SUP

PROJECT ID: 8397-00-70

WITH: N/A

COUNTY: POLK

FEBRUARY 2023

ORDER OF SHEETS

TOTAL SHEETS = 68

50

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH M - CTH PP

WAPOGASSET BRANCH BRIDGE B-48-0057

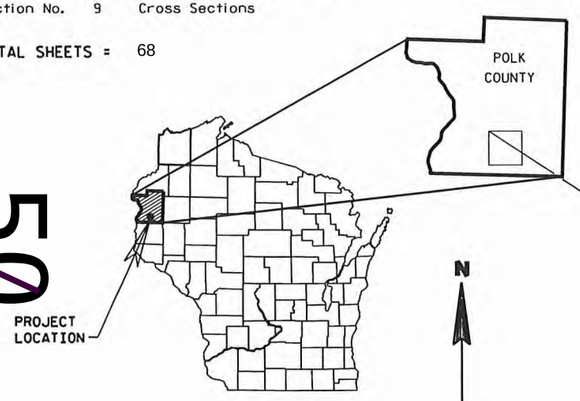
CTH K

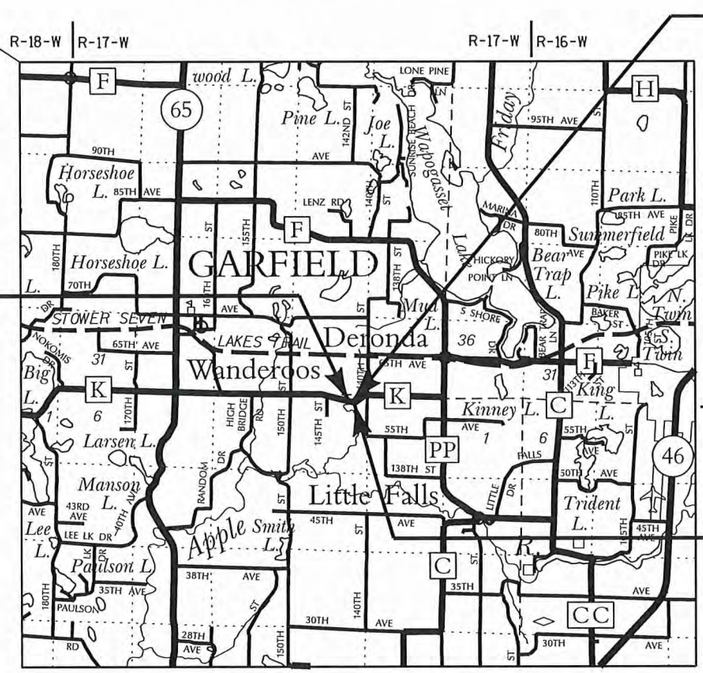
POLK COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8397-00-70	WISC 2023250	1

STATE PROJECT NUMBER

8397-00-70





LAYOUT

SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.071 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), POLK COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

DESIGN DESIGNATION

A.A.D.T. (2023)	=	1,250
A.A.D.T. (2043)	=	1,690
D.H.V.	=	125
D.	=	50/50
T.	=	5%
DESIGN SPEED	=	30 MPH
ESALS	=	140,000

CONVENTIONAL SYMBOLS

PLAN

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

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

ACCEPTED FOR

County of Polk

Oct 13, 2022 — Date

Highway Commissioner

ORIGINAL PLANS PREPARED BY

AYRES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com

DANIEL N. SYDOW E-38363 WI PROFESSIONAL ENGINEER

10/14/2022

DATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AYRES ASSOCIATES INC
Designer	AYRES ASSOCIATES INC
PROJECT MANAGER	PAULA GROOM, PE
Regional Examiner	TOU YANG, PE
Regional Supervisor	TYLER RONGSTAD, PE

APPROVED FOR THE DEPARTMENT

DATE: 10/14/22 Paula Groom (Signature)

E

GENERAL NOTES

EROSION CONTROL ITEMS TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

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

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCLUSIVE OF THE ROADBED, SHALL BE FERTILIZED, SEEDED, AND MULCHED AS DIRECTED BY THE ENGINEER.

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

ASPHALTIC REMOVAL IS INCLUDED IN THE ITEM EXCAVATION COMMON.

TOPSOIL SHALL BE PLACED ON THE SLOPES, TO THE POINT OF INTERCEPT WITH THE ORIGINAL GROUND SHOWN ON THE CROSS SECTIONS.

THE DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (NAVD 88).

ASPHALT SURFACE SHALL USE ½" (12.5 mm) NOMINAL AGGREGATE SIZE.

WETLANDS EXIST IN THE PROJECT AREA. NO DISTURBANCE IS ALLOWED OUTSIDE THE SLOPE INTERCEPTS.

UTILITIES

XCEL ENERGY-ELECTRIC
801 KELLER AVENUE
AMERY, WI 54001
ATTN: JAKE MILLER
715-268-3227
715-441-7120 (CELL)
Jake.I.Miller@xcelenergy.com
ATTN: CORISSA SEELY
715-737-4097
corissa.e.seely@xcelenergy.com

NORTHWEST COMMUNICATIONS - COMMUNICATIONS
116 HARRIMAN AVE. N.
AMERY, WI 54001
ATTN: GREG CARDINAL
715-268-7101
gregcardinal@amerytel.net

** DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

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

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:

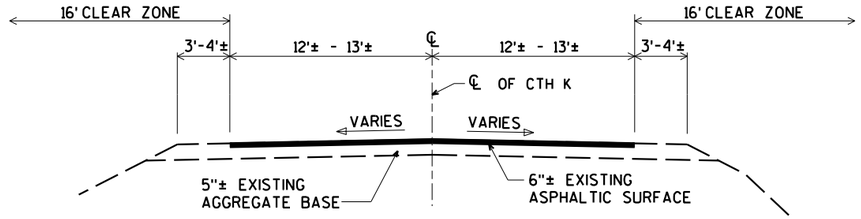
AMY CRONK
810 W MAPLE ST.
SPOONER, WI 54801
715-635-4229
amy.cronk@Wisconsin.gov

COUNTY CONTACT

POLK COUNTY, HIGHWAY COMMISSIONER
900 PHEASANT LANE
BALSAM LAKE, WI 54810
ATTN: EMIL 'MOE' NORBY
715-485-8723
Emil.Norby@co.polk.wi.us

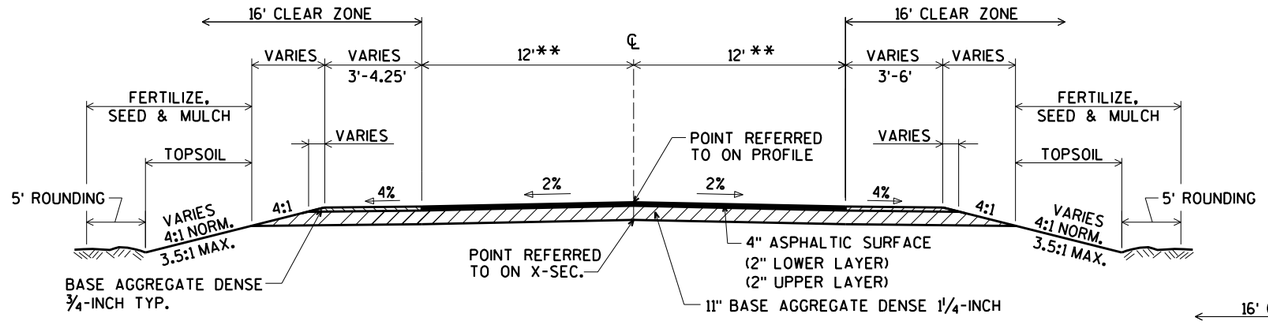
DESIGNER

AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: DANIEL SYDOW, PE
715-834-3161
sydowd@ayresassociates.com



TYPICAL EXISTING SECTION

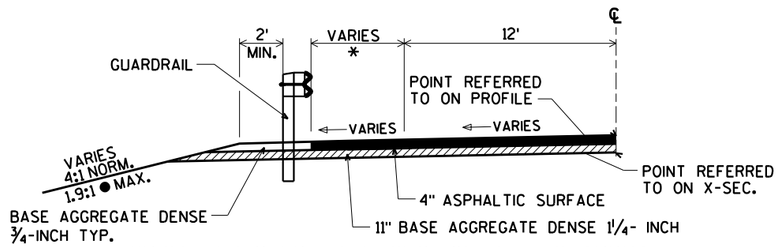
STA. 8+25 - STA. 12+00



TYPICAL FINISHED SECTION

STA. 8+25 - STA. 8+97.33

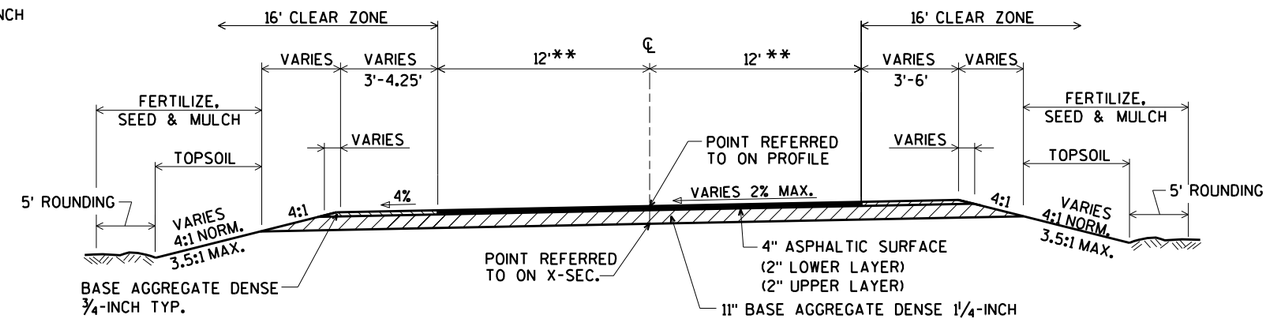
** THE ASPHALT SHALL BE PLACED 32-FEET WIDE AT THE ENDS OF THE BRIDGE AND FOLLOW THE FACE OF GUARDRAIL, AND TAPER TO MATCH EXISTING AT THE END OF THE PROJECT.



TYPICAL FINISHED HALF SECTION WITH GUARDRAIL

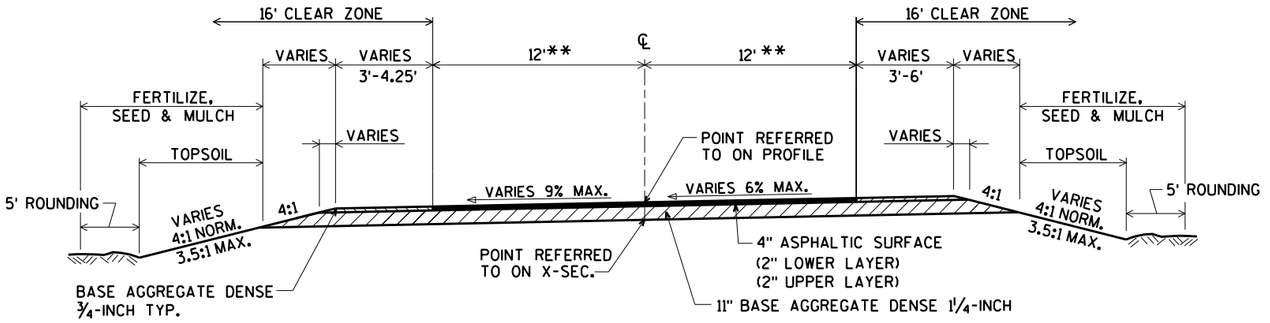
* 4' MIN (AT END OF BRIDGE)
6' MAX (AT END TERMINAL)

● 2.5:1 OUTSIDE OF RIPRAP AREA



TYPICAL FINISHED SECTION - SUPERELEVATED

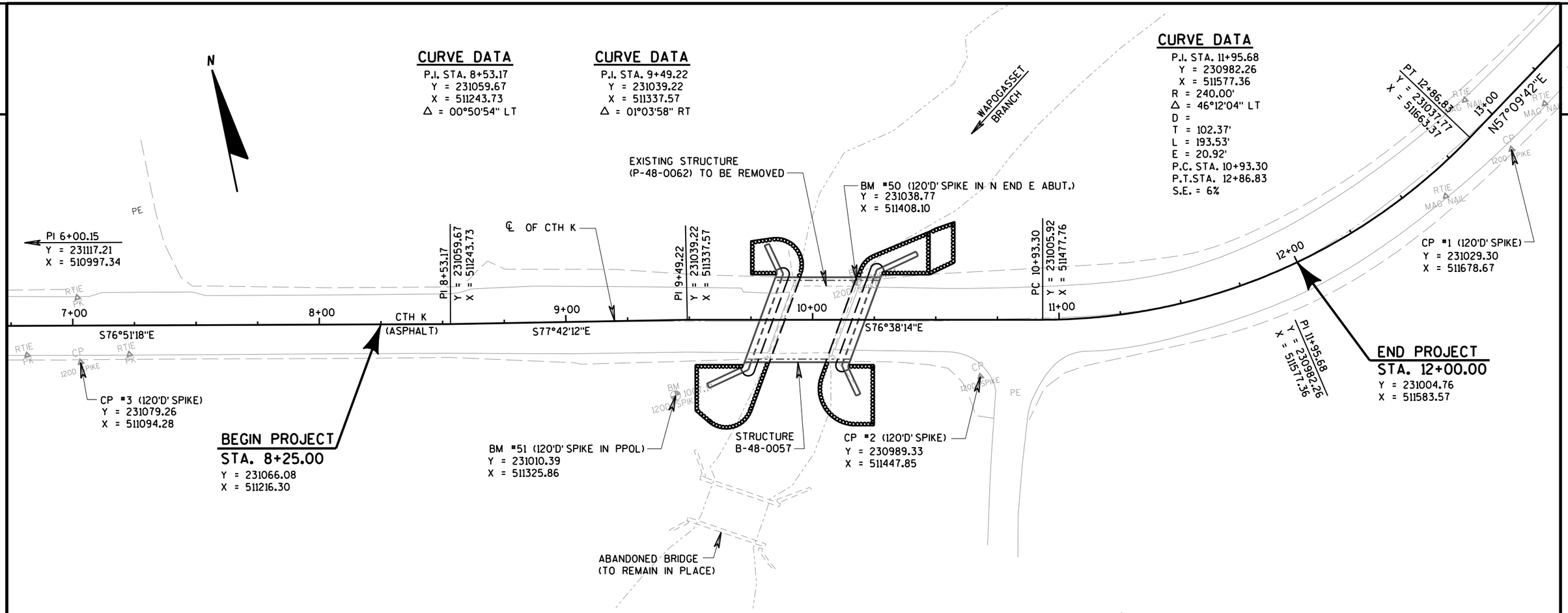
STA. 8+97.33 - STA. 9+78.67
STA. 10+21.33 - STA. 10+57.70



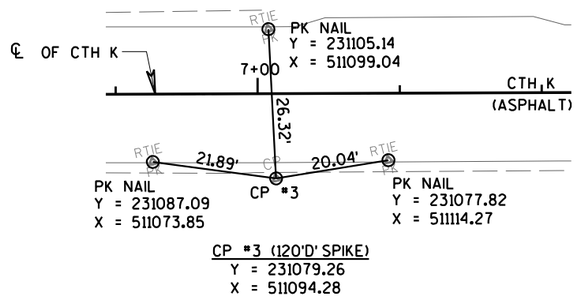
TYPICAL FINISHED SECTION - SUPERELEVATED

STA. 10+57.70 - STA. 12+00.00

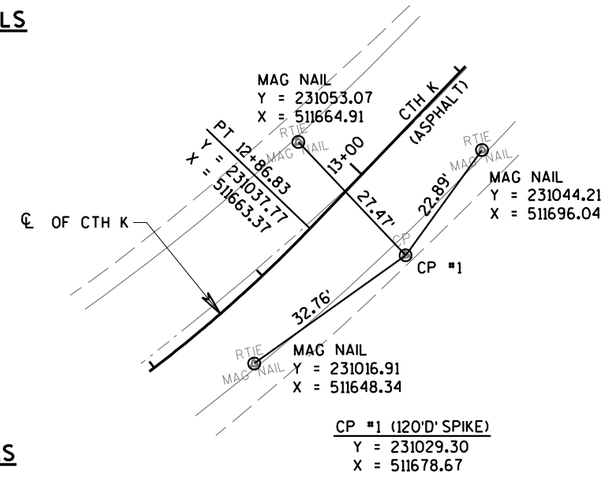
PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK	TYPICAL SECTIONS	SHEET 3	E



ALIGNMENT CONTROLS

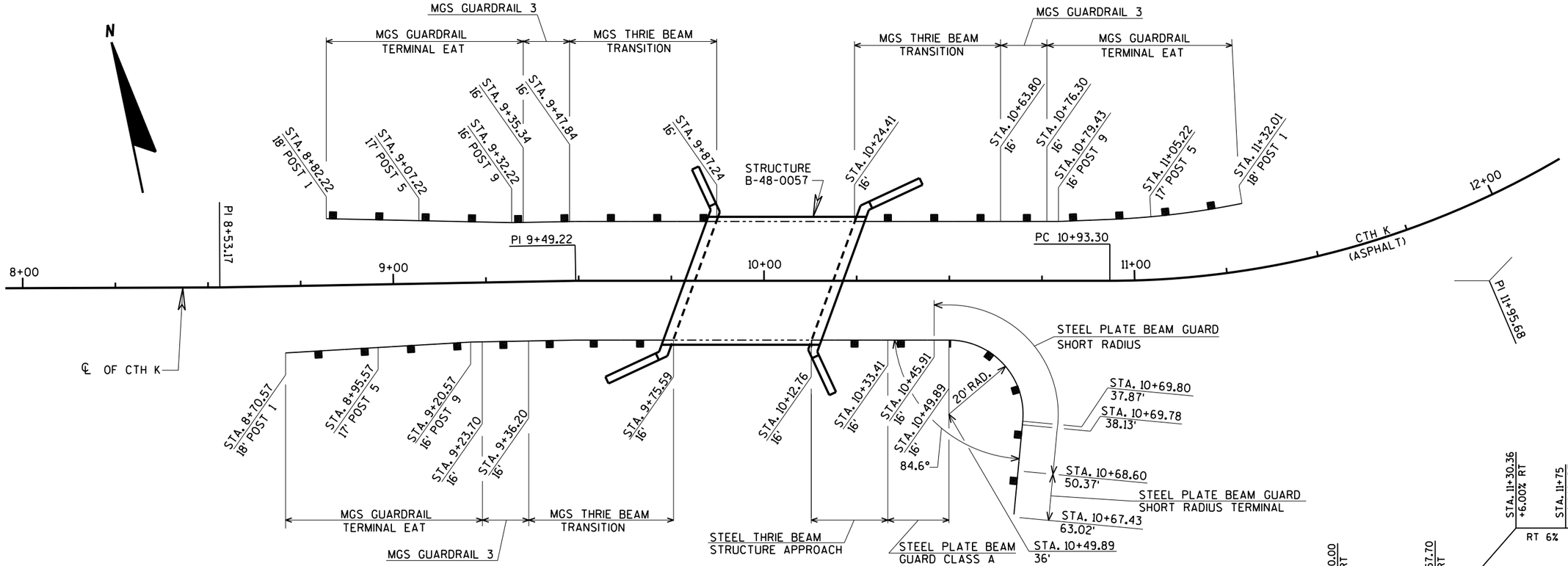


ALIGNMENT TIES

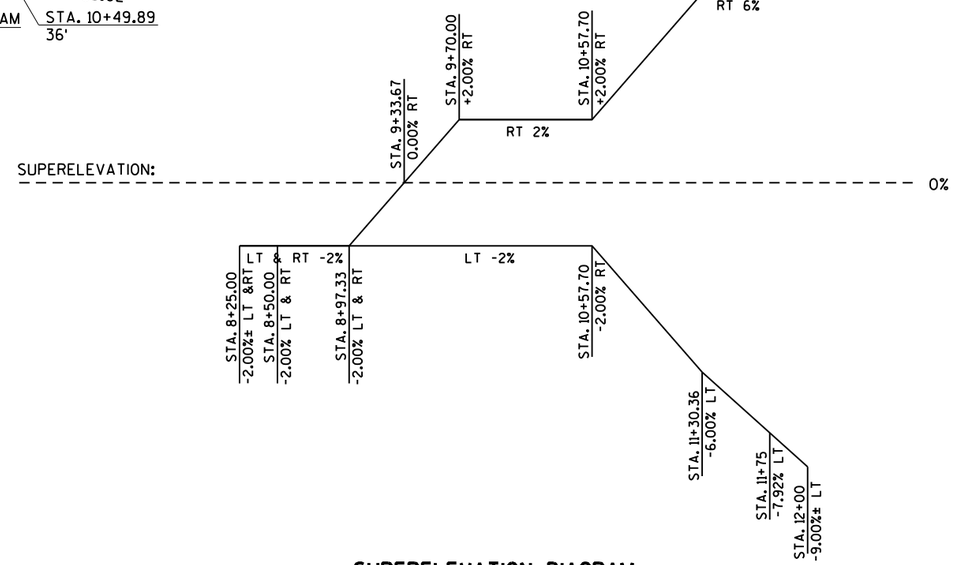


PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK	ALIGNMENT CONTROLS	SCALE, FEET 0 20 40	SHEET 4	E

2



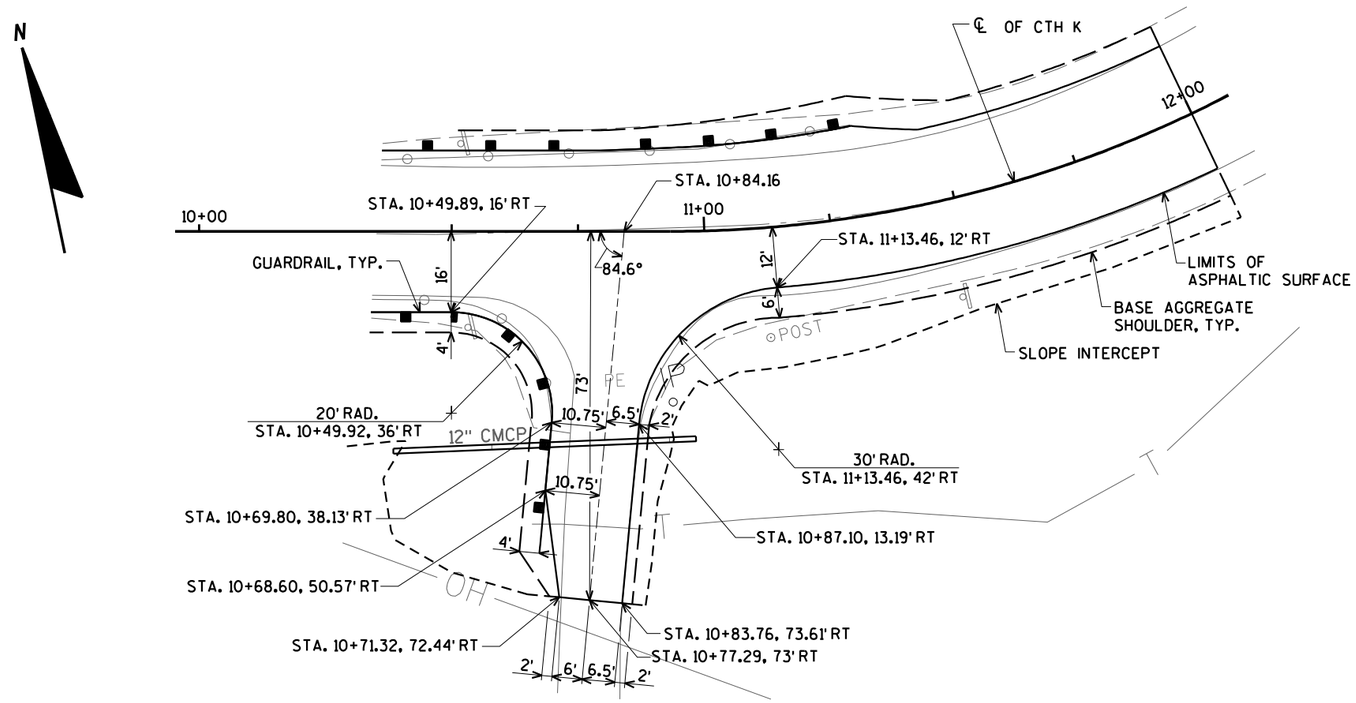
GUARDRAIL LAYOUT



SUPERELEVATION DIAGRAM

PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK	CONSTRUCTION DETAILS	SHEET 5	E

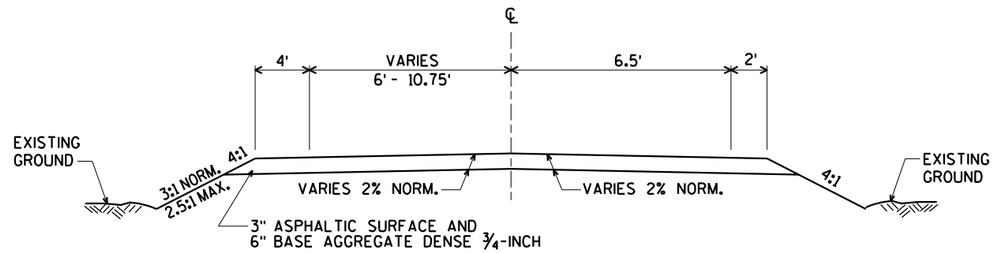
2



PLAN

STA. 10+84.16, RT

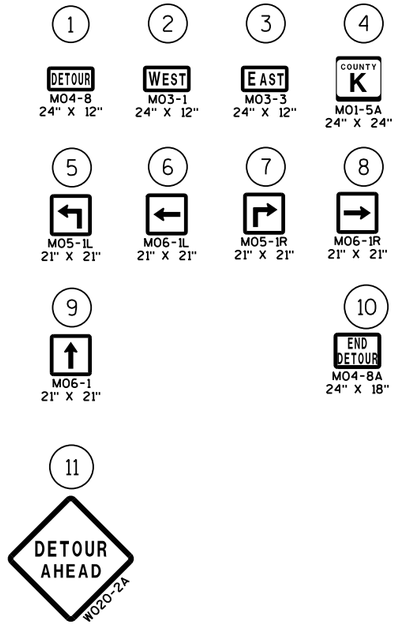
NOTE:
SEE PLAN AND PROFILE
SHEET FOR PIPE INFORMATION

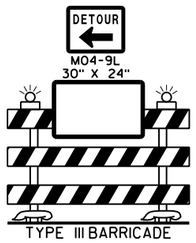


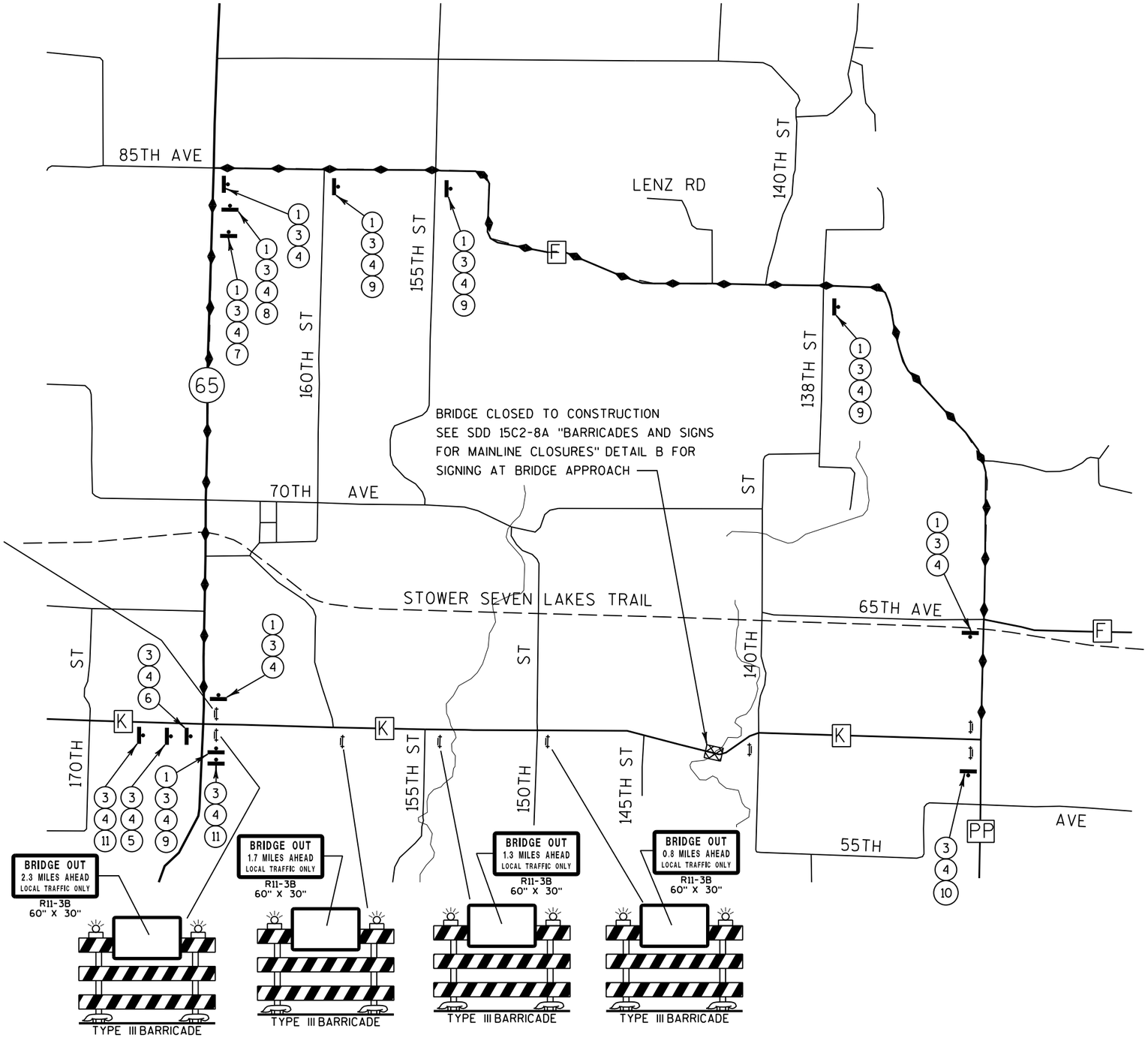
TYPICAL CROSS SECTION

PRIVATE ENTRANCE DETAILS

PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK	CONSTRUCTION DETAILS	SHEET 6	E







— ◆ — DETOUR ROUTE

GENERAL NOTES
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

SEE SDD 15C2-8A "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL B FOR SIGNING AT BRIDGE APPROACH AND ADVANCED AREAS LEADING TO THE WORK ZONE.

PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK	TRAFFIC CONTROL	SHEET 7	E

2

1 — DETOUR — M04-8 — 24" X 12"

2 — WEST — M03-1 — 24" X 12"

3 — EAST — M03-3 — 24" X 12"

4 — COUNTY K — M01-5A — 24" X 24"

5 — M05-1L — 21" X 21"

6 — M06-1L — 21" X 21"

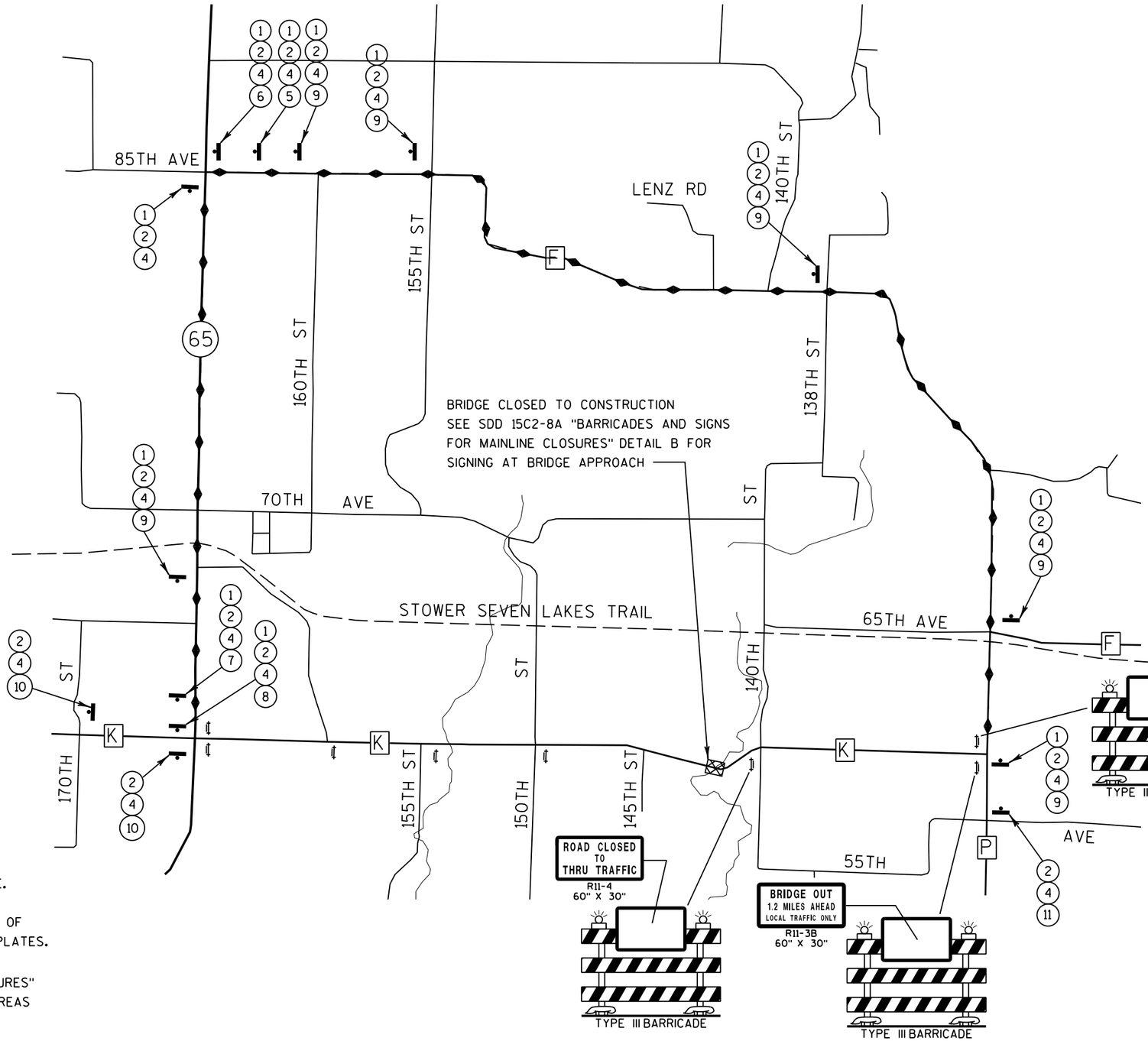
7 — M05-1R — 21" X 21"

8 — M06-1R — 21" X 21"

9 — M06-1 — 21" X 21"

10 — END DETOUR — M04-8A — 24" X 18"

11 — DETOUR AHEAD — W020-2A



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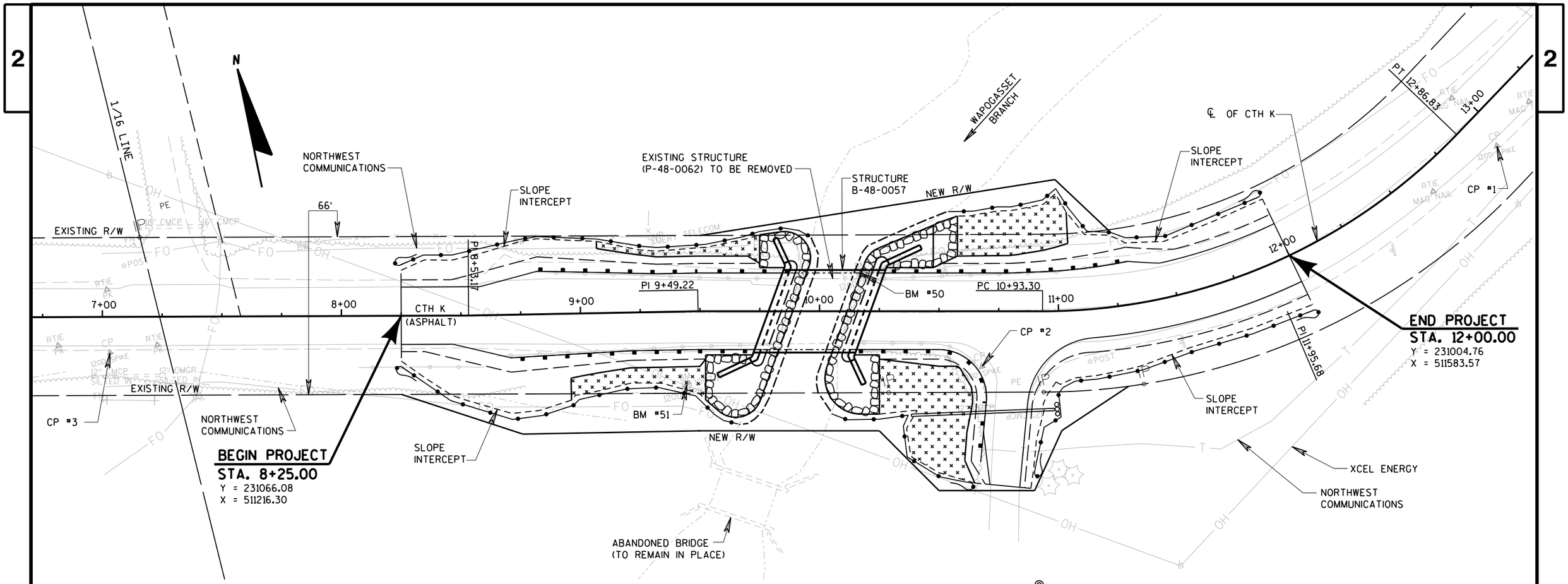
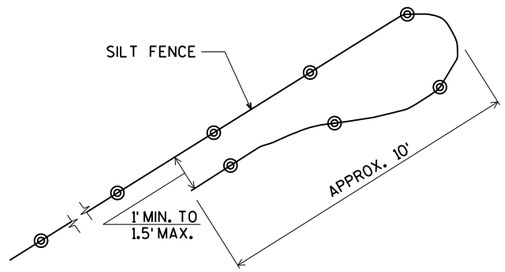


	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33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

TOTAL PROJECT AREA = 0.746 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.547 ACRES



SILT FENCE END DETAIL

(TURNAROUNDS - TO REDIRECT AMPHIBIANS AND REPTILES AWAY FROM CONSTRUCTION ZONE)

HIGH WATER$_2$ EL. 1005.17

NOTE:
NO DISTURBANCE OR TOPSOIL STOCKPILING IS ALLOWED OUTSIDE OF THE SLOPE INTERCEPTS. WETLANDS EXIST IN THE PROJECT AREA.

LEGEND

- EROSION MAT CLASS II TYPE C
- SILT FENCE
- COFFERDAM
- RIPRAP HEAVY
- CULVERT PIPE CHECKS

PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK	EROSION CONTROL	SCALE, FEET 0 20 40	SHEET 9	E

8397-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	3.000	3.000
0004	201.0205	Grubbing	STA	3.000	3.000
0006	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0008	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-48-0062	EACH	1.000	1.000
0010	204.0165	Removing Guardrail	LF	470.000	470.000
0012	205.0100	Excavation Common	CY	431.000	431.000
0014	206.1001	Excavation for Structures Bridges (structure) 01. B-48-0057	EACH	1.000	1.000
0016	206.5001	Cofferdams (structure) 01. B-48-0057	EACH	1.000	1.000
0018	208.0100	Borrow	CY	8.000	8.000
0020	210.1500	Backfill Structure Type A	TON	1,115.000	1,115.000
0022	213.0100	Finishing Roadway (project) 01. 8397-00-70	EACH	1.000	1.000
0024	305.0110	Base Aggregate Dense 3/4-Inch	TON	115.000	115.000
0026	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	900.000	900.000
0028	455.0605	Tack Coat	GAL	160.000	160.000
0030	465.0105	Asphaltic Surface	TON	275.000	275.000
0032	502.0100	Concrete Masonry Bridges	CY	229.000	229.000
0034	502.3200	Protective Surface Treatment	SY	250.000	250.000
0036	505.0400	Bar Steel Reinforcement HS Structures	LB	6,200.000	6,200.000
0038	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	22,460.000	22,460.000
0040	513.4061	Railing Tubular Type M	LF	89.700	89.700
0042	516.0500	Rubberized Membrane Waterproofing	SY	14.000	14.000
0044	520.3312	Culvert Pipe Class III-A 12-Inch	LF	60.000	60.000
0046	550.0500	Pile Points	EACH	16.000	16.000
0048	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	720.000	720.000
0050	606.0300	Riprap Heavy	CY	320.000	320.000
0052	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	190.000	190.000
0054	614.0200	Steel Thrie Beam Structure Approach	LF	21.000	21.000
0056	614.0305	Steel Plate Beam Guard Class A	LF	12.500	12.500
0058	614.0345	Steel Plate Beam Guard Short Radius	LF	37.500	37.500
0060	614.0390	Steel Plate Beam Guard Short Radius Terminal	EACH	1.000	1.000
0062	614.2300	MGS Guardrail 3	LF	37.500	37.500
0064	614.2500	MGS Thrie Beam Transition	LF	120.000	120.000
0066	614.2610	MGS Guardrail Terminal EAT	EACH	3.000	3.000
0068	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8397-00-70	EACH	1.000	1.000
0070	619.1000	Mobilization	EACH	1.000	1.000
0072	623.0200	Dust Control Surface Treatment	SY	1,560.000	1,560.000
0074	624.0100	Water	MGAL	11.000	11.000
0076	625.0100	Topsoil	SY	815.000	815.000
0078	627.0200	Mulching	SY	1,070.000	1,070.000
0080	628.1504	Silt Fence	LF	955.000	955.000
0082	628.1520	Silt Fence Maintenance	LF	2,865.000	2,865.000
0084	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0086	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0088	628.2027	Erosion Mat Class II Type C	SY	430.000	430.000
0090	628.7555	Culvert Pipe Checks	EACH	1.000	1.000
0092	629.0210	Fertilizer Type B	CWT	1.000	1.000
0094	630.0120	Seeding Mixture No. 20	LB	44.000	44.000
0096	630.0200	Seeding Temporary	LB	44.000	44.000
0098	630.0500	Seed Water	MGAL	33.000	33.000

8397-00-70

Line	Item	Item Description	Unit	Total	Qty
0100	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	6.000	6.000
0102	637.2230	Signs Type II Reflective F	SF	24.000	24.000
0104	638.2602	Removing Signs Type II	EACH	10.000	10.000
0106	638.3000	Removing Small Sign Supports	EACH	8.000	8.000
0108	642.5001	Field Office Type B	EACH	1.000	1.000
0110	643.0420	Traffic Control Barricades Type III	DAY	1,980.000	1,980.000
0112	643.0705	Traffic Control Warning Lights Type A	DAY	3,240.000	3,240.000
0114	643.0900	Traffic Control Signs	DAY	9,720.000	9,720.000
0116	643.5000	Traffic Control	EACH	1.000	1.000
0118	645.0111	Geotextile Type DF Schedule A	SY	140.000	140.000
0120	645.0120	Geotextile Type HR	SY	620.000	620.000
0122	646.1020	Marking Line Epoxy 4-Inch	LF	1,500.000	1,500.000
0124	650.4500	Construction Staking Subgrade	LF	333.000	333.000
0126	650.5000	Construction Staking Base	LF	333.000	333.000
0128	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000
0130	650.6501	Construction Staking Structure Layout (structure) 01. B-48-0057	EACH	1.000	1.000
0132	650.9911	Construction Staking Supplemental Control (project) 01. 8397-00-70	EACH	1.000	1.000
0134	650.9920	Construction Staking Slope Stakes	LF	333.000	333.000
0136	690.0150	Sawing Asphalt	LF	64.000	64.000
0138	715.0502	Incentive Strength Concrete Structures	DOL	1,374.000	1,374.000
0140	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 10+00	EACH	1.000	1.000
0142	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	300.000	300.000
0144	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	300.000	300.000
0146	SPV.0195	Special 01. Select Crushed Material for Travel Corridor	TON	12.000	12.000

3

CLEARING AND GRUBBING

CATEGORY	STATION	TO	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
0010	8+25	-	11+25	LT/RT	3	3
				TOTAL 0010	3	3

REMOVING GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF
0010	8+07	-	8+59	RT	53
0010	8+65	-	9+82	RT	117
0010	8+80	-	9+92	LT	113
0010	10+09	-	10+70	RT	76
0010	10+18	-	11+32	LT	111
				TOTAL 0010	470

BASE AGGREGATE

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL	REMARKS
0010	8+25	-	9+78.67	LT/RT	35	430	5	WEST APPROACH
0010	10+21.33	-	12+00	LT/RT	80	470	6	EAST APPROACH
				TOTAL 0010	115	900	11	

CULVERT PIPE

CATEGORY	STATION	LOCATION	203.0100 REMOVAL SMALL PIPE CULVERTS EACH	520.3312 CULVERT PIPE CLASS III-A 12-INCH* LF	628.7555 CULVERT PIPE CHECKS EACH
0010	10+84.16	PE RT	1	60	1
		TOTAL 0010	1	60	1

NOTE:
* STEEL PIPE MINIMUM THICKNESS = 0.064 INCHES
ALUMINUM PIPE MINIMUM THICKNESS = 0.060 INCHES

CTH K EARTHWORK SUMMARY

From/To Station	Location	Common Excavation (1) (Item 205.0100) Cut	Unexpanded Fill	Expanded Fill (2) Factor 1.30	Mass Ordinate +/- (3)	Waste	Borrow (Item 208.0100)	Comment:
8+25 - 9+78.67	MAINLINE	190	90	117	73	73	-	
10+21.33 - 12+00	MAINLINE	241	248	322	-81	-	8	
		431					**8**	

1) Common Excavation is the Cut. Item number 205.0100.

2) Expanded Fill. Factor = 1.30; Expanded Fill = Unexpanded Fill * Fill Factor

3) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material on the project.

4) All quantities shown in CY.

ASPHALT

CATEGORY	STATION	TO	STATION	LOCATION	* 455.0605 TACK COAT GAL	** 465.0105 ASPHALTIC SURFACE TON	REMARKS
0010	8+25.00	-	9+78.67	MAINLINE	74	120	
0010	10+21.33	-	12+00	MAINLINE	86	135	
0010		PE RT			-	20	
				TOTAL 0010	160	275	

NOTES:
*** TACK COAT APPLICATION RATE = 0.07 GAL/SY**
**** ASSUMED HMA AT 112 LBS/SY/IN**

GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	614.0345 STEEL PLATE BEAM GUARD SHORT RADIUS LF	614.0390 STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL EACH	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
0010	8+70.57	-	9+75.59	RT	--	--	--	--	12.5	40	1
0010	8+82.22	-	9+87.24	LT	--	--	--	--	12.5	40	1
0010	10+12.76	-	10+67.43	RT	21	12.5	37.5	1	--	--	--
0010	10+24.41	-	11+32.01	LT	--	--	--	--	12.5	40	1
				TOTAL 0010	21	12.5	37.5	1	37.5	120	3

MAINTENANCE AND REPAIR OF HAUL ROADS

CATEGORY	LOCATION	618.0100.01 MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) (01. 8397-00-70) EACH
0030	CTH K	1
	TOTAL 0030	1

EROSION CONTROL

CATEGORY	STATION	TO	STATION	LOCATION	625.0100 TOPSOIL SY	627.0200 MULCHING SY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2027 EROSION MAT CLASS II TYPE C SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL
0010	8+25	-	10+00	RT	200	230	165	495	55	0.20	8	8	6
0010	8+25	-	10+00	LT	135	195	185	555	30	0.10	7	7	5
0010	10+00	-	12+00	RT	290	255	260	780	160	0.30	12	12	9
0010	10+00	-	12+00	LT	190	175	155	465	100	0.20	8	8	6
0010			UNDISTRIBUTED		-	215	190	570	85	0.20	9	9	7
				TOTAL 0010	815	1,070	955	2,865	430	1.0	44	44	33

EXTRA ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	213.0100.01 FINISHING ROADWAY (PROJECT) (01. 8397-00-70) EACH	623.0200 DUST CONTROL SURFACE TREATMENT SY	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
0010	8+25.00	-	12+00.00	PROJECT-WIDE	1	1,560	4	4
				TOTAL 0010	1	1,560	4	4

SIGNS

CATEGORY	STATION	LOCATION	634.0614 POSTS WOOD 4X6-INCH X 14-FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
0010	9+48	RT	-	-	1	1	R12-1 (45 TONS)
0010	9+71	RT	1	3	-	-	W5-52R
0010	9+81	RT	-	-	1	1	W5-52R
0010	9+84	LT	1	3	-	-	W5-52L
0010	9+91	LT	-	-	1	1	W5-52L
0010	10+09	RT	-	-	1	1	W5-52L
0010	10+16	RT	1	3	-	-	W5-52L
0010	10+19	LT	-	-	1	1	W5-52R
0010	10+29	LT	1	3	-	-	W5-52R
0010	10+52	LT	-	-	1	1	R12-1 (45 TONS)
0010	10+53	RT	1	6	2	1	Double W1-8
0010	11+47	RT	1	6	2	1	Double W1-8
		TOTAL 0010	6	24	10	8	

TRAFFIC CONTROL

CATEGORY	LOCATION	DURATION DAYS	NO.	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	NO.	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	NO.	643.0900 TRAFFIC CONTROL SIGNS DAY	643.5000 TRAFFIC CONTROL EACH
0010	PER SDD 15C2	90	14	1,260	20	1,800	4	360	-
0010	PER DETOUR PLAN	90	8	720	16	1,440	104	9,360	
0010	CTH K	-	-	-	-	-		-	1
	TOTAL 0010			1,980		3,240		9,720	1

3

MARKING LINE

					646.1020 4-INCH MARKING LINE EPOXY		
					YELLOW	WHITE	
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	REMARKS
0010	8+25.00	-	12+00.00	C/L	750	-	YELLOW SOLID CENTERLINE
0010	8+25.00	-	12+00.00	LT	-	375	WHITE EDGELINE
0010	8+25.00	-	12+00.00	RT	-	375	WHITE EDGELINE
SUBTOTALS					750	750	
				TOTAL 0010	1,500		

STAKING

					650.4500 CONSTRUCTION STAKING SUBGRADE	650.5000 CONSTRUCTION STAKING BASE	650.6000 CONSTRUCTION STAKING PIPE CULVERTS	650.6501.01 CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) (01. B-48-0057)	650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 8397-00-70)	650.9920 CONSTRUCTION STAKING SLOPE STAKES
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	EACH	EACH	EACH	LF
0010	8+25.00	-	12+00	MAINLINE	333	333	-	-	-	333
0010				PROJECT 8397-00-70	-	-	1	-	1	-
				TOTAL 0010	333	333	1	0	1	333
0020	9+78.67	-	10+21.33	B-48-0057	-	-	-	1	-	-
				TOTAL 0020	0	0	0	1	0	0
				PROJECT TOTAL	333	333	1	1	1	333

SAWING ASHALT

			690.0150 SAWING ASPHALT
CATEGORY	STATION	LOCATION	LF
0010	8+25	MAINLINE	24
0010	12+00	MAINLINE	27
0010	10+84.16	PE RT	13
		TOTAL 0010	64

INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM

		999.2000.S INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM
CATEGORY	STATION	EACH
0010	10+00	1
	TOTAL 0010	1

CONVENTIONAL SYMBOLS

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W LINE
PROPERTY LINE
LOT, TIE, AND OTHER MINOR LINES
SLOPE INTERCEPT
CORPORATE LIMITS
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)
FEE ACQUISITION AREA (HATCHING VARIES BY OWNER)
TEMP. LIMITED EASEMENT AREA
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)
TRANSMISSION STRUCTURES
BUILDING
BUILDING (TO BE REMOVED)
BRIDGE

PARCEL NUMBER
PRW POINT NUMBER
SECTION CORNER
NOTATION FOR COMBUSTABLE FLUIDS
NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES
ACCESS CONTROLLED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)
NO ACCESS (NEW HIGHWAY)
NATIONAL GEODETIC SURVEY MONUMENT
SIXTEENTH CORNER MONUMENT
PARALLEL OFFSETS

UTILITY NUMBER
TLE POINT NUMBER
R/W MONUMENT
NON-MONUMENTED R/W POINT
FOUND IRON PIN
VALVE (GAS, WATER, ETC.)
SIGN
OFF-PREMISE SIGN

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	OUTLOT	OL
ACRES	AC	PAGE	P
AHEAD	AH	POINT OF TANGENCY	PT
ALUMINUM	ALUM	PROPERTY LINE	PL
AND OTHERS	ET AL	RECORDED AS	(100')
BACK	BK	REEL / IMAGE	R/I
BLOCK	BLK	REFERENCE LINE	R/L
CENTERLINE	C/L	PERMANENT LIMITED EASEMENT	PLE
CERTIFIED SURVEY MAP	CSM	POINT OF BEGINNING	POB
CONCRETE	CONC	POINT OF CURVATURE	PC
COUNTY	CO	POINT OF COMPOUND CURVE	PCC
COUNTY TRUNK HIGHWAY	CTH	POINT OF INTERSECTION	PI
DISTANCE	DIST	REMAINING	REM
CORNER	COR	RESTRICTIVE DEVELOPMENT EASEMENT	RDE
DOCUMENT NUMBER	DOC	RIGHT	RT
EASEMENT	EASE	RIGHT OF WAY	R/W
EXISTING	EX	SECTION	SEC
GAS VALVE	GV	SEPTIC VENT	SEPV
GRID NORTH	GN	SQUARE FEET	SF
HIGHWAY EASEMENT	HE	STATE TRUNK HIGHWAY	STH
IDENTIFICATION	ID	STATION	STA
LAND CONTRACT	LC	TELEPHONE PEDESTAL	TP
LEFT	LT	TEMPORARY LIMITED EASEMENT	TLE
MONUMENT	MON	TRANSPORTATION PROJECT PLAT	TPP
NATIONAL GEODETIC SURVEY NUMBER	NGS / NO	UNITED STATES HIGHWAY / VOLUME	USH / V

CONVENTIONAL UTILITY SYMBOLS

		NON-COMPENSABLE	COMPENSABLE
WATER	W		
GAS	G		
TELEPHONE	T		
OVERHEAD TRANSMISSION LINES	OH		
ELECTRIC	E		
CABLE TELEVISION	TV		
FIBER OPTIC	FO		
SANITARY SEWER	SAN		
STORM SEWER	SS		
ELECTRIC TOWER			
POWER POLE			
TELEPHONE POLE			
TELEPHONE PEDESTAL			

CURVE DATA ABBREVIATIONS

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ / DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NO.	OWNER(S)	INTEREST REQUIRED	R/W (ACRES) NEW	EXISTING	TOTAL
1	PATRICK T. MCALPINE AND ARLENE M. MCALPINE	FEE	0.082	0.104	0.186
2	PAUL S. HILL AND KERRY A. HILL	FEE	0.049	0.130	0.179
3	CAROL NELSON	FEE	0.045	0.220	0.265
50	NORTHWEST COMMUNICATIONS	RELEASE OF RIGHTS			

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE COUNTY.

R/W STATION & OFFSET TABLE

POINT	STATION	OFFSET
100	11+25.00	32.25' LT
101	11+25.00	0.00'
102	11+25.00	33.75' RT
103	11+00.00	50.00' RT
104	10+90.00	75.00' RT
105	10+50.00	75.00' RT
106	10+25.00	50.00' RT
107	9+48.75	50.00' RT
108	8+75.00	50.00' RT
109	8+25.00	32.87' RT
110	8+25.00	0.00'
111	8+25.00	33.13' LT
112	9+50.00	31.68' LT
113	11+00.00	55.00' LT

COURSE TABLE

COURSE	BEARING	DISTANCE
100-101	S05°47'46"W	32.25'
101-102	S05°47'46"W	33.75'
102-103	S69°50'08"W	33.54'
103-104	S37°46'02"W	27.58'
104-105	N76°38'14"W	40.00'
105-106	N31°38'14"W	35.36'
106-107	N76°38'14"W	75.31'
107-108	N77°42'12"W	73.76'
108-109	N58°32'09"W	53.44'
109-110	N13°08'42"E	32.87'
110-111	N13°08'42"E	33.13'
111-112	S76°50'39"E	125.11'
112-113	S85°35'22"E	150.30'
113-100	S33°12'35"E	30.56'

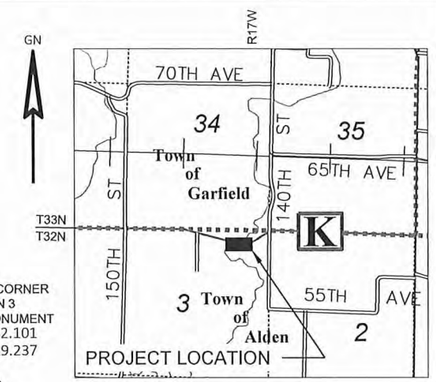
R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
8397-00-00		
CONSTRUCTION PROJECT NUMBER 8397-00-70	4.01	1

PLAT OF RIGHT OF WAY REQUIRED FOR

CTH M - CTH PP

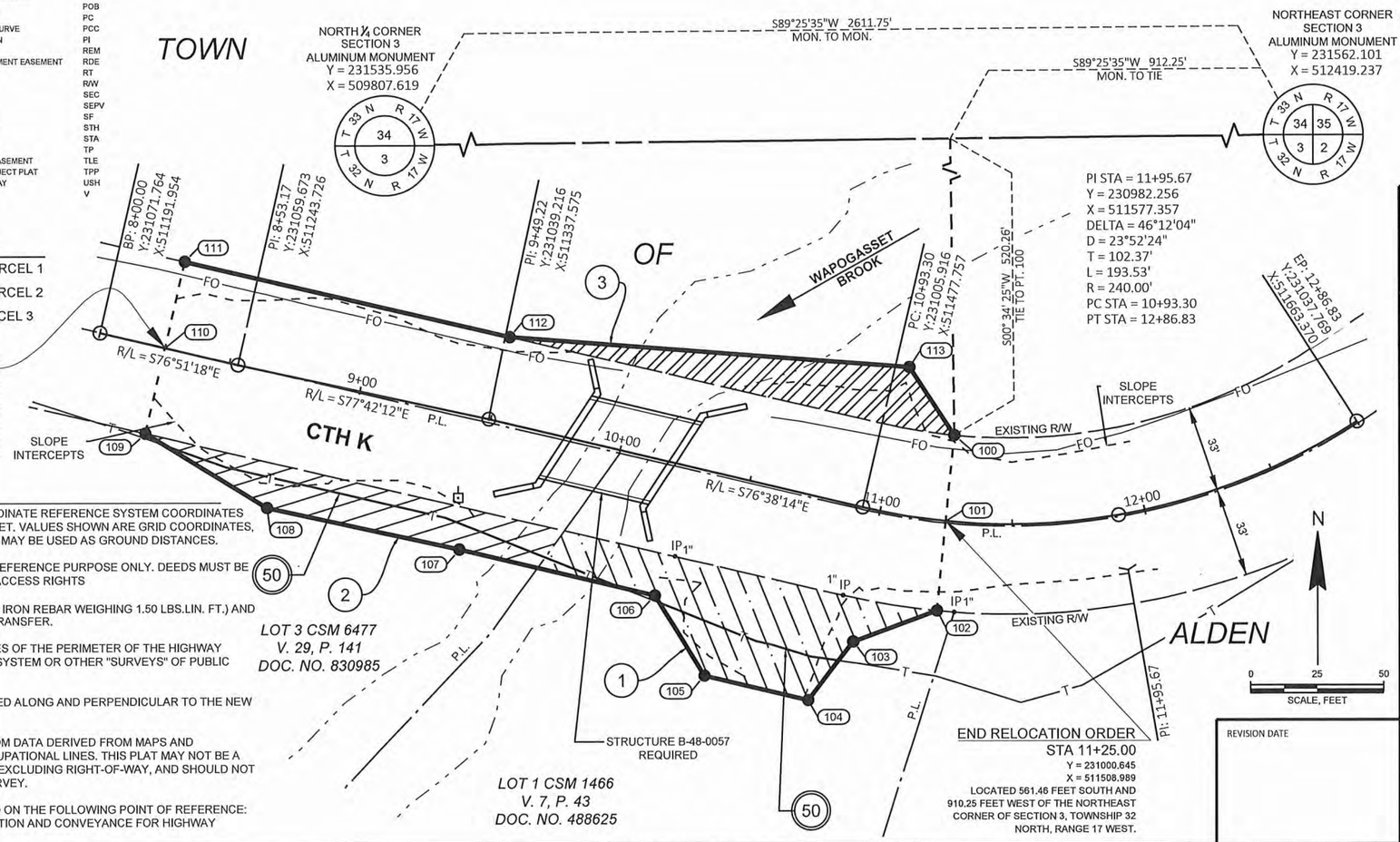
WAPOGASSET BRANCH BRIDGE B-48-0057

CTH K — POLK COUNTY



LOCATION SKETCH
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.06 MI.



NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), POLK COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

THIS PLAT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSE ONLY. DEEDS MUST BE CHECKED TO DETERMINE PROPERTY BOUNDARIES AND ACCESS RIGHTS

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 (¾"x24" CAPPED IRON REBAR WEIGHING 1.50 LBS.LIN. FT.) AND ARE PLACED PRIOR TO OR AT THE TIME OF LAND TITLE TRANSFER.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

EXISTING ROAD RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINT OF REFERENCE: CSM 1288, CSM 1466 AND CSM 6477, FOUND MONUMENTATION AND CONVEYANCE FOR HIGHWAY PURPOSES PER V. 197 PG. 543, DOC. NO. 295732.

REVISION DATE

APPROVED FOR POLK COUNTY

7-27-22 DATE — HIGHWAY COMMISSIONER

PLAT PREPARED BY AYRES

THE SURVEY IS PREPARED AT THE REQUEST OF POLK COUNTY.

THE FIELD SURVEY WAS PERFORMED IN FEBRUARY 2021.

THIS SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WISCONSIN — CHRISTOPHER R. BADTKE S-3150 EAU CLAIRE WI — LAND SURVEYOR

05/19/2022 DATE

CHRISTOPHER R. BADTKE, P.L.S. S-3150

FILE NAME : I:\74\EC\421292.00 POLK COUNTY CTH K\CADD\C3D\RW\83970000_0401.DWG PLOT DATE : 5/19/2022 12:47 PM PLOT BY : BADTKE, CHRISTOPHER PLOT NAME :

BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
50	10+17.9	120'd' SPIKE IN N END E ABUT., 16' LT.	1008.24
51	9+43.9	120'd' SPIKE IN PPOL, 31' RT.	1007.17

N

1/16 LINE

EXISTING R/W

66'

CTH K (ASPHALT)

7+00 8+00 9+00 10+00 11+00 12+00

NORTHWEST COMMUNICATIONS

SLOPE INTERCEPT

EXISTING STRUCTURE (P-48-0062) TO BE REMOVED

STRUCTURE B-48-0057

BM #50

NEW R/W

PI 8+53.17

PI 9+49.22

STA. 9+50 31.68'

STA. 11+00 55'

STA. 11+25 32.25'

PC 10+93.30

PI 11+95.68

WAPOGASSET BRANCH

MAILBOX TO BE MOVED OUTSIDE OF CONSTURCTION LIMITS PRIOR TO CONSTRUCTION BY OTHERS.

℄ OF CTH K

PT 12+86.83

13+00

CP #1

NORTHWEST COMMUNICATIONS

CP #2

CP #3

BM #51

BEGIN PROJECT
STA. 8+25.00
Y = 231066.08
X = 511216.30

END PROJECT
STA. 12+00.00
Y = 231004.76
X = 511583.57

STA. 8+25 33.05'

STA. 8+75 50'

STA. 10+25 50'

STA. 10+50 75'

STA. 10+90 75'

STA. 11+00 50'

STA. 11+25 33.75'

SLOPE INTERCEPT

XCEL ENERGY

EXISTING 12" DIA. CMCP TO BE REMOVED

CONSTRUCT PE RT
12" ϕ CP REQ'D.
L = 60'
INLET EL. 1008.97
OUTLET EL. 1008.89

ABANDONED BRIDGE (TO REMAIN IN PLACE)

NOTES:
FOR ALIGNMENT CONTROL POINTS, BEARINGS, TIES, AND COORDINATES, SEE "ALIGNMENT CONTROLS" SHEET.

FOR GUARDRAIL LAYOUT AND SUPERELEVATION DIAGRAM, SEE "CONSTRUCTION DETAILS" SHEET.

EARTHWORK SUMMARY
STA. 8+25.00 TO STA. 9+78.67
EXC. COMMON 190 C.Y.
FILL 90 C.Y.
SHR. = 30%
WASTE 73 C.Y.

EARTHWORK SUMMARY
STA. 10+21.33 TO STA. 12+00.00
EXC. COMMON 241 C.Y.
FILL 248 C.Y.
SHR. = 30%
BORROW 81 C.Y.

1020 1010 1000 990

EXISTING ℄ PROFILE

-1.03% +1.66% +4.31%

PI STA 8+25.00
PI EL 1010.99

PC STA 9+27.50
PC EL 1009.94

LO STA 9+79.24
LO EL 1009.67

HIGH WATER 100 EL. 1012.36

135.00' VC
K = 50.18

FINISHED ℄ PROFILE

PT STA 10+62.50
PT EL 1010.36

130.00' VC
K = 49.12

PI STA 11+30.00
PI EL 1011.48

PT STA 11+95.00
PT EL 1014.28

PI STA 12+00.00
PI EL 1014.49

PI STA 9+95.00
PI EL 1009.24

WATER EL. 997.74
(8-18-2021)

PC STA 10+65.00
PC EL 1010.40

STREAM BED EL. 995.74±

STA. 10+00.00
REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-48-0062
SINGLE-SPAN TIMBER FLAT SLAB BRIDGE
ON TIMBER ABUTMENTS
26.6' CLEAR RDWY. x 26.1' O.A.L.
20° SKEW LHF

STA. 10+00.00
STRUCTURE B-48-0057 REQ'D.
SINGLE-SPAN CONCRETE FLAT SLAB BRIDGE
ON VERTICAL PILE-ENCASED (A5) ABUTMENTS
32'-0" CLEAR ROADWAY x 42'-8" O.A.L.
20° SKEW LHF

	EXISTING ELEVATION	PROPOSED ELEVATION
6+50	1014.36	
7+00	1013.16	
7+50	1012.22	
8+00	1011.36	
8+50	1010.64	1010.73
9+00	1010.08	1010.22
9+50	1009.62	1009.75
10+00	995.91	1009.71
10+50	1009.78	1010.17
11+00	1010.82	1011.11
11+50	1012.54	1012.55
12+00	1014.49	MATCH
12+50	1016.17	
13+00	1017.41	
13+50	1018.48	

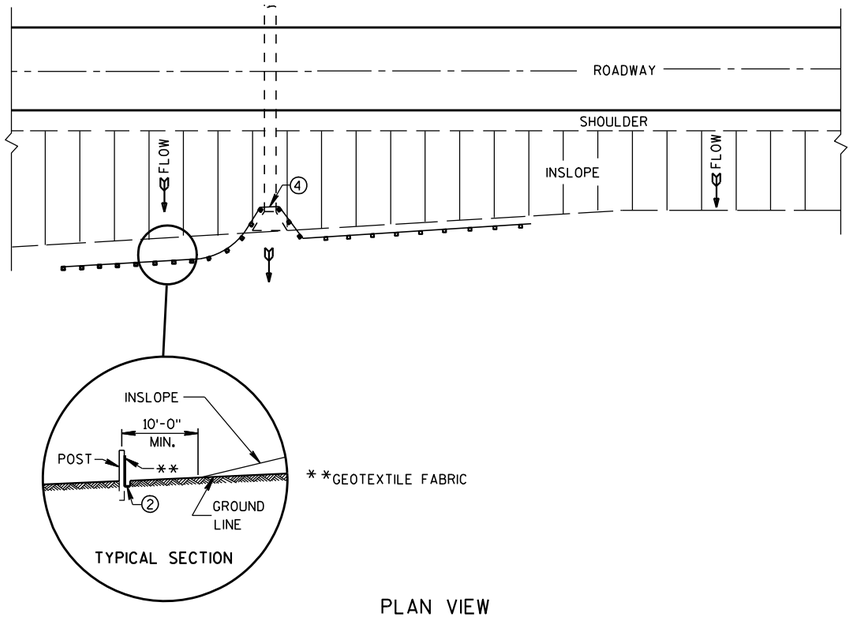
PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK	PLAN AND PROFILE	SCALE, FEET 0 25 50	SHEET 16	E

I:\42\42-1292.00 - Polk Co. CTH K\Structures\CADD\Roadway\421292 pp.dgn 10/7/2022 PENTABLE:Wisdot_shd.tbl walderak 1:50

WISDOT/CADDS SHEET 40

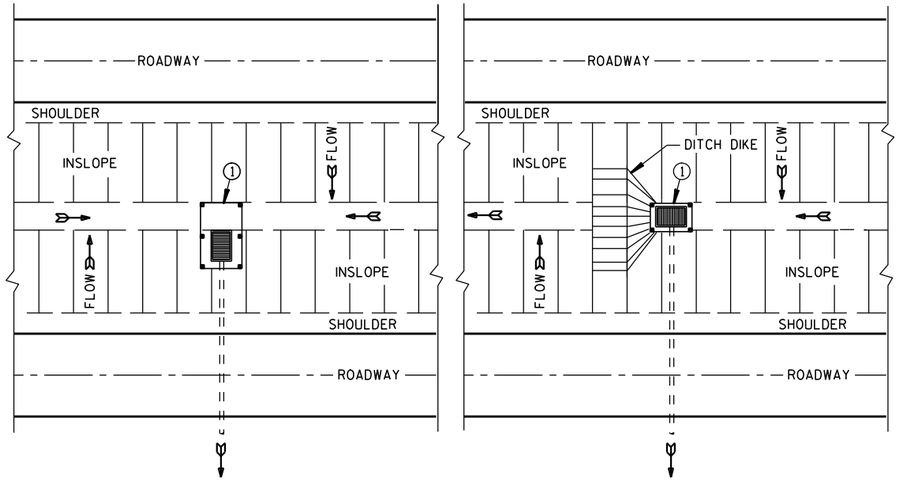
Standard Detail Drawing List

08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
12A03-10	NAME PLATE (STRUCTURES)
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-10	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-22	ALONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



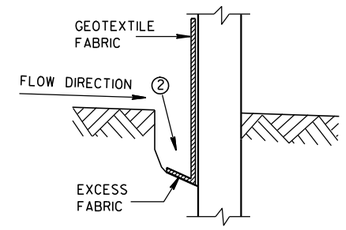
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

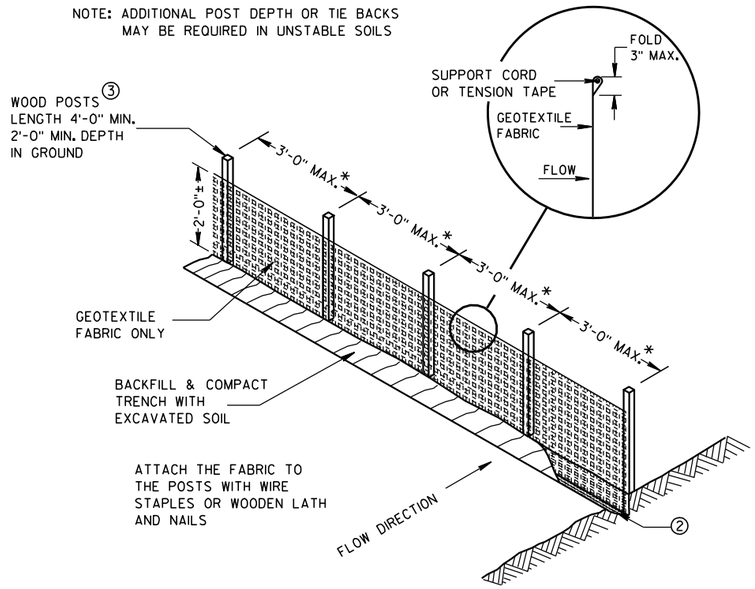
GENERAL NOTES

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

1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

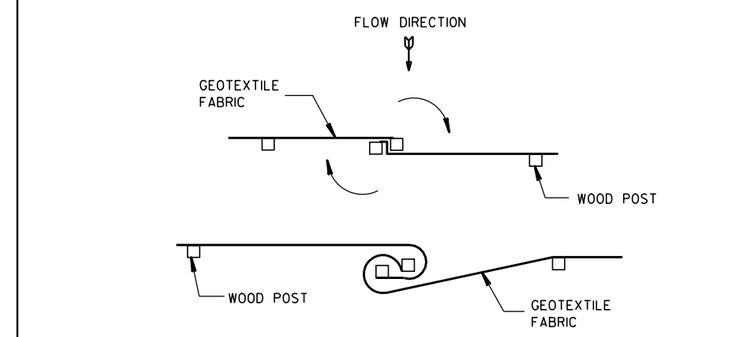


TRENCH DETAIL

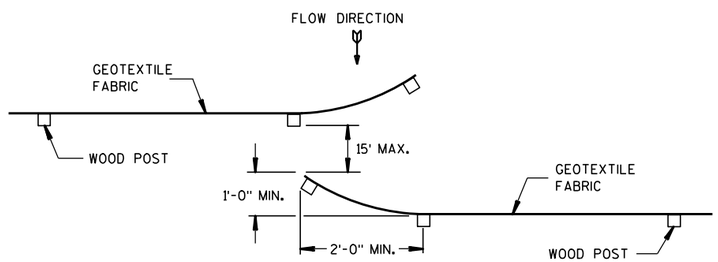


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

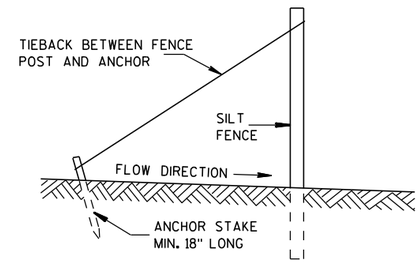


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

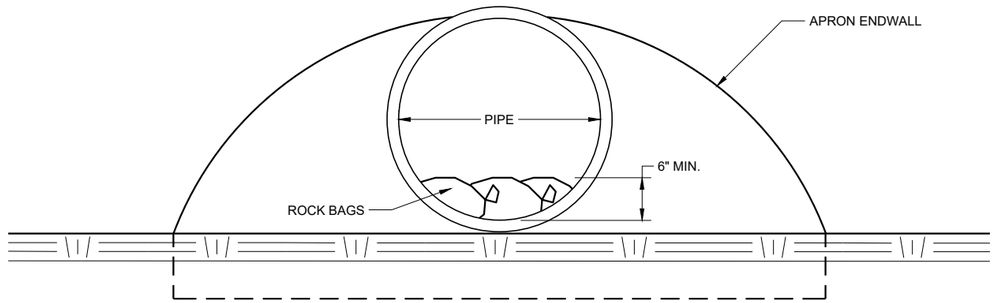
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

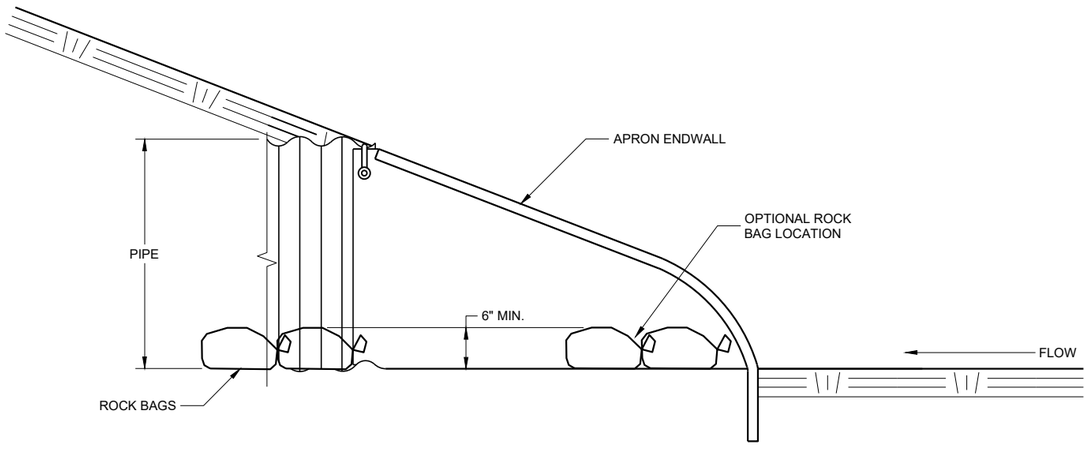
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6



END VIEW



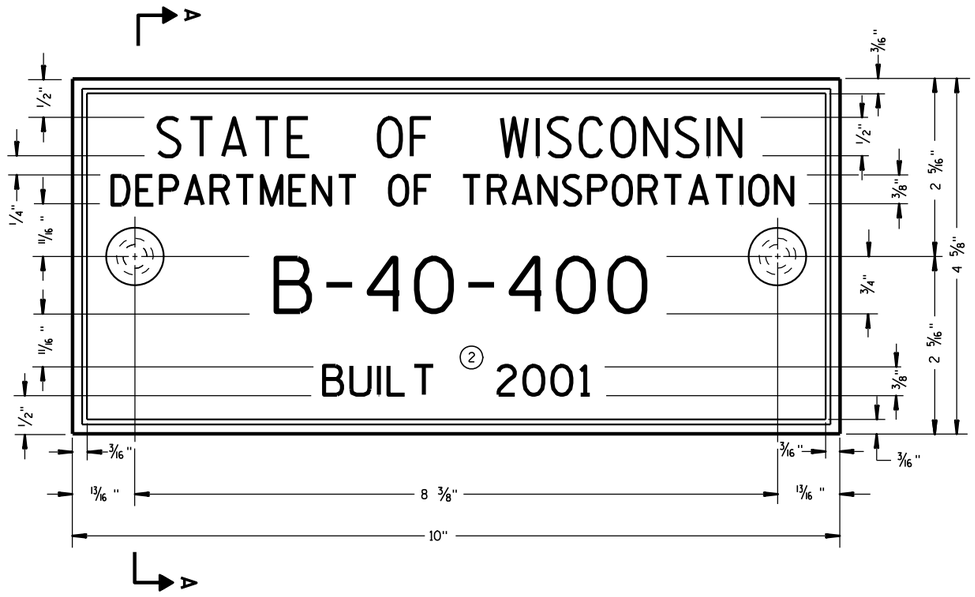
SIDE VIEW

CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)

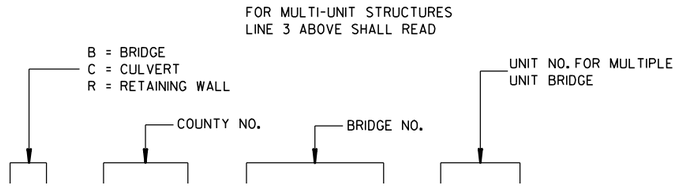
CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGI
FHWA	

6
SDD 08E15 - 01



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

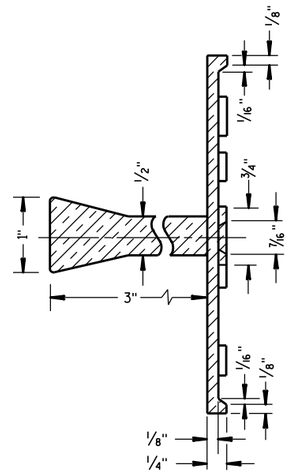
GENERAL NOTES

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.

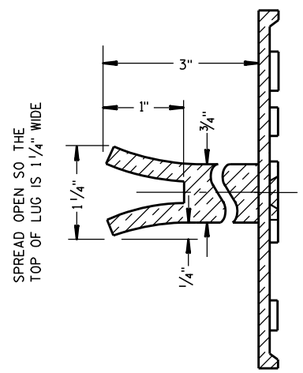
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

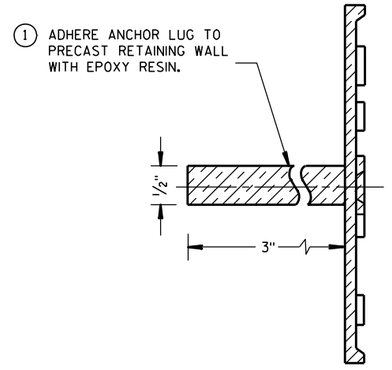
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



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 20 ENGINEER
FHWA	

6

S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10

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

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

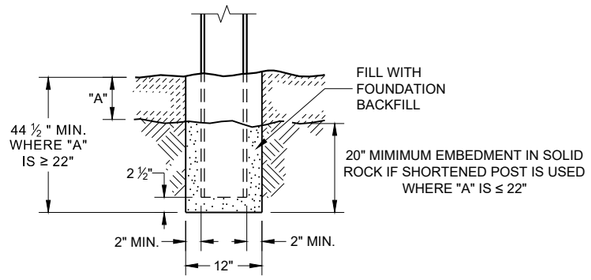
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

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

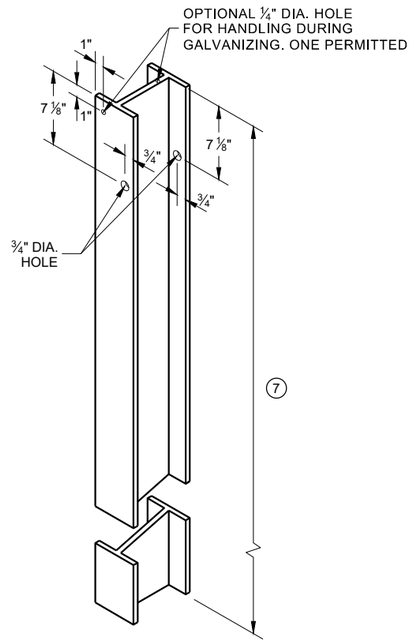
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

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

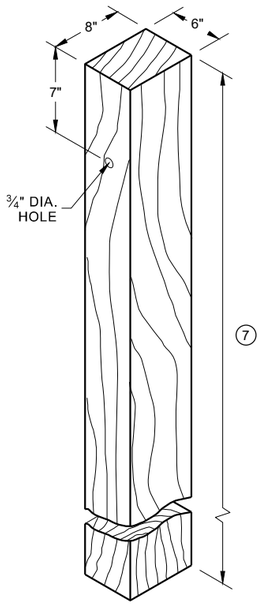
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



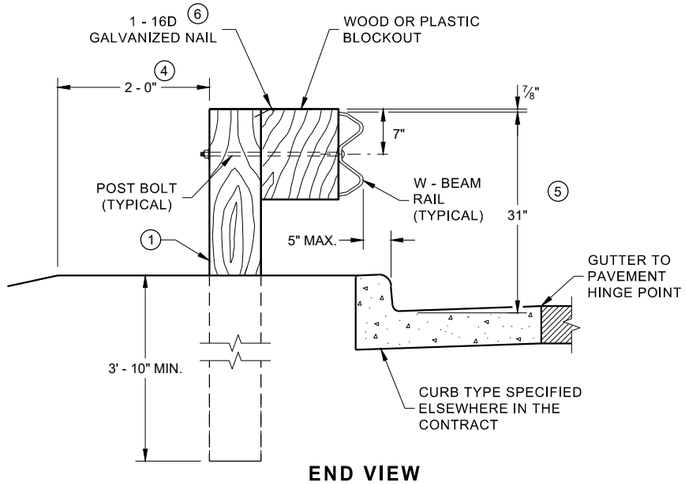
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



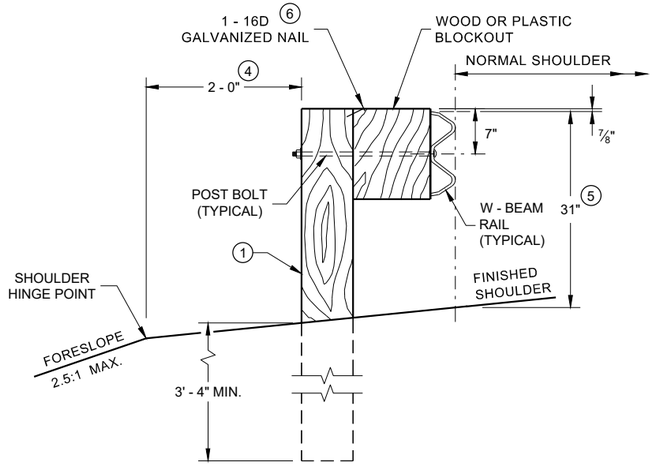
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



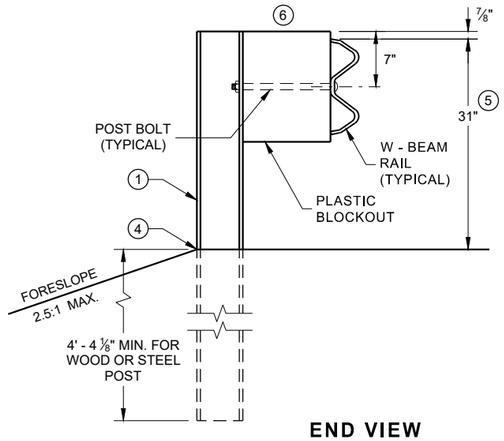
WOOD POST (6" X 8") NOMINAL (1)



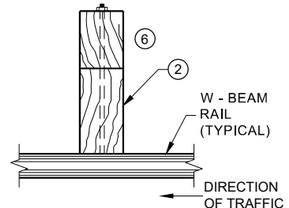
END VIEW
LOCATED ALONG A CURBED ROADWAY



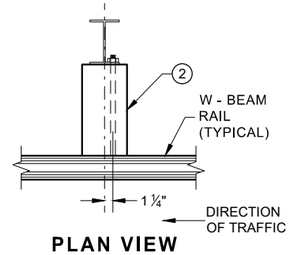
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



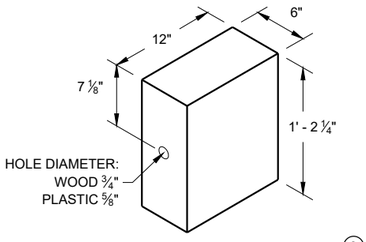
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

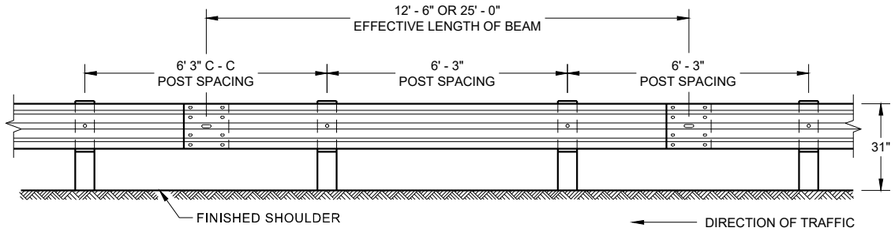
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

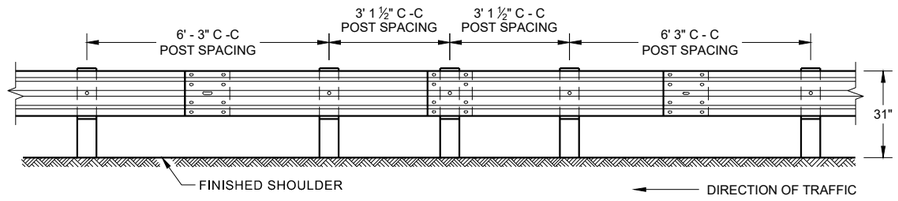
SDD 14B42 - 07a

6

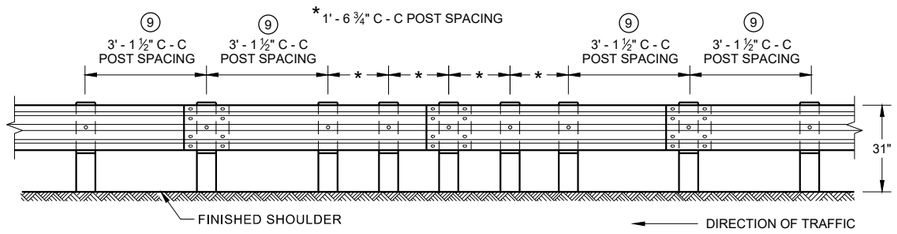
SDD 14B42 - 07a



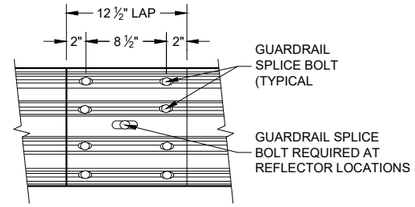
FRONT VIEW
POST SPACING STANDARD INSTALLATION



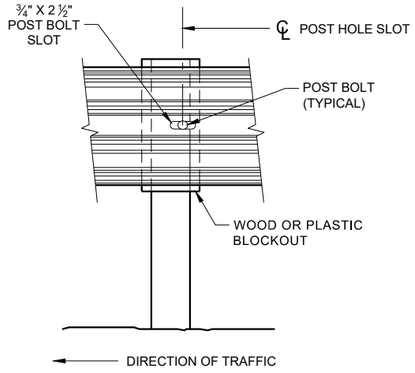
FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)



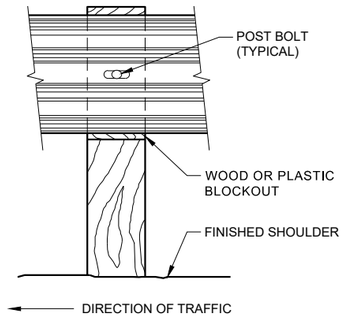
FRONT VIEW
QUARTER POST SPACING (QS)



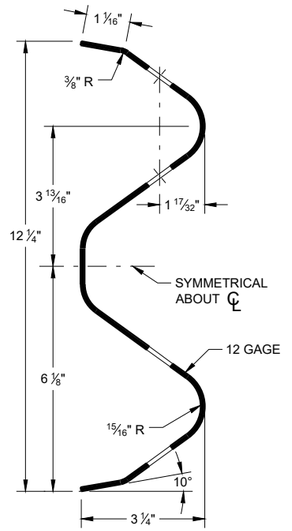
FRONT VIEW
MID-SPAN BEAM SPLICE



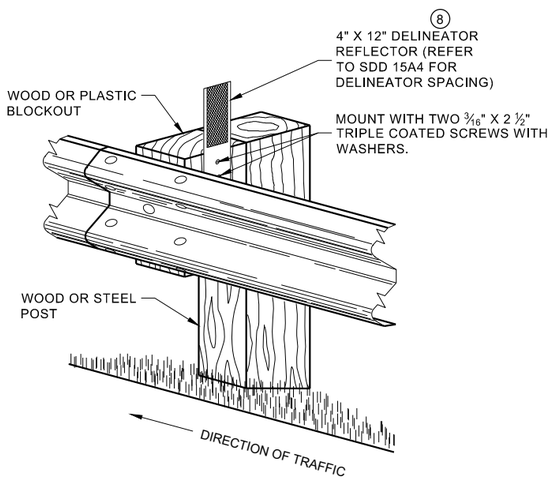
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

GENERAL NOTES

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

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

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

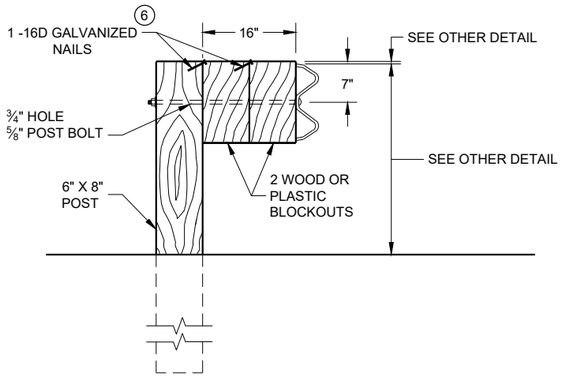
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B42 - 07b
SDD 14B42 - 07b

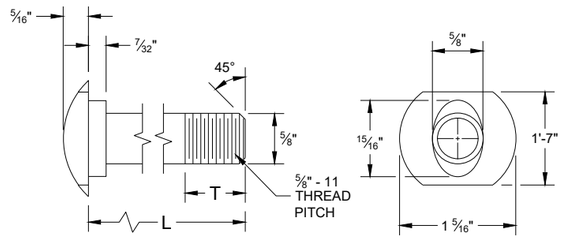


DETAIL FOR 16" BLOCKOUT DEPTH

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.

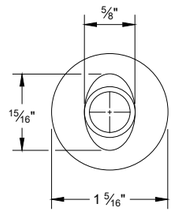
NOTE:

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

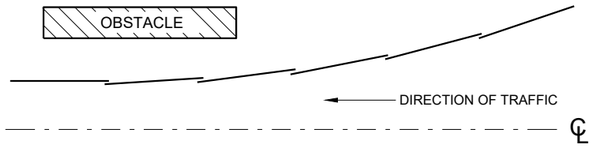


POST BOLT TABLE

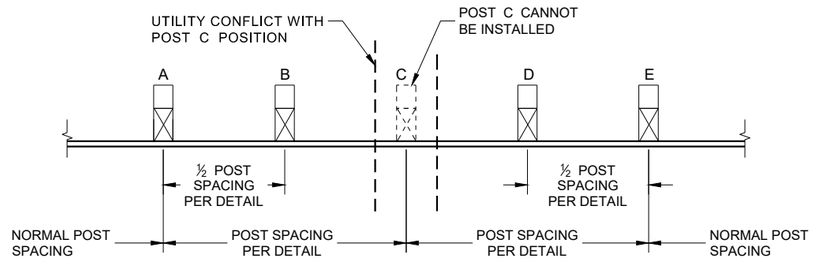
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



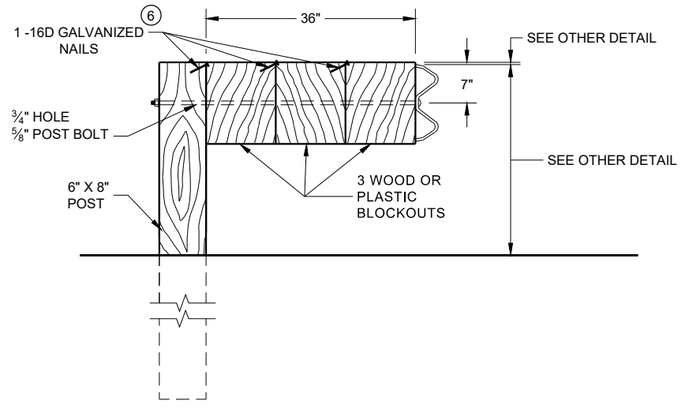
ALTERNATE BOLT HEAD



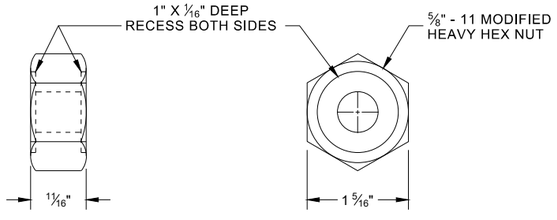
PLAN VIEW
BEAM LAPPING DETAIL



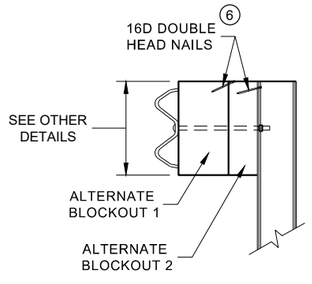
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



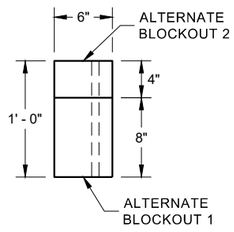
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

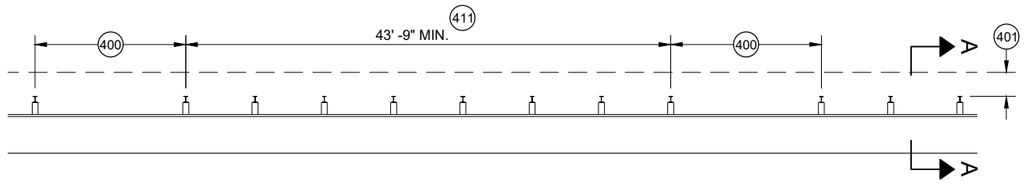
ALTERNATE WOOD BLOCKOUT DETAIL

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.

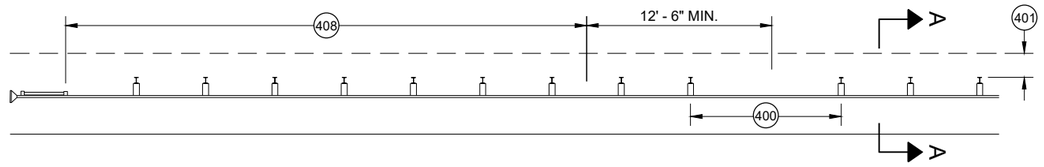
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

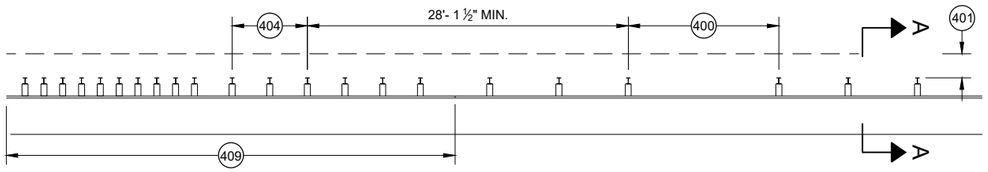
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL



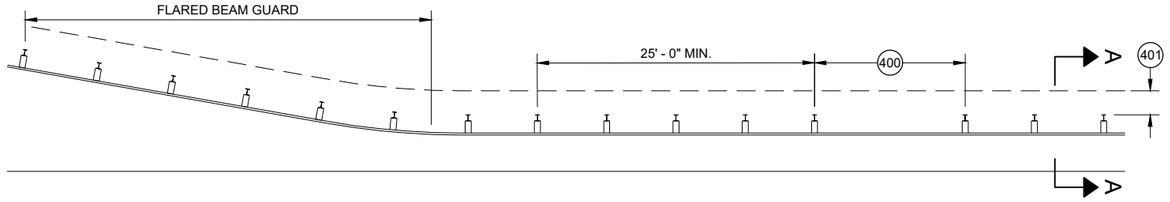
MISSING POST IN MGS GUARDRAIL



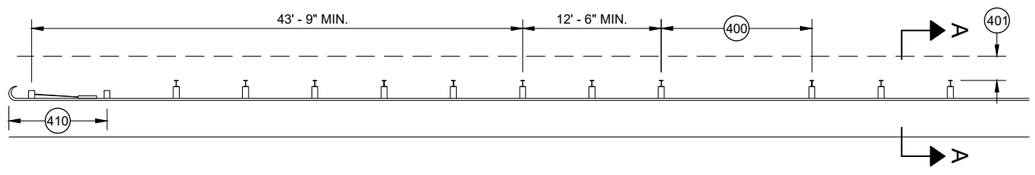
MISSING POST IN MGS GUARDRAIL NEAR EAT



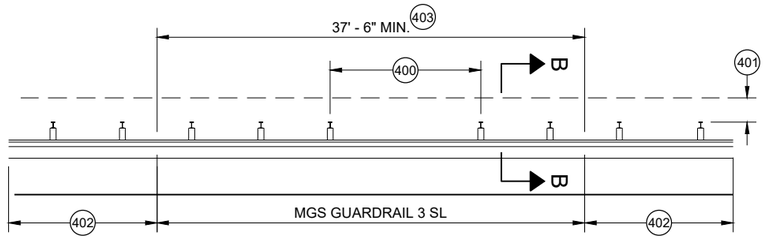
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

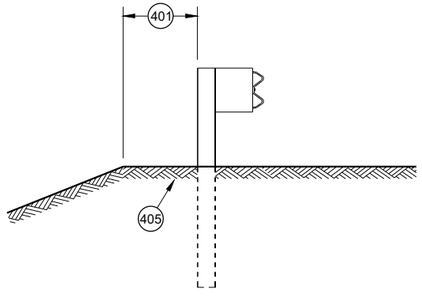


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

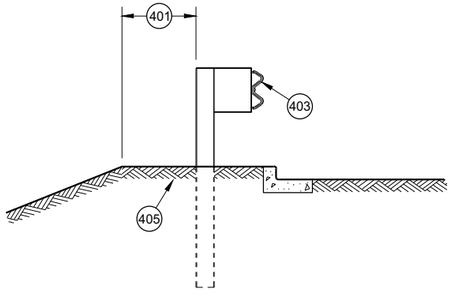


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

(400) MAX SPAN 12' - 6"
(401) 2' MIN.
(402) MGS GUARDRAIL 3
(403) NESTING BEAM GUARD
(404) ASYMMETRIC TRANSITION
(405) SOIL WELL DRAINED AND COMPACTED
(406) SEE OTHER DRAWINGS IN THIS SDD
(407) SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
(408) SEE SDD 14B44
(409) SEE SDD 14B45
(410) SEE SDD 14B47
(411) MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

FHWA

6

SDD 14B42 - 07d

GENERAL NOTES

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

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

(C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.

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

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

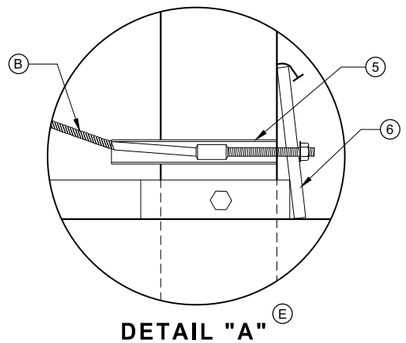
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

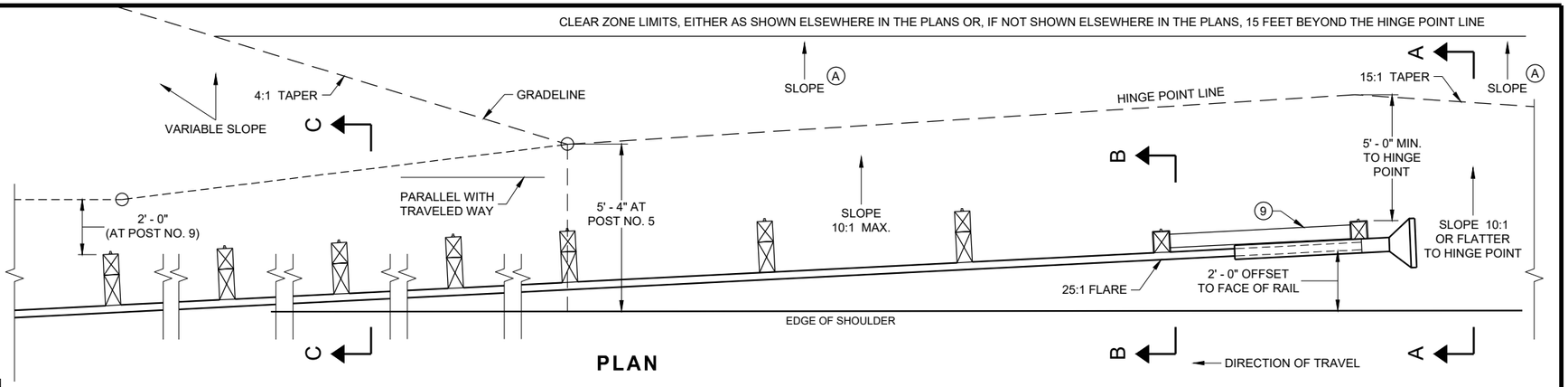
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

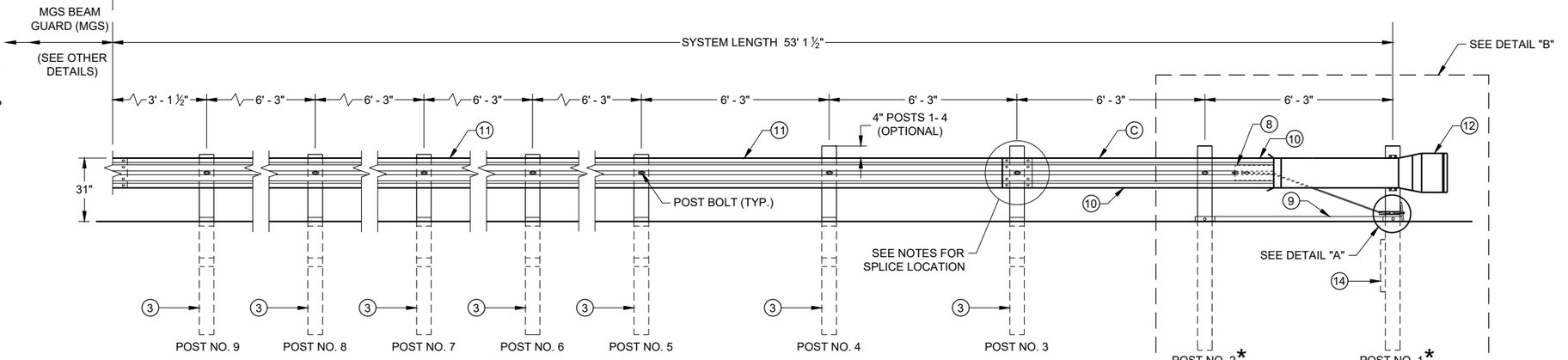
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



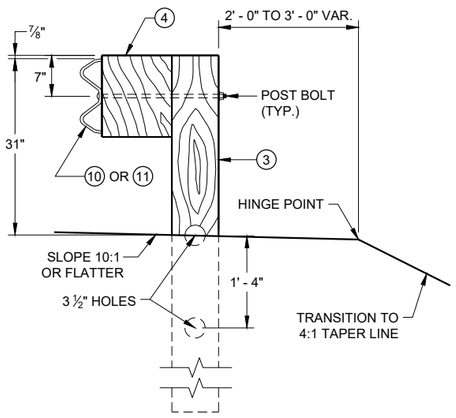
DETAIL "A" (E)



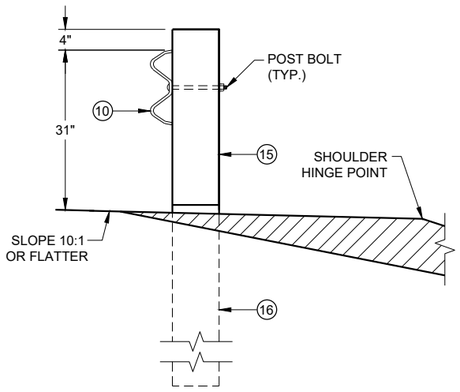
PLAN



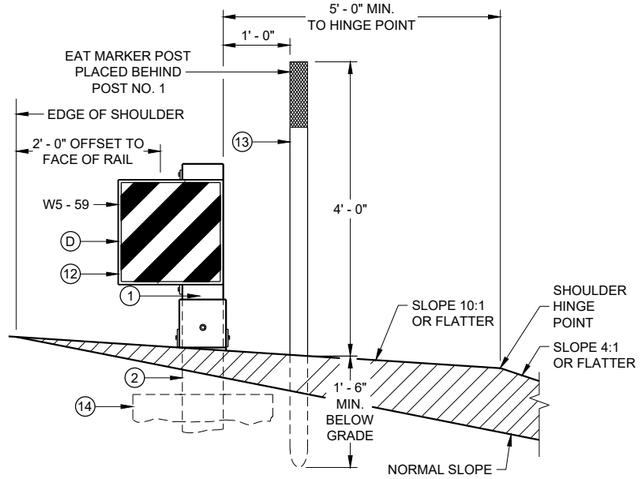
ELEVATION



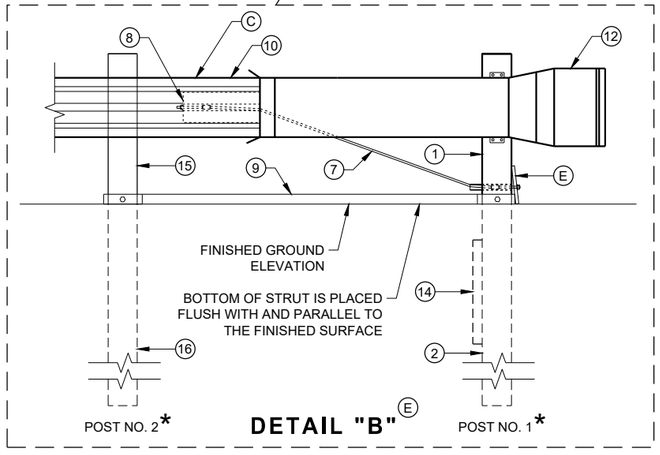
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



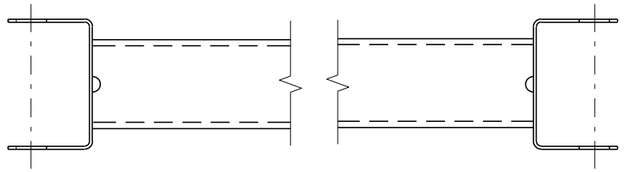
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

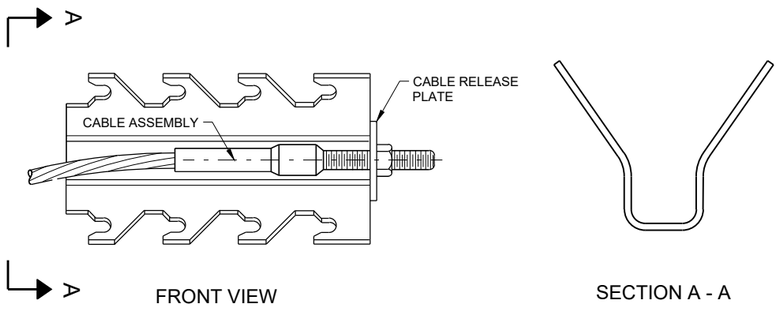
SDD 14B44 - 04a



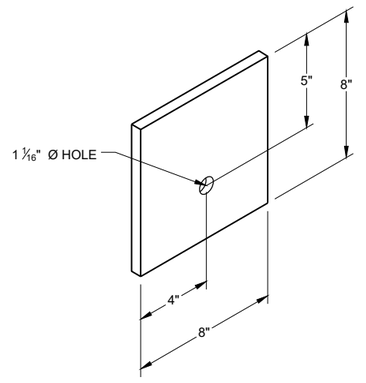
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX ⑧ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

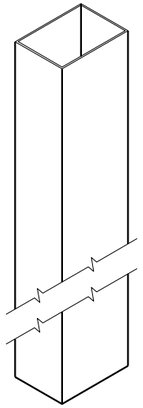
6

SDD 14B44 - 04b

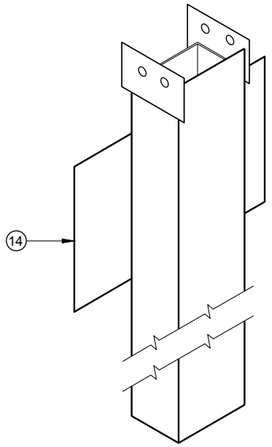
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

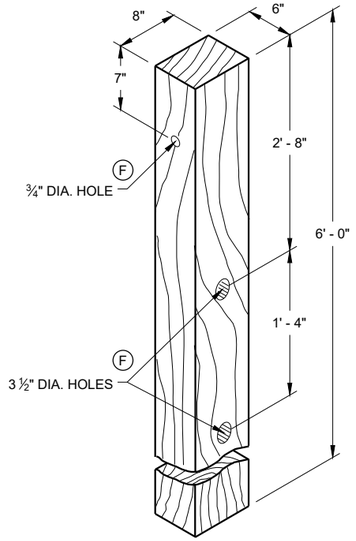
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



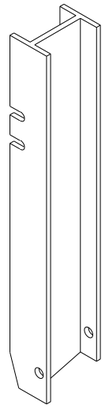
UPPER POST NO. 1 (1) (E)



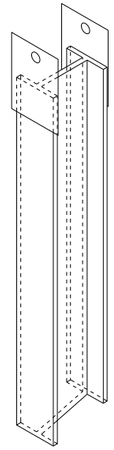
LOWER POST NO. 1 (2) (E)



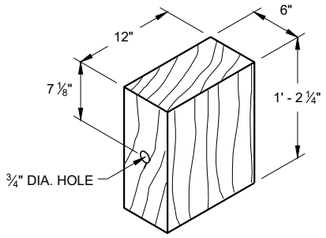
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



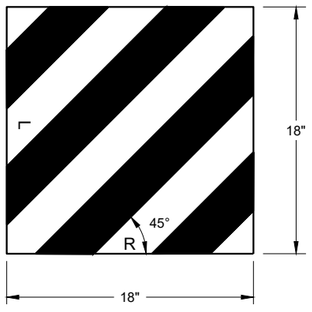
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

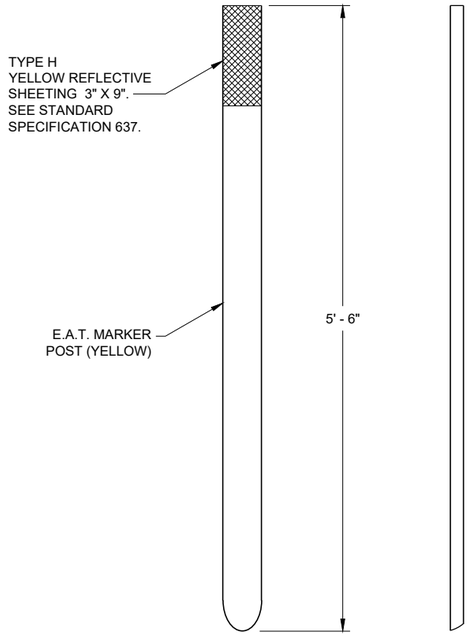


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



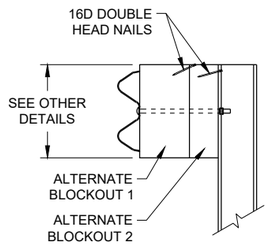
W5 - 59

REFLECTIVE SHEETING DETAIL (E)

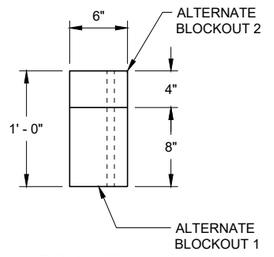


FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR
FHWA

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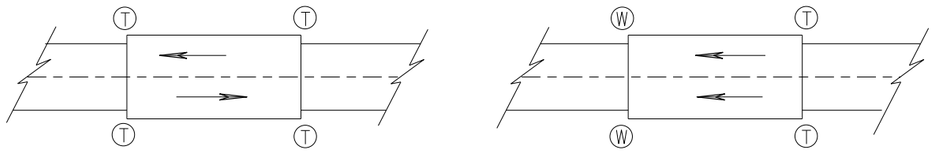
SDD 14B44 - 04c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

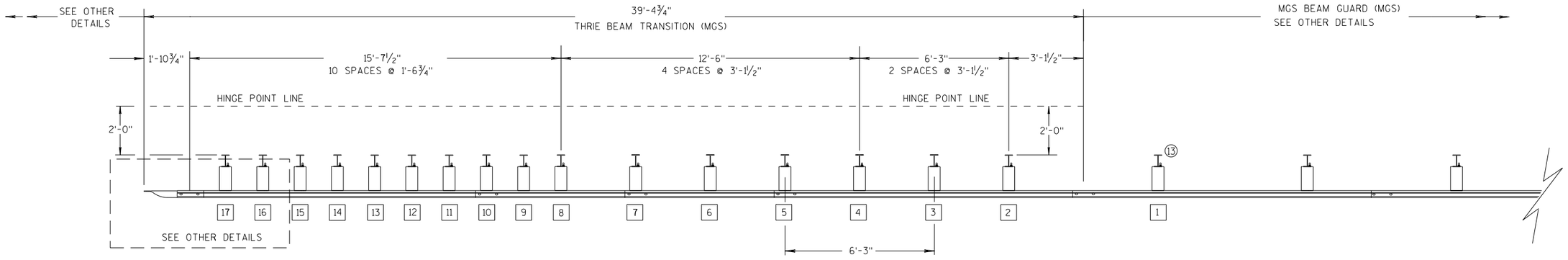
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

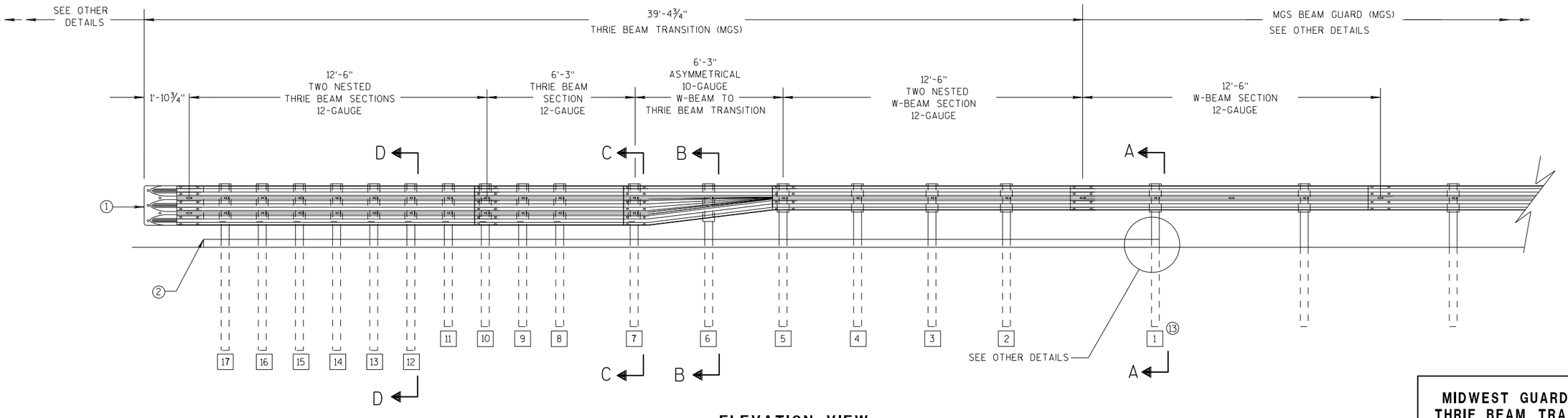
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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

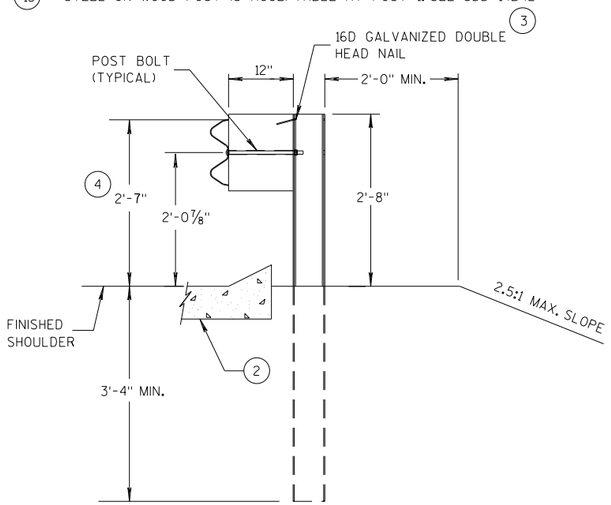
GENERAL NOTES

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

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

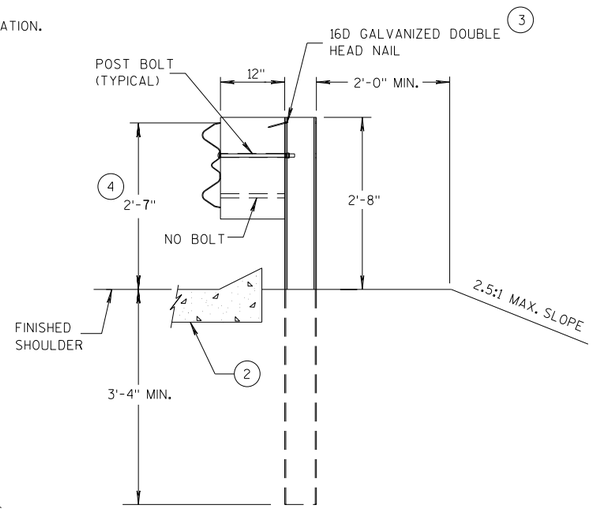
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



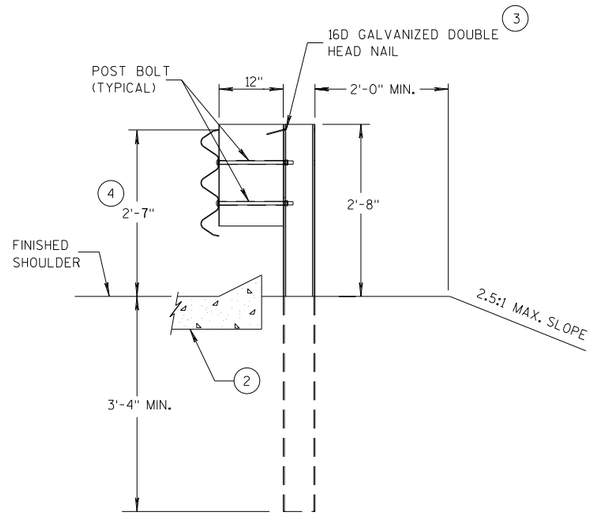
SECTION A-A (13)

POSTS 1-5



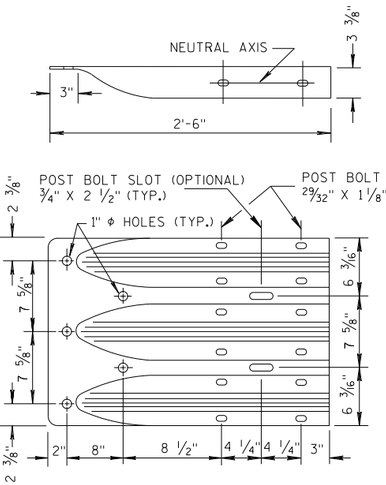
SECTION B-B

POST 6

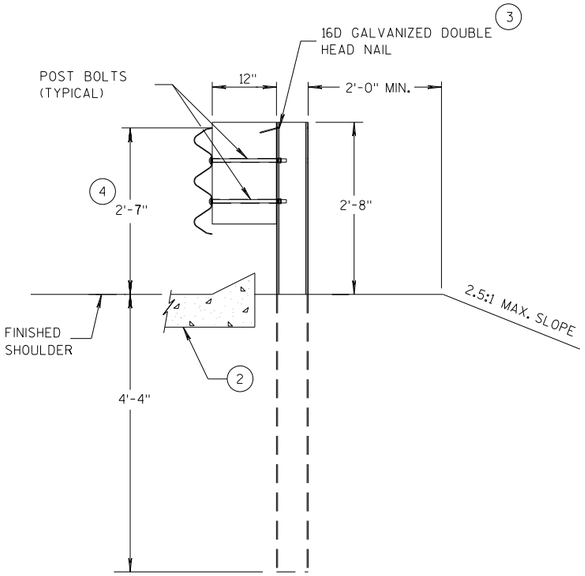


SECTION C-C

POSTS 7-11

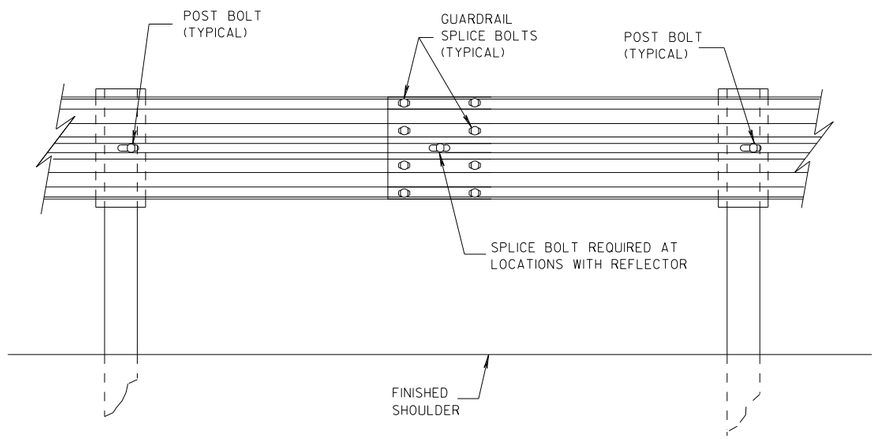


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

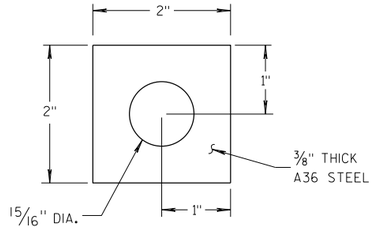
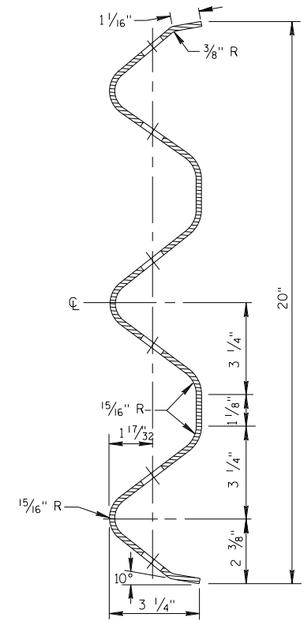


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

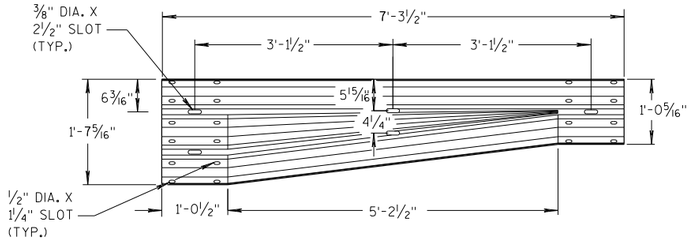
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 29

6

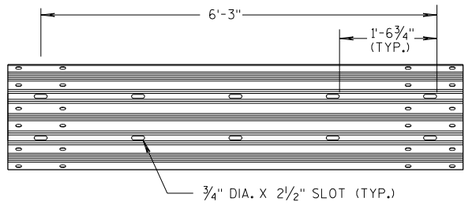
S.D.D. 14 B 45-5b

6

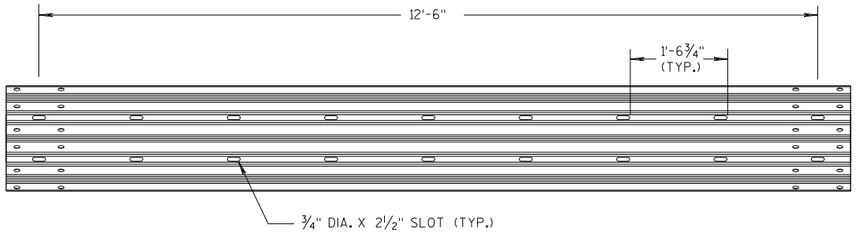
S.D.D. 14 B 45-5b



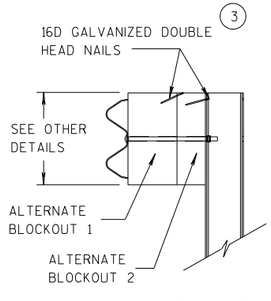
W-BEAM TO THRIE BEAM TRANSITION SECTION



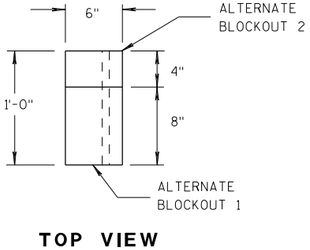
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

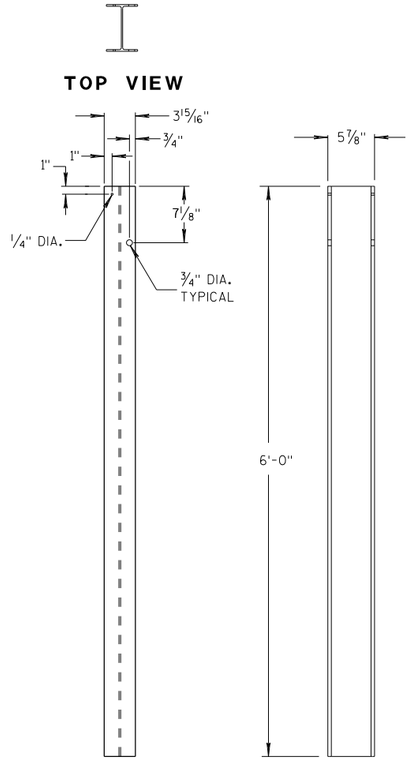


SIDE VIEW



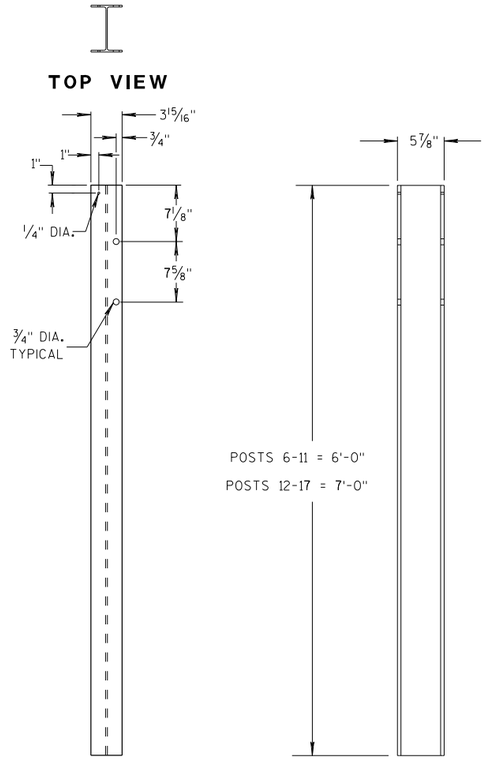
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



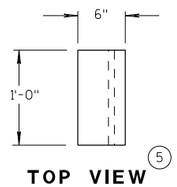
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

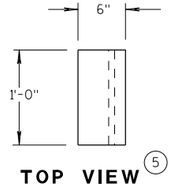


FRONT VIEW SIDE VIEW

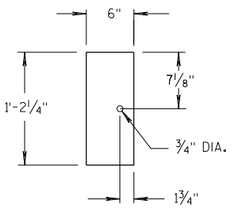
STEEL POSTS 6-17



TOP VIEW (5)

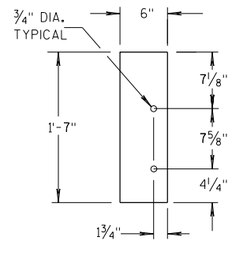


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

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

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

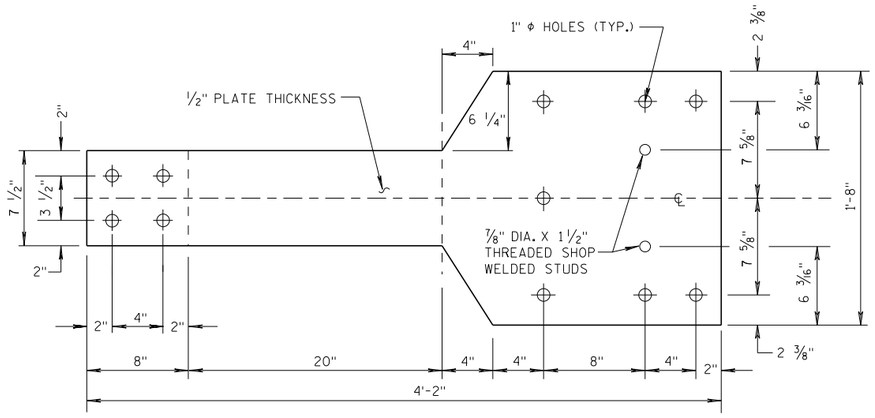
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

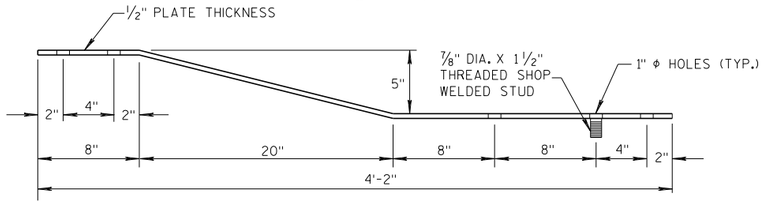
6
S.D.D. 14 B 45-5c

GENERAL NOTES

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

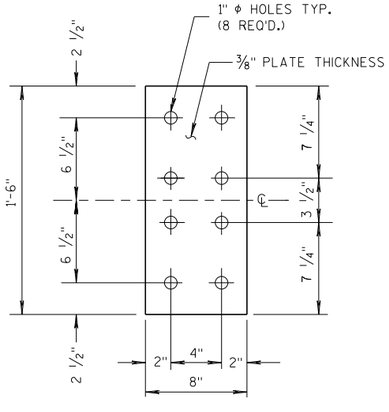


FRONT VIEW



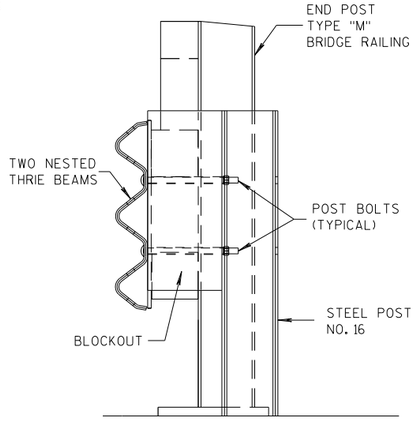
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

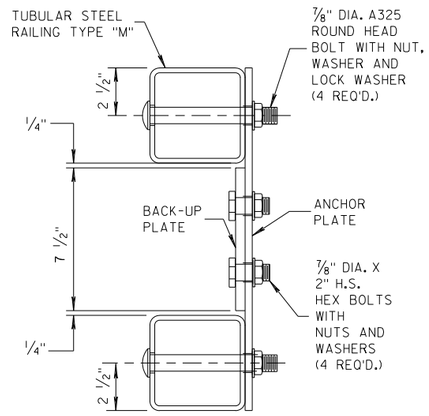


FRONT VIEW

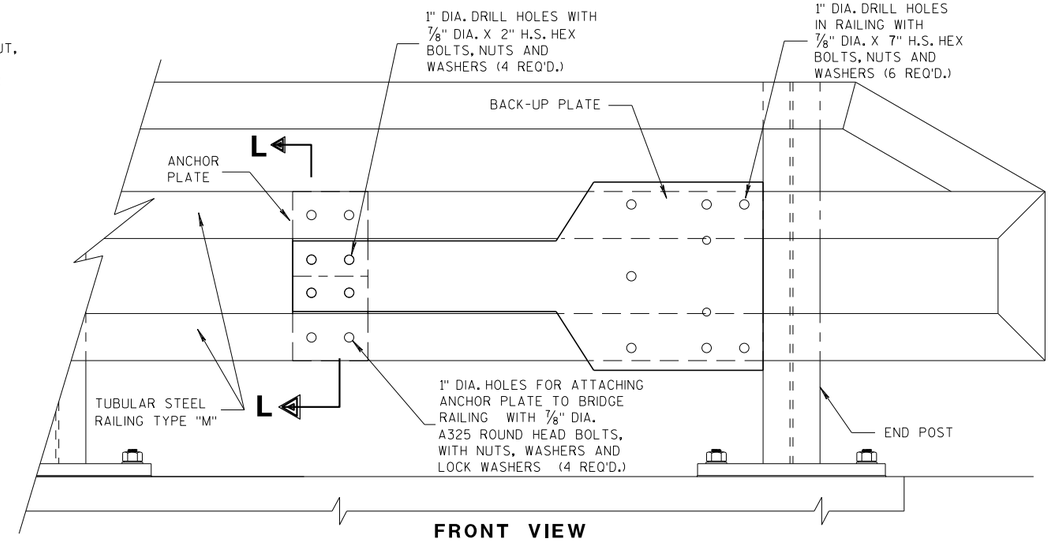
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

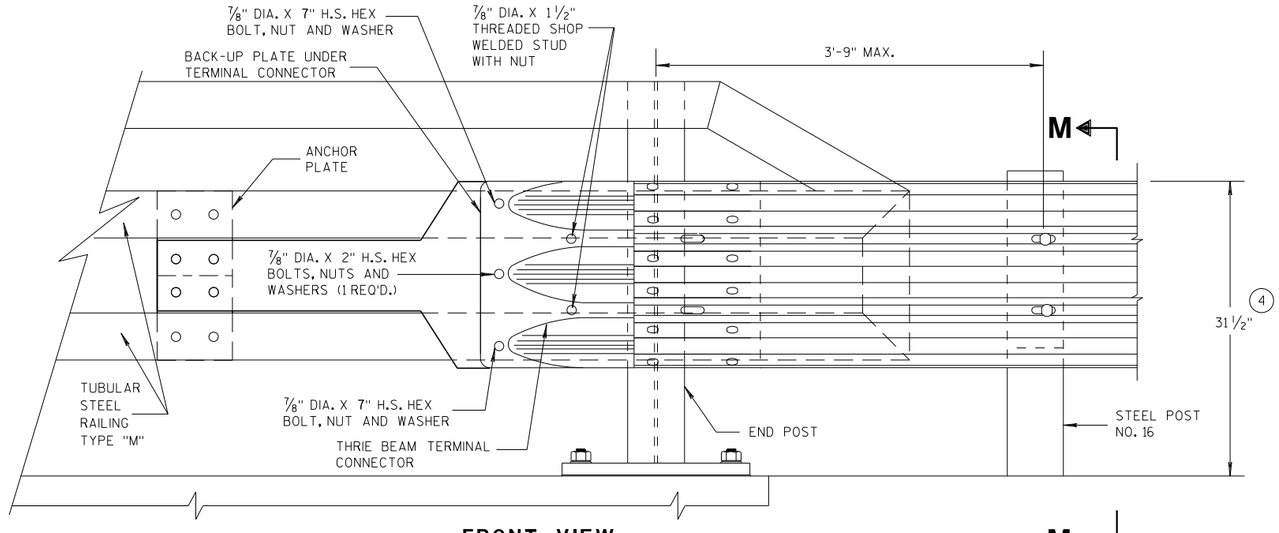


SECTION L-L

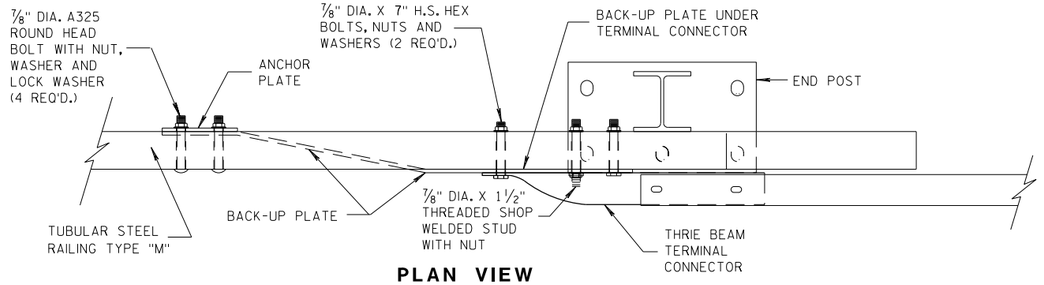


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERVISOR
FHWA

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

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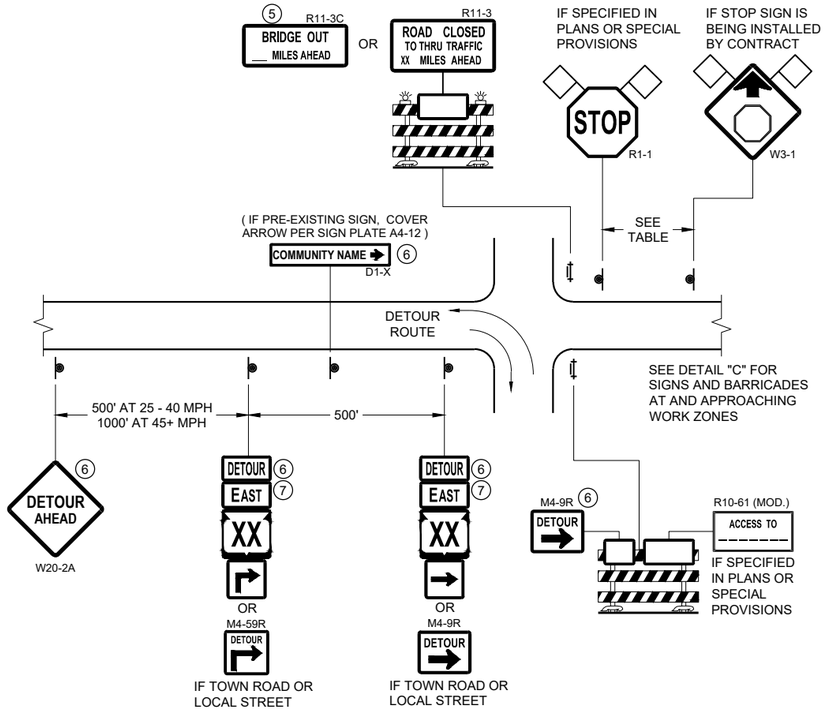
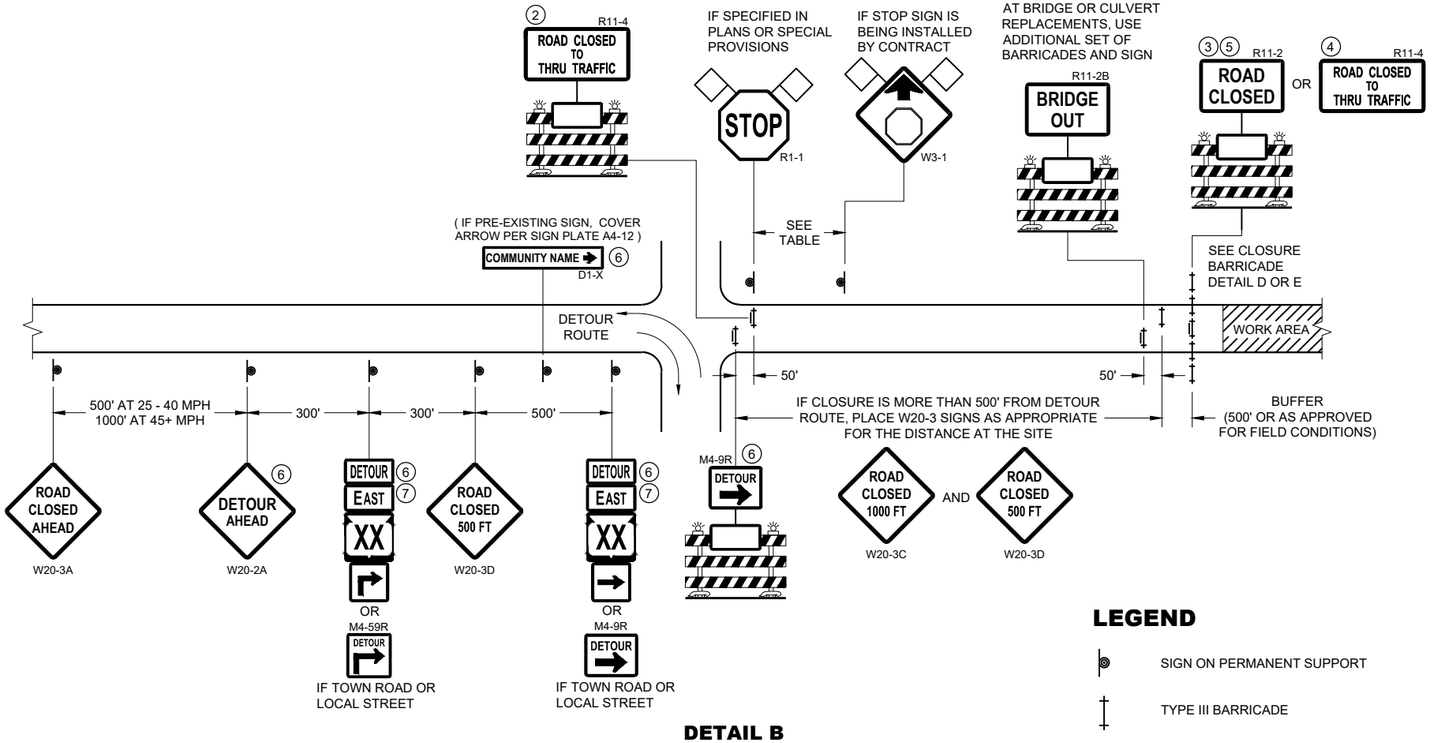
S.D.D. 14 B 45-5h



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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



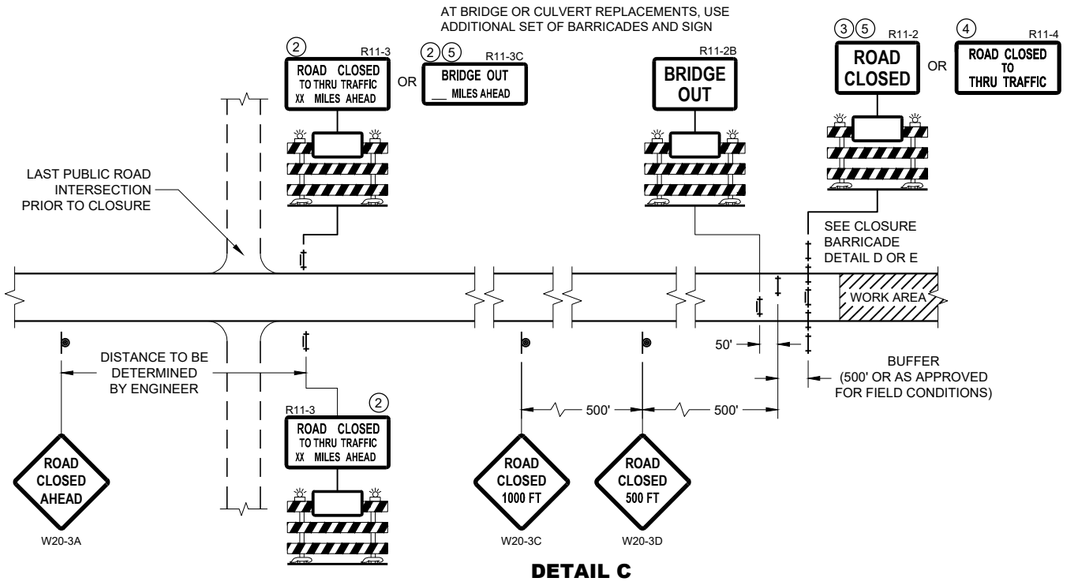
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

DETOUR M4 - 8
EAST M3 - X
XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A
M05 - 1 OR M06 - 1



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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

SDD 15C02 - 08a

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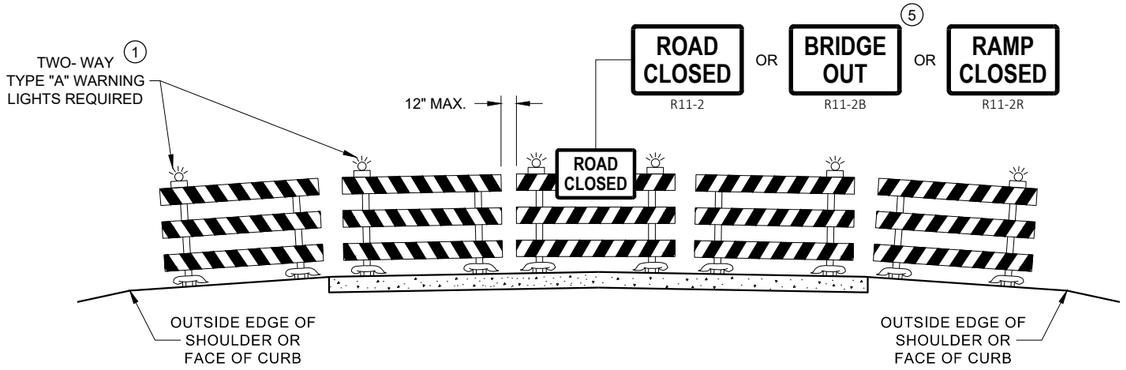
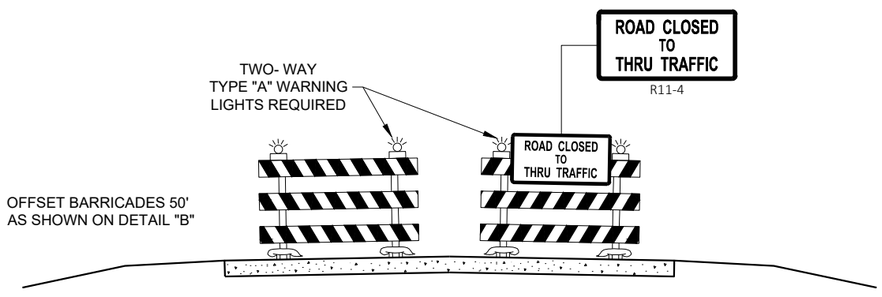
SDD 15C02 - 08a



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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SDD 15C02 - 08b

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SDD 15C02 - 08b

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR — M4 - 8
- EAST — M3 - X
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- M05 - 1 OR M06 - 1 OR M06 - 1

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.

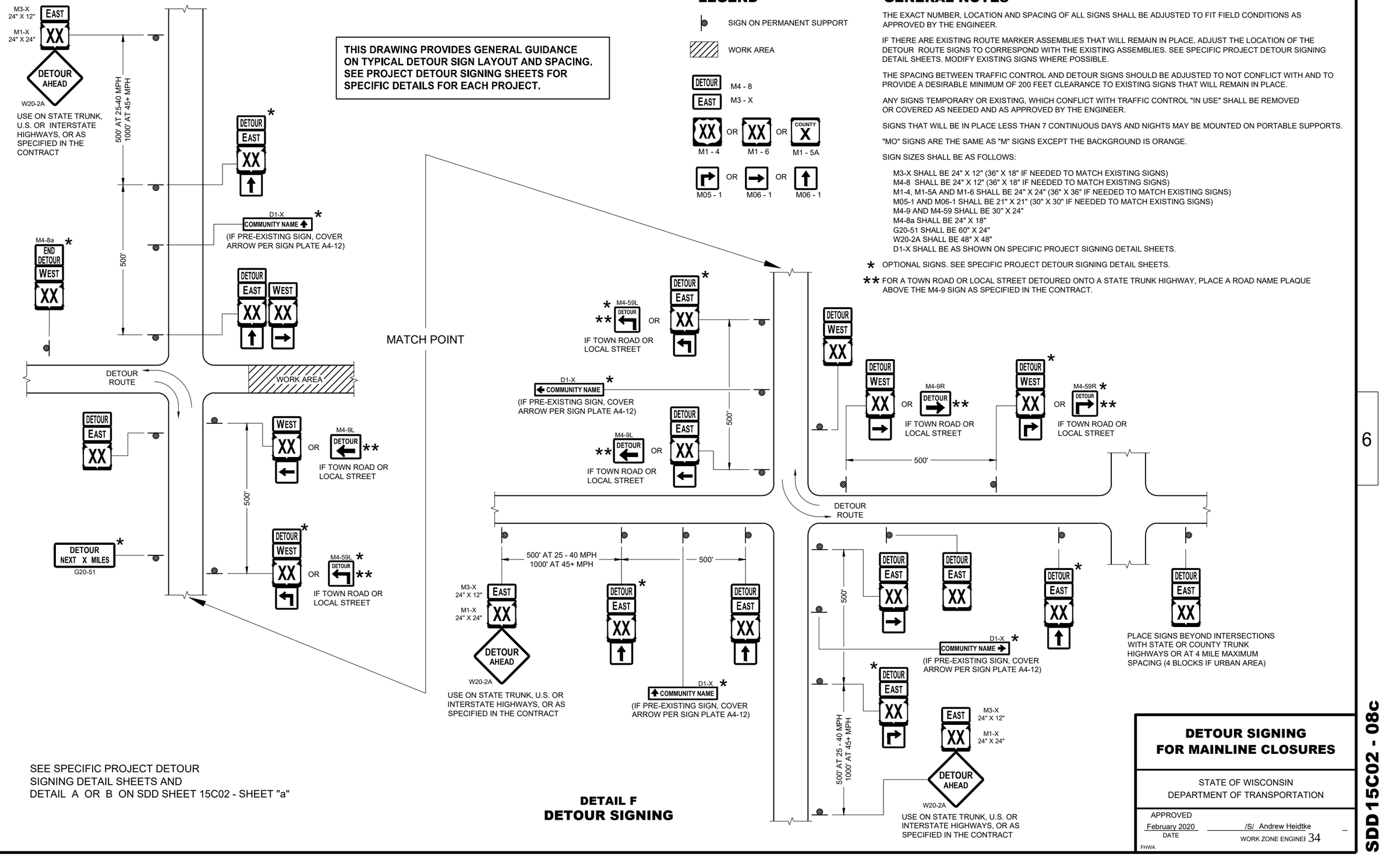
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A 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.



SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

DETAIL F
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15C02 - 08c

SDD 15C02 - 08c

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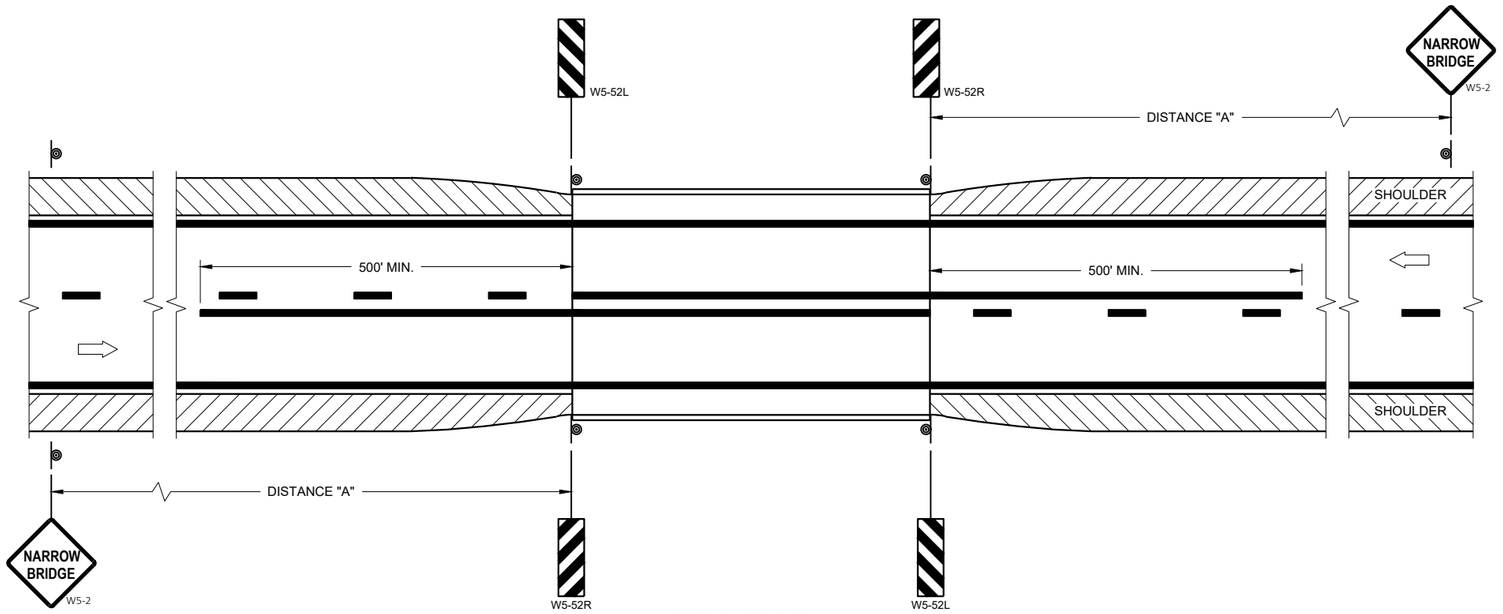
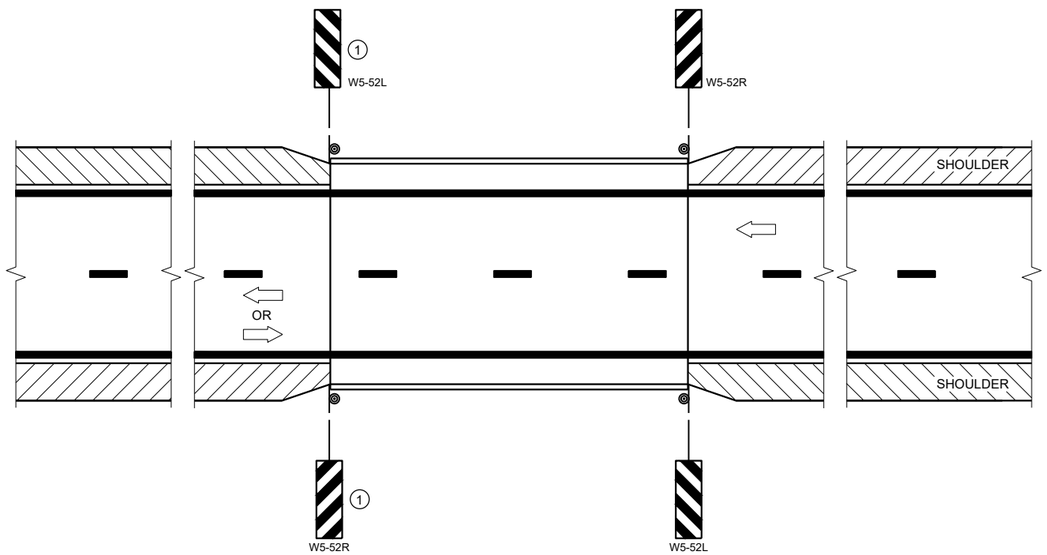


SITUATION 1

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



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 THE DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

(1) OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

DISTANCE TABLE

POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	700'

SIGNING AND MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 — DATE
/S/ Jeannie Silver — STATE SIGNING AND MARKING ENGINEER
FHWA

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SDD 15C06 - 10

GENERAL NOTES

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

(1) LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING

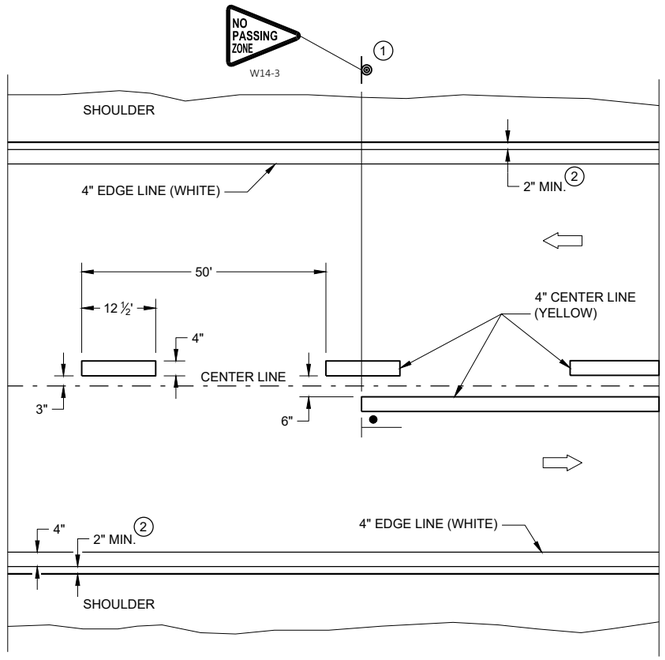
(2) MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

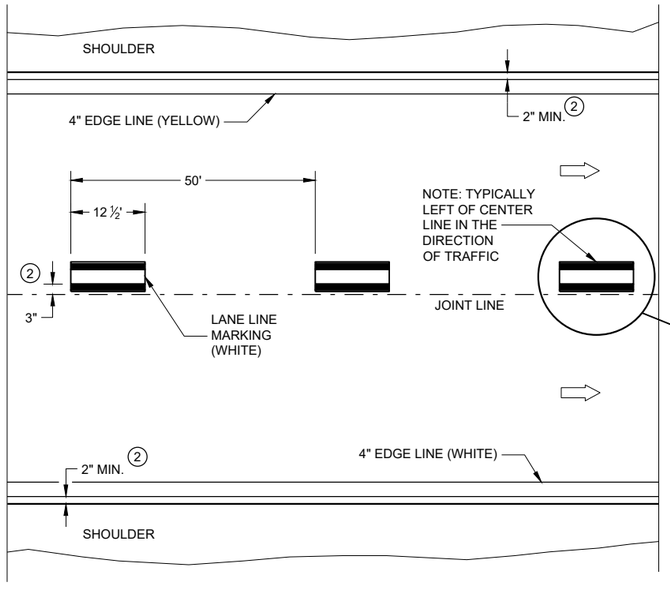
"T" MARKING

SIGN ON PERMANENT SUPPORT

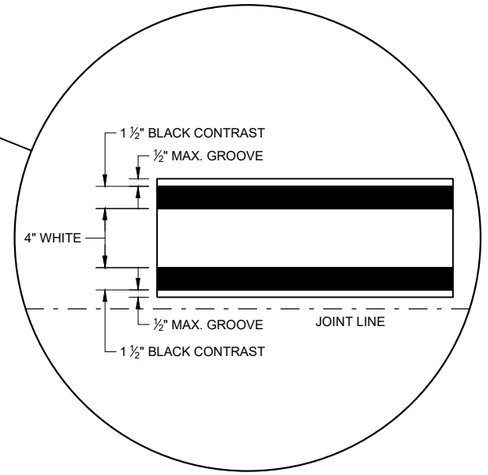
DIRECTION OF TRAFFIC



TWO WAY TRAFFIC



ONE WAY TRAFFIC



PERMANENT PAVEMENT MARKING

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 — DATE
/S/ Jeannie Silver — STATEWIDE SIGNING AND M ENGINEER

FHWA

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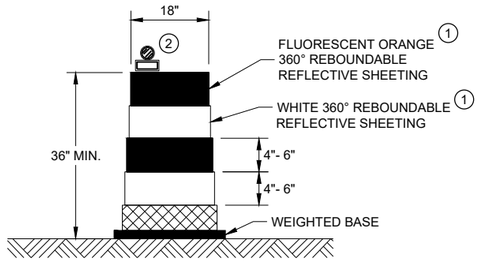
SDD 15C08 - 22a

6

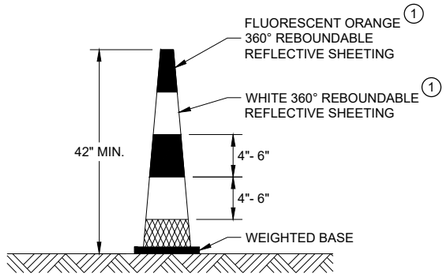
SDD 15C08 - 22a

GENERAL NOTES

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

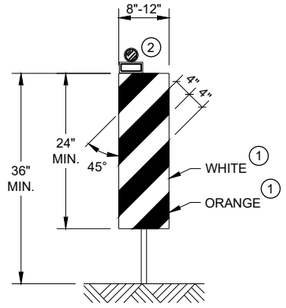


DRUM



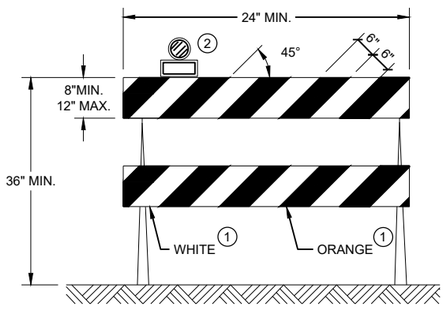
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



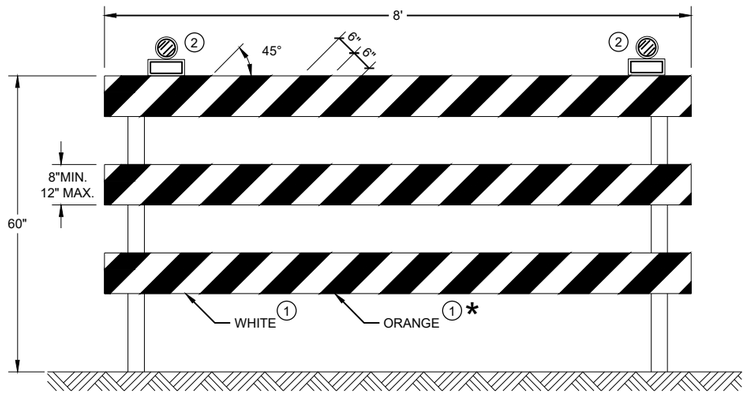
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

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SDD15C11 - 09b

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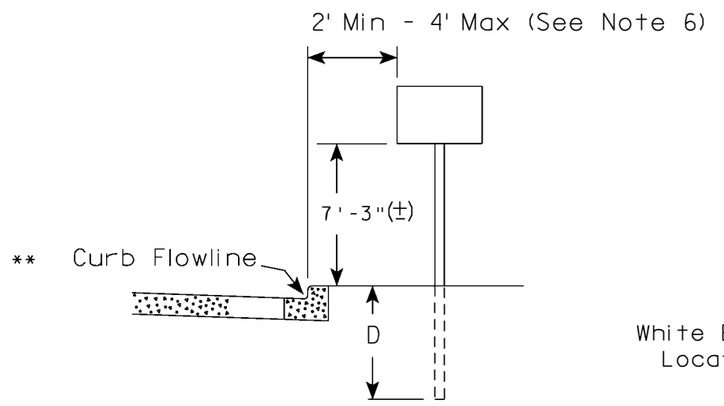
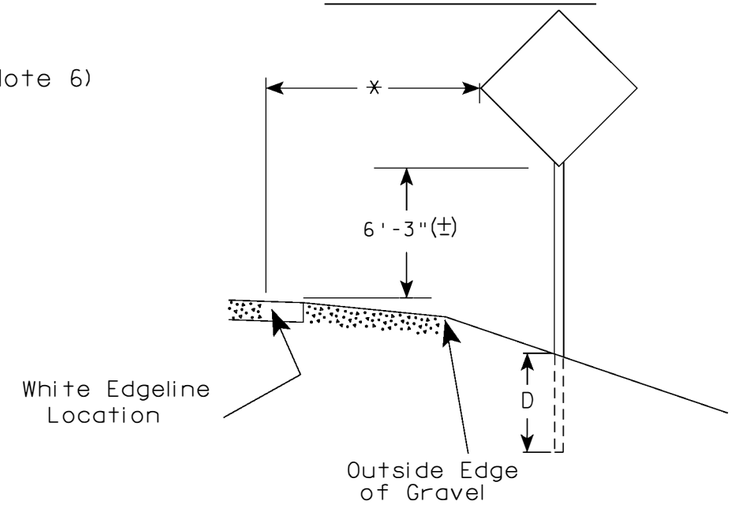
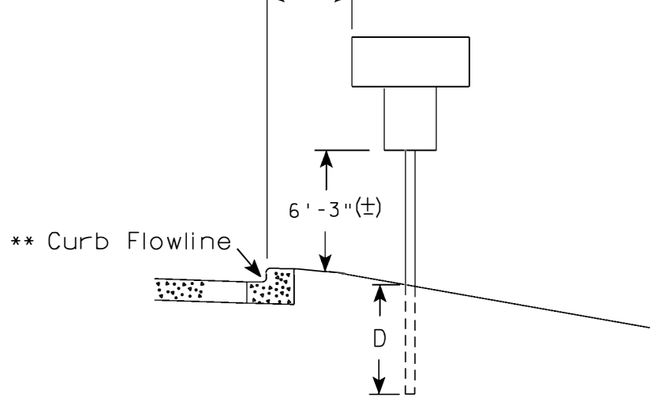
SDD15C11 - 09b

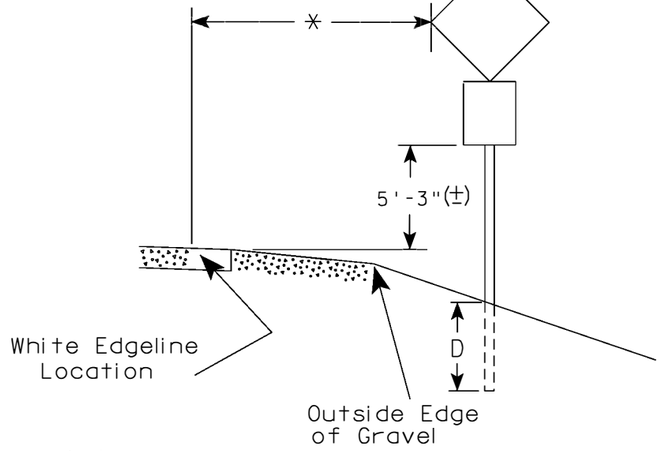
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
   The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.

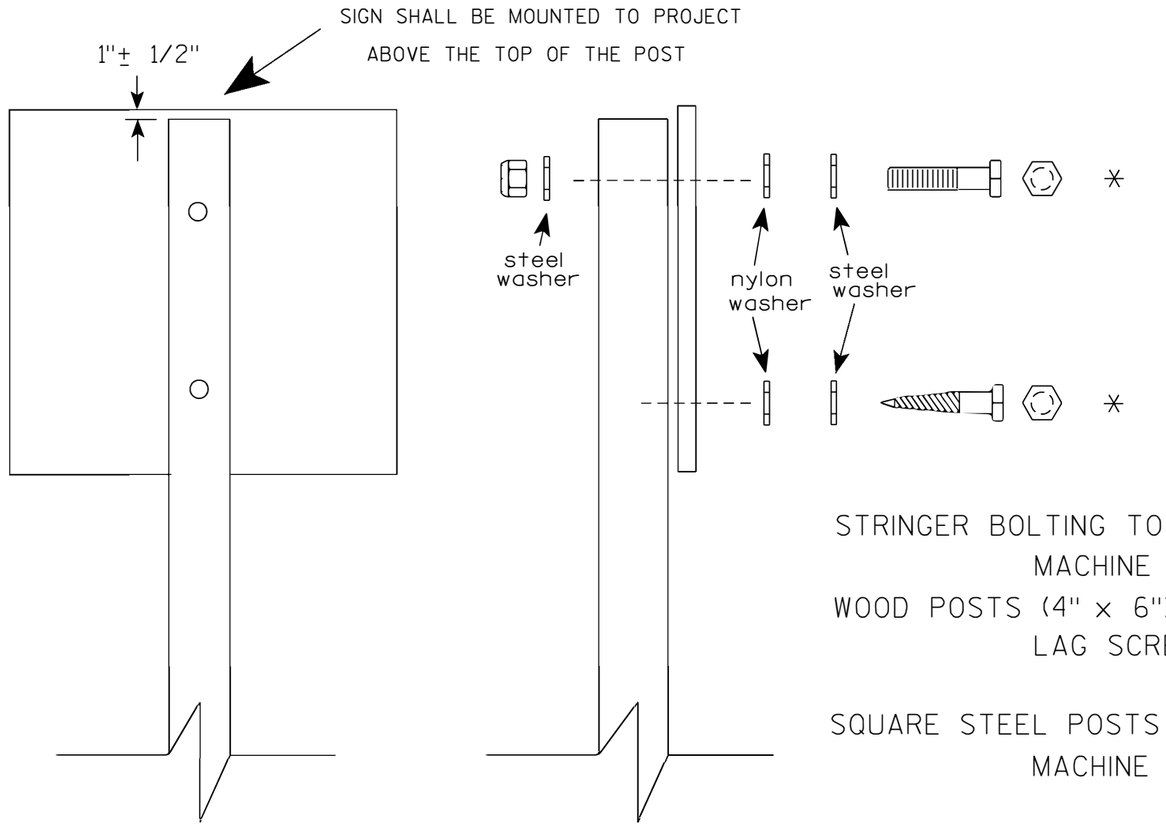
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK		SHEET NO: 38	E



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

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

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

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

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

WOOD POSTS (4" x 6")

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

SQUARE STEEL POSTS (2" x 2")

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

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

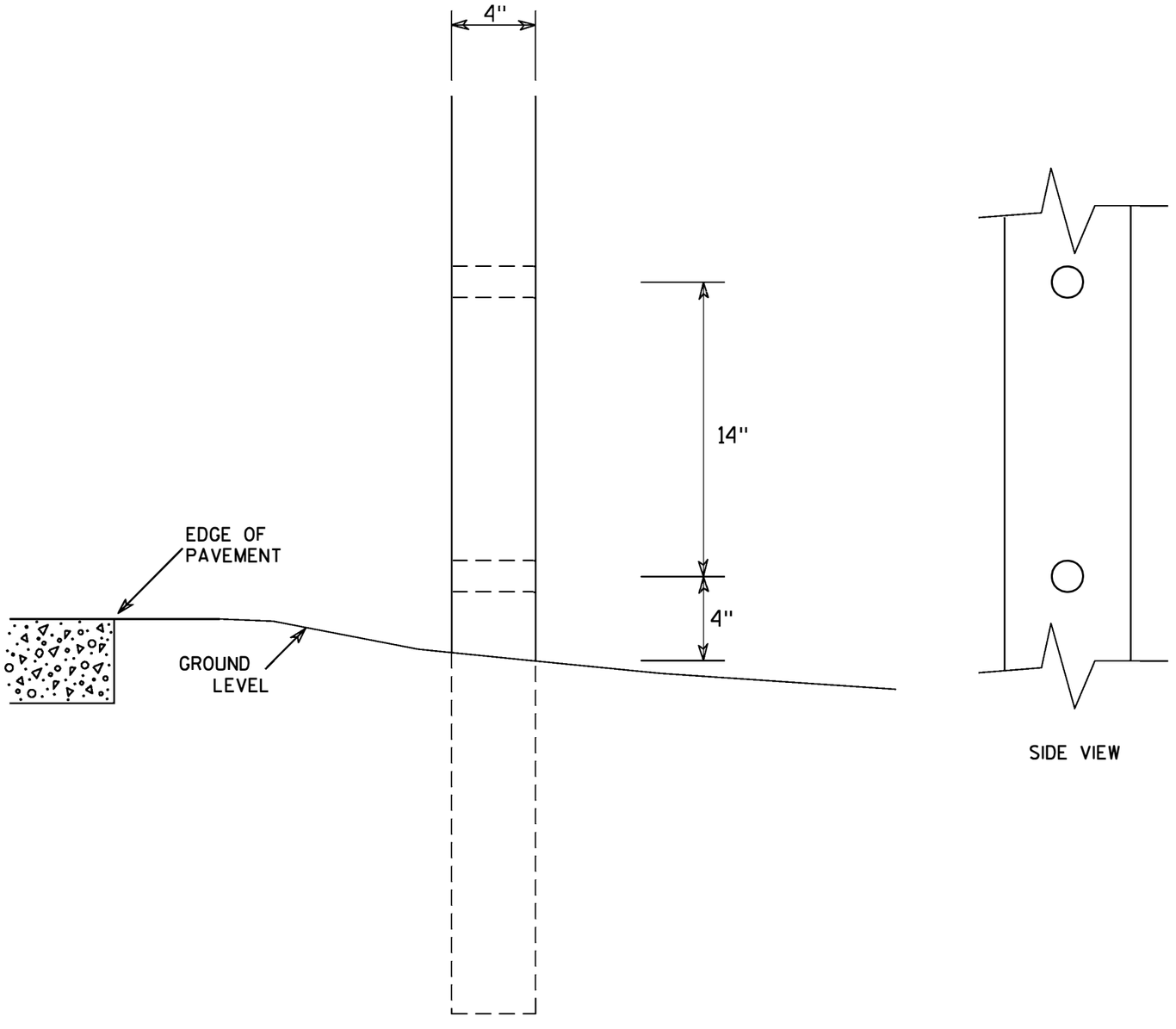
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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



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.

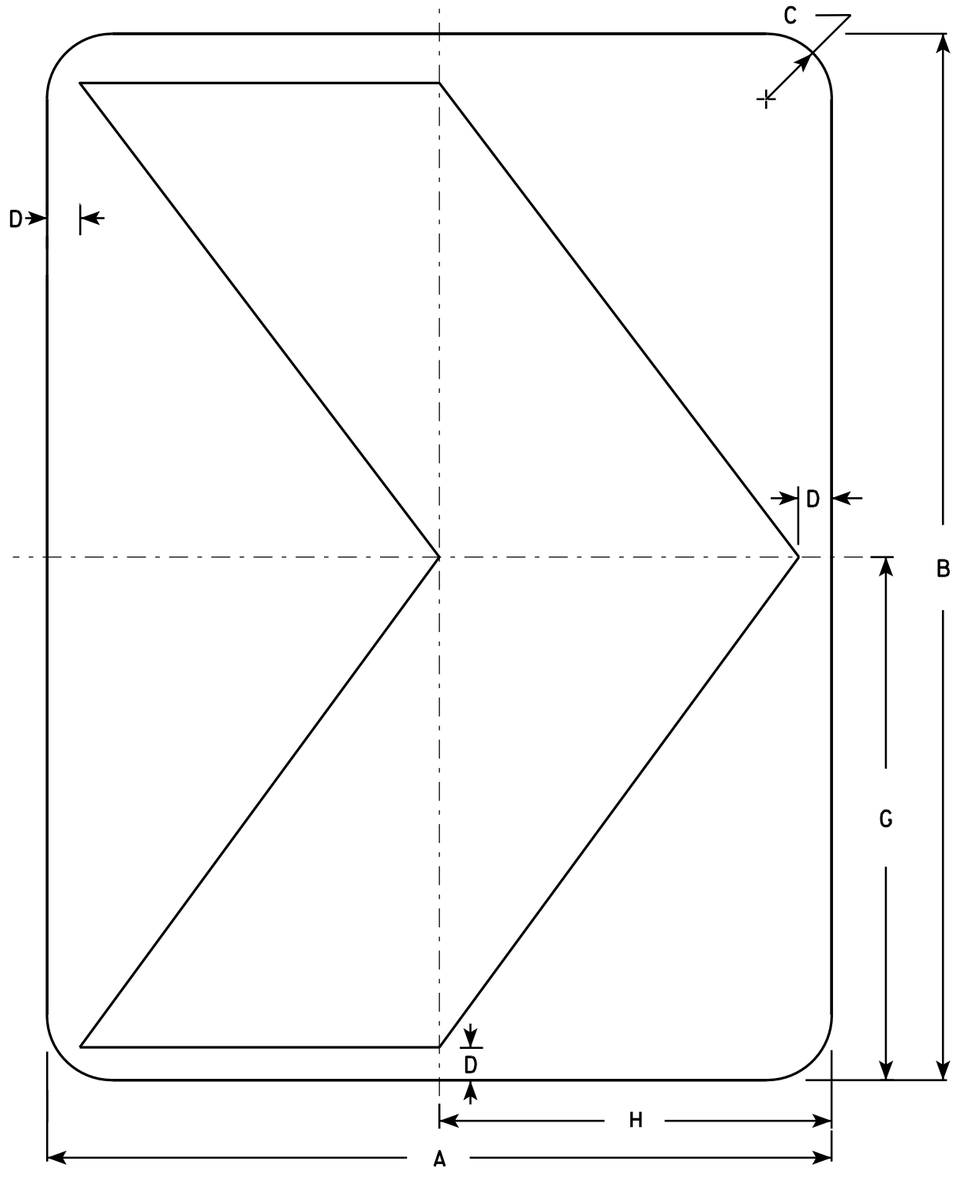
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

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

PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK		SHEET NO: 40	E



W1-8

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.

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	12	18	1 ½	½			9	6																			1.5
2S	18	24	1 ½	¾			12	9																			3.0
2M	18	24	1 ½	¾			12	9																			3.0
3	24	30	1 ½	1			15	12																			5.0
4	30	36	1 ⅞	1 ¼			18	15																			7.5
5	36	48	2 ¼	1 ½			24	18																			12.0

STANDARD SIGN
W1-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-8.6

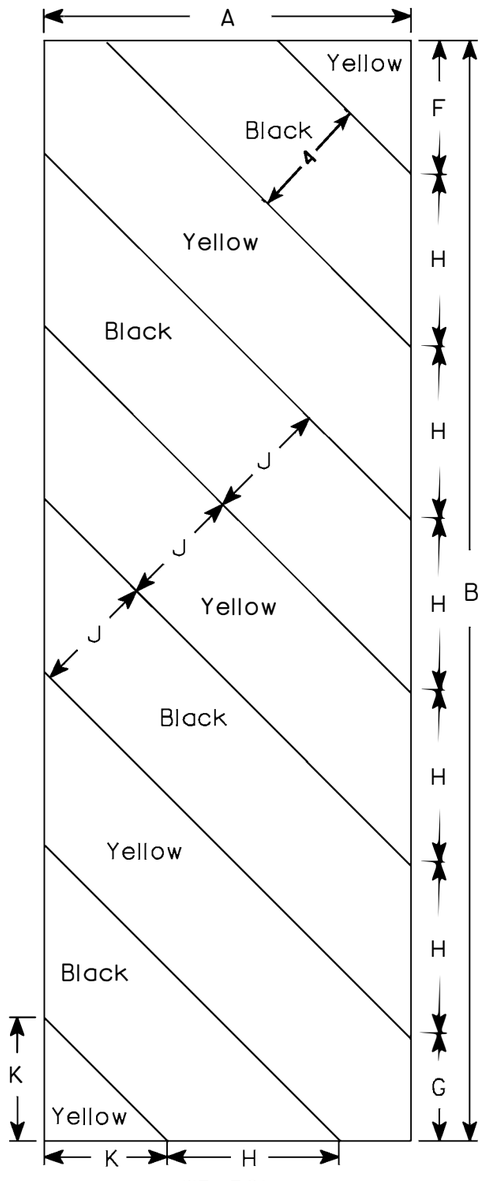
PROJECT NO: 8397-00-70 | HWY: CTH K | COUNTY: POLK | SHEET NO: 41 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W18.DGN PLOT DATE : 07-JUN-2010 12:55 PLOT BY : ditjph

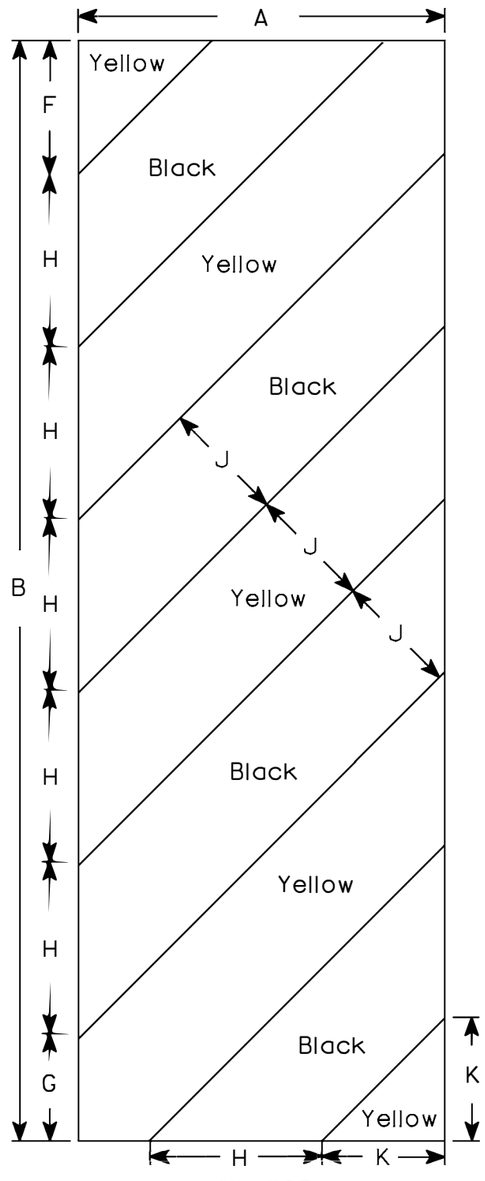
WISDOT/CADDS SHEET 42

7

7



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

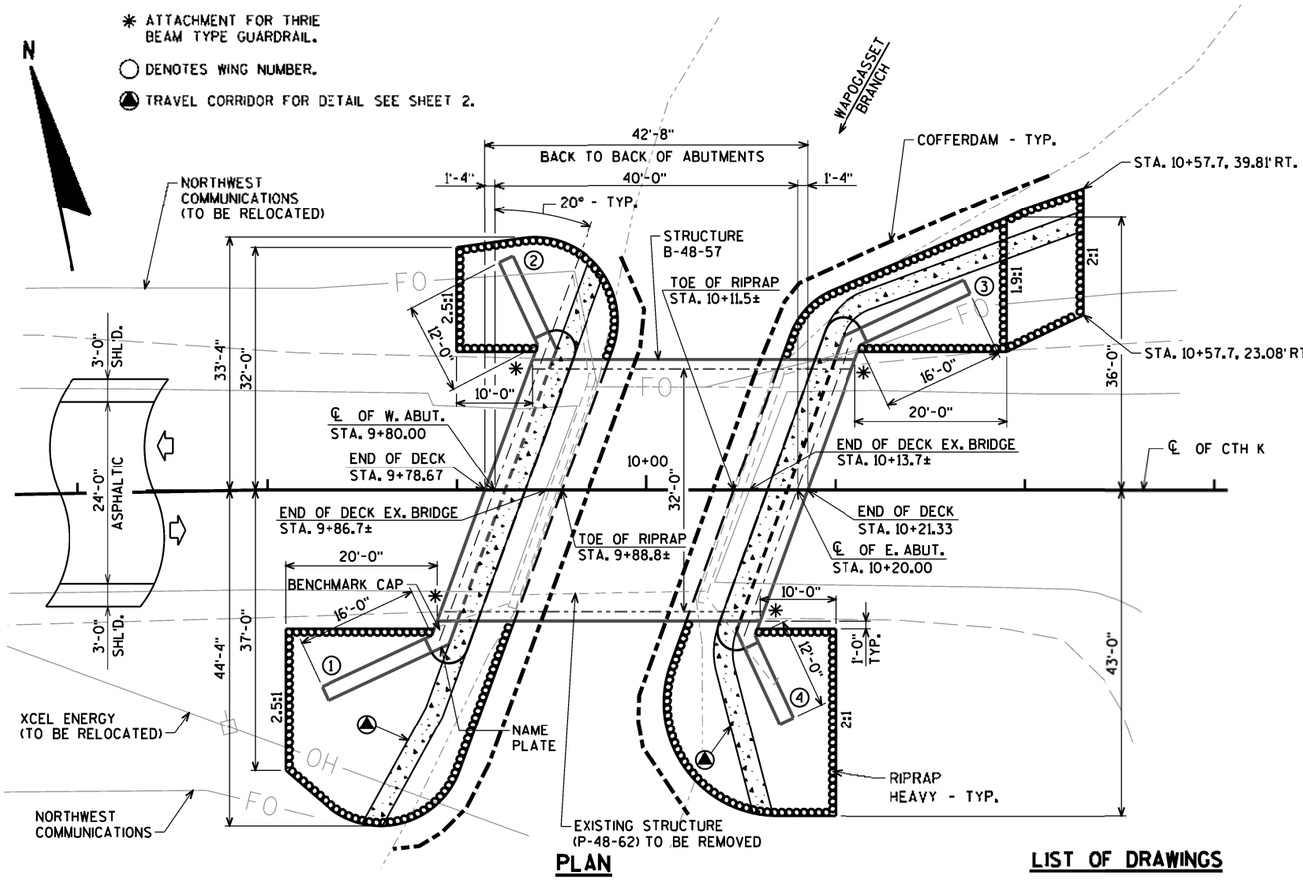
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: 8397-00-70 | HWY: CTH K | COUNTY: POLK | SHEET NO: 42 | E

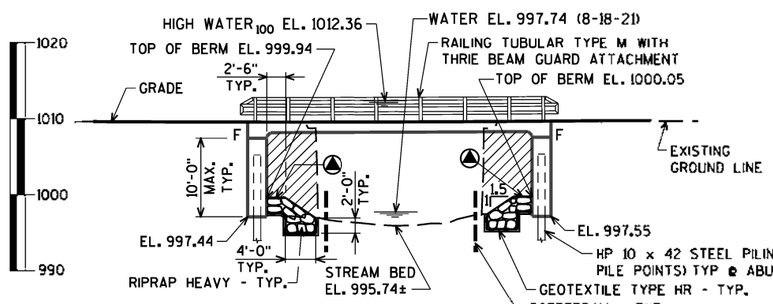
STATE PROJECT NUMBER

8397-00-70



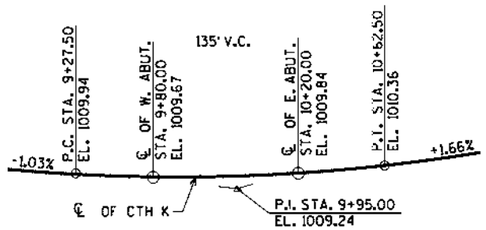
PLAN

SINGLE-SPAN CONCRETE FLAT SLAB



ELEVATION

(NORMAL TO ℄ OF CREEK)

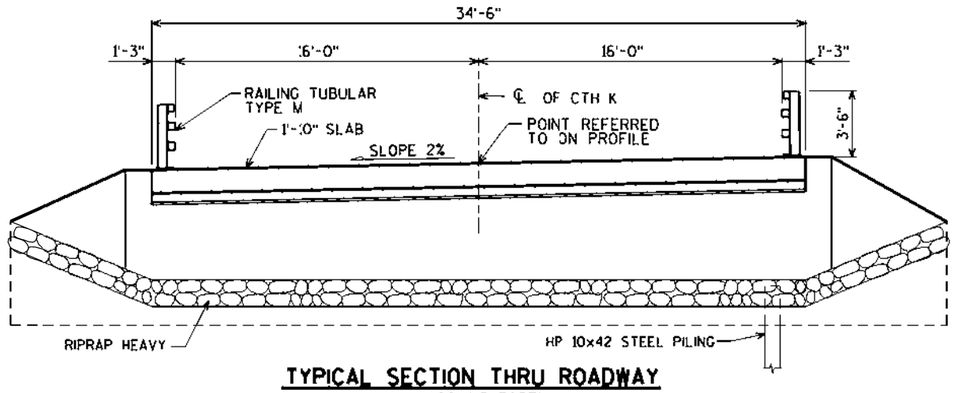


PROFILE GRADE LINE

(CTH K)

BENCH MARK:
BM #50, 120 'd' SPIKE IN N END E ABUT.
STA. 10+17.9, 16'LT.
EL. 1008.24

LIST OF DRAWINGS



TYPICAL SECTION THRU ROADWAY

(LOOKING EAST)

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.17
OPERATING RATING FACTOR: 1.52
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

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

MATERIAL PROPERTIES:

CONCRETE MASONRY	SUPERSTRUCTURE	f'_c = 4,000 p.s.i.
	ALL OTHER	f'_c = 3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60)		f_y = 60,000 p.s.i.

HYDRAULIC DATA:

100 YEAR FREQUENCY

Q_{100} = 5,440 c.f.s. { STRUCTURE = 3,370 c.f.s. / ROADWAY OVERFLOW = 2,070 c.f.s.

VEL. = 9.5 f.p.s.
HW_{100} = EL. 1012.36
WATERWAY AREA = 356 sq. ft.
DRAINAGE AREA = 114.0 sq. mi.
SCOUR CRITICAL CODE = 5
DATUM = NAVD88 (2012)

2 YEAR FREQUENCY

Q_2 = 1,720 c.f.s.
VEL. = 7.6 f.p.s.
HW_2 = EL. 1005.17

ROAD OVERTOPPING FREQUENCY

FREQUENCY = 9 YEARS
Q_9 = 3,225 c.f.s.
HW_9 = EL. 1009.93

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS ‡ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 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 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC DATA:

A.A.D.T. = 1,250 (2023)
A.A.D.T. = 1,690 (2043)
R.D.S. = 30 M.P.H.

COST OF EXCAVATION OR FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-48-57".

REMOVE EXISTING SUBSTRUCTURE AS NEEDED. COST INCLUDED IN "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS" ITEM. TYPICAL AT ALL SUBSTRUCTURES.

09/26/2022

BRIDGE OFFICE CONTACT:
AARON BONK
(608)-261-0261

CONSULTANT CONTACT:
DAN SYDOW
(715)-834-3161

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED SDR 11/01/22
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-48-57

CTH K OVER WAPOGASSET BRANCH

COUNTY	TOWN/~~CITY/VILLAGE~~
POLK	ALDEN

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
ZSS	KRO	JLB	DNS

GENERAL PLAN

SHEET 1 OF 13
43

9/26/2022
PENTABLE:BReau_shd_util.tbl

DATE: DATE: DATE:
BACK CHECKED BY: CORRECTED BY:

8

8

I:±42±42-1292.00 - Polk Co, CTH K±Structures±CADD±Structure±Final±421292 gp.dgn

I.D. DATE:

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER.	TOTAL
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-48-62	EACH	-----	-----	-----	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-48-57	EACH	-----	-----	-----	1
206.5001	COFFERDAMS B-48-57	EACH	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	555	560	-----	1,115
502.0100	CONCRETE MASONRY BRIDGES	CY	61.7	61.9	105.4	229
502.3200	PROTECTIVE SURFACE TREATMENT	SY	30	30	190	250
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	3,090	3,110	-----	6,200
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,120	2,120	18,220	22,460
513.4061	RAILING TUBULAR TYPE M	LF	-----	-----	89.7	89.7
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	7	7	-----	14
550.0500	PILE POINTS	EACH	8	8	-----	16
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	360	360	-----	720
606.0300	RIPRAP HEAVY	CY	175	145	-----	320
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	95	95	-----	190
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	70	70	-----	140
645.0120	GEOTEXTILE TYPE HR	SY	335	285	-----	620
SPV.0195.01	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	5	7	-----	12
	NON-BID ITEMS					
	FILLER	SIZE	-----	-----	-----	1/2" & 3/4"

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 NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-48-57" SHALL BE THE EXISTING GROUNDLINE.

THE EXISTING STRUCTURE, P-48-62 TO BE REMOVED, IS A TIMBER FLAT SLAB BRIDGE ON TIMBER ABUTMETNS, 26.1 FEET LONG WITH A 26.6 FOOT CLEAR ROADWAY WIDTH.

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET AND APPLY TO THE TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.

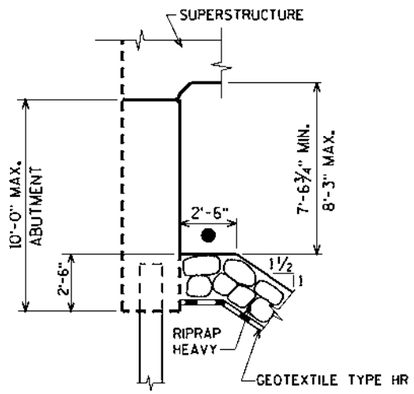
BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3-FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

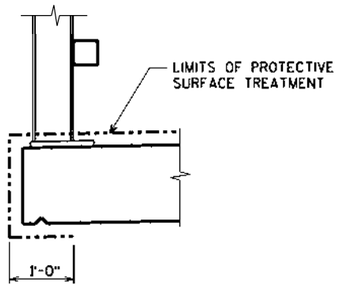
EXISTING SUBSTRUCTURE LOCATIONS ARE BASED ON SURVEY. EXTENT OF BELOW GRADE SUBSTRUCTURES ARE NOT KNOWN. REMOVE EXISTING SUBSTRUCTURES AS NEEDED TO BUILD NEW SUBSTRUCTURES. COST OF SUBSTRUCTURE REMOVAL IS CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE" BID ITEM.

AT ABUTMENTS, CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.



TRAVEL CORRIDOR DETAIL

● TRAVEL CORRIDOR
FILL VOIDS IN RIPRAP HEAVY WITH "SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR".



PROTECTIVE SURFACE TREATMENT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-48-57

DRAWN BY JLB | PLANS CKD. ZSS

ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com

QUANTITIES AND NOTES

SHEET 2 OF 13
44

8/25/2022
PENTABLE:BReou_shd_util.tbl

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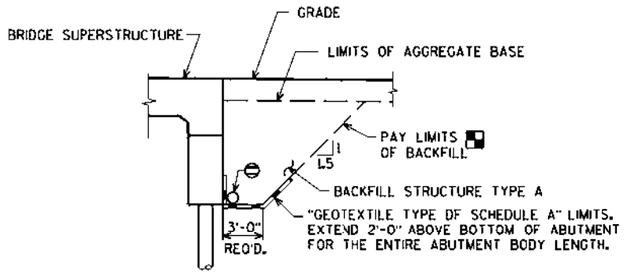
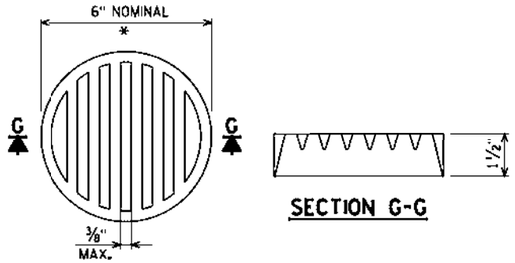


BACKFILL STRUCTURE LIMITS

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

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON THIS SHEET.



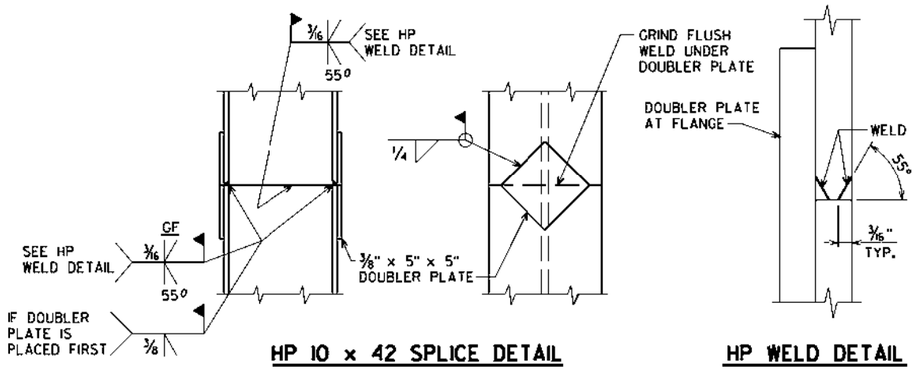
SECTION G-G

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

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

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 ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF 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.

RODENT SHIELD DETAIL



HP 10 x 42 SPLICE DETAIL

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-48-57

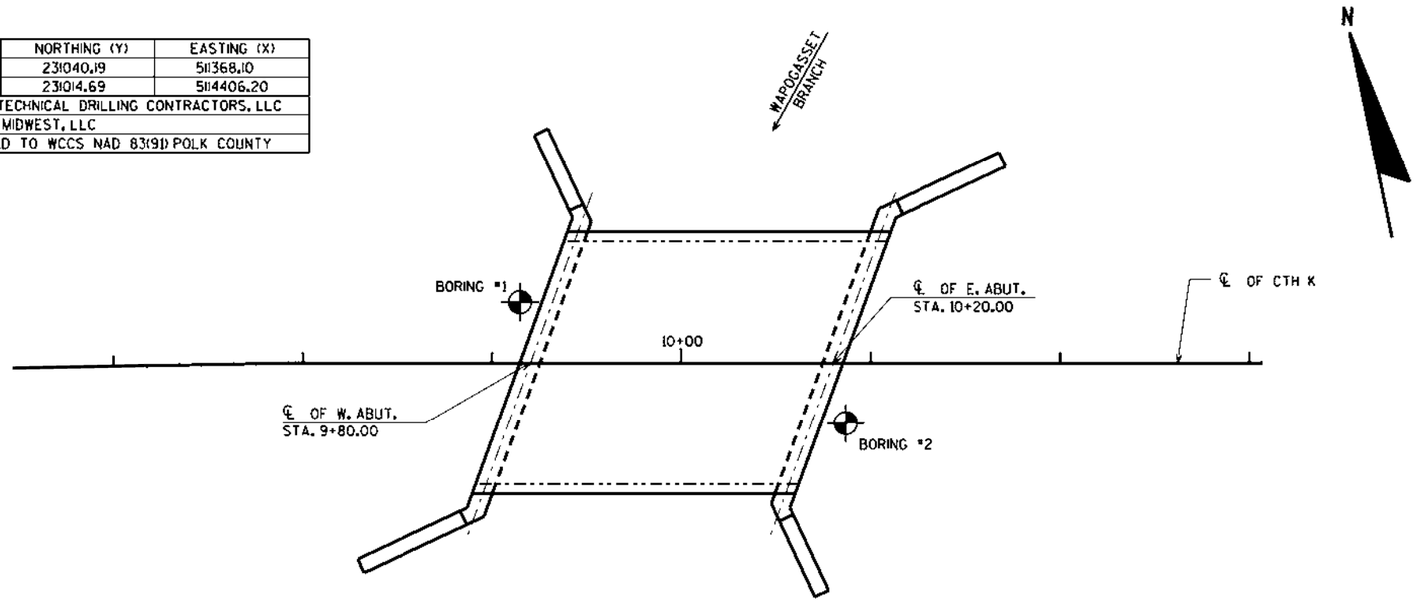
DRAWN BY JLB | PLANS CK'D. ZSS

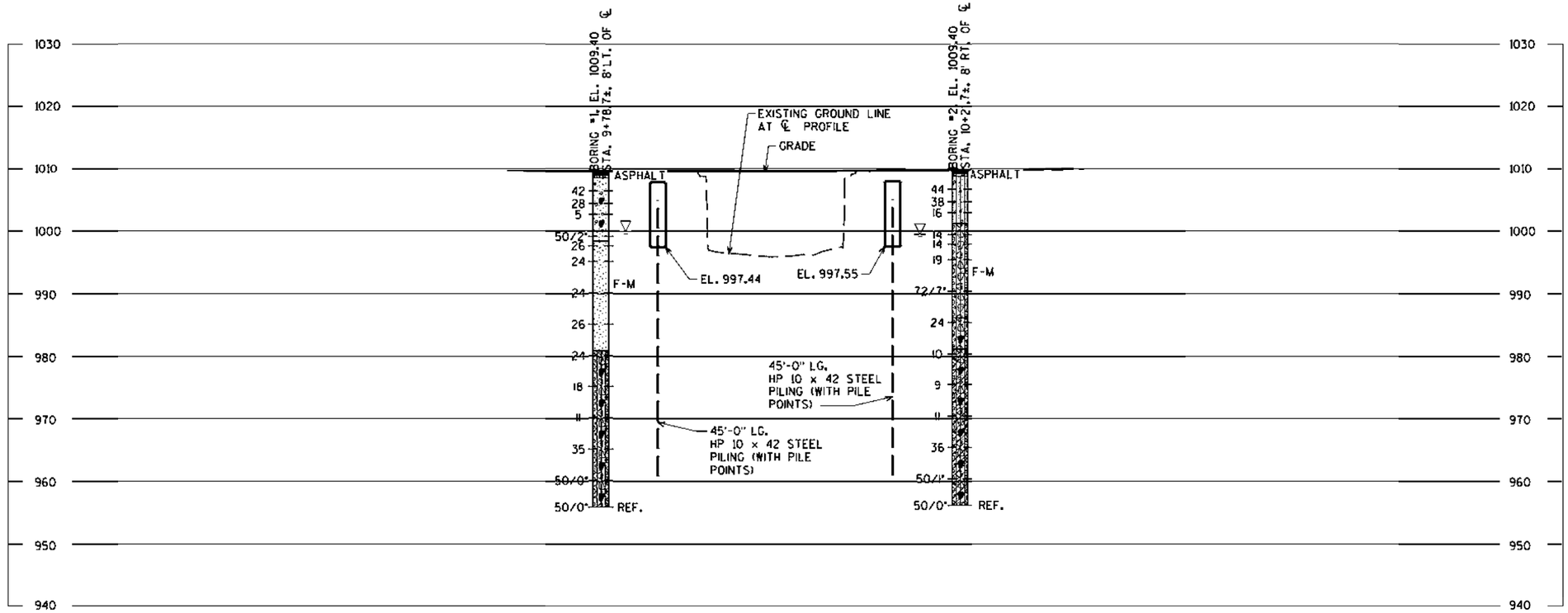
STRUCTURE DETAILS

SHEET 3 OF 13
45

ORIGINAL PLANS PREPARED BY
AYRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	1/11/2022	231040.19	511368.10
2	1/11/2022	231014.69	511406.20
BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC			
REPORT COMPLETED BY: ECS MIDWEST, LLC			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) POLK COUNTY			





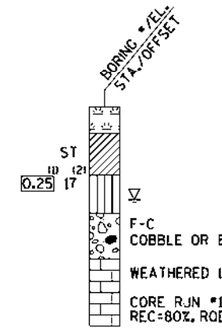
STATE PROJECT NUMBER

8397-00-70

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-48-57

DRAWN BY JLB | PLANS CK'D. ZSS

SUBSURFACE EXPLORATION

SHEET 4 OF 13
46

8/29/2022
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NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)

STATE PROJECT NUMBER

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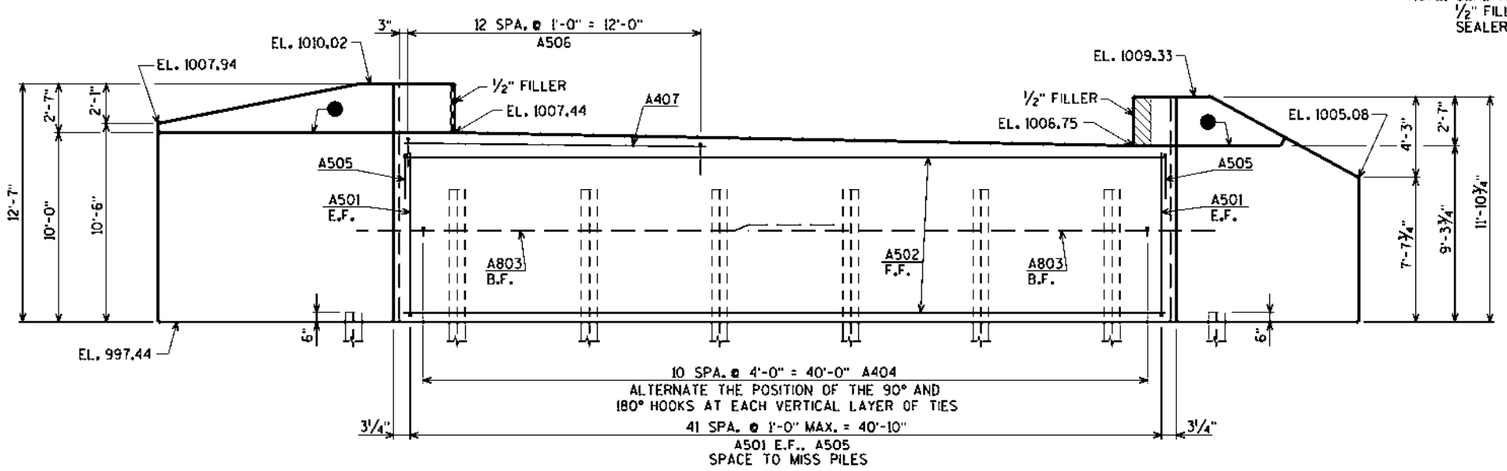
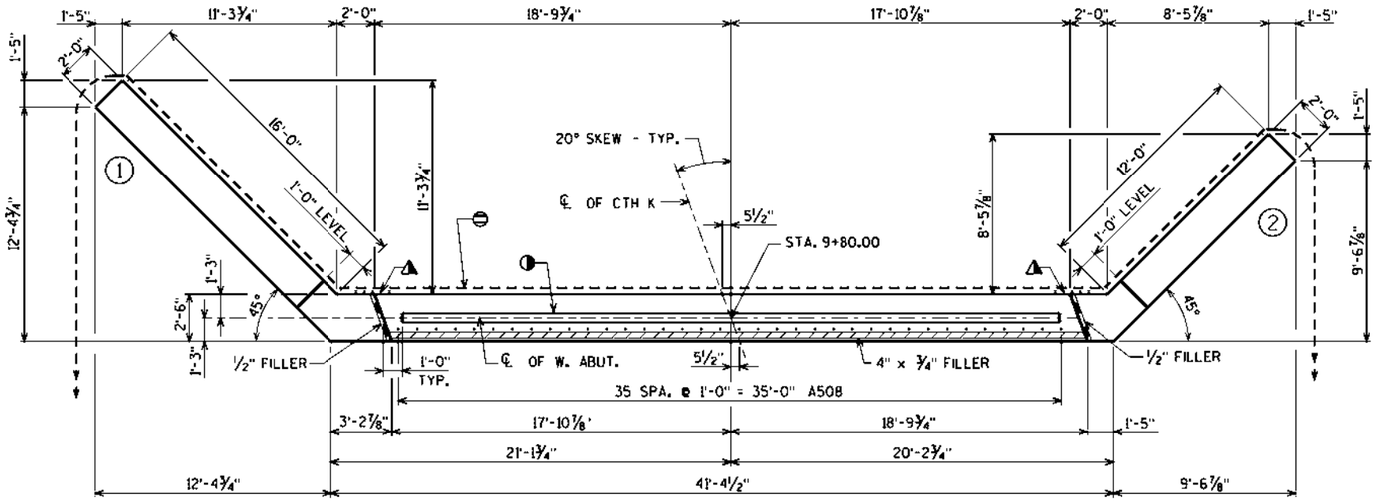
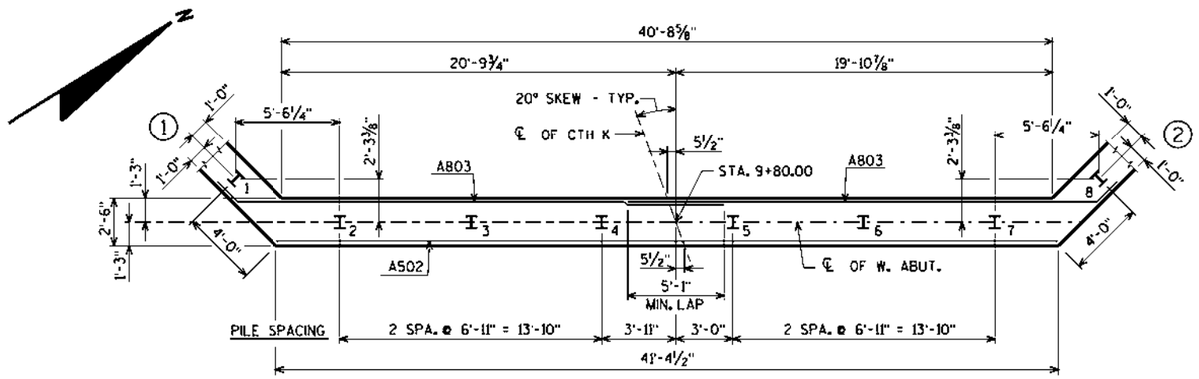


ELEVATION
(LOOKING WEST)



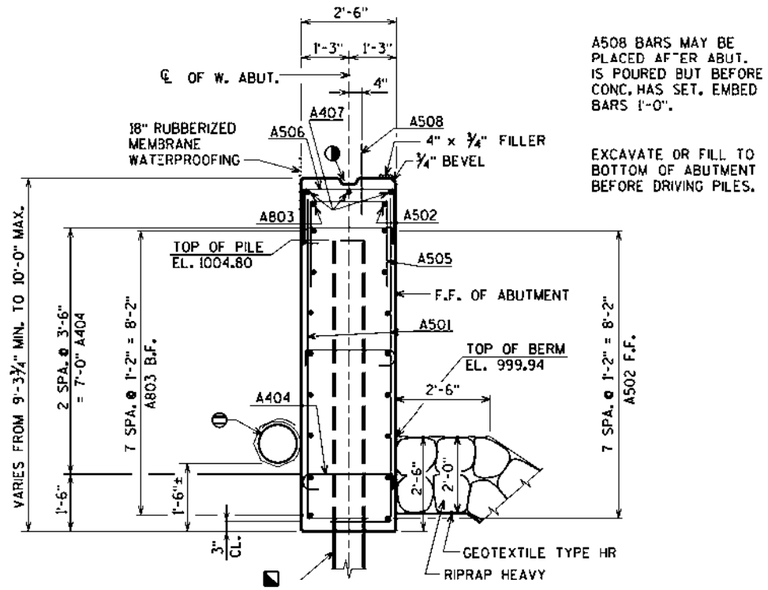
PLAN



PILE LAYOUT

A508 BARS MAY BE PLACED AFTER ABUT. IS POURED BUT BEFORE CONC. HAS SET. EMBED BARS 1'-0".

EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.



TYPICAL SECTION THRU BODY

◥ ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE. ESTIMATED LENGTH 45'-0".

NOTE: DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. FOR RODENT SHIELD DETAIL SEE SHEET 3.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

◑ KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

◭ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-48-57

DRAWN BY CLP | PLANS CK'D. ZSS

WEST ABUTMENT

SHEET 5 OF 13
47

ORIGINAL PLANS PREPARED BY
AYRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8/29/2022
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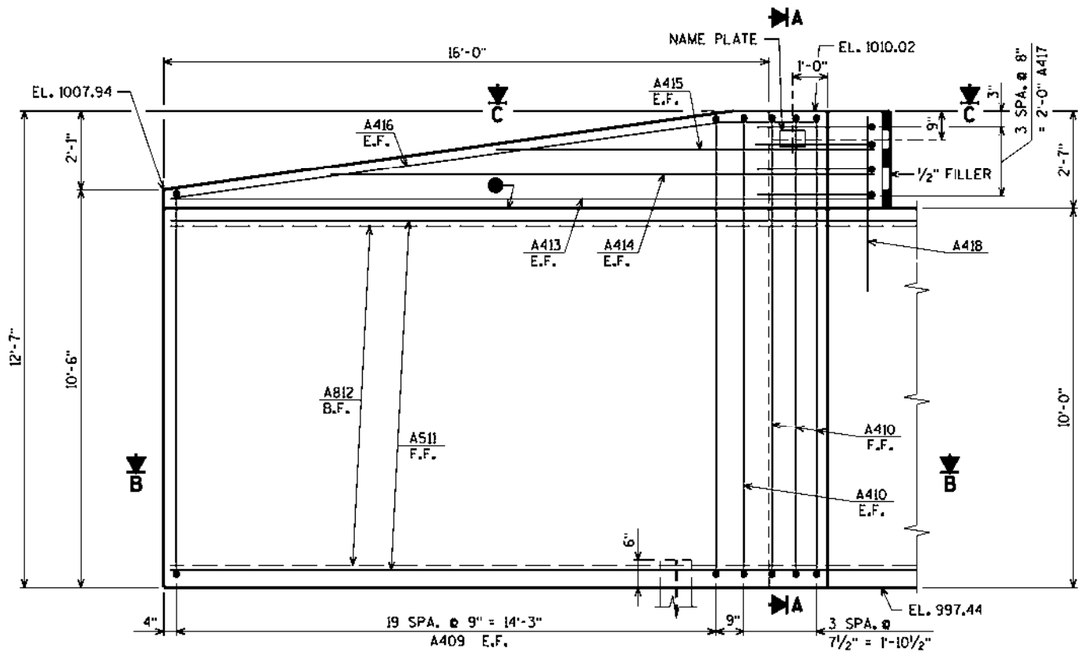
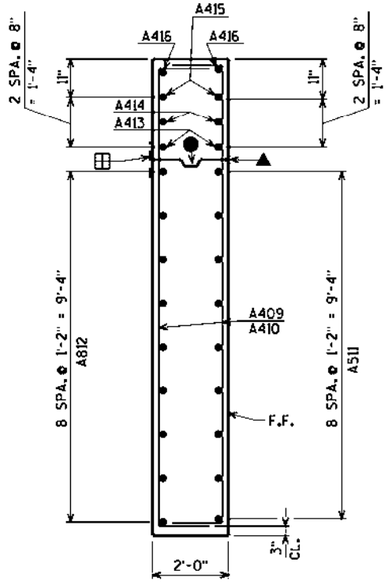
STATE PROJECT NUMBER

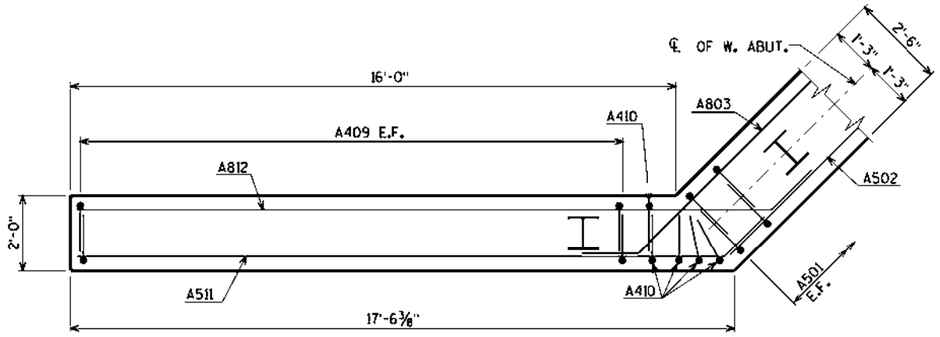
8397-00-70



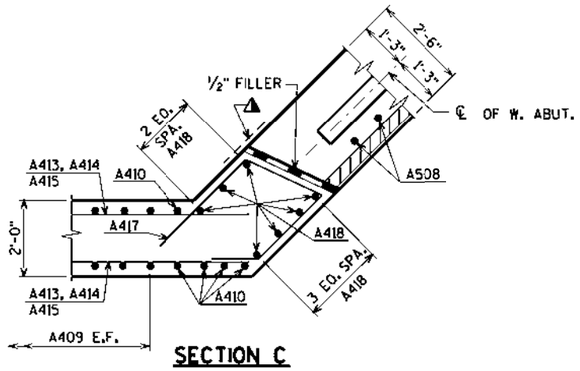
ELEVATION - WING 1



SECTION A



SECTION B



SECTION C

▲ ¾" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.

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FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-48-57

DRAWN BY CLP | PLANS CK'D. ZSS

WEST ABUTMENT WING 1 DETAILS

SHEET 6 OF 13
48

ORIGINAL PLANS PREPARED BY
AYRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

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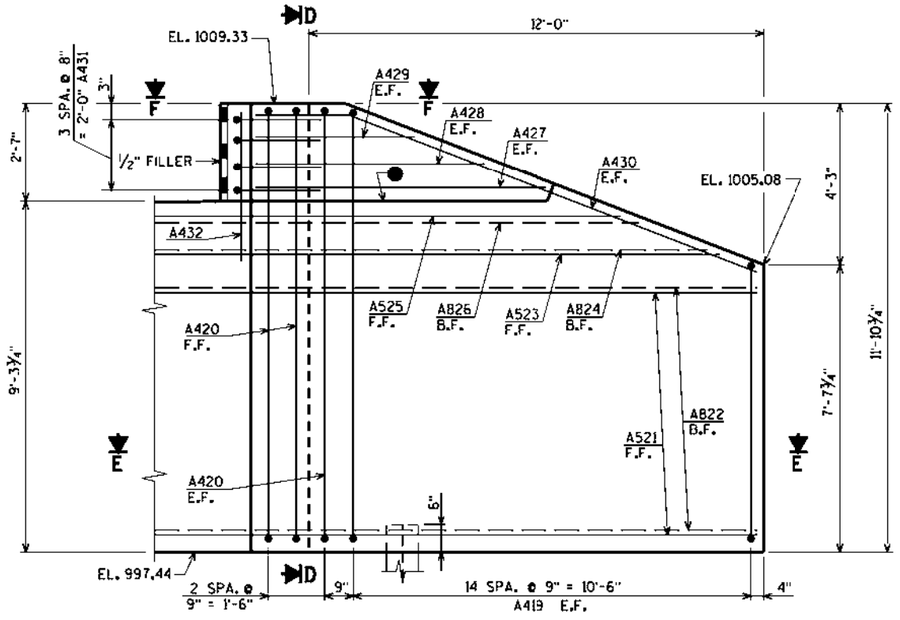
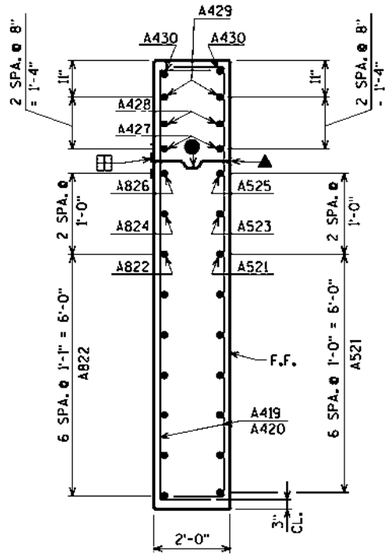
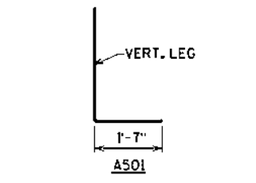
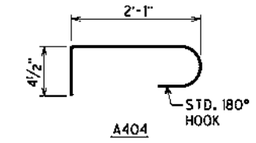


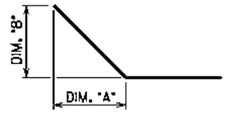
ELEVATION - WING 2



SECTION D







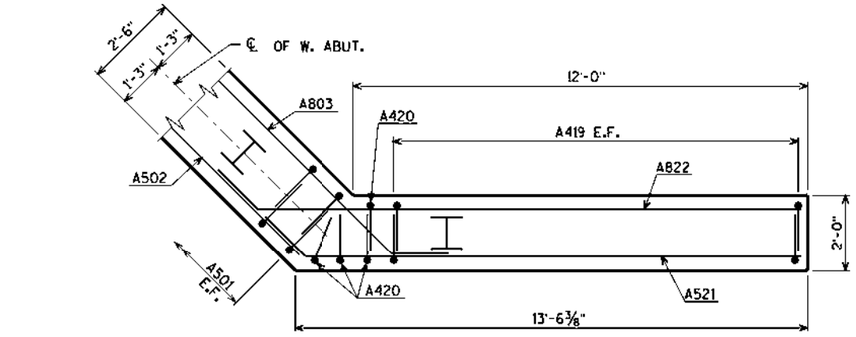
BAR NO.	DIM. "A"	DIM. "B"
A803	1'-0¾"	1'-0¾"
A511	1'-0¾"	1'-0¾"
A812	1'-0¾"	1'-0¾"
A416	15'-0"	2'-0"
A521	1'-0¾"	1'-0¾"
A822	1'-0¾"	1'-0¾"
A523	1'-0¾"	1'-0¾"
A824	1'-0¾"	1'-0¾"
A525	1'-0¾"	1'-0¾"
A826	1'-0¾"	1'-0¾"
A430	11'-0"	4'-2"

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	2.080" COATED 3.090" UNCOATED LOCATION
A501		84	10-3	X			BODY VERT. E.F.
A502		9	41-3				BODY HORIZ. F.F.
A803		18	26-9	X			BODY HORIZ. B.F.
A404		33	2-9	X			BODY TIES
A505		42	8-5	X			BODY VERT. TOP
A506		13	4-11	X			BODY VERT. TOP
A407		3	12-6				BODY HORIZ. TOP
A508	X	36	2-0				BODY DOWELS
A409	X	40	13-5	X		⊗	WING 1 VERT. E.F.
A410	X	5	14-8	X			WING 1 VERT. E.F.
A511	X	9	18-7	X			WING 1 HORIZ. F.F.
A812	X	9	20-1	X			WING 1 HORIZ. B.F.
A413	X	2	17-4				WING 1 HORIZ. E.F.
A414	X	2	13-5				WING 1 HORIZ. E.F.
A415	X	2	8-7				WING 1 HORIZ. E.F.
A416	X	2	17-0	X			WING 1 DIAG. E.F.
A417	X	4	9-5	X			WING 1 HORIZ.
A418	X	7	4-0				WING 1 VERT.
A419	X	30	11-8	X		⊗	WING 2 VERT. E.F.
A420	X	4	13-11	X			WING 2 VERT. E.F.
A521	X	7	14-9	X			WING 2 HORIZ. F.F.
A822	X	7	16-4	X			WING 2 HORIZ. B.F.
A523	X	1	13-9	X			WING 2 HORIZ. F.F.
A824	X	1	15-4	X			WING 2 HORIZ. B.F.
A525	X	1	10-11	X			WING 2 HORIZ. F.F.
A826	X	1	12-6	X			WING 2 HORIZ. B.F.
A427	X	2	7-9				WING 2 HORIZ. E.F.
A428	X	2	6-1				WING 2 HORIZ. E.F.
A429	X	2	4-4				WING 2 HORIZ. E.F.
A430	X	2	14-0	X			WING 2 DIAG. E.F.
A431	X	4	7-7	X			WING 2 HORIZ.
A432	X	5	4-0				WING 2 VERT.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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



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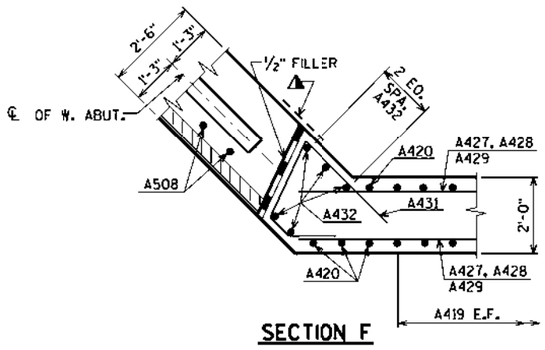

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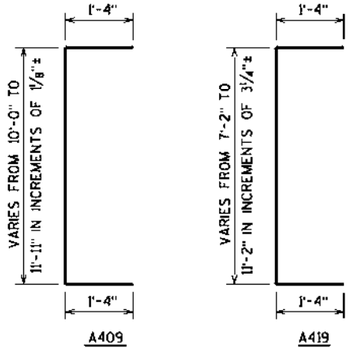

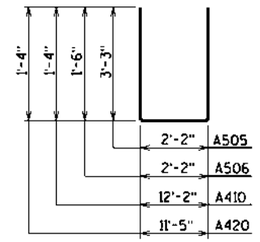

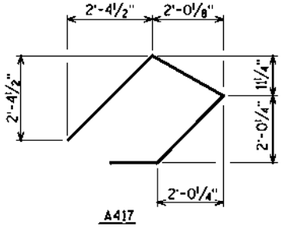

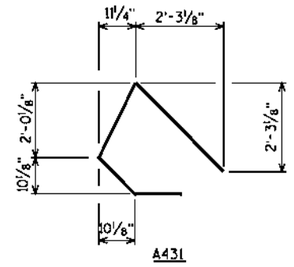

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FOR PILE SPLICE DETAIL SEE SHEET 3.

BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
A409	2 SERIES OF 20	12'-6" TO 14'-5"
A419	2 SERIES OF 15	9'-8" TO 13'-8"

BUNDLE AND TAG EACH SERIES SEPARATELY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-48-57

DRAWN BY CLP | PLANS CK'D. ZSS

WEST ABUTMENT WING 2 DETAILS & BILL OF BARS

SHEET 7 OF 13
49

ORIGINAL PLANS PREPARED BY
AYRES
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Eau Claire, WI 54701
www.AyresAssociates.com

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8

STATE PROJECT NUMBER

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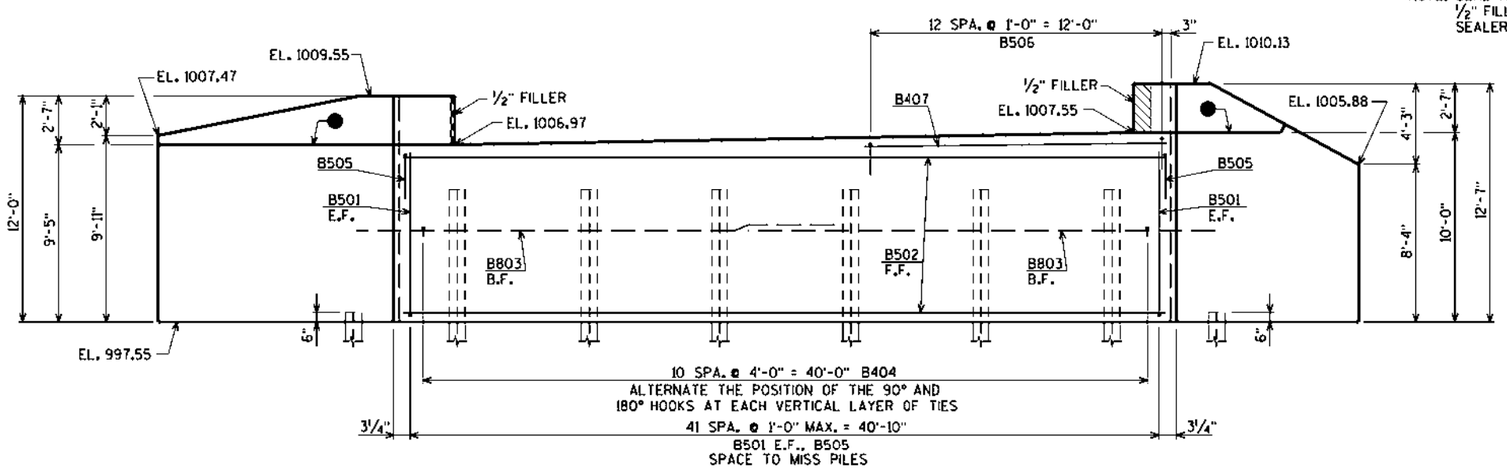
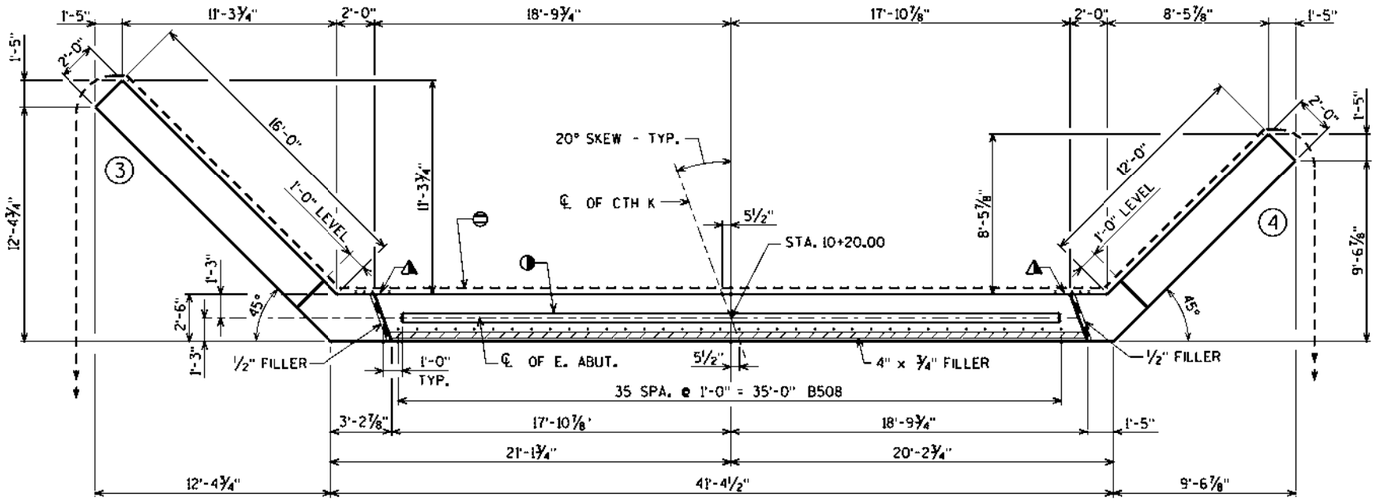
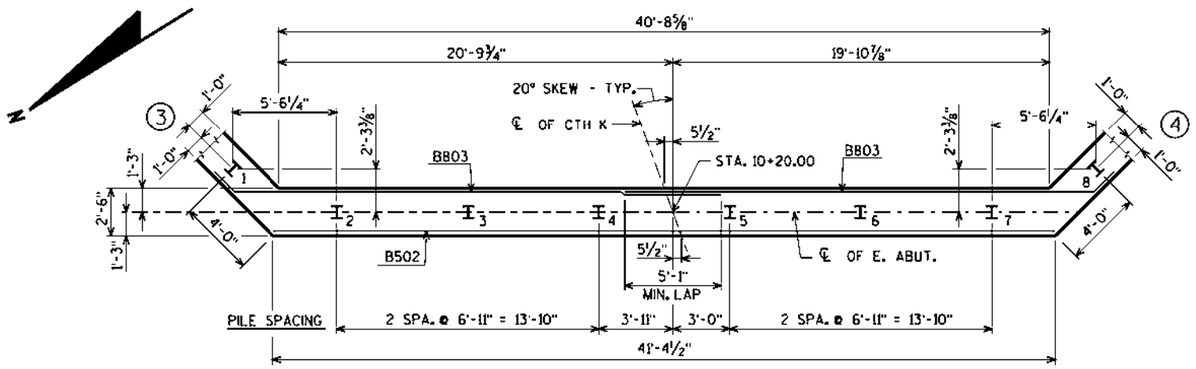
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)



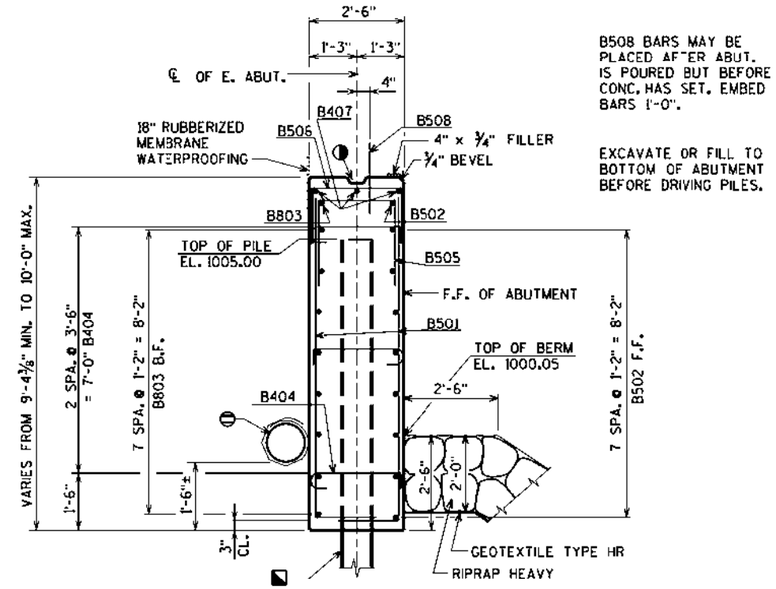
ELEVATION
(LOOKING EAST)



PLAN



PILE LAYOUT



B508 BARS MAY BE PLACED AFTER ABUT. IS POURED BUT BEFORE CONC. HAS SET. EMBED BARS 1'-0".

EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.

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FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-48-57

DRAWN BY CLP | PLANS CK'D. ZSS

EAST ABUTMENT

SHEET 8 OF 13
50

ORIGINAL PLANS PREPARED BY
AYRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8

8

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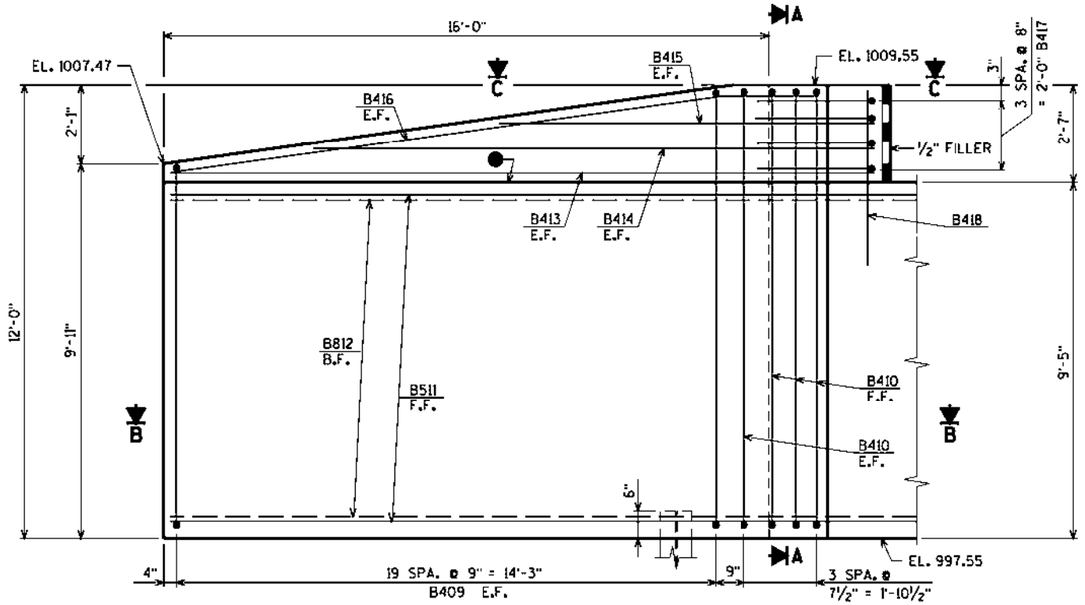
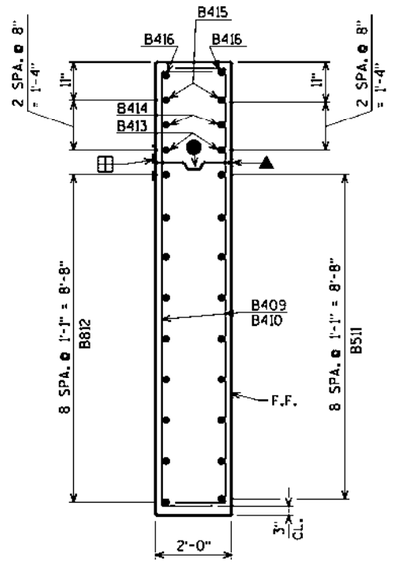
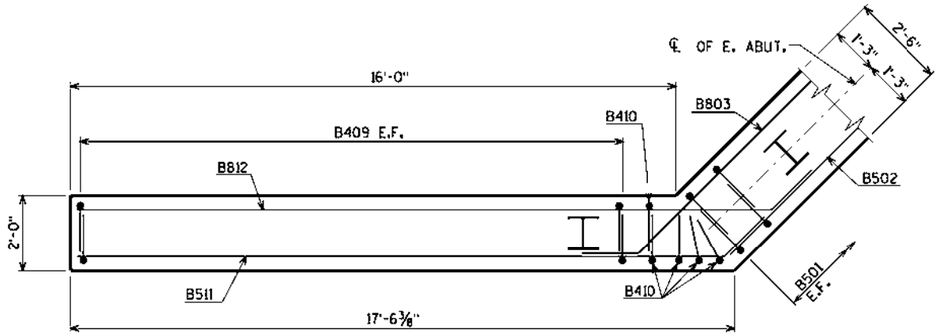


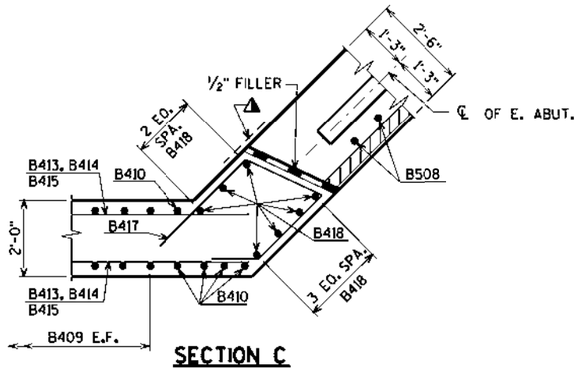
ELEVATION - WING 3



SECTION A



SECTION B



SECTION C

▲ ¾" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.

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FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-48-57

DRAWN BY CLP | PLANS CK'D. ZSS

EAST ABUTMENT WING 3 DETAILS

SHEET 9 OF 13
51

ORIGINAL PLANS PREPARED BY
AYRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

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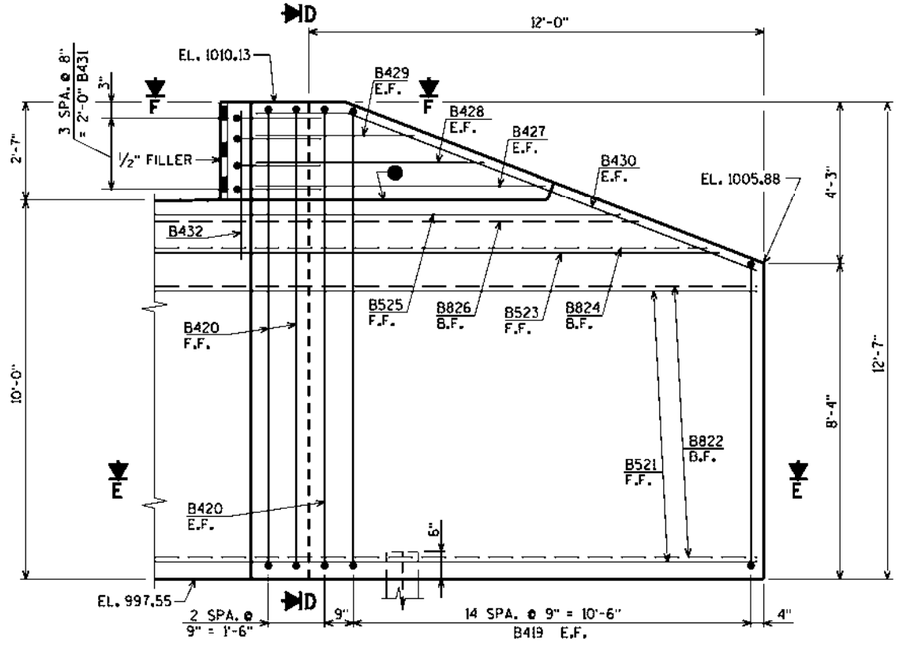
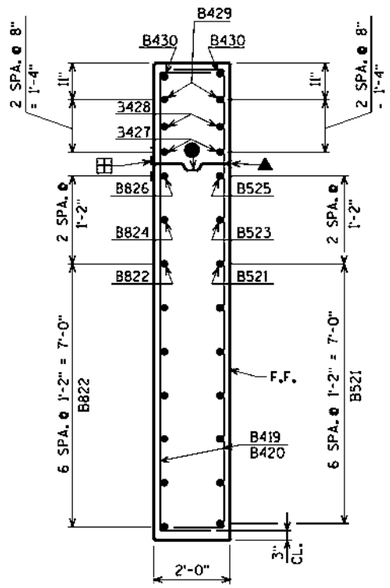
STATE PROJECT NUMBER

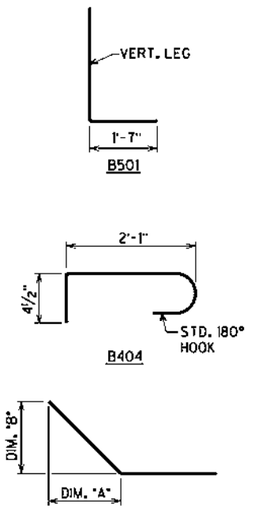
8397-00-70



ELEVATION - WING 4



SECTION D



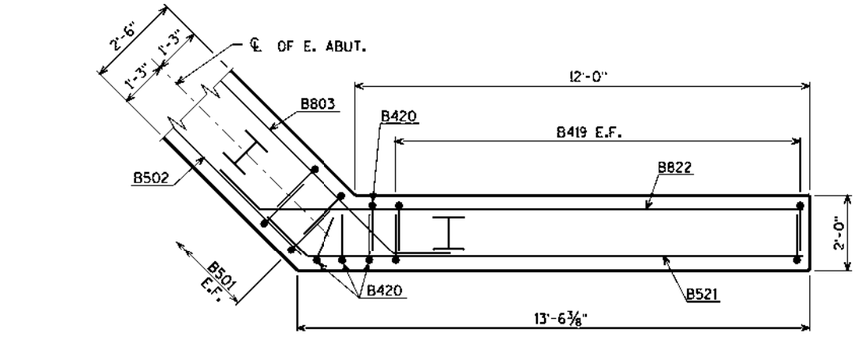
BAR NO.	DIM. "A"	DIM. "B"
B803	1'-0¾"	1'-0¾"
B511	1'-0¾"	1'-0¾"
B812	1'-0¾"	1'-0¾"
B416	15'-0"	2'-0"
B521	1'-0¾"	1'-0¾"
B822	1'-0¾"	1'-0¾"
B523	1'-0¾"	1'-0¾"
B824	1'-0¾"	1'-0¾"
B525	1'-0¾"	1'-0¾"
B826	1'-0¾"	1'-0¾"
B430	11'-0"	4'-2"

BILL OF BARS

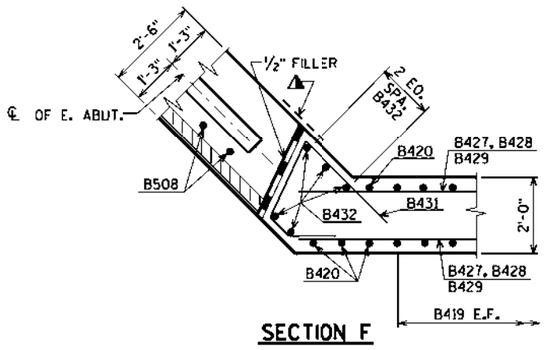
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	2.120" COATED 3.110" UNCOATED LOCATION
B501		84	10-5	X			BODY VERT. E.F.
B502		9	41-3				BODY HORIZ. F.F.
B803		18	26-9	X			BODY HORIZ. B.F.
B404		33	2-9	X			BODY TIES
B505		42	8-5	X			BODY VERT. TOP
B506		13	4-11	X			BODY VERT. TOP
B407		3	12-6				BODY HORIZ. TOP
B508	X	36	2-0				BODY DOWELS
B409	X	40	12-10	X		⊗	WING 3 VERT. E.F.
B410	X	5	14-0	X			WING 3 VERT. E.F.
B511	X	9	18-7	X			WING 3 HORIZ. F.F.
B812	X	9	20-1	X			WING 3 HORIZ. B.F.
B413	X	2	17-5				WING 3 HORIZ. E.F.
B414	X	2	13-5				WING 3 HORIZ. E.F.
B415	X	2	8-7				WING 3 HORIZ. E.F.
B416	X	2	17-0	X			WING 3 DIAG. E.F.
B417	X	4	9-5	X			WING 3 HORIZ.
B418	X	7	4-0				WING 3 VERT.
B419	X	30	12-5	X		⊗	WING 4 VERT. E.F.
B420	X	4	14-8	X			WING 4 VERT. E.F.
B521	X	7	14-9	X			WING 4 HORIZ. F.F.
B822	X	7	16-4	X			WING 4 HORIZ. B.F.
B523	X	1	13-9	X			WING 4 HORIZ. F.F.
B824	X	1	15-4	X			WING 4 HORIZ. B.F.
B525	X	1	10-11	X			WING 4 HORIZ. F.F.
B826	X	1	12-6	X			WING 4 HORIZ. B.F.
B427	X	2	7-9				WING 4 HORIZ. E.F.
B428	X	2	6-1				WING 4 HORIZ. E.F.
B429	X	2	4-4				WING 4 HORIZ. E.F.
B430	X	2	14-0	X			WING 4 DIAG. E.F.
B431	X	4	7-7	X			WING 4 HORIZ.
B432	X	5	4-0				WING 4 VERT.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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



SECTION E



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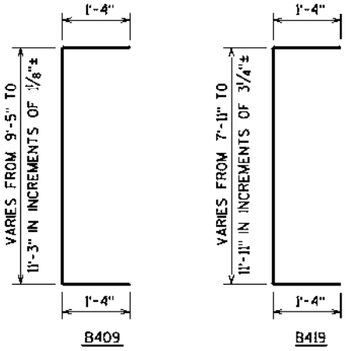

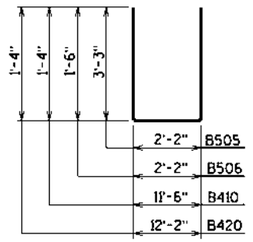

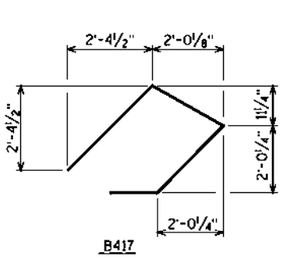

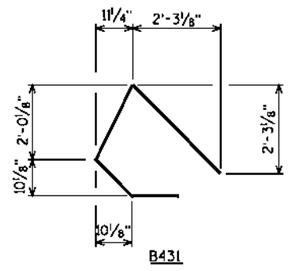

▲ ¾" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BEAM SEAT TO TOP OF WINGWALL.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JT. IS USED. (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES").

FOR PILE SPLICE DETAIL SEE SHEET 3.

BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
B409	2 SERIES OF 20	11'-11" TO 13'-9"
B419	2 SERIES OF 15	10'-5" TO 14'-5"

BUNDLE AND TAG EACH SERIES SEPARATELY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-48-57

DRAWN BY CLP | PLANS CK'D. ZSS

EAST ABUTMENT WING 4 DETAILS & BILL OF BARS

SHEET 10 OF 13
52

ORIGINAL PLANS PREPARED BY
AYRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8/18/2022
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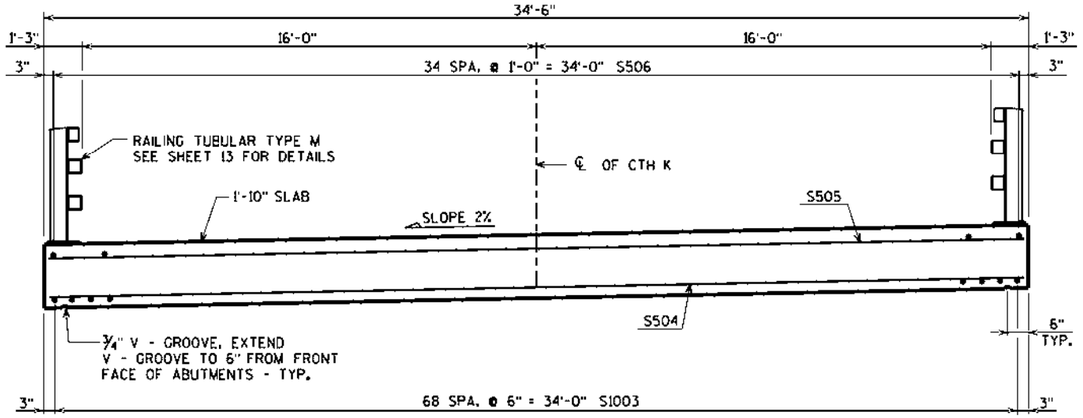


TYPICAL SECTION THRU BRIDGE

(LOOKING EAST)

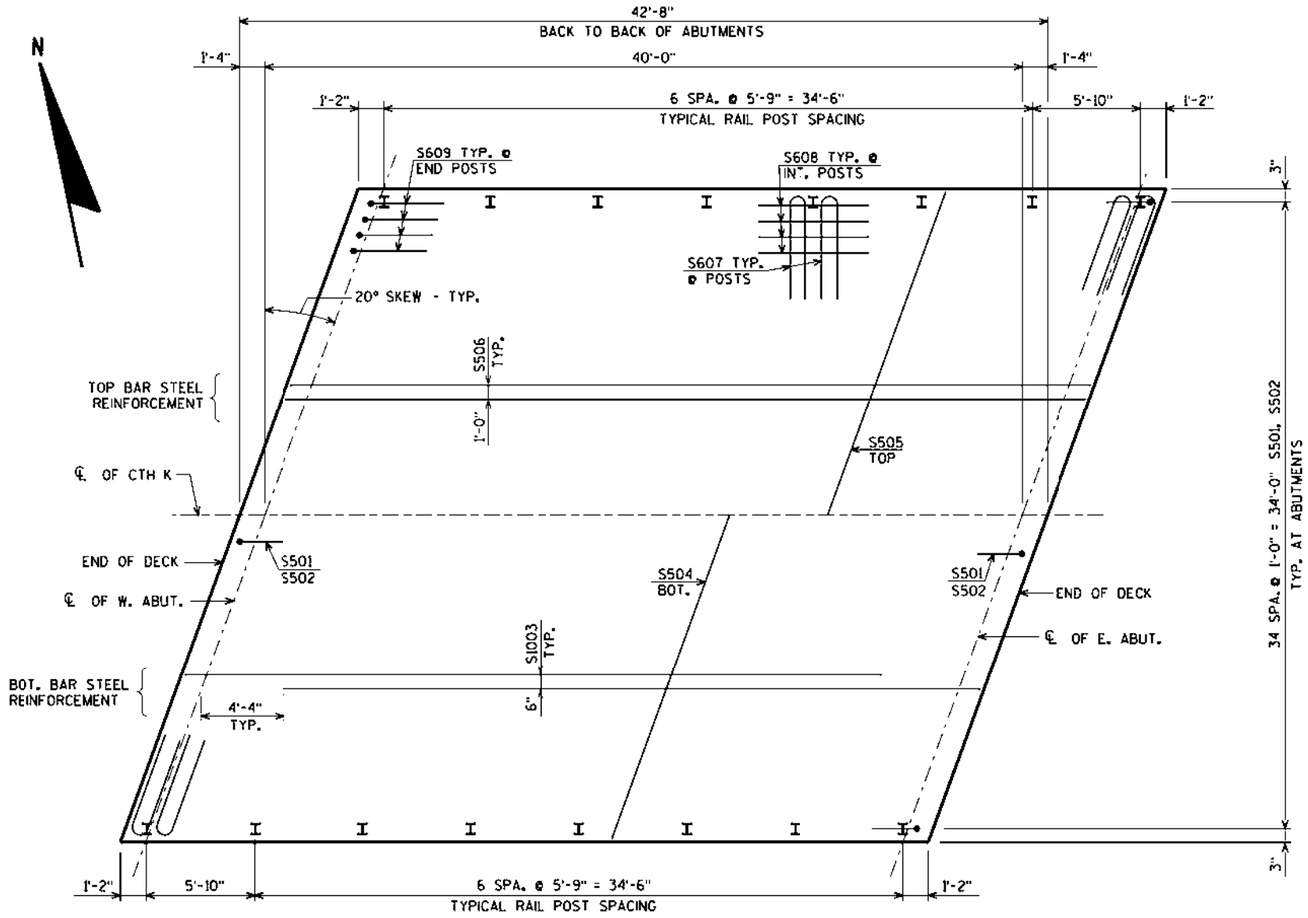
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

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

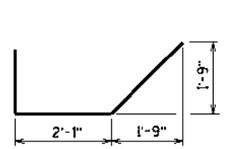
BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	18,220# COATED LOCATION
S501	X	70	6-3	X		SLAB @ ABUT.
S502	X	70	3-7	X		SLAB @ ABUT.
S1003	X	69	36-10			SLAB LONG. BOT.
S504	X	60	36-4			SLAB TRANS. BOT.
S505	X	43	36-4			SLAB TRANS. TOP
S506	X	35	42-3			SLAB LONG. TOP
S607	X	32	12-0	X		SLAB @ RAIL POSTS
S608	X	48	6-0			SLAB @ INT. RAIL POSTS
S609	X	16	4-8	X		SLAB @ END RAIL POSTS

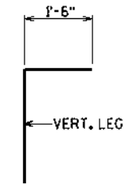
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



PLAN



S501



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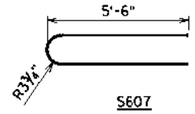

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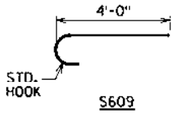

S609

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-48-57

DRAWN BY CLP | PLANS CK'D. ZSS

SUPERSTRUCTURE

SHEET 11 OF 13
53

ORIGINAL PLANS PREPARED BY
AYRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

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8/29/2022
PENTABLE:BRequ_std_util.tbl

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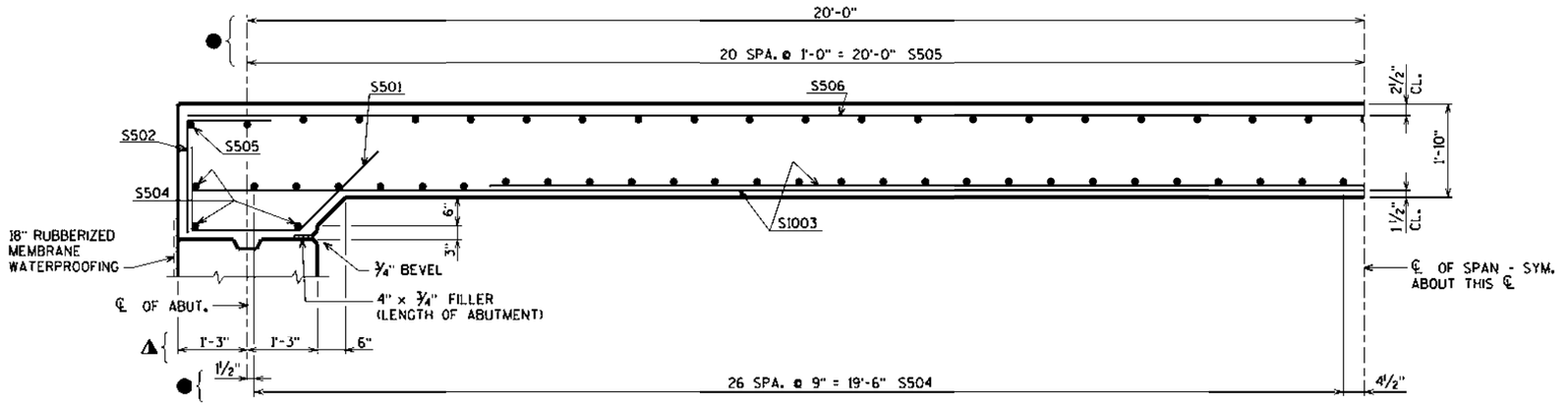
STATE PROJECT NUMBER

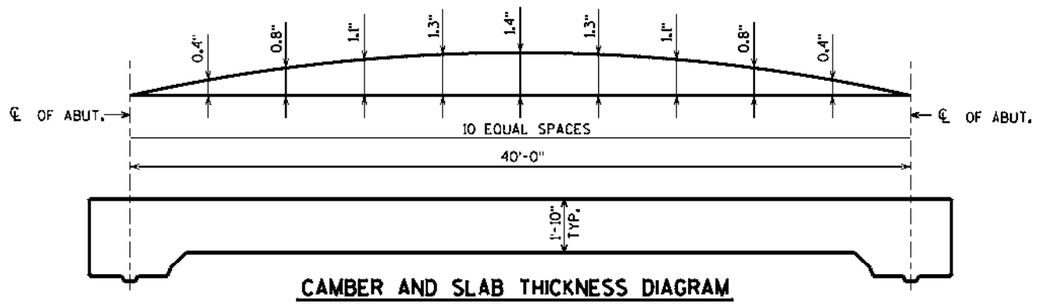
8397-00-70



PART LONGITUDINAL SECTION

△ DIMENSIONS MEASURED NORMAL TO ℄ OF SUBSTRUCTURE.

● DIMENSIONS MEASURED ALONG ℄ OF ROAD.



CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTION.

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

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE, FOLLOW THIS PROCEDURE:

TOP OF SLAB ELEVATION AT FINAL GRADE
MINUS..... SLAB THICKNESS
PLUS..... CAMBER
PLUS..... FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
EQUALS = TOP OF SLAB FLASEWORK ELEVATION

TOP OF DECK ELEVATIONS

LOCATION	℄ OF W. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ OF E. ABUT.
N. EDGE OF SLAB	1009.33	1009.34	1009.35	1009.36	1009.38	1009.40	1009.42	1009.45	1009.48	1009.51	1009.55
℄ OF STRUCTURE	1009.67	1009.67	1009.68	1009.69	1009.70	1009.71	1009.73	1009.75	1009.78	1009.80	1009.84
S. EDGE OF SLAB	1010.02	1010.02	1010.02	1010.02	1010.03	1010.04	1010.05	1010.07	1010.08	1010.11	1010.13

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

SURVEY TOP OF SLAB ELEVATIONS

LOCATION	℄ OF W. ABUT.	5/10 PTS.	℄ OF E. ABUT.
N. EDGE OF SLAB			
℄ OF STRUCTURE			
S. EDGE OF SLAB			

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF DECK ELEVATIONS AT THE ℄ OF ABUTMENTS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR ℄. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-48-57

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SUPERSTRUCTURE DETAILS

SHEET 12 OF 13
54

ORIGINAL PLANS PREPARED BY
AYRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

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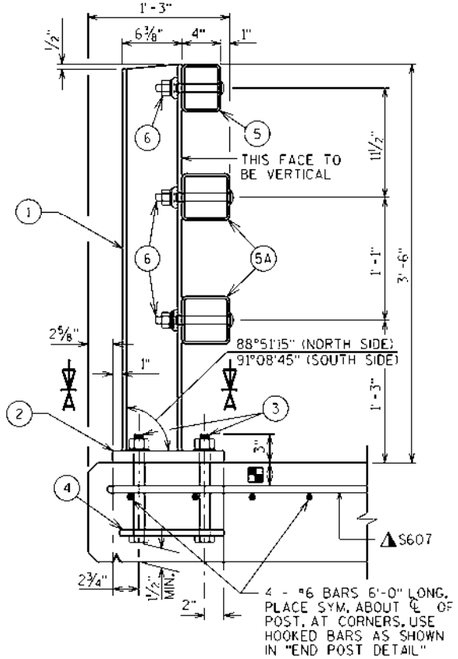
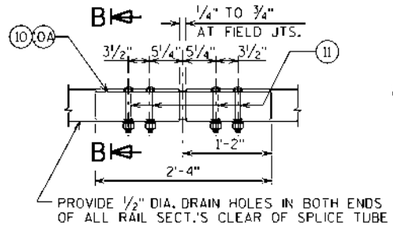
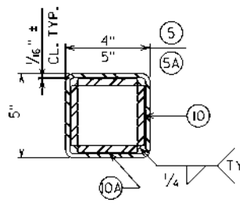


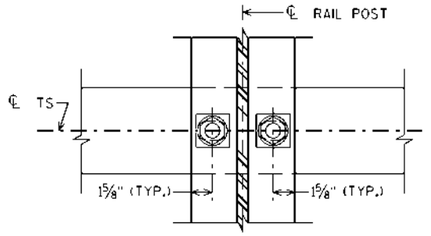
SECTION THRU RAILING ON SLAB



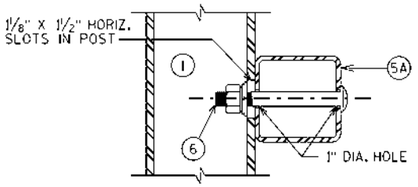
FIELD ERECTION JOINT DETAIL



SECTION B-B

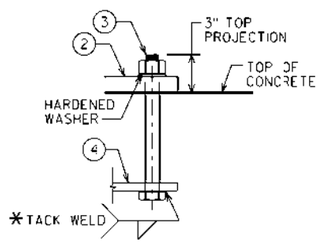


SECTION THRU POST WEB



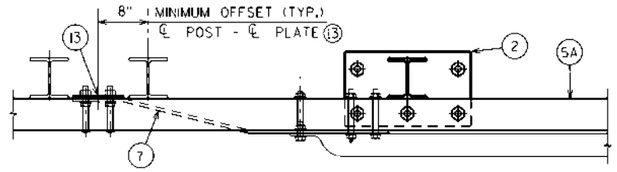
SECTION THRU RAIL

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



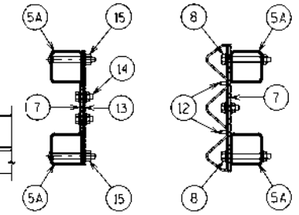
ANCHOR BOLTS

TYPICAL RAIL TO POST CONNECTIONS



TOP VIEW AT END POST

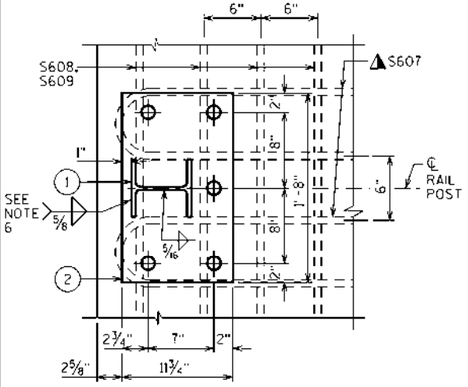
THRIE BEAM RAIL ATTACHMENT



SECTION C-C SECTION D-D

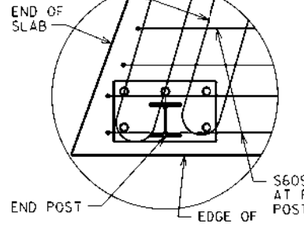
LEGEND

1. W6 x 25 WITH 1⅛" X 1½" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
2. PLATE 1¼" x 11¾" x 1'-8" WITH 1 7/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
3. ASTM A449 - 1⅛" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED), 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. ~~USE 1'-9" LONG IN ABUTMENT WINGS.~~ AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. ~~USE 10½" LONG AT ALL OTHER LOCATIONS.~~ (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTABILITY.)
4. ⅝" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3
5. TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
5A. TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
6. ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1⅝" X 1⅝" MIN. WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
7. ½" THK. BACK-UP PLATE WITH 2 - ⅞" X 1½" THREADED SHOP WELDED STUDS (NO. 12), BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
8. 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
9. SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".
10. ⅜" X 3⅝" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
10A. ⅜" X 2⅝" X 2'-4" PLATE USED IN NO. 5, ⅜" X 3⅝" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
11. ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16" X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS ~~AND 15/16" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS~~ IN PLATE NO. 10A.
12. ⅞" DIA. X 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D.
13. ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
14. ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
15. 1" DIA. HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.



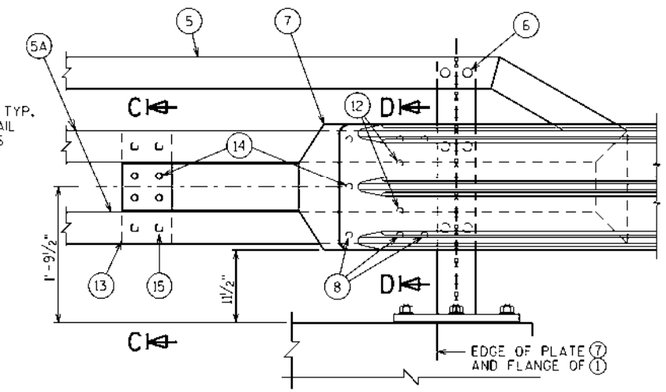
SECTION A-A

■ PLACE BELOW TOP MAT SLAB REINFORCEMENT



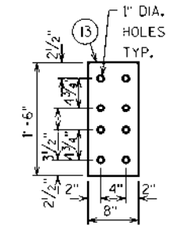
END POST DETAIL

REINFORCEMENT AT CORNERS



DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT

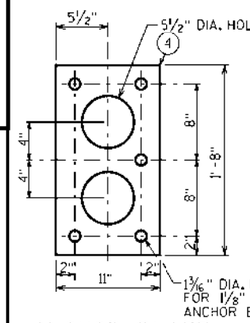


ANCHOR PLATE

AT BEAM GUARD ATTACHMENT

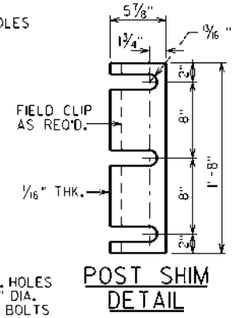
GENERAL NOTES

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

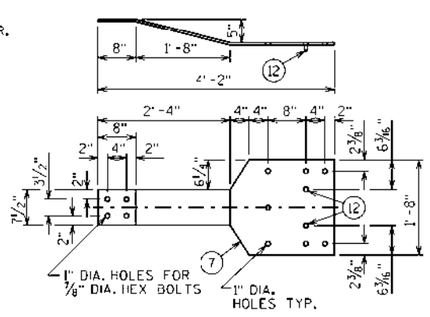


ANCHOR PLATE

AT RAIL TO DECK CONNECTION

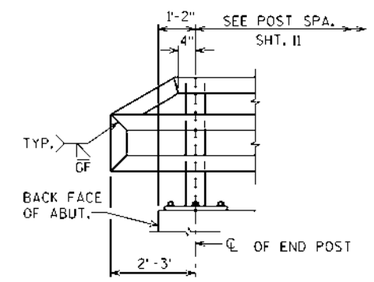


POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

▲ TIE TO TOP MAT OF STEEL.

✱ ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.

◥ ¼" TO ¾" OPENING AT A1 ABUTMENTS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-48-57

DRAWN BY CLP | PLANS CK'D. ZSS

TUBULAR STEEL RAILING TYPE 'M'

SHEET 13 OF 13
55

ORIGINAL PLANS PREPARED BY
AYRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

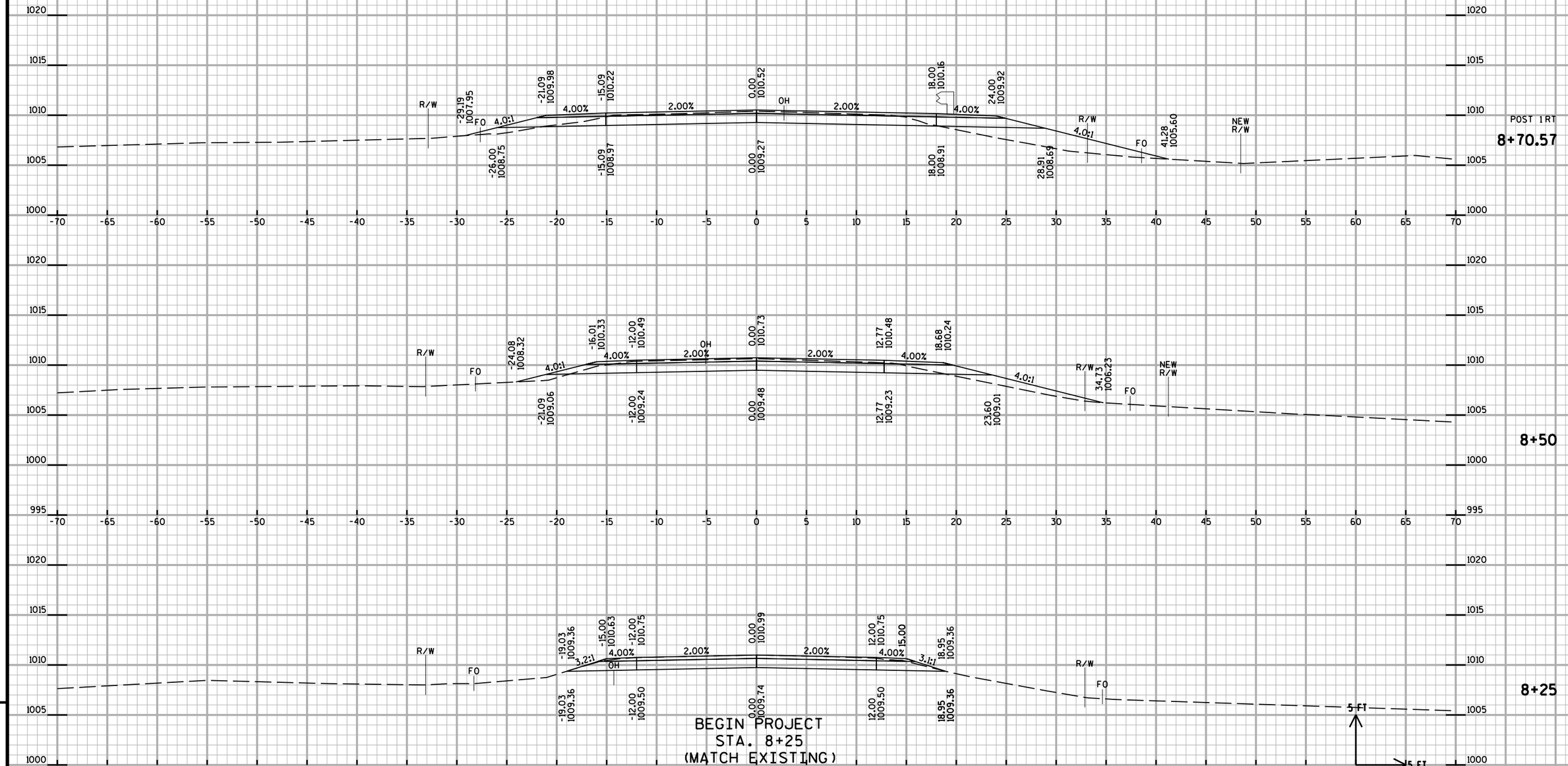
8

8

CTH K COMPUTER EARTHWORK

Station	Distance	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
		Cut	Fill	Cut	Fill	Cut	Expanded Fill	
						1.00	1.30	
				Note 1	Note 2	Note 1		Note 3
8+25	--	40.3	0.0					
8+50	25	35.9	9.7	35	4	35	6	29
8+70.57	21	35.2	25.7	27	13	62	23	39
8+75	4	34.7	26.2	6	4	68	29	39
8+82.22	7	34.6	23.7	9	7	77	38	40
8+95.57	13	35.1	12.4	17	9	95	49	45
9+00	4	35.2	10.5	6	2	100	52	49
9+07.22	7	33.9	14.0	9	3	110	56	54
9+20.57	13	32.8	10.6	16	6	126	64	62
9+25	4	32.5	10.2	5	2	131	66	66
9+32.22	7	31.8	10.0	9	3	140	69	71
9+50	18	29.3	25.2	20	12	160	84	76
9+75	25	27.3	21.7	26	22	186	113	74
9+78.67	4	27.3	21.7	4	3	190	116	74
BRIDGE	--	--	--	--	--	--	--	--
10+21.33	--	16.9	62.0	--	--	--	--	--
10+25	4	16.9	62.0	2	8	192	127	65
10+50	25	18.1	106.5	16	78	209	229	-20
10+75	25	50.2	73.2	32	83	240	337	-97
10+79.43	4	43.3	66.2	8	11	248	352	-104
11+00	21	26.5	50.1	27	44	274	409	-135
11+05.22	5	26.9	33.5	5	8	280	420	-140
11+25	20	34.8	3.4	23	14	302	438	-135
11+32.01	7	38.9	1.9	10	1	312	438	-127
11+50	18	43.4	0.0	27	1	339	439	-100
11+75	25	51.1	0.0	44	0	383	439	-56
12+00	25	53.6	0.0	48	0	431	439	-8
				431	338			

STA. 8+25 TO 8+70.57

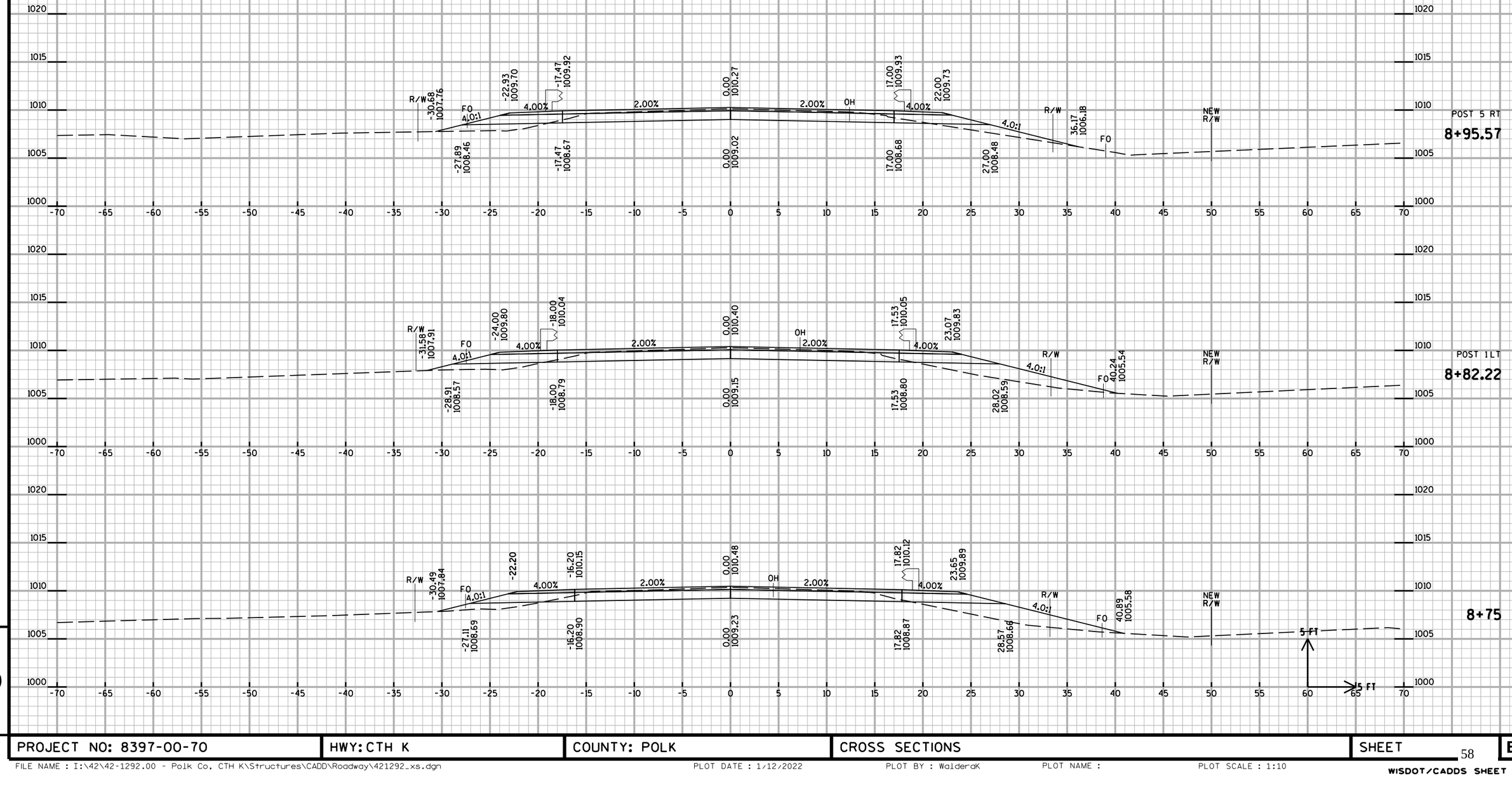


PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK	CROSS SECTIONS	SHEET 57	E

FILE NAME : I:\42\42-1292.00 - Polk Co, CTH K\Structures\CADD\Roadway\421292_xs.dgn PLOT DATE : 1/12/2022 PLOT BY : WalderaK PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 8+75 TO 8+95.57



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PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK	CROSS SECTIONS	SHEET	E

9

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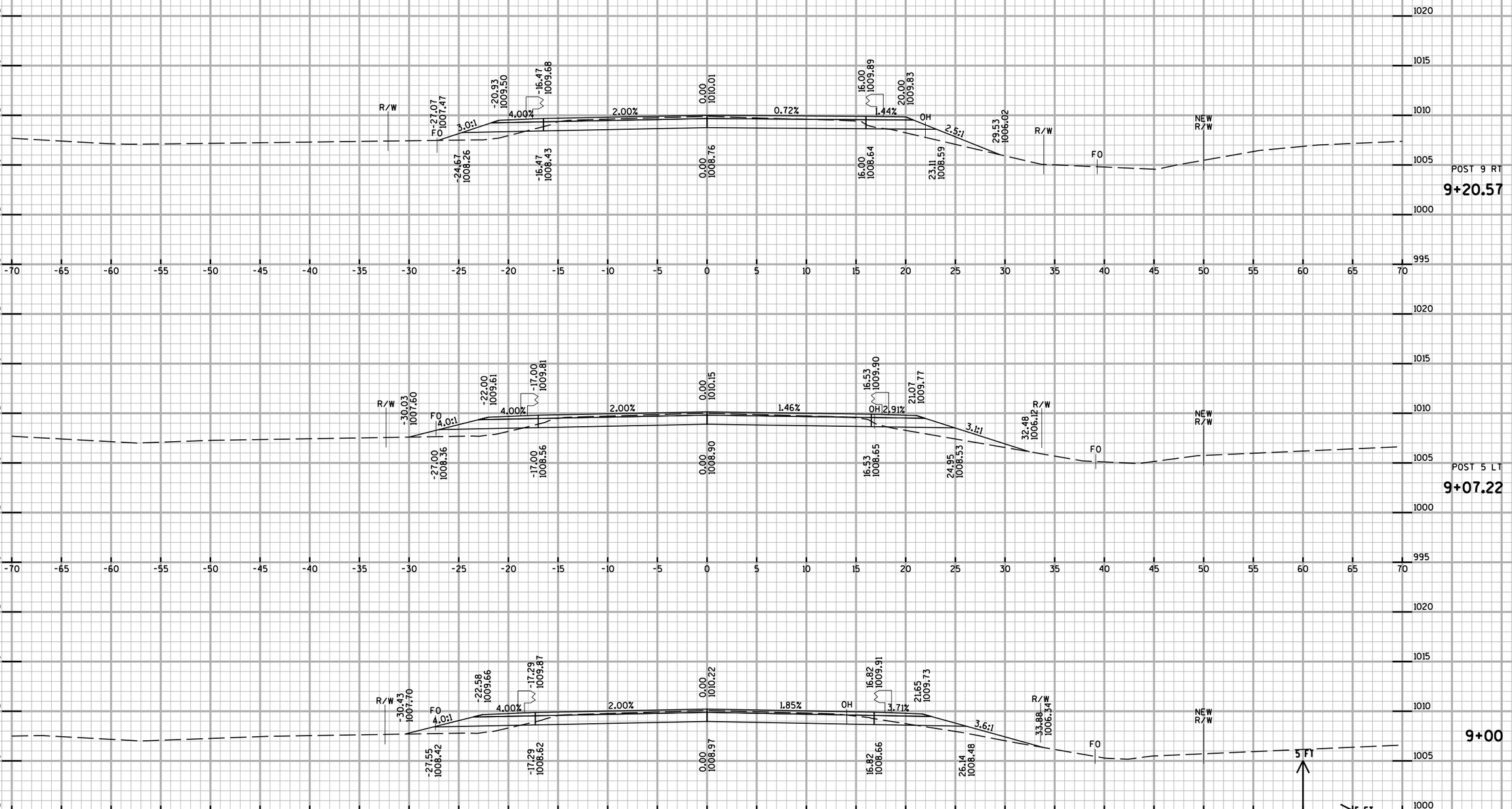
WISDOT/CADDS SHEET 21

STA. 9+00 TO 9+20.57



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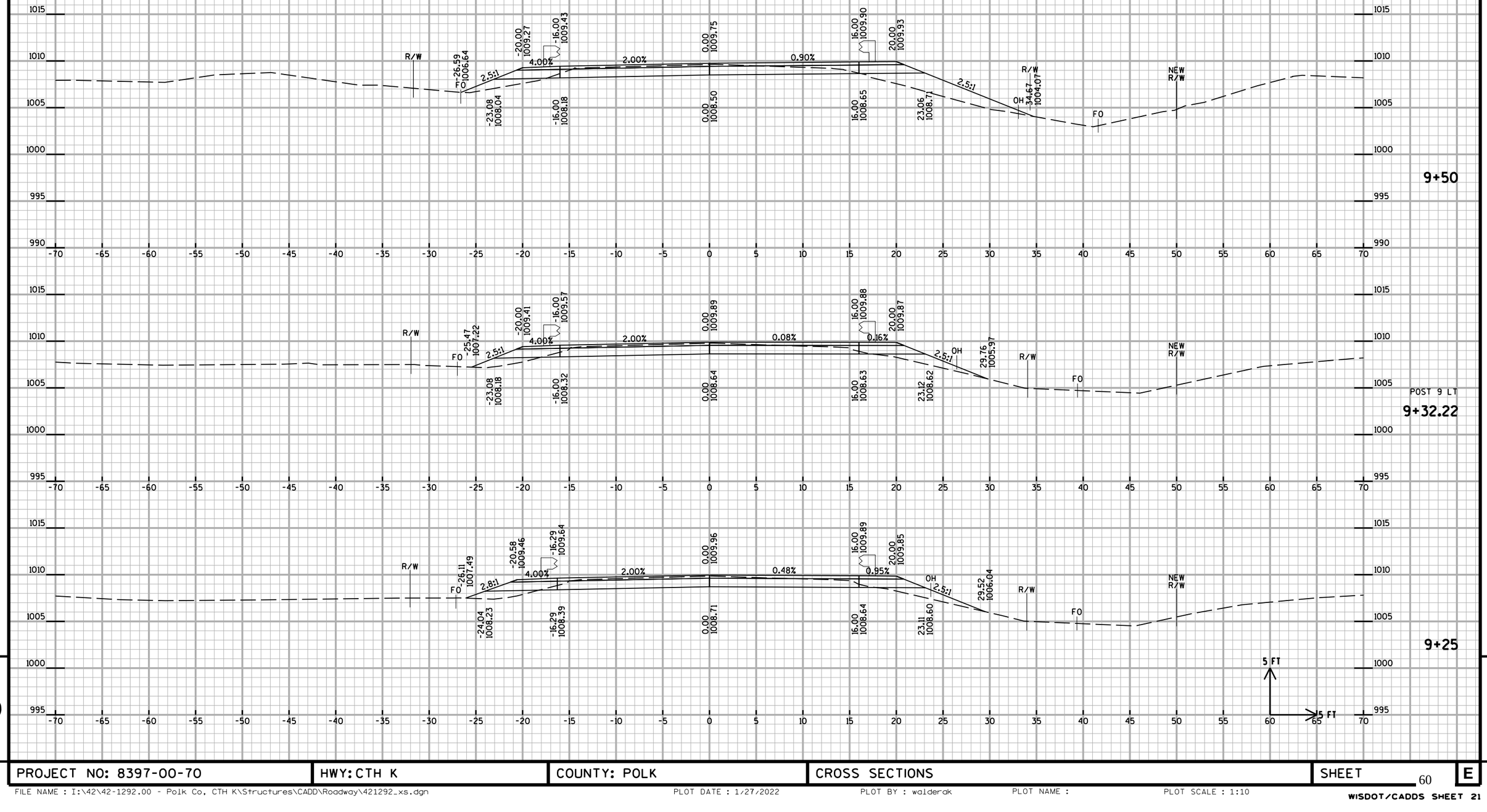
WISDOT/CADDS SHEET 21

STA. 9+25 TO 9+50



PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK	CROSS SECTIONS	SHEET 60	E

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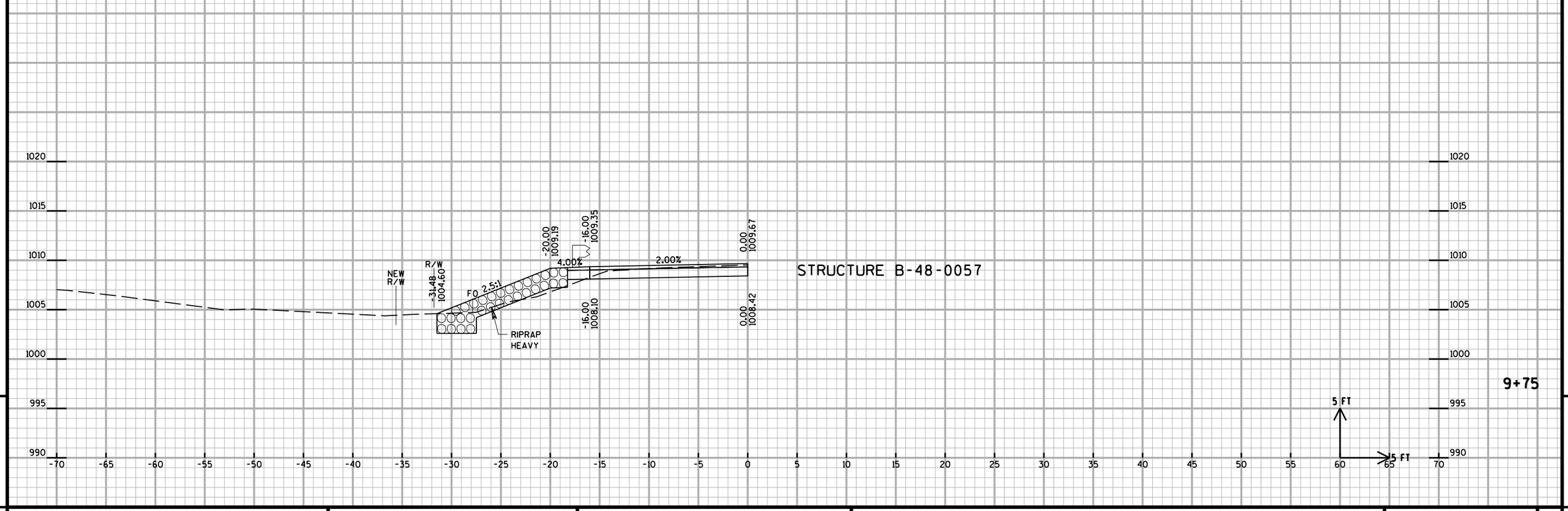
WISDOT/CADDS SHEET 21

STA. 9+75 TO 9+75

STRUCTURE B-48-0057



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PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK	CROSS SECTIONS	SHEET	E

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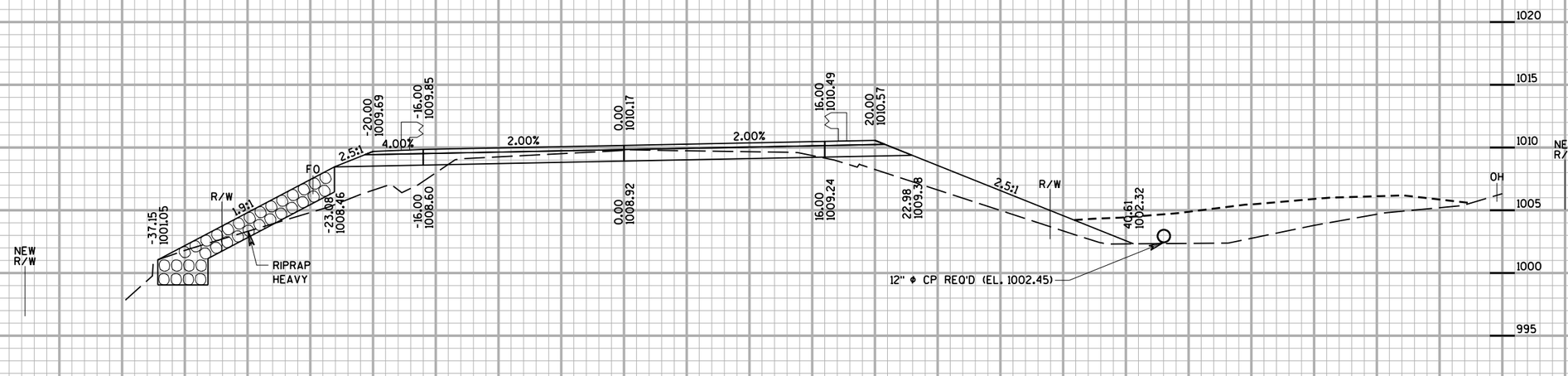
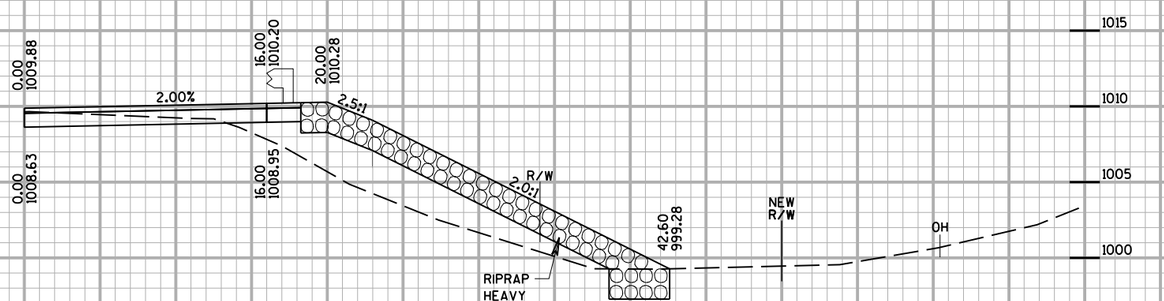
WISDOT/CADDS SHEET 21

STA. 10+25 TO 10+50



STRUCTURE B-48-0057



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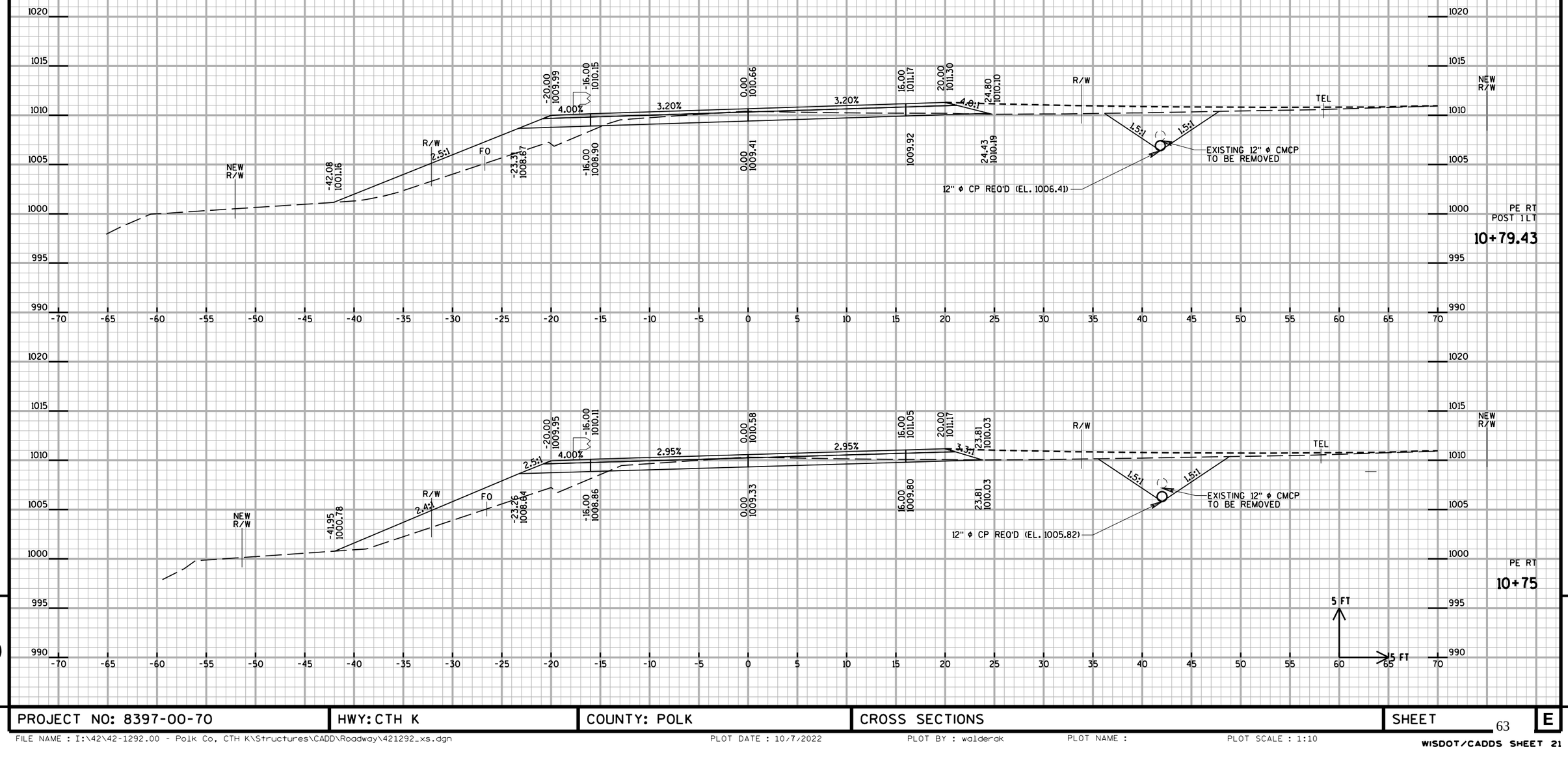
WISDOT/CADDS SHEET 21

STA. 10+75 TO 10+79.43



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PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK	CROSS SECTIONS	SHEET	E

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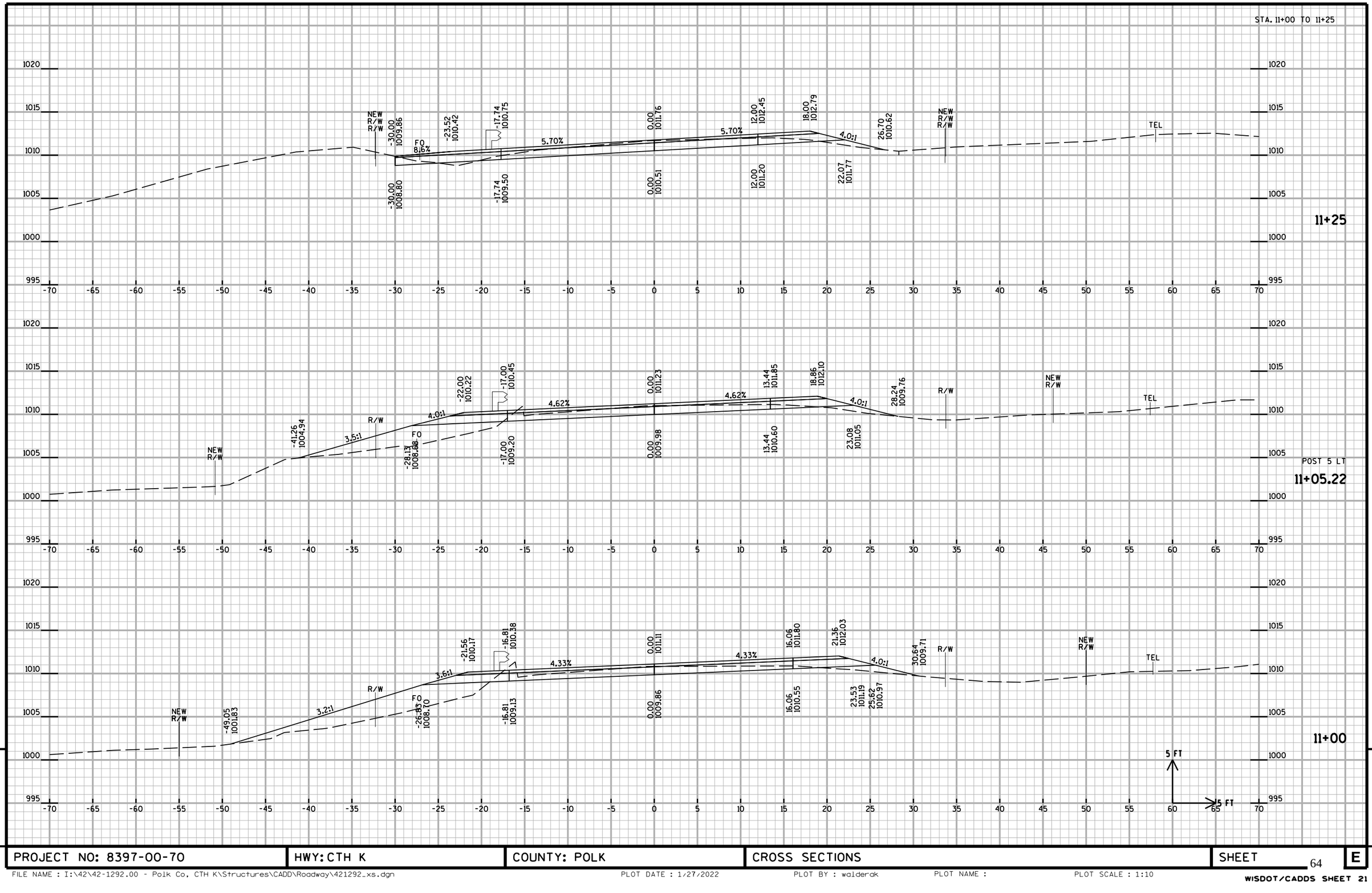
WISDOT/CADDS SHEET 21

STA. 11+00 TO 11+25



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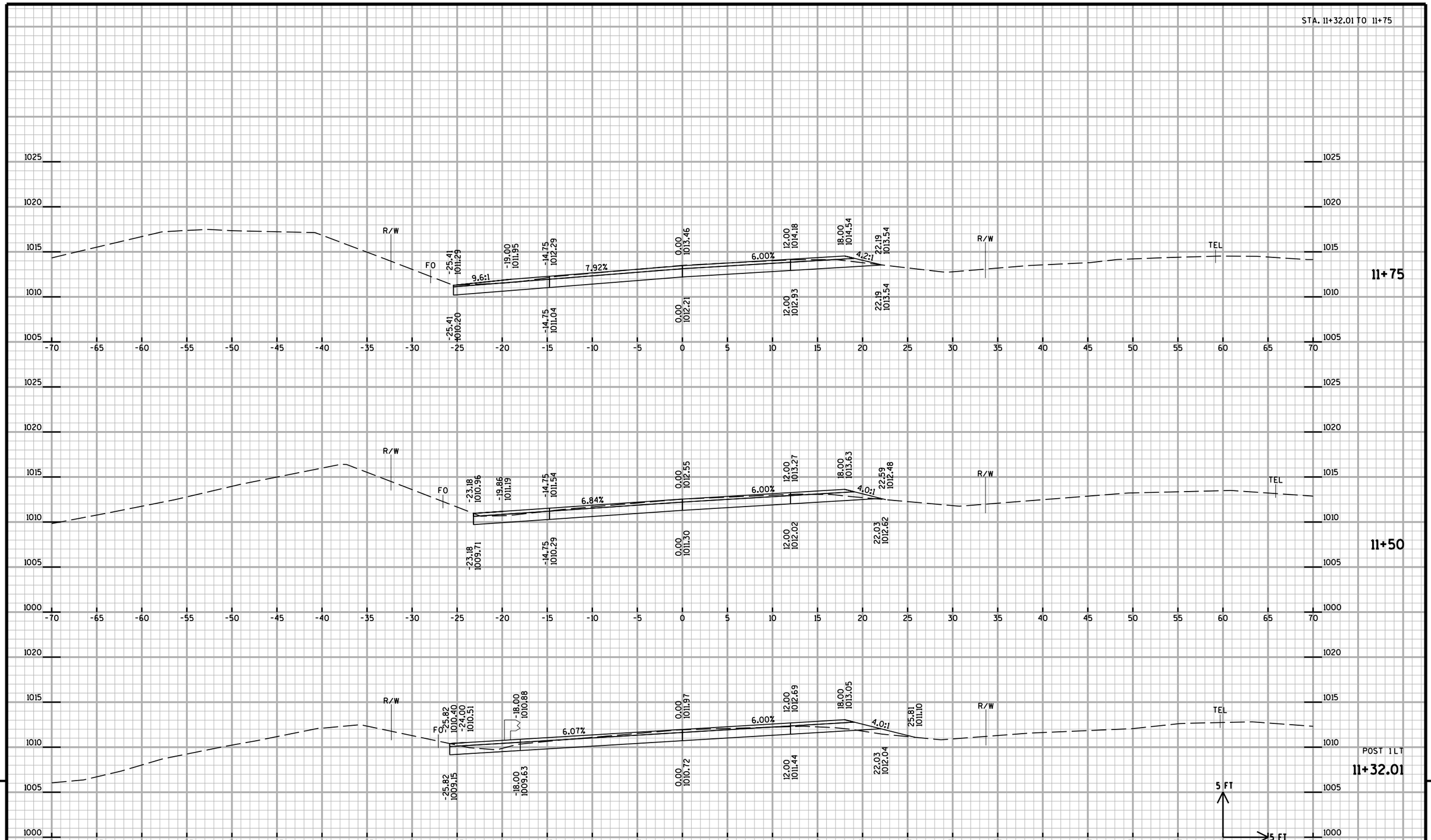
WISDOT/CADDS SHEET 21

STA. 11+32.01 TO 11+75



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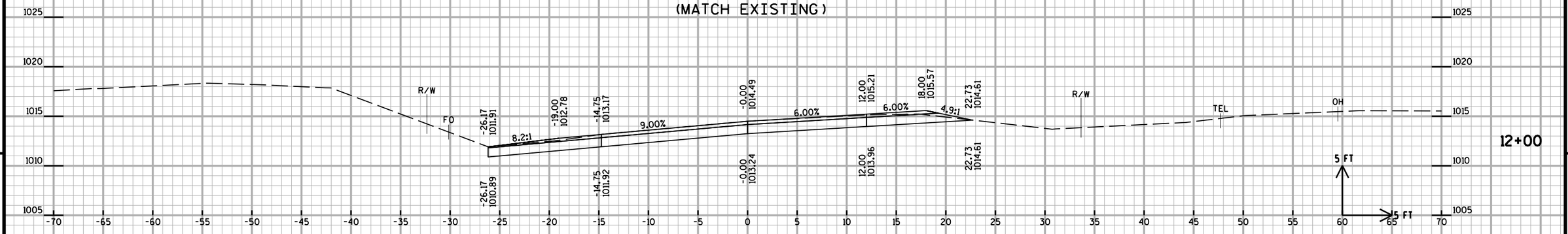
PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1292.00 - Polk Co, CTH K\Structures\CADD\Roadway\421292_xs.dgn PLOT DATE : 1/27/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 12+00 TO 12+00

END PROJECT
STA. 12+00
(MATCH EXISTING)



PROJECT NO: 8397-00-70	HWY: CTH K	COUNTY: POLK	CROSS SECTIONS	SHEET	E

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WISDOT/CADDS SHEET 21

Notes

Wisconsin Department of Transportation

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