CITY OF SEGUIN &
GUADALUPE COUNTY

what is e max? 4% or 6% ? Design criteria will depend on this.

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			1
STATE	STATE DIST.	COUNTY	
TEXAS	SAT	GUADALUPE	
CONT.	SECT.	JOB	HIGHWAY NO.
0915	46	052	CORDOVA

DESIGN SPEED = 40 MPH
AREA OF DISTURBED SOIL = 76.6 ACRES
ADT(2025) = 17,770
ADT(2045) = 22,700
DESIGN CRITERIA: CITY OF SEGUIN
ACCESSIBILITY STANDARDS = PROWAG

REGISTERED ACCESSIBILITY SPECIALIST INSPECTION REQUIRED
TDLR NO.

INDEX OF SHEETS

SEE SHEET 2 FOR INDEX OF SHEETS

30% SUBMITTAL

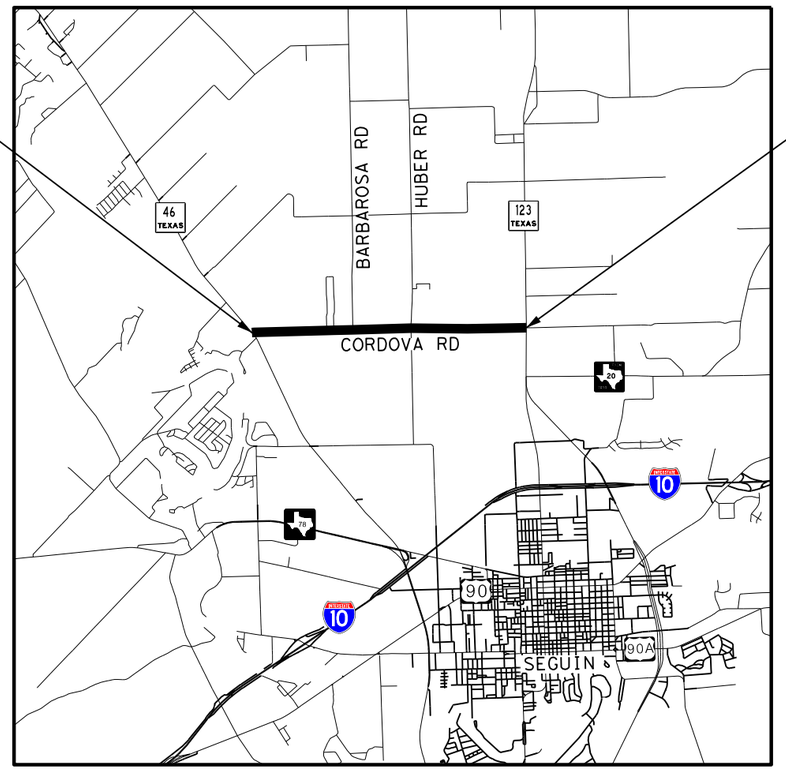
FEDERAL AID PROJECT
PROJECT NO.
CSJ: 0915-46-052
LIMITS FROM: SH 46
TO: SH 123

NET LENGTH OF ROADWAY = 18216.00 FT = 3.45 MI
NET LENGTH OF BRIDGE = 144.82 FT = 0.03 MI
NET LENGTH OF PROJECT = 18360.82 FT = 3.48 MI

FOR WORK CONSISTING OF EXPANDING ROADWAY FROM 2 TO 4 LANES WITH RAISED MEDIAN OR CENTER TURN LANE. REALIGN CORDOVA ROAD AT SH 46. ADD SHARED USE PATHS.

BEGIN PROJECT
STA 110+75.84

END PROJECT
STA 294+60.18



CITY COUNCIL

DONNA DODGEN, MAYOR
JOE REA
SONIA MENDEZ
CHRIS AVILES
CHRIS RANGEL
JEREMY ROY
MONICA CARTER
PENNY WALLACE FOLLIS
MARK HERBOLD

CITY MANAGER

STEVE PARKER

CITY ASSISTANT MANAGER

RICK CORTES

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, JULY 5, 2022)

EXCEPTIONS: NONE
EQUATIONS: NONE
RAILROAD CROSSING:

If you are using color, then TxDOT logo should be in Color. Follow Hierarchy: TxDOT above, followed by County, City, then Consultant logos.

THE STATE OF TEXAS
GUADALUPE COUNTY

SEGUIN
TEXAS

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PLANS PREPARED BY:

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

Design Filename: $FILE$

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\General\1277500_index01.dgn

GENERAL	
1	TITLE SHEET
2	INDEX OF SHEETS
3-7	PROJECT LAYOUT
8-15	TYPICAL SECTIONS
16	GENERAL NOTES
17	ESTIMATE & QUANTITY
18-19	TCP QUANTITY SUMMARY
20-25	ROADWAY QUANTITY SUMMARY
26-28	DRAINAGE QUANTITY SUMMARY
29	SIGNING & PAVEMENT MARKING QUANTITY SUMMARY
30	SW3P QUANTITY SUMMARY
TRAFFIC CONTROL PLAN	
31	TRAFFIC CONTROL PLAN GENERAL NOTES
32	TRAFFIC CONTROL PLAN NARRATIVE
33-35	TRAFFIC CONTROL PLAN PHASE I TYPICAL SECTIONS
36-57	TRAFFIC CONTROL PLAN PHASE I
58	TRAFFIC CONTROL PLAN PHASE II TYPICAL SECTIONS
59-80	TRAFFIC CONTROL PLAN PHASE II
ROADWAY	
81-83	SURVEY CONTROL SHEET
84-86	HORIZONTAL ALIGNMENT DATA
87-130	ROADWAY PLAN & PROFILE
131-132	DRIVEWAY DETAILS
DRAINAGE	
133-135	DRAINAGE AREA MAP
136-163	HYDRAULIC DATA SHEET
164-169	STORM DRAIN COMPUTATIONS
170	DITCH HYDRAULIC DATA SHEET
171-192	DRAINAGE LAYOUT
193-200	CULVERT LAYOUT

THE STANDARD SHEETS SPECIFICALLY SHOWN WITH PRECEDING (*), HAVE BEEN SELECTED BY ME, OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

INTERIM REVIEW

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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

FOR ALL SHEETS:

TxDOT logo in Color.
Follow Hierarchy: TxDOT above, followed by County, City, then Consultant logos.

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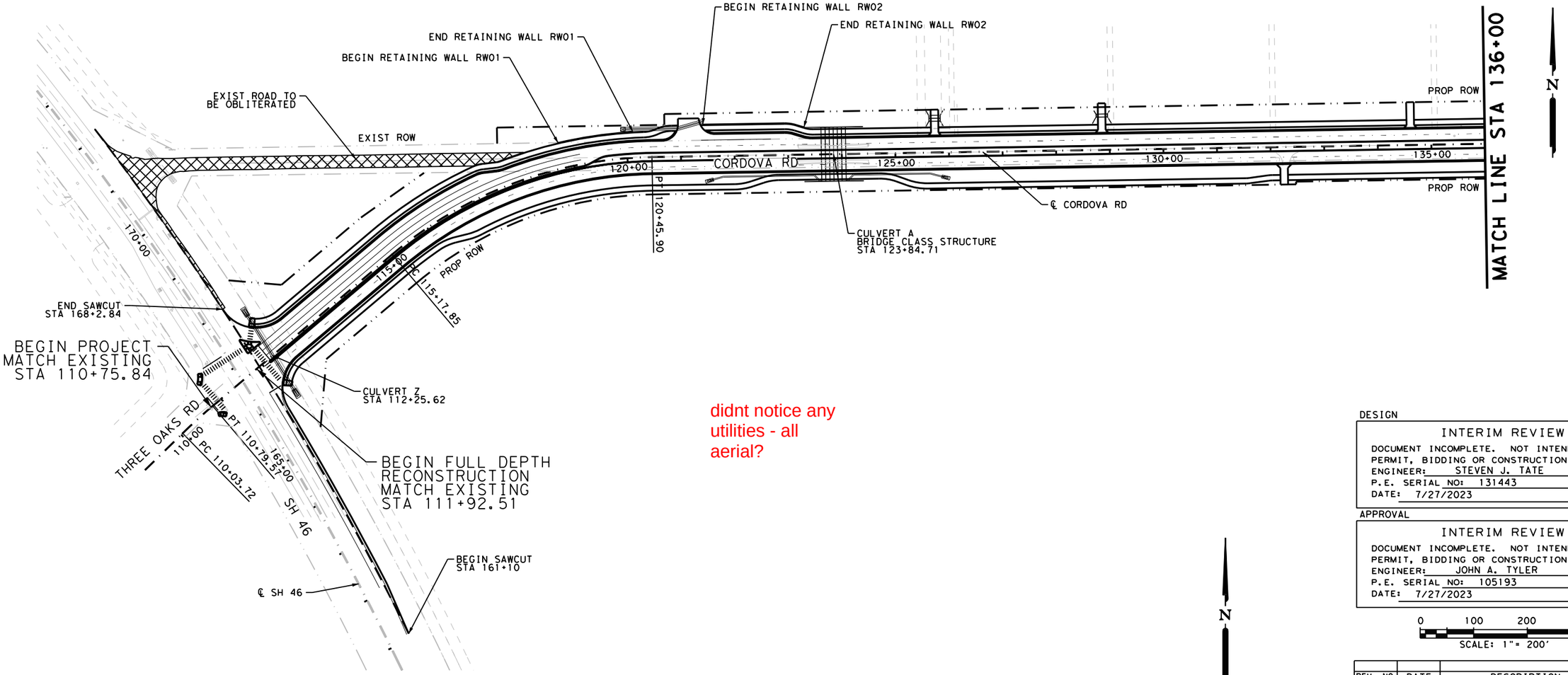
INDEX OF SHEETS

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	2

Plotted on: 7/27/2023



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DATE: 7/27/2023

0 100 200 300
SCALE: 1"= 200'

REV. NO.	DATE	DESCRIPTION	BY

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PROJECT LAYOUT

BEGIN PROJECT TO STA 159+00

SHEET 1 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	3

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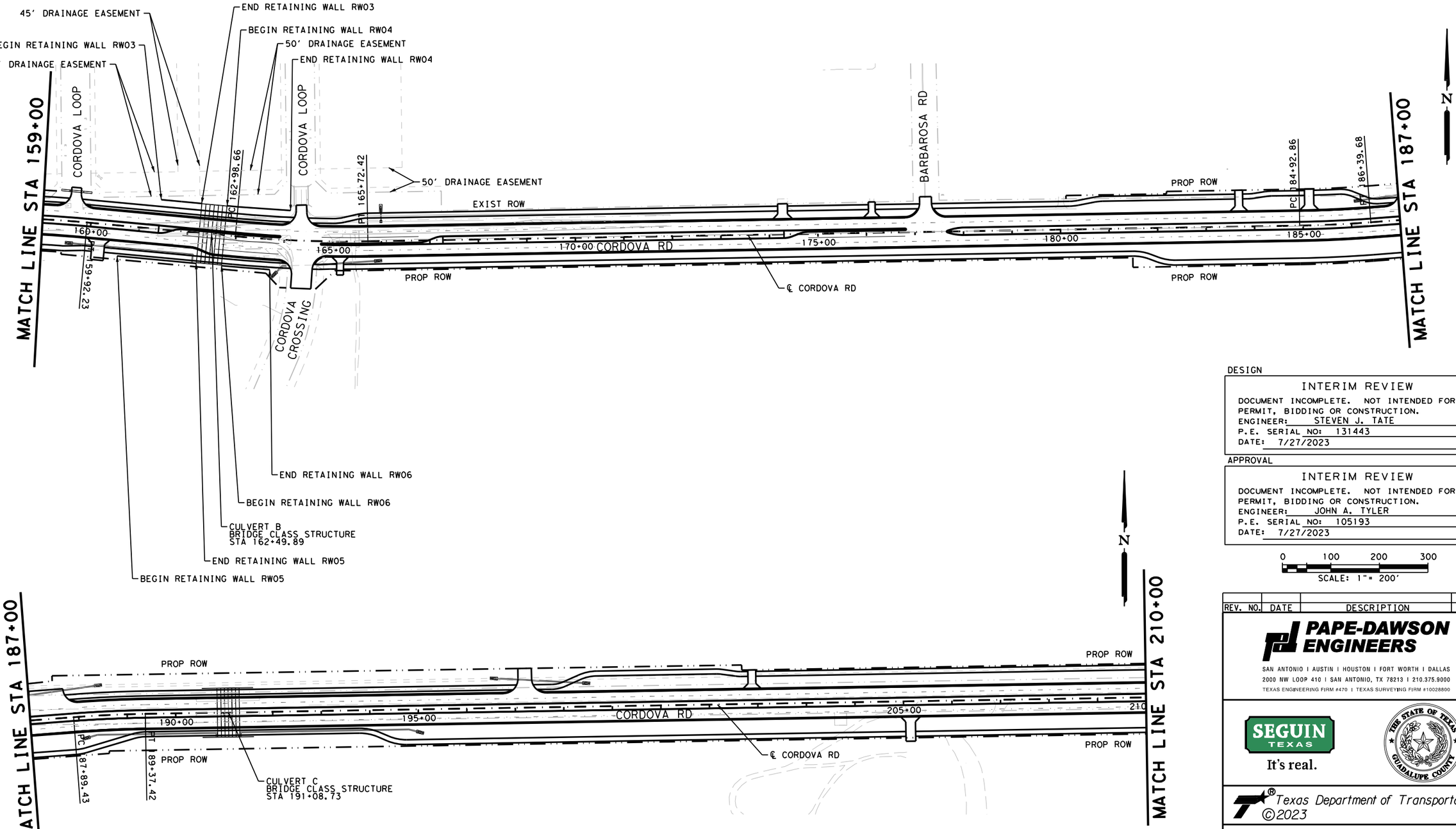

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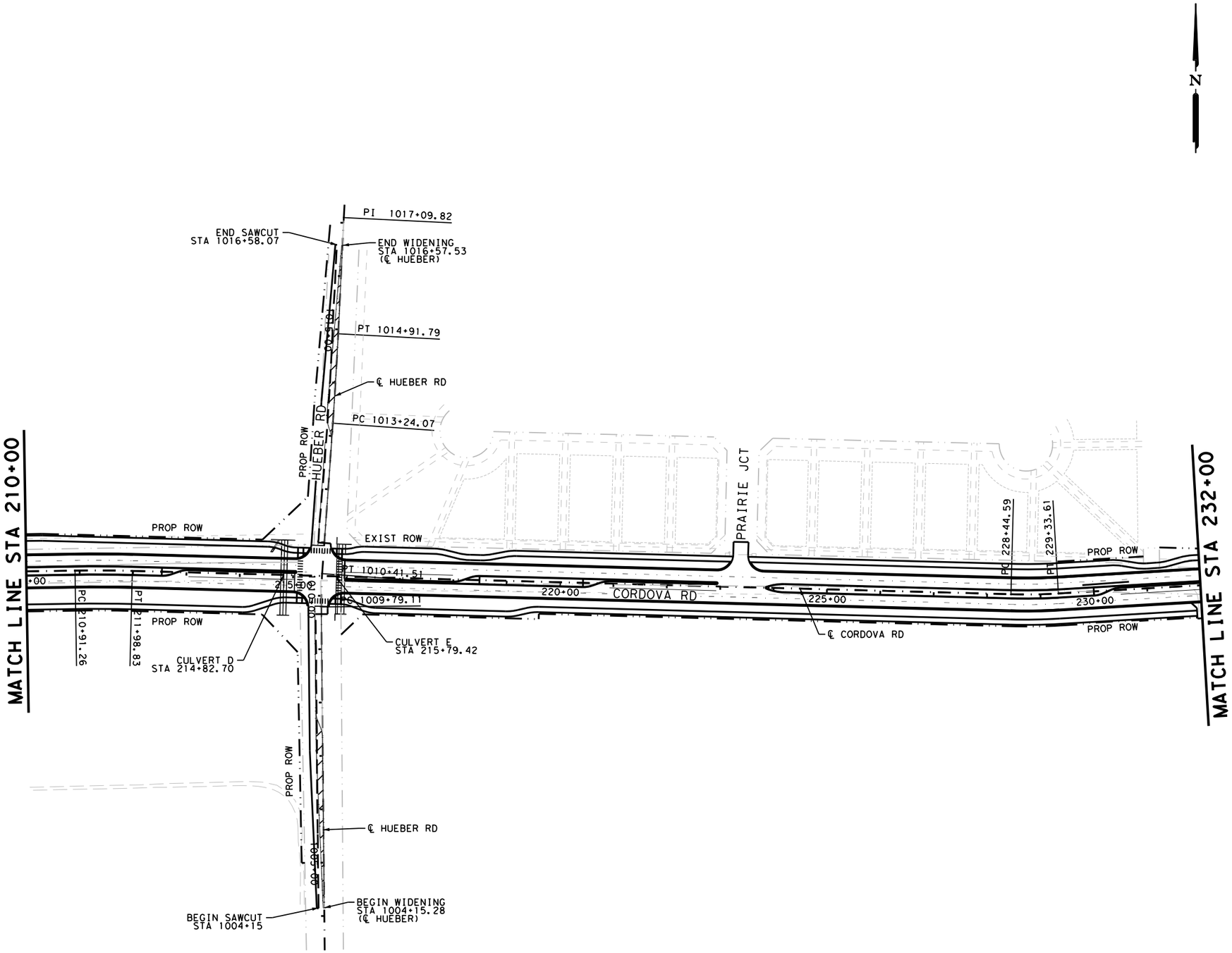
PROJECT LAYOUT

STA 159+00 TO STA 210+00

SHEET 2 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	4



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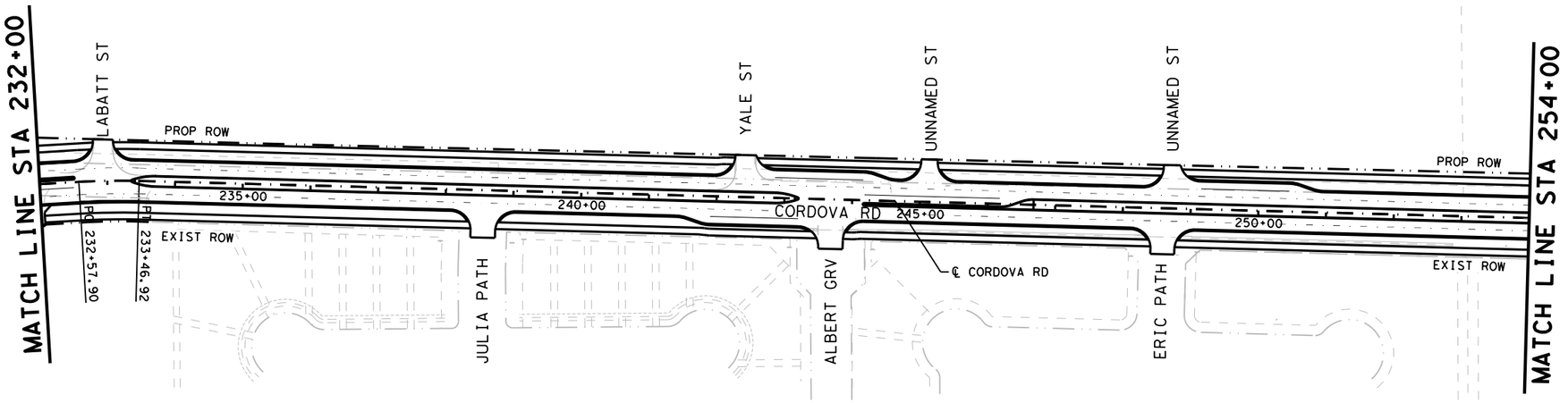
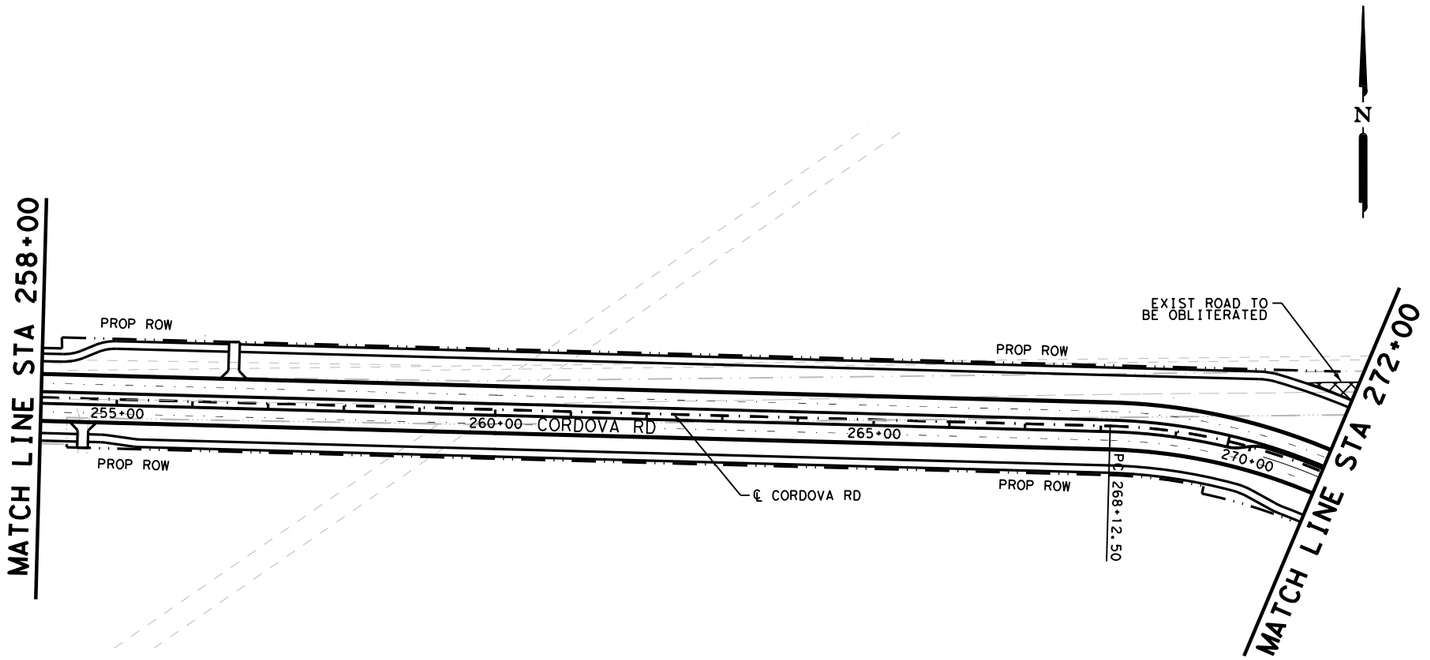
PROJECT LAYOUT

STA 210+00 TO STA 232+00

SHEET 3 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	5





N

0 100 200 300

SCALE: 1"= 200'

DESIGN

INTERIM REVIEW

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ENGINEER: STEVEN J. TATE

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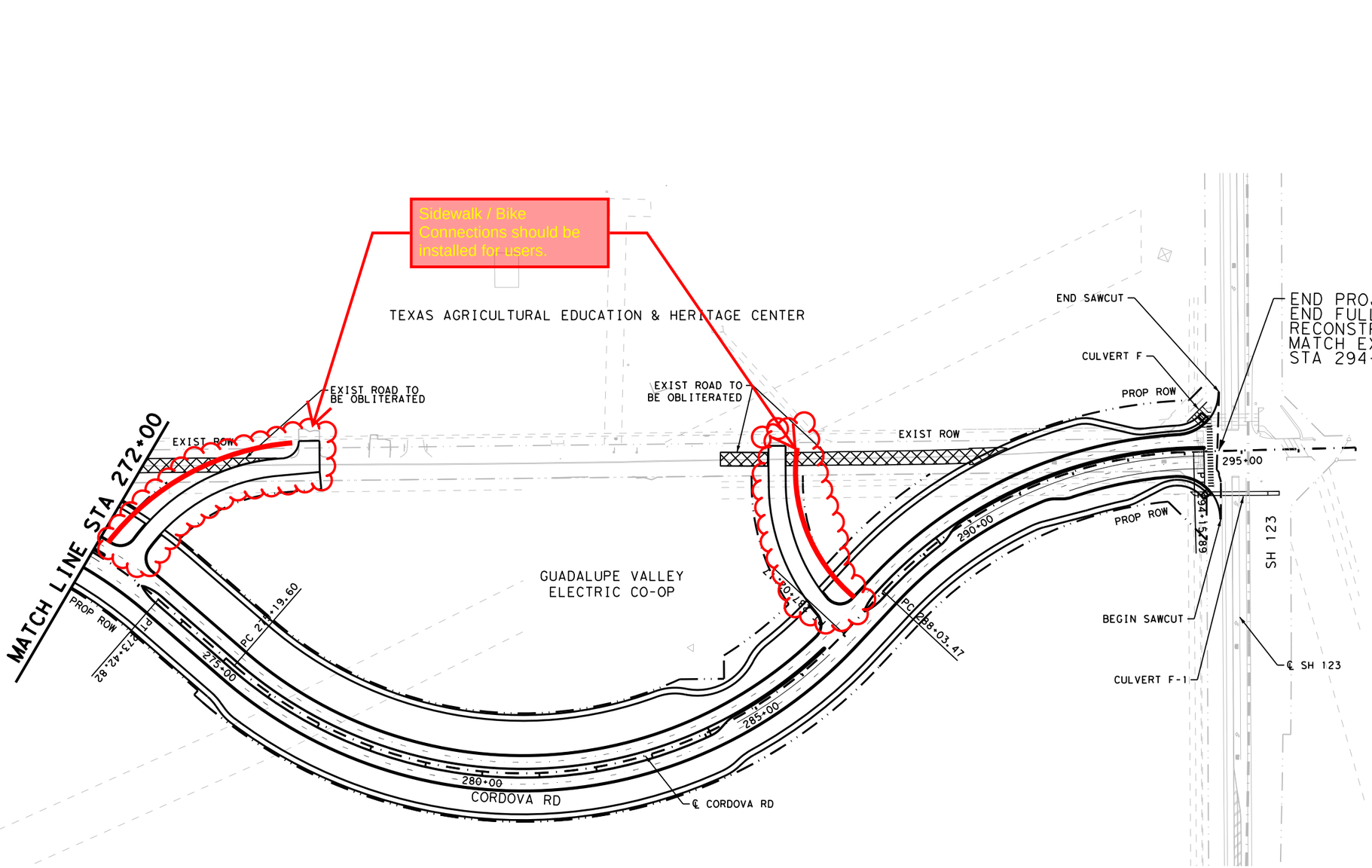
PROJECT LAYOUT

STA 232+00 TO STA 272+00

SHEET 4 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	6



DESIGN

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SCALE: 1"= 200'

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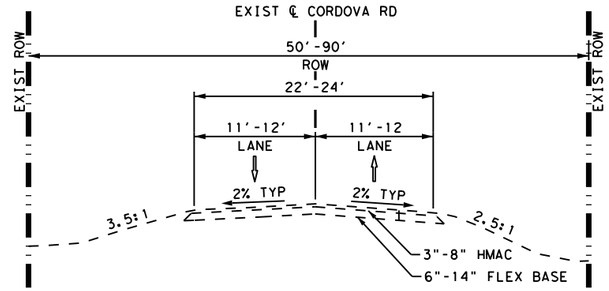
PROJECT LAYOUT

STA 271+00 TO END OF PROJECT

SHEET 5 OF 5

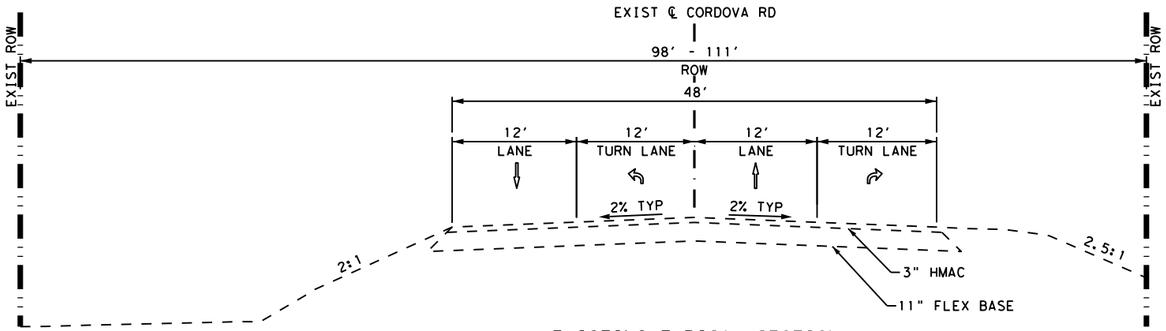
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	7

Plotted on: 7/27/2023



EXISTING TYPICAL SECTION
CORDOVA RD
NTS
STA 112+00 TO STA 162+00
STA 165+00 TO STA 242+00
STA 244+70 TO STA 294+00

utilities?



EXISTING TYPICAL SECTION
CORDOVA RD
NTS
STA 163+00 TO STA 164+00

DESIGN

INTERIM REVIEW
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TYPICAL SECTIONS

SHEET 1 OF 8

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	8

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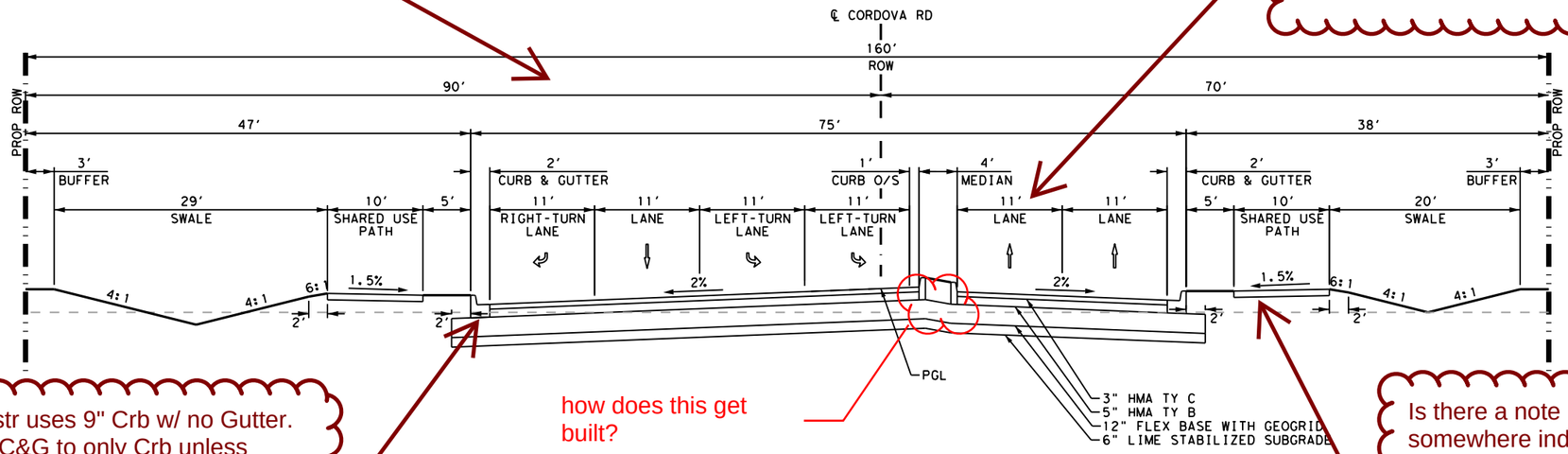
Plotted on: 7/27/2023

Typically, where is the Existing ROW?

Proposed Traff Arrows should be filled in and not hollow.

This typical section will required the existing traffic signal to be upgraded and I didn't see traffic signal layouts in this plan set



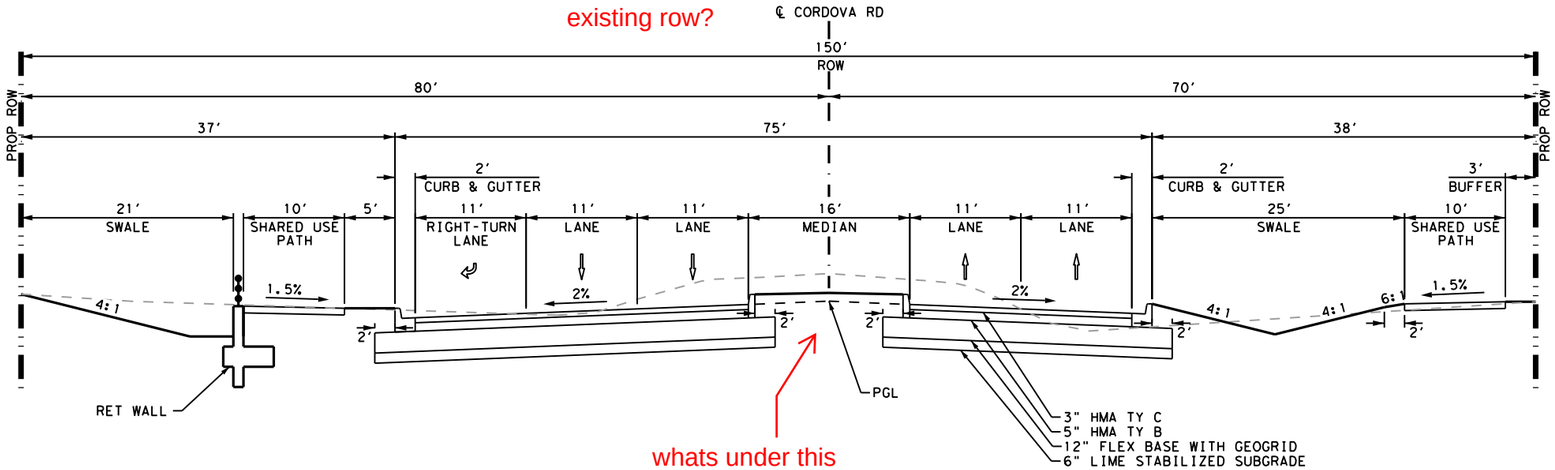
San Antonio Distr uses 9" Crb w/ no Gutter. Please change C&G to only Crb unless specifically asked by City or County.

how does this get built?

Is there a note somewhere indicating SUP Design Spd? That will determine min Radius on SUP curves.

PROPOSED TYPICAL SECTION
CORDOVA RD
NTS
STA 112+18 TO STA 117+24

existing row?



whats under this area?

PROPOSED TYPICAL SECTION
CORDOVA RD
NTS
STA 121+38 TO STA 122+68

DESIGN

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TYPICAL SECTION

SHEET 2 OF 8

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	9

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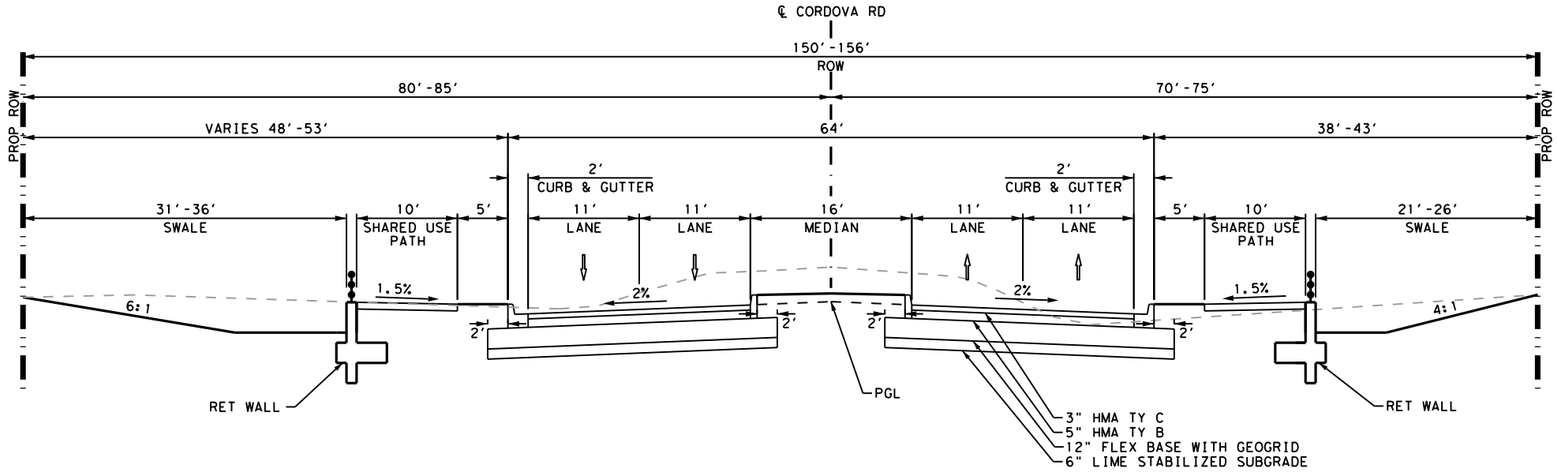


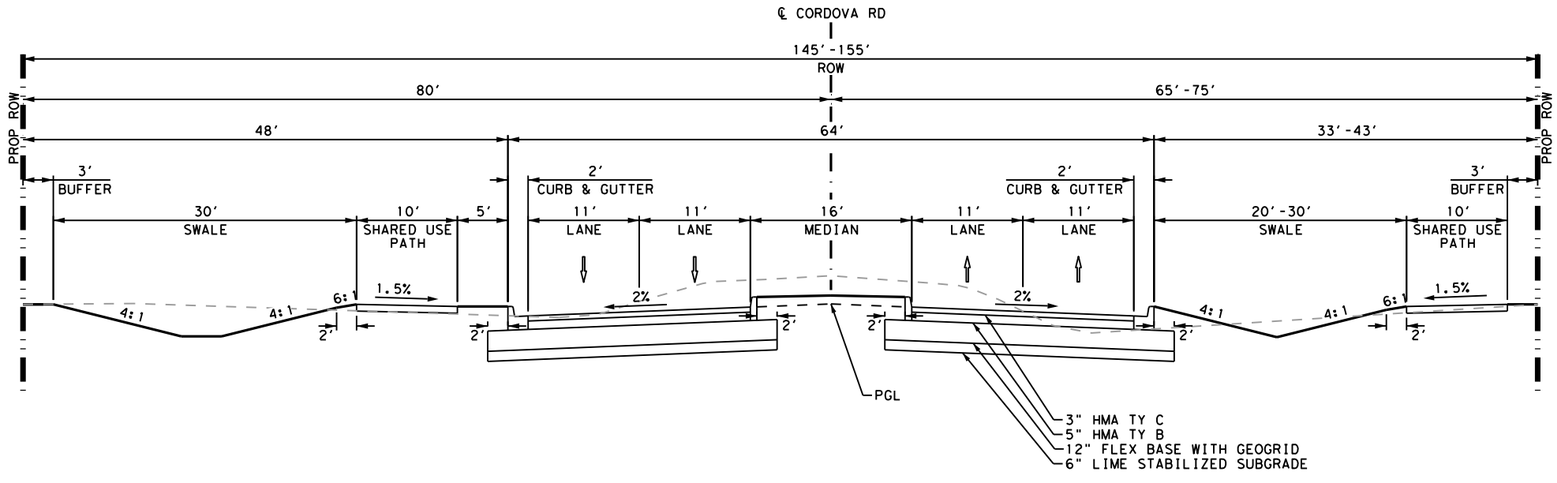
PROPOSED TYPICAL SECTION

CORDOVA RD

NTS

STA 123+18 TO STA 124+69

STA 189+37 TO STA 193+78



PROPOSED TYPICAL SECTION

CORDOVA RD

NTS

STA 125+59 TO STA 137+18

STA 194+75 TO STA 197+76

DESIGN

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TYPICAL SECTION

SHEET 3 OF 8

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	10

Plotted on: 7/27/2023

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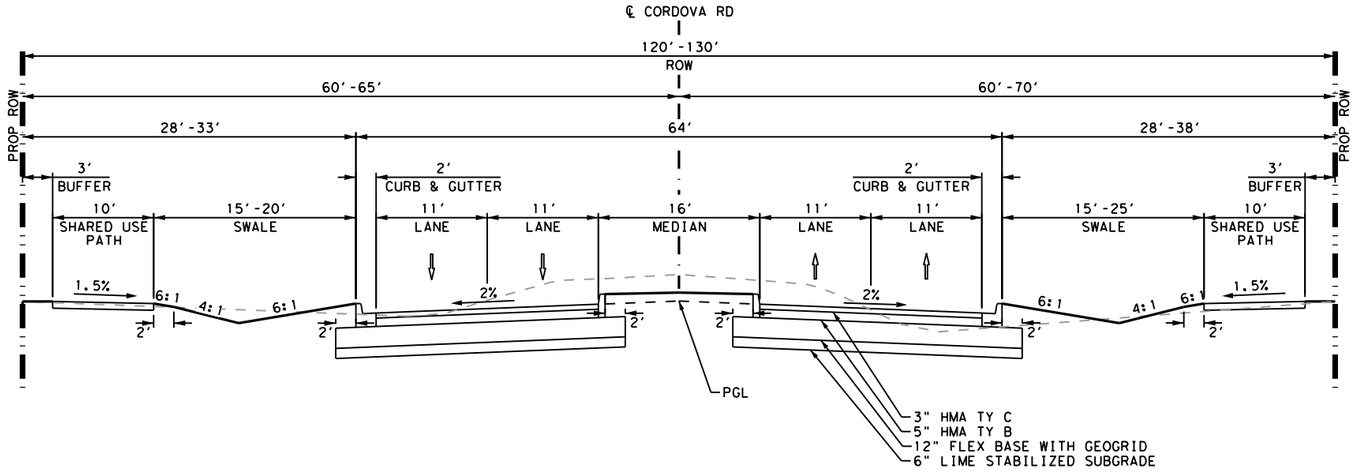


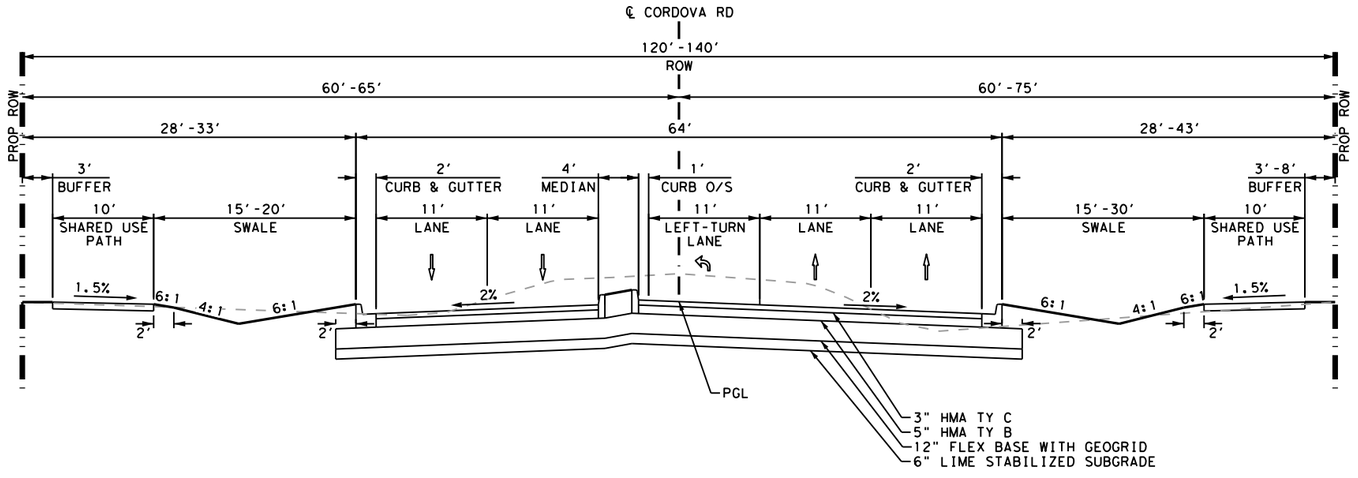
PROPOSED TYPICAL SECTION

CORDOVA RD

NTS

STA 138+00 TO STA 142+87
STA 148+14 TO STA 151+66
STA 155+05 TO STA 157+52
STA 167+27 TO STA 174+30

STA 218+49 TO STA 220+43
STA 224+20 TO STA 230+00
STA 233+70 TO STA 241+41



PROPOSED TYPICAL SECTION

CORDOVA RD

NTS

STA 143+37 TO STA 145+37
STA 152+16 TO STA 154+16
STA 174+80 TO STA 176+80

STA 213+04 TO STA 215+04
STA 220+93 TO STA 222+93

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TYPICAL SECTION

SHEET 4 OF 8

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	11

Plotted on: 7/27/2023

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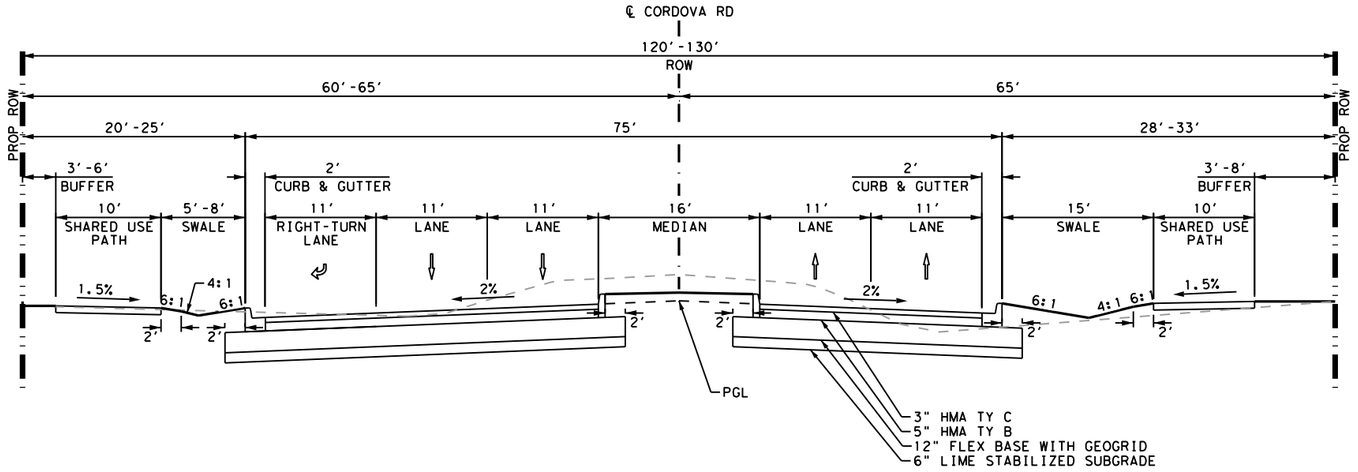
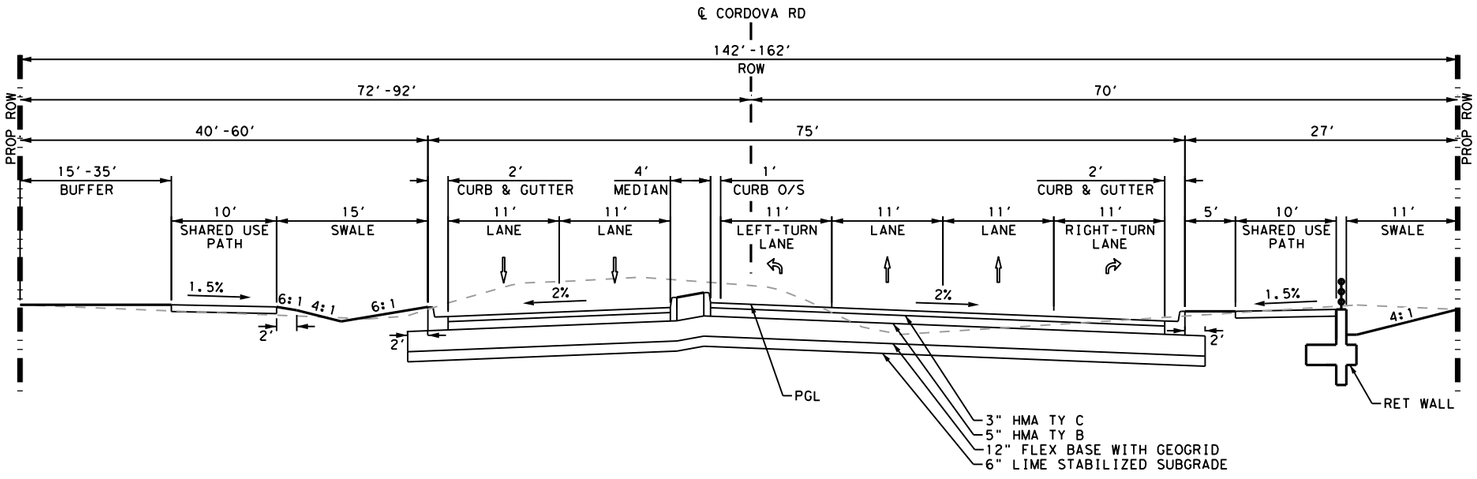


PROPOSED TYPICAL SECTION
CORDOVA RD
NTS
STA 146+34 TO STA 147+64
STA 177+65 TO STA 178+95
STA 249+15 TO STA 250+45



PROPOSED TYPICAL SECTION
CORDOVA RD
NTS
STA 161+90 TO STA 163+90

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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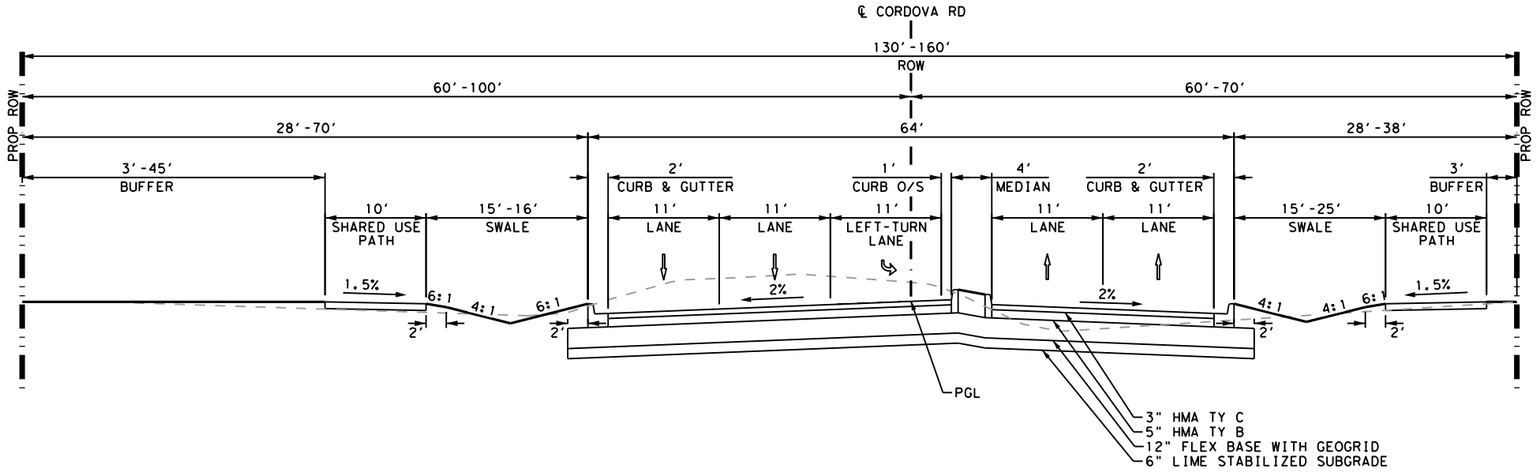
TYPICAL SECTION

SHEET 5 OF 8

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	12

Plotted on: 7/27/2023
Design Filename: P:\127\75\00\Design\Civil\General\1277500_typP04.dgn

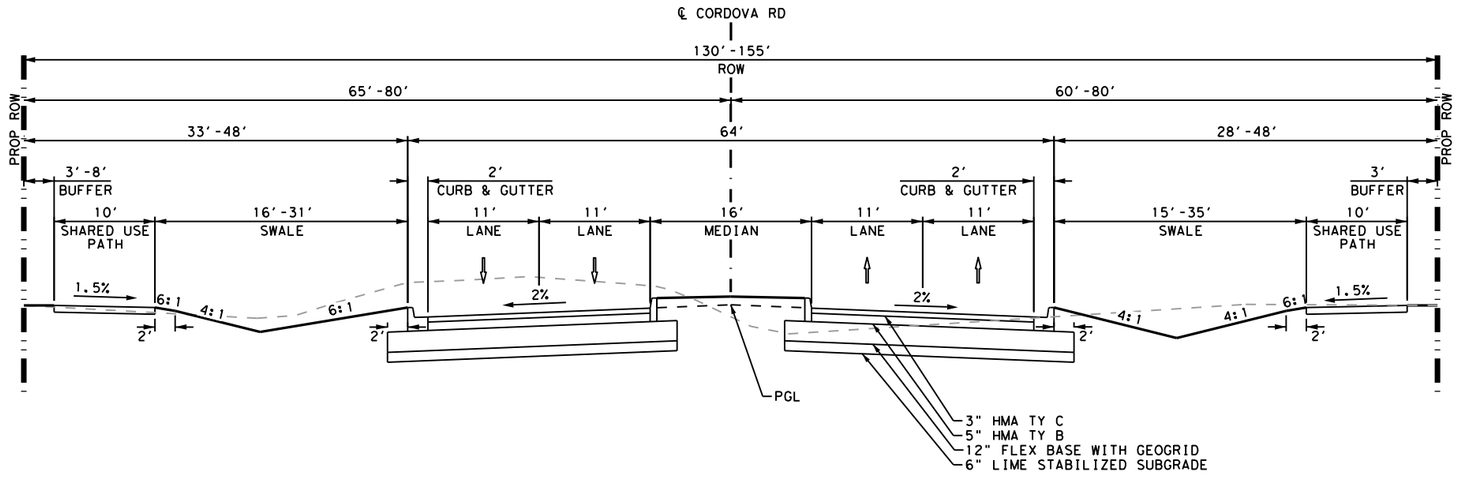


PROPOSED TYPICAL SECTION

CORDOVA RD

NTS

STA 164+77 TO STA 166+77
STA 215+99 TO STA 217+99
STA 244+18 TO STA 246+18



PROPOSED TYPICAL SECTION

CORDOVA RD

NTS

STA 180+87 TO STA 185+78
STA 198+70 TO STA 212+54
STA 250+95 TO STA 268+13

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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TYPICAL SECTION

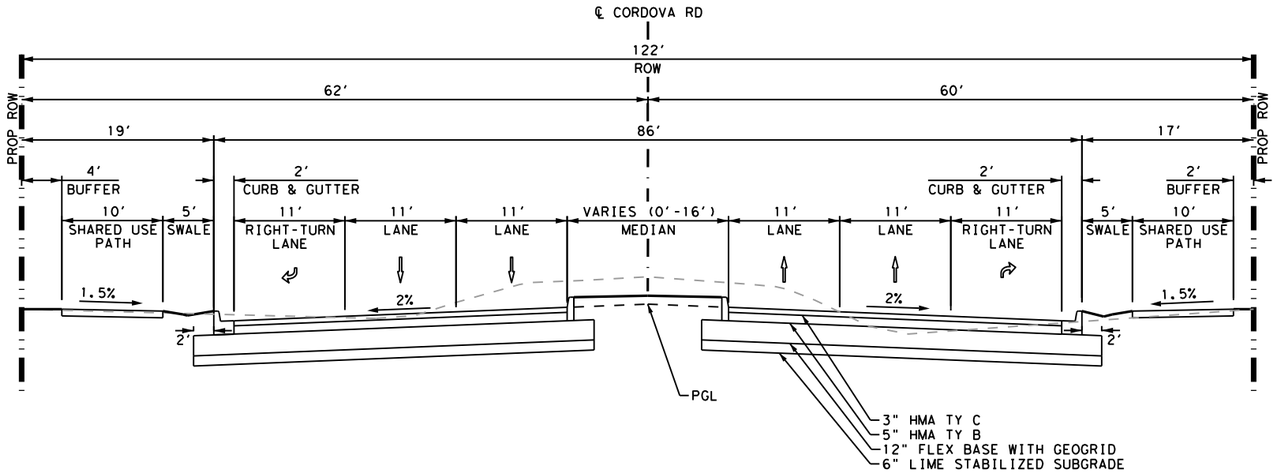
SHEET 6 OF 8

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	13

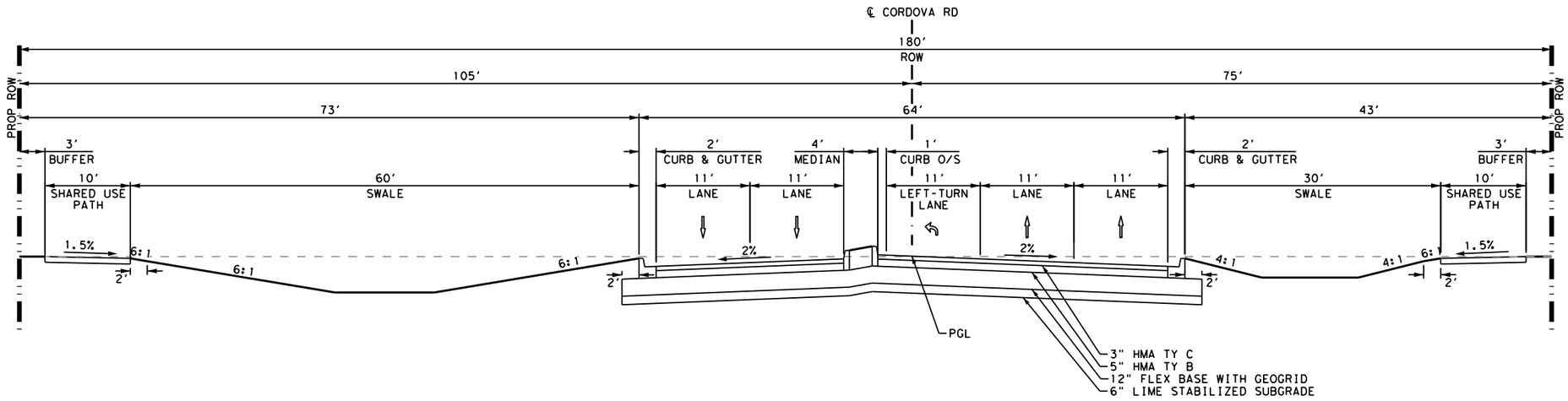
Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\General\1277500_typP05.dgn

Plotted on: 7/27/2023



PROPOSED TYPICAL SECTION
CORDOVA RD
NTS
STA 241+91 TO STA 244+16



PROPOSED TYPICAL SECTION
CORDOVA RD
NTS
STA 270+20 TO STA 272+20

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
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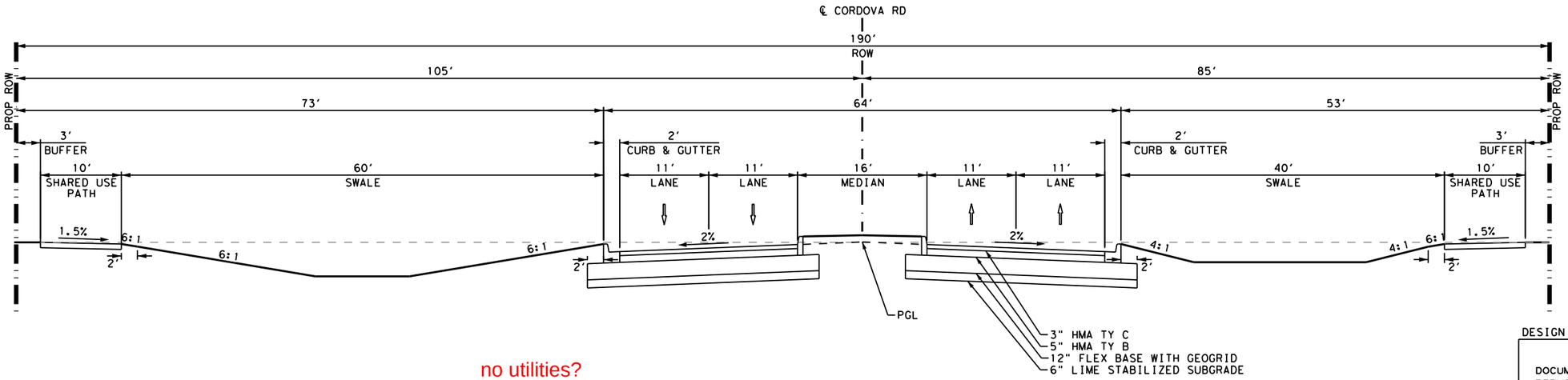
TYPICAL SECTION

SHEET 7 OF 8

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	14

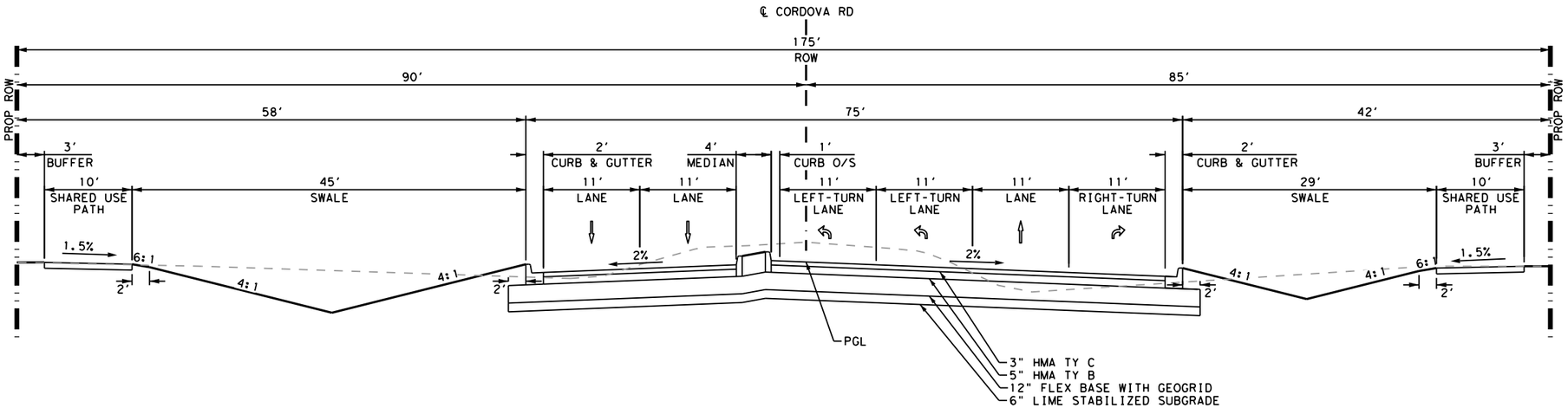
Design Filename: P:\127\75\00\Design\Civil\General\1277500_typP06.dgn

Plotted on: 7/27/2023



no utilities?

PROPOSED TYPICAL SECTION
CORDOVA RD
NTS
STA 273+40 TO STA 284+09



PROPOSED TYPICAL SECTION
CORDOVA RD
NTS
STA 291+85 TO STA 294+18

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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TYPICAL SECTION

SHEET 8 OF 8

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	15

Design Filename: P:\127\75\00\Design\Civil\General\1277500_typP07.dgn

Plotted on: 7/27/2023

TO BE PROVIDED AT LATER SUBMITTAL

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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GENERAL NOTES

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	16

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Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Summaries\1277500_Estimate_SUMM01.dgn

TO BE PROVIDED AT LATER SUBMITTAL

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ESTIMATE & QUANTITY

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	17

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Summaries\1277500_TCP_SUMM01.dgn

TCP QUANTITY SUMMARY

	ITEM	0460-6005	0508-6001	0512-6009	0512-6010	0512-6033	0512-6034	0512-6057
SHT NO	TCP SHEETS	CMP (GAL STL 36 IN)	CONSTRUCTING DETOURS	PORT CTB (FUR & INST)(LOW PROF)(TY 1)	PORT CTB (FUR & INST)(LOW PROF)(TY 2)	PORT CTB (MOVE)(LOW PROF)(TY 1)	PORT CTB (MOVE)(LOW PROF)(TY 2)	PORT CTB (REMOVE)(LOW PROF)(TY 1)
		LF	SY	LF	LF	LF	LF	LF
37	PHASE 1 - SHEET 2 OF 22		123	120	20			120
38	PHASE 1 - SHEET 3 OF 22	144	1434	1340				1160
39	PHASE 1 - SHEET 4 OF 22		1249	940	40			860
40	PHASE 1 - SHEET 5 OF 22		1362	860	40			680
41	PHASE 1 - SHEET 6 OF 22		448	180	20			180
42	PHASE 1 - SHEET 7 OF 22		132					
43	PHASE 1 - SHEET 8 OF 22		103					
44	PHASE 1 - SHEET 9 OF 22		152					
45	PHASE 1 - SHEET 10 OF 22		390					
46	PHASE 1 - SHEET 11 OF 22		518					
47	PHASE 1 - SHEET 12 OF 22		132					
49	PHASE 1 - SHEET 14 OF 22		625					
50	PHASE 1 - SHEET 15 OF 22		997					
51	PHASE 1 - SHEET 16 OF 22		1071					
52	PHASE 1 - SHEET 17 OF 22		3					
57	PHASE 1 - SHEET 22 OF 22			240	40			240
59	PHASE 2 - SHEET 1 OF 22							
60	PHASE 2 - SHEET 2 OF 22					180	40	180
61	PHASE 2 - SHEET 3 OF 22							
62	PHASE 2 - SHEET 4 OF 22							
63	PHASE 2 - SHEET 5 OF 22							
64	PHASE 2 - SHEET 6 OF 22							
65	PHASE 2 - SHEET 7 OF 22							
66	PHASE 2 - SHEET 8 OF 22							
67	PHASE 2 - SHEET 9 OF 22							
68	PHASE 2 - SHEET 10 OF 22							
69	PHASE 2 - SHEET 11 OF 22							
70	PHASE 2 - SHEET 12 OF 22							
71	PHASE 2 - SHEET 13 OF 22							
72	PHASE 2 - SHEET 14 OF 22							
73	PHASE 2 - SHEET 15 OF 22							
74	PHASE 2 - SHEET 16 OF 22							
75	PHASE 2 - SHEET 17 OF 22							
76	PHASE 2 - SHEET 18 OF 22							
77	PHASE 2 - SHEET 19 OF 22							
78	PHASE 2 - SHEET 20 OF 22							
79	PHASE 2 - SHEET 21 OF 22							
80	PHASE 2 - SHEET 22 OF 22					260	40	260
	TOTALS	144	8739	3680	160	440	80	3680

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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TCP QUANTITY SUMMARY

SHEET 1 OF 2

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	18

	ITEM	0512-6058	0662-6008	0662-6037
	TCP SHEETS	PORT CTB (REMOVE)(LOW PROF)(TY 2)	WK ZN PAV MRK NON-REMOV (W)6"(SLD)	WK ZN PAV MRK NON-REMOV (Y)6"(SLD)
SHT NO		LF	LF	LF
37	PHASE 1 - SHEET 2 OF 22	20	403	404
38	PHASE 1 - SHEET 3 OF 22		2002	2002
39	PHASE 1 - SHEET 4 OF 22		2000	2000
40	PHASE 1 - SHEET 5 OF 22		2000	2000
41	PHASE 1 - SHEET 6 OF 22	20	1995	1996
42	PHASE 1 - SHEET 7 OF 22		2074	1900
43	PHASE 1 - SHEET 8 OF 22		2000	2000
44	PHASE 1 - SHEET 9 OF 22		2000	2000
45	PHASE 1 - SHEET 10 OF 22		2000	2000
46	PHASE 1 - SHEET 11 OF 22		2000	2000
47	PHASE 1 - SHEET 12 OF 22		531	522
49	PHASE 1 - SHEET 14 OF 22		1580	1630
50	PHASE 1 - SHEET 15 OF 22		2000	2000
51	PHASE 1 - SHEET 16 OF 22		2003	2002
52	PHASE 1 - SHEET 17 OF 22		97	144
57	PHASE 1 - SHEET 22 OF 22	40	950	840
59	PHASE 2 - SHEET 1 OF 22			482
60	PHASE 2 - SHEET 2 OF 22	40		976
61	PHASE 2 - SHEET 3 OF 22			1998
62	PHASE 2 - SHEET 4 OF 22			2000
63	PHASE 2 - SHEET 5 OF 22			2000
64	PHASE 2 - SHEET 6 OF 22		852	2012
65	PHASE 2 - SHEET 7 OF 22		482	1870
66	PHASE 2 - SHEET 8 OF 22			2000
67	PHASE 2 - SHEET 9 OF 22			2002
68	PHASE 2 - SHEET 10 OF 22			2000
69	PHASE 2 - SHEET 11 OF 22			2000
70	PHASE 2 - SHEET 12 OF 22		588	1872
71	PHASE 2 - SHEET 13 OF 22		692	2002
72	PHASE 2 - SHEET 14 OF 22		699	2006
73	PHASE 2 - SHEET 15 OF 22		911	2000
74	PHASE 2 - SHEET 16 OF 22		583	2006
75	PHASE 2 - SHEET 17 OF 22		175	1992
76	PHASE 2 - SHEET 18 OF 22		340	984
77	PHASE 2 - SHEET 19 OF 22			1024
78	PHASE 2 - SHEET 20 OF 22		92	1024
79	PHASE 2 - SHEET 21 OF 22		500	1000
80	PHASE 2 - SHEET 22 OF 22	40	887	844
	TOTALS	160	32436	61534

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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TCP QUANTITY SUMMARY

SHEET 2 OF 2

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	19

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Summaries\1277500_TCP_SUMM01.dgn

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Summaries\1277500_Rdwy_SUMM01.dgn

ROADWAY QUANTITY SUMMARY

	ITEM	0100-6002	0106-6002	0110-6001	0132-6003	0247-6041	0260-6002	0260-6079
SHT NO	ROADWAY PLAN & PROFILE	PREPARING ROW	OBLITERATING ABANDONED ROAD	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL) (ORD COMP) (TY B)	FL BS (CMP IN PLC) (TYA GR1-2) (FNAL	LIME (HYDRATED LIME (SLURRY))	LIME TRT (SUBGRADE) (6")
		STA	SY	CY	CY	CY	TON	SY
87	SHEET 1 OF 44	5.0		126.0	3817.0	1006.0	35.7	3018
88	SHEET 2 OF 44	5.0	456	989.0	1350.0	1351.7	47.9	4055
89	SHEET 3 OF 44	5.0		952.0	2239.0	1203.3	42.6	3610
90	SHEET 4 OF 44	5.0		1347.0	1487.0	1061.7	37.6	3185
91	SHEET 5 OF 44	5.0		2052.0	425.0	1061.7	37.6	3185
92	SHEET 6 OF 44	5.0		1525.0	446.0	1113.3	39.5	3340
93	SHEET 7 OF 44	5.0		1083.0	640.0	1159.0	41.1	3477
94	SHEET 8 OF 44	5.0		811.0	750.0	1252.7	44.4	3758
95	SHEET 9 OF 44	5.0		1883.0	236.0	1236.7	43.8	3710
96	SHEET 10 OF 44	5.0		2937.0	207.0	1098.0	38.9	3294
97	SHEET 11 OF 44	5.0		355.0	5044.0	1434.3	50.8	4303
98	SHEET 12 OF 44	5.0		2951.0	246.0	1151.3	40.8	3454
99	SHEET 13 OF 44	5.0		2546.0	339.0	1089.3	38.6	3268
100	SHEET 14 OF 44	5.0		2253.0	179.0	1309.0	46.4	3927
101	SHEET 15 OF 44	5.0		2001.0	970.0	1062.0	37.6	3186
102	SHEET 16 OF 44	5.0		683.0	2447.0	1139.7	40.4	3419
103	SHEET 17 OF 44	5.0		757.0	3607.0	1062.0	37.6	3186
104	SHEET 18 OF 44	5.0		2965.0	303.0	1121.0	39.7	3363
105	SHEET 19 OF 44	5.0		2675.0	290.0	1062.0	37.6	3186
106	SHEET 20 OF 44	5.0		1943.0	529.0	1062.0	37.6	3186
107	SHEET 21 OF 44	5.0		1960.0	388.0	1159.0	41.1	3477
108	SHEET 22 OF 44	5.0		2232.0	285.0	1388.7	49.2	4166
109	SHEET 23 OF 44	5.0		3034.0	156.0	1269.3	45.0	3808
110	SHEET 24 OF 44	5.0		2209.0	539.0	1062.0	37.6	3186
111	SHEET 25 OF 44	5.0		1323.0	569.0	1243.7	44.1	3731
112	SHEET 26 OF 44	5.0		1460.0	422.0	1125.0	39.9	3375
113	SHEET 27 OF 44	5.0		2681.0	264.0	1405.3	49.8	4216
114	SHEET 28 OF 44	5.0		2900.0	285.0	1307.3	46.3	3922
115	SHEET 29 OF 44	5.0		1805.0	422.0	1090.7	38.7	3272
116	SHEET 30 OF 44	5.0		4284.0	6.0	1062.0	37.6	3186
117	SHEET 31 OF 44	5.0		5043.0	12.0	1062.0	37.6	3186
118	SHEET 32 OF 44	5.0		5778.0	82.0	1073.7	38.0	3221
119	SHEET 33 OF 44	5.0	247	6115.0	43.0	1730.0	61.3	5190
120	SHEET 34 OF 44	5.0		7192.0	168.0	1062.0	37.6	3186
121	SHEET 35 OF 44	5.0		6528.0	152.0	1097.7	38.9	3293
122	SHEET 36 OF 44	5.0	60	4831.0	35.0	1622.7	57.5	4868
123	SHEET 37 OF 44	5.0	305	4685.0	40.0	1359.7	48.2	4079
124	SHEET 38 OF 44	2.0	672					
125	SHEET 39 OF 44	2.0	823					
126	SHEET 40 OF 44	5.0				202.3	7.2	607
127	SHEET 41 OF 44	5.0				210.0	7.4	630
128	SHEET 42 OF 44	4.0				102.0	3.6	306
129	SHEET 43 OF 44	4.0	841					
130	SHEET 44 OF 44		1082					
	TOTALS	207.0	4486	96894.0	29419.0	44671.7	1583.1	134015

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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THE STATE OF TEXAS GUADALUPE COUNTY

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ROADWAY QUANTITY SUMMARY

SHEET 1 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	20

	ITEM	0310-6027	0423-6005	0462-6001	0464-6003	0464-6005	0464-6007	0464-6030
SHT NO	ROADWAY PLAN & PROFILE	PRIME COAT(MC-30 OR AE-P)	RETAINING WALL (SPREAD FOOTING)	CONC BOX CULV (3 FT X 2 FT)	RC PIPE (CL III)(18 IN)	RC PIPE (CL III)(24 IN)	RC PIPE (CL III)(30 IN)	RC PIPE (ARCH)(CL III)(DES 1)
		GAL	SF	LF	LF	LF	LF	LF
87	SHEET 1 OF 44	603.60						
88	SHEET 2 OF 44	811.00	895					
89	SHEET 3 OF 44	722.00	880					
90	SHEET 4 OF 44	637.00		60				
91	SHEET 5 OF 44	637.00			88	100		
92	SHEET 6 OF 44	668.00				210		
93	SHEET 7 OF 44	695.40						
94	SHEET 8 OF 44	751.60						
95	SHEET 9 OF 44	742.00						
96	SHEET 10 OF 44	658.80						231
97	SHEET 11 OF 44	860.60	2915					
98	SHEET 12 OF 44	690.80						
99	SHEET 13 OF 44	653.60						
100	SHEET 14 OF 44	785.40						
101	SHEET 15 OF 44	637.20			96			
102	SHEET 16 OF 44	683.80			96			
103	SHEET 17 OF 44	637.20						
104	SHEET 18 OF 44	672.60						
105	SHEET 19 OF 44	637.20				54		
106	SHEET 20 OF 44	637.20			110			
107	SHEET 21 OF 44	695.40						
108	SHEET 22 OF 44	833.20						
109	SHEET 23 OF 44	761.60						
110	SHEET 24 OF 44	637.20						
111	SHEET 25 OF 44	746.20						
112	SHEET 26 OF 44	675.00						
113	SHEET 27 OF 44	843.20						
114	SHEET 28 OF 44	784.40						
115	SHEET 29 OF 44	654.40						90
116	SHEET 30 OF 44	637.20					60	
117	SHEET 31 OF 44	637.20						
118	SHEET 32 OF 44	644.20						
119	SHEET 33 OF 44	1038.00						
120	SHEET 34 OF 44	637.20						
121	SHEET 35 OF 44	658.60						
122	SHEET 36 OF 44	973.60						
123	SHEET 37 OF 44	815.80						
124	SHEET 38 OF 44							
125	SHEET 39 OF 44							
126	SHEET 40 OF 44	121.40						
127	SHEET 41 OF 44	126.00						
128	SHEET 42 OF 44	61.20						
129	SHEET 43 OF 44							
130	SHEET 44 OF 44							
	TOTALS	26803.00	4690	60	390	364	60	321

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Summaries\1277500_Rdwy_SUMM01.dgn

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
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ROADWAY QUANTITY SUMMARY

SHEET 2 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	21

	ITEM	0467-6363	0467-6395	0467-6423	0467-6519	0529-6002	0529-6008	0530-6004
SHT NO	ROADWAY PLAN & PROFILE	SET (TY II) (18 IN) (RCP) (6: 1) (P)	SET (TY II) (24 IN) (RCP) (6: 1) (P)	SET (TY II) (30 IN) (RCP) (6: 1) (P)	SET (TY II) (DES 1) (RCP) (6: 1) (P)	CONC CURB (TY II)	CONC CURB & GUTTER (TY II)	DRIVEWAYS (CONC)
		EA	EA	EA	EA	LF	LF	SY
87	SHEET 1 OF 44					573	760	
88	SHEET 2 OF 44					995	1005	
89	SHEET 3 OF 44					1000	951	
90	SHEET 4 OF 44					1000	1000	166
91	SHEET 5 OF 44	4	4			1000	1000	143
92	SHEET 6 OF 44		4			1000	968	109
93	SHEET 7 OF 44					1002	1016	
94	SHEET 8 OF 44					834	962	144
95	SHEET 9 OF 44					899	984	162
96	SHEET 10 OF 44				6	980	973	483
97	SHEET 11 OF 44					836	901	135
98	SHEET 12 OF 44					1017	985	69
99	SHEET 13 OF 44					1002	1000	80
100	SHEET 14 OF 44					1002	1000	60
101	SHEET 15 OF 44	4				836	1164	79
102	SHEET 16 OF 44	4				1000	904	102
103	SHEET 17 OF 44					1000	1000	
104	SHEET 18 OF 44					1000	946	
105	SHEET 19 OF 44		2			1000	1000	80
106	SHEET 20 OF 44	4				1000	1000	122
107	SHEET 21 OF 44					1003	999	
108	SHEET 22 OF 44					820	951	
109	SHEET 23 OF 44					824	978	
110	SHEET 24 OF 44					1000	1000	
111	SHEET 25 OF 44					836	980	55
112	SHEET 26 OF 44					1000	965	
113	SHEET 27 OF 44					892	842	
114	SHEET 28 OF 44					1002	900	
115	SHEET 29 OF 44				4	1000	1002	63
116	SHEET 30 OF 44			2		1000	1000	87
117	SHEET 31 OF 44					1000	1000	
118	SHEET 32 OF 44					1002	1000	
119	SHEET 33 OF 44					836	1069	
120	SHEET 34 OF 44					994	1006	
121	SHEET 35 OF 44					1002	801	
122	SHEET 36 OF 44					812	1035	
123	SHEET 37 OF 44					879	1001	
124	SHEET 38 OF 44							
125	SHEET 39 OF 44							
126	SHEET 40 OF 44							
127	SHEET 41 OF 44							
128	SHEET 42 OF 44							
129	SHEET 43 OF 44							
130	SHEET 44 OF 44							
	TOTALS	16	10	2	10	34878	36048	2139

Plotted on: 7/27/2023

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REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY QUANTITY SUMMARY

SHEET 3 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	22

	ITEM	0531-6001	0531-6004	0531-6005	0531-6010	0531-6016	0556-6008	0666-6036
SHT NO	ROADWAY PLAN & PROFILE	CONC SIDEWALKS (4")	CURB RAMPS (TY 1)	CURB RAMPS (TY 2)	CURB RAMPS (TY 7)	CURB RAMPS (TY 21)	PIPE UNDERDRAINS (TY 8) (6")	REFL PAV MRK TY I (W)8"(SLD)(10
		SY	EA	EA	EA	EA	LF	LF
87	SHEET 1 OF 44	724	2	2		1		912
88	SHEET 2 OF 44	1110					150	3700
89	SHEET 3 OF 44	1065					190	
90	SHEET 4 OF 44	1083						
91	SHEET 5 OF 44	1081						
92	SHEET 6 OF 44	1055						
93	SHEET 7 OF 44	1106						163
94	SHEET 8 OF 44	1026						137
95	SHEET 9 OF 44	1035						200
96	SHEET 10 OF 44	965						
97	SHEET 11 OF 44	987					220	322
98	SHEET 12 OF 44	1095						177
99	SHEET 13 OF 44	1089						20
100	SHEET 14 OF 44	1067						180
101	SHEET 15 OF 44	1102						
102	SHEET 16 OF 44	1007						
103	SHEET 17 OF 44	1116						
104	SHEET 18 OF 44	1071						
105	SHEET 19 OF 44	1094						
106	SHEET 20 OF 44	1088						
107	SHEET 21 OF 44	1118						197
108	SHEET 22 OF 44	934			4			296
109	SHEET 23 OF 44	1078						200
110	SHEET 24 OF 44	1111						
111	SHEET 25 OF 44	1062						200
112	SHEET 26 OF 44	1068						
113	SHEET 27 OF 44	1013						341
114	SHEET 28 OF 44	1006						20
115	SHEET 29 OF 44	1099						45
116	SHEET 30 OF 44	1096						
117	SHEET 31 OF 44	1112						
118	SHEET 32 OF 44	1119						
119	SHEET 33 OF 44	1094						198
120	SHEET 34 OF 44	1098						
121	SHEET 35 OF 44	1111						42
122	SHEET 36 OF 44	1082						1475
123	SHEET 37 OF 44	980			2			671
124	SHEET 38 OF 44							
125	SHEET 39 OF 44							
126	SHEET 40 OF 44							98
127	SHEET 41 OF 44							138
128	SHEET 42 OF 44							785
129	SHEET 43 OF 44							
130	SHEET 44 OF 44							
	TOTALS	39147	2	2	6	1	560	10517

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REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY QUANTITY SUMMARY

SHEET 4 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	23

	ITEM	0666-6048	0666-6178	0666-6182	0666-6184	0666-6192	0666-6309	0668-6077
SHT NO	ROADWAY PLAN & PROFILE	REFL PAV MRK TY I (W)24"(SLD)(1	REFL PAV MRK TY II (W) 8" (SLD)	REFL PAV MRK TY II (W) 24" (SLD)	REFL PAV MRK TY II (W) (ARROW)	REFL PAV MRK TY II (W) (WORD)	RE PM W/RET REQ TY I (W)6"(SLD)(10	PREFAB PAV MRK TY C (W) (ARROW)
		LF	LF	LF	EA	EA	LF	EA
87	SHEET 1 OF 44	623	912	623	3	3		3
88	SHEET 2 OF 44						250	3
89	SHEET 3 OF 44						250	
90	SHEET 4 OF 44						250	
91	SHEET 5 OF 44						250	
92	SHEET 6 OF 44						250	
93	SHEET 7 OF 44						250	
94	SHEET 8 OF 44						250	
95	SHEET 9 OF 44						251	
96	SHEET 10 OF 44						250	
97	SHEET 11 OF 44						251	
98	SHEET 12 OF 44						250	
99	SHEET 13 OF 44						250	
100	SHEET 14 OF 44						250	
101	SHEET 15 OF 44						250	
102	SHEET 16 OF 44						250	
103	SHEET 17 OF 44						250	
104	SHEET 18 OF 44						250	
105	SHEET 19 OF 44						250	
106	SHEET 20 OF 44						250	
107	SHEET 21 OF 44						250	
108	SHEET 22 OF 44	916	435	916	1	1	201	
109	SHEET 23 OF 44						250	
110	SHEET 24 OF 44						250	
111	SHEET 25 OF 44						250	
112	SHEET 26 OF 44						250	
113	SHEET 27 OF 44						250	
114	SHEET 28 OF 44						250	
115	SHEET 29 OF 44						250	
116	SHEET 30 OF 44						250	
117	SHEET 31 OF 44						250	
118	SHEET 32 OF 44						250	
119	SHEET 33 OF 44						250	
120	SHEET 34 OF 44						251	
121	SHEET 35 OF 44						251	
122	SHEET 36 OF 44						250	
123	SHEET 37 OF 44	280					215	3
124	SHEET 38 OF 44							
125	SHEET 39 OF 44							
126	SHEET 40 OF 44	115	396	115				
127	SHEET 41 OF 44	119	953	119				
128	SHEET 42 OF 44	1	785		1	1		
129	SHEET 43 OF 44							
130	SHEET 44 OF 44							
	TOTALS	2054	3481	1773	5	5	8920	9

REV. NO.	DATE	DESCRIPTION	BY

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ROADWAY QUANTITY SUMMARY

SHEET 5 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	24

Plotted on: 7/27/2023
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	ITEM	0668-6085	0740-6004	3075-6001	3076-6006	3076-6031	3076-6066
SHT NO	ROADWAY PLAN & PROFILE	PREFAB PAV MRK TY C (W) (WORD)	ANTI - GRAFFITI COATING(PERMN	GEOGRID BASE REINFORCEMENT	D-GR HMA TY-B PG70-22	D-GR HMA TY-C PG76-22	TACK COAT
		EA	SF	SY	TON	TON	GAL
87	SHEET 1 OF 44	3		3018	721.3	432.8	524.60
88	SHEET 2 OF 44	3	716	4055	920.7	552.4	669.60
89	SHEET 3 OF 44		704	3610	795.0	477.0	578.20
90	SHEET 4 OF 44			3185	672.4	403.4	489.00
91	SHEET 5 OF 44			3185	672.4	403.4	489.00
92	SHEET 6 OF 44			3340	718.6	431.1	522.60
93	SHEET 7 OF 44			3477	751.9	451.1	546.80
94	SHEET 8 OF 44			3758	850.3	510.2	618.40
95	SHEET 9 OF 44			3710	828.6	497.1	602.60
96	SHEET 10 OF 44			3294	707.9	424.7	514.80
97	SHEET 11 OF 44		2332	4303	1007.6	604.6	732.80
98	SHEET 12 OF 44			3454	746.1	447.6	542.60
99	SHEET 13 OF 44			3268	688.6	413.2	500.80
100	SHEET 14 OF 44			3927	828.0	496.8	602.20
101	SHEET 15 OF 44			3186	672.1	403.3	488.80
102	SHEET 16 OF 44			3419	748.0	448.8	544.00
103	SHEET 17 OF 44			3186	672.1	403.3	488.80
104	SHEET 18 OF 44			3363	727.4	436.4	529.00
105	SHEET 19 OF 44			3186	672.1	403.3	488.80
106	SHEET 20 OF 44			3186	672.1	403.3	488.80
107	SHEET 21 OF 44			3477	753.2	451.9	547.80
108	SHEET 22 OF 44			4166	952.9	571.7	693.00
109	SHEET 23 OF 44			3808	862.7	517.6	627.40
110	SHEET 24 OF 44			3186	672.1	403.3	488.80
111	SHEET 25 OF 44			3731	840.4	504.2	611.20
112	SHEET 26 OF 44			3375	728.5	437.1	529.80
113	SHEET 27 OF 44			4216	984.8	590.9	716.20
114	SHEET 28 OF 44			3922	883.9	530.3	642.80
115	SHEET 29 OF 44			3272	695.8	417.5	506.00
116	SHEET 30 OF 44			3186	672.1	403.3	488.80
117	SHEET 31 OF 44			3186	672.1	403.3	488.80
118	SHEET 32 OF 44			3221	675.1	405.1	491.00
119	SHEET 33 OF 44			5190	1196.0	717.6	869.80
120	SHEET 34 OF 44			3186	672.1	403.3	488.80
121	SHEET 35 OF 44			3293	696.3	417.8	506.40
122	SHEET 36 OF 44			4868	1113.5	668.1	809.80
123	SHEET 37 OF 44	3		4079	957.8	574.7	696.60
124	SHEET 38 OF 44						
125	SHEET 39 OF 44						
126	SHEET 40 OF 44			607	155.7	90.1	111.20
127	SHEET 41 OF 44			630	161.4	98.5	118.40
128	SHEET 42 OF 44			306	72.9	42.7	52.40
129	SHEET 43 OF 44						
130	SHEET 44 OF 44						
	TOTALS	9	3752	134015	29492.1	17692.6	21447.20

REV. NO.	DATE	DESCRIPTION	BY

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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY QUANTITY SUMMARY

SHEET 6 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	25

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Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Summaries\1277500_Drainage_SUMM01.dgn

DRAINAGE QUANTITY SUMMARY

SHT NO	ITEM / SHEET NAME	0402-6001 TRENCH EXCAVATION PROTECTION (LF)	0432-6001 RIPRAP (CONC)(4 IN) (CY)	0450-6032 RAIL (TY C223) (LF)	0450-6048 RAIL (HANDRAIL)(TY B) (LF)	0462-6001 CONC BOX CULV (3 FT X 2 FT) (LF)	0462-6004 CONC BOX CULV (4 FT X 3 FT) (LF)	0462-6005 CONC BOX CULV (4 FT X 4 FT) (LF)	0462-6006 CONC BOX CULV (5 FT X 2 FT) (LF)
171	DRAINAGE LAYOUT								
172	DRAINAGE LAYOUT		127.0		200				
173	DRAINAGE LAYOUT		292.0	120	387				
174	DRAINAGE LAYOUT		246.0						
175	DRAINAGE LAYOUT								
176	DRAINAGE LAYOUT	708							
177	DRAINAGE LAYOUT	99		150	485				
178	DRAINAGE LAYOUT								
179	DRAINAGE LAYOUT								
180	DRAINAGE LAYOUT		22.0	120	200				
181	DRAINAGE LAYOUT								
182	DRAINAGE LAYOUT	319	20.0			138			638
183	DRAINAGE LAYOUT	604							
184	DRAINAGE LAYOUT	2084	16.0		100				
185	DRAINAGE LAYOUT	2732			153		422	197	
186	DRAINAGE LAYOUT	2472	159.0			888		749	
187	DRAINAGE LAYOUT		103.0			23			
188	DRAINAGE LAYOUT								
190	DRAINAGE LAYOUT								
191	DRAINAGE LAYOUT								
192	DRAINAGE LAYOUT				115				
	TOTALS	9018	985.0	390	1640	1049	422	946	638

SHT NO	ITEM / SHEET NAME	0462-6010 CONC BOX CULV (6 FT X 3 FT) (LF)	0462-6011 CONC BOX CULV (6 FT X 4 FT) (LF)	0462-6014 CONC BOX CULV (7 FT X 3 FT) (LF)	0462-6020 CONC BOX CULV (8 FT X 5 FT) (LF)	0462-6054 CONC BOX CULV (6 FT X 3 FT)(EXTEND) (LF)	0462-6099 CONC BOX CULV (6 FT X 2 FT) (LF)	0464-6007 RC PIPE (CL III)(30 IN) (LF)	0464-6019 RC PIPE (CL IV)(30 IN) (LF)
171	DRAINAGE LAYOUT							324	
172	DRAINAGE LAYOUT								
173	DRAINAGE LAYOUT			612					
174	DRAINAGE LAYOUT								
175	DRAINAGE LAYOUT								
176	DRAINAGE LAYOUT								495
177	DRAINAGE LAYOUT				738				311
178	DRAINAGE LAYOUT								
179	DRAINAGE LAYOUT								
180	DRAINAGE LAYOUT			612					
181	DRAINAGE LAYOUT								
182	DRAINAGE LAYOUT								
183	DRAINAGE LAYOUT								
184	DRAINAGE LAYOUT	878					35		
185	DRAINAGE LAYOUT	96	896						
186	DRAINAGE LAYOUT		763						
187	DRAINAGE LAYOUT								
188	DRAINAGE LAYOUT								
190	DRAINAGE LAYOUT								
191	DRAINAGE LAYOUT								
192	DRAINAGE LAYOUT	137				125			
	TOTALS	1111	1659	1224	738	125	35	324	806

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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DRAINAGE QUANTITY SUMMARY

SHEET 1 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	26

DRAINAGE QUANTITY SUMMARY CONT.

SHT NO	SHEET NAME	0464-6025 RC PIPE (CL V) (18 IN) LF	0464-6026 RC PIPE (CL V) (24 IN) LF	0465-6014 INLET (COMPL) (PCO) (3FT) (LEFT) EA	0465-6015 INLET (COMPL) (PCO) (3FT) (RIGHT) EA	0465-6016 INLET (COMPL) (PCO) (3FT) (BOTH) EA	0465-6018 INLET (COMPL) (PCO) (4FT) (LEFT) EA	0465-6020 INLET (COMPL) (PCO) (4FT) (BOTH) EA	0465-6070 INLET (COMPL) (PSL) (RC) (3FTX3FT) EA
171	DRAINAGE LAYOUT								
172	DRAINAGE LAYOUT								
173	DRAINAGE LAYOUT								
174	DRAINAGE LAYOUT								
175	DRAINAGE LAYOUT								
176	DRAINAGE LAYOUT		195				2	1	
177	DRAINAGE LAYOUT								
178	DRAINAGE LAYOUT								
179	DRAINAGE LAYOUT								
180	DRAINAGE LAYOUT								
181	DRAINAGE LAYOUT								
182	DRAINAGE LAYOUT	6	154		1	1			
183	DRAINAGE LAYOUT	396	198						1
184	DRAINAGE LAYOUT		1128		2	2			4
185	DRAINAGE LAYOUT		1098	1	3	3			1
186	DRAINAGE LAYOUT		181						
187	DRAINAGE LAYOUT								
188	DRAINAGE LAYOUT								
190	DRAINAGE LAYOUT								
191	DRAINAGE LAYOUT								
192	DRAINAGE LAYOUT								
	TOTALS	402	2954	1	6	6	2	1	6

SHT NO	SHEET NAME	0465-6071 INLET (COMPL) (PSL) (RC) (4FTX4FT) EA	0465-6076 INLET (COMPL) (PSL) (RC) (6FTX6FT) EA	0465-6077 INLET (COMPL) (PSL) (RC) (8FTX8FT) EA	0465-6126 INLET (COMPL) (PSL) (FG) (3FTX3FT-3FTX3FT) EA	0465-6127 INLET (COMPL) (PSL) (FG) (4FTX4FT-3FTX3FT) EA	0465-6128 INLET (COMPL) (PSL) (FG) (4FTX4FT-4FTX4FT) EA	0465-6338 INLET (COMPL) (ARMOR CURB SLOT) EA	0466-6179 WINGWALL (PW - 1) (HW=4 FT) EA
171	DRAINAGE LAYOUT								
172	DRAINAGE LAYOUT							2	
173	DRAINAGE LAYOUT							6	
174	DRAINAGE LAYOUT							4	
175	DRAINAGE LAYOUT							4	
176	DRAINAGE LAYOUT					1	1	5	
177	DRAINAGE LAYOUT	1						6	
178	DRAINAGE LAYOUT							3	
179	DRAINAGE LAYOUT							5	
180	DRAINAGE LAYOUT							6	
181	DRAINAGE LAYOUT							2	
182	DRAINAGE LAYOUT			3	1			6	2
183	DRAINAGE LAYOUT				3			5	
184	DRAINAGE LAYOUT			2				1	
185	DRAINAGE LAYOUT		1	2				2	
186	DRAINAGE LAYOUT	4						2	
187	DRAINAGE LAYOUT							4	
188	DRAINAGE LAYOUT							4	
190	DRAINAGE LAYOUT							2	
191	DRAINAGE LAYOUT							1	
192	DRAINAGE LAYOUT							4	3
	TOTALS	5	1	7	4	1	1	74	5

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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DRAINAGE QUANTITY SUMMARY

SHEET 2 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	27

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Summaries\1277500_Drainage_SUMM01.dgn

DRAINAGE QUANTITY SUMMARY CONT.

SHT NO	SHEET NAME	0466-6180 WINGWALL (PW - 1) (HW=5 FT) EA	0466-6181 WINGWALL (PW - 1) (HW=6 FT) EA	0466-6183 WINGWALL (PW - 1) (HW=8 FT) EA	0467-6391 SET (TY II) (24 IN) (RCP) (4: 1) (P) EA	0467-6423 SET (TY II) (30 IN) (RCP) (6: 1) (P) EA	0496-6001 REMOV STR (BOX CULVERT) EA	0496-6004 REMOV STR (SET) EA	0496-6005 REMOV STR (WINGWALL) EA
171	DRAINAGE LAYOUT					4			
172	DRAINAGE LAYOUT								
173	DRAINAGE LAYOUT		2				1		2
174	DRAINAGE LAYOUT								
175	DRAINAGE LAYOUT								
176	DRAINAGE LAYOUT								
177	DRAINAGE LAYOUT			2					2
178	DRAINAGE LAYOUT								
179	DRAINAGE LAYOUT								
180	DRAINAGE LAYOUT		2				1		2
181	DRAINAGE LAYOUT								
182	DRAINAGE LAYOUT	2							
183	DRAINAGE LAYOUT								
184	DRAINAGE LAYOUT								
185	DRAINAGE LAYOUT								
186	DRAINAGE LAYOUT				1				
187	DRAINAGE LAYOUT								
188	DRAINAGE LAYOUT								
190	DRAINAGE LAYOUT								
191	DRAINAGE LAYOUT								
192	DRAINAGE LAYOUT							1	1
	TOTALS	2	4	2	1	4	2	1	7

SHT NO	SHEET NAME	0496-6009 REMOV STR (BRIDGE O - 99 FT LENGTH) EA	0496-6016 REMOV STR (PIPE) EA
171	DRAINAGE LAYOUT		
172	DRAINAGE LAYOUT		
173	DRAINAGE LAYOUT		
174	DRAINAGE LAYOUT		
175	DRAINAGE LAYOUT		
176	DRAINAGE LAYOUT		
177	DRAINAGE LAYOUT	1	
178	DRAINAGE LAYOUT		
179	DRAINAGE LAYOUT		
180	DRAINAGE LAYOUT		
181	DRAINAGE LAYOUT		
182	DRAINAGE LAYOUT		2
183	DRAINAGE LAYOUT		
184	DRAINAGE LAYOUT		
185	DRAINAGE LAYOUT		
186	DRAINAGE LAYOUT		
187	DRAINAGE LAYOUT		
188	DRAINAGE LAYOUT		
190	DRAINAGE LAYOUT		
191	DRAINAGE LAYOUT		
192	DRAINAGE LAYOUT		
	TOTALS	1	2

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO I AUSTIN I HOUSTON I FORT WORTH I DALLAS
2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000
TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

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DRAINAGE QUANTITY SUMMARY

SHEET 3 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	28

Plotted on: 7/27/2023

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Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Summaries\1277500_S&PM_SUMM01.dgn

SIGNING & PAVEMENT MARKING QUANTITY SUMMARY

TO BE PROVIDED AT LATER SUBMITTAL

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
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SIGNING & PAVEMENT MARKINGS QUANTITY SUMMARY

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	29

Plotted on: 7/27/2023

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SW3P QUANTITY SUMMARY

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	30

Plotted on: 7/27/2023

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DETOURS, BARRICADES, WARNING SIGNS, SEQUENCE OF WORK, ETC.

THE CONTRACTORS ATTENTION IS DIRECTED TO THE REQUIREMENTS OF ITEM 7, "LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC", OF THE STANDARD SPECIFICATIONS. IN ADDITION TO THESE REQUIREMENTS, THE FOLLOWING PROVISIONS SHALL ALSO GOVERN ON THIS CONTRACT:

1. GENERAL

1. TRAFFIC MUST BE HANDLED THROUGHOUT THE PROJECT DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A SAFE AND COMFORTABLE PASSAGE FOR VEHICULAR AND PEDESTRIAN TRAFFIC WITH MINIMAL INCONVENIENCE TO THE PUBLIC, AS SHOWN IN THE PLANS OR AS DIRECTED.

2. THE CONTRACTOR MAY PROPOSE/RECOMMEND MODIFICATIONS TO THE SEQUENCE OF WORK FOR CONSIDERATION BY THE ENGINEER, ANY MAJOR RECOMMENDED MODIFICATION BY THE CONTRACTOR SHALL INCLUDE ANY CHANGES TO THE VARIOUS BID ITEMS, IMPACT TO TRAFFIC, EFFECT OF OVERALL PROJECT IN TIME AND COST, ETC. IF THIS PROPOSAL IS IMPLEMENTED, THE CONTRACTOR WILL BE RESPONSIBLE FOR DEVELOPING DETAILED PLAN SHEETS TO BE SEALED BY A LICENSED PROFESSIONAL ENGINEER FOR INCLUSION WITH THE CHANGE ORDER. THE CONTRACTOR CANNOT PROCEED WITH ANY CONSTRUCTION OPERATIONS BASED ON A REVISED PHASE/SEQUENCE UNTIL WRITTEN APPROVAL IS OBTAINED FROM BEXAR COUNTY. IF AT ANY TIME DURING CONSTRUCTION THE CONTRACTOR'S PROPOSED PLAN OF OPERATION FOR HANDLING TRAFFIC DOES NOT PROVIDE FOR SAFE AND COMFORTABLE MOVEMENT, THE CONTRACTOR WILL IMMEDIATELY CHANGE THEIR OPERATION TO CORRECT THE UNSATISFACTORY CONDITION.

3. DO NOT STORE ANY CONSTRUCTION MATERIAL OR EQUIPMENT AT ANY LOCATION THAT WILL CONSTITUTE A HAZARD AND WILL ENDANGER TRAFFIC.

4. THE CONTRACTOR WILL PROVIDE ADVANCE NOTIFICATION TO BEXAR COUNTY IMPENDING/UPCOMING LANE CLOSURES FOR ALL TEMPORARY AND/OR PERMANENT LANE, RAMP, CONNECTOR, FRONTAGE, SHOULDER, ETC. CLOSURES OR DETOURS.

5. ACCESS TO ADJOINING PROPERTY MUST BE MAINTAINED AT ALL TIMES.

6. TEMPORARY DRAINAGE IS THE RESPONSIBILITY OF THE CONTRACTOR.

7. AT NO TIME SHALL TWO CONSECUTIVE INTERSECTING ROADWAYS BE CLOSED AT ONE TIME DURING CONSTRUCTION.

8. AT NO TIME SHALL TWO CONSECUTIVE RAMPS BE CLOSED AT ONE TIME DURING CONSTRUCTION OR OVERLAY OPERATIONS.

9. UNLESS OTHERWISE NOTED IN THE PLANS AND/OR AS DIRECTED BY BEXAR COUNTY, DAILY LANE CLOSURES SHALL BE LIMITED ACCORDING TO THE FOLLOWING RESTRICTIONS:

NIGHTTIME: ASK AREA ENGINEER AND CONSTRUCTION ENGINEER (WITH UNIFORMED OFF DUTY LAW ENFORCEMENT OFFICERS)

WEEKEND CLOSURES WHEN APPROVED BY THE ENGINEER: ASK AREA ENGINEER AND CONSTRUCTION ENGINEER.

NO LANE CLOSURES WILL BE PERMITTED FOR THE FOLLOWING DATES:
- BETWEEN DECEMBER 15 AND JANUARY 1.
- WEDNESDAY BEFORE THANKSGIVING THRU THE SUNDAY AFTER THANKSGIVING.
- SATURDAY AND SUNDAY BEFORE MEMORIAL DAY AND LABOR DAY.
- SATURDAY OR SUNDAY WHEN JULY 4 FALLS ON A FRIDAY OR MONDAY.

10. REMOVAL AND DISPOSAL OF EXISTING ABANDONDED UTILITIES (EITHER PERVIOUSLY ABANDONDED OR ABANDONDED DURING THIS PROJECT) REQUIRED TO SUPPORT THIS PROJECT SHALL BE PERFORMED AND PAID FOR AS INDICATED ON THE PLANS.

11. COORDINATE WITH ADJACENT PROJECTS.

12. COVER PERMANENT SIGNS IF NOT USED OR APPLICABLE TO CURRENT OR SUBSEQUENT PHASES. THIS IS SUBSIDARY TO ITEM 502.

13. ADVANCE WARNING SIGNS AND LANE CLOSURES MUST BE MOVED UP PERIODICALLY IN ORDER TO KEEP UP WITH THE MOVING WORK ZONE. AS WORK PROGRESSES, THE LANE CLOSURE SIGNING AND
APPROPRIATE BARRICADES MUST FOLLOW APPLICABLE STANDARDS.

2. SAFETY

1. THE CONTRACTOR WILL PROVIDE, CONSTRUCT AND MAINTAIN BARRICADES AND SIGNS IN ACCORDANCE WITH STATE STANDARDS BC (1-12)-21. ANY SIGNS REQUIRED THAT ARE NOT DETAILED IN THE STANDARD SHEETS SHALL BE IN CONFORMANCE WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AND THE "STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS."

2. BARRICADES AND WARNING SIGNS SHALL BE PLACED AS INDICATED ON THE PLANS. THIS SHALL BE CONSIDERED THE MINIMUM REQUIRED TO PROVIDE FOR THE SAFETY OF TRAFFIC DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN OTHER SUCH BARRICADES AND SIGNS DEEMED NECESSARY BY THE ENGINEER OR AS DIRECTED BY FIELD CONDITIONS TO PROVIDE FOR THE PASSAGE OF TRAFFIC IN SAFETY AT ALL TIMES.

3. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN FLAGGERS AS DIRECTED/APPROVED BY BEXAR COUNTY, AT SUCH POINTS, AND FOR SUCH PERIODS OF TIME AS MAY BE REQUIRED, TO PROVIDE FOR THE SAFETY OF THE TRAVELING PUBLIC AND THE CONTRACTORS PERSONNEL.

4. THE CONTRACTOR SHALL KEEP THE ROADWAY CLEAN AND FREE OF DIRT OR OTHER MATERIALS DURING HAULING OPERATIONS. IF THE CONTRACTOR DOES NOT MAINTAIN A CLEAN ROADWAY, THEY SHALL CEASE ALL CONSTRUCTION OPERATIONS, WHEN DIRECTED BY BEXAR COUNTY, TO CLEAN THE ROADWAY TO THE SATISFACTION OF THE COUNTY.

3. HAULING EQUIPMENT

1. THE USE OF RUBBER-TIRED EQUIPMENT WILL BE REQUIRED FOR MOVING DIRT OR OTHER MATERIALS ALONG OR ACROSS PAVEMENT SURFACES. WHERE THE CONTRACTOR DESIRES TO MOVE ANY EQUIPMENT NOT LICENSED FOR OPERATION ON PUBLIC HIGHWAYS, ON OR ACROSS PAVEMENT, THEY SHALL PROTECT THE PAVEMENT FROM DAMAGE AS DIRECTED/APPROVED BY THE COUNTY.

2. THROUGHOUT CONSTRUCTION OPERATIONS, THE CONTRACTOR WILL BE REQUIRED TO CONDUCT THEIR HAULING OPERATIONS IN A MANNER SUCH THAT VEHICLES WILL NOT HAUL OVER PREVIOUSLY RECOMPACTED SUBGRADE OR COMPACTED BASE MATERIAL, EXCEPT IN SHORT SECTIONS FOR DUMPING MANIPULATIONS.

4. FINAL CLEAN UP

UPON COMPLETION OF THE WORK AND BEFORE FINAL ACCEPTANCE, THE CONTRACTOR SHALL CLEAR AND REMOVE FROM THE SITE ALL SURPLUS AND DISCARDED MATERIALS AND DEBRIS OF EVERY KIND AND LEAVE THE ENTIRE PROJECT IN A SMOOTH, NEAT AND SIGHTLY CONDITION.

5. PAYMENT

ALL BARRICADES, SIGNS, AND FLAGGERS SHALL BE SUBSIDIARY TO ITEM 502 BARRICADES, SIGNS AND TRAFFIC HANDLING. ALL EROSION AND SEDIMENT CONTROL DEVICES WILL BE PAID FOR UNDER ITEM 506 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS. ALL WORK ZONE PAVEMENT MARKINGS WILL BE PAID FOR UNDER ITEM 662 WORK ZONE PAVEMENT MARKINGS. ALL OTHER WORK AND MATERIALS SHALL BE SUBSIDIARY TO THE VARIOUS BID ITEMS UNLESS OTHERWISE INDICATED IN THE PLANS.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
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TRAFFIC CONTROL PLAN GENERAL NOTES

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	31

Plotted on: 7/27/2023

TRAFFIC CONTROL PLAN SEQUENCE OF WORK

(1) THIS PROJECT WILL BE CONSTRUCTED IN (3) PHASES. BEFORE THE COMMENCEMENT OF EACH PHASE, INSTALL ADVANCE WARNING SIGNS, TEMPORARY SIGNS AND BARRICADES AS SHOWN ON THE PLANS AND/OR AS DIRECTED/APPROVED BY THE ENGINEER. DAILY LANE CLOSURES WILL BE USED IN ACCORDANCE WITH STATE TCP STANDARDS. DROP OFF CONDITIONS OF GREATER THAN 2" MUST HAVE A 3:1 SLOPE AT THE END OF EACH DAY, AS WELL AS THROUGHOUT THE PROJECT WHERE ACCESS TO ADJACENT PROPERTIES IS ALLOWED TO DRIVEWAYS AND SIDE STREETS.
(2) PREPARING ROW / REMOVAL OF EXISTING ITEMS TO BE DONE ONLY IN AREAS WHERE WORK IS OCCURING, AS PER THE PHASES NOTED BELOW.
(3) PLANING, SURFACE TREATMENTS AND OVERLAYS SHALL BE PERFORMED IN THE DIRECTION OF TRAFFIC. BEGIN SURFACE CONSTRUCTION ON HIGH SIDE OF ROAD TO AVOID WATER PONDING ISSUES.
(4) THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE REQUIREMENTS OF ITEM 7, "LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC" AND ITEM 502, "BARRICADES, SIGNS, AND TRAFFIC HANDLING", OF THE STANDARD SPECIFICATIONS, AND TO THE GENERAL NOTES.
(5) A BRIEF DESCRIPTION OF THESE PHASES ARE AS FOLLOWS:

PHASE 1

A) SET ADVANCED WARNING SIGNS IN ACCORDANCE WITH TXDOT BC STANDARDS

B) SET EROSION CONTROL MEASURES AS SHOWN ON SW3P LAYOUTS AND AS DIRECTED BY THE ENGINEER

what type of layout?
TA?

STEP 1- CONSTRUCT TEMP WIDENING

A) USE TXDOT TCP STANDARD TCP(2-2)-18 FOR ONE-LANE TWO-WAY TRAFFIC CONTROL

B) DURING OFF-PEAK HOURS, CONSTRUCT TEMPORARY DRAINAGE AND WIDENING TO THE LIMITS SHOWN ON THE PHASE ONE LAYOUTS

STEP 2- PROPOSED PAVEMENT, DRAINAGE, AND SUP

A) INSTALL WORK ZONE PAVEMENT MARKINGS AS SHOWN AND SHIFT TRAFFIC INTO THE PHASE ONE CONFIGURATION

B) SET BARRIER, CHANNELIZING DEVICES, AND BARRICADES AS SHOWN AND AS DIRECTED BY THE ENGINEER.

C) CONSTRUCT PROPOSED DRAINAGE STRUCTURES, PAVEMENT, CURB/CURB & GUTTER, SUP, AND DITCHES TO THE LIMITS SHOWN IN THE PLANS. DO NOT CONSTRUCT THE FINAL LIFT OF HMAC UNTIL PHASE 3.

STEP 3- INTERSECTIONS AND TRANSITIONAL AREAS (NOT PROVIDED FOR 30%)

A) REFERENCING THE INTERSECTION PHASING SHEETS CONSTRUCT INTERSECTIONS CONNECTIONS

B) REFERNCING THE TRANSITIONAL DETAILS CONSTRUCT PHASE ONE TO PHASE TWO TRANSITIONS

PHASE 2

A) ADJUST ADVANCED WARNING SIGNS IN ACCORDANCE WITH TXDOT BC STANDARDS

B) SET EROSION CONTROL MEASURES AS SHOWN ON SW3P LAYOUTS AND AS DIRECTED BY THE ENGINEER

STEP 1- PROPOSED PAVEMENT, DRAINAGE, AND SUP

A) INSTALL WORK ZONE PAVEMENT MARKINGS AS SHOWN AND SHIFT TRAFFIC INTO THE PHASE TWO CONFIGURATION

B) SET BARRIER, CHANNELIZING DEVICES, AND BARRICADES AS SHOWN AND AS DIRECTED BY THE ENGINEER.

C) CONSTRUCT PROPOSED DRAINAGE STRUCTURES, PAVEMENT, CURB/CURB & GUTTER, SUP, AND DITCHES TO THE LIMITS SHOWN IN THE PLANS. DO NOT CONSTRUCT THE FINAL LIFT OF HMAC UNTIL PHASE 3.

STEP 2- INTERSECTIONS (NOT PROVIDED FOR 30%)

A) REFERENCING THE INTERSECTION PHASING SHEETS CONSTRUCT INTERSECTIONS CONNECTIONS

PHASE 3- (NOT PROVIDED FOR 30%)

A) ADJUST ADVANCED WARNING SIGNS IN ACCORDANCE WITH TXDOT BC STANDARDS

B) SET EROSION CONTROL MEASURES AS SHOWN ON SW3P LAYOUTS AND AS DIRECTED BY THE ENGINEER

STEP 1- MEDIAN AND CENTER LEFT-TURN LANES

A) INSTALL WORK ZONE PAVEMENT MARKINGS AS SHOWN AND CLOSE INSIDE EASTBOUND AND WESTBOUND LANES

B) SET CHANNELIZING DEVICES AND BARRICADES AS SHOWN AND AS DIRECTED BY THE ENGINEER.

C) CONSTRUCT PROPOSED MEDIANS AND LEFT-TURN LANES TO THE LIMITS SHOWN IN THE PLANS.

STEP 2- FINAL OVERLAY AND PROJECT COMPLETION

A) PLACE SHORT-TERM TABS IN THE FINAL PAVEMENT MARKING CONFIGURATION

B) USING MOBILE OPERATION PLACE FINAL HMAC LIFT

C) PLACE SHORT-TERM TABS IN THE FINAL PAVEMENT MARKING CONFIGURATION

D) PLACE FINAL PAVEMENT MARKINGS AS SHOWN IN THE PLANS

E) INSTALL PROPOSED SIGNS

F) PERFORM FINAL CLEANUP

DESIGN

INTERIM REVIEW
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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
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TRAFFIC CONTROL PLAN SEQUENCE OF WORK

SHEET 1 OF 1

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	32

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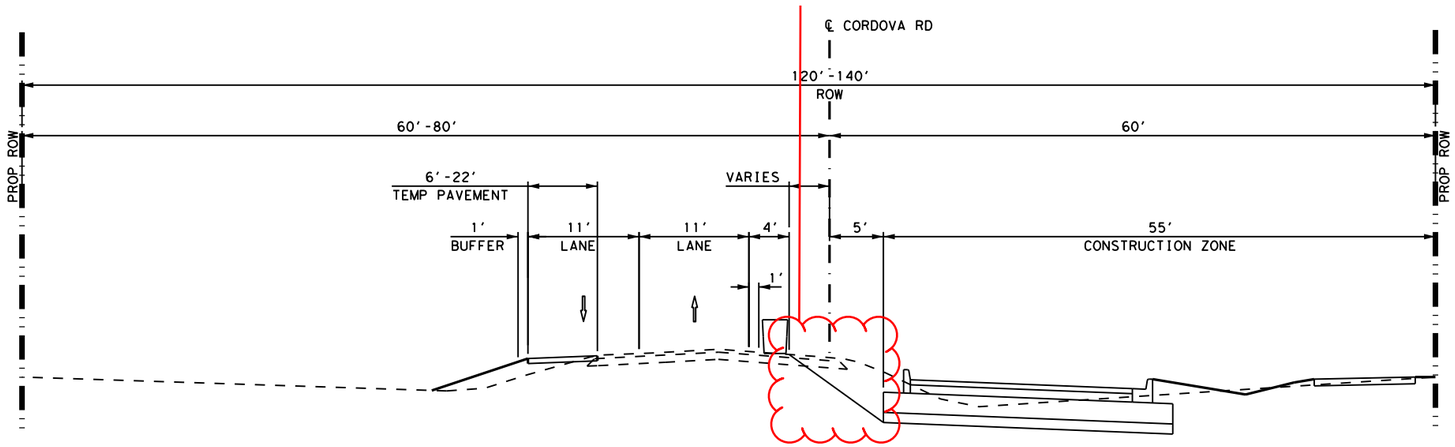
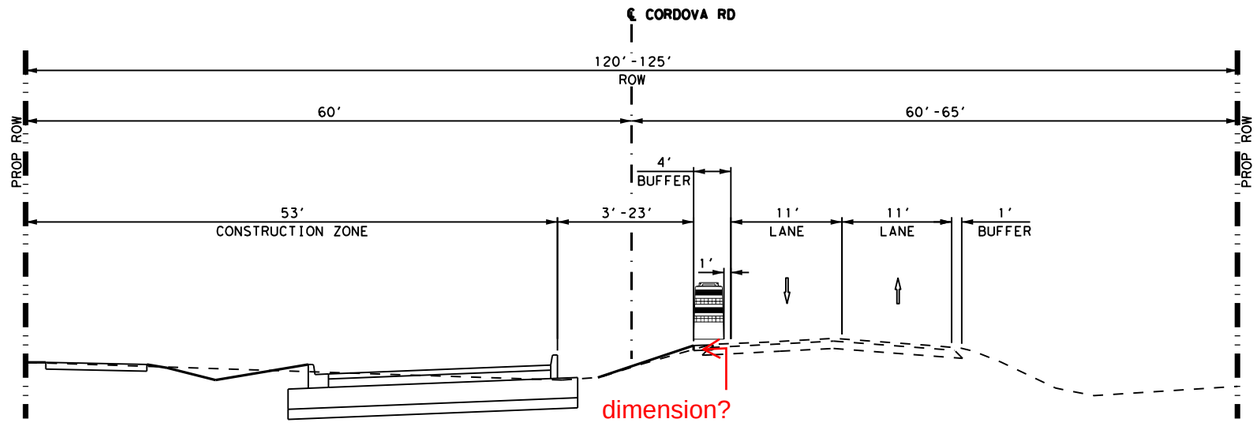
what happens in the interim?



CORDOVA RD - PHASE I

STA 120+45 TO STA 151+85

NTS



CORDOVA RD - PHASE I

STA 154+70 TO STA 160+05

NTS

DESIGN

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ENGINEER: STEVEN J. TATE

P.E. SERIAL NO: 131443

DATE: 7/27/2023

APPROVAL

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ENGINEER: JOHN A. TYLER

P.E. SERIAL NO: 105193

DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS

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TRAFFIC CONTROL PLAN TYPICAL SECTIONS PHASE I

SHEET 1 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	33

Plotted on: 7/27/2023

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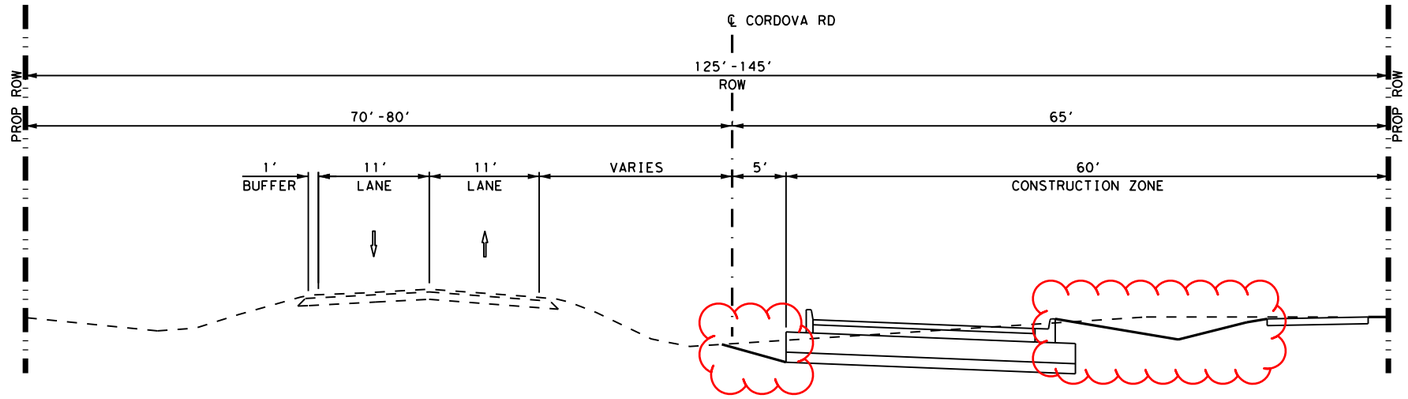
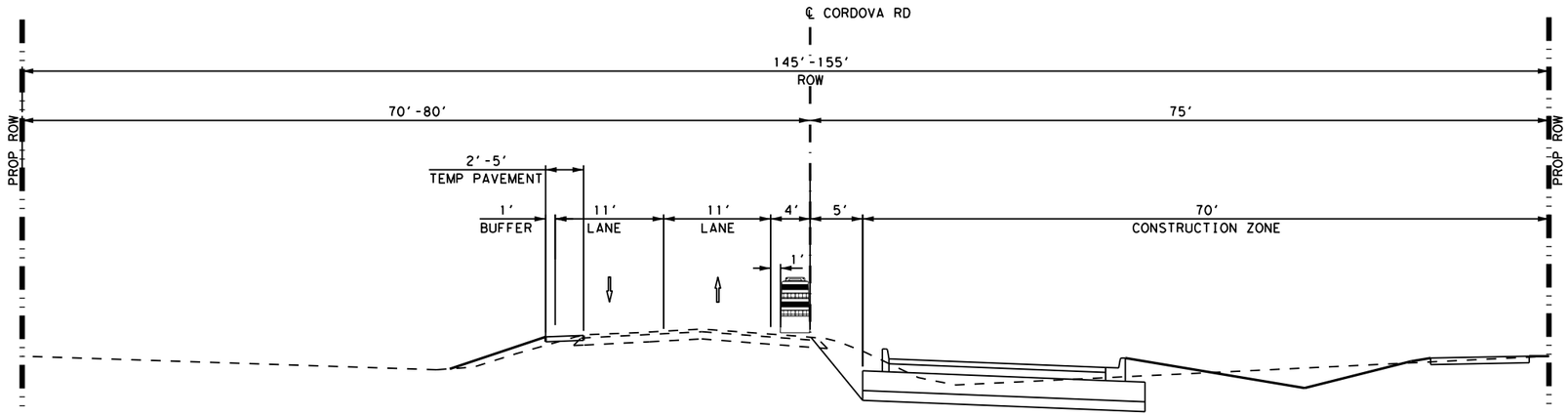
Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\TCP\Phase1\1277500_TCP_Typical02.dgn



CORDOVA RD - PHASE I

STA 166+00 TO STA 185+00
STA 216+00 TO STA 228+45
STA 264+00 TO STA 270+00
NTS



CORDOVA RD - PHASE I

STA 188+00 TO STA 212+50
STA 260+50 TO STA 264+00
NTS

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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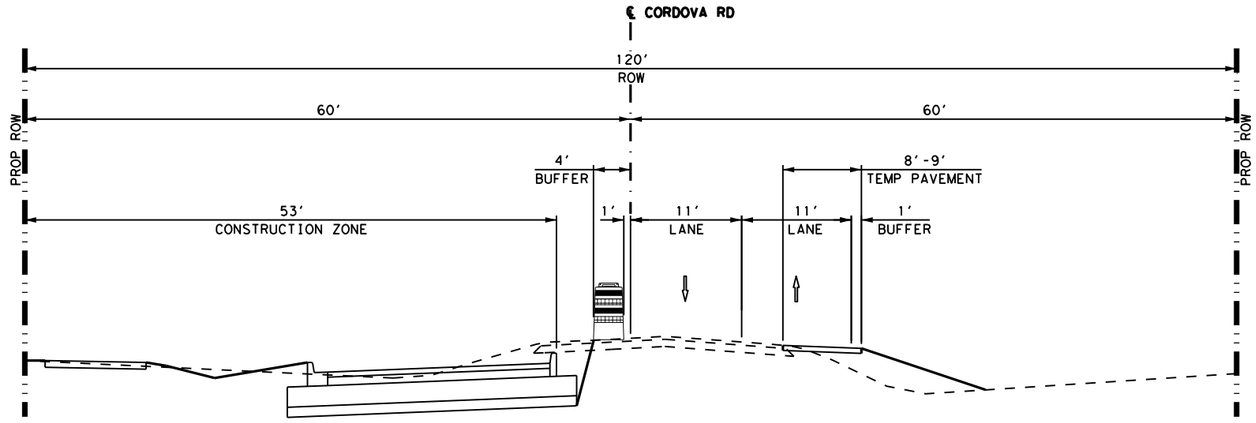
CORDOVA RD

TRAFFIC CONTROL PLAN TYPICAL SECTIONS PHASE I

SHEET 2 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	34

Plotted on: 7/27/2023



CORDOVA RD - PHASE I

STA 233+45 TO STA 257+25

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.

ENGINEER: STEVEN J. TATE

P.E. SERIAL NO: 131443

DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.

ENGINEER: JOHN A. TYLER

P.E. SERIAL NO: 105193

DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

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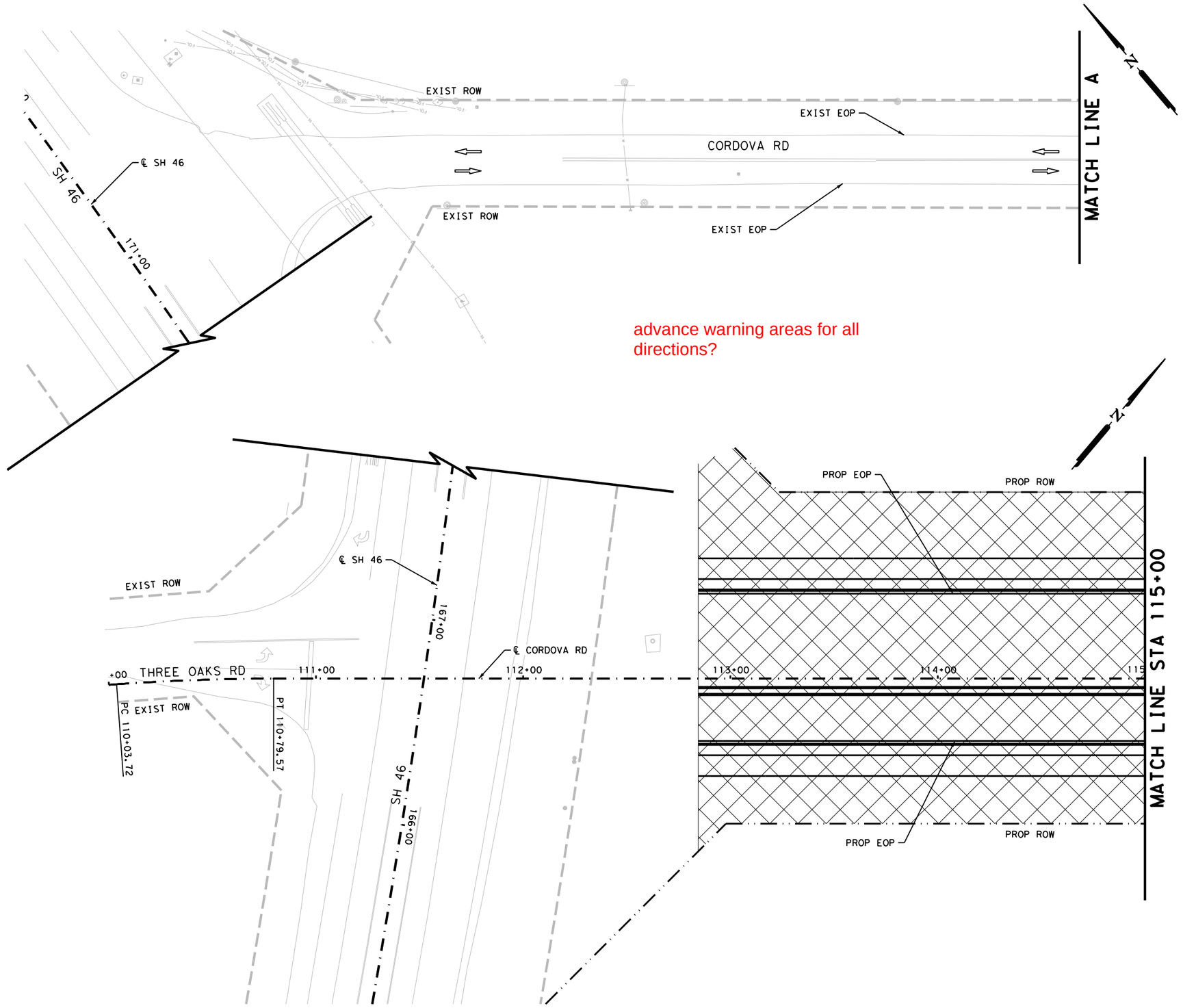
TRAFFIC CONTROL PLAN TYPICAL SECTIONS PHASE I

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	35

Design Filename: P:\127\75\00\Design\Civil\TCP\Phase1\1277500_TCP_Typical03.dgn

Plotted on: 7/27/2023



LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

[A] WK ZN PAV MRK NON-REMOV (W)6"(SLD)

[B] WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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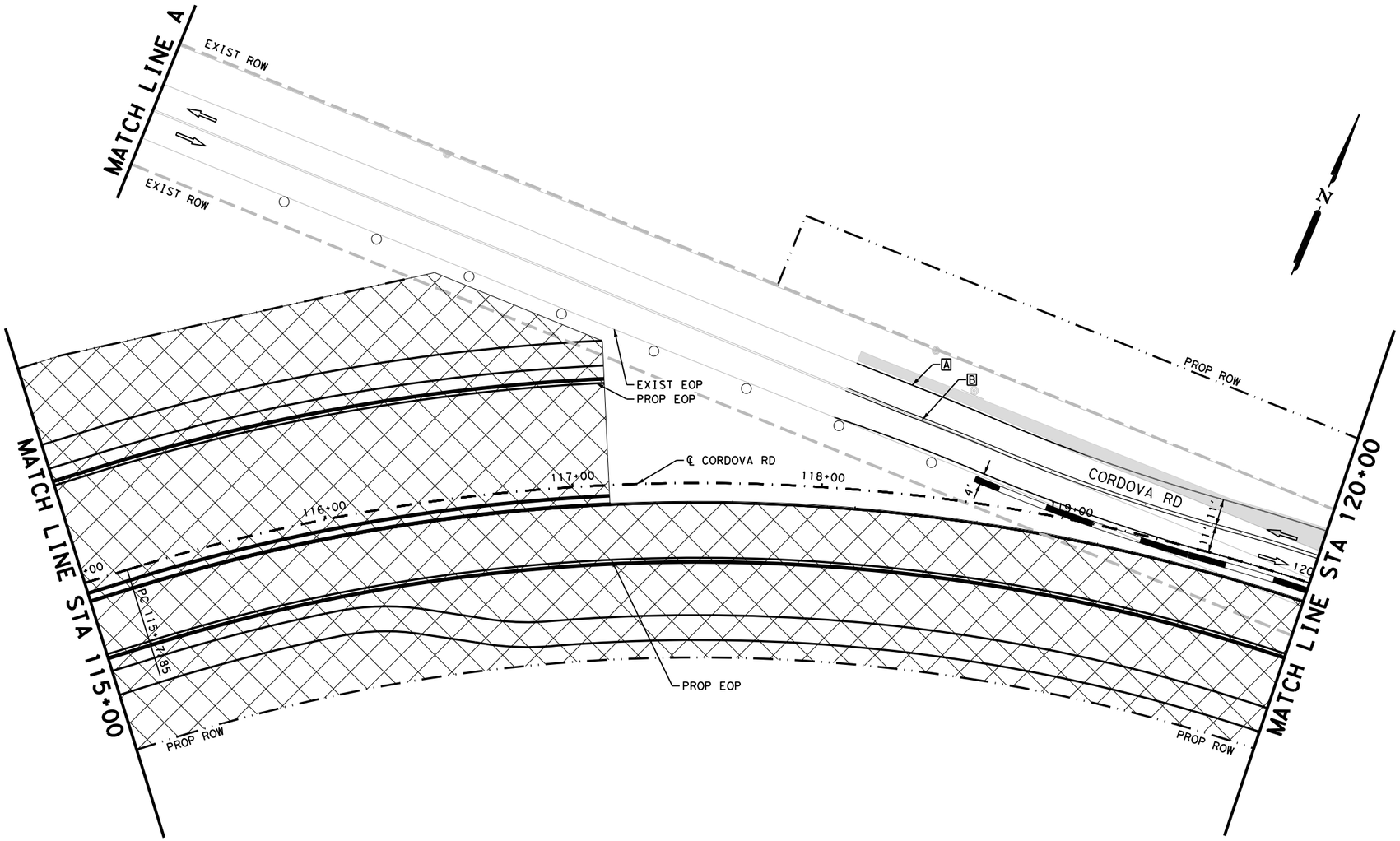
TRAFFIC CONTROL PLAN PHASE I

BEGIN PROJECT TO STA 115+00

SHEET 1 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	36

Design Filename: P:\127\75\00\Design\Civil\TCP\Phase1\1277500_TCP_PH1_01.dgn



LEGEND

- CONSTRUCTION AREA PHASE I
- TEMPORARY PAVEMENT
- TYPE III BARRICADE
- SIGN
- TRAFFIC FLOW ARROWS
- PLASTIC DRUMS
- LOW PROFILE CONCRETE BARRIER (LPCB)
- [A] WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- [B] WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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TRAFFIC CONTROL PLAN PHASE I

STA 115+00 TO STA 120+00

SHEET 2 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	37

Plotted on: 7/27/2023

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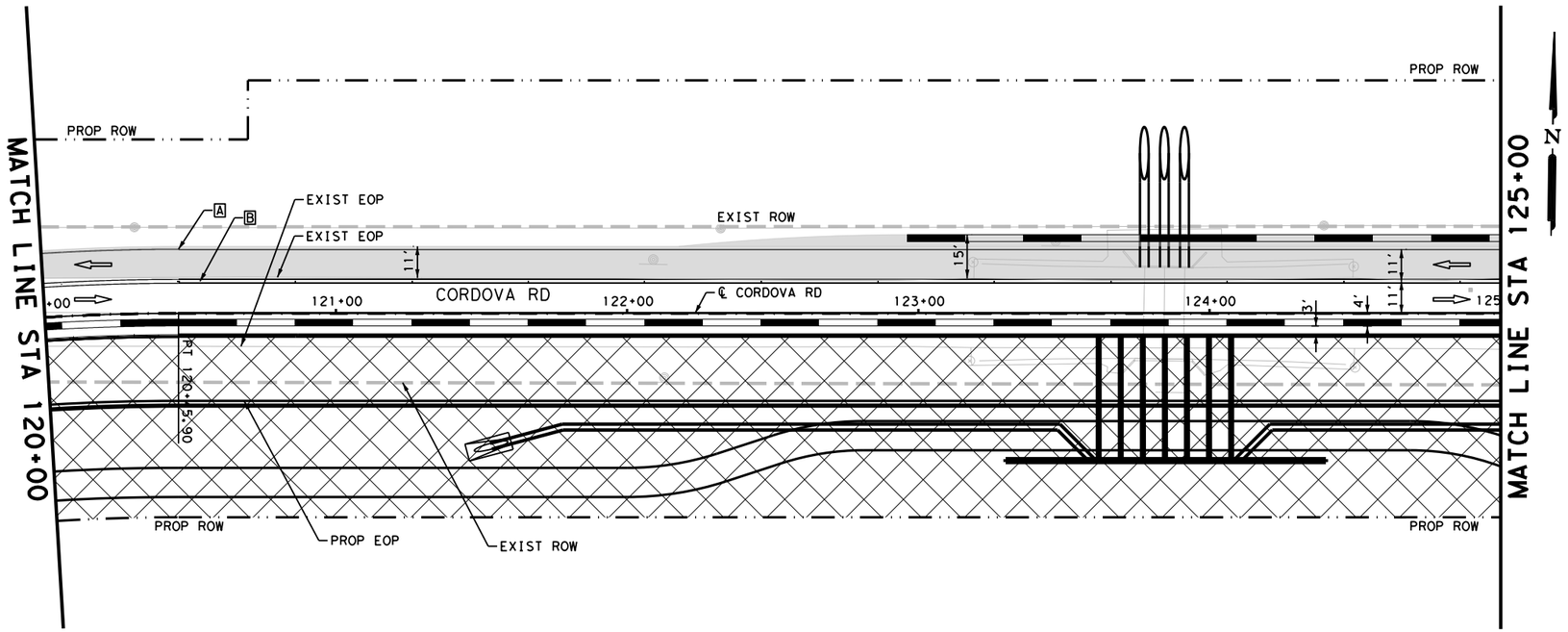

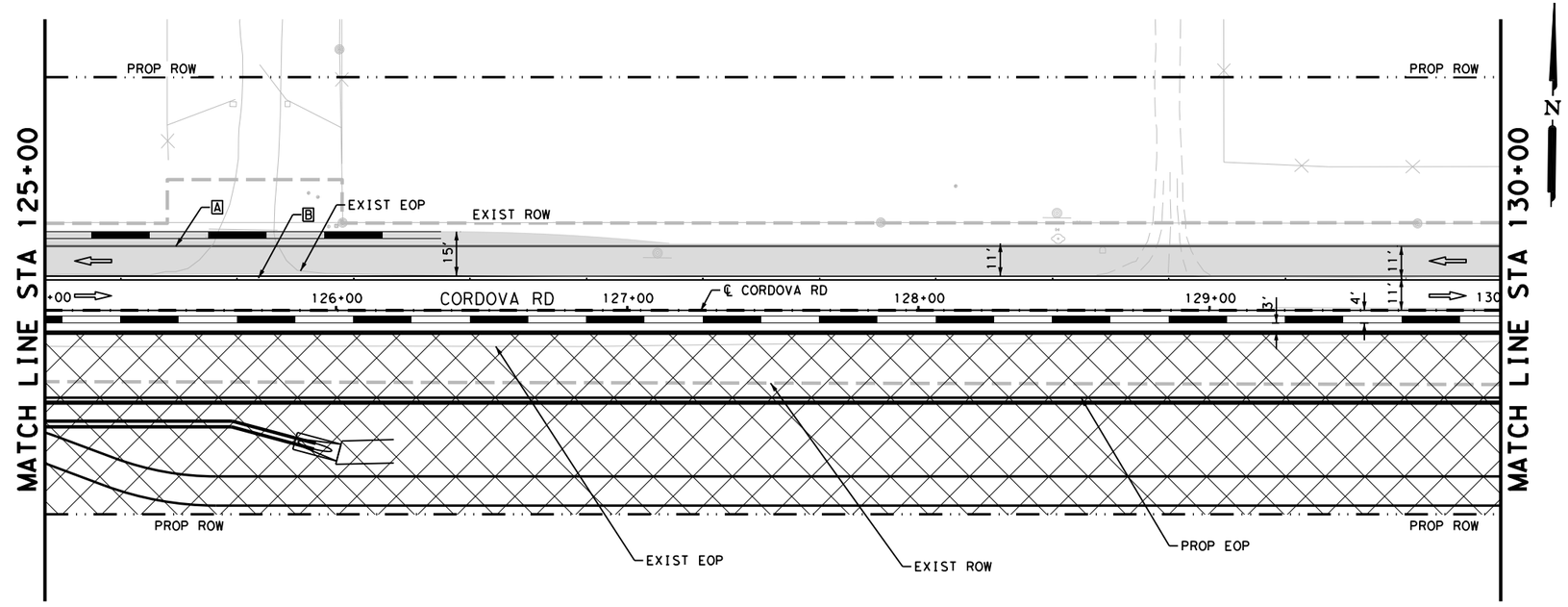

LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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TRAFFIC CONTROL PLAN PHASE I

STA 120+00 TO STA 130+00

SHEET 3 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	38

Plotted on: 7/27/2023

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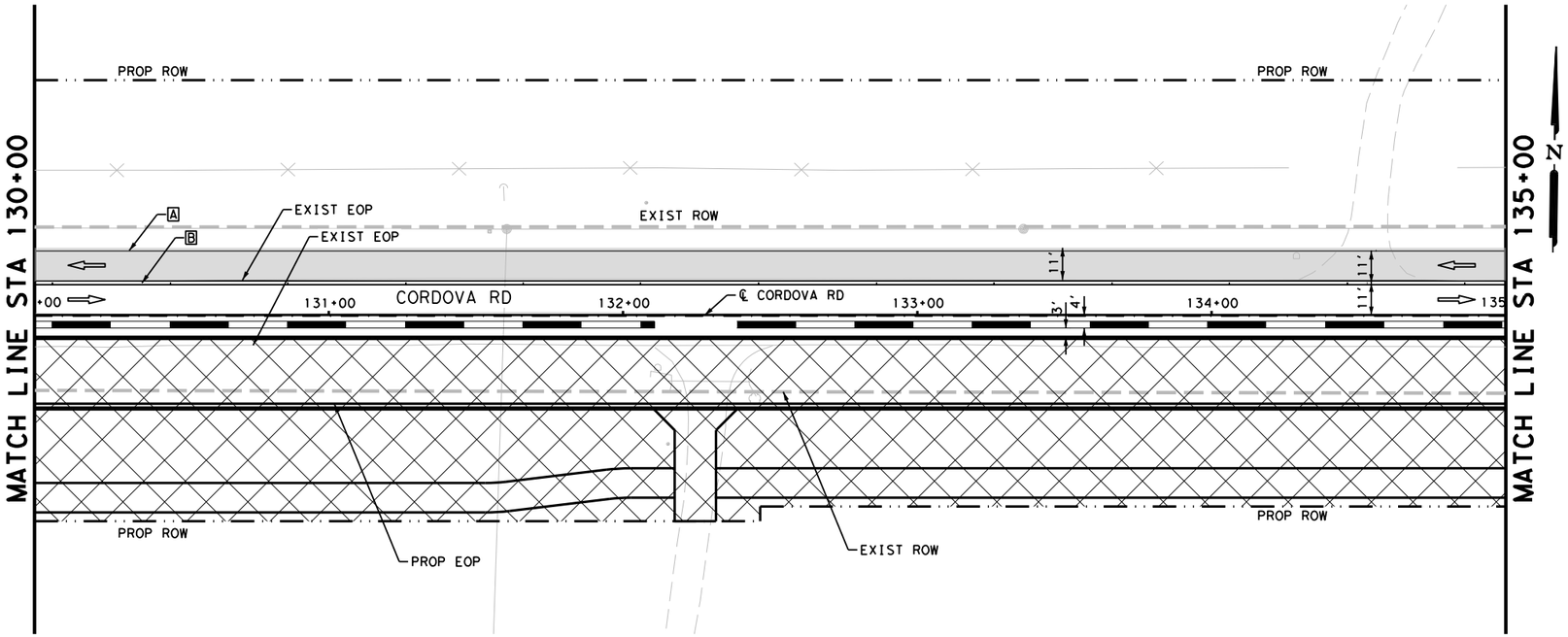

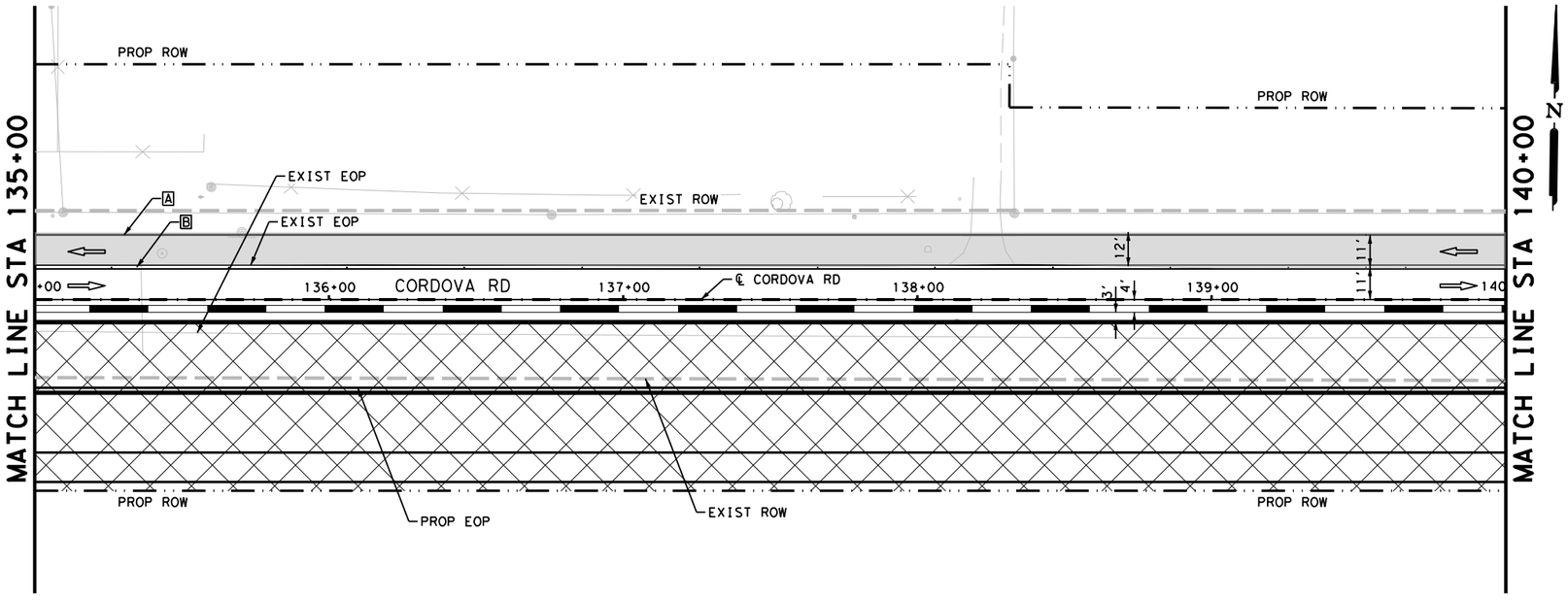

LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6" (SLD)

B WK ZN PAV MRK NON-REMOV (Y)6" (DBL) (SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

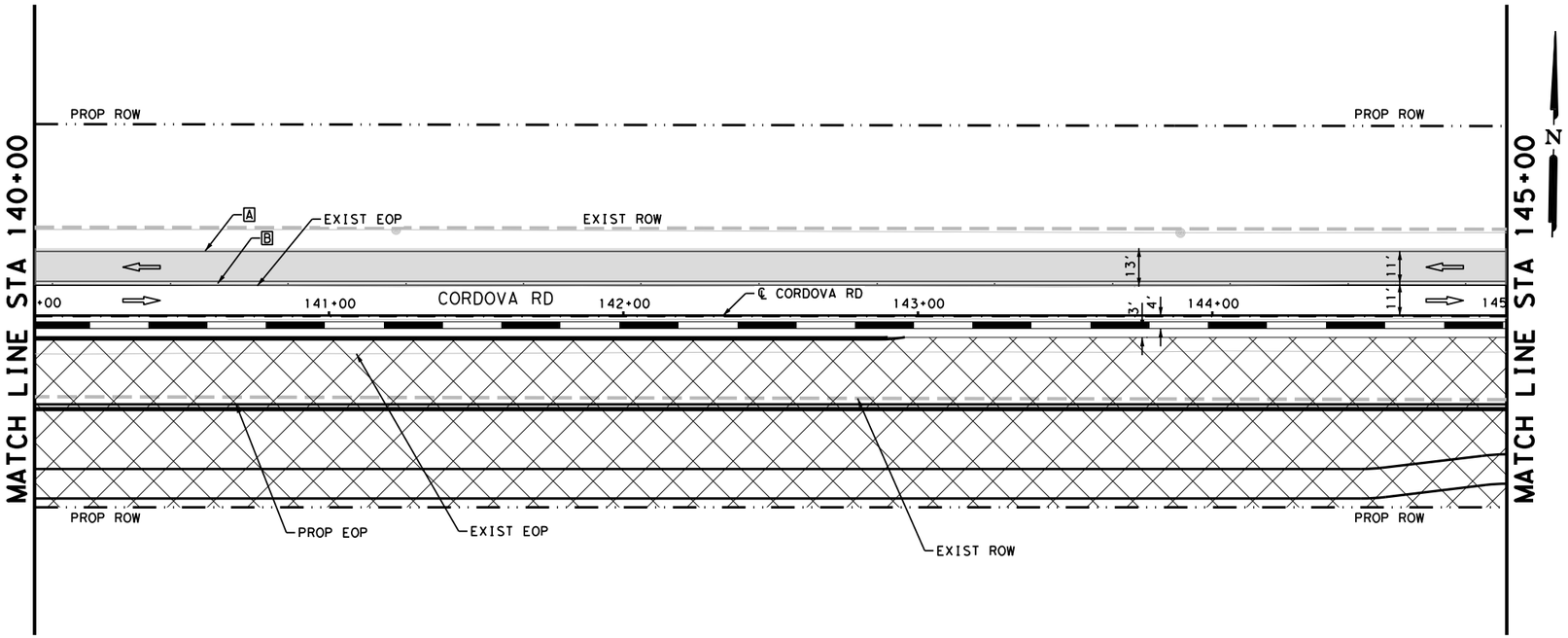
STA 130+00 TO STA 140+00

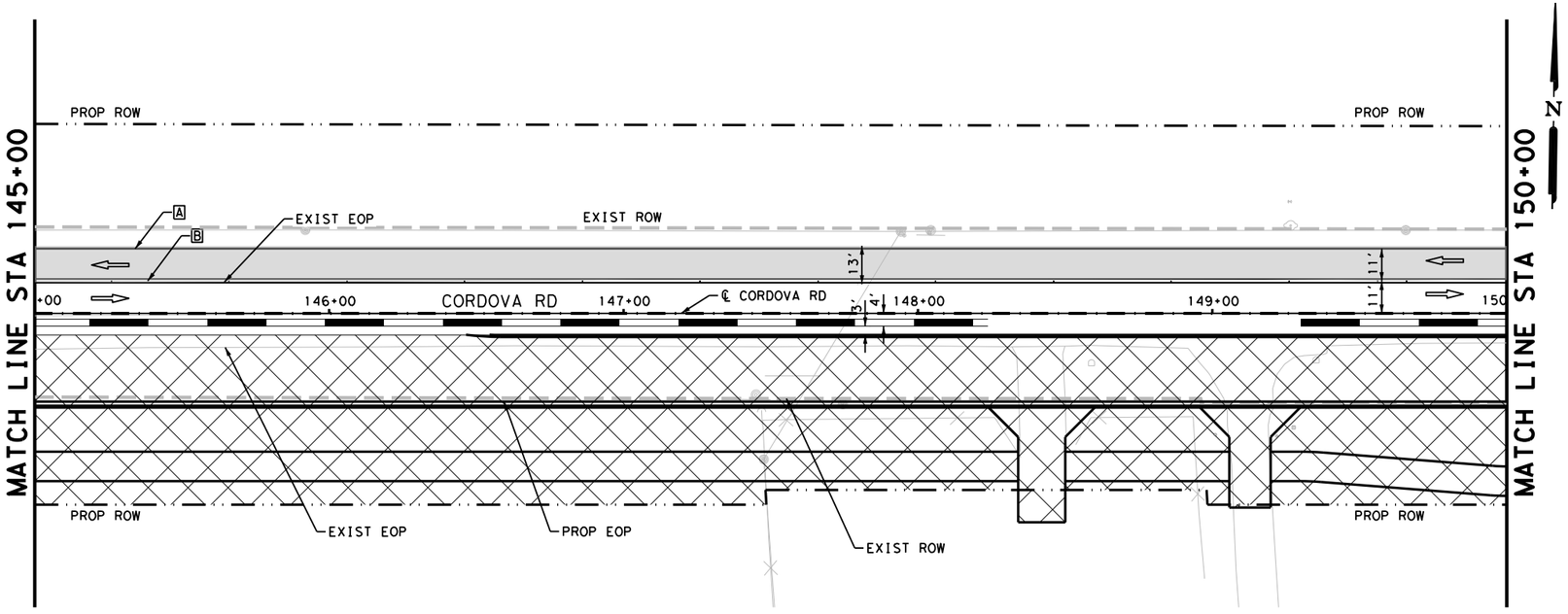
SHEET 4 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	39

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\TCP\Phase1\1277500_TCP_PH1_04.dgn





LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

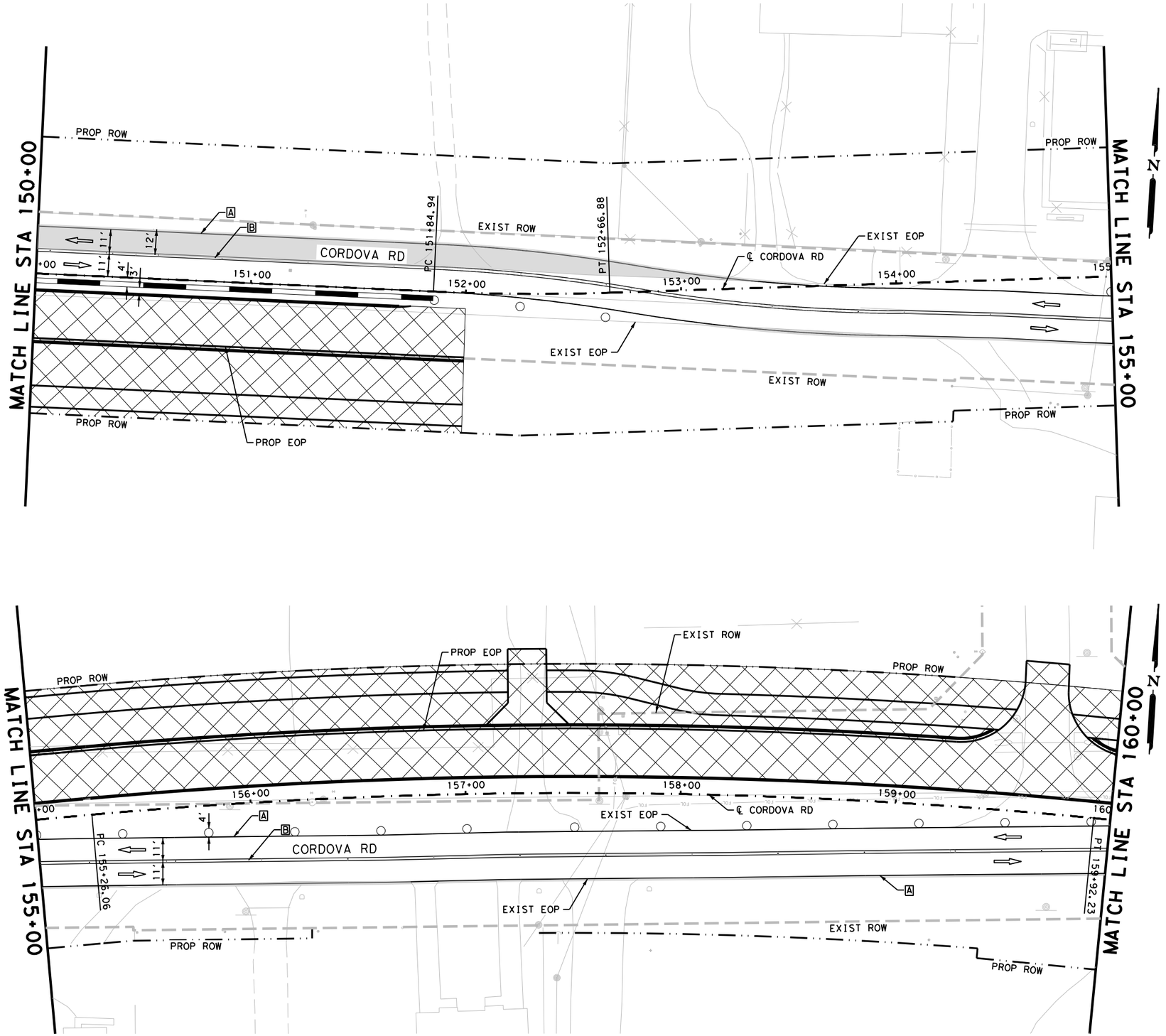
STA 140+00 TO STA 150+00

SHEET 5 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	40

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\TCP\Phase1\1277500_TCP_PH1_05.dgn



LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

[A] WK ZN PAV MRK NON-REMOV (W)6"(SLD)

[B] WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 150+00 TO STA 160+00

SHEET 6 OF 22

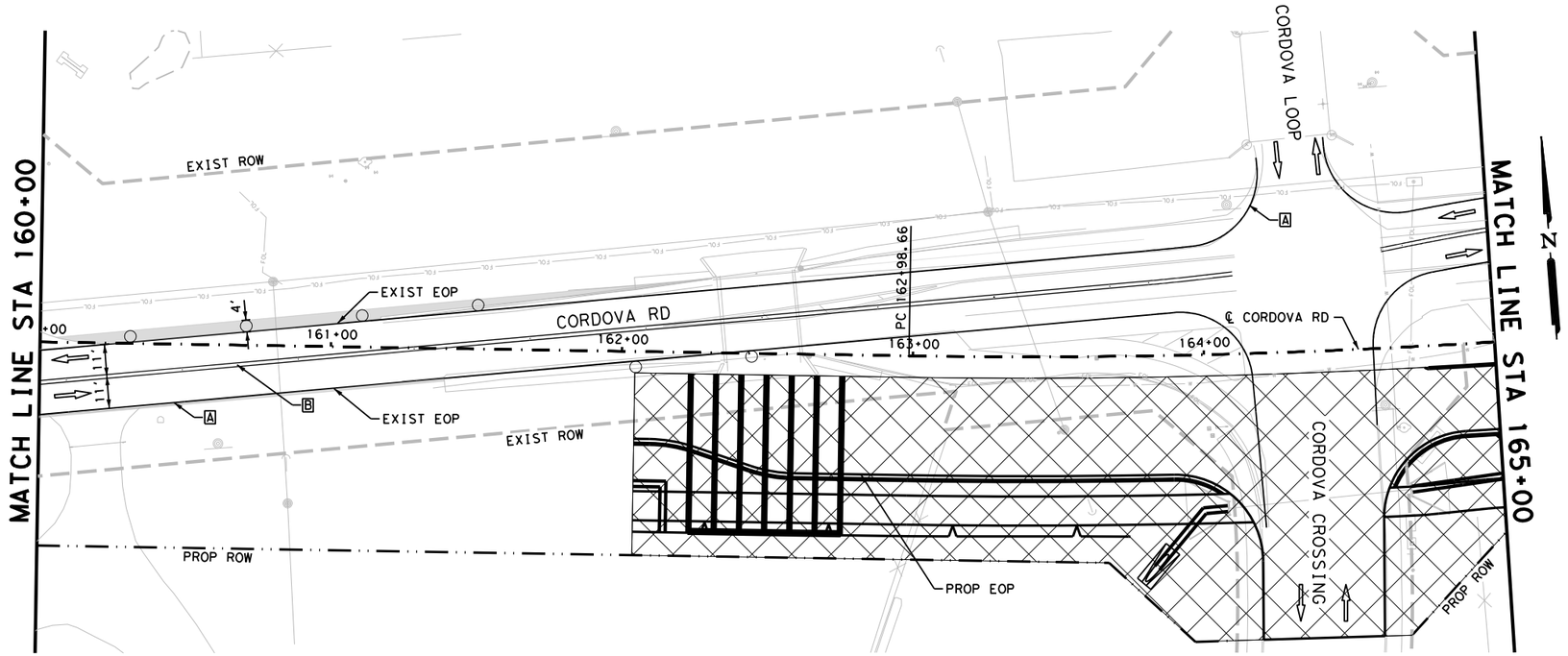
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	41

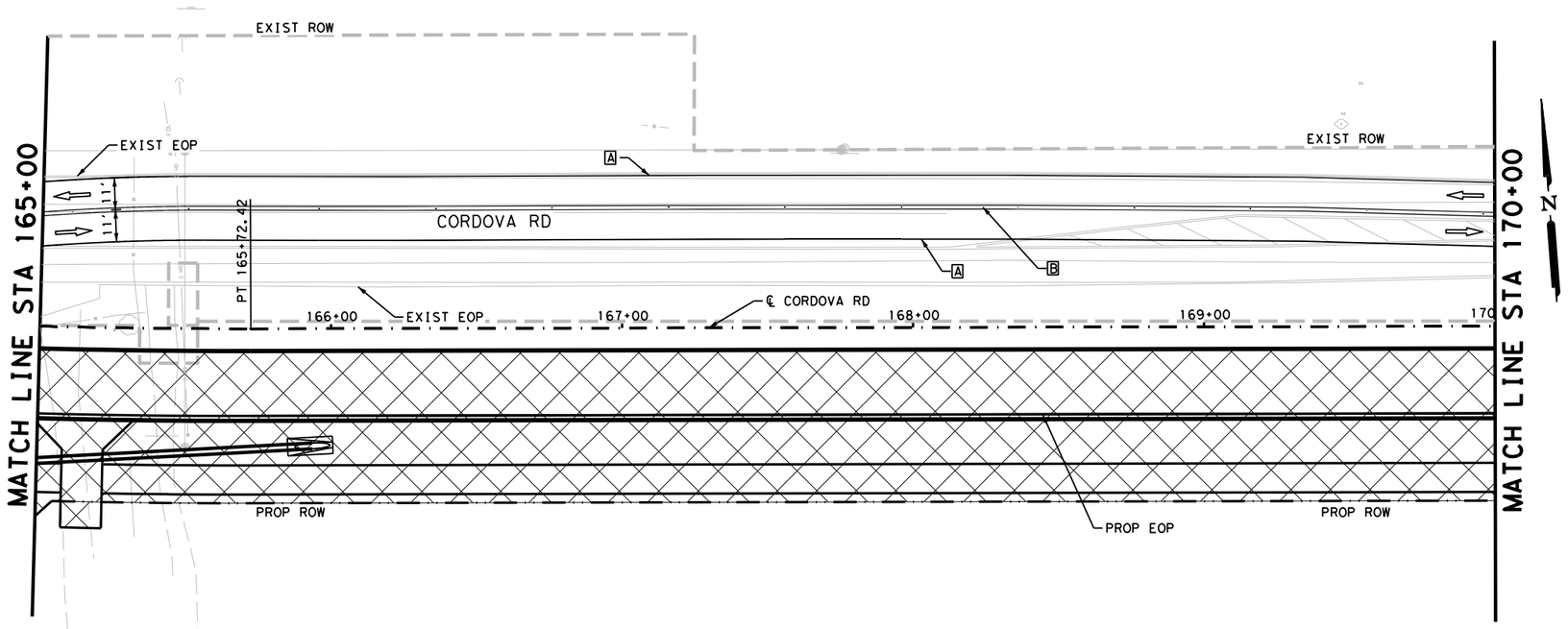
Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\TCP\Phase1\1277500_TCP_PH1_06.dgn

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\TCP\Phase1\1277500_TCP_PH1_07.dgn





LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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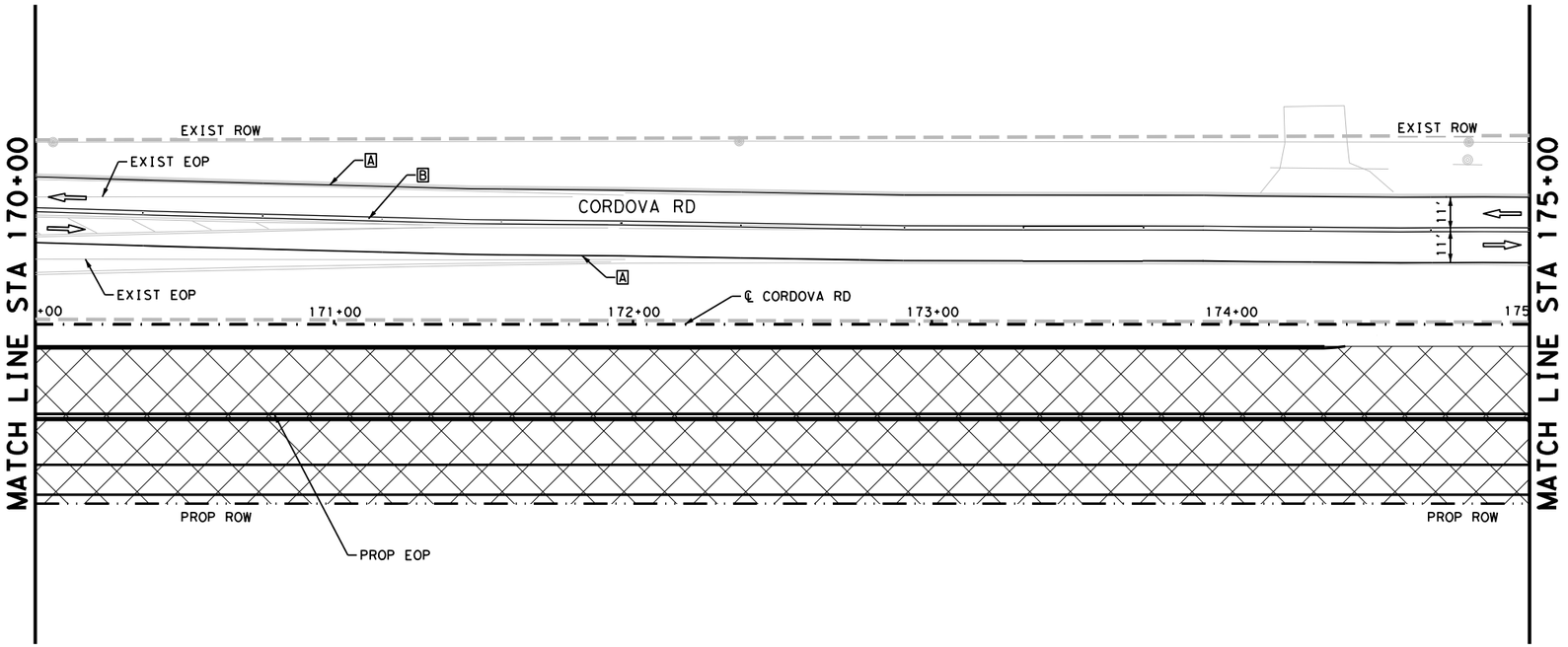
CORDOVA RD

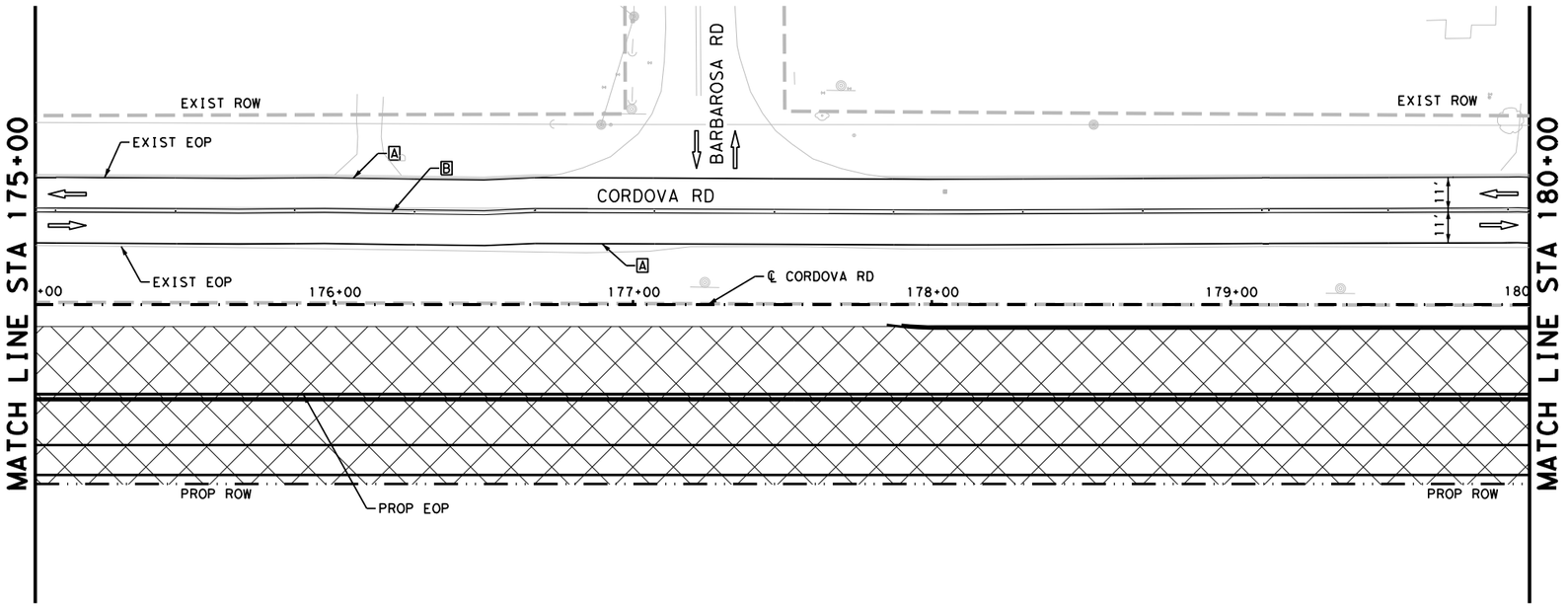
TRAFFIC CONTROL PLAN PHASE I

STA 160+00 TO STA 170+00

SHEET 7 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	42





LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

N

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 170+00 TO STA 180+00

SHEET 8 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	43

Plotted on: 7/27/2023

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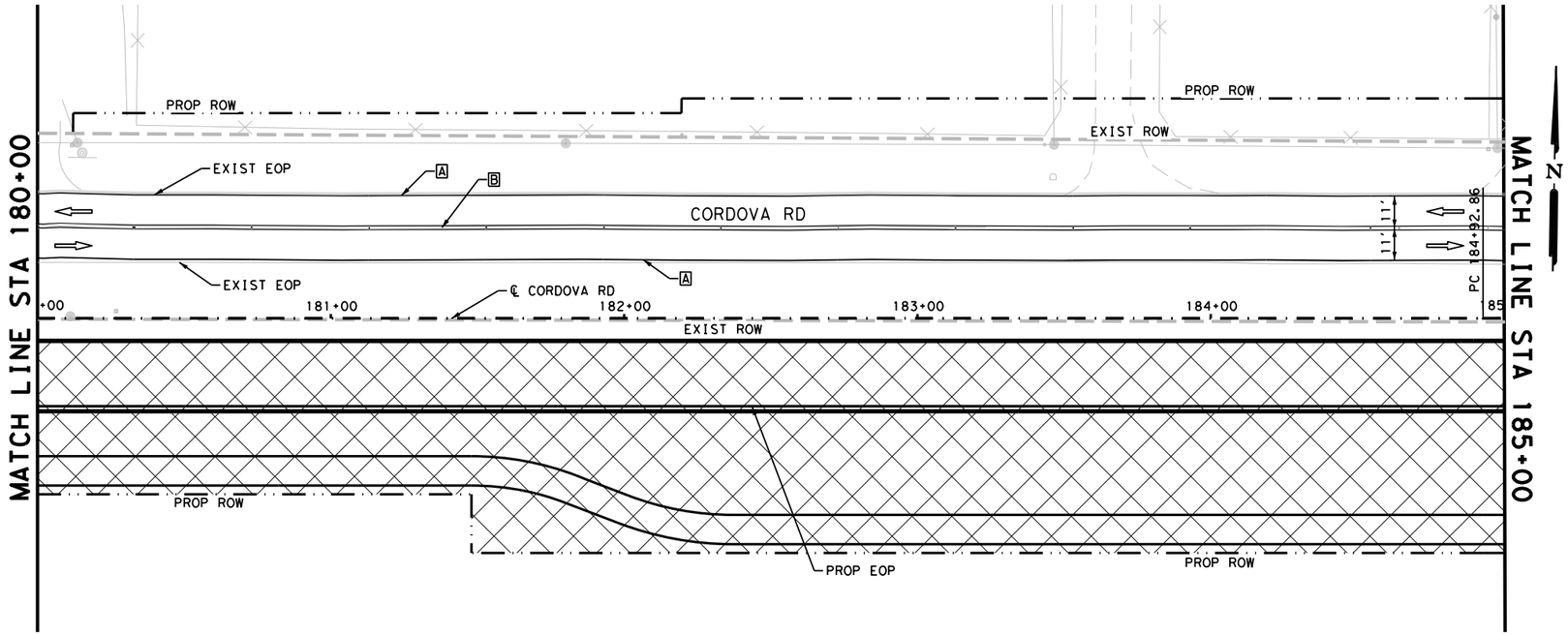

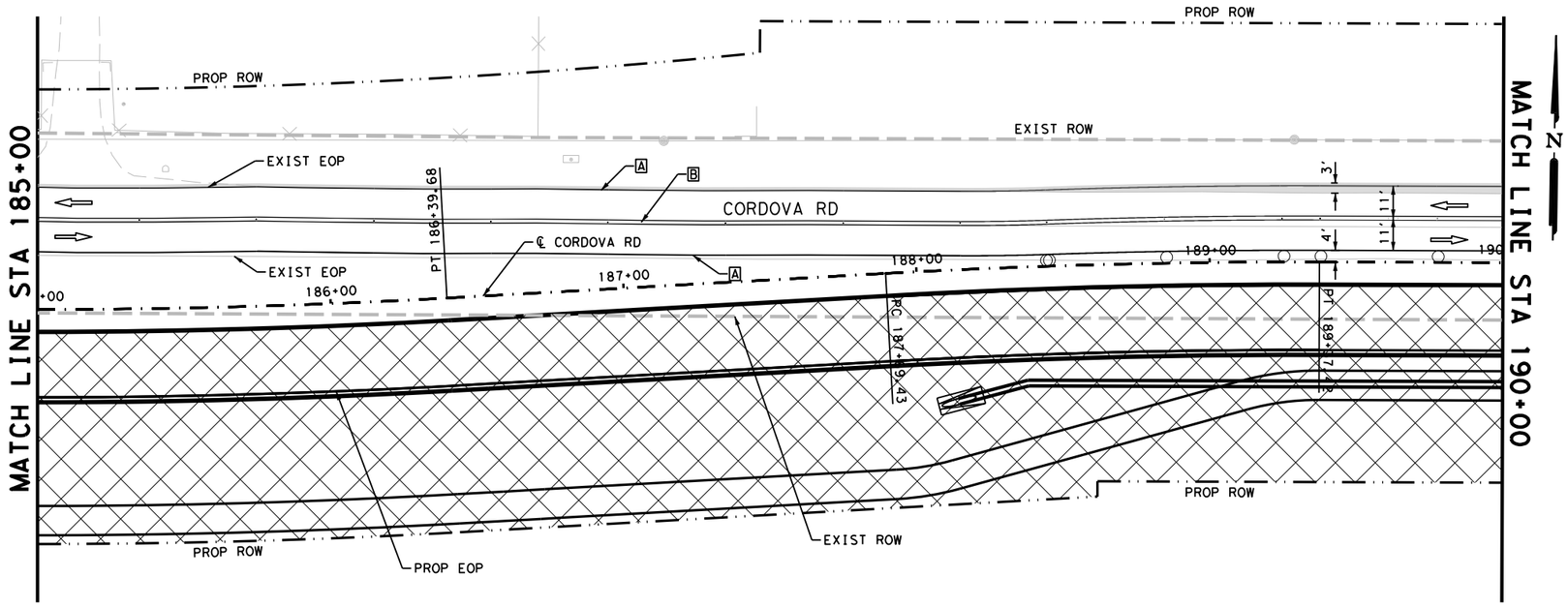

LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6" (SLD)

B WK ZN PAV MRK NON-REMOV (Y)6" (DBL) (SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 180+00 TO STA 190+00

SHEET 9 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	44

Plotted on: 7/27/2023

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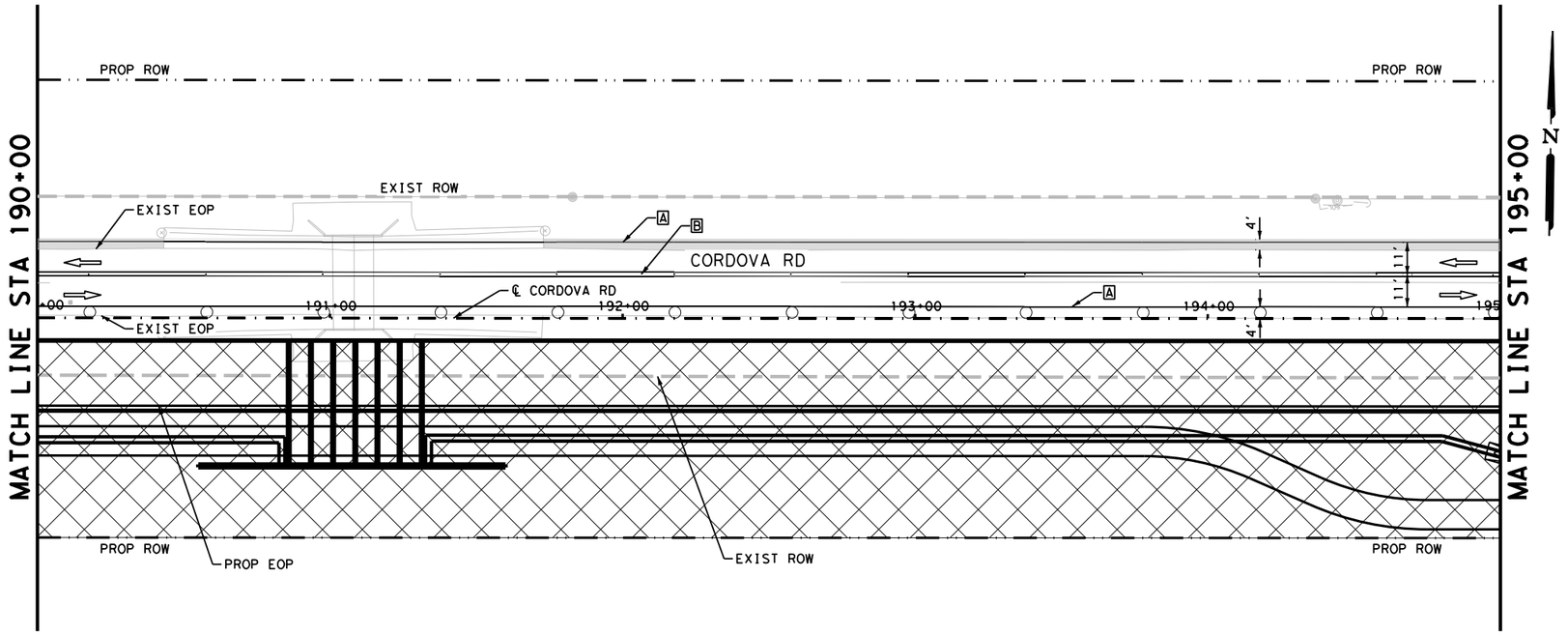

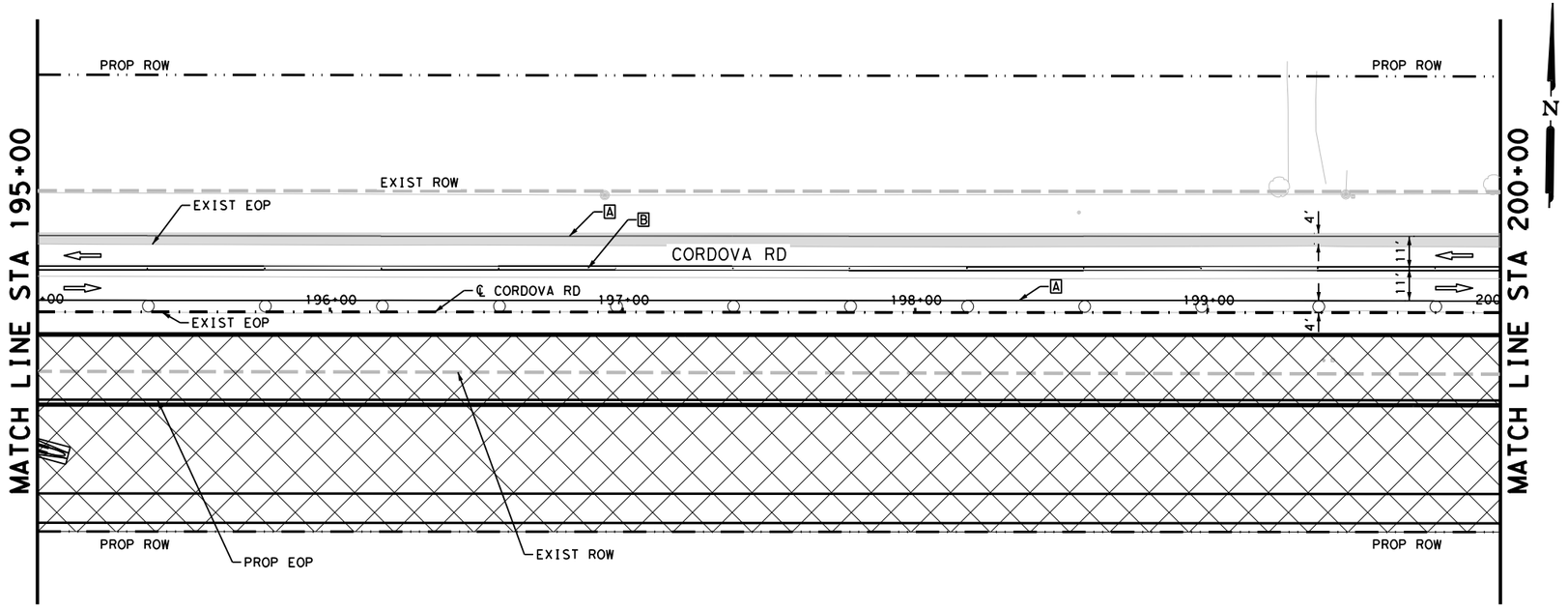

LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 190+00 TO STA 200+00

SHEET 10 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	45

Plotted on: 7/27/2023

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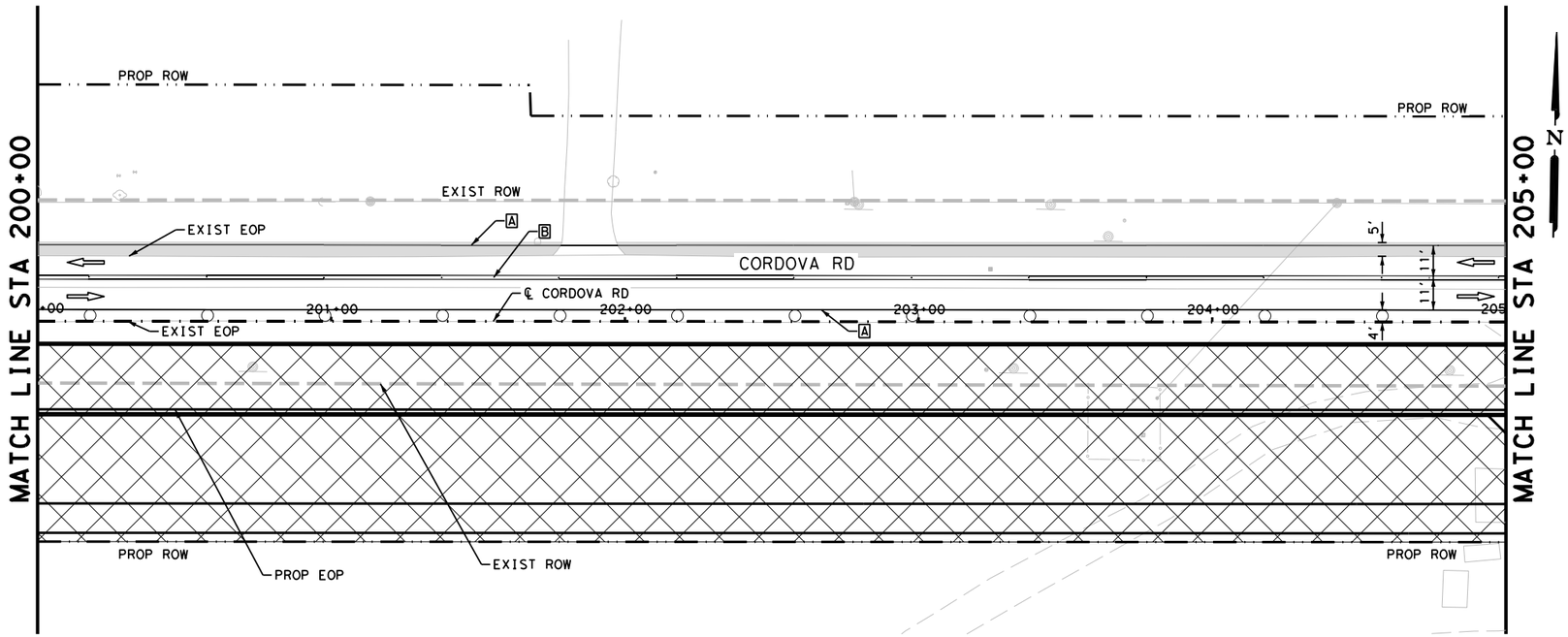

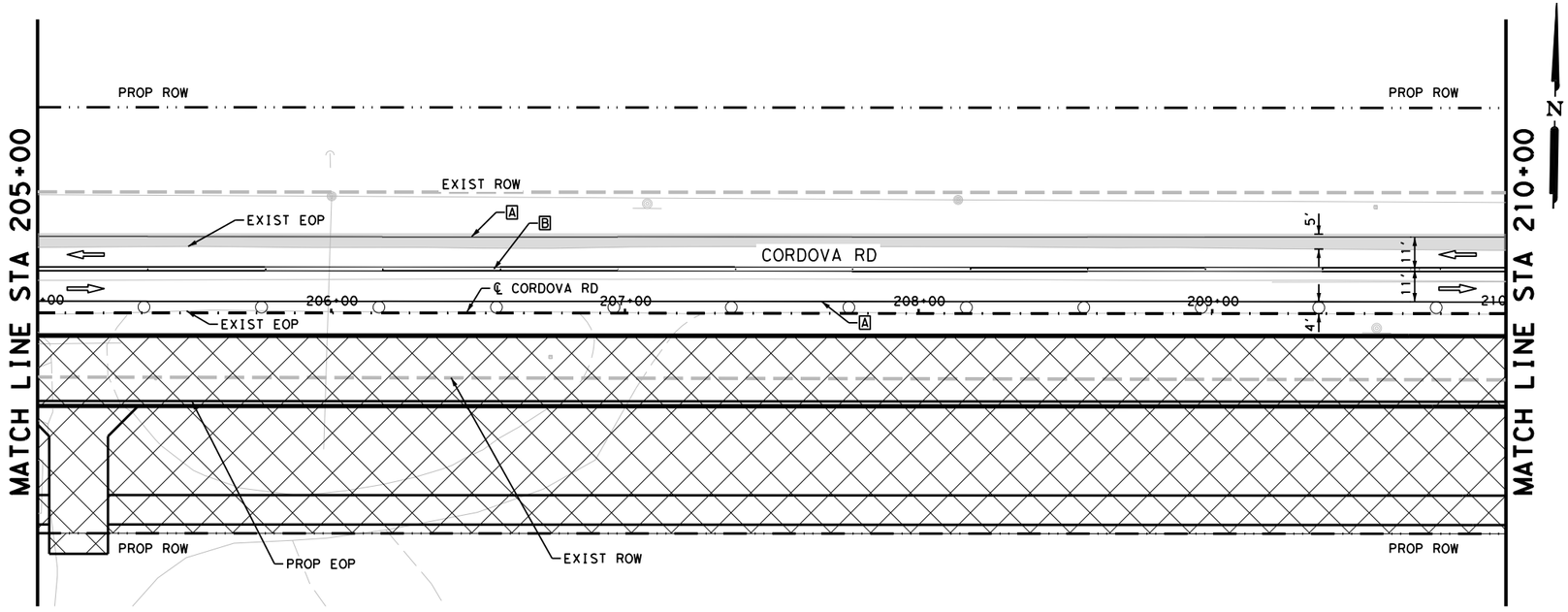

LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

[A] WK ZN PAV MRK NON-REMOV (W)6"(SLD)

[B] WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
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5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 200+00 TO STA 210+00

SHEET 11 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	46

Plotted on: 7/27/2023

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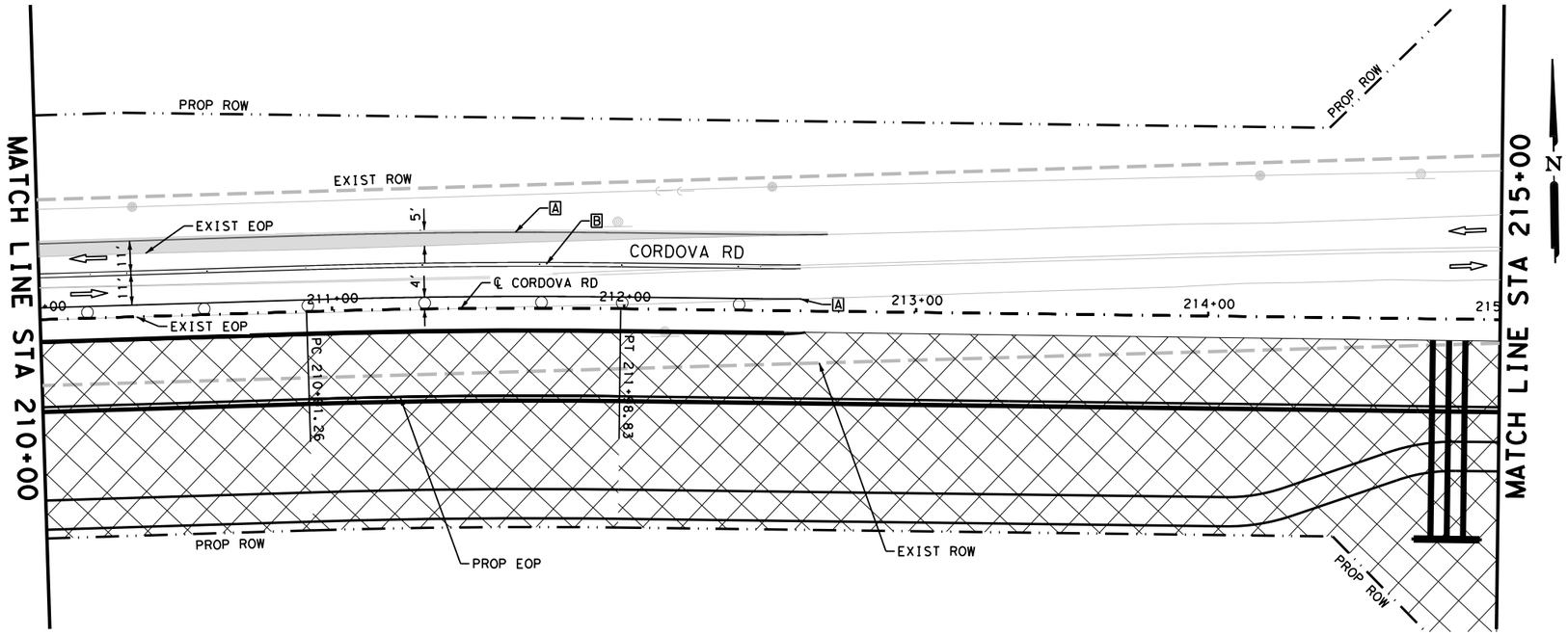
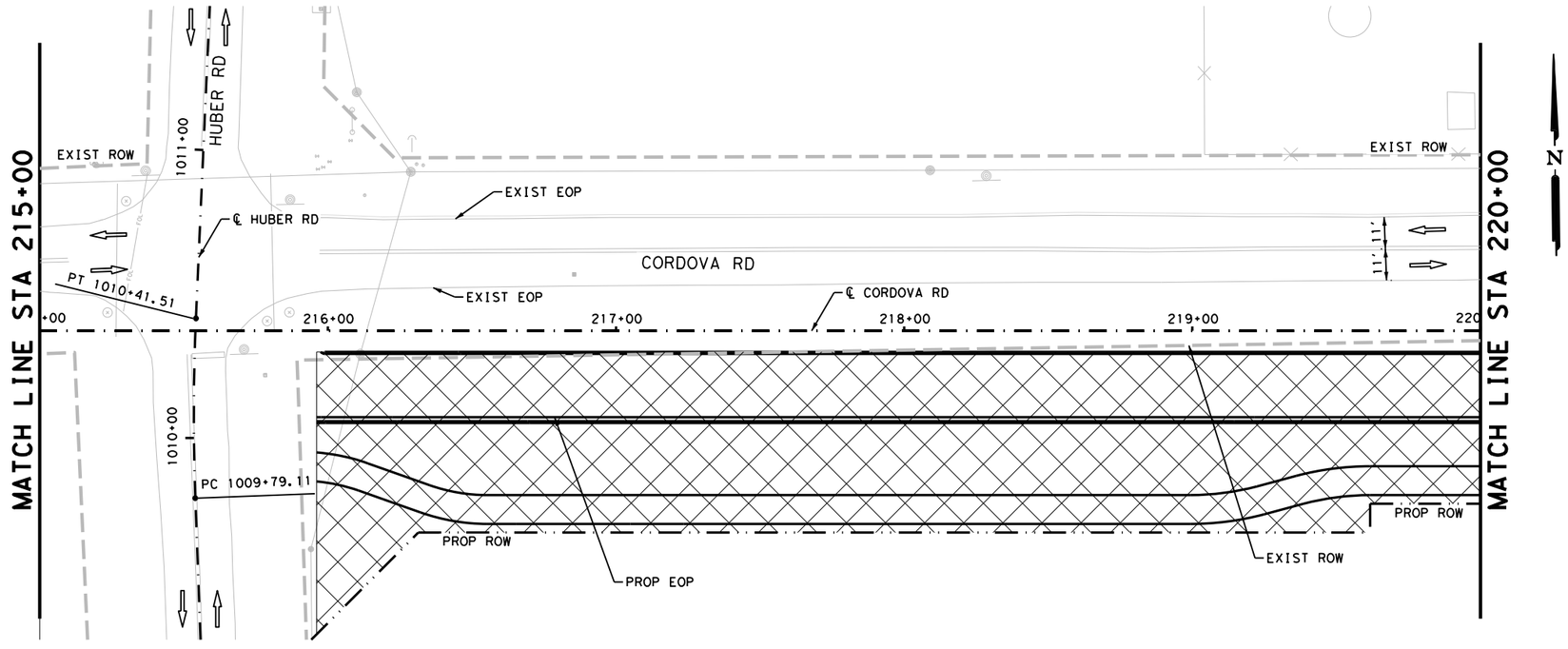
Plotted on: 7/27/2023





LEGEND

- CONSTRUCTION AREA PHASE I
- TEMPORARY PAVEMENT
- TYPE III BARRICADE
- SIGN
- TRAFFIC FLOW ARROWS
- PLASTIC DRUMS
- LOW PROFILE CONCRETE BARRIER (LPCB)
- A WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
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5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 210+00 TO STA 220+00

SHEET 12 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	47

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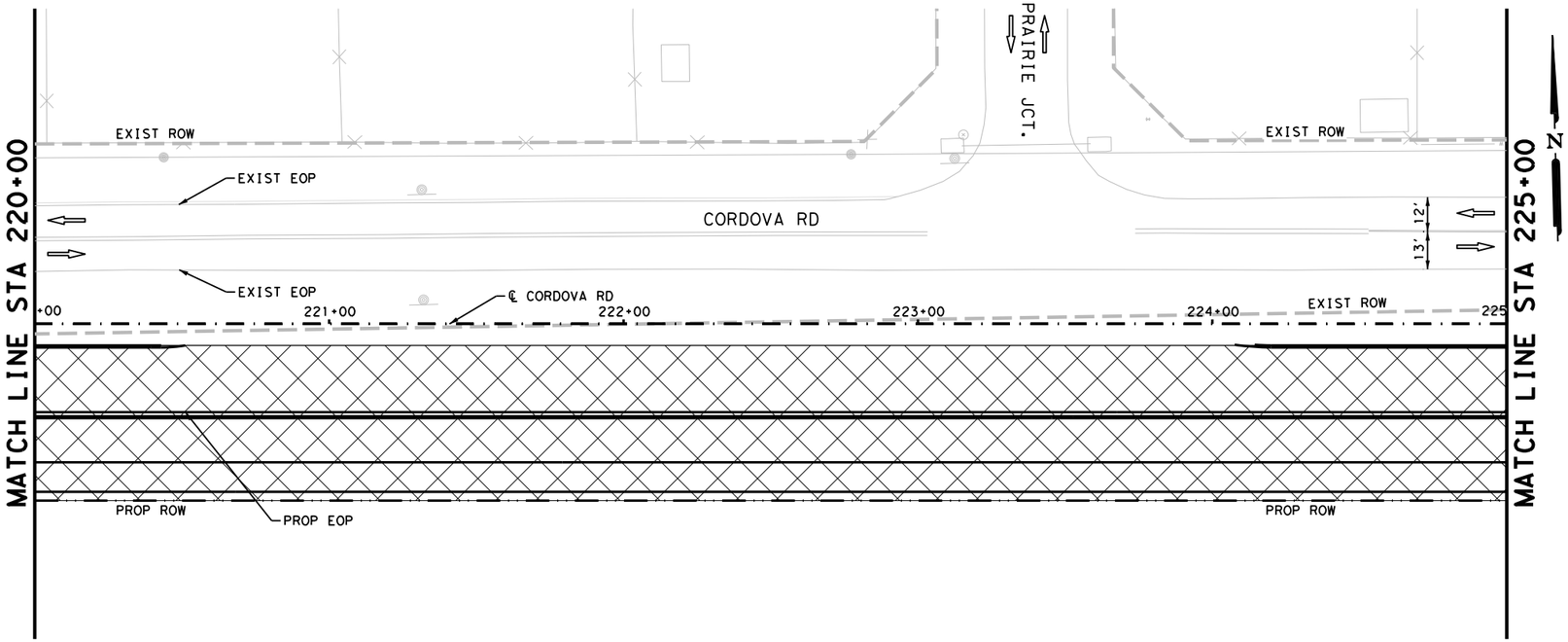

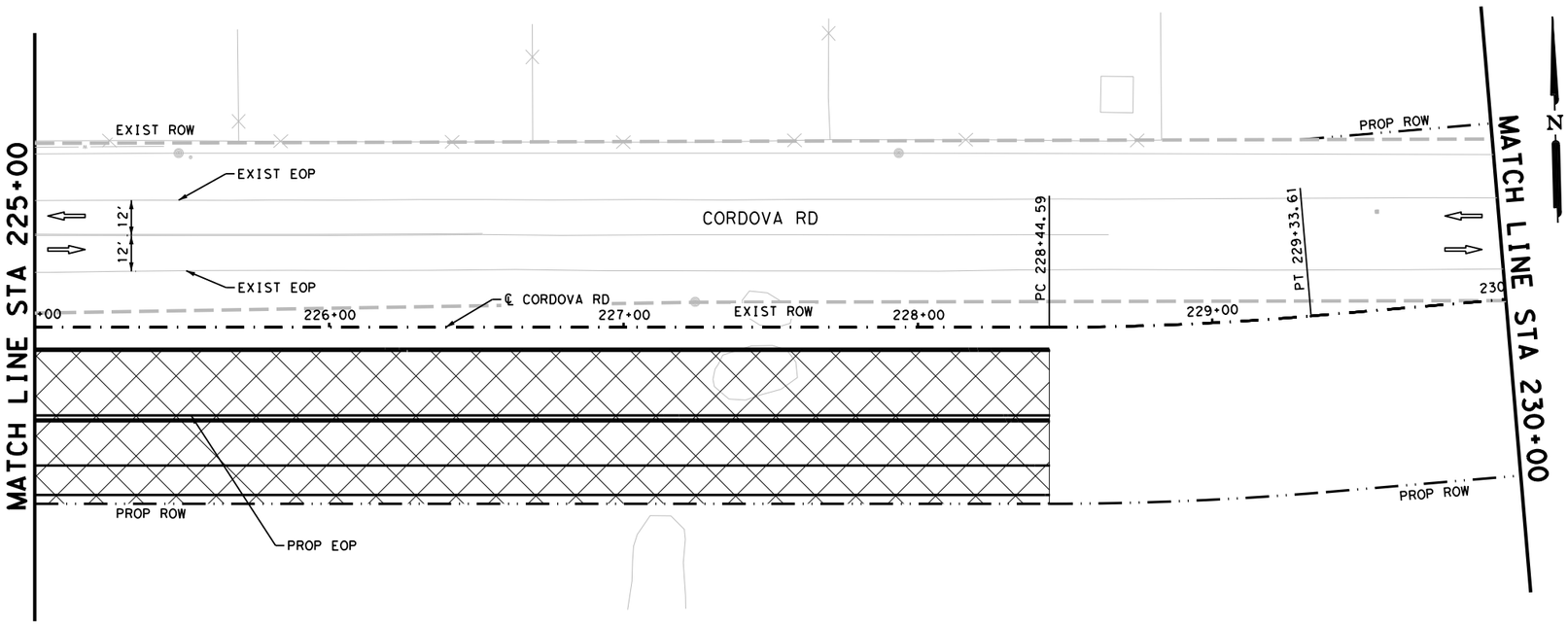

LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
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5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 220+00 TO STA 230+00

SHEET 13 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	48

Plotted on: 7/27/2023

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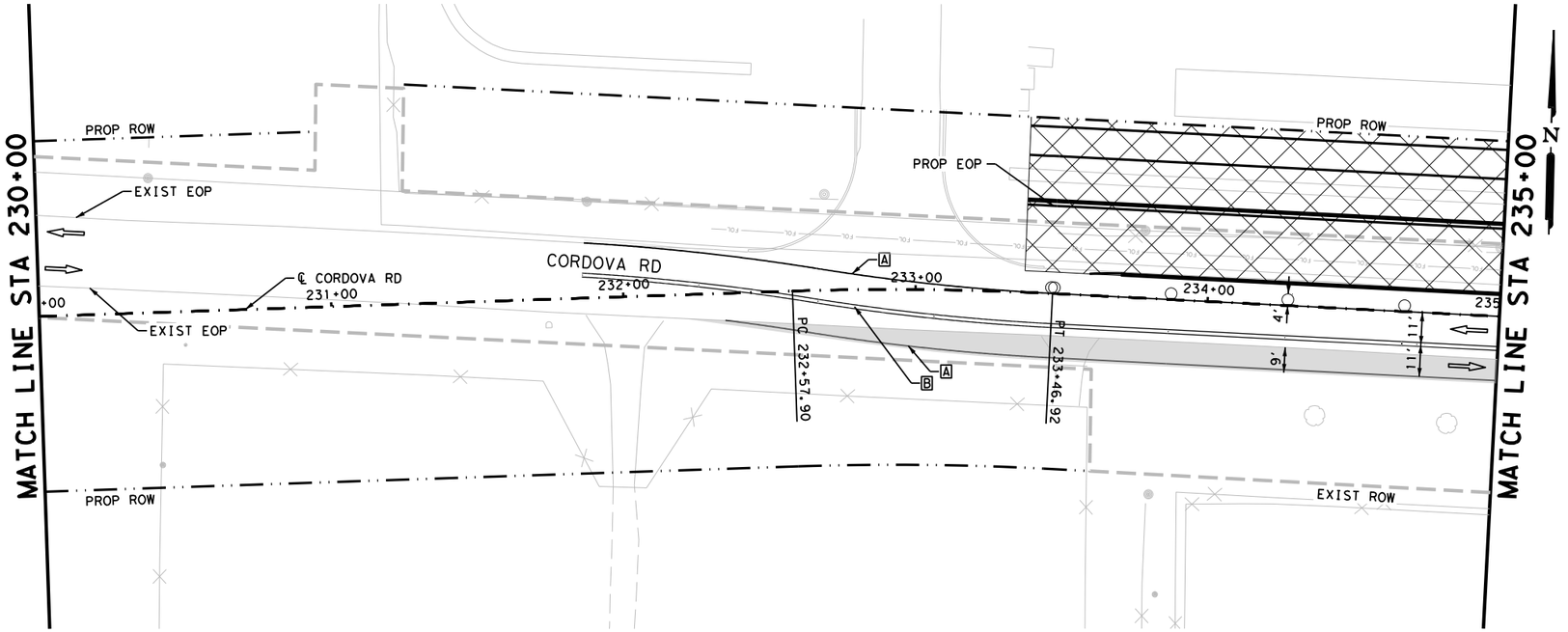

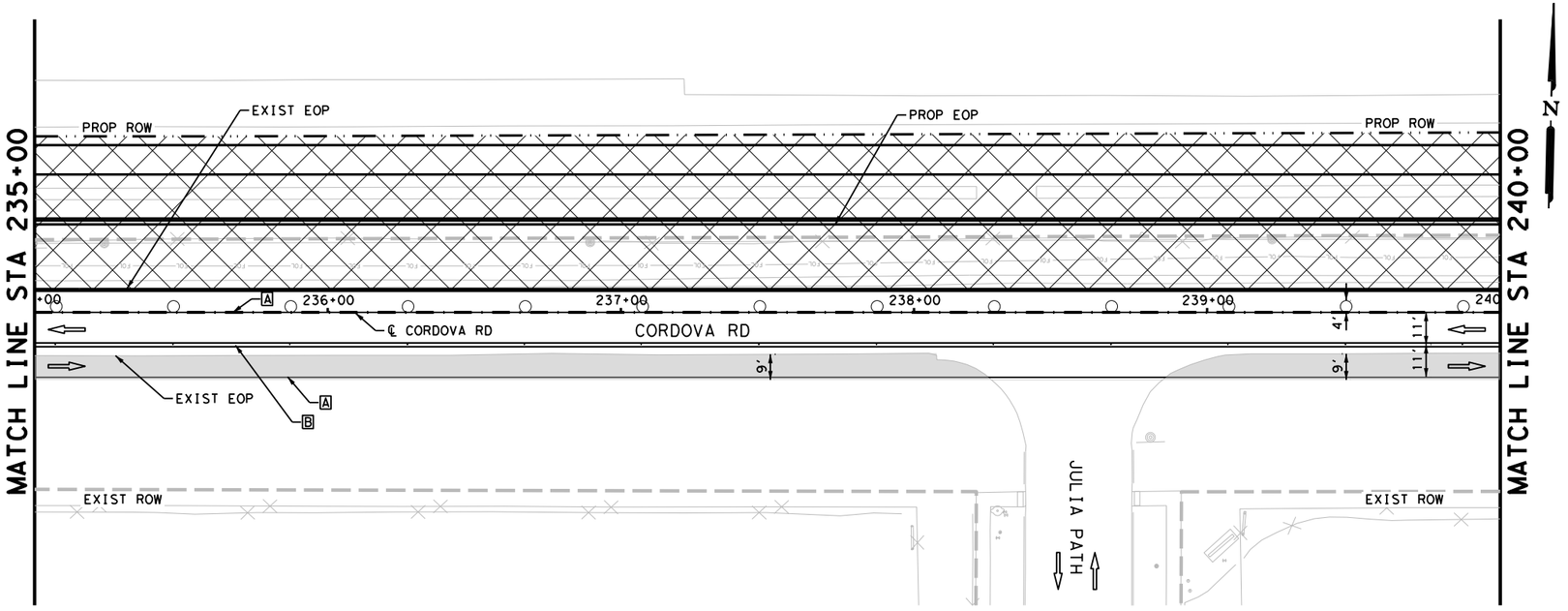

LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 230+00 TO STA 240+00

SHEET 14 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	49

Plotted on: 7/27/2023

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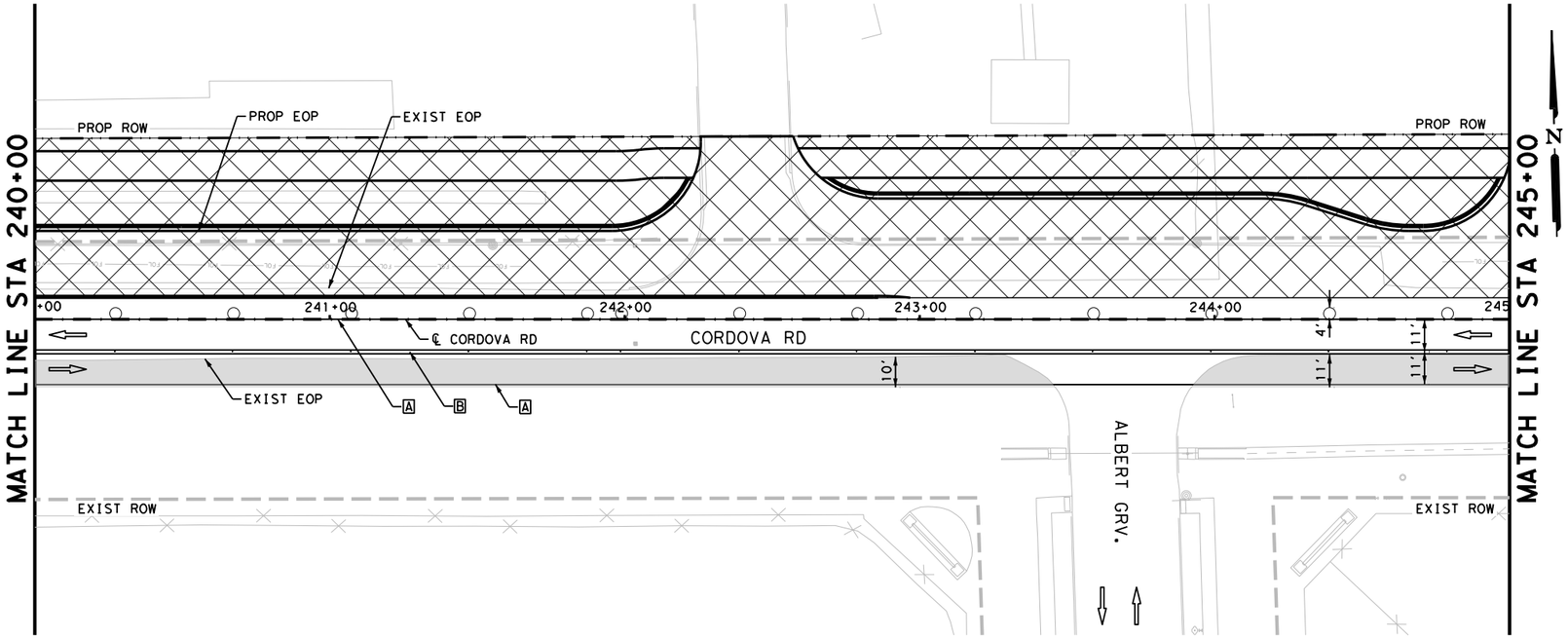

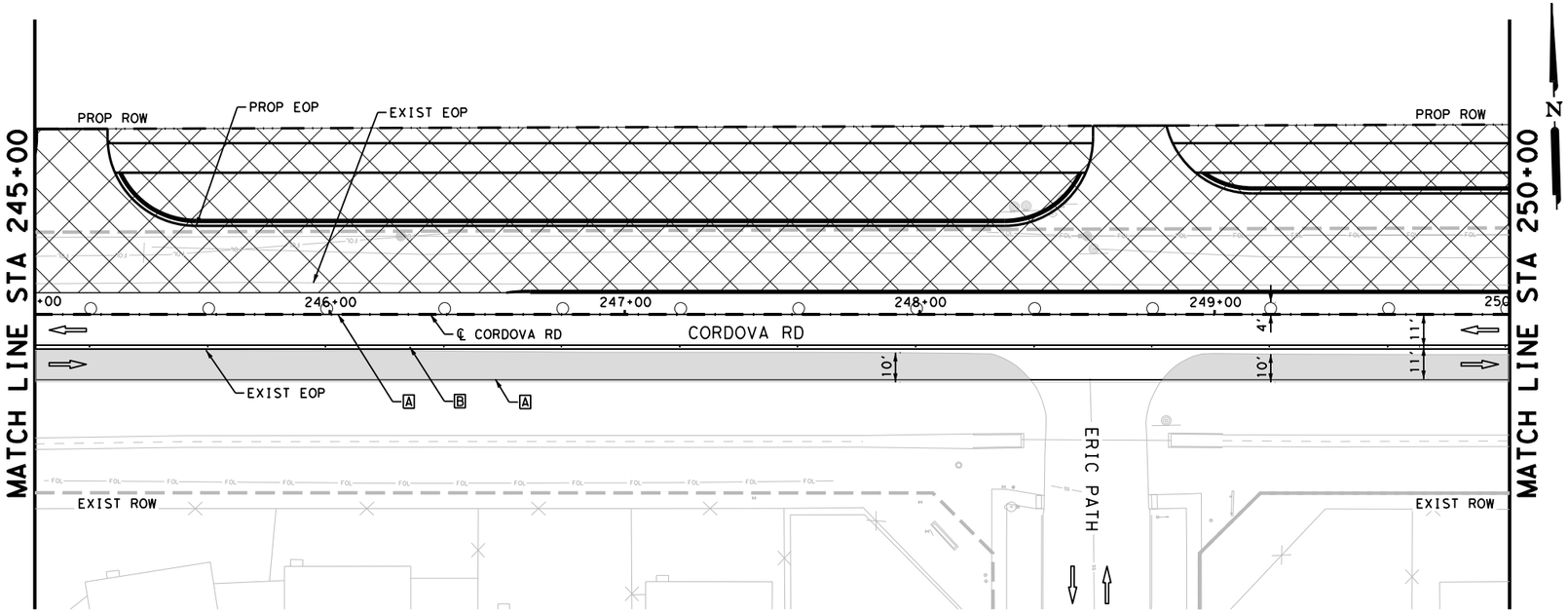

LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 240+00 TO STA 250+00

SHEET 15 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	50

Plotted on: 7/27/2023

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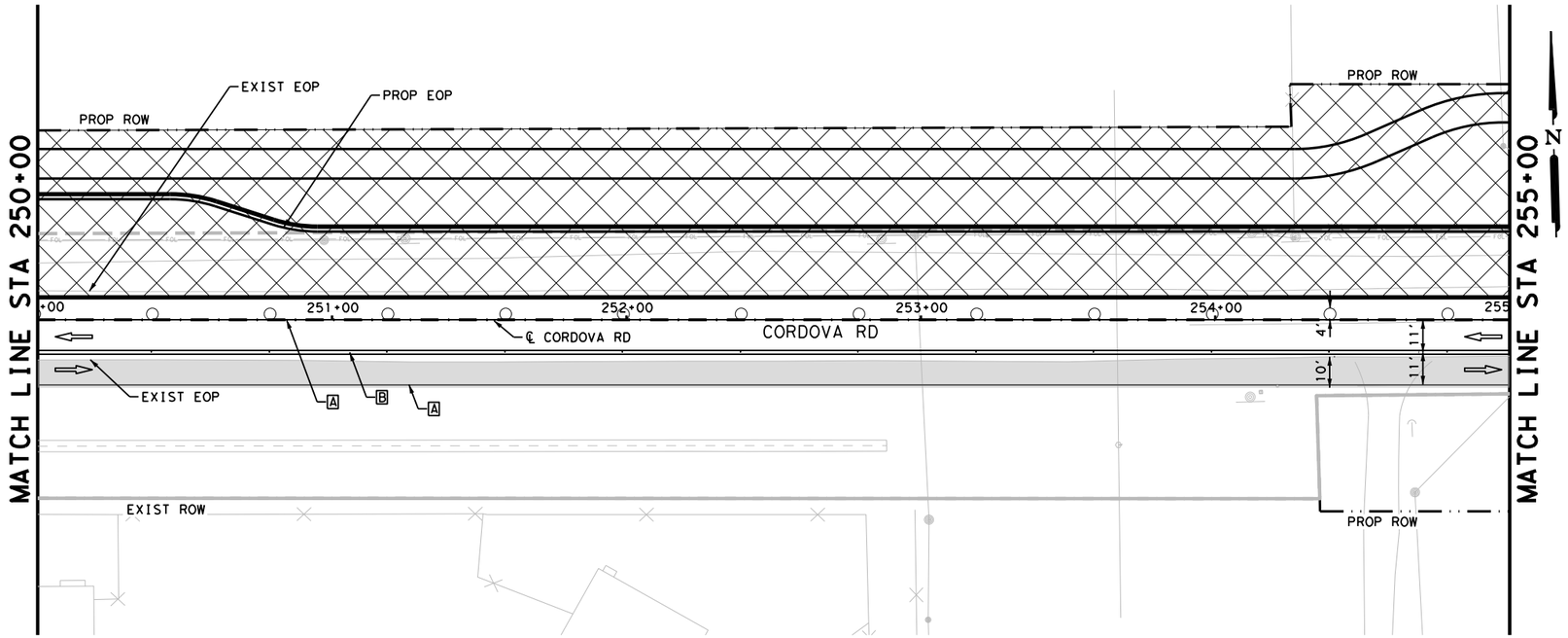

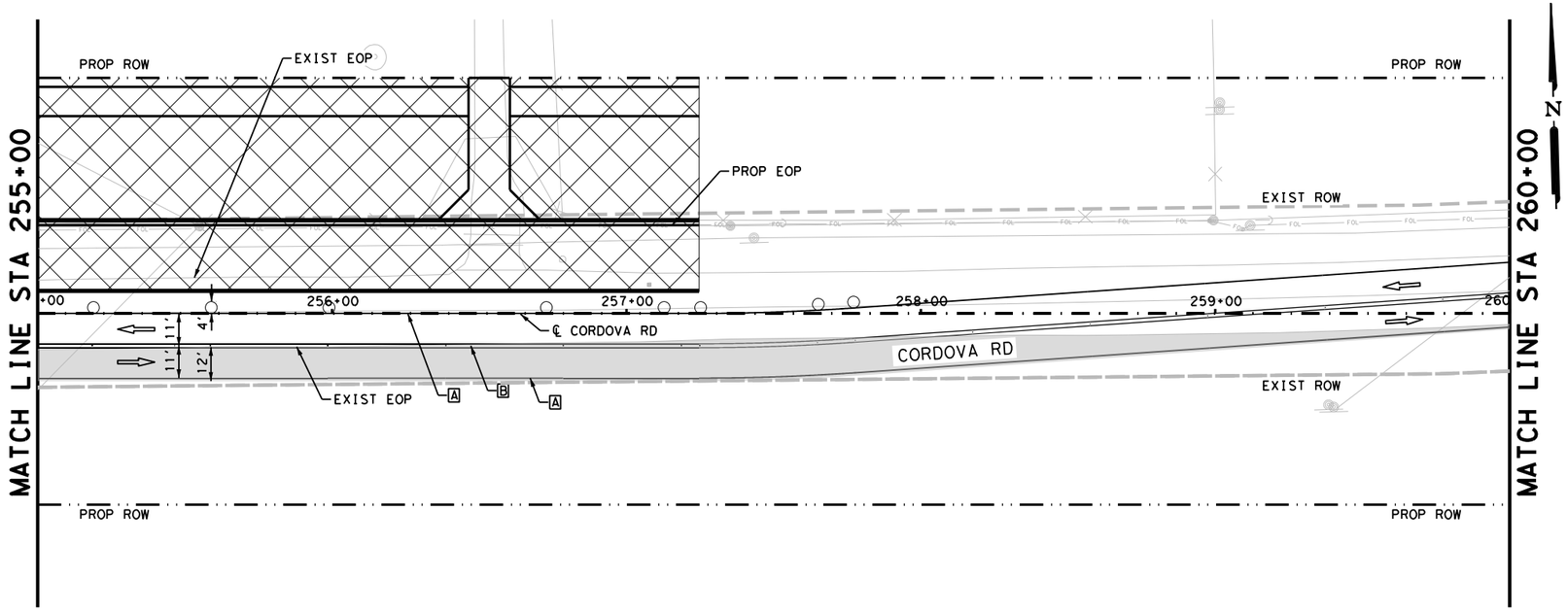

LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 250+00 TO STA 260+00

SHEET 16 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	51

Plotted on: 7/27/2023

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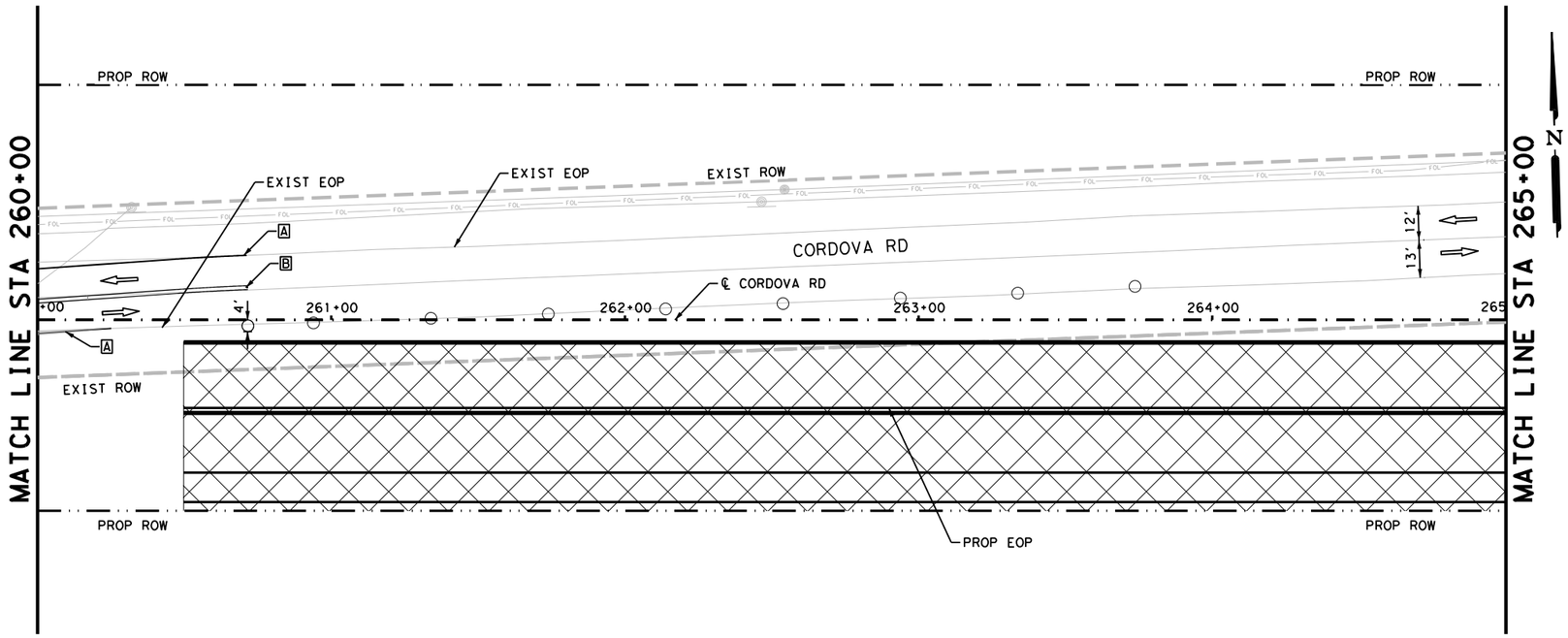

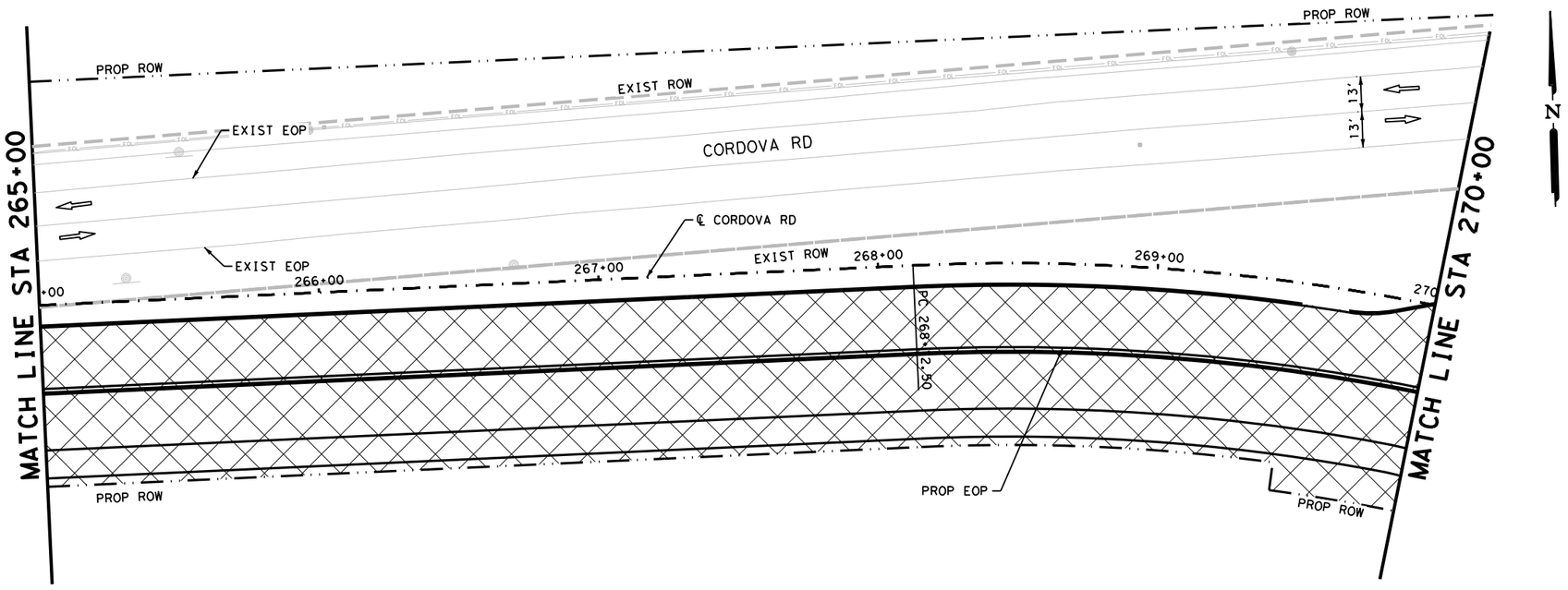

LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 260+00 TO STA 270+00

SHEET 17 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	52

Plotted on: 7/27/2023

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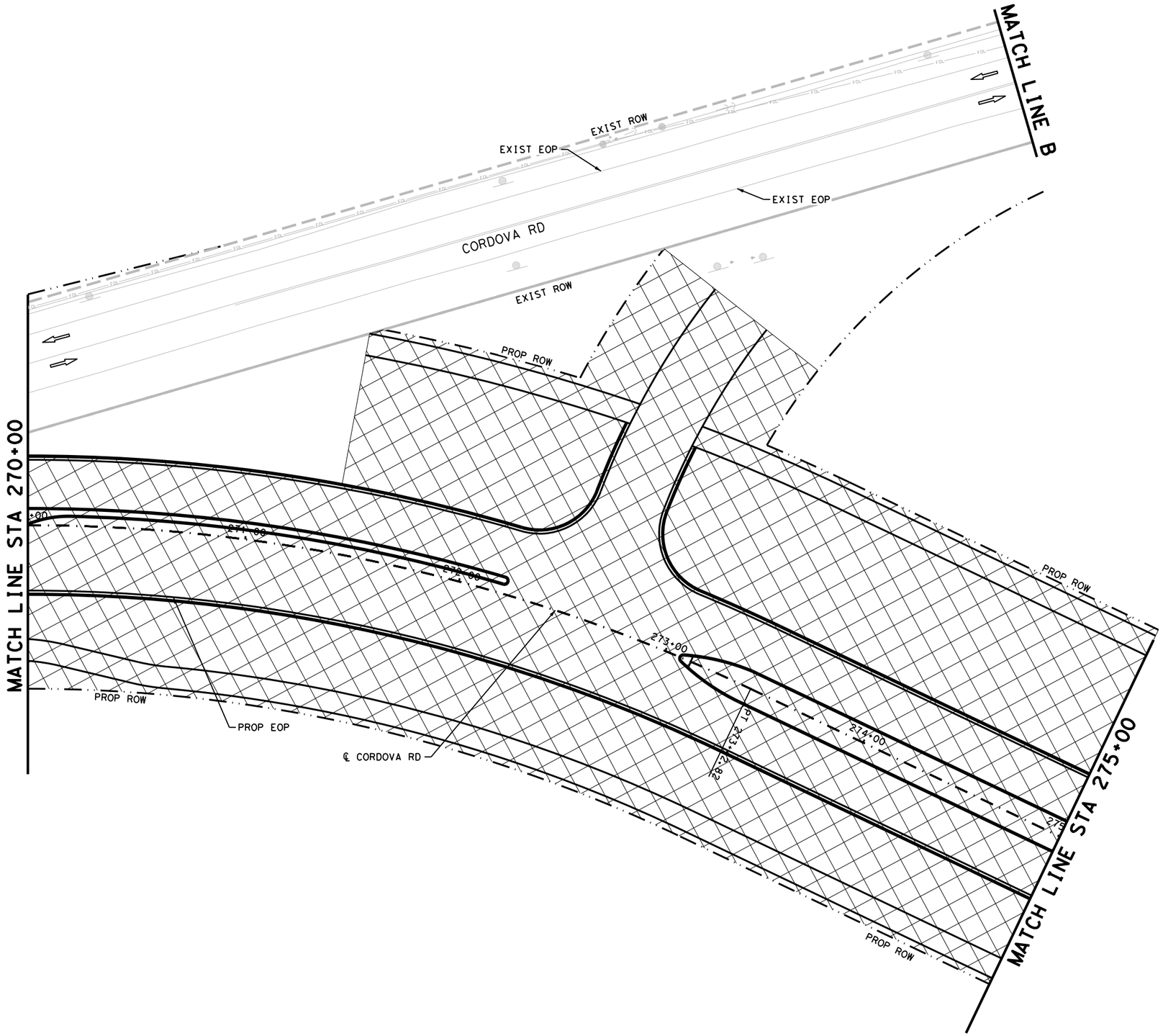
Plotted on: 7/27/2023



LEGEND

- CONSTRUCTION AREA PHASE I
- TEMPORARY PAVEMENT
- TYPE III BARRICADE
- SIGN
- TRAFFIC FLOW ARROWS
- PLASTIC DRUMS
- LOW PROFILE CONCRETE BARRIER (LPCB)
- [A] WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- [B] WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 270+00 TO STA 275+00

SHEET 18 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DW:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DW:	SAT	GUADALUPE	0915	45	052	53

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Plotted on: 7/27/2023

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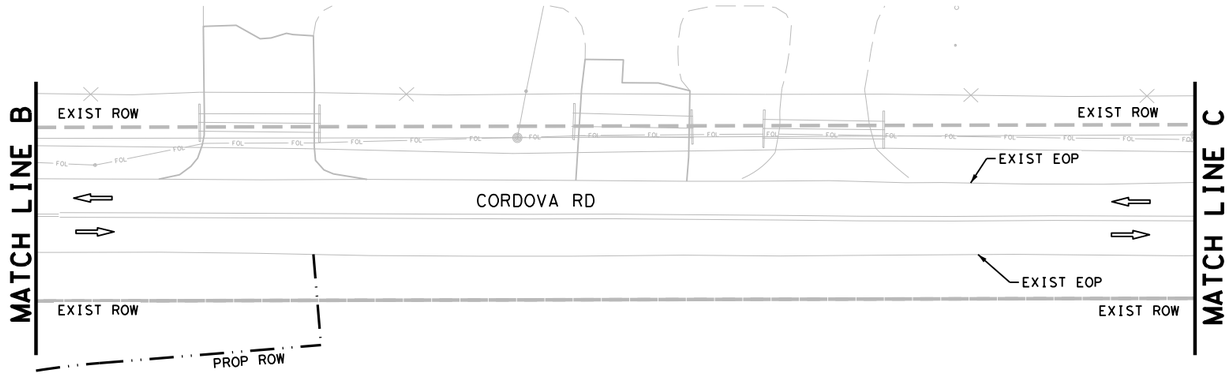

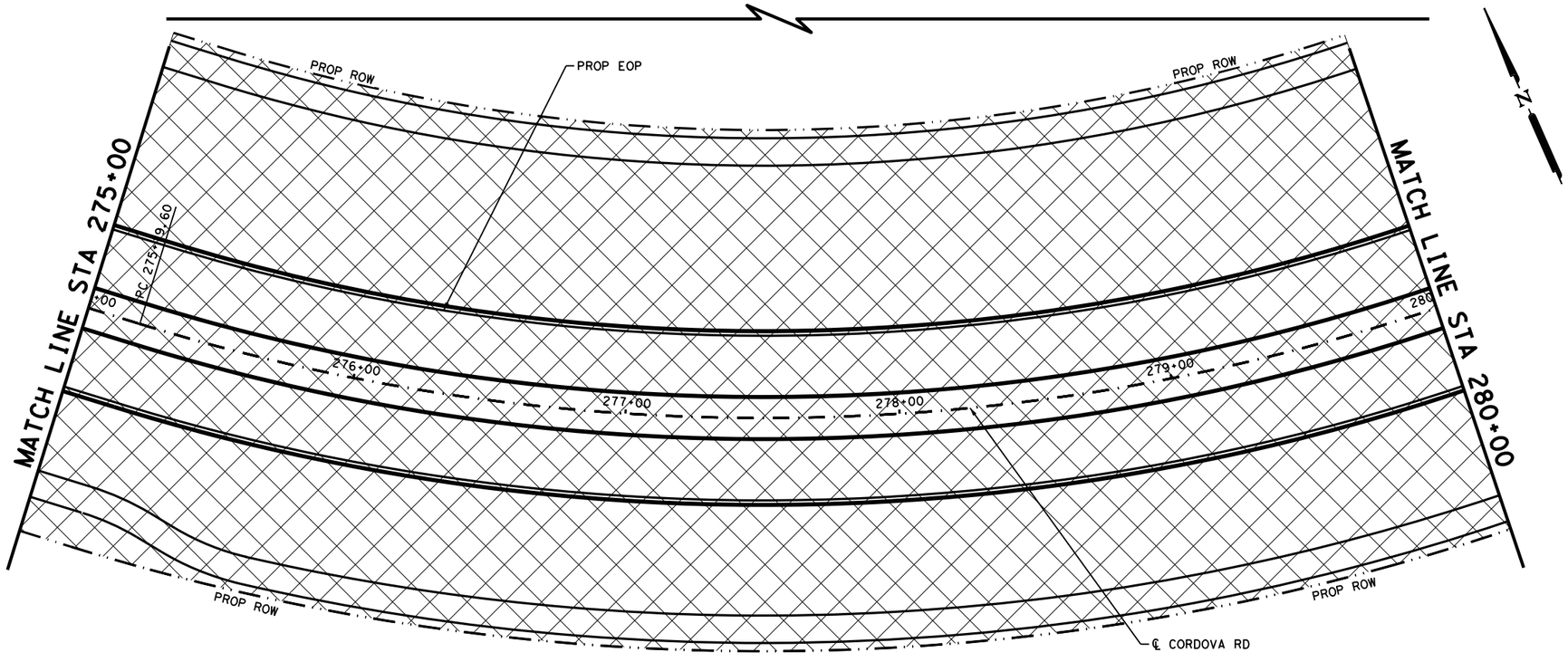

LEGEND

- CONSTRUCTION AREA PHASE I
- TEMPORARY PAVEMENT
- TYPE III BARRICADE
- SIGN
- TRAFFIC FLOW ARROWS
- PLASTIC DRUMS
- LOW PROFILE CONCRETE BARRIER (LPCB)
- [A] WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- [B] WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
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5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 275+00 TO STA 280+00

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	54

Plotted on: 7/27/2023

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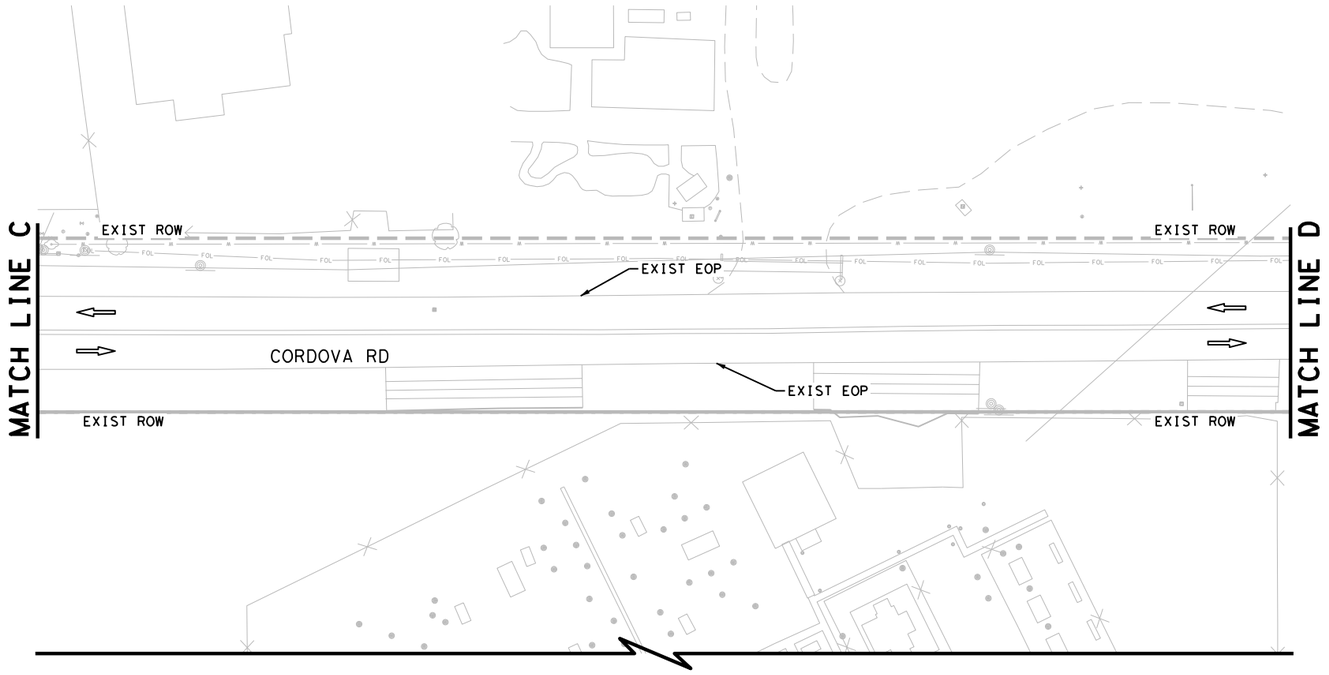

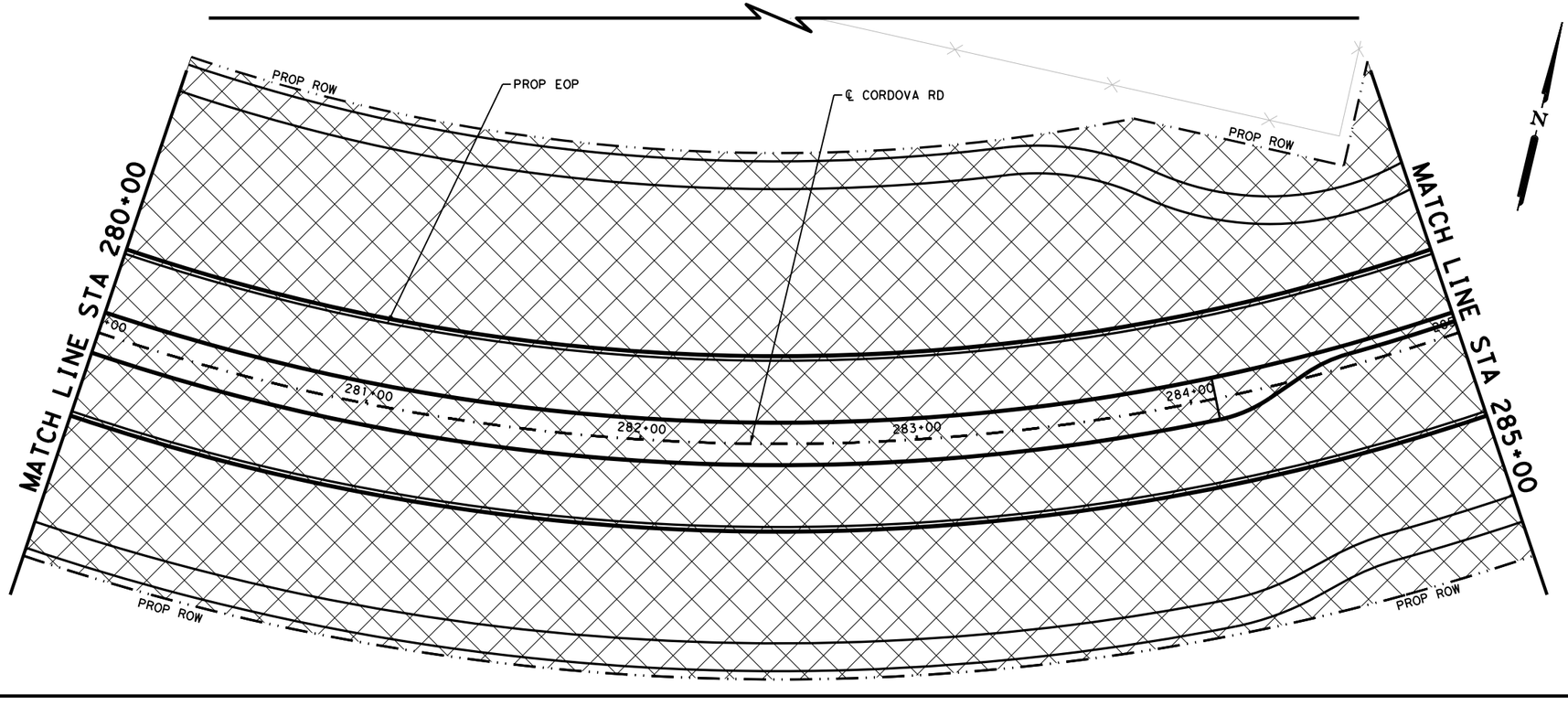

LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 280+00 TO STA 285+00

SHEET 20 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	55

Plotted on: 7/27/2023

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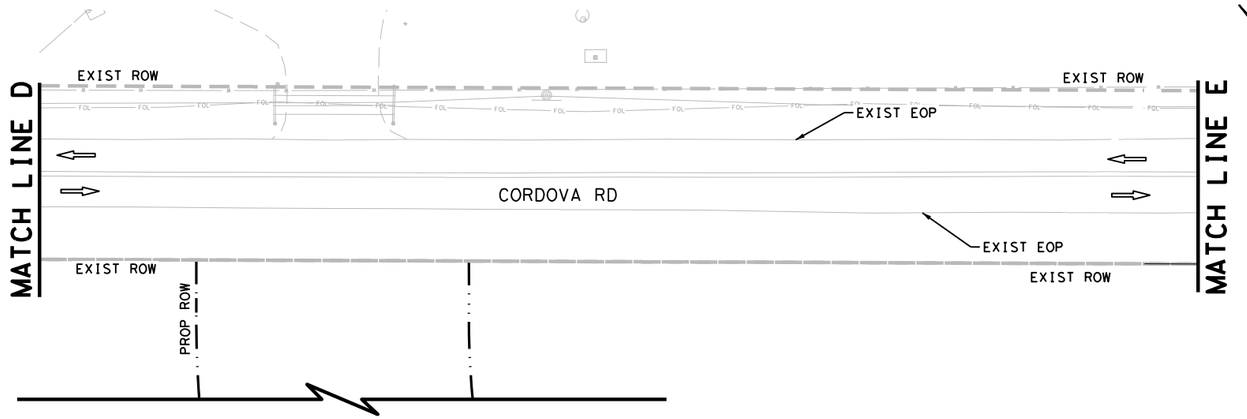

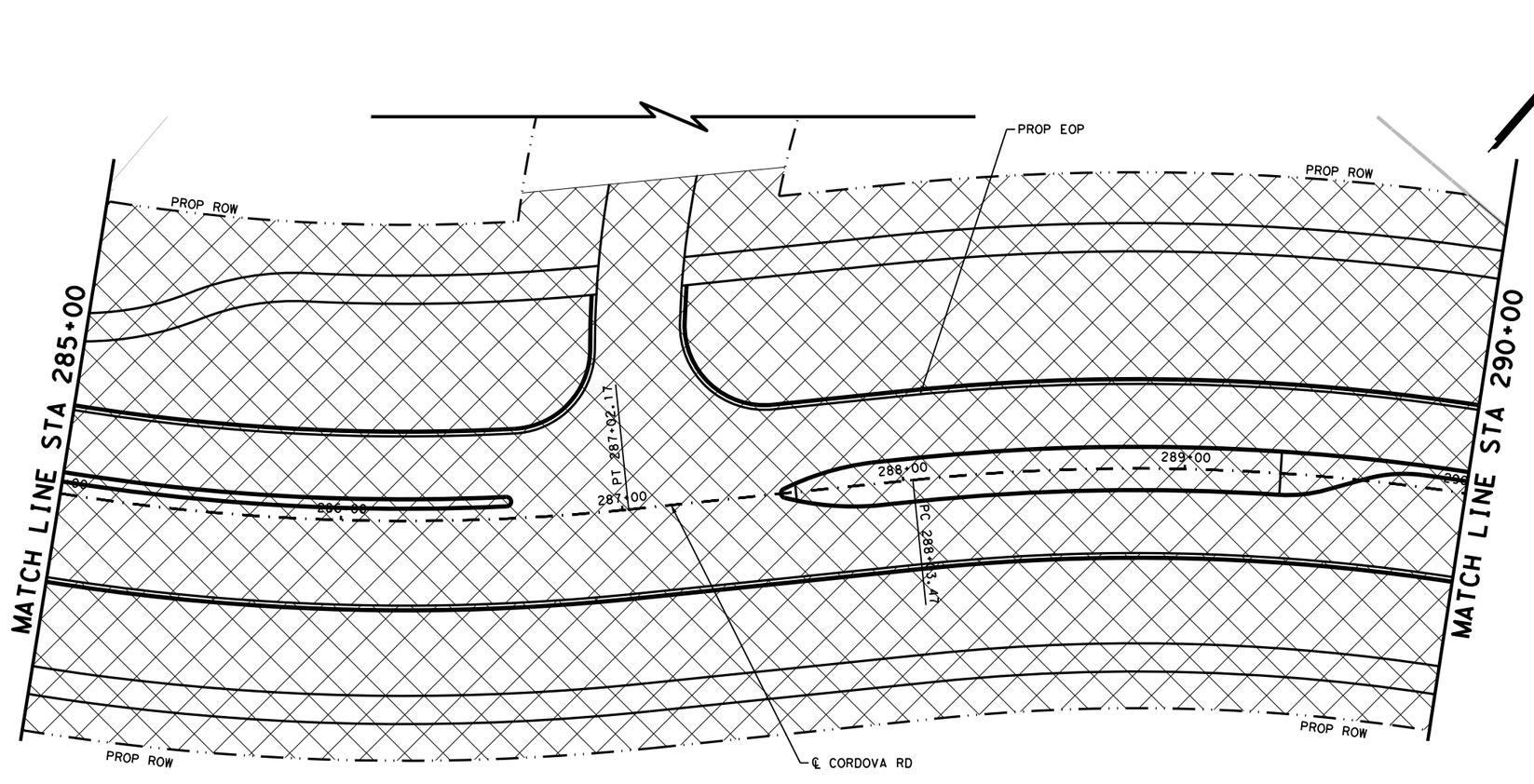

LEGEND

- CONSTRUCTION AREA PHASE I
- TEMPORARY PAVEMENT
- TYPE III BARRICADE
- SIGN
- TRAFFIC FLOW ARROWS
- PLASTIC DRUMS
- LOW PROFILE CONCRETE BARRIER (LPCB)
- [A] WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- [B] WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

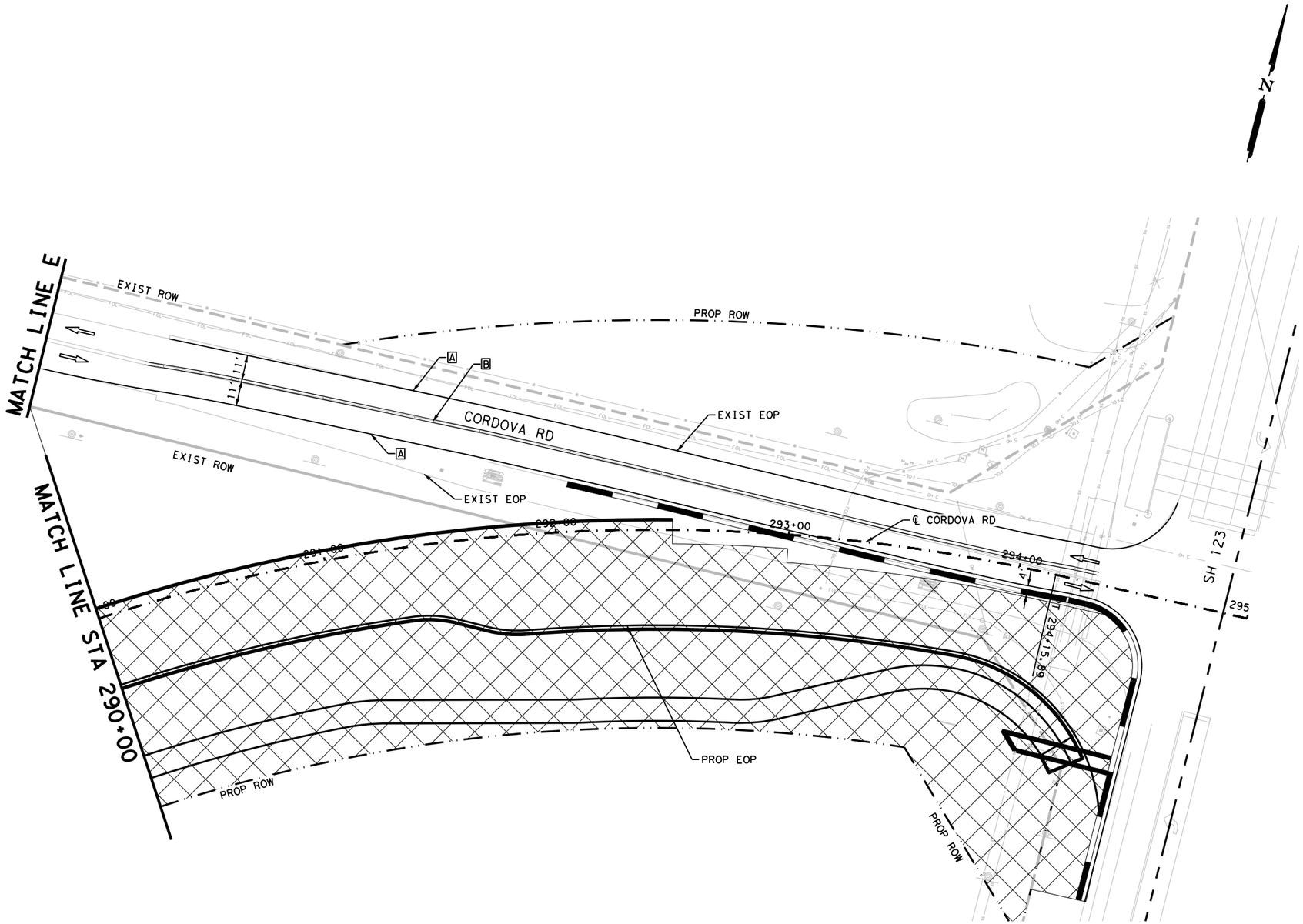
TRAFFIC CONTROL PLAN PHASE I

STA 285+00 TO STA 290+00

SHEET 21 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	56

Plotted on: 7/27/2023



LEGEND

CONSTRUCTION AREA PHASE I

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

[A] WK ZN PAV MRK NON-REMOV (W)6"(SLD)

[B] WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
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5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE I

STA 290+00 TO END OF PROJECT

SHEET 22 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	57

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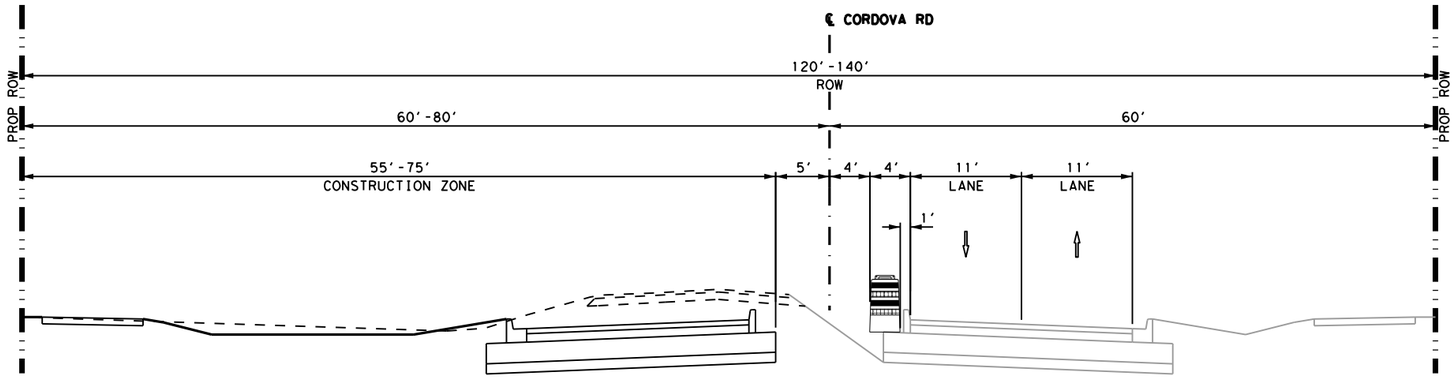
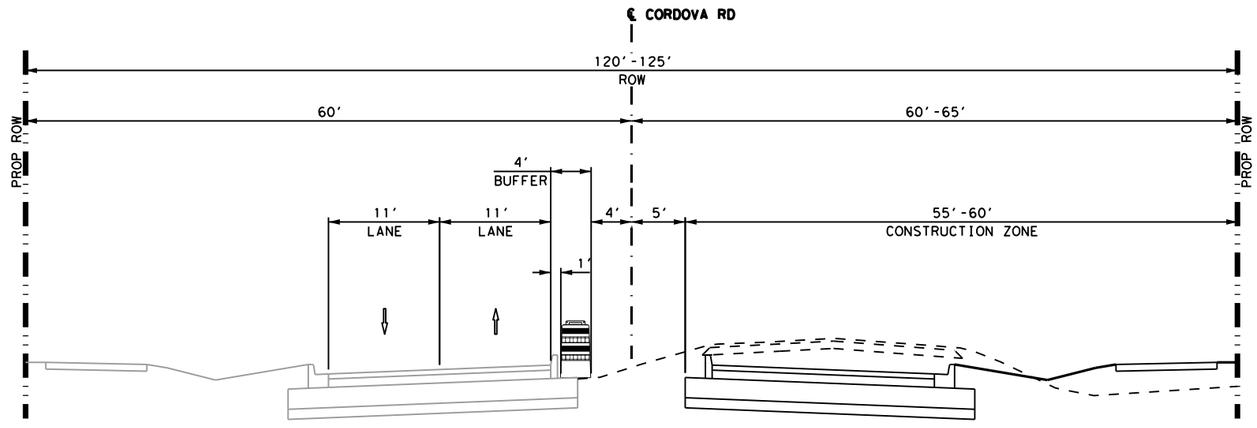
Plotted on: 7/27/2023



CORDOVA RD - PHASE II

STA 120+45 TO STA 153+00
STA 166+00 TO STA 215+00
STA 216+00 TO STA 230+00
STA 260+00 TO STA 270+00
NTS



CORDOVA RD - PHASE II

STA 154+70 TO STA 160+05
STA 233+00 TO STA 258+00
NTS

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN TYPICAL SECTIONS PHASE II

SHEET 1 OF 1

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	58

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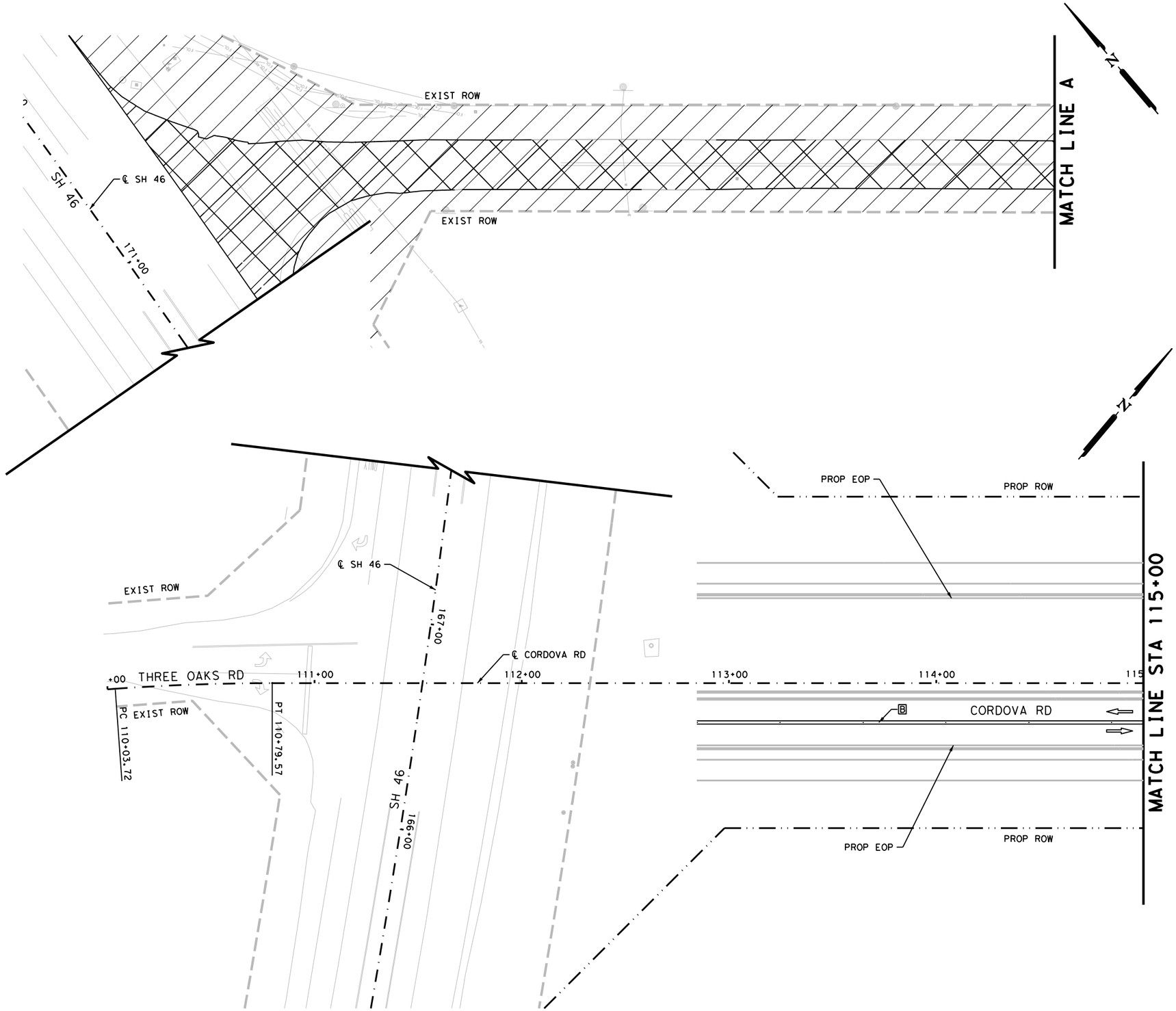
Plotted on: 7/27/2023



LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

BEGIN PROJECT TO STA 115+00

SHEET 1 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	59

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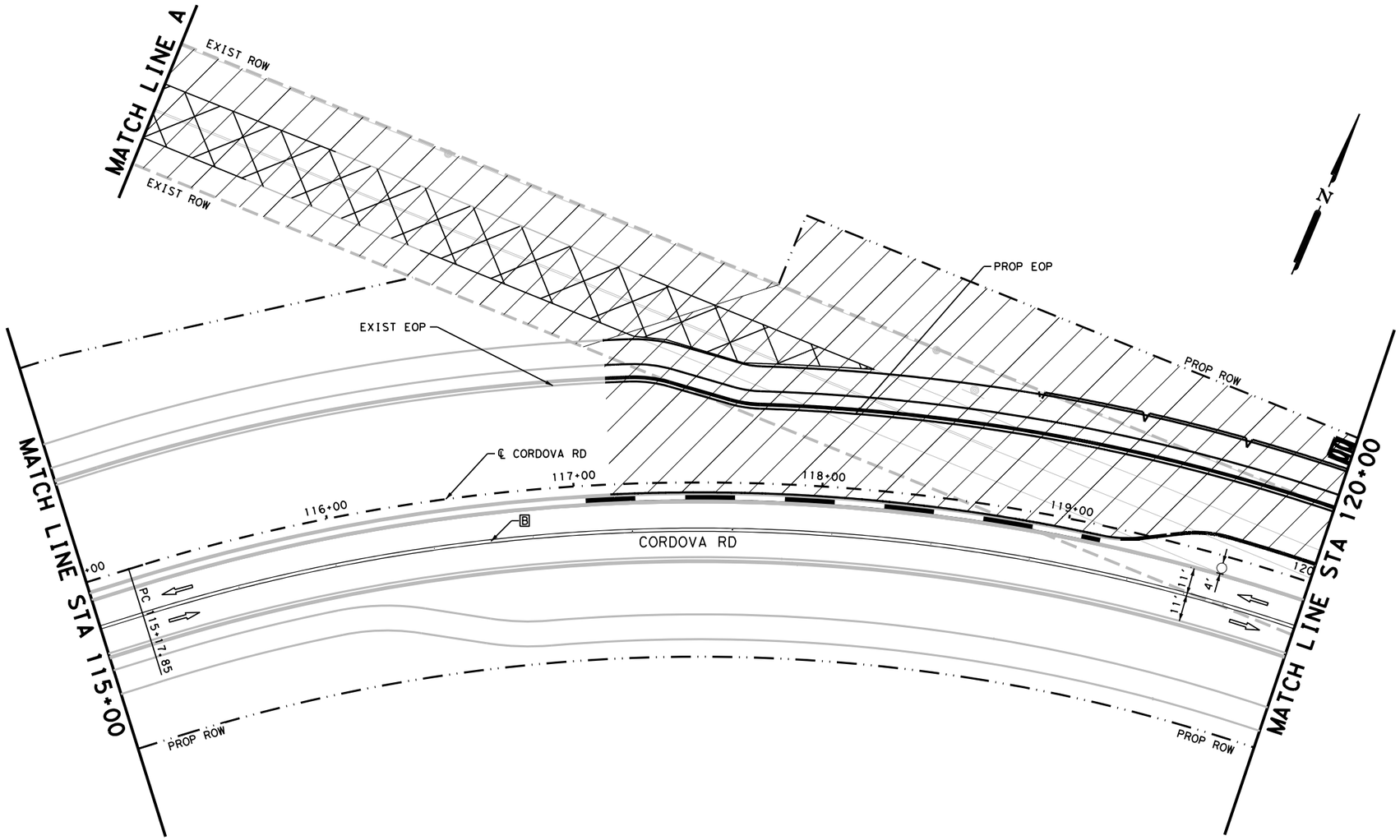

LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 115+00 TO STA 120+00

SHEET 2 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	60

Plotted on: 7/27/2023

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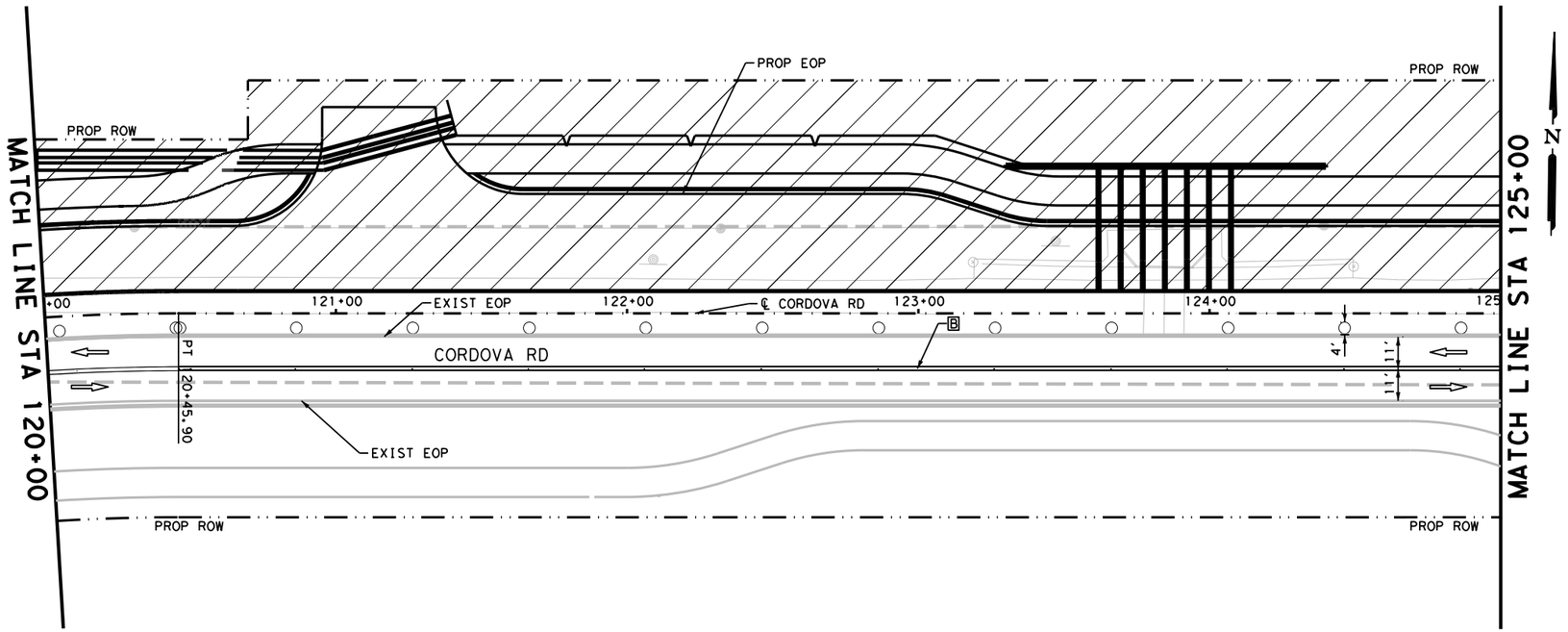

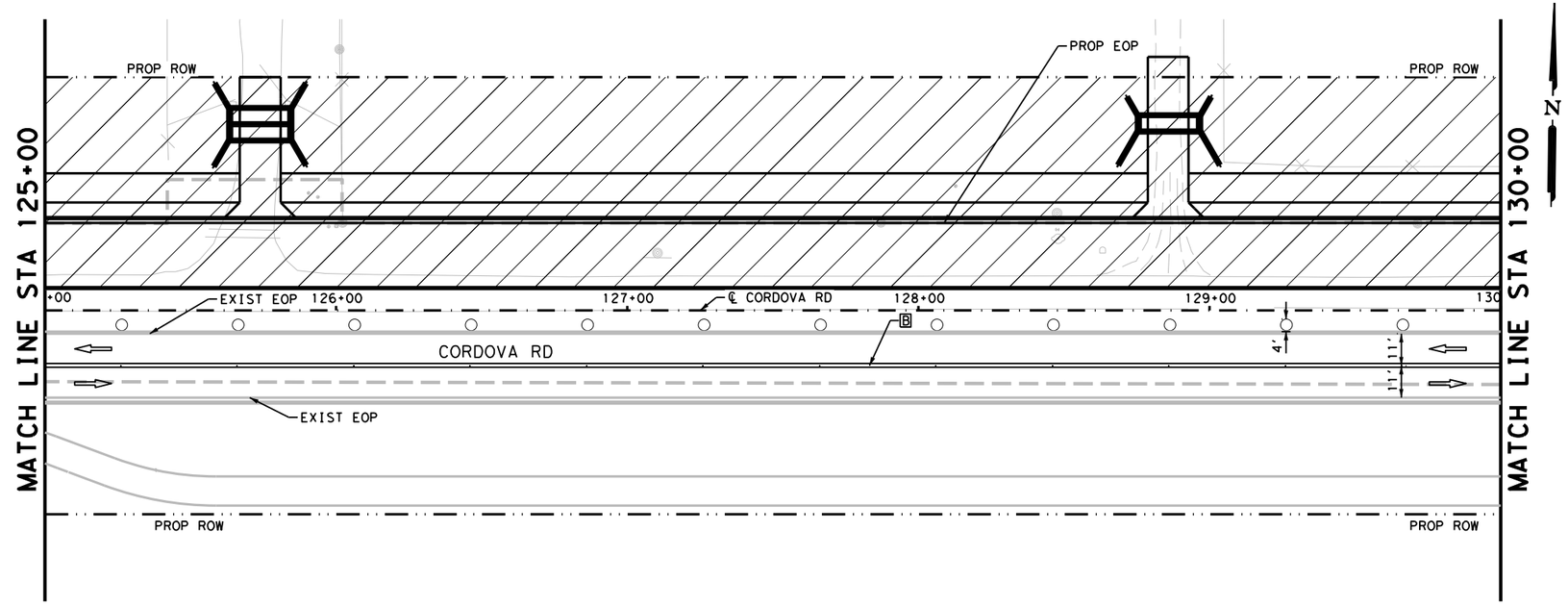

LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 120+00 TO STA 130+00

SHEET 3 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	61

Plotted on: 7/27/2023

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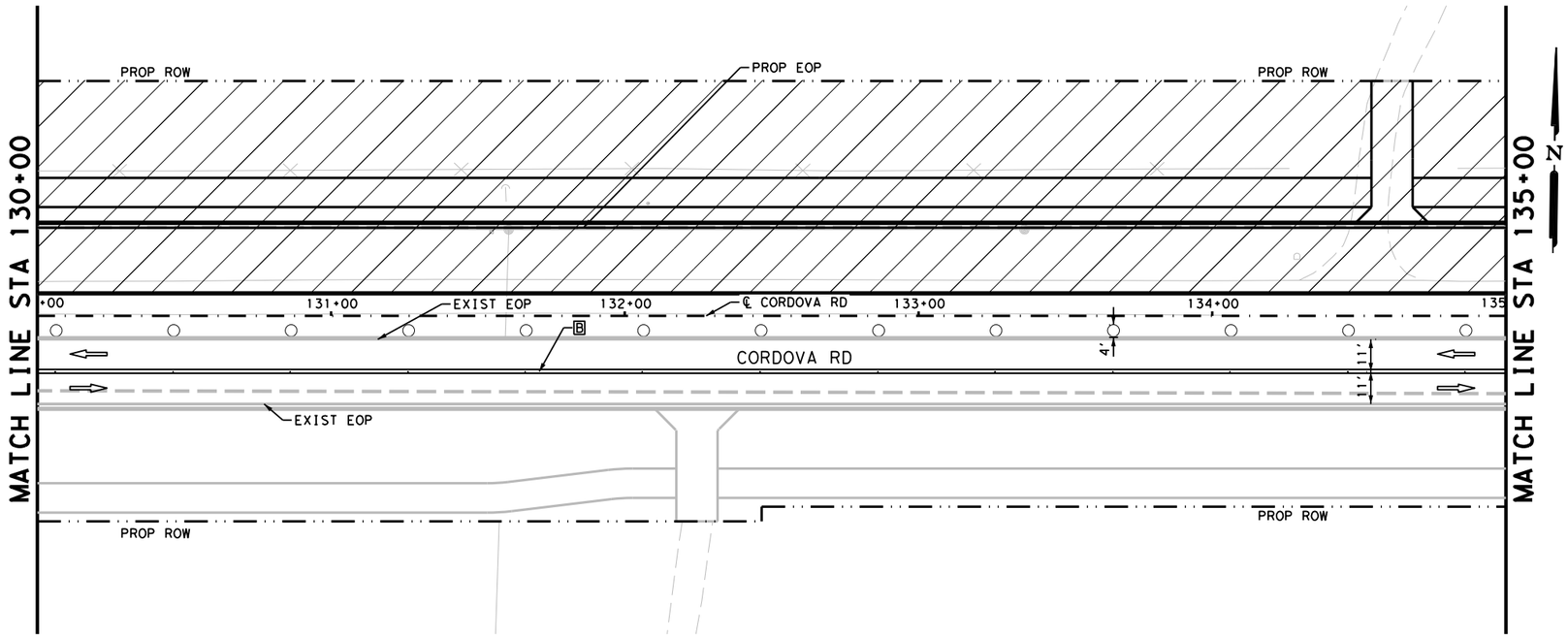

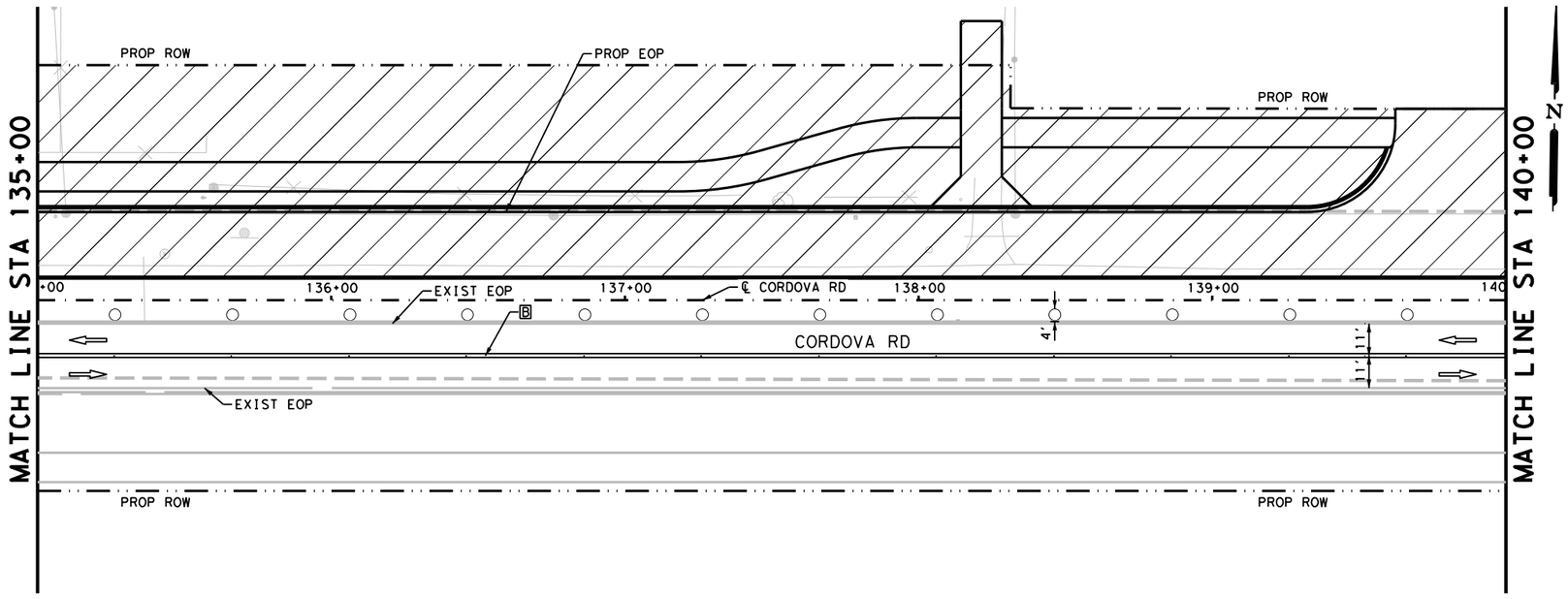

LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 130+00 TO STA 140+00

SHEET 4 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	62

Plotted on: 7/27/2023

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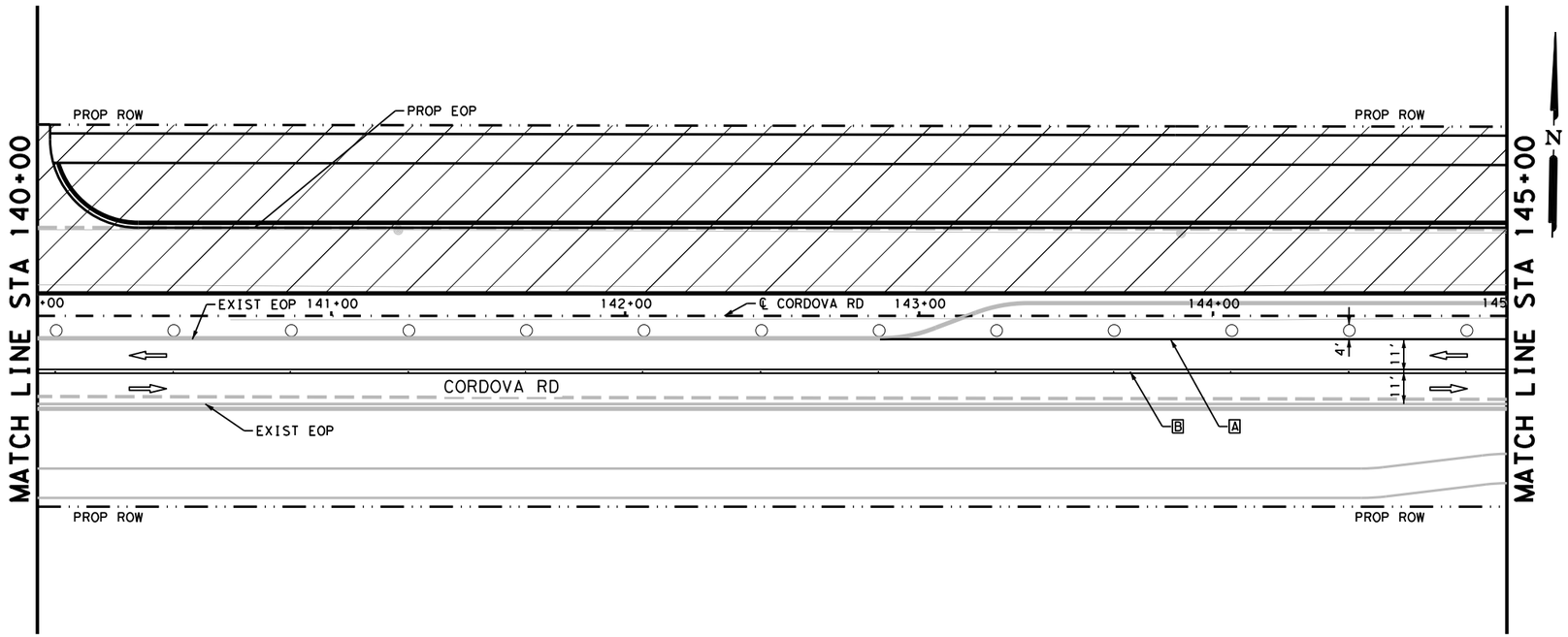

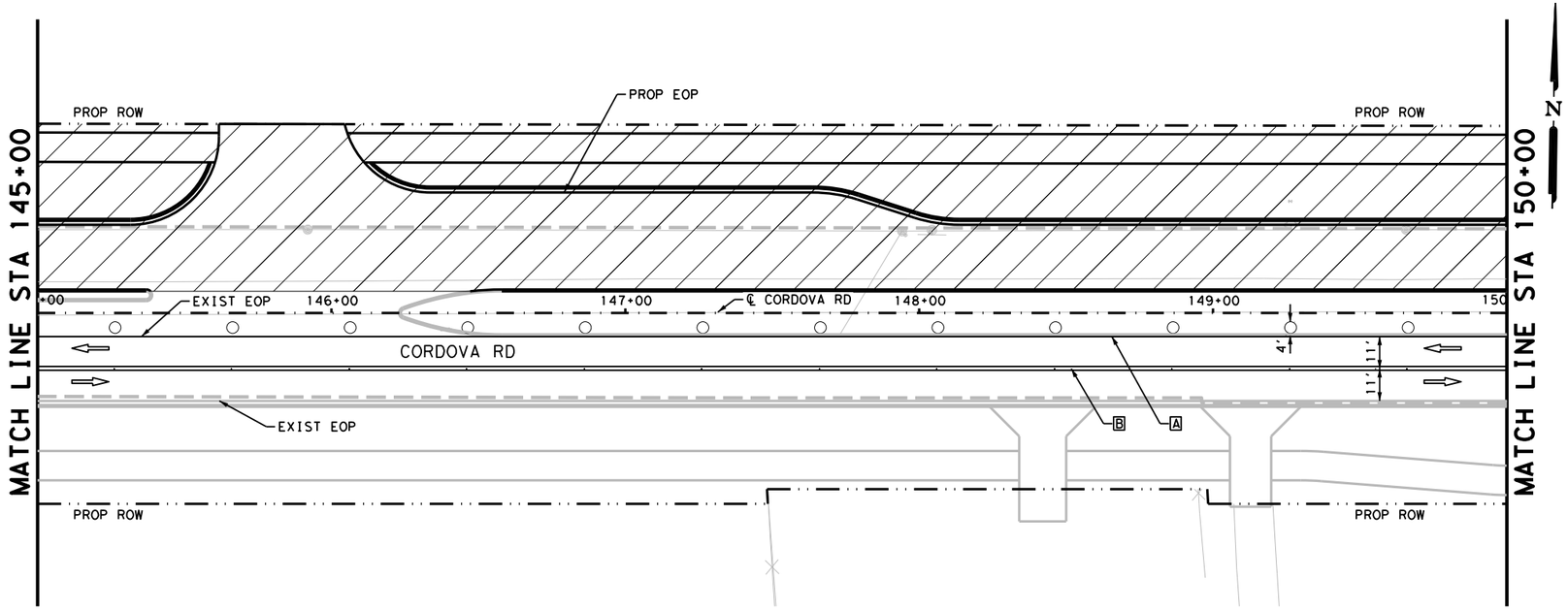

LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

[A] WK ZN PAV MRK NON-REMOV (W)6"(SLD)

[B] WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 140+00 TO STA 150+00

SHEET 5 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	63

Plotted on: 7/27/2023

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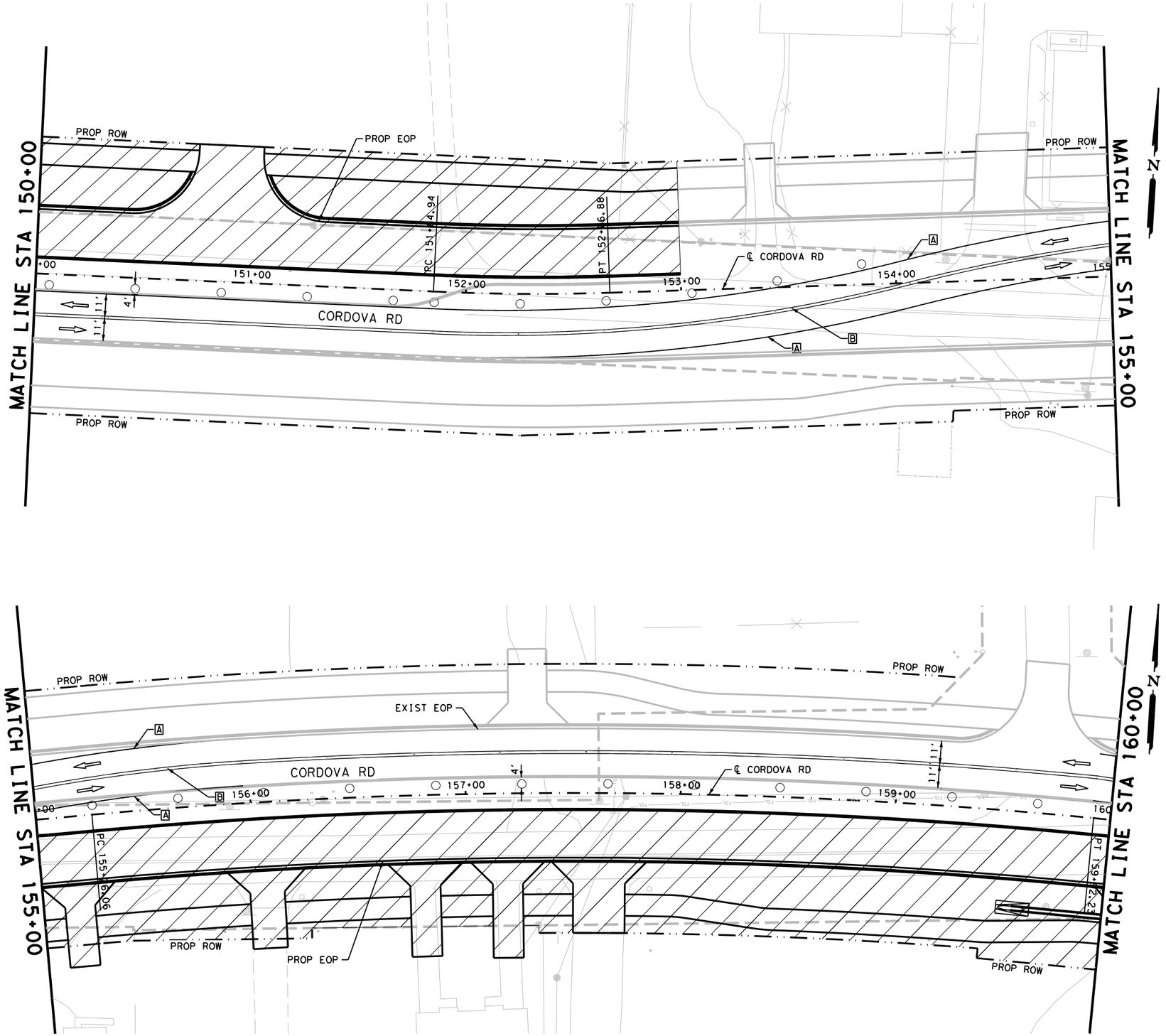

LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
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5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 150+00 TO STA 160+00

SHEET 6 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	64

Plotted on: 7/27/2023

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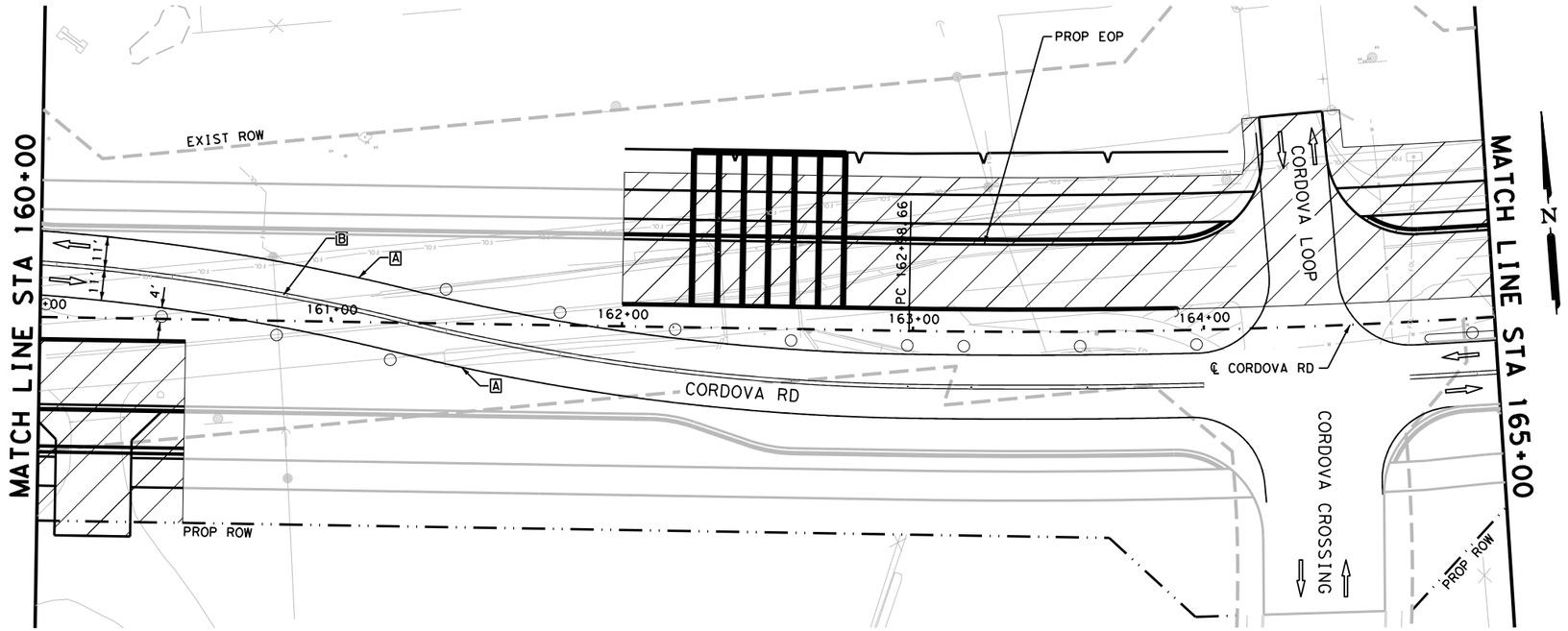

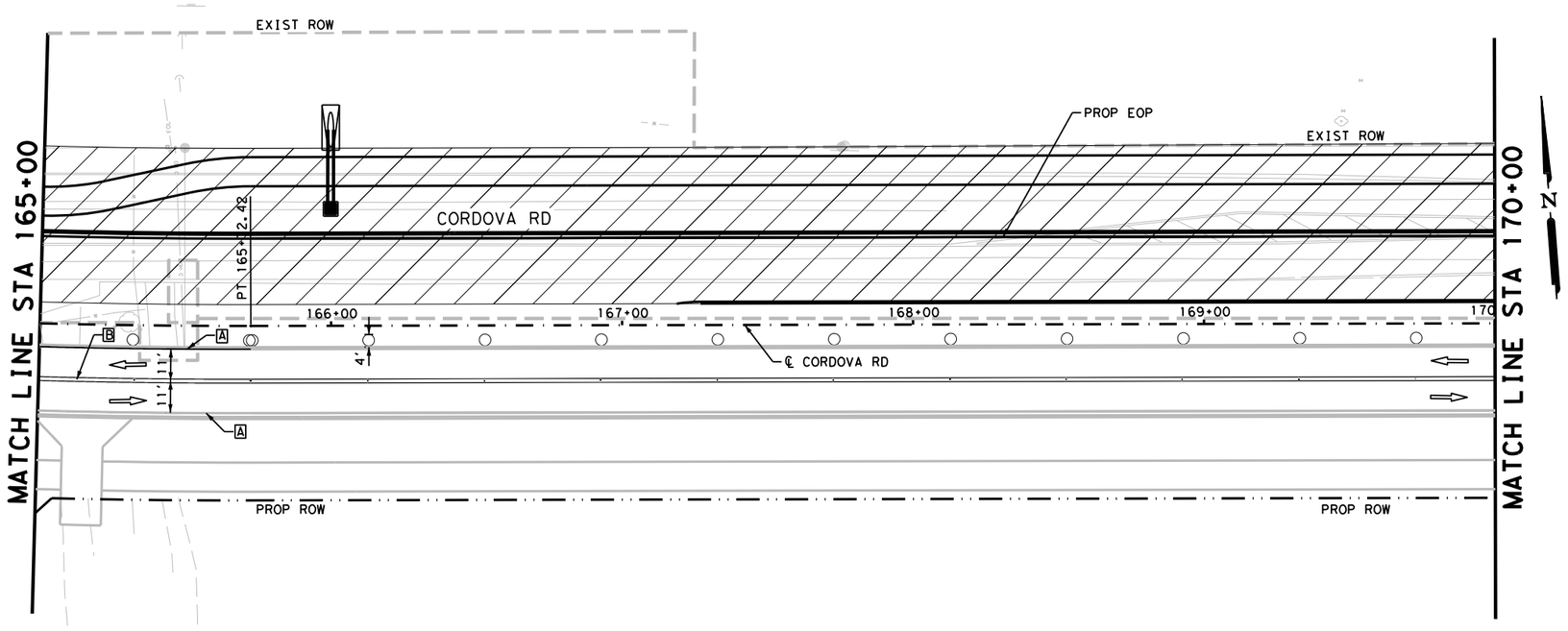

LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

[A] WK ZN PAV MRK NON-REMOV (W)6"(SLD)

[B] WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 160+00 TO STA 170+00

SHEET 7 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	65

Plotted on: 7/27/2023

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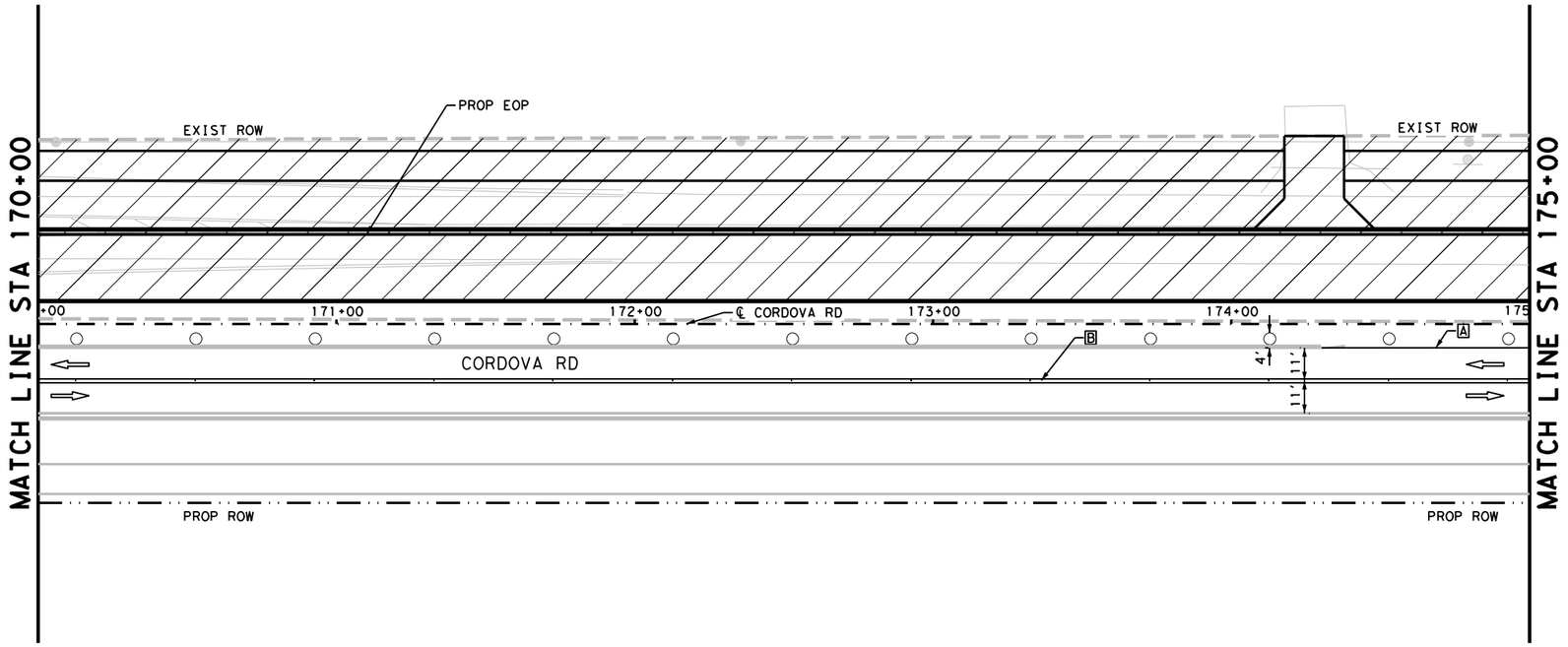

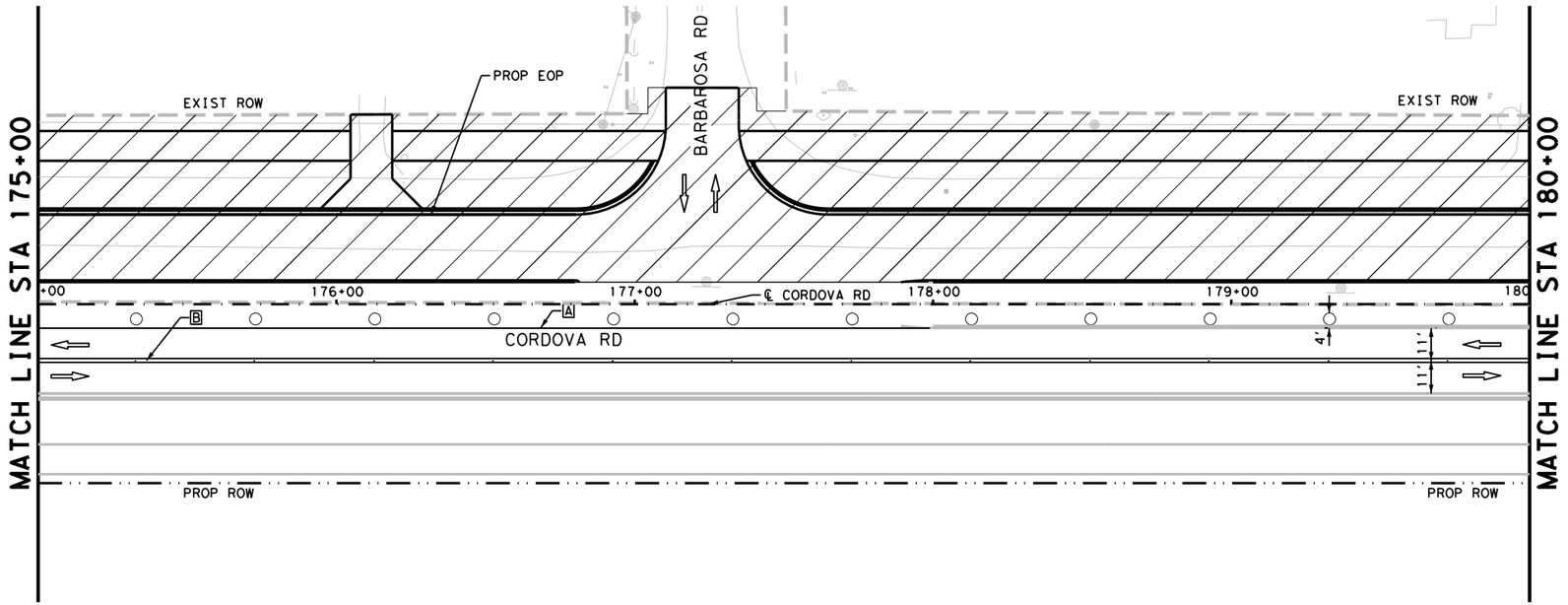

LEGEND

- CONSTRUCTION AREA PHASE II
- TEMPORARY PAVEMENT
- TYPE III BARRICADE
- SIGN
- TRAFFIC FLOW ARROWS
- PLASTIC DRUMS
- LOW PROFILE CONCRETE BARRIER (LPCB)
- A WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

N

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 170+00 TO STA 180+00

SHEET 8 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	66

Plotted on: 7/27/2023

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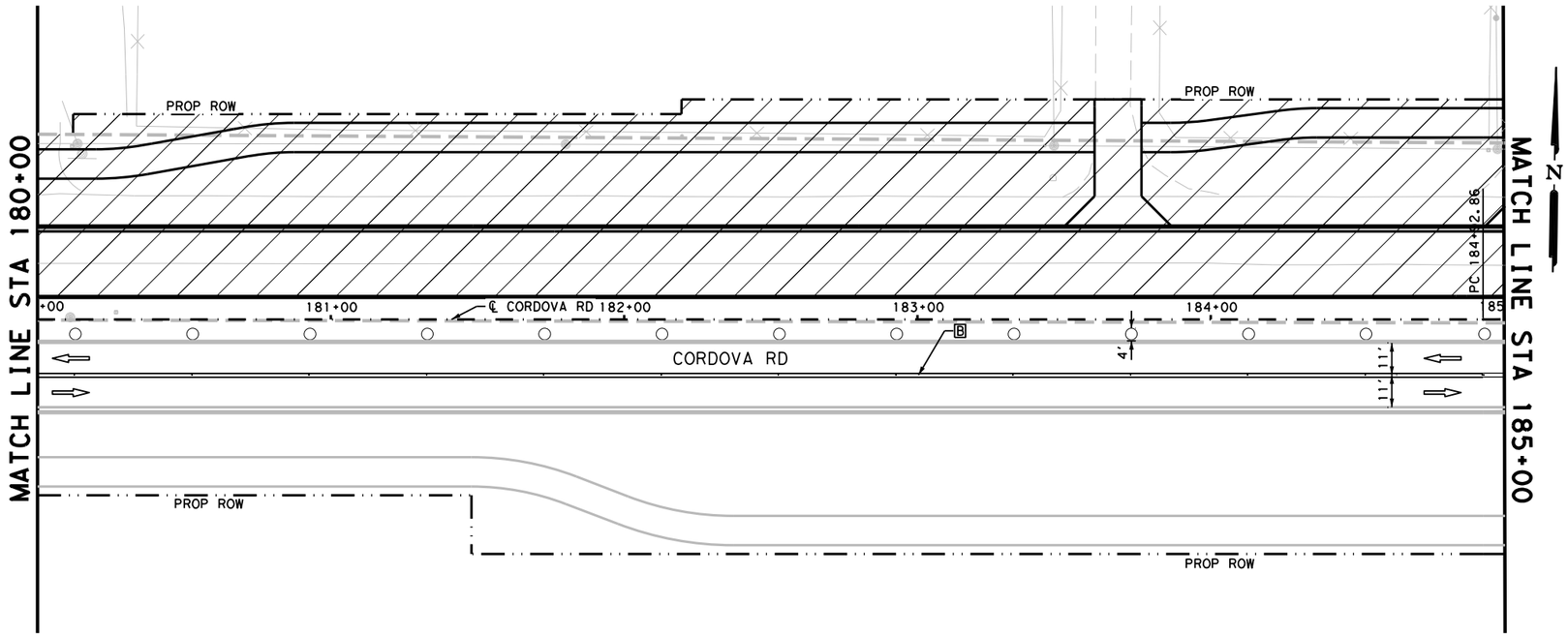

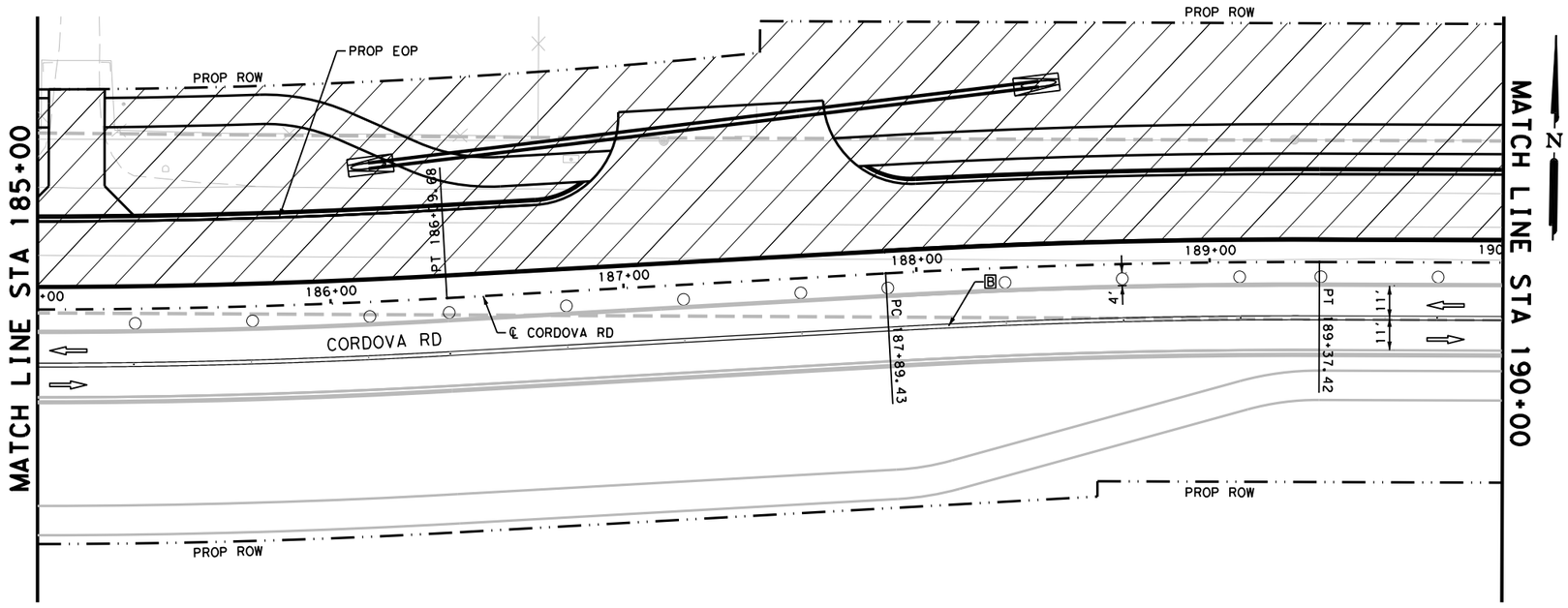

LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 180+00 TO STA 190+00

SHEET 9 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	67

Plotted on: 7/27/2023

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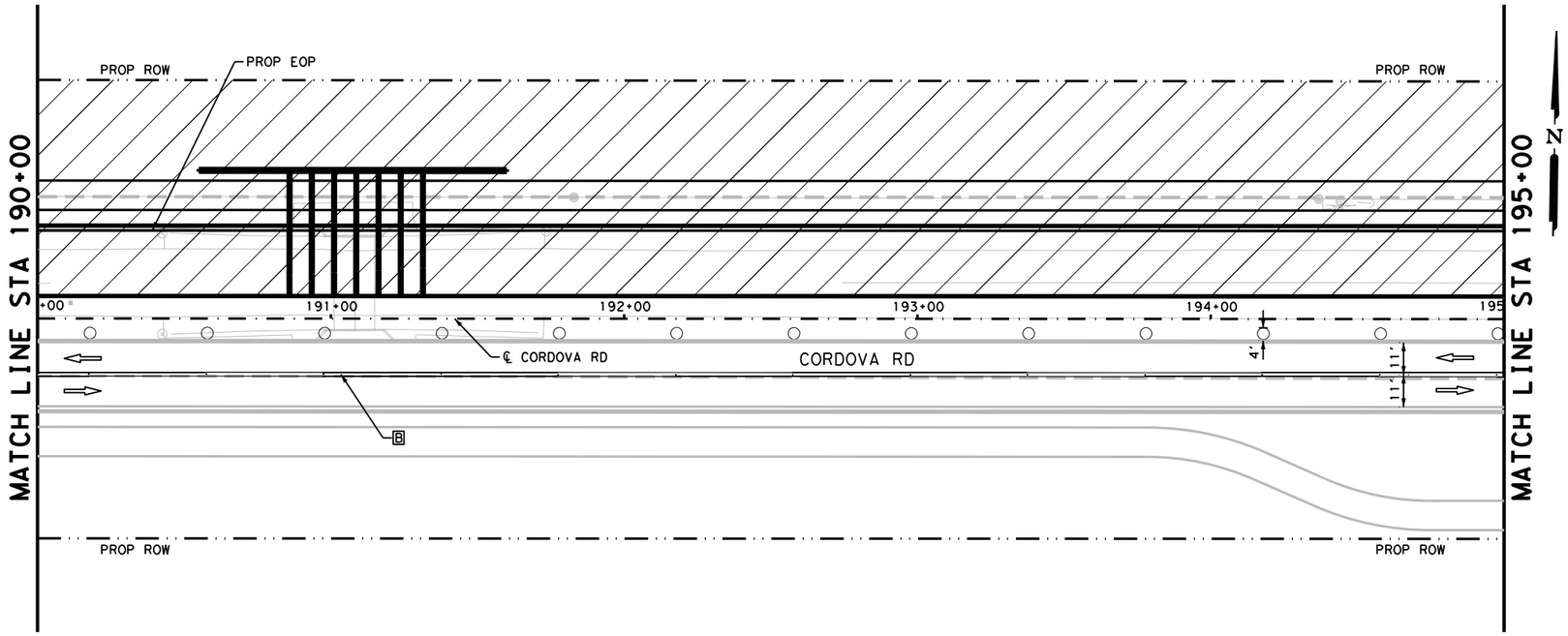

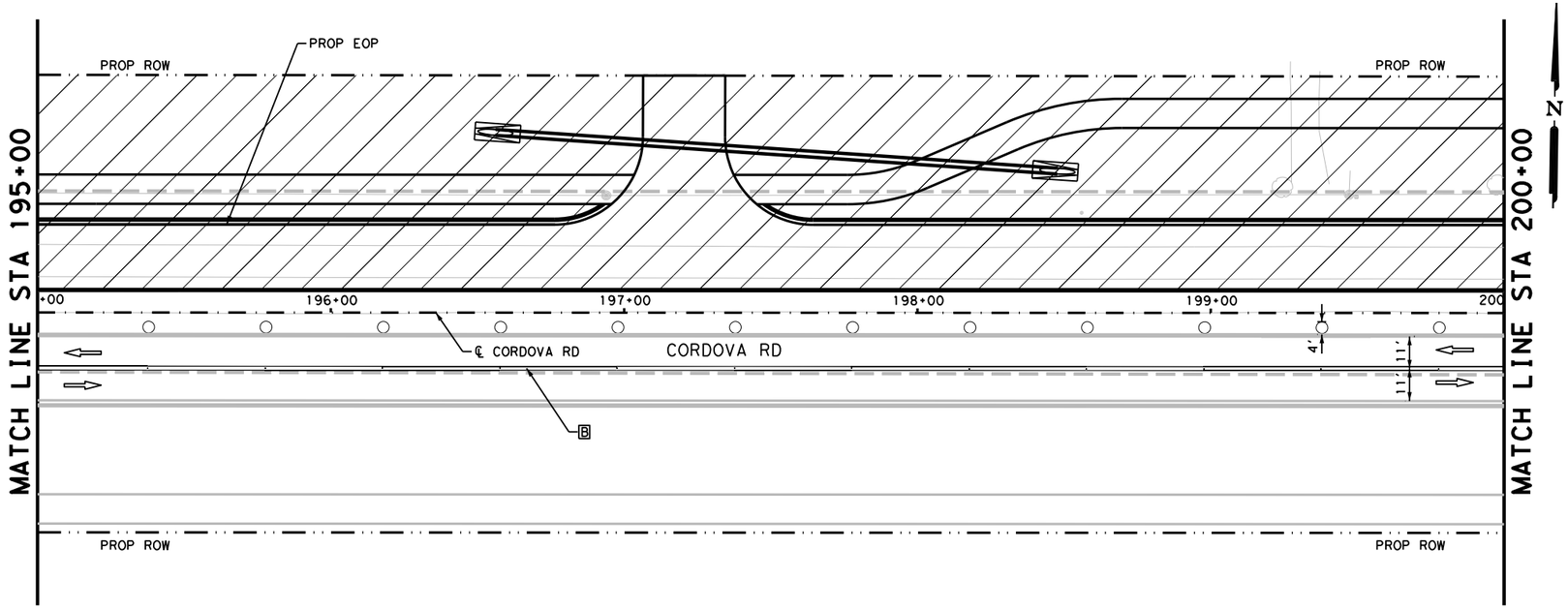

LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 190+00 TO STA 200+00

SHEET 10 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	68

Plotted on: 7/27/2023

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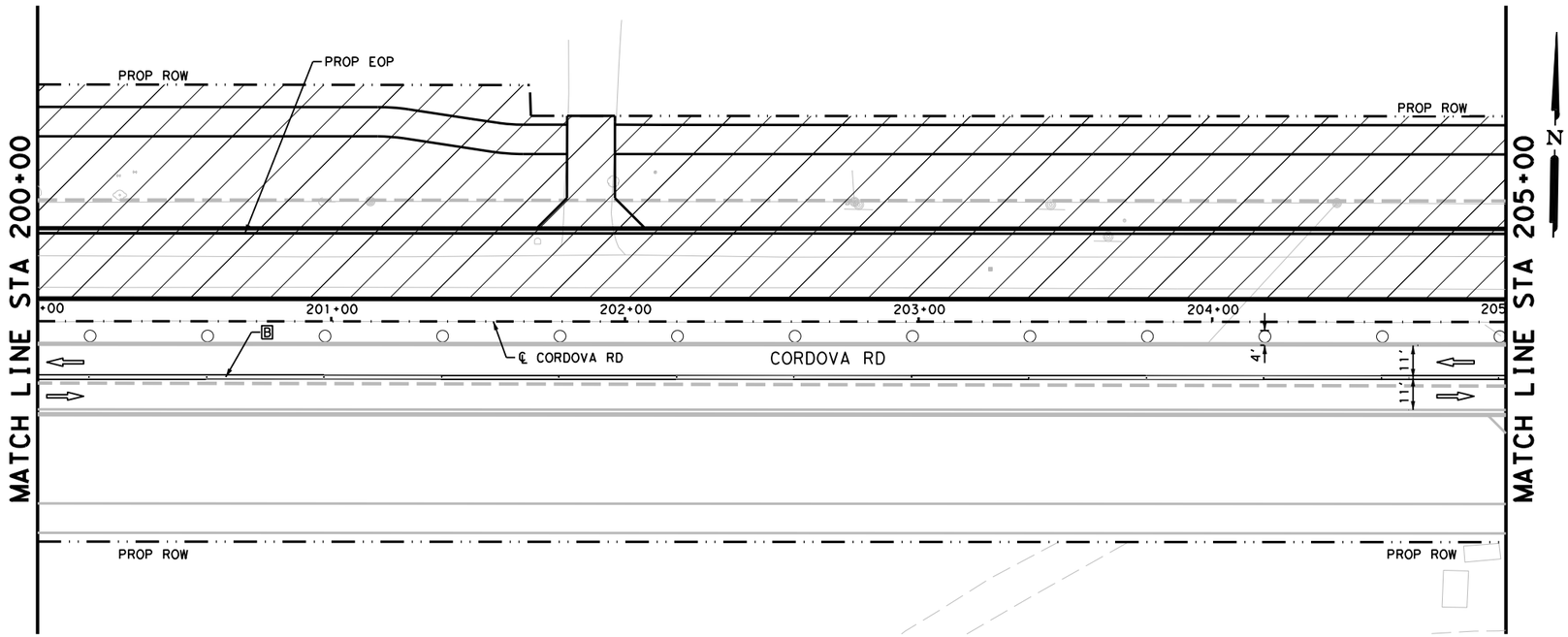

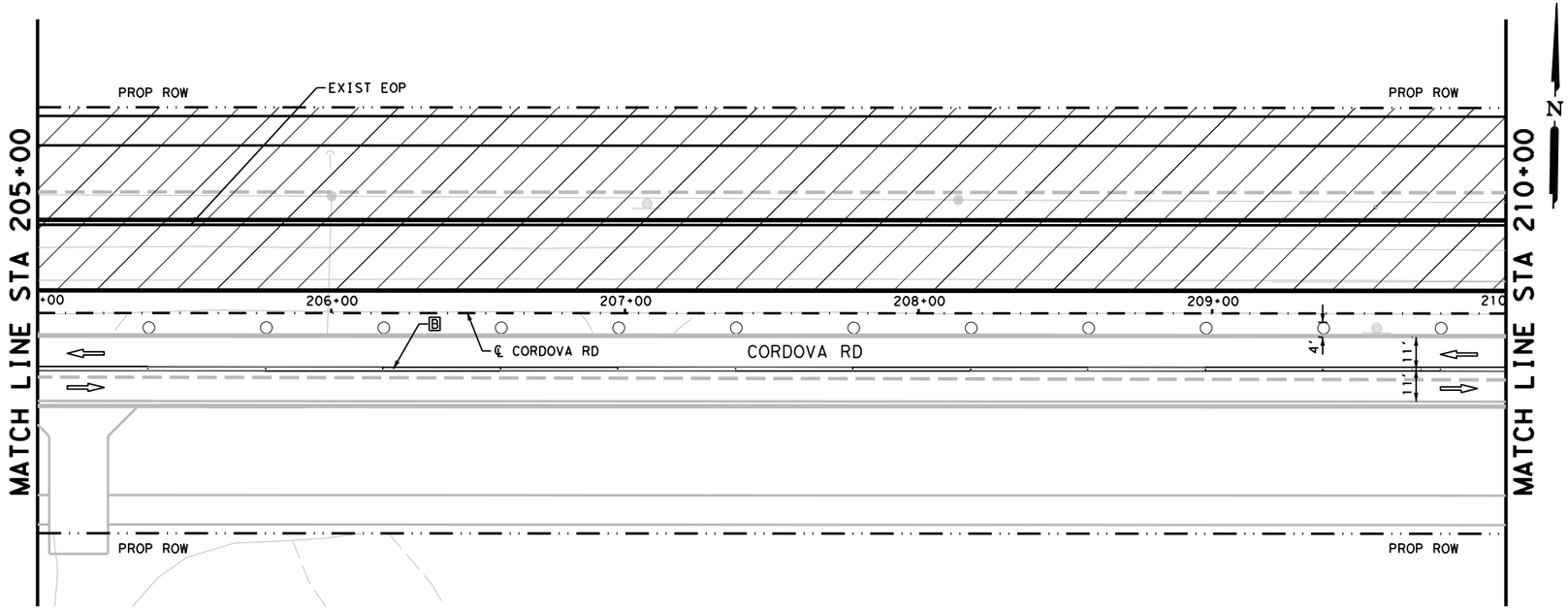

LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 200+00 TO STA 210+00

SHEET 11 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	69

Plotted on: 7/27/2023

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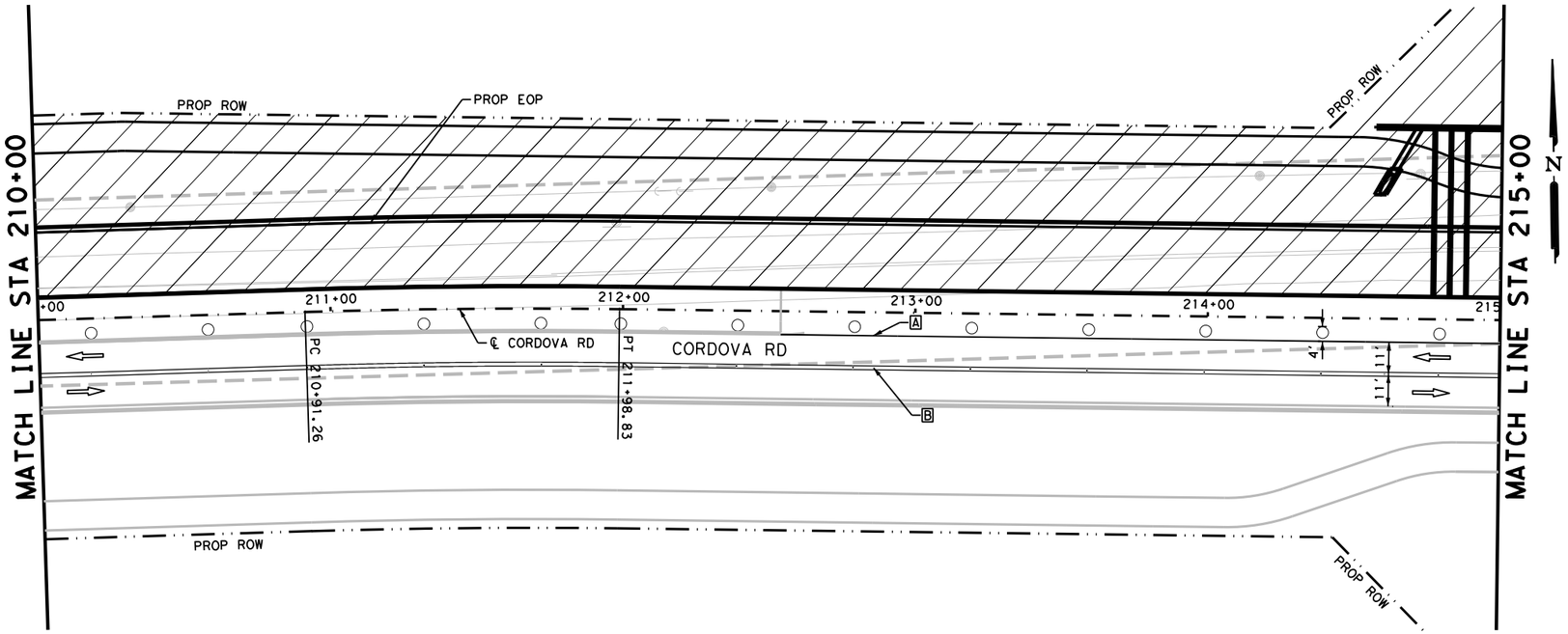
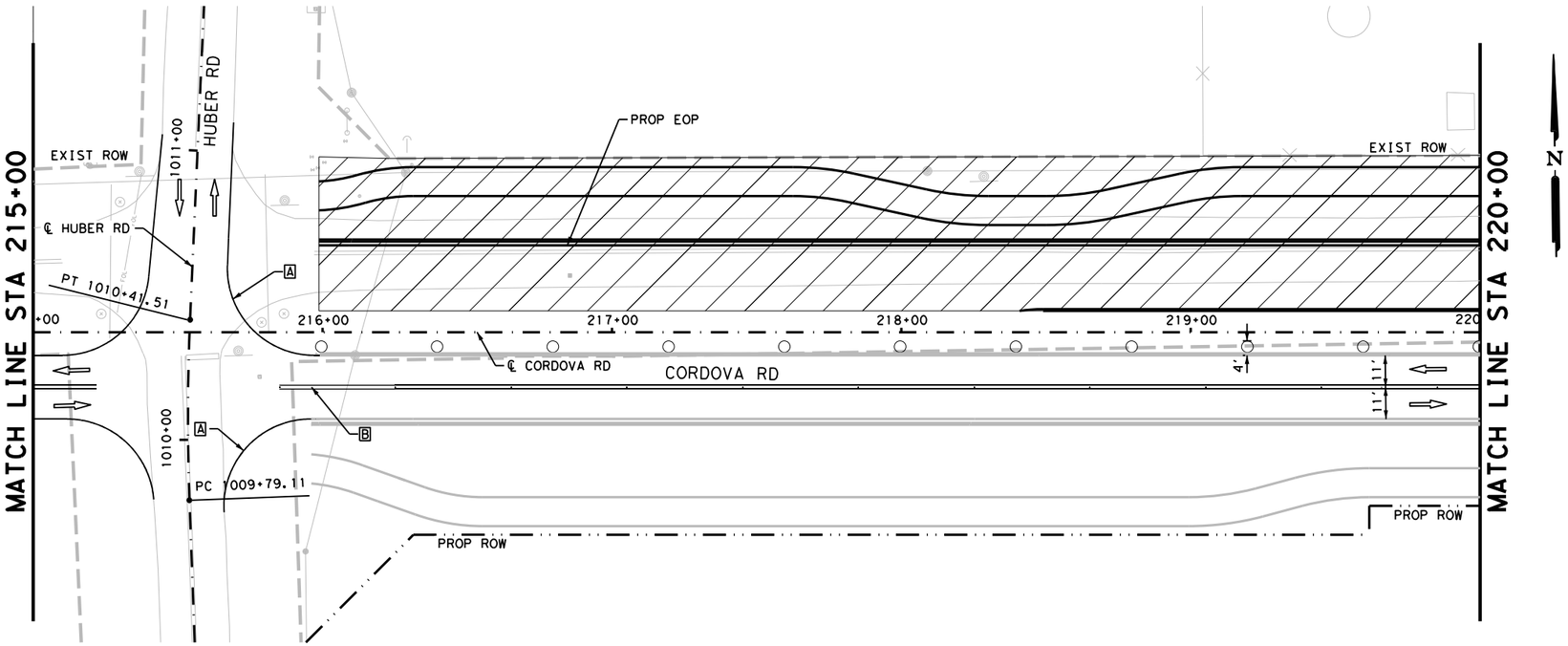
Plotted on: 7/27/2023





LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 210+00 TO STA 220+00

SHEET 12 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	70

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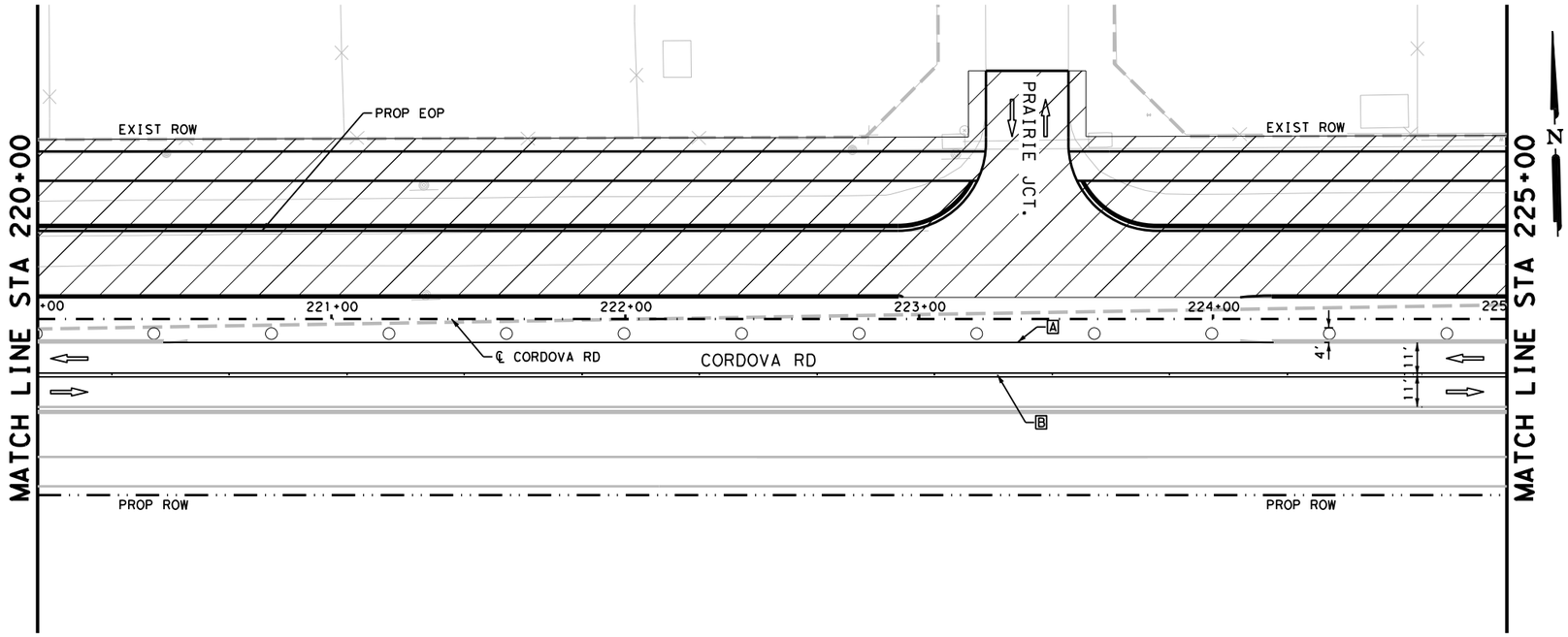

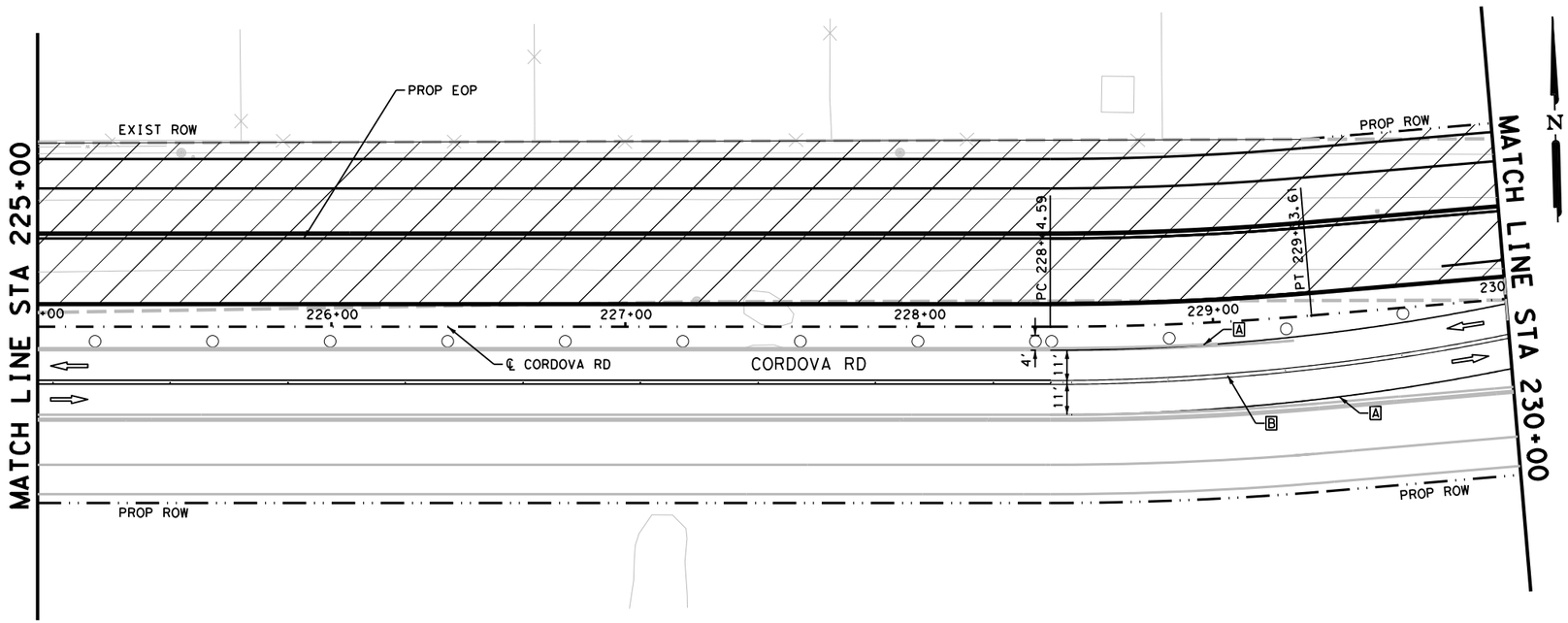

LEGEND

- CONSTRUCTION AREA PHASE II
- TEMPORARY PAVEMENT
- TYPE III BARRICADE
- SIGN
- TRAFFIC FLOW ARROWS
- PLASTIC DRUMS
- LOW PROFILE CONCRETE BARRIER (LPCB)
- [A] WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- [B] WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
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5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

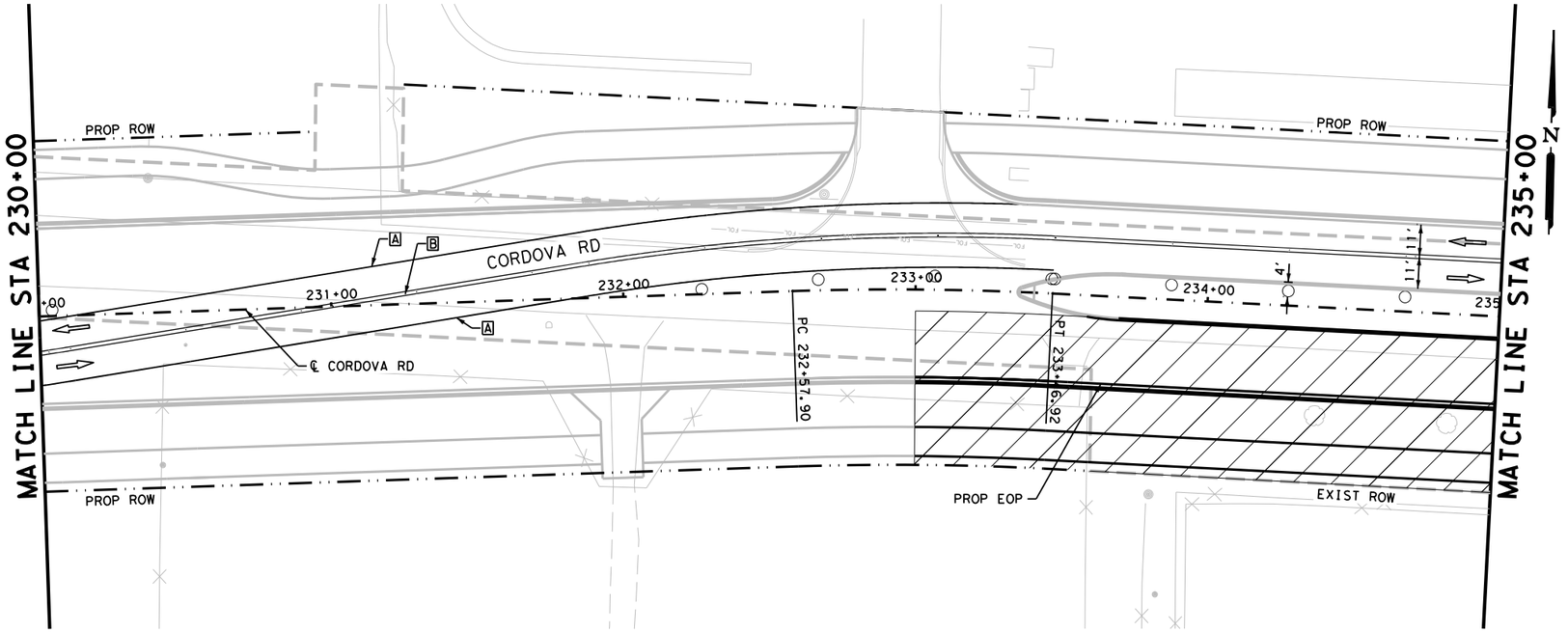
STA 220+00 TO STA 230+00

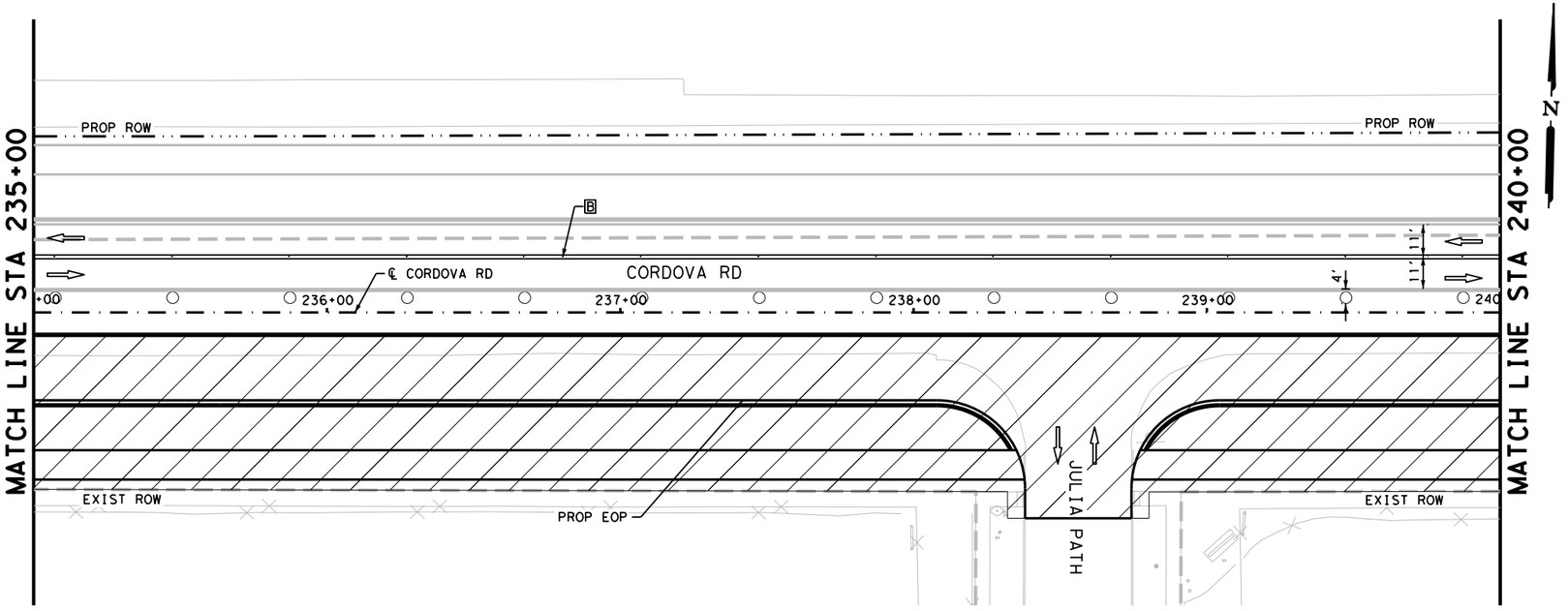
SHEET 13 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	71

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\TCP\Phase II\1277500_TCP_PH2_13.dgn





LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
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5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 230+00 TO STA 240+00

SHEET 14 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	72

Plotted on: 7/27/2023

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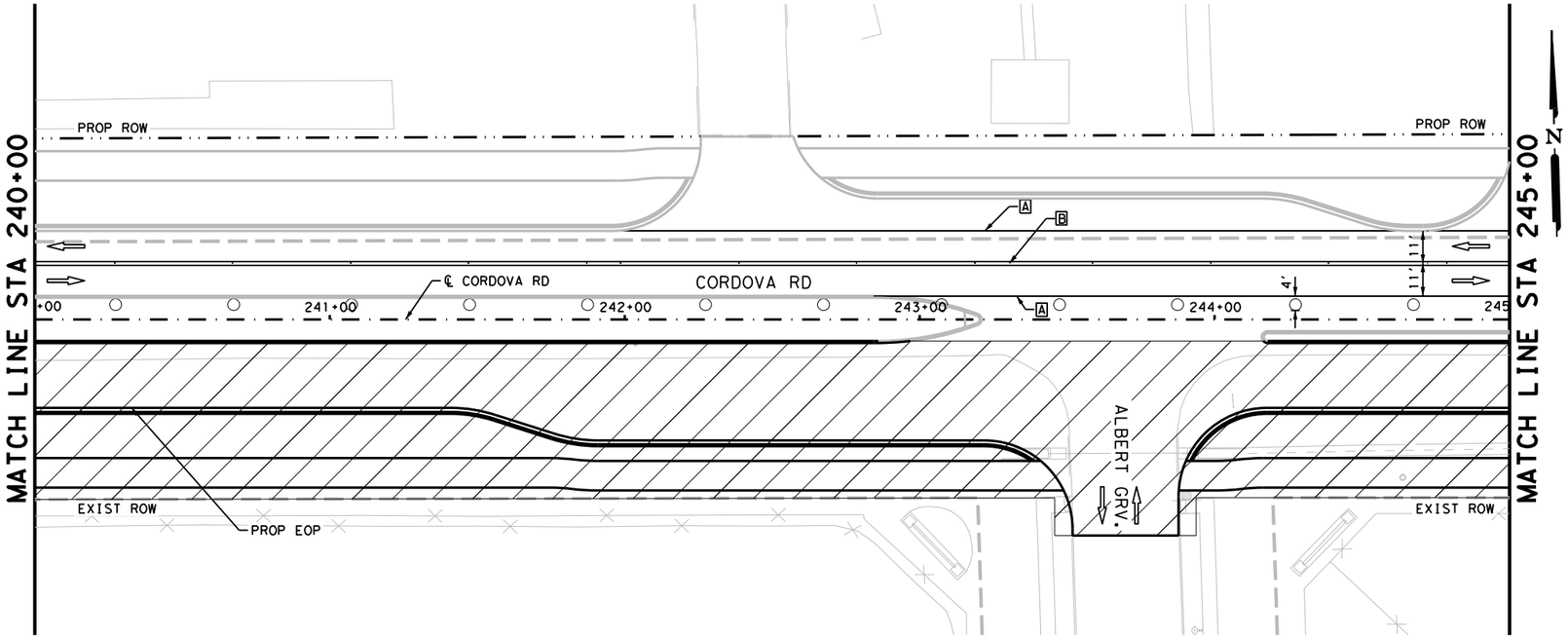

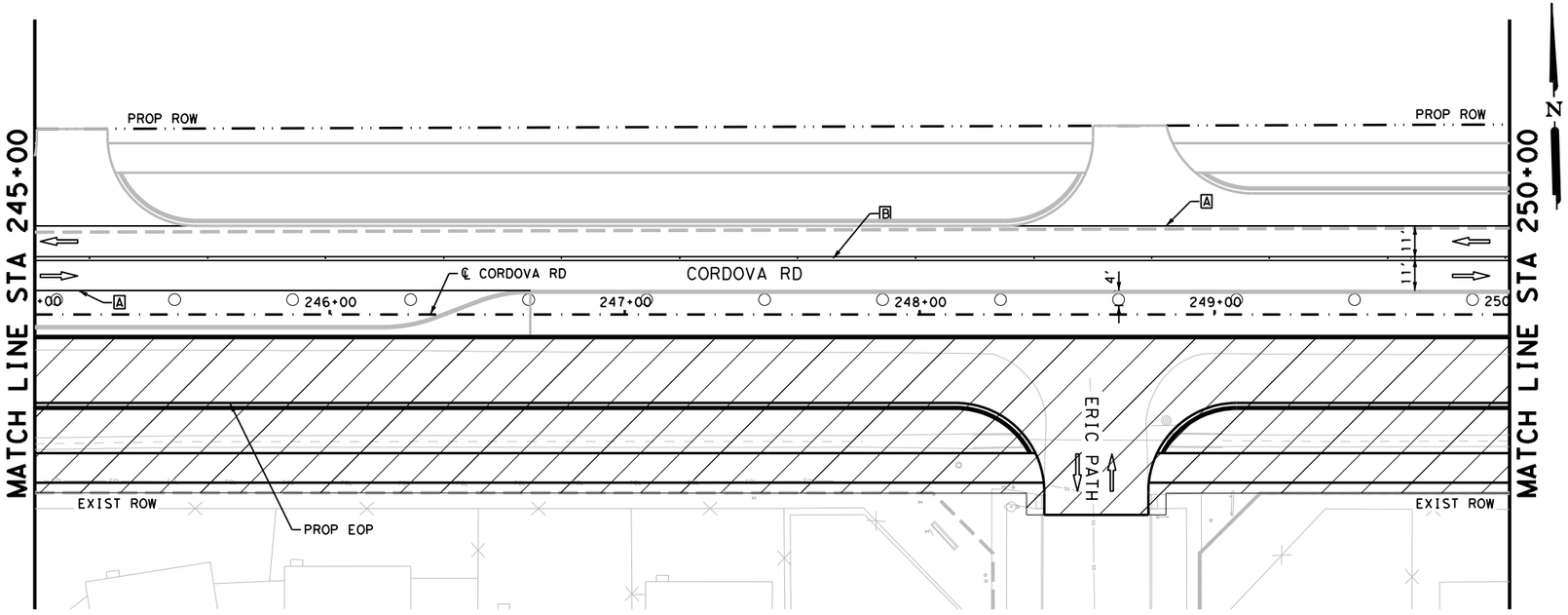

LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

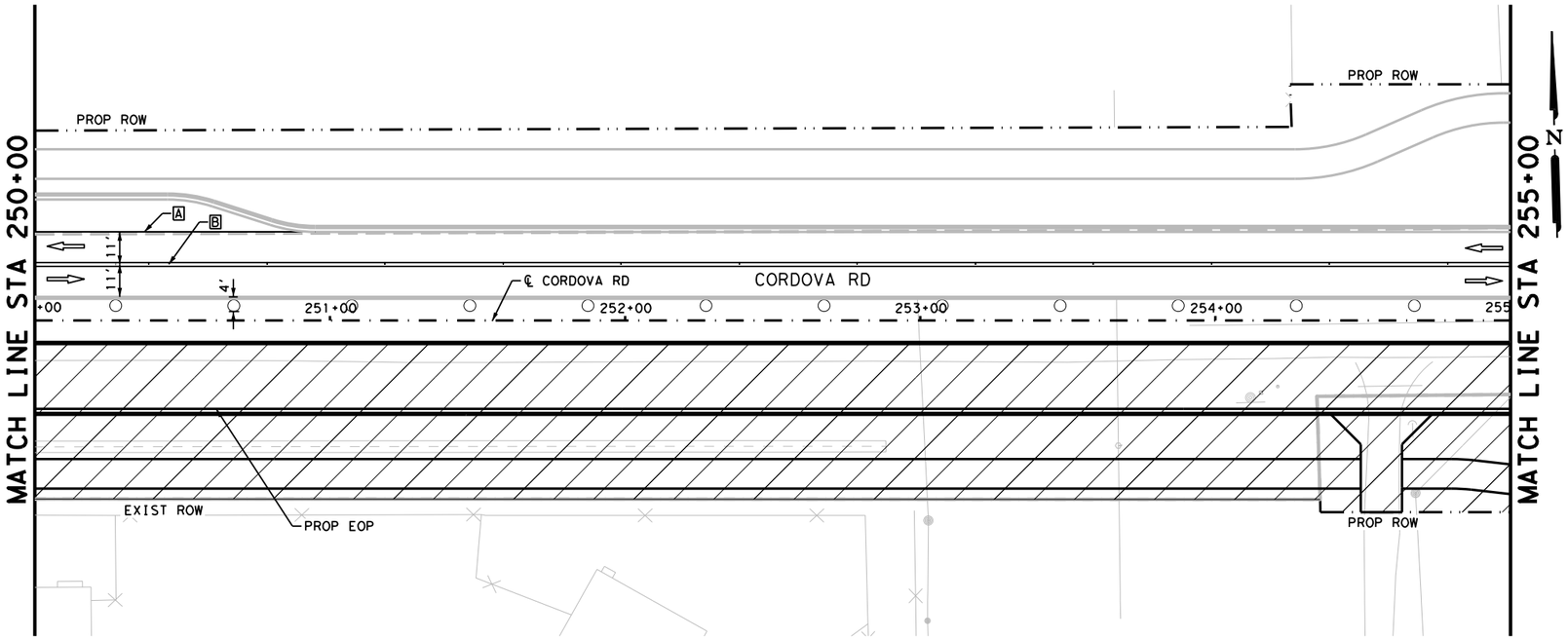
STA 240+00 TO STA 250+00

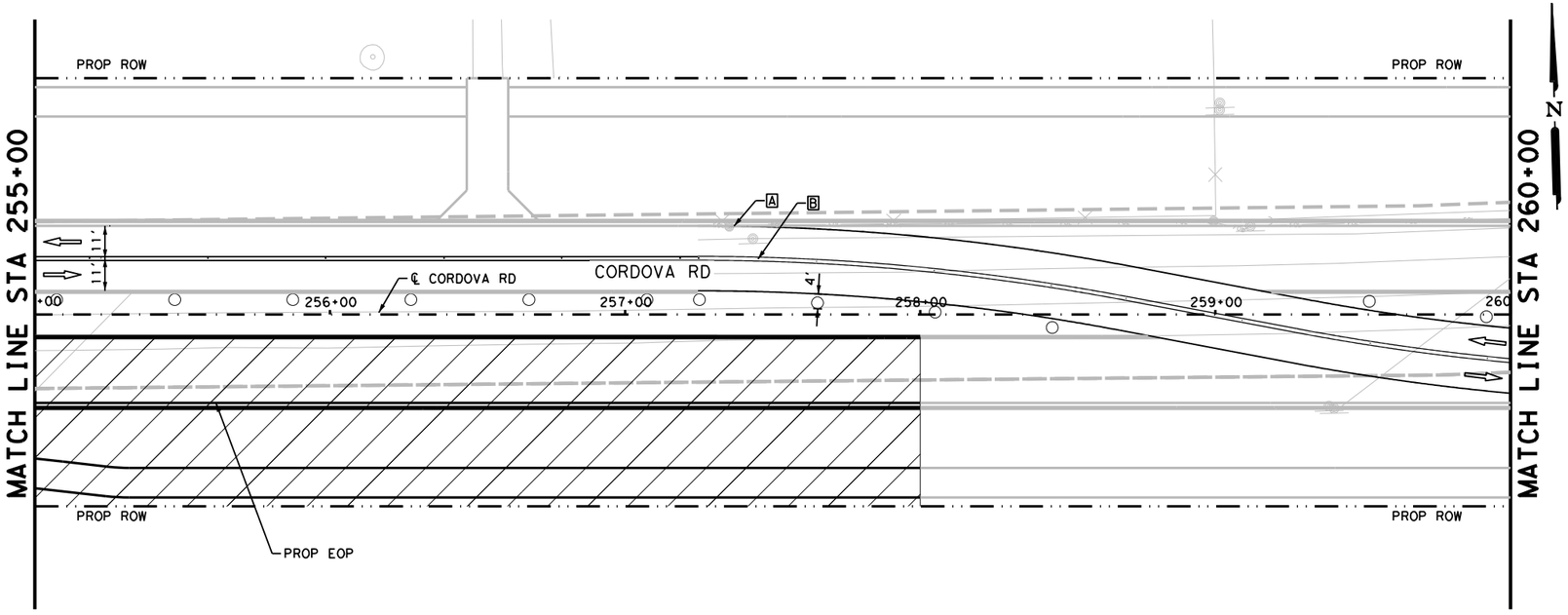
SHEET 15 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	73

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\TCP\Phase II\1277500_TCP_PH2_15.dgn





LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 250+00 TO STA 260+00

SHEET 16 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	74

Plotted on: 7/27/2023

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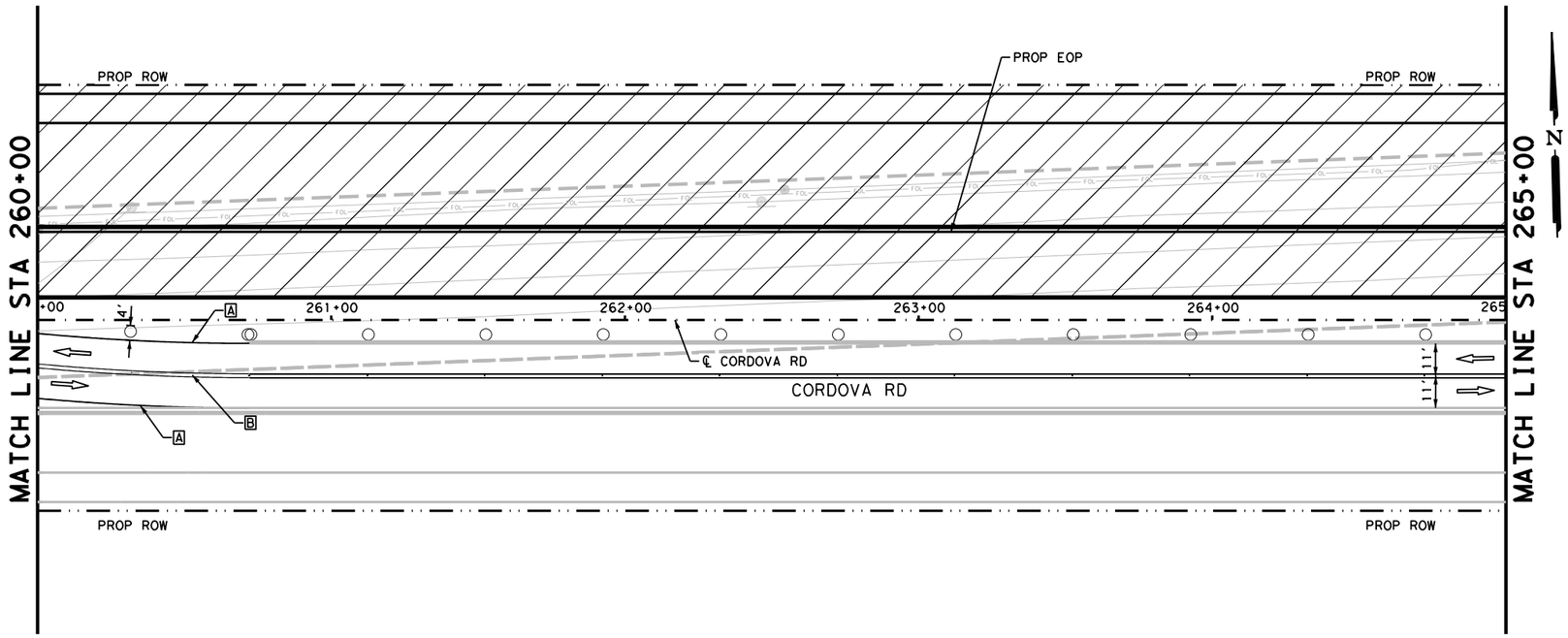

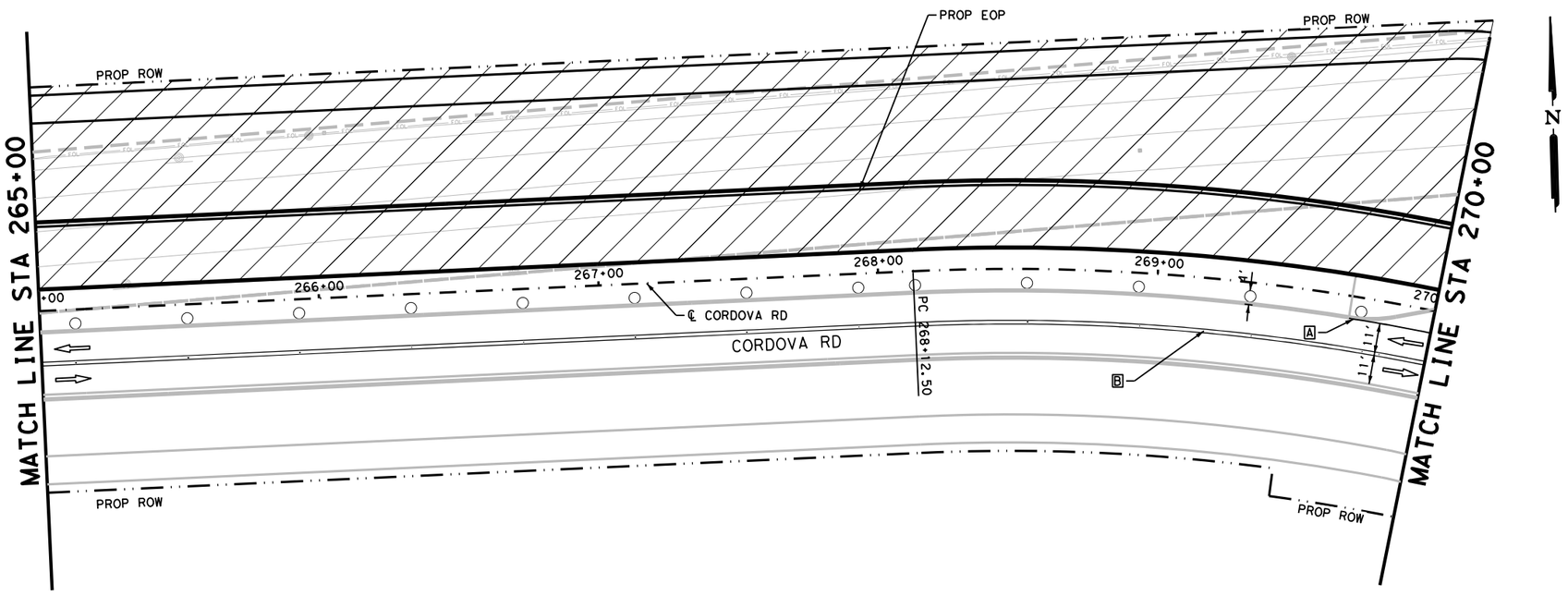

LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 260+00 TO STA 270+00

SHEET 17 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	75

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\TCP\Phase II\1277500_TCP_PH2_17.dgn

Plotted on: 7/27/2023

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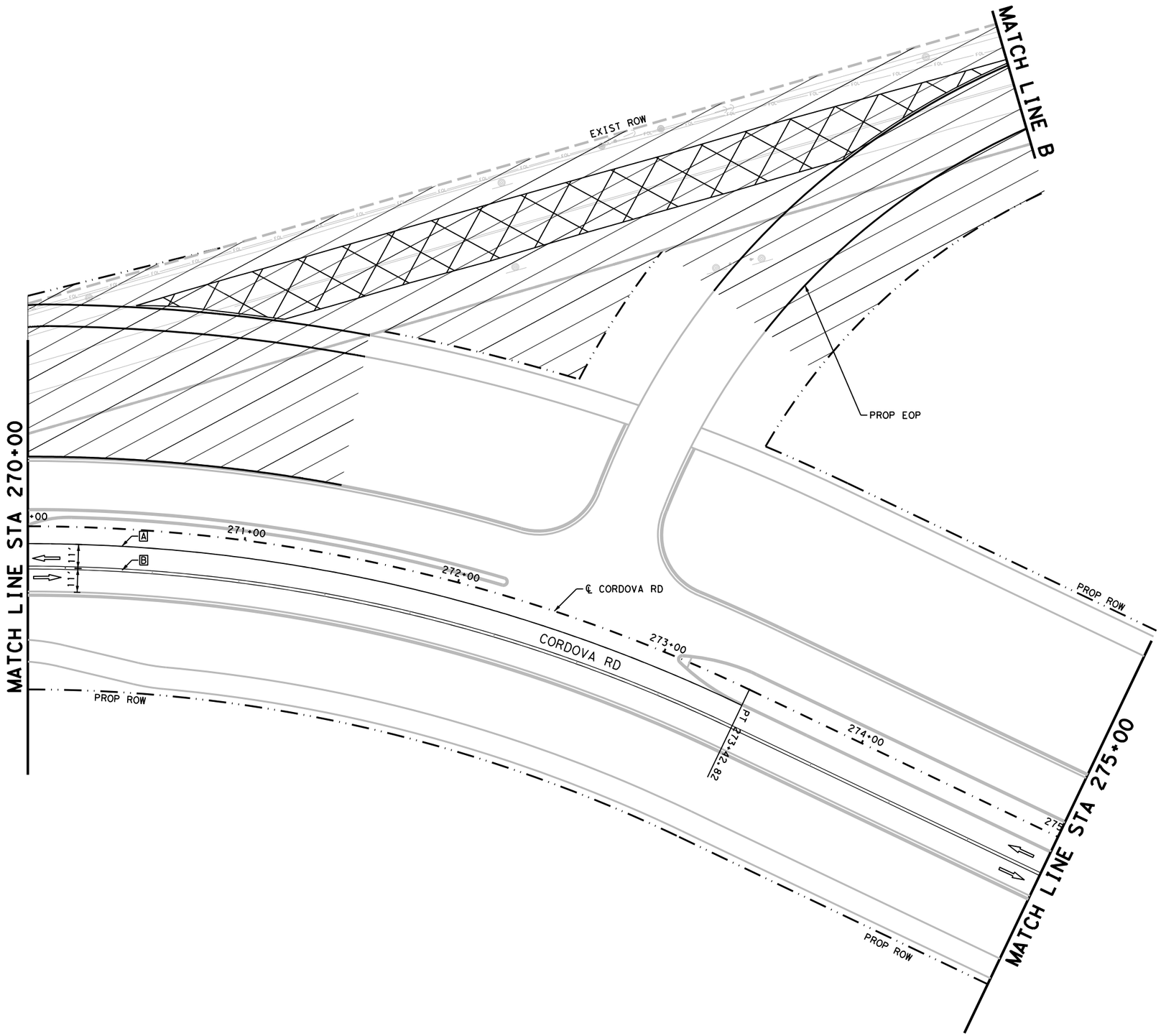

LEGEND

- CONSTRUCTION AREA PHASE II
- TEMPORARY PAVEMENT
- TYPE III BARRICADE
- SIGN
- TRAFFIC FLOW ARROWS
- PLASTIC DRUMS
- LOW PROFILE CONCRETE BARRIER (LPCB)
- [A] WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- [B] WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
4. ONE SECTION OF LPCB TY 2 MUST BE PLACED AT EACH UPSTREAM AND DOWNSTREAM END. THE TY 2 IS INCLUDED IN THE LPCB CALLOUTS.
5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 270+00 TO STA 275+00

SHEET 18 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	76

Plotted on: 7/27/2023

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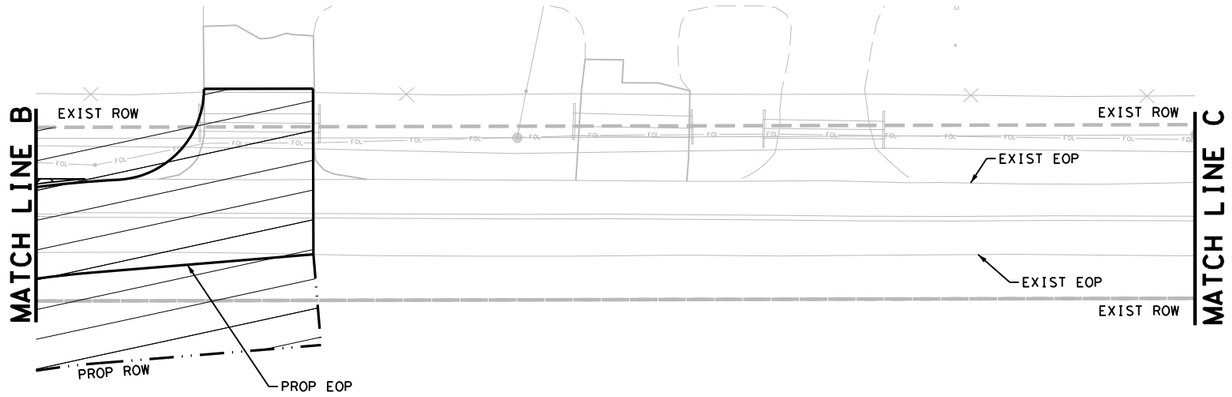

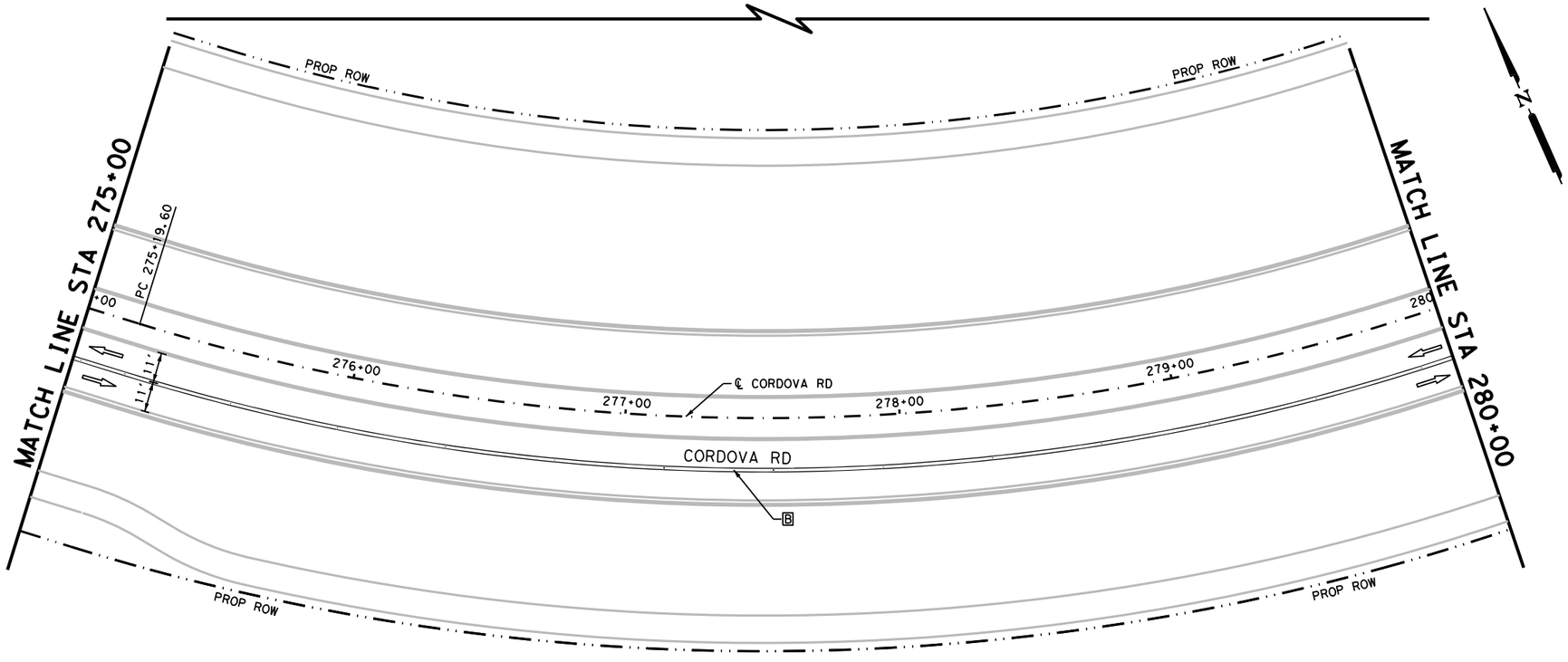

LEGEND

- CONSTRUCTION AREA PHASE II
- TEMPORARY PAVEMENT
- TYPE III BARRICADE
- SIGN
- TRAFFIC FLOW ARROWS
- PLASTIC DRUMS
- LOW PROFILE CONCRETE BARRIER (LPCB)
- A WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
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5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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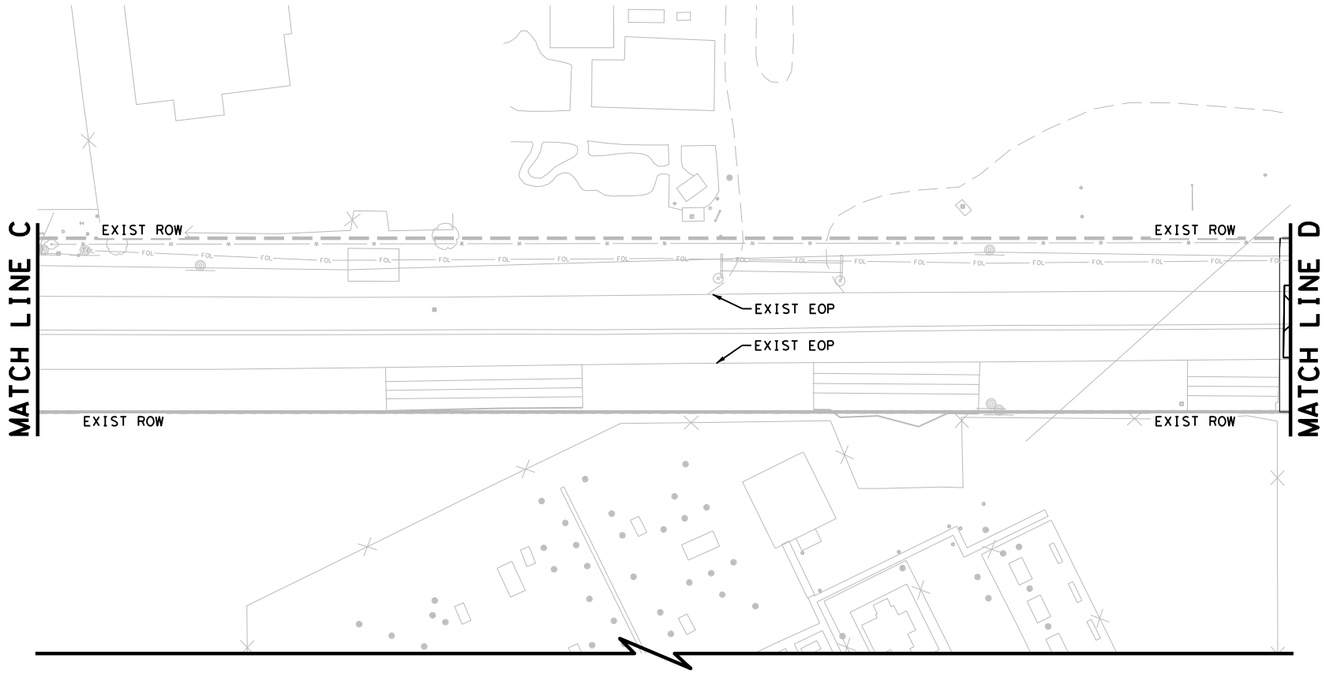
CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 275+00 TO STA 280+00

SHEET 19 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	77



LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
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5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 280+00 TO STA 285+00

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	78

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\TCP\PhaseII\1277500_TCP_PH2_20.dgn

Plotted on: 7/27/2023

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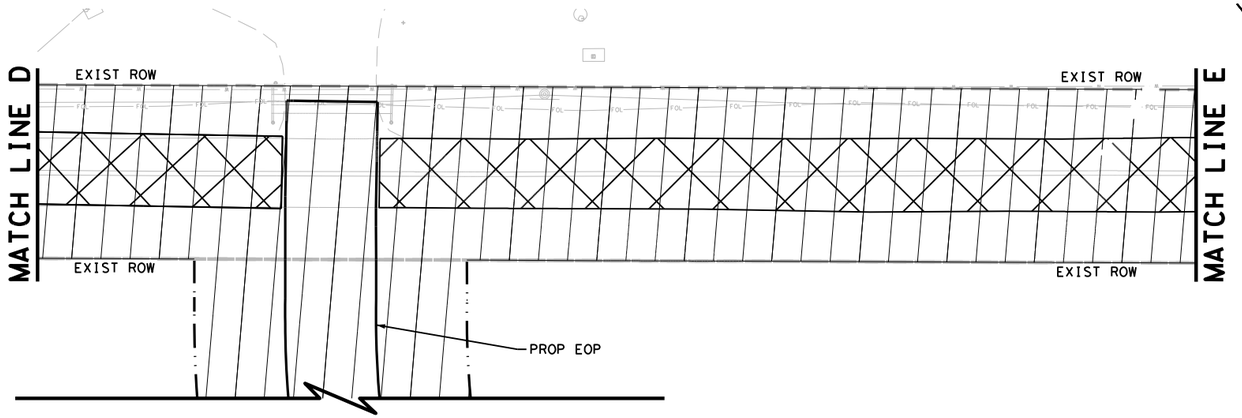

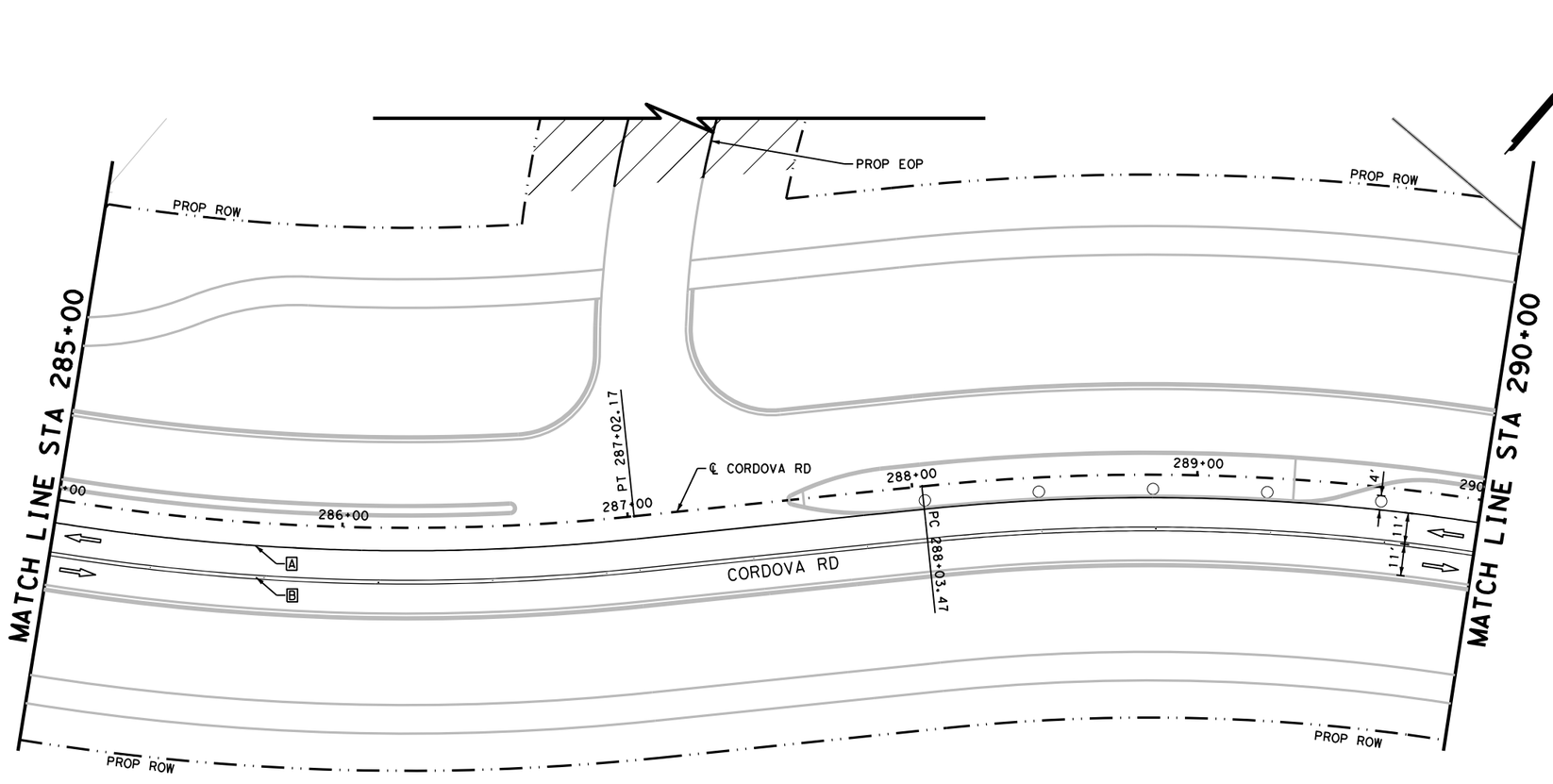

LEGEND

CONSTRUCTION AREA PHASE II

TEMPORARY PAVEMENT

TYPE III BARRICADE

SIGN

TRAFFIC FLOW ARROWS

PLASTIC DRUMS

LOW PROFILE CONCRETE BARRIER (LPCB)

A WK ZN PAV MRK NON-REMOV (W)6"(SLD)

B WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
3. EXISTING PAVEMENT MARKINGS CONFLICTING WITH WORK ZONE PAVEMENT MARKINGS SHALL BE REMOVED. THIS WORK IS CONSIDERED SUBSIDIARY TO THE WORK ZONE PAVEMENT MARKING ITEMS.
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5. A 3:1 TRAVERSABLE SAFETY SLOPE MUST BE ADDED TO ALL DROPOFFS GREATER THAN 24" IN AREAS NOT PROTECTED BY BARRIER AT THE END OF THE WORK DAY.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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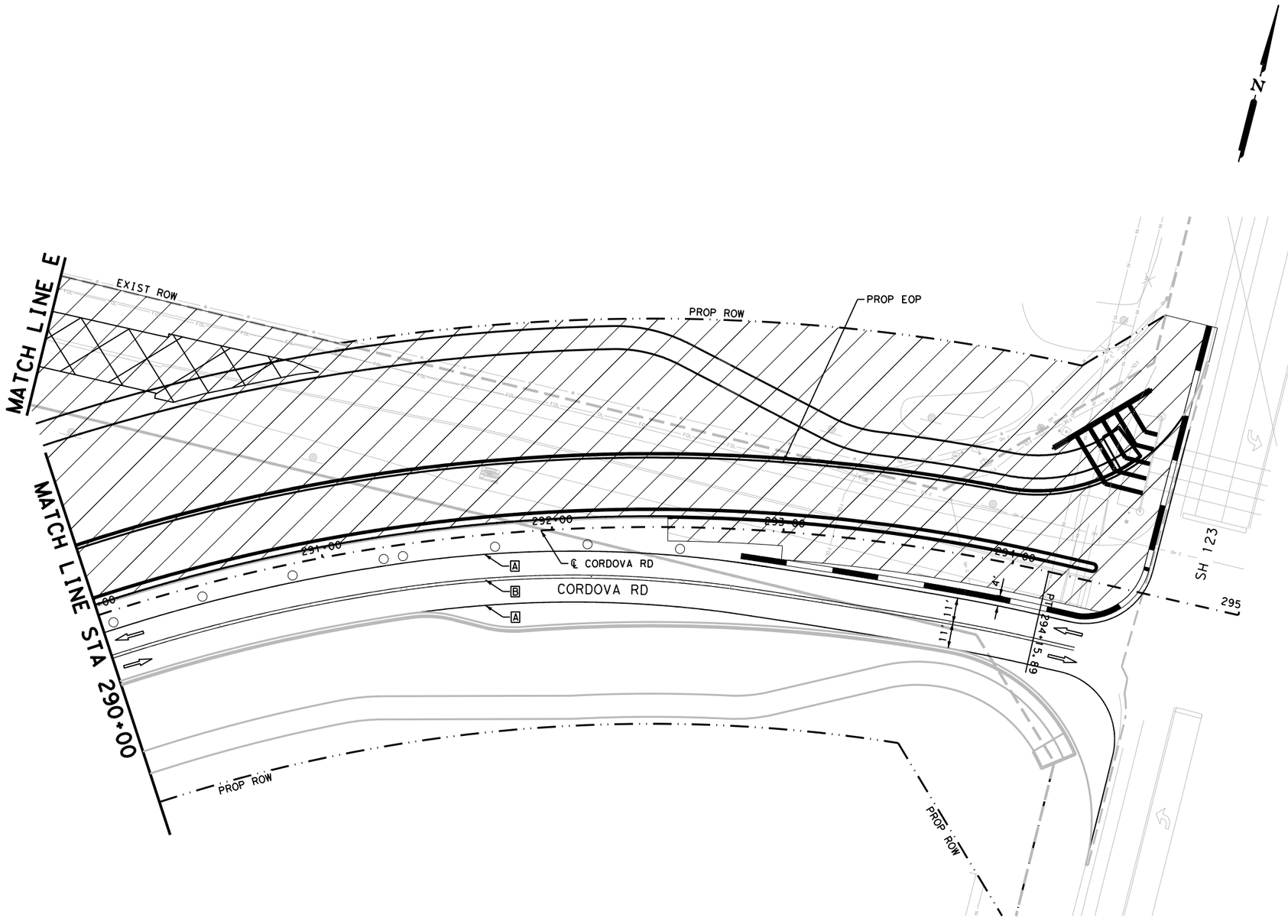
CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 285+00 TO STA 290+00

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	79



LEGEND

- CONSTRUCTION AREA PHASE II
- TEMPORARY PAVEMENT
- TYPE III BARRICADE
- SIGN
- TRAFFIC FLOW ARROWS
- PLASTIC DRUMS
- LOW PROFILE CONCRETE BARRIER (LPCB)
- [A] WK ZN PAV MRK NON-REMOV (W)6"(SLD)
- [B] WK ZN PAV MRK NON-REMOV (Y)6"(DBL)(SLD)

NOTES:

1. FOR ADDITIONAL DETAILS SEE TxDOT TCP STANDARD SHEETS.
2. EXISTING FEATURES ARE SHOWN SCREENED BACK.
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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50 75
SCALE: 1"= 50'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

TRAFFIC CONTROL PLAN PHASE II

STA 290+00 TO END OF PROJECT

SHEET 22 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	80

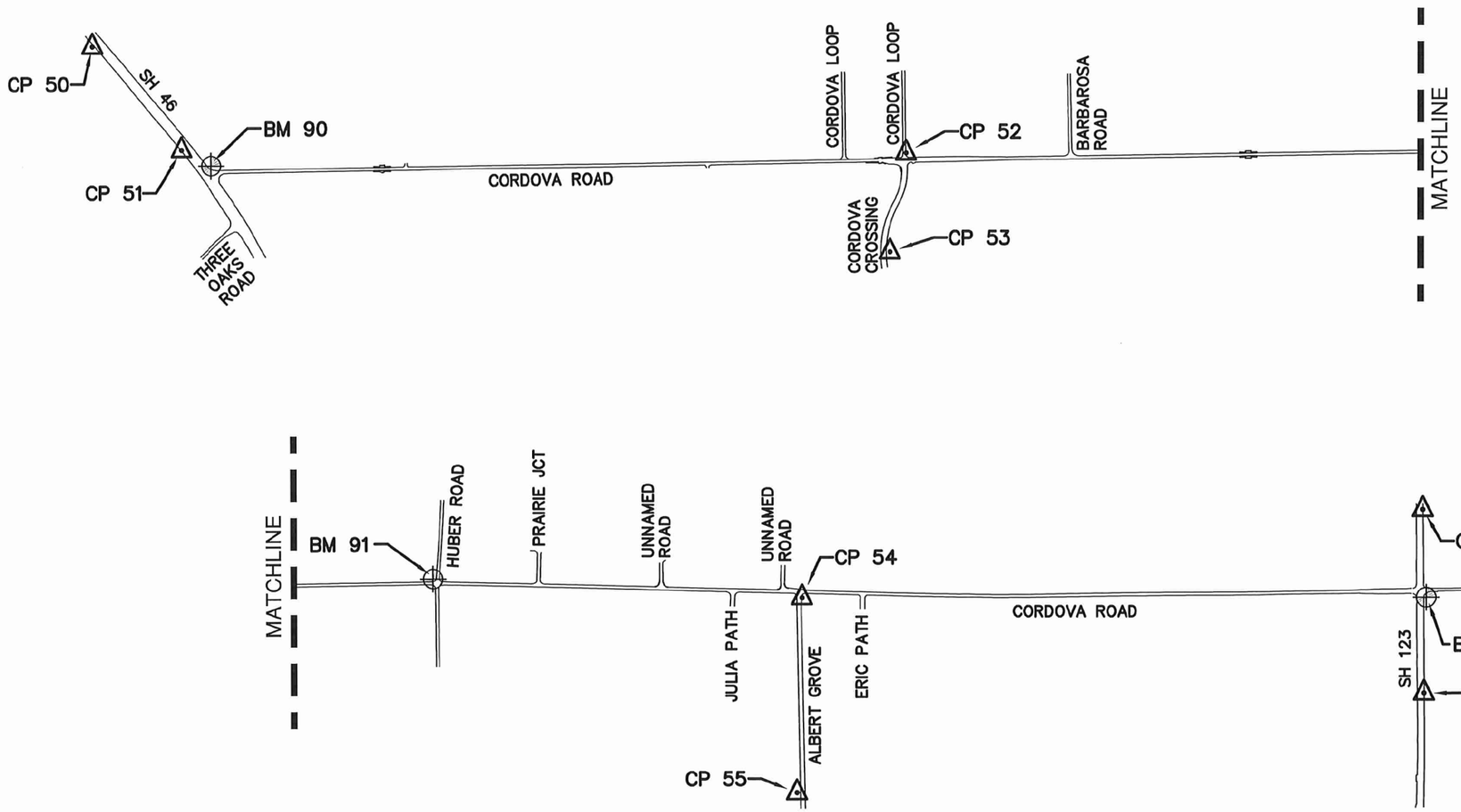
Plotted on: 7/27/2023

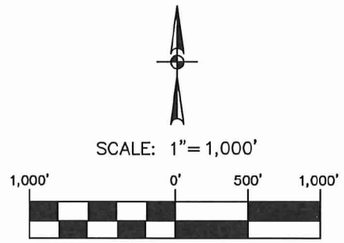
Design Filename: P:\127\75\00\Design\Civil\TCP\Phase II\1277500_TCP_PH2_22.dgn

Plotted on: July 20, 2023

Design Filename: N:\TRANSPO\CIVIL\12775-00\CONTROL SHEETS\CT 12775-00 SEGUIN-MLH.DWG

HORIZONTAL AND VERTICAL CONTROL POINTS				
Point #	Northing	Easting	Elevation	Full Description
50	13,780,269.16	2,277,895.93	589.96	MAG NAIL & WASHER
51	13,779,469.20	2,278,587.47	587.58	MAG NAIL & WASHER
52	13,779,443.43	2,284,204.79	580.19	MAG NAIL & WASHER
53	13,778,683.52	2,284,079.80	580.46	MAG NAIL & WASHER
54	13,779,354.28	2,292,144.04	594.36	MAG NAIL & WASHER
55	13,777,847.98	2,292,104.52	593.85	MAG NAIL & WASHER
56	13,780,032.11	2,296,957.28	576.81	MAG NAIL & WASHER
57	13,778,614.39	2,296,968.07	577.06	MAG NAIL & WASHER
89	13,779,353.71	2,296,983.86	575.22	BM-CW123 CHISELLED SQUARE ON CONCRETE
90	13,779,348.54	2,278,820.42	588.69	BM-CW125 CHISELLED SQUARE ON CONCRETE
91	13,779,499.02	2,289,276.70	590.81	BM-CW124 CHISELLED "X" ON FIRE HYDRANT BOLT





NOTES:

1. COORDINATES SHOWN ARE DISPLAYED AS SURFACE VALUES IN US SURVEY FEET, BASED ON THE NORTH AMERICAN DATUM OF 1983 (2011) EPOCH 2010.00 FROM THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE SOUTH CENTRAL ZONE, WITH A SURFACE ADJUSTMENT FACTOR OF 1.00015 APPLIED.
2. ELEVATIONS SHOWN ARE BASED ON NAVD88 (GEOID 18), OBTAINED BY RTK METHODS AND BALANCING A CLOSED, DOUBLE RUN DIGITAL LEVEL LOOP.
3. FIELD WORK FOR THIS SURVEY WAS COMPLETED IN JANUARY, 2023.
4. CONTRACTOR MUST VERIFY CONTROL POINT PRIOR TO BEGINNING CONSTRUCTION.

LEGEND

CP	CONTROL POINT
BM	BENCHMARK
N.T.S.	NOT TO SCALE

SURVEYOR'S CERTIFICATION:

THE CONTROL POINTS SHOWN HEREIN WERE DETERMINED BY A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION.

1/6/2023

SHARON L SABIN
RPLS 6950

STATE OF TEXAS REGISTERED SHARON L. SABIN 6950 PROFESSIONAL LAND SURVEYOR

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

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THE STATE OF TEXAS GUADALUPE COUNTY

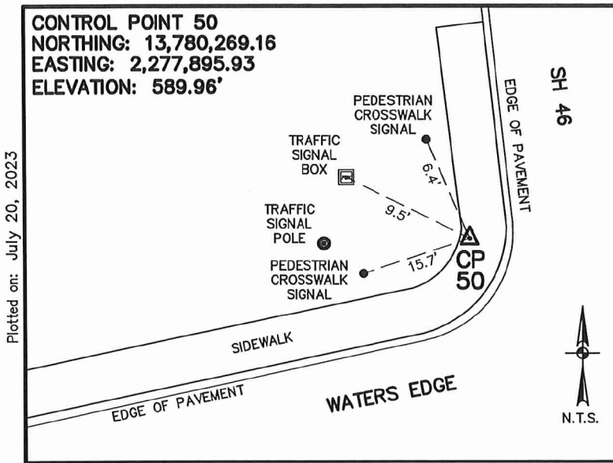
Texas Department of Transportation ©2023

CORDOVA RD

HORIZONTAL AND VERTICAL CONTROL SHEETS

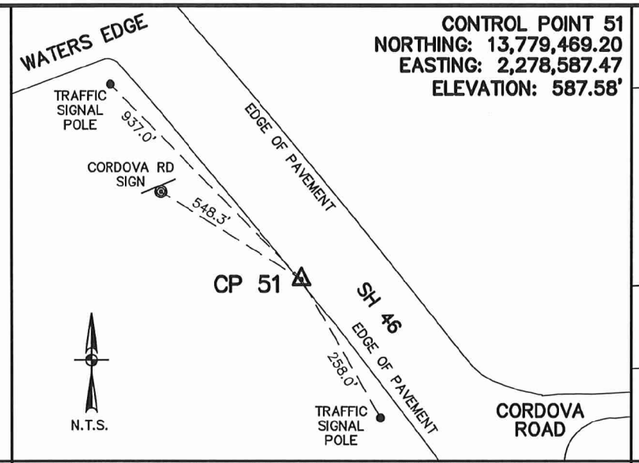
SHEET 1 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	81



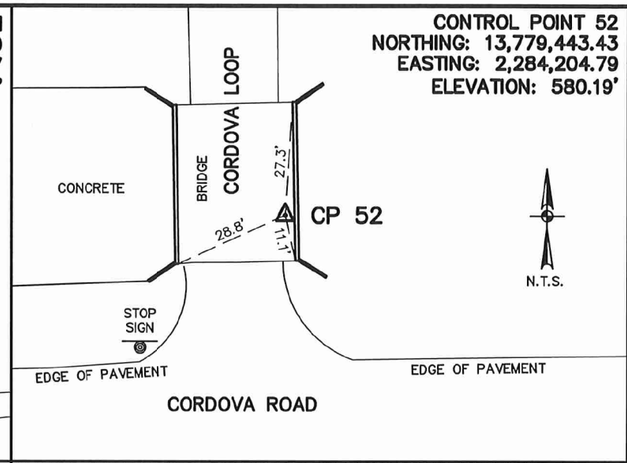
CONTROL POINT 50
NORTHING: 13,780,269.16
EASTING: 2,277,895.93
ELEVATION: 589.96'

MAG NAIL WITH WASHER ON THE WEST SIDE OF SH 46 APPROXIMATELY 1,350 FEET NORTH OF THE INTERSECTION OF SH 46 AND CORDOVA ROAD.



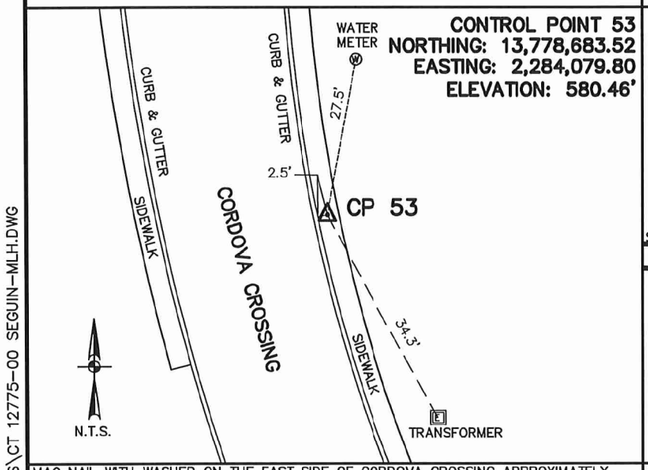
CONTROL POINT 51
NORTHING: 13,779,469.20
EASTING: 2,278,587.47
ELEVATION: 587.58'

MAG NAIL WITH WASHER ON THE WEST SIDE OF SH 46 APPROXIMATELY 280 FEET NORTH OF THE INTERSECTION OF SH 46 AND CORDOVA ROAD.



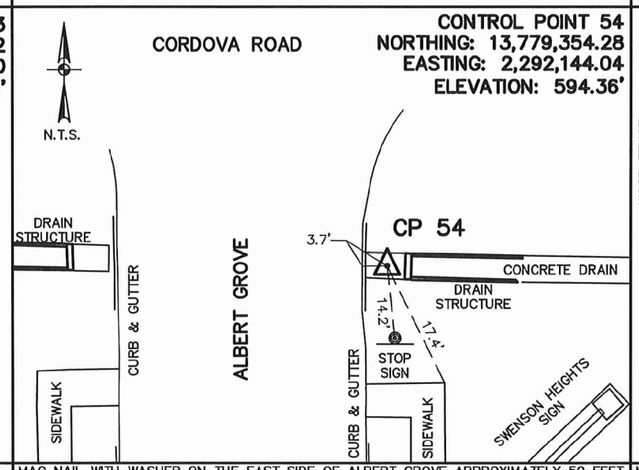
CONTROL POINT 52
NORTHING: 13,779,443.43
EASTING: 2,284,204.79
ELEVATION: 580.19'

MAG NAIL WITH WASHER ON THE EAST SIDE OF CORDOVA LOOP APPROXIMATELY 50 FEET NORTH OF THE INTERSECTION OF CORDOVA LOOP AND CORDOVA ROAD.



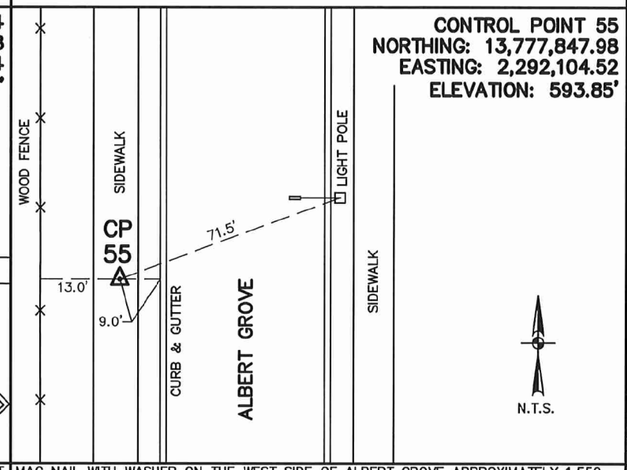
CONTROL POINT 53
NORTHING: 13,778,683.52
EASTING: 2,284,079.80
ELEVATION: 580.46'

MAG NAIL WITH WASHER ON THE EAST SIDE OF CORDOVA CROSSING APPROXIMATELY 720 FEET SOUTH OF THE INTERSECTION OF CORDOVA CROSSING AND CORDOVA ROAD.



CONTROL POINT 54
NORTHING: 13,779,354.28
EASTING: 2,292,144.04
ELEVATION: 594.36'

MAG NAIL WITH WASHER ON THE EAST SIDE OF ALBERT GROVE APPROXIMATELY 50 FEET SOUTH OF THE INTERSECTION OF ALBERT GROVE AND CORDOVA ROAD.



CONTROL POINT 55
NORTHING: 13,777,847.98
EASTING: 2,292,104.52
ELEVATION: 593.85'

MAG NAIL WITH WASHER ON THE WEST SIDE OF ALBERT GROVE APPROXIMATELY 1,550 FEET SOUTH OF THE INTERSECTION OF ALBERT GROVE AND CORDOVA ROAD.

NOTES:

1. COORDINATES SHOWN ARE DISPLAYED AS SURFACE VALUES IN US SURVEY FEET, BASED ON THE NORTH AMERICAN DATUM OF 1983 (2011) EPOCH 2010.00 FROM THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE SOUTH CENTRAL ZONE, WITH A SURFACE ADJUSTMENT FACTOR OF 1.00015 APPLIED.

2. ELEVATIONS SHOWN ARE BASED ON NAVD88 (GEOID 18), OBTAINED BY RTK METHODS AND BALANCING A CLOSED, DOUBLE RUN DIGITAL LEVEL LOOP.

3. FIELD WORK FOR THIS SURVEY WAS COMPLETED IN JANUARY, 2023.

4. CONTRACTOR MUST VERIFY CONTROL POINT PRIOR TO BEGINNING CONSTRUCTION.

LEGEND

CP	CONTROL POINT
BM	BENCHMARK
N.T.S.	NOT TO SCALE

SURVEYOR'S CERTIFICATION:

THE CONTROL POINTS SHOWN HEREIN WERE DETERMINED BY A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION.

1/6/2023

SHARON L. SABIN
RPLS 6950

STATE OF TEXAS
REGISTERED
SHARON L. SABIN
6950
PROFESSIONAL
LAND SURVEYOR

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

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THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

CORDOVA RD

HORIZONTAL AND VERTICAL CONTROL SHEETS

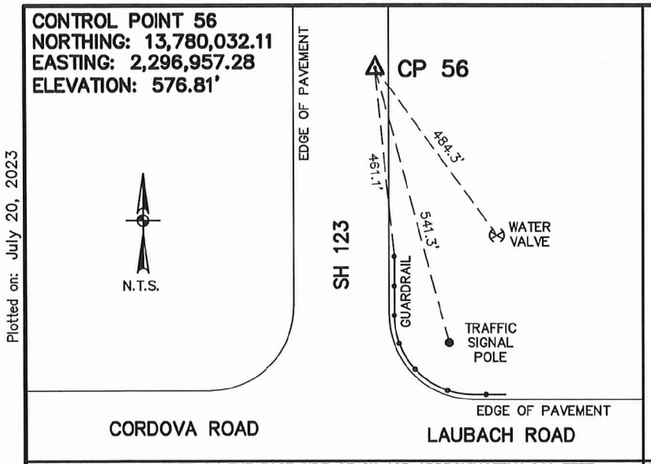
SHEET 2 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	82

Plotted on: July 20, 2023

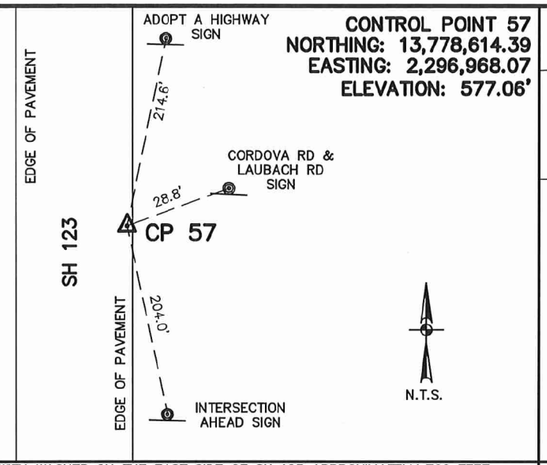
Design Filename: N:\TRANSPO\CIVIL\12775-00\CONTROL SHEETS\CT 12775-00 SEGUIN-MLH.DWG

CONTROL POINT 56
NORTHING: 13,780,032.11
EASTING: 2,296,957.28
ELEVATION: 576.81'



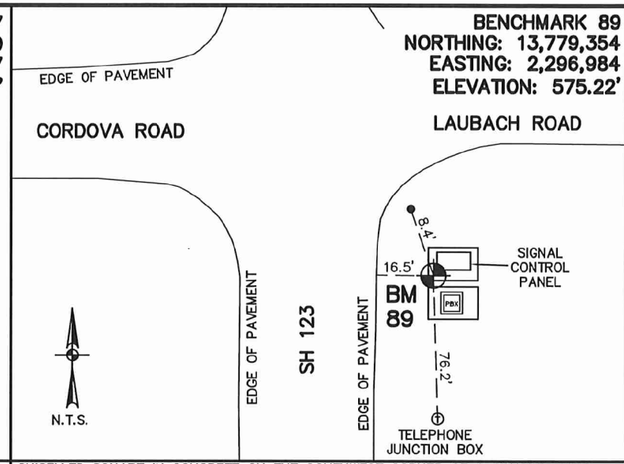
MAG NAIL WITH WASHER ON THE EAST SIDE OF SH 123 APPROXIMATELY 640 FEET NORTH OF THE INTERSECTION OF SH 123 AND CORDOVA ROAD.

CONTROL POINT 57
NORTHING: 13,778,614.39
EASTING: 2,296,968.07
ELEVATION: 577.06'

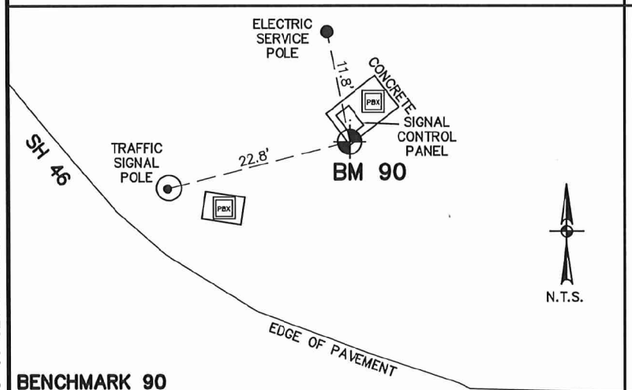


MAG NAIL WITH WASHER ON THE EAST SIDE OF SH 123 APPROXIMATELY 790 FEET SOUTH OF THE INTERSECTION OF SH 123 AND CORDOVA ROAD.

BENCHMARK 89
NORTHING: 13,779,354
EASTING: 2,296,984
ELEVATION: 575.22'



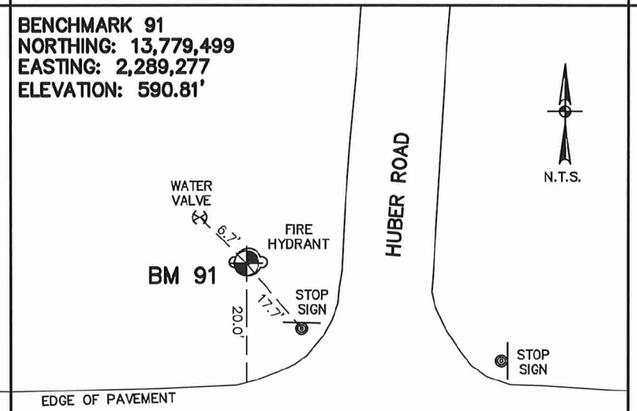
CHISELLED SQUARE IN CONCRETE ON THE SOUTHWEST CORNER OF A CONCRETE PAD WITH A SIGNAL CONTROL PANEL ON THE SOUTHEAST CORNER OF THE INTERSECTION OF SH 123 AND LAUBACH ROAD.



BENCHMARK 90
NORTHING: 13,779,349
EASTING: 2,278,820
ELEVATION: 588.69'

CHISELLED SQUARE IN CONCRETE AT THE SOUTH CORNER OF A CONCRETE PAD WITH A SIGNAL CONTROL PANEL ON THE NORTHEAST CORNER OF THE INTERSECTION OF CORDOVA ROAD AND SH 46.

BENCHMARK 91
NORTHING: 13,779,499
EASTING: 2,289,277
ELEVATION: 590.81'



CHISELLED 'X' ON FIRE HYDRANT BOLT ON THE NORTHWEST CORNER OF THE INTERSECTION OF HUBER ROAD AND CORDOVA ROAD.

NOTES:

1. COORDINATES SHOWN ARE DISPLAYED AS SURFACE VALUES IN US SURVEY FEET, BASED ON THE NORTH AMERICAN DATUM OF 1983 (2011) EPOCH 2010.00 FROM THE TEXAS COORDINATE SYSTEM ESTABLISHED FOR THE SOUTH CENTRAL ZONE, WITH A SURFACE ADJUSTMENT FACTOR OF 1.00015 APPLIED.
2. ELEVATIONS SHOWN ARE BASED ON NAVD88 (GEOID 18), OBTAINED BY RTK METHODS AND BALANCING A CLOSED, DOUBLE RUN DIGITAL LEVEL LOOP.
3. FIELD WORK FOR THIS SURVEY WAS COMPLETED IN JANUARY, 2023.
4. CONTRACTOR MUST VERIFY CONTROL POINT PRIOR TO BEGINNING CONSTRUCTION.

LEGEND

CP	CONTROL POINT
BM	BENCHMARK
N.T.S.	NOT TO SCALE
SH	STATE HIGHWAY
PBX	PULL BOX

SURVEYOR'S CERTIFICATION:

THE CONTROL POINTS SHOWN HEREIN WERE DETERMINED BY A SURVEY MADE ON THE GROUND UNDER MY SUPERVISION.

1/6/2023

SHARON L. SABIN
RPLS 6950

STATE OF TEXAS REGISTERED SHARON L. SABIN 6950 PROFESSIONAL LAND SURVEYOR

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

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Texas Department of Transportation
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CORDOVA RD

HORIZONTAL AND VERTICAL CONTROL SHEETS

SHEET 3 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	83

Plotted on: July 20, 2023

Design Filename: N:\TRANSPO\CIVIL\12775-00\CONTROL SHEETS\CT 12775-00 SEGUIN-MLH.DWG

this is Proposed Cordova horiz align.
Where is Existing Cordova haln?

CORDOVA

Beginning chain CORDOVA description

Point CORDOVA1 N 13,778,111.77 E 2,278,203.43 Sta 100+00.00

Course from CORDOVA1 to PC CORDOVA 3 N 45° 39′ 47.18" E Dist 515.36

Curve Data

Curve CORDOVA 3					
P.I. Station	105+67.01	N	13,778,508.54	E	2,278,608.49
Delta =	7° 23′ 16.10"	(RT)			
Degree =	7° 09′ 43.36"				
Tangent =	51.65				
Length =	103.15				
Radius =	799.99				
External =	1.67				
Long Chord =	103.08				
Mid. Ord. =	1.66				
P.C. Station	105+15.36	N	13,778,471.95	E	2,278,572.04
P.T. Station	106+18.51	N	13,778,540.15	E	2,278,649.34
C.C.		N	13,777,907.43	E	2,279,138.88
Back = N	44° 52′ 56.31" E				
Ahead = N	52° 16′ 12.40" E				
Chord Bear = N	48° 34′ 34.36" E				

Curve Data

Curve CORDOVA 4					
P.I. Station	107+05.09	N	13,778,593.13	E	2,278,717.81
Delta =	6° 36′ 25.22"	(LT)			
Degree =	3° 49′ 11.12"				
Tangent =	86.58				
Length =	172.97				
Radius =	1,499.99				
External =	2.50				
Long Chord =	172.87				
Mid. Ord. =	2.49				
P.C. Station	106+18.51	N	13,778,540.15	E	2,278,649.34
P.T. Station	107+91.48	N	13,778,653.64	E	2,278,779.74
C.C.		N	13,779,726.49	E	2,277,731.44
Back = N	52° 16′ 12.40" E				
Ahead = N	45° 39′ 47.18" E				
Chord Bear = N	48° 57′ 59.79" E				

Course from PT CORDOVA 4 to PC CORDOVA 7 N 45° 39′ 47.18" E Dist 212.23

Curve Data

Curve CORDOVA 7					
P.I. Station	110+41.66	N	13,778,828.48	E	2,278,958.68
Delta =	4° 08′ 21.01"	(RT)			
Degree =	5° 27′ 24.27"				
Tangent =	37.94				
Length =	75.85				
Radius =	1,050.00				
External =	0.69				
Long Chord =	75.84				
Mid. Ord. =	0.68				
P.C. Station	110+03.72	N	13,778,801.96	E	2,278,931.54
P.T. Station	110+79.57	N	13,778,852.97	E	2,278,987.66
C.C.		N	13,778,050.96	E	2,279,665.36
Back = N	45° 39′ 47.18" E				
Ahead = N	49° 48′ 08.19" E				
Chord Bear = N	47° 43′ 57.69" E				

Course from PT CORDOVA 7 to PC CORDOVA 10 N 49° 48′ 08.19" E Dist 438.28

Curve Data

Curve CORDOVA 10					
P.I. Station	117+92.74	N	13,779,313.27	E	2,279,532.39
Delta =	39° 17′ 32.56"	(RT)			
Degree =	7° 26′ 27.64"				
Tangent =	274.88				
Length =	528.05				
Radius =	770.00				
External =	47.59				
Long Chord =	517.76				
Mid. Ord. =	44.82				
P.C. Station	115+17.85	N	13,779,135.85	E	2,279,322.43
P.T. Station	120+45.90	N	13,779,317.61	E	2,279,807.24
C.C.		N	13,778,547.71	E	2,279,819.41
Back = N	49° 48′ 08.19" E				
Ahead = N	89° 05′ 40.75" E				
Chord Bear = N	69° 26′ 54.47" E				

Course from PT CORDOVA 10 to PC CORDOVA 13 N 89° 05′ 40.75" E Dist 3,139.04

Curve Data

Curve CORDOVA 13					
P.I. Station	152+25.93	N	13,779,367.86	E	2,282,986.87
Delta =	4° 28′ 16.36"	(LT)			
Degree =	5° 27′ 24.27"				
Tangent =	40.99				
Length =	81.94				
Radius =	1,050.00				
External =	0.80				
Long Chord =	81.92				
Mid. Ord. =	0.80				
P.C. Station	151+84.94	N	13,779,367.21	E	2,282,945.89
P.T. Station	152+66.88	N	13,779,371.70	E	2,283,027.68
C.C.		N	13,780,417.08	E	2,282,929.30
Back = N	89° 05′ 40.75" E				
Ahead = N	84° 37′ 24.39" E				
Chord Bear = N	86° 51′ 32.57" E				

Course from PT CORDOVA 13 to PC CORDOVA 16 N 84° 37′ 24.39" E Dist 259.18

Curve Data

Curve CORDOVA 16					
P.I. Station	157+59.82	N	13,779,417.89	E	2,283,518.45
Delta =	10° 41′ 01.38"	(RT)			
Degree =	2° 17′ 30.59"				
Tangent =	233.76				
Length =	466.17				
Radius =	2,500.00				
External =	10.90				
Long Chord =	465.49				
Mid. Ord. =	10.86				
P.C. Station	155+26.06	N	13,779,395.99	E	2,283,285.72
P.T. Station	159+92.23	N	13,779,396.27	E	2,283,751.21
C.C.		N	13,776,906.98	E	2,283,519.97
Back = N	84° 37′ 24.39" E				
Ahead = S	84° 41′ 34.23" E				
Chord Bear = N	89° 57′ 55.08" E				

Course from PT CORDOVA 16 to PC CORDOVA 19 S 84° 41′ 34.23" E Dist 306.43

Curve Data

Curve CORDOVA 19					
P.I. Station	164+35.68	N	13,779,355.25	E	2,284,192.76
Delta =	6° 16′ 27.13"	(LT)			
Degree =	2° 17′ 30.59"				
Tangent =	137.02				
Length =	273.76				
Radius =	2,500.00				
External =	3.75				
Long Chord =	273.63				
Mid. Ord. =	3.75				
P.C. Station	162+98.66	N	13,779,367.92	E	2,284,056.33
P.T. Station	165+72.42	N	13,779,357.56	E	2,284,329.76
C.C.		N	13,781,857.21	E	2,284,287.57
Back = S	84° 41′ 34.23" E				
Ahead = N	89° 01′ 58.64" E				
Chord Bear = S	87° 49′ 47.79" E				

Course from PT CORDOVA 19 to PC CORDOVA 22 N 89° 01′ 58.64" E Dist 1,920.44

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS
It's real.

THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

HORIZONTAL ALIGNMENT DATA

SHEET 1 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	84

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\General\1277500_HalnData01.dgn

CORDOVA

Curve Data

Curve CORDOVA 22

P.I. Station	185+66.29	N	13,779,391.21	E	2,286,323.34
Delta =	3° 21′ 53.57" (LT)				
Degree =	2° 17′ 30.59"				
Tangent =	73.43				
Length =	146.82				
Radius =	2,500.00				
External =	1.08				
Long Chord =	146.80				
Mid. Ord. =	1.08				
P.C. Station	184+92.86	N	13,779,389.98	E	2,286,249.92
P.T. Station	186+39.68	N	13,779,396.76	E	2,286,396.57
C.C.		N	13,781,889.62	E	2,286,207.73
Back = N	89° 01′ 58.64" E				
Ahead = N	85° 40′ 05.07" E				
Chord Bear = N	87° 21′ 01.86" E				

Course from PT CORDOVA 22 to PC CORDOVA 25 N 85° 40′ 05.07" E Dist 149.75

Curve Data

Curve CORDOVA 25

P.I. Station	188+63.45	N	13,779,413.66	E	2,286,619.69
Delta =	3° 23′ 30.07" (RT)				
Degree =	2° 17′ 30.59"				
Tangent =	74.02				
Length =	147.99				
Radius =	2,500.00				
External =	1.10				
Long Chord =	147.97				
Mid. Ord. =	1.09				
P.C. Station	187+89.43	N	13,779,408.07	E	2,286,545.89
P.T. Station	189+37.42	N	13,779,414.88	E	2,286,693.70
C.C.		N	13,776,915.21	E	2,286,734.72
Back = N	85° 40′ 05.07" E				
Ahead = N	89° 03′ 35.14" E				
Chord Bear = N	87° 21′ 50.10" E				

Course from PT CORDOVA 25 to PC CORDOVA 28 N 89° 03′ 35.14" E Dist 2,153.84

Curve Data

Curve CORDOVA 28

P.I. Station	211+45.05	N	13,779,451.10	E	2,288,901.04
Delta =	2° 27′ 55.03" (RT)				
Degree =	2° 17′ 30.59"				
Tangent =	53.79				
Length =	107.57				
Radius =	2,500.00				
External =	0.58				
Long Chord =	107.56				
Mid. Ord. =	0.58				
P.C. Station	210+91.26	N	13,779,450.22	E	2,288,847.25
P.T. Station	211+98.83	N	13,779,449.67	E	2,288,954.81
C.C.		N	13,776,950.56	E	2,288,888.27
Back = N	89° 03′ 35.14" E				
Ahead = S	88° 28′ 29.83" E				
Chord Bear = S	89° 42′ 27.35" E				

Course from PT CORDOVA 28 to PC CORDOVA 31 S 88° 28′ 29.83" E Dist 1,645.76

Curve Data

Curve CORDOVA 31

P.I. Station	228+89.13	N	13,779,404.69	E	2,290,644.51
Delta =	4° 51′ 27.88" (LT)				
Degree =	5° 27′ 24.27"				
Tangent =	44.54				
Length =	89.02				
Radius =	1,050.00				
External =	0.94				
Long Chord =	89.00				
Mid. Ord. =	0.94				
P.C. Station	228+44.59	N	13,779,405.87	E	2,290,599.99
P.T. Station	229+33.61	N	13,779,407.28	E	2,290,688.97
C.C.		N	13,780,455.50	E	2,290,627.93
Back = S	88° 28′ 29.83" E				
Ahead = N	86° 40′ 02.28" E				
Chord Bear = N	89° 05′ 46.22" E				

Course from PT CORDOVA 31 to PC CORDOVA 34 N 86° 40′ 02.28" E Dist 324.29

Curve Data

Curve CORDOVA 34

P.I. Station	233+02.44	N	13,779,428.72	E	2,291,057.18
Delta =	4° 51′ 27.88" (RT)				
Degree =	5° 27′ 24.27"				
Tangent =	44.54				
Length =	89.02				
Radius =	1,050.00				
External =	0.94				
Long Chord =	89.00				
Mid. Ord. =	0.94				
P.C. Station	232+57.90	N	13,779,426.13	E	2,291,012.71
P.T. Station	233+46.92	N	13,779,427.53	E	2,291,101.70
C.C.		N	13,778,377.90	E	2,291,073.75
Back = N	86° 40′ 02.28" E				
Ahead = S	88° 28′ 29.83" E				
Chord Bear = N	89° 05′ 46.22" E				

Course from PT CORDOVA 34 to PC CORDOVA 37 S 88° 28′ 29.83" E Dist 3,465.57

Curve Data

Curve CORDOVA 37

P.I. Station	270+88.66	N	13,779,327.95	E	2,294,842.11
Delta =	39° 27′ 40.51" (RT)				
Degree =	7° 26′ 27.64"				
Tangent =	276.16				
Length =	530.32				
Radius =	770.00				
External =	48.03				
Long Chord =	519.90				
Mid. Ord. =	45.21				
P.C. Station	268+12.50	N	13,779,335.30	E	2,294,566.04
P.T. Station	273+42.82	N	13,779,146.82	E	2,295,050.58
C.C.		N	13,778,565.57	E	2,294,545.55
Back = S	88° 28′ 29.83" E				
Ahead = S	49° 00′ 49.32" E				
Chord Bear = S	68° 44′ 39.58" E				

Course from PT CORDOVA 37 to PC CORDOVA 40 S 49° 00′ 49.32" E Dist 176.78

Curve Data

Curve CORDOVA 40

P.I. Station	282+63.12	N	13,778,543.22	E	2,295,745.28
Delta =	87° 59′ 43.14" (LT)				
Degree =	7° 26′ 27.64"				
Tangent =	743.52				
Length =	1,182.57				
Radius =	770.00				
External =	300.38				
Long Chord =	1,069.73				
Mid. Ord. =	216.09				
P.C. Station	275+19.60	N	13,779,030.87	E	2,295,184.02
P.T. Station	287+02.17	N	13,779,087.07	E	2,296,252.27
C.C.		N	13,779,612.12	E	2,295,689.05
Back = S	49° 00′ 49.32" E				
Ahead = N	42° 59′ 27.54" E				
Chord Bear = N	86° 59′ 19.11" E				

Course from PT CORDOVA 40 to PC CORDOVA 43 N 42° 59′ 27.54" E Dist 101.30

Curve Data

Curve CORDOVA 43

P.I. Station	291+26.91	N	13,779,397.75	E	2,296,541.90
Delta =	45° 34′ 13.50" (RT)				
Degree =	7° 26′ 27.64"				
Tangent =	323.44				
Length =	612.42				
Radius =	770.00				
External =	65.17				
Long Chord =	596.41				
Mid. Ord. =	60.09				
P.C. Station	288+03.47	N	13,779,161.17	E	2,296,321.35
P.T. Station	294+15.89	N	13,779,405.87	E	2,296,865.24
C.C.		N	13,778,636.12	E	2,296,884.57
Back = N	42° 59′ 27.54" E				
Ahead = N	88° 33′ 41.04" E				
Chord Bear = N	65° 46′ 34.29" E				

Course from PT CORDOVA 43 to CORDOVA45 N 88° 33′ 41.04" E Dist 627.83

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HORIZONTAL ALIGNMENT DATA

SHEET 2 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	85

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\General\1277500_HainDat02.dgn

Plotted on: 7/27/2023

SH 46

Beginning chain SH46 description

Point SH461 N 13,777,353.16 E 2,279,802.31 Sta 149+46.95

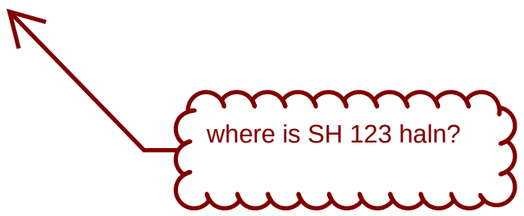
Course from SH461 to PC SH46 3 N 24° 33′ 01.65" W Dist 982.05

Curve SH46 3						
		Curve Data				
P.I. Station		167+07.91	N	13,778,954.92	E	2,279,070.64
Delta	=	15° 29′ 00.00"	(LT)			
Degree	=	1° 00′ 00.00"				
Tangent	=	778.91				
Length	=	1,548.33				
Radius	=	5,729.58				
External	=	52.70				
Long Chord	=	1,543.63				
Mid. Ord.	=	52.22				
P.C. Station		159+29.00	N	13,778,246.43	E	2,279,394.27
P.T. Station		174+77.33	N	13,779,551.31	E	2,278,569.61
C.C.			N	13,775,865.82	E	2,274,182.67
Back	= N	24° 33′ 01.65" W				
Ahead	= N	40° 02′ 01.65" W				
Chord Bear	= N	32° 17′ 31.65" W				

Course from PT SH46 3 to SH465 N 40° 02′ 01.65" W Dist 397.18

Point SH465 N 13,779,855.42 E 2,278,314.13 Sta 178+74.52

Ending chain SH46 description



HUBER RD

Beginning chain HUBERRD description

Point HUBERBL71 N 13,778,403.12 E 2,289,318.23 Sta 1000+00.00

Course from HUBERBL71 to PC HUBERBL7 3 N 0° 34′ 49.04" W Dist 979.11

Curve HUBERBL7 3						
		Curve Data				
P.I. Station		1010+10.32	N	13,779,413.39	E	2,289,308.00
Delta	=	4° 38′ 36.16"	(RT)			
Degree	=	7° 26′ 27.64"				
Tangent	=	31.22				
Length	=	62.40				
Radius	=	770.00				
External	=	0.63				
Long Chord	=	62.39				
Mid. Ord.	=	0.63				
P.C. Station		1009+79.11	N	13,779,382.18	E	2,289,308.32
P.T. Station		1010+41.51	N	13,779,444.53	E	2,289,310.21
C.C.			N	13,779,389.97	E	2,290,078.28
Back	= N	0° 34′ 49.04" W				
Ahead	= N	4° 03′ 47.12" E				
Chord Bear	= N	1° 44′ 29.04" E				

Course from PT HUBERBL7 3 to PC HUBERBL7 6 N 4° 03′ 47.12" E Dist 282.57

Curve HUBERBL7 6						
		Curve Data				
P.I. Station		1014+07.93	N	13,779,810.06	E	2,289,335.85
Delta	=	0° 51′ 04.34"	(LT)			
Degree	=	0° 30′ 27.14"				
Tangent	=	83.86				
Length	=	167.71				
Radius	=	11,288.92				
External	=	0.31				
Long Chord	=	167.71				
Mid. Ord.	=	0.31				
P.C. Station		1013+24.07	N	13,779,726.39	E	2,289,330.24
P.T. Station		1014+91.79	N	13,779,893.80	E	2,289,340.23
C.C.			N	13,780,482.71	E	2,278,066.68
Back	= N	3° 50′ 29.42" E				
Ahead	= N	2° 59′ 25.08" E				
Chord Bear	= N	3° 24′ 57.25" E				

Course from PT HUBERBL7 6 to HUBERBL79 N 2° 46′ 49.78" E Dist 218.04

Point HUBERBL79 N 13,780,111.58 E 2,289,350.81 Sta 1017+09.82

Course from HUBERBL79 to HUBERBL710 N 2° 57′ 26.27" E Dist 417.77

Point HUBERBL710 N 13,780,528.80 E 2,289,372.36 Sta 1021+27.59

Ending chain HUBERRD description

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

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DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HORIZONTAL ALIGNMENT DATA

SHEET 3 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	86

Design Filename: P:\127\75\00\Design\Civil\General\1277500_HalnData03.dgn

Existing Traff flow arrows are hollow. Need to add Dark filled Arrows for Proposed Traff flow.

MATCH LINE STA 168+10
SEE SHEET 43 OF 44

END SAWCUT
STA 168+2.84

SH 46

℄ SH46

EXIST ROW

PROP ROW

PROP EOP

5% MAX

ONLY

℄ CORDOVA

CORDOVA RD

MATCH LINE STA 115+00

BEGIN PROJECT
MATCH EXISTING
STA 110+75.84

THREE OAKS CR

PC 110+03.72

BEGIN FULL DEPTH
RECONSTRUCTION
MATCH EXISTING
STA 111+93.51

CULVERT Z
STA 112+25.62

where is Existing ROW?

FOR ALL: Any linework UNDER the road should be dotted lines. Bold to indicate Proposed is fine.

MATCH LINE STA 165+60
SEE SHEET 42 OF 44

What is cross slope on SH 46? Does curve tie in and match cross slope, not just elevation?

(+)2.1878 %

(-)1.0637 %

(-)1.0637 %

(-)0.5000 %

PGL @ CORDOVA ℄

EXISTING GROUND
LT ROW

EXISTING GROUND
RT ROW

EXISTING GROUND
@ ℄

VPC 112+00.00 EL. = 588.23'

VPT 113+50.00 EL. = 589.07'

STA = 112+75.00
EL = 589.87'
EX = -0.61'
K = 46
L = 150.00'

STA = 114+89.40
EL = 587.59'

Flow line elev?

585.08 585.50 585.73 586.89 588.23 587.95 584.44 584.25 586.03 589.33 584.41 584.30 585.86 589.07 584.49 584.41 585.72 588.54 584.55 584.49 585.63 588.01 584.63 584.50 585.70 587.54 584.69

110+00 111+00 112+00 113+00 114+00 115+00

590 585 580 575

LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

1. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT. CENTER OF MARKING OR FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK. i.e. FADED.
3. REFER TO HORIZONTAL ALIGNMENT DATA SHEETS FOR CURVE DATA AND ALIGNMENT INFORMATION.

DESIGN

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P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 110+00 TO STA 115+00

SHEET 1 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	87

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_01.dgn

Arrow oriented the wrong way.

FOR ALL:

Show PC and PT Stations w/ a little larger text size

ARMORED CURB SLOTS?

add (Cordova Proposed) or something to reference which haln is being used.

Add callouts for raised conc median and for Two Way Left Turn Lane (TWTL) or is this an open ditch?

MATCH LINE B-B SEE SHEET 44 OF 44

ROAD TO BE OBLITERATED

DITCH STA 117+29 77' LT EL= 587.18'

DITCH STA 117+66 68' LT EL= 587.37'

DITCH STA 118+84 68' LT EL= 587.17'

BEGIN RW STA 118+80

BEGIN DITCH STA 116+50 42' LT EL= 586.79'

BEGIN DITCH STA 116+50 44' RT EL= 583.62'

EXIST ROW

PROP ROW

PROP EOP

℄ CORDOVA

CORDOVA RD

MATCH LINE STA 115+00

MATCH LINE STA 120+00

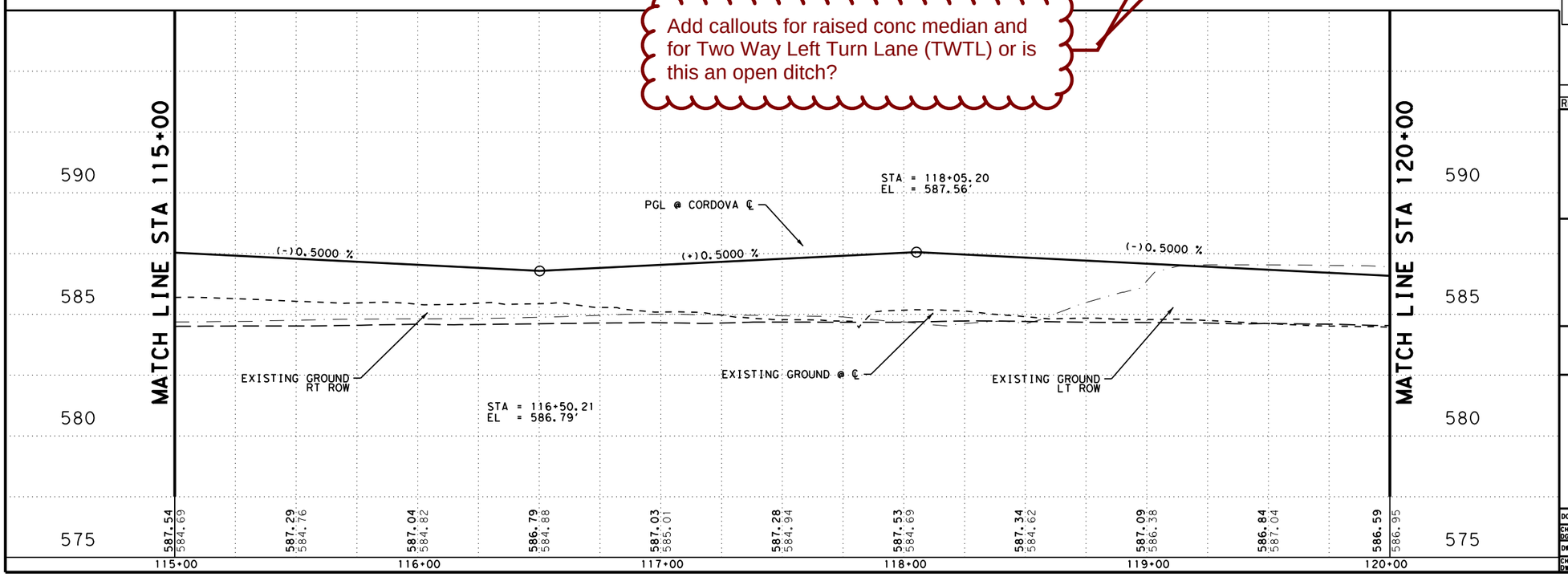
PI STATION = 117+92.74
DELTA = 39° 17' 32.56" (RT)
DEGREE OF CURVE = 7° 26' 27.64"
TANGENT = 274.88
LENGTH = 528.05
RADIUS = 770.00
PC STATION = 115+17.85
PT STATION = 120+45.90

N

LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

1. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT. CENTER OF MARKING OR FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK. i.e. FADED.
3. REFER TO HORIZONTAL ALIGNMENT DATA SHEETS FOR CURVE DATA AND ALIGNMENT INFORMATION.



DESIGN

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P.E. SERIAL NO: 131443
DATE: 7/27/2023

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P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 115+00 TO STA 120+00

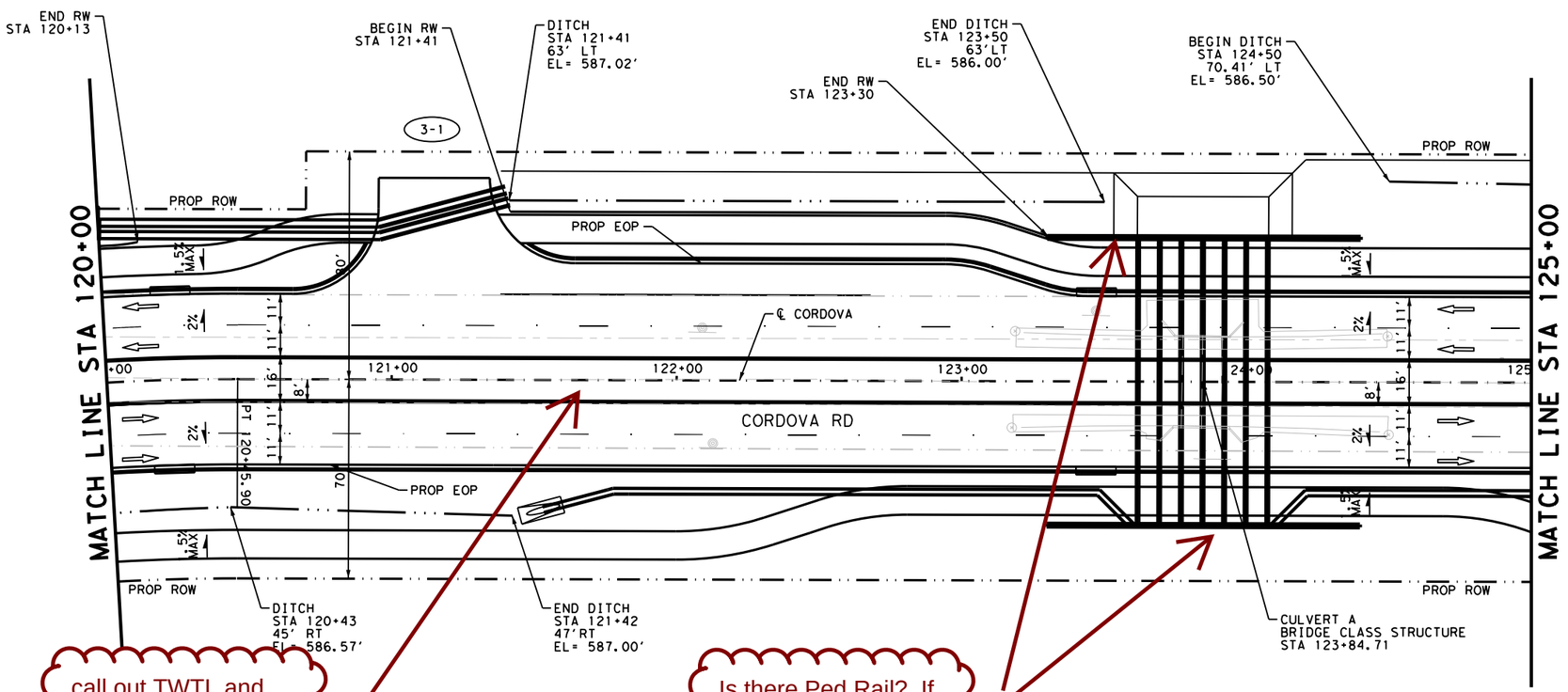
SHEET 2 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	88

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1275500_rdwy_02.dgn

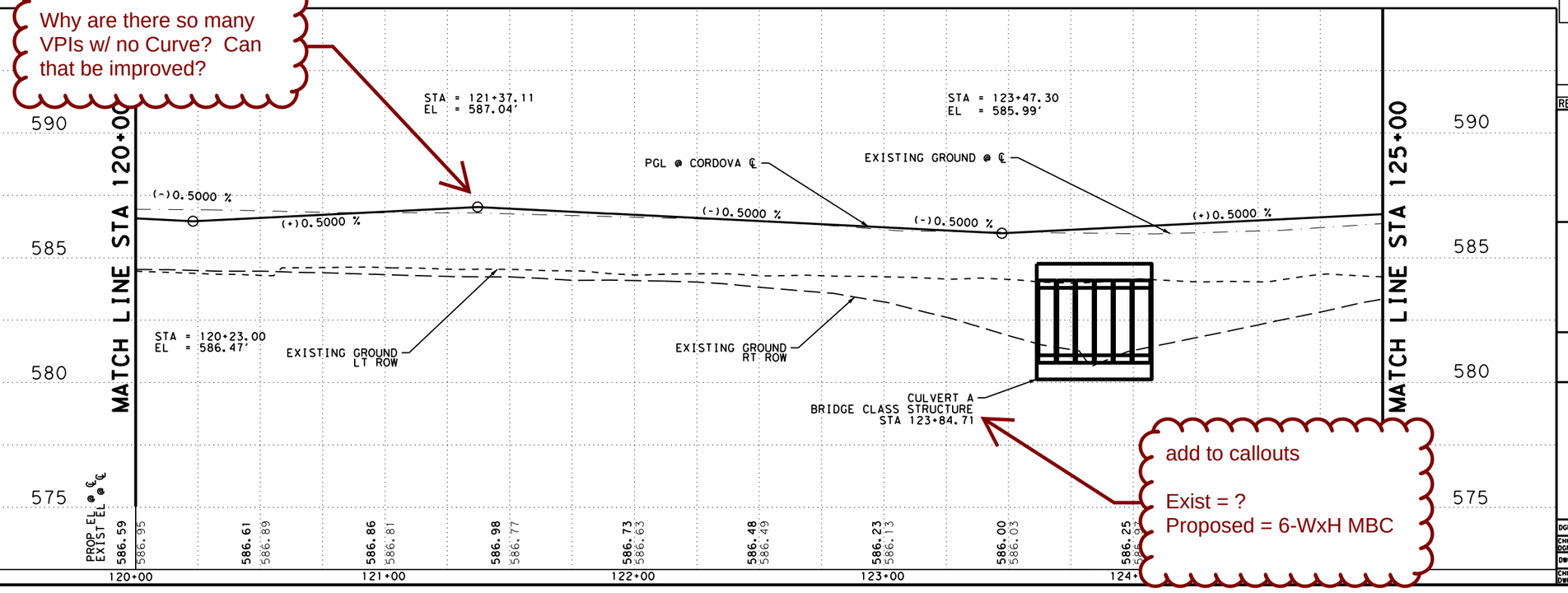
Plotted on: 7/27/2023



call out TWTL and show two arrows for continuous left turns.

Is there Ped Rail? If so, add callout.

Why are there so many VPIs w/ no Curve? Can that be improved?



add to callouts

Exist = ?
Proposed = 6-WxH MBC

LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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P.E. SERIAL NO: 131443
DATE: 7/27/2023

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
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ROADWAY PLAN AND PROFILE

STA 120+00 TO STA 125+00

SHEET 3 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	89

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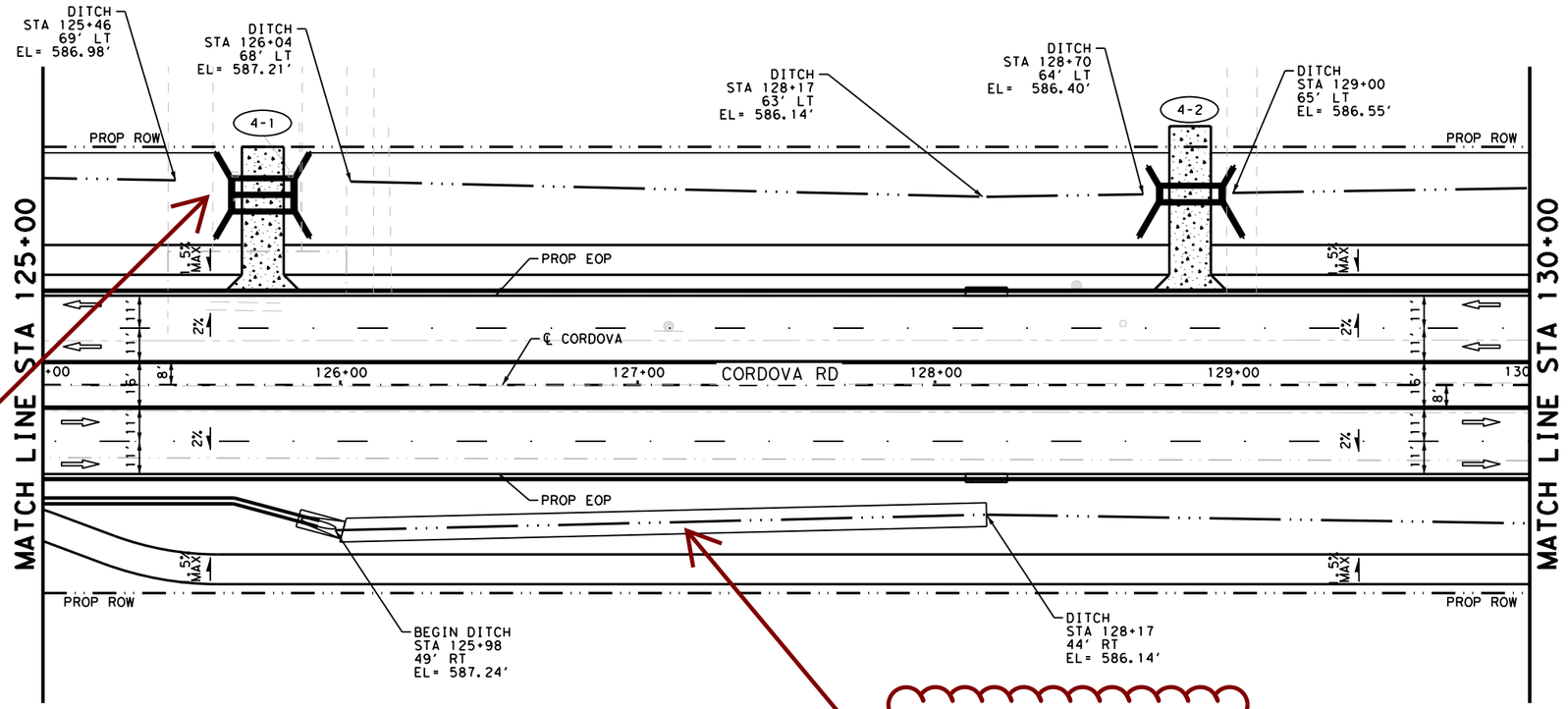
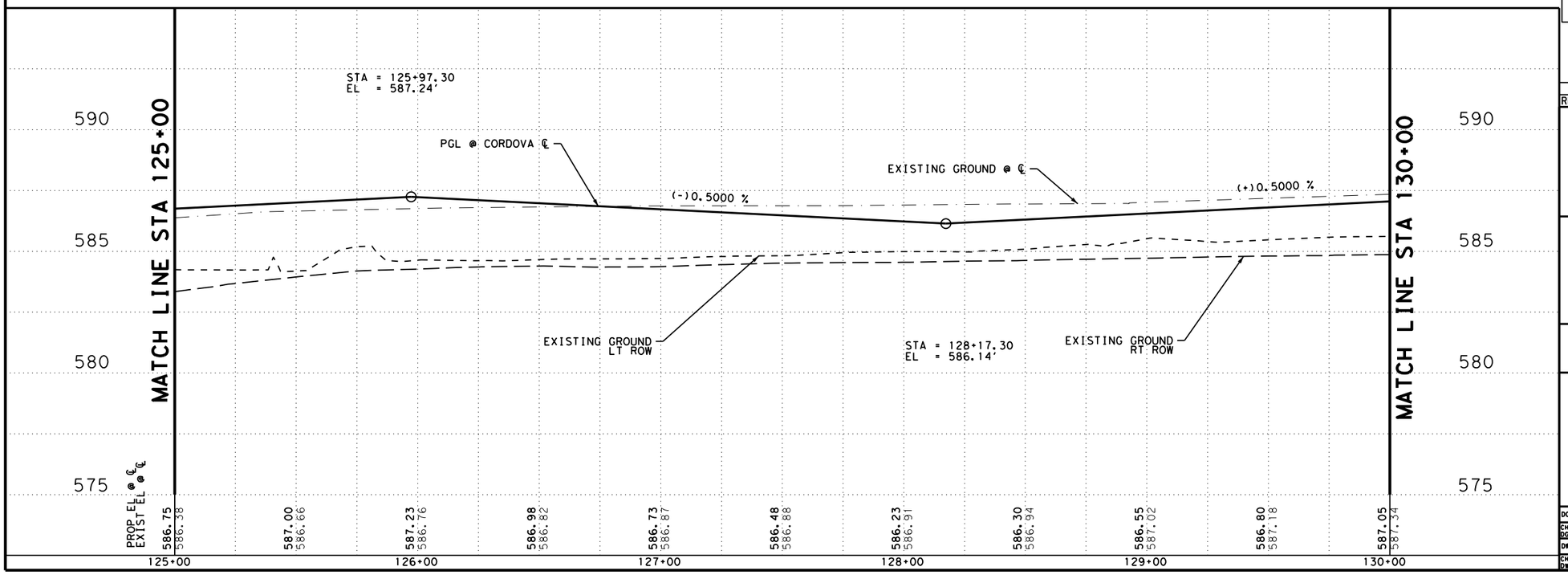


See previous comments for linework underneath

Drainage flowline arrows?



LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

1. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT. CENTER OF MARKING OR FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK. i.e. FADED.
3. REFER TO HORIZONTAL ALIGNMENT DATA SHEETS FOR CURVE DATA AND ALIGNMENT INFORMATION.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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Texas Department of Transportation ©2023

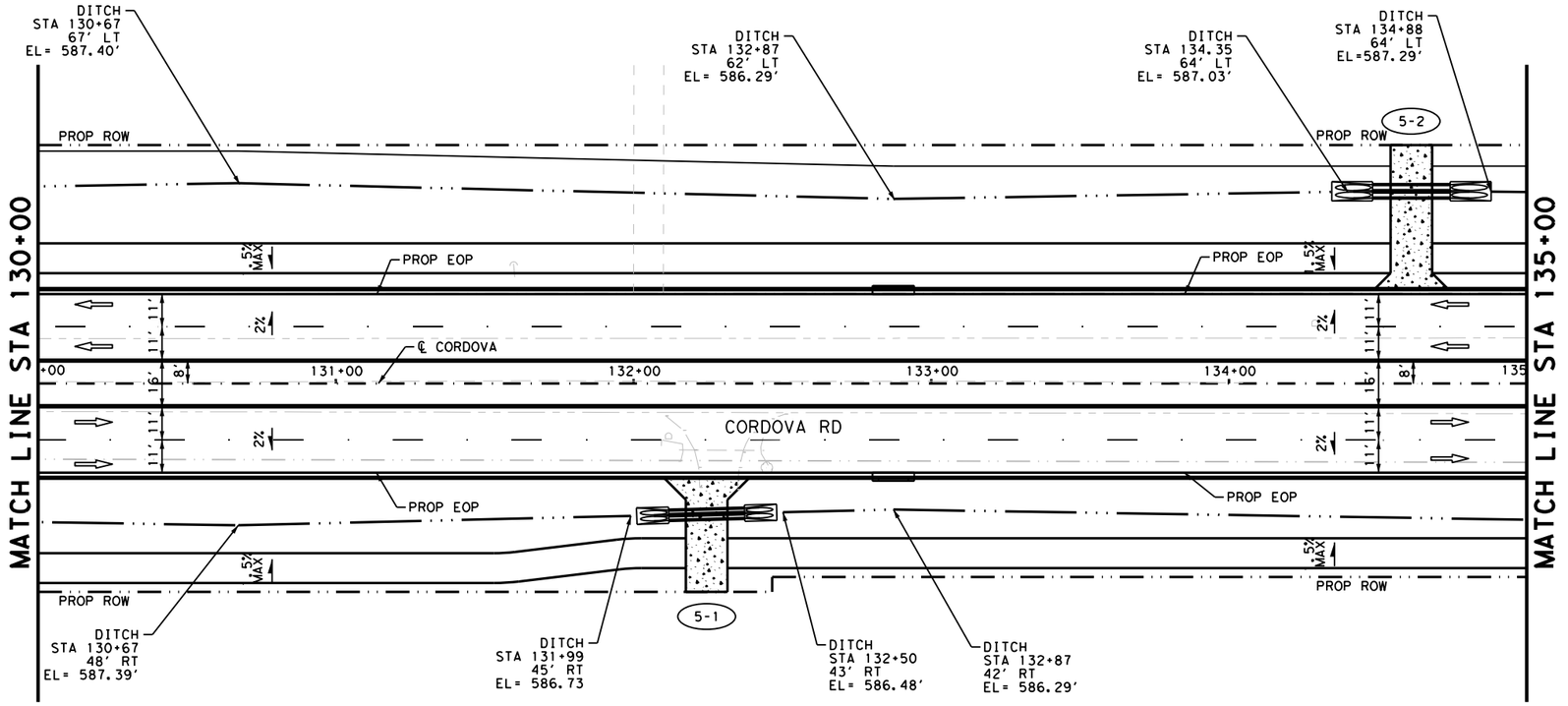
ROADWAY PLAN AND PROFILE

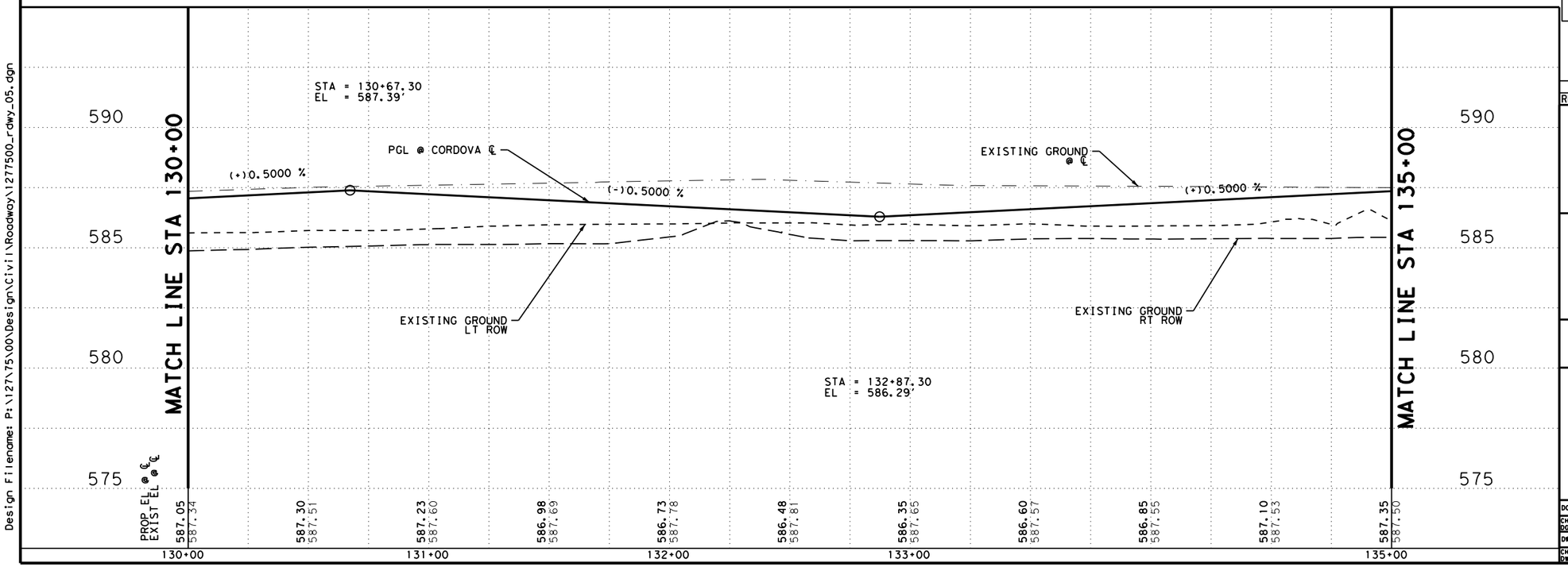
STA 125+00 TO STA 130+00

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	90

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_04.dgn





Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_05.dgn

LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

N

NOTES

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INTERIM REVIEW
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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

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DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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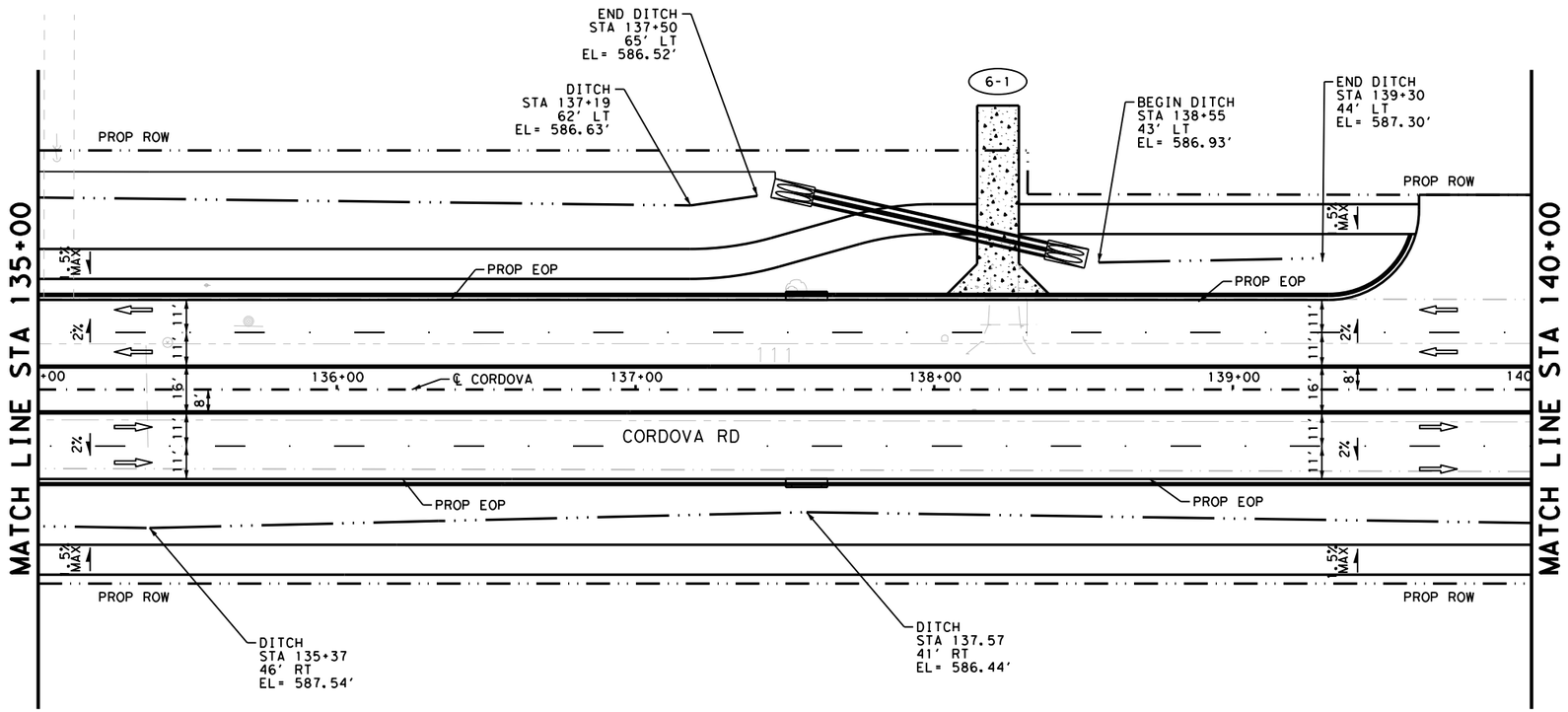
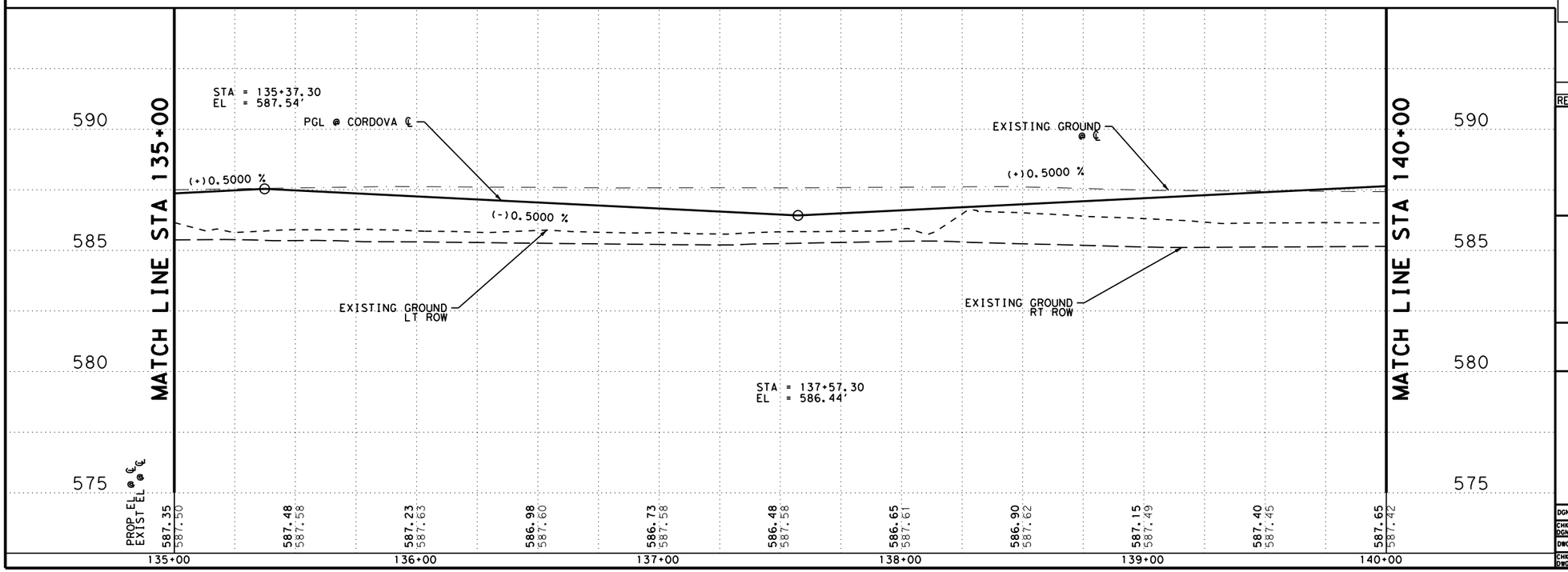
ROADWAY PLAN AND PROFILE

STA 130+00 TO STA 135+00

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	91

Plotted on: 7/27/2023





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

N

NOTES

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P.E. SERIAL NO: 131443
DATE: 7/27/2023

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 135+00 TO STA 140+00

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	92

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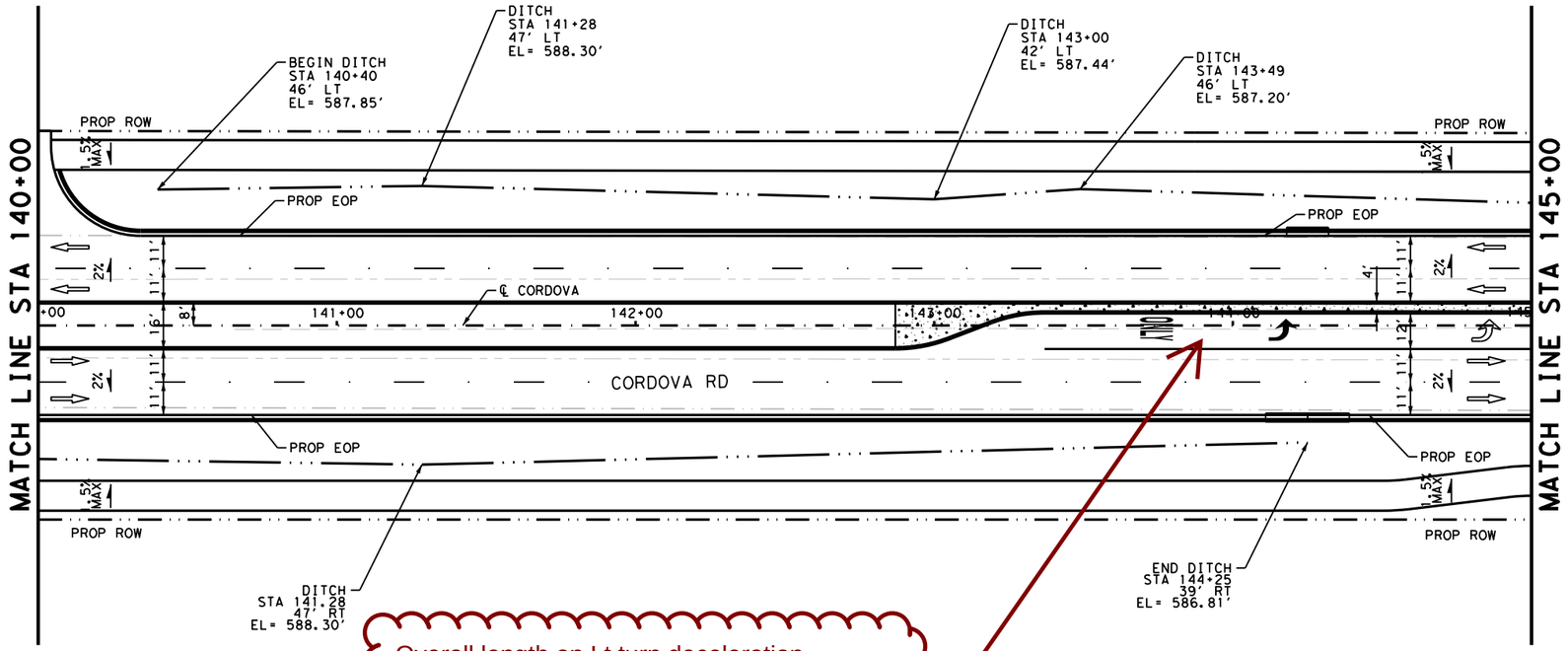
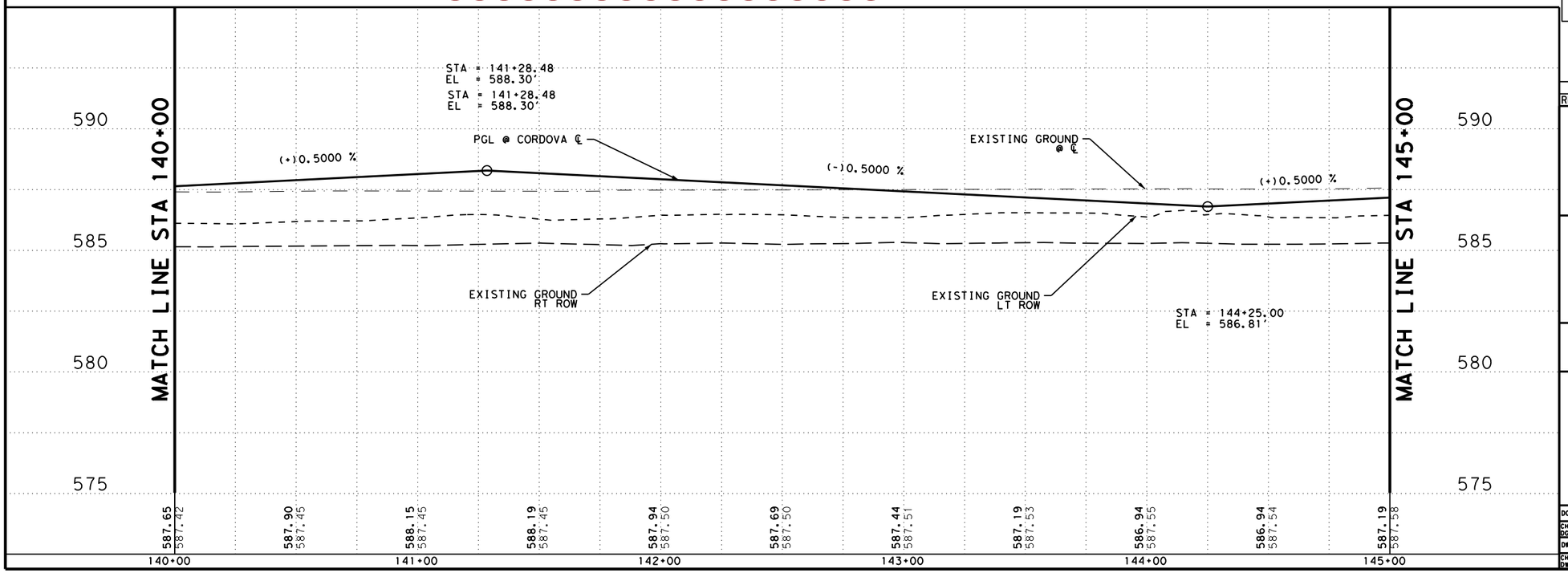


Overall length on Lt turn deceleration appears short. Please verify. Also, 50' taper does meet, but recommend 100' taper.



LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
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APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 140+00 TO STA 145+00

SHEET 7 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	93

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_07.dgn

Overall length on Rt turn deceleration appears short. Please verify. Also, 50' taper does meet, but recommend 100' taper.

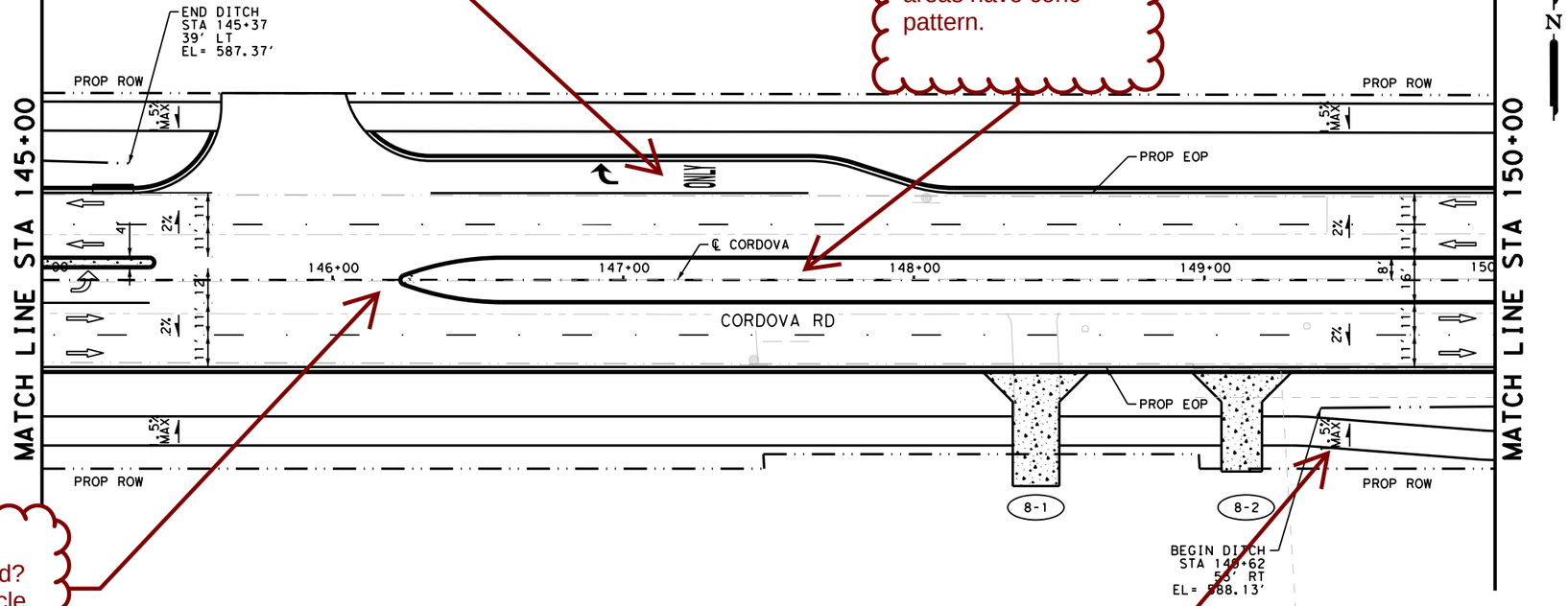
Is this a raised median? Other areas have conc pattern.

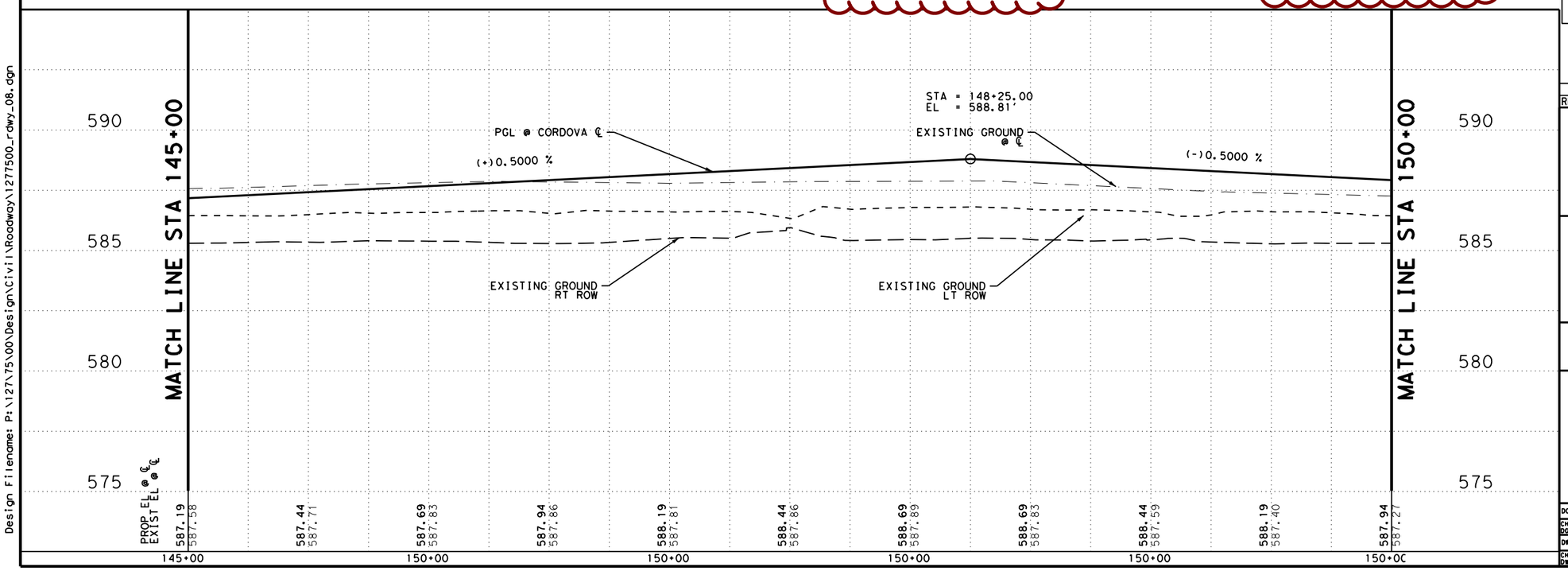
Will WB to EB U-turns be allowed? What design vehicle can make this?

what is this radius?

Profile appears to be 1"=5', please verify.

Plotted on: 7/27/2023





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

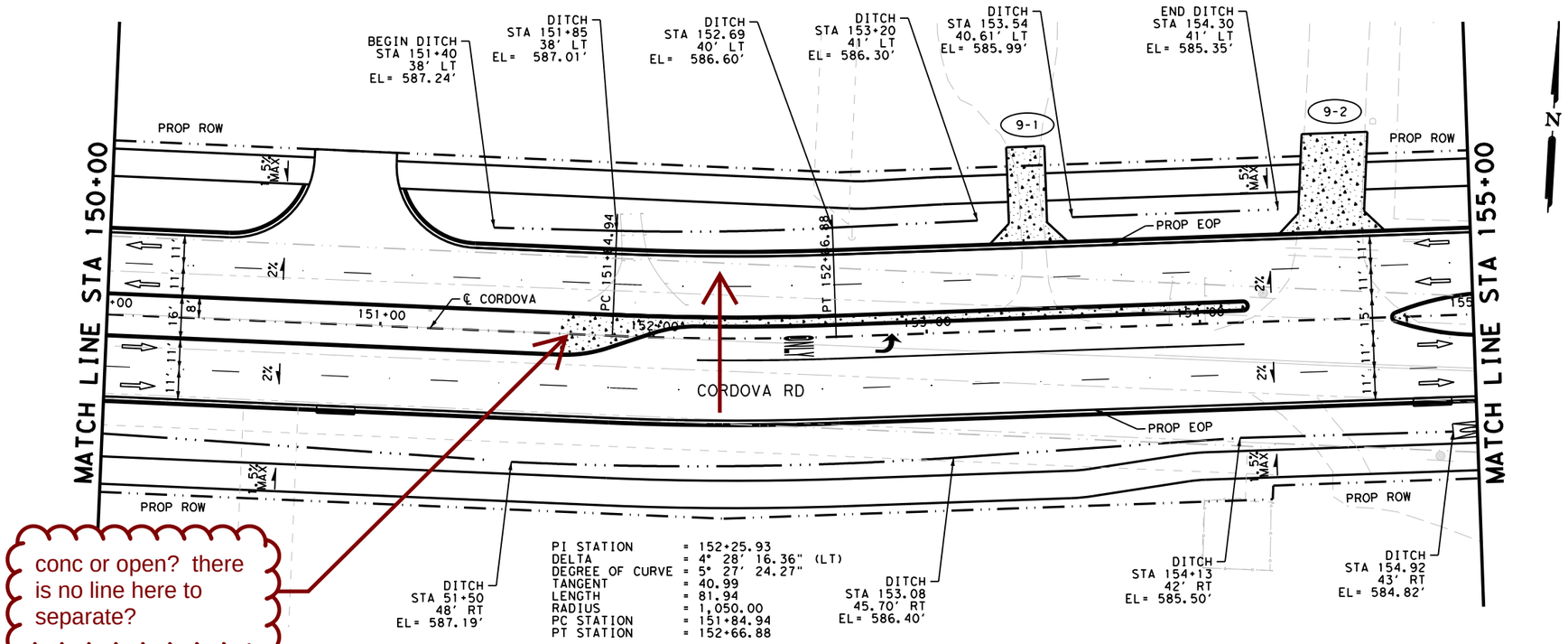
STA 145+00 TO STA 150+00

SHEET 8 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	94

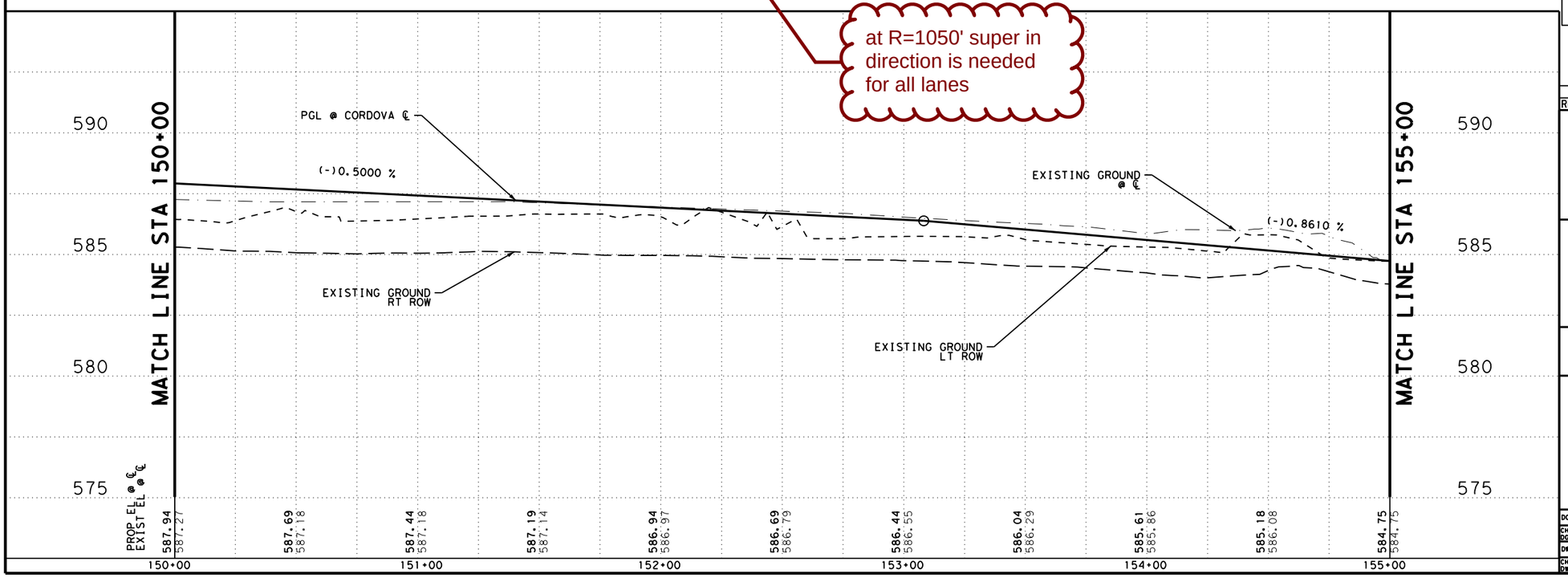
Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_08.dgn

Plotted on: 7/27/2023



conc or open? there is no line here to separate?

at R=1050' super in direction is needed for all lanes



LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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DESIGN

INTERIM REVIEW

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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 150+00 TO STA 155+00

SHEET 9 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	95

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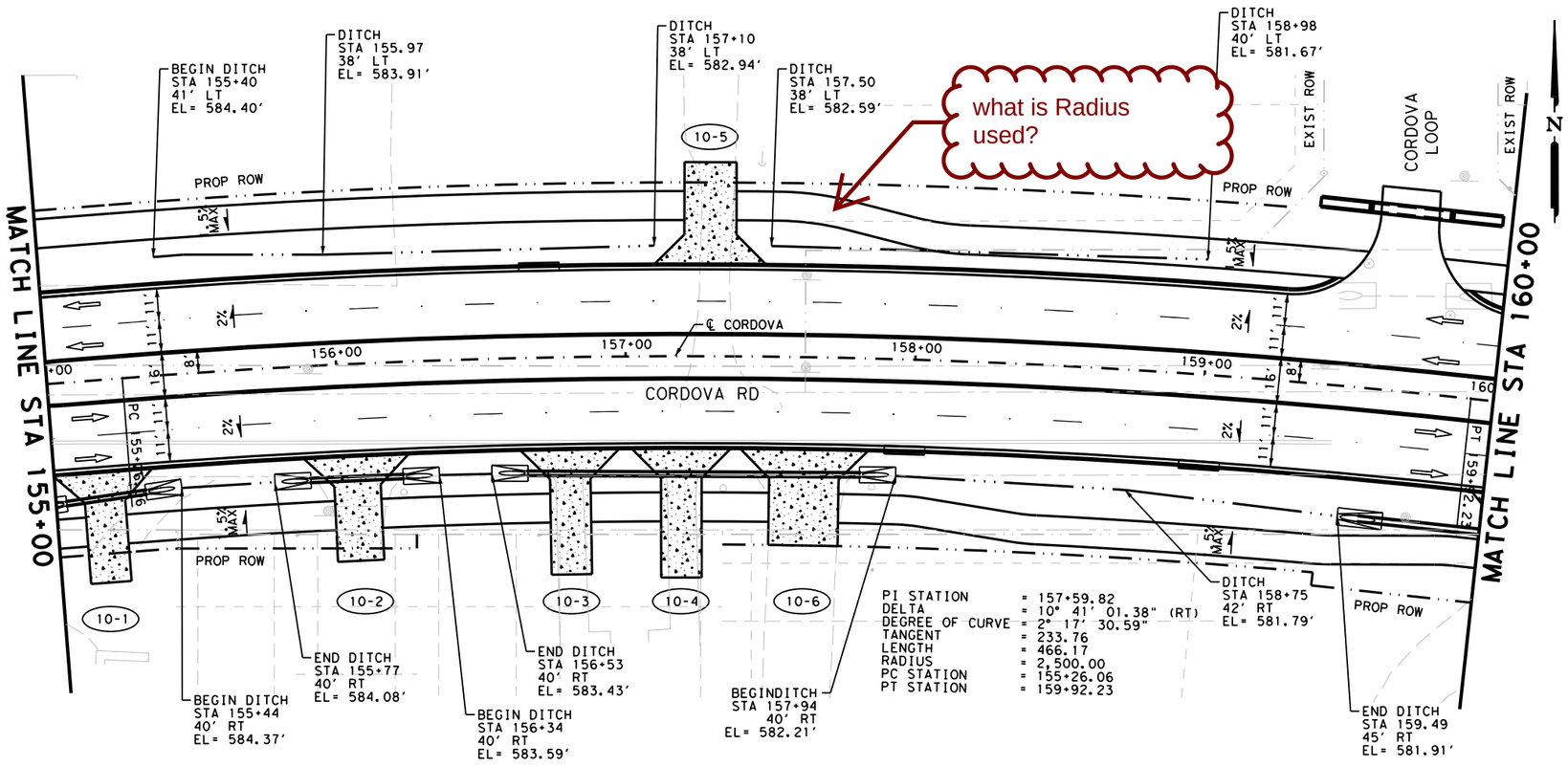
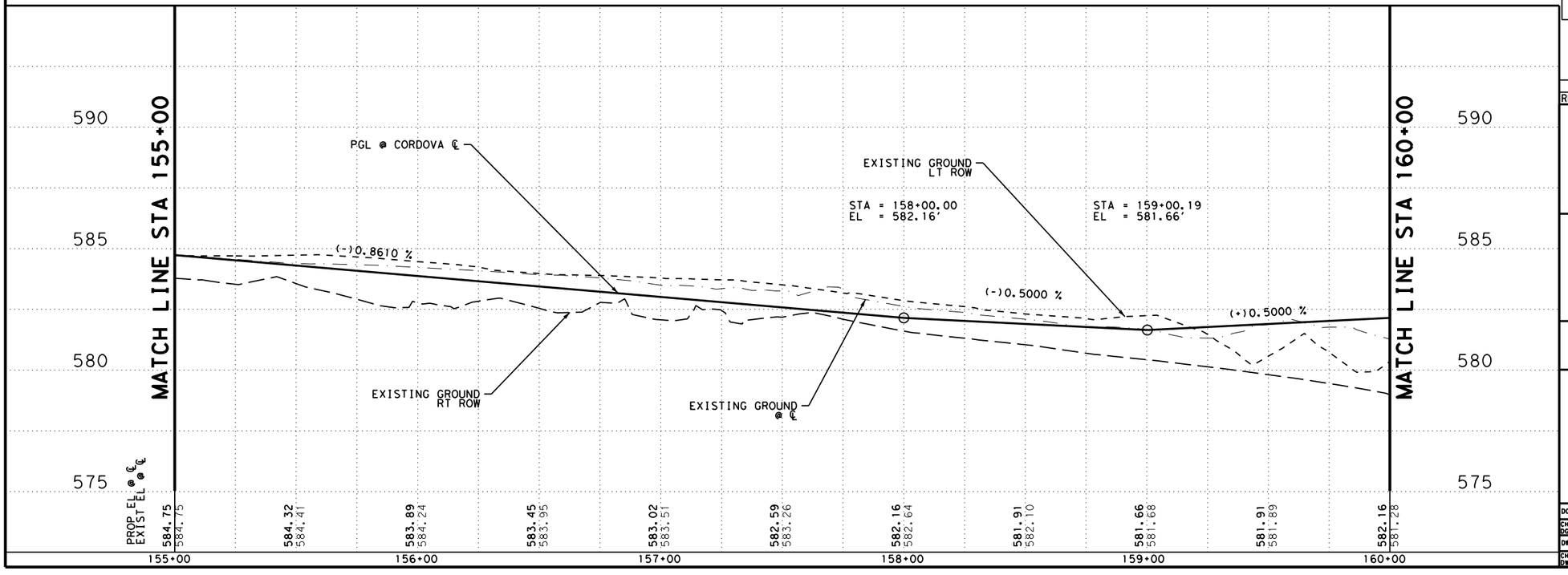
Plotted on: 7/27/2023





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 155+00 TO STA 160+00

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	96

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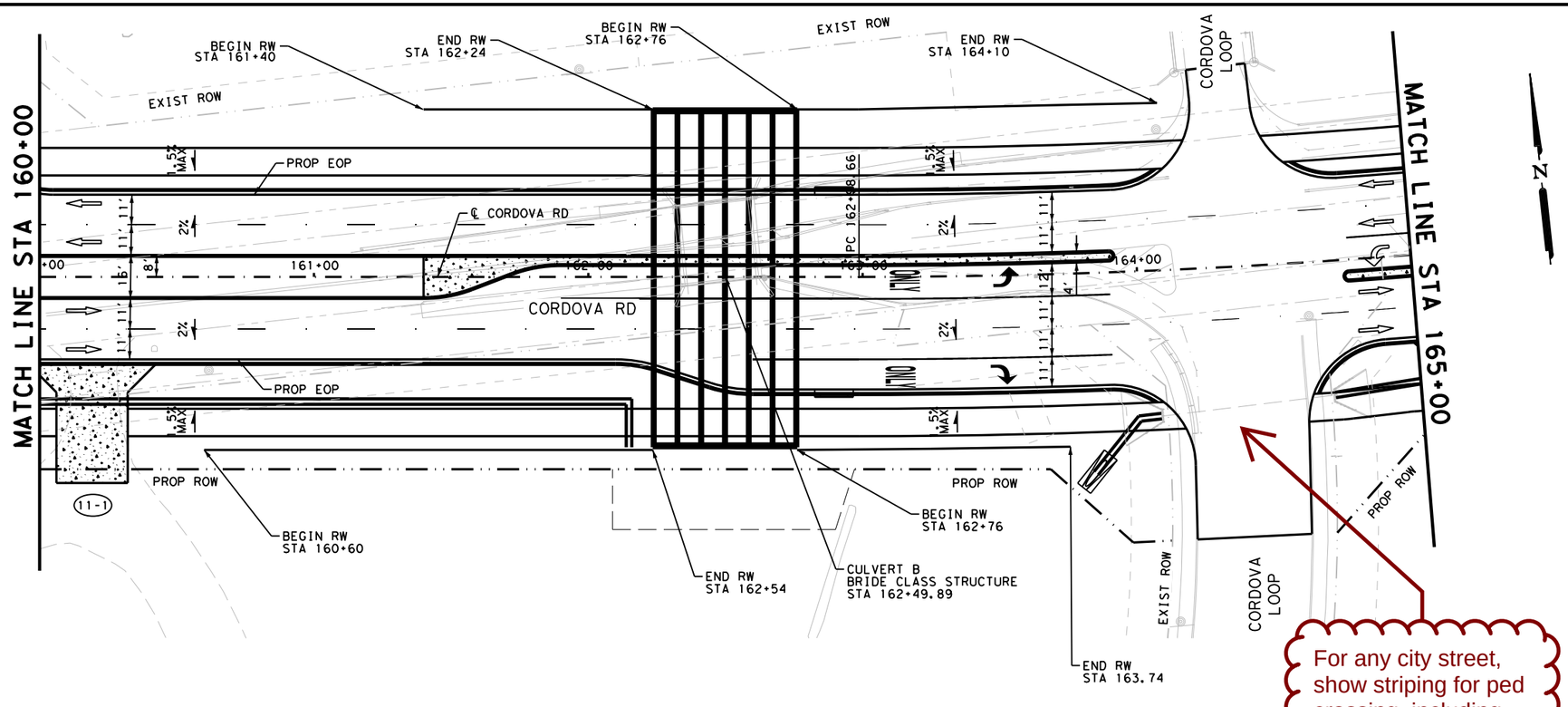
Plotted on: 7/27/2023



LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
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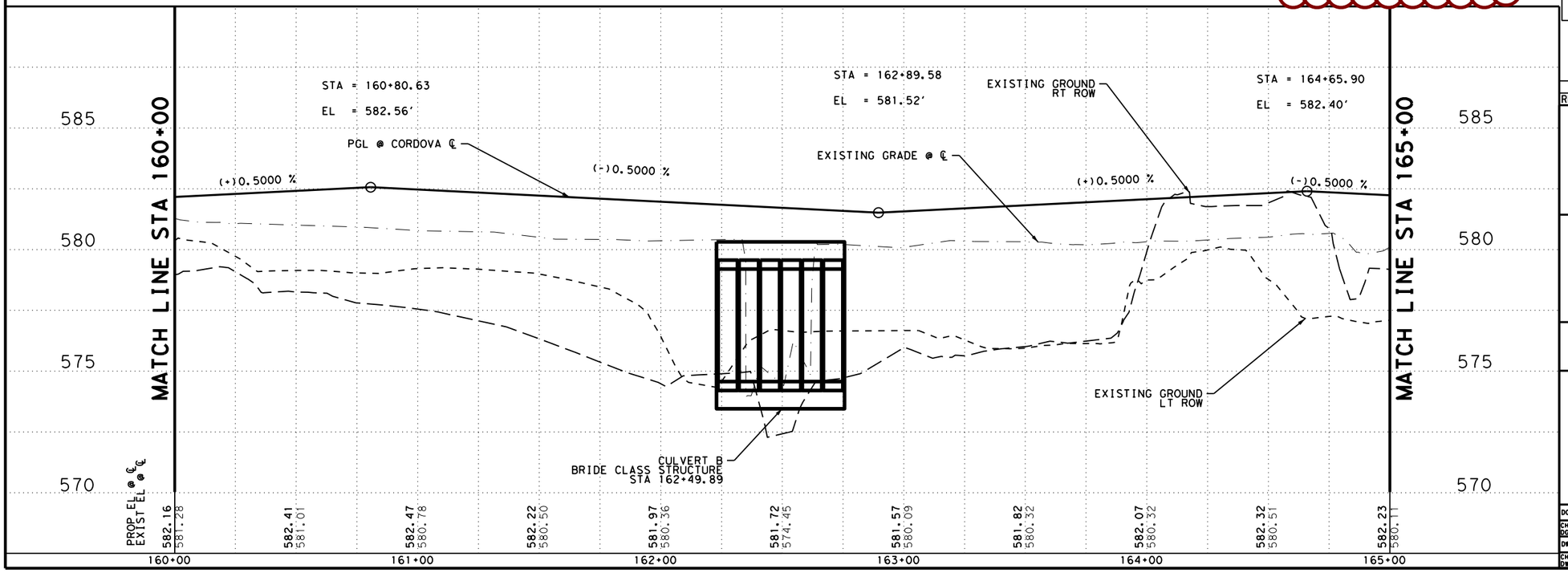
For any city street, show striping for ped crossing, including stopbar. Also show ADA ramps.



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P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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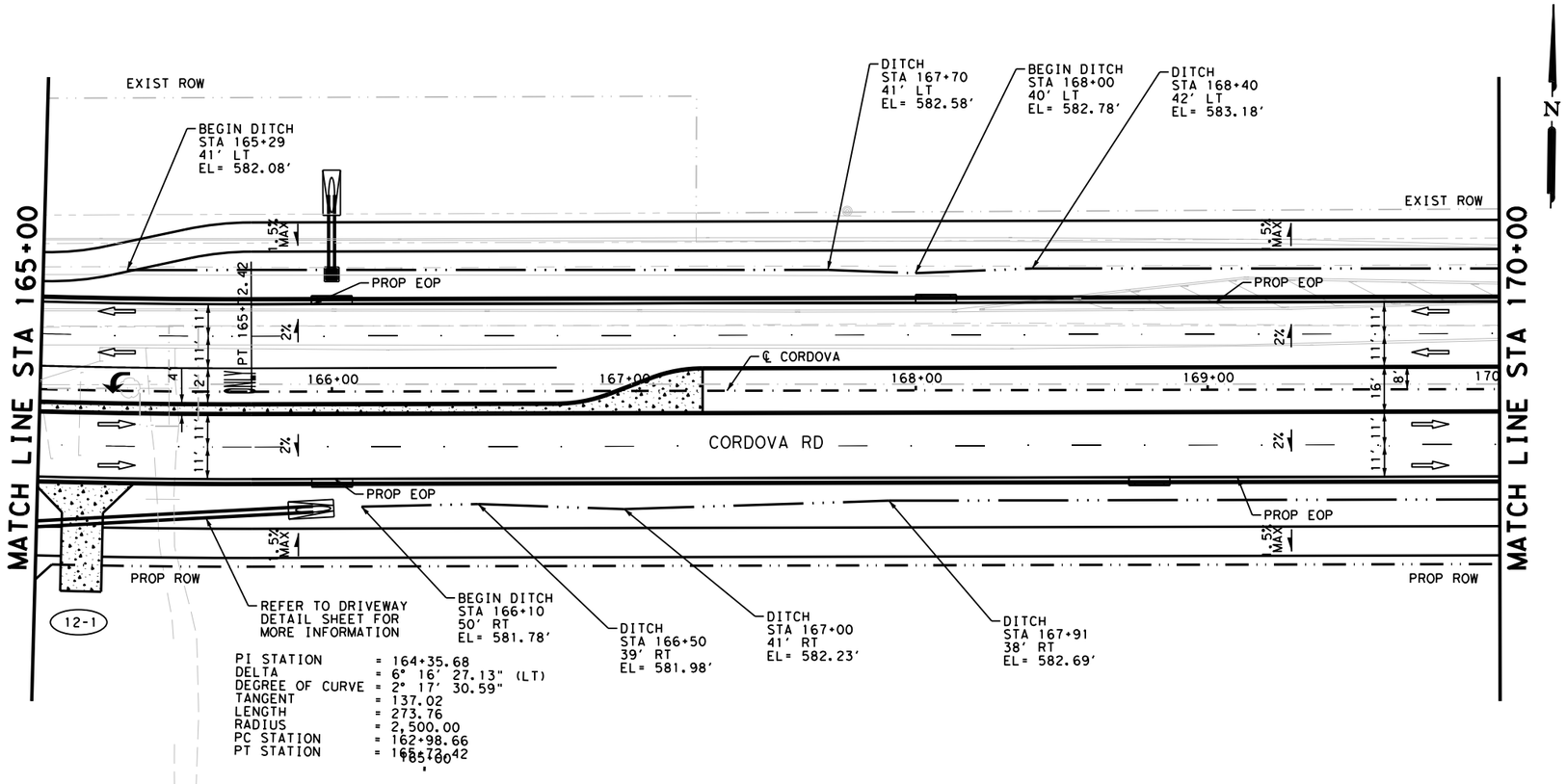
ROADWAY PLAN AND PROFILE

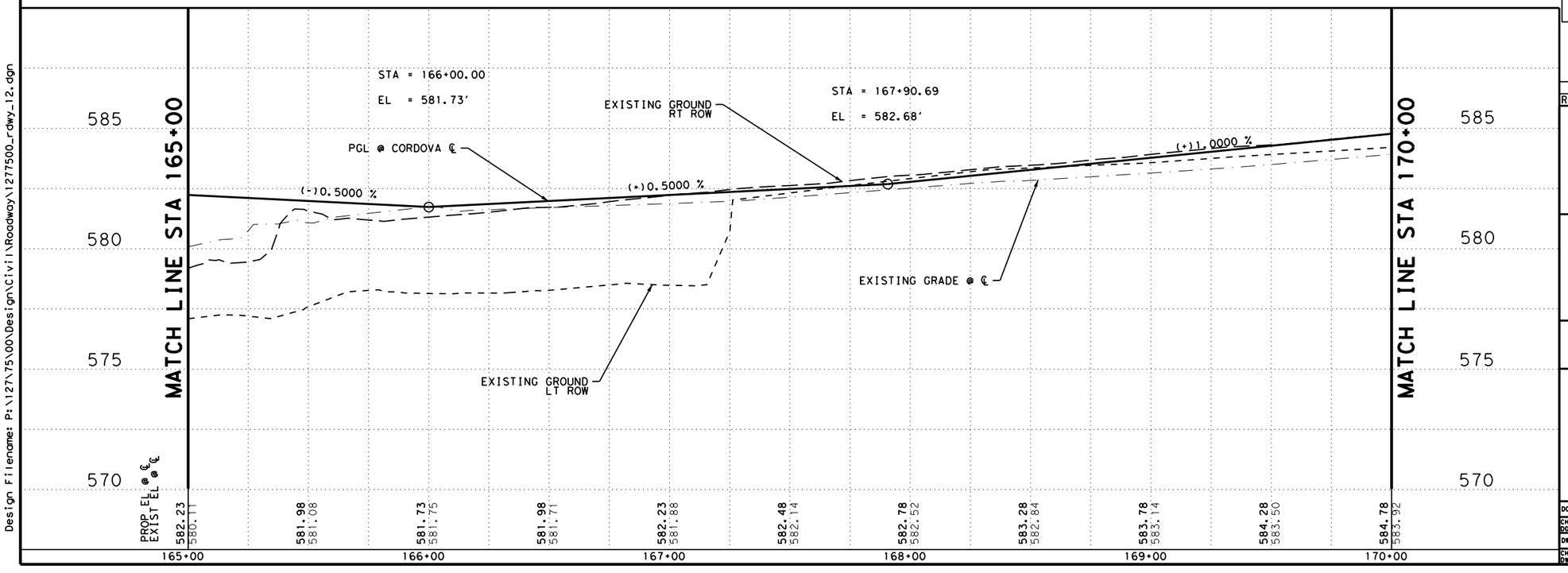
STA 160+00 TO STA 165+00

SHEET 11 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	97

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_11.dgn





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- DRIVEWAY NUMBER (#-#)
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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Texas Department of Transportation
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ROADWAY PLAN AND PROFILE

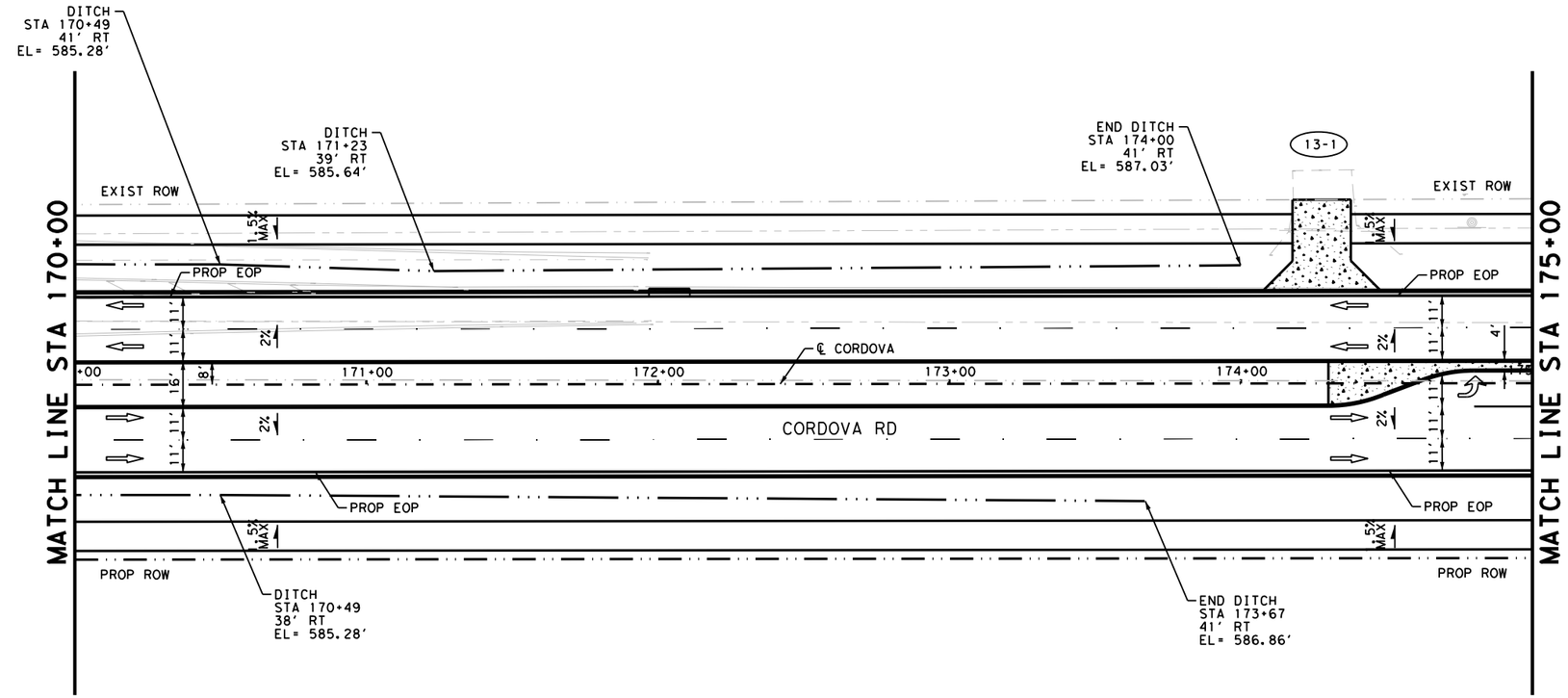
STA 165+00 TO STA 170+00

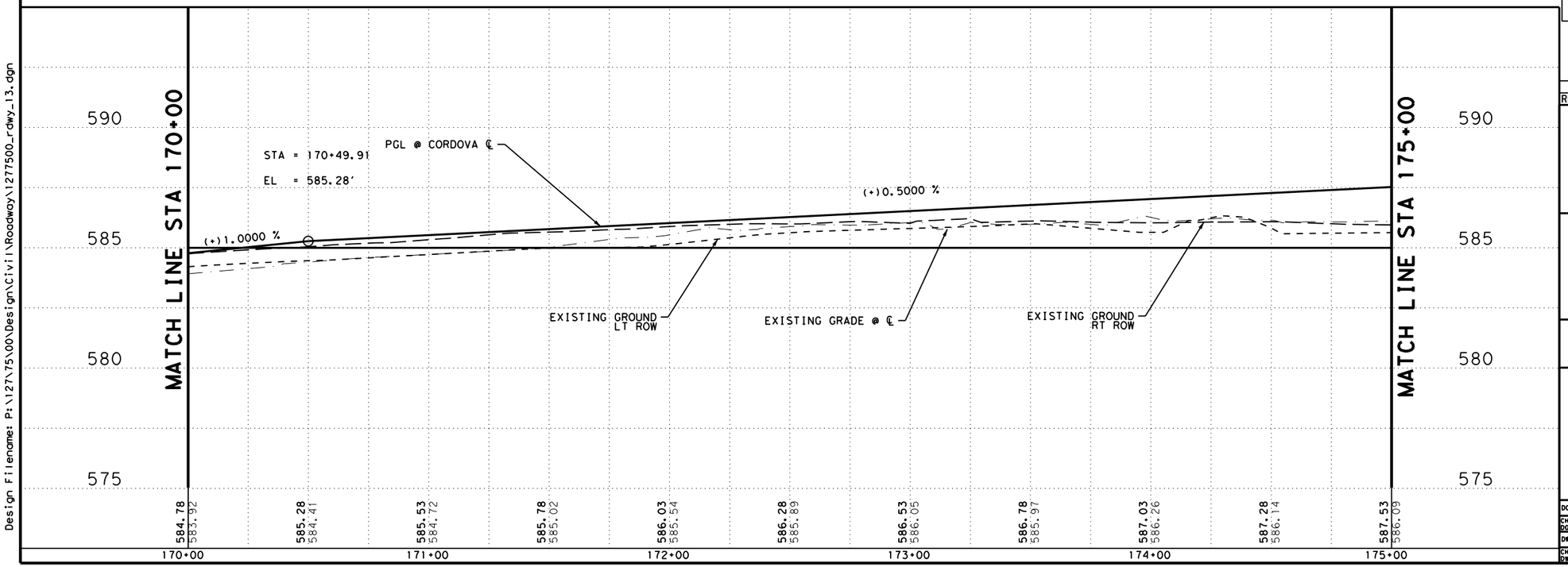
SHEET 12 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	98

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_12.dgn





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

N

NOTES

1. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT. CENTER OF MARKING OR FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK. i.e. FADED.
3. REFER TO HORIZONTAL ALIGNMENT DATA SHEETS FOR CURVE DATA AND ALIGNMENT INFORMATION.

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ENGINEER: STEVEN J. TATE
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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 170+00 TO STA 175+00

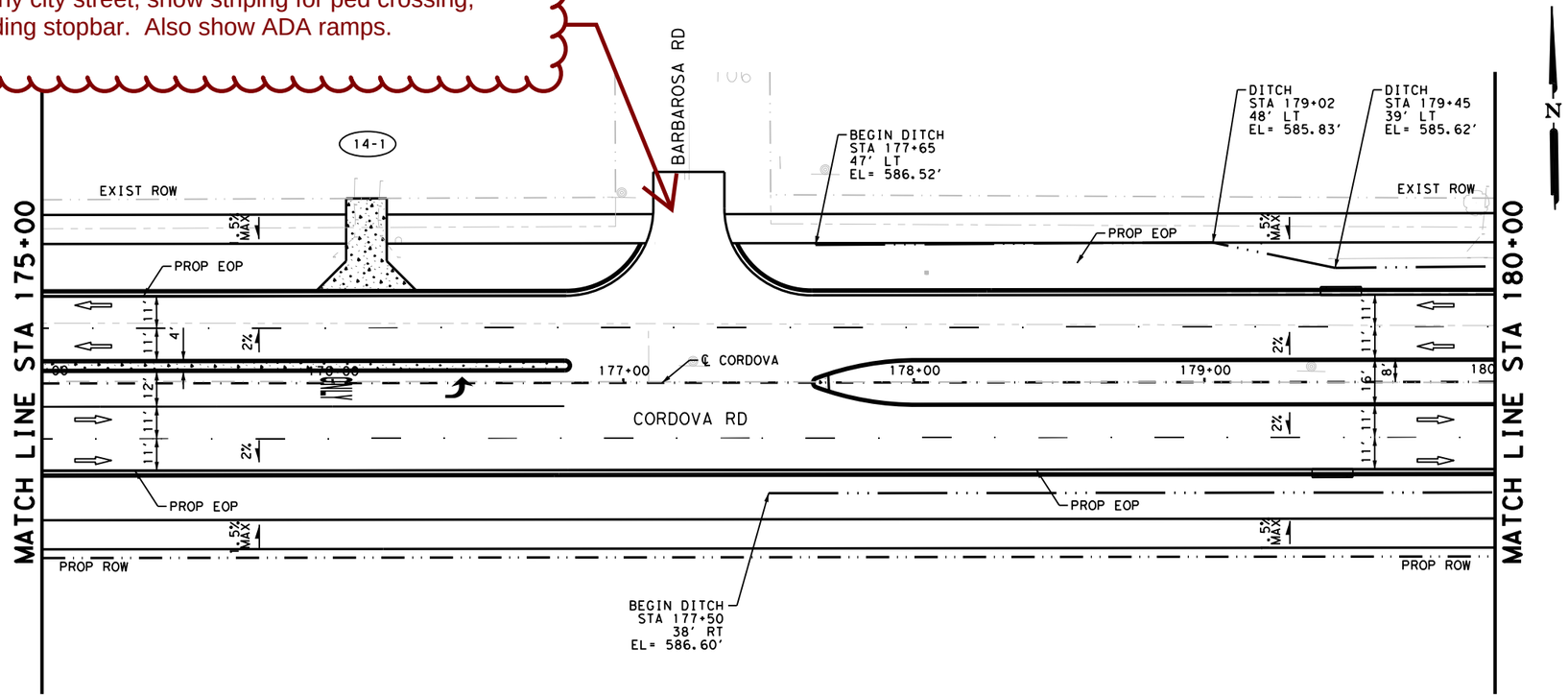
SHEET 13 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	99

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_13.dgn

For any city street, show striping for ped crossing, including stopbar. Also show ADA ramps.



LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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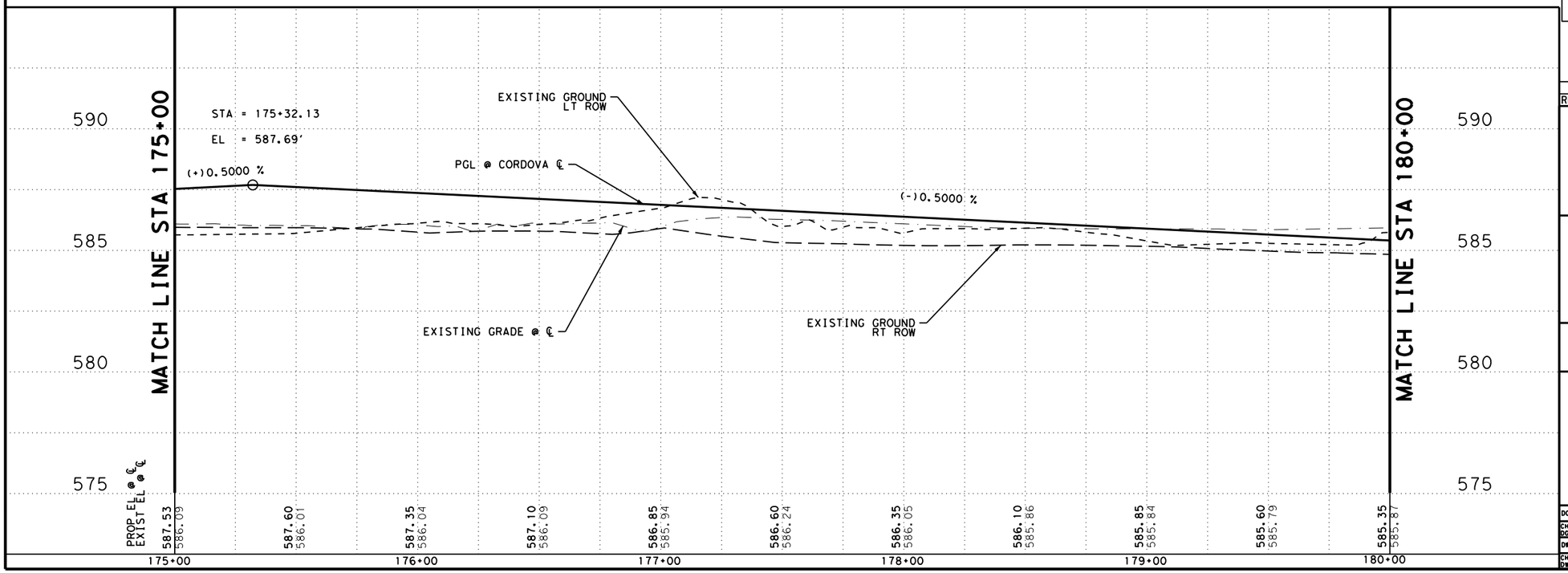

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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

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SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

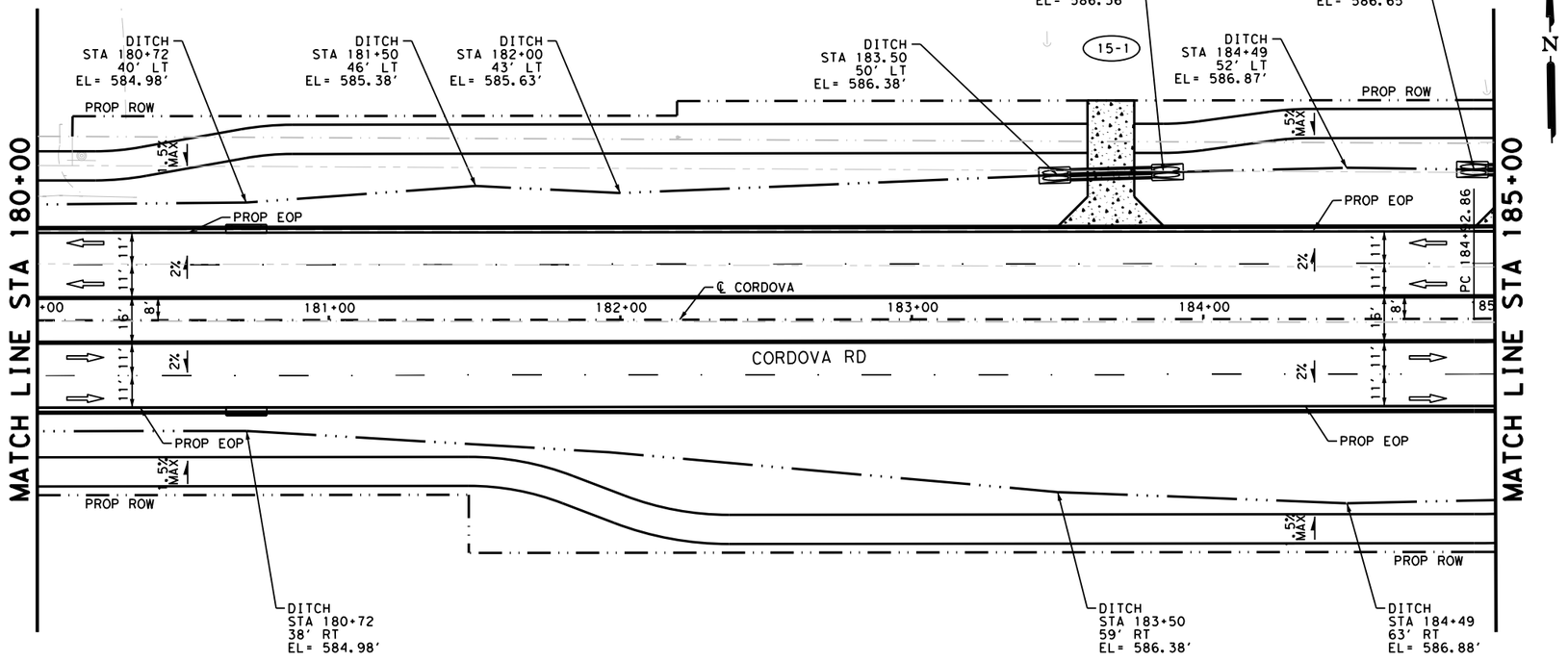
STA 175+00 TO STA 180+00

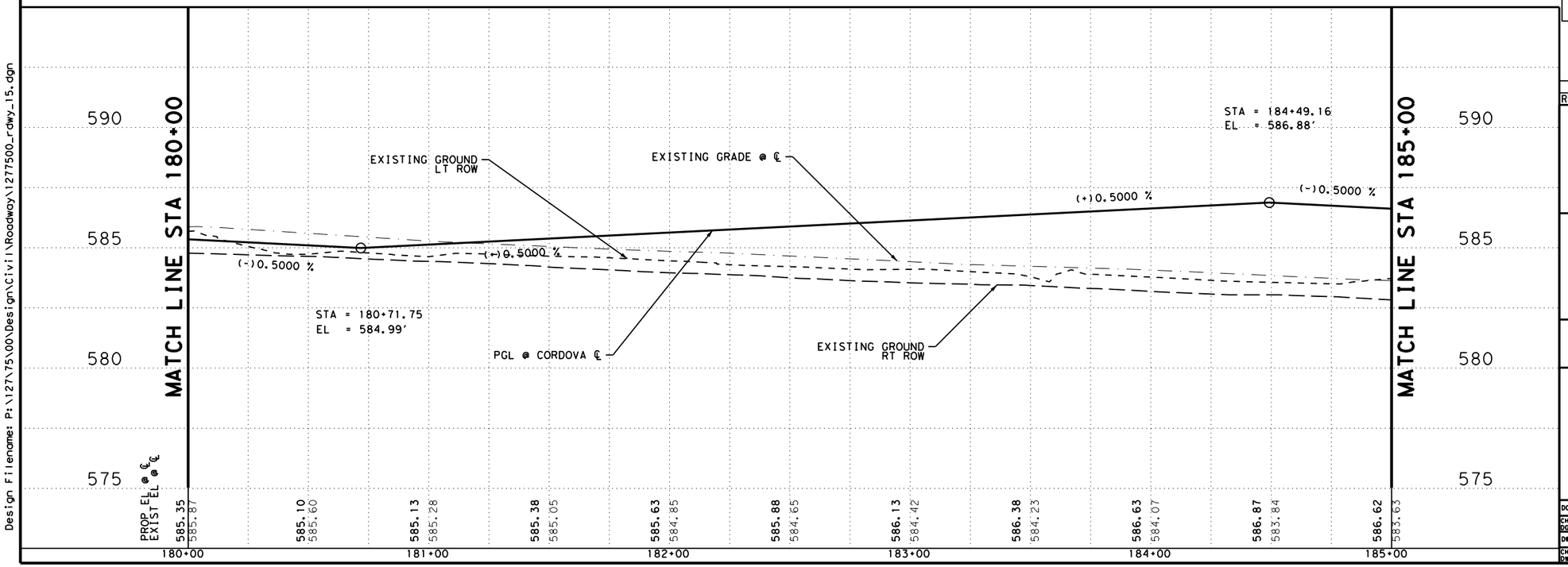
SHEET 14 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	100

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_14.dgn





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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ENGINEER: STEVEN J. TATE
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DATE: 7/27/2023

APPROVAL

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 180+00 TO STA 185+00

SHEET 15 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	101

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_15.dgn

Plotted on: 7/27/2023

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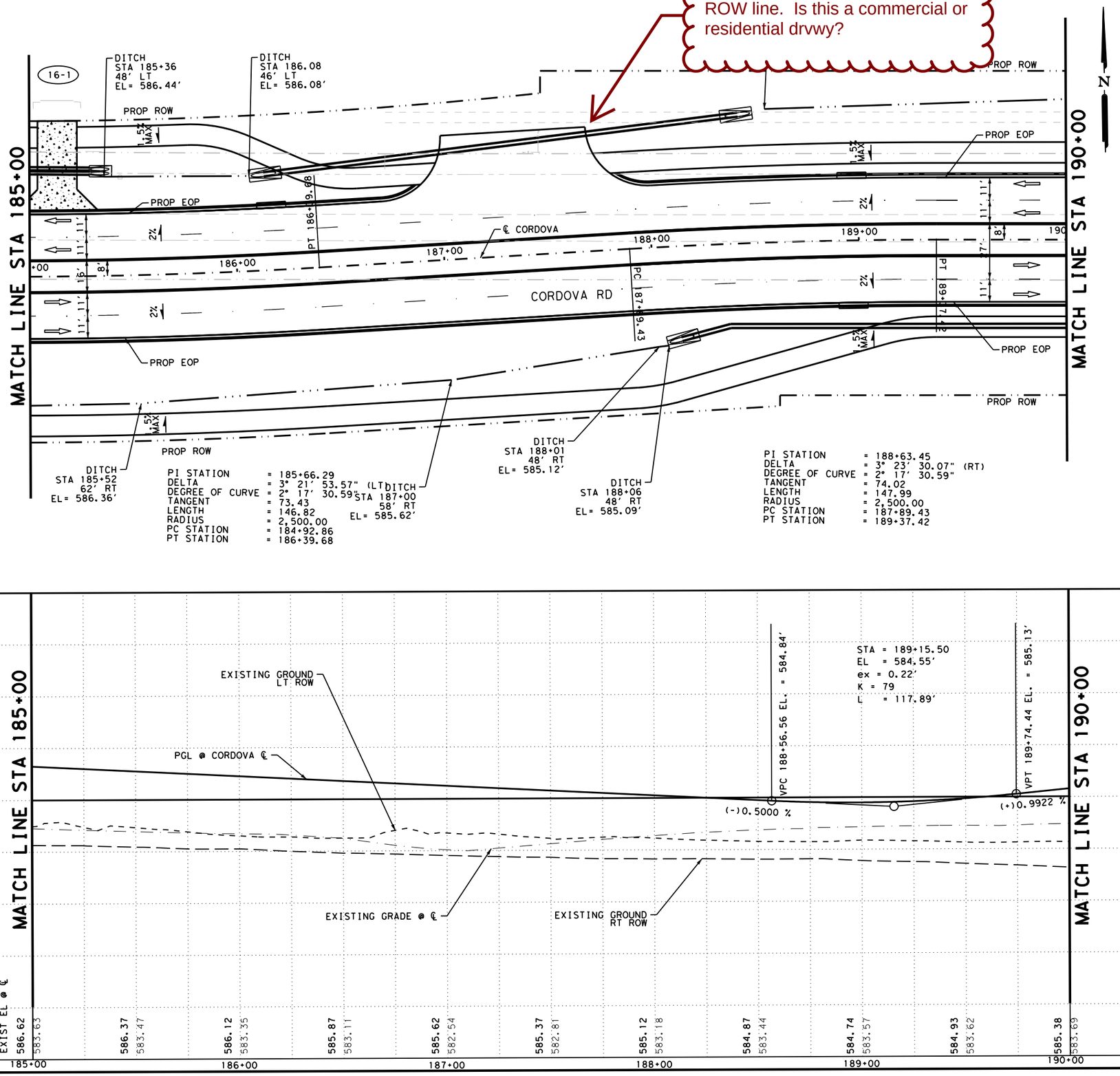

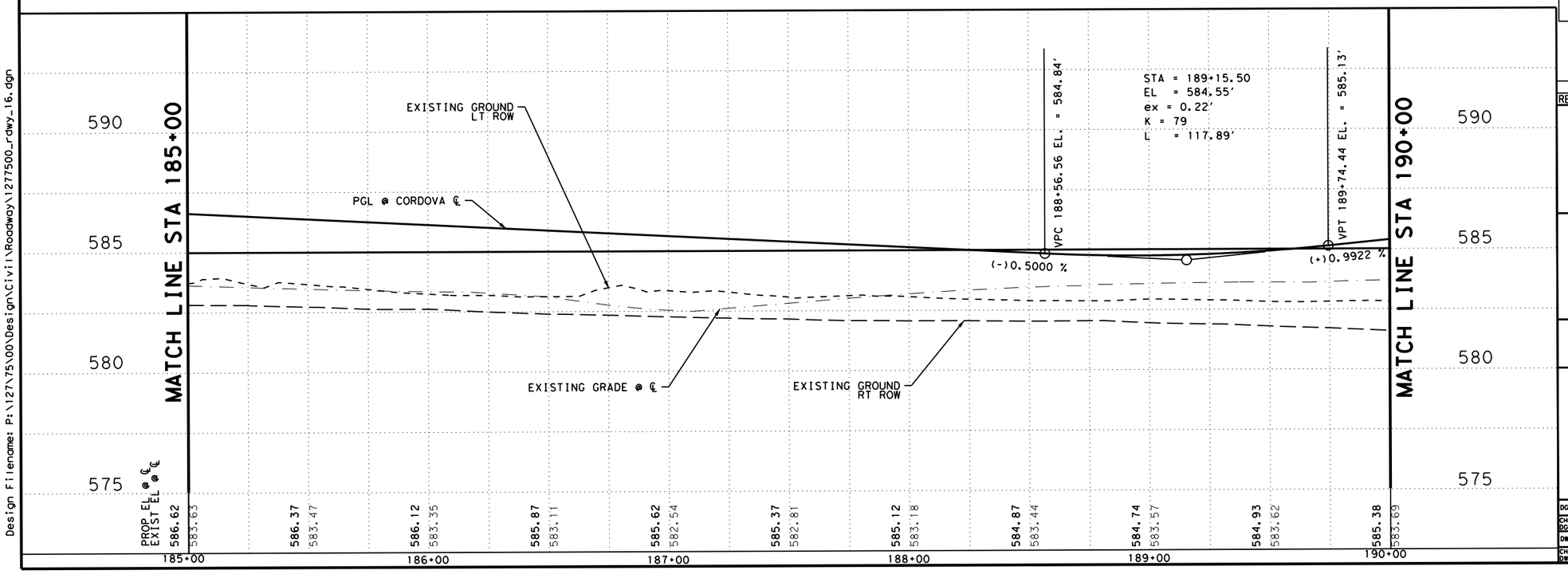

LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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ENGINEER: STEVEN J. TATE
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APPROVAL

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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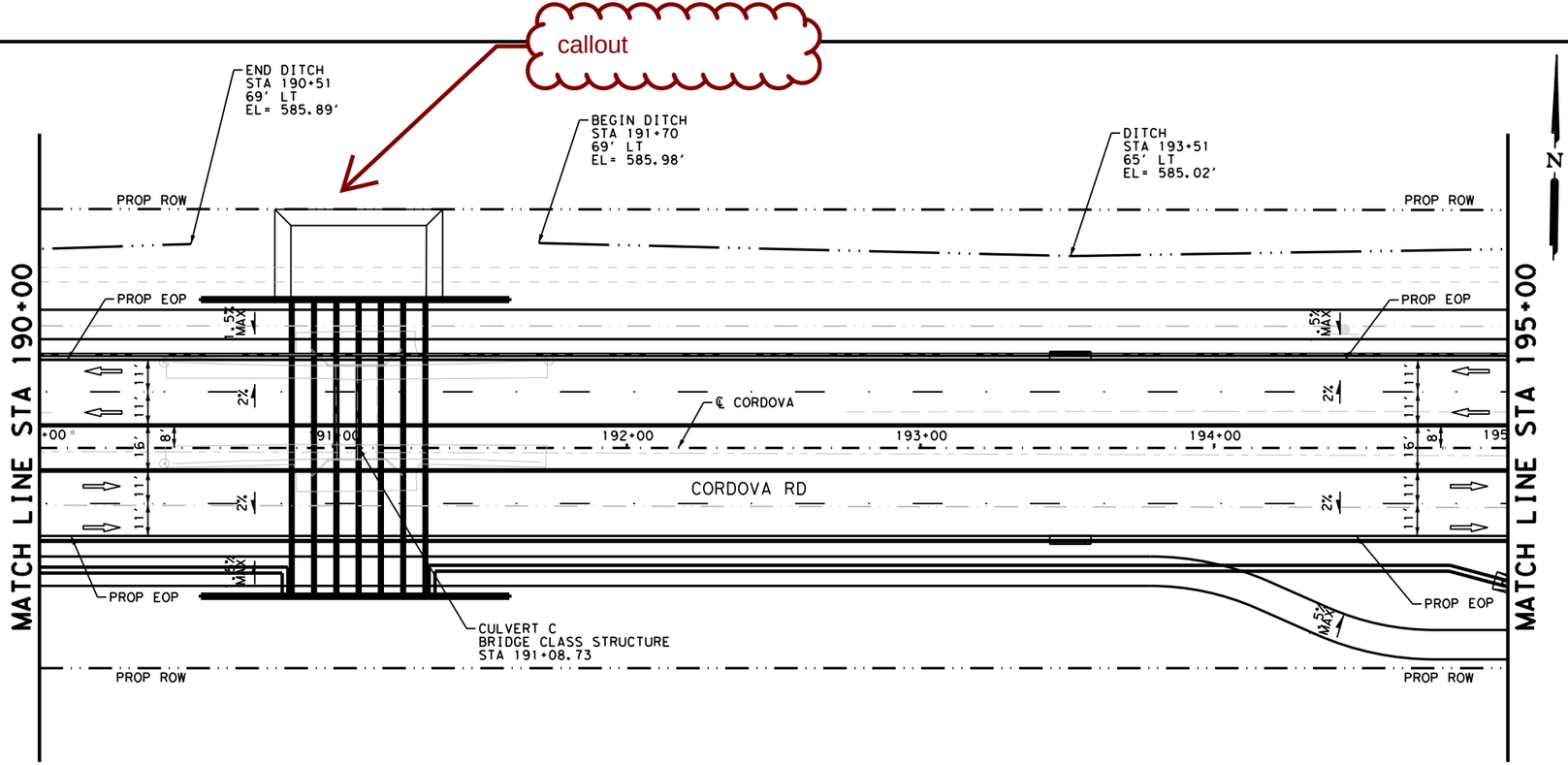
ROADWAY PLAN AND PROFILE

STA 185+00 TO STA 190+00

SHEET 16 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	102

Plotted on: 7/27/2023



LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
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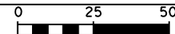
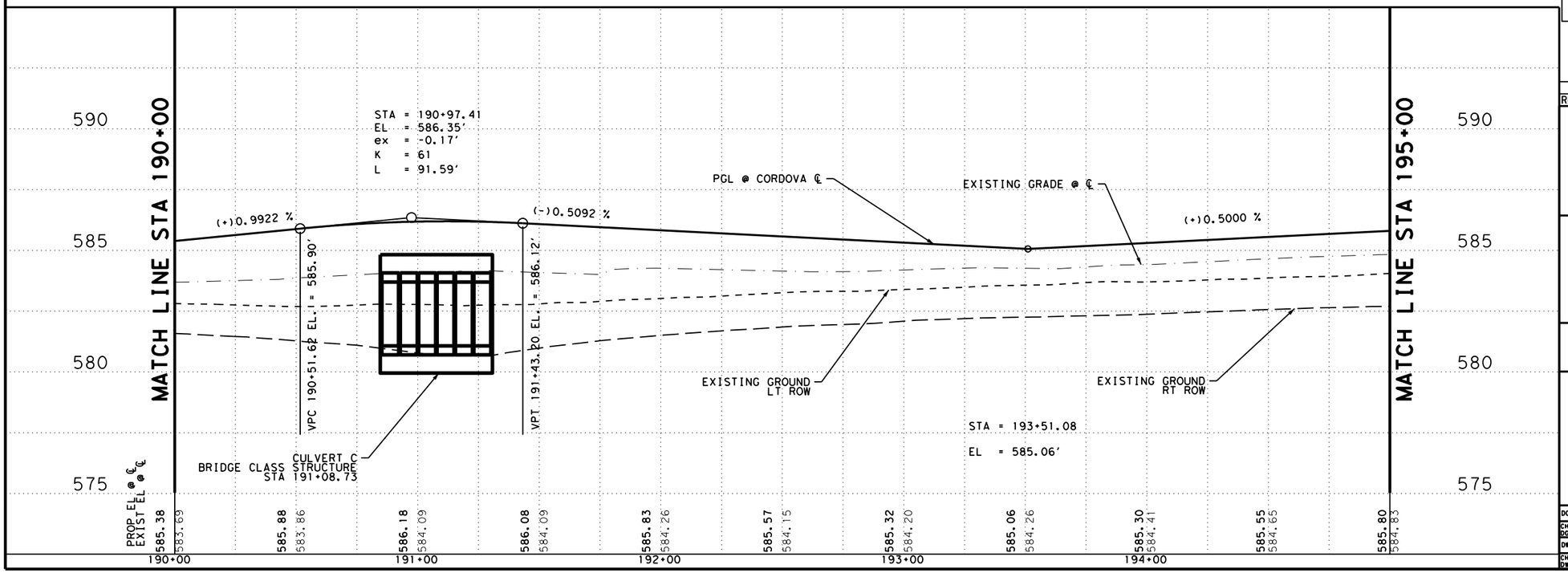
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023



SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY



PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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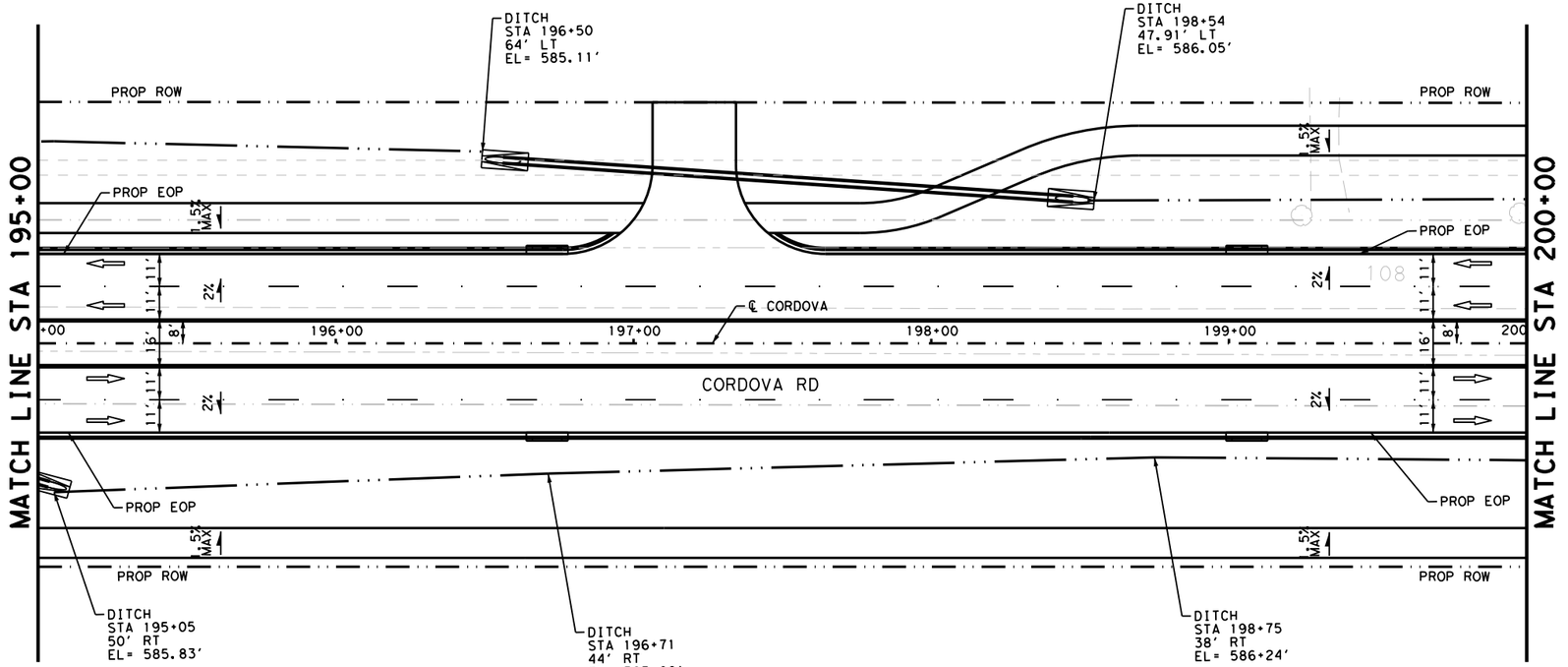
ROADWAY PLAN AND PROFILE

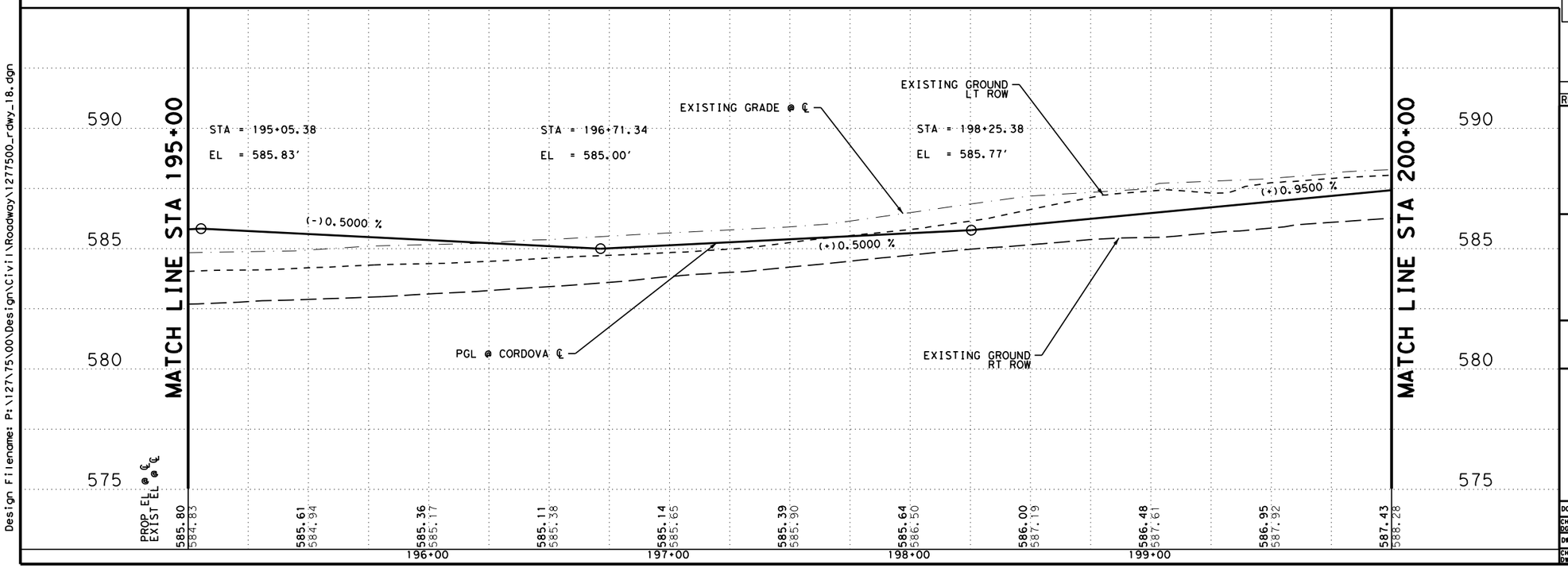
STA 190+00 TO STA 195+00

SHEET 17 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	103

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_17.dgn





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 195+00 TO STA 200+00

SHEET 18 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	104

Plotted on: 7/27/2023

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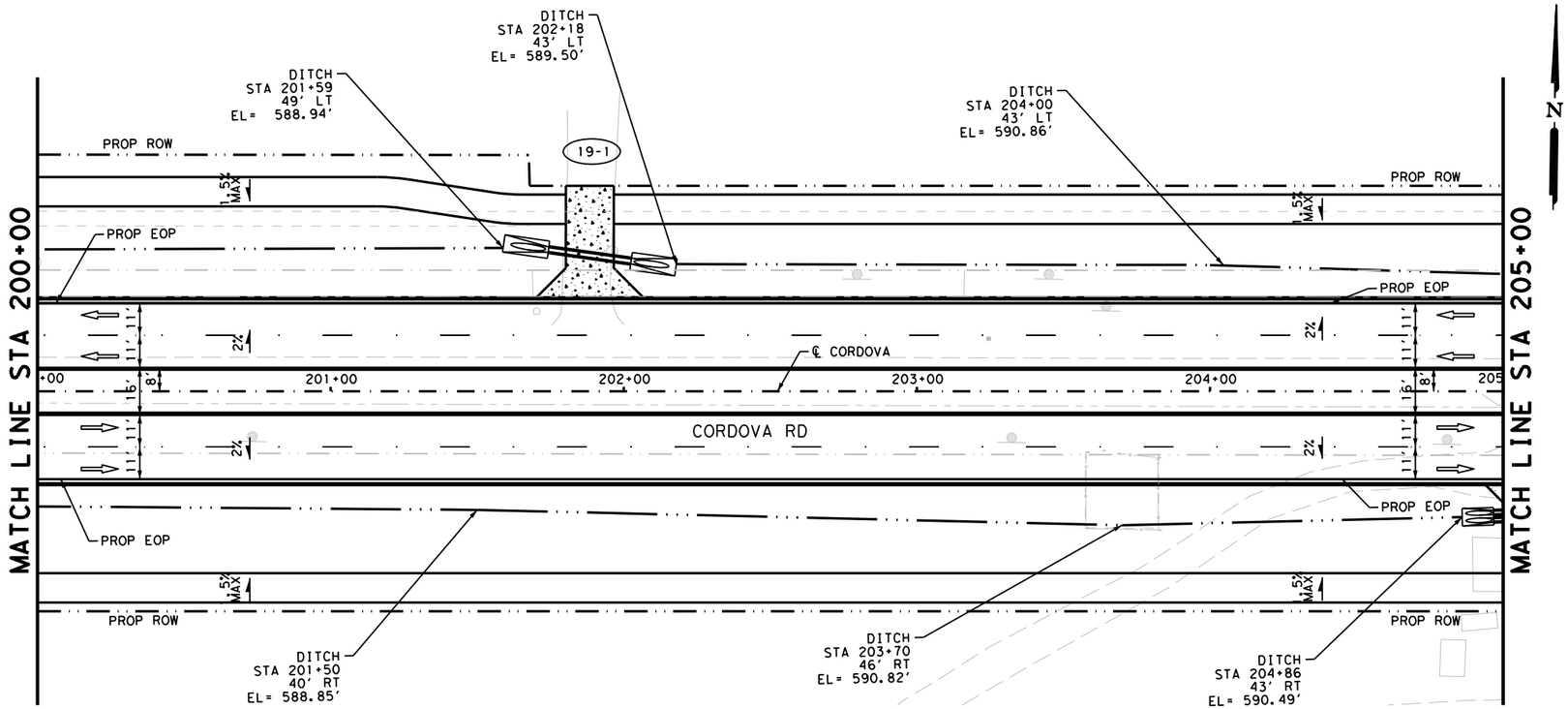

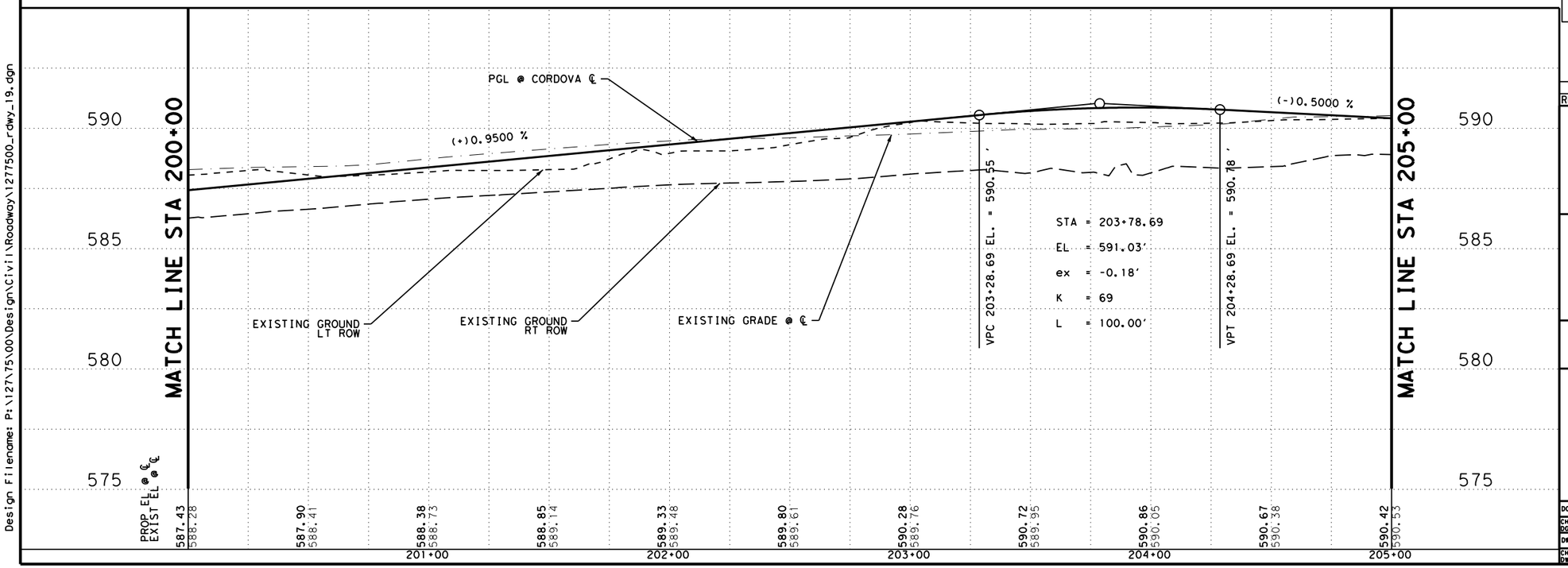

LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

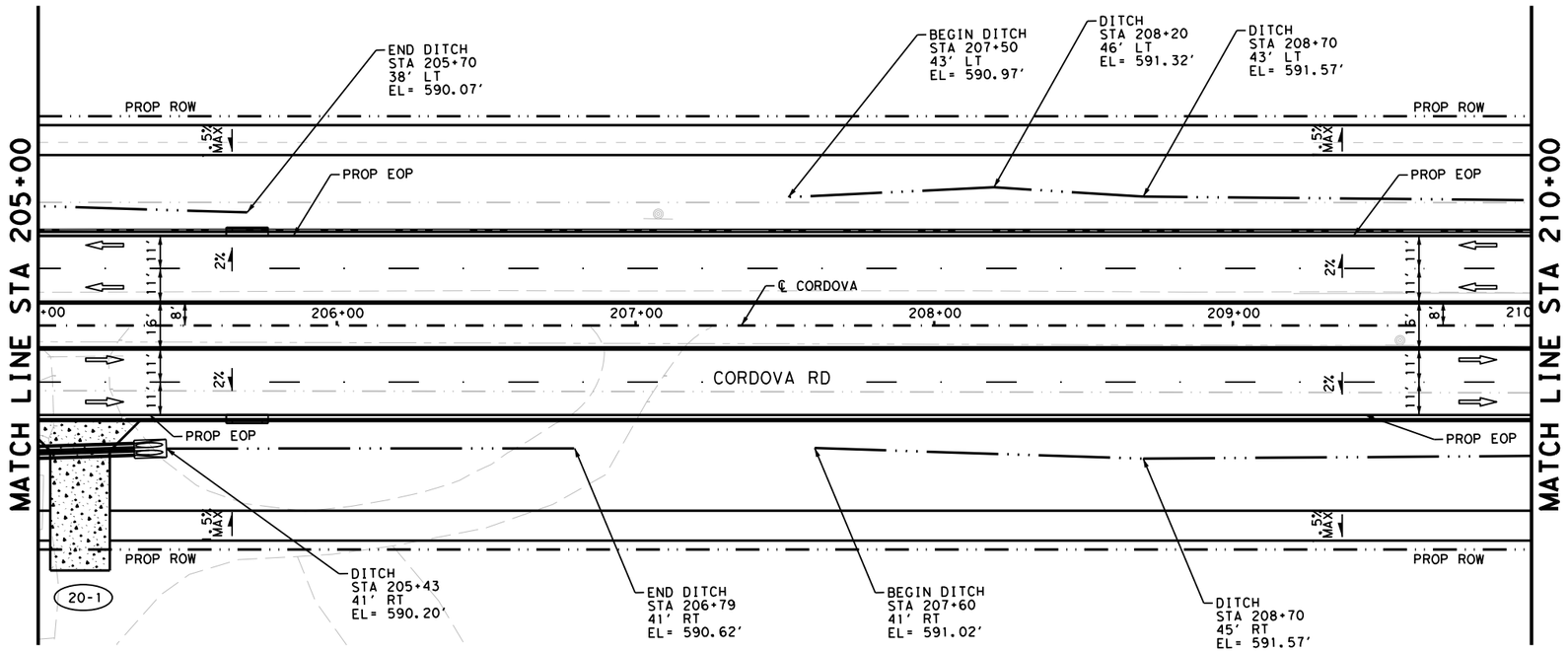
STA 200+00 TO STA 205+00

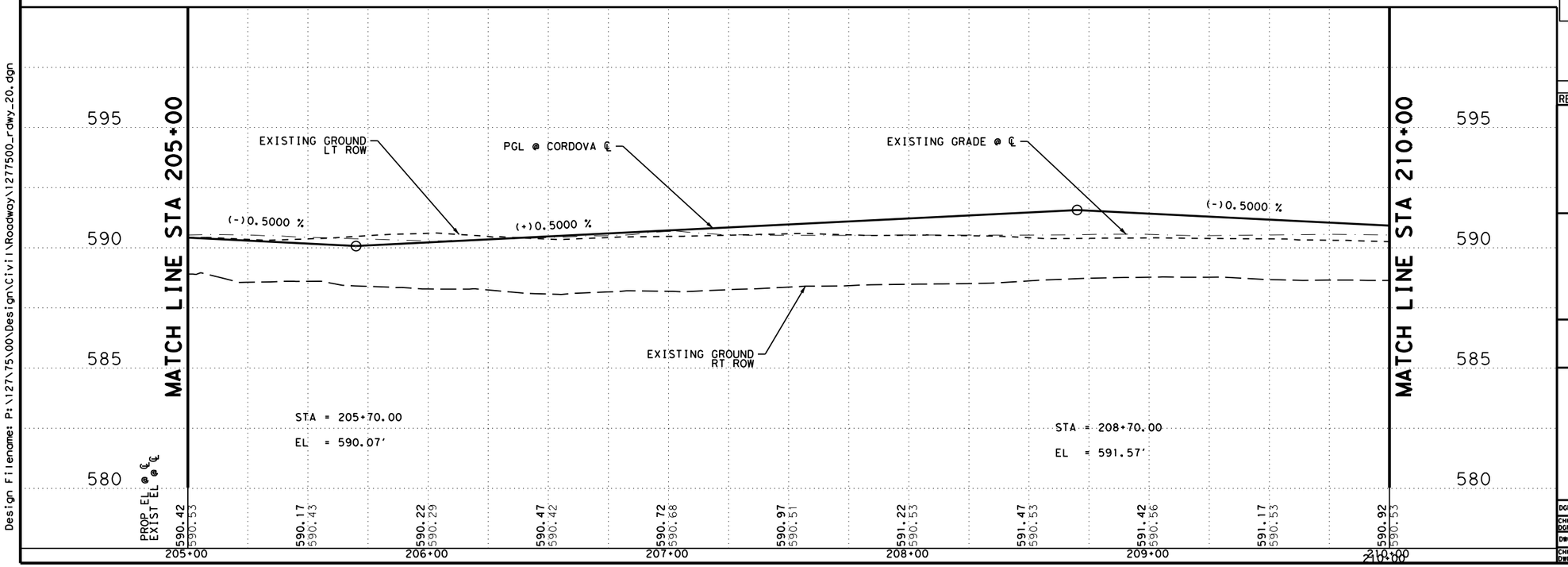
SHEET 19 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	105

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_19.dgn





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

N

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APPROVAL

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 205+00 TO STA 210+00

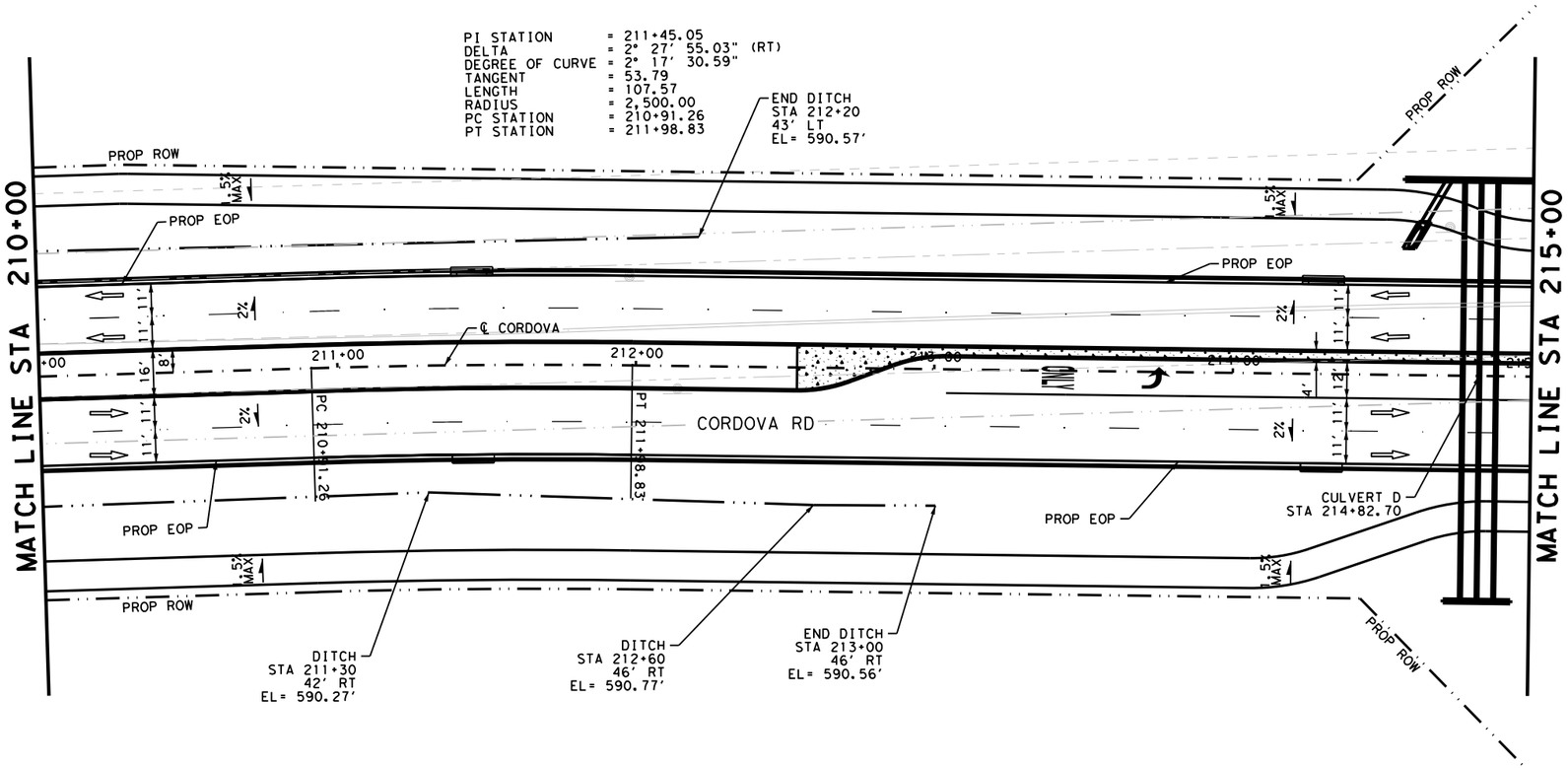
SHEET 20 OF 44

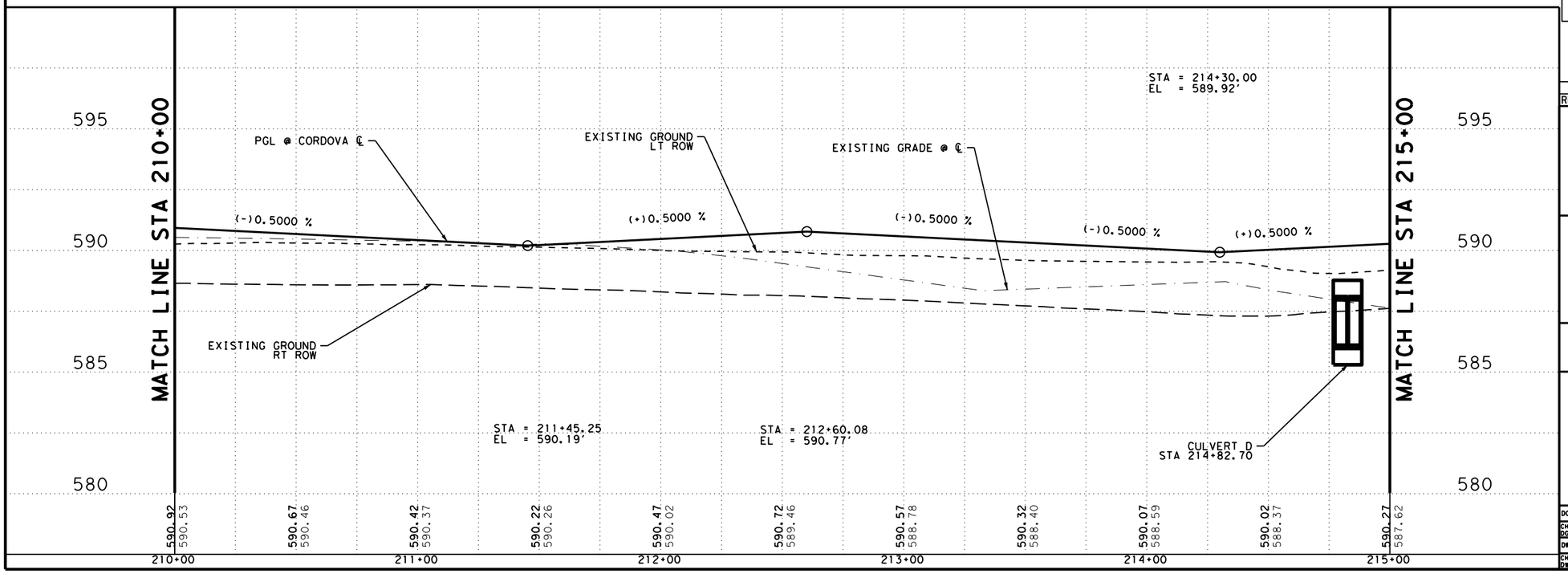
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	106

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_20.dgn

Plotted on: 7/27/2023





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

1. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT. CENTER OF MARKING OR FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK. i.e. FADED.
3. REFER TO HORIZONTAL ALIGNMENT DATA SHEETS FOR CURVE DATA AND ALIGNMENT INFORMATION.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

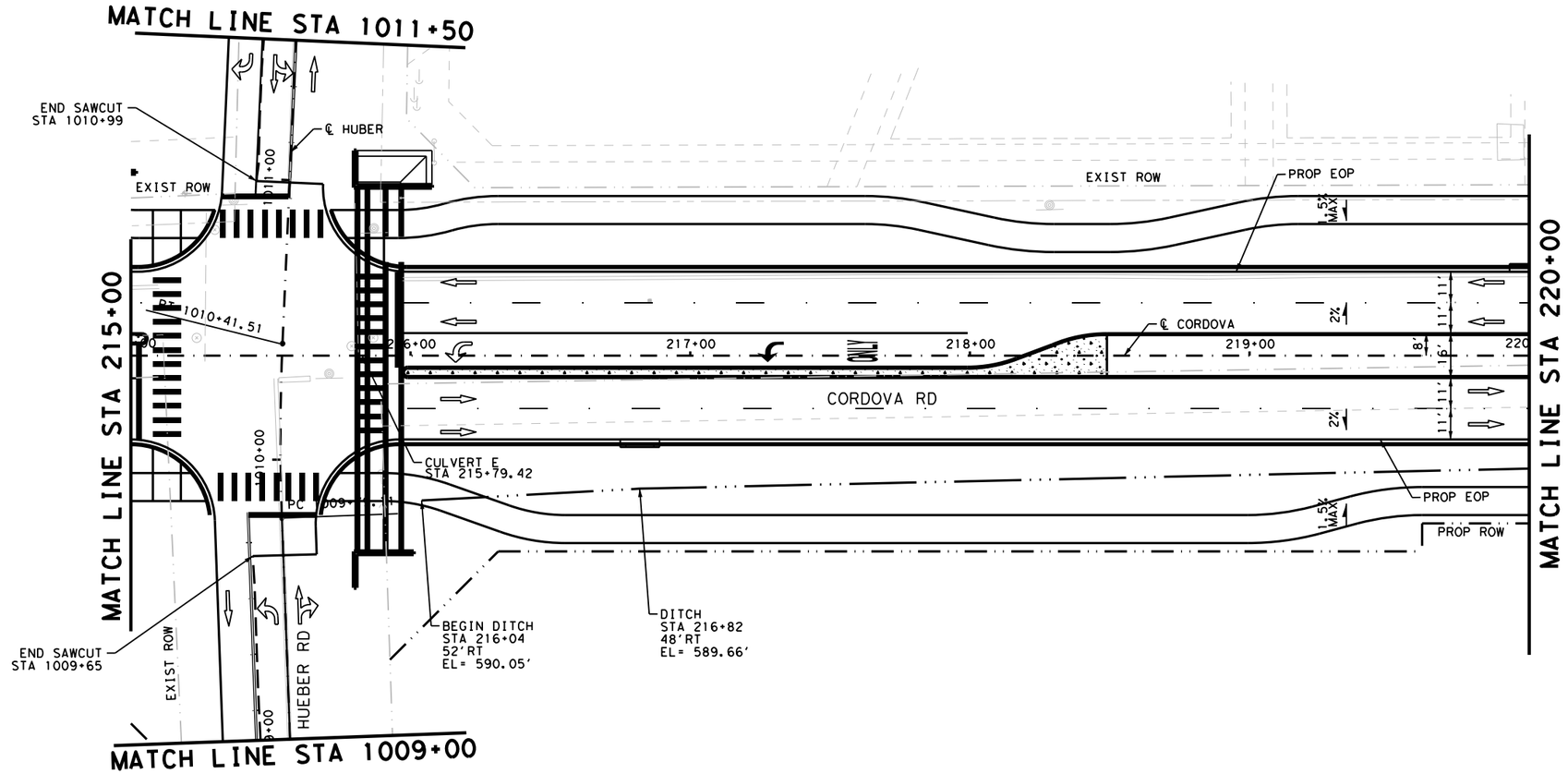
ROADWAY PLAN AND PROFILE

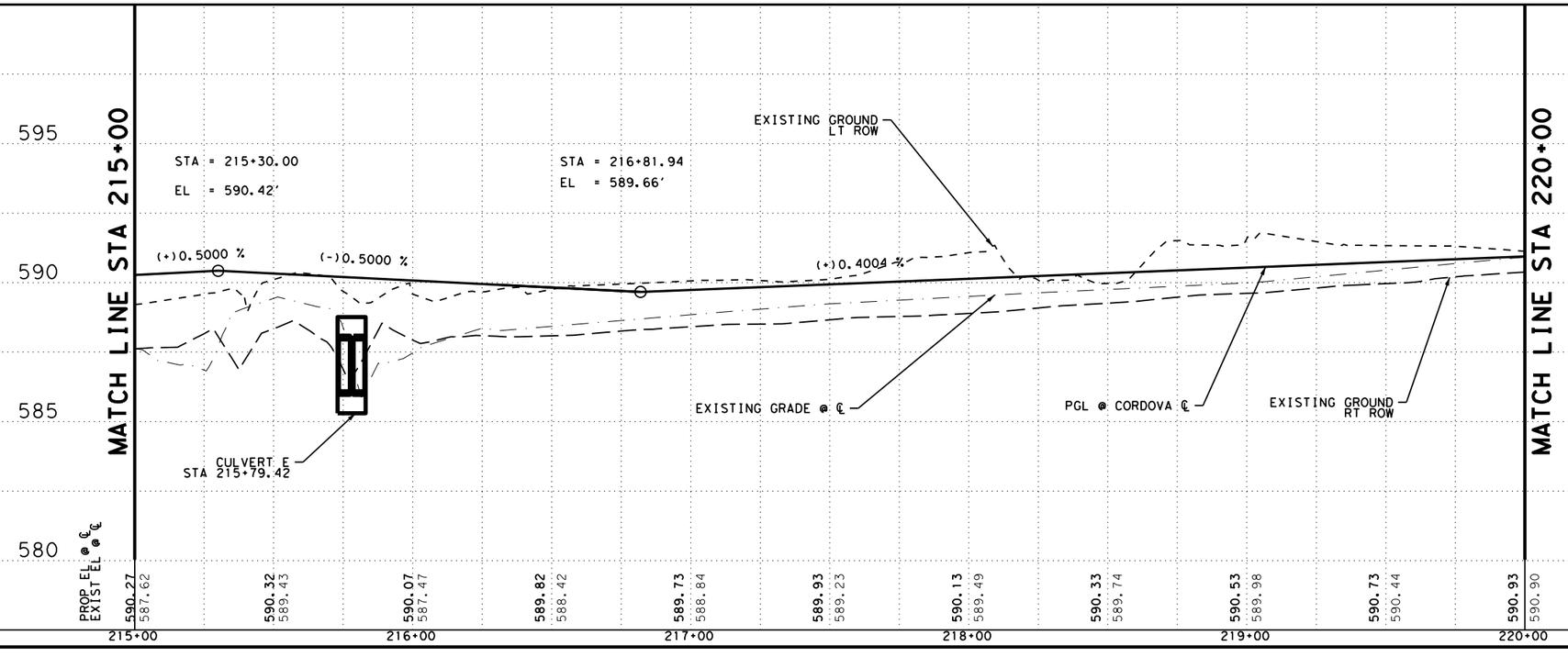
STA 210+00 TO STA 215+00

SHEET 21 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	107

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_21.dgn





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

N

NOTES

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INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

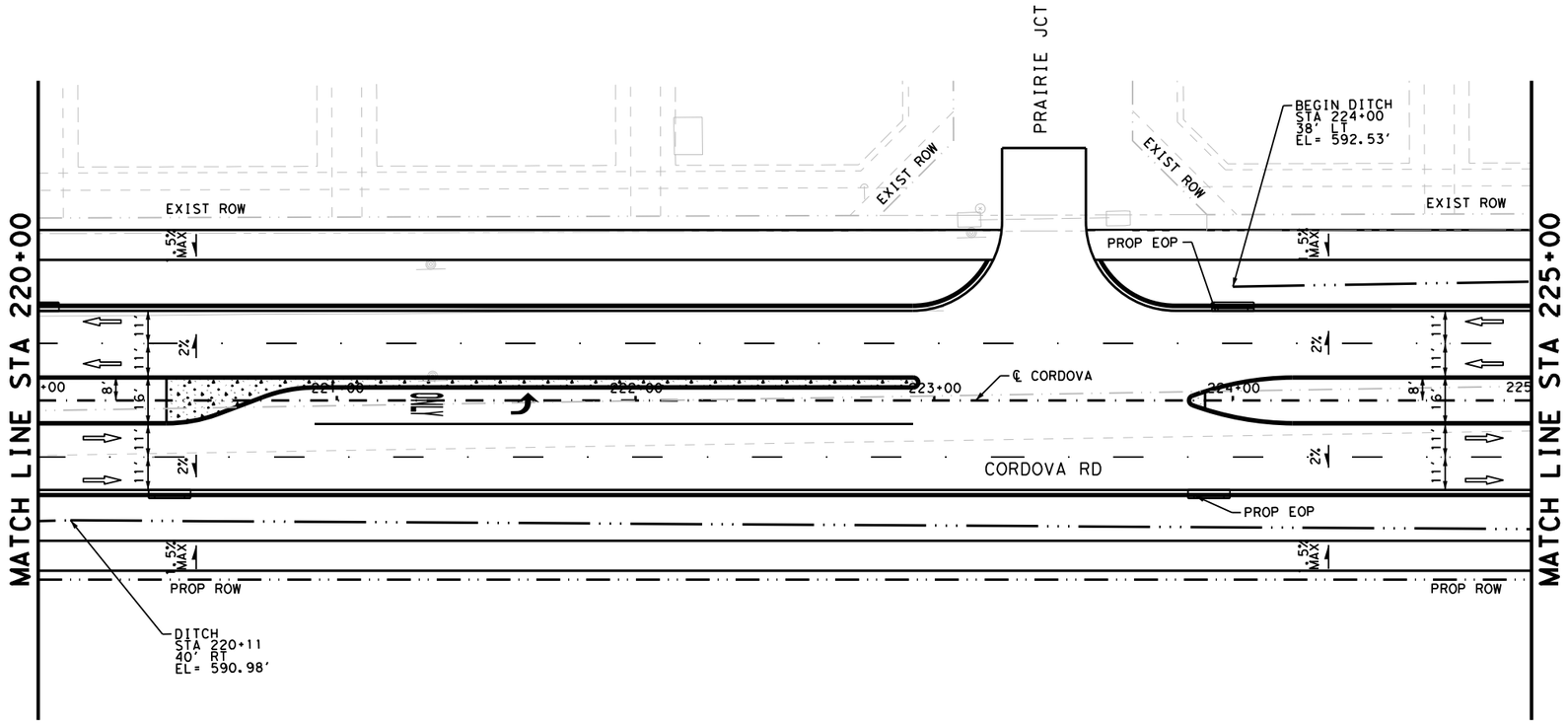
STA 215+00TO STA 220+00

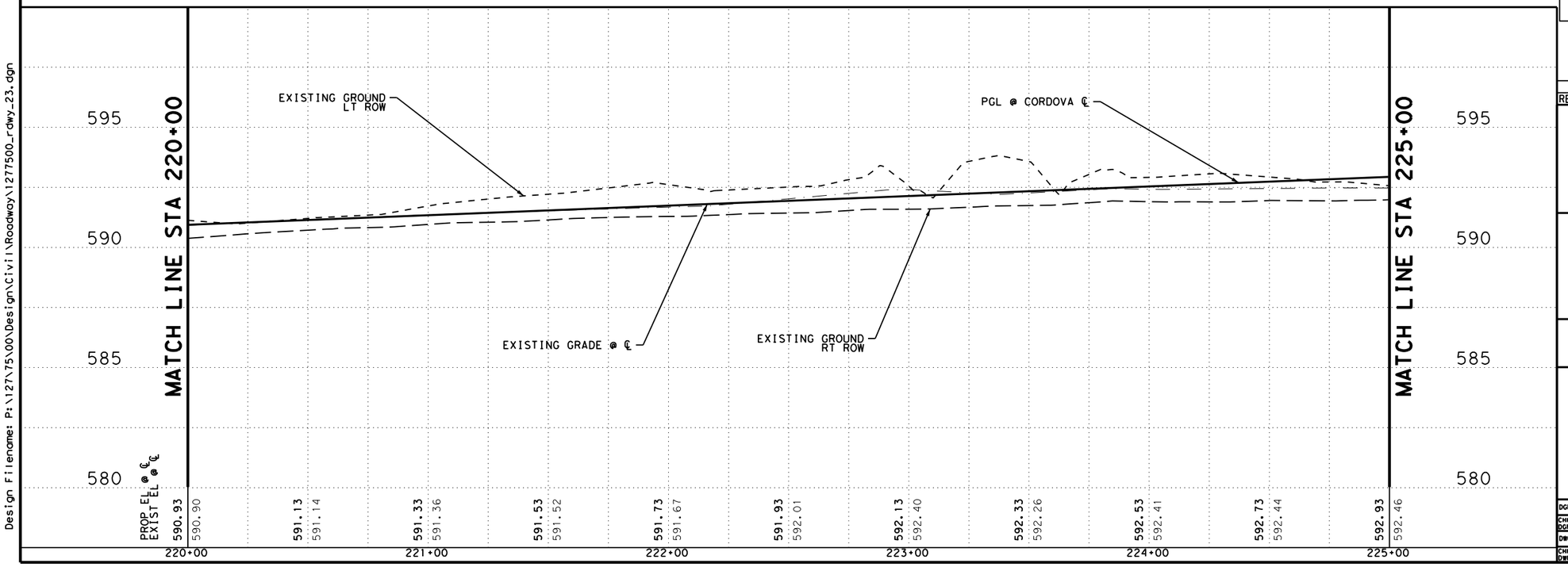
SHEET 22 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	108

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_22.dgn





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 220+00 TO STA 225+00

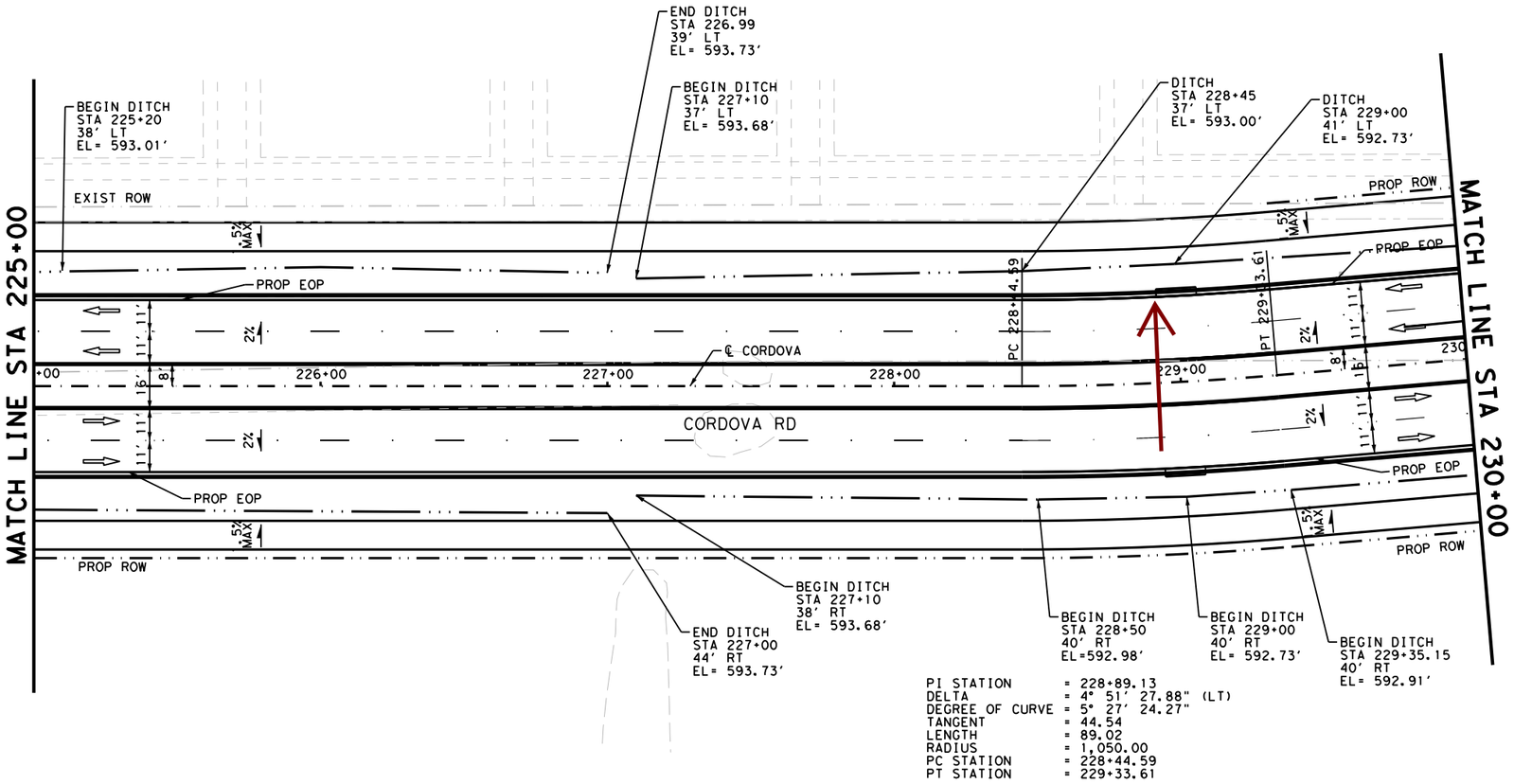
SHEET 23 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	109

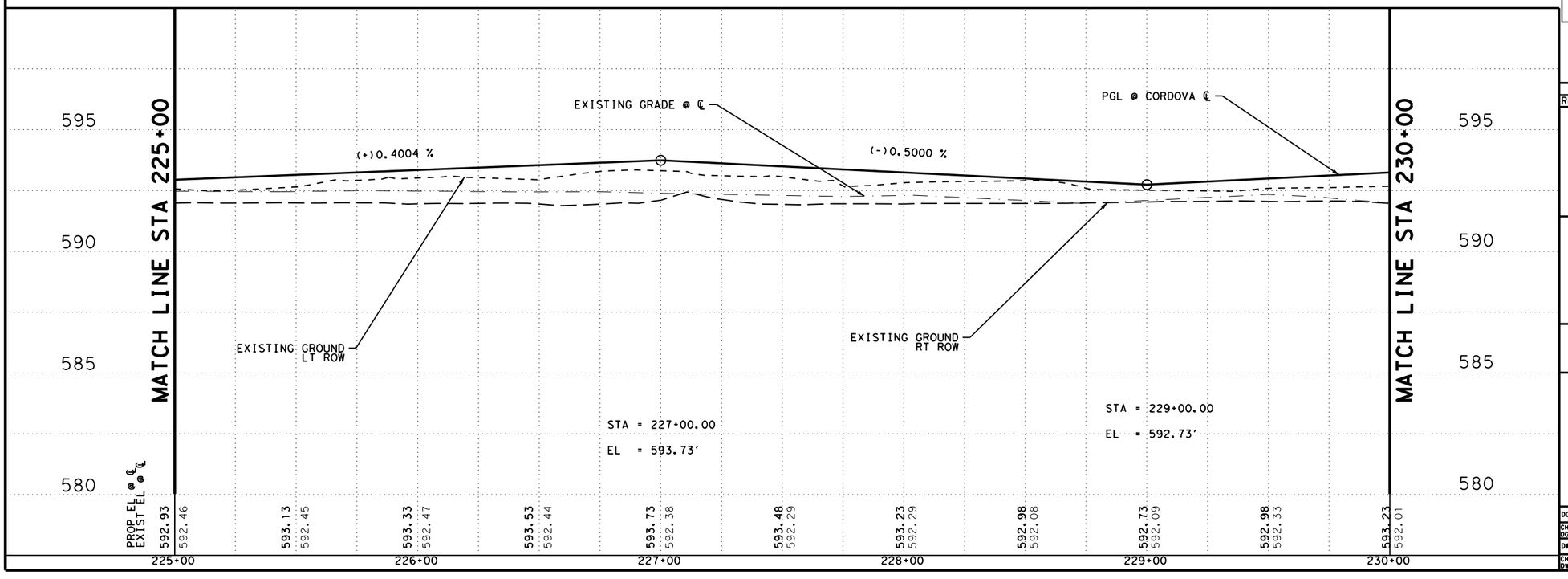
Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_23.dgn

Plotted on: 7/27/2023



PI STATION = 228+89.13
DELTA = 4° 51' 27.88" (LT)
DEGREE OF CURVE = 5° 27' 24.27"
TANGENT = 44.54
LENGTH = 89.02
RADIUS = 1,050.00
PC STATION = 228+44.59
PT STATION = 229+33.61



LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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DESIGN

INTERIM REVIEW
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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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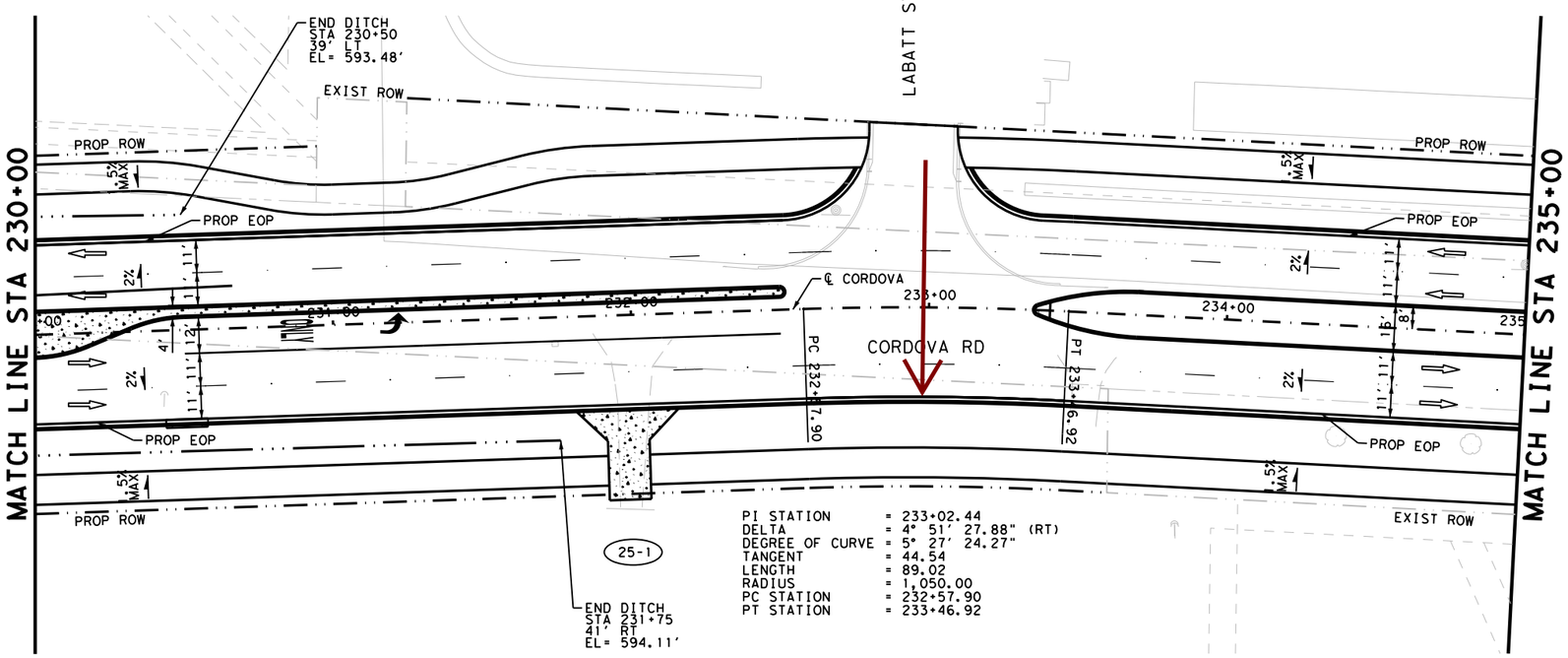
ROADWAY PLAN AND PROFILE

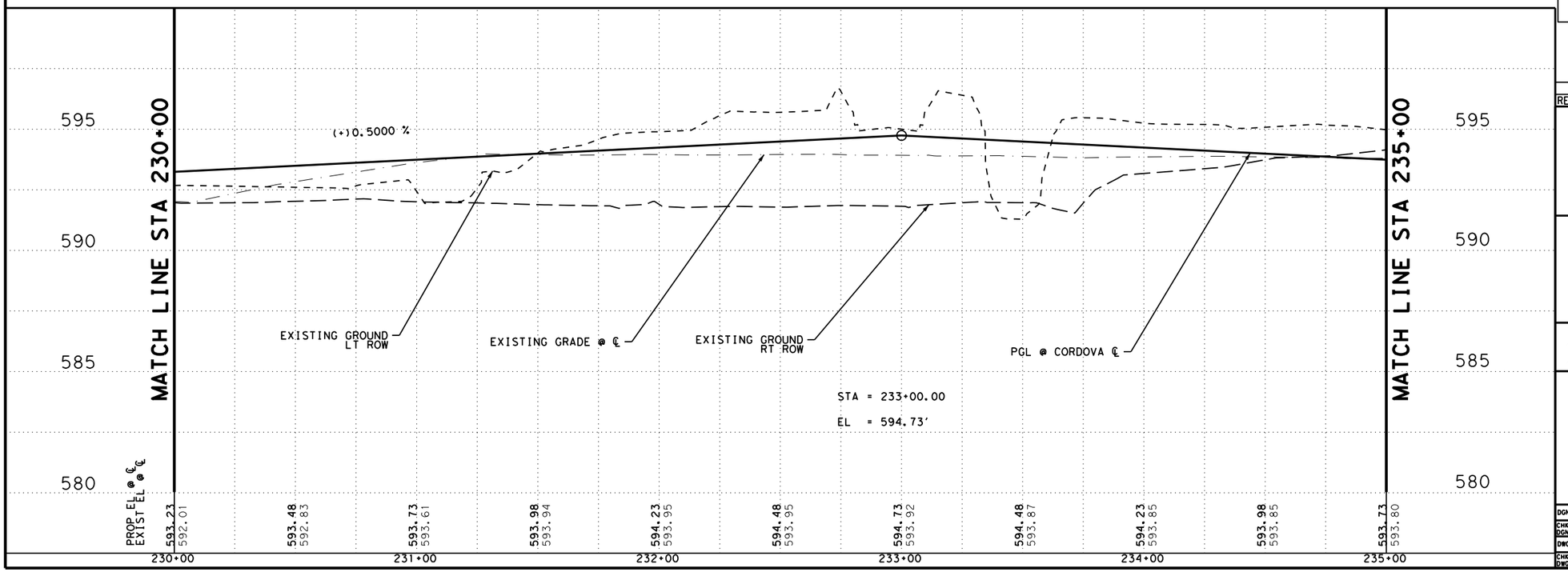
STA 225+00 TO STA 230+00

SHEET 24 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	110

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_24.dgn





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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DESIGN

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DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 230+00 TO STA 235+00

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	111

Plotted on: 7/27/2023

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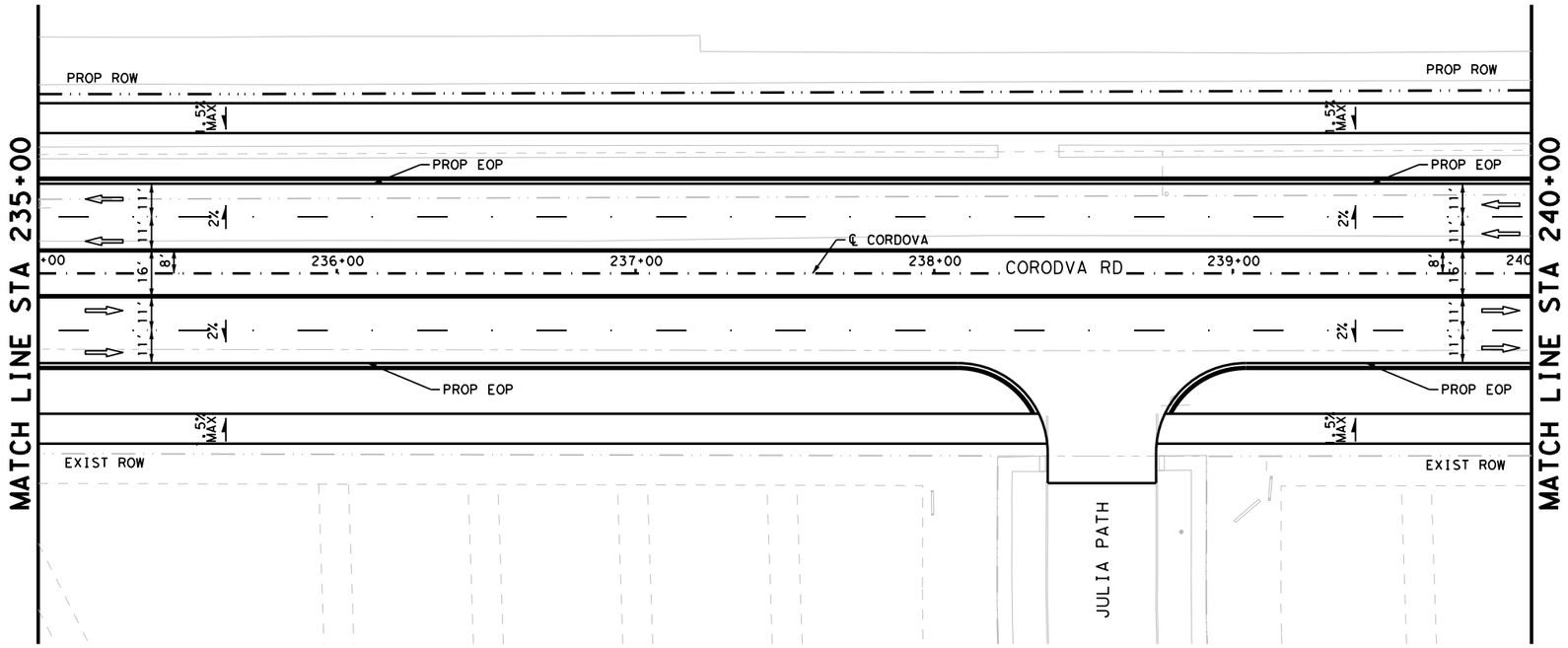

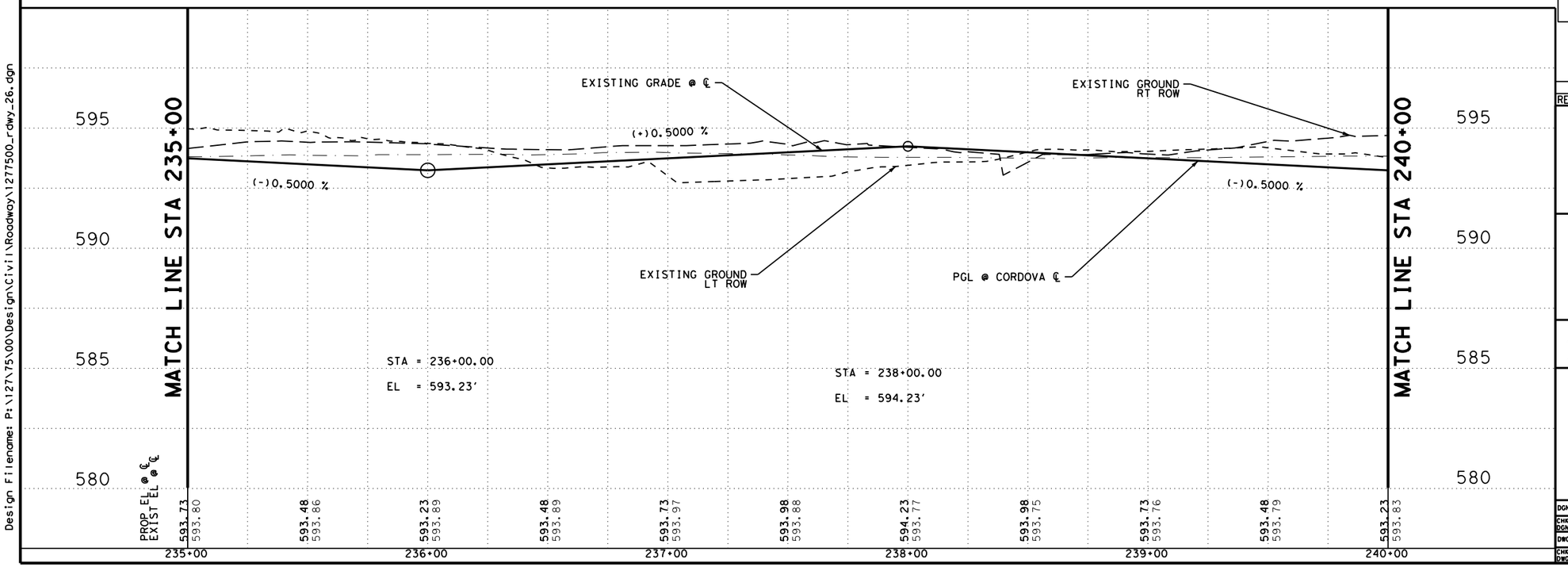

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_26.dgn

LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

N

NOTES

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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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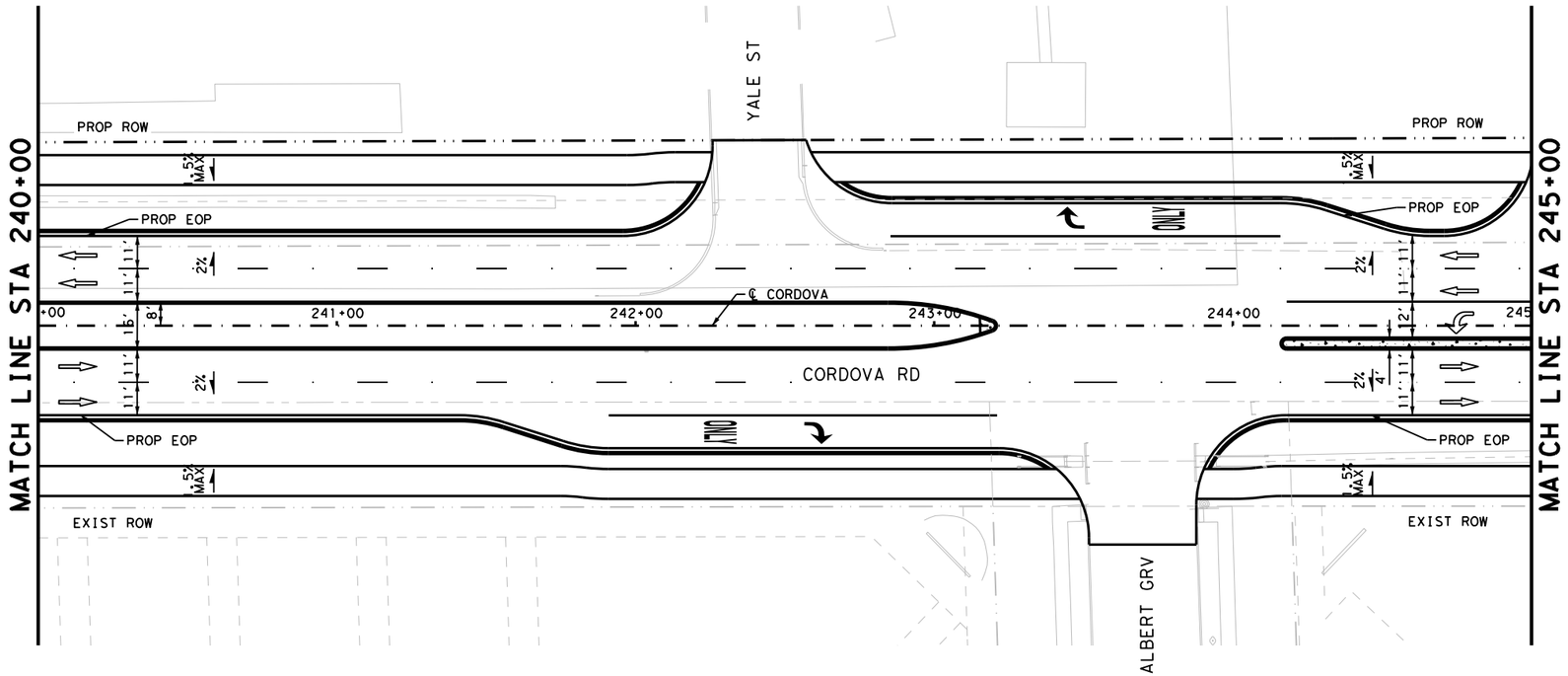
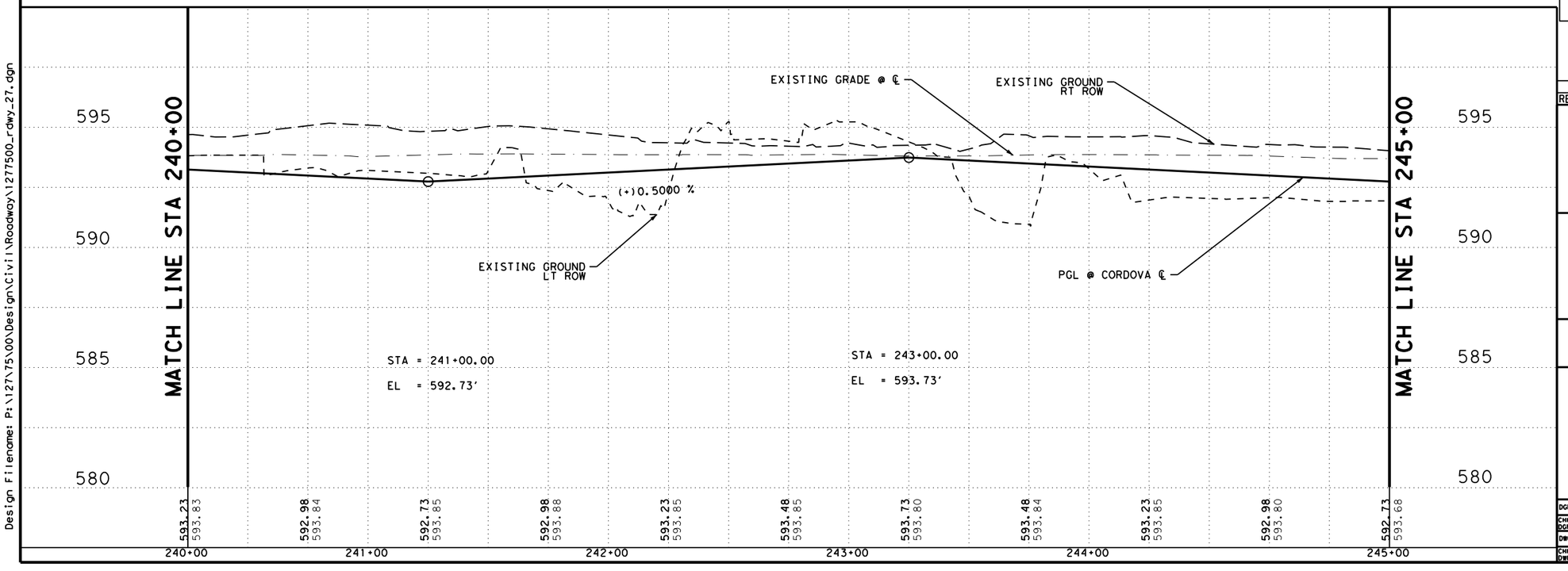
ROADWAY PLAN AND PROFILE

STA 235+00 TO STA 240+00

SHEET 26 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	112





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 240+00 TO STA 245+00

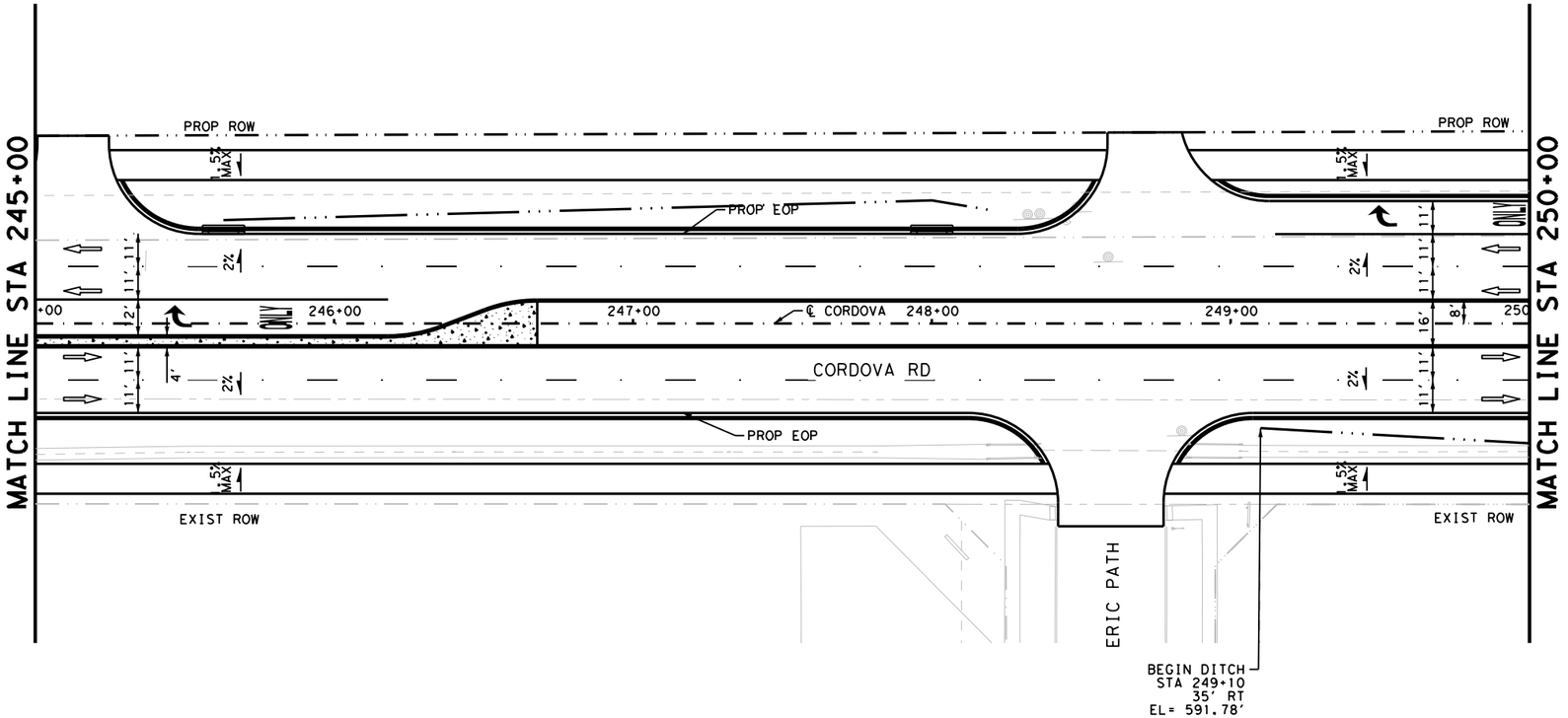
SHEET 27 OF 44

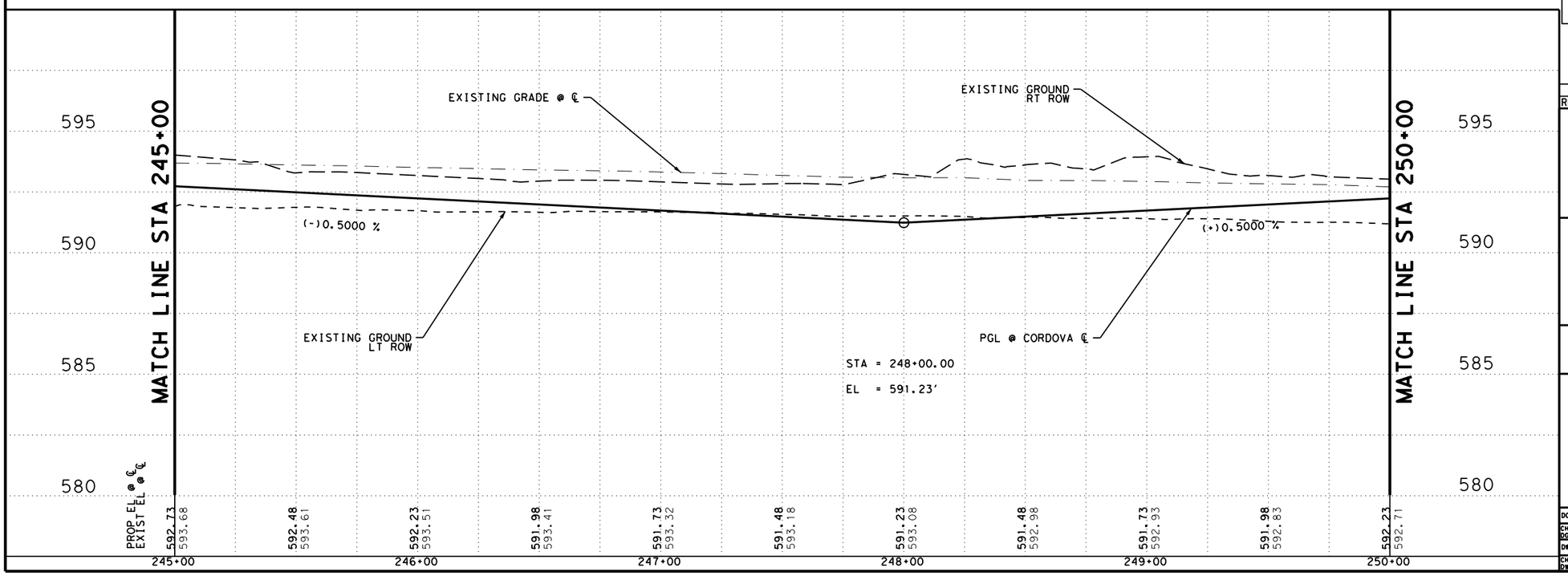
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	113

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_27.dgn

Plotted on: 7/27/2023





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

N

NOTES

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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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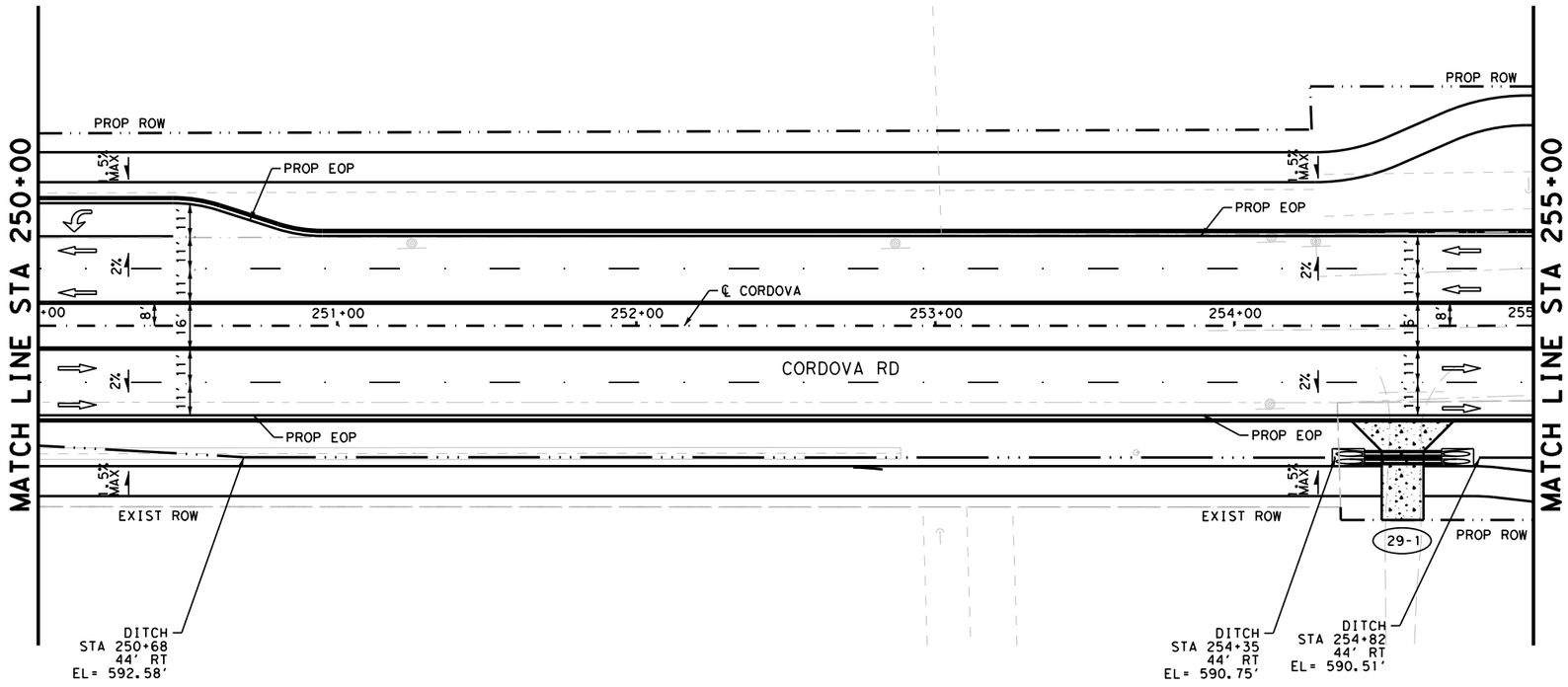
ROADWAY PLAN AND PROFILE

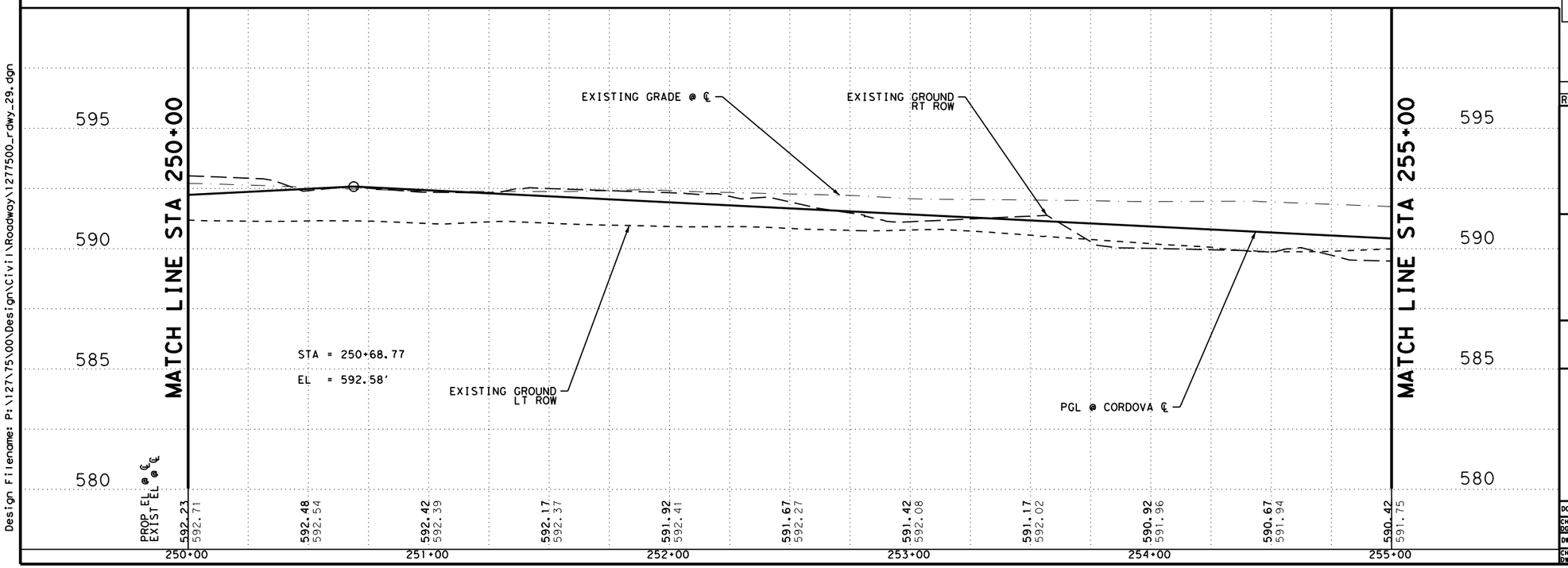
STA 245+00 TO STA 250+00

SHEET 28 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	114

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_28.dgn





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

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DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation
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ROADWAY PLAN AND PROFILE

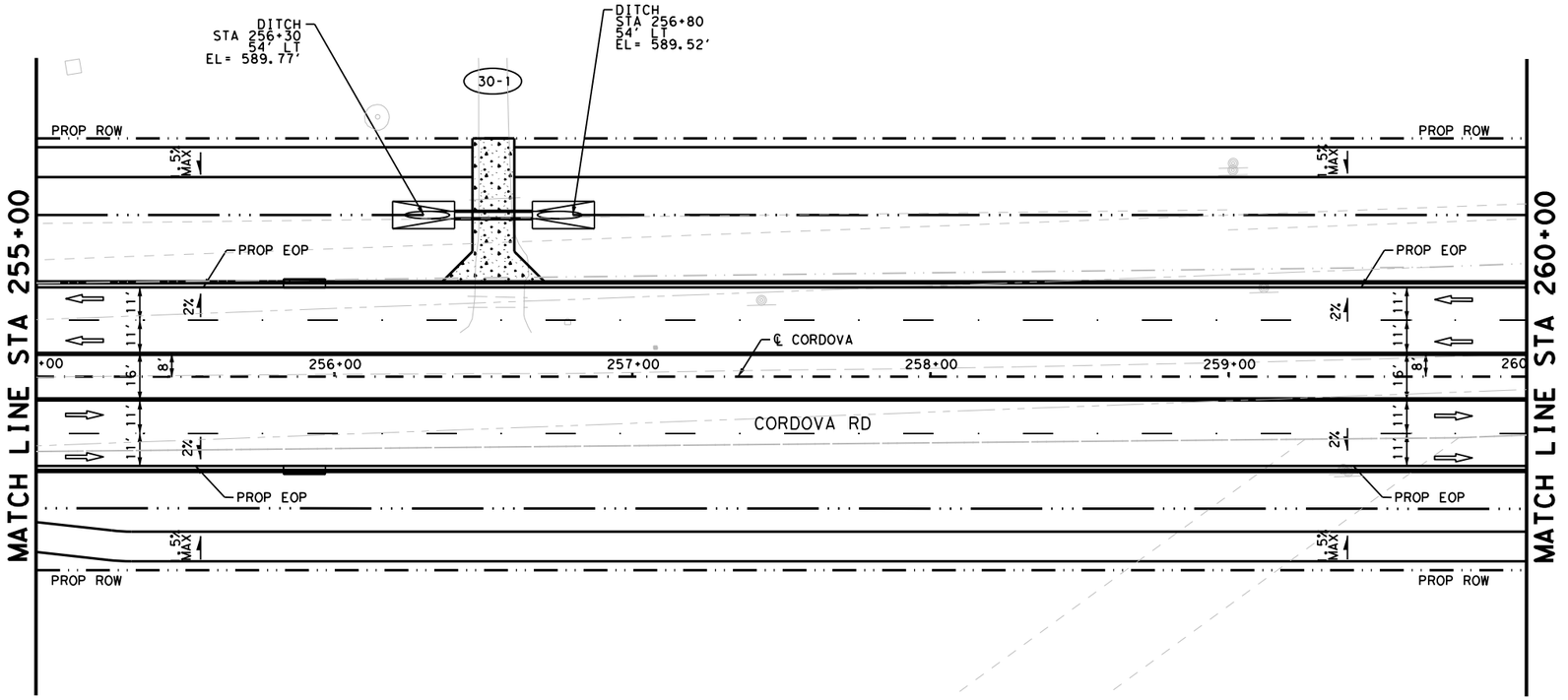
STA 250+00 TO STA 255+00

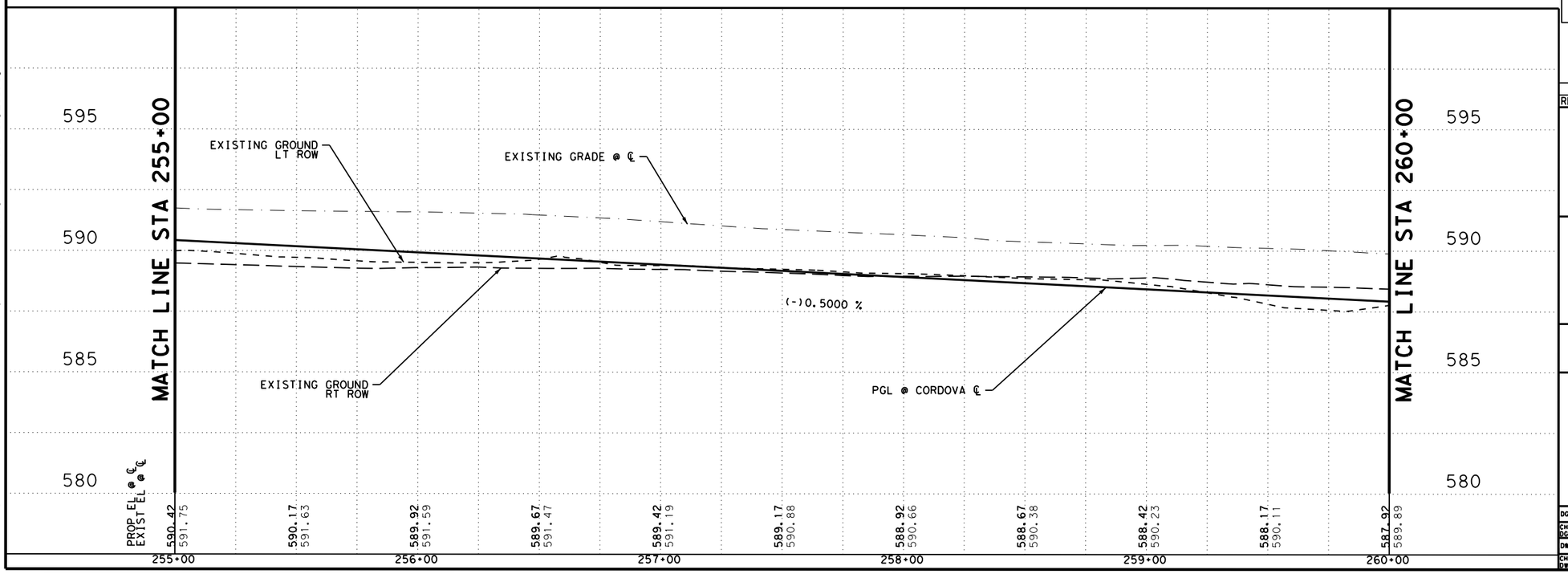
SHEET 29 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	115

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_29.dgn





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

1. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT. CENTER OF MARKING OR FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK. i.e. FADED.
3. REFER TO HORIZONTAL ALIGNMENT DATA SHEETS FOR CURVE DATA AND ALIGNMENT INFORMATION.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

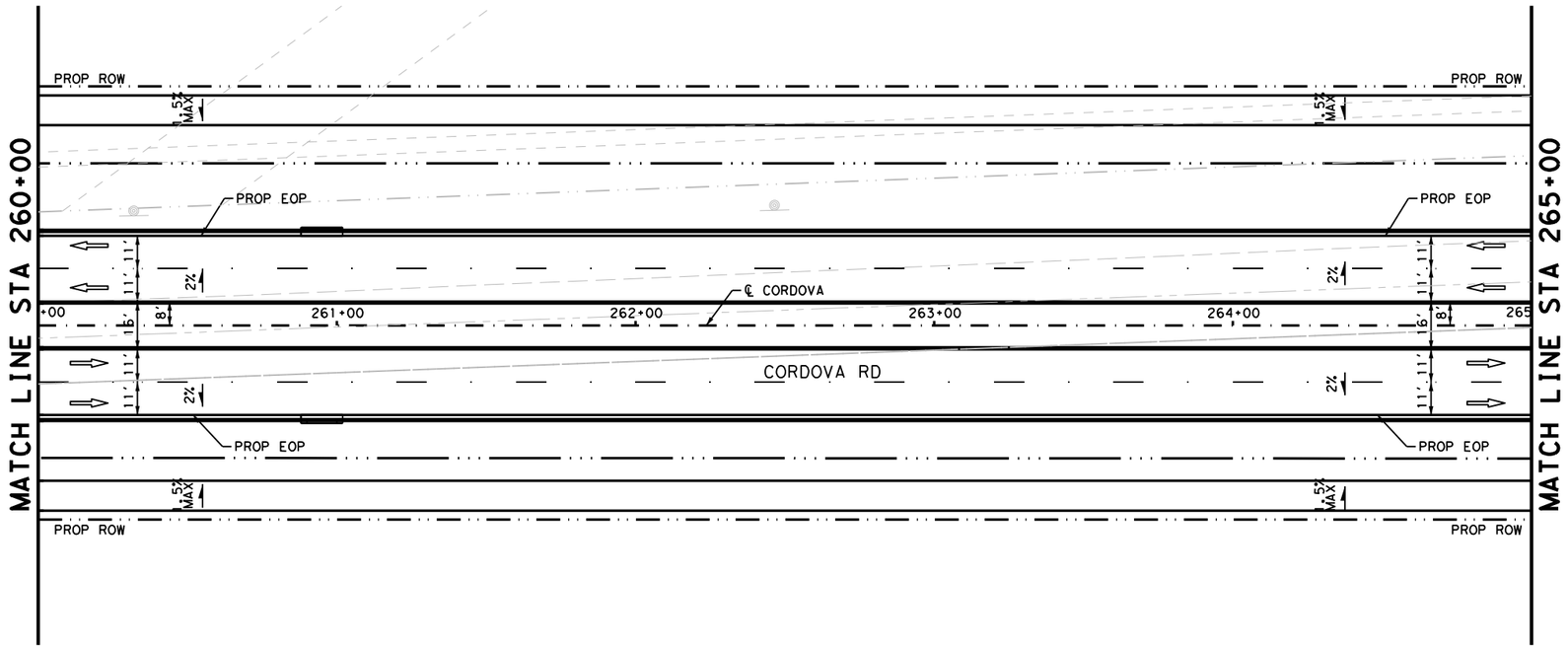
STA 255+00 TO STA 260+00

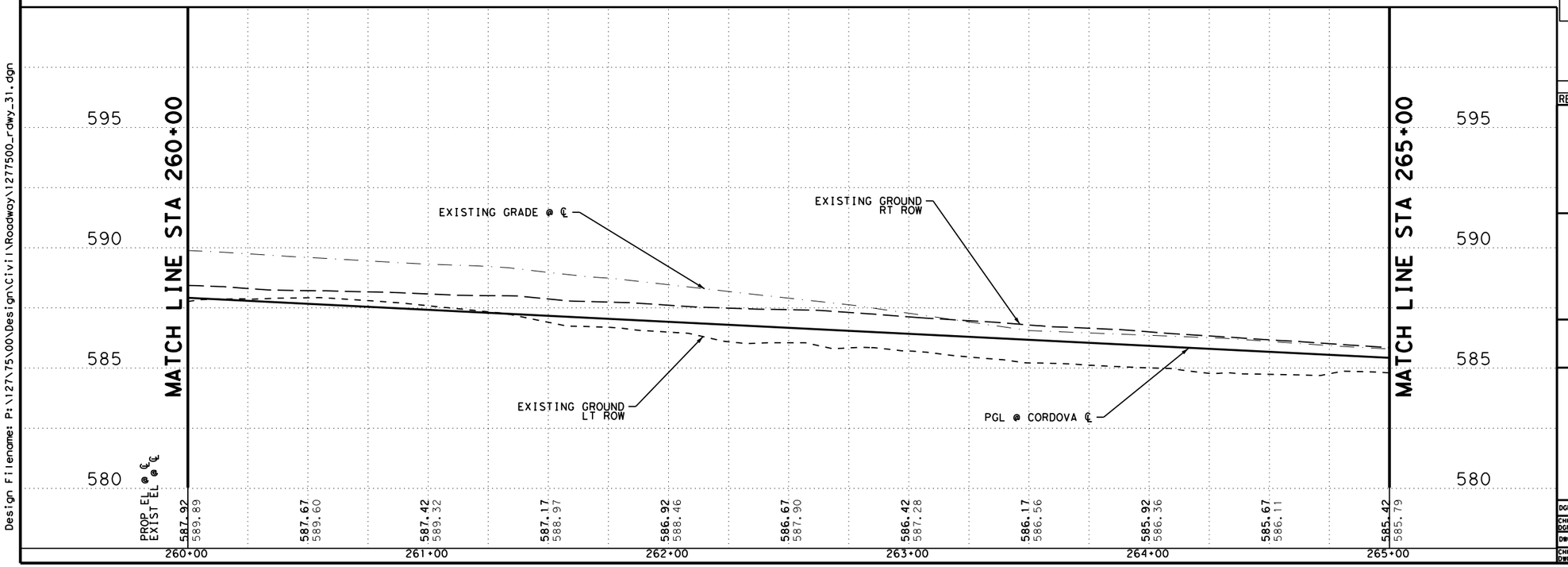
SHEET 30 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	116

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_30.dgn





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

N

NOTES

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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

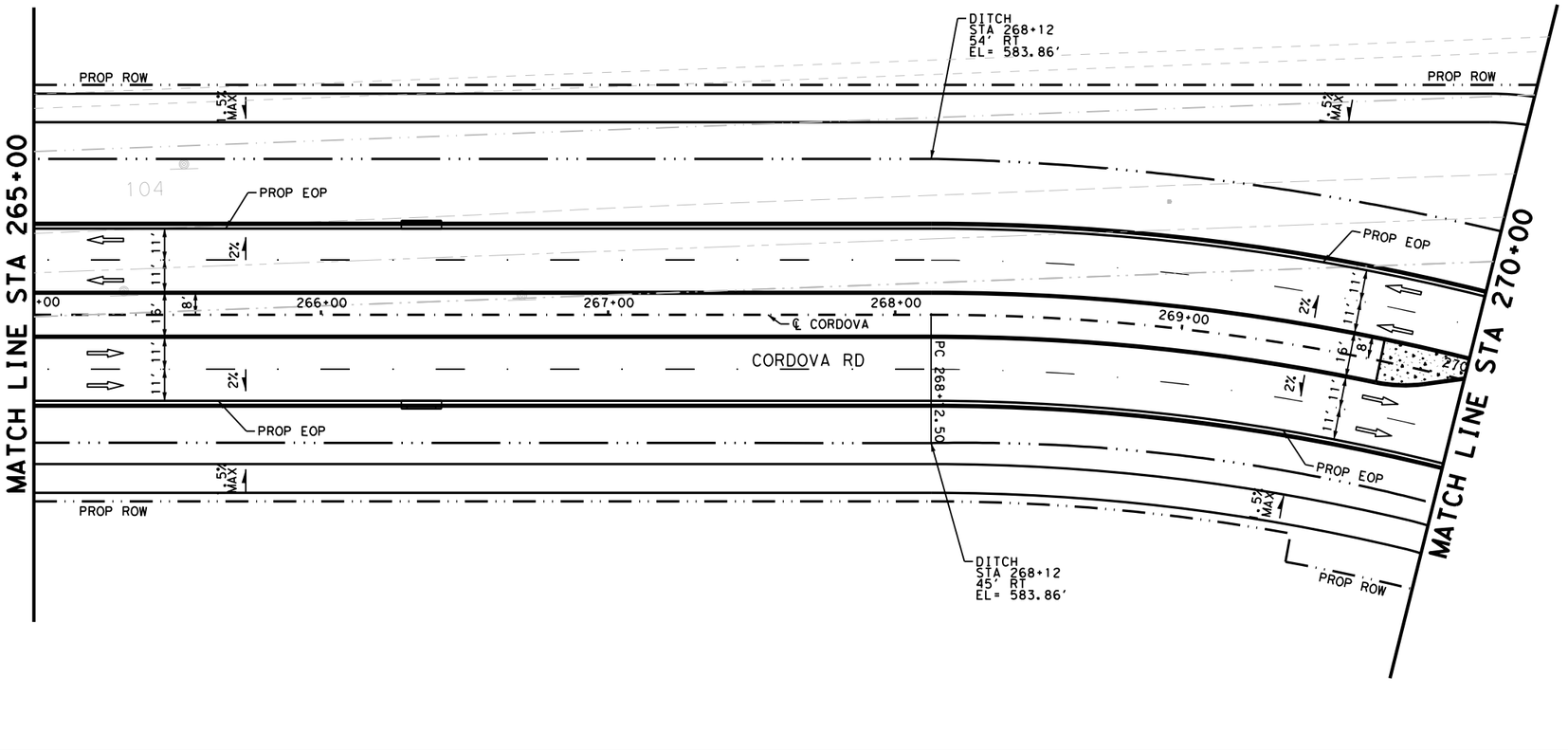
STA 260+00 TO STA 265+00

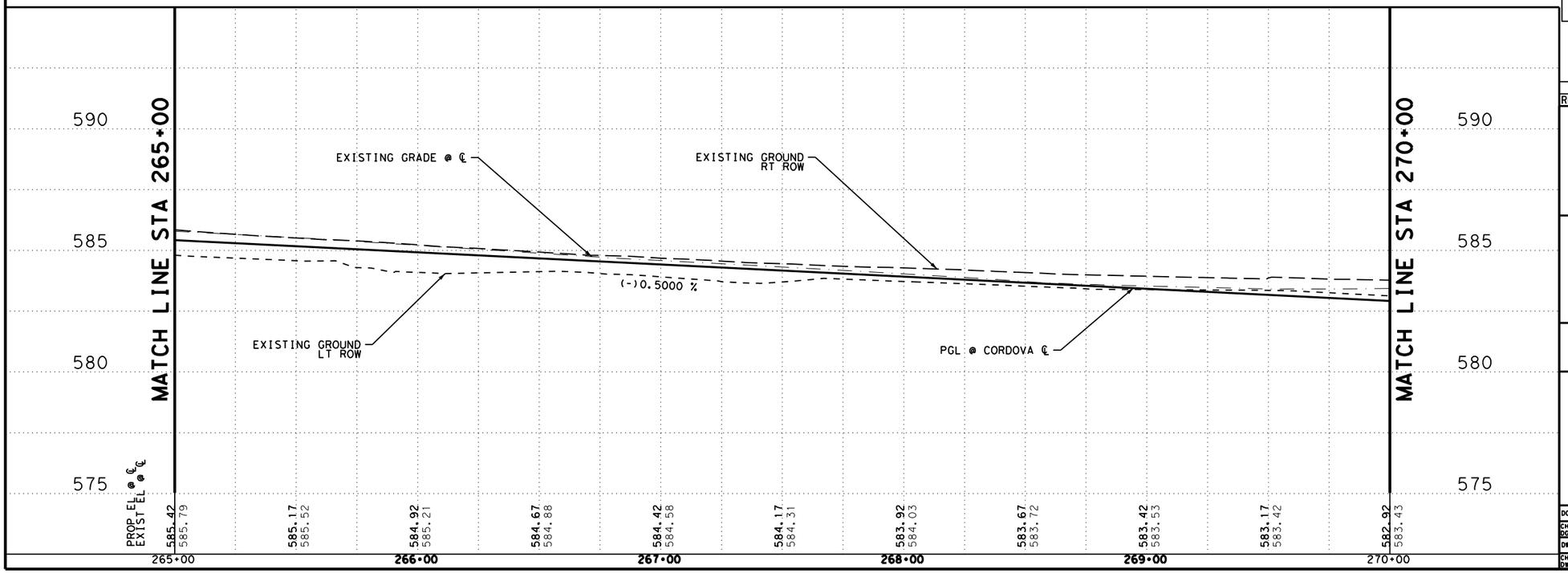
SHEET 31 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	117

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_31.dgn





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

N

NOTES

1. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT. CENTER OF MARKING OR FACE OF CURB UNLESS OTHERWISE NOTED.
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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

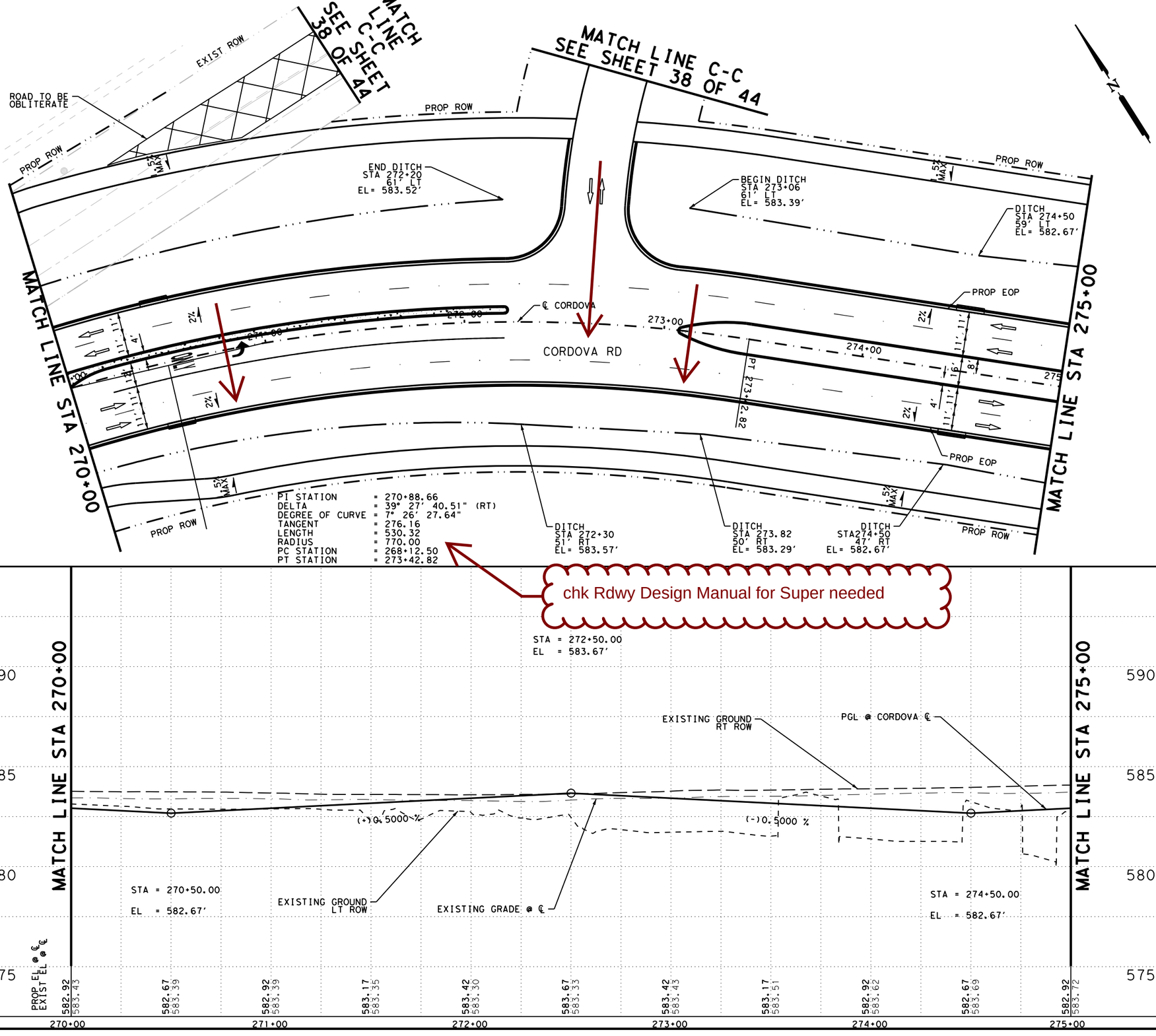
STA 265+00 TO STA 270+00

SHEET 32 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	118

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_32.dgn



LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 270+00 TO STA 275+00

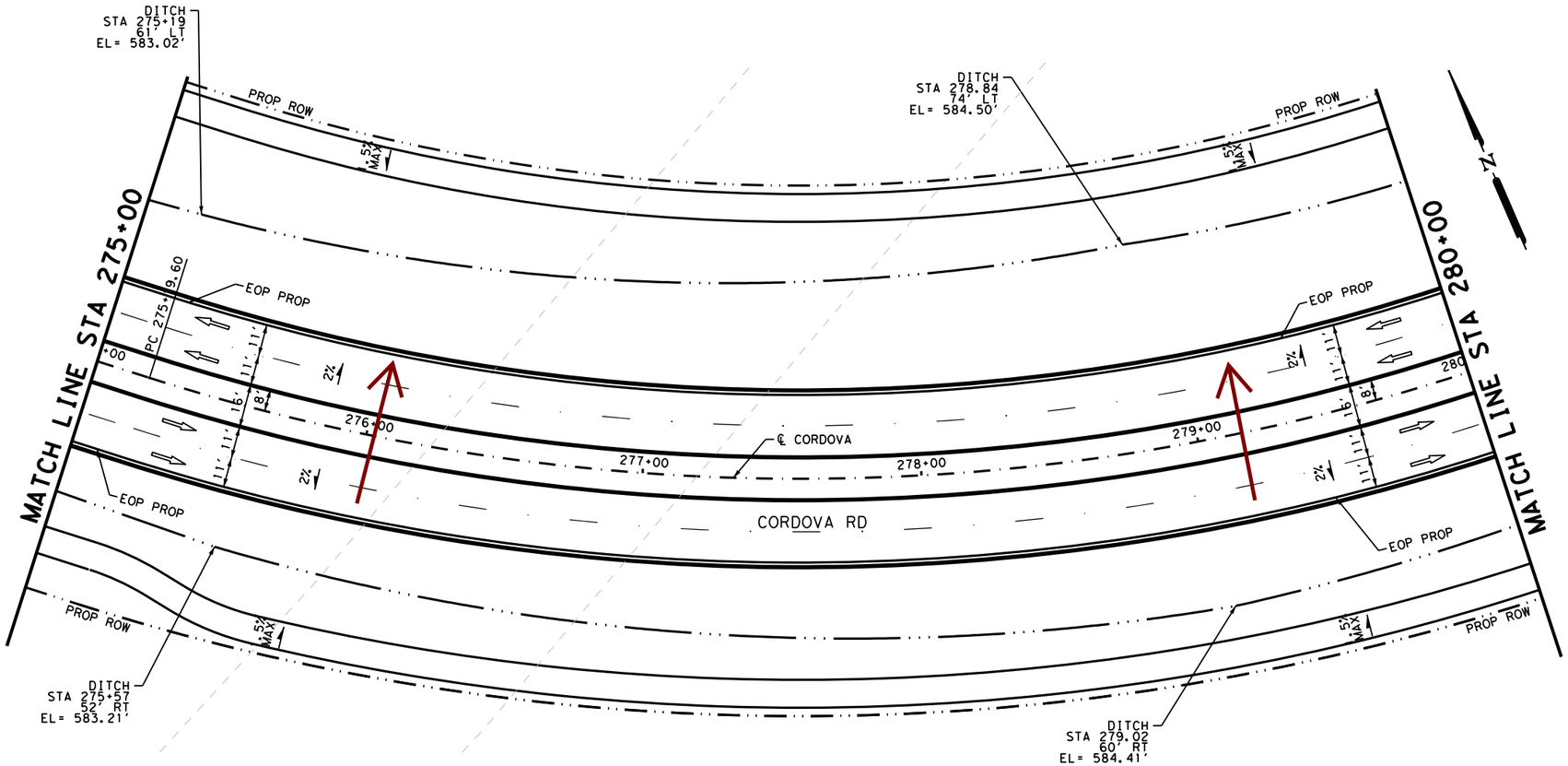
SHEET 33 OF 44

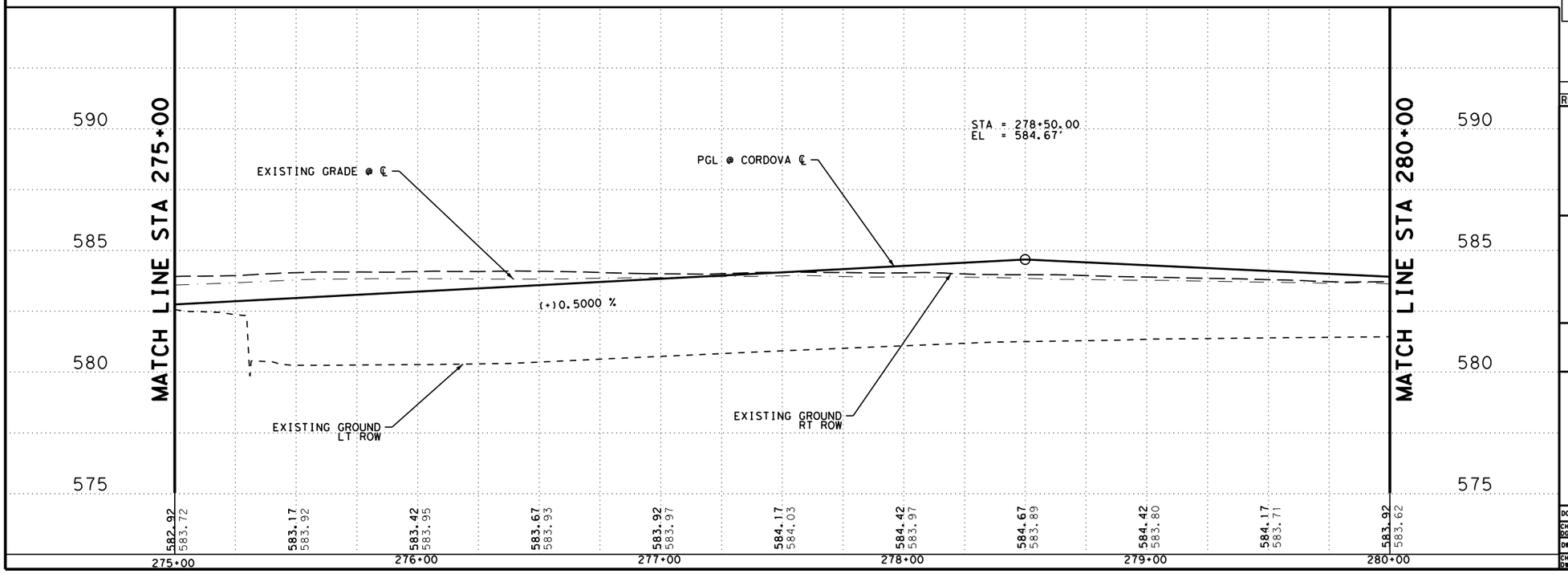
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	119

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_33.dgn

Plotted on: 7/27/2023





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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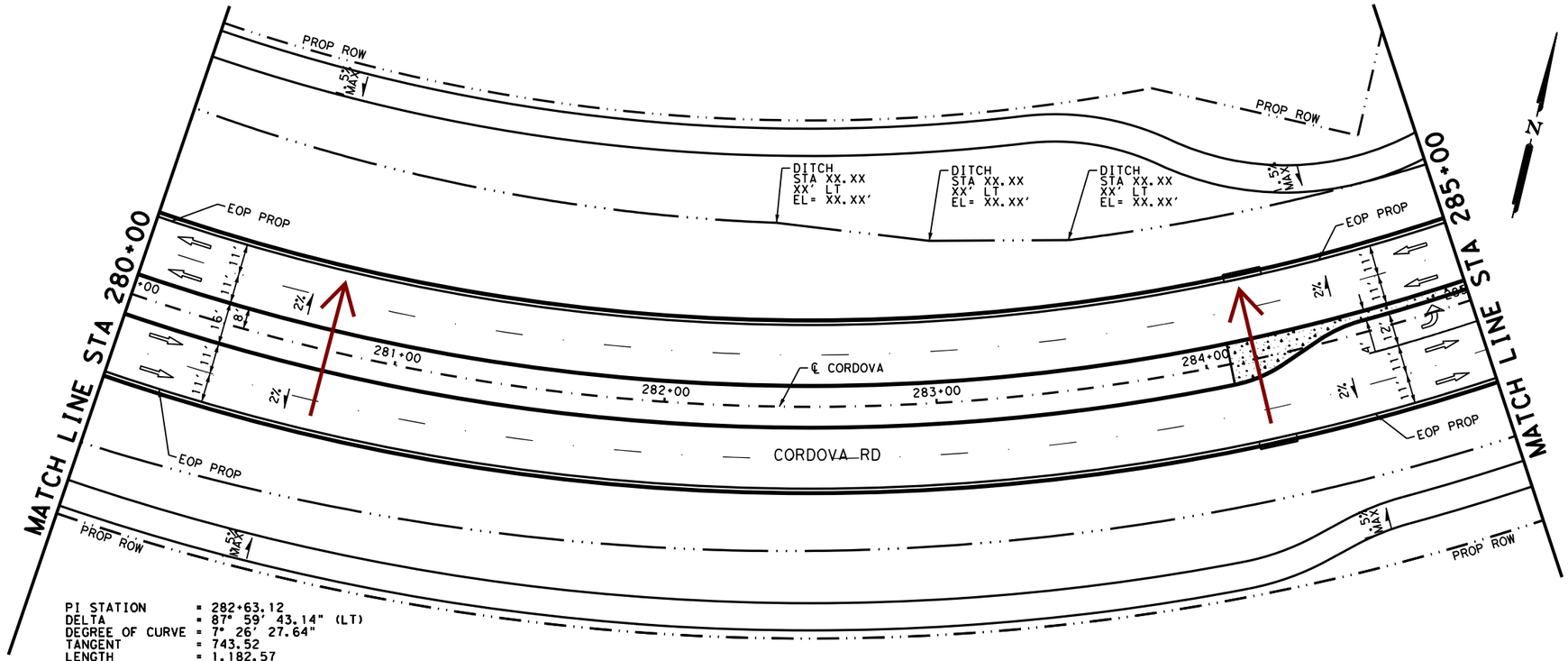
ROADWAY PLAN AND PROFILE

STA 275+00 TO STA 280+00

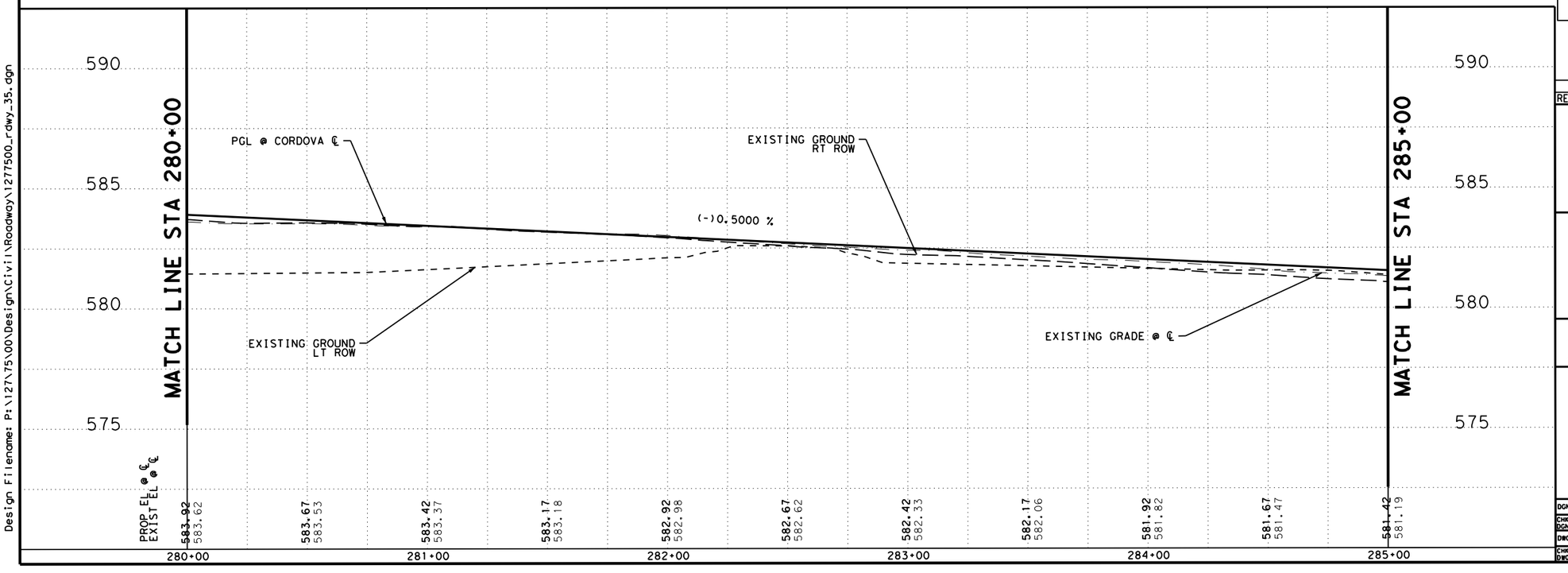
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	120

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_34.dgn

Plotted on: 7/27/2023



PI STATION = 282+63.12
DELTA = 87° 59' 43.14" (LT)
DEGREE OF CURVE = 7° 26' 27.64"
TANGENT = 743.52
LENGTH = 1,182.57
RADIUS = 770.00
PC STATION = 275+19.60
PT STATION = 287+02.17



LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

STA 280+00 TO STA 285+00

SHEET 35 OF 44

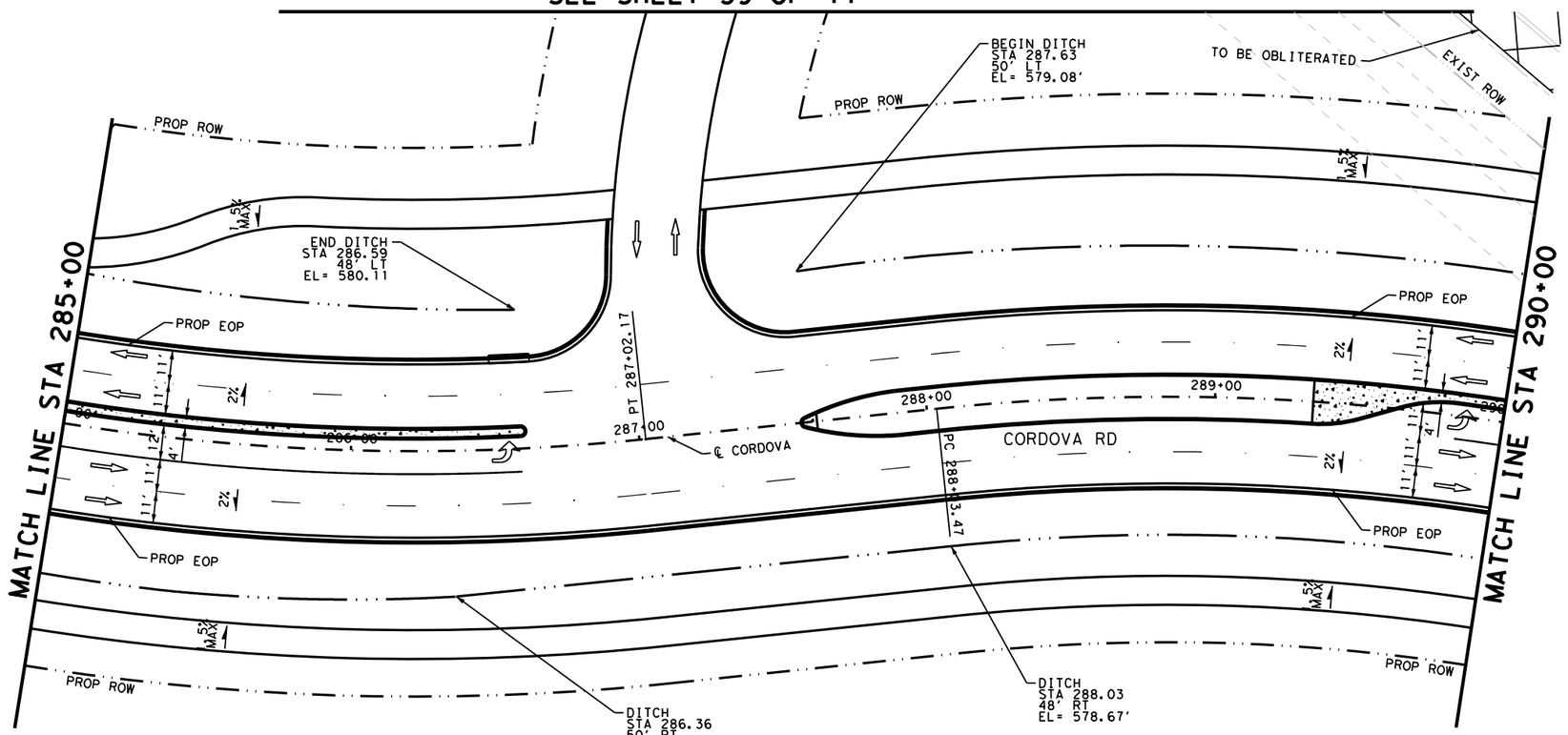
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	121

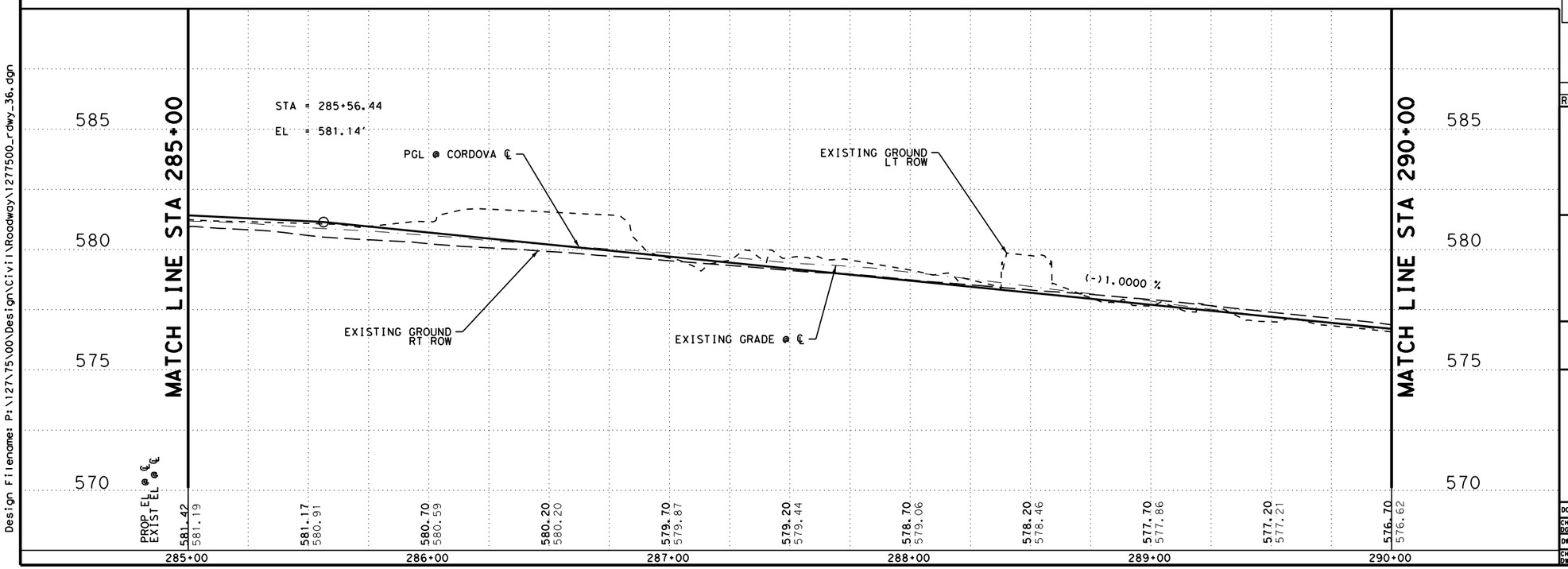
Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_35.dgn

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_36.dgn

MATCH LINE D-D
SEE SHEET 39 OF 44





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

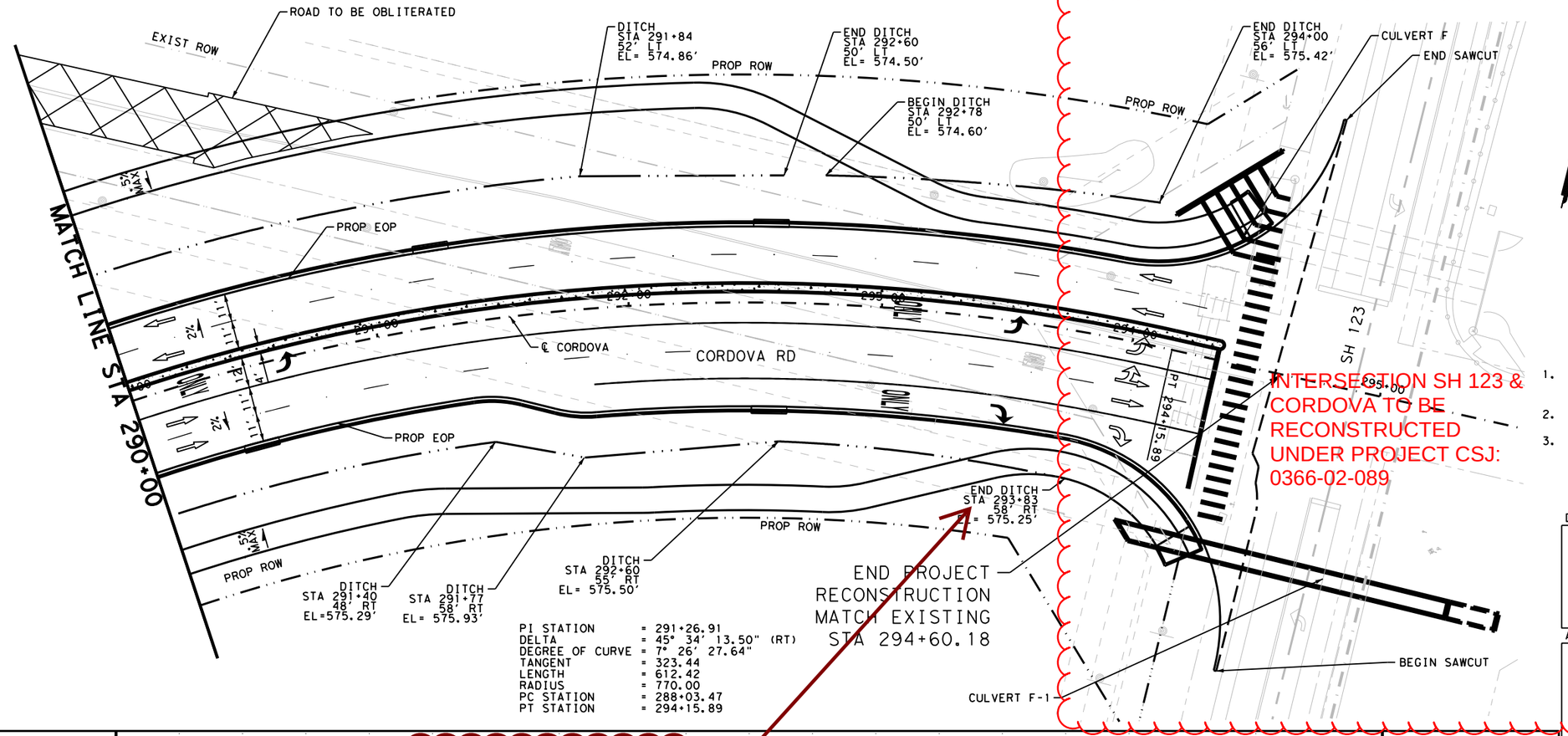
STA 285+00 TO STA 290+00

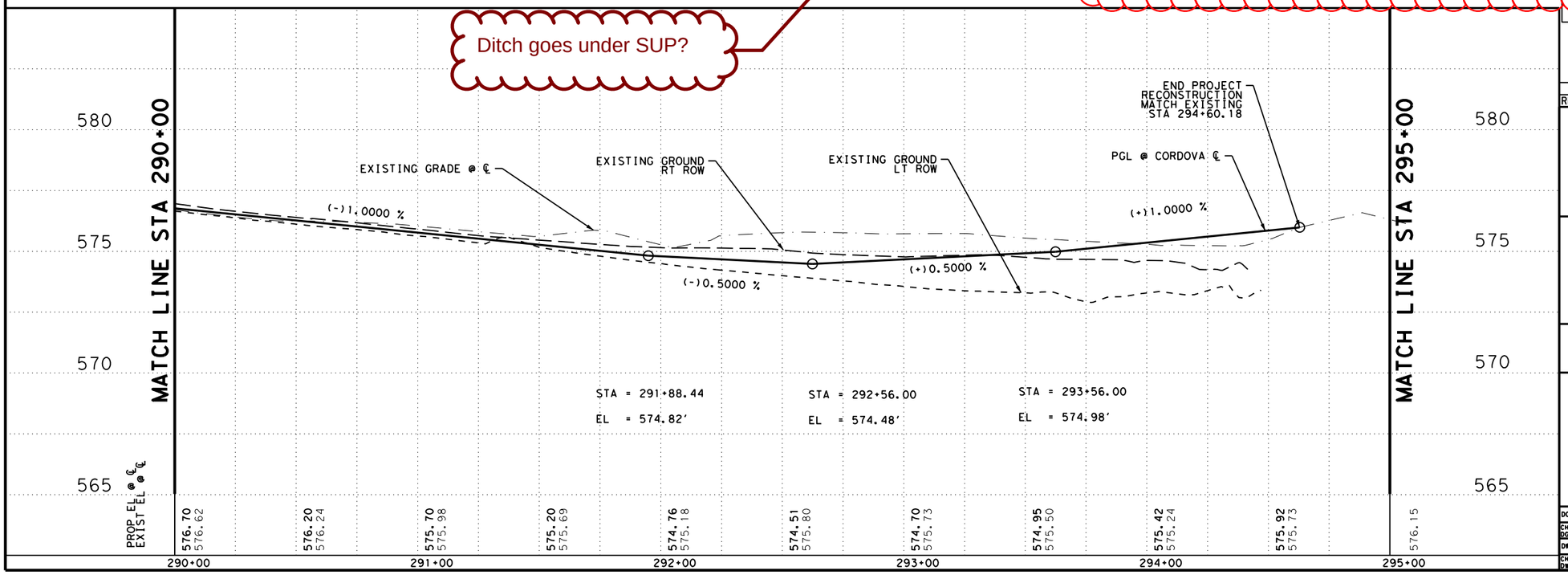
SHEET 36 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	122

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_37.dgn





LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

N

NOTES

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INTERIM REVIEW
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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

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DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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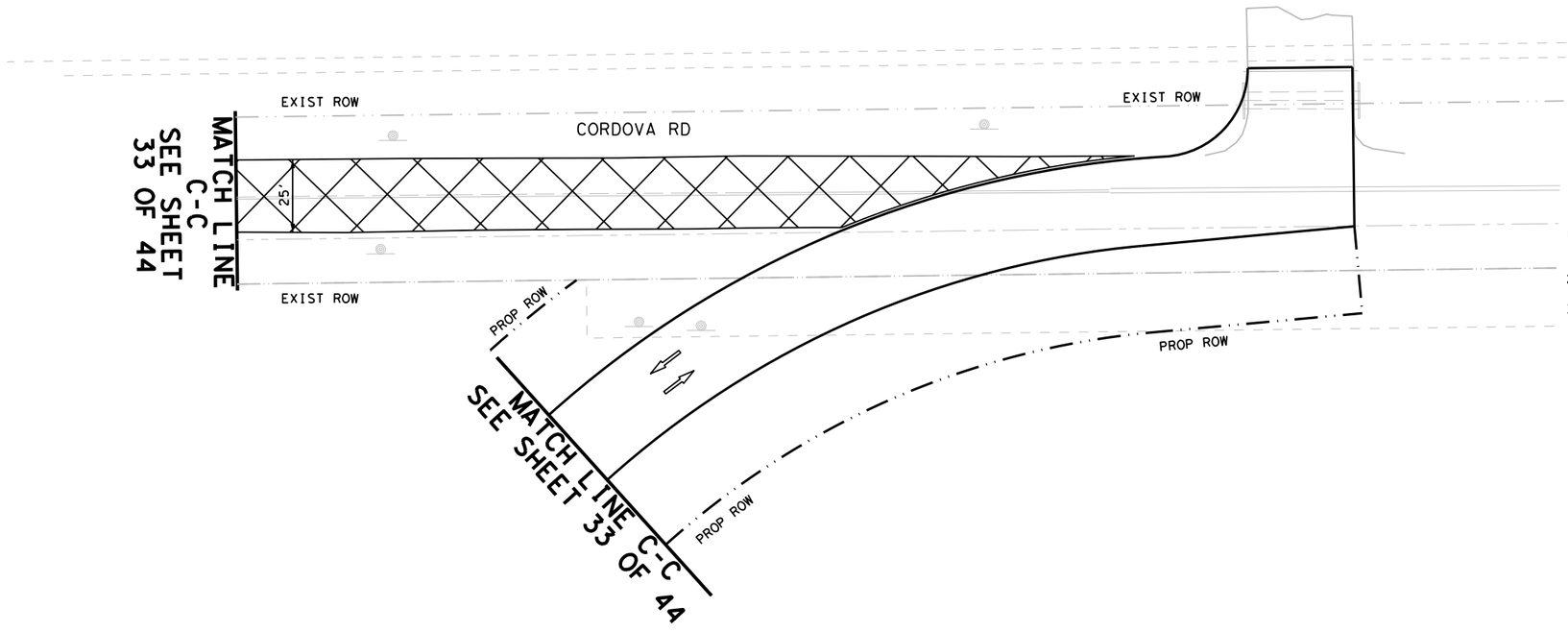
ROADWAY PLAN AND PROFILE

STA 290+00 TO STA 295+00

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	123

Plotted on: 7/27/2023



NO PROPOSED PROFILE THIS SHEET

LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

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INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

SHEET 38 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	124

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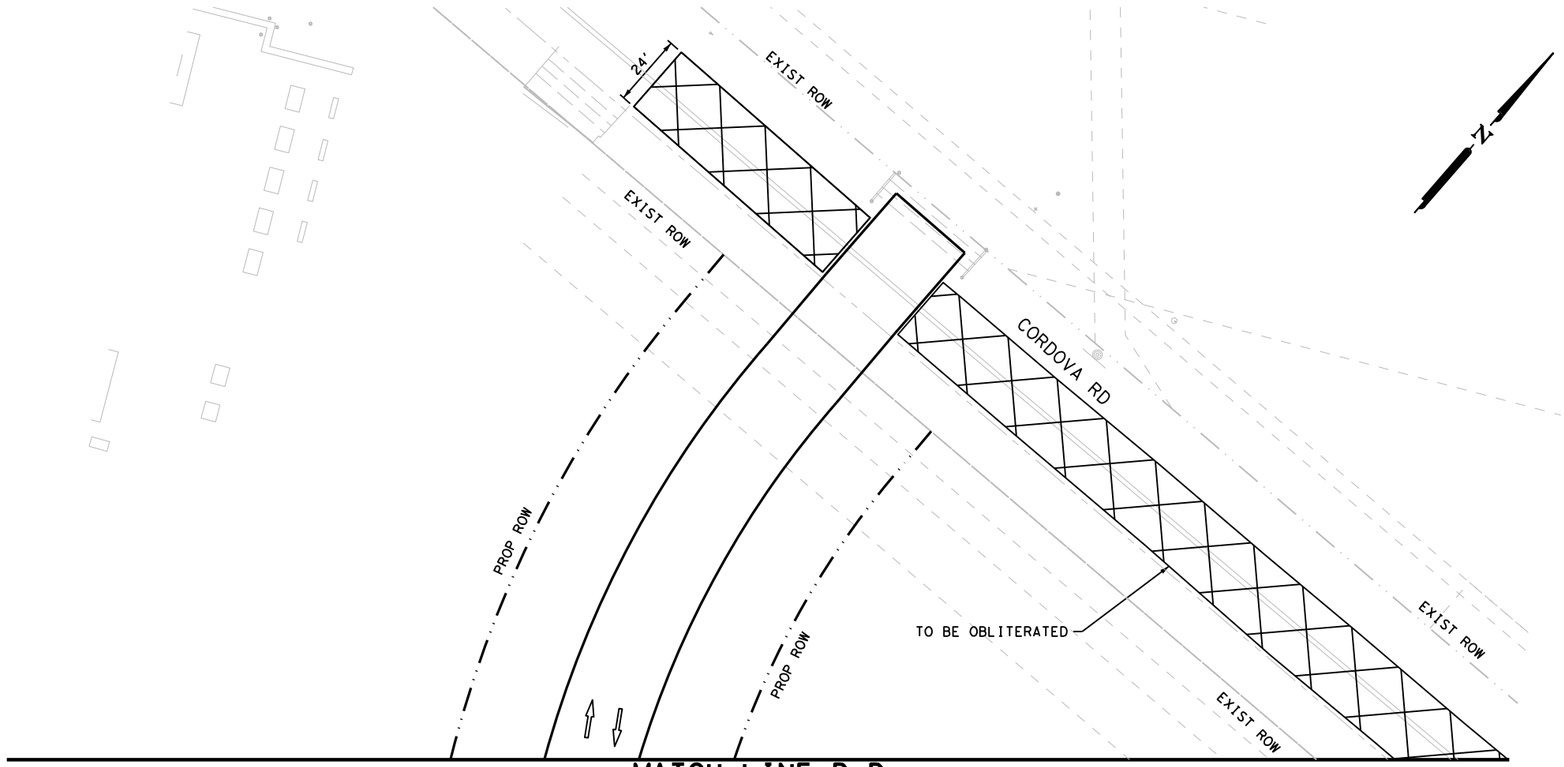

MATCH LINE D-D
SEE SHEET 36 OF 44

NO PROPOSED PROFILE THIS SHEET

LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

NOTES

1. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT. CENTER OF MARKING OR FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK. i.e. FADED.
3. REFER TO HORIZONTAL ALIGNMENT DATA SHEETS FOR CURVE DATA AND ALIGNMENT INFORMATION.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

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DATE: 7/27/2023

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SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
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ROADWAY PLAN AND PROFILE

SHEET 39 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	125

Plotted on: 7/27/2023

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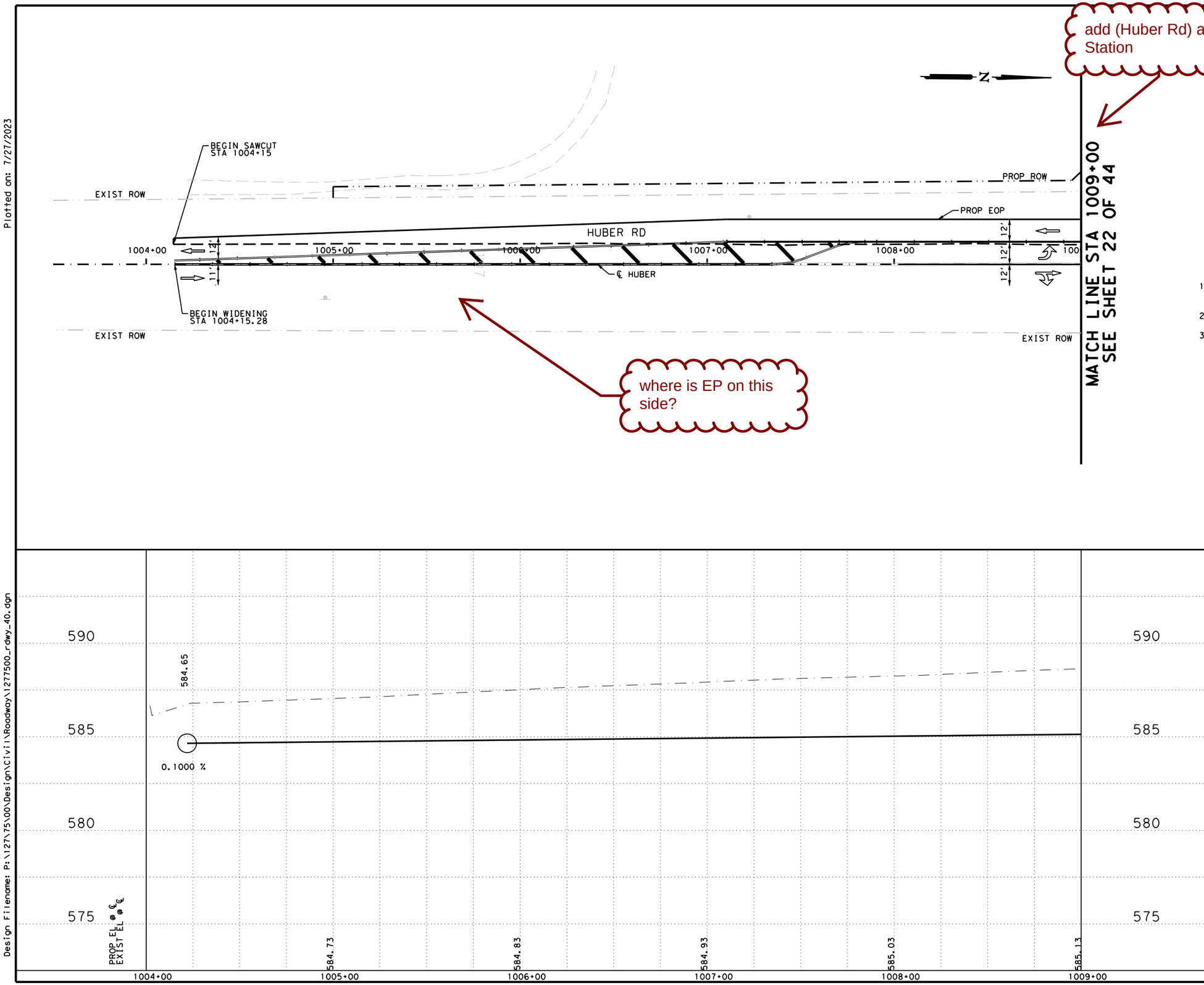
Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_40.dgn

add (Huber Rd) after Station



where is EP on this side?

LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

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HUBER RD

ROADWAY PLAN AND PROFILE

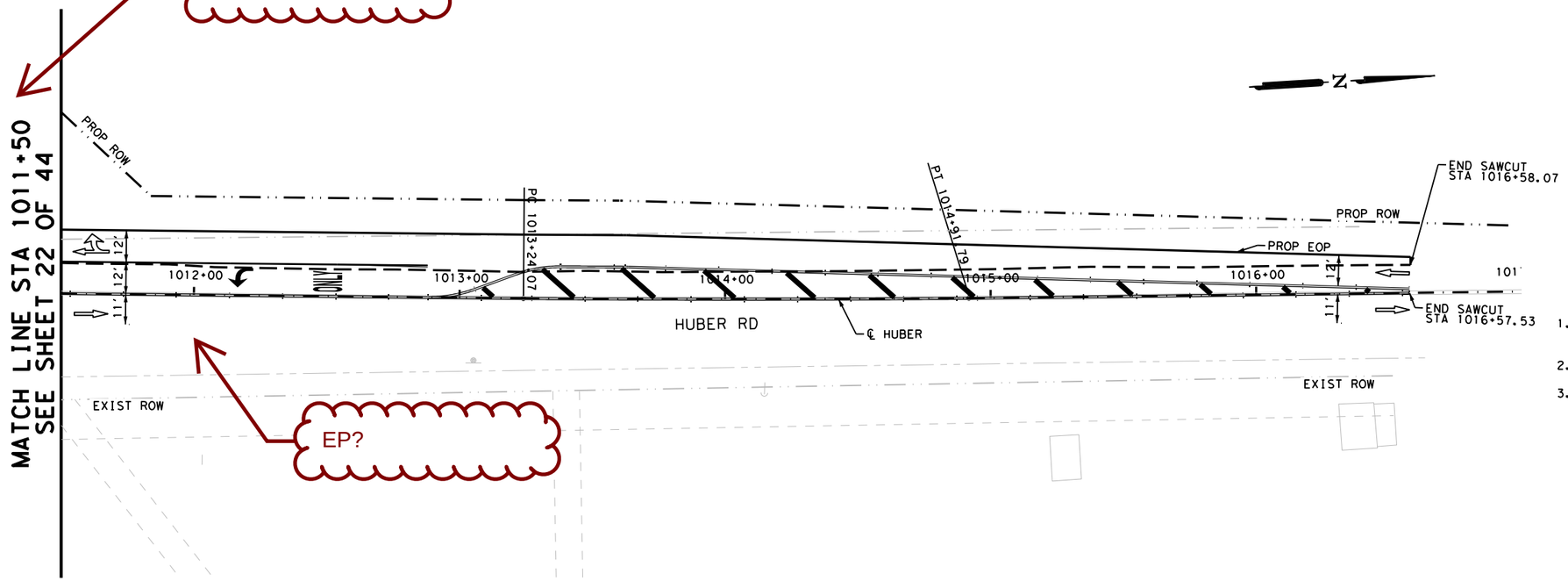
STA 1004+00 TO STA 1009+00

SHEET 40 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	126

Plotted on: 7/27/2023

add (Huber Rd) after Station



LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

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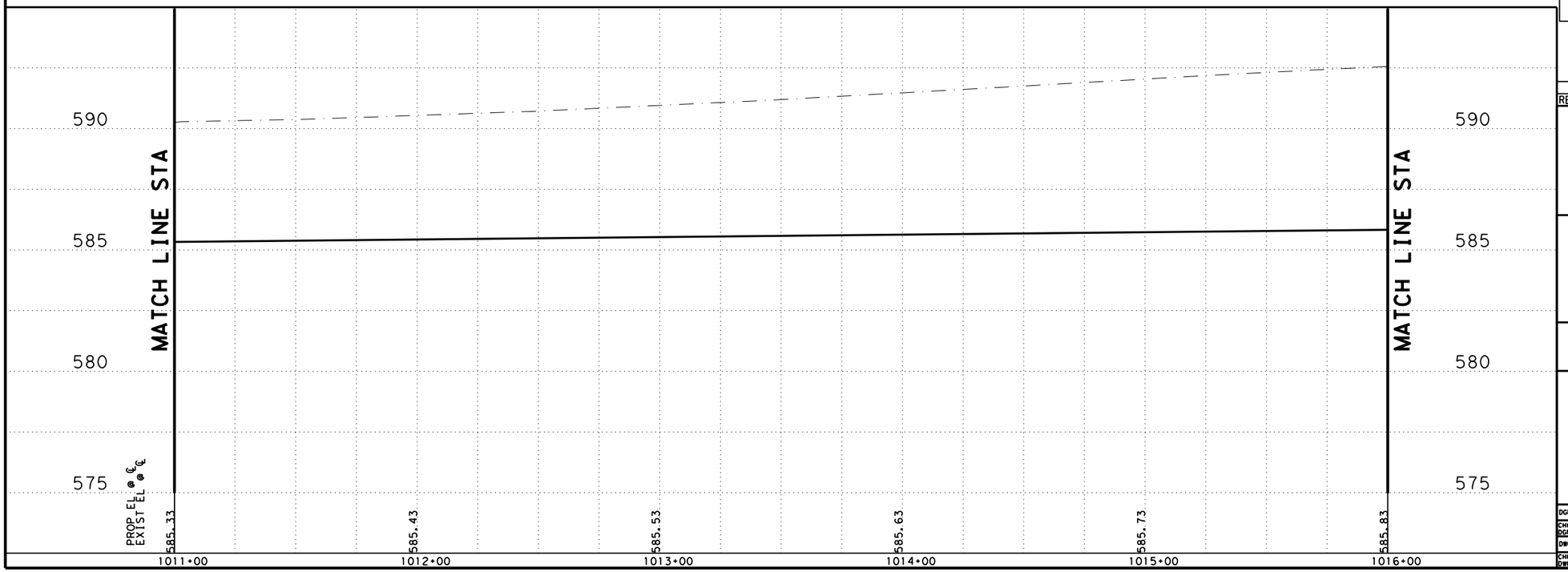

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HUBER RD

ROADWAY PLAN AND PROFILE

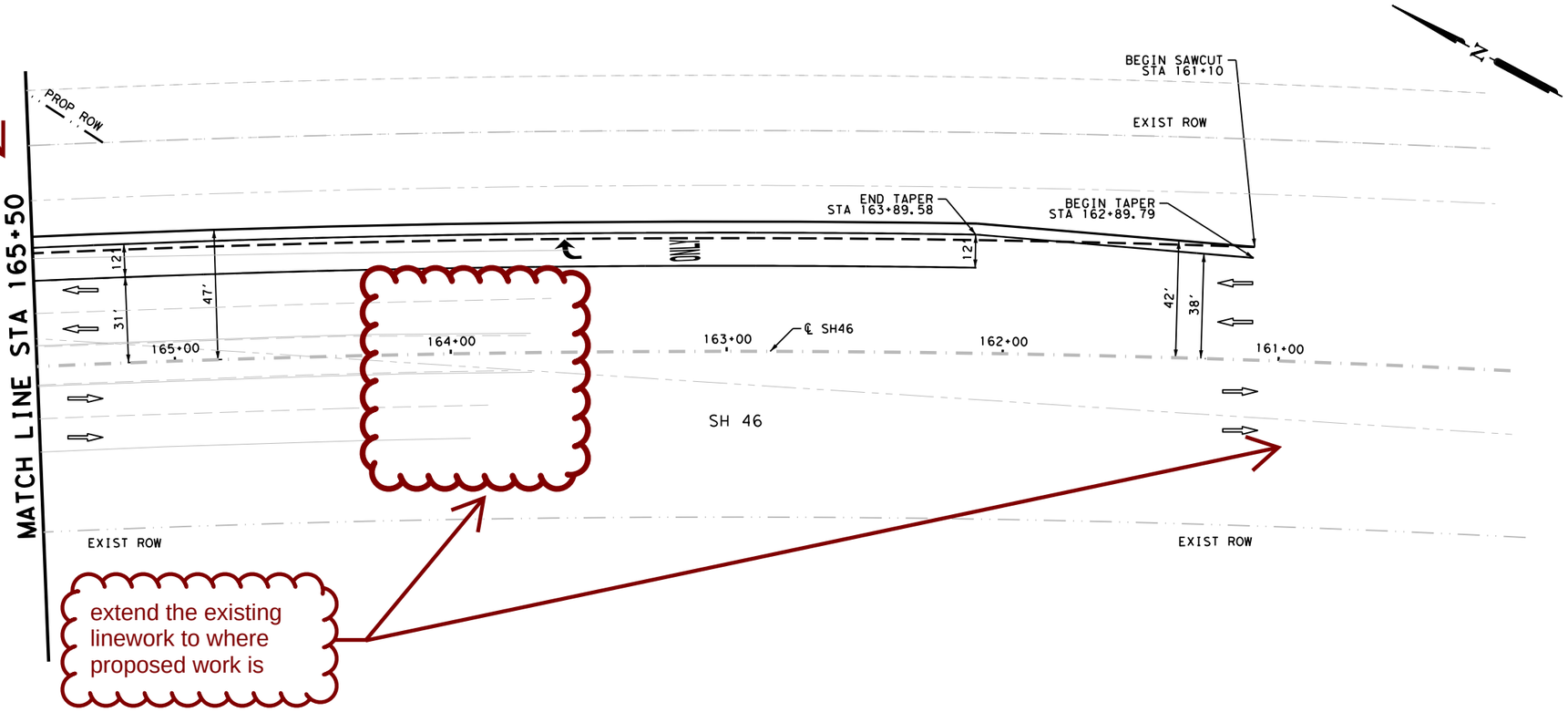
STA 1011+50 TO STA 1016+60

SHEET 41 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	127

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_41.dgn

what road is this?



extend the existing linework to where proposed work is

LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- DRIVEWAY NUMBER (#-#)
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
- MAILBOX

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REV. NO.	DATE	DESCRIPTION	BY

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SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
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SH46

ROADWAY PLAN AND PROFILE

STA 161+00 TO STA 165+50

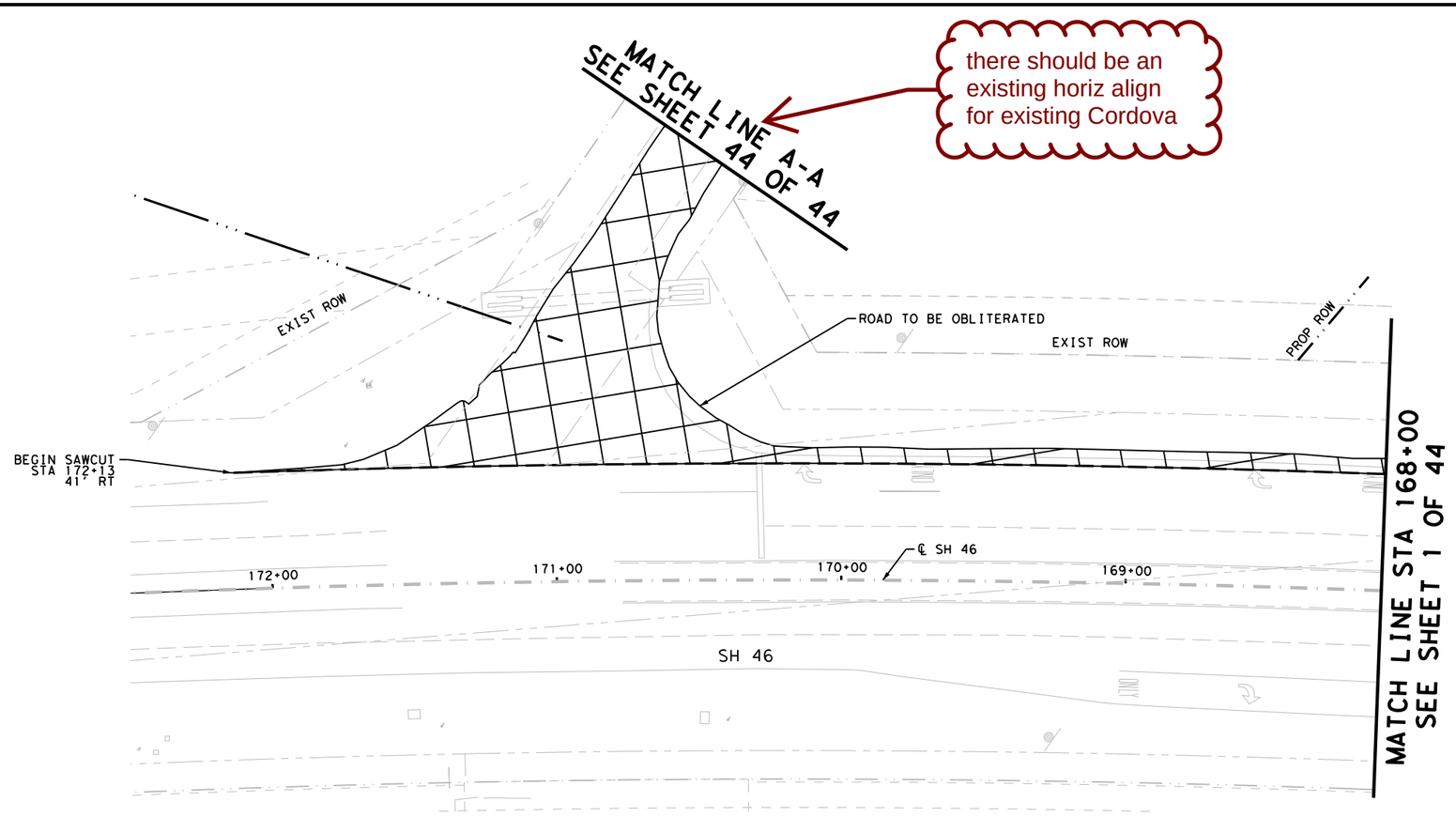
SHEET 42 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	128

Plotted on: 7/27/2023
Design Filename: P:\127\75\00\Design\Civil\Roadway\1275500_rdwy_42.dgn

Plotted on: 7/27/2023

there should be an existing horiz align for existing Cordova



NO PROPOSED PROFILE THIS SHEET

LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
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ENGINEER: JOHN A. TYLER
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DATE: 7/27/2023

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SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

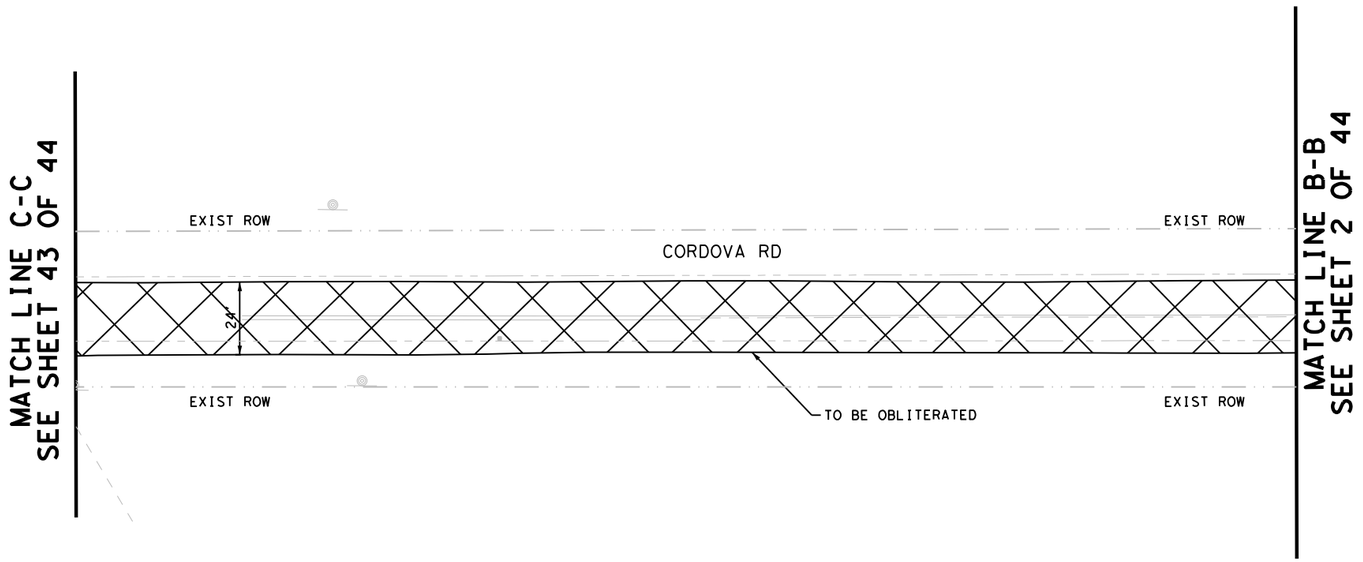
STA 168+00 TO STA 172+50

SHEET 43 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	129

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_43.dgn

Plotted on: 7/27/2023



N

LEGEND

- PROP ROW
- EXIST ROW
- DITCH FLOW LINE
- #-# DRIVEWAY NUMBER
- TRAFFIC FLOW
- CONC RIPRAP / DRIVEWAYS
- INLET
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REV. NO.	DATE	DESCRIPTION	BY

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SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ROADWAY PLAN AND PROFILE

SHEET 44 OF 44

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	130

Design Filename: P:\127\75\00\Design\Civil\Roadway\1277500_rdwy_44.dgn

DRIVEWAY NO.	REFERENCE POINT			ITEM	SKEW	PROP WIDTH	L1	S1	L2	S2	L3	S3	L4	S4	Flowline Elevation	ITEM				
	STA	OFFSET (FT)	SIDE	CONC DRIVWAY												RC PIPE	RC PIPE	RC PIPE	RC PIPE	CONC BOX CULV
				SY	DEGREE	FT	FT	%	FT	%	FT	%	FT	%		(CL III) (18 IN)	(CL III) (24 IN)	(CL III) (30 IN)	(ARCH) (CL III) (DES 1)	(5 FT X 2 FT)
4-1	125+74	32	LT	78	90	14	15	-1.50	21.86	-2.90	11.14	-4.00	0	0	582.35	0	0	0	0	40
4-2	128+86	32	LT	88	90	14	15	1.50	18	1.00	22.7	-4.09	0	0	582.95	0	0	0	0	20
5-1	132+25	32	RT	65	90	14	20	2.00	10	1.50	8	1.16	0	0	583.41	88	0	0	0	0
5-2	134+61	32	LT	78	90	14	15	1.50	17	0.68	15.8	-4.11	0	0	583.61	0	100	0	0	0
6-1	138+21	32	LT	109	90	14	18	6.00	12	1.50	18	-4.22	0	0	0	0	210	0	0	0
8-1	148+42	32	RT	80	90	16	15	-8.00	10	-1.50	14	-9.50	0	0	588+25	0	0	0	0	0
8-2	149+13	32	RT	64	90	14	15	-8.00	10	-1.50	9	-9.50	0	0	587+95	0	0	0	0	0
9-1	153+39	32	LT	60	90	14	11	6.00	14	-1.50	10	-2.00	0	0	584	SEE DRN SHEET	0	0	0	0
9-2	154+46	32	LT	102	90	24	15	6.00	6.18	1.50	21	0.00	0	0	583.12	SEE DRN SHEET	0	0	0	0
10-1	155+17	32	RT	70	90	14	11	6.00	14	-1.50	13	-5.60	0	0	582.86	0	0	0	46	0
10-2	156+06	32	RT	75	90	16	11	6.00	14	-1.50	11	-9.68	0	0	582	0	0	0	50	0
10-3	156+45	32	RT	78	90	14	11	6.00	14	1.50	18	-4.00	0	0	581.04	0	0	0	135	0
10-4	157+19	32	RT	79	90	14	11	6.00	14	1.50	19.5	-3.22	0	0	580.66	0	0	0	0	0
10-5	157+29	32	LT	82	90	6.18	15	8.00	10	1.50	9.8	3.00	0	0	581.01	0	0	0	2	0
10-6	157+62	32	RT	99	90	24	11	6.00	14	1.50	8	-4.22	0	0	580.25	0	0	0	0	0
11-1	160+19	32	RT	135	90	26	18	-8.00	10	-1.50	14	-6.00	0	0	577	SEE DRN SHEET	0	0	0	0
12-1	165+15	32	RT	69	90	14	15	-8.00	10	-1.50	12	-5.00	0	0	577.55	0	0	0	0	135
13-1	174+28	32	LT	80	90	20	11	3.00	14	-1.50	6	-6.50	0	0	585.4	0	0	0	0	0
14-1	176+12	32	LT	60	90	14	11	-1.00	16	-1.50	5.51	-3.00	0	0	586.86	0	0	0	0	0
15-1	183+68	32	LT	79	90	16	25	-6.00	10	-1.50	8	-1.80	0	0	581.81	96	0	0	0	0
16-1	185+13	32	LT	102	90	19	30	-4.25	10	-1.50	3	-2.80	0	0	581.64	96	0	0	0	0
19-1	201+88	32	LT	80	90	16.31	14	4.80	11	-3.14	13	1.50	0	0	586.02	0	54	0	0	0
20-1	205+14	32	RT	122	90	20	11	4.00	19	-4.00	10	-1.50	10	-5	587.55	110	0	0	0	0
25-1	231+98	32	RT	55	90	14	15	-8.00	10	-1.50	5	-4.46	0	0	593.6	0	0	0	0	0
29-1	254+56	32	RT	63	90	14	10	5.00	10	-3.00	10	-1.50	3	-1.8	0	0	0	0	90	0
30-1	256+53	75	LT	87	90	14	22	3.00	13	-1.26	13	1.50	0	0	585.9	0	0	60	0	0

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ENGINEER: JOHN A. TYLER
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NOT TO SCALE

REV. NO.	DATE	DESCRIPTION	BY

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CORDOVA RD

DRIVEWAY DETAILS

SHEET 1 OF 2

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	131

Plotted on: 7/27/2023
Design Filename: P:\127\75\00\Design\Civil\Roadway\Driveways\1277500_Driveway_details.dgn

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Roadway\Driveways\1277500_Driveway_details02.dgn

CONCRETE DRIVEWAY NOTES

1. ROW PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE CONCRETE DRIVEWAY SHALL BE PAID FOR UNDER ITEM NO. 503.1 OR 503.2.
2. 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.
3. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE UNLESS AUTHORIZED BY THE CITY TRAFFIC ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

TYPE	MINIMUM	MAXIMUM
RESIDENTIAL	10'	20'
COMMERCIAL - ONE WAY	12'	20'
COMMERCIAL - TWO WAY	24'	30'

4. FOR LOCAL TYPE "A" STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 2' FROM THE BACK OF CURB.
5. FOR OTHER THAN LOCAL TYPE "A" STREETS, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 2' FROM THE BACK OF CURB OR, AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
6. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
7. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3/8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.
8. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 5.0% (1:20) MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
9. SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

DRIVEWAY DETAILS

SHEET 2 OF 2

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	132

Plotted on: 7/27/2023

COMPUTATION POINT	CONTRIBUTING DRAINAGE AREAS	DRAINAGE AREA (ACRES)	CONTRIBUTING METHOD	5-YEAR DISCHARGE (CFS)	10-YEAR DISCHARGE (CFS)	25-YEAR DISCHARGE (CFS)	50-YEAR DISCHARGE (CFS)	100-YEAR DISCHARGE (CFS)
CULVERT A	A	258.87	SCS	201.00	286.90	416.00	519.00	636.60
CULVERT B	B + B-1	1599.91	SCS	728.50	1060.80	1569.40	1996.70	2501.90
CULVERT B-1	B-1	813.16	SCS	346.10	506.70	754.20	963.00	1211.10
CULVERT C	C	115.38	SCS	162.90	222.30	326.10	400.60	481.50
CULVERT D	D	47.99	RATIONAL	63.55	76.51	94.46	108.63	123.95
CULVERT E	E	39.10	RATIONAL	43.03	51.97	64.43	74.32	85.11
CULVERT F	F + F-1	865.56	SCS	515.40	740.70	1080.80	1360.40	1685.20
CULVERT F-1	F-1	97.35	RATIONAL	111.16	134.17	166.20	191.60	219.25

CONTRIBUTING DRAINAGE AREA	LAG TIME (MIN)	CN
A	78.66	73
B	152.43	74
B-1	177.66	73
C	29.18	72
D	*	*
E	*	*
F	111.55	74
F-1	*	*

* N/A. RATIONAL METHOD USED.

RAINFALL DEPTH (NOAA ATLAS 14, VOL. 11, VER. 2)	
PROFILE	24-HR EVENT DEPTH (IN)
5 YR	5.33
10 YR	6.64
25 YR	8.67
50 YR	10.50
100 YR	12.60

RAINFALL DEPTHS OBTAINED AT MID-POINT OF CORDOVA RD USING NATIONAL WEATHER SERVICE PRECIPITATION FREQUENCY DATA SERVER (PFDS)

CONTRIBUTING DRAINAGE AREA	C	Tc (MIN)	5YR INTENSITY (IN/HR)	10YR INTENSITY (IN/HR)	25YR INTENSITY (IN/HR)	50YR INTENSITY (IN/HR)	100YR INTENSITY (IN/HR)
D	0.50	51.22	2.65	3.19	3.94	4.53	5.17
E	0.50	67.70	2.20	2.66	3.30	3.80	4.35
F-1	0.50	64.11	2.28	2.76	3.41	3.94	4.50

Use EBDLKUP-2019, Guadalupe County, Zone 1, PDS method

— · — · · R.O.W.

DARY

Include note of climatic adjustment and FPA notification

DRAINAGE AREA

NOTES:

1. DRAINAGE AREAS OFF ROW DELINEATED USING EXISTING 1-FT CONTOURS FROM 2017 GIS DATA AND FIELD VERIFIED SITE IMPROVEMENTS.
2. ALL UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY DEPTHS AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION.
3. ALL PIPES ARE NORMAL TO AND STRAIGHT FROM STRUCTURE UNLESS OTHERWISE SHOWN.
4. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 500 1000 2000
SCALE: 1"= 2000'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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EXISTING DRAINAGE AREA MAP

SHEET 1 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	133

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_da01.dgn

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_da02.dgn

COMPUTATION POINT	CONTRIBUTING DRAINAGE AREAS	DRAINAGE AREA (ACRES)	CONTRIBUTING METHOD	5-YEAR DISCHARGE (CFS)	10-YEAR DISCHARGE (CFS)	25-YEAR DISCHARGE (CFS)	50-YEAR DISCHARGE (CFS)	100-YEAR DISCHARGE (CFS)
CULVERT Z	Z	49.73	RATIONAL	37.29	45.33	56.67	65.77	75.83
CULVERT A	A	258.80	SCS	200.90	286.80	415.90	518.80	636.50
CULVERT B	B + B-1	1600.53	SCS	728.50	1060.80	1569.40	1996.70	2502.00
CULVERT B-1	B-1	814.10	SCS	346.50	507.20	755.00	964.00	1212.40
CULVERT C	C	116.83	SCS	164.90	225.00	330.10	405.50	487.30
CULVERT D	D	48.10	RATIONAL	63.70	76.69	94.68	108.87	124.23
CULVERT E	E	39.91	RATIONAL	43.92	53.05	65.77	75.86	86.87
CULVERT F	F	783.93	SCS	492.50	705.90	1027.50	1290.00	1593.90
CULVERT F-1	F-1	83.43	RATIONAL	95.26	114.98	142.44	164.20	187.90
DS OF F	F + F-1	867.36	SCS	520.60	747.50	1090.60	1372.30	1699.50

CONTRIBUTING DRAINAGE AREA	LAG TIME (MIN)	CN
Z	*	*
A	78.66	73
B	152.43	74
B-1	177.66	73
C	29.18	72
D	*	*
E	*	*
F	111.55	74
F-1	*	*

* N/A. RATIONAL METHOD USED.

RAINFALL DEPTH (NOAA ATLAS 14, VOL. 11, VER. 2)	
PROFILE	24-HR EVENT DEPTH (IN)
5 YR	5.33
10 YR	6.64
25 YR	8.67
50 YR	10.50
100 YR	12.60

RAINFALL DEPTHS OBTAINED AT MID-POINT OF CORDOVA RD USING NATIONAL WEATHER SERVICE PRECIPITATION FREQUENCY DATA SERVER (PFDS)

CONTRIBUTING DRAINAGE AREA	C	tc (MIN)	5YR INTENSITY (IN/HR)	10YR INTENSITY (IN/HR)	25YR INTENSITY (IN/HR)	50YR INTENSITY (IN/HR)	100YR INTENSITY (IN/HR)
Z	0.50	16.71	1.50	1.82	2.28	2.65	3.05
D	0.50	51.22	2.65	3.19	3.94	4.53	5.17
E	0.50	67.70	2.20	2.66	3.30	3.80	4.35
F-1	0.50	64.11	2.28	2.76	3.41	3.94	4.50

— · — · · R.O.W.

IDARY

Include note of climatic adjustment and FPA notification

Use EBDLKUP-2019, Guadalupe County, Zone 1, PDS method

NOTES:

1. DRAINAGE AREAS OFF ROW DELINEATED USING EXISTING 1-FT CONTOURS FROM 2017 GIS DATA AND FIELD VERIFIED SITE IMPROVEMENTS.
2. ALL UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY DEPTHS AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION.
3. ALL PIPES ARE NORMAL TO AND STRAIGHT FROM STRUCTURE UNLESS OTHERWISE SHOWN.
4. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 500 1000 2000
SCALE: 1"= 2000'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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PROPOSED DRAINAGE AREA MAP

SHEET 2 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	134

Plotted on: 7/27/2023

COMPUTATION POINT	CONTRIBUTING DRAINAGE AREAS	DRAINAGE AREA (ACRES)	CONTRIBUTING METHOD	5-YEAR DISCHARGE (CFS)	10-YEAR DISCHARGE (CFS)	25-YEAR DISCHARGE (CFS)	50-YEAR DISCHARGE (CFS)	100-YEAR DISCHARGE (CFS)
CULVERT Z	Z	49.73	RATIONAL	37.29	45.33	56.67	65.77	75.83
CULVERT A	A	258.80	SCS	233.00	321.30	452.20	555.50	672.00
CULVERT B	B + B-1	1600.53	SCS	814.30	1157.40	1675.10	2105.50	2610.40
CULVERT B-1	B-1	814.10	SCS	387.90	553.90	806.60	1017.60	1266.10
CULVERT C	C	116.83	SCS	191.60	252.20	358.70	433.40	514.50
CULVERT D	D	48.10	RATIONAL	63.70	76.69	94.68	108.87	124.23
CULVERT E	E	39.91	RATIONAL	43.92	53.05	65.77	75.86	86.87
CULVERT F	F	783.93	SCS	549.90	768.60	1093.90	1356.90	1659.10
CULVERT F-1	F-1	83.43	RATIONAL	95.26	114.98	142.44	164.20	187.90
DS OF F	F + F-1	867.36	SCS	580.60	813.50	1160.70	1443.10	1768.50

CONTRIBUTING DRAINAGE AREA	LAG TIME (MIN)	CN
Z	*	*
A	78.66	77
B	152.43	77
B-1	177.66	76
C	29.18	76
D	*	*
E	*	*
F	111.55	77
F-1	*	*

* N/A. RATIONAL METHOD USED.

RAINFALL DEPTH (NOAA ATLAS 14, VOL. 11, VER. 2)	
PROFILE	24-HR EVENT DEPTH (IN)
5 YR	5.33
10 YR	6.64
25 YR	8.67
50 YR	10.50
100 YR	12.60

RAINFALL DEPTHS OBTAINED AT MID-POINT OF CORDOVA RD USING NATIONAL WEATHER SERVICE PRECIPITATION FREQUENCY DATA SERVER (PFDS)

CONTRIBUTING DRAINAGE AREA	C	Tc (MIN)	5YR INTENSITY (IN/HR)	10YR INTENSITY (IN/HR)	25YR INTENSITY (IN/HR)	50YR INTENSITY (IN/HR)	100YR INTENSITY (IN/HR)
Z	0.50	116.7	1.50	1.82	2.28	2.65	3.05
D	0.50	51.22	2.65	3.19	3.94	4.53	5.17
E	0.50	67.70	2.20	2.66	3.30	3.80	4.35
F-1	0.50	64.11	2.28	2.76	3.41	3.94	4.50

Include note of climatic adjustment and FPA notification

Use EBDLKUP-2019, Guadalupe County, Zone 1, PDS method

DARY

X-X DRAINAGE AREA

NOTES:

1. DRAINAGE AREAS OFF ROW DELINEATED USING EXISTING 1-FT CONTOURS FROM 2017 GIS DATA AND FIELD VERIFIED SITE IMPROVEMENTS.
2. ALL UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY DEPTHS AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION.
3. ALL PIPES ARE NORMAL TO AND STRAIGHT FROM STRUCTURE UNLESS OTHERWISE SHOWN.
4. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 500 1000 2000
SCALE: 1"= 2000'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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ULTIMATE DRAINAGE AREA MAP

SHEET 3 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	135

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_da03.dgn

Plotted on: 7/27/2023

Crossing Discharge Data

Discharge Selection Method: Recurrence

Rating Curve Plot for Crossing: Culvert_Z_Prop

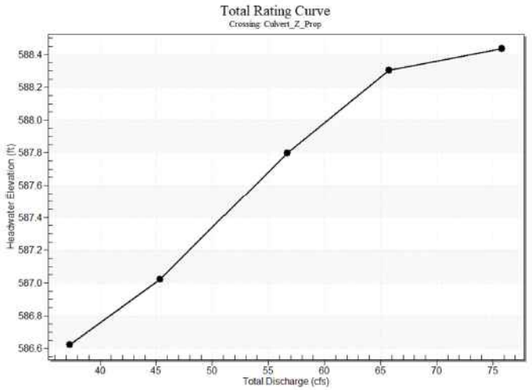


Table 1 - Summary of Culvert Flows at Crossing: Culvert_Z_Prop

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert_Z_Prop Discharge (cfs)	Roadway Discharge (cfs)	Iterations
586.62	5 year	37.29	37.29	0.00	1
587.02	10 year*	45.33	45.33	0.00	1
587.80	25 year	56.67	56.67	0.00	1
588.30	50 year	65.77	63.10	2.60	15
588.43	100 year†	75.83	64.49	11.29	7
588.20	Overtopping	61.74	61.74	0.00	Overtopping

*Design Storm
†Check Storm

HW elevations will be higher

Culvert Data: Culvert_Z_Prop

Table 2 - Culvert Summary Table: Culvert_Z_Prop

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
5 year	37.29 cfs	37.29 cfs	586.62	2.24	2.573	7-M2c	2.50	1.46	1.46	0.48	6.25	0.90
10 year*	45.33 cfs	45.33 cfs	587.02	2.59	2.971	7-M2c	2.50	1.62	1.62	0.51	6.74	0.91
25 year	56.67 cfs	56.67 cfs	587.80	3.20	3.749	7-M2c	2.50	1.81	1.81	0.54	7.42	0.92
50 year	65.77 cfs	63.10 cfs	588.30	3.61	4.255	7-M2c	2.50	1.91	1.91	0.56	7.83	0.94
100 year†	75.83 cfs	64.49 cfs	588.43	3.70	4.385	7-M2c	2.50	1.93	1.93	0.59	7.92	0.92

*Design Storm
†Check Storm

Culvert Barrel Data

Culvert Barrel Type Straight Culvert
Inlet Elevation (invert): 584.05 ft,
Outlet Elevation (invert): 583.87 ft
Culvert Length: 196.00 ft,
Culvert Slope: 0.0009

doesn't match culvert data

Roadway Data for Crossing: Culvert_Z_Prop

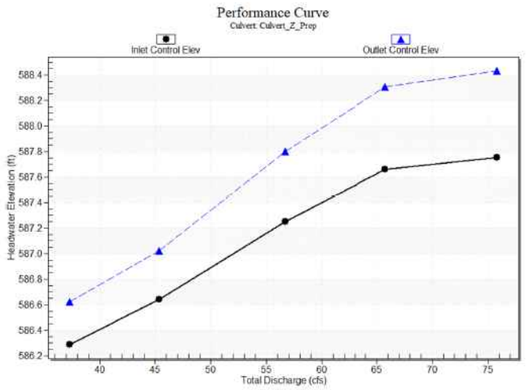
Roadway Profile Shape: Irregular Roadway Shape (coordinates)

Irregular Roadway Cross-Section

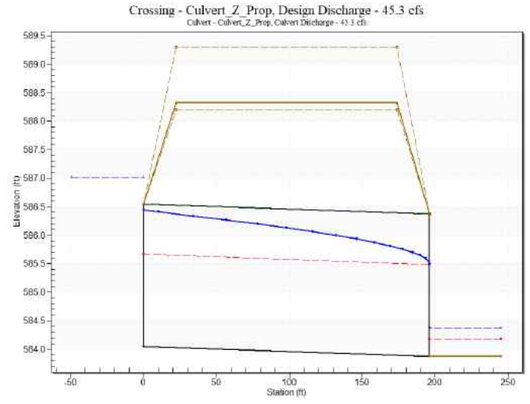
Coord No.	Station (ft)	Elevation (ft)
0	0.00	588.20
1	20.00	588.20
2	40.00	588.32
3	60.00	588.69
4	80.00	588.98
5	100.00	589.19
6	120.00	589.30

Roadway Surface: Paved
Roadway Top Width: 151.33 ft

Culvert Performance Curve Plot: Culvert_Z_Prop



Water Surface Profile Plot for Culvert: Culvert_Z_Prop



Site Data - Culvert_Z_Prop

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 584.05 ft
Outlet Station: 196.00 ft
Outlet Elevation: 583.87 ft
Number of Barrels: 2

Culvert Data Summary - Culvert_Z_Prop

Barrel Shape: Circular
Barrel Diameter: 2.50 ft
Barrel Material: Concrete
Embedment: 0.00 in
Barrel Manning's n: 0.0130
Culvert Type: Straight
Inlet Configuration: Mitered to Conform to Slope (Ke=0.7)
Inlet Depression: None

Tailwater Data for Crossing: Culvert_Z_Prop

Table 2 - Downstream Channel Rating Curve (Crossing: Culvert_Z_Prop)

Flow (cfs)	Water Surface Elev (ft)	Velocity (ft/s)	Depth (ft)	Shear (psf)	Froude Number
37.29	584.35	0.48	0.90	0.09	0.43
45.33*	584.38	0.51	0.91	0.09	0.41
56.67	584.41	0.54	0.92	0.10	0.40
65.77	584.43	0.56	0.94	0.11	0.39
75.83†	584.46	0.59	0.92	0.11	0.39

*Design Storm
†Check Storm

Tailwater Channel Data - Culvert_Z_Prop

Tailwater Channel Option: Irregular Channel
Channel Slope: Irregular Channel

User Defined Channel Cross-Section

Coord No.	Station (ft)	Elevation (ft)	Manning's n
1	0.00	584.51	0.0350
2	60.00	584.50	0.0350
3	120.00	584.44	0.0350
4	180.00	584.44	0.0350
5	240.00	584.39	0.0350
6	300.00	584.33	0.0350
7	360.00	584.34	0.0350
8	420.00	584.30	0.0350
9	480.00	584.28	0.0350
10	540.00	583.87	0.0320
11	555.00	583.87	0.0320
12	570.00	583.96	0.0300
13	585.00	584.08	0.0300
14	600.00	586.46	0.0160
15	615.00	587.94	0.0000

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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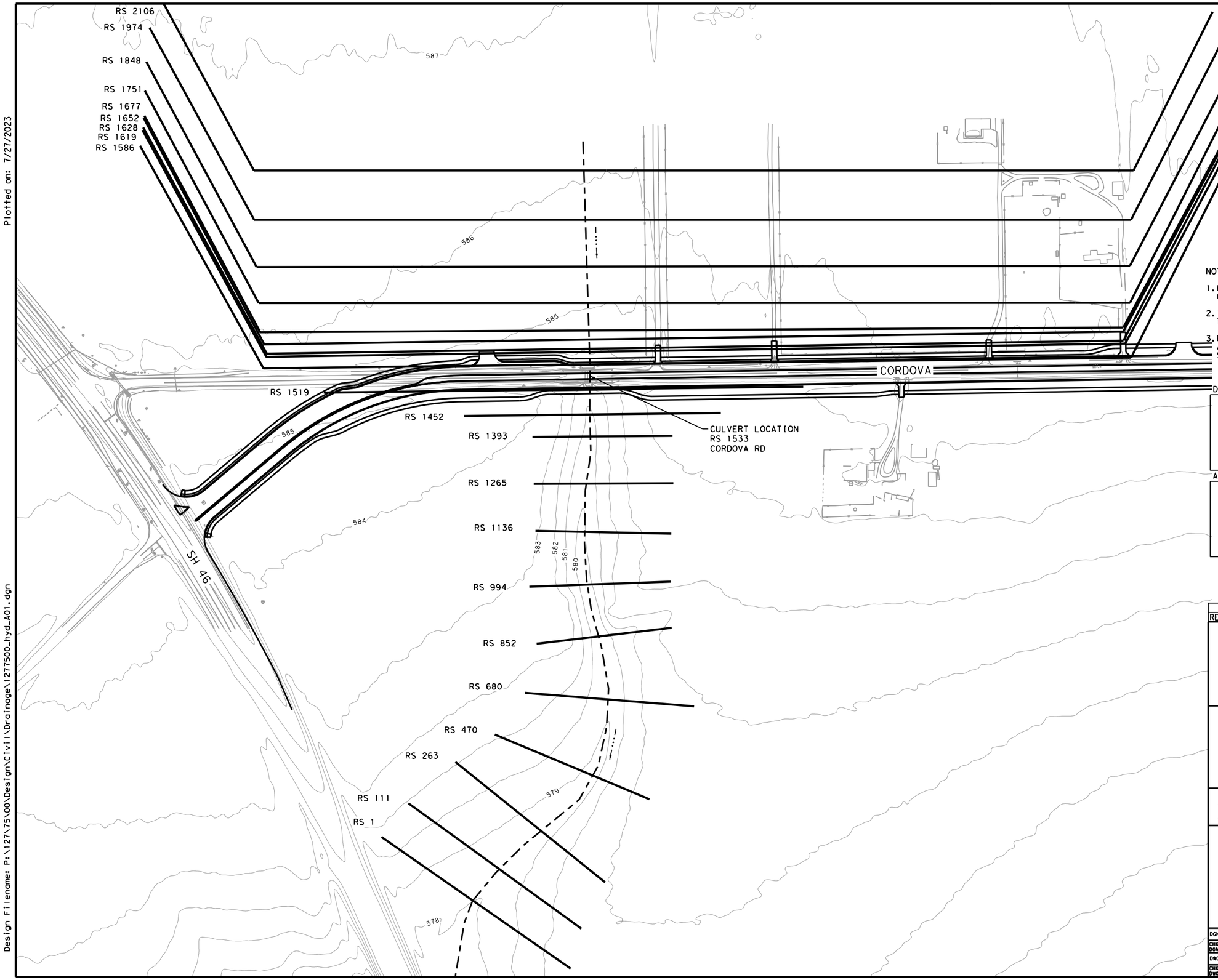
HYDRAULIC DATA SHEET CULVERT Z

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	136

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_Z1.dgn



NOTES:

1. HEC-RAS VERSION 6.3.1 USED FOR HYDRAULIC CALCULATIONS.
2. 1-FT CONTOURS FROM 2017 STRATMAP CENTRAL TEXAS LIDAR DATASET.
3. FOR CULVERTS CROSSING CORDOVA RD, 25YR AEP STORM USED FOR DESIGN, PER CITY OF SEGUIN CRITERIA.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO I AUSTIN I HOUSTON I FORT WORTH I DALLAS
2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000
TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET CULVERT A

SHEET 1 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	137

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_A01.dgn

Plotted on: 7/27/2023

HEC-RAS OUTPUT

River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
2106	5yr	PRE	201	585.64	586.22	585.99	586.22	0.002049	0.73	275.96	1662.75	0.27
2106	5yr	POST_EX	201	585.64	586.2	585.99	586.21	0.001636	0.61	332.31	1616.71	0.23
2106	5yr	POST_ULT	233	585.64	586.23	586	586.23	0.001528	0.63	377.2	1689.66	0.23
2106	10yr	PRE	286.9	585.64	586.29	586.05	586.3	0.001775	0.79	361.94	1732.47	0.26
2106	10yr	POST_EX	286.9	585.64	586.27	586.03	586.27	0.00137	0.65	444.91	1720.96	0.22
2106	10yr	POST_ULT	321.3	585.64	586.29	586.05	586.3	0.001292	0.67	486.24	1734.16	0.22
2106	25yr (Design)	PRE	416	585.64	586.4	586.12	586.41	0.0016	0.82	510.98	2136.37	0.25
2106	25yr (Design)	POST_EX	416	585.64	586.35	586.09	586.36	0.00122	0.7	604.69	1969.32	0.22
2106	25yr (Design)	POST_ULT	452.2	585.64	586.38	586.11	586.39	0.001191	0.7	653.9	2072.59	0.22
2106	50yr	PRE	519	585.64	586.52	586.15	586.53	0.000868	0.73	718.66	2365.62	0.19
2106	50yr	POST_EX	519	585.64	586.42	586.13	586.42	0.001171	0.72	731.02	2212.39	0.22
2106	50yr	POST_ULT	555.5	585.64	586.43	586.14	586.44	0.001182	0.75	760.93	2249.21	0.22
2106	100yr (Check)	PRE	636.6	585.64	586.56	586.19	586.57	0.000607	0.65	982.35	2385.88	0.16
2106	100yr (Check)	POST_EX	636.6	585.64	586.46	586.15	586.47	0.00117	0.78	833.08	2316.2	0.22
2106	100yr (Check)	POST_ULT	672	585.64	586.47	586.16	586.48	0.001181	0.8	862.11	2323.85	0.22
1974	5yr	PRE	201	585.22	585.96	585.73	585.97	0.001847	0.78	256.06	938	0.26
1974	5yr	POST_EX	201	585.22	585.97	585.74	585.98	0.001824	0.77	261.14	944.01	0.26
1974	5yr	POST_ULT	233	585.22	586.01	585.75	586.02	0.001759	0.78	300.23	1043.42	0.26
1974	10yr	PRE	286.9	585.22	586.04	585.78	586.05	0.002035	0.87	329.47	1162.51	0.28
1974	10yr	POST_EX	286.9	585.22	586.05	585.78	586.06	0.001871	0.82	350.95	1181.34	0.26
1974	10yr	POST_ULT	321.3	585.22	586.1	585.79	586.11	0.001602	0.77	416.45	1372.19	0.25
1974	25yr (Design)	PRE	416	585.22	586.27	585.84	586.28	0.000668	0.72	577.9	2214.91	0.17
1974	25yr (Design)	POST_EX	416	585.22	586.15	585.84	586.16	0.001927	0.86	483.65	1595.01	0.27
1974	25yr (Design)	POST_ULT	452.2	585.22	586.17	585.85	586.19	0.001979	0.87	524.76	1779.24	0.27
1974	50yr	PRE	519	585.22	586.45	585.87	586.46	0.000362	0.58	911.36	2426.92	0.13
1974	50yr	POST_EX	519	585.22	586.22	585.88	586.23	0.001911	0.87	604.89	2072.48	0.27
1974	50yr	POST_ULT	555.5	585.22	586.23	585.89	586.25	0.001854	0.88	643.04	2143.93	0.27
1974	100yr (Check)	PRE	636.6	585.22	586.49	585.91	586.5	0.000442	0.67	975.5	2496.67	0.15
1974	100yr (Check)	POST_EX	636.6	585.22	586.27	585.92	586.28	0.001796	0.91	713.49	2215.11	0.27
1974	100yr (Check)	POST_ULT	672	585.22	586.28	585.93	586.29	0.001799	0.93	739.83	2233.48	0.27
1848	5yr	PRE	201	585.09	585.65	585.47	585.67	0.003286	0.99	203.88	810.65	0.34
1848	5yr	POST_EX	201	585.09	585.66	585.48	585.68	0.003219	1.16	173.07	817.64	0.35
1848	5yr	POST_ULT	233	585.09	585.7	585.5	585.72	0.002972	1.2	193.88	858.99	0.35
1848	10yr	PRE	286.9	585.09	585.74	585.52	585.76	0.002719	1.06	271.28	885.1	0.32
1848	10yr	POST_EX	286.9	585.09	585.77	585.53	585.79	0.002625	1.26	228.35	913.14	0.33
1848	10yr	POST_ULT	321.3	585.09	585.83	585.55	585.85	0.002676	1.14	281.93	1063.35	0.33
1848	25yr (Design)	PRE	416	585.09	586.22	585.59	586.22	0.000287	0.62	673.46	1955.55	0.12
1848	25yr (Design)	POST_EX	416	585.09	585.93	585.6	585.94	0.001601	0.86	483	1357.34	0.25
1848	25yr (Design)	POST_ULT	452.2	585.09	585.96	585.62	585.97	0.001583	0.87	518.37	1420.2	0.25
1848	50yr	PRE	519	585.09	586.43	585.62	586.43	0.000151	0.46	1125.84	2421	0.09
1848	50yr	POST_EX	519	585.09	586.03	585.64	586.04	0.001259	0.83	630.9	1648.23	0.23
1848	50yr	POST_ULT	555.5	585.09	586.02	585.66	586.03	0.001547	0.92	610.23	1594.79	0.25
1848	100yr (Check)	PRE	636.6	585.09	586.46	585.67	586.46	0.000201	0.55	1168.41	2449.24	0.1
1848	100yr (Check)	POST_EX	636.6	585.09	586.06	585.69	586.07	0.001561	0.96	672.12	1679.3	0.26
1848	100yr (Check)	POST_ULT	672	585.09	586.05	585.7	586.07	0.001806	1.02	663.94	1673.18	0.28
1751	5yr	PRE	201	584.42	585.37	585.13	585.39	0.002436	1.21	165.99	674.95	0.32
1751	5yr	POST_EX	201	584.42	585.41	585.14	585.43	0.002216	1.23	163.13	803.16	0.31
1751	5yr	POST_ULT	233	584.42	585.46	585.17	585.48	0.002094	1.29	181.3	848.16	0.31
1751	10yr	PRE	286.9	584.42	585.5	585.19	585.53	0.002053	1.33	216.31	876.19	0.31
1751	10yr	POST_EX	286.9	584.42	585.55	585.2	585.58	0.001915	1.36	211.02	933.23	0.3
1751	10yr	POST_ULT	321.3	584.42	585.6	585.23	585.63	0.001829	1.4	228.98	991.53	0.3
1751	25yr (Design)	PRE	416	584.42	586.2	585.27	586.2	0.000134	0.55	762.16	2395.78	0.09
1751	25yr (Design)	POST_EX	416	584.42	585.75	585.28	585.79	0.001561	1.48	280.4	1215.66	0.29
1751	25yr (Design)	POST_ULT	452.2	584.42	585.82	585.3	585.83	0.001258	0.99	457.77	1368.51	0.24
1751	50yr	PRE	519	584.42	586.42	585.32	586.42	0.000075	0.4	1309.31	2653.24	0.07
1751	50yr	POST_EX	519	584.42	585.92	585.34	585.93	0.001002	0.94	558.06	1720.42	0.22
1751	50yr	POST_ULT	555.5	584.42	585.95	585.36	585.95	0.000475	0.64	879.43	1774.17	0.15
1751	100yr (Check)	PRE	636.6	584.42	586.44	585.38	586.45	0.000104	0.47	1341.66	2664.21	0.08
1751	100yr (Check)	POST_EX	636.6	584.42	585.98	585.4	585.99	0.000521	0.69	938.13	1841.1	0.16
1751	100yr (Check)	POST_ULT	672	584.42	585.96	585.42	585.97	0.000658	0.76	897.48	1786.97	0.18
1677	5yr	PRE	201	584.09	585.06	584.91	585.12	0.006327	1.97	102.28	656.02	0.52
1677	5yr	POST_EX	201	584.08	585.14	584.92	585.2	0.00464	1.94	103.81	739.49	0.46
1677	5yr	POST_ULT	233	584.08	585.2	584.95	585.27	0.004366	2.02	115.53	789.91	0.46
1677	10yr	PRE	286.9	584.09	585.27	584.98	585.33	0.003557	1.91	150.49	877.1	0.42
1677	10yr	POST_EX	286.9	584.08	585.3	585.01	585.37	0.003969	2.13	134.68	897.17	0.45
1677	10yr	POST_ULT	321.3	584.08	585.37	585.04	585.44	0.003732	2.19	146.84	940.61	0.44
1677	25yr (Design)	PRE	416	584.09	586.19	585.09	586.19	0.00009	0.54	773.87	2618.51	0.08
1677	25yr (Design)	POST_EX	416	584.08	585.54	585.13	585.62	0.003234	2.32	178.98	1142.3	0.42
1677	25yr (Design)	POST_ULT	452.2	584.08	585.6	585.16	585.69	0.003074	2.37	191.07	1170.68	0.42
1677	50yr	PRE	519	584.09	586.41	585.16	586.41	0.000045	0.36	1447.52	2744.67	0.05
1677	50yr	POST_EX	519	584.08	585.72	585.21	585.81	0.002817	2.44	213.03	1496.44	0.41
1677	50yr	POST_ULT	555.5	584.08	585.78	585.24	585.87	0.002703	2.47	224.67	1797.72	0.4
1677	100yr (Check)	PRE	636.6	584.09	586.44	585.23	586.44	0.000063	0.43	1474.11	2758.47	0.06
1677	100yr (Check)	POST_EX	636.6	584.08	585.96	585.3	585.96	0.000193	0.5	1333.29	2151.71	0.1
1677	100yr (Check)	POST_ULT	672	584.08	585.9	585.33	585.91	0.000763	1.01	690.69	2041.29	0.2
1652	5yr	PRE	201	584.08	584.85	584.72	584.94	0.008842	2.39	84.05	589.95	0.62
1652	5yr	POST_EX	201	584.08	584.97	584.78	585.06	0.00641	2.41	83.57	705.14	0.55
1652	5yr	POST_ULT	233	584.08	585.04	584.82	585.14	0.006058	2.51	92.88	745.02	0.54
1652	10yr	PRE	286.9	584.08	585.19	584.81	585.25	0.002877	1.97	145.72	904.32	0.39
1652	10yr	POST_EX	286.9	584.08	585.15	584.88	585.26	0.005597	2.66	107.75	847.35	0.54
1652	10yr	POST_ULT	321.3	584.08	585.21	584.93	585.33	0.005293	2.74	117.28	944.38	0.53
1652	25yr (Design)	PRE	416	584.08	586.19	584.94	586.19	0.000079	0.54	775.35	2632.04	0.07
1652	25yr (Design)	POST_EX	416	584.08	585.39	585.02	585.52	0.004715	2.93	141.77	1056.73	0.51
1652	25yr (Design)	POST_ULT	452.2	584.08	585.45	585.06	585.59	0.004525	3	150.91	1082.77	0.51
1652	50yr	PRE	519	584.08	586.41	585.02	586.41	0.000034	0.34	1537.32	2767.19	0.05
1652	50yr	POST_EX	519	584.08	585.57	585.13	585.72	0.004214	3.1	167.45	1227.3	0.5
1652	50yr	POST_ULT	555.5	584.08	585.63	585.17	585.79	0.004086	3.16	176.04	1269.22	0.5
1652	100yr (Check)	PRE	636.6	584.08	586.44	585.11	586.44	0.000049	0.41	1562.18	2780.73	0.06
1652	100yr (Check)	POST_EX	636.6	584.08	585.77	585.25	585.93	0.003791	3.26	195.38	1838.12	0.49
1652	100yr (Check)	POST_ULT	672	584.08	585.88	585.27	585.9	0.000491	0.91	774.25	2058.2	0.16

River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1628	5yr	PRE	201	583.92	584.65	584.45	584.75	0.006576	2.49	80.85	603.61	0.56
1628	5yr	POST_EX	201	583.92	584.55	584.55	584.82	0.014306	4.16	48.35	459.64	1
1628	5yr	POST_ULT	233	583.92	584.6	584.6	584.9	0.013932	4.37	53.3	536.03	1.01
1628	10yr	PRE	286.9	583.92	585.13	584.57	585.19	0.001977	2	143.54	978.83	0.34
1628	10yr	POST_EX	286.9	583.92	584.69	584.69	585.03	0.013311	4.68	61.28	662.15	1.01
1628	10yr	POST_ULT	321.3	583.92	584.74	584.74	585.11	0.01293	4.85	66.2	692.85	1
1628	25yr (Design)	PRE	416	583.92	586.19	584.71	586.19	0.000067	0.53	778.21	2645.58	0.07
1628	25yr (Design)	POST_EX	416	583.92	584.89	584.89	585.32	0.011972	5.25	79.18	814	0.99
1628	25yr (Design)	POST_ULT	452.2	583.92	584.94	584.94	585.39	0.011786	5.41	83.66	835.99	0.99
1628	50yr	PRE	519	583.92	586.41	584.82	586.41	0.000024	0.31	1682.05	2794.39	0.04
1628	50yr	POST_EX	519	583.92	585.02	585.02	585.52	0.011589	5.68	91.36	905.54	1
1628	50yr	POST_ULT	555.5	583.92	585.07	585.07	585.59	0.0113	5.79	95.91	929.29	0.99
1628	100yr (Check)	PRE	636.6	583.92	586.44	584.94	586.44	0.000034	0.37	1705.47	2809.08	0.05
1628	100yr (Check)	POST_EX	636.6	583.92	585.16	585.16	585.74	0.011347	6.12	103.98	992.26	1.01
1628	100yr (Check)	POST_ULT	672	583.92	585.21	585.21	585.81	0.010904	6.18	108.72	1038.28	1
1619	5yr	PRE	201	583.79	584.58	584.38	584.69	0.006947	2.67	75.41	575.37	0.58
1619	5yr	POST_EX	201	581.12	582.43	581.94	582.58	0.000564	3.07	65.39	53.85	0.49
1619	5yr	POST_ULT	233	581.12	582.55	582.03	582.71	0.000559	3.23	72.04	54.58	0.5
1619	10yr	PRE	286.9	583.79	585.1	584.5	585.17	0.001987	2.11	135.91	1014.74	0.34
1619	10yr	POST_EX	286.9	581.12	582.75	582.17	582.93	0.000547	3.46	82.9	55.74	0.5
1619	10yr	POST_ULT	321.3	581.12	582.87	582.24	583.07	0.000536	3.58	89.74	56.47	0.5
1619	25yr (Design)	PRE	416	583.79	586.19	584.66	586.19	0.000062	0.53	782.7	2651.04	0.07
1619	25yr (Design)	POST_EX	416	581.12	583.19	582.44	583.42	0.000505	3.85	108.14	58.37	0.5
1619	25yr (Design)	POST_ULT	452.2	581.12	583.31	582.52	583.55	0.000493	3.93	115.16	59.07	0.5
1619	50yr	PRE	519	583.79	586.41	584.78	586.41	0.00002	0.3	1753.39	2787.63	0.04
1619	50yr	POST_EX	519	581.12	583.53	582.65	583.78	0.000469	4.05	128.05	60.35	0.49
1619	50yr	POST_ULT	555.5	581.12	583.64	582.72	583.9	0.000457	4.11	135.07	61.04	0.49
1619	100yr (Check)	PRE	636.6	583.79	586.44	584.9	586.44	0.000029	0.36	1776.28	2803.45	0.05
1619	100yr (Check)	POST_EX	636.6	581.12	583.89	582.87	584.17	0.000432	4.23	150.58	62.52	0.48
1619	100yr (Check)	POST_ULT	672	581.12	584	582.92	584.28	0.000415	4.25	158.11	159.48	0.51
1586	5yr	PRE	201	583.07	583.92	583.92	584.28	0.014905	4.81	41.76	448.23	1.01
1586	10yr	PRE	286.9	583.07	584.98	584.11	585.1	0.001449	2.76	104.04	1041.84	0.37
1586	25yr (Design)	PRE	416	583.07	586.14	584.37	586.18	0.000828	1.5	277.24	2582.6	0.25
1586	50yr	PRE	519	583.07	586.37	584.55	586.4	0.001484	1.45	370.32	2729.89	0.31
1586	100yr (Check)	PRE	636.6	583.07	586.37	584.74	586.42	0.002173	1.77	374.22	2734.74	0.38
1533			Culvert									
1519	5yr	PRE	201	580.79	582.4	582.36	582.9	0.011573	5.64	35.63	155.58	0.95
1519	10yr	PRE	286.9	580.79	582.64	582.64	583.32	0.012237	6.61	43.38	186.56	1.01
1519	25yr (Design)	PRE	416	580.79	583.02	583.02	583.89	0.011128	7.46	55.78	268.91	1.01
1519	50yr	PRE	519	580.79	583.29	583.29	584.3	0.01061	8.03	64.61	301.96	1.01
1519	100yr (Check)	PRE	636.6	580.79	583.58	583.58	584.73	0.010097	8.59	74.13	374.59	1
1452	5yr	PRE	201	580.59	582.24		582.33	0.003124	2.31	87.05	114.21	0.47
1452	5yr	POST_EX	201	580.59	582.23		582.33	0.003032	2.55	78.73	113.33	0.47
1452	5yr	POST_ULT	233	580.59	582.31		582.42	0.003065	2.72	85.75	119.64	0.48
1452	10yr	PRE	286.9	580.59	582.44		582.55	0.003005	2.59	111.48	130.56	0.47
1452	10yr	POST_EX	286.9	580.59	582.43		582.57	0.003171	2.98	96.17	129.37	0.5
1452	10yr	POST_ULT	321.3	580.59	582.5		582.65	0.003237	3.14	102.29	133.78	0.51
1452	25yr (Design)	PRE	416	580.59	582.67		582.81	0.002976	2.99	143.46	147.93	0.49
1452	25yr (Design)	POST_EX	416	580.59	582.66		582.86	0.003551	3.58	116.17	146.39	0.55
1452	25yr (Design)	POST_ULT	452.2	580.59	582.71		582.93	0.003669	3.74	120.94	152.23	0.56
1452	50yr	PRE	519	580.59	582.83		582.99	0.002986	3.25	167.53	161.44	0.5
1452	50yr	POST_EX	519	580.59	582.81		583.06	0.003881	4.02	129.17	158.96	0.58
1452	50yr	POST_ULT	555.5	580.59	582.86		583.13	0.003995	4.16	133.39	164.93	0.59
1452	100yr (Check)	PRE	636.6	580.59	582.99		583.18	0.002988	3.51	194.52	176.65	0.51
1452	100yr (Check)	POST_EX	636.6	580.59	582.96		583.27	0.00424	4.48	142.18	173.62	0.62
1452	100yr (Check)	POST_ULT	672	580.59	583		583.33	0.004346	4.61	145.8	177.59	0.63
1393	5yr	PRE	201	580.75	582.05		582.14	0.003343	2.38	84.36	111.11	0.48
1393	5yr	POST_EX	201	580.75	582.05		582.14	0.003343	2.38	84.36	111.11	0.48
1393	5yr	POST_ULT	233	580.75	582.13		582.22	0.003383	2.49	93.67	117.74	0.49
1393	10yr	PRE	286.9	580.75	582.25		582.36	0.003327	2.65	108.65	125.79	0.49
1393	10yr	POST_EX	286.9	580.75	582.25		582.36	0.003327	2.65	108.65	125.79	0.49
1393	10yr	POST_ULT	321.3	580.75	582.33		582.44	0.003301	2.73	118.13	131.92	0.5
1393	25yr (Design)	PRE	416	580.75	582.49		582.63	0.003222	3	140.88	146.04	0.5
1393	25yr (Design)	POST_EX	416	580.75	582.49		582.63	0.003222	3	140.88	146.04	0.5
1393	25yr (Design)	POST_ULT	452.2	580.75	582.55		582.69	0.003197	3.1	149.45	150.81	0.51
1393	50yr	PRE	519	580.75	582.65		582.81	0.003166	3.25	165	160.19	0.51
1393	50yr	POST_EX	519	580.75	582.65		582.81	0.003166	3.25	165	160.19	0.51
1393	50yr	POST_ULT	555.5	580.75	582.7		582.87	0.003147	3.33	173.45	163.82	0.51
1393	100yr (Check)	PRE	636.6	580.75	582.81		583	0.003114	3.5	192.04	174.09	0.52
1393	100yr (Check)	POST_EX	636.6	580.75	582.81		583	0.003114	3.5	192.04	174.09	0.52
1393	100yr (Check)	POST_ULT	672	580.75	582.85		583.05	0.003097	3.56	200.1	177.24	0.52
1265	5yr	PRE	201	580.28	581.7		581.77	0.002422	2.1	95.73	122.47	0.41
1265	5yr	POST_EX	201	580.28	581.7		581.77	0.002422	2.1	95.73	122.47	0.41
1265	5yr	POST_ULT	233	580.28	581.79		581.86	0.002364	2.19	106.62	127.86	0.41
1265	10yr	PRE	286.9	580.28	581.92		582	0.002373	2.34	123.67	138.57	0.42
1265	10yr	POST_EX	286.9	580.28	581.92		582	0.002372	2.34	123.68	138.57	0.42
1265	10yr	POST_ULT	321.3	580.28	581.99		582.08	0.002399	2.43	134.06	144.32	0.43
1265	25yr (Design)	PRE	416	580.28	582.16		582.27	0.002334	2.66	160.37	159.2	0.43
1265	25yr (Design)	POST_EX	416	580.28	582.16		582.27	0.002334	2.66	160.37	159.2	0.43
1265	25yr (Design)	POST_ULT	452.2	580.28	582.23		582.34	0.002302	2.74	170.59	164.92	0.43
1265	50yr	PRE	519	580.28	582.33		582.46	0.002272	2.88	188.71	174.48	0.44
1265	50yr	POST_EX	519	580.28	582.33		582.46	0.002272	2.88	188.71	174.48	0.44
1265	50yr	POST_ULT	555.5	580.28	582.39		582.52	0.002254	2.94	198.59	179.51	0.44
1265	100yr (Check)	PRE	636.6	580.28	582.51		582.65	0.002227	3.08	220.12	190.04	0.44
1265	100yr (Check)	POST_EX	636.6	580.28	582.51		582.65	0.002227	3.08	220.12	190.04	0.44
1265	100yr (Check)	POST_ULT	672	580.28	582.55		582.7	0.002216	3.14	229.44	194.55	0.44

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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THE STATE OF TEXAS GUADALUPE COUNTY
Texas Department of Transportation ©2023

HYDRAULIC DATA SHEET
CULVERT A

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	138

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_A02.dgn

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\127500_hyd_A02.dgn

HEC-RAS OUTPUT

River Sta	Profile	Plan	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1136	5yr	PRE	201	580.05	581.42		581.48	0.002038	2.06	101.09	125.96	0.39
1136	5yr	POST_EX	201	580.05	581.42		581.48	0.002038	2.06	101.09	125.96	0.39
1136	5yr	POST_ULT	233	580.05	581.51		581.58	0.002013	2.14	113.13	133.52	0.39
1136	10yr	PRE	286.9	580.05	581.64		581.72	0.001965	2.3	130.93	144.03	0.39
1136	10yr	POST_EX	286.9	580.05	581.64		581.72	0.001965	2.3	130.94	144.03	0.39
1136	10yr	POST_ULT	321.3	580.05	581.71		581.8	0.001956	2.4	141.65	149.88	0.4
1136	25yr (Design)	PRE	416	580.05	581.89		582	0.001938	2.64	170.51	164.42	0.4
1136	25yr (Design)	POST_EX	416	580.05	581.89		582	0.001938	2.64	170.51	164.42	0.4
1136	25yr (Design)	POST_ULT	452.2	580.05	581.96		582.07	0.001939	2.72	181.23	171.49	0.41
1136	50yr	PRE	519	580.05	582.07		582.19	0.001938	2.86	200.44	180.2	0.41
1136	50yr	POST_EX	519	580.05	582.07		582.19	0.001938	2.86	200.44	180.2	0.41
1136	50yr	POST_ULT	555.5	580.05	582.12		582.25	0.001937	2.93	210.84	185.09	0.41
1136	100yr (Check)	PRE	636.6	580.05	582.24		582.38	0.001936	3.08	233.52	195.77	0.42
1136	100yr (Check)	POST_EX	636.6	580.05	582.24		582.38	0.001936	3.08	233.52	195.77	0.42
1136	100yr (Check)	POST_ULT	672	580.05	582.29		582.43	0.001935	3.14	243.33	200.59	0.42
994	5yr	PRE	201	579.39	581.13		581.2	0.001962	2.12	95.97	109.32	0.38
994	5yr	POST_EX	201	579.39	581.13		581.2	0.001962	2.12	95.97	109.32	0.38
994	5yr	POST_ULT	233	579.39	581.21		581.29	0.002073	2.26	104.99	115.36	0.4
994	10yr	PRE	286.9	579.39	581.33		581.42	0.002188	2.46	119.41	121.83	0.41
994	10yr	POST_EX	286.9	579.39	581.33		581.42	0.002187	2.46	119.42	121.83	0.41
994	10yr	POST_ULT	321.3	579.39	581.4		581.5	0.002231	2.59	127.88	127.22	0.42
994	25yr (Design)	PRE	416	579.39	581.57		581.69	0.002322	2.89	150.44	137.13	0.44
994	25yr (Design)	POST_EX	416	579.39	581.57		581.69	0.002322	2.89	150.44	137.13	0.44
994	25yr (Design)	POST_ULT	452.2	579.39	581.62		581.76	0.002369	3	158.41	141.77	0.45
994	50yr	PRE	519	579.39	581.72		581.87	0.002457	3.2	172.33	146.41	0.46
994	50yr	POST_EX	519	579.39	581.72		581.87	0.002457	3.2	172.33	146.41	0.46
994	50yr	POST_ULT	555.5	579.39	581.77		581.93	0.002508	3.3	179.63	150.94	0.47
994	100yr (Check)	PRE	636.6	579.39	581.87		582.06	0.002607	3.52	195.63	158.27	0.48
994	100yr (Check)	POST_EX	636.6	579.39	581.87		582.06	0.002607	3.52	195.63	158.27	0.48
994	100yr (Check)	POST_ULT	672	579.39	581.92		582.11	0.002648	3.61	202.44	162.13	0.49
852	5yr	PRE	201	579.18	580.82		580.88	0.002491	2	100.7	138.73	0.41
852	5yr	POST_EX	201	579.18	580.82		580.88	0.002491	2	100.7	138.73	0.41
852	5yr	POST_ULT	233	579.18	580.89		580.96	0.002469	2.09	111.25	141.64	0.42
852	10yr	PRE	286.9	579.18	581.01		581.09	0.00246	2.24	127.86	146.36	0.42
852	10yr	POST_EX	286.9	579.18	581.01		581.09	0.002457	2.24	127.9	146.38	0.42
852	10yr	POST_ULT	321.3	579.18	581.08		581.16	0.002475	2.33	137.67	149.27	0.43
852	25yr (Design)	PRE	416	579.18	581.24		581.34	0.002531	2.55	163.75	162.84	0.44
852	25yr (Design)	POST_EX	416	579.18	581.24		581.34	0.002531	2.55	163.75	162.84	0.44
852	25yr (Design)	POST_ULT	452.2	579.18	581.3		581.4	0.00253	2.62	172.92	164.94	0.44
852	50yr	PRE	519	579.18	581.39		581.51	0.00254	2.77	188.54	169.58	0.45
852	50yr	POST_EX	519	579.18	581.39		581.51	0.00254	2.77	188.54	169.58	0.45
852	50yr	POST_ULT	555.5	579.18	581.44		581.56	0.00255	2.85	196.53	172.47	0.46
852	100yr (Check)	PRE	636.6	579.18	581.54		581.68	0.002569	3.01	214.02	180.09	0.46
852	100yr (Check)	POST_EX	636.6	579.18	581.54		581.68	0.002569	3.01	214.02	180.09	0.46
852	100yr (Check)	POST_ULT	672	579.18	581.58		581.72	0.002584	3.08	221.31	181.75	0.47
680	5yr	PRE	201	579	580.4		580.46	0.002428	2.04	98.55	132.09	0.41
680	5yr	POST_EX	201	579	580.4		580.46	0.002428	2.04	98.55	132.09	0.41
680	5yr	POST_ULT	233	579	580.47		580.55	0.002444	2.14	109.21	141.4	0.42
680	10yr	PRE	286.9	579	580.59		580.67	0.00244	2.31	125.47	149.87	0.43
680	10yr	POST_EX	286.9	579	580.59		580.67	0.002439	2.31	125.48	149.88	0.43
680	10yr	POST_ULT	321.3	579	580.64		580.73	0.002487	2.43	134.26	154.05	0.43
680	25yr (Design)	PRE	416	579	580.79		580.9	0.002611	2.73	157.91	181.22	0.45
680	25yr (Design)	POST_EX	416	579	580.79		580.9	0.002611	2.73	157.91	181.22	0.45
680	25yr (Design)	POST_ULT	452.2	579	580.84		580.96	0.002619	2.82	167.95	192.82	0.46
680	50yr	PRE	519	579	580.92		581.06	0.002691	2.99	185.1	213.49	0.47
680	50yr	POST_EX	519	579	580.92		581.06	0.002691	2.99	185.1	213.49	0.47
680	50yr	POST_ULT	555.5	579	580.97		581.11	0.002719	3.08	194.43	223.22	0.48
680	100yr (Check)	PRE	636.6	579	581.06		581.22	0.002782	3.25	215.85	244.91	0.49
680	100yr (Check)	POST_EX	636.6	579	581.06		581.22	0.002782	3.25	215.85	244.91	0.49
680	100yr (Check)	POST_ULT	672	579	581.09		581.26	0.00281	3.33	225	253.46	0.49
470	5yr	PRE	201	578.6	579.94		579.99	0.002085	1.76	114.19	166.27	0.37
470	5yr	POST_EX	201	578.6	579.94		579.99	0.002085	1.76	114.19	166.27	0.37
470	5yr	POST_ULT	233	578.6	580.01		580.06	0.002141	1.84	126.82	176.68	0.38
470	10yr	PRE	286.9	578.6	580.12		580.18	0.00218	1.96	146.92	194.95	0.39
470	10yr	POST_EX	286.9	578.6	580.12		580.18	0.002216	1.97	146.13	194.6	0.39
470	10yr	POST_ULT	321.3	578.6	580.17		580.23	0.002228	2.06	156.81	205.26	0.4
470	25yr (Design)	PRE	416	578.6	580.31		580.39	0.002222	2.28	186.17	224.34	0.41
470	25yr (Design)	POST_EX	416	578.6	580.31		580.39	0.002222	2.28	186.17	224.34	0.41
470	25yr (Design)	POST_ULT	452.2	578.6	580.35		580.44	0.002239	2.36	196.47	228.28	0.41
470	50yr	PRE	519	578.6	580.43		580.53	0.002268	2.5	215.45	250	0.42
470	50yr	POST_EX	519	578.6	580.43		580.53	0.002268	2.5	215.45	250	0.42
470	50yr	POST_ULT	555.5	578.6	580.47		580.57	0.002283	2.57	226.07	264.89	0.43
470	100yr (Check)	PRE	636.6	578.6	580.56		580.67	0.00231	2.71	248.93	271.23	0.43
470	100yr (Check)	POST_EX	636.6	578.6	580.56		580.67	0.00231	2.71	248.93	271.23	0.43
470	100yr (Check)	POST_ULT	672	578.6	580.59		580.71	0.002323	2.77	258.41	281.38	0.44
263	5yr	PRE	201	578.21	579.51		579.55	0.002065	1.69	119.06	183.25	0.37
263	5yr	POST_EX	201	578.21	579.51		579.55	0.002065	1.69	119.06	183.25	0.37
263	5yr	POST_ULT	233	578.21	579.58		579.62	0.002117	1.77	131.82	198.07	0.38
263	10yr	PRE	286.9	578.21	579.66		579.72	0.002176	1.92	150.24	217.94	0.39
263	10yr	POST_EX	286.9	578.21	579.66		579.72	0.002178	1.92	150.2	217.93	0.39
263	10yr	POST_ULT	321.3	578.21	579.71		579.78	0.002205	2.02	161.09	223.45	0.4
263	25yr (Design)	PRE	416	578.21	579.84		579.91	0.002289	2.26	189.75	248.48	0.41
263	25yr (Design)	POST_EX	416	578.21	579.84		579.91	0.002289	2.26	189.75	248.48	0.41
263	25yr (Design)	POST_ULT	452.2	578.21	579.88		579.96	0.002319	2.34	200.26	254.6	0.42
263	50yr	PRE	519	578.21	579.95		580.04	0.002374	2.48	219.35	269.43	0.43
263	50yr	POST_EX	519	578.21	579.95		580.04	0.002374	2.48	219.35	269.43	0.43
263	50yr	POST_ULT	555.5	578.21	579.99		580.09	0.002401	2.56	229.62	279.65	0.43
263	100yr (Check)	PRE	636.6	578.21	580.07		580.18	0.002429	2.7	252.69	291.1	0.44
263	100yr (Check)	POST_EX	636.6	578.21	580.07		580.18	0.002429	2.7	252.69	291.1	0.44
263	100yr (Check)	POST_ULT	672	578.21	580.1		580.21	0.002451	2.76	262.01	298.61	0.45

River Sta	Profile	Plan	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
111	5yr	PRE	201	577.96	579.18	578.79	579.22	0.002259	1.63	123.43	214.48	0.38
111	5yr	POST_EX	201	577.96	579.18	578.79	579.22	0.002259	1.63	123.43	214.48	0.38
111	5yr	POST_ULT	233	577.96	579.24	578.84	579.29	0.002341	1.71	136.33	226.46	0.39
111	10yr	PRE	286.9	577.96	579.32		579.38	0.002391	1.85	155.36	250.87	0.4
111	10yr	POST_EX	286.9	577.96	579.32		579.37	0.002433	1.86	154.44	249.88	0.4
111	10yr	POST_ULT	321.3	577.96	579.36	578.96	579.42	0.002477	1.95	165.58	254.62	0.41
111	25yr (Design)	PRE	416	577.96	579.47	579.07	579.54	0.002602	2.19	193.61	276.39	0.43
111	25yr (Design)	POST_EX	416	577.96	579.47	579.07	579.54	0.002602	2.19	193.61	276.39	0.43
111	25yr (Design)	POST_ULT	452.2	577.96	579.51	579.1	579.59	0.002627	2.27	204.07	279.4	0.44
111	50yr	PRE	519	577.96	579.57	579.17	579.66	0.002703	2.41	222	294.65	0.45
111	50yr	POST_EX	519	577.96	579.57	579.17	579.66	0.002703	2.41	221.98	294.64	0.45
111	50yr	POST_ULT	555.5	577.96	579.6	579.2	579.7	0.002737	2.49	231.75	301.46	0.45
111	100yr (Check)	PRE	636.6	577.96	579.67	579.26	579.78	0.002816	2.64	252.77	318.51	0.46
111	100yr (Check)	POST_EX	636.6	577.96	579.67	579.26	579.78	0.002816	2.64	252.77	318.51	0.46
111	100yr (Check)	POST_ULT	672	577.96	579.7	579.29	579.81	0.002851	2.71	261.72	326.5	0.47
1	5yr	PRE	201	577.82	578.65	578.56	578.76	0.009998	2.57	78.32	209.93	0.74
1	5yr	POST_EX	201	577.82	578.65	578.56	578.76	0.009998	2.57	78.32	209.93	0.74
1	5yr	POST_ULT	233	577.82	578.7	578.6	578.81	0.010005	2.64	88.23	226.64	0.75
1	10yr	PRE	286.9	577.82	578.77	578.67	578.88	0.01	2.76	103.77	248.74	0.75
1	10yr	POST_EX	286.9	577.82	578.77	578.67	578.88	0.01	2.76	103.77	248.74	0.75
1	10yr	POST_ULT	321.3	577.82	578.8	578.71	578.93	0.010016	2.84	113	260.06	0.76
1	25yr (Design)	PRE	416	577.82	578.88	578.81	579.03	0.009988	3.1	134.06	270.01	0.78
1	25yr (Design)	POST_EX	416	577.82	578.88	578.79	579.03	0.009991	3.1	134.04	270	0.78
1	25yr (Design)	POST_ULT	452.2	577.82	578.92	578.81	579.07	0.010017	3.15	143.34	282.29	0.78
1	50yr	PRE	519	577.82	578.97	578.87	579.13	0.010001	3.28	158.02	292.58	0.79
1	50yr	POST_EX	519	577.82	578.97	578.87	579.13	0.010001	3.28	158.02	292.58	0.79
1	50yr	POST_ULT	555.5	577.82	578.99	578.89	579.17	0.010003	3.34	166.13	299.51	0.79
1	100yr (Check)	PRE	636.6	577.82	579.05	578.95	579.24	0.009999	3.5	182.04	306.74	0.8
1	100yr (Check)	POST_EX	636.6	577.82	579.05	578.95	579.24	0.009999	3.5	182.04	306.74	0.8
1	100yr (Check)	POST_ULT	672	577.82	579.07	578.97	579.26	0.009992	3.56	188.67	309.16	0.8

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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THE STATE OF TEXAS GUADALUPE COUNTY

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HYDRAULIC DATA SHEET
CULVERT A

SHEET 3 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	139

Plotted on: 7/27/2023

HEC-RAS CULVERT OUTPUT DATA - EXISTING

Plan: PRE	River 1	Reach 1	RS: 1533	Culv Group:	Culvert #1	Profile: 25yr (Design)	
Q Culv Group (cfs)	371.65	Culv Full Len (ft)					
# Barrels	3	Culv Vel US (ft/s)	8.26				
Q Barrel (cfs)	123.88	Culv Vel DS (ft/s)	13.8				
E.G. US. (ft)	586.18	Culv Inv El Up (ft)	581.4				
W.S. US. (ft)	586.14	Culv Inv El Dn (ft)	580.96				
E.G. DS (ft)	583.89	Culv Frctn Ls (ft)	0.42				
W.S. DS (ft)	583.02	Culv Exit Loss (ft)	1.83				
Delta EG (ft)	2.29	Culv Entr Loss (ft)	0.04				
Delta WS (ft)	3.12	Q Weir (cfs)	44.35				
E.G. IC (ft)	586.18	Weir Sta Lft (ft)	2003.57				
E.G. OC (ft)	585.46	Weir Sta Rgt (ft)	2256.11				
Culvert Control	Inlet	Weir Submerg	0				
Culv WS Inlet (ft)	584.4	Weir Max Depth (ft)	0.59				
Culv WS Outlet (ft)	582.76	Weir Avg Depth (ft)	0.24				
Culv Nml Depth (ft)	1.81	Weir Flow Area (sq ft)	30.68				
Culv Crt Depth (ft)	2.67	Min El Weir Flow (ft)	585.91				

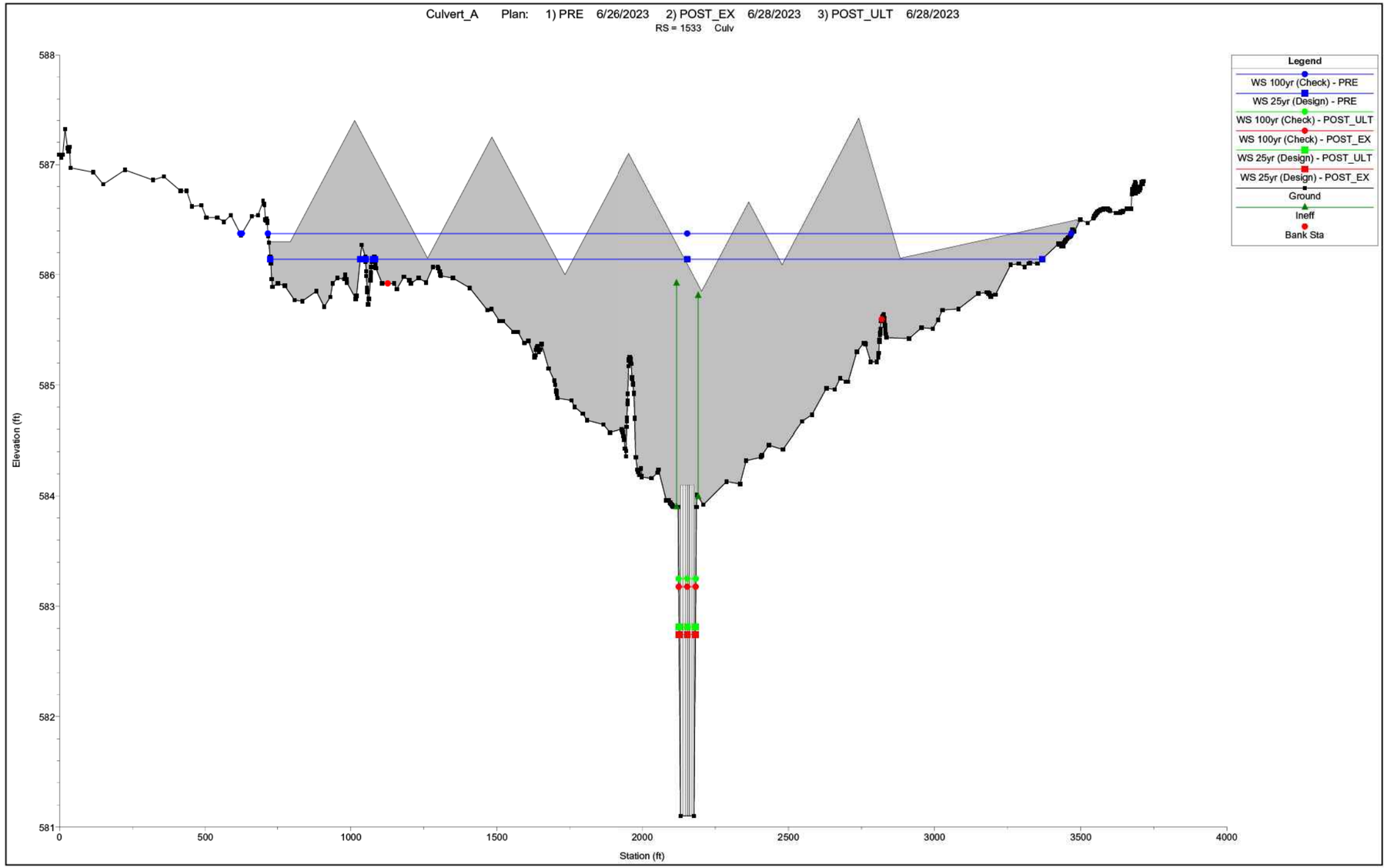
Plan: PRE	River 1	Reach 1	RS: 1533	Culv Group:	Culvert #1	Profile: 100yr (Check)	
Q Culv Group (cfs)	503.6	Culv Full Len (ft)	33				
# Barrels	3	Culv Vel US (ft/s)	11.19				
Q Barrel (cfs)	167.87	Culv Vel DS (ft/s)	11.19				
E.G. US. (ft)	586.42	Culv Inv El Up (ft)	581.4				
W.S. US. (ft)	586.37	Culv Inv El Dn (ft)	580.96				
E.G. DS (ft)	584.73	Culv Frctn Ls (ft)	0.44				
W.S. DS (ft)	583.58	Culv Exit Loss (ft)	1.18				
Delta EG (ft)	1.69	Culv Entr Loss (ft)	0.08				
Delta WS (ft)	2.79	Q Weir (cfs)	133				
E.G. IC (ft)	586.54	Weir Sta Lft (ft)	1932.2				
E.G. OC (ft)	586.42	Weir Sta Rgt (ft)	2432.08				
Culvert Control	Outlet	Weir Submerg	0				
Culv WS Inlet (ft)	584.4	Weir Max Depth (ft)	0.83				
Culv WS Outlet (ft)	583.96	Weir Avg Depth (ft)	0.23				
Culv Nml Depth (ft)	2.27	Weir Flow Area (sq ft)	85.17				
Culv Crt Depth (ft)	3	Min El Weir Flow (ft)	585.91				

HEC-RAS CULVERT OUTPUT DATA - ULTIMATE PROPOSED

Plan: POST_ULT	River 1	Reach 1	RS: 1533	Culv Group:	Culvert #1	Profile: 25yr (Design)	
Q Culv Group (cfs)	452.2	Culv Full Len (ft)					
# Barrels	6	Culv Vel US (ft/s)	6.29				
Q Barrel (cfs)	75.37	Culv Vel DS (ft/s)	5.62				
E.G. US. (ft)	583.55	Culv Inv El Up (ft)	581.1				
W.S. US. (ft)	583.31	Culv Inv El Dn (ft)	580.8				
E.G. DS (ft)	582.93	Culv Frctn Ls (ft)	0.22				
W.S. DS (ft)	582.71	Culv Exit Loss (ft)	0.27				
Delta EG (ft)	0.62	Culv Entr Loss (ft)	0.12				
Delta WS (ft)	0.6	Q Weir (cfs)					
E.G. IC (ft)	583.51	Weir Sta Lft (ft)					
E.G. OC (ft)	583.55	Weir Sta Rgt (ft)					
Culvert Control	Outlet	Weir Submerg					
Culv WS Inlet (ft)	582.81	Weir Max Depth (ft)					
Culv WS Outlet (ft)	582.71	Weir Avg Depth (ft)					
Culv Nml Depth (ft)	1.62	Weir Flow Area (sq ft)					
Culv Crt Depth (ft)	1.53	Min El Weir Flow (ft)	585.86				

Plan: POST_ULT	River 1	Reach 1	RS: 1533	Culv Group:	Culvert #1	Profile: 100yr (Check)	
Q Culv Group (cfs)	672	Culv Full Len (ft)					
# Barrels	6	Culv Vel US (ft/s)	7.44				
Q Barrel (cfs)	112	Culv Vel DS (ft/s)	7.27				
E.G. US. (ft)	584.28	Culv Inv El Up (ft)	581.1				
W.S. US. (ft)	584	Culv Inv El Dn (ft)	580.8				
E.G. DS (ft)	583.33	Culv Frctn Ls (ft)	0.29				
W.S. DS (ft)	583	Culv Exit Loss (ft)	0.49				
Delta EG (ft)	0.95	Culv Entr Loss (ft)	0.17				
Delta WS (ft)	1	Q Weir (cfs)					
E.G. IC (ft)	584.24	Weir Sta Lft (ft)					
E.G. OC (ft)	584.28	Weir Sta Rgt (ft)					
Culvert Control	Outlet	Weir Submerg					
Culv WS Inlet (ft)	583.25	Weir Max Depth (ft)					
Culv WS Outlet (ft)	583	Weir Avg Depth (ft)					
Culv Nml Depth (ft)	2.14	Weir Flow Area (sq ft)					
Culv Crt Depth (ft)	2	Min El Weir Flow (ft)	585.86				

PROPOSED CULVERT UPSTREAM HEC-RAS CROSS SECTION OUTPUT



EXPLANATION OF PLANS:

1. PRE: PRE-PROJECT (EXISTING) GEOMETRY WITH EXISTING FLOWS.
2. POST_EX: POST-PROJECT (PROPOSED) GEOMETRY WITH EXISTING FLOWS.
3. POST_ULT: POST-PROJECT (PROPOSED) GEOMETRY WITH ULTIMATE DEVELOPMENT CONDITION FLOWS. SEE ULTIMATE DRAINAGE AREA SHEET FOR COMPUTATION DETAILS.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
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REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
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HYDRAULIC DATA SHEET CULVERT A

SHEET 4 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	140

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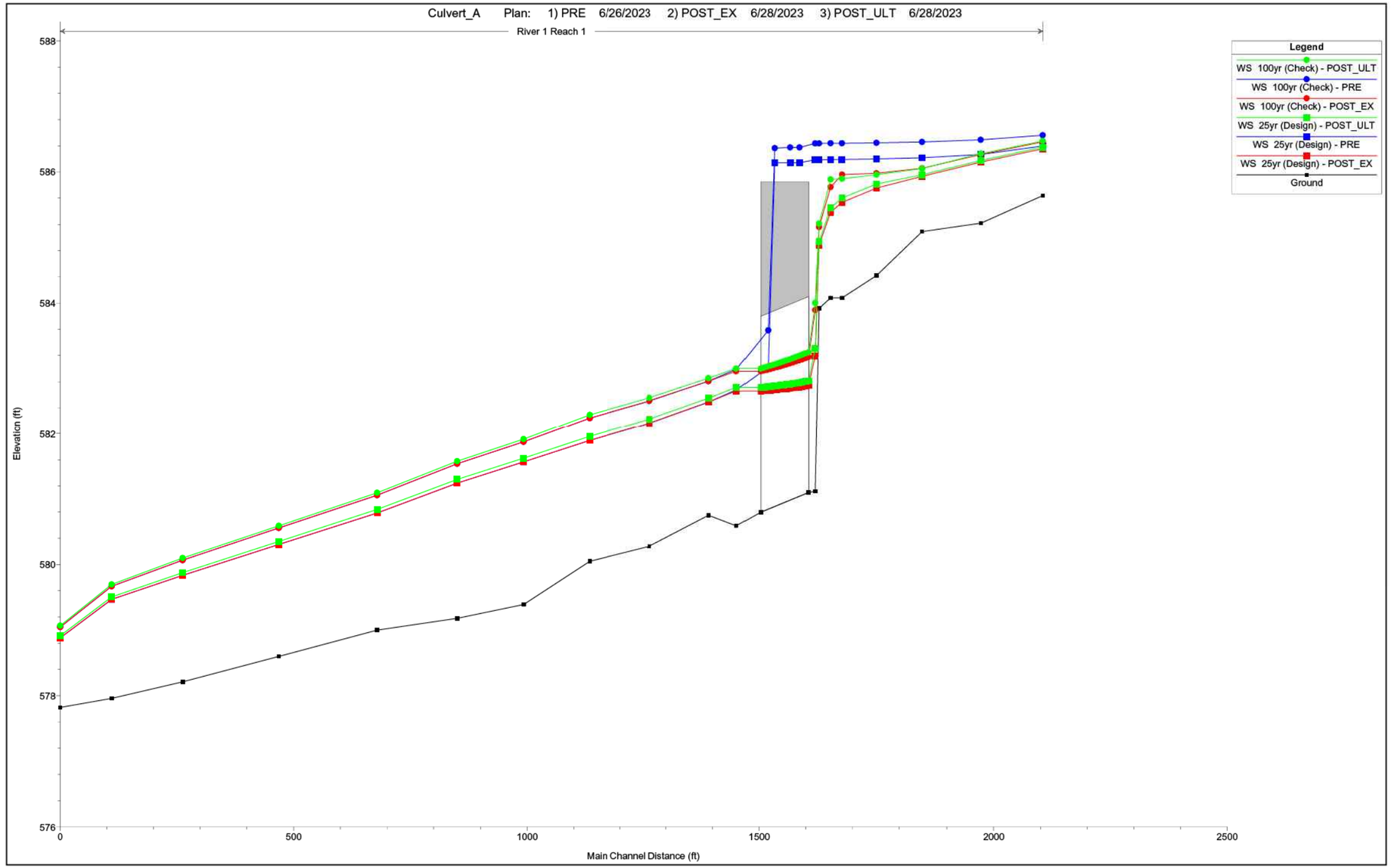
Plotted on: 7/27/2023

HEC-RAS PROFILE PLOT OUTPUT



DESIGN

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HYDRAULIC DATA SHEET
CULVERT A

SHEET 5 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	141

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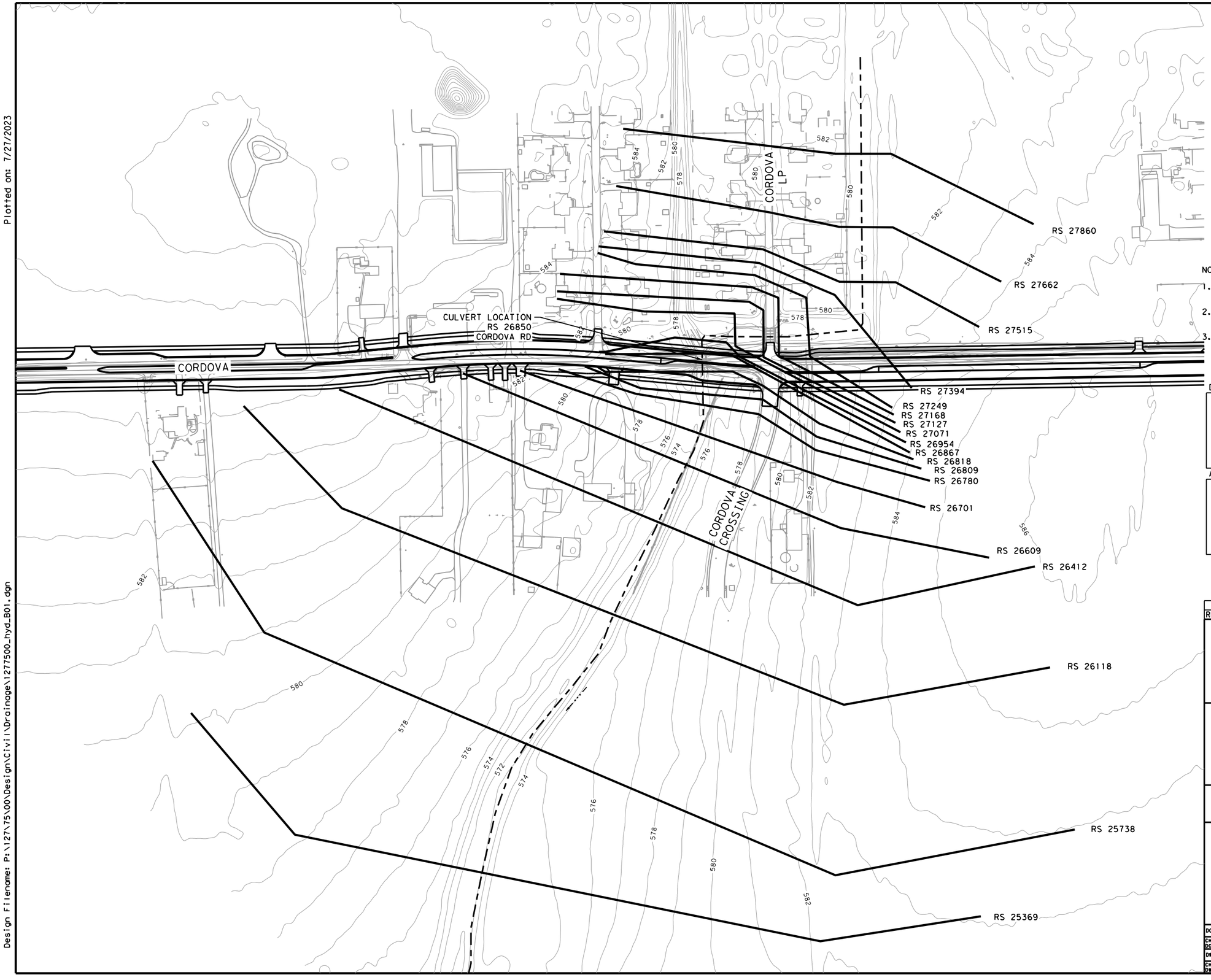

NOTES:

1. HEC-RAS VERSION 6.3.1 USED FOR HYDRAULIC CALCULATIONS.
2. 1-FT CONTOURS FROM 2017 STRATMAP CENTRAL TEXAS LIDAR DATASET.
3. FOR CULVERTS CROSSING CORDOVA RD, 25YR AEP STORM USED FOR DESIGN, PER CITY OF SEGUIN CRITERIA.

DESIGN

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HYDRAULIC DATA SHEET
CULVERT B

SHEET 1 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	142

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_B01.dgn

Plotted on: 7/27/2023

HEC-RAS OUTPUT

River Sta	Profile	Plan	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
27860	5yr	CEM	347.8	579.24	581		581.07	0.002198	2.33	179.94	341.56	0.39
27860	5yr	POST_EX	347.8	579.24	581		581.07	0.002199	2.33	179.92	341.53	0.39
27860	5yr	POST_ULT	387.9	579.24	581.08		581.15	0.002054	2.33	208.01	395.6	0.38
27860	10yr	CEM	509	579.24	581.31		581.37	0.001675	2.29	304.27	503.55	0.35
27860	10yr	POST_EX	509	579.24	581.27		581.34	0.001924	2.43	282.1	471.18	0.38
27860	10yr	POST_ULT	553.9	579.24	581.36		581.42	0.001693	2.35	329.27	529.47	0.35
27860	25yr (Design)	CEM	757.7	579.24	581.75		581.79	0.00098	2	569.79	710.47	0.28
27860	25yr (Design)	POST_EX	757.7	579.24	581.58		581.64	0.00176	2.48	456.15	628.12	0.36
27860	25yr (Design)	POST_ULT	806.6	579.24	581.62		581.69	0.001704	2.49	484.58	640.93	0.36
27860	50yr	CEM	967.5	579.24	582.15		582.17	0.000552	1.74	874.06	856.54	0.22
27860	50yr	POST_EX	967.5	579.24	581.79		581.85	0.001403	2.43	599.31	718.22	0.33
27860	50yr	POST_ULT	1017.6	579.24	581.88		581.93	0.001185	2.32	664.45	738.52	0.31
27860	100yr (Check)	CEM	1216.4	579.24	582.54		582.56	0.000355	1.57	1227.14	940.85	0.18
27860	100yr (Check)	POST_EX	1216.4	579.24	582.17		582.21	0.000853	2.17	892.92	863.74	0.27
27860	100yr (Check)	POST_ULT	1266.1	579.24	582.24		582.28	0.000778	2.12	952.2	883.31	0.26
27662	5yr	CEM	347.8	578.91	580.55		580.63	0.002222	2.54	160.66	219.47	0.4
27662	5yr	POST_EX	347.8	578.91	580.55		580.63	0.002222	2.54	160.65	219.46	0.4
27662	5yr	POST_ULT	387.9	578.91	580.63		580.72	0.002317	2.57	176.71	263.29	0.41
27662	10yr	CEM	509	578.91	580.91		581	0.00212	2.77	272.24	440.69	0.4
27662	10yr	POST_EX	509	578.91	580.84		580.93	0.00221	2.75	241.61	414	0.41
27662	10yr	POST_ULT	553.9	578.91	580.93		581.03	0.002371	2.95	279	442.03	0.43
27662	25yr (Design)	CEM	757.7	578.91	581.61		581.64	0.000599	1.76	643.83	637.03	0.22
27662	25yr (Design)	POST_EX	757.7	578.91	581.24		581.31	0.001624	2.66	426.84	526.15	0.36
27662	25yr (Design)	POST_ULT	806.6	578.91	581.3		581.37	0.00156	2.65	458.4	547.22	0.35
27662	50yr	CEM	967.5	578.91	582.06		582.09	0.000347	1.55	965.5	782.99	0.18
27662	50yr	POST_EX	967.5	578.91	581.55		581.6	0.001151	2.39	604.36	615.24	0.31
27662	50yr	POST_ULT	1017.6	578.91	581.68		581.73	0.000894	2.21	692.59	661.79	0.27
27662	100yr (Check)	CEM	1216.4	578.91	582.48		582.5	0.000246	1.45	1310.09	860.39	0.15
27662	100yr (Check)	POST_EX	1216.4	578.91	582.03		582.07	0.000586	1.99	941.52	775.93	0.23
27662	100yr (Check)	POST_ULT	1266.1	578.91	582.11		582.15	0.000538	1.95	1003.8	795.89	0.22
27515	5yr	CEM	347.8	578.55	580.05		580.19	0.004091	3.23	125.33	196.82	0.53
27515	5yr	POST_EX	347.8	578.55	580.05		580.19	0.004113	3.24	125.09	196.71	0.54
27515	5yr	POST_ULT	387.9	578.55	580.12		580.27	0.004089	3.34	135.05	200.26	0.54
27515	10yr	CEM	509	578.55	580.56		580.68	0.002214	2.95	201.49	235.48	0.41
27515	10yr	POST_EX	509	578.55	580.32		580.49	0.003946	3.6	164.81	212.75	0.54
27515	10yr	POST_ULT	553.9	578.55	580.41		580.58	0.003728	3.63	178.2	219.35	0.53
27515	25yr (Design)	CEM	757.7	578.55	581.52		581.55	0.00058	1.88	624.59	573.83	0.22
27515	25yr (Design)	POST_EX	757.7	578.55	580.86		581	0.002677	3.39	283.12	395.31	0.46
27515	25yr (Design)	POST_ULT	806.6	578.55	580.94		581.07	0.002476	3.34	317.97	452.22	0.45
27515	50yr	CEM	967.5	578.55	582.01		582.04	0.000329	1.62	943.44	708	0.17
27515	50yr	POST_EX	967.5	578.55	581.3		581.4	0.001654	3	503.64	554.98	0.37
27515	50yr	POST_ULT	1017.6	578.55	581.53		581.59	0.001021	2.5	630.38	574.51	0.3
27515	100yr (Check)	CEM	1216.4	578.55	582.44		582.46	0.000229	1.49	1259.86	766.66	0.15
27515	100yr (Check)	POST_EX	1216.4	578.55	581.94		581.98	0.000609	2.16	891.38	695.72	0.24
27515	100yr (Check)	POST_ULT	1266.1	578.55	582.03		582.07	0.000547	2.09	953.77	711.04	0.23
27394	5yr	CEM	347.8	578.21	579.62		579.73	0.003379	2.92	138.89	215.17	0.51
27394	5yr	POST_EX	347.8	578.21	579.6		579.72	0.003644	2.99	135.3	213.74	0.53
27394	5yr	POST_ULT	387.9	578.21	579.7		579.82	0.00319	2.96	152.89	220.68	0.5
27394	10yr	CEM	509	578.21	580.44		580.5	0.000895	2.04	295.73	287.38	0.28
27394	10yr	POST_EX	509	578.21	579.99		580.1	0.002493	2.92	203.29	242.17	0.45
27394	10yr	POST_ULT	553.9	578.21	580.13		580.23	0.002079	2.81	229.98	252.17	0.42
27394	25yr (Design)	CEM	757.7	578.21	581.48		581.5	0.000286	1.46	812.87	686.84	0.17
27394	25yr (Design)	POST_EX	757.7	578.21	580.67		580.76	0.001383	2.69	376.18	411.73	0.36
27394	25yr (Design)	POST_ULT	806.6	578.21	580.76		580.85	0.00132	2.69	415.56	451.14	0.35
27394	50yr	CEM	967.5	578.21	581.99		582	0.00017	1.22	1171.04	710.06	0.13
27394	50yr	POST_EX	967.5	578.21	581.2		581.25	0.000742	2.26	638.64	587.45	0.27
27394	50yr	POST_ULT	1017.6	578.21	581.45		581.49	0.000542	2.01	795.41	684.94	0.23
27394	100yr (Check)	CEM	1216.4	578.21	582.43		582.44	0.000136	1.19	1490.29	776.3	0.12
27394	100yr (Check)	POST_EX	1216.4	578.21	581.9		581.92	0.000316	1.65	1105.04	705.19	0.18
27394	100yr (Check)	POST_ULT	1266.1	578.21	581.99		582.01	0.000291	1.6	1170.47	710.02	0.17
27249	5yr	CEM	347.8	576.24	579.29		579.4	0.001653	2.71	148.69	183.56	0.38
27249	5yr	POST_EX	347.8	576.24	579.21		579.33	0.002022	2.91	137.28	179.87	0.42
27249	5yr	POST_ULT	387.9	576.24	579.38		579.49	0.001698	2.82	160.35	187.09	0.39
27249	10yr	CEM	509	576.24	580.34		580.39	0.000564	2	347.96	387.21	0.24
27249	10yr	POST_EX	509	576.24	579.71		579.82	0.00151	2.87	209.72	206.53	0.37
27249	10yr	POST_ULT	553.9	576.24	579.89		579.99	0.001346	2.82	237.96	229.84	0.36
27249	25yr (Design)	CEM	757.7	576.24	581.45		581.46	0.00019	1.3	859.56	549.24	0.14
27249	25yr (Design)	POST_EX	757.7	576.24	580.49		580.58	0.001035	2.75	401.33	408.05	0.32
27249	25yr (Design)	POST_ULT	806.6	576.24	580.6		580.69	0.000936	2.64	447.96	417.64	0.31
27249	50yr	CEM	967.5	576.24	581.97		581.98	0.000134	1.22	1206.37	822.78	0.12
27249	50yr	POST_EX	967.5	576.24	581.11		581.16	0.000553	2.09	682.97	506.43	0.24
27249	50yr	POST_ULT	1017.6	576.24	581.39		581.43	0.000376	1.81	829.74	543.49	0.2
27249	100yr (Check)	CEM	1216.4	576.24	582.41		582.42	0.000118	1.25	1590.72	932.04	0.12
27249	100yr (Check)	POST_EX	1216.4	576.24	581.86		581.88	0.000252	1.64	1116.11	780.49	0.17
27249	100yr (Check)	POST_ULT	1266.1	576.24	581.95		581.98	0.000235	1.62	1191.95	817.21	0.16
27168	5yr	CEM	347.8	576.78	578.86	578.23	579.16	0.00344	4.33	80.35	161.67	0.56
27168	5yr	POST_EX	347.8	576.78	578.62	578.23	579	0.00533	4.97	69.99	144.75	0.68
27168	5yr	POST_ULT	387.9	576.78	578.81	578.33	579.19	0.004694	4.97	78.04	155.39	0.65
27168	10yr	CEM	509	576.78	580.31	578.62	580.35	0.000448	1.84	336.18	298.16	0.21
27168	10yr	POST_EX	509	576.78	579.58	578.62	579.69	0.00175	2.93	208.66	215.6	0.39
27168	10yr	POST_ULT	553.9	576.78	579.78	578.72	579.88	0.001383	2.74	242.7	225.39	0.35
27168	25yr (Design)	CEM	757.7	576.78	581.43	579.13	581.45	0.000169	1.3	867.86	650.08	0.13
27168	25yr (Design)	POST_EX	757.7	576.78	580.42	579.13	580.49	0.000955	2.47	367.9	344.36	0.3
27168	25yr (Design)	POST_ULT	806.6	576.78	580.53	579.22	580.61	0.000904	2.43	410.09	378.83	0.29
27168	50yr	CEM	967.5	576.78	581.96	579.43	581.97	0.000129	1.27	1252.18	810.18	0.12
27168	50yr	POST_EX	967.5	576.78	581.07	579.43	581.12	0.000517	2.09	633.77	463.74	0.23
27168	50yr	POST_ULT	1017.6	576.78	581.36	579.46	581.4	0.000355	1.86	775.55	506.98	0.19
27168	100yr (Check)	CEM	1216.4	576.78	582.4	579.63	582.41	0.000112	1.28	1639.92	943.22	0.11
27168	100yr (Check)	POST_EX	1216.4	576.78	581.83	579.63	581.86	0.000244	1.71	1154.02	779.18	0.16
27168	100yr (Check)	POST_ULT	1266.1	576.78	581.93	579.67	581.96	0.00023	1.69	1230.37	804.93	0.16
27148			Culvert									

River Sta	Profile	Plan	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
27127	5yr	CEM	347.8	576.24	578.84	577.78	579.05	0.001841	3.73	93.24	131.44	0.43
27127	5yr	POST_EX	347.8	576.24	578.62	577.78	578.88	0.002531	4.11	84.67	120.94	0.49
27127	5yr	POST_ULT	387.9	576.24	578.78	577.88	579.06	0.002493	4.27	90.9	128.86	0.5
27127	10yr	CEM	509	576.24	580.22	578.18	580.29	0.000519	2.12	259.23	220.47	0.23
27127	10yr	POST_EX	509	576.24	579.31	578.18	579.48	0.002354	3.36	157.09	160.59	0.46
27127	10yr	POST_ULT	553.9	576.24	579.48	578.29	579.64	0.001997	3.3	174.7	167.91	0.43
27127	25yr (Design)	CEM	757.7	576.24	581.42	578.73	581.44	0.000176	1.51	781.35	670.86	0.14
27127	25yr (Design)	POST_EX	757.7	576.24	580.16	578.73	580.31	0.001266	3.25	250.93	214.82	0.36
27127	25yr (Design)	POST_ULT	806.6	576.24	580.33	578.84	580.48	0.001125	3.2	272.47	233.02	0.34
27127	50yr	CEM	967.5	576.24	581.95	579.13	581.97	0.000126	1.4	1175.5	834.34	0.12
27127	50yr	POST_EX	967.5	576.24	581.01	579.13	581.1	0.000558	2.48	528.44	430.2	0.25
27127	50yr	POST_ULT	1017.6	576.24	581.32	579.22	581.38	0.000368	2.14	721.42	636.22	0.2
27127	100yr (Check)	CEM	1216.4	576.24	582.38	579.44	582.4	0.000108	1.39	1567.27	928.24	0.12
27127	100yr (Check)	POST_EX	1216.4	576.24	581.81	579.43	581.85	0.000244	1.91	1067.67	780.57	0.17
27127	100yr (Check)	POST_ULT	1266.1	576.24	581.91	579.48	581.95	0.000227	1.87	1148.32	820.65	0.16
27071	5yr	CEM	347.8	575.84	578.82	577.38	578.89	0.000857	2.1	165.35	138.71	0.28
27071	5yr	POST_EX	347.8	575.84	578.57	577.38	578.66	0.001317	2.44	142.53	132.02	0.34
27071	5yr	POST_ULT	387.9	575.84	578.75	577.48	578.84	0.001199	2.45	158.53	136.48	0.33
27071	10yr	CEM	509	575.84	580.21	577.85	580.25	0.000262	1.64	328.4	226.55	0.17
27071	10yr	POST_EX	509	575.84	579.24	577.85	579.33	0.000924	2.47	207.15	158.08	0.3
27071	10yr	POST_ULT	553.9	575.84	579.42	577.97	579.51	0.000839	2.47	226.76	168.85	0.29
27071	25yr (Design)	CEM	757.7	575.84	581.41	578.26	581.43	0.000126	1.4	866.73	738.76	0.12
27071	25yr (Design)	POST_EX	757.7	575.84	580.12	578.26	580.22	0.000643	2.53	315.49	215.97	0.26
27071	25yr (Design)	POST_ULT	806.6	575.84	580.3	578.32	580.4	0.000595	2.51	341.86	238.43	0.26
27071	50yr	CEM	967.5	575.84	581.94	578.51	581.96	0.000094	1.31	1285.23	836.22	0.11
27071	50yr	POST_EX	967.5	575.84	580.98	578.51	581.06	0.000387	2.27	590.71	580.51	0.21
27071	50yr	POST_ULT	1017.6	575.84	581.3	578.56	581.35	0.000264	1.99	793.07	701.87	0.18
27071	100yr (Check)	CEM	1216.4	575.84	582.38	578.79	582.39	0.000083	1.31	1666.67	900.39	0.1
27071	100yr (Check)	POST_EX	1216.4	575.84	581.8	578.79	581.83	0.000182	1.79	1169.22	813.22	0.15
27071	100yr (Check)	POST_ULT	1266.1	575.84	581.9	578.85	581.93	0.00017	1.76	1252.99	830.04	0.15
26954	5yr	CEM	730.9	574.37	578.78	576.64	578.83	0.000361	1.73	423.89	176.38	0.19
26954	5yr	POST_EX	730.9	574.37	577.23	577.23	578.04	0.011114	7.19	101.6	126.59	1
26954	5yr	POST_ULT	814.3	574.37	577.35	577.35	578.22	0.010894	7.47	109.05	128.27	1
26954	10yr	CEM	1064	574.37	580.2	576.96	580.23	0.000156	1.5	805.72	345.78	0.14
26954	10yr	POST_EX	1064	574.37	577.69	577.69	578.73	0.010282	8.17	130.28	135.47	1
26954	10yr	POST_ULT	1157.4	574.37	577.81	577.81	578.91	0.010165	8.42	137.49	138.05	1
26954	25yr (Design)	CEM	1574.2	574.37	581.39	577.35	581.42	0.000109	1.5	1351.29	515.72	0.12
26954	25yr (Design)	POST_EX	1574.2	574.37	578.6	578.29	579.7	0.006737	8.41	187.07	163.42	0.86
26954	25yr (Design)	POST_ULT	1675.1	574.37	578.88	578.42	579.92	0.005657	8.19	204.63	183.02	0.8
26954	50yr	CEM	2002.6	574.37	581.91	577.68	581.94	0.000113	1.64	1706.14	729.13	0.12
26954	50yr	POST_EX	2002.6	574.37	579.74	578.76	580.67	0.003694	7.74	258.84	313.26	0.67
26954	50yr	POST_ULT	2105.5	574.37	580.19	578.89	581.03	0.002889	7.33	287.15	345.58	0.6
26954	100yr (Check)	CEM	2508.9	574.37	582.34	578.01	582.38	0.000124	1.8	2030.45	785.96	0.13
26954	100yr (Check)	POST_EX	2508.9	574.37	581.75	579.3	581.81	0.000206	2.17	1590.02	707.28	0.17
26954	100yr (Check)	POST_ULT	2610.4	574.37	581.84	579.4	581.91	0.000204	2.18	1660.66	720.65	0.16
26867	5yr	CEM	730.9	573.97	577.84	576.86	578.6	0.001369	6.96	104.99	34.67	0.64
26867	10yr	CEM	1064	573.97	579.06	577.65	579.96	0.001152	7.59	140.2	43.73	0.61
26867	25yr (Design)	CEM	1574.2	573.97	580.55	578.74	581.22	0.000996	6.89	343.79	406.58	0.57
26867	50yr	CEM	2002.6	573.97	580.59	580.58	581.63	0.001547	8.64	354	415.38	0.71
26867	100yr (Check)	CEM	2508.9	573.97	581.12	581.12	582.09	0.001375	8.76	516.39	474.01	0.68
26850			Culvert									
26818	5yr	CEM	730.9	572.31	576.46	575.45	576.95	0.003143	5.65	129.35	54.45	0.58
26818	10yr	CEM	1064	572.31	576.67	576.1	577.58	0.005303	7.68	138.51	57.89	0.76
26818	25yr (Design)	CEM	1574.2	572.31	576.93	576.93	578.64	0.008933	10.51	149.84	61.88	1
26818	50yr	CEM	2002.6	572.31	577.51	577.51	579.54	0.008566	11.42	175.31	86.36	1.01
26818	100yr (Check)	CEM	2508.9	572.31	578.18	578.18	580.52	0.008042	12.27	204.53	123.75	1
26809	5yr	CEM	730.9	572.4	576.54		576.65	0.001231	2.79	309.89	232.1	0.34
26809	5yr	POST_EX	730.9	574.43	576.26	576.26	577.02	0.011335	7.02	104.07	214.82	1
26809	5yr	POST_ULT	814.3	574.43	576.36	576.36	577.19	0.011269	7.32	111.23	220.71	1.01
26809	10yr	CEM	1064	572.4	576.92		577.05	0.001315	3.23	401.48	257.95	0.37
26809	10yr	POST_EX	1064	574.43	576.69	576.69	577.68	0.010494	7.97	133.42	241.8	1
26809	10yr	POST_ULT	1157.4	574.43	576.81	576.81	577.85	0.01021	8.18	141.49	248.8	1
26809	25yr (Design)	CEM	1574.2	572.4	577.38		577.55	0.00138	3.71	528.15	286.13	0.39
26809	25yr (Design)	POST_EX	1574.2	574.43	577.28	577.28	578.56	0.009582	9.08	173.43	281.23	1
26809	25yr (Design)	POST_ULT	1675.1	574.43	577.39	577.39	578.72	0.009436	9.26	180.85	286.89	1
26809	50yr	CEM	2002.6	572.4	577.71		577.9	0.001411	4.03	623.53	301.21	0.4
26809	50yr	POST_EX	2002.6	574.43	577.72	577.72	579.23	0.00913	9.85	203.3	301.89	1
26809	50yr	POST_ULT	2105.5	574.43	577.84	577.84	579.38	0.008901	9.97	211.11	311.04	1
26809	100yr (Check)	CEM	2508.9	572.4	578.04		578.27	0.001474	4.4	729.21	333.49	0.41
26809	100yr (Check)	POST_EX	2508.9	574.43	578.22	578.22	579.96	0.008576	10.58	237.16	356.67	1
26809	100yr (Check)	POST_ULT	2610.4	574.43	578.31	578.31	580.1	0.00851	10.72	243.43	367.07	1
26780	5yr	CEM	730.9	574.13	576.47		576.61	0.001592	3.14	283.64	234.07	0.39
26780	5yr	POST_EX	730.9	574.13	576.47		576.61	0.001591	3.14	283.67	234.08	0.39
26780	5yr	POST_ULT	814.3	574.13	576.58		576.71	0.001593	3.24	307.83	240.7	0.39
26780	10yr	CEM	1064	574.13	576.85		577.01	0.0016	3.53	376.42	257.65	0.4
26780	10yr	POST_EX	1064	574.13	576.85		577.01	0.0016	3.53	376.42	257.65	0.4
26780	10yr	POST_ULT	1157.4	574.13	576.95		577.11	0.001587	3.61	401.7	262.66	0.4
26780	25yr (Design)	CEM	1574.2	574.13	577.32		577.51	0.001587	3.96	502.51	281.65	0.41
26780	25yr (Design)	POST_EX	1574.2	574.13	577.32		577.51	0.001587	3.96	502.51	281.65	0.41
26780	25yr (Design)	POST_ULT	1675.1	574.13	577.4		577.6	0.001589	4.04	525.44	286.06	0.42
26780	50yr	CEM	2002.6	574.13	577.64		577.86	0.001601	4.27	596.73	300.15	0.42
26780	50yr	POST_EX	2002.6	574.13	577.64		577.86	0.001601	4.27	596.74	300.16	0.42
26780	50yr	POST_ULT	2105.5	574.13	577.71		577.94	0.001607	4.34	618.35	305.11	0.43
26780	100yr (Check)	CEM	2508.9	574.13	577.97		578.22	0.001626	4.6	700.45	322.6	0.43
26780	100yr (Check)	POST_EX	2508.9	574.13	577.97		578.22	0.001627	4.6	700.43	322.59	0.43
26780	100yr (Check)	POST_ULT	2610.4	574.13	578.04		578.29	0.001623	4.65	721.32	325.53	0.43

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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THE STATE OF TEXAS GUADALUPE COUNTY

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HYDRAULIC DATA SHEET
CULVERT B

SHEET 2 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	143

Design Filename: P:\127\75\00\Design\Civil\Drainage\127500_hyd_B02.dgn

26701	5yr	CEM	730.9	573.88	576.39		576.48	0.001214	2.58	312.54	203.71	0.34
26701	5yr	POST_EX	730.9	573.88	576.39		576.48	0.001214	2.58	312.57	203.71	0.34
26701	5yr	POST_ULT	814.3	573.88	576.49		576.59	0.001251	2.69	332.86	205.9	0.34
26701	10yr	CEM	1064	573.88	576.76		576.88	0.001379	2.99	388.8	214.65	0.37
26701	10yr	POST_EX	1064	573.88	576.76		576.88	0.00138	2.99	388.79	214.64	0.37
26701	10yr	POST_ULT	1157.4	573.88	576.85		576.98	0.001444	3.07	409.21	220.7	0.37
26701	25yr (Design)	CEM	1574.2	573.88	577.21		577.38	0.001509	3.48	492.58	240.62	0.39
26701	25yr (Design)	POST_EX	1574.2	573.88	577.21		577.38	0.001508	3.48	492.6	240.62	0.39
26701	25yr (Design)	POST_ULT	1675.1	573.88	577.29		577.47	0.001522	3.57	511.62	245.92	0.4
26701	50yr	CEM	2002.6	573.88	577.53		577.73	0.001568	3.84	575.8	302.92	0.41
26701	50yr	POST_EX	2002.6	573.88	577.53		577.73	0.001567	3.84	575.84	302.95	0.41
26701	50yr	POST_ULT	2105.5	573.88	577.6		577.81	0.001575	3.92	597.2	305.45	0.41
26701	100yr (Check)	CEM	2508.9	573.88	577.85		578.09	0.001597	4.18	676.75	311.43	0.42
26701	100yr (Check)	POST_EX	2508.9	573.88	577.85		578.09	0.001597	4.18	676.73	311.43	0.42
26701	100yr (Check)	POST_ULT	2610.4	573.88	577.92		578.16	0.001597	4.24	696.62	312.18	0.42
26609	5yr	CEM	730.9	573.66	576.31		576.38	0.000949	2.19	350.98	223.44	0.29
26609	5yr	POST_EX	730.9	573.66	576.31		576.38	0.000949	2.19	351.01	223.45	0.29
26609	5yr	POST_ULT	814.3	573.66	576.41		576.48	0.000973	2.3	373.3	234.15	0.3
26609	10yr	CEM	1064	573.66	576.67		576.77	0.001033	2.59	435.4	243.39	0.32
26609	10yr	POST_EX	1064	573.66	576.67		576.76	0.001033	2.59	435.39	243.38	0.32
26609	10yr	POST_ULT	1157.4	573.66	576.76		576.86	0.001051	2.69	457.53	247.26	0.32
26609	25yr (Design)	CEM	1574.2	573.66	577.12		577.25	0.001126	3.08	548.45	261.98	0.34
26609	25yr (Design)	POST_EX	1574.2	573.66	577.12		577.25	0.001125	3.08	548.47	261.98	0.34
26609	25yr (Design)	POST_ULT	1675.1	573.66	577.19		577.34	0.001142	3.17	568.97	265.33	0.35
26609	50yr	CEM	2002.6	573.66	577.43		577.6	0.001194	3.43	631.97	273.87	0.36
26609	50yr	POST_EX	2002.6	573.66	577.43		577.6	0.001193	3.43	632.01	273.89	0.36
26609	50yr	POST_ULT	2105.5	573.66	577.5		577.67	0.001208	3.5	651.24	281.28	0.36
26609	100yr (Check)	CEM	2508.9	573.66	577.75		577.95	0.001264	3.79	726.8	321.38	0.38
26609	100yr (Check)	POST_EX	2508.9	573.66	577.75		577.95	0.001264	3.79	726.82	321.39	0.38
26609	100yr (Check)	POST_ULT	2610.4	573.66	577.81		578.02	0.001286	3.87	746.39	327.24	0.38
26412	5yr	CEM	730.9	572.44	576.05		576.15	0.001865	2.81	304.35	227.43	0.36
26412	5yr	POST_EX	730.9	572.44	576.05		576.15	0.001865	2.81	304.31	227.44	0.36
26412	5yr	POST_ULT	814.3	572.44	576.14		576.25	0.001896	2.92	325.47	235.12	0.36
26412	10yr	CEM	1064	572.44	576.39		576.52	0.001983	3.23	385.75	255.68	0.38
26412	10yr	POST_EX	1064	572.44	576.39		576.52	0.001984	3.23	385.68	255.67	0.38
26412	10yr	POST_ULT	1157.4	572.44	576.48		576.62	0.002	3.32	408.22	262.92	0.38
26412	25yr (Design)	CEM	1574.2	572.44	576.82		576.99	0.002078	3.71	503.38	291.55	0.4
26412	25yr (Design)	POST_EX	1574.2	572.44	576.82		576.99	0.002079	3.71	503.33	291.55	0.4
26412	25yr (Design)	POST_ULT	1675.1	572.44	576.89		577.07	0.002098	3.8	525.34	297.79	0.4
26412	50yr	CEM	2002.6	572.44	577.12		577.32	0.002158	4.06	594.31	316.56	0.41
26412	50yr	POST_EX	2002.6	572.44	577.12		577.32	0.002158	4.06	594.28	316.57	0.41
26412	50yr	POST_ULT	2105.5	572.44	577.19		577.4	0.002174	4.13	615.61	322.16	0.42
26412	100yr (Check)	CEM	2508.9	572.44	577.43		577.67	0.002228	4.4	697.41	342.73	0.43
26412	100yr (Check)	POST_EX	2508.9	572.44	577.43		577.67	0.002229	4.4	697.36	342.73	0.43
26412	100yr (Check)	POST_ULT	2610.4	572.44	577.49		577.73	0.002241	4.47	717.55	347.62	0.43
26118	5yr	CEM	730.9	573.82	575.38		575.49	0.003138	2.75	273.88	235.84	0.43
26118	5yr	POST_EX	730.9	573.82	575.38		575.49	0.003138	2.75	273.88	235.84	0.43
26118	5yr	POST_ULT	814.3	573.82	575.48		575.6	0.00305	2.83	296.41	239.52	0.43
26118	10yr	CEM	1064	573.82	575.73		575.87	0.002883	3.09	356.98	245.82	0.43
26118	10yr	POST_EX	1064	573.82	575.73		575.87	0.002883	3.09	356.98	245.82	0.43
26118	10yr	POST_ULT	1157.4	573.82	575.81		575.96	0.002849	3.18	377.88	247.94	0.43
26118	25yr (Design)	CEM	1574.2	573.82	576.12		576.31	0.002884	3.59	457.25	264.29	0.45
26118	25yr (Design)	POST_EX	1574.2	573.82	576.12		576.31	0.002884	3.59	457.25	264.29	0.45
26118	25yr (Design)	POST_ULT	1675.1	573.82	576.19		576.39	0.002897	3.68	475.35	270.76	0.45
26118	50yr	CEM	2002.6	573.82	576.4		576.63	0.002941	3.95	533.07	290.51	0.46
26118	50yr	POST_EX	2002.6	573.82	576.4		576.63	0.002941	3.95	533.07	290.51	0.46
26118	50yr	POST_ULT	2105.5	573.82	576.46		576.69	0.002954	4.03	550.94	296.37	0.47
26118	100yr (Check)	CEM	2508.9	573.82	576.68		576.95	0.002999	4.32	620.16	317.94	0.48
26118	100yr (Check)	POST_EX	2508.9	573.82	576.68		576.95	0.002999	4.32	620.16	317.94	0.48
26118	100yr (Check)	POST_ULT	2610.4	573.82	576.74		577.01	0.003009	4.39	637.35	323.09	0.48
25738	5yr	CEM	730.9	572	574.55	573.64	574.61	0.001438	1.95	377.2	293.85	0.3
25738	5yr	POST_EX	730.9	572	574.55	573.64	574.61	0.001438	1.95	377.2	293.85	0.3
25738	5yr	POST_ULT	814.3	572	574.64	573.71	574.71	0.001482	2.04	404.04	303.95	0.3
25738	10yr	CEM	1064	572	574.88	573.85	574.96	0.001596	2.25	479.78	331.06	0.32
25738	10yr	POST_EX	1064	572	574.88	573.85	574.96	0.001596	2.25	479.78	331.06	0.32
25738	10yr	POST_ULT	1157.4	572	574.96	573.9	575.04	0.001631	2.32	506.73	340.16	0.33
25738	25yr (Design)	CEM	1574.2	572	575.25	574.14	575.36	0.001737	2.64	608.34	356.14	0.34
25738	25yr (Design)	POST_EX	1574.2	572	575.25	574.14	575.36	0.001737	2.64	608.34	356.14	0.34
25738	25yr (Design)	POST_ULT	1675.1	572	575.31	574.19	575.43	0.001754	2.71	630.52	357.79	0.35
25738	50yr	CEM	2002.6	572	575.5	574.35	575.63	0.001808	2.93	698.67	362.84	0.36
25738	50yr	POST_EX	2002.6	572	575.5	574.35	575.63	0.001808	2.93	698.67	362.84	0.36
25738	50yr	POST_ULT	2105.5	572	575.56	574.4	575.7	0.001825	3	719.02	364.33	0.36
25738	100yr (Check)	CEM	2508.9	572	575.77	574.59	575.93	0.001872	3.24	796.65	369.97	0.37
25738	100yr (Check)	POST_EX	2508.9	572	575.77	574.59	575.93	0.001872	3.24	796.65	369.97	0.37
25738	100yr (Check)	POST_ULT	2610.4	572	575.82	574.63	575.99	0.001884	3.29	815.24	371.31	0.38
25369	5yr	CEM	730.9	571.95	572.93	572.93	573.24	0.021694	4.46	164	272.45	1.01
25369	5yr	POST_EX	730.9	571.95	572.93	572.93	573.24	0.021694	4.46	164	272.45	1.01
25369	5yr	POST_ULT	814.3	571.95	572.98	572.98	573.31	0.02124	4.59	177.22	276.81	1.01
25369	10yr	CEM	1064	571.95	573.11	573.11	573.49	0.020132	4.94	215.19	289.22	1.01
25369	10yr	POST_EX	1064	571.95	573.11	573.11	573.49	0.020132	4.94	215.19	289.22	1.01
25369	10yr	POST_ULT	1157.4	571.95	573.16	573.16	573.56	0.01983	5.06	228.69	293.44	1.01
25369	25yr (Design)	CEM	1574.2	571.95	573.35	573.35	573.82	0.018712	5.49	286.53	311.2	1.01
25369	25yr (Design)	POST_EX	1574.2	571.95	573.35	573.35	573.82	0.018712	5.49	286.53	311.2	1.01
25369	25yr (Design)	POST_ULT	1675.1	571.95	573.39	573.39	573.88	0.018533	5.59	299.7	314.91	1.01
25369	50yr	CEM	2002.6	571.95	573.52	573.52	574.06	0.017917	5.91	339.14	320.09	1.01
25369	50yr	POST_EX	2002.6	571.95	573.52	573.52	574.06	0.017917	5.91	339.14	320.09	1.01
25369	50yr	POST_ULT	2105.5	571.95	573.55	573.55	574.11	0.017712	5.99	351.23	321.41	1.01
25369	100yr (Check)	CEM	2508.9	571.95	573.7	573.7	574.32	0.01698	6.31	397.4	326.26	1.01
25369	100yr (Check)	POST_EX	2508.9	571.95	573.7	573.7	574.32	0.01698	6.31	397.4	326.26	1.01
25369	100yr (Check)	POST_ULT	2610.4	571.95	573.73	573.73	574.37	0.016913	6.4	407.97	327.35	1.01

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\127500_hyd_B02.dgn

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET CULVERT B

SHEET 3 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	144

Plotted on: 7/27/2023

HEC-RAS CULVERT OUTPUT DATA - EXISTING

Plan: CEM Guadalupe River	Tributary 4a RS: 26850	Culv Group: Culvert #1	Profile: 25yr (Design)
Q Culv Group (cfs)	1310.42	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	11.75
Q Barrel (cfs)	1310.42	Culv Vel DS (ft/s)	14.66
E.G. US. (ft)	581.21	Culv Inv El Up (ft)	573.95
W.S. US. (ft)	580.55	Culv Inv El Dn (ft)	573.5
E.G. DS (ft)	578.64	Culv Frctn Ls (ft)	0.11
W.S. DS (ft)	576.93	Culv Exit Loss (ft)	1.64
Delta EG (ft)	2.57	Culv Entr Loss (ft)	0.82
Delta WS (ft)	3.63	Q Weir (cfs)	263.78
E.G. IC (ft)	581.21	Weir Sta Lft (ft)	399.24
E.G. OC (ft)	580.81	Weir Sta Rgt (ft)	816.58
Culvert Control	Inlet	Weir Submerg	0
Culv WS Inlet (ft)	578.24	Weir Max Depth (ft)	0.89
Culv WS Outlet (ft)	576.94	Weir Avg Depth (ft)	0.53
Culv Nml Depth (ft)	2.3	Weir Flow Area (sq ft)	129.75
Culv Crt Depth (ft)	4.29	Min El Weir Flow (ft)	580.52

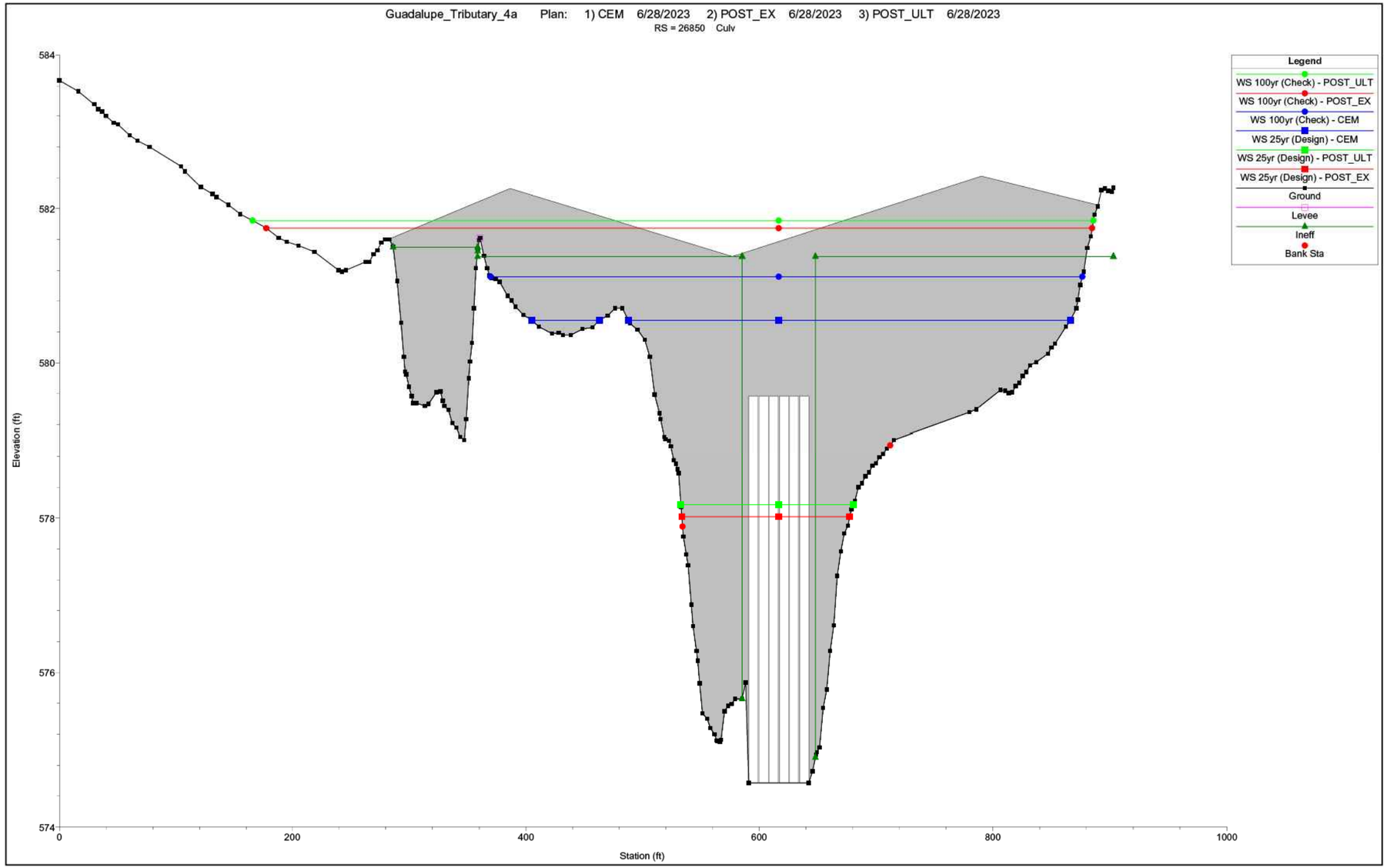
Plan: CEM Guadalupe River	Tributary 4a RS: 26850	Culv Group: Culvert #1	Profile: 100yr (Check)
Q Culv Group (cfs)	1447.7	Culv Full Len (ft)	
# Barrels	1	Culv Vel US (ft/s)	12.15
Q Barrel (cfs)	1447.7	Culv Vel DS (ft/s)	15.06
E.G. US. (ft)	581.92	Culv Inv El Up (ft)	573.95
W.S. US. (ft)	581.12	Culv Inv El Dn (ft)	573.5
E.G. DS (ft)	580.52	Culv Frctn Ls (ft)	0.1
W.S. DS (ft)	578.18	Culv Exit Loss (ft)	0.21
Delta EG (ft)	1.4	Culv Entr Loss (ft)	1.09
Delta WS (ft)	2.94	Q Weir (cfs)	1079.84
E.G. IC (ft)	581.92	Weir Sta Lft (ft)	174.47
E.G. OC (ft)	581.29	Weir Sta Rgt (ft)	887.4
Culvert Control	Inlet	Weir Submerg	0
Culv WS Inlet (ft)	578.53	Weir Max Depth (ft)	1.6
Culv WS Outlet (ft)	577.2	Weir Avg Depth (ft)	0.78
Culv Nml Depth (ft)	2.45	Weir Flow Area (sq ft)	419.3
Culv Crt Depth (ft)	4.58	Min El Weir Flow (ft)	580.52

HEC-RAS CULVERT OUTPUT DATA - ULTIMATE PROPOSED

Plan: POST_ULT Guadalupe River	Tributary 4a RS: 26901	Culv Group: Culvert #1	Profile: 25yr (Design)
Q Culv Group (cfs)	1675.1	Culv Full Len (ft)	
# Barrels	6	Culv Vel US (ft/s)	9.68
Q Barrel (cfs)	279.18	Culv Vel DS (ft/s)	10.39
E.G. US. (ft)	579.92	Culv Inv El Up (ft)	574.57
W.S. US. (ft)	578.88	Culv Inv El Dn (ft)	574.2
E.G. DS (ft)	578.72	Culv Frctn Ls (ft)	0.39
W.S. DS (ft)	577.39	Culv Exit Loss (ft)	0.51
Delta EG (ft)	1.2	Culv Entr Loss (ft)	0.29
Delta WS (ft)	1.49	Q Weir (cfs)	
E.G. IC (ft)	579.86	Weir Sta Lft (ft)	
E.G. OC (ft)	579.92	Weir Sta Rgt (ft)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (ft)	578.17	Weir Max Depth (ft)	
Culv WS Outlet (ft)	577.56	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	3.64	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	3.36	Min El Weir Flow (ft)	581.39

Plan: POST_ULT Guadalupe River	Tributary 4a RS: 26901	Culv Group: Culvert #1	Profile: 100yr (Check)
Q Culv Group (cfs)	2432.85	Culv Full Len (ft)	
# Barrels	6	Culv Vel US (ft/s)	10.78
Q Barrel (cfs)	405.48	Culv Vel DS (ft/s)	11.77
E.G. US. (ft)	581.9	Culv Inv El Up (ft)	574.57
W.S. US. (ft)	581.84	Culv Inv El Dn (ft)	574.2
E.G. DS (ft)	580.1	Culv Frctn Ls (ft)	0.42
W.S. DS (ft)	578.31	Culv Exit Loss (ft)	0.56
Delta EG (ft)	1.79	Culv Entr Loss (ft)	0.82
Delta WS (ft)	3.53	Q Weir (cfs)	177.55
E.G. IC (ft)	581.9	Weir Sta Lft (ft)	158.51
E.G. OC (ft)	581.67	Weir Sta Rgt (ft)	683.35
Culvert Control	Inlet	Weir Submerg	0
Culv WS Inlet (ft)	579.27	Weir Max Depth (ft)	0.72
Culv WS Outlet (ft)	578.51	Weir Avg Depth (ft)	0.29
Culv Nml Depth (ft)	4.82	Weir Flow Area (sq ft)	114.68
Culv Crt Depth (ft)	4.31	Min El Weir Flow (ft)	581.39

PROPOSED CULVERT HEC-RAS CROSS SECTION OUTPUT



EXPLANATION OF PLANS:

1. PRE: PRE-PROJECT (EXISTING) GEOMETRY WITH EXISTING FLOWS.
2. POST_EX: POST-PROJECT (PROPOSED) GEOMETRY WITH EXISTING FLOWS.
3. POST_ULT: POST-PROJECT (PROPOSED) GEOMETRY WITH ULTIMATE DEVELOPMENT CONDITION FLOWS. SEE ULTIMATE DRAINAGE AREA SHEET FOR COMPUTATION DETAILS.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

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DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET CULVERT B

SHEET 4 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	145

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Plotted on: 7/27/2023

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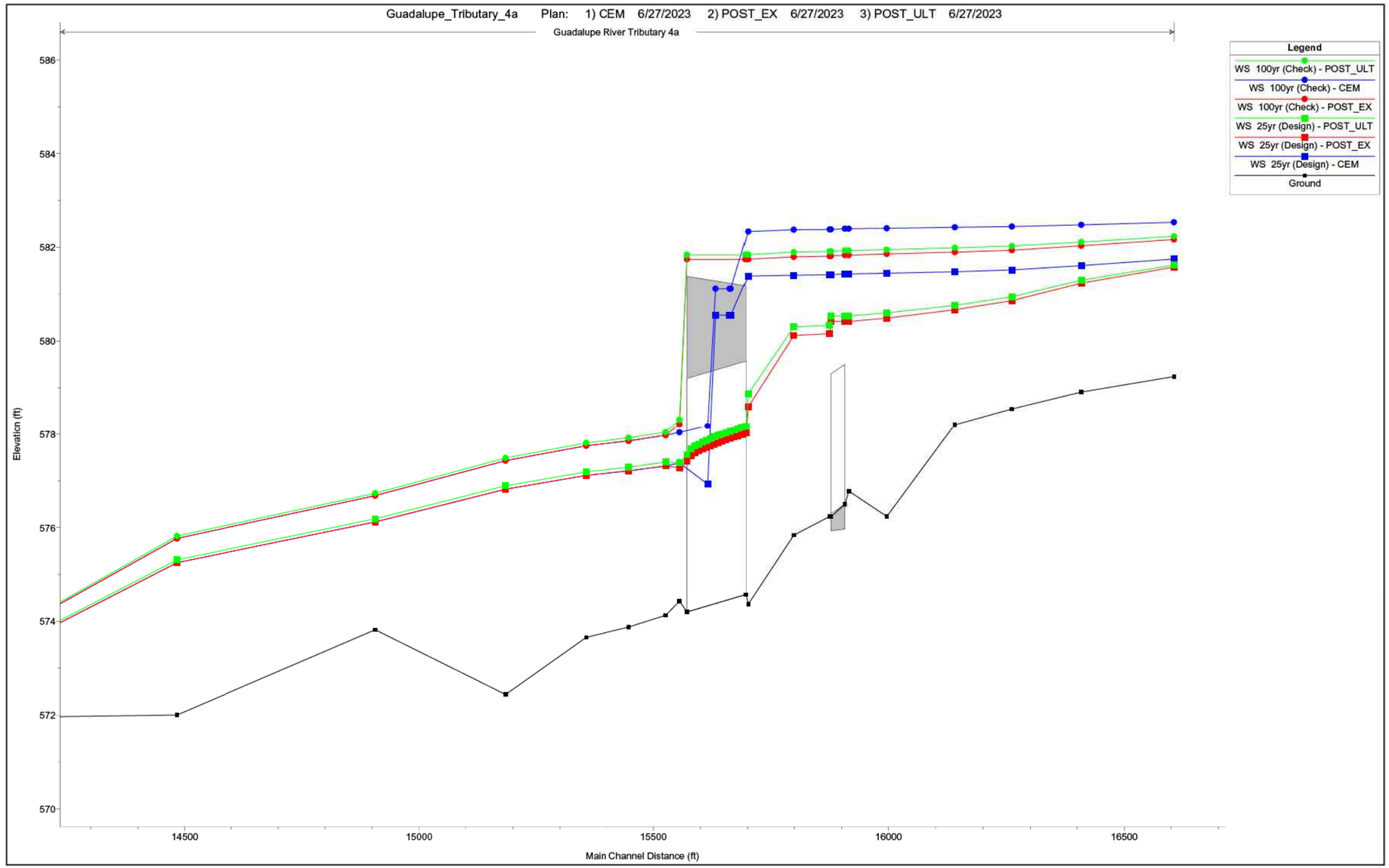
HEC-RAS PROFILE PLOT OUTPUT



DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
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HYDRAULIC DATA SHEET
CULVERT B

SHEET 5 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	146

Plotted on: 7/27/2023

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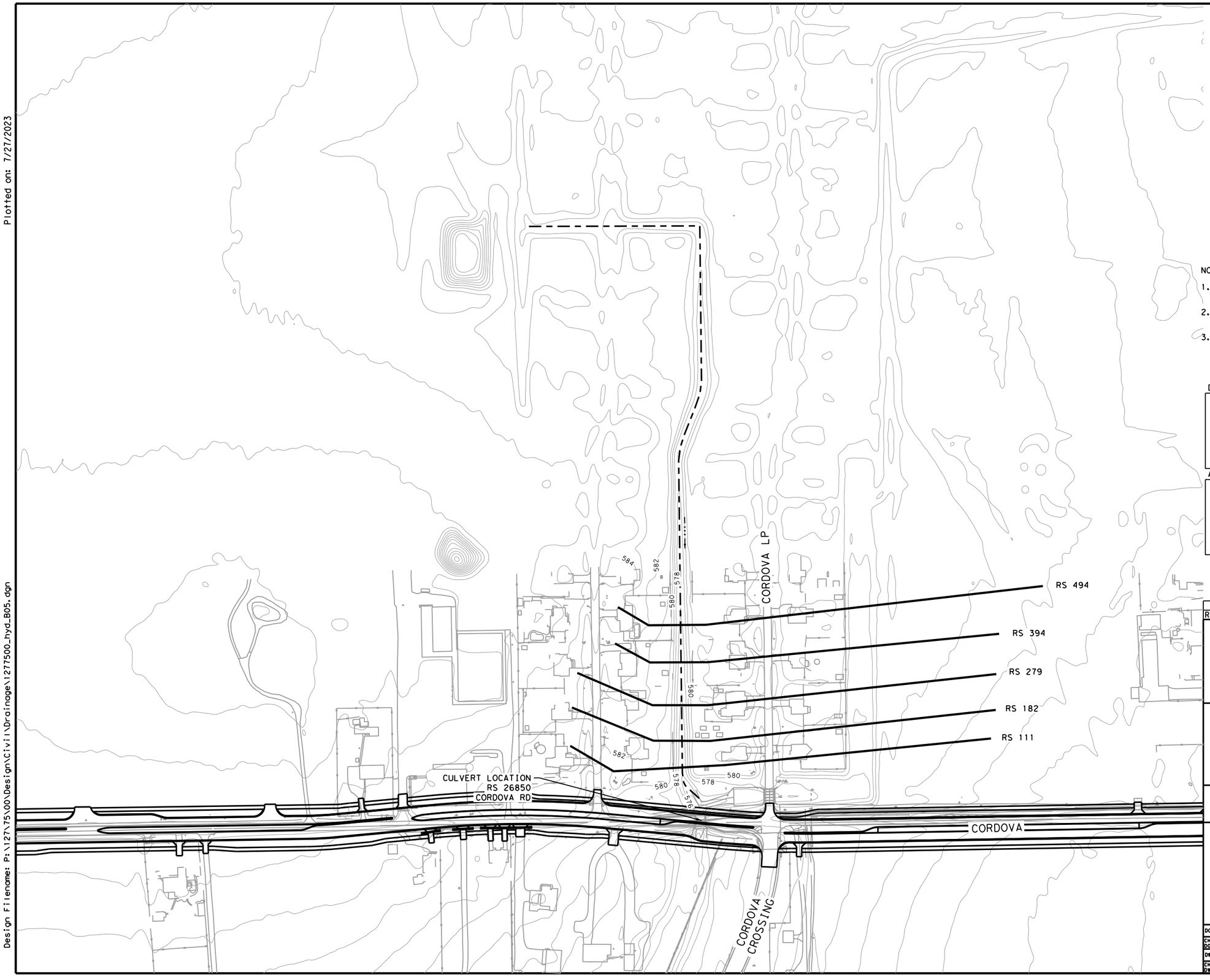

NOTES:

1. HEC-RAS VERSION 6.3.1 USED FOR HYDRAULIC CALCULATIONS.
2. 1-FT CONTOURS FROM 2017 STRATMAP CENTRAL TEXAS LIDAR DATASET.
3. FOR CULVERTS CROSSING CORDOVA RD, 25YR AEP STORM USED FOR DESIGN, PER CITY OF SEGUIN CRITERIA.

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET
CULVERT B - WEST DRAIN

SHEET 1 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	147

Plotted on: 7/27/2023

HEC-RAS OUTPUT

River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
494	5yr	PRE	391.5	577.33	580.64		580.9	0.003505	4.2	105.44	197.82	0.5
494	5yr	POST_EX	391.5	577.33	580.64		580.9	0.003511	4.2	105.35	197.55	0.5
494	5yr	POST_ULT	436.7	577.33	580.78	579.94	581.04	0.003334	4.27	122.33	241.6	0.49
494	10yr	PRE	566.3	577.33	581.17		581.33	0.002112	3.76	251.13	429.06	0.4
494	10yr	POST_EX	566.3	577.33	581.15		581.32	0.002251	3.86	241.36	415.2	0.41
494	10yr	POST_ULT	616.3	577.33	581.26		581.41	0.001953	3.7	290.76	466.53	0.39
494	25yr (Design)	PRE	832.9	577.33	581.73		581.8	0.000979	2.9	552.42	637.75	0.28
494	25yr (Design)	POST_EX	832.9	577.33	581.62		581.71	0.00134	3.32	480.87	600.27	0.33
494	25yr (Design)	POST_ULT	886.5	577.33	581.69		581.78	0.001249	3.25	524.7	620.69	0.32
494	50yr	PRE	1055	577.33	582.11		582.16	0.000672	2.59	849.04	922.28	0.24
494	50yr	POST_EX	1055	577.33	581.85		581.93	0.001215	3.31	630.58	743.54	0.32
494	50yr	POST_ULT	1109.5	577.33	581.89		581.98	0.001184	3.3	666.39	784.04	0.31
494	100yr (Check)	PRE	1316	577.33	582.49		582.52	0.000412	2.16	1217.19	1011.68	0.19
494	100yr (Check)	POST_EX	1316	577.33	582.12		582.19	0.001034	3.21	857.22	924.31	0.3
494	100yr (Check)	POST_ULT	1369.7	577.33	582.19		582.25	0.00093	3.08	920.4	935.47	0.28
394	5yr	PRE	391.5	577.08	580.15		580.48	0.004851	4.65	85.77	130.52	0.58
394	5yr	POST_EX	391.5	577.08	580.15		580.48	0.004878	4.66	85.57	129.3	0.58
394	5yr	POST_ULT	436.7	577.08	580.27		580.63	0.004878	4.85	94.82	153.48	0.59
394	10yr	PRE	566.3	577.08	580.71		581.04	0.003711	4.8	143.87	230.12	0.53
394	10yr	POST_EX	566.3	577.08	580.6	579.89	580.99	0.004563	5.16	128.35	210.4	0.58
394	10yr	POST_ULT	616.3	577.08	580.7	580.03	581.1	0.004477	5.26	142.46	228.96	0.58
394	25yr (Design)	PRE	832.9	577.08	581.53		581.67	0.001506	3.68	410.53	639.36	0.35
394	25yr (Design)	POST_EX	832.9	577.08	581.08	580.77	581.47	0.004046	5.48	212.32	340.27	0.56
394	25yr (Design)	POST_ULT	886.5	577.08	581.17	580.88	581.54	0.003884	5.48	234.98	374.75	0.56
394	50yr	PRE	1055	577.08	582.03		582.08	0.00071	2.77	784.06	836.34	0.25
394	50yr	POST_EX	1055	577.08	581.42	581.3	581.72	0.003163	5.22	344.19	534.12	0.51
394	50yr	POST_ULT	1109.5	577.08	581.58		581.8	0.002387	4.67	440.41	670.2	0.44
394	100yr (Check)	PRE	1316	577.08	582.44		582.48	0.000424	2.29	1166.89	964.45	0.19
394	100yr (Check)	POST_EX	1316	577.08	581.96		582.07	0.00132	3.73	727.29	818.55	0.34
394	100yr (Check)	POST_ULT	1369.7	577.08	582.05		582.14	0.001124	3.5	805.33	844.36	0.31
279	5yr	PRE	391.5	576.31	579.57		579.88	0.005501	4.5	90.23	129.62	0.6
279	5yr	POST_EX	391.5	576.31	579.56		579.87	0.005651	4.55	89.2	128.82	0.61
279	5yr	POST_ULT	436.7	576.31	579.68		580.01	0.005766	4.68	97.11	134.89	0.62
279	10yr	PRE	566.3	576.31	580.39		580.61	0.003227	3.93	161.93	202.81	0.48
279	10yr	POST_EX	566.3	576.31	580.01		580.38	0.006122	4.93	122.01	160.86	0.64
279	10yr	POST_ULT	616.3	576.31	580.12		580.49	0.006105	5.01	131.9	172.34	0.64
279	25yr (Design)	PRE	832.9	576.31	581.46		581.53	0.000817	2.6	547.14	631.32	0.26
279	25yr (Design)	POST_EX	832.9	576.31	580.57		580.95	0.005032	5.18	184.77	220.19	0.6
279	25yr (Design)	POST_ULT	886.5	576.31	580.68		581.05	0.004687	5.16	200.96	252.85	0.59
279	50yr	PRE	1055	576.31	581.98		582.01	0.000431	2.09	914.11	802.22	0.19
279	50yr	POST_EX	1055	576.31	581.16		581.37	0.002544	4.29	372.85	502.34	0.45
279	50yr	POST_ULT	1109.5	576.31	581.4		581.55	0.001662	3.67	513.84	620.53	0.37
279	100yr (Check)	PRE	1316	576.31	582.41		582.44	0.000285	1.83	1288.78	922.21	0.16
279	100yr (Check)	POST_EX	1316	576.31	581.87		581.94	0.00082	2.82	829.6	743.57	0.26
279	100yr (Check)	POST_ULT	1369.7	576.31	581.97		582.03	0.00072	2.7	907.71	774.48	0.25
182	5yr	PRE	391.5	576.18	579.2		579.43	0.003677	4	114.62	160.75	0.5
182	5yr	POST_EX	391.5	576.18	579.14		579.39	0.004156	4.19	108.29	154.99	0.53
182	5yr	POST_ULT	436.7	576.18	579.3		579.54	0.003828	4.16	124.63	170.75	0.52
182	10yr	PRE	566.3	576.18	580.31		580.39	0.001214	2.65	272.58	330.27	0.3
182	10yr	POST_EX	566.3	576.18	579.73		579.92	0.003091	3.86	176.74	203.73	0.47
182	10yr	POST_ULT	616.3	576.18	579.86		580.04	0.002921	3.82	194.33	211.85	0.46
182	25yr (Design)	PRE	832.9	576.18	581.45		581.47	0.000264	1.6	856.56	646.66	0.15
182	25yr (Design)	POST_EX	832.9	576.18	580.37		580.55	0.002574	3.92	290.28	377.84	0.44
182	25yr (Design)	POST_ULT	886.5	576.18	580.52		580.69	0.002276	3.83	338.03	415.88	0.42
182	50yr	PRE	1055	576.18	581.97		581.98	0.000176	1.43	1245.43	851.15	0.12
182	50yr	POST_EX	1055	576.18	581.13		581.2	0.000854	2.7	661.21	597.63	0.26
182	50yr	POST_ULT	1109.5	576.18	581.39		581.43	0.000528	2.23	818.96	634.1	0.21
182	100yr (Check)	PRE	1316	576.18	582.4		582.41	0.000142	1.37	1638.69	951.55	0.11
182	100yr (Check)	POST_EX	1316	576.18	581.85		581.88	0.000336	1.93	1146.84	800.35	0.17
182	100yr (Check)	POST_ULT	1369.7	576.18	581.95		581.98	0.000305	1.87	1231.47	841.3	0.16
111	5yr	PRE	391.5	575.78	578.82	578.11	579.15	0.003736	4.66	89.68	109.66	0.59
111	5yr	POST_EX	391.5	575.78	578.57	578.11	579.02	0.005606	5.42	74.34	67.36	0.71
111	5yr	POST_ULT	436.7	575.78	578.75	578.28	579.2	0.005201	5.42	85.04	95.12	0.69
111	10yr	PRE	566.3	575.78	580.21	578.71	580.31	0.000935	2.84	249.71	243.85	0.31
111	10yr	POST_EX	566.3	575.78	579.24	578.71	579.64	0.004183	5.25	123.74	157.91	0.63
111	10yr	POST_ULT	616.3	575.78	579.42	578.84	579.79	0.003855	5.08	142.55	172.08	0.61
111	25yr (Design)	PRE	832.9	575.78	581.41	579.42	581.45	0.00029	2.04	729.79	692.24	0.18
111	25yr (Design)	POST_EX	832.9	575.78	580.12	579.42	580.37	0.002344	4.39	234.88	235.12	0.49
111	25yr (Design)	POST_ULT	886.5	575.78	580.3	579.52	580.53	0.001985	4.23	265.19	254.36	0.45
111	50yr	PRE	1055	575.78	581.94	579.68	581.97	0.000205	1.87	1130.57	846.21	0.16
111	50yr	POST_EX	1055	575.78	580.98	579.68	581.12	0.001038	3.55	470.81	498.73	0.34
111	50yr	POST_ULT	1109.5	575.78	581.3	579.74	581.39	0.000637	2.96	654.98	660.47	0.27
111	100yr (Check)	PRE	1316	575.78	582.38	579.95	582.4	0.000155	1.73	1520.28	936.46	0.14
111	100yr (Check)	POST_EX	1316	575.78	581.8	579.95	581.85	0.000361	2.43	1014.64	801.63	0.21
111	100yr (Check)	POST_ULT	1369.7	575.78	581.9	580	581.95	0.000373	2.5	1096.92	839.16	0.21

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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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THE STATE OF TEXAS GUADALUPE COUNTY

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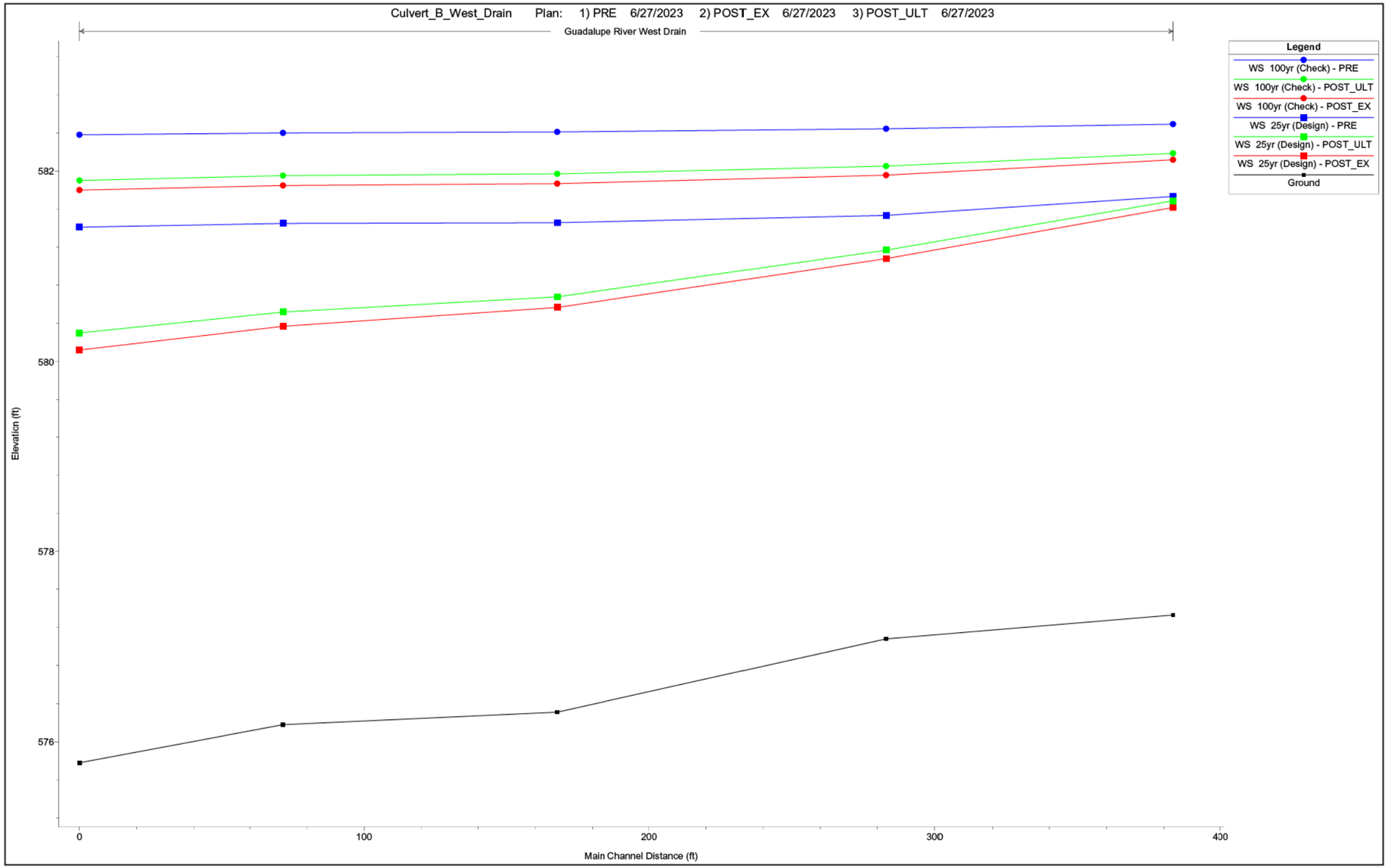
HYDRAULIC DATA SHEET
CULVERT B - WEST DRAIN

SHEET 2 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	148

Plotted on: 7/27/2023

HEC-RAS PROFILE PLOT OUTPUT



DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

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REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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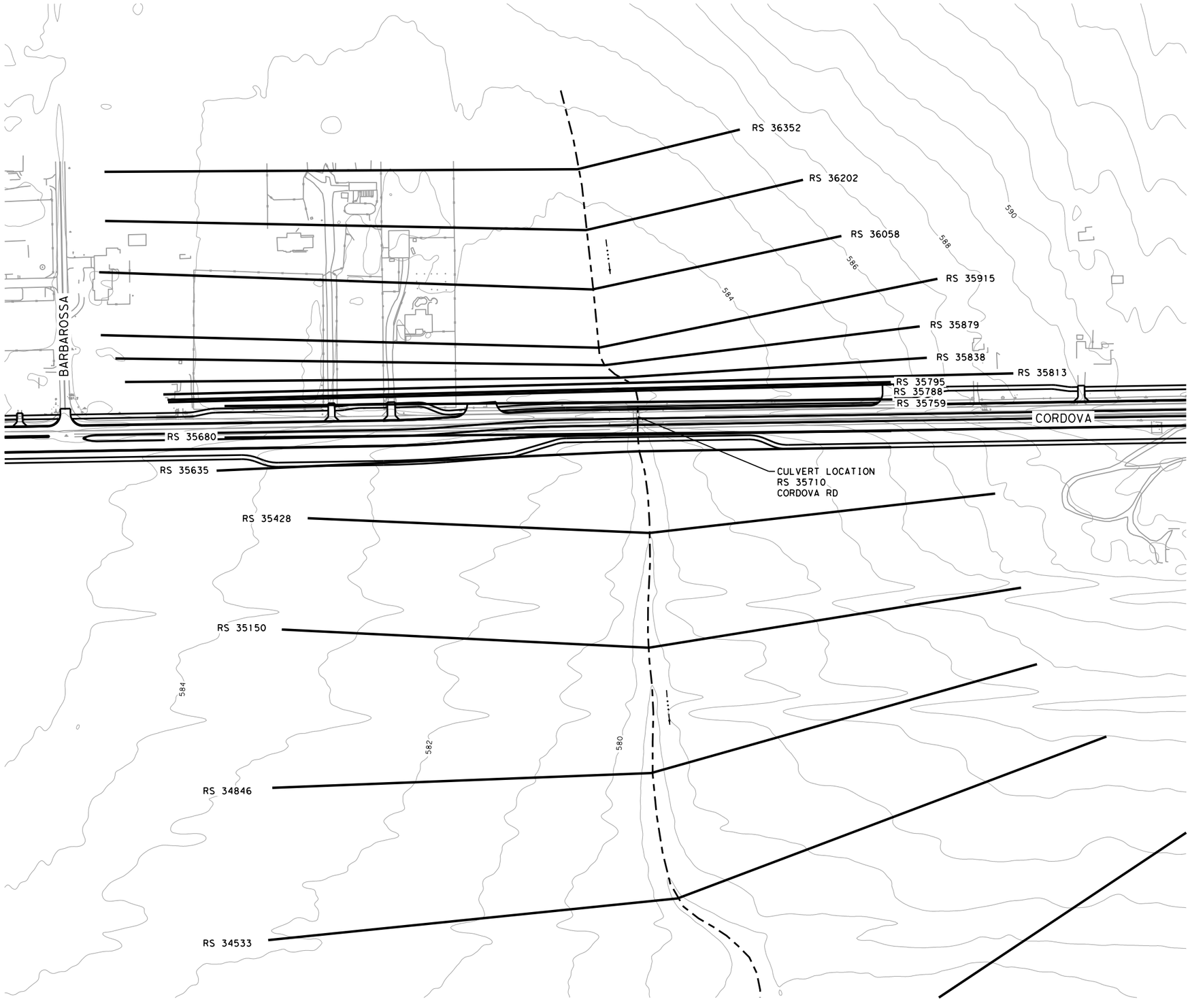
HYDRAULIC DATA SHEET CULVERT B - WEST DRAIN

SHEET 3 OF 3

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	149

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_B07.dgn

Plotted on: 7/27/2023



NOTES:

1. HEC-RAS VERSION 6.3.1 USED FOR HYDRAULIC CALCULATIONS.
2. 1-FT CONTOURS FROM 2017 STRATMAP CENTRAL TEXAS LIDAR DATASET.
3. FOR CULVERTS CROSSING CORDOVA RD, 25YR AEP STORM USED FOR DESIGN, PER CITY OF SEGUIN CRITERIA.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET
CULVERT C

SHEET 1 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	150

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_C01.dgn

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_C02.dgn

HEC-RAS OUTPUT

River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
36352	5yr	CEM	162.9	584.14	584.46		584.48	0.002925	0.75	186.18	782.25	0.31
36352	5yr	POST_EX	162.9	584.14	584.54	584.32	584.55	0.002174	0.75	179.45	923.85	0.27
36352	5yr	POST_ULT	191.6	584.14	584.57	584.34	584.59	0.002275	0.84	199.77	945.2	0.29
36352	10yr	CEM	222.3	584.14	584.54		584.55	0.002797	0.85	252.05	922.31	0.31
36352	10yr	POST_EX	222.3	584.14	584.35	584.35	584.48	0.027246	1.83	84.81	588.68	0.88
36352	10yr	POST_ULT	252.2	584.14	584.6	584.4	584.62	0.001831	0.81	313.51	964	0.26
36352	25yr (Design)	CEM	326.1	584.14	584.6		584.61	0.003321	1.07	305.42	958.09	0.35
36352	25yr (Design)	POST_EX	326.1	584.14	584.67	584.44	584.68	0.001758	0.9	375.56	1001.52	0.26
36352	25yr (Design)	POST_ULT	358.7	584.14	584.69	584.46	584.71	0.001727	0.94	401.71	1015.26	0.27
36352	50yr	CEM	400.6	584.14	584.65		584.67	0.003172	1.16	354.51	990.47	0.35
36352	50yr	POST_EX	400.6	584.14	584.73	584.49	584.74	0.001688	0.98	434.99	1034.74	0.27
36352	50yr	POST_ULT	433.4	584.14	584.75	584.5	584.76	0.0017	1.02	459.12	1059.8	0.27
36352	100yr (Check)	CEM	481.5	584.14	584.71		584.73	0.002725	1.21	419.64	1026.56	0.34
36352	100yr (Check)	POST_EX	481.5	584.14	584.79	584.53	584.8	0.001626	1.05	498.98	1081.07	0.27
36352	100yr (Check)	POST_ULT	514.5	584.14	584.81	584.55	584.83	0.001576	1.07	529.87	1112.19	0.27
36202	5yr	CEM	162.9	583.67	584.11	583.91	584.12	0.00213	0.8	208.29	762.7	0.28
36202	5yr	POST_EX	162.9	583.67	584.15	583.99	584.17	0.003187	1.07	150.18	786.83	0.35
36202	5yr	POST_ULT	191.6	583.67	584.19	584.01	584.21	0.003035	1.12	169.63	805.29	0.34
36202	10yr	CEM	222.3	583.67	584.15	583.95	584.16	0.002495	0.94	241.36	785.36	0.31
36202	10yr	POST_EX	222.3	583.67	584.23	584.03	584.25	0.002991	1.18	188.11	824.28	0.35
36202	10yr	POST_ULT	252.2	583.67	584.26	584.05	584.29	0.002871	1.22	207.54	848.83	0.34
36202	25yr (Design)	CEM	326.1	583.67	584.32	584	584.33	0.001243	0.88	385.38	877.53	0.23
36202	25yr (Design)	POST_EX	326.1	583.67	584.35	584.08	584.37	0.002519	1.3	254.34	889.91	0.33
36202	25yr (Design)	POST_ULT	358.7	583.67	584.38	584.11	584.41	0.002402	1.33	274.48	922.01	0.33
36202	50yr	CEM	400.6	583.67	584.42	584.03	584.43	0.001006	0.9	471.57	948.79	0.21
36202	50yr	POST_EX	400.6	583.67	584.43	584.13	584.46	0.002219	1.36	302.38	957.78	0.32
36202	50yr	POST_ULT	433.4	583.67	584.46	584.14	584.49	0.002096	1.37	324.14	989.51	0.31
36202	100yr (Check)	CEM	481.5	583.67	584.51	584.06	584.52	0.000876	0.94	564.79	1046.54	0.21
36202	100yr (Check)	POST_EX	481.5	583.67	584.52	584.16	584.55	0.001938	1.4	355.91	1049.92	0.31
36202	100yr (Check)	POST_ULT	514.5	583.67	584.55	584.18	584.58	0.00184	1.41	377.86	1106.03	0.3
36058	5yr	CEM	162.9	583.25	583.88	583.58	583.89	0.001193	0.82	198.95	788.35	0.22
36058	5yr	POST_EX	162.9	583.25	583.88	583.58	583.89	0.001309	0.85	191.84	780.76	0.23
36058	5yr	POST_ULT	191.6	583.25	583.92	583.61	583.94	0.001256	0.89	214.53	840.07	0.23
36058	10yr	CEM	222.3	583.25	583.96	583.63	583.97	0.000872	0.76	314.63	877.7	0.2
36058	10yr	POST_EX	222.3	583.25	583.97	583.63	583.99	0.0012	0.94	238.53	892.58	0.23
36058	10yr	POST_ULT	252.2	583.25	584.02	583.65	584.03	0.001151	0.97	261.42	944.05	0.23
36058	25yr (Design)	CEM	326.1	583.25	584.25	583.69	584.25	0.000305	0.62	602.38	1061.87	0.12
36058	25yr (Design)	POST_EX	326.1	583.25	584.13	583.69	584.15	0.001035	1.04	317.78	1007.57	0.23
36058	25yr (Design)	POST_ULT	358.7	583.25	584.18	583.71	584.19	0.000998	1.07	341.59	1025.96	0.22
36058	50yr	CEM	400.6	583.25	584.35	583.73	584.36	0.000285	0.65	717.18	1152.01	0.12
36058	50yr	POST_EX	400.6	583.25	584.23	583.73	584.25	0.000958	1.1	371.47	1055.36	0.22
36058	50yr	POST_ULT	433.4	583.25	584.28	583.75	584.3	0.00093	1.13	394.67	1074.78	0.22
36058	100yr (Check)	CEM	481.5	583.25	584.45	583.77	584.46	0.000267	0.68	834.27	1191.09	0.12
36058	100yr (Check)	POST_EX	481.5	583.25	584.34	583.77	584.36	0.00089	1.16	428.71	1146.62	0.22
36058	100yr (Check)	POST_ULT	514.5	583.25	584.38	583.79	584.4	0.000862	1.17	452.44	1165.62	0.22
35915	5yr	CEM	162.9	583.02	583.76	583.34	583.77	0.00071	0.8	209.65	912.85	0.18
35915	5yr	POST_EX	162.9	583.02	583.7	583.35	583.71	0.001113	0.93	179.45	876.39	0.22
35915	5yr	POST_ULT	191.6	583.02	583.75	583.38	583.77	0.001084	0.98	200.37	910.97	0.23
35915	10yr	CEM	222.3	583.02	583.91	583.4	583.92	0.000176	0.47	534.26	1025.17	0.09
35915	10yr	POST_EX	222.3	583.02	583.81	583.41	583.83	0.001058	1.03	221.51	947.28	0.23
35915	10yr	POST_ULT	252.2	583.02	583.86	583.43	583.88	0.001039	1.08	240.85	999.65	0.23
35915	25yr (Design)	CEM	326.1	583.02	584.23	583.47	584.23	0.000093	0.43	859.57	1214.59	0.07
35915	25yr (Design)	POST_EX	326.1	583.02	583.98	583.48	584	0.001006	1.18	284.84	1067.06	0.23
35915	25yr (Design)	POST_ULT	358.7	583.02	584.03	583.5	584.05	0.000995	1.22	302.93	1094.06	0.23
35915	50yr	CEM	400.6	583.02	584.33	583.52	584.34	0.000096	0.47	974.94	1261.72	0.08
35915	50yr	POST_EX	400.6	583.02	584.09	583.53	584.11	0.000986	1.27	325.03	1122.44	0.23
35915	50yr	POST_ULT	433.4	583.02	584.13	583.56	584.16	0.000978	1.3	341.76	1157.84	0.23
35915	100yr (Check)	CEM	481.5	583.02	584.43	583.57	584.44	0.000099	0.5	1152.93	1304.53	0.08
35915	100yr (Check)	POST_EX	481.5	583.02	584.2	583.58	584.23	0.000965	1.35	365.9	1196.83	0.23
35915	100yr (Check)	POST_ULT	514.5	583.02	584.24	583.6	584.27	0.000952	1.38	382.49	1221.17	0.23
35879	5yr	CEM	162.9	582.94	583.72	583.3	583.73	0.000935	0.96	169.49	960.55	0.21
35879	5yr	POST_EX	162.9	582.94	583.62	583.31	583.65	0.00177	1.2	136.05	858.22	0.28
35879	5yr	POST_ULT	191.6	582.94	583.68	583.34	583.71	0.001782	1.28	149.65	904.23	0.29
35879	10yr	CEM	222.3	582.94	583.91	583.36	583.91	0.000138	0.45	560.42	1067.08	0.09
35879	10yr	POST_EX	222.3	582.94	583.74	583.37	583.76	0.001791	1.36	163.36	976.82	0.3
35879	10yr	POST_ULT	252.2	582.94	583.79	583.39	583.82	0.001804	1.43	175.84	999.63	0.3
35879	25yr (Design)	CEM	326.1	582.94	584.22	583.44	584.23	0.000087	0.44	864.08	1283.95	0.07
35879	25yr (Design)	POST_EX	326.1	582.94	583.9	583.46	583.94	0.001837	1.6	204.04	1062.93	0.31
35879	25yr (Design)	POST_ULT	358.7	582.94	583.95	583.48	583.99	0.00185	1.66	215.58	1087.6	0.31
35879	50yr	CEM	400.6	582.94	584.33	583.49	584.33	0.000093	0.48	972.72	1320.91	0.07
35879	50yr	POST_EX	400.6	582.94	584	583.51	584.05	0.00187	1.74	229.62	1112.78	0.32
35879	50yr	POST_ULT	433.4	582.94	584.05	583.53	584.1	0.001882	1.8	240.24	1144.21	0.32
35879	100yr (Check)	CEM	481.5	582.94	584.43	583.54	584.43	0.000079	0.47	1255.92	1358.55	0.07
35879	100yr (Check)	POST_EX	481.5	582.94	584.11	583.57	584.16	0.001888	1.88	255.69	1181.61	0.33
35879	100yr (Check)	POST_ULT	514.5	582.94	584.15	583.59	584.21	0.001879	1.93	266.43	1243.93	0.33
35838	5yr	CEM	162.9	582.88	583.64		583.67	0.001632	1.31	124.1	955.73	0.28
35838	5yr	POST_EX	162.9	582.88	583.36	583.28	583.46	0.012258	2.5	65.17	640.54	0.71
35838	5yr	POST_ULT	191.6	582.88	583.42	583.32	583.52	0.010667	2.56	74.89	662.54	0.68
35838	10yr	CEM	222.3	582.88	583.86		583.89	0.001178	1.35	164.94	1080.69	0.25
35838	10yr	POST_EX	222.3	582.88	583.47	583.34	583.58	0.009823	2.65	83.93	751.88	0.66
35838	10yr	POST_ULT	252.2	582.88	583.51	583.38	583.63	0.009609	2.77	91.12	805.98	0.66
35838	25yr (Design)	CEM	326.1	582.88	584.21		584.22	0.000625	0.87	453.28	1303.86	0.18
35838	25yr (Design)	POST_EX	326.1	582.88	583.61	583.46	583.75	0.009281	3.04	107.43	945.37	0.67
35838	25yr (Design)	POST_ULT	358.7	582.88	583.64	583.49	583.8	0.009619	3.19	112.54	955.3	0.69
35838	50yr	CEM	400.6	582.88	584.31		584.32	0.00052	0.87	558.56	1348.01	0.17
35838	50yr	POST_EX	400.6	582.88	583.67	583.53	583.85	0.010228	3.39	118.06	965.22	0.71
35838	50yr	POST_ULT	433.4	582.88	583.7	583.56	583.89	0.010615	3.54	122.39	974.13	0.73
35838	100yr (Check)	CEM	481.5	582.88	584.41		584.42	0.000503	0.86	663.52	1388.07	0.16
35838	100yr (Check)	POST_EX	481.5	582.88	583.75	583.6	583.96	0.010556	3.69	130.59	989.76	0.74
35838	100yr (Check)	POST_ULT	514.5	582.88	583.8	583.63	584.01	0.009861	3.71	138.69	1011.92	0.72

River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
35813	5yr	CEM	162.9	582.84	583.58	583.24	583.62	0.002464	1.6	101.51	915.59	0.35
35813	5yr	POST_EX	162.9	582.14	582.76	582.76	583.05	0.021341	4.33	37.6	64.32	1
35813	5yr	POST_ULT	191.6	582.14	582.92	582.92	583.15	0.022253	3.84	49.85	246.74	0.98
35813	10yr	CEM	222.3	582.84	583.82	583.32	583.86	0.001666	1.62	137.59	1035.32	0.3
35813	10yr	POST_EX	222.3	582.14	582.97	582.97	583.22	0.023042	4.02	55.29	321.99	1.01
35813	10yr	POST_ULT	252.2	582.14	583.05	583.05	583.28	0.022697	3.9	64.72	386.17	1
35813	25yr (Design)	CEM	326.1	582.84	584.21	583.44	584.21	0.000075	0.44	893.22	1335.71	0.07
35813	25yr (Design)	POST_EX	326.1	582.14	583.13	583.13	583.41	0.021493	4.25	76.76	487.66	1
35813	25yr (Design)	POST_ULT	358.7	582.14	583.19	583.17	583.47	0.018814	4.24	84.59	572.27	0.95
35813	50yr	CEM	400.6	582.84	584.31	583.51	584.32	0.000082	0.48	996.81	1382.02	0.07
35813	50yr	POST_EX	400.6	582.14	583.28	583.22	583.55	0.015014	4.14	96.71	628.5	0.87
35813	50yr	POST_ULT	433.4	582.14	583.36	583.25	583.61	0.012289	4.03	107.67	658.99	0.8
35813	100yr (Check)	CEM	481.5	582.84	584.42	583.59	584.42	0.000062	0.43	1380.39	1426.91	0.06
35813	100yr (Check)	POST_EX	481.5	582.14	583.5	583.3	583.72	0.009009	3.83	125.88	841.54	0.7
35813	100yr (Check)	POST_ULT	514.5	582.14	583.59	583.34	583.81	0.007374	3.7	139.1	923.01	0.64
35795	5yr	CEM	162.9	582.72	583.55	583.15	583.59	0.002026	1.59	102.18	893.46	0.32
35795	5yr	POST_EX	162.9	581.37	582.03	581.98	582.28	0.189165	4.07	40.01	65	0.91
35795	5yr	POST_ULT	191.6	581.37	582.17	582.06	582.4	0.125384	3.86	49.7	66.78	0.79
35795	10yr	CEM	222.3	582.72	583.79	583.23	583.84	0.001508	1.65	134.53	1033.41	0.29
35795	10yr	POST_EX	222.3	581.37	582.31	582.13	582.53	0.095592	3.78	58.75	68.39	0.72
35795	10yr	POST_ULT	252.2	581.37	582.44	582.18	582.66	0.074186	3.7	68.17	70.03	0.66
35795	25yr (Design)	CEM	326.1	582.72	584.21	583.36	584.21	0.000067	0.43	916.82	1333.65	0.06
35795	25yr (Design)	POST_EX	326.1	581.37	582.78	582.34	582.97	0.050038	3.51	92.87	116.41	0.61
35795	25yr (Design)	POST_ULT	358.7	581.37	582.92	582.4	583.09	0.041705	3.35	107.02	331.52	0.6
35795	50yr	CEM	400.6	582.72	584.31	583.45	584.31	0.000074	0.48	1018.56	1384.63	0.07
35795	50yr	POST_EX	400.6	581.37	583.09	582.47	583.25	0.027976	3.18	126.07	500.01	0.52
35795	50yr	POST_ULT	433.4	581.37	583.22	582.53	583.37	0.022052	3.1	139.65	593.94	0.48
35795	100yr (Check)	CEM	481.5	582.72	584.41	583.53	584.42	0.000055	0.42	1428.79	1435.26	0.06
35795	100yr (Check)	POST_EX	481.5	581.37	583.39	582.61	583.54	0.016568	3.03	158.69	758.87	0.44
35795	100yr (Check)	POST_ULT	514.5	581.37	583.51	582.66	583.65	0.014073	3	171.27	863.28	0.42
35788	5yr	CEM	162.9	582.66	583.53	583.12	583.58	0.002145	1.68	97.02	863.9	0.33
35788	5yr	POST_EX	162.9	581.08	582.03	581.8	582.22	0.001068	3.46	47.09	52.54	0.64
35788	5yr	POST_ULT	191.6	581.08	582.16	581.88	582.36	0.000959	3.55	53.98	53.41	0.62
35788	10yr	CEM	222.3	582.66	583.78	583.2	583.82	0.001629	1.75	126.97	1027	0.3
35788	10yr	POST_EX	222.3	581.08	582.3	581.95	582.5	0.000874	3.64	61.08	54.3	0.6
35788	10yr	POST_ULT	252.2	581.08	582.42	582.04	582.63	0.000811	3.72	67.81	55.13	0.59
35788	25yr (Design)	CEM	326.1	582.66	584.21	583.34	584.21	0.000067	0.44	907.17	1328.65	0.06
35788	25yr (Design)	POST_EX	326.1	581.08	582.71	582.21	582.94	0.000687	3.83	85.18	102.22	0.64
35788	25yr (Design)	POST_ULT	358.7	581.08	582.86	582.28	583.07	0.000602	3.65	98.32	263.79	0.64
35788	50yr	CEM	400.6	582.66	584.31	583.44	584.31	0.000075	0.48	1007.03	1378.18	0.07
35788	50yr	POST_EX	400.6	581.08	583.04	582.38	583.23	0.000518	3.46	115.84	437.24	0.56
35788	50yr	POST_ULT	433.4	581.08	583.17	582.44	583.35	0.000474	3.37	128.42	569.91	0.52
35788	100yr (Check)	CEM	481.5	582.66	584.41	583.52	584.42	0.000054	0.42	1435.94	1439.87	0.06
35788	100yr (Check)	POST_EX	481.5	581.08	583.35	582.53	583.52	0.000426	3.3	145.8	697.02	0.48
35788	100yr (Check)	POST_ULT	514.5	581.08	583.46	582.58	583.63	0.000401	3.27	157.2	812.27	0.45
35759	5yr	CEM	162.9	582.35	583.08	583.08	583.37	0.0165	4.33	37.59	210.72	1.02
35759	10yr	CEM	222.3	582.35	583.57	583.21	583.72	0.003796	3.16	70.4	790.98	0.54
35759	25yr (Design)	CEM	326.1	582.35	584.17	583.42	584.2	0.001506	1.43	308.38	1262.57	0.31
35759	50yr	CEM	400.6	582.35	584.28	583.55	584.3	0.001086	1.35	403.01	1302.87	0.27
35759	100yr (Check)	CEM	481.5	582.35	584.39	583.69	584.41	0.000854	1.31	497.41	1333.63	0.25
35710			Culvert									
35680	5yr	CEM	162.9	580.38	581.75		582.03	0.007803	4.3	37.89	89.45	0.77
35680	10yr	CEM	222.3	580.38	581.78	581.77	582.28	0.012957	5.67	39.22	93.71	0.99
35680	25yr (Design)	CEM	326.1	580.38	582.06	582.06	582.72	0.012246	6.5	50.2	125.96	1.01
35680	50yr	CEM	400.6	580.38	582.25	582.25	583	0.011723	6.96	57.55	138.31	1.01
35680	100yr (Check)	CEM	481.5	580.38	582.44	582.44	583.3	0.011262	7.4	65.04	201.97	1.01
35635	5yr	CEM	162.9	580.67	581.72		581.75	0.002045	1.38	118.06	247.39	0.35
35635	5yr	POST_EX	162.9	580.67	581.76	581.38	581.86	0.002842	2.56	63.74	265.2	0.46
35635	5yr	POST_ULT	191.6	580.67	581.84	581.44	581.96	0.002956	2.76	69.43	305.05	0.48
35635	10yr	CEM	222.3	580.67	581.84		581.87	0.001888	1.49	151.07	303.7	0.35
35635	10yr	POST_EX	222.3	580.67	581.92	581.51	582.06	0.003129	2.98	74.62	349.2	0.5
35635	10yr	POST_ULT	252.2	580.67	581.99	581.57	582.15	0.003273	3.18	79.41	388.68	0.51
35635	25yr (Design)	CEM	326.1	580.67	582		582.04	0.001703	1.67	207.7	393.66	0.34
35635	25yr (Design)	POST_EX	326.1	580.67	582.14	581.71	582.35	0.003705	3.65	89.27	554.68	0.56
35635	25yr (Design)	POST_ULT	358.7	580.67	582.19	581.77	582.42	0.003937	3.86	92.81	587.66	0.58
35635	50yr	CEM	400.6	580.67	582.09		582.14	0.001684	1.8	249.99	533.47	0.35
35635	50yr	POST_EX	400.6	580.67	582.25	581.84	582.52	0.004295	4.15	96.62	629.26	0.61
35635	50yr	POST_ULT	433.4	580.67	582.29	581.9	582.59	0.004559	4.36	99.49	667.13	0.63
35635	100yr (Check)	CEM	481.5	580.67	582.18		582.23	0.001647	1.9	296.89	577.51	0.35
35635	100yr (Check)	POST_EX	481.5	580.67	582.35	581.98	582.69	0.004932	4.65	103.51	721.1	0.66
35635	100yr (Check)	POST_ULT	514.5	580.67	582.39	582.03	582.76	0.005212	4.86	105.93	745.87	0.68
35428	5yr	CEM	162.9	580.12	581.2		581.25	0.003049	1.79	91.08	172.18	0.43
35428	5yr	POST_EX	162.9	580.12	581.2		581.25	0.003049	1.79	91.08	172.18	0.43
35428	5yr	POST_ULT	191.6	580.12	581.27		581.33	0.003066	1.84	104	188.88	0.44
35428	10yr	CEM	222.3	580.12	581.35		581.4	0.003025	1.88	118.46	207.19	0.44
35428	10yr	POST_EX	222.3	580.12	581.35		581.4	0.003025	1.88	118.47	207.21	0.44
35428	10yr	POST_ULT	252.2	580.12	581.41		581.46	0.003067	1.91	131.84	226.33	0.44
35428	25yr (Design)	CEM	326.1	580.12	581.51		581.58	0.003278	2.08	157.11	257.06	0.46
35428	25yr (Design)	POST_EX	326.1	580.12	581.51		581.58	0.003279	2.08	157.1	257.04	0.46
35428	25yr (Design)	POST_ULT	358.7	580.12	581.55		581.62	0.003307	2.15	167.4	272.1	0.47
35428	50yr	CEM	400.6	580.12	581.6		581.68	0.00324	2.23	181.43	295.28	0.47
35428	50yr	POST_EX	400.6	580.12	581.6		581.68	0.003239	2.23	181.44	295.31	0.47
35428	50yr	POST_ULT	433.4	580.12	581.63		581.72	0.003246	2.3	191.4	311.24	0.47
35428	100yr (Check)	CEM	481.5	580.12	581.68		581.77	0.003287	2.4	206.07	359.69	0.48
35428	100yr (Check)	POST_EX	481.5	580.12	581.68		581.77	0.003287	2.4	206.07	359.69	0.48
35428	100yr (Check)	POST_ULT	514.5	580.12	581.71		581.8	0.003279	2.46	217.3	379.47	0.48

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET
CULVERT C

SHEET 2 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	151

River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
35150	5yr	CEM	162.9	579.27	580.48		580.52	0.002325	1.63	99.79	176.54	0.38
35150	5yr	POST_EX	162.9	579.27	580.48		580.52	0.002325	1.63	99.78	176.52	0.38
35150	5yr	POST_ULT	191.6	579.27	580.57		580.61	0.002198	1.63	117.88	201.27	0.37
35150	10yr	CEM	222.3	579.27	580.65		580.69	0.002156	1.65	134.78	221.9	0.37
35150	10yr	POST_EX	222.3	579.27	580.65		580.69	0.00216	1.65	134.68	221.77	0.37
35150	10yr	POST_ULT	252.2	579.27	580.71		580.75	0.002134	1.71	147.39	244.91	0.38
35150	25yr (Design)	CEM	326.1	579.27	580.83		580.88	0.001958	1.85	182.33	320.12	0.37
35150	25yr (Design)	POST_EX	326.1	579.27	580.83		580.88	0.001957	1.85	182.37	320.2	0.37
35150	25yr (Design)	POST_ULT	358.7	579.27	580.88		580.93	0.001939	1.91	197.4	348.04	0.37
35150	50yr	CEM	400.6	579.27	580.93		580.99	0.001909	1.98	217.56	384.33	0.37
35150	50yr	POST_EX	400.6	579.27	580.93		580.99	0.001909	1.98	217.58	384.37	0.37
35150	50yr	POST_ULT	433.4	579.27	580.97		581.04	0.001866	2.02	234.95	416.39	0.37
35150	100yr (Check)	CEM	481.5	579.27	581.03		581.09	0.001859	2.09	258.85	474.86	0.37
35150	100yr (Check)	POST_EX	481.5	579.27	581.03		581.09	0.001859	2.09	258.88	474.94	0.37
35150	100yr (Check)	POST_ULT	514.5	579.27	581.07		581.13	0.001836	2.13	276.73	503.75	0.37
34846	5yr	CEM	162.9	578.42	579.81		579.86	0.002057	1.71	95.46	144.14	0.37
34846	5yr	POST_EX	162.9	578.42	579.81		579.86	0.002058	1.71	95.43	144.09	0.37
34846	5yr	POST_ULT	191.6	578.42	579.9		579.95	0.002178	1.75	109.6	166.61	0.38
34846	10yr	CEM	222.3	578.42	579.97		580.02	0.002249	1.82	121.88	178.07	0.39
34846	10yr	POST_EX	222.3	578.42	579.97		580.02	0.002247	1.82	121.91	178.09	0.39
34846	10yr	POST_ULT	252.2	578.42	580.03		580.09	0.002292	1.9	132.46	184.08	0.4
34846	25yr (Design)	CEM	326.1	578.42	580.17		580.24	0.002343	2.03	160.54	221.3	0.41
34846	25yr (Design)	POST_EX	326.1	578.42	580.17		580.24	0.002343	2.03	160.54	221.3	0.41
34846	25yr (Design)	POST_ULT	358.7	578.42	580.22		580.29	0.00235	2.11	170.87	238.9	0.41
34846	50yr	CEM	400.6	578.42	580.27		580.34	0.002388	2.22	183.6	254.34	0.42
34846	50yr	POST_EX	400.6	578.42	580.27		580.34	0.002391	2.22	183.52	254.3	0.42
34846	50yr	POST_ULT	433.4	578.42	580.31		580.39	0.00236	2.28	194.92	261.16	0.42
34846	100yr (Check)	CEM	481.5	578.42	580.37		580.45	0.002392	2.38	209.66	288.93	0.43
34846	100yr (Check)	POST_EX	481.5	578.42	580.37		580.45	0.002391	2.38	209.71	289.02	0.43
34846	100yr (Check)	POST_ULT	514.5	578.42	580.4		580.49	0.002396	2.44	220.93	315.27	0.43
34533	5yr	CEM	162.9	577.7	578.92		578.98	0.004006	1.95	83.43	169.68	0.49
34533	5yr	POST_EX	162.9	577.7	578.92		578.98	0.004001	1.95	83.46	169.7	0.49
34533	5yr	POST_ULT	191.6	577.7	578.98	578.68	579.04	0.003984	2.05	93.29	177.37	0.5
34533	10yr	CEM	222.3	577.7	579.03	578.73	579.1	0.004049	2.18	102.33	191.79	0.51
34533	10yr	POST_EX	222.3	577.7	579.03	578.73	579.1	0.004054	2.18	102.29	191.73	0.51
34533	10yr	POST_ULT	252.2	577.7	579.08	578.8	579.16	0.003937	2.27	112.26	206.32	0.51
34533	25yr (Design)	CEM	326.1	577.7	579.17	578.91	579.27	0.004183	2.56	130.98	220.85	0.53
34533	25yr (Design)	POST_EX	326.1	577.7	579.17	578.91	579.27	0.004171	2.56	131.11	221.08	0.53
34533	25yr (Design)	POST_ULT	358.7	577.7	579.2	578.94	579.31	0.004266	2.67	139.15	229.7	0.54
34533	50yr	CEM	400.6	577.7	579.25	578.98	579.37	0.004295	2.79	150.18	241.57	0.55
34533	50yr	POST_EX	400.6	577.7	579.25	578.98	579.37	0.00429	2.79	150.24	241.64	0.55
34533	50yr	POST_ULT	433.4	577.7	579.28	579.02	579.41	0.004322	2.88	158.8	254.04	0.56
34533	100yr (Check)	CEM	481.5	577.7	579.34	579.07	579.48	0.004179	2.97	174.28	275.31	0.55
34533	100yr (Check)	POST_EX	481.5	577.7	579.34	579.07	579.48	0.004182	2.97	174.23	275.27	0.55
34533	100yr (Check)	POST_ULT	514.5	577.7	579.37	579.1	579.51	0.004215	3.05	182.71	282.41	0.56

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_C02.dgn

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET
CULVERT C

SHEET 3 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	152

Plotted on: 7/27/2023

HEC-RAS CULVERT OUTPUT DATA - EXISTING

Plan: CEM WALNUT BRANCH	Reach-1 RS: 35710	Culv Group: Culvert #1	Profile: 25yr (Design)
Q Culv Group (cfs)	273.18	Culv Full Len (ft)	
# Barrels	3	Culv Vel US (ft/s)	8.37
Q Barrel (cfs)	91.06	Culv Vel DS (ft/s)	11.12
E.G. US. (ft)	584.2	Culv Inv El Up (ft)	580.5
W.S. US. (ft)	584.17	Culv Inv El Dn (ft)	579.95
E.G. DS (ft)	582.72	Culv Frctn Ls (ft)	0.26
W.S. DS (ft)	582.06	Culv Exit Loss (ft)	0.79
Delta EG (ft)	1.48	Culv Entr Loss (ft)	0.44
Delta WS (ft)	2.11	Q Weir (cfs)	52.92
E.G. IC (ft)	584.01	Weir Sta Lft (ft)	707.08
E.G. OC (ft)	584.2	Weir Sta Rgt (ft)	975.44
Culvert Control	Outlet	Weir Submerg	0
Culv WS Inlet (ft)	582.68	Weir Max Depth (ft)	0.3
Culv WS Outlet (ft)	581.59	Weir Avg Depth (ft)	0.17
Culv Nml Depth (ft)	1.35	Weir Flow Area (sq ft)	46.67
Culv Crt Depth (ft)	2.18	Min El Weir Flow (ft)	583.91

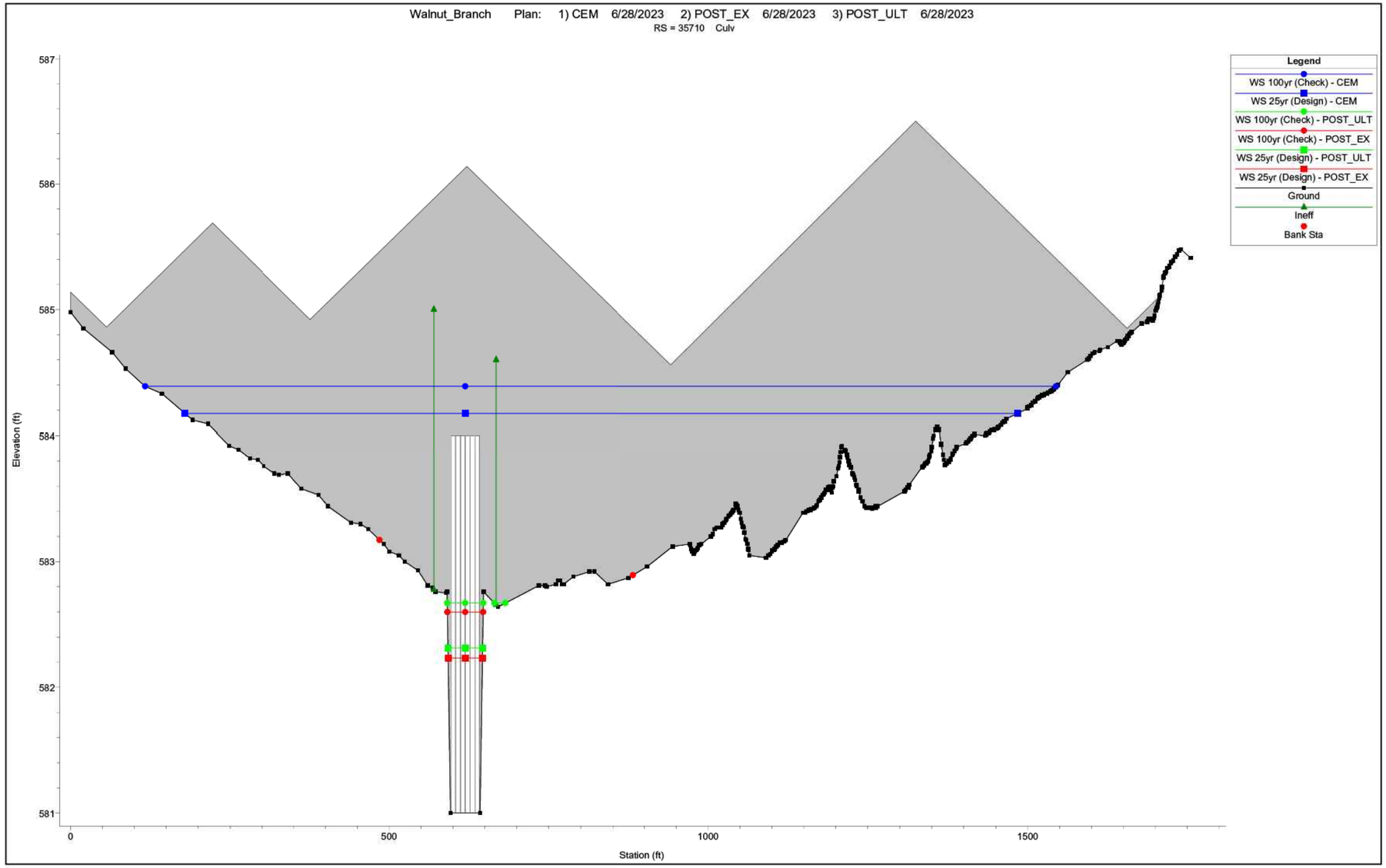
Plan: CEM WALNUT BRANCH	Reach-1 RS: 35710	Culv Group: Culvert #1	Profile: 100yr (Check)
Q Culv Group (cfs)	297.6	Culv Full Len (ft)	
# Barrels	3	Culv Vel US (ft/s)	8.61
Q Barrel (cfs)	99.2	Culv Vel DS (ft/s)	11.36
E.G. US. (ft)	584.42	Culv Inv El Up (ft)	580.5
W.S. US. (ft)	584.39	Culv Inv El Dn (ft)	579.95
E.G. DS (ft)	583.3	Culv Frctn Ls (ft)	0.25
W.S. DS (ft)	582.44	Culv Exit Loss (ft)	0.41
Delta EG (ft)	1.12	Culv Entr Loss (ft)	0.46
Delta WS (ft)	1.94	Q Weir (cfs)	183.9
E.G. IC (ft)	584.35	Weir Sta Lft (ft)	549.03
E.G. OC (ft)	584.42	Weir Sta Rgt (ft)	1056.23
Culvert Control	Outlet	Weir Submerg	0
Culv WS Inlet (ft)	582.8	Weir Max Depth (ft)	0.52
Culv WS Outlet (ft)	581.7	Weir Avg Depth (ft)	0.32
Culv Nml Depth (ft)	1.43	Weir Flow Area (sq ft)	120.76
Culv Crt Depth (ft)	2.3	Min El Weir Flow (ft)	583.91

HEC-RAS CULVERT OUTPUT DATA - ULTIMATE PROPOSED

Plan: POST_ULT WALNUT BRANCH	Reach-1 RS: 35710	Culv Group: Culvert #1	Profile: 25yr (Design)
Q Culv Group (cfs)	358.7	Culv Full Len (ft)	
# Barrels	6	Culv Vel US (ft/s)	6.5
Q Barrel (cfs)	59.78	Culv Vel DS (ft/s)	5.36
E.G. US. (ft)	583.07	Culv Inv El Up (ft)	581
W.S. US. (ft)	582.86	Culv Inv El Dn (ft)	580.6
E.G. DS (ft)	582.42	Culv Frctn Ls (ft)	0.33
W.S. DS (ft)	582.19	Culv Exit Loss (ft)	0.21
Delta EG (ft)	0.64	Culv Entr Loss (ft)	0.1
Delta WS (ft)	0.67	Q Weir (cfs)	
E.G. IC (ft)	583.07	Weir Sta Lft (ft)	
E.G. OC (ft)	583.1	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	582.31	Weir Max Depth (ft)	
Culv WS Outlet (ft)	582.19	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.26	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.31	Min El Weir Flow (ft)	584.61

Plan: POST_ULT WALNUT BRANCH	Reach-1 RS: 35710	Culv Group: Culvert #1	Profile: 100yr (Check)
Q Culv Group (cfs)	514.5	Culv Full Len (ft)	
# Barrels	6	Culv Vel US (ft/s)	7.33
Q Barrel (cfs)	85.75	Culv Vel DS (ft/s)	6.85
E.G. US. (ft)	583.63	Culv Inv El Up (ft)	581
W.S. US. (ft)	583.46	Culv Inv El Dn (ft)	580.6
E.G. DS (ft)	582.76	Culv Frctn Ls (ft)	0.39
W.S. DS (ft)	582.39	Culv Exit Loss (ft)	0.36
Delta EG (ft)	0.88	Culv Entr Loss (ft)	0.13
Delta WS (ft)	1.08	Q Weir (cfs)	
E.G. IC (ft)	583.63	Weir Sta Lft (ft)	
E.G. OC (ft)	583.67	Weir Sta Rgt (ft)	
Culvert Control	Inlet	Weir Submerg	
Culv WS Inlet (ft)	582.67	Weir Max Depth (ft)	
Culv WS Outlet (ft)	582.39	Weir Avg Depth (ft)	
Culv Nml Depth (ft)	1.6	Weir Flow Area (sq ft)	
Culv Crt Depth (ft)	1.67	Min El Weir Flow (ft)	584.61

PROPOSED CULVERT UPSTREAM HEC-RAS CROSS SECTION OUTPUT



EXPLANATION OF PLANS:

1. PRE: PRE-PROJECT (EXISTING) GEOMETRY WITH EXISTING FLOWS.
2. POST_EX: POST-PROJECT (PROPOSED) GEOMETRY WITH EXISTING FLOWS.
3. POST_ULT: POST-PROJECT (PROPOSED) GEOMETRY WITH ULTIMATE DEVELOPMENT CONDITION FLOWS. SEE ULTIMATE DRAINAGE AREA SHEET FOR COMPUTATION DETAILS.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

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PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET CULVERT C

SHEET 4 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	153

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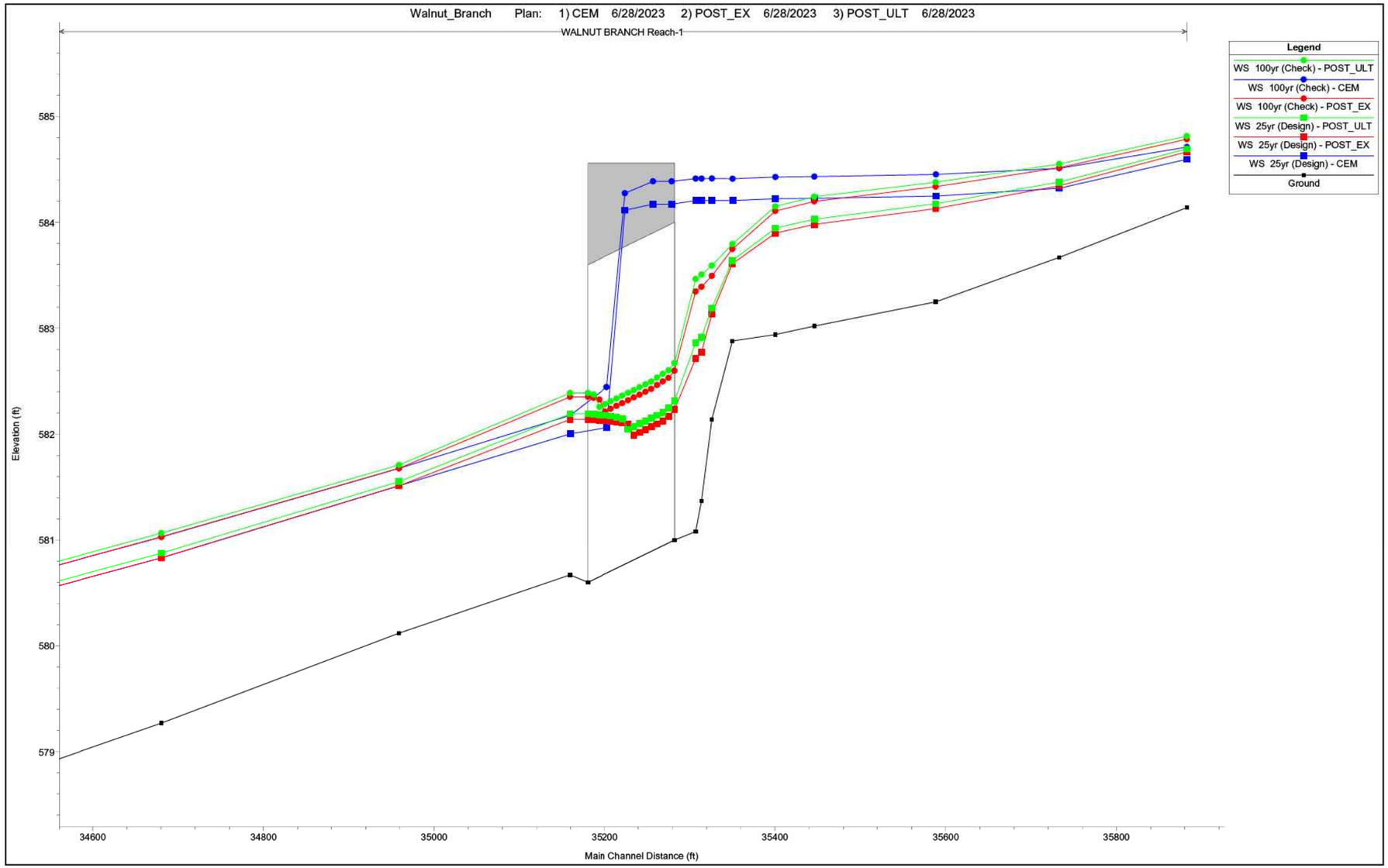
Plotted on: 7/27/2023

HEC-RAS PROFILE PLOT OUTPUT



DESIGN

INTERIM REVIEW

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ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
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HYDRAULIC DATA SHEET
CULVERT C

SHEET 5 OF 5

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	154

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_C04.dgn

Plotted on: 7/27/2023

Crossing Discharge Data

Discharge Selection Method: Recurrence

Rating Curve Plot for Crossing: Culvert_D_Exist

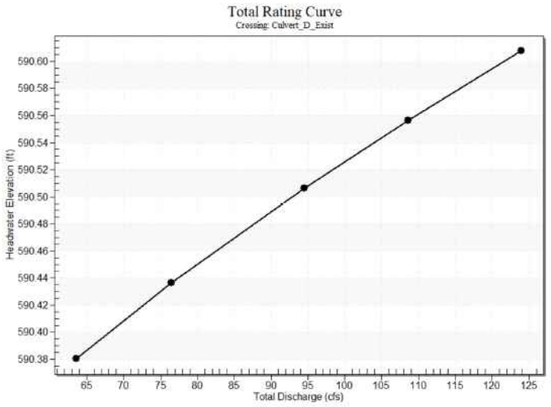


Table 1 - Summary of Culvert Flows at Crossing: Culvert_D_Exist

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert_D_Exist Discharge (cfs)	Roadway Discharge (cfs)	Iterations
590.38	5 year	63.60	26.12	37.45	8
590.44	10 year	76.50	25.60	50.89	5
590.51	25 year	94.50	24.94	69.53	4
590.56	50 year	108.60	24.47	84.12	4
590.61	100 year	123.90	24.01	99.89	4
590.13	Overtopping	32.58	32.58	0.00	Overtopping

Culvert Data: Culvert_D_Exist

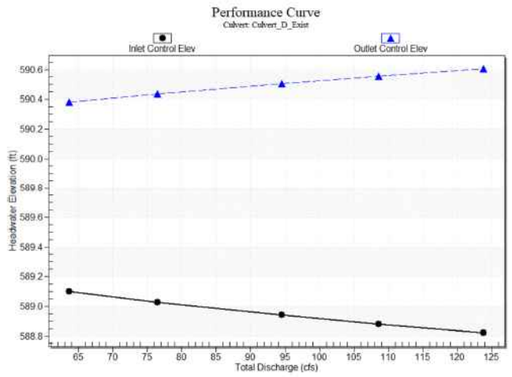
Table 2 - Culvert Summary Table: Culvert_D_Exist

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
5 year	63.60 cfs	26.12 cfs	590.38	2.94	4.221	4-FFf	-1.00	1.36	1.85	2.01	5.95	2.31
10 year	76.50 cfs	25.60 cfs	590.44	2.87	4.277	4-FFf	-1.00	1.34	1.85	2.15	5.83	2.42
25 year	94.50 cfs	24.94 cfs	590.51	2.78	4.346	4-FFf	-1.00	1.32	1.85	2.33	5.68	2.55
50 year	108.60 cfs	24.47 cfs	590.56	2.72	4.396	4-FFf	-1.00	1.31	1.85	2.45	5.58	2.64
100 year	123.90 cfs	24.01 cfs	590.61	2.66	4.448	4-FFf	-1.00	1.29	1.85	2.58	5.47	2.73

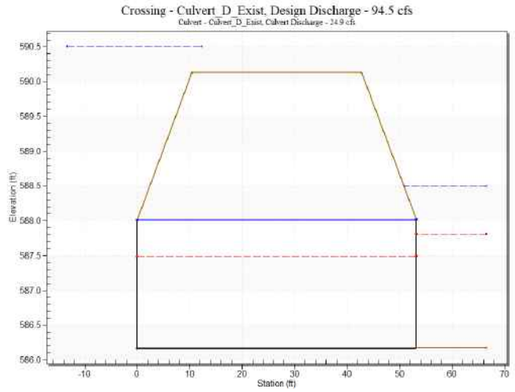
Culvert Barrel Data

Culvert Barrel Type Straight Culvert
Inlet Elevation (invert): 586.16 ft,
Outlet Elevation (invert): 586.17 ft
Culvert Length: 53.20 ft,
Culvert Slope: -0.0002

Culvert Performance Curve Plot: Culvert_D_Exist



Water Surface Profile Plot for Culvert: Culvert_D_Exist



Site Data - Culvert_D_Exist

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 586.16 ft
Outlet Station: 53.20 ft
Outlet Elevation: 586.17 ft
Number of Barrels: 1

Culvert Data Summary - Culvert_D_Exist

Barrel Shape: Pipe Arch
Barrel Span: 36.10 in
Barrel Rise: 22.20 in
Barrel Material: Steel or Aluminum
Embedment: 0.00 in
Barrel Manning's n: 0.0250
Culvert Type: Straight
Inlet Configuration: Projecting (Ke=0.9)
Inlet Depression: None

Tailwater Data for Crossing: Culvert_D_Exist

Table 3 - Downstream Channel Rating Curve (Crossing: Culvert_D_Exist)

Flow (cfs)	Water Surface Elev (ft)	Velocity (ft/s)	Depth (ft)	Shear (psf)	Froude Numbe
63.60	588.18	2.01	2.31	0.38	0.41
76.50	588.32	2.15	2.42	0.40	0.41
94.50	588.50	2.33	2.55	0.44	0.42
108.60	588.62	2.45	2.64	0.46	0.42
123.90	588.75	2.58	2.73	0.48	0.42

Tailwater Channel Data - Culvert_D_Exist

Tailwater Channel Option: Triangular Channel
Side Slope (H:V): 6.83 (_:1)
Channel Slope: 0.0030
Channel Manning's n: 0.0350
Channel Invert Elevation: 586.17 ft

Roadway Data for Crossing: Culvert_D_Exist

Roadway Profile Shape: Constant Roadway Elevation
Crest Length: 100.00 ft
Crest Elevation: 590.13 ft
Roadway Surface: Paved
Roadway Top Width: 32.30 ft

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

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HYDRAULIC DATA SHEET
CULVERT D EXIST

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	155

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_D01.dgn

Plotted on: 7/27/2023

Crossing Discharge Data

Discharge Selection Method: Recurrence

Rating Curve Plot for Crossing: Culvert_D_Prop

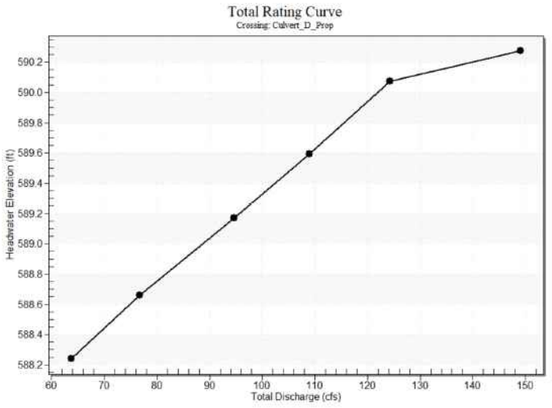


Table 1 - Summary of Culvert Flows at Crossing: Culvert_D_Prop

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert_D_Prop Discharge (cfs)	Roadway Discharge (cfs)	Iterations
588.24	5 year	63.70	63.70	0.00	1
588.66	10 year	76.69	76.69	0.00	1
589.17	25 year*	94.68	94.68	0.00	1
589.59	50 year	108.87	108.87	0.00	1
590.07	100 year†	124.23	124.00	0.07	21
590.07	Overtopping	123.92	123.92	0.00	Overtopping

*Design Storm
†Check Storm

Culvert Data: Culvert_D_Prop

Table 2 - Culvert Summary Table: Culvert_D_Prop

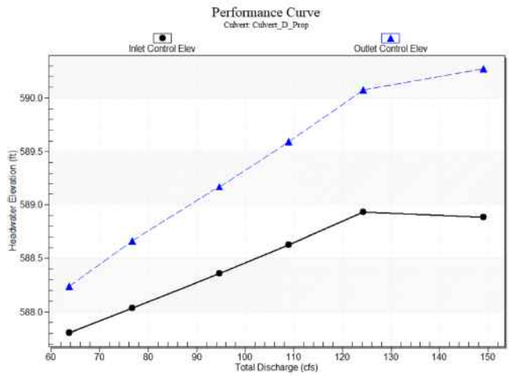
Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
5 year	63.70 cfs	63.70 cfs	588.24	1.70	2.141	7-M1t	1.74	1.08	1.99	1.99	3.21	1.89
10 year	76.69 cfs	76.69 cfs	588.66	1.94	2.560	4-FFf	2.00	1.22	2.00	2.18	3.83	1.99
25 year*	94.68 cfs	94.68 cfs	589.17	2.26	3.069	4-FFf	2.00	1.41	2.00	2.41	4.73	2.10
50 year	108.87 cfs	108.87 cfs	589.59	2.52	3.494	4-FFf	2.00	1.54	2.00	2.58	5.44	2.18
100 year†	124.23 cfs	124.00 cfs	590.07	2.83	3.974	4-FFf	2.00	1.68	2.00	2.75	6.20	2.26

*Design Storm
†Check Storm

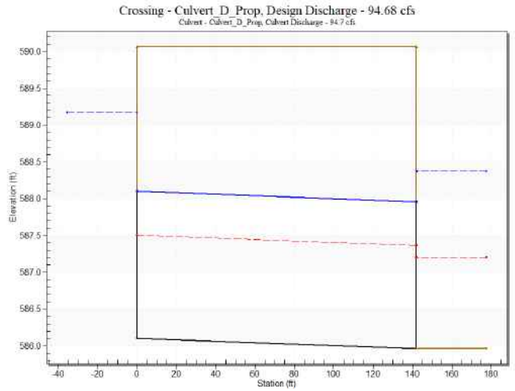
Culvert Barrel Data

Culvert Barrel Type Straight Culvert
Inlet Elevation (invert): 586.10 ft,
Outlet Elevation (invert): 585.96 ft
Culvert Length: 142.00 ft,
Culvert Slope: 0.0010

Culvert Performance Curve Plot: Culvert_D_Prop



Water Surface Profile Plot for Culvert: Culvert_D_Prop



Site Data - Culvert_D_Prop

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 586.10 ft
Outlet Station: 142.00 ft
Outlet Elevation: 585.96 ft
Number of Barrels: 2

Culvert Data Summary - Culvert_D_Prop

Barrel Shape: Concrete Box
Barrel Span: 5.00 ft
Barrel Rise: 2.00 ft
Barrel Material: Concrete
Embedment: 0.00 in
Barrel Manning's n: 0.0130
Culvert Type: Straight
Inlet Configuration: 1:1 Bevel Headwall (Ke=0.2)
Inlet Depression: None

Tailwater Data for Crossing: Culvert_D_Prop

Table 3 - Downstream Channel Rating Curve (Crossing: Culvert_D_Prop)

Flow (cfs)	Water Surface Elev (ft)	Velocity (ft/s)	Depth (ft)	Shear (psf)	Froude Number
63.70	587.95	1.99	1.89	0.12	0.29
76.69	588.14	2.18	1.99	0.14	0.29
94.68*	588.37	2.41	2.10	0.15	0.29
108.87	588.54	2.58	2.18	0.16	0.30
124.23†	588.71	2.75	2.26	0.17	0.30

*Design Storm
†Check Storm

Tailwater Channel Data - Culvert_D_Prop

Tailwater Channel Option: Trapezoidal Channel
Bottom Width: 9.00 ft
Side Slope (H:V): 4.00 (_:1)
Channel Slope: 0.0010
Channel Manning's n: 0.0300
Channel Invert Elevation: 585.96 ft

Roadway Data for Crossing: Culvert_D_Prop

Roadway Profile Shape: Constant Roadway Elevation
Crest Length: 100.00 ft
Crest Elevation: 590.07 ft
Roadway Surface: Paved
Roadway Top Width: 142.00 ft

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET CULVERT D PROP

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	156

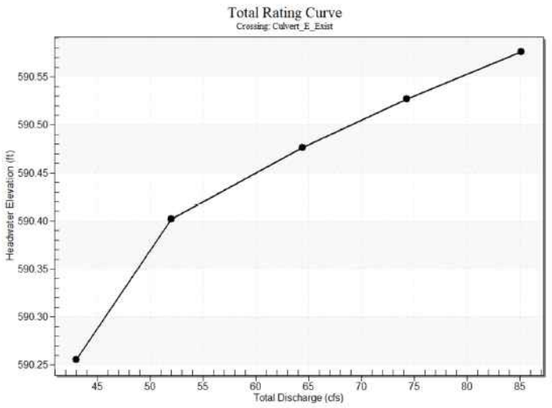
Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_D02.dgn

Plotted on: 7/27/2023

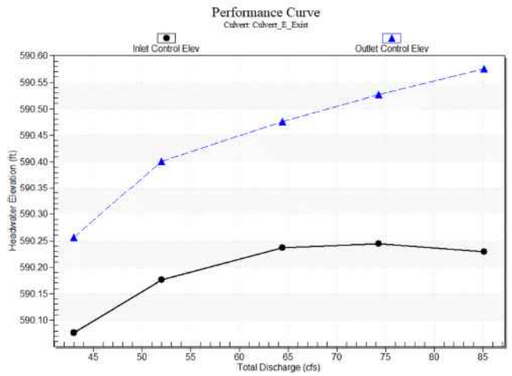
Crossing Discharge Data

Discharge Selection Method: Recurrence

Rating Curve Plot for Crossing: Culvert_E_Exist



Culvert Performance Curve Plot: Culvert_E_Exist



Tailwater Data for Crossing: Culvert_E_Exist

Table 3 - Downstream Channel Rating Curve (Crossing: Culvert_E_Exist)

Flow (cfs)	Water Surface Elev (ft)	Velocity (ft/s)	Depth (ft)	Shear (psf)	Froude Number
43.00	587.31	1.58	2.59	0.51	0.51
52.00	587.42	1.69	2.72	0.55	0.52
64.40	587.57	1.84	2.87	0.60	0.53
74.30	587.67	1.94	2.98	0.63	0.53
85.10	587.77	2.04	3.08	0.66	0.54

Tailwater Channel Data - Culvert_E_Exist

Tailwater Channel Option: Triangular Channel
Side Slope (H:V): 6.65 (_:1)
Channel Slope: 0.0052
Channel Manning's n: 0.0350
Channel Invert Elevation: 585.73 ft

Roadway Data for Crossing: Culvert_E_Exist

Roadway Profile Shape: Constant Roadway Elevation
Crest Length: 100.00 ft
Crest Elevation: 590.31 ft
Roadway Surface: Paved
Roadway Top Width: 34.50 ft

Water Surface Profile Plot for Culvert: Culvert_E_Exist

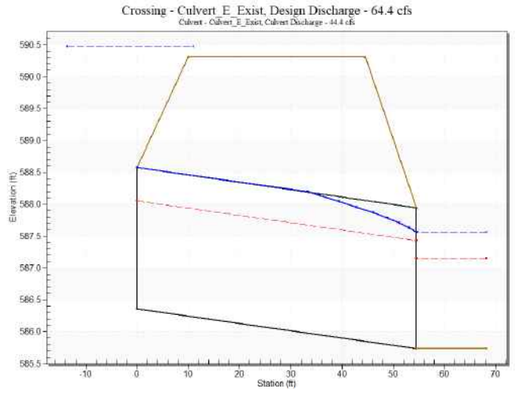


Table 1 - Summary of Culvert Flows at Crossing: Culvert_E_Exist

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert_E_Exist Discharge (cfs)	Roadway Discharge (cfs)	Iterations
590.26	5 year	43.00	43.00	0.00	1
590.40	10 year	52.00	43.89	8.07	9
590.48	25 year	64.40	44.41	19.97	6
590.53	50 year	74.30	44.48	29.81	5
590.58	100 year	85.10	44.35	40.72	4
590.31	Overtopping	43.39	43.39	0.00	Overtopping

Culvert Data: Culvert_E_Exist

Table 2 - Culvert Summary Table: Culvert_E_Exist

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
5 year	43.00 cfs	43.00 cfs	590.26	3.72	3.896	7-M2c	2.22	1.67	1.67	1.58	8.12	2.59
10 year	52.00 cfs	43.89 cfs	590.40	3.82	4.042	7-M2t	2.22	1.68	1.69	1.69	8.17	2.72
25 year	64.40 cfs	44.41 cfs	590.48	3.88	4.116	7-M2t	2.22	1.70	1.84	1.84	7.78	2.87
50 year	74.30 cfs	44.48 cfs	590.53	3.88	4.167	7-M2t	2.22	1.70	1.94	1.94	7.52	2.98
100 year	85.10 cfs	44.35 cfs	590.58	3.87	4.216	7-M2t	2.22	1.69	2.04	2.04	7.28	3.08

Culvert Barrel Data

Culvert Barrel Type Straight Culvert
Inlet Elevation (invert): 586.36 ft,
Outlet Elevation (invert): 585.73 ft
Culvert Length: 54.51 ft,
Culvert Slope: 0.0116

Site Data - Culvert_E_Exist

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 586.36 ft
Outlet Station: 54.51 ft
Outlet Elevation: 585.73 ft
Number of Barrels: 1

Culvert Data Summary - Culvert_E_Exist

Barrel Shape: Pipe Arch
Barrel Span: 43.30 in
Barrel Rise: 26.60 in
Barrel Material: Steel or Aluminum
Embedment: 0.00 in
Barrel Manning's n: 0.0250
Culvert Type: Straight
Inlet Configuration: Projecting (Ke=0.9)
Inlet Depression: None

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET CULVERT E EXIST

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	157

Design Filename: P:\127\75\00\Design\Civil\Drainage\127500_hyd_E01.dgn

Plotted on: 7/27/2023

Crossing Discharge Data

Discharge Selection Method: Recurrence

Rating Curve Plot for Crossing: Culvert_E_Prop

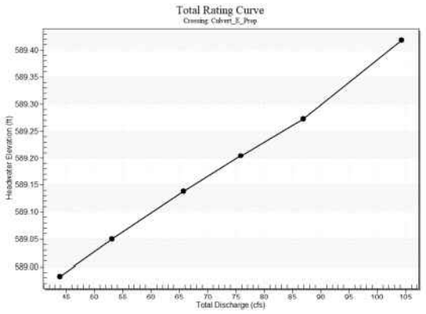


Table 1 - Summary of Culvert Flows at Crossing: Culvert_E_Prop

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert_E_Prop_West Discharge (cfs)	Culvert_E_Prop_East Discharge (cfs)	Roadway Discharge (cfs)	Iterations
588.98	5 year	43.92	21.96	21.96	0.00	7
589.05	10 year	53.05	26.52	26.52	0.00	4
589.14	25 year*	65.77	32.88	32.88	0.00	4
589.20	50 year	75.86	37.93	37.93	0.00	4
589.27	100 year†	86.87	43.43	43.43	0.00	4
590.14	Overtopping	138.14	50.13	88.01	0.00	Overtopping

*Design Storm
†Check Storm

Tailwater Data for Crossing: Culvert_E_Prop

Table 4 - Downstream Channel Rating Curve (Crossing: Culvert_E_Prop)

Flow (cfs)	Water Surface Elev (ft)	Velocity (ft/s)	Depth (ft)	Shear (psf)	Froude Number
43.92	586.48	1.48	1.66	0.09	0.28
53.05	586.63	1.63	1.76	0.10	0.28
65.77*	586.82	1.82	1.87	0.11	0.29
75.86	586.96	1.96	1.94	0.12	0.29
86.87†	587.11	2.11	2.02	0.13	0.29

*Design Storm
†Check Storm

Tailwater Channel Data - Culvert_E_Prop

Tailwater Channel Option: Trapezoidal Channel
Bottom Width: 12.00 ft
Side Slope (H:V): 4.00 (_:1)
Channel Slope: 0.0010
Channel Manning's n: 0.0300
Channel Invert Elevation: 585.00 ft

Roadway Data for Crossing: Culvert_E_Prop

Roadway Profile Shape: Constant Roadway Elevation
Crest Length: 100.00 ft
Crest Elevation: 590.14 ft
Roadway Surface: Paved
Roadway Top Width: 132.00 ft

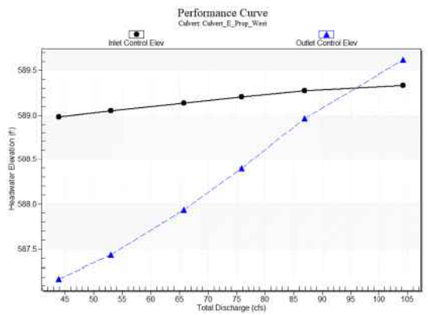
Culvert Data: Culvert_E_Prop_West

Table 2 - Culvert Summary Table: Culvert_E_Prop_West

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
5 year	43.92 cfs	21.96 cfs	588.98	3.84	2.034	3-M2t	2.00	1.18	1.48	1.48	4.96	1.66
10 year	53.05 cfs	26.52 cfs	589.05	3.91	2.297	3-M2t	2.00	1.34	1.63	1.63	5.42	1.76
25 year*	65.77 cfs	32.88 cfs	589.14	4.00	2.792	7-M2t	2.00	1.55	1.82	1.82	6.01	1.87
50 year	75.86 cfs	37.93 cfs	589.20	4.06	3.257	7-M2t	2.00	1.71	1.96	1.96	6.44	1.94
100 year†	86.87 cfs	43.43 cfs	589.27	4.13	3.828	4-FFf	2.00	1.87	2.00	2.11	7.24	2.02

*Design Storm
†Check Storm

Culvert Performance Curve Plot: Culvert_E_Prop_West



Culvert Barrel Data

Culvert Barrel Type Straight Culvert
Inlet Elevation (invert): 585.14 ft,
Outlet Elevation (invert): 585.00 ft
Culvert Length: 132.04 ft,
Culvert Slope: 0.0011
Inlet Throat Elevation: 585.14 ft,
Inlet Crest Elevation: 588.48 ft

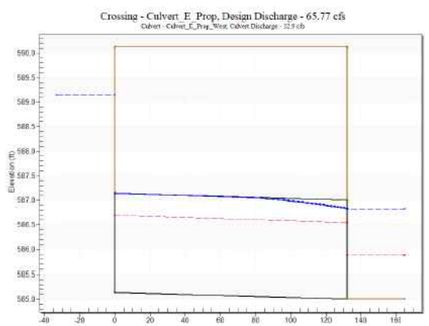
Site Data - Culvert_E_Prop_West

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 588.21 ft
Outlet Station: 132.00 ft
Outlet Elevation: 585.00 ft
Number of Barrels: 1

Culvert Data Summary - Culvert_E_Prop_West

Barrel Shape: Concrete Box
Barrel Span: 3.00 ft
Barrel Rise: 2.00 ft
Barrel Material: Concrete
Embedment: 0.00 in
Barrel Manning's n: 0.0120
Culvert Type: Straight
Inlet Configuration: 1:1 Bevel Headwall
Inlet Depression: Yes

Water Surface Profile Plot for Culvert: Culvert_E_Prop_West



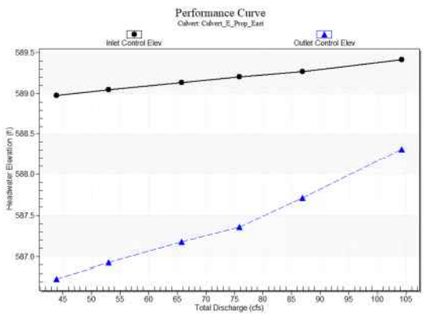
Culvert Data: Culvert_E_Prop_East

Table 3 - Culvert Summary Table: Culvert_E_Prop_East

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
5 year	43.92 cfs	21.96 cfs	588.98	3.84	1.593	7-M1t	1.23	0.84	1.48	1.48	2.98	1.66
10 year	53.05 cfs	26.52 cfs	589.05	3.91	1.788	7-M1t	1.41	0.96	1.63	1.63	3.25	1.76
25 year*	65.77 cfs	32.88 cfs	589.14	4.00	2.037	7-M1t	1.64	1.10	1.82	1.82	3.60	1.87
50 year	75.86 cfs	37.93 cfs	589.20	4.06	2.220	7-M1t	1.82	1.21	1.96	1.96	3.86	1.94
100 year†	86.87 cfs	43.43 cfs	589.27	4.13	2.570	4-FFf	2.00	1.33	2.00	2.11	4.34	2.02

*Design Storm
†Check Storm

Culvert Performance Curve Plot: Culvert_E_Prop_East



Culvert Barrel Data

Culvert Barrel Type Straight Culvert
Inlet Elevation (invert): 585.14 ft,
Outlet Elevation (invert): 585.00 ft
Culvert Length: 132.04 ft,
Culvert Slope: 0.0011
Inlet Throat Elevation: 585.14 ft,
Inlet Crest Elevation: 588.48 ft

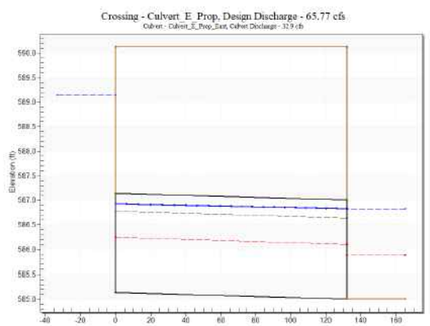
Site Data - Culvert_E_Prop_East

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 588.21 ft
Outlet Station: 132.00 ft
Outlet Elevation: 585.00 ft
Number of Barrels: 1

Culvert Data Summary - Culvert_E_Prop_East

Barrel Shape: Concrete Box
Barrel Span: 5.00 ft
Barrel Rise: 2.00 ft
Barrel Material: Concrete
Embedment: 0.00 in
Barrel Manning's n: 0.0120
Culvert Type: Straight
Inlet Configuration: 1:1 Bevel Headwall
Inlet Depression: Yes

Water Surface Profile Plot for Culvert: Culvert_E_Prop_East



DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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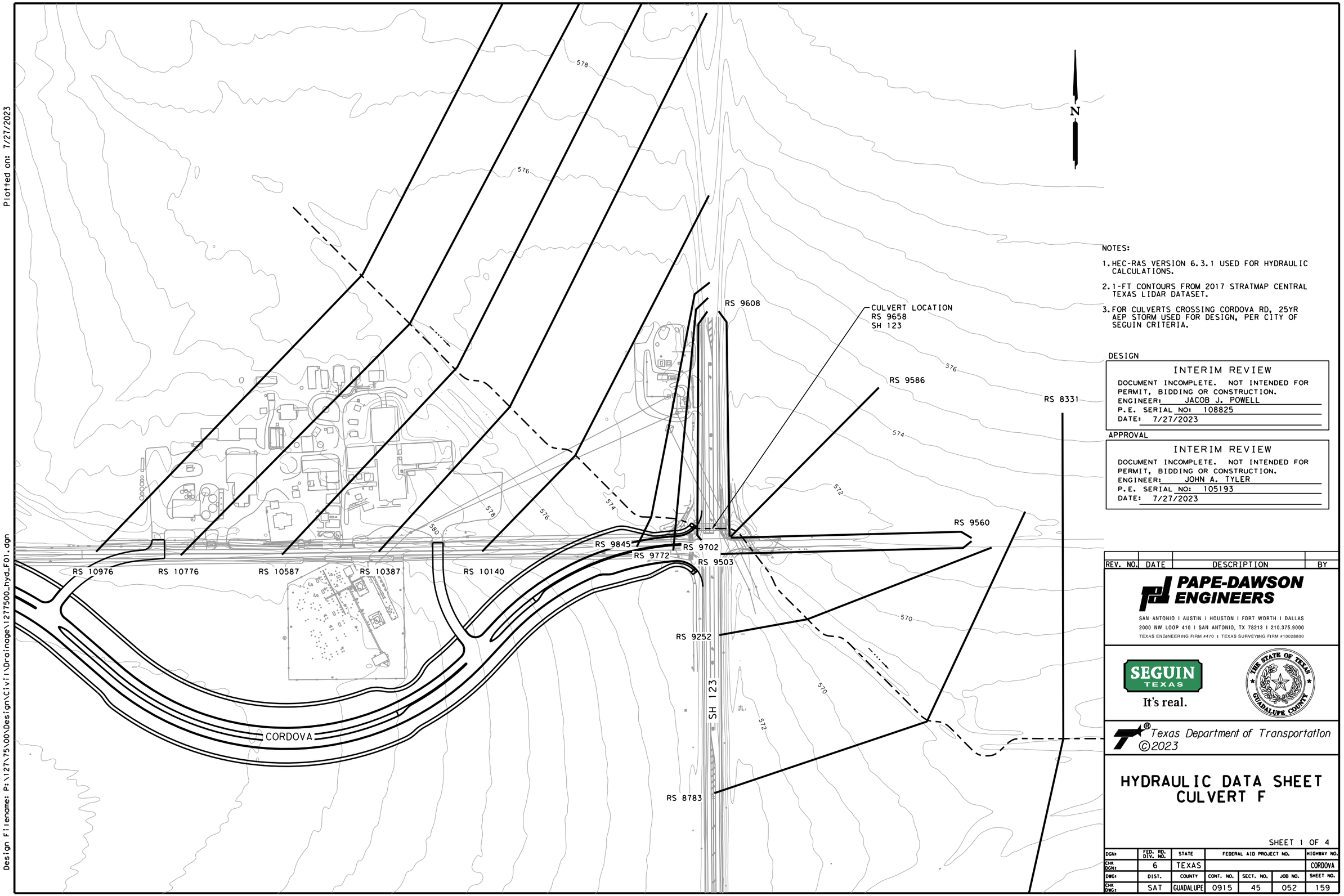
HYDRAULIC DATA SHEET
CULVERT E PROP

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	158

Design Filename: P:\127\75\00\Design\Civil\Drainage\127500_hyd_E02.dgn

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_F01.dgn



NOTES:

1. HEC-RAS VERSION 6.3.1 USED FOR HYDRAULIC CALCULATIONS.
2. 1-FT CONTOURS FROM 2017 STRATMAP CENTRAL TEXAS LIDAR DATASET.
3. FOR CULVERTS CROSSING CORDOVA RD, 25YR AEP STORM USED FOR DESIGN, PER CITY OF SEGUIN CRITERIA.

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

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SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET
CULVERT F

SHEET 1 OF 4

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	159

HEC-RAS OUTPUT

River Sta	Profile	Plan	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
10976	5yr	PRE	515.4	575.33	576.54		576.58	0.002829	1.51	342.09	647.06	0.36
10976	5yr	POST	492.5	575.33	576.55		576.58	0.002454	1.42	348.27	651.67	0.34
10976	10yr	PRE	740.7	575.33	576.72		576.76	0.002607	1.61	466.91	773.12	0.35
10976	10yr	POST	705.9	575.33	576.69		576.73	0.002625	1.59	448.98	757.04	0.35
10976	25yr (Design)	PRE	1080.8	575.33	577.14		577.17	0.001052	1.31	844.49	976.92	0.24
10976	25yr (Design)	POST	1027.5	575.33	577.06		577.09	0.001281	1.38	764.53	957.35	0.26
10976	50yr	PRE	1360.4	575.33	577.78		577.79	0.000295	0.93	1509.52	1124.82	0.14
10976	50yr	POST	1290	575.33	577.26		577.29	0.001011	1.38	957.95	993.06	0.24
10976	100yr (Check)	PRE	1685.2	575.33	578.65		578.65	0.000097	0.67	2552.25	1329.08	0.08
10976	100yr (Check)	POST	1593.9	575.33	577.49		577.52	0.000807	1.38	1195.53	1066.84	0.22
10776	5yr	PRE	515.4	574.91	576.27		576.28	0.000886	1.02	507.02	708.5	0.21
10776	5yr	POST	492.5	574.91	576.36		576.37	0.000552	0.86	576.29	734.36	0.17
10776	10yr	PRE	740.7	574.91	576.43		576.46	0.000958	1.18	630.11	754.78	0.23
10776	10yr	POST	705.9	574.91	576.41		576.43	0.000941	1.15	614.75	751.49	0.22
10776	25yr (Design)	PRE	1080.8	574.91	577.03		577.05	0.000372	0.95	1148.81	956.35	0.15
10776	25yr (Design)	POST	1027.5	574.91	576.93		576.95	0.000433	0.99	1051.79	930.46	0.16
10776	50yr	PRE	1360.4	574.91	577.74		577.75	0.000136	0.74	1874.42	1135.86	0.1
10776	50yr	POST	1290	574.91	577.15		577.16	0.0004	1.04	1256.25	967.59	0.16
10776	100yr (Check)	PRE	1685.2	574.91	578.63		578.64	0.000059	0.58	3011.54	1401.81	0.07
10776	100yr (Check)	POST	1593.9	574.91	577.39		577.41	0.000363	1.08	1498.63	1017.82	0.15
10587	5yr	PRE	515.4	574.38	576.14		576.15	0.000538	0.84	613.82	780.17	0.17
10587	5yr	POST	492.5	574.38	576.29		576.3	0.000276	0.67	733.11	797.88	0.12
10587	10yr	PRE	740.7	574.38	576.29		576.31	0.000627	1.01	732.13	795.48	0.19
10587	10yr	POST	705.9	574.38	576.28		576.29	0.000602	0.98	719.35	789.5	0.18
10587	25yr (Design)	PRE	1080.8	574.38	576.98		576.99	0.000222	0.79	1386.12	1035.08	0.12
10587	25yr (Design)	POST	1027.5	574.38	576.87		576.88	0.000256	0.82	1272.11	1009.72	0.13
10587	50yr	PRE	1360.4	574.38	577.72		577.73	0.000088	0.63	2195.11	1145.75	0.08
10587	50yr	POST	1290	574.38	577.09		577.1	0.000251	0.87	1497.11	1054.46	0.13
10587	100yr (Check)	PRE	1685.2	574.38	578.62		578.63	0.000039	0.52	3277.2	1257.99	0.06
10587	100yr (Check)	POST	1593.9	574.38	577.34		577.35	0.000236	0.92	1764.26	1099	0.13
10387	5yr	PRE	515.4	573.98	576.03		576.04	0.000544	0.81	638.38	869.63	0.17
10387	5yr	POST	492.5	573.98	576.25		576.25	0.000221	0.6	828.65	918.06	0.11
10387	10yr	PRE	740.7	573.98	576.16		576.18	0.000682	0.99	752.33	908.61	0.19
10387	10yr	POST	705.9	573.98	576.15		576.17	0.000645	0.95	743.13	907.42	0.18
10387	25yr (Design)	PRE	1080.8	573.98	576.95		576.96	0.000161	0.72	1526.49	1061.63	0.1
10387	25yr (Design)	POST	1027.5	573.98	576.83		576.84	0.00019	0.74	1402.06	1050.85	0.11
10387	50yr	PRE	1360.4	573.98	577.71		577.71	0.000064	0.59	2388.03	1199.27	0.07
10387	50yr	POST	1290	573.98	577.05		577.06	0.000184	0.8	1634.4	1070.48	0.11
10387	100yr (Check)	PRE	1685.2	573.98	578.62		578.62	0.00003	0.51	3566.17	1399.8	0.05
10387	100yr (Check)	POST	1593.9	573.98	577.3		577.31	0.000172	0.85	1912.09	1133.05	0.11
10140	5yr	PRE	515.4	573.49	575.91		575.92	0.000426	0.81	676.26	928.97	0.15
10140	5yr	POST	492.5	573.49	576.2		576.21	0.000136	0.55	955.31	988.46	0.09
10140	10yr	PRE	740.7	573.49	575.99		576.01	0.000638	1.05	751.26	941.39	0.19
10140	10yr	POST	705.9	573.49	575.99		576.01	0.000569	0.99	755.75	942.23	0.18
10140	25yr (Design)	PRE	1080.8	573.49	576.91		576.92	0.000113	0.69	1680.62	1050.79	0.09
10140	25yr (Design)	POST	1027.5	573.49	576.79		576.8	0.000131	0.71	1551.25	1040.45	0.09
10140	50yr	PRE	1360.4	573.49	577.69		577.7	0.00005	0.58	2533.55	1134.75	0.06
10140	50yr	POST	1290	573.49	577.01		577.02	0.000135	0.78	1780.8	1059.41	0.1
10140	100yr (Check)	PRE	1685.2	573.49	578.61		578.61	0.000026	0.51	3608.03	1200.58	0.05
10140	100yr (Check)	POST	1593.9	573.49	577.26		577.27	0.000132	0.83	2052.81	1084.91	0.1
9845	5yr	PRE	515.4	573.09	575.74		575.76	0.000575	1.13	472.69	703.6	0.2
9845	5yr	POST	492.5	573.09	576.15		576.16	0.000143	0.71	773.18	755.97	0.1
9845	10yr	PRE	740.7	573.09	575.64		575.69	0.001753	1.83	397.26	697.73	0.34
9845	10yr	POST	705.9	573.09	575.72		575.76	0.001187	1.6	454.25	702.13	0.28
9845	25yr (Design)	PRE	1080.8	573.09	576.86		576.87	0.00014	0.91	1321.91	782.53	0.11
9845	25yr (Design)	POST	1027.5	573.09	576.73		576.74	0.000162	0.94	1219.56	781.01	0.12
9845	50yr	PRE	1360.4	573.09	577.67		577.68	0.000065	0.77	1960.95	809.09	0.08
9845	50yr	POST	1290	573.09	576.95		576.96	0.000171	1.04	1387.68	783.65	0.12
9845	100yr (Check)	PRE	1685.2	573.09	578.6		578.6	0.000035	0.68	2719.53	819.2	0.06
9845	100yr (Check)	POST	1593.9	573.09	577.2		577.22	0.000172	1.12	1585.93	787.88	0.12
9772	5yr	PRE	515.4	573.13	575.75		575.75	0.000026	0.43	1377.4	720.15	0.05
9772	5yr	POST	492.5	573.13	576.03	574.49	576.13	0.000778	2.48	198.92	722.11	0.27
9772	10yr	PRE	740.7	573.13	575.66		575.66	0.000064	0.65	1311.15	719.47	0.08
9772	10yr	POST	705.9	573.13	574.79	574.79	575.49	0.013455	6.72	104.99	656.18	1
9772	25yr (Design)	PRE	1080.8	573.13	576.86		576.87	0.000026	0.55	2184.02	730.75	0.05
9772	25yr (Design)	POST	1027.5	573.13	576.73	575.17	576.74	0.000027	0.55	2088.73	729.01	0.05
9772	50yr	PRE	1360.4	573.13	577.67		577.67	0.000019	0.54	2784.55	759	0.05
9772	50yr	POST	1290	573.13	576.95	575.48	576.95	0.000034	0.64	2245.67	732.44	0.06
9772	100yr (Check)	PRE	1685.2	573.13	578.6		578.6	0.000014	0.53	3488.01	759	0.04
9772	100yr (Check)	POST	1593.9	573.13	577.2	575.81	577.21	0.00004	0.73	2431.37	739.58	0.07
9702	5yr	PRE	515.4	571.35	575.42	573.65	575.72	0.001439	4.47	119.04	643.67	0.39
9702	10yr	PRE	740.7	571.35	574.2	574.2	575.52	0.010464	9.5	81.36	444.56	1
9702	25yr (Design)	PRE	1080.8	571.35	575.48	574.96	576.74	0.006057	9.25	120.62	648.03	0.81
9702	50yr	PRE	1360.4	571.35	575.5	575.5	577.47	0.009377	11.57	121.46	650.41	1
9702	100yr (Check)	PRE	1685.2	571.35	576.13	576.13	578.37	0.008814	12.32	140.8	656.26	1
9658			Culvert									
9608	5yr	PRE	515.4	569.2	572.17	572.17	573.16	0.012796	8.01	65.2	77.05	0.99
9608	5yr	POST	492.5	569.2	572.11	572.11	573.07	0.0129	7.88	63.27	61.82	0.99
9608	10yr	PRE	740.7	569.2	572.7	572.7	573.97	0.012097	9.1	82.54	366.49	1.01
9608	10yr	POST	705.9	569.2	572.62	572.62	573.85	0.012279	8.96	79.82	266.21	1.01
9608	25yr (Design)	PRE	1080.8	569.2	573.43	573.43	575.04	0.011092	10.3	106.38	486.79	1
9608	25yr (Design)	POST	1027.5	569.2	573.32	573.32	574.88	0.011214	10.13	102.85	432.87	1
9608	50yr	PRE	1360.4	569.2	573.95	573.95	575.85	0.010737	11.18	123.37	595.55	1.01
9608	50yr	POST	1290	569.2	573.82	573.82	575.65	0.010845	10.98	119.13	578.93	1.01
9608	100yr (Check)	PRE	1685.2	569.2	574.54	574.54	576.72	0.010119	11.96	142.84	633.23	1.01
9608	100yr (Check)	POST	1593.9	569.2	574.38	574.38	576.48	0.01026	11.74	137.57	630.65	1.01

River Sta	Profile	Plan	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
9586	5yr	PRE	515.4	568.81	571.86		572.07	0.002255	4.4	175.15	244.02	0.45
9586	5yr	POST	492.5	568.81	571.81		572.02	0.002228	4.33	164.26	209.28	0.45
9586	10yr	PRE	740.7	568.81	571.91	571.67	572.31	0.004214	6.09	188.14	261.65	0.62
9586	10yr	POST	705.9	568.81	571.88	571.6	572.27	0.004082	5.95	179.77	250.95	0.61
9586	25yr (Design)	PRE	1080.8	568.81	572.13	572.13	572.69	0.005827	7.51	253.82	349.76	0.74
9586	25yr (Design)	POST	1027.5	568.81	572.1	572.04	572.64	0.00562	7.32	241.83	338.72	0.72
9586	50yr	PRE	1360.4	568.81	572.48	572.48	572.9	0.004395	6.98	387.31	400.6	0.65
9586	50yr	POST	1290	568.81	572.45	572.45	572.85	0.004288	6.86	374.09	397.22	0.64
9586	100yr (Check)	PRE	1685.2	568.81	574.69	572.63	574.71	0.000192	2.01	1500.06	612.63	0.15
9586	100yr (Check)	POST	1593.9	568.81	574.47	572.58	574.5	0.000215	2.07	1371.07	580.77	0.15
9560	5yr	PRE	515.4	568.44	571.86	570.52	571.98	0.001509	3.34	259.77	367.48	0.35
9560	5yr	POST	492.5	568.44	571.81	570.47	571.94	0.001642	3.43	239.36	366.73	0.36
9560	10yr	PRE	740.7	568.44	571.95	570.96	572.14	0.002459	4.34	288.52	369.97	0.44
9560	10yr	POST	705.9	568.44	571.9	570.89	572.1	0.002527	4.35	273.38	368.46	0.45
9560	25yr (Design)	PRE	1080.8	568.44	572.24	571.96	572.43	0.002477	4.63	397.32	438.61	0.45
9560	25yr (Design)	POST	1027.5	568.44	572.2	571.96	572.39	0.002466	4.58	380.91	411.63	0.45
9560	50yr	PRE	1360.4	568.44	572.41	572.08	572.62	0.002656	4.96	478.16	532.08	0.47
9560	50yr	POST	1290	568.44	572.35	572.06	572.56	0.002723	4.96	447.03	512.07	0.48
9560	100yr (Check)	PRE	1685.2	568.44	571.54	571.54	573.98	0.030248	13.79	146.44	340.03	1.51
9560	100yr (Check)	POST	1593.9	568.44	571.52	571.52	573.81	0.02815	13.23	140.14	313.86	1.46
9541			Culvert									
9503	5yr	PRE	515.4	568.8	571.14	571.14	571.88	0.01242	6.89	75.39	438.69	1.02
9503	5yr	POST	492.5	568.8	571.11	571.11	571.81	0.012039	6.7	74.01	437.25	1.01
9503	10yr	PRE	740.7	568.8	571.67	571.67	571.9	0.003844	4.75	285.64	602.48	0.6
9503	10yr	POST	705.9	568.8	571.64	571.64	571.88	0.003935	4.76	270.39	585.4	0.61
9503	25yr (Design)	PRE	1080.8	568.8	571.83	571.83	572.07	0.004159	5.22	387.62	652.08	0.63
9503	25yr (Design)	POST	1027.5	568.8	571.77	571.77	572.05	0.004717	5.45	349.6	633.01	0.67
9503	50yr	PRE	1360.4	568.8	571.92	571.92	572.19	0.004832	5.76	440.63	670.21	0.69
9503	50yr	POST	1290	568.8	571.88	571.88	572.17	0.005062	5.83	415.91	669.63	0.7
9503	100yr (Check)	PRE	1685.2	568.8	572	572	572.31	0.005391	6.24	495.18	671.23	0.73
9503	100yr (Check)	POST	1593.9	568.8	571.97	571.97	572.28	0.005264	6.13	479.76	670.94	0.72
9252	5yr	PRE	515.4	567.95	570.29		570.34	0.000649	1.98	353.39	338.46	0.25
9252	5yr	POST	520.6	567.95	570.3		570.34	0.000653	1.99	355.39	339.94	0.25
9252	10yr	PRE	740.7	567.95	570.53		570.59	0.000784	2.36	441.1	397.04	0.28
9252	10yr	POST	747.5	567.95	570.54		570.6	0.000788	2.37	443.5	399.8	0.28
9252	25yr (Design)	PRE	1080.8	567.95	570.82		570.9	0.000956	2.82	567.54	485.38	0.31
9252	25yr (Design)	POST	1090.6	567.95	570.83		570.91	0.000951	2.82	574.34	492.19	0.31
9252	50yr	PRE	1360.4	567.95	571.01		571.11	0.001069	3.13	671.78	573.35	0.34
9252	50yr	POST	1372.3	567.95	571.02		571.11	0.001072	3.14	675.6	574.98	0.34
9252	100yr (Check)	PRE	1685.2	567.95	571.19		571.29	0.001143	3.38	776.23	617.28	0.35
9252	100yr (Check)	POST	1699.5	567.95	571.2		571.3	0.001134	3.37	783.48	620.33	0.35
8783	5yr	PRE	515.4	567.88	569.82		569.88	0.001697	2.63	302.54	479.08	0.38
8783	5yr	POST	520.6	567.88	569.83		569.89	0.001679	2.62	305.97	480.52	0.38
8783	10yr	PRE	740.7	567.88	570		570.08	0.001805	2.93	394.21	543.75	0.4
8783	10yr	POST	747.5	567.88	570		570.08	0.001808	2.93	396.63	544.69	0.4
8783	25yr (Design)	PRE	1080.8	567.88	570.22		570.31	0.001842	3.21	520.58	604.23	0.42
8783	25yr (Design)	POST	1090.6	567.88	570.24		570.32	0.001844	3.23	529.64	607.74	0.42
8783	50yr	PRE	1360.4	567.88	570.39		570.48	0.001823	3.39	627.54	646.72	0.42
8783	50yr	POST	1372.3	567.88	570.4		570.49	0.001823	3.4	631.41	647.69	0.42
8783	100yr (Check)	PRE	1685.2	567.88	570.55		570.65	0.001855	3.59	730.15	687	0.43
8783	100yr (Check)	POST	1699.5	567.88	570.55		570.66	0.001856	3.6	734.52	689.36	0.43
8331	5yr	PRE	515.4	567.28	569.13		569.18	0.001636	2.42	335.22	543.47	0.37
8331	5yr	POST	520.6	567.28	569.13		569.18	0.001635	2.43	337.64	544.08	0.37
8331	10yr	PRE	740.7	567.28	569.32		569.38	0.001529	2.57	446.47	594.29	0.37
8331	10yr	POST	747.5	567.28	569.33		569.38	0.001527	2.57	449.53	595.79	0.37
8331	25yr (Design)	PRE	1080.8	567.28	569.57		569.63	0.001448	2.76	599.31	658.8	0.37
8331	25yr (Design)	POST	1090.6	567.28	569.57		569.63	0.001455	2.77	601.96	659.16	0.37
8331	50yr	PRE	1360.4	567.28	569.76		569.82	0.001388	2.89	730.12	738.35	0.36
8331	50yr	POST	1372.3	567.28	569.76		569.83	0.001398	2.9	732.55	738.7	0.37
8331	100yr (Check)	PRE	1685.2	567.28	569.93		570	0.001322	2.98	858.8	784.69	0.36
8331	100yr (Check)	POST	1699.5	567.28	569.93		570	0.001319	2.98	864.36	786.03	0.36

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET
CULVERT F

SHEET 2 OF 4

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	160

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_F02.dgn

Plotted on: 7/27/2023

HEC-RAS CULVERT OUTPUT DATA - EXISTING

Plan: PRE GERONIMO TRIBUTA	Reach 1 RS: 9658	Culv Group: Culvert #1	Profile: 25yr (Design)
Q Culv Group (cfs)	827.37	Culv Full Len (ft)	84
# Barrels	4	Culv Vel US (ft/s)	11.49
Q Barrel (cfs)	206.84	Culv Vel DS (ft/s)	11.49
E.G. US. (ft)	576.74	Culv Inv El Up (ft)	571.37
W.S. US. (ft)	575.48	Culv Inv El Dn (ft)	569.57
E.G. DS (ft)	575.04	Culv Frctn Ls (ft)	0.94
W.S. DS (ft)	573.43	Culv Exit Loss (ft)	0.44
Delta EG (ft)	1.7	Culv Entr Loss (ft)	0.41
Delta WS (ft)	2.05	Q Weir (cfs)	253.43
E.G. IC (ft)	579.47	Weir Sta Lft (ft)	24.47
E.G. OC (ft)	576.74	Weir Sta Rgt (ft)	683.4
Culvert Control	Outlet	Weir Submerg	0
Culv WS Inlet (ft)	574.37	Weir Max Depth (ft)	0.4
Culv WS Outlet (ft)	572.57	Weir Avg Depth (ft)	0.26
Culv Nml Depth (ft)	1.87	Weir Flow Area (sq ft)	173.17
Culv Crt Depth (ft)	3	Min El Weir Flow (ft)	576.38

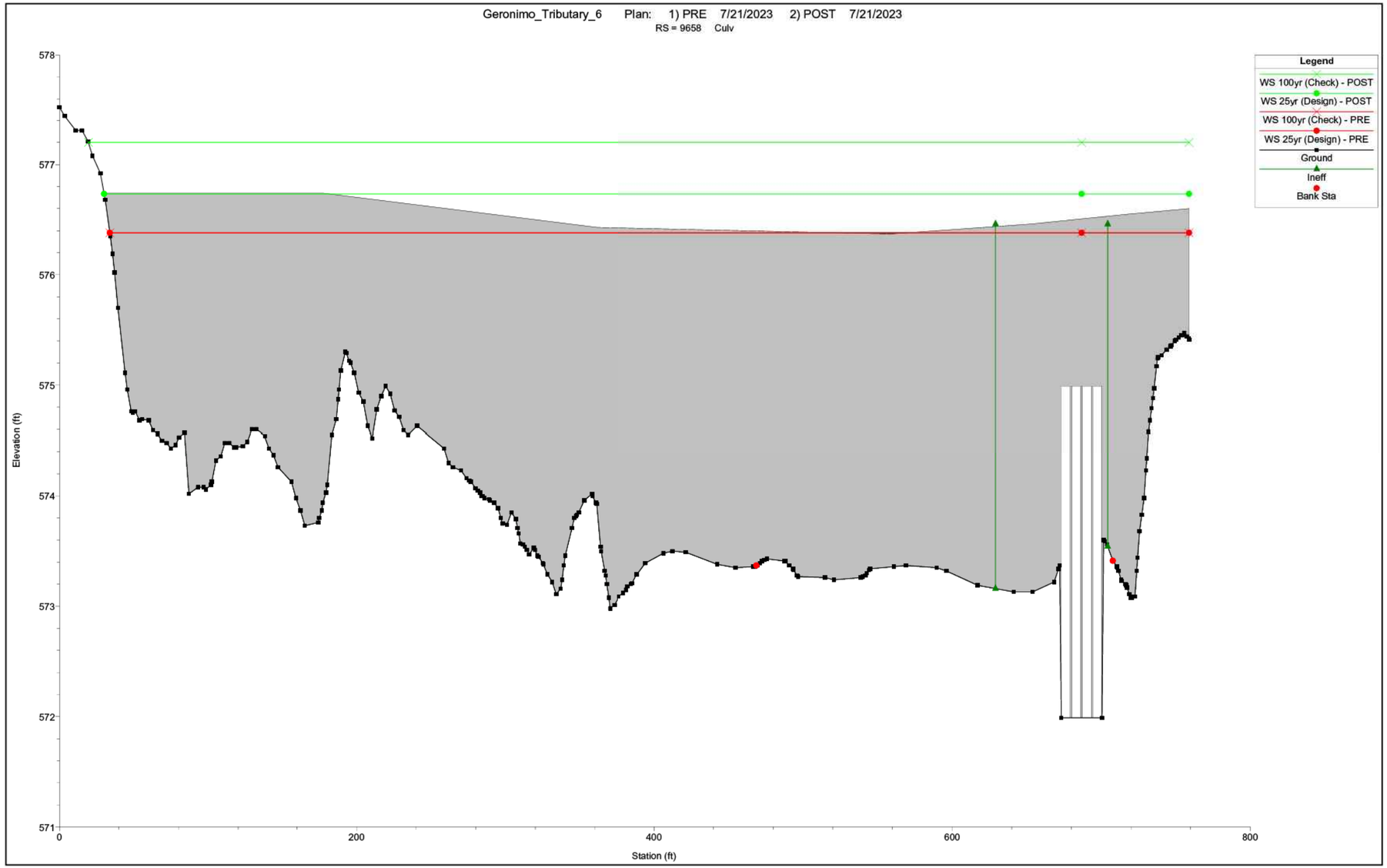
Plan: PRE GERONIMO TRIBUTA	Reach 1 RS: 9658	Culv Group: Culvert #1	Profile: 100yr (Check)
Q Culv Group (cfs)	549.74	Culv Full Len (ft)	84
# Barrels	4	Culv Vel US (ft/s)	7.64
Q Barrel (cfs)	137.43	Culv Vel DS (ft/s)	7.64
E.G. US. (ft)	577.27	Culv Inv El Up (ft)	571.37
W.S. US. (ft)	576.13	Culv Inv El Dn (ft)	569.57
E.G. DS (ft)	576.72	Culv Frctn Ls (ft)	0.38
W.S. DS (ft)	574.54	Culv Exit Loss (ft)	0
Delta EG (ft)	0.56	Culv Entr Loss (ft)	0.18
Delta WS (ft)	1.59	Q Weir (cfs)	1135.46
E.G. IC (ft)	577.24	Weir Sta Lft (ft)	0
E.G. OC (ft)	577.27	Weir Sta Rgt (ft)	683.4
Culvert Control	Outlet	Weir Submerg	0
Culv WS Inlet (ft)	574.37	Weir Max Depth (ft)	0.89
Culv WS Outlet (ft)	572.57	Weir Avg Depth (ft)	0.73
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	500.57
Culv Crt Depth (ft)	2.54	Min El Weir Flow (ft)	576.38

HEC-RAS CULVERT OUTPUT DATA - PROPOSED

Plan: POST GERONIMO TRIBUTA	Reach 1 RS: 9658	Culv Group: Culvert #1	Profile: 25yr (Design)
Q Culv Group (cfs)	782.39	Culv Full Len (ft)	114
# Barrels	4	Culv Vel US (ft/s)	10.87
Q Barrel (cfs)	195.6	Culv Vel DS (ft/s)	10.87
E.G. US. (ft)	576.74	Culv Inv El Up (ft)	571.99
W.S. US. (ft)	576.73	Culv Inv El Dn (ft)	569.57
E.G. DS (ft)	574.88	Culv Frctn Ls (ft)	1.67
W.S. DS (ft)	573.32	Culv Exit Loss (ft)	0.27
Delta EG (ft)	1.85	Culv Entr Loss (ft)	0.55
Delta WS (ft)	3.41	Q Weir (cfs)	245.11
E.G. IC (ft)	579.44	Weir Sta Lft (ft)	29.44
E.G. OC (ft)	576.74	Weir Sta Rgt (ft)	759
Culvert Control	Outlet	Weir Submerg	0
Culv WS Inlet (ft)	574.99	Weir Max Depth (ft)	0.4
Culv WS Outlet (ft)	572.57	Weir Avg Depth (ft)	0.24
Culv Nml Depth (ft)	1.81	Weir Flow Area (sq ft)	173.23
Culv Crt Depth (ft)	3	Min El Weir Flow (ft)	576.45

Plan: POST GERONIMO TRIBUTA	Reach 1 RS: 9658	Culv Group: Culvert #1	Profile: 100yr (Check)
Q Culv Group (cfs)	531.3	Culv Full Len (ft)	114
# Barrels	4	Culv Vel US (ft/s)	7.38
Q Barrel (cfs)	132.82	Culv Vel DS (ft/s)	7.38
E.G. US. (ft)	577.21	Culv Inv El Up (ft)	571.99
W.S. US. (ft)	577.2	Culv Inv El Dn (ft)	569.57
E.G. DS (ft)	576.48	Culv Frctn Ls (ft)	0.48
W.S. DS (ft)	574.38	Culv Exit Loss (ft)	0
Delta EG (ft)	0.73	Culv Entr Loss (ft)	0.25
Delta WS (ft)	2.82	Q Weir (cfs)	1062.6
E.G. IC (ft)	577.18	Weir Sta Lft (ft)	19.22
E.G. OC (ft)	577.21	Weir Sta Rgt (ft)	759
Culvert Control	Outlet	Weir Submerg	0
Culv WS Inlet (ft)	574.99	Weir Max Depth (ft)	0.84
Culv WS Outlet (ft)	572.57	Weir Avg Depth (ft)	0.67
Culv Nml Depth (ft)		Weir Flow Area (sq ft)	492.55
Culv Crt Depth (ft)	2.48	Min El Weir Flow (ft)	576.45

PROPOSED CULVERT UPSTREAM HEC-RAS CROSS SECTION OUTPUT



EXPLANATION OF PLANS:

1. PRE: PRE-PROJECT (EXISTING) GEOMETRY WITH EXISTING FLOWS.
2. POST_EX: POST-PROJECT (PROPOSED) GEOMETRY WITH EXISTING FLOWS.
3. POST_ULT: POST-PROJECT (PROPOSED) GEOMETRY WITH ULTIMATE DEVELOPMENT CONDITION FLOWS. SEE ULTIMATE DRAINAGE AREA SHEET FOR COMPUTATION DETAILS.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET CULVERT F

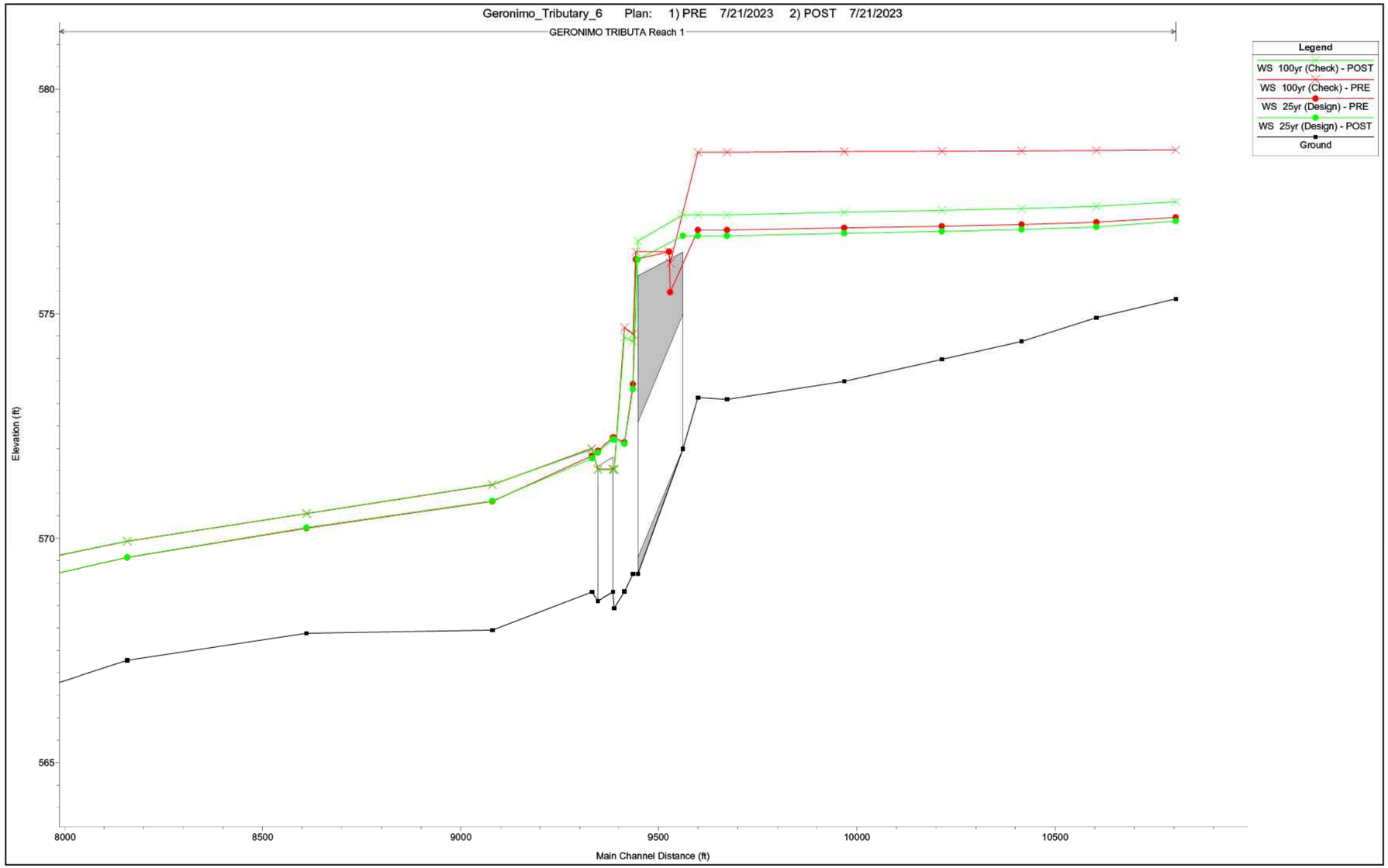
SHEET 3 OF 4

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	161

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_F03.dgn

Plotted on: 7/27/2023

HEC-RAS PROFILE PLOT OUTPUT



DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET
CULVERT F

SHEET 4 OF 4

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	162

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Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\127500_hyd_F101.dgn

Crossing Discharge Data

Discharge Selection Method: Recurrence

Rating Curve Plot for Crossing: Culvert_F-1_Prop

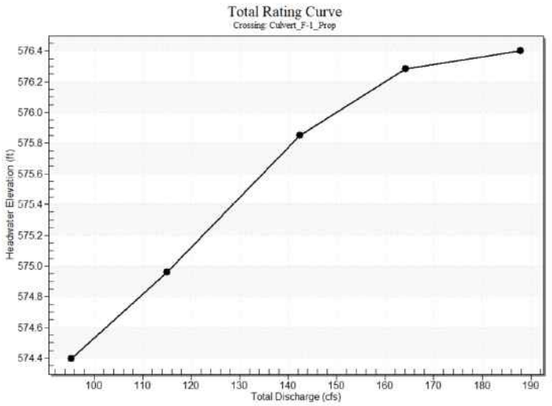


Table 1 - Summary of Culvert Flows at Crossing: Culvert_F-1_Prop

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert_F-1_Prop Discharge (cfs)	Roadway Discharge (cfs)	Iterations
574.40	5 year	95.26	95.26	0.00	1
574.96	10 year*	114.98	114.98	0.00	1
575.85	25 year	142.44	142.44	0.00	1
576.28	50 year	164.20	154.22	9.90	12
576.40	100 year†	187.90	157.21	30.62	6
576.18	Overtopping	151.48	151.48	0.00	Overtopping

*Design Storm
†Check Storm

Culvert Data: Culvert_F-1_Prop

Table 2 - Culvert Summary Table: Culvert_F-1_Prop

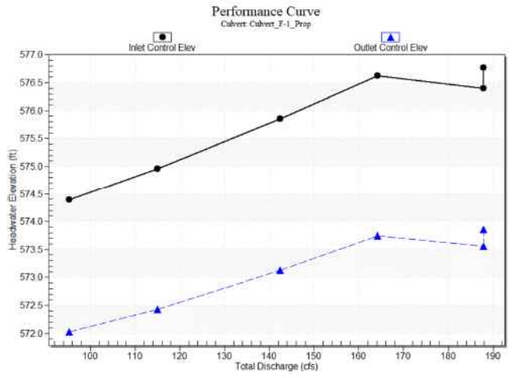
Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
5 year	95.26 cfs	95.26 cfs	574.40	3.40	1.022	5-S2n	0.00	0.00	1.50	0.51	10.57	2.56
10 year*	114.98 cfs	114.98 cfs	574.96	3.96	1.431	5-S2n	0.00	0.00	1.73	0.58	11.10	2.68
25 year	142.44 cfs	142.44 cfs	575.85	4.85	2.127	5-S2n	0.00	0.00	2.03	0.61	11.72	2.83
50 year	164.20 cfs	154.22 cfs	576.28	5.63	2.742	5-S2n	0.00	0.00	2.24	0.64	12.12	2.93
100 year†	187.90 cfs	157.21 cfs	576.40	5.40	2.563	5-S2n	0.00	0.88	2.18	0.68	12.01	3.03

*Design Storm
†Check Storm

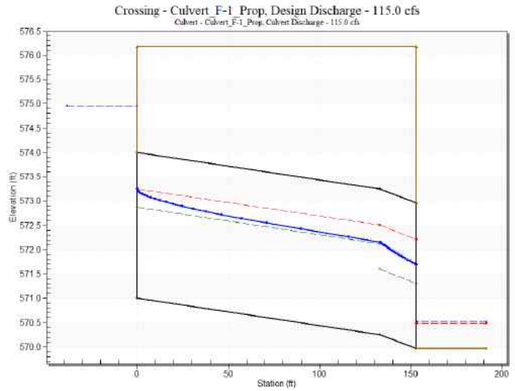
Culvert Barrel Data

Culvert Barrel Type Single Broken-back Culvert
Inlet Elevation (invert): 571.00 ft,
Break Elevation (invert): 570.25 ft,
Outlet Elevation (invert): 569.96 ft
Culvert Length: 153.00 ft,
Upper Culvert Section Slope: 0.0056
Steep Culvert Section Slope: 0.0145

Culvert Performance Curve Plot: Culvert_F-1_Prop



Water Surface Profile Plot for Culvert: Culvert_F-1_Prop



Site Data - Culvert_F-1_Prop

Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 571.00 ft
Break Station: 133.00 ft
Break Elevation: 570.25 ft
Outlet Station: 153.00 ft
Outlet Elevation: 569.96 ft
Number of Barrels: 1

Culvert Data Summary - Culvert_F-1_Prop

Barrel Shape: Concrete Box
Barrel Span: 6.00 ft
Barrel Rise: 3.00 ft
Upper Section Material: Concrete
Lower Section Material:
Embedment: 0.00 in
Upper Section Manning's n: 0.0120
Lower Section Manning's n: 0.0120
Culvert Type: Single Broken-back
Inlet Configuration: Square Edge (90°) Headwall (Ke=0.5)
Inlet Depression: None

Tailwater Data for Crossing: Culvert_F-1_Prop

Table 3 - Downstream Channel Rating Curve (Crossing: Culvert_F-1_Prop)

Flow (cfs)	Water Surface Elev (ft)	Velocity (ft/s)	Depth (ft)	Shear (psf)	Froude Number
95.26	570.47	0.51	2.56	0.64	0.85
114.98*	570.52	0.56	2.68	0.69	0.86
142.44	570.57	0.61	2.83	0.76	0.88
164.20	570.60	0.64	2.93	0.80	0.88
187.90†	570.64	0.68	3.03	0.84	0.89

*Design Storm
†Check Storm

Tailwater Channel Data - Culvert_F-1_Prop

Tailwater Channel Option: Trapezoidal Channel
Bottom Width: 10.58 ft
Side Slope (H:V): 120.00 (_:1)
Channel Slope: 0.0200
Channel Manning's n: 0.0350
Channel Invert Elevation: 569.96 ft

Roadway Data for Crossing: Culvert_F-1_Prop

Roadway Profile Shape: Constant Roadway Elevation
Crest Length: 100.00 ft
Crest Elevation: 576.18 ft
Roadway Surface: Paved
Roadway Top Width: 153.00 ft

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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HYDRAULIC DATA SHEET CULVERT F-1 PROP

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	163

SYSTEM A CALCULATIONS

RUNOFF COMPUTATIONS - RATIONAL METHOD							
AREA - ID	AREA (ac)	C	CA	Tc (MIN)	I10 (IN/HR)	Q10 (CFS)	TO INLET/JUNCTION
AD1-ARMOR01	0.69	0.88	0.61	10	7.26	4.4	AD1-ARMOR01
AD1-ARMOR02	0.43	0.85	0.37	10	7.26	2.7	AD1-ARMOR02
AD1-ARMOR03	0.58	0.82	0.47	10	7.26	3.4	AD1-ARMOR03
AD2-ARMOR01	0.54	0.77	0.41	10	7.26	3.0	AD1-ARMOR04
AD2-ARMOR02	0.54	0.77	0.41	10	7.26	3.0	AD1-ARMOR05
AD2-ARMOR03	0.55	0.80	0.44	10	7.26	3.2	AD1-ARMOR06
AD2-ARMOR04	0.27	0.89	0.24	10	7.26	1.8	AD1-ARMOR07
AD2-ARMOR05	0.30	0.89	0.27	10	7.26	1.9	AD1-ARMOR08
AD3-ARMOR01	0.45	0.95	0.42	10	7.26	3.1	AD3-ARMOR01
AD3-ARMOR02	0.23	0.74	0.17	10	7.26	1.2	AD3-ARMOR02
AD3-ARMOR03	0.43	0.78	0.33	10	7.26	2.4	AD3-ARMOR03
AD4-ARMOR01	0.35	0.81	0.28	10	7.26	2.0	AD3-ARMOR04
AD4-ARMOR02	0.35	0.81	0.28	10	7.26	2.0	AD4-ARMOR02
AD4-ARMOR03	0.43	0.81	0.35	10	7.26	2.6	AD4-ARMOR03
AD4-ARMOR04	0.54	0.88	0.47	10	7.26	3.4	AD4-ARMOR04

CURB INLET COMPUTATIONS														
INLET				DRAINAGE AREA	Q FROM AREA	CARRY OVER FLOW	TOTAL Q10	LONGITUDINAL ROAD SLOPE	DEPTH OF FLOW	ALLOWABLE PONDED WIDTH	PONDED WIDTH	LENGTH INLET REQ'D	LENGTH INLET ACTUAL	BY PASS FLOW	REMARKS
NO	TYPE	CONTROL	STATION	NO	CFS	CFS	CFS	FT/FT	FT	FT	FT	FT	FT	CFS	
AD1-ARMOR01	(1-ARM CURB)	42.26'L CORDOVA	116+50.00	AD1-ARMOR01	4.4		4.2	---	0.26	34.33	13.05	0.0	10.0		*SUMP
AD1-ARMOR02	(1-ARM CURB)	31.33'L CORDOVA	120+23.00	AD1-ARMOR02	2.7		2.7	---	0.20	11.33	9.73	0.0	10.0		*SUMP
AD1-ARMOR03	(1-ARM CURB)	31.33'L CORDOVA	123+47.30	AD1-ARMOR03	3.4		3.4	---	0.23	11.33	11.39	0.0	10.0		*SUMP
AD1-ARMOR04	(1-ARM CURB)	31.33'L CORDOVA	128+17.30	AD2-ARMOR01	3.0		3.0	---	0.21	11.33	10.50	0.0	10.0		*SUMP
AD1-ARMOR05	(1-ARM CURB)	31.33'L CORDOVA	132+87.30	AD2-ARMOR02	3.0		3.0	---	0.21	11.33	10.50	0.0	10.0		*SUMP
AD1-ARMOR06	(1-ARM CURB)	31.33'L CORDOVA	137+57.30	AD2-ARMOR03	3.2		3.2	---	0.22	11.33	10.94	0.0	10.0		*SUMP
AD1-ARMOR07	(1-ARM CURB)	31.33'L CORDOVA	144+25.00	AD2-ARMOR04	1.8	0.00	1.8	---	0.15	11.33	7.96	0.0	10.0		*SUMP
AD1-ARMOR08	(1-ARM CURB)	31.33'L CORDOVA	145+24.50	AD2-ARMOR05	1.9		1.9	0.0050	0.21	11.33	10.29	10.3	10.0		
AD3-ARMOR01	(1-ARM CURB)	31.33'R CORDOVA	116+50.00	AD3-ARMOR01	3.1		3.1	---	0.21	11.33	10.64	0.0	10.0		*SUMP
AD3-ARMOR02	(1-ARM CURB)	31.33'R CORDOVA	120+23.00	AD3-ARMOR02	1.2		1.4	---	0.13	11.33	8.07	0.0	10.0		*SUMP
AD3-ARMOR03	(1-ARM CURB)	31.33'R CORDOVA	123+47.30	AD3-ARMOR03	2.4		2.4	---	0.18	11.33	9.10	0.0	10.0		*SUMP
AD3-ARMOR04	(1-ARM CURB)	31.33'R CORDOVA	128+17.30	AD4-ARMOR01	2.0		2.4	---	0.18	11.33	9.10	0.0	10.0		*SUMP
AD4-ARMOR02	(1-ARM CURB)	31.33'R CORDOVA	132+87.30	AD4-ARMOR02	2.0		2.0	---	0.16	11.33	8.38	0.0	10.0		*SUMP
AD4-ARMOR03	(1-ARM CURB)	31.33'R CORDOVA	137+57.30	AD4-ARMOR03	2.6		2.6	---	0.19	11.33	9.43	0.0	10.0		*SUMP
AD4-ARMOR04	(2-ARM CURB)	31.33'R CORDOVA	144+25.00	AD4-ARMOR04	3.4		3.4	---	0.16	11.33	10.19	0.0	20.0		*SUMP

NOTE:

10 YR DESIGN STORM WAS ANALYZED USING GEOPAK DRAINAGE FOR STORM DRAIN CALCULATIONS

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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STORM DRAIN COMPUTATIONS

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	164

Plotted on: 7/27/2023
Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_storm_01.dgn

SYSTEM B CALCULATIONS

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_storm_02.dgn

RUNOFF COMPUTATIONS - RATIONAL METHOD							
AREA - ID	AREA (ac)	C	CA	Tc (MIN)	I (IN/HR)	Q (CFS)	TO INLET/JUNCTION
BD1-1	0.38	0.53	0.20	10	7.26	17.8	DI-BD1-1
BD1-2	2.66	0.60	1.59	10	7.26	11.6	DI-BD1-2
BD1-3	5.74	0.62	3.57	10	7.26	25.9	
BD1-4	0.62	0.65	0.41	10	7.26	3.0	BD1-4
BD1-5	0.41	0.78	0.32	10	7.26	2.3	BD1-5
BD1-6	0.39	0.71	0.28	10	7.26	2.0	BD1-6
BD1-ARMOR01	0.13	0.81	0.11	10	7.26	0.8	BD1-ARMOR01
BD2-ARMOR01	0.41	0.77	0.32	10	7.26	2.3	BD2-ARMOR01
BD2-ARMOR02	0.29	0.95	0.27	10	7.26	2.0	BD2-ARMOR02
BD2-ARMOR03	0.29	0.95	0.28	10	7.26	2.0	BD2-ARMOR03
BD2-ARMOR04	0.22	0.95	0.21	10	7.26	1.5	BD2-ARMOR04
BD3-ARMOR01	0.42	0.73	0.31	10	7.26	2.2	BD3-ARMOR01
BD3-ARMOR02	0.43	0.77	0.33	10	7.26	2.4	BD3-ARMOR02
BD3-ARMOR03	0.61	0.74	0.45	10	7.26	3.3	BD3-ARMOR03
BD3-ARMOR04	0.36	0.71	0.26	10	7.26	1.9	BD3-ARMOR04
BD4-ARMOR01	0.56	0.94	0.52	10	7.26	3.8	BD4-ARMOR01
BD4-ARMOR02	0.37	0.95	0.35	10	7.26	2.6	BD4-ARMOR02
BD4-ARMOR03	0.48	0.84	0.40	10	7.26	2.9	BD4-ARMOR03

CURB INLET COMPUTATIONS															
INLET				DRAINAGE AREA	Q FROM AREA	CARRY OVER FLOW	TOTAL Q	LONGITUDIN ROAD SLOPE	DEPT OF FLOW	ALLOWABLE PONDED WIDTH	PONDE WIDTH	LENGTH INLET REQ'D	LENGTH INLET ACTUAL	BY FLOW	REMARKS
NO	TYPE	CONTROL	STATION	NO	CFS	CFS	CFS	FT/FT	FT	FT	FT	FT	FT	CFS	
BD1-4	Type PCO Curb Inlet w/ 1 Ext (Left) (4* x5*)	31.33'LT CORDOVA	154+97.00	BD1-4	3.0		3.0	0.0086	0.22	11.33	10.88	13.4	9.5	0.32	C.O. TO BD1-ARMOR01
BD1-5	Type PCO Curb Inlet w/ 1 Ext (Left) (4* x5*)	31.33'LT CORDOVA	157+69.00	BD1-5	2.3		2.3	0.0086	0.20	11.33	9.94	11.7	9.5	0.11	C.O. TO BD1-6
BD1-6	Type PCO Curb Inlet w/ 2 Ext (4* x5*)	31.33'LT CORDOVA	159+00.00	BD1-6	2.0	0.11	2.1	---	0.15	11.33	8.79	0.0	14.0		*SUMP
BD1-ARMOR01	(1-ARM CURB)	31.33'LT CORDOVA	156+70.71	BD1-ARMOR01	0.8	0.32	1.1	0.0086	0.15	11.33	7.49	8.5	10.0		
BD2-ARMOR01	(1-ARM CURB)	31.33'LT CORDOVA	162+89.58	BD2-ARMOR01	2.3		2.3	---	0.18	11.33	8.82	8.5	10.0		*SUMP
BD2-ARMOR02	(1-ARM CURB)	31.33'LT CORDOVA	166+00.00	BD2-ARMOR02	2.0	0.11	2.1	---	0.16	11.33	8.22	8.5	10.0		*SUMP
BD2-ARMOR03	(1-ARM CURB)	31.33'LT CORDOVA	168+07.00	BD2-ARMOR03	2.0		2.0	0.0100	0.18	11.33	9.18	12.4	10.0		
BD2-ARMOR04	(1-ARM CURB)	31.33'LT CORDOVA	172+04.00	BD2-ARMOR04	1.5		1.5	0.0050	0.19	11.33	9.45	9.1	10.0		
BD3-ARMOR01	(1-ARM CURB)	31.33'RT CORDOVA	159+00.19	BD3-ARMOR01	2.2	0.36	2.6	---	0.19	11.33	9.46	9.1	10.0		*SUMP
BD3-ARMOR02	(1-ARM CURB)	31.33'RT CORDOVA	157+97.18	BD3-ARMOR02	2.4	0.51	2.9	0.0086	0.22	11.33	10.80	14.6	10.0		
BD3-ARMOR03	(1-ARM CURB)	31.33'RT CORDOVA	154+84.00	BD3-ARMOR03	3.3	0.00	3.3	0.0086	0.23	11.33	11.28	15.5	10.0		
BD3-ARMOR04	(1-ARM CURB)	31.33'RT CORDOVA	150+85.00	BD3-ARMOR04	1.9		1.9	0.0050	0.20	11.33	10.16	10.1	10.0		
BD4-ARMOR01	(1-ARM CURB)	42.33'RT CORDOVA	162+89.58	BD4-ARMOR01	3.8		3.8	---	0.25	22.33	12.29	14.6	10.0		*SUMP
BD4-ARMOR02	(1-ARM CURB)	31.33'RT CORDOVA	166+00.00	BD4-ARMOR02	2.6	0.43	3.0	---	0.21	11.33	10.46	14.6	10.0		*SUMP
BD4-ARMOR03	(1-ARM CURB)	31.33'RT CORDOVA	168+80.00	BD4-ARMOR03	2.9		2.9	0.0100	0.21	11.33	10.55	15.2	10.0		

TRAFFIC INLET COMPUTATIONS															
INLET				DRAINAGE AREA	Q	INLET HEAD	REQ'D AREA	INLET AREA	INLET TYPE	CARRY OVER			BY PASS FLOW		
NO	CONTROL		STATION	NO	CFS	FT	FT²	FT²							
DI-BD1-1	40.00	'RT CORDOVA	153+00.00	BD1-1	1.5	0.15	1.36	8.19	PSL FG-SFG 4x4						
DI-BD1-2	40.00	'RT CORDOVA	156+70.00	BD1-2	11.6	0.90	4.34	4.54	PSL FG-SFG 4x4 w 3x3 gr						

STORM DRAIN COMPUTATIONS										
LINE NO	FROM	TO	LENGTH (FT)	TC (MIN)	I (in/hr)	Q (CFS)	DESIGN STR SIZE	SLOPE %	CAP (CFS)	VEL (FT/SEC)	FREQ (YR)
LINE-B1	BD1-1	BD1-4	194.61	10.58	7.11	17.8	24" RCP	0.50	18.6	5.7	5
LINE-B1	BD1-4	BD1-2	170.74	11.30	6.94	20.0	30" RCP	0.50	33.8	4.1	5
LINE-B1	BD1-2	BD1-5	96.18	11.57	6.88	30.5	30" RCP	1.00	47.8	6.2	5
LINE-B1	BD1-5	BD1-6	127.73	11.91	6.80	32.4	30" RCP	1.00	47.8	6.6	5
LINE-B1	BD1-6	BD1-8	314.72	12.67	6.80	34.0	30" RCP	0.10	15.1	6.9	5
LINE-B1	BD1-8	OF-BD1	95.00	12.91	---	34.0	30" RCP	0.10	15.1	8.1	5

NOTE:

10 YR DESIGN STORM WAS ANALYZED USING GEOPAK DRAINAGE FOR STORM DRAIN CALCULATIONS

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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STORM DRAIN COMPUTATIONS

SHEET 2 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	165

Plotted on: 7/27/2023

SYSTEM C CALCULATIONS

RUNOFF COMPUTATIONS - RATIONAL METHOD							
AREA - ID	AREA (ac)	C	CA	Tc (MIN)	I (IN/HR)	Q (CFS)	TO INLET/JUNCTION
CD1-ARMOR01	0.31	0.90	0.28	10	7.26	2.0	CD1-ARMOR01
CD1-ARMOR02	0.37	0.81	0.30	10	7.26	2.2	CD1-ARMOR02
CD1-ARMOR03	0.12	0.82	0.10	10	7.26	0.7	CD1-ARMOR03
CD1-ARMOR04	0.59	0.79	0.46	10	7.26	3.3	CD1-ARMOR04
CD2-ARMOR01	0.45	0.77	0.35	10	7.26	2.5	CD2-ARMOR01
CD2-ARMOR02	0.46	0.77	0.35	10	7.26	2.5	CD2-ARMOR02
CD2-ARMOR03	0.35	0.82	0.28	10	7.26	2.1	CD2-ARMOR03
CD2-ARMOR04	0.35	0.81	0.28	10	7.26	2.1	CD2-ARMOR04
CD3-ARMOR01	0.32	0.90	0.29	10	7.26	2.1	CD3-ARMOR01
CD3-ARMOR02	0.37	0.81	0.30	10	7.26	2.2	CD3-ARMOR02
CD3-ARMOR03	0.56	0.79	0.45	10	7.26	3.2	CD3-ARMOR03
CD4-ARMOR01	0.41	0.77	0.32	10	7.26	2.3	CD4-ARMOR01
CD4-ARMOR02	0.30	0.81	0.25	10	7.26	1.8	CD4-ARMOR02
CD4-ARMOR03	0.35	0.80	0.28	10	7.26	2.0	CD4-ARMOR03
CD4-ARMOR04	0.35	0.78	0.27	10	7.26	2.0	CD4-ARMOR04

CURB INLET COMPUTATIONS															
INLET				DRAINAGE AREA	Q FROM AREA	CARRY OVER FLOW	TOTAL Q	LONGITUDIN ROAD SLOPE	DEPT OF FLOW	ALLOWABLE PONDED WIDTH	PONDE WIDTH	LENGTH INLET REQ'D	LENGTH INLET ACTUAL	BY FLOW	REMARKS
NO	TYPE	CONTROL	STATION	NO	CFS	CFS	CFS	FT/FT	FT	FT	FT	FT	FT	CFS	
CD1-ARMOR01	(1-ARM CURB)	31.33'LT CORDOVA	179+47.00	CD1-ARMOR01	2.0		2.0	0.0050	0.21	11.33	10.45	10.5	10.0		
CD1-ARMOR02	(1-ARM CURB)	31.33'LT CORDOVA	180+71.75	CD1-ARMOR02	2.2	0.01	2.2	---	0.17	11.33	8.90	8.5	10.0		*SUMP
CD1-ARMOR03	(1-ARM CURB)	31.33'LT CORDOVA	186+18.00	CD1-ARMOR03	0.7		0.7	0.0050	0.14	11.33	7.06	5.9	10.0		
CD1-ARMOR04	(1-ARM CURB)	31.33'LT CORDOVA	188+97.00	CD1-ARMOR04	3.3		3.3	---	0.23	11.33	11.25	13.9	10.0		*SUMP
CD2-ARMOR01	(1-ARM CURB)	31.33'LT CORDOVA	193+51.01	CD2-ARMOR01	2.5		2.5	---	0.19	11.33	9.93	8.5	10.0		*SUMP
CD2-ARMOR02	(1-ARM CURB)	31.33'LT CORDOVA	196+71.00	CD2-ARMOR02	2.5	0.11	2.6	---	0.19	11.33	10.12	8.5	10.0		*SUMP
CD2-ARMOR03	(1-ARM CURB)	31.33'LT CORDOVA	199+06.00	CD2-ARMOR03	2.1		2.1	0.0095	0.19	11.33	9.34	12.4	10.0		
CD2-ARMOR04	(1-ARM CURB)	31.33'LT CORDOVA	205+70.00	CD2-ARMOR04	2.1		2.1	---	0.16	11.33	8.69	12.4	10.0		*SUMP
CD3-ARMOR01	(1-ARM CURB)	31.33'RT CORDOVA	179+44.00	CD3-ARMOR01	2.1		2.1	0.0050	0.21	11.33	10.59	10.7	10.0		
CD3-ARMOR02	(1-ARM CURB)	31.33'RT CORDOVA	180+71.75	CD3-ARMOR02	2.2	0.02	2.2	---	0.17	11.33	9.47	10.7	10.0		*SUMP
CD3-ARMOR03	(1-ARM CURB)	31.33'RT CORDOVA	188+97.00	CD3-ARMOR03	3.2		3.2	---	0.22	11.33	11.02	10.7	10.0		*SUMP
CD4-ARMOR01	(1-ARM CURB)	31.33'RT CORDOVA	193+51.01	CD4-ARMOR01	2.3		2.3	---	0.18	11.33	9.05	10.7	10.0		*SUMP
CD4-ARMOR02	(1-ARM CURB)	31.33'RT CORDOVA	196+71.00	CD4-ARMOR02	1.8	0.10	1.9	---	0.15	11.33	9.35	10.7	10.0		*SUMP
CD4-ARMOR03	(1-ARM CURB)	31.33'RT CORDOVA	199+06.00	CD4-ARMOR03	2.0		2.0	0.0095	0.19	11.33	9.27	12.3	10.0		
CD4-ARMOR04	(1-ARM CURB)	31.33'RT CORDOVA	205+70.00	CD4-ARMOR04	2.0		2.0	---	0.16	11.33	7.98	12.3	10.0		*SUMP

SYSTEM D CALCULATIONS

RUNOFF COMPUTATIONS - RATIONAL METHOD							
AREA - ID	AREA (ac)	C	CA	Tc (MIN)	I (IN/HR)	Q (CFS)	TO INLET/JUNCTION
DD1-ARMOR01	0.29	0.81	0.23	10	7.26	1.7	DD1-ARMOR01
DD1-ARMOR02	0.18	0.91	0.16	10	7.26	1.2	DD1-ARMOR02
DD2-ARMOR01	0.29	0.78	0.22	10	7.26	1.6	DD2-ARMOR01
DD2-ARMOR02	0.23	0.95	0.22	10	7.26	1.6	DD2-ARMOR02

CURB INLET COMPUTATIONS															
INLET				DRAINAGE AREA	Q FROM AREA	CARRY OVER FLOW	TOTAL Q	LONGITUDIN ROAD SLOPE	DEPT OF FLOW	ALLOWABLE PONDED WIDTH	PONDE WIDTH	LENGTH INLET REQ'D	LENGTH INLET ACTUAL	BY FLOW	REMARKS
NO	TYPE	CONTROL	STATION	NO	CFS	CFS	CFS	FT/FT	FT	FT	FT	FT	FT	CFS	
DD1-ARMOR01	(1-ARM CURB)	31.33'LT CORDOVA	211+45.25	DD1-ARMOR01	1.7		1.7	---	0.14	11.33	8.56	0.0	10.0		*SUMP
DD1-ARMOR02	(1-ARM CURB)	31.33'LT CORDOVA	214+30.00	DD1-ARMOR02	1.2		1.2	---	0.11	11.33	7.01	0.0	10.0		*SUMP
DD2-ARMOR01	(1-ARM CURB)	31.33'RT CORDOVA	211+45.25	DD2-ARMOR01	1.6		1.9	---	0.15	11.33	8.41	0.0	10.0		*SUMP
DD2-ARMOR02	(1-ARM CURB)	31.33'RT CORDOVA	214+30.00	DD2-ARMOR02	1.6		1.6	---	0.14	11.33	7.85	0.0	10.0		*SUMP

NOTE:

10 YR DESIGN STORM WAS ANALYZED USING GEOPAK DRAINAGE FOR STORM DRAIN CALCULATIONS

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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STORM DRAIN COMPUTATIONS

SHEET 3 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	166

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_storm_03.dgn

SYSTEM E CALCULATIONS

RUNOFF COMPUTATIONS - RATIONAL METHOD							
AREA - ID	AREA (ac)	C	CA	Tc (MIN)	I. (IN/HR)	Q. (CFS)	TO INLET/JUNCTION
ED1-2	1.69	0.56	0.94	10	7.26	6.8	DI-ED1-2
ED1-3	0.39	0.78	0.31	10	7.26	2.2	ED1-3
ED1-5	0.33	0.63	0.21	10	7.26	1.5	ED1-5
ED1-6	1.48	0.60	0.89	10	7.26	6.5	DI-ED1-6
ED1-ARMOR01	0.30	0.94	0.28	10	7.26	2.0	ED1-ARMOR01
ED1-ARMOR02	0.22	0.82	0.18	10	7.26	1.3	ED1-ARMOR02
ED2-ARMOR01	0.32	0.89	0.29	10	7.26	2.1	ED2-ARMOR01
ED2-ARMOR02	0.28	0.95	0.27	10	7.26	1.9	ED2-ARMOR02
ED2-ARMOR03	0.22	0.82	0.18	10	7.26	1.3	ED2-ARMOR03

CURB INLET COMPUTATIONS															
INLET				DRAINAGE AREA	Q_a FROM AREA	CARRY OVER FLOW	TOTAL Q_a	LONGITUDIN ROAD SLOPE	DEPT OF FLOW	ALLOWABLE PONDED WIDTH	PONDE WIDTH	LENGTH INLET REQ'D	LENGTH INLET ACTUAL	BY FLOW	REMARKS
NO	TYPE	CONTROL	STATION	NO	CFS	CFS	CFS	FT/FT	FT	FT	FT	FT	FT	CFS	
ED1-3	Type PCO Curb Inlet w/ 2 Ext (3* x5*)	31.33'LT CORDOVA	216+82.00	ED1-3	2.2		2.2	---	0.15	11.33	8.71	0.0	14.0		*SUMP
ED1-5	Type PCO Curb Inlet w/ 1 Ext (Right) (3* x5*)	31.33'LT CORDOVA	218+40.00	ED1-5	1.5		1.5	0.0040	0.20	11.33	9.81	7.8	9.5		
ED1-ARMOR01	(1-ARM CURB)	31.33'LT CORDOVA	220+00.00	ED1-ARMOR01	2.0		2.0	0.0040	0.22	11.33	10.87	10.0	10.0		
ED1-ARMOR02	(1-ARM CURB)	31.33'LT CORDOVA	224+00.00	ED1-ARMOR02	1.3		1.3	0.0040	0.19	11.33	9.25	7.9	10.0		
ED2-ARMOR01	(1-ARM CURB)	31.33'RT CORDOVA	216+82.00	ED2-ARMOR01	2.1		2.1	---	0.16	11.33	9.63	0.0	10.0		*SUMP
ED2-ARMOR02	(1-ARM CURB)	31.33'RT CORDOVA	220+44.00	ED2-ARMOR02	1.9		1.9	0.0040	0.22	11.33	10.74	9.8	10.0		
ED2-ARMOR03	(1-ARM CURB)	31.33'RT CORDOVA	223+92.00	ED2-ARMOR03	1.3		1.3	0.0040	0.19	11.33	9.29	7.9	10.0		

TRAFFIC INLET COMPUTATIONS																
INLET				DRAINAGE AREA	Q.	INLET HEAD	REQ'D AREA	INLET AREA	INLET TYPE	CARRY OVER			BY PASS FLOW			
NO	CONTROL		STATION	NO	CFS	FT	FT²	FT²								
DI-ED1-2	39.50	'RT	CORDOVA	224+00.00	ED1-2	6.8	0.50	3.45	5.50	PSL FG-SFG 3x3 w 3x3EO gr						
DI-ED1-4	54.00	'RT	CORDOVA	218+40.00	n/a	46.6	0.75	19.13	n/a	PAZD FG 5x5-3						
DI-ED1-6	39.50	'RT	CORDOVA	219+95.00	ED1-6	6.5	0.48	3.34	5.50	PSL FG-SFG 3x3 w 3x3EO gr						

STORM DRAIN COMPUTATIONS										
LINE NO	FROM	TO	LENGTH (FT)	TC (MIN)	I. (in/hr)	Q. (CFS)	DESIGN			
							STR SIZE	SLOPE %	CAP (CFS)	VEL (FT/SEC)	FREQ (YR)
LINE-E1	DI-ED1-2	ED1-7	122.00	10.54	7.26	6.8	18" RCP	0.30	6.7	3.9	5
LINE-E1	ED1-7	DI-ED1-6	277.00	11.75	6.84	6.8	18" RCP	0.30	6.7	3.9	5
LINE-E1	DI-ED1-6	ED1-9	149.52	12.40	6.70	12.5	24" RCP	0.50	18.6	4.0	5
LINE-E1-LAT02	DI-ED1-4	ED1-9	5.50	12.40	6.70	46.6	3'S x 2'H Box Culv	0.50	46.8	7.8	5
LINE-E1-LAT02	ED1-5	ED1-9	3.67	12.40	6.70	1.5	24" RCP	0.50	18.6	0.5	5
LINE-E1	ED1-9	ED1-8	150.01	12.84	6.61	60.3	5'S x 2'H Box Culv	0.10	41.4	6.0	5
LINE-E1-LAT01	ED1-3	ED1-8	1.67	12.84	6.61	2.5	18" RCP	0.50	8.7	1.4	5
LINE-E1	ED1-8	OF-ED1	80.13	13.06	---	62.4	5'S x 2'H Box Culv	0.10	41.4	7.4	5

NOTE:

10 YR DESIGN STORM WAS ANALYZED USING GEOPAK DRAINAGE FOR STORM DRAIN CALCULATIONS

INTERIM REVIEW
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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
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STORM DRAIN COMPUTATIONS

SHEET 4 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	167

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_storm_04.dgn

SYSTEM F CALCULATIONS

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_storm_05.dgn

RUNOFF COMPUTATIONS - RATIONAL METHOD

AREA - ID	AREA (ac)	C	CA	Tc (MIN)	I (IN/HR)	Q (CFS)	TO INLET/JUNCTION
FD1-1	0.80	0.63	0.50	10	7.26	3.6	DI-FD1-1
FD1-3	0.32	0.76	0.25	10	7.26	1.8	FD1-3
FD1-4	0.69	0.71	0.49	10	7.26	3.6	FD1-4
FD1-5	0.71	0.72	0.50	10	7.26	3.7	FD1-5
FD1-6	1.15	0.78	0.89	10	7.26	6.5	DI-FD1-6
FD2-1	0.79	0.76	0.60	10	7.26	4.3	DI-FD2-1
FD2-2	0.63	0.71	0.45	10	7.26	3.3	FD2-2
FD2-3	0.91	0.62	0.56	10	7.26	4.1	FD2-3
FD2-4	0.45	0.65	0.29	10	7.26	2.1	FD2-4
FD2-5	0.58	0.56	0.32	10	7.26	2.3	FD2-5
FD2-6	0.40	0.66	0.27	10	7.26	1.9	FD2-6
FD2-7	0.40	0.66	0.26	10	7.26	1.9	FD2-7
FD2-8	0.46	0.61	0.28	10	7.26	2.0	FD2-8
FD2-9	0.83	0.66	0.55	10	7.26	4.0	FD2-9
FD1-ARMOR01	0.26	0.83	0.22	10	7.26	1.6	FD1-ARMOR01
FD1-ARMOR02	0.27	0.95	0.26	10	7.26	1.9	FD1-ARMOR02
FD1-ARMOR03	0.46	0.86	0.39	10	7.26	2.9	FD1-ARMOR03
FD1-ARMOR04	0.38	0.82	0.31	10	7.26	2.2	FD1-ARMOR04
FD1-ARMOR05	0.37	0.81	0.30	10	7.26	2.2	FD1-ARMOR05
FD1-ARMOR06	0.39	0.81	0.32	10	7.26	2.3	FD1-ARMOR06
FD1-ARMOR07	0.44	0.87	0.38	10	7.26	2.8	FD1-ARMOR07
FD1-ARMOR08	0.40	0.82	0.33	10	7.26	2.4	FD1-ARMOR08
FD1-ARMOR09	0.41	0.81	0.33	10	7.26	2.4	FD1-ARMOR09
FD1-ARMOR10	0.15	0.94	0.14	10	7.26	1.0	FD1-ARMOR10
FD1-ARMOR11	0.26	0.88	0.23	10	7.26	1.7	FD1-ARMOR11
FD1-ARMOR12	0.36	0.92	0.33	10	7.26	2.4	FD1-ARMOR12
FD2-ARMOR01	0.26	0.83	0.22	10	7.26	1.6	FD2-ARMOR01
FD2-ARMOR02	0.21	0.95	0.20	10	7.26	1.4	FD2-ARMOR02
FD2-ARMOR03	0.38	0.82	0.31	10	7.26	2.2	FD2-ARMOR03
FD2-ARMOR04	0.37	0.81	0.30	10	7.26	2.2	FD2-ARMOR04
FD2-ARMOR05	0.39	0.81	0.32	10	7.26	2.3	FD2-ARMOR05
FD2-ARMOR06	0.48	0.87	0.42	10	7.26	3.0	FD2-ARMOR06
FD2-ARMOR07	0.45	0.83	0.37	10	7.26	2.7	FD2-ARMOR07
FD2-ARMOR08	0.42	0.81	0.34	10	7.26	2.5	FD2-ARMOR08
FD2-ARMOR09	0.49	0.91	0.45	10	7.26	3.2	FD2-ARMOR09
FD2-ARMOR10	0.57	0.93	0.53	10	7.26	3.9	FD2-ARMOR10

CURB INLET COMPUTATIONS

INLET NO	INLET TYPE	CONTROL	STATION	DRAINAGE AREA NO	Q FROM AREA CFS	CARRY OVER FLOW CFS	TOTAL Q CFS	LONGITUDINAL ROAD SLOPE FT/FT	DEPT OF FLOW FT	ALLOWABLE PONDED WIDTH FT	PONDED WIDTH FT	LENGTH INLET REQ'D FT	LENGTH INLET ACTUAL FT	BY FLOW CFS	REMARKS
FD1-3	Type PCO Curb Inlet w/ 1 Ext (Right) (3' x5')	31.33'LT CORDOVA	230+56.00	FD1-3	1.8		1.8	0.0050	0.20	11.33	9.99	8.9	9.5		
FD1-4	Type PCO Curb Inlet w/ 2 Ext (3' x5')	31.33'LT CORDOVA	236+00.00	FD1-4	3.6		3.6	---	0.21	11.33	10.33	0.0	14.0		*SUMP
FD1-5	Type PCO Curb Inlet w/ 2 Ext (3' x5')	31.33'LT CORDOVA	241+00.00	FD1-5	3.7		3.7	---	0.21	11.33	10.44	0.0	14.0		*SUMP
FD2-2	Type PCO Curb Inlet w/ 2 Ext (3' x5')	31.33'RT CORDOVA	236+00.00	FD2-2	3.3		3.3	---	0.19	11.33	10.36	8.7	14.0		*SUMP
FD2-3	Type PCO Curb Inlet w/ 2 Ext (3' x5')	31.33'RT CORDOVA	241+00.00	FD2-3	4.1	0.00	4.1	---	0.23	11.33	11.25	8.7	14.0		*SUMP
FD2-4	Type PCO Curb Inlet w/ 1 Ext (Right) (3' x5')	31.33'RT CORDOVA	239+80.00	FD2-4	2.1		2.1	0.0050	0.21	11.33	10.64	9.8	9.5		
FD2-5	Type PCO Curb Inlet w/ 1 Ext (Left) (3' x5')	71.45'RT CORDOVA	243+52.37	FD2-5	2.3		2.3	0.0056	0.17	18.00	16.68	14.1	9.5	0.31	C.O. TO FD2-7
FD2-6	Type PCO Curb Inlet w/ 1 Ext (Right) (3' x5')	69.97'RT CORDOVA	243+88.23	FD2-6	1.9		1.9	0.0056	0.16	18.00	15.52	12.6	9.5	0.15	C.O. TO FD2-7
FD2-7	Type PCO Curb Inlet w/ 1 Ext (Right) (3' x5')	31.33'RT CORDOVA	244+60.00	FD2-7	1.9	0.46	2.4	0.0050	0.22	11.33	11.10	10.5	9.5	0.03	C.O. TO FD2-8
FD2-8	Type PCO Curb Inlet w/ 1 Ext (Right) (3' x5')	31.33'RT CORDOVA	246+25.00	FD2-8	2.0	0.03	2.0	0.0050	0.21	11.33	10.51	9.6	9.5		
FD2-9	Type PCO Curb Inlet w/ 2 Ext (3' x5')	31.33'RT CORDOVA	248+00.00	FD2-9	4.0	0.00	4.0	---	0.22	11.33	11.47	9.6	14.0		*SUMP
FD1-ARMOR01	(1-ARM CURB)	31.33'LT CORDOVA	229+00.00	FD1-ARMOR01	1.6		1.6	---	0.14	11.33	7.35	0.0	10.0		*SUMP
FD1-ARMOR02	(1-ARM CURB)	31.33'LT CORDOVA	245+63.00	FD1-ARMOR02	1.9		1.9	0.0050	0.20	11.33	10.14	10.1	10.0		
FD1-ARMOR03	(1-ARM CURB)	31.33'LT CORDOVA	248+00.00	FD1-ARMOR03	2.9		2.9	---	0.20	11.33	10.14	0.0	10.0		*SUMP
FD1-ARMOR04	(1-ARM CURB)	31.33'LT CORDOVA	255+90.00	FD1-ARMOR04	2.2		2.2	0.0050	0.22	11.33	10.88	11.2	10.0		
FD1-ARMOR05	(1-ARM CURB)	31.33'LT CORDOVA	260+95.00	FD1-ARMOR05	2.2	0.04	2.2	0.0050	0.22	11.33	10.85	11.1	10.0		
FD1-ARMOR06	(1-ARM CURB)	31.33'LT CORDOVA	266+35.00	FD1-ARMOR06	2.3	0.04	2.4	0.0050	0.22	11.33	11.07	11.5	10.0		
FD1-ARMOR07	(1-ARM CURB)	31.33'LT CORDOVA	270+50.00	FD1-ARMOR07	2.8	0.06	2.8	---	0.20	11.33	10.92	11.5	10.0		*SUMP
FD1-ARMOR08	(1-ARM CURB)	31.33'LT CORDOVA	274+50.00	FD1-ARMOR08	2.4		2.4	---	0.18	11.33	9.74	11.5	10.0		*SUMP
FD1-ARMOR09	(1-ARM CURB)	31.33'LT CORDOVA	284+20.00	FD1-ARMOR09	2.4		2.4	0.0050	0.22	11.33	11.13	11.6	10.0		
FD1-ARMOR10	(1-ARM CURB)	31.33'LT CORDOVA	286+56.00	FD1-ARMOR10	1.0	0.06	1.1	0.0100	0.15	11.33	7.30	8.9	10.0		
FD1-ARMOR11	(1-ARM CURB)	31.33'LT CORDOVA	291+26.00	FD1-ARMOR11	1.7		1.7	0.0100	0.17	11.33	8.56	11.2	10.0		
FD1-ARMOR12	(1-ARM CURB)	31.33'LT CORDOVA	292+56.00	FD1-ARMOR12	2.4	0.03	2.4	---	0.18	11.33	9.07	11.2	10.0		*SUMP
FD2-ARMOR01	(1-ARM CURB)	31.33'RT CORDOVA	229+00.00	FD2-ARMOR01	1.6		1.6	0.0050	0.19	11.33	9.52	9.2	10.0		
FD2-ARMOR02	(1-ARM CURB)	31.33'RT CORDOVA	230+50.00	FD2-ARMOR02	1.4		1.4	0.0050	0.18	11.33	9.18	8.7	10.0		
FD2-ARMOR03	(1-ARM CURB)	31.33'RT CORDOVA	255+90.00	FD2-ARMOR03	2.2		2.2	0.0050	0.22	11.33	10.86	11.1	10.0		
FD2-ARMOR04	(1-ARM CURB)	31.33'RT CORDOVA	260+95.00	FD2-ARMOR04	2.2	0.04	2.2	0.0050	0.22	11.33	10.85	11.1	10.0		
FD2-ARMOR05	(1-ARM CURB)	31.33'RT CORDOVA	266+35.00	FD2-ARMOR05	2.3	0.04	2.4	0.0050	0.22	11.33	11.07	11.5	10.0		
FD2-ARMOR06	(1-ARM CURB)	31.33'RT CORDOVA	270+50.00	FD2-ARMOR06	3.0	0.06	3.1	---	0.21	11.33	11.27	11.1	10.0		*SUMP
FD2-ARMOR07	(1-ARM CURB)	31.33'RT CORDOVA	274+50.00	FD2-ARMOR07	2.7		2.7	---	0.19	11.33	9.70	11.1	10.0		*SUMP
FD2-ARMOR08	(1-ARM CURB)	31.33'RT CORDOVA	284+20.00	FD2-ARMOR08	2.5		2.5	0.0050	0.23	11.33	11.29	11.8	10.0		
FD2-ARMOR09	(1-ARM CURB)	31.33'RT CORDOVA	290+45.00	FD2-ARMOR09	3.2	0.08	3.3	0.0100	0.22	11.33	11.06	16.3	10.0		
FD2-ARMOR10	(1-ARM CURB)	42.33'RT CORDOVA	292+56.00	FD2-ARMOR10	3.9	0.60	4.5	---	0.27	22.33	13.65	16.1	10.0		*SUMP

NOTE:

10 YR DESIGN STORM WAS ANALYZED USING GEOPAK DRAINAGE FOR STORM DRAIN CALCULATIONS

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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STORM DRAIN COMPUTATIONS

SHEET 5 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	168

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_hyd_storm_06.dgn

SYSTEM F CALCULATIONS CONT.

TRAFFIC INLET COMPUTATIONS

INLET NO	INLET CONTROL	STATION	DRAINAGE AREA NO	Q. CFS	INLET HEAD FT	REQ'D AREA FT²	INLET AREA FT²	INLET TYPE	CARRY OVER	BY PASS FLOW
DI-FD1-1	38.50 'RT CORDOVA	229+00.00	FD1-1	3.6	0.33	2.26	5.50	PSL FG-SFG 3x3 w 3x3EO gr		
DI-FD1-6	41.00 'RT CORDOVA	248+00.00	FD1-6	6.5	0.48	3.34	5.50	PSL FG-SFG 3x3 w 3x3EO gr		
DI-FD2-1	38.50 'RT CORDOVA	229+00.00	FD2-1	4.3	0.37	2.54	5.50	PSL FG-SFG 3x3 w 3x3EO gr		

STORM DRAIN COMPUTATIONS

LINE NO	FROM	TO	LENGTH (FT)	TC (MIN)	I. (in/hr)	Q. (CFS)	DESIGN STR SIZE	SLOPE %	CAP (CFS)	VEL (FT/SEC)	FREQ (YR)
LINE-F1-1	DI-FD1-1	FD1-3	150.89	12.24	6.73	3.6	24" RCP	0.35	15.6	1.2	5
LINE-F1-1	FD1-3	FD1-MH01	13.83	12.42	6.73	5.0	24" RCP	0.50	18.6	1.6	5
LINE-F1-1	FD1-MH01	FD1-MH02	50.10	13.00	6.57	5.0	24" RCP	0.50	18.6	1.6	5
LINE-F1-1-LAT01	HW-1	FD1-MH02	34.97	13.00	6.57	99.2	6'S x 2'H Box Culv	2.00	234.0	8.3	5
LINE-F1-1	FD1-MH02	FD1-MH03	481.13	14.41	6.30	104.1	6'S x 3'H Box Culv	0.10	91.1	5.8	5
LINE-F1-1-LAT02	FD1-4	FD1-MH03	27.33	14.41	6.30	3.6	24" RCP	2.00	37.3	1.1	5
LINE-F1-1	FD1-MH03	FD1-MH04	492.00	15.81	6.05	107.0	6'S x 3'H Box Culv	0.10	91.1	5.9	5
LINE-F1-1-LAT03	FD1-5	FD1-MH04	27.33	15.81	6.05	3.7	24" RCP	2.00	37.3	1.2	5
LINE-F1-1	FD1-MH04	OF-LINE-F1-1	1668.37	20.11	---	109.7	6'S x 4'H Box Culv	0.10	132.9	8.4	5
LINE-F1-2	0	FD1-MH05	44.00	0.12	---	81.7	4'S x 3'H Box Culv	5.00	370.5	6.8	5
LINE-F1-2	FD1-MH05	FD1-MH06	378.00	10.23	7.20	81.7	4'S x 3'H Box Culv	0.10	52.4	6.8	5
LINE-F1-2-LAT01	DI-FD1-6	FD1-MH06	24.50	10.23	7.20	6.5	24" RCP	2.00	37.3	2.1	5
LINE-F1-2	FD1-MH06	OF-LINE-F1-2	955.20	12.64	---	88.1	4'S x 4'H Box Culv	0.10	75.0	8.9	5
LINE-F1-3	HW-3	OF-LINE-F1-3	82.23	0.13	---	32.1	24" RCP	0.50	18.6	10.4	5
LINE-F2	DI-FD2-1	FD2-MH01	268.61	13.29	7.26	4.3	24" RCP	0.10	8.3	1.4	5
LINE-F2	FD2-MH01	FD2-MH02	279.10	16.71	7.26	4.3	24" RCP	0.10	8.3	1.4	5
LINE-F2	FD2-MH02	FD2-2	140.17	18.46	5.64	4.3	24" RCP	0.10	8.3	1.4	5
LINE-F2	FD2-2	FD2-MH03	188.61	20.17	5.64	5.9	24" RCP	0.10	8.3	1.9	5
LINE-F2	FD2-MH03	FD2-4	183.39	21.84	5.20	5.9	24" RCP	0.10	8.3	1.9	5
LINE-F2	FD2-4	FD2-3	115.00	22.75	5.09	7.0	24" RCP	0.10	8.3	2.2	5
LINE-F2	FD2-3	FD2-MH04	286.45	24.31	4.92	9.7	24" RCP	0.10	8.3	3.1	5
LINE-F2-LAT01	FD2-5	FD2-6	35.90	10.18	7.21	2.0	24" RCP	0.50	18.6	3.7	5
LINE-F2-LAT1	FD2-6	FD2-MH04	31.98	24.31	4.92	3.8	24" RCP	0.50	18.6	4.4	5
LINE-F2	FD2-MH04	FD2-7	65.57	24.62	4.89	11.8	24" RCP	0.10	8.3	3.8	5
LINE-F2	FD2-7	FD2-8	160.00	25.27	4.82	13.4	24" RCP	0.10	8.3	4.3	5
LINE-F2	FD2-8	FD2-9	170.00	25.89	4.76	14.6	24" RCP	0.10	8.3	4.7	5
LINE-F2	FD2-9	FD2-MH05	295.50	26.81	4.76	17.1	24" RCP	0.10	8.3	6.2	5
LINE-F2	FD2-MH05	FD2-MH06	296.00	28.27	4.76	17.1	3'S x 2'H Box Culv	0.10	20.9	3.5	5
LINE-F2	FD2-MH06	FD2-MH07	296.00	29.69	4.76	17.1	3'S x 2'H Box Culv	0.10	20.9	3.7	5
LINE-F2	FD2-MH07	FD2-MH08	296.00	30.98	4.76	17.1	3'S x 2'H Box Culv	0.10	20.9	4.2	5
LINE-F2	FD2-MH08	OF-LINE-F2	22.14	31.07	---	17.1	3'S x 2'H Box Culv	0.10	20.9	5.7	5

NOTE:

10 YR DESIGN STORM WAS ANALYZED USING GEOPAK DRAINAGE FOR STORM DRAIN CALCULATIONS

INTERIM REVIEW
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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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STORM DRAIN COMPUTATIONS

SHEET 6 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	169

		DITCH PROPERTIES						COMPUTATION POINT HYDROLOGY		DITCH HYDRAULIC OUTPUT	
COMPUTATION POINT	LT/RT	FORESLOPE H:V	BACKSLOPE H:V	LONG. SLOPE ft/ft	MANNINGS COEFF.	BOT. WIDTH (ft)	DITCH DEPTH (ft)	DRAINAGE AREA	Q(10YR) (cfs)	FLOW DEPTH (ft)	VELOCITY (fps)
116+50.21	LT	4	4	0.0045	0.012	0	1.44	AD1-N4	21	1.01	5.16
118+05.20	LT	4	4	0.0045	0.012	0	1.53	AD1-N3	29	1.14	5.59
120+23.00	LT	0.00001	4	0.0017	0.012	4	2.00	AD1-N2	37.2	1.29	4.40
123+47.30	LT	0.00001	4	0.005	0.012	11	2.56	AD1	45.4	0.63	5.84
144+25.00	LT	6	7.12	0.001	0.03	0	1.36	AD2-N4	10.7	1.21	1.11
137+57.30	LT	4	4	0.001	0.012	0	1.80	AD2-N3	35.2	1.62	3.34
132+87.30	LT	4	4	0.001	0.012	0	2.48	AD2-N2	44.8	1.78	3.55
128+17.30	LT	4	4	0.001	0.012	0	2.01	AD2-N1	59.8	1.98	3.81
CULVERT A	LT	4	4	0.008	0.012	0	2.55	AD2	111.3	1.69	9.71
116+50.21	RT	4	4	0.0016	0.03	0	0.84	AD3-N3	2.6	0.79	1.04
118+05.20	RT	4	4	0.0016	0.03	0	1.13	AD3-N2	3	0.83	1.08
120+23.00	RT	4	6	0.0015	0.03	0	1.25	AD3-N1	5.3	0.96	1.16
121+37.11	RT	4	4	0.0015	0.03	0	1.17	AD3	5.8	1.08	1.25
144+25.00	RT	4	6	0.00128	0.03	10.8	0.48	AD4-N4	4.9	0.42	0.90
137+57.30	RT	4	11	0.001	0.03	0	1.14	AD4-N3	9.8	1.11	1.05
132+87.30	RT	4	6	0.001	0.03	0	1.60	AD4-N2	13.1	1.45	1.25
128+17.30	RT	4	11	0.001	0.03	0	1.35	AD4-N1	16.2	1.35	1.19
125+97.30	RT	4	6.5	0.001	0.012	0	1.27	AD4	16.4	1.10	2.59
159+00.19	LT	4	4.25	0.009	0.012	0	1.28	BD1-N1	28	0.98	7.14
CULVERT B DRAIN	LT	4	4.25	0.009	0.012	0	1.28	BD1	28.4	0.98	7.17
166+00.00	LT	6	7.24	0.0051	0.03	0	0.86	BD2-N1	8.7	0.82	1.94
CULVERT B DRAIN	LT	4.1	7.4	0.0051	0.03	0	0.87	BD2	8.5	0.86	1.99
159+00.19	RT	4	7.8	0.01	0.03	0	1.28	BD3-N1	9.6	0.79	2.63
CULVERT B DRAIN	RT	4	7.8	0.01	0.03	0	1.28	BD3	9.9	0.80	2.65
166+00.00	RT	4	5	0.001	0.03	0	1.50	BD4-N2	10.6	1.39	1.21
166+00.00	RT	4	5	0.001	0.012	0	1.50	BD4-N1	25	1.36	2.99
166+00.00	RT	4	5	0.001	0.012	0	1.50	BD4	26.5	1.39	3.03
180+71.75	LT	6	12.78	0.0064	0.03	0	1.20	CD1-N3	6.5	0.62	1.81
184+02.56	LT	4	4.2	0.0064	0.03	0	2.06	CD1-N2	16.4	1.20	2.77
191+06.12	LT	4	4	0.001	0.012	0	1.55	CD1	23.3	1.39	3.01
205+70.00	LT	4	10.27	0.003	0.03	0	1.45	CD2-N3	6.9	0.81	1.47
196+71.34	LT	4	3	0.001	0.03	5	2.95	CD2-N2	40.5	1.94	1.77
193+51.08	LT	4	3	0.001	0.03	5	2.26	CD2-N1	45.9	2.06	1.82
191+08.83	LT	4	3	0.001	0.012	5	1.85	CD2	52.3	1.42	3.71
180+71.75	RT	6	15.63	0.005	0.03	0	0.60	CD3-N2	5.7	0.59	1.54
187+90.40	RT	4.2	22.75	0.001	0.012	0	0.89	CD3-N1	11.6	0.67	1.89
CULVERT C DRAIN	RT	4.2	22.75	0.001	0.012	0	0.89	CD3	12	0.68	1.91
205+70.00	RT	4	51.76	0.003	0.03	0	0.42	CD4-N3	3	0.35	0.86
196+71.34	RT	4	11.97	0.0128	0.03	0	1.52	CD4-N2	10.6	0.69	2.75
195+05.38	RT	4	8.63	0.0065	0.03	0	1.39	CD4-N1	10.9	0.87	2.27
211+45.25	LT	4	14	0.003	0.03	0	0.91	DD1-N2	3.2	0.56	1.15
211+45.25	RT	6	30	0.005	0.03	0	0.76	DD2-N2	2.7	0.37	1.13
214+30.00	RT	6	8.75	0.005	0.03	0	1.04	DD2-N1	4.8	0.63	1.62
220+13.19	LT	6	4	0.01	0.03	0	1.07	ED1-N2	10.5	0.87	2.80
220+13.19	RT	6	15.33	0.003	0.03	0	0.67	ED2-N2	5.9	0.66	1.29
216+30.00	RT	6	4.12	0.0064	0.03	0	1.36	ED2-N1	9.1	0.89	2.28
CULVERT E	RT	6	4	0.0064	0.03	0	1.36	ED2	9.1	0.89	2.28
270+50.00	LT	6	5.93	0.00167	0.03	0	3.99	FD1-N4	270	3.83	3.09
274+50.00	LT	6	6.58	0.00179	0.03	0	4.43	FD1-N3	266.8	3.69	3.12
284+37.75	LT	4	1.37	0.001925	0.03	0	5.26	FD1-N2	260.3	5.04	3.82
270+50.00	RT	6	4.71	0.001	0.012	0	2.13	FD2-N3	40.9	1.53	3.24
274+50.00	RT	6	3.66	0.001	0.012	0	2.53	FD2-N2	92.4	2.17	4.07
292+56.00	RT	4	5.1	0.001	0.012	0	2.66	FD2-N1	91.2	2.21	4.12
EAST END	RT	4	5.1	0.001	0.012	0	2.66	FD2	90.9	2.20	4.11

NOTES:
1. 10-YR DESIGN STORM WAS ANALYZED USING MANNINGS EQUATION FOR DITCH CALCULATIONS
2. SLOPES OF 0.0001 REPRESENT A VERTICAL SLOPE (i.e. RETAINING WALL)

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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Texas Department of Transportation
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DITCH HYDRAULIC DATA SHEET

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	170

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_ditch_comps_01.dgn

Plotted on: 7/27/2023

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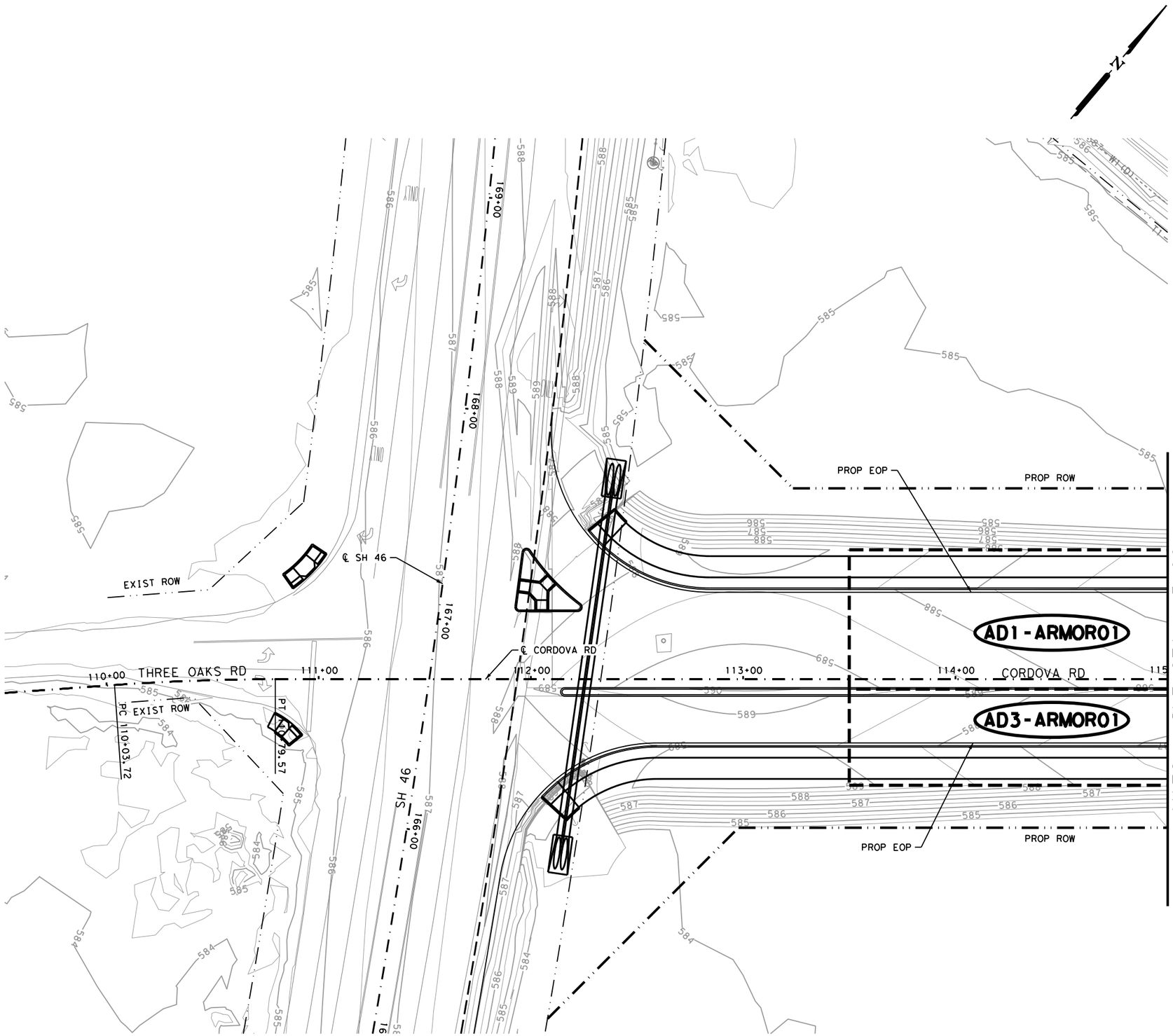

LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS. CONTRACTOR SHALL VERIFY DEPTHS AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION.
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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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Texas Department of Transportation
©2023

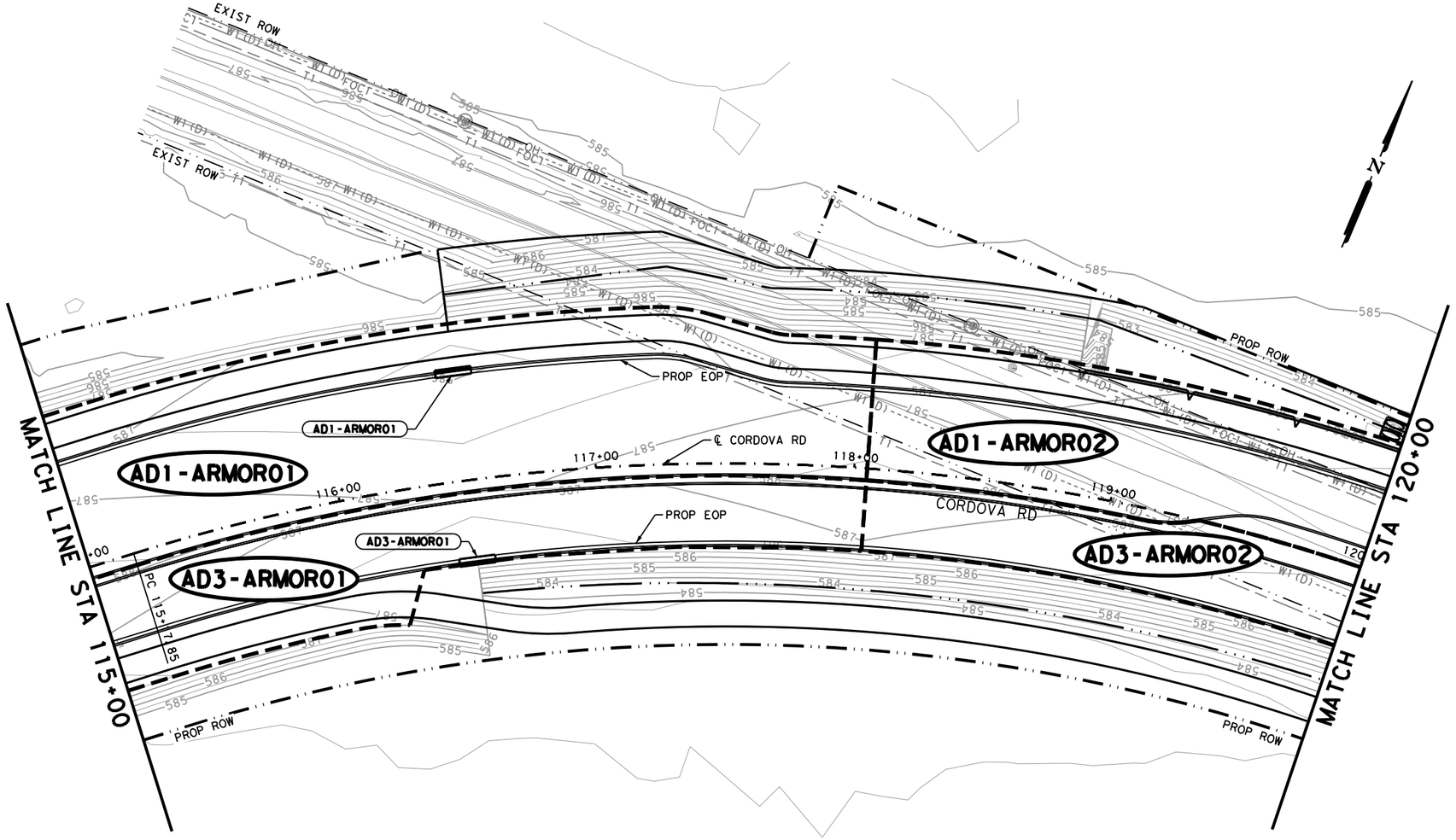
CORDOVA RD

DRAINAGE LAYOUT

BEGIN PROJECT TO STA 115+00

SHEET 1 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	171



Plotted on: 7/27/2023

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LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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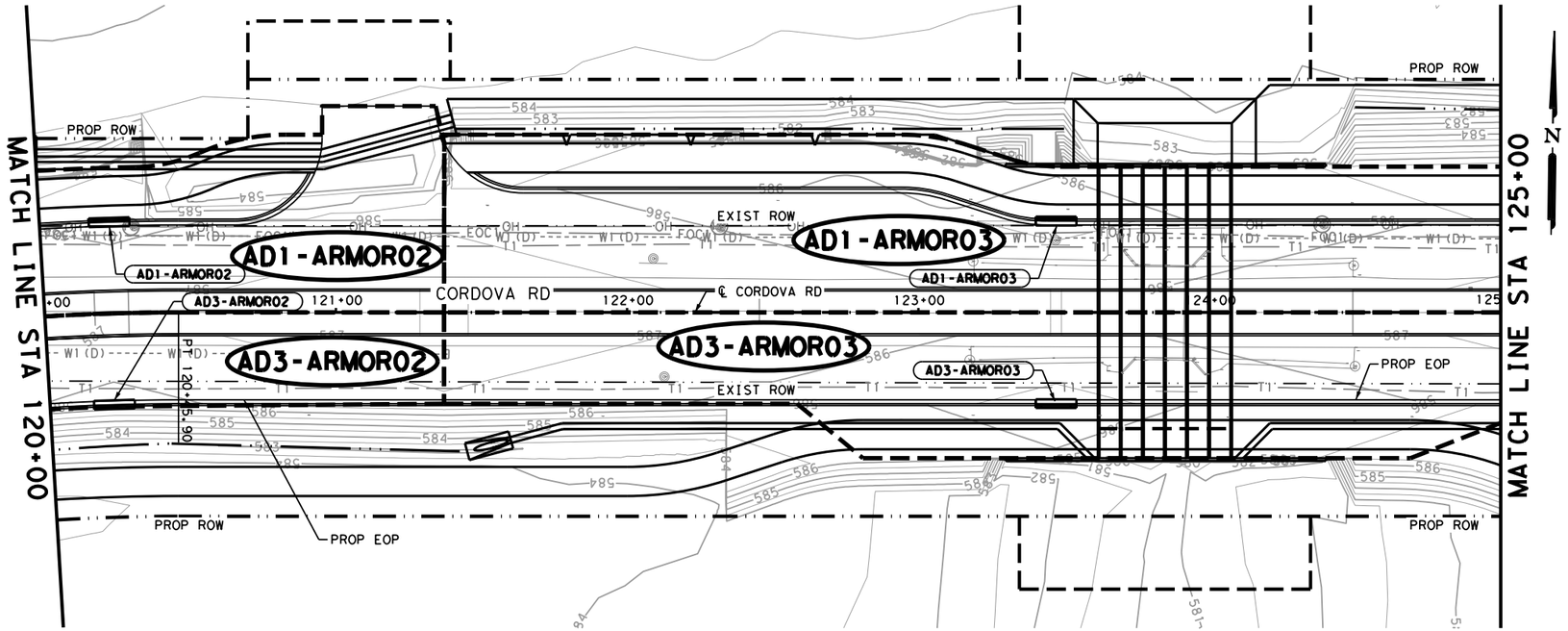
CORDOVA RD

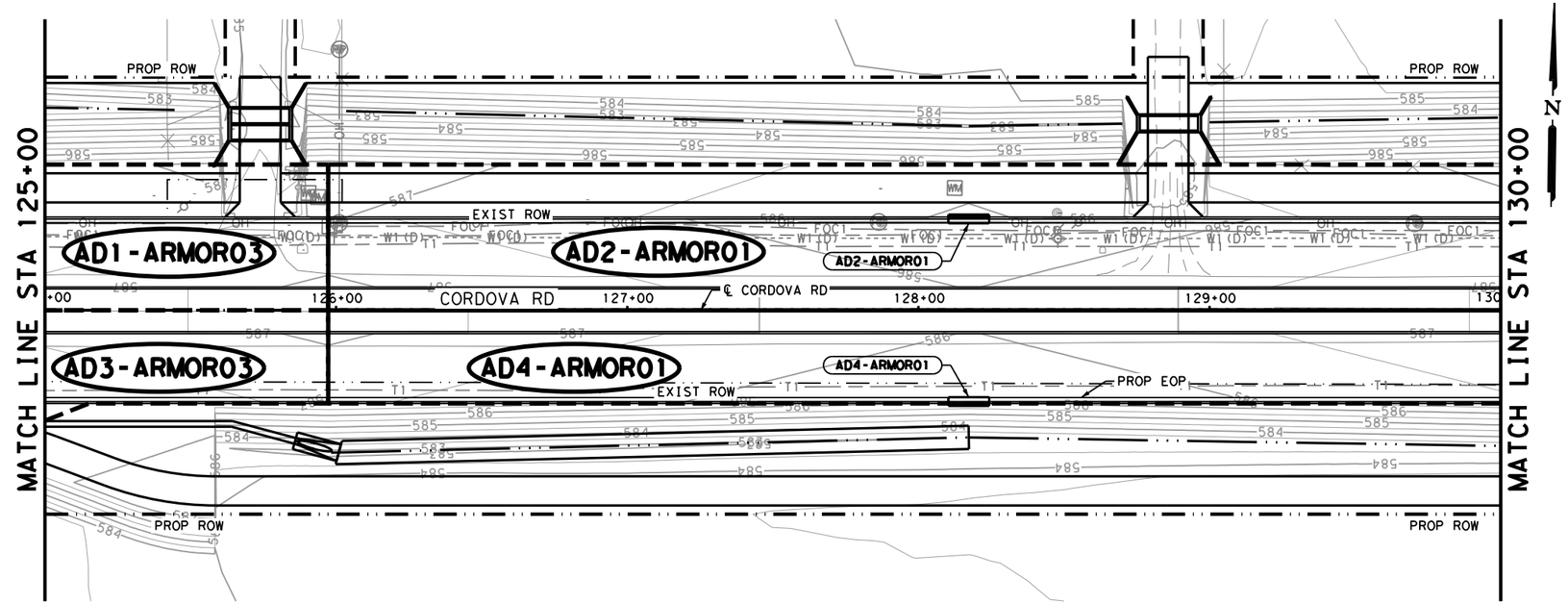
DRAINAGE LAYOUT

STA 115+00 TO STA 120+00

SHEET 2 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	172





LEGEND

- X-X — DRAINAGE AREA
- LINE-E1 — STORM DRAIN DESIGNATION
- ED1-1 — STRUCTURE DESIGNATION

NOTES

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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

CORDOVA RD

DRAINAGE LAYOUT

STA 120+00 TO STA 130+00

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	173

Plotted on: 7/27/2023

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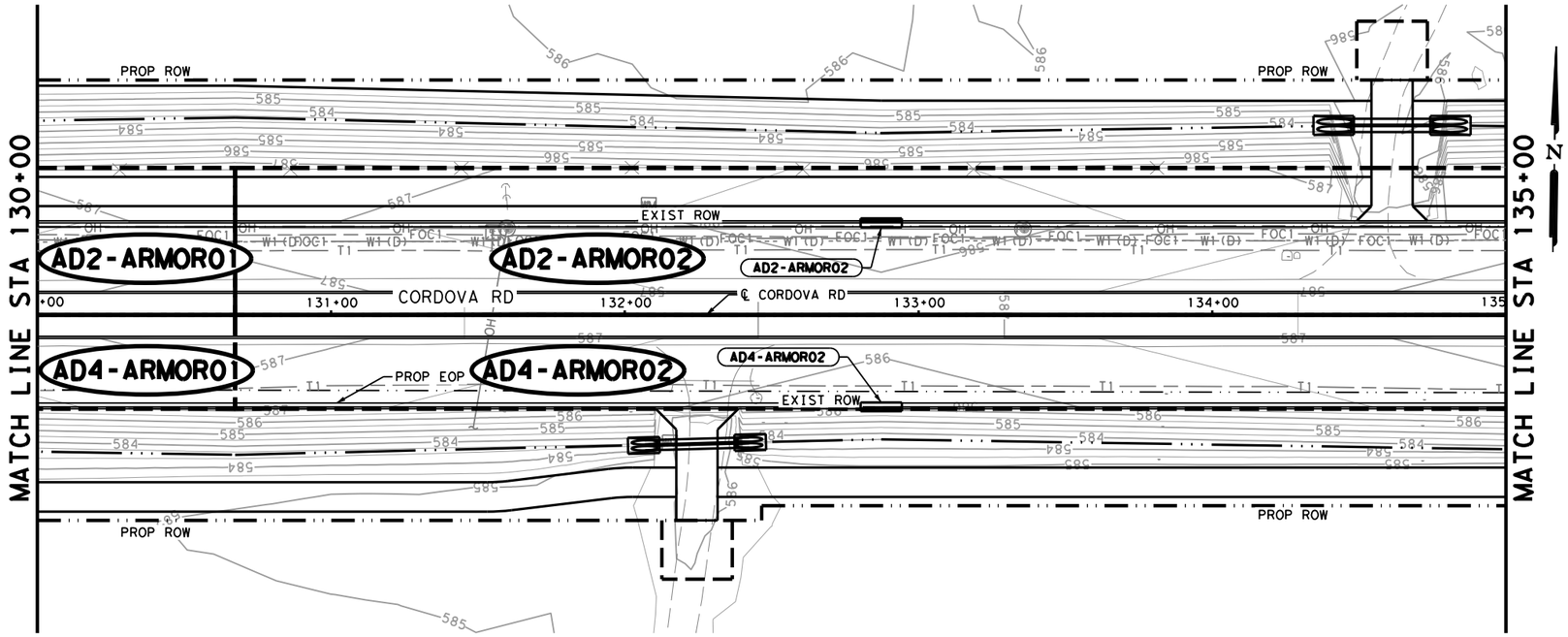

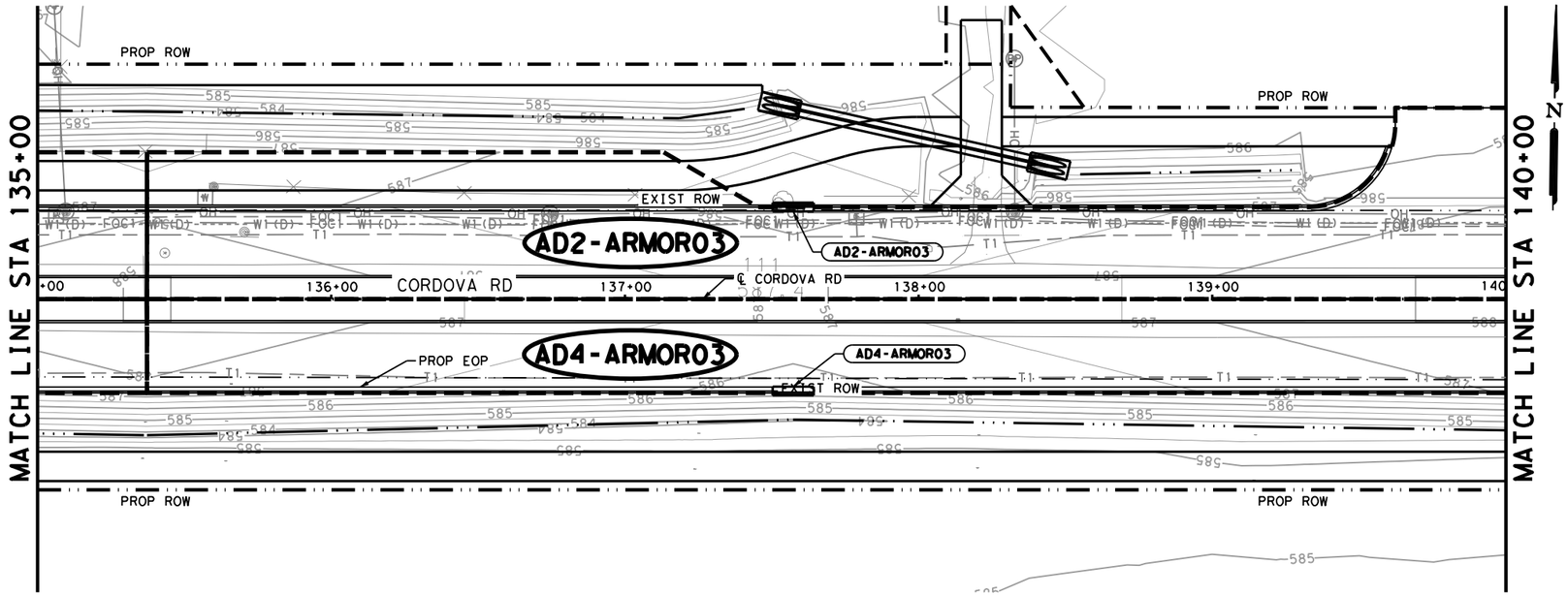

LEGEND

- X-X — DRAINAGE AREA
- LINE-E1 — STORM DRAIN DESIGNATION
- ED1-1 — STRUCTURE DESIGNATION

NOTES

1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS. CONTRACTOR SHALL VERIFY DEPTHS AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION.
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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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Texas Department of Transportation ©2023

CORDOVA RD

DRAINAGE LAYOUT

STA 130+00 TO STA 140+00

SHEET 4 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	174

Plotted on: 7/27/2023

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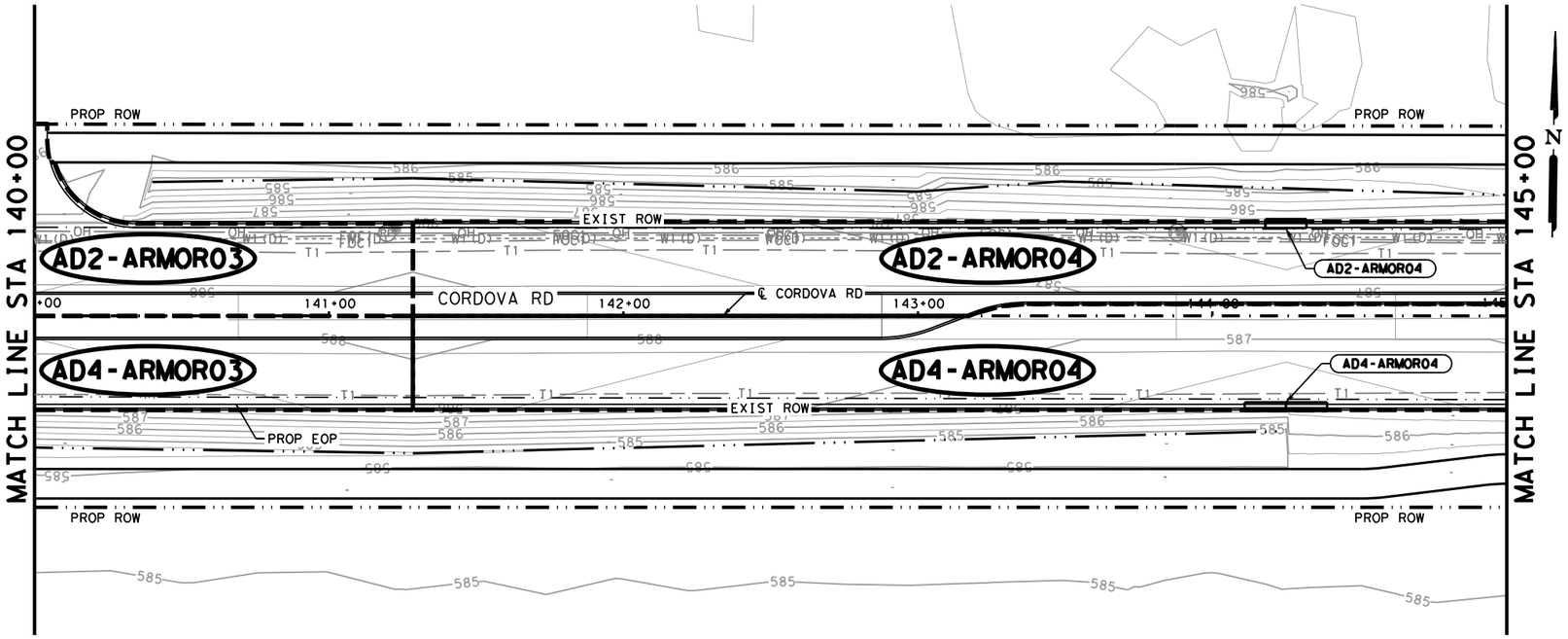

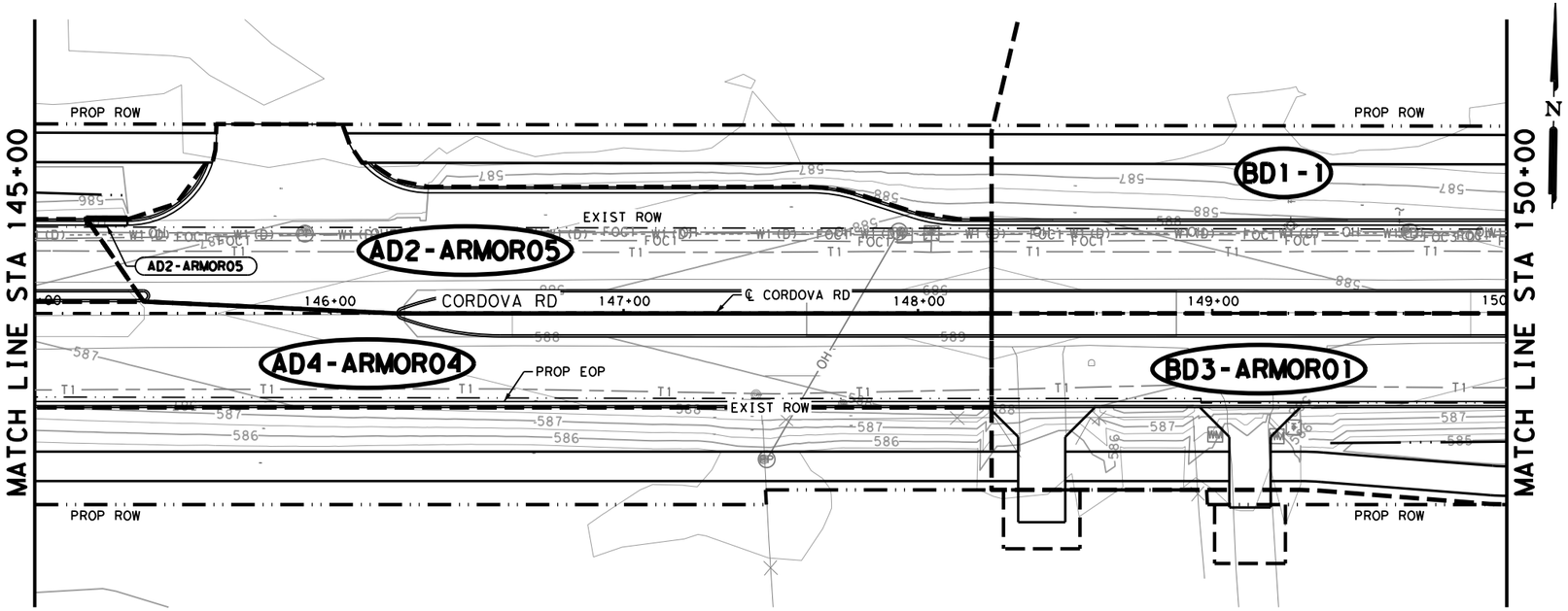

LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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Texas Department of Transportation ©2023

CORDOVA RD

DRAINAGE LAYOUT

STA 140+00 TO STA 150+00

SHEET 5 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	175

Plotted on: 7/27/2023

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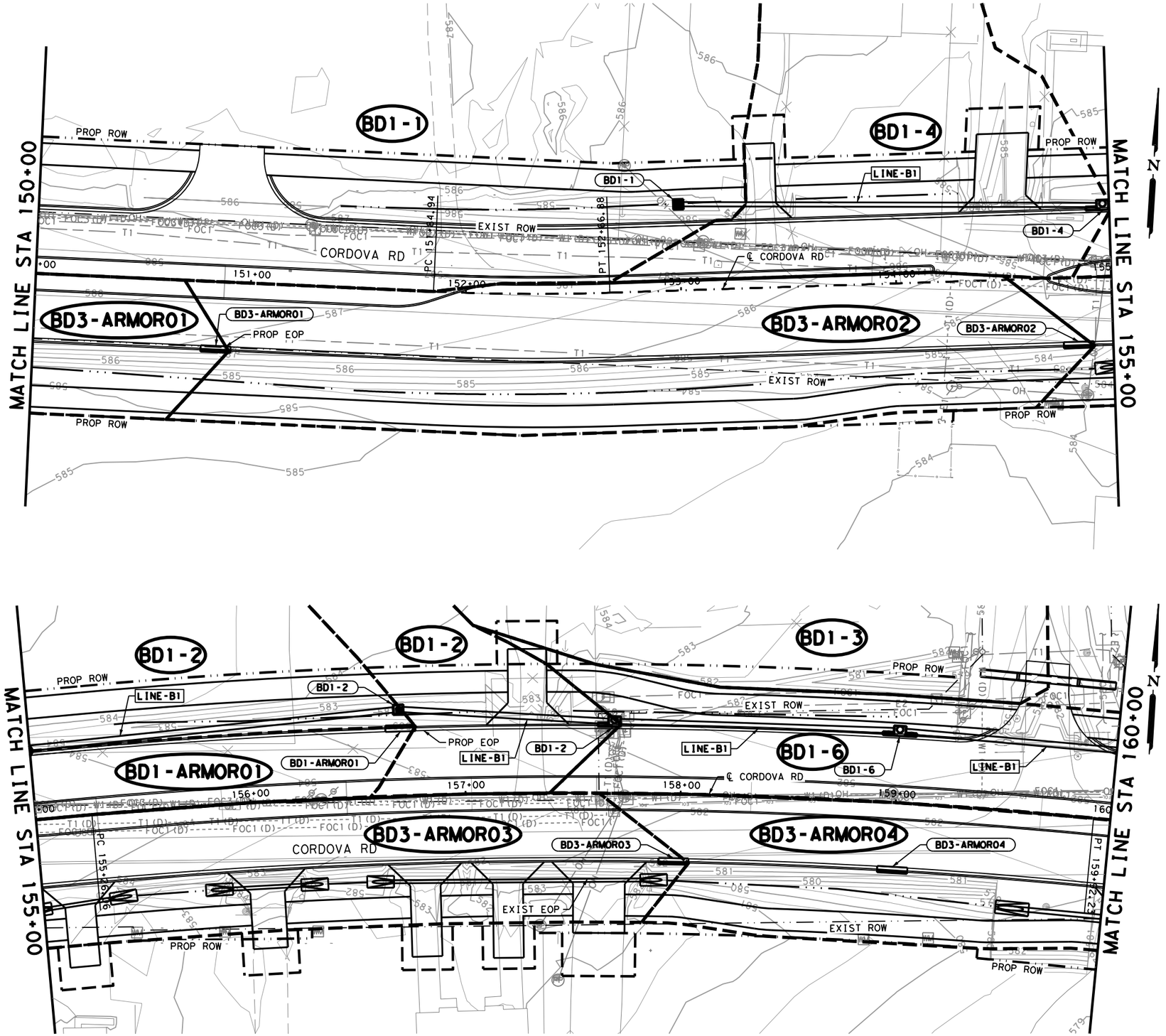

LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

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DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CORDOVA RD

DRAINAGE LAYOUT

STA 150+00 TO STA 160+00

SHEET 6 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	176

Plotted on: 7/27/2023

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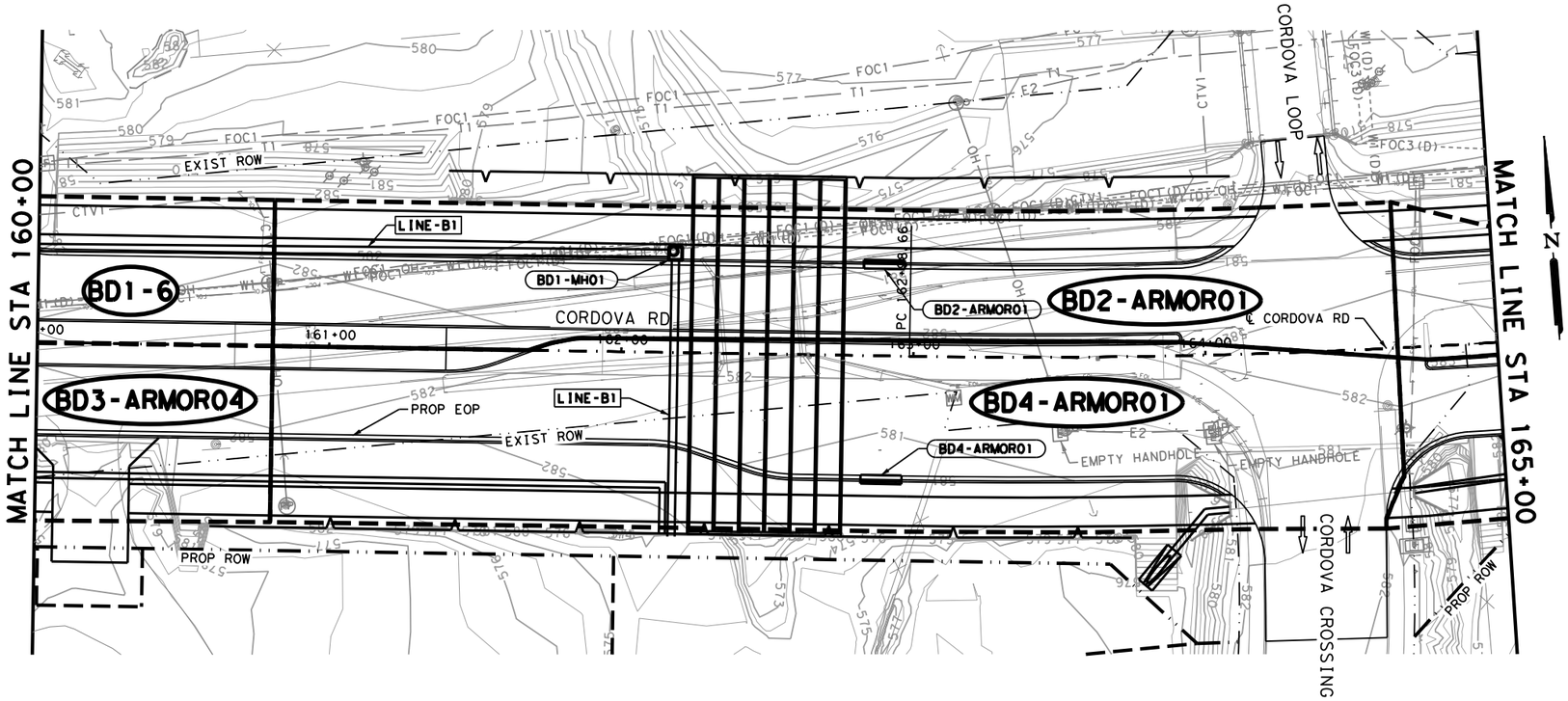

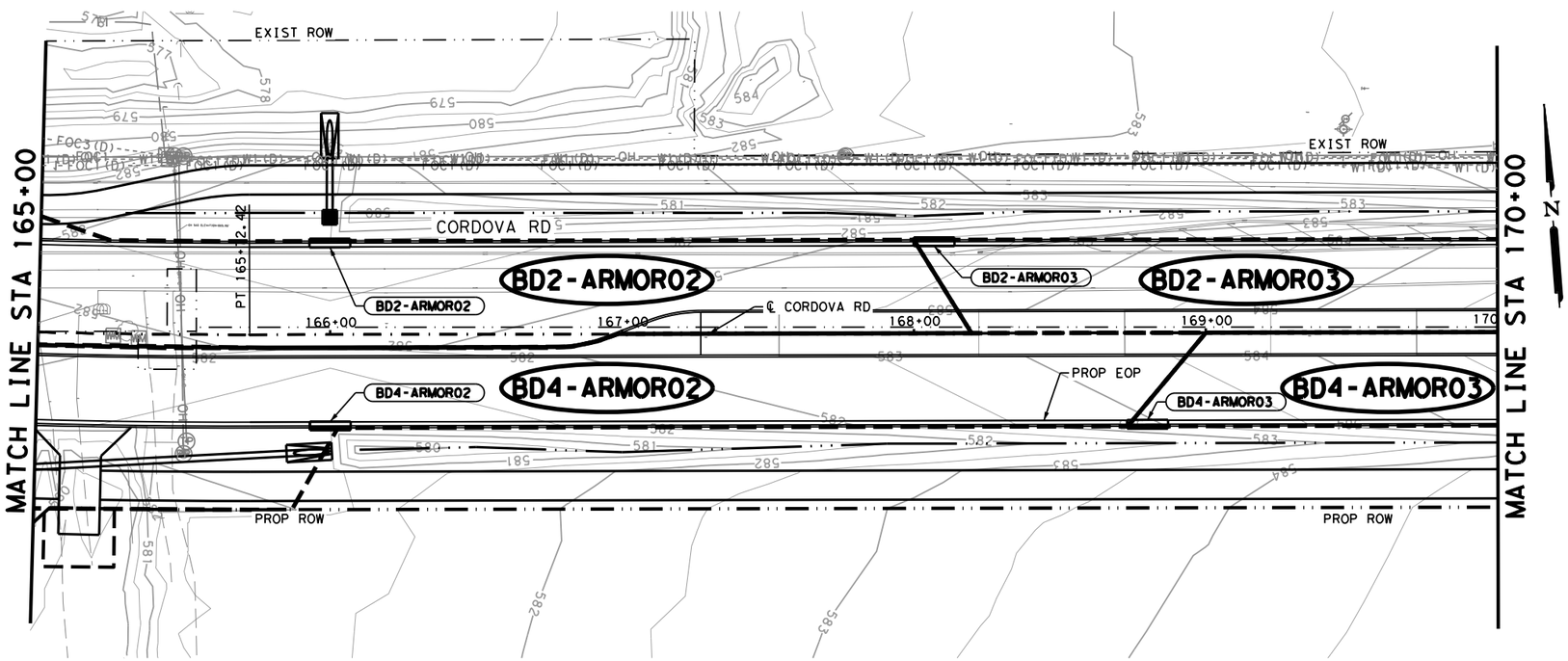

LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

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DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO I AUSTIN I HOUSTON I FORT WORTH I DALLAS
2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000
TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS
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THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

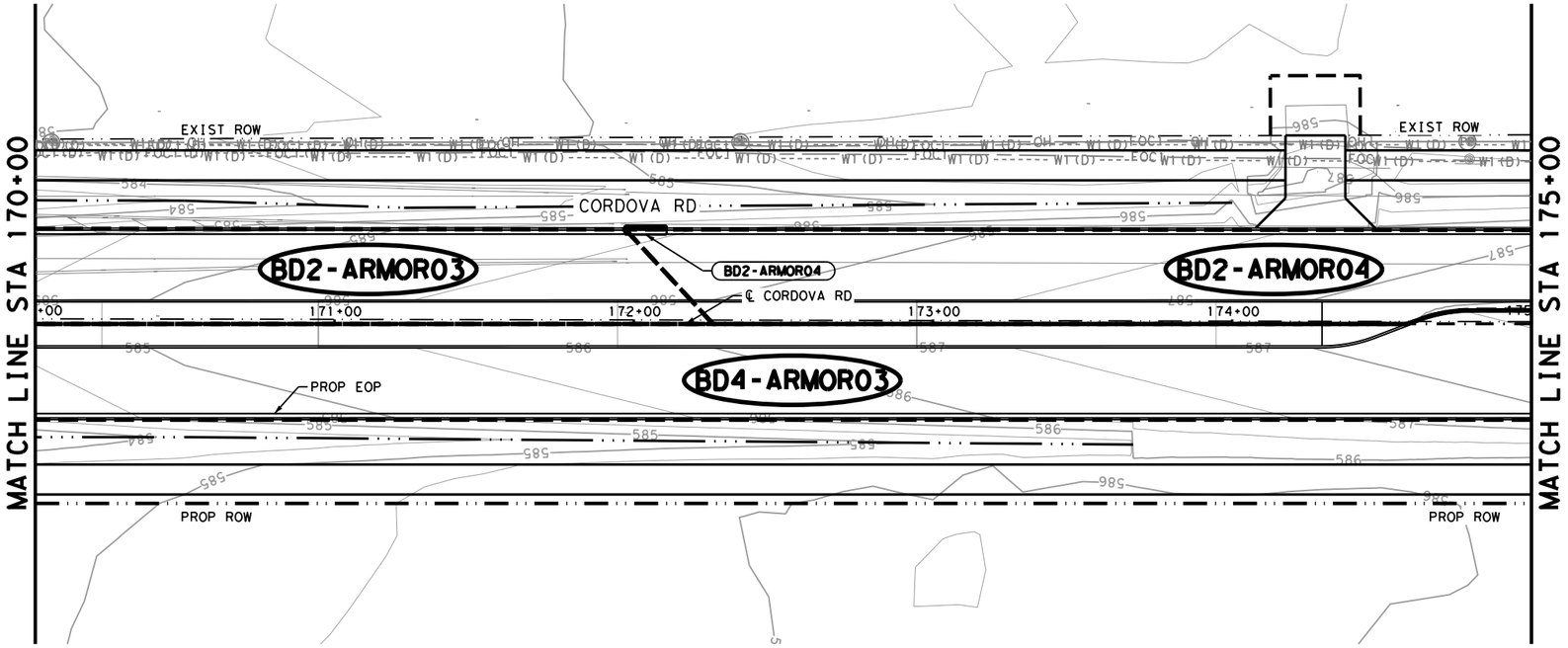
CORDOVA RD

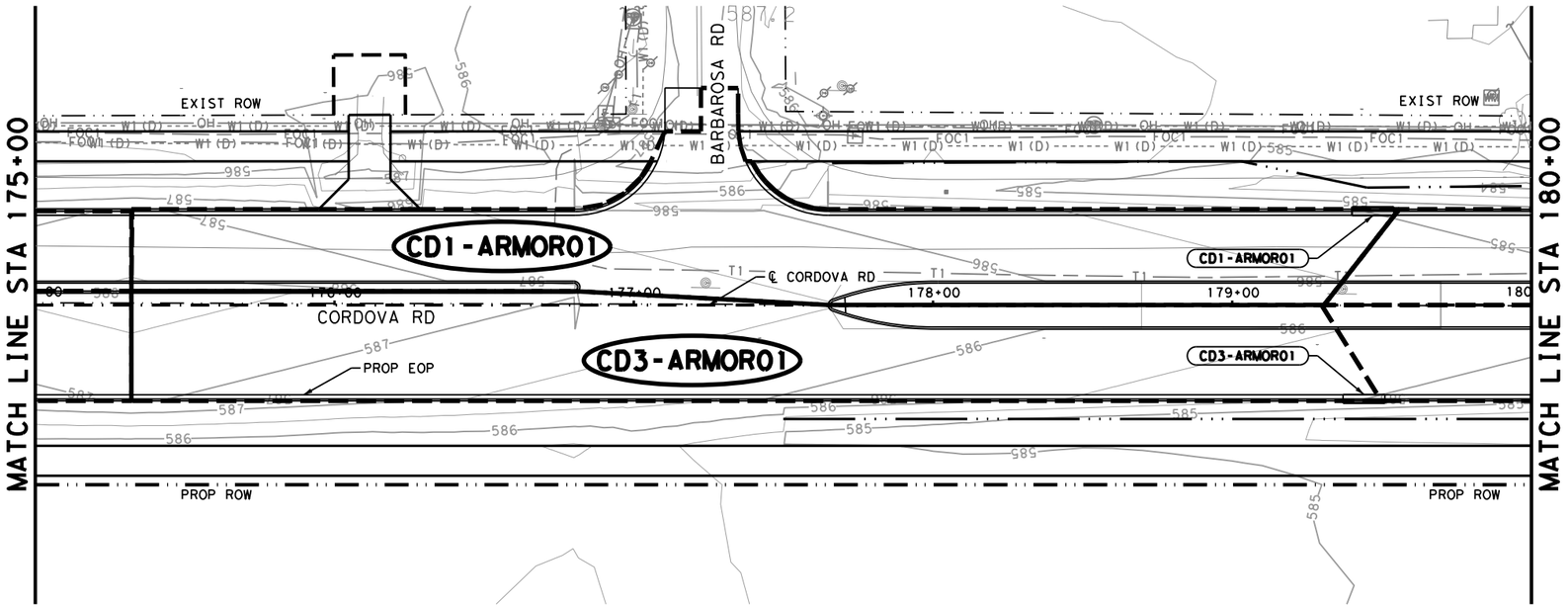
DRAINAGE LAYOUT

STA 160+00 TO STA 170+00

SHEET 7 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	177





N

LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS. CONTRACTOR SHALL VERIFY DEPTHS AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION.
2. SEE PERTINENT STRUCTURE LAYOUT OR PROFILE FOR ADDITIONAL DETAILS OF EACH STRUCTURE.
3. ALL PIPES ARE NORMAL TO AND STRAIGHT FROM STRUCTURE TO STRUCTURE UNLESS OTHERWISE SHOWN.
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5. MANHOLE & GRATE INLET STATION, OFFSET, AND ELEVATIONS REFERENCES ARE TO THE CENTER AND TOP OF STRUCTURE.
6. CURB INLET STATION, OFFSET, AND ELEVATION REFERENCES ARE TO THE TOP FACE OF CURB OF INLET STRUCTURE.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS
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THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

CORDOVA RD

DRAINAGE LAYOUT

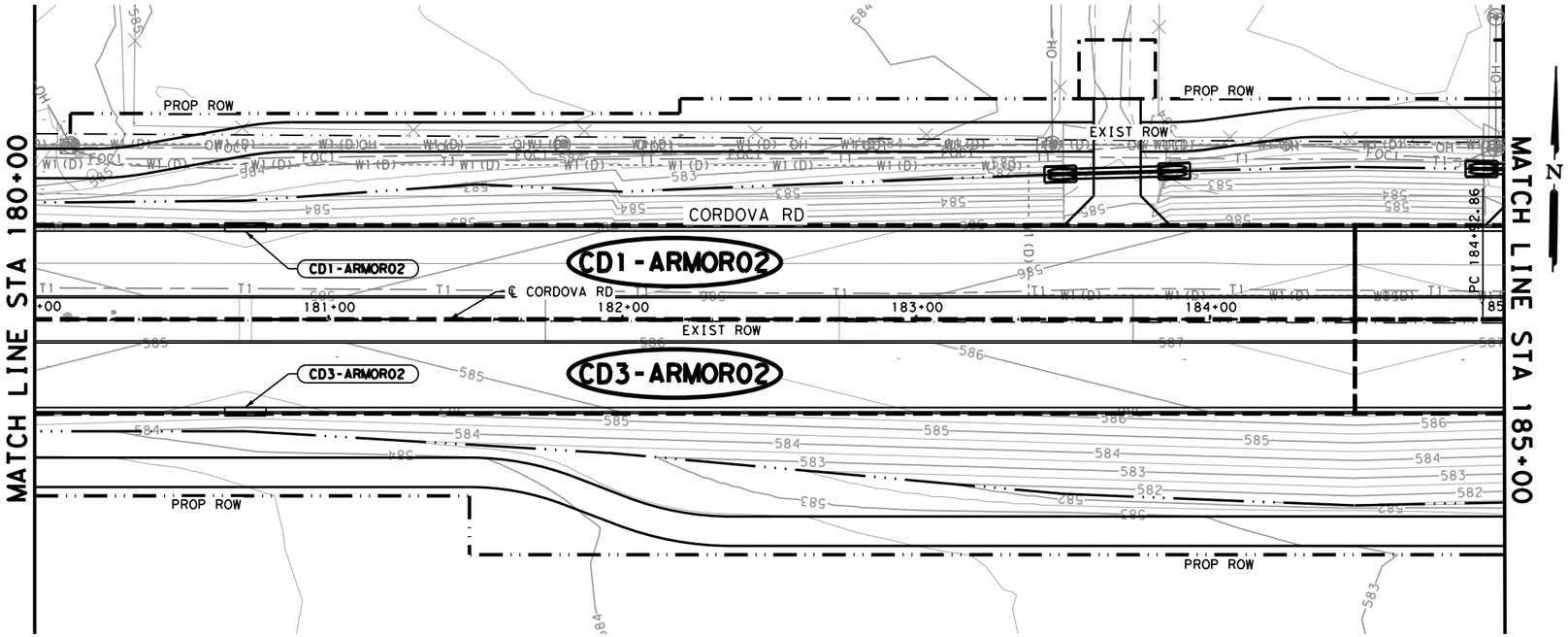
STA 170+00 TO STA 180+00

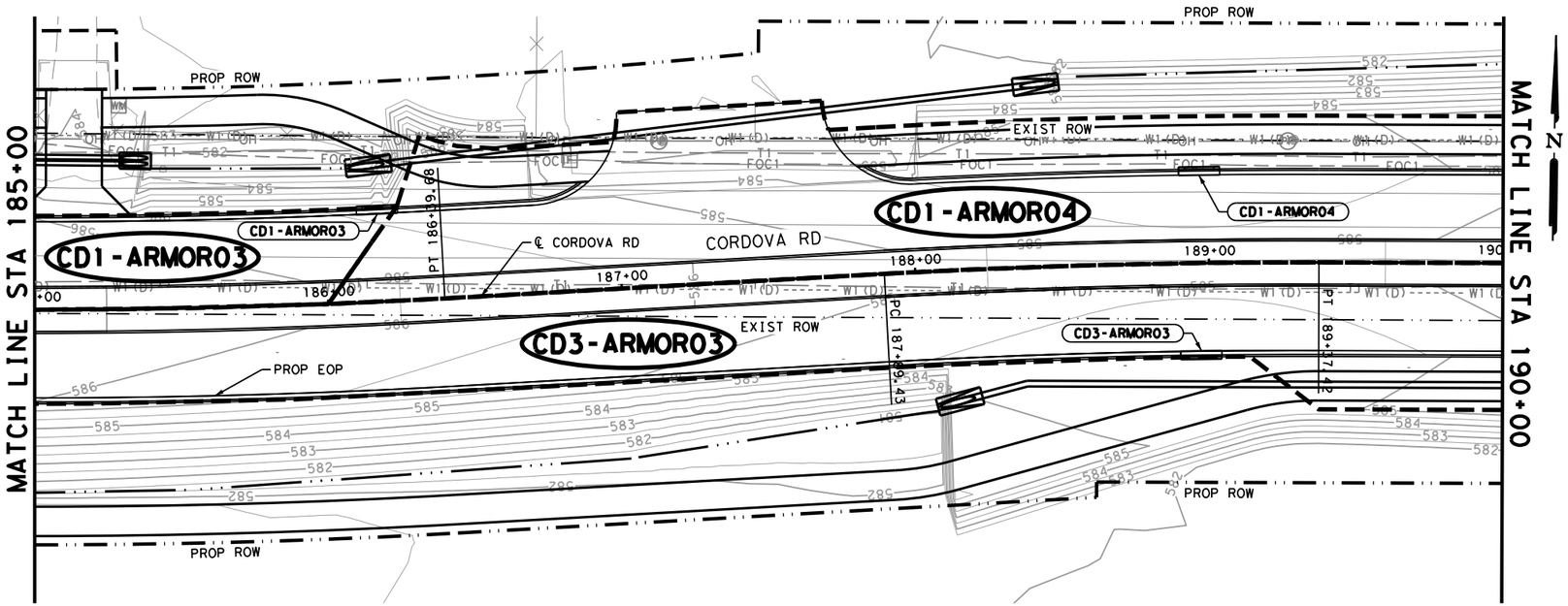
SHEET 8 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	178

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_sd_08.dgn





LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS
It's real.

THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

CORDOVA RD

DRAINAGE LAYOUT

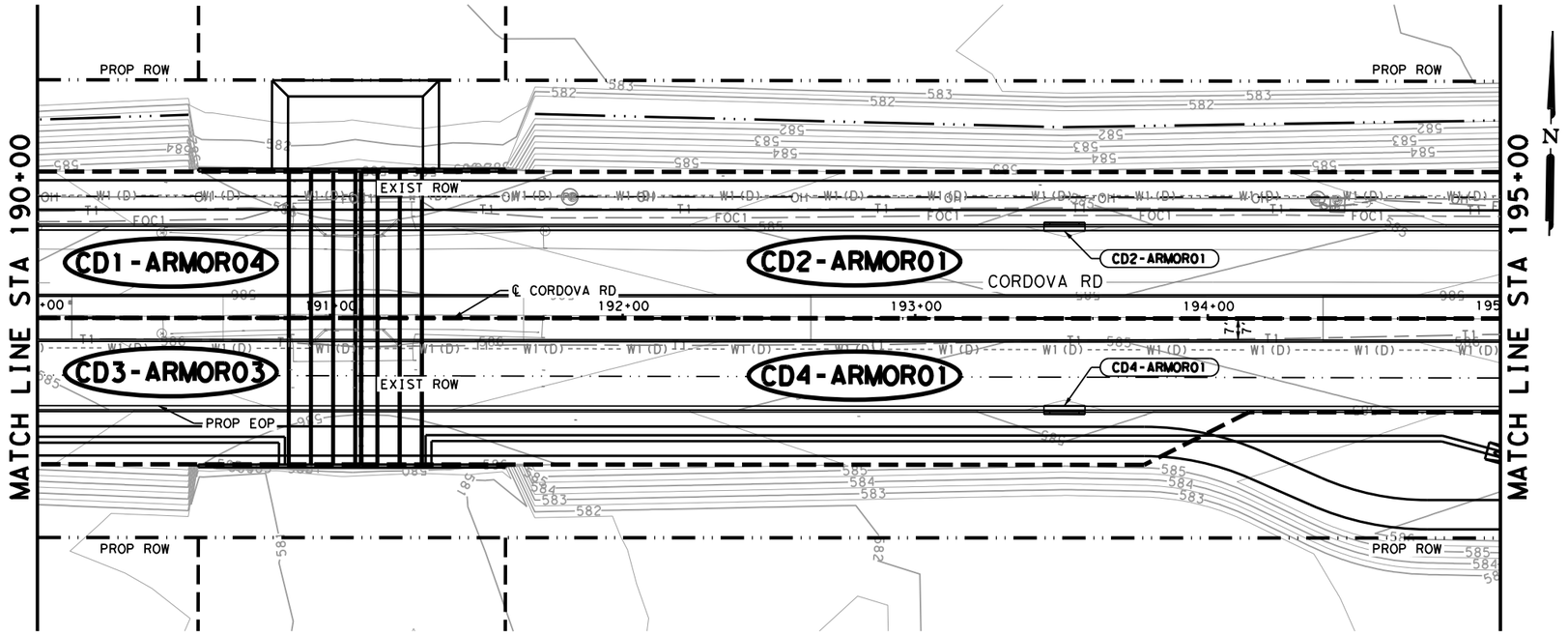
STA 180+00 TO STA 190+00

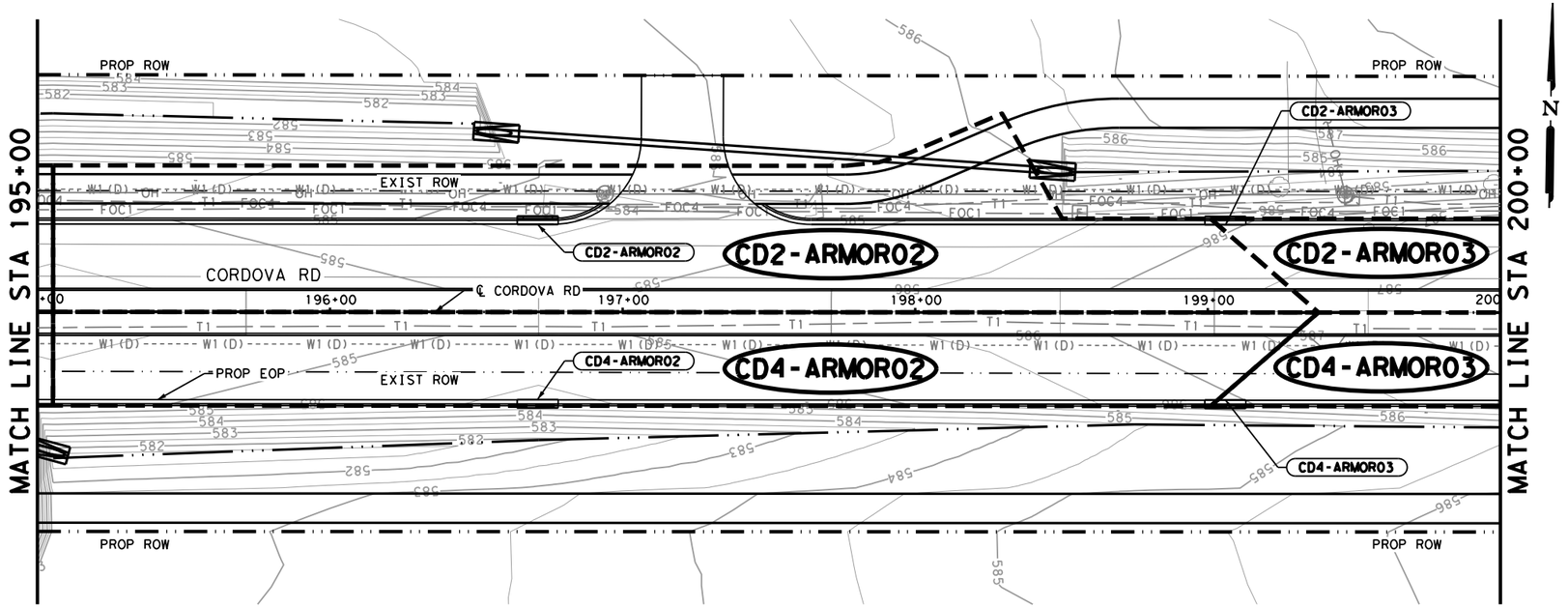
SHEET 9 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	179

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_sd_09.dgn





LEGEND

- X-X — DRAINAGE AREA
- LINE-E1 — STORM DRAIN DESIGNATION
- ED1-1 — STRUCTURE DESIGNATION

NOTES

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DESIGN

INTERIM REVIEW
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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS
It's real.
THE STATE OF TEXAS GUADALUPE COUNTY
Texas Department of Transportation ©2023

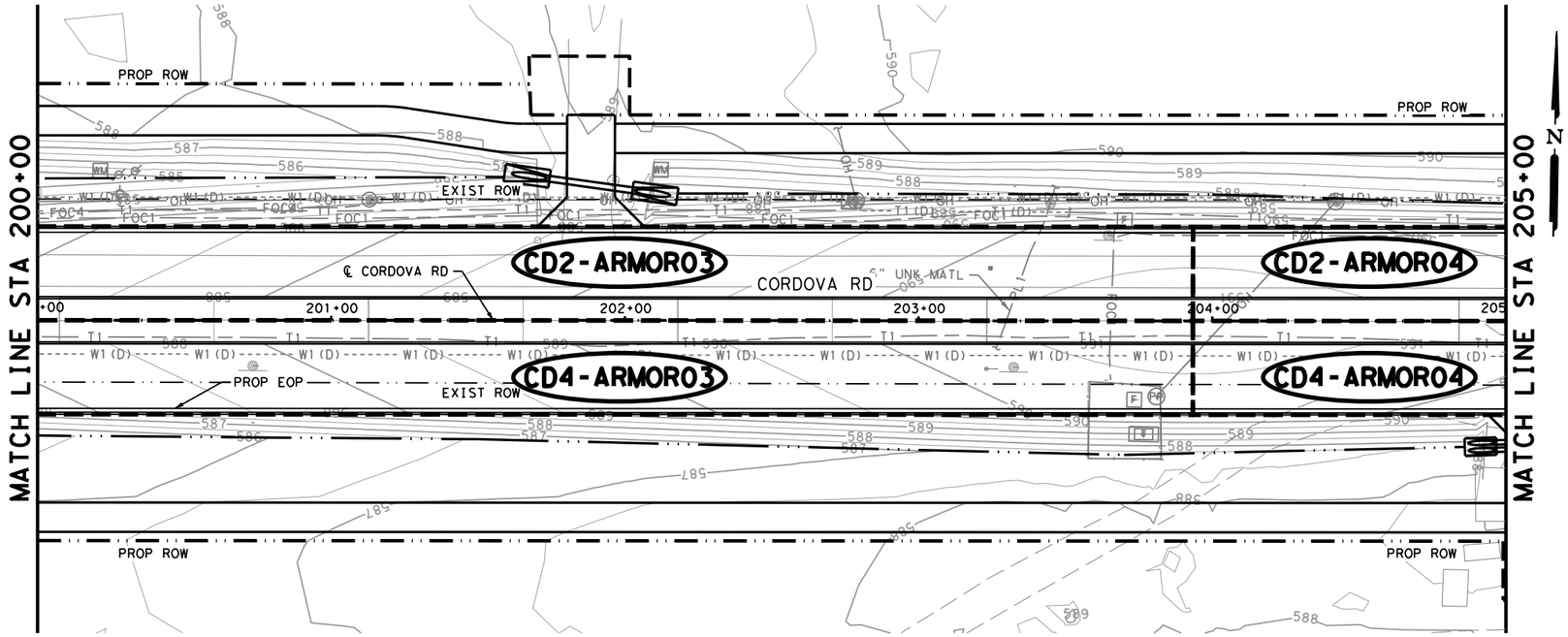
CORDOVA RD

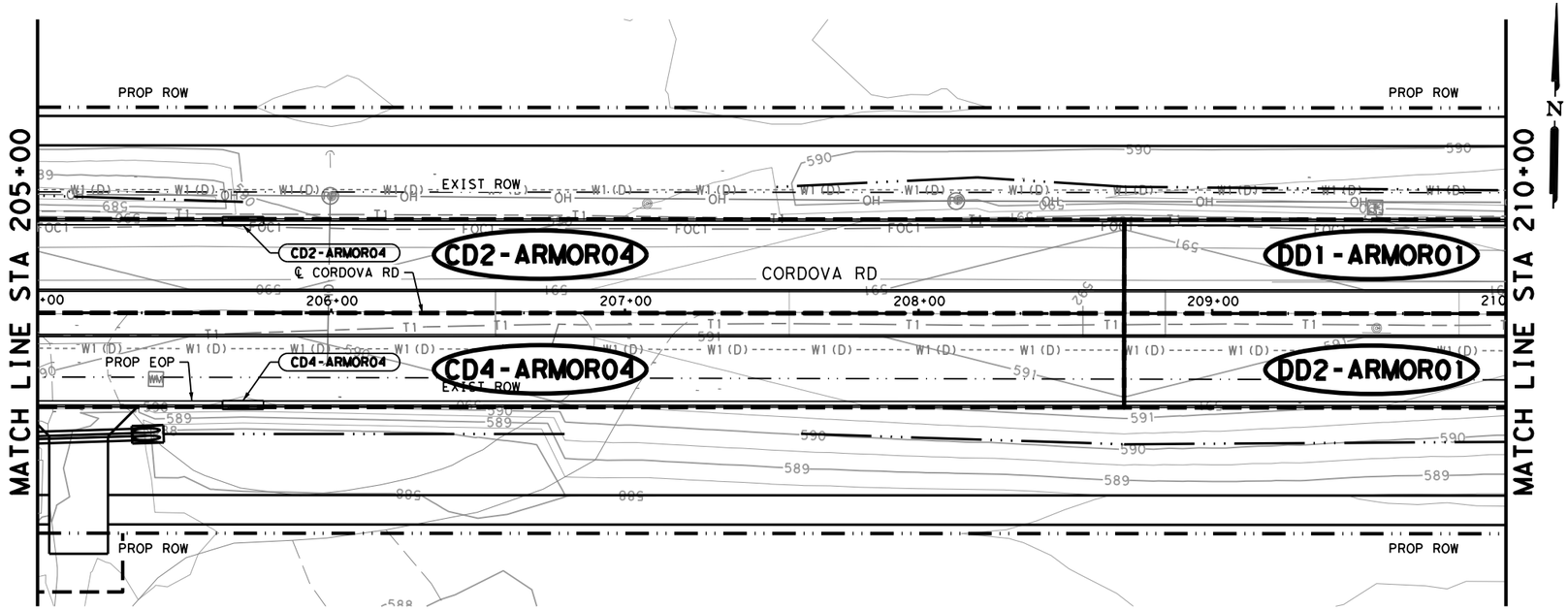
DRAINAGE LAYOUT

STA 190+00 TO STA 200+00

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	180

Plotted on: 7/27/2023
Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_sd_10.dgn





LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS
It's real.

THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

CORDOVA RD

DRAINAGE LAYOUT

STA 200+00 TO STA 210+00

SHEET 11 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	181

Plotted on: 7/27/2023

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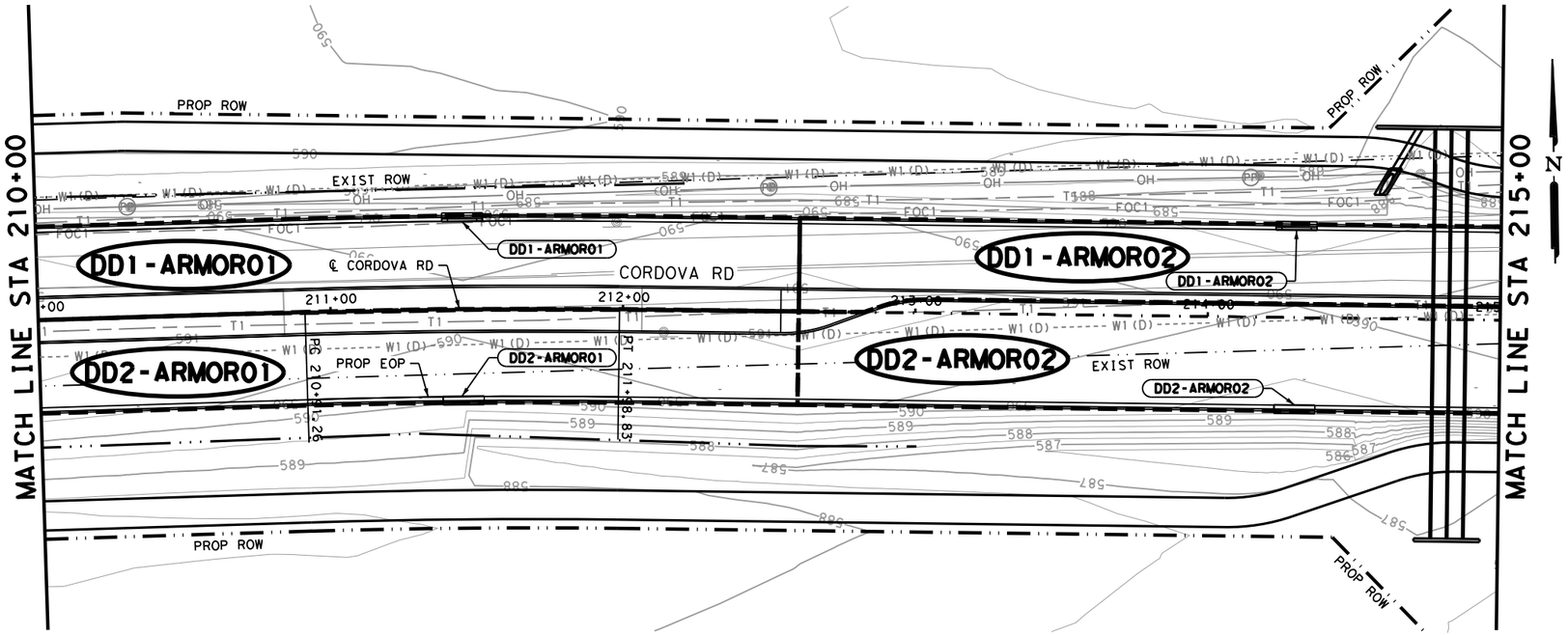

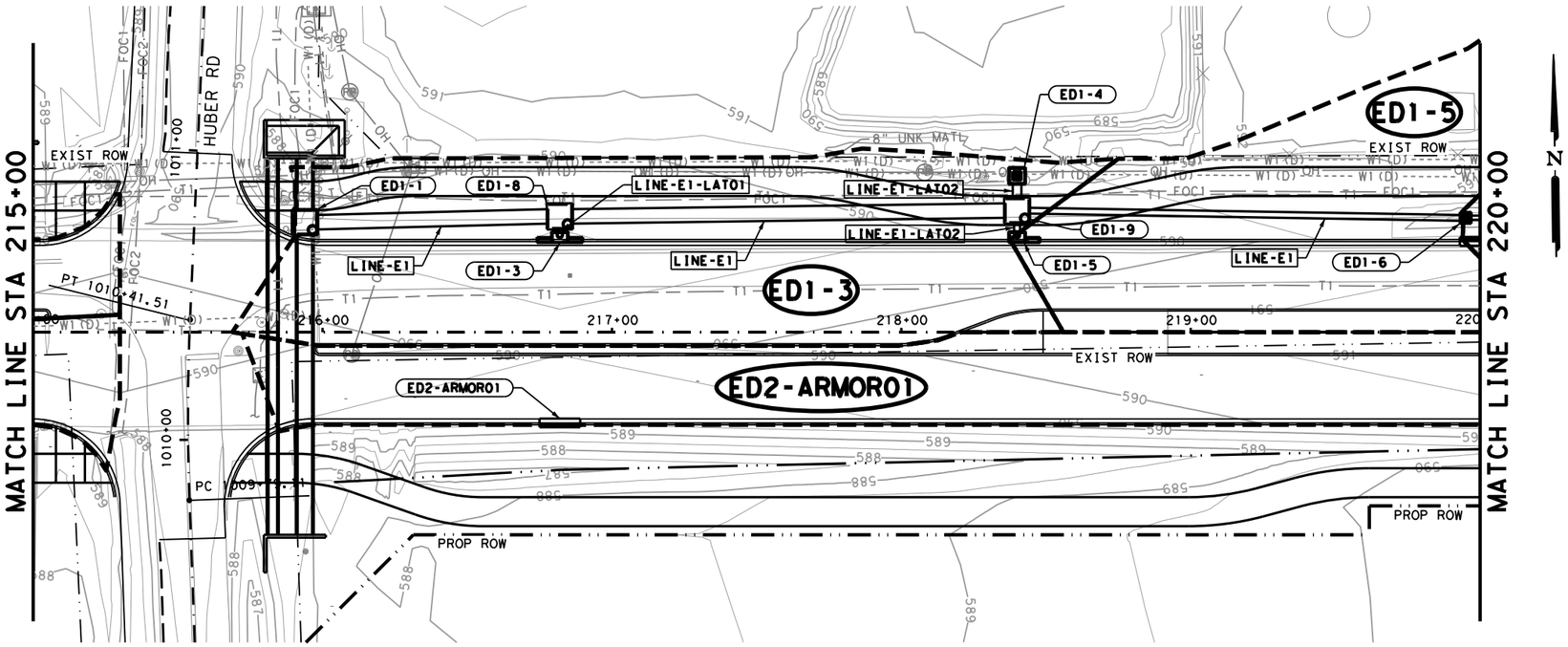

LEGEND

- X-X — DRAINAGE AREA
- LINE-E1 — STORM DRAIN DESIGNATION
- ED1-1 — STRUCTURE DESIGNATION

NOTES

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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS
It's real.

THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

CORDOVA RD

DRAINAGE LAYOUT

STA 210+00 TO STA 220+00

SHEET 12 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	182

Plotted on: 7/27/2023

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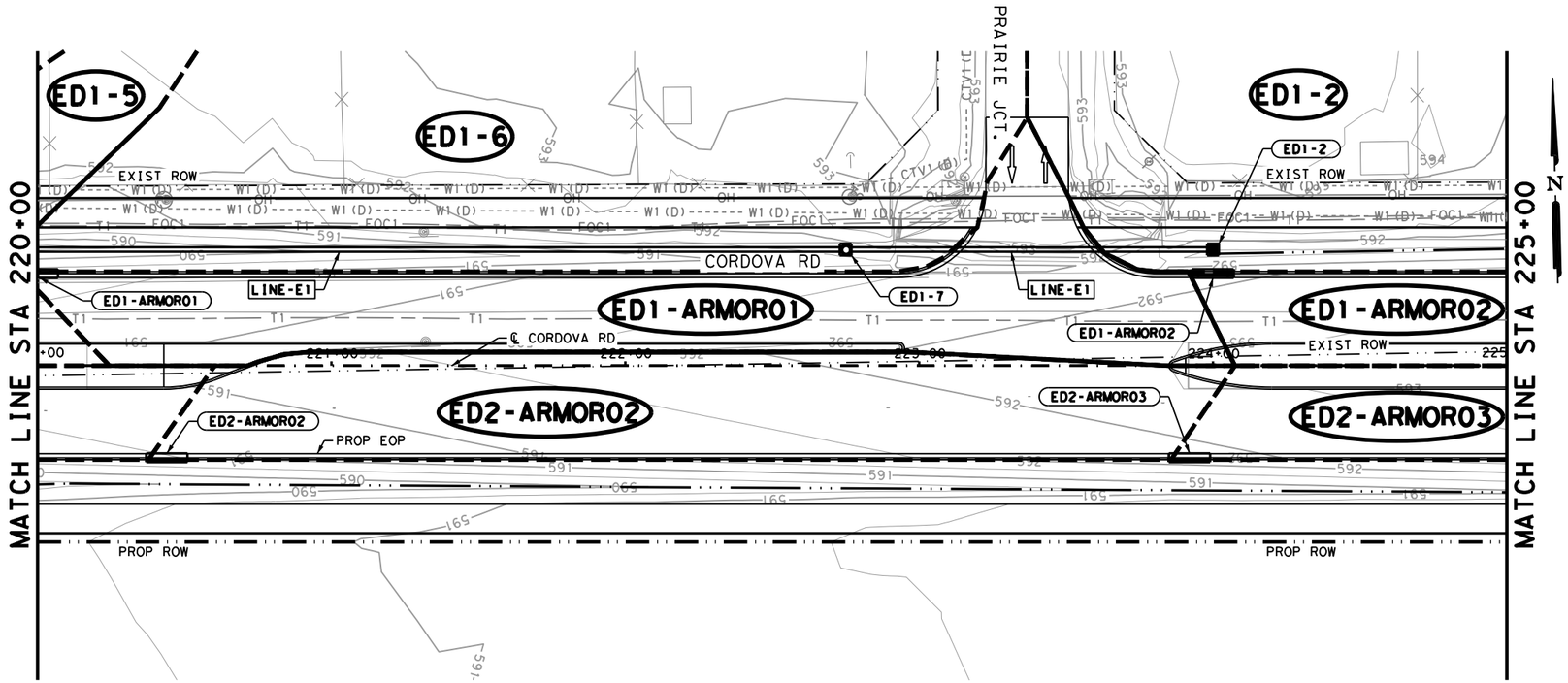

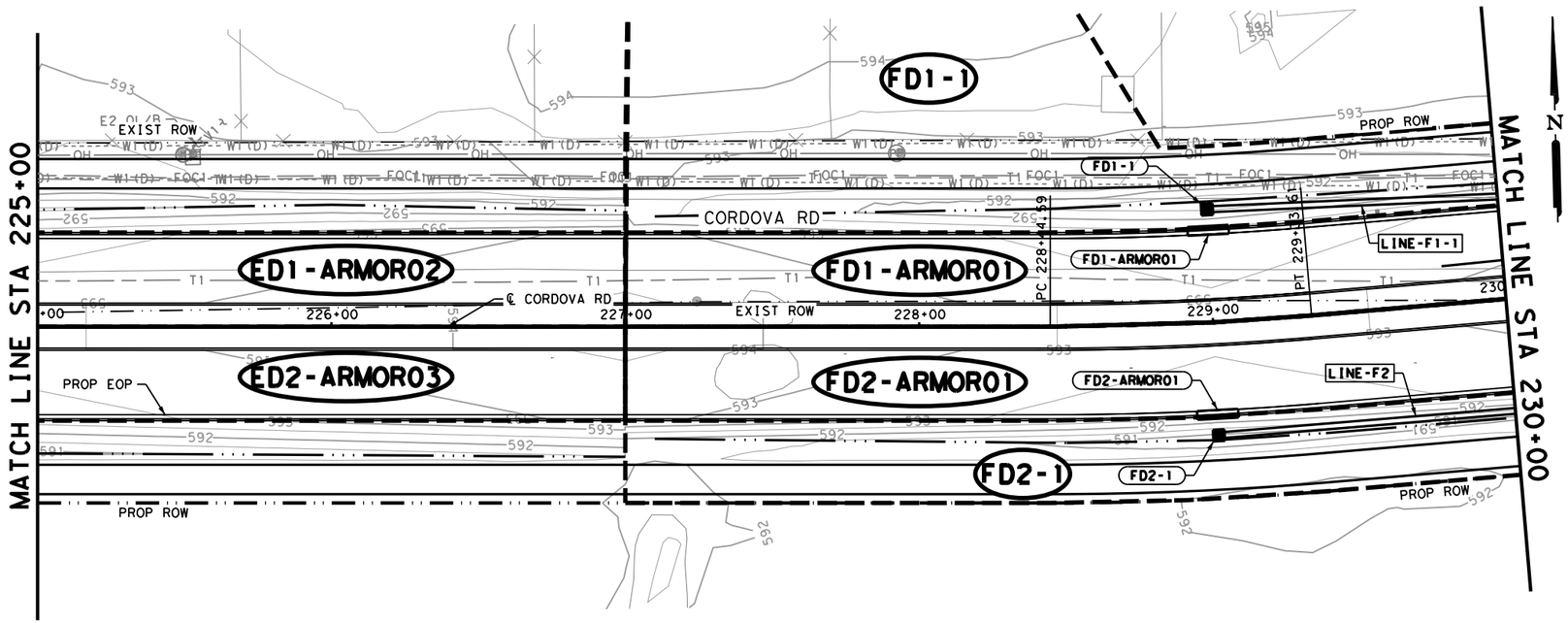

Plotted on: 7/27/2023

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LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

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DESIGN

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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS
It's real.

THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

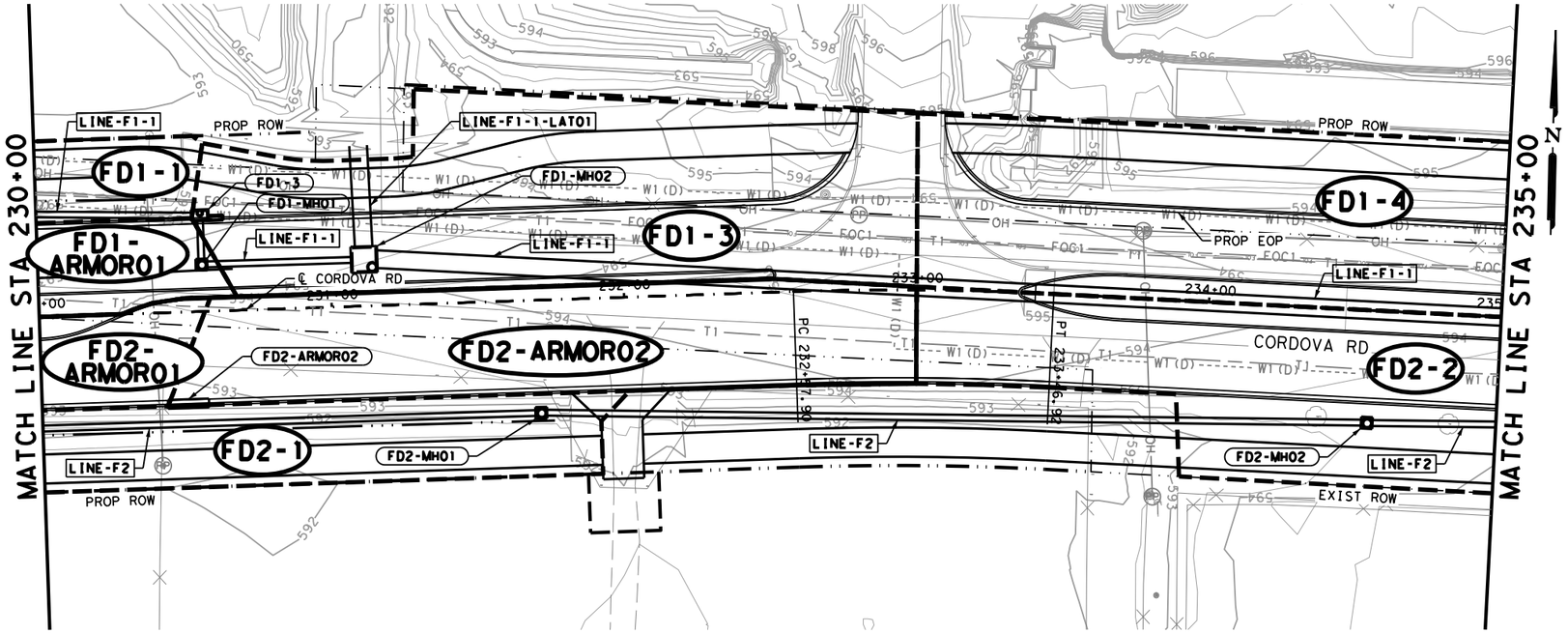
CORDOVA RD

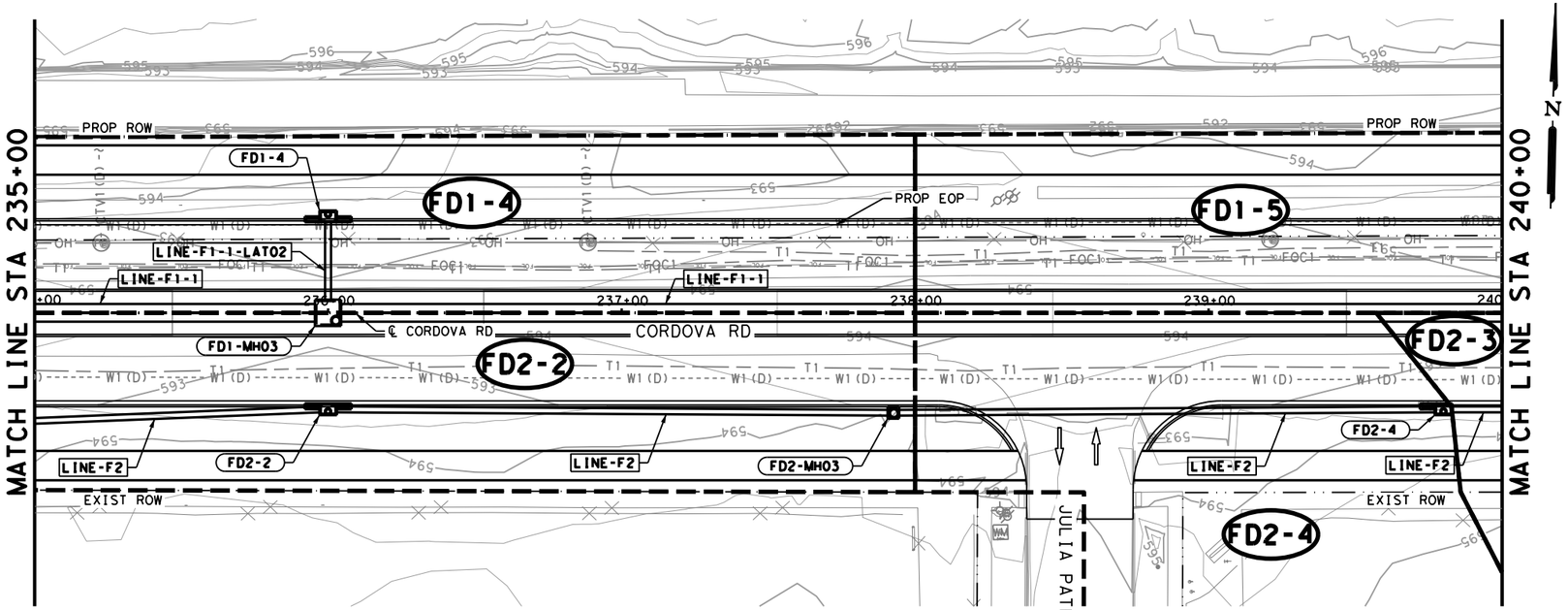
DRAINAGE LAYOUT

STA 220+00 TO STA 230+00

SHEET 13 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	183





Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_sd_14.dgn

LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

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ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

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ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS
It's real.

THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

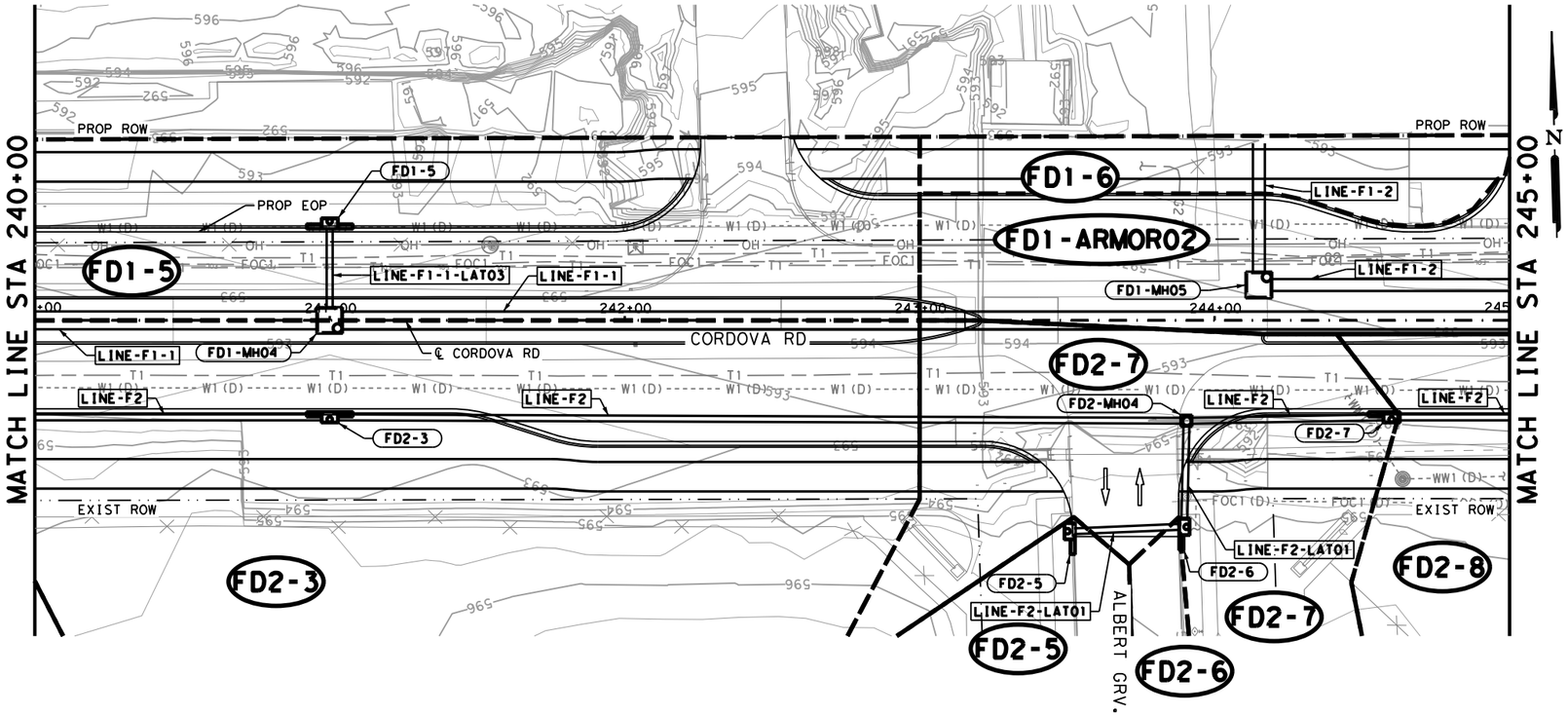
CORDOVA RD

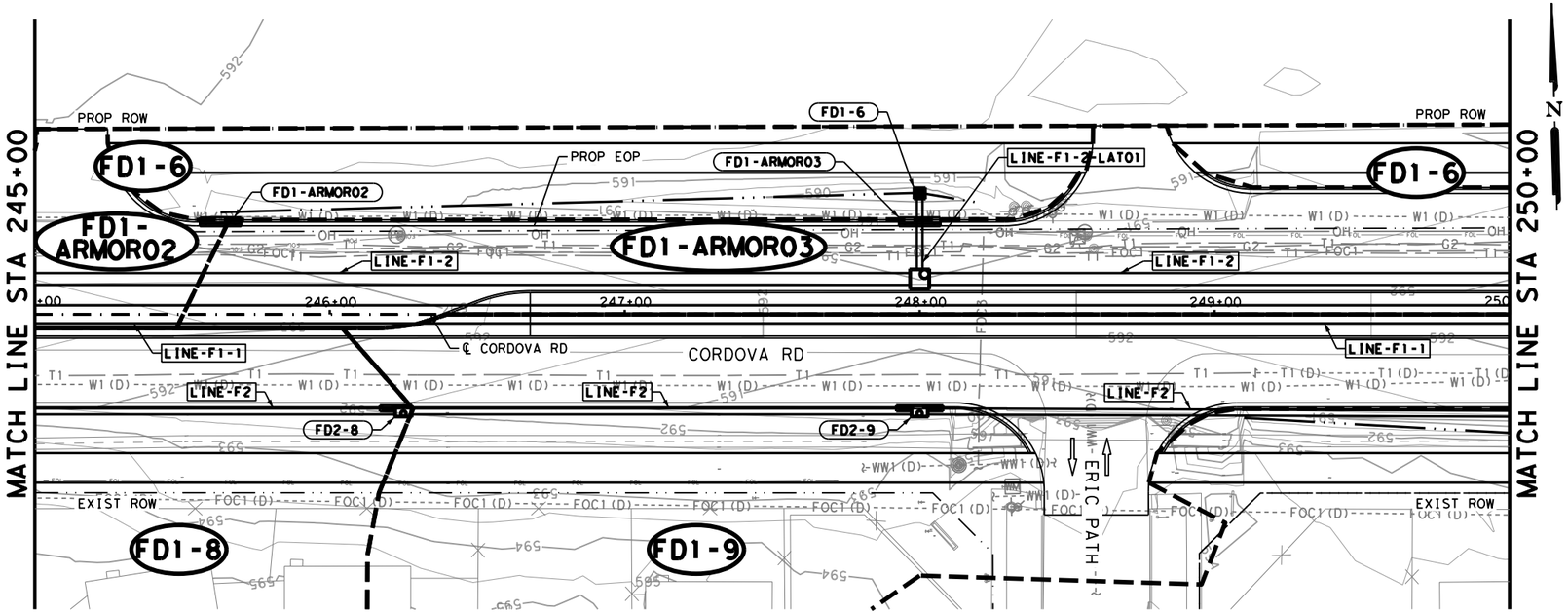
DRAINAGE LAYOUT

STA 230+00 TO STA 240+00

SHEET 14 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	184





LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

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ENGINEER: JOHN A. TYLER
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SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS
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THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

CORDOVA RD

DRAINAGE LAYOUT

STA 240+00 TO STA 250+00

SHEET 15 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	185

Plotted on: 7/27/2023

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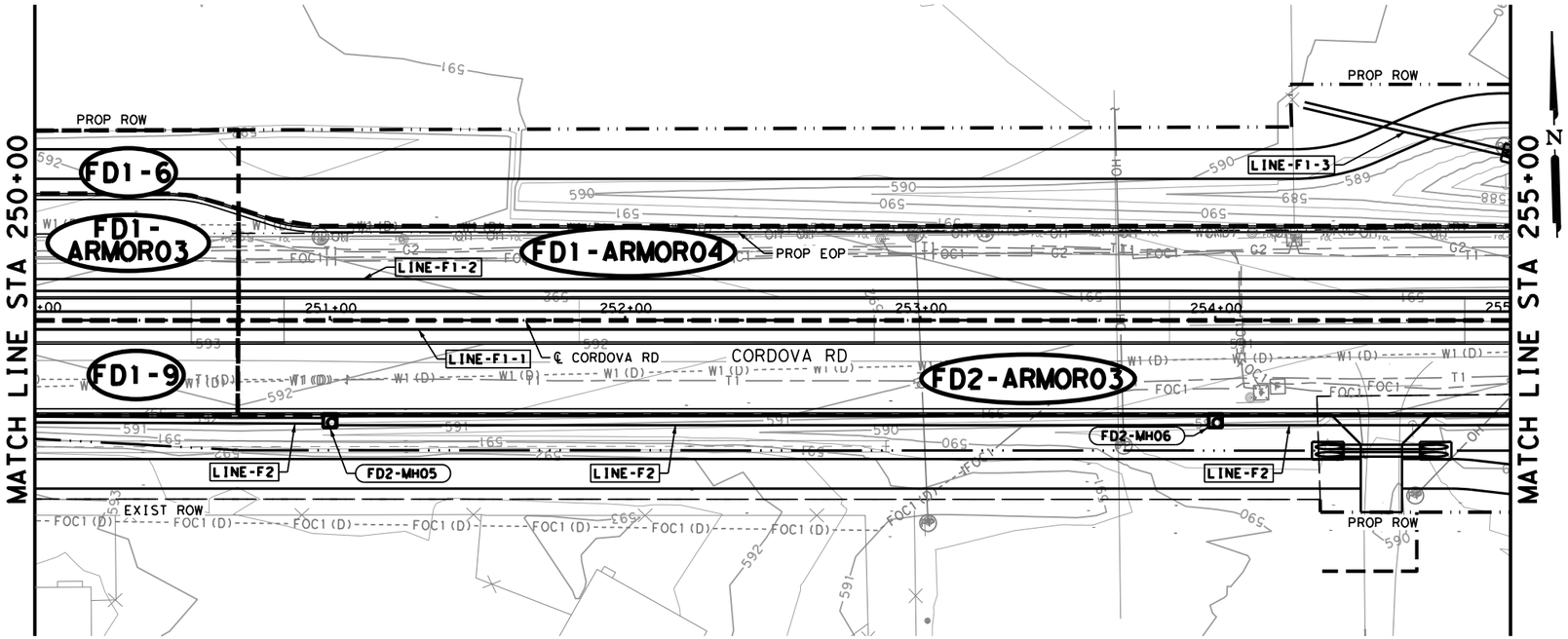

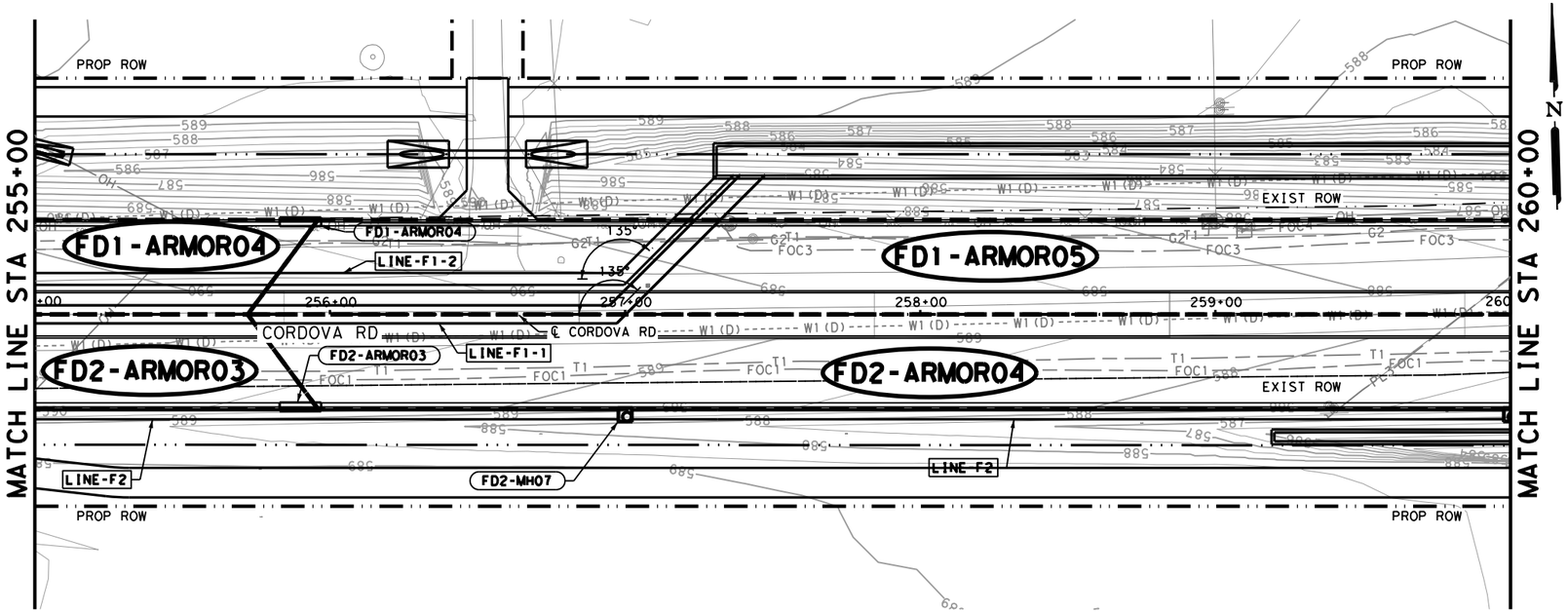

LEGEND

- X-X — DRAINAGE AREA
- LINE-E1 — STORM DRAIN DESIGNATION
- ED1-1 — STRUCTURE DESIGNATION

NOTES

1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS. CONTRACTOR SHALL VERIFY DEPTHS AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION.
2. SEE PERTINENT STRUCTURE LAYOUT OR PROFILE FOR ADDITIONAL DETAILS OF EACH STRUCTURE.
3. ALL PIPES ARE NORMAL TO AND STRAIGHT FROM STRUCTURE TO STRUCTURE UNLESS OTHERWISE SHOWN.
4. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED.
5. MANHOLE & GRATE INLET STATION, OFFSET, AND ELEVATIONS REFERENCES ARE TO THE CENTER AND TOP OF STRUCTURE.
6. CURB INLET STATION, OFFSET, AND ELEVATION REFERENCES ARE TO THE TOP FACE OF CURB OF INLET STRUCTURE.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS
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THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

CORDOVA RD

DRAINAGE LAYOUT

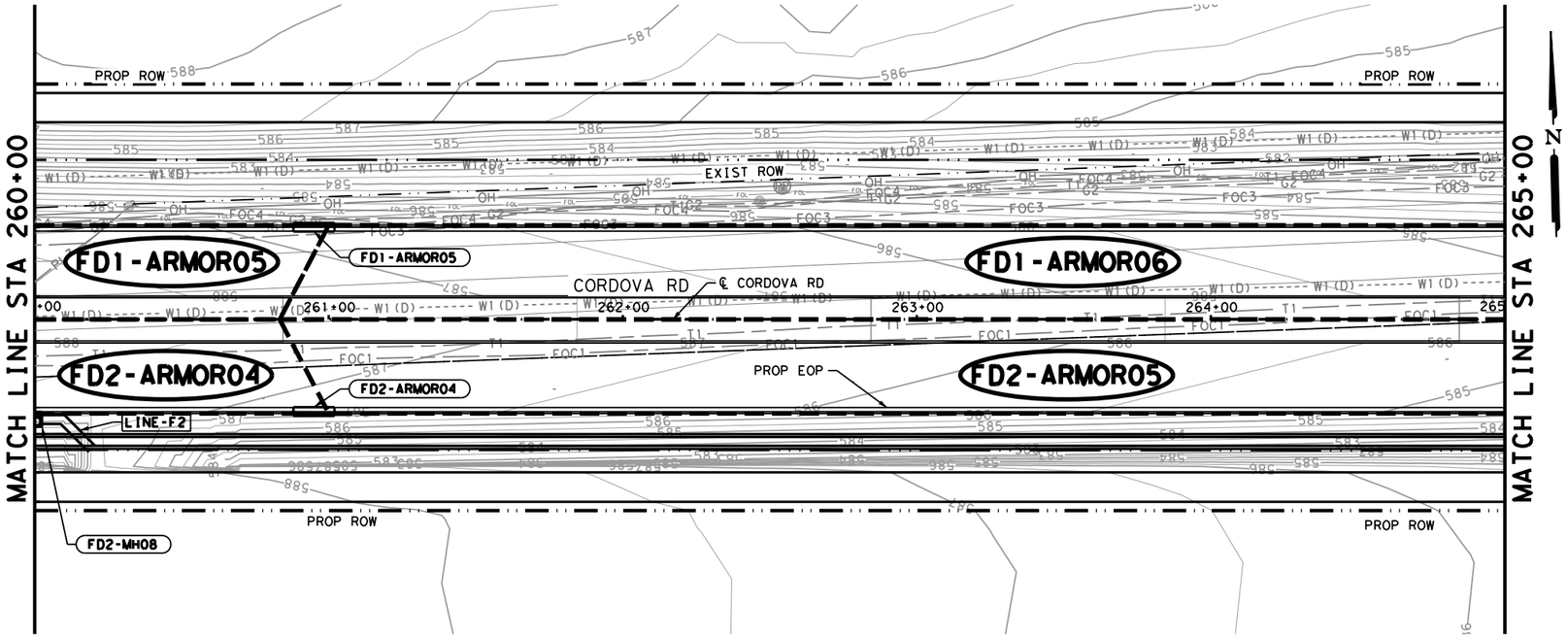
STA 250+00 TO STA 260+00

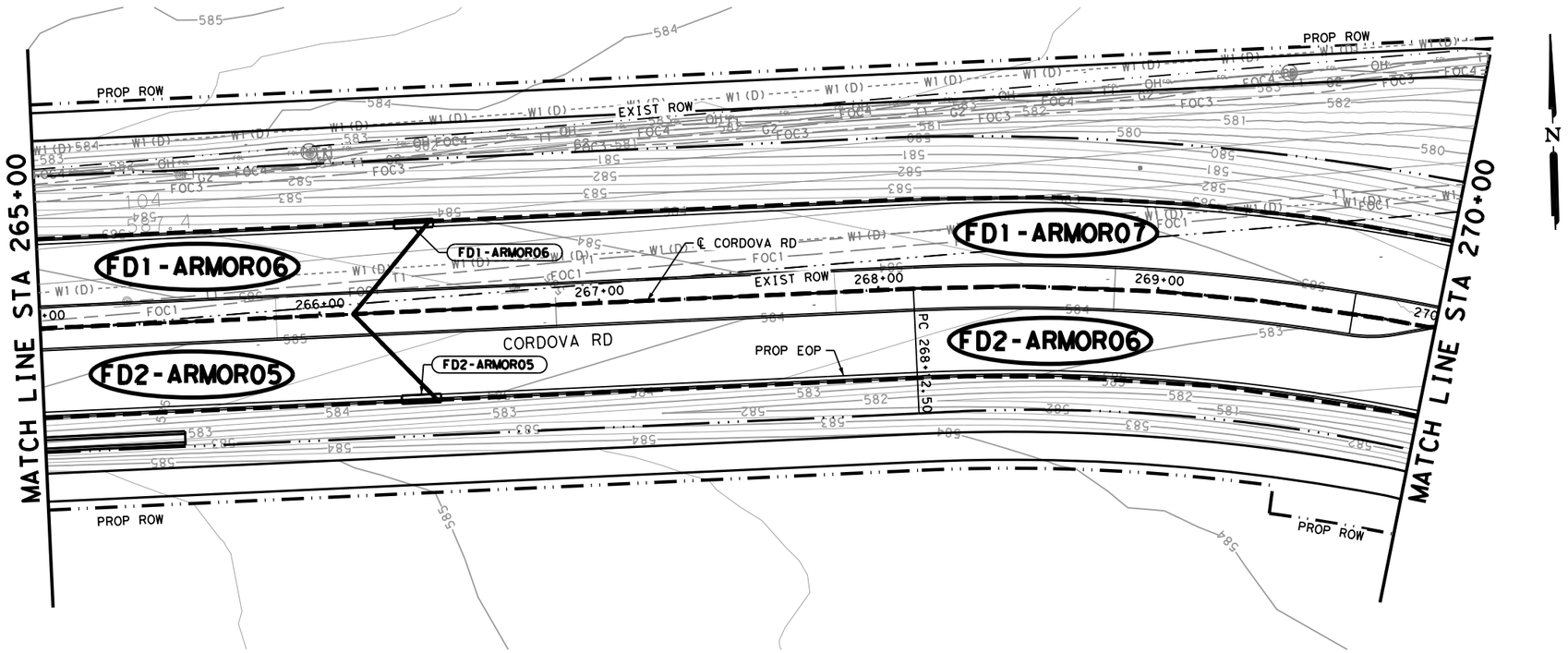
SHEET 16 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	186

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_sd_16.dgn





LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS. CONTRACTOR SHALL VERIFY DEPTHS AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION.
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6. CURB INLET STATION, OFFSET, AND ELEVATION REFERENCES ARE TO THE TOP FACE OF CURB OF INLET STRUCTURE.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS
It's real.

THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

CORDOVA RD

DRAINAGE LAYOUT

STA 260+00 TO STA 270+00

SHEET 17 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	187

Plotted on: 7/27/2023

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Plotted on: 7/27/2023

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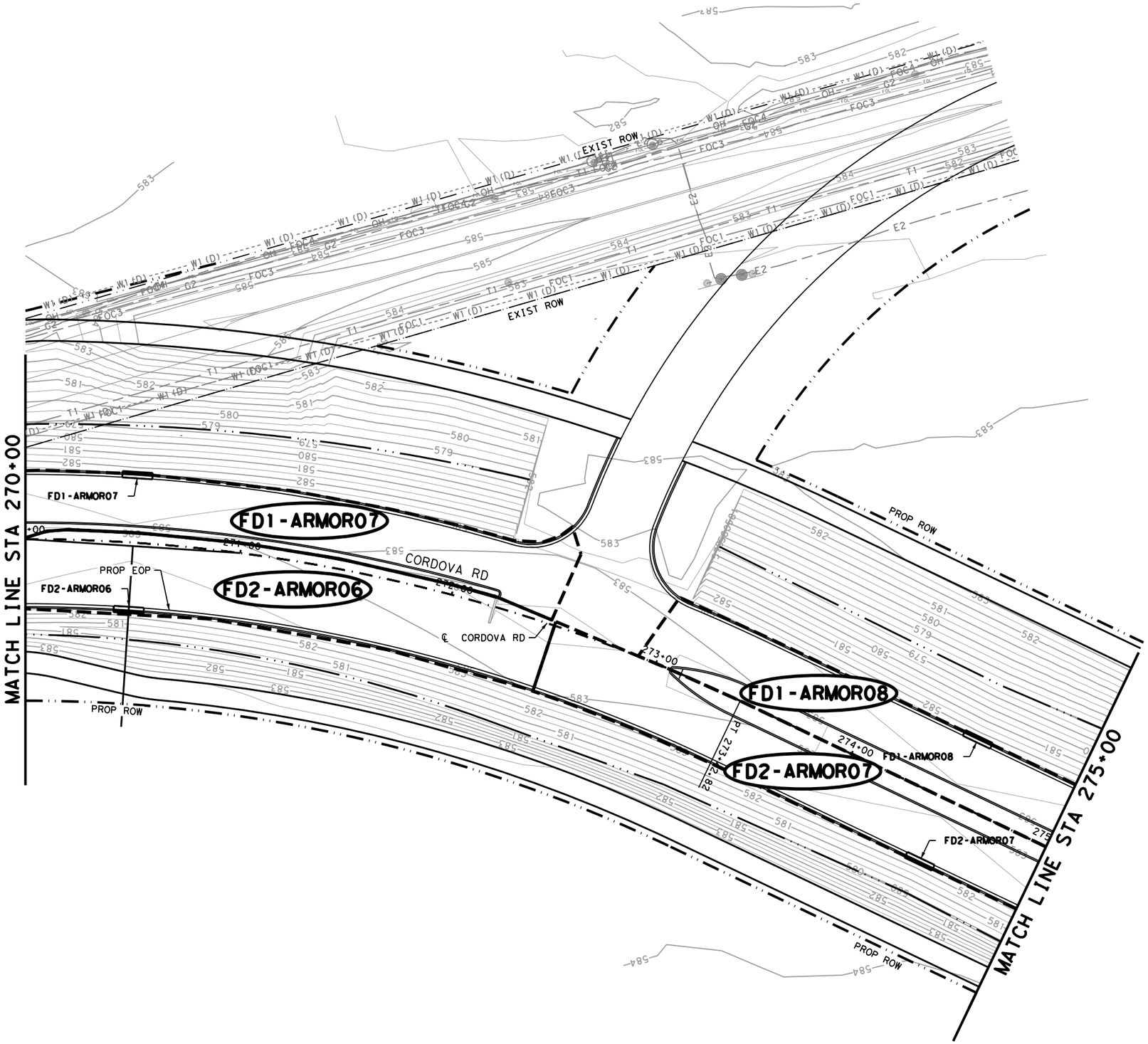

LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS. CONTRACTOR SHALL VERIFY DEPTHS AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION.
2. SEE PERTINENT STRUCTURE LAYOUT OR PROFILE FOR ADDITIONAL DETAILS OF EACH STRUCTURE.
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6. CURB INLET STATION, OFFSET, AND ELEVATION REFERENCES ARE TO THE TOP FACE OF CURB OF INLET STRUCTURE.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

CORDOVA RD

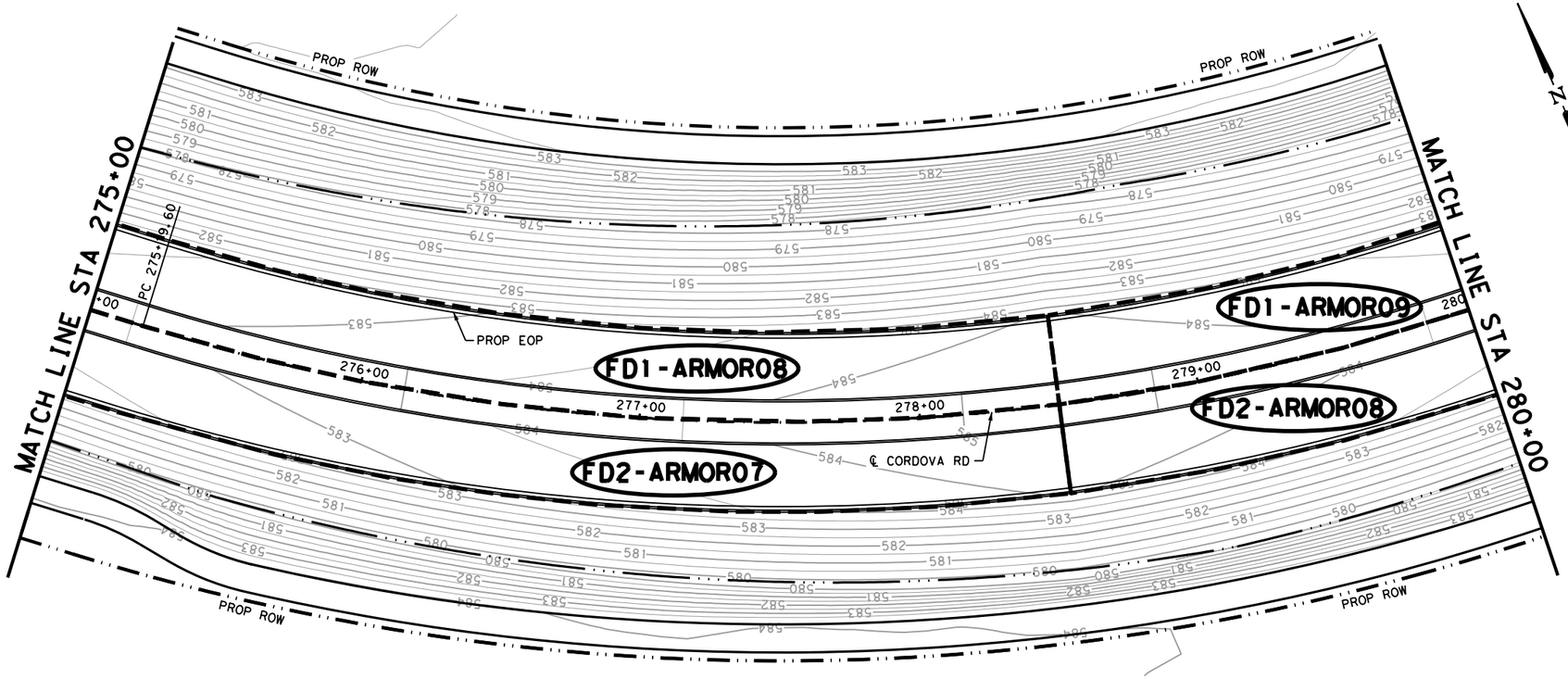
DRAINAGE LAYOUT

STA 270+00 TO STA 275+00

SHEET 18 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	188

Plotted on: 7/27/2023



LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS. CONTRACTOR SHALL VERIFY DEPTHS AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION.
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DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS
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THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

CORDOVA RD

DRAINAGE LAYOUT

STA 275+00 TO STA 280+00

SHEET 19 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DW:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DW:	SAT	GUADALUPE	0915	45	052	189

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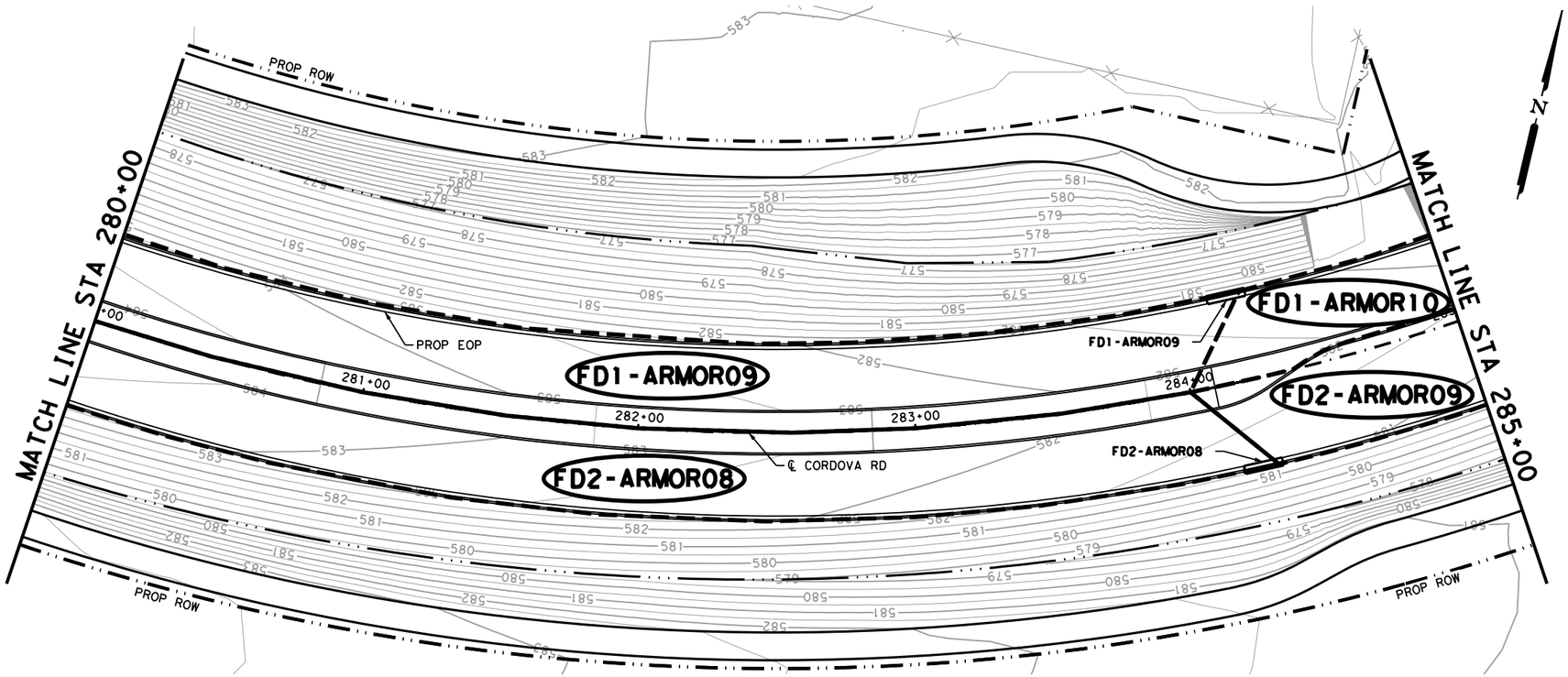
Plotted on: 7/27/2023



LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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THE STATE OF TEXAS GUADALUPE COUNTY
Texas Department of Transportation ©2023

CORDOVA RD

DRAINAGE LAYOUT

STA 280+00 TO STA 285+00

SHEET 20 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	190

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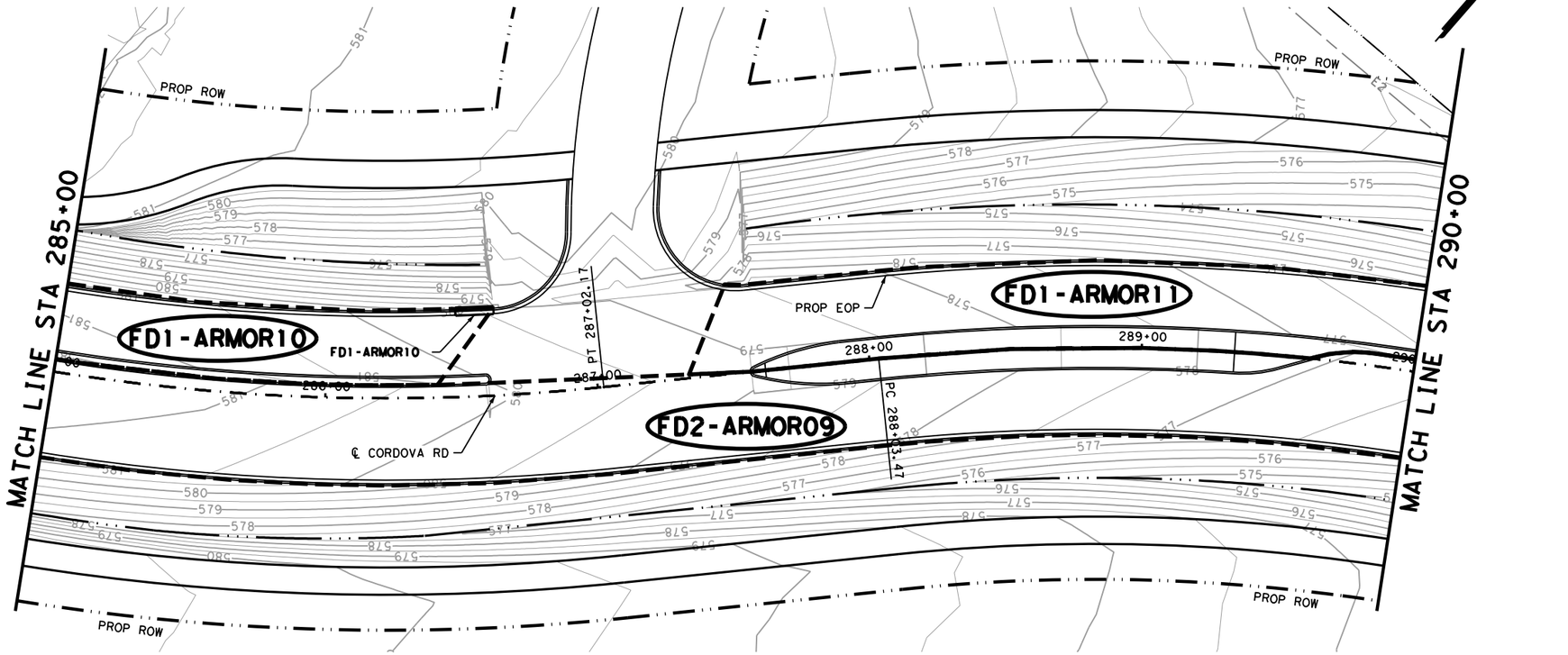
Plotted on: 7/27/2023



LEGEND

X-X	DRAINAGE AREA
LINE-E1	STORM DRAIN DESIGNATION
ED1-1	STRUCTURE DESIGNATION

NOTES

1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS. CONTRACTOR SHALL VERIFY DEPTHS AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION.
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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation
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CORDOVA RD

DRAINAGE LAYOUT

STA 285+00 TO STA 290+00

SHEET 21 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	191

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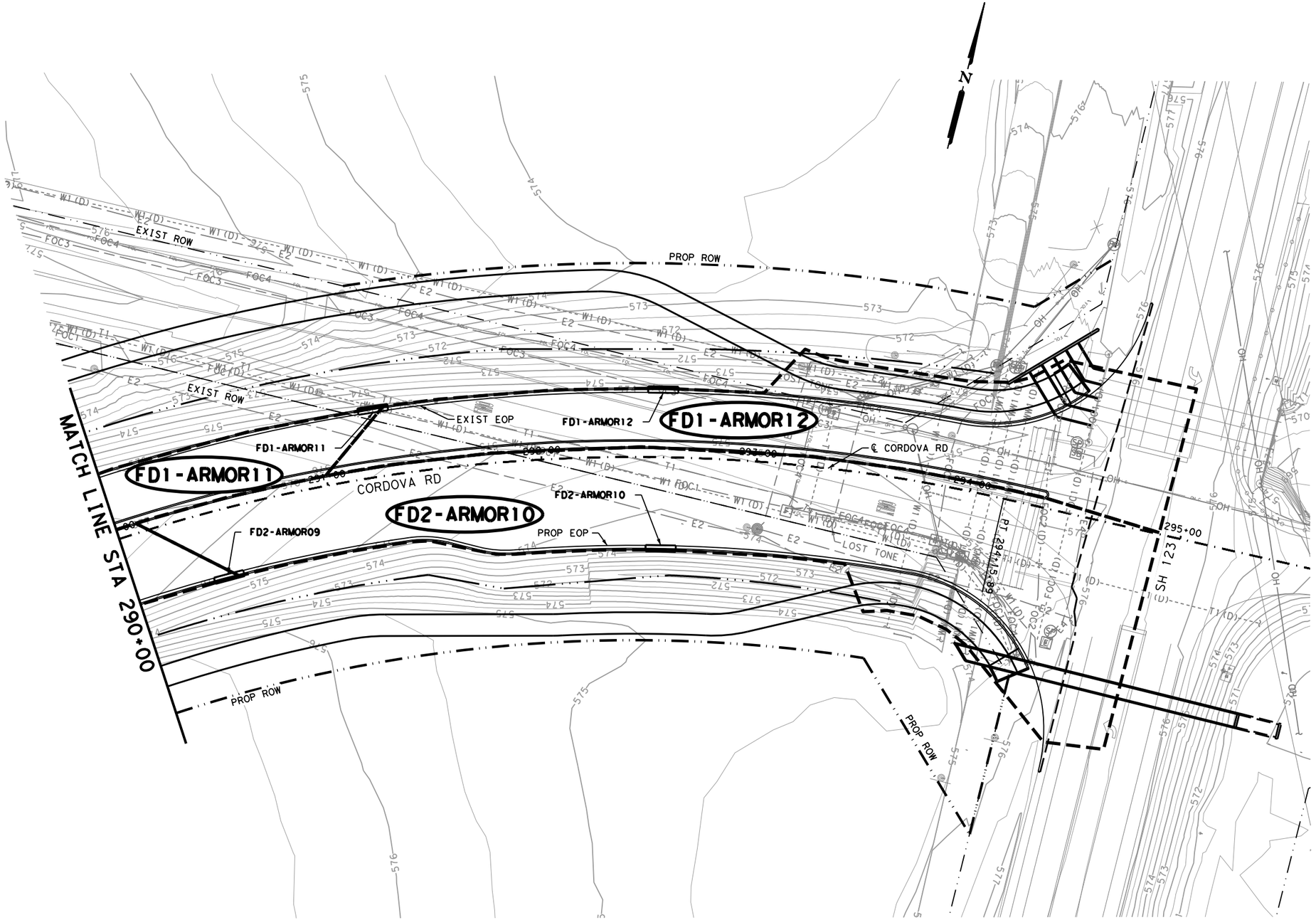

LEGEND

- X-X — DRAINAGE AREA
- LINE-E1 — STORM DRAIN DESIGNATION
- ED1-1 — STRUCTURE DESIGNATION

NOTES

1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS. CONTRACTOR SHALL VERIFY DEPTHS AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION.
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DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: STEVEN J. TATE
P.E. SERIAL NO: 131443
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 25 50

SCALE: PLAN 1"= 50' PROFILE 1"= 10'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS
It's real.

THE STATE OF TEXAS GUADALUPE COUNTY

Texas Department of Transportation ©2023

CORDOVA RD

DRAINAGE LAYOUT

STA 290+00 TO END OF PROJECT

SHEET 22 OF 22

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	192

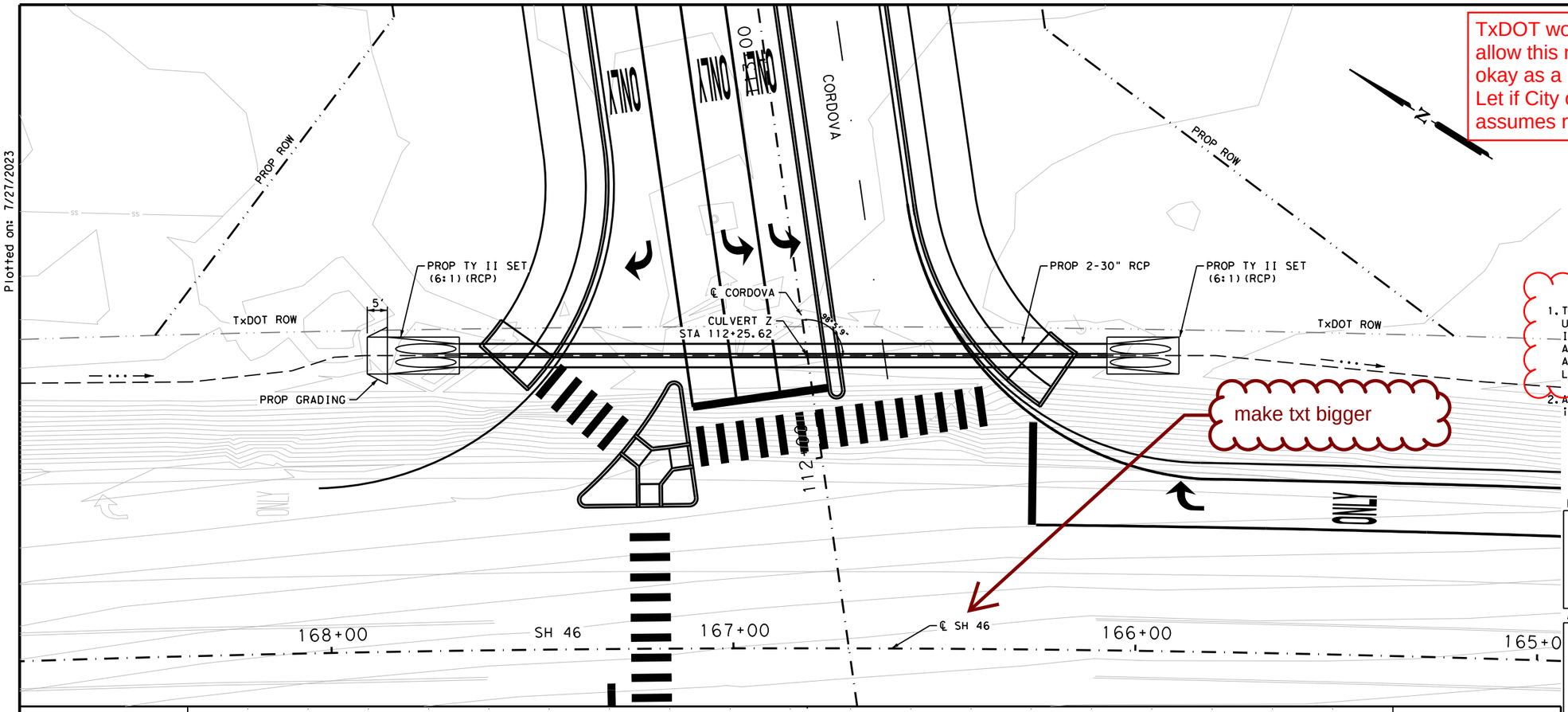
Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_sd_22.dgn

Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_str_01.dgn

TxDOT would not allow this note. Is it okay as a Local Govt Let if City of Seguin assumes risk?



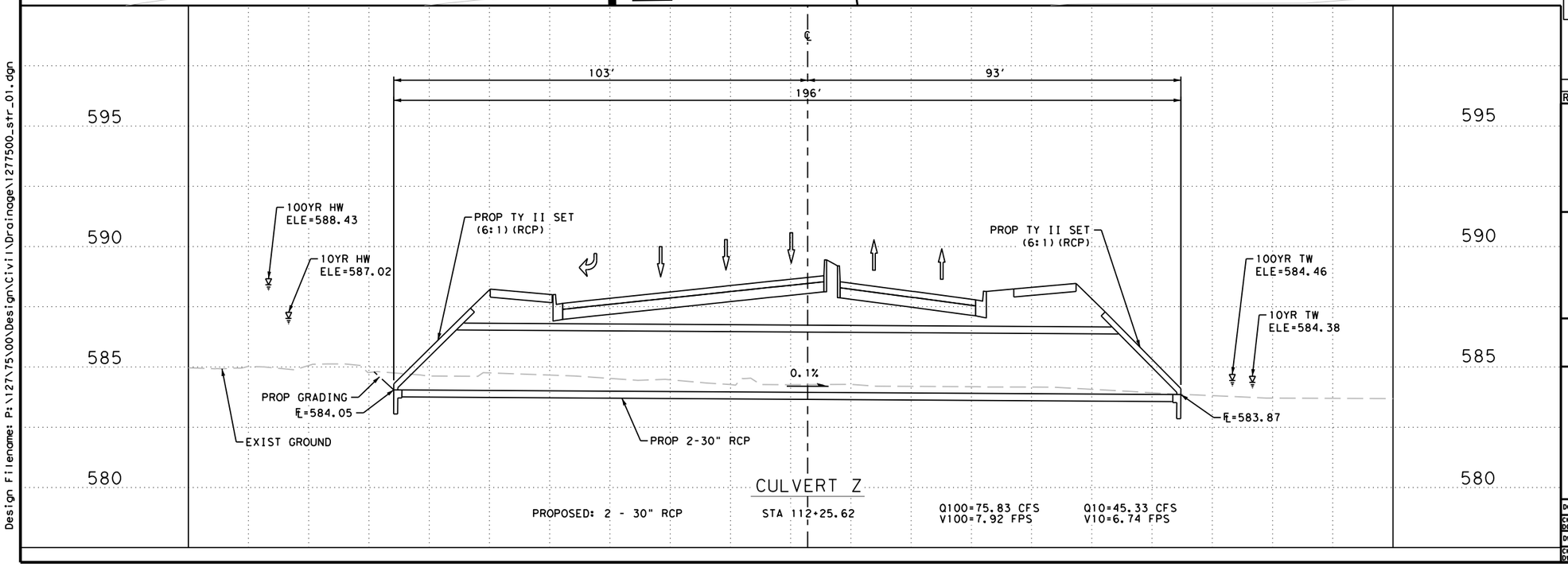
LEGEND

FLOW ARROW

FLOW LINE

NOTES

1. THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL VERIFY ACTUAL LOCATION PRIOR TO CONSTRUCTION.
2. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED.



CULVERT Z

PROPOSED: 2 - 30" RCP

STA 112+25.62

Q100=75.83 CFS
V100=7.92 FPS

Q10=45.33 CFS
V10=6.74 FPS

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 15 30

SCALE: PLAN 1"= 30' PROFILE 1"= 5'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SEGUIN TEXAS

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THE STATE OF TEXAS GUADALUPE COUNTY

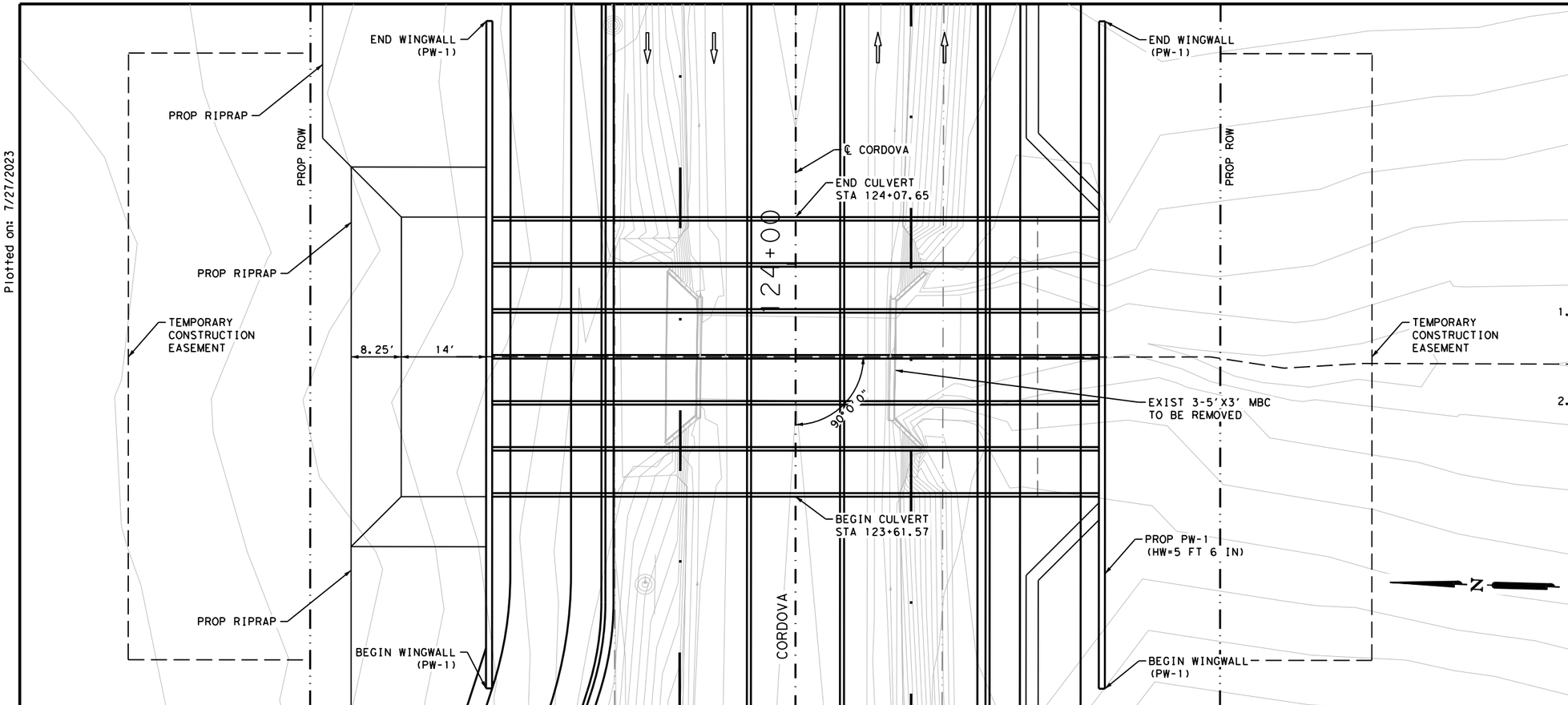
Texas Department of Transportation

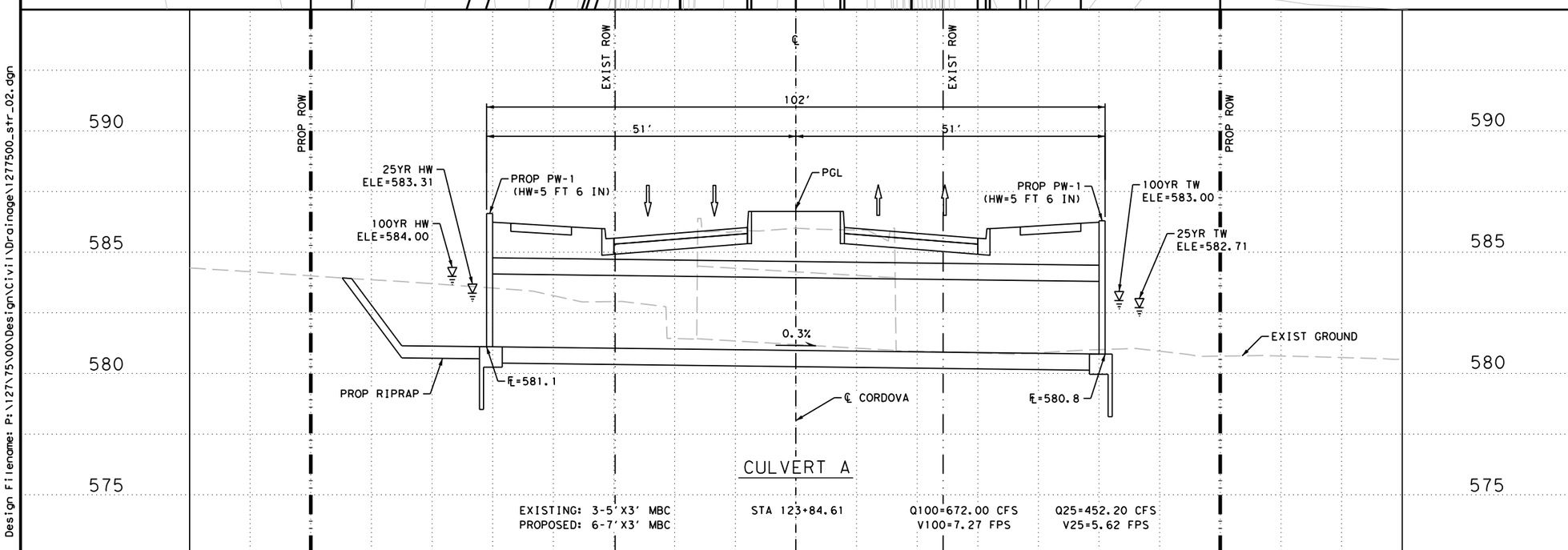
©2023

CULVERT Z
PLAN AND PROFILE

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	193

Plotted on: 7/27/2023





CULVERT A

EXISTING: 3-5'X3' MBC
PROPOSED: 6-7'X3' MBC

STA 123+84.61

Q100=672.00 CFS
V100=7.27 FPS

Q25=452.20 CFS
V25=5.62 FPS

LEGEND

FLOW ARROW

FLOW LINE

NOTES

1. THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL VERIFY ACTUAL LOCATION PRIOR TO CONSTRUCTION.
2. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 10 20

SCALE: PLAN 1"= 20' PROFILE 1"= 5'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CULVERT A
BRIDGE CLASS STRUCTURE
PLAN AND PROFILE

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	194

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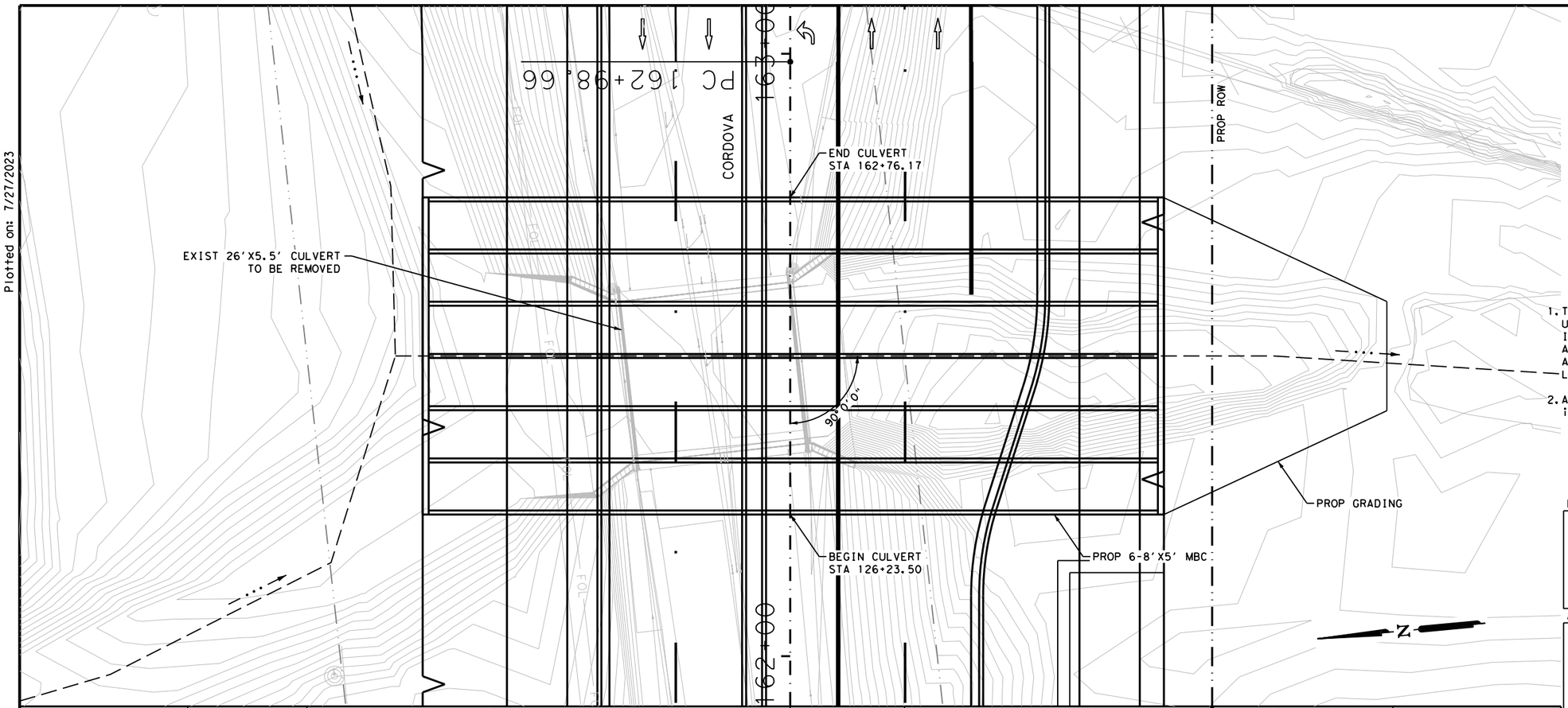
Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_str_03.dgn



LEGEND

FLOW ARROW

FLOW LINE

NOTES

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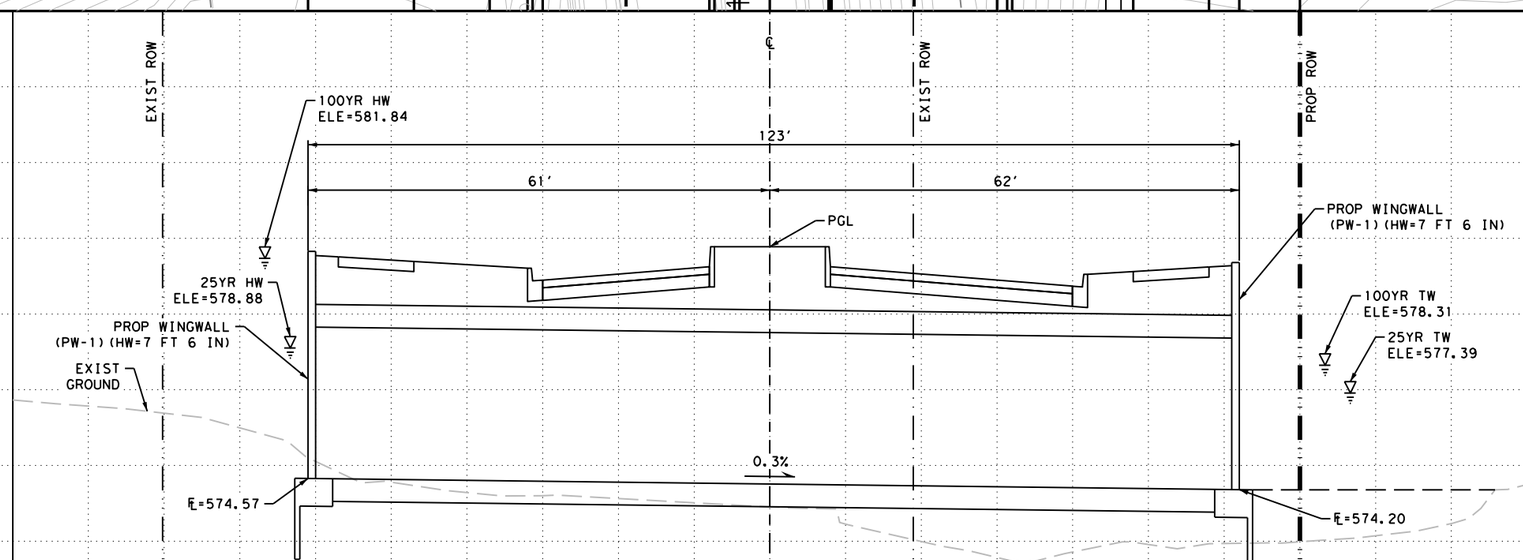

CULVERT B

EXISTING: 26'X5.5' CULVERT
PROPOSED: 6-8'X5' MBC

STA 162+49.83

Q100=2432.85CFS
Q25=1675.10CFS

V100=11.77 FPS
V25=10.39 FPS

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 10 20

SCALE: PLAN 1"= 20' PROFILE 1"= 5'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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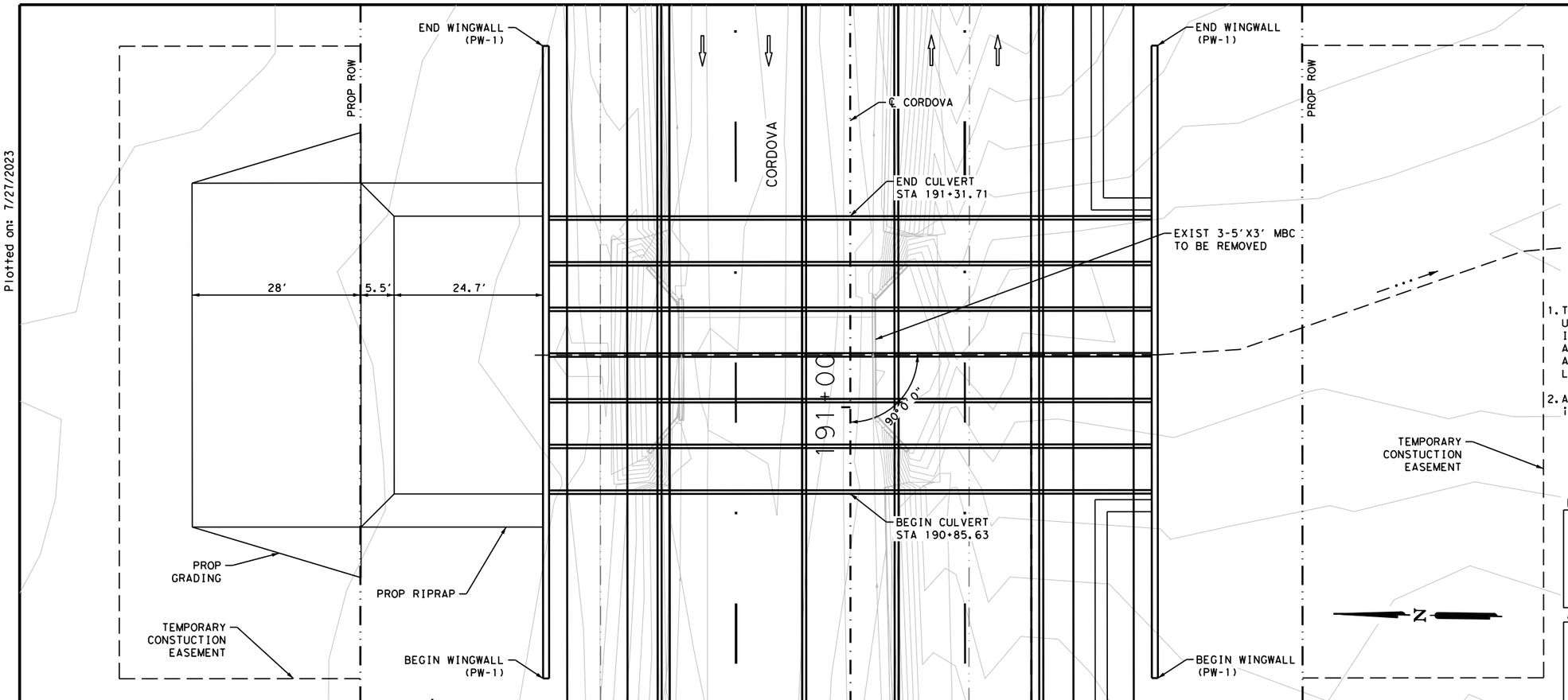
CULVERT B
BRIDGE CLASS STRUCTURE
PLAN AND PROFILE

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	195

Plotted on: 7/27/2023



LEGEND

FLOW ARROW

FLOW LINE

NOTES

1. THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL VERIFY ACTUAL LOCATION PRIOR TO CONSTRUCTION.
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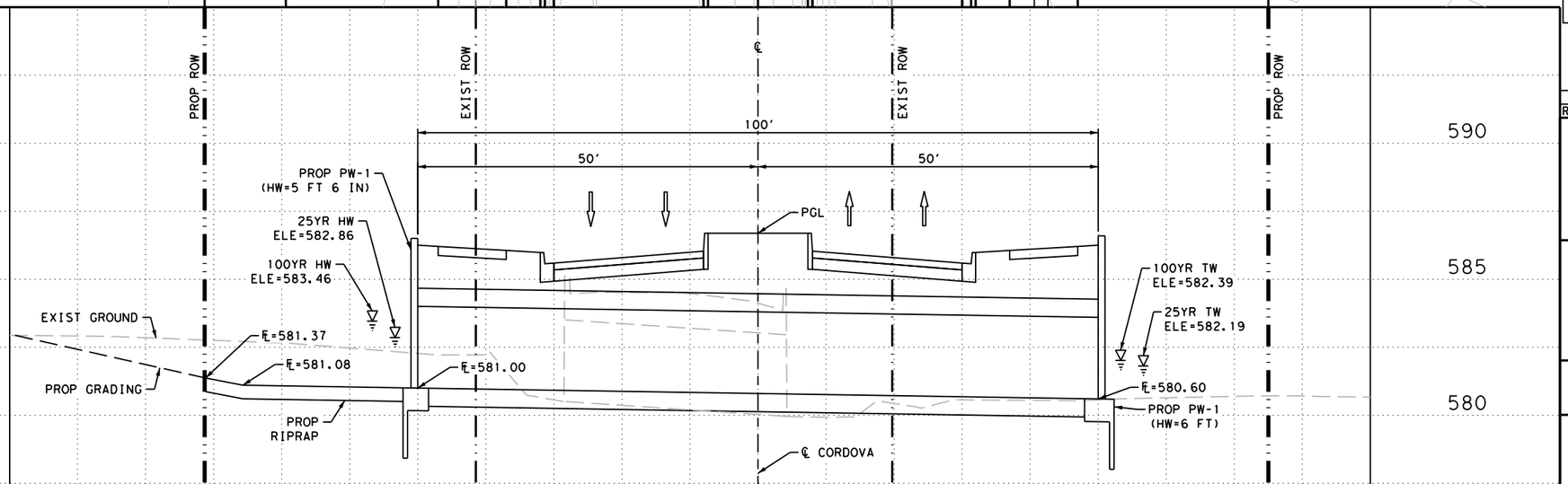

CULVERT C

EXISTING: 3-5'X3' MBC
PROPOSED: 6-7'X3' MBC

STA 191+08.67

100Q=514.50 CFS
100V=6.85 FPS

25Q=358.70 CFS
25V=5.36 FPS

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 10 20

SCALE: PLAN 1"= 20' PROFILE 1"= 5'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CULVERT C
BRIDGE CLASS STRUCTURE
PLAN AND PROFILE

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	196

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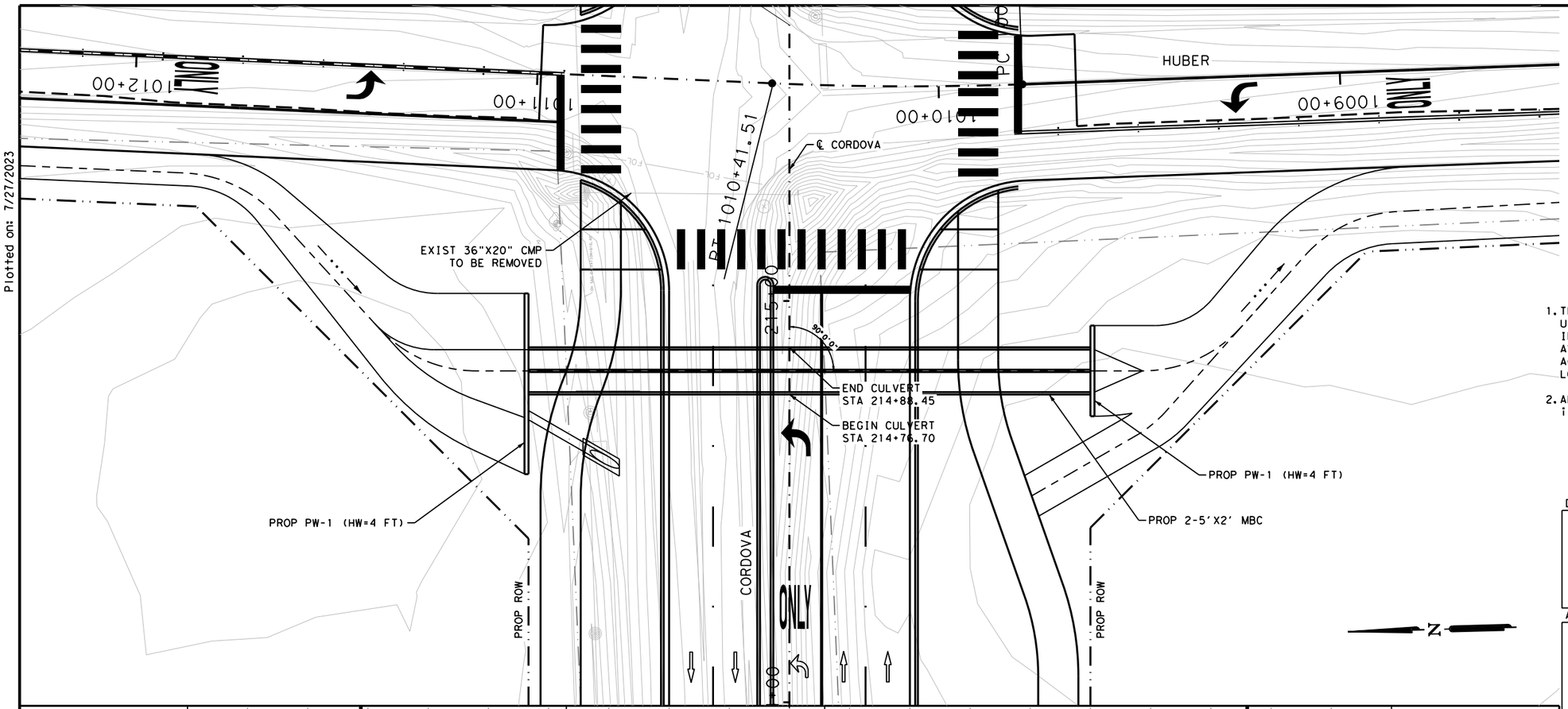
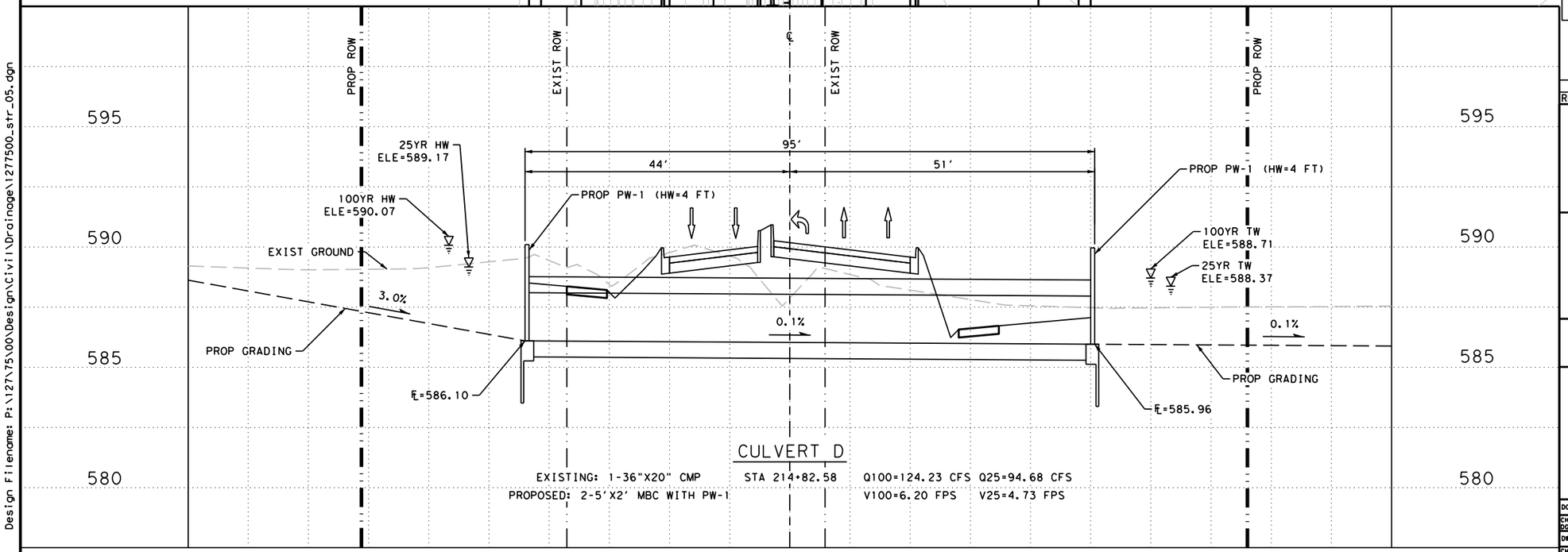
Plotted on: 7/27/2023

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_str_05.dgn





CULVERT D

EXISTING: 1-36"X20" CMP STA 214+82.58 Q100=124.23 CFS Q25=94.68 CFS
PROPOSED: 2-5'X2' MBC WITH PW-1 V100=6.20 FPS V25=4.73 FPS

LEGEND

FLOW ARROW

FLOW LINE

NOTES

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2. ALL EXISTING FEATURES ARE SHOWN SCREENED BACK, i.e. FADED.

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 15 30

SCALE: PLAN 1"= 30' PROFILE 1"= 5'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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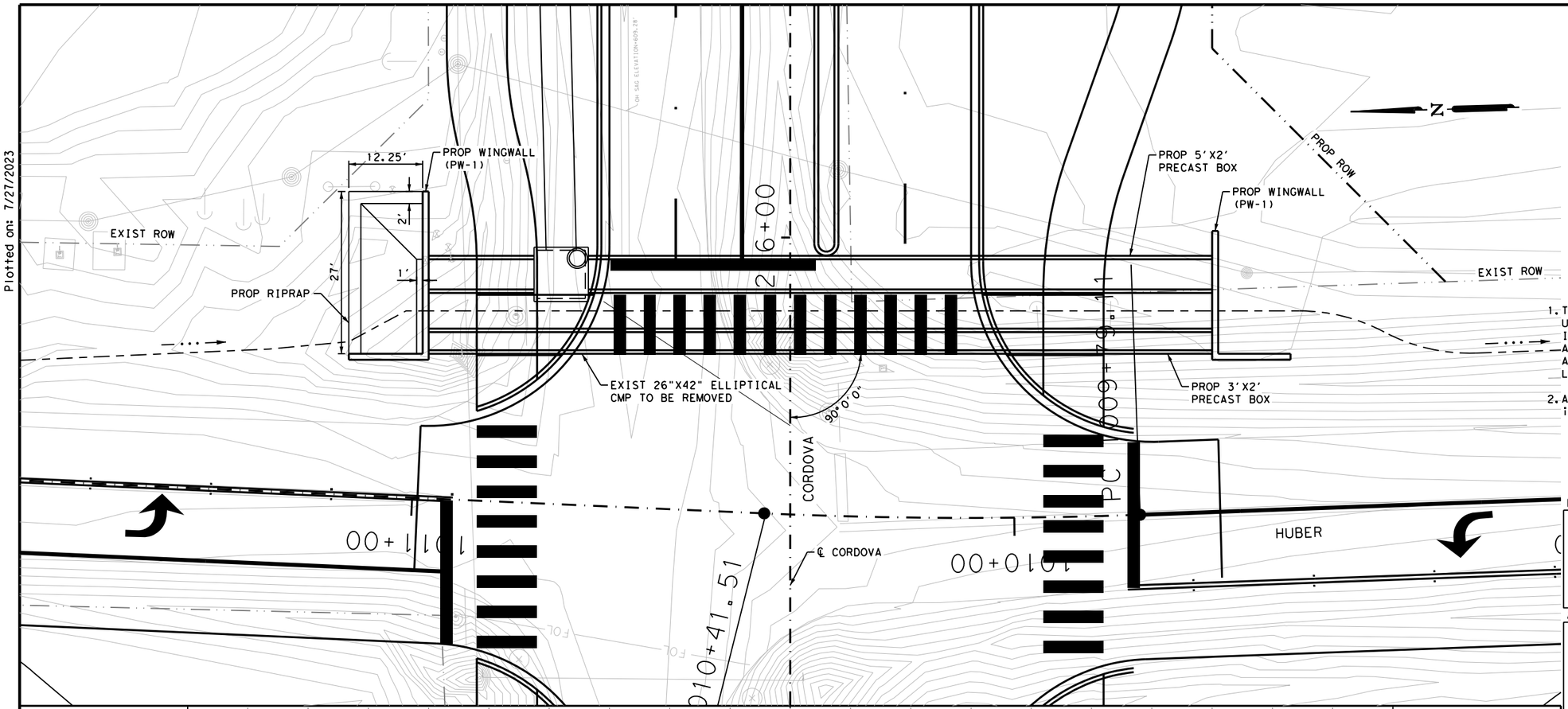
CULVERT D
PLAN AND PROFILE

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	197

Plotted on: 7/27/2023



LEGEND

FLOW ARROW

FLOW LINE

NOTES

1. THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL VERIFY ACTUAL LOCATION PRIOR TO CONSTRUCTION.
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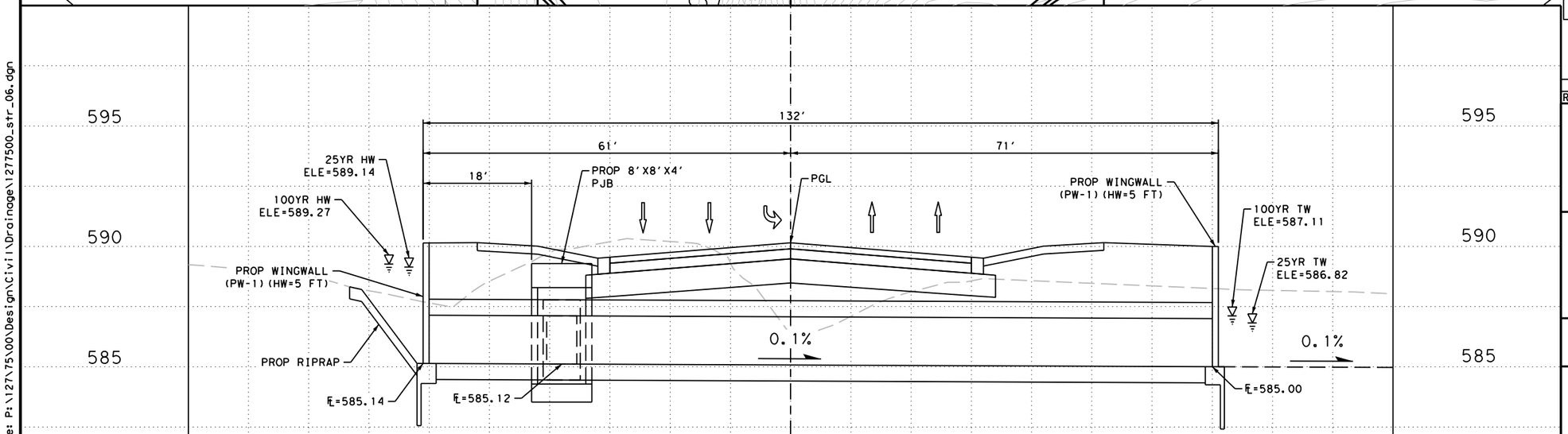

CULVERT E

EXISTING: 26"X42" ELLIPTICAL CMP
PROPOSED: 1-3'X2' BOX AND 1-5'X2' BOX

STA 215+83.81

Q100=86.87 CFS V100=5.79 FPS
Q25=65.77 CFS V25=4.81 FPS

DESIGN

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 10 20

SCALE: PLAN 1"= 20' PROFILE 1"= 5'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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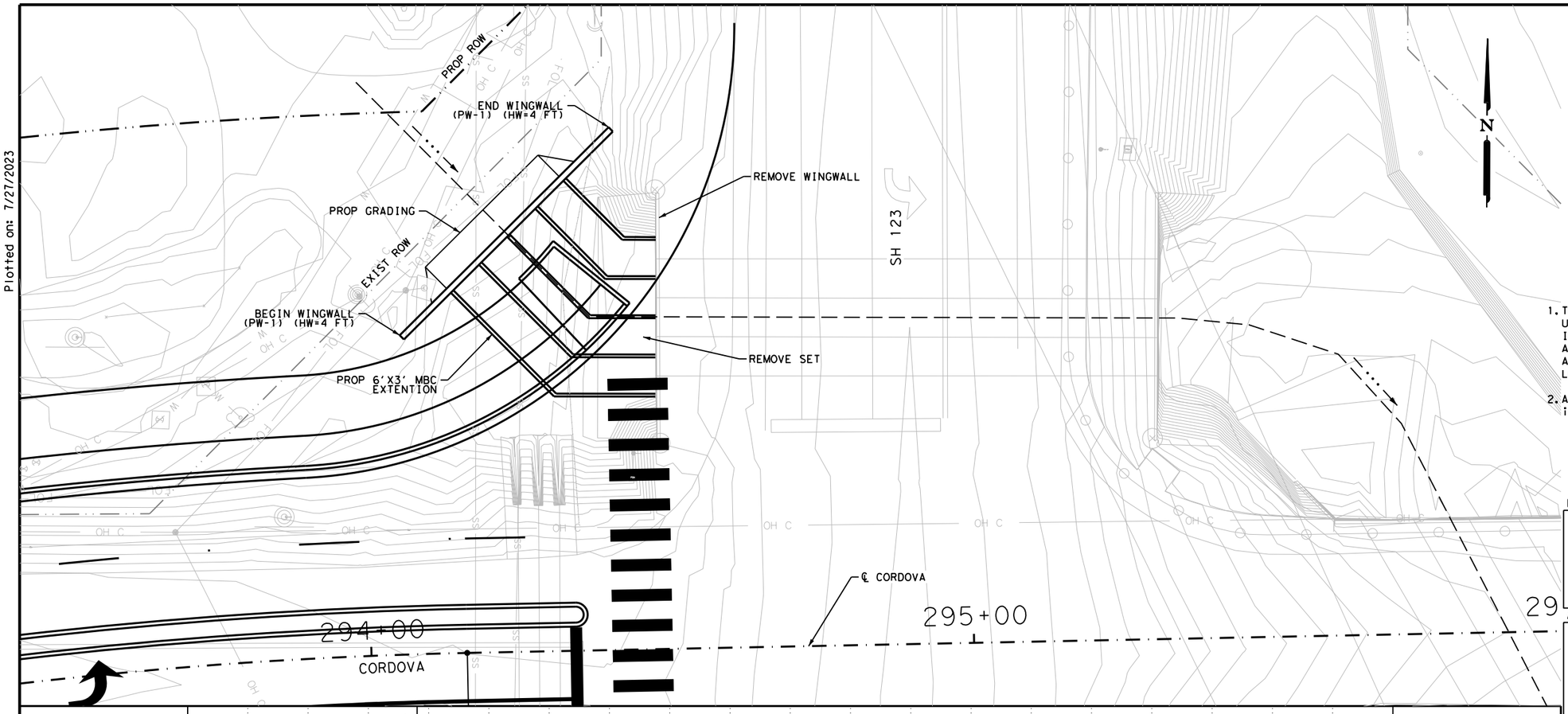
CULVERT E PLAN AND PROFILE

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	198

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_str_06.dgn

Plotted on: 7/27/2023



N

LEGEND

FLOW ARROW

FLOW LINE

NOTES

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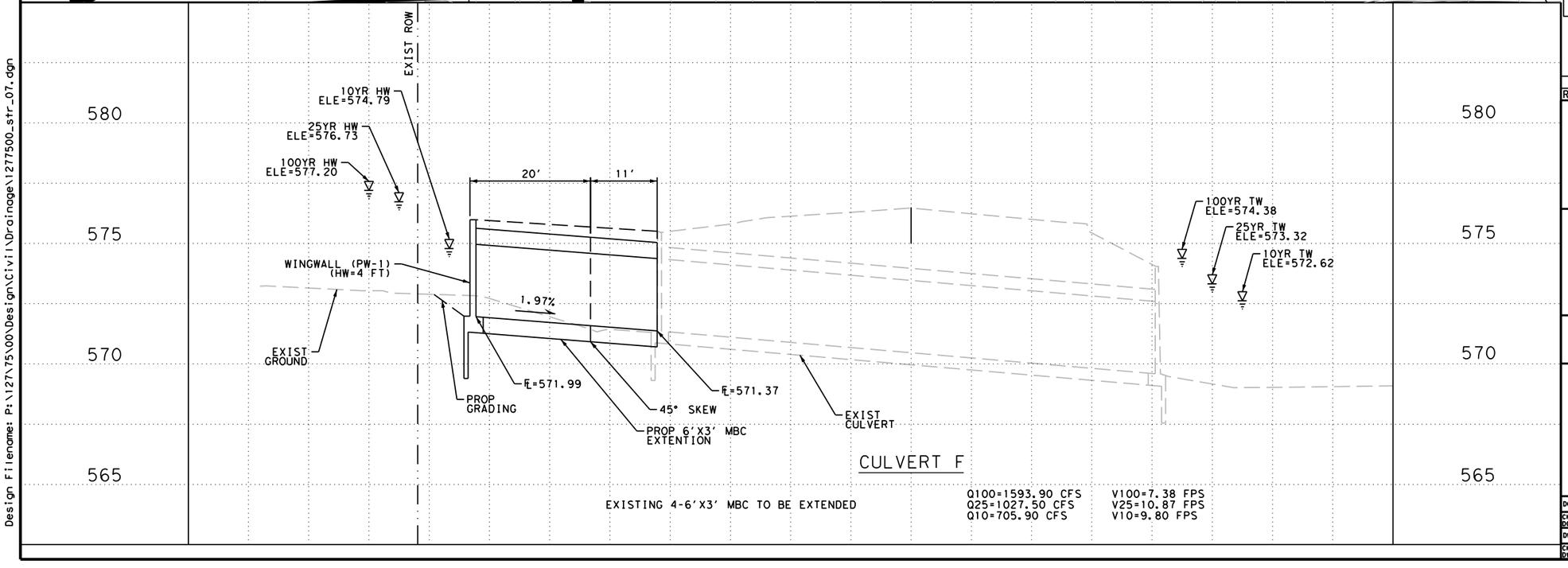

CULVERT F

EXISTING 4-6'X3' MBC TO BE EXTENDED

Q100=1593.90 CFS
Q25=1027.50 CFS
Q10=705.90 CFS

V100=7.38 FPS
V25=10.87 FPS
V10=9.80 FPS

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 10 20

SCALE: PLAN 1"= 20' PROFILE 1"= 5'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CULVERT F
BRIDGE CLASS STRUCTURE
PLAN AND PROFILE

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	199

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_str_07.dgn

Plotted on: 7/27/2023

294+00

295+00

℄ CORDOVA

296+00

CORDOVA

PT 294+15.89

SH 123

PROP WINGWALL
(PW-1)

PROP WINGWALL
(PW-1) (45° SKEW)

PROP ROW

EXIST ROW

TxDOT ROW

N

LEGEND

FLOW ARROW

FLOW LINE

NOTES

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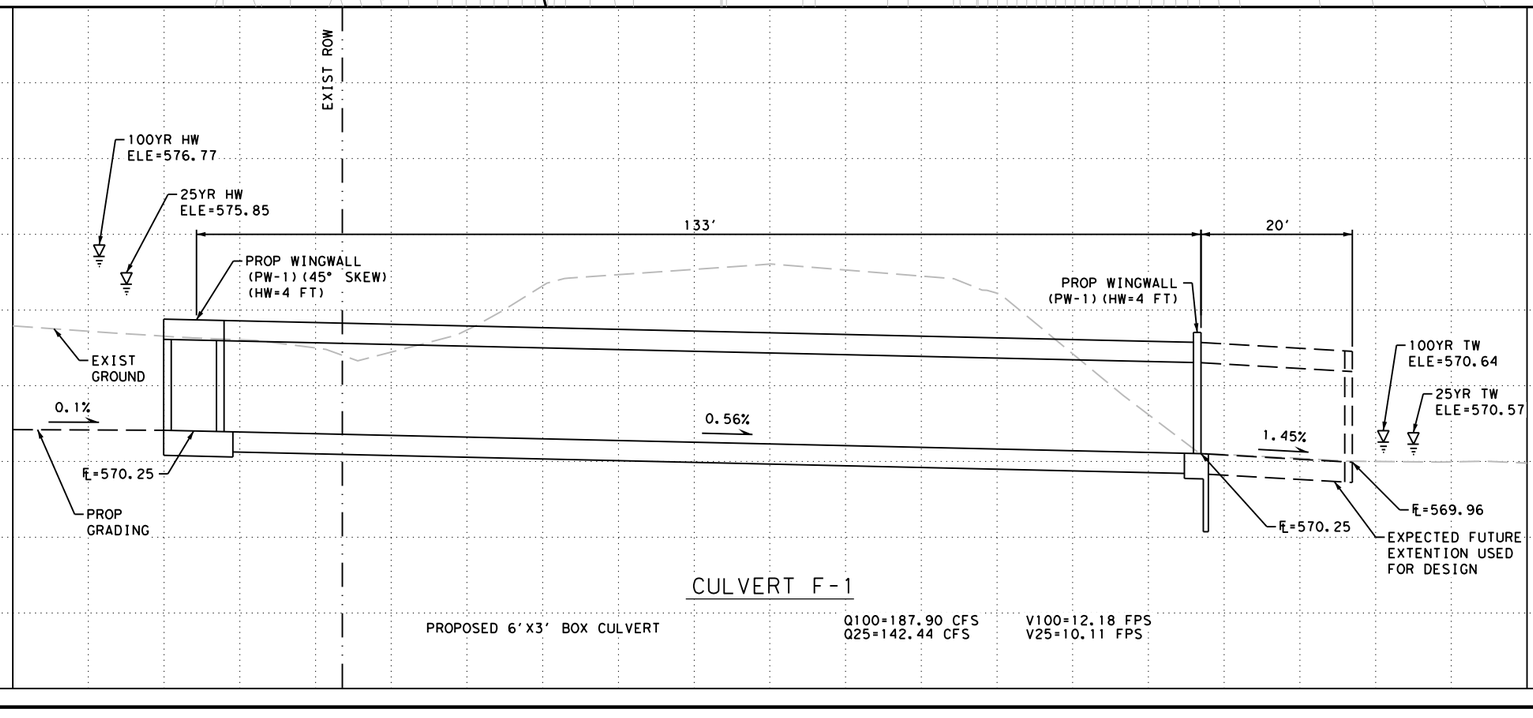

CULVERT F-1

PROPOSED 6'X3' BOX CULVERT

Q100=187.90 CFS
Q25=142.44 CFS

V100=12.18 FPS
V25=10.11 FPS

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JACOB J. POWELL
P.E. SERIAL NO: 108825
DATE: 7/27/2023

APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.
ENGINEER: JOHN A. TYLER
P.E. SERIAL NO: 105193
DATE: 7/27/2023

0 10 20

SCALE: PLAN 1"= 20' PROFILE 1"= 5'

REV. NO.	DATE	DESCRIPTION	BY

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

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CULVERT F-1 PLAN AND PROFILE

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				CORDOVA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	GUADALUPE	0915	45	052	200

Design Filename: P:\127\75\00\Design\Civil\Drainage\1277500_str_08.dgn