DECEMBER 2018 FEDERAL PROJECT STATE PROJECT STATE OF WISCONSIN ORDER OF SHEETS **PROJECT** CONTRACT WISC 2019024 8949-04-78 Section No. 1 DEPARTMENT OF TRANSPORTATION Section No. 2 Typical Sections and Details Estimate of Quantities Miscellaneous Quantitles ē PLAN OF PROPOSED IMPROVEMENT Section No. 5 Plan and Profile Section No. 6 Standard Detail Drawings 00 Section No. 7 **BALDWIN - MENOMONIE** 0 Section No. 8 Structure Plans Section No. 9 Computer Earthwork Data DRY RUN BRIDGE B-55-0287 0 Section No. 9 Cross Sections **USH 12** 04-TOTAL SHEETS = 156 ST. CROIX COUNTY ∞ PROJECT LOCATION STATE PROJECT NUMBER 8949-04-78 **BEGIN SECTION 3** STA 300+25 **BEGIN SECTION 2** END PROJECT END SECTION 3 **BEGIN PROJECT** STA 432+00 END SECTION 2 STA 93+78 STA 306+00 STA 22+00 R15W R16W Y = 339880.597 ORIGINAL PLANS PREPARED BY Baldwin AVF DESIGN DESIGNATION Hersey SECTIONS 1 & 2 SECTION 3 **CONSULTING ENGINEERS** = 3400 _ 2000 A.A.D.T. 2019 BEGIN SECTION = 4400 _ 2650 A.A.D.T. 2039 Buen Janvis 300 70TH AVE D.H.V. = 500 STRUCTURE B-55-0287 = 60/40 - 60/40 UP D.D. = 13.6% _____ 13.6% 65TH AVE **END SECTION 1** = 60 ___ 60 DESIGN SPEED = 910,000 ---- 910,000 STA 56+75 ROSE LN **ESALS** *Woodvill Ryan Jarvis 45349 Enu Claire 60TH AVE _{60TH} 36 CONVENTIONAL SYMBOLS 31 6 PROFILE T29N 55TH AVE BB CORPORATE LIMITS 1////// GRADE LINE T28N ORIGINAL GROUND PROPERTY LINE ROCK_ MARSH OR ROCK PROFILE LOT LINE (To be noted as such) __LABEL LIMITED HIGHWAY EASEMENT SPECIAL DITCH EXISTING RIGHT OF WAY STATE OF WISCONSIN GRADE ELEVATION PROPOSED OR NEW R/W LINE DEPARTMENT OF TRANSPORTATION 222ND CULVERT (Profile View) SLOPE INTERCEPT 45TH AVE 50TH AVE PREPARED BY 2257 B UTILITIES REFERENCE LINE FAA, INC. **ELECTRIC** FAA, INC. EXISTING CULVERT FIBER OPTIC MATT PFEIFER PROPOSED CULVERT GAS JENNIFER OLDENBURG (Box or Pipe) SANITARY SEWER COMBUSTIBLE FLUIDS LAYOUT STORM SEWER TELEPHONE SCALE APPROVED FOR THE DEPARTMENT WATER MARSH AREA HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, ST. CROIX COUNTY, NADB3 (YEAR), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID UTILITY PEDESTAL TOTAL NET LENGTH OF CENTERLINE = 0.351 MI POWER POLE 4 DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. WOODED OR SHRUB AREA TELEPHONE POLE E FILE NAME : F:\PROJECTS\2014-114\0006\DRAWINGS\89490408\SHEETSPLAN\010101_TI.DWG LAYOUT NAME - 010101_TI PLOT DATE : 4/26/2018 10:14 AM PLOT BY : RYAN JARVIS PLOT NAME : WISDOT/CADDS SHEET 10 NO TREES OR SHRUBS SHALL BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE BEEN DESIGNATED FOR REMOVAL BY THE ENGINEER.

DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE FINISHED WITH SALVAGED TOPSOIL, FERTILIZER, SEED AND MULCH OR EROSION MAT AS DIRECTED BY THE ENGINEER.

ALL PRIVATE DRIVEWAYS AND COMMERCIAL ENTRANCES SHALL BE RESTORED IN KIND, LIMITS TO BE DETERMINED BY THE ENGINEER.

PAVING LIMITS ARE TO BE DETERMINED BY THE ENGINEER.

LOCATION OF UNDERGROUND UTILITIES AS SHOWN ON THE PLAN ARE APPROXIMATE, THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

ALL RADII ARE MEASURED TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED ON THE PLAN.

CURVE DATA IS BASED ON THE ARC DEFINITION.

PRIOR TO THE PLACEMENT OF MGS GUARDRAIL, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.

THE EROSION CONTROL FEATURES AS SHOWN ON THE PLAN DETAILS ARE AT SUGGESTED LOCATIONS, THEIR EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

WETLANDS MAY EXIST IN LOCATIONS THAT ARE NOT SHOWN IN THE PLANS. DO NOT STAGE IN OR DISTURB WETLANDS AREAS.

WHEN THE QUANTITY OF BASE AGGREGATE OR ASPHALTIC SURFACE 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

6-INCH ASPHALTIC SURFACE SHALL CONSIST OF A 4-INCH LOWER LAYER AND A 2-INCH UPPER LAYER.

STANDARD ABBREVIATIONS

A.A.D.T. B.A.D. ANNUAL AVERAGE DAILY TRAFFIC BASE AGGREGATE DENSE C/L CPRC CENTERLINE CULVERT PIPE REINFORCED CONCRETE CMCP CY D.D. CORRUGATED METAL CULVERT PIPE DAILY DIRECTIONAL SPLIT (TRAFFIC VOLUME)
DAILY HOURLY TRAFFIC
ENERGY ABSORBING TERMINAL D.H.V. EAT EB EL. ESALS **EASTBOUND ELEVATION** EQUIVALENT SINGLE AXLE LOADS F0 FIBER OPTIC INV LB POUND LINEAR FEET LF OR L.F. LT. MAX. LEFT MAXIMUM MINIMUM NORTHBOUND NO PASSING ZONE OVERHEAD

MIN. NB NPZ OH P.E. PRIVATE ENTRANCE REQ'D REQUIRED R/L OR RL REFERENCE LINE RT. R/W RIGHT RIGHT OF WAY SB S.D.D. SOUTHBOUND

STANDARD DETAIL DRAWING

STA. SF STH STATION SQUARE FOOT STATE HIGHWAY SY SQUARE YARD

T. T.L.E. TYP. VAR. PERCENT OF TRUCK TRAFFIC TEMPORARY LIMITED EASEMENT

TYPICAL VARIES WESTBOUND

WISDOT REGIONAL CONTACT MATTHEW PFEIFER WISDOT NORTHWEST REGION EAU CLAIRE OFFICE 718 WEST CLAIREMONT AVENUE EAU CLAIRE, WI 54701 (715) 579-0789

DESIGN CONTACT FLEMING, ANDRE & ASSOCIATES, INC. MATT GUNDRY 3615 N. HASTINGS WAY - STE. 100 EAU CLAIRE, WI 54703 (715) 832-8400 MJGUNDRY@FAA-ENGINEERS.COM

UTILITIES

COMMUNICATIONS KEN CARLSRUD BALDWIN TELECOM, INC. 930 MAPLE ST BALDWIN, WI 54002 (715) 684-3346 (OFFICE) (715) 760-0966 (MOBILE) kcarlsrud@lswi.net

BRADLEY SCHMIDTKNECHT WEST WISCONSIN TELCOM COOPERATIVE 5808 OLD MILL PLAZA EAU CLAIRE. WI 54703 (715) 231-0504 brads@wwt.net

ELECTRIC DISTRIBUTION ROB DOOLEY ST CROIX ELECTRIC COOPERATIVE 1925 RIDGEWAY ST P.O. BOX 160 HAMMOND, WI 54015-5039 (715) 796-5637 robdoo@scecnet.net

CORISSA SEELY XCEL ENERGY 1414 W HAMILTON AVE P.O. BOX 8 EAU CLAIRE, WI 54702-0008 (715) 737-4097

corlssa.e.seely@xcelenergy.com

ELECTRIC TRANSMISSION

ROB MALY DAIRYLAND POWER COOPERATIVE 3200 EAST AVE S P.O. BOX 817 LA CROSSE, WI 54602 (608) 787-1427 rob.maly@DairylandPower.com

CORISSA SEELY XCEL ENERGY 1414 W HAMILTON AVE P.O. BOX 8 EAU CLAIRE, WI 54702-0008 (715) 737-4097 corlssa.e.seely@xcelenergy.com



PROJECT NO:8949-04-78

HWY: USH 12

COUNTY: ST. CROIX

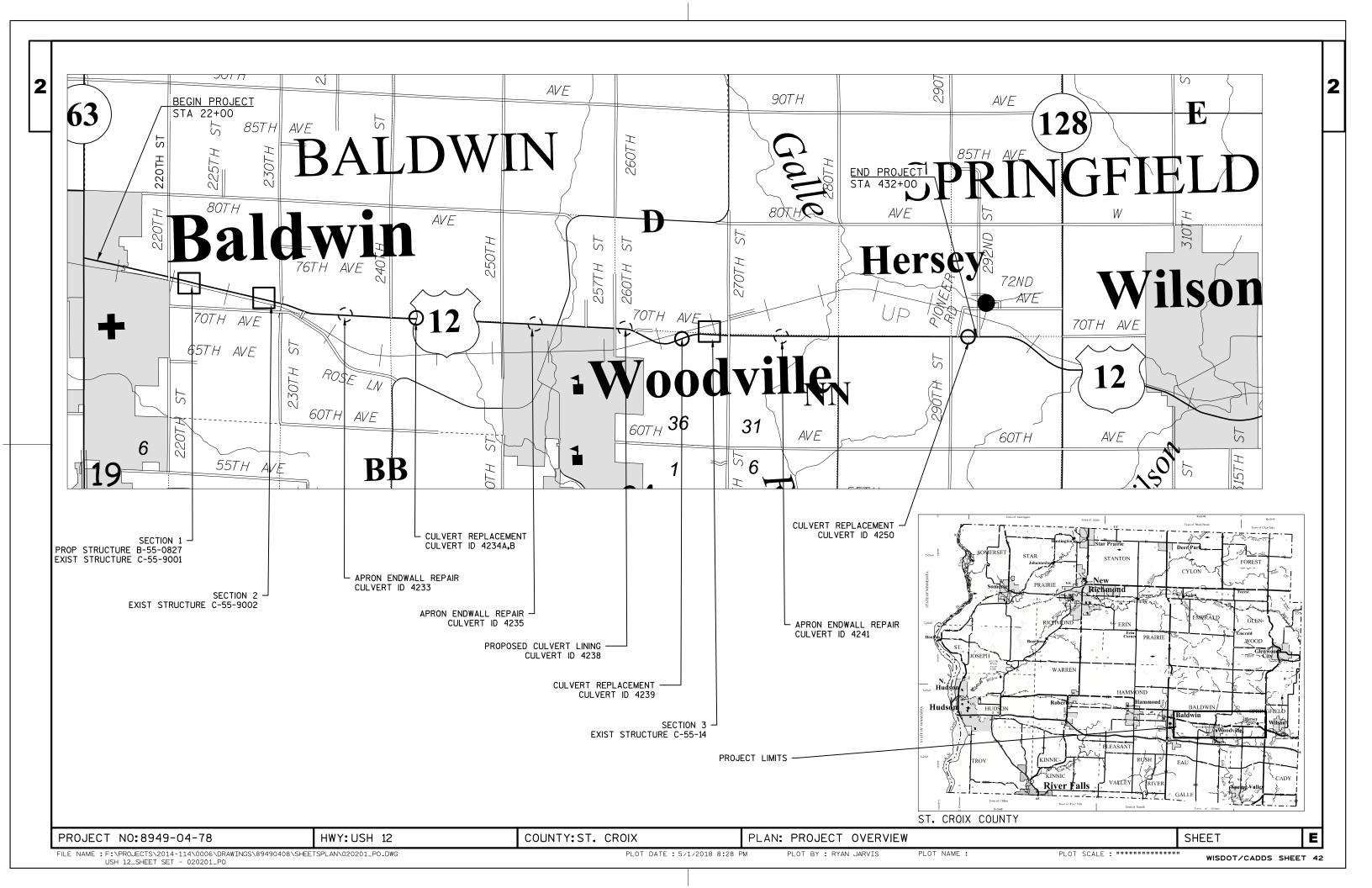
GENERAL NOTES

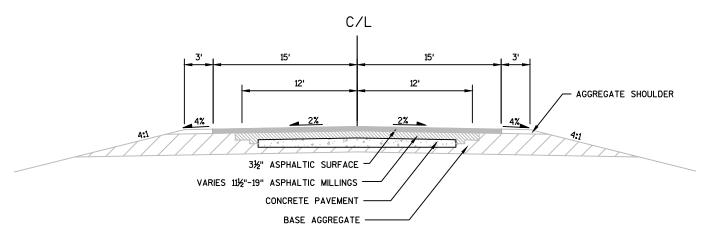
PLOT BY : MATT GUNDRY

PLOT NAME :

Ε

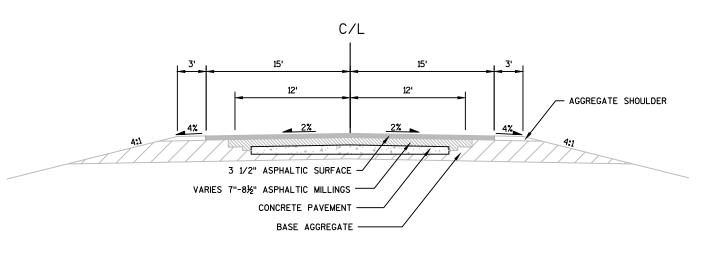
SHEET





EXISTING TYPICAL SECTION USH 12

<u>SECTION 3 (C-55-14)</u> STA 300+25 TO STA 306+00

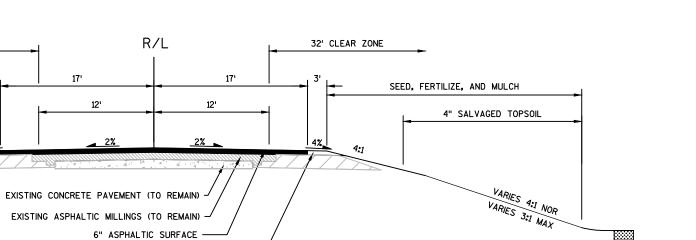


EXISTING TYPICAL SECTION USH 12

SECTION 1 (C-55-9001) STA 49+50 TO STA 56+75

SECTION 2 (C-55-9002) STA 88+23 TO STA 93+78

PROJECT NO:8949-04-78 COUNTY: ST. CROIX SHEET E HWY: USH 12 PLAN: EXISTING TYPICAL SECTIONS PLOT NAME :

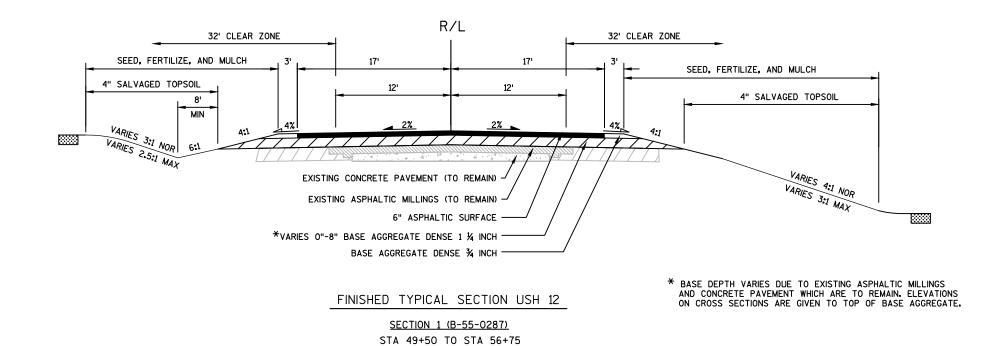


FINISHED TYPICAL SECTION USH 12

BASE AGGREGATE DENSE 34 INCH

SECTION 2 STA 88+23 TO STA 93+78

SECTION 3 STA 300+25 TO STA 306+00



FILE NAME : F:\PROJECTS\2014-114\0006\DRAWINGS\89490408\SHEETSPLAN\020301_TS.DWG LAYOUT NAME - 020302_TS

HWY: USH 12

PLOT DATE: 5/1/2018 4:23 PM

PLOT BY : RYAN JARVIS

PLAN: FINISHED TYPICAL SECTIONS

PLOT NAME :

WISDOT/CADDS SHEET 42

SHEET

E

COUNTY: ST. CROIX

32' CLEAR ZONE

SEED, FERTILIZE, AND MULCH

MIN

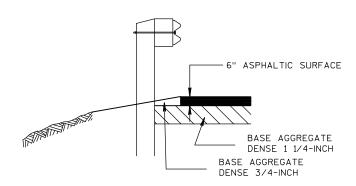
4" SALVAGED TOPSOIL

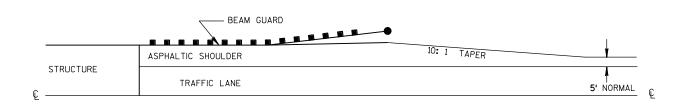
VARIES 3:1 NOR VARIES 2.5:1 MAX

PROJECT NO:8949-04-78

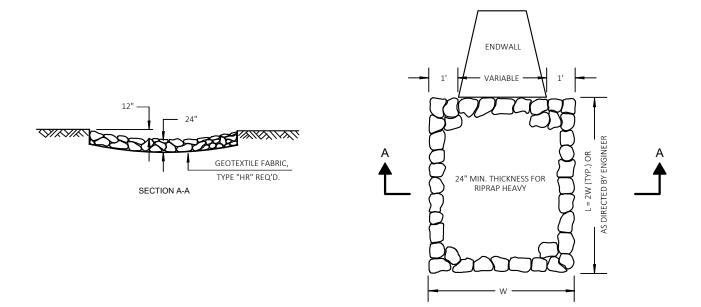
2

2

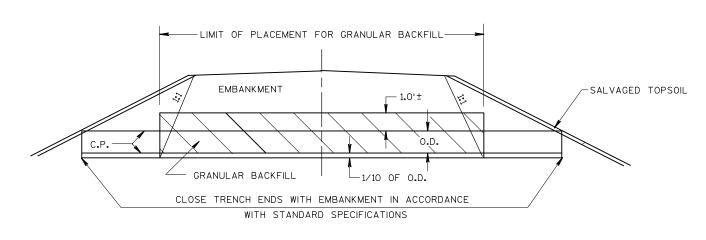




DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD



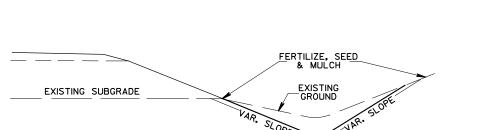
RIPRAP HEAVY TREATMENT AT CULVERTS



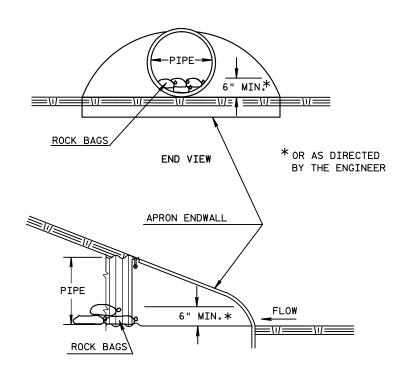
CULVERT BACKFILL DETAIL

PROJECT NO:8949-04-78 HWY:USH 12 COUNTY:ST. CROIX PLAN: CONSTRUCTION DETAILS SHEET

2



DITCH CLEANING DETAIL



SIDE VIEW

CULVERT PIPE CHECK

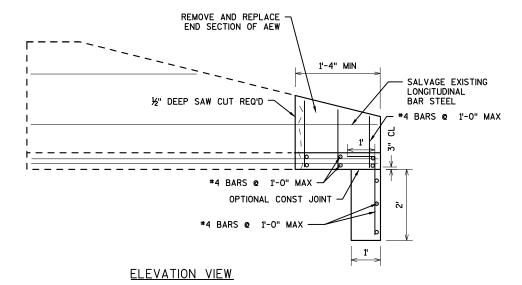
PROJECT NO:8949-04-78 HWY:USH 12 COUNTY:ST. CROIX PLAN: CONSTRUCTION DETAILS SHEET

4" SALVAGED TOPSOIL

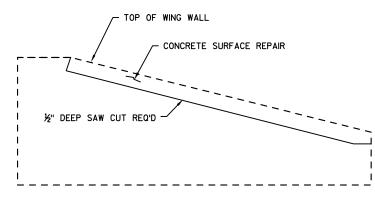
SECTION VIEW AT END OF CULVERT

SECTION VIEW A-A AT HEADER

APRON ENDWALL REPAIR - STA 216+15 LT



APRON ENDWALL REPAIR - STA 130+20 RT



ELEVATION VIEW

APRON ENDWALL REPAIR - STA 337+90 RT

GENERAL NOTES

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

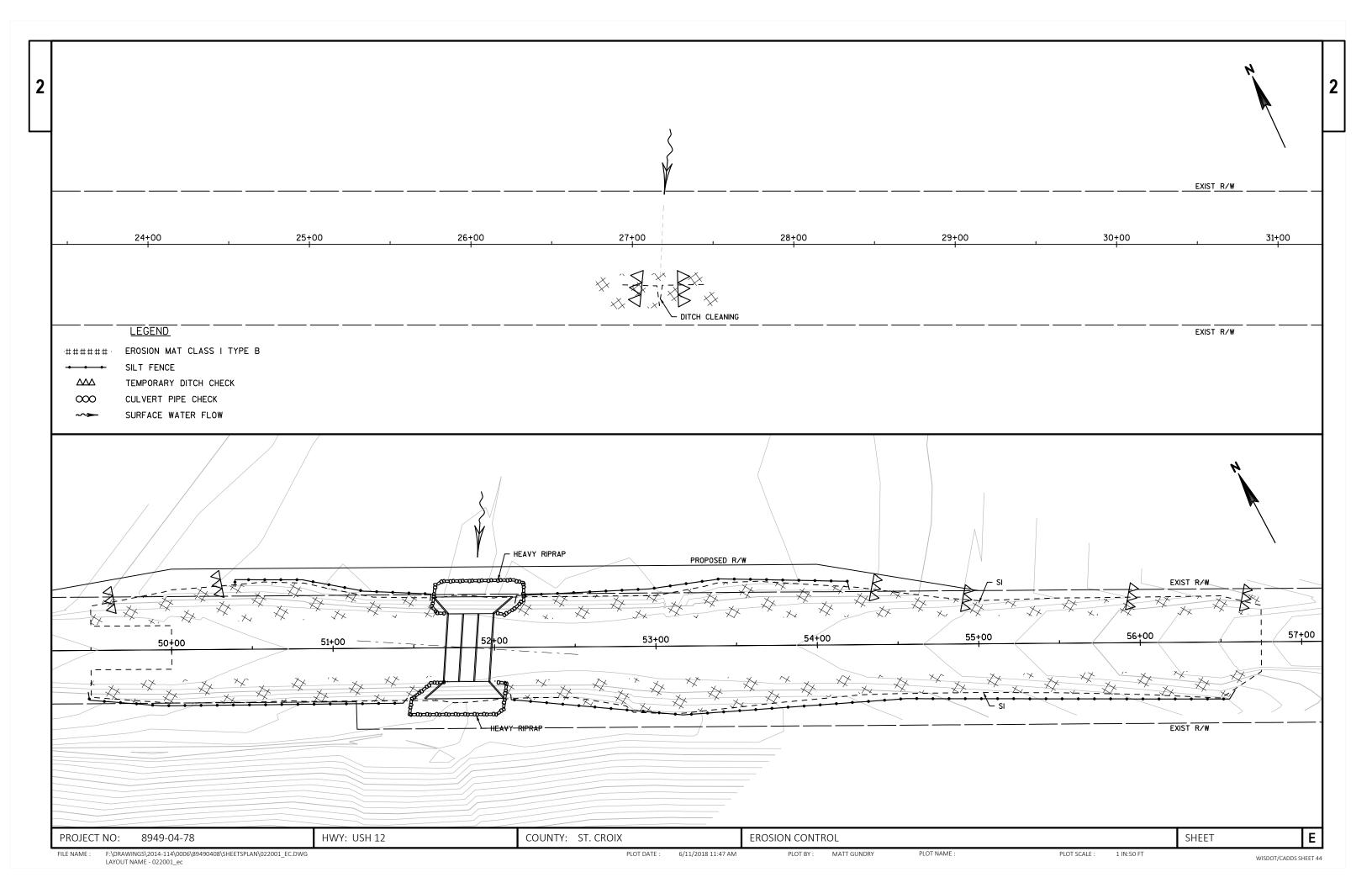
CONCRETE MASONRY SHALL HAVE AN ULTIMATE COMPRESSIVE STRENGTH, F'c = 3500 PSI

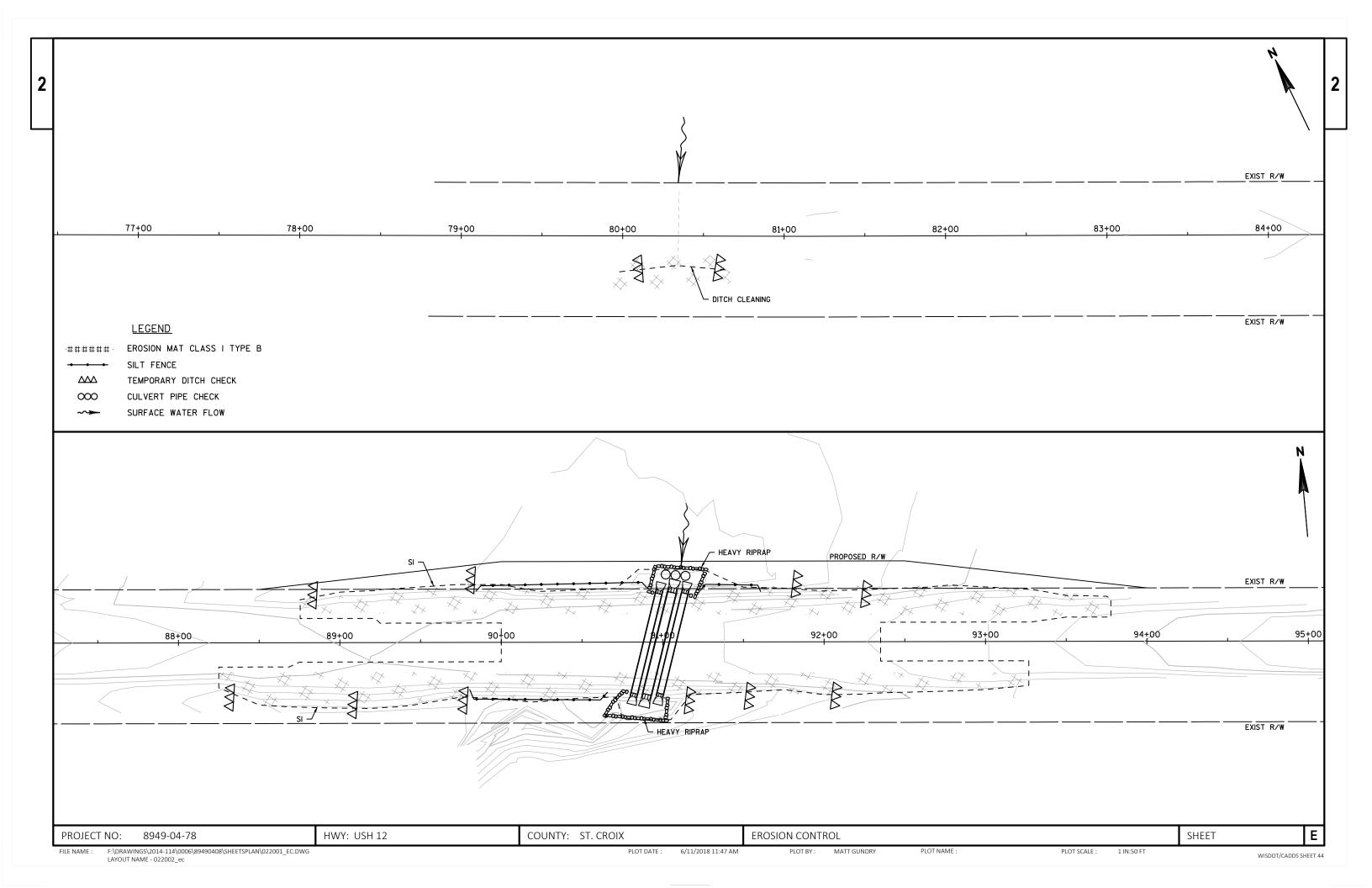
BAR STEEL REINFORCEMENT SHALL BE AASHTO GRADE 60, Fy = 60,000 PSI

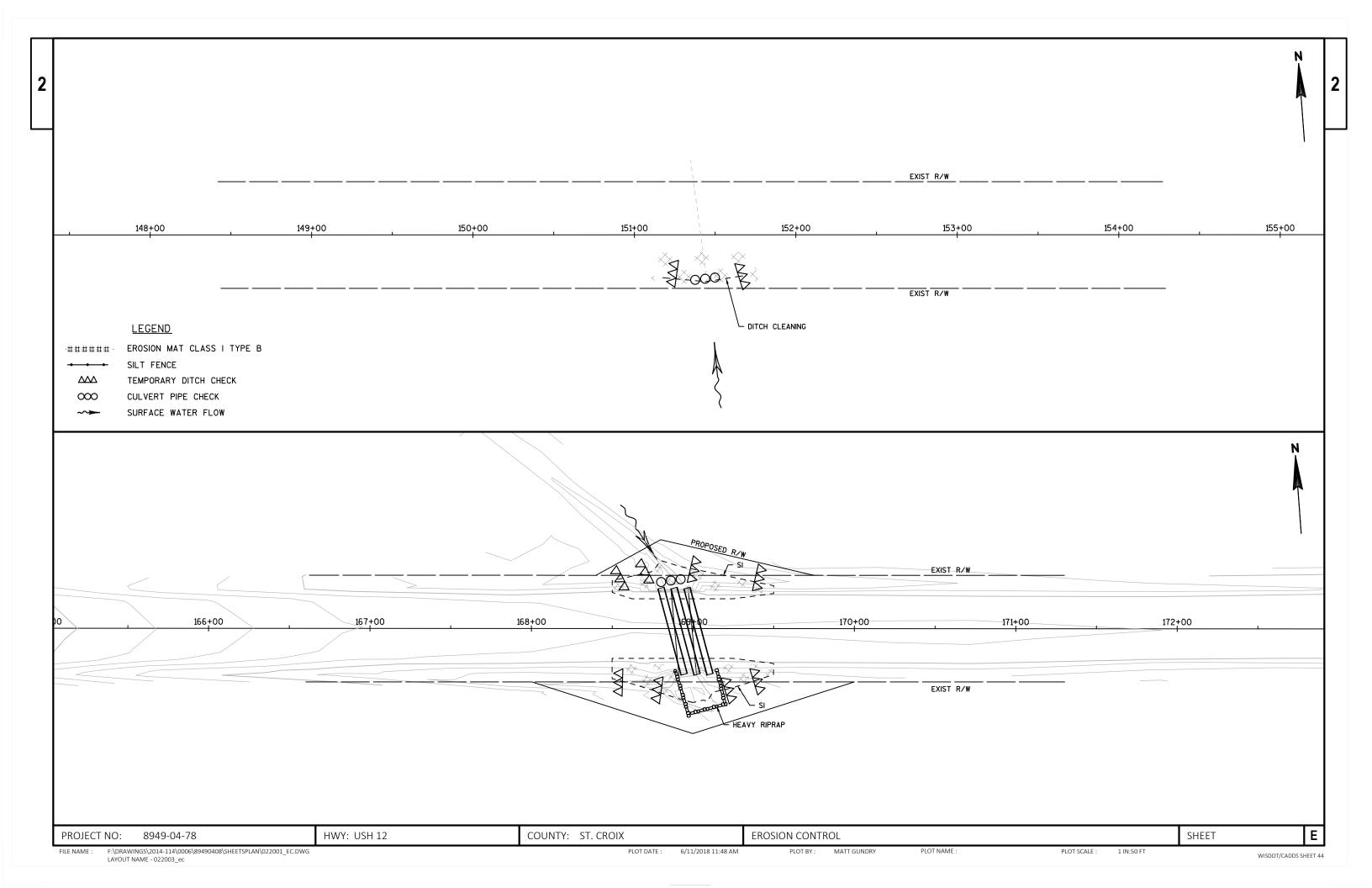
MAKE A 1/2-INCH DEEP SAW CUT AT THE LIMITS OF THE REPAIR BEFORE REMOVAL OF THE DETERIORATED CONCRETE. SAW CUTS ARE INCIDENTAL TO CONCRETE SURFACE REPAIR AND REMOVING OLD STRUCTURE ITEMS.

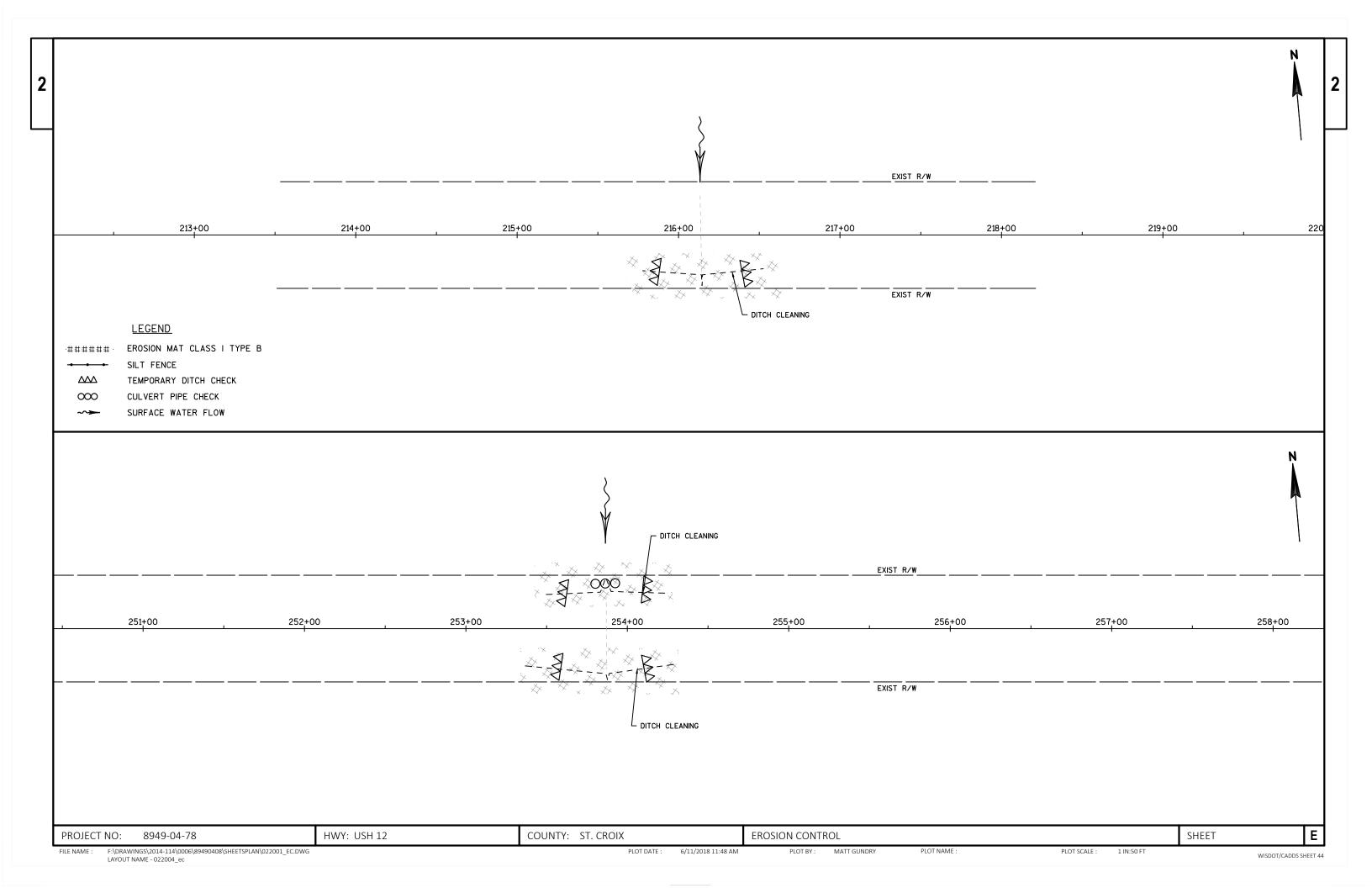
PROJECT NO:8949-04-78 HWY:USH 12 COUNTY:ST. CROIX PLAN: CONCRETE MASONRY CULVERT REPAIR DETAILS SHEET

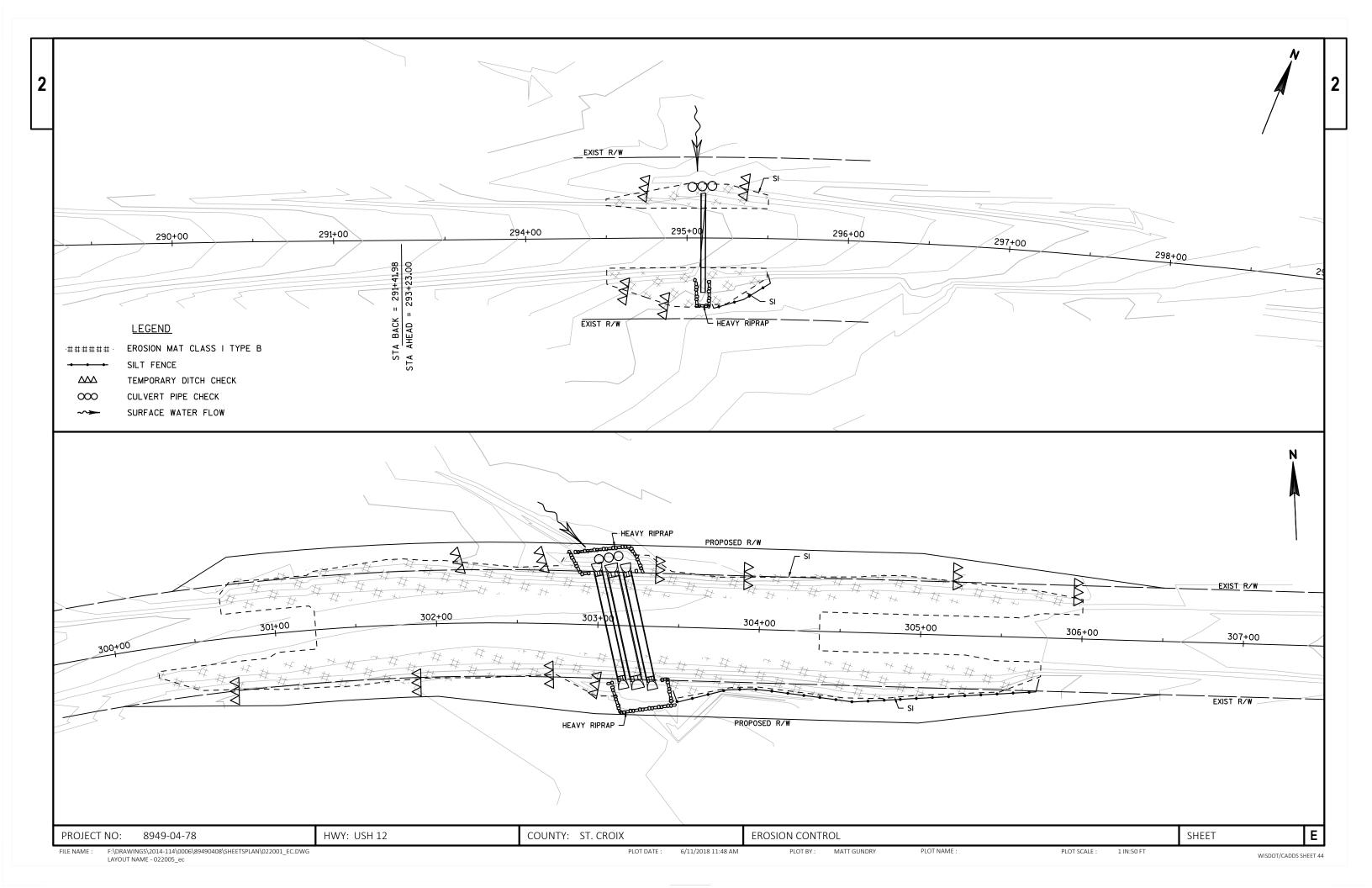
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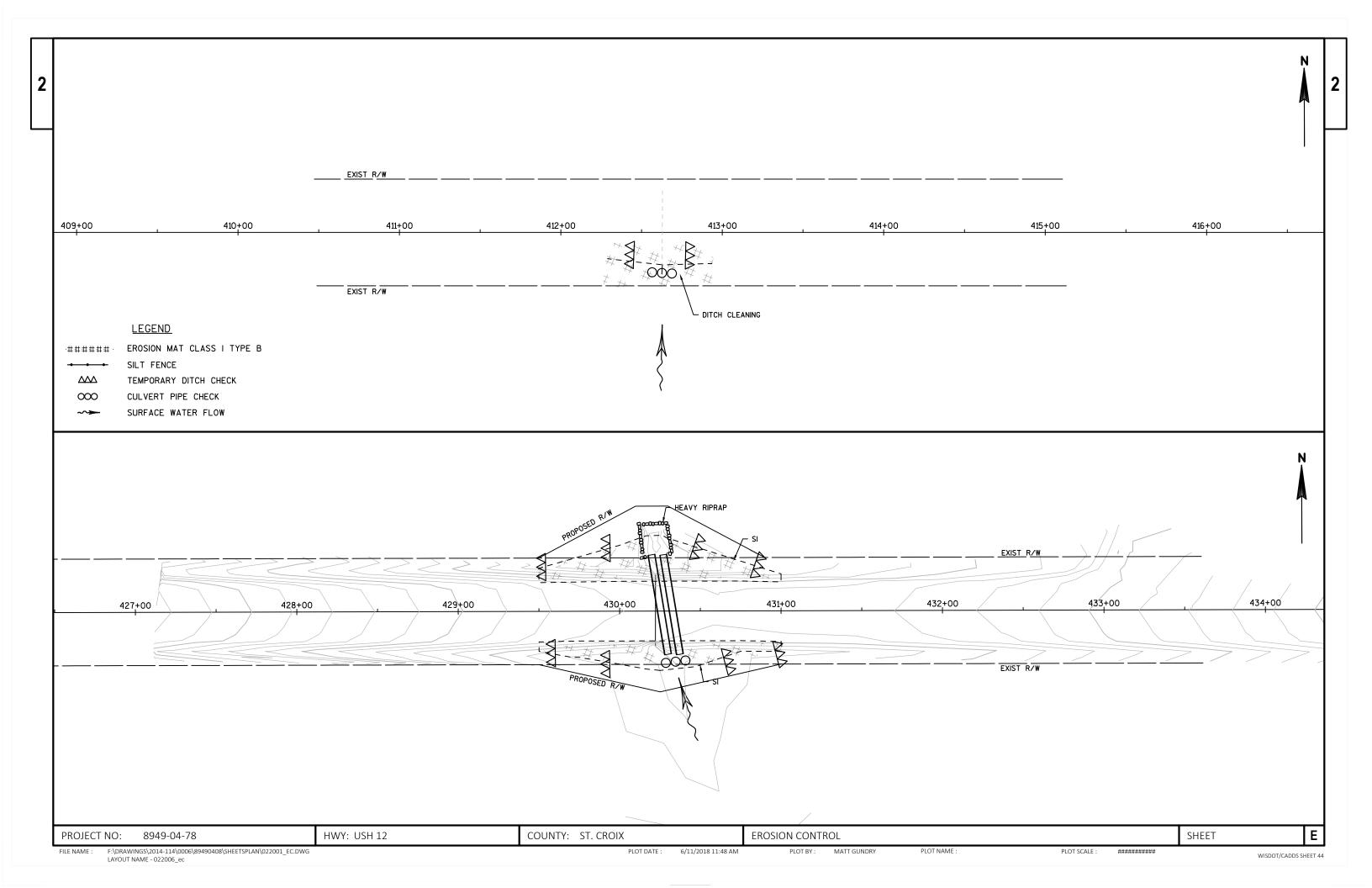


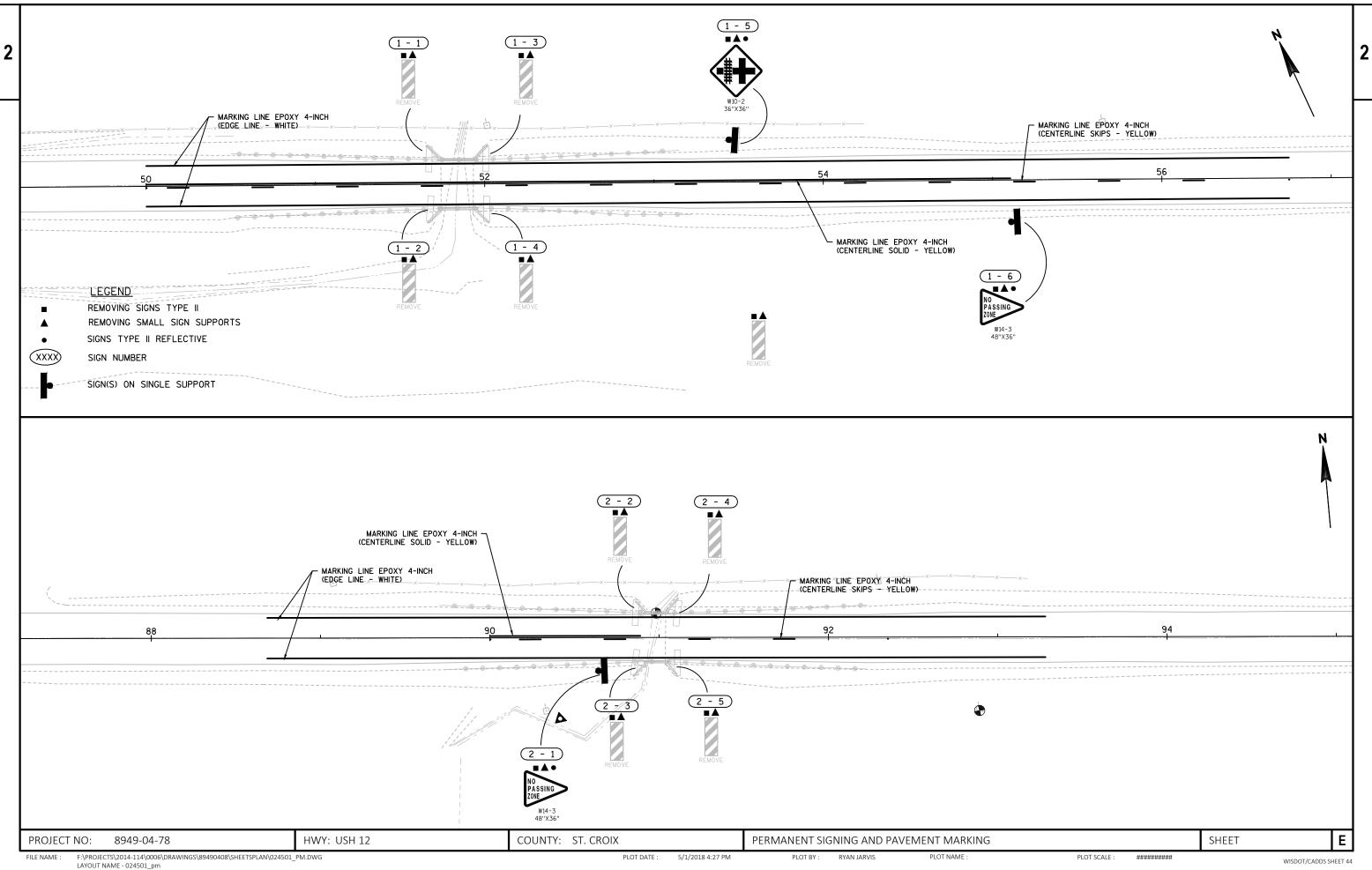


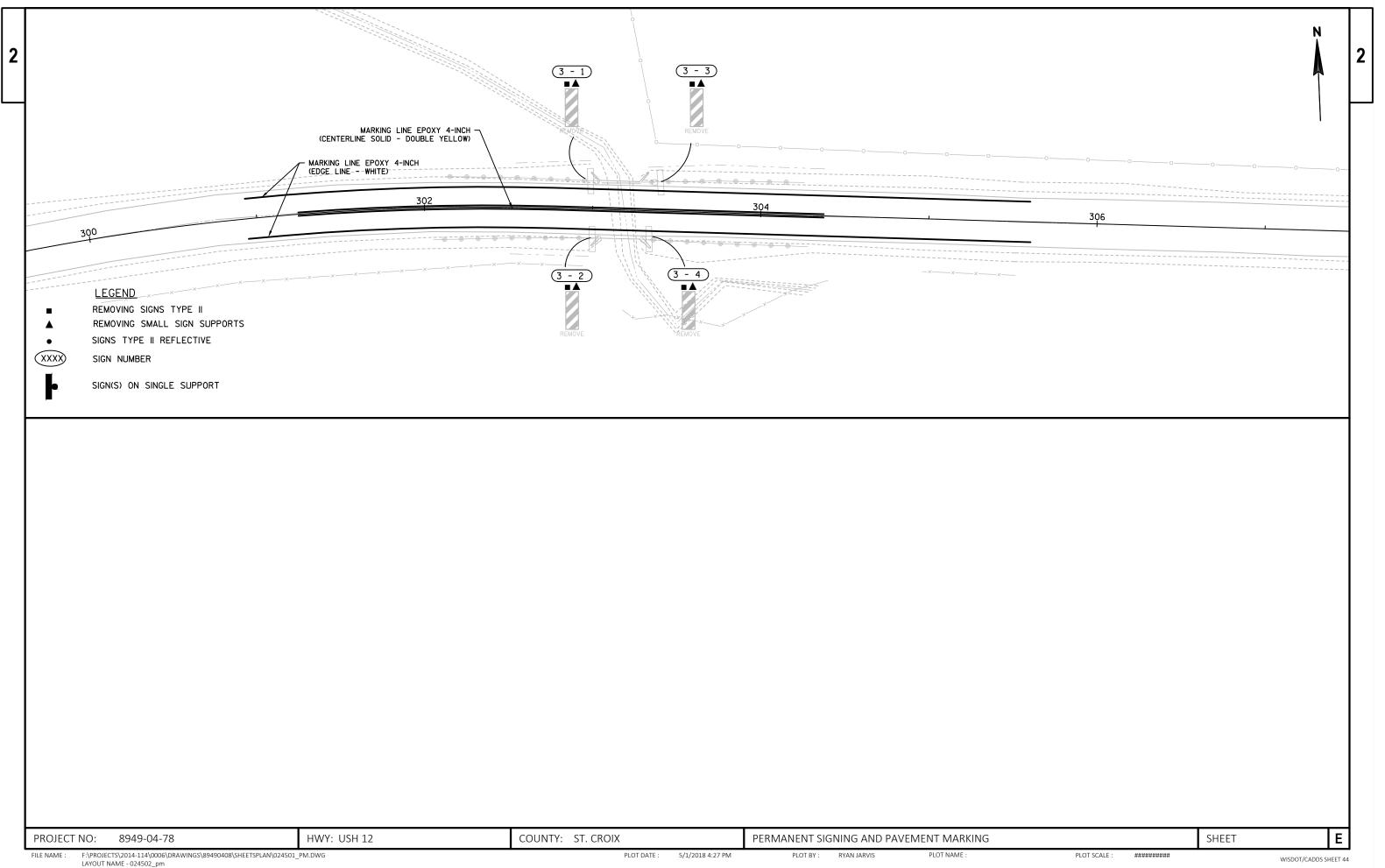


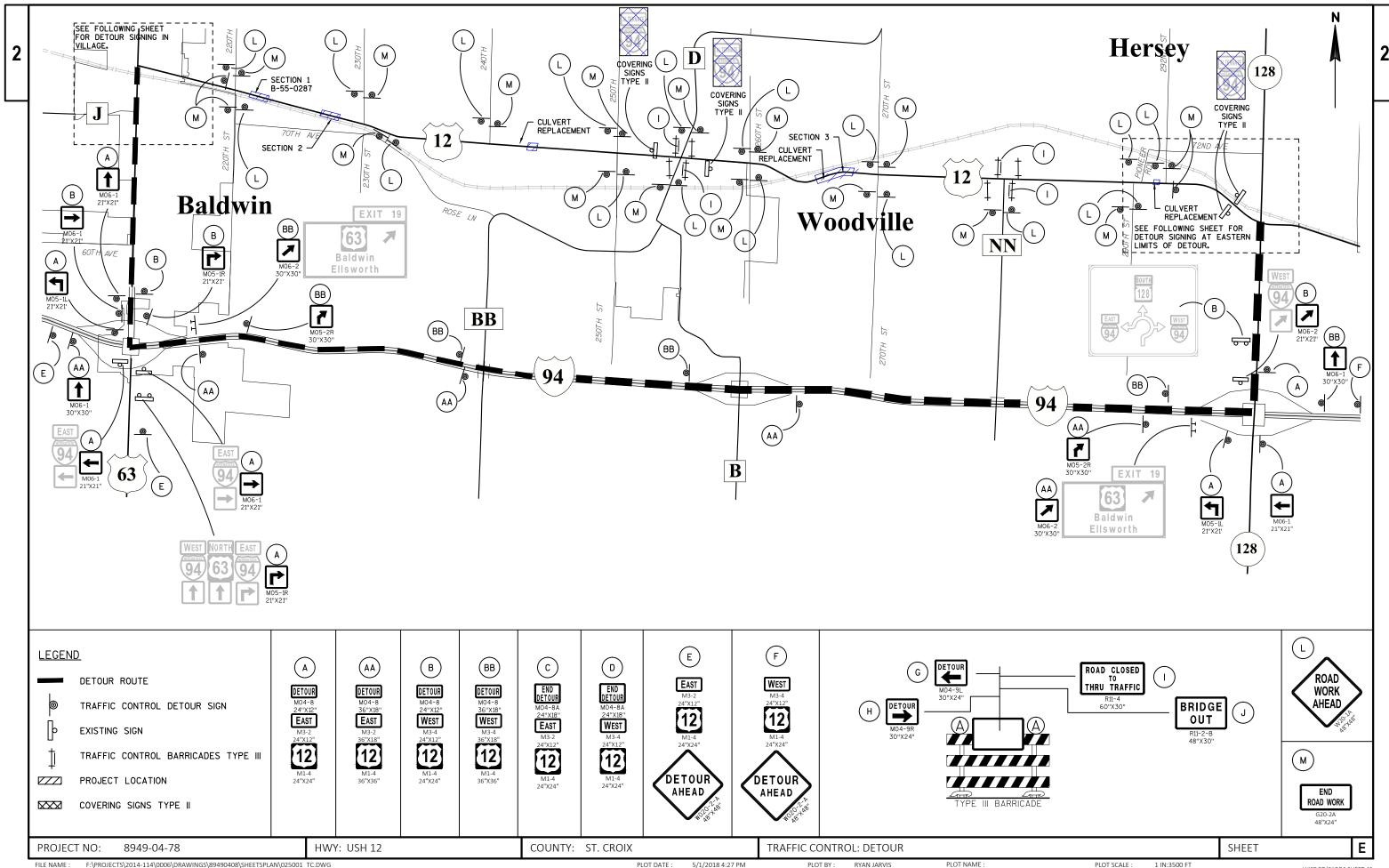


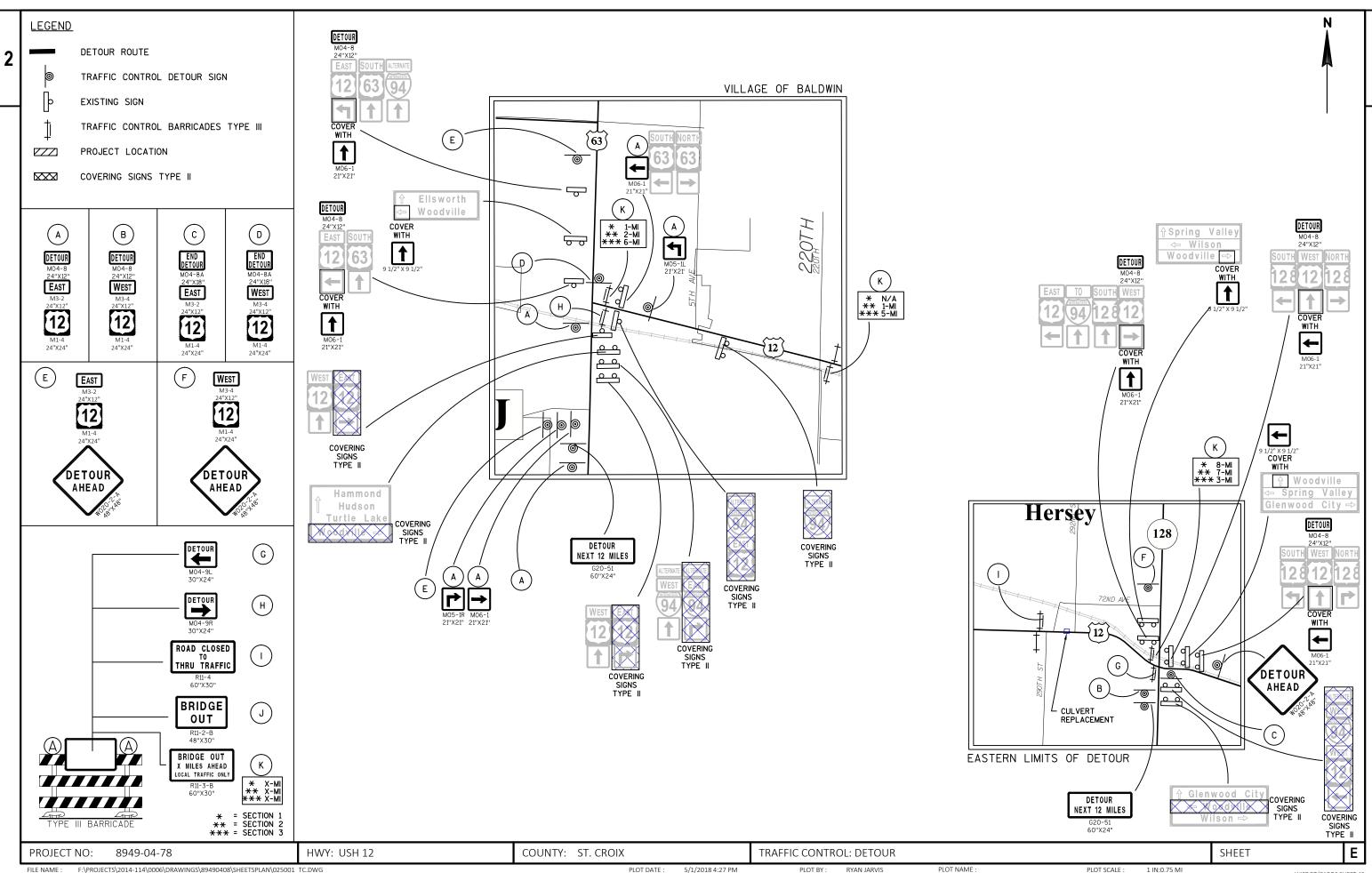








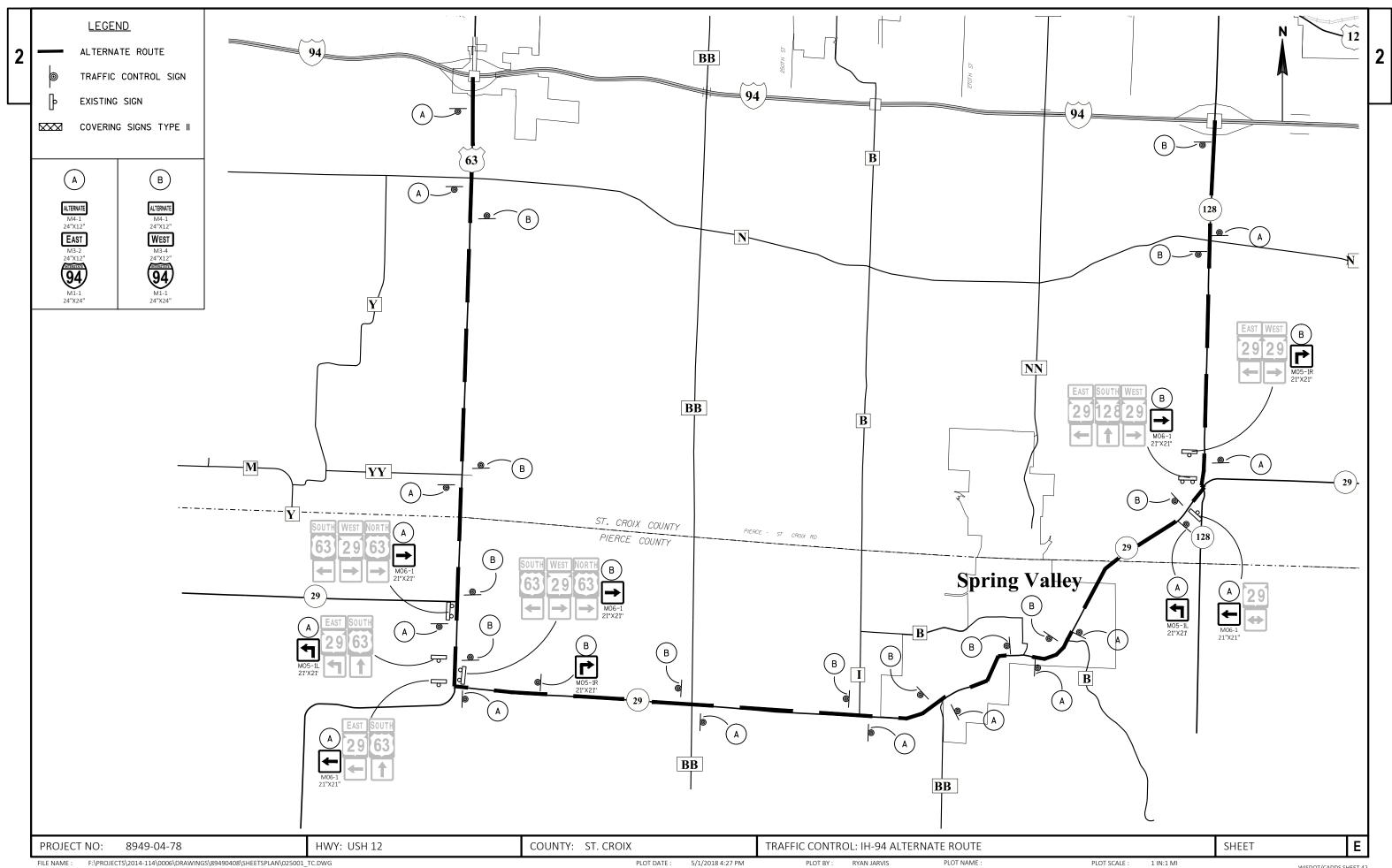




PLOT DATE:

PLOT NAME

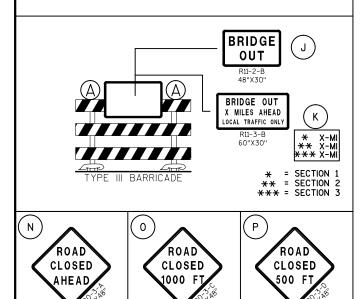
1 IN:0.75 MI



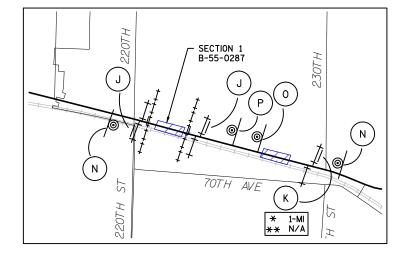
TRAFFIC CONTROL BARRICADES TYPE II

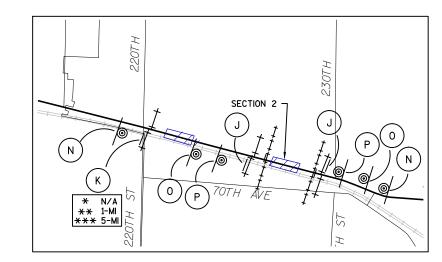
ROAD CLOSURE BARRICADE GROUP (SEE SDD 15C2-6B DETAIL D)

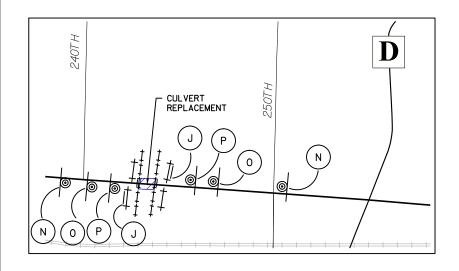
PROJECT LOCATION

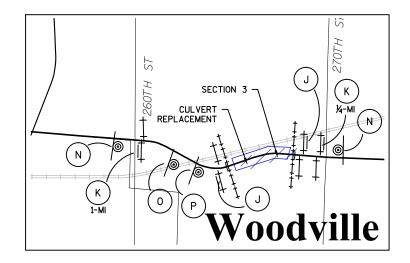


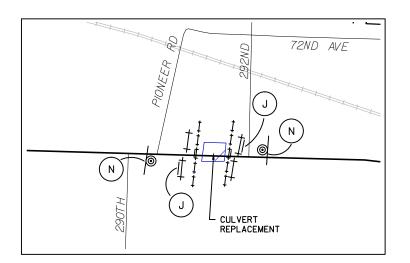
NOTE: SEE SDD 15C2 "BARRICADES AND SIGNS FOR MAINLINE CLOSURE" FOR ADDITIONAL TRAFFIC CONTROL NOT SHOWN IN TRAFFIC CONTROL PLAN SHEETS.











PROJECT NO:

8949-04-78

HWY: USH 12

COUNTY: ST. CROIX

TRAFFIC CONTROL: SHORT TERM

PLOT BY:

RYAN JARVIS

SHEET

F:\PROJECTS\2014-114\0006\DRAWINGS\89490408\SHEETSPLAN\025001_TC.DWG FILE NAME : LAYOUT NAME - 025003_tc

PLOT DATE:

5/1/2018 4:27 PM

PLOT NAME :

PLOT SCALE : 1 IN:3500 FT WISDOT/CADDS SHEET 42

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					8040 04 70
					8949-04-78
Line	Item	Item Description	Unit	Total	Qty
0072	521.0336	Apron Endwalls for Culvert Pipe Sloped Cross Drains Steel 36-Inch 4 to 1	EACH	4.000	4.000
0074	521.0342	Apron Endwalls for Culvert Pipe Sloped Cross Drains Steel 42-Inch 4 to 1	EACH	6.000	6.000
0076	521.1030	Apron Endwalls for Culvert Pipe Steel 30-Inch	EACH	2.000	2.000
0078	522.0136	Culvert Pipe Reinforced Concrete Class III 36-Inch	LF	116.000	116.000
0800	522.0142	Culvert Pipe Reinforced Concrete Class III 42-Inch	LF	147.000	147.000
0082	522.2319	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 19x30-Inch	LF	56.000	56.000
0084	522.2329	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 29x45-Inch	LF	116.000	116.000
086	522.2334	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 34x53-Inch	LF	112.000	112.000
8800	522.2338	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 38x60-Inch	LF	58.000	58.000
0090	522.2348	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 48x76-Inch	LF	56.000	56.000
0092	522.2619	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 19x30-Inch	EACH	2.000	2.000
0094	522.2629	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 29x45-Inch	EACH	4.000	4.000
0096	522.2634	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 34x53-Inch	EACH	4.000	4.000
0098	522.2638	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 38x60-Inch	EACH	2.000	2.000
0100	522.2648	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 48x76-Inch	EACH	2.000	2.000
0102	606.0300	Riprap Heavy	CY	1,070.000	1,070.000
0104	614.0920	Salvaged Rail	LF	1,350.000	1,350.000
0106	614.2300	MGS Guardrail 3	LF	350.000	350.000
0108	614.2330	MGS Guardrail 3 K	LF	200.000	200.000
0110	614.2340	MGS Guardrail 3 L	LF	450.000	450.000
0112	614.2500	MGS Thrie Beam Transition	LF	150.000	150.000
0114	614.2610	MGS Guardrail Terminal EAT	EACH	12.000	12.000
0116	616.0100	Fence Woven Wire (height) 01. 4-ft Barbed	LF	140.000	140.000
0118	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8949-04-78	EACH	1.000	1.000
0120	619.1000	Mobilization	EACH	1.000	1.000
0122	624.0100	Water	MGAL	28.000	28.000
0124	625.0500	Salvaged Topsoil	SY	3,700.000	3,700.000
0126	627.0200	Mulching	SY	5,150.000	5,150.000
0128	628.1504	Silt Fence	LF	2,000.000	2,000.000
0.25	020.100 r	5 5.100		_,000.000	_,000.000

Page 3

Estimate Of Quantities

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					8949-04-78	
Line	Item	Item Description	Unit	Total	Qty	
0130	628.1520	Silt Fence Maintenance	LF	2,000.000	2,000.000	
0132	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000	
0134	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000	
0136	628.2004	Erosion Mat Class I Type B	SY	8,500.000	8,500.000	
0138	628.7504	Temporary Ditch Checks	LF	960.000	960.000	
0140	628.7555	Culvert Pipe Checks	EACH	50.000	50.000	
0142	629.0210	Fertilizer Type B	CWT	3.000	3.000	
0144	630.0120	Seeding Mixture No. 20	LB	100.000	100.000	
0146	633.5200	Markers Culvert End	EACH	22.000	22.000	
0148	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	3.000	3.000	
0150	637.2230	Signs Type II Reflective F	SF	21.000	21.000	
0152	638.2602	Removing Signs Type II	EACH	15.000	15.000	
0154	638.3000	Removing Small Sign Supports	EACH	15.000	15.000	
0156	642.5001	Field Office Type B	EACH	1.000	1.000	
0158	643.0420	Traffic Control Barricades Type III	DAY	2,050.000	2,050.000	
0160	643.0705	Traffic Control Warning Lights Type A	DAY	3,600.000	3,600.000	
0162	643.0900	Traffic Control Signs	DAY	21,200.000	21,200.000	
0164	643.0920	Traffic Control Covering Signs Type II	EACH	12.000	12.000	
0166	643.5000	Traffic Control	EACH	1.000	1.000	
0168	645.0105	Geotextile Type C	SY	260.000	260.000	
0170	645.0120	Geotextile Type HR	SY	1,605.000	1,605.000	
0172	646.1020	Marking Line Epoxy 4-Inch	LF	5,085.000	5,085.000	
0174	650.4500	Construction Staking Subgrade	LF	1,255.000	1,255.000	
0176	650.5000	Construction Staking Base	LF	1,255.000	1,255.000	
0178	650.6000	Construction Staking Pipe Culverts	EACH	12.000	12.000	
0180	650.6500	Construction Staking Structure Layout (structure) 01. B-55-0287	LS	1.000	1.000	
0182	650.9910	Construction Staking Supplemental Control (project) 01. 8949-04-78	LS	1.000	1.000	
0184	650.9920	Construction Staking Slope Stakes	LF	1,255.000	1,255.000	
0186	690.0150	Sawing Asphalt	LF	360.000	360.000	
0188	715.0502	Incentive Strength Concrete Structures	DOL	948.000	948.000	
0190	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000	
0192	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,200.000	1,200.000	
0194	SPV.0090	Special 01. Ditch Cleaning	LF	400.000	400.000	

CLEARING AND GRUBBING									
201.0105 201.020									
				CLEARING	GRUBBING				
STATION	TO	STATION	LOCATION	STA	STA				
430+00	TO	431+00	LT	1	1				
ITEM TOTA	\L			1	1				

RI	REMOVING SMALL PIPE CULVERTS								
STATION TO	STATION	LOCATION	EACH						
168+95		MAINLINE	2						
295+10		MAINLINE	1						
430+22		MAINLINE	1						
ITEM TOTAL	ITEM TOTAL								

REMOVING OLD S	203.0200	
DESCRIPTION	LOCATION	LS
01. 130+20	END SECTION OF AEW - RT	1
02. 303+17	CONC MASONRY HEADER - LT	1
ITEM TOTAL		2

REMOVING OLD STRUCTUR	E OVER WATERWAY (STATION)	203 . 0500 . S
DESCRIPTION	LOCATION	EACH
01. 90+98	SECTION 2	1
02. 303+17	SECTION 3	1
ITEM TOTAL		2

	REMOVING ASPHALTIC SURFACE								
STATION	TO	STATION	LOCATION	SY					
50+00	ТО	56+75	SECTION 1	2255					
30+00	10	20+12	SECTION 1	2233					
90+00	TO	92+35	SECTION 2	785					
168+80	TO	169+10	MAINLINE	100					
295+05	TO	295+15	MAINLINE	70					
301+25	TO	304+37	SECTION 3	1045					
430+10	TO	430+35	MAINLINE	85					
ITEM TOTAL				4340					

	204.0170							
STATION	то	STATION	LOCATION	LF				
304+35	TO	305+75	RT	140				
ITEM TOTAL	TEM TOTAL							

FILE NAME : F:\PROJECTS\2014-114\0006\DRAWINGS\89490408\SHEETSPLAN\030201_MQ.DWG

	ļ	REMOVING 01.	APRON ENDWALLS	204 . 9060 . S
STATION	TO	STATION	LOCATION	EACH
	261+95	5	X-PIPE	2
ITEM TOTAL				2
			1	

PREPARE	FOUND	ATION F	OR ASPH	ALTIC PA	VING (PROJECT)	8949-04-78	211.0100
STATIC	DN T	0 ST	ATION		LOCATION		EACH
22+00	0 T	0 43	2+00		MAINLINE		1
ITEM TO	TAL						1

REPARE	FOUNDATION	FOR BASE AGGREGATE	211.0500
TO	STATION	LOCATION	STA
то	432+00	SECTION 3	1
			1
	ТО	TO STATION	TO STATION LOCATION

	FINISH	HING ROADWAY	(PROJECT) 8949-04-78	213.0100
STATION	ТО	STATION	LOCATION	EACH
22+00	то	432+00	MAINLINE	1
ITEM TOTAL				1

			U	SH 12 EARTHWORK SU	IMMARY				
Division	From/To Station	Common Excavation (1)	Salvaged/Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded FIII (13)	Mass Ordinate +/- (14)	Waste	Borrow
		(item #205.0100)				Factor			
Division 1		Cu+ (2)				1.25			(I tem #208.0100)
Section 1 - West	49+50/51+66	109	55	109	347	434	-324	0	324
Division 2									
Section 1 - East	52+01.66/56+75	187	153	187	580	725	-538	0	538
Division 3									
Section 2	88+25/93+77.72	184	88	184	1,036	1,295	-1,110	0	1,110
Division 4									
Culvert Replacement 1	168+50 /169+50	3	0	3	134	167	-164	0	164
Division 5									
Culvert Replacement 2	294+50/295+50	1	0	1	87	109	-108	0	108
Division 6									
Section 3	325+00/306+00	254	110	254	1,361	1,701	-1,447	0	1,447
Division 7									
Culvert Replacement 3	429+50/431+00	0	0	0	241	301	-301	0	301
Grand Total		739	406	739	3 785	4 731	-3 993	0	4 000
Grand Total	Total Common Exc	738 740	406	738	3,785	4,731	-3,993	0	4,000

- Excavation Common is the sum of the Cut and EBS Excavation columns, Item number 205.0100
 Salvaged/Unsuable Pavement Material is NOT included in Cut.
 EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
 4) Salvaged/Unusable Pavement Material

- 5) Available Material = Cut Salvaged/Unusuable Pavement Material
 6) Marsh Excavation to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 205.0500
 7) Rock Excavation Item number 205.0200

PLOT BY : RYAN JARVIS

- 8) Reduced Marsh in Fill Excavated Marsh material is usuable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
 9) Reduced EBS in Fill Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
 10) Expanded Marsh Backfill This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.11
- 1D Expanded EBS Backfill This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.11
- 12) Expanded Rock Factor = 1.1.
 13) Expanded Fill. Factor = 1.25
- Depending on selections:

PLOT DATE: 5/1/2018 8:31 PM

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor

PLOT NAME :

14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

COUNTY: ST. CROIX PROJECT NO:8949-04-78 HWY: USH 12 MISCELLANEOUS QUANTITIES

WISDOT/CADDS SHEET 42

SHEET

PLOT SCALE : ########

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	BASE	AGGREGATE (DENSE 3/4-INCH	305.0110
STATION	ТО	STATION	LOCATION	TON
49+50	TO	56+75	SECTION 1	220
88+23	то	93+78	SECTION 2	170
168+80	то	169+10	MAINLINE	13
295+05	TO	295+15	MAINLINE	8
300+25	то	306+05	SECTION 3	175
430+10	то	430+35	MAINLINE	14
ITEM TOTAL	-			600

	BASE A	AGGREGATE D	ENSE 1 1/4-INCH	305.0120
STATION	то	STATION	LOCATION	TON
50+00	то	56+75	SECTION 1	185
90+00	TO	92+35	SECTION 2	130
168+80	TO	169+10	MAINLINE	125
295+05	TO	295+15	MAINLINE	65
301+25	TO	304+37	SECTION 3	150
430+10	TO	430+35	MAINLINE	125
ITEM TOTA	L			780

	TACK COAT				
STATION	ТО	STATION	LOCATION	GAL	
50+00	TO	56+75	SECTION 1	140	
90+00	TO	92+35	SECTION 2	65	
168+80	TO	169+10	MAINLINE	7	
295+05	TO	295+15	MAINLINE	5	
301+25	TO	304+37	SECTION 3	75	
430+10	TO	430+35	MAINLINE	8	
ITEM TOTAL				300	

	_					
	ASPHALTIC SURFACE					
STATION	ТО	STATION	LOCATION	TON		
50+00	ТО	56+75	SECTION 1	1070		
90+00	TO	92+35	SECTION 2	480		
168+80	то	169+10	MAINLINE	55		
295+05	TO	295+15	MAINLINE	30		
301+25	TO	304+37	SECTION 3	590		
430+10	TO	430+35	MAINLINE	55		
ITEM TOTAL				2280		

CONCRETE MASON	504.0900	
STATION	LOCATION	CY
130+20	END SECTION OF AEW - RT	0.6
303+17	CONC MASONRY HEADER - LT	0.4
ITEM TOTAL		1

BAR STEEL REINFORCEM	505.0400	
STATION	LOCATION	LB
130+20	END SECTION OF AEW - RT	40
303+17	CONC MASONRY HEADER - LT	25
ITEM TOTAL		65

CONCRETE SURF	CONCRETE SURFACE REPAIR				
STATION	LOCATION	SF			
337+90	TOP OF WING WALLS - RT	10			

	FENCE WOVEN WIRE (4.5-FEET), BARBED					
STATION	TO	STATION	LOCATION	LF		
304+35	TO	305+75	RT	140		
ITEM TOTAL				140		

MAINTENANCE	AND REP	AIR OF HAUL	ROADS (PROJECT) 8949-04-78	618.0100
STATION	TO	STATION	LOCATION	EACH
22+00	TO	432+00	PROJECT	1
ITEM TOTAL				1

MOBILIZATION					
STATION	ТО	STATION	LOCATION	EACH	CATEGORY
22+00	TO	432+00	ROADWAY	0.7	010
	51+33		B-55-0287	0.3	020
ITEM TOTAL				1	

CLEANING CUI	CLEANING CULVERT PIPES						
STATION TO STATION	LOCATION	EACH					
216+15	MAINLINE	1					
246+95	MAINLINE	1					
ITEM TOTAL		2					

RIPRAP I	HEAVY	606.0300				
STATION	LOCATION	CY				
51+84	SECTION 1	420				
90+98	SECTION 2	235				
168+95	PIPE RT	40				
295+10	PIPE LT & RT	10				
303+17	SECTION 3	250				
430+29	PIPE LT	30				
ITEM TOTAL	ITEM TOTAL					

							CL	JLVERT PIPE AN	D APRON ENDWA	LLS								
		520 . 9700 . S	520 . 9750 . S	521.0336	521.0342	521.1030	522.0136	522.0142	522.2319	522.2329	522.2334	522.2338	522.2348	522,2619	522,2629	522.2634	522,2638	522.2648
STATION	LOCATION	CULVERT PIPE	CLEANING CP	APRON ENDWALLS FOR	APRON ENDWALLS FOR	APRON ENDWALLS	CPRC	CPRC	CPRCHE	CPRCHE	CPRCHE	CPRCHE	CPRCHE	APRON ENDWALLS				
		LINERS (INCH)	FOR LINER	CP SLOPED CROSS DRAIN	CP SLOPED CROSS DRAIN	FOR CULVERT PIPE	CLASS III	CLASS III	CLASS HE-III	CLASS HE-III	CLASS HE-III	CLASS HE-III	CLASS HE-III	FOR CPRCHE				
		01. 30-INCH	VERIFICATION	STEEL 36-INCH 4 TO 1	STEEL 42-INCH 4 TO 1	STEEL 30-IN	36-INCH	42-INCH	19×30-INCH	29×45-INCH	34×53-INCH	38×60-INCH	48×76-INCH	19×30-INCH	29×45-INCH	34×53-INCH	38×60-INCH	48×76-INCH
		LF	EACH	EACH	EACH	EACH	LF	LF	LF	LF	LF	LF	LF	EACH	EACH	EACH	EACH	EACH
90+90.2										58					2			
90+98.25	SECTION 2											58					2	
91+06.3										58					2			
168+87	MAINLINE				6			147										
261+95	MAINLINE	59	1			2												
295+10	MAINLINE								56					2				
303+07.5											56					2		
303+16.5	SECTION 3												56					2
303+25.5				-							56					2		
430+29	MAINLINE			4			116											
ITEM TOTAL		59	1	4	6	2	116	147	56	116	112	58	56	2	4	4	2	2

PLOT DATE : 5/1/2018 8:31 PM

HWY:USH 12 PROJECT NO:8949-04-78

COUNTY:ST. CROIX

MISCELLANEOUS QUANTITIES

PLOT SCALE : *********

WISDOT/CADDS SHEET 42

Ε

SHEET

					GUARDRAIL SUMM	IARY			
				614.0920	614.2300	614.2330	614.2340	614.2500	614.2610
STATION	TO	STATION	LOCATION	SALVAGED	MGS	MGS	MGS	MGS THRIE BEAM	MGS GUARDRAIL
				RAIL	GUARDRAIL 3	GUARDRAIL 3 K	GUARDRAIL 3 L	TRANSITION	TERMINAL EAT
				LF	LF	LF	LF	LF	EACH
50+50	TO	53+63	LT & RT	490					
89+70	TO	92+23	LT & RT	475					
302+05	TO	304+29	LT & RT	385					
50+04.5	TO	51+70.1	RT			75.0		37.5	1
50+57.3	TO	51+72.9	LT			25.0		37.5	1
51+95.1	TO	53+10.7	RT			25.0		37.5	1
51+97.9	TO	53+63.5	LT			75.0		37.5	1
89+18.55	T0	92+24.80	RT	-	87.5		112.5		2
89+71.93	T0	92+78.18	LT	-	87.5		112.5		2
301+44.83	T0	304+92.93	RT	-	87.5		112.5		2
301+81.29	T0	304+86.21	LT	-	87.5		112.5		2
ITEM TOTAL				1350	350	200	450	150	12

				625.0500	627.0200	629.0210	630.0120
STATION	TO	STATION	LOCATION	SALVAGED TOPSOIL	MULCHING	FERTILIZER	SEEDING MIXTURE
						TYPE B	NO. 20
				SY	SY	CWT	LBS
50+00	TO	56+75	SECTION 1	1400	2150	1.0	40
90+00	TO	92+35	SECTION 2	950	1220	0.7	25
168+80	TO	169+10	MAINLINE	35	70	0.1	1
295+05	TO	295+15	MAINLINE	25	40	0.1	1
301+25	TO	304+37	SECTION 3	1130	1480	0.8	30
430+10	TO	430+35	MAINLINE	50	80	0.1	1
UND	ISTRIBL	JTED		110	110	0.2	2
TEM TOTAL				3700	5150	3.0	100

			WATER	624.0100
STATION	TO	STATION	LOCATION	MGAL
49+50	TO	56+75	SECTION 1 BASE AGGREGATE	8
88+23	TO	93+78	SECTION 2 BASE AGGREGATE	6
168+80	то	169+10	MAINLINE BASE AGGREGATE	3
295+05	TO	295+15	MAINLINE BASE AGGREGATE	2
300+25	TO	306+05	SECTION 3 BASE AGGREGATE	6
430+10	TO	430+35	MAINLINE BASE AGGREGATE	3
ITEM TOTAL				28

					EROSION CONTROL	_ ITEMS				
				628.1905	628.1910	628.1504	628.1520	628.2004	628.7504	628.7555
	STATION	1	LOCATION	MOBILIZATIONS	MOBILIZATIONS	SILT FENCE	SILT FENCE	EROSION MAT	TEMPORARY	CULVERT
				EROSION	EMERGENCY		MAINTENANCE	CLASS I	DITCH CHECKS	PIPE CHECKS
				CONTROL	EROSION CONTROL			TYPE B		
				EACH	EACH	LF	LF	SY	LF	EACH
22+00	TO	432+00	PROJECT	6	4					
50+00	TO	56+75	SECTION 1			1100	1100	2420	90	
90+00	TO	92+35	SECTION 2			300	300	1815	120	10
168+80	TO	169+10	MAINLINE					265	120	9
295+05	TO	295+15	MAINLINE			100	100	300	60	2
301+25	TO	304+37	SECTION 3			300	300	2205	150	13
430+10	TO	430+35	MAINLINE					435	120	6
22+00	TO	432+00	DITCH CLEANING					310	210	5
UNE	ISTRIBU	TED	PROJECT			200	200	750	90	5
ITEM TOTAL			·	6	4	2000	2000	8500	960	50

MAR	KERS CULVERT END	633.5200	
STATION TO STATION	LOCATION	EACH	
27+18	X - PIPE	2	
90+98	SECTION 2	2	
168+95	X - PIPE	2	
253+90	X - PIPE	2	
295+10	X - PIPE	2	
303+17	SECTION 3	2	
423+47	423+47 X - PIPE		
430+26	X - PIPE	2	
UNDISTRIBUTED	PROJECT	(
EM TOTAL		22	

				PERMANENT SIGN	ING			
					637.2230 SIGNS,	634.0612 WOOD POSTS,	638.2602 REMOVING	638.3000 REMOVING SMALL
SIGN			SIGN	SIGN	TYPE II,	4X6-INCH X 12 FT	SIGNS	SIGN SUPPORTS
NUMBER	STATION	LOCATION	CODE	DESCRIPTION	REFLECTIVE F	EACH	TYPE II	EACH
					SF		EACH	
1 - 1		LT		CLEARANCE STRIPER DOWN LEFT			1	1
1 - 2		RT		CLEARANCE STRIPER DOWN RIGHT			1	1
1 - 3		LT		CLEARANCE STRIPER DOWN RIGHT			1	1
1 - 4		RT		CLEARANCE STRIPER DOWN LEFT			1	1
1 - 5	53+35	LT	W10-2	PARALLEL RAILROAD CROSSING LT	9.00	1	1	1
1 - 6	55+12	RT	W14-3	NO PASSING ZONE	6.00	1	1	1
2 - 1	90+65	RT	W14-3	NO PASSING ZONE	6.00	1	1	1
2 - 2		LT		CLEARANCE STRIPER DOWN LEFT			1	1
2 - 3		RT		CLEARANCE STRIPER DOWN RIGHT			1	1
2 - 4		LT		CLEARANCE STRIPER DOWN RIGHT			1	1
2 - 5		RT		CLEARANCE STRIPER DOWN LEFT			1	1
3 - 1		LT		CLEARANCE STRIPER DOWN LEFT			1	1
3 - 2		RT		CLEARANCE STRIPER DOWN RIGHT			1	1
3 - 3		LT		CLEARANCE STRIPER DOWN RIGHT			1	1
3 - 4		RT		CLEARANCE STRIPER DOWN LEFT			1	1
ITEM	TOTAL			·	21.00	3	15	15

COUNTY:ST. CROIX HWY:USH 12 MISCELLANEOUS QUANTITIES SHEET Ε PROJECT NO:8949-04-78

FILE NAME : F:\DRAWINGS\2014-114\0006\89490408\SHEETSPLAN\030201_MQ.DWG

PLOT DATE: 6/11/2018 1:33 PM

PLOT BY : MATT GUNDRY

PLOT NAME :

PLOT SCALE : ########

WISDOT/CADDS SHEET 42

		TRAFFIC CON	TROL ITEMS			
		643.5000	643.0420	643.0705	643.0900	643.0920
LOCATION	LOCATION	TRAFFIC CONTROL				
			BARRICADES	WARNING LIGHTS	SIGNS	COVERING SIGNS
			TYPE III	TYPE A		TYPE II
		EACH	DAY	DAY	DAY	EACH
PROJECT	SEE TRAFFIC CONTROL SHEETS	1	720	1440	2870	
DETOUR	SEE TRAFFIC CONTROL SHEETS		240	480	10150	12 (1 CYCLE EACH)
ALT ROUTE	SEE TRAFFIC CONTROL SHEETS				7490	
SHORT TERM	SEE TRAFFIC CONTROL SHEETS		1090	1680	690	
ITEM TOTAL		1	2050	3600	21200	12

	FIELD OFFICE TYPE B 642.5001							
STATION	ТО	STATION	LOCATION	EACH				
22+00	ТО	432+00	PROJECT	1				
ITEM TOTAL				1				

G	GEOTEXTILE TYPE HR					
STATION TO STATION	LOCATION	SY				
51+84	SECTION 1	630				
90+98	SECTION 2	350				
168+95	PIPE RT	60				
295+10	PIPE RT	20				
303+17	SECTION 3	375				
430+29	PIPE LT	45				
ITEM TOTAL	EM TOTAL					

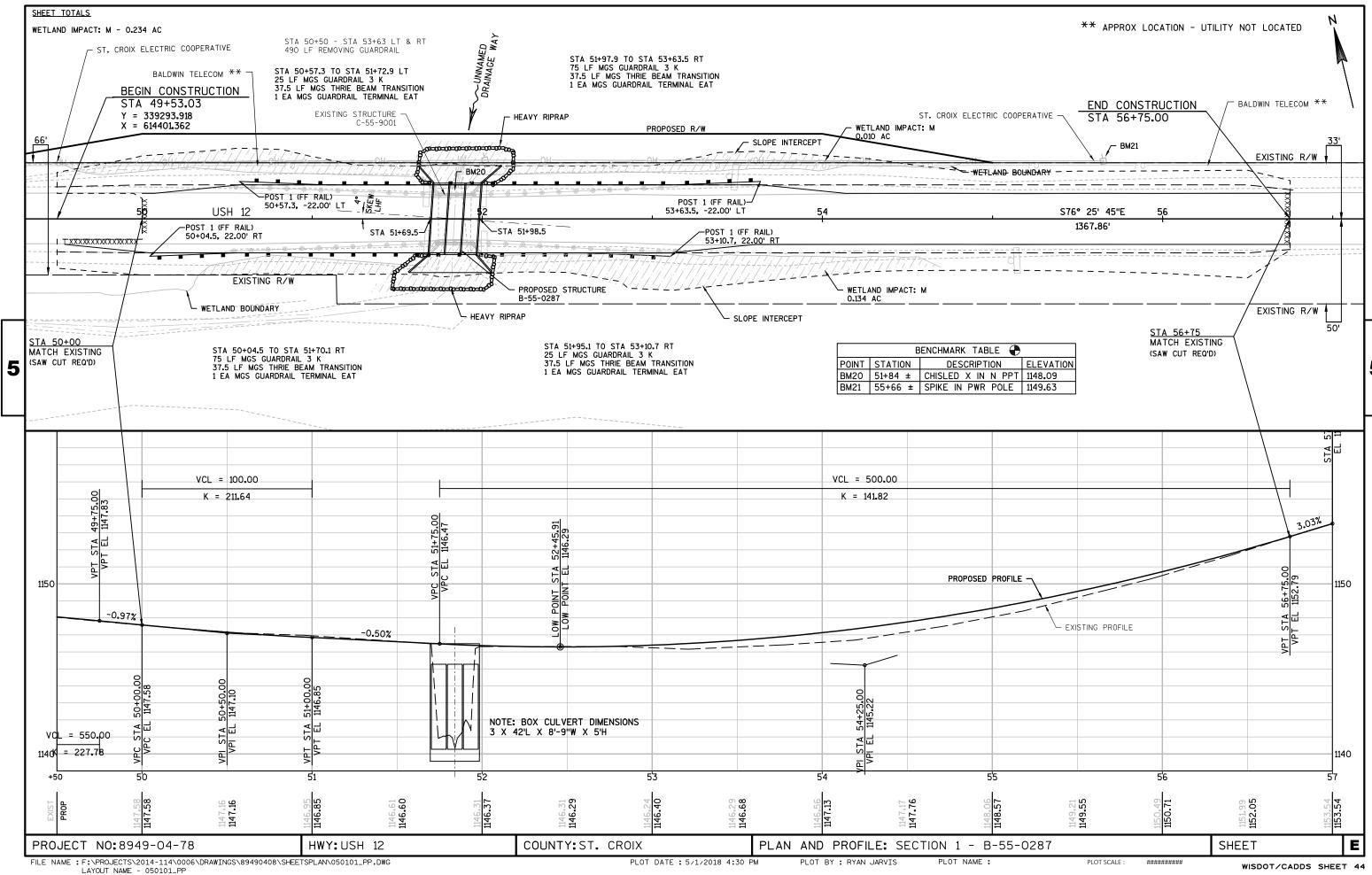
MARKING LINE EPOXY 4-INCH					
STATION	TO	STATION	LOCATION	LF	
50+00	то	56+75	SECTION 1 - CL / EDGE LINES	2000	
90+00	TO	92+35	SECTION 2 - CL / EDGE LINES	1060	
301+25	TO	304+37	SECTION 3 - CL / EDGE LINES	1560	
22+00	TO	432+00	CULVERT REPLACEMENTS - CL / EDGE LINES	465	
TEM TOTAL				5085	

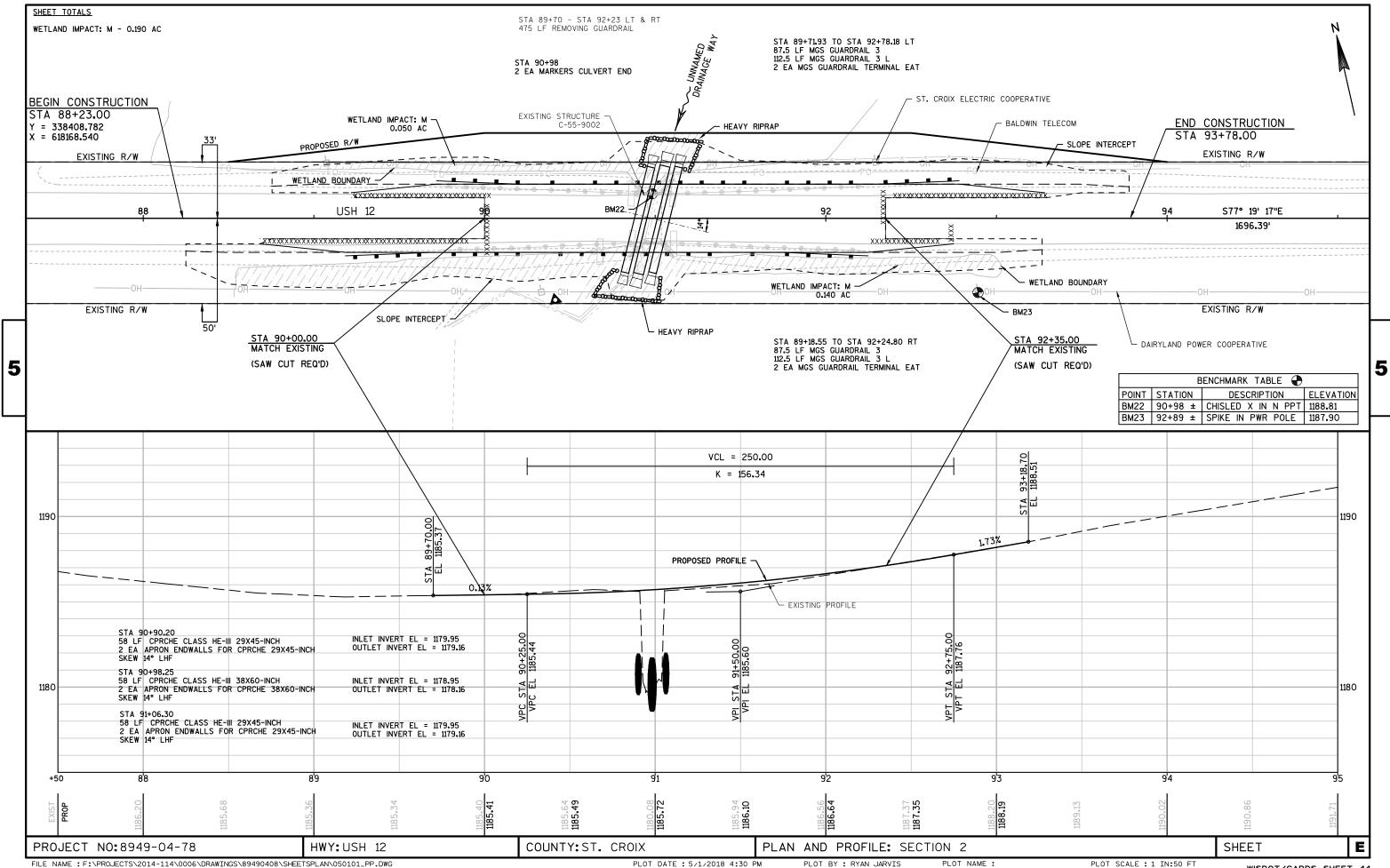
	690.0150			
STATION	TO	STATION	LOCATION	LF
50+00	ТО	56+75	SECTION 1	60
90+00	TO	92+35	SECTION 2	60
168+80	TO	169+10	MAINLINE	60
295+05	TO	295+15	MAINLINE	60
301+25	TO	304+37	SECTION 3	60
430+10	TO	430+35	MAINLINE	60
ITEM TOTAL				360

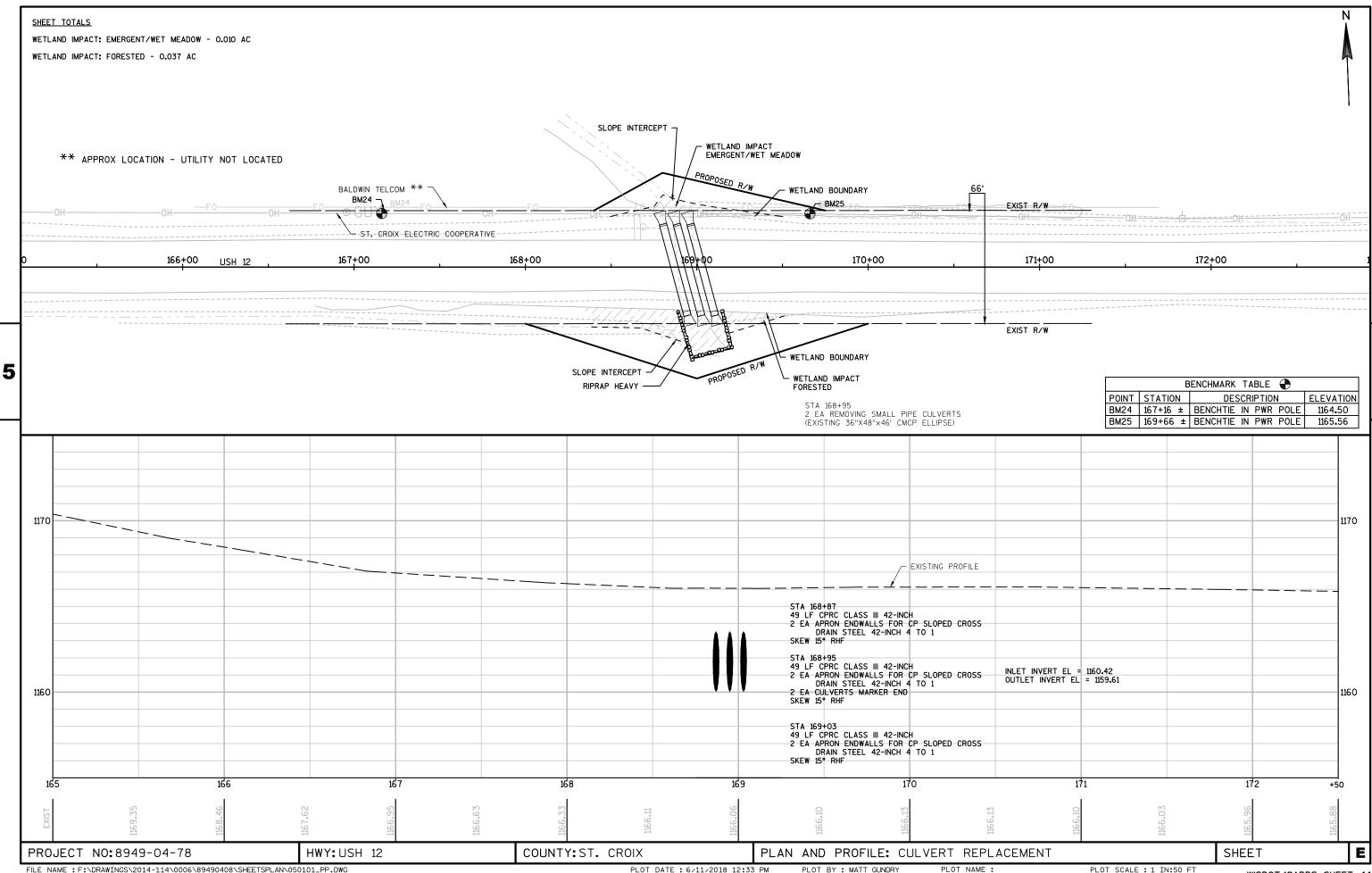
DITCH CLEANING				SPV.0090.01	
STATION	TO	STATION	LOCATION	LF	
	27+18		RT	50	
	30+35		RT	50	
1	51+40		RT	50	
2	216+15		RT	50	
2	53+90		LT,RT	100	
4	12+63		RT	50	
UNDISTRIBUTED				50	
ITEM TOTAL				400	

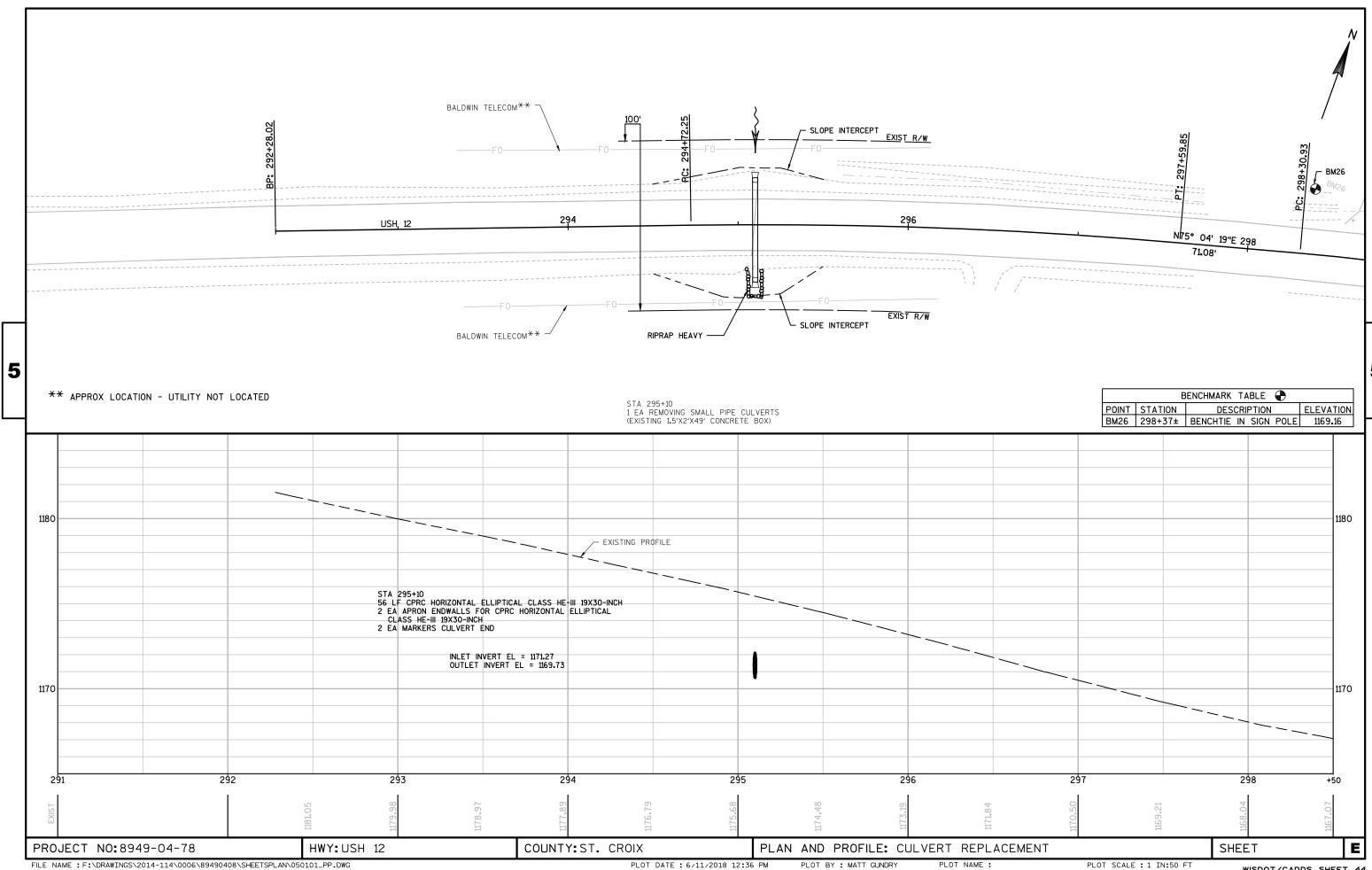
	CONSTRUCTION STAKING								
				650.4500	650.5000	650.6000	650.6500	650.9910	650.9920
				CATEGORY 010	CATEGORY 010	CATEGORY 010	CATEGORY 020	CATEGORY 010	CATEGORY 010
STATION	TO	STATION	LOCATION	CONSTRUCTION STAKING					
				SUBGRADE	BASE	PIPE CULVERTS	STRUCTURE LAYOUT	SUPPLIMENTAL	SLOPE STAKES
							(STRUCTURE)	CONTROL (PROJECT)	
							B-55-0287	8949-04-78	
				LF	LF	EACH	LS	LS	LF
50+00	TO	430+35	PROJECT					1	
50+00	TO	56+75	SECTION 1	645	645		1		645
90+00	TO	92+35	SECTION 2	235	235	3			235
168+80	TO	169+10	MAINLINE	30	30	3			30
295+05	TO	295+15	MAINLINE	10	10	1			10
301+25	TO	304+37	SECTION 3	310	310	3			310
430+10	TO	430+35	MAINLINE	25	25	2			25
ITEM TOTAL	-			1255	1255	12	1	1	1255

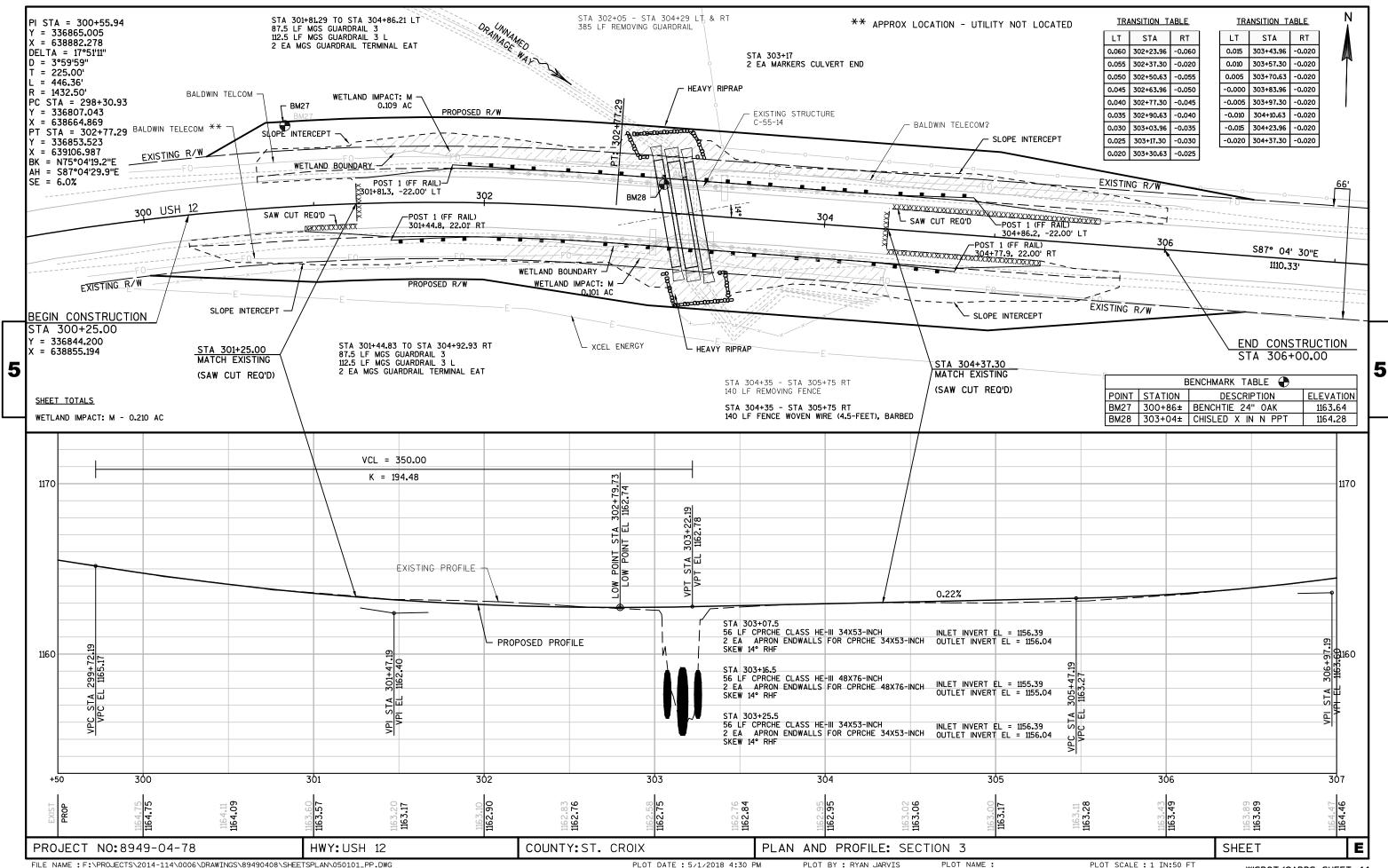
PROJECT NO:8949-04-78 HWY:USH 12 COUNTY:ST. CROIX MISCELLANEOUS QUANTITIES SHEET **E**

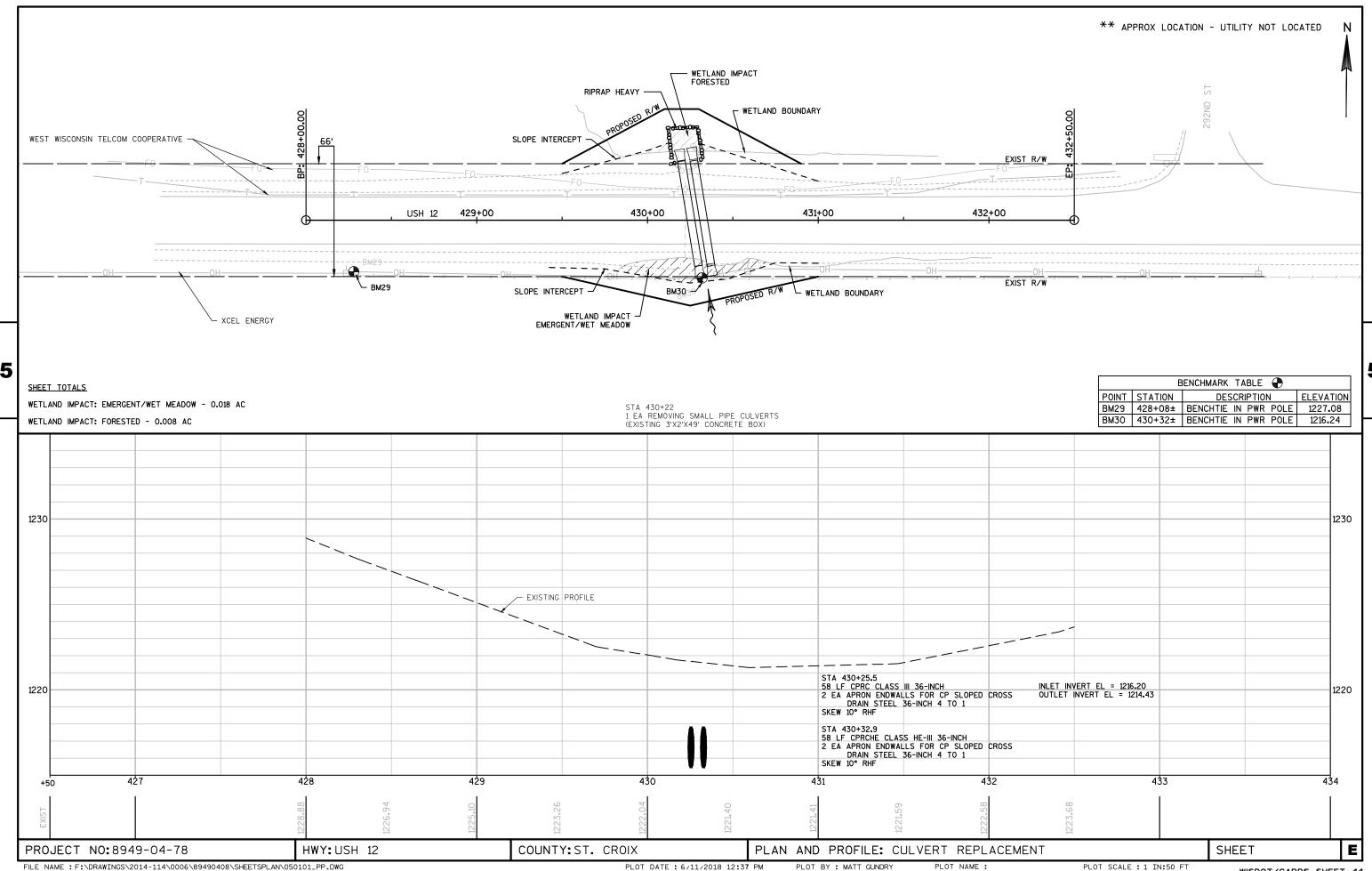


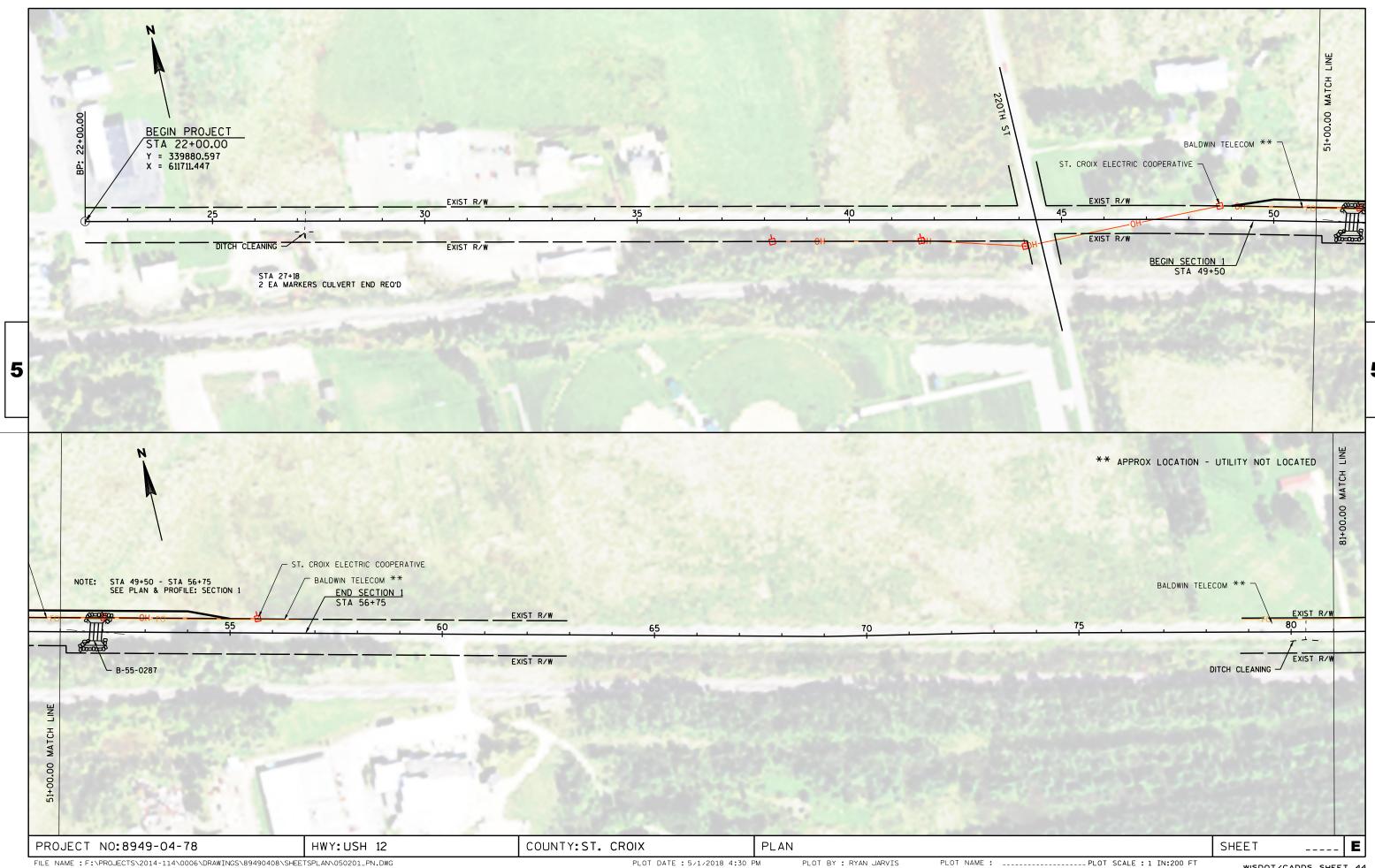










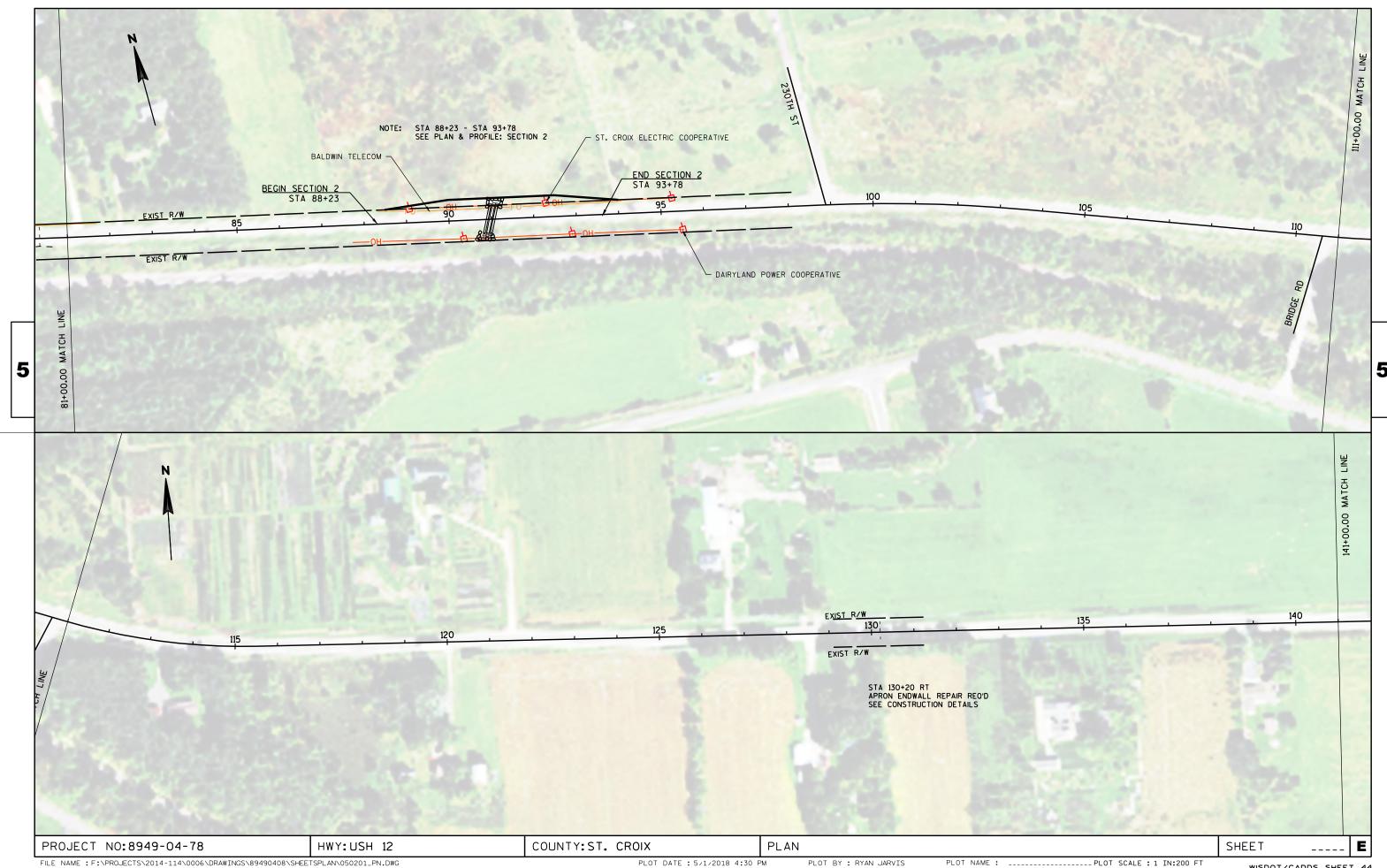


FILE NAME : F:\PROJECTS\2014-114\0006\DRAWINGS\89490408\SHEETSPLAN\050201_PN.DWG LAYOUT NAME - 050201_PN

PLOT DATE: 5/1/2018 4:30 PM

PLOT NAME : _____PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 44





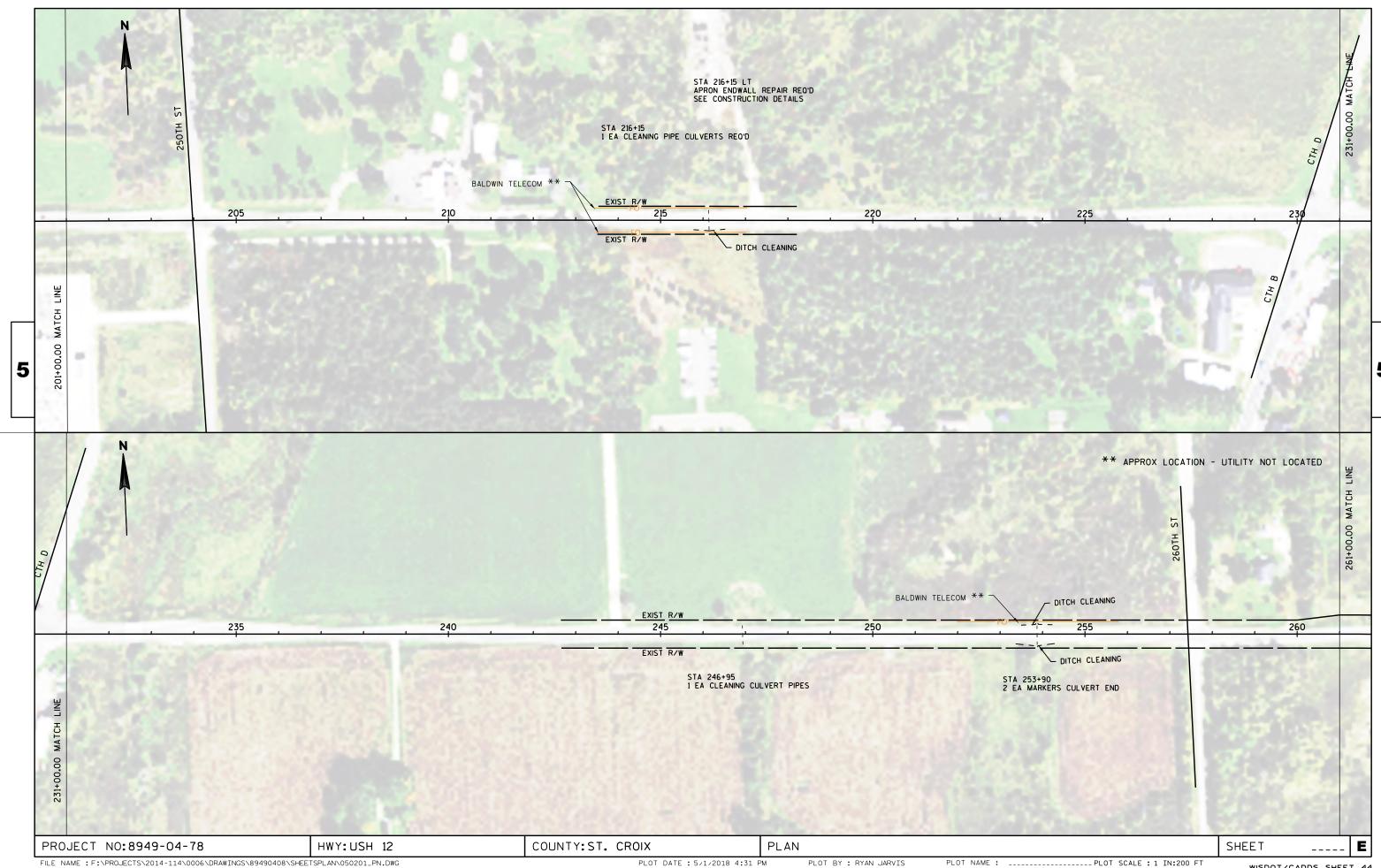
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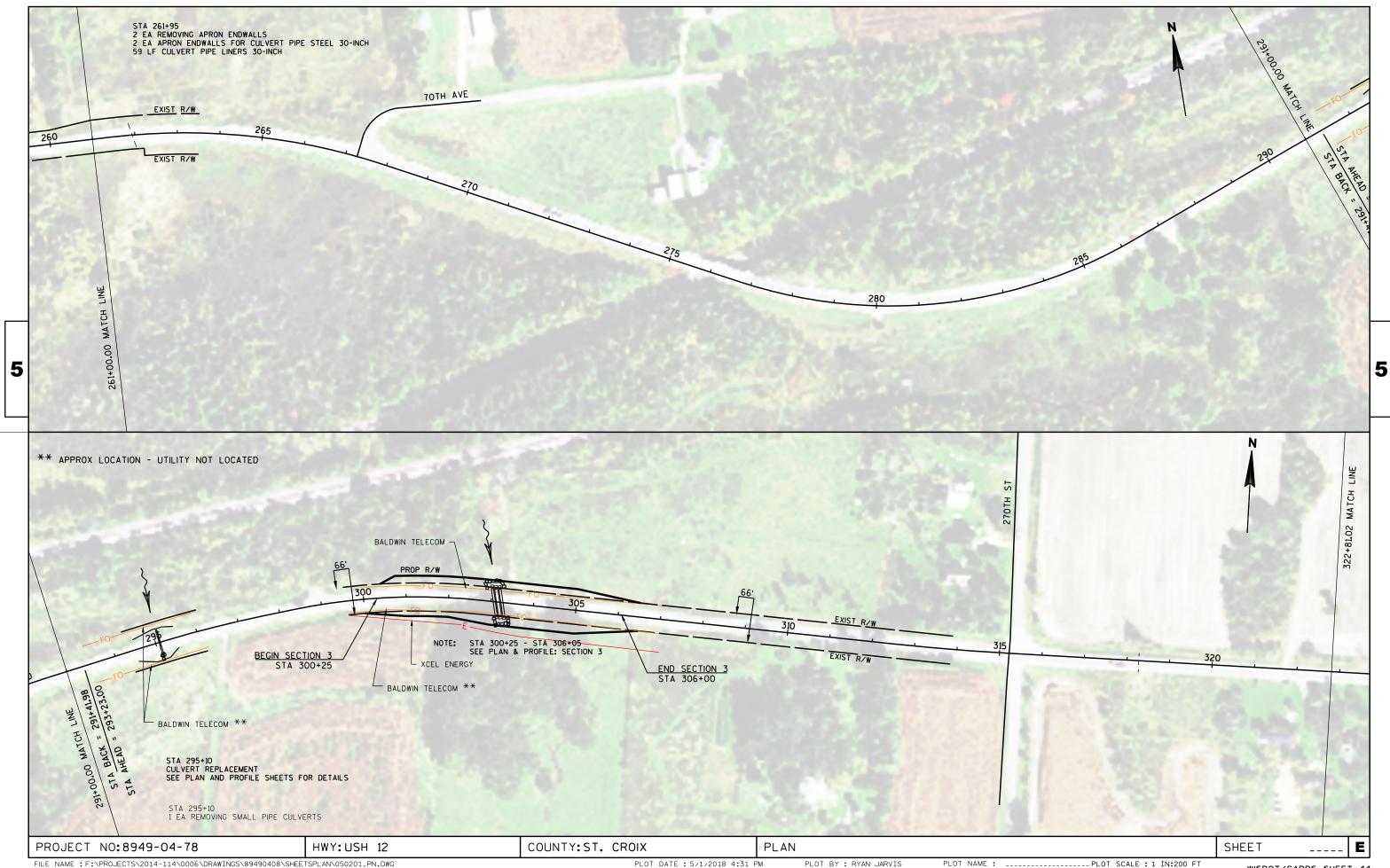
PLOT DATE : 5/1/2018 4:31 PM

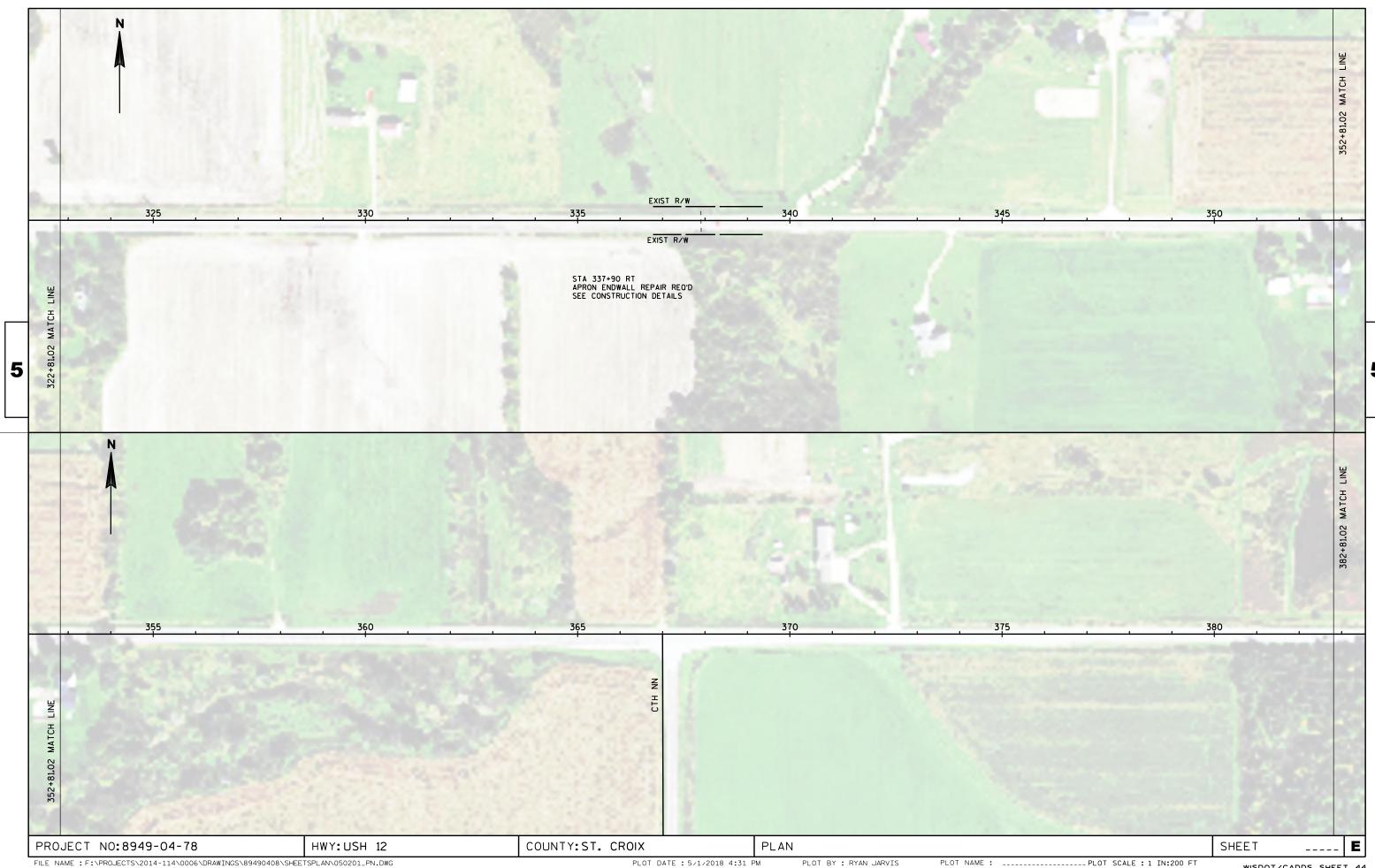
PLOT BY : RYAN JARVIS

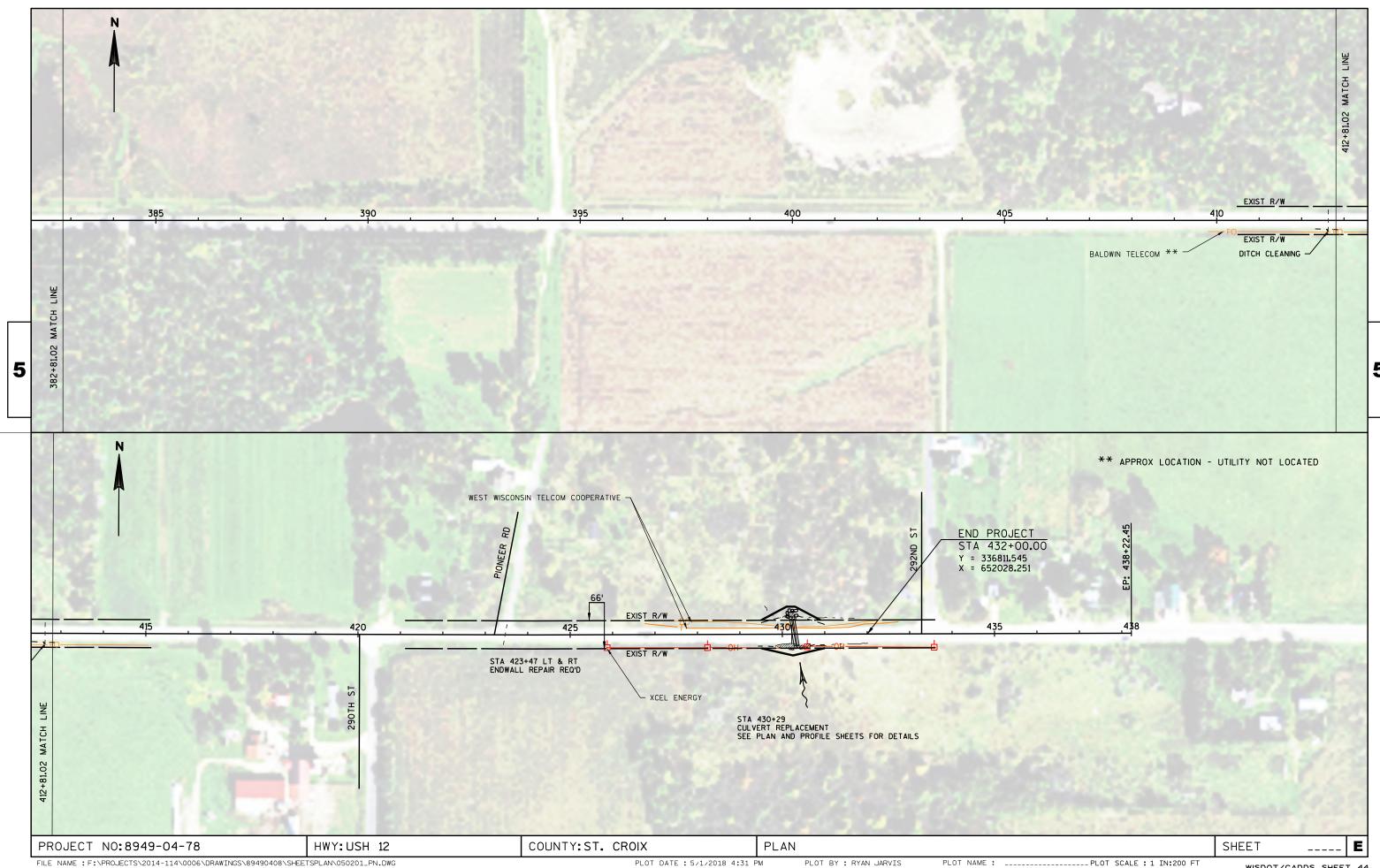
PLOT NAME : _____PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 44









Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F08-02	STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED CROSS DRAINS
12A03-10	NAME PLATE (STRUCTURES)
14B42-06A	MI DWEST GUARDRAI L SYSTEM (MGS) GUARDRAI L
14B42-06B	MI DWEST GUARDRAI L SYSTEM (MGS) GUARDRAI L
14B42-06C	MI DWEST GUARDRAI L SYSTEM (MGS) GUARDRAI L
14B42-06D	MI DWEST GUARDRAI L SYSTEM (MGS) GUARDRAI L
14B43-04A	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-04B	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-04C	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B44-04A	MI DWEST GUARDRAI L SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MI DWEST GUARDRAI L SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MI DWEST GUARDRAI L 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)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A01-13A	MARKER POST FOR RIGHT-OF-WAY
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15B01-08A	FENCE WOVEN WIRE
15B01-08B	FENCE WOVEN WIRE
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-19A	LONGI TUDI NAL MARKI NG (MAI NLI NE)
15C19-05A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

GENERAL NOTES

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

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



WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF **EROSION BALES / TEMPORARY** DITCH CHECKS

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02 /S/ Beth Connestro
CHIEF ROADWAY DEVELOPMENT ENGINEER

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TYPICAL APPLICATION OF SILT FENCE

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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.

- \bigcirc 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 11/8" X 11/8" OF OAK OR HICKORY.
- 4) SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- (5) CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



TRENCH DETAIL



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)



SILT FENCE

S.D.D. 8 E 9-6

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			1	METAL	APR	ON EN	NDWAL	.LS			
PIPE	MIN. 1	THICK.			DIMENS	SIONS (I	nches)			APPROX.	
DIA.	(Incl		A			W	SLOPE	BODY			
(IN.)	STEEL	ALUM.	(±1")	(MAX.)	(±1")	(±1 ½")	①	0	(±2")	320.2	
12	.064	.060	6	6	6	21	12	171/2	24	2½+o 1	1Pc.
15	.064	.060	7	8	6	26	14	213/4	30	2½to 1	1Pc.
18	.064	.060	8	10	6	31	15	281/4	36	21/2+o 1	1Pc.
21	.064	.060	9	12	6	36	18	295/8	42	21/2+o 1	1Pc.
24	.064	.075	10	13	6	41	18	371/4	48	21/2+o 1	1Pc.
30	.079	.075	12	16	8	51	18	521/4	60	21/2+0 1	1Pc.
36	.079	. 105	14	19	9	60	24	59¾	72	21/2+o 1	2 Pc.
42	.109	.105	16	22	11	69	24	75%	84	21/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 ¹ / ₄ +o 1	3 Pc.
54	.109	.105	18	30	12	84	30	851/2	102	2 ¹ / ₄ †o 1	3 Pc.
60	.109×	.105×	18	33	12	87	_	_	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	_	_	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	_	_	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	_	_	132	11/2+0 1	3 Pc.
84	.109×	.105×	18	45	12	87	_	_	138	11/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	_	_	144	11/2+0 1	3 Pc.
96	.109×	.105×	18	35	12	87	_	_	150	1/2+0 1	3 Pc.

	RE	INFORC	ED C	ONCRET	E APRO	N E	NDWAL	.LS
PIPE			DIM	ENSIONS	(Inches)			APPROX.
DIA.	T	A	В	С	D	Ε	G	SLOPE
12	2	4	24	48 1/8	721/8	24	2	3 to 1
15	21/4	6	27	46	73	30	21/4	3 to 1
18	21/2	9	27	46	73	36	21/2	3 to 1
21	23/4	9	36	371/2	731/2	42	23/4	3 to 1
24	3	91/2	431/2	30	731/2	48	3	3 to 1
27	31/4	101/2	491/2	24	731/2	54	31/4	3 to 1
30	$3\frac{1}{2}$	12	54	193/4	731/2	60	31/2	3 to 1
36	4	15	63	34¾	97¾	72	4	3 to 1
42	$4\frac{1}{2}$	21	63	35	98	78	41/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	51/2		65	**************************************	8 ¹ / ₄ - 100	90	51/2	2% to 1
60	6	* * * 30-35	60	39	99	96	5	2 to 1
66	61/2	* * * 24-30	* * * 72-78	* * * 21-27	99	102	51/2	2 to 1
72	7	* ** 24-36	78	21	99	108	6	2 to 1
78	71/2	* ** 24-36	78	21	99	114	61/2	2 to 1
84	8	36	901/2	21	1111/2	120	61/2	1½+o 1
90	81/2	41	871/2	24	1111/2	132	61/2	11/2+0 1

THREADED %6" DIA. ROD CONNECTOR AROUND CULVERT & THROUGH TANK TYPE CONNECTOR LUG LUG OR ALTERNATE CONNECTOR STRAP (SEE DETAIL) MEASURED LENGTH OF CULVERT TYPE 1 FOR 12" THRU 24" CORR. PIPE







NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL.

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

DIMPLED BAND MAY BE USED WITH HELICALLY

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

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

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT ALTERNATE FOR TYPE 1 CONNECTION END SECTION CONNECTOR STRAP

* EXCEPT CENTER PANEL SEE GENERAL NOTES





SHOULDER

SLOPE



SIDE ELEVATION METAL ENDWALLS



**MAXIMUM





CONCRETE ENDWALLS

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

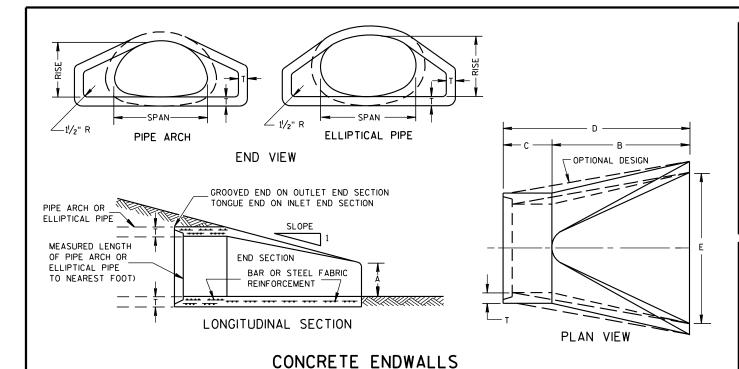
(1) FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.



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

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Checkson SPAN RISE STEEL ALUM. (±1") (MAX.) (±1") (±1½") (±1½") (±2") SLOPE		2- ² / ₃ " X ¹ / ₂ " CORRUGATIONS													
DIA. (Inches) A B H L L1 L2 W (±2") SLOPE BOD'	EQUIV.	(loci	hasi	MIN. 1	HICK.				APPROX						
15				(Incl	nes)	A	В		L					BODY	
18 21 15 .064 .060 7 10 6 23 14 19¾8 36 2½to 1 1 Pc 21 24 18 .064 .060 8 12 6 28 18 21¾4 42 2½to 1 1 Pc 24 28 20 .064 .060 9 14 6 32 18 27½ 48 2½to 1 1 Pc 30 35 24 .079 .075 10 16 6 39 18 37½ 60 2½to 1 1 Pc 36 42 29 .079 .075 12 18 8 46 24 45¾ 75 2½to 1 1 Pc 42 49 33 .109 .105 13 21 9 53 24 54¾ 85 2½to 1 3 Pc 48 57 38 .109 .105 18 26 12 63 24 68 90 2½to 1 3 Pc 54 64 43 .109 .105 18 30 12 70 24 72¾ 102 2½to 1 3 Pc 60 71 47 </th <th>(Inches)</th> <th>SPAN</th> <th>RISE</th> <th>STEEL</th> <th>ALUM.</th> <th>(±]")</th> <th>(MAX.)</th> <th>(±]")</th> <th>(±1 ½")</th> <th>①</th> <th>0</th> <th>(±2")</th> <th>3E0. E</th> <th></th>	(Inches)	SPAN	RISE	STEEL	ALUM.	(±]")	(MAX.)	(±]")	(±1 ½")	①	0	(±2")	3E0. E		
21	15	17	13	.064	.060	7	9	6	19	14	16	30	2½+o 1	1Pc.	
24 28 20 .064 .060 9 14 6 32 18 27½ 48 2½ to 1 1 Pc 30 35 24 .079 .075 10 16 6 39 18 375% 60 2½ to 1 1 Pc 36 42 29 .079 .075 12 18 8 46 24 45¾ 75 2½ to 1 1 Pc 42 49 33 .109 .105 13 21 9 53 24 54¾ 85 2½ to 1 2 Pc 48 57 38 .109 .105 18 26 12 63 24 68 90 2½ to 1 3 Pc 54 64 43 .109 .105 18 30 12 70 24 72¾ 102 2¼ to 1 3 Pc 66 77 52 .109* .105* 18 36 12 77 — 126 2 to 1 3 Pc 66 77 52 .109* .105* 18 36 12 77 — 126 2 to 1 3 Pc	18	21	15	.064	.060	7	10	6	23	14	193/8	36	21/2+o 1	1Pc.	
30 35 24 .079 .075 10 16 6 39 18 375/8 60 21/2 to 1 1 Pc 36 42 29 .079 .075 12 18 8 46 24 453/8 75 21/2 to 1 1 Pc 42 49 33 .109 .105 13 21 9 53 24 543/4 85 21/2 to 1 2 Pc 48 57 38 .109 .105 18 26 12 63 24 68 90 21/2 to 1 3 Pc 54 64 43 .109 .105 18 30 12 70 24 723/4 102 21/4 to 1 3 Pc 60 71 47 .109* .105* 18 33 12 77 30 821/4 114 21/4 to 1 3 Pc 66 77 52 .109* .105* 18 36 12 77 — 126 2 to 1 3 Pc	21	24	18	.064	.060	8	12	6	28	18	213/4	42	21/2+o 1	1Pc.	
36	24	28	20	.064	.060	9	14	6	32	18	271/2	48	21/2+o 1	1 Pc.	
42 49 33 .109 .105 13 21 9 53 24 54¾ 85 2½to 1 2 Pr 48 57 38 .109 .105 18 26 12 63 24 68 90 2½to 1 3 Pr 54 64 43 .109 .105 18 30 12 70 24 72¾ 102 2¼to 1 3 Pr 60 71 47 .109* .105* 18 33 12 77 30 82¼ 114 2¼to 1 3 Pr 66 77 52 .109* .105* 18 36 12 77 — 126 2 to 1 3 Pr	30	35	24	.079	.075	10	16	6	39	18	375/8	60	21/2+o 1	1 Pc.	
48 57 38 .109 .105 18 26 12 63 24 68 90 2½t 1 3 Pr 54 64 43 .109 .105 18 30 12 70 24 72¾ 102 2½t 1 3 Pr 60 71 47 .109* .105* 18 33 12 77 30 82¼ 114 2¼t 1 3 Pr 66 77 52 .109* .105* 18 36 12 77 — 126 2 to 1 3 Pr	36	42	29	.079	.075	12	18	8	46	24	45%	75	21/2+o 1	1Pc.	
54 64 43 .109 .105 18 30 12 70 24 72¾ 102 2½/4 to 1 3 Po 60 71 47 .109* .105* 18 33 12 77 30 82¼ 114 2¼ to 1 3 Po 66 77 52 .109* .105* 18 36 12 77 — 126 2 to 1 3 Po	42	49	33	.109	.105	13	21	9	53	24	54¾	85	21/2 to 1	2 Pc.	
60 71 47 .109* .105* 18 33 12 77 30 82'/4 114 2'/4+0 1 3 PG 66 77 52 .109* .105* 18 36 12 77 — 126 2 +0 1 3 PG	48	57	38	.109	.105	18	26	12	63	24	68	90	2½+o 1	3 Pc.	
66 77 52 .109* .105* 18 36 12 77 — — 126 2 to 1 3 Pd	54	64	43	.109	.105	18	30	12	70	24	723/4	102	2 ¹ / ₄ +o 1	3 Pc.	
	60	71	47	.109*	.105*	18	33	12	77	30	821/4	114	21/4+0 1	3 Pc.	
70 07 57 1004 1054 10 70 10 77	66	77	52	. 109*	.105 *	18	36	12	77	_	-	126	2 to 1	3 Pc.	
12 83 57 .109* .105* 18 39 12 77 — — 138 2 †0 1 3 Pa	72	83	57	.109*	.105*	18	39	12	77	_	_	138	2 to 1	3 Pc.	

	3" X 1" CORRUGATIONS																
EQUIV.	(Inches)		MIN. THICK.		DIMENSIONS (Inches)						APPROX.						
(Inches)	SPAN	RISE	STEEL	ALUM.	(±1")	(MAX.)		(±1 ½")		L 2 ①	(±2")	SLOPE					
48	53	41	.109	.105	18	26	12	63	24	723/4	90	2½+o 1	2 Pc.				
54	60	46	.109	.105	18	30	12	70	30	821/4	102	2 to 1	2 Pc.				
60	66	51	.109*	. 105*	18	33	12	77	_	_	114	11/2+0 1	3 Pc.				
66	73	55	.109 *	. 105*	18	36	12	77	_	_	126	1½+o 1	3 Pc.				
72	81	59	.109*	. 105*	18	39	12	77	_	_	138	2 to 1	3 Pc.				
78	87	63	.109*	.105 *	22	38	12	77	_	_	148	11/2+0 1	3 Pc.				
84	95	67	.109*	. 105*	22	34	12	77	_	_	162	11/2+0 1	3 Pc.				
90	103	71	.109*	. 105*	22	38	12	77	_	_	174	1½+o 1	3 Pc.				
96	112	75	.109*	.105*	24	40	12	77	_	_	174	11/2 to 1	3 Pc.				

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

THREADED 7/6" DIA. ROD OVER TOP OF APRON, SIDE

LUGS TO BE RIVETED TO

MEASURED LENGTH OF PIPE ARCH

MEASURED LENGTH

OF PIPE ARCH

SECTION

CONNECTOR SECTION

TO BE PAID FOR AS

PART OF END SECTION

CONNECTOR

* EXCEPT CENTER PANEL SEE GENERAL NOTES

ROD HOLDER

COUPLING BAND

RIVETED OR

BOLTED

REQUIRED

	REINFORCED CONCRETE PIPE ARCH												
EQUIV.			DIME	NSIONS	(Inche	s)			APPROX				
DIA. (Inches)	** SPAN	** RISE	T	A	В	С	D	E	SLOPE				
24	29	18	3	81/2	39	33	72	48	3 to 1				
30	36	22	31/2	91/2	50	46	96	60	3 to 1				
36	44	27	4	111/8	60	36	96	72	3 to 1				
42	51	31	41/2	1513/16	60	36	96	78	3 to 1				
48	58	36	5	21	60	36	96	84	3 to 1				
54	65	40	51/2	251/2	60	36	96	90	3 to 1				
60	73	45	6	31	60	36	96	96	3 to 1				
72	88	54	7	31	60	39	99	120	2 to 1				
84	102	62	8	281/2	83	19	102	144	2 to 1				

REINFORCED CONCRETE ELLIPTICAL PIPE												
EQUIV.	DIMENSIONS (Inches)											
DIA. (Inches)	** SPAN	** RISE	T	A	В	С	D	Ε	APPROX. SLOPE			
24	30	19	31/4	81/2	39	33	72	48	3 to 1			
30	38	24	3¾	91/2	54	18	72	60	3 to 1			
36	45	29	41/2	111/8	60	24	84	72	21/2+o 1			
42	53	34	5	15¾	60	36	96	78	21/2+o 1			
48	60	38	51/2	21	60	36	96	84	2½+o 1			
54	68	43	6	251/2	60	36	96	90	2½+o 1			
60	76	48	61/2	30	60	36	96	96	21/2 to 1			

**NOMINAL SIZE

GENERAL NOTES

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

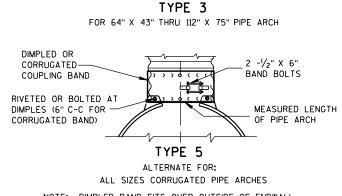
CONCRETE APRON ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA, GALVANIZED STEEL OR ALUMINUM APRON ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

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

① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.



TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH

NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL.

phonelly.	TUBING SLIPPED (AND RIVETS PRIO CATION OF THE E
L ₂ ① 3%" R.	3%" DIA. X 1/2" OR ALUM. BUT SPACED AT 6 LENGTH OF RI 3%" R. OUTSIDE SIDEWALL
EDGE OF SIDEWALL SHEET ROLLED SNUGLY AGAINST STEEL ROD	MINIMUM %6" STEEL ROD O GALV. REINFOR

APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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

REINFORCED EDGE (SEE SECTION A-A)
PLAN VIEW END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER PLATE W + 10" (RISE 23" THRU 29") W + 20" (RISE 33" THRU 75") END VIEW END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS
SHOULDER SLOPE SLOPE FLOW LINE

SIDE ELEVATION

METAL ENDWALLS

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0.109" THICK GALV. STEEL OR 0.109" THICK ALUMINUM 3/8" DIA. RIVETS SPACED APRON SIDEWALL AT 6" C-C SHEET 1" O.D. X O.079" THICK GALV. STEEL OR 0.075" THICK ALUM. OVER SHEET OR TO FABRI-END SECTION "- GALV. STEEL TTONHEAD RIVETS 6" C-C. OVER-RIVET = 0.78" OF APRON L SHEET DIA. GALV. OR 10M ORCING BAR

└─ ¹/8" (APPROX.)

CONNECTION DETAILS

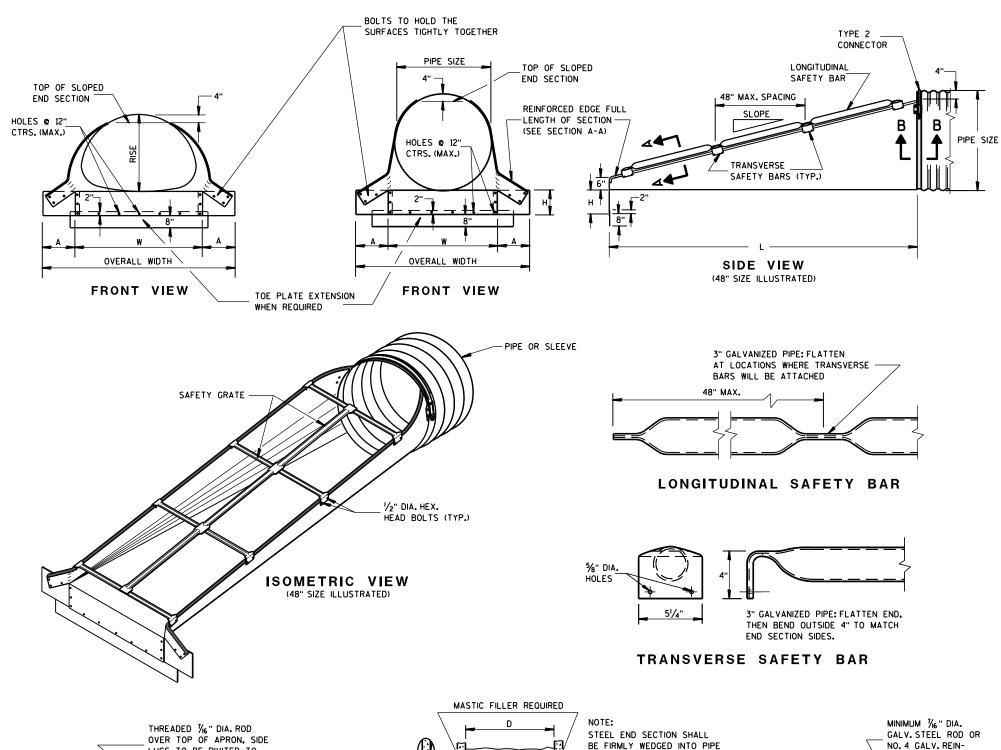


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GENERAL NOTES

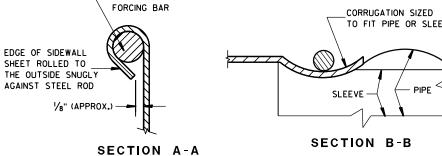
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

SAFETY GRATES SHALL BE FABRICATED FROM 3-INCH DIAMETER GALVANIZED PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL. THE LONGITUDINAL BAR SHALL BE WELDED TO THE TRANSVERSE BARS WHERE THE BARS CROSS. THE NUMBER OF TRANSVERSE BARS REQUIRED WILL VARY DEPENDING ON THE LENGTH OF THE END SECTION.

SLOPED STEEL ENDWALLS LOCATED AT THE ENDS OF CONCRETE CULVERT PIPE SHALL BE FURNISHED WITH STEEL ADAPTER SLEEVES.

	STEEL APRON ENDWALLS FOR CULVERT PIPE CROSS DRAINS											
PIPE MIN. THICK. DIMENSIONS (Inches) L DIMENSIONS												
DIA. (IN.)	IN.	GAGE	A	A H W OVERALL SLOPE LENGTH INCHES SL					SLOPE	LENGTH INCHES		
36	.109	12	12	9	42	66	4:1	104	6:1	156		
42	.109	12	16	12	48	80	4:1	128	6:1	192		
48	.109	12	16	12	54	86	4:1	152	6:1	228		
54	.109	12	16	6 12 60 92 4:1 176 6:1 264								
60	.109	12	16	12	66	98	4:1	200	6:1	300		

EQUIV.	INCHES		MIN. THICK.		DIMENSIONS (Inches)				L DIMENSIONS			
DIA. (IN.)	SPAN	RISE	IN.	GAGE	A	Н	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
30	35	24	.079	14	12	9	41	65	4:1	56	6:1	84
36	42	29	.109	12	12	9	48	72	4:1	76	6:1	114
42	49	33	.109	12	16	12	55	87	4:1	92	6:1	138
48	57	38	.109	12	16	12	63	95	4:1	112	6:1	168
54	64	43	.109	12	16	12	70	102	4:1	132	6:1	198
60	71	47	.109	12	16	12	77	109	4:1	148	6:1	222



STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED CROSS DRAINS

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APPROVED

/S/ Jerry H. Zogg 6/5/2012 ROADWAY STANDARDS DEVELOPMENT ENGINEER FHWA

OVER TOP OF APRON, SIDE LUGS TO BE RIVITED TO ROD HOLDER MEASURED LENGTH OF CULVERT

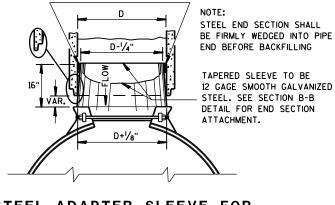
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TYPE 2 CONNECTOR DETAIL



STEEL ADAPTER SLEEVE FOR **CONCRETE PIPE**

TO FIT PIPE OR SLEEVE





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.



SPREAD OPEN SO THE TOP OF LUG IS 11/4" WIDE

SECTION A-A

ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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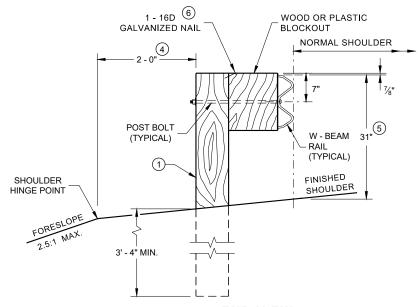
3/26/IO /S/ SCOT BECKET

CHIEF STRUCTURAL DEVELOPMENT ENGINEER

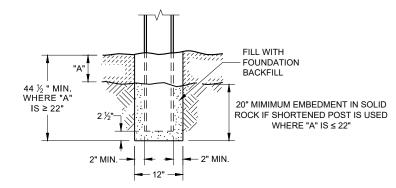
D.D. 12 A

3-10

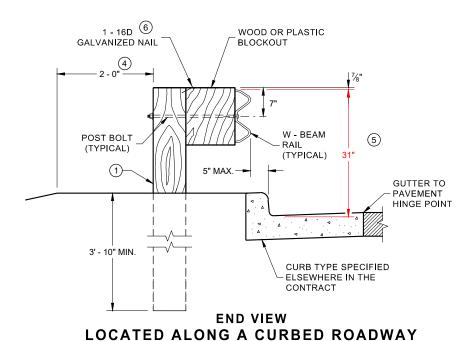
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- $\ \, \ \,$ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 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
- 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).
- $\fill \begin{tabular}{ll} \end{tabular}$ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS \$\pm1"\$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 % " 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.
- TOTAL POST LENGTH FOR TYPE K IS 7' 0". TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



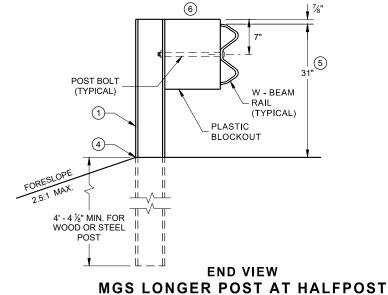
END VIEW LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION

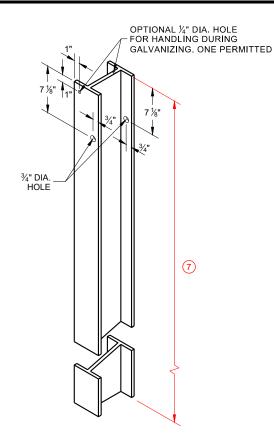


END VIEW SETTING STEEL OR WOOD POST IN ROCK

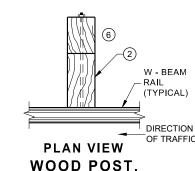


SPACING W BEAM (K)

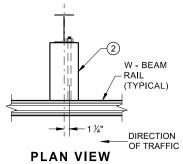




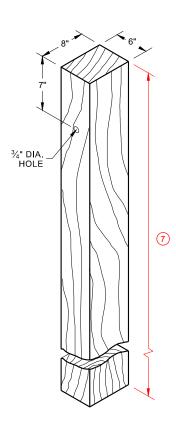
STEEL POST & HOLE **PUNCHING DETAIL** (W 6 X 9) ⁽¹⁾



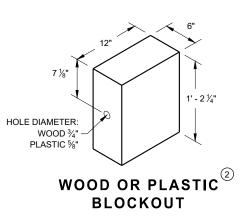
WOOD POST BLOCKOUT & BEAM



STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD POST (6" X 8") NOMINAL



MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

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

6' 3" C - C

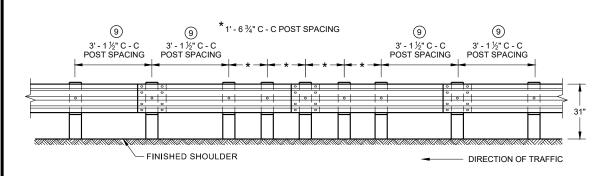
POST SPACING

DIRECTION OF TRAFFIC

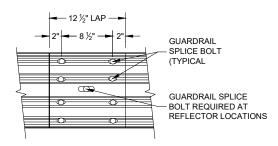
6' - 3" C -C

POST SPACING

FINISHED SHOULDER



FRONT VIEW **QUARTER POST SPACING (QS)**



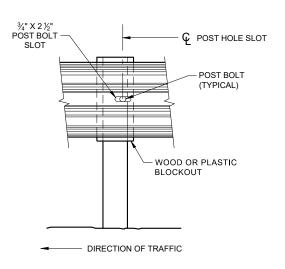
FRONT VIEW MID-SPAN BEAM SPLICE

GENERAL NOTES

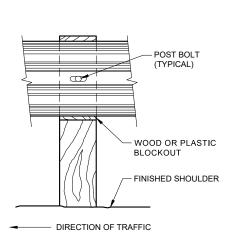
- DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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

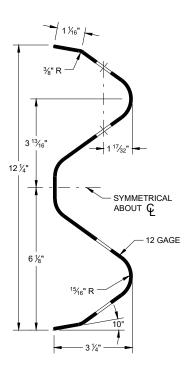
GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES %" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



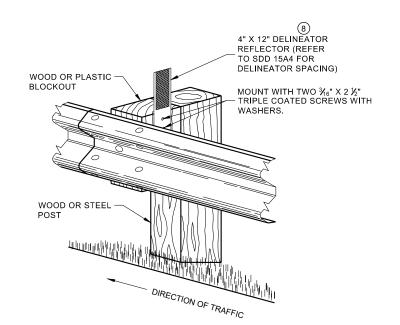
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST







ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

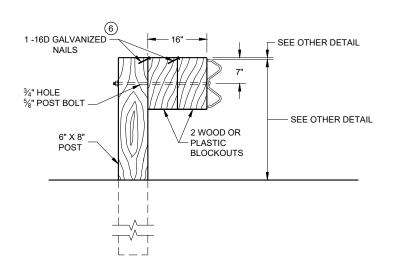
> STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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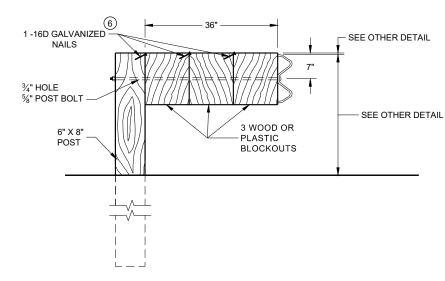
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DETAIL FOR 16" BLOCKOUT DEPTH

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



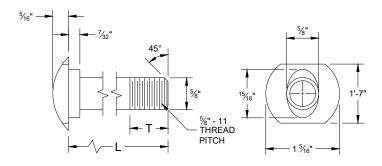
DETAIL FOR 36" BLOCKOUT DEPTH

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

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

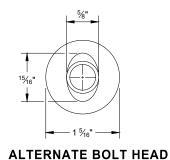
NOTE:

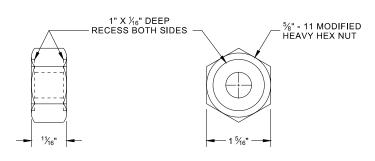
- 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF $\frac{3}{16}$ ".
- 2. IF THE BOLT EXTENDS MORE THAN $\mbox{\ensuremath{\mbox{\sc M}}}\mbox{\sc "}\mbox{\sc FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.}$



POST BOLT TABLE

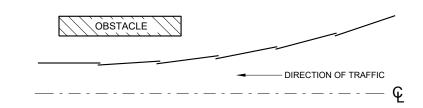
L	T (MIN.)
1 1⁄4"	1 1/4"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



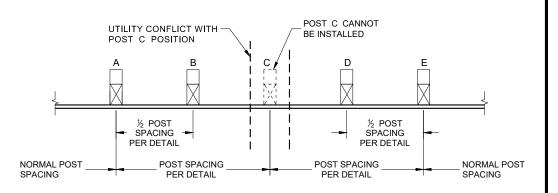


POST BOLT, SPLICE BOLT **AND RECESS NUT**

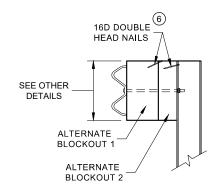
WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D (6) GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

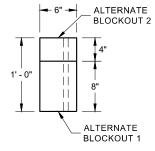


PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION





SIDE VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

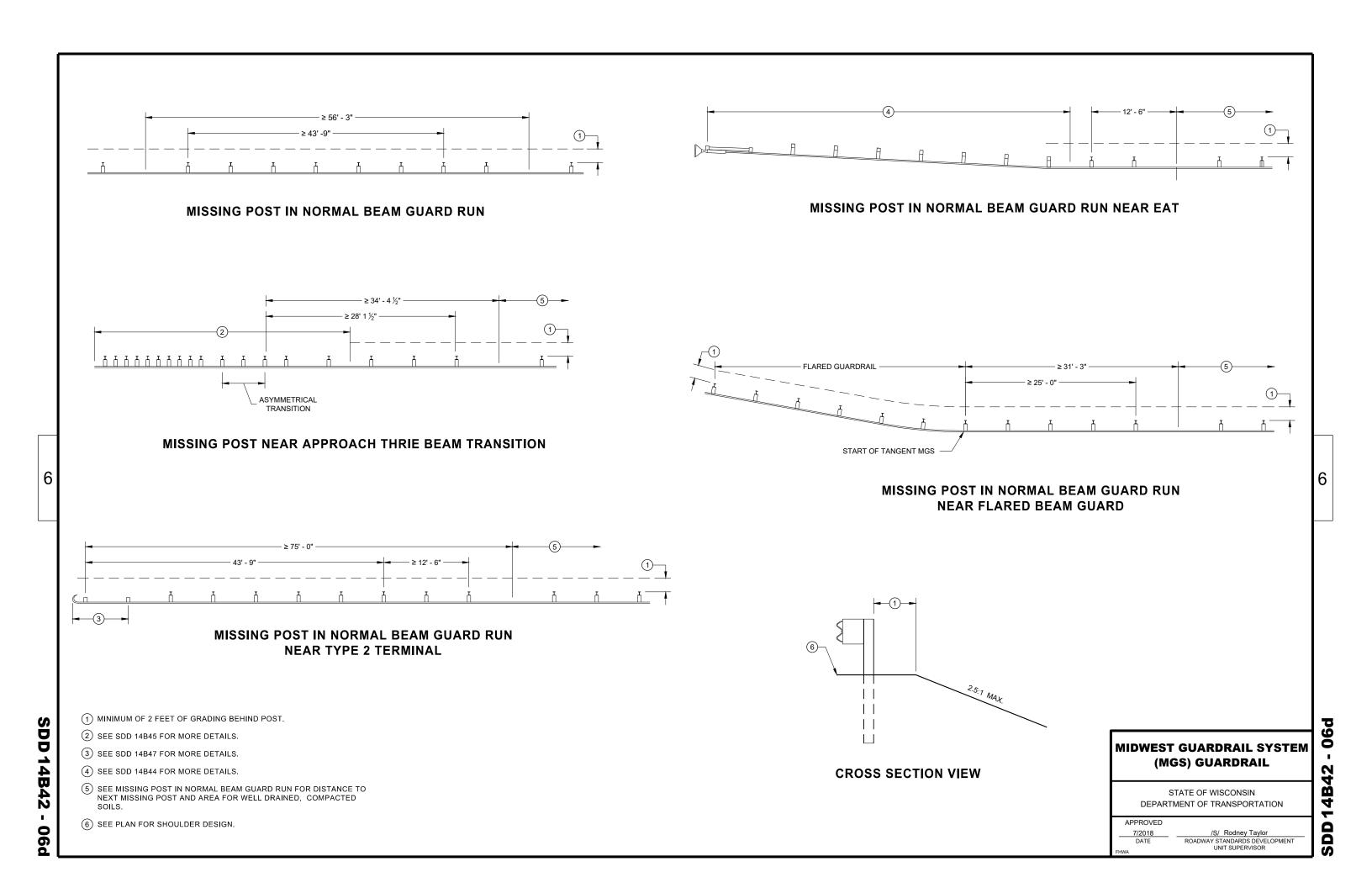
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

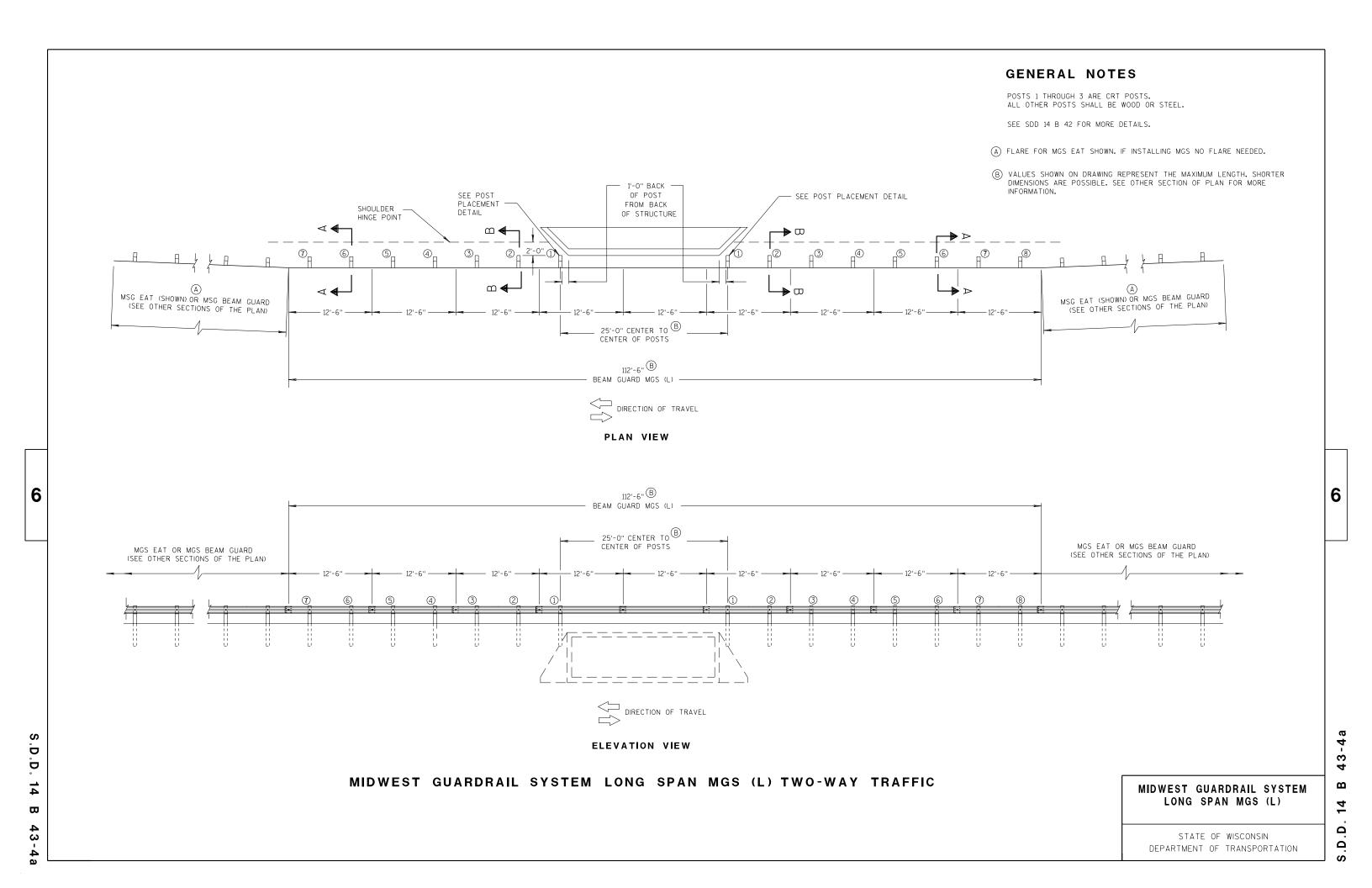
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

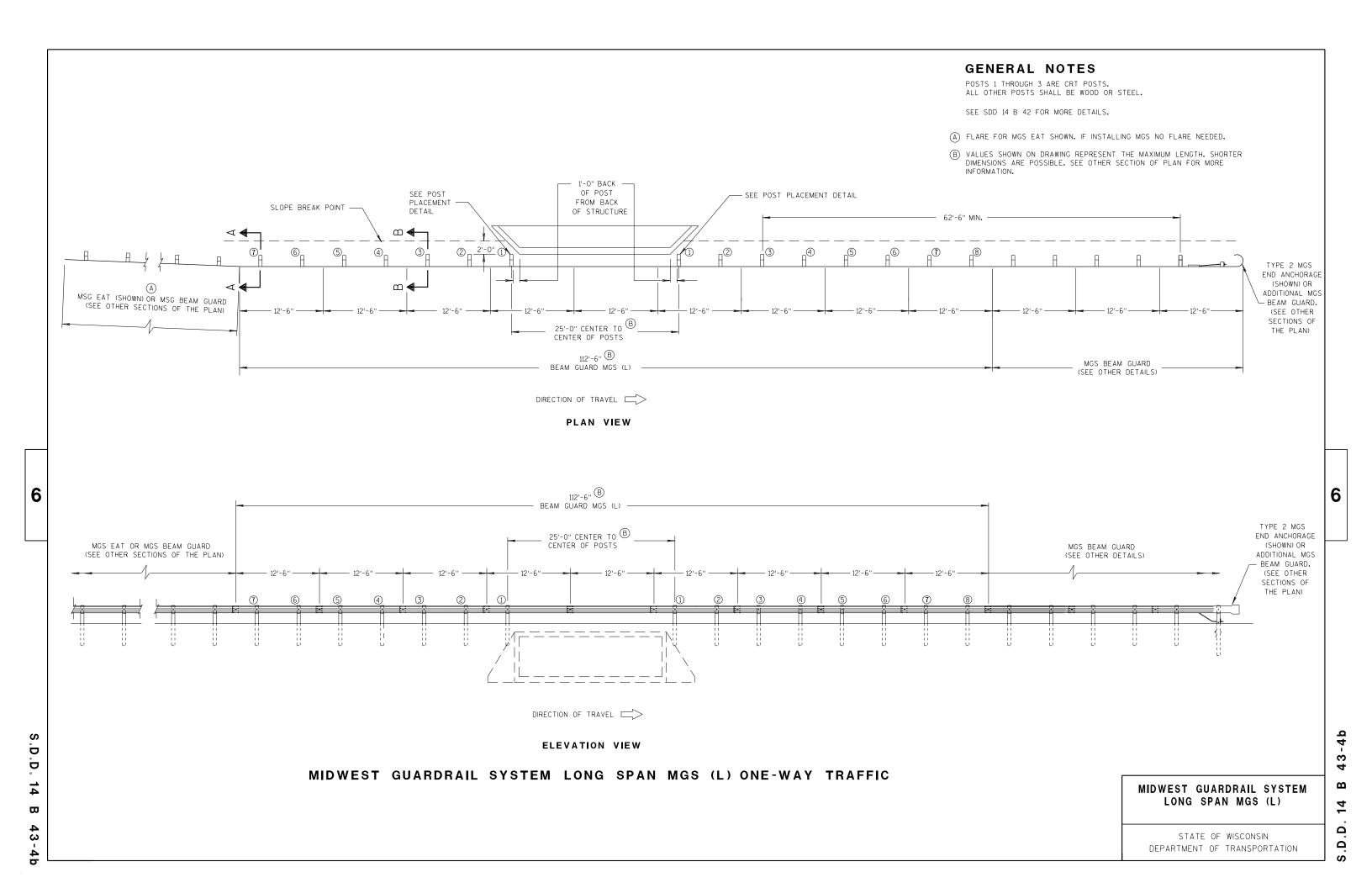
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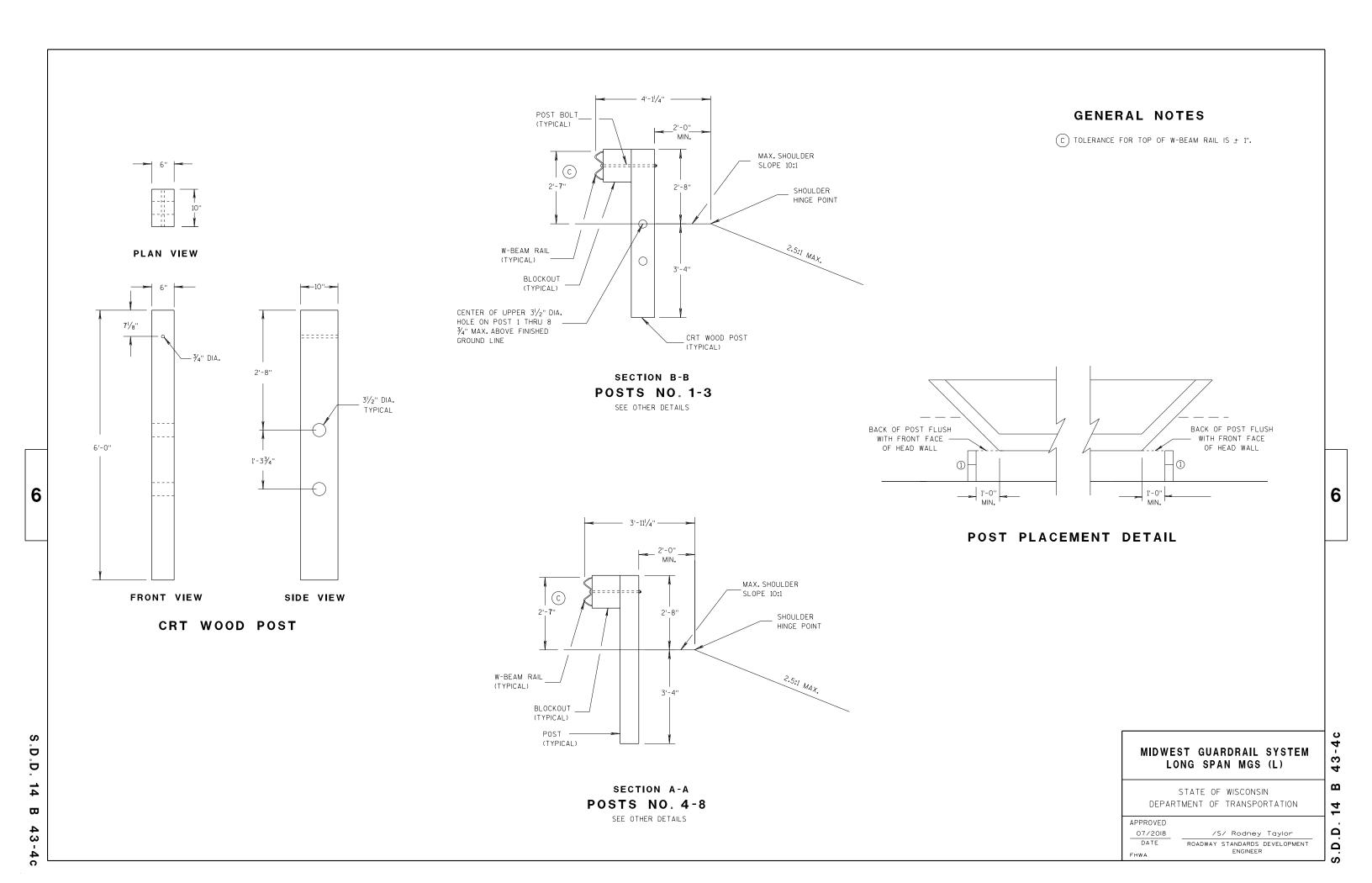
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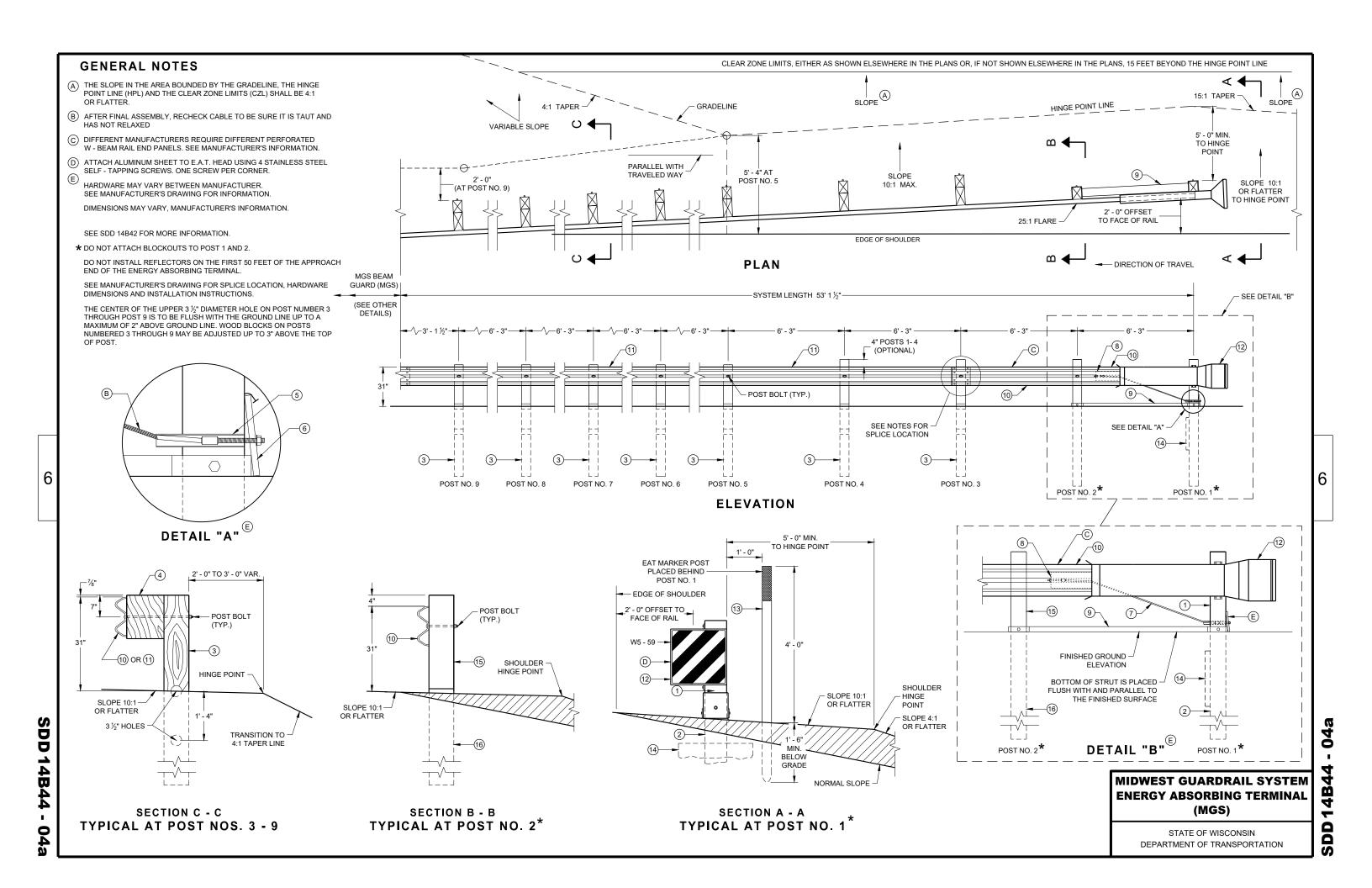
PLAN VIEW

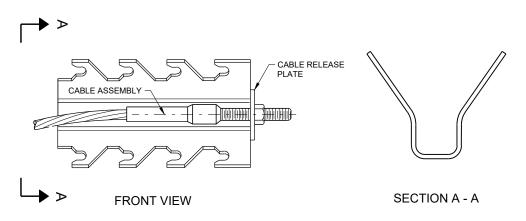




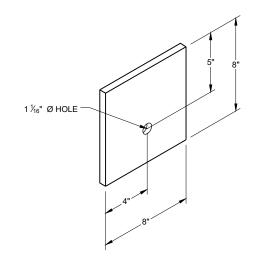








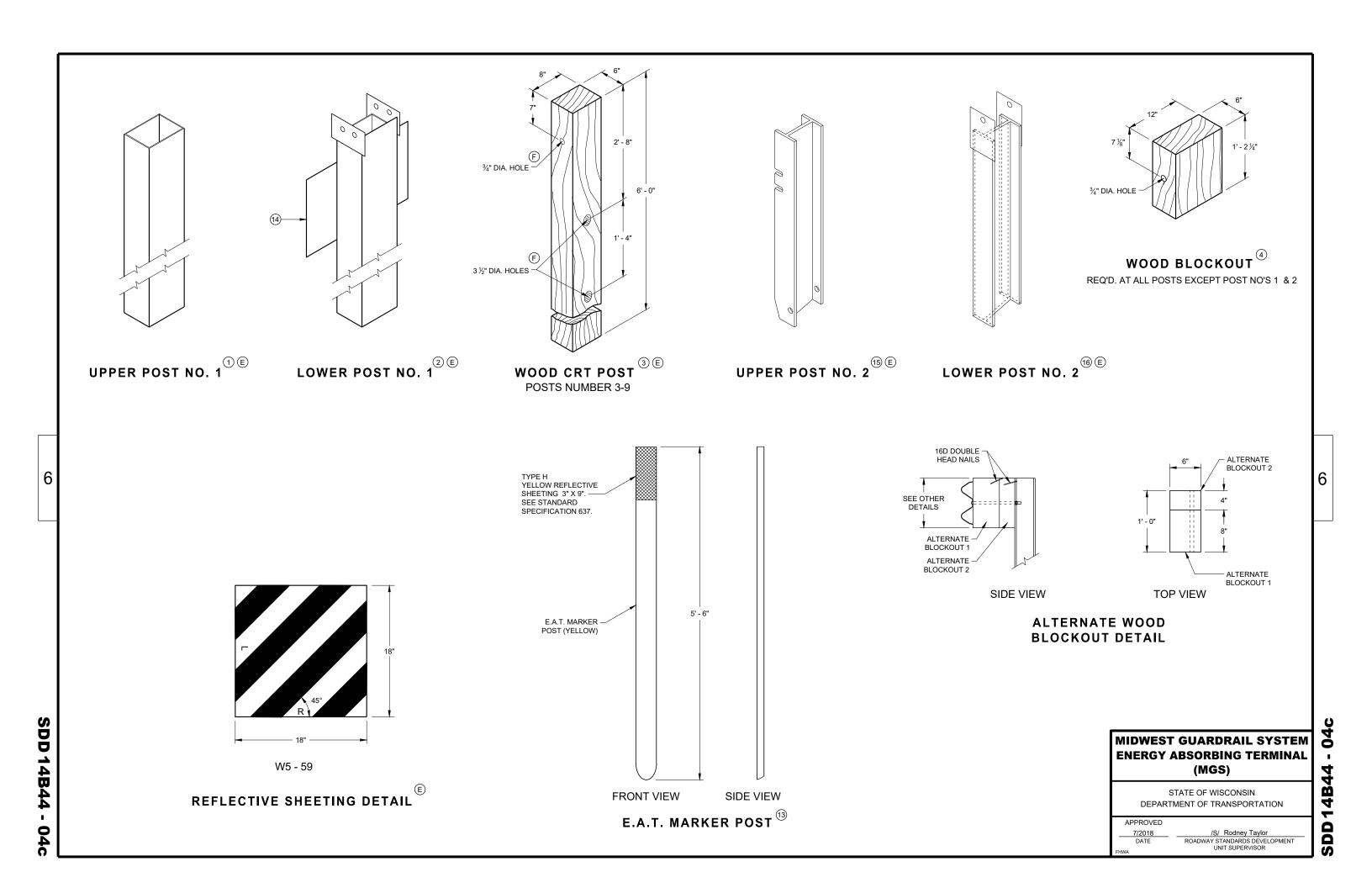
GENERIC ANCHOR CABLE BOX ^{(9) (E)}

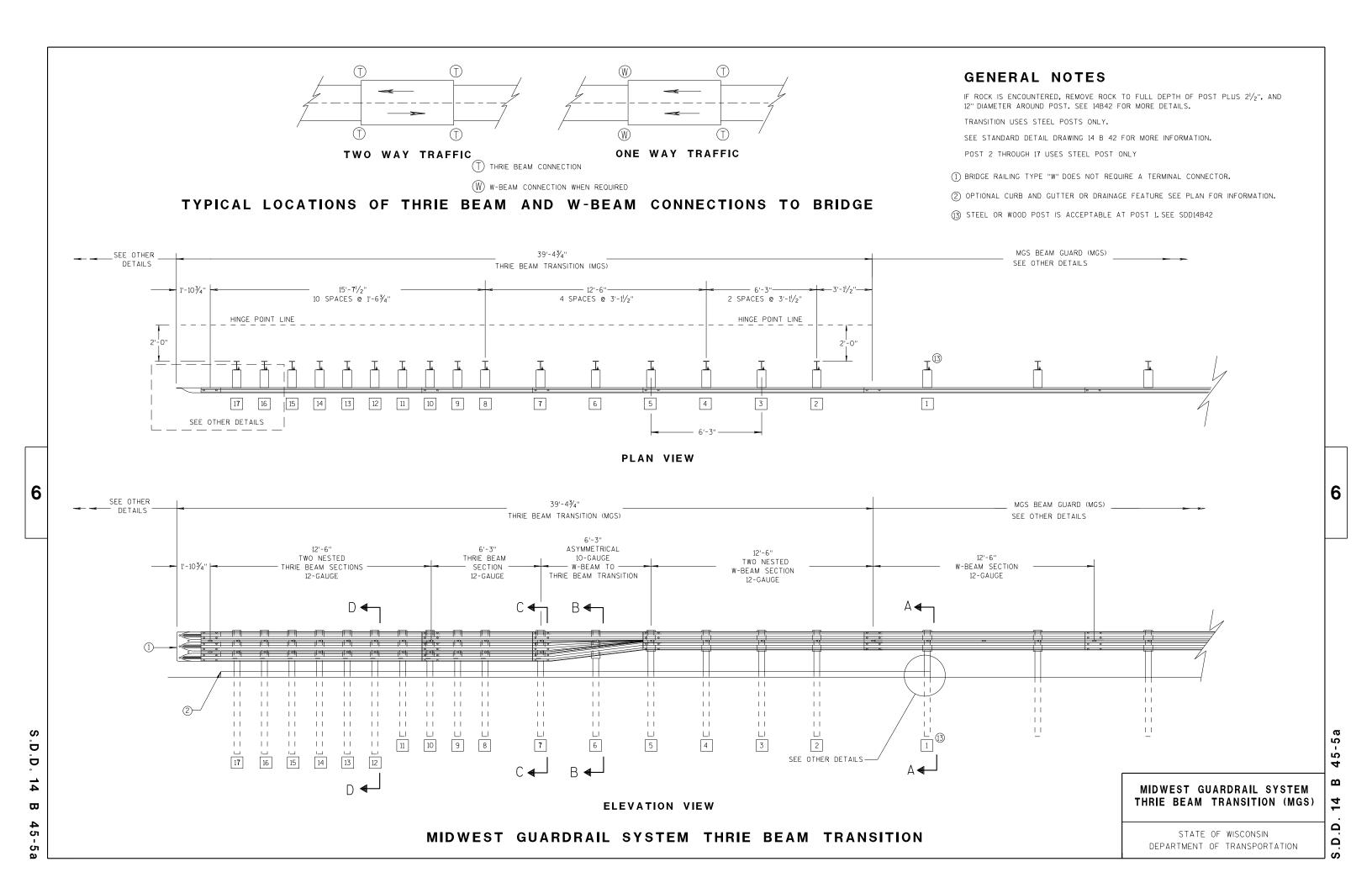


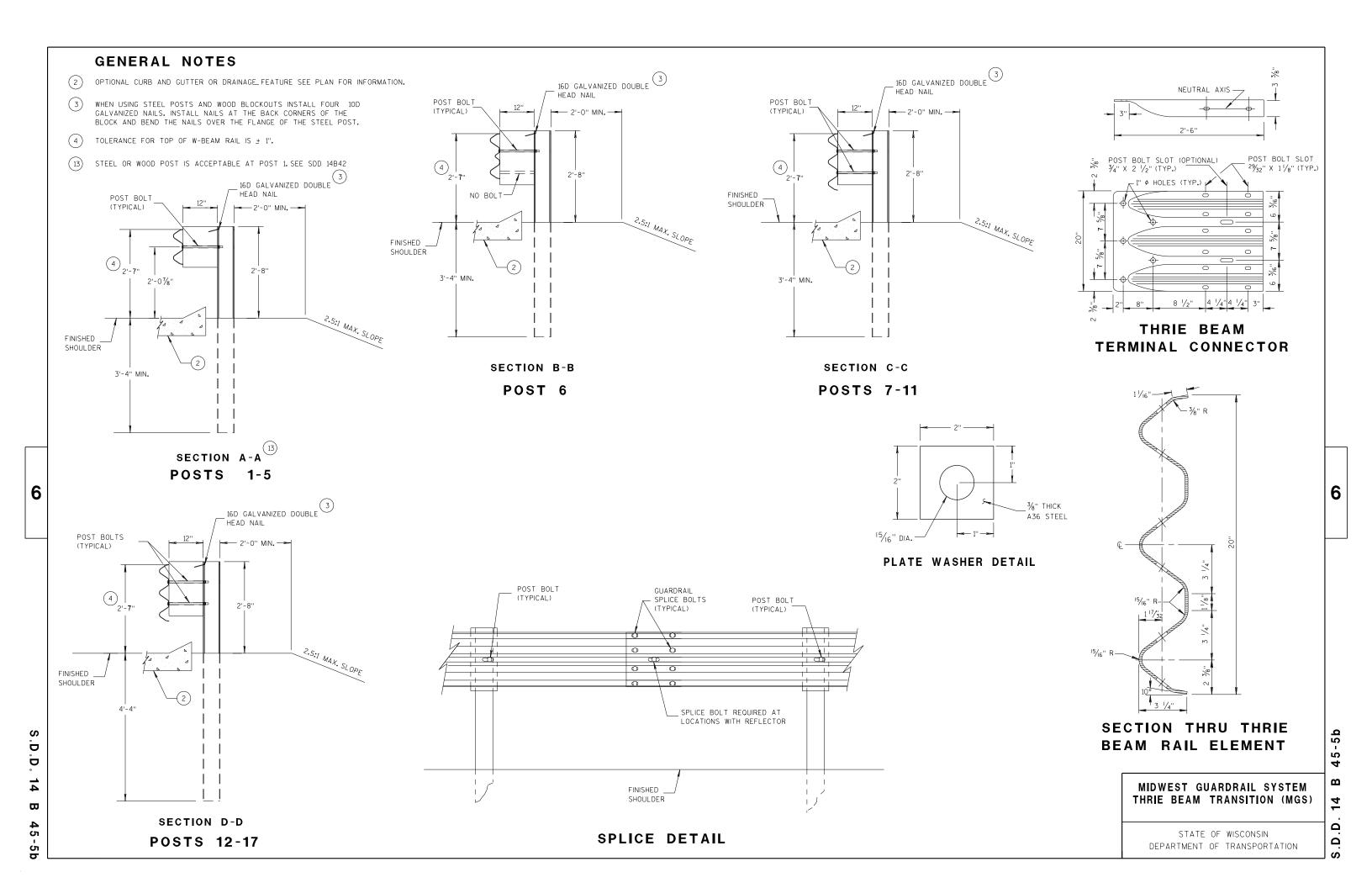
BEARING PLATE

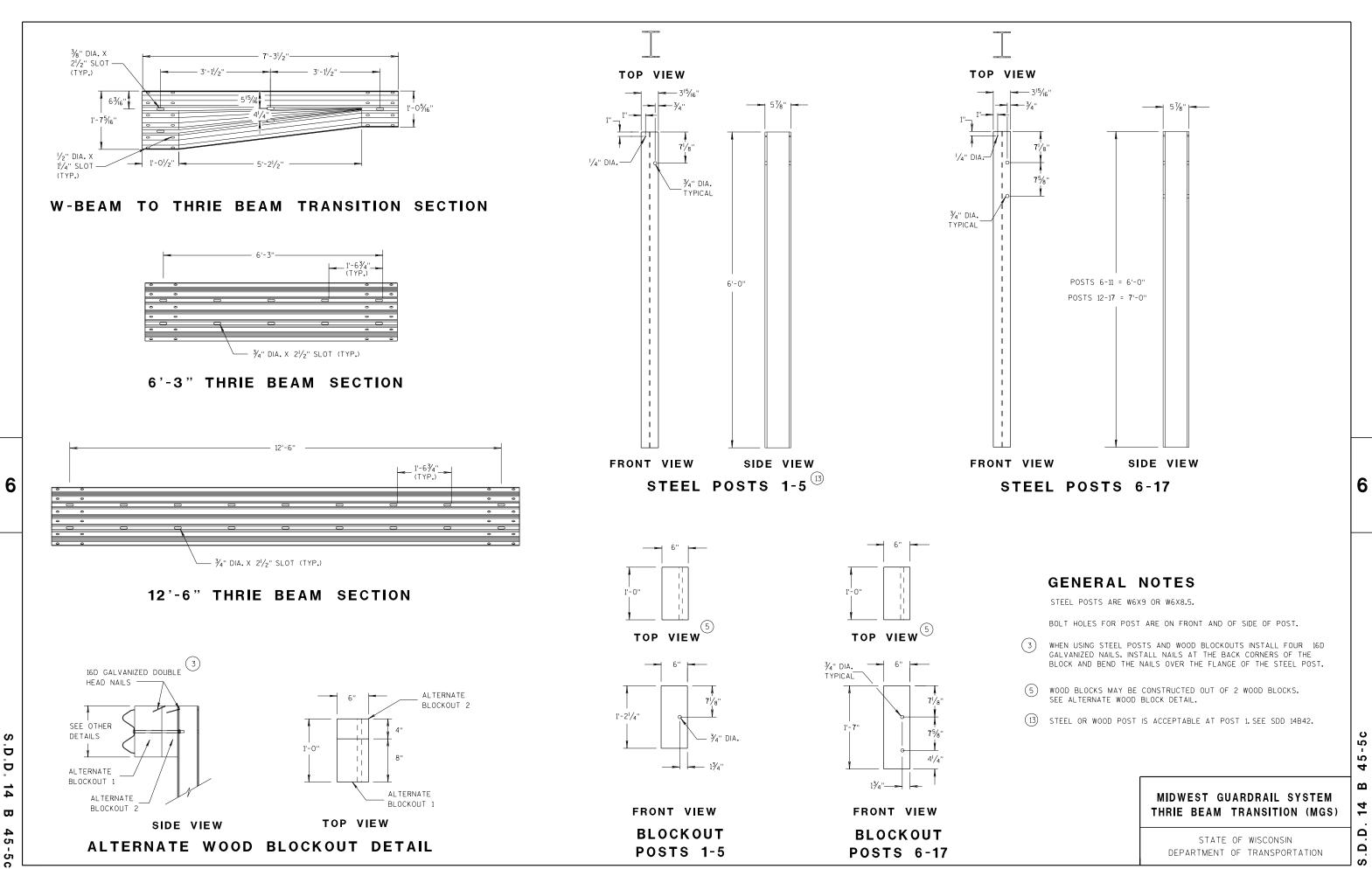
MIDWEST GUARDRAIL SYSTEM **ENERGY ABSORBING TERMINAL** (MGS)

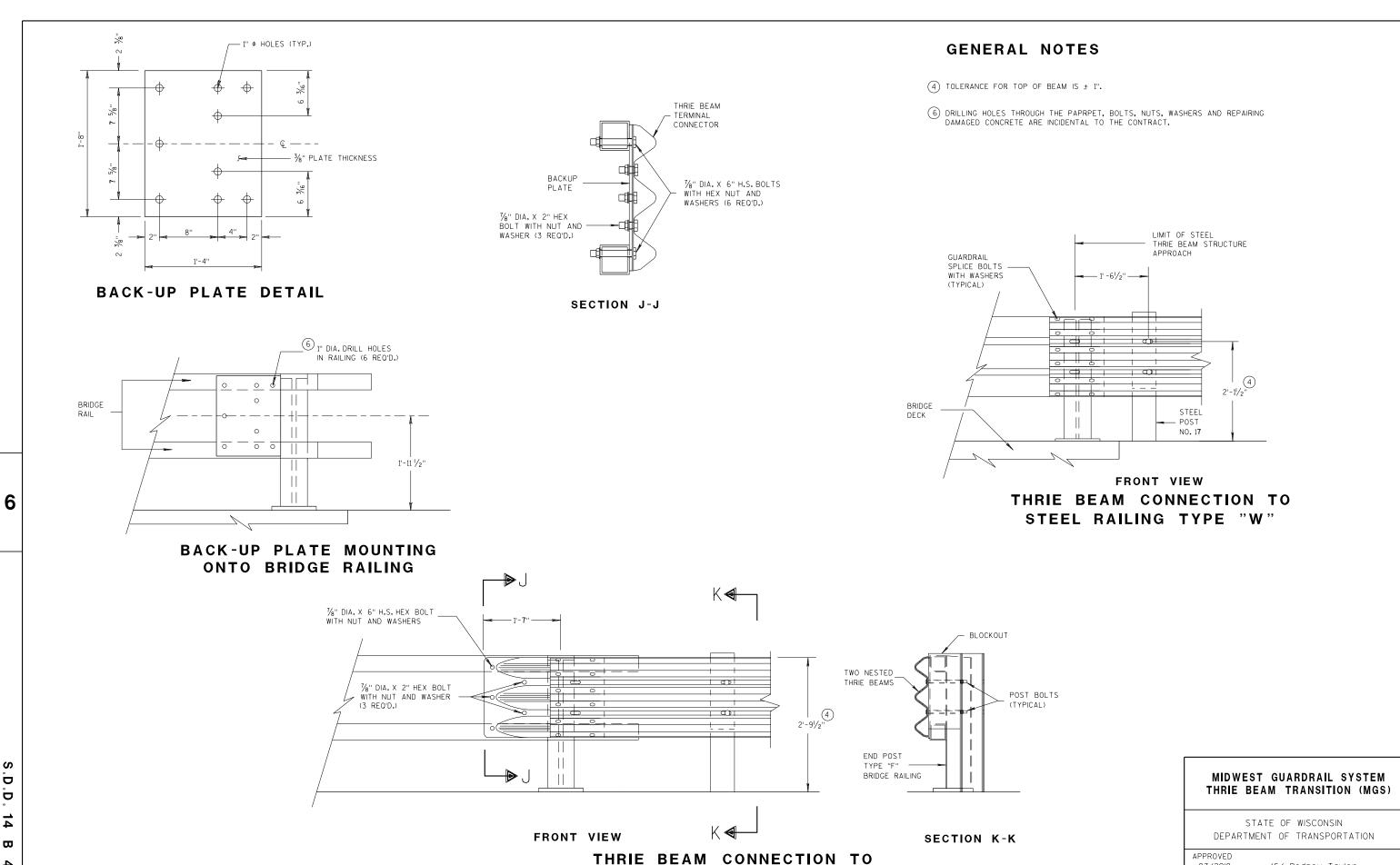
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION SDD











TUBULAR RAILING TYPE "F"

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07/2018

DATE

/S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT

UNIT SUPERVISOR

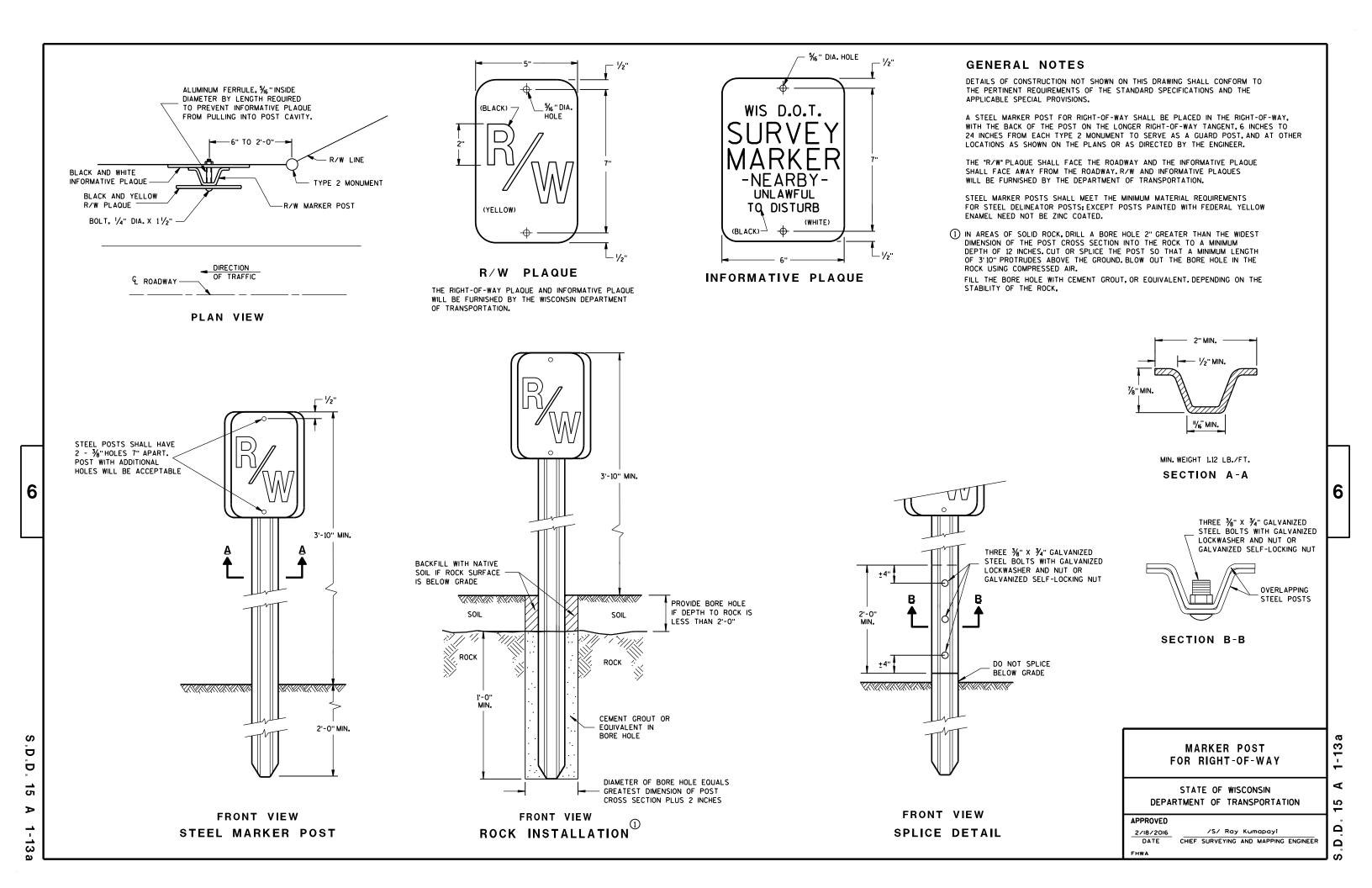
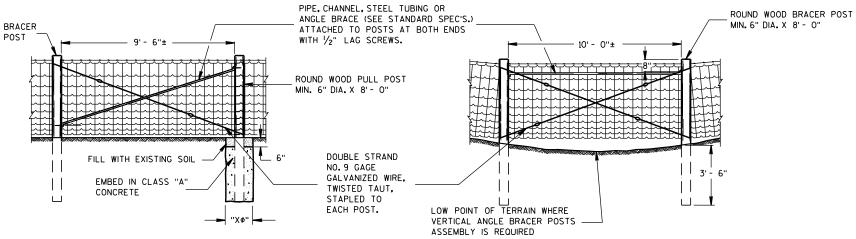




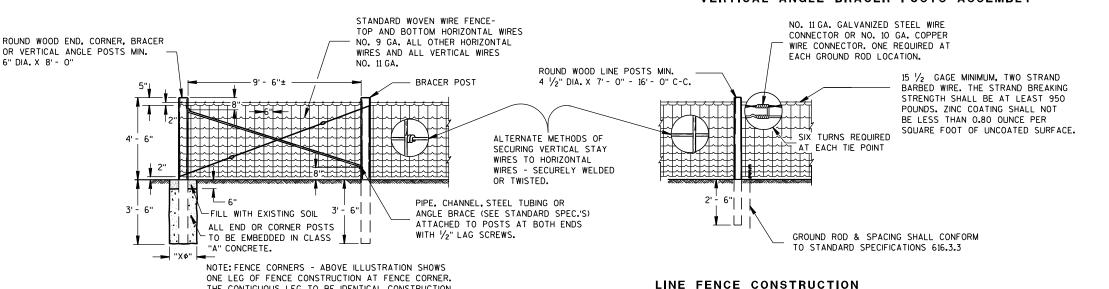


ILLUSTRATION SHOWS POSITION OF STANDARD STEEL BRACE, DOUBLE STRAND GALVANIZED WIRE, AND THE POST TO BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM LEFT TO RIGHT. THE BRACES SHALL BE POSITIONED ON THE OPPOSITE DIAGONALS AND THE OPPOSITE POST SHALL BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM RIGHT TO LEFT.



PULL OR STRETCHER POSTS ASSEMBLY

VERTICAL ANGLE BRACER POSTS ASSEMBLY



END OR CORNER POSTS ASSEMBLY

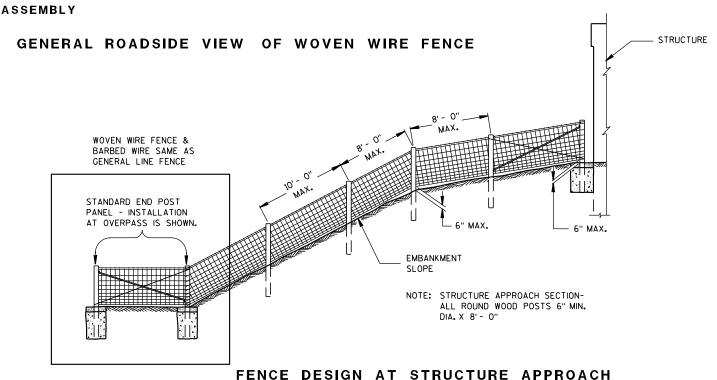
STANDARD END POST

PANEL - INSTALLATION AT UNDERPASS IS SHOWN.

ALTERNATE FENCE DESIGN

AT STRUCTURE

THE CONTIGUOUS LEG TO BE IDENTICAL CONSTRUCTION.



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FENCE WOVEN WIRE

GENERAL NOTES

TO PULL-OUT.

"X ϕ " = DIAMETER OF THE POST PLUS 12".

FENCE STAPLES SHOULD NEVER BE DRIVEN VER-

TICALLY INTO WOOD POSTS (WITH BOTH LEGS

PARALLEL WITH THE WOOD GRAIN). DOING SO

CAN SEPARATE THE GRAIN AND SIGNIFICANTLY

REDUCE THE HOLDING POWER. ROTATING THE

THE GRAIN AND PROVIDES MORE RESISTANCE

DO NOT STAPLE WIRE TIGHT TO THE LINE

PANSION AND CONTRACTION. STAPLE AR-

DRIVEN TIGHT TO POSTS. ALL STAPLES SHALL BE 2" X 9 GAGE AND SHALL BE MAN-

RANGEMENT SHALL BE THE SAME FOR ALL

OTHER POSTS EXCEPT THAT THEY SHALL BE

LIFACTURED FROM GALVANIZED WIRE OR HOT

DIP GALVANIZED AFTER FORMING. STAPLES

FENCE SHALL BE LOCATED 3'-0" INSIDE THE RIGHT OF WAY LINE UNLESS

OTHERWISE INDICATED ON THE PLANS.

SHALL HAVE SLASH-CUT POINTS.

POSTS. ALLOW MOVEMENT OF WIRE FOR EX-

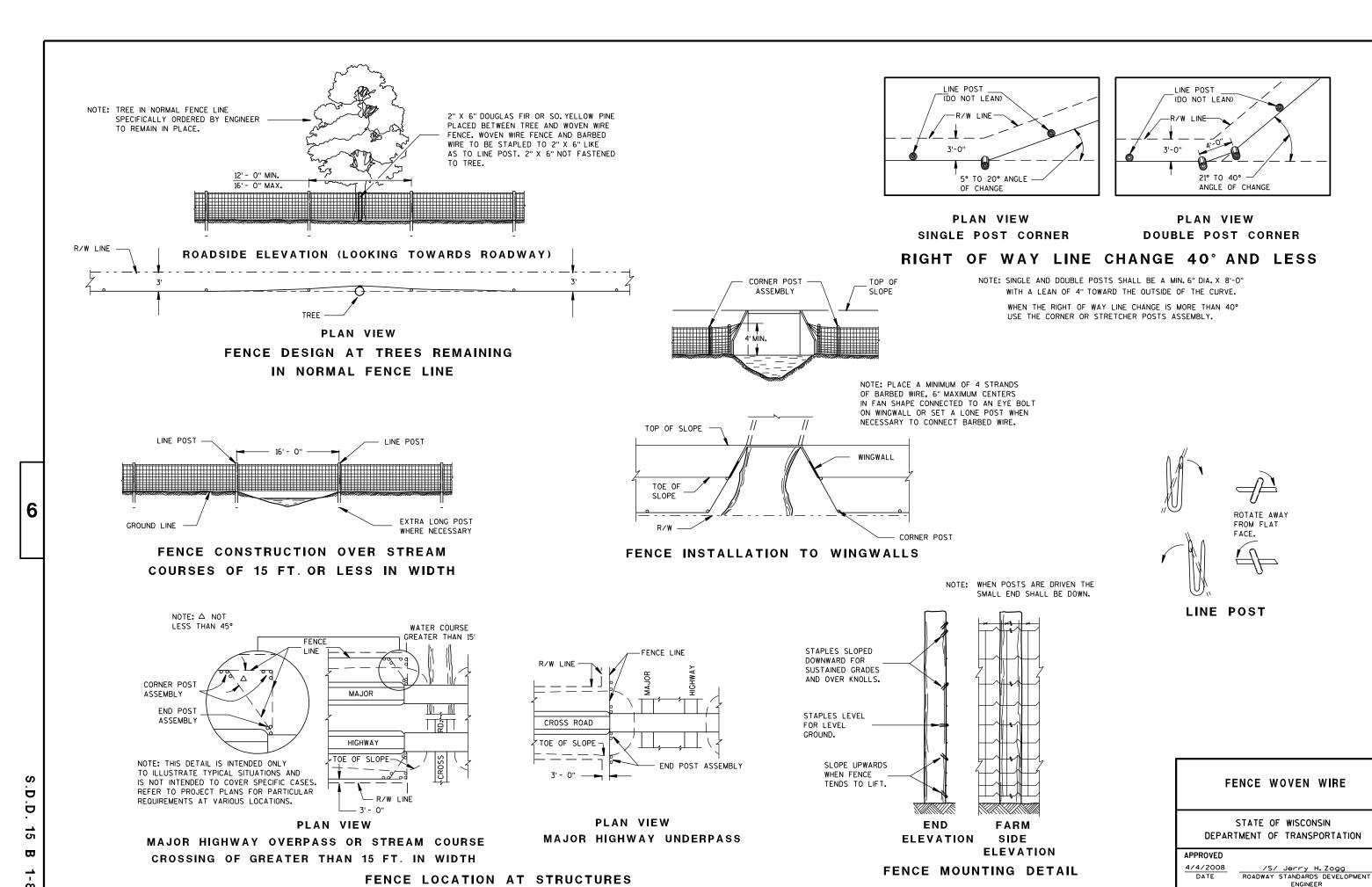
STAPLES SLIGHTLY OFF VERTICAL STRADDLES

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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S.D.D. 15 B 1-8b



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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

R11-2 SHALL BE 48" X 30". R11-3, R11-4 AND R10-61 SHALL BE 60" X 30". M4-9 SHALL BE 30" X 24". M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.) M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.) M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.) 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
- THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.
- FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.
- FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.
- FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.
- 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.
- "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

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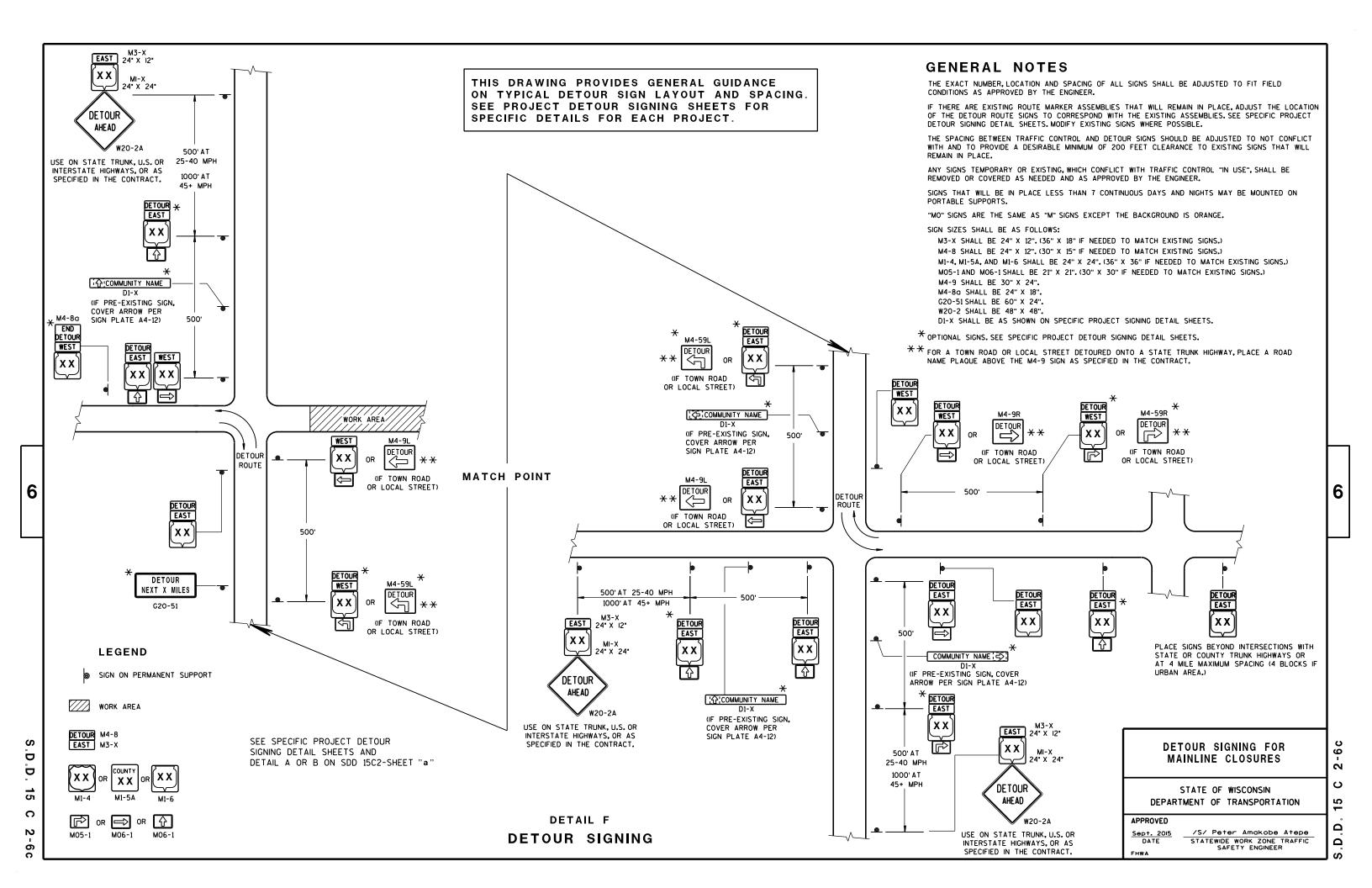
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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

/S/ Peter Amakobe Atepe

STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER



GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

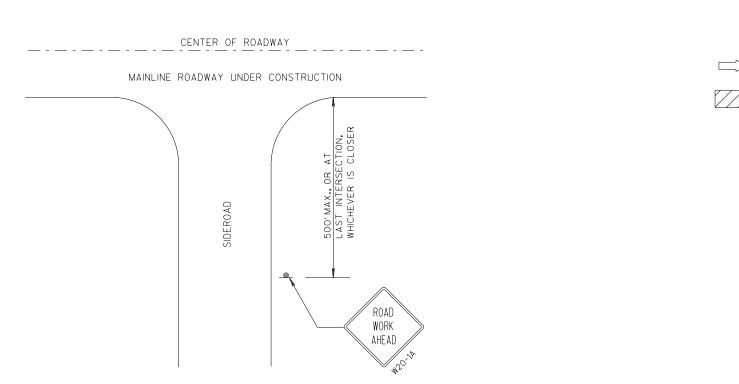
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

- imes OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- ** PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



LEGEND

SIGN ON PERMANENT SUPPORT

6

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DIRECTION OF TRAFFIC

WORK AREA

TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 /S/ Andrew Heidtke

DATE WORK ZONE ENGINEER

D.D. 15 C 4

S

MAINLINE ROADWAY UNDER CONSTRUCTION

ROAD

WORK

AHEAD

CENTER OF ROADWAY

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

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.

ALL SIGNS ARE 48"×48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48"

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

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

imes The Third W20-1Sign is required only if there is an intersection BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED 6

15

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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

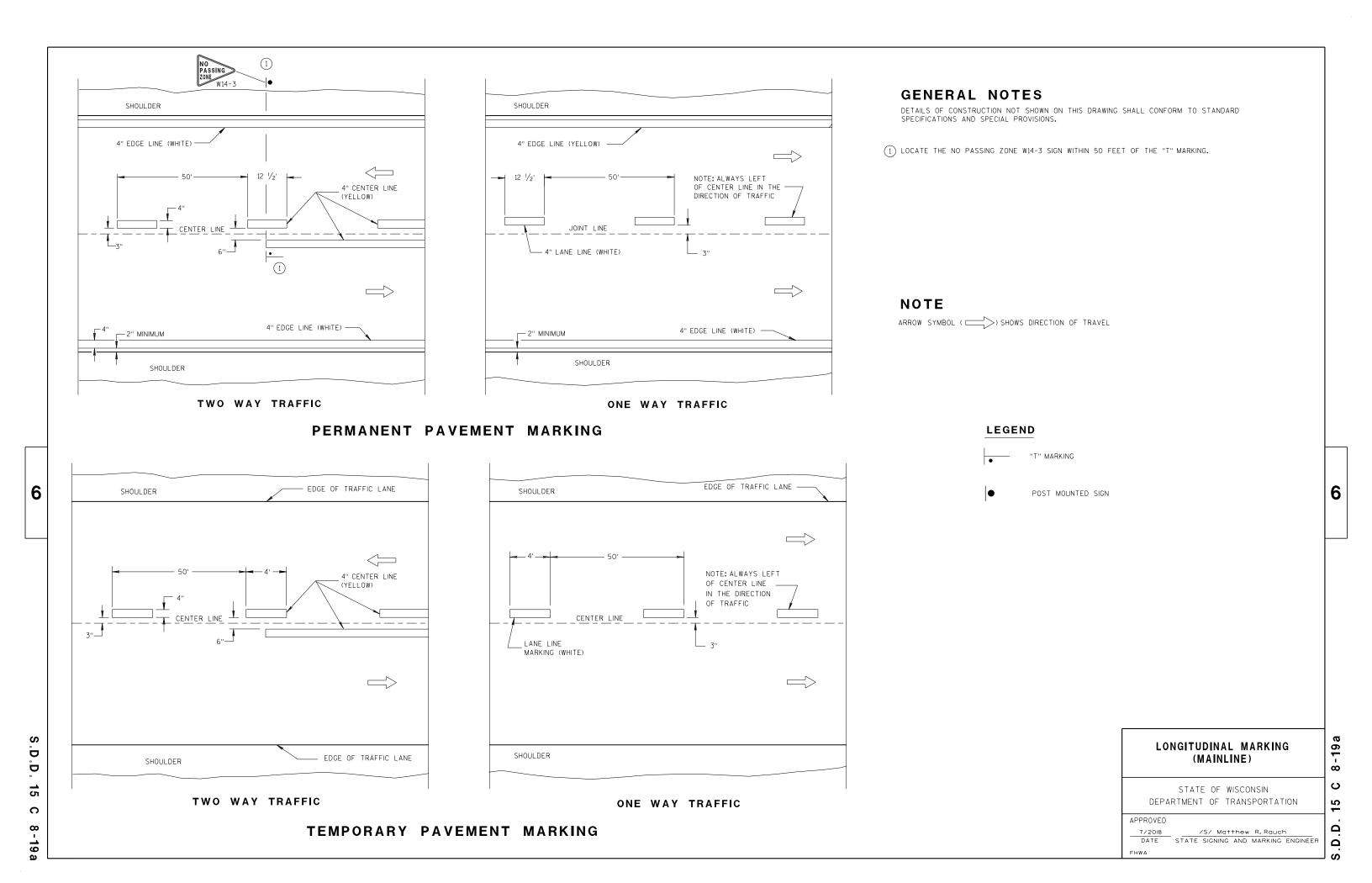
ROAD OPEN TO TRAFFIC

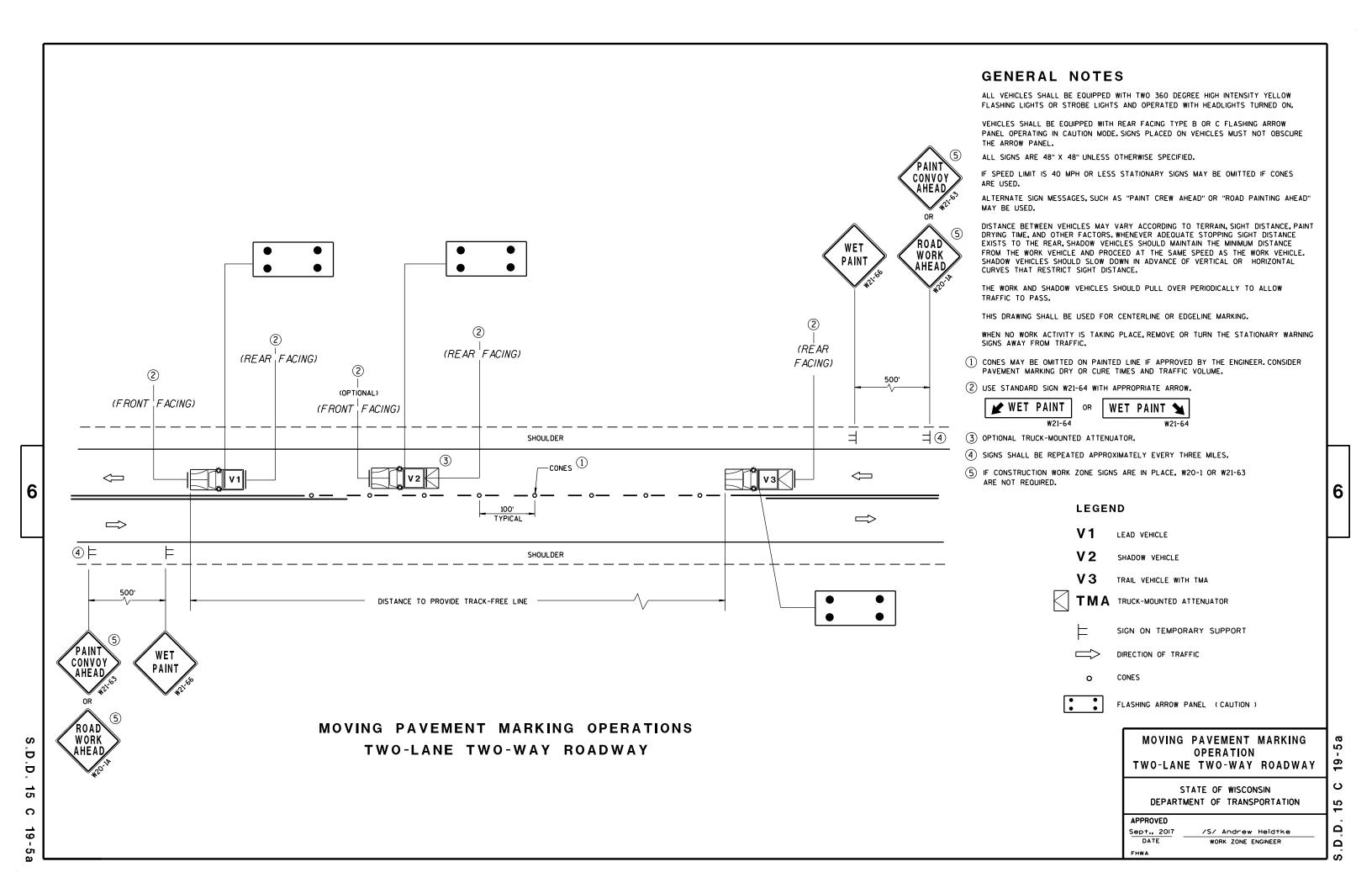
APPROVED

7/2018 /S/ Andrew Heidtke DATE WORK ZONE ENGINEER

D D 15 C S









TUBULAR STEEL POSTS

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

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SO.FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE). SIGNS LARGER THAN 27 SO.FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST **EMBEDMENT DEPTH**

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

4" X 6" WOOD POST

POST SPACING REQUIREM	MENTS	NUMBER OF	
L	E	WOOD POSTS REQUIRED	
48" OR LESS AND LESS THAN 20 SO.FT.	-	1	
LESS THAN 60"	12"	2	٤
60" TO 120"	L/5	2	
GREATER THAN 120" LESS THAN 168"	12"	3	
168" AND GREATER	12"	4	

SEE NOTE (3)

RURAL AREA

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

-11

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- 11/2" DIAMETER HOLES

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NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 1/6" X 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS

RIVETS - 1/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

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

1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

> ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED

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

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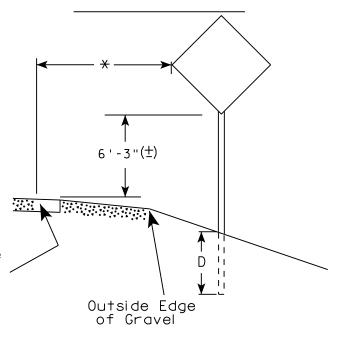
urban area

2' Min - 4' Max (See Note 6)

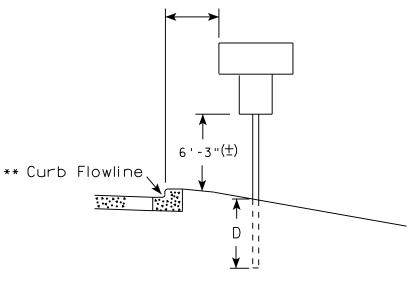
** Curb Flowline

D | White Edgeline Location

RURAL AREA (See Note 2)



2' Min - 4' Max (See Note 6)



White Edgeline
Location

Outside Edge
of Gravel

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway

or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

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

GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R Rauch

For State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-3.21

SHEET NO:

PROJECT NO: HWY: COUNTY:



NOTES: 1. ALL MATERIAL TO BE APPROVED

BY ENGINEER PRIOR TO INSTALLATION

- 2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
- 3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

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



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

HWY:



PLAN VIEW

COUNTY:

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

For State Traffic Engineer

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

SHEET NO:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN

PROJECT NO:

PLOT DATE: 27-JAN-2014 09:48

PLOT NAME :

PLOT BY: mscsja

PLOT SCALE: 13.659812:1.000000

APPROVED

GENERAL NOTES

- 1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
- 2. See tables below for required number of posts.
- 3. For expressways and freeways, mounting height is 7'-3'' (±) or 6'-3'' (±) depending upon existence of sub-sign.
- 4. The (±) tolerance for mounting height is 3 inches.
- 5. J-Assemblies are considered to be one sign for mounting height.
- 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
- 7. Folding signs shall be mounted at a height of 5'-3'' (\pm) or as directed by the engineer.
- 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8). Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4''-3'' (±).
- * 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.
- ** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.
- ** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

POST EMBEDMENT DEPTH

D
(Min)
4'
5'

WISCONSIN DEPT OF TRANSPORTATION APPROVED For State Traffic Engineer DATE 8/21/17 PLATE NO. <u>A4-4.15</u>





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

HWY:

SIGN SHAPE OTHER THAN (THREE POSTS REQUIR	
L	E
Greater than 108" to 144"	12''

COUNTY:

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A44.DGN

PROJECT NO:

PLOT DATE: 21-AUG-2017 15:54

PLOT SCALE: 108.188297:1.000000

WISDOT/CADDS SHEET 42

OF TYPE II SIGNS ON MULTIPLE POSTS

TYPICAL INSTALLATION

SHEET NO:

PLOT BY: \$\$...plotuser...\$\$ PLOT NAME:



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

Nather R Raw
For State Traffic Engineer

DATE <u>8/11/16</u>

PLATE NO. <u>44-8.8</u>

PROJECT NO:

FILE NAME : C:\CAFfiles\Projects\tr stdplote\A48 DCN

PLOT DATE . 11-416-2016 11:35

PINT RY * \$\$ nintuser \$\$

SHEET NO:

| | |



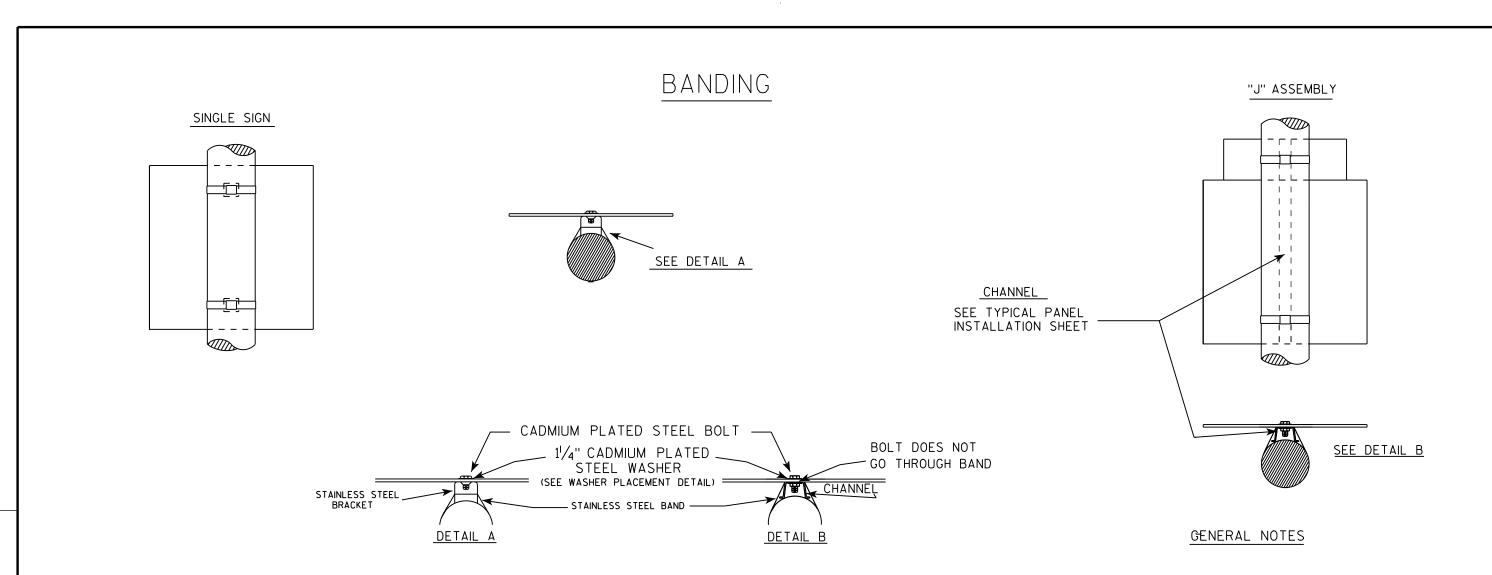
PROJECT NO: HWY: COUNTY: SHEET NO: FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE: 05-FEB-2015 17:09 PLOT BY: mscsja PLOT NAME : PLOT SCALE: 13.659812:1.000000

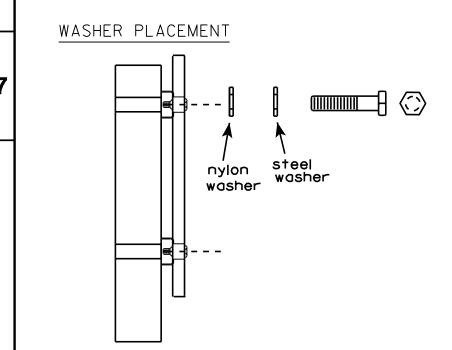
DATE 2/05/15

PLATE NO. <u>A4-9.9</u>

For State Traffic Engineer







HWY:

WASHERS (ALL POSTS) -

COUNTY:

1-1/4" O.D. $X\frac{3}{8}$ " I.D. $X\frac{1}{16}$ " STEEL 1-1/4" O.D. $X\frac{3}{8}$ " I.D. X .080 NYLON FOR ALL TYPE H SIGNS

PLOT BY: mscsja

- 1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
- 2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
- 3. Banding and assembly bracket shall be stainless steel. All bands shall be $\frac{3}{4}$ " in width and 0.025" thickness.

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED 400 1100 400 400

For State Traffic Engineer

DATE 8/16/13

713 PLATE NO. A5-9.3

SHEET NO:

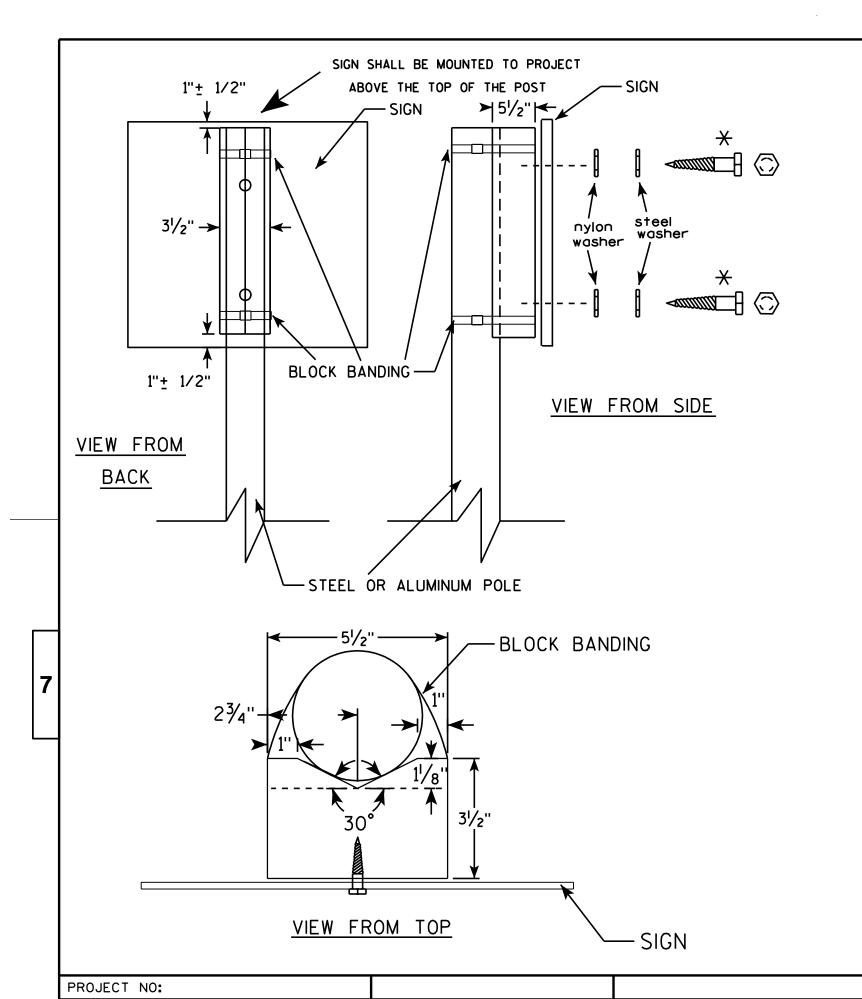
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A59.DGN

PROJECT NO:

PLOT DATE: 16-AUG-2013 13:27

PLOT NAME :

PLOT SCALE: 33.740899:1.000000



GENERAL NOTES

- 1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
- 2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, 3/4" WIDTH AND 0.025" THICKNESS
- 3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS.

 SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
- 4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
- 5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
 - b. Cadmium plated in accordance with ASTM Designation: B 766 TYPE 3, Class 12, or
 - c. Electro-galvanized in accordance with ASTM Designation: B 633, TYPE III, SC 3.
- 6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
- 7. STEEL WASHERS SHALL BE 11/4" O.D. X 3/8" I.D. X 1/16"
- 8. NYLON WASHERS SHALL BE $1^{1}/_{4}$ " O.D. X $3/_{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

X LAG BOLTS SHALL BE 3/8" X 21/2"

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

APPROVED

For State Traffic Engineer

DATE 7/12/07

PLATE NO. A5-10.1

SHEET NO:

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.

2. Color:

Background - Orange Message - Black

- 3. Message Series C
- 4. 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.



Metric equivalent for this sign is:

SIZE	Α	В	С	D	E	F	G	Н	I	J	К	L	М	N	0	Р	Q	R	S	T	U	٧	W	Х	Y	Z	Area sq. ft.	Area m2
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 %	6 3/4	16 ¾	2 1/2	1 3/4	18 ½													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 %	6 3/4	16 ¾	2 1/2	1 3/4	18 ½													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 %	6 3/4	16 ¾	2 1/2	1 3/4	18 ½													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 1/8	6 3/4	16 ¾	2 1/2	1 3/4	18 ½													8.0	0.72

COUNTY:

STANDARD SIGN G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED 400 110 00 00 110

for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

SHEET NO:

FILE NAME : C:\Users\PROJECTS\tr_stdplate\G202A.DGN

HWY:

PROJECT NO:

PLOT DATE: 30-SEP-2009 09:31

PLOT BY : ditjph

PLOT NAME :

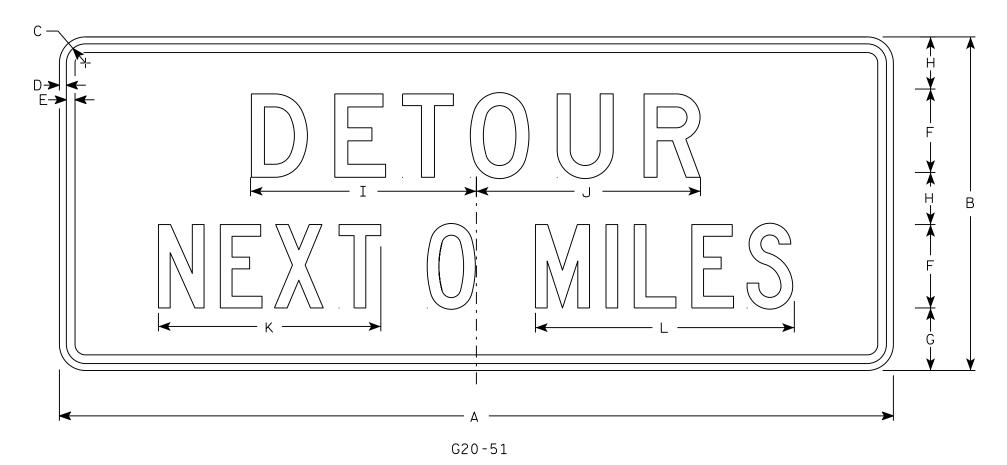
PLOT SCALE : 5.561773:1.000000

5.561773:1.000000 WISDOT/CADDS SHEET 42

- 1. Sign is Type II Type F Reflective
- 2. Color:

Background - Orange Message - Black

- 3. Message Series Line 1 is D and Line 2 is C
- 4. 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.
- 5. Round distance to nearest whole Mile and substitute appropriate numerals and optically adjust spacing to achieve proper balance



SIZE Z D Ε 4 1/2 3 3/4 16 1/4 16 1/8 24 | 1 3/8 1/2 5/8 16 18 5/8 6 10 3 24 1 3/8 5/8 4 1/2 3 3/4 16 1/4 16 1/8 1/2 60 6 16 18 5/8 10

COUNTY:

STANDARD SIGN G20-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

ROVED Matthew & Rauch
For State Traffic Engineer

SHEET NO:

DATE 3/14/17

PLATE NO. G20-51.2

PLOT SCALE: 6.904489:1.000000

HWY:

PROJECT NO:

- 1. Sign is Type II See Note 6 reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:

Background - Top Red - Bottom Blue (See Note 6) Message - White - See Note 6

- 3. Message Series See note 5
- 4. Substitute appropriate numerals & ajust spacing as per plate A10-1.
- 5. M1-1 Numerals D Interstate - C

M1-1A - All copy - C

6. Permanent Signs

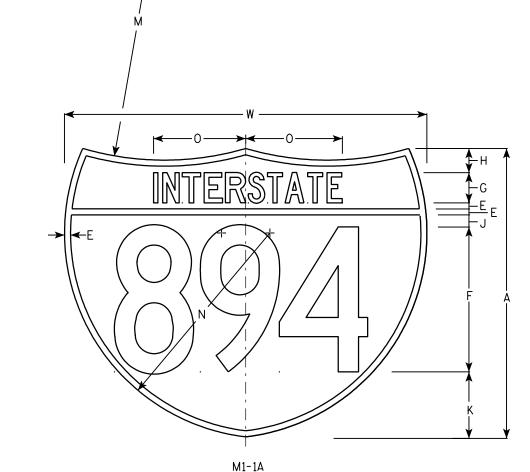
Message - Type H Reflective

Detour or other temporary signs Background - Reflective

Message - Reflective

M1-1

HWY:



PLOT DATE: 13-OCT-2005 14:49

Metric equivalent for these signs are:

SIZE	M1-1	SIZE	M1-1A
1			
2	600 mm X 600 mm	2	600 mm X 750 mm
3	900 mm X 900 mm	3	900 mm X 1125 mm
4	900 mm X 900 mm	4	900 mm X 1125 mm
5	900 mm X 900 mm	5	900 mm X 1125 mm

<u></u>	100	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	X 300	וווווו		J00 I	IIIII	123 11111	<u>' </u>																	M1 - 1	W1-1A	M1-1	W1-1A
SIZE	Α	В	С	D	E	F	G	Ι	I	J	K	L	М	N	0	Ρ	a	R	S	T	U	٧	W	Х	Y	Area sq. ft.	Area sq. ft.	Area m2	Area m2
1																													
2	24				1/2	12	2 ½	2		1	5 ½	15	24	17	7 1/8								30			3.13	3.91	. 36	.46
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 ½	36	25 ½	11 ¾								45			7.03	8.79	. 81	1.05
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 ½	36	25 ½	11 ¾								45			7.03	8.79	.81	1.05
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 ¾								45			7.03	8.79	. 81	1.05

COUNTY:

INTERSTATE ROUTE MARKER M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

DATE 08/23/05

For State Traffic Engineer

SHEET NO:

PLOT BY : DITJPH PLOT NAME :

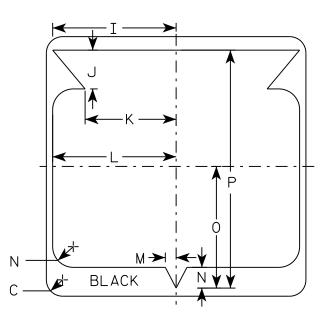
PROJECT NO:

- 1. Sign is Type II Type H Reflective
- 2. Color:

Background - White Message - Black

- 3. Message Series D except 3 number signs Series C
- 4. 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.

	G F A H H
A A	
M1-6	1



SIZE	Α	В	С	D	E	F	G	Н	I	J	K	L	М	N	0	Р	Q	R	S	Т	U	٧	W	Х	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 1/8	11 1/2	1	1 1/8	11 1/4	21 1/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15	5	12 5/8	17 1/8	1 1/2	2 1/8	16 1/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15	5	12 5/8	17 1/8	1 1/2	2 1/8	16 1/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 ¾	5	12 5/8	17 1/8	1 1/2	2 1/8	16 1/8	33											9.0

COUNTY:

STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

for State Traffic Engineer

DATE 3/16/18

PLATE NO. <u>M1-6.10</u>

SHEET NO:

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M16.DGN

HWY:

PROJECT NO:

PLOT DATE: 16-MAR-2018 14:11

PLOT BY: \$\$...plotuser...\$\$ PLOT NAME:

PLOT SCALE : 6.655277:1.000000







MP3-1









HWY:



NOTES

- 1. All Signs Type II Type H
- 2. Color:

Background - See note 5 Message - See note 5

- 3. Message Series C
- 4. 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.

5. M3-1 thru M3-4 Background - White Message - Black

MB3-1 thru MB3-4 Background - Blue

Message - White

MK3-1 thru MK3-4 Background - Green

Message - White

MM3-1 thru MM3-4 Background - White

Message - Green

MN3-1 thru MN3-4 Background - Brown

Message - White

MP3-1 thru MP3-4 Background - White

Message - Blue

6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	Α	В	С	D	E	F	G	Н	I	J	К	L	М	N	0	Р	Q	R	S	Т	U	V	W	Х	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 1/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

COUNTY:

STANDARD SIGNS M3-1 thur M3-4 **SERIES**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

DATE 10/15/15 PLATE NO. M3-1.14

Ε

SHEET NO:

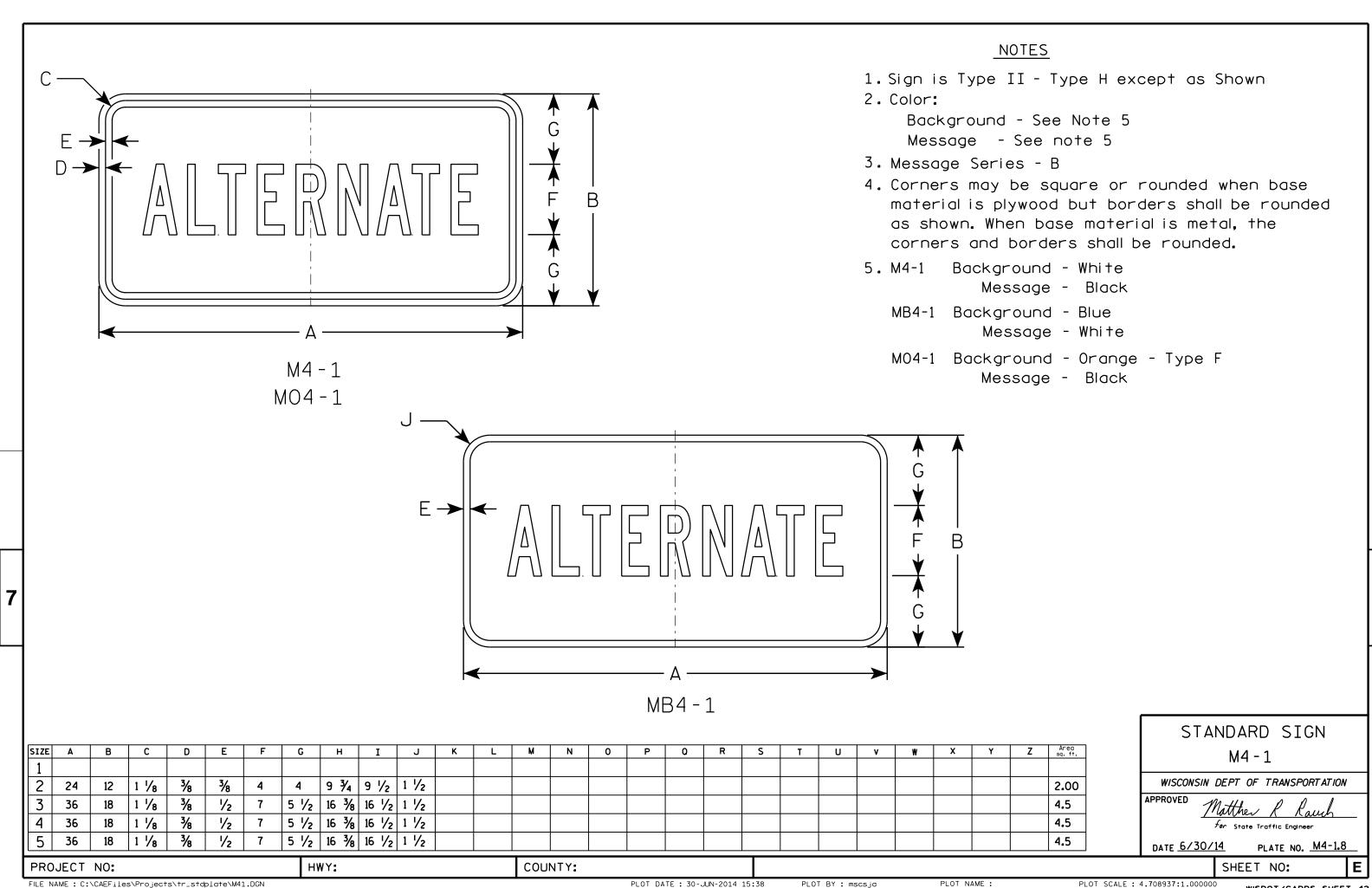
FILE NAME · C·\CAFfiles\Projects\tr stdolote\M31 DCN

PROJECT NO:

PLOT DATE . 01-DEC-2015 17:54

PLOT RY . \$\$ plotuser \$\$ PLOT NAME :

PLOT SCALE . 11 675051.1 000000



- 1. Sign is Type II Type F Reflective reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:

Background - Orange Message - Black

- 3. Message Series B
- 4. 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.

) A G	
 	; B
→ G →	

Α С E F G H I J S Х Z D 0 10 10 1/4 1 1/8 3/8 3/8 24 2.0 3 36 1 1/8 3/8 1/2 4 1/2 14 5/8 14 1/2 4.5 4 5

COUNTY:

STANDARD SIGN M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

DATE 11/10/10 PLATE NO. M4-8.2

SHEET NO:

FILE NAME : C:\Users\PROJECTS\tr_stdplate\M48.DGN

PROJECT NO:

HWY:

PLOT DATE: 10-NOV-2010 13:18

PLOT BY : ditjph

PLOT SCALE : 4.767

PLOT NAME :

PLOT SCALE: 4.767233:1.000000

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.

2. Color:

Background - Orange Message - Black

- 3. Message Series B
- 4. 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.

 $D \longrightarrow$ Н M4-8A

SIZE	Α	В	С	D	E	F	G	Н	I	J	K	L	М	N	0	Р	0	R	S	Т	U	٧	w	Х	Y	Z	Area sq. ft.
$\parallel 1 \parallel$																											
2	24	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5				·	·						·																

COUNTY:

STANDARD SIGN M4-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matther

For State Traffic Engineer DATE 3/9/11

PLATE NO. M4-8A.2

SHEET NO:

FILE NAME : C:\Users\PROJECTS\tr_stdplate\M48A.DGN

HWY:

PROJECT NO:

PLOT DATE: 09-MAR-2011 10:29

PLOT BY: mscj9h

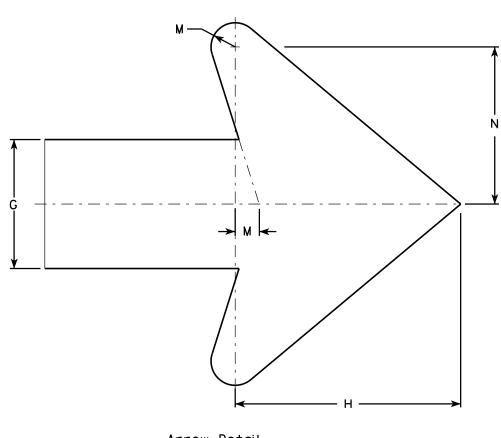
PLOT NAME :

PLOT SCALE: 3.972696:1.000000

- Sign is Type II Type F Reflective reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:

Background - Orange Message - Black

- 3. Message Series D
- 4. 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.
- 5. M4-9L is the same as M4-9R except the arrow is reversed.



Arrow Detail

PLOT NAME :

W X	Y Z Arec
	5.0
	5.0
	12.0
	12.0

COUNTY:

M4-9R

STANDARD SIGN M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R

For State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-9R.4

SHEET NO:

FILE NAME : C:\Users\PROJECTS\tr_stdplate\M49R.DGN

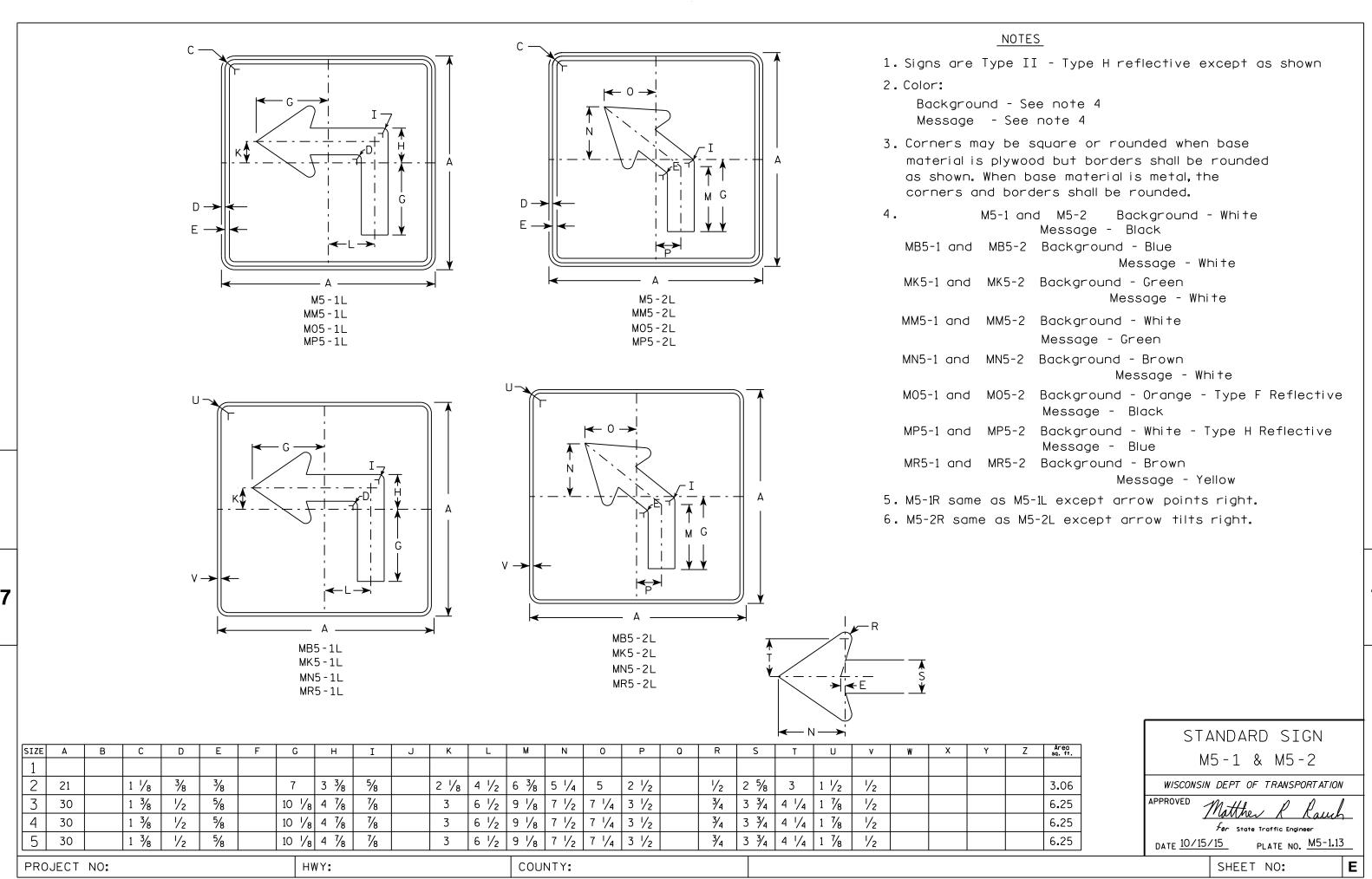
HWY:

PROJECT NO:

PLOT DATE: 09-MAR-2011 11:17

PLOT BY: mscj9h

PLOT SCALE: 5.959043:1.000000



FILE NAME . C.\CAFfiles\Projects\tr stdolote\M51 DCN

PLOT DATE . 01-DEC-2015 18:07

PINT RY . \$\$ DIOTUSET \$\$ PINT NAMF :

PLOT SCALE . 11 675051.1 000000







MR6-1

HWY:



NOTES

- 1. Signs are Type II Type H except as Shown
- 2. Color:

Background - See note 4 Message - See note 4

- 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. M6-1 and M6-2 Background White

Message - Black

MB6-1 and MB6-2 Background - Blue

Message - White

MK6-1 and MK6-2 Background - Green

Message - White

MM6-1 and MM6-2 Background - White

Message - Green

MN6-1 and MN6-2 Background - Brown

Message - White

M06-1 and M06-2 Background - Orange - Type F Reflective

Message - Black

MP6-1 and MP6-2 Background - White

Message - Blue

MR6-1 and MR6-2 Background - Brown

Message - Yellow



SIZE	: Α	В	С	D	E	F	G	Н	I	J	K	L	М	N	0	Р	٥	R	S	T	U	٧	W	Х	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3%		7 1/2	7 1/8	5 %	5	4 1/4	5 1/4	3	2 %	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5%		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 1/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 1/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 1/8	1/2					6.25

COUNTY:

STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew & Rawl For State Traffic Engineer

Ε

DATE 10/15/15 PLATE NO. M6-1.15

SHEET NO:

FILE NAME · C·\CAFfiles\Projects\tr stdplote\M61 DCN

PROJECT NO:

PLOT DATE . 01-DEC-2015 17:57

PIOT RY . \$\$ plotuser \$\$ PIOT NAMF :

PLOT SCALE . 11 675051.1 000000

- 1. Sign is Type II Type H Reflective reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:

Background - White Message - Black

- 3. Message Series D
- 4. 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.

C —		<u> </u>
D A E A		$ \begin{array}{c c} G & \hline & F & \hline & B & \hline & G & G & \hline & G & \hline & G & G & G & \hline & G & G & G & \hline & G & G & G & G & \hline & G & G & G & G & G & G \\ & G & G & G & G & G & G & G & G & G & $
	R11-2B	

SIZE	Α	В	С	D	E	F	G	Н	I	J	К	L	M	N	0	Р	0	R	S	T	U	V	W	X	Y	Z	Areo sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	19 ¾	9 3/4	9 %																10.0
2M	48	30	1 %	1/2	5/8	8	5	4	19 ¾	9 3/4	9 %																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 ¾	9 3/4	9 %																10.0
4	48	30	1 %	1/2	5/8	8	5	4	19 ¾	9 3/4	9 %																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 ¾	9 3/4	9 %																10.0

STANDARD SIGN R11-2B

WISCONSIN DEPT OF TRANSPORTATION

DATE 4/1/11 PLATE NO. R11-2B.2

SHEET NO:

PROJECT NO:



- 1. Sign is Type II Type H Reflective
- 2. Color:

G

Background - White Message - Black

- 3. Message Series C
- 4. 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.
- 5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.

HWY:

R11-3B

** See Note 5

 $D \rightarrow$

E→

STANDARD SIGN R11-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

PLATE NO. R11-3B.3

SHEET NO:

SIZE A В С D 1 3/8 5/8 10 3/4 8 3/8 4 3/4 6 1/2 36 18 1/2 4 3 2 1/2 2 2 13 1/4 2 1/4 3 1 1/2 2 2 6 3/4 7 1/8 4.5 60 30 1 3/8 1/2 4 1/4 3 3/8 20 1/8 13 1/4 1 3/4 17 3/8 13 1/8 3 1/2 12.5 5 10 11 1/8 2M 4 1/4 3 3/8 20 1/8 13 1/4 1 3/4 3 1/2 11 1/8 30 17 3/8 13 1/8 12.5 4 5

COUNTY:

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\R113B.DGN

PROJECT NO:

PLOT DATE: 21-MAR-2017 08:46

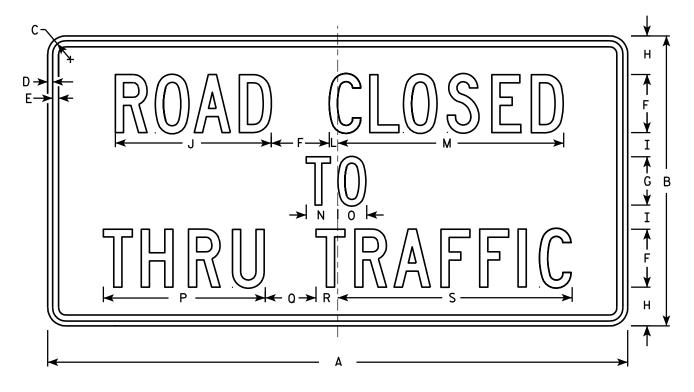
PLOT BY: \$\$...plotuser...\$\$ PLOT NAME:

PLOT SCALE: 6.896672:1.000000

- 1. Sign is Type II Type H Reflective reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:

Background - White Message - Black

- 3. Message Series C
- 4. 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.



R11-4

SIZE	Α	В	С	D	E	F	G	Η	I	J	K	L	М	Z	0	Р	0	R	S	T	U	٧	W	X	Y	Z	Area sq. ft.
1																											
2S	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7 /8	23 ¾	3 1/4	3	16 ¾	5 1/4	2 1/4	24 1/4								12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7∕8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
3																											
4																											
5																											

COUNTY:

STANDARD SIGN R11 - 4

WISCONSIN DEPT OF TRANSPORTATION

DATE 4/1/11 PLATE NO. R11-4.3

SHEET NO:

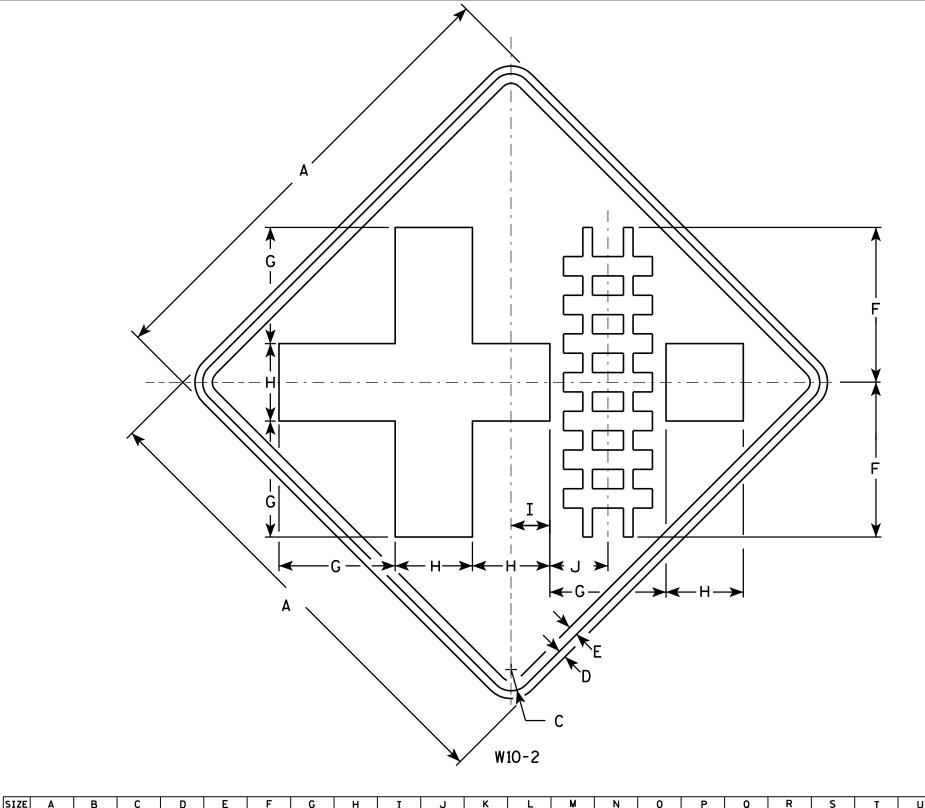
PROJECT NO: FILE NAME : C:\Users\PROJECTS\tr_stdplate\R114.DGN HWY:

PLOT DATE: 01-APR-2011 14:11

PLOT BY: mscj9h

PLOT NAME :

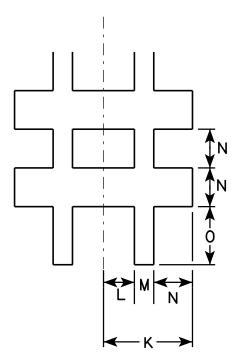
PLOT SCALE: 9.931739:1.000000



- 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	Α	В	С	D	E	F	G	Н	I	J	К	L	M	N	0	Р	0	R	S	T	U	٧	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	10	7 1/2	5	2 1/2	3 3/4	2 1/8	1	5/8	1 1/4	1 %												6.25
25	36		1 1/8	5/8	3/4	12	9	6	3	4 1/2	3 %	1 1/8	3/4	1 1/2	2 1/4												9.0
2M	36		1 %	5/8	3/4	12	9	6	3	4 1/2	3 %	1 1/8	3/4	1 1/2	2 1/4												9.0
3	36		1 %	5⁄8	₹4	12	9	6	3	4 1/2	3 %	1 1/8	3/4	1 1/2	2 1/4												9.0
4	48		2 1/4	3/4	1	16	12	8	4	6	4 1/2	1 1/2	1	2	3												16.0
5																											

COUNTY:

STANDARD SIGN W10-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED $f_{\it or}$ State Traffic Engineer PLATE NO. W10-2.8

DATE 3/13/13

SHEET NO:

HWY:

PROJECT NO:



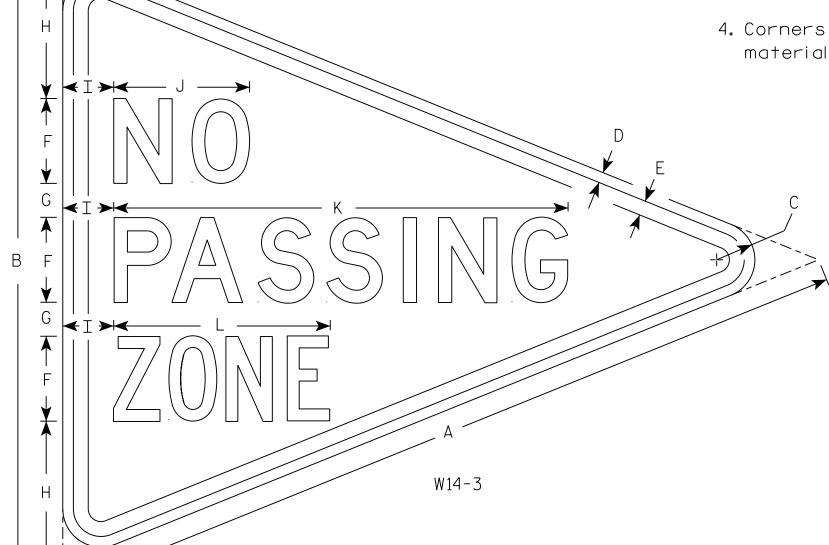
- 1. Sign is Type II Type F Reflective
- 2. Color:

Background - Yellow

Message – Black

3. Message Series - Lines 1 and 2 are Series D. Line 3 is series C.

4. Corners and borders shall be rounded on all base materials for this sign.



			,																								
SIZE	Α	В	С	D	E	F	G	Н	I	J	K	L	М	N	0	Р	0	R	S	Т	U	٧	W	Х	Y	Z	Area sq. ft.
1																											
2S	48	36	2 1/4	5/8	<i>7</i> ⁄8	5	2	8 ½	3	8	26 ¾	12 3/4															5.56
2M																											
3																											
4																											
5																											
PRO	JECT	NO:					Н	WY:					COL	INTY:													

STANDARD SIGN W14-3

WISCONSIN DEPT OF TRANSPORTATION

500 3/21/17

E 3/21/17 PLATE NO. W14-3

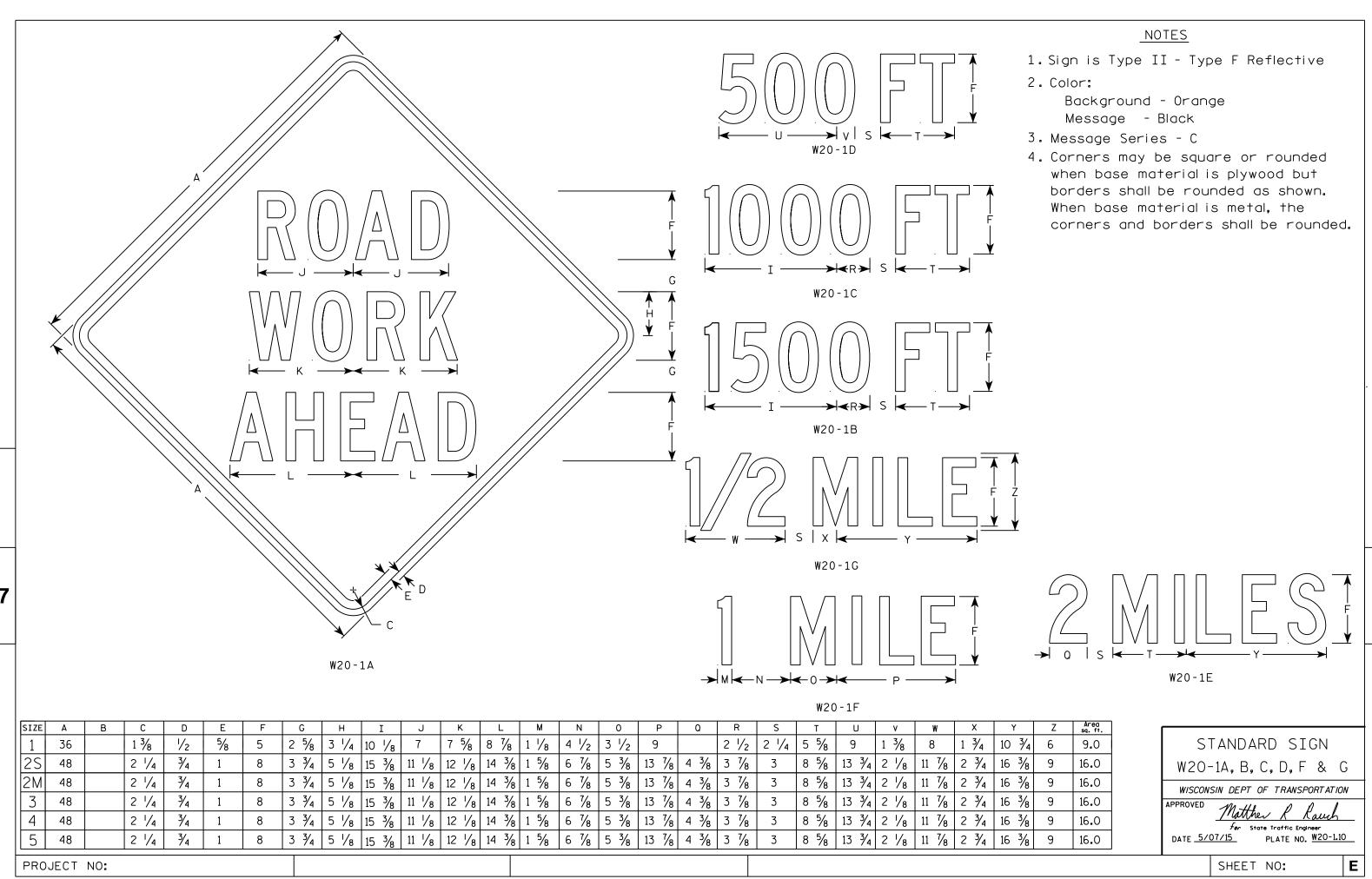
SHEET NO:

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W143.DGN

PLOT DATE: 21-MAR-2017 08:48

PLOT BY: \$\$...plotuser...\$\$ PLOT NAME:

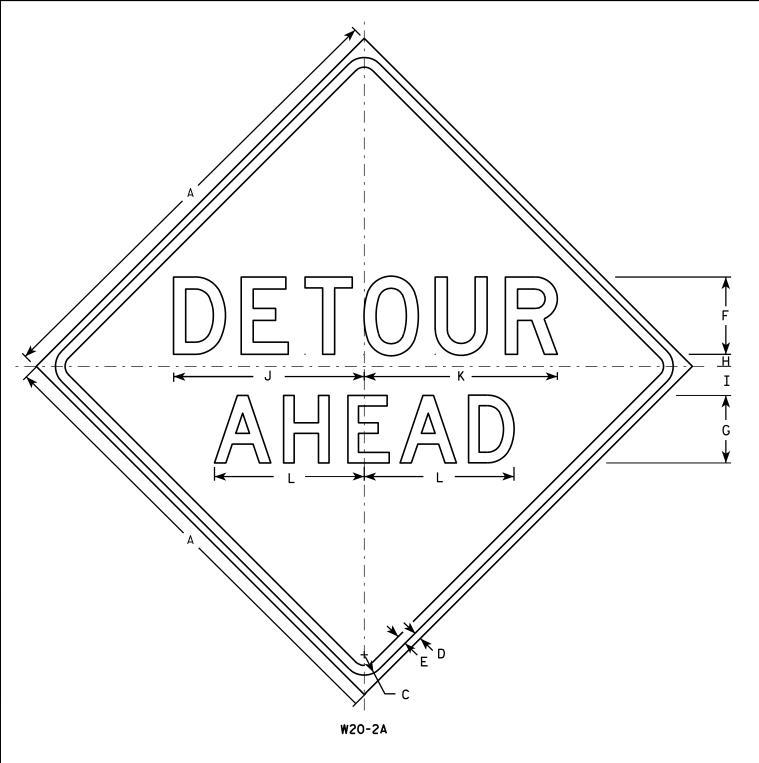
PLOT SCALE : 5.650195:1.000000



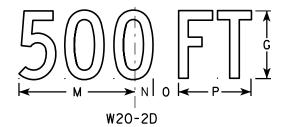
FILE NAME . C.\CAFfiles\Projects\tr stdolote\W201 DCN

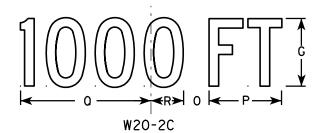
PLOT DATE . 01-DEC-2015 18.24

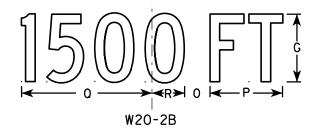
PIOT RY * \$\$ plotuser \$\$

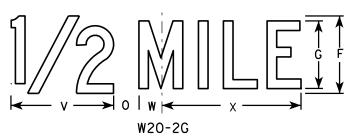


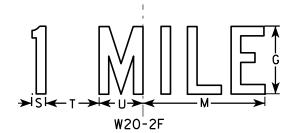
HWY:











PLOT BY: mscj9h

NOTES

- Sign is Type II Type F Reflective reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:

Background - Orange Message - Black

- 3. Message Series See note 5
- 4. 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.
- 5. Line 1 is Series D.
 Line 2 is Series D for AHEAD and
 Series C for all other distances.

SIZE	. Α	В	С	D	E	F	G	Н	I	J	K	L	М	N	0	Р	0	R	S	T	U	٧	W	X	Y	Z	Area sq. ft.
1	36		1 1/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 1/8	5 %	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 ¾	20	15 1/2	12	1 1/8	2 %	7 1/2	13 1/2	3 %	1 1/2	6	4 %	10 %	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 ¾	20	15 1/2	12	1 1/8	2 %	7 1/2	13 1/2	3 %	1 1/2	6	4 %	10 %	2 3/8	14 3/8			16.0
3	48		2 1/4	₹4	1	8	7	1 1/4	3	19 ¾	20	15 1/2	12	1 1/8	2 %	7 1/2	13 1/2	3 %	1 1/2	6	4 %	10 %	2 3/8	14 3/8			16.0
4	48		2 1/4	₹4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 1/8	2 %	7 1/2	13 1/2	3 %	1 1/2	6	4 %	10 %	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 ¾	20	15 1/2	12	1 1/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 %	2 3/8	14 3/8	·		16.0

COUNTY:

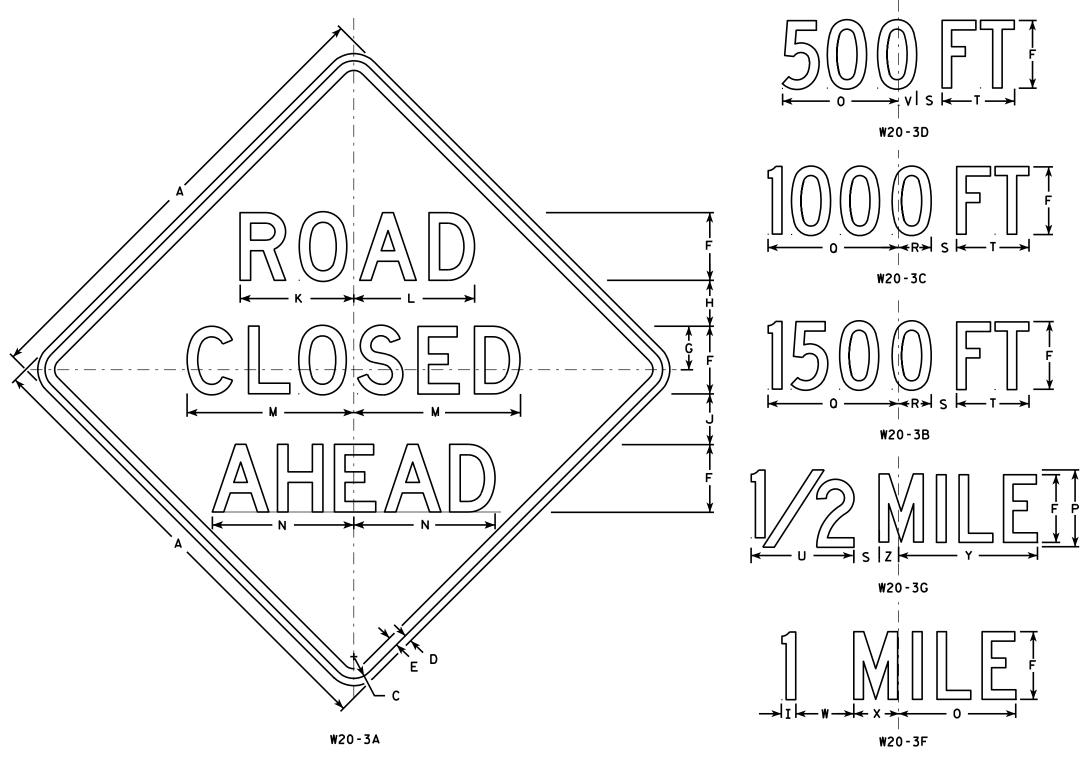
STANDARD SIGN W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

DATE 3/18/11 PLATE NO. W20-2.6

SHEET NO:

PROJECT NO:



- 1. Sign is Type II Type F Reflective reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:

Background - Orange Message - Black

- 3. Message Series see note 5
- 4. 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.
- 5. Lines 1 and 2 are Series D. Line 3 is Series D for AHEAD and Series C for all other distances.

1 % 5/8 ¾ 8 3/8 8 7/8 12 1/2 5 % 1 3/8 4 1/2 36 3 1/2 10 3/4 1 3/4 8 4 \(\frac{5}{8} \) 14 \(\frac{3}{8} \) 2 \(\frac{3}{8} \) 16.0 3/4 1 1/2 | 5 1/4 | 11 3/4 | 12 1/2 | 17 1/4 | 14 5/8 | 7 1/2 10 5/8 1 7/8 2M 3/4 4 \\ 14 \\ 38 \ 2 \\ 38 \ 16.0 48 | 5 1/4 | 11 3/4 | 12 1/2 | 17 1/4 | 14 5/8 | 7 1/2 10 % 1 % 4 1/2 4 3/4 1 1/2 5 1/4 11 3/4 12 1/2 17 1/4 14 5/8 3/4 13 1/2 3 3/8 2 5/8 7 1/2 10 5/8 1 3/8 4 % | 14 % | 2 % | 16.0 48 3/4 4 1/2 4 3/4 1 1/2 5 1/4 11 3/4 12 1/2 17 1/4 14 5/8 13 1/2 3 3/8 2 5/8 4 \\ 14 \\ 38 \ 2 \\ 38 \ 16.0 7 1/2 10 5/8 1 7/8 48 5 4 5/8 14 3/8 2 3/8 16.0 3/4 2 1/4 4 1/2 | 4 3/4 | 1 1/2 | 5 1/4 | 11 3/4 | 12 1/2 | 17 1/4 | 14 5/8 | 13 1/2 3 3/8 2 5/8 7 1/2 10 5/8 1 3/8 48

COUNTY:

STANDARD SIGN W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

For State Traffic Engineer DATE 3/18/11

PLATE NO. W20-3.7

SHEET NO:

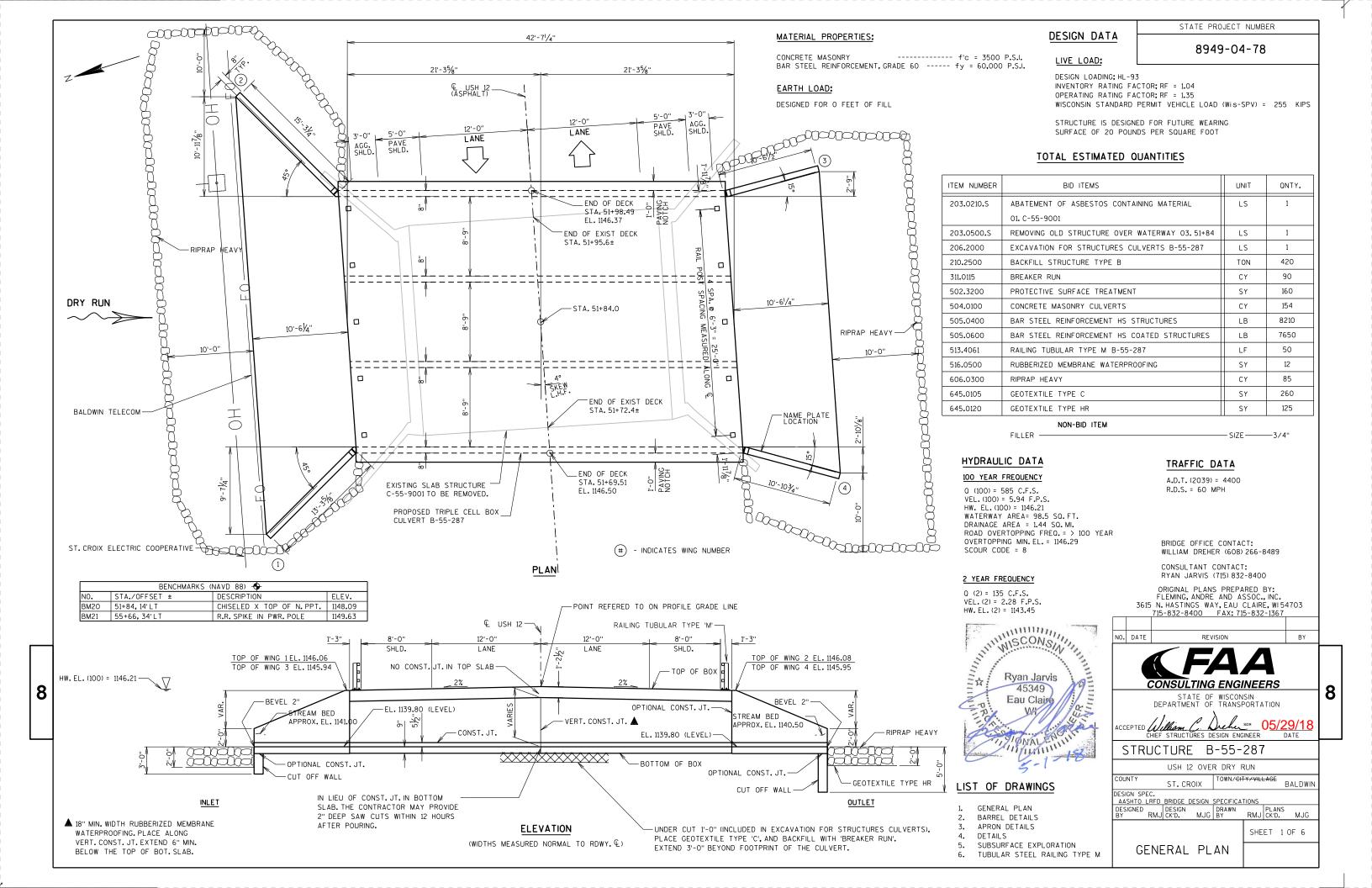
PROJECT NO: FILE NAME : C:\Users\PROJECTS\tr_stdplate\W203.DGN HWY:

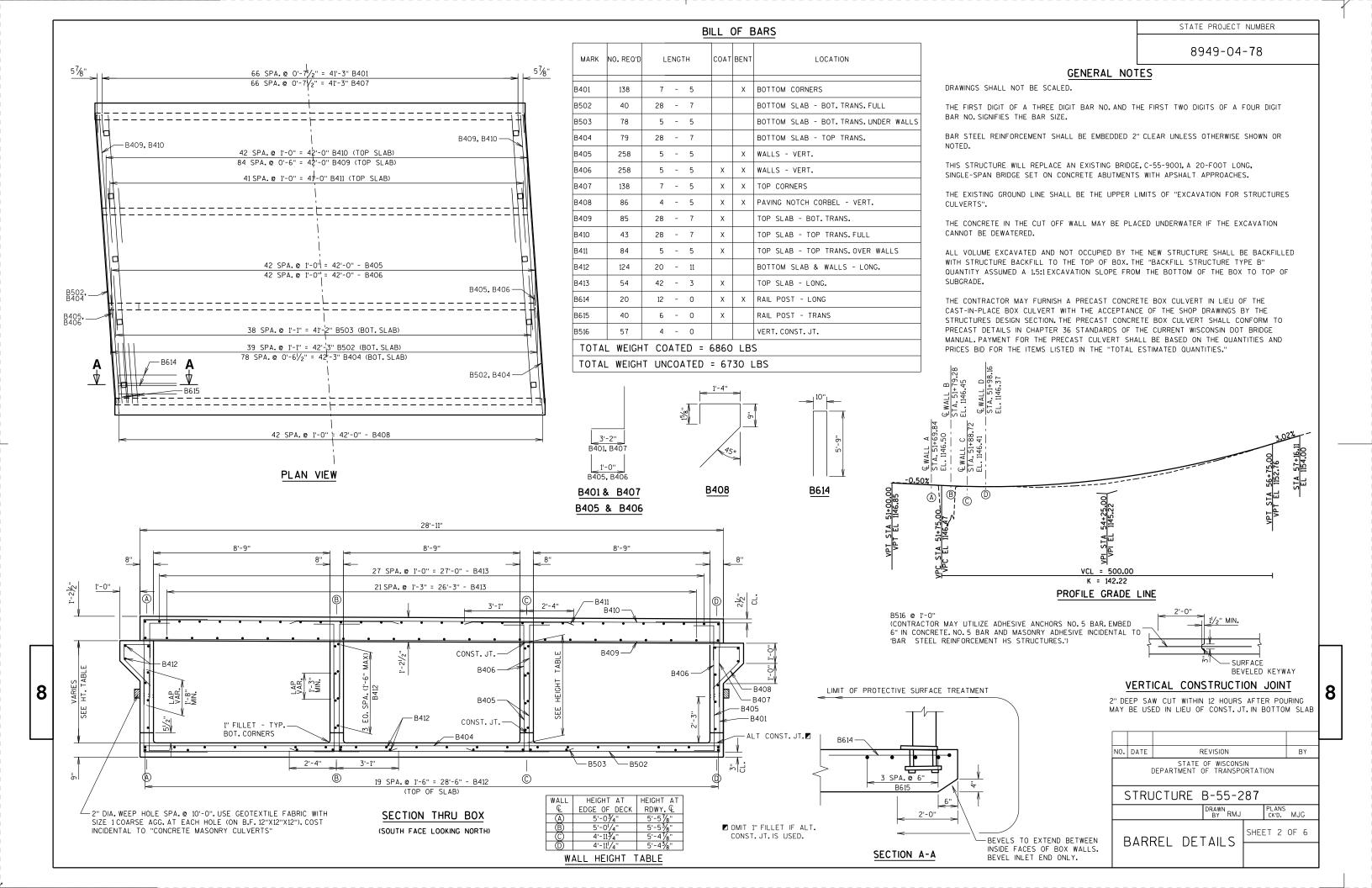
PLOT DATE: 18-MAR-2011 12:08

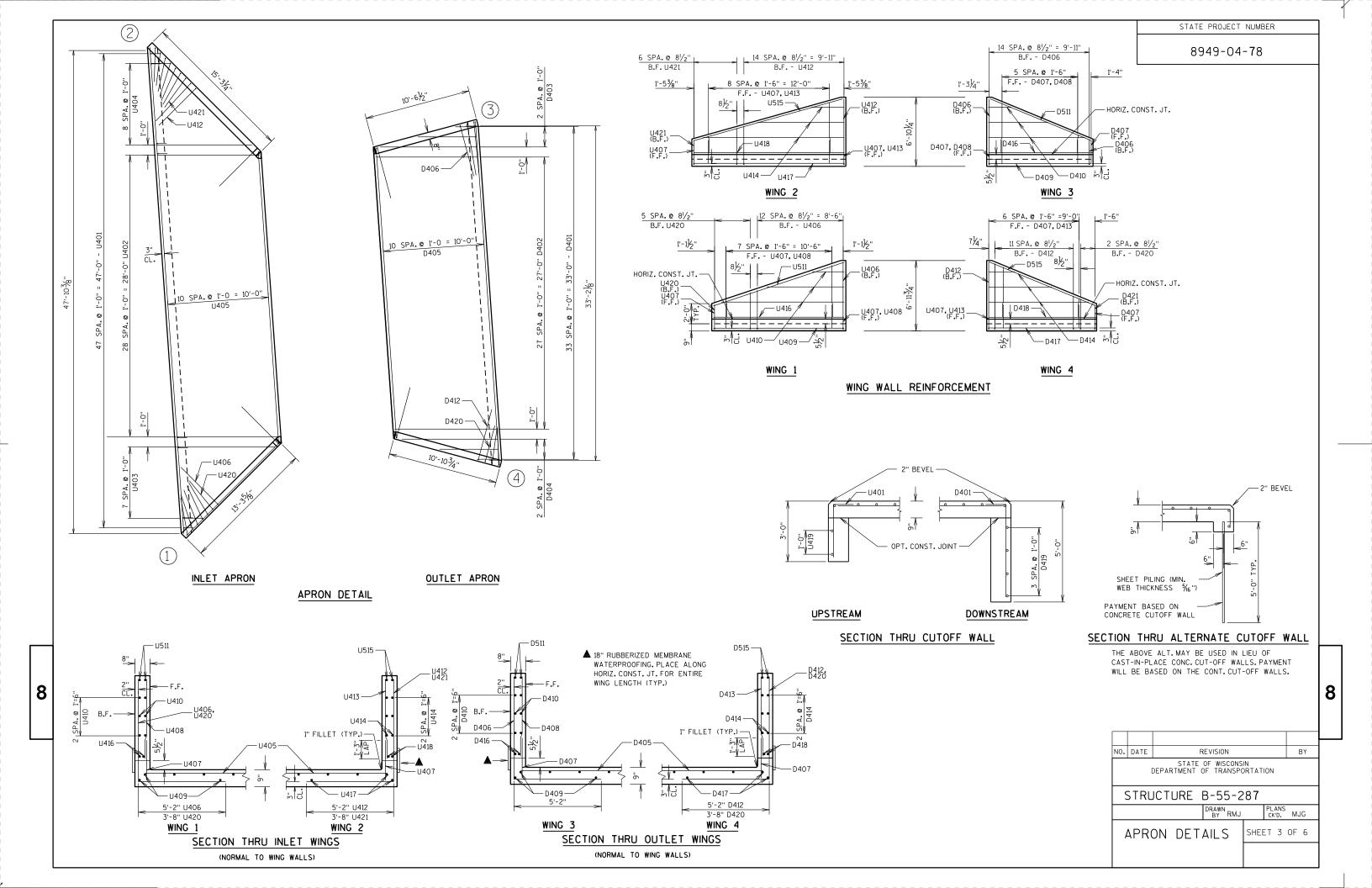
PLOT BY: mscj9h

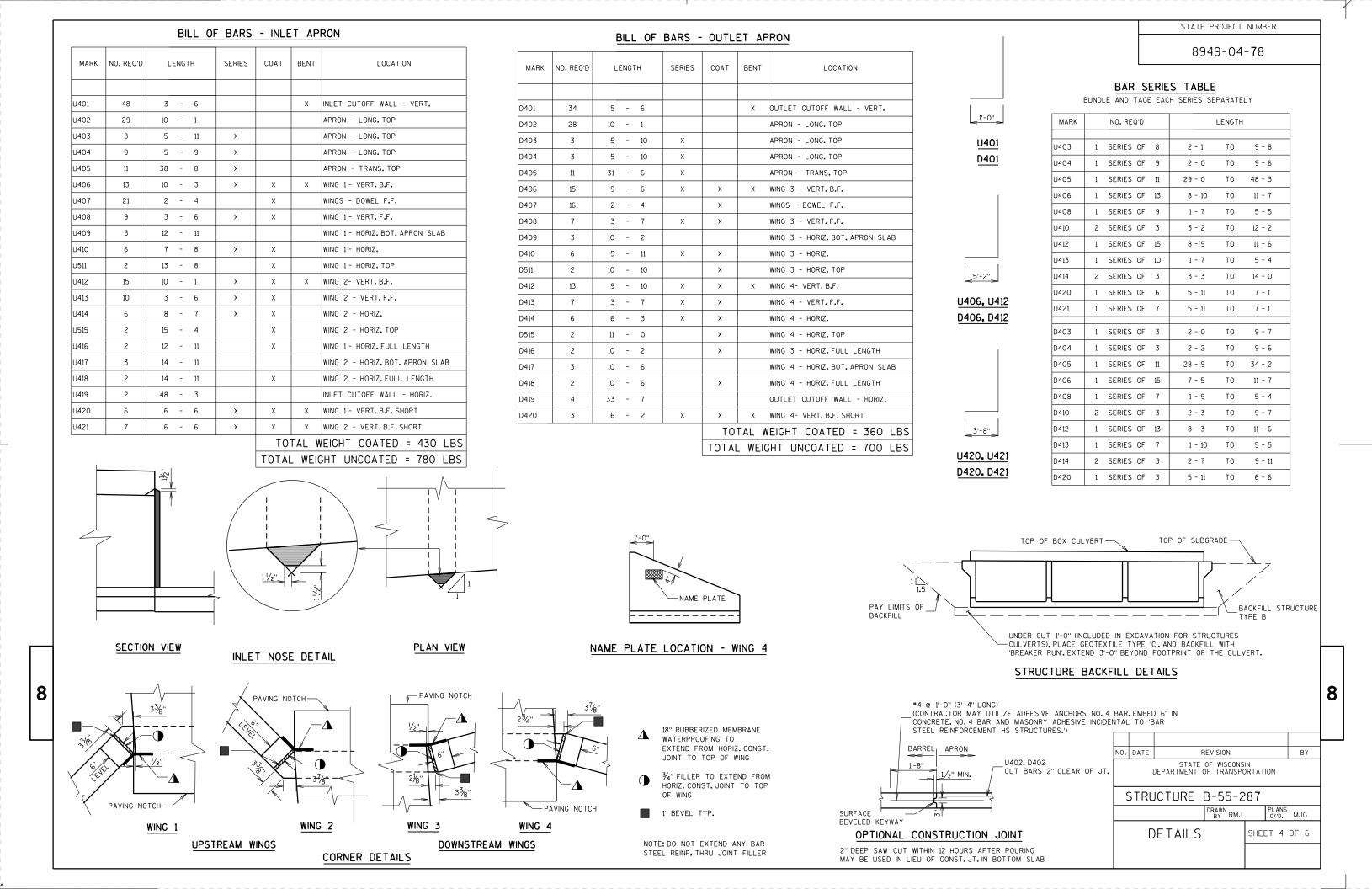
PLOT NAME :

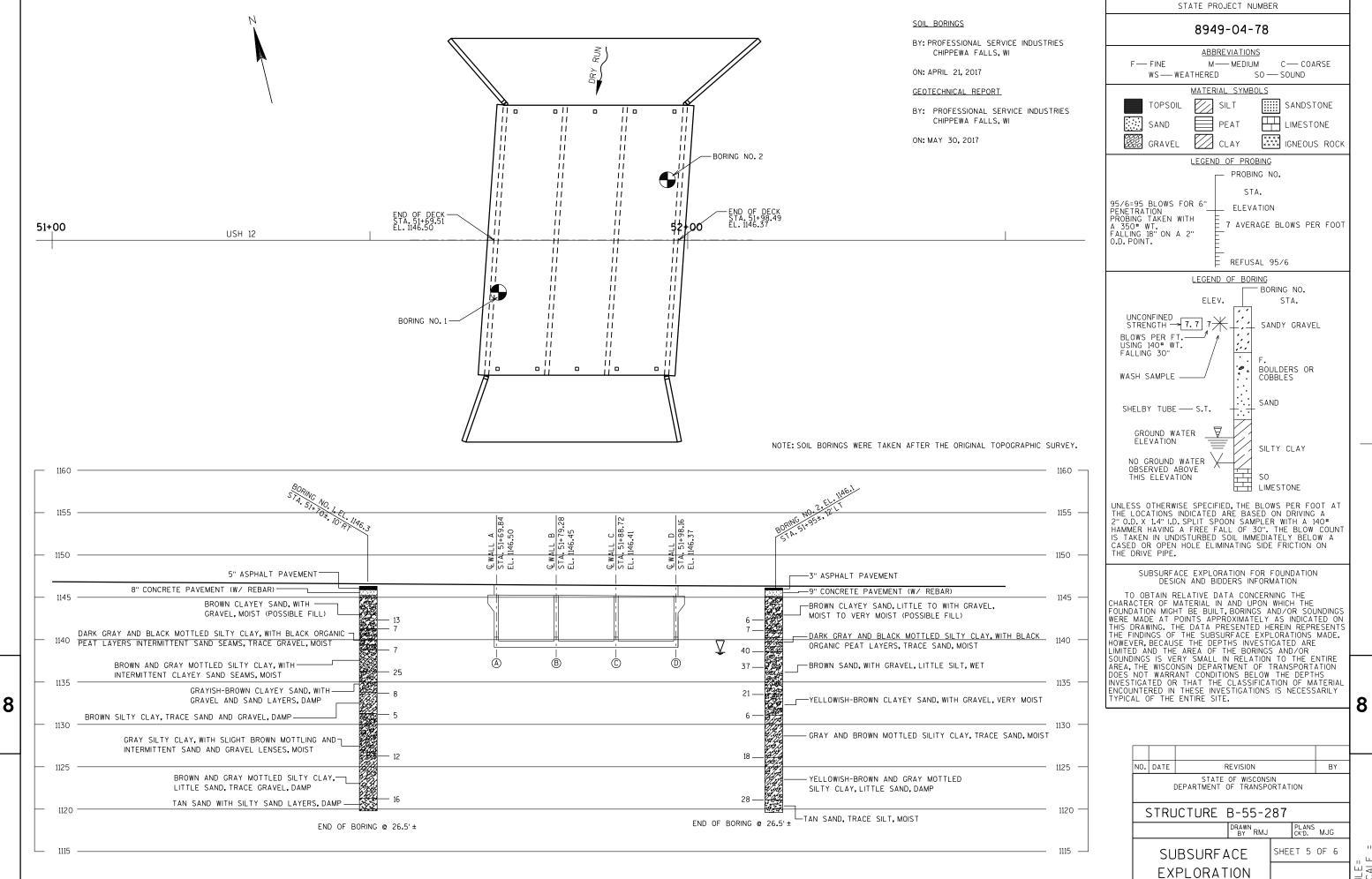
PLOT SCALE: 9.931739:1.000000

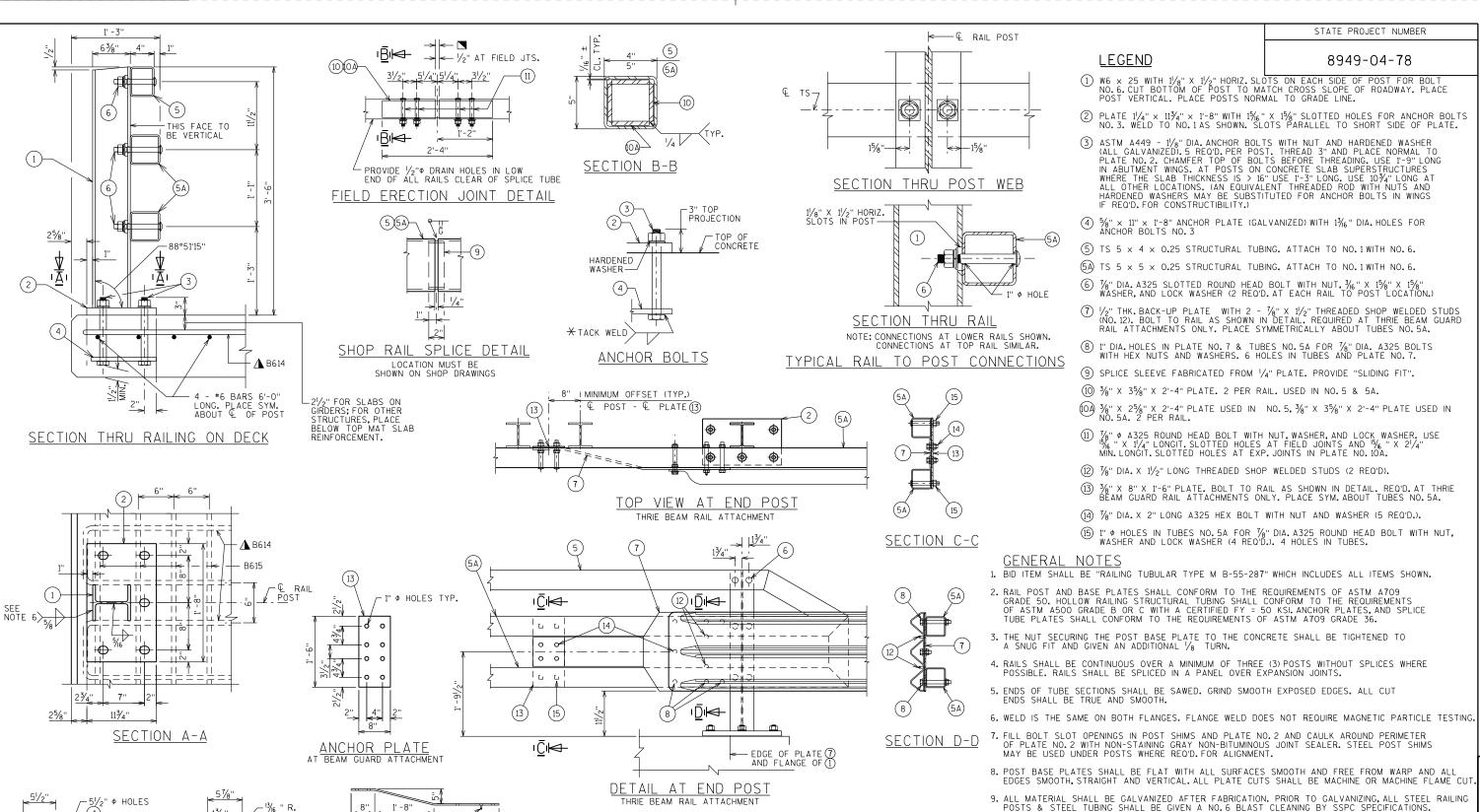












SEE POST SPA. SHT.1

PART ELEVATION OF RAILING

(12)

(12)

END OF SLAB

2' -3"

4' -2"

BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT

-1"¢ HOLES FOR

7/8" Φ HEX BOLTS

8

FIELD CLIP

POST SHIM

DETAIL

AS REQ'D.

" ϕ HOLES

FÖR 11/8" Φ ANCHOR BOLTS

ANCHOR PLATE

AT RAIL TO DECK CONNECTION

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.

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

TIE TO TOP MAT OF STEEL.

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



<u>Tubular steel</u>

RAILING TYPE M

RAII M 7-17

SHEET 6 OF 6

t Expanded Fill 1.25	Mass Ordinate
9 1	Note 8
0	0
62	-59
71	-67
126	-116
179	-164
191	-175
199	-183
269	-245
314	-283
330	-296
	-359
9 434	-379
))	330 408

				AREA (SF)		Incre	emental Vol (CY) (Unadjus	sted)	Cumula		
STATION	Real Station	Distance	Cu+	Salvaged/Unusable Pavement Material	Fill	Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Cut 1.00 Note 1	Expanded FIII 1,25	Mass Ordinate
52+01.66	5201.66	0.00	14.9	8.8	38.7	0.0	0.0	0.0	0	0	0
52+50	5250.00	48.34	17.2	8.8	30.9	28.7	15.7	62.3	29	78	-65
52+60.73	5260,73	10.73	16.6	8.8	34.2	6.7	3.5	12.9	35	94	-78
52+85.73	5285.73	25.00	13.5	8.8	56.3	14.0	8.1	41.9	49	146	-124
53+00	5300.00	14,27	10.0	8.8	55.3	6.2	4.6	29.5	56	183	-160
53+10.73	5310.73	10.73	8.2	8.8	62.5	3.6	3.5	23.4	59	213	-189
53+13.52	5313.52	2.80	8.3	8.8	62.7	0.9	0.9	6.5	60	221	-197
53+38.52	5338.52	25.00	8.2	8.8	59.3	7.6	8.1	56.4	68	291	-268
53+50	5350.00	11.48	8.1	8.8	54.5	3.5	3.7	24.2	71	321	-298
53+63.53	5363.53	13.53	8.2	8.8	49.8	4.1	4.4	26.1	75	354	-331
54+00	5400.00	36.47	9.4	8.8	33.0	11.8	11.8	56.0	87	424	-401
54+50	5450.00	50.00	10.5	8.8	19.5	18.4	16.2	48.6	106	485	-460
55+00	5500.00	50.00	8.8	8.8	14.5	17.8	16.2	31.4	123	524	-497
55+50	5550.00	50.00	8.4	8.8	21.3	15.9	16.2	33.2	139	566	-539
56+00	5600.00	50.00	8.0	8.8	30.4	15.2	16.2	47.9	154	625	-600
56+50	5650.00	50.00	12.9	8.8	36.9	19.3	16.2	62.4	174	703	-675
56+75	5675.00	25.00	15.2	8.8	0.8	13.0	8.1	17.5	187	725	-692

COLUMN TOTALS

COLUMN TOTALS

				AREA (SF)		Incr	emental Vol (CY) (Unadjus	sted)	Cumula		
STATION	Real Station	Distance	Cut	Salvaged/Unusable Pavement Material	FIII	Cut	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Cut 1.00 Note 1	Expanded Fill 1,25	Mass Ordinate
88+25	8825.00	0.00	1.1	0.0	1.2	0.0	0.0	0.0	0	0	10100
88+50	8850.00	25.00	1.0	0.0	24.8	1.0	0.0	12.0	1	15	-14
88+75.49	8875.49	25.49	4.2	0.9	29.4	2.4	0.4	25.5	3	47	-44
89+00	8900.00	24.51	4.5	0.9	38.0	3.9	0.8	30.6	7	85	-79
39+18.55	8918.55	18.55	4.6	0.9	39.9	3.1	0.6	26.8	10	119	-110
9+43.55	8943.55	25.00	5.2	1.8	44.0	4.5	1.2	38.9	15	167	-155
89+50	8950.00	6.45	5.0	1.8	43.5	1.2	0.4	10.5	16	180	-168
9+68.55	8968,55	18.55	4.3	1.8	40.9	3.2	1.2	29.0	19	217	-202
9+71.93	8971.93	3,37	4.3	1.8	41.2	0.5	0.2	5.1	20	223	-208
9+96.93	8996.93	25.00	4.0	1.8	44.8	3.8	1.6	39.8	24	273	-255
90+00	9000.00	3.07	14.8	8.8	47.1	1.1	0.6	5.2	25	279	-261
90+21.93	9021.93	21.93	15.8	8.8	46.4	12.4	7.1	37.9	37	327	-304
90+50	9050.00	28.07	17.6	8.8	47.5	17.3	9.1	48.8	55	388	-356
91+00	9100.00	50.00	22.1	8.8	274.7	36.7	16.2	298.4	91	761	-709
91+50	9150.00	50.00	10.2	8.8	40.7	29.9	16.2	292.0	121	1,126	-1,060
91+74.8	9174.80	24.80	9.4	8.8	27.1	9.0	8.0	31.1	130	1,164	-1,098
92+00	9200.00	25.20	13.9	8.8	20.4	10.8	8.2	22.1	141	1,192	-1,123
2+24.8	9224.80	24.80	16.9	8.8	13.4	14.1	8.0	15.5	155	1,212	-1,136
2+28.18	9228.18	3.37	17.2	8.8	12.2	2.1	1.1	1.6	157	1,214	-1,137
92+35	9235.00	6.82	17.8	1.8	12.2	4.4	1.3	3.1	162	1,217	-1,138
92+50	9250.00	15.00	5.8	1.8	13.6	6.6	1.0	7.1	168	1,226	-1,141
92+53.18	9253.18	3.18	5.8	1.8	14.0	0.7	0.2	1.6	169	1,228	-1,143
2+78.18	9278.18	25.00	5.4	1.8	19.0	5.2	1.6	15.3	174	1,247	-1,158
93+00	9300.00	21.82	4.5	1.8	18.9	4.0	1.4	15.3	178	1,267	-1,175
93+50	9350.00	50.00	0.8	0.0	3.4	4.9	1.6	20.6	183	1,292	-1,198
3+77.72	9377.72	27.72	1.5	0.0	0.0	1.1	0.0	1.8	184	1,295	-1,199

9

COUNTY:ST. CROIX HWY:USH 12 SHEET Ε PROJECT NO:8949-04-78 EARTHWORK

PLOT BY : RYAN JARVIS

9

				ι	DIVISION 4 - I	CULVERT REPLAC	EMENT 1				
		-		AREA (SF)		Incre	emental Vol (CY) (Unadju	sted)	Cumula	tive Vol (CY)	
STATION	Real Station	otion Distance	Cut	Salvaged/Unusable Pavement Material	FIII	Cut	Salvaged/Unusable Pavement Material	FIII	Cut 1.00	Expanded Fill 1,25	Mass Ordinate
						Note 1	Note 2	Note 3	Note 1		Note 8
168+50	16850.00	0.00	0.1	0.0	0.4	0.0	0.0	0.0	0	0	0
168+95	16895.00	45.00	1.8	0.0	72.1	1.6	0.0	60.4	2	75	-74
169+00	16900.00	5.00	1.4	0.0	65.0	0.3	0.0	12.7	2	91	-89
169+50	16950.00	50.00	0.0	0.0	0.6	1.4	0.0	60.7	3	167	-164
				COLUMN TOTALS		3.2	0.0	133.8			

				AREA (SF)		Incre	emental Vol (CY) (Unadjus	sted)	Cumula-	tive Vol (CY)	-
STATION	Real Station	Distance	Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cu†	Expanded FIII 1.25	Mass Ordinate
		5.5.5.5.				Note 1	Note 2	Note 3	Note 1		Note 8
294+50	29268.98	0.00	0.0	0.0	0.4	0.0	0.0	0.0	0	0	0
295+00	29318.98	50.00	0.5	0.0	40.6	0.5	0.0	37.9	0	47	-47
295+10.11	29329.09	10.11	0.4	0.0	43.0	0.2	0.0	15.6	1	67	-66
295+50	29368.98	39.89	0.0	0.0	2.7	0.3	0.0	33.8	1	109	-108

				AREA (SF)		Incr	emental Vol (CY) (Unadju	sted)	Cumula	tive Vol (CY)	
STATION	Real Station	Distance	Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Cut 1.00 Note 1	Expanded FIII 1,25	Mass Ordinate
300+25	30025.00	0.00	1.2	0.0	0.0	0.0	0.0	0.0	0	0	0
300+50	30050.00	25.00	1.2	0.0	7.9	1.1	0.0	3.7	li	5	-3
301+00	30100.00	50.00	3.2	1.8	38.5	4.1	1.6	43.0	5	58	-55
301+25	30125.00	25.00	17.7	1.8	47.7	9.7	1.6	39.9	15	108	-97
301+44.83	30144.83	19.83	16.3	8.8	54.2	12.5	3.9	37.4	27	155	-135
301+50	30150.00	5.17	17.2	8.8	54.6	3.2	1.7	10.4	31	168	-146
301+70.18	30170.18	20.18	21.3	8.8	61.8	14.4	6.5	43.5	45	222	-193
301+81.29	30181.29	11.11	22.8	8.8	62.4	9.1	3.6	25.6	54	254	-219
301+95.54	30195.54	14,24	24.0	8.8	59.6	12.4	4.6	32.2	66	295	-252
302+00	30200.00	4.46	24.3	8.8	59.7	4.0	1.4	9.9	70	307	-262
02+05.95	30205.95	5.95	23.8	8.8	61.7	5.3	1.9	13.4	76	324	-275
802+30.61	30230.61	24.66	21.6	8.8	63.7	20.7	8.0	57.3	96	395	-334
302+50	30250.00	19.39	17.3	8.8	64.1	14.0	6.3	45.9	110	453	-383
303+00	30300.00	50.00	25.1	8.8	78.5	39.3	16.2	132.0	150	618	-525
303+16.44	30316.44	16.44	21.5	8.8	373.0	14.2	5.3	137.5	164	790	-688
303+50	30350.00	33.56	13.0	8.8	65.7	21.4	10.9	272.6	185	1,130	-1,019
304+00	30400.00	50.00	14.3	8.8	56.4	25.3	16.2	113.0	211	1,272	-1,151
04+27.93	30427.93	27.93	17.4	8.8	62.8	16.4	9.1	61.6	227	1,349	-1,220
304+36.2	30436.20	8.28	17.4	8.8	64.0	5.3	2.7	19.4	232	1,373	-1,242
304+37.3	30437.30	1.10	17.3	1.8	64.1	0.7	0.2	2.6	233	1,376	-1,245
304+50	30450.00	12.70	4.7	1.8	66.8	5.2	0.8	30.8	238	1,415	-1,279
304+52.93	30452.93	2.93	4.6	1.8	67.0	0.5	0.2	7.3	239	1,424	-1,288
304+61.2	30461.20	8.28	4.6	1.8	66.2	1.4	0.5	20.4	240	1,449	-1,312
304+77.93	30477.93	16.72	2.4	1.8	66.5	2.2	1.1	41.1	242	1,501	-1,363
304+86.21	30486.21	8.28	2.4	1.8	63.0	0.7	0.5	19.9	243	1,525	-1,387
305+00	30500.00	13.79	2.4	1.8	54.1	1.2	0.9	29.9	244	1,563	-1,424
305+50	30550.00	50.00	3.1	0.9	32.5	5.1	2.4	80.1	249	1,663	-1,522
306+00	30600.00	50.00	1.6	0.9	0.1	4.3	1.6	30.2	254	1,701	-1,557

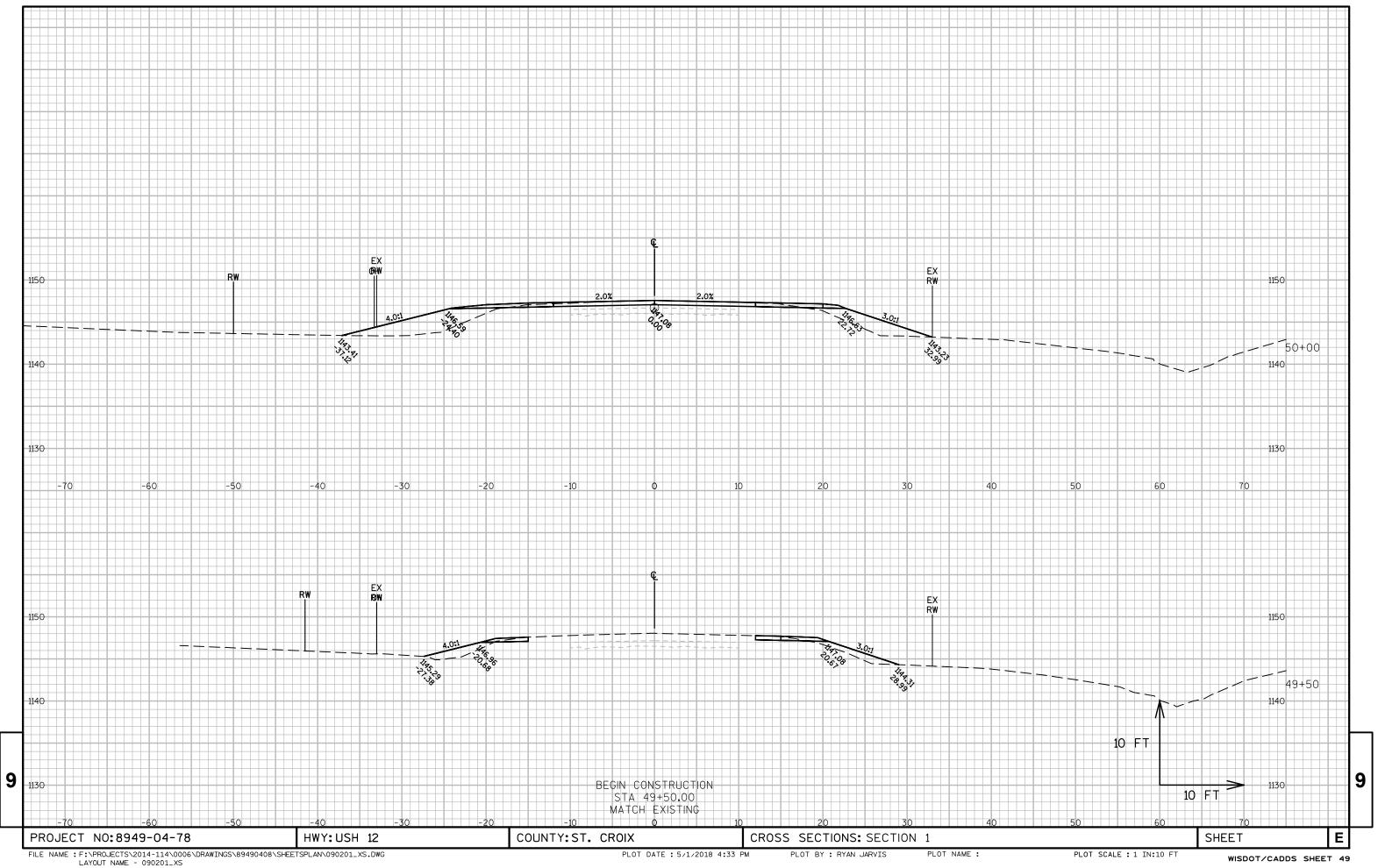
	_		AREA (SF)			Incre	emental Vol (CY) (Unadjus	sted)	Cumula		
STATION	Real Station	Real Station Distance	Cu†	Salvaged/Unusable Pavement Material	FIII	Cu+	Salvaged/Unusable Pavement Material	FIII	Cu† 1.00	Expanded Fill 1.25	Mass Ordinate
						Note 1	Note 2	Note 3	Note 1		Note 8
429+50	42768.98	0.00	0.0	0.0	0.2	0	0	0	0	0	0
430+00	42818.98	50.00	0.0	0.0	46.1	0.0	0.0	42.8	0	54	-54
430+26.5	42845.48	26.50	0.0	0.0	112.1	0.0	0.0	77.6	0	151	-150
430+50	42868.98	23.50	0.0	0.0	51.8	0.0	0.0	71.3	٥ -	240	-240
431+00	42918.98	50.00	0.0	0.0	0.9	0.0	0.0	48.8	0	301	-301
				COLUMN TOTALS		0.1	0.0	240.5			

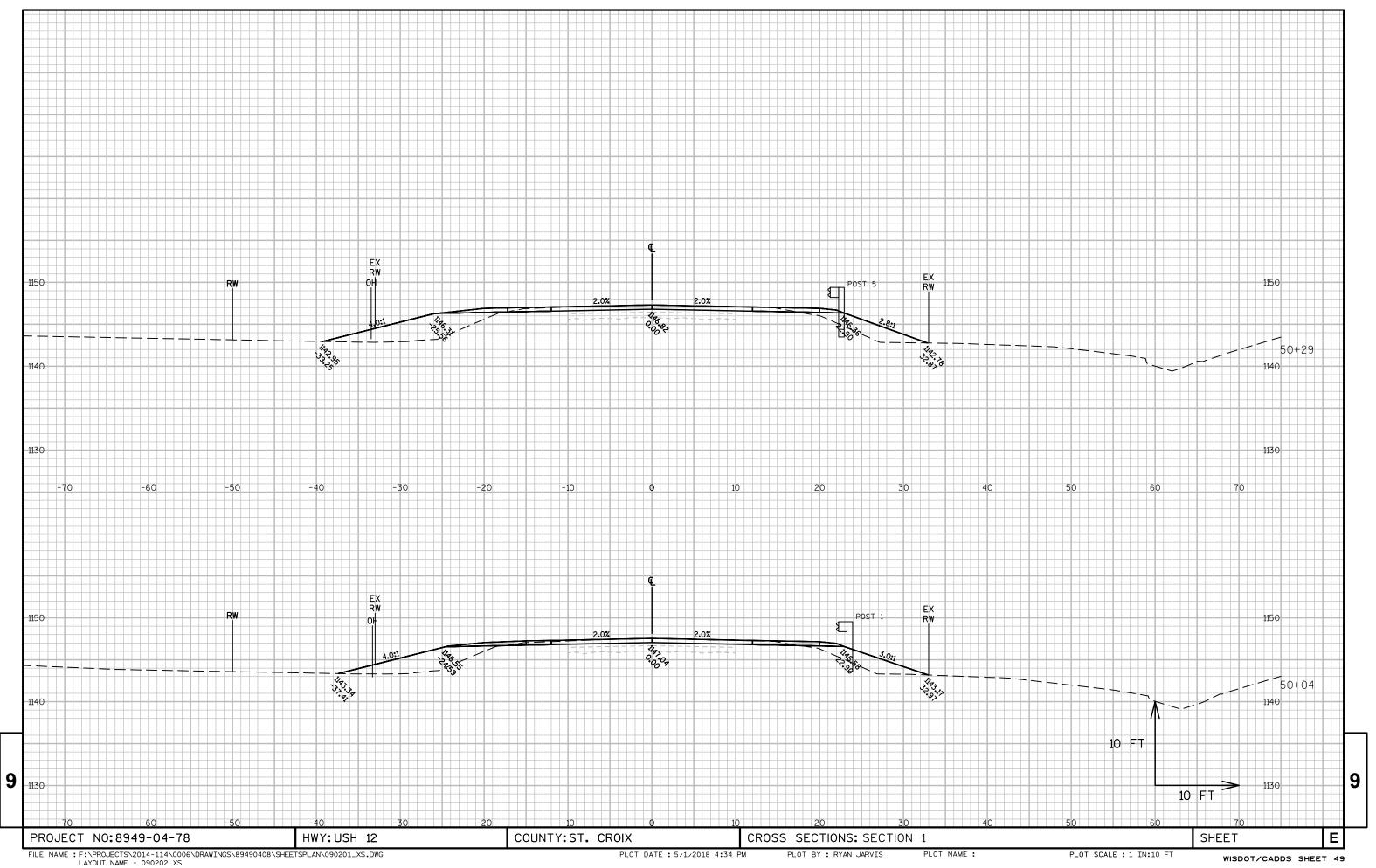
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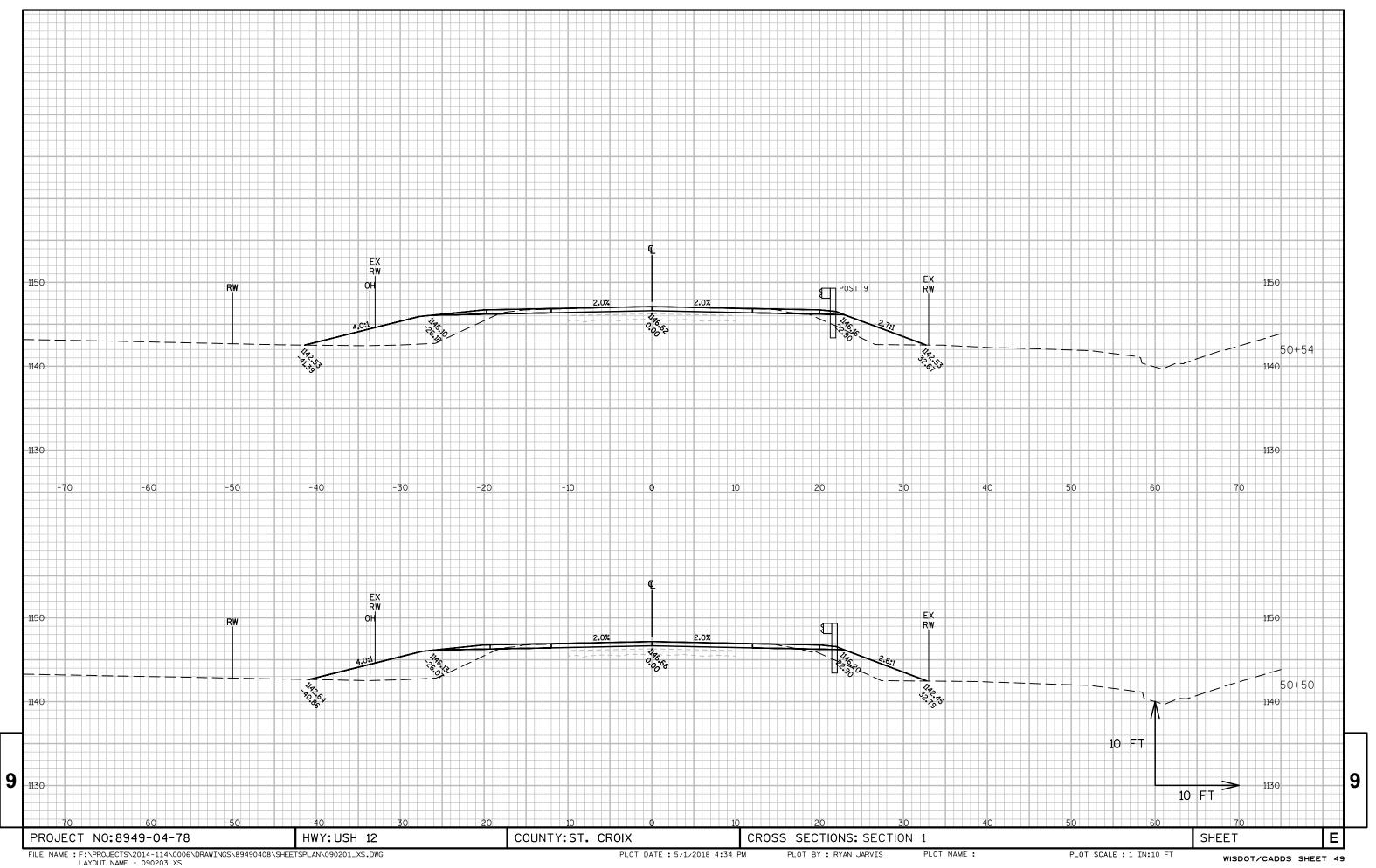
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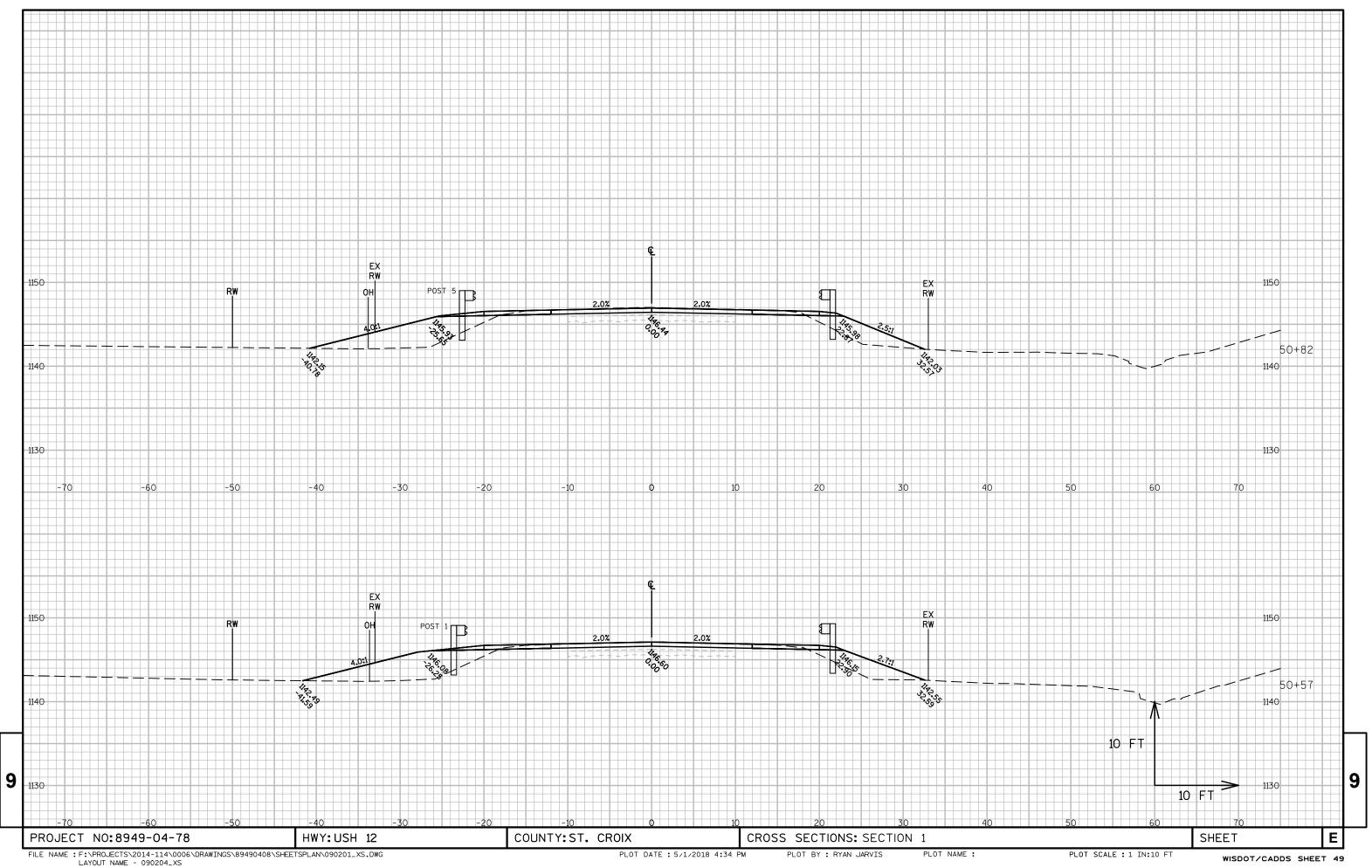
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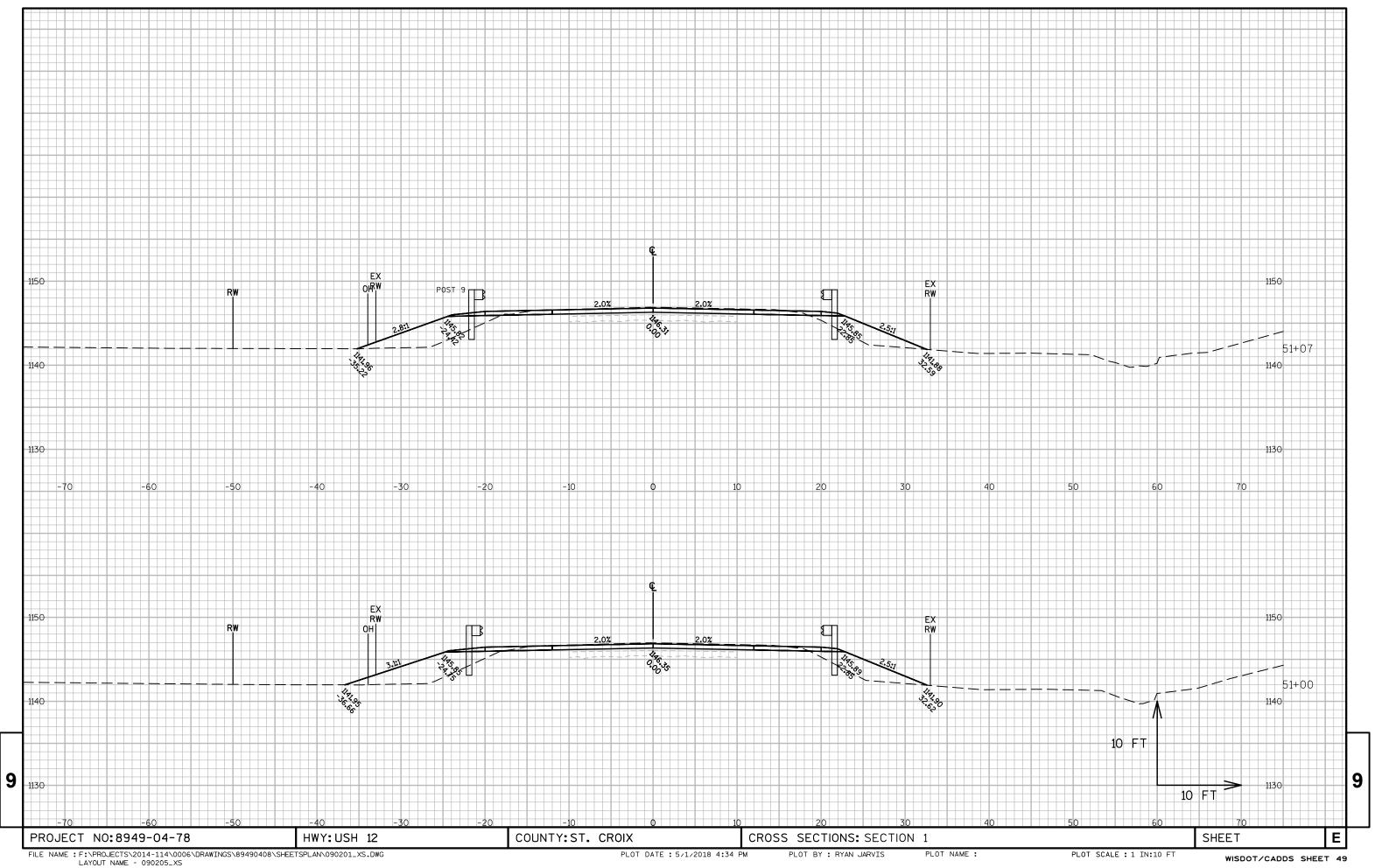
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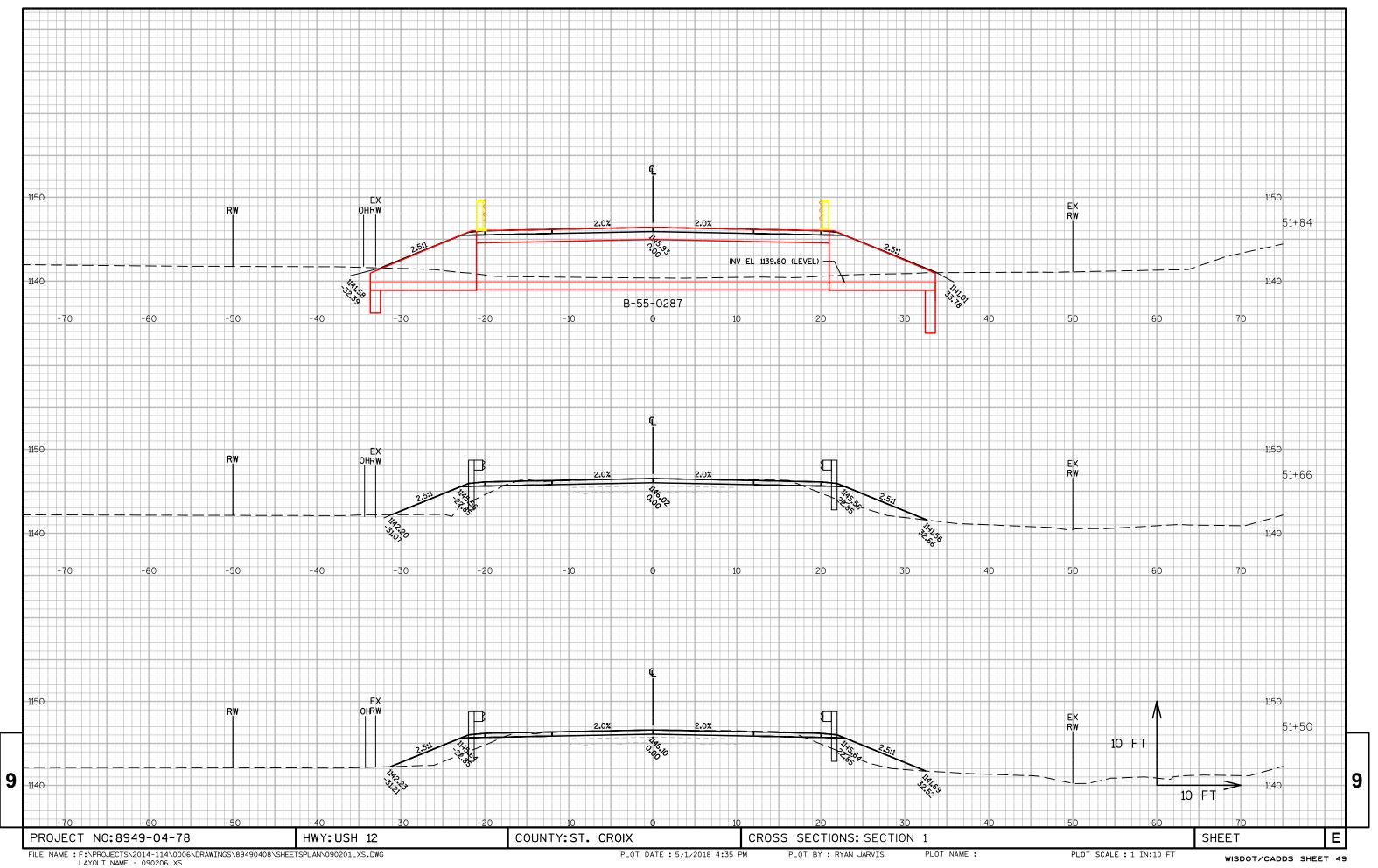


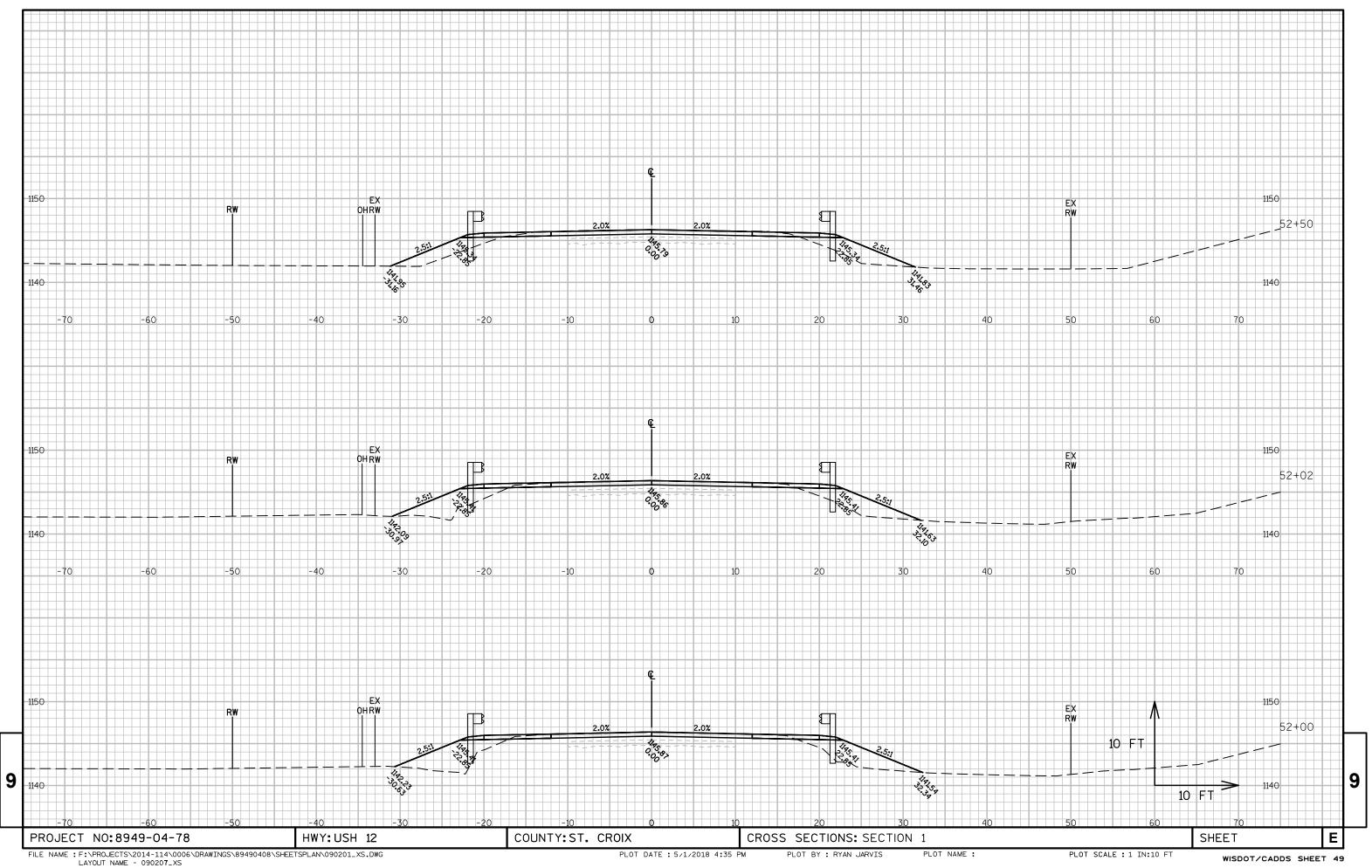


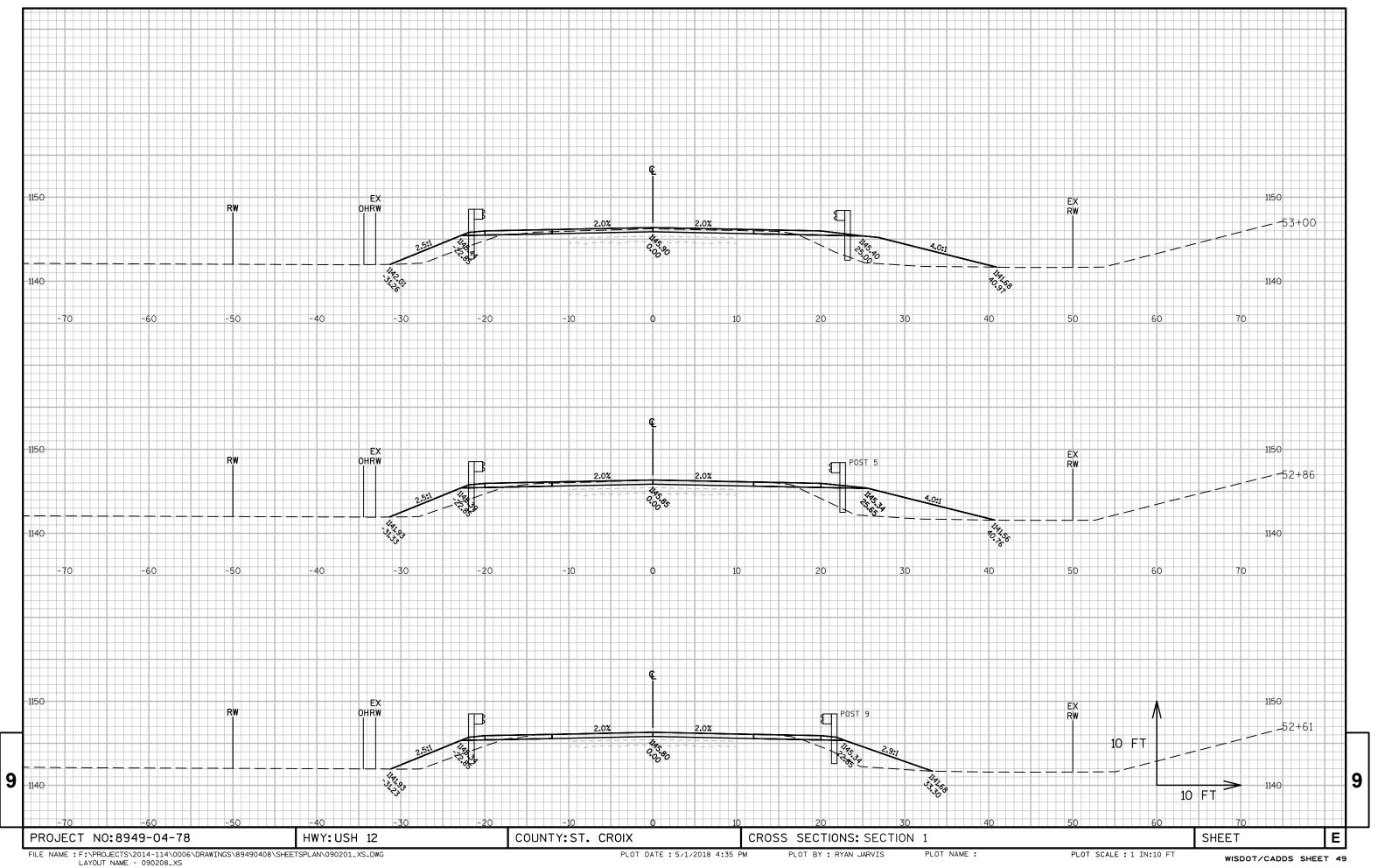


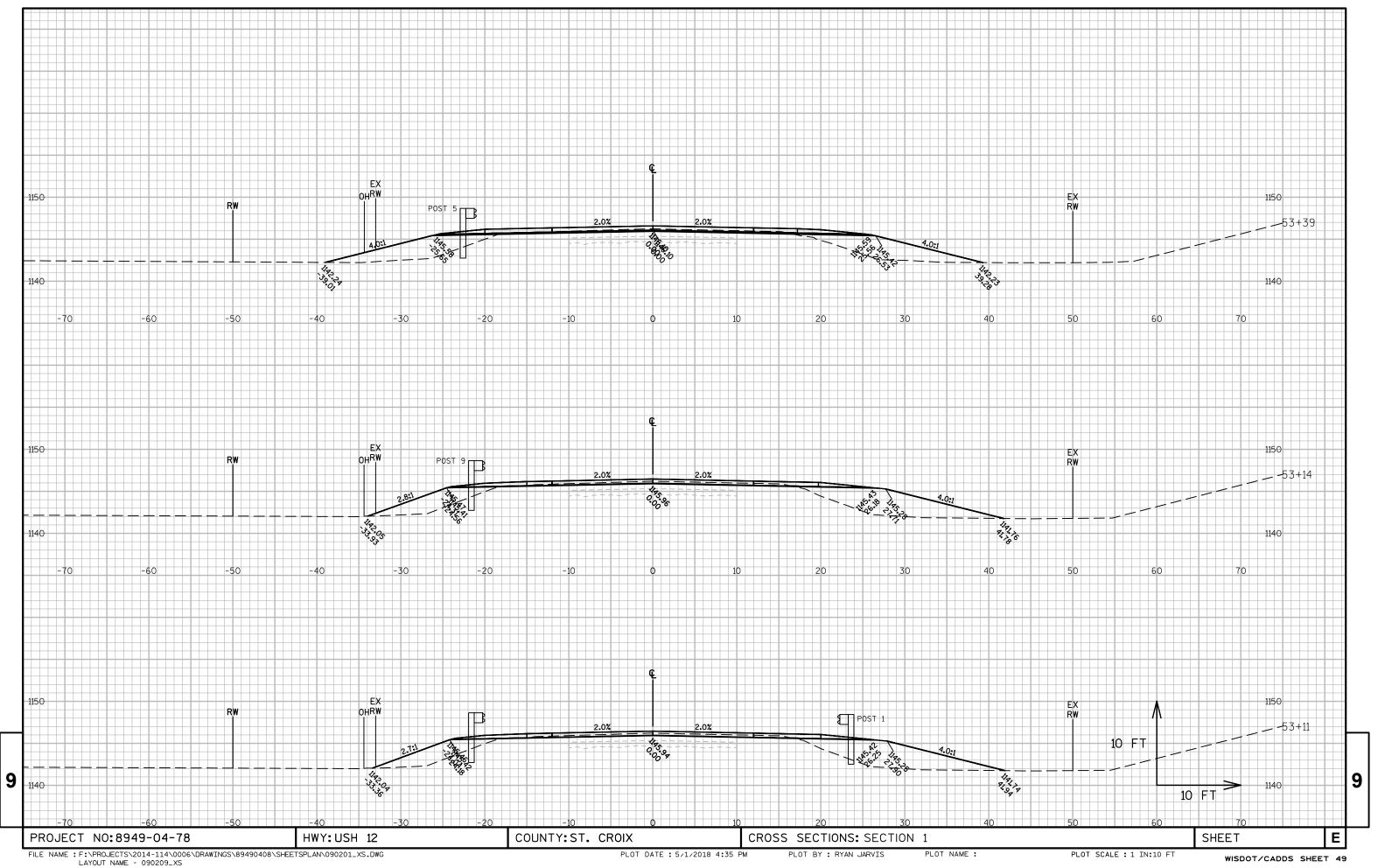


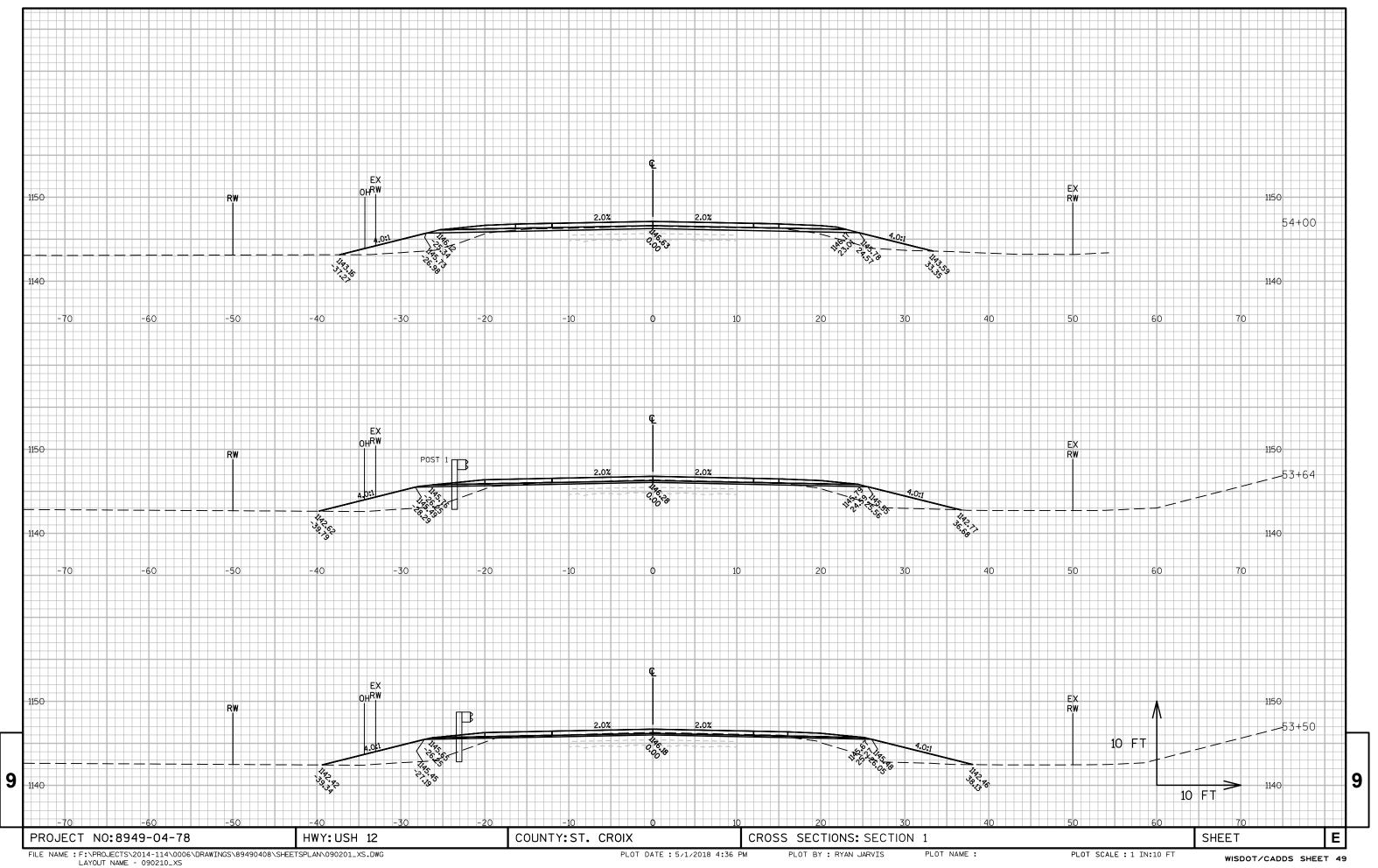


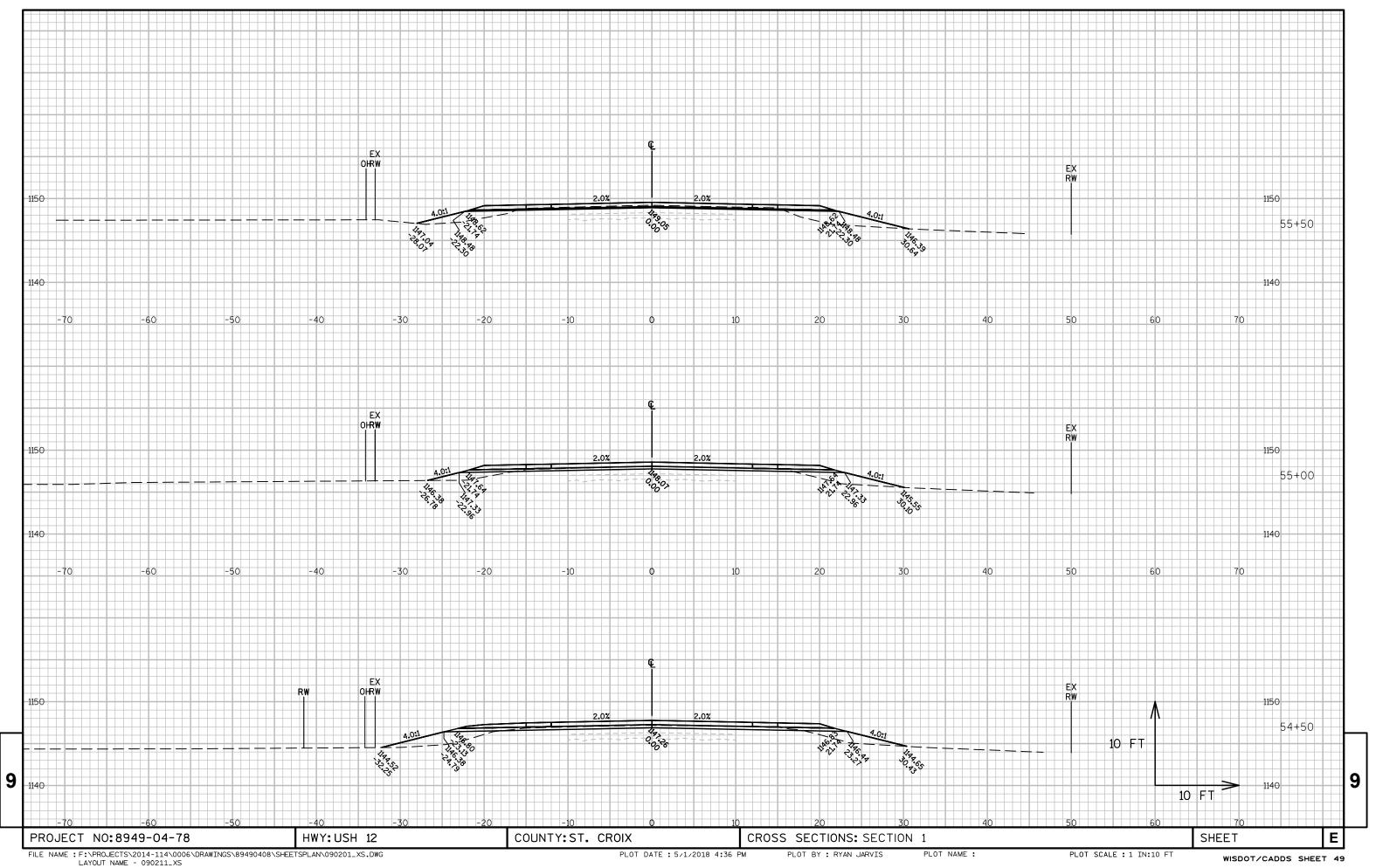


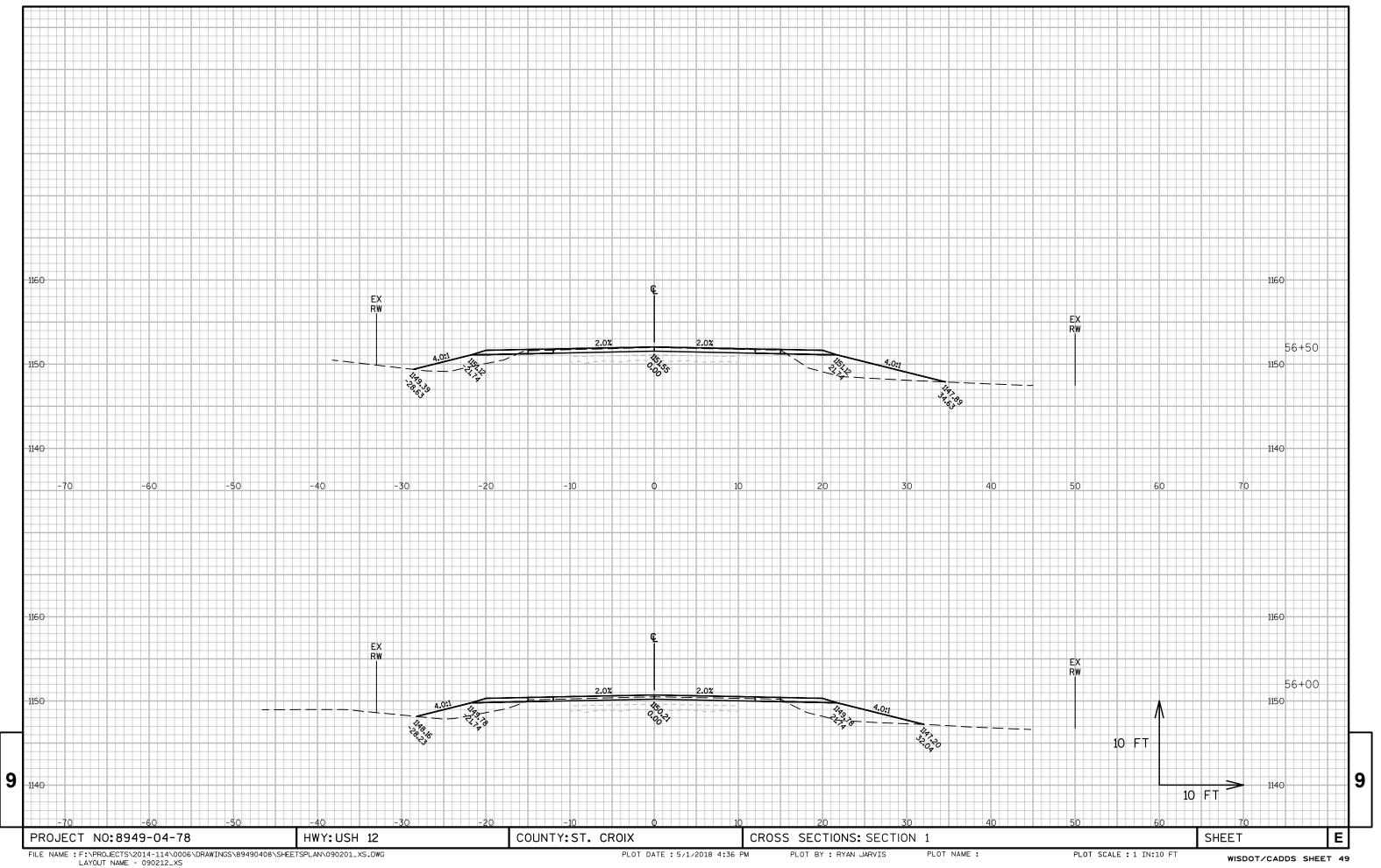


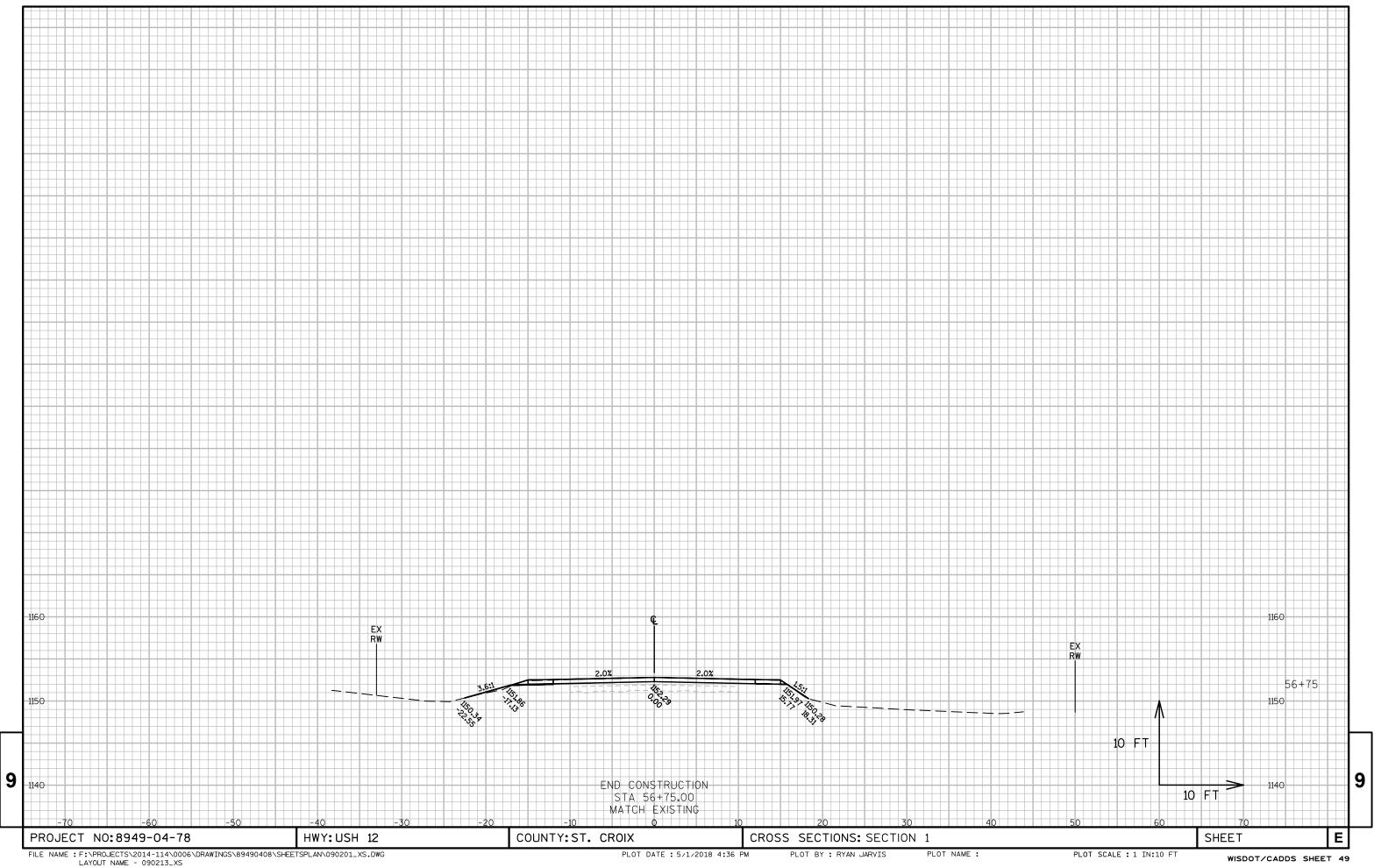


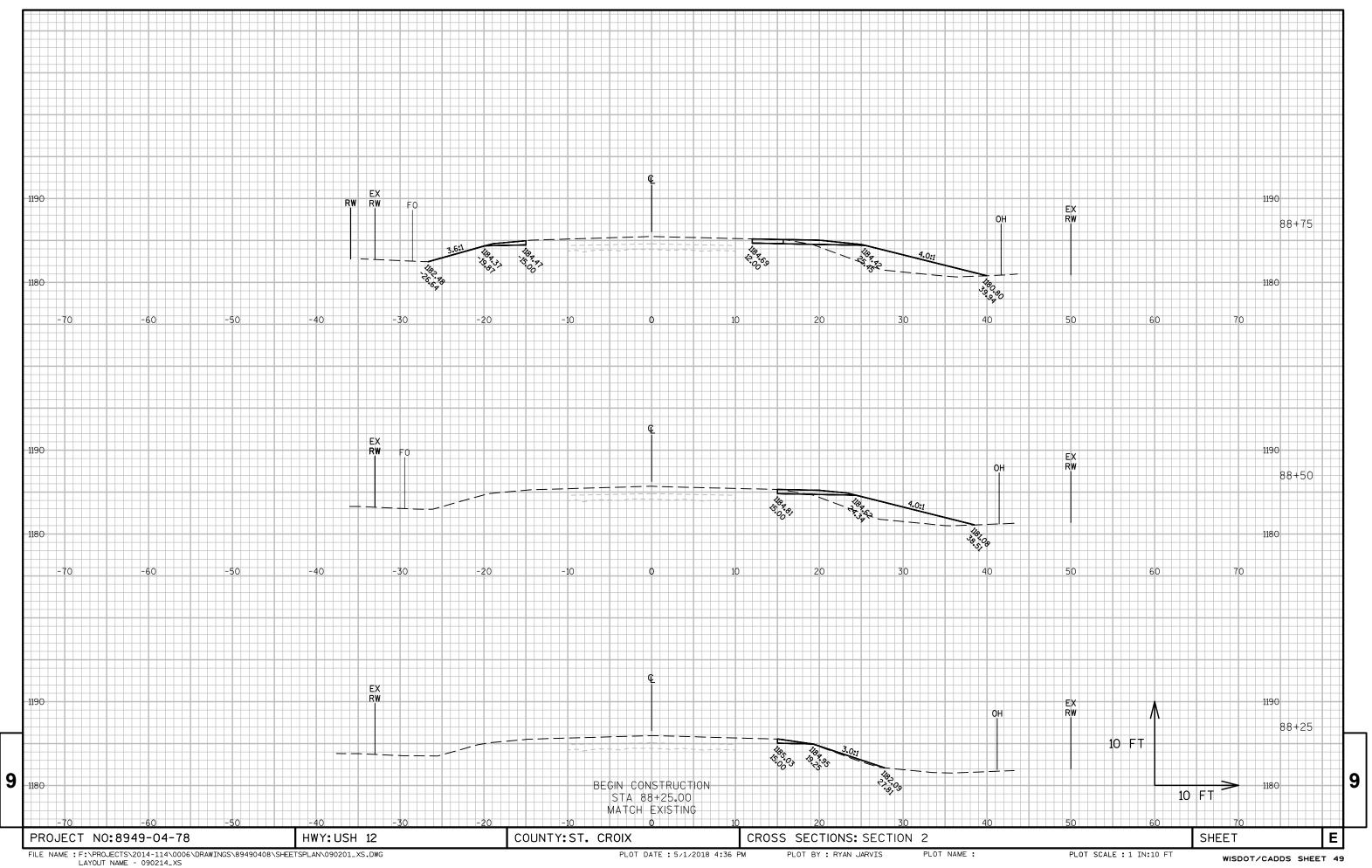


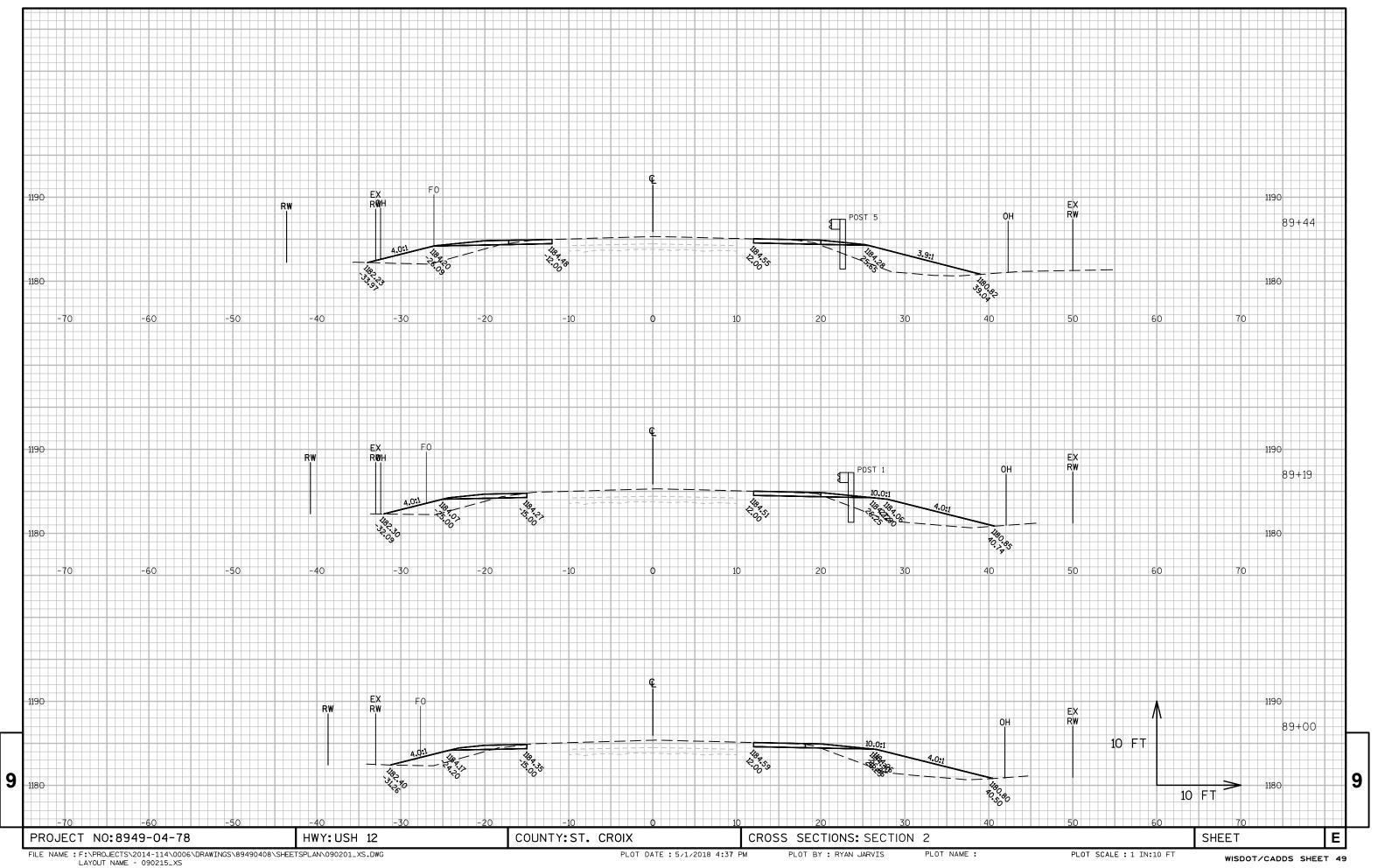


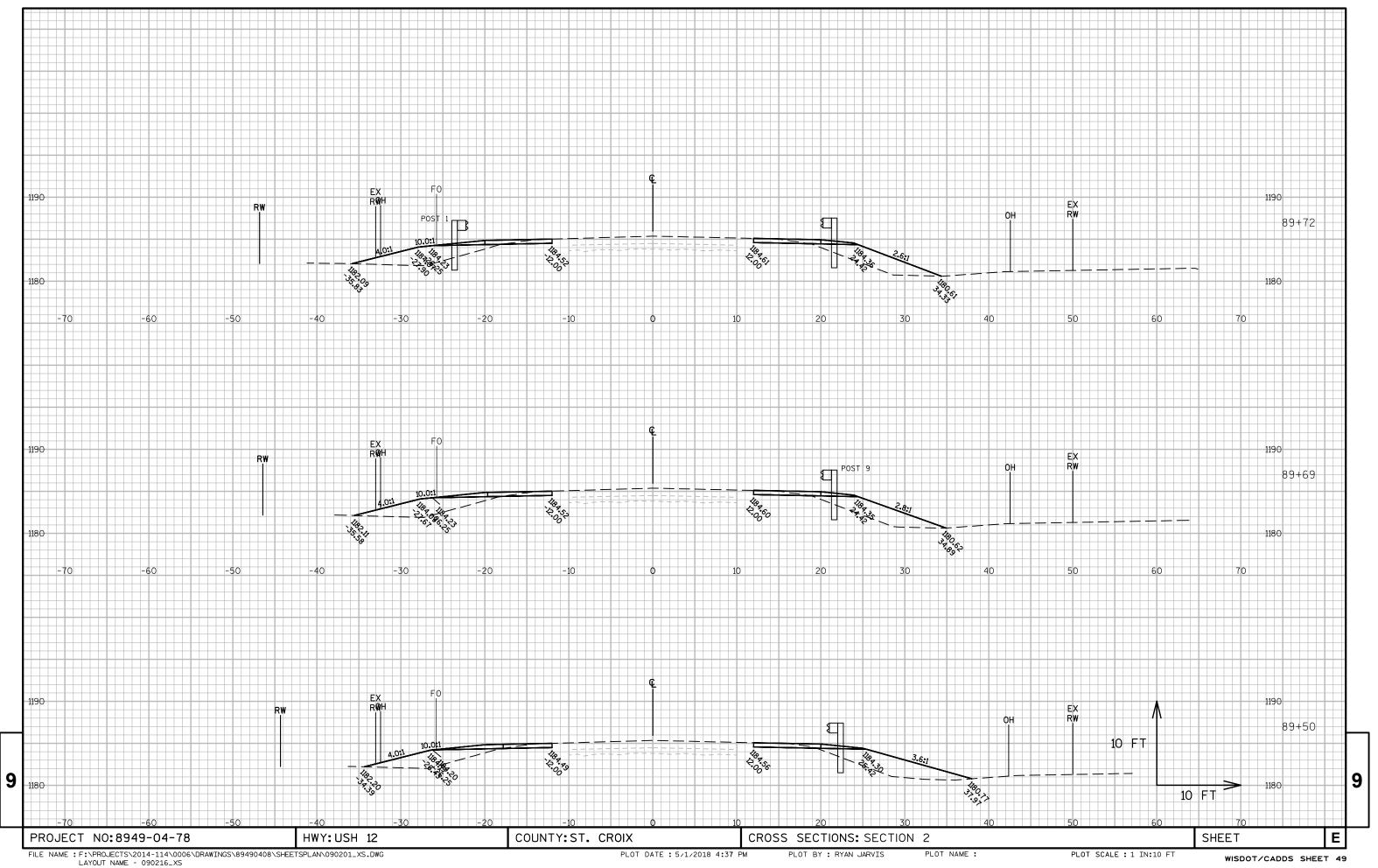


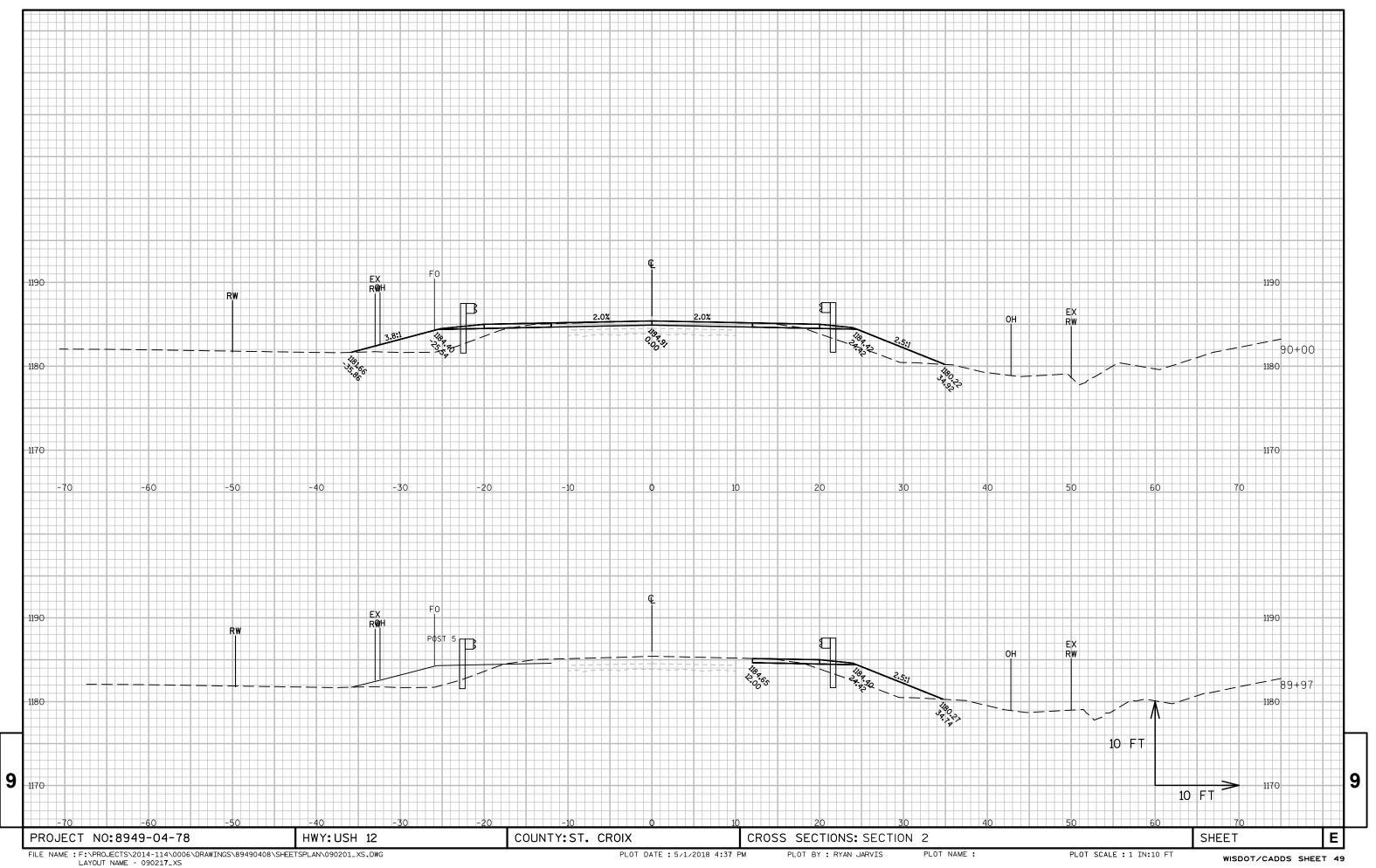


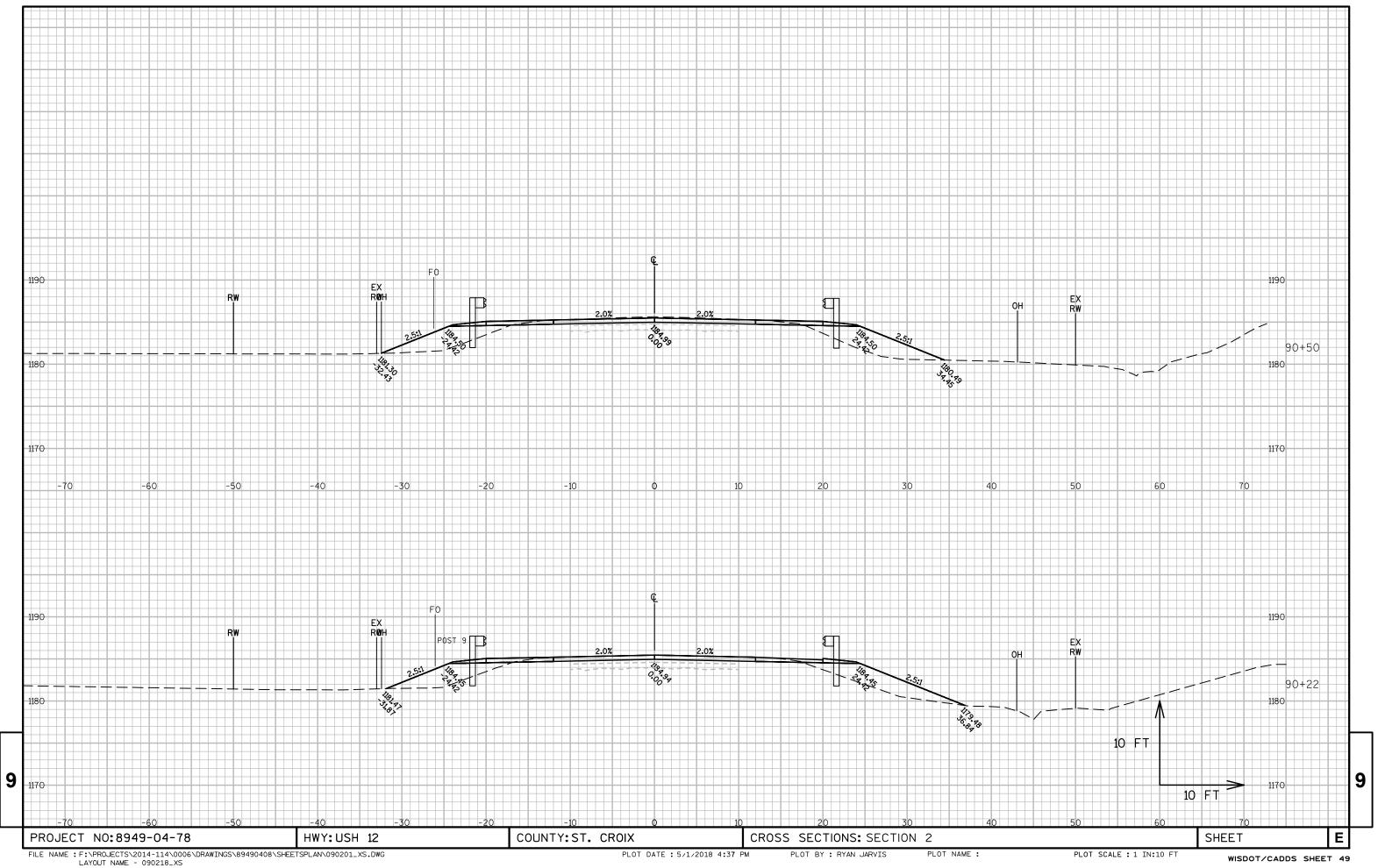


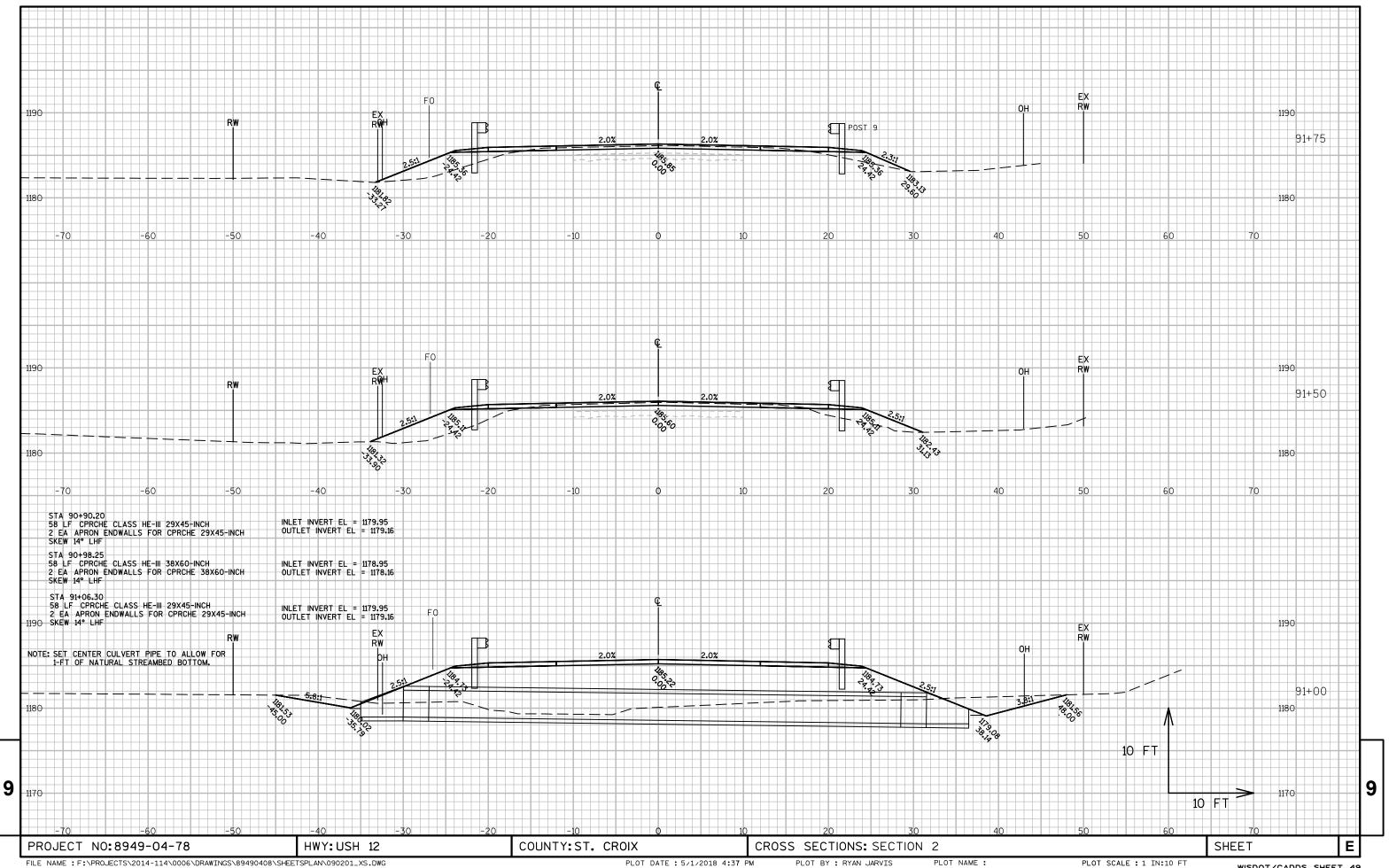


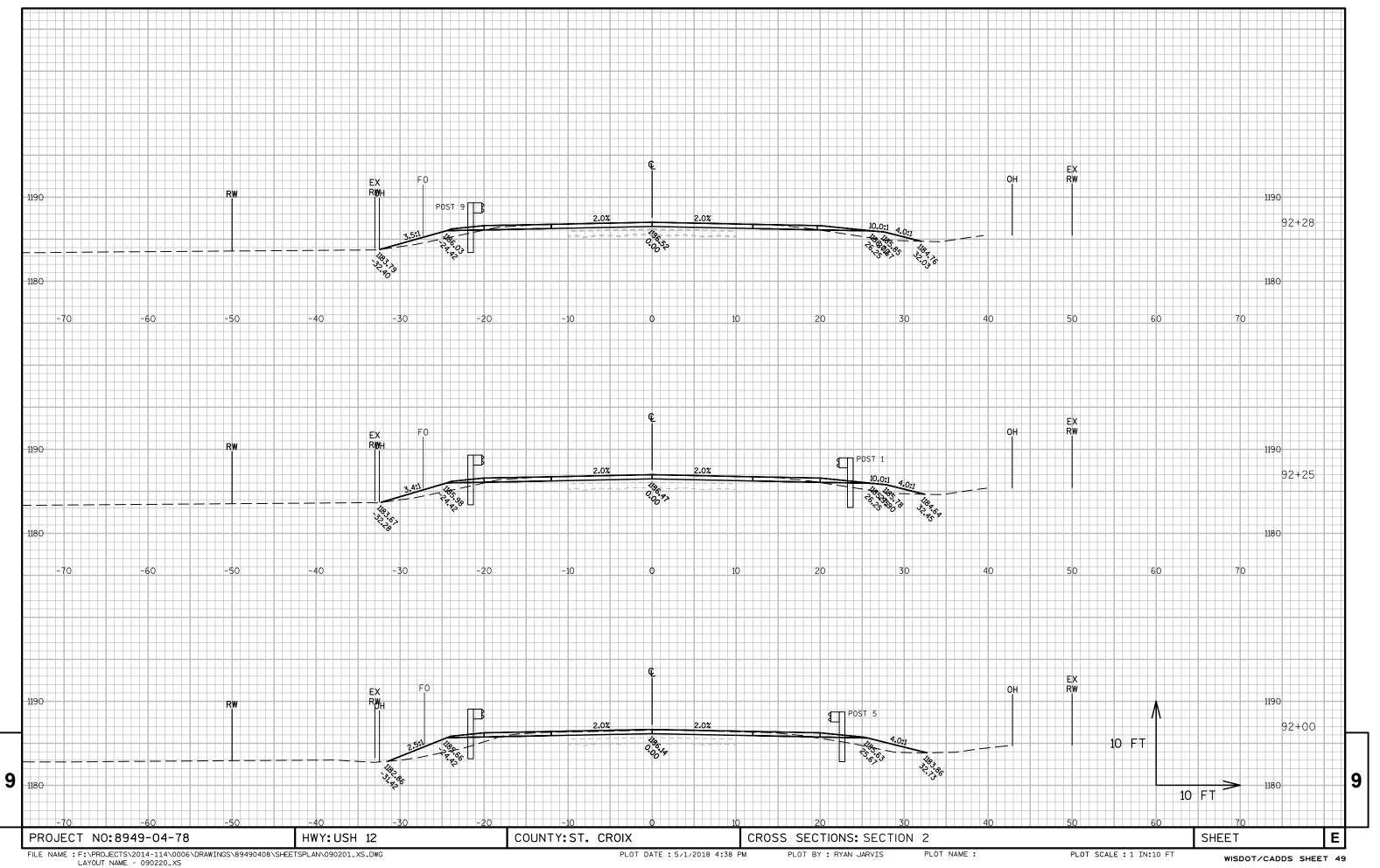


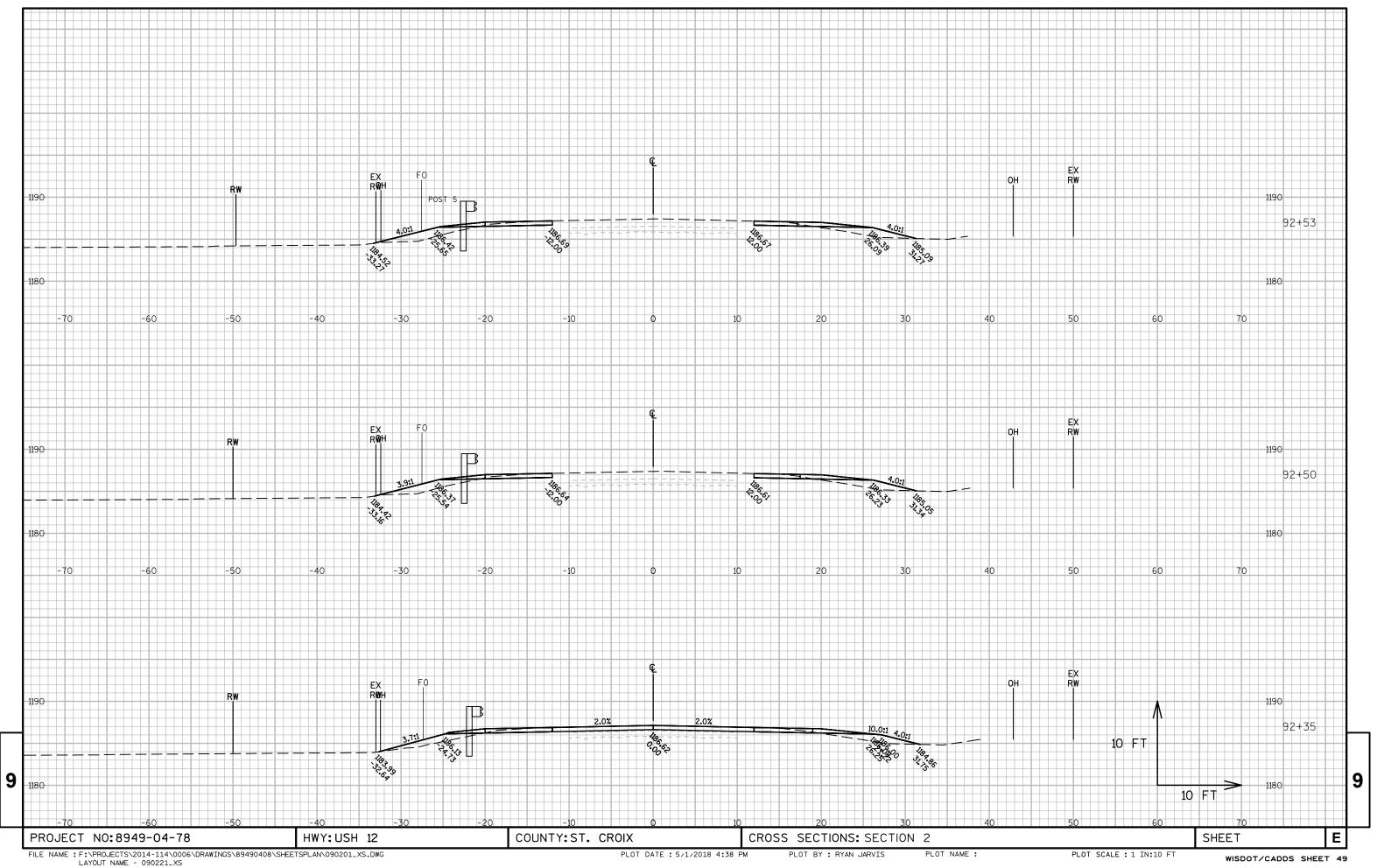


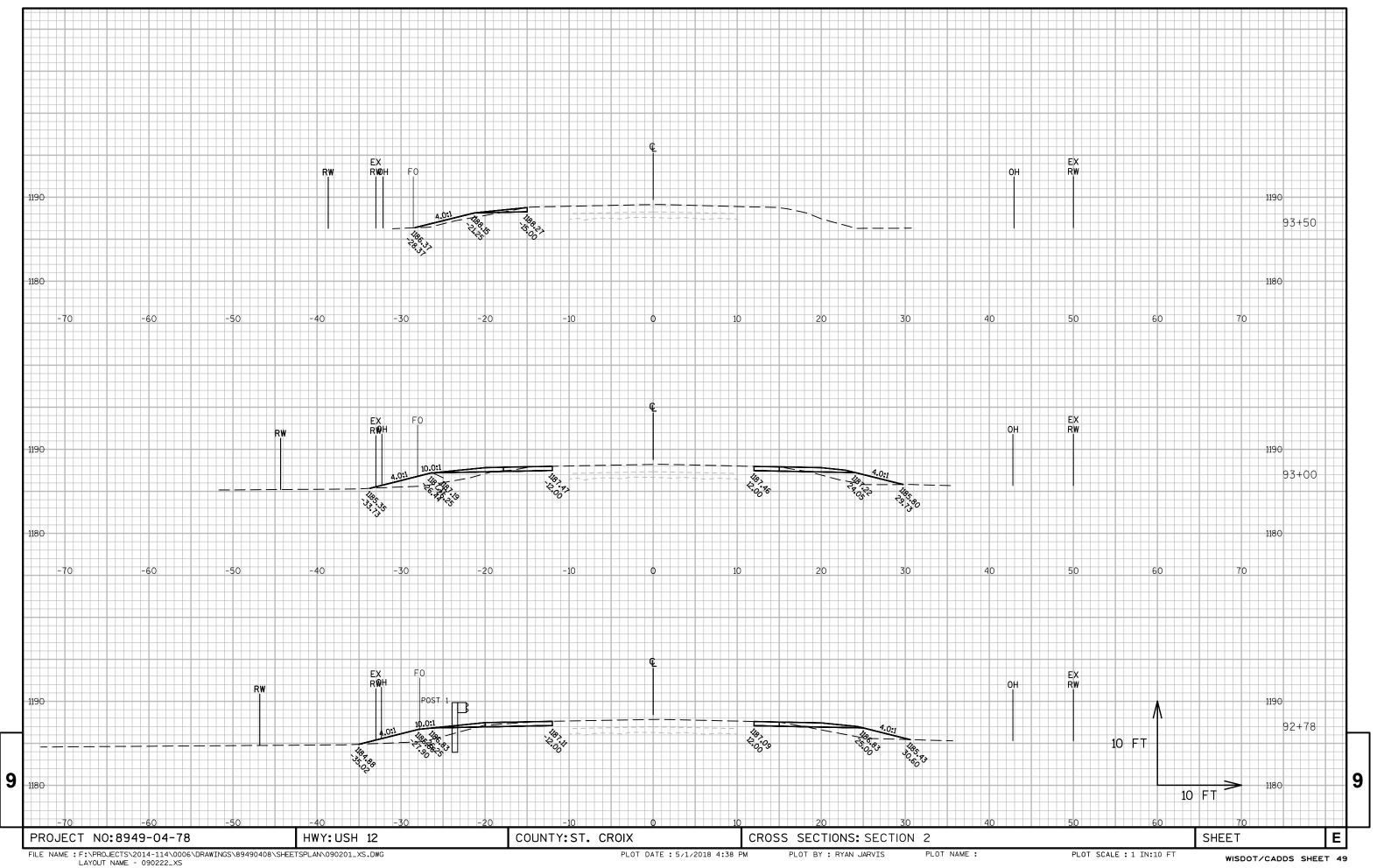


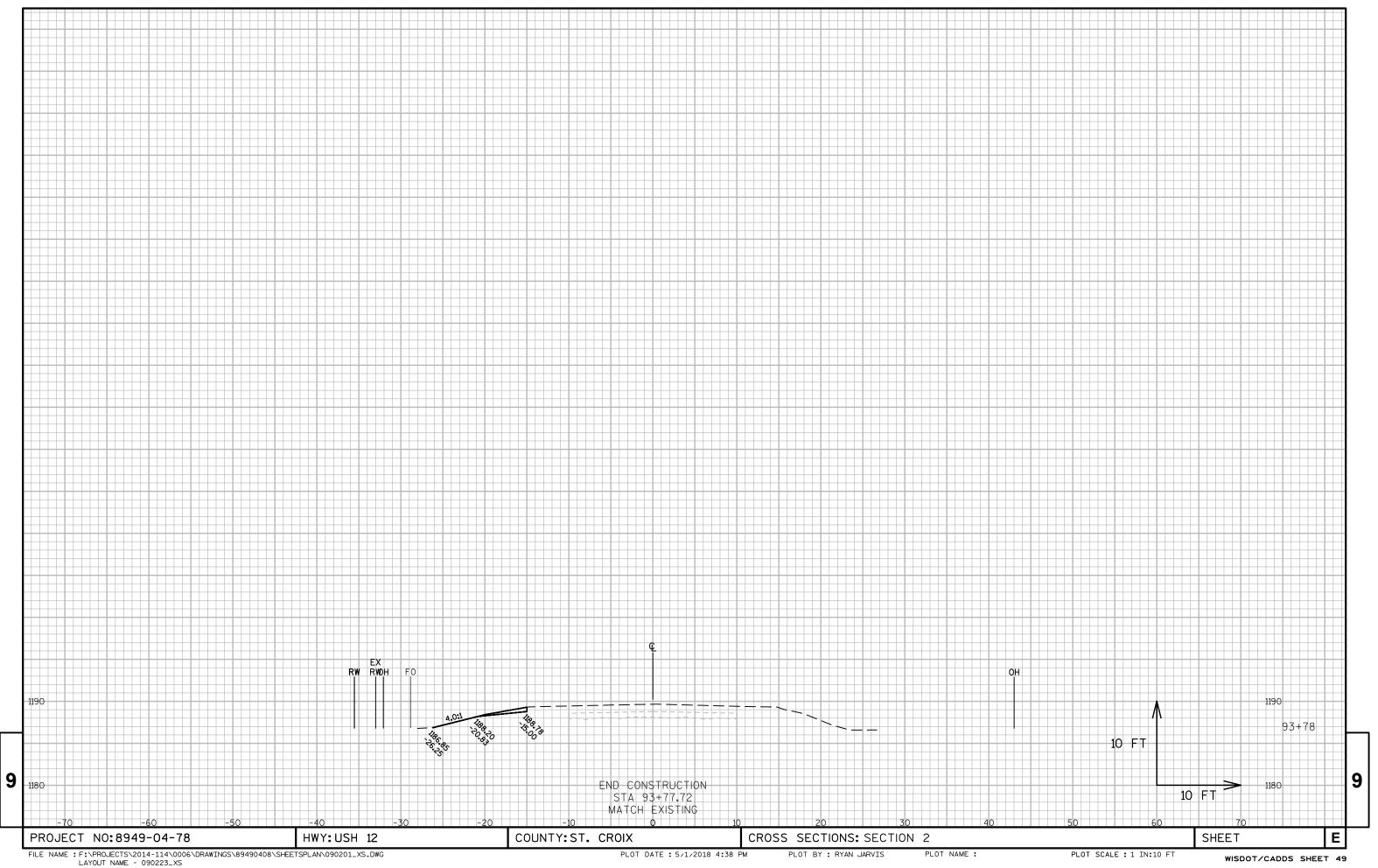


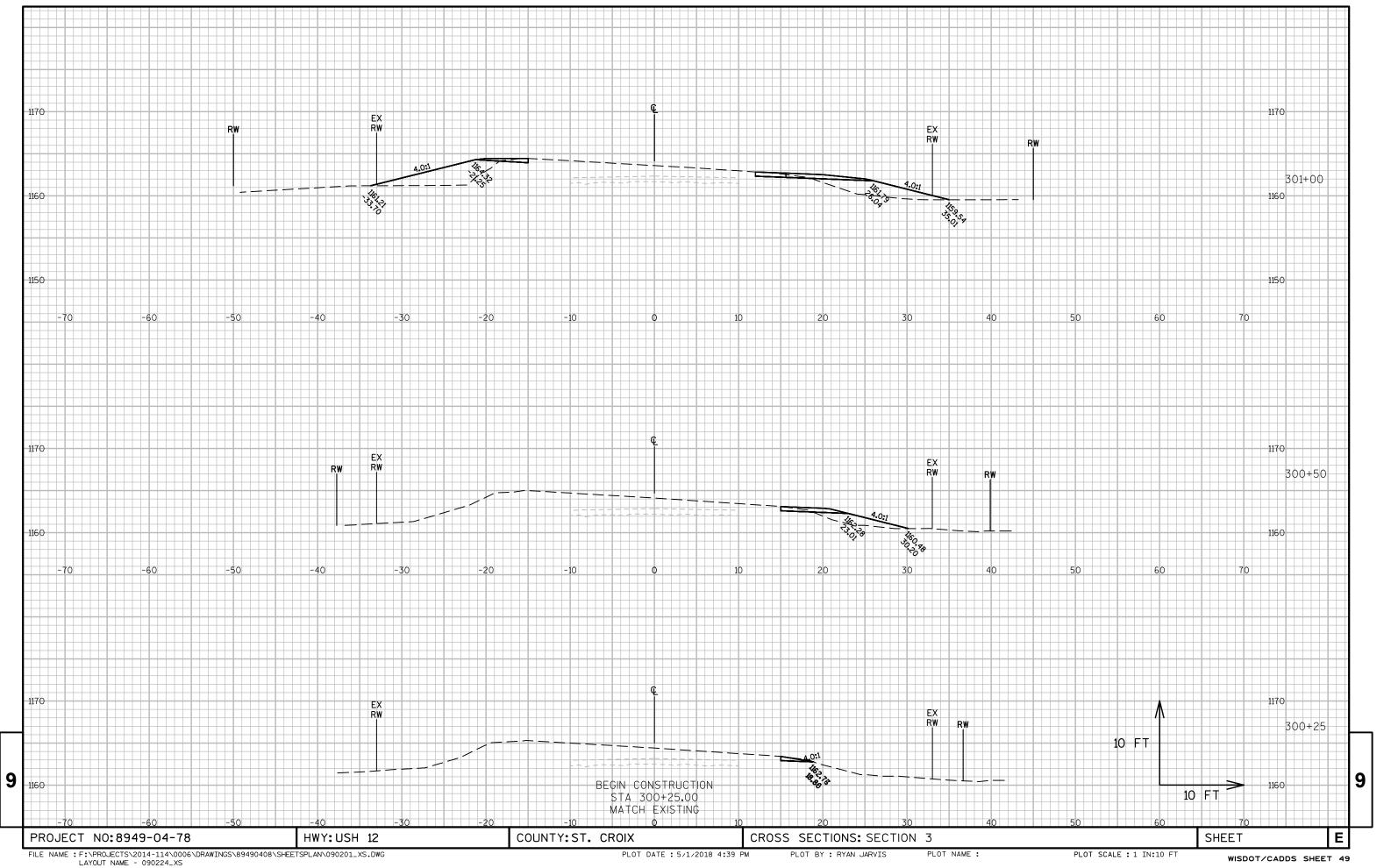


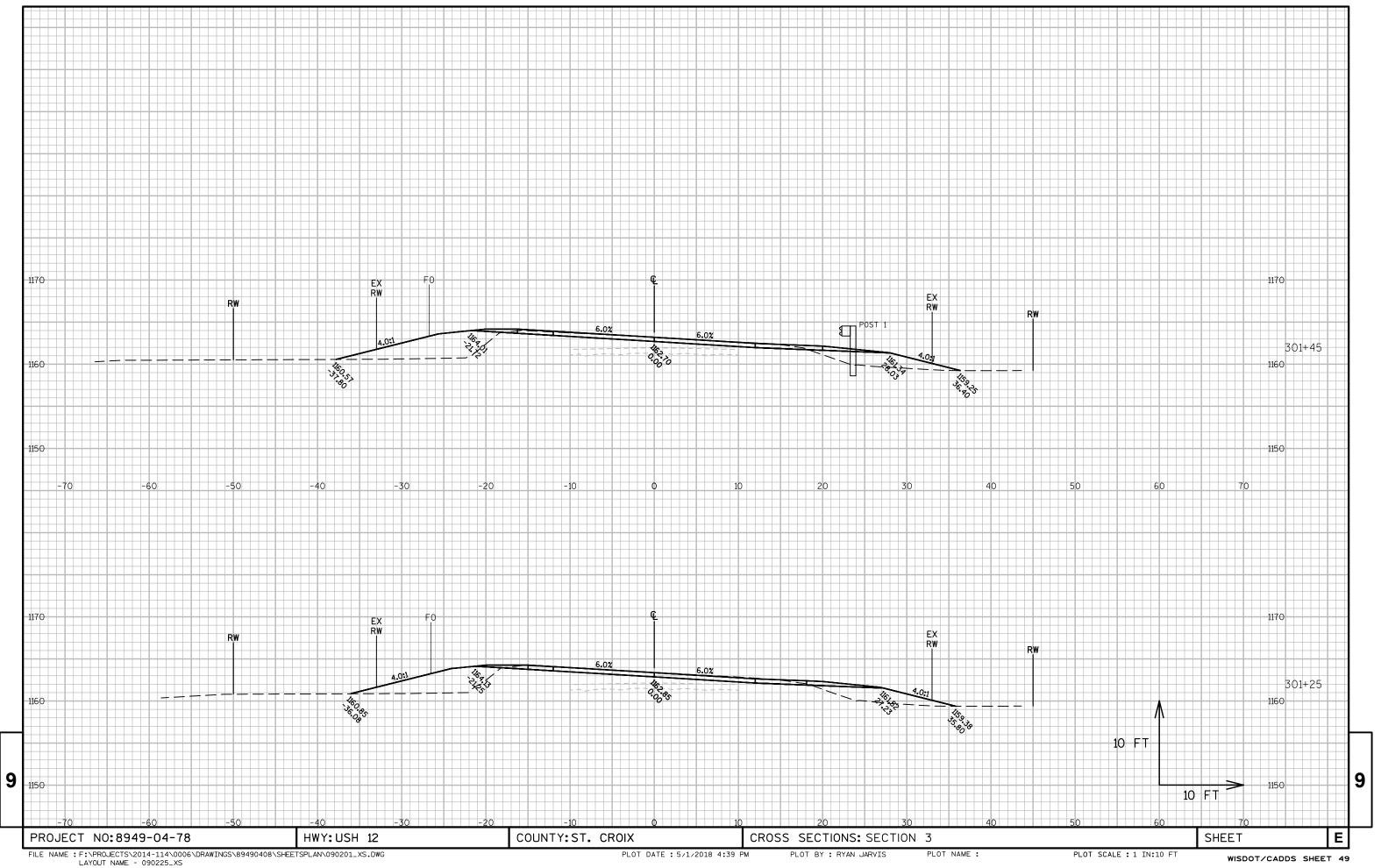


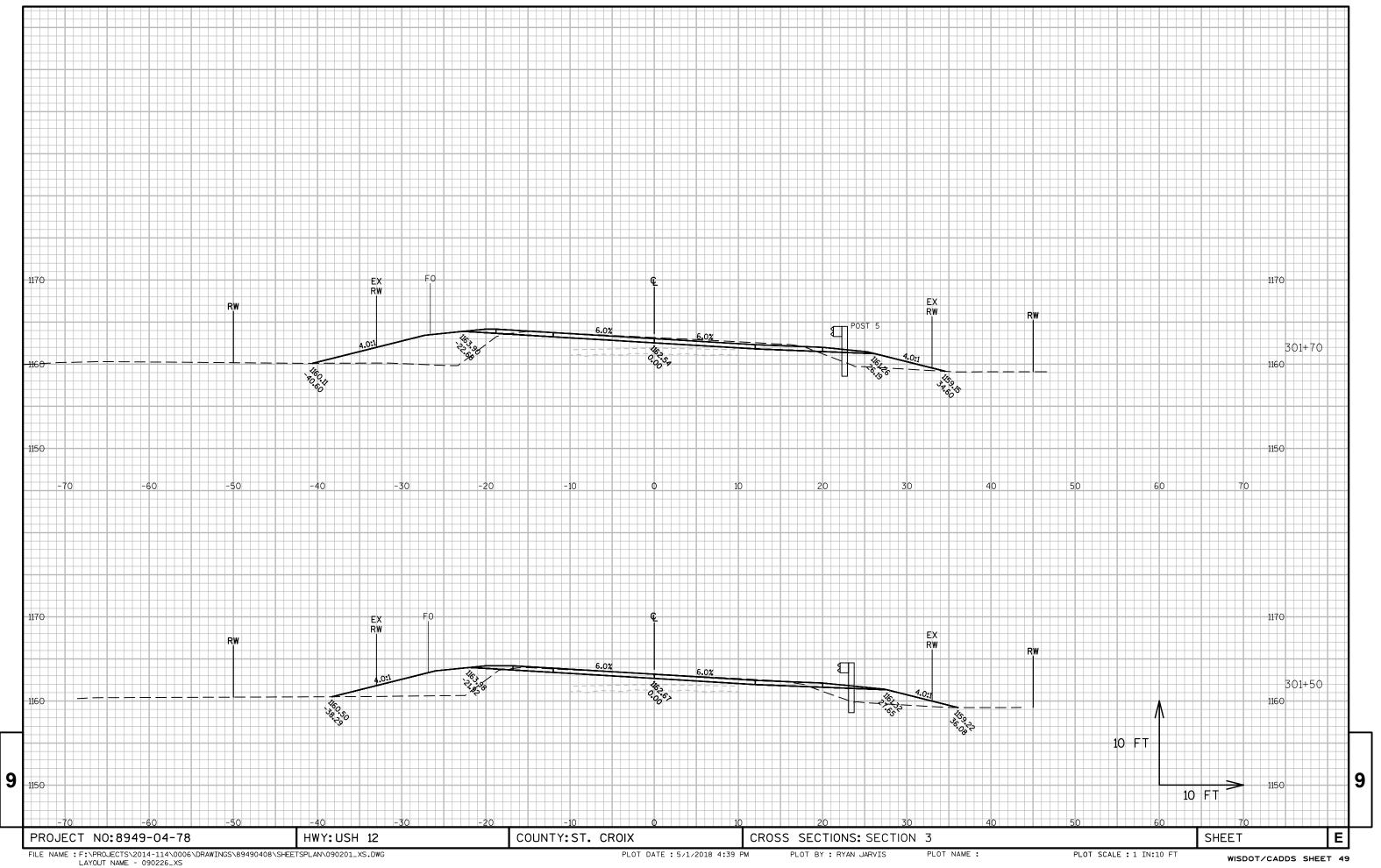


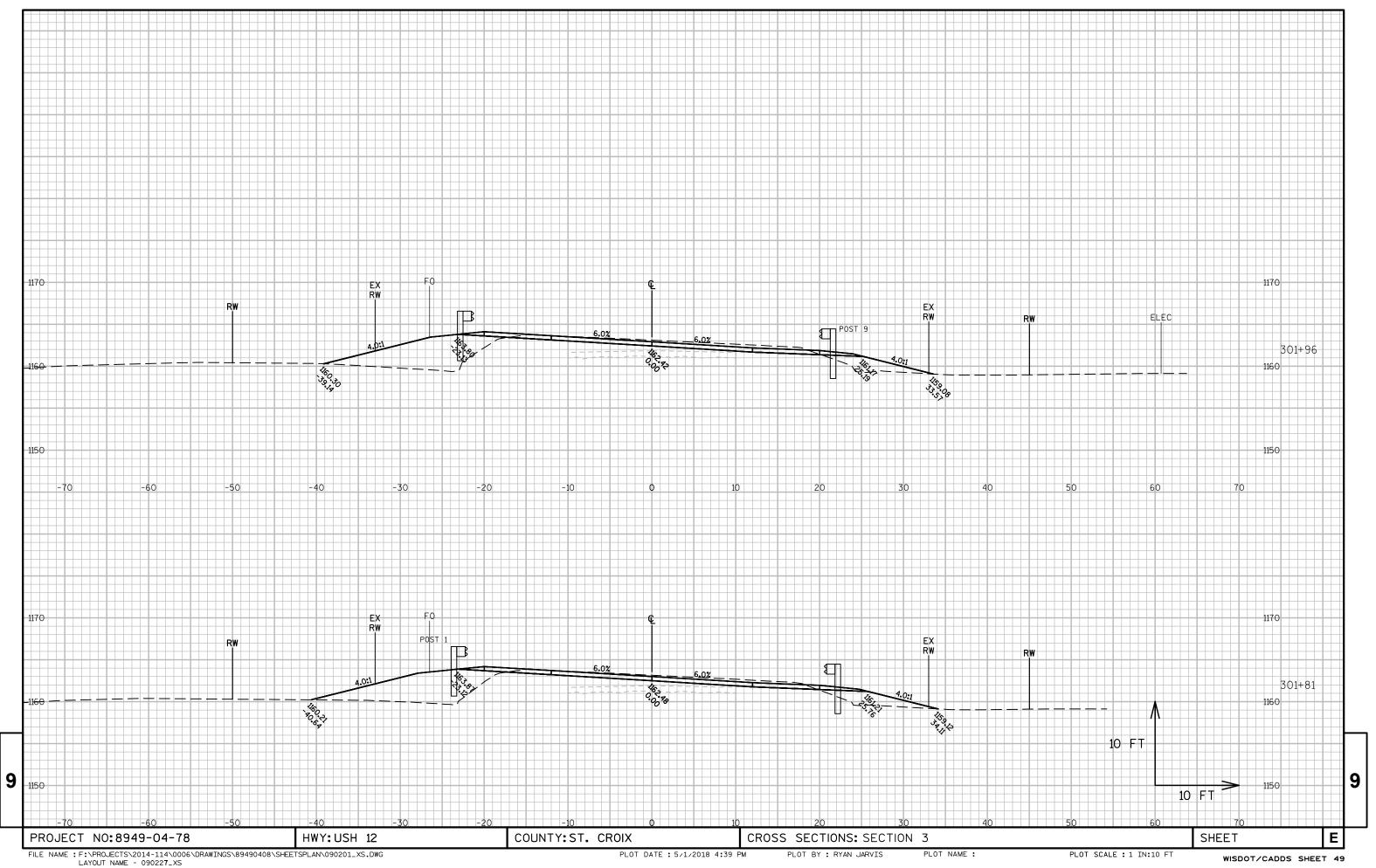


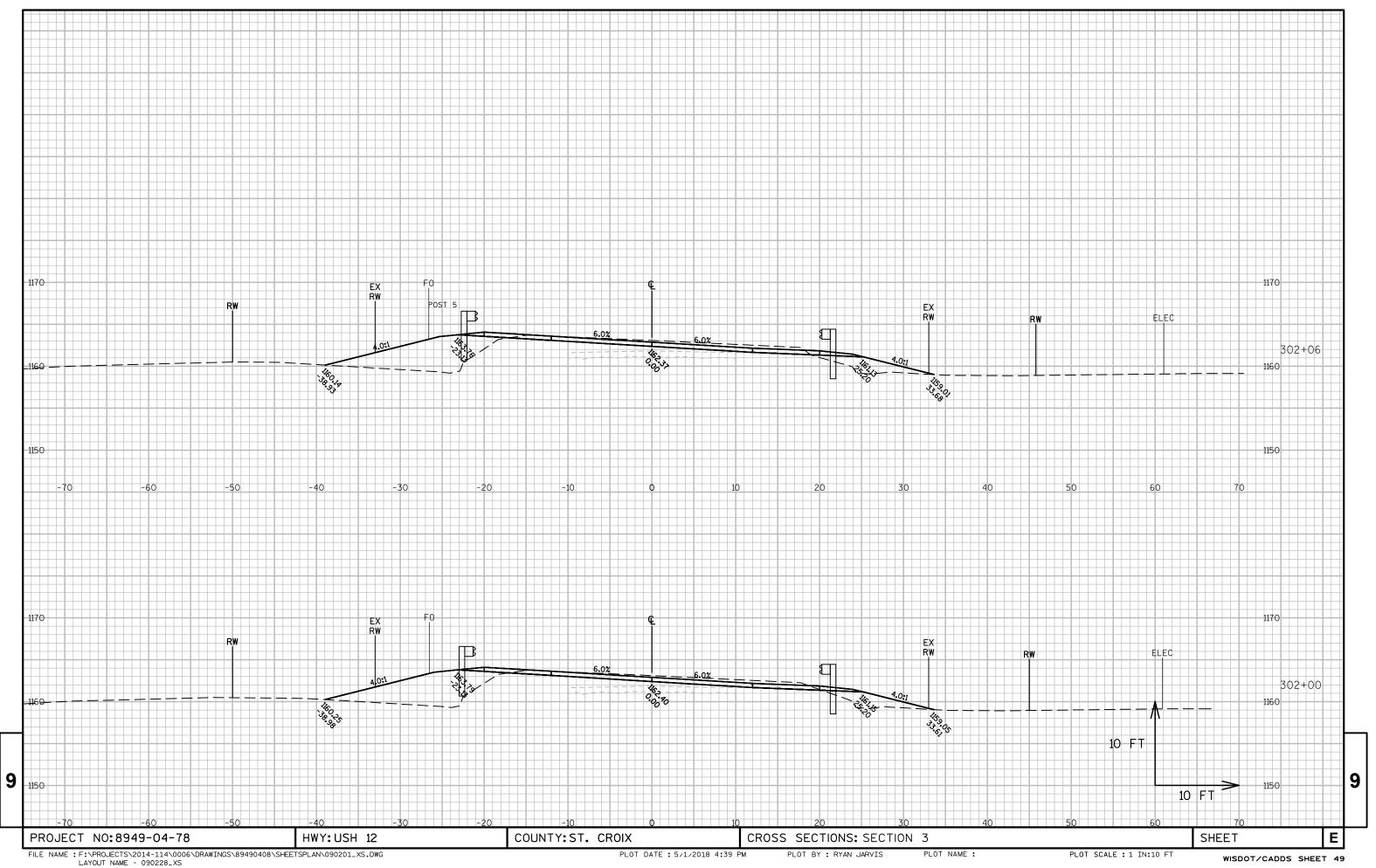


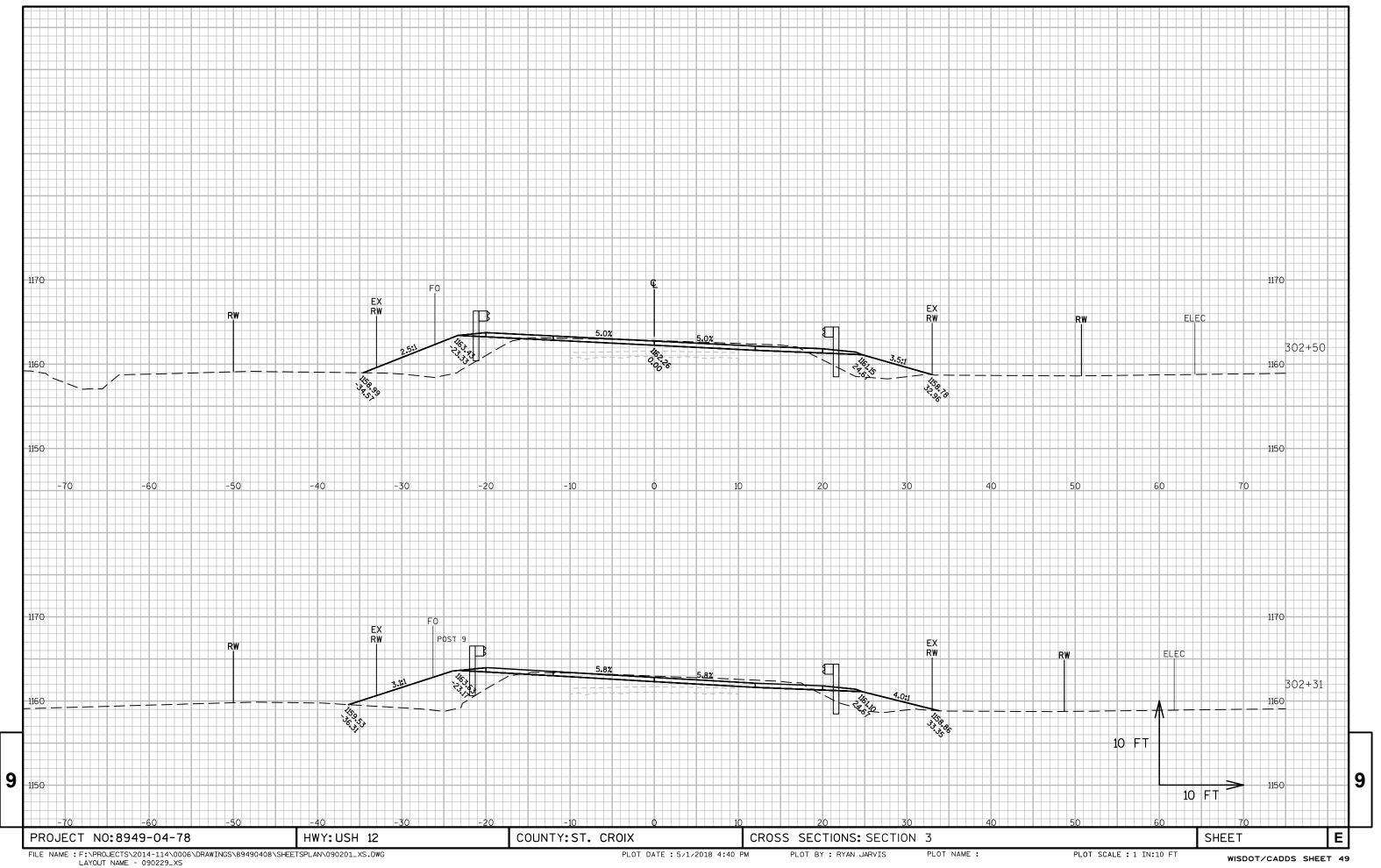


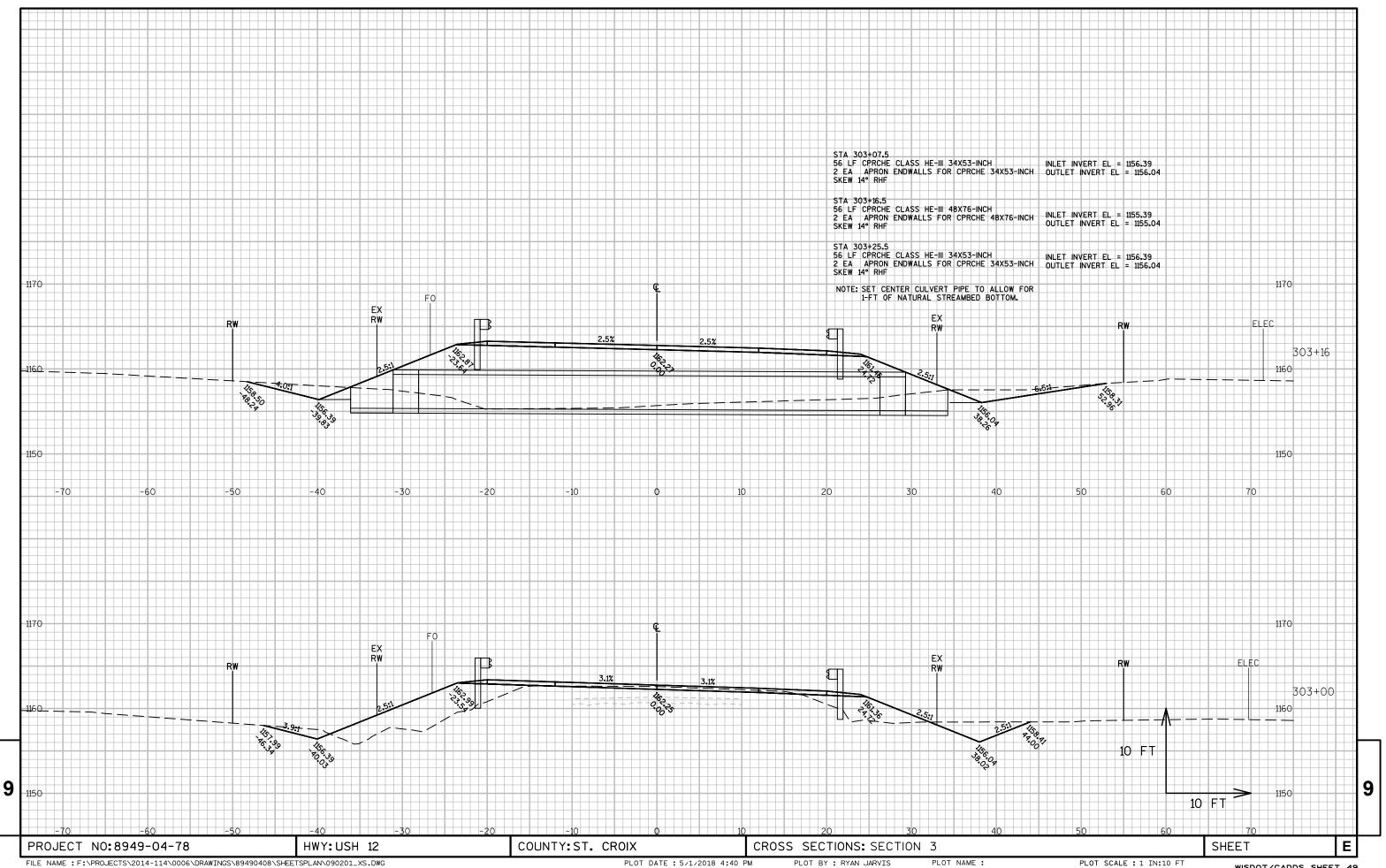


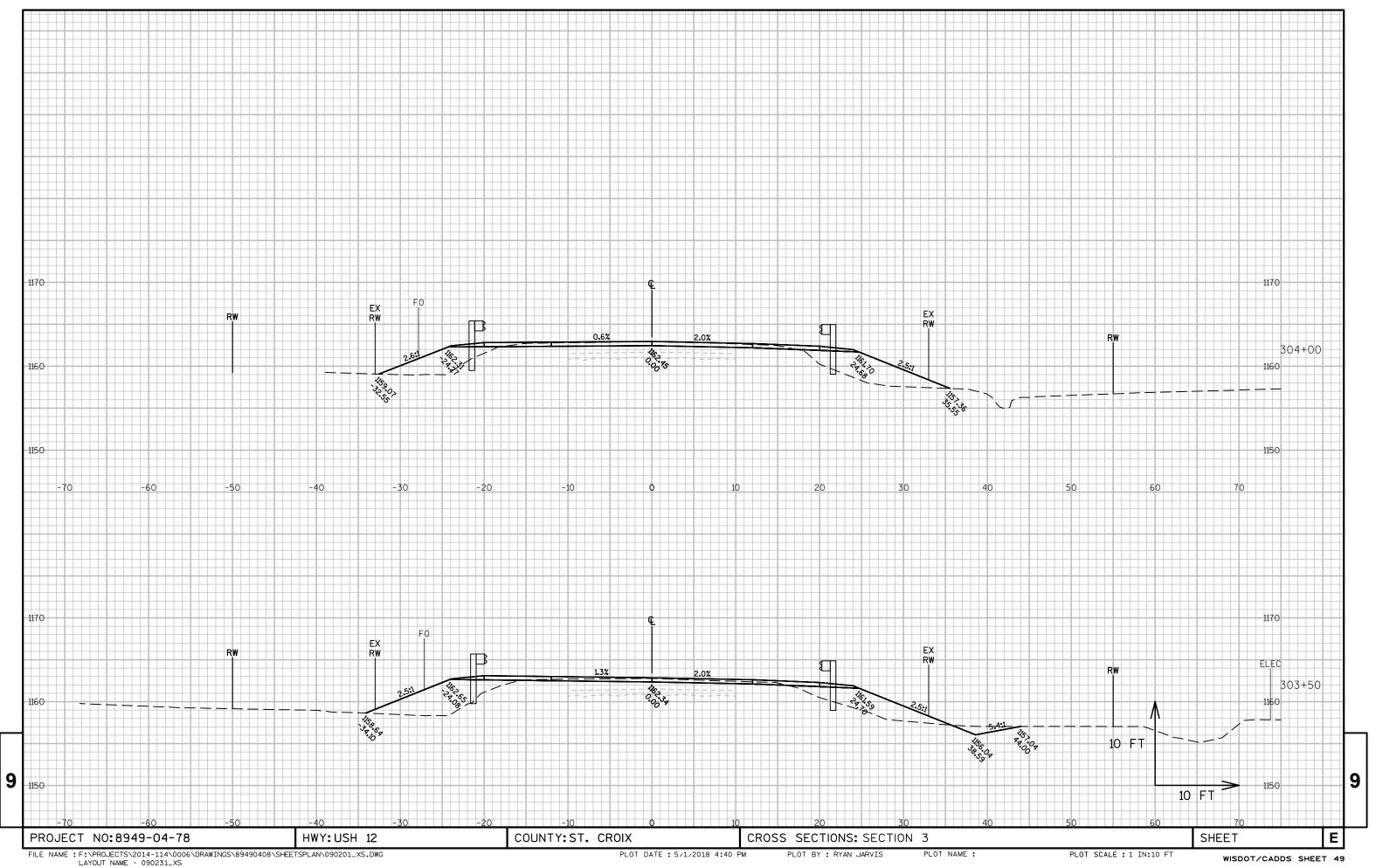


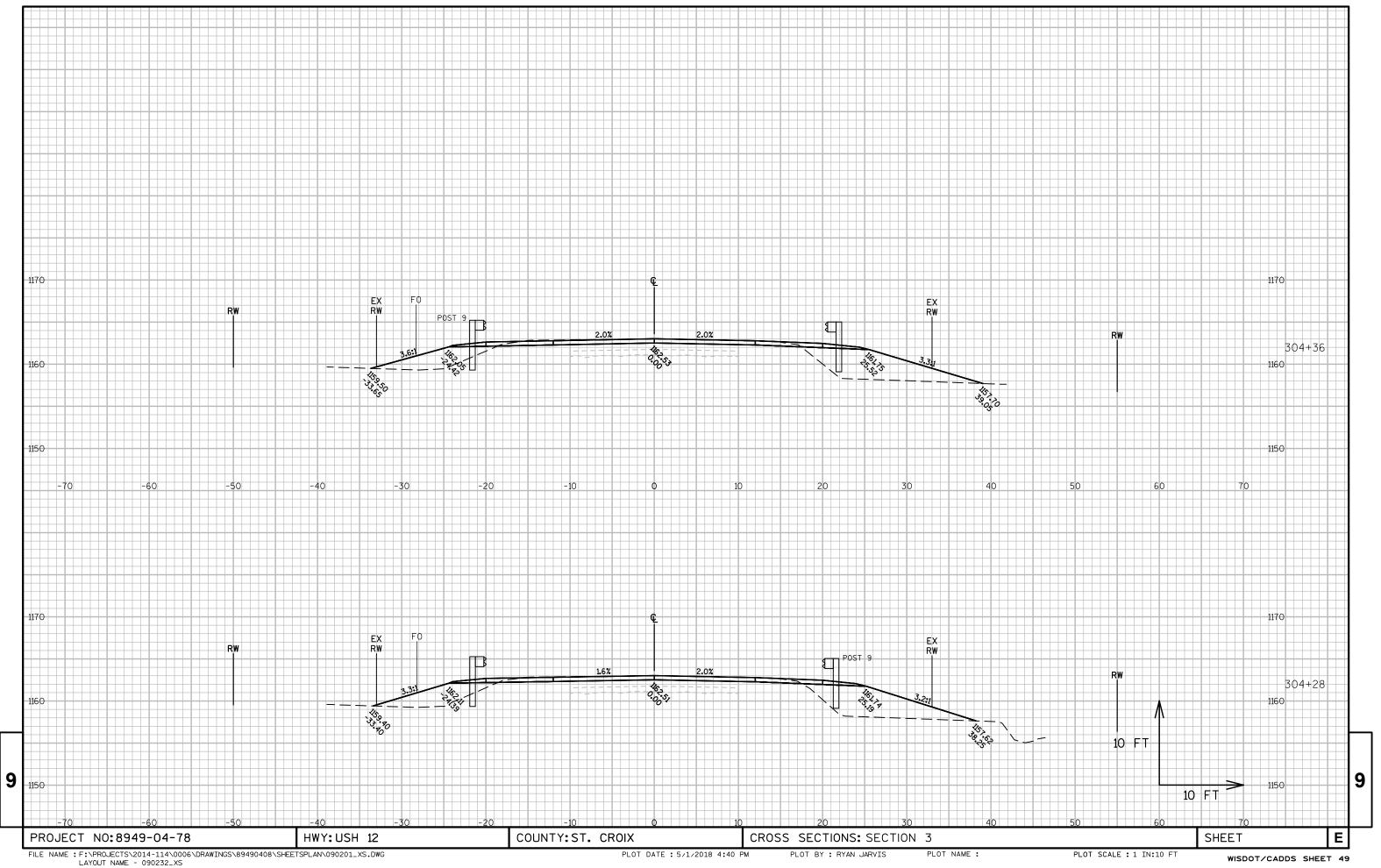


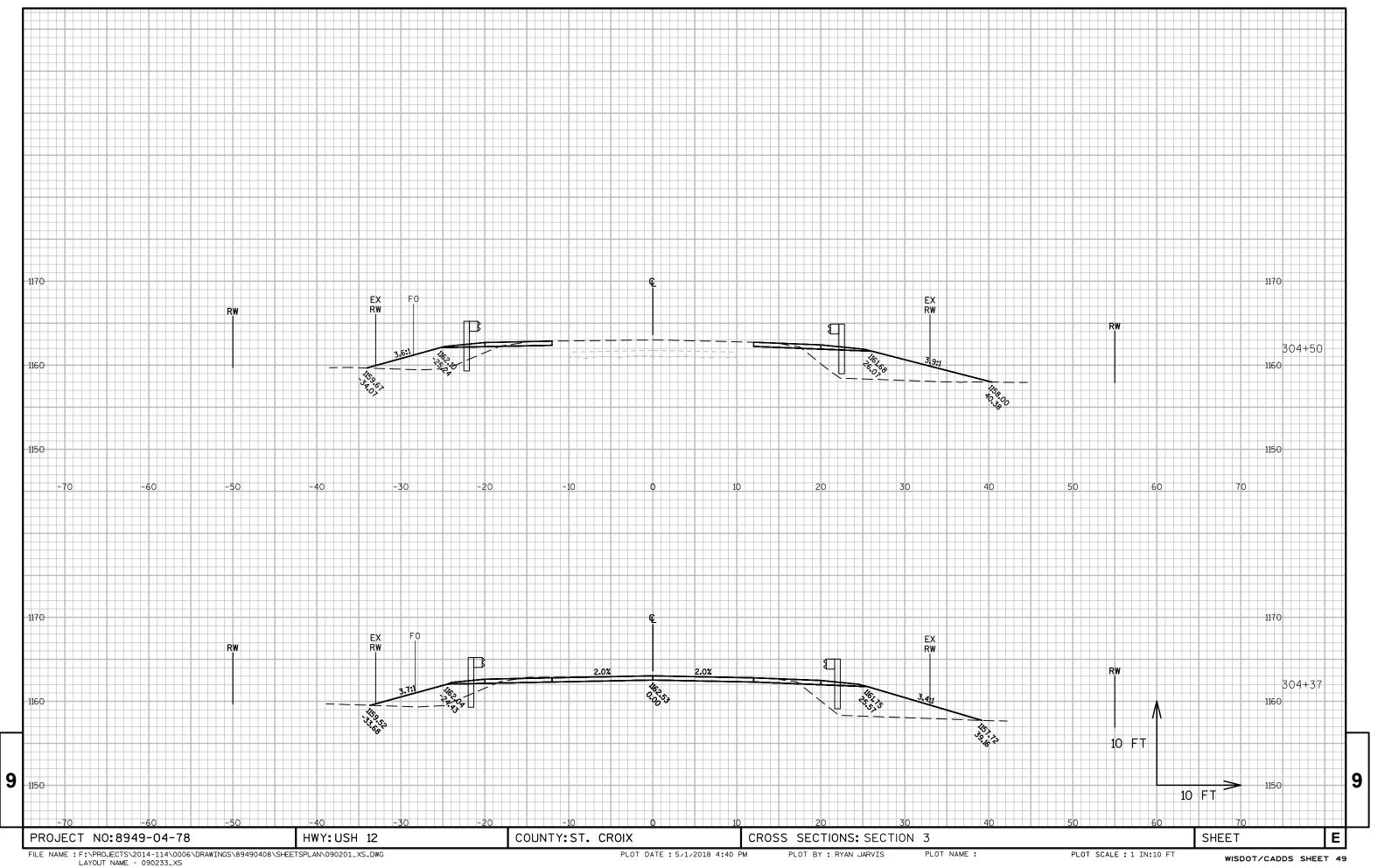


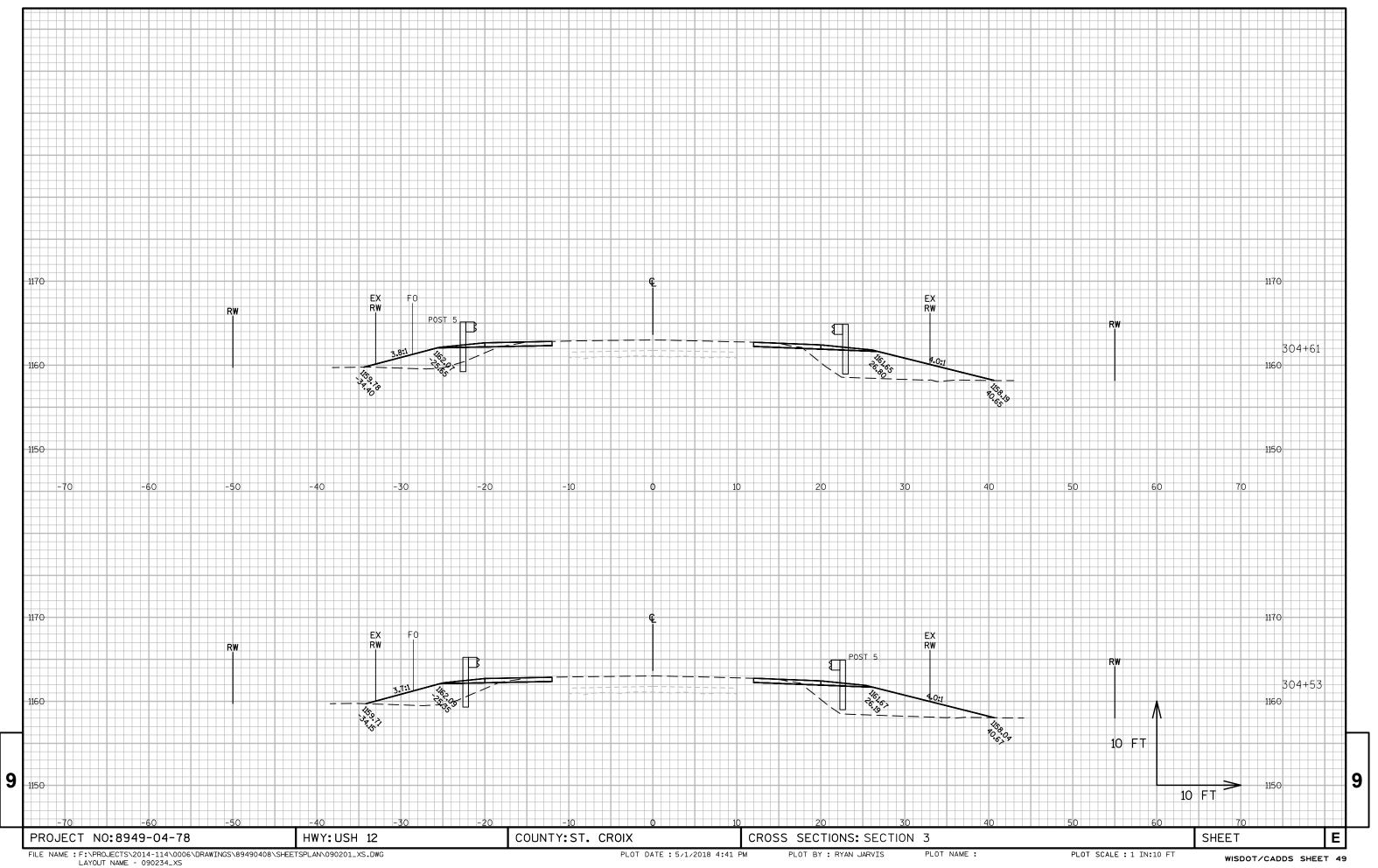


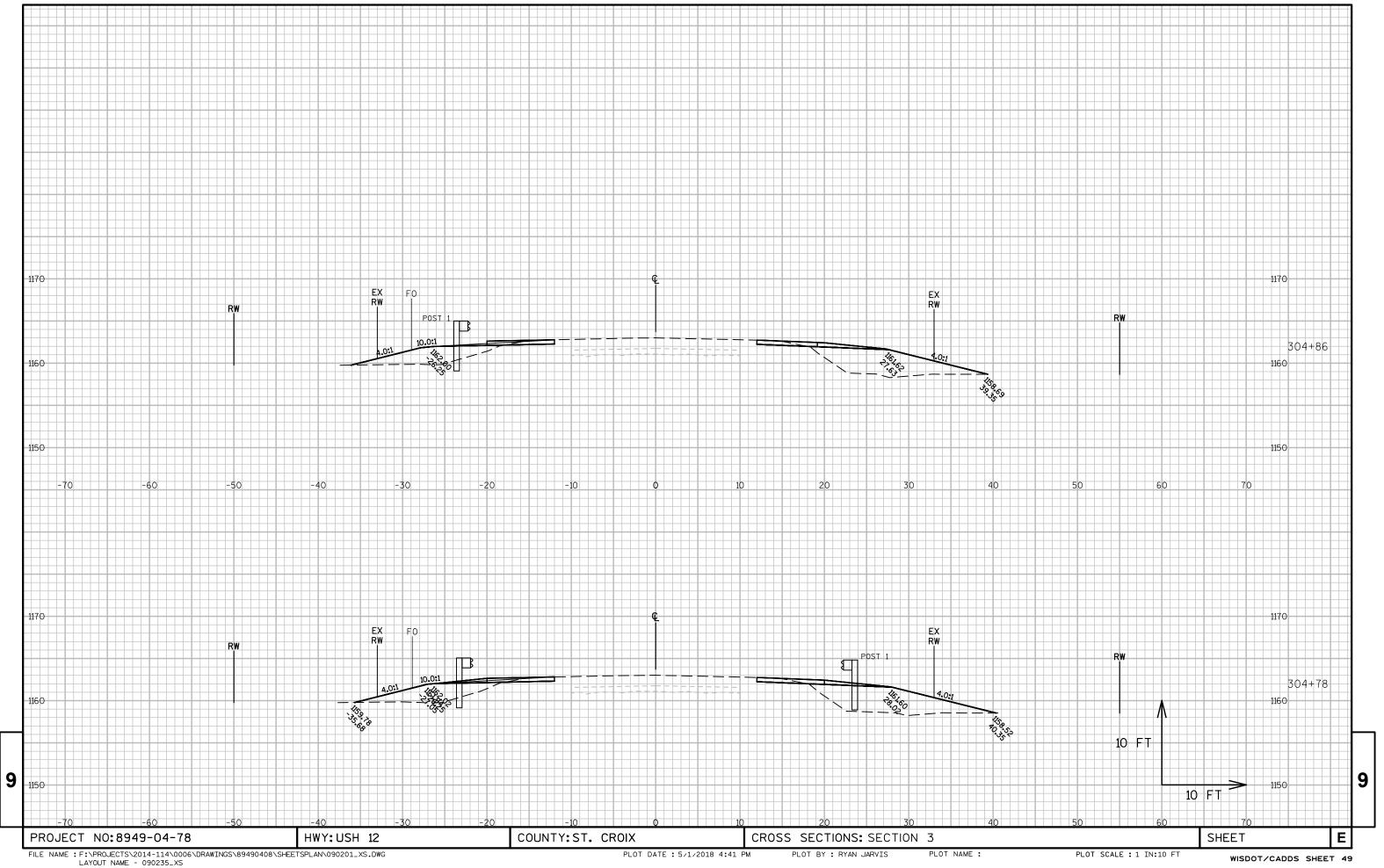


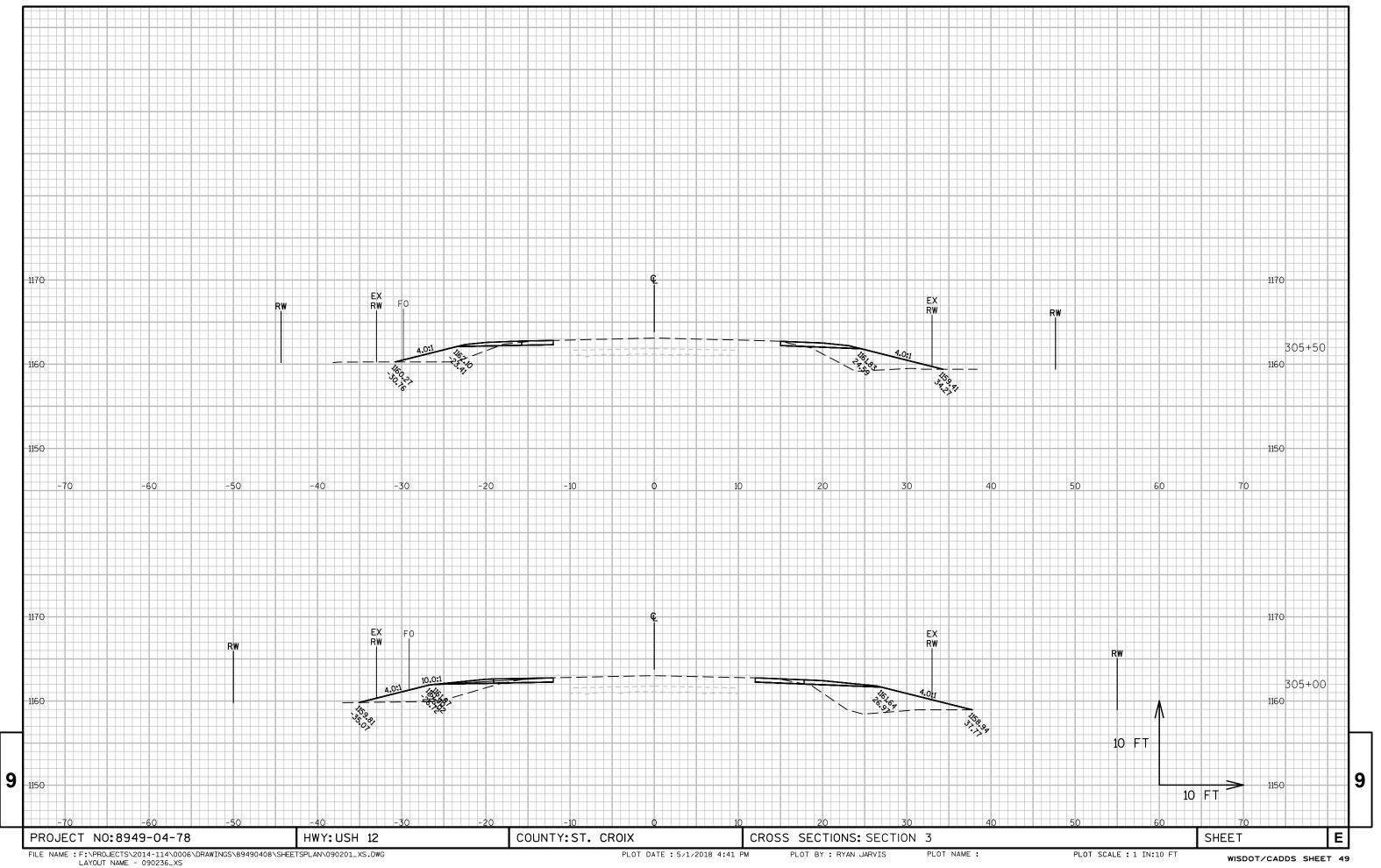


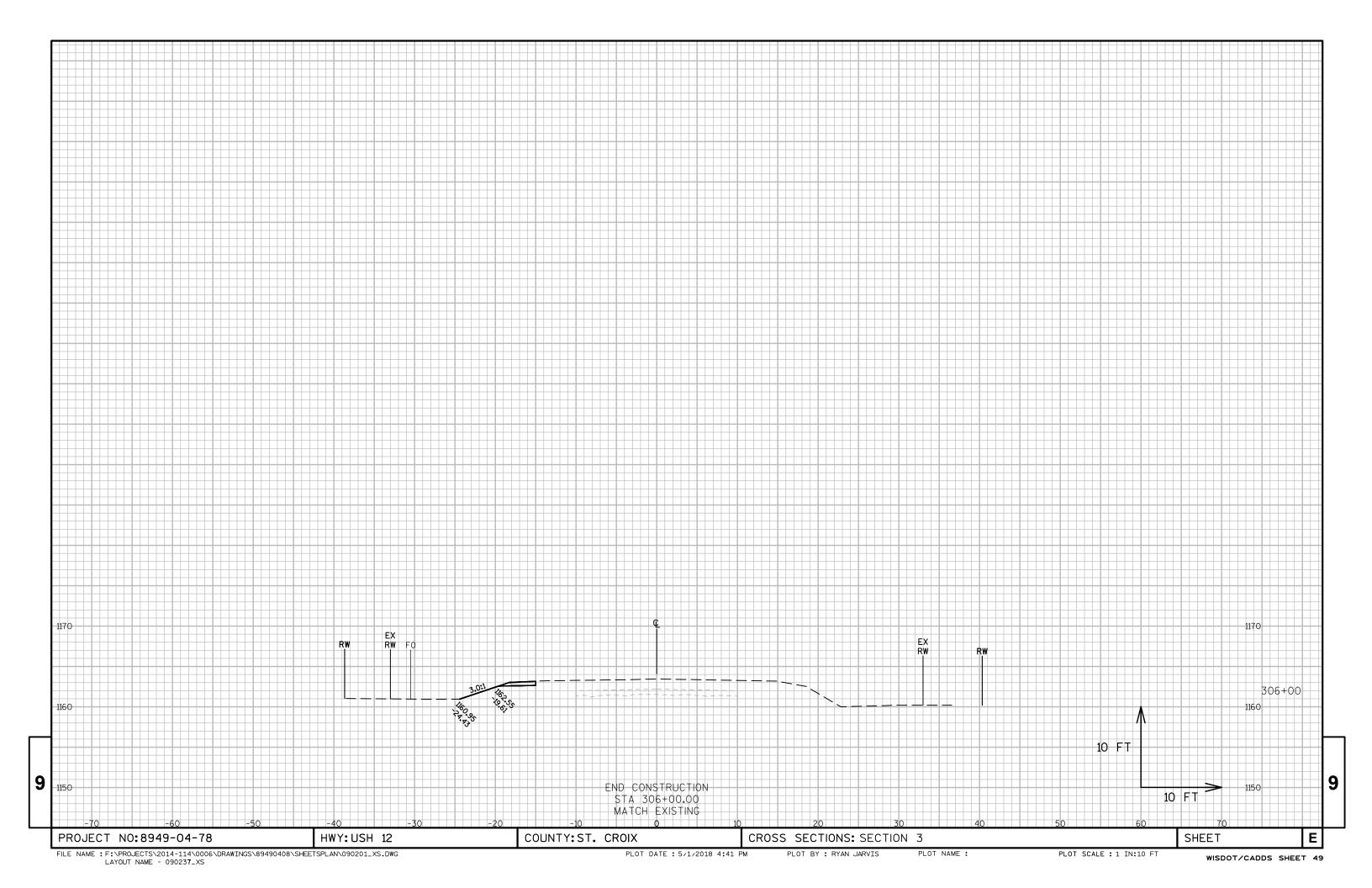


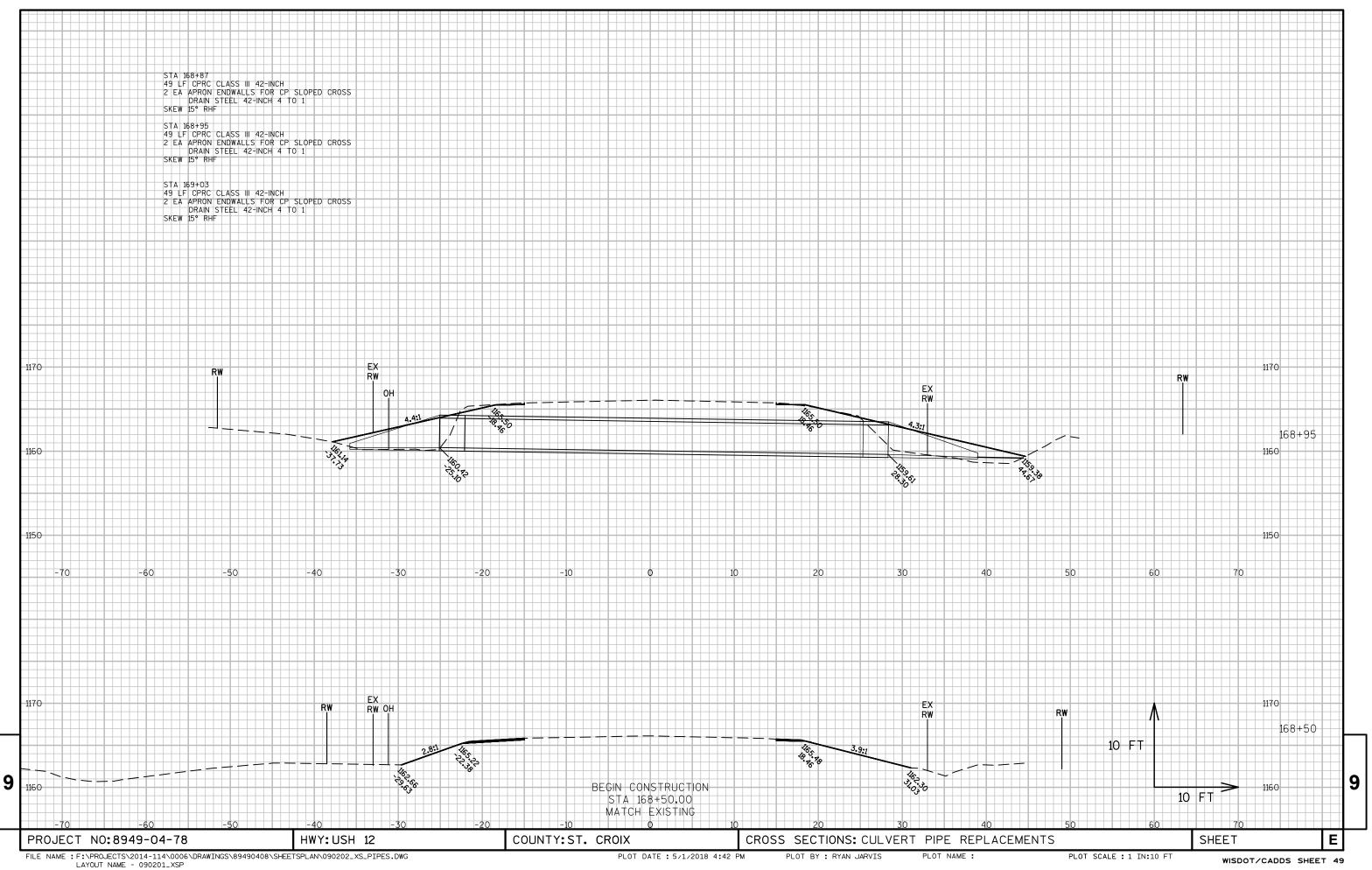


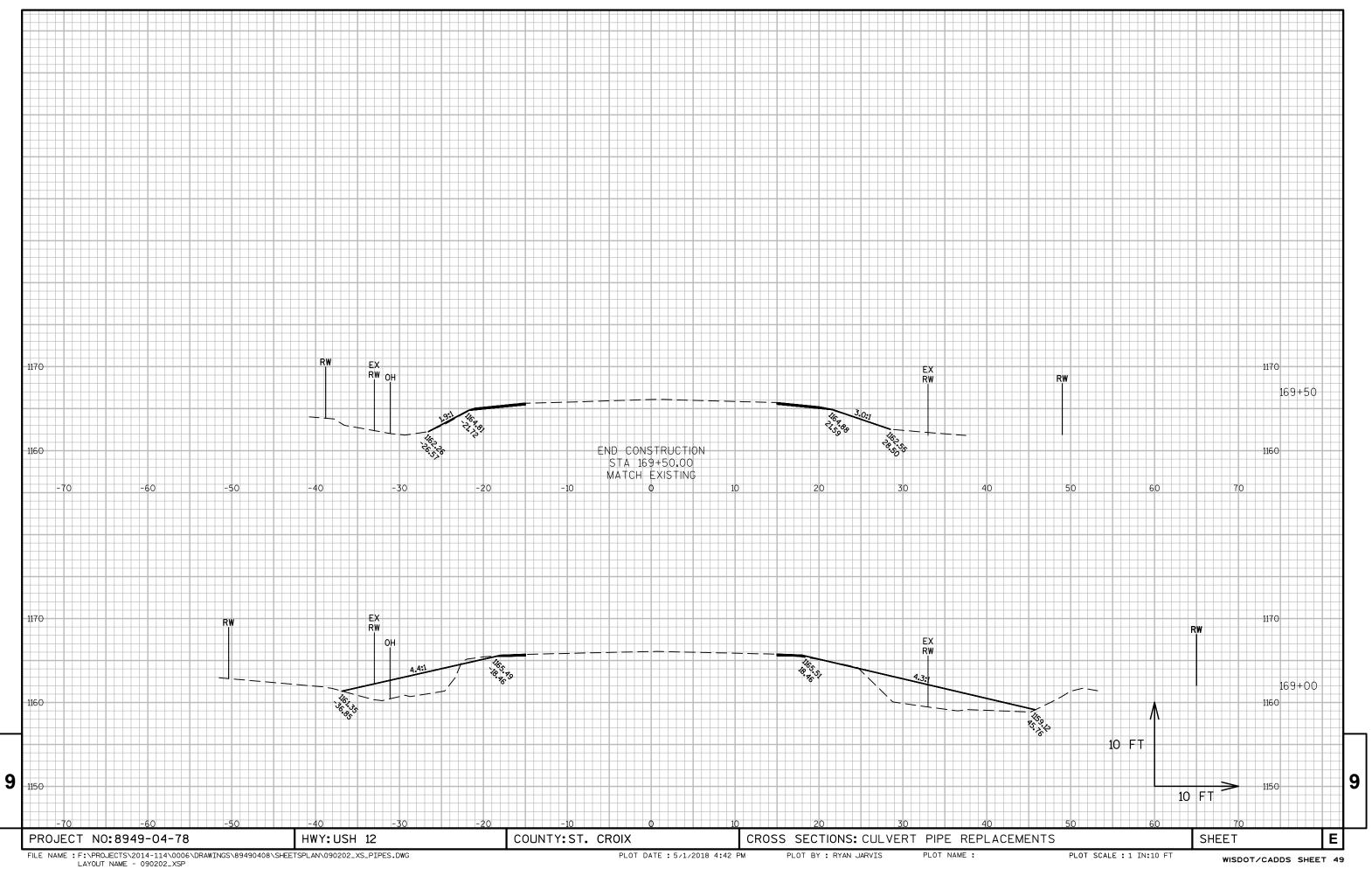


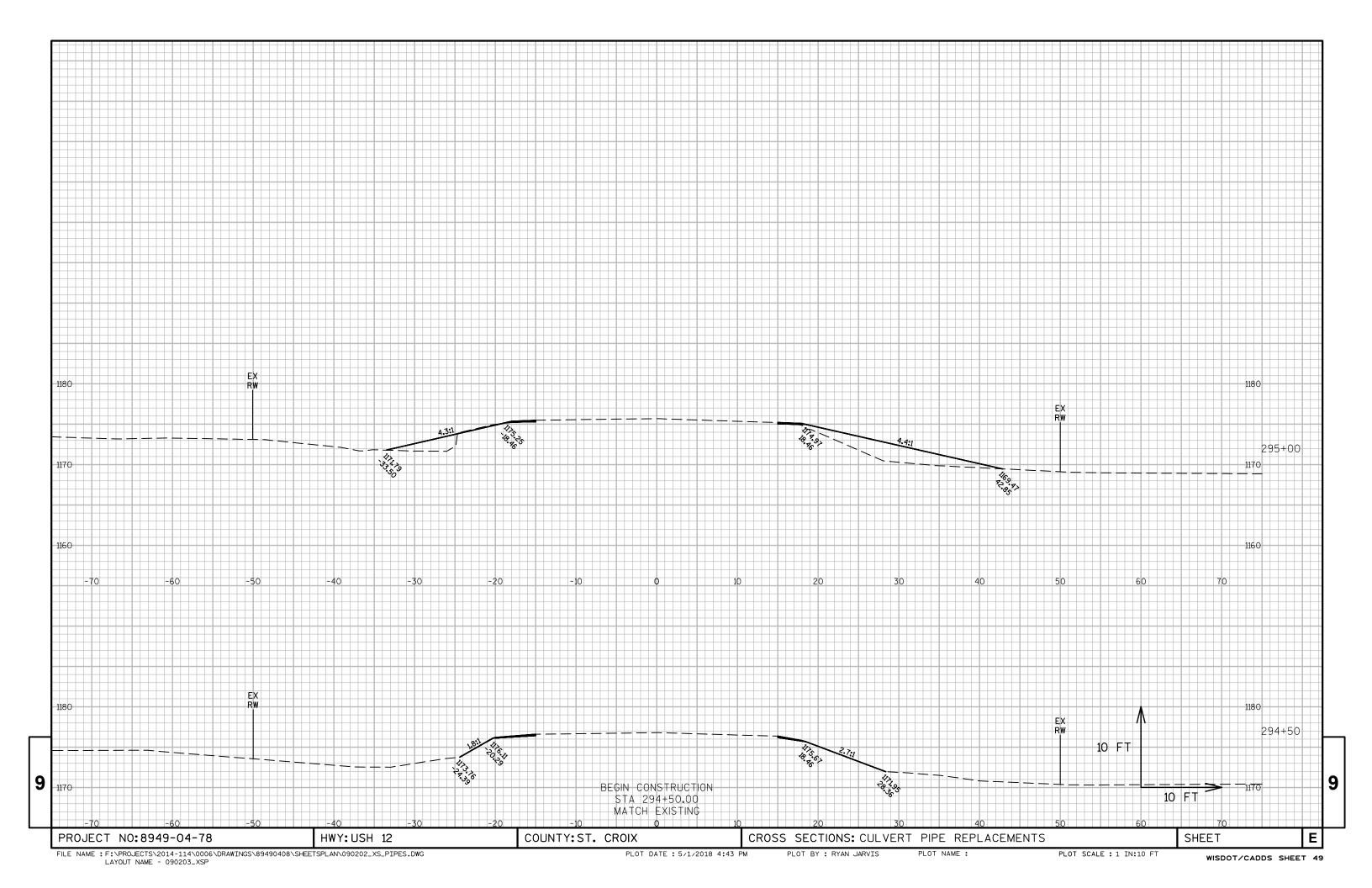


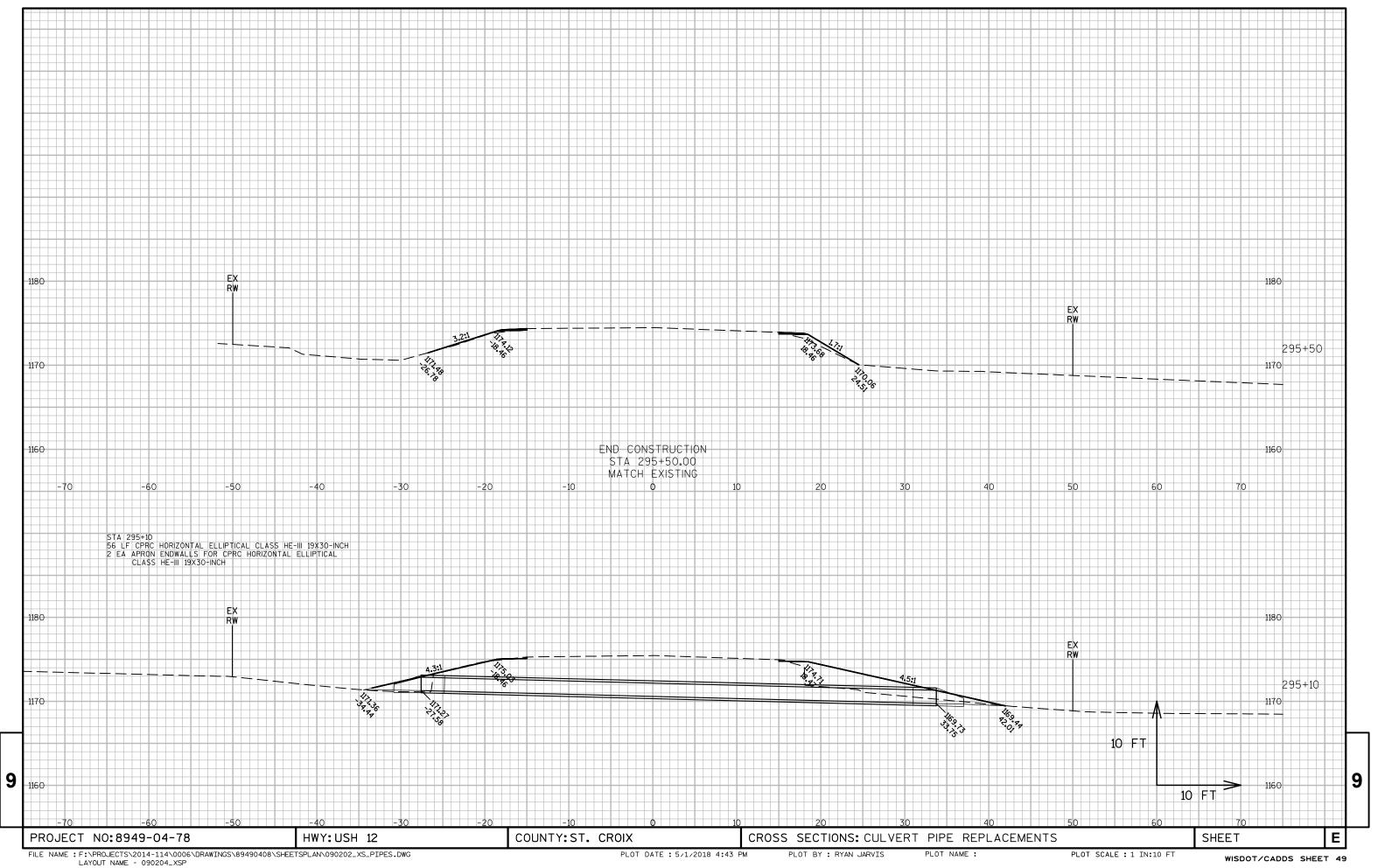


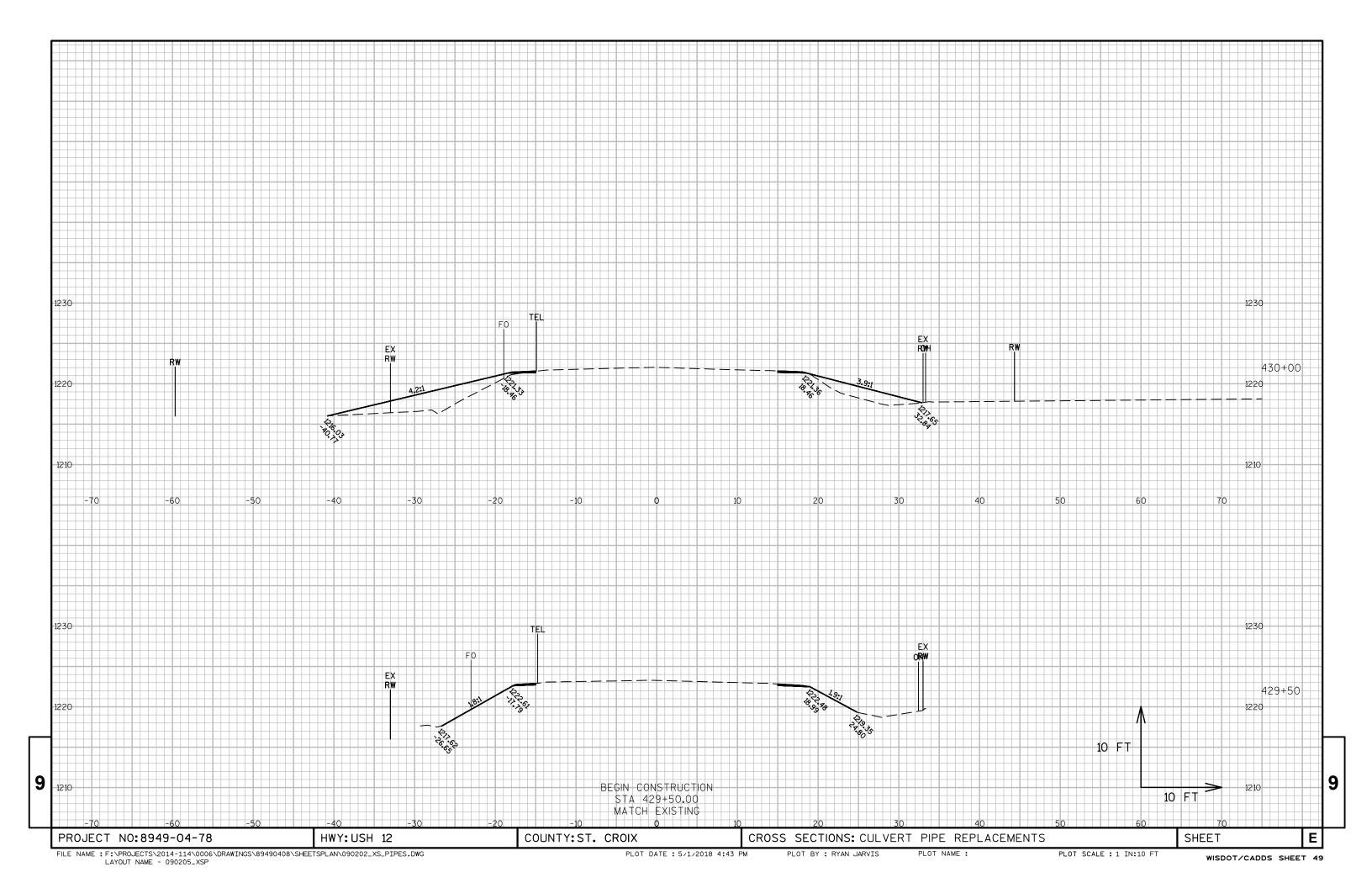


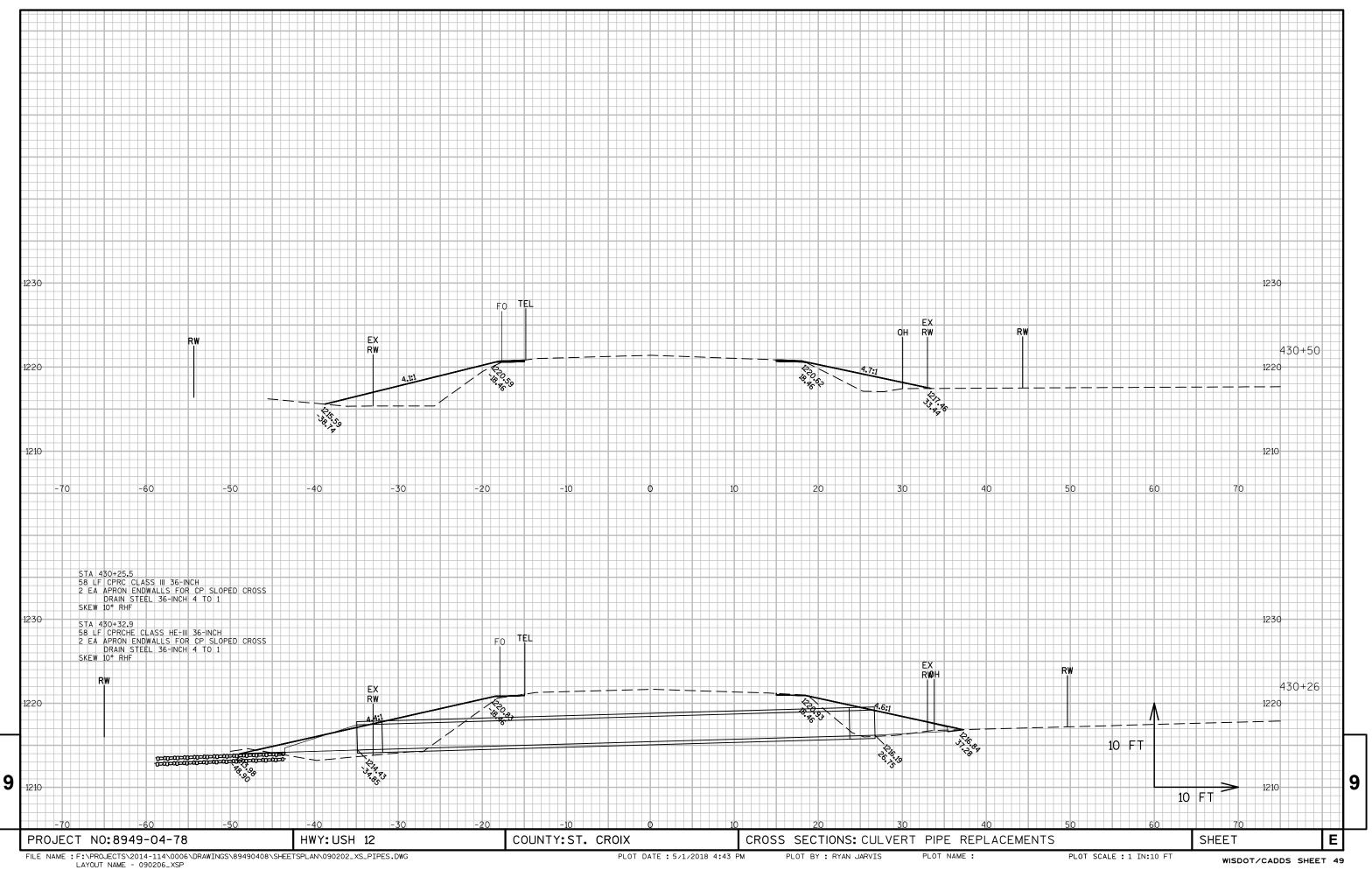


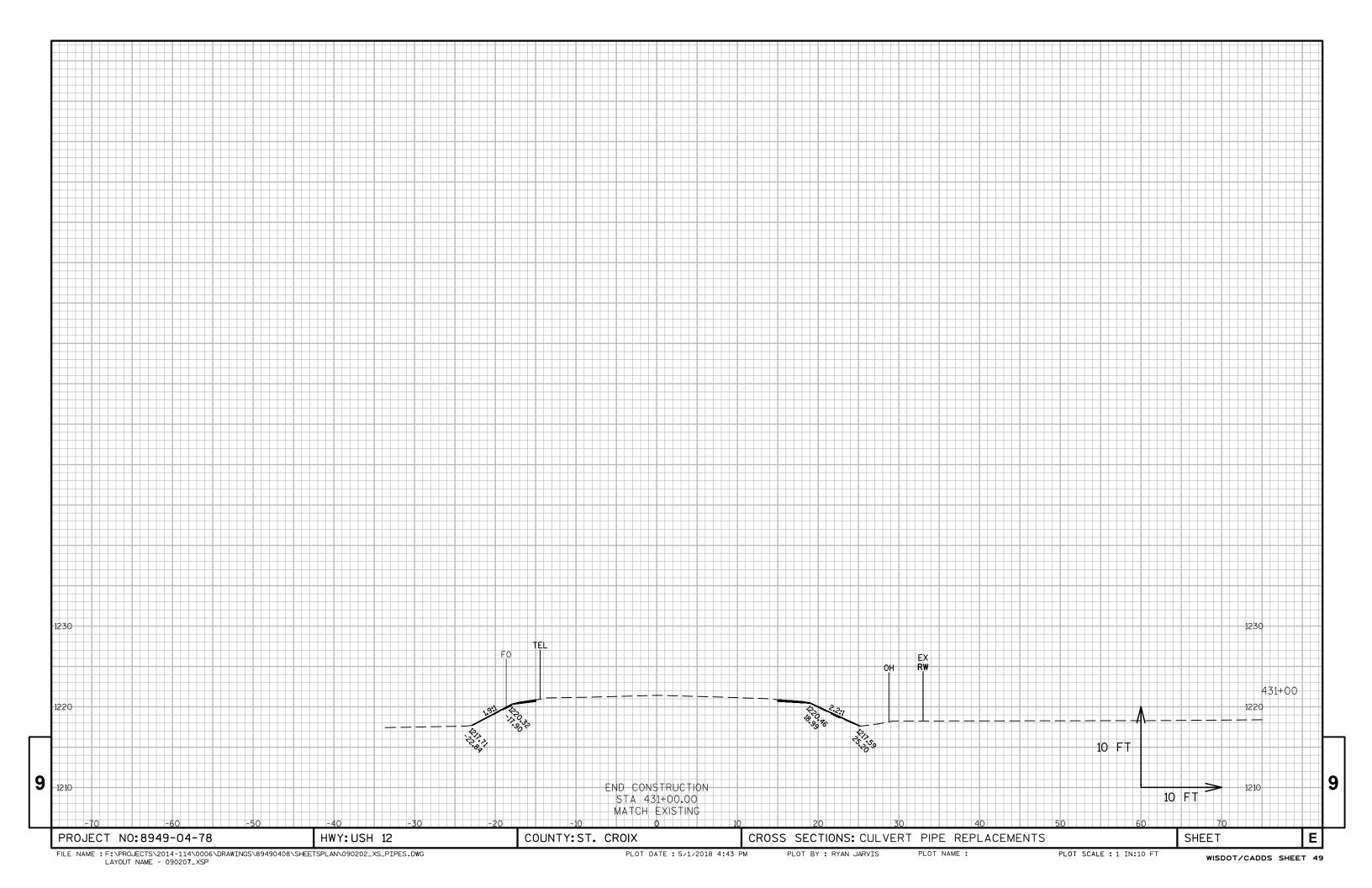














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