WIS APRIL 2018

ORDER OF SHEETS

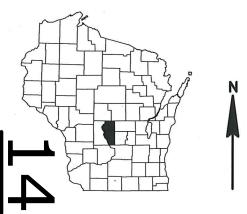
Section No. 1 Typical Sections and Details Section No. 3 Estimate of Quantities Section No. 3 Miscellaneous Quantities

Plan and Profile Section No. 5 Standard Detail Drawings Section No. 6

Computer Earthwork Data

Cross Sections

TOTAL SHEETS = 50



DESIGN DESIGNATION

2018 = 3400 A.A.D.T. A.A.D.T. 2038 = 4300 D.H.V. = 10.3 D.D. = 60/40 = 7.1% DESIGN SPEED = 60 MPH **ESALS** = N/A

CONVENTIONAL SYMBOLS

WOODED OR SHRUB AREA

PLAN		PROFILE	
CORPORATE LIMITS	1/////	GRADE LINE	
PROPERTY LINE		ORIGINAL GROUND	
LOT LINE		MARSH OR ROCK PROFILE (To be noted as such)	ROCK
LIMITED HIGHWAY EASEMENT		SPECIAL DITCH	LABEL
EXISTING RIGHT OF WAY PROPOSED OR NEW R/W LINE		GRADE ELEVATION	95.36
SLOPE INTERCEPT		CULVERT (Profile View)	0 . \square
REFERENCE LINE	300,EB,	UTILITIES	6
EXISTING CULVERT		ELECTRIC OVERHEAD UTILITY	—— E ——
PROPOSED CULVERT (Box or Pipe)	-	FIBER OPTIC	— F0
	MA	GAS	—— G ——
COMBUSTIBLE FLUIDS	-caution>	SANITARY SEWER	SAN
	M	STORM SEWER	——ss——
MARSH AREA	(I I I)	TELEPHONE	— T — T
MANON AREA	(A A)	WATER	— w —
		LITH ITY PENESTAL	Y

POWER POLE

TELEPHONE POLE

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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

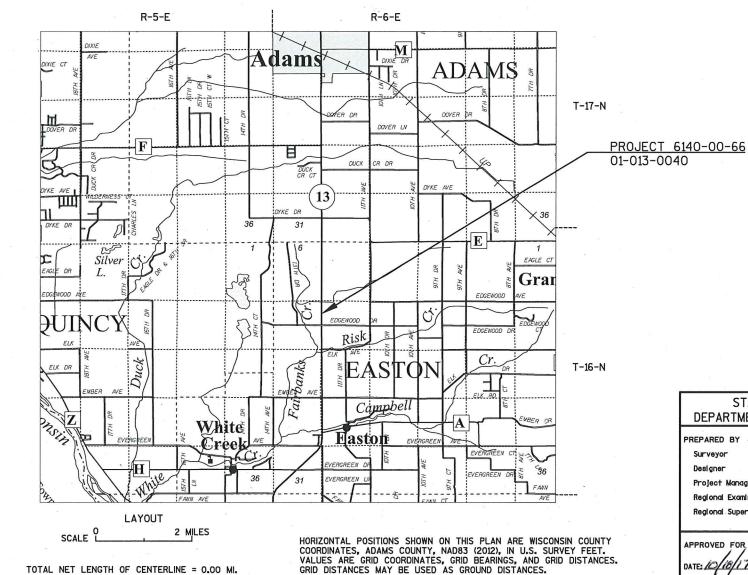
WISCONSIN DELLS - ADAMS

CULVERT REPLACEMENT

STH 13

ADAMS COUNTY

STATE PROJECT NUMBER 6140-00-66



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT

PROJECT

CONTRACT

STATE PROJECT

6140-00-66

PREPARED BY

Surveyor

PLOT DATE: 9/28/2017 11:50 AM

TOTAL NET LENGTH OF CENTERLINE = 0.00 MI.

PLOT BY : GRULING, ZACHARY P PLOT NAME :

2

GENERAL NOTES

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

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY OPERATIONS, OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

PAPCCS - PIPE ARCH POLY COATED CORRUGATED STEEL

Q2 = 18 CFS

SECTION 2 ORDER

General Notes
Project Overview
Typical Section
Construction Details
Erosion Control
Traffic Control

AS-BUILT REFERENCE (YEAR)*

DJ4669 (1932) 6140-03-71 (1973) 6143-05-71 (1996) 6140-00-84 (2012)

*Approval Year (Not Construction)

HMA LAYERS

2" 4 LT 58-28 S Upper 2" 4 LT 58-28 S Lower 2" 4 LT 58-28 S Lower

ENVIRONMENTAL CONTACTS

WI Department of Natural Resources

3911 Fish Hatchery Road Fitchburg, WI 53711 Attn: Andy Barta Phone: (608) 275-3308

UTILITY CONTACTS

Adams - Columbia Electric - Electricity

Jon Trzesniak PO Box 70 Friendship, WI 53934 1-800-831-8629 Ext 244 <u>itresniak@acecwi.com</u>

Marquette - Adams Telephone - Communication Line

Jason Sengbusch 113 N Oxford Street Oxford, WI 53952 (608) 586-7070 jsengbusch@maadtelco.com **Frontier - Communication Line**

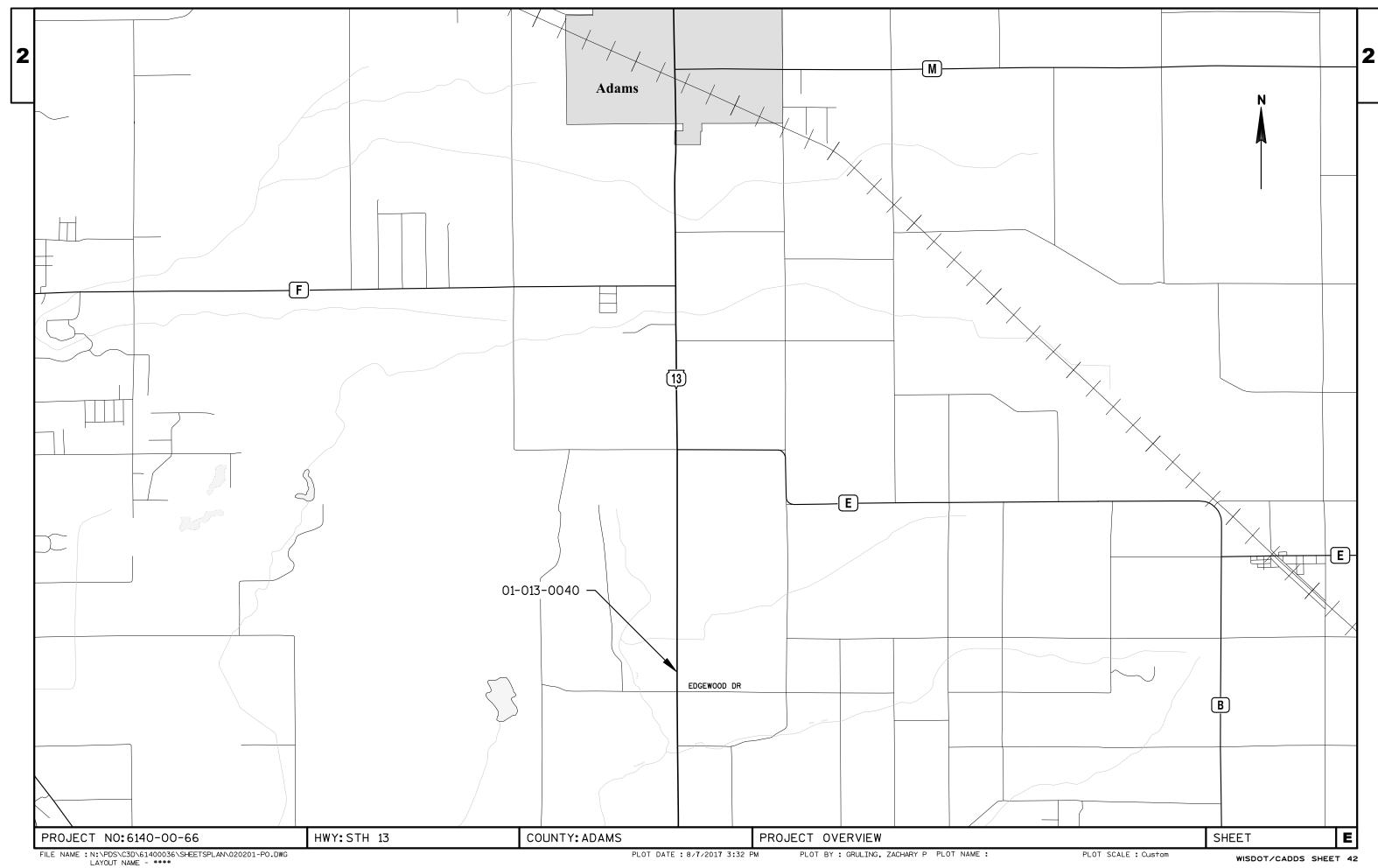
Jerry Moore 2222 West WI Street Portage, WI 53901 (608) 742-9507 (608) 346-0353 jerald.r.moore@ftr.com

DidGERS HOTLINE

Dial (800)242-8511

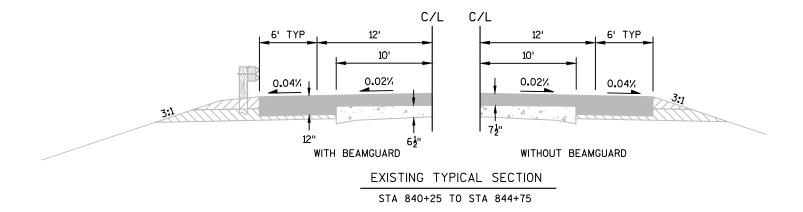
www.DiggersHotline.com

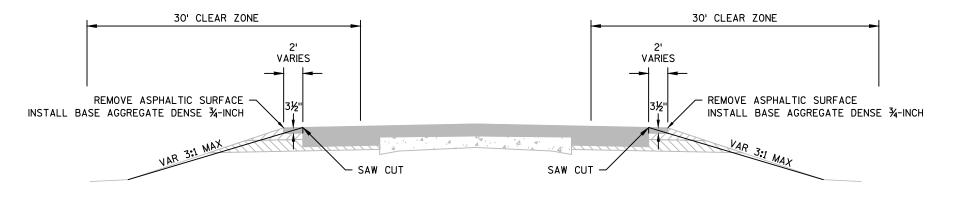
PROJECT NO: 6140-00-66 HWY: STH 13 COUNTY: ADAMS GENERAL NOTES SHEET: **E**



2

|2





PROPOSED TYPICAL SECTION

STA 840+25 TO STA 842+25 STA 842+93 TO STA 844+75

LEGEND

EXISTING HMA PAVEMENT

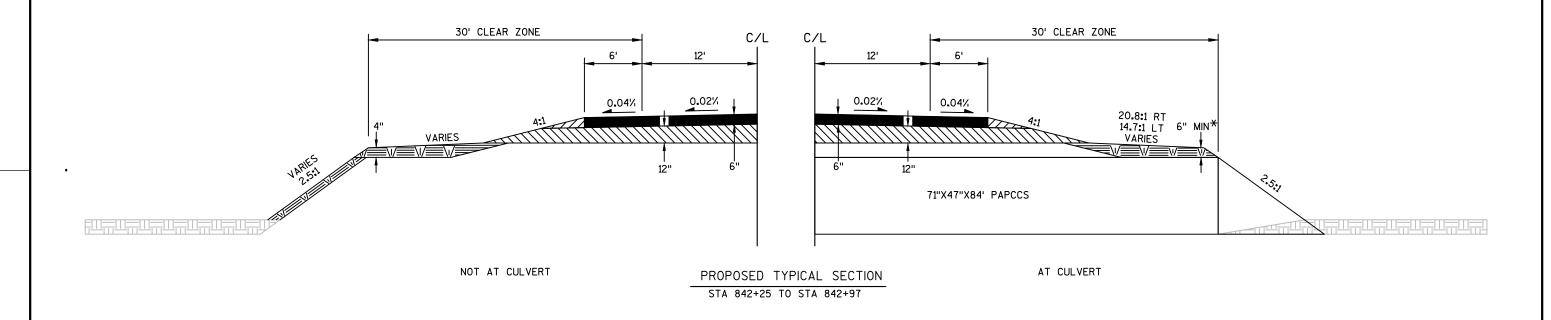
EXISTING BASE AGGREGATE DENSE 11/4-INCH

EXISTING BASE AGGREGATE DENSE ¾-INCH

EXISTING NON-REINFORCED CONCRETE PAVEMENT

PROJECT NO:6140-00-66 HWY:STH 13 COUNTY:ADAMS TYPICAL SECTION SHEET **E**

2



LEGEND

EXISTING HMA PAVEMENT

EXISTING BASE AGGREGATE DENSE 11/4-INCH

EXISTING BASE AGGREGATE DENSE 34-INCH

EXISTING NON-REINFORCED CONCRETE PAVEMENT

EXISTING GROUND

HMA PAVEMENT 4 LT 58-28 S

BASE AGGREGATE DENSE 11/4-INCH

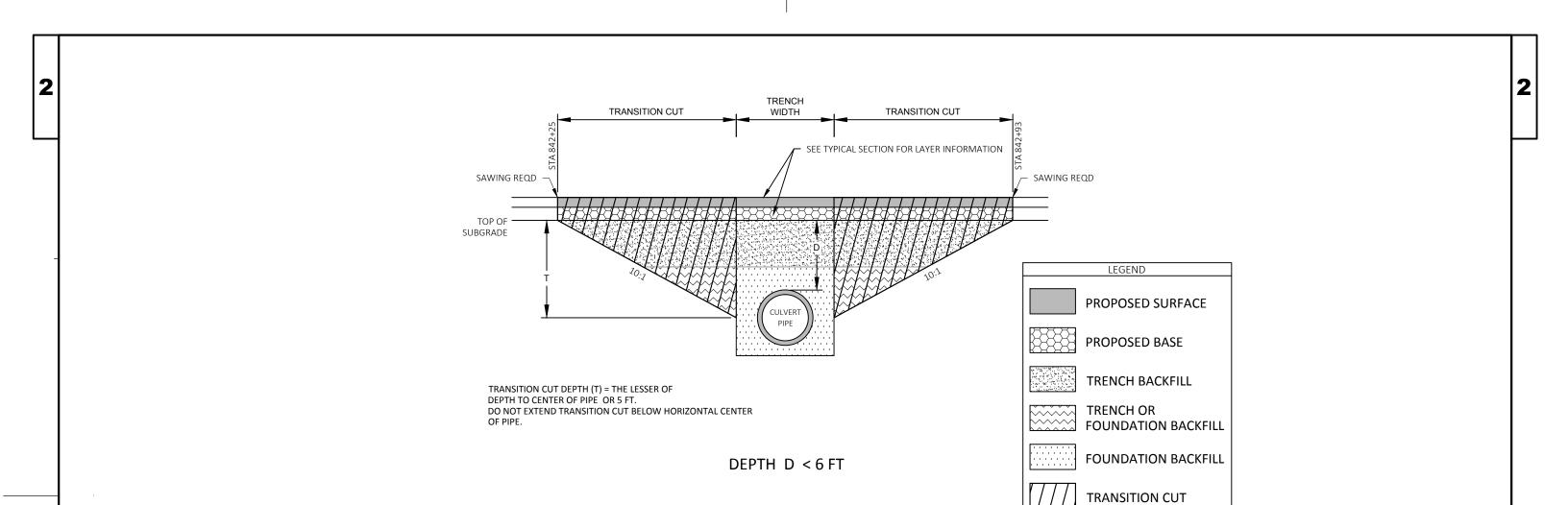
BASE AGGREGATE DENSE ¾-INCH

TOPSOIL, SEED, FERTILIZER & EROSION MAT URBAN CLASS | TYPE B

* WHEN DEPTH OVER CULVERT IS 6" OR LESS, USE TOPSOIL FOR ENTIRE THICKNESS

PROJECT NO:6140-00-66 HWY:STH 13 COUNTY:ADAMS TYPICAL SECTION SHEET **E**

FILE NAME: N:\PDS\C3D\61400036\SHEETSPLAN\020301-TS.DWG PLOT DATE: 9/25/2017 1:44 PM PLOT BY: GRULING, ZACHARY P PLOT NAME: PLOT SCALE: 1 IN:10 FT AND CADDS SHEET 42



NOTES

TRANSITION CUT IS PAID AS EXCAVATION COMMON.

TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.

TRENCH BACKFILL AND FOUNDATION BACKFILL USED IN TRANSITION CUT AREA IS INCIDENTAL TO PIPE INSTALLATION (PER STD SPEC 520).

CULVERT PIPE TRANSITION

ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)	REMARKS
STH 13	842+63	2	71x47	01-013-0040

PROJECT NO:6140-00-66 HWY:STH 13 COUNTY:ADAMS CONSTRUCTION DETAILS: CULVERT PIPE TRANSITION SHEET

FILE NAME : N:\PDS\C3D\61400036\SHEETSPLAN\021001-CD.DWG

PLOT DATE : 10/2/2017 7:01 AM

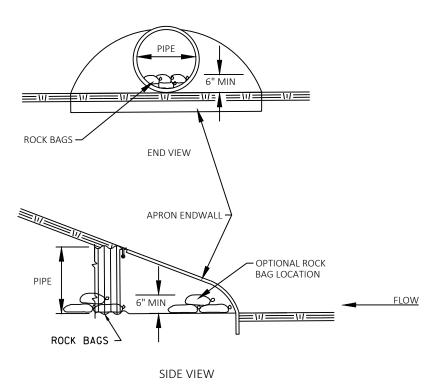
PLOT BY : GRULING, ZACHARY P PLOT NAME : PLOT SCALE : 1 IN:10 FT

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WISDOT/CADDS SHEET 42

1 IN:10 FT

WISDOT/CADDS SHEET 42

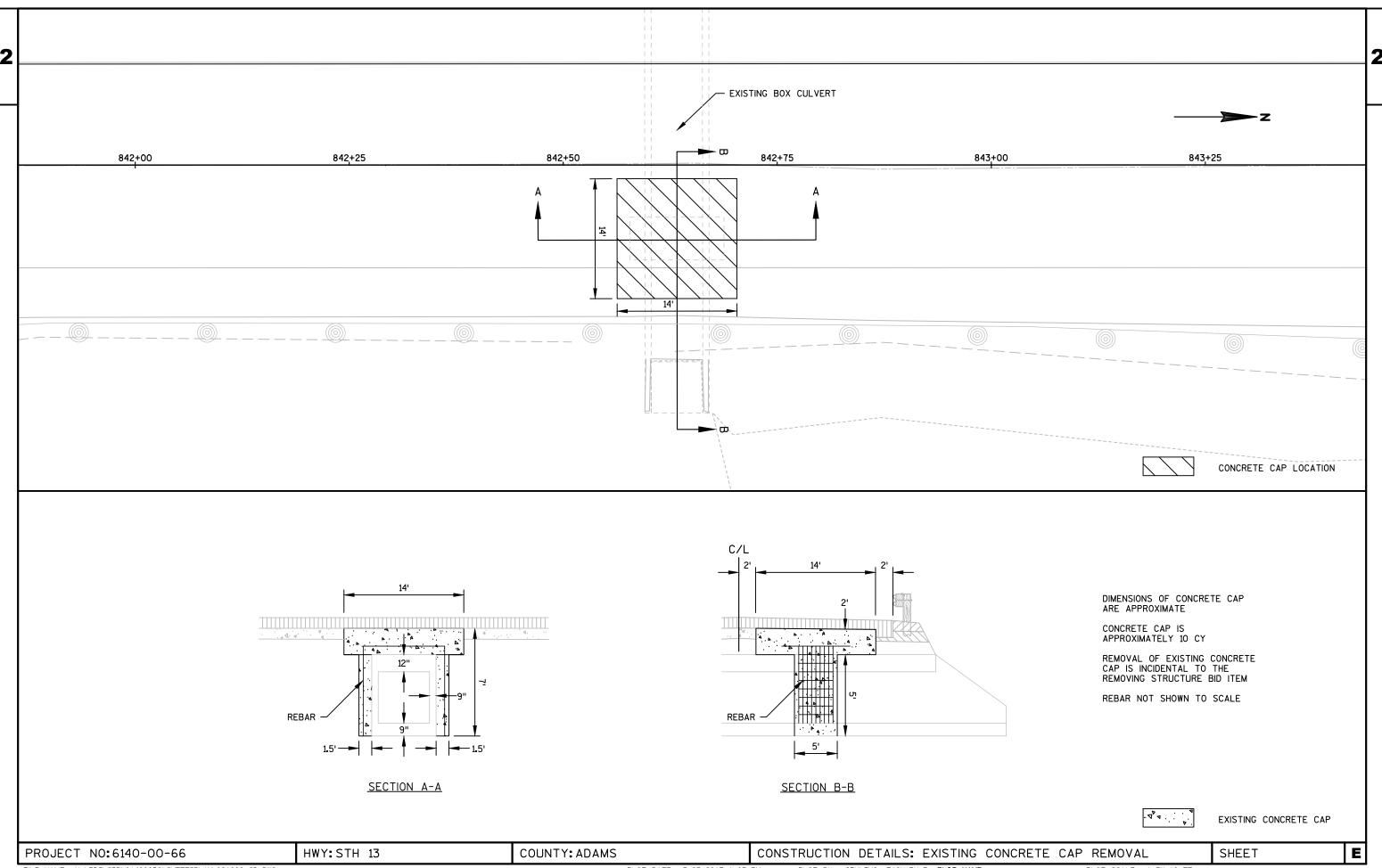


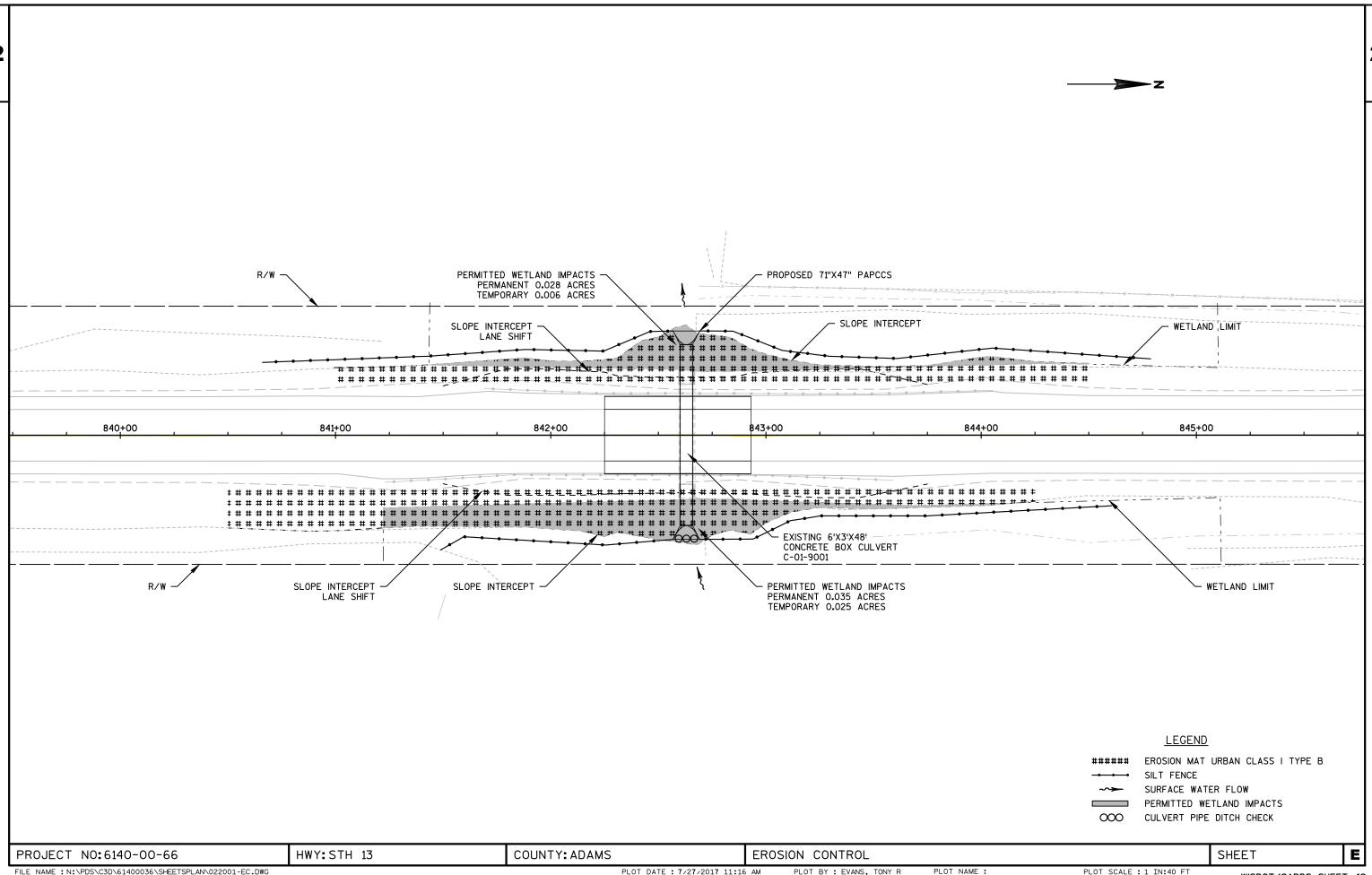
CULVERT PIPE CHECK

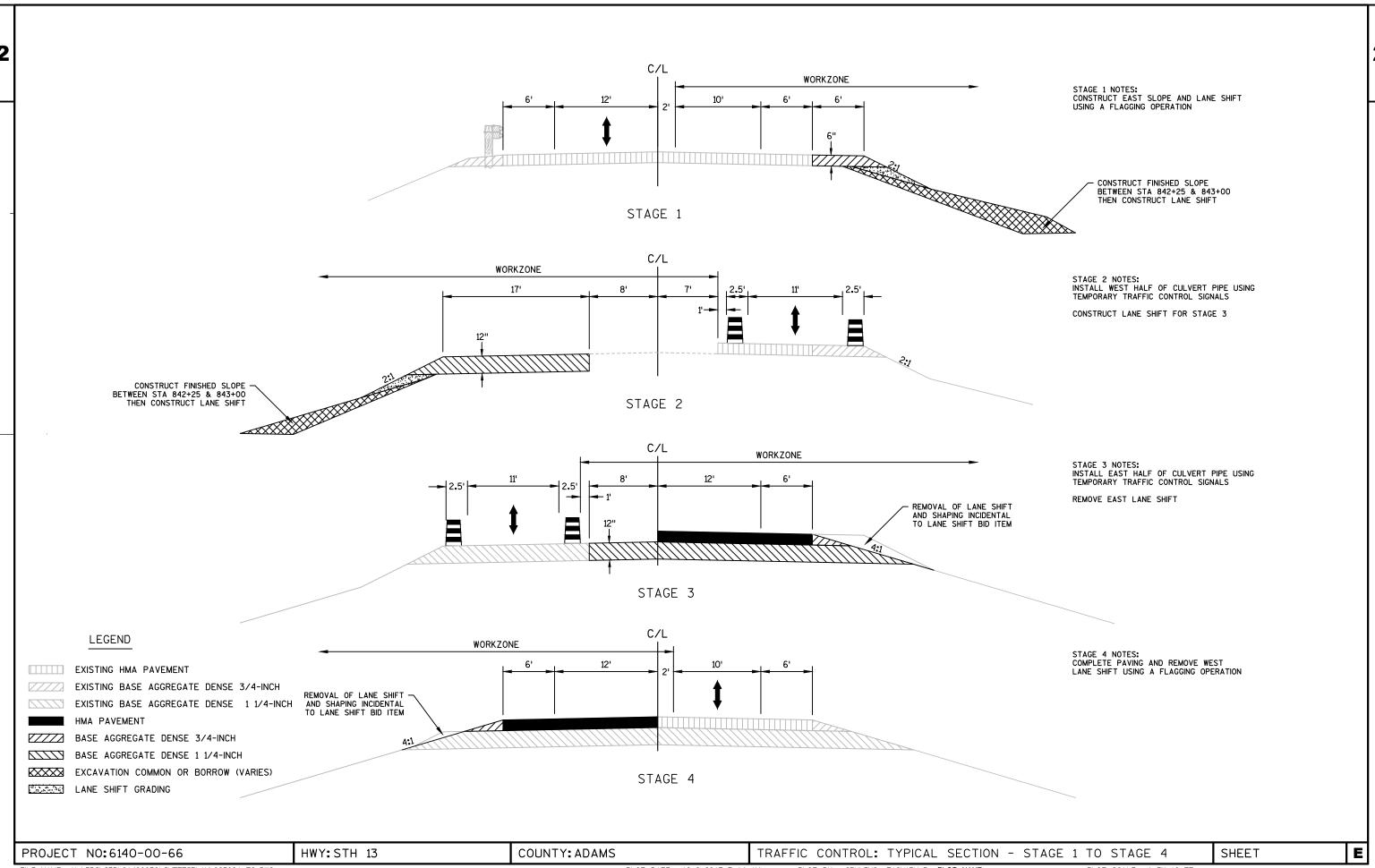
(INSTALL ON INLET END ONLY)

HWY: STH 13 E COUNTY: ADAMS SHEET PROJECT NO: 6140-00-66 CONSTRUCTION DETAILS: CULVERT PIPE CHECK

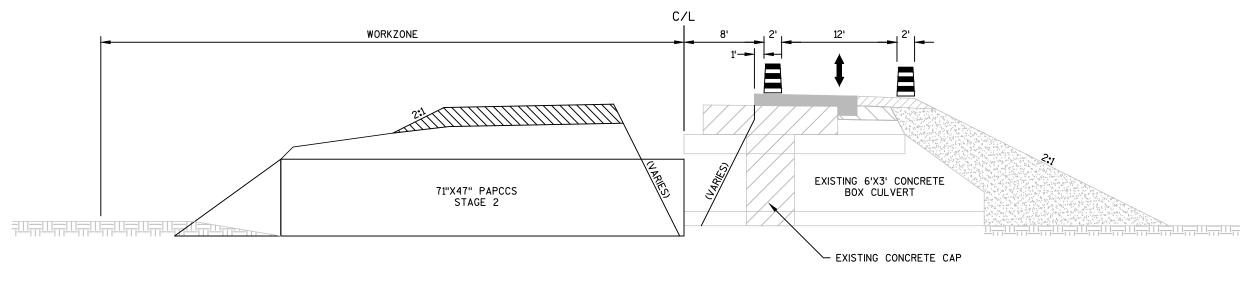
N:\PDS\C3D\61400036\SHEETSPLAN\021003-CD.DWG LAYOUT NAME - 03 FILE NAME : PLOT DATE : 2/07/2018 12:00 PM PLOT BY: GRULING, ZACHARY:) PLOT NAME : PLOT SCALE :



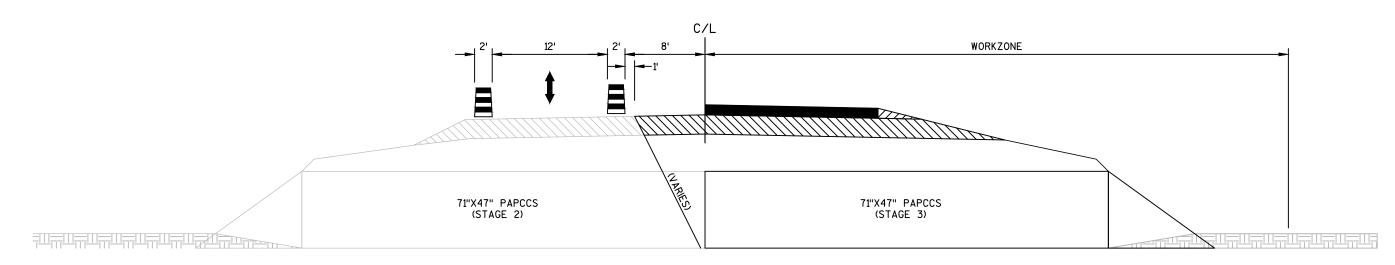








TYPICAL SECTION - LANE SHIFT AT CULVERT
STAGE 2



TYPICAL SECTION - LANE SHIFT AT CULVERT

STAGE 3

LEGEND

EXISTING HMA PAVEMENT

EXISTING BASE AGGREGATE DENSE 1 1/4-INCH

HWY:STH 13

EXISTING BASE AGGREGATE DENSE 3/4-INCH

EXISTING GROUND

LANE SHIFT (FILL)

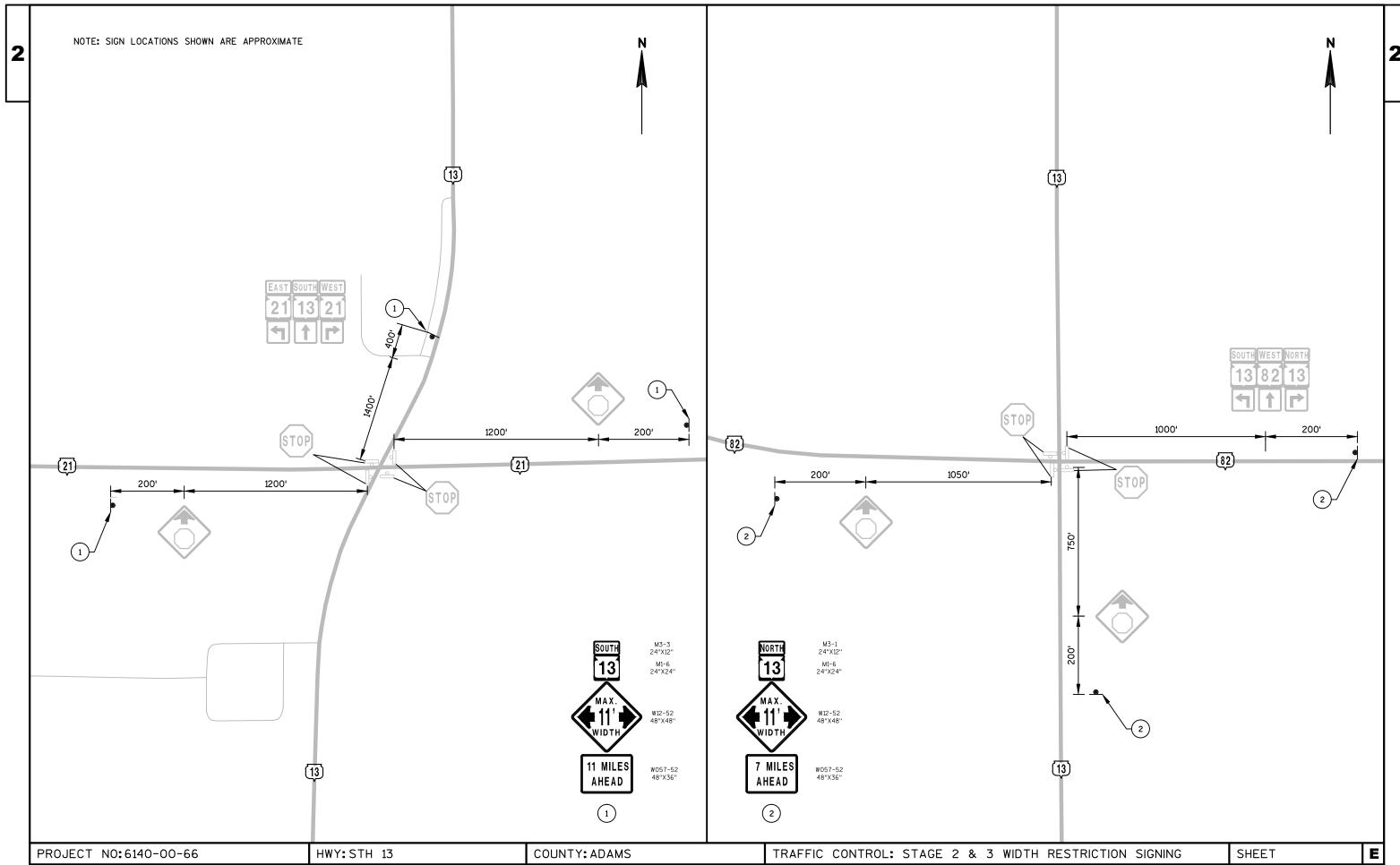
HMA PAVEMENT

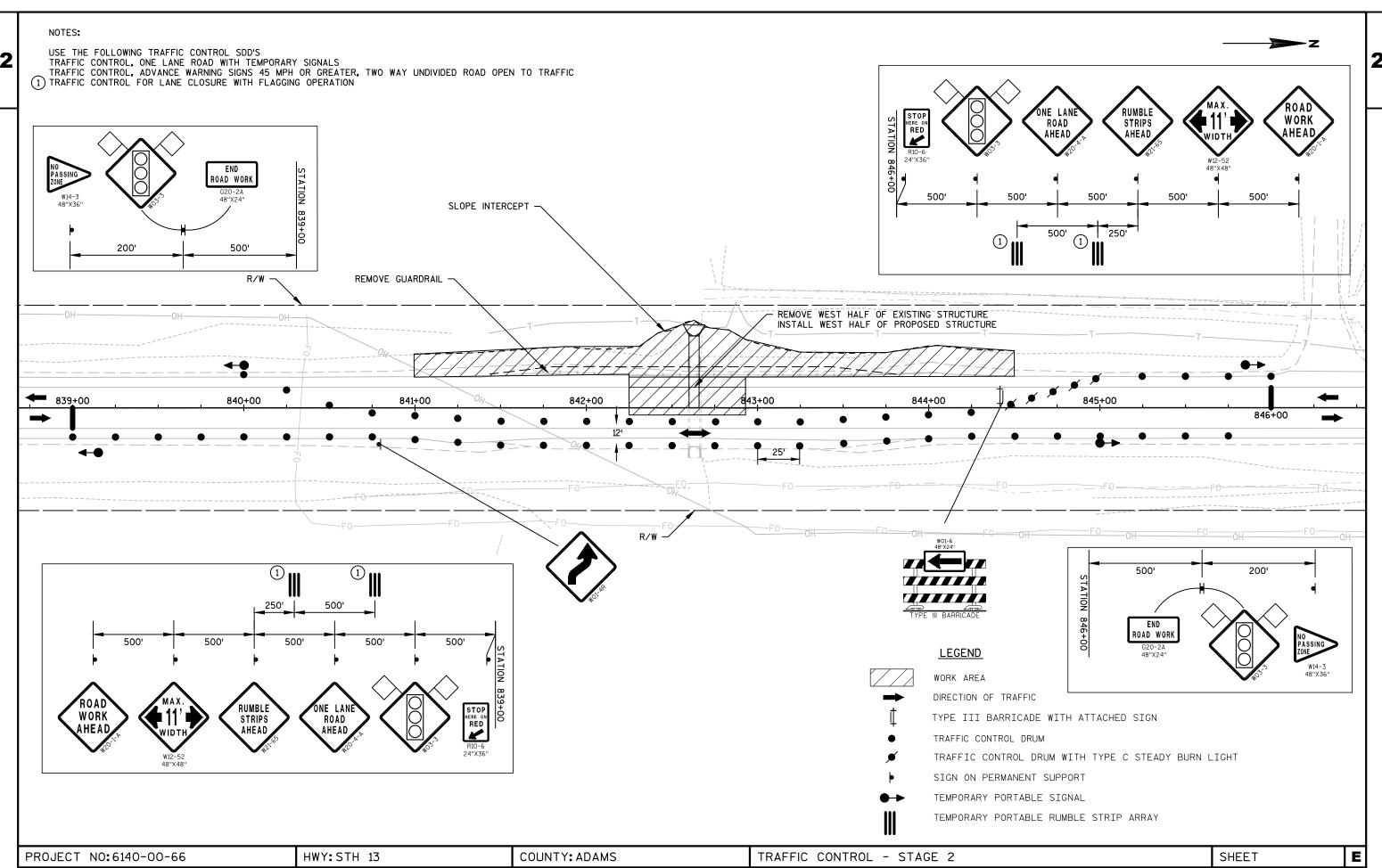
PROJECT NO:6140-00-66

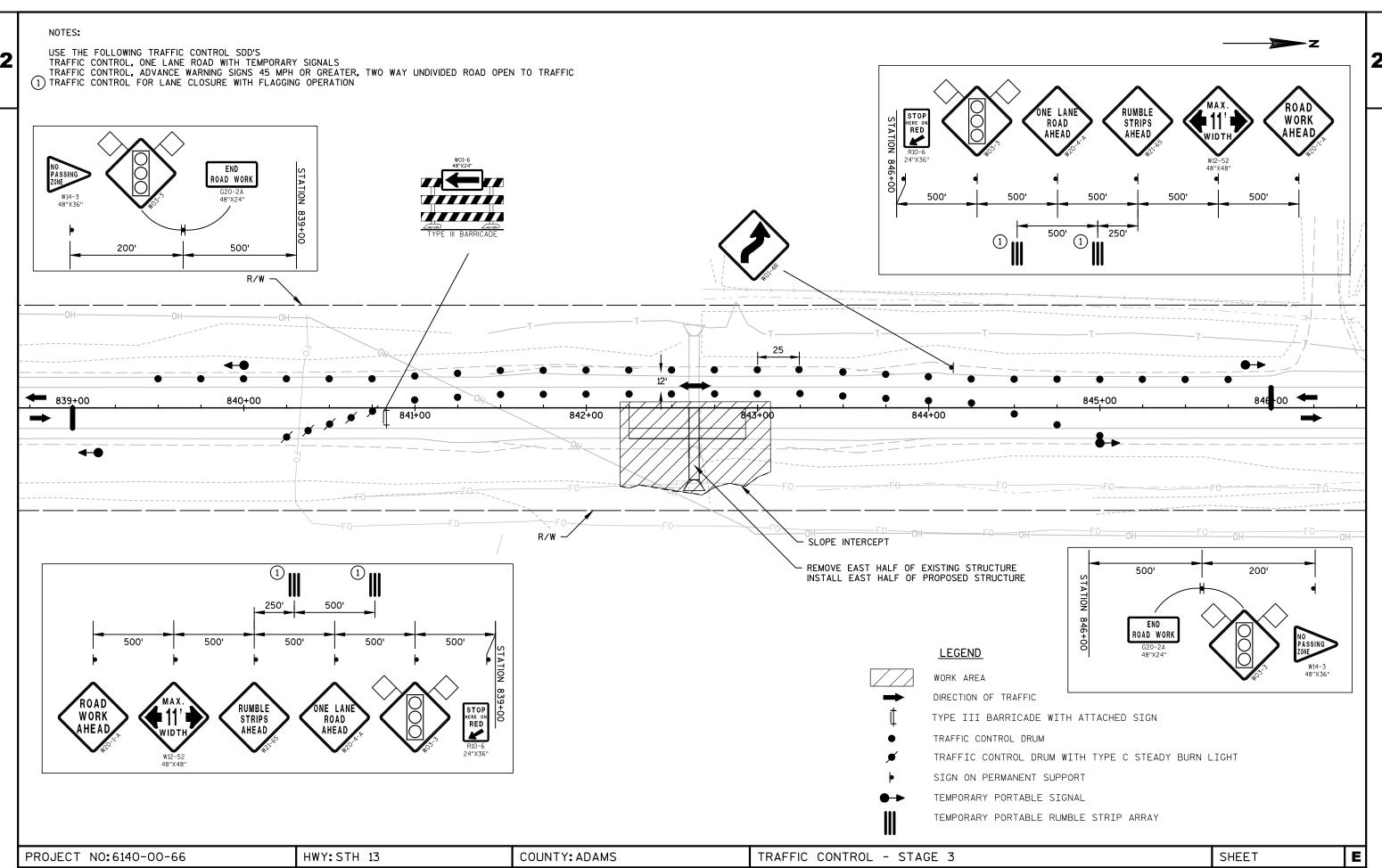
BASE AGGREGATE DENSE 1 1/4-INCH

BASE AGGREGATE DENSE 3/4-INCH

COUNTY: ADAMS TRAFFIC CONTROL: TYPICAL SECTION - LANE SHIFT AT CULVERT SHEET







					6140-00-66
Line	Item	Item Description	Unit	Total	Qty
0002	203.0200	Removing Old Structure (station) 01. 842+63	LS	1.000	1.000
0004	204.0100	Removing Pavement	SY	151.000	151.000
0006	204.0110	Removing Asphaltic Surface	SY	152.000	152.000
0008	204.0165	Removing Guardrail	LF	472.000	472.000
0010	205.0100	Excavation Common **P**	CY	471.000	471.000
0010	208.0100	Borrow **P**	CY	28.000	28.000
0012	213.0100	Finishing Roadway (project) 01. 6140-00-66	EACH	1.000	1.000
0014	305.0110	Base Aggregate Dense 3/4-Inch	TON	11.000	11.000
0018	305.0110	Base Aggregate Dense 1 1/4-Inch	TON	383.000	383.000
0020	455.0605	Tack Coat	GAL	20.000	20.000
0020	460.2000	Incentive Density HMA Pavement	DOL	70.000	70.000
0022	460.5224	HMA Pavement 4 LT 58-28 S	TON	94.000	94.000
0024	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	68.000	68.000
0028	521.1271	Apron Endwalls for Pipe Arch Steel 71x47-Inch	EACH	2.000	2.000
0020	521.5771	Pipe Arch Polymer Coated Corrugated Steel 71x47-Inch		84.000	84.000
		Maintenance And Repair of Haul Roads (project) 01.			
0032	618.0100	6140-00-66	EACH	1.000	1.000
0034	619.1000	Mobilization	EACH	1.000	1.000
0036	624.0100	Water	MGAL	1.900	1.900
0038	625.0100	Topsoil	SY	1,099.000	1,099.000
0040	628.1504	Silt Fence	LF	709.000	709.000
0042	628.1520	Silt Fence Maintenance	LF	709.000	709.000
0044	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0046	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0048	628.2008	Erosion Mat Urban Class I Type B	SY	1,099.000	1,099.000
0050	628.7555	Culvert Pipe Checks	EACH	6.000	6.000
0052	629.0210	Fertilizer Type B	CWT	0.700	0.700
0054	630.0175	Seeding Mixture No. 75	LB	6.900	6.900
0056	633.5200	Markers Culvert End	EACH	2.000	2.000
0058	642.5001	Field Office Type B	EACH	1.000	1.000
0060	643.0300	Traffic Control Drums	DAY	348.000	348.000
0062	643.0310.S	Temporary Portable Rumble Strips	LS	1.000	1.000
0064	643.0420	Traffic Control Barricades Type III	DAY	6.000	6.000
0066	643.0715	Traffic Control Warning Lights Type C	DAY	72.000	72.000
0068	643.0900	Traffic Control Signs	DAY	310.000	310.000
0070	643.5000	Traffic Control	EACH	1.000	1.000
0070	646.1020	Marking Line Epoxy 4-Inch	LF	1,013.000	1,013.000
0074	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch		24.000	24.000
0074	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000
0078	650.9910	Construction Staking Supplemental Control (project) 01.		1.000	1.000
0070	030.9910	Construction Staking Supplemental Control (project) 01.	LO	1.000	1.000

Estimate Of Quantities Page 2

					6140-00-66	
Line	Item	Item Description	Unit	Total	Qty	
		6140-00-66				
0800	650.9920	Construction Staking Slope Stakes	LF	725.000	725.000	
0082	661.0100	Temporary Traffic Signals for Bridges (structure) 01. 01-013-041	LS	1.000	1.000	
0084	690.0150	Sawing Asphalt	LF	368.000	368.000	
0086	690.0250	Sawing Concrete	LF	108.000	108.000	
8800	SPV.0060	Special 01. Lane Shift Grading	EACH	2.000	2.000	
0090	SPV.0105	Special 01. Temporary Water Diversion	LS	1.000	1.000	



REMOVING ASPHALTIC SURFACE

3

REMOVING OLD STRUCTURE

STATION	LOCATION	DESCRIPTION	203.0200 LS	STRUCTURE NUMBER
842+63	LT & RT	6' x 3' BOX CULVERT	1	C-01-9001
		TOTAL	1	

WIDTH 204.0110 STATION - STATION LOCATION FEET SY REMARKS 842+25 - 842+93 LT 61 842+25 - 842+93 RT 61 841+02 - 841+82 RT 11 EAT BUMP OUT 841+38 - 842+10 LT EAT BUMP OUT RT 843+26 - 844+22 EAT BUMP OUT 843+58 - 844+46 LT EAT BUMP OUT TOTAL 152

REMOVING PAVEMENT

STATION - STATION	WIDTH FEET	204.0100 SY	REMARKS
842+25 - 842+93	20	151	
	TOTAL	151	

REMOVING GUARDRAIL

STATION - STATION	LOCATION	204.0165 LF	REMARKS	
841+23 - 843+59 841+69 - 844+05	RT LT	236 236	STAGE 1 STAGE 2	
	TOTAL	472		

EARTHWORK SUMMARY

Division	From/To Station	Location	ITEM # 205.0100 Common Excavation	Available Material	Unexpanded Fill	Expanded Fill Factor 1.25	Mass Ordinate +/-	Waste	ITEM # 208.0100 Borrow	Comment:
Stage 1	840+25 - 844+50	RT	97	97	100	125	-28	0	28	
Stage 2	840+75 - 844+75	LT	156	156	111	139	17	17	0	
Stage 1 Transition Cut	841+25 - 841+97	RT	109	109	0	0	109	0	0	
Stage 2 Transition Cut	841+25 - 841+97	LT	109	109	0	0	109	0	0	
Project Total			471	471	211	264	207	17	28	

PROJECT NO: 6140-00-66 HWY: STH 13 COUNTY: ADAMS MISCELLANEOUS QUANTITIES SHEET: **E**

	BASE AG	GREGATE D	ENSE			HMA PAVEMENT							
STATION - STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	REMARKS	_		STATIO	N - STATION	LOCATION	455.0605 TACK COA GAL	460.5224 4 LT T 58-28 S TON	REMARKS	
842+25 - 842+93 842+25 - 842+93 841+50 - 843+75 841+50 - 843+75	LT RT RT LT	5 5 11	119 119 63 82 383	LANE SHIFT - STAGE LANE SHIFT - STAGE			842+2	5 - 842+93 5 - 842+93	LT RT TOTALS	10 10 20	47 47 47	THE WINTER THE	
<u>ASPHALTIO</u> <u>STATION - ST</u> 842+25 - 842	ATION LO		STRIP 2-LAN 465.0475 LF RE 68	E RURAL EMARKS			STATION 842+63	LOCATION LT & RT TOTALS	521.57 PIPE A POLYMER CORRUG STEE 71X47-I LF	RCH COATED GATED EL A NCH	521.1271 APRON ENDWALLS FOR PIPE ARCH STEEL 71X47-INCH EACH 2	633.5200 MARKERS CULVERT END EACH 2	
STATION - STATION 840+50 - 844+50	628.190 MOBILIZAT EROSIO CONTRO	05 MOI TIONS EM ON E OL C	S28.1910 BILIZATIONS ERGENCY ROSION CONTROL EACH	REMARKS			84	ATION - STATIOI 42+25 - 842+93 42+25 - 842+93	<u>WA</u>	ΓΕR 624.0 ΠΟΝ MG Γ 1. Γ 0.	0100 AL REMA 2 STAGE	NRKS E 2	
TOTA	LS 2	628.1520 MAINTENANCE LF 110 193 194 212	4 <u>CU</u>	ATION LOCATION 2+63 RT TOTAL	6 628.7555 EACH 6	STATION - 840+50 -	STATION 844+25	LOCATION RT	OSION MAT 625.0100 TOPSOIL SY 418	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0175 SEEDING MIXTURE NO. 75 LB	REMARKS
TOTALS	709	709	=			841+00 -	844+50	LT TOTALS	681 1099	681 1099	0.4	6.9	

<u>!</u>	MARKING LINE E	POXY											
646.1020 646.1020					TEMPORARY TRAFFIC SIGNALS					CONS	TRUCTION S	TAKING	
STATION - STATION	LOCATION	4-INCH WHITE LF	4-INCH YELLOW LF				661.0100 FOR BRIDGES				650.6000 PIPE CULVERTS	650.9920 SLOPE STAKES	
840+25 - 844+75	EDGELINE LT	450		OTATION! (LOCATION	(STRUCTURE)	DEMARKO	STATION - ST	ATION	EACH	LF	REMARKS
840+25 - 844+75	EDGELINE RT	450		STATION - S	STATION	LOCATION	LS	REMARKS					
840+25 - 844+75	CENTERLINE		113	839+00 - 8	346+00	STH 13	1	STAGE 2 & STAGE 3	840+50 - 844	4+50	1	725	
	SUBTOTAL	900	113			TOTAL	1	=		TOTALS	1	725	=
	TOTAL	10	013										
									_				
	TR AFFI	CONTROL	1		l		CV.	WING					

TRAFFIC CONTROL											
	STAGE DAYS	QTY	643.0300 DRUMS DAYS	QTY	643.0420 BARRICADES TYPE III DAYS	QTY	643.0715 WARNING LIGHTS TYPE C DAYS	QTY	643.0900 SIGNS DAYS		
STAGE 1 STAGE 2 STAGE 3 STAGE 4	3 3 3 2	0 58 58 0	0 174 174 0	0 1 1 0	0 3 3 0	0 12 12 0	0 36 36 0	14 40 40 14	42 120 120 28		
TOTALS	11		348		6		72		310		

HWY: STH 13

		SAWING		
STATION - STATION	LOCATION	690.0150 ASPHALT LF	690.0250 CONCRETE LF	REMARKS
841+02 - 841+82	RT	80		EAT BUMP OUT
841+38 - 842+10	LT	72		EAT BUMP OUT
842+25	LT & RT	16	20	
842+25 - 842+93	CL		68	STAGING
842+93	LT & RT	16	20	
843+26 - 844+22	RT	96		EAT BUMP OUT
843+58 - 844+46	LT	88		EAT BUMP OUT
	TOTAL	368	108	

TEMPORARY WATER DIVERSION									
		SPV.0105.01							
STATION	LOCATION	LS	REMARKS						
842+63	LT & RT	1	Q2 = 18 CFS						
	TOTALS	1							

STATION	LOCATION	649.0850 REMOVEABLE TAPE 18-INCH LF	REMARKS
839+00 846+00	RT LT TOTAL	12 12 12	STAGE 2 & 3 STAGE 2 & 3

TEMPORARY MARKING STOP LINE

STATION - STATION	LOCATION	SPV.0060.01 EACH	REMARKS	*BORROW CY
841+50 - 843+75	RT	1	STAGE 1	27
841+50 - 843+75	LT	1	STAGE 2	31
	TOTALS	2		58
*FOR INFORMATIONAL	PURPOSES O	NLY, NOT A BID	ITEM	

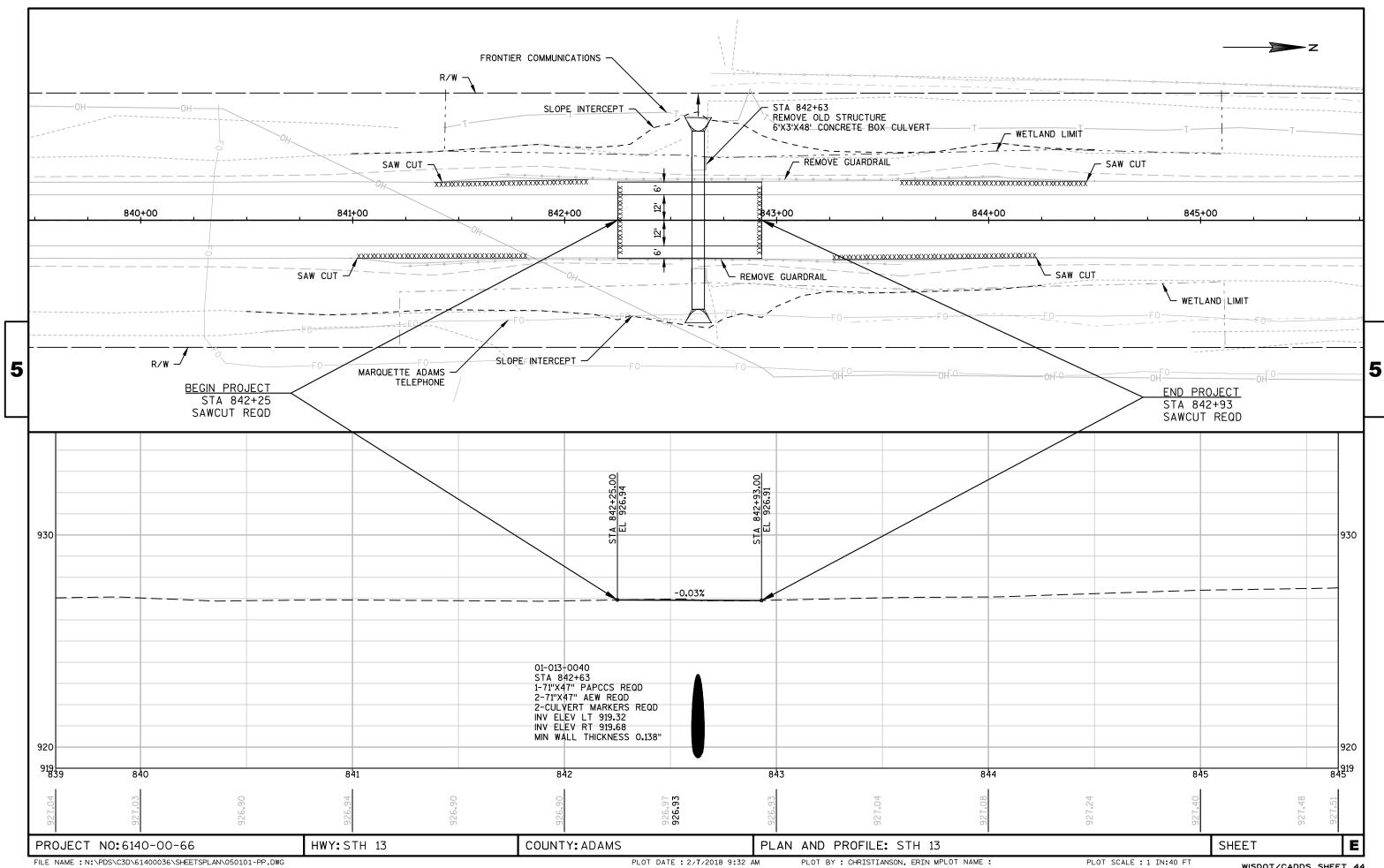
LANE SHIFT

TEMPORARY PORTABLE RUMBLE STRIPS									
STATION - STATION	LOCATION	643.0310.S LS	REMARKS	_					
839+00 - 846+00	STH 13	1	STAGE 1, 2, 3 & 4						
	TOTAL	1	=						
		SI	HEET:	E					

PROJECT NO: 6140-00-66

COUNTY: ADAMS

MISCELLANEOUS QUANTITIES



Standard Detail Drawing List

08E09-06	SILT FENCE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
09G02-04A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-04B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-04C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
14B29-01	SAFETY EDGE
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-18A	LONGI TUDI NAL MARKI NG (MAI NLI NE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15D33-04	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

TYPICAL APPLICATION OF SILT FENCE

6

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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)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Cannestra

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

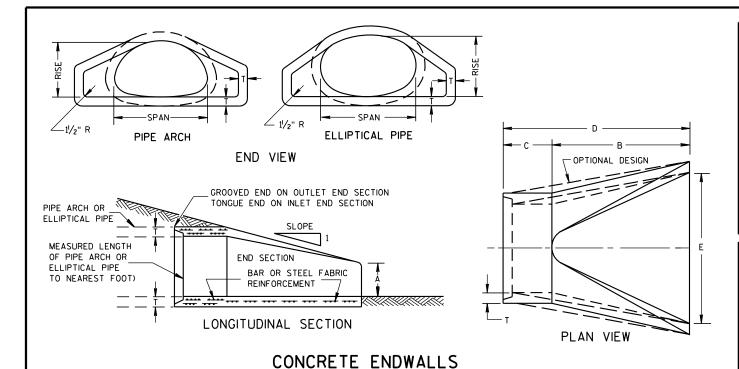
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D.D. 8 E 9

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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	MIN. THICK. DIMENSIONS (Inches)									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+0 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) A B H L L1 L2 W							BODY	
(Inches)	SPAN	RISE	STEEL	ALUM.	(±1")	(MAX.)		(±1 ½")		0	(±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.			DIME	NSIONS	(Inche	s)			APPROX.		
DIA. (Inches)	** SPAN	** **									
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.

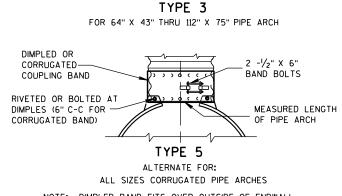
CONCRETE APRON ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA, GALVANIZED STEEL OR ALUMINUM APRON ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE

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

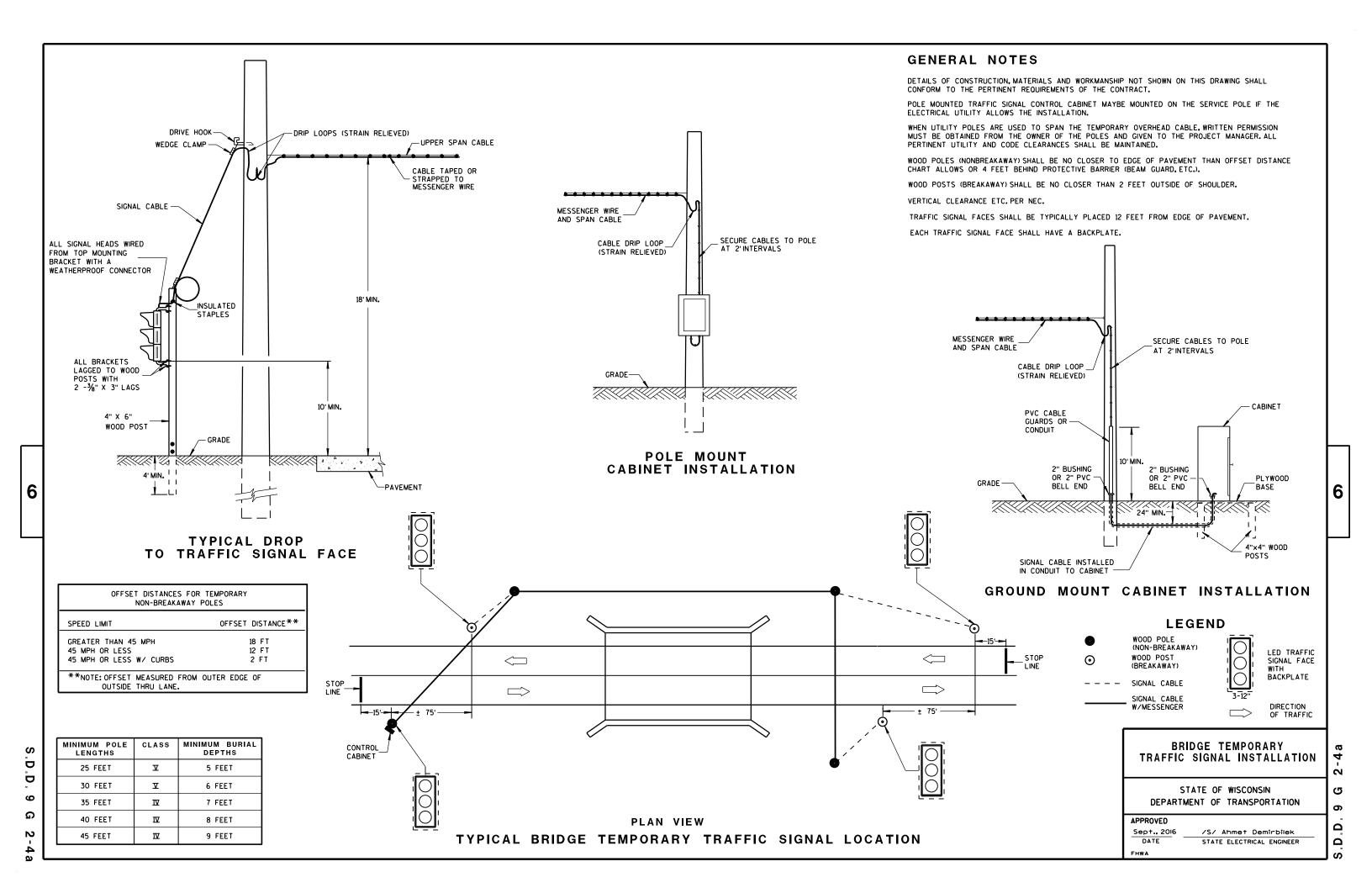
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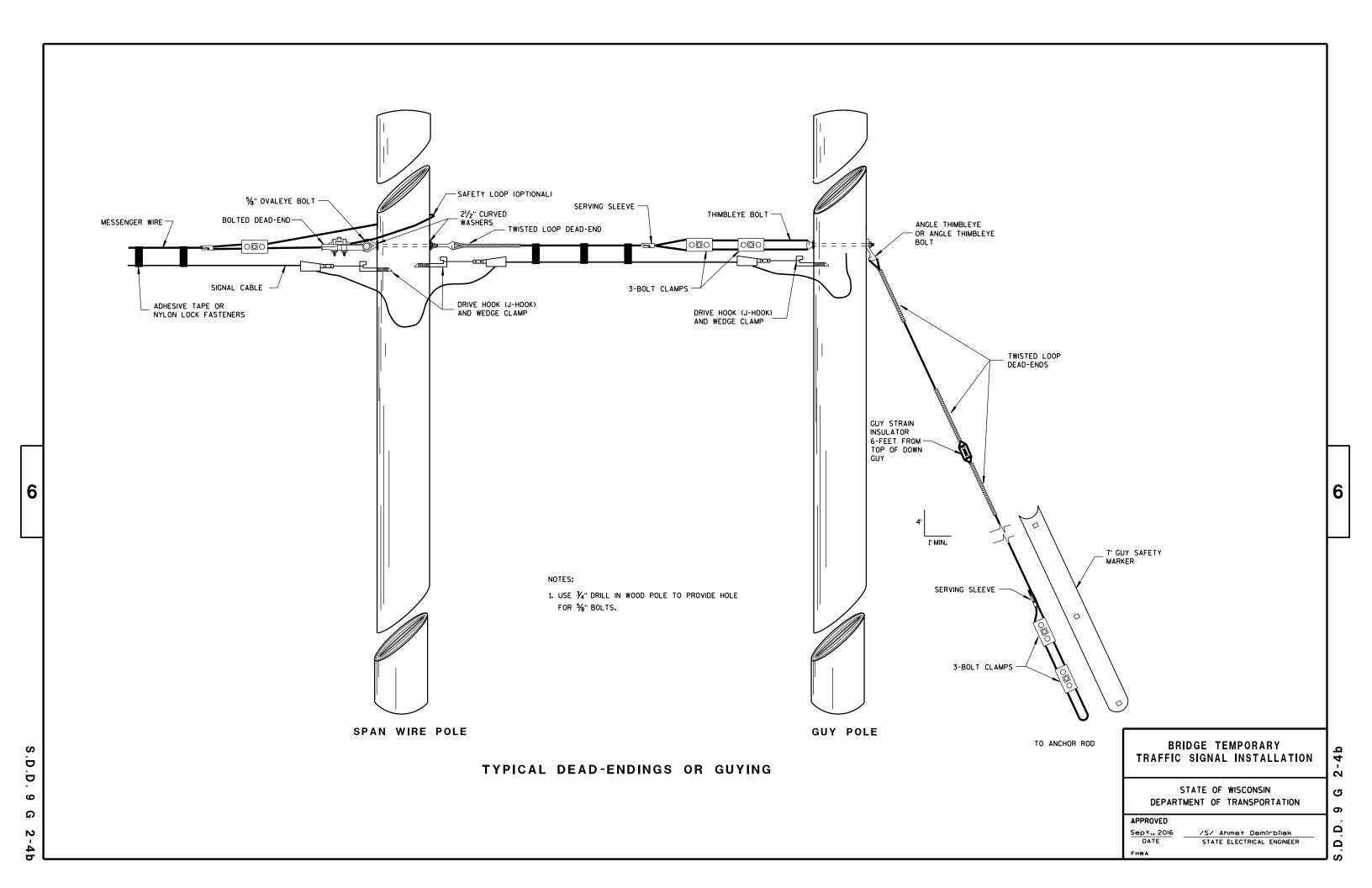
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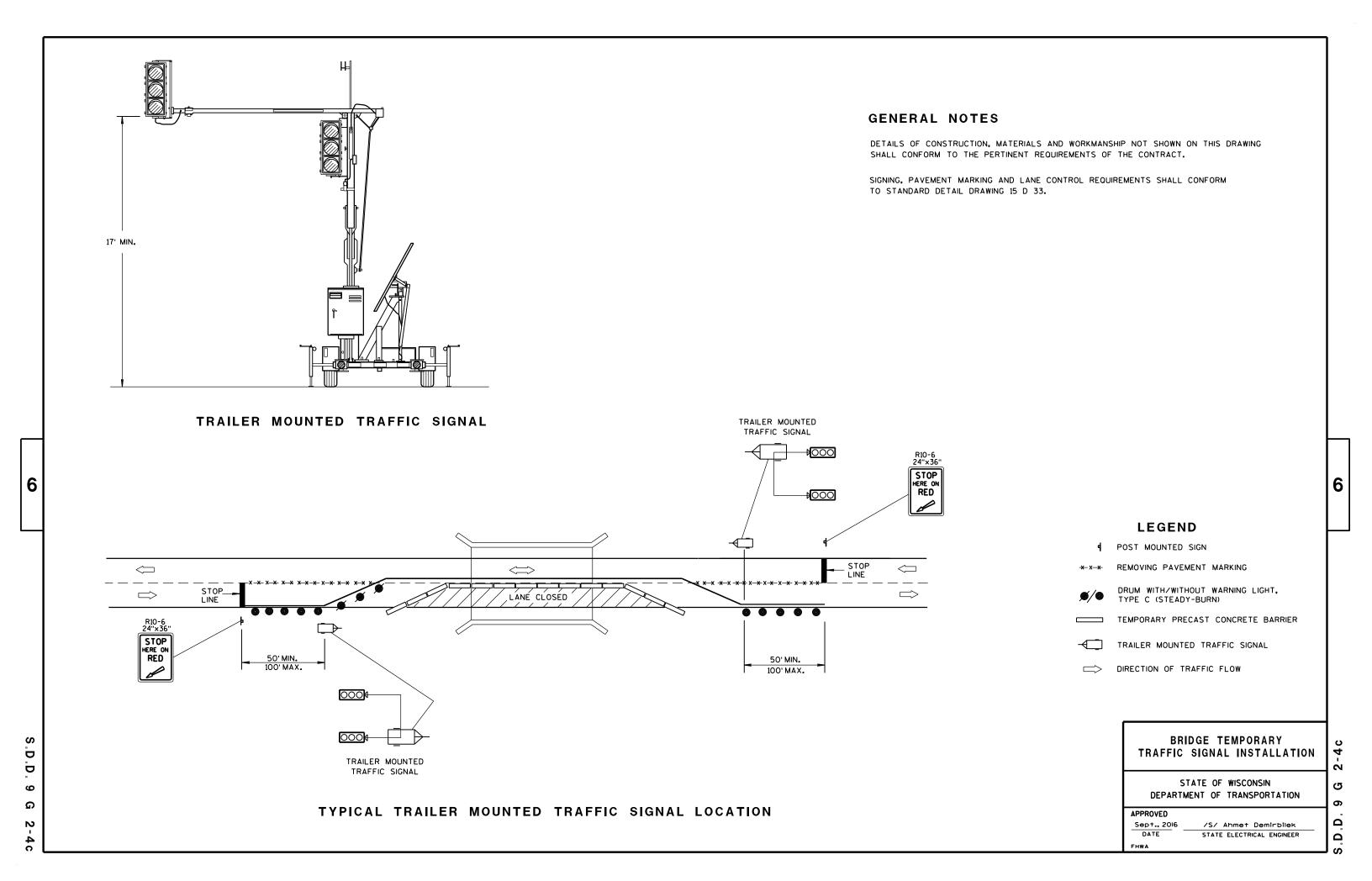
0.109" THICK GALV. STEEL OR 0.109" THICK ALUMINUM 3/8" DIA. RIVETS SPACED APRON SIDEWALL AT 6" C-C SHEET 1" O.D. X O.079" THICK GALV. STEEL OR 0.075" THICK ALUM. OVER SHEET OR TO FABRI-END SECTION "- GALV. STEEL TTONHEAD RIVETS 6" C-C. OVER-RIVET = 0.78" OF APRON L SHEET DIA. GALV. OR 10M ORCING BAR

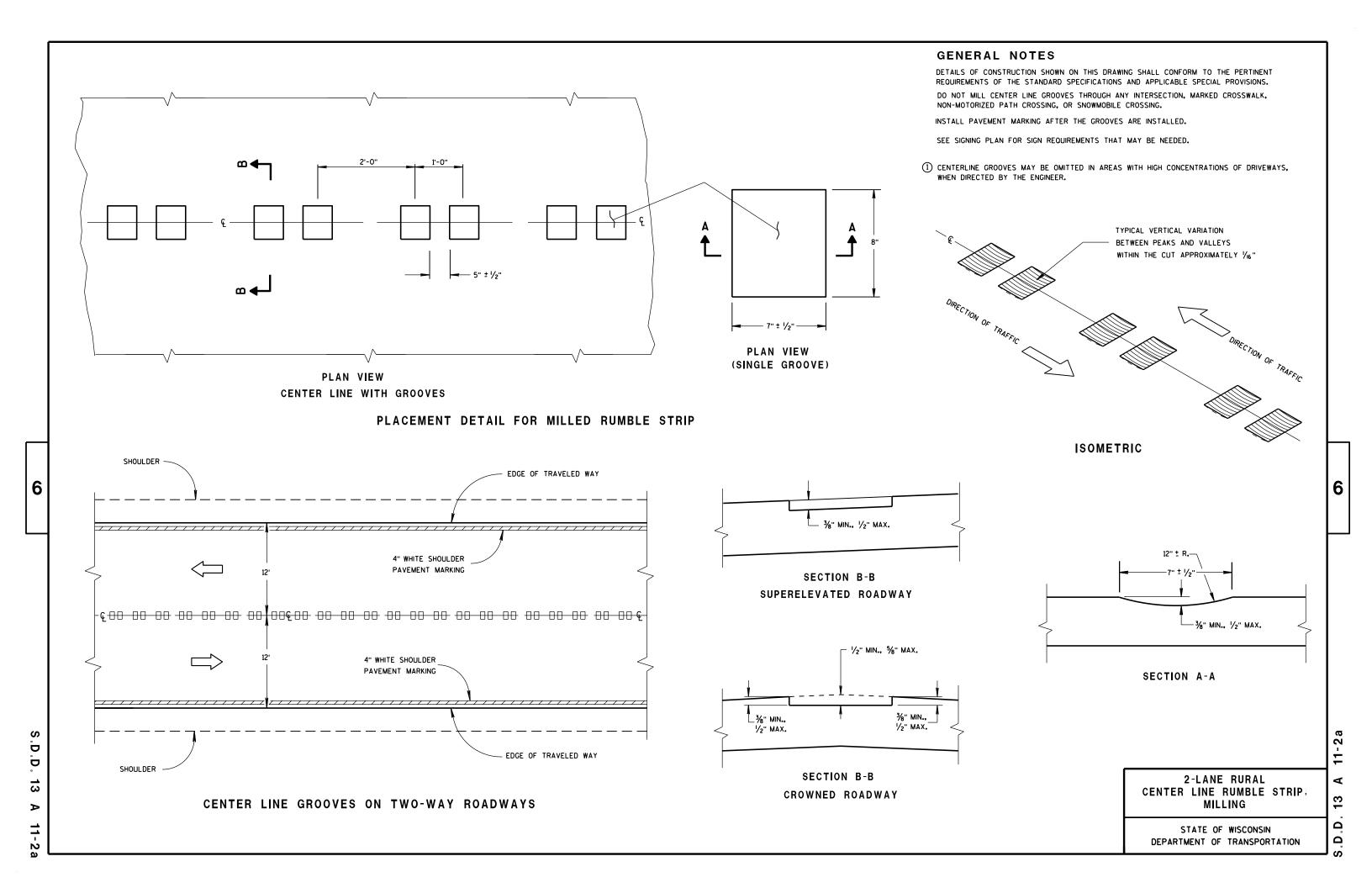
└─ ¹/8" (APPROX.)

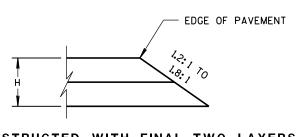
CONNECTION DETAILS

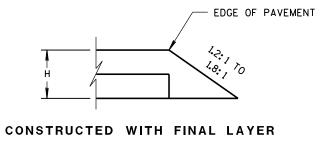








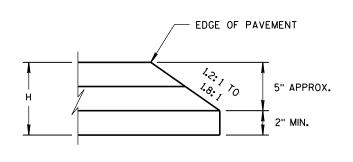


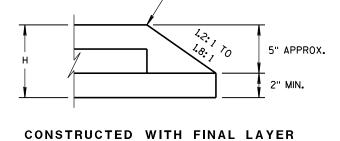


FOR H 5" OR LESS

CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS





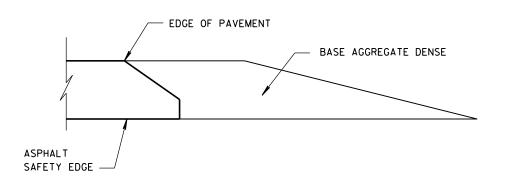
FOR H GREATER THAN 5"

EDGE OF PAVEMENT

CONSTRUCTED WITH FINAL TWO LAYERS

FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE SM

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DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

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GENERAL NOTES

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

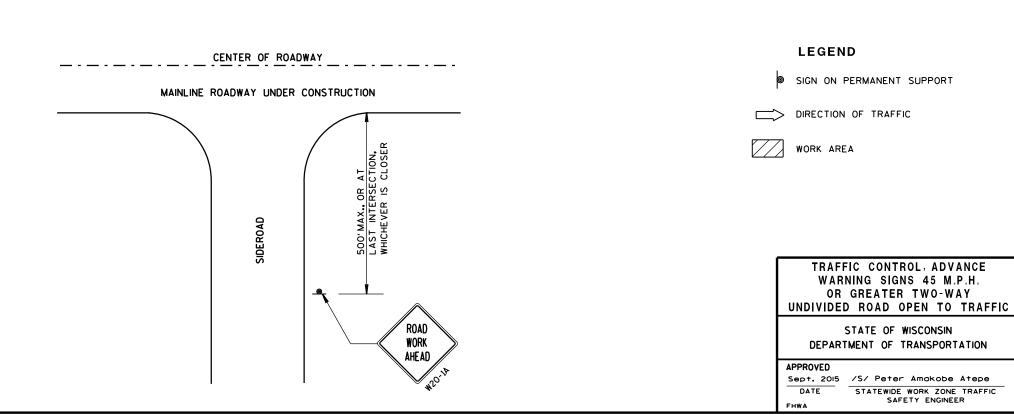
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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.

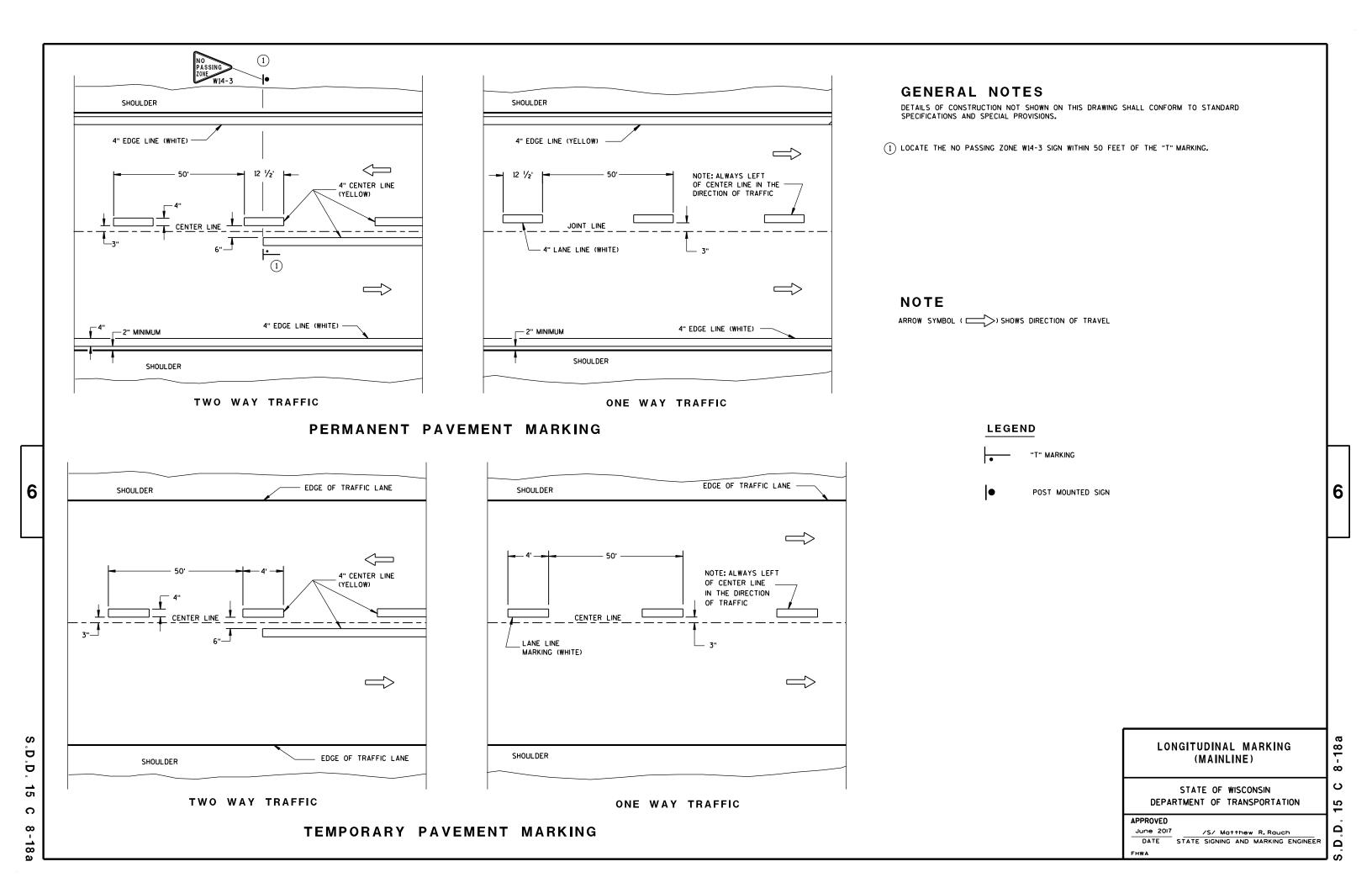
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- * PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



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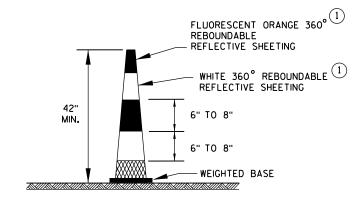
SAFETY ENGINEER



DRUM

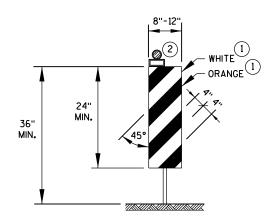
TYPE 2 BARRICADE

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



42" CONE

DO NOT USE IN TAPERS 1/2 SPACING OF DRUMS

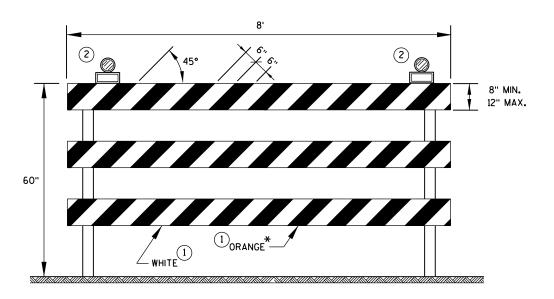


VERTICAL PANEL

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

GENERAL NOTES

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



TYPE 3 BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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June 2017
DATE

WORK ZONE ENGINEER
FHWA

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TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STOP/SLOW PADDLE ON SUPPORT STAFF

5' MIN.

WORK

AHEAD

48" X 24"

END ROAD WORK G20-2A

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W20-1A

GENERAL NOTES

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

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

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

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT. REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

* UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.

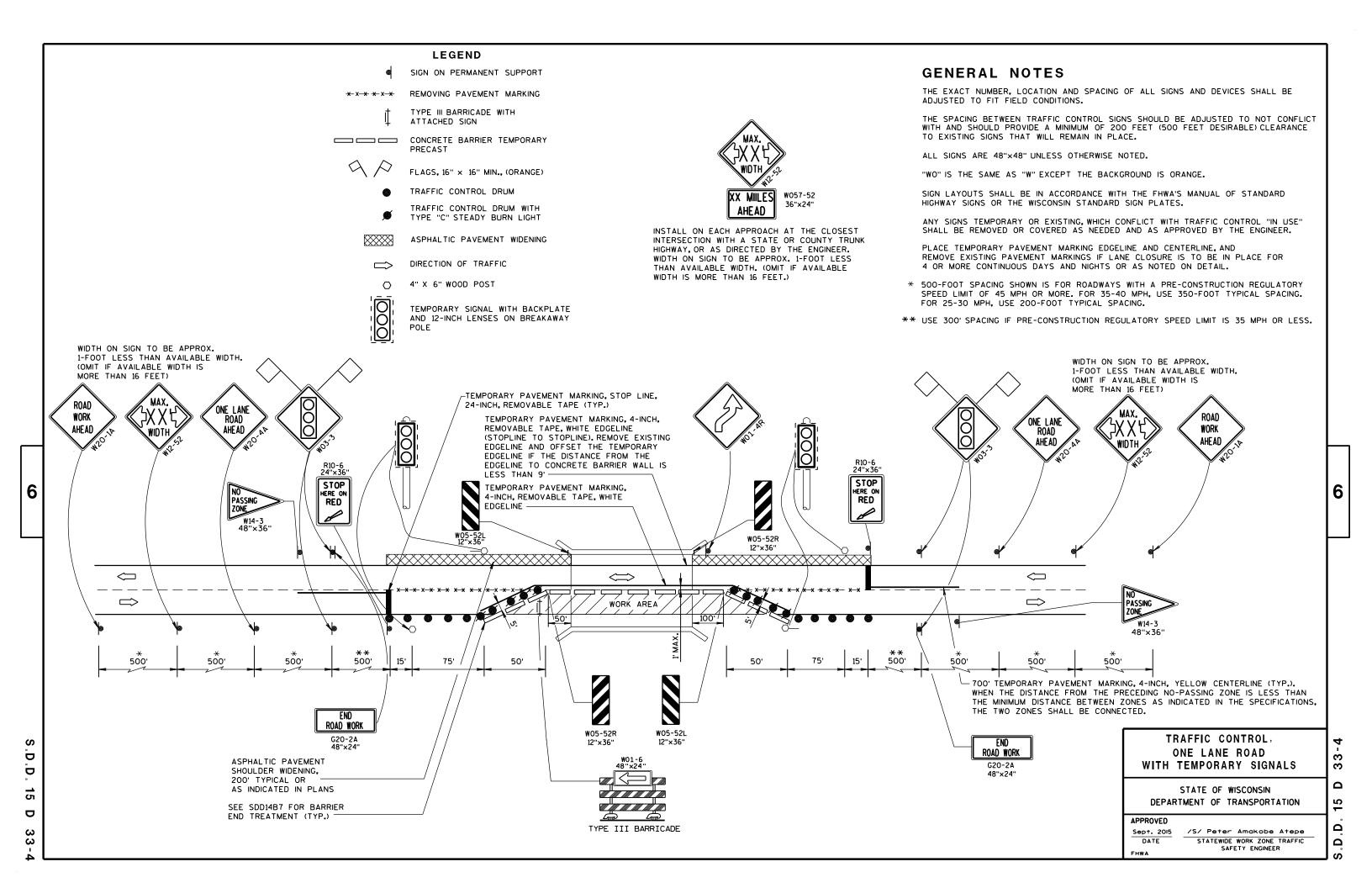
- 1) FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

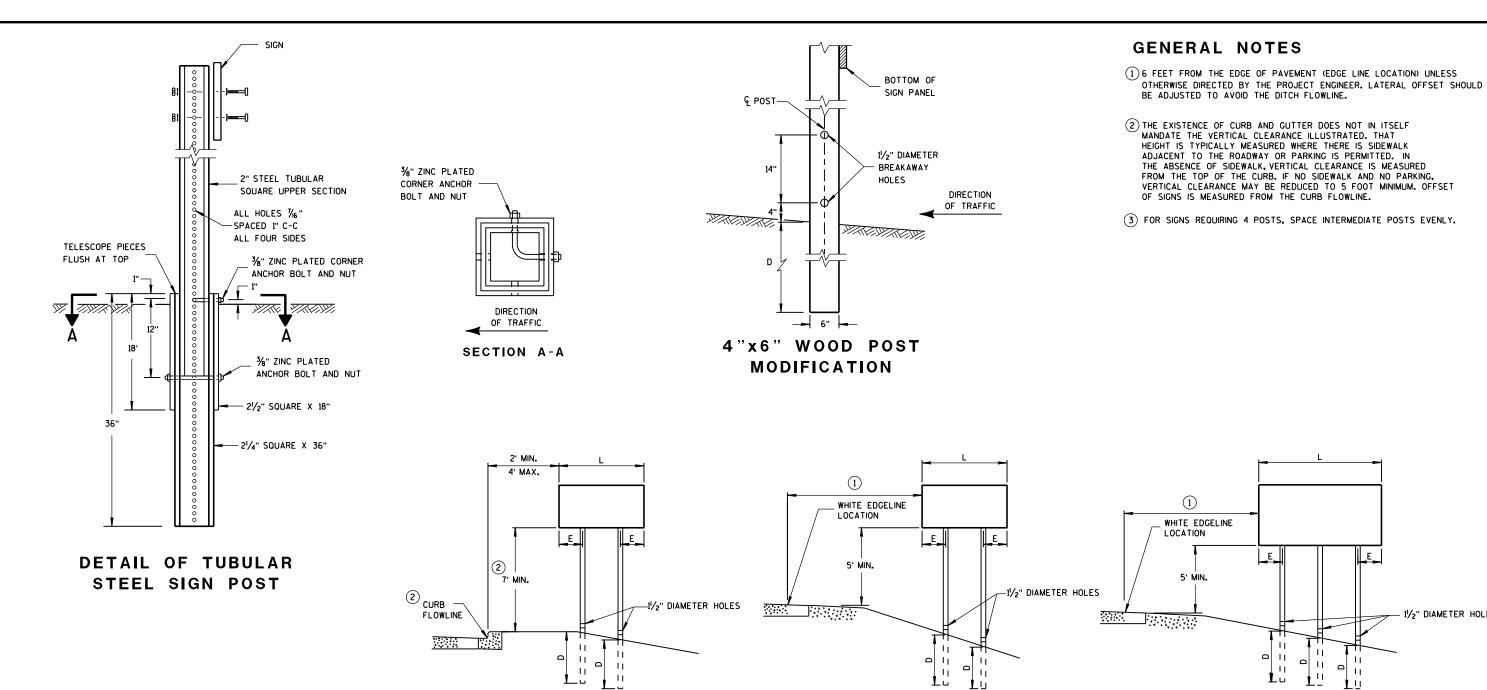
TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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

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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

RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST **EMBEDMENT DEPTH**

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

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		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)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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- 11/2" DIAMETER HOLES

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 - 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

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

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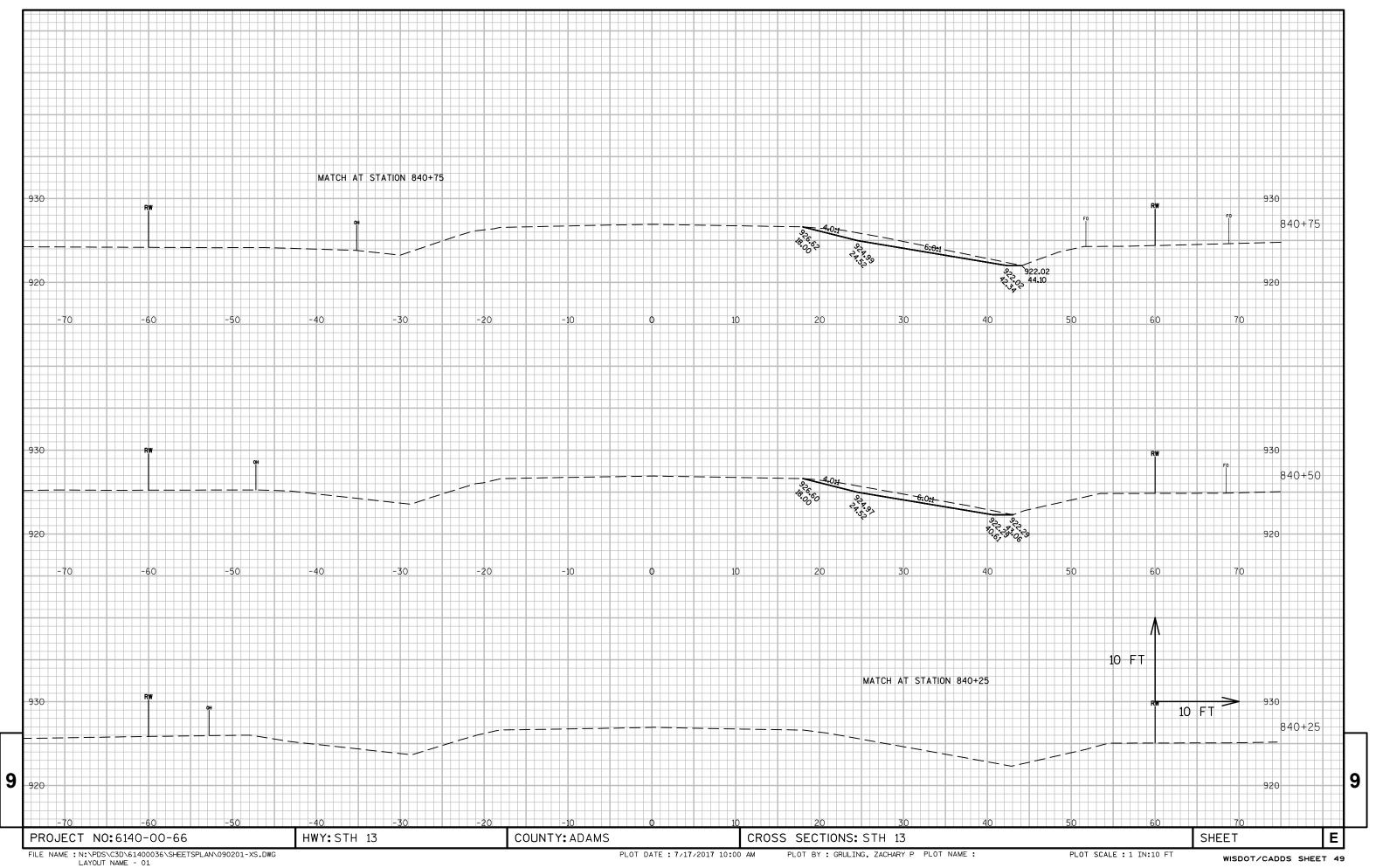
STH 13 LT									
			Cut	Fill	Cumulative	Cumulative	Net		
Station	Cut Area	Fill Area	Volume	Volume	Cut	Fill	Volume		
	SF	SF	CY	CY	CY	CY	CY		
840+25	0.0	0.0	-	-	-	-	-		
840+50	0.0	0.0	0.00	0.00	0.00	0.00	0.00		
840+75	0.0	0.0	0.00	0.00	0.00	0.00	0.00		
841+00	3.7	0.0	1.71	0.00	1.71	0.00	1.71		
841+25	7.3	0.0	5.09	0.00	6.81	0.00	6.81		
841+50	10.9	0.0	8.43	0.00	15.23	0.00	15.23		
841+75	14.2	0.0	11.62	0.00	26.85	0.00	26.85		
842+00	11.8	0.0	12.04	0.00	38.89	0.00	38.89		
842+25	5.3	1.7	7.92	0.79	46.81	0.79	46.02		
842+50	2.4	28.5	3.56	13.98	50.37	14.77	35.60		
842+63	1.4	86.1	0.91	27.59	51.29	42.36	8.93		
842+75	1.3	34.1	0.60	26.71	51.89	69.07	-17.18		
843+00	1.7	10.1	1.39	20.46	53.27	89.53	-36.26		
843+25	2.0	3.2	1.71	6.16	54.99	95.69	-40.70		
843+50	2.3	2.0	1.99	2.41	56.98	98.10	-41.12		
843+75	8.8	0.0	5.14	0.93	62.12	99.02	-36.91		
844+00	18.4	0.0	12.59	0.00	74.71	99.02	-24.31		
844+25	10.5	0.0	13.38	0.00	88.09	99.02	-10.93		
844+50	3.9	0.8	6.67	0.37	94.76	99.39	-4.64		
844+75	0.0	0.0	1.81	0.37	96.56	99.76	-3.20		

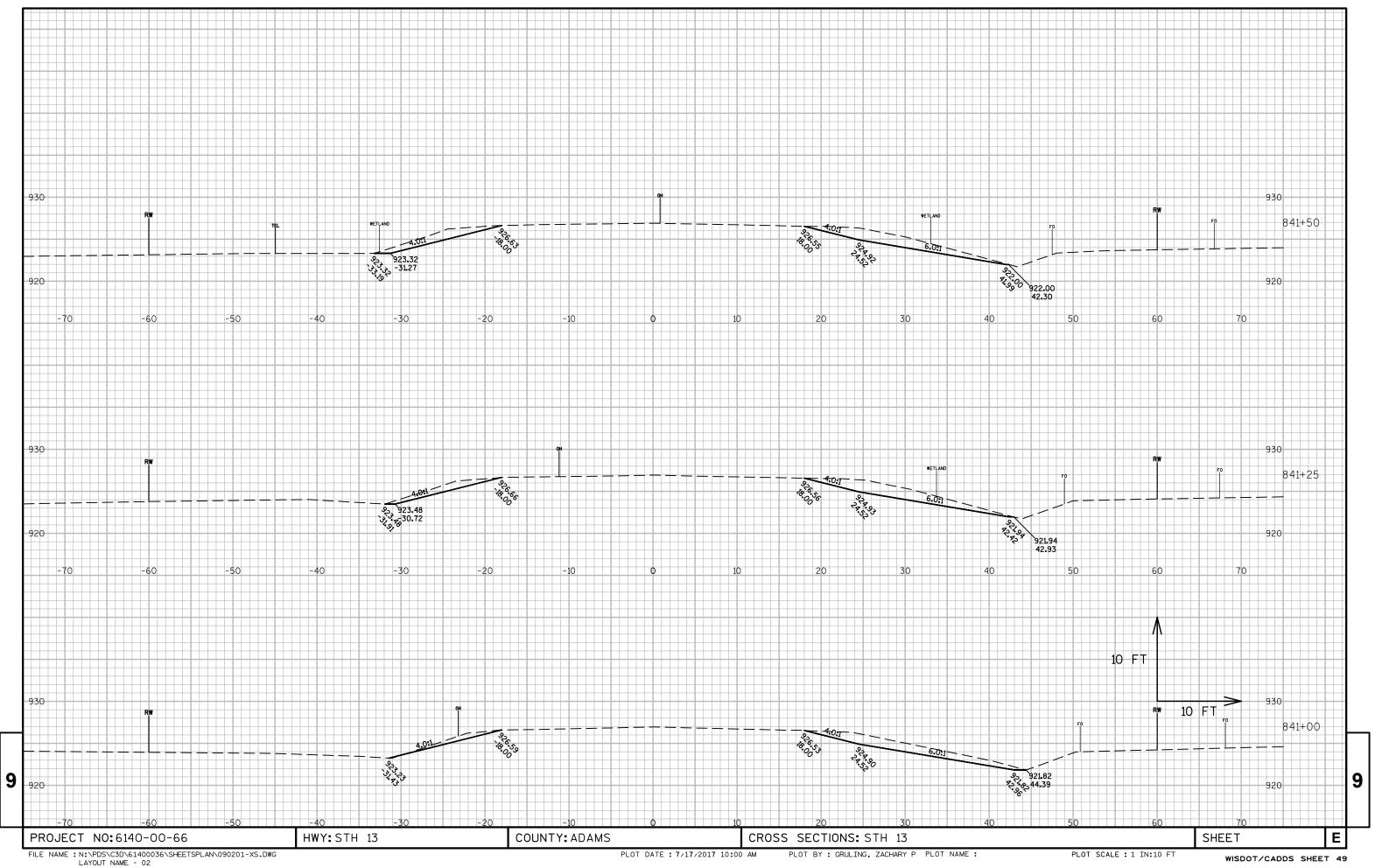
	STH 13 RT								
			Cut	Fill	Cumulative	Cumulative	Net		
Station	Cut Area	Fill Area	Volume	Volume	Cut	Fill	Volume		
	SF	SF	CY	CY	CY	CY	CY		
840+25	0	0	-	-	-	-	-		
840+50	12.9	0	5.97	0.00	5.97	0.00	5.97		
840+75	15.7	0	13.24	0.00	19.21	0.00	19.21		
841+00	21	0	16.99	0.00	36.20	0.00	36.20		
841+25	21.9	0	19.86	0.00	56.06	0.00	56.06		
841+50	19.8	0	19.31	0.00	75.37	0.00	75.37		
841+75	13.9	0	15.60	0.00	90.97	0.00	90.97		
842+00	6.9	0.6	9.63	0.28	100.60	0.28	100.32		
842+25	3	12.4	4.58	6.02	105.19	6.30	98.89		
842+50	0.7	44.4	1.71	26.30	106.90	32.59	74.31		
842+63	0.7	88.9	0.34	32.09	107.24	64.68	42.55		
842+75	0.8	31.5	0.33	26.76	107.57	91.44	16.13		
843+00	2.9	5.2	1.71	16.99	109.28	108.43	0.85		
843+25	10.2	0	6.06	2.41	115.35	110.84	4.51		
843+50	16.1	0	12.18	0.00	127.52	110.84	16.69		
843+75	14	0	13.94	0.00	141.46	110.84	30.62		
844+00	7.4	0	9.91	0.00	151.36	110.84	40.53		
844+25	1.5	0	4.12	0.00	155.49	110.84	44.65		
844+50	0	0	0.69	0.00	156.18	110.84	45.34		
844+75	0	0	0.00	0.00	156.18	110.84	45.34		

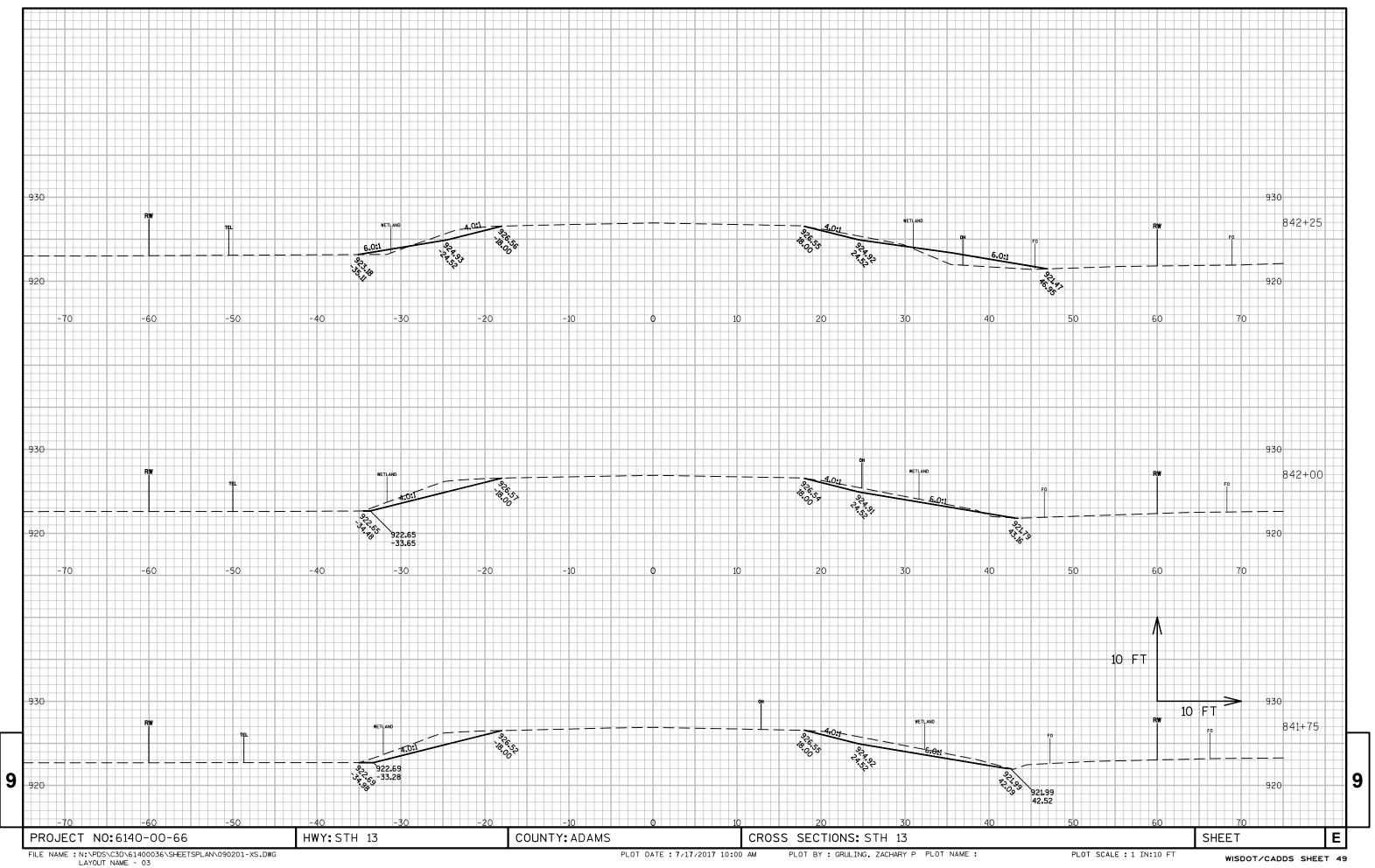
STH 13 LT Lane Shift								
			Cut	Fill	Cumulative	Cumulative	Net	
Station	Cut Area	Fill Area	Volume	Volume	Cut	Fill	Volume	
	SF	SF	CY	CY	CY	CY	CY	
841+50	0.0	0.5	-	-	-	-	-	
841+75	0.0	5.5	0.00	2.78	0.00	2.78	-2.78	
842+00	0.0	6.9	0.00	5.74	0.00	8.52	-8.52	
842+25	0.0	3.1	0.00	4.63	0.00	13.15	-13.15	
842+50	0.0	0.1	0.00	1.48	0.00	14.63	-14.63	
842+63	0.0	0.1	0.00	0.05	0.00	14.68	-14.68	
842+75	0.0	0.1	0.00	0.04	0.00	14.72	-14.72	
843+00	0.0	5.6	0.00	2.64	0.00	17.36	-17.36	
843+25	0.0	6.9	0.00	5.79	0.00	23.15	-23.15	
843+50	0.0	5.0	0.00	5.51	0.00	28.66	-28.66	
843+75	0.0	0.7	0.00	2.64	0.00	31.30	-31.30	

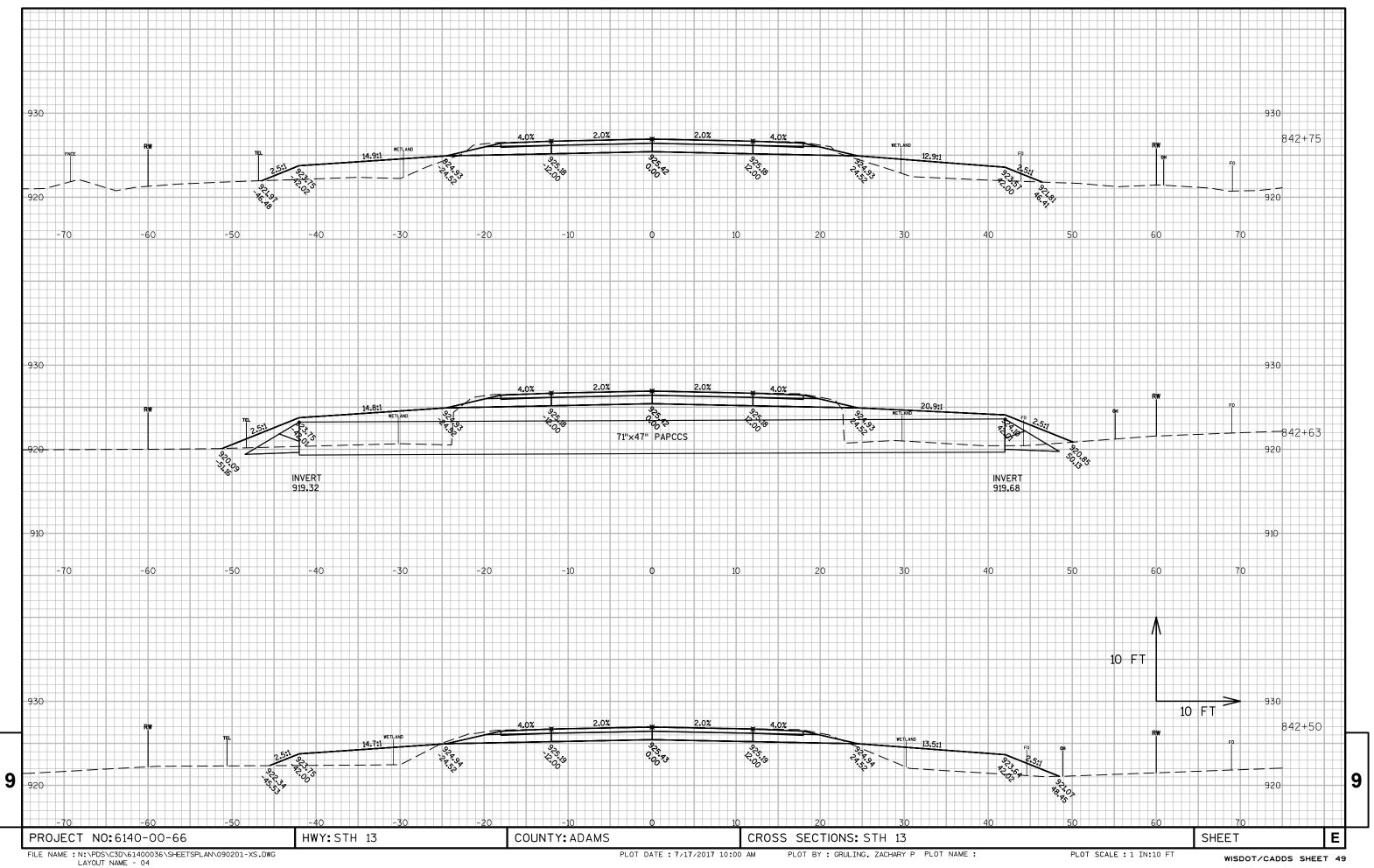
STH 13 RT Lane Shift								
			Cut	Fill	Cumulative	Cumulative	Net	
Station	Cut Area	Fill Area	Volume	Volume	Cut	Fill	Volume	
	SF	SF	CY	CY	CY	CY	CY	
841+50	0.0	0.4	-	-	-	-	-	
841+75	0.0	3.3	0.00	1.71	0.00	1.71	-1.71	
842+00	0.0	4.1	0.00	3.43	0.00	5.14	-5.14	
842+25	0.0	3.3	0.00	3.43	0.00	8.56	-8.56	
842+50	0.0	3.0	0.00	2.92	0.00	11.48	-11.48	
842+63	0.0	2.9	0.00	1.42	0.00	12.90	-12.90	
842+75	0.0	3.0	0.00	1.31	0.00	14.21	-14.21	
843+00	0.0	4.1	0.00	3.29	0.00	17.50	-17.50	
843+25	0.0	4.7	0.00	4.07	0.00	21.57	-21.57	
843+50	0.0	3.4	0.00	3.75	0.00	25.32	-25.32	
843+75	0.0	0.4	0.00	1.76	0.00	27.08	-27.08	

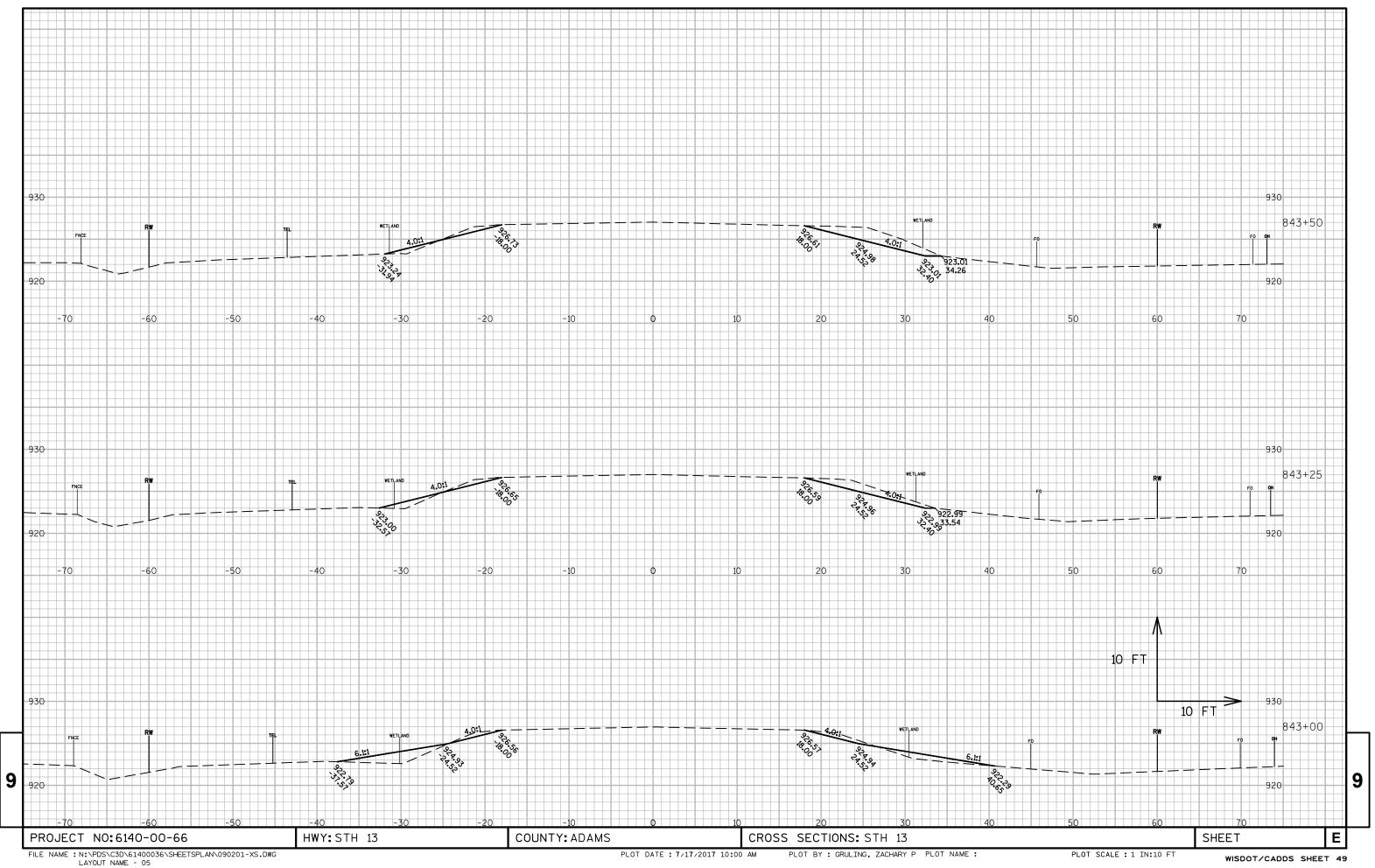
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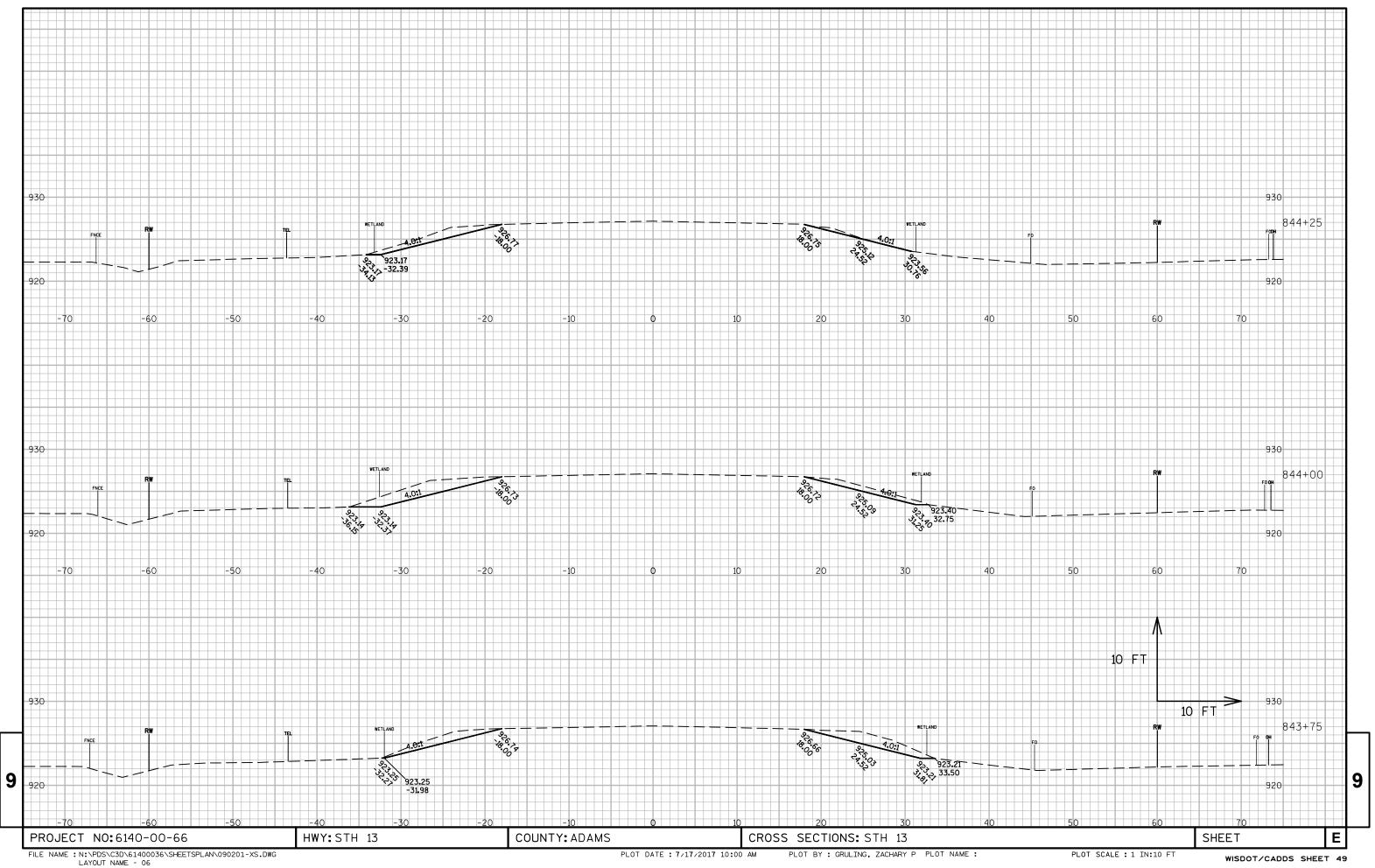


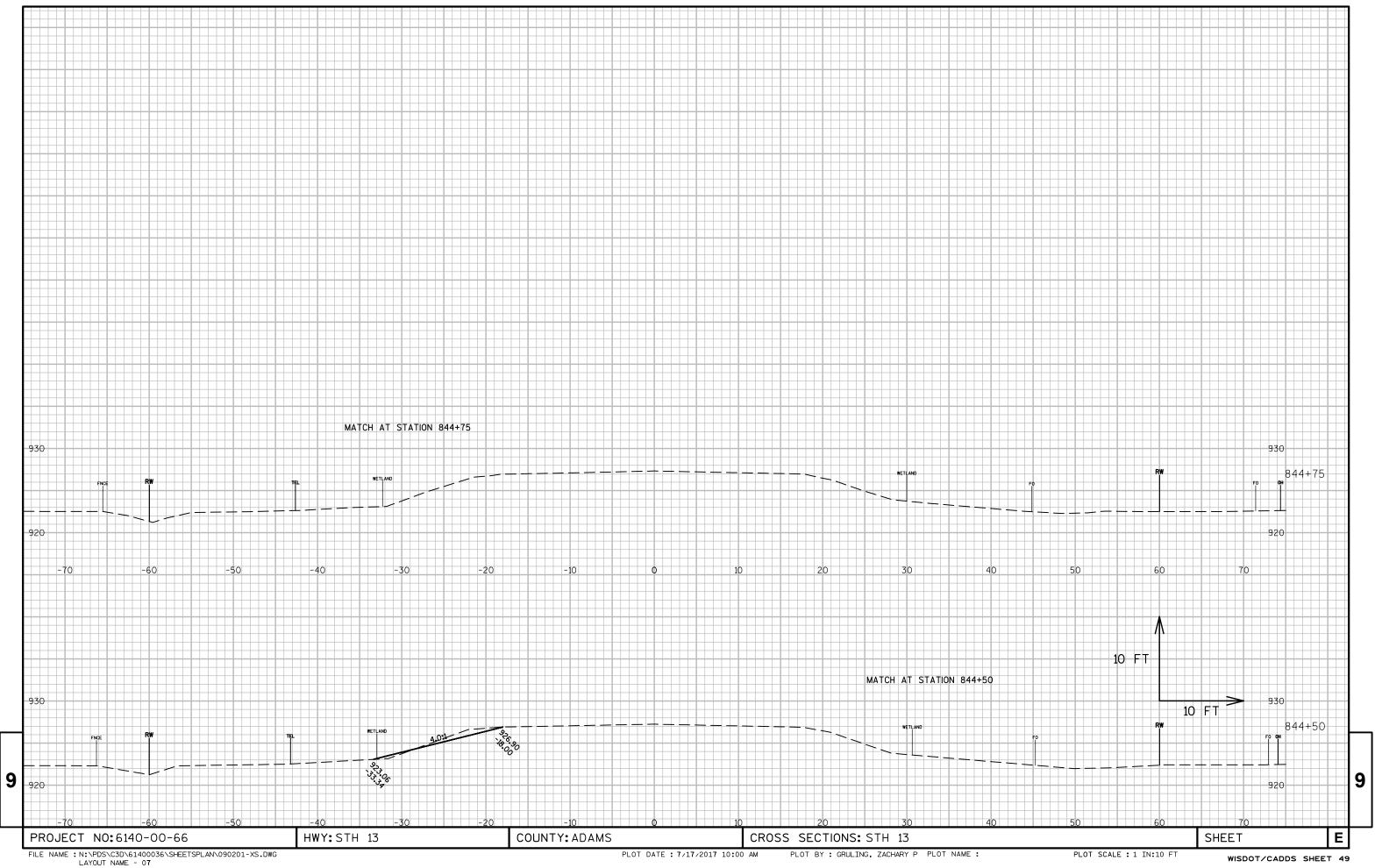


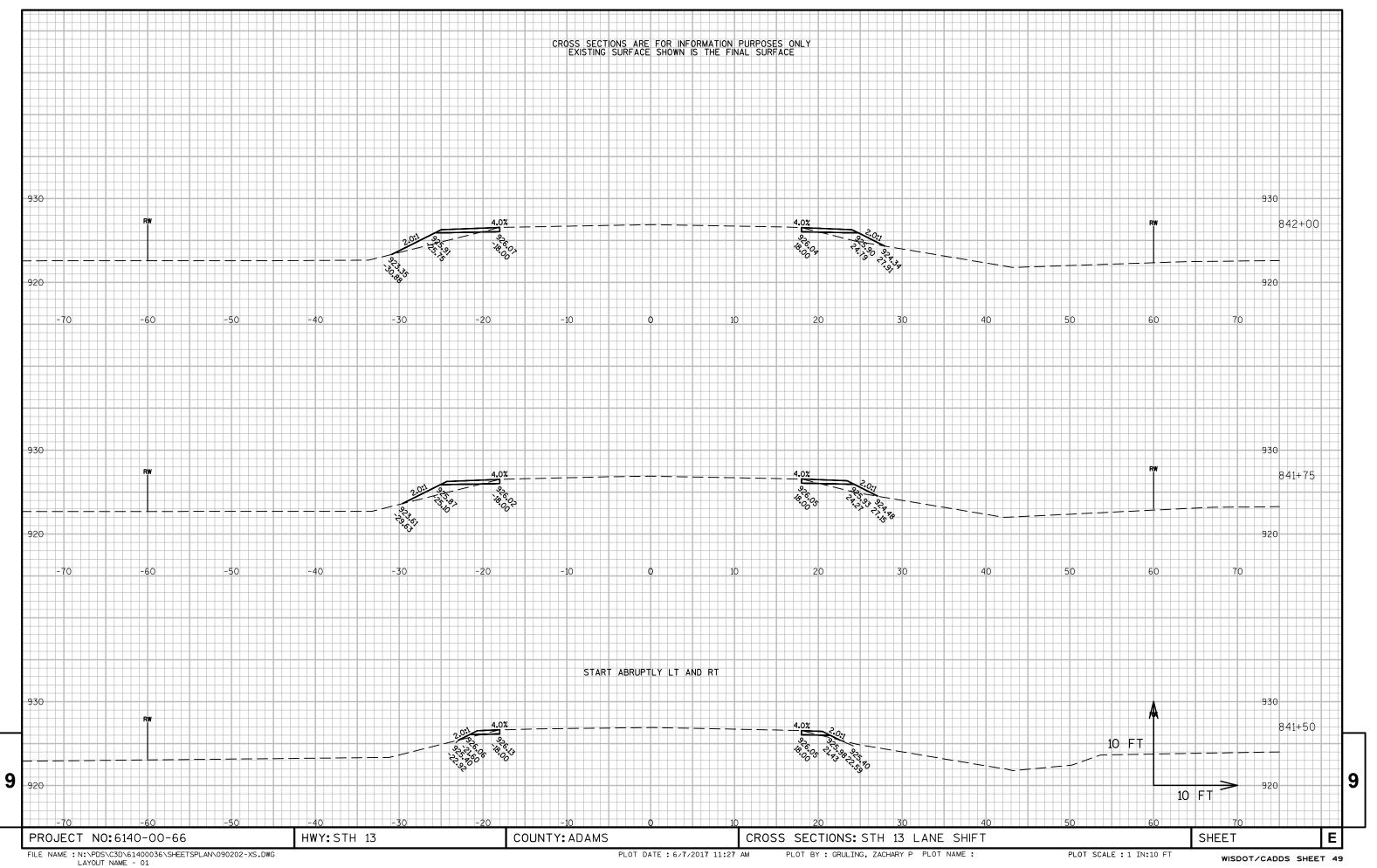


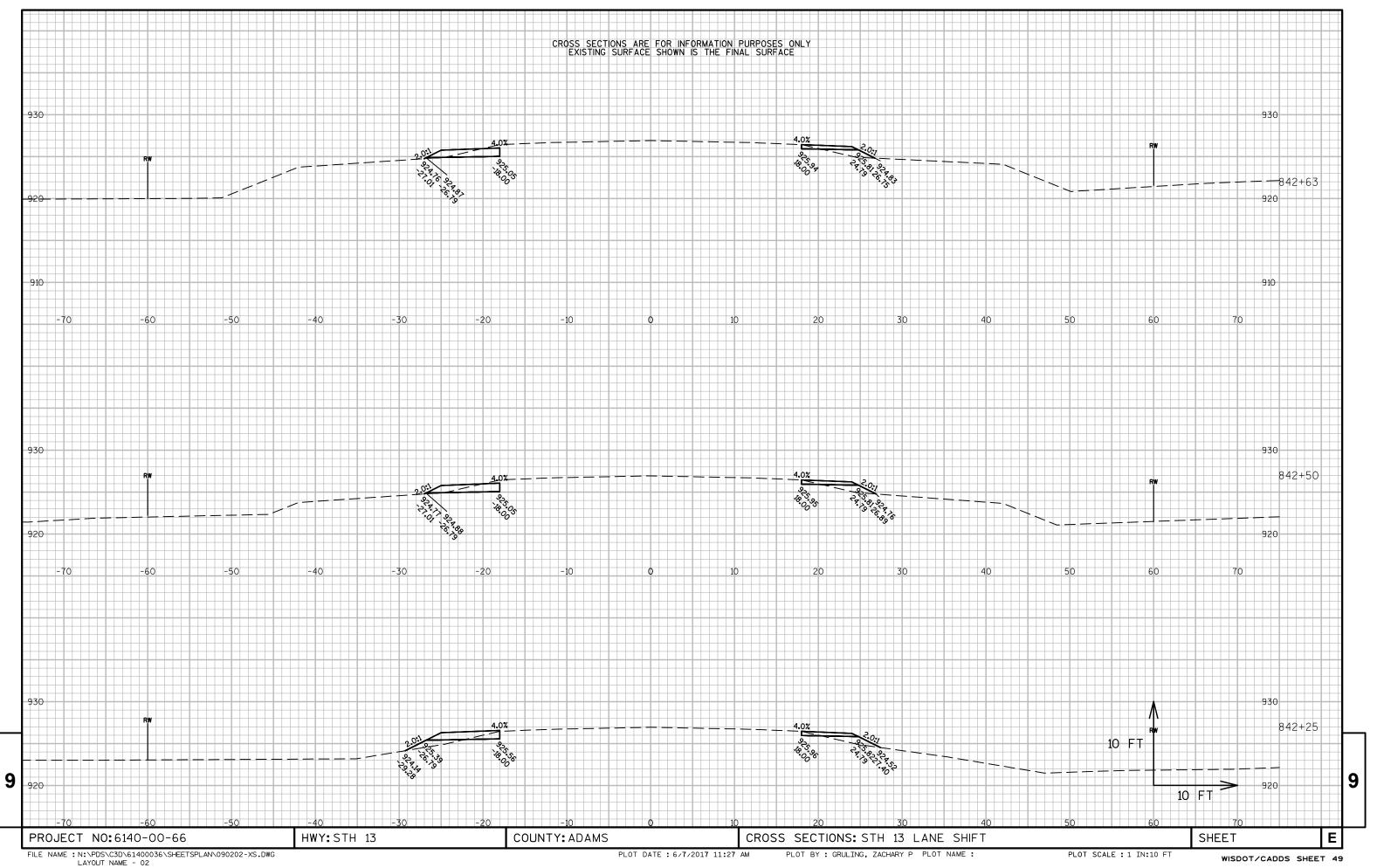


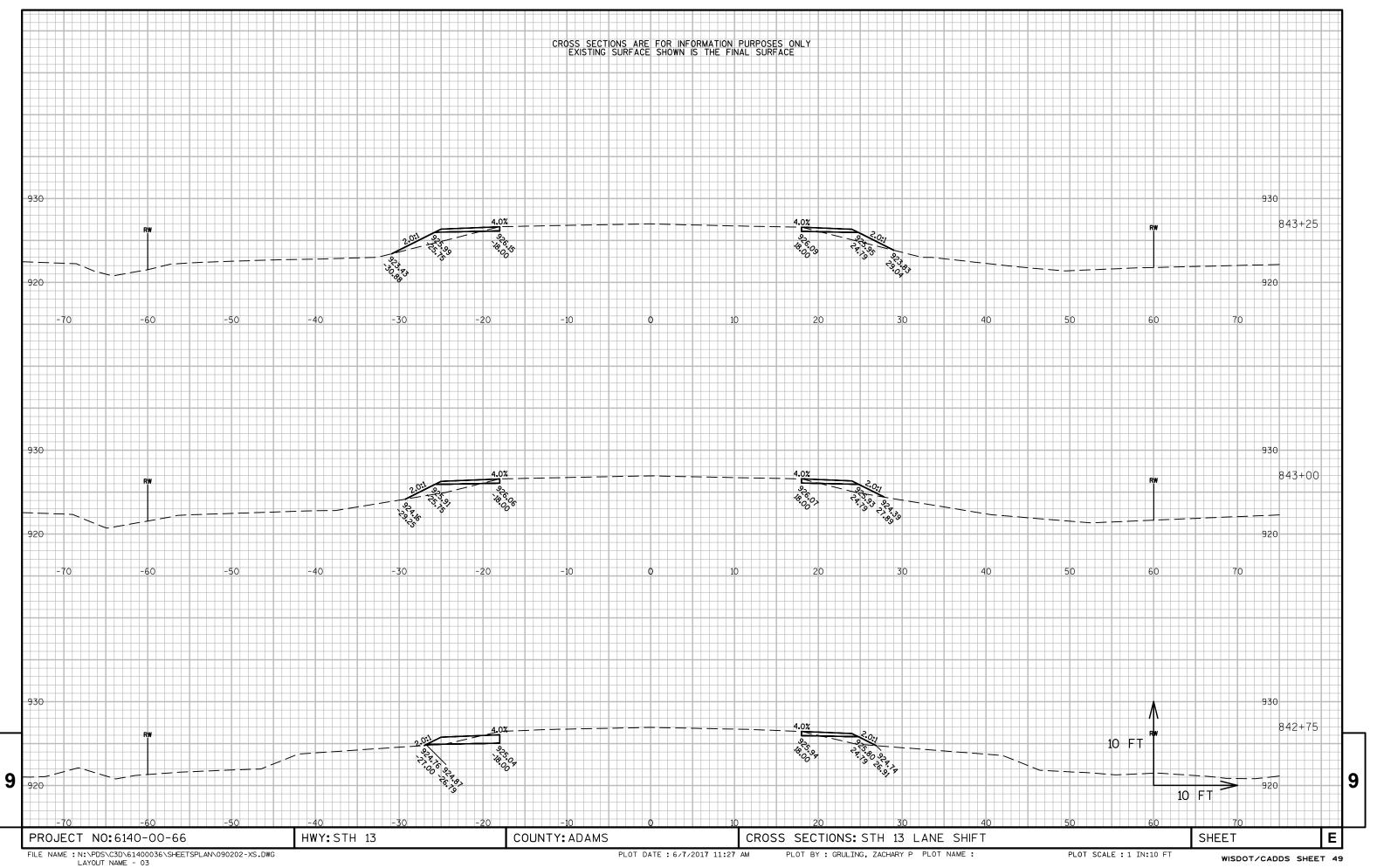


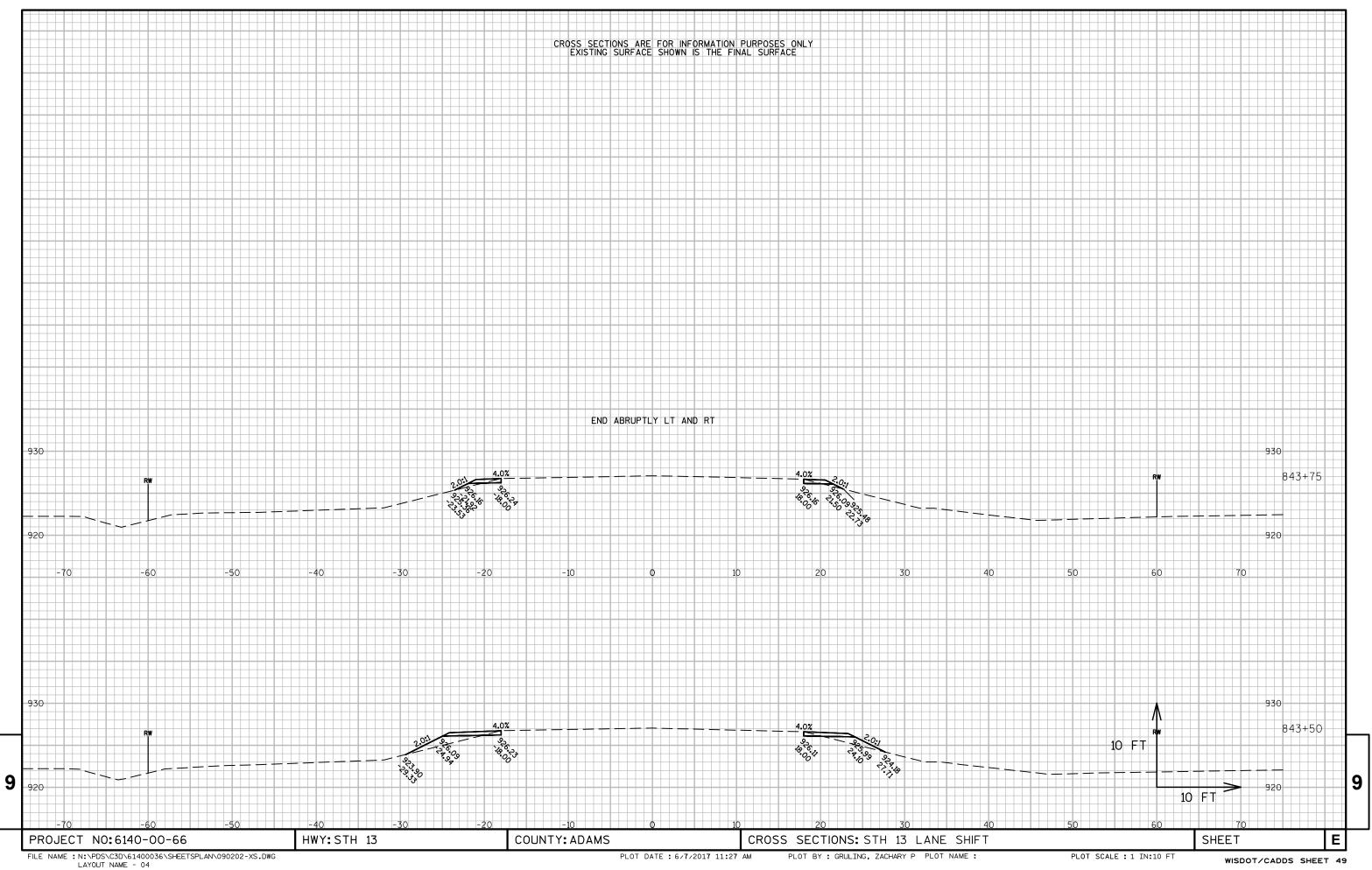














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