MAY 2017

ORDER OF SHEETS

Section No. 1

Section No. 4

Section No. 5

Section No. 9

TOTAL SHEETS = 134

PLAN

П	CORPORATE LIMITS	/////
	PROPERTY LINE	
	LOT LINE LIMITED HIGHWAY EASEMENT EXISTING RIGHT OF WAY PROPOSED OR NEW R/W LINE	
	SLOPE INTERCEPT	
	REFERENCE LINE	,
	EXISTING CULVERT PROPOSED CULVERT (Box or Pipe)	
	COMBUSTIBLE FLUIDS	-caution
	MARSH AREA	# # # #

WOODED OR SHRUB AREA

DESIGN DESIGNATION

A.A.D.T. 2017 =

A.A.D.T. 2037 =

D.H.V.

DESIGN SPEED

CONVENTIONAL SYMBOLS

= 375

= 60/40 = 4.5%

= 40 M.P.H. = 37,000

GRADE LINE

ORIGINAL GROUND

MARSH OR ROCK PROFILE

(To be noted as such)

SPECIAL DITCH

GRADE ELEVATION

CULVERT (Profile View)

UTILITIES

ELECTRIC

FIBER OPTIC

GAS

SANITARY SEWER

STORM SEWER

TELEPHONE

WATER

UTILITY PEDESTAL

POWER POLE

TELEPHONE OF TELEPHONE OF TELEPHONE

TELEPHONE OF TELEPHO

PROFILE

Typical Sections and Details (Includes Erosion Control Plan)

Estimate of Quantitles
Miscellaneous Quantitles

Computer Earthwork Data

Right of Way Plat

Plan and Profile

Cross Sections

STATE OF WISCONSIN **DEPARTMENT OF TRANSPORTATION**

PLAN OF PROPOSED IMPROVEMENT

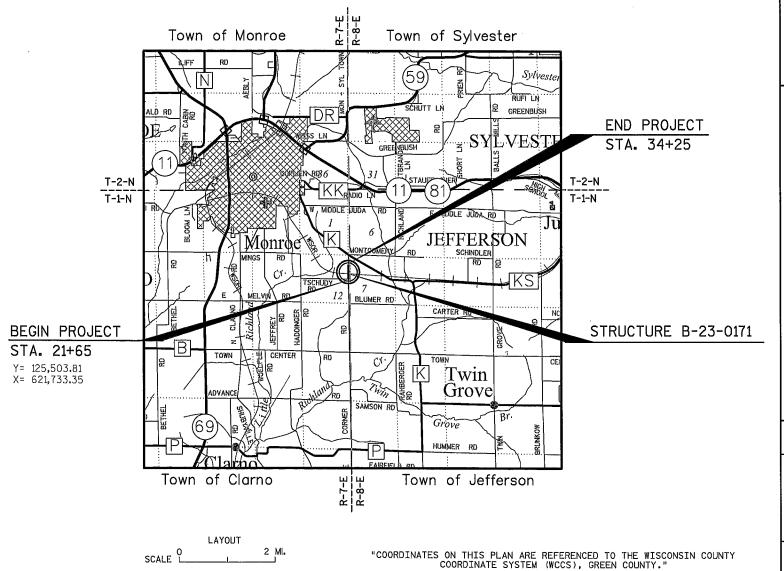
STATE PROJECT FEDERAL PROJECT PROJECT CONTRACT 5687-00-72

TOWNS OF JEFFERSON AND CLARNO, FIVE CORNER ROAD

(WSOR RAILROAD BRIDGE B-23-0171)

TOWN ROAD
GREEN COUNTY

5687-00-72



ACCEPTED FOR

1/17/2017 Just Dun

ACCEPTED FOR

TOWN of JEFFERSON

1/16 17 Thomas Man Co

ACCEPTED FOR

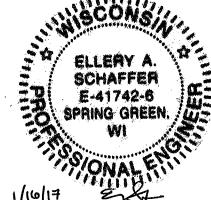
TOWN of CLARNO

1/18/11 Million Martay

ORIGINAL PLANS PREPARED BY

JEVELL associates engineers, inc

Engineers - Architects - Surveyors



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

REPARED BY

Surveyor JEWELL ASSOCIATES ENGINEERS, INC

esigner JEWELL ASSOCIATES ENGINEERS, INC.

anagement Consultant KL ENGINEERING, INC.

APPROVED FOR THE DEPARTMENT

(Management Konsultant Signature)

FILE NAME : S:\PROJECTS\K19180 FIVE CORNER ROAD\SHEETSPLAN\TITLE SHEET.DWG

PLOT DATE: 12/29/2016 1:38 PM

TOTAL NET LENGTH OF CENTERLINE = 0.239 MI.

PLOT BY : STRINE, THERESA

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

LIST OF STANDARD ARREVIATIONS

	LIST	OF STANI	DAKD ARRKENIA III	<u> </u>	
ABUT	Abutment	INV	Invert	SALV	Salvaged
AC .	Acre	IP	Iron Pipe or Pin	SAN S	Sanitary Sewer
AGG	Aggregate	IRS	Iron Rod Set	SEC	Section
AΗ	Ahead	JT	Joint	SHLDR	Shoulder
<	Angle	JCT	Junction	SHR	Shrinkage
ASPH	Asphaltic	LHF	Left-Hand Forward	SW	Sidewalk
AVG	Average	L	Length of Curve	S	South
ADT	Average Daily Traffic	LIN FT or LF	Linear Foot	SQ	Square
BAD	Base Aggregate Dense	LC	Long Chord of Curve	SF or SQ FT	Square Feet
3K	Back	MH	Manhole	SY or SQ YD	Square Yard
3F	Back Face	МВ	Mailbox	STD	Standard
3M	Bench Mark	ML or M/L	Match Line	SDD	Standard Detail Drawing
3R	Bridge	N N	North	STH	State Trunk Highways
C or C/L	Center Line	Y	North Grid Coordinate	STA	Station
		OD	Outside Diameter	SS	Storm Sewer
DC DTU	Center to Center				
CTH	County Trunk Highway	PLE	Permanent Limited	SG	Subgrade
CR	Creek	DT	Easement	SE	Superelevation
CR	Crushed	PT	Point	SL or S/L	Survey Line
CY or CU YD		PC	Point of Curvature	SV	Septic Vent
CP	Culvert Pipe	PI	Point of Intersection	T	Tangent
C & G	Curb and Gutter	PRC	Point of Reverse Curvature	TEL	Telephone
)	Degree of Curve	PT	Point of Tangency	TEMP	Temporary
ΝV	Design Hour Volume	POC	Point On Curve	TI	Temporary Interest
DIA	Diameter	POT	Point on Tangent	TLE	Temporary Limited
	East	PVC	Polyvinyl Chloride		Easement
<	East Grid Coordinate	PCC	Portland Cement Concrete	t	Ton
ELEC	Electric (al)	LB	Pound	T or TN	Town
EL or ELEV	Elevation ´	PSI	Pounds Per Square Inch	TRANS	Transition
ESALS	Equivalent Single Axle	PE	Private Entrance	TL or T/L	Transit Line
	Loads	R	Radius	T	Trucks (percent of)
BS	Excavation Below Subgrade	RR	Railroad	TYP	Typical
F	Face to Face	R	Range	UNCL	Unclassified
Ė	Field Entrance	RL or R/L	Reference Line	UG	Underground Cable
-	Fill	RP RP	Reference Point	USH	United States Highway
-G	Finished Grade	RCCP	Reinforced Concrete	VAR	Variable
L or F/L	Flow Line	NCCI	Culvert Pipe	V	Velocity or Design Spee
T	Foot	REQ'D	Required	VERT	Vertical
TG		RES	Residence or Residential	VERT	
	Footing				Vertical Curve
SN.	Grid North	RW	Retaining Wall	VOL	Volume
HT.	Height	RT	Right	WM	Water Main
CWT	Hundredweight	RHF	Right—Hand Forward	WV	Water Valve
HYD	Hydrant	R/W	Right-of-Way	W	West
NL	Inlet	R	River	WB	Westbound
D	Inside Diameter	RD	Road	YD	Yard
		RDWY	Roadway		

GENERAL NOTES

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

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE, AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS COMMON

DISTURBED AREAS SHOWN WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE FERTILIZED (TYPE B), SEEDED (USE SEED MIX NO. 20) AND EROSION MAT CLASS I TYPE A OR MULCHED AS DIRECTED

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

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

ENGINEER IN THE FIELD.

FILL EXPANSION IS VARIABLE AND IS ESTIMATED AT 25%.

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

3½ INCHES OF HMA PAVEMENT 4 LT 58-28 S SHALL BE CONSTRUCTED WITH A 1½—INCH UPPER LAYER AND 1¾—INCH LOWER LAYER. THE NOMINAL SIZE OF AGGREGATE USED FOR THE LOWER LAYER SHALL BE 12.5 MM.

REMAIN IN PLACE SHALL REQUIRE A SAWCUT MEETING THE APPROVAL OF THE

BE ADJUSTED TO FIT FIFLD CONDITIONS

THE FIELD PRIOR TO PLACEMENT

CURVE DATA IS BASED ON THE ARC DEFINITION.

HMA PAVEMENT 4 LT 58-28 S QUANTITIES WERE CALCULATED 115 LB/SY/IN.

THE EXACT LOCATION OF PRIVATE AND FIELD ETRANCES TO BE DETERMINED BY THE

ALL RADII DIMENSIONS ON THE PLAN ARE GIVEN TO THE EDGE OF ASPHALT (SIDEROADS/PRIVATE ENTRANCE (ASPHALT)) AND EDGE OF FINISHED SHOULDER FOR BASE AGGRÉGATE DENSE FOR PRIVATE ENTRANCES/FIELD ENTRANCES.

EXCAVATION. EXACT LOCATIONS OF EBS WILL BE DETERMINED BY THE ENGINEER.

BY THE ENGINEER IN THE FIELD.

EROSION MAT CLASS I TYPE A OR MULCH ALL SLOPES AS DIRECTED BY THE

REMOVAL OF ASPHALTIC SURFACES WHERE AN ABUTTING ASPHALTIC SURFACE IS TO ENGINEER IN THE FIELD.

INLET AND OUTLET ELEVATIONS FOR CULVERT PIPES AS SHOWN ON THE PLAN MAY

THE LOCATION OF ALL PERMANENT SIGNING SHALL BE VERIFIED BY THE ENGINEER IN

CONTACTS

DESIGN CONSULTANT:

JEWELL ASSOCIATES ENGINEERS. INC. 560 SUNRISE DRIVE SPRING GREEN, WI 53588 ATTN: ELLERY SCHAFFER, P.E. PH: (608) 588-7484 CELL: (608) 459-6027 EMAIL: ellery.schaffer@jewellassoc.com

TOWN OF JEFFERSON:

HARVEY MANDEL, CHAIRMAN W3227 MIDDLE JUDA ROAD P.O. BOX 2 JUDA, WI 53550 PH: (608) 934-5661

TOWN OF CLARNO:

NATHAN HARTWIG, CHAIRMAN W5663 COUNTY HIGHWAY P MONROE, WI 53566 PH: (608) 325-4273 EMAIL: townofclarno@tds.net

DNR LIAISON:

STATE OF WISCONSIN DNR SERVICE CENTER 3911 FISH HATCHERY ROAD FITCHBURG, WI 53711 ATTN: LAURA BUB PH: (608) 275-3485 E-MAlL: Íaura.bub@wisconsin.gov

GREEN COUNTY HIGHWAY:

JEFF WUNSCHEL, COMMISSIONER 2813 6TH STREET P.O. BOX 259 MONROE, WI 53566 PH: (608) 328-9411 E-MAIL: jwunschel@greencountywi.org

WISCONSIN & SOUTHERN RAILROAD: ROGER SCHAALMA

1890 EAST JOHNSON STREET MADISON, WI 53704 PH: (608) 620-2044 EMAIL: rschaalma@watcocompanies.com

UTILITIES

ELECTRIC:

ALLIANT ENERGY ATTN: JASON HOGAN 4902 N BILTMORF LANE MADISON, WI 53718 OFFICE: (608) 458-4871 CELL: (608) 395-7395

EMAIL: jasonhogan@alliantenergy.com

TELEPHONE:

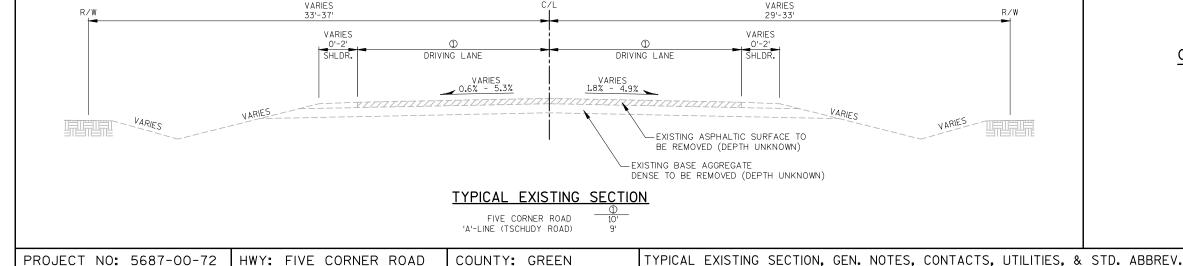
TDS TELECOM ATTN: MIKE HAMMEL 827 16TH AVE MONROE, WI 53566 PH: (608) 328-5262 EMAIL: Michael.Hammel@TDSTelecom.com



*DENOTES UTILITY IS NOT A MEMBER OF DIGGERS HOTLINE

ORDER OF SECTION 2 SHEETS:

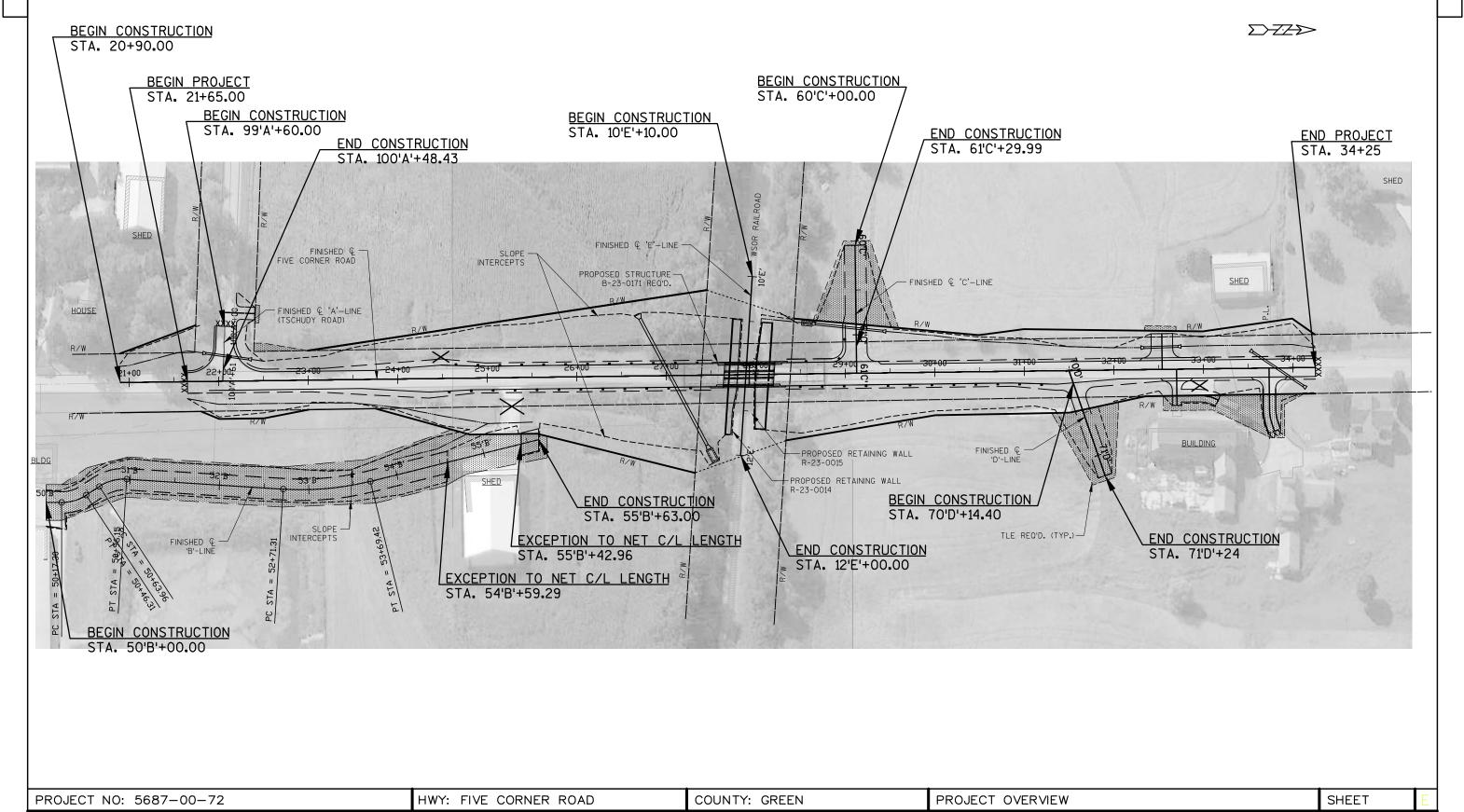
- WRITTEN MATERIAL (INCLUDES TYPICAL EXISTING SECTION)
- PROJECT OVERVIEW
- TYPICAL FINISHED SECTIONS
- CONSTRUCTION DETAILS
- EROSION CONTROL AND DRAINAGE
- PERMANENT SIGNING
- ALIGNMENT LAYOUT
- CONTROL POINT TIES



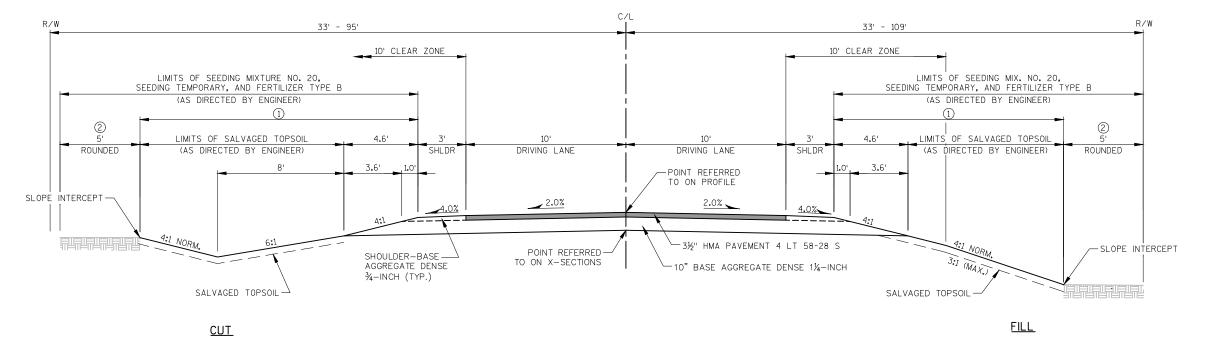
SHEET

Ε



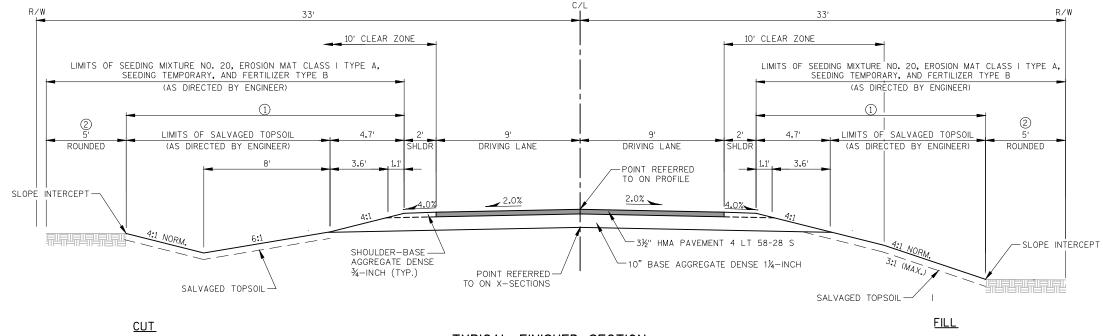






1 LIMITS OF EROSION MAT CLASS I TYPE A OR MULCHING (AS DIRECTED BY ENGINEER)

② LIMITS MULCHING (AS DIRECTED BY ENGINEER)



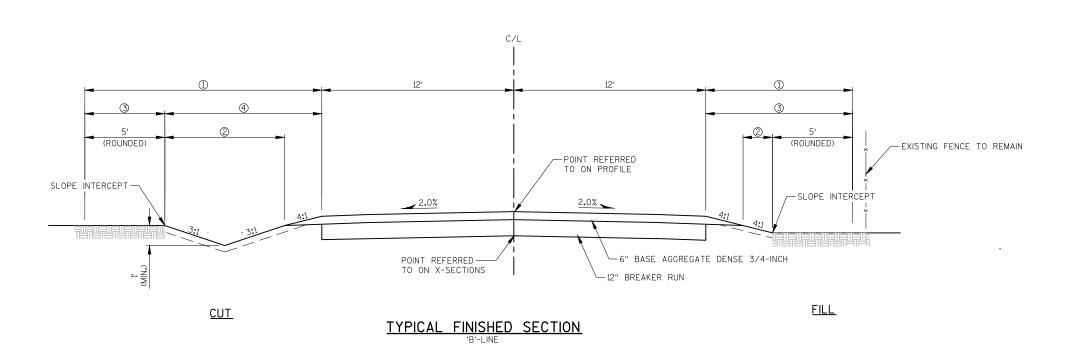
TYPICAL FINISHED SECTION

TYPICAL FINISHED SECTION 'A'-LINE (TSCHUDY ROAD)

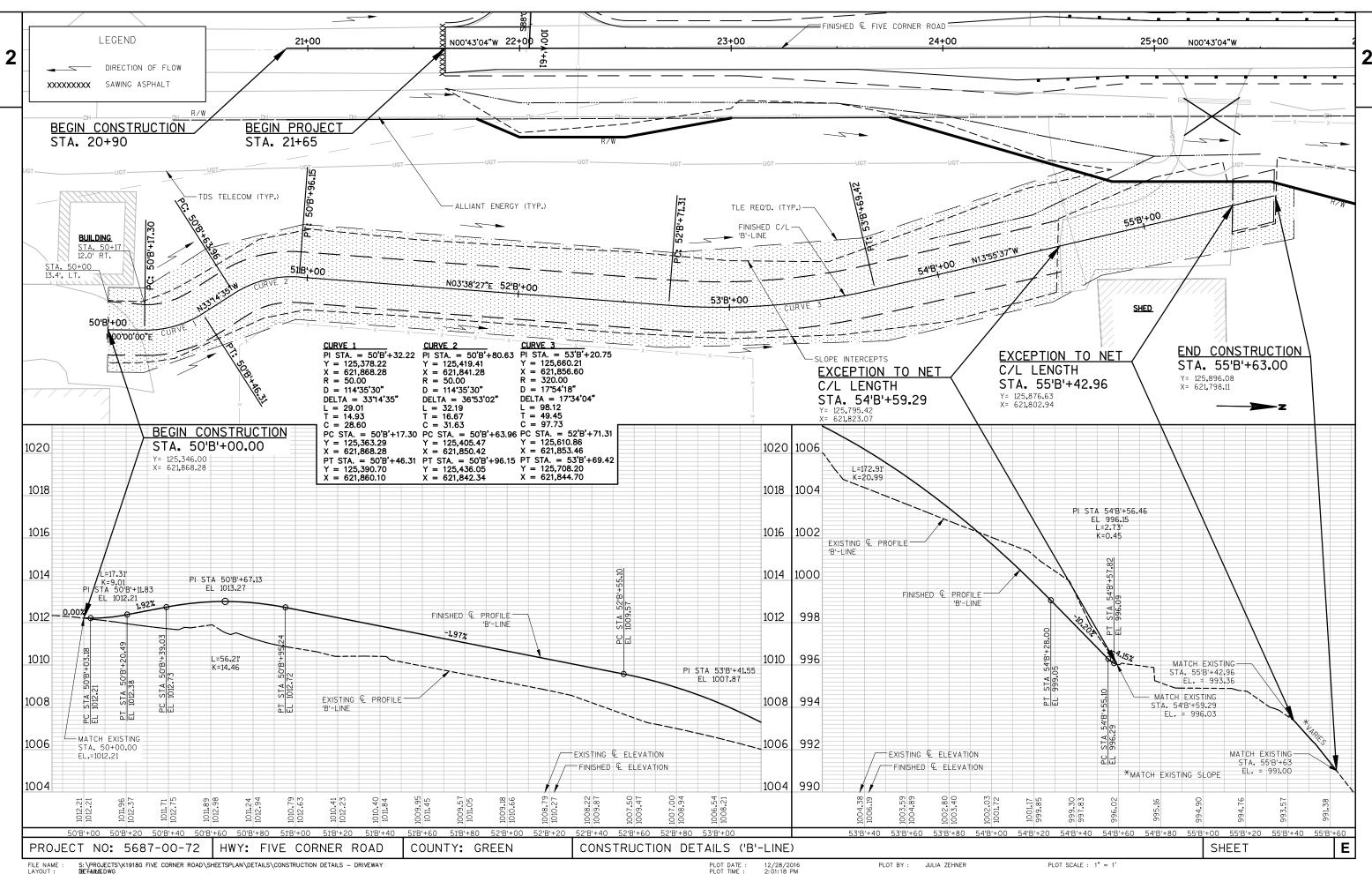
- ① LIMITS OF EROSION MAT CLASS I TYPE A OR MULCHING (AS DIRECTED BY ENGINEER)
- 2 LIMITS MULCHING (AS DIRECTED BY ENGINEER)

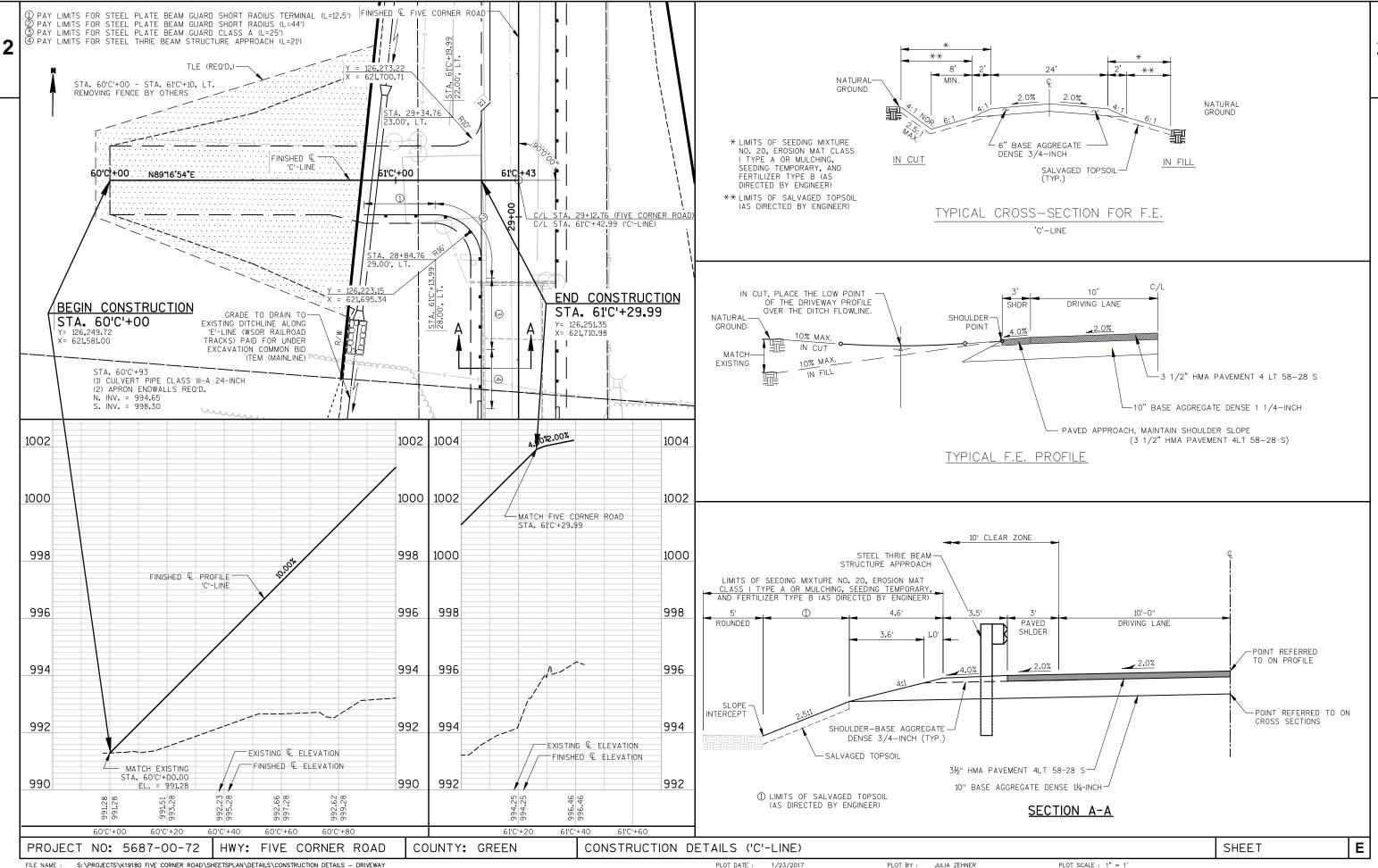
Ε HWY: FIVE CORNER ROAD SHEET PROJECT NO: 5687-00-72 COUNTY: GREEN FINISHED TYPICAL SECTIONS

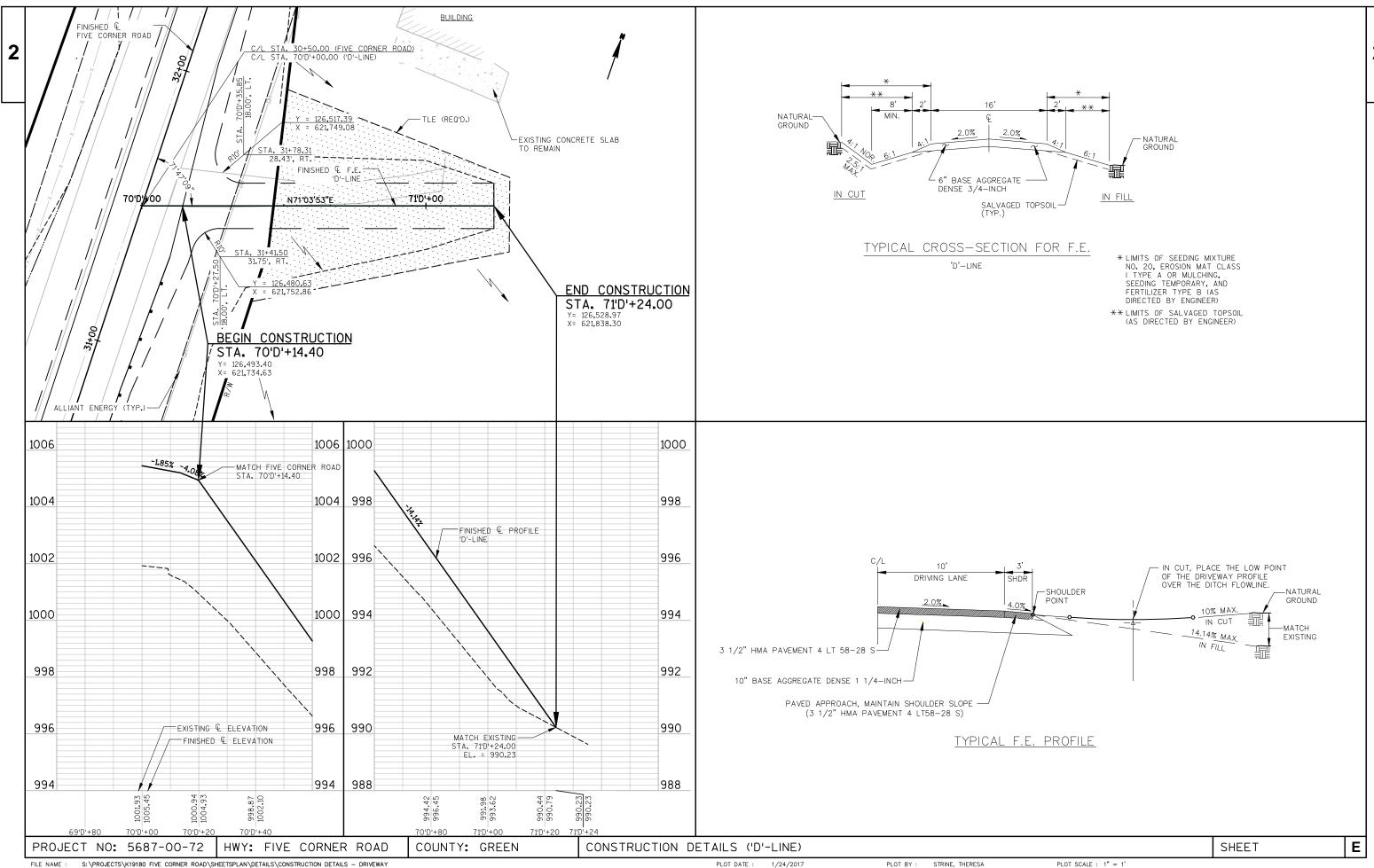
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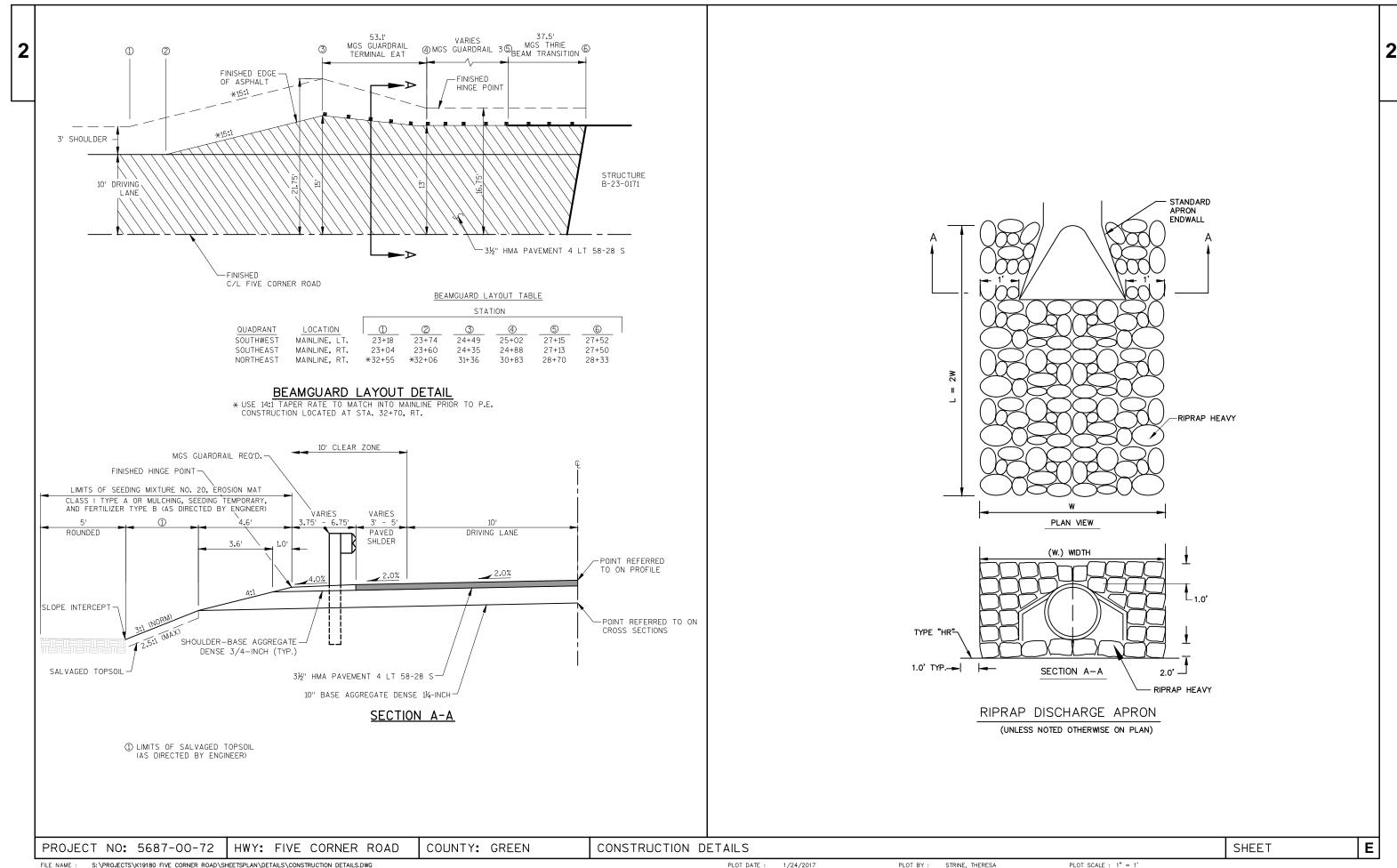


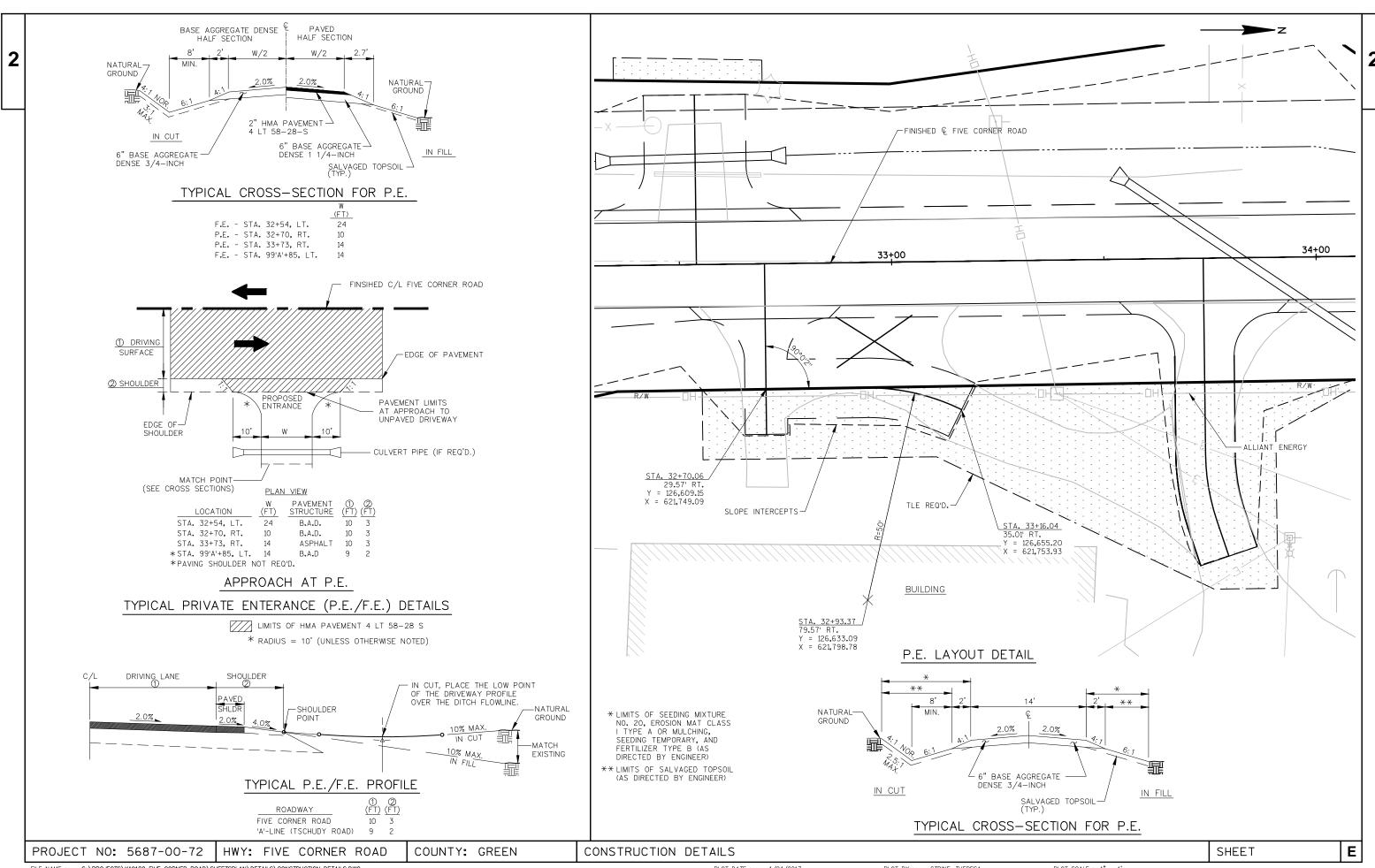
- ① LIMITS OF SEEDING MIXTURE NO. 20, SEEDING TEMPORARY, AND FERTILIZER TYPE B (AS DIRECTED BY ENGINEER)
- ② LIMITS OF SALVAGED TOPSOIL (AS DIRECTED BY ENGINEER)
- 3 LIMITS OF MULCHING (AS DIRECTED BY ENGINEER)
- (4) LIMITS OF EROSION MAT CLASS I TYPE A OR MULCHING (AS DIRECTED BY ENGINEER)

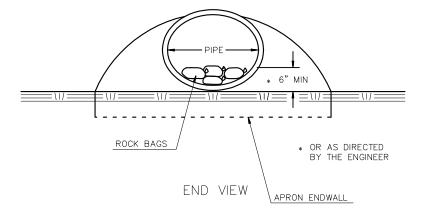


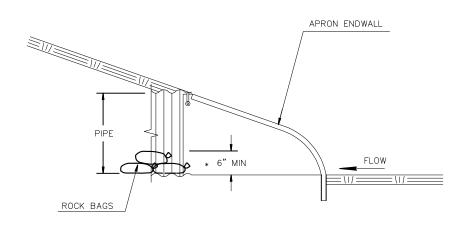












CULVERT PIPE CHECKS

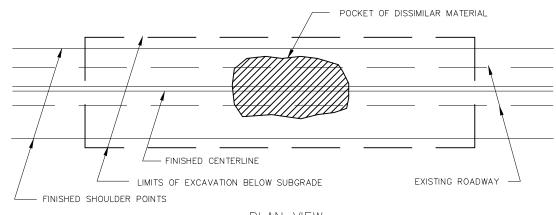
SIDE VIEW

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

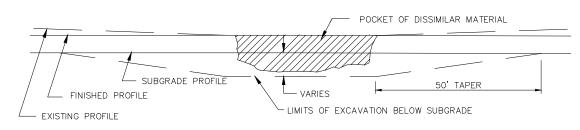
TOTAL PROJECT AREA= 3.46 ACRES TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 4.32 ACRES

COUNTY: GREEN

HWY: FIVE CORNER ROAD

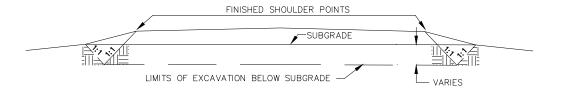


PLAN VIEW



PROFILE VIEW

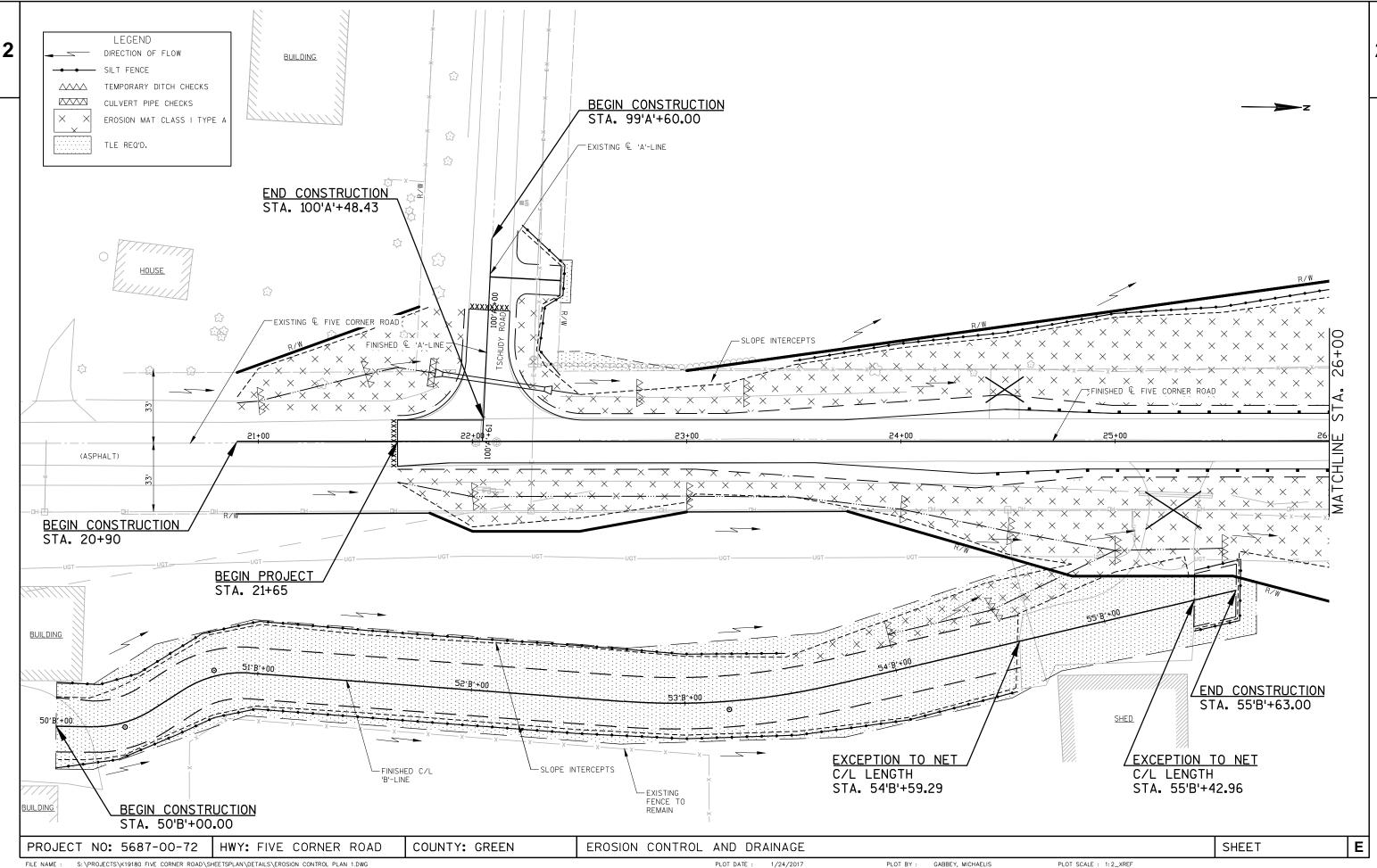
RURAL EXCAVATION BELOW SUBGRADE (E.B.S.)

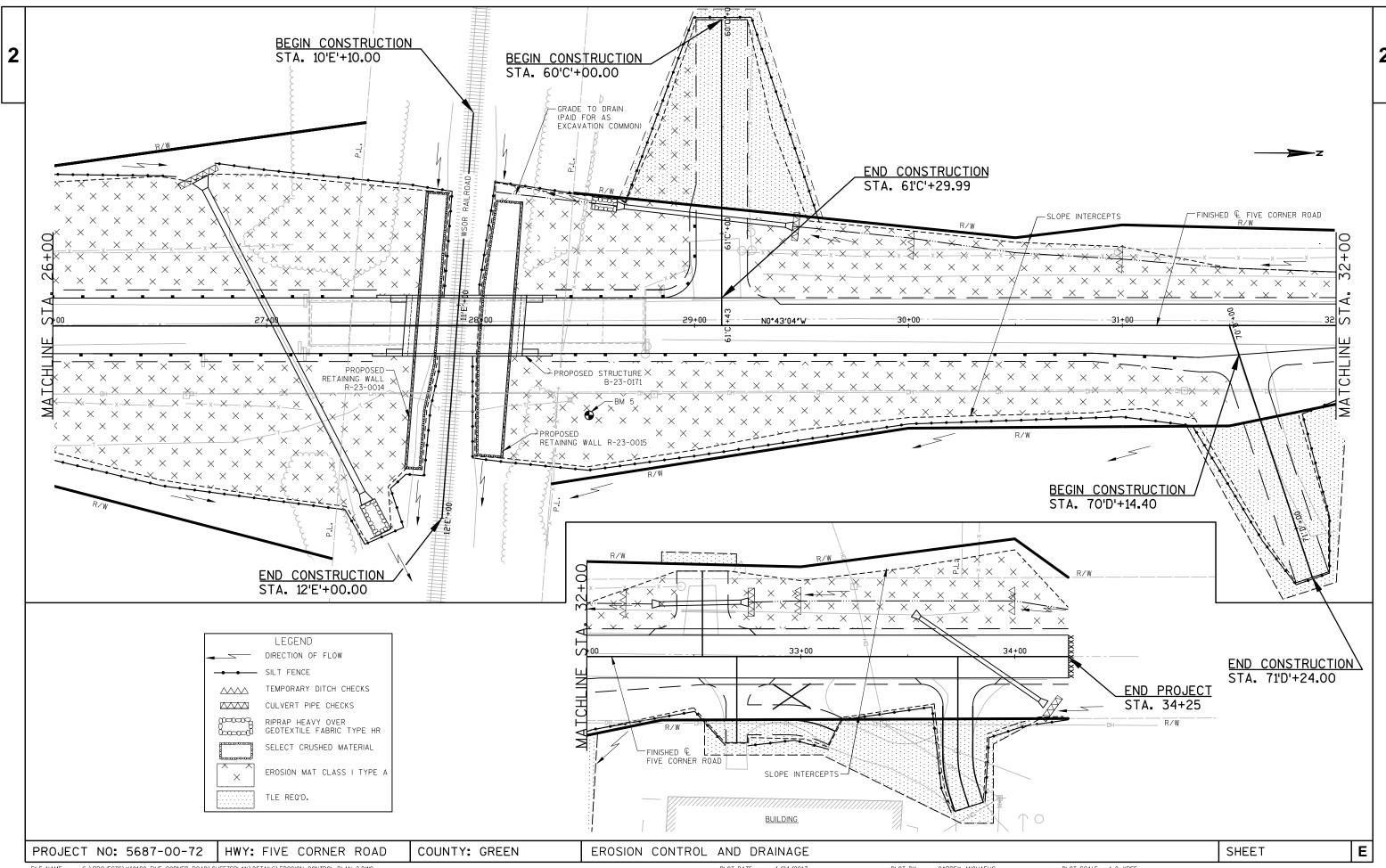


CROSS SECTION VIEW

- 1. EXACT LOCATION OF E.B.S. (EXCAVATION BELOW SUBGRADE) SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
- 2. E.B.S. AREA TO BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE ENGINEER. BACKFILL MUST BE HOMOGENEOUS WITH ADJOINING FILL MATERIAL.
- 3. THE FILL SECTION WITHIN 100' OF THE MOUTH OF THE CUT MUST BE KEPT 2' BELOW SUBGRADE UNTIL E.B.S. IS COMPLETED. LATERAL LIMITS OF EXCAVATION SHALL BE THE SUBGRADE SHOULDER POINTS.

12/27/2016 11: 24: 40 AM





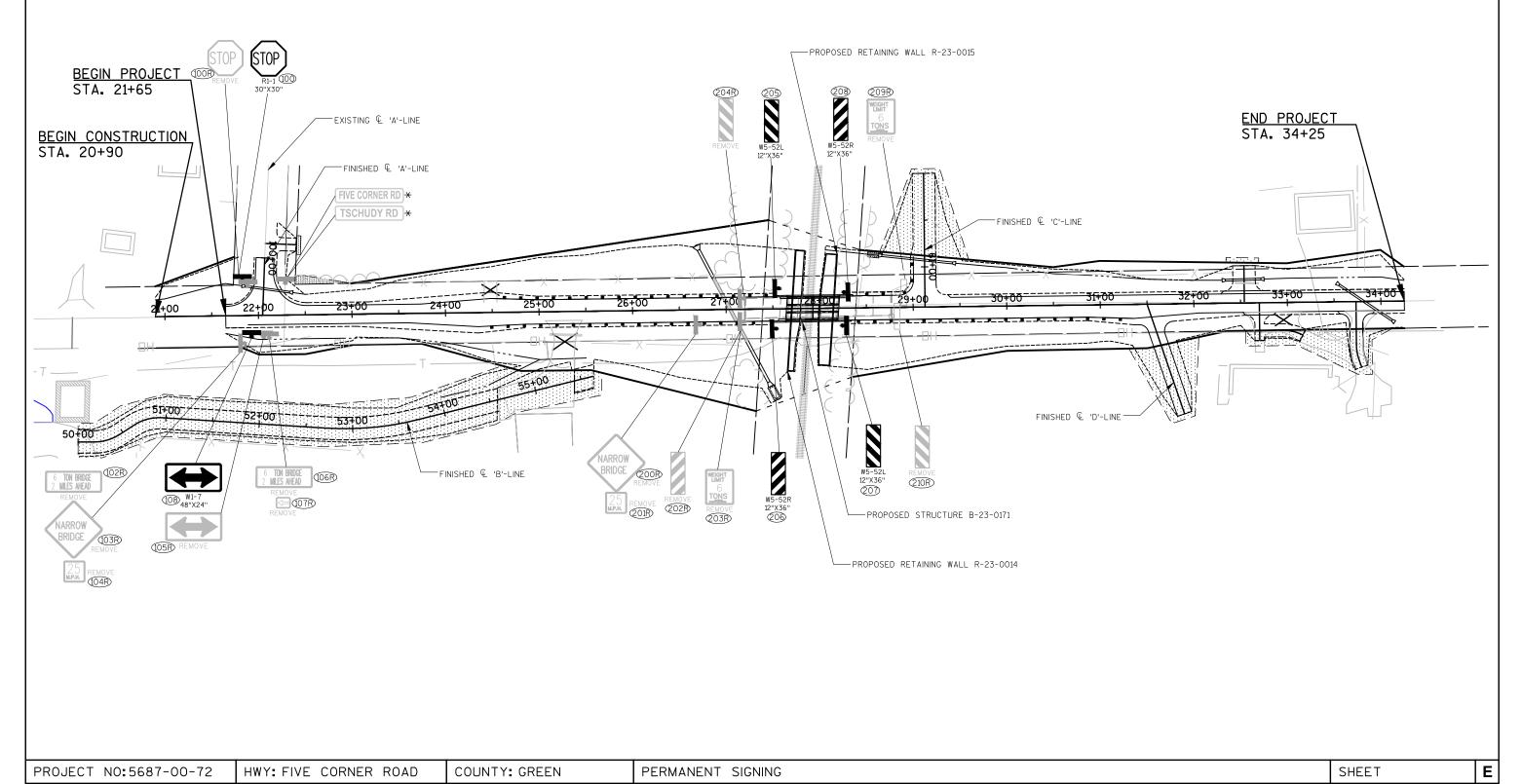
LEGEND

REMOVING SIGNS TYPE II/ REMOVING SMALL SIGN SUPPORTS

SIGNS REFLECTIVE F/H ON POSTS WOOD

* THE TOWN OF CLARNO WILL REMOVE TOWN ROAD SIGNS PRIOR TO CONSTRUCTION AND RE-ERECT POST CONSTRUCTION.

NOTE: THE FINAL LOCATION OF PERMANENT SIGNING SHALL BE VERIFIED BY THE ENGINEER IN THE FIELD.

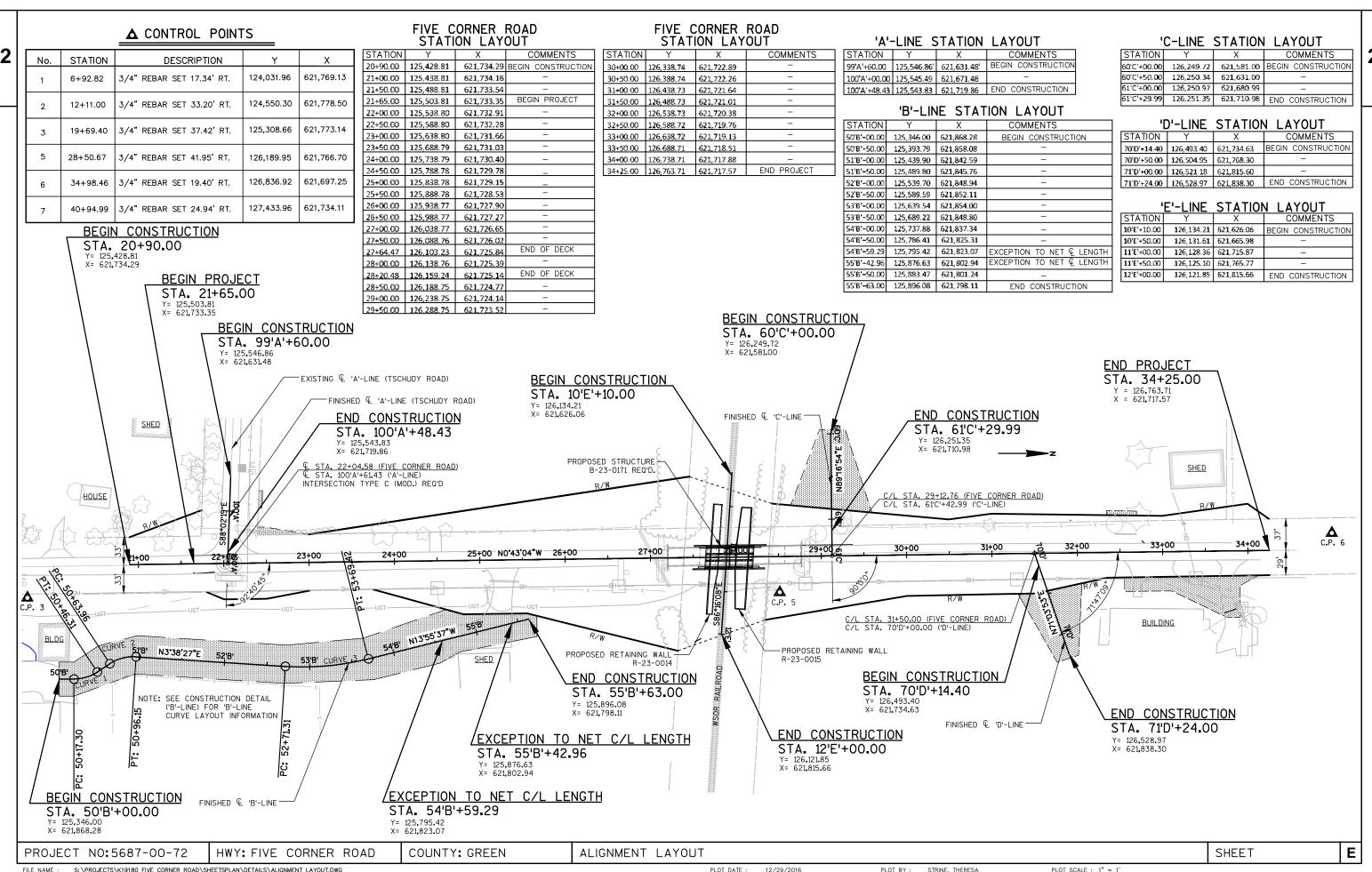


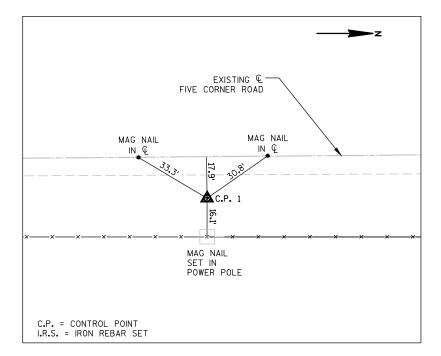
FILE NAME : S:\PROJECTS\K19180 FIVE CORNER ROAD\SHEETSPLAN\DETAILS\PERMANENT SIGNING.DWG

PLOT DATE : 12/28/2016 PLOT TIME : 2:25:43 PM PLOT BY: JULIA ZEHNER

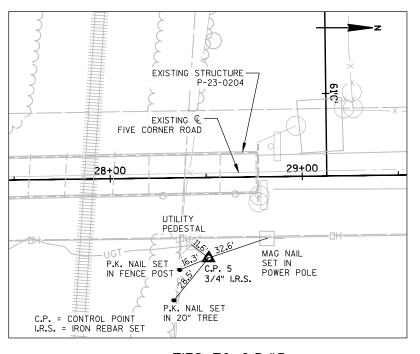
PLOT SCALE : 1" = 1'

2

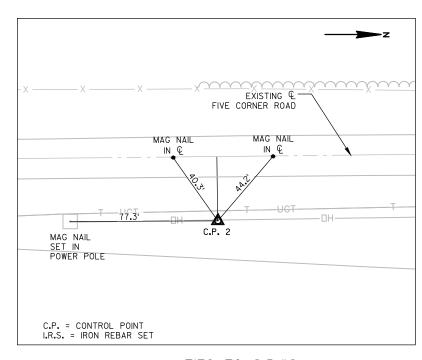




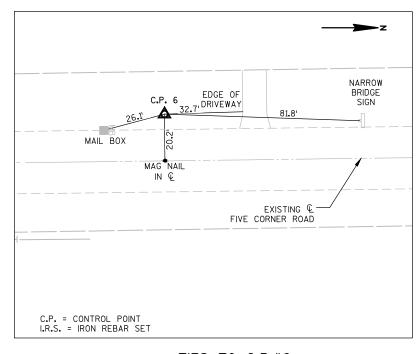
TIES TO C.P.#1
STA. 6+92.82; 17.34' RT.
Y = 124,031.96
X = 621,769.13



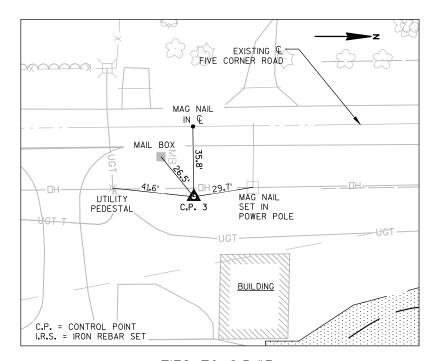
TIES TO C.P.#5 STA. 28+50.67; 41.95' RT. Y = 126,189.95



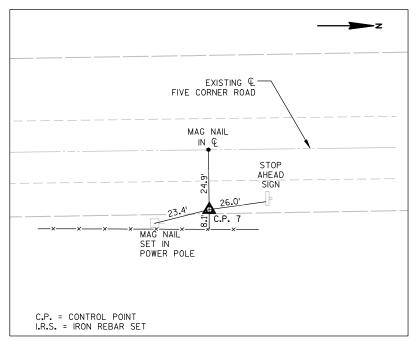
TIES TO C.P.#2 STA. 12+11.00; 33.20' RT. Y = 124,550.30 X = 621,778.50



TIES TO C.P.#6 STA. 34+98.46; 19.40' LT. Y = 126,836.92 X = 621,697.25



TIES TO C.P.#3 STA. 19+69.40; 37.42' RT. Y = 125,308.66 X = 621,773.14



TIES TO C.P.#7 STA. 40+94.99; 24.94' RT. Y = 127,433.96 X = 621,734.11

PROJECT NO:5687-00-72

HWY: FIVE CORNER ROAD

COUNTY: GREEN

CONTROL POINT TIES

SHEET

Ε

					5687-00-72	
Line	Item	Item Description	Unit	Total	Qty	
		·				
0010	201.0105	Clearing	STA	6.000	6.000	
0020	201.0120	Clearing	ID	10.000	10.000	
0030	201.0205	Grubbing	STA	6.000	6.000	
0040	201.0220	Grubbing	ID	17.000	17.000	
0050	203.0100	Removing Small Pipe Culverts	EACH	5.000	5.000	
0060	203.0200	Removing Old Structure (station) 01. Sta. 27+98	LS	1.000	1.000	
0070	203.0210.S	Abatement of Asbestos Containing Material (structure) 01. P-23-0204	LS	1.000	1.000	
0800	203.0225.S	Debris Containment (structure) 01. P-23-0204	LS	1.000	1.000	
0090	205.0100	Excavation Common	CY	1,150.000	1,150.000	
0100	206.1000	Excavation for Structures Bridges (structure) 01. B-23-0171	LS	1.000	1.000	
0110	208.0100	Borrow	CY	26,350.000	26,350.000	
0120	209.1100	Backfill Granular Grade 1	CY	375.000	375.000	
0130	210.1500	Backfill Structure Type A	TON	240.000	240.000	
0140	213.0100	Finishing Roadway (project) 01. 5687-00-72	EACH	1.000	1.000	
0150	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,180.000	1,180.000	
0160	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	3,000.000	3,000.000	
0170	311.0110	Breaker Run	TON	820.000	820.000	
0180	450.4000	HMA Cold Weather Paving	TON	710.000	710.000	
0190	455.0605	Tack Coat	GAL	180.000	180.000	
0200	460.2000	Incentive Density HMA Pavement	DOL	460.000	460.000	
0210	460.5224	HMA Pavement 4 LT 58-28 S	TON	710.000	710.000	
0220	502.0100	Concrete Masonry Bridges	CY	127.000	127.000	
0230	502.3200	Protective Surface Treatment	SY	160.000	160.000	
0240	502.3210	Pigmented Surface Sealer	SY	70.000	70.000	
0250	503.0136	Prestressed Girder Type I 36-Inch	LF	218.000	218.000	
0260	505.0400	Bar Steel Reinforcement HS Structures	LB	3,420.000	3,420.000	
0270	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	17,630.000	17,630.000	
0280	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	8.000	8.000	
0290	506.4000	Steel Diaphragms (structure) 02. B-23-0171	EACH	3.000	3.000	
0300	513.2001	Railing Pipe (structure) 01. R-23-0014	LF	33.000	33.000	
0310	513.2001	Railing Pipe (structure) 02. R-23-0015	LF	33.000	33.000	
0320	516.0500	Rubberized Membrane Waterproofing	SY	14.000	14.000	
0330	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	6.000	6.000	
0340	520.1036	Apron Endwalls for Culvert Pipe 36-Inch	EACH	2.000	2.000	
0350	520.3324	Culvert Pipe Class III-A 24-Inch	LF	158.000	158.000	
0360	520.3336	Culvert Pipe Class III-A 36-Inch	LF	160.000	160.000	
0370	521.0728	Pipe Arch Corrugated Steel 28x20-Inch	LF	68.000	68.000	
0380	521.1228	Apron Endwalls for Pipe Arch Steel 28x20-Inch	EACH	2.000	2.000	

0770

0780

643.0100

645.0120

					5687-00-72
Line	Item	Item Description	Unit	Total	Qty
0390	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	630.000	630.000
0400	604.0400	Slope Paving Concrete	SY	18.000	18.000
0410	604.0600	Slope Paving Select Crushed Material	SY	335.000	335.000
0420	606.0300	Riprap Heavy	CY	20.000	20.000
0430	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	470.000	470.000
0440	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0450	614.0200	Steel Thrie Beam Structure Approach	LF	21.000	21.000
0460	614.0305	Steel Plate Beam Guard Class A	LF	25.000	25.000
0470	614.0345	Steel Plate Beam Guard Short Radius	LF	44.000	44.000
0480	614.0390	Steel Plate Beam Guard Short Radius Terminal	EACH	1.000	1.000
0490	614.2300	MGS Guardrail 3	LF	651.000	651.000
0500	614.2500	MGS Thrie Beam Transition	LF	120.000	120.000
0510	614.2610	MGS Guardrail Terminal EAT	EACH	3.000	3.000
0520	616.0204	Fence Chain Link 4-FT	LF	182.000	182.000
0530	619.1000	Mobilization	EACH	1.000	1.000
0540	624.0100	Water	MGAL	40.000	40.000
0550	625.0500	Salvaged Topsoil	SY	10,700.000	10,700.000
0560	627.0200	Mulching	SY	23,900.000	23,900.000
0570	628.1504	Silt Fence	LF	3,600.000	3,600.000
0580	628.1520	Silt Fence Maintenance	LF	10,800.000	10,800.000
0590	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0600	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0610	628.2002	Erosion Mat Class I Type A	SY	11,150.000	11,150.000
0620	628.7504	Temporary Ditch Checks	LF	210.000	210.000
0630	628.7555	Culvert Pipe Checks	EACH	25.000	25.000
0640	629.0210	Fertilizer Type B	CWT	20.000	20.000
0650	630.0120	Seeding Mixture No. 20	LB	410.000	410.000
0660	630.0200	Seeding Temporary	LB	205.000	205.000
0670	630.0300	Seeding Borrow Pit	LB	260.000	260.000
0680	633.5100	Markers Row	EACH	30.000	30.000
0690	633.5200	Markers Culvert End	EACH	6.000	6.000
0700	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0710	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	2.000	2.000
0720	637.2210	Signs Type II Reflective H	SF	5.180	5.180
0730	637.2230	Signs Type II Reflective F	SF	20.000	20.000
0740	638.2602	Removing Signs Type II	EACH	14.000	14.000
0750	638.3000	Removing Small Sign Supports	EACH	10.000	10.000
0760	642.5001	Field Office Type B	EACH	1.000	1.000
0770	642.0400	Troffic Control (project) 04 FC07 00 70	EACH	1.000	1.000

EACH

SY

Traffic Control (project) 01. 5687-00-72

Geotextile Type HR

1.000

45.000

1.000

45.000

Estimate Of Quantities Page 3

					5687-00-72	
Line	Item	Item Description	Unit	Total	Qty	
0790	650.4500	Construction Staking Subgrade	LF	1,970.000	1,970.000	
0800	650.5000	Construction Staking Base	LF	1,970.000	1,970.000	
0810	650.6000	Construction Staking Pipe Culverts	EACH	5.000	5.000	
0820	650.6500	Construction Staking Structure Layout (structure) 01. B-23-0171	LS	1.000	1.000	
0830	650.6500	Construction Staking Structure Layout (structure) 02. R-23-0014	LS	1.000	1.000	
0840	650.6500	Construction Staking Structure Layout (structure) 03. R-23-0015	LS	1.000	1.000	
0850	650.9910	Construction Staking Supplemental Control (project) 01. 5687-00-72	LS	1.000	1.000	
0860	650.9920	Construction Staking Slope Stakes	LF	1,970.000	1,970.000	
0870	690.0150	Sawing Asphalt	LF	76.000	76.000	
0880	715.0502	Incentive Strength Concrete Structures	DOL	762.000	762.000	
0890	SPV.0165	Special 01. Wall Concrete Panel Mechanically Stabilized Earth LRFD/QMP **P**	SF	3,860.000	3,860.000	

ALL BID ITEMS ARE CATEGORY 010 UNLESS OTHERWISE NOTED

CLEARING & GRUBBING

		201.0105	201.0205	201.0120	201.0220
		CLEARING	GRUBBING	CLEARING	GRUBBING
STATION - STATION	LOCATION	(STA)	(STA)	(ID)	(ID)
21+00 - 25+00	MAINLINE	4	4	-	-
27+00 - 29+00	MAINLINE	2	2	-	-
30+97	MAINLINE, LT	-	-	5	5
32+72	MAINLINE, LT	-	-	5	5
32+95	MAINLINE, LT				7
	TOTALS =	6	6	10	17

REMOVING SMALL PIPE CULVERTS

		203.0100	
STATION - STATION	LOCATION	(EACH)	REMARKS
*21+85 - 22+52	MAINLINE, RT.	1	4" PVC, L=68"
25+23	MAINLINE, RT	1	24" CMP; L=34
27+04	MAINLINE	1	36" RCCP; L=7
32+54	MAINLINE, LT	1	12" CMP; L=26
33+82	MAINLINE	1	12" CMP; L=74

TOTAL = 5

*SAWCUTTING PIPE AND SALVAGING END CAP INCLUDED IN REMOVING SMALL PIPE CULVERT BID ITEM.

EARTHWORK SUMMARY

CATEGORY	STATION - STATION	LOCATION	(1) 205.0100 COMMON EXCAVATION CUT (CY)	AVAILABLE MATERIAL (CY) (2)	UNEXPANDED FILL (CY)	EXPANDED FILL (CY) FACTOR 1.25 (3)	MASS ORDINATE +/- (CY)(4)	208.0100 BORROW (CY)
010	20+90.00 -34+25 00	MAINLINE	615	615	19898	24874	-24259	-24259
	100'A'+00 - 100'A'+48.43	A'-LINE	56	56	0	0	56	56
	50'B'+00 - 55'B'+63.00	B'-LINE	380	380	1 77	221	159	159
	60'C'+00 - 61'C'+29.99	C'-LINE	11	1 1	1654	2068	-2057	-2057
	70'D'+14.40 - 71'D'+24.00	D'-LINE	4	4	218	272	-268	-268
	-	P.E. / F.E.	84	84	52	65	19	19
	CALCE	_	1150	1150	21000	27500		26250

NOTES:

- 1.) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN OUT
- 2.) AVAILABLE MATERIAL = CUT
- 3.) EXPANDED FILL FACTOR 1.25: EXPANDED FILL = (UNEXPANDED FILL)*1.25
- 4.) THE MASS ORDINATE+ OR QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE CATEGORY. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE CATEGORY.

BASE AGGREGATE DENSE

		305.0110	305.0120	
		BASE AGGREGATE	BASE AGGREGATE	311.0110
		DENSE 3/4-INCH	DENSE 1 1/4-INCH	BREAKER RUN
STATION - STATION	LOCATION	(TON)	(TON)	(TON)
21+65 - 34+25	MAINLINE	240	2690	- '
99'A'+60 - 100'A'+48.43	'A'-LINE	11	59	-
* 50'B'+00 - 55'B'+63	'B'-LINE	48 4	-	747
60°C'+00 - 61°C'+29.99	'C'-LINE	141		-
70'D'+14.40 - 71'D'+24	'D'-LINE	79		-
-	P.E., F.E.	116		
	UNDISTRIBUTED	109	251	73
	TOTALS =	1180	3000	820
	21+65 - 34+25 99'A'+60 - 100'A'+48.43 * 50'B'+00 - 55'B'+63 60'C'+00 - 61'C'+29.99 70'D'+14.40 - 71'D'+24	21+65 - 34+25 MAINLINE 99'A'+60 - 100'A'+48.43 'A'-LINE * 50'B'+00 - 55'B'+63 'B'-LINE 60'C'+00 - 61'C'+29.99 'C'-LINE 70'D'+14.40 - 71'D'+24 'D'-LINE P.E., F.E.	## BASE AGGREGATE DENSE 3/4-INCH STATION - STATION	BASE AGGREGATE DENSE 3/4-INCH STATION - STATION LOCATION (TON) (TON) 21+65 - 34+25 MAINLINE 240 2690 99'A'+60 - 100'A'+48.43 'A'-LINE 11 59 * 50'B'+00 - 55'B'+63 'B'-LINE 484 - 60'C'+00 - 61'C'+29.99 'C'-LINE 141 - 70'D'+14.40 - 71'D'+24 'D'-LINE 79 - P.E., F.E. UNDISTRIBUTED 109 251

*EXCEPTION TO NET C/L LENGTH STA. 54'B'+59.29 - STA. 55'B'+42.96

HMA PAVEMENT

		450.4000 HMA COLD WEATHER PAVING	455.0605 TACK COAT	460.5224 HMA PAVEMENT 4 LT 58-28 S
STATION-STATION	LOCATION	(TON)	(GAL)	(TON)
21+65 - 34+25	MAINLINE	638	159	638
100'A'+00 - 100'A'+48.43	'A'-LINE	34	9	34
33+73	P.E MAINLINE, RT.	7	-	7
-	UNDISTRIBUTED	31	12	31
	TOTALS =	710	180	710

CULVERT PIPES

STATION	LOCATION	520.1024 APRON ENDWALLS FOR CULVERT PIPE 24-INCH (EACH)	520.1036 APRON ENDWALLS FOR CULVERT PIPE 36-INCH (EACH)	520.3324 CULVERT PIPE CLASS III-A 24-INCH (LF)	520.3336 CULVERT PIPE CLASS III-A 36-INCH (LF)	521.0728 PIPE ARCH CORRUGATED STEEL 28X20-INCH (LF)	521.1228 APRON ENDWALLS FOR PIPE ARCH STEEL 28X20-INCH (EACH)	628.7555 CULVERT PIPE CHECKS (EACH)	650.6000 CONSTRUCTION STAKING PIPE CULVERTS (EACH)
27+04	MAINLINE	-	2	•	160	-	-	7	1
32+54	MAINLINE, LT.	2	-	34	-	-	-	2	1
33+82	MAINLINE	-	-	-	-	68	2	3	1
100'A'+33	'A'-LINE	2	-	48	-	-	-	3	1
60'C'+93	'C'-LINE	2	-	76	-	-	-	3	1
-	UNDISTRIBUTED							7	
	TOTAL =	6	2	158	160	68	2	25	5

	MINIMUM THICHNESS (IN)						
PIPE SIZE	STEEL	ALUMINUM					
18-INCH	0.064	0 060					
24-INCH	0.064	0 075					
36-INCH	0.079	0 105					
28x20-INCH	0.064	-					

PROJECT NO:5687-00-72 HWY:FIVE CORNER ROAD COUNTY:GREEN MISCELLANEOUS QUANTITIES SHEET **E**

RIPRAP	0	CEC	$\Gamma \Gamma \nabla T$	$\square \wedge \square$	
RIPRAF	Ox.	GEU	ı⊏∧ı	ГАО	ていし

		606.0300 RIPRAP HEAVY	645.0120 GEOTEXTILE FABRIC TYPE HR
STATION	LOCATION	(CY)	(SY)
27+53	MAINLINE, RT	10	25
28+63	MAINLINE, LT	6	16
-	UNDISTRIBUTED	4	4
	TOTALS =	20	45

GUARDRAIL

		614.0200 STEEL THRIE BEAM STRUCTURE	614.0305 STEEL PLATE BEAM GUARD	614.0345 STEEL PLATE BEAM GUARD	614.0390 STEEL PLATE BEAM GUARD SHORT RADIUS	614.2300 MGS GUARDRAIL	614.2500 MGS THRIE BEAM	614.2610 MGS GUARDRAIL	FOR INFORMATIONAL PURPOSE		FOR INFORMATION		DSES ONLY
		APPROACH	CLASS A	SHORT RADIUS	TERMINAL	3	TRANSITION	TERMINAL EAT	RADIUS	OF INSTALLATION	NO OF		
STATION - STATION	LOCATION	(LF)	(LF)	(LF)	(EACH)	(LF)	(LF)	(EACH)	(FT)	(FT)	CRT POSTS		
24+35 - 27+50	MAINLINE, RT	-	-	-	-	225	40	1		-	-		
24+49 - 27+52	MAINLINE, LT	-	-	-	-	213	40	1	-	-	-		
28+33 - 31+36	MAINLINE, RT	-	-	-	-	213	40	1	_	-	-		
28+35 - 29+01	MAINLINE, LT	21	25	44	1				_ 16	44	7		
	TOTALS =	21	25	44	1	651	120	3					

WATER

PROJECT 5678-00-72	624.0100 (MGAL) 40
TOTAL =	40

FINISHING ITEMS											
		625.0500 SALVAGED TOPSOIL	627.0200 MULCHING	628.2002 EROSION MAT CLASS I TYPE A	629.0210 FERTILIZER TYPE B	630.0120 SEEDING MIXTURE NO. 20	630.0200 SEEDING TEMPORARY	630.0300 SEEDING BORROW PIT			
STATION - STATION	LOCATION	(SY)	(SY)	(SY)	(CWT)	(LB)	(LB)	(LB)			
20+90-34+25	MAINLINE	7164	1694	8203	6.3	268	134	-			
99'A'+60-100'A'+48.43	A-LINE	112	73	150	0.1	3	2	-			
*50'B'+00-55'B'+63	B-LINE	336	747	140	0.6	25	13	-			
60'C'+00-61'C'+29.99	C'-LINE	592	290	436	0.5	20	10	-			
70'D'+14.40-71'D'+24	D'-LINE	367	489	-	0.3	14	7	-			
-	BORROW PIT	-	15810	-	10	-	-	214			
-	UNDISTRIBUTED	2129	4797	2221	2.2	80	39	46			
	TOTALS =	10700	23900	11150	20.0	410	205	260			

*EXCEPTION TO NET C/L LENGTH STA. 54'B'+59.29 - STA. 55'B'+42.96

COUNTY: GREEN

NOTE: 'E'-LINE QUANTITIES (SALVAGED TOPSOIL, EROSION MAT CLASS I TYPE A, FERTILIZER TYPE B, SEEDING MIXTURE NO. 20 AND SEEDING TEMPORARY) FOR MINOR GRADING ACTIVITIES ARE INCLUDED IN MAINLINE QUANTITIES.

SILT FENCE

			628 1520
		628 1504	SILT FENCE
		SILT FENCE	MAINTENANCE
STATION - STATION	JOCATION	(LF)	(LF)
23+50 - 27-93	MAISLINE, LT	492	1478
28+00 - 27-83	MAINLINE, RT	285	855
28+00 - 29-60	MAISE SELET	332	996
28+00 - 34-25	MAINLINE, RT	825	2475
99"A'+60 - 100"A -48,43	A-LINE	80	240
50 B'+00 - 53'B ÷50	B-LINE, LT.	350	1050
50 B'+00 - 54'B -50	3-L NE. RT	459	1350
55 B'+43 - 55'B -63	B-LINE	70	210
	UND STRIBUTED	716	2148
	TOTALS =	3600	10800

LOCATION (EACH)

32.25 LT.

62.88 LT.

633.5100

SHEET

MOBILIZATION EROSION CONTROL

		628.1910
	628.1905	MOBILIZATIONS
	MOBILIZATIONS	EMERGENCY EROSION
	EROSION CONTROL	CONTROL
PROJECT	(EACH)	(EACH)
5671-00-76	5	4
TOTALS=	5	4

628 7504

STATION	LOCATION	(LF)
21+00	MAINLINE, LT	10
21+50	MAINLINE, LT	10
22+00	MAINLINE, RT	10
22+75	MAINLINE, LT	10
23+00	MAINLINE, RT	10
23+25	MAINLINE, LT	10
24+00	MAINLINE, RT	10
24+50	MAINLINE, RT	10
25+00	MAINLINE, RT	10
25+50	MAINLINE, RT	10
30+00	MAINLINE, LT	10
31+00	MAINLINE, LT	10
32+20	MAINLINE, LT	10
33+00	MAINLINE, LT	10
34+00	MAINLINE, LT	10
54'B'+00	B'-LINE, LT	10
54'B'+50	B'-LINE, LT	10
-	UNDISTRIBUTED	40
	TOTAL =	210

TEMPORARY DITCH CHECKS

101	21170.00	02.00 L1.	
102	21+77.22	107.00 LT.	1
103	22+43.26	106.17 LT.	1
104	22+39.64	32.78 LT.	1
105	23+00.00	32.99 LT.	1
106	26+00.00	74.69 LT.	1
107	26+00.00	74.81 RT.	1
108	25+55.00	63.00 RT.	1
109	24+80.00	63.00 RT.	1
110	23+75.00	32.74 RT.	1
111	23+00.00	33.00 RT.	1
112	22+50.00	42.00 RT.	1
113	22+00.00	42.00 RT.	1
114	21+80.00	33.43 RT.	1
115	20+90.00	33.75 RT.	1
120	27+46.69	95.00 LT.	1
121	28+43.43	62.05 LT.	1
122	30+00.00	41.00 LT.	1
123	31+00.00	47.00 LT.	1
124	31+00.00	47.30 RT.	1
125	30+00.00	48.00 RT.	1
126	28+32.87	74.00 RT.	1
127	27+30.86	109.00 RT.	1
130	33+00.00	42.00 LT.	1
131	34+00.00	55.00 LT.	1
132	34+25.00	36.98 LT.	1
133	34+25.00	29.02 RT.	1
134	32+35.00	29.70 RT.	1
135	31+50.00	47.00 RT.	1
		TOTAL =	30

MARKERS ROW

POINT STATION

20+90.00

21+75.05

100

101

MARKERS CULVERT END

		633,5200
STATION	LOCATION	(EACH)
27+04	MAINLINE	2
33+82	MAINLINE	2
100 A+33	AFLINE	2
	TOTAL =	6

S:\PROJECTS\K19180 FIVE CORNER ROAD\SHEETSPLAN\DETAILS\MISC. QUANTITIES.DWG MQ2

HWY: FIVE CORNER ROAD

PROJECT NO:5687-00-72

MISCELLANEOUS QUANTITIES

PLOT BY: STRINE, THERESA

PLOT SCALE : 1" = 1'

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PERMANENT SIGNING

								637.2210	637,2230			638.2602	638,3000	
								SIGNS	SIGNS	POSTS WO	OD 4X6-INCH X	REMOVING	REMOVING	
								TYPE II	TYPE II	634.0612	634.0616	SIGNS	SMALL SIGN	SIGN
SIGN	APPROX.			SIGN	SIGN		SIGN SIZE	REFLECTIVE H	REFLECTIVE F	12-FT	16-FT	TYPE II	SUPPORTS	MOUNTED
NUMBER	STATION	LOCATION	POSITION	CODE	DESCRIPTION	ORDER LINES	IN X IN	(SF)	(SF)	(EACH)	(EACH)	(EACH)	(EACH)	ON SAME
100	100'A'+30	'A'-Line	Right	R1-1	Stop		30X 3 0	5.18			1			
101R	100'A'+30	'A'-Line	Right	R1-1	Stop		30X30					1	1	
102R	22+08	Mainline	Right	R12-55	_Ton Bridge _ Miles Ahead	6 - 2	48X24					1	1	
103R	22+08	Mainline	Right	W5-2	Narrow Bridge		30X30					1		102R
104R	22+08	Mainline	Right	W13-1	_ M P H.	25	18X18					1		102R
105R	22+07	Mainline	Right	W1-7	Double Arrow	Left/Right Arrow	48X24					1	1	_
106R	22+10	Mainline	Right	R12-55	_Ton Bridge _ Miles Ahead	62	48X24					1	1	
107R	22+10	Mainline	Right	M7-1	Arrow	Left Arrow	12X9					1		106R
108	22+07	Mainline	Right	W1-7	Double Arrow	Left/Right Arrow	48X24		8.00		1			
200R	26+67	Mainline	Right	W5-2	Narrow Bridge		30X30					1	1	
201R	26+67	Mainline	Right	W13-1	_ M P H.	25	18X18					1		200R
202R	27+16	Mainline	Right	W5-52R	Bridge Hash Marks		12X36					1	1	
203R	27+19	Mainline	Right	R12-1	Weight Limit _ Tons	6	24X30					1	1	
204R	27+20	Mainline	Left	W5-52L	Bridge Hash Marks		12X36					1	1	
205	27+48	Mainline	Left	W5-52L	Bridge Hash Marks		12X36		3.00	1				
206	27+48	Mainline	Right	W5-52R	Bridge Hash Marks		12X36		3.00	1				
207	28+36	Mainline	Right	W5-52R	Bridge Hash Marks		12X36		3.00	1				
208	28+36	Mainline	Left	W5-52L	Bridge Hash Marks		12X36		3 00	1				
209R	28+85	Mainline	Left	R12-1	Weight Limit _ Tons	6	24X30					1	1	
210R	28+79	Mainline	Right	W5-52L	Bridge Hash Marks		12x36					1	1	
						TOTALS =		5.18	20.00	4	2	14	10	

CONSTRUCTION STAKING

				C	ONSTRUCTION 9	STAKING		
				+650.6500	¥650.6500	× 650.6500	650.9910	
				STRUCTURE	STRUCTURE	STRUCTURE	SUPPLEMENTAL	650.9920
		650.4500	650.5000	LAYOUT	LAYOUT	LAYOUT	CONTROL	SLOPE
		SUBGRADE	BASE	(8-23-0171)	(R-23-0014)	(R-23-0015)	5687-00-72	STAKES
STATION - STATION	LOCATION	(LF)	(LF)	(LS)	(LS)	(LS)	(LS)	(LF)
21+65 - 34+25	MAINLINE	1203	1203	-	-	-	-	1203
100'A'+00 - 100'A'+48,43	'A'LINE	49	49	-	-	-	•	49
** 50'B'+00 - 55'B'+63	'B'-LINE	478	478	-	-	-	•	478
60'C'+00 - 61'C'+29 99	'C'-LINE	130	130	-	-	-	•	130
70'D'+14.40 - 71'D'+24.00	'D'-LINE	110	1 1 0	-	-	-	-	110
27+70	MAINLINE	-	-	-	1	-		-
27+92	MAINLINE	-	-	1	-	-		-
28+15	MAINLINE	-	-	-	-	1		-
•	PROJECT	-	-	-	-	-	1	-
	TOTALS =	1970	1970	1	1	1	1	1970

*CATEGORY 020

SEE "CULVERT PIPES" FOR BID ITEM 650,6000 CONSTRUCTION STAKING CULVERT PIPE QUANTITIES

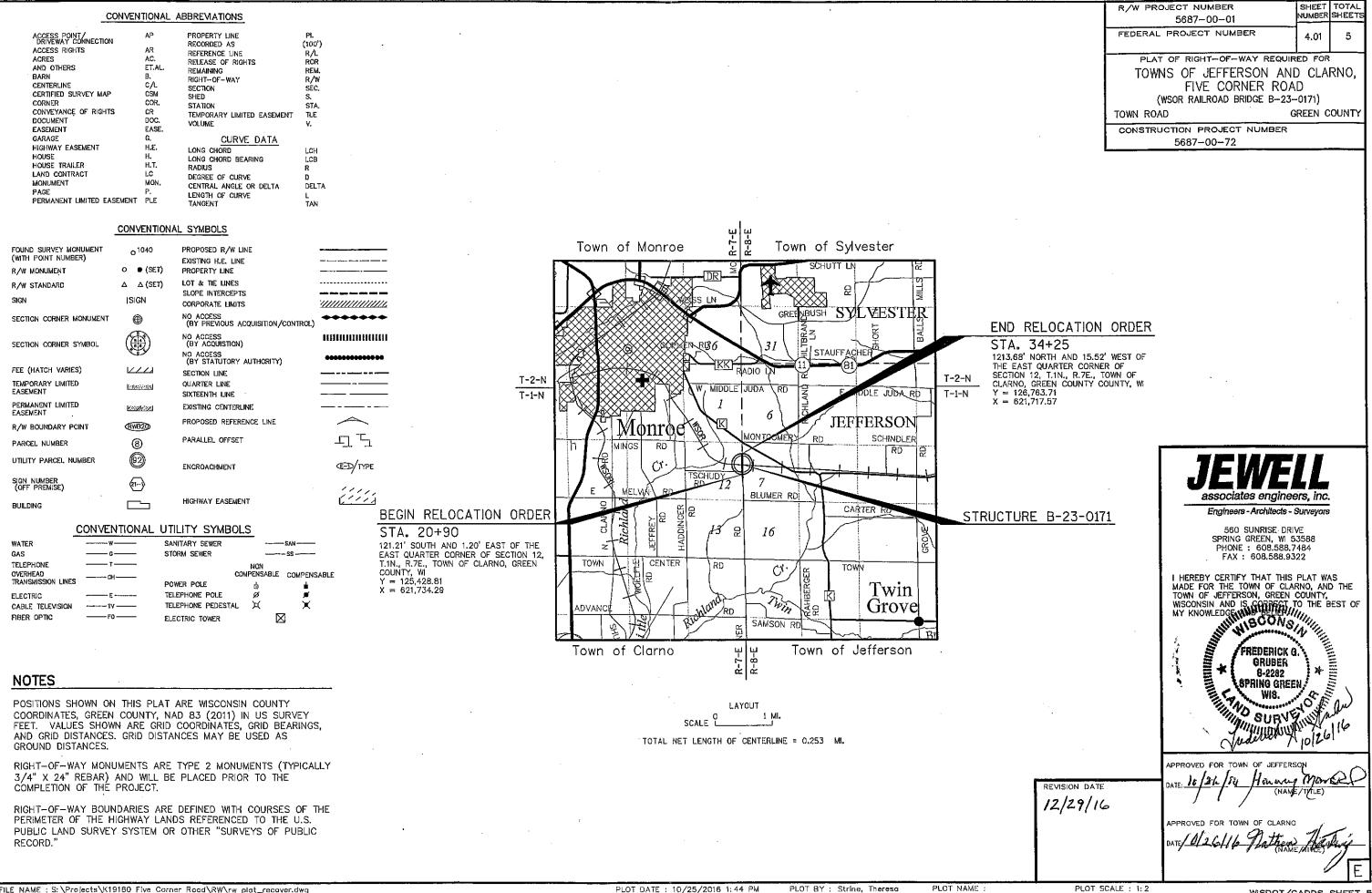
SAWING ASPHALT

		690.0150
STATION	LOCATION	(LF)
21+65	MAINLINE	22
33+73	MAINLINE, RT-P.E.	14
34+25	MAINLINE	20
100'A'+00	A'-LINE	20
	TOTAL =	76
	TOTAL =	76

TOTAL - /

PROJECT NO:5687-00-72 HWY:FIVE CORNER ROAD COUNTY:GREEN MISCELLANEOUS QUANTITIES SHEET

^{**} EXCEPTION TO NET C/L LENGTH STA. 54'B'+59.29 - STA. 55'B'+42.96



SHEET	PARCEL		INTEREST	R/W	ACRES REC	T.L.E.	PERMIT	
NUMBER	NUMBER	OWNER (S)	REQUIRED	NEW	EXISTING	TOTAL	ACRES	ACRES
4.03	1	ROLLING RICHLAND ACRES, A PARTNERSHIP CONSISTING OF GARY WILD, DONALD WILD, DAVID WILD AND FRANCES WILD	FEE	0.03	0.16	0.19		
4.03 & 4.04	2	GARY WILD, DONALD WILD, DAVID WILD AND FRANCES WILD ALSO KNOWN AS THE ROLLING RICHLAND ACRES, A PARTNERSHIP	FEE, TLE	0.31	0.45	0.76	0.01	
4.03 & 4.04	3	DONALD E. WILD	FEE, TLE	0.34	0.49	0.83	0.59	
4.04 & 4.05	4	TRACY M. SIGNER, A SINGLE PERSON	FEE, TLE	0.11	0.28	0.39	0.13	
4.04 & 4.05	5	DUSTIN D. & BRANDI M. WIDMER, HUSBAND AND WIFE AS SURVIVORSHIP MARITAL PROPERTY	FEE, TLE	0.19	0.65	0.84	0.19	
4.05	6	TODD E. & TONYA L. ELMER, HUSBAND AND WIFE AS JOINT TENANTS	FEE	0.01	0.04	0.05		
4.04	7	WISCONSIN DEPARTMENT OF TRANSPORTATION	PERMIT					0.24
4.05	8	DUSTIN WIDEMER & BRANDI M. WIDEMER, HUSBAND AND WIFE	FEE, TLE	0.03	0.12	0.15	0.01	
4.03 & 4.04	201	TDS TELECOM			RELEA	SE OF RIG	HTS	
4.04 & 4.05	202	ALLIANT ENERGY			RELEA	SE OF RIG	HTS	

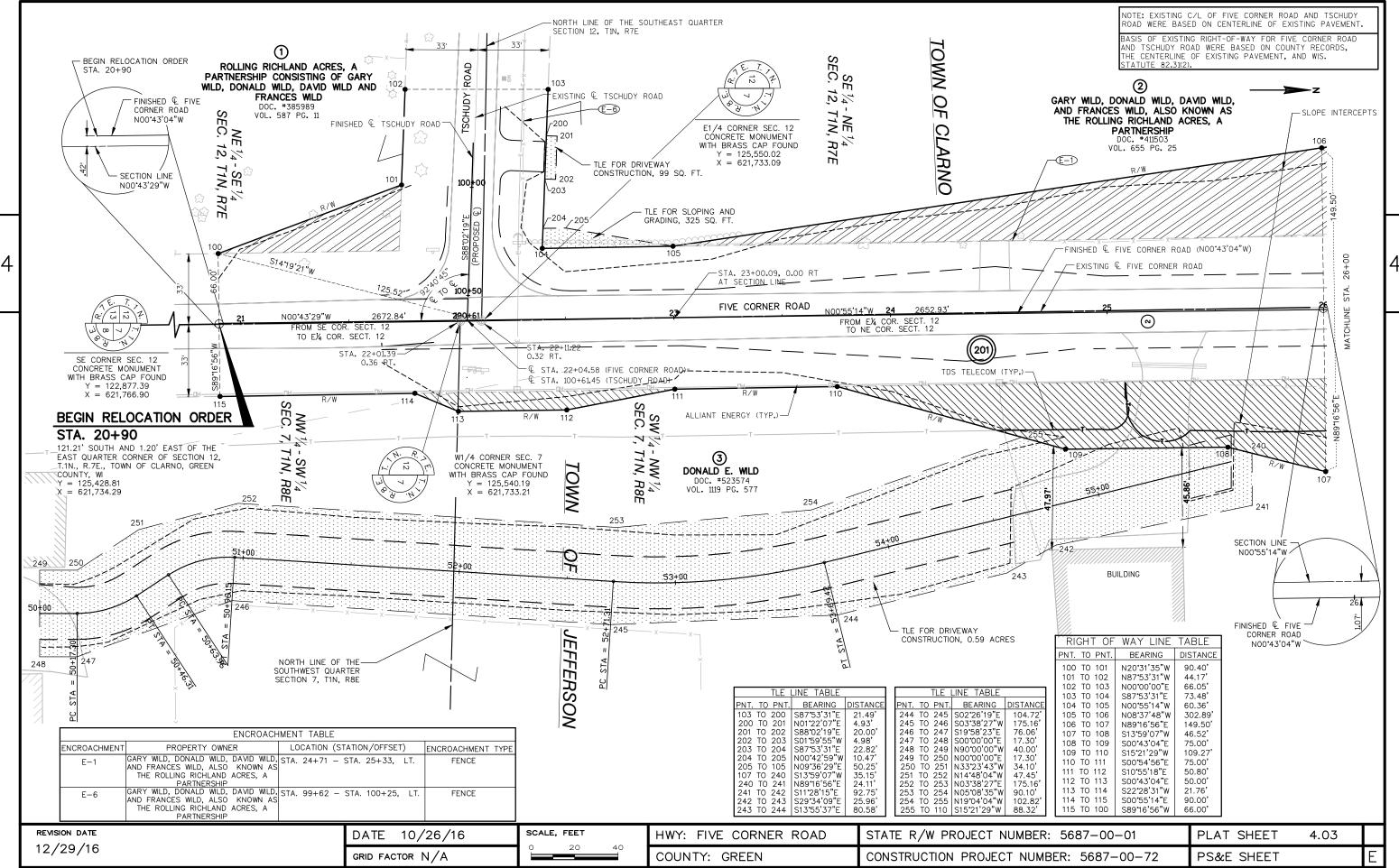
NOTE: AREAS SHOWN IN THE TOTAL ACRES COLUMN MAY BE APPROXIMATE AND ARE DERIVED FROM THE TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED. OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE TOWN OF JEFFERSON AND THE TOWN OF CLARNO.

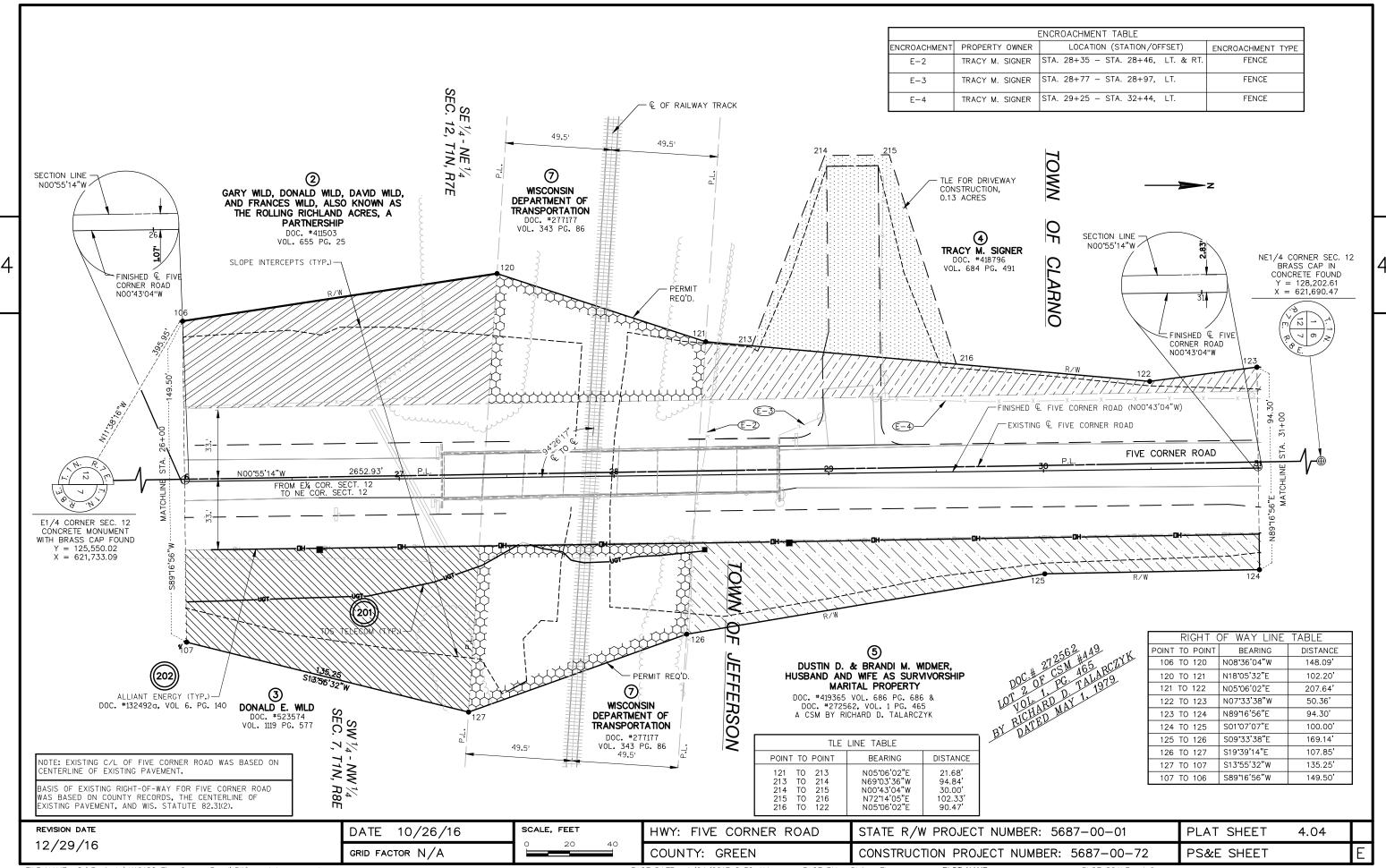
	COORDINA	TE TABLE – R	/W POINTS	
PT.#	STATION	OFFSET	Y	×
100 101 102 103 104 105 106 107 109 110 111 112 113 114 122 121 122 123 124 125 127 130 131 132 133 134	20+90.00 21+75.05 21+77.22 22+43.26 22+43.26 22+39.64 23+00.00 26+00.00 25+55.00 24+80.00 23+75.00 23+00.00 22+50.00 21+80.00 22+50.00 21+80.00 20+90.00 21+46.69 28+43.43 30+50.00 31+00.00 31+00.00 31+00.00 34+25.00 34+25.00 34+25.00 31+30.00 31+30.00	32.25 LT. 62.88 LT. 107.00 LT. 106.17 LT. 32.78 LT. 32.99 LT. 74.69 LT. 74.81 RT. 63.00 RT. 63.00 RT. 42.00 RT. 42.00 RT. 42.00 RT. 42.00 LT. 47.00 LT. 47.00 LT. 47.00 LT. 47.00 LT. 47.00 LT. 47.00 LT. 55.00 LT. 62.05 LT. 41.00 LT. 47.00 RT. 48.00 RT. 74.00 RT. 74.00 RT. 74.00 RT. 74.00 RT. 74.00 LT. 55.00 LT. 55.00 LT. 62.05 LT.	125428.41 125514.69 125580.73 125578.03 125638.38 125939.71 125894.57 125714.20 125639.21 125589.33 125539.33 125539.33 125539.33 125519.23 125429.24 126084.26 126181.41 126388.19 126439.33 126379.34 126172.56 126070.99 126638.19 126738.02 126748.07 126748.07 126748.07	621702.04 621670.34 621626.20 621626.20 621699.64 621698.67 621653.22 621802.70 621791.46 621792.40 621764.66 621774.91 621766.59 621768.04 621681.27 621662.81 621674.64 621770.89 621789.98 621799.98 621798.98 621799.98 62174.91 621662.81 621671.14 621662.81 621671.14 621662.85 62174.96 621749.64

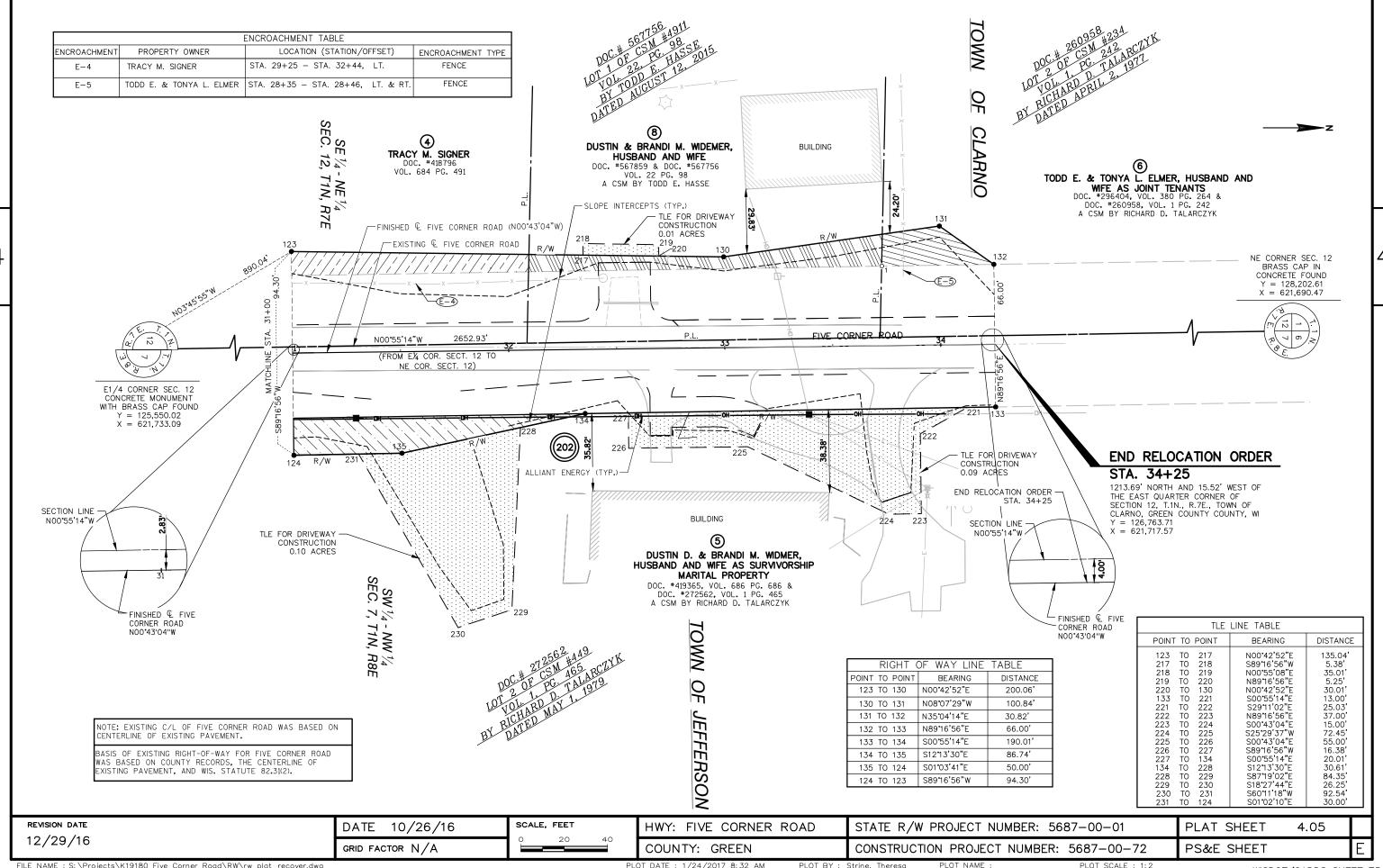
	COORDIN	NATE TABLE -	- T.L.E. POIN	TS
PT.#	STATION	OFFSET	Y	Х
200 201 202 203 204 205 213 214 215 216 217 221 222 223 224 225 226 227 228 229 230 241 242 243 244 245 246 247 248 249 251 242 243 244 245 246 247 248 249 251 264 275 276 276 276 276 276 276 276 276 276 276	22+42.20 22+47.13 22+46.20 22+41.22 22+40.10 22+50.57 28+65.00 29+60.00 29+30.00 32+35.00 32+70.00 33+70.00 33+70.00 33+70.00 33+70.00 33+70.00 33+75.00 33+75.00 32+55.	84.71 LT. 84.53 LT. 64.56 LT. 64.79 LT. 42.00 LT. 42.00 LT. 148.00 LT. 148.00 LT. 148.00 LT. 148.00 LT. 23.07 RT. 43.63 LT. 49.00 RT. 42.05 RT. 29.07 RT. 41.00 RT. 29.63 RT. 35.80 RT. 120.00 RT. 128.00 RT. 29.63 RT. 29.00 RT. 20.00 LT. 25.00 LT.	125579.94 125584.87 125584.87 125584.19 125579.21 125578.37 125588.84 126203.00 126236.90 126266.89 126298.11 126573.18 126573.11 126608.19 126751.08 126729.22 126729.69 126741.69 126741.69 126594.09 126594.09 126540.23 126515.33 126469.32 125905.60 125905.90 125905.90 125815.00 125905.90 125815.00 125905.90 125341.78 12563.29 125343.78 125363.29 125343.78 125363.29 125343.764 125437.64 125437.64 125437.64 125437.64	621647.68 621647.80 621667.61 621690.41 621690.41 621690.28 621664.73 621575.78 621575.78 621673.22 621676.52 621676.76 621746.80 621796.00 621796.00 621765.00 621765.69 621749.32 621840.38 621794.21 621880.38 621848.28 621848.28 621848.28 621888.28 621888.28 621848.28 621848.28 621848.28 621848.28 621848.28 621848.28 621848.28 621848.28 621848.28 621848.28 621848.28 621848.28 621848.28 62182.51 62182.51 62187.39

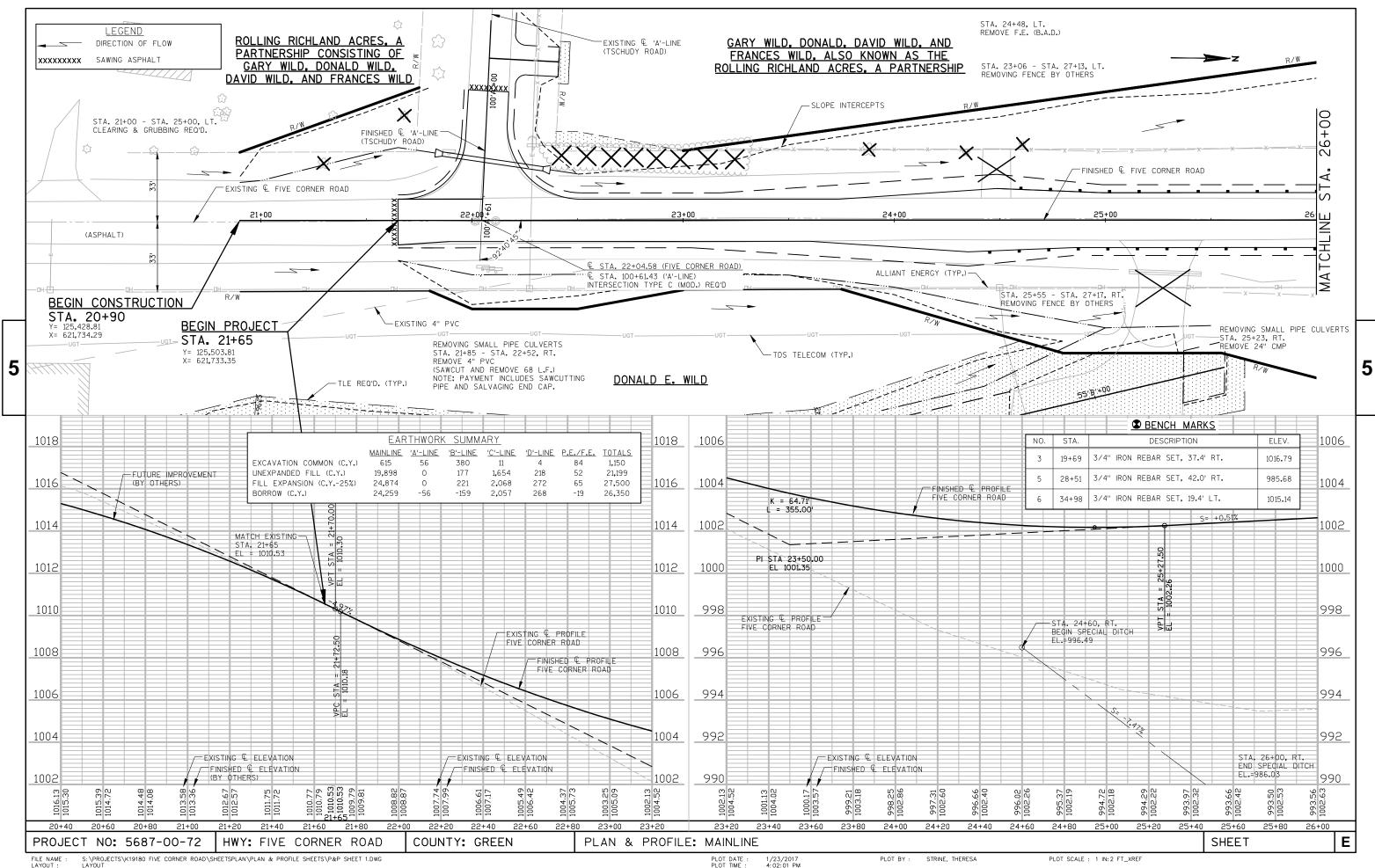
	COORDINATE TABLE - FOUND SURVEY MONUMENTS											
РТ.#	STATION	OFFSET	Y	X	DESCRIPTION							
1	33+73.11	36.74 LT.	126711.36	621681.48	FOUND 3/4" ¢ IRON REBAR							

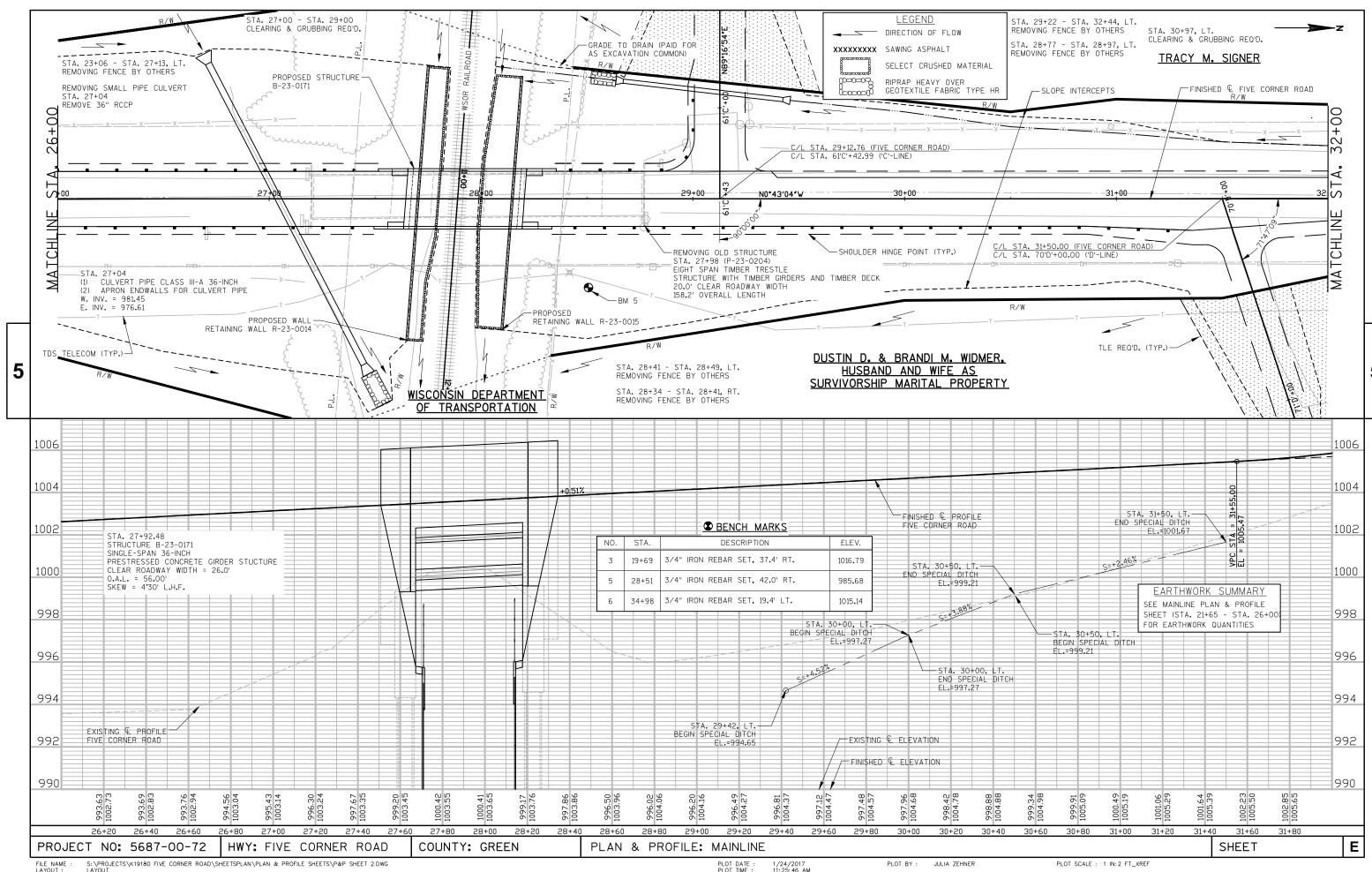
REVISION DATE SCALE, FEET 4.02 DATE 10/26/16 HWY: FIVE CORNER ROAD STATE R/W PROJECT NUMBER: 5687-00-01 PLAT SHEET 25 12/29/16 GRID FACTOR N/A PS&E SHEET COUNTY: GREEN CONSTRUCTION PROJECT NUMBER: 5687-00-72

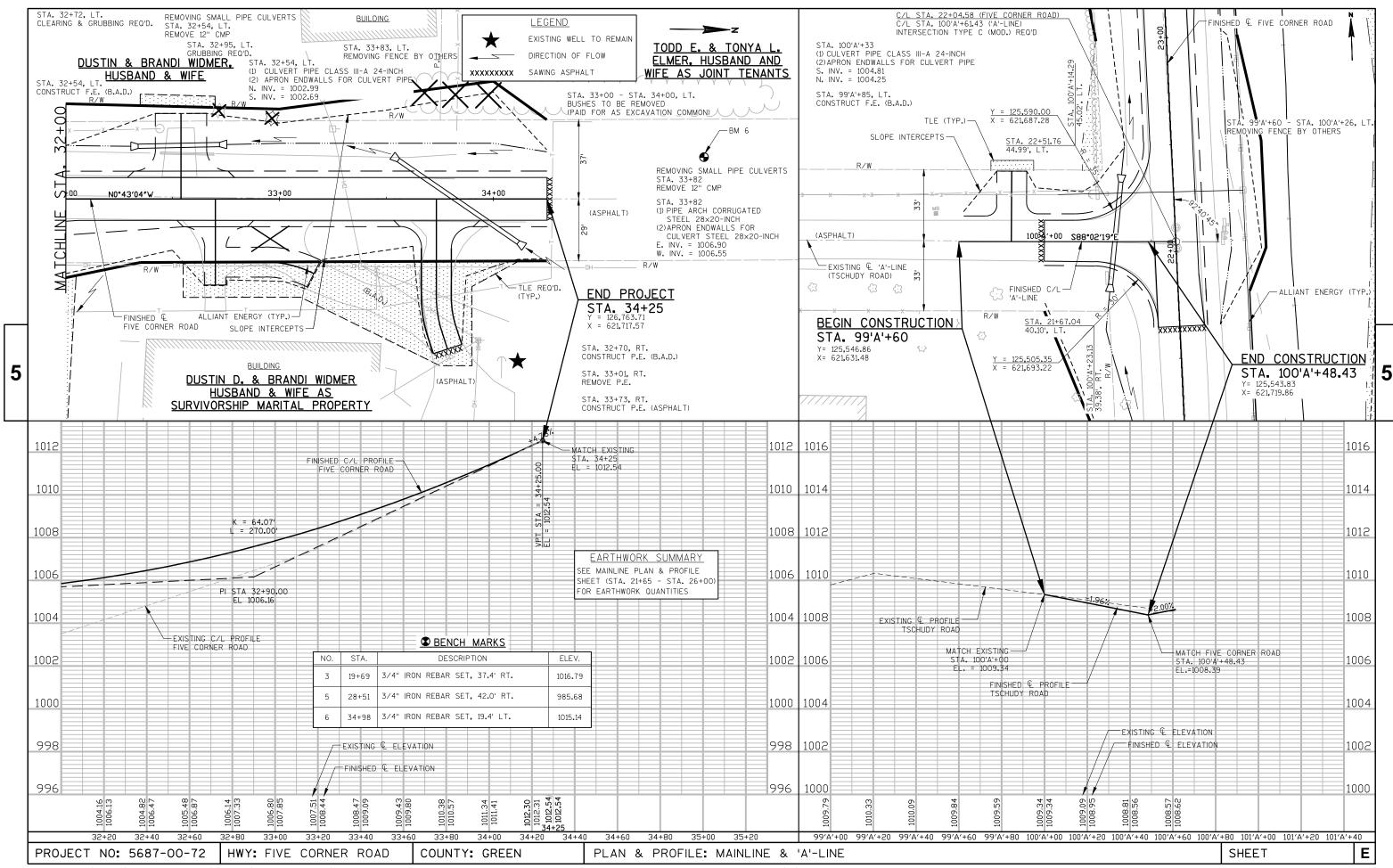












Standard Detail Drawing List

DOAD1-13A AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE 12A03-10 NAME PLATE (STRUCTURES) 14B15-09A STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS 14B15-09C STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS 14B15-09C STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS 14B15-09C STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS 14B20-11A STEEL THRIE BEAM STRUCTURE APPROACH 14B20-11H STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT 14B24-08A STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL 14B24-08B STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL 14B27-01A STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL 14B27-01A STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL 14B27-01C STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL 14B22-04A MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL 14B42-04B MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL 14B42-04C MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL 14B44-02A MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL 14B44-02B MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) 14B45-04A MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) 14B45-04A MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) 14B45-04A MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) 14B45-04B MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) 14B45-04A MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) 14B45-04B MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) 14B45-04C MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) 15A01-13A MARKER POST FOR RIGHT-OF-WAY 15A03-02A FLEXIBLE MARKER POST FOR CULVERT END 15A03-15B FENCE CHAIN LINK 15B03-15B FENCE CHAIN LINK 15B03-16B FENCE CHAIN LINK 15B03-15B FENCE CH	08E08-03 08E09-06 08F01-11 08F02-01	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS SILT FENCE APRON ENDWALLS FOR CULVERT PIPE APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
14B15-09A STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS 14B15-09B STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS 14B15-09C STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS 14B20-11A STEEL THRIE BEAM STRUCTURE APPROACH 14B20-11H STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT 14B24-08A STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL 14B24-08B STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL 14B24-08C STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL 14B27-01A STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL 14B27-01A STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL 14B27-01C STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL 14B27-01C STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL 14B42-04A MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL 14B42-04B MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL 14B42-04C MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL 14B44-02A MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) 14B44-02B MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) 14B45-04C MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) 14B45-04B MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) 14B45-04C MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) 14B45-04B MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) 14B45-04C MIDWEST GUA		
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15CO2-O6B BARRICADES AND SIGNS FOR MAINLINE CLOSURES	15B03-15B	FENCE CHAIN LINK
	15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15CO6-08 SIGNING & MARKING FOR TWO LANE BRIDGES		
	15C06-08	SIGNING & MARKING FOR TWO LANE BRIDGES

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)

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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			1	METAL	APR	ON EN	NDWAL	.LS			
PIPE	MIN. 1	THICK.		DIMENSIONS (Inches)							
DIA.	(Incl		A B H L L1 L2 W						APPROX.	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

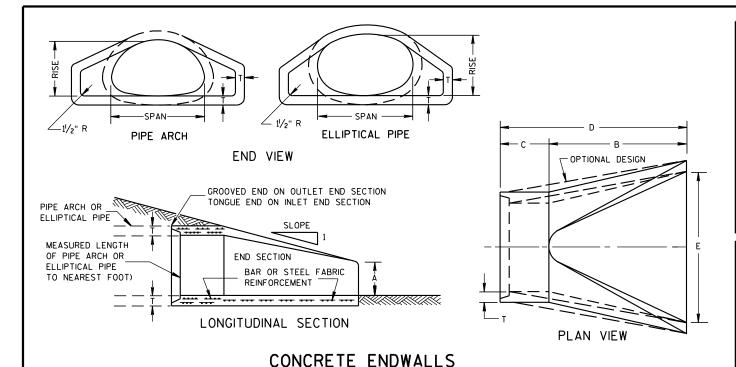
LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES. THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES.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



REINFORCED

SECTION A-A)

- EDGE (SEE

END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY

BOLTS, RIVETS, OR RESISTANCE

THE SURFACES TIGHTLY TOGETHER

TOE PLATE (SAME THICKNESS

AND METAL AS APRON) SHALL

BE FURNISHED WHEN CALLED

FOR ON THE PLANS

FLOW

SPOT WELDS WHICH WILL HOLD

APRON

SHEET

SIDEWALL -

EDGE OF SIDEWALL SHEET

-ROLLED SNUGLY AGAINST

STEEL ROD

PLAN VIEW

W + 10" (RISE 23" THRU 29")

W + 20" (RISE 33" THRU 75")

SIDE ELEVATION

METAL ENDWALLS

END VIEW

SHOULDER

SL0PE

RISE

	2- 2/3" X 1/2" CORRUGATIONS														
EQUIV.	(Incl	2051	MIN. 1	HICK.		APPROX									
DIA.			(Inch	nes)	A	В	Н	L	Lı	L ₂	W	APPROX.	BODY		
(Inches)	SPAN	RISE	STEEL	ALUM.	(±]")	(MAX.)	(±]")	(±1 ½")	①	<u> </u>	(±2")	JEOI L			
15	17	13	.064	.060	7	9	6	19	14	16	30	21/2+0 1	1Pc.		
18	21	15	.064	.060	7	10	6	23	14	193/8	36	21/2+o 1	1Pc.		
21	24	18	.064	.060	8	12	6	28	18	213/4	42	21/2+0 1	1Pc.		
24	28	20	.064	.060	9	14	6	32	18	271/2	48	21/2 to 1	1 Pc.		
30	35	24	.079	.075	10	16	6	39	18	375/8	60	21/2+o 1	1 Pc.		
36	42	29	.079	.075	12	18	8	46	24	45%	75	21/2 to 1	1Pc.		
42	49	33	.109	.105	13	21	9	53	24	54¾	85	21/2 to 1	2 Pc.		
48	57	38	.109	.105	18	26	12	63	24	68	90	21/2+o 1	3 Pc.		
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.		
66	77	52	.109×	.105 *	18	36	12	77	_	_	126	2 to 1	3 Pc.		
72	83	57	.109 *	.105*	18	39	12	77	_		138	2 to 1	3 Pc.		

	3" X 1" CORRUGATIONS														
EQUIV. DIA.	(Incl	nes)	MIN. 1		Α	В	w	APPROX. SLOPE	BODY						
(Inches)	SPAN	RISE	STEEL	ALUM.	(±1")	(MAX.)	(±1")	(±1 ½")	①	0	(±2")	JEO. E			
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.

TYPE 2

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

* EXCEPT CENTER PANEL SEE GENERAL NOTES

COUPLING BAND

REQUIRED

RIVETED OR

BOLTED

	REINFORCED CONCRETE PIPE ARCH													
EQUIV.		DIMENSIONS (Inches)												
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										
EOUIV.	DIMENSIONS (Inches)									
DIA. (Inches)	** SPAN	** RISE	T	A	В	С	D	E	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 to 1	
42	53	34	5	15¾	60	36	96	78	21/2+0 1	
48	60	38	51/2	21	60	36	96	84	21/2+0 1	
54	68	43	6	251/2	60	36	96	90	21/2+0 1	
60	76	48	61/2	30	60	36	96	96	2½+o 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. ROD HOLDER

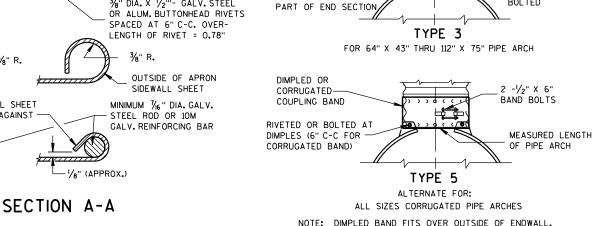
CONCRETE APRON ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA, GALVANIZED STEEL OR ALUMINUM APRON ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE

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.



THREADED 76" DIA. ROD OVER TOP OF APRON, SIDE

LUGS TO BE RIVETED TO

0.109" THICK GALV. STEEL OR

0.109" THICK ALUMINUM

3/8" DIA. RIVETS SPACED

1" O.D. X O.079" THICK GALV.

STEEL OR 0.075" THICK ALUM.

TUBING SLIPPED OVER SHEET

AND RIVETS PRIOR TO FABRI-

CATION OF THE END SECTION

3/8" DIA. X 1/2""- GALV. STEEL

AT 6" C-C

MEASURED LENGTH OF PIPE ARCH

MEASURED LENGTH

OF PIPE ARCH

SECTION

CONNECTOR SECTION

TO BE PAID FOR AS

CONNECTOR

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

CONNECTION DETAILS

APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED			
11/30/94	/S/ Ror	y L.Rhinesm	ith
DATE	CHIEF ROADWA	Y DEVELOPMEN	ENGINEER
FHWA			

6

END CORNER

PLATE

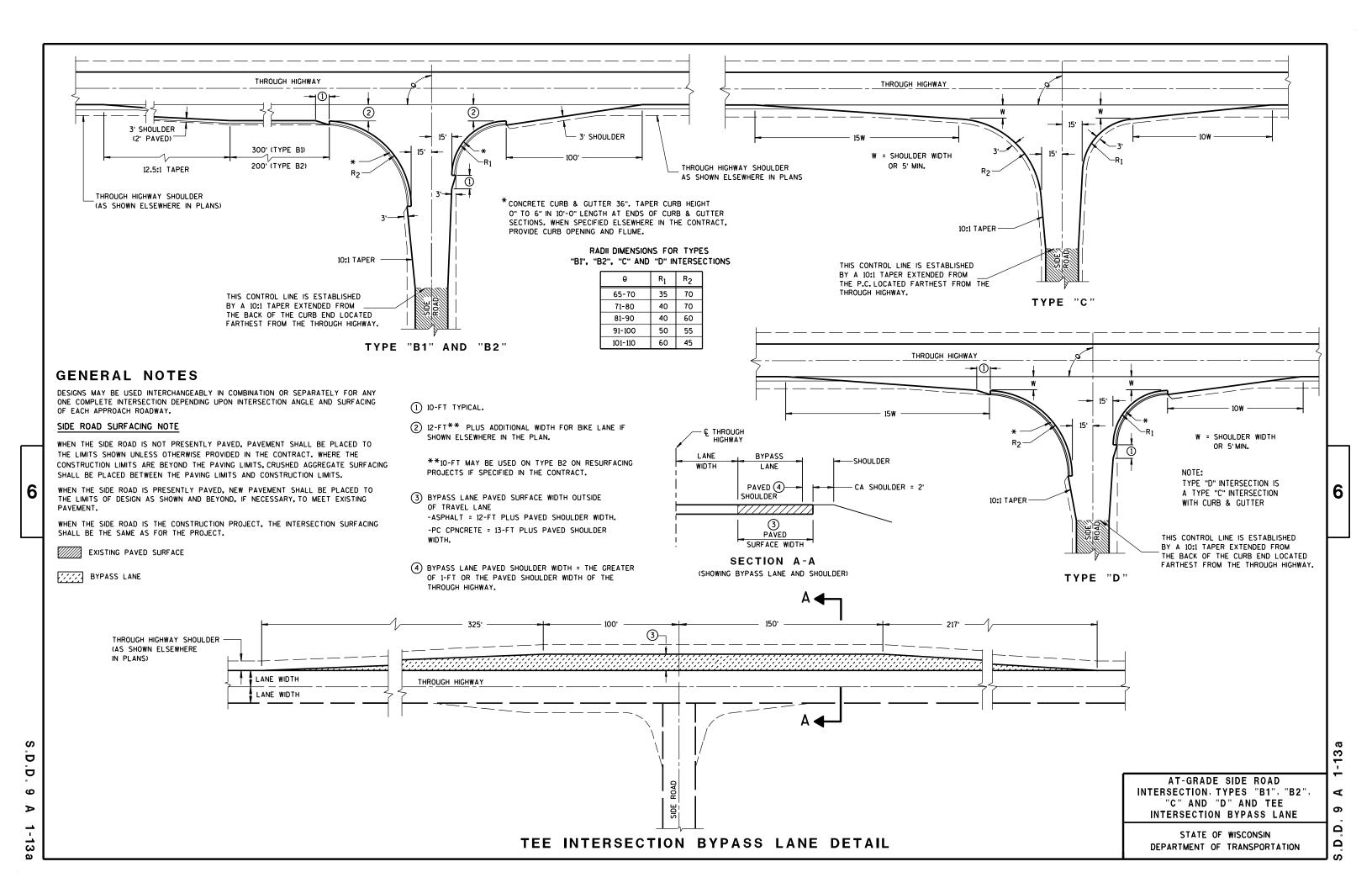
%6" DIA. HOLES FOR BOLTS OR RIVETS

12" C-C MAX.

SPACING

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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

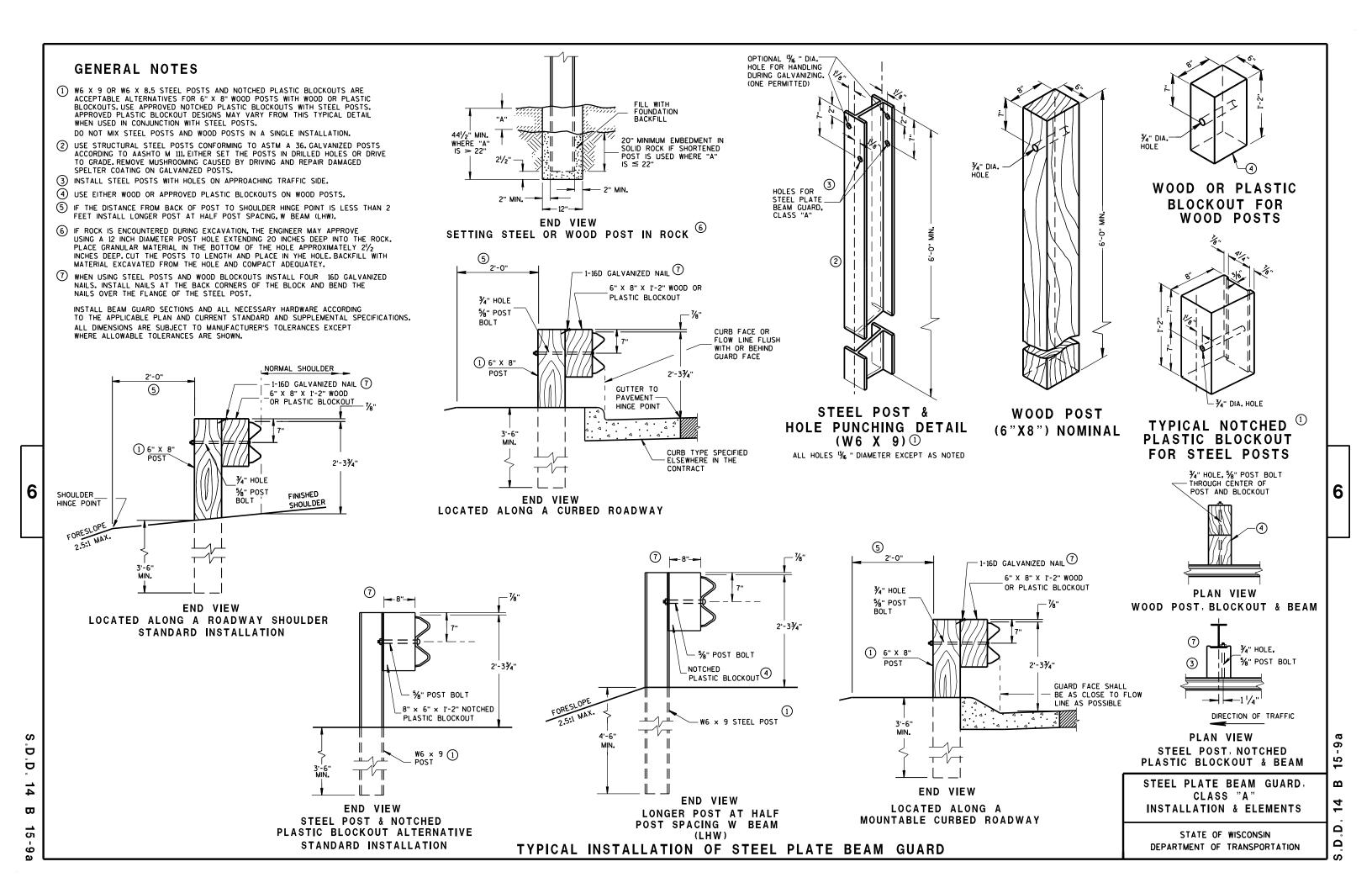
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3/26/IO /S/ SCOT BECKET

CHIEF STRUCTURAL DEVELOPMENT ENGINEER

D.D. 12 A

3-10

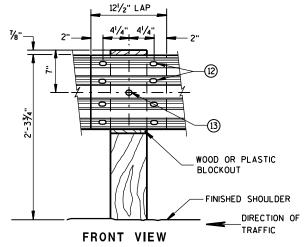


FRONT VIEW

POST SPACING STANDARD INSTALLATION

3/6" R 11/1/6" R 3/6" R 11/1/2" SYMMETRICAL ABOUT € 12 GAGE 10 31/4"

SECTION THRU W BEAM



BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

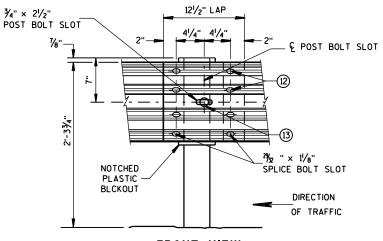
GENERAL NOTES

- (8) PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
- 9 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- (10) REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- (11) PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
- (12) 8 -5%" \$ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- 3 %" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH %" DIA. F844 FLAT WASHER UNDER NUT.

I2'-6" OR 25'-0" EFFECTIVE LENGTH OF BEAM 3'-1\frac{1}{2}\t" C-C 3'-1\frac{1}\t" C-C 3'-1\frac{1}{2}\t" C-C 3'-1\frac{1}{2}\t" C-C 3'-1\frac{1}{2}\t" C-C 3'-1\frac{1}{2}\t" C-C 3'-1\frac{1}{2}\t" C-C 3'-1

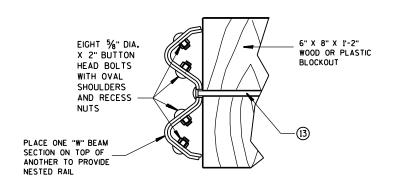
FRONT VIEW

POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW
BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS
OF STEEL PLATE BEAM GUARD

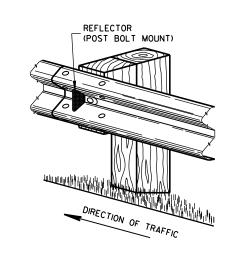


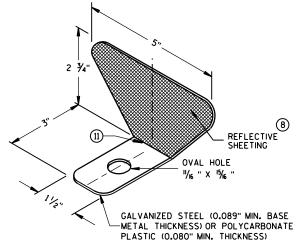
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

	9
REFLECTOR	SPACING

	BEAM GUARD	REFLECTOR	NO. SURFACES	MIN. NO.
	LENGTH	SPACING	REFLECTORIZED	REFLECTORS
ONE WAY	< 200'	50' C-C	1	3
TRAFFIC	> 200'	100' C-C	1	
TWO WAY	> 500, < 500,	25' C-C 50' C-C	1 (10)	6
		50:00		
TWO WAY TRAFFIC	> 500,	50' C-C	2 11	3





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 14 B 1

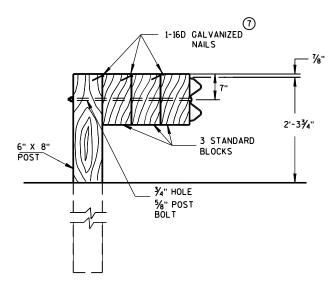
S.D.D. 14 B

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DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

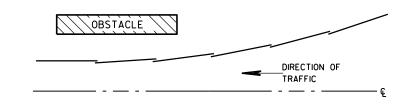


DETAIL FOR TRIPLE BLOCKS

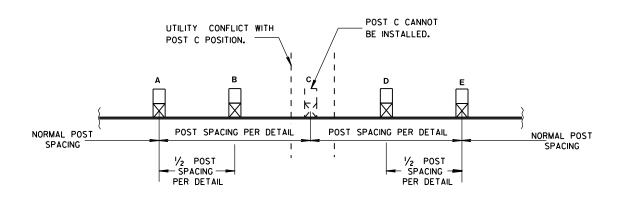
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA 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.



PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS 6

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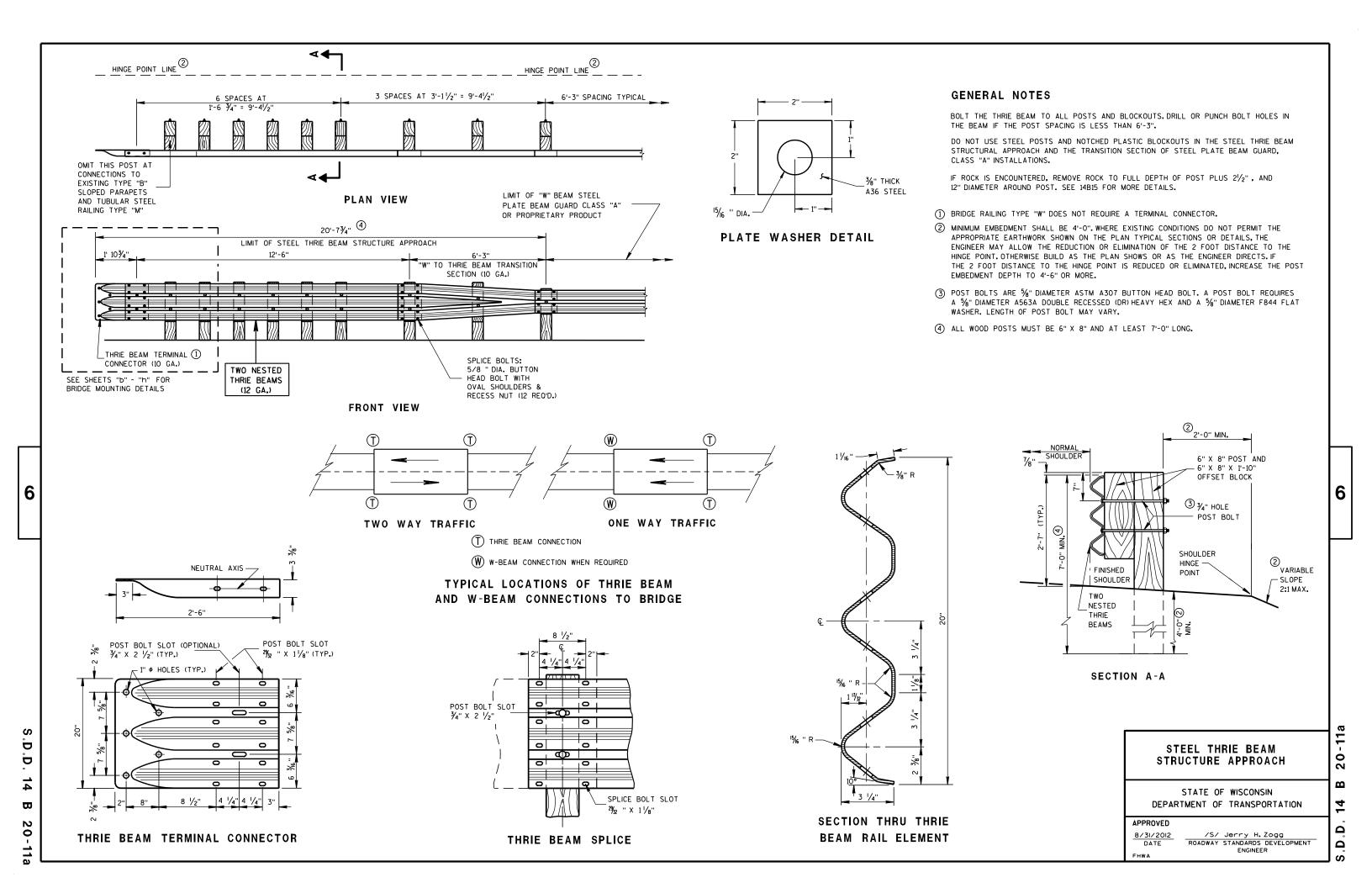
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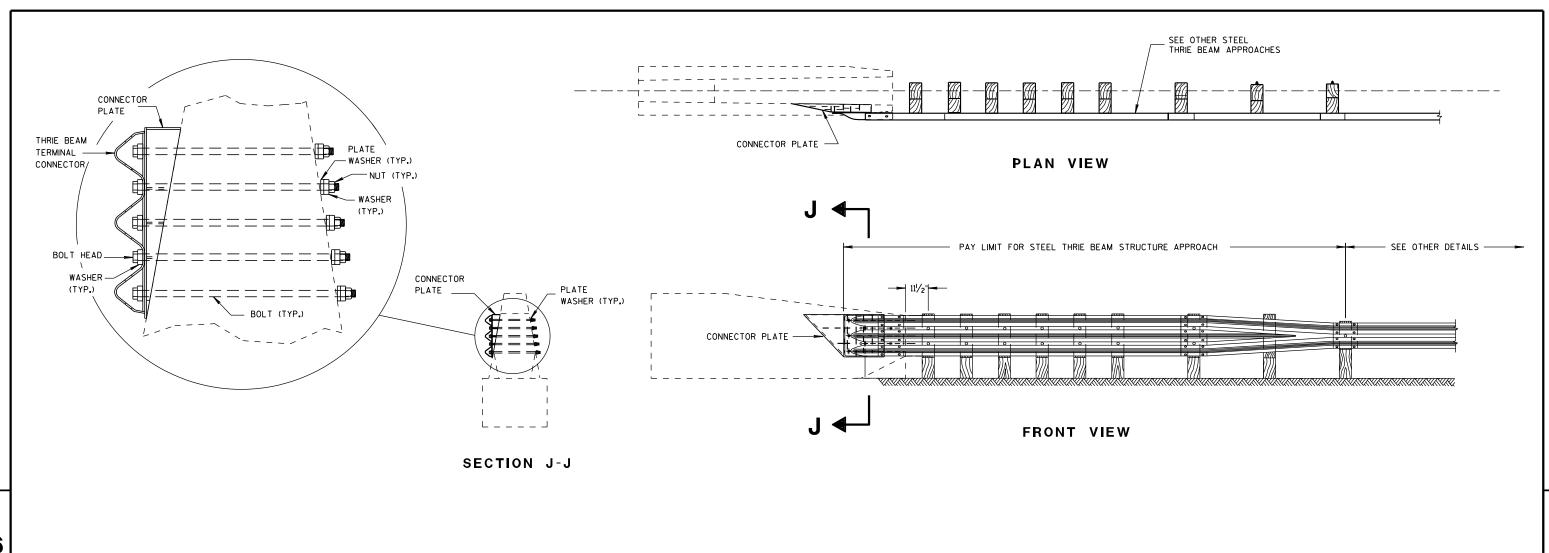
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2016
DATE
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

D.D. 14 B 15-9c





CBSS THRIE BEAM ANCHORAGE SECTION (SEE OTHER DETAILS) 1 1 1 313/6 313/6 313/6 1111 133/8 1111

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 614.

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

1 BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

CONNECTOR PLATE LOCATION

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT

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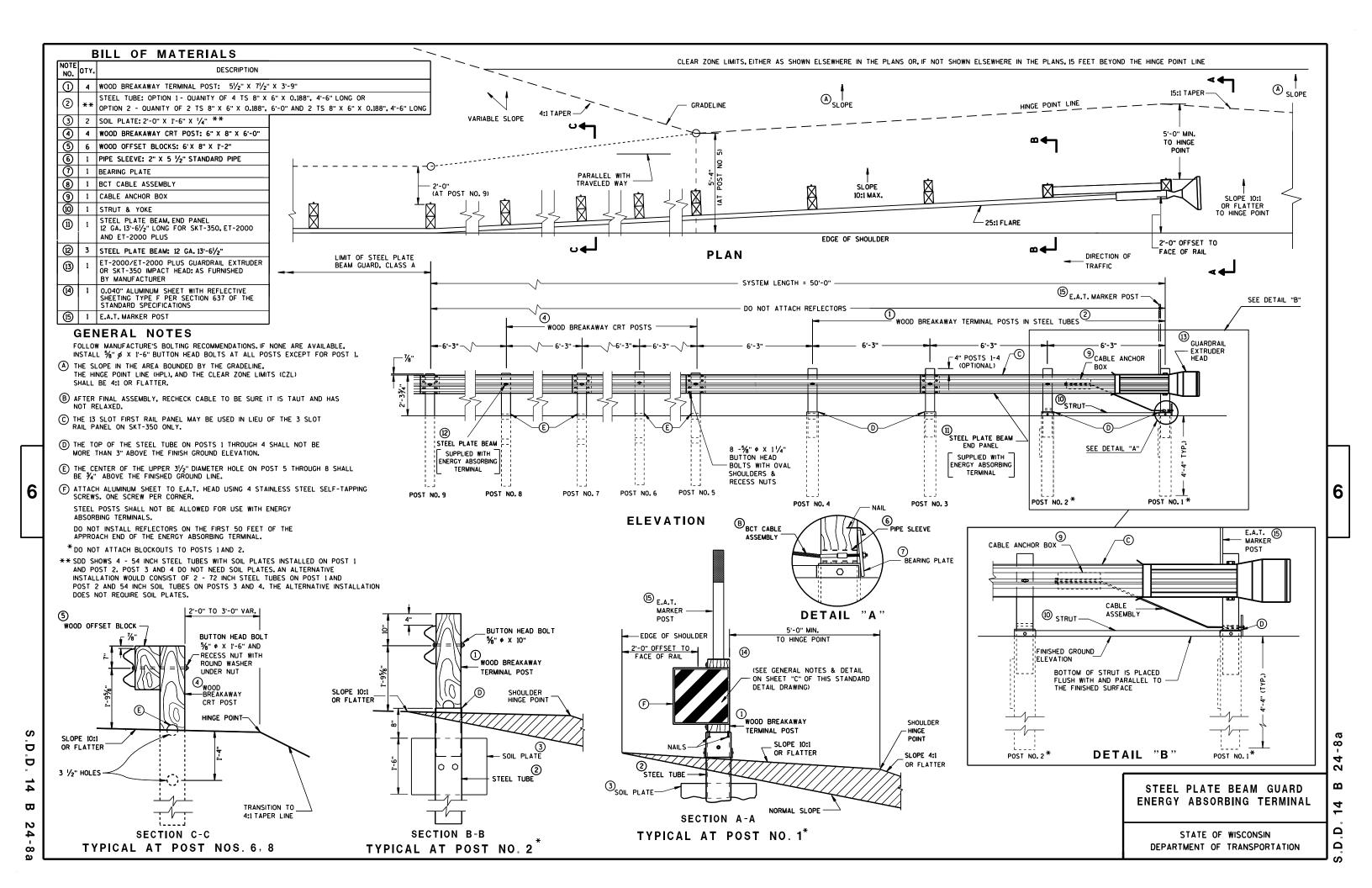
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

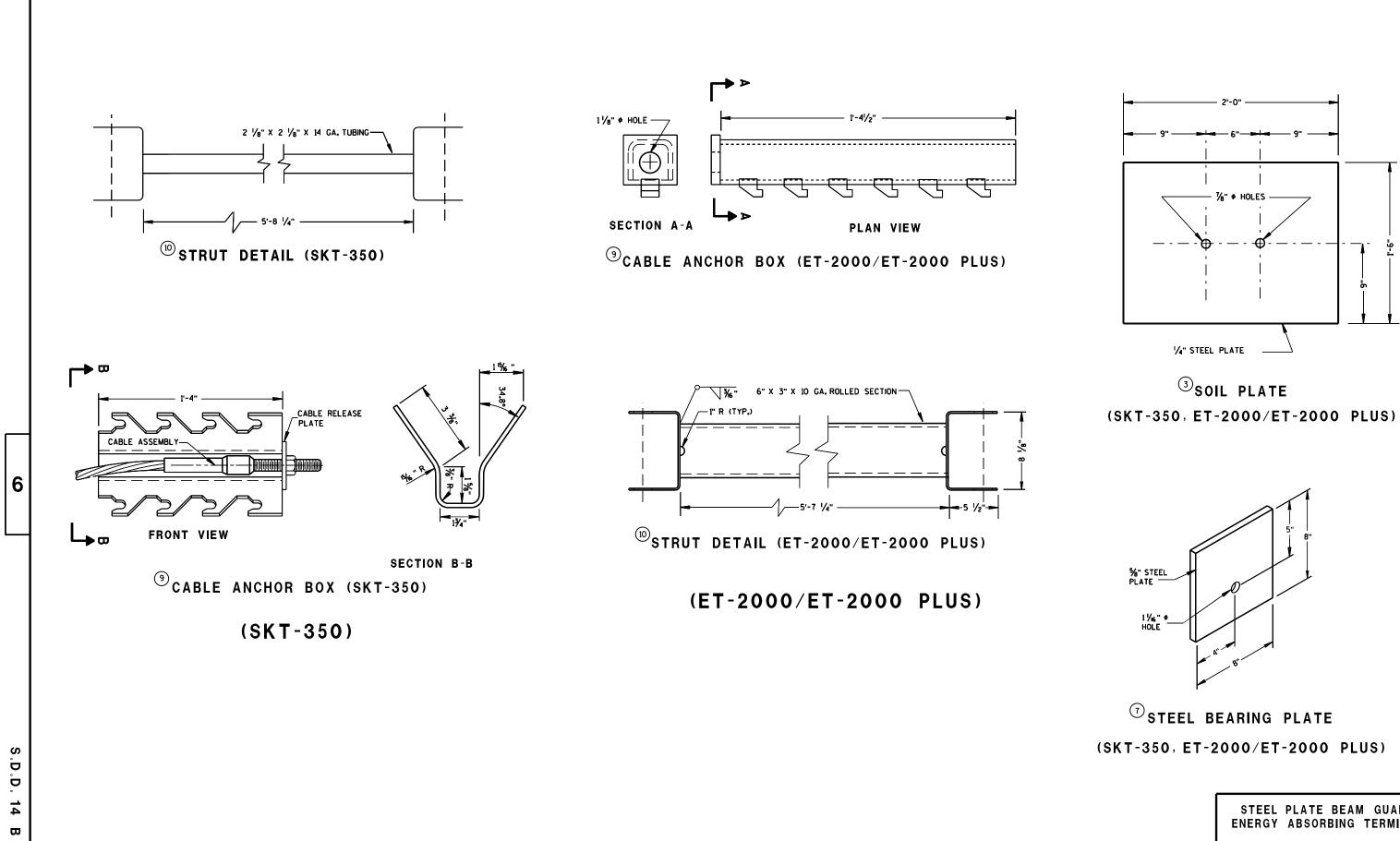
APPROVED

8/31/2012 /S/ Jerry H. Zogg

DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

S.D.D. 14 B 20-11h

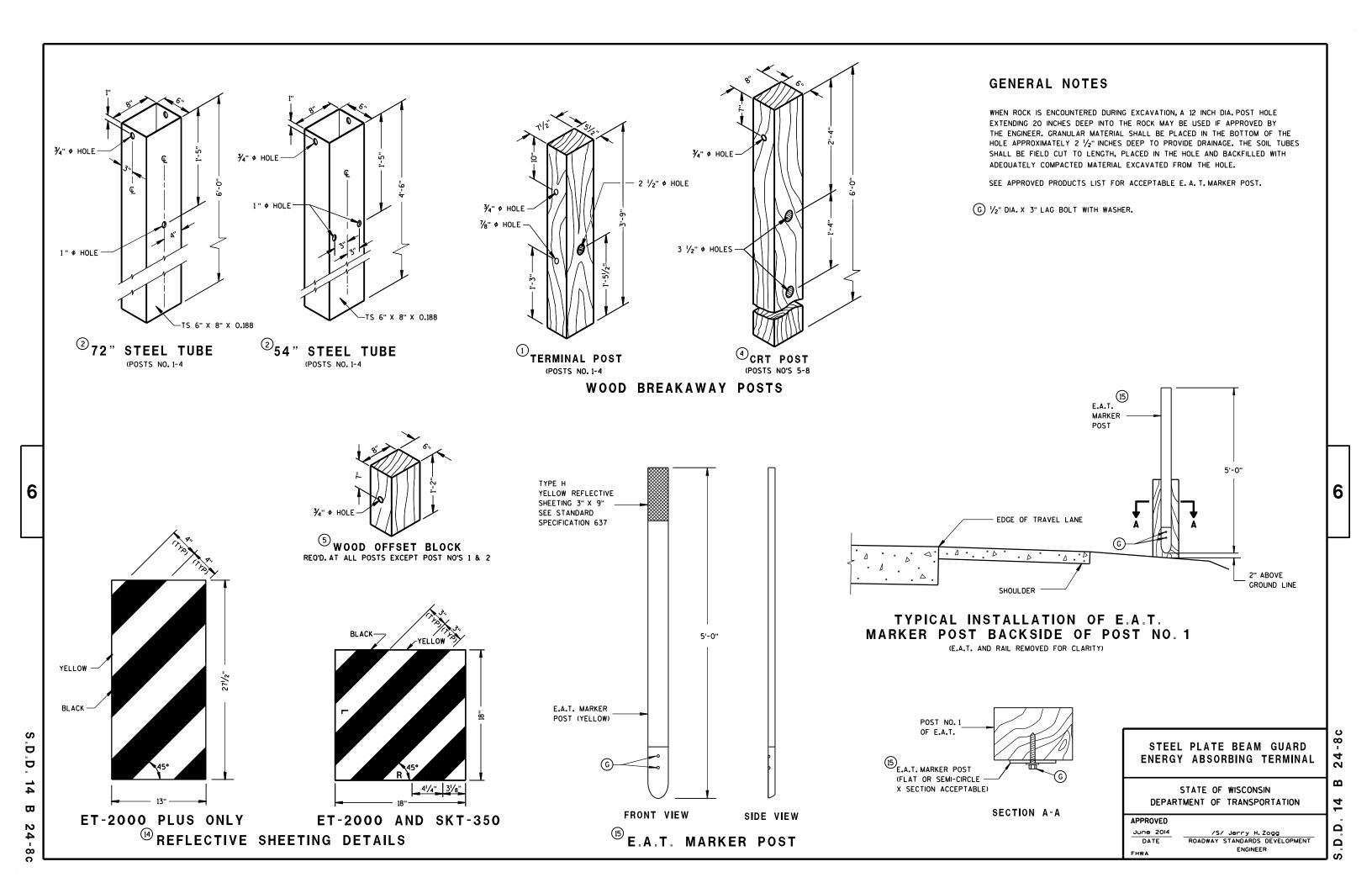




24-8b

STEEL PLATE BEAM GUARD **ENERGY ABSORBING TERMINAL**

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 14 أ يُ



STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

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GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2. UNLESS NOTED OTHERWISE.

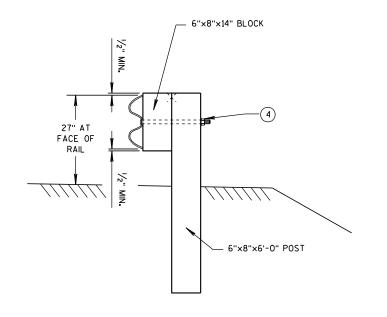
SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

- (1) ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.
- 2) RADIUS FROM 8' 36'. SEE PLAN.
- 3 HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.
- (4) %" ø X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	* NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH × WIDTH)
8'	5	1 at 12.5'	25' × 15'
16'	7	1 a† 25'	30' × 15'
24'	9	1 at 25' and 1 at 12 . 5'	40' × 20'
32'	11	2 at 25'	50' × 20'

* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



SECTION B-B (BEAM GUARD POST)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 6

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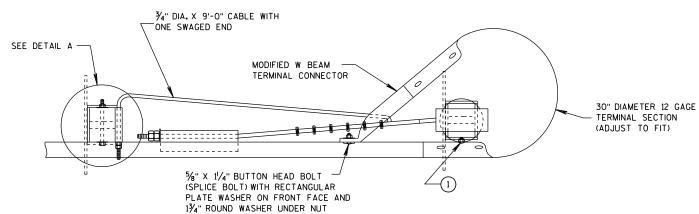
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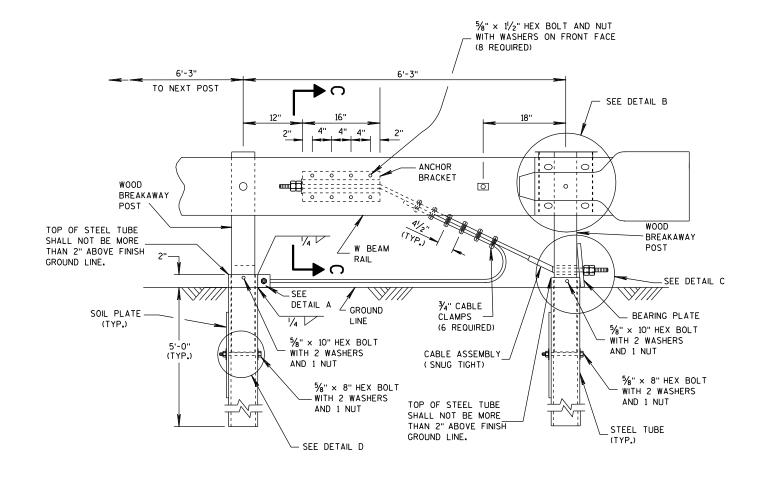
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PLAN VIEW



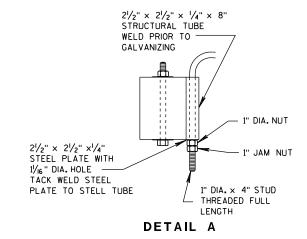
ELEVATION VIEW

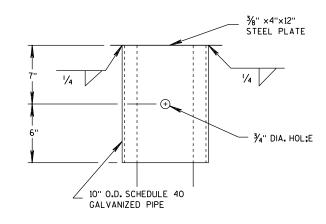
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A 5%" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.

INSTALL GALVANIZED 3/4" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.

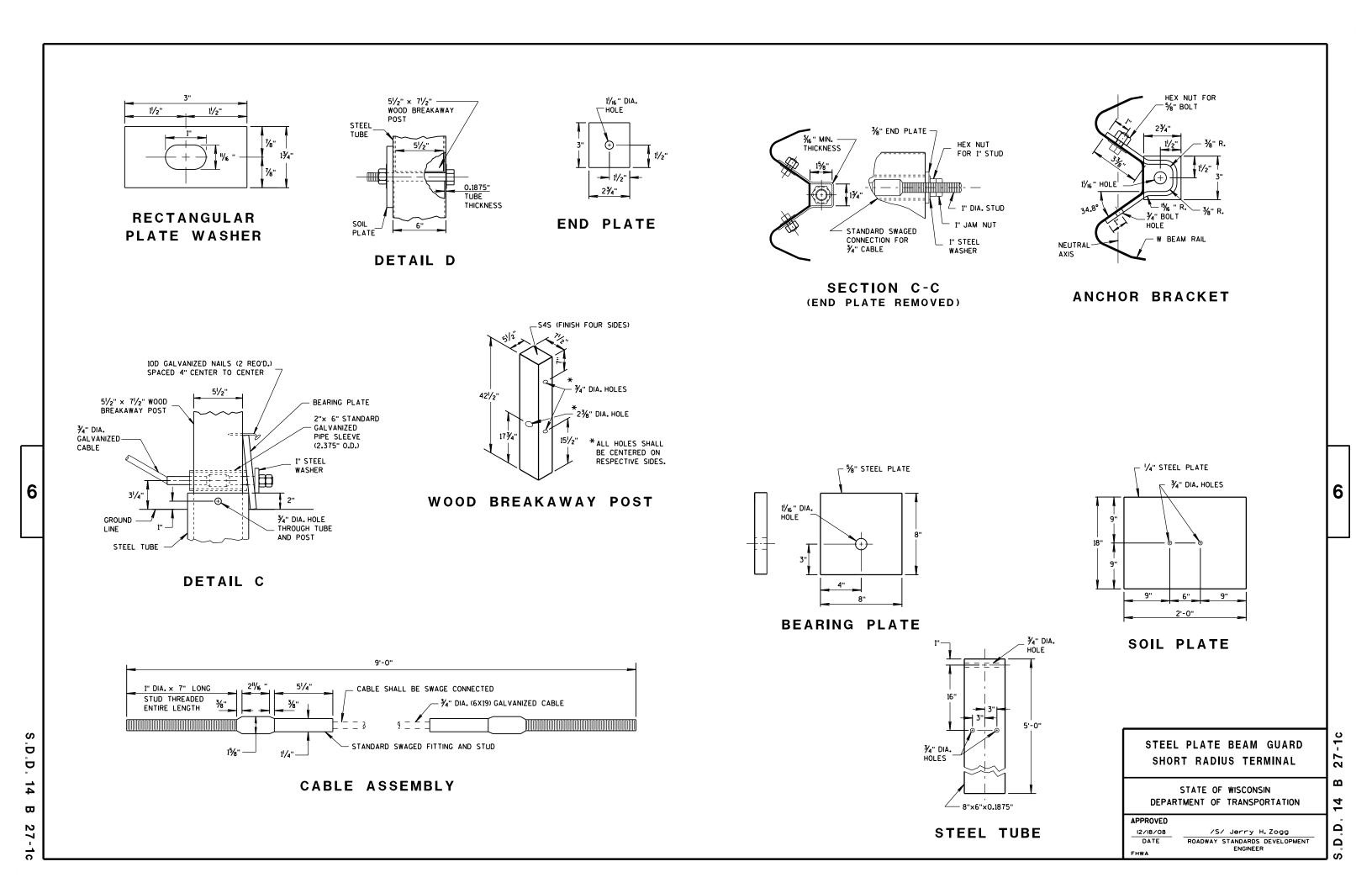




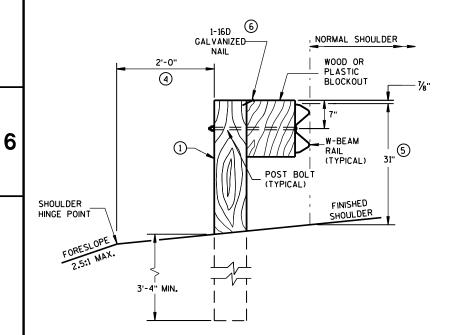
DETAIL B (BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

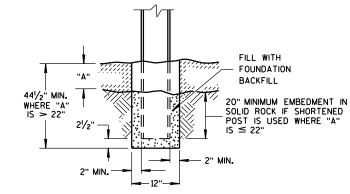


- 2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- (3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 21/2 INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- (5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 273/4" TO 32".
- (6) WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



END VIEW

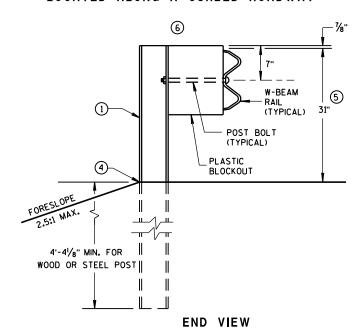
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



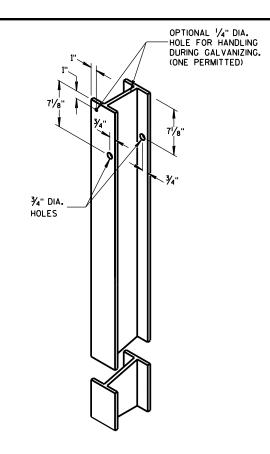
END VIEW SETTING STEEL OR WOOD POST IN ROCK 3



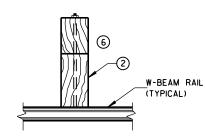
END VIEW LOCATED ALONG A CURBED ROADWAY



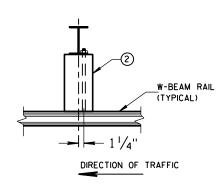
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



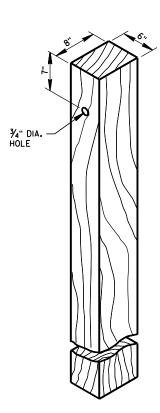
STEEL POST & HOLE PUNCHING DETAIL (w6X9)^①



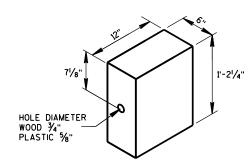
PLAN VIEW WOOD POST, **BLOCKOUT & BEAM**



PLAN VIEW STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD POST (6" X 8") NOMINAL



WOOD OR PLASTIC BLOCKOUT

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

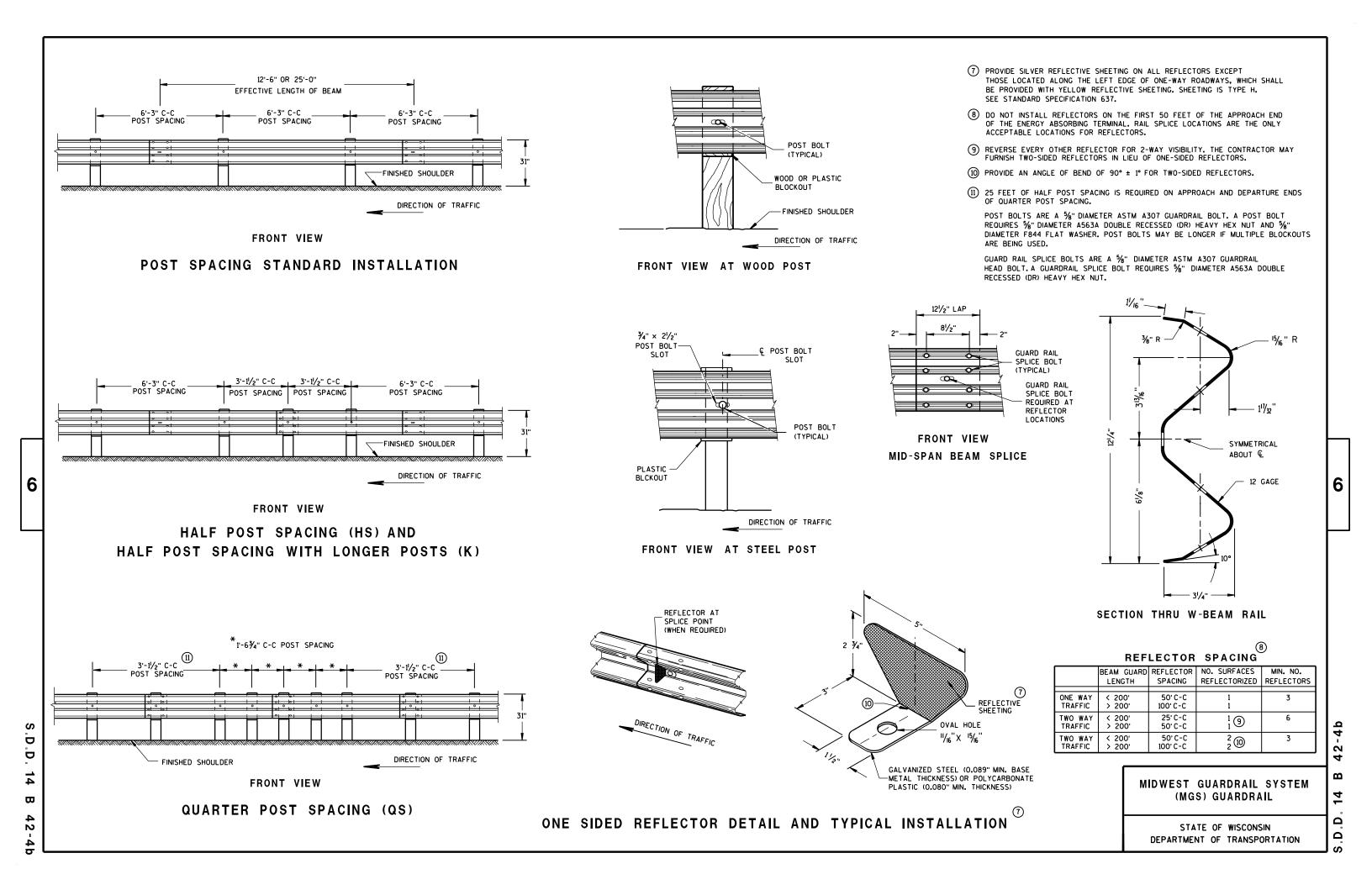
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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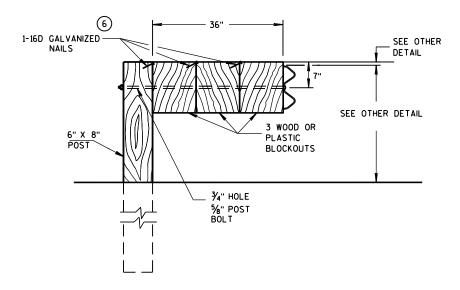
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DETAIL FOR 16" BLOCKOUT DEPTH

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.

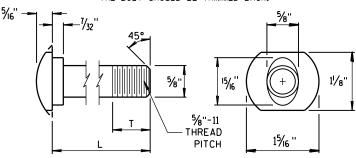


DETAIL FOR 36" BLOCKOUT DEPTH

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.

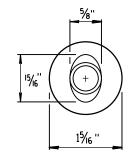
> DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

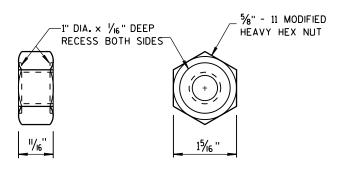


POST BOLT TABLE

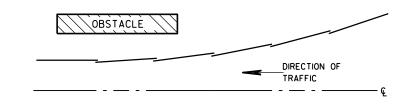
11/8"
1/8
13/4"
4"
4½ ₆ "
4"
41/16"
4"



ALTERNATE BOLT HEAD

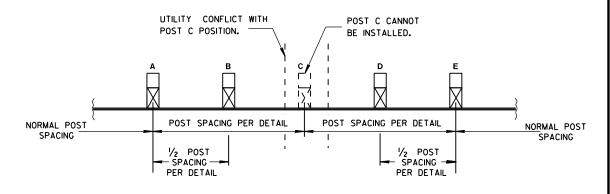


POST BOLT, SPLICE BOLT AND RECESS NUT



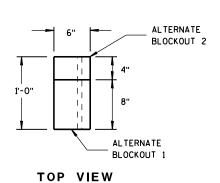
PLAN VIEW

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

APPROVED

/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER

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SECTION A-A SECTION B-B

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PLAN VIEW

BILL OF MATERIALS

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



MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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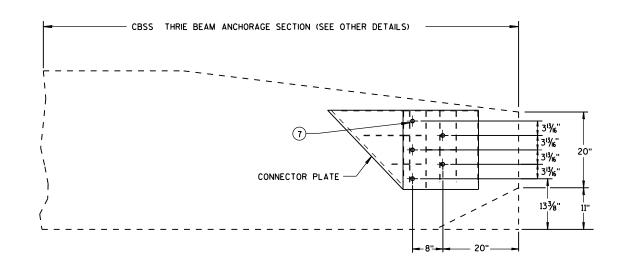
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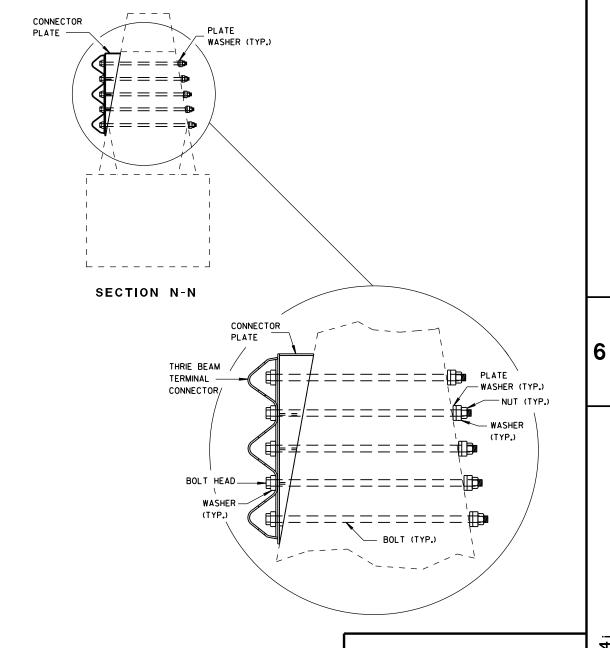


SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

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

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



MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

4

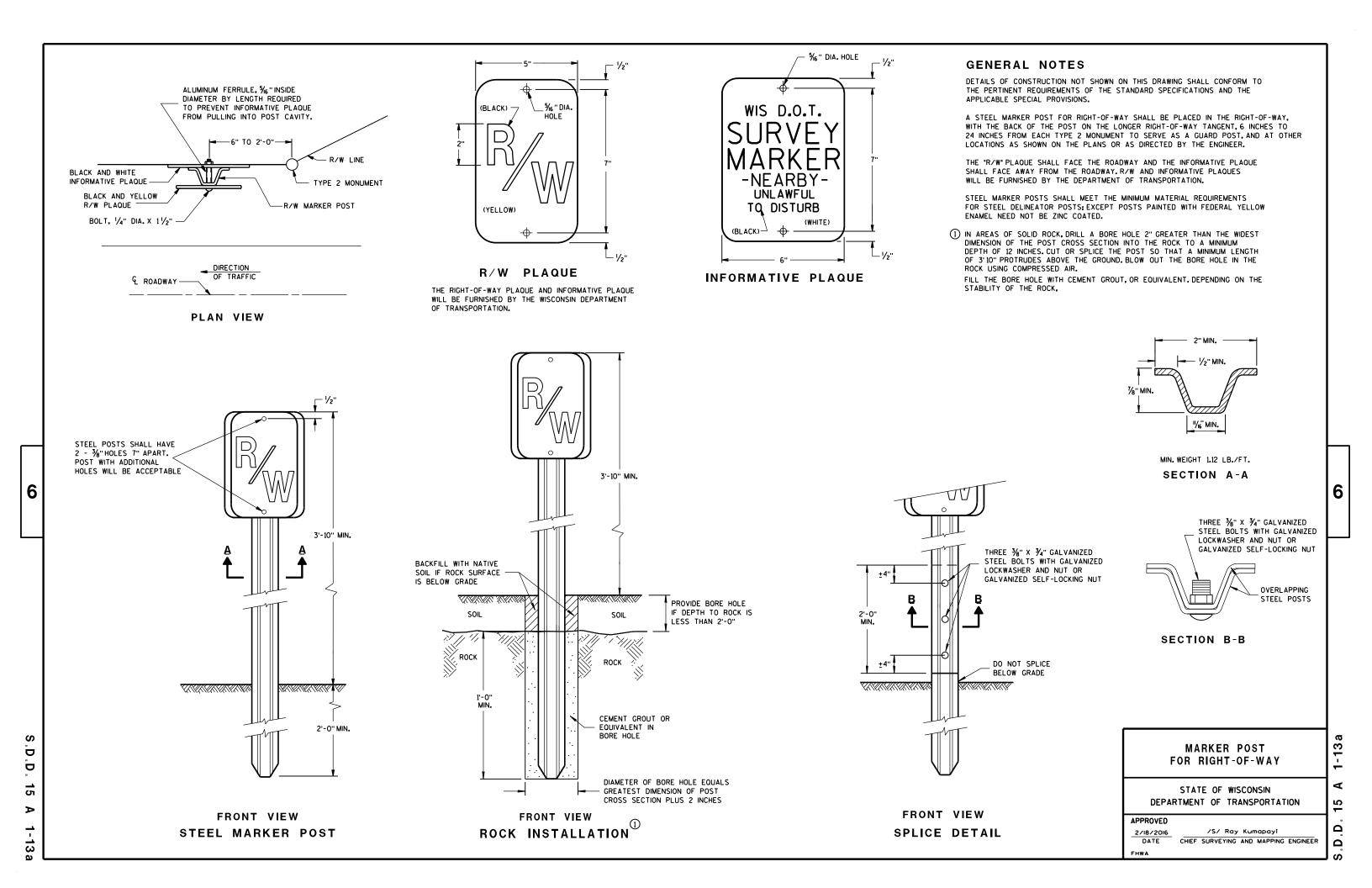
APPROVED
June, 2015 /S.

FHWA

OIS /S/ Jerry H. Zogg

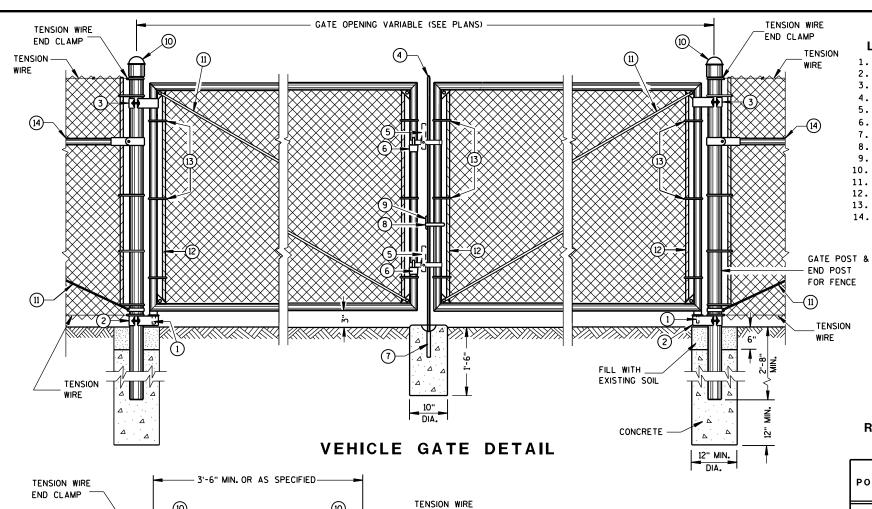
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

S.D.D. 14 B 4









END CLAMP

EXISTING SOIL

PEDESTRIAN GATE DETAIL

CONCRETE

12" MIN.

CONCRETE

12" MIN.

TENSION

GATE POST &

END POST

FOR FENCE

TENSION -

GATE POST &

TENSION

END POST

FOR FENCE

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REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL	LESS THAN OR EQUAL TO 6 FT.	SP3
POSTS **	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2†
	GREATER THAN OR EOUAL TO 8 FT.	FS3

BRACE RAIL TYPES

USE	TYPE
BRACE RAIL	SP1 OR FS1

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS

- LEGEND 1. STRAIGHT PLUG
- 2. BOTTOM HINGE
- TOP HINGE
- 4. PLUNGER ROD
- 5. FULCRUM LATCH
- 6. FORK CATCH *
- 7. PLUNGER ROD CATCH 8. LOCK KEEPER GUIDE
- 9. LOCK KEEPER
- 10. DOME TOPS
- 11. TRUSS RODS
- 12. TENSION BAR
- 13. TENSION BANDS 14. BRACE RAIL

*NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

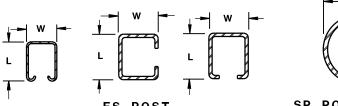
USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

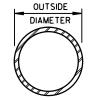
FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.

USE TYPE 2, CLASS 3, MARCELLED/CRIMPED, TENSION WIRE PER ASTM A 817.





SP POST & RAIL

CROSS SECTIONS OF POSTS AND RAILS

ROLLED-FORMED STEEL FENCE POST (2.0 OZ./SQ. FT. COATING)

POST TYPE	LENGTH (L) INCH	WIDTH (W)	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2†	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

ROUND STEEL FENCE POST (1.8 OZ./SQ. FT. COATING)

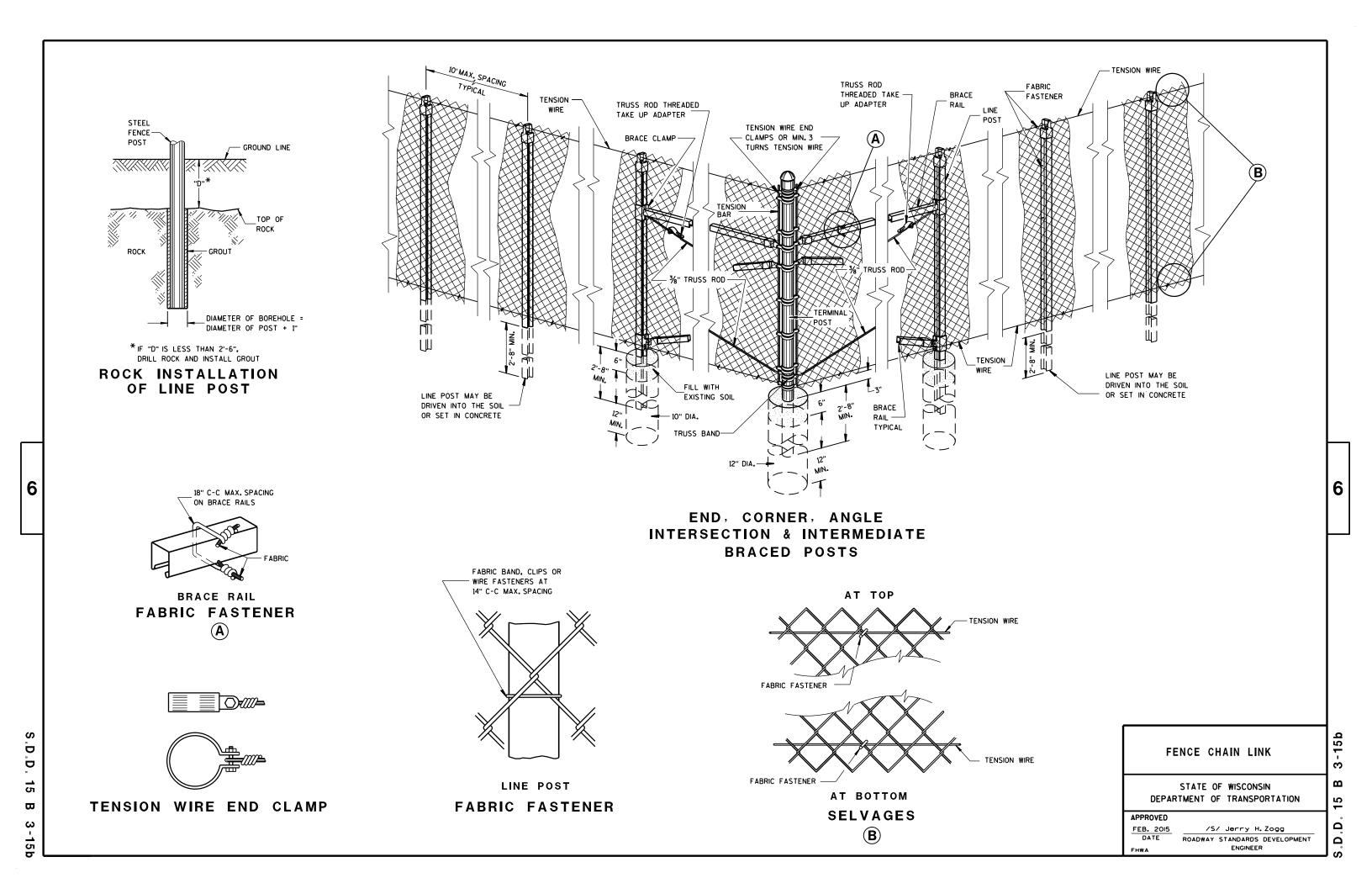
POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
	LESS THAN OR EQUAL TO 6 FT.	SP4
GATES	LESS THAN OR EOUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

FENCE CHAIN LINK

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION က





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

2

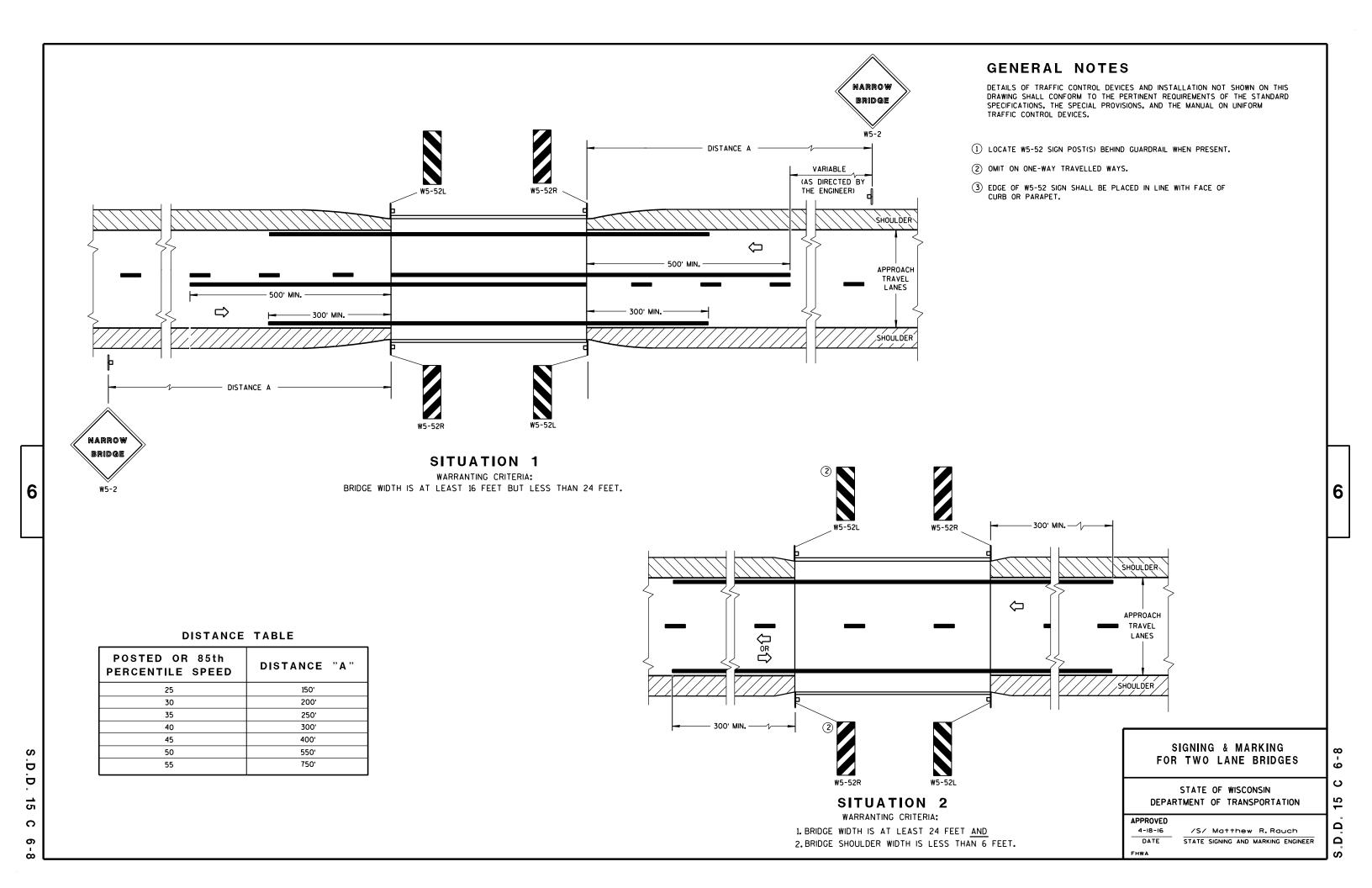
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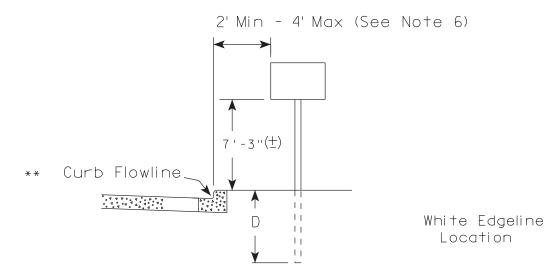
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

/S/ Peter Amakobe Atepe

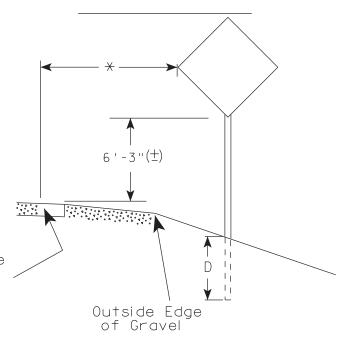
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER



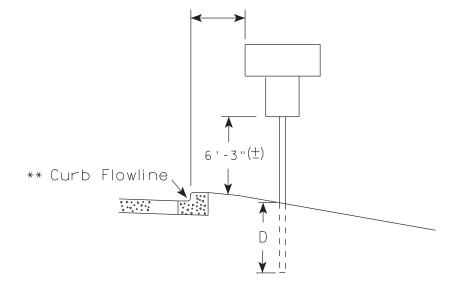
URBAN ARFA



RURAL AREA (See Note 2)



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



5'-3"(生) White Edgeline D IILocation Outside Edae 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" (±) depending upon existence of a sub-sign.
- 4. Minimum mounting height for J assemblies (A2-1S) is $7'-3''(\pm)$ or $6'-3''(\pm)$ per urban or rural detail respectively.
- 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 (+) 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" (\pm) . 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'' (\pm).

POST EMBEDMENT DEPTH

D
(Min)
4'
5'

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

SHEET NO:

APPROVED

for State Traffic Engineer

DATE 7/23/15

PLATE NO. <u>A4-3.20</u>

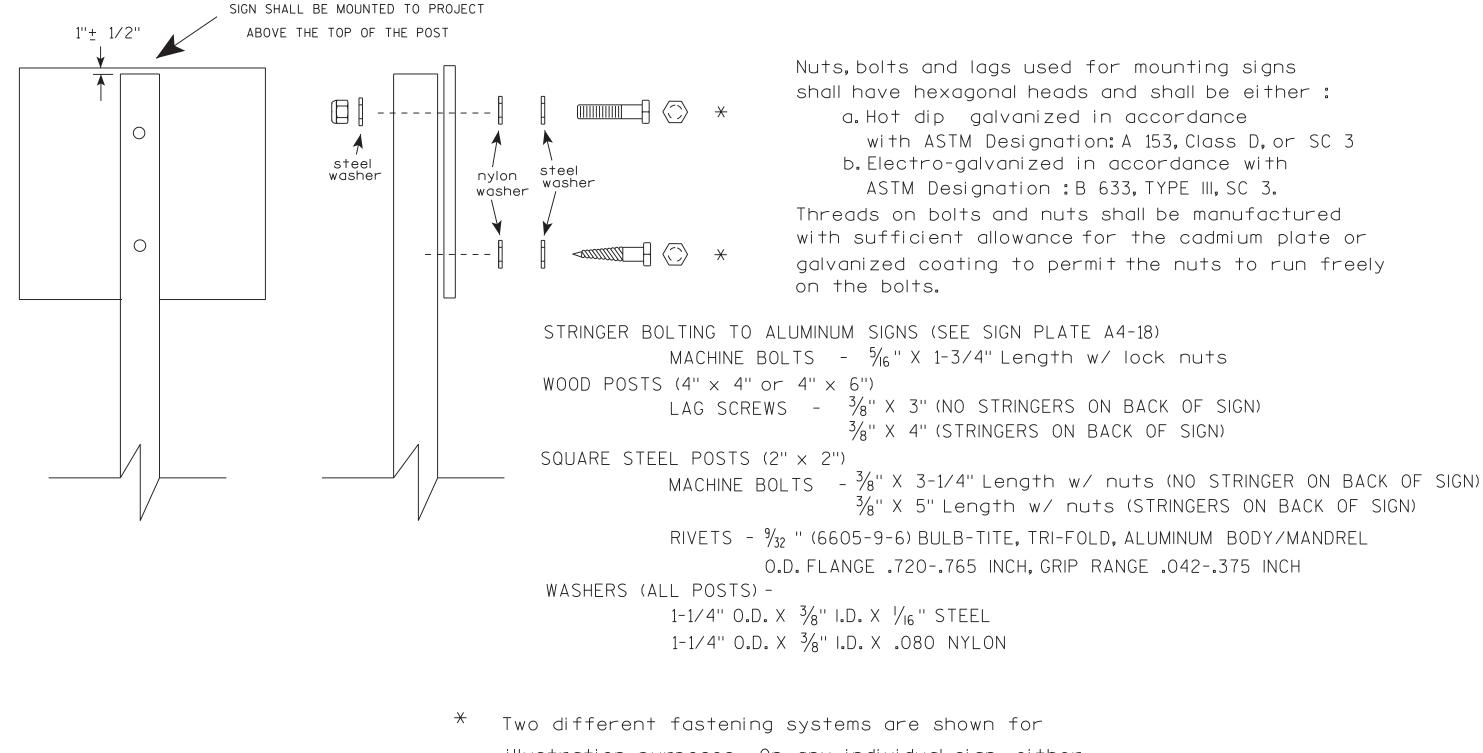
HWY:

COUNTY:

PLOT DATE: 23-JUL-2015 15:21 PLOT BY : mscj9h PLOT NAME :

PLOT SCALE: 99.237937:1.000000

PROJECT NO:



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

For State Traffic Engineer

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

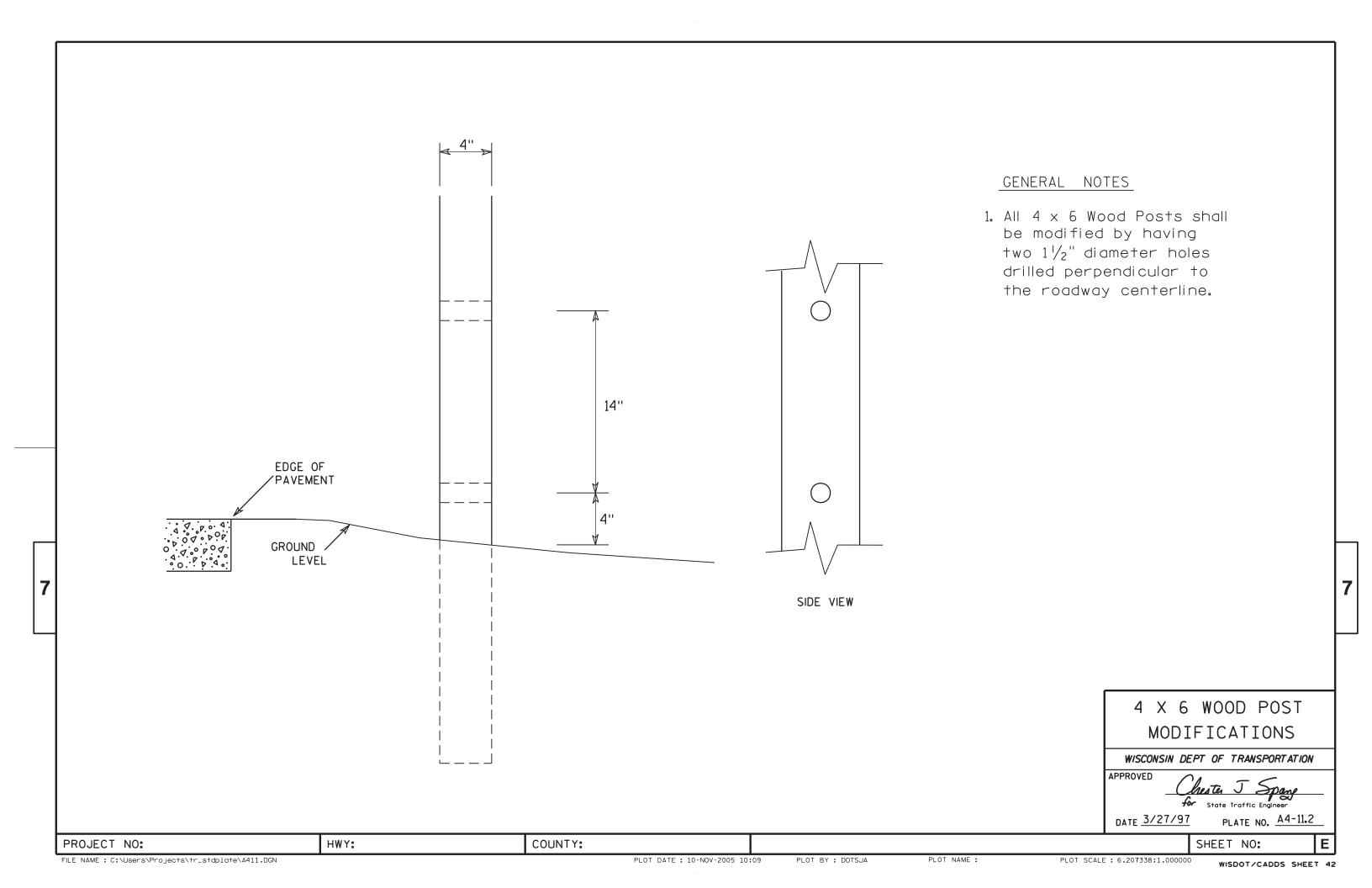
SHEET NO:

FILE NAME . C.\CAFfiles\Projects\tr stdolote\A48 DGN

PROJECT NO:

PLOT DATE . 11-4HG-2016 11:35

PLOT RY • \$\$ plotuser

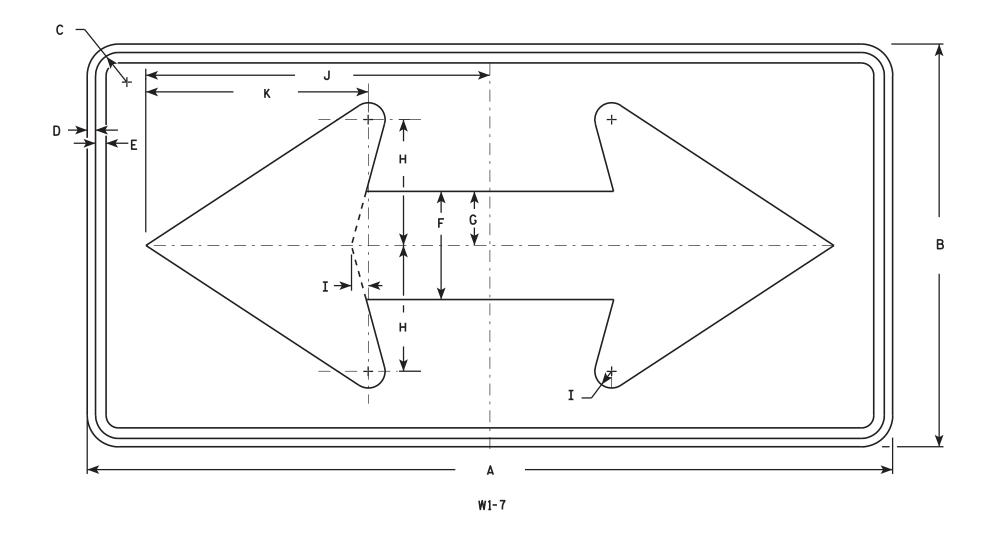


NOTES

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

Background - Yellow Message - Black

3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



SIZE	Α	В	С	D	E	F	G	Н	I	J	K	L	М	N	0	Р	0	R	S	Т	U	٧	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3⁄8	1/2	5	2 1/2	5 ¾	₹4	15 %	10 1/8																4.5
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 %	16 1/4																12.5
5	96	48	2 1/4	3/4	1	13	6 1/2	15	2	41	26 1/2																32.0

COUNTY:

STANDARD SIGN W1-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R Raw

For State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-7.7

DATE OF THE

SHEET NO:

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W17.DGN

PROJECT NO:

HWY:

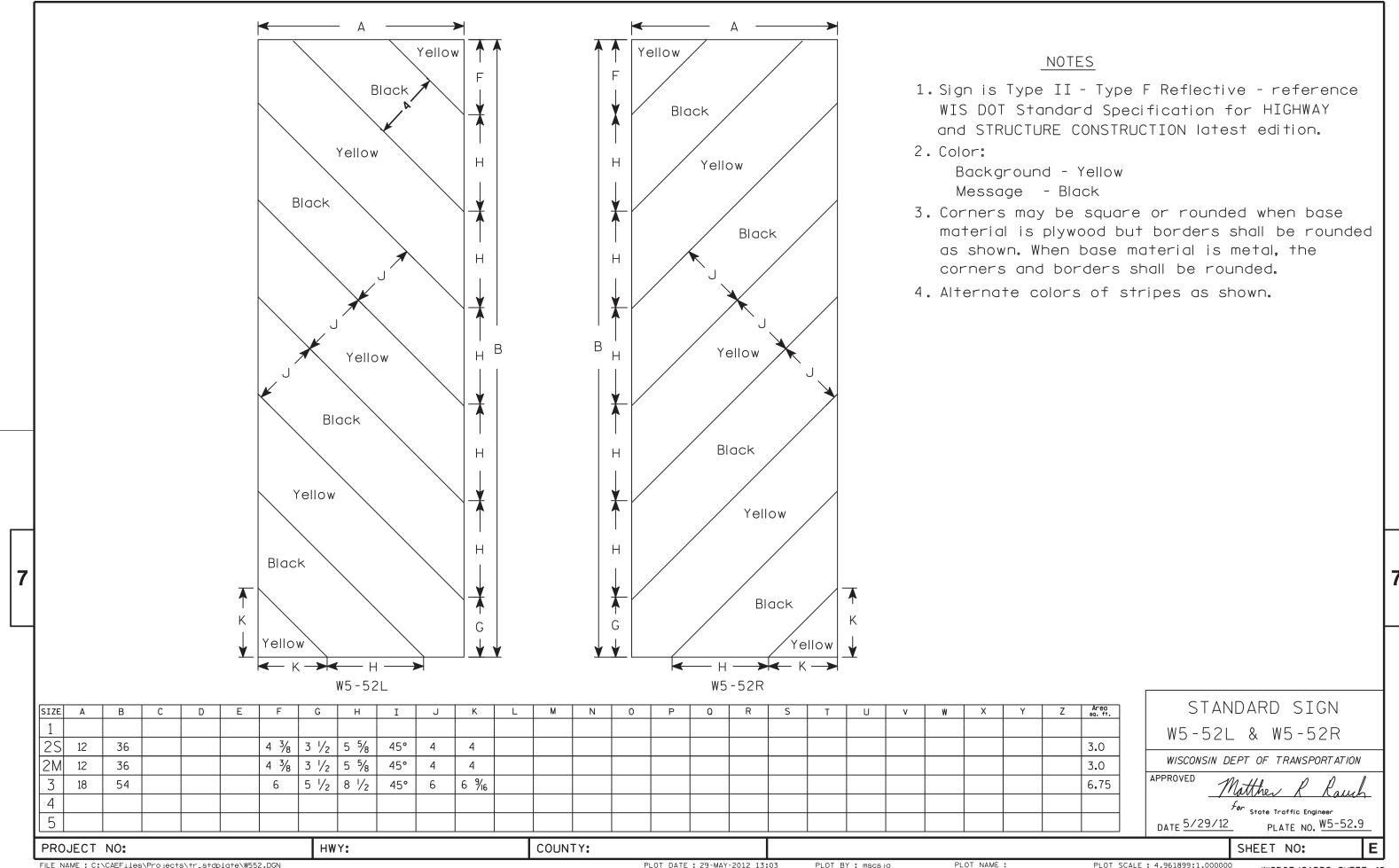
PLOT DATE: 07-JUN-2010 12:35

PLOT BY: ditjph

PLOT NAME :

PLOT SCALE: 5.720679:1.000000

WISDOT/CADDS SHEET 42



FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W552.DGN

PLOT DATE: 29-MAY-2012 13:03

PLOT BY: mscsja

PLOT SCALE: 4.961899:1.000000

WISDOT/CADDS SHEET 42

EARTHWORK-MAINLINE

	AREA (SF)			INCREMENTAL VOL (CY)								CUMMULATIVE VOLUME (CY)										
-	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1					SALVAGED/			REDUCED						- ()	REDUCED					
		SALVAGED/					UNUSABLE			MARSH IN FILL	FILL	SELECT CRUSHED		CUT			MARSH IN FILL	FILL	SELECT CRUSHED		MASS	
		UNUSABLE				CUT	PAV'T MATERIAL	FILL		(0.6)		MATERIAL		1.00		MARSH	(0.6)	(25%)	MATERIAL		ORDINATE	
STATION	CUT	PAV'T MATERIAL	FILL	MARSH EX	EBS	NOTE 1	NOTE 2	NOTE 3	MARSH EX	NOTE 4	(25%)	(1.5)	EBS	NOTE 1	FILL	EX	NOTÉ 4	NOTE 5	(1.5)	EBS	NOTE 6	
20+90	0	0	0	0	0	. 0	0	0	0	0	` o ´	°o ′	0	0	0	0	٥	0	`o´	0	0	
21+00	8	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	٥	0	0	0	1	
21+50	84	Ó	3	0	0	85	a	3	0	٥	4	0	Ó	86	3	0	0	4	o	٥	82	
21+65	84	Ö	3	ò	0	47	à	2	ō	Ď	2	ō	Ó	133	5	o	ō	6	ō	Ó	127	
21+65	111	Ō	3	o	0	0	a	ō	ō	Ď	0	Ö	Ó	133	5	ō	Ó	6	ò	Ô	127	
21+90	111	ō	3	ō	o	103	à	2	ō	Ď	3	ō	Ó	236	7	ō	Ö	9	ō	Ó	227	
21+90	52	ō	Ó	ō	o	0	à	0	ō	Ď	Ó	ō	Ó	236	7	ō	Ö	9	ō	ò	227	
22+00	52	0	ō	0	0	19	n	n	0	n	0	ō	n	255	7	ō	Ö	9	9	n	246	
22+22	52	ō	ő	0	ō	42	n	n	ő	n	ō	0	n	297	7	ō	Ö	9	9	n	288	
22+22	23	ő	6	0	ŏ	0	n	n	Ô	n	ő	o	n	297	7	ŏ	Ö	9	ā	n	288	
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23+50	1	Õ	131	ñ	ň	1	n	165	ñ	n	207	Õ	n	344	229	ň	۸	285	Ô	n	59	
24+00	1	Õ	238	Ď	ň	2	n	341	ñ	n	427	Ô	n	346	570	ñ	^	712	o o	n	-366	
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25+50	0	0	714	D D	^	5	0	1173	0	0	1466	0	0	376	3185	٥	Ô	3980	0	0	-3604	
26+00	0	0	1006	0	0	0	0	1592	0	n	1991	0	n	376	4777	0	Ö	5971	0	n	-5595	
26+50	0	0	1272	0	0	0	0	2109	0	0	2636	0	n	376	6886	0	Ö	8607	0	n	-8231	
27+00	0	0	1332	0	0	0	0	241 1	0	0	3014	0	n	376	9297	0	Ö	11621	0	n	-11245	
27+20	0	0	1332	0	0	0	0	987	0	0	1234	0	n	376	10284	0	0	12855	0	0	-12479	
27+20	0	0	1332	v v	0	0	0	0	0	0	0	0	0	376	10284	0	0	12855	0	0	-12479	
27+20	0	0	1994	0	0	0	0	1847	0	0	2310	0	0	376	12 1 3 1	0	^	15165	0	0	-14789	
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27+65	Ü	٥	1994 0	0	0	0	Ú	812 0	0	0	1015	0	0	376	13238	0	0	16549	0	0	-16173	
27+65	0	0	0	0	0	0	0	Û	0	0	0	0	0	376	13238	0	0	16549	0	n	-16173	
28+00	0	0	0	Ų.	0	0	ų	Ů,	0	Ü	0	0	0	376	13238	0	0	16549	0	0	-16173	
28+20	0	0	-	· ·	0	0	U	0	0	0	0	0	n		13238	0	0	16549	0	0	-16173	
28+20	0	0	1530 1344	· ·	0	0	U	-	0	0	1996	0	U	376 376	13238	0	0	16549	0	n	-16173	
28+50	0	0		0	0	0	0	1597 362	0	0		0	0	376	14835	0	0	18545	0	n	-18169	
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28+77	0	0	948	0	^	0	0	721 0	0	0	901	0	0		15918	0	0	19899	0	a	-19523	
28+77	0	0	513	U O	0	0	0	_	0	0	475	0	0	376 376	16298	0	0	19899	0	0	-19523	
28+97	0	0	513	U O	0	0	0	38D 0	0	0	475 0	0	0	376		0	0	20374	0	0	-19998	
28+97	0	0	513 513	U O	0	0	0	57	0	0	_	0	0	376	16298 16355	0	0	20374	0	n	-19998	
29+00	U			บ	0	0	0		0	U	71	0	U			0	U O	20445	0	0	-20069	
29+26	U	0	513	U	0	U	U	494	0	U	617	U .	U	376	16849	0	0	21062	0	U	-20686	
29+26	U	0	498	U	0	0	0	0	0	U	0	0	u	376	16849	0	0	21062	0	U	-20686	
29+50	2	Ü	498	U	0	1	U	442	0	U	554	U .	U	377	1729 1	0	0	21616	0	U	-21239	
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30+50	2	0	313	U	0	4	U	651	0	U	814	U	U	384	18765	0	0	23459	0	U	-23075	
31+00	8	0	218	0	0	10	O .	491	0	Ü	614	0	Ü	394	19256	0	Ü	24073	0	Ü	-23679	
31+47	U	0	97	0	0	/	Ü	274	0	U	342	0	U	401	19530	0	O .	24415	0	U	-24014	
31+47	Ü	0	97	0	0	O	O .	0	0	Ü	0	O	Ü	401	19530	0	Ü	24415	0	Ü	-24014	
31+50	U	0	97	0	0	o .	O .	12	0	Ü	14	O	Ü	401	19542	0	Ü	24429	0	Ü	-24028	
31+68	0	0	97	0	0	0	a	65	0	0	81	0	0	401	19607	0	0	24510	0	0	-24109	
31+68	0	0	97	0	0	0	O	0	0	0	0	0	0	401	19607	0	0	24510	0	0	-24109	
32+00	0	0	87	0	0	0	O	109	0	0	136	0	0	401	19716	0	0	24646	0	0	-24245	
32+50	8	0	32	0	0	7	0	110	0	0	137	0	0	408	19826	0	0	24783	0	0	-24375	
33+00	7	0	11	0	0	14	0	40	Ō	0	50	0	0	422	19866	Ō	0	24833	0	0	-24411	
33+50	39	0	4	0	0	43	0	14	0	0	18	0	0	465	19880	0	0	24851	0	0	-24386	
34+00	72	0	10	0	0	103	0	13	0	0	17	0	0	568	19893	0	0	24868	0	0	-24300	
34+25	29	0	0	0	0	47	0	5	0	0	6	0	0	615	19898	0	0	24874	0	0	-24259	
				COLUMN TOTA	ALS =	615	0	19898	0	0	24874	o	0									

9

CUT INCLUDES SALVAGED/UNUSABLE MATERIAL

2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL

THIS DOES NOT SHOW UP IN CROSS SECTIONS

DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VO

8 - FILL (25%) DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME REDUCED MARSH THAT CAN BE USED IN FILL

5 - FILL (25%) 6 - MASS ORDINATE FILL 25%: (UNEXPANDED FILL)*1.25 (CUT + REDUCED MARSH(0 6) - FILL (25%))

SHEET EARTHWORK TABLE Ε PROJECT NO:5687-00-72 HWY: FIVE CORNER ROAD COUNTY: GREEN

S:\PROJECTS\K19180 FIVE CORNER ROAD\SHEETSPLAN\DETAILS\EARTHWORK TABLE.DWG LAYOUTI

PLOT BY: JULIA ZEHNER

PLOT SCALE : 1" = 1'

EARTHWORK-PROJECT TOTALS

	INCREMENTAL VOL (CY)									CUMMULATIVE VOLUME (CY)							
	SALVAGED/ UNUSABLE CUT PAV'T MATERIAL		F(LL		REDUCED MARSH IN FILL (0.6)	FILL	SELECT CRUSHED MATERIAL		CUT 1.00			REDUCED MARSH IN FILL MARSH (0.6)		FILL SELECT CRUSHED (25%) MATERIAL		MASS ORDINATE	
	NOTE 1	NOTE 2	NOTE 3	MARSH EX	NÒTÉ 4	(25%)	(1.5)	EBS	NOTE 1	FILL	EX	NÒTÉ 4	NOTE 5	(1.5)	EBS	NOTE 6	
MAINLINE	615	0	19898	0	0	24874	o	0	615	19898	0	0	24874	0	0	-24259	
A'-LINE	56	0	0	0	0	0	0	0	671	19898	0	0	24874	0	0	-24203	
B'-LINE	380	0	177	0	0	221	o	0	1051	20075	0	0	25095	0	0	-24044	
C'-LINE	11	0	1654	0	0	2068	0	0	1062	21729	0	0	27163	0	0	-26101	
D'-LINE	4	0	218	0	0	272	o	0	1066	21947	0	0	27435	0	0	-26369	
F.E. / P.E.	84	0	52	0	0	65	0	0	1150	21999	0	0	27500	0	0	-26350	
PROJECT TOTALS =	1150	0	21999	0	0	27500	0	0									

NOTES:

3 - FILL

4 - REDUCED MARSH 5 - FILL (25%) 6 - MASS ORDINATE

1 - CUT
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL
THIS DOES NOT SHOW UP IN CROSS SECTIONS

DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME

REDUCED MARSH THAT CAN BE USED IN FILL FILL 25%: (UNEXPANDED FILL)*1.25 (CUT + REDUCED MARSH(0.6) - FILL (25%))

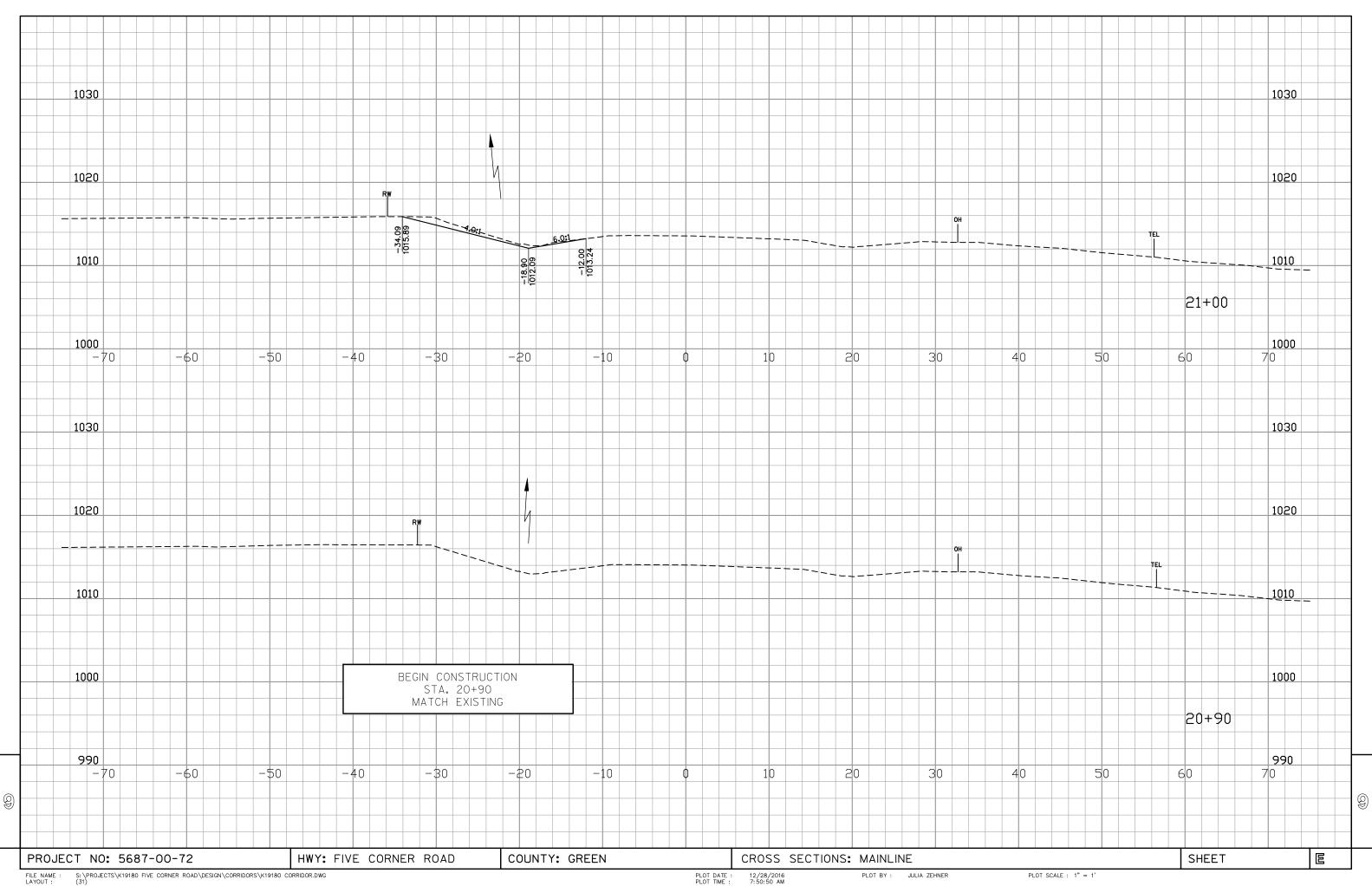
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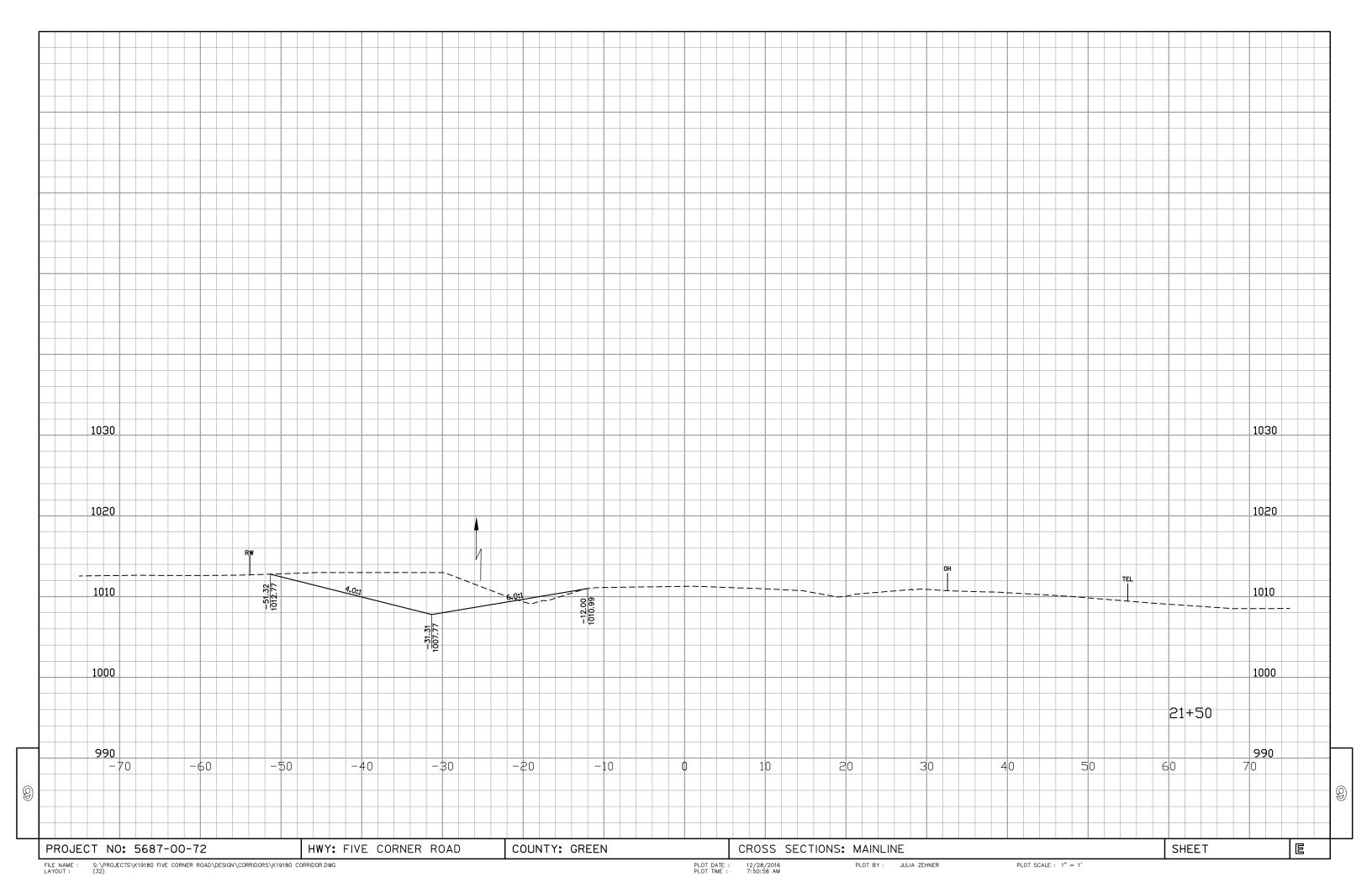
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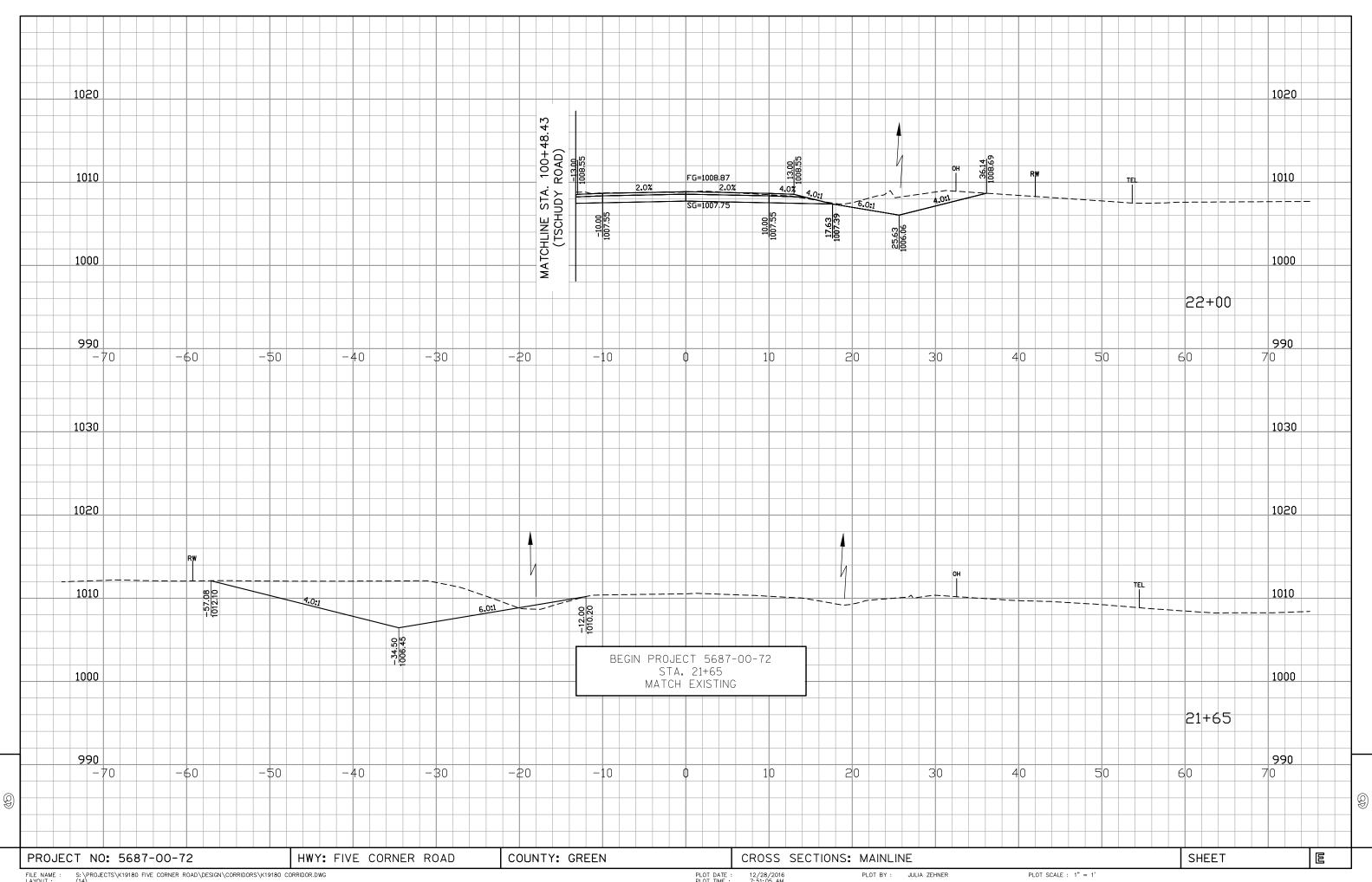
SHEET PROJECT NO:5687-00-72 EARTHWORK TABLE Ε HWY: FIVE CORNER ROAD COUNTY: GREEN

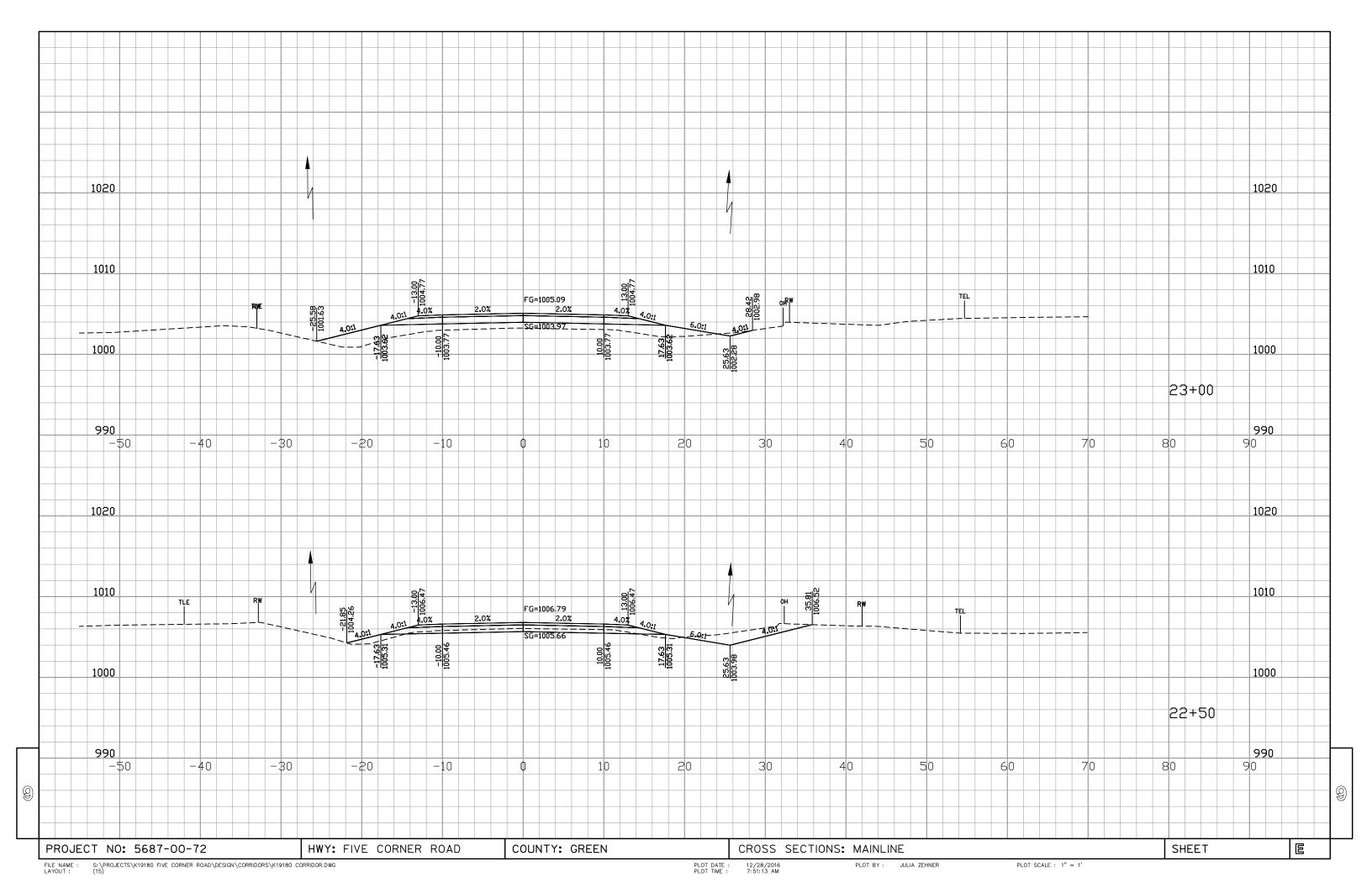
S:\PROJECTS\K19180 FIVE CORNER ROAD\SHEETSPLAN\DETAILS\EARTHWORK TABLE.DWG LAYOUT1 (2)

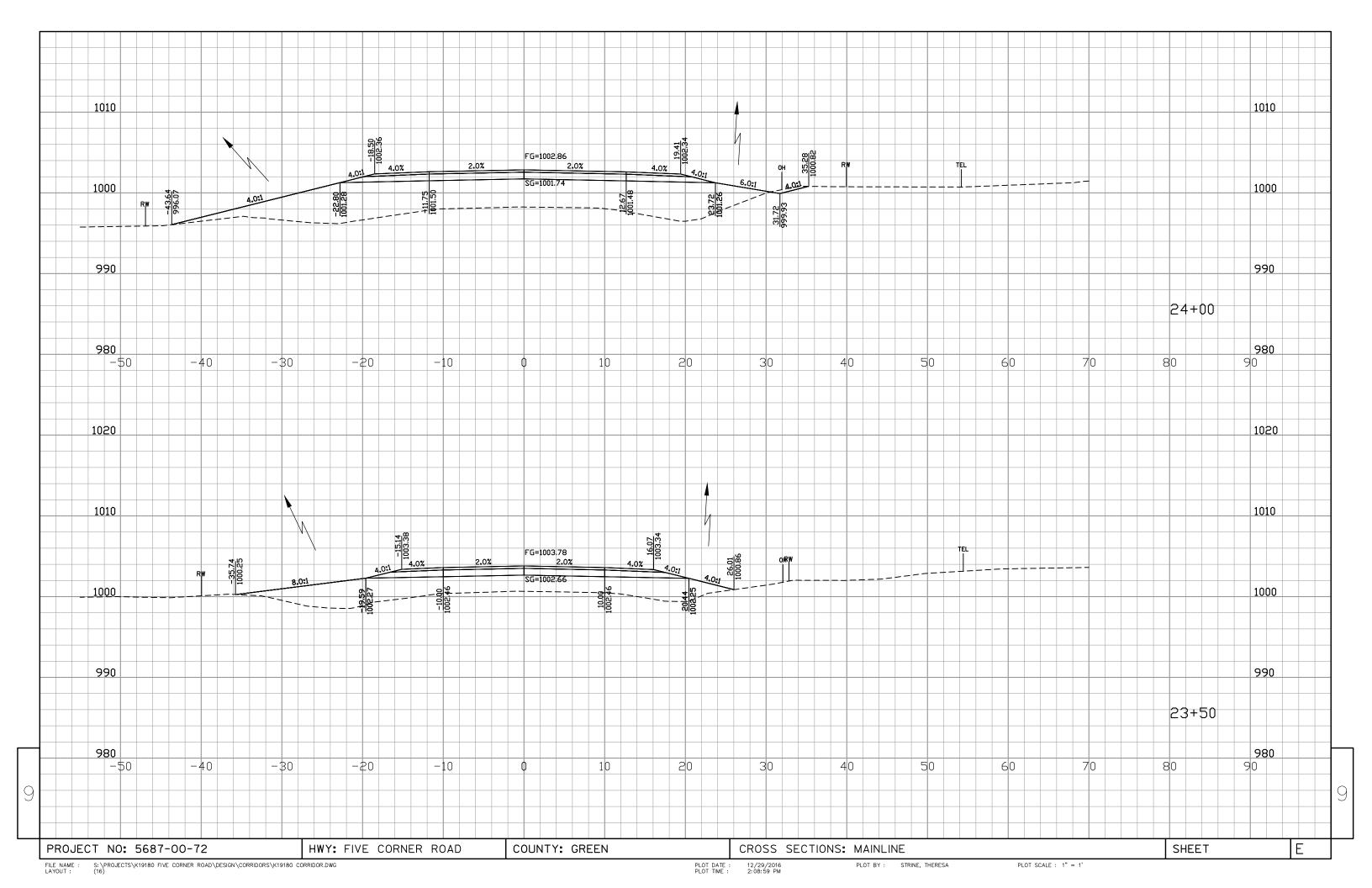
PLOT BY: JULIA ZEHNER

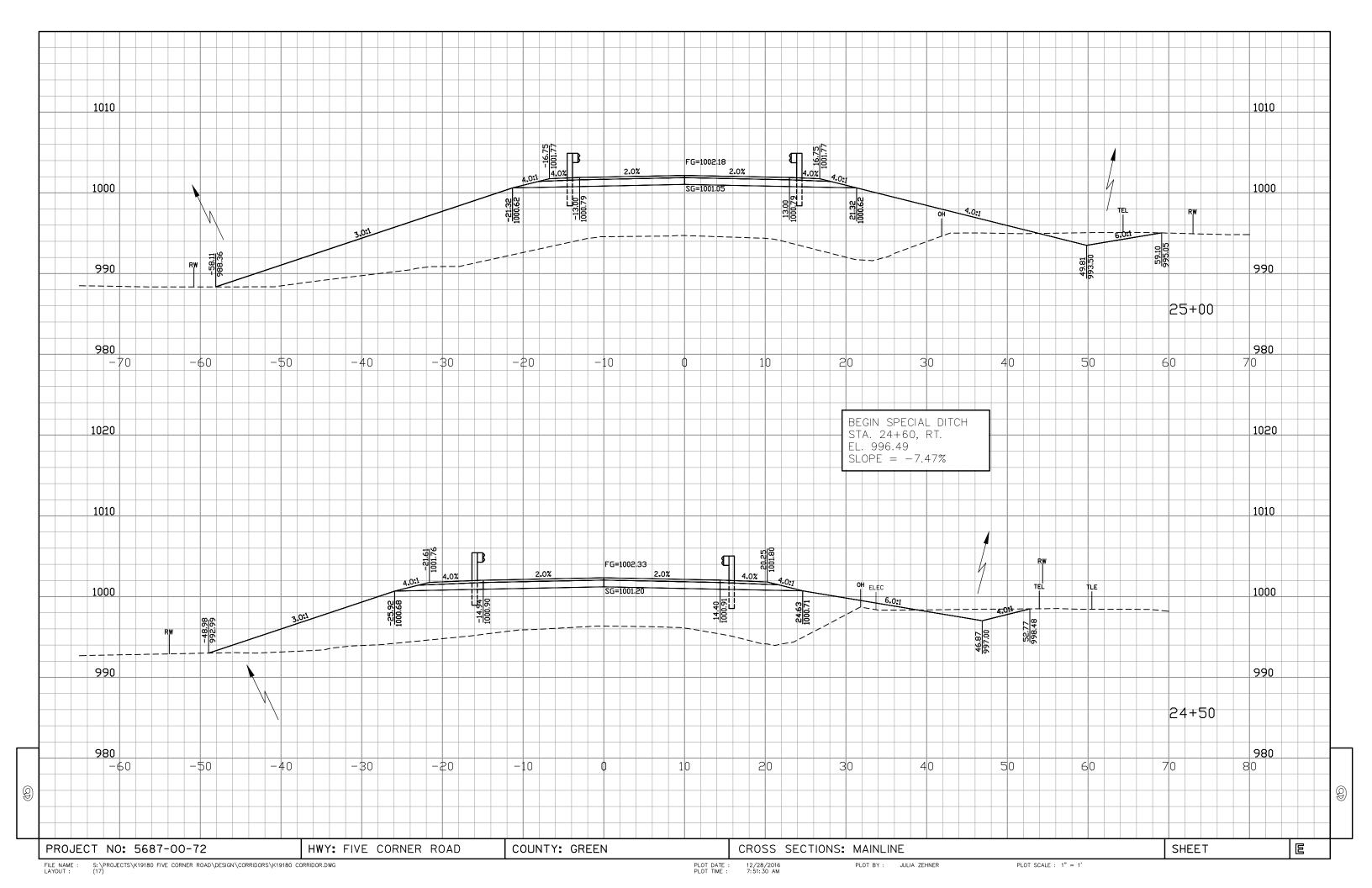


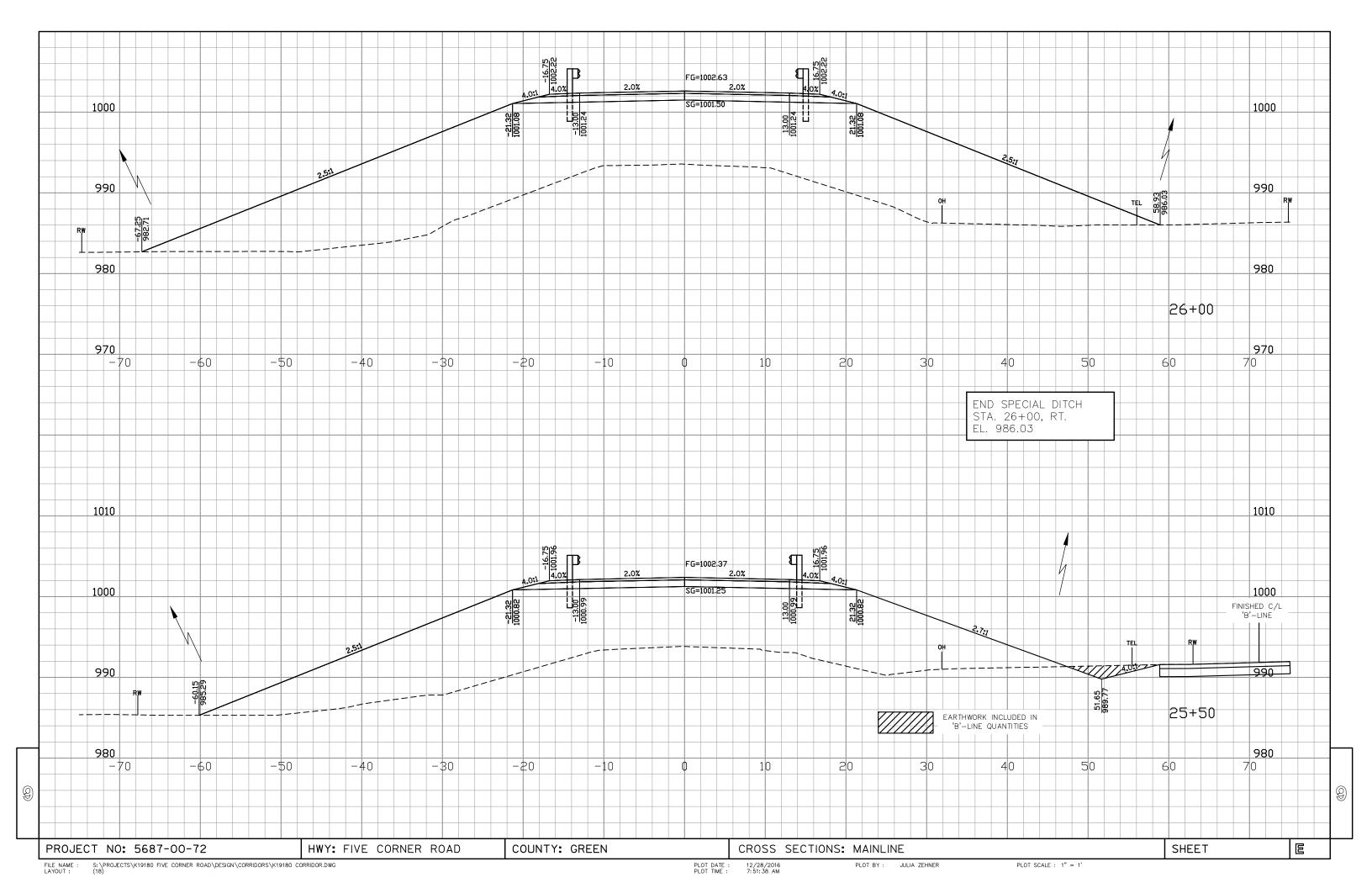


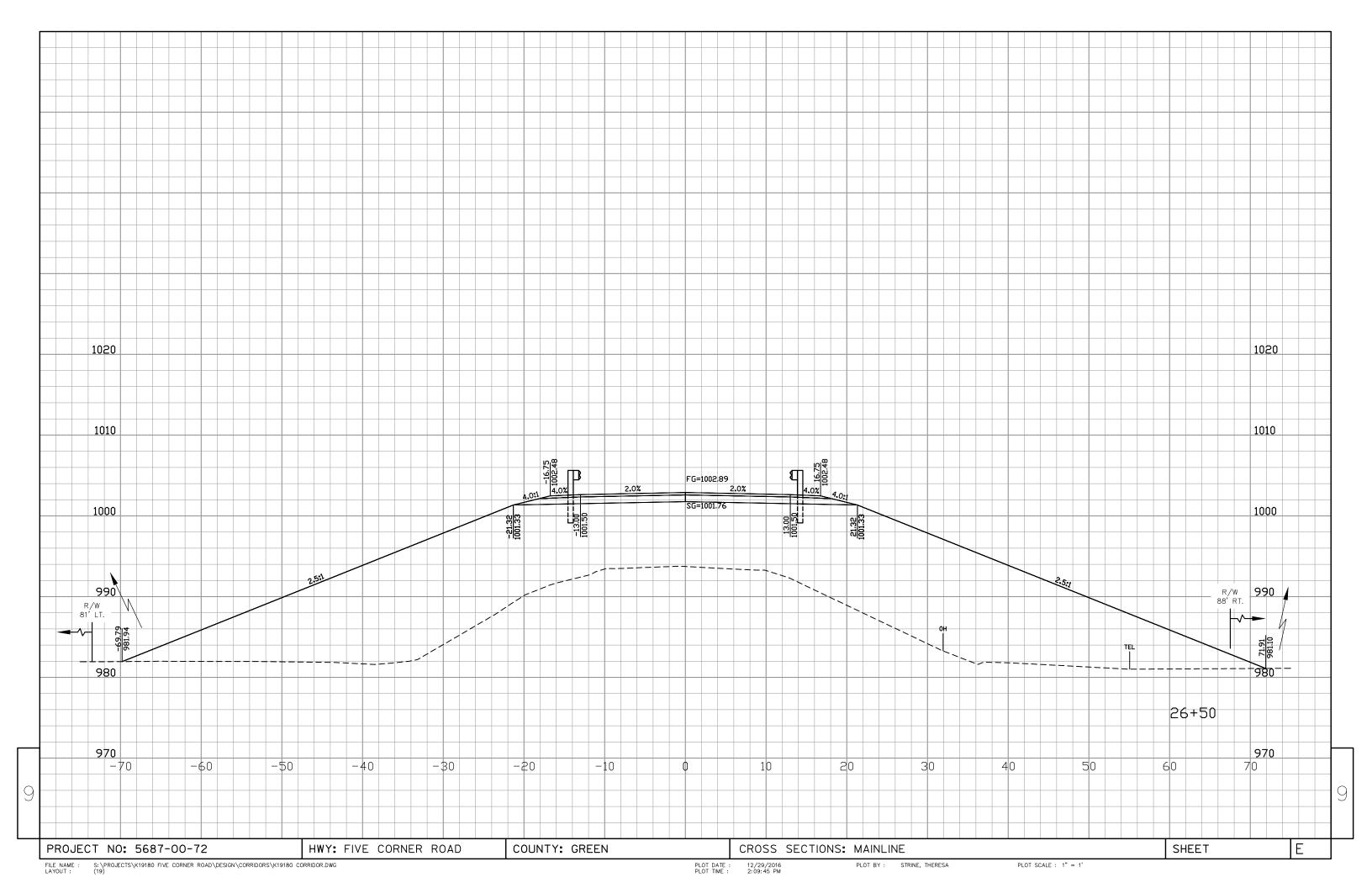


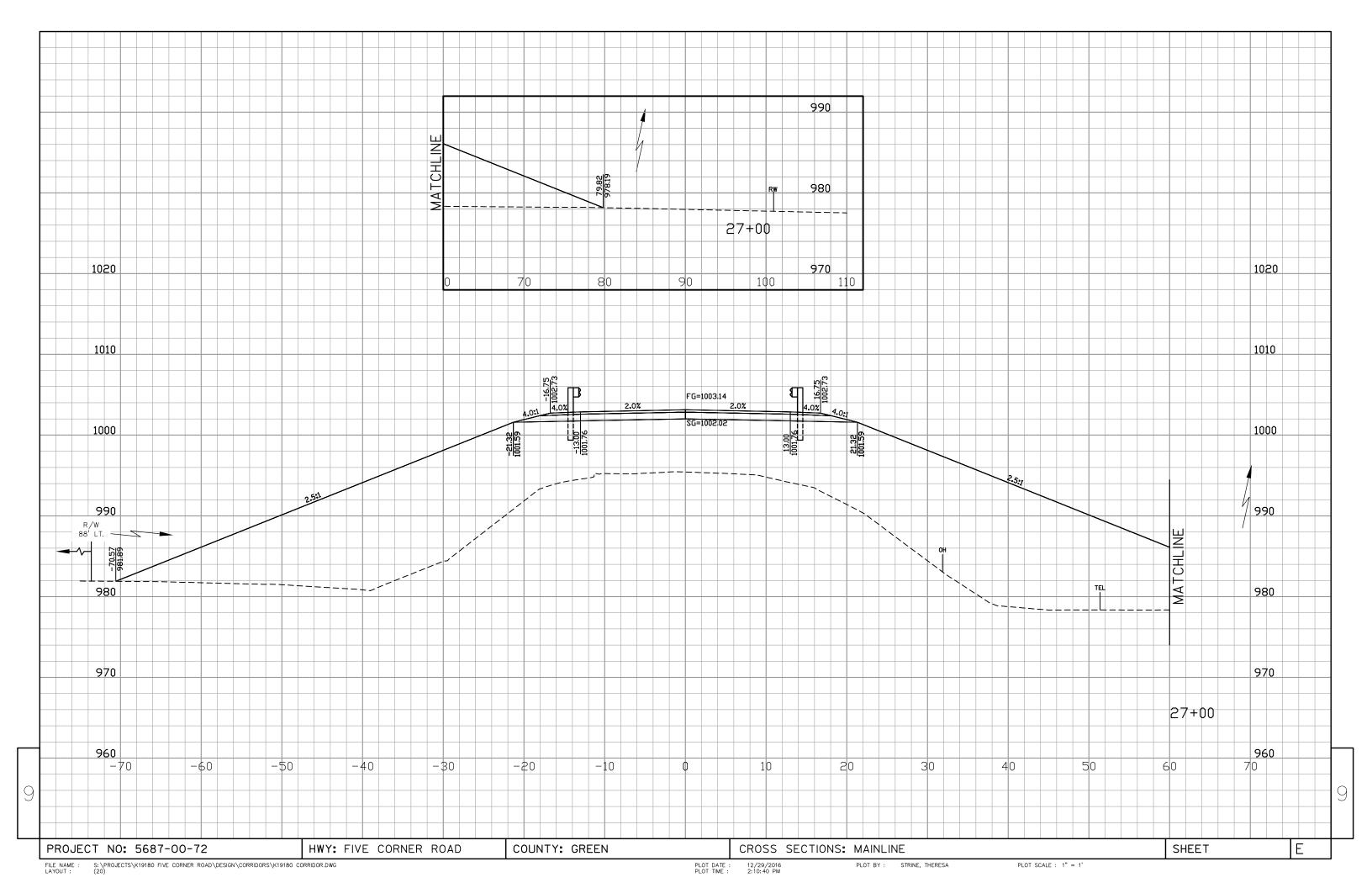


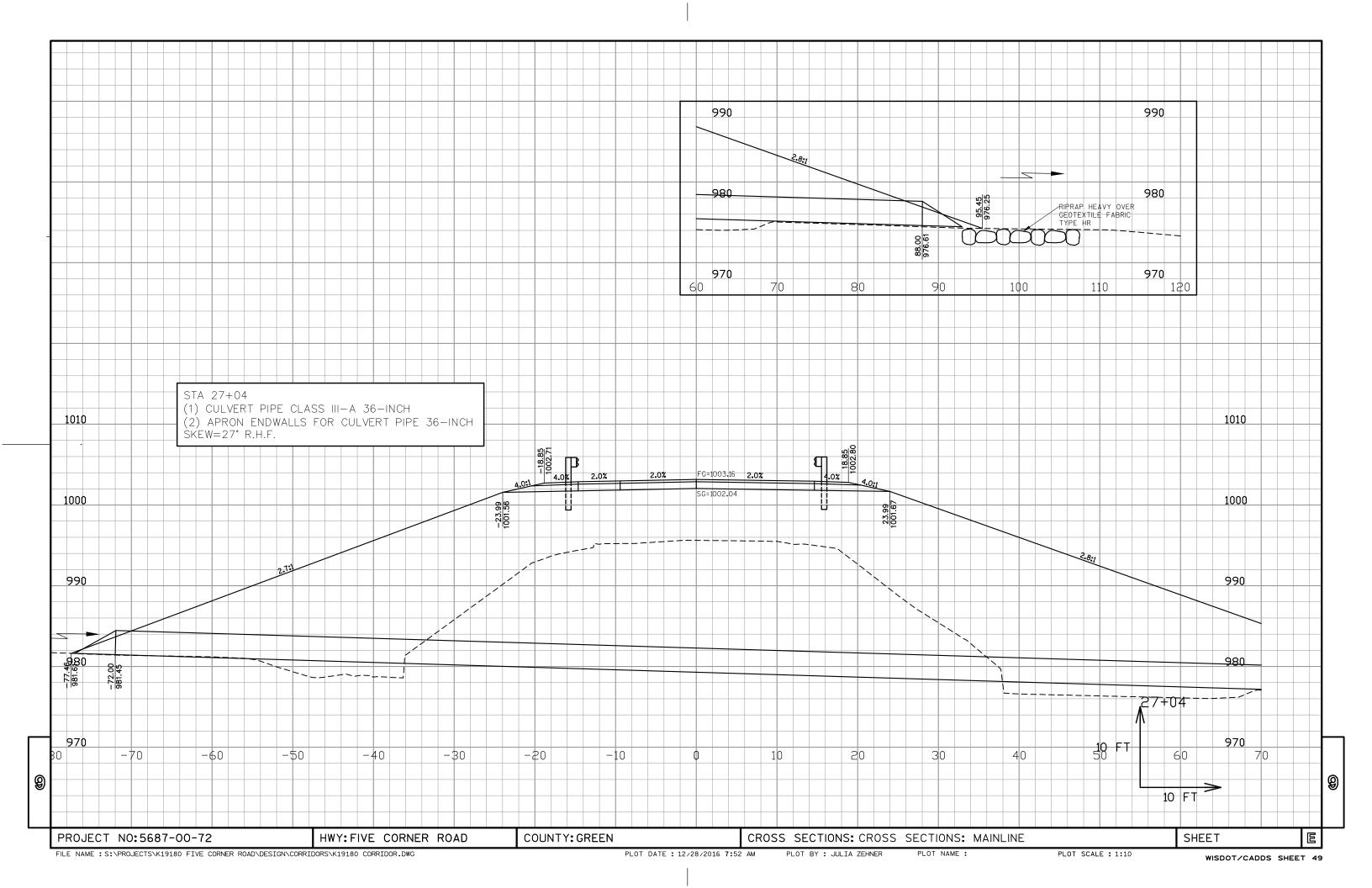


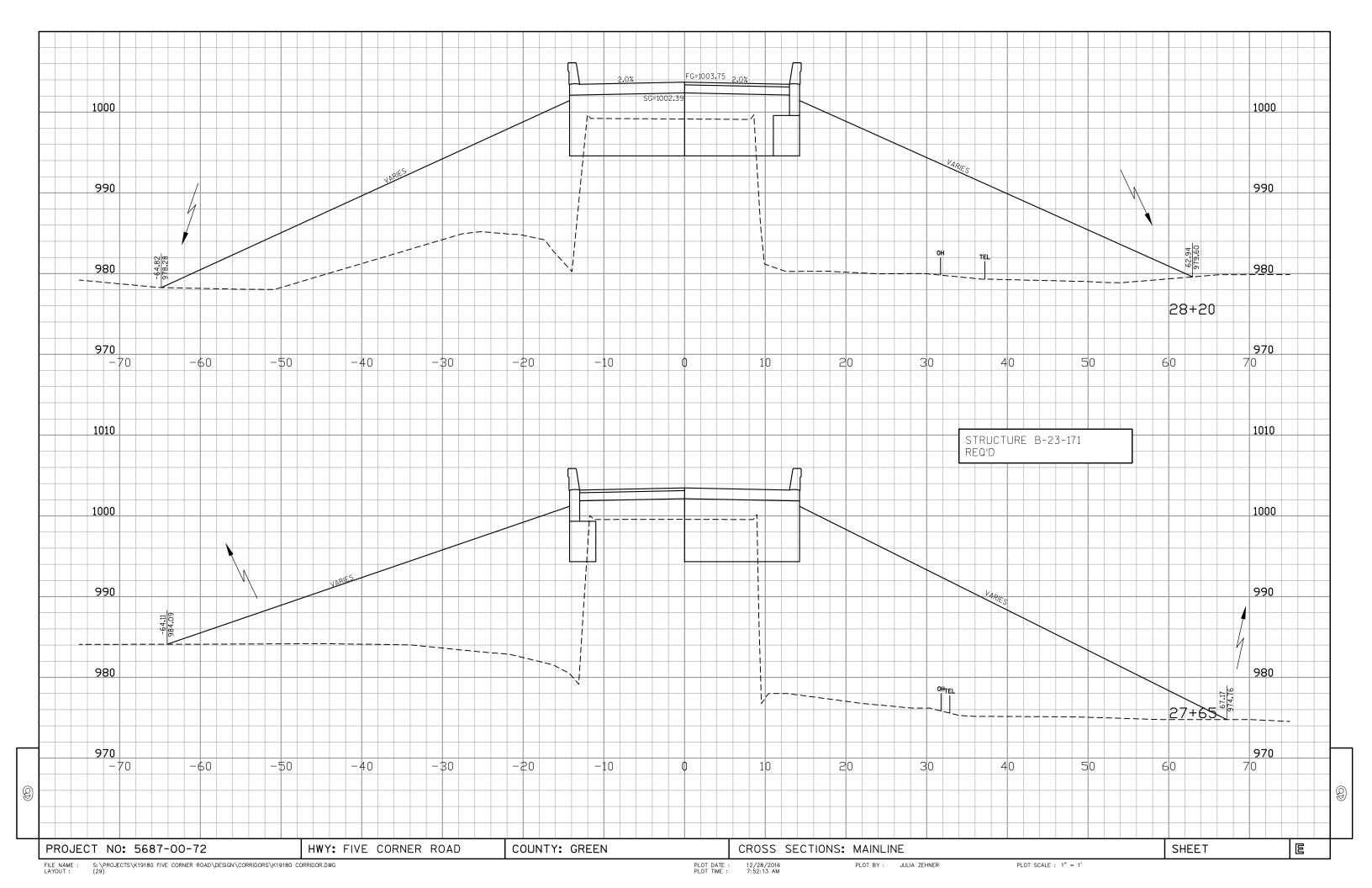


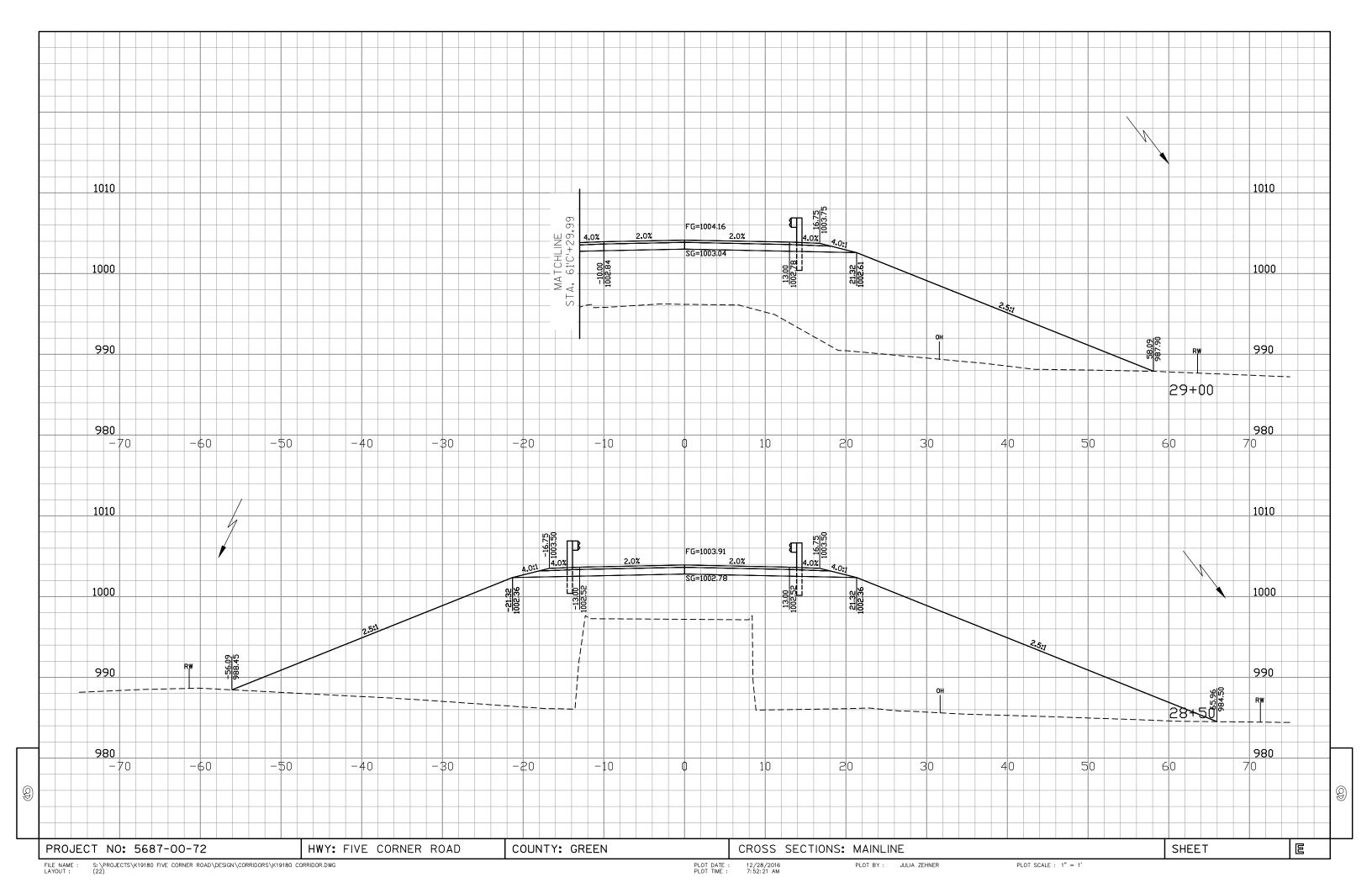


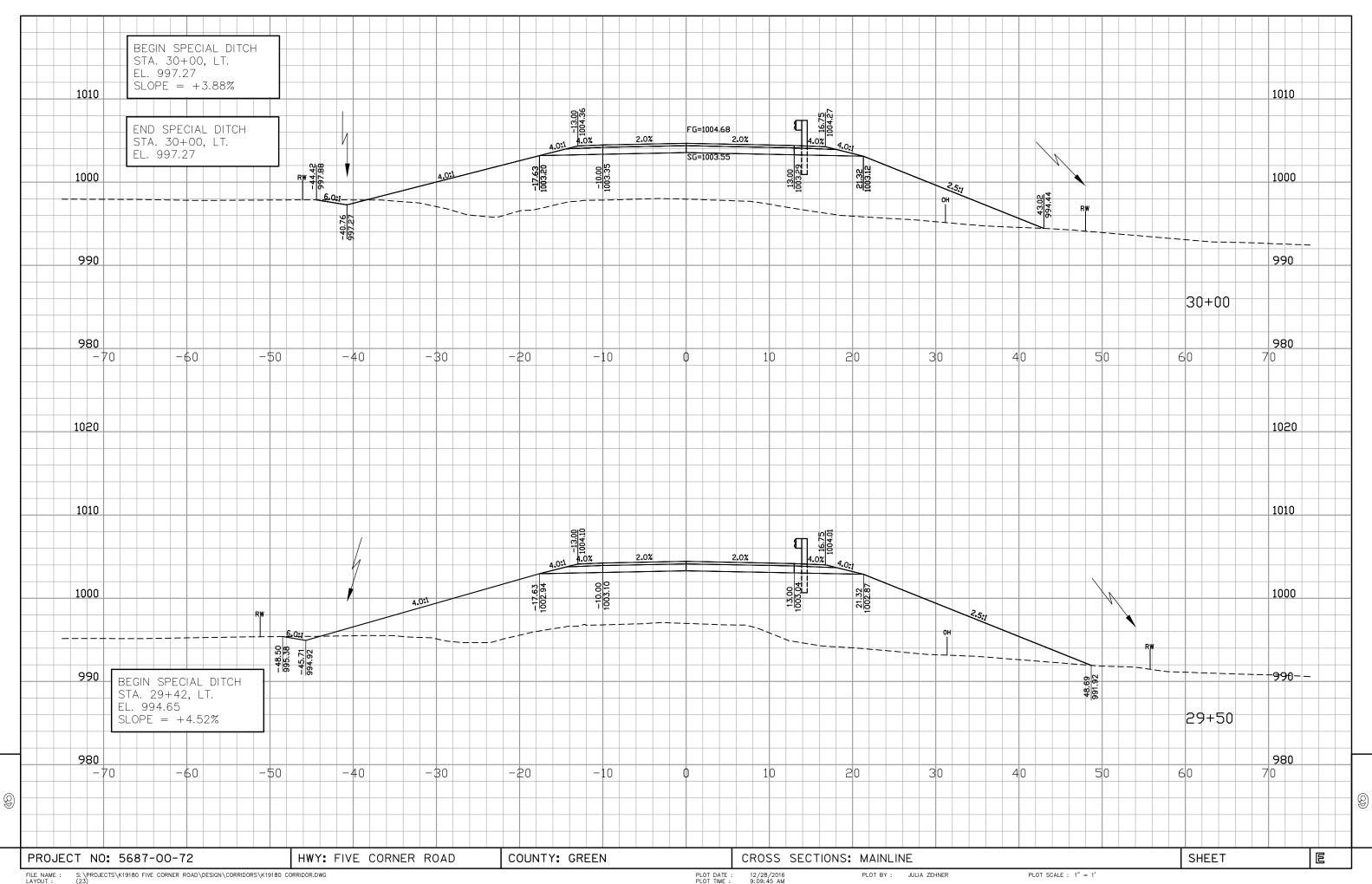


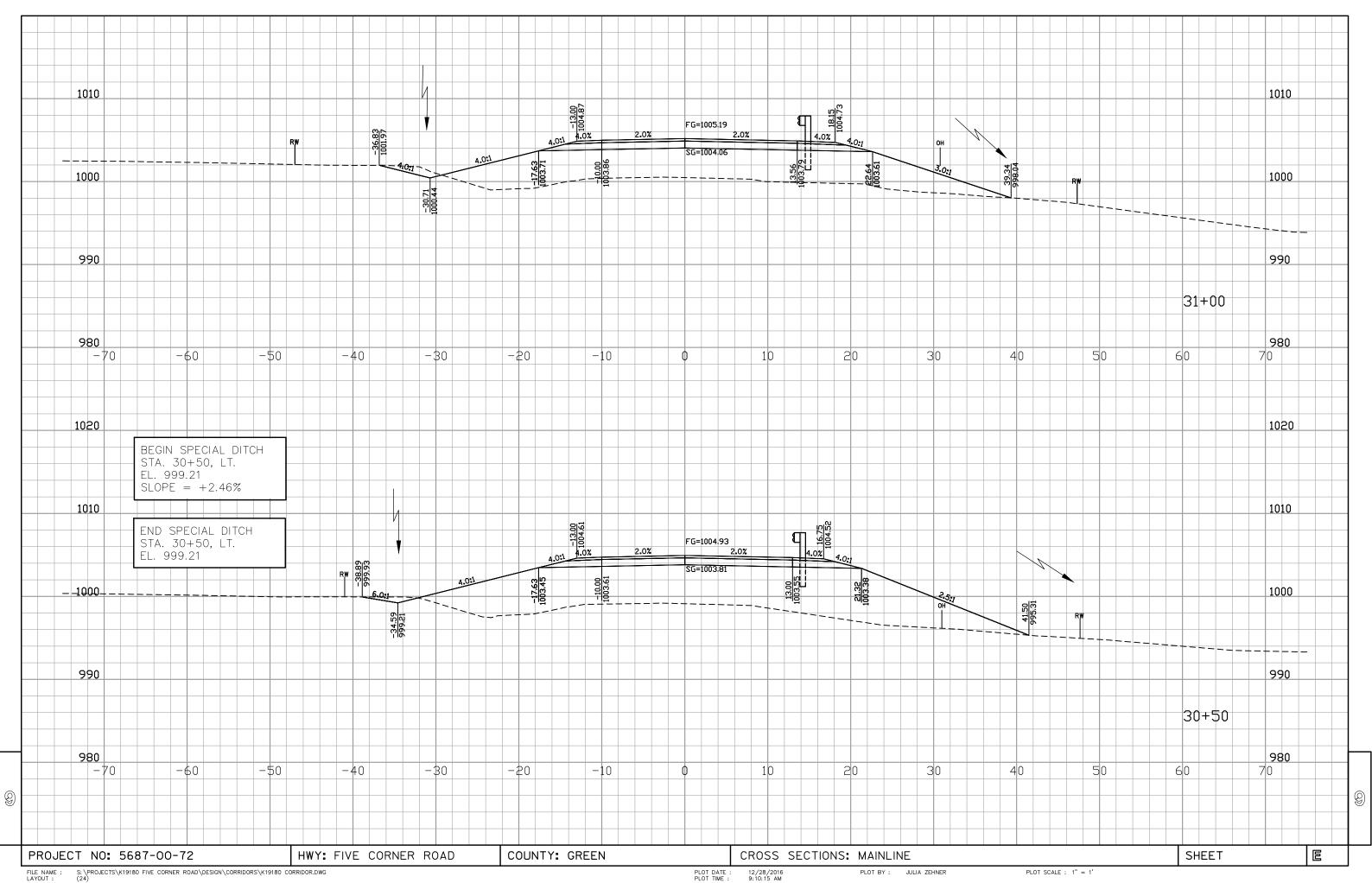


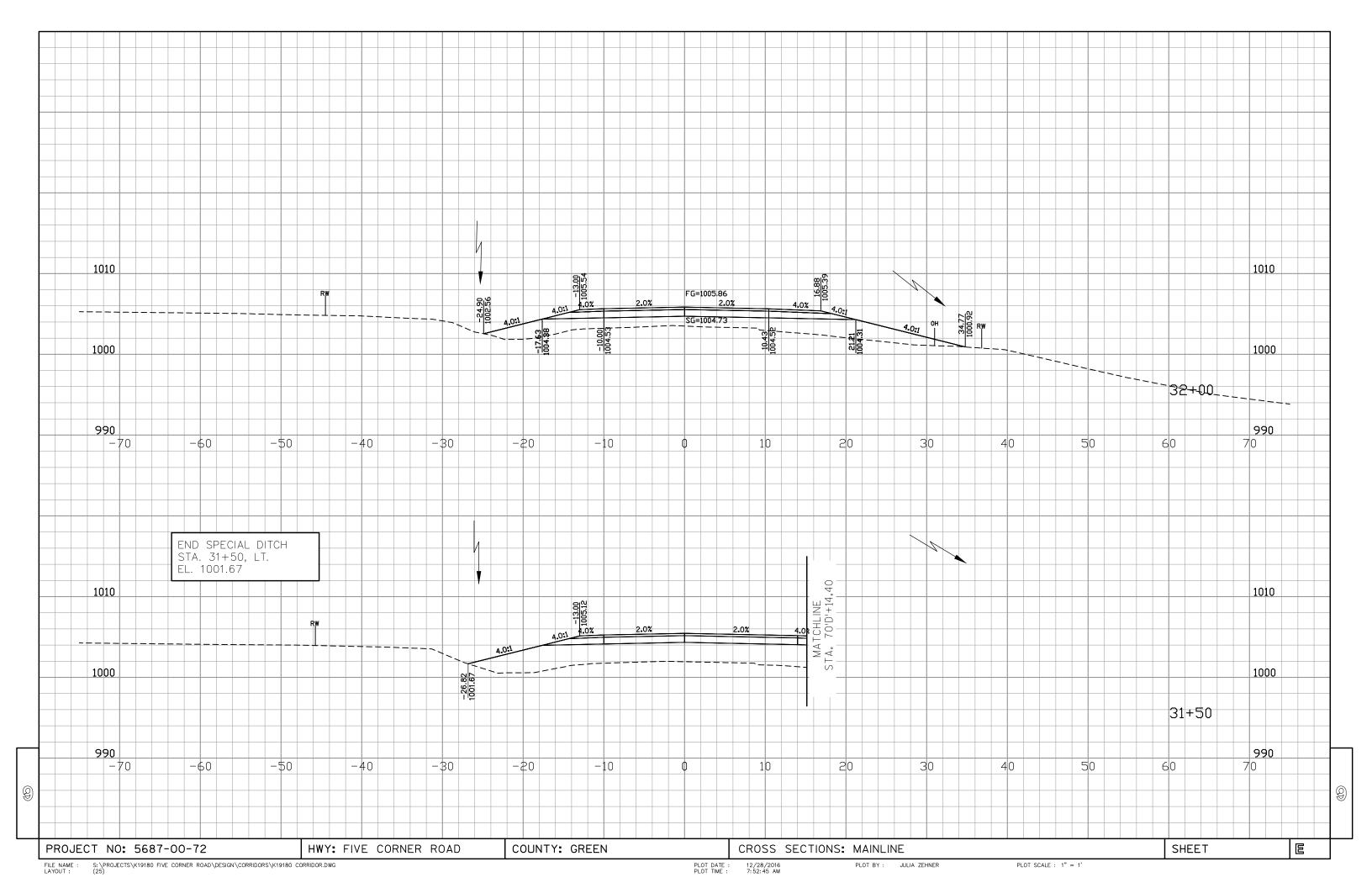


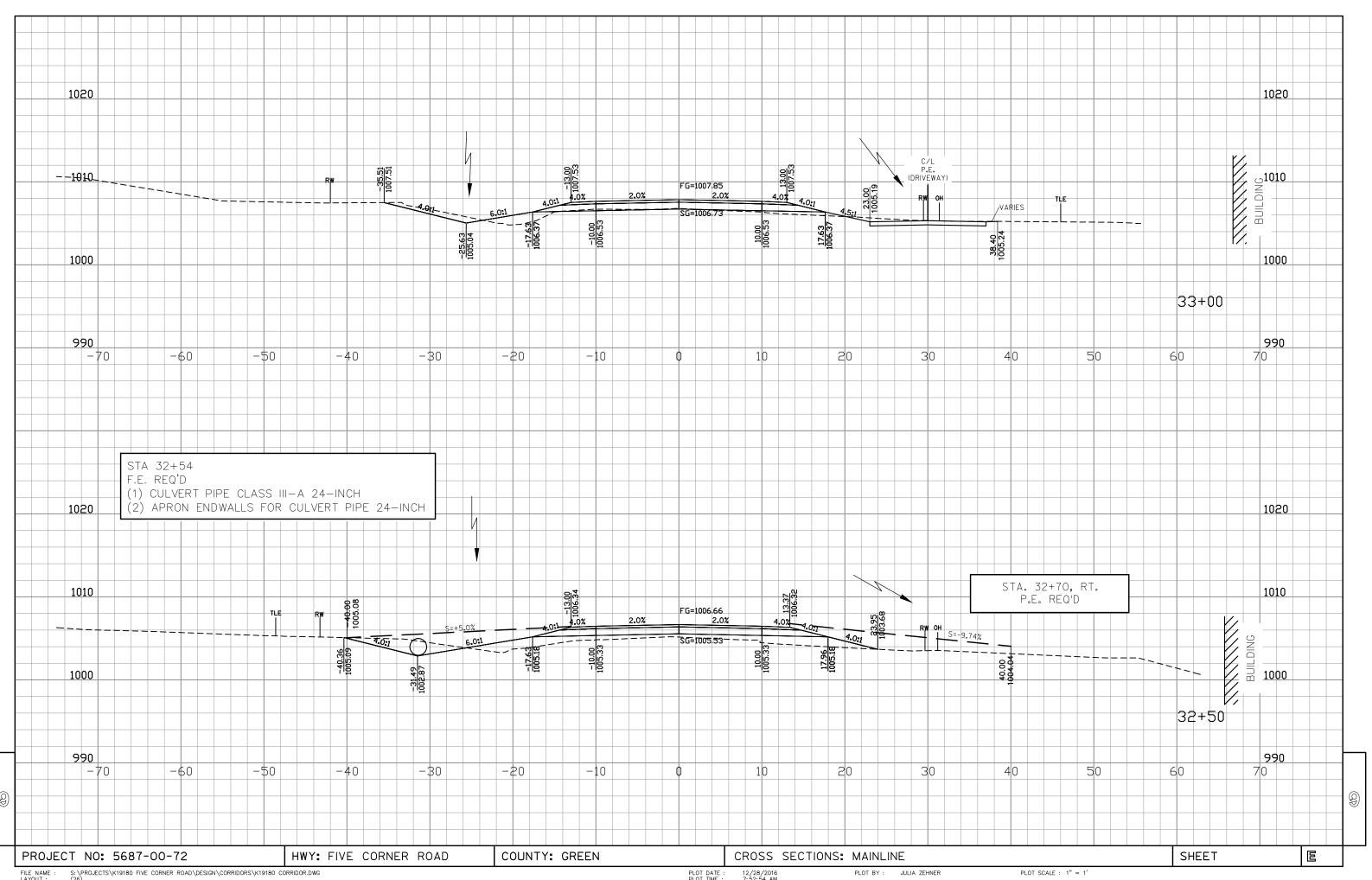


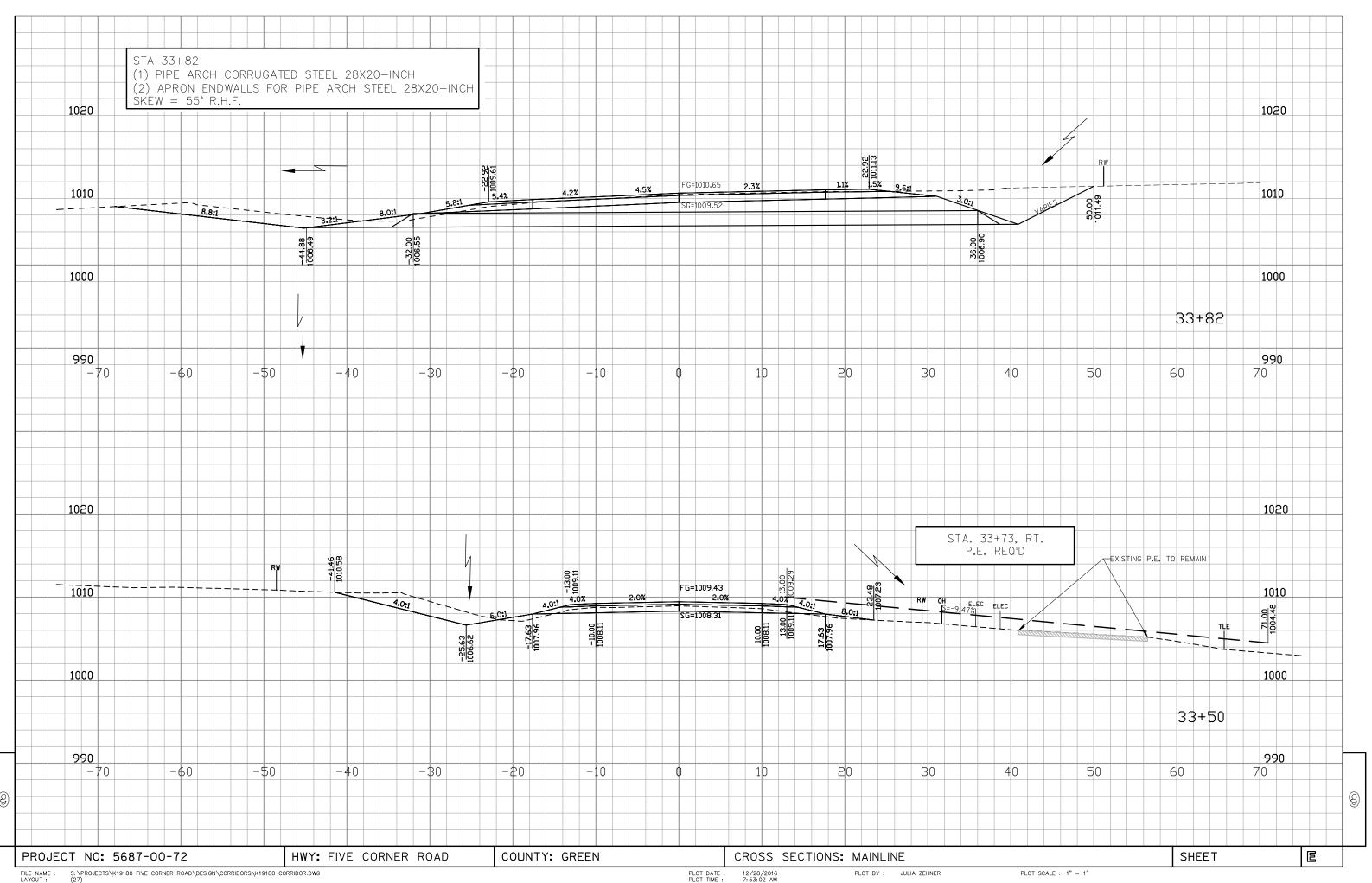


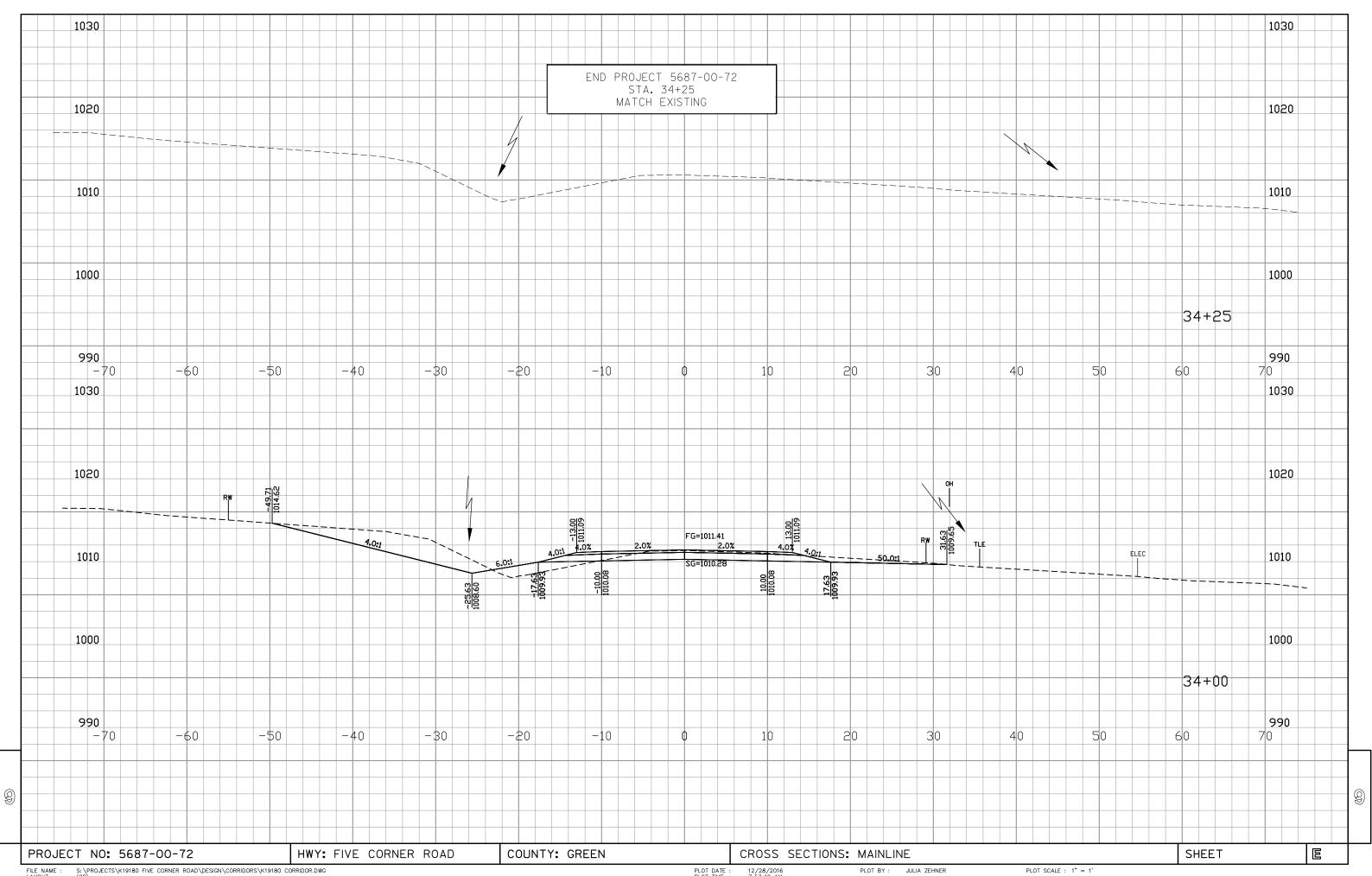


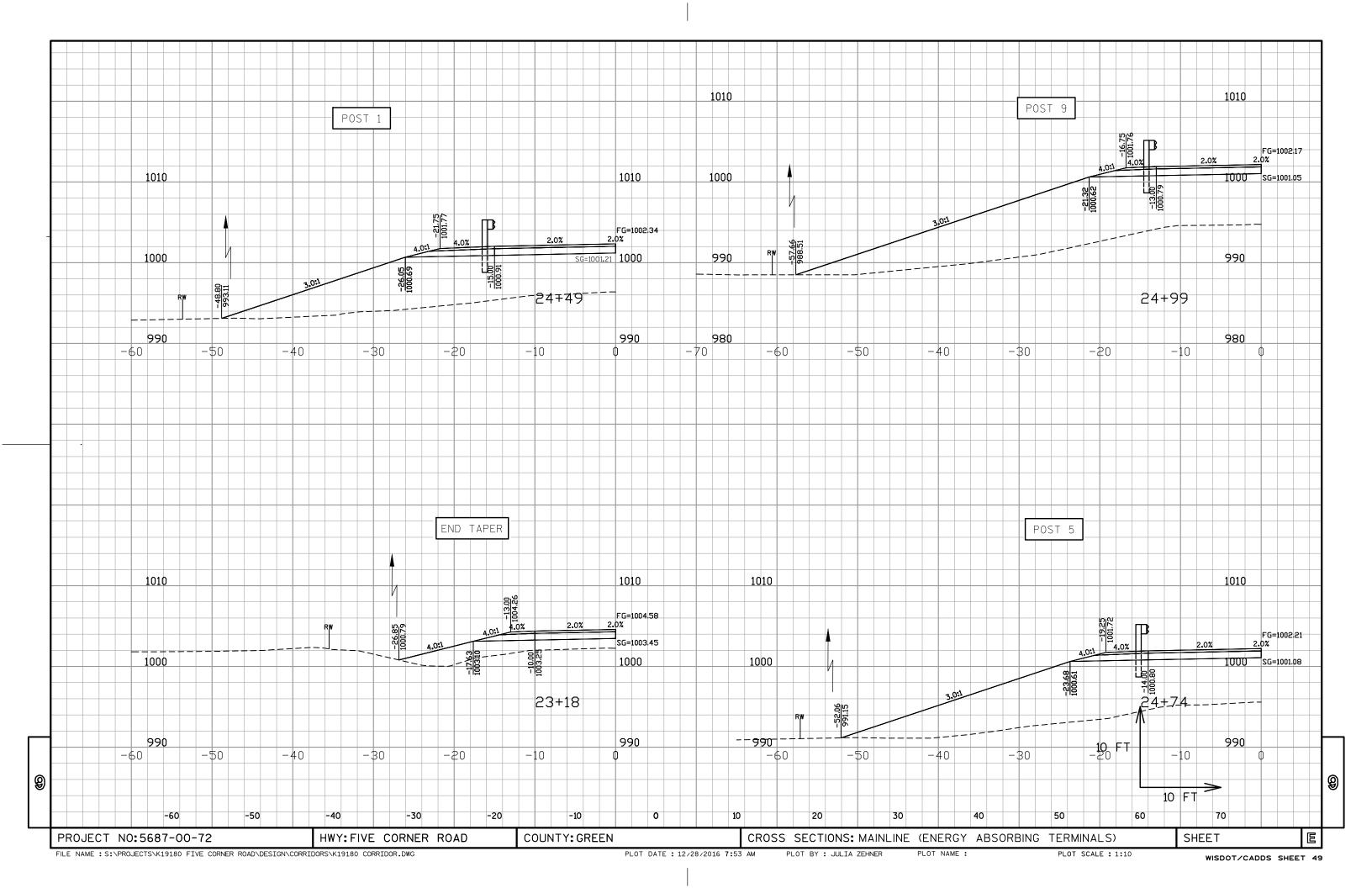


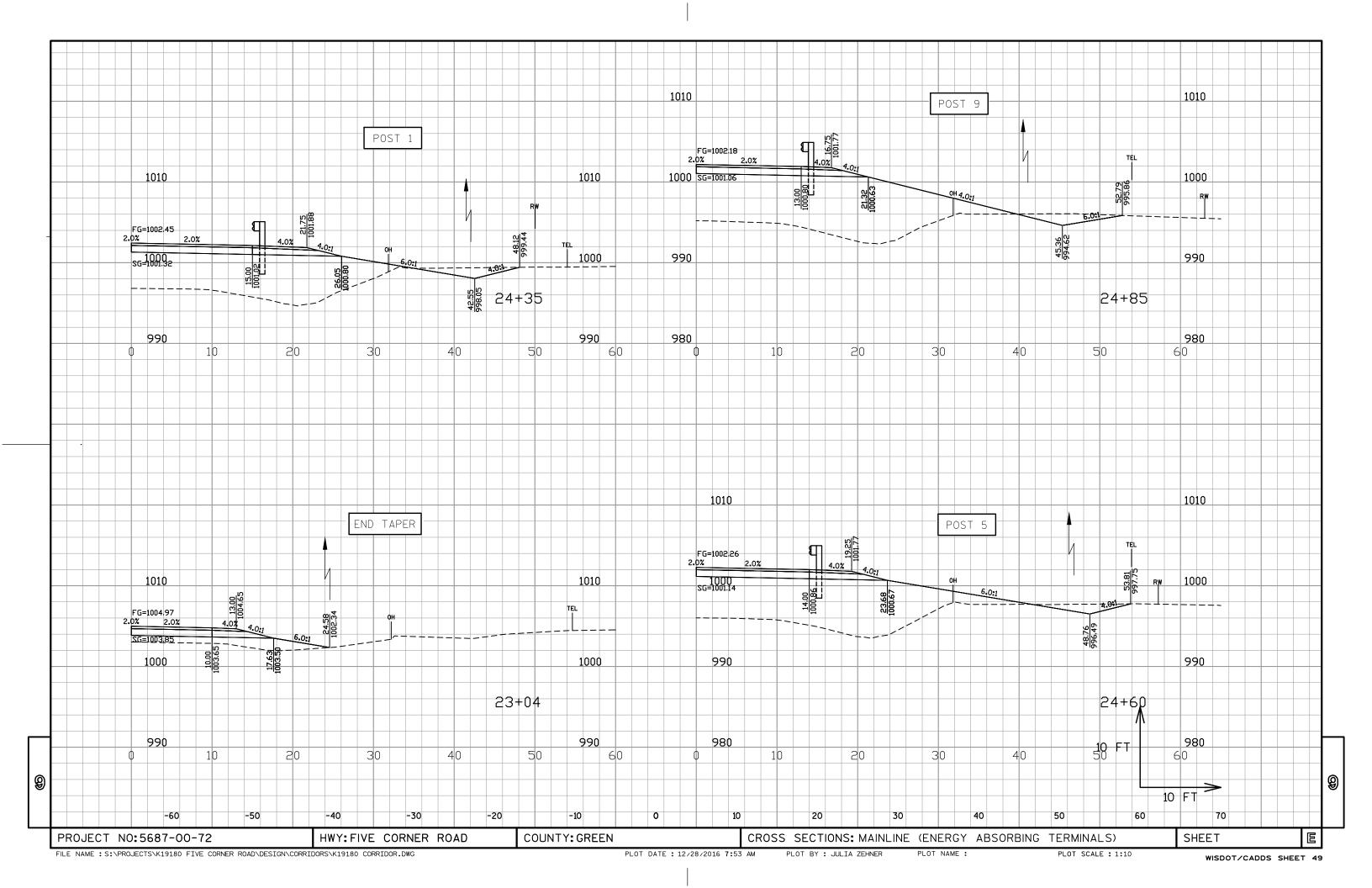


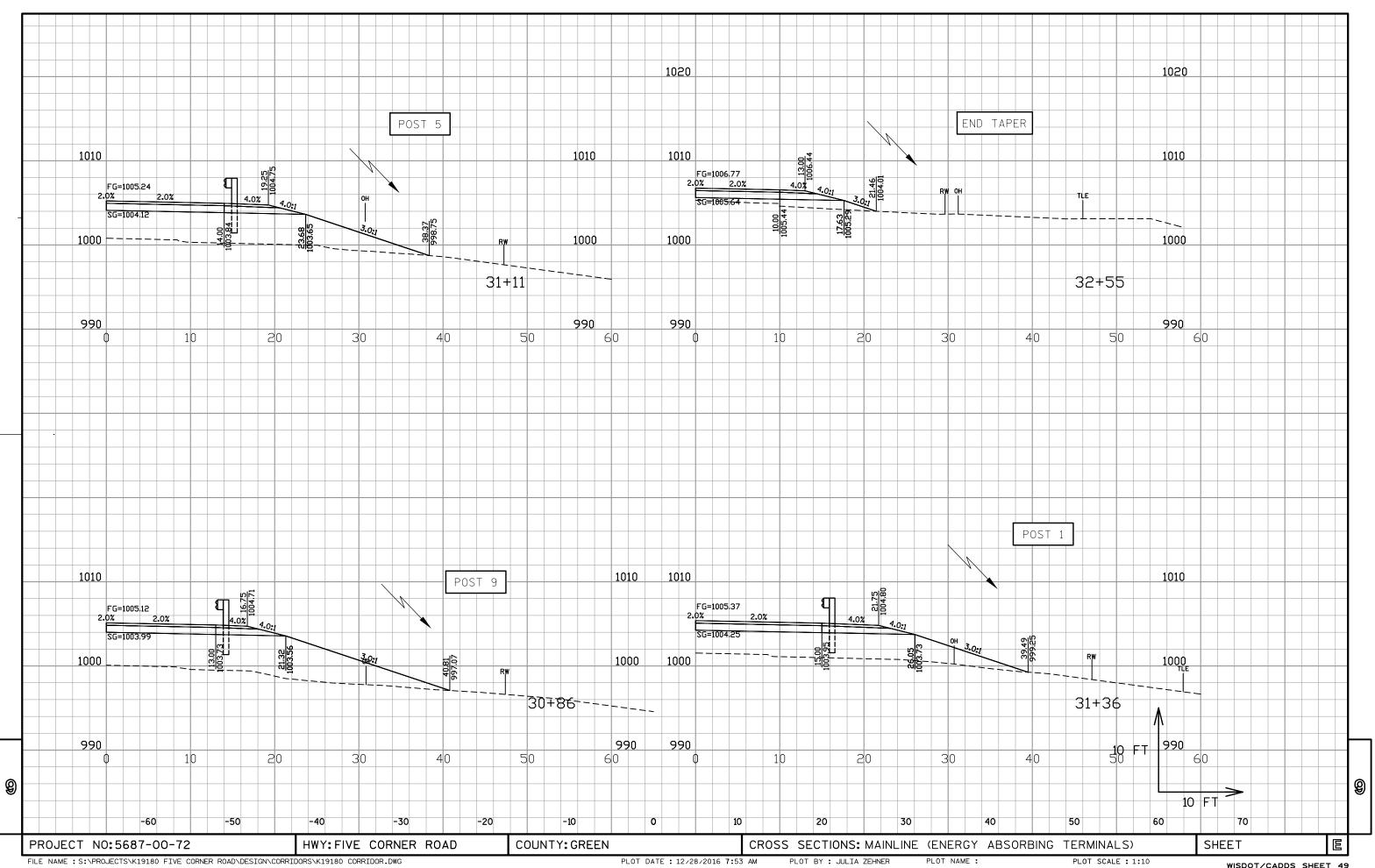


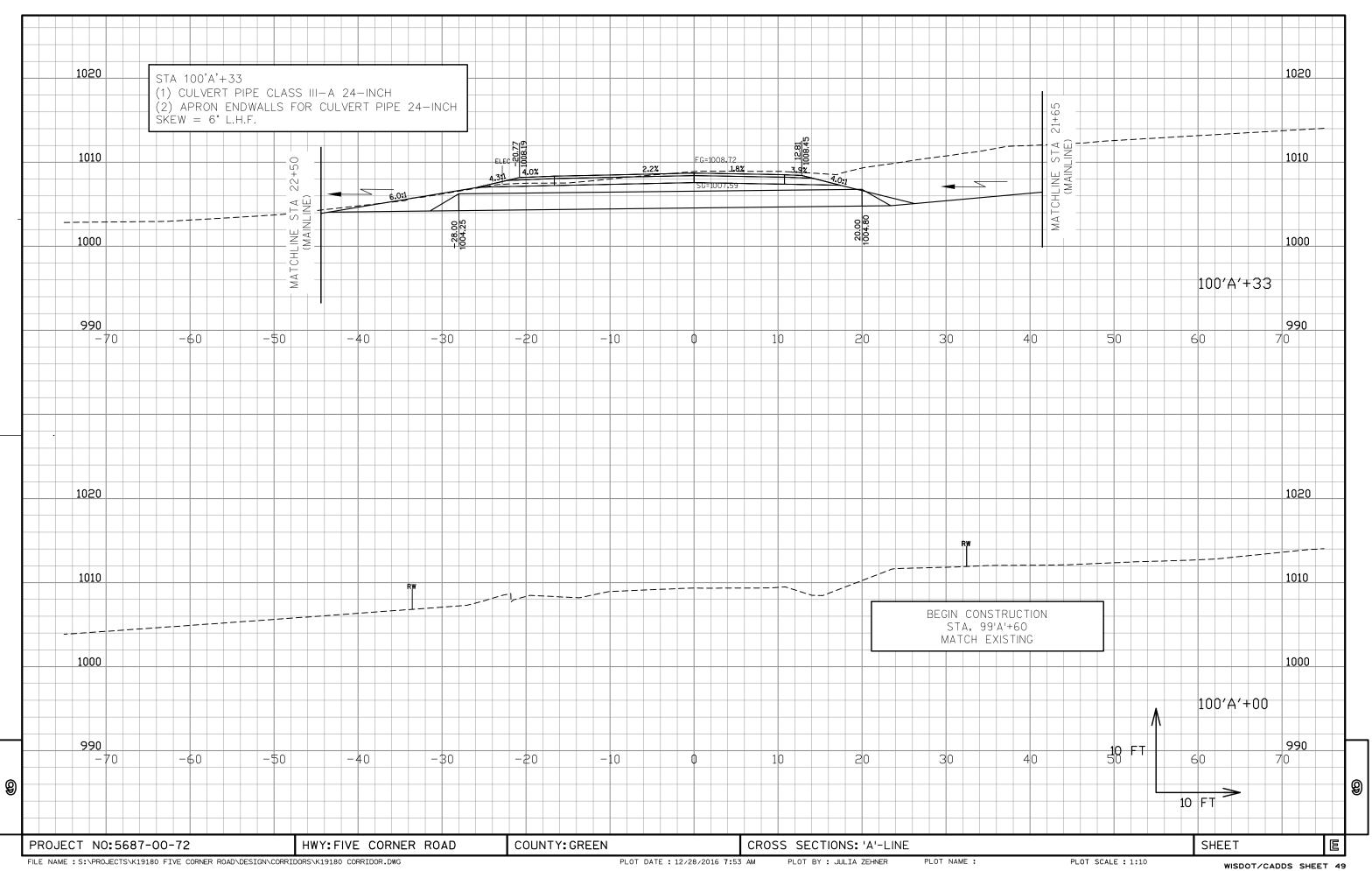


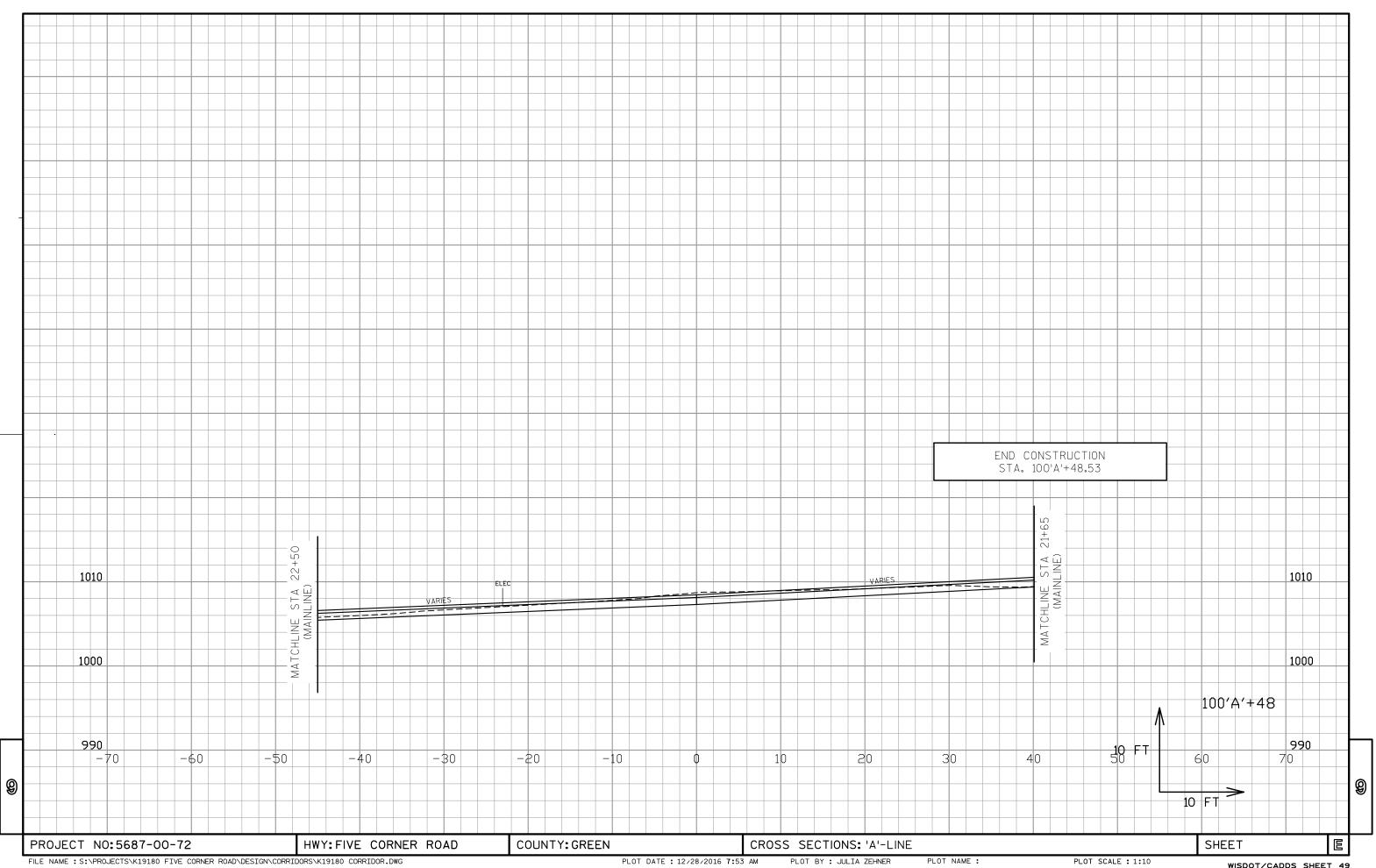


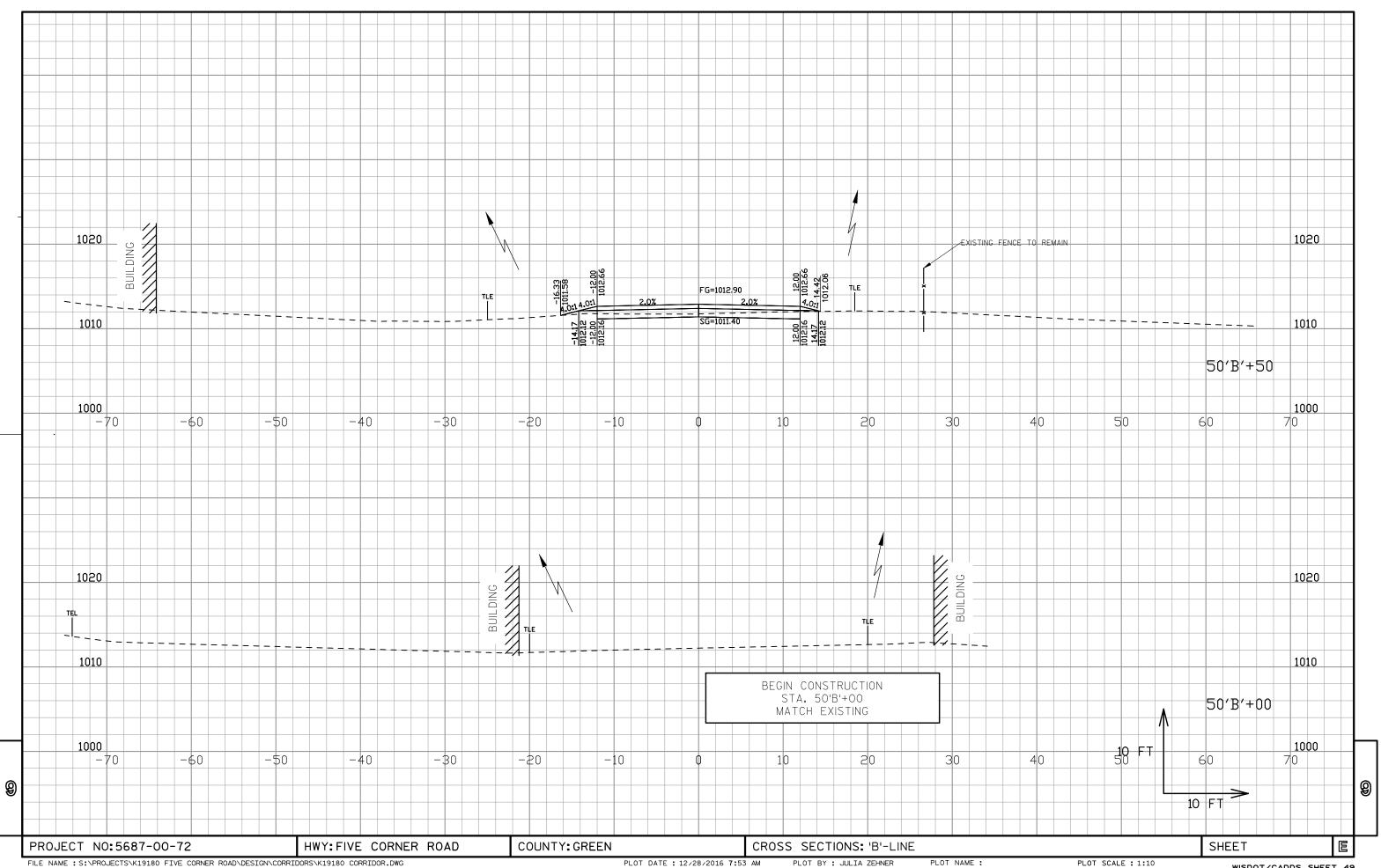


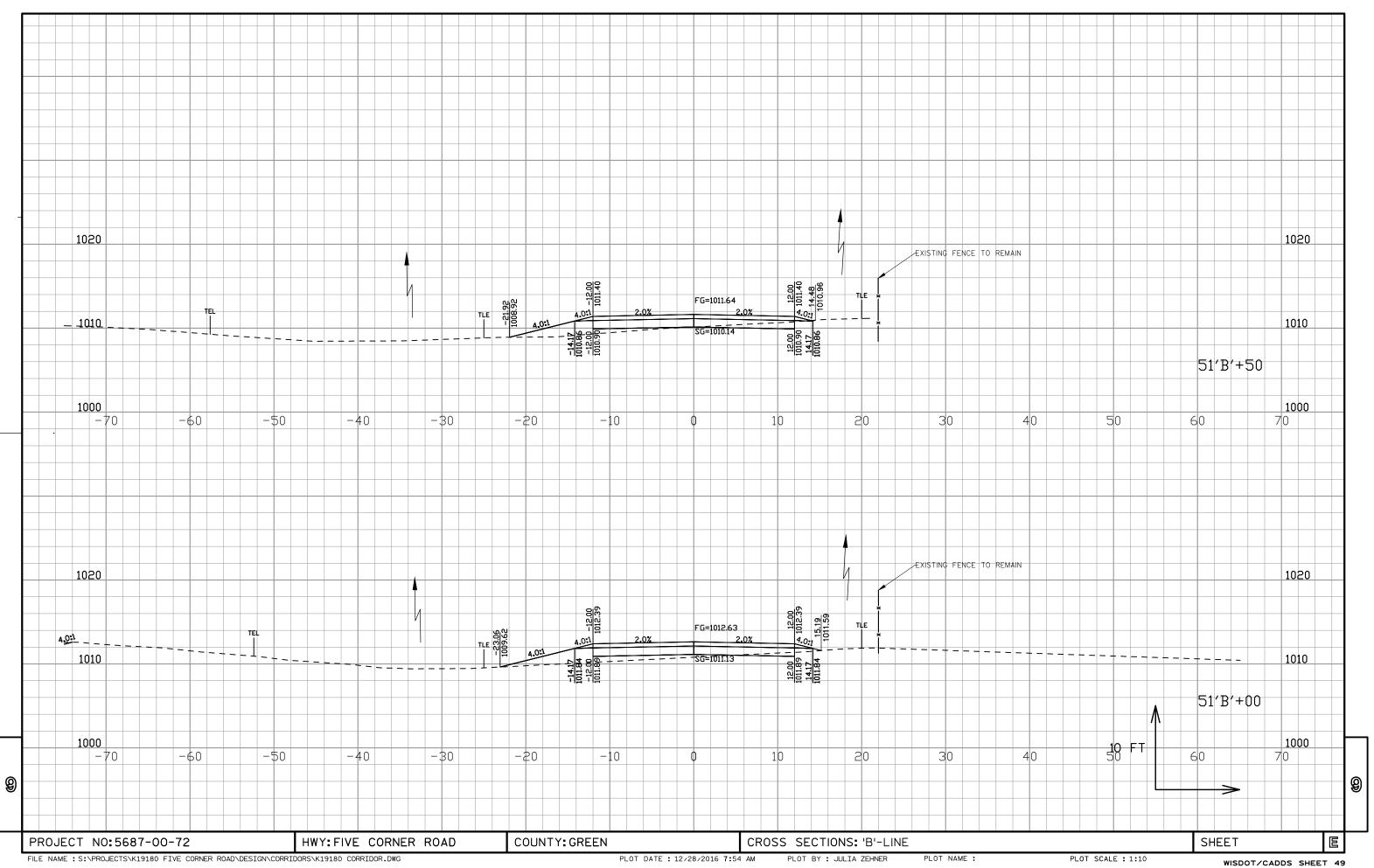


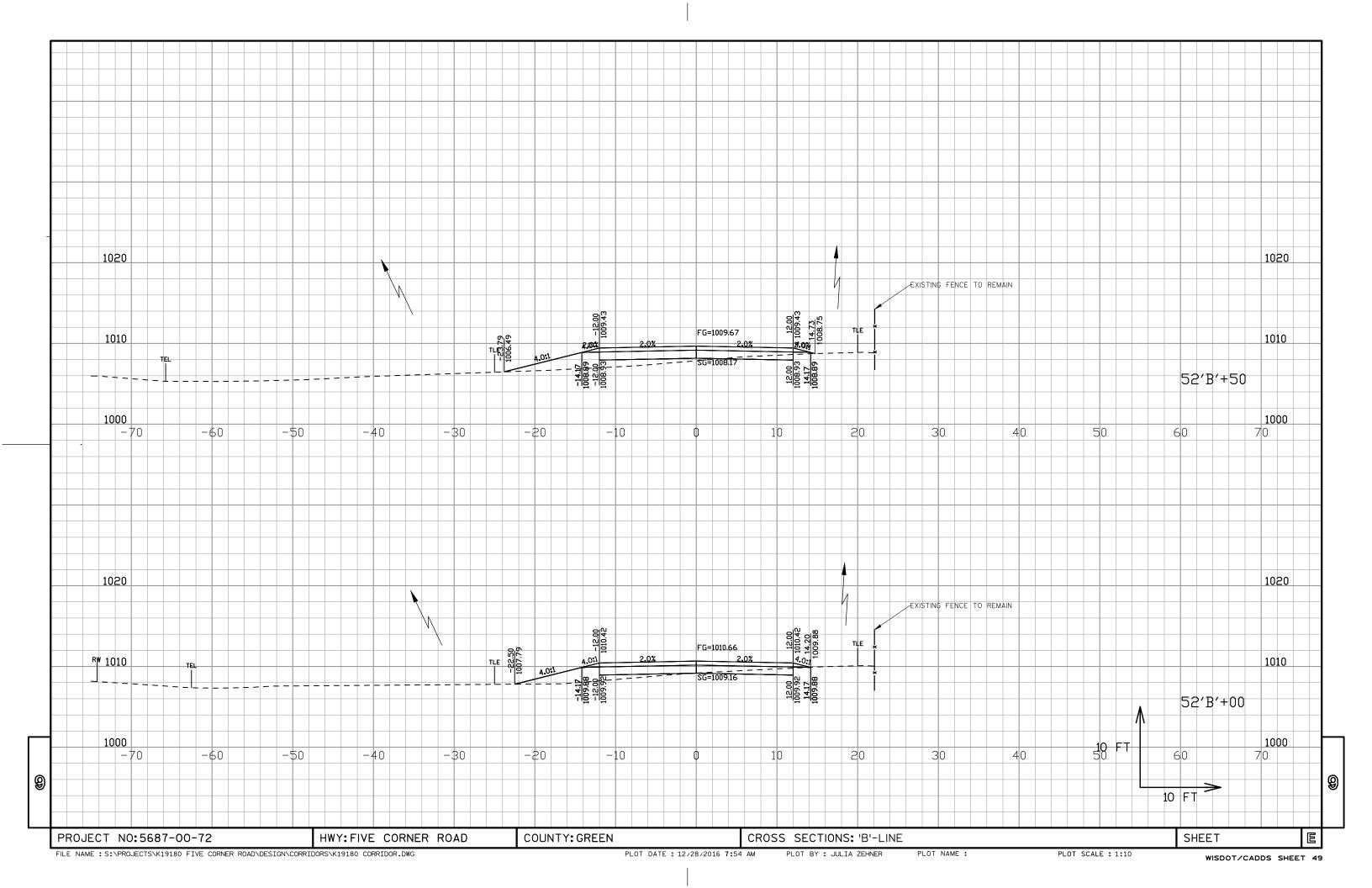


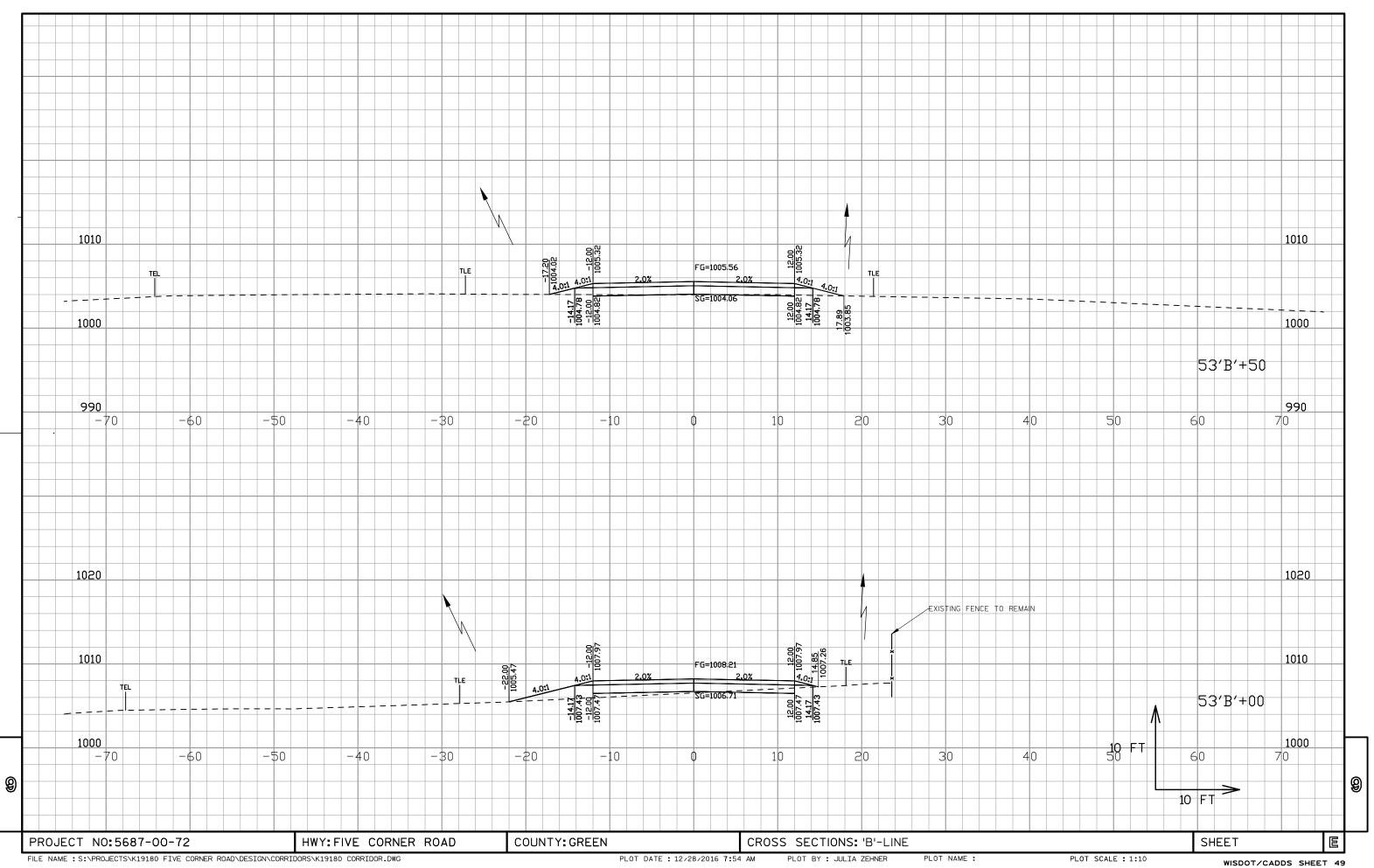


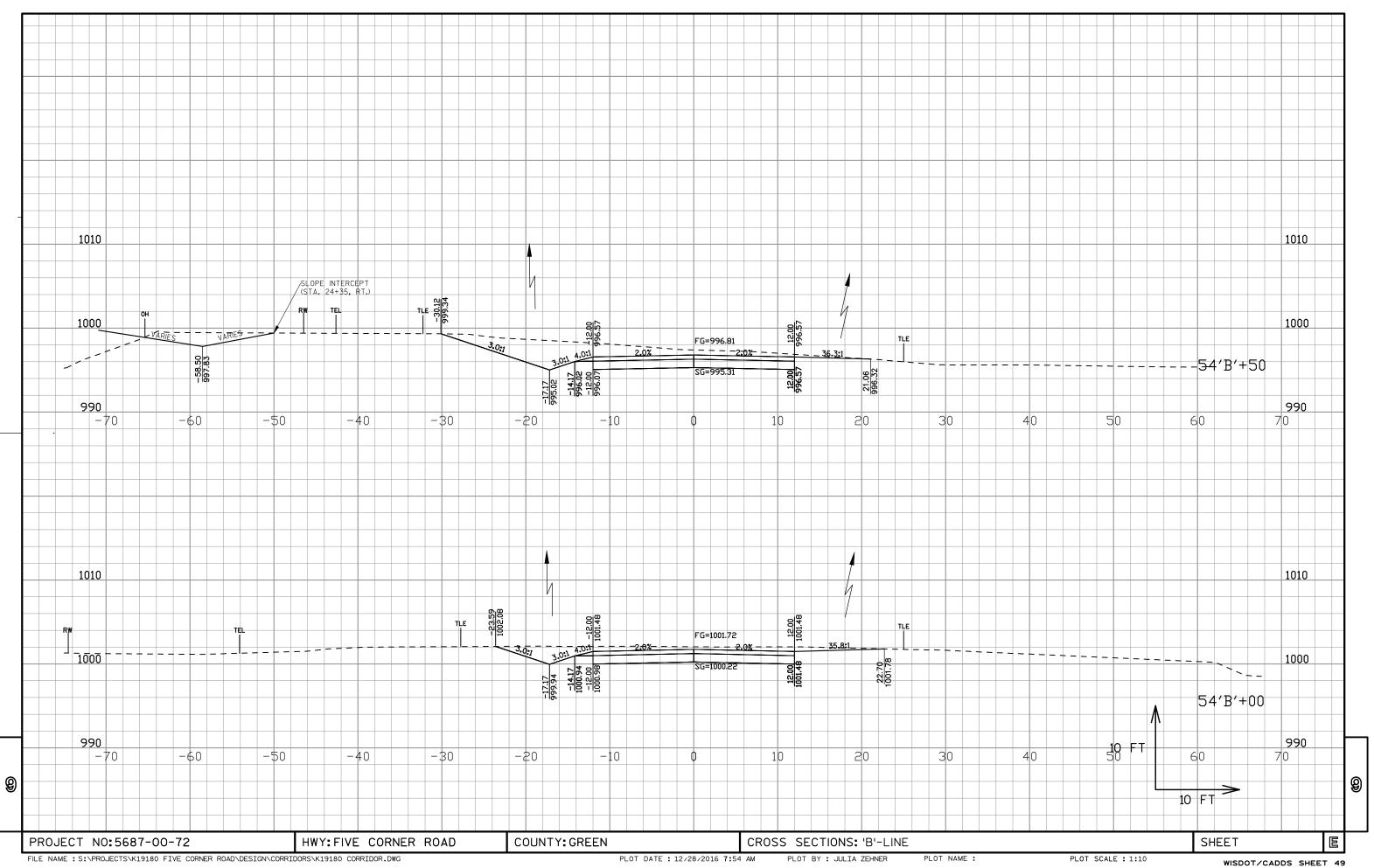


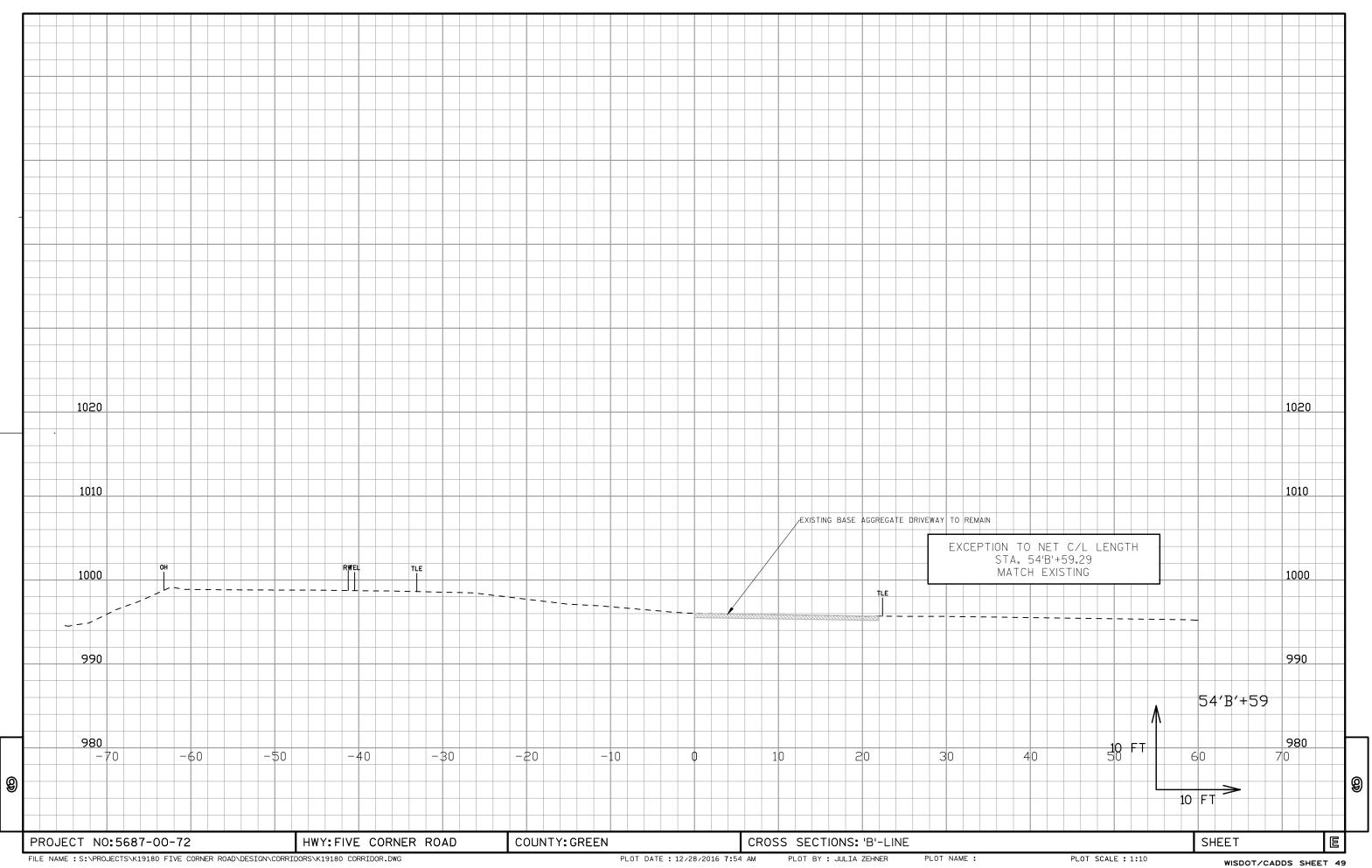


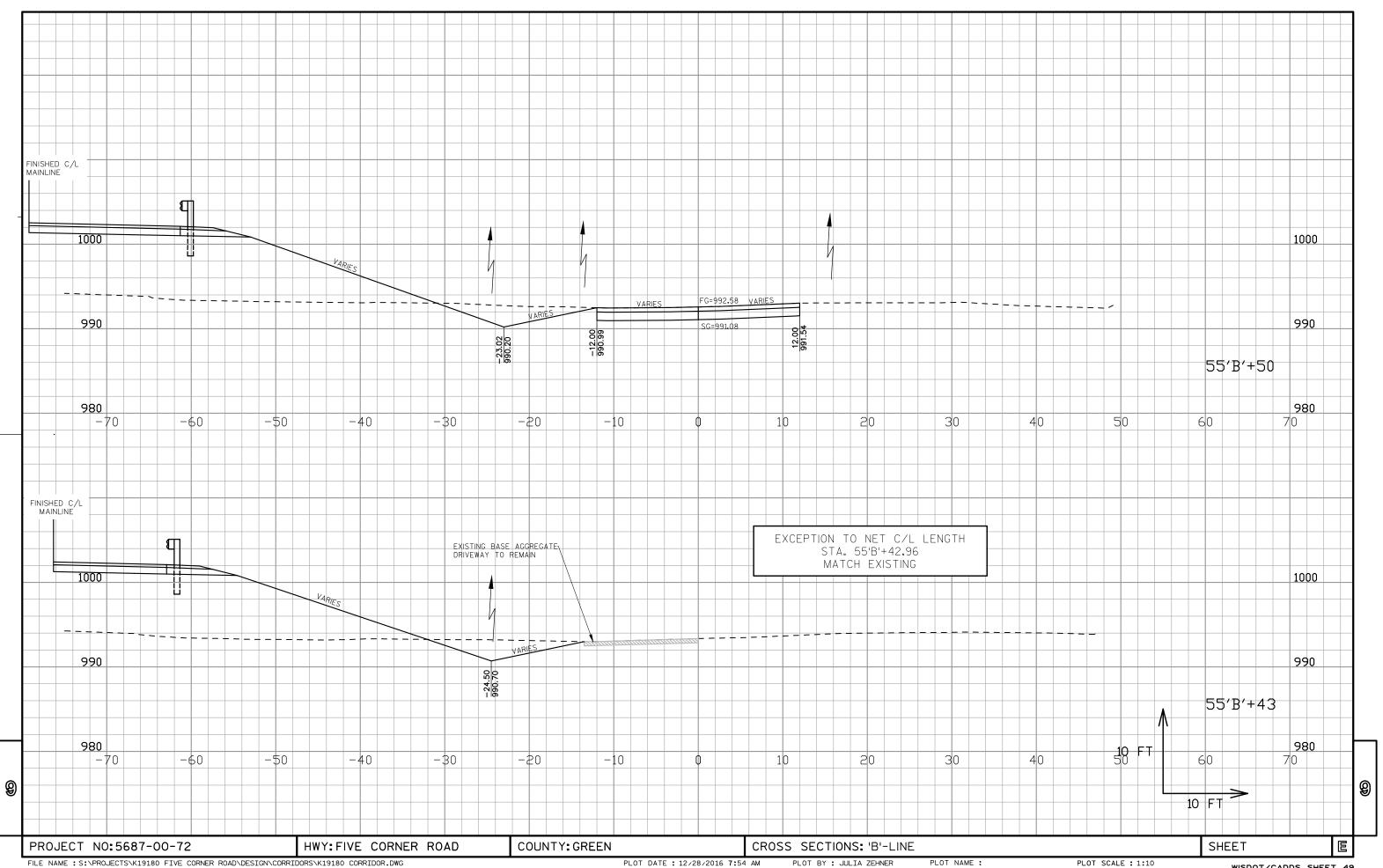


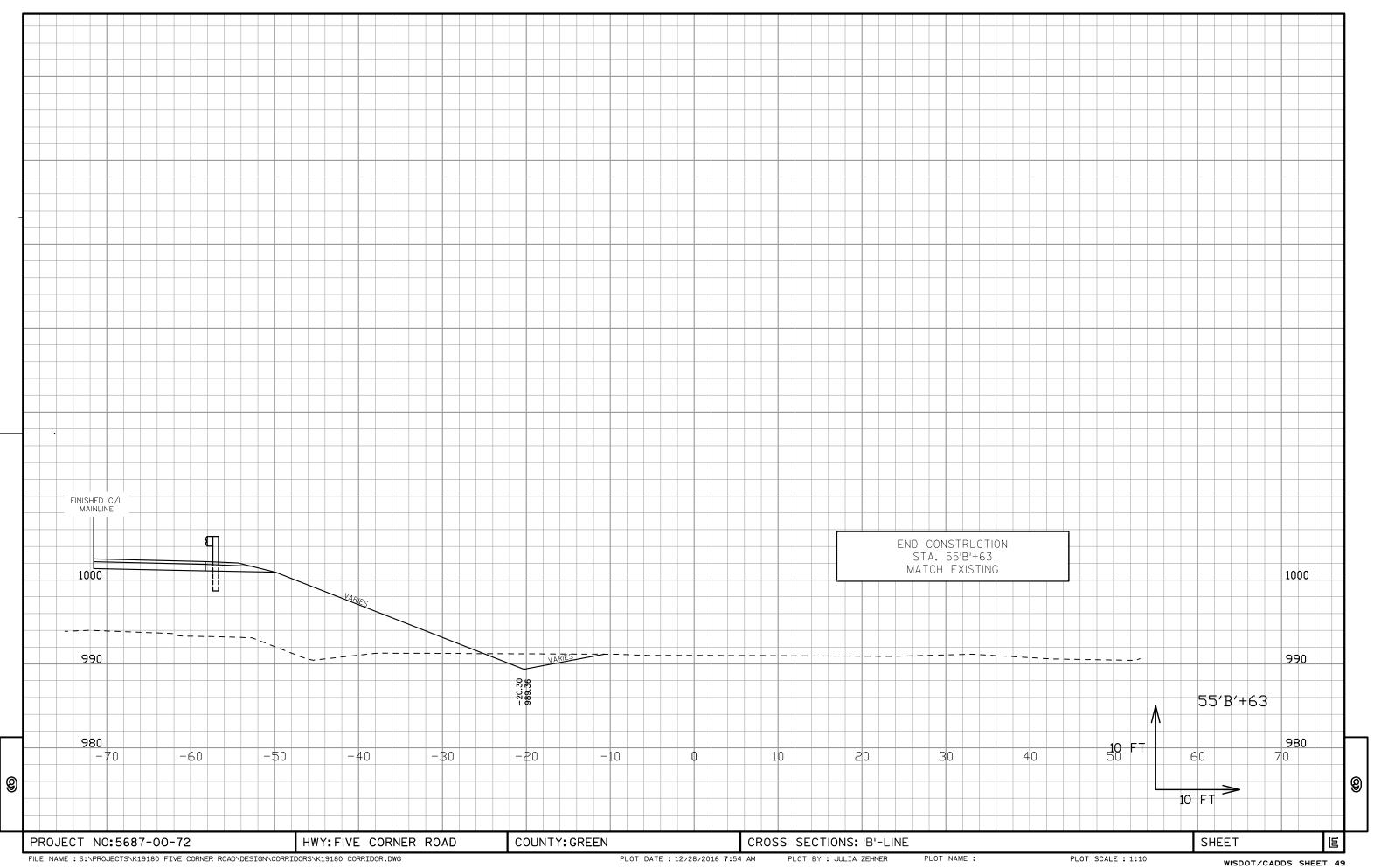


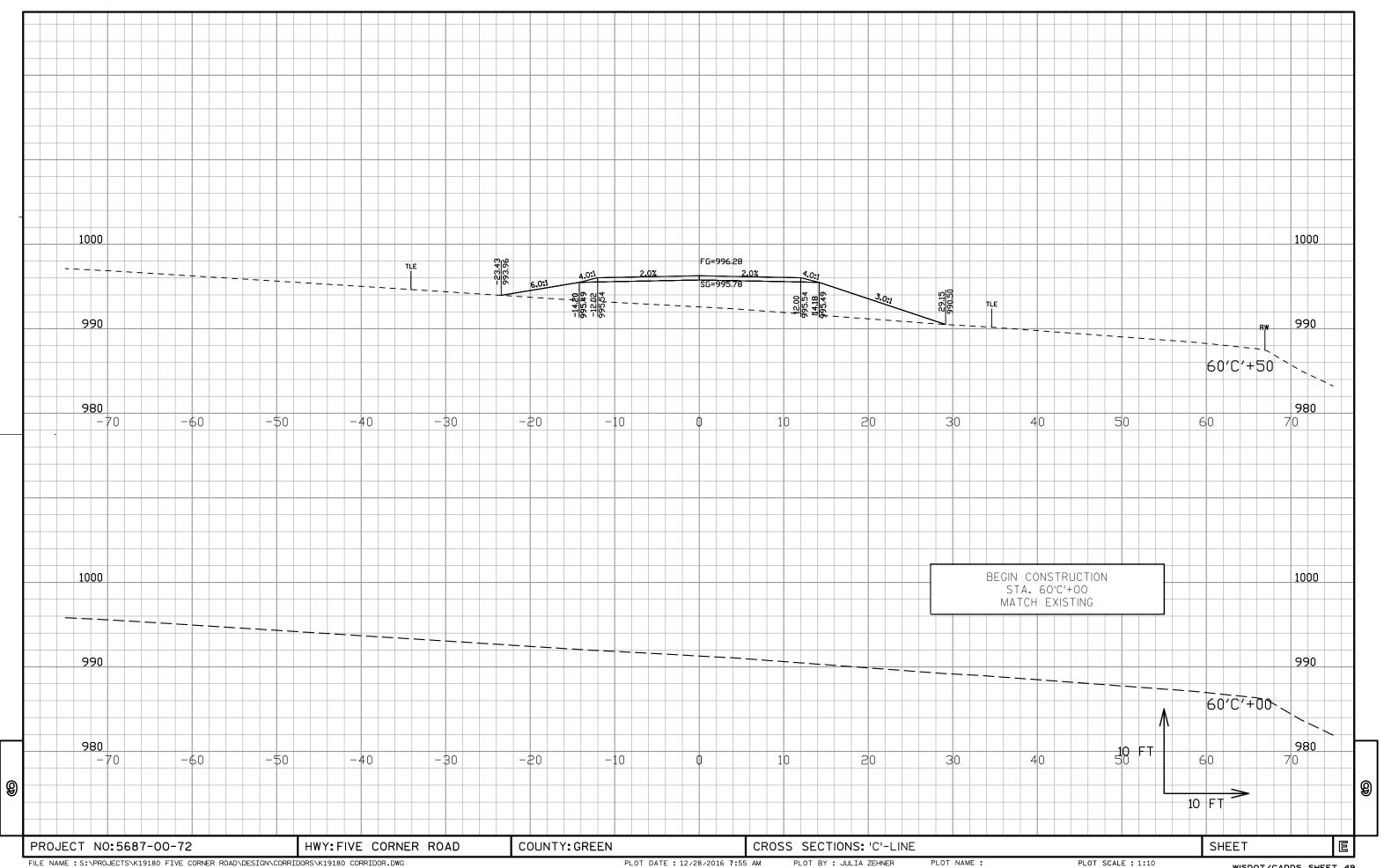


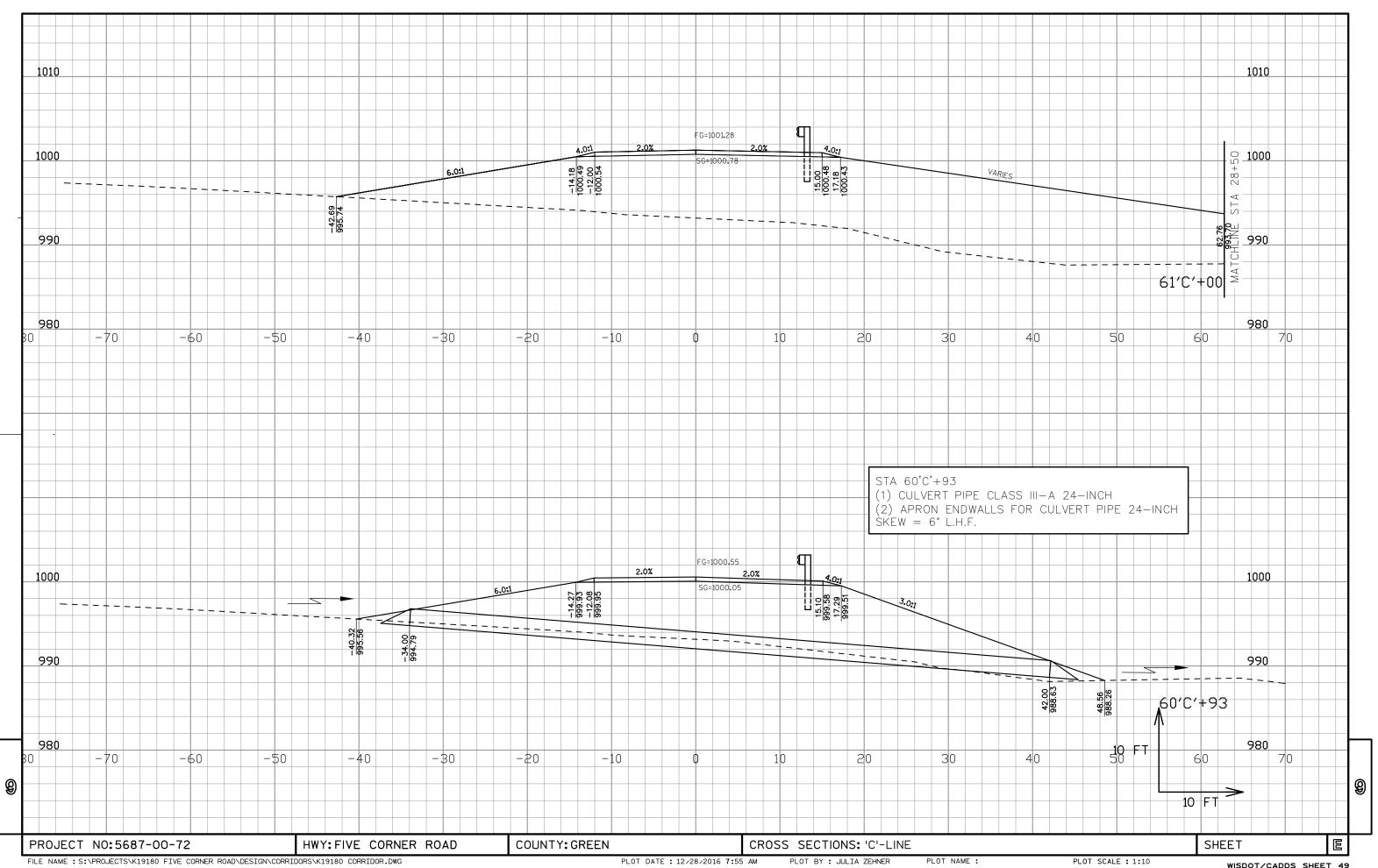


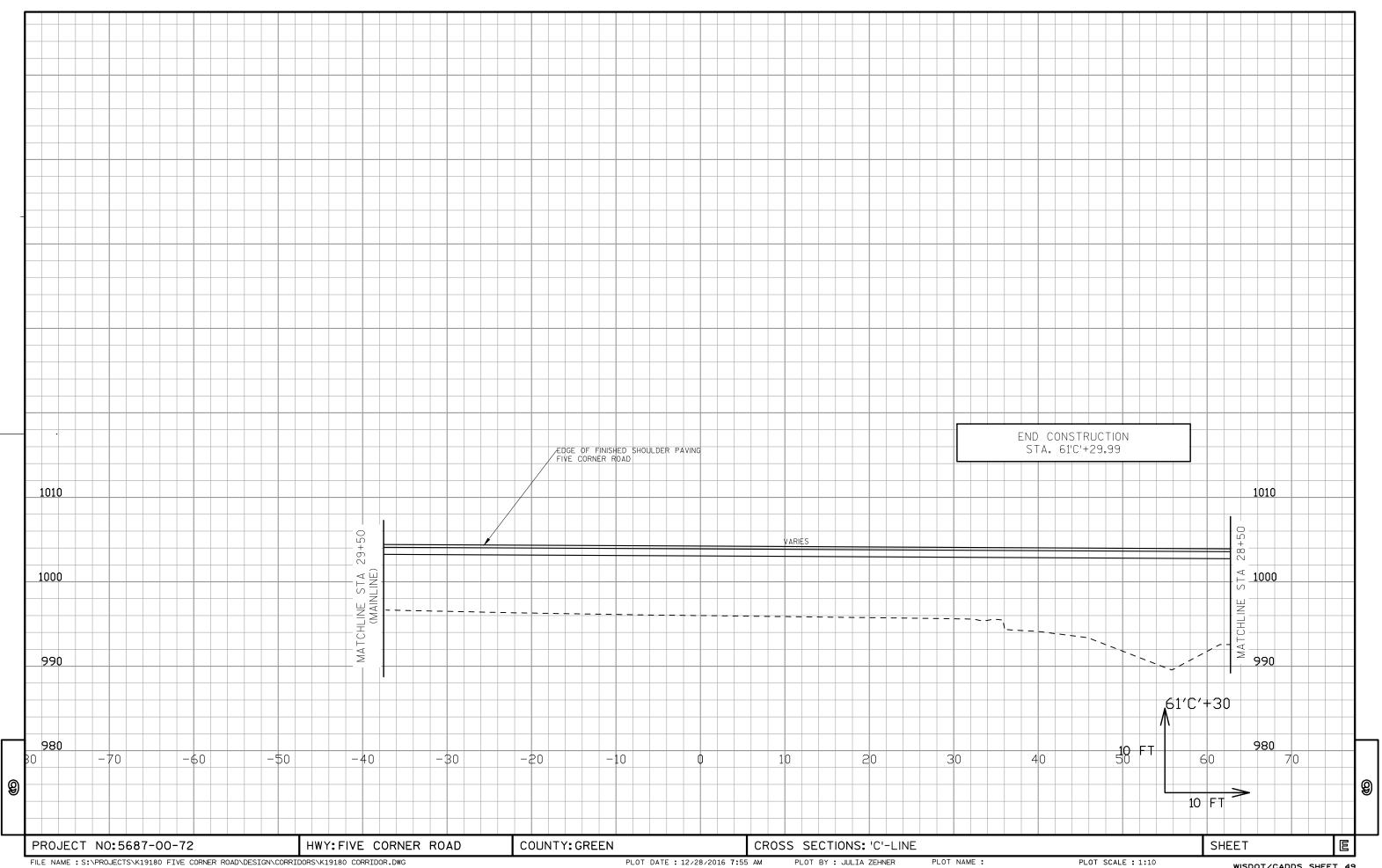


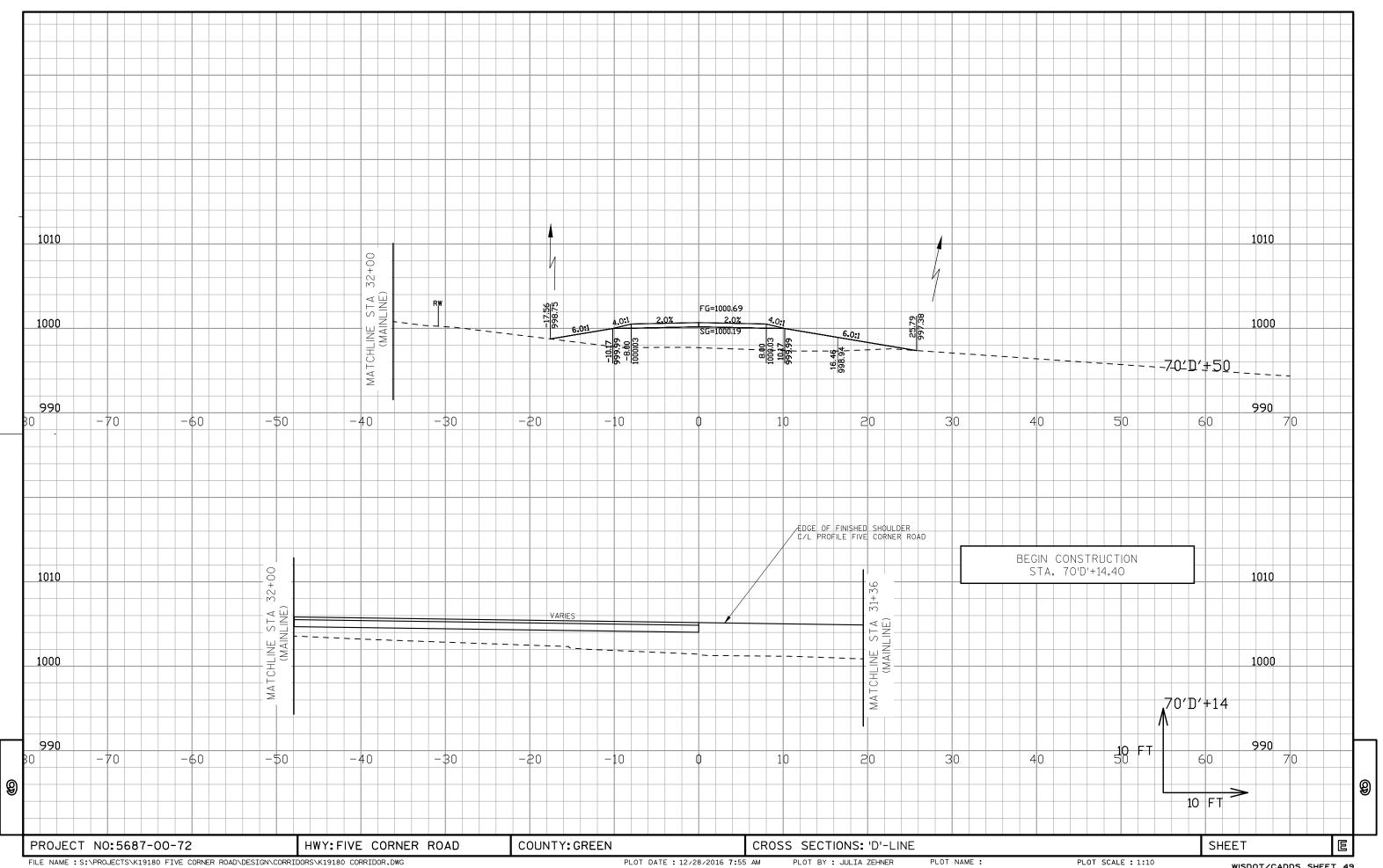


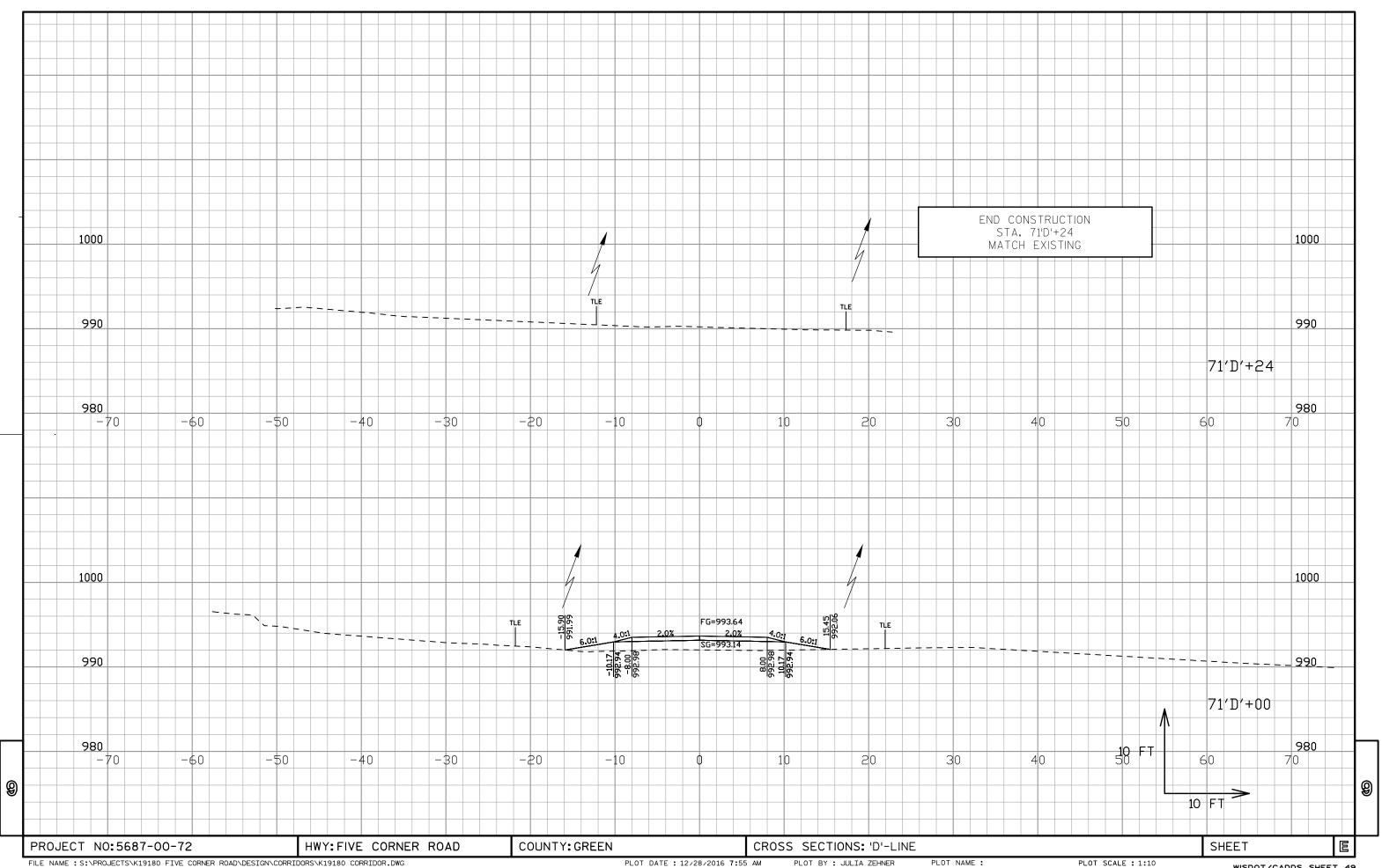






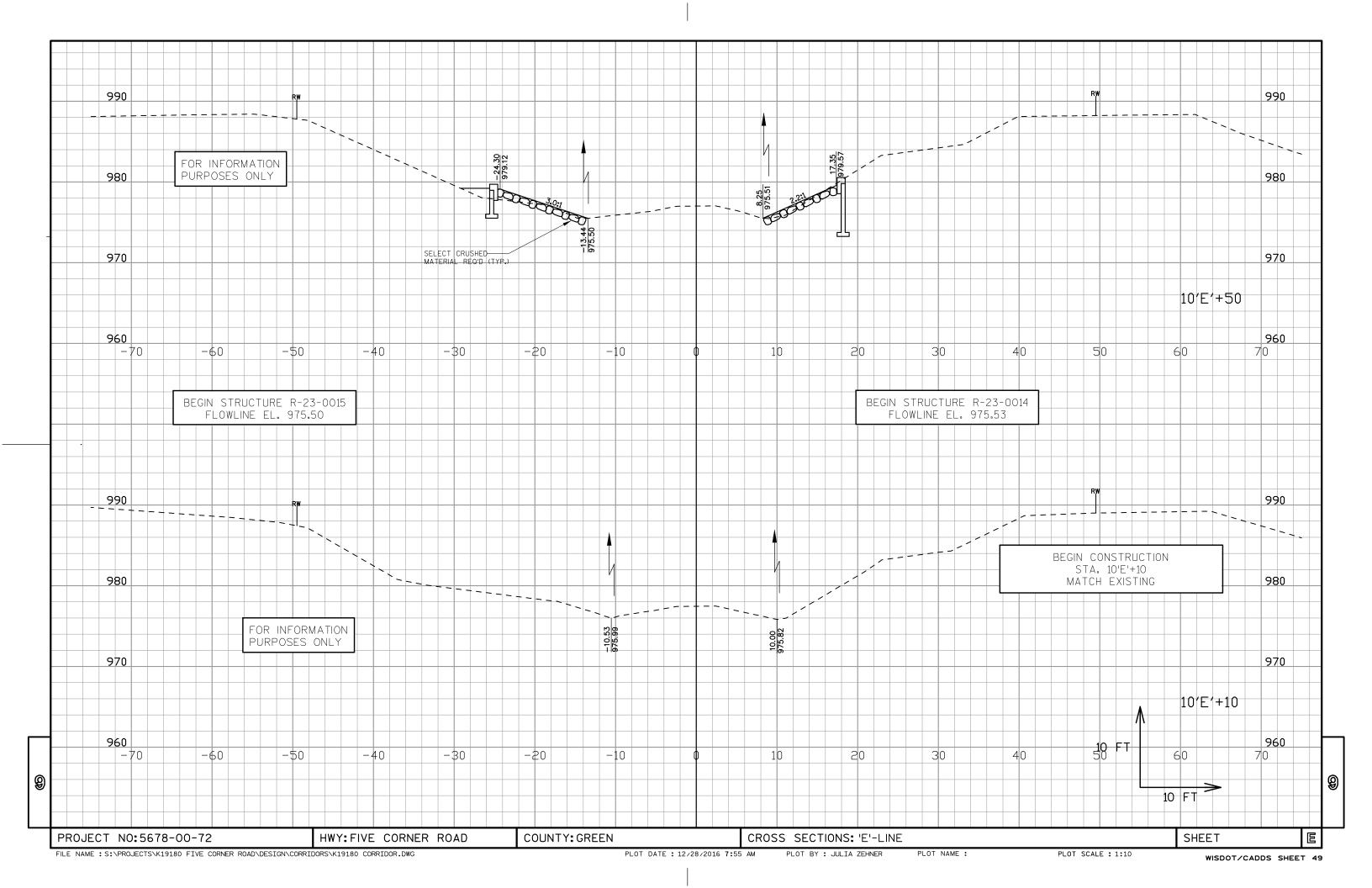


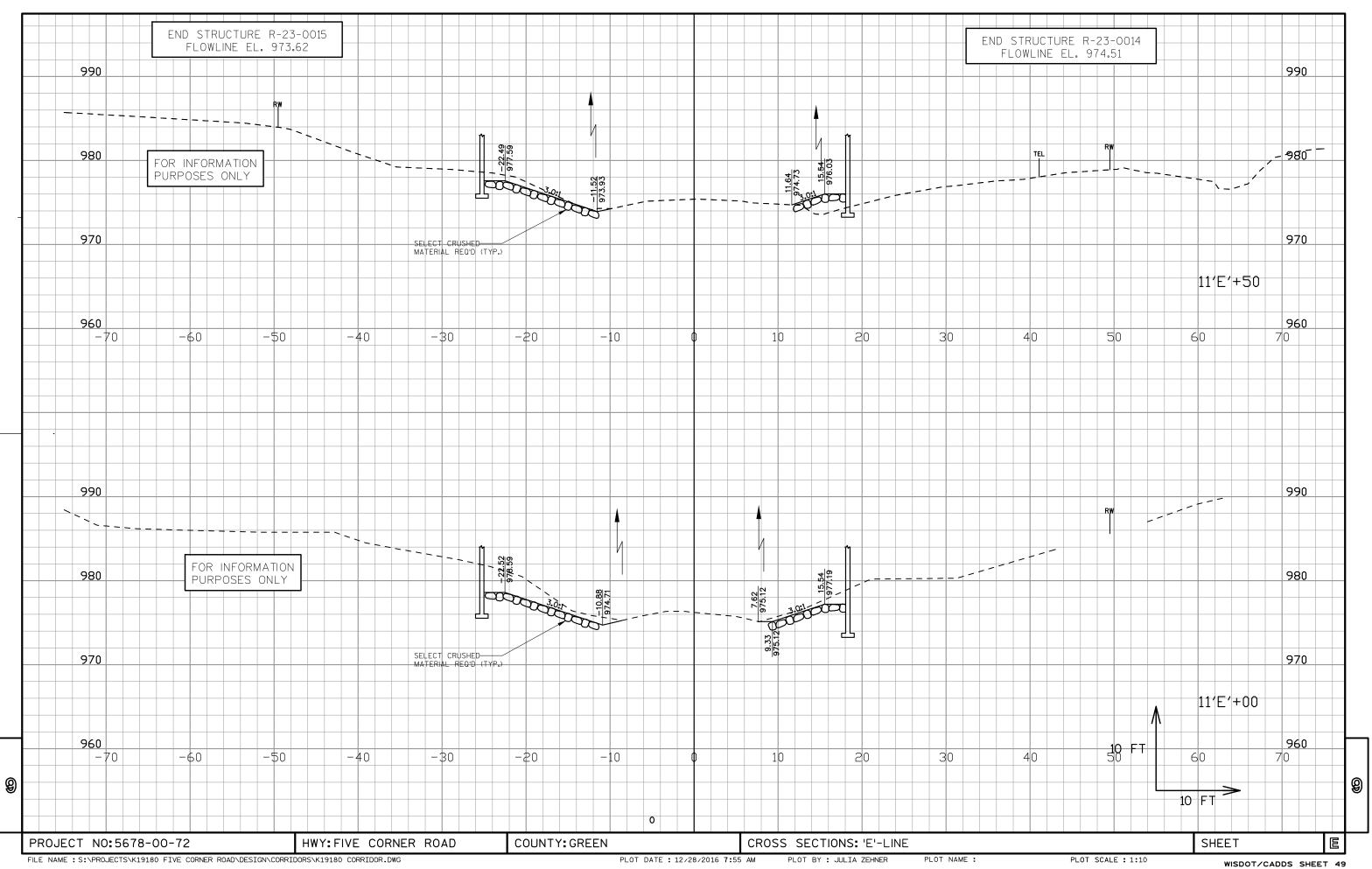


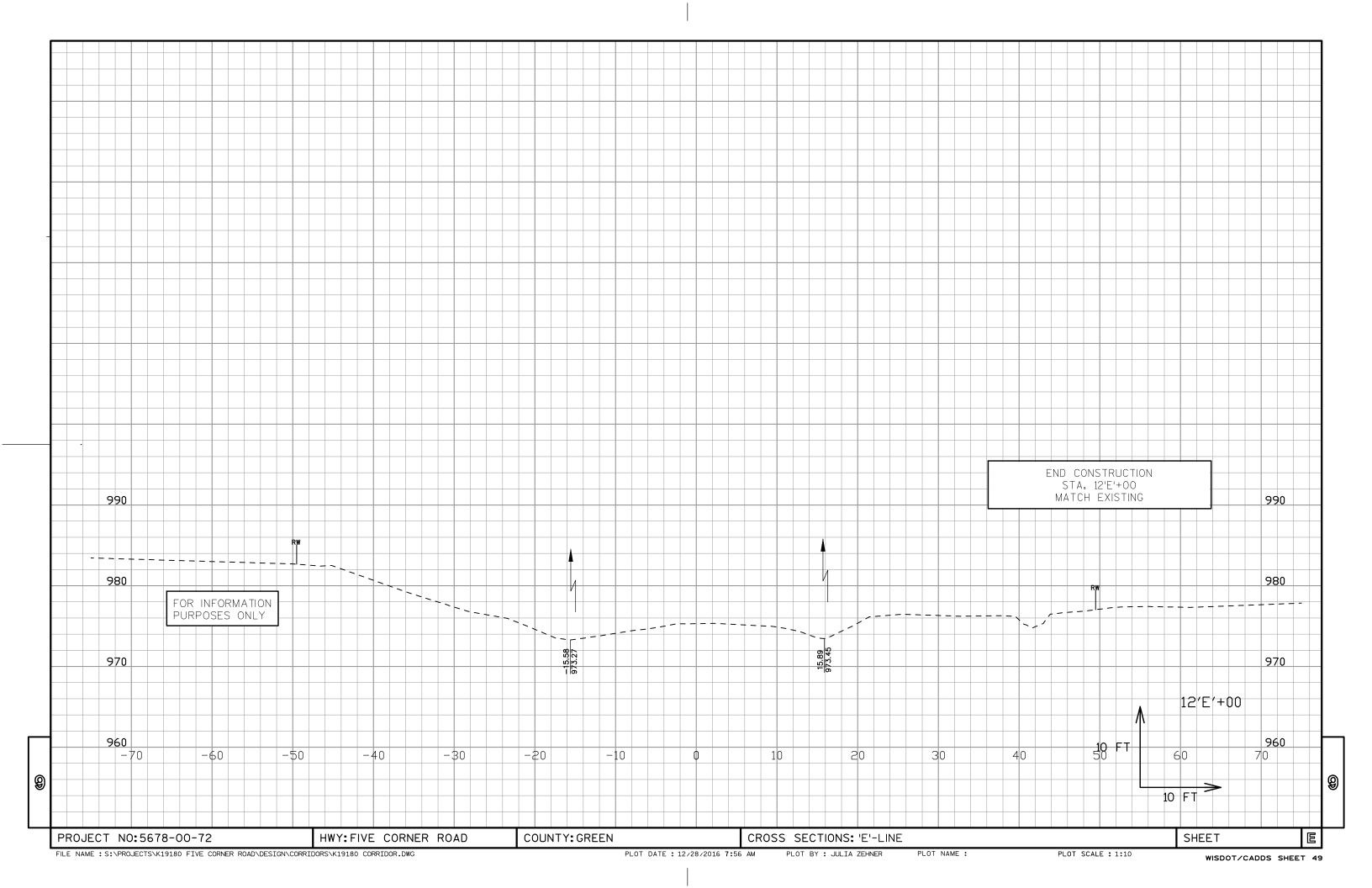


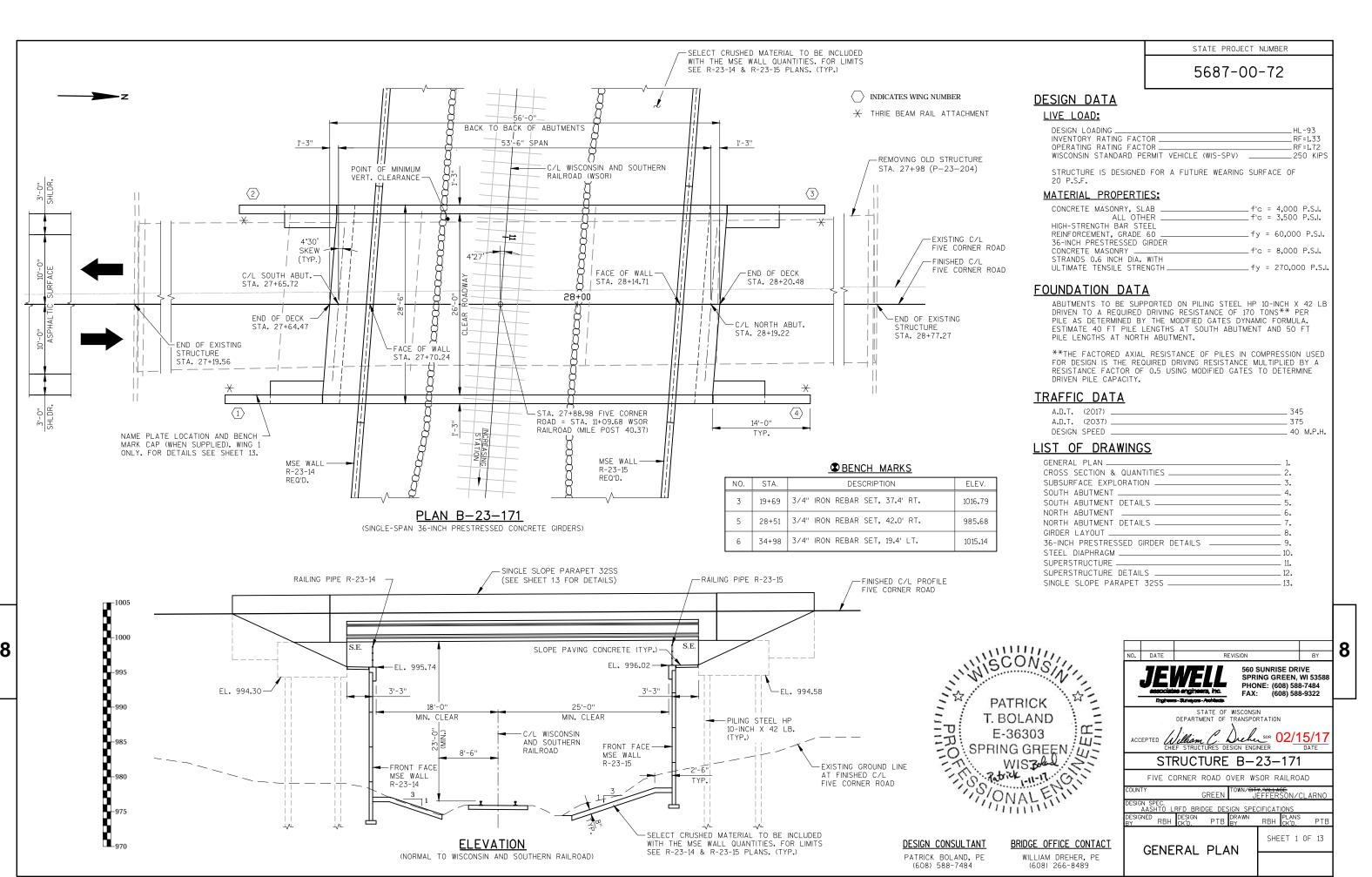
PLOT DATE : 12/28/2016 7:55 AM FILE NAME : S:\PROJECTS\K19180 FIVE CORNER ROAD\DESIGN\CORRIDORS\K19180 CORRIDOR.DWG PLOT BY: JULIA ZEHNER

WISDOT/CADDS SHEET 49









GENERAL NOTES

STA. 12+00. EL. 975.30

DRAWINGS SHALL NOT BE SCALED.

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

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

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

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

THE SLOPE OF FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH 4" CONCRETE TO BE PAID AS "SLOPE PAVING CONCRETE" TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS, OR AS DIRECTED BY THE ENGINEER IN THE FIELD.

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

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL

APPLY PROTECTIVE SURFACE TREATMENT TO THE ENTIRE TOP OF THE DECK. APPLY PIGMENTED SURFACE SEALER TO THE INSIDE FACE AND TOP OF SLOPED FACED PARAPETS INCLUDING PARAPETS ON ABUTMENT WINGS.

THE EXISTING STRUCTURE (P-23-204) IS AN EIGHT SPAN TIMBER TRESTLE STRUCTURE WITH TIMBER GIRDERS AND A TIMBER DECK. THE STRUCTURE IS 21.3' WIDE BY 158.2' LONG AND

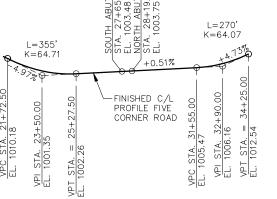
ALL STATIONS AND ELEVATIONS SHOWN ARE IN FEET.

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

COORDINATE THE CONSTRUCTION OF BRIDGE B-23-171 WITH THE CONSTRUCTION OF RETAINING WALLS R-23-0014 AND R-23-0015.

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

CONNECTING INTO MSE WALL PIPE UNDERDRAIN AND ALL NECESSARY MATERIALS IS INCIDENTAL TO BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH."



1.08%

WSOR - PROFILE GRADE LINE

(WSOR RAILROAD LOOKING NORTH)

FIVE CORNER ROAD - PROFILE GRADE LINE

VPC STA. 21+72. EL. 1010.18

SINGLE SLOPE PARAPET

32SS (TYP.) FOR DETAIL SEE SHEET 13.

V-GROOVE TERMINATE

6" FROM FRONT FACE OF

ABUTMENT DIAPHRAGM.

(TYP.)

PIPE UNDERDRAIN WRAPPED 6-INCH PROPOSED ABUTMENT CONNECT BRIDGE PIPE UNDERDRAIN INTO MSE

MSE WALL PIPE UNDERDRAIN AND ALL NECESSARY MATERIALS IS INCIDENTAL TO BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH.

TOTAL ESTIMATED QUANTITIES

BACKFILL STRUCTURE TYPE A

28'-6" OUT TO OUT OF DECK 26'-0"

CLEAR ROADWAY

3 SPA. @ 7'-8" = 23'-0"36-INCH PRESTRESSËD CONCRETE GIRDERS

PROPOSED CROSS-SECTION THROUGH ROADWAY

IMITS OF BACKFILL

- SUBGRADE

13'-0"

2%_

IN SPAN

◆ BACKFILL STRUCTURE TYPE A PAY LIMITS.

PIPE UNDERDRAIN WRAPPED 6-INCH.

BACKFILL BEYOND PAY LIMITS SHALL BE

INCIDENTAL TO THE BID ITEM "EXCAVATION FOR STRUCTURES B-23-171". LIMITS OF

SLOPED 0.5% MIN. CONNECT BRIDGE PIPE UNDERDRAIN INTO MSE WALL PIPE

UNDERDRAIN. CONNECTING INTO MSE WALL PIPE UNDERDRAIN AND ALL NECESSARY

MATERIALS IS INCIDENTAL TO BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH.

EXCAVATION SHALL BE DETERMINED BY THE

TYP.)

-POINT REFERRED TO ON

PROFILE GRADE LINE

13'-0"

_2%

RAILING PIPE

2'-9"

BRIDGE STRUCTURE-

4" CONCRETE REQ'D.

PAID FOR AS SLOPE PAVING CONCRETE.

R-23-15 (SEE

MSE WALL PLANS

AT ABUTMENT

1'-0" WITHIN ROADBED

BACKFILL STRUCTURE DETAIL

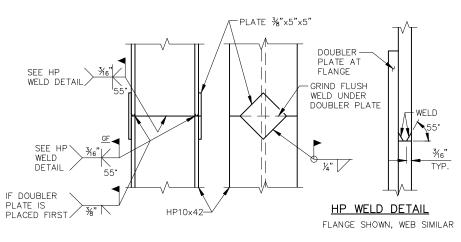
(TYPICAL AT BOTH ABUTMENTS)

C/L FIVE CORNER ROAD

ITEM NUMBER	ITEM DESCRIPTION	UNIT	S. ABUT.	SUPER	N. ABUT.	TOTALS
203.0200	REMOVING OLD STRUCTURE STA. 27+98	LS				1
203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL P-23-204	LS				1
203.0225.S	DEBRIS CONTAINMENT P-23-204	LS				1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-23-171	LS				1
210.1500	BACKFILL STRUCTURE TYPE A	TON	120		120	240
502.0100	CONCRETE MASONRY BRIDGES	CY	29	69	29	127
502.3200	PROTECTIVE SURFACE TREATMENT	SY		160		160
502.3210	PIGMENTED SURFACE SEALER	SY		70		70
503.0136	PRESTRESSED GIRDER TYPE 36-INCH	LF		218		218
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,710		1,710	3,420
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,420	14,780	1,430	17,630
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	4		4	8
506.4000	STEEL DIAPHRAGMS B-23-171	EACH		3		3
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	6		6	12
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	280		350	630
604.0400	SLOPE PAVING CONCRETE	SY	9		9	18
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	90		90	180
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH		4		4
	NON-BID ITEMS					
	FILLER	SIZE				½" & ¾"
	EXPANDED POLYSTYRENE	SIZE				1"

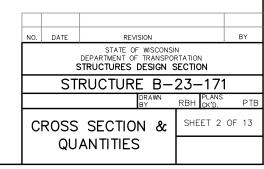
WALL PIPE UNDERDRAIN. CONNECTING INTO

PIPE UNDERDRAIN DETAIL



PILE SPLICE DETAIL

STEEL "HP" PILE MATERIAL SHALL BE ASTM A 572 GRADE 50.

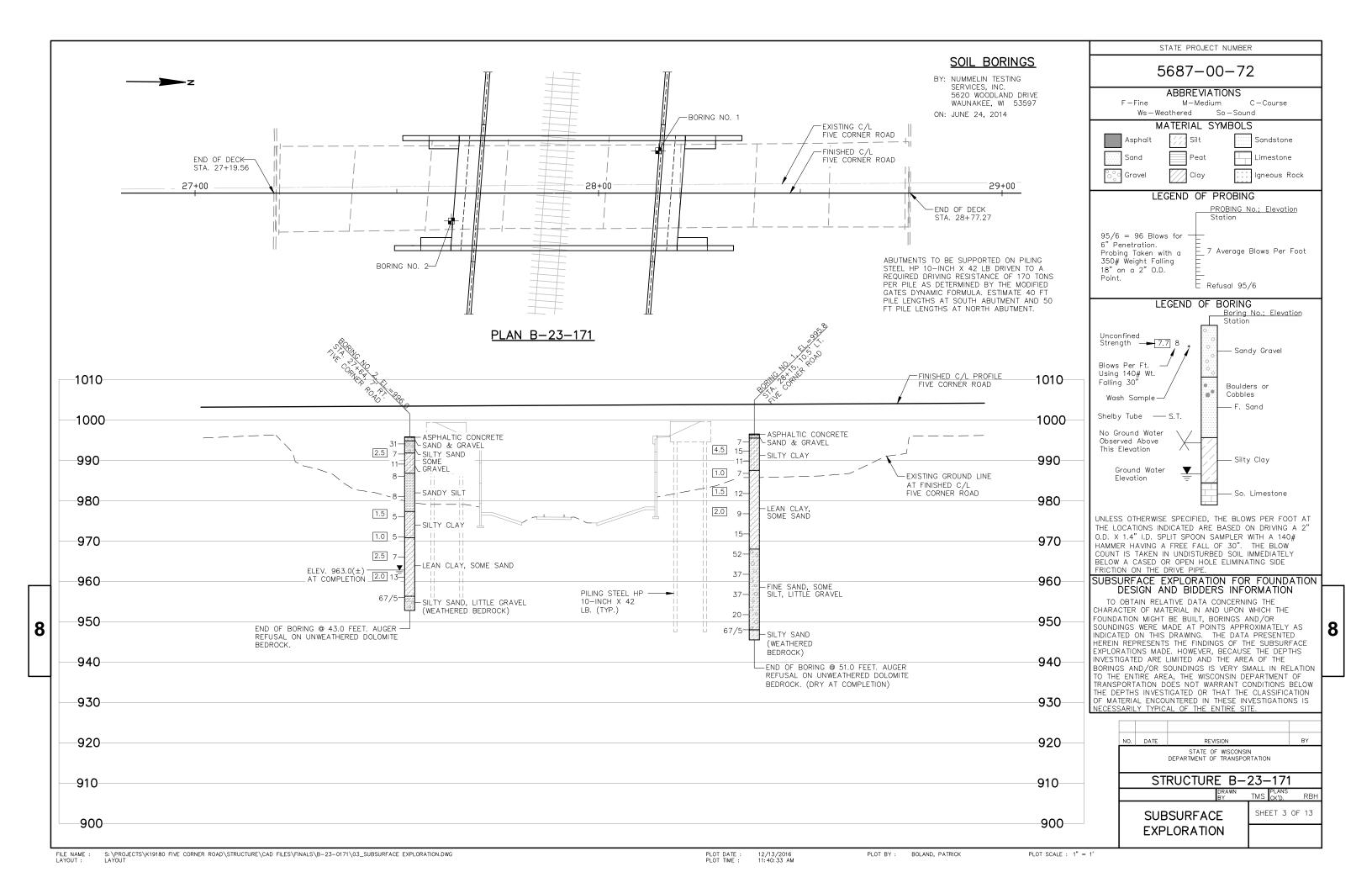


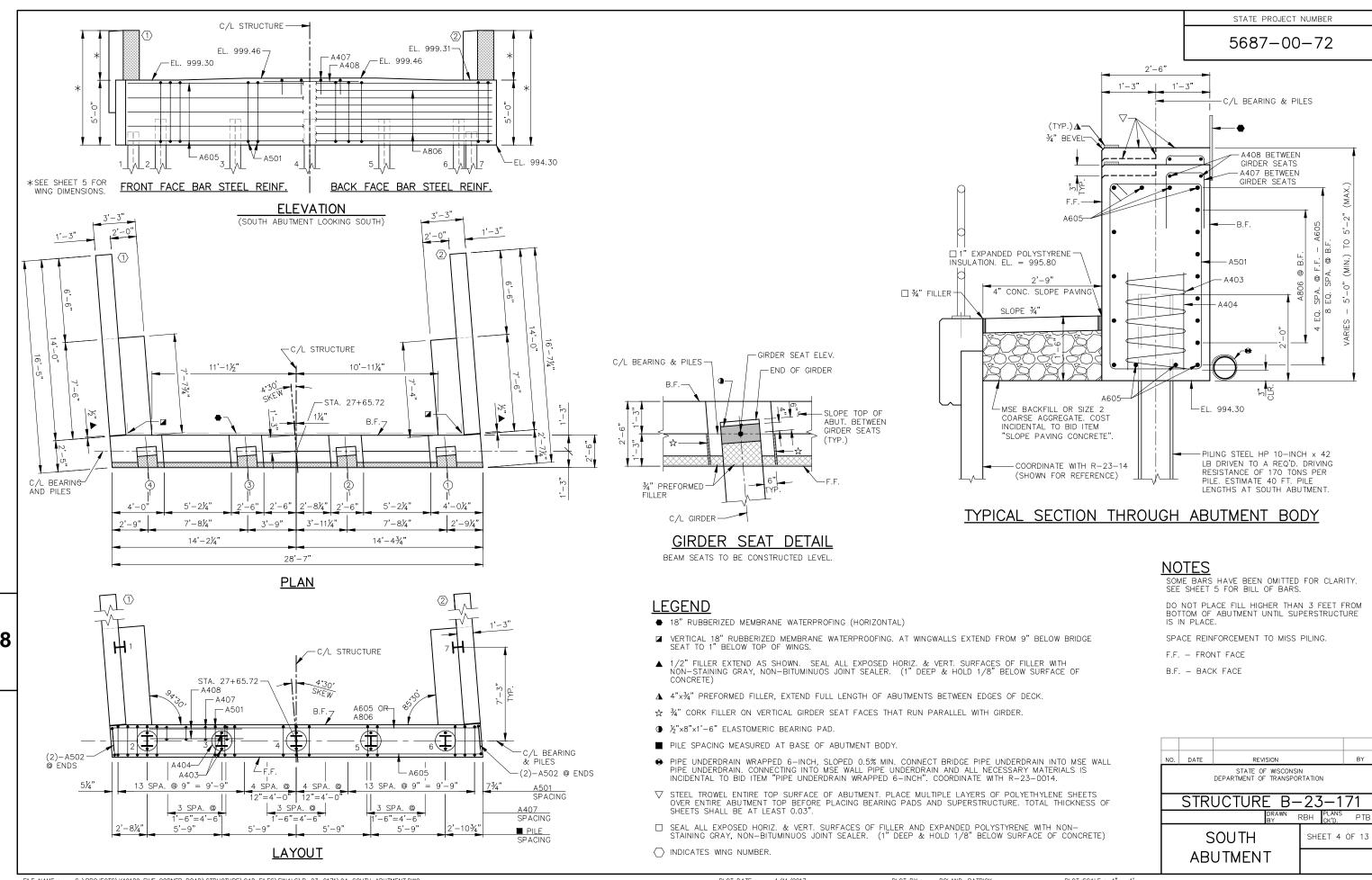
8

S:\PROJECTS\K19180 FIVE CORNER ROAD\STRUCTURE\CAD FILES\FINALS\B-23-0171\02_CROSS SECTION & QUANTITIES.DWG LAYOUT

PLOT BY : BOLAND, PATRICK PLOT SCALE: 1" = 1'

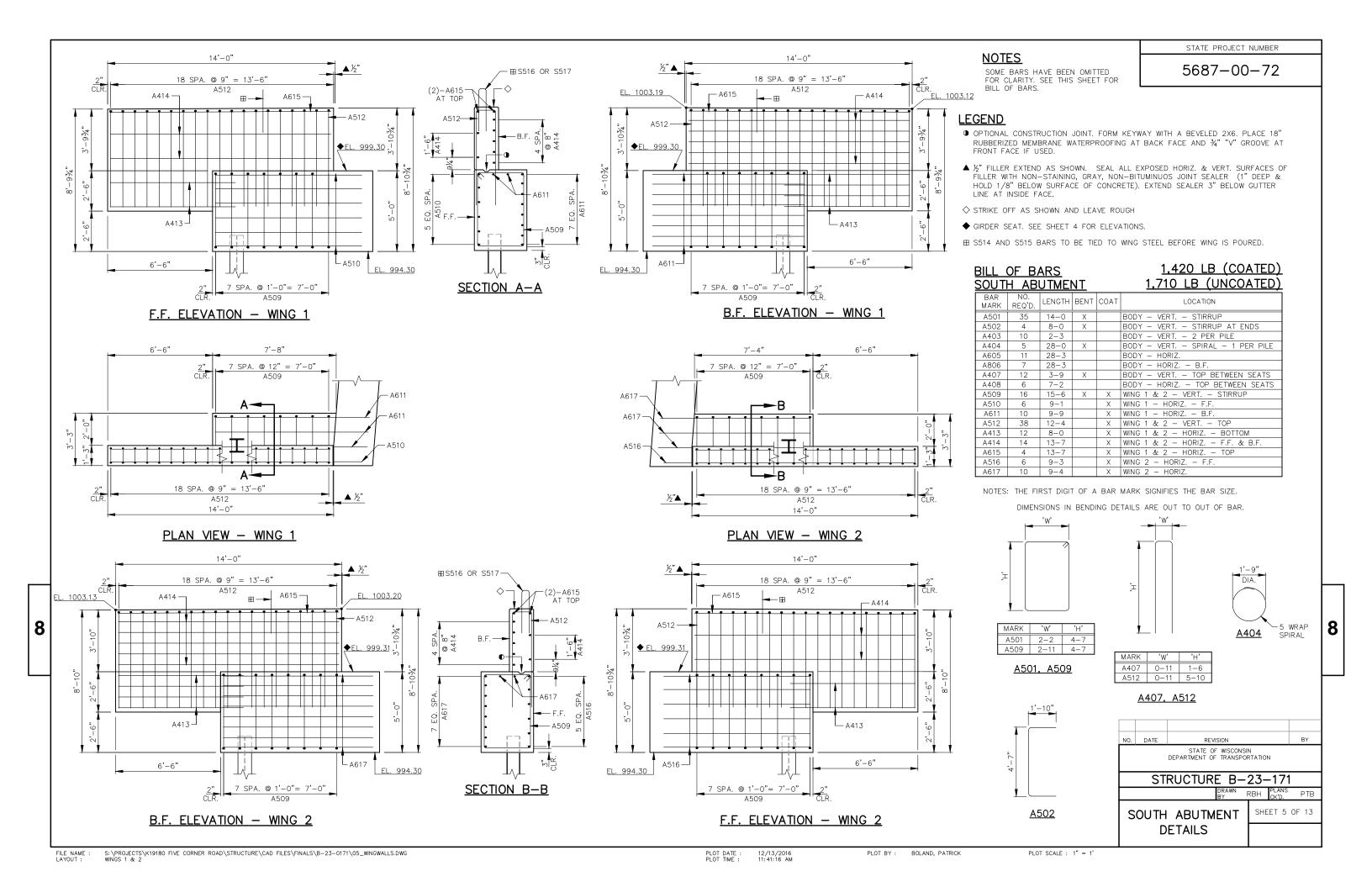
FILE NAME :

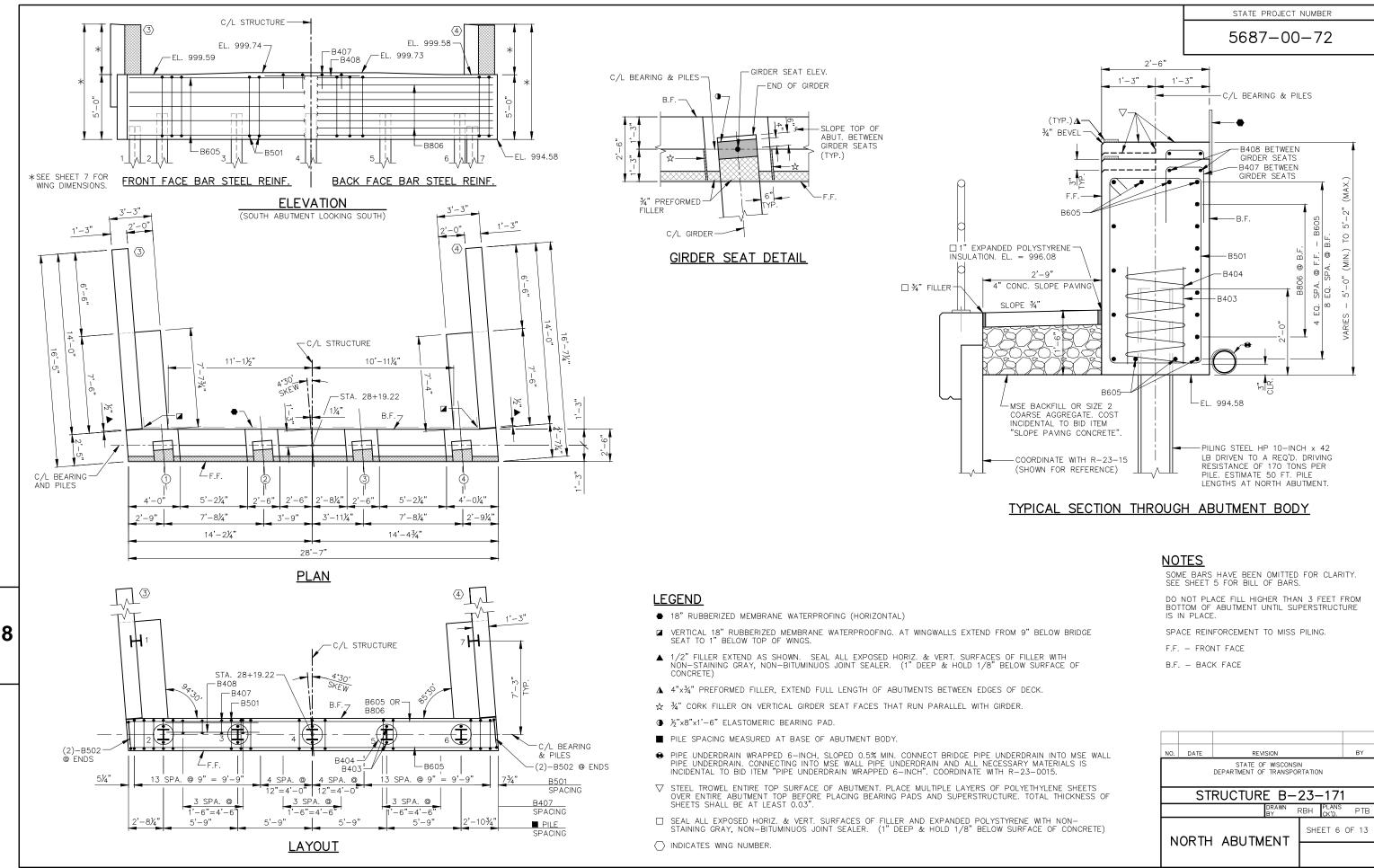


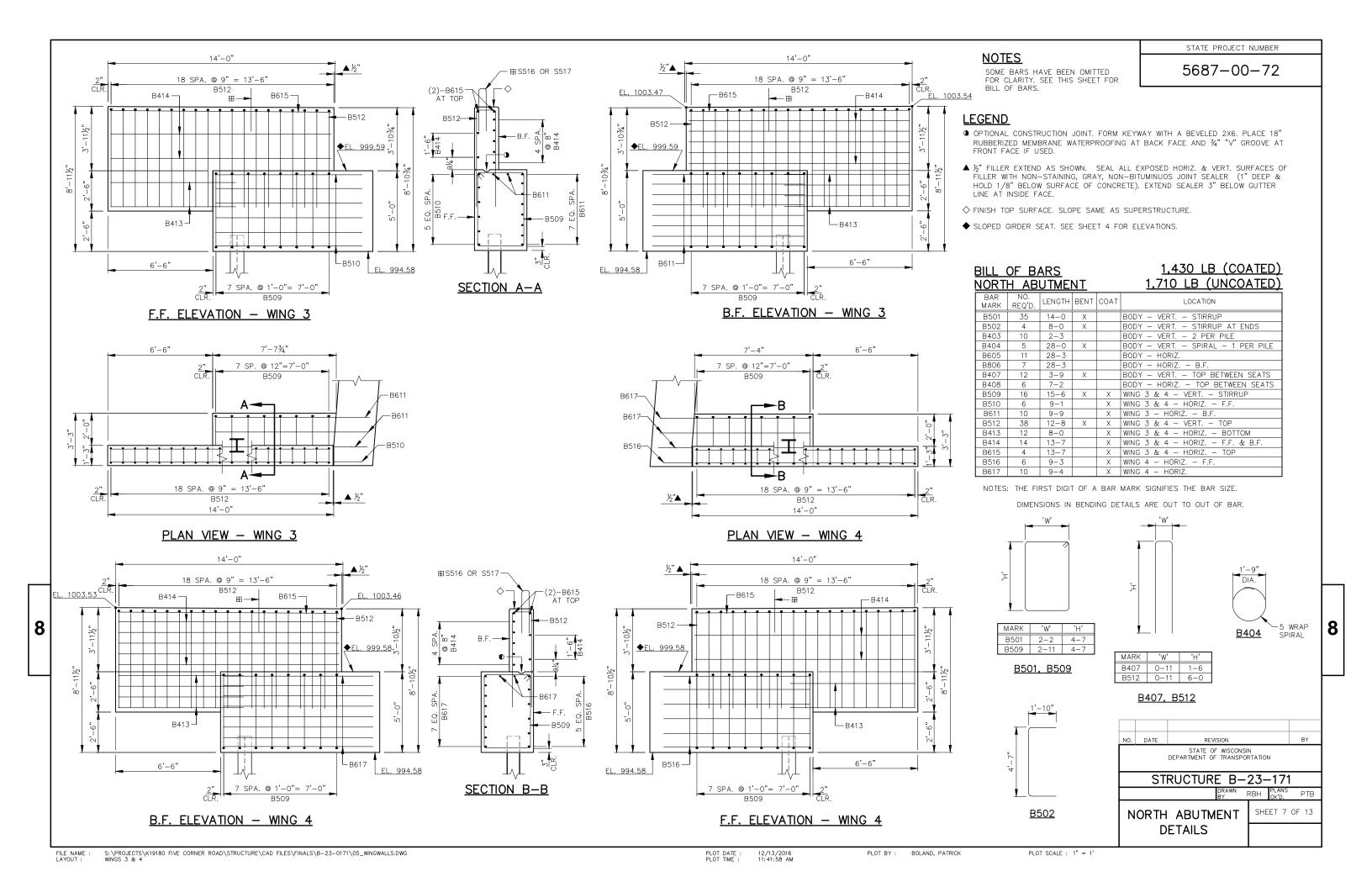


FILE NAME LAYOUT : S:\PROJECTS\K19180 FIVE CORNER ROAD\STRUCTURE\CAD FILES\FINALS\B-23-0171\04_SOUTH ABUTMENT.DWG SOUTH ABUTMENT 1/11/2017 7: 46: 10 AM

PLOT BY: BOLAND, PATRICK PLOT SCALE : 1" = 1'







STATE PROJECT NUMBER

5687-00-72



14,780 LB (COATED)

8

	BAR MARK	NO. REQ'D.	LENGTH	BENT	COAT	LOCATION
	S501	66	10-0	X	Х	ABUT DIAPHRAGM - VERT.
	S502	66	5-11	Х	Х	ABUT DIAPHRAGM - VERT TOP
	S603	4	1-8		Χ	ABUT DIAPHRAGM - HORIZ FRONT - ENDS
	S604	12	1-11		Χ	ABUT DIAPHRAGM - HORIZ FRONT - ENDS
	S605	6	5-10		Χ	ABUT DIAPHRAGM - HORIZ FRONT
	S606	18	6-4		Χ	ABUT DIAPHRAGM - HORIZ FRONT
	S607	12	28-3		Χ	ABUT DIAPHRAGM - HORIZ FRONT
	S408	12	4-10		Х	ABUT DIAPHRAGM - HORIZ BOTTOM
	S409	36	3-9	Х	Х	ABUT DIAPHRAGM - HORIZ BOTTOM
	S510	16	6-0		Χ	ABUT DIAPHRAGM - GIRDER - WEB
	S511	191	28-3		Х	DECK - TOP & BOTTOM - TRANS.
	S412	162	28-8		Χ	DECK - TOP & BOTTOM - LONGIT.
	S513	168	4-5	Х	X	PARAPET – VERT.
⊞	S514	32	5-10	Х	Х	PARAPET – VERT.
⊞	S515	68	5-7	Х	X	PARAPET – VERT.
*	S516	48	3-0	Х	X	PARAPET – VERT.
	S517	200	5-0	Х	Х	PARAPET – VERT.
	S518	24	4-10	Х	Х	PARAPET – VERT.
	S519	44	4-9	Х	Х	PARAPET – VERT.
	S520	24	28-9		X	PARAPET - HORIZ.
	S521	20	13-4		Χ	PARAPET - HORIZ.
	S522	4	13-4		Χ	PARAPET - HORIZ.

NOTES: THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE. DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

GIRDER LAYOUT

54'-6" GIRDER LENGTH

53'-6"

C/L SPAN

3½"

OFFSET

10¾" OFFSET

-STEEL DIAPHRAGM (SEE SHEET 10)

10¾"

OFFSET

3½" OFFSET

C/L BOLT ANCHORAGE --

26'-9"

28'-1¾"

27'-6½"

STA. 28+19.22-

C/L GIRDER (TYP.)-

26'-9"

26'-41/4"

26'-11½"

<u>LEGEND</u>

1 INDICATES GIRDER LINE.

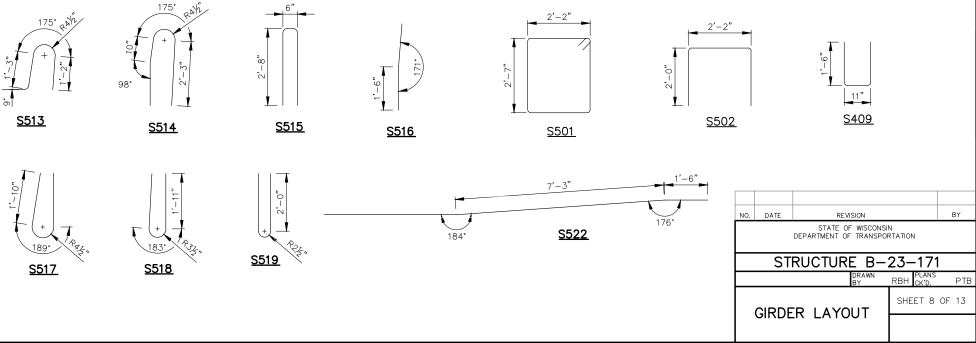
★ S516 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE S516 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

C/L BEARING -SOUTH ABUT.

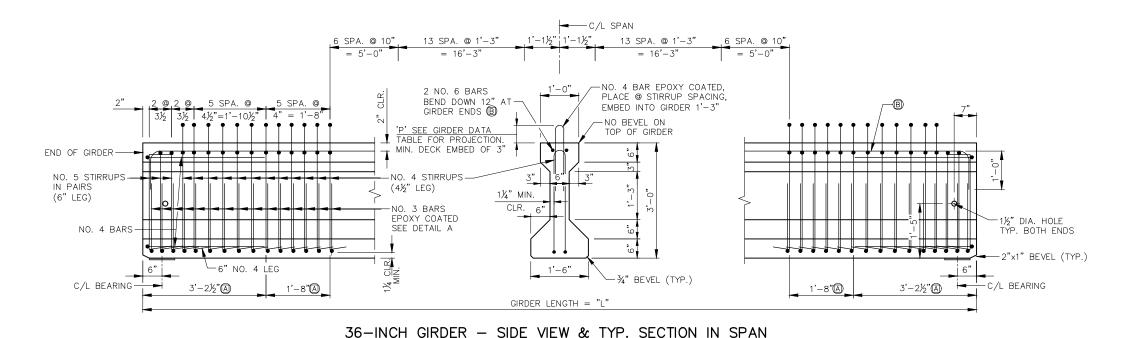
C/L STRUCTURE

STA. 27+65.72

⊞ S514 AND S515 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.



— C/L BEARING NORTH ABUT.



(A) DETAIL TYP. AT EACH END

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 2" OF THE TOP FLANGE.

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

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

PRESTRESSING STRANDS SHALL BE 0.6-INCH DIAMETER 7-WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270 KSI.

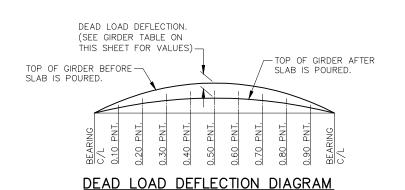
STRANDS SHALL BE FLUSH WITH THE ENDS OF THE GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END OF STRANDS SHALL BE COATED WITH NON-BITUMINEOUS JOINT SEALER.

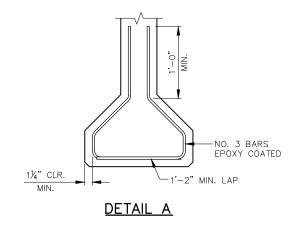
SPACING SHOWN FOR NO. 4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

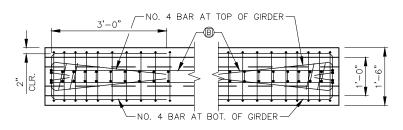
AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE SHEET 10.

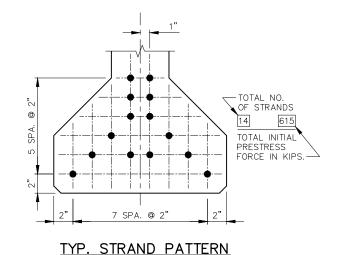
DATA SHOWN IN DEFLECTION DATA IS THEORETICAL AND MAY VARY WITH CONCRETE STRENGTH, VARIABLE PRESTRESS CONDITIONS AND PRESTRESS LOSES.







PLAN VIEW OF GIRDER ENDS



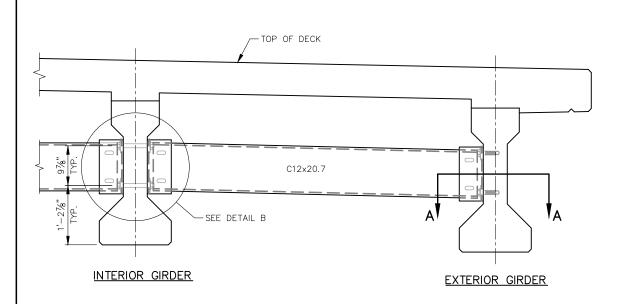
	GIRDER DATA							(STIRRU	P	ż	B NO. 6 "B" BAR	S MAY BE SPL	ICED, USE 53"	MIN. LAP.				
GIRDER			CONC. DEAD LOAD DEFLECTION STRENGTH		PROJECTION 'P' 50		DRAPED PATTERN		UNDRAPED PATTERN										
LENGTH "L"	QUANT.	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	f'c K.S.I.	1ST ⅓	MID.	END 1/3	DIA	TOTAL NO. f'ci OF K.S.I. "A"	(INCHES) "B" "C" MIN. MAX.	TOTAL NO. f' OF K.S STRANDS	, GIRDER
54'-6"	4	⅓"	3%"	¾"	1/2"	1/2"	1/2"	3/8"	3∕8"	⅓"	8	8"	6"	8"	0.6			14 6.	3 1-4

^{*} MIN. CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

S:\PROJECTS\K19180 FIVE CORNER ROAD\STRUCTURE\CAD FILES\FINALS\B-23-0171\08_36-INCH PRESTRESSED GIRDER DETAILS.DWG

PLOT DATE : 1/11/2017 PLOT TIME : 7:47:17 AM PLOT BY : BOLAND, PATRICK

PLOT SCALE : 1" = 1'



FORM 1¼" DIA. HOLES IN WEB WITH PIPE SLEEVE. 1/8" DIA. HIGH STRENGTH BOLTS WITH HEX NUT, TWO WASHERS AND 31/2" x 31/2" x 1/6" PLATE WASHERS. -15/6"×23/6" SLOTTED HOLES IN ANGLE HOLES IN CHANNEL -CENTER OF DIAPHRAGM - %" DIA. HIGH STRENGTH BOLTS WITH HEX NUT, TWO WASHERS AND A 3½" SQUARE x $\frac{1}{6}$ " PLATE WASHER ON SLOTTED SIDE.

DETAIL B

(FOR CONTINUOUS LINE OF DIAPHRAGMS)

GIRDER NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS

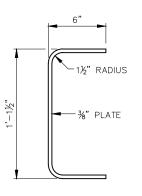
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

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

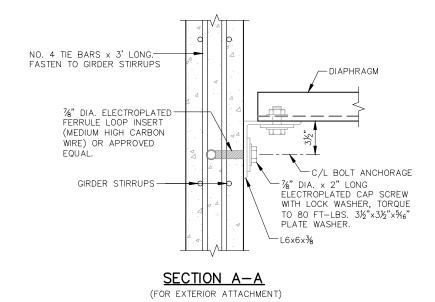
STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ¼ TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM

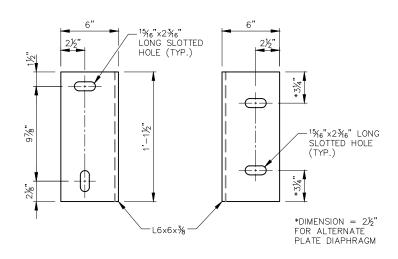
PLACE ONE DIAPHRAGM AT MID-LENGTH OF GIRDER AS INDICATED ON



SECTION THROUGH ALTERNATE DIAPHRAGM

PART TRANSVERSE SECTION AT DIAPHRAGM





GIRDER FACE

DIAPHRAGM FACE

DIAPHRAGM SUPPORT

DATE REVISION STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURE B-23-171 RBH CK'D. SHEET 10 OF 13 STEEL DIAPHRAGM

S:\PROJECTS\K19180 FIVE CORNER ROAD\STRUCTURE\CAD FILES\FINALS\B-23-0171\09_STEEL DIAPHRAGM.DWG

PLOT BY: BOLAND, PATRICK

PLOT SCALE : 1" = 1'

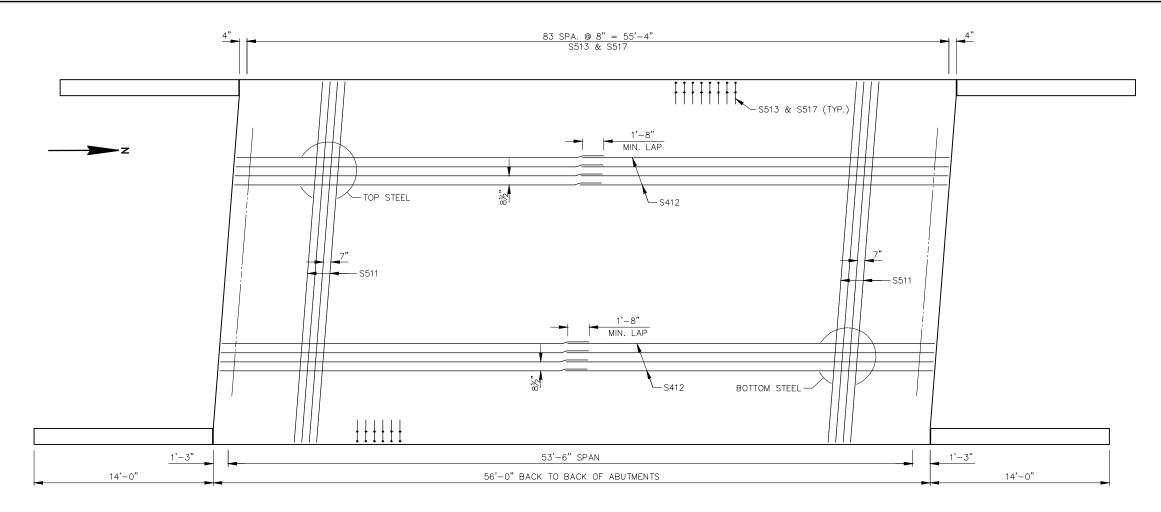
STATE PROJECT NUMBER

5687-00-72

NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE SHEET 12 FOR BAR SPACING IN THE DECK AND SHEET 8 FOR BILL OF BARS.

T.D. - TOP OF DECK



<u>PLAN</u>

¾" V-GROVE-TIE BAR-INTERIOR GIRDERS EXTERIOR GIRDERS

ELEVATIONS AT TOP OF DECK

GIRDER	LINE	C/L BRG. S. ABUT.	0.10 PT.	0.20 PT.	0.30 PT.	0.40 PT.	0.50 PT.	0.60 PT.	0.70 PT.	0.80 PT.	0.90 PT.	C/L BRG. N. ABUT.
W. EDGE	T.D.	1003.22	1003.25	1003.28	1003.31	1003.33	1003.36	1003.39	1003.42	1003.44	1003.47	1003.50
1	T.D.	1003.25	1003.28	1003.31	1003.34	1003.36	1003.39	1003.42	1003.45	1003.47	1003.50	1003.53
2	T.D.	1003.40	1003.43	1003.46	1003.49	1003.51	1003.54	1003.57	1003.60	1003.62	1003.65	1003.68
C/L	T.D.	1003.48	1003.51	1003.53	1003.56	1003.59	1003.62	1003.64	1003.67	1003.70	1003.73	1003.75
3	T.D.	1003.40	1003.43	1003.46	1003.48	1003.51	1003.54	1003.57	1003.59	1003.62	1003.65	1003.67
4	T.D.	1003.24	1003.27	1003.30	1003.33	1003.35	1003.38	1003.41	1003.44	1003.46	1003.49	1003.52
E. EDGE	T.D.	1003.21	1003.24	1003.27	1003.30	1003.32	1003.35	1003.38	1003.41	1003.43	1003.46	1003.49

SLAB HAUNCH DETAIL

IF 11/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR, ** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

TO DETERMINE 'T', ELEVATION OF TOP OF GIRDERS AT THE C/L OF SUBSTRUCTURE UNITS AND AT THE 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

- TOP OF DECK ELEV. AT FINAL GRADE

 TOP OF GIRDER ELEVATION
- + DEAD LOAD DEFLECTION - SLAB THICKNESS
- = HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH HEIGHT ('T') OF $2\slash\!\!/2\!\!\!/2\!\!\!/$ WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

 \bigstar slab thickness shall be increased as necessary to conceal intersection of slab and top of girder at all facia girders.

NO. DATE REVISION STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURE B-23-171 RBH CK'D. SHEET 11 OF 13 SUPERSTRUCTURE

8

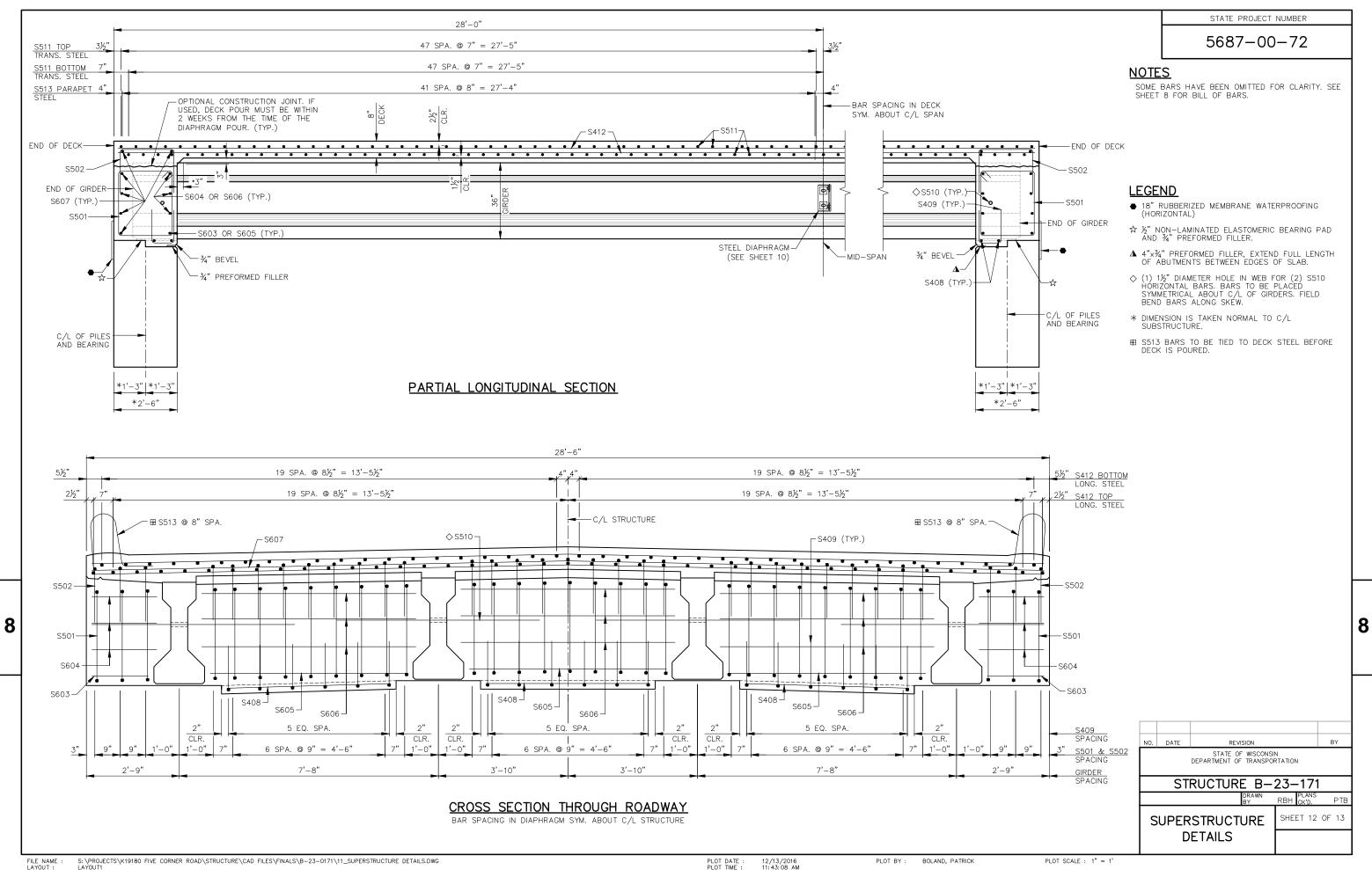
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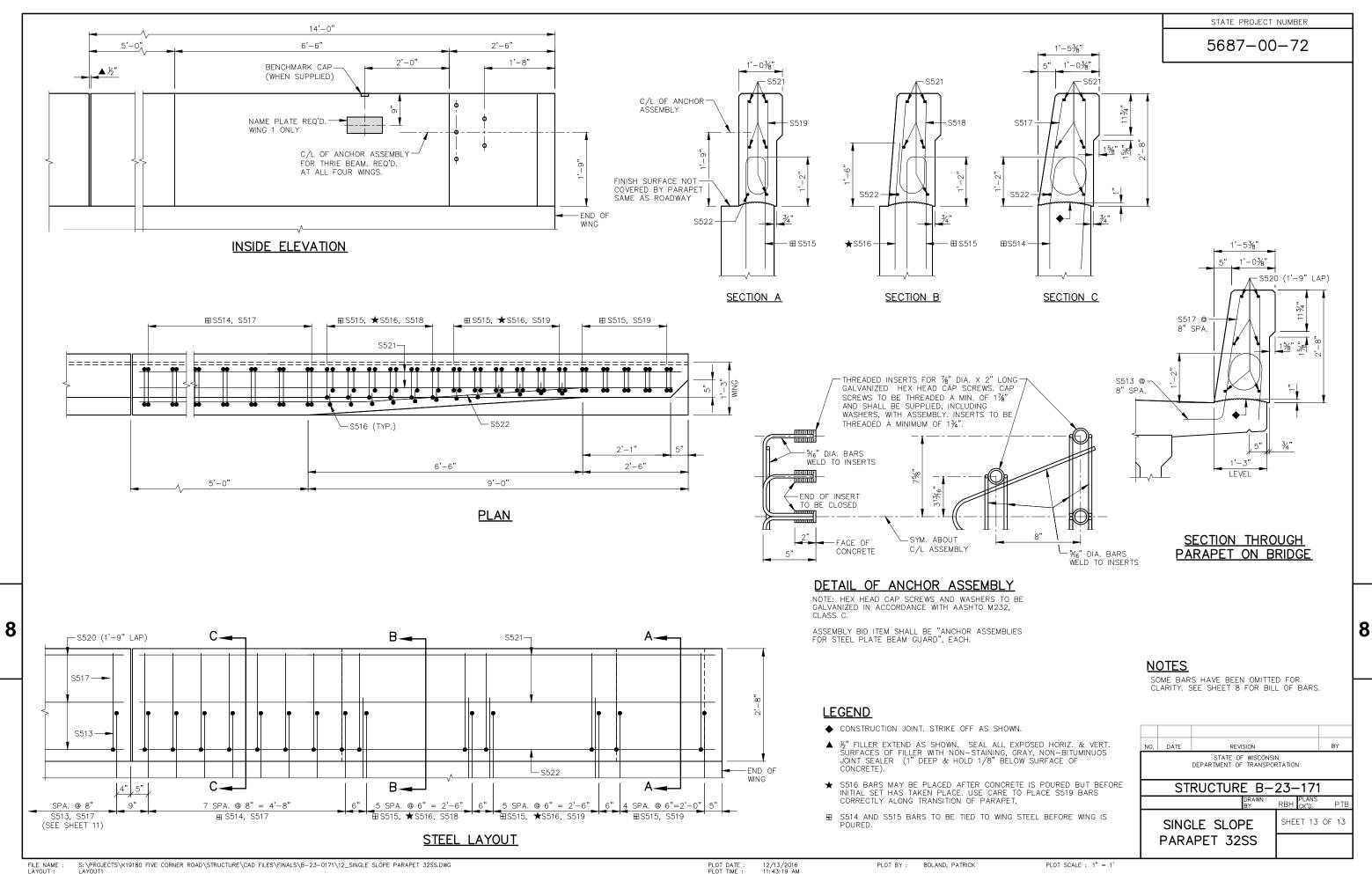
S:\PROJECTS\K19180 FIVE CORNER ROAD\STRUCTURE\CAD FILES\FINALS\B-23-0171\10_SUPERSTRUCTURE.DWG LAYOUT1

1/11/2017 7: 47: 56 AM

PLOT BY : BOLAND, PATRICK

PLOT SCALE : 1" = 1'





DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE

PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL SHALL BE DESIGNED USING THE ELEVATIONS GIVEN

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO THE 30° WITHOUT CERTIFIED TEST VALUES.

DESIGN THE RETAINING WALL FOR HORIZONTAL FINISHED GRADE BEHIND THE WALL AND A LIVE LOAD SURCHARGE OF 240 PSF.

DESIGN OF WALL IN FRONT OF ABUTMENT TO RESIST FORCE FROM ALL HORIZONTAL EARTH PRESSURE ACTING ON THE BACK OF THE ABUTMENTS BELOW THE BEAM SEATS.

EITHER 5'x5' OR 5'x10' RECTANGULAR STANDARD PANELS MAY BE USED

DITCH GRADING AT THE TOE OF SLOPE ALONG THE RAIL LINE AS SHOWN ON THE E-LINE CROSS SECTION SHEETS IS INCIDENTAL TO THE BID ITEM "SLOPE PAVING SELECT CRUSHED MATERIAL".

240 P.S.F. (TRAFFIC)

MATERIAL PROPERTIES:

4. SUBSURFACE EXPLORATION

PATE SPRING GREEN WIS 7 : Ш=

STATE OF WISCONSIN RTMENT OF TRANSPORTATION DEPARTMENT OF

STRUCTURE R-23-14

560 SUNRISE DRIVE

FAX:

SPRING GREEN, WI 53588

(608) 588-9322

01/18/17

SHEET 1 OF 4

PHONE: (608) 588-7484

RETAINING WALL AT WSOR RAILROAD

HTO LRFD BRIDGE DESIGN SPECIFICATION SIGNED RBH CK'D PTB BY РТВ

GENERAL PLAN

CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD/QMP".

SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO

ALLOWABLE WALL SYSTEMS

M.S.E. CONCRETE PANEL WALL

DESIGN DATA

LIVE LOAD:

LIVE LOAD SURCHARGE

CONCRETE MASONRY f'c = 3,500 P.S.I. PRECAST CONCRETE WALL PANEL $_{f'c} = 4,000 P.S.I.$ HIGH-STRENGTH BAR STEEL REINFORCEMENT fy = 60,000 P.S.I. STRUCTURAL STEEL CARBON _ fy = 36,000 P.S.I.(ASTM A709 GRADE 36)

LIST OF DRAWINGS

- GENERAL PLAN
- WALL DETAILS 3. RAILING PIPE DETAILS

SOUTH ABUTMENT STRUCTURE B-23-171

85°30

130'-0"

TOP OF COPING

EL. 995.74

FINISHED GROUND LINE

EDGE OF DECK

2'-81/2"

34'-0" LEVEL

WALL ELEVATION R-23-14

130'-0"

STA, 27+70,24 FIVE CURNER RUAD

FRONT FACE R-23-14

C/L FIVE CORNER ROAD

SELECT CRI

PLAN R-23-14

34'-0" LEVEL

(LOOKING SOUTH AT FRONT OF WALL)

-C/L FIVE

CORNER ROAD

♥BENCH MARKS NO. STA. DESCRIPTION ELEV. 3/4" IRON REBAR SET, 37.4' RT. 19+69 1016.79 3/4" IRON REBAR SET, 42.0' RT. 5 28+51 985.68 3/4" IRON REBAR SET, 19,4" LT, 34+98 1015.14

63'-0"

SLOPE PAVING CONCRETE

-EDGE OF DECK

2'-8½"

(INCLUDED IN BRIDGE QUANTITIES)

38'-0"

LIMITS OF FENCE CHAIN LINK 4-FT

FENCE CHAIN LINK 4-FT

CONCRETE LEVELING PAD

8'-0"

LEVEL

8'-0"

LEVEL

SELECT CRUSHED MATERIAL

RAILING PIPE R-23-14

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER UNLESS OTHERWISE SHOWN OR NOTED.

50'-0"

LIMITS OF FENCE CHAIN LINK 4-FT

FENCE CHAIN LINK 4-FT-

-NAME PLATE LOCATION, FOR

67'-0"

DETAILS SEE SHEET 2.

50'-0"

NAME PLATE LOCATION, FOR

DETAILS SEE SHEET 2.

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

ALL STATIONS AND ELEVATIONS ARE IN FEET, ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

ALL DIMENSIONS ARE ALONG THE FRONT FACE OF PRECAST CONCRETE WALL PANEL, UNLESS

THESE PLANS ARE FOR A MECHANICALLY STABILIZED EARTH CONCRETE PANEL WALL.

ALL BAR STEEL REINFORCEMENT LOCATED IN CAST-IN-PLACE CONCRETE IS TO BE EPOXY COATED.

FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M153 TYPES I, II, OR III, OR M123.

THE COST OF FURNISHING AND PLACING THE LEVELING PAD UNDER THE MSE PRECAST WALL PANELS IS INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF CONCRETE LEVELING PAD TO THE TOP OF WALL AS SHOWN ON THE PLANS.

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTALS
209.0100	BACKFILL GRANULAR	CY	200
513,2001	RAILING PIPE R-23-14	LF	33
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	1
604.0600	SLOPE PAVING SELECT CRUSHED MATERIAL	SY	140
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	150
616.0204	FENCE CHAIN LINK 4-FT	LF	96
SPV.0165.01	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD/QMP	SF	2,080
	NON-BID ITEMS		
	NAME PLATE		
	PREFORMED JOINT FILLER	SIZE	3/4"
	EXPANDED POLYSTYRENE	SIZE	1"

DESIGN CONSULTANT

PATRICK BOLAND, PE (608) 588-7484

BRIDGE OFFICE CONTACT WILLIAM DREHER, PE (608) 266-8489

S:\PROJECTS\K19180 FIVE CORNER ROAD\STRUCTURE\CAD FILES\FINALS\R-23-0014&R-23-0015\R-23-14&15_01_GENERAL PLAN.DWG SOUTH WALL FILE NAME LAYOUT :

BOLAND, PATRICK

PLOT SCALE: 1" = 1'

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

ORIENT SHIELD SO SLOTS ARE VERTICAL.

¾" CONTINUOUS DRIP GROOVE

OUTSIDE FACE OF

WALL R-23-14

GROUND LINE

BOTTOM OF WALL-

LEVELING PAD -

FINSHED

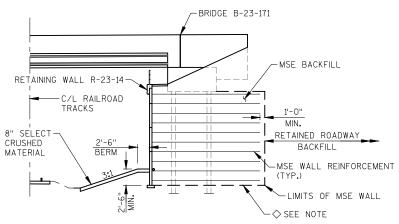
△ CAST-IN-PLACE

CONCRETE COPING DETAIL

(SEE DETAIL)

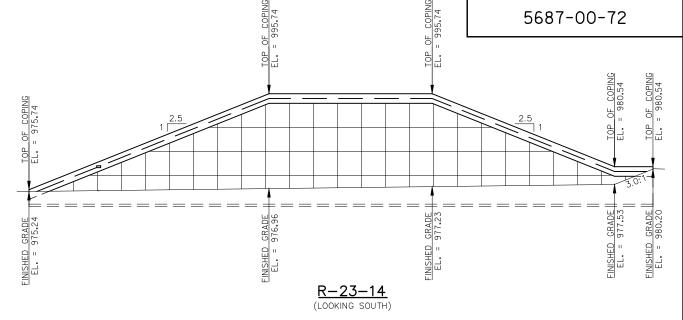
THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6—INCH".

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



TYPICAL SECTION THROUGH MSE RETAINING WALL

◇ UNDERCUTTING MAY BE REQUIRED IF UNSUITABLE MATERIAL IS ENCOUNTERED. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD. UNDERCUT UNSUITABLE MATERIAL AND REPLACE WITH BACKFILL GRANULAR. COST OF OVEREXCAVATION IS INCLUDED IN THE BID ITEM "BACKFILL GRANULAR".



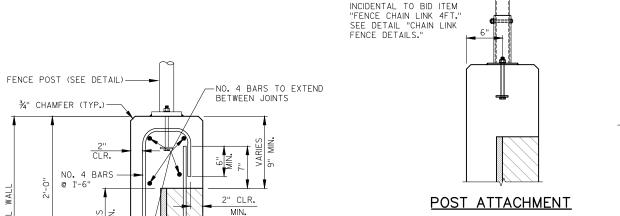
	■SAFETY FACTORS FOR MSE WALLS											
STRUCTURE	LOCATION	WALL HEIGHT * (FT)	SLIDING (CDR ≥ 1.0)	OVERTURN (CDR ≥ 1.0)	GLOBAL STABILITY (CDR <u>></u> 1.0)	BEARING CAPACITY (CDR <u>></u> 1.0)	LENGTH OF REINFORCEMENT (FT)					
	WALL TAPER	6	1.2	2.3	1.6	2.7	6					
R-23-14	WALL TAPER	12	1,0	1,4	1.1	1.3	8.3					
1, 23-14	WALL TAPER	20	1,0	1,4	1.0	1,2	14.8					
	CENTER SECTION	23	1,0	1.4	1.0	1.2	16.6					

*INCLUDES 2'-6" EMBEDMENT DEPTH

** CRITICAL CONDITION CASE

IN ALL SAFETY FACTORS ARE CALCULATED FOR THE WALL HEIGHTS AND REINFORCEMENT LENGTHS SHOWN IN THE TABLE. SEE GEOTECHNICAL REPORT FOR FURTHER INFORMATION, FINAL DESIGN FOR INTERNAL AND EXTERNAL STABILITY IS THE RESPONSIBILITY OF THE WALL DESIGNER AND MAY BE DIFFERENT FROM THE VALUES IN THE TABLE.

SOIL REINFORCEMENT MUST EXTEND A MINIMUM OF 3.0' BEYOND THE FAILURE PLANE FOR INTERNAL STABILITY AS DEFINED BY AASHTO SPECIFICATIONS.



-CONNECT PIPE UNDERDRAIN FROM B-23-171 (SEE BRIDGE PLAN FOR DETAILS AND

QUANTITIES)

"PIPE UNDERDRAIN WRAPPED 6-INCH" SLOPE 0.5% MIN. TO

SUITABLE DRAINAGE. ATTACH RODENT SHIELDS AT EXPOSED

ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON THIS SHEET.

NO. 4 DOWELS

1'-6" LONG @ 2'-6" SPA.

CHAIN LINK FENCE POST,— SET IN POST SLEEVE. ALL NECESSARY HARDWARE

FINISHED GROUNDLINE

NAME PLATE DETAIL

PLACE IN CENTER OF COPING

74" CHAMFER (FRONT, BACK & TOP) FACE OF MSE WALL

COPING CONTRACTION JOINT DO NOT RUN BAR STEEL THROUGH JOINT. MAX. SPACING OF JOINT = 12'

■ 18" RUBBERIZED MEMBRANE WATERPROOFING

FACE OF MSE WALL
OUTSIDE FACE OF COPING

COPING EXPANSION JOINT

DO NOT RUN BAR STEEL THROUGH JOINT.

MAX. SPACING OF JOINT = 50'

ASSUMED SOIL PARAMETERS	OF FILL MATERIALS				
SOIL DESCRIPTION	SOIL UNIT WEIGHT (PCF)	COHESION (PSF)	FRICTION ANGLE (DEGREES)		
PROPOSED EMBANKMENT FILL (GRANULAR)	120	0	30		
MSE FILL (GRANULAR)*	120	0	30		
GRANULAR ENGINEERED FILL	120	0	30		

*MSE BACKFILL ASSUMED TO EXTEND 2.0' BELOW PROPOSED FINISHED GRADE.

SOIL PARAMETERS										
SOIL DESCRIPTION	BOTTOM ELEVATION (FT)	SOIL UNIT WEIGHT (PCF)	COHESION (PSF)	FRICTION ANGLE (DEGREES)						
EX. FILL: LOOSE SILTY SAND	991.8	120	0	31						
EX. FILL: VERY STIFF SILTY CLAY	986.8	120	2,500	0						
EX. FILL: LOOSE SANDY SILT	977.3	120	0	30						
EX. FILL: STIFF SILTY CLAY	970.8	120	1,500	0						
VERY STIFF LEAN CLAY	956.3	120	2,000	0						
WEATHERED DOLOMITE BEDROCK	952.8	135	0	43						

LEGEND

■ 1" EXPANDED POLYSTYRENE

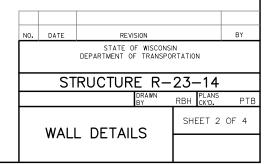
★ WALL COPING CONCRETE, REINFORCEMENT BARS AND LEVELING PAD ARE TO BE INCLUDED IN THE BID ITEM: "MECHANICALLY STABILIZED EARTH CONCRETE PANEL WALL LRFD".

STATE PROJECT NUMBER

✓ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM TOP OF COPING 6" BELOW TOP OF PANELS.

8

↑ PREFORMED FILLER, SEAL ALL EXPOSED HORIZ. & VERT, SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINUOS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE)





LEGEND

- 1 2" Ø NOMINAL STEEL PIPE FOR POSTS: CUT BOTTOM OF POST TO MATCH TOP OF CONCRETE.
- (2) 2"ø NOMINAL STEEL PIPE FOR RAILS: WELD TO NO. 1
- 3 PLATE $\cancel{3}$ 4" X 5" X 8", WITH $\cancel{5}$ 8" \emptyset HOLE FOR ANCHOR BOLTS NO. 6.
- (4) ½"ø x 6%" Long Hex Bolts (galvanized) with nut and washer. 2 req'd per post. Thread 3" and place normal to plate no. 5. Chamfer top of Bolts before threading. Adhesive anchors ½—inch may be substituted for ½"ø cast—in—place anchor bolts. Anchor plate not req'd when ADHESIVE ANCHORS ARE USED. TE NOTE
- ★ ADHESIVE ANCHORS ½-INCH: 6" MIN. EMBEDMENT INTO CONCRETE AND MINIMUM PULLOUT CAPACITY OF 10 KIPS, ANCHOR, WASHER AND NUT SHALL BE GALVANIZED.
- (5) 1/4" X 2" X 8" FLAT BAR, WITH 1/8" # HOLES FOR ANCHOR BOLTS NO. 4.
- $\begin{tabular}{lll} \hline (6) & 11/2" \emptyset & PIPE & SLEEVE X 1'-10" LONG FOR NO. 2. PROVIDE 1/2" \emptyset & SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 2. PROVIDE 1/3" Ø X 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.$

GENERAL NOTES

BID ITEM SHALL BE "RAILING PIPE R-23-14" WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

FIELD ERECTION JOINTS MUST BE PLACED IN BETWEEN RAIL POSTS WHERE THERE IS ALSO A CONCRETE COPING EXPANSION JOINT IN BETWEEN RAIL POSTS.

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

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

DRILL DRAIN HOLES PRIOR TO GALVANIZING.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

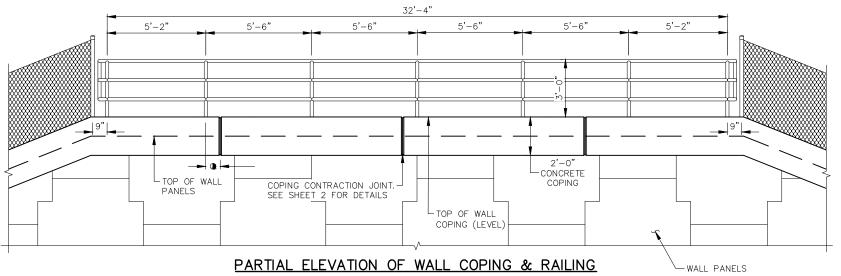
STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D FOR ALIGNMENT.

ALL RAILS AND POSTS ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

PLACE ALL NUTS ON OUTSIDE OF POSTS.

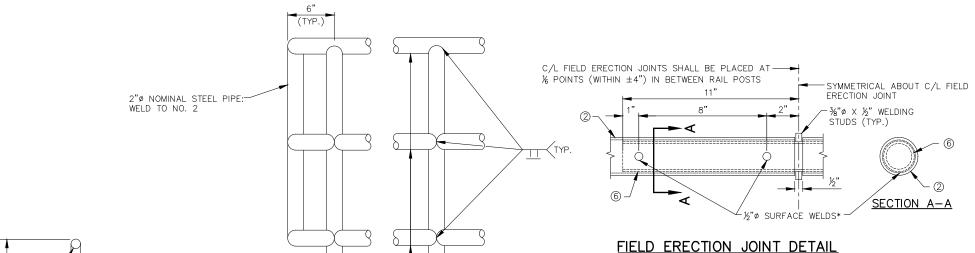
ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING.

☑ CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS IN POST SHIMS AND BASE PLATES WITH NON-STAINING, GRAY, NON-BITUMNOUS JOINT SEALER.

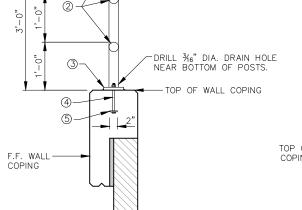


(LOOKING SOUTH AT FRONT OF WALL)

① 9" MIN. DISTANCE REQUIRED BETWEEN THE C/L OF COPING JOINTS AND THE C/L OF RAIL POSTS



*MIN. %" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.



SECTION THROUGH RAILING

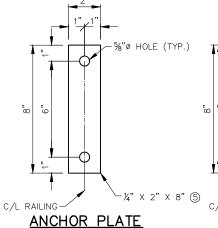
TOP OF -BASE PLATE (3) COPING -ANCHOR PLATE (5) TACK WELD: AT 1/3 POINTS

PART OF ELEVATION OF RAILING

POST ATTACHMENT UNIT SHALL BE GALV. AFTER FABRICATION

-FIELD CLIP THICK-AS REQ'D 21/4" 21/4" 4½"

POST SHIM DETAILS SHIMS REQUIRED ONLY WHEN POSTS ARE WELDED TO BASE PLATES, PROVIDE 4 SHIMS PER POST.



%"ø HOLE FOR 兆"ø BOLTS. -2"ø POST -½"ø DRAIN HOLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION STRUCTURE R-23-14

DATE

RAILING PIPE

REVISION

SHEET 3 OF 4

8

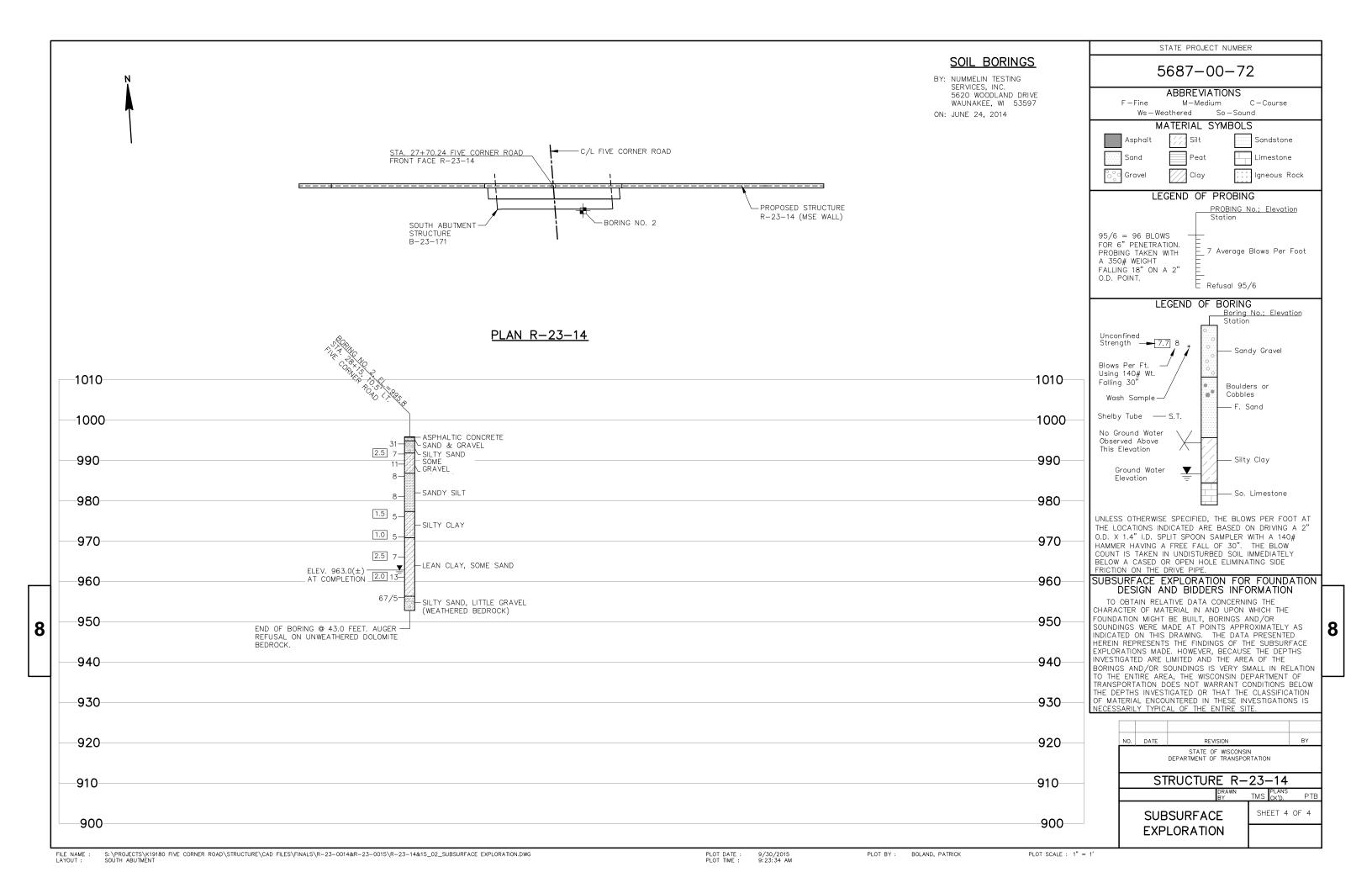
BASE PLATE

DETAILS

S:\PROJECTS\K19180 FIVE CORNER ROAD\STRUCTURE\CAD FILES\FINALS\R-23-0014&R-23-0015\R-23-14&15_04 PIPE RAILING DETAILS.DWG R-23-14 PIPE RAILING DETAILS

BOLAND, PATRICK PLOT BY:

PLOT SCALE : 1" = 1'



DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD/QMP".

PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR THE REQUIRED ALIGNMENTS AND DETAILS.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE

DESIGN THE RETAINING WALL FOR HORIZONTAL FINISHED GRADE BEHIND

DESIGN OF WALL IN FRONT OF ABUTMENT TO RESIST FORCE FROM ALL HORIZONTAL EARTH PRESSURE ACTING ON THE BACK OF THE ABUTMENTS BELOW THE BEAM SEATS.

EITHER 5'x5' OR 5'x10' RECTANGULAR STANDARD PANELS MAY BE

ALLOWABLE WALL SYSTEMS

M.S.E. CONCRETE PANEL WALL

MATERIAL PROPERTIES.

f'c = 3,500 P.S.I. PRECAST CONCRETE WALL PANEL $_{f'c} = 4,000 P.S.I.$ HIGH-STRENGTH BAR STEEL REINFORCEMENT fy = 60,000 P.S.I. STRUCTURAL STEEL CARBON _ fy = 36,000 P.S.I.(ASTM A709 GRADE 36)

- GENERAL PLAN
- WALL DETAILS
- 4. SUBSURFACE EXPLORATION

SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO

THE RETAINING WALL SHALL BE DESIGNED USING THE ELEVATIONS GIVEN ON THIS SHEET.

WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO THE 30° WITHOUT CERTIFIED TEST VALUES.

THE WALL AND A LIVE LOAD SURCHARGE OF 240 PSF.

USED FOR THIS PROJECT.

DITCH GRADING AT THE TOE OF SLOPE ALONG THE RAIL LINE AS SHOWN ON THE E-LINE CROSS SECTION SHEETS IS INCIDENTAL TO THE BID ITEM "SLOPE PAVING SELECT CRUSHED MATERIAL".

DESIGN DATA

LIVE LOAD:

IVE LOAD	SURCHARGE	240	P.S.F.	(TRAFFIC)	
ΔTFRΙΔΙ	PROPERTIES:				

CONCRETE MASONRY

LIST OF DRAWINGS

- 3. RAILING PIPE DETAILS

PROFIL PATRICK T. BOLAND E-36303 SPRING GREEN

7,500 MM

L'SCONS

─SELECT CRUSHED

MΔTFRIΔI

STRUCTURE R-23-15

DEPARTMENT OF

RETAINING WALL AT WSOR RAILROAD

TO LRFD BRIDGE DESIGN SPECIFICATION

GENERAL PLAN

58'-0" 62'-0" 34'-0" LEVEL 45'-0" 41'-0" -NORTH ABUTMENT STRUCTURE B-23-171 SLOPE PAVING CONCRETE 85°30 -NAME PLATE LOCATION (INCLUDED IN BRIDGE QUANTITIES) FOR DETAILS SEE SHEET 2. EDGE OF DECK -EDGE OF DECK 2'-8½" 2'-8½" STA. 28+14.71 FIVE CORNER ROAD FRONT FACE R-23-15 -C/L FIVE CORNER ROAD

120'-0'

CORNER ROAD

34'-0" LEVEL

WALL ELEVATION R-23-15

(LOOKING NORTH AT FRONT OF WALL)

PLAN R-23-15

120'-0"

TOP OF COPING

EL. 996,02

-FINISHED GROUND LINE

GENERAL NOTES

8

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER UNLESS OTHERWISE SHOWN OR NOTED.

41'-0'

LIMITS OF FENCE CHAIN LINK 4-FT

FENCE CHAIN LINK 4-FT-

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

ALL STATIONS AND ELEVATIONS ARE IN FEET, ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

ALL DIMENSIONS ARE ALONG THE FRONT FACE OF PRECAST CONCRETE WALL PANEL, UNLESS OTHERWISE SHOWN.

ALL BAR STEEL REINFORCEMENT LOCATED IN CAST-IN-PLACE CONCRETE IS TO BE EPOXY COATED.

THESE PLANS ARE FOR A MECHANICALLY STABILIZED FARTH CONCRETE PANEL WALL.

FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M153 TYPES I, II, OR III, OR M123.

THE COST OF FURNISHING AND PLACING THE LEVELING PAD UNDER THE MSE PRECAST WALL PANELS IS INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF CONCRETE LEVELING PAD TO THE TOP OF WALL AS SHOWN ON THE PLANS.

BENCH MARKS

45'-0"

LIMITS OF FENCE CHAIN LINK 4-FT

CONCRETE LEVELING PAD

FENCE CHAIN LINK 4-FT

NAME PLATE LOCATION. FOR

DETAILS SEE SHEET 2.

RAILING PIPE R-23-15

NO.	STA.	DESCRIPTION	ELEV.	
3	19+69	3/4" IRON REBAR SET, 37.4' RT.	1016.79	
5	28+51	3/4" IRON REBAR SET, 42.0' RT.	985.68	
6	34+98	3/4" IRON REBAR SET, 19.4' LT.	1015.14	

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTALS
209.0100	BACKFILL GRANULAR	CY	175
513,2001	RAILING PIPE R-23-15	LF	33
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	1
604.0600	SLOPE PAVING SELECT CRUSHED MATERIAL	SY	195
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	140
616.0204	FENCE CHAIN LINK 4-FT	LF	86
SPV.0165.01	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD/QMP	SF	1,780
	NON-BID ITEMS		
	NAME PLATE		
	PREFORMED JOINT FILLER	SIZE	3/4"
	EXPANDED POLYSTYRENE	SIZE	1"

DESIGN CONSULTANT

PATRICK BOLAND, PE (608) 588-7484

BRIDGE OFFICE CONTACT WILLIAM DREHER, PE (608) 266-8489

S:\PROJECTS\K19180 FIVE CORNER ROAD\STRUCTURE\CAD FILES\FINALS\R-23-0014&R-23-0015\R-23-14&15_01_GENERAL PLAN.DWG NORTH WALL FILE NAME LAYOUT :

8

560 SUNRISE DRIVE SPRING GREEN, WI 53588

PHONE: (608) 588-7484 (608) 588-9322

STATE OF WISCONSIN RTMENT OF TRANSPORTATION Diches 01/18/17

SIGNED RBH CK'D PTB BY РТВ

FAX:

SHEET 1 OF 4

PLOT BY : BOLAND, PATRICK \star dimensions are approximate. The grate is sized to fit into a pipe coupling.

ORIENT SHIELD SO SLOTS ARE VERTICAL.

FENCE POST (SEE DETAIL)-

34" CHAMFER (TYP.)-

CLR.

NO. 4 BARS -

¾" CONTINUOUS DRIP GROOVE

OUTSIDE FACE OF

WALL R-23-14

GROUND LINE

BOTTOM OF WALL

LEVELING PAD -

FILE NAME LAYOUT : FINSHED

△ CAST-IN-PLACE

CONCRETE COPING DETAIL

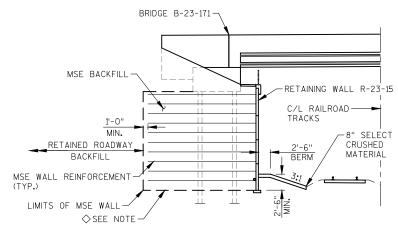
(SEE DETAIL)

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

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

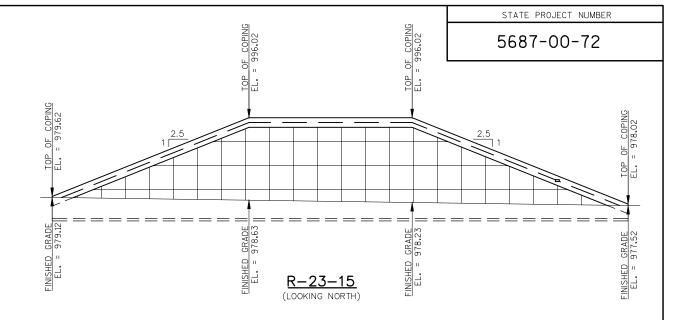
MIN. -NO. 4 DOWELS

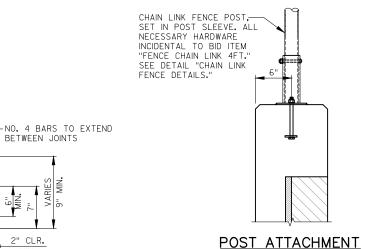
1'-6" LONG @ 2'-6" SPA.



TYPICAL SECTION THROUGH MSE RETAINING WALL

♦ UNDERCUTTING MAY BE REQUIRED IF UNSUITABLE MATERIAL IS ENCOUNTERED. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD. UNDERCUT UNSUITABLE MATERIAL AND REPLACE WITH BACKFILL GRANULAR. COST OF OVEREXCAVATION IS INCLUDED IN THE BID ITEM "BACKFILL GRANULAR".





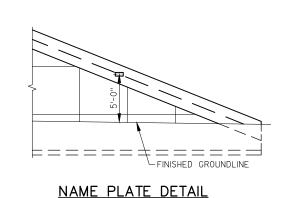
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QUANTITIES)

"PIPE UNDERDRAIN WRAPPED 6-INCH" SLOPE 0.5% MIN. TO

SUITABLE DRAINAGE. ATTACH RODENT SHIELDS AT EXPOSED

ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON THIS SHEET.



PLACE IN CENTER OF COPING

	ASAFETY FACTORS FOR MSE WALLS												
STRUCTURE	LOCATION	WALL HEIGHT* (FT)	SLIDING (CDR ≥ 1.0)	OVERTURN (CDR ≥ 1.0)	GLOBAL STABILITY (CDR <u>></u> 1.0)	BEARING CAPACITY (CDR <u>></u> 1.0)	LENGTH OF REINFORCEMENT (FT)						
	WALL TAPER	6	1.2	2.3	1.6	2.7	6						
R-23-15	WALL TAPER	12	1.0	1,4	1.1	1.3	8.3						
	CENTER SECTION	21	1.0	1.4	1.0	1.2	15.4						

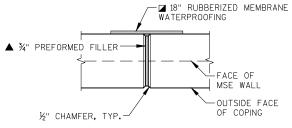
- * INCLUDES 2'-6" EMBEDMENT DEPTH
- ** CRITICAL CONDITION CASE
- ALL SAFETY FACTORS ARE CALCULATED FOR THE WALL HEIGHTS AND REINFORCEMENT LENGTHS SHOWN IN THE TABLE. SEE GEOTECHNICAL REPORT FOR FURTHER INFORMATION. FINAL DESIGN FOR INTERNAL AND EXTERNAL STABILITY IS THE RESPONSIBILITY OF THE WALL DESIGNER AND MAY BE DIFFERENT FROM THE VALUES IN THE TABLE.

SOIL REINFORCEMENT MUST EXTEND A MINIMUM OF 3.0' BEYOND THE FAILURE PLANE FOR INTERNAL STABILITY AS DEFINED BY AASHTO SPECIFICATIONS.

FACE OF MSE WALL

COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THROUGH JOINT. MAX. SPACING OF JOINT = 12'



COPING EXPANSION JOINT

DO NOT RUN BAR STEEL THROUGH JOINT.

MAX. SPACING OF JOINT = 50'

ASSUMED SOIL PARAMETERS OF FILL MATERIALS						
SOIL DESCRIPTION	SOIL UNIT WEIGHT (PCF)	COHESION (PSF)	FRICTION ANGLE (DEGREES)			
PROPOSED EMBANKMENT FILL (GRANULAR)	120	0	30			
MSE FILL (GRANULAR)*	120	0	30			
GRANULAR ENGINEERED FILL	120	0	30			

^{*}MSE BACKFILL ASSUMED TO EXTEND 2.0' BELOW PROPOSED FINISHED GRADE.

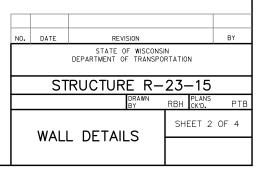
SOIL PARAMETERS						
SOIL DESCRIPTION	BOTTOM ELEVATION (FT)	SOIL UNIT WEIGHT (PCF)	COHESION (PSF)	FRICTION ANGLE (DEGREES)		
EX. FILL: SILTY CLAY	987.0	120	4,000	0		
STIFF LEAN CLAY	967.5	120	1,500	0		
FINE DENSE SAND	947.5	120	0	35		
WEATHERED DOLOMITE BEDROCK	945.0	135	0	43		

LEGEND

- 1" EXPANDED POLYSTYRENE
- ▲ WALL COPING CONCRETE, REINFORCEMENT BARS AND LEVELING PAD ARE TO BE INCLUDED IN THE BID ITEM: "MECHANICALLY STABILIZED EARTH CONCRETE PANEL WALL LRFD".
- ✓ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM TOP OF COPING 6" BELOW TOP OF PANELS.

8

↑ ¾" PREFORMED FILLER, SEAL ALL EXPOSED HORIZ. & VERT, SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINUOS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE)





LEGEND

- 1 2" Ø NOMINAL STEEL PIPE FOR POSTS: CUT BOTTOM OF POST TO MATCH TOP OF CONCRETE.
- (2) 2"ø NOMINAL STEEL PIPE FOR RAILS: WELD TO NO. 1
- 3 PLATE $\cancel{3}$ 4" X 5" X 8", WITH $\cancel{5}$ 8" \emptyset HOLE FOR ANCHOR BOLTS NO. 6.
- (4) ½"ø x 6%" Long Hex Bolts (galvanized) with nut and washer. 2 req'd per post. Thread 3" and place normal to plate no. 5. Chamfer top of Bolts before threading. Adhesive anchors ½—inch may be substituted for ½"ø cast—in—place anchor bolts. Anchor plate not req'd when ADHESIVE ANCHORS ARE USED. TE NOTE
- ★ ADHESIVE ANCHORS ½-INCH: 6" MIN. EMBEDMENT INTO CONCRETE AND MINIMUM PULLOUT CAPACITY OF 10 KIPS, ANCHOR, WASHER AND NUT SHALL BE GALVANIZED.
- (5) 1/4" X 2" X 8" FLAT BAR, WITH 1/8" # HOLES FOR ANCHOR BOLTS NO. 4.
- $\begin{tabular}{lll} \hline (6) & 11/2" \emptyset & PIPE & SLEEVE X 1'-10" LONG FOR NO. 2. PROVIDE 1/2" \emptyset & SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 2. PROVIDE 1/3" Ø X 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.$

GENERAL NOTES

BID ITEM SHALL BE "RAILING PIPE R-23-15" WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

FIELD ERECTION JOINTS MUST BE PLACED IN BETWEEN RAIL POSTS WHERE THERE IS ALSO A CONCRETE COPING EXPANSION JOINT IN BETWEEN RAIL POSTS.

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

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

DRILL DRAIN HOLES PRIOR TO GALVANIZING.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

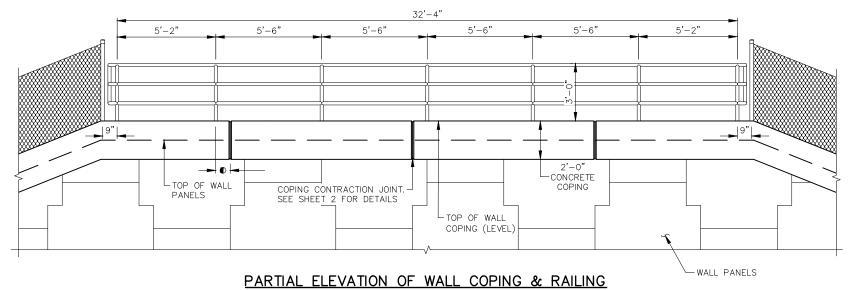
STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D FOR ALIGNMENT.

ALL RAILS AND POSTS ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

PLACE ALL NUTS ON OUTSIDE OF POSTS.

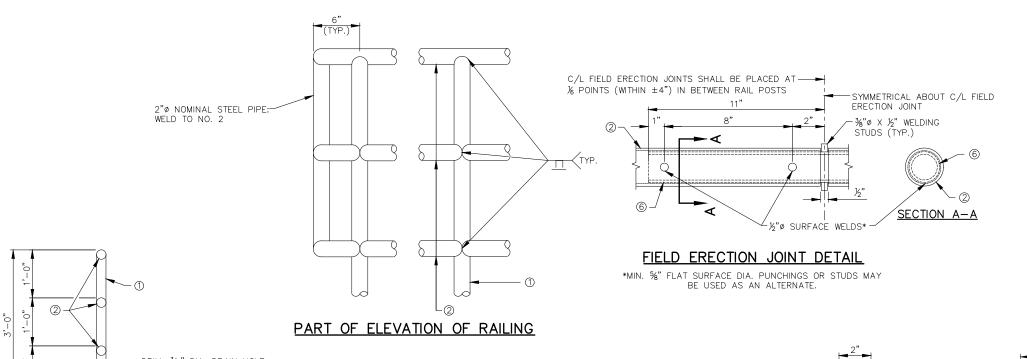
ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING.

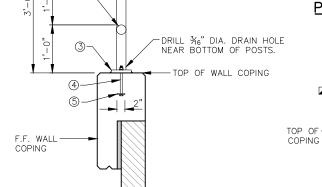
☑ CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS IN POST SHIMS AND BASE PLATES WITH NON-STAINING, GRAY, NON-BITUMNOUS JOINT SEALER.



(LOOKING NORTH AT FRONT OF WALL)

● 9" MIN. DISTANCE REQUIRED BETWEEN THE C/L OF COPING JOINTS AND THE C/L OF RAIL POSTS





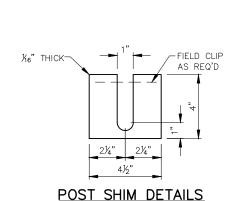
SECTION THROUGH RAILING

POST ATTACHMENT UNIT SHALL BE GALV. AFTER FABRICATION

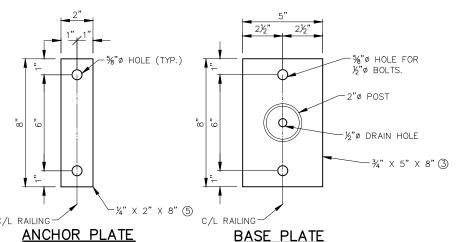
4

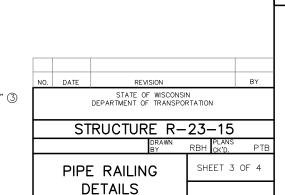
TACK WELD AT ½ POINTS -BASE PLATE ③

ANCHOR PLATE (5)







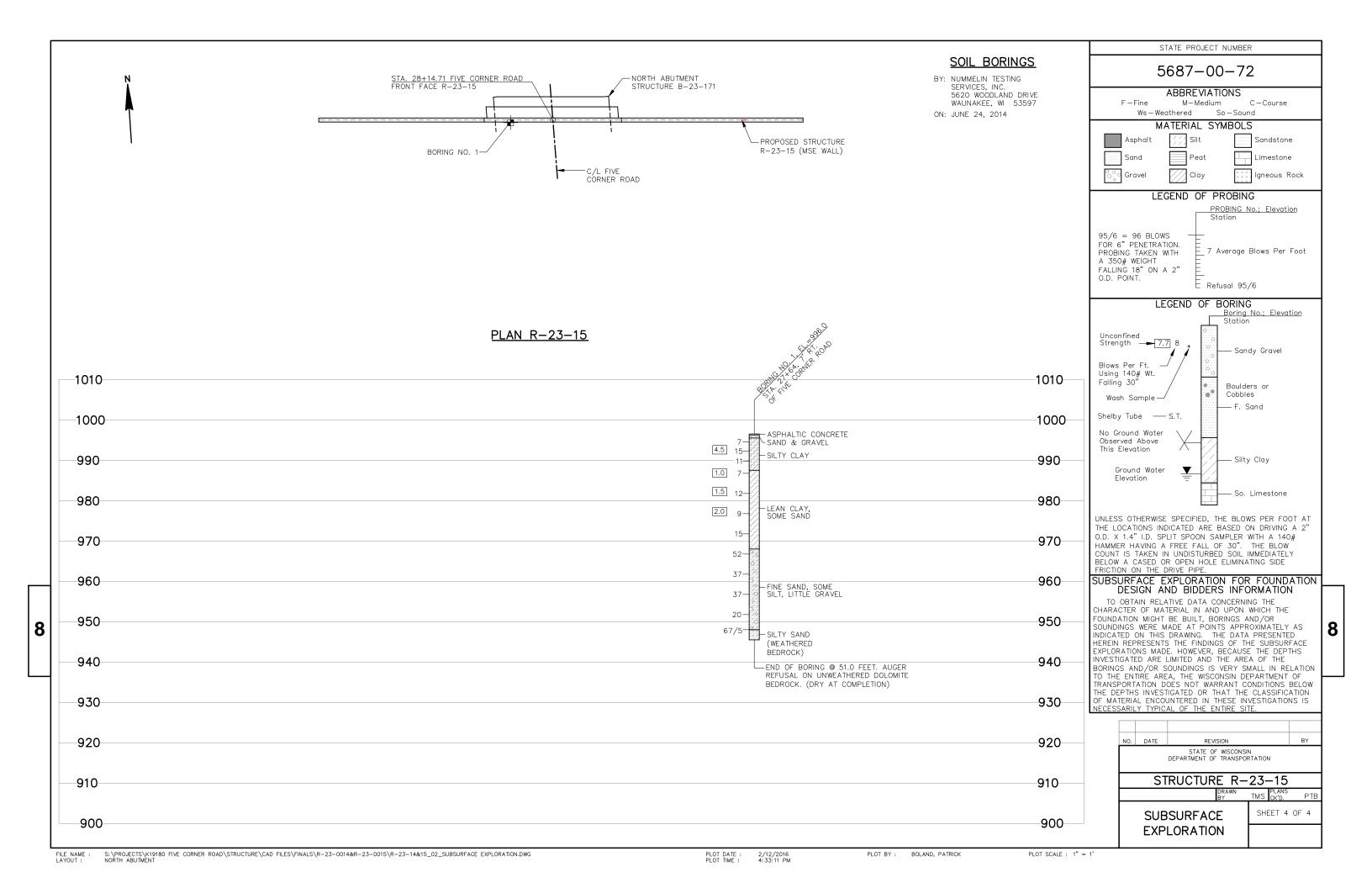


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S:\PROJECTS\K19180 FIVE CORNER ROAD\STRUCTURE\CAD FILES\FINALS\R-23-0014&R-23-0015\R-23-14&15_04 PIPE RAILING DETAILS.DWG R-23-15 PIPE RAILING DETAILS

BOLAND, PATRICK PLOT BY:

PLOT SCALE : 1" = 1'





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