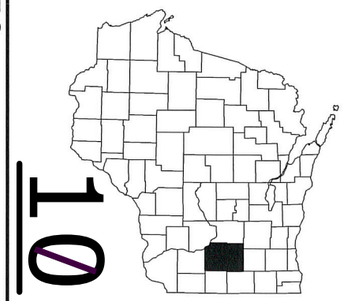
SWL MAR 2017

PROJECT ID: WITH: N/A 5848-00-70

COUNTY: DANE

ORDER OF SHEETS

TOTAL SHEETS = 60



10

N

DESIGN DESIGNATION

A.A.D.T.	2017	= 530
A.A.D.T.	2037	= 630
D.H.V.		= 3.5
D.D.		= 60/40
T.		= 4.1%
DESIGN SPEED		= 50
ESALS		= 59,000

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH PB - STH 69

(SUGAR RIVER BRIDGE B-13-0685)

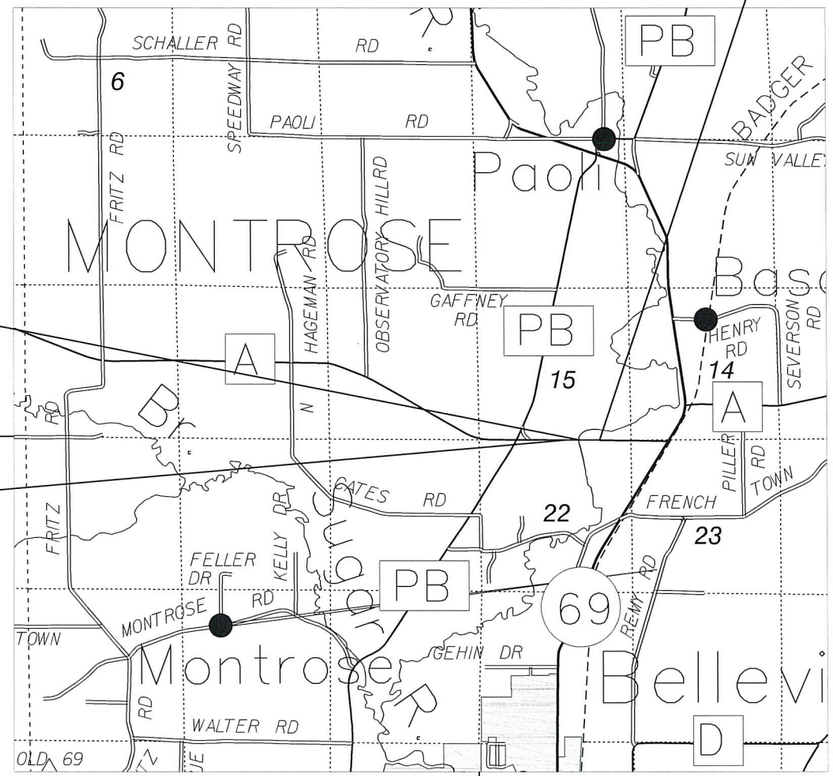
CTH A

DANE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5848-00-70	WISC 2017099	1

STATE PROJECT NUMBER
5848-00-70

END PROJECT
STA. 15+77.00
N = 419,308.41
E = 782,373.42



STRUCTURE B-13-0685

T-5-N

BEGIN PROJECT
STA. 11+20.00
N = 419,314.88
E = 781,916.46

R-8-E

LAYOUT
SCALE 0 1 MILE

TOTAL NET LENGTH OF CENTERLINE =0.087 MILE

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

ACCEPTED FOR
COUNTY of DANE

10-21-16 (Date) (HIGHWAY COMMISSIONER)

ORIGINAL PLANS PREPARED BY

WISCONSIN
MICHAEL J. STATZ
E-31249
MADISON WI
PROFESSIONAL ENGINEER
10-20-16 (Date) (Professional Engineer)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor MSA PROFESSIONAL SERVICES, INC.
Designer MSA PROFESSIONAL SERVICES, INC.

MANAGEMENT CONSULTANT KL ENGINEERING

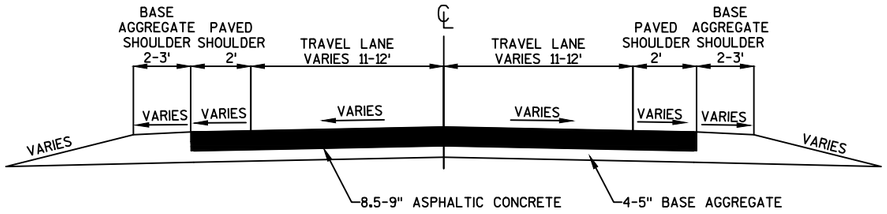
APPROVED FOR THE DEPARTMENT
DATE: 10/27/16 (Management Consultant Signature)

E

FILE NAME : P:\11300S\11330S\11331\11331012\CADD\SHEETSPLAN\TITLE SHEET\11331012 - TITLE SHEET.DWG
LAYOUT NAME - TITLE SHEET

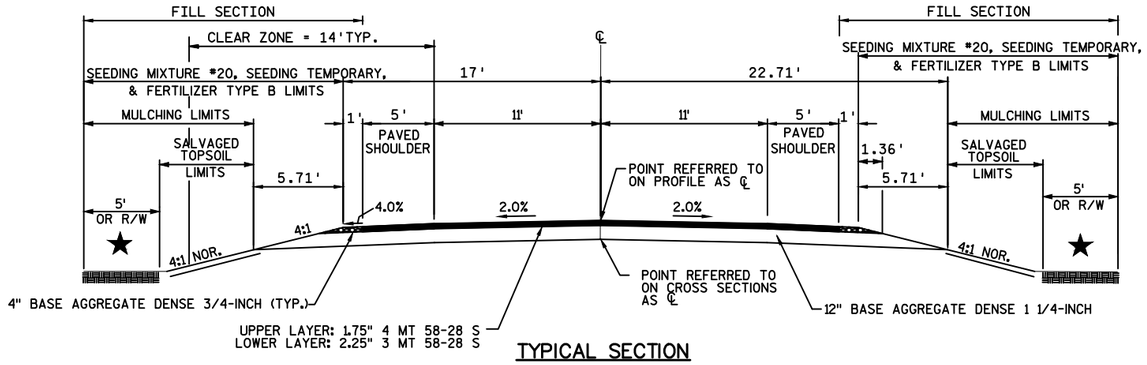
PLOT DATE : 10/20/2016 9:13 AM PLOT BY : CHAD WAGNER PLOT NAME :

WISDOT/CADDS SHEET 10



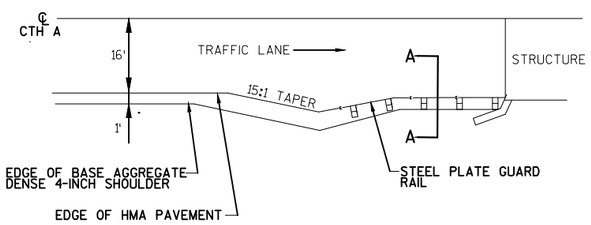
EXISTING TYPICAL SECTION

CTH A

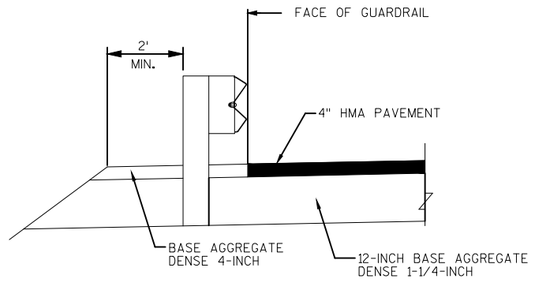


TYPICAL SECTION

CTH A



PLAN - HMA PAVEMENT SHOULDER AT GUARDRAIL

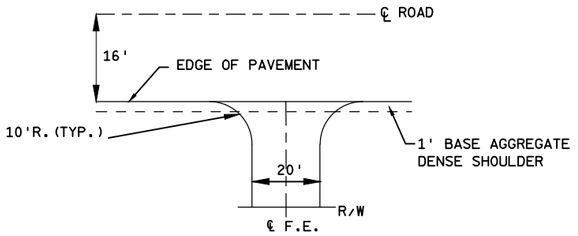


SECTION A-A THRU GUARDRAIL

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			A			A			A		
	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 = 1.653 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.915 ACRES



FIELD ENTRANCE PLAN

GENERAL NOTES

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

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

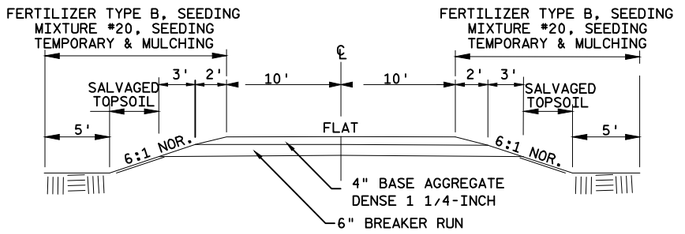
ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO 1H48 BENCHMARK WITH ELEVATION OF 887.065 LOCATED 0.5 MILES EAST OF THE EXISTING BRIDGE, THE STATION IS A BRONZE WISDOT GEODETIC SURVEY CONTROL STATION.

TEMPORARY DITCH CHECKS, IF NEEDED, SHALL BE PLACED AS DIRECTED BY THE ENGINEER.

SILT FENCE TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER AND IN PLACE PRIOR TO BRIDGE REMOVAL.

DANE COUNTY WILL REMOVE EXISTING SIGNS AND POSTS EXCEPT FOR SUGAR RIVER SIGNS AND THE INVASIVE SIGN

★ WETLAND EXIST AT STA. 11+60 TO 14+20. THE CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE THE SLOPE INTERCEPT IN THESE AREAS.



FIELD ENTRANCE - TYPICAL SECTION

FIELD ENTRANCE DETAILS

DESIGN CONTACT

MSA PROFESSIONAL SERVICES, INC.
ATTN: MICHAEL J. STATZ, P.E.
2901 INTERNATIONAL LANE, SUITE 300
MADISON, WI 53704-3133
PHONE: (608) 242-7779
EMAIL: MSTATZ@MSA-PS.COM

DANE COUNTY DEPUTY HIGHWAY COMMISSIONER
ATTN: PAMELA J. DUNPHY, P.E.
2302 FISH HATCHERY ROAD
MADISON, WI 53713
PHONE: (608) 266-4036
EMAIL: DUNPHY@CO.DANE.WI.US

DNR LIAISON

DEPARTMENT OF NATURAL RESOURCES
ATTN.: LAURA BUB
ENVIRONMENTAL REVIEW AND ANALYSIS SPECIALIST
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711-5397
PHONE: (608) 275-3485
EMAIL: LAURA.BUB@WISCONSIN.GOV

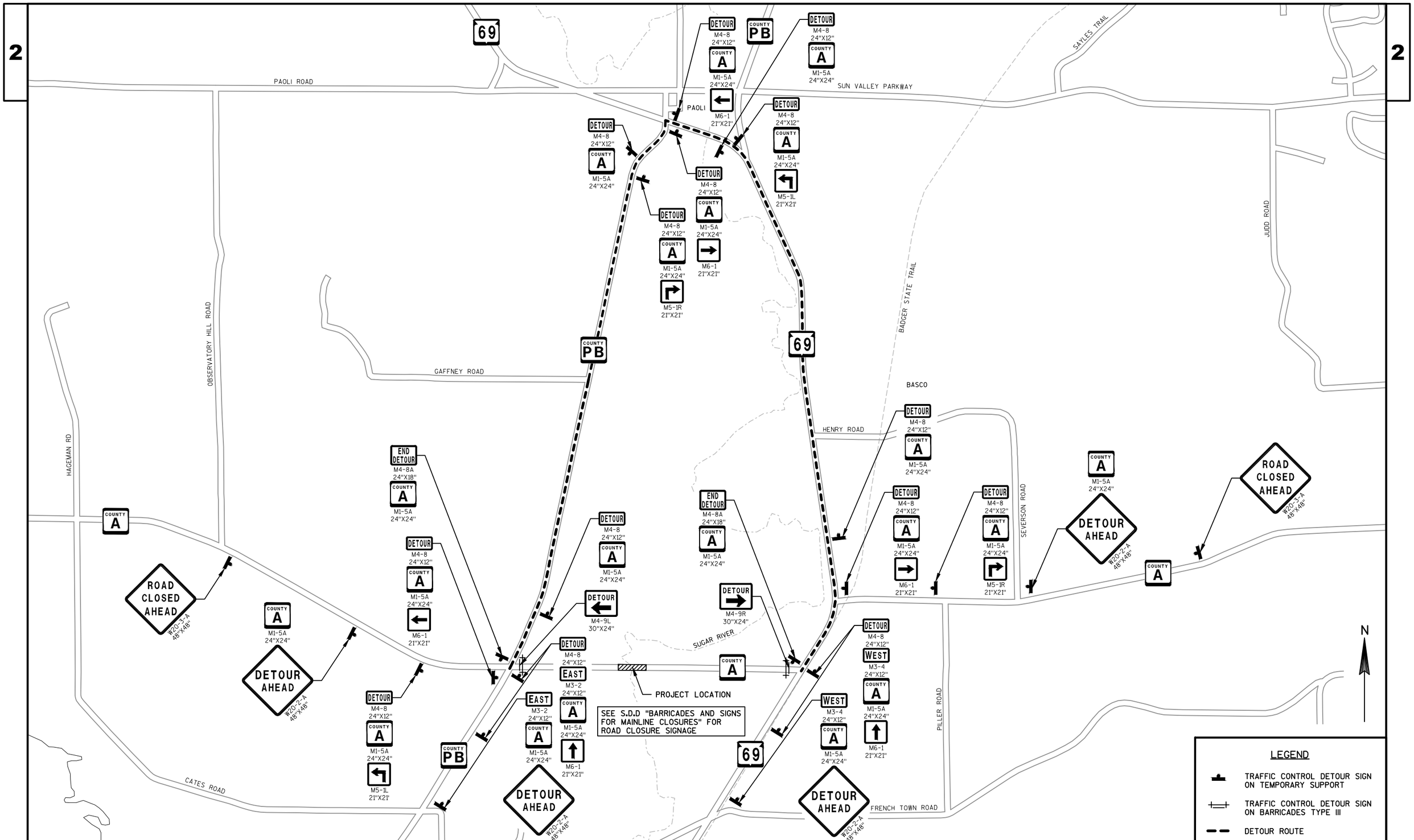
UTILITIES

TELEPHONE:NOT IN PROJECT AREA
FRONTIER COMMUNICATIONS
ATTN: DANA GILLET
100 COMMUNICATIONS DRIVE
SUN PRAIRIE, WI 53590
PHONE: (608) 837-1605
EMAIL: DANA.GILLETT@FTR.COM

ELECTRIC:
ALLIANT ENERGY
ATTN: RICK MARTINGILIO
2147 COUNTY ROAD PB
VERONA, WI 53593
PHONE: (608) 845-1120
EMAIL: RICKAMARTINGILIO@ALLIANTENERGY.COM

**-DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

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



PROJECT NO: 5848-00-70	HWY: CTH A	COUNTY: DANE	DETOUR PLAN	SHEET 3	E

FILE NAME : P:\11300S\11330S\11331\11331012\CADD\SHEETSPLAN\CTH A DETOUR MAP.DWG
LAYOUT NAME - DETOUR MAP

PLOT DATE : 10/24/2016 3:21 PM PLOT BY : JASON DOLENS PLOT NAME : PLOT SCALE : **********

5848-00-70

Line	Item	Item Description	Unit	Total	Qty
0010	201.0105	Clearing	STA	3.000	3.000
0020	201.0205	Grubbing	STA	3.000	3.000
0030	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 13+47	LS	1.000	1.000
0040	204.0165	Removing Guardrail	LF	224.000	224.000
0050	204.0170	Removing Fence	LF	200.000	200.000
0060	205.0100	Excavation Common	CY	866.000	866.000
0070	206.1000	Excavation for Structures Bridges (structure) 01. B-13-685	LS	1.000	1.000
0080	208.0100	Borrow	CY	837.000	837.000
0090	210.1500	Backfill Structure Type A	TON	400.000	400.000
0100	213.0100	Finishing Roadway (project) 01. 5848-00-70	EACH	1.000	1.000
0110	305.0110	Base Aggregate Dense 3/4-Inch	TON	110.000	110.000
0120	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,385.000	1,385.000
0130	311.0110	Breaker Run	TON	455.000	455.000
0140	415.0080	Concrete Pavement 8-Inch	SY	40.000	40.000
0150	415.0410	Concrete Pavement Approach Slab	SY	74.000	74.000
0160	455.0605	Tack Coat	GAL	60.000	60.000
0170	460.2000	Incentive Density HMA Pavement	DOL	180.000	180.000
0180	460.6223	HMA Pavement 3 MT 58-28 S	TON	160.000	160.000
0190	460.6224	HMA Pavement 4 MT 58-28 S	TON	120.000	120.000
0200	502.0100	Concrete Masonry Bridges	CY	322.000	322.000
0210	502.3200	Protective Surface Treatment	SY	755.000	755.000
0220	503.0137	Prestressed Girder Type I 36W-Inch	LF	616.000	616.000
0230	505.0400	Bar Steel Reinforcement HS Structures	LB	7,080.000	7,080.000
0240	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	47,115.000	47,115.000
0250	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	16.000	16.000
0260	506.4000	Steel Diaphragms (structure) 01. B-13-685	EACH	6.000	6.000
0270	513.7084	Railing Steel Type NY4 (structure) 01. B-13-685	LF	320.000	320.000
0280	516.0500	Rubberized Membrane Waterproofing	SY	16.000	16.000
0290	550.0500	Pile Points	EACH	25.000	25.000
0300	550.2128	Piling CIP Concrete 12 3/4 X 0.50-Inch	LF	925.000	925.000
0310	606.0300	Riprap Heavy	CY	495.000	495.000
0320	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	160.000	160.000
0330	614.2500	MGS Thrie Beam Transition	LF	158.000	158.000
0340	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0350	619.1000	Mobilization	EACH	1.000	1.000
0360	624.0100	Water	MGAL	20.000	20.000
0370	625.0500	Salvaged Topsoil **P**	SY	2,150.000	2,150.000
0380	627.0200	Mulching **P**	SY	2,550.000	2,550.000

5848-00-70

Line	Item	Item Description	Unit	Total	Qty
0390	628.1104	Erosion Bales	EACH	10.000	10.000
0400	628.1504	Silt Fence	LF	1,200.000	1,200.000
0410	628.1520	Silt Fence Maintenance	LF	2,400.000	2,400.000
0420	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0430	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0440	628.2004	Erosion Mat Class I Type B	SY	50.000	50.000
0450	628.2006	Erosion Mat Urban Class I Type A	SY	50.000	50.000
0460	628.6005	Turbidity Barriers	SY	260.000	260.000
0470	628.7560	Tracking Pads	EACH	2.000	2.000
0480	629.0210	Fertilizer Type B **P**	CWT	2.000	2.000
0490	630.0120	Seeding Mixture No. 20 **P**	LB	90.000	90.000
0500	630.0200	Seeding Temporary **P**	LB	45.000	45.000
0510	630.0300	Seeding Borrow Pit	LB	5.000	5.000
0520	631.1100	Sod Erosion Control **P**	SY	50.000	50.000
0530	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0540	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	2.000	2.000
0550	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0560	638.2102	Moving Signs Type II	EACH	3.000	3.000
0570	638.3000	Removing Small Sign Supports	EACH	2.000	2.000
0580	642.5001	Field Office Type B	EACH	1.000	1.000
0590	643.0100	Traffic Control (project) 01. 5848-00-70	EACH	1.000	1.000
0600	643.0420	Traffic Control Barricades Type III	DAY	1,260.000	1,260.000
0610	643.0705	Traffic Control Warning Lights Type A	DAY	1,960.000	1,960.000
0620	643.0900	Traffic Control Signs	DAY	700.000	700.000
0630	643.2000	Traffic Control Detour (project) 01. 5848-00-70	EACH	1.000	1.000
0640	643.3000	Traffic Control Detour Signs	DAY	4,620.000	4,620.000
0650	645.0120	Geotextile Type HR	SY	915.000	915.000
0660	646.0103	Pavement Marking Paint 4-Inch	LF	2,066.000	2,066.000
0670	650.4500	Construction Staking Subgrade	LF	421.000	421.000
0680	650.5000	Construction Staking Base	LF	421.000	421.000
0690	650.9910	Construction Staking Supplemental Control (project) 01. 5848-00-70	LS	1.000	1.000
0700	650.9920	Construction Staking Slope Stakes	LF	421.000	421.000
0710	690.0150	Sawing Asphalt	LF	288.000	288.000
0720	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0730	715.0502	Incentive Strength Concrete Structures	DOL	1,932.000	1,932.000
0740	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	375.000	375.000

EARTHWORK PROJECT I.D. 5848-00-70

Division	From/To Station	Location	Common Excavation (1) (item # 205.0100) Cut (2)	EBS Excavation (3)	Salvaged/Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (6) Factor 1.25	Mass Ordinate +/- (7)	Waste	Borrow (item #208.0100)	Comment:
1	10+68 - 12+77.46		371		0	371	704	880	-509	0	509	
2	14+34.55 - 16+44		350		0	350	543	679	-328	0	328	
	STRUCTURE B-13-0685		0	0	0	0	0	0	0	0	0	
	UNDISTRIBUTED EBS		0	144	0	0	0	0	0	0	0	
Project Totals			722	144	0	722	1,247	1,559	-837	0	837	
	Overall Project Total:		866									

1) Excavation Common is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Breaker Run material. An undistributed amount of Breaker Run material is included in the project.
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Expanded Fill. Factor = 1.25
7) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

CLEARING & GRUBBING

CATEGORY	STATION	TO STATION	LOCATION	(201.0105) CLEARING STA	(201.0205) GRUBBING STA
0010	11+00	13+00	LT&RT	2	2
	14+00	15+00	LT/RT	1	1
	PROJECT TOTALS			**3**	**3**

BASE AGGREGATE DENSE

CATEGORY	STATION	TO STATION	LOCATION	(305.0110) 3/4-INCH TON	(305.0120) 1 1/4-INCH TON	(311.0110) BREAKER TON	(624.0100) WATER MGAL
0010	10+68	12+77.46	LT & RT	55	690	-	10
	14+34.55	16+44	LT & RT	55	665	-	10
	FIELD ENTRANCE			-	30	44	-
	UNDISTRIBUTED			-	-	411	-
	PROJECT TOTALS			**110**	**1,385**	**455**	**20**

NOTE: WATER BID ITEM TO BE USED FOR BASE AGGREGATE DUST CONTROL AND COMPACTION

MGS GUARDRAIL

CATEGORY	STATION	TO STATION	(614.2500) MGS THRIE BEAM TRANSITION LF	(614.2610) MGS GUARDRAIL TERMINAL EAT EACH
0010	11+88	12+41	-	1
	11+88	12+41	-	1
	12+41	12+81	39.5	-
	12+41	12+81	39.5	-
	14+31	14+71	39.5	-
	14+31	14+71	39.5	-
	14+71	15+24	-	1
	14+71	15+24	-	1
	PROJECT TOTALS		**158**	**4**

REMOVING GUARDRAIL

CATEGORY	STATION	TO STATION	LOCATION	(204.0165) LF
0010	12+12	12+77	RT	65
	12+30	12+77	LT	47
	14+17	12+64	RT	47
	14+17	14+82	LT	65
	PROJECT TOTAL			**224**

CONCRETE PAVEMENT

CATEGORY	STATION	TO STATION	LOCATION	(415.0080) CONCRETE PAVEMENT 8-INCH SY	(415.0410) CONCRETE PAVEMENT APPROACH SLAB SY
0030	12+63	12+78	LT & RT	20	37
	14+34	14+49	LT & RT	20	37
	UNDISTRIBUTED			-	-
	PROJECT TOTALS			**40**	**74**

REMOVING FENCE

CATEGORY	STATION	TO STATION	LOCATION	(204.0170) LF
0030	11+50	13+50	RT	200
	PROJECT TOTAL			**200**

HMA PAVEMENT

CATEGORY	STATION	TO STATION	(460.6224) HMA PAVEMENT 4 MT 58-28 S TON	(460.6223) HMA PAVEMENT 3 MT 58-28 S TON	(455.0605) TACK COAT GAL
0010	10+68	12+63	60	80	30
	14+48	16+44	60	80	30
	PROJECT TOTALS		**120**	**160**	**60**

SAWING ASPHALT

CATEGORY	STATION	TO STATION	LOCATION	(690.0150) LF
0010	10+68	11+20	LT	53
	10+68	11+20	RT	53
	11+20	-	LT & RT	22
	15+77	16+44	LT	69
	15+77	16+44	RT	69
	15+77	-	LT & RT	22
	PROJECT TOTAL			**288**

SILT FENCE

CATEGORY	STATION	TO STATION	LOCATION	(628.1504) LF	(628.1520) MAINTENANCE LF
0010	10+68	13+62	LT	305	610
	10+68	11+35	RT	65	130
	11+55	13+64	RT	230	460
	13+92	16+44	LT	270	540
	14+03	16+44	RT	250	500
	UNDISTRIBUTED			80	160
	PROJECT TOTALS			**1,200**	**2,400**

EROSION BALES

CATEGORY	LOCATION	(628.1104) EACH
0010	UNDISTRIBUTED	10
	PROJECT TOTAL	**10**

MOBILIZATIONS EROSION CONTROL

CATEGORY	STATION	TO STATION	(628.1905) EACH	(628.1910) EMERGENCY EACH
0010	10+68	16+44	2	2
	PROJECT TOTALS		**2**	**2**

EROSION MAT

CATEGORY	LOCATION	(628.2004) CLASS I TYPE B SF	(628.2006) URBAN CLASS I TYPE A SY
0010	UNDISTRIBUTED	50	50
	PROJECT TOTALS	**50**	**50**

TURBIDITY BARRIER

CATEGORY	LOCATION	(628.6005) SY
0010	WEST RIVERBANK	150
	EAST RIVERBANK	110
	PROJECT TOTAL	**260**

TRACKING PAD

CATEGORY	STATION	LOCATION	(628.7560) EACH
0010	10+68	LT & RT	1
	16+44	LT & RT	1
	PROJECT TOTAL		**2**

FINISHING ITEMS

CATEGORY	STATION	TO STATION	LOCATION	* (625.0500) SALVAGED TOPSOIL SY	* (627.0200) MULCHING SY	* (629.0210) FERTILIZER TYPE B CWT	* (630.0120) SEEDING MIXTURE NO. 20 LB	* (630.0200) SEEDING TEMPORARY LB	(630.0300) SEEDING BORROW PIT	(631.1100) SOD EROSION CONTROL SY
0010	10+68	12+78	RT	490	590	0.5	20	10	-	-
	12+68	12+78	LT	570	670	0.5	25	12.5	-	-
	14+20	16+44	RT	520	620	0.5	20	10	-	-
	14+20	16+44	LT	570	670	0.5	25	12.5	-	-
	UNDISTRIBUTED			-	390	-	-	-	5	50
	PROJECT TOTALS			**2,150**	**2,940**	**2**	**90**	**45**	**5**	**50**

* PAY PLAN QUANTITY WITHOUT MEASURE

PERMANENT SIGNING

CATEGORY	CODE	STATION	LOCATION	(637.2230) SIGNS TYPE II REFLECTIVE F SF	(634.0612) POSTS WOOD 4X6-INCH 12-FT EACH	(634.0614) POSTS WOOD 4X6-INCH 14-FT EACH	(638.2102) MOVING SIGNS TYPE II EACH	(638.3000) REMOVING SMALL SIGN SUPPORT EACH	NOTES
0010	W5-52R	12+77	RT	3.00	1	-	-	-	
	W5-52L	12+77	LT	3.00	1	-	-	-	
	W5-52R	14+35	LT	3.00	1	-	-	-	
	W5-52L	14+35	RT	3.00	1	-	-	-	
	EXISTING	12+31	RT	-	-	1	1	1	SUGAR RIVER SIGN
	EXISTING	14+09	RT	-	-	-	1	-	DNR INVASIVE SPECIES SIGN
	EXISTING	14+63	LT	-	-	1	1	1	SUGAR RIVER SIGN
	PROJECT TOTALS			**12.00**	**4**	**2**	**3**	**2**	

TRAFFIC CONTROL

CATEGORY	DESCRIPTION	BARRICADES TYPE III NO. DEVICES	(643.0420) TRAFFIC CONTROL BARRICADES TYPE III DAY	WARNING LIGHTS TYPE A NO. DEVICES	(643.0705) TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	SIGNS NO. DEVICES	(643.0900) TRAFFIC CONTROL SIGNS DAY	(643.0100) TRAFFIC CONTROL (PROJECT) EACH	DETOUR SIGNS NO. DEVICES	(643.3000) TRAFFIC CONTROL DETOUR SIGNS DAYS	(643.2000) TRAFFIC CONTROL DETOUR (PROJECT) EACH
0010	PROJECT 5848-00-70	18	1,260	28	1,960	10	700	1	66	4,620	1
	PROJECT TOTALS		**1,260**		**1,960**		**700**	**1**		**4,620**	**1**

PAVEMENT MARKING PAINT 4-INCH

CATEGORY	STATION	STATION	LOCATION	(646.0103) YELLOW LF	(646.0103) WHITE LF	NOTES
0010	10+68	16+44	LT & RT	-	1,152	SOLID WHITE EDGE LINE
	11+20	15+77	CENTERLINE	914	-	DOUBLE YELLOW CENTERLINE
	PROJECT SUBTOTALS			**914**	**1,152**	
	PROJECT TOTAL			**2,066**		

CONSTRUCTION STAKING

CATEGORY	STATION	TO STATION	LOCATION	(650.4500) SUBGRADE LF	(650.5000) BASE LF	(650.9910) SUPPLEMENTAL CONTROL LS	(650.9920) SLOPE STAKING LF
010	10+68	12+78	LT & RT	210	210	-	210
	14+33	16+44	LT & RT	211	211	-	211
	PROJECT 5848-00-70			-	-	1	-
	PROJECT TOTALS			**421**	**421**	**1**	**421**

BENCH MARKS				
NO.	STA.	DESCRIPTION	OFFSET	ELEV.
1	11+07.4	RAILROAD NAIL IN TREE	36.6' LT	879.58
2	12+67.5	CHISELED CROSS	14.9' LT	886.84

CONCRETE PAVEMENT 8-INCH
CONCRETE PAVEMENT APPROACH SLAB

CONTROL POINTS					
NO.	STA.	DESCRIPTION	ELEV.	X	Y
1	9+96.3	3/4" REBAR	881.48	781,792.99	419,334.66
2	17+23.9	3/4" REBAR	881.32	782,520.57	419,326.47

BEGIN CONSTRUCTION
STA. 10+68.00
Y = 419,315.54
X = 781,864.47

END CONSTRUCTION
STA. 16+44.00
Y = 419,307.47
X = 782,440.43

N

SUNBURST LAND LLC
(CULTIVATED FIELD)

EDGE OF CULTIVATED FIELD (TYP.)

(WETLANDS)

SUGAR RIVER

(TREES & BRUSH)

BM1

BM2

TURBIDITY BARRIER (TYP.)

EXISTING STRUCTURE B-13-0035

EXISTING EDGE OF PAVEMENT (TYP.)

ABANDONED 10-INCH CLAY DRAIN PIPE (LOCATION APPROXIMATE)

EXISTING EDGE OF GRAVEL (TYP.)

STA. 10+68 16' LT.

11' (TYP.)

STA. 11+43 16' LT.

STA. 11+88 19' LT.

65'

11+00

CTH A

12+00

13+00

S89°11'51.91"E

14+00

15+00

16+00

EXISTING SIGN (WEIGHT LIMIT 45 TONS)

EXISTING SIGN (SUGAR RIVER)

STA. 15+24 19' LT.

PROPOSED EDGE OF PAVEMENT (TYP.)

STA. 15+69 16' LT.

STA. 16+44 16' LT.

EXISTING SIGN (MARKER POST)

SAW CUT

STA. 11+65 16' RT.

STA. 11+88 19' RT.

SECTION LINE

EXISTING GUARDRAIL (TYP.) (REMOVE)

STA. 15+69, 16' RT.

STA. 15+24 19' RT.

SAW CUT

STA. 10+68 16' RT.

STA. 10+68 16' RT.

EXISTING SIGN (MARKER POST)

F.E. (GRAVEL)

EXISTING SIGN (MARKER POST)

EXISTING SIGN (SUGAR RIVER)

B-13-0685

PROPOSED GUARDRAIL (TYP.)

EXISTING SIGN (MARKER POST)

EXISTING TOP OF SLOPE (TYP.)

EXISTING SIGN (MARKER POST)

60'

EXISTING SIGN (WEIGHT LIMIT 45 TONS)

EXISTING DNR SIGN

OH

SILT FENCE (TYP.)

(TREES & BRUSH)

GUY

EXISTING SLOPE BOTTOM (TYP.)

EXISTING R/W (TYP.)

F.E. STA. 11+44, RT.

16.5'

OVERHEAD ELECTRIC (TYP.)

WISCONSIN POWER & LIGHT

EXISTING FENCE (TYP.) (REMOVE)

SLOPE INTERCEPT (TYP.)

REMOVE EXISTING BRIDGE B-13-0035
STA 13+47
THREE SPAN STEEL DECK GIRDER
26.0' CLEAR ROADWAY WIDTH
161.6' OVERALL LENGTH

(TALL GRASS)

GENERAL TELEPHONE EASEMENT

6897 COUNTY HIGHWAY A
JOHN J & LINDA C EVERSON

(CULTIVATED FIELD)

(TALL GRASS)

(CULTIVATED FIELD)

5

5

BEGIN PROJECT
STA. 11+20.00
Y = 419,314.88
X = 781,916.46

END PROJECT
STA. 15+77.00
Y = 419,308.41
X = 782,373.42

STA. 13+56 STRUCTURE B-13-0685
2-SPAN 36W" PRESTRESSED CONCRETE GIRDER BRIDGE
OVERALL LENGTH 157.08'
34.0' CLEAR ROADWAY WIDTH
0.0 DEG SKEW

HW 100 EL. 878.40
OBSERVED WATER EL. 871.4±
(6/29/15)
STREAMBED EL. 868.3±

VPC STA 11+08.00
VPC EL 883.94

VPI STA 13+42.00
VPI EL 887.68

VPT STA 15+76.00
VPT EL 884.16

1.60%

-1.50%

EARTHWORK SUMMARY
STA. 10+68 - STA. 16+44

COMMON EXC.	866 C.Y.
FILL	1,247 C.Y.
FILL EXPANSION	25%
BORROW	837 C.Y.

VCL = 468.00
K = 151.02

890
880
878

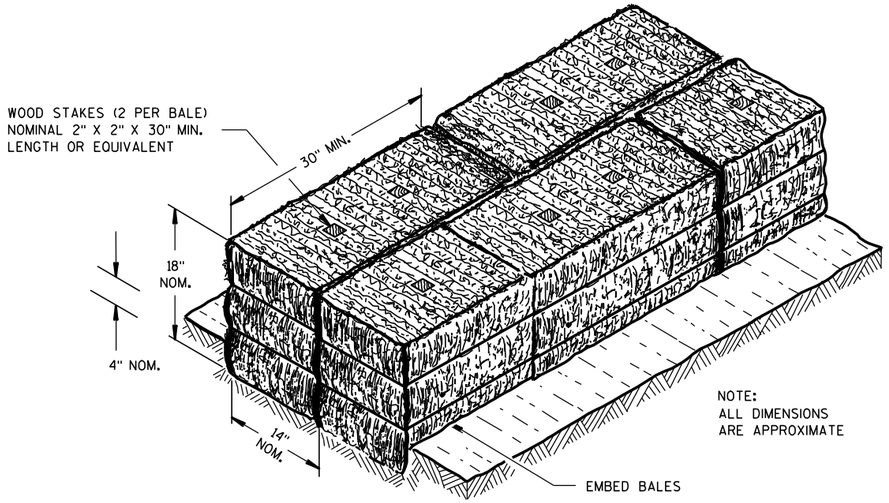
10 11 12 13 14 15 16

883.04 883.82 884.62 884.07 885.38 884.44 886.09 884.71 886.52 884.88 886.58 884.94 886.50 884.90 886.02 884.76 885.30 884.52 884.55 884.17 883.80 883.18

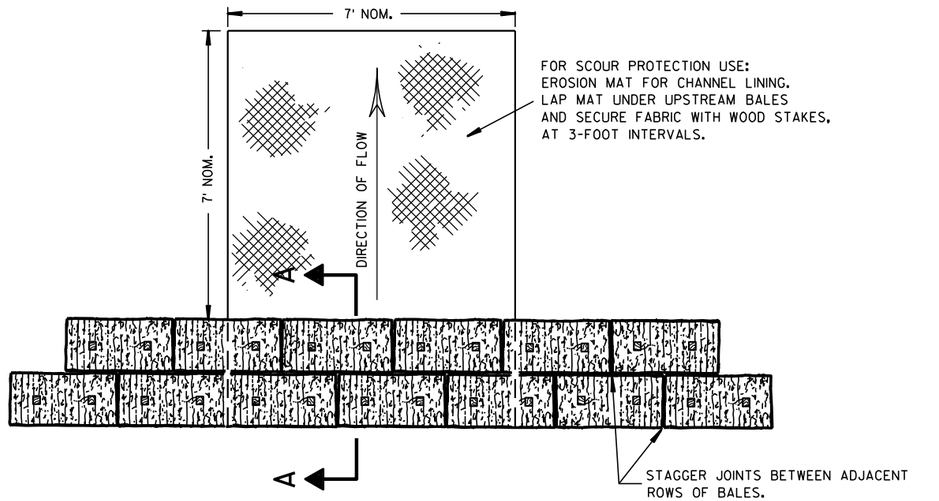
PROJECT NO: 5848-00-70	HWY: CTH A	COUNTY: DANE	PLAN AND PROFILE: CTH A	SHEET 9	E

Standard Detail Drawing List

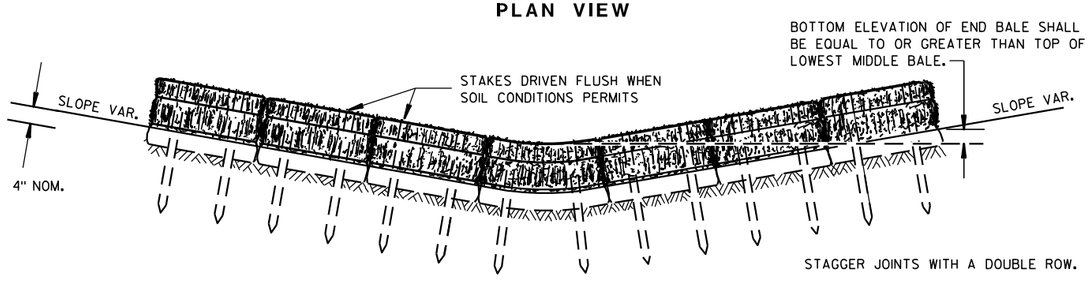
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08E14-01	TRACKING PAD
12A03-10	NAME PLATE (STRUCTURES)
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B42-04A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-08	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)



SECTION A-A



PLAN VIEW



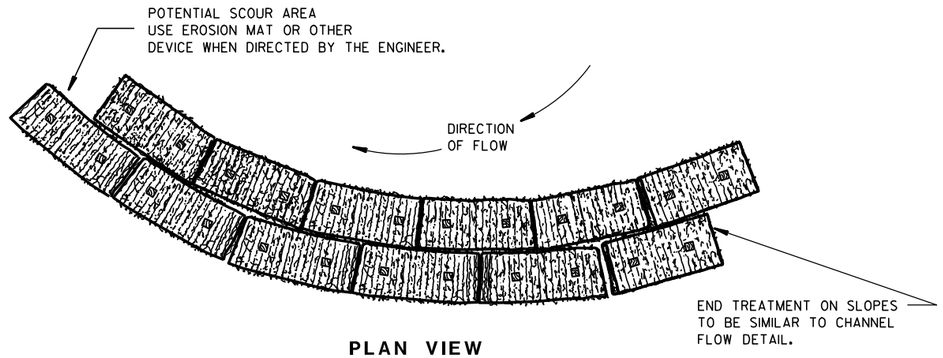
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

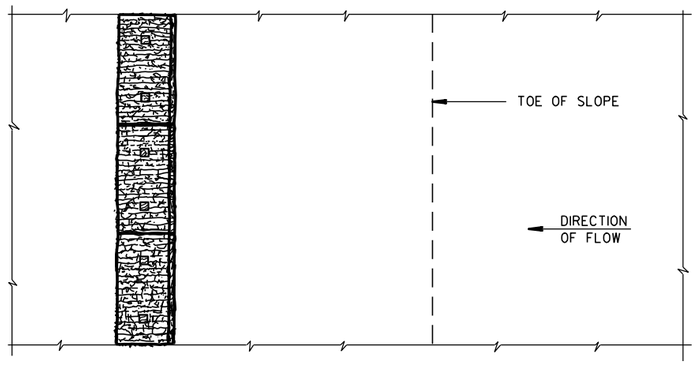
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

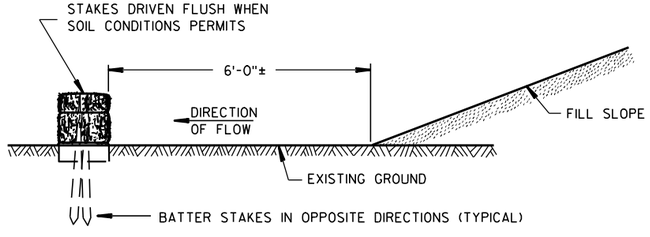


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

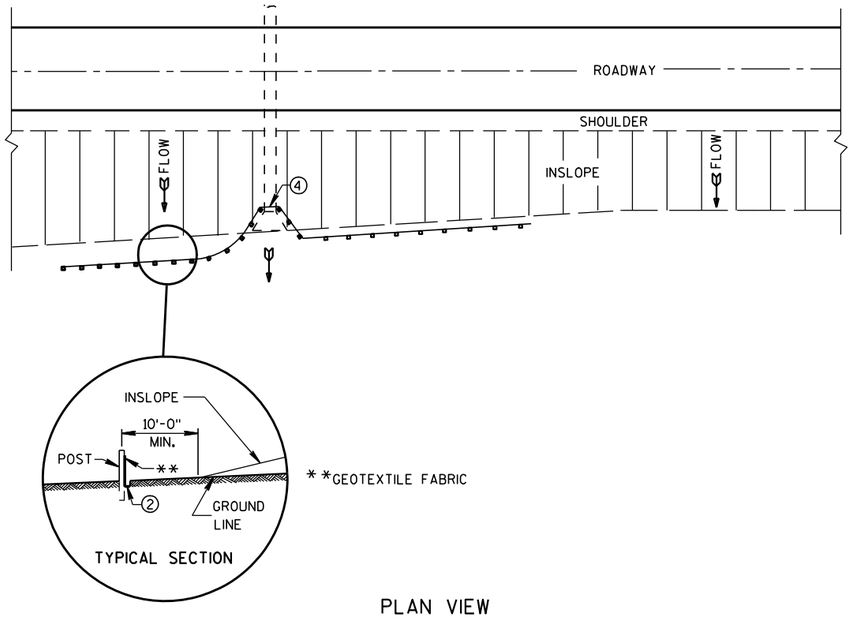
APPROVED
6/04/02 DATE
/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

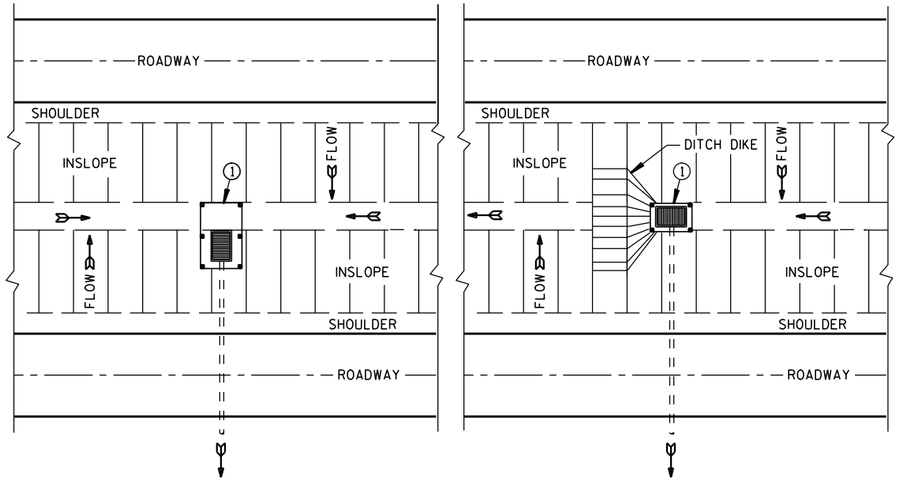
6

S.D.D. 8 E 8-3



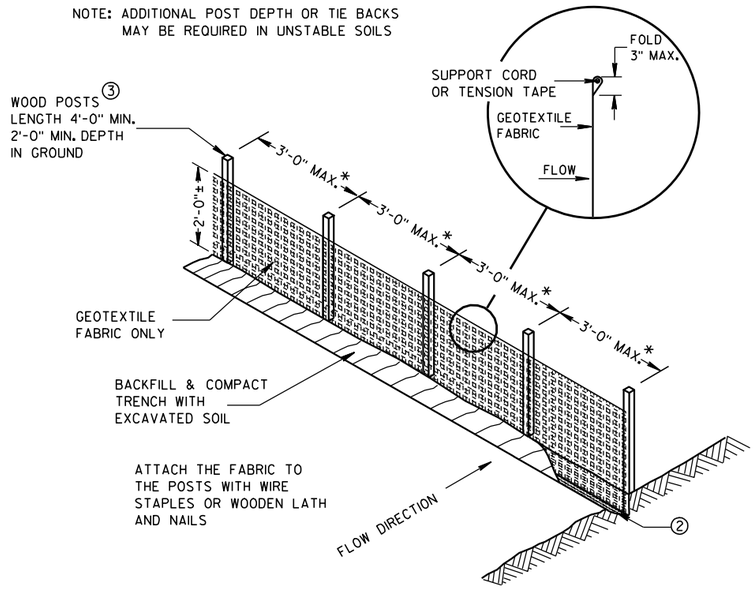
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



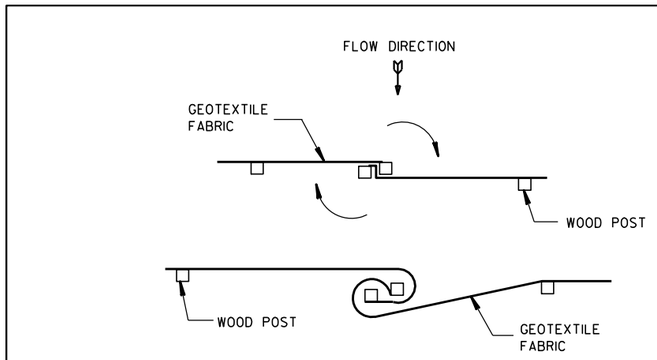
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



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

SILT FENCE

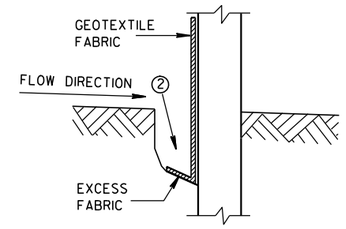


JOINING TWO LENGTHS OF SILT FENCE 5

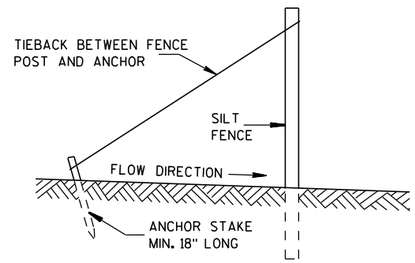
GENERAL NOTES

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 TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

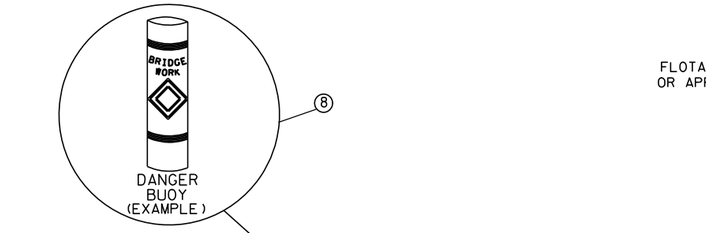
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

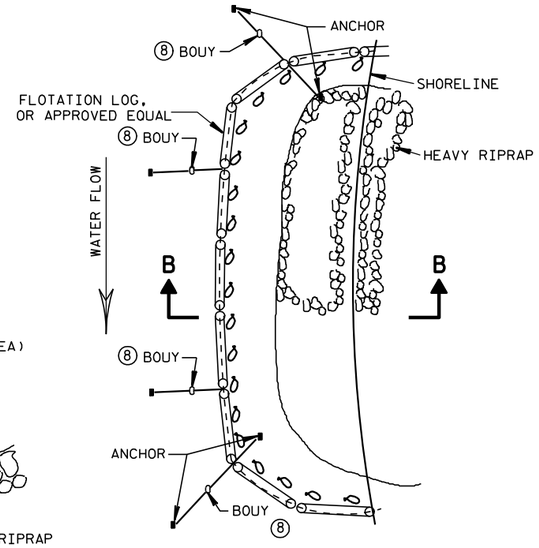
S.D.D. 8 E 9-6

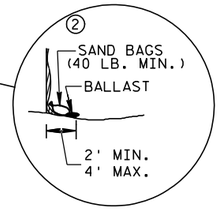
6

S.D.D. 8 E 9-6

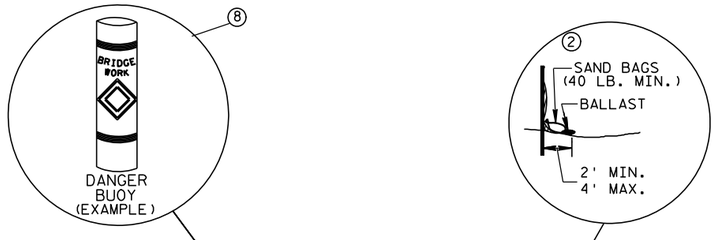


SECTION B-B

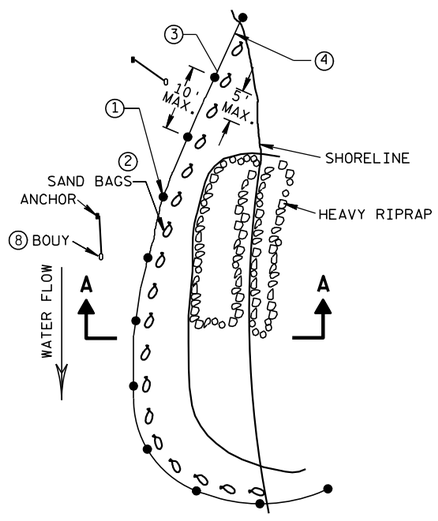




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

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

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

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

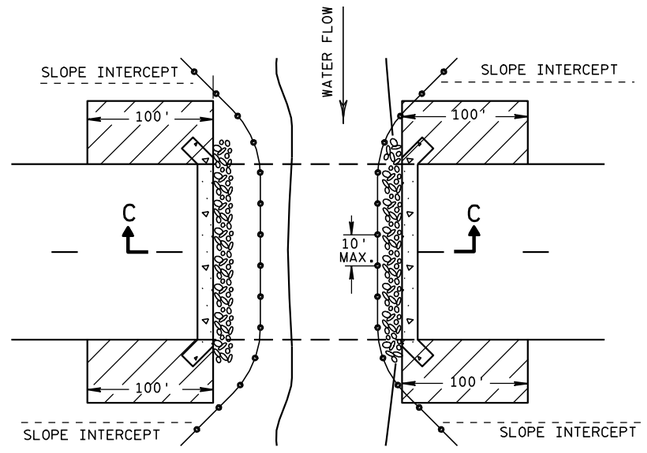
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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

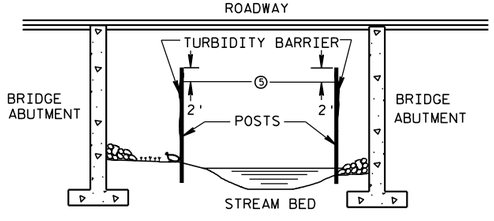
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

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



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

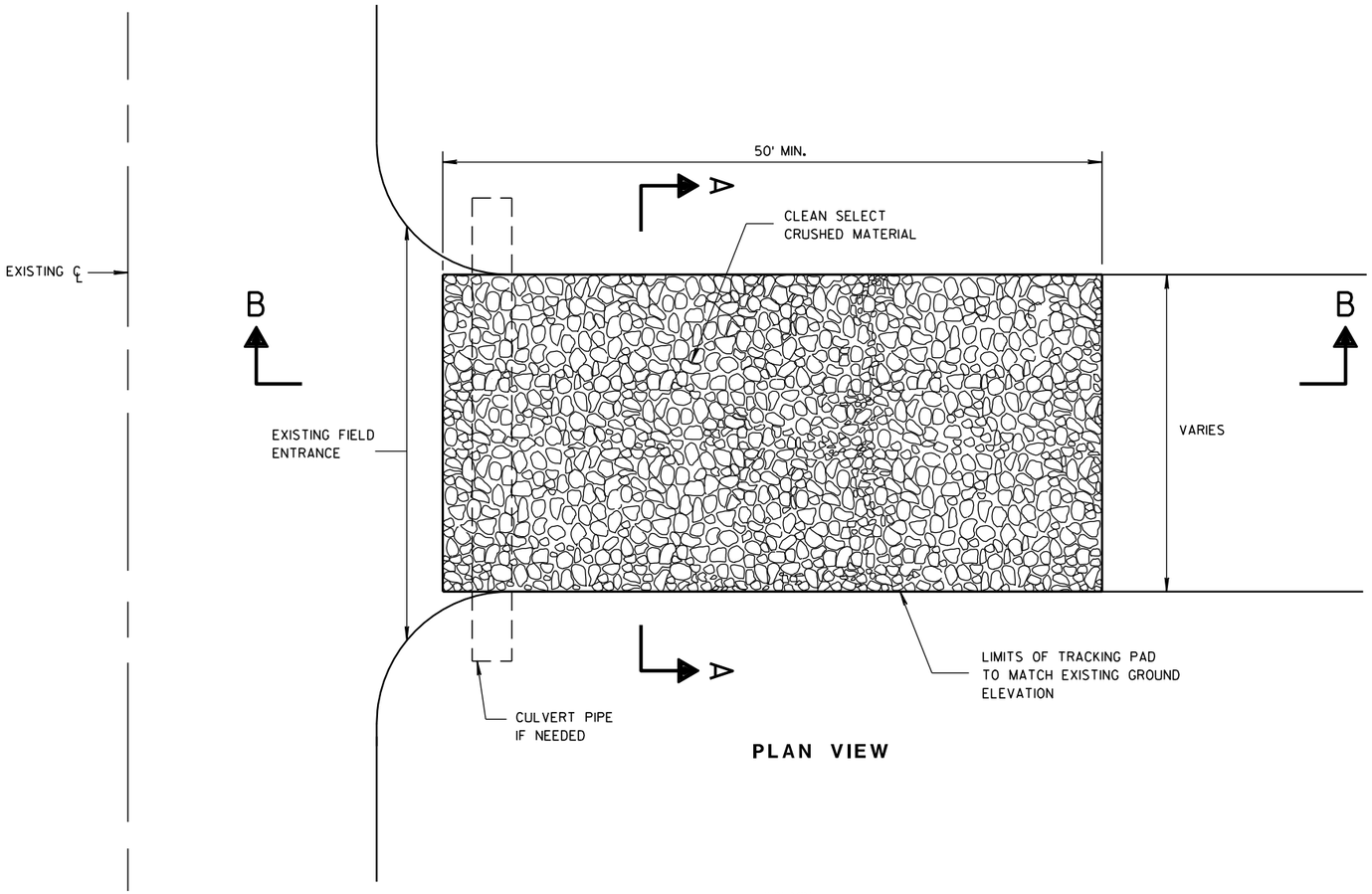
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

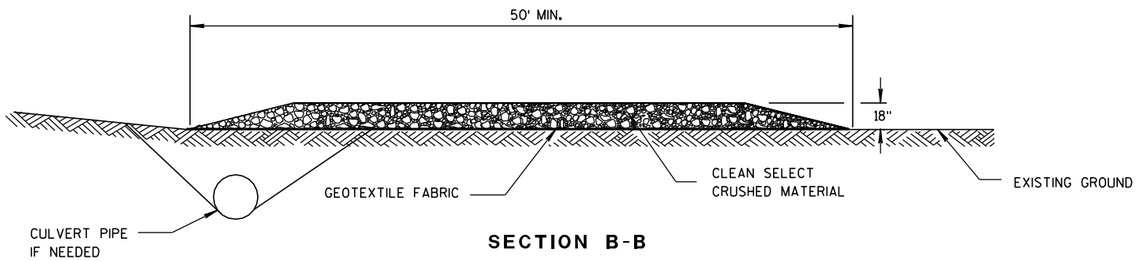
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 11-2



PLAN VIEW



SECTION B-B

GENERAL NOTES

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

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

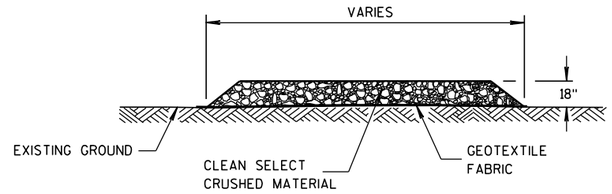
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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

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

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

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

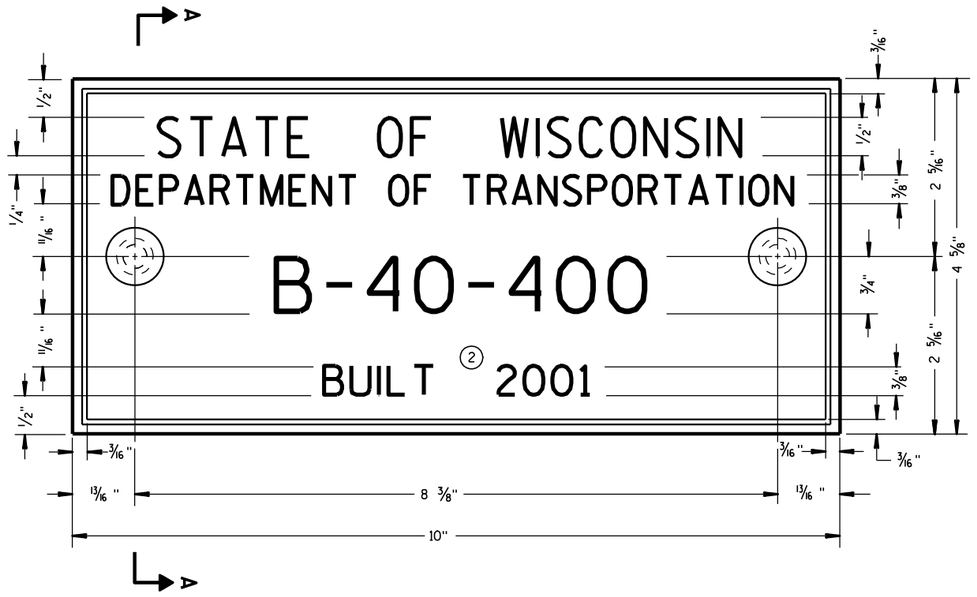


SECTION A-A

TRACKING PAD

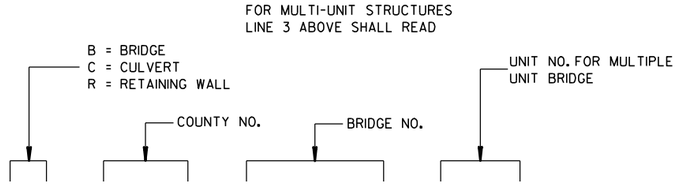
TRACKING PAD	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/24/2011 DATE	/S/ Jerry H. Zoda ROADWAY STANDARDS ENGINEER
FHWA	ENT

6
S.D.D. 8 E 14-1
6
S.D.D. 8 E 14-1



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

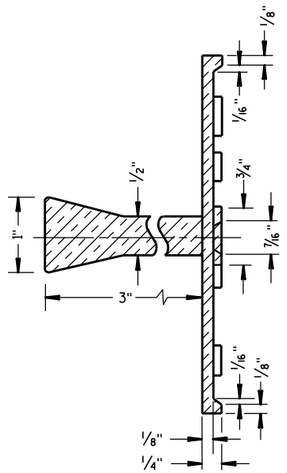
GENERAL NOTES

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.

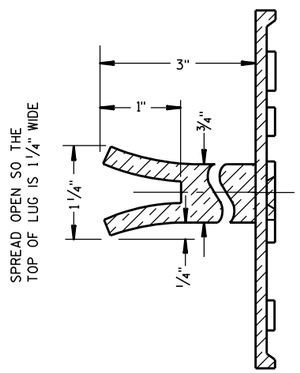
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

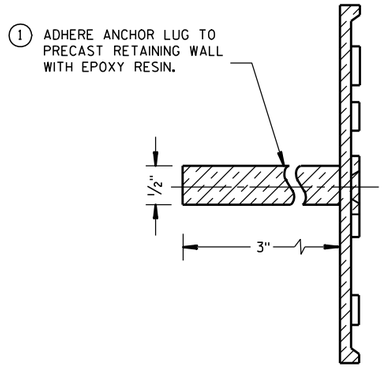
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

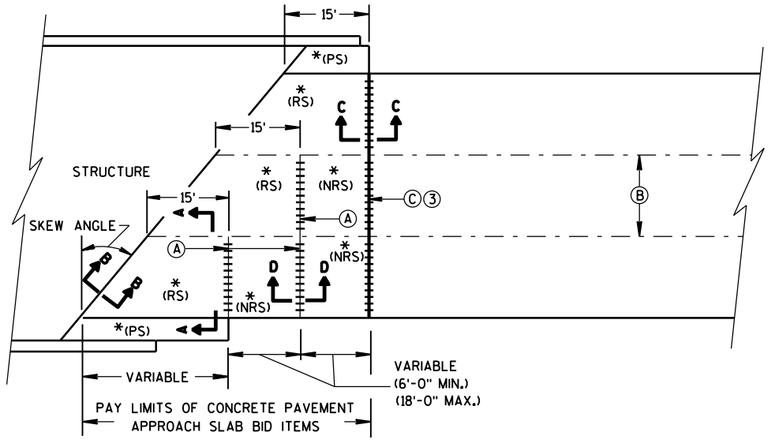
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
3/26/10 DATE	/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER
FHWA	

6

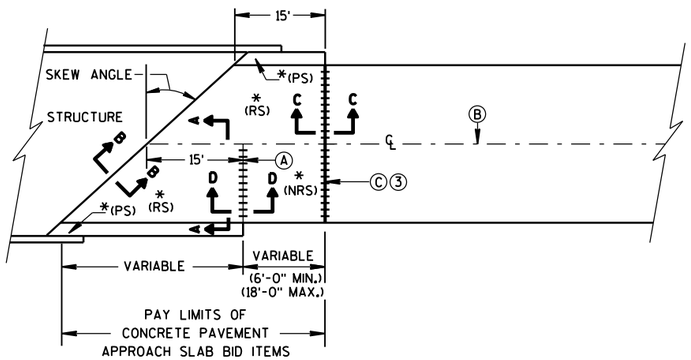
S.D.D. 12 A 3-10

6

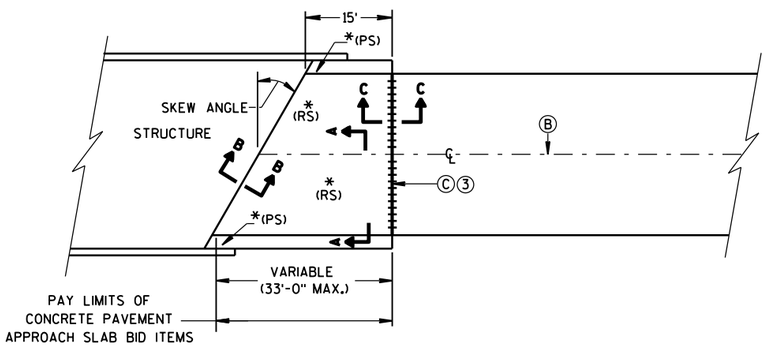
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >20°
(PAVEMENT WIDTH ≤30')



SKEWS ≤20°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

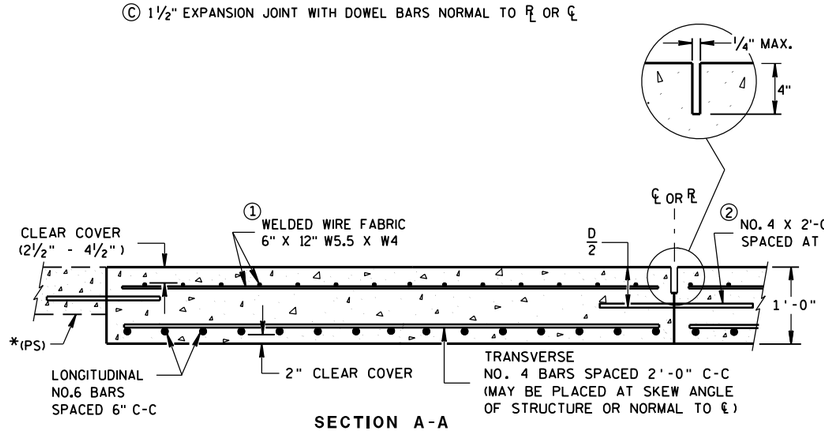
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

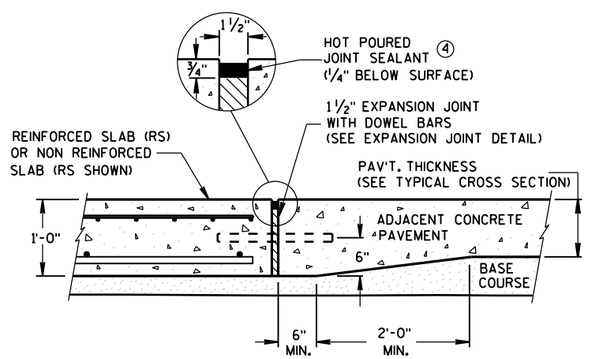
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.

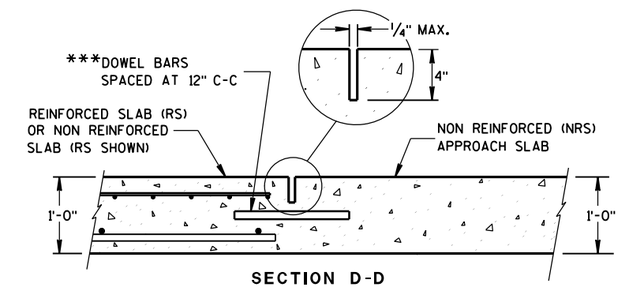
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

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.

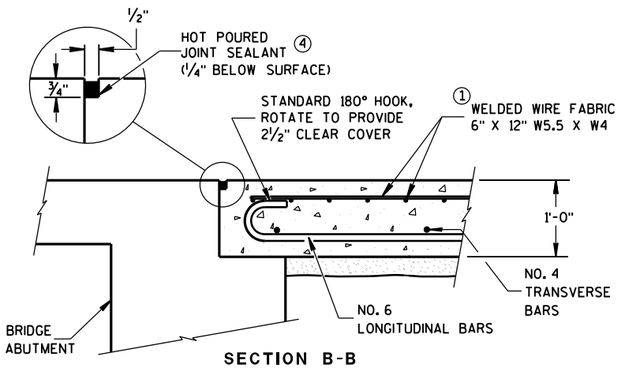
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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

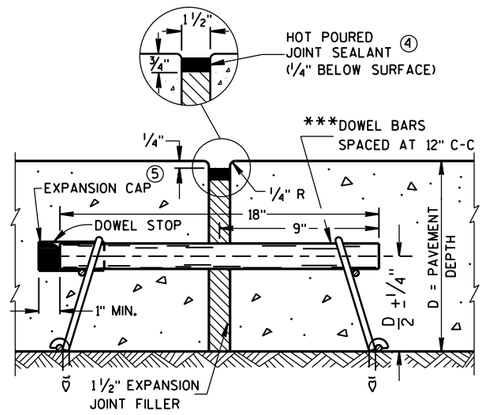
③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

④ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.

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.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
/S/ Peter Kemp, P.E.
PAVEMENT SUPER
FHWA

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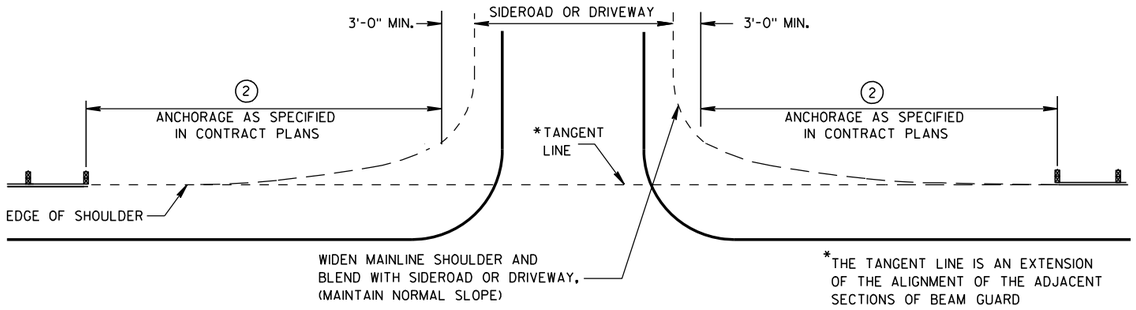
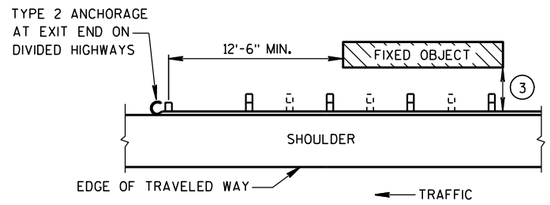
S.D.D. 13 B 2-8a



BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

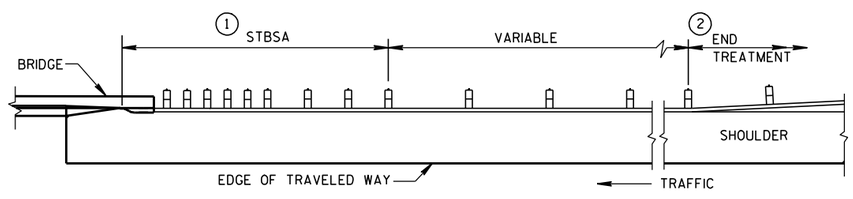
THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

(1) STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.

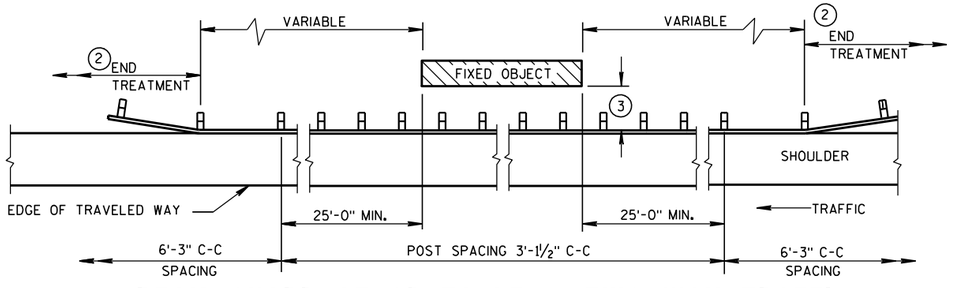
(2) USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

(3)

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1½"
4'-6"	6' - 3"

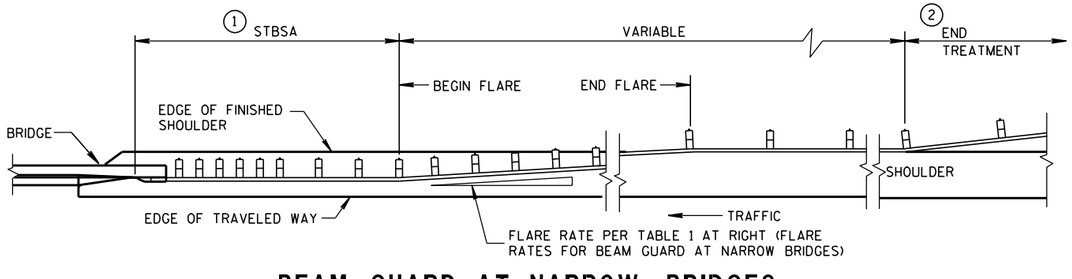


BEAM GUARD AT FULL WIDTH BRIDGES



BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")



BEAM GUARD AT NARROW BRIDGES
(FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

TABLE 1
FLARE RATES FOR BEAM GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1

STEEL PLATE BEAM GUARD CLASS "A" AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-21-07 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 14 B 18-6a

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.

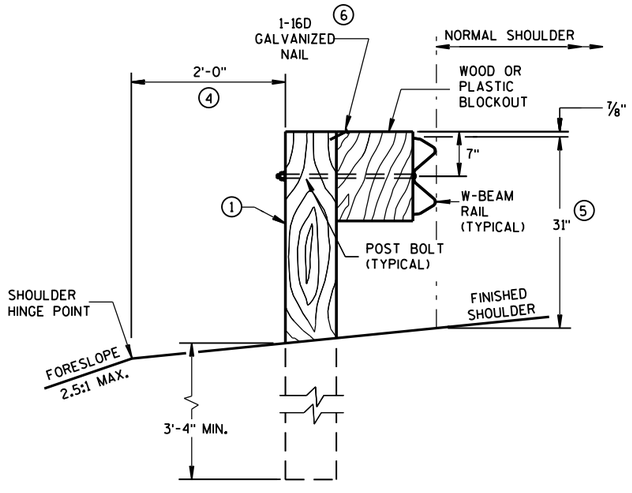
② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ 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).

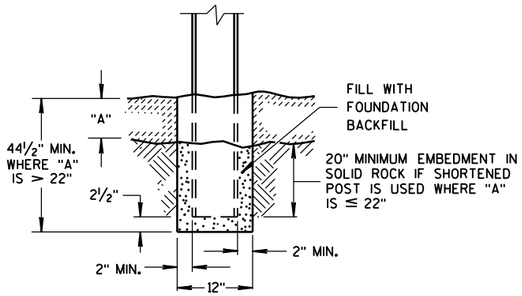
⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

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.



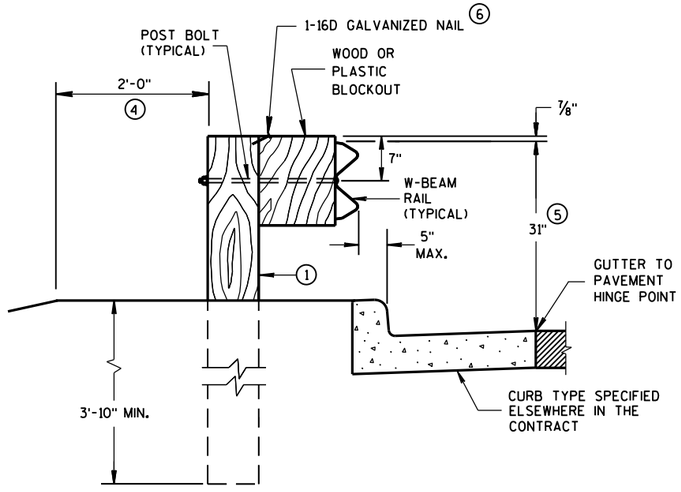
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



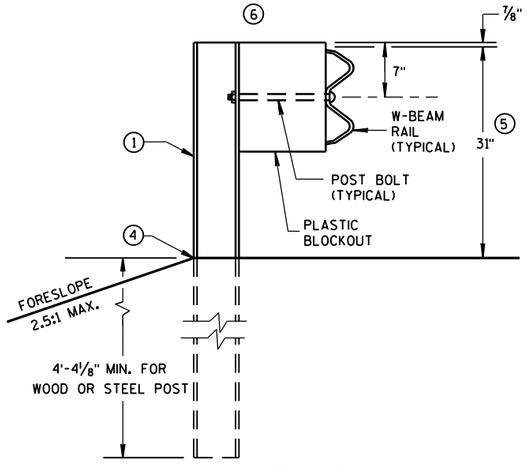
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



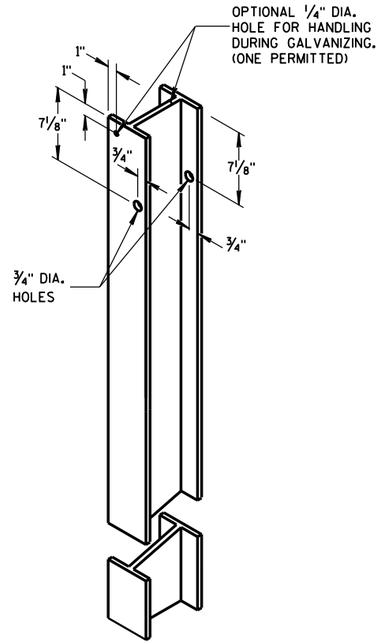
END VIEW

LOCATED ALONG A CURBED ROADWAY

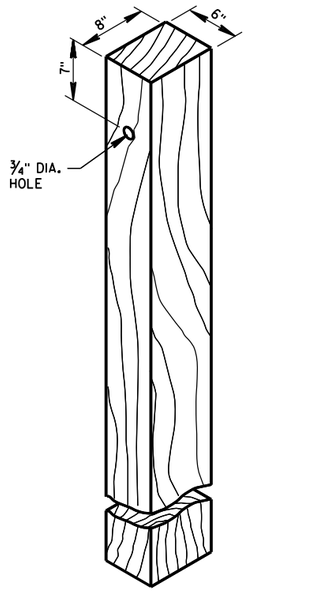


END VIEW

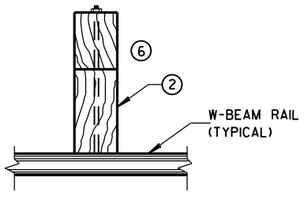
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



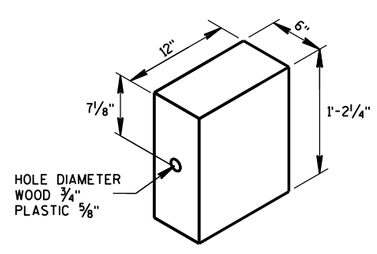
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



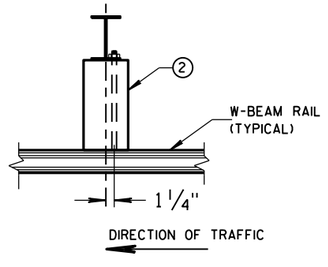
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②



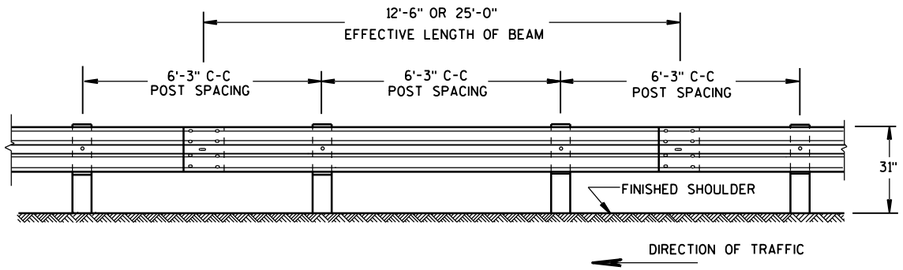
PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

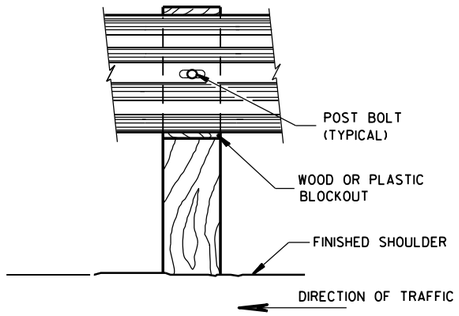
6

S.D.D. 14 B 42-4a



FRONT VIEW

POST SPACING STANDARD INSTALLATION



FRONT VIEW AT WOOD POST

7. PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

8. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

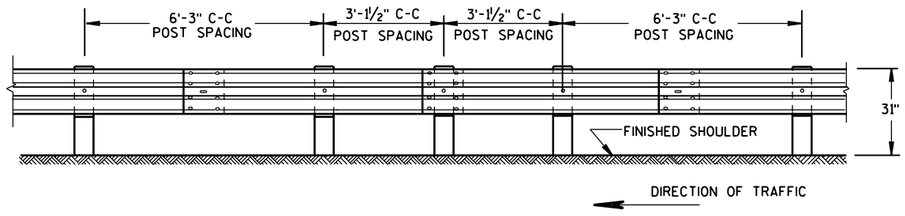
9. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

10. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

11. 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

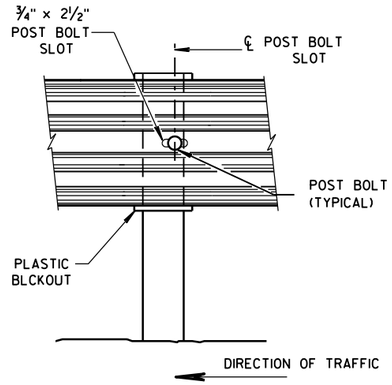
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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

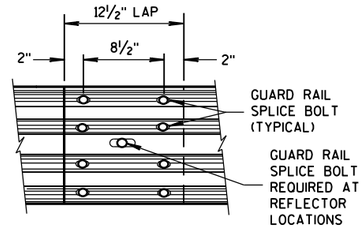


FRONT VIEW

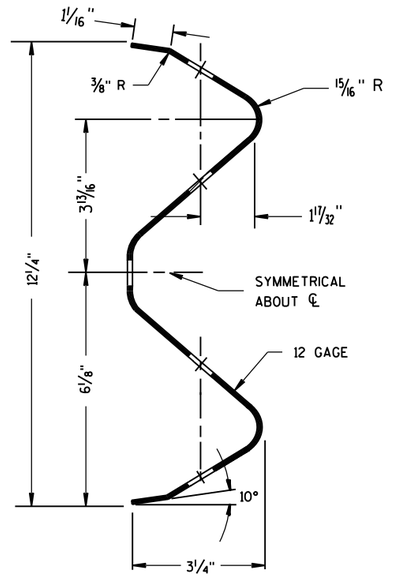
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



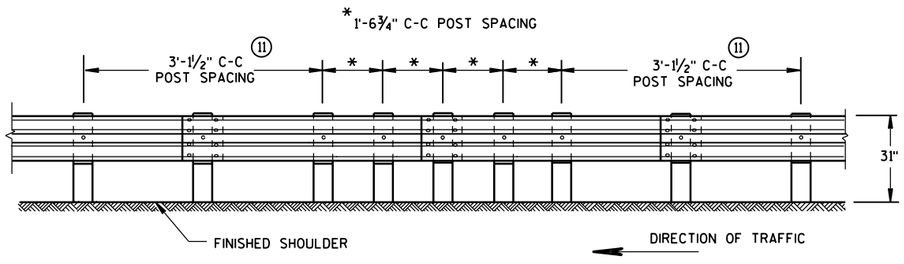
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE

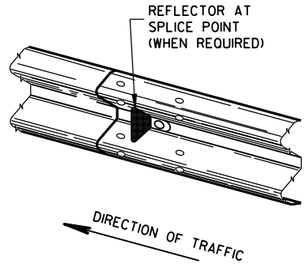


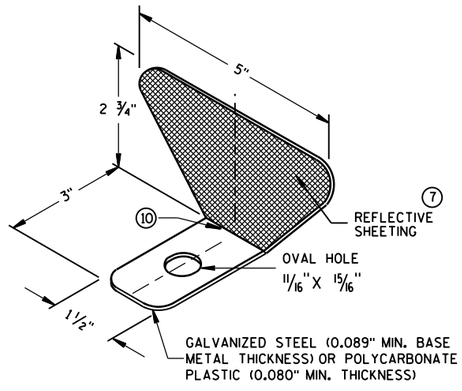
SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (7)

REFLECTOR SPACING (8)

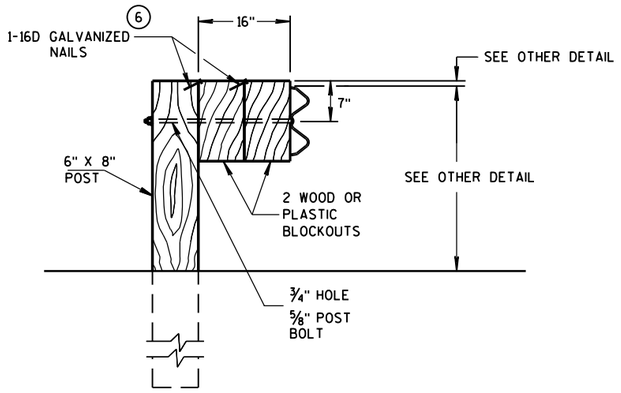
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 (9)	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2 (10)	

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

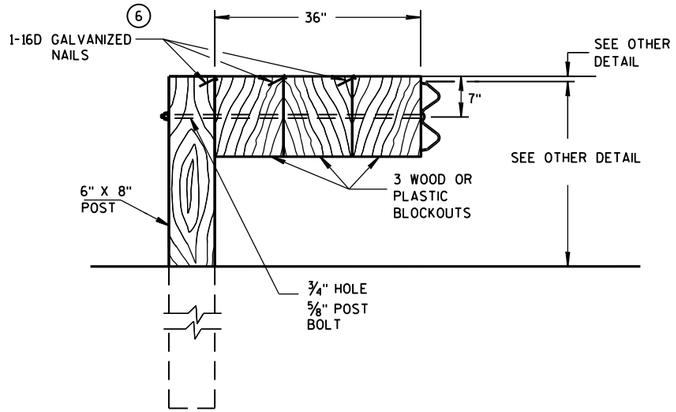
6

S.D.D. 14 B 42-4b



DETAIL FOR 16" BLOCKOUT DEPTH

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

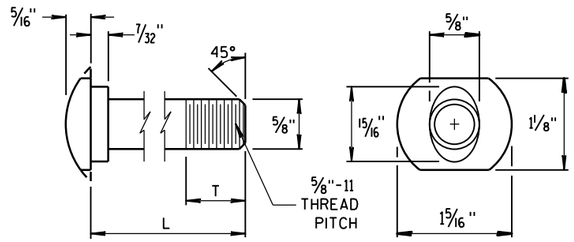


DETAIL FOR 36" BLOCKOUT DEPTH

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

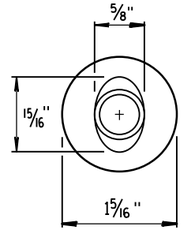
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

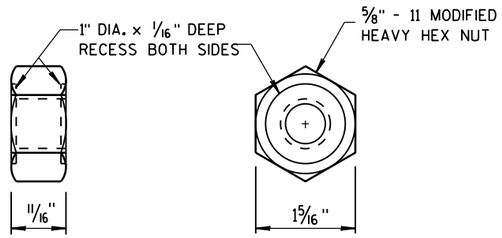


POST BOLT TABLE

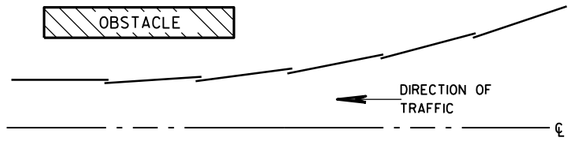
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

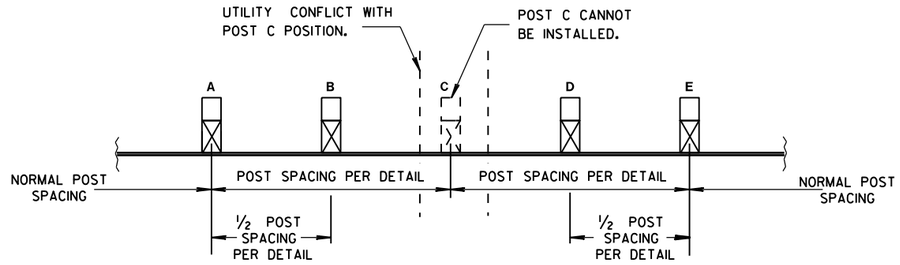


POST BOLT, SPLICE BOLT AND RECESS NUT

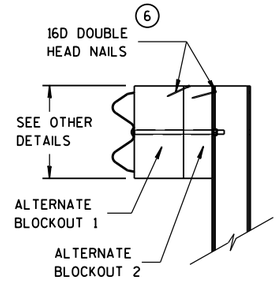


PLAN VIEW

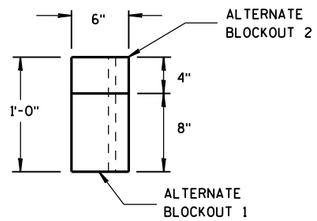
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

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

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

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

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

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

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

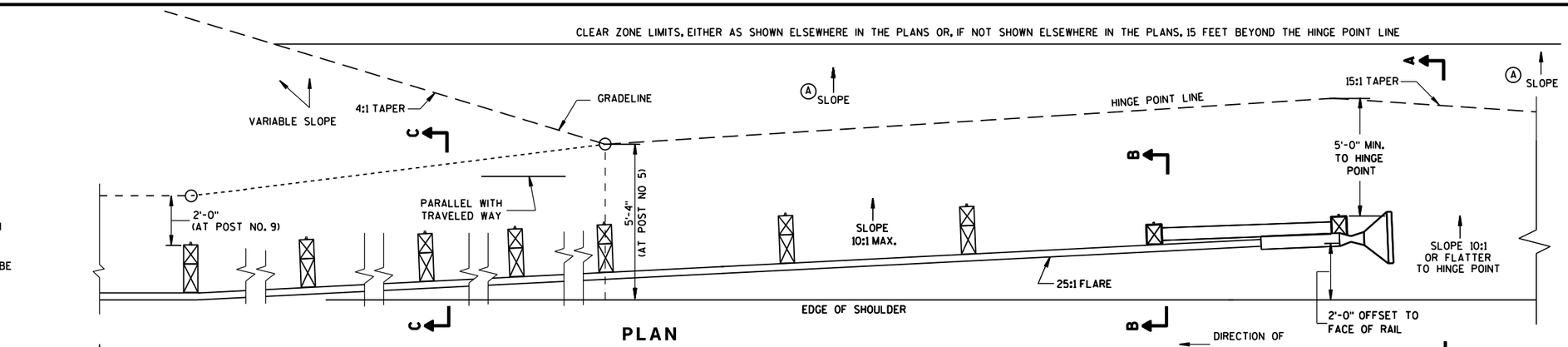
SEE SDD 14B42 FOR MORE INFORMATION.

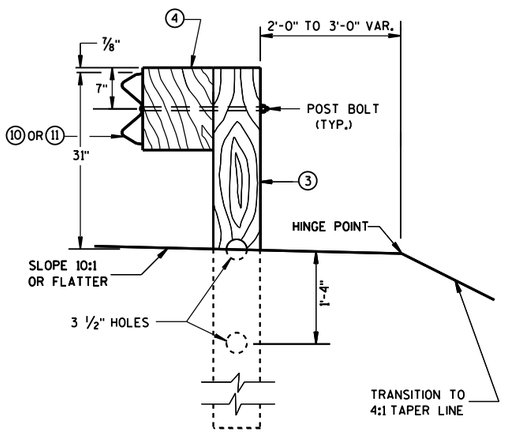
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

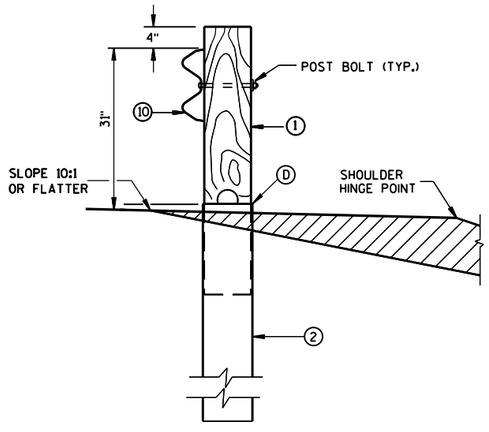
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.

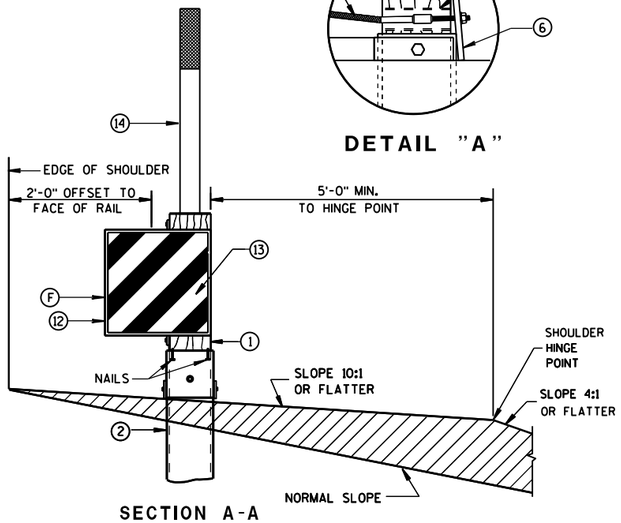




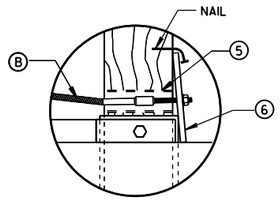
SECTION C-C
TYPICAL AT POST NOS. 3-9



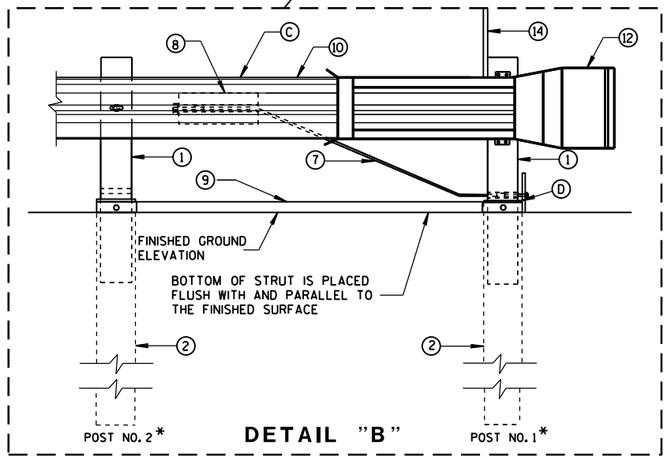
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



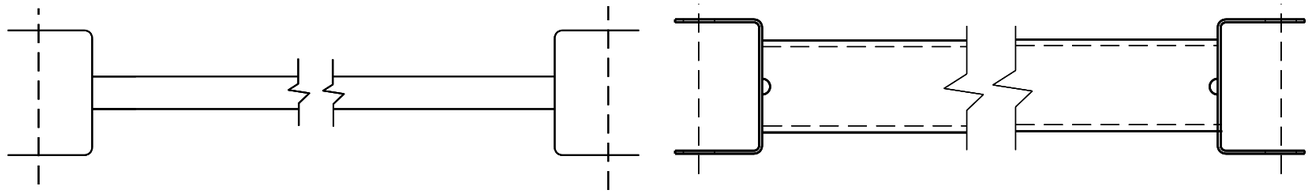
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

S.D.D. 14 B 44-2a

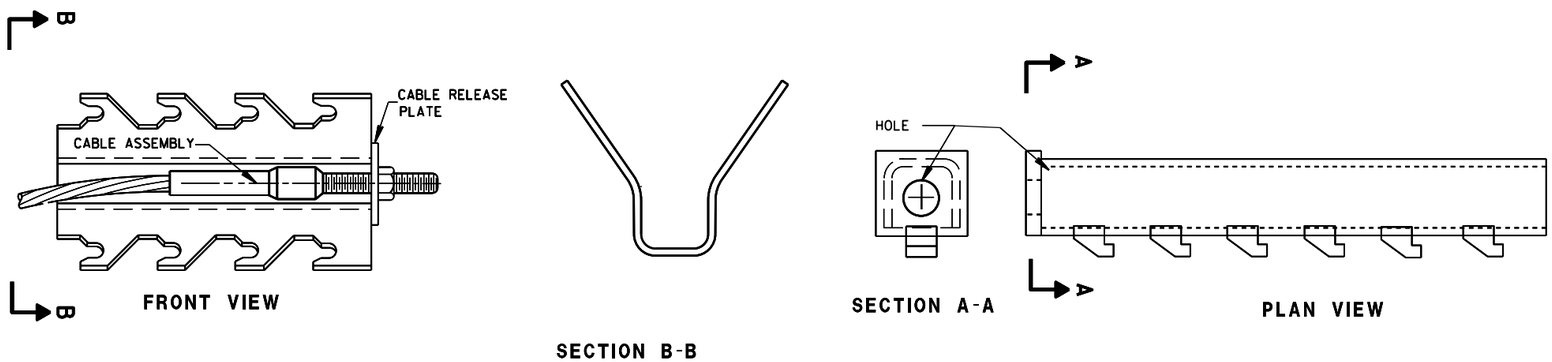
S.D.D. 14 B 44-2a



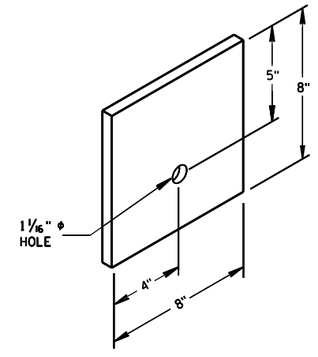
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND STRUT
(10)	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
(11)	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
(12)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



GENERIC ANCHOR CABLE BOX (8) (H)



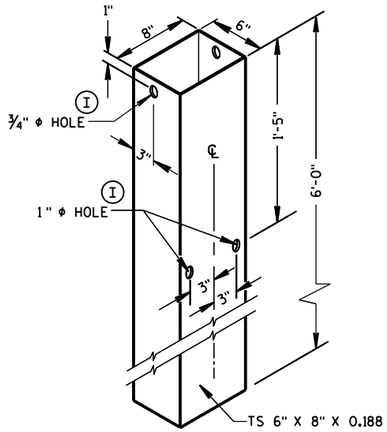
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

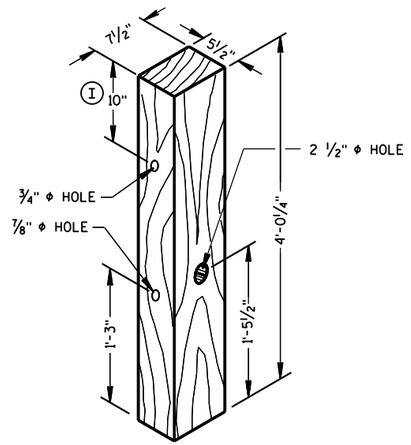
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 44-2b

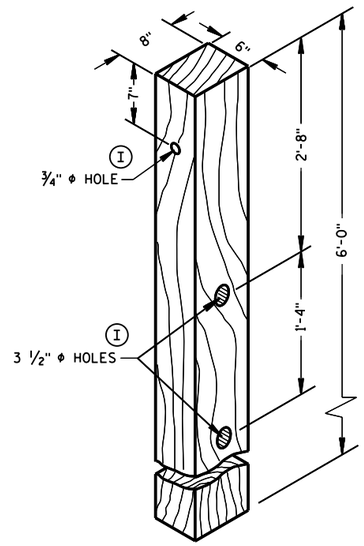


FOUNDATION TUBE (2)



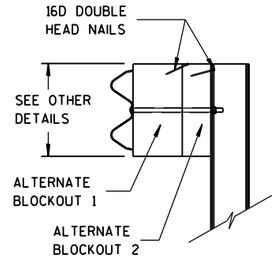
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

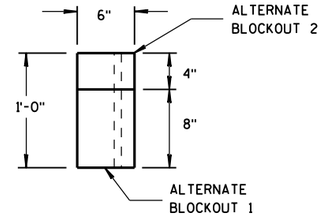


POSTS NUMBER 3-9

WOOD CRT POST (3)

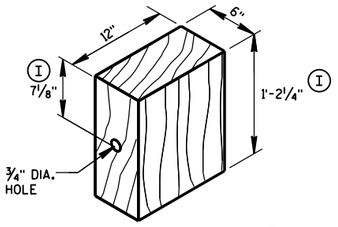


SIDE VIEW



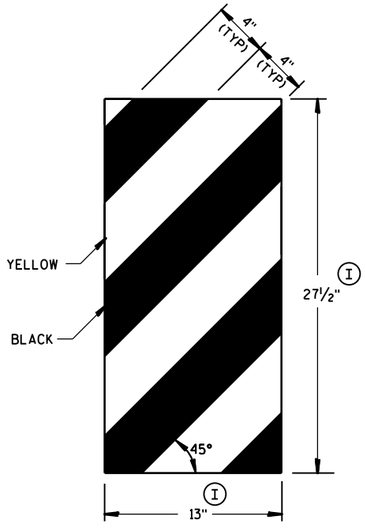
TOP VIEW

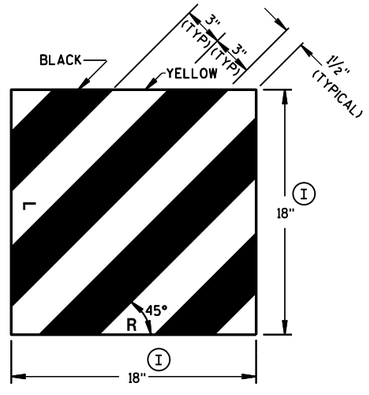
ALTERNATE WOOD BLOCKOUT DETAIL



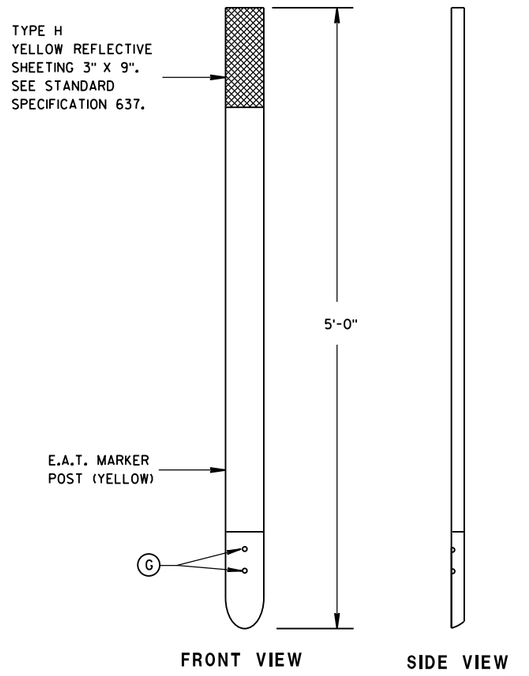
WOOD BLOCKOUT (4)

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





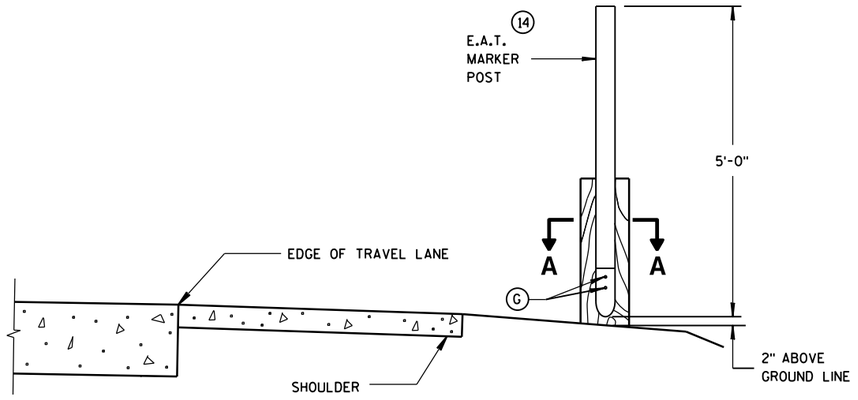
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

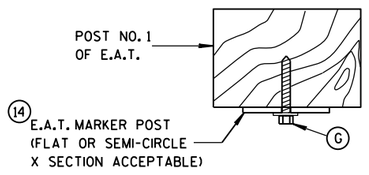
SIDE VIEW

E.A.T. MARKER POST (14)



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

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



SECTION A-A

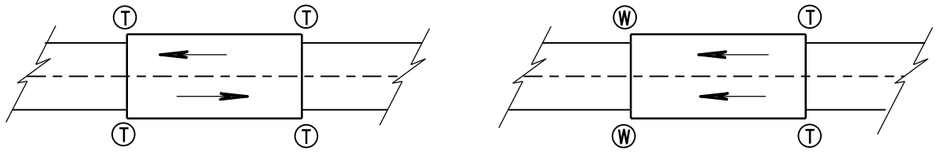
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 44-2c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

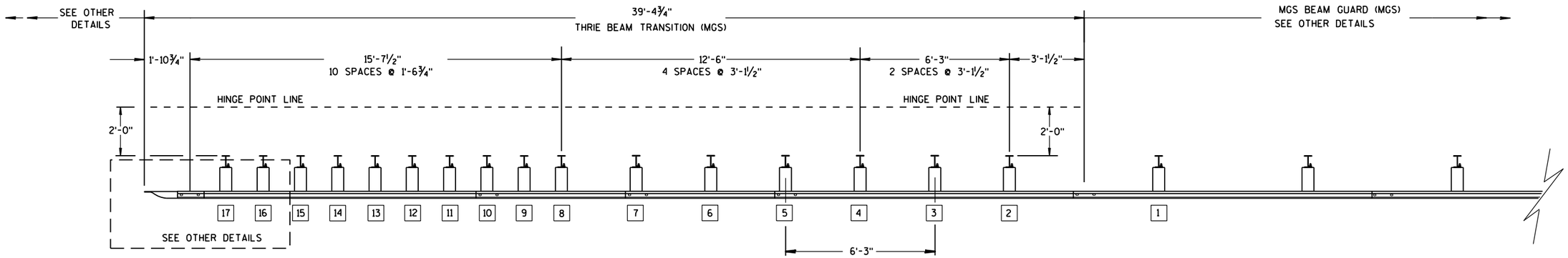
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

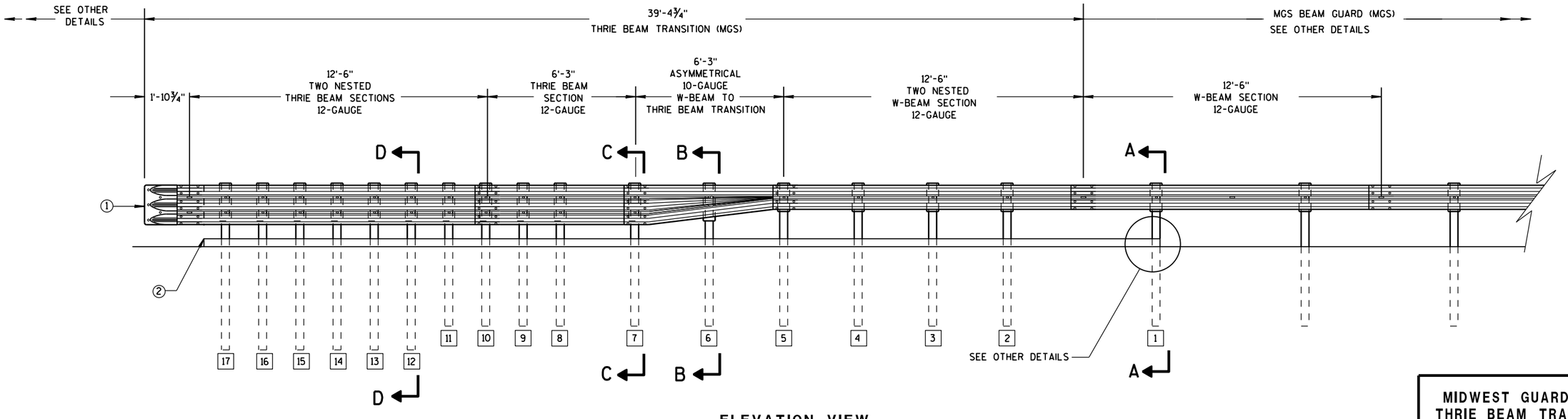
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 45-4a

6

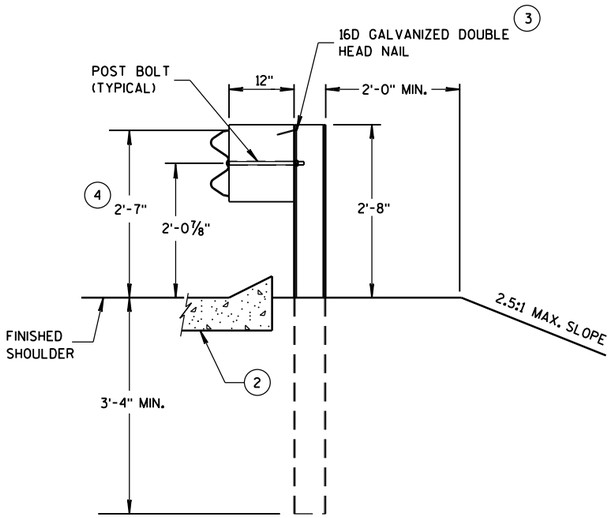
S.D.D. 14 B 45-4a

GENERAL NOTES

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

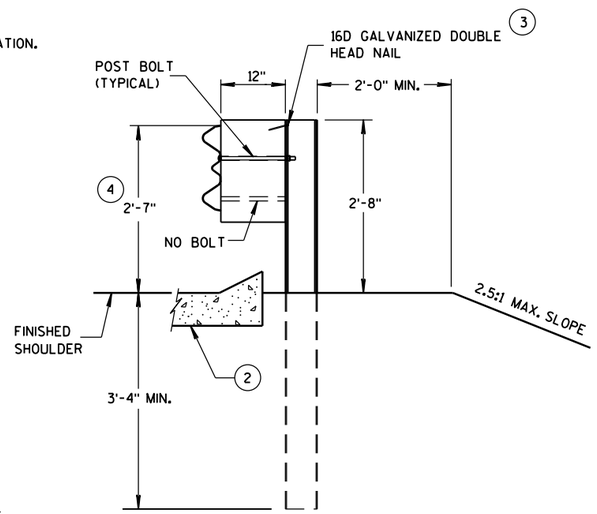
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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



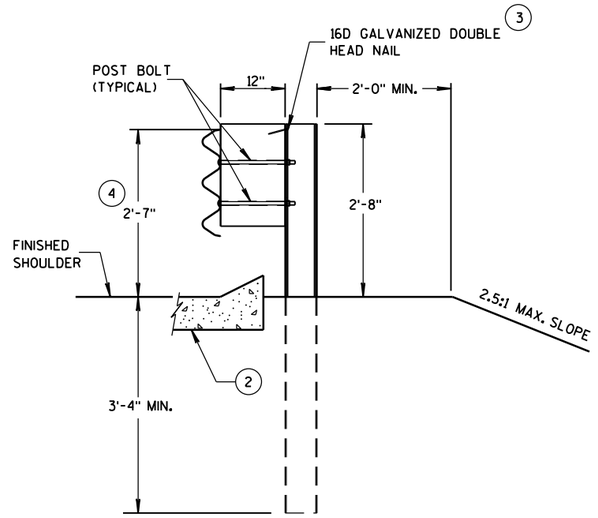
SECTION A-A

POSTS 1-5



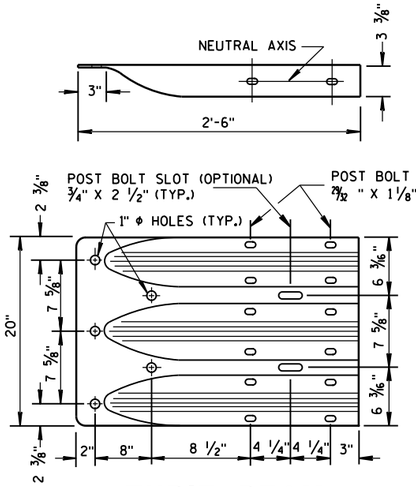
SECTION B-B

POST 6



SECTION C-C

POSTS 7-11



THRIE BEAM TERMINAL CONNECTOR

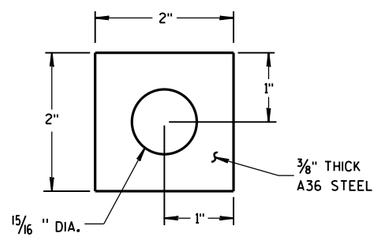
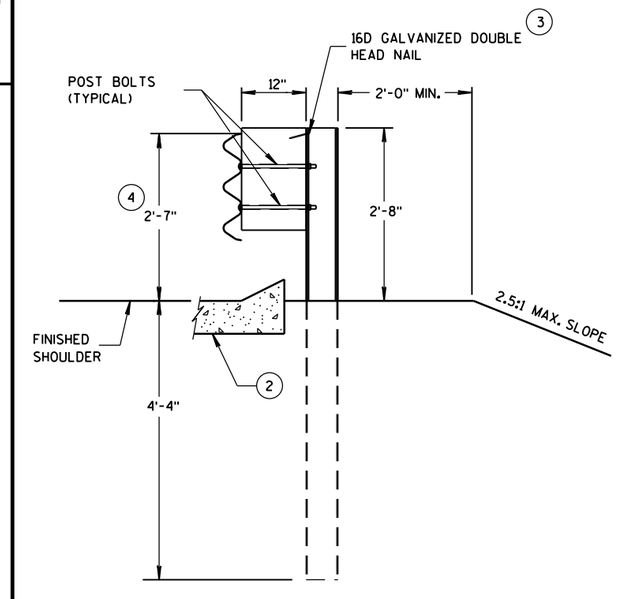
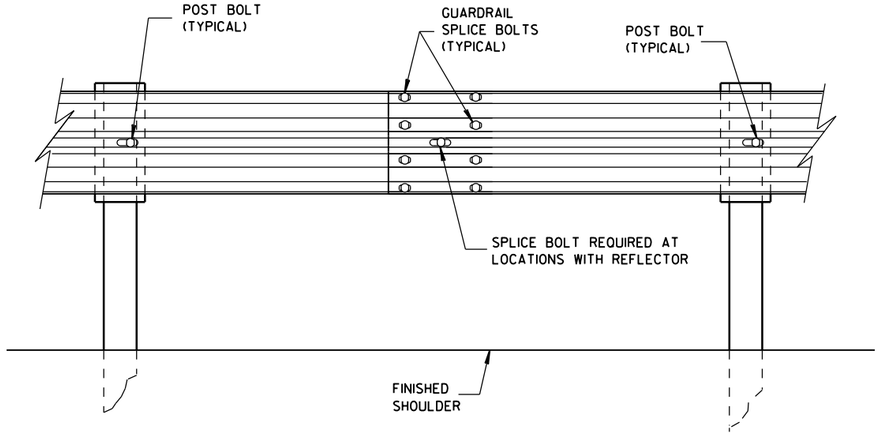


PLATE WASHER DETAIL

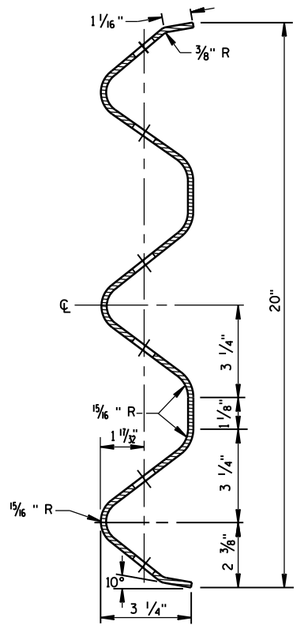


SECTION D-D

POSTS 12-17



SPLICE DETAIL



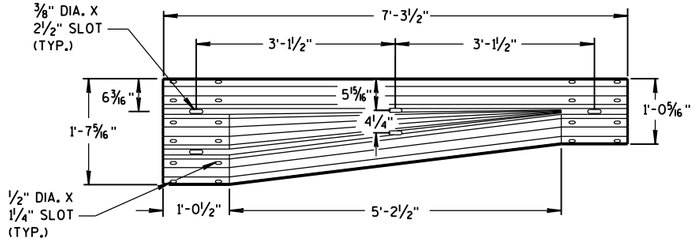
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

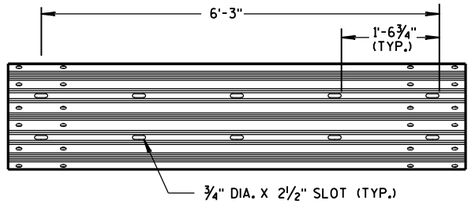
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

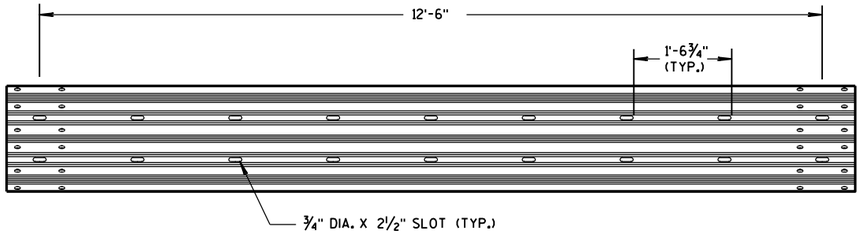
S.D.D. 14 B 45-4b



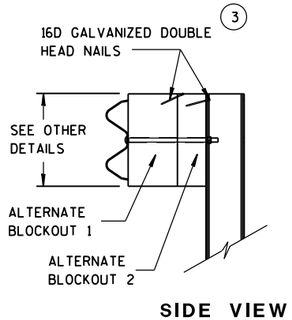
W-BEAM TO THRIE BEAM TRANSITION SECTION



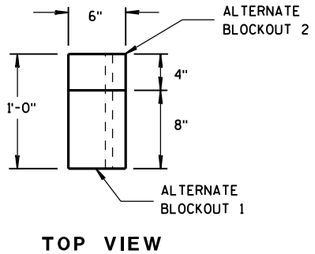
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

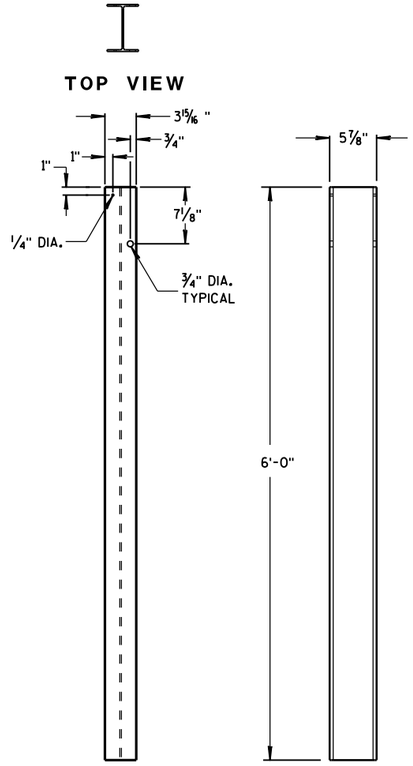


SIDE VIEW



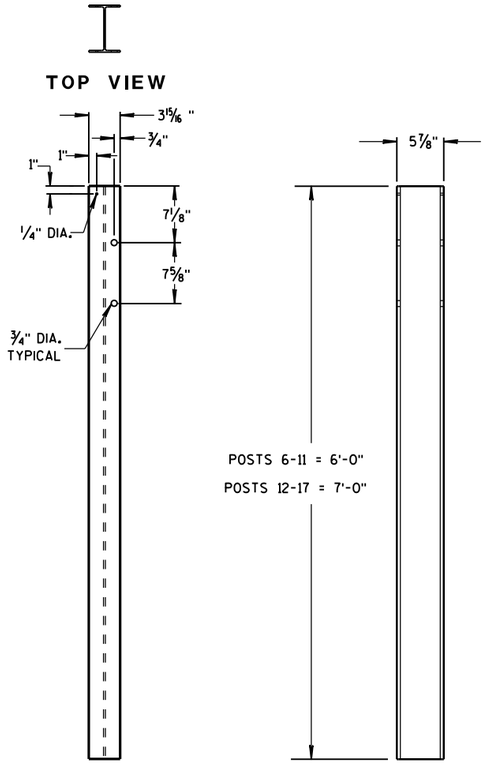
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



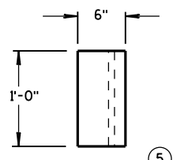
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5

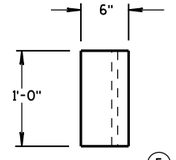


FRONT VIEW SIDE VIEW

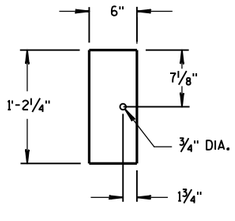
STEEL POSTS 6-17



TOP VIEW (5)

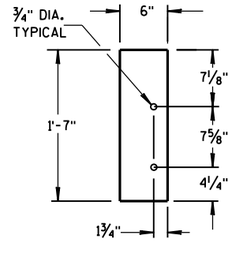


TOP VIEW (5)



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.

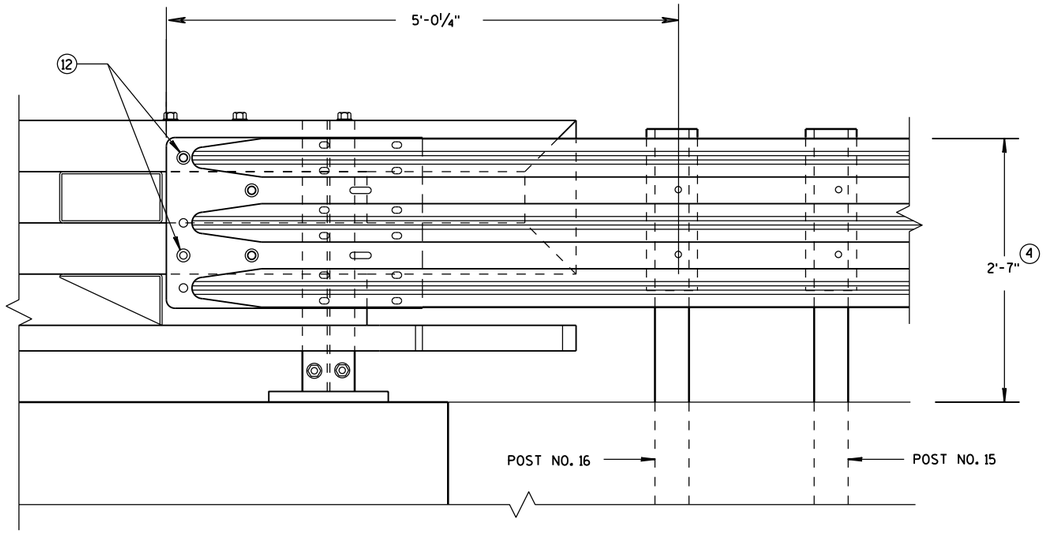
(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

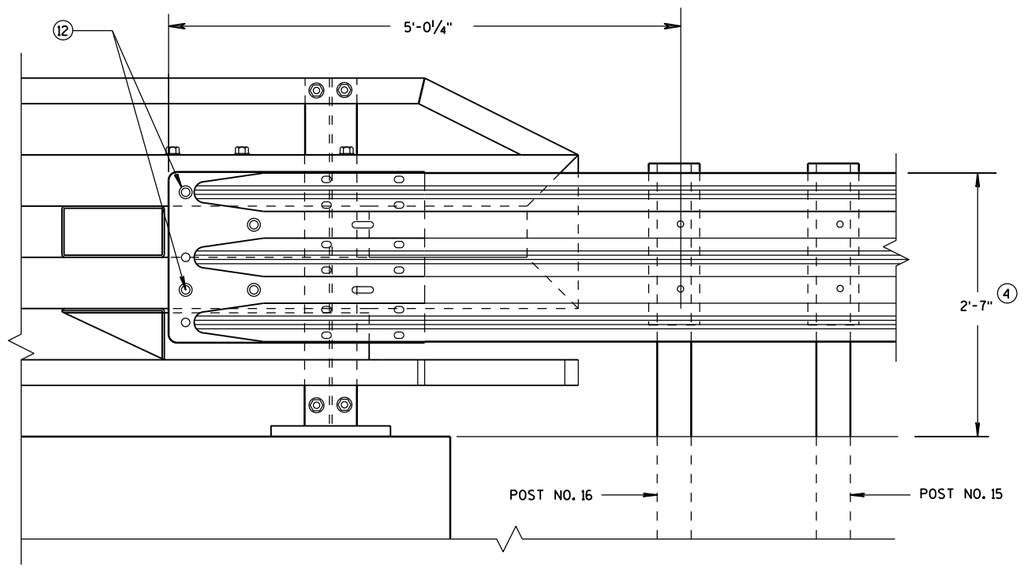
6

S.D.D. 14 B 45-4c



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 ½-INCH BEYOND NUT.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS D 27 NT
ENGINEER

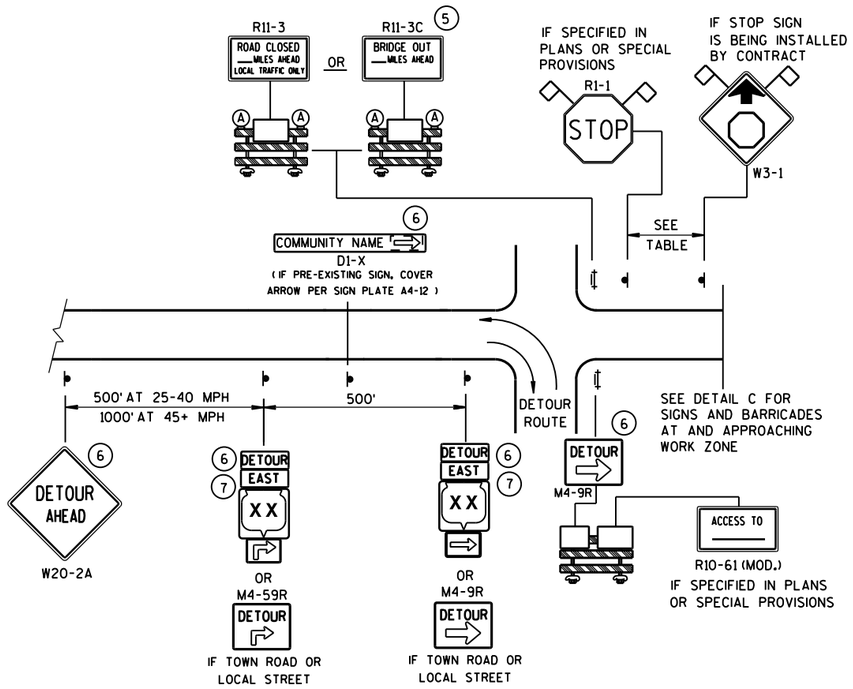
FHWA

6

S.D.D. 14 B 45-4k

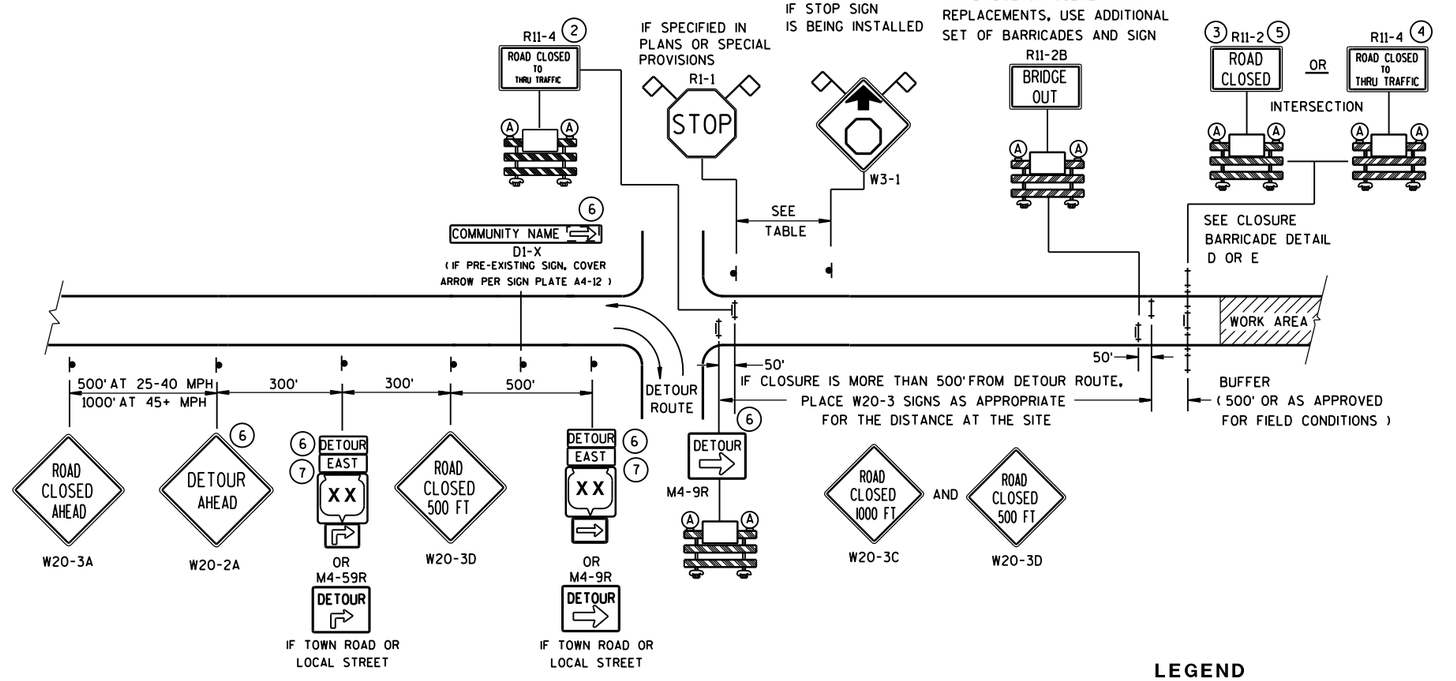
6

S.D.D. 14 B 45-4k



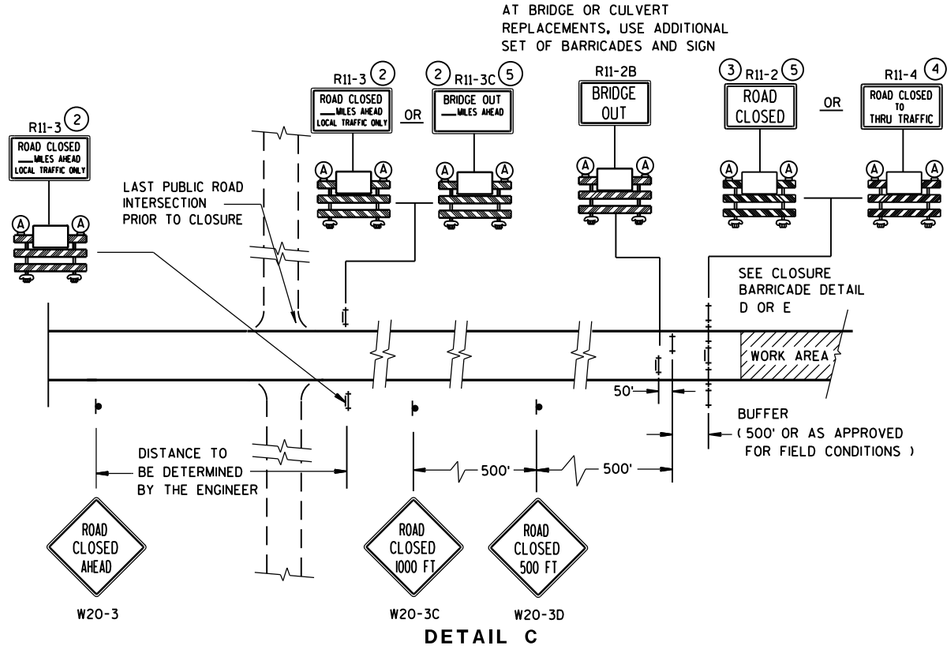
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

SEE SDD 15C2-SHEET "**b**" FOR GENERAL NOTES AND FOOTNOTES (1) THROUGH (7)

LEGEND

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

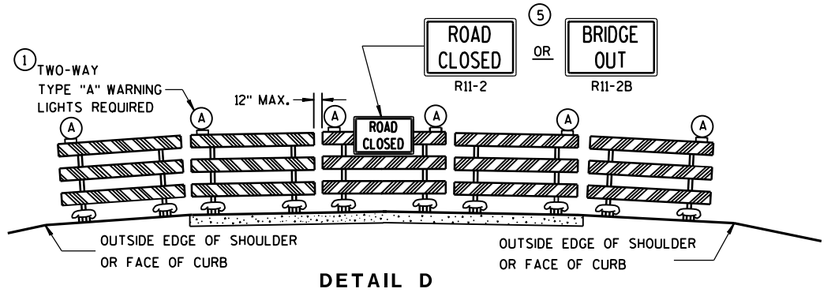
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

6

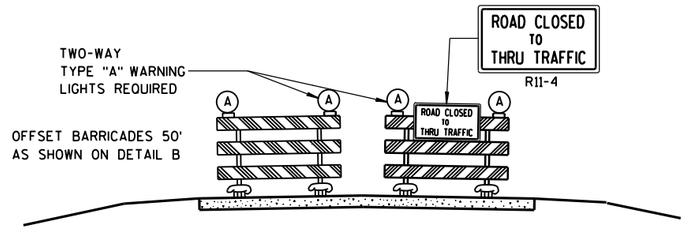
S.D.D. 15 C 2-6a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO... SAFETY ENGI... — FHWA — FIC

6

S.D.D. 15 C 2-6b

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

GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

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

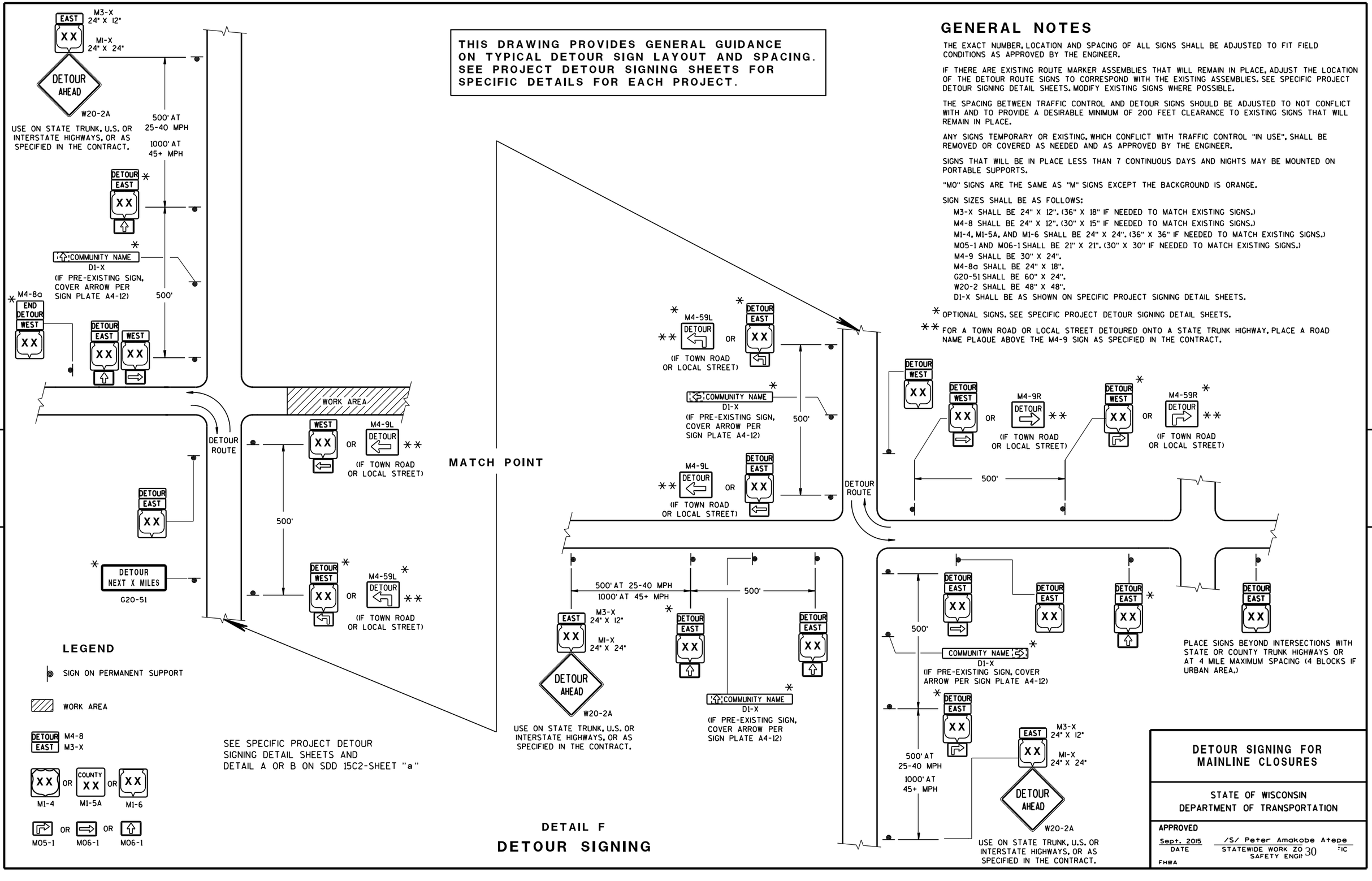
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- MO5-1 AND MO6-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

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

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



DETAIL F

DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

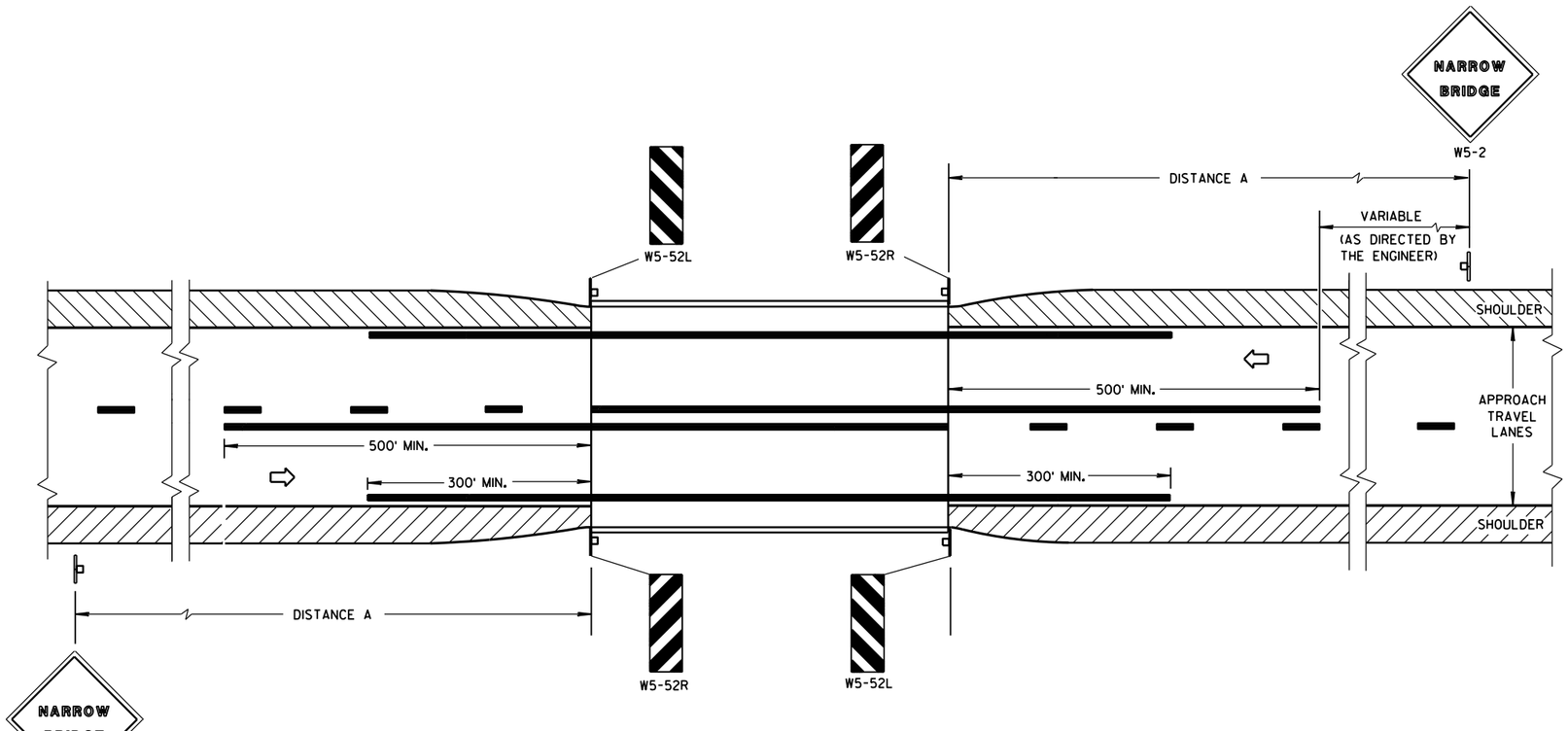
Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO... SAFETY ENGI... FIC

FHWA

6

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

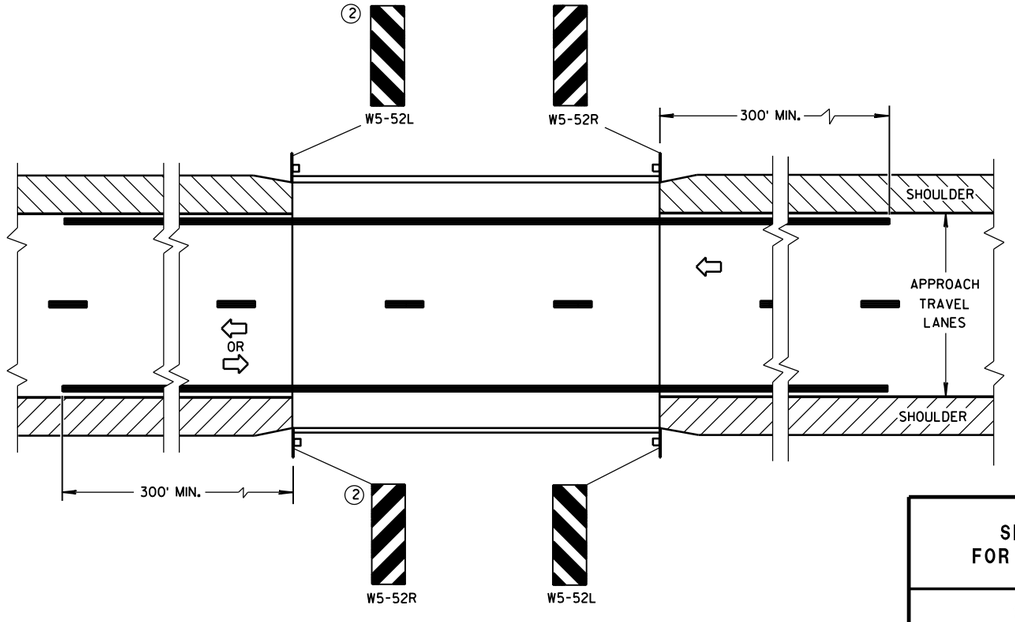


SITUATION 1

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'



SITUATION 2

WARRANTING CRITERIA:

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

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.

① LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

② OMIT ON ONE-WAY TRAVELLED WAYS.

③ EDGE OF W5-52 SIGN SHALL BE PLACED IN LINE WITH FACE OF CURB OR PARAPET.

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

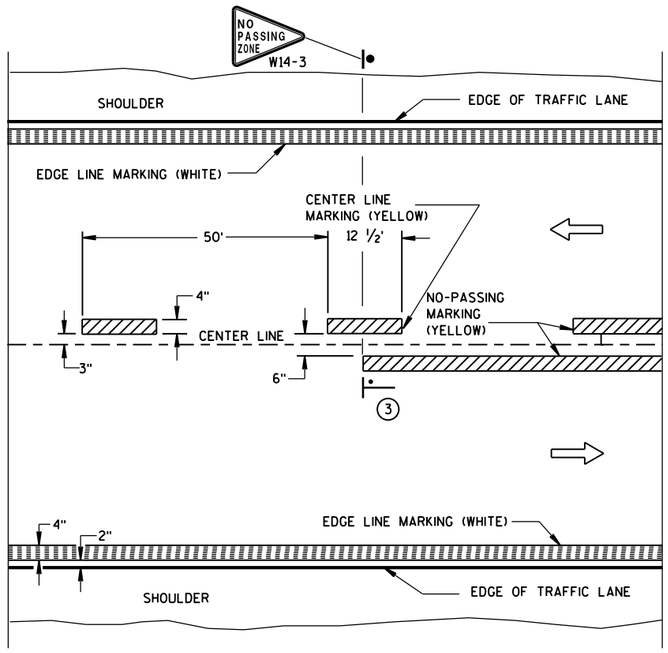
APPROVED
4-18-16 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

6

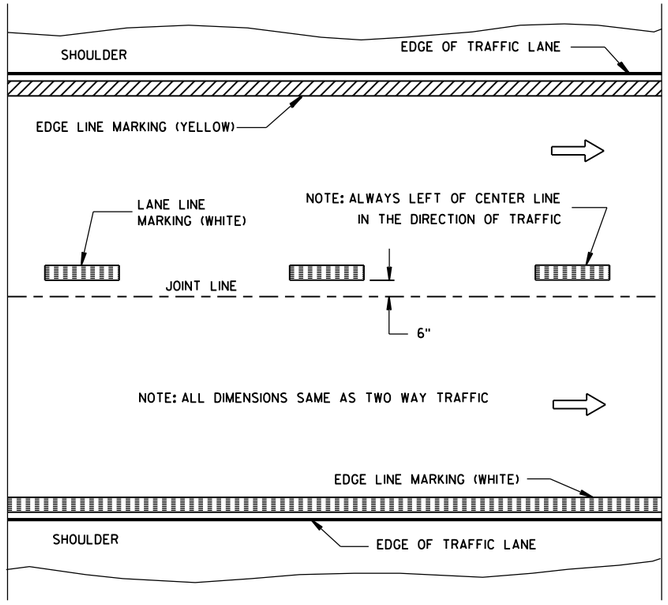
S.D.D. 15 C 6-8

6

S.D.D. 15 C 6-8

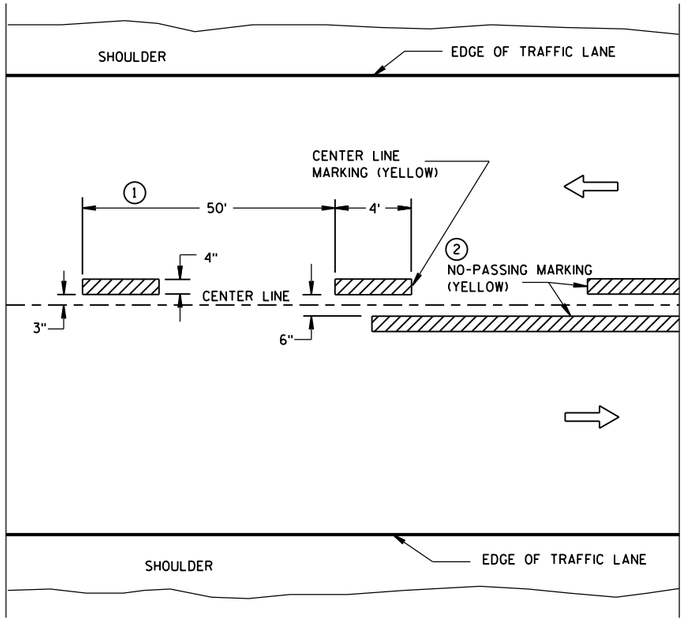


TWO WAY TRAFFIC

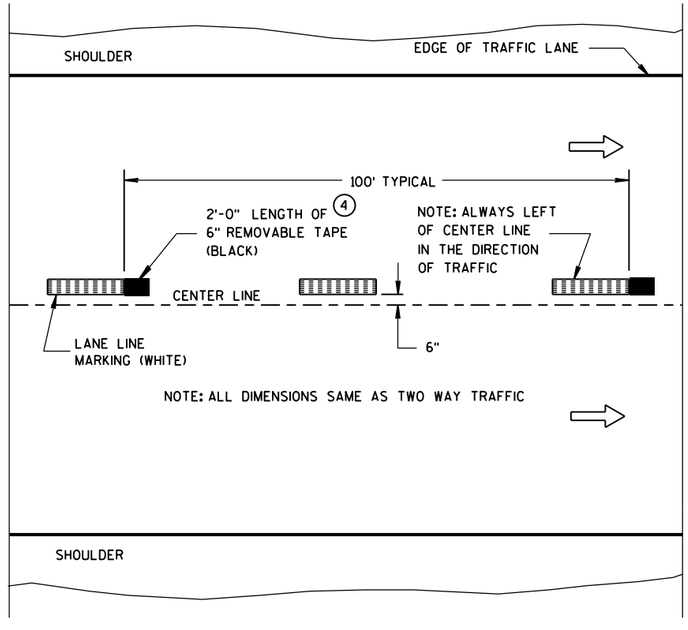


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

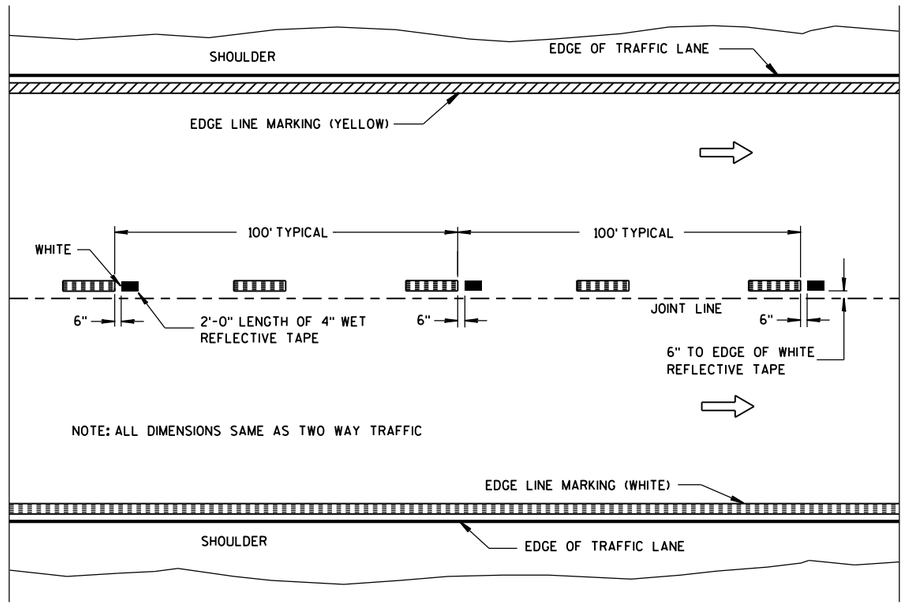
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



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

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

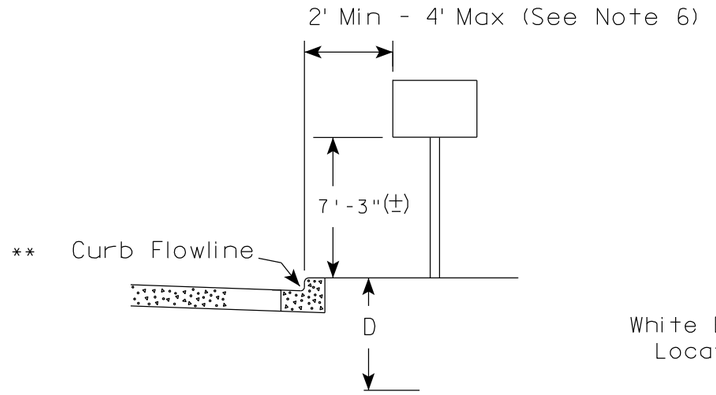
6

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

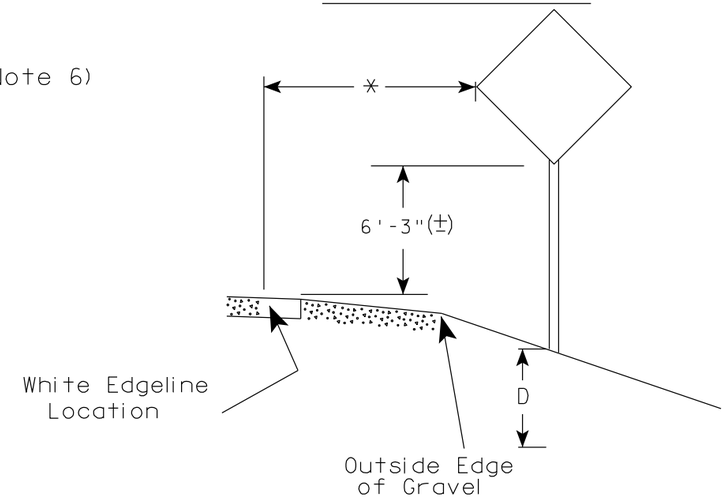
6

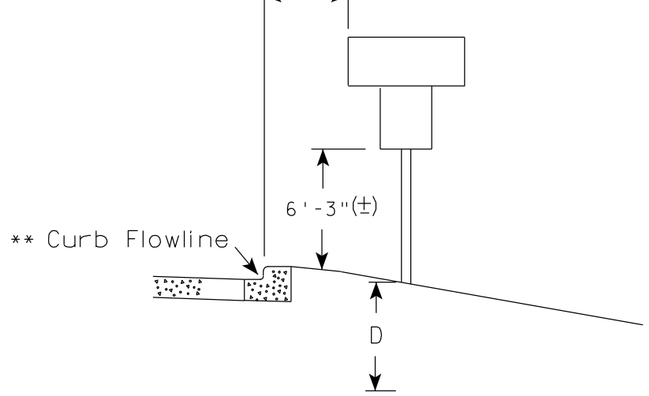
S.D.D. 15 C 8-16a

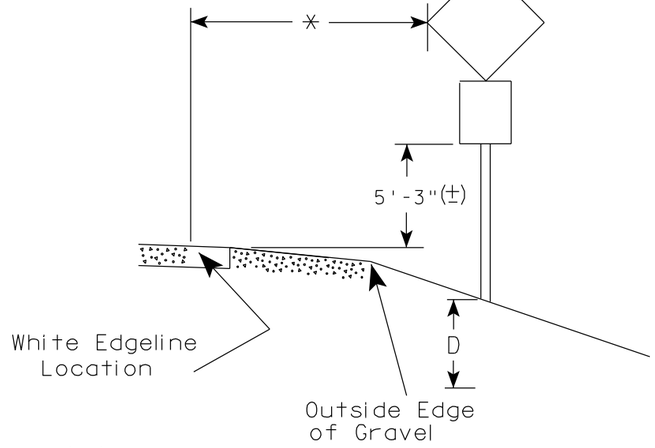
URBAN AREA



RURAL AREA (See Note 2)







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

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

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 barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

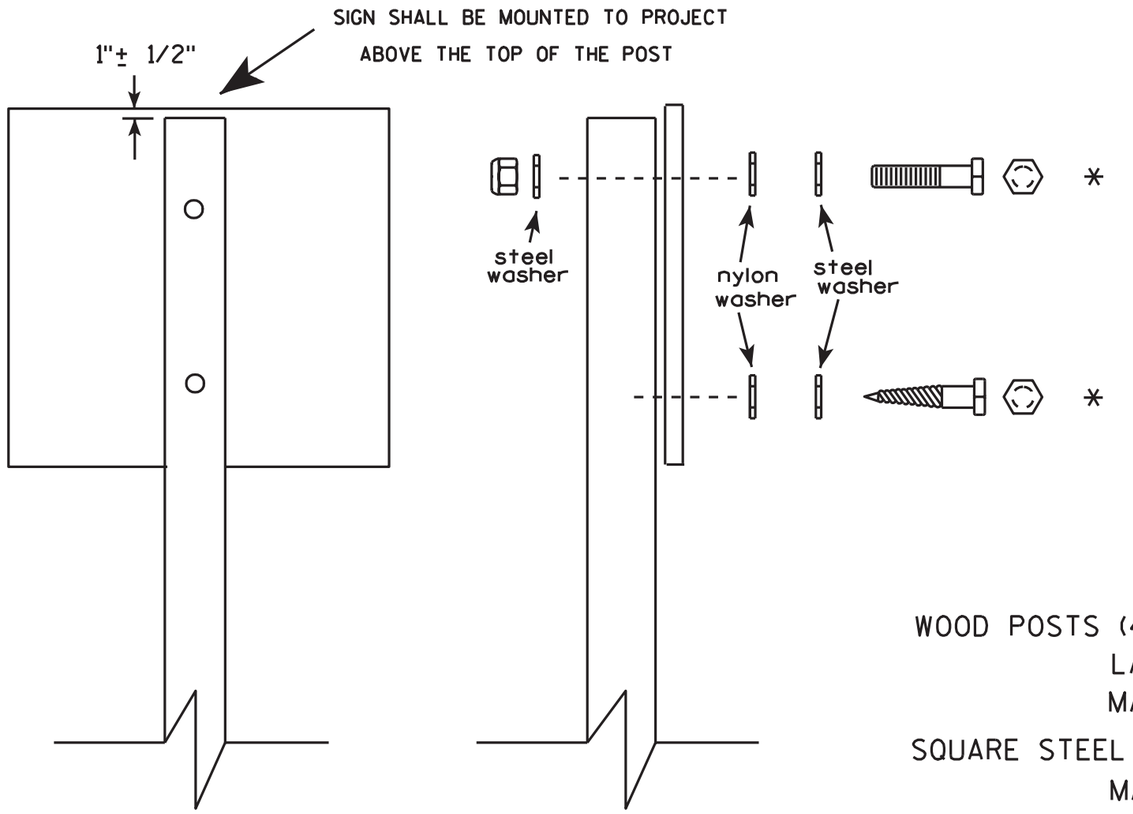
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 33	E



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

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

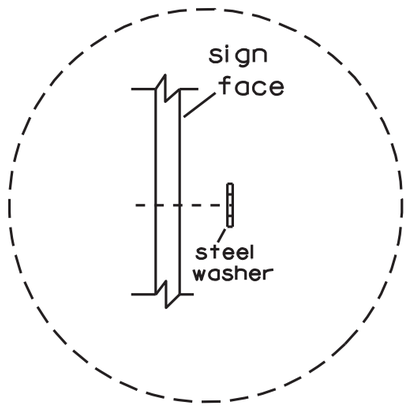
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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

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



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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

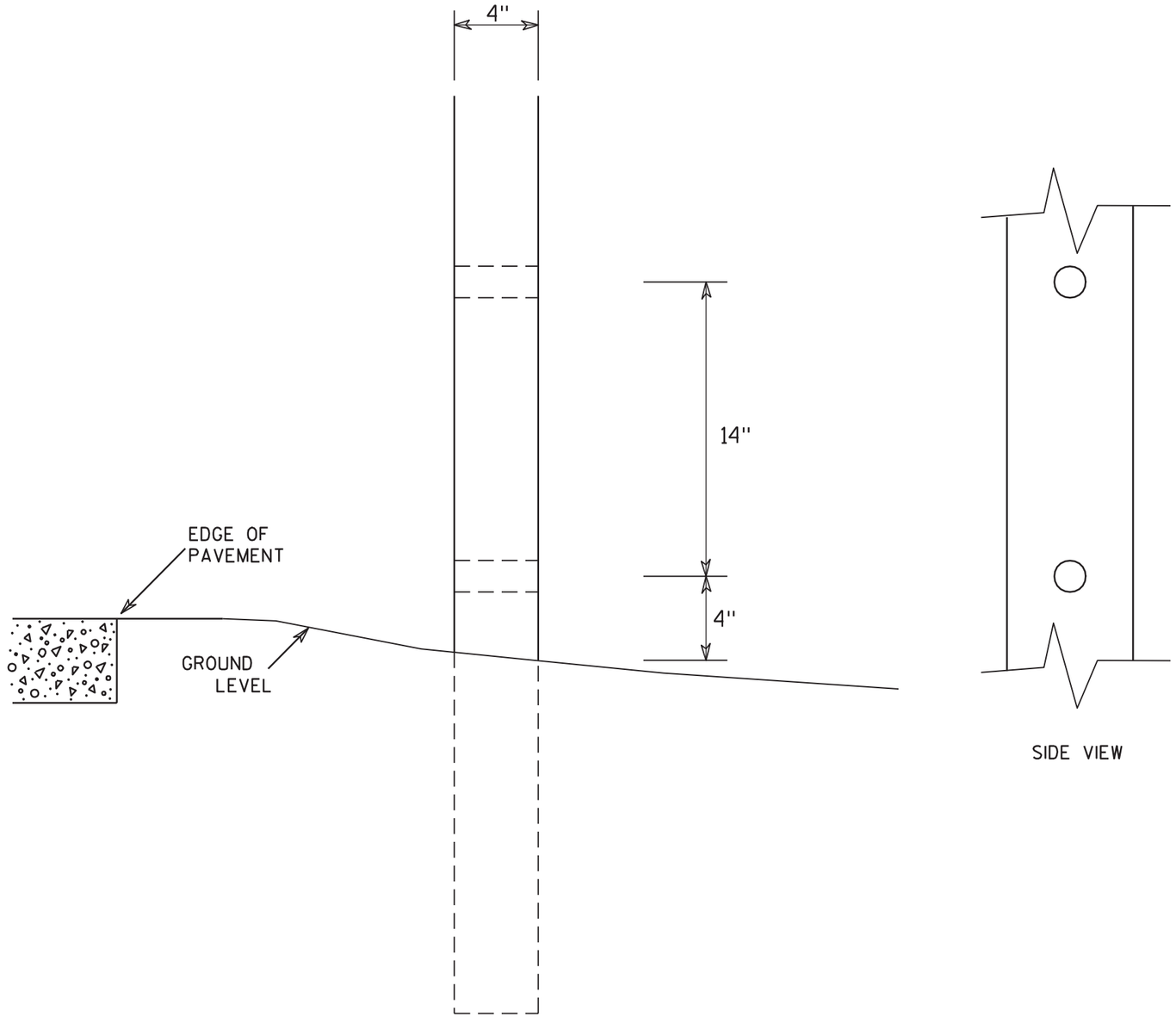
DATE 3/23/10 PLATE NO. A4-8.7

7

7

PROJECT NO:

SHEET NO: 34 E



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

7

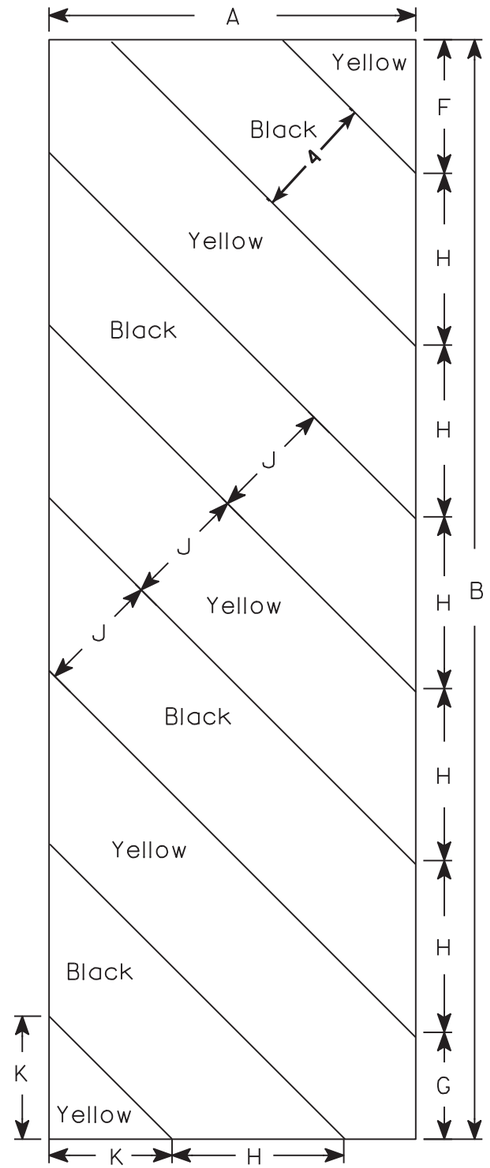
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

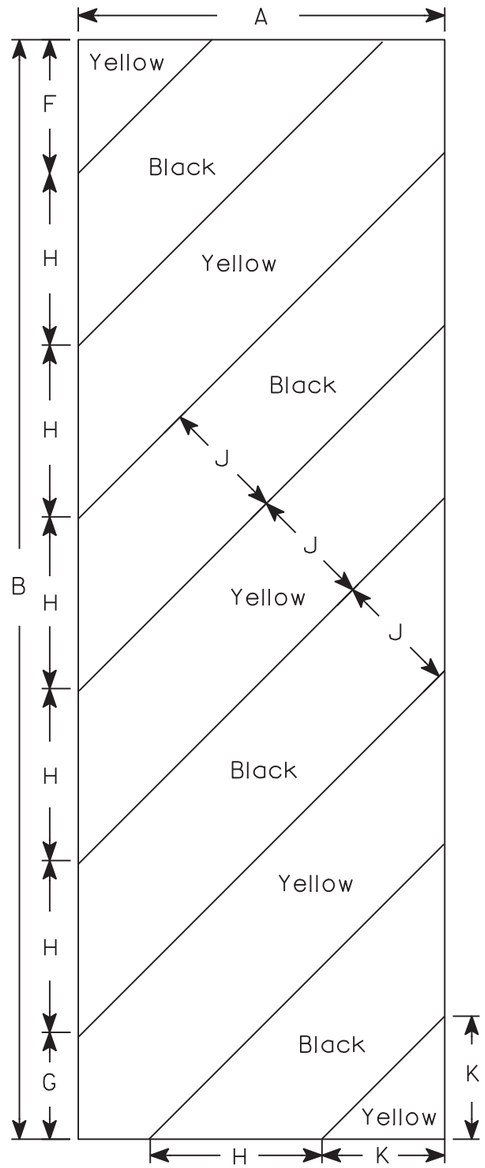
APPROVED Chester J Spang for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 35	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

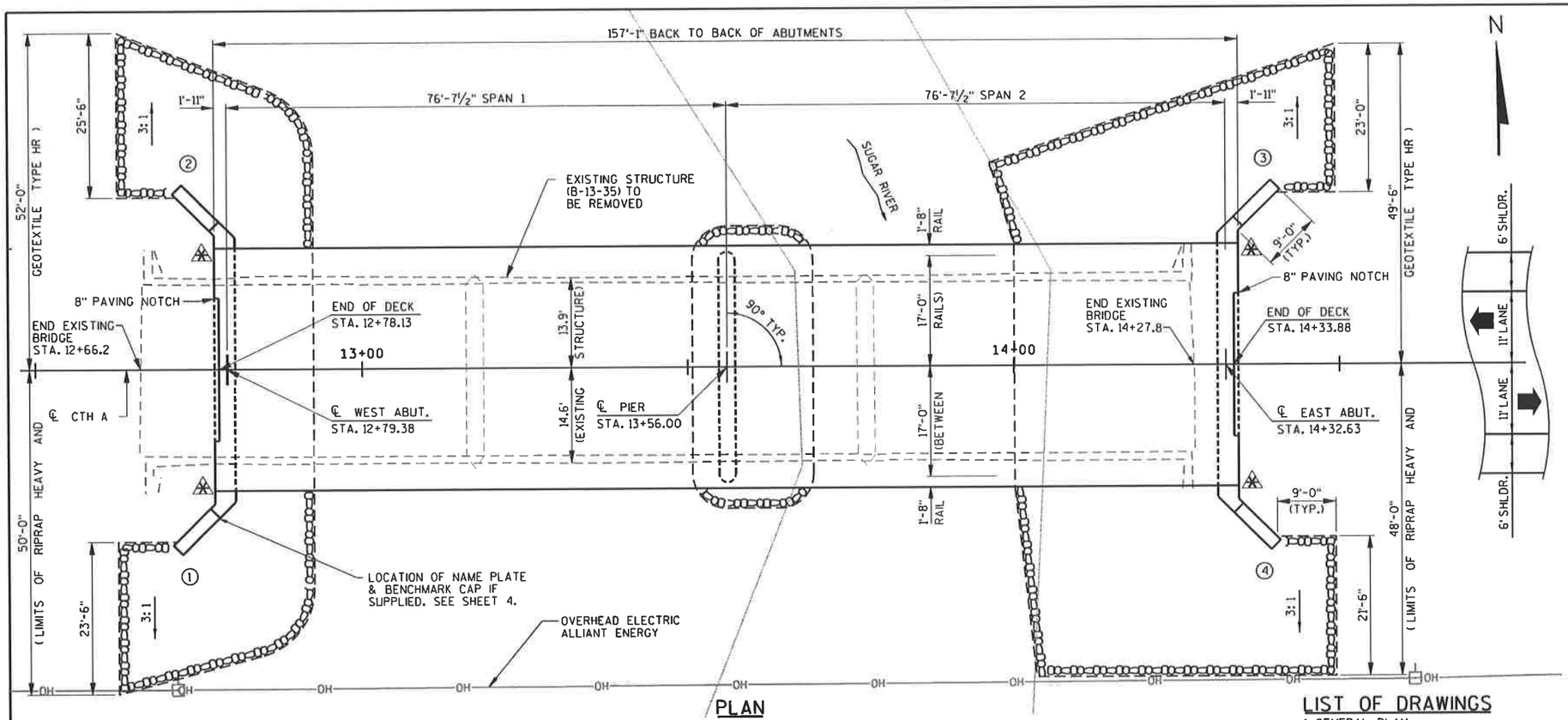
DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 36 | E

STATE PROJECT NUMBER
5848-00-70

BENCHMARKS ⊕ NAVD 88

NO.	STA./OFFSET	DESCRIPTION	ELEV.
1	11+07.4, 36.6' LT.	RAILROAD SPIKE IN TREE	879.58
2	12+67.5, 14.9' LT.	CHISELED CROSS	886.84



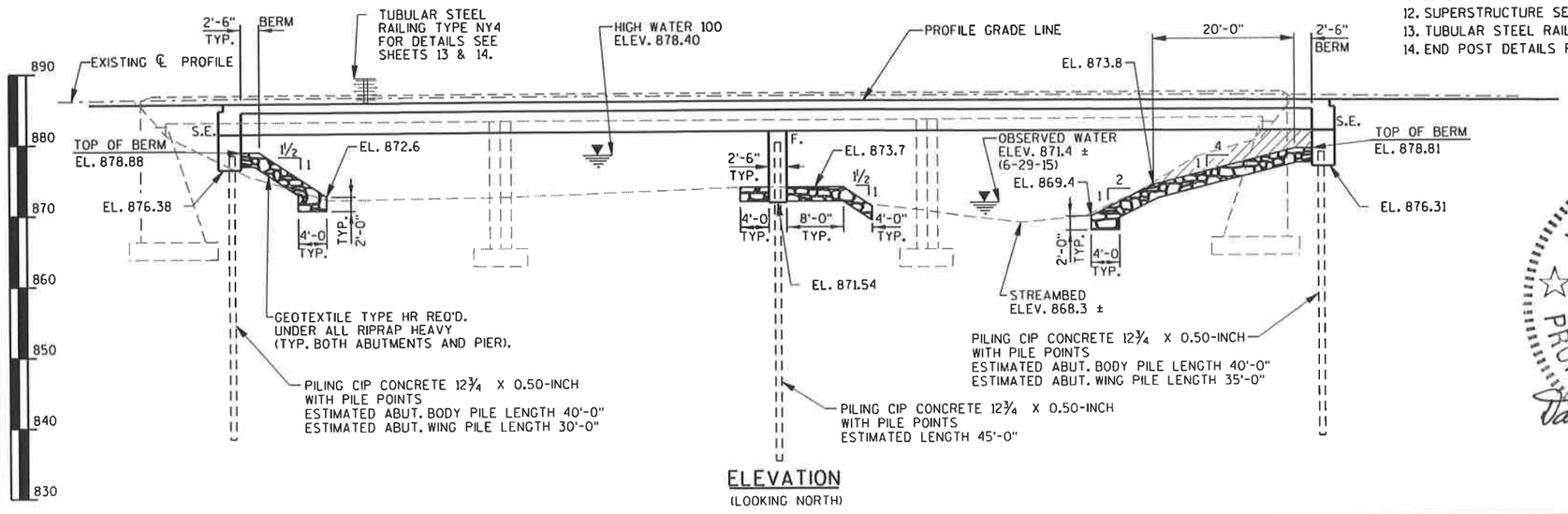
PLAN

(TWO SPAN 36W" PRESTRESSED CONCRETE GIRDER)

○ - INDICATES WING NUMBER

⁂ - INDICATES LOCATION OF THRIE BEAM GUARD ATTACHMENT AT WINGS.

▨ - REMOVAL OF THIS MATERIAL IS INCLUDED IN THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-13-685".



ELEVATION

(LOOKING NORTH)

DESIGN DATA

LIVE LOAD:

DESIGN LOADING : HL-93
INVENTORY RATING FACTOR : 1.24
OPERATIONAL RATING FACTOR : 1.63

TRAFFIC DATA:

A.A.D.T. (2017) = 530
A.A.D.T. (2037) = 630
R.D.S. = 50 MPH

WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS.

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

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.

36W-INCH PRESTRESSED GIRDERS CONCRETE MASONRY ——— f'c = 8,000 P.S.I.
STRANDS - 0.60" Φ WITH AN ULTIMATE TENSILE STRENGTH OF ——— fy = 270,000 P.S.I.

FOUNDATION DATA:

ABUTMENTS AND PIER TO BE SUPPORTED ON PILING CIP CONCRETE 12¾ X 0.50-INCH WITH PILE POINTS. DRIVE ABUTMENT PILES TO A REQUIRED DRIVING RESISTANCE OF 160 TONS ✳ PER PILE IN THE BODY AND 120 TONS ✳ PER PILE IN THE WINGS. DRIVE PIER PILES TO A REQUIRED DRIVING RESISTANCE OF 210 TONS ✳ PER PILE. REQUIRED DRIVING RESISTANCE IS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED WEST ABUTMENT PILE LENGTHS ARE 40'-0" IN THE BODY AND 30'-0" IN THE WINGS. ESTIMATED EAST ABUTMENT PILE LENGTHS ARE 40'-0" IN THE BODY AND 35'-0" IN THE WINGS. ESTIMATED PIER PILE LENGTHS ARE 45'-0".

✳ THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5.

HYDRAULIC DATA:

100 YEAR FREQUENCY

DRAINAGE AREA	96 SQ. MI.
Q_{100}	4,750 C.F.S.
VELOCITY	6.28 F.P.S.
WATERWAY AREA	756 SQ. FT.
HIGH WATER $_{100}$ ELEVATION	878.40
ROADWAY OVERFLOW DESIGN FREQUENCY	> 100 YEARS
SCOUR CRITICAL CODE	5
O_2 (910 C.F.S.)	874.40

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION, QUANTITIES & NOTES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. PIER
9. 36W" PRESTRESSED GIRDER DETAILS
10. STEEL DIAPHRAGM & BEARING PAD DETAILS
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE SECTIONS & DETAILS
13. TUBULAR STEEL RAILING TYPE NY4
14. END POST DETAILS FOR TUBULAR STEEL RAILING TYPE NY4

CONSULTANT DESIGN CONTACT:
DANIEL WAGNER
(608) 355-8952

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

WISCONSIN
DANIEL H. WAGNER
E-19220
BARABOO, WI
PROFESSIONAL ENGINEER

Daniel H. Wagner
11-28-2016

NO.	DATE	REVISION	BY

MSA PROFESSIONAL SERVICES
TRANSPORTATION • MUNICIPAL DEVELOPMENT • ENVIRONMENTAL
1230 South Boulevard Baraboo, WI 53913
608-356-2771 1-800-362-4505 Fax: 608-356-2770

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 11/28/16
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-13-685

CTH A OVER SUGAR RIVER

COUNTY	TOWN/~~CITY/VILLAGE~~
DANE	MONTROSE

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JAS	DHW	RLR	JAS

GENERAL PLAN

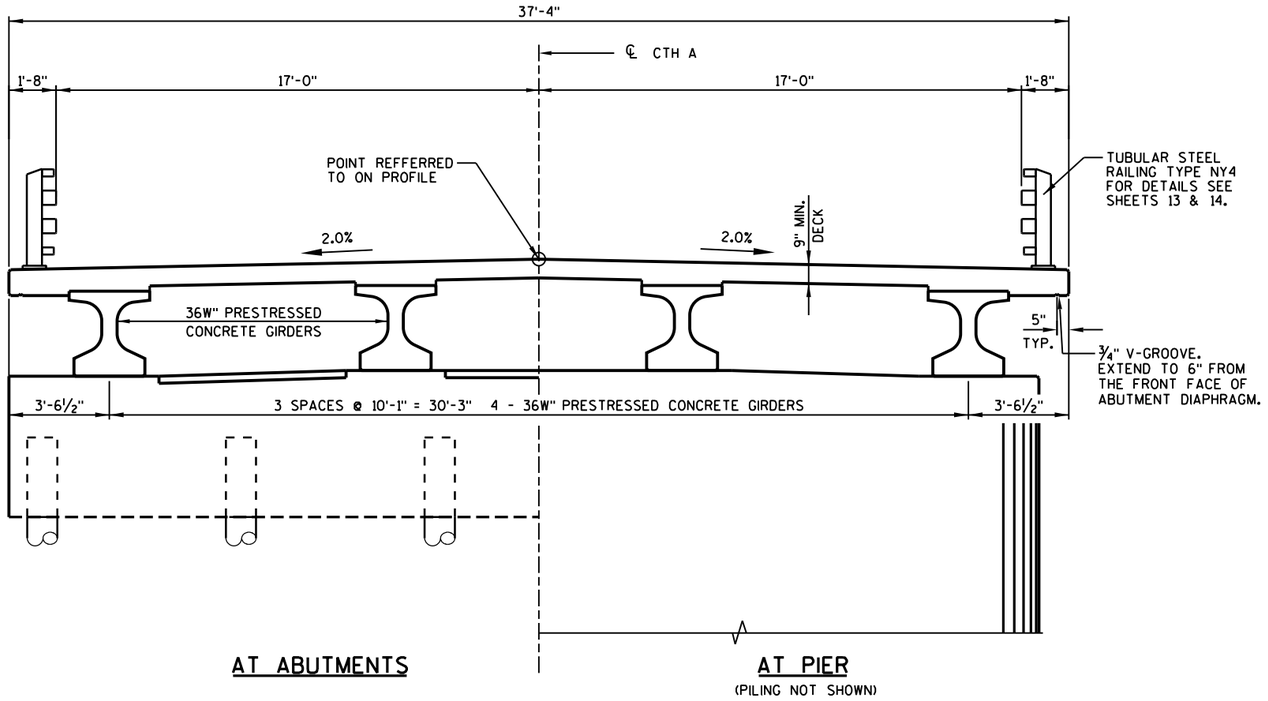
SHEET 1 OF 14
37

8

8

STATE PROJECT NUMBER

5848-00-70



CROSS SECTION THRU BRIDGE

(LOOKING EAST)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST DIGIT OF A THREE DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE LIMITS SHOWN ON SHEET 1 AND ON THE ABUTMENT SHEETS OR AS DIRECTED BY THE ENGINEER. SEE SHEET 1 FOR RIPRAP HEAVY AND GEOTEXTILE TYPE HR LIMITS AT PIER.

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES" FOR THE ABUTMENTS AND PIER.

THIS STRUCTURE WILL REPLACE EXISTING BRIDGE, B-13-35, A 161.6 FT. LONG, THREE SPAN, STEEL DECK GIRDER BRIDGE ON OPEN CONCRETE ABUTMENTS AND ON TWO CONCRETE TWO-COLUMN FRAMED PIERS.

Ⓑ - BACKFILL PAY LIMITS, BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

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

DO NOT PLACE FILL ABOVE 3'-0" FROM THE BOTTOM OF ABUTMENT UNTIL THE SUPERSTRUCTURE IS IN PLACE.

APPLY PROTECTIVE SURFACE TREATMENT TO THE TOP OF THE DECK, TO THE SIDES OF THE DECK, TO THE OUTSIDE 1'-0" OF THE UNDERSIDE OF THE DECK, TO THE TOPS OF WINGS, AND TO THE EXPOSED FRONT FACE OF WINGS.

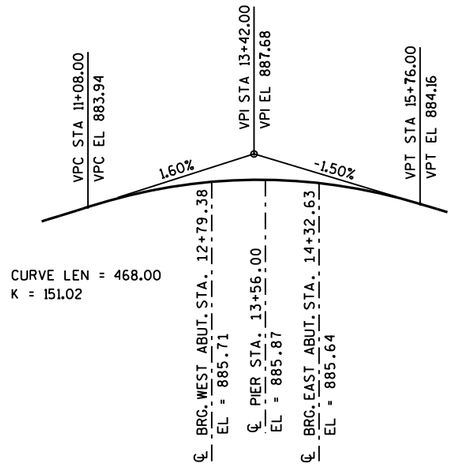
ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO 1H48 BENCHMARK WITH ELEVATION OF 887.065 LOCATED 0.5 MILES EAST OF THE EXISTING BRIDGE. THE STATION IS A BRONZE WISDOT GEODETIC SURVEY CONTROL STATION.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE 36W" PRESTRESSED GIRDER DETAILS SHEET.

REMOVE THE EXISTING BRIDGE TO THE EXTENTS REQUIRED BY THE STANDARD SPECIFICATIONS, EXCEPT REMOVE THE WEST ABUTMENT TO 4 FEET BELOW FINISHED GRADE AND THE EXISTING EAST PIER TO 2 FEET BELOW THE ADJOINING STREAMBED LEVEL.

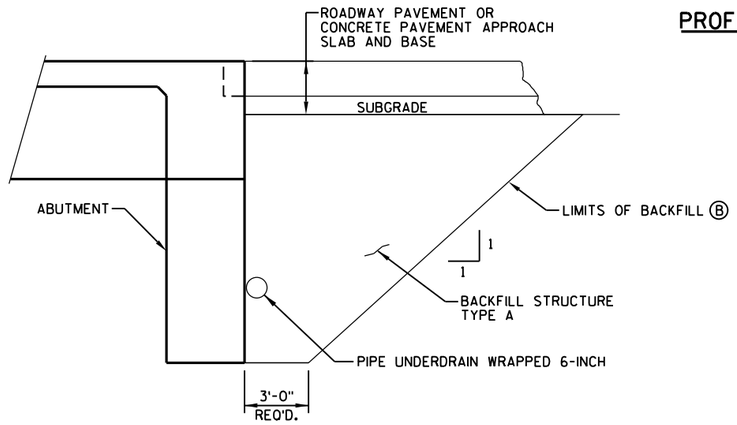
TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNIT	WEST ABUT.	PIER	EAST ABUT.	SUPER	TOTAL
203.0600.S.01	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 13+47	LS	-	-	-	-	1
206.1000.01	EXCAVATION FOR STRUCTURES BRIDGES B-13-685	LS	-	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	200	-	200	-	400
502.0100	CONCRETE MASONRY BRIDGES	CY	38	31	38	215	322
502.3200	PROTECTIVE SURFACE TREATMENT	SY	21	-	21	713	755
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	-	-	-	616	616
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2760	1560	2760	-	7080
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1600	45	1600	43870	47115
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	-	-	-	16	16
506.4000.01	STEEL DIAPHRAGMS B-13-685	EACH	-	-	-	6	6
513.7084.01	RAILING STEEL TYPE NY4 B-13-685	LF	-	-	-	320	320
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	8	-	8	-	16
550.0500	PILE POINTS	EACH	8	9	8	-	25
550.2128	PILING CIP CONCRETE 12 3/4 X 0.50-INCH	LF	300	315	310	-	925
606.0300	RIPRAP HEAVY	CY	160	55	280	-	495
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	80	-	80	-	160
645.0120	GEOTEXTILE TYPE HR	SY	300	125	490	-	915
	NON-BID ITEMS						
	CORK FILLER	SIZE					¾"
	PREFORMED FILLER	SIZE					½" & ¾"



CURVE LEN = 468.00
K = 151.02

PROFILE GRADE LINE - CTH A



STRUCTURE BACKFILL DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-685

DRAWN BY RLR | PLANS CK'D. JAS

CROSS SECTION, QUANTITIES & NOTES

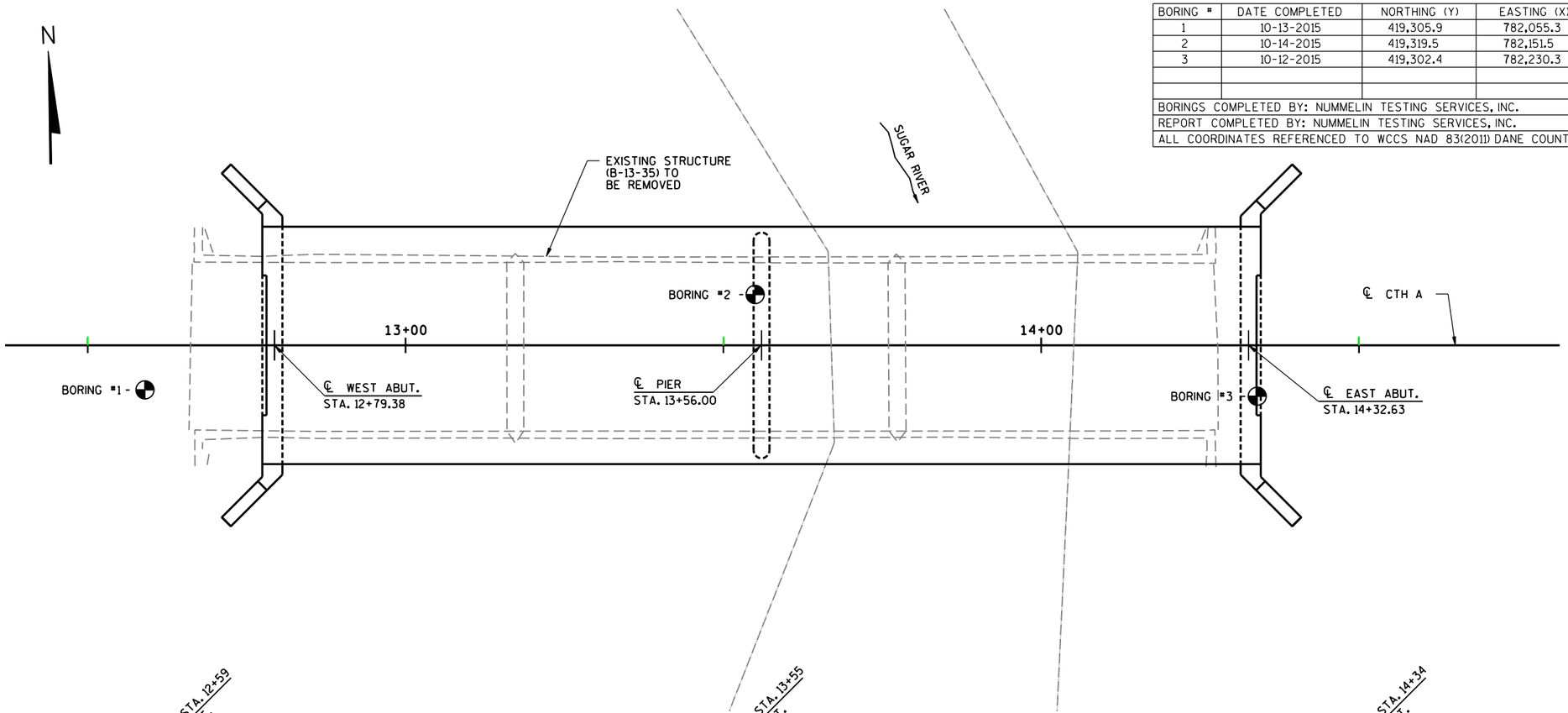
SHEET 2 OF 14
38

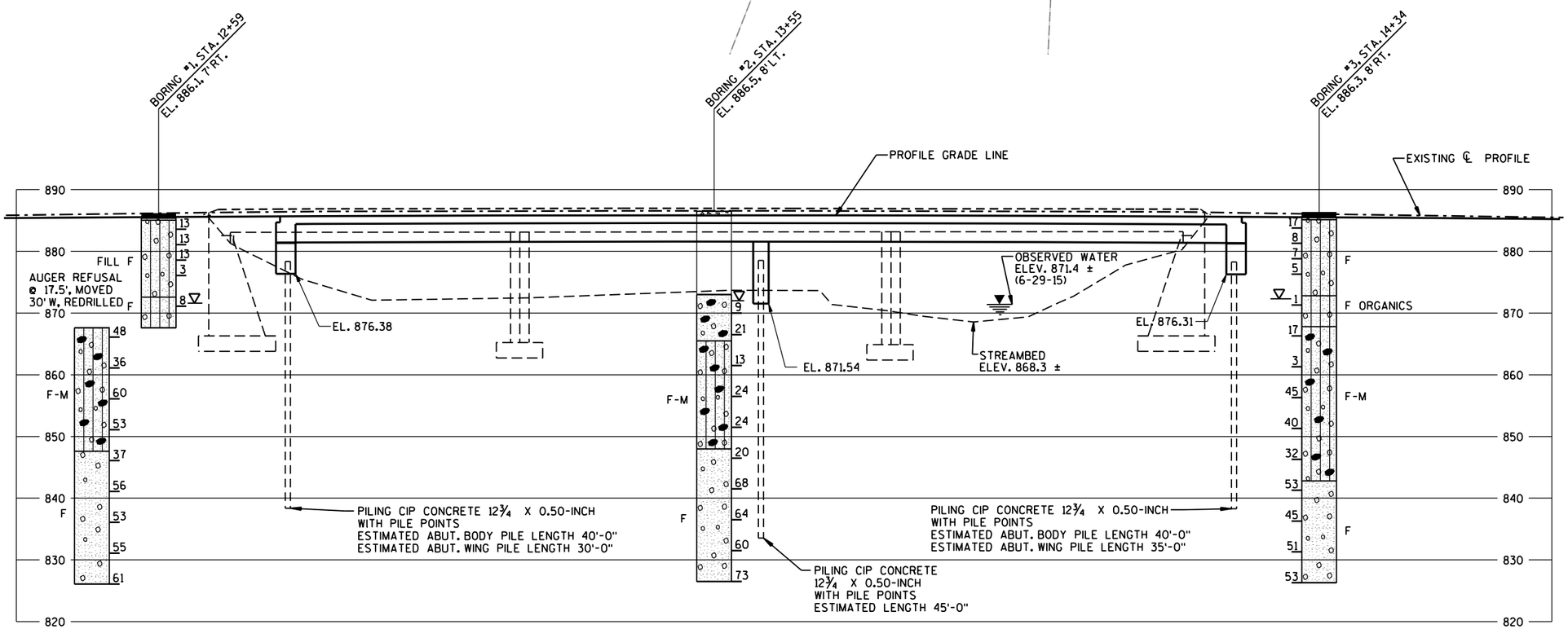
8

8

FILE= 11331012_02.DGN
DATE= 10/18/2016

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	10-13-2015	419,305.9	782,055.3
2	10-14-2015	419,319.5	782,151.5
3	10-12-2015	419,302.4	782,230.3
BORINGS COMPLETED BY: NUMMELIN TESTING SERVICES, INC.			
REPORT COMPLETED BY: NUMMELIN TESTING SERVICES, INC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2011) DANE COUNTY			





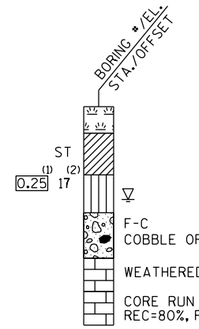
STATE PROJECT NUMBER

5848-00-70

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 ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE 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-13-685

DRAWN BY RLR | PLANS CK'D. JAS

SUBSURFACE EXPLORATION

SHEET 3 OF 14

39

8

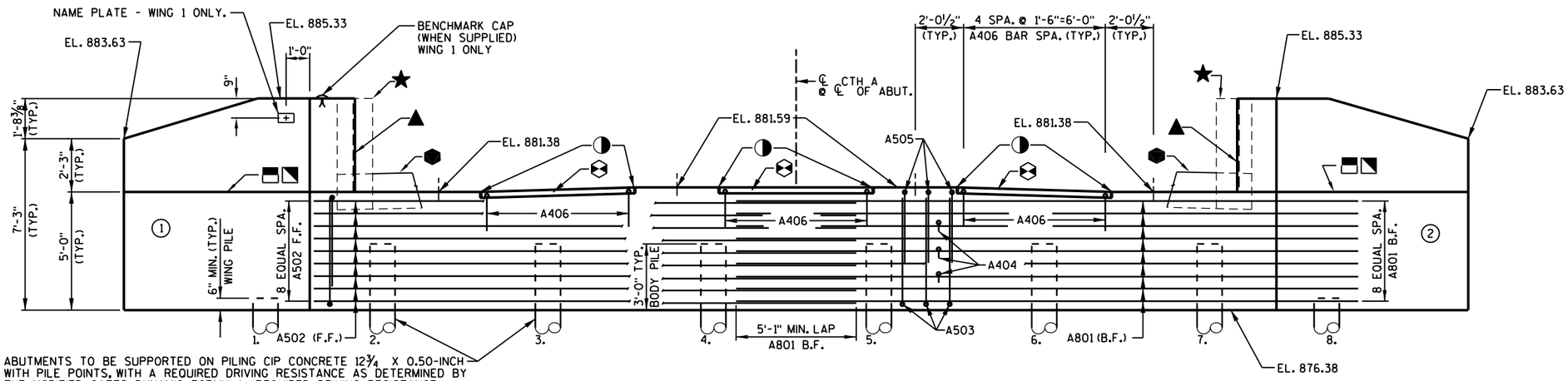
8

11331012_03.dgn 10/17/2016 2:47:45 PM rrabska

FILE= 11331012_03.DGN
DATE= 10/17/2016

STATE PROJECT NUMBER

5848-00-70



ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 12¾ X 0.50-INCH WITH PILE POINTS, WITH A REQUIRED DRIVING RESISTANCE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. REQUIRED DRIVING RESISTANCE IS 160 TONS PER PILE IN THE ABUTMENT BODY AND 120 TONS PER PILE IN THE ABUTMENT WINGS. ESTIMATED PILE LENGTHS ARE 40'-0" IN THE ABUTMENT BODY AND 30'-0" IN THE WINGS.

FRONT FACE BARSTEEL REINF.

ELEVATION
(LOOKING WEST)

BACK FACE BARSTEEL REINF.

NOTES

ELEVATIONS ARE GIVEN AT THE ℄ OF ABUTMENT.

CONSTRUCT BEAM SEATS LEVEL.

FOR WING DETAILS AND ADDITIONAL ABUTMENT DETAILS SEE SHEET 5.

LEGEND

⬡ — DENOTES GIRDER NUMBER.

◯ — INDICATES WING NUMBER.

F.F. — FRONT FACE B.F. — BACK FACE CL. — CLEAR

◎ — PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU RIPRAP HEAVY AND GEOTEXTILE TYPE HR. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE. SEE SHEET 5.

◑ — ¾" CORK FILLER (VERTICAL FACE ONLY) AT SIDES OF SEMI-EXPANSION POCKETS.

◭ — 4" x ¾" PREFORMED JOINT FILLER, EXTEND FULL LENGTH ALONG F.F. OF ABUTMENT BETWEEN OUTSIDE EDGES OF DECK. SEE ALSO FILLER AT BEARING PAD DETAIL, SHEET 10.

★ — VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM BRIDGE SEAT TO TOPS OF WINGS.

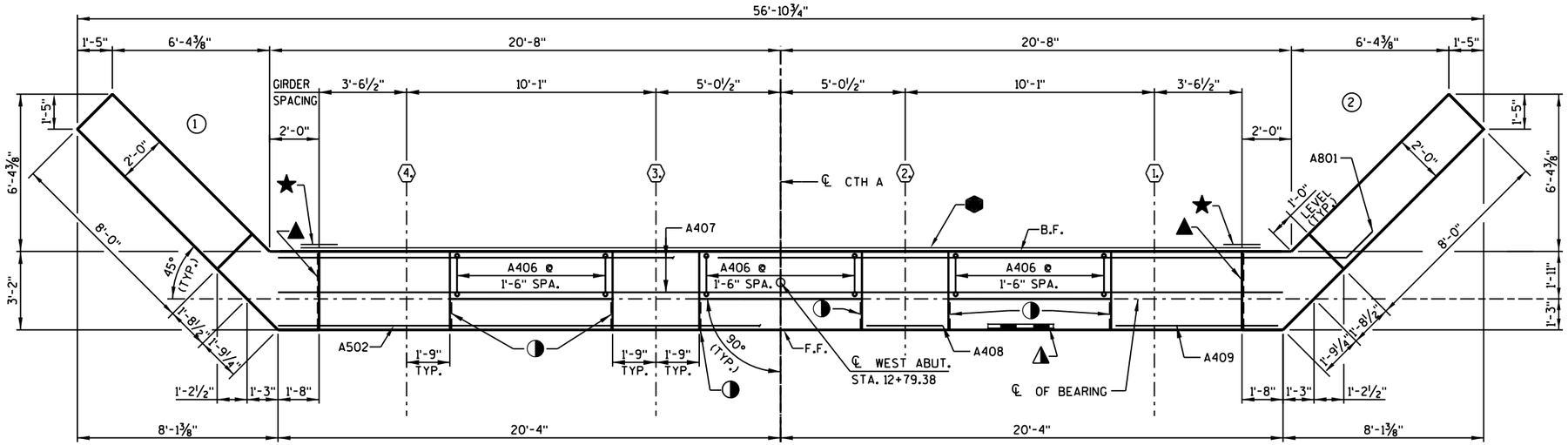
⬢ — HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WINGS.

▲ — ½" PREFORMED JOINT FILLER, EXTEND FROM BEAM SEAT TO TOP OF WING. SEAL ALL EXPOSED HORIZONTAL & VERTICAL SURFACES OF PREFORMED JOINT FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER, (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE).

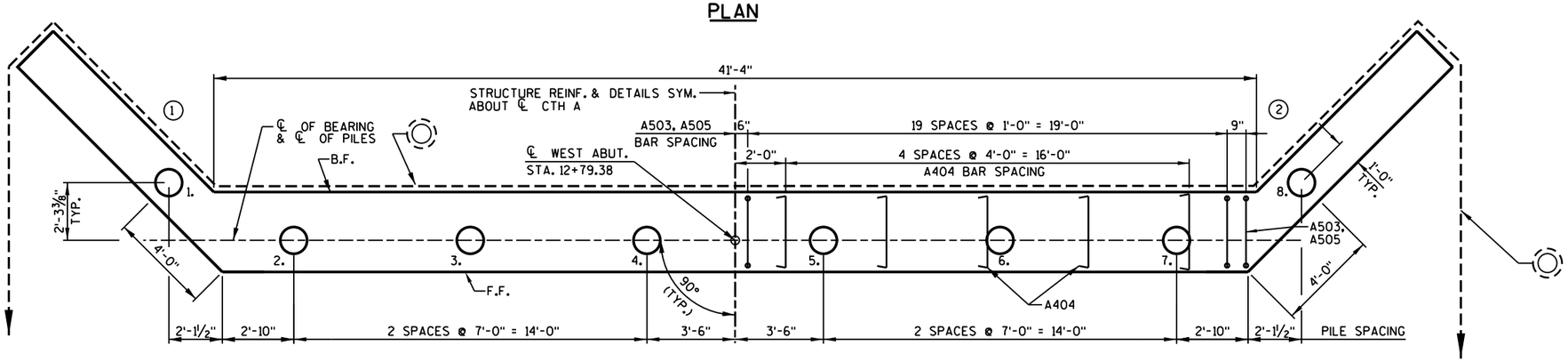
⬙ — SEMI-EXPANSION POCKET, CONSTRUCT 3" DEEPER THAN SURROUNDING BEAM SEATS AND BACKWALL.

◹ — ¾" "V" GROOVE ON FRONT FACE OF WING WALL CONSTRUCTION JOINT IF JOINT IS USED.

▬ — OPTIONAL KEYED CONST. JOINT ON WING FORMED BY SURFACED & BEVELED 2x6. IF JOINT IS USED PLACE ⬢ ON B.F. OF WING. COST OF ⬢ AT WING IS INCIDENTAL TO "CONCRETE MASONRY BRIDGES".



PLAN



PILE PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-685

DRAWN BY RLR | PLANS CK'D. JAS

WEST ABUTMENT

SHEET 4 OF 14
40

FILE= 11331012_04.DGN
DATE= 10/17/2016

8

8

STATE PROJECT NUMBER

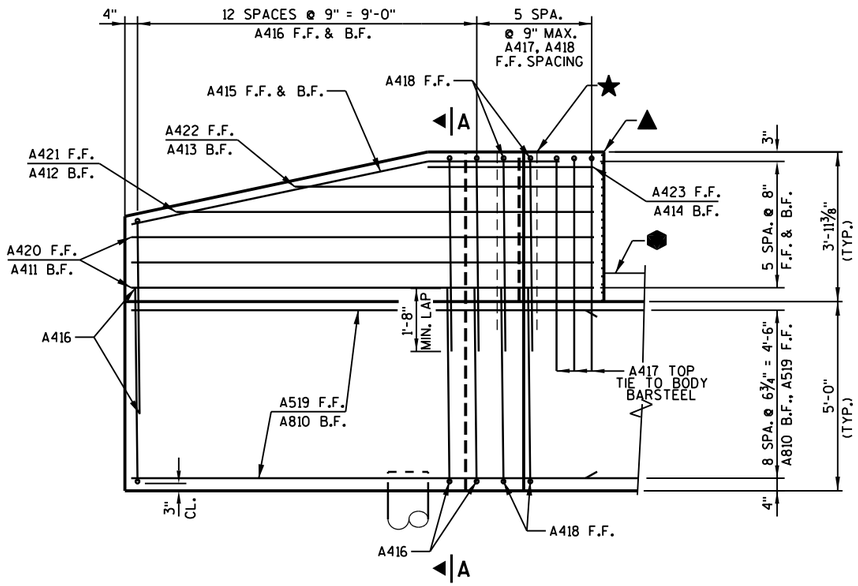
5848-00-70

UNCOATED 2760 LBS.
COATED 1600 LBS.

BILL OF BARS (WEST ABUTMENT)

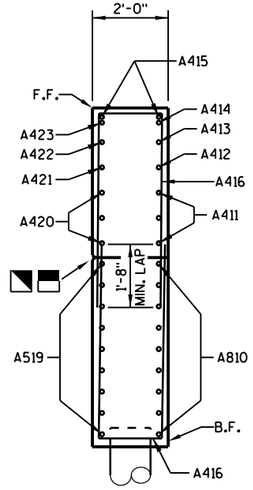
MARK	NUMBER REQUIRED COATED	NUMBER REQUIRED UNCOATED	LENGTH	BENT	LOCATION
A801	-	18	26'-10"	X	ABUTMENT BODY - B.F. - HORIZ.
A502	-	9	40'-7"		ABUTMENT BODY - F.F. - HORIZ.
A503	-	84	6'-1"	X	ABUTMENT BODY - F.F. & B.F. - VERT.
A404	-	30	3'-5"	X	ABUTMENT BODY - TIES - HORIZ.
A505	-	42	8'-7"	X	ABUTMENT BODY - TOP - STIRRUP - VERT.
A406	-	15	4'-5"	X	ABUTMENT BODY - TOP - BACKWALL STIRRUP - VERT.
A407	-	2	40'-7"		ABUTMENT BODY - TOP - BACKWALL - HORIZ.
A408	-	2	3'-2"		ABUTMENT BODY - TOP - F.F. - GIRDER SEATS 2&3 - HORIZ.
A409	-	2	6'-7"		ABUTMENT BODY - TOP - F.F. - GIRDER SEATS 1&4 - HORIZ.
A810	18	-	14'-1"	X	WINGS - B.F. - HORIZ.
A411	6	-	10'-9"	X	WINGS - B.F. - HORIZ.
A412	2	-	9'-7"	X	WINGS - B.F. - HORIZ.
A413	2	-	6'-5"	X	WINGS - B.F. - HORIZ.
A414	2	-	3'-5"		WINGS - B.F. - TOP - HORIZ.
A415	4	-	11'-5"	X	WINGS - F.F. & B.F. - TOP - HORIZ.
A416	52	-	11'-9"	X	WINGS - F.F. & B.F. - VERT.
A417	6	-	13'-11"	X	WINGS - F.F. & B.F. - VERT.
A418	8	-	7'-0"	X	WINGS - F.F. @ CORNER - VERT.
A519	18	-	12'-8"	X	WINGS - F.F. - HORIZ.
A420	6	-	12'-6"	X	WINGS - F.F. - HORIZ.
A421	2	-	11'-4"	X	WINGS - F.F. - HORIZ.
A422	2	-	8'-3"	X	WINGS - F.F. - HORIZ.
A423	4	-	3'-8"	X	WINGS - F.F. & CENTER - TOP - HORIZ.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

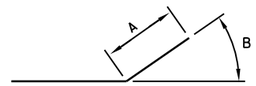


ELEVATION
(LOOKING AT F.F. OF WINGS)

NOTE:
WING 1 SHOWN,
WING 2 SIMILAR.

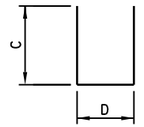


SECTION A-A THRU WING

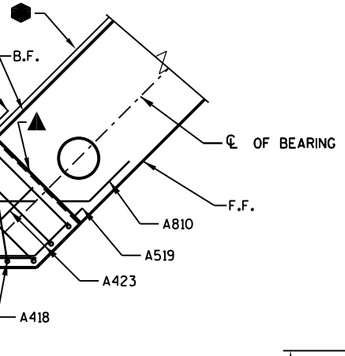


MARK	A	B
A801 A810 A519	1'-6"	45°
A411 THRU A413	1'-10"	45°
A415	3'-5"	12°
A420 THRU A423	1'-4"	45°

A503, A418



MARK	C	D
A404	4½"	2'-10"
A505	3'-0"	2'-10"
A406	1'-6"	1'-7"
A416	5'-1½"	1'-8"
A417	5'-7½"	2'-10"



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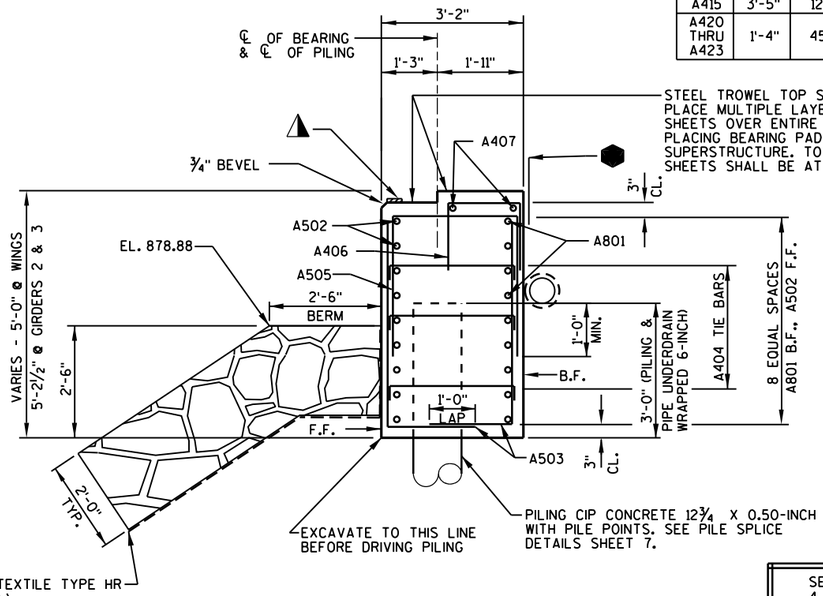
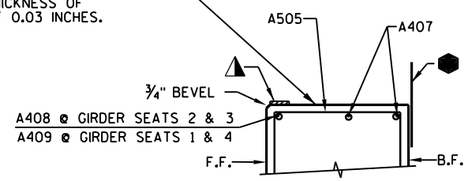


TYPICAL SECTION THRU ABUTMENT



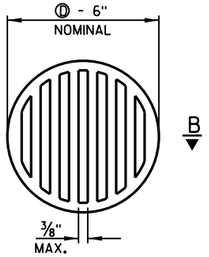
SECTION THRU TOP OF ABUTMENT @ BEARING SEATS

ROD. - 6" NOMINAL

RODENT SHIELD NOTES:

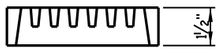
ORIENT SHIELD SO SLOTS ARE VERTICAL.

THE RODENT SHIELD 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 ATTACHEMENT OF THIS SHIELD TO THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH STAINLESS STEEL SHEET METAL SCREWS. THE RODENT SHIELD SHALL BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".



RODENT SHIELD

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



SECTION B-B

SEE LEGEND ON SHEET 4 FOR DESCRIPTION OF

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-685

DRAWN BY RLR | PLANS CK'D. JAS

WEST ABUTMENT DETAILS

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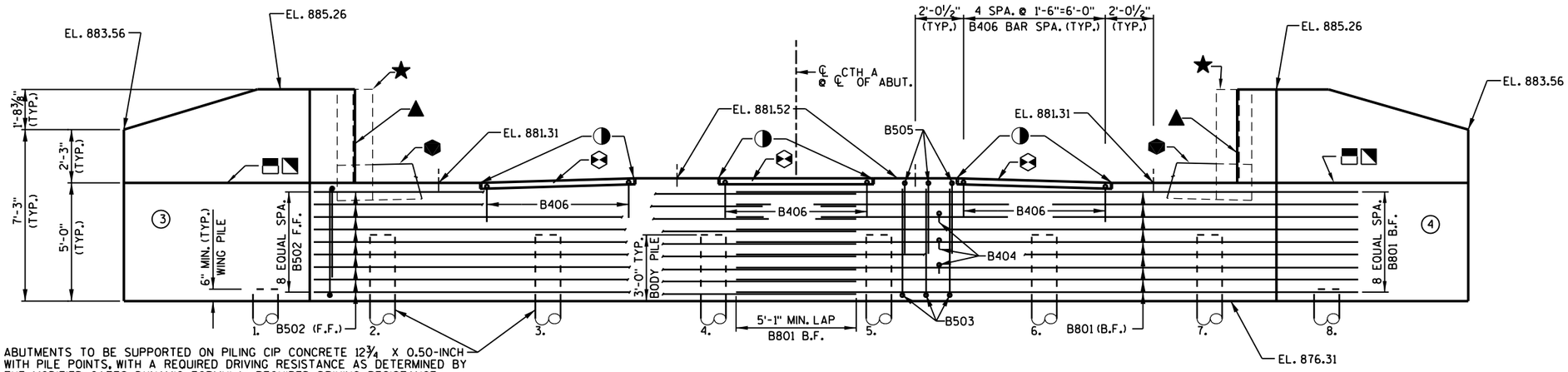


ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 12¾ X 0.50-INCH WITH PILE POINTS, WITH A REQUIRED DRIVING RESISTANCE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. REQUIRED DRIVING RESISTANCE IS 160 TONS PER PILE IN THE ABUTMENT BODY AND 120 TONS PER PILE IN THE ABUTMENT WINGS. ESTIMATED PILE LENGTHS ARE 40'-0" IN THE ABUTMENT BODY AND 35'-0" IN THE WINGS.

FRONT FACE BARSTEEL REINF.

ELEVATION
(LOOKING EAST)

BACK FACE BARSTEEL REINF.

NOTES

ELEVATIONS ARE GIVEN AT THE ℄ OF ABUTMENT.

CONSTRUCT BEAM SEATS LEVEL.

FOR WING DETAILS AND ADDITIONAL ABUTMENT DETAILS SEE SHEET 7.

LEGEND

⬡ — DENOTES GIRDER NUMBER.

◯ — INDICATES WING NUMBER.

F.F.—FRONT FACE B.F.—BACK FACE CL.—CLEAR

◎ — PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU RIPRAP HEAVY AND GEOTEXTILE TYPE HR. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE. SEE SHEET 5.

◑ — ¾" CORK FILLER (VERTICAL FACE ONLY) AT SIDES OF SEMI-EXPANSION POCKETS.

◭ — 4"x¾" PREFORMED JOINT FILLER, EXTEND FULL LENGTH ALONG F.F. OF ABUTMENT BETWEEN OUTSIDE EDGES OF DECK. SEE ALSO FILLER AT BEARING PAD DETAIL, SHEET 10.

★ — VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM BRIDGE SEAT TO TOPS OF WINGS.

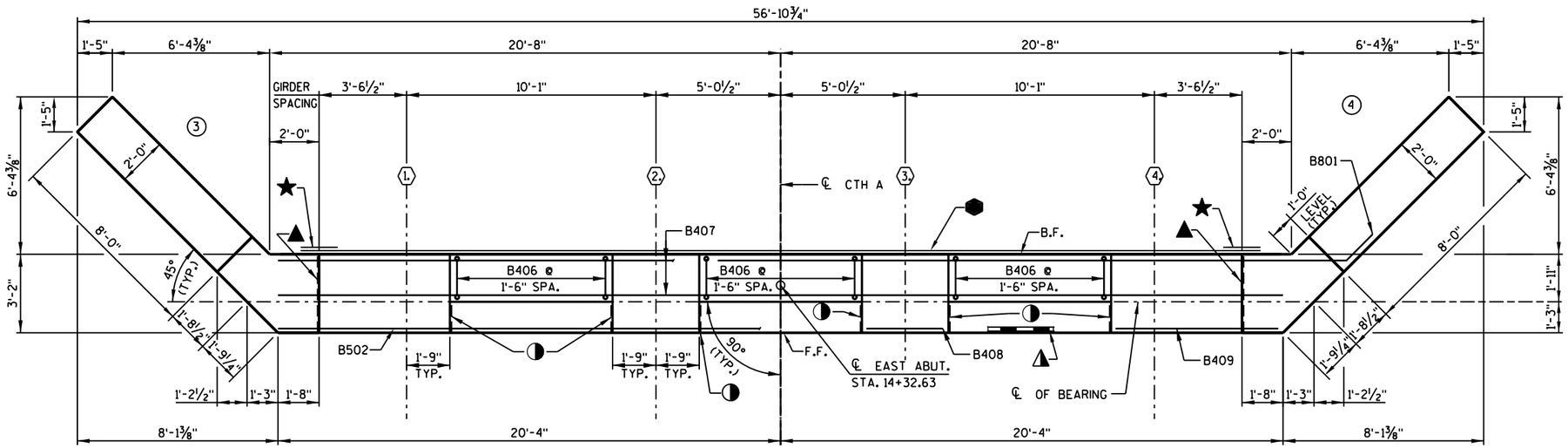
⬢ — HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WINGS.

▲ — ½" PREFORMED JOINT FILLER, EXTEND FROM BEAM SEAT TO TOP OF WING. SEAL ALL EXPOSED HORIZONTAL & VERTICAL SURFACES OF PREFORMED JOINT FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER, (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE).

⬙ — SEMI-EXPANSION POCKET, CONSTRUCT 3" DEEPER THAN SURROUNDING BEAM SEATS AND BACKWALL.

◹ — ¾" "V" GROOVE ON FRONT FACE OF WING WALL CONSTRUCTION JOINT IF JOINT IS USED.

▬ — OPTIONAL KEYED CONST. JOINT ON WING FORMED BY SURFACED & BEVELED 2x6. IF JOINT IS USED PLACE ⬢ ON B.F. OF WING. COST OF ⬢ AT WING IS INCIDENTAL TO "CONCRETE MASONRY BRIDGES".



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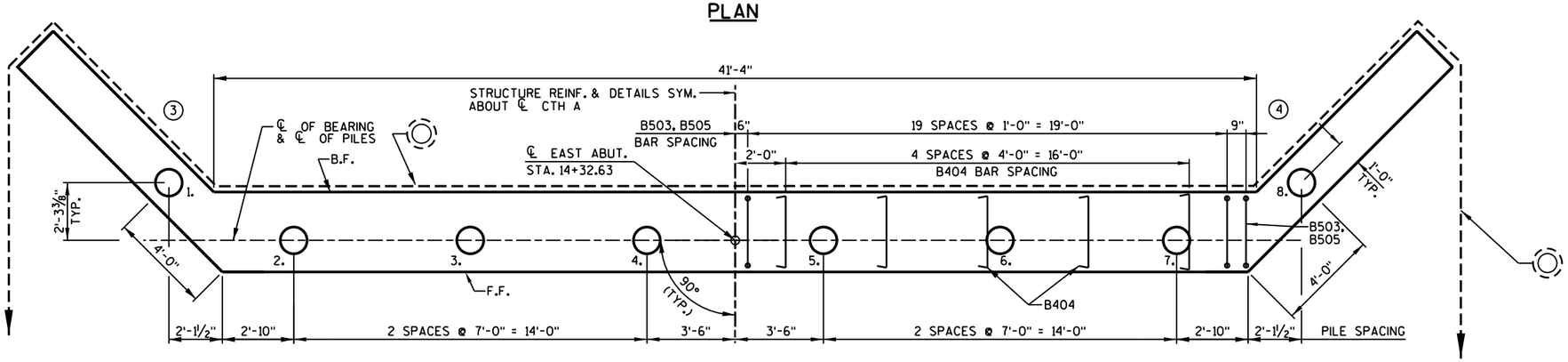

PILE PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-685

DRAWN BY RLR | PLANS CK'D. JAS

EAST ABUTMENT

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DATE= 10/17/2016

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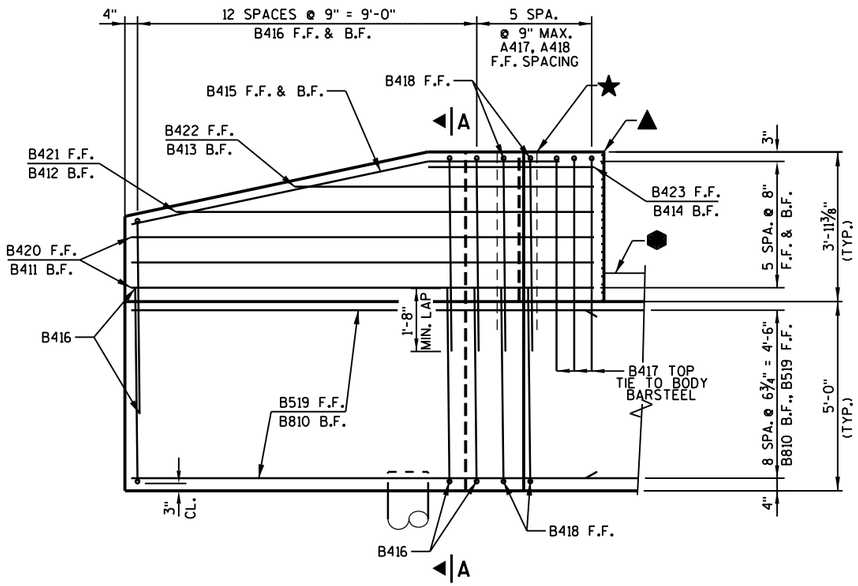
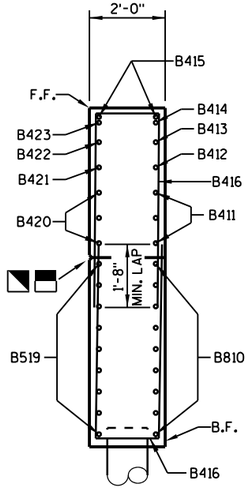


ELEVATION

(LOOKING AT F.F. OF WINGS)

NOTE:
WING 3 SHOWN,
WING 4 SIMILAR.



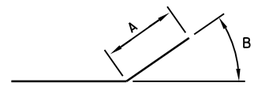
SECTION A-A THRU WING

BILL OF BARS (EAST ABUTMENT)

UNCOATED 2760 LBS.
COATED 1600 LBS.

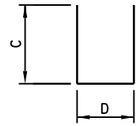
MARK	NUMBER REQUIRED COATED	NUMBER REQUIRED UNCOATED	LENGTH	BENT	LOCATION
B801	-	18	26'-10"	X	ABUTMENT BODY - B.F. - HORIZ.
B502	-	9	40'-7"		ABUTMENT BODY - F.F. - HORIZ.
B503	-	84	6'-1"	X	ABUTMENT BODY - F.F. & B.F. - VERT.
B404	-	30	3'-5"	X	ABUTMENT BODY - TIES - HORIZ.
B505	-	42	8'-7"	X	ABUTMENT BODY - TOP - STIRRUP - VERT.
B406	-	15	4'-5"	X	ABUTMENT BODY - TOP - BACKWALL STIRRUP - VERT.
B407	-	2	40'-7"		ABUTMENT BODY - TOP - BACKWALL - HORIZ.
B408	-	2	3'-2"		ABUTMENT BODY - TOP - F.F. - GIRDER SEATS 2&3 - HORIZ.
B409	-	2	6'-7"		ABUTMENT BODY - TOP - F.F. - GIRDER SEATS 1&4 - HORIZ.
B810	18	-	14'-1"	X	WINGS - B.F. - HORIZ.
B411	6	-	10'-9"	X	WINGS - B.F. - HORIZ.
B412	2	-	9'-7"	X	WINGS - B.F. - HORIZ.
B413	2	-	6'-5"	X	WINGS - B.F. - HORIZ.
B414	2	-	3'-5"		WINGS - B.F. - TOP - HORIZ.
B415	4	-	11'-5"	X	WINGS - F.F. & B.F. - TOP - HORIZ.
B416	52	-	11'-9"	X	WINGS - F.F. & B.F. - VERT.
B417	6	-	13'-11"	X	WINGS - F.F. & B.F. - VERT.
B418	8	-	7'-0"	X	WINGS - F.F. @ CORNER - VERT.
B519	18	-	12'-8"	X	WINGS - F.F. - HORIZ.
B420	6	-	12'-6"	X	WINGS - F.F. - HORIZ.
B421	2	-	11'-4"	X	WINGS - F.F. - HORIZ.
B422	2	-	8'-3"	X	WINGS - F.F. - HORIZ.
B423	4	-	3'-8"	X	WINGS - F.F. & CENTER - TOP - HORIZ.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

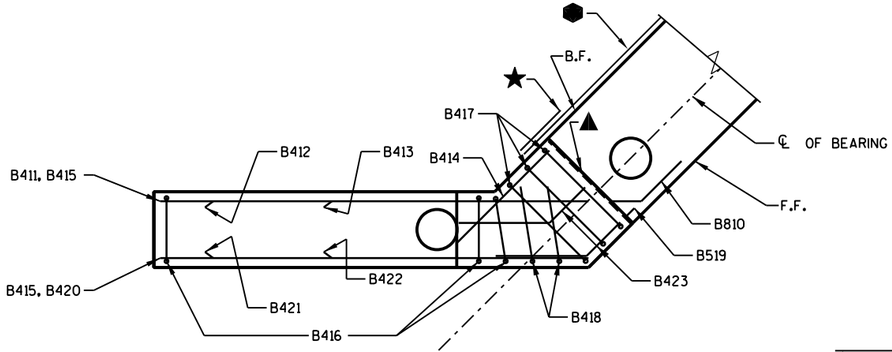


MARK	A	B
B801 B810 B519	1'-6"	45°
B411 THRU B413	1'-10"	45°
B415	3'-5"	12°
B420 THRU B423	1'-4"	45°

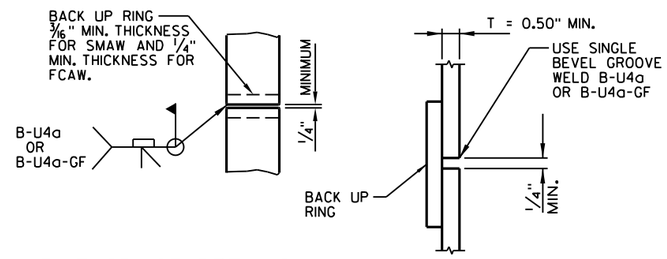
B503, B418



MARK	C	D
B404	4½"	2'-10"
B505	3'-0"	2'-10"
B406	1'-6"	1'-7"
B416	5'-1½"	1'-8"
B417	5'-7½"	2'-10"

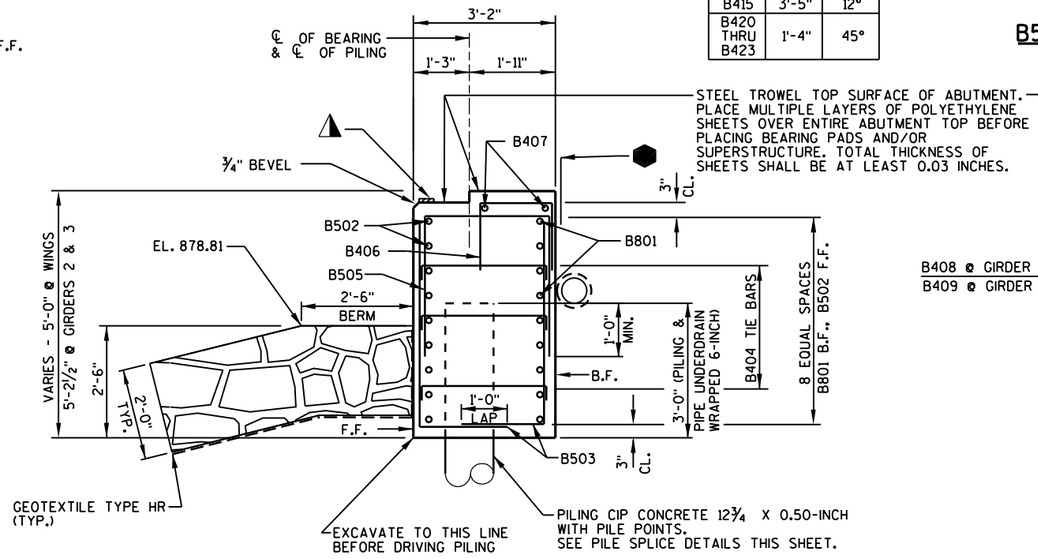


PLAN

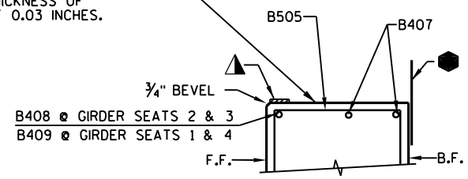


PILE SPLICE DETAILS

WELD DETAIL



TYPICAL SECTION THRU ABUTMENT



SECTION THRU TOP OF ABUTMENT @ BEARING SEATS

SEE LEGEND ON SHEET 6 FOR DESCRIPTION OF

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-685

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EAST ABUTMENT DETAILS

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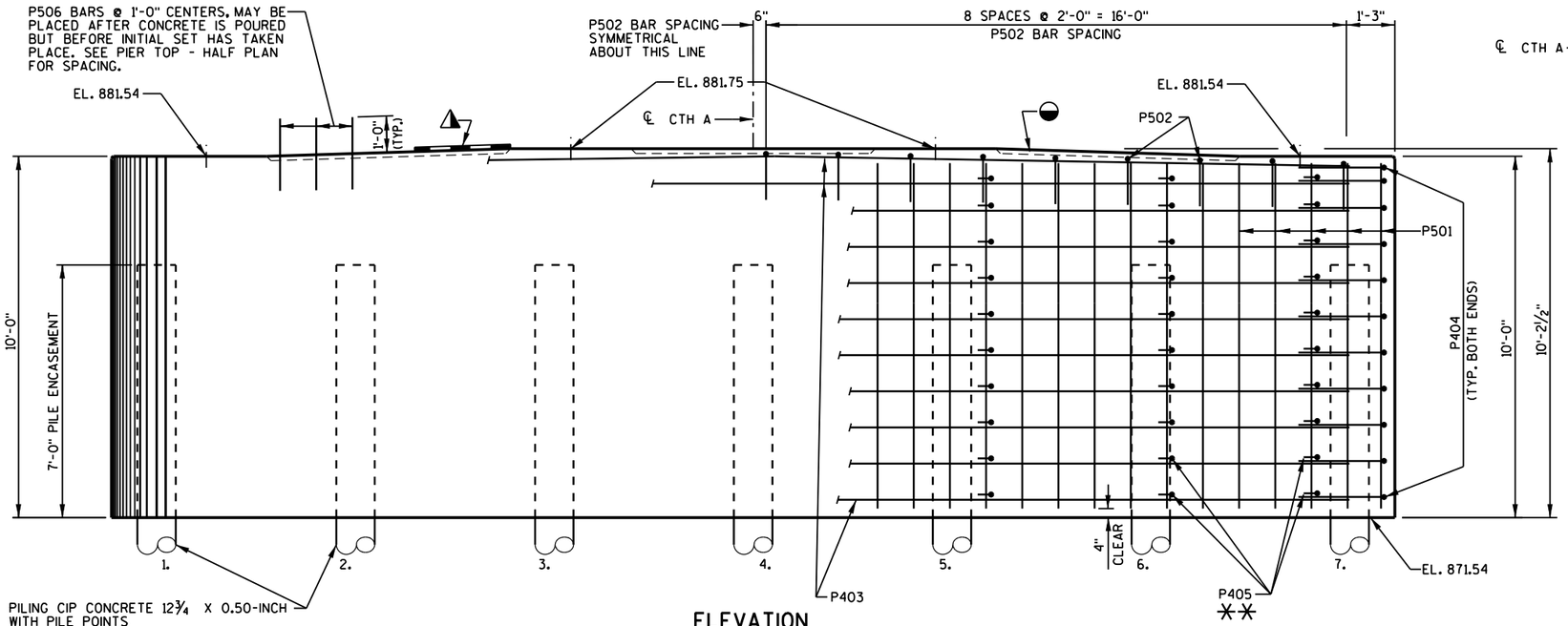
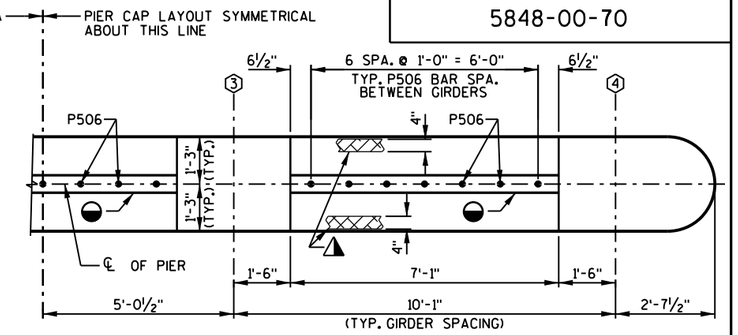
STATE PROJECT NUMBER

5848-00-70



ELEVATION
(LOOKING EAST)



PIER TOP - HALF PLAN

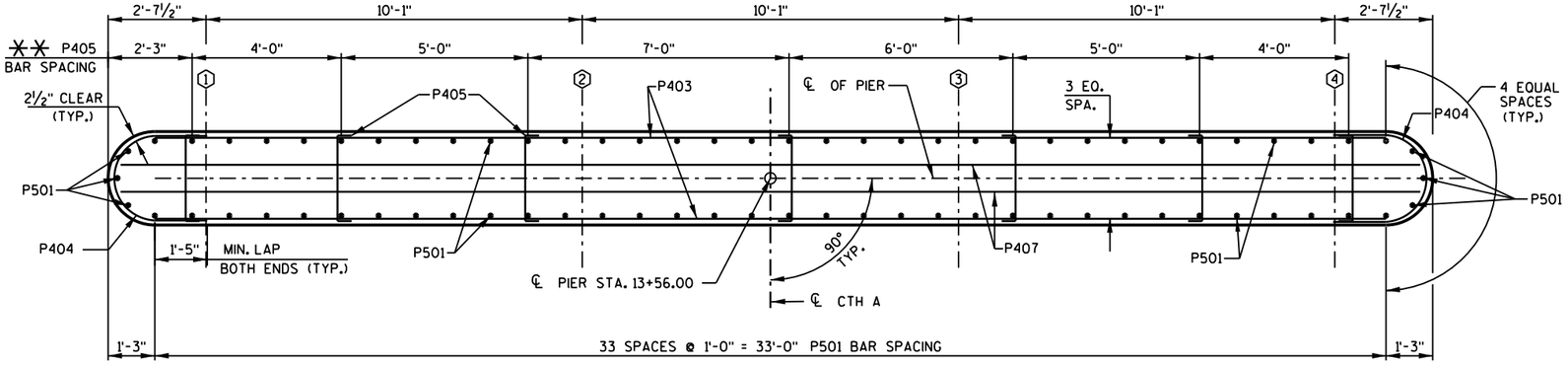
BILL OF BARS

COATED 45 LBS.
UNCOATED 1560 LBS.

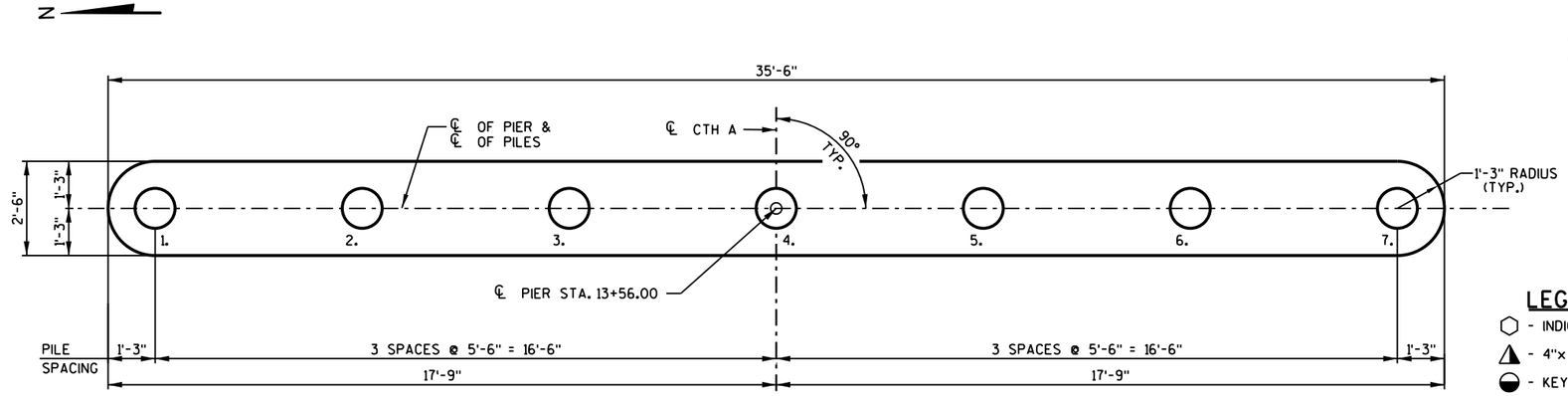
MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
P501	74	9'-6"		PIER - VERT.
P502	18	4'-5"	X	PIER - STIRRUPS - TOP - VERT.
P403	22	33'-0"		PIER - TOP & SIDES - HORIZ.
P404	22	6'-1"	X	PIER - AT ENDS - HORIZ.
P405	70	2'-8"	X	PIER - TIES - HORIZ.
Ⓒ P506	21	2'-0"		PIER - DOWELS @ TOP - VERT.
P407	2	34'-10"		PIER - TOP - HORIZ.

Ⓒ - THESE BARS SHALL BE EPOXY COATED.

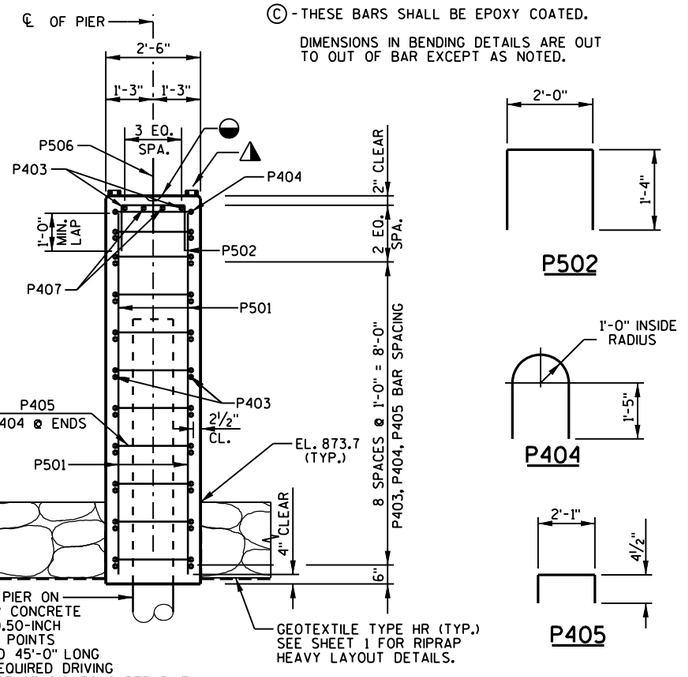
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR EXCEPT AS NOTED.



PLAN



PILE PLAN



TYPICAL SECTION THRU PIER

LEGEND

⬡ - INDICATES GIRDER NUMBER.
◭ - 4"x ¾" PREFORMED FILLER BETWEEN GIRDERS.
◒ - KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
** - ADJACENT TO EACH PILE, ONE SIDE ONLY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-685

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PIER

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NOTES

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

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECTION 503.3.3 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

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

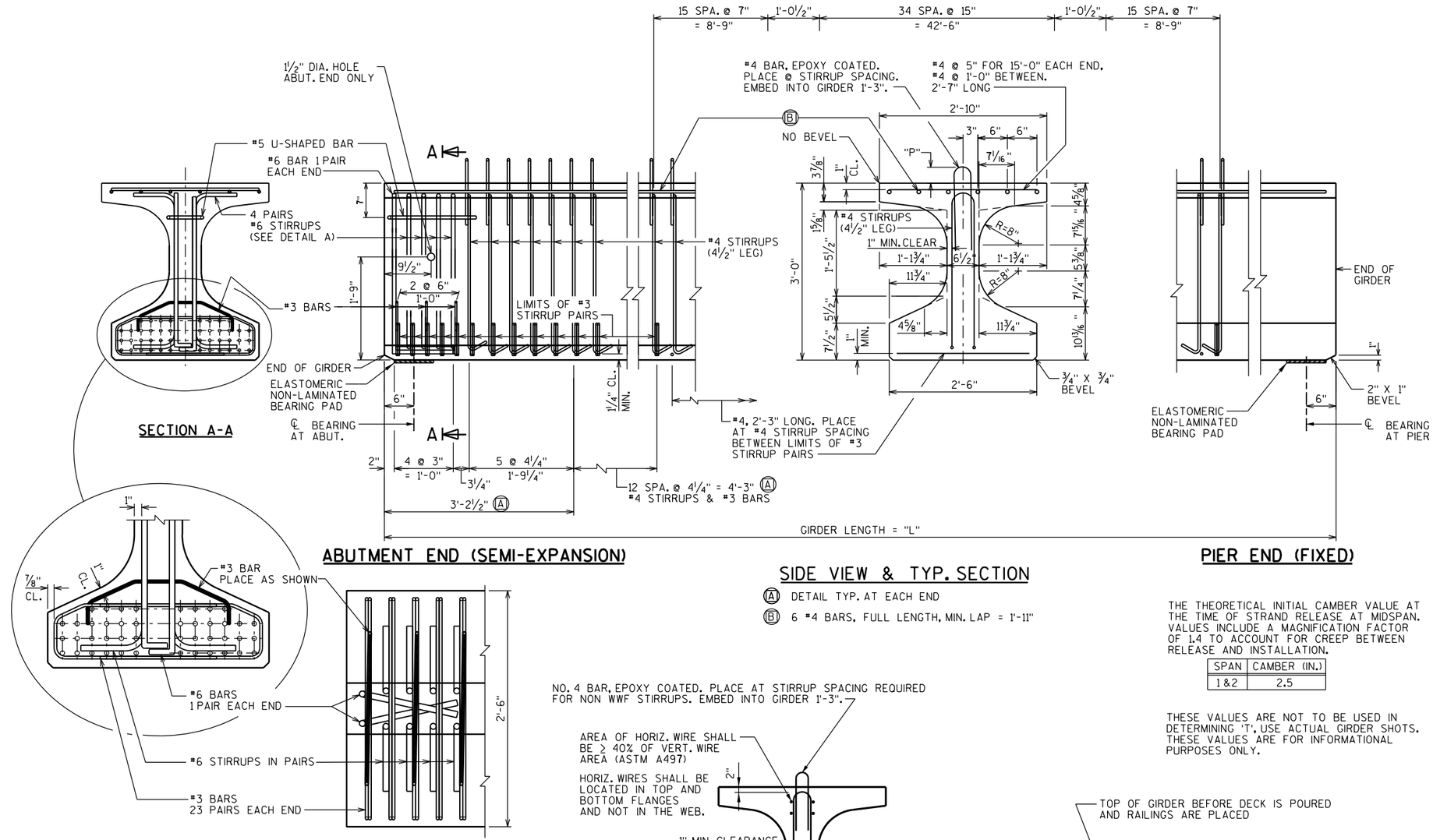
STRANDS SHALL BE FLUSH WITH THE END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE SHEET 10.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

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



SECTION A-A

ABUTMENT END (SEMI-EXPANSION)

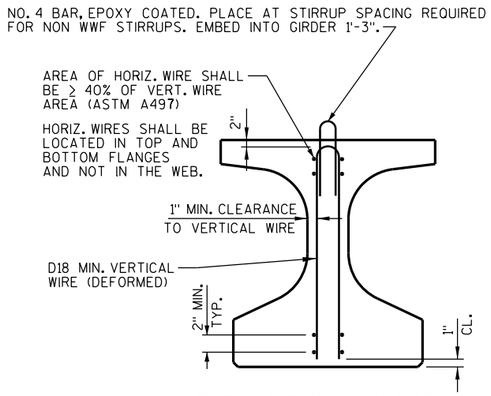
PIER END (FIXED)

DETAIL A
BOTTOM FLANGE

SIDE VIEW & TYP. SECTION

Ⓐ DETAIL TYP. AT EACH END

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

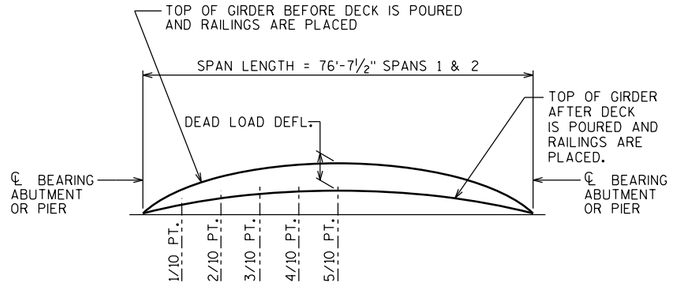


SECTION THRU GIRDER
SHOWING WELDED WIRE FABRIC (WWF) STIRRUPS ASTM A497 (Fy = 70 Ksi)

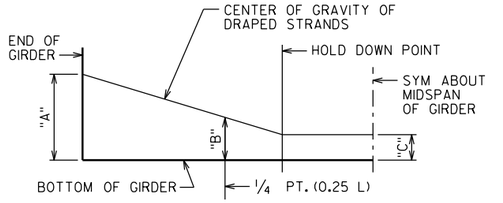
THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN. VALUES INCLUDE A MAGNIFICATION FACTOR OF 1.4 TO ACCOUNT FOR CREEP BETWEEN RELEASE AND INSTALLATION.

SPAN	CAMBER (IN.)
1&2	2.5

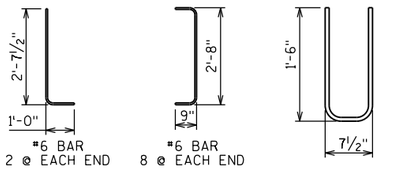
THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T'. USE ACTUAL GIRDER SHOTS. THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

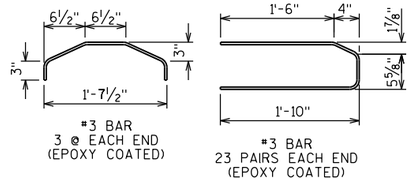


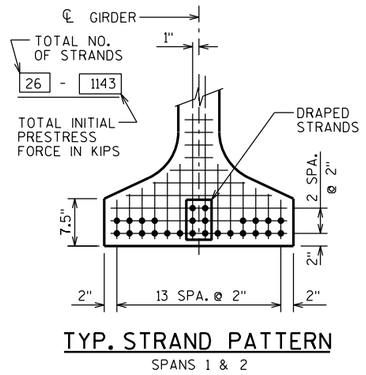
DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE







TYP. STRAND PATTERN
SPANS 1 & 2

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

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (p.s.i.)	"P" 1ST 1/3 OF GIRDER	"P" MID 1/3 OF GIRDER	"P" END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	(IN.) "A"	"B" MIN.	"B" MAX.	"C"
1&2	1-4	77'-0"	0.5	0.9	1.2	1.4	1.5	1.4	1.2	0.9	0.5	8000	6.50"	6.50"	6.50"	0.6	26	6800	32	11	14	4

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-685

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36W" PRESTRESSED GIRDER DETAILS

SHEET 9 OF 14
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DATE= 11/28/2016

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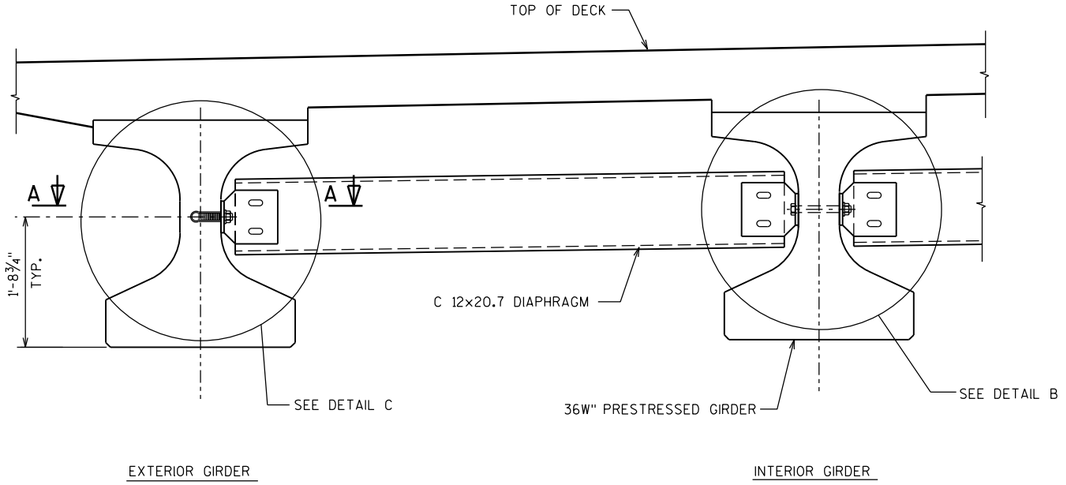
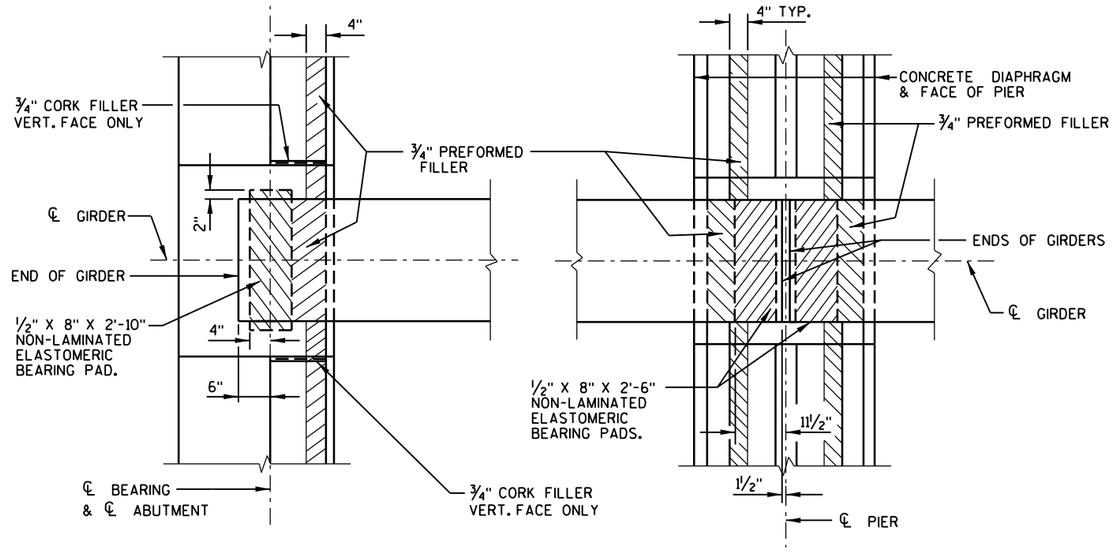
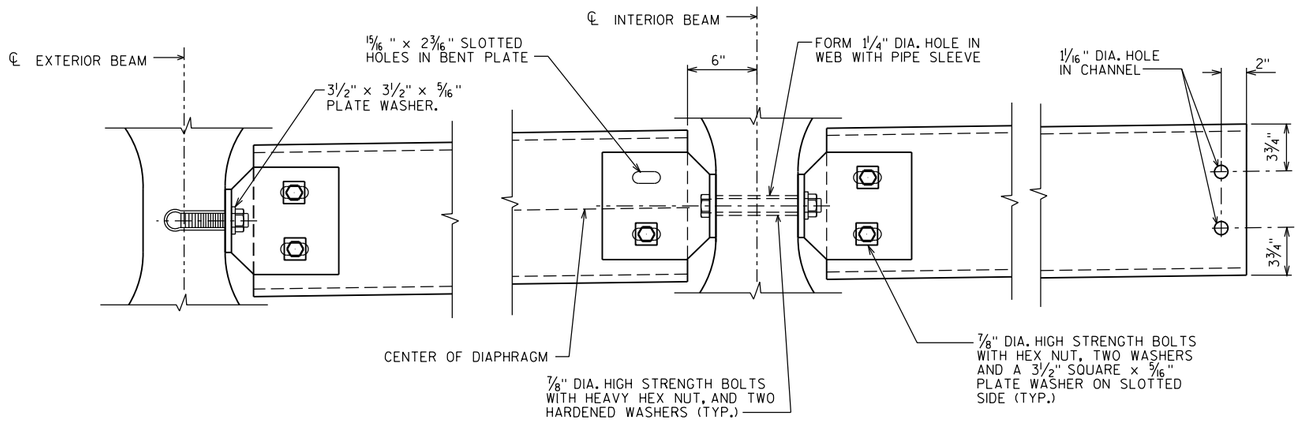
5848-00-70



PART TRANSVERSE SECTION AT DIAPHRAGM

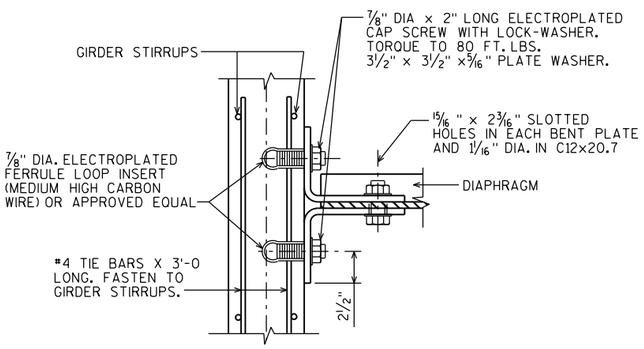


BEARING PAD DETAIL



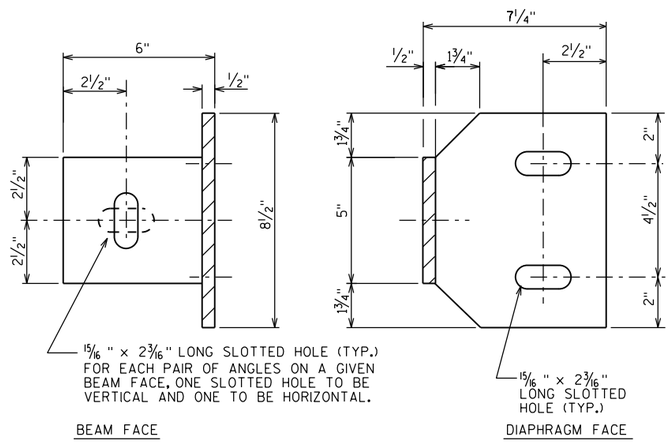
DETAIL C

DETAIL B



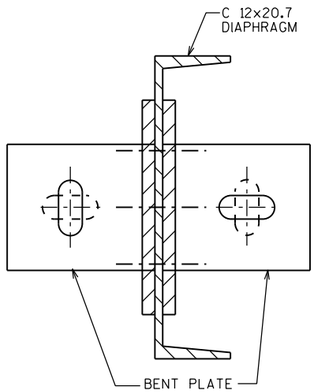
SECTION A-A

(FOR EXTERIOR ATTACHMENT)



BEAM FACE

DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-13-685", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE BE ASTM A709 GRADE 36.

ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ¼ TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.

FOR STEEL DIAPHRAGM SPACING SEE SHEET 11.

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STRUCTURE B-13-685

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STEEL DIAPHRAGM & BEARING PAD DETAILS

SHEET 10 OF 14

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DATE= 10/13/2016

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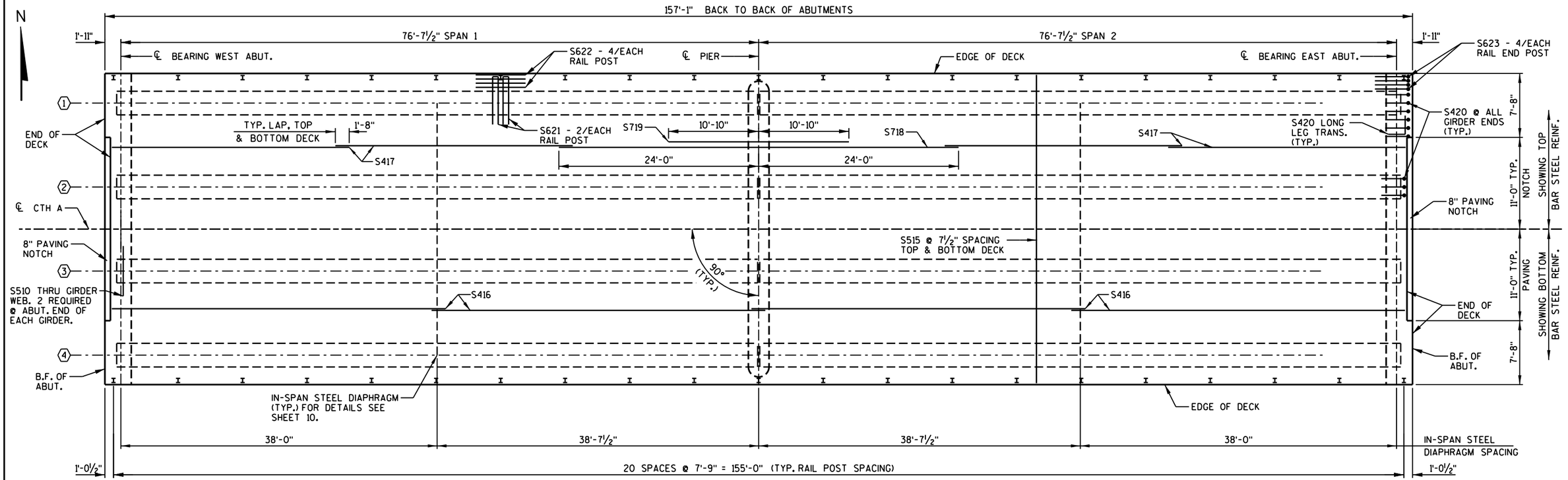
STATE PROJECT NUMBER

5848-00-70



PLAN

GENERAL NOTES

⬡ - INDICATES GIRDER NUMBER

SEE SHEET 12 FOR TRANSVERSE AND LONGITUDINAL BAR SPACING.

TOP OF DECK ELEVATIONS @ ℄ OF GIRDERS

LOCATION	SPAN POINT	SOUTH EDGE OF DECK	C/L GIRDER 4	C/L GIRDER 3	CTH A C/L	C/L GIRDER 2	C/L GIRDER 1	NORTH EDGE OF DECK
W. ABUT.	1	885.33	885.41	885.61	885.71	885.61	885.41	885.33
	1.1	885.37	885.44	885.64	885.74	885.64	885.44	885.37
	1.2	885.40	885.47	885.67	885.77	885.67	885.47	885.40
	1.3	885.42	885.49	885.70	885.80	885.70	885.49	885.42
	1.4	885.44	885.52	885.72	885.82	885.72	885.52	885.44
	1.5	885.46	885.53	885.74	885.84	885.74	885.53	885.46
	1.6	885.48	885.55	885.75	885.85	885.75	885.55	885.48
	1.7	885.49	885.56	885.76	885.86	885.76	885.56	885.49
	1.8	885.49	885.56	885.77	885.87	885.77	885.56	885.49
	1.9	885.50	885.57	885.77	885.87	885.77	885.57	885.50
PIER	2	885.49	885.56	885.77	885.87	885.77	885.56	885.49
	2.1	885.49	885.56	885.76	885.86	885.76	885.56	885.49
	2.2	885.48	885.55	885.75	885.85	885.75	885.55	885.48
	2.3	885.47	885.54	885.74	885.84	885.74	885.54	885.47
	2.4	885.45	885.52	885.72	885.82	885.72	885.52	885.45
	2.5	885.43	885.50	885.70	885.80	885.70	885.50	885.43
	2.6	885.40	885.47	885.68	885.78	885.68	885.47	885.40
	2.7	885.37	885.44	885.65	885.75	885.65	885.44	885.37
	2.8	885.34	885.41	885.61	885.71	885.61	885.41	885.34
	2.9	885.30	885.38	885.58	885.68	885.58	885.38	885.30
E. ABUT	3	885.26	885.34	885.54	885.64	885.54	885.34	885.26

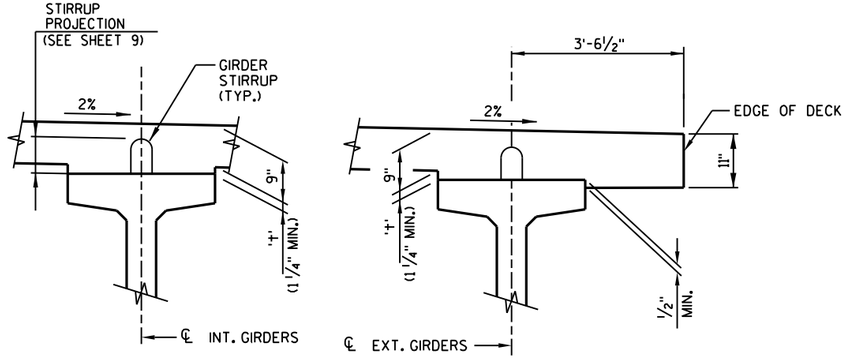
TO DETERMINE '+', ELEV. OF TOP OF GIRDERS AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. TO DETERMINE THE TOP OF DECK ELEVATION FOR POINT REFERRED USE TABLE ON THIS SHEET AND ADJUST FOR CROSS SLOPE OVER GIRDER. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEADLOAD DEFLECTION (SEE SHEET 9)
- DECK THICKNESS

= HAUNCH HEIGHT '+'

IF 1¼" MINIMUM HAUNCH HEIGHT '+' CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN DECK THICKNESS SHALL BE HELD. MAX. HAUNCH HEIGHT EQUALS "STIRRUP PROJECTION" MINUS 3".

NOTE: AN AVERAGE HAUNCH ("+") OF 2½" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES."



DECK HAUNCH DETAIL

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-685

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SUPERSTRUCTURE

SHEET 11 OF 14
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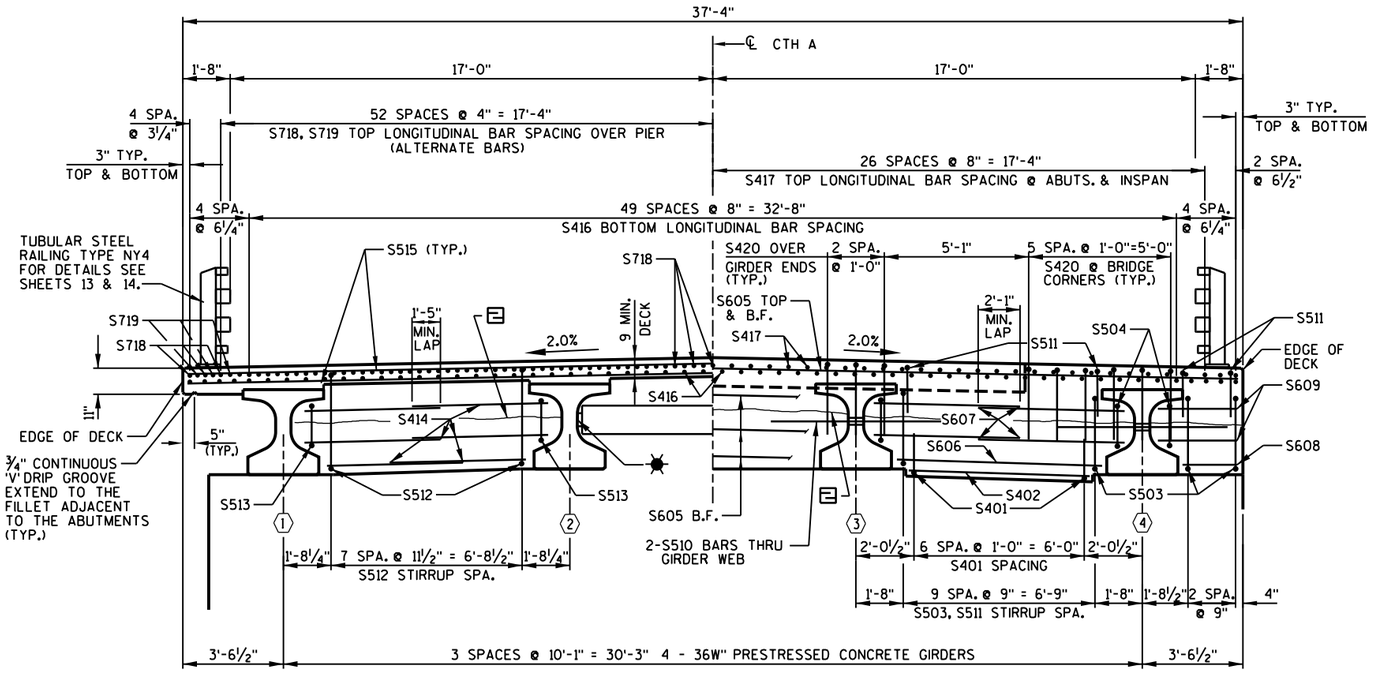
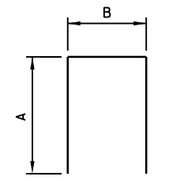


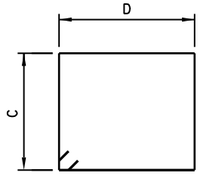
AT PIER IN SPAN AT ABUTMENTS

CROSS SECTION THRU BRIDGE

(LOOKING EAST)



MARK	A	B
S401	1'-6"	11"
S511	1'-10"	2'-2"
S621	5'-10"	8"

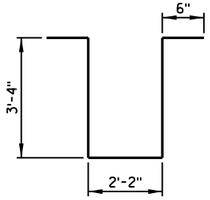


MARK	C	D
S503	2'-6"	2'-10"
S504	1'-4"	2'-10"
S513	1'-4"	2'-2"

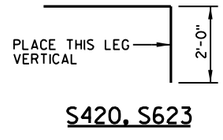
BILL OF BARS (COATED) 43,870 LBS.

MARK	NUMBER REQ'D.	LENGTH	BENT	DESCRIPTION
S401	42	3'-9"	X	DIAPH. @ ABUT. - SEMI-EXP. NOTCH - STIRRUP - VERT.
S402	12	6'-4"		DIAPH. @ ABUT. - SEMI-EXP. NOTCH - HORIZ.
S503	72	11'-4"	X	DIAPH. @ ABUT. - STIRRUP - VERT.
S504	16	9'-0"	X	DIAPH. @ ABUT. - STIRRUP - VERT.
S605	10	37'-0"		DIAPH. @ ABUT. - B.F. & TOP - HORIZ.
S606	6	7'-3"		DIAPH. @ ABUT. - F.F. - INTERIOR BAYS - HORIZ.
S607	24	5'-2"		DIAPH. @ ABUT. - F.F. - INTERIOR BAYS - HORIZ.
S608	4	1'-11"		DIAPH. @ ABUT. - F.F. @ ENDS - HORIZ.
S609	8	2'-9"		DIAPH. @ ABUT. - F.F. @ ENDS - HORIZ.
S510	16	6'-0"		DIAPH. @ ABUT. - 2 THRU GIRDER WEB - HORIZ.
S511	72	5'-7"	X	DIAPH. @ ABUT. - TOP STIRRUP - VERT.
S512	24	9'-4"	X	DIAPH. @ PIER - STIRRUP - VERT.
S513	6	7'-8"	X	DIAPH. @ PIER - STIRRUP - VERT.
S414	36	4'-9"		DIAPH. @ PIER - HORIZ.
S515	497	37'-0"		DECK - TOP & BOTTOM - TRANS.
S416	232	40'-0"		DECK - BOTTOM - LONGIT.
S417	228	28'-7"		DECK - TOP @ ABUTS. & IN SPAN - LONGIT.
S718	57	48'-0"		DECK - TOP - OVER PIER - LONGIT.
S719	56	21'-8"		DECK - TOP - OVER PIER - LONGIT.
S420	40	4'-2"	X	DECK - OVER GIRDER ENDS @ ABUT. - LONGIT.
S621	84	12'-0"	X	DECK - 2 PER RAIL POST - TRANS.
S622	152	6'-0"		DECK - 4 PER RAIL POST - LONGIT.
S623	16	6'-0"	X	DECK - 4 PER RAIL END POST - LONGIT.

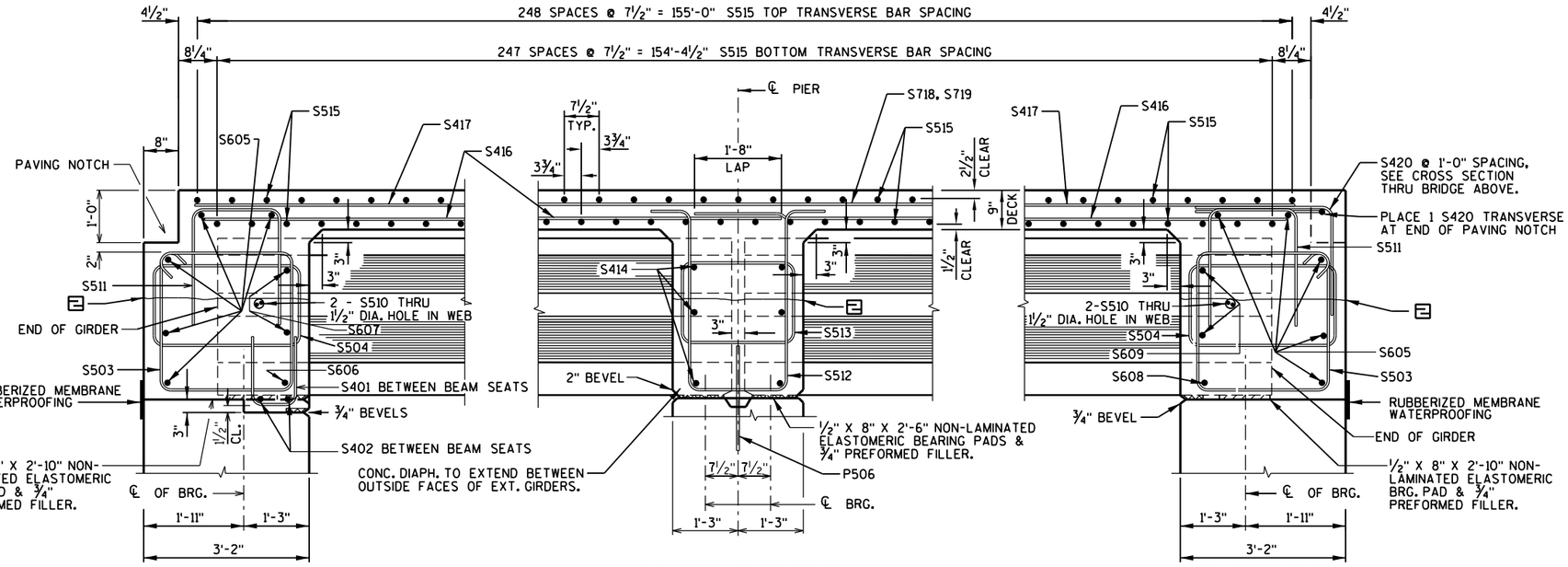
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
EPOXY COAT ALL SUPERSTRUCTURE BAR REINFORCEMENT.



S512



S420, S623



AT ABUTMENT INTERIOR BAYS AT PIER DIAPHRAGM AT ABUTMENT ENDS

PART LONGITUDINAL SECTION

LEGEND

⬡ - INDICATES GIRDER NUMBER

⊟ - OPTIONAL CONSTRUCTION JOINT 1'-2" BELOW TOP OF GIRDERS. IF USED DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.

✶ - FOR DETAILS OF STEEL DIAPHRAGMS AND DIAPHRAGM INSERTS, SEE SHEET 10. FOR LAYOUT AND SPACING OF STEEL DIAPHRAGMS, SEE PLAN, SHEET 11.

F.F. - FRONT FACE B.F. - BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-685

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SUPERSTRUCTURE SECTIONS & DETAILS

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STATE PROJECT NUMBER

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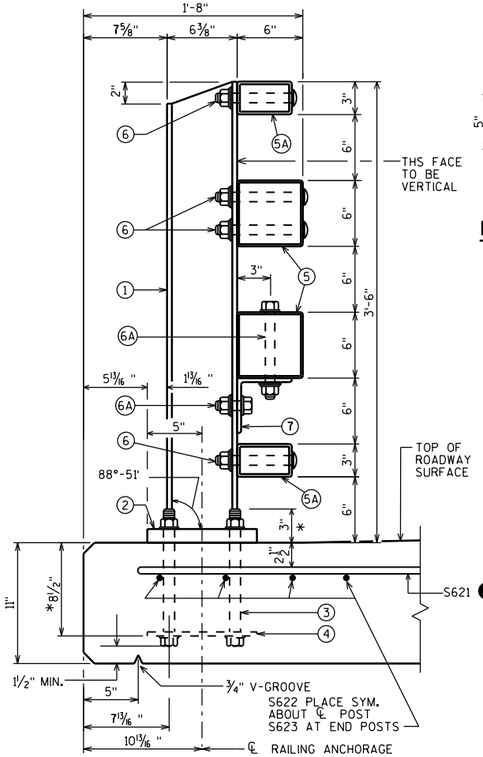
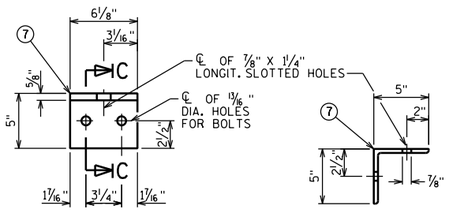


SECTION THRU RAILING ON DECK

*NORMAL TO BASE PLATE

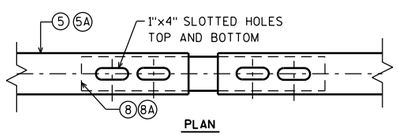


RAILING ANGLE DETAIL

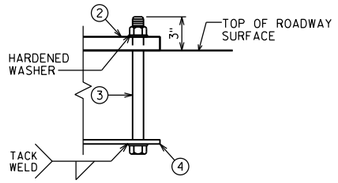
INTERIOR ELEVATION

SECTION C-C

ANGLE SECTION

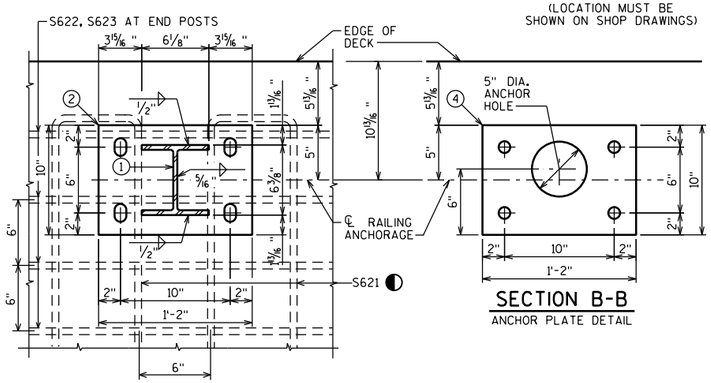


FIELD ERECTION JOINT DETAIL



ANCHOR BOLTS

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

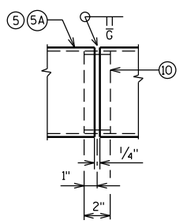


SECTION A-A

BASE PLATE DETAIL

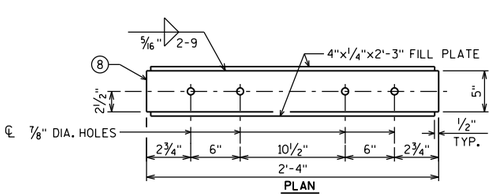
SECTION B-B

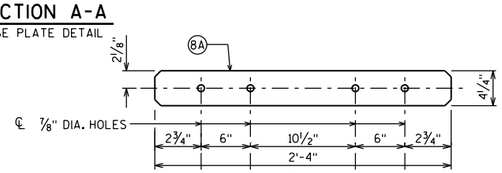
ANCHOR PLATE DETAIL

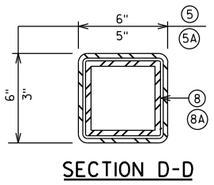


SHOP RAIL SPLICE DETAIL

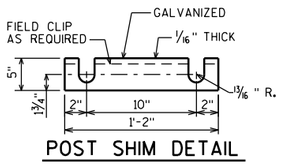
(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



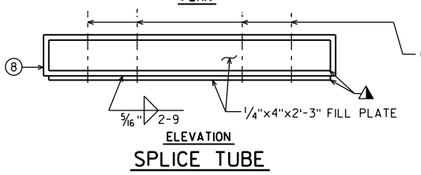




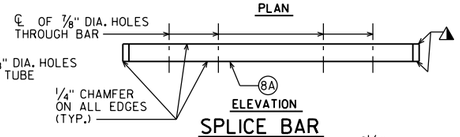
SECTION D-D



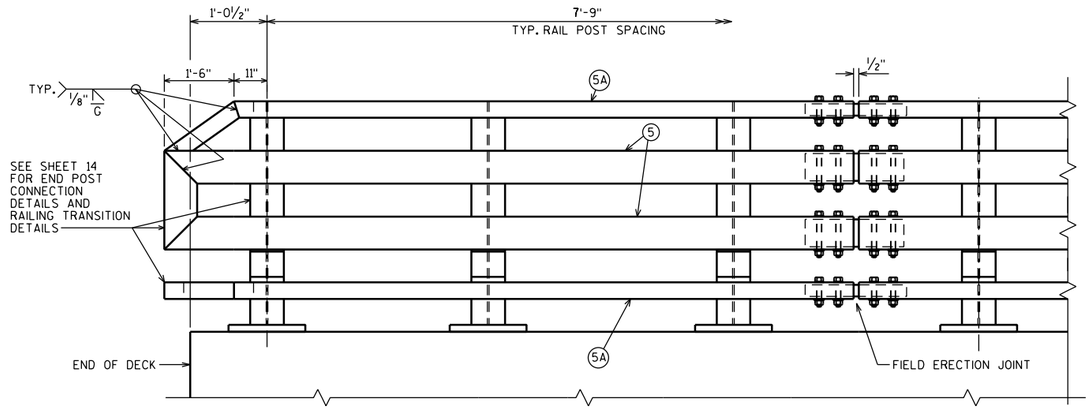
POST SHIM DETAIL



SPLICE TUBE

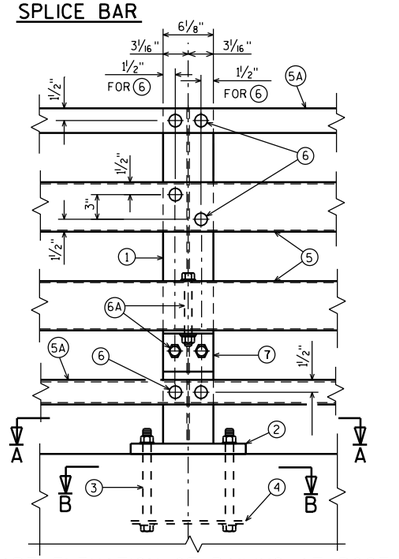


SPLICE BAR



PART ELEVATION OF RAILING

INTERIOR ELEVATION



PART ELEVATION OF RAILING AT POST

INTERIOR ELEVATION

LEGEND

(1) W6 X 25 WITH 1⅛" X 1⅜" HORIZONTAL SLOTTED HOLES ON EACH SIDE OF POST FOR BOLT NO. 6 AT TOP TWO RAILS. USE 1" DIA. HOLES FOR BOLTS NO. 6 AT BOTTOM NO. 5A & FOR BOLT NO. 6A AT NO. 7. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

(2) PLATE 1¼" X 10" X 1'-2" WITH 1⅛" X 1⅞" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.

(3) ASTM A449 - 1" DIA. ANCHOR BOLTS WITH HEAVY HEX NUT AND 2" O.D. HARDENED WASHER (ALL GALVANIZED). 4 REQUIRED PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 11½" LONG BOLT FOR CONCRETE DECKS.

(4) ⅜" X 10" X 1'-2" ANCHOR PLATE (GALVANIZED) WITH 1⅛" DIA. HOLES FOR ANCHOR BOLTS NO. 3.

(5) TS 6 X 6 X ⅜" STRUCTURAL TUBING. USE 1" DIA. HOLES FOR BOLT NO. 6 (FRONT & BACK) & ⅞" DIA. HOLES FOR BOLT NO. 6A (TOP & BOTTOM).

(5A) TS 5 X 3 X ¼" STRUCTURAL TUBING. USE 1" DIA. HOLES FOR BOLT NO. 6. IN TOP RAIL (FRONT & BACK). USE 1⅛" X 1⅜" HORIZONTAL SLOTTED HOLES FOR BOLT NO. 6 IN BOTTOM RAIL (FRONT & BACK) AND A 2" O.D. WASHER UNDER BOLT HEAD.

(6) ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH HEX NUT, ⅜" X 1¾" X 1¾" WASHER, AND SPRING LOCK WASHER (2 REQUIRED AT RAIL TO POST LOCATIONS SHOWN).

(6A) ¾" DIA. A325 BOLT WITH HEX NUT AND SPRING LOCK WASHER (1 REQUIRED AT RAIL TO ANGLE AND 2 REQUIRED AT ANGLE TO POST LOCATIONS SHOWN WITH ⅜" X 1¾" X 1¾" WASHER).

(7) L 5 X 5 X ⅝" STRUCTURAL ANGLE. ATTACH TO NO. 1 AND NO. 5 AS SHOWN.

(8) TS 5 X 5 X ⅝" X 2'-4" LONG SPLICE TUBE. 1 PER RAIL. USED IN NO. 5.

(8A) 4¼" X 2⅛" X 2'-4" LONG SPLICE BAR. 1 PER RAIL. USED IN NO. 5A.

(9) ¾" DIA. A325 FULLY THREADED BOLTS, 7½" LONG, WITH 2 WASHERS AND HEAVY HEX NUT ON EACH BOLT. NUT TO BE FINGER TIGHT. (4 REQUIRED PER SPLICE). USE 1" X 4" SLOTTED HOLES IN TOP AND BOTTOM OF NO. 5.

(9A) ¾" DIA. A325 FULLY THREADED BOLTS, 4½" LONG, WITH 2 WASHERS AND HEAVY HEX NUT ON EACH BOLT. NUT TO BE FINGER TIGHT. (4 REQUIRED PER SPLICE). USE 1" X 4" SLOTTED HOLES IN TOP AND BOTTOM OF NO. 5A.

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

▲ PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE RAILS, SPLICE TUBES AND FILL PLATES.

◐ TIE TO TOP MAT OF STEEL.

NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE NY4 B-13-685", WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT, AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS, ANGLES, SPLICE TUBES, SPLICE BARS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS.

RAIL POST, BASE PLATES, SPLICE BAR, ANGLES AND SPLICE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED f_y =50 KSI. ANCHOR PLATES & SHIMS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.

THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ⅛ TURN.

FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. CAULK AROUND PERIMETER OF NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER PLATE NO. 2 WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-685

DRAWN BY RLR | PLANS CK'D. JAS

TUBULAR STEEL RAILING TYPE NY4

SHEET 13 OF 14
49

FILE= 11331012_13.DGN
DATE= 10/13/2016

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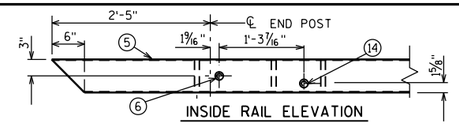
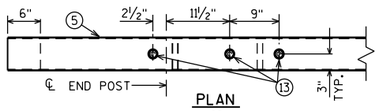
11331012_13.dgn 10/13/2016 3:59:42 PM rrabska

RAILNY4
7-16

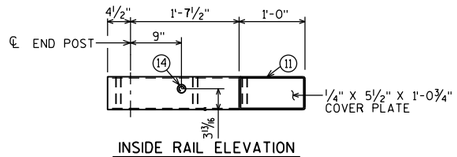
STATE PROJECT NUMBER

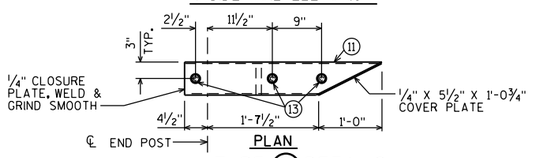
5848-00-70



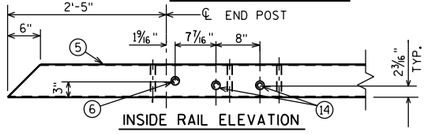


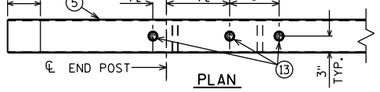
TOP RAIL ⑤ DETAILS



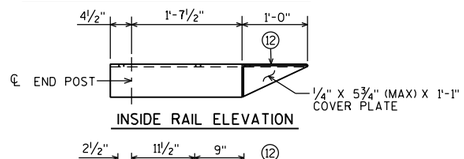


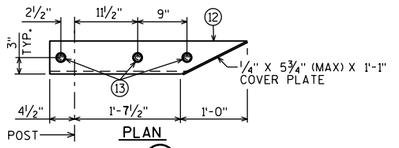
TUBE ⑪ DETAILS



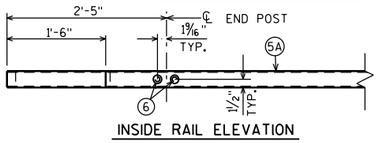


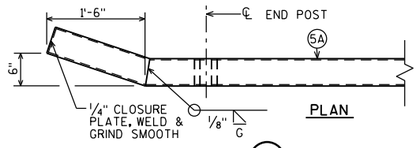
BOTTOM RAIL ⑤ DETAILS



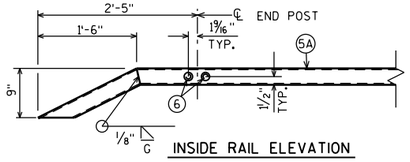


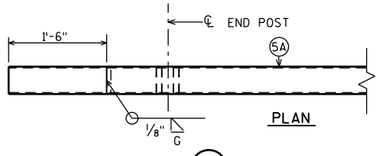
ANGLE ⑫ DETAILS



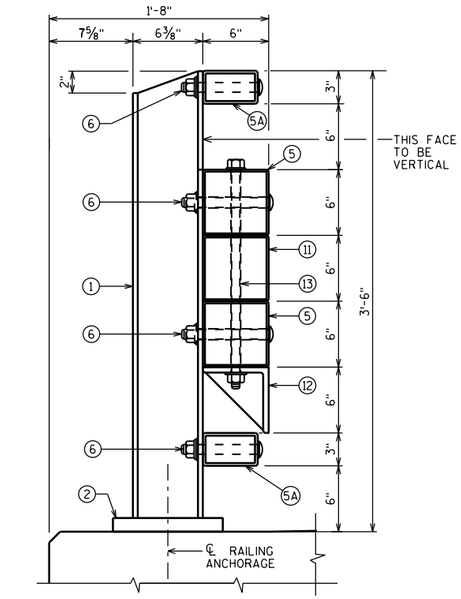


BOTTOM RAIL 5A DETAILS

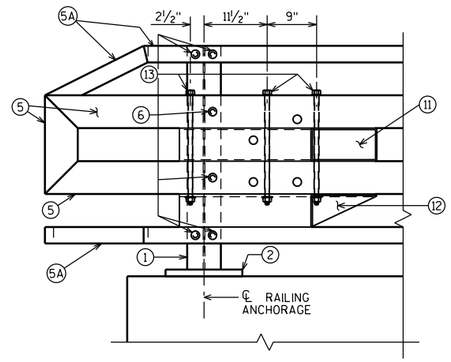




TOP RAIL 5A DETAILS

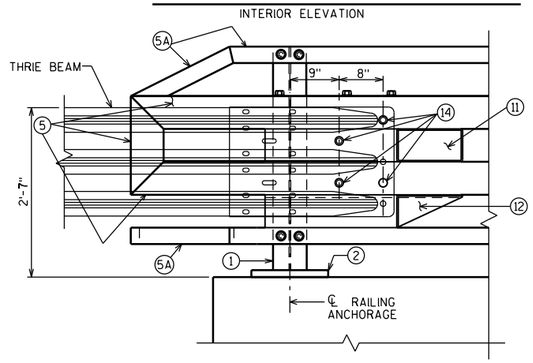


SECTION THRU RAILING END POST



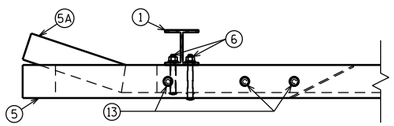
ELEVATION DETAIL AT END POST

INTERIOR ELEVATION

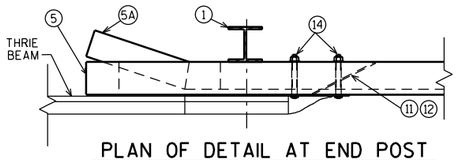


ELEVATION OF DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT



PLAN OF DETAIL AT END POST



PLAN OF DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT

LEGEND

(1) W6 X 25 WITH 1 1/8" X 1 3/4" HORIZONTAL SLOTTED HOLES ON SIDE OF POST FOR BOLT NO. 6 AT NO. 5 & AT TOP RAIL NO. 5A. USE 1" DIA. HOLE FOR BOLT NO. 6 AT NO. 5A BOTTOM RAIL. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

(2) PLATE 1 1/4" X 10" X 1'-2". SEE SHEET "TUBULAR STEEL RAILING NY4" FOR MORE INFORMATION.

(5) TS 6 X 6 X 3/16" STRUCTURAL TUBING. USE 7/8" DIA. HOLES IN TOP AND BOTTOM OF RAILS FOR BOLT NO. 13 AS SHOWN IN PLAN DETAILS. USE 1" DIA. HOLES IN FRONT AND BACK OF RAILS FOR BOLTS NO. 6 & NO. 14 AS SHOWN IN ELEVATION DETAILS.

(5A) TS 5 X 3 X 1/4" STRUCTURAL TUBING. USE 1" DIA. HOLES FOR TOP RAIL NO. 5A (FRONT & BACK). USE 1 1/8" X 1 3/8" HORIZONTAL SLOTTED HOLES FOR BOLT NO. 6 IN BOTTOM RAIL (FRONT & BACK) AND A 2" O.D. WASHER UNDER BOLT HEAD.

(6) 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH HEX NUT, 3/16" X 1 3/4" X 1 3/4" WASHER, AND SPRING LOCK WASHER (1 REQUIRED AT RAIL NO. 5 TO POST NO. 1 CONNECTION LOCATIONS SHOWN. 2 REQUIRED AT RAIL NO. 5A TO POST NO. 1 CONNECTION LOCATIONS SHOWN).

(11) TS 6 X 6 X 3/16" STRUCTURAL TUBING. USE 1" DIA. HOLES IN FRONT AND BACK FOR BOLT NO. 14 & 7/8" DIA. HOLES IN TOP & BOTTOM FOR BOLT NO. 13.

(12) L 6 X 6 X 1/2" STRUCTURAL ANGLE. USE 7/8" DIA. HOLES IN TOP FLANGE FOR BOLT NO. 13.

(13) 3/4" DIA. A325 FULLY THREADED BOLTS, 2 WASHERS AND A HEAVY HEX NUT, ON EACH BOLT. NUT TO BE FINGER TIGHT. 3 BOLTS AT EACH END POST.

(14) 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH HEX NUT AND 3/16" X 2" X 2" WASHER FOR CONNECTION OF THRIE BEAM (4 REQUIRED)

NOTES

STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED f_y=50 KSI. STRUCTURAL ANGLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-13-685

DRAWN BY RLR | PLANS CK'D. JAS

END POST DETAILS FOR TUBULAR STEEL RAILING TYPE NY4

SHEET 14 OF 14
50

FILE= 11331012-14.DGN
DATE= 10/13/2016

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11331012_14.dgn 10/13/2016 4:00:38 PM rrabska

EARTHWORK PROJECT I.D. 5848-00-70 CTH A

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Salvaged/Unusable Pavement Material	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Salvaged/Unusable Pavement Material Note 2	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Expanded Fill 1.25	Mass Ordinate Note 7
10+68	1068.00	0.00	22	0	0	0	0	0	0	0	0
11+20	1120.00	52.00	23	0	11	43	0	11	43	13	30
11+20	1120.00	0.00	51	0	11	0	0	0	43	13	30
11+28	1128.00	8.00	51	0	23	15	0	5	59	20	39
11+44	1144.00	16.00	49	0	53	30	0	22	88	47	41
11+88	1188.00	44.00	54	0	135	84	0	153	172	239	-67
12+15	1215.00	27.00	59	0	145	57	0	140	229	414	-185
12+41	1241.00	26.00	62	0	166	59	0	149	287	600	-313
12+77.46	1277.46	36.46	62	0	166	84	0	224	371	880	-509
						371	0	704			

EARTHWORK PROJECT I.D. 5848-00-70 CTH A

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Salvaged/Unusable Pavement Material	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Salvaged/Unusable Pavement Material Note 2	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Expanded Fill 1.25	Mass Ordinate Note 7
14+34.55	1434.55	0.00	60	0	95	0	0	0	0	0	0
14+71	1471.00	36.45	60	0	95	85	0	174	85	217	-133
14+98	1498.00	27.00	56	0	96	58	0	96	142	337	-195
15+24	1524.00	26.00	52	0	102	52	0	95	194	456	-262
15+77	1577.00	53.00	50	0	38	100	0	137	294	627	-333
15+77	1577.00	0.00	23	0	38	0	0	0	294	627	-333
15+84	1584.00	7.00	23	0	30	6	0	8	300	638	-338
16+44	1644.00	60.00	22	0	0	50	0	33	350	679	-328
						350	0	543			
				PROJECT TOTAL		722	0	1,247			

1) Excavation Common is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Breaker Run material. An undistributed amount of Breaker Run material is included in the project.
7) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

9

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PROJECT NO:5848-00-70	HWY:CTH A	COUNTY:DANE	EARTHWORK	SHEET	E

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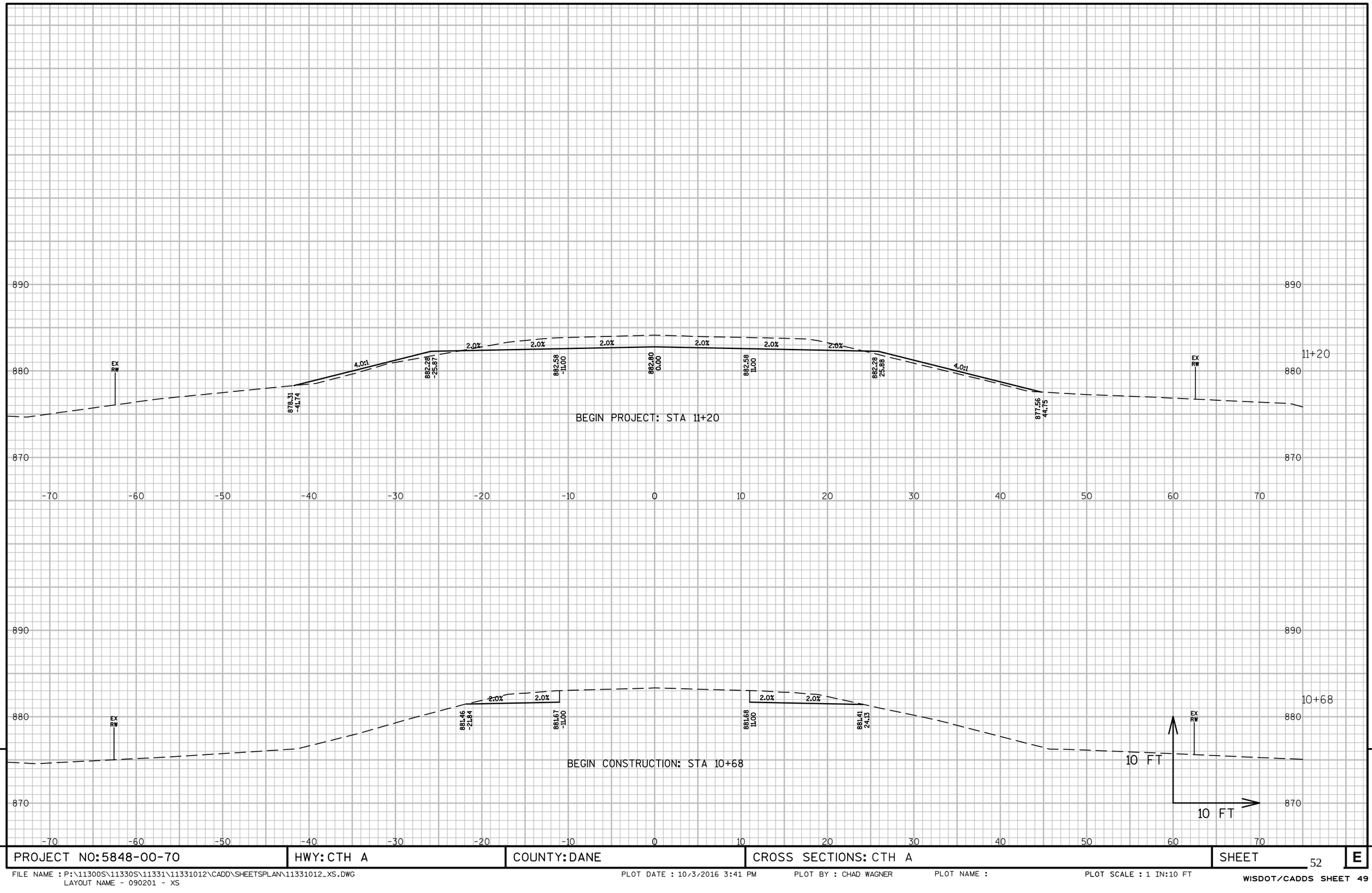

PROJECT NO: 5848-00-70	HWY: CTH A	COUNTY: DANE	CROSS SECTIONS: CTH A	SHEET 52	E

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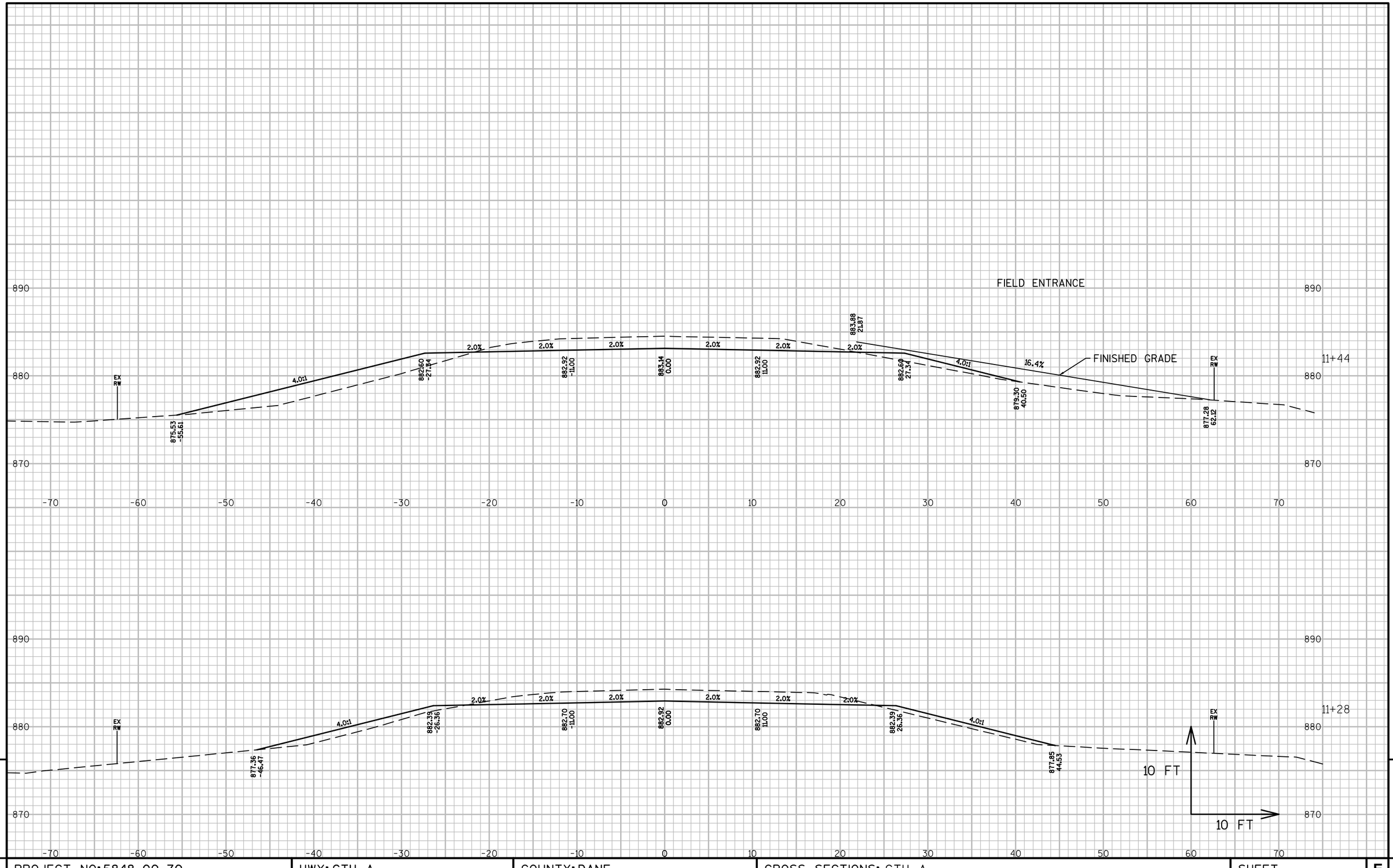
WISDOT/CADDS SHEET 49



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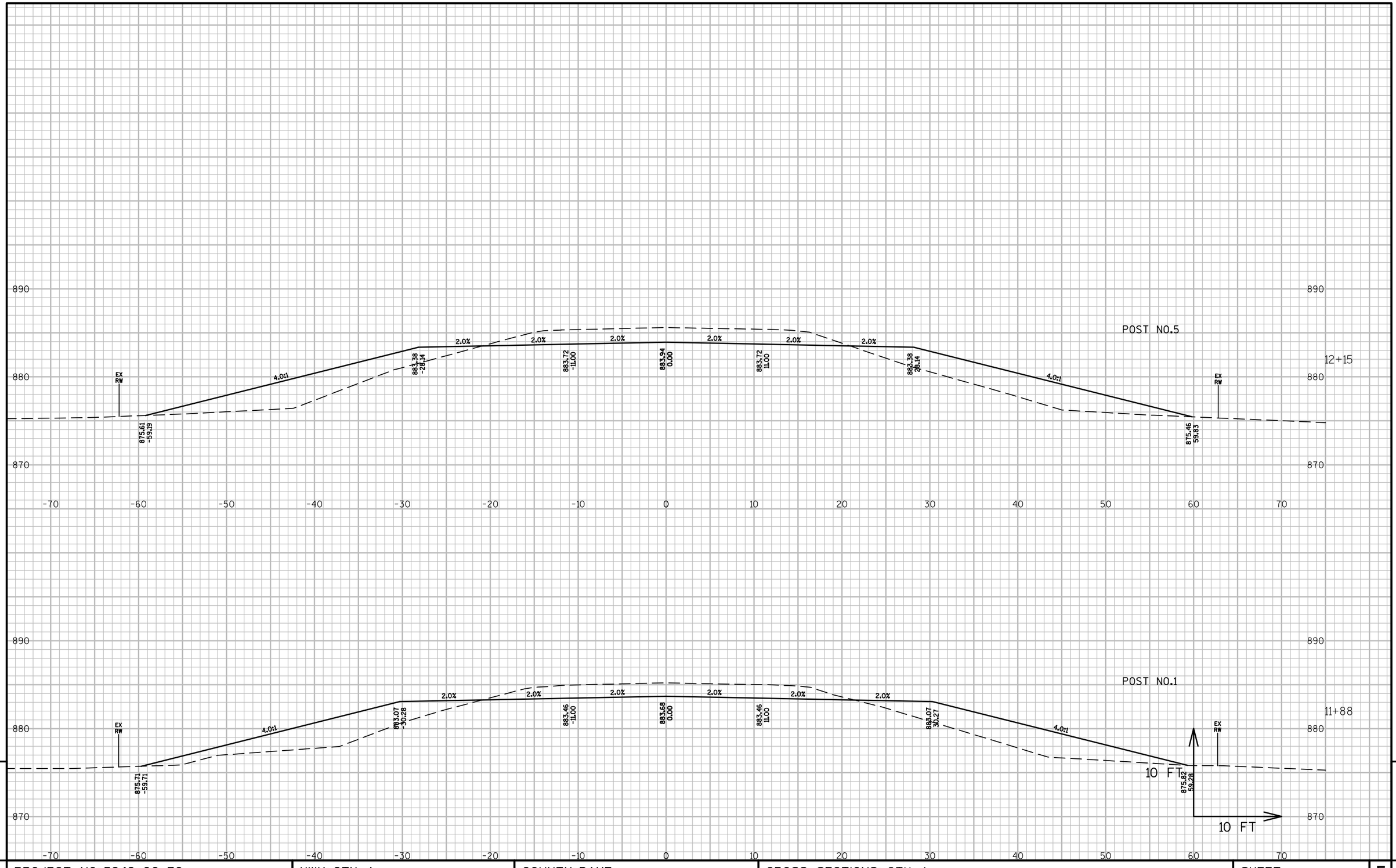

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PROJECT NO: 5848-00-70	HWY: CTH A	COUNTY: DANE	CROSS SECTIONS: CTH A	SHEET 54	E

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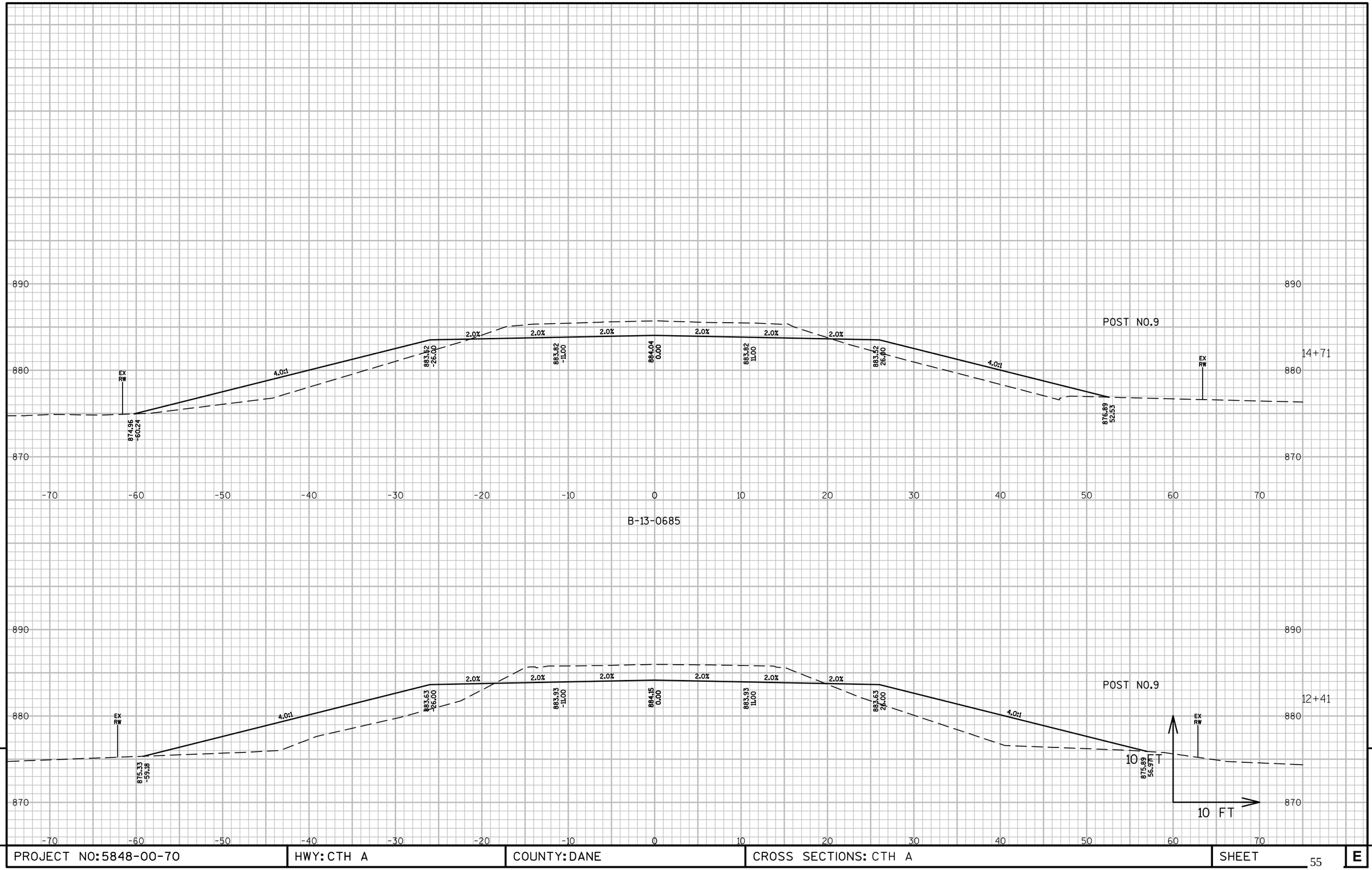

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PROJECT NO: 5848-00-70	HWY: CTH A	COUNTY: DANE	CROSS SECTIONS: CTH A	SHEET 55	E

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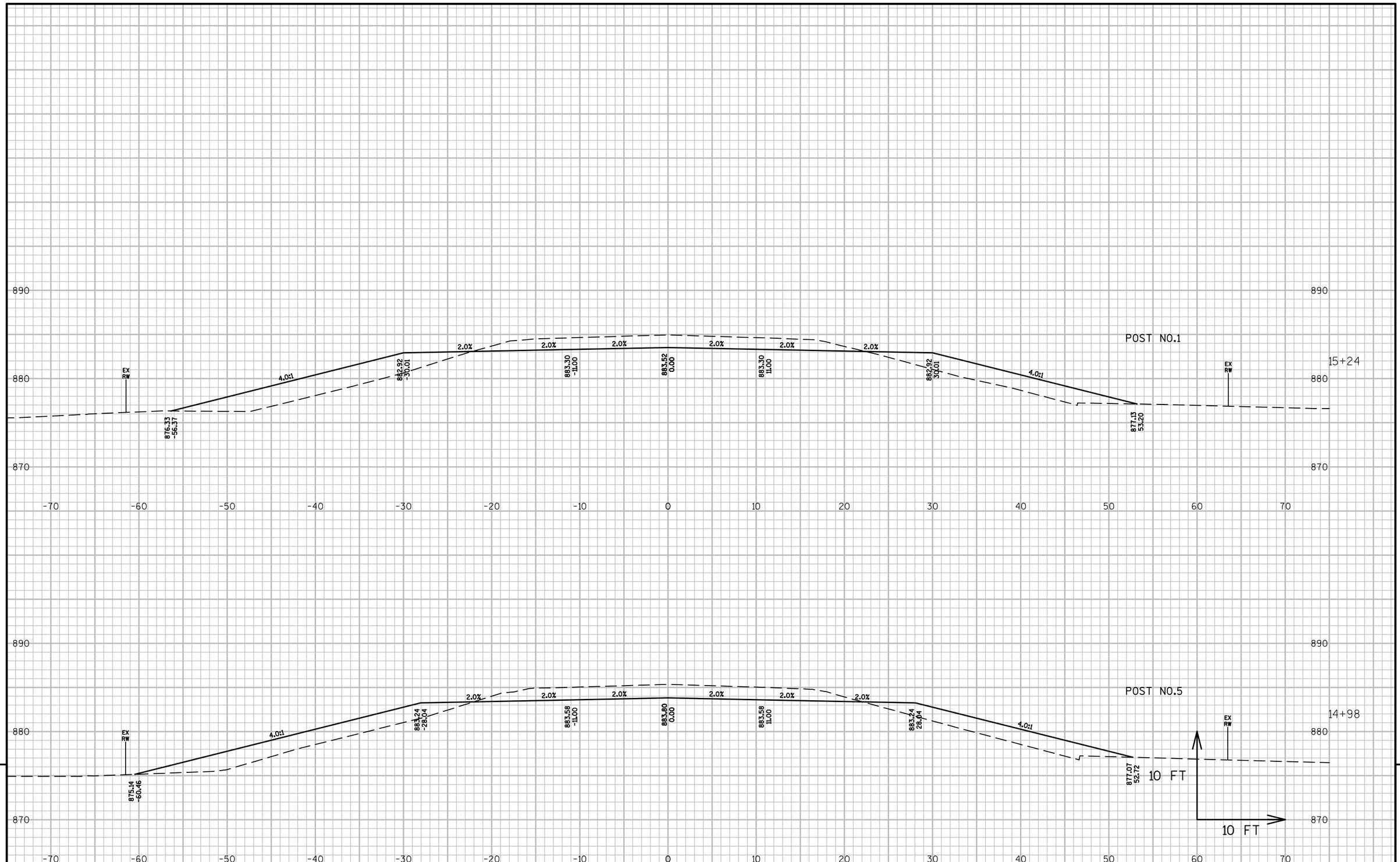

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PROJECT NO: 5848-00-70	HWY: CTH A	COUNTY: DANE	CROSS SECTIONS: CTH A	SHEET 56	E

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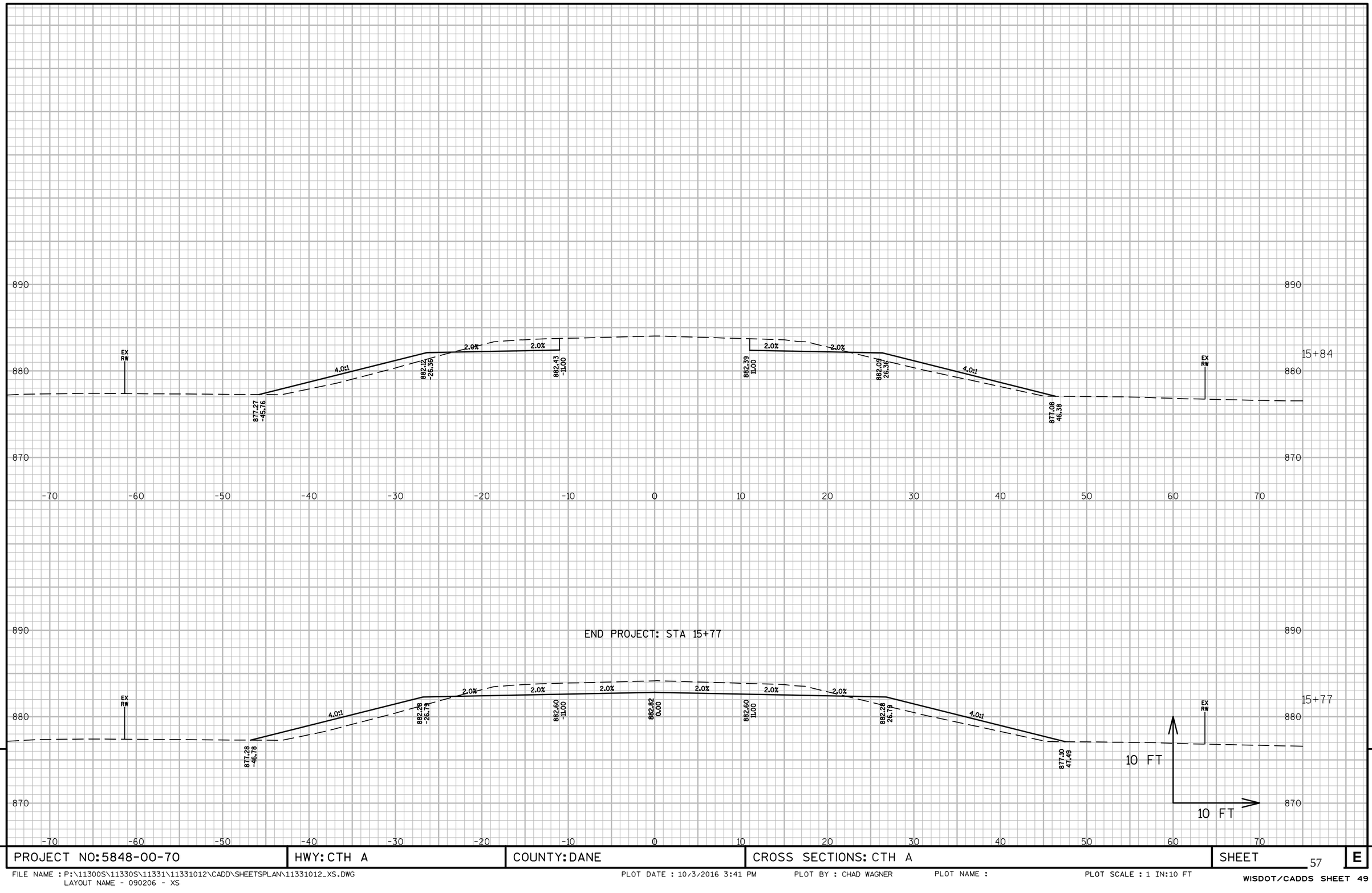

PROJECT NO: 5848-00-70	HWY: CTH A	COUNTY: DANE	CROSS SECTIONS: CTH A	SHEET 57	E

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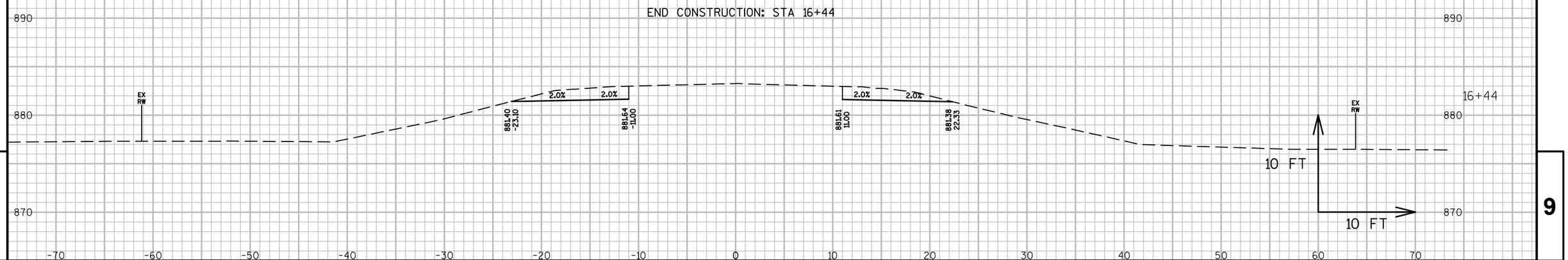
END CONSTRUCTION: STA 16+44



PROJECT NO: 5848-00-70	HWY: CTH A	COUNTY: DANE	CROSS SECTIONS: CTH A	SHEET 58	E

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WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

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