

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			1
STATE	STATE DIST.	COUNTY	
TEXAS	SAT	BEXAR	
CONT.	SECT.	JOB	HIGHWAY NO.
0915	12	586	VA

STATE OF TEXAS  
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS  
SHEET NO. DESCRIPTION  
SEE SHEET NO. 2 & 3 FOR INDEX OF SHEETS

DESIGN SPEED = N/A  
AREA OF DISTURBED SOIL = 1.00 ACRES  
ADT: N/A

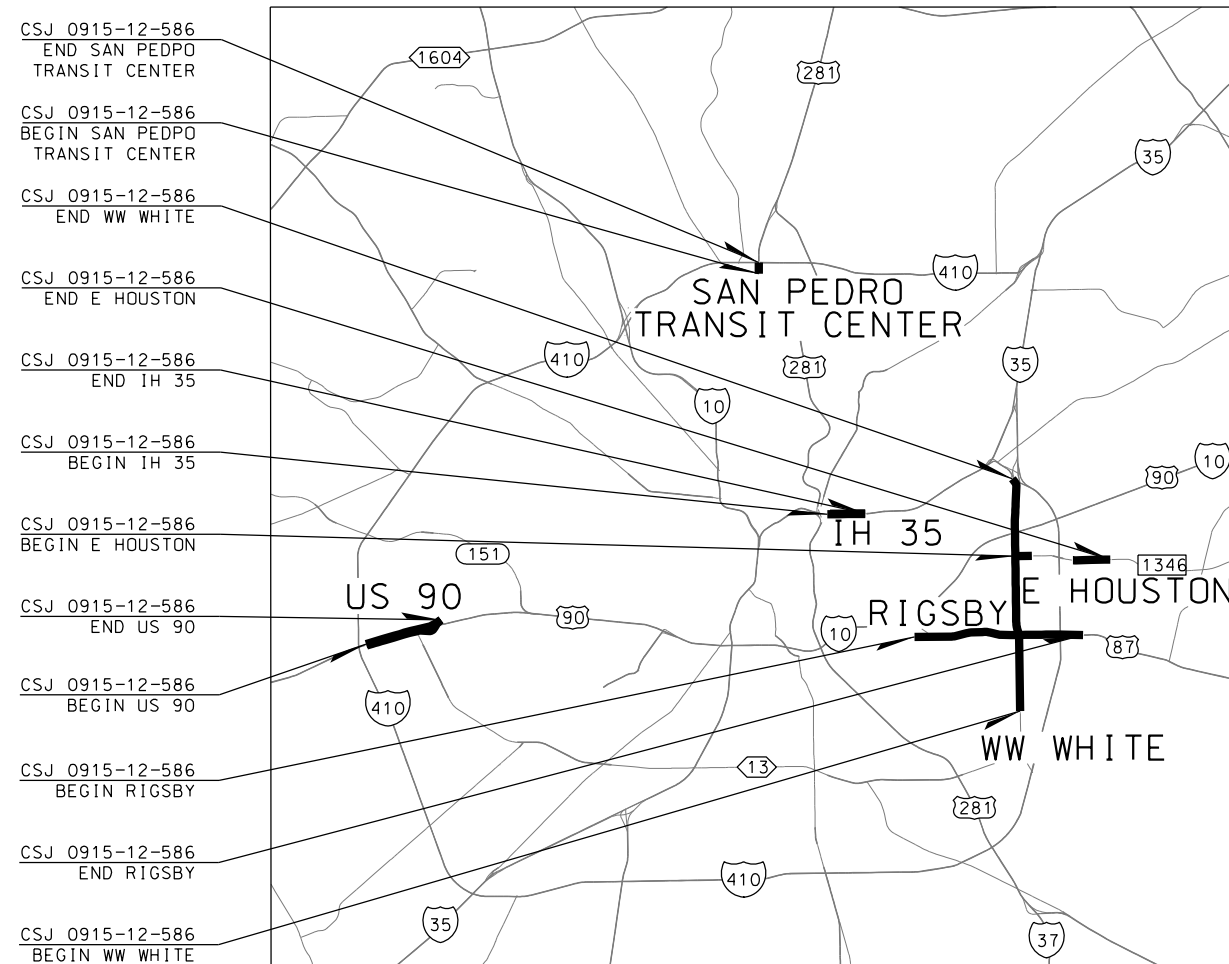
PLANS OF PROPOSED  
STATE HIGHWAY IMPROVEMENT

FEDERAL AID PROJECT.  
STP ( )  
CSJ 0915-12-586

BEXAR COUNTY

LIMITS: AT VARIOUS LOCATIONS IN  
THE SAN ANTONIO DISTRICT

FOR PEDESTRIAN IMPROVEMENTS INCLUDING BUS SHELTER PADS, SIDEWALKS, ADA CURB RAMPS



- CSJ 0915-12-586  
END SAN PEDRO  
TRANSIT CENTER
- CSJ 0915-12-586  
BEGIN SAN PEDRO  
TRANSIT CENTER
- CSJ 0915-12-586  
END WW WHITE
- CSJ 0915-12-586  
END E HOUSTON
- CSJ 0915-12-586  
END IH 35
- CSJ 0915-12-586  
BEGIN IH 35
- CSJ 0915-12-586  
BEGIN E HOUSTON
- CSJ 0915-12-586  
END US 90
- CSJ 0915-12-586  
BEGIN US 90
- CSJ 0915-12-586  
BEGIN RIGSBY
- CSJ 0915-12-586  
END RIGSBY
- CSJ 0915-12-586  
BEGIN WW WHITE

LOCATION MAP NOT TO SCALE

EXCEPTIONS: NONE  
EQUATIONS: NONE  
RR X-ING'S: NONE

REGISTERED ACCESSIBILITY SPECIALIST (RAS) INSPECTION  
REQUIRED. TDLR NO. EABPRJ: \_\_\_\_\_

FINAL PLANS

LETTING DATE: \_\_\_\_\_  
DATE CONTRACTOR BEGAN WORK: \_\_\_\_\_  
DATE WORK WAS ACCEPTED: \_\_\_\_\_  
FINAL CONTRACT COST: \$ \_\_\_\_\_  
CONTRACTOR: \_\_\_\_\_

FINAL PLANS STATEMENT:

THE CONSTRUCTION WORK WAS PERFORMED  
IN ACCORDANCE WITH THE PLANS.

AREA ENGINEER \_\_\_\_\_ P. E. \_\_\_\_\_ DATE \_\_\_\_\_

TEXAS DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR  
LETTING

DESIGN SUPPORT DIRECTOR

RECOMMENDED FOR  
LETTING

DIRECTOR OF TRANSPORTATION, PLANNING & DEVELOPMENT

APPROVED FOR  
LETTING

DISTRICT ENGINEER

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, MAY, 2012).

Plotted on: 9/29/2017

Design File name: P:\11135\01\des\gn\Civil\General\1113501\_Index01.dgn

SHEET NO.	DESCRIPTION
	<u>GENERAL</u>
1	TITLE SHEET
2-3	INDEX
4-5	PROJECT LAYOUT
6	IH 35 TYPICAL SECTIONS
7	E HOUSTON TYPICAL SECTIONS
8	US 90 TYPICAL SECTIONS
9	RIGSBY TYPICAL SECTIONS
10	SAN PEDRO TRANSIT CENTER TYPICAL SECTIONS
11-13	WW WHITE TYPICAL SECTIONS
14	GENERAL NOTES
15	ESTIMATE & QUANTITY
16-33	SUMMARY OF QUANTITIES
34	SUPPLEMENTAL QUANTITIES
	<u>TRAFFIC CONTROL PLAN</u>
35	TCP NARRATIVE
36-38	TCP LINE DIAGRAM
39-42	SAN PEDRO TRANSIT CENTER TRAFFIC CONTROL PLAN
	<u>TRAFFIC CONTROL PLAN STANDARDS</u>
43	* BC (1)-14
44	* BC (2)-14
45	* BC (3)-14
46	* BC (4)-14
47	* BC (5)-14
48	* BC (6)-14
49	* BC (7)-14
50	* BC (8)-14
51	* BC (9)-14
52	* BC (10)-14
53	* BC (11)-14
54	* BC (12)-14
55	* TCP(1-1)-12
56	* TCP(1-2)-12
57	* TCP(1-3)-12
58	* TCP(1-4)-12
59	* TCP(1-5)-12
60	* TCP(2-1)-12
61	* WZ(BTS-1)-13
62	* WZ(BTS-2)-13
63	* WZ(UL)-13
	<u>ROADWAY DETAILS</u>
64	SURVEY CONTROL
65-70	HORIZONTAL ALIGNMENT DATA SHEET
71-82	SPECIAL DETAILS
83	VIA BUS STOP DETAILS
84	SUMMARY OF SMALL SIGNS
	<u>IH-35</u>
85	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 1 OF 13
86	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 2 OF 13
87	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 3 OF 13
88	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 4 OF 13
89	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 5 OF 13
90	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 6 OF 13
91	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 7 OF 13
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93	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 9 OF 13
94	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 10 OF 13
95	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 11 OF 13
96	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 12 OF 13
97	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 13 OF 13
98	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 1 OF 12
99	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 2 OF 12
100	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 3 OF 12
101	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 4 OF 12
102	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 5 OF 12
103	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 6 OF 12
104	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 7 OF 12
105	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 8 OF 12
106	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 9 OF 12
107	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 10 OF 12
108	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 11 OF 12
109	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 12 OF 12
	<u>E HOUSTON</u>
110	E HOUSTON SIDEWALK CONSTRUCTION PLAN 1 OF 13

SHEET NO.	DESCRIPTION
	<u>E HOUSTON CONT</u>
111	E HOUSTON SIDEWALK CONSTRUCTION PLAN 2 OF 13
112	E HOUSTON SIDEWALK CONSTRUCTION PLAN 3 OF 13
113	E HOUSTON SIDEWALK CONSTRUCTION PLAN 4 OF 13
114	E HOUSTON SIDEWALK CONSTRUCTION PLAN 5 OF 13
115	E HOUSTON SIDEWALK CONSTRUCTION PLAN 6 OF 13
116	E HOUSTON SIDEWALK CONSTRUCTION PLAN 7 OF 13
117	E HOUSTON SIDEWALK CONSTRUCTION PLAN 8 OF 13
118	E HOUSTON SIDEWALK CONSTRUCTION PLAN 9 OF 13
119	E HOUSTON SIDEWALK CONSTRUCTION PLAN 10 OF 13
120	E HOUSTON SIDEWALK CONSTRUCTION PLAN 11 OF 13
121	E HOUSTON SIDEWALK CONSTRUCTION PLAN 12 OF 13
122	E HOUSTON SIDEWALK CONSTRUCTION PLAN 13 OF 13
	<u>SAN PEDRO TRANSIT CENTER</u>
123	SAN PEDRO SIDEWALK CONSTRUCTION PLAN 1 OF 6
124	SAN PEDRO SIDEWALK CONSTRUCTION PLAN 2 OF 6
125	SAN PEDRO SIDEWALK CONSTRUCTION PLAN 3 OF 6
126	SAN PEDRO SIDEWALK CONSTRUCTION PLAN 4 OF 6
127	SAN PEDRO SIDEWALK CONSTRUCTION PLAN 5 OF 6
128	SAN PEDRO SIDEWALK CONSTRUCTION PLAN 6 OF 6
129	SAN PEDRO EXISTING CONDITIONS
130	SAN PEDRO TRAFFIC SIGNAL PLAN
131	SAN PEDRO CONDUIT AND CONDUCTOR SCHEDULE
132	SAN PEDRO TRAFFIC SIGNAL ELEVATION
133	SAN PEDRO SIGNING AND PAVEMENT MARKING 1 OF 6
134	SAN PEDRO SIGNING AND PAVEMENT MARKING 2 OF 6
135	SAN PEDRO SIGNING AND PAVEMENT MARKING 3 OF 6
136	SAN PEDRO SIGNING AND PAVEMENT MARKING 4 OF 6
137	SAN PEDRO SIGNING AND PAVEMENT MARKING 5 OF 6
138	SAN PEDRO SIGNING AND PAVEMENT MARKING 6 OF 6
139	SIGNING DETAILS
	<u>US 90</u>
140	US 90 EB SIDEWALK CONSTRUCTION PLAN 1 OF 9
141	US 90 EB SIDEWALK CONSTRUCTION PLAN 2 OF 9
142	US 90 EB SIDEWALK CONSTRUCTION PLAN 3 OF 9
143	US 90 EB SIDEWALK CONSTRUCTION PLAN 4 OF 9
144	US 90 EB SIDEWALK CONSTRUCTION PLAN 5 OF 9
145	US 90 EB SIDEWALK CONSTRUCTION PLAN 6 OF 9
146	US 90 EB SIDEWALK CONSTRUCTION PLAN 7 OF 9
147	US 90 EB SIDEWALK CONSTRUCTION PLAN 8 OF 9
148	US 90 EB SIDEWALK CONSTRUCTION PLAN 9 OF 9
149	US 90 WB SIDEWALK CONSTRUCTION PLAN 1 OF 11
150	US 90 WB SIDEWALK CONSTRUCTION PLAN 2 OF 11
151	US 90 WB SIDEWALK CONSTRUCTION PLAN 3 OF 11
152	US 90 WB SIDEWALK CONSTRUCTION PLAN 4 OF 11
153	US 90 WB SIDEWALK CONSTRUCTION PLAN 5 OF 11
154	US 90 WB SIDEWALK CONSTRUCTION PLAN 6 OF 11
155	US 90 WB SIDEWALK CONSTRUCTION PLAN 7 OF 11
156	US 90 WB SIDEWALK CONSTRUCTION PLAN 8 OF 11
157	US 90 WB SIDEWALK CONSTRUCTION PLAN 9 OF 11
158	US 90 WB SIDEWALK CONSTRUCTION PLAN 10 OF 11
159	US 90 WB SIDEWALK CONSTRUCTION PLAN 11 OF 11
	<u>WW WHITE</u>
160	WW WHITE SIDEWALK CONSTRUCTION PLAN 1 OF 51
161	WW WHITE SIDEWALK CONSTRUCTION PLAN 2 OF 51
162	WW WHITE SIDEWALK CONSTRUCTION PLAN 3 OF 51
163	WW WHITE SIDEWALK CONSTRUCTION PLAN 4 OF 51
164	WW WHITE SIDEWALK CONSTRUCTION PLAN 5 OF 51
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172	WW WHITE SIDEWALK CONSTRUCTION PLAN 13 OF 51
173	WW WHITE SIDEWALK CONSTRUCTION PLAN 14 OF 51
174	WW WHITE SIDEWALK CONSTRUCTION PLAN 15 OF 51
175	WW WHITE SIDEWALK CONSTRUCTION PLAN 16 OF 51
176	WW WHITE SIDEWALK CONSTRUCTION PLAN 17 OF 51
177	WW WHITE SIDEWALK CONSTRUCTION PLAN 18 OF 51
178	WW WHITE SIDEWALK CONSTRUCTION PLAN 19 OF 51
179	WW WHITE SIDEWALK CONSTRUCTION PLAN 20 OF 51
180	WW WHITE SIDEWALK CONSTRUCTION PLAN 21 OF 51

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

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL


INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

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 | TPLS FIRM REGISTRATION #10028800

 Texas Department of Transportation  
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INDEX OF SHEETS

SHEET 1 OF 2

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	2

Plotted on: 9/29/2017

Design File name: P:\11135\01\des\gn\Civil\General\1113501\_Index01.dgn

SHEET NO.	DESCRIPTION	SHEET NO.	DESCRIPTION	SHEET NO.	DESCRIPTION
	<u>WW WHITE CONT</u>		<u>RIGSBY CONT</u>		<u>ILLUMINATION/TRAFFIC SIGNAL-STANDARDS CONT</u>
181	WW WHITE SIDEWALK CONSTRUCTION PLAN 22 OF 51	253	RIGSBY SIDEWALK CONSTRUCTION PLAN 43 OF 80	333	* ED (11)-14
182	WW WHITE SIDEWALK CONSTRUCTION PLAN 23 OF 51	254	RIGSBY SIDEWALK CONSTRUCTION PLAN 44 OF 80	334	* ED (12)-14
183	WW WHITE SIDEWALK CONSTRUCTION PLAN 24 OF 51	255	RIGSBY SIDEWALK CONSTRUCTION PLAN 45 OF 80	335	* RIP(1)-17
184	WW WHITE SIDEWALK CONSTRUCTION PLAN 25 OF 51	256	RIGSBY SIDEWALK CONSTRUCTION PLAN 46 OF 80	336	* RIP(2)-17
185	WW WHITE SIDEWALK CONSTRUCTION PLAN 26 OF 51	257	RIGSBY SIDEWALK CONSTRUCTION PLAN 47 OF 80	337	* RIP(3)-17
186	WW WHITE SIDEWALK CONSTRUCTION PLAN 27 OF 51	258	RIGSBY SIDEWALK CONSTRUCTION PLAN 48 OF 80	338	* RIP(4)-17
187	WW WHITE SIDEWALK CONSTRUCTION PLAN 28 OF 51	259	RIGSBY SIDEWALK CONSTRUCTION PLAN 49 OF 80	339	* RFBA-13
188	WW WHITE SIDEWALK CONSTRUCTION PLAN 29 OF 51	260	RIGSBY SIDEWALK CONSTRUCTION PLAN 50 OF 80	340	* TS-FD-12
189	WW WHITE SIDEWALK CONSTRUCTION PLAN 30 OF 51	261	RIGSBY SIDEWALK CONSTRUCTION PLAN 51 OF 80	341	* LMA (1)-12
190	WW WHITE SIDEWALK CONSTRUCTION PLAN 31 OF 51	262	RIGSBY SIDEWALK CONSTRUCTION PLAN 52 OF 80	342	* LMA (2)-12
191	WW WHITE SIDEWALK CONSTRUCTION PLAN 32 OF 51	263	RIGSBY SIDEWALK CONSTRUCTION PLAN 53 OF 80	343	* LMA (3)-12
192	WW WHITE SIDEWALK CONSTRUCTION PLAN 33 OF 51	264	RIGSBY SIDEWALK CONSTRUCTION PLAN 54 OF 80	344	* LMA (4)-12
193	WW WHITE SIDEWALK CONSTRUCTION PLAN 34 OF 51	265	RIGSBY SIDEWALK CONSTRUCTION PLAN 55 OF 80	345	* LMA (5)-12
194	WW WHITE SIDEWALK CONSTRUCTION PLAN 35 OF 51	266	RIGSBY SIDEWALK CONSTRUCTION PLAN 56 OF 80	346	* RADAR PRESENCE DETECTOR AND RADAR ADVANCE DETECTOR PLACEMENT - STANDARDS
195	WW WHITE SIDEWALK CONSTRUCTION PLAN 36 OF 51	267	RIGSBY SIDEWALK CONSTRUCTION PLAN 57 OF 80		
196	WW WHITE SIDEWALK CONSTRUCTION PLAN 37 OF 51	268	RIGSBY SIDEWALK CONSTRUCTION PLAN 58 OF 80	347-348	* PCO
197	WW WHITE SIDEWALK CONSTRUCTION PLAN 38 OF 51	269	RIGSBY SIDEWALK CONSTRUCTION PLAN 59 OF 80	349	* CAPPING INLETS & MANHOLES (SAT DIST STANDARDS)
198	WW WHITE SIDEWALK CONSTRUCTION PLAN 39 OF 51	270	RIGSBY SIDEWALK CONSTRUCTION PLAN 60 OF 80	350	* CONCRETE PIPE COLLAR AND CONNECTION DETAIL
199	WW WHITE SIDEWALK CONSTRUCTION PLAN 40 OF 51	271	RIGSBY SIDEWALK CONSTRUCTION PLAN 61 OF 80	351-352	* SCC-8
200	WW WHITE SIDEWALK CONSTRUCTION PLAN 41 OF 51	272	RIGSBY SIDEWALK CONSTRUCTION PLAN 62 OF 80		<u>ENVIRONMENTAL</u>
201	WW WHITE SIDEWALK CONSTRUCTION PLAN 42 OF 51	273	RIGSBY SIDEWALK CONSTRUCTION PLAN 63 OF 80	353	* EPIC
202	WW WHITE SIDEWALK CONSTRUCTION PLAN 43 OF 51	274	RIGSBY SIDEWALK CONSTRUCTION PLAN 64 OF 80	354	* SW3P
203	WW WHITE SIDEWALK CONSTRUCTION PLAN 44 OF 51	275	RIGSBY SIDEWALK CONSTRUCTION PLAN 65 OF 80	355-357	* EC(9)-16
204	WW WHITE SIDEWALK CONSTRUCTION PLAN 45 OF 51	276	RIGSBY SIDEWALK CONSTRUCTION PLAN 66 OF 80	358	SWP3 SAMPLE INTERSECTION
205	WW WHITE SIDEWALK CONSTRUCTION PLAN 46 OF 51	277	RIGSBY SIDEWALK CONSTRUCTION PLAN 67 OF 80		<u>CROSS SECTIONS</u>
206	WW WHITE SIDEWALK CONSTRUCTION PLAN 47 OF 51	278	RIGSBY SIDEWALK CONSTRUCTION PLAN 68 OF 80	359-362	SAN PEDRO TRANSIT CENTER PROPOSED CROSS SECTIONS
207	WW WHITE SIDEWALK CONSTRUCTION PLAN 48 OF 51	279	RIGSBY SIDEWALK CONSTRUCTION PLAN 69 OF 80		
208	WW WHITE SIDEWALK CONSTRUCTION PLAN 49 OF 51	280	RIGSBY SIDEWALK CONSTRUCTION PLAN 70 OF 80		
209	WW WHITE SIDEWALK CONSTRUCTION PLAN 50 OF 51	281	RIGSBY SIDEWALK CONSTRUCTION PLAN 71 OF 80		
210	WW WHITE SIDEWALK CONSTRUCTION PLAN 51 OF 51	282	RIGSBY SIDEWALK CONSTRUCTION PLAN 72 OF 80		
	<u>RIGSBY</u>	283	RIGSBY SIDEWALK CONSTRUCTION PLAN 73 OF 80		
211	RIGSBY SIDEWALK CONSTRUCTION PLAN 1 OF 80	284	RIGSBY SIDEWALK CONSTRUCTION PLAN 74 OF 80		
212	RIGSBY SIDEWALK CONSTRUCTION PLAN 2 OF 80	285	RIGSBY SIDEWALK CONSTRUCTION PLAN 75 OF 80		
213	RIGSBY SIDEWALK CONSTRUCTION PLAN 3 OF 80	286	RIGSBY SIDEWALK CONSTRUCTION PLAN 76 OF 80		
214	RIGSBY SIDEWALK CONSTRUCTION PLAN 4 OF 80	287	RIGSBY SIDEWALK CONSTRUCTION PLAN 77 OF 80		
215	RIGSBY SIDEWALK CONSTRUCTION PLAN 5 OF 80	288	RIGSBY SIDEWALK CONSTRUCTION PLAN 78 OF 80		
216	RIGSBY SIDEWALK CONSTRUCTION PLAN 6 OF 80	289	RIGSBY SIDEWALK CONSTRUCTION PLAN 79 OF 80		
217	RIGSBY SIDEWALK CONSTRUCTION PLAN 7 OF 80	290	RIGSBY SIDEWALK CONSTRUCTION PLAN 80 OF 80		
218	RIGSBY SIDEWALK CONSTRUCTION PLAN 8 OF 80		<u>ROADWAY - STANDARDS</u>		
219	RIGSBY SIDEWALK CONSTRUCTION PLAN 9 OF 80	291-294	* PED-12A		
220	RIGSBY SIDEWALK CONSTRUCTION PLAN 10 OF 80	295-297	* PRD-13		
221	RIGSBY SIDEWALK CONSTRUCTION PLAN 11 OF 80	298	* CCCG-12		
222	RIGSBY SIDEWALK CONSTRUCTION PLAN 12 OF 80	299	* ARMOR CURB SLOT WITH CONCRETE FOUNDATION (SAT DIST STANDARDS)		
223	RIGSBY SIDEWALK CONSTRUCTION PLAN 13 OF 80	300-303	* MB-15(1)		
224	RIGSBY SIDEWALK CONSTRUCTION PLAN 14 OF 80	304	* MB-14(2)		
225	RIGSBY SIDEWALK CONSTRUCTION PLAN 15 OF 80	305	* MB-14(2A)		
226	RIGSBY SIDEWALK CONSTRUCTION PLAN 16 OF 80	306	* MB-14(2B)		
227	RIGSBY SIDEWALK CONSTRUCTION PLAN 17 OF 80	307	* JS-14		
228	RIGSBY SIDEWALK CONSTRUCTION PLAN 18 OF 80	308-309	* CRCP (1) -17		
229	RIGSBY SIDEWALK CONSTRUCTION PLAN 19 OF 80	310-311	* REPCP-14		
230	RIGSBY SIDEWALK CONSTRUCTION PLAN 20 OF 80	312	* RW 1(L) A		
231	RIGSBY SIDEWALK CONSTRUCTION PLAN 21 OF 80	313	* RW 1(L) B		
232	RIGSBY SIDEWALK CONSTRUCTION PLAN 22 OF 80	314	* RW 1(L) C		
233	RIGSBY SIDEWALK CONSTRUCTION PLAN 23 OF 80	315	* RW 2		
234	RIGSBY SIDEWALK CONSTRUCTION PLAN 24 OF 80		<u>SIGNING &amp; PAVEMENT MARKING - STANDARDS</u>		
235	RIGSBY SIDEWALK CONSTRUCTION PLAN 25 OF 80	316	* SMD (GEN)-08		
236	RIGSBY SIDEWALK CONSTRUCTION PLAN 26 OF 80	317	* SMD (SLIP-1)-08		
237	RIGSBY SIDEWALK CONSTRUCTION PLAN 27 OF 80	318	* SMD (SLIP-2)-08		
238	RIGSBY SIDEWALK CONSTRUCTION PLAN 28 OF 80	319	* SMD (SLIP-3)-08		
239	RIGSBY SIDEWALK CONSTRUCTION PLAN 29 OF 80	320	* D & OM(1)-15		
240	RIGSBY SIDEWALK CONSTRUCTION PLAN 30 OF 80	321	* D & OM(2)-15		
241	RIGSBY SIDEWALK CONSTRUCTION PLAN 31 OF 80	322	* PM(1)-12		
242	RIGSBY SIDEWALK CONSTRUCTION PLAN 32 OF 80	323	* PM(2)-12		
243	RIGSBY SIDEWALK CONSTRUCTION PLAN 33 OF 80	324	* PM(3)-12		
244	RIGSBY SIDEWALK CONSTRUCTION PLAN 34 OF 80		<u>ILLUMINATION / TRAFFIC SIGNAL - STANDARDS</u>		
245	RIGSBY SIDEWALK CONSTRUCTION PLAN 35 OF 80	325	* ED (1)-14		
246	RIGSBY SIDEWALK CONSTRUCTION PLAN 36 OF 80	326	* ED (3)-14		
247	RIGSBY SIDEWALK CONSTRUCTION PLAN 37 OF 80	327	* ED (4)-14		
248	RIGSBY SIDEWALK CONSTRUCTION PLAN 38 OF 80	328	* ED (5)-14		
249	RIGSBY SIDEWALK CONSTRUCTION PLAN 39 OF 80	329	* ED (6)-14		
250	RIGSBY SIDEWALK CONSTRUCTION PLAN 40 OF 80	330	* ED (7)-14		
251	RIGSBY SIDEWALK CONSTRUCTION PLAN 41 OF 80	331	* ED (9)-14		
252	RIGSBY SIDEWALK CONSTRUCTION PLAN 42 OF 80	332	* ED (10)-14		

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

**INTERIM REVIEW**

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

**REVIEW AND APPROVAL**


**INTERIM REVIEW**

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

REV. NO.	DATE	DESCRIPTION	BY

**PAPE-DAWSON ENGINEERS**

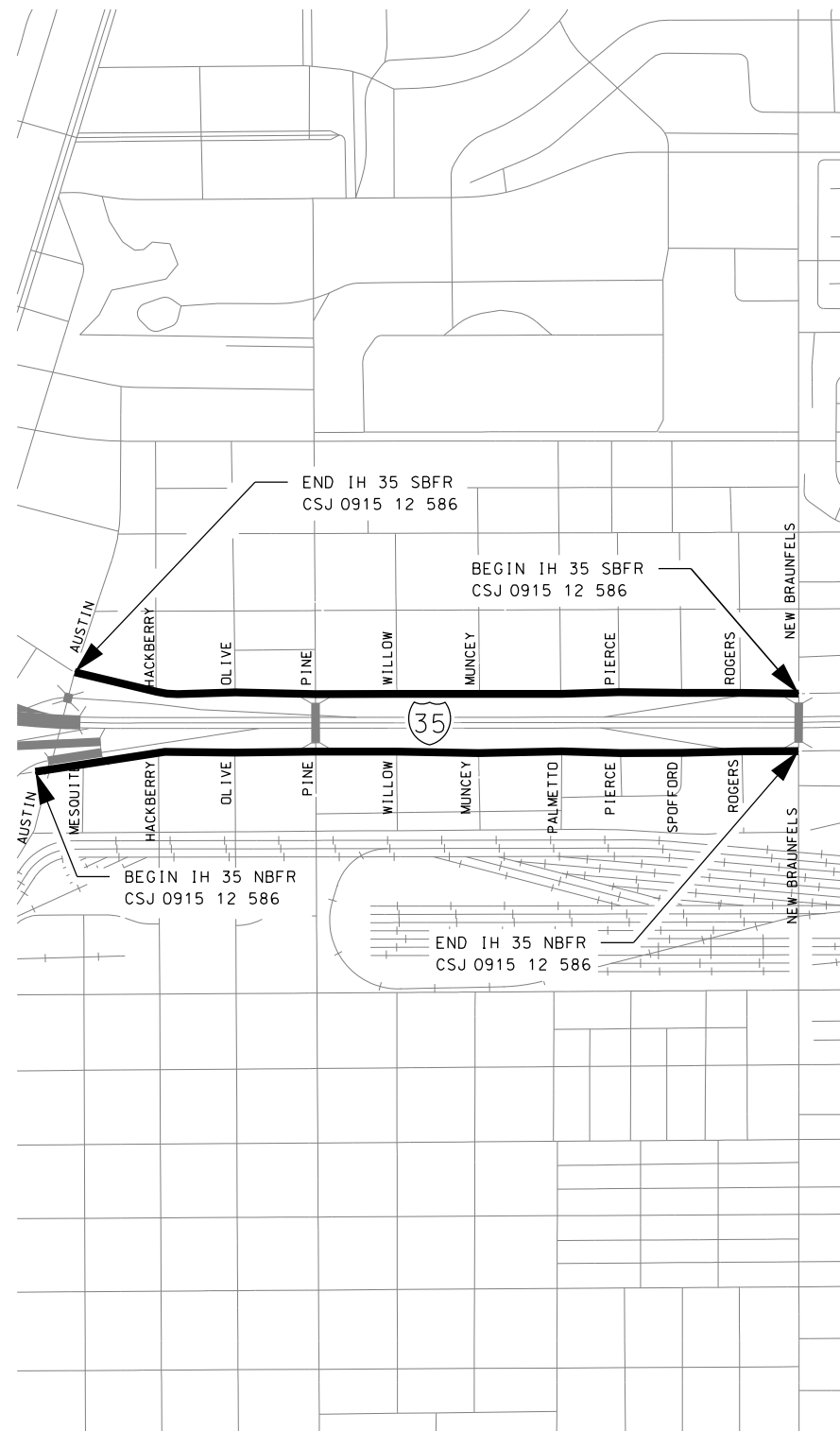
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

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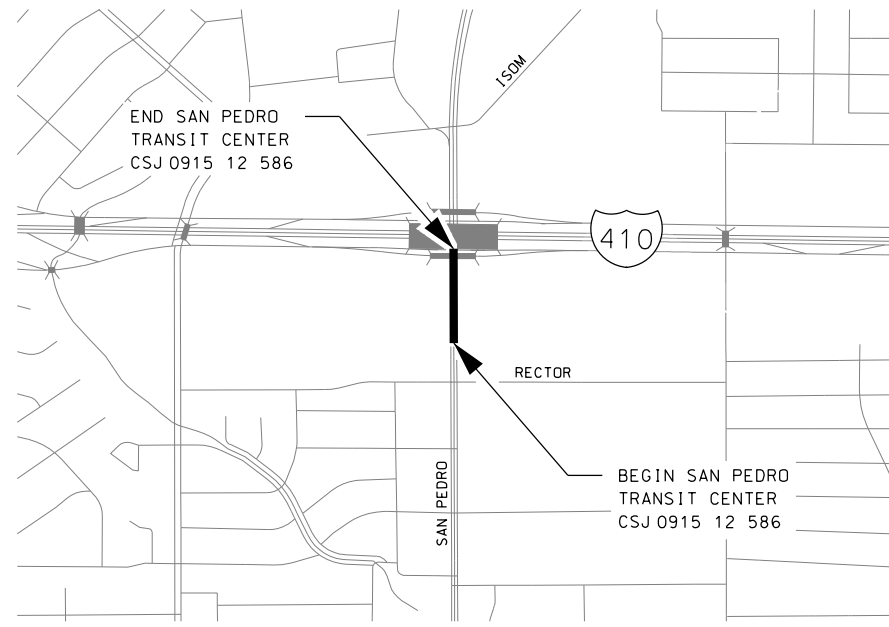
**INDEX OF SHEETS**

SHEET 2 OF 2

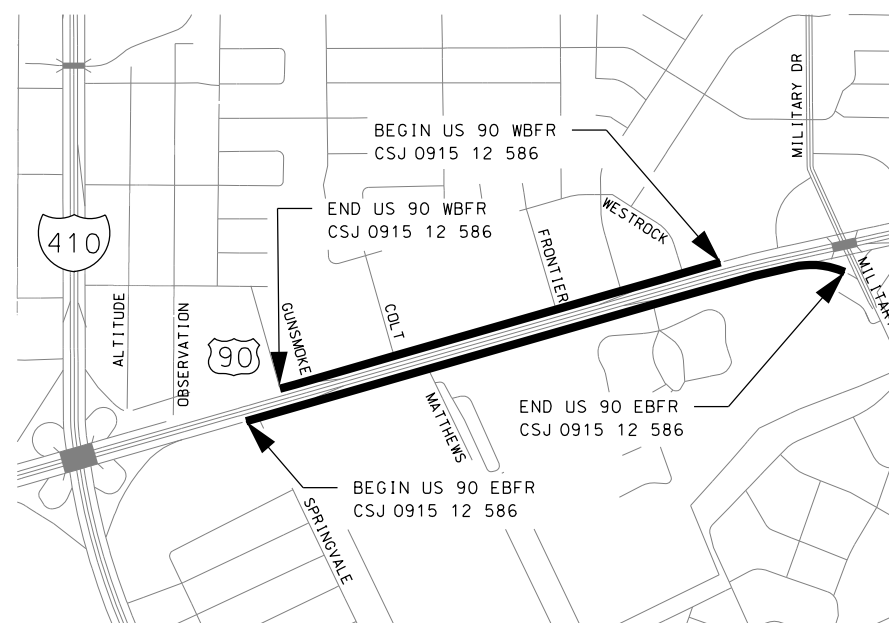
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CHK DWG	SAT	BEXAR	0915	12	586	3



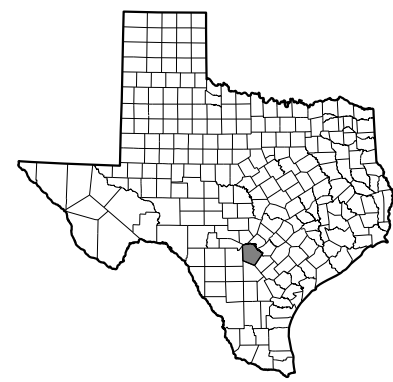
IH 35  
 NBFR:SEE SHEETS 85 - 97  
 SBFR:SEE SHEETS 98 - 109



SAN PEDRO TRANSIT CENTER  
 SEE SHEETS 123 - 128



US 90  
 EBFR:SEE SHEETS 140 - 148  
 WBFR:SEE SHEETS 149 - 159



NOT TO SCALE

REV. NO.	DATE	DESCRIPTION	BY



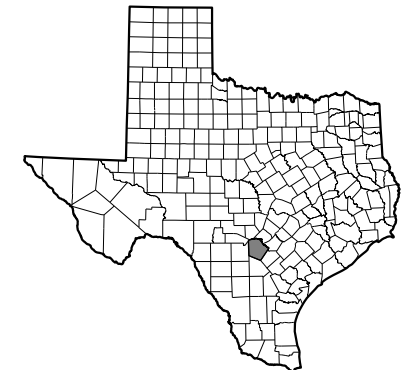
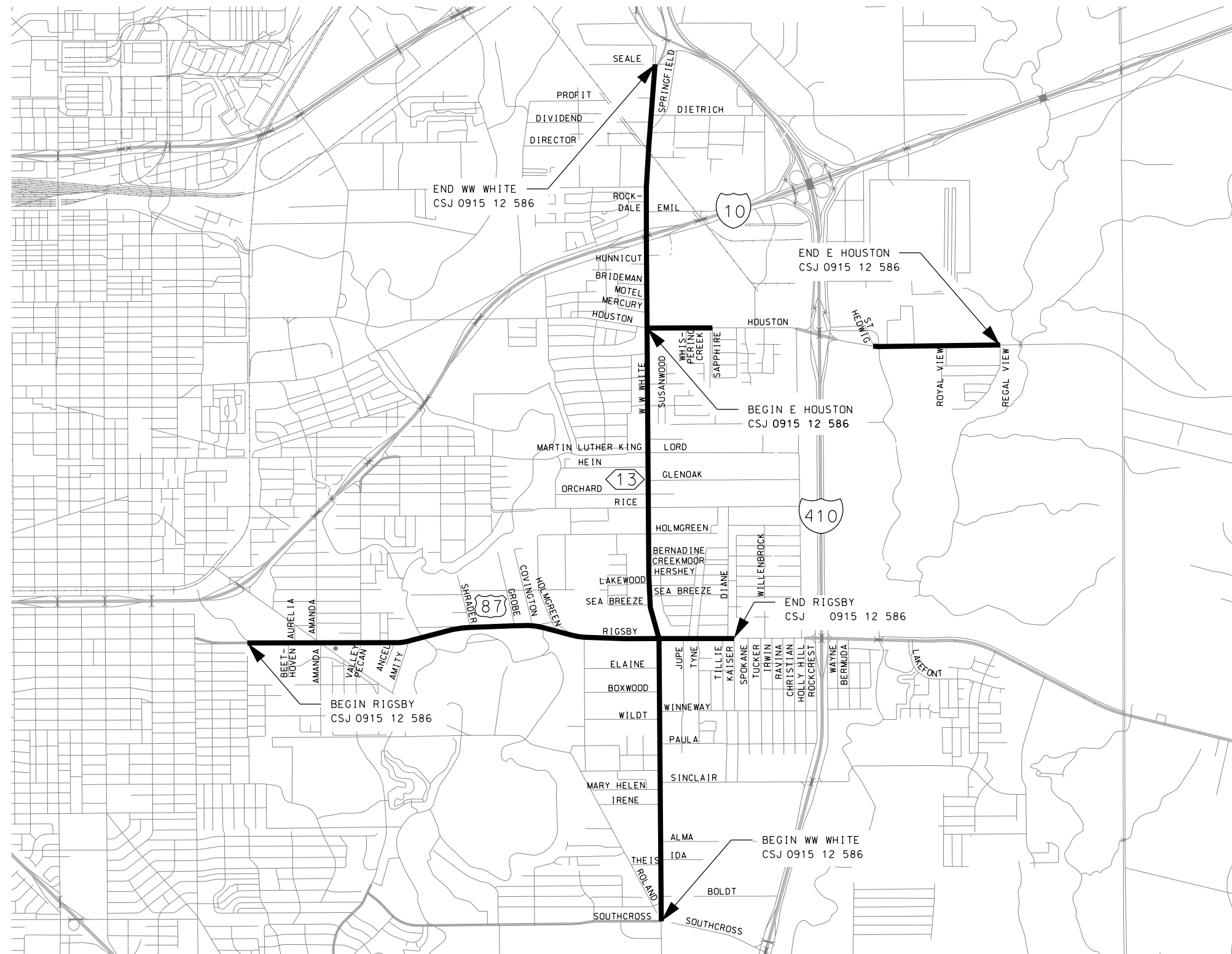
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



PROJECT  
 LAYOUT  
 MAPS

SHEET 1 OF 2

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	4



RIGSBY  
SEE SHEETS 211 - 290

WW WHITE  
SEE SHEETS 160 - 210

E HOUSTON  
SEE SHEETS 110 - 122

NOT TO SCALE

REV. NO.	DATE	DESCRIPTION	BY



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

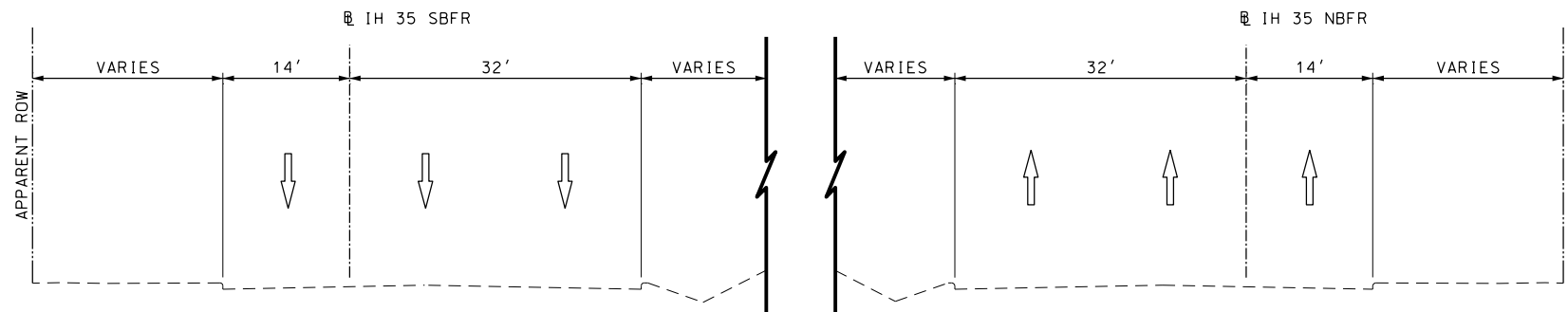


PROJECT  
LAYOUT  
MAPS

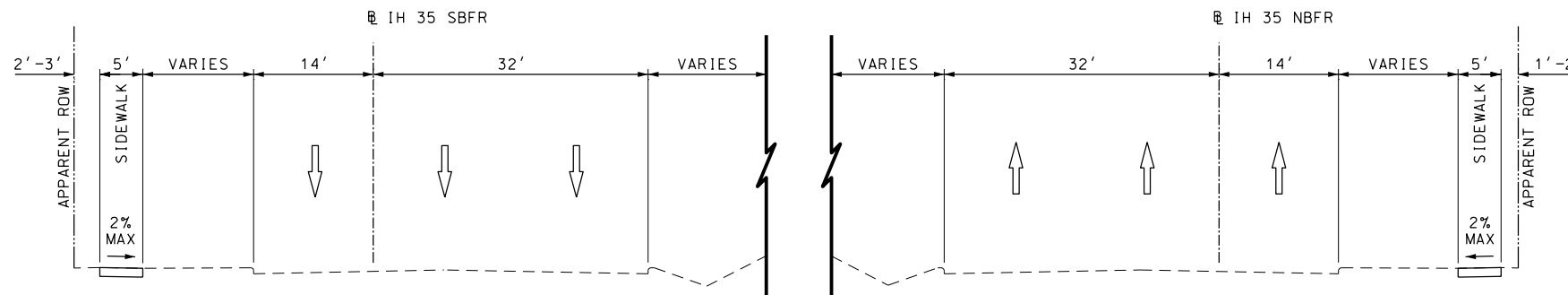
SHEET 2 OF 2

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	5

Plotted on: 9/29/2017



EXISTING TYPICAL SECTION  
IH-35  
NOT TO SCALE  
FROM STA 100+00 TO STA 147+00



PROPOSED TYPICAL SECTION  
IH-35  
NOT TO SCALE  
FROM STA 100+00 TO STA 147+00

DESIGN

INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JOHN A. TYLER  
P.E. SERIAL NO: 105193  
DATE: 9/29/2017

REVIEW AND APPROVAL

INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JAMES A. LUTZ  
P.E. SERIAL NO: 84722  
DATE: 9/29/2017

REV. NO.	DATE	DESCRIPTION	BY



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



IH 35  
TYPICAL SECTION

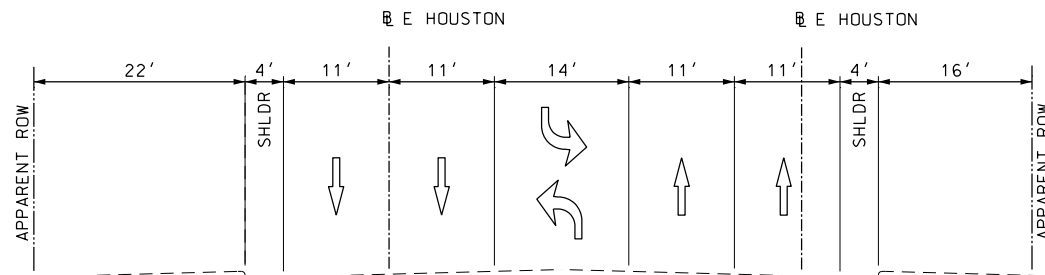
SHEET 1 OF 1

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	6

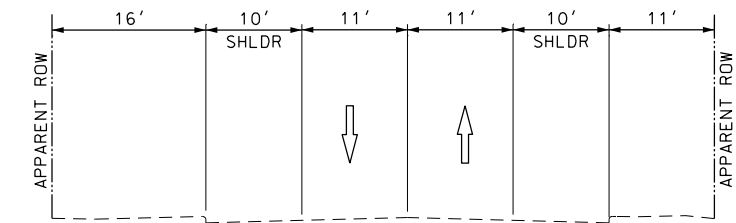
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Plotted on: 9/29/2017

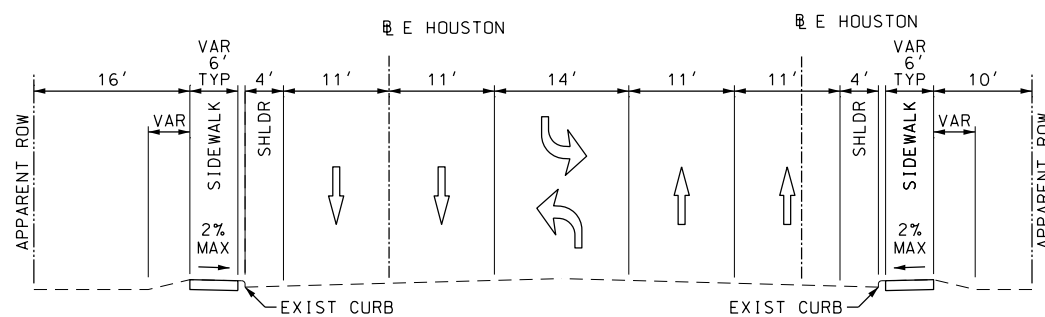
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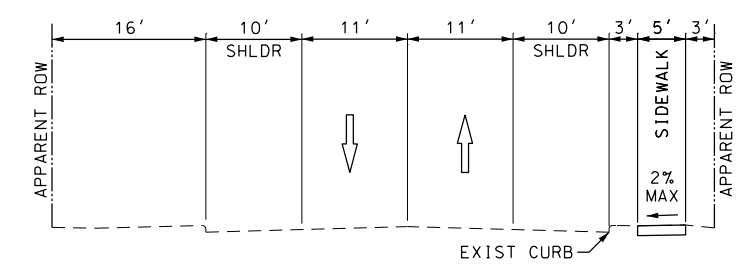
EXISTING TYPICAL SECTION  
E HOUSTON  
NOT TO SCALE  
FROM STA 300+00 TO STA 407+00



EXISTING TYPICAL SECTION  
ROYAL VIEW DR  
NOT TO SCALE  
STA 406+00



PROPOSED TYPICAL SECTION  
E HOUSTON  
NOT TO SCALE  
FROM STA 300+00 TO STA 407+00



PROPOSED TYPICAL SECTION  
ROYAL VIEW DR  
NOT TO SCALE  
STA 406+00

DESIGN  
INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JOHN A. TYLER  
P.E. SERIAL NO: 105193  
DATE: 9/29/2017

REVIEW AND APPROVAL  
INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JAMES A. LUTZ  
P.E. SERIAL NO: 84722  
DATE: 9/29/2017

REV. NO.	DATE	DESCRIPTION	BY

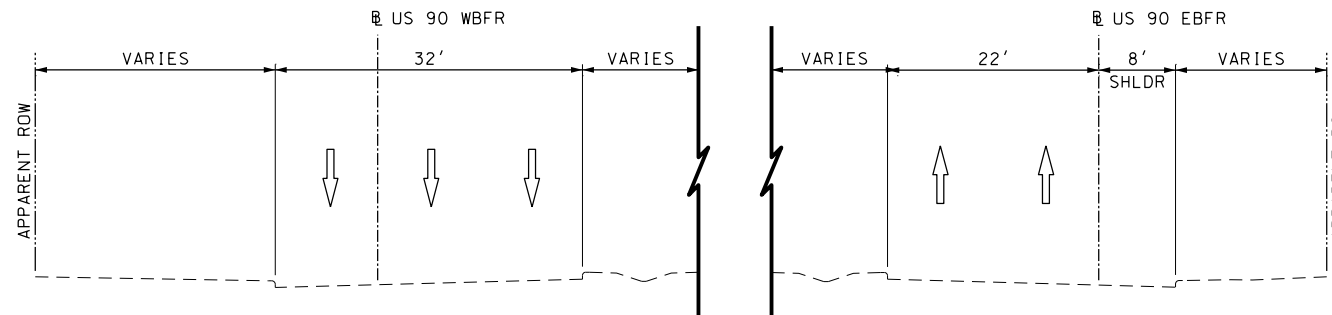
**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



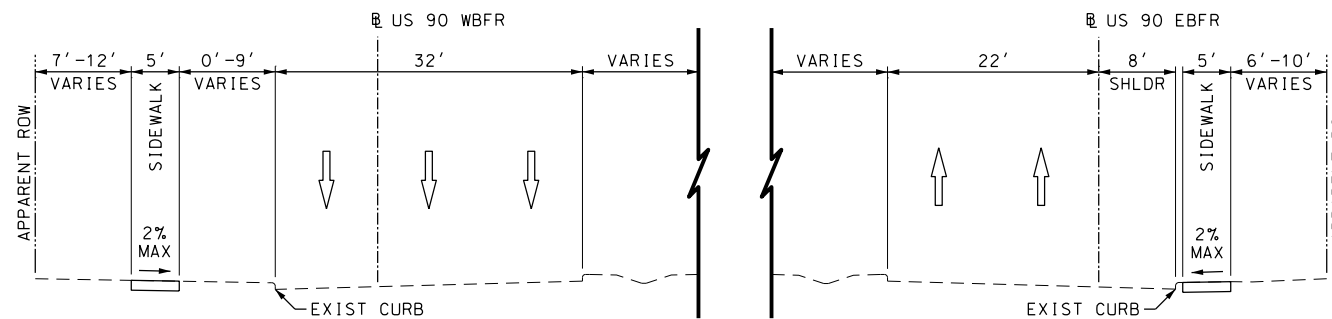
E HOUSTON  
TYPICAL SECTION

SHEET 1 OF 1

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	7



EXISTING TYPICAL SECTION  
US 90  
NOT TO SCALE  
FROM STA 302+00 TO STA 356+00



PROPOSED TYPICAL SECTION  
US 90  
NOT TO SCALE  
FROM STA 302+00 TO STA 356+00

DESIGN

INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JOHN A. TYLER  
P.E. SERIAL NO: 105193  
DATE: 9/29/2017

REVIEW AND APPROVAL

INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JAMES A. LUTZ  
P.E. SERIAL NO: 84722  
DATE: 9/29/2017

REV. NO.	DATE	DESCRIPTION	BY



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



US 90  
TYPICAL SECTION

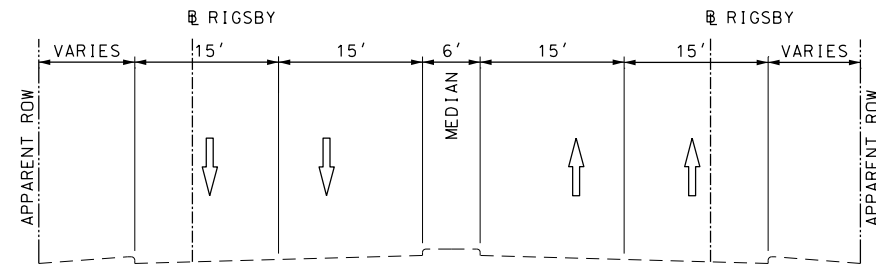
SHEET 1 OF 1

DWG:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DWG:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	8

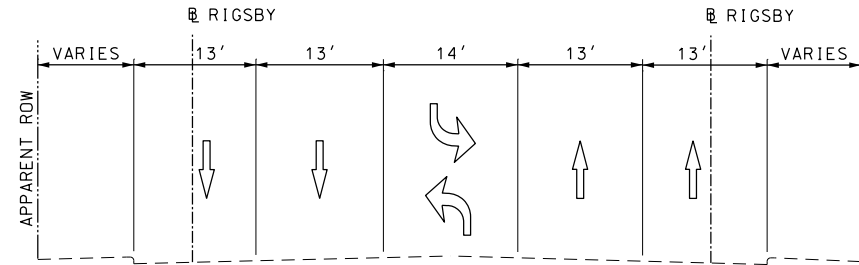


Plotted on: 9/29/2017

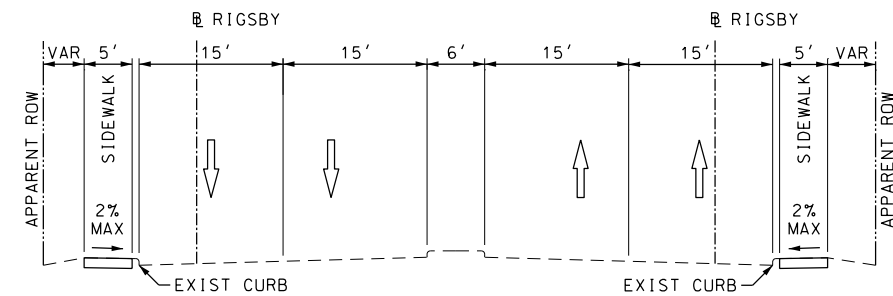
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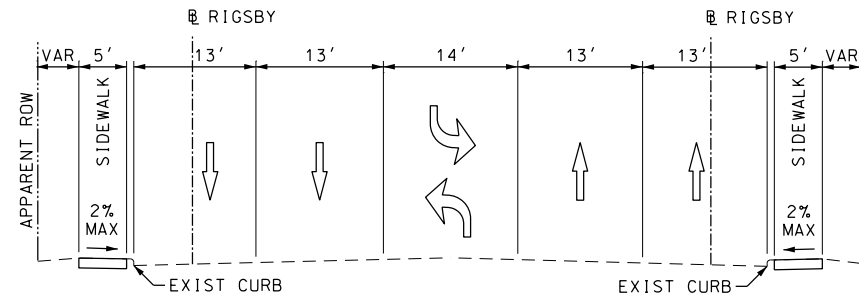
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RIGSBY  
NOT TO SCALE  
FROM STA 100+00 TO STA 117+00



EXISTING TYPICAL SECTION  
RIGSBY  
NOT TO SCALE  
FROM STA 117+00 TO STA 284+00



PROPOSED TYPICAL SECTION  
RIGSBY  
NOT TO SCALE  
FROM STA 100+00 TO STA 117+00



PROPOSED TYPICAL SECTION  
RIGSBY  
NOT TO SCALE  
FROM STA 117+00 TO STA 284+00

DESIGN

INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JOHN A. TYLER  
P.E. SERIAL NO: 105193  
DATE: 9/29/2017

REVIEW AND APPROVAL

INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JAMES A. LUTZ  
P.E. SERIAL NO: 84722  
DATE: 9/29/2017

REV. NO.	DATE	DESCRIPTION	BY



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



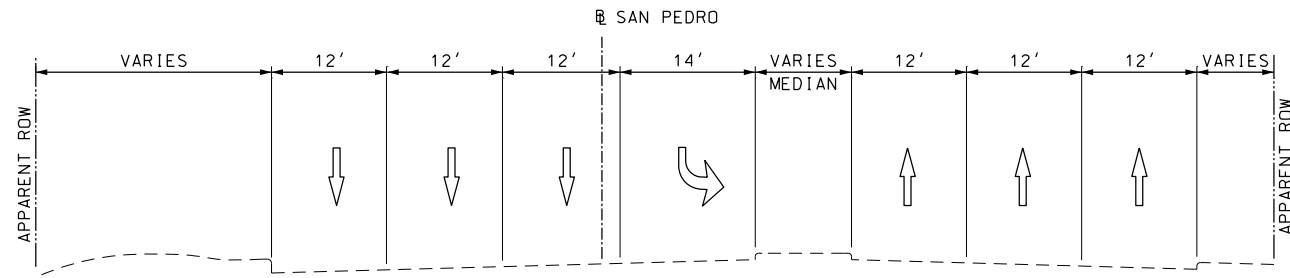
RIGSBY  
TYPICAL SECTION

SHEET 1 OF 1

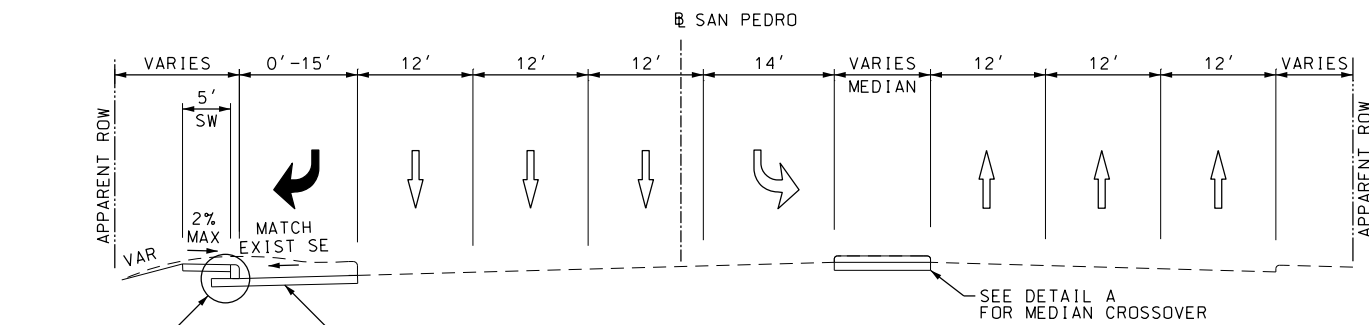
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	9

Plotted on: 9/29/2017

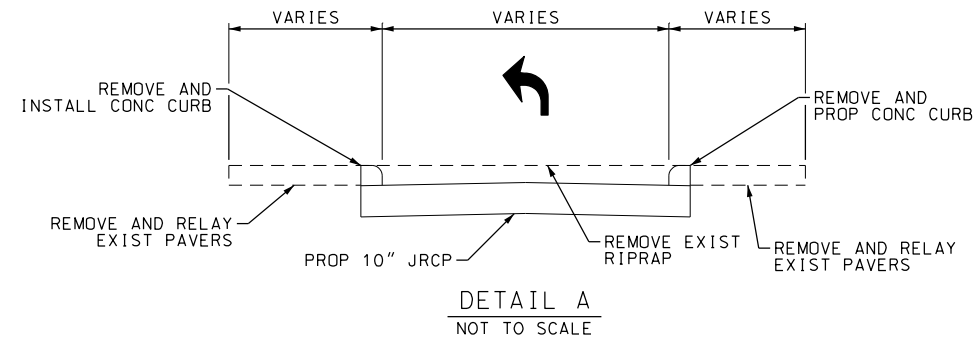
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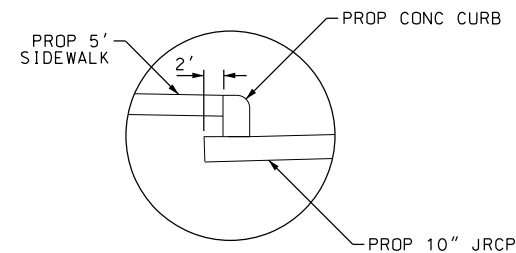
EXISTING TYPICAL SECTION  
SAN PEDRO  
NOT TO SCALE  
FROM STA 606+00 TO STA 614+00



PROPOSED TYPICAL SECTION  
SAN PEDRO  
NOT TO SCALE  
FROM STA 606+00 TO STA 614+00



DETAIL A  
NOT TO SCALE



DETAIL B  
NOT TO SCALE

DESIGN

INTERIM REVIEW	
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.	
ENGINEER:	JOHN A. TYLER
P.E. SERIAL NO:	105193
DATE:	9/29/2017

REVIEW AND APPROVAL

INTERIM REVIEW	
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.	
ENGINEER:	JAMES A. LUTZ
P.E. SERIAL NO:	84722
DATE:	9/29/2017

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

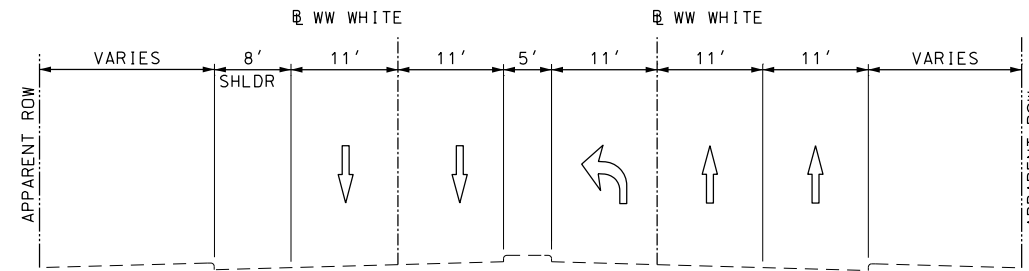
Texas Department of Transportation  
© 2017

SAN PEDRO  
TYPICAL SECTION

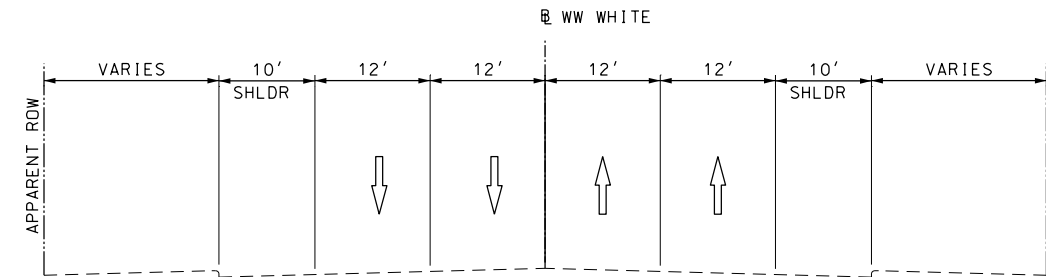
SHEET 1 OF 1

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:			HIGHWAY NO.:
CHK DGN:	6	TEXAS				VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	10

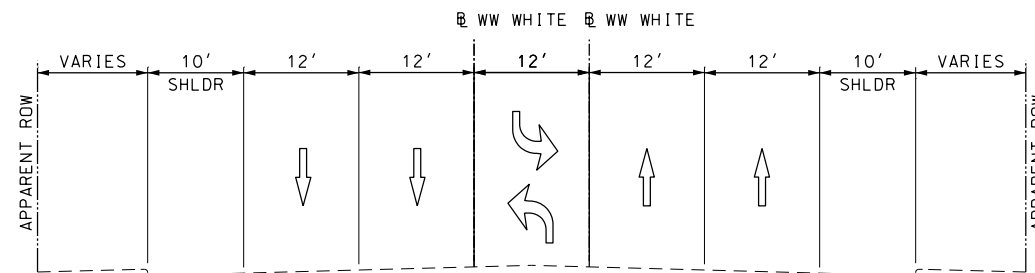
Plotted on: 9/29/2017



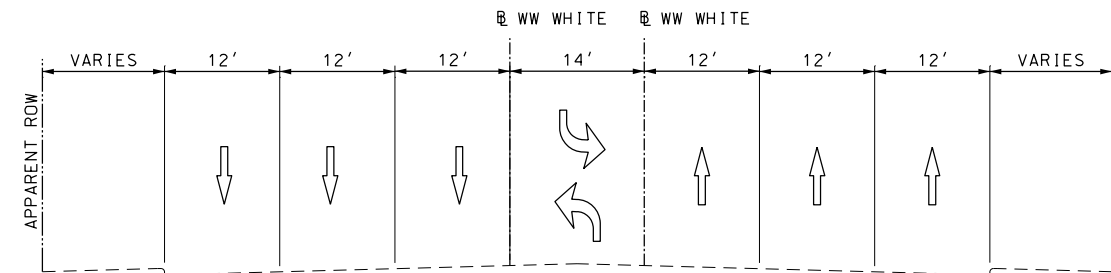
EXISTING TYPICAL SECTION  
 WW WHITE  
 NOT TO SCALE  
 FROM STA 104+00 TO STA 108+00



EXISTING TYPICAL SECTION  
 WW WHITE  
 NOT TO SCALE  
 FROM STA 120+00 TO STA 187+00



EXISTING TYPICAL SECTION  
 WW WHITE  
 NOT TO SCALE  
 FROM STA 187+00 TO STA 280+00



EXISTING TYPICAL SECTION  
 WW WHITE  
 NOT TO SCALE  
 FROM STA 280+00 TO STA 316+00

DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

REV. NO.	DATE	DESCRIPTION	BY



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

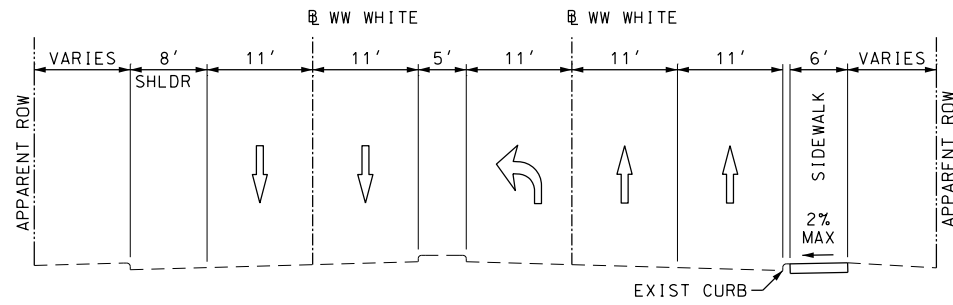


WW WHITE  
 TYPICAL SECTION

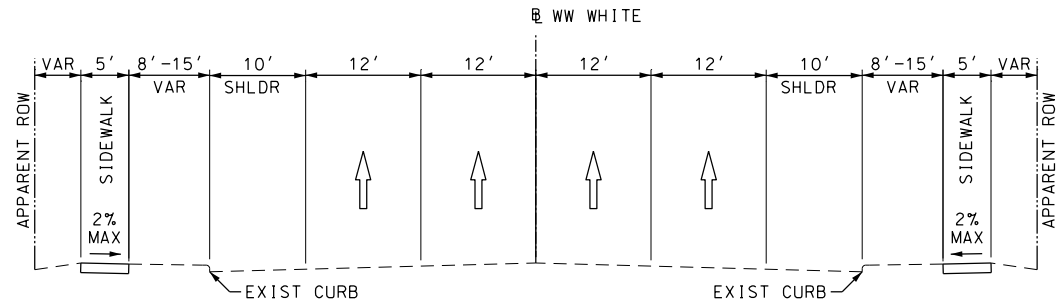
SHEET 1 OF 3

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:			HIGHWAY NO.:
CHK DGN:	6	TEXAS				VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	11

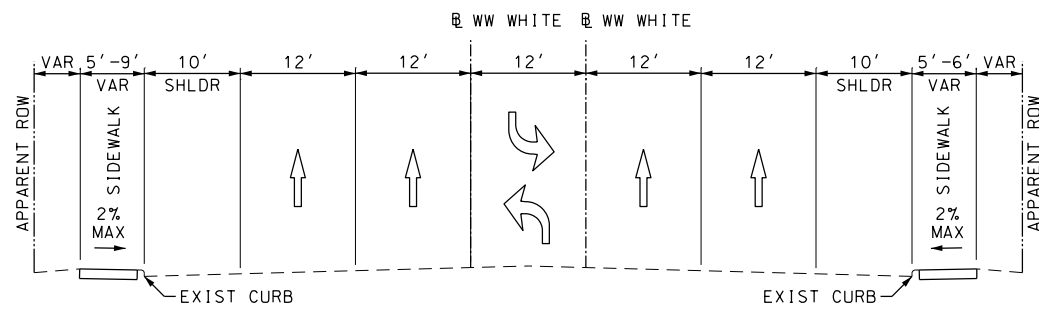
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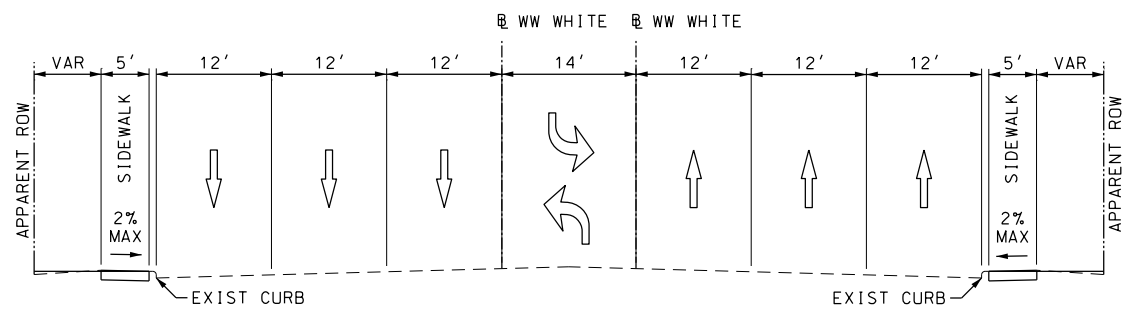
PROPOSED TYPICAL SECTION  
 WW WHITE  
 NOT TO SCALE  
 FROM STA 104+00 TO STA 108+00



PROPOSED TYPICAL SECTION  
 WW WHITE  
 NOT TO SCALE  
 FROM STA 120+00 TO STA 187+00



PROPOSED TYPICAL SECTION  
 WW WHITE  
 NOT TO SCALE  
 FROM STA 187+00 TO STA 280+00



PROPOSED TYPICAL SECTION  
 WW WHITE  
 NOT TO SCALE  
 FROM STA 280+00 TO STA 316+00

DESIGN

INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL

INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

REV. NO.	DATE	DESCRIPTION	BY



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

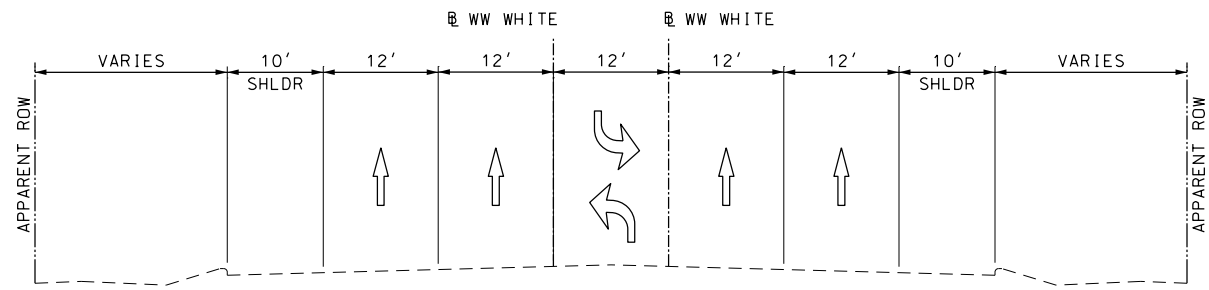


WW WHITE  
 TYPICAL SECTION

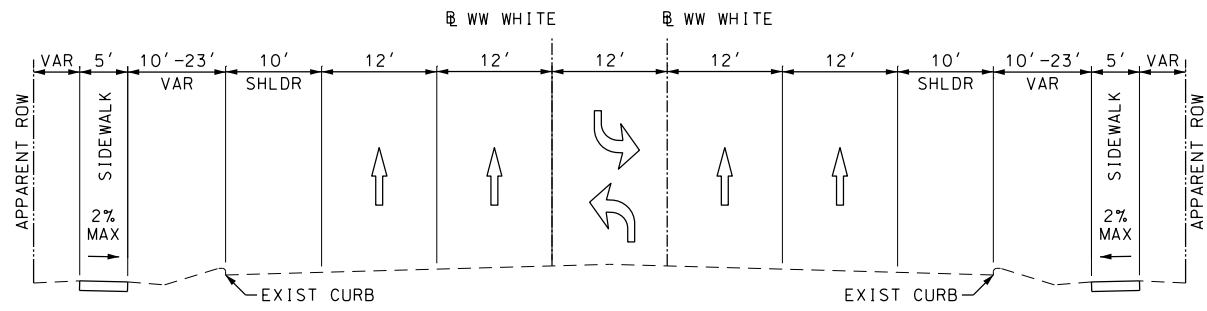
DWG:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DWG:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	12

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\General\1113501\_WWWHITE\_TYP\_SECO1.dgn



EXISTING TYPICAL SECTION  
 WW WHITE  
 NOT TO SCALE  
 FROM STA 316+00 TO STA 365+00



PROPOSED TYPICAL SECTION  
 WW WHITE  
 NOT TO SCALE  
 FROM STA 316+00 TO STA 365+00

DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

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



WW WHITE  
 TYPICAL SECTION

SHEET 3 OF 3


DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.:
				586
				SHEET NO.:
				13

Plotted on: 9/29/2017

Design Filename: P:\1111\35\01\design\Civil\General\1113501\_GeneralNotes.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  
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



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GENERAL NOTES



  

SHEET OF

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	14

Plotted on: 9/29/2017

Design Filename: P:\111\35\01\design\Civil\General\1113501\_E0.dgn

REV. NO.	DATE	DESCRIPTION			BY
 <p><b>PAPE-DAWSON ENGINEERS</b></p> <p>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</p>					
 <p>Texas Department of Transportation © 2017</p>					
<p>ESTIMATE AND QUANTITY</p>					
SHEET OF					
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.		HIGHWAY NO.
CHK DGN:	6	TEXAS			VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.
CHK DWG:	SAT	BEXAR	0915	12	586
					15














Plotted on: 9/29/2017

Design File name: P:\11135\01\des\ign\Civil\Summary\1113501\_Summar ies.dgn


SHT NO	ITEM	INTERSECTION			
		REMOVAL OF SIGNAL HEAD ASSM 0690-6024	REMOVAL OF SIGNAL RELATED SIGNS 0690-6027	INSTALL OF SIGNAL RELATED SIGNS 0690-6029	REMOVAL OF PEDESTRIAN PUSH BUTTONS 0690-6030
		EA	EA	EA	EA
85	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 1 OF 13				
86	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 2 OF 13				
87	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 3 OF 13				
88	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 4 OF 13				
89	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 5 OF 13				
90	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 6 OF 13				
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93	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 9 OF 13				
94	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 10 OF 13				
95	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 11 OF 13				
96	IH 35 NBFR SIDEWALK CONSTRUCTION PLAN 12 OF 13				
99	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 2 OF 12				
100	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 3 OF 12				
101	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 4 OF 12				
102	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 5 OF 12				
103	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 6 OF 12				
104	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 7 OF 12				
105	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 8 OF 12				
106	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 9 OF 12				
107	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 10 OF 12				
108	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 11 OF 12				
109	IH 35 SBFR SIDEWALK CONSTRUCTION PLAN 12 OF 12				
110	E HOUSTON SIDEWALK CONSTRUCTION PLAN 1 OF 13				
111	E HOUSTON SIDEWALK CONSTRUCTION PLAN 2 OF 13				
112	E HOUSTON SIDEWALK CONSTRUCTION PLAN 3 OF 13				
113	E HOUSTON SIDEWALK CONSTRUCTION PLAN 4 OF 13				
114	E HOUSTON SIDEWALK CONSTRUCTION PLAN 5 OF 13				
115	E HOUSTON SIDEWALK CONSTRUCTION PLAN 6 OF 13				
116	E HOUSTON SIDEWALK CONSTRUCTION PLAN 7 OF 13				
117	E HOUSTON SIDEWALK CONSTRUCTION PLAN 8 OF 13				
118	E HOUSTON SIDEWALK CONSTRUCTION PLAN 9 OF 13				
119	E HOUSTON SIDEWALK CONSTRUCTION PLAN 10 OF 13				
120	E HOUSTON SIDEWALK CONSTRUCTION PLAN 11 OF 13				
121	E HOUSTON SIDEWALK CONSTRUCTION PLAN 12 OF 13				
122	E HOUSTON SIDEWALK CONSTRUCTION PLAN 13 OF 13				
123	SAN PEDRO SIDEWALK CONSTRUCTION PLAN 1 OF 6				
124	SAN PEDRO SIDEWALK CONSTRUCTION PLAN 2 OF 6				
125	SAN PEDRO SIDEWALK CONSTRUCTION PLAN 3 OF 6				
126	SAN PEDRO SIDEWALK CONSTRUCTION PLAN 4 OF 6				
128	SAN PEDRO SIDEWALK CONSTRUCTION PLAN 6 OF 6				
133	SAN PEDRO SIGNING AND PAVEMENT MARKING 1 OF 6				
134	SAN PEDRO SIGNING AND PAVEMENT MARKING 2 OF 6				
135	SAN PEDRO SIGNING AND PAVEMENT MARKING 3 OF 6				
136	SAN PEDRO SIGNING AND PAVEMENT MARKING 4 OF 6		1	1	
137	SAN PEDRO SIGNING AND PAVEMENT MARKING 5 OF 6				
138	SAN PEDRO SIGNING AND PAVEMENT MARKING 6 OF 6				2
140	US 90 EB SIDEWALK CONSTRUCTION PLAN 1 OF 9				
141	US 90 EB SIDEWALK CONSTRUCTION PLAN 2 OF 9				
142	US 90 EB SIDEWALK CONSTRUCTION PLAN 3 OF 9				
143	US 90 EB SIDEWALK CONSTRUCTION PLAN 4 OF 9				
144	US 90 EB SIDEWALK CONSTRUCTION PLAN 5 OF 9				
145	US 90 EB SIDEWALK CONSTRUCTION PLAN 6 OF 9				
146	US 90 EB SIDEWALK CONSTRUCTION PLAN 7 OF 9				
147	US 90 EB SIDEWALK CONSTRUCTION PLAN 8 OF 9				
148	US 90 EB SIDEWALK CONSTRUCTION PLAN 9 OF 9				
149	US 90 WB SIDEWALK CONSTRUCTION PLAN 1 OF 11				
150	US 90 WB SIDEWALK CONSTRUCTION PLAN 2 OF 11				
151	US 90 WB SIDEWALK CONSTRUCTION PLAN 3 OF 11				
152	US 90 WB SIDEWALK CONSTRUCTION PLAN 4 OF 11				
153	US 90 WB SIDEWALK CONSTRUCTION PLAN 5 OF 11				
154	US 90 WB SIDEWALK CONSTRUCTION PLAN 6 OF 11				
155	US 90 WB SIDEWALK CONSTRUCTION PLAN 7 OF 11				
156	US 90 WB SIDEWALK CONSTRUCTION PLAN 8 OF 11				
157	US 90 WB SIDEWALK CONSTRUCTION PLAN 9 OF 11				
158	US 90 WB SIDEWALK CONSTRUCTION PLAN 10 OF 11				

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 #1002800



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SUMMARY OF QUANTITIES

SHEET 6 OF 18

DIST:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:			HIGHWAY NO.:
CHK DWG:	6	TEXAS				VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	21














Plotted on: 9/29/2017

Design File name: P:\11135\01\des\ign\Civil\Summary\1113501\_Summary.es.dgn


SHT NO	ITEM  INTERSECTION	0690-6024	0690-6027	0690-6029	0690-6030
		REMOVAL OF SIGNAL HEAD ASSM EA	REMOVAL OF SIGNAL RELATED SIGNS EA	INSTALL OF SIGNAL RELATED SIGNS EA	REMOVAL OF PEDESTRIAN PUSH BUTTONS EA
159	US 90 WB SIDEWALK CONSTRUCTION PLAN 11 OF 11				
160	WW WHITE SIDEWALK CONSTRUCTION PLAN 1 OF 51				
161	WW WHITE SIDEWALK CONSTRUCTION PLAN 2 OF 51				
162	WW WHITE SIDEWALK CONSTRUCTION PLAN 3 OF 51				
163	WW WHITE SIDEWALK CONSTRUCTION PLAN 4 OF 51				
164	WW WHITE SIDEWALK CONSTRUCTION PLAN 5 OF 51				
165	WW WHITE SIDEWALK CONSTRUCTION PLAN 6 OF 51				
166	WW WHITE SIDEWALK CONSTRUCTION PLAN 7 OF 51				
167	WW WHITE SIDEWALK CONSTRUCTION PLAN 8 OF 51	2			2
168	WW WHITE SIDEWALK CONSTRUCTION PLAN 9 OF 51	2			2
169	WW WHITE SIDEWALK CONSTRUCTION PLAN 10 OF 51				
170	WW WHITE SIDEWALK CONSTRUCTION PLAN 11 OF 51				
171	WW WHITE SIDEWALK CONSTRUCTION PLAN 12 OF 51	1			1
172	WW WHITE SIDEWALK CONSTRUCTION PLAN 13 OF 51				
173	WW WHITE SIDEWALK CONSTRUCTION PLAN 14 OF 51	1			1
174	WW WHITE SIDEWALK CONSTRUCTION PLAN 15 OF 51				
175	WW WHITE SIDEWALK CONSTRUCTION PLAN 16 OF 51				2
176	WW WHITE SIDEWALK CONSTRUCTION PLAN 17 OF 51				1
177	WW WHITE SIDEWALK CONSTRUCTION PLAN 18 OF 51				3
178	WW WHITE SIDEWALK CONSTRUCTION PLAN 19 OF 51				4
179	WW WHITE SIDEWALK CONSTRUCTION PLAN 20 OF 51				
180	WW WHITE SIDEWALK CONSTRUCTION PLAN 21 OF 51				
181	WW WHITE SIDEWALK CONSTRUCTION PLAN 22 OF 51				
182	WW WHITE SIDEWALK CONSTRUCTION PLAN 23 OF 51				
183	WW WHITE SIDEWALK CONSTRUCTION PLAN 24 OF 51				
184	WW WHITE SIDEWALK CONSTRUCTION PLAN 25 OF 51				
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187	WW WHITE SIDEWALK CONSTRUCTION PLAN 28 OF 51				
188	WW WHITE SIDEWALK CONSTRUCTION PLAN 29 OF 51				
189	WW WHITE SIDEWALK CONSTRUCTION PLAN 30 OF 51				
190	WW WHITE SIDEWALK CONSTRUCTION PLAN 31 OF 51				
191	WW WHITE SIDEWALK CONSTRUCTION PLAN 32 OF 51				1
192	WW WHITE SIDEWALK CONSTRUCTION PLAN 33 OF 51				3
193	WW WHITE SIDEWALK CONSTRUCTION PLAN 34 OF 51				3
194	WW WHITE SIDEWALK CONSTRUCTION PLAN 35 OF 51				
195	WW WHITE SIDEWALK CONSTRUCTION PLAN 36 OF 51	1			1
196	WW WHITE SIDEWALK CONSTRUCTION PLAN 37 OF 51				
197	WW WHITE SIDEWALK CONSTRUCTION PLAN 38 OF 51				
198	WW WHITE SIDEWALK CONSTRUCTION PLAN 39 OF 51	1			1
199	WW WHITE SIDEWALK CONSTRUCTION PLAN 40 OF 51				
200	WW WHITE SIDEWALK CONSTRUCTION PLAN 41 OF 51	2			2
201	WW WHITE SIDEWALK CONSTRUCTION PLAN 42 OF 51	2			2
202	WW WHITE SIDEWALK CONSTRUCTION PLAN 43 OF 51				
203	WW WHITE SIDEWALK CONSTRUCTION PLAN 44 OF 51				
204	WW WHITE SIDEWALK CONSTRUCTION PLAN 45 OF 51				
205	WW WHITE SIDEWALK CONSTRUCTION PLAN 46 OF 51				
206	WW WHITE SIDEWALK CONSTRUCTION PLAN 47 OF 51				
207	WW WHITE SIDEWALK CONSTRUCTION PLAN 48 OF 51				
208	WW WHITE SIDEWALK CONSTRUCTION PLAN 49 OF 51				
209	WW WHITE SIDEWALK CONSTRUCTION PLAN 50 OF 51				
211	RIGSBY SIDEWALK CONSTRUCTION PLAN 1 OF 80				
212	RIGSBY SIDEWALK CONSTRUCTION PLAN 2 OF 80				
213	RIGSBY SIDEWALK CONSTRUCTION PLAN 3 OF 80				
214	RIGSBY SIDEWALK CONSTRUCTION PLAN 4 OF 80				
215	RIGSBY SIDEWALK CONSTRUCTION PLAN 5 OF 80				
216	RIGSBY SIDEWALK CONSTRUCTION PLAN 6 OF 80				
217	RIGSBY SIDEWALK CONSTRUCTION PLAN 7 OF 80				
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221	RIGSBY SIDEWALK CONSTRUCTION PLAN 11 OF 80				
222	RIGSBY SIDEWALK CONSTRUCTION PLAN 12 OF 80				
223	RIGSBY SIDEWALK CONSTRUCTION PLAN 13 OF 80				
224	RIGSBY SIDEWALK CONSTRUCTION PLAN 14 OF 80				
225	RIGSBY SIDEWALK CONSTRUCTION PLAN 15 OF 80				

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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SUMMARY OF QUANTITIES

SHEET 12 OF 18

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:			HIGHWAY NO.:
CHK DGN:	6	TEXAS				VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	27



SHT NO	ITEM	INTERSECTION																			
		RAIL (HANDRAIL) (TY A)	RAIL (HANDRAIL) (TY B)	CONC BOX CULV (8 FT X 4 FT)	RC PIPE (CL 111) (18 IN)	RC PIPE (CL 111) (24 IN)	INLET (COMPL) (PCO) (3FT) (RIGHT)	GRATE & FRAME	ADJUSTING MANHOLES & INLETS	REMOVE STR (RAIL)	LANDSCAPE PAVERS	REMOVE AND RELAY PAVERS	CONC CURB (TY 11)	CONC CURB (SLOTTED)	CONC CURB & GUTTER (ARMOR CURB)	DRIVEWAYS (CONC)	DRIVEWAYS (ACP)	CONC SIDEWALKS (4")	CURB RAMPS (TY 1)	CURB RAMPS (TY 2)	CURB RAMPS (TY 3)
226	RIGSBY SIDEWALK CONSTRUCTION PLAN 16 OF 80																				
227	RIGSBY SIDEWALK CONSTRUCTION PLAN 17 OF 80																				
228	RIGSBY SIDEWALK CONSTRUCTION PLAN 18 OF 80																				
229	RIGSBY SIDEWALK CONSTRUCTION PLAN 19 OF 80																				
230	RIGSBY SIDEWALK CONSTRUCTION PLAN 20 OF 80																				
231	RIGSBY SIDEWALK CONSTRUCTION PLAN 21 OF 80																				
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261	RIGSBY SIDEWALK CONSTRUCTION PLAN 51 OF 80																				
262	RIGSBY SIDEWALK CONSTRUCTION PLAN 52 OF 80				28																
263	RIGSBY SIDEWALK CONSTRUCTION PLAN 53 OF 80	53		14						39											
264	RIGSBY SIDEWALK CONSTRUCTION PLAN 54 OF 80																				
265	RIGSBY SIDEWALK CONSTRUCTION PLAN 55 OF 80		18																		
266	RIGSBY SIDEWALK CONSTRUCTION PLAN 56 OF 80																				
267	RIGSBY SIDEWALK CONSTRUCTION PLAN 57 OF 80																				
268	RIGSBY SIDEWALK CONSTRUCTION PLAN 58 OF 80																				
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286	RIGSBY SIDEWALK CONSTRUCTION PLAN 76 OF 80																				
287	RIGSBY SIDEWALK CONSTRUCTION PLAN 77 OF 80																				
288	RIGSBY SIDEWALK CONSTRUCTION PLAN 78 OF 80																				
289	RIGSBY SIDEWALK CONSTRUCTION PLAN 79 OF 80																				
290	RIGSBY SIDEWALK CONSTRUCTION PLAN 80 OF 80																				
	TOTALS	53	103	14	28	5	1	23	1	94	74	242	15334	13	140	14601	5358	20649	127	441	99

REV. NO.	DATE	DESCRIPTION	BY
 <p><b>PAPE-DAWSON ENGINEERS</b></p> <p>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</p>  <p>Texas Department of Transportation © 2017</p>			
<h2>SUMMARY OF QUANTITIES</h2>			
SHEET 14 OF 18			
CHK DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:
CHK DGN:	6	TEXAS	VA
DWG:	DIST.:	COUNTY:	CONT. NO. SECT. NO. JOB NO. SHEET NO.
CHK DWG:	SAT	BEXAR	0915 12 586 29











Plotted on: 9/29/2017

Design File name: P:\111.35\01\des\ign\Civil\Summaries\1113501\_Summar ies.dgn

SHT NO	ITEM	0690-6024	0690-6027	0690-6029	0690-6030
		REMOVAL OF SIGNAL HEAD ASSM EA	REMOVAL OF SIGNAL RELATED SIGNS EA	INSTALL OF SIGNAL RELATED SIGNS EA	REMOVAL OF PEDESTRIAN PUSH BUTTONS EA
226	RIGSBY SIDEWALK CONSTRUCTION PLAN 16 OF 80				
227	RIGSBY SIDEWALK CONSTRUCTION PLAN 17 OF 80				
228	RIGSBY SIDEWALK CONSTRUCTION PLAN 18 OF 80				
229	RIGSBY SIDEWALK CONSTRUCTION PLAN 19 OF 80	1			1
230	RIGSBY SIDEWALK CONSTRUCTION PLAN 20 OF 80				
231	RIGSBY SIDEWALK CONSTRUCTION PLAN 21 OF 80				
232	RIGSBY SIDEWALK CONSTRUCTION PLAN 22 OF 80				
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265	RIGSBY SIDEWALK CONSTRUCTION PLAN 55 OF 80	1			
266	RIGSBY SIDEWALK CONSTRUCTION PLAN 56 OF 80				
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287	RIGSBY SIDEWALK CONSTRUCTION PLAN 77 OF 80				
288	RIGSBY SIDEWALK CONSTRUCTION PLAN 78 OF 80				
289	RIGSBY SIDEWALK CONSTRUCTION PLAN 79 OF 80				
290	RIGSBY SIDEWALK CONSTRUCTION PLAN 80 OF 80				
	TOTALS	14	1	1	32

REV. NO.	DATE	DESCRIPTION	BY			
 <p>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</p>						
 <p>© 2017</p>						
SUMMARY OF QUANTITIES						
SHEET 18 OF 18						
DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	33

Plotted on: 9/29/2017

TRAFFIC SIGNAL QUANTITIES

SHT NO	TRAFFIC SIGNAL SUMMARY	ITEM	QUANTITY	UNIT
129	SAN PEDRO TRAFFIC SIGNAL PLAN	DRILL SHAFT (TRF SIG POLE) (48 IN)	22	LF
		COND T (PVC) (SCH 40) (3") (BORE)	110	LF
		COND T (PVC) (SCH 80) (3")	165	LF
		ELEC CONDR (NC. 8) BARE	318	LF
		GROUND BOX TY D (162922) W/APRON	1	EA
		INSTALL HWY TRF SIG (ISOLATED)	1	EA
		VEH SIG SEC (12") LED (GRN)	6	EA
		VEH SIG SEC (12") LED (GRN ARW)	1	EA
		VEH SIG SEC (12") LED (YEL)	6	EA
		VEH SIG SEC (12") LED (RED)	6	EA
		BACK PLATE (12") (3 SEC)	5	EA
		BACK PLATE (12") (4 SEC)	1	EA
		TRF SIG CBL (TY A) (14 AWG) (9 CONDR)	340	LF
		INS TRF SIG PL AM(S) 1 ARM (60")	1	EA
		CCTV MOUNT (POLE)	1	EA
		RADAR PRESENCE DETECTOR	1	EA
		RADAR PRESENCE DETECTOR COMM CABLE	516	LF
		RADAR ADVANCED DETECTION DEVICE	1	EA
		RADAR ADVANCE DETECTOR COMM CABLE	318	LF

INDEFINITE QUANTITIES


ITEM	QUANTITY	UNIT
EXCAVATION (SPECIAL)	150.0	CY
EMBANKMENT (FINAL) (ORD COMP) (TY B)	150.0	CY
CONC PAV (JOINT REINF) (10")	100	SY
CL A CONC (MISC)	20.0	CY
MOBILIZATION	1.0	LS
BARRICADES, SIGNS AND TRAFFIC HANDLING	31	MO
SANDBAGS FOR EROSION CONTROL	2000	EA
BIODEG EROSN CONT LOGS (INSTL) (12")	2000	LF
BIODEG EROSN CONT LOGS (REMOVE)	2000	LF
INSTALL OF VEHICLE DETECTORS	10000	LF
PORTABLE CHANGEABLE MESSAGE SIGN	2	EA

UTILITY ADJUSTMENT QUANTITIES


UTILITY OWNER	ADJUSTING MANHOLES	ADJUST GAS ACCESS COVER	SANITARY SEWER (ADJUST MANHOLE)	ADJUST EXISTING VALVE BOX	ADJUST EXISTING METER AND NEW METER BOX
GAS FACILITY	EA	EA	EA	EA	EA
SANITARY SEWER		1	7		
TELECOMM	3				
WATER				19	34
STORM SEWER	2				
TOTALS	5	1	7	19	34

Design Filename: P:\111135\01\design\Civil\Summaries\11113501\_Summar ies.dgn

REV. NO.	DATE	DESCRIPTION	BY



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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SUPPLEMENTAL QUANTITIES

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	34

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

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 / APPROVED BY THE ENGINEER.
- (2) THE CONTRACTOR MAY PROPOSE / RECOMMEND MODIFICATIONS TO THE SEQUENCE OF WORK FOR CONSIDERATION BY THE ENGINEER. ANY MAJOR RECOMMENDED MODIFICATIONS BY THE CONTRACTOR SHALL INCLUDE ANY CHANGES TO THE VARIOUS BID ITEMS, IMPACT TO TRAFFIC, AND 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 THE ENGINEER. 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 VEHICULAR AND PEDESTRIAN TRAFFIC.
- (4) THE CONTRACTOR WILL PROVIDE ADVANCE NOTIFICATION TO THE ENGINEER OF IMPEDING / UPCOMING LANE CLOSURES FOR ALL TEMPORARY AND / OR PERMANENT LANE, RAMP, CONNECTOR, FRONTAGE, SHOULDER, ETC. CLOSURES OR DETOURS. SEE GENERAL NOTES FOR NOTIFICATION REQUIREMENTS.
- (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 INTERSECTION ROADWAYS BE CLOSED AT ONE TIME DURING CONSTRUCTION.
- (8) UNLESS OTHERWISE NOTED IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER, DAILY LANE CLOSURES SHALL BE LIMITED ACCORDING TO THE FOLLOWING RESTRICTIONS.

LANE CLOSURES WILL BE LIMITED TO MONDAY THRU FRIDAY FROM 9:00 AM TO 4:00 PM, UNLESS OTHERWISE APPROVED.

DAY TIME: NO MORE THAN 1,500 LF OF LANE CLOSURE IN EACH DIRECTION SHALL BE PERMITTED AT ANY TIME ALONG EACH HIGHWAY CORRIDOR.

NIGHT TIME: (WITH UNIFORMED OFF DUTY LAW ENFORCEMENT OFFICERS AND OFFICIAL VEHICLE)

WEEKEND CLOSURES: WHEN APPROVED BY THE ENGINEER

NO LANE CLOSURES WILL BE PERMITTED FOR THE FOLLOWING DATES:

BETWEEN DECEMBER 15 AND JANUARY 1

FIESTA WEEK AND TAX FREE WEEKEND (BEXAR COUNTY ONLY)

WEDNESDAY BEFORE THANKSGIVING THRU THE SUNDAY AFTER THANKSGIVING

FRIDAY, SATURDAY AND SUNDAY OF EASTER WEEKEND

SATURDAY AND SUNDAY BEFORE MEMORIAL DAY AND LABOR DAY

SATURDAY AND SUNDAY WHEN JULY 4 FALLS ON A FRIDAY OR MONDAY

ELECTION DAYS (BEXAR COUNTY ONLY)

- (9) REMOVAL AND DISPOSAL OF EXISTING ABANDONED UTILITIES (EITHER PREVIOUSLY ABANDONED OR ABANDONED DURING THIS PROJECT) REQUIRED TO SUPPORT THIS PROJECT'S CONSTRUCTION SHALL BE PERFORMED UNDER AND SUBSIDIARY TO THE OVERALL PREPARE RIGHT-OF-WAY ITEM (ITEM 100).
- (10) COORDINATE WITH ADJACENT PROJECTS.
- (11) COVER PERMANENT SIGNS IF NOT USED. THIS IS SUBSIDIARY TO ITEM 502.
- (12) EXCAVATION MORE THAN 12" IN DEPTH WITHIN 5 FEET OF AN EXISTING CPS ENERGY POLE WILL REQUIRE POLE BRACING. CONTACT CPS ENERGY UTILITY COORDINATION TO REQUEST POLE BRACING. THE ESTIMATED DURATION FOR THE POLE BRACING PROCESS IS APPROXIMATELY 6 TO 8 WEEKS.

- (13) COORDINATE WITH THE CITY OF SAN ANTONIO OR TXDOT FOR SIGNAL TIMING REVISIONS, AS NECESSARY.
- (14) LANE CLOSURES MUST BE MOVE 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.
- (15) CONTRACTOR SHALL NOT REMOVE OR ADJUST ANY VIA ASSETS.
- (16) CONTRACTOR SHALL CONTACT VIA THIRTY (30) DAYS PRIOR, FOR:
  - (A) THE REMOVAL OF BENCHES, STOP POLES AND ANY OTHER VIA AMENITIES WITHIN THE PROJECT LIMITS.
  - (B) THE REMOVAL OF SHELTERS.
  - (C) THE COORDINATION OF TEMPORARY BUS STOPS.
- (17) THE CONTRACTOR WILL BE LIABLE FOR ANY DAMAGES TO VIA FACILITIES NOT REMOVED BY VIA.
- (18) THE CONTRACTOR IS REQUIRED TO REPLACE ALL FLATWORK REMOVED OR DAMAGED IN THE COURSE OF EXECUTING THE CONTRACT UNLESS OTHERWISE NOTED BY VIA.
- (19) THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING VIA FACILITIES IF ADJACENT TO WORK AREA.
- (20) CONCERNING NEW VIA RELATED FLATWORK: THE CONTRACTOR SHALL SCHEDULE WITH VIA A PRE-POUR INSPECTION FOR ANY SHELTER SLAB, PAD, ADA CONNECTOR OR OTHER REPLACEMENT THAT DIRECTLY AFFECTS VIA AMENITIES NOT TO INCLUDE SIDEWALKS.

2. SEQUENCE OF WORK

- (1) NOTIFY AFFECTED BUSINESS OWNERS 2 WEEKS PRIOR TO CONSTRUCTION, MAINTAIN TEMPORARY ACCESS AT ALL TIMES.
- (2) CLOSE SIDEWALK TO PEDESTRIAN TRAFFIC, DETOUR PEDESTRIANS PER TXDOT STANDARD WZ(BTS-2)-13. SEE TCP LINE DIAGRAM SHEETS.
- (3) INSTALL SW3P IN ACCORDANCE WITH STORM WATER POLLUTION PREVENTION PLAN.
- (4) REMOVE EXISTING SIDEWALK, DRAINAGE STRUCTURES, AND EXISTING ROAD MATERIAL, SEE TYPICAL SECTIONS, PAVEMENT DETAILS AND PLAN LAYOUT SHEETS FOR ADDITIONAL INFORMATION. ENSURE POSITIVE DRAINAGE AROUND INTERSECTION RETURNS. CONTRACTOR SHALL INSTALL METAL PLATE OVER OPEN TRENCHES, UNCOVERED MANHOLES AND INLETS ADJACENT TO TRAFFIC OVER NIGHT OR WHEN NO WORK IS BEING PERFORMED. INSTALL TEMPORARY PAVEMENT MARKINGS AS NEEDED OR AS DIRECTED BY THE ENGINEER.
- (5) CONSTRUCT RETAINING WALL FOOTINGS AND WALLS. INSTALL DRAINAGE ELEMENTS FROM DOWNSTREAM TO UPSTREAM. ENSURE POSITIVE DRAINAGE FROM EXISTING TO PROPOSED DRAINAGE STRUCTURES. WORK AT EACH LOCATION MUST BE COMPLETED BY THE END OF EACH DAY (7 AM TO 7 PM).
- (6) FORM SIDEWALKS, CURB RAMPS AND STEPS.
- (7) CONSTRUCT SIDEWALKS, CURB RAMPS, STEPS, AND INSTALL PEDESTRIAN RAILS.
- (8) OPEN COMPLETED SIDEWALK TO PEDESTRIANS AS SOON AS POSSIBLE, WITH THE APPROVAL OF THE ENGINEER.
- (9) ADJUST PEDESTRIAN PUSH BUTTONS.
- (10) AFTER ALL SIDEWALK AND DRAINAGE IMPROVEMENTS ARE COMPLETE FOR ALL CORNERS, AND PLANE ASPHALT AS INDICATED, INSTALL TEMPORARY PAVEMENT MARKINGS AS NEEDED OR AS DIRECTED BY THE ENGINEER.
- (11) INSTALL PERMANENT PAVEMENT MARKINGS.
- (12) INSTALL/RELOCATE PERMANENT SIGNING.
- (13) REMOVE SW3P ITEMS.

3. SAFETY

- (1) THE CONTRACTOR WILL PROVIDE, CONSTRUCT AND MAINTAIN BARRICADES AND SIGNS REQUIRED THAT ARE NOT DETAILED IN THE STANDARD SHEETS SHALL BE IN ACCORDANCE 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 DESCRIBED IN THIS NARRATIVE. 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 SAFE PASSAGE OF TRAFFIC AT ALL TIMES.
- (3) THE CONTRACTOR SHALL PROVIDE AND MAINTAIN FLAGGERS AS DIRECTED/APPROVED BY THE ENGINEER AT SUCH POINTS, AND FOR SUCH PERIODS OF TIME AS MAY BE REQUIRED TO PROVIDE FOR THE SAFETY OF THE TRAVELING PUBLIC AND THE CONTRACTOR'S 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 THE ENGINEER, TO CLEAN THE ROADWAY TO THE SATISFACTION OF THE ENGINEER.

4. HAULING EQUIPMENT

- (1) THE USE OF RUBBER-TIRED EQUIPMENT WILL BE REQUIRED FOR MOVING DIRT OR OTHER MATERIALS ALONG OR ACROSS PAVED 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 ENGINEER.
- (2) THROUGHOUT CONSTRUCTION OPERATIONS, THE CONTRACTOR WILL BE REQUIRED TO CONDUCT THEIR HAULING OPERATIONS IN MANNER SUCH THAT VEHICLES WILL NOT HAUL OVER PREVIOUSLY RECOMPACTED SUBGRADE OR COMPACTED BASE MATERIAL, EXCEPT IN SHORT SECTIONS FOR DUMPING MANIPULATIONS.

5. FINAL CLEAN UP

UPON COMPLETION OF THE WORK AND BEFORE FINAL ACCEPTANCE AND FINAL PAYMENT IS MADE, 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 SLIGHTLY CONDITION.


6. PAYMENT

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

Plotted on: 9/29/2017


Design File name: P:\11135\01\des\gn\Civil\TCP\1113501\_TCP\_Narr.dgn

REV. NO.	DATE	DESCRIPTION	BY



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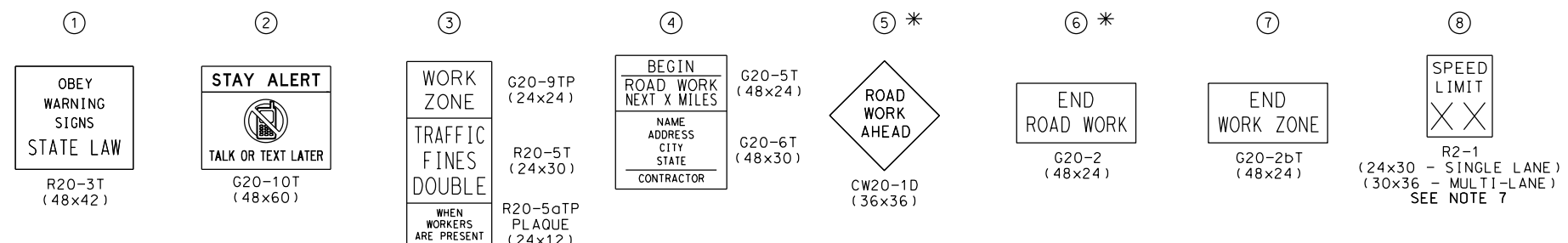
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TCP NARRATIVE

DGN:	FED. RD. DIV. NO.:	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	35

Plotted on: 9/29/2017

Design File name: P:\111\113501\113501\_TCP\_LINEDIAGRAMS.dgn



- NOTE:
- CONTRACTOR SHALL PLACE ADVANCE WARNING SIGNS ACCORDING TO DISTANCE "X" ON STANDARD BC(2)-14
  - CONTRACTOR SHALL FIELD VERIFY POSTED SPEED FOR "X" SPACING
  - SIGN LOCATIONS MAY BE ADJUSTED DUE TO CONDITIONS AS APPROVED BY THE ENGINEER
  - CONFLICTING SIGNS SHALL BE COVERED BY CONTRACTOR OR AS DIRECTED BY THE ENGINEER
  - SIGNS SHOWN SHALL BE COORDINATED WITH SPECIFIC WORK TRAFFIC CONTROL DETAILS INCLUDED IN THE PLANS
  - SIGNS 5 & 6 TO BE MOVED AND PLACED ONLY IN ADVANCE OF WHERE WORK IS BEING PERFORMED
  - SIGN 8 SHALL DISPLAY APPROPRIATE SPEED LIMIT IN PLACE OF "XX"

**LEGEND**

- CONSTRUCTION WARNING SIGN
- TRAFFIC FLOW
- WORK ZONE

POSTED SPEED	LONGITUDINAL BUFFER SPACE "Y" DISTANCE
MPH	FT (APPROX)
30	90
35	120
40	155
45	195
50	240
55	295
60	350
65	410
70	475

\* SEE NOTE 6 FOR TYPICAL USE OF SIGNS 5 & 6

DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

NOT TO SCALE

REV. NO.	DATE	DESCRIPTION	BY

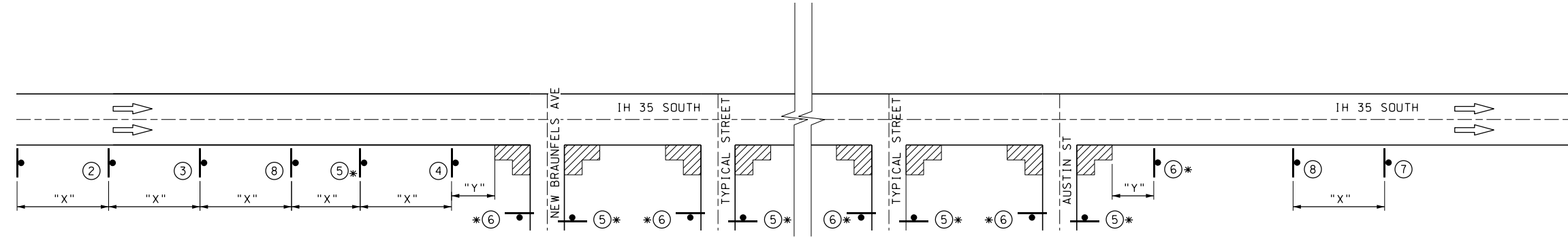
**PAPE-DAWSON ENGINEERS**  
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 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



TCP LINE DIAGRAM

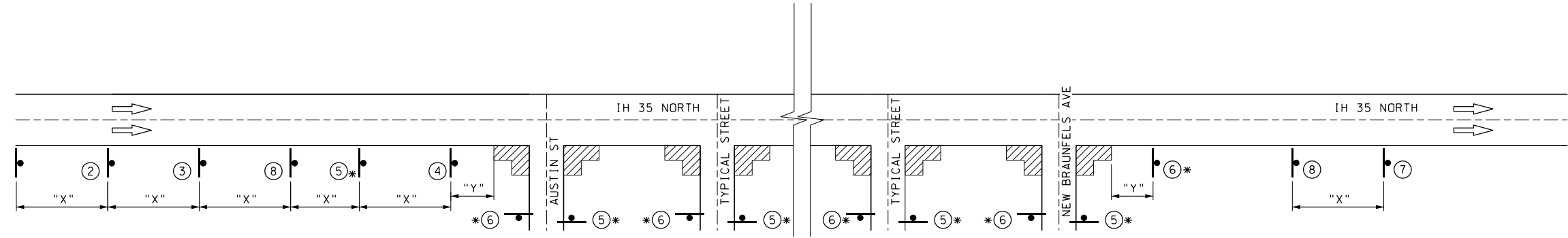
SHEET 1 OF 3

DGN:	FED. NO. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	36



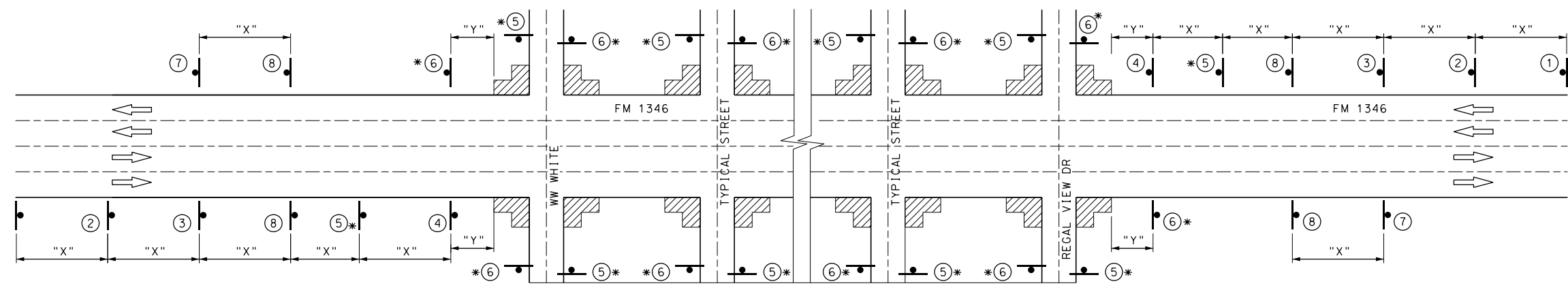
IH 35 SOUTHBOUND FROM NEW BRAUNFELS AVE TO AUSTIN ST

SHEETS 101 - 104 - REFER TO TCP (1-1c) FOR ADDITIONAL INFORMATION  
 SHEETS 98 - 100, 105 - 109 - REFER TO TCP (1-4d) FOR ADDITIONAL INFORMATION



IH 35 NORTHBOUND FROM AUSTIN ST TO NEW BRAUNFELS AVE

SHEETS 85 - 94 - REFER TO TCP (1-1c) FOR ADDITIONAL INFORMATION  
 SHEETS 95 - 96 - REFER TO TCP (1-4d) FOR ADDITIONAL INFORMATION

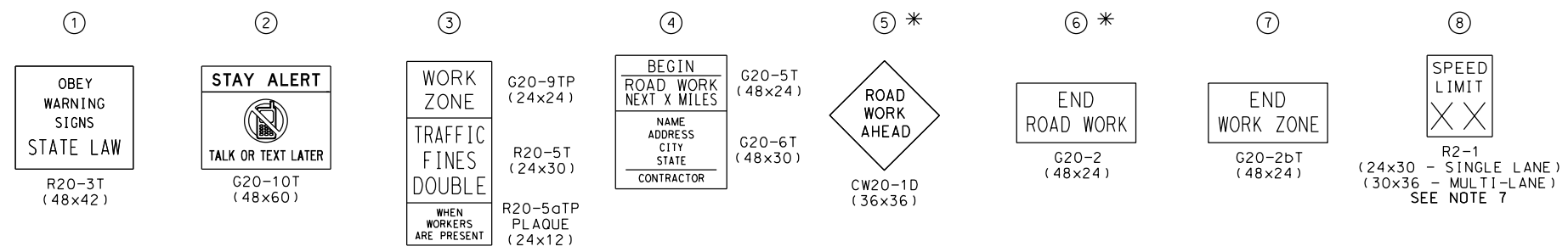


E HOUSTON FROM WW WHITE RD TO REGAL VIEW DR

SHEETS 110 - 122 - REFER TO TCP (1-4A) FOR ADDITIONAL INFORMATION

Plotted on: 9/29/2017

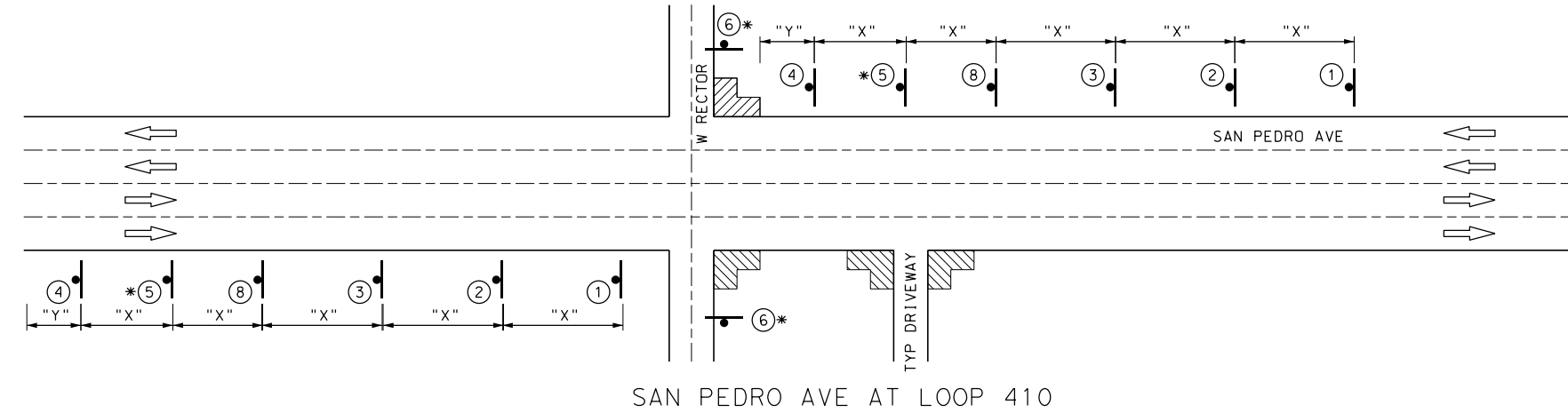
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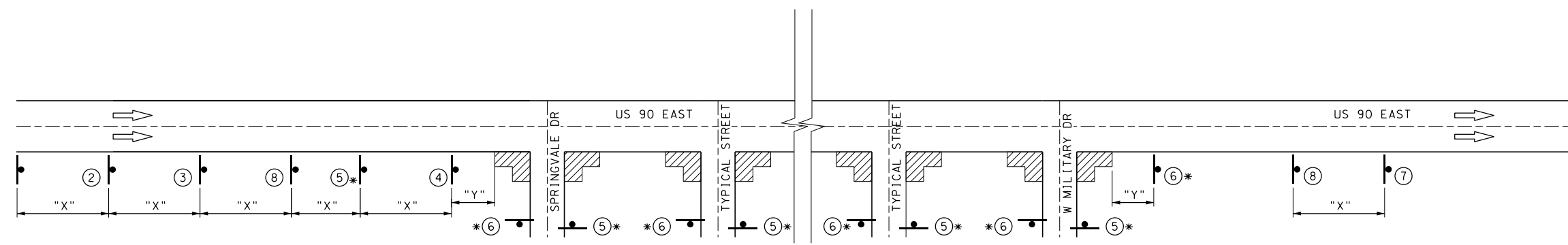
- NOTE:
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  - CONTRACTOR SHALL FIELD VERIFY POSTED SPEED FOR "X" SPACING
  - SIGN LOCATIONS MAY BE ADJUSTED DUE TO CONDITIONS AS APPROVED BY THE ENGINEER
  - CONFLICTING SIGNS SHALL BE COVERED BY CONTRACTOR OR AS DIRECTED BY THE ENGINEER
  - SIGNS SHOWN SHALL BE COORDINATED WITH SPECIFIC WORK TRAFFIC CONTROL DETAILS INCLUDED IN THE PLANS
  - SIGNS 5 & 6 TO BE MOVED AND PLACED ONLY IN ADVANCE OF WHERE WORK IS BEING PERFORMED
  - SIGN 8 SHALL DISPLAY APPROPRIATE SPEED LIMIT IN PLACE OF "XX"

LEGEND		POSTED SPEED	LONGITUDINAL BUFFER SPACE "Y" DISTANCE
	CONSTRUCTION WARNING SIGN	MPH	FT (APPROX)
	TRAFFIC FLOW		
	WORK ZONE		
		30	90
		35	120
		40	155
		45	195
		50	240
		55	295
		60	350
		65	410
		70	475

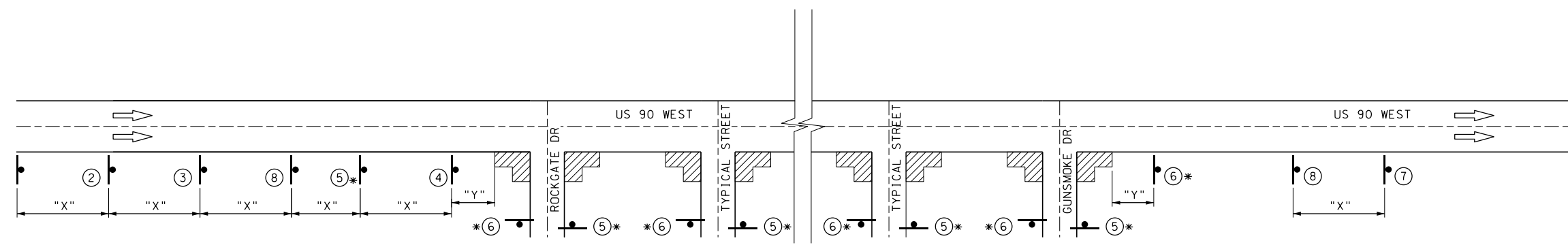
\* SEE NOTE 6 FOR TYPICAL USE OF SIGNS 5 & 6



SAN PEDRO AVE AT LOOP 410  
SHEETS 123 - 128 - REFER TO TCP (1-4a) FOR ADDITIONAL INFORMATION



US 90 EASTBOUND FROM SPRINGVALE DR TO W MILITARY DR  
SHEETS 140 - 146, 148 - REFER TO TCP (1-1c) FOR ADDITIONAL INFORMATION  
SHEET 147 - REFER TO TCP (1-4a) FOR ADDITIONAL INFORMATION



US 90 WESTBOUND FROM ROCKGATE DR TO GUNSMOKE DR  
SHEETS 149 - 159 - REFER TO TCP (1-4a) FOR ADDITIONAL INFORMATION

DESIGN  
INTERIM REVIEW  
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ENGINEER: JOHN A. TYLER  
P.E. SERIAL NO: 105193  
DATE: 9/29/2017

REVIEW AND APPROVAL  
INTERIM REVIEW  
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ENGINEER: JAMES A. LUTZ  
P.E. SERIAL NO: 84722  
DATE: 9/29/2017

NOT TO SCALE

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TCP LINE DIAGRAM

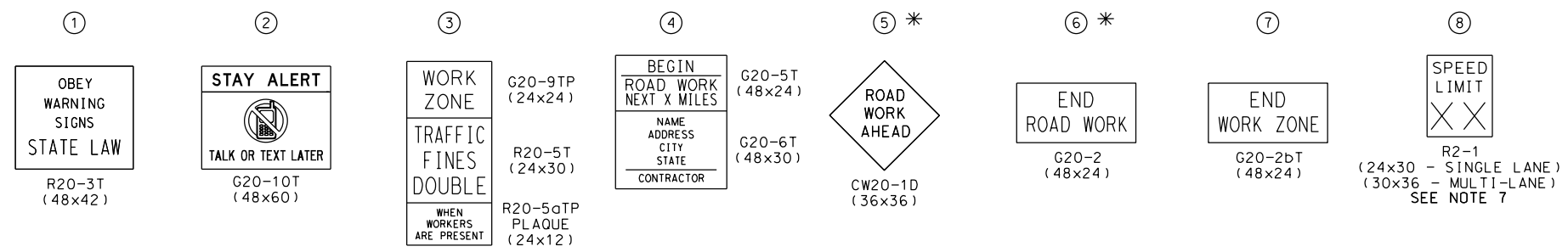
SHEET 2 OF 3

DGN:	FED. NO. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	37

Plotted on: 9/29/2017

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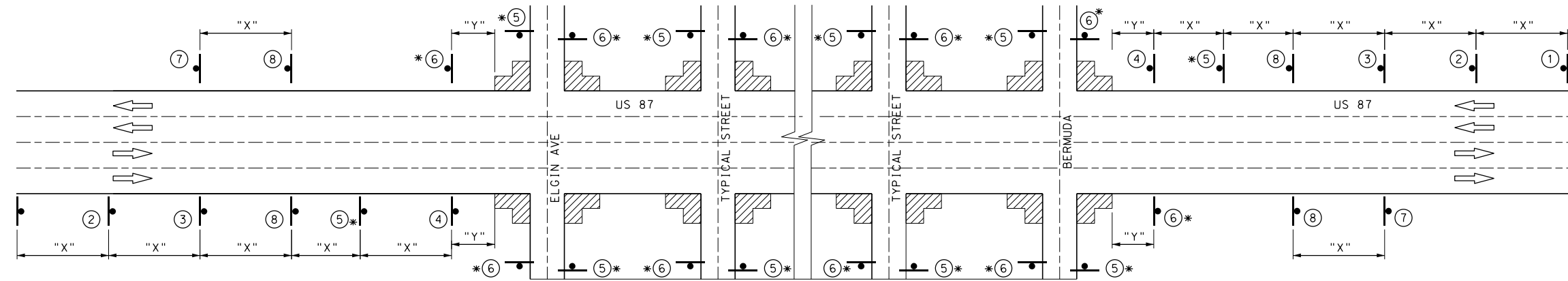
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  - SIGNS 5 & 6 TO BE MOVED AND PLACED ONLY IN ADVANCE OF WHERE WORK IS BEING PERFORMED
  - SIGN 8 SHALL DISPLAY APPROPRIATE SPEED LIMIT IN PLACE OF "XX"

LEGEND

- CONSTRUCTION WARNING SIGN
- TRAFFIC FLOW
- WORK ZONE

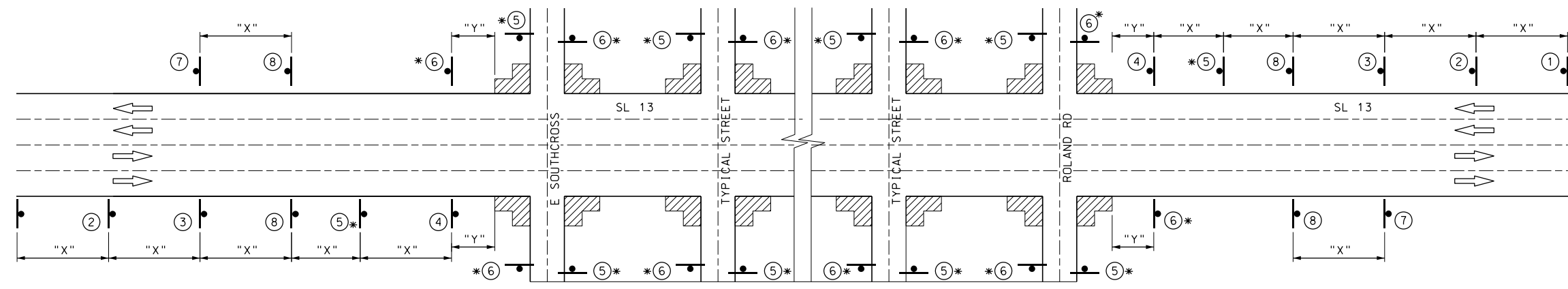
POSTED SPEED	LONGITUDINAL BUFFER SPACE "Y" DISTANCE
MPH	FT (APPROX)
30	90
35	120
40	155
45	195
50	240
55	295
60	350
65	410
70	475

\* SEE NOTE 6 FOR TYPICAL USE OF SIGNS 5 & 6



RIGSBY FROM ELGIN AVE TO BERMUDA

SHEETS 226-230 - REFER TO TCP (1-1a) FOR ADDITIONAL INFORMATION  
 SHEETS 246-247, 268-270 - REFER TO TCP (1-1c) FOR ADDITIONAL INFORMATION  
 SHEETS 211-225, 231-245, 248-267, 271-290 - REFER TO TCP (1-4a) FOR ADDITIONAL INFORMATION



WW WHITE FROM E SOUTHCROSS TO ROLAND RD

SHEETS 161 - 165, 197, 202 - REFER TO TCP (1-1b) FOR ADDITIONAL INFORMATION  
 SHEETS 169 - 173, 198 - 199, 201, 203, 208 - REFER TO TCP (1-1c) FOR ADDITIONAL INFORMATION  
 SHEETS 160, 166 - 168, 174-196, 200, 204-207, 209 - REFER TO TCP (1-4a) FOR ADDITIONAL INFORMATION

DESIGN  
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 ENGINEER: JOHN A. TYLER  
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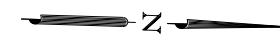
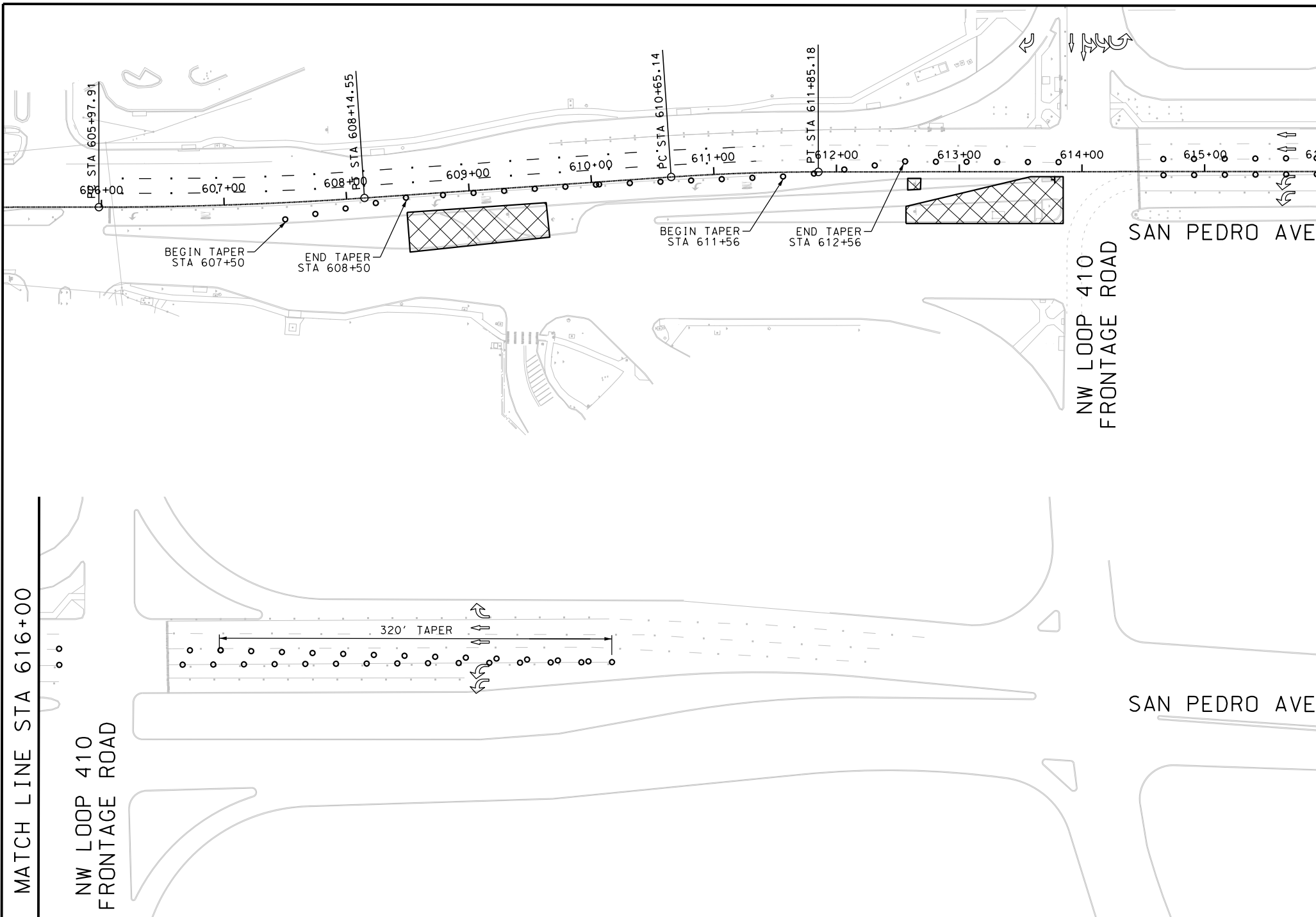
TCP LINE DIAGRAM

SHEET 3 OF 3

DGN:	FED. NO. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:			HIGHWAY NO.:
CHK DGN:	6	TEXAS				VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	38

Plotted on: 9/29/2017

Design Filename: P:\111\35\01\design\Civil\TCP\1113501\_TCP\_San\_Pedro\_TransitCenter\_01.dgn



**LEGEND**

- CONSTRUCTION AREA
- PLASTIC DRUMS
- TRAFFIC FLOW ARROWS

**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.

MATCH LINE STA 616+00

NW LOOP 410 FRONTAGE ROAD

MATCH LINE STA 616+00

DESIGN

**INTERIM REVIEW**

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL

**INTERIM REVIEW**

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 100'

REV. NO.	DATE	DESCRIPTION	BY

**Pape-Dawson Engineers**

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 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
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SAN PEDRO AVE  
 TRANSIT CENTER  
 TRAFFIC CONTROL PLAN  
 PHASE 1  
 NIGHT CLOSURE

**PHASE ONE NOTES**

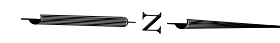
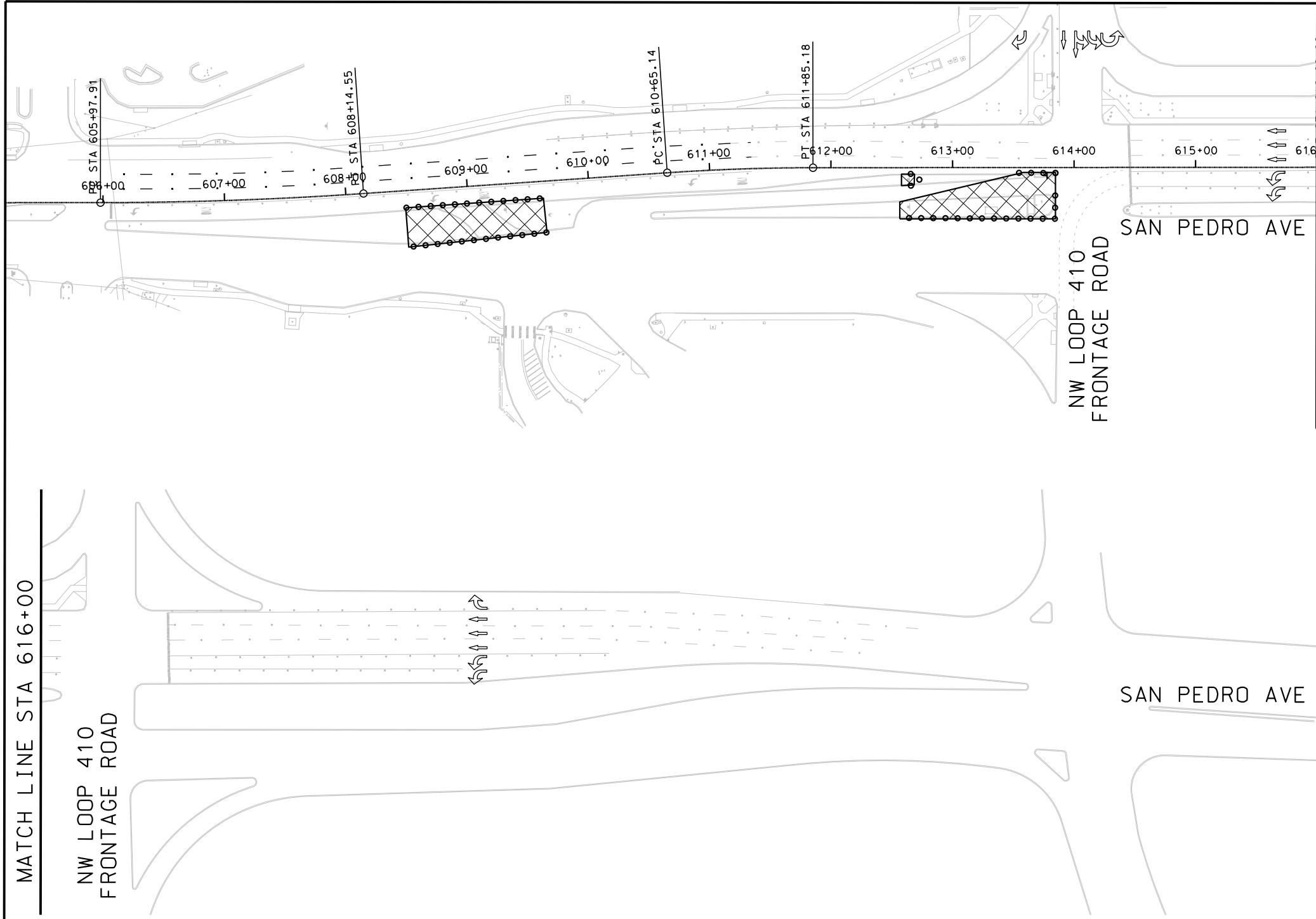
1. PHASE ONE CONSISTS OF THE DEMOLITION AND CONTRUSTION OF THE SAN PEDRO MEDIAN
2. PHASE ONE SHALL BE COMPLETED PRIOR TO BEGINNING PHASE TWO
3. LANE CLOSURES MAY ONLY OCCUR AT NIGHT AND SHALL FOLLOW PHASE ONE NIGHT CLOSURE
4. DAY TIME WORK MAY BE PERFORMED IF LANE CLOSURE IS NOT REQUIRED
5. BUS TRAFFIC INTO THE VIA TRANSIT CENTER SHALL BE MAINTAINED AT ALL TIMES, PROVIDE TEMPORARY ASPHALT TRANSITIONS WHERE NECESSARY (NSP1)
6. BEGIN WITH DEMOLITION OF WEST SIDE OF MEDIAN AND CONSTRUCTION OF BUS LANE TO MAINTAIN ACCESS
7. DEMOLISH AND CONSTRUCT NORTH END OF MEDIAN, CURB, AND CURB RAMPS
8. DEMOLISH AND CONSTRUCT NEW BUS LANE AT SOUTH END OF MEDIAN

SHEET 1 OF 4

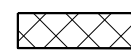


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CHK DWG:	SAT	BEXAR	0915	12	586 39

Plotted on: 9/29/2017

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**LEGEND**

-  CONSTRUCTION AREA
-  PLASTIC DRUMS
-  TRAFFIC FLOW ARROWS

**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.

MATCH LINE STA 616+00

NW LOOP 410 FRONTAGE ROAD

NW LOOP 410 FRONTAGE ROAD

MATCH LINE STA 616+00

**PHASE ONE NOTES**

1. PHASE ONE CONSISTS OF THE DEMOLITION AND CONTRUSTION OF THE SAN PEDRO MEDIAN
2. PHASE ONE SHALL BE COMPLETED PRIOR TO BEGINNING PHASE TWO
3. LANE CLOSURES MAY ONLY OCCUR AT NIGHT AND SHALL FOLLOW PHASE ONE NIGHT CLOSURE
4. DAY TIME WORK MAY BE PERFORMED IF LANE CLOSURE IS NOT REQUIRED
5. BUS TRAFFIC INTO THE VIA TRANSIT CENTER SHALL BE MAINTAINED AT ALL TIMES, PROVIDE TEMPORARY ASPHALT TRANSITIONS WHERE NECESSARY (NSP1)
6. BEGIN WITH DEMOLITION OF WEST SIDE OF MEDIAN AND CONSTRUCTION OF BUS LANE TO MAINTAIN ACCESS
7. DEMOLISH AND CONSTRUCT NORTH END OF MEDIAN, CURB, AND CURB RAMPS
8. DEMOLISH AND CONSTRUCT NEW BUS LANE AT SOUTH END OF MEDIAN

**DESIGN**

INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

**REVIEW AND APPROVAL**

INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 100'

REV. NO.	DATE	DESCRIPTION	BY



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



SAN PEDRO AVE  
 TRANSIT CENTER  
 TRAFFIC CONTROL PLAN  
 PHASE 1  
 DAY CLOSURE

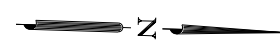
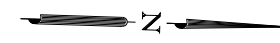
SHEET 2 OF 4

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DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.
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				SHEET NO.
				40



Plotted on: 9/29/2017

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**LEGEND**

- CONSTRUCTION AREA
- PLASTIC DRUMS
- TRAFFIC FLOW ARROWS

**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.

MATCH LINE STA 616+00

NW LOOP 410 FRONTAGE ROAD

MATCH LINE STA 616+00

DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 100'

REV. NO.	DATE	DESCRIPTION	BY



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



SAN PEDRO AVE  
 TRANSIT CENTER  
 TRAFFIC CONTROL PLAN  
 PHASE 2  
 NIGHT CLOSURE

SHEET 3 OF 4

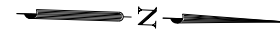
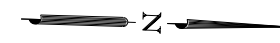
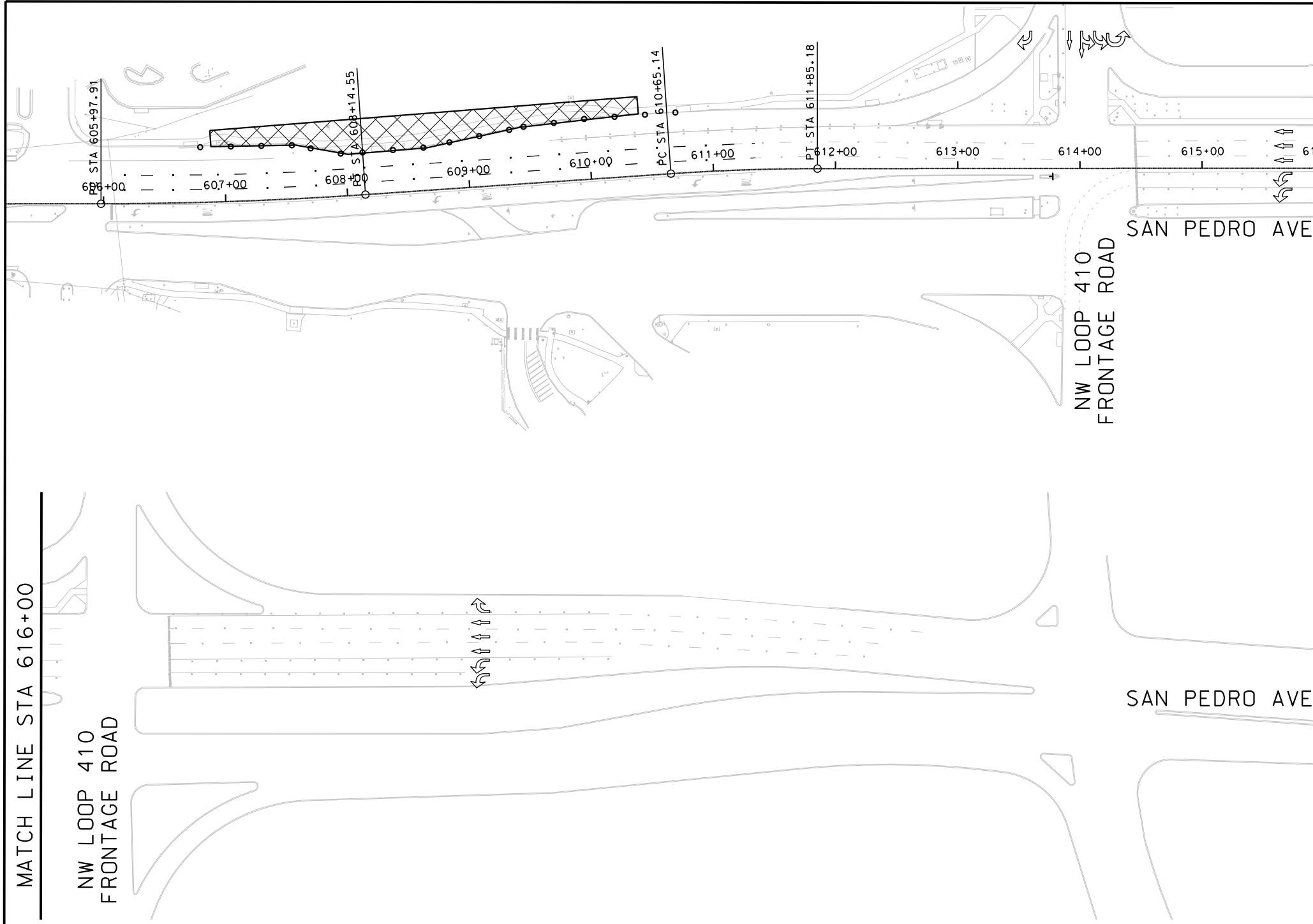
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				586
				SHEET NO.
				41

**PHASE TWO NOTES**




1. PHASE TWO CONSISTS OF CAPPING EXIST INLET, REMOVING EXIST ILLUMINATION POLE, REALIGNING CURB, WIDENING CONC PAVEMENT, AND INSTALLATION OF NEW CURB INLET AND ILLUMINATION POLE
2. LANE CLOSURES MAY ONLY OCCUR AT NIGHT AND SHALL FOLLOW PHASE TWO NIGHT CLOSURE
3. DAY TIME WORK MAY BE PERFORMED IF LANE CLOSURE IS NOT REQUIRED
4. BEGIN WITH REMOVAL AND CAPPING OF EXISTING INLET, DE-ENERGIZE ILLUMINATION POLE, DISASSEMBLE FROM FOUNDATION, AND SAVE FOR LATER USE
5. REMOVE PAVEMENT, CURB, AND SIDEWALK AS SHOWN IN PLANS
6. INSTALL NEW CURB INLET, RCP, AND INSTALL ILLUMINATION POLE
7. CONSTRUCT CONCRETE PAVEMENT
8. FORM CURB AND SIDEWALK

Plotted on: 9/29/2017

Design Filename: P:\111\35\01\design\Civil\TCP\San\_Pedro\_TransitCenter\_04.dgn



**LEGEND**

-  CONSTRUCTION AREA
-  PLASTIC DRUMS
-  TRAFFIC FLOW ARROWS

**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.

MATCH LINE STA 616+00

NW LOOP 410 FRONTAGE ROAD

NW LOOP 410 FRONTAGE ROAD

MATCH LINE STA 616+00

**DESIGN**

**INTERIM REVIEW**

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

**REVIEW AND APPROVAL**

**INTERIM REVIEW**

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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 100'

REV. NO.	DATE	DESCRIPTION	BY



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



SAN PEDRO AVE  
 TRANSIT CENTER  
 TRAFFIC CONTROL PLAN  
 PHASE 2  
 DAY CLOSURE

SHEET 4 OF 4

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.
CHK DGN:	6	TEXAS		VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.
				586
				SHEET NO.
				42

**PHASE TWO NOTES**

1. PHASE TWO CONSISTS OF CAPPING EXIST INLET, REMOVING EXIST ILLUMINATION POLE, REALIGNING CURB, WIDENING CONC PAVEMENT, AND INSTALLATION OF NEW CURB INLET AND ILLUMINATION POLE
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5. REMOVE PAVEMENT, CURB, AND SIDEWALK AS SHOWN IN PLANS
6. INSTALL NEW CURB INLET, RCP, AND INSTALL ILLUMINATION POLE
7. CONSTRUCT CONCRETE PAVEMENT
8. FORM CURB AND SIDEWALK

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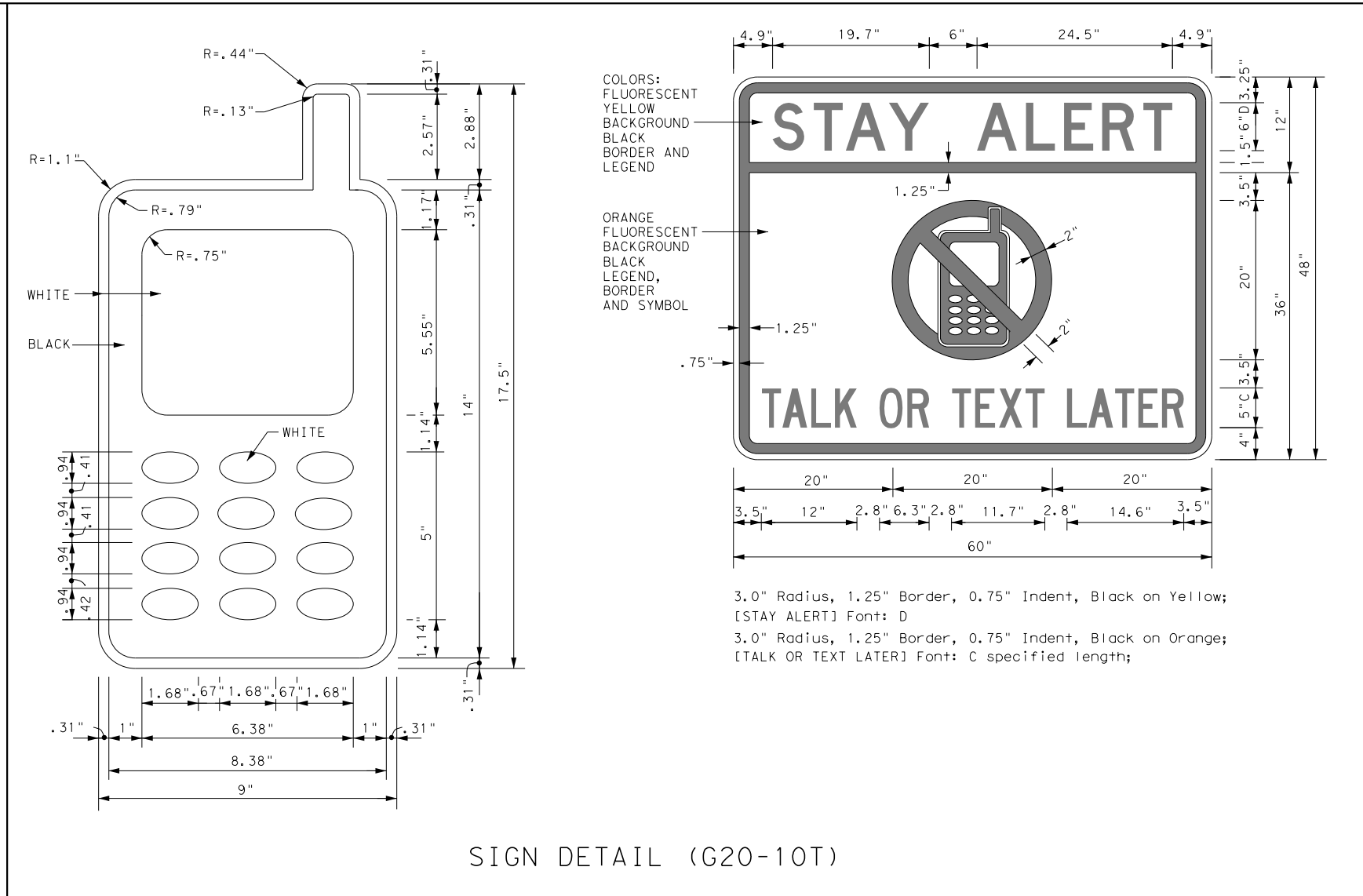
**BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:**

- The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
- The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
- The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
- Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.
- When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
- The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
- All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
- The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
- As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER (see Sign Detail G20-10T) and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. However, the TRAFFIC FINES DOUBLE sign will not be required on projects consisting solely of mobile operation work, such as striping or milling edgeline rumble strips. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.
- Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.
- The Engineer has the final decision on the location of all traffic control devices.
- Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

**WORKER SAFETY APPAREL NOTES:**

- Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.

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Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found on-line at the web address given below or by contacting:

Texas Department of Transportation  
 Traffic Operations Division - TE  
 Phone (512) 416-3118

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT <a href="http://www.txdot.gov">http://www.txdot.gov</a>
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

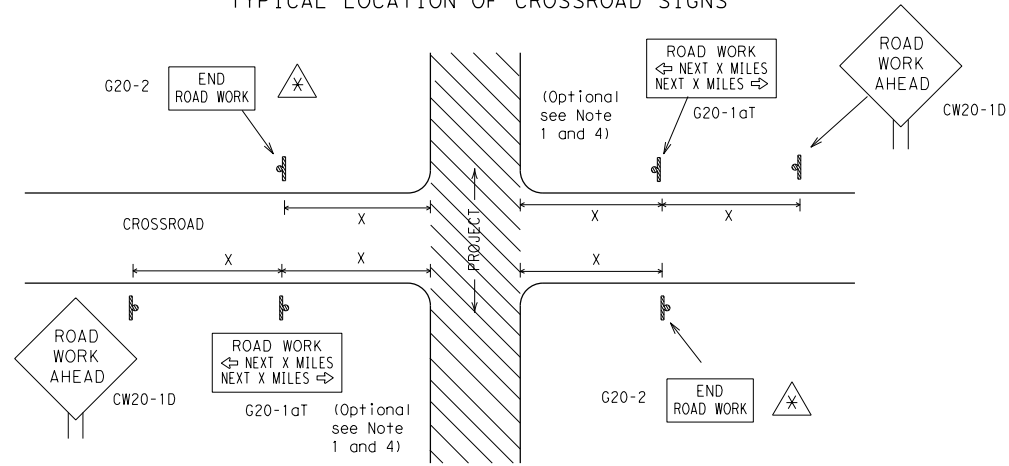
SHEET 1 OF 12

<b>BARRICADE AND CONSTRUCTION          GENERAL NOTES          AND REQUIREMENTS</b>			
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© TxDOT November 2002	CONT: 0915	SECT: 12	JOB: 586
REVISIONS			HIGHWAY: VA
4-03 5-10 8-14	DIST: SAT	COUNTY: BEXAR	SHEET NO.: 43
9-07 7-13			

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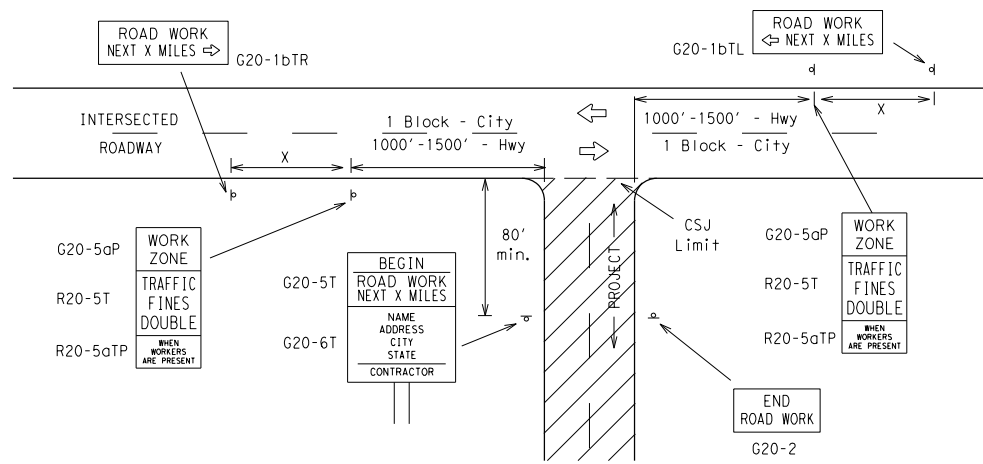
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TYPICAL LOCATION OF CROSSROAD SIGNS



- ⚠ May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of Engineer. (See note 2 below)
- The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D) sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
  - The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK" (G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume. This information shall be shown in the plans.
  - Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
  - The "ROAD WORK NEXT X MILES" (G20-1aT) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
  - Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
  - When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

- The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
- If construction closes the road at a T-intersection the Contractor shall place the "CONTRACTOR NAME" (G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow (G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR) signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING<sup>1,5,6</sup>

Sign Number or Series	SIZE		SPACING	
	Conventional Road	Expressway/Freeway	Posted Speed MPH	Sign Δ Spacing "X" Feet (Apprx.)
CW20 <sup>4</sup>	48" x 48"	48" x 48"	30	120
CW21			35	160
CW22			40	240
CW23			45	320
CW25			50	400
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"	55	500 <sup>2</sup>
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"	60	600 <sup>2</sup>
			65	700 <sup>2</sup>
			70	800 <sup>2</sup>
			75	900 <sup>2</sup>
			80	1000 <sup>2</sup>
			*	* <sup>3</sup>

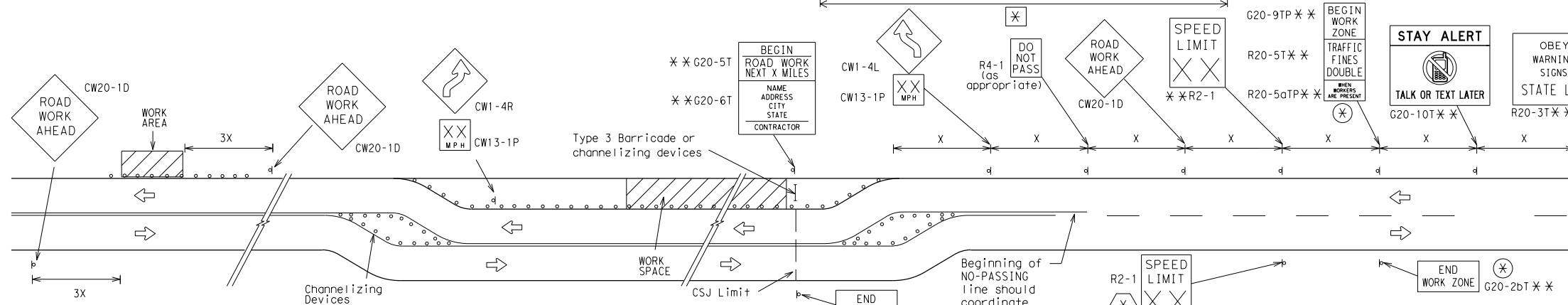
\* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

Δ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

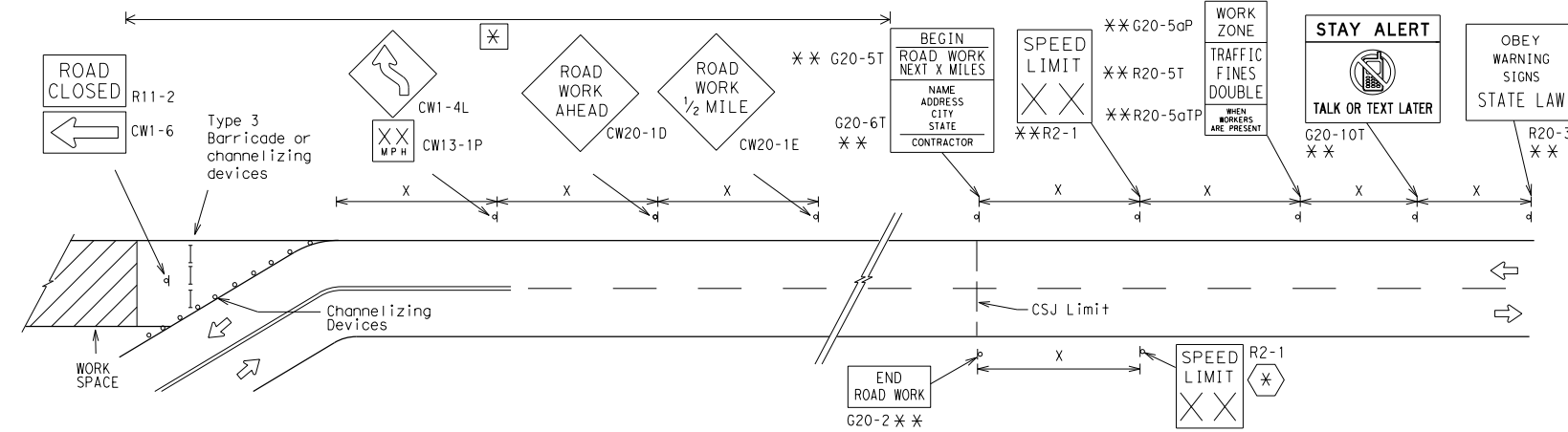
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer. See Note 2 under "Typical Location of Crossroad Signs".
- Only diamond shaped warning sign sizes are indicated.
- See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

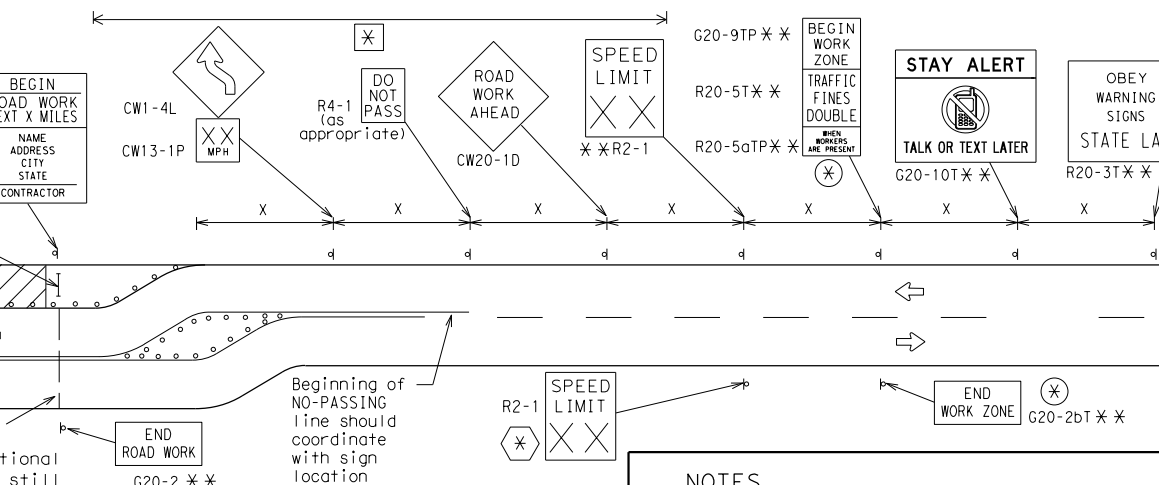


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

⊗ The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

\*\* Required CSJ Limit signing. See Note 10 on BC(1). TRAFFIC FINES DOUBLE signs will not be required on projects consisting solely of mobile operations work.

⊗ Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.

⊗ Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND	
—	Type 3 Barricade
○ ○ ○	Channelizing Devices
⊗	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

SHEET 2 OF 12



BARRICADE AND CONSTRUCTION PROJECT LIMIT

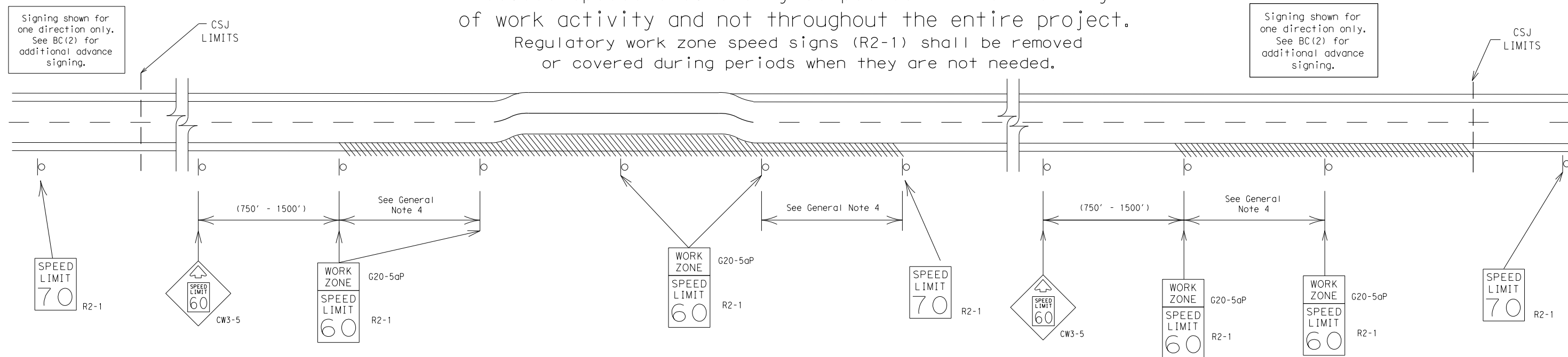
BC(2)-14

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© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
9-07	8-14	DIST	COUNTY	SHEET NO.
7-13		SAT	BEXAR	44

# TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project. Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



## GUIDANCE FOR USE:

### LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present.

Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

- rough road or damaged pavement surface
- substantial alteration of roadway geometrics (diversions)
- construction detours
- grade
- width
- other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

### SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the travelled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered. (See Removing or Covering on BC(4)).

## GENERAL NOTES

- Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
- Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
- Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
- Frequency of work zone speed limit signs should be:
 

40 mph and greater	0.2 to 2 miles
35 mph and less	0.2 to 1 mile
- Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
- Fabrication, erection and maintenance of the "ADVANCE SPEED LIMIT" (CW3-5) sign, "WORK ZONE" (G20-5aP) plaque and the "SPEED LIMIT" (R2-1) signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
- Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
- Techniques that may help reduce traffic speeds include but are not limited to:
  - Law enforcement.
  - Flagger stationed next to sign.
  - Portable changeable message sign (PCMS).
  - Low-power (drone) radar transmitter.
  - Speed monitor trailers or signs.
- Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
- For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

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SHEET 3 OF 12

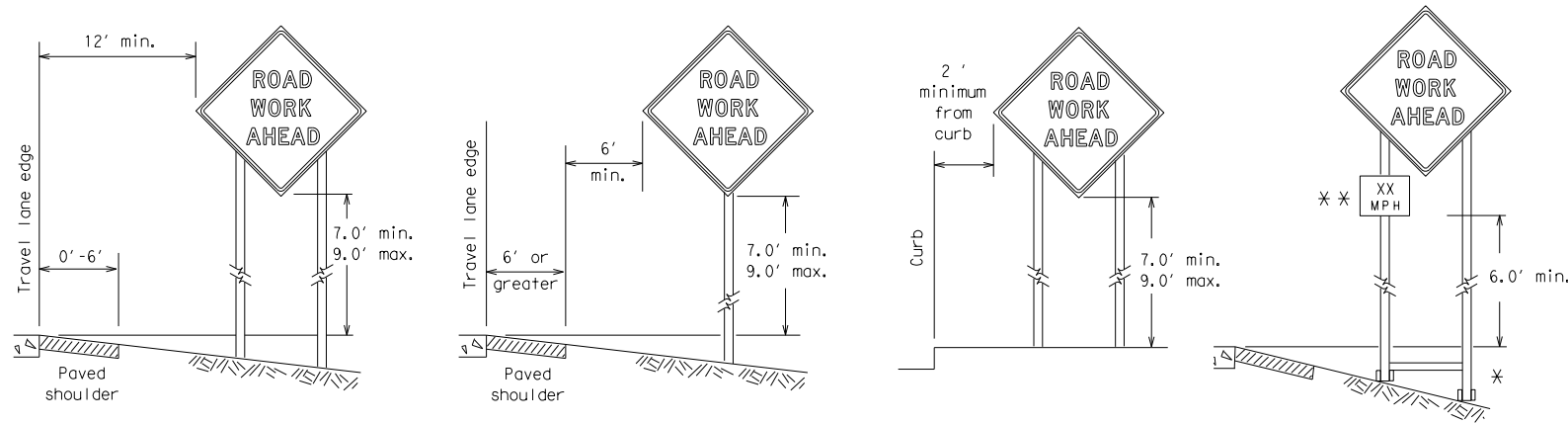


## BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC (3) - 14

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© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
REVISIONS		0915	12	586	VA				
9-07	8-14	DIST	COUNTY		SHEET NO.				
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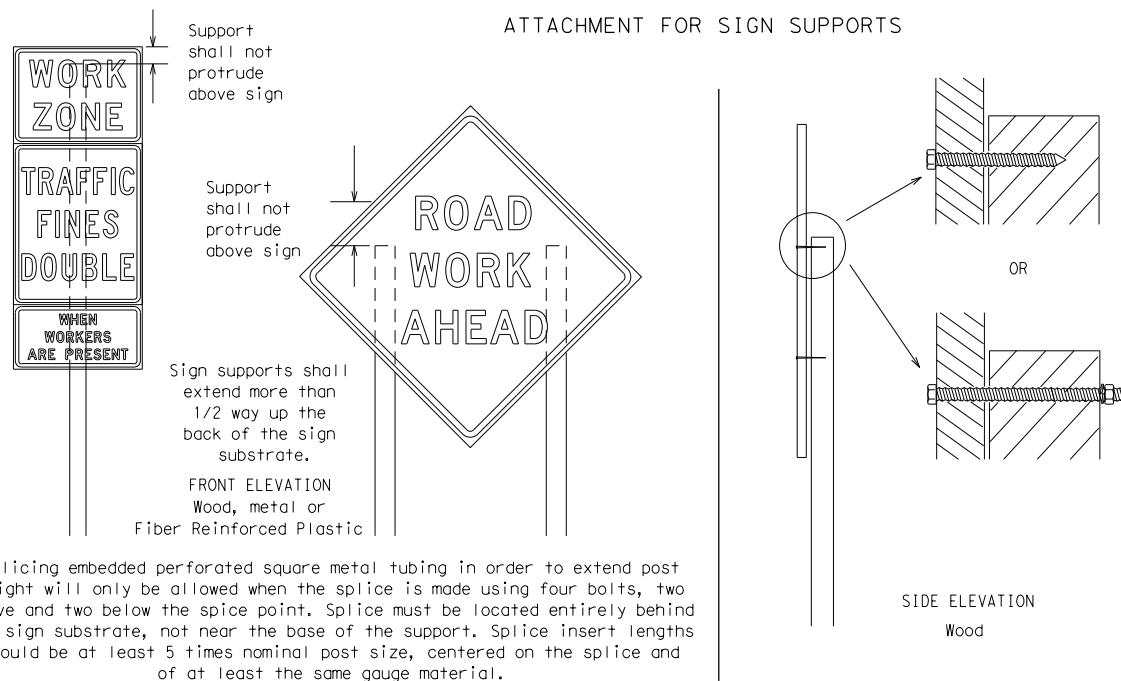
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



\* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

\*\* When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS



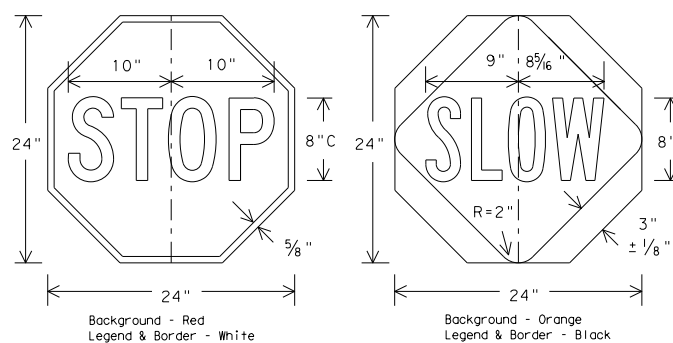
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the splice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

STOP/SLOW PADDLES

- STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24" as detailed below.
- When used at night, the STOP/SLOW paddle shall be retroreflectORIZED.
- STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
- Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

- Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
- When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition.
- When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
- If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
- If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC sheets or the CWZTCD. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
- Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
  - Wooden sign posts shall be painted white.
  - Barricades shall NOT be used as sign supports.
  - All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
  - The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
  - The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
  - The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
  - Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
  - The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.
- DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)**
- The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
    - Long-term stationary - work that occupies a location more than 3 days.
    - Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
    - Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
    - Short, duration - work that occupies a location up to 1 hour.
    - Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

- The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
- The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
- Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
- Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
- Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

- The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

- The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
- "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
- All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

- All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
- White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
- Orange sheeting, meeting the requirements of DMS-8300 Type B<sub>FL</sub> or Type C<sub>FL</sub>, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

- All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

- When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
- Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
- Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
- When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
- Burlap shall NOT be used to cover signs.
- Duct tape or other adhesive material shall NOT be affixed to a sign face.
- Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
- Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
- Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
- Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
- Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
- Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

- Flags may be used to draw attention to warning signs. When used the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.



BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

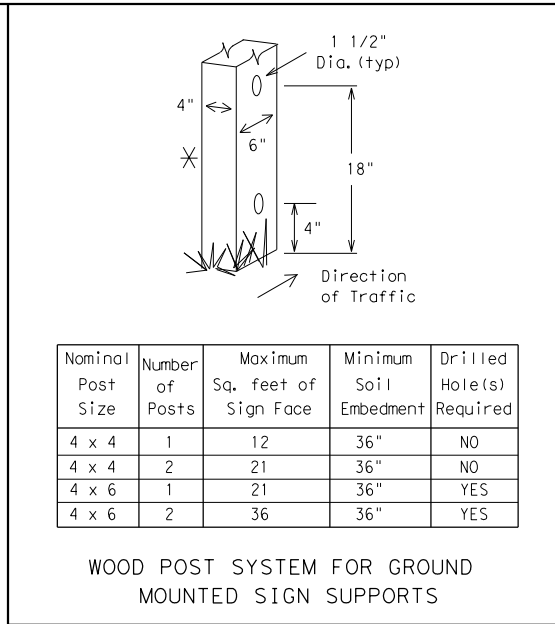
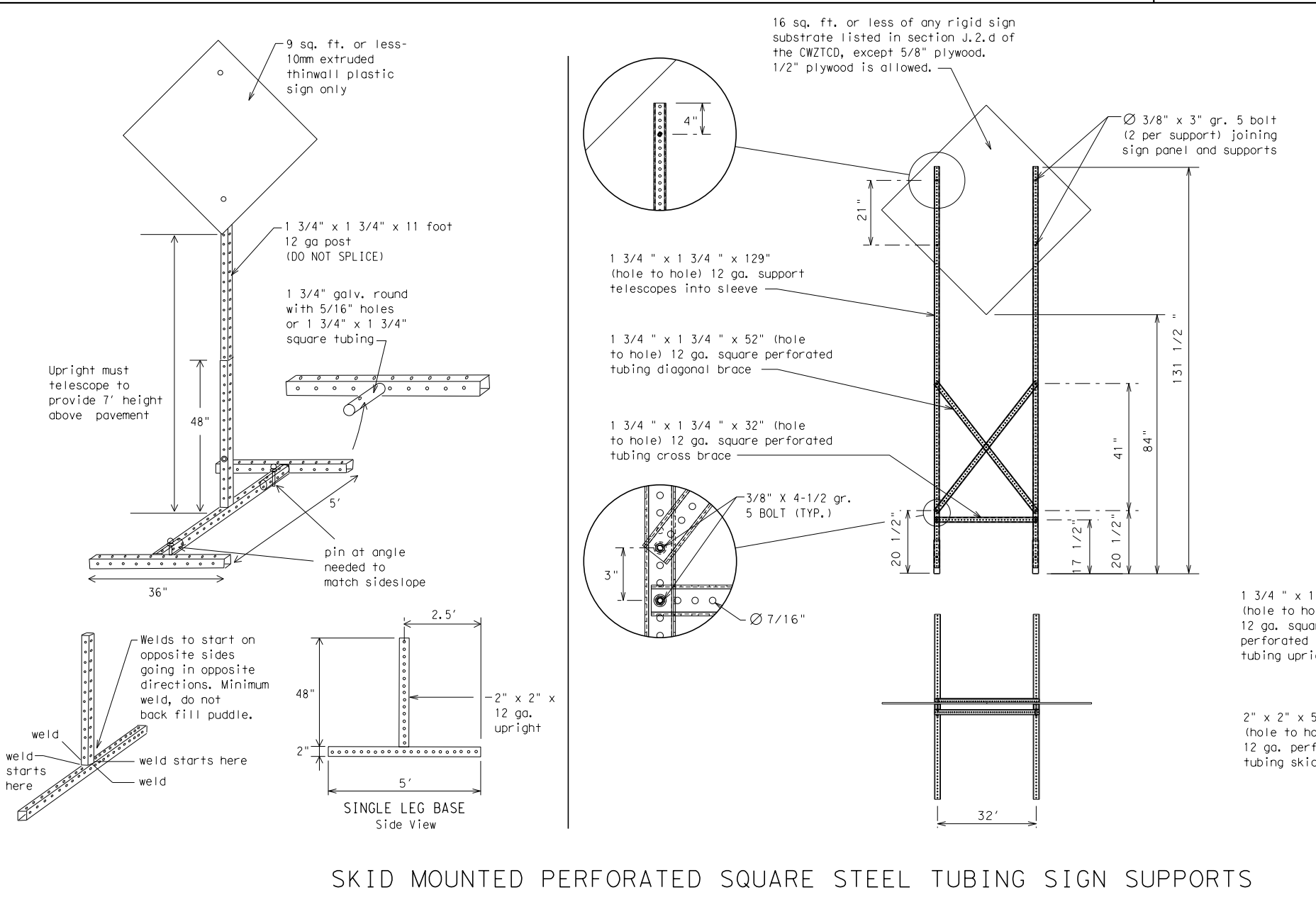
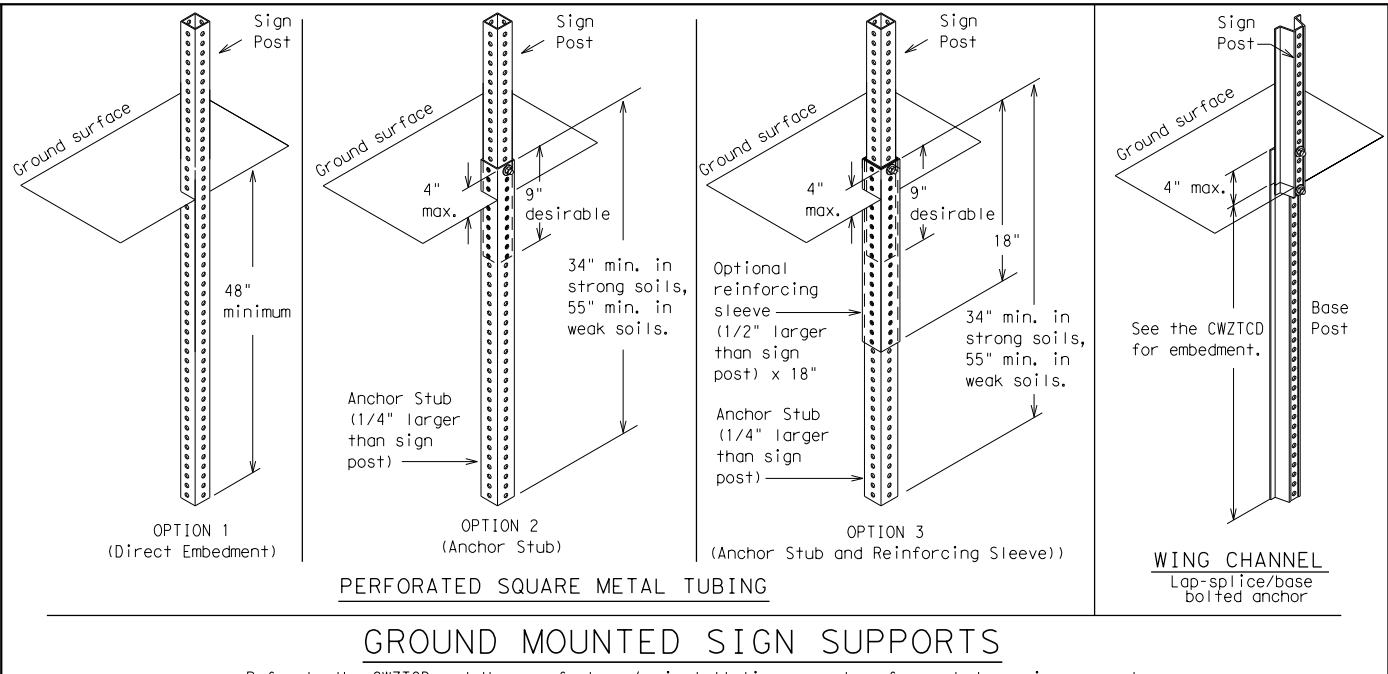
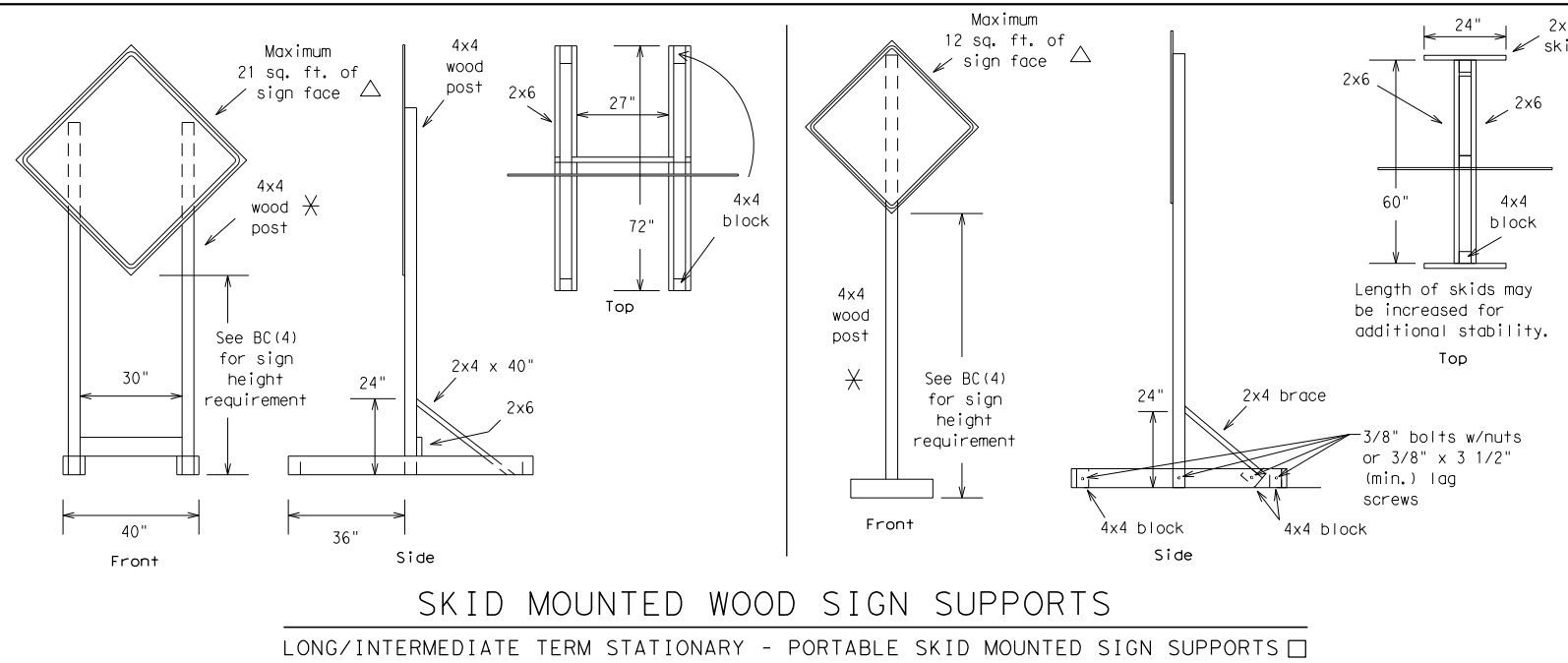
BC (4) - 14

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9-07	8-14	DIST	COUNTY	SHEET NO.					
7-13		SAT	BEXAR	46					

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**WEDGE ANCHORS**  
Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

**OTHER DESIGNS**  
MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

- GENERAL NOTES**
- Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
  - No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
  - When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

- See BC(4) for definition of "Work Duration."
- Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.
- See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

**BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT**  
BC(5) - 14

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7-13	SAT	BEXAR	47	

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WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

# RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

## PORTABLE CHANGEABLE MESSAGE SIGNS

- The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
- Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
- Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
- Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
- Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
- When in use the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
- The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
- The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
- Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
- Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
- Do not use the word "Danger" in message.
- Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
- Do not display messages that scroll horizontally or vertically across the face of the sign.
- The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
- PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
- Each line of text should be centered on the message board rather than left or right justified.
- If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

## Phase 1: Condition Lists

### Road/Lane/Ramp Closure List

FREEWAY CLOSED X MILE
ROAD CLOSED AT SH XXX
ROAD CLSD AT FM XXXX
RIGHT X LANES CLOSED
CENTER LANE CLOSED
NIGHT LANE CLOSURES
VARIOUS LANES CLOSED
EXIT CLOSED
MALL DRIVEWAY CLOSED
XXXXXXXX BLVD CLOSED

### Other Condition List

FRONTAGE ROAD CLOSED
SHOULDER CLOSED XXX FT
RIGHT LN CLOSED XXX FT
RIGHT X LANES OPEN
DAYTIME LANE CLOSURES
I-XX SOUTH EXIT CLOSED
EXIT XXX CLOSED X MILE
RIGHT LN TO BE CLOSED
X LANES CLOSED TUE - FRI

ROADWORK XXX FT
FLAGGER XXXX FT
RIGHT LN NARROWS XXXX FT
MERGING TRAFFIC XXXX FT
LOOSE GRAVEL XXXX FT
DETOUR X MILE
ROADWORK PAST SH XXXX
BUMP XXXX FT
TRAFFIC SIGNAL XXXX FT

ROAD REPAIRS XXXX FT
LANE NARROWS XXXX FT
TWO-WAY TRAFFIC XX MILE
CONST TRAFFIC XXX FT
UNEVEN LANES XXXX FT
ROUGH ROAD XXXX FT
ROADWORK NEXT FRI-SUN
US XXX EXIT X MILES
LANES SHIFT *

\* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

## Phase 2: Possible Component Lists

### Action to Take/Effect on Travel List

MERGE RIGHT
DETOUR NEXT X EXITS
USE EXIT XXX
STAY ON US XXX SOUTH
TRUCKS USE US XXX N
WATCH FOR TRUCKS
EXPECT DELAYS
REDUCE SPEED XXX FT
USE OTHER ROUTES
STAY IN LANE *

FORM X LINES RIGHT
USE XXXXX RD EXIT
USE EXIT I-XX NORTH
USE I-XX E TO I-XX N
WATCH FOR TRUCKS
EXPECT DELAYS
PREPARE TO STOP
END SHOULDER USE
WATCH FOR WORKERS

### Location List

AT FM XXXX
BEFORE RAILROAD CROSSING
NEXT X MILES
PAST US XXX EXIT
XXXXXXXX TO XXXXXXX
US XXX TO FM XXXX

### Warning List

SPEED LIMIT XX MPH
MAXIMUM SPEED XX MPH
MINIMUM SPEED XX MPH
ADVISORY SPEED XX MPH
RIGHT LANE EXIT
USE CAUTION
DRIVE SAFELY
DRIVE WITH CARE

### \*\* Advance Notice List

TUE-FRI XX AM - X PM
APR XX - XX X PM-X AM
BEGINS MONDAY
BEGINS MAY XX
MAY X-X XX PM - XX AM
NEXT FRI-SUN
XX AM TO XX PM
NEXT TUE AUG XX
TONIGHT XX PM - XX AM

\*\* See Application Guidelines Note 6.

## APPLICATION GUIDELINES

- Only 1 or 2 phases are to be used on a PCMS.
- The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
- A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
- A Location Phase is necessary only if a distance or location is not included in the first phase selected.
- If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
- For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

## WORDING ALTERNATIVES

- The words RIGHT, LEFT and ALL can be interchanged as appropriate.
- Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
- EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
- Highway names and numbers replaced as appropriate.
- ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
- AHEAD may be used instead of distances if necessary.
- FT and MI, MILE and MILES interchanged as appropriate.
- AT, BEFORE and PAST interchanged as needed.
- Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

## FULL MATRIX PCMS SIGNS

- When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
- When symbol signs, such as the "Flagger Symbol" (CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
- When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
- A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

WORD OR PHRASE	ABBREVIATION	WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD	Major	MAJ
Alternate	ALT	Miles	MI
Avenue	AVE	Miles Per Hour	MPH
Best Route	BEST RTE	Minor	MNR
Boulevard	BLVD	Monday	MON
Bridge	BRDG	Normal	NORM
Canal	CANT	North	N
Center	CTR	Northbound	(route) N
Construction Ahead	CONST AHD	Parking	PKING
CROSSING	XING	Road	RD
Detour Route	DETOUR RTE	Right Lane	RT LN
Do Not	DONT	Saturday	SAT
East	E	Service Road	SERV RD
Eastbound	(route) E	Shoulder	SHLDR
Emergency	EMER	Slippery	SLIP
Emergency Vehicle	EMER VEH	South	S
Entrance, Enter	ENT	Southbound	(route) S
Express Lane	EXP LN	Speed	SPD
Expressway	EXPWY	Street	ST
XXXX Feet	XXXX FT	Sunday	SUN
Fog Ahead	FOG AHD	Telephone	PHONE
Freeway	FRWY, FWY	Temporary	TEMP
Freeway Blocked	FWY BLKD	Thursday	THURS
Friday	FRI	To Downtown	TO DWNTN
Hazardous Driving	HAZ DRIVING	Traffic	TRAF
Hazardous Material	HAZMAT	Travelers	TRVLR
High-Occupancy Vehicle	HOV	Tuesday	TUES
Highway	HWY	Time Minutes	TIME MIN
Hour(s)	HR, HRS	Upper Level	UPR LEVEL
Information	INFO	Vehicles (s)	VEH, VEHS
It Is	ITS	Warning	WARN
Junction	JCT	Wednesday	WED
Left	LFT	Weight Limit	WT LIMIT
Left Lane	LFT LN	West	W
Lane Closed	LN CLOSED	Westbound	(route) W
Lower Level	LWR LEVEL	Wet Pavement	WET PVMT
Maintenance	MAINT	Will Not	WONT

Roadway designation # IH-number, US-number, SH-number, FM-number



BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC (6) - 14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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9-07	8-14	DIST	COUNTY	SHEET NO.
7-13	SAT	BEXAR		48

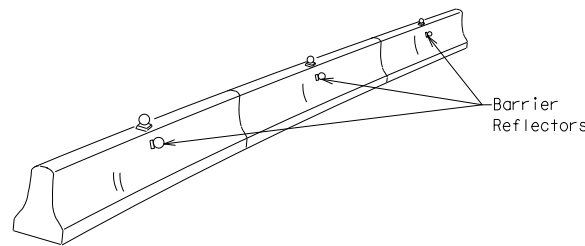
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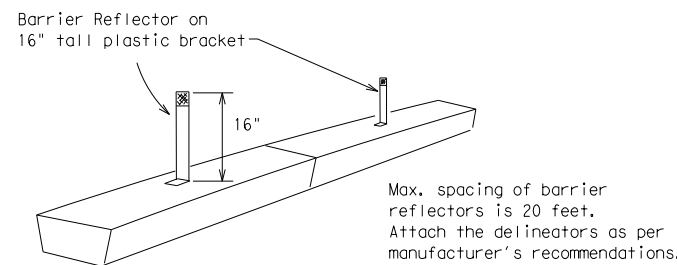


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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.

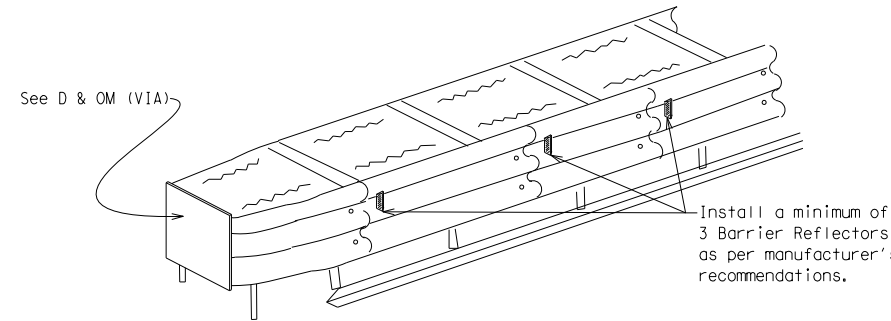


CONCRETE TRAFFIC BARRIER (CTB)



LOW PROFILE CONCRETE BARRIER (LPCB)

- Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
- Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional) while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
- When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
- Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
- Maximum spacing of Barrier Reflectors is forty (40) feet.
- Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
- Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
- Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
- Single slope barriers shall be delineated as shown on the above detail.



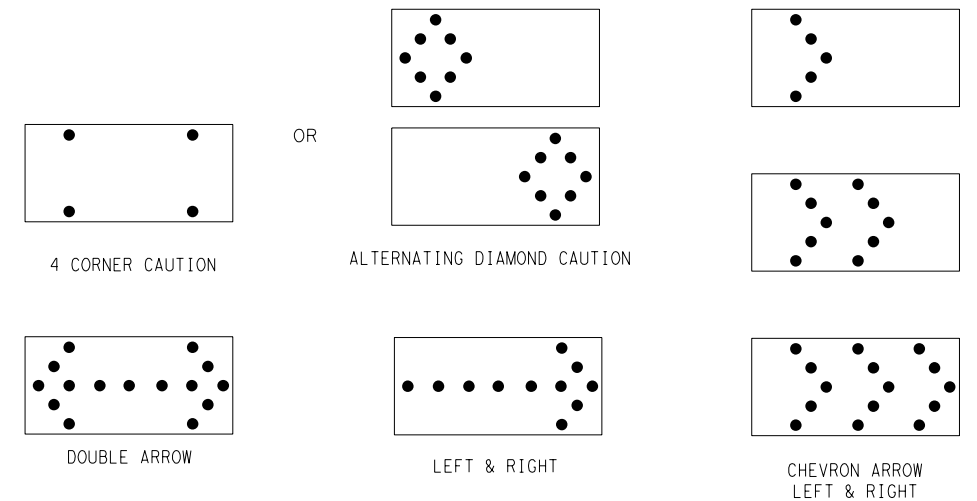
DELINEATION OF END TREATMENTS

END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet crashworthy standards as defined in the National Cooperative Highway Research Report 350. Refer to the CWZTCD List for approved end treatments and manufacturers.

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

- The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
- Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
- The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
- The Flashing Arrow Board should be able to display the following symbols:



- The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
- The straight line caution display is NOT ALLOWED.
- The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
- Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
- The sequential arrow display is NOT ALLOWED.
- The flashing arrow display is the TxDOT standard; however, the sequential Chevron display may be used during daylight operations.
- The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
- A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
- A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
- Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

**ATTENTION**  
Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

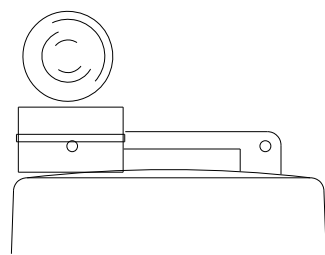
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B<sub>FL</sub> or C<sub>FL</sub> Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
- Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
- The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
- When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
- When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
- The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

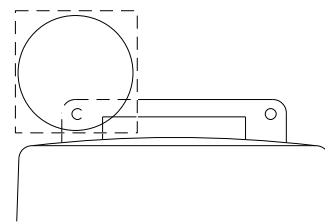
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
- Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
- Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
- Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
- The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

- A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
- The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
- The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
- Round reflectors shall be fully reflectorized, including the area where attached to the drum.
- Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
- The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
- When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
- The warning reflector should be mounted on the side of the handle nearest approaching traffic.
- The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.



Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

FLASHING ARROW BOARDS

SHEET 7 OF 12

TRUCK-MOUNTED ATTENUATORS

- Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the National Cooperative Highway Research Report No. 350 (NCHRP 350) or the Manual for Assessing Safety Hardware (MASH).
- Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
- Refer to the CWZTCD for a list of approved TMAs.
- TMAs are required on freeways unless otherwise noted in the plans.
- A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
- The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.



BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

BC (7) - 14

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**GENERAL NOTES**

- For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
- For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
- For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
- Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
- The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

**GENERAL DESIGN REQUIREMENTS**

Pre-qualified plastic drums shall meet the following requirements:

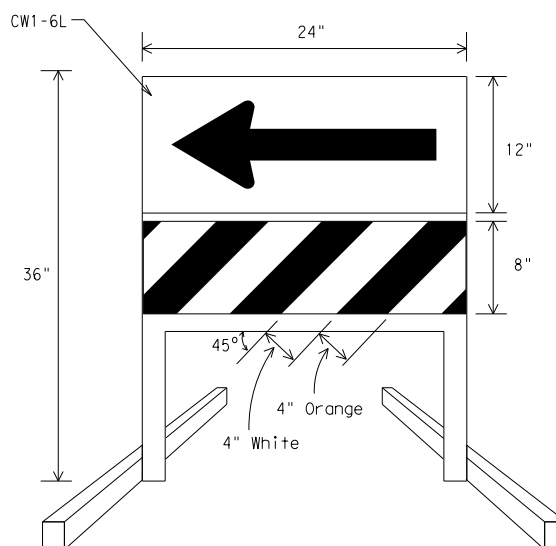
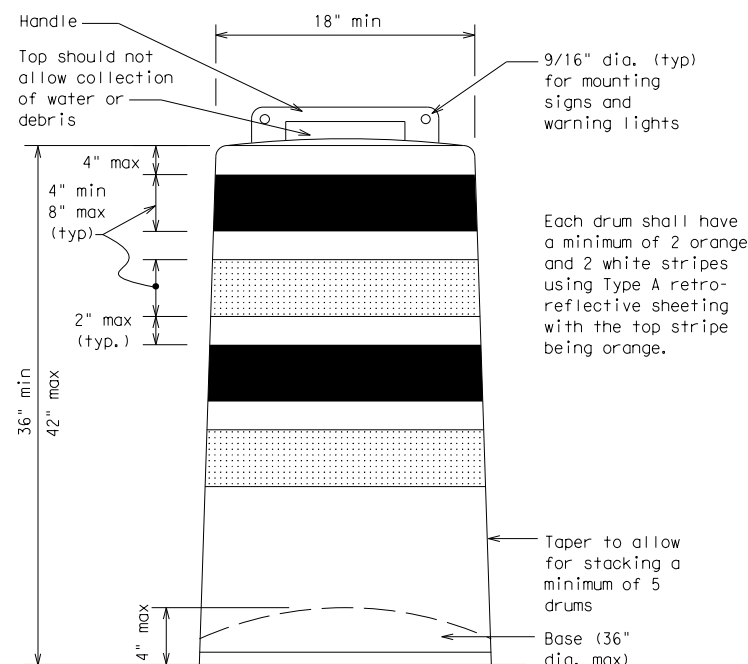
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
- Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
- Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
- The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
- The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
- Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
- Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
- Drum body shall have a maximum unballasted weight of 11 lbs.
- Drum and base shall be marked with manufacturer's name and model number.

**RETROREFLECTIVE SHEETING**

- The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A reflective sheeting shall be supplied unless otherwise specified in the plans.
- The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

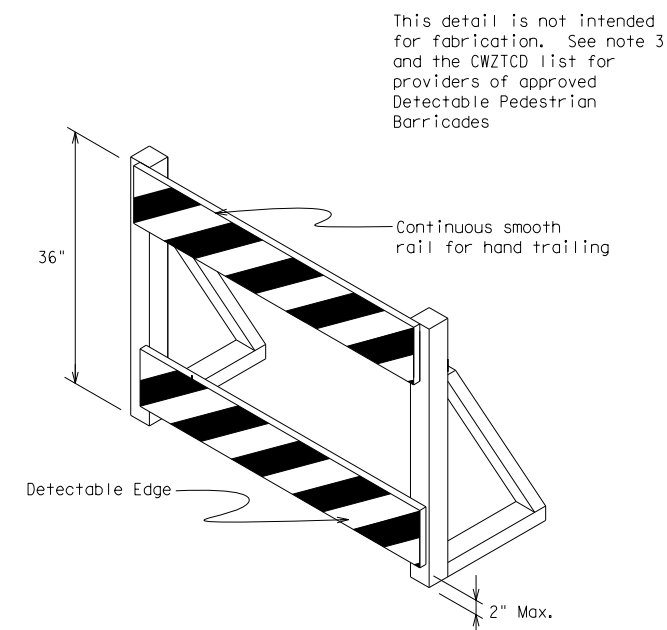
**BALLAST**

- Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
- Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
- Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
- The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
- When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
- Ballast shall not be placed on top of drums.
- Adhesives may be used to secure base of drums to pavement.



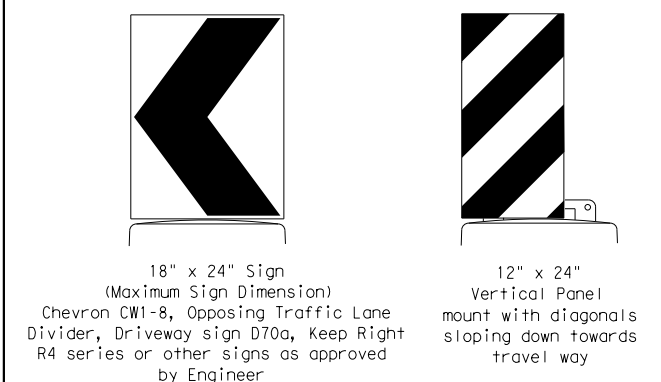
**DIRECTION INDICATOR BARRICADE**

- The Direction Indicator Barricade may be used in tapers, transitions, and other areas where specific directional guidance to drivers is necessary.
- If used, the Direction Indicator Barricade should be used in series to direct the driver through the transition and into the intended travel lane.
- The Direction Indicator Barricade shall consist of One-Direction Large Arrow (CW1-6) sign in the size shown with a black arrow on a background of Type B<sub>FL</sub> or Type C<sub>FL</sub> Orange retroreflective sheeting above a rail with Type A retroreflective sheeting in alternating 4" white and orange stripes sloping downward at an angle of 45 degrees in the direction road users are to pass. Sheeting types shall be as per DMS 8300.
- Double arrows on the Direction Indicator Barricade will not be allowed.
- Approved manufacturers are shown on the CWZTCD List. Ballast shall be as approved by the manufacturers instructions.



**DETECTABLE PEDESTRIAN BARRICADES**

- When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.
- Where pedestrians with visual disabilities normally use the closed sidewalk, a device that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.
- Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
- Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)" and should not be used as a control for pedestrian movements.
- Warning lights shall not be attached to detectable pedestrian barricades.
- Detectable pedestrian barricades may use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

**SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS**

- Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
- Chevrons and other work zone signs with an orange background shall be manufactured with Type B<sub>FL</sub> or Type C<sub>FL</sub> Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
- Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
- Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
- Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
- Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
- Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
- R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

SHEET 8 OF 12

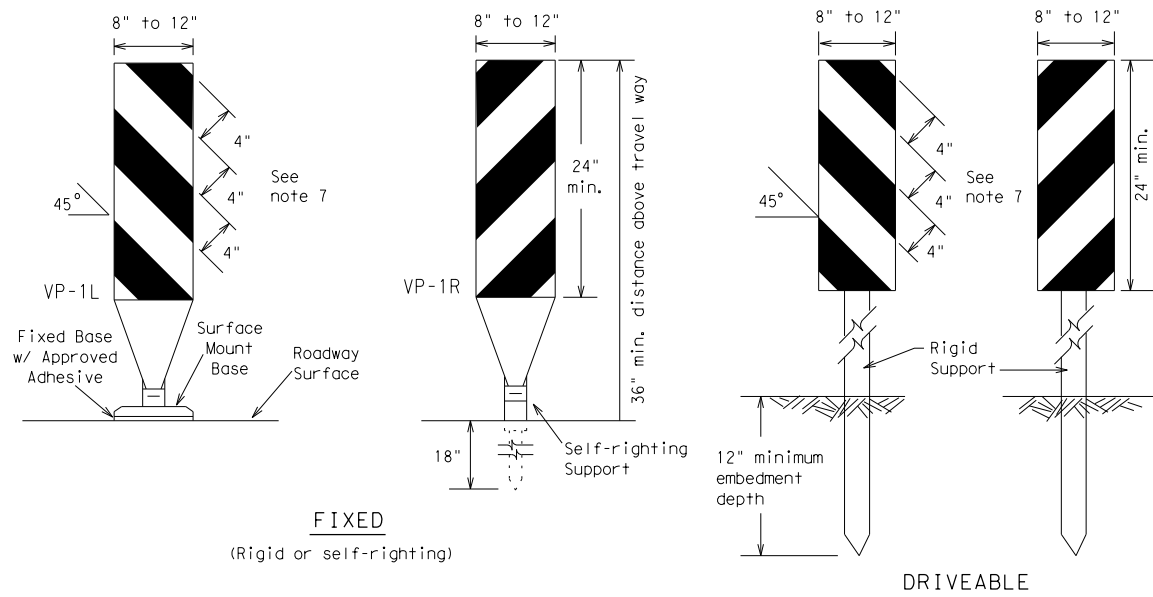


**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

BC (8) - 14

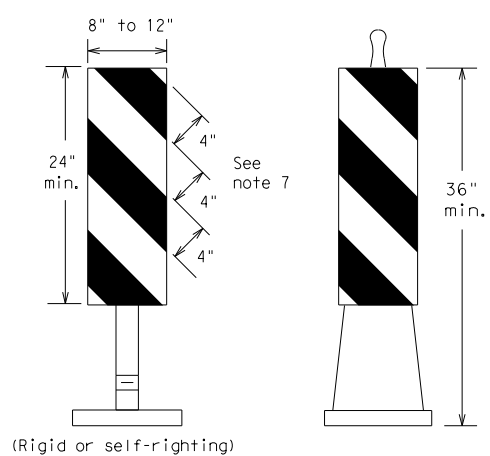
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**FIXED**  
(Rigid or self-righting)

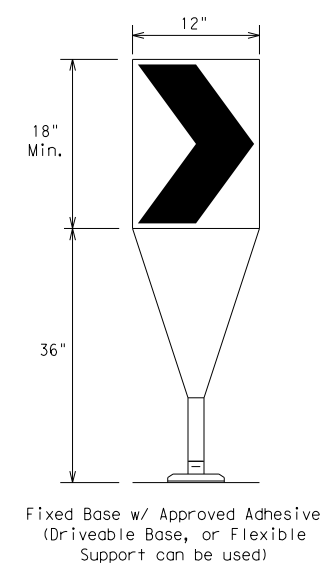
**DRIVEABLE**



**PORTABLE**

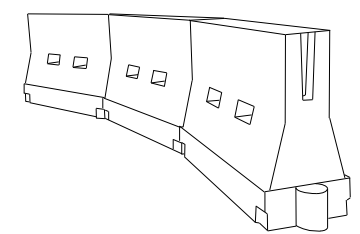
**VERTICAL PANELS (VPs)**

- Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual Appendix B "Treatment of Pavement Drop-offs in Work Zones" for additional guidelines on the use of VP's for drop-offs.
- VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
- VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
- Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Sheeting for the VP's shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
- Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.



- The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
- Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
- Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
- To be effective, the chevron should be visible for at least 500 feet.
- Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B<sub>FL</sub> or Type C<sub>FL</sub> conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
- For Long Term Stationary use on tapers or transitions on freeways and divided highways self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

**CHEVRONS**



**LONGITUDINAL CHANNELIZING DEVICES (LCD)**

- LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
- LCDs may be used instead of a line of cones or drums.
- LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
- LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
- LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10) placed near the top of the LCD along the full length of the device.

**WATER BALLASTED SYSTEMS USED AS BARRIERS**

- Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate NCHRP 350 crashworthiness requirements based on roadway speed and barrier application.
- Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
- Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
- When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

**HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS**

**GENERAL NOTES**

- Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
- Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
- Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
- Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
- The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	L = WS <sup>2</sup> / 60	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

\*\*Taper lengths have been rounded off.  
L=Length of Taper (FT.) W=Width of Offset (FT.)  
S=Posted Speed (MPH)

**SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS**

SHEET 9 OF 12

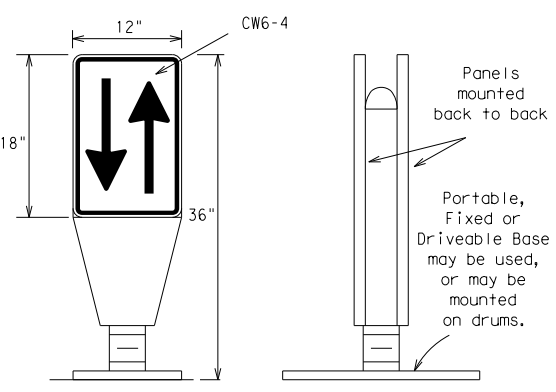


**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

**BC (9) - 14**

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**OPPOSING TRAFFIC LANE DIVIDERS (OTLD)**

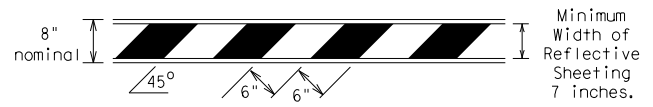
- Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
- The OTLD may be used in combination with 42" cones or VPs.
- Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
- The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B<sub>FL</sub> or Type C<sub>FL</sub> conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

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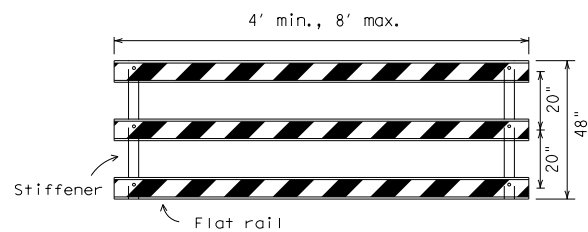
**TYPE 3 BARRICADES**

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.

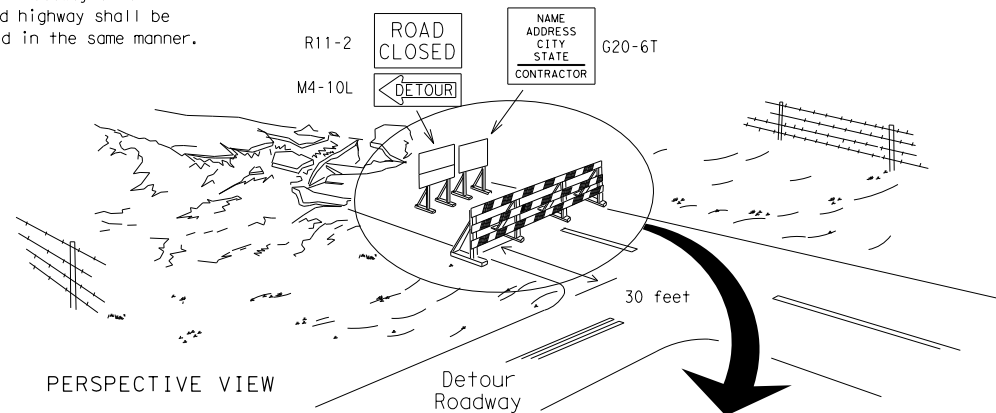


**TYPICAL STRIPING DETAIL FOR BARRICADE RAIL**



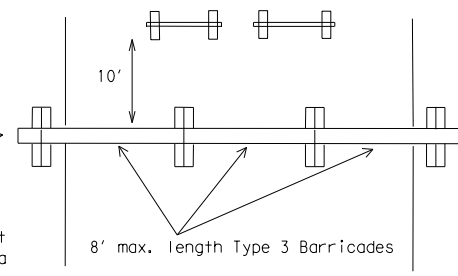
**TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES**

Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

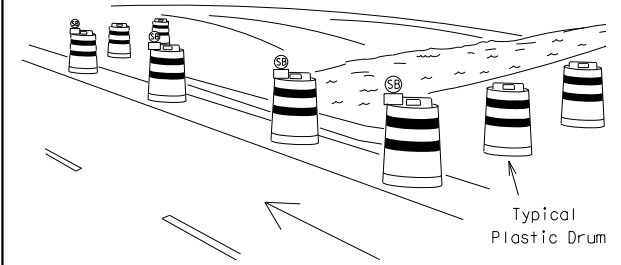
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



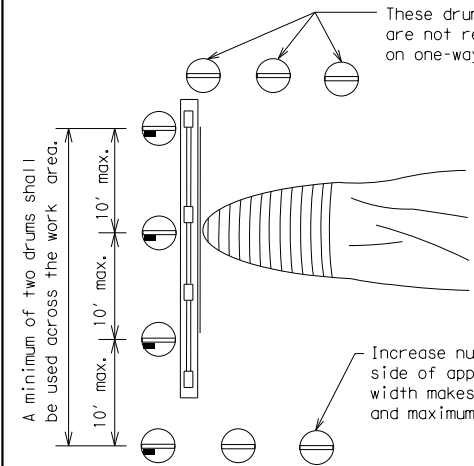
PLAN VIEW

1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

**TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION**



PERSPECTIVE VIEW

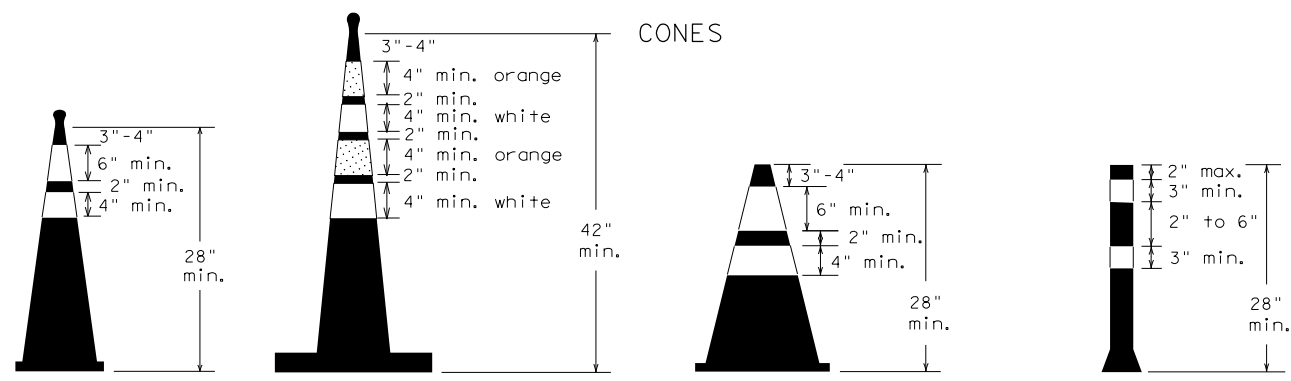


PLAN VIEW

**CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS**

1. Where positive redirection capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.

LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
	Steady burn warning light or yellow warning reflector



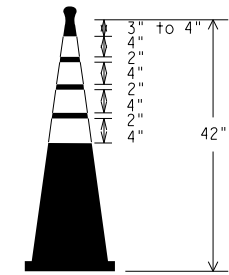
Two-Piece cones

One-Piece cones

Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.  
 42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

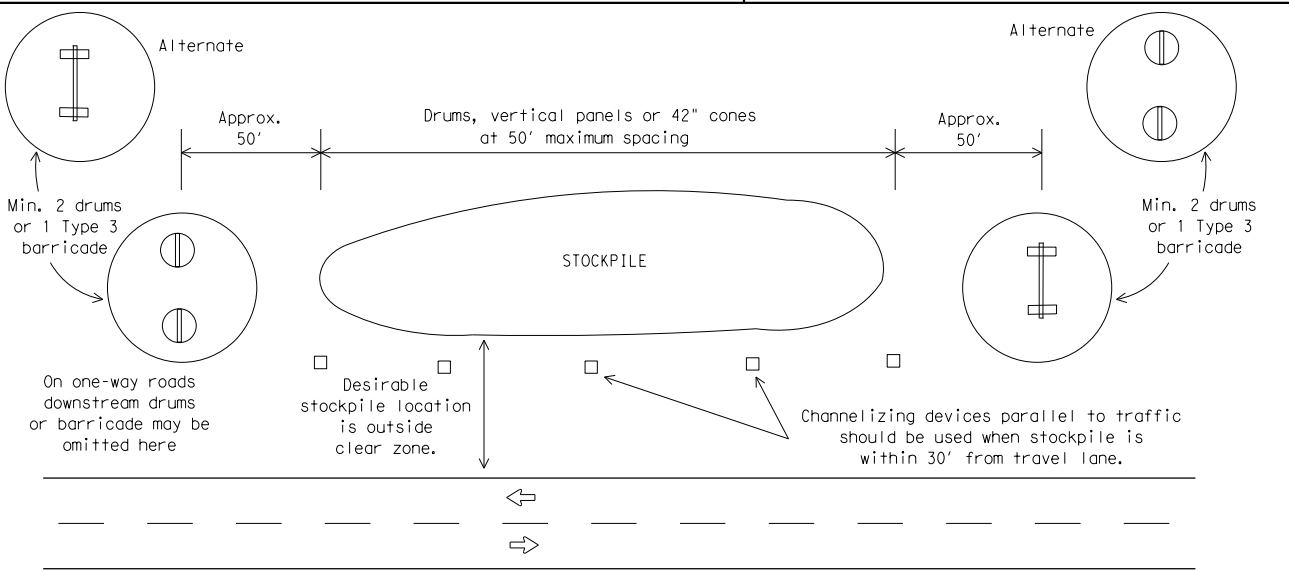
THIS DEVICE SHALL NOT BE USED ON PROJECTS LET AFTER MARCH 2014.



EDGE LINE CHANNELIZER

1. This device is intended only for use in place of a vertical panel to channelize traffic by indicating the edge of the travel lane. It is not intended to be used in transitions or tapers.
2. This device shall not be used to separate lanes of traffic (opposing or otherwise) or warn of objects.
3. This device is based on a 42 inch, two-piece cone with an alternate striping pattern: four 4 inch retroreflective bands, with an approximate 2 inch gap between bands. The color of the band should correspond to the color of the edgeline (yellow for left edgeline, white for right edgeline) for which the device is substituted or for which it supplements. The reflectorized bands shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
4. The base must weigh a minimum of 30 lbs.

SHEET 10 OF 12



**TRAFFIC CONTROL FOR MATERIAL STOCKPILES**

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers used at night shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.

Texas Department of Transportation Traffic Operations Division Standard

**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

BC (10) - 14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13	SAT	BEXAR	52	

DATE: 9/29/2017 10:13:45 AM  
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## WORK ZONE PAVEMENT MARKINGS

### GENERAL

- The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
- Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Additional supplemental pavement marking details may be found in the plans or specifications.
- Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
- When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
- When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
- All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

### RAISED PAVEMENT MARKERS

- Raised pavement markers are to be placed according to the patterns on BC(12).
- All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

### PREFABRICATED PAVEMENT MARKINGS

- Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
- Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

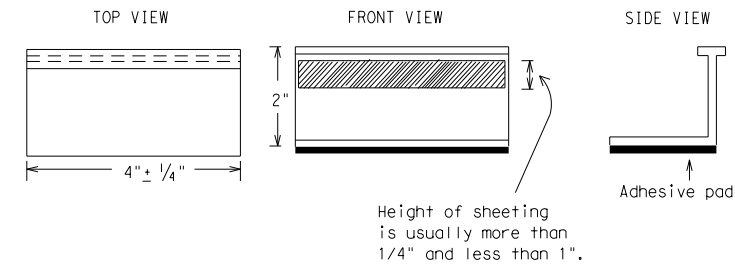
### MAINTAINING WORK ZONE PAVEMENT MARKINGS

- The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
- Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
- The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
- Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

### REMOVAL OF PAVEMENT MARKINGS

- Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
- The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
- Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
- The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
- Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
- Blast cleaning may be used but will not be required unless specifically shown in the plans.
- Over-painting of the markings SHALL NOT BE permitted.
- Removal of raised pavement markers shall be as directed by the Engineer.
- Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
- Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

## Temporary Flexible-Reflective Roadway Marker Tabs



STAPLES OR NAILS SHALL NOT BE USED TO SECURE  
TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER  
TABS TO THE PAVEMENT SURFACE

- Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
- Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
  - Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
  - Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
- Small design variances may be noted between tab manufacturers.
- See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

### RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

- Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
- All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
- Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:  
 YELLOW - (two amber reflective surfaces with yellow body).  
 WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

SHEET 11 OF 12



## BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

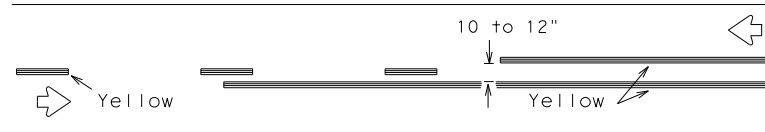
BC(11) - 14

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1-02 7-13	SAT	BEXAR	53	
11-02 8-14				

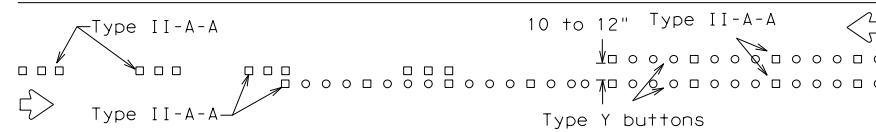
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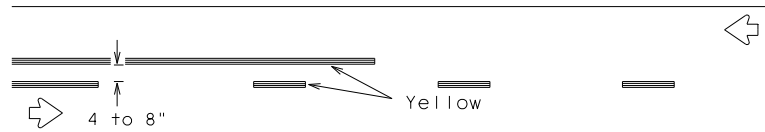
## PAVEMENT MARKING PATTERNS



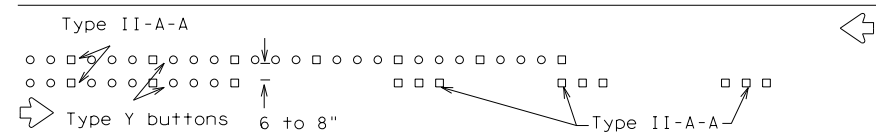
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



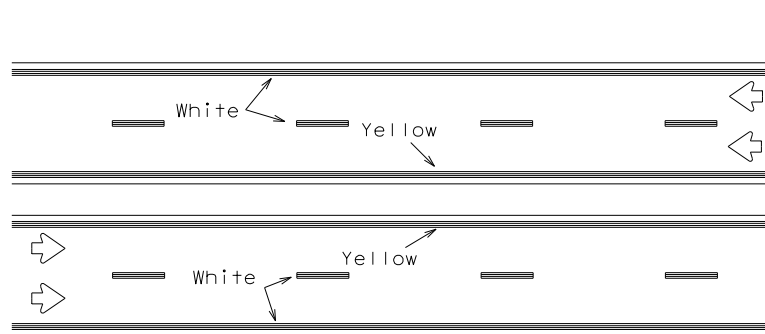
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



RAISED PAVEMENT MARKERS - PATTERN B

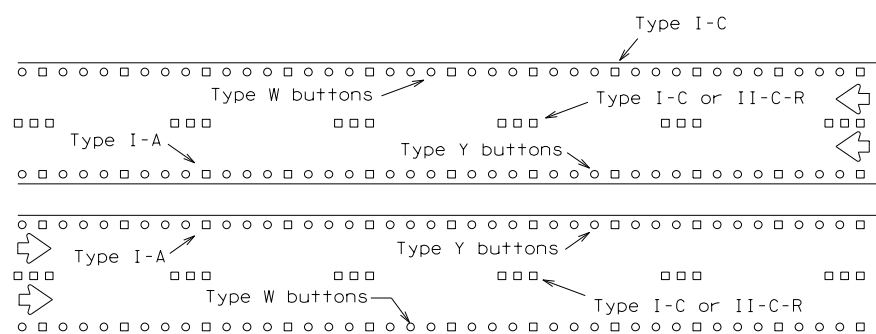
Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer. Prefabricated markings may be substituted for reflectorized pavement markings.

## CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



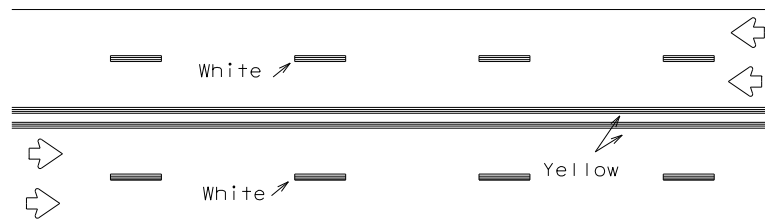
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectorized pavement markings.



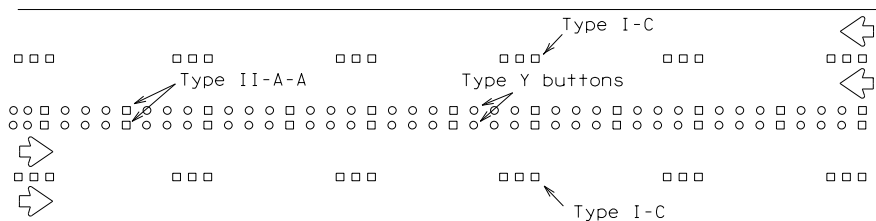
RAISED PAVEMENT MARKERS

## EDGE & LANE LINES FOR DIVIDED HIGHWAY



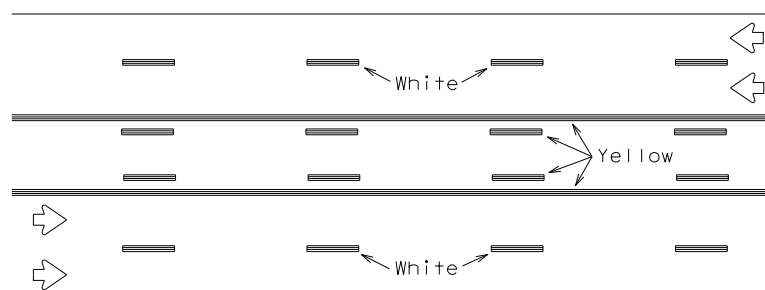
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectorized pavement markings.



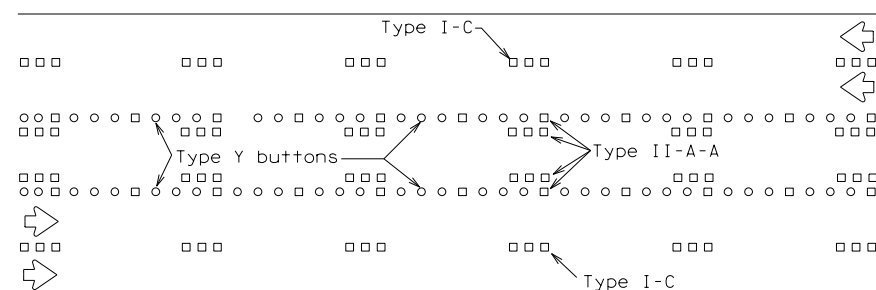
RAISED PAVEMENT MARKERS

## LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

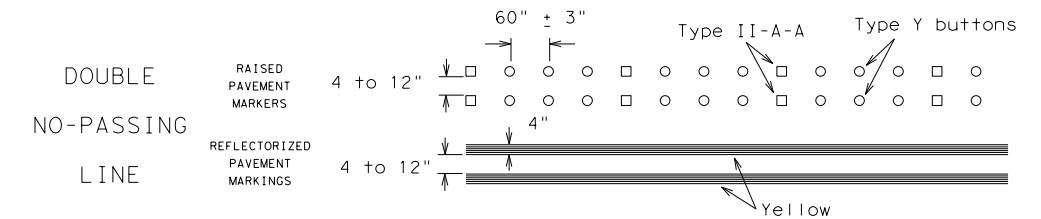
Prefabricated markings may be substituted for reflectorized pavement markings.



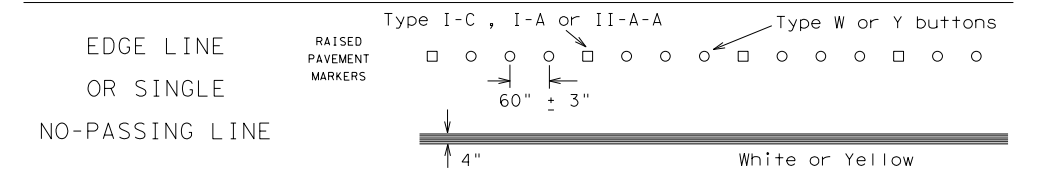
RAISED PAVEMENT MARKERS

## TWO-WAY LEFT TURN LANE

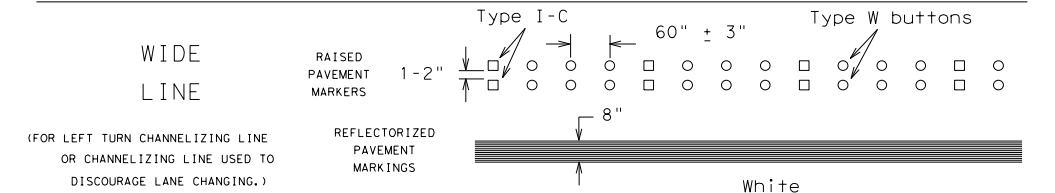
## STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



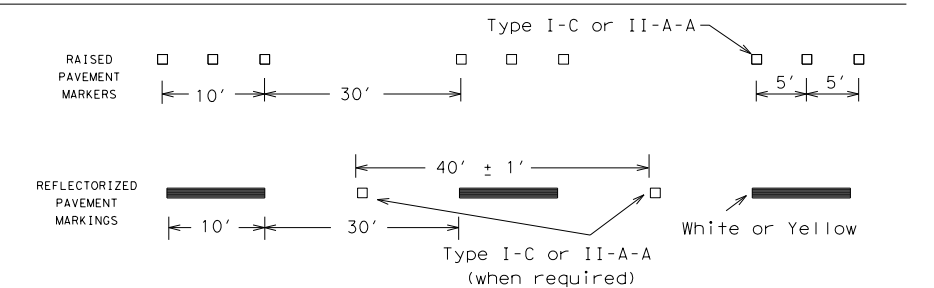
SOLID LINES



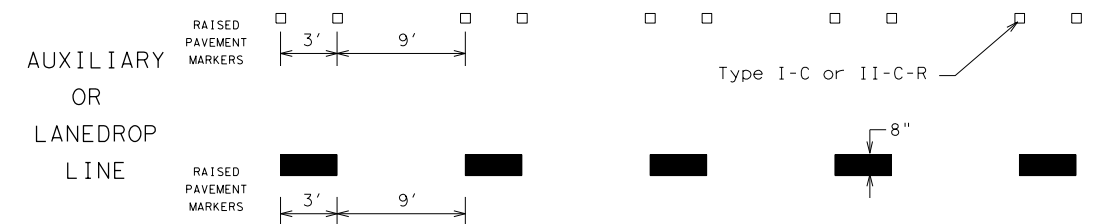
WIDE LINE



CENTER LINE OR LANE LINE

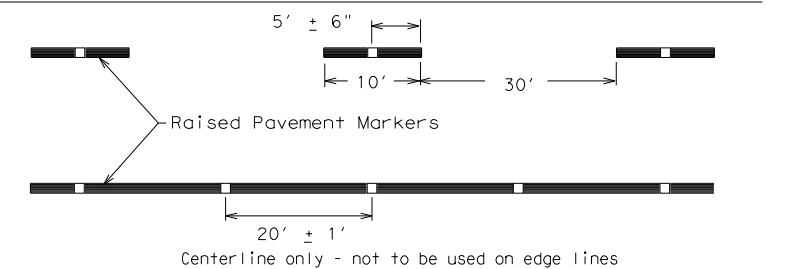


BROKEN LINES



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



SHEET 12 OF 12

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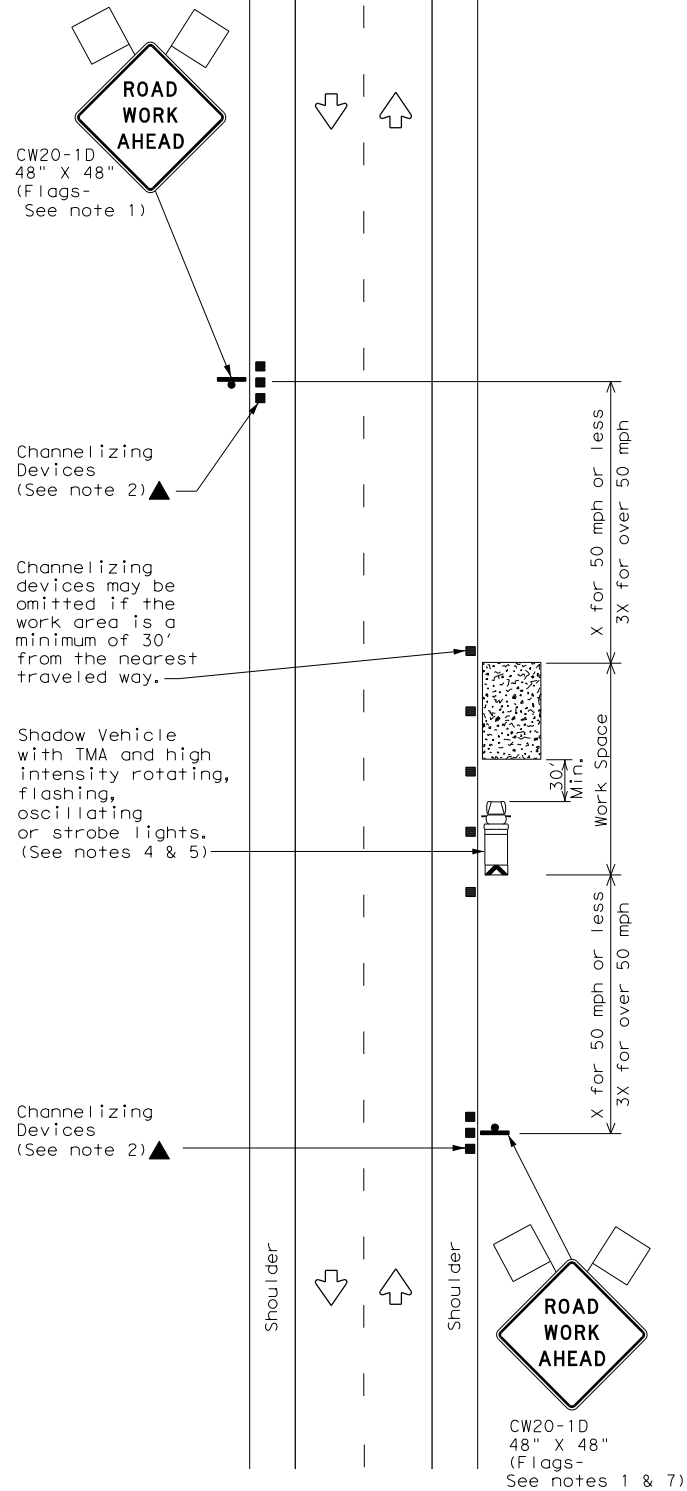
## BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	OW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
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2-98 7-13	DIST	COUNTY	SHEET NO.	
11-02 8-14	SAT	BEXAR	54	

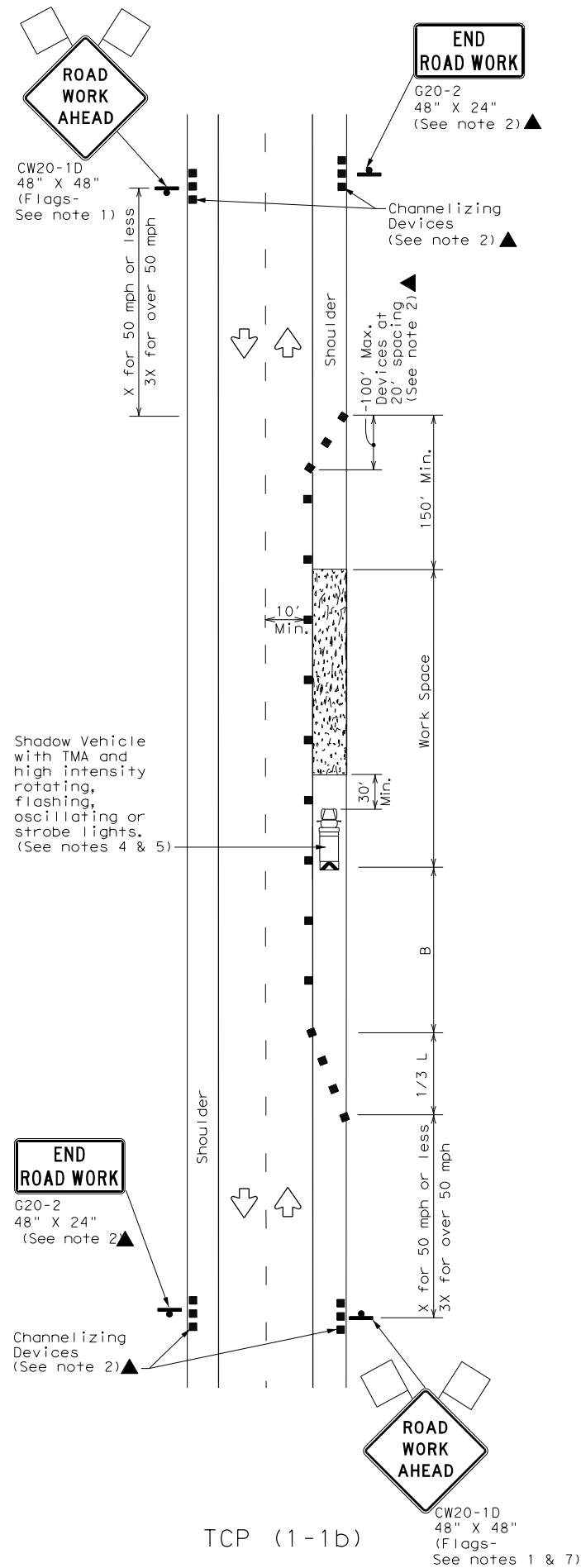
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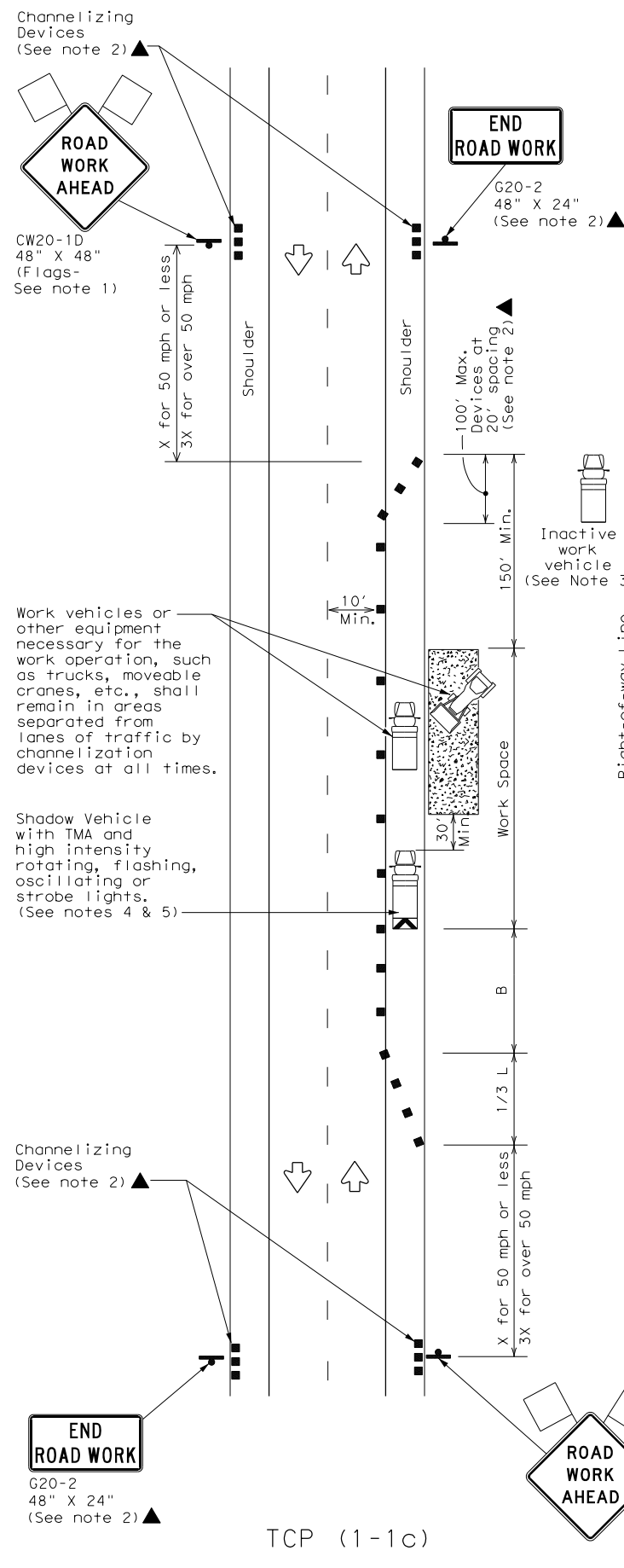
TCP (1-1a)

**WORK SPACE NEAR SHOULDER**  
 Conventional Roads



TCP (1-1b)

**WORK SPACE ON SHOULDER**  
 Conventional Roads



TCP (1-1c)

**WORK VEHICLES ON SHOULDER**  
 Conventional Roads

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed * *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L = WS <sup>2</sup> / 60	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

**GENERAL NOTES**

- Flags attached to signs where shown are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
- A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
- See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
- CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.



**TRAFFIC CONTROL PLAN**  
**CONVENTIONAL ROAD**  
**SHOULDER WORK**

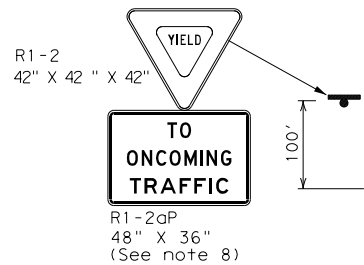
TCP (1-1) - 12

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1-97		SAT	BEXAR		55
4-98					

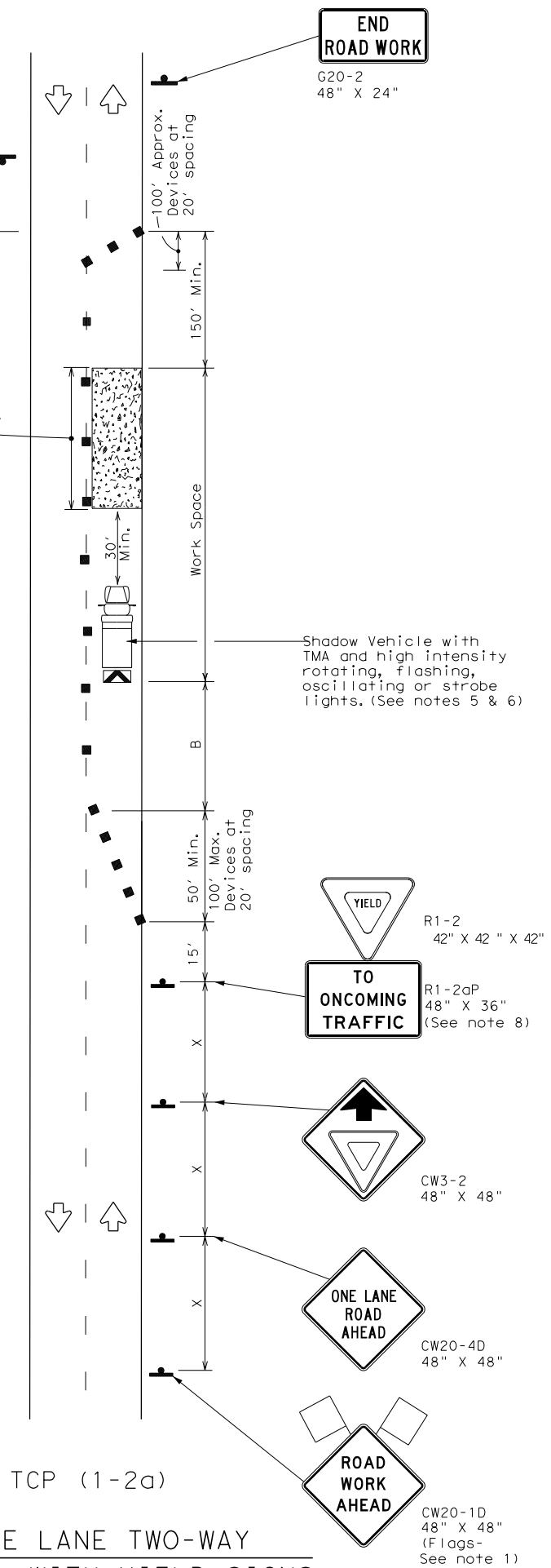
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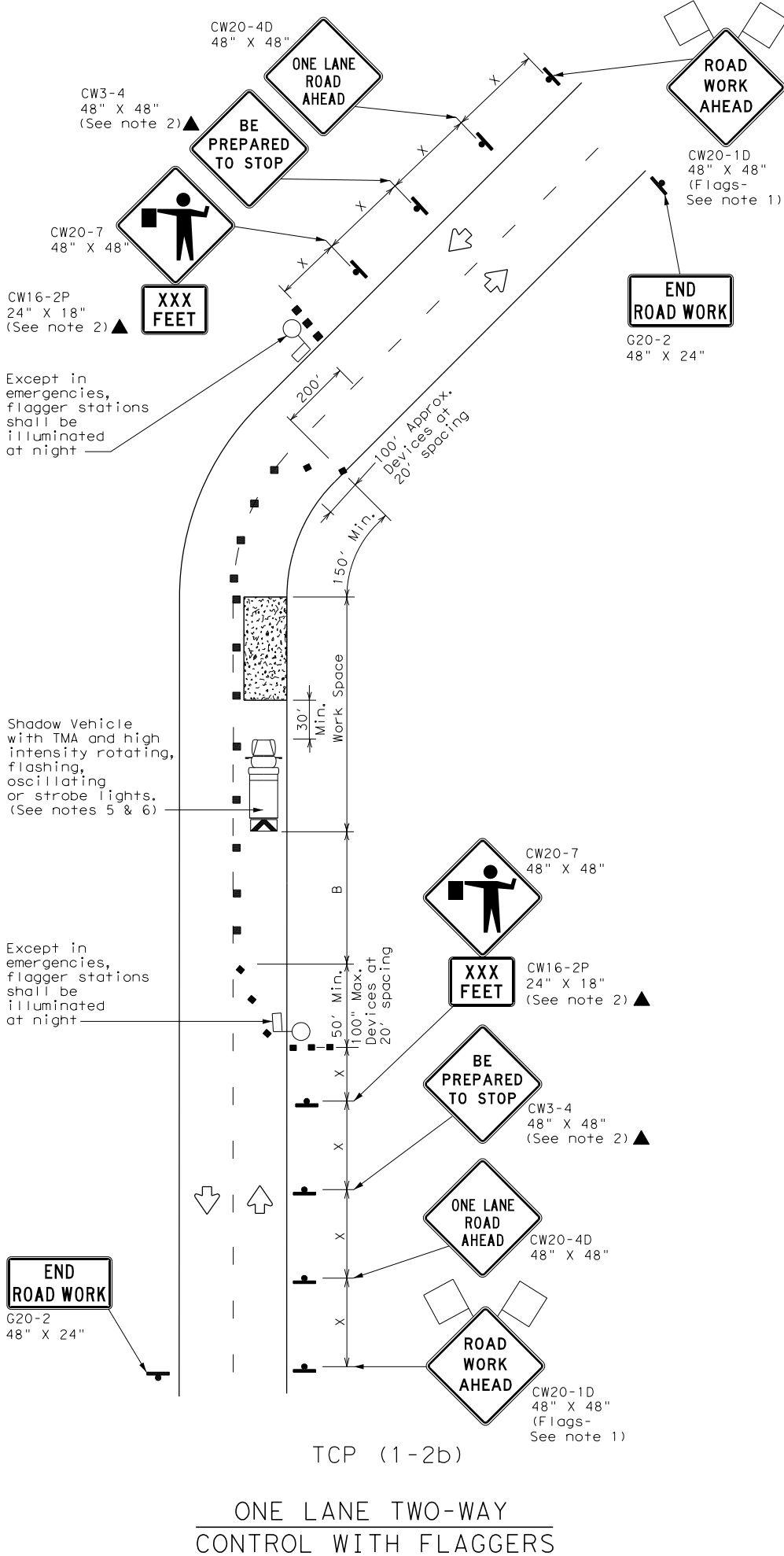
Warning Sign Sequence in Opposite Direction Same as Below



Channelizing devices separate work space from traveled way



TCP (1-2a)  
 ONE LANE TWO-WAY  
 CONTROL WITH YIELD SIGNS  
 (Less than 2000 ADT - See note 7)



TCP (1-2b)  
 ONE LANE TWO-WAY  
 CONTROL WITH FLAGGERS

**LEGEND**

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed * X	Formula L = WS <sup>2</sup> / 60	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L = WS <sup>2</sup> / 60	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45		450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

**TYPICAL USAGE**

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

**GENERAL NOTES**

- Flags attached to signs where shown are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
- Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
- A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

**TCP (1-2a)**

- R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.
- R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.

**TCP (1-2b)**

- Flaggers should use two-way radios or other methods of communication to control traffic.
- Length of work space should be based on the ability of flaggers to communicate.
- If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
- Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
- Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.



**TRAFFIC CONTROL PLAN  
 ONE-LANE TWO-WAY  
 TRAFFIC CONTROL**

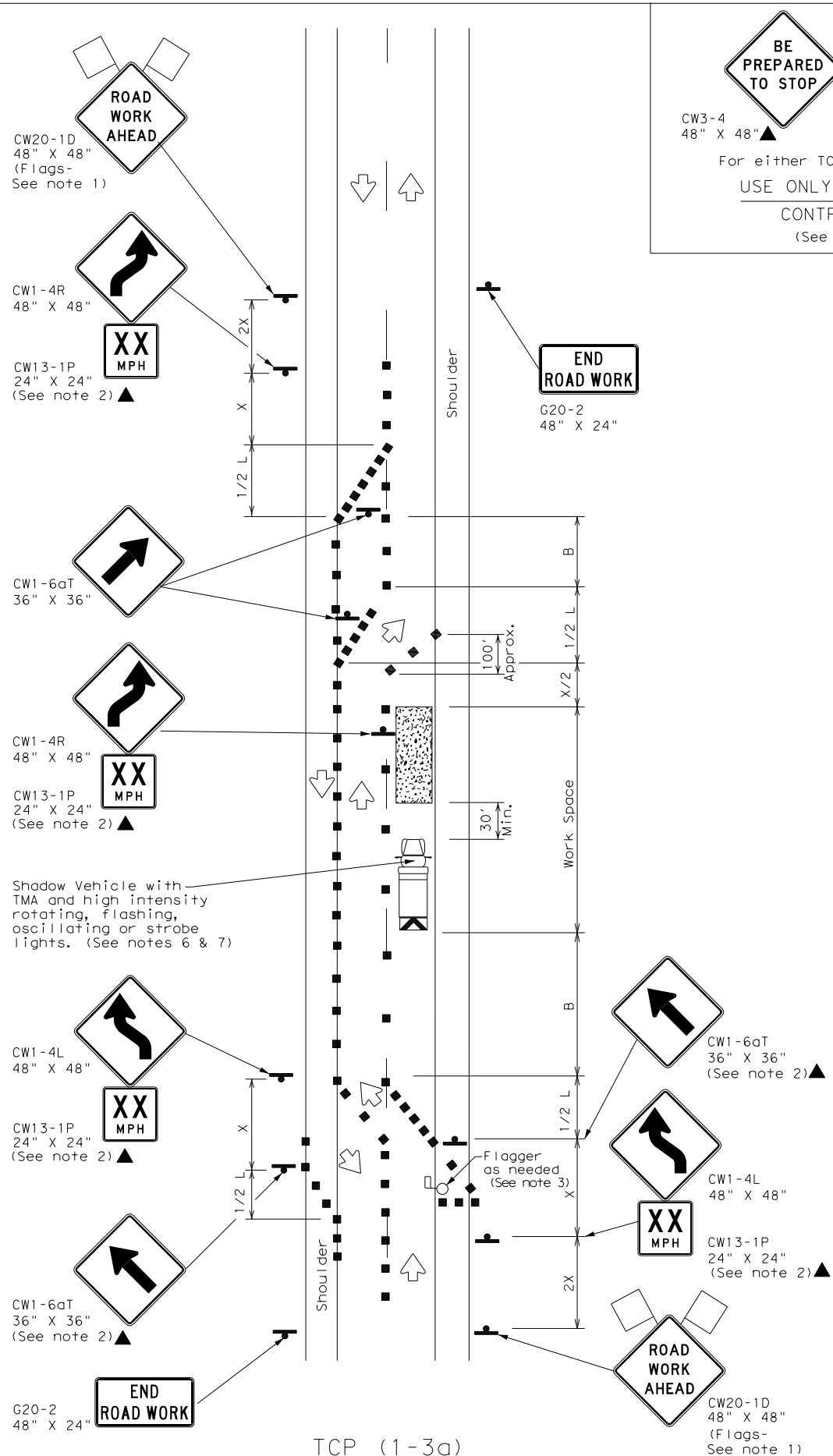
TCP (1-2) - 12

© TxDOT December 1985		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
4-90	2-12	0915	12	586	VA
2-94		DIST	COUNTY	SHEET NO.	
1-97		SAT	BEXAR	56	
4-98					

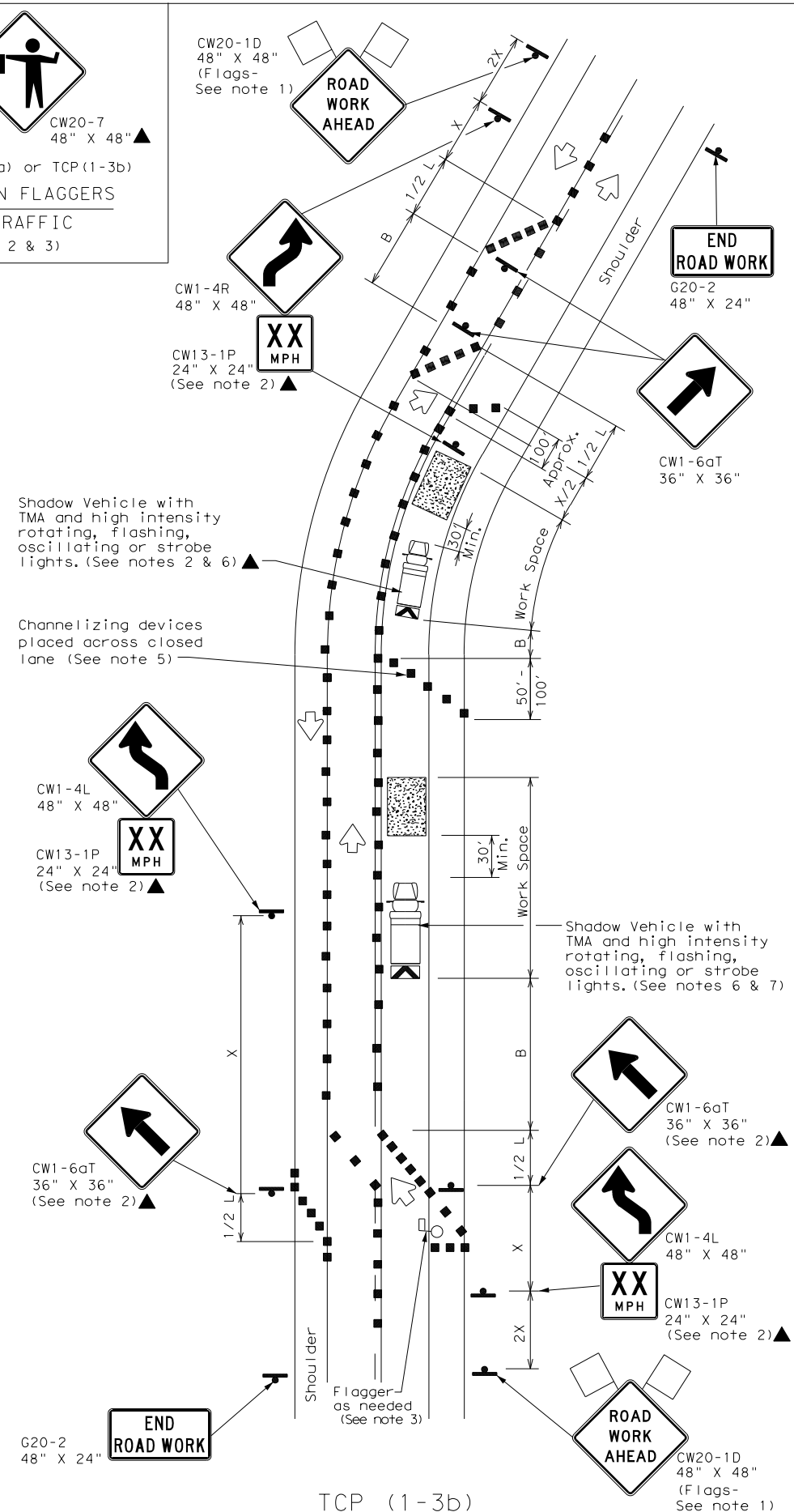


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TCP (1-3a)  
 2-LANE ROADWAY WITH PAVED SHOULDERS  
 ONE LANE CLOSED  
 ADEQUATE FIELD OF VIEW



TCP (1-3b)  
 2-LANE ROADWAY WITH PAVED SHOULDERS  
 ONE LANE CLOSED  
 INADEQUATE FIELD OF VIEW

**LEGEND**

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L = WS / 60	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70	700'	770'	840'	70'	140'	800'	475'	
75	750'	825'	900'	75'	150'	900'	540'	

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

**TYPICAL USAGE**

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

- GENERAL NOTES**
- Flags attached to signs where shown are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
  - Flagger control should NOT be used unless roadway conditions or heavy traffic volume require additional emphasis to safely control traffic. Additional flaggers may be positioned in advance of traffic queues to alert traffic to reduce speed.
  - DO NOT PASS, PASS WITH CARE and construction regulatory speed zone signs may be installed downstream of the ROAD WORK AHEAD signs.
  - When the work zone is made up of several work spaces, channelizing devices should be placed laterally across the closed lane to re-emphasize closure. Laterally placed channelizing devices should be repeated every 500 to 1000 feet in urban areas and every 1/4 to 1/2 mile in rural areas.
  - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
  - Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20', or 15' if posted speed are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the area of conflicting markings not the entire work zone.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation  
 Traffic Operations Division

**TRAFFIC CONTROL PLAN  
 TRAFFIC SHIFTS ON  
 TWO LANE ROADS**

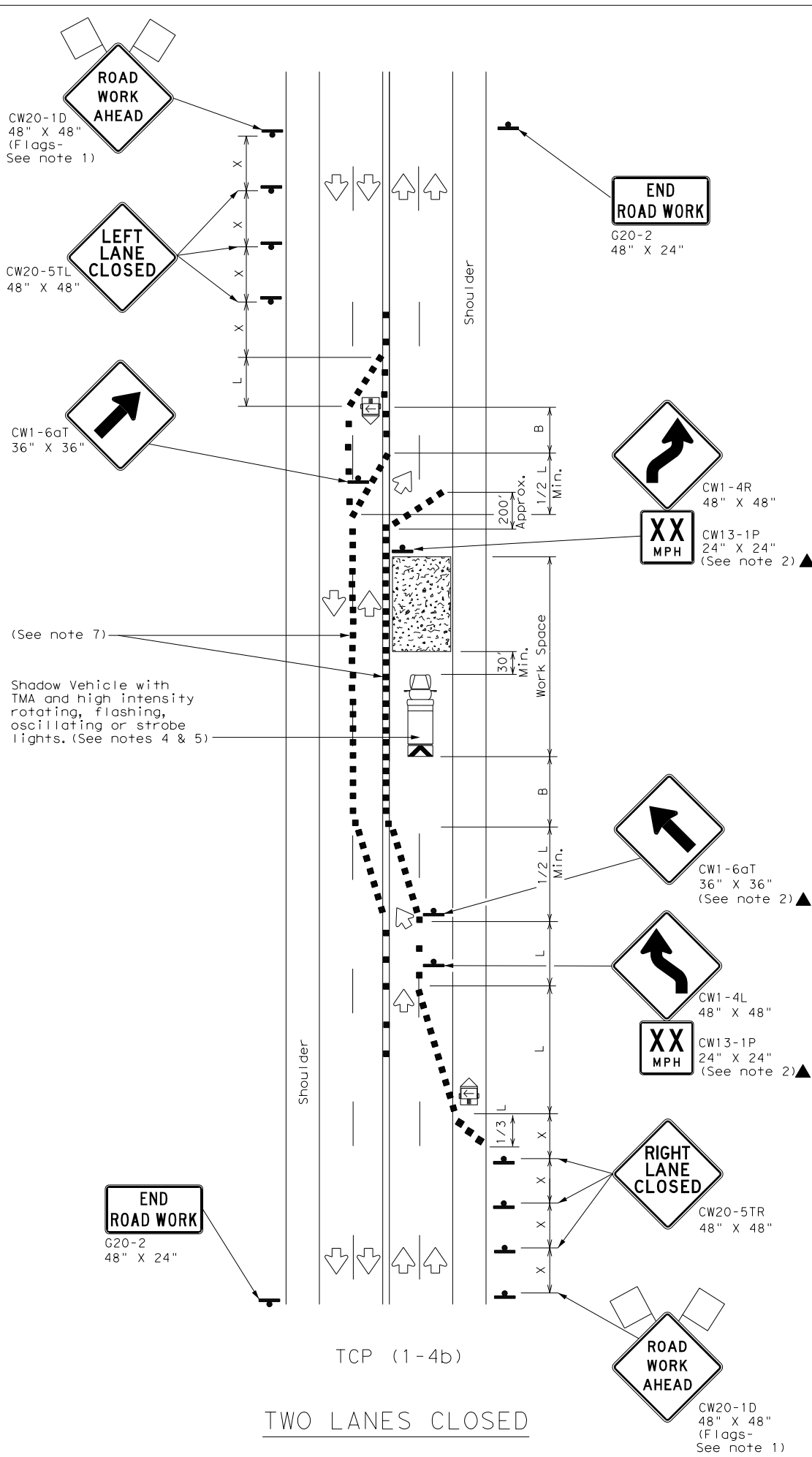
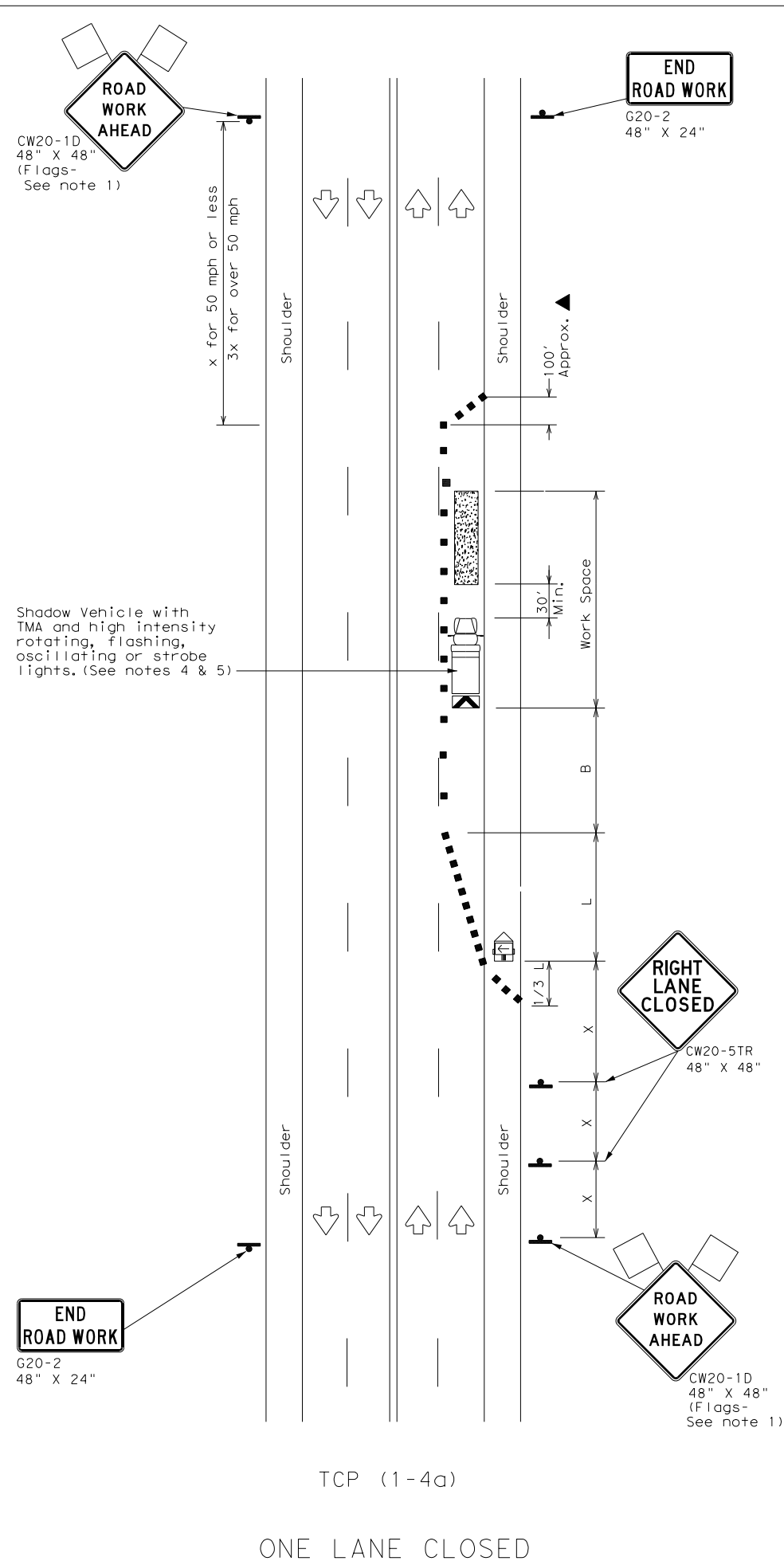
TCP (1-3) - 12

© TxDOT December 1985		DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
2-94	2-12	0915	12	586	VA
8-95					
1-97		DIST	COUNTY		SHEET NO.
4-98		SAT	BEXAR		57

153

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**LEGEND**

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	$L = WS$	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

**TYPICAL USAGE**

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

- GENERAL NOTES**
- Flags attached to signs where shown are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
  - The CW20-1D "ROAD WORK AHEAD" sign may be repeated if the visibility of the work zone is less than 1500 feet.
  - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

**TCP (1-4a)**

- If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline where needed to protect the work space from opposing traffic with the arrow panel placed in the closed lane near the end of the merging taper.

**TCP (1-4b)**

- Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

**Texas Department of Transportation**  
 Traffic Operations Division

**TRAFFIC CONTROL PLAN**  
 LANE CLOSURES ON MULTILANE  
 CONVENTIONAL ROADS

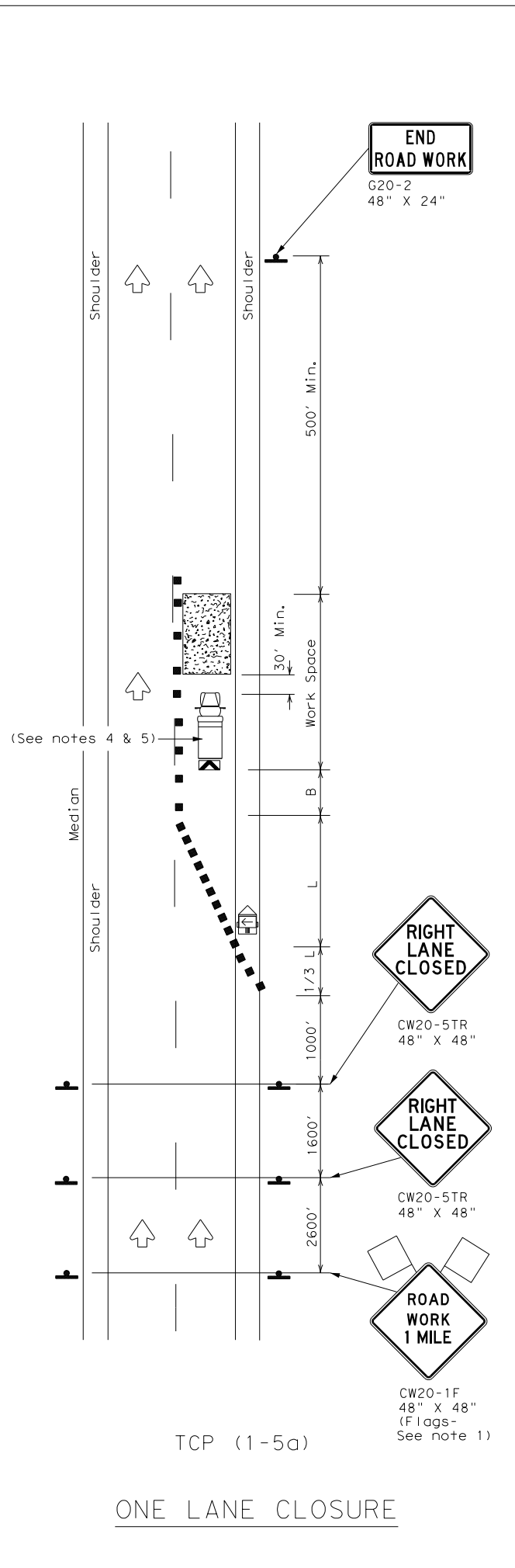
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© TxDOT December 1985		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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8-95					
1-97		DIST	COUNTY		SHEET NO.
4-98		SAT	BEXAR		58

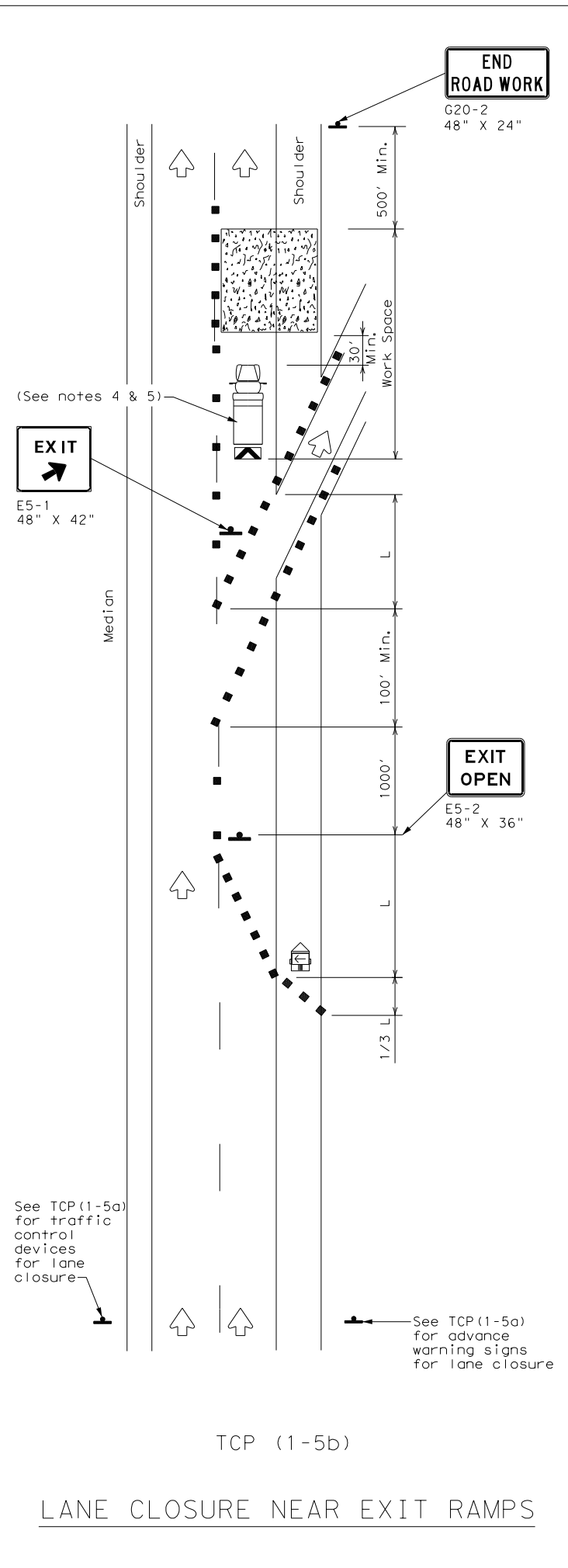
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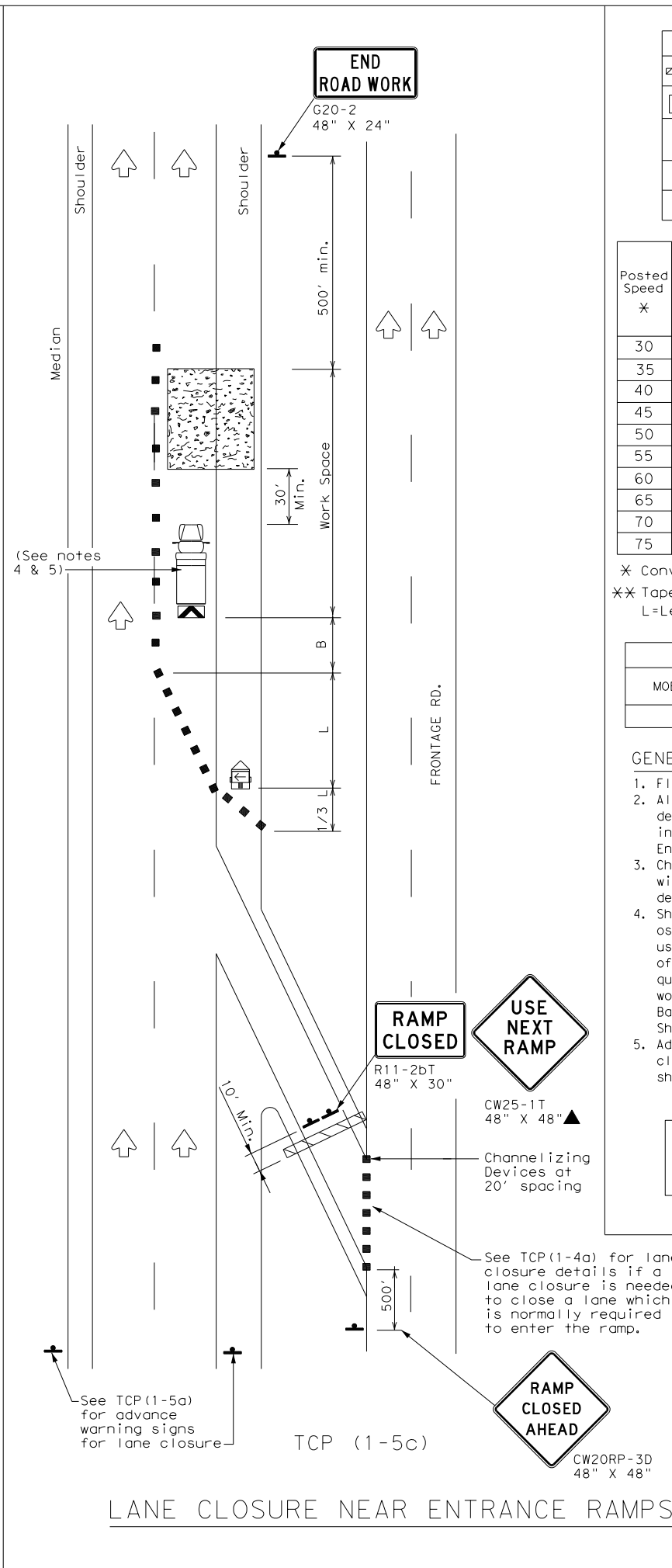
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ONE LANE CLOSURE



LANE CLOSURE NEAR EXIT RAMP



LANE CLOSURE NEAR ENTRANCE RAMP

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
		✓		

- GENERAL NOTES
- Flags attached to signs where shown, are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
  - Channelizing devices used to close lanes may be supplemented with the Chevron Alignment Sign placed on every other channelizing device. Chevrons may be attached to plastic drums as per BC Standards.
  - Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.



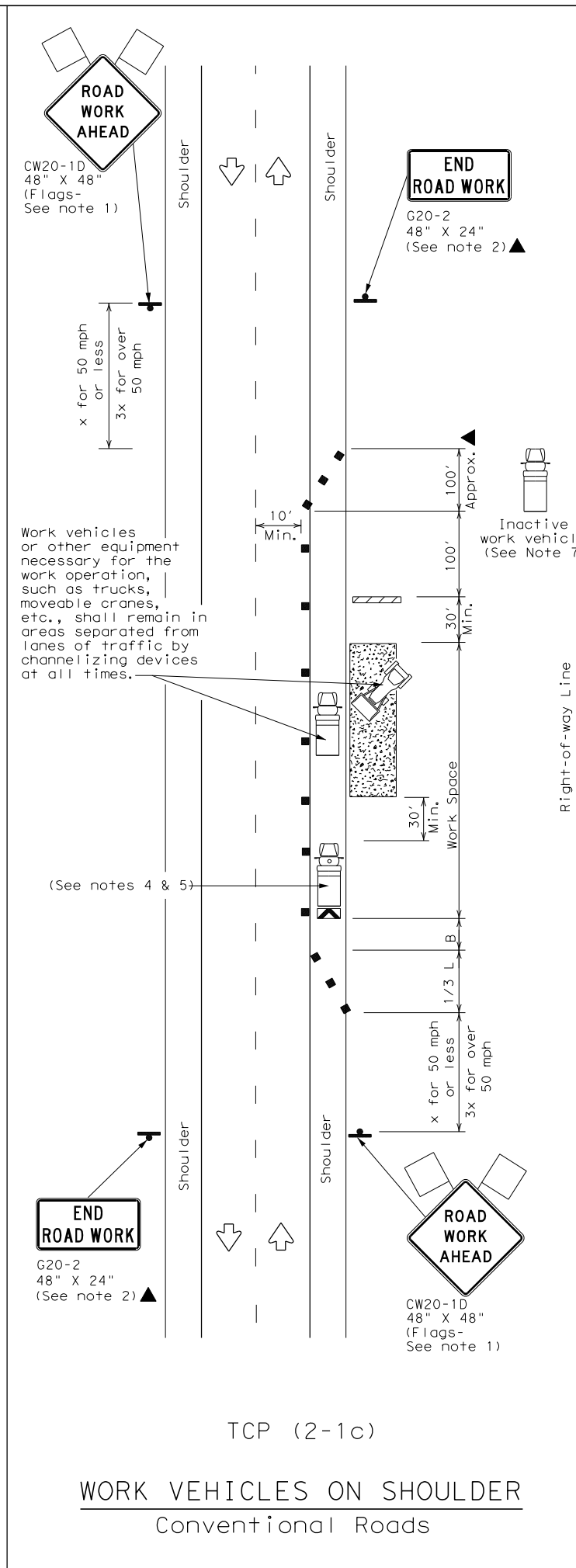
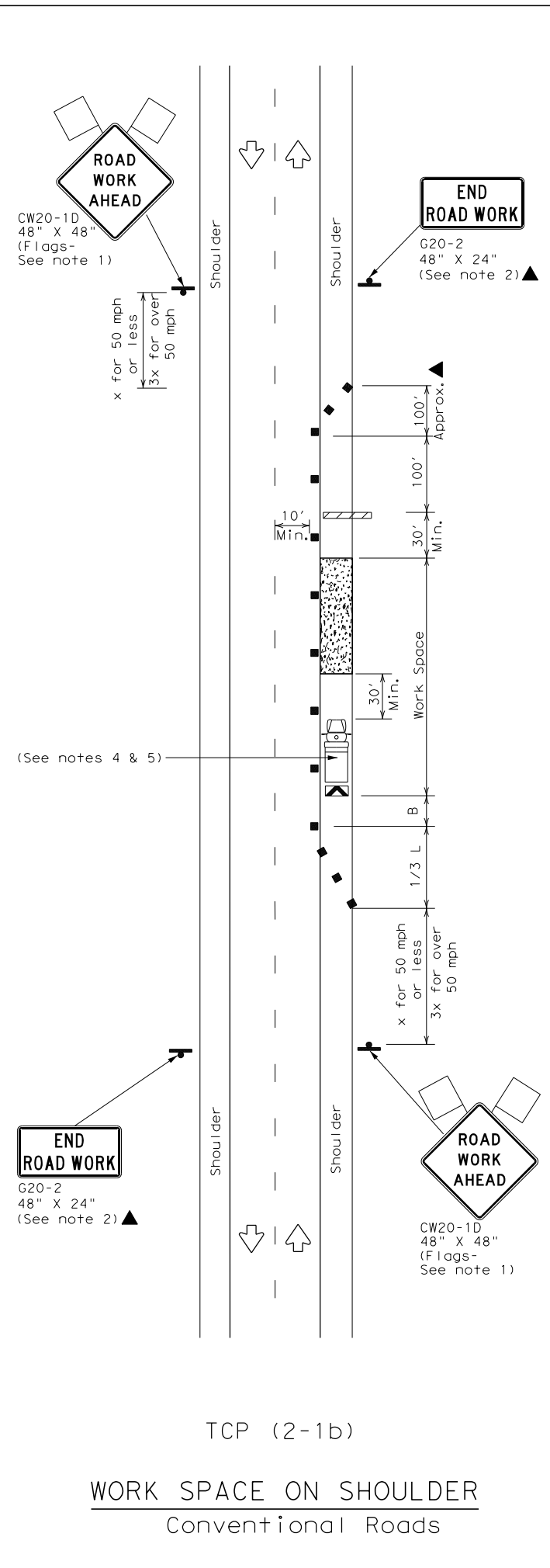
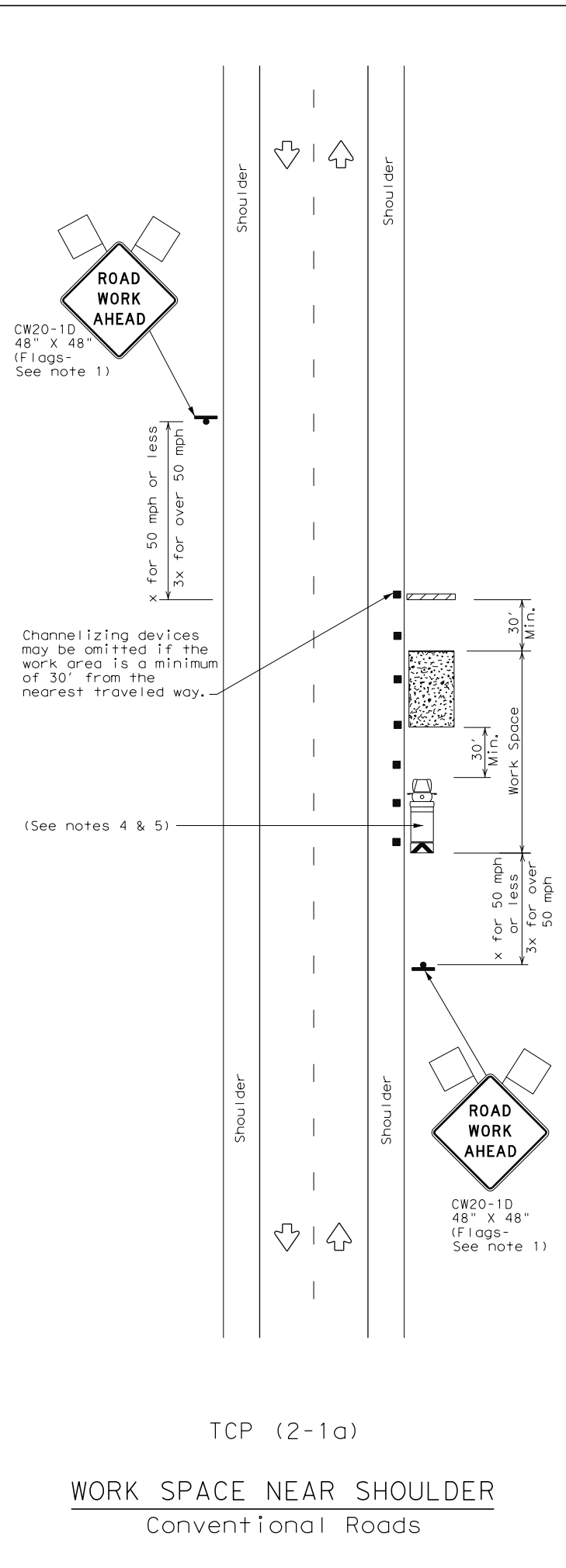
TRAFFIC CONTROL PLAN  
 LANE CLOSURES FOR  
 DIVIDED HIGHWAYS

TCP (1-5) - 12

© TxDOT February 2012		DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
		0915	12	586	VA
		DIST	COUNTY	SHEET NO.	
		SAT	BEXAR	59	

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LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	✓

- GENERAL NOTES
- Flags attached to signs where shown, are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
  - Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
  - Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
  - See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
  - Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
  - CW21-5 "SHOULDER WORK" signs may be used in place of CW21-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.



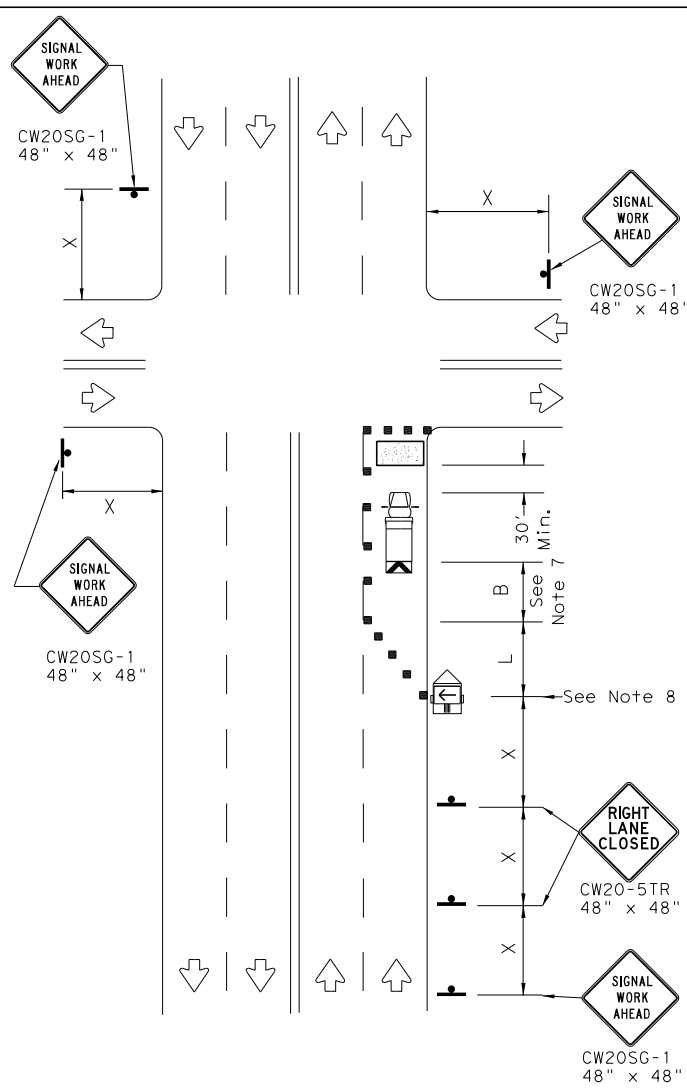
TRAFFIC CONTROL PLAN  
 CONVENTIONAL ROAD  
 SHOULDER WORK

TCP (2-1) - 12

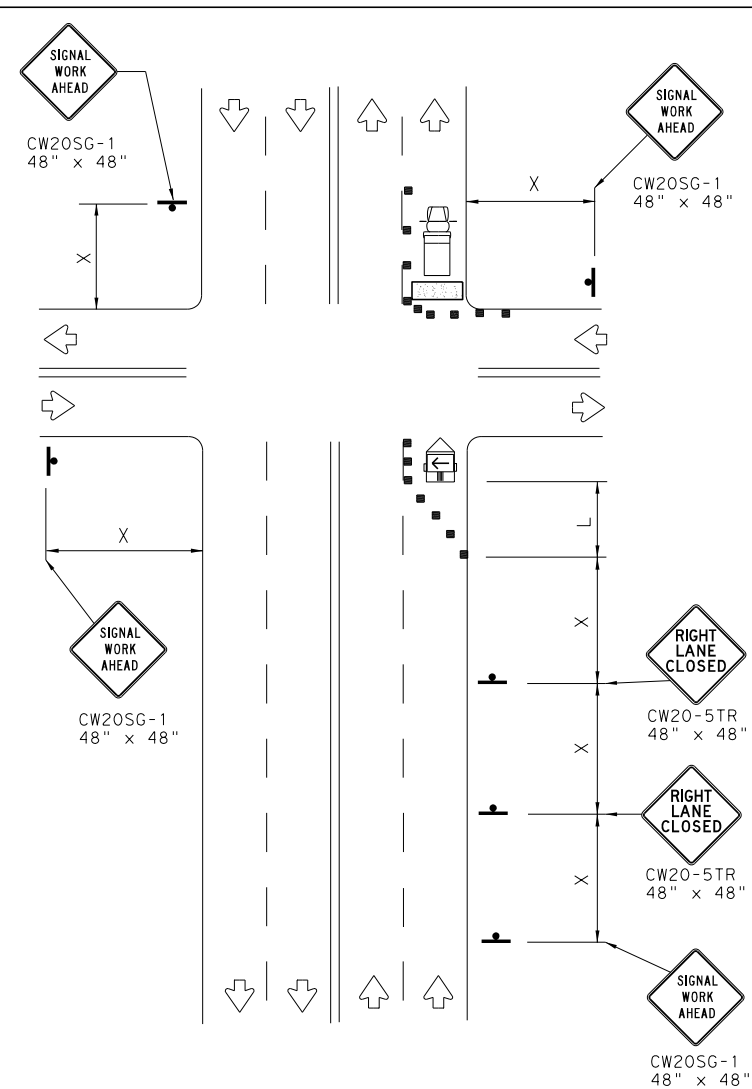
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REVISIONS		CONT	SECT	JOB	HIGHWAY
2-94	2-12	0915	12	586	VA
8-95		DIST	COUNTY		SHEET NO.
1-97		SAT	BEXAR		60
4-98					
161					

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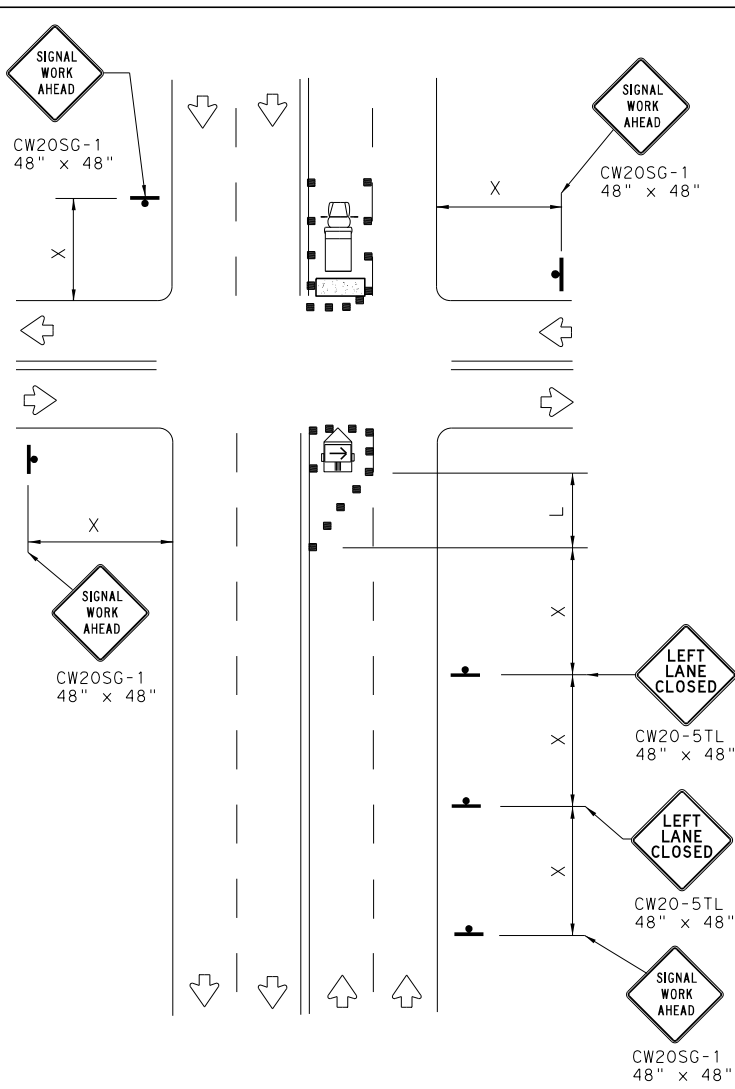
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NEAR SIDE LANE CLOSURE  
 SHORT DURATION OR SHORT TERM STATIONARY



FAR SIDE RIGHT LANE CLOSURE  
 SHORT DURATION OR SHORT TERM STATIONARY



FAR SIDE LEFT LANE CLOSURE  
 SHORT DURATION OR SHORT TERM STATIONARY

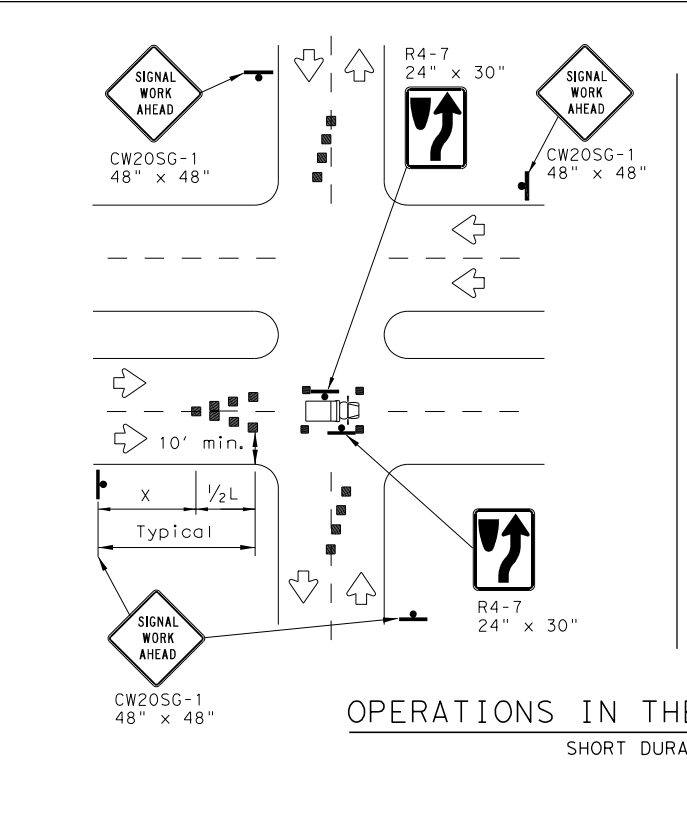
LEGEND

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

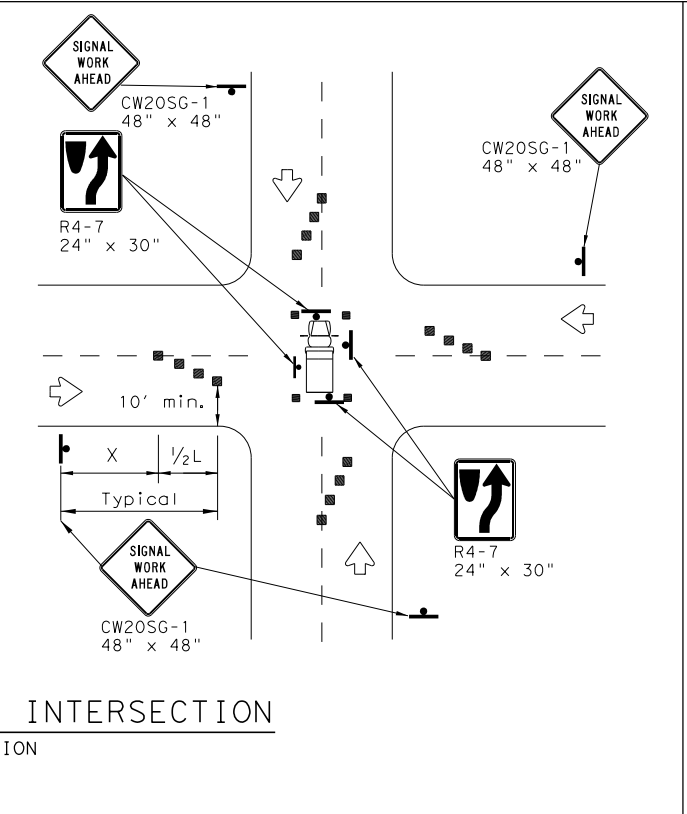
Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

WORKERS IN BUCKET TRUCKS SHALL NOT WORK ABOVE OPEN LANES OF TRAFFIC.



OPERATIONS IN THE INTERSECTION  
 SHORT DURATION



GENERAL NOTES

- The minimum size channelizing device is the 28" cone. 42" Two-piece cones, drums, vertical panels or barricades will be required when the device must be left unattended at night.
- Obstructions or hazards at the work area shall be clearly marked and delineated at all times.
- Flaggers and Flagger Symbol (CW20-7) signs may be required according to field conditions.
- Vehicles parked in roadway shall be equipped with at least two high intensity rotating, flashing, oscillating or strobe type lights.
- High level warning devices (flag trees) may be used at corners of the vehicle.
- When work operations are performed on existing signals, the signals may be placed in flashing red mode when approved by the engineer. If existing signals do not have power, All-Way Stop (R1-1 and R1-3P) signs may be implemented when approved by the engineer.
- For Short-Term Stationary work the buffer space "B" from the above table should be used if field conditions permit. For Short Duration (less than 1 hour) any buffer space provided will enhance the safety of the setup.
- The arrow board at this location may be omitted for Short Duration work if the work vehicle has an arrow board in operation. As an option, the arrow board may be placed at the end of the taper in the closed lane if space is not available at the beginning of the taper.
- Signs and devices for the NEAR SIDE LANE CLOSURE may be altered for a left lane closure by using a LEFT LANE CLOSED (CW20-5TL) and adding channelizing devices on the centerline to protect the work space from opposing traffic.



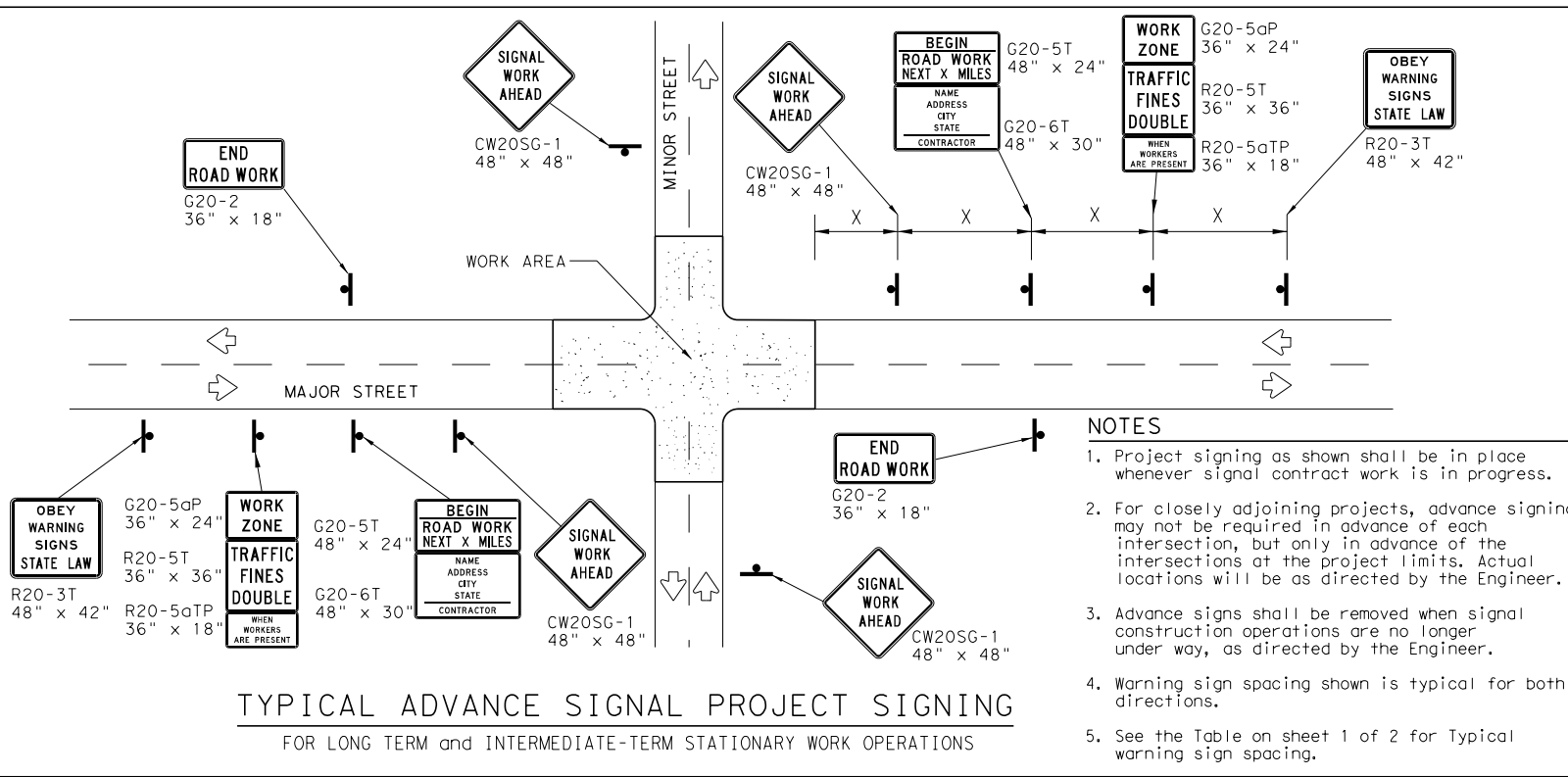
TRAFFIC SIGNAL WORK  
 TYPICAL DETAILS

WZ(BTS-1)-13

FILE: wzbtbs-13.dgn	DN: TxDOT	CK: TxDOT	OW: TxDOT	CK: TxDOT
© TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
2-98 10-99 7-13	DIST	COUNTY	SHEET NO.	
4-98 3-03	SAT	BEXAR	61	

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- NOTES**
1. Project signing as shown shall be in place whenever signal contract work is in progress.
  2. For closely adjoining projects, advance signing may not be required in advance of each intersection, but only in advance of the intersections at the project limits. Actual locations will be as directed by the Engineer.
  3. Advance signs shall be removed when signal construction operations are no longer under way, as directed by the Engineer.
  4. Warning sign spacing shown is typical for both directions.
  5. See the Table on sheet 1 of 2 for Typical warning sign spacing.

**GENERAL NOTES FOR WORK ZONE SIGNS**

1. Signs shall be installed and maintained in a straight and plumb condition.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. Nails shall NOT be used to attach signs to any support.
5. All signs shall be installed in accordance with the plans or as directed by the Engineer.
6. The Contractor shall furnish the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD).
7. The Contractor shall furnish sign supports and substrates listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD), installed as per the manufacturer's recommendations.
8. Temporary signs that have damaged or cracked substrates and/or damaged or marred reflective sheeting shall be replaced as directed by the Engineer.
9. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1".
10. Damaged wood posts shall be replaced. Splicing wood posts will not be allowed.

**DURATION OF WORK**

1. Work zone durations are defined in Part 6, Section 6G.02 of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

**SIGN MOUNTING HEIGHT**

1. Sign height of Long-term/Intermediate-term warning signs shall be as shown on Figure 6F-1 of the TMUTCD.
2. Sign height of Short-term/Short Duration warning signs shall be as shown on Figure 6F-2 of the TMUTCD.
3. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

**REMOVING OR COVERING**

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered, unless otherwise approved by the Engineer.
2. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night without damaging the sign sheeting. Burlap, or heavy materials such as plywood or aluminum shall not be used to cover signs.
3. Duct tape or other adhesive material shall NOT be affixed to a sign face.
4. Signs and anchor stubs shall be removed and holes back filled upon completion of the work.

**REFLECTIVE SHEETING**

1. All signs shall be retroreflective and constructed of sheeting meeting the requirements of the DMS and color usage table shown on this sheet.

**SIGN SUPPORT WEIGHTS**

1. Weights used to keep signs from turning over should be sandbags filled with dry, cohesionless material.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects will not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber, such as tire inner tubes, shall not be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

**LEGEND**

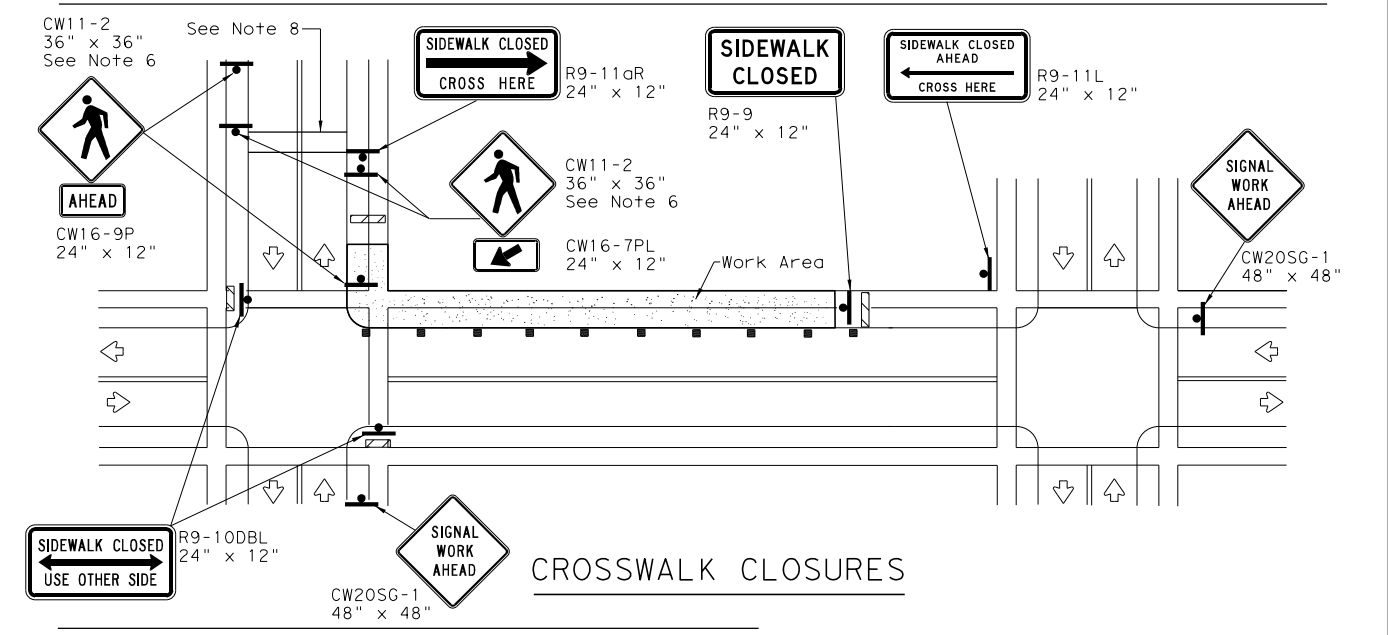
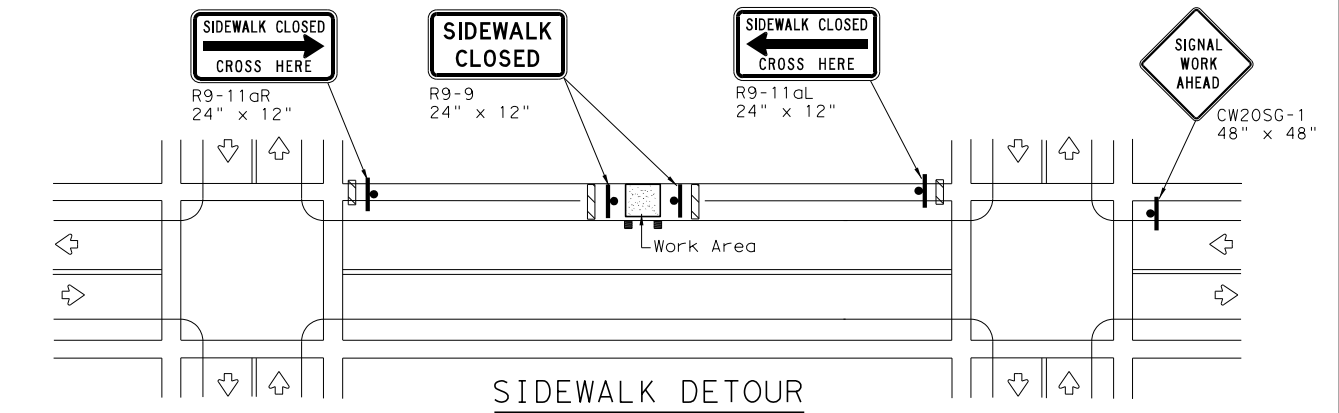
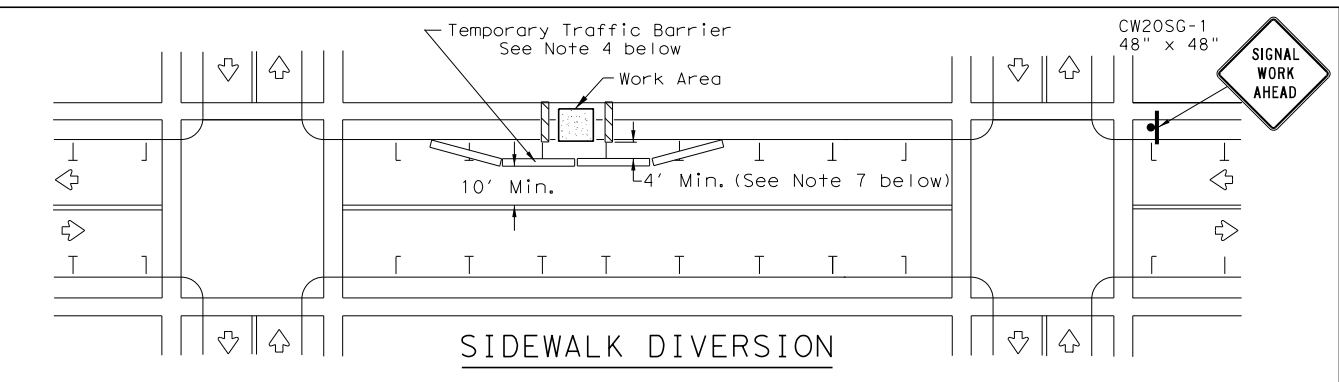
	Sign
	Channelizing Devices
	Type 3 Barricade

**DEPARTMENTAL MATERIAL SPECIFICATIONS**

SIGN FACE MATERIALS	DMS-8300
FLEXIBLE ROLL-UP REFLECTIVE SIGNS	DMS-8310

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B <sub>FL</sub> OR TYPE C <sub>FL</sub> SHEETING
WHITE	BACKGROUND	TYPE A SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found at the following web address:  
[http://www.txdot.gov/txdot\\_library/publications/construction.htm](http://www.txdot.gov/txdot_library/publications/construction.htm)



**PEDESTRIAN CONTROL**

1. Holes, trenches or other hazards shall be adequately protected by covering, delineating or surrounding the hazard with orange plastic pedestrian fencing or longitudinal channelizing devices, or as directed by the Engineer.
2. "CROSSWALK CLOSURES" as detailed above will require the Engineer's approval prior to installation.
3. R9 series signs shown may be placed on supports detailed on the BC standards or CWZTCD list, or when fabricated from approved lightweight plastic substrates, they may be mounted on top of a plastic drum at or near the location shown.
4. For speeds less than 45 mph longitudinal channelizing devices may be used instead of traffic barriers when approved by the Engineer. Attenuation of blunt ends and installation of water filled devices shall be as per BC(9) and manufacturer's recommendations.
5. Location of devices are for general guidance. Actual device spacing and location must be field adjusted to meet actual conditions.
6. Where pedestrians with visual disabilities normally use the closed sidewalk Detectable Pedestrian Barricades should be used instead of the Type 3 Barricades shown.
7. The width of existing sidewalk should be maintained if practical.
8. Pavement markings for mid-block crosswalks shall be paid for under the appropriate bid items.
9. When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.

SHEET 2 OF 2



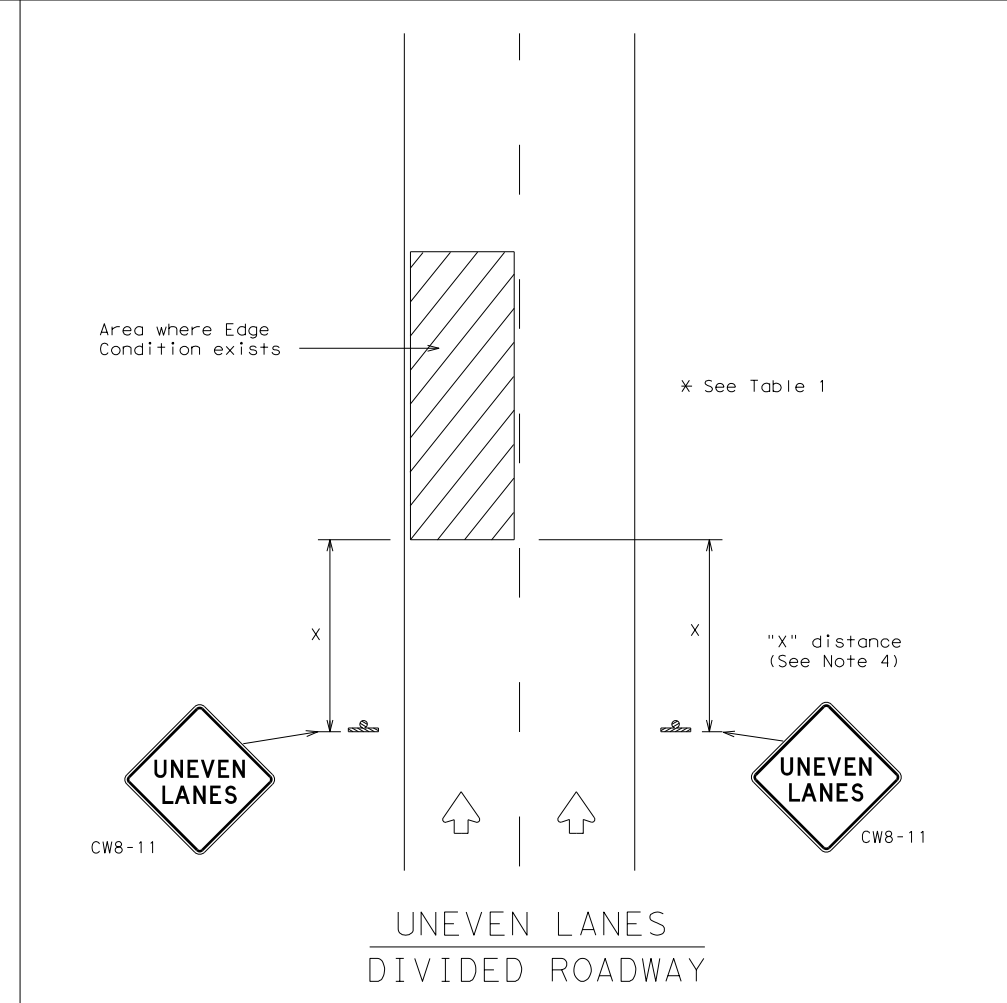
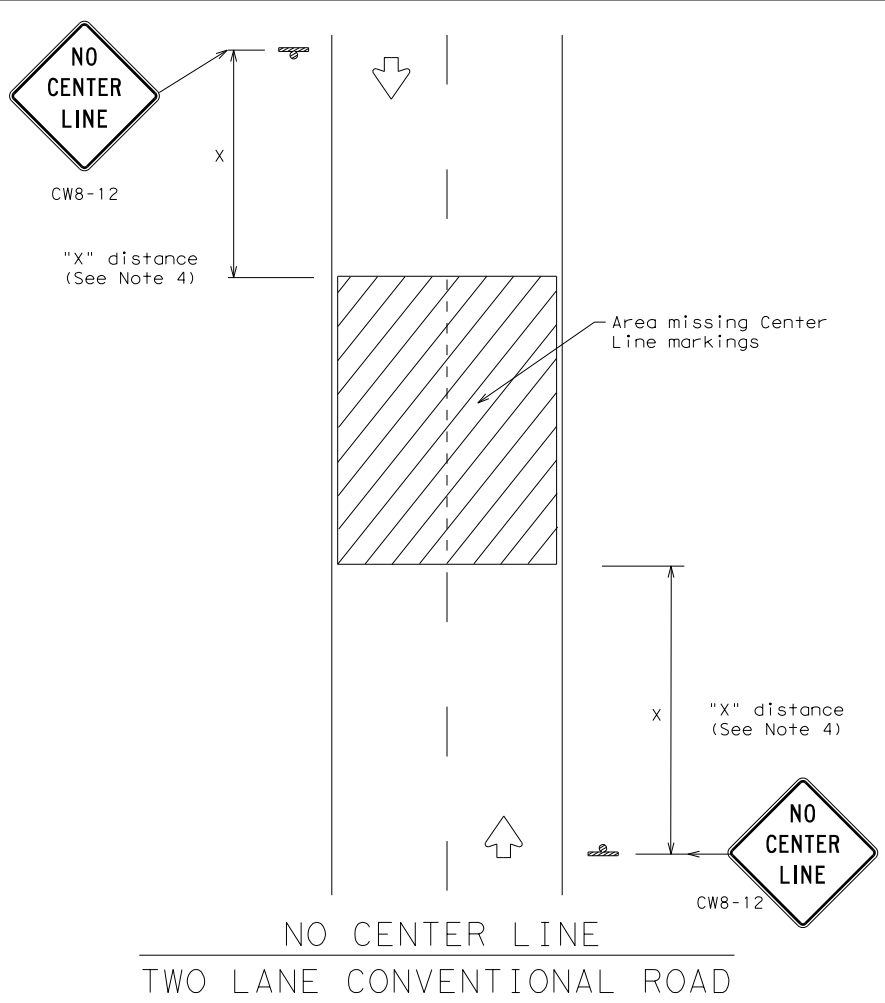
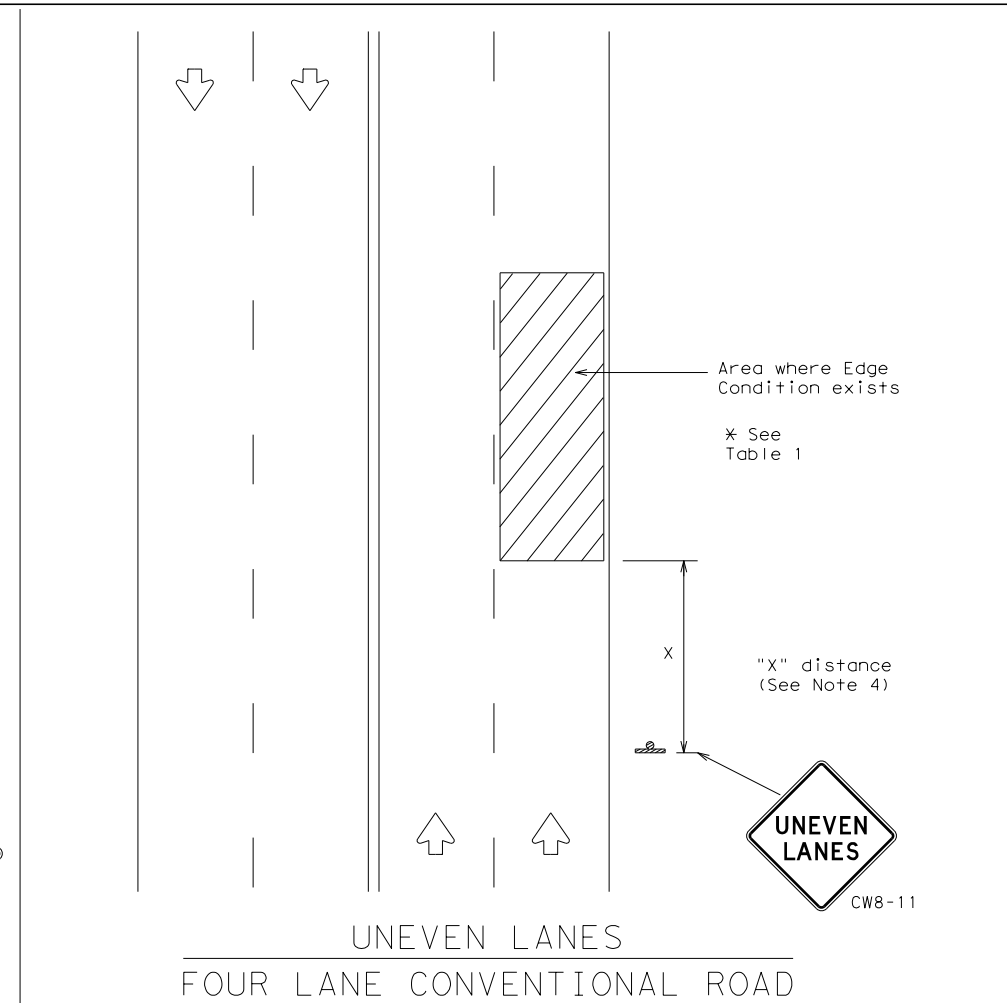
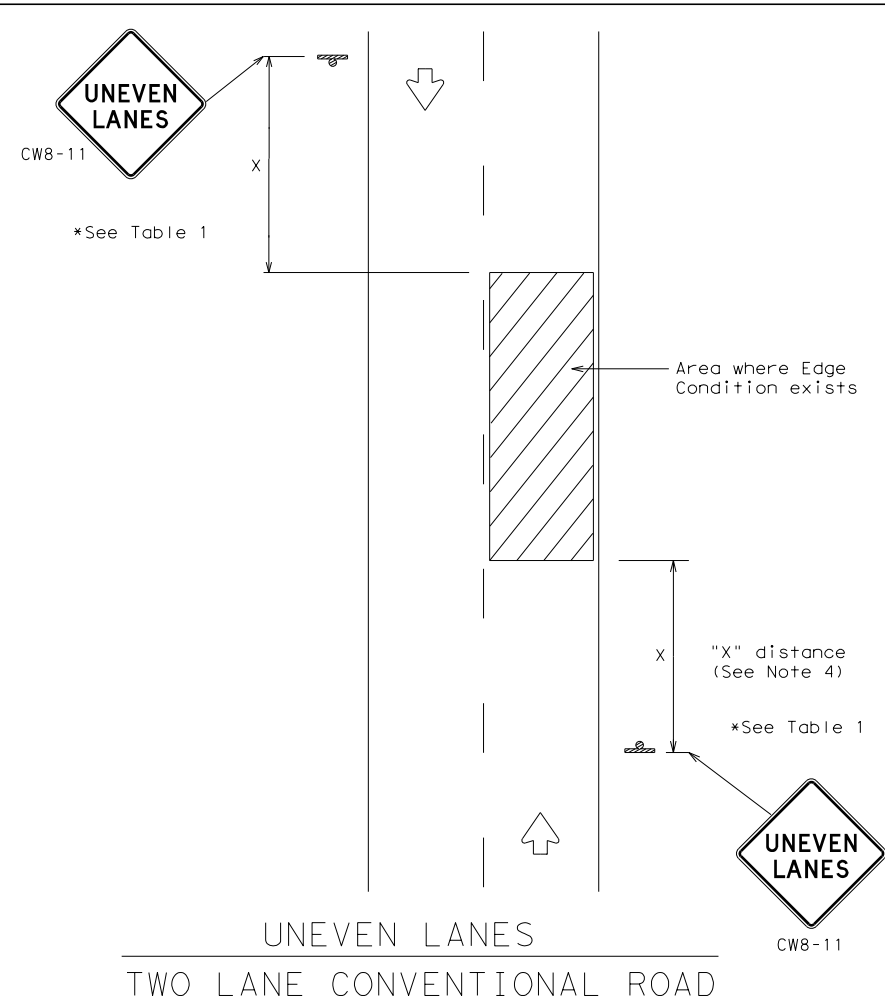
**TRAFFIC SIGNAL WORK BARRICADES AND SIGNS**

WZ(BTS-2)-13

FILE:	wzbt-13.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
© TxDOT	April 1992	CONT:	REVISIONS	SECT:	JOB	HIGHWAY			
2-98	10-99	7-13	0915	12	586	VA			
4-98	3-03		DIST:	COUNTY	SHEET NO.				
			SAT:	BEXAR	62				

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DEPARTMENTAL MATERIAL SPECIFICATIONS	
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY (REMOVABLE) PREFABRICATED PAVEMENT MARKINGS	DMS-8241
SIGN FACE MATERIALS	DMS-8300

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B <sub>FL</sub> OR TYPE C <sub>FL</sub> SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

GENERAL NOTES

- If spalling or holes occur, ROUGH ROAD (CW8-8) signs should be placed in advance of the condition and be repeated every two miles where the condition persists.
- UNEVEN LANES (CW8-11) signs shall be installed in advance of the condition and repeated every mile. Signs installed along the uneven lane condition may be supplemented with the NEXT XX MILES (CW7-3aP) plaque or Advisory Speed (CW13-1P) plaque.
- NO CENTER LINE (CW8-12) signs and temporary pavement markings as per the WZ(STPM) standard shall be installed if yellow centerlines separating two way traffic are obscured or obliterated. Repeat NO CENTER LINE signs every two miles where the center line markings are not in place. The signs and markings shall remain in place until permanent pavement markings are installed.
- Signs shall be spaced at the distances recommended as per BC standards.
- Additional signs may be required as directed by the Engineer. Signs shall remain in place until final surface is applied. Signs shall be considered subsidiary to Item 502 "BARRICADES, SIGNS AND TRAFFIC HANDLING."
- Signs shall be fabricated and mounted on supports as shown on the BC standards and/or listed on the "Compliant Work Zone Traffic Control Devices" list.
- Short term markings shall not be used to simulate edge lines.
- All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition.

Edge Condition	Edge Height (D)	* Warning Devices
①	Less than or equal to: 1/4" (maximum-planing) 1/2" (typical-overlay)	Sign: CW8-11
②	Less than or equal to 3"	Sign: CW8-11
③	Distance "D" may be a maximum of 3" if uneven lanes with edge condition 2 or 3 are open to traffic after work operations cease. Uneven lanes should not be open to traffic when "D" is greater than 3".	

TRAFFIC CONTROL DURING PLANING, OVERLAY AND LEVELING OPERATIONS ARE SHOWN ELSEWHERE IN THE PLANS.

MINIMUM WARNING SIGN SIZE	
Conventional roads	36" x 36"
Freeways/expressways, divided roadways	48" x 48"



SIGNING FOR UNEVEN LANES

WZ (UL) - 13


FILE: wz1-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
8-95 2-98 7-13	DIST	COUNTY	SHEET NO.	
1-97 3-03	SAT	BEXAR	63	

Plotted on: 9/29/2017

Design Filename: P:\1111\35\01\design\Civil\General\1113501\_SURVEYCONTROL.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  
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



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SURVEY CONTROL

SHEET OF  
 64 OF

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	64



HIGHWAY 90 FB ALIGN (SWM FB)

Beginning chain SWM EB description

Point SWM01 N 13,694,756.83 E 2,081,827.72 Sta 300+00.00

Course from SWM01 to PC SWM01 N 73° 44' 14" E Dist 4,345.83

Curve Data

Curve SWM01  
 P.I. Station 344+69.96 N 13,696,008.61 E 2,086,118.82  
 Delta = 7° 06' 11" (RT)  
 Degree = 2° 51' 53"  
 Tangent = 124.13  
 Length = 247.94  
 Radius = 2,000.00  
 External = 3.85  
 Long Chord = 247.79  
 Mid. Ord. = 3.84  
 P.C. Station 343+45.83 N 13,695,973.85 E 2,085,999.66  
 P.T. Station 345+93.78 N 13,696,028.37 E 2,086,241.37  
 C.C. N 13,694,053.88 E 2,086,559.75  
 Back = N 73° 44' 14" E  
 Ahead = N 80° 50' 25" E  
 Chord Bear = N 77° 17' 19" E

Course from PT SWM01 to SWM03 N 80° 50' 25" E Dist 514.22

Point SWM03 N 13,696,110.23 E 2,086,749.04 Sta 351+08.00

Course from SWM03 to SWM04 N 78° 09' 28" E Dist 485.00

Point SWM04 N 13,696,209.76 E 2,087,223.71 Sta 355+93.00

Ending chain SWM EB description

HIGHWAY 90 WB ALIGN (SWM WB)

Beginning chain SWM WB description

Point SWM05 N 13,696,534.73 E 2,087,085.41 Sta 600+00.00

Course from SWM05 to PC SWM02 S 78° 02' 57" W Dist 259.14

Curve Data

Curve SWM02  
 P.I. Station 604+54.80 N 13,696,440.56 E 2,086,640.47  
 Delta = 7° 28' 58" (LT)  
 Degree = 1° 54' 54"  
 Tangent = 195.66  
 Length = 390.75  
 Radius = 2,992.00  
 External = 6.39  
 Long Chord = 390.48  
 Mid. Ord. = 6.38  
 P.C. Station 602+59.14 N 13,696,481.07 E 2,086,831.88  
 P.T. Station 606+49.90 N 13,696,375.46 E 2,086,455.96  
 C.C. N 13,693,553.92 E 2,087,451.44  
 Back = S 78° 02' 57" W  
 Ahead = S 70° 33' 59" W  
 Chord Bear = S 74° 18' 28" W

Course from PT SWM02 to SWM07 S 70° 33' 59" W Dist 204.10

Point SWM07 N 13,696,307.55 E 2,086,263.49 Sta 608+54.00

Course from SWM07 to SWM08 S 73° 46' 26" W Dist 2,293.18

Point SWM08 N 13,695,666.77 E 2,084,061.65 Sta 631+47.18

Course from SWM08 to SWM09 S 73° 43' 39" W Dist 2,974.39

Point SWM09 N 13,694,833.34 E 2,081,206.42 Sta 661+21.57

Ending chain SWM WB description

SAN PEDRO TRANSIT CENTER ALIGN (SPTC)

Beginning chain SPTC description

Point SPTC01 N 13,737,959.54 E 2,128,108.35 Sta 600+00.00

Course from SPTC01 to PC SPTC01 N 0° 07' 19" W Dist 597.91

Curve Data

Curve SPTC01  
 P.I. Station 607+06.27 N 13,738,665.81 E 2,128,106.85  
 Delta = 3° 52' 44" (LT)  
 Degree = 1° 47' 26"  
 Tangent = 108.36  
 Length = 216.63  
 Radius = 3,200.00  
 External = 1.83  
 Long Chord = 216.59  
 Mid. Ord. = 1.83  
 P.C. Station 605+97.91 N 13,738,557.46 E 2,128,107.08  
 P.T. Station 608+14.55 N 13,738,773.91 E 2,128,099.29  
 C.C. N 13,738,550.65 E 2,124,907.09  
 Back = N 0° 07' 19" W  
 Ahead = N 4° 00' 02" W  
 Chord Bear = N 2° 03' 41" W

Course from PT SPTC01 to PC SPTC02 N 4° 00' 02" W Dist 250.59

Curve Data

Curve SPTC02  
 P.I. Station 611+25.18 N 13,739,083.79 E 2,128,077.62  
 Delta = 3° 51' 50" (RT)  
 Degree = 3° 13' 08"  
 Tangent = 60.04  
 Length = 120.04  
 Radius = 1,780.00  
 External = 1.01  
 Long Chord = 120.02  
 Mid. Ord. = 1.01  
 P.C. Station 610+65.14 N 13,739,023.89 E 2,128,081.81  
 P.T. Station 611+85.18 N 13,739,143.83 E 2,128,077.47  
 C.C. N 13,739,148.07 E 2,129,857.47  
 Back = N 4° 00' 02" W  
 Ahead = N 0° 08' 12" W  
 Chord Bear = N 2° 04' 07" W

Course from PT SPTC02 to SPTC04 N 0° 08' 12" W Dist 423.08

Point SPTC04 N 13,739,566.91 E 2,128,076.47 Sta 616+08.26

Ending chain SPTC description

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\General\1113501\_HALN\_Data01.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  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

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**HORIZONTAL ALIGNMENT DATA SHEET**

SHEET 1 OF 6

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK:	SAT	BEXAR	0915	12
DWG:				586
				65

IH 35 SB ALIGN (SB35)

Beginning chain SB35 description

Point SB3501 N 13,709,855.45 E 2,140,838.43 Sta 200+00.00  
 Course from SB3501 to PC SB3501 S 89° 42' 51" W Dist 3,965.78

Curve Data  
 \*-----\*

Curve SB3501  
 P.I. Station 240+89.94 N 13,709,835.04 E 2,136,748.54  
 Delta = 11° 20' 42" (RT)  
 Degree = 4° 35' 01"  
 Tangent = 124.16  
 Length = 247.51  
 Radius = 1,250.00  
 External = 6.15  
 Long Chord = 247.10  
 Mid. Ord. = 6.12  
 P.C. Station 239+65.78 N 13,709,835.66 E 2,136,872.70  
 P.T. Station 242+13.28 N 13,709,858.86 E 2,136,626.69  
 C.C. N 13,711,085.65 E 2,136,866.46  
 Back = S 89° 42' 51" W  
 Ahead = N 78° 56' 28" W  
 Chord Bear = N 84° 36' 48" W

Course from PT SB3501 to SB3503 N 78° 56' 28" W Dist 487.52

Point SB3503 N 13,709,952.37 E 2,136,148.23 Sta 247+00.80

Ending chain SB35 description

IH 35 NB ALIGN (NB35)

Beginning chain NB35 description

Point NB3501 N 13,709,405.60 E 2,135,834.24 Sta 100+00.00  
 Course from NB3501 to PC NB3501 N 80° 46' 47" E Dist 256.11

Curve Data  
 \*-----\*

Curve NB3501  
 P.I. Station 103+71.92 N 13,709,465.19 E 2,136,201.35  
 Delta = 8° 49' 46" (RT)  
 Degree = 3° 49' 11"  
 Tangent = 115.81  
 Length = 231.16  
 Radius = 1,500.00  
 External = 4.46  
 Long Chord = 230.93  
 Mid. Ord. = 4.45  
 P.C. Station 102+56.11 N 13,709,446.64 E 2,136,087.04  
 P.T. Station 104+87.27 N 13,709,465.98 E 2,136,317.15  
 C.C. N 13,707,966.02 E 2,136,327.38  
 Back = N 80° 46' 47" E  
 Ahead = N 89° 36' 34" E  
 Chord Bear = N 85° 11' 40" E

Course from PT NB3501 to NB3503 N 89° 36' 34" E Dist 3,299.82

Point NB3503 N 13,709,488.48 E 2,139,616.89 Sta 137+87.08

Course from NB3503 to NB3504 N 89° 29' 14" E Dist 240.26

Point NB3504 N 13,709,490.63 E 2,139,857.14 Sta 140+27.34

Course from NB3504 to NB3505 Due East Dist 834.31

Point NB3505 N 13,709,490.63 E 2,140,691.45 Sta 148+61.65

Ending chain NB35 description

HOUSTON EB ALIGN (HOU EB)

Beginning chain HOU EB description

Point HOU01 N 13,704,501.52 E 2,158,091.77 Sta 300+00.00  
 Course from HOU01 to HOU02 N 89° 51' 02" E Dist 1,765.06

Point HOU02 N 13,704,506.12 E 2,159,856.83 Sta 317+65.06  
 Course from HOU02 to PC HOU01 S 89° 57' 16" E Dist 2,262.94

Curve Data  
 \*-----\*

Curve HOU01  
 P.I. Station 343+64.61 N 13,704,504.06 E 2,162,456.38  
 Delta = 15° 27' 33" (RT)  
 Degree = 2° 18' 37"  
 Tangent = 336.61  
 Length = 669.13  
 Radius = 2,480.00  
 External = 22.74  
 Long Chord = 667.10  
 Mid. Ord. = 22.53  
 P.C. Station 340+28.00 N 13,704,504.33 E 2,162,119.77  
 P.T. Station 346+97.13 N 13,704,414.08 E 2,162,780.74  
 C.C. N 13,702,024.33 E 2,162,117.79  
 Back = S 89° 57' 16" E  
 Ahead = S 74° 29' 43" E  
 Chord Bear = S 82° 13' 30" E

Course from PT HOU01 to HOU04 S 74° 29' 43" E Dist 806.03

Point HOU04 N 13,704,198.61 E 2,163,557.44 Sta 355+03.17

Course from HOU04 to PC HOU02 S 75° 29' 08" E Dist 393.22

Curve Data  
 \*-----\*

Curve HOU02  
 P.I. Station 366+95.26 N 13,703,899.84 E 2,164,711.48  
 Delta = 15° 37' 53" (LT)  
 Degree = 0° 59' 04"  
 Tangent = 798.87  
 Length = 1,587.81  
 Radius = 5,820.00  
 External = 54.57  
 Long Chord = 1,582.89  
 Mid. Ord. = 54.06  
 P.C. Station 358+96.39 N 13,704,100.06 E 2,163,938.11  
 P.T. Station 374+84.20 N 13,703,915.42 E 2,165,510.20  
 C.C. N 13,709,734.31 E 2,165,396.75  
 Back = S 75° 29' 08" E  
 Ahead = N 88° 52' 59" E  
 Chord Bear = S 83° 18' 04" E

Course from PT HOU02 to HOU06 N 88° 52' 59" E Dist 1,631.60

Point HOU06 N 13,703,947.22 E 2,167,141.49 Sta 391+15.81

Course from HOU06 to HOU07 N 89° 45' 31" E Dist 1,885.83


Point HOU07 N 13,703,955.17 E 2,169,027.31 Sta 410+01.64


Ending chain HOU EB description

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\General\1113501\_HALN\_Data02.dgn

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 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
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HORIZONTAL ALIGNMENT  
 DATA SHEET

SHEET 2 OF 6

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.:
				586
				SHEET NO.:
				66

HOUSTON WB ALIGN (HOU WB)

RIGSBY FB ALIGN (RIG FB)

RIGSBY FB ALIGN (RIG FB) CONTINUED

Beginning chain HOU WB description

Point HOU08 N 13,703,995.18 E 2,169,027.14 Sta 500+00.00  
 Course from HOU08 to HOU09 S 89° 45' 31" W Dist 1,885.83  
 Point HOU09 N 13,703,987.23 E 2,167,141.32 Sta 518+85.83  
 Course from HOU09 to PC HOU03 S 88° 52' 59" W Dist 1,632.61

Curve Data  
\*-----\*

Curve HOU03  
 P.I. Station 544+13.83 N 13,703,937.95 E 2,164,613.80  
 Delta = 17° 36' 42" (RT)  
 Degree = 0° 59' 29"  
 Tangent = 895.39  
 Length = 1,776.66  
 Radius = 5,780.00  
 External = 68.94  
 Long Chord = 1,769.67  
 Mid. Ord. = 68.13  
 P.C. Station 535+18.44 N 13,703,955.41 E 2,165,509.02  
 P.T. Station 552+95.10 N 13,704,192.18 E 2,163,755.26  
 C.C. N 13,709,734.31 E 2,165,396.36  
 Back = S 88° 52' 59" W  
 Ahead = N 73° 30' 19" W  
 Chord Bear = N 82° 18' 40" W

Course from PT HOU03 to HOU11 N 73° 30' 19" W Dist 192.37  
 Point HOU11 N 13,704,246.80 E 2,163,570.81 Sta 554+87.47  
 Course from HOU11 to PC HOU04 N 74° 29' 43" W Dist 677.57

Curve Data  
\*-----\*

Curve HOU04  
 P.I. Station 565+99.38 N 13,704,544.03 E 2,162,499.36  
 Delta = 15° 27' 33" (LT)  
 Degree = 1° 47' 26"  
 Tangent = 434.34  
 Length = 863.40  
 Radius = 3,200.00  
 External = 29.34  
 Long Chord = 860.78  
 Mid. Ord. = 29.08  
 P.C. Station 561+65.05 N 13,704,427.93 E 2,162,917.89  
 P.T. Station 570+28.44 N 13,704,544.38 E 2,162,065.03  
 C.C. N 13,701,344.38 E 2,162,062.48  
 Back = N 74° 29' 43" W  
 Ahead = N 89° 57' 16" W  
 Chord Bear = N 82° 13' 30" W

Course from PT HOU04 to HOU13 N 89° 57' 16" W Dist 2,208.25  
 Point HOU13 N 13,704,546.13 E 2,159,856.77 Sta 592+36.69  
 Course from HOU13 to HOU14 S 89° 51' 01" W Dist 1,765.26  
 Point HOU14 N 13,704,541.52 E 2,158,091.52 Sta 610+01.96

Ending chain HOU WB description

Beginning chain RIG EB description

Point RIG01 N 13,695,009.09 E 2,146,114.56 Sta 100+00.00  
 Course from RIG01 to PC RIG C1 N 89° 58' 44" E Dist 3,952.98

Curve Data  
\*-----\*

Curve RIG C1  
 P.I. Station 145+39.30 N 13,695,010.75 E 2,150,653.87  
 Delta = 16° 29' 57" (LT)  
 Degree = 1° 25' 01"  
 Tangent = 586.32  
 Length = 1,164.53  
 Radius = 4,044.00  
 External = 42.28  
 Long Chord = 1,160.51  
 Mid. Ord. = 41.85  
 P.C. Station 139+52.98 N 13,695,010.53 E 2,150,067.54  
 P.T. Station 151+17.51 N 13,695,177.47 E 2,151,215.99  
 C.C. N 13,699,054.53 E 2,150,066.06  
 Back = N 89° 58' 44" E  
 Ahead = N 73° 28' 47" E  
 Chord Bear = N 81° 43' 46" E

Course from PT RIG C1 to PC RIG C2 N 73° 28' 47" E Dist 674.38

Curve Data  
\*-----\*

Curve RIG C2  
 P.I. Station 162+10.57 N 13,695,488.29 E 2,152,263.92  
 Delta = 14° 54' 29" (RT)  
 Degree = 1° 47' 26"  
 Tangent = 418.68  
 Length = 832.62  
 Radius = 3,200.00  
 External = 27.27  
 Long Chord = 830.28  
 Mid. Ord. = 27.04  
 P.C. Station 157+91.90 N 13,695,369.24 E 2,151,862.53  
 P.T. Station 166+24.52 N 13,695,500.07 E 2,152,682.43  
 C.C. N 13,692,301.33 E 2,152,772.46  
 Back = N 73° 28' 47" E  
 Ahead = N 88° 23' 16" E  
 Chord Bear = N 80° 56' 02" E

Course from PT RIG C2 to PC RIG C3 N 88° 23' 16" E Dist 1,677.87

Curve Data  
\*-----\*

Curve RIG C3  
 P.I. Station 186+74.82 N 13,695,557.75 E 2,154,731.93  
 Delta = 16° 56' 47" (RT)  
 Degree = 2° 17' 31"  
 Tangent = 372.43  
 Length = 739.42  
 Radius = 2,500.00  
 External = 27.59  
 Long Chord = 736.73  
 Mid. Ord. = 27.29  
 P.C. Station 183+02.39 N 13,695,547.27 E 2,154,359.64  
 P.T. Station 190+41.82 N 13,695,459.26 E 2,155,091.10  
 C.C. N 13,693,048.26 E 2,154,429.98  
 Back = N 88° 23' 16" E  
 Ahead = S 74° 39' 57" E  
 Chord Bear = S 83° 08' 20" E

Course from PT RIG C3 to PC RIG C4 S 74° 39' 57" E Dist 721.70

Curve Data  
\*-----\*

Curve RIG C4  
 P.I. Station 201+06.64 N 13,695,177.67 E 2,156,118.01  
 Delta = 12° 57' 51" (LT)  
 Degree = 1° 53' 50"  
 Tangent = 343.13  
 Length = 683.33  
 Radius = 3,020.00  
 External = 19.43  
 Long Chord = 681.87  
 Mid. Ord. = 19.31  
 P.C. Station 197+63.51 N 13,695,268.41 E 2,155,787.10  
 P.T. Station 204+46.84 N 13,695,163.48 E 2,156,460.85  
 C.C. N 13,698,180.90 E 2,156,585.74  
 Back = S 74° 39' 57" E  
 Ahead = S 87° 37' 48" E  
 Chord Bear = S 81° 08' 52" E

Course from PT RIG C4 to RIG06 S 87° 37' 48" E Dist 363.40  
 Point RIG06 N 13,695,148.45 E 2,156,823.94 Sta 208+10.24  
 Course from RIG06 to RIG07 S 89° 38' 50" E Dist 1,626.03  
 Point RIG07 N 13,695,138.44 E 2,158,449.94 Sta 224+36.27  
 Course from RIG07 to RIG08 N 89° 45' 25" E Dist 672.92  
 Point RIG08 N 13,695,141.29 E 2,159,122.86 Sta 231+09.19  
 Course from RIG08 to RIG09 N 89° 49' 44" E Dist 5,361.43  
 Point RIG09 N 13,695,157.31 E 2,164,484.26 Sta 284+70.62

Ending chain RIG EB description

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



HORIZONTAL ALIGNMENT DATA SHEET

SHEET 3 OF 6

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.:
				586
				SHEET NO.:
				67

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\General\1113501\_HALN\_Data03.dgn

RIGSBY WB ALIGN (RIG WB)

RIGSBY WB ALIGN (RIG WB) CONTINUED

Beginning chain RIG WB description

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=====
Point RIG10      N   13,695,206.23 E   2,164,484.11 Sta   500+00.00
Course from RIG10 to RIG11 S 89° 49' 44" W Dist 5,361.44
Point RIG11      N   13,695,190.22 E   2,159,122.70 Sta   553+61.44
Course from RIG11 to RIG12 S 88° 38' 38" W Dist 672.64
Point RIG12      N   13,695,174.30 E   2,158,450.25 Sta   560+34.08
Course from RIG12 to RIG13 N 89° 38' 50" W Dist 1,626.59
Point RIG13      N   13,695,184.32 E   2,156,823.69 Sta   576+60.67
Course from RIG13 to PC RIG C5 N 88° 17' 57" W Dist 327.42
    
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Curve Data

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*-----*
Curve RIG C5
P.I. Station    583+45.51 N   13,695,204.64 E   2,156,139.15
Delta =         13° 38' 00" (RT)
Degree =        1° 54' 58"
Tangent =       357.42
Length =        711.46
Radius =        2,990.00
External =       21.29
Long Chord =    709.78
Mid. Ord. =     21.14
P.C. Station    579+88.09 N   13,695,194.03 E   2,156,496.41
P.T. Station    586+99.55 N   13,695,299.16 E   2,155,794.46
C.C.           N   13,698,182.72 E   2,156,585.16
Back = N 88° 17' 57" W
Ahead = N 74° 39' 57" W
Chord Bear = N 81° 28' 57" W
    
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Course from PT RIG C5 to PC RIG C6 N 74° 39' 57" W Dist 740.79

Curve Data

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*-----*
Curve RIG C6
P.I. Station    598+14.85 N   13,695,594.10 E   2,154,718.86
Delta =         16° 56' 47" (LT)
Degree =        2° 16' 45"
Tangent =       374.52
Length =        743.56
Radius =        2,514.00
External =       27.74
Long Chord =    740.86
Mid. Ord. =     27.44
P.C. Station    594+40.34 N   13,695,495.06 E   2,155,080.04
P.T. Station    601+83.90 N   13,695,583.56 E   2,154,344.49
C.C.           N   13,693,070.56 E   2,154,415.22
Back = N 74° 39' 57" W
Ahead = S 88° 23' 16" W
Chord Bear = N 83° 08' 20" W
    
```

Course from PT RIG C6 to PC RIG C7 S 88° 23' 16" W Dist 1,672.13

Curve Data

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*-----*
Curve RIG C7
P.I. Station    622+76.81 N   13,695,524.68 E   2,152,252.41
Delta =         14° 47' 57" (LT)
Degree =        1° 46' 06"
Tangent =       420.78
Length =        836.88
Radius =        3,240.00
External =       27.21
Long Chord =    834.56
Mid. Ord. =     26.98
P.C. Station    618+56.03 N   13,695,536.52 E   2,152,673.02
P.T. Station    626+92.91 N   13,695,405.80 E   2,151,848.77
C.C.           N   13,692,297.80 E   2,152,764.18
Back = S 88° 23' 16" W
Ahead = S 73° 35' 19" W
Chord Bear = S 80° 59' 18" W
    
```

Course from PT RIG C7 to PC RIG C8 S 73° 35' 19" W Dist 630.66

Curve Data

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*-----*
Curve RIG C8
P.I. Station    638+98.20 N   13,695,065.27 E   2,150,692.59
Delta =         16° 23' 26" (RT)
Degree =        1° 26' 10"
Tangent =       574.63
Length =        1,141.41
Radius =        3,990.00
External =       41.17
Long Chord =    1,137.52
Mid. Ord. =     40.75
P.C. Station    633+23.57 N   13,695,227.62 E   2,151,243.81
P.T. Station    644+64.98 N   13,695,065.06 E   2,150,117.96
C.C.           N   13,699,055.05 E   2,150,116.50
Back = S 73° 35' 19" W
Ahead = S 89° 58' 44" W
Chord Bear = S 81° 47' 02" W
    
```

Course from PT RIG C8 to RIG18 S 89° 58' 44" W Dist 4,003.42



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Point RIG18      N   13,695,063.59 E   2,146,114.54 Sta   684+68.40
    
```

Ending chain RIG WB description

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\General\1113501\_HALN\_Data04.dgn

REV. NO.	DATE	DESCRIPTION	BY
 <p><b>PAPE-DAWSON ENGINEERS</b></p> <p>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</p>  <p>Texas Department of Transportation © 2017</p>			
<p>HORIZONTAL ALIGNMENT DATA SHEET</p>			
SHEET 4 OF 6			
DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:
CHK:	6	TEXAS	
DWG:	DIST.:	COUNTY:	CONT. NO.:
	SAT	BEXAR	0915
			12
			586
			68

WW WHITE NB ALIGN (WW NB)

WW WHITE NB ALIGN (WW NB) CONTINUED

Beginning chain WW NB description

Point WW01 N 13,686,067.64 E 2,158,531.19 Sta 100+00.00  
 Course from WW01 to WW02 N 0° 32' 11" W Dist 3,413.23  
 Point WW02 N 13,689,480.72 E 2,158,499.24 Sta 134+13.23  
 Course from WW02 to WW03 N 0° 14' 19" W Dist 2,475.30  
 Point WW03 N 13,691,956.00 E 2,158,488.93 Sta 158+88.53  
 Course from WW03 to WW04 N 0° 44' 56" W Dist 1,635.44  
 Point WW04 N 13,693,591.30 E 2,158,467.56 Sta 175+23.97  
 Course from WW04 to PC WW C1 N 0° 02' 22" E Dist 1,468.91

Curve Data

Curve WW C1  
 P.I. Station 192+28.73 N 13,695,296.06 E 2,158,468.73  
 Delta = 17° 38' 23" (LT)  
 Degree = 3° 46' 10"  
 Tangent = 235.85  
 Length = 467.96  
 Radius = 1,520.00  
 External = 18.19  
 Long Chord = 466.12  
 Mid. Ord. = 17.97  
 P.C. Station 189+92.88 N 13,695,060.21 E 2,158,468.57  
 P.T. Station 194+60.84 N 13,695,520.87 E 2,158,397.42  
 C.C. N 13,695,061.26 E 2,156,948.57  
 Back = N 0° 02' 22" E  
 Ahead = N 17° 36' 01" W  
 Chord Bear = N 8° 46' 49" W

Course from PT WW C1 to PC WW C2 N 17° 36' 01" W Dist 351.64

Curve Data

Curve WW C2  
 P.I. Station 201+87.58 N 13,696,213.59 E 2,158,177.67  
 Delta = 17° 12' 05" (RT)  
 Degree = 2° 18' 37"  
 Tangent = 375.09  
 Length = 744.55  
 Radius = 2,480.00  
 External = 28.21  
 Long Chord = 741.75  
 Mid. Ord. = 27.89  
 P.C. Station 198+12.49 N 13,695,856.05 E 2,158,291.09  
 P.T. Station 205+57.03 N 13,696,588.67 E 2,158,175.06  
 C.C. N 13,696,605.93 E 2,160,655.00  
 Back = N 17° 36' 01" W  
 Ahead = N 0° 23' 56" W  
 Chord Bear = N 8° 59' 58" W

Course from PT WW C2 to WW07 N 0° 23' 56" W Dist 2,514.56

Point WW07 N 13,699,103.17 E 2,158,157.56 Sta 230+71.59

Course from WW07 to WW08 N 1° 08' 02" W Dist 1,631.67

Point WW08 N 13,700,734.52 E 2,158,125.27 Sta 247+03.27

Course from WW08 to PC WW C3 N 0° 16' 39" W Dist 7,814.06

Curve Data

Curve WW C3  
 P.I. Station 325+59.80 N 13,708,590.96 E 2,158,087.21  
 Delta = 3° 17' 16" (RT)  
 Degree = 3° 52' 17"  
 Tangent = 42.47  
 Length = 84.93  
 Radius = 1,480.00  
 External = 0.61  
 Long Chord = 84.91  
 Mid. Ord. = 0.61  
 P.C. Station 325+17.32 N 13,708,548.49 E 2,158,087.42  
 P.T. Station 326+02.25 N 13,708,633.38 E 2,158,089.44  
 C.C. N 13,708,555.65 E 2,159,567.40  
 Back = N 0° 16' 39" W  
 Ahead = N 3° 00' 37" E  
 Chord Bear = N 1° 21' 59" E

Course from PT WW C3 to PC WW C4 N 3° 00' 37" E Dist 3,380.55

Curve Data

Curve WW C4  
 P.I. Station 361+94.73 N 13,712,220.90 E 2,158,278.10  
 Delta = 32° 48' 15" (RT)  
 Degree = 7° 57' 28"  
 Tangent = 211.94  
 Length = 412.23  
 Radius = 720.00  
 External = 30.54  
 Long Chord = 406.62  
 Mid. Ord. = 29.30  
 P.C. Station 359+82.79 N 13,712,009.26 E 2,158,266.97  
 P.T. Station 363+95.02 N 13,712,392.76 E 2,158,402.12  
 C.C. N 13,711,971.45 E 2,158,985.98  
 Back = N 3° 00' 37" E  
 Ahead = N 35° 48' 52" E  
 Chord Bear = N 19° 24' 44" E

Course from PT WW C4 to WW11 N 35° 48' 52" E Dist 226.76


Point WW11 N 13,712,576.65 E 2,158,534.81 Sta 366+21.79

Ending chain WW NB description


Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\General\1113501\_HALN\_Data05.dgn

REV. NO.	DATE	DESCRIPTION	BY



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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HORIZONTAL ALIGNMENT  
 DATA SHEET

SHEET 5 OF 6

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.:
				586
				SHEET NO.:
				69

WW WHITE SB ALIGN (WW SB)

WW WHITE SB ALIGN (WW SB) CONTINUED

Beginning chain WW SB description

Point WW12 N 13,713,489.53 E 2,157,925.92 Sta 600+00.00  
 Course from WW12 to PC WW C5 S 38° 10' 06" E Dist 386.76

Curve Data  
 \*-----\*

Curve WW C5  
 P.I. Station 605+74.59 N 13,713,037.79 E 2,158,281.01  
 Delta = 41° 10' 43" (RT)  
 Degree = 11° 27' 33"  
 Tangent = 187.83  
 Length = 359.35  
 Radius = 500.00  
 External = 34.12  
 Long Chord = 351.67  
 Mid. Ord. = 31.94  
 P.C. Station 603+86.76 N 13,713,185.46 E 2,158,164.93  
 P.T. Station 607+46.11 N 13,712,850.22 E 2,158,271.14  
 C.C. N 13,712,876.47 E 2,157,771.83  
 Back = S 38° 10' 06" E  
 Ahead = S 3° 00' 37" W  
 Chord Bear = S 17° 34' 44" E

Course from PT WW C5 to PC WW C6 S 3° 00' 37" W Dist 4,220.56

Curve Data  
 \*-----\*

Curve WW C6  
 P.I. Station 650+10.30 N 13,708,591.92 E 2,158,047.21  
 Delta = 3° 17' 16" (LT)  
 Degree = 3° 46' 10"  
 Tangent = 43.62  
 Length = 87.22  
 Radius = 1,520.00  
 External = 0.63  
 Long Chord = 87.21  
 Mid. Ord. = 0.63  
 P.C. Station 649+66.68 N 13,708,635.48 E 2,158,049.50  
 P.T. Station 650+53.90 N 13,708,548.29 E 2,158,047.42  
 C.C. N 13,708,555.65 E 2,159,567.40  
 Back = S 3° 00' 37" W  
 Ahead = S 0° 16' 39" E  
 Chord Bear = S 1° 21' 59" W

Course from PT WW C6 to WW15 S 0° 16' 39" E Dist 7,814.44

Point WW15 N 13,700,733.94 E 2,158,085.27 Sta 728+68.34

Course from WW15 to WW16 S 1° 08' 02" E Dist 1,631.73

Point WW16 N 13,699,102.53 E 2,158,117.56 Sta 745+00.07

Course from WW16 to PC WW C7 S 0° 23' 56" E Dist 2,514.20

Curve Data  
 \*-----\*

Curve WW C7  
 P.I. Station 773+95.41 N 13,696,207.26 E 2,158,137.72  
 Delta = 17° 12' 05" (LT)  
 Degree = 2° 16' 25"  
 Tangent = 381.15  
 Length = 756.56  
 Radius = 2,520.00  
 External = 28.66  
 Long Chord = 753.72  
 Mid. Ord. = 28.34  
 P.C. Station 770+14.27 N 13,696,588.39 E 2,158,135.06  
 P.T. Station 777+70.82 N 13,695,843.95 E 2,158,252.96  
 C.C. N 13,696,605.93 E 2,160,655.00  
 Back = S 0° 23' 56" E  
 Ahead = S 17° 36' 01" E  
 Chord Bear = S 8° 59' 58" E

Course from PT WW C7 to PC WW C8 S 17° 36' 01" E Dist 351.64

Curve Data

Curve WW C8  
 P.I. Station 783+52.11 N 13,695,289.88 E 2,158,428.73  
 Delta = 17° 38' 22" (RT)  
 Degree = 3° 52' 17"  
 Tangent = 229.64  
 Length = 455.64  
 Radius = 1,480.00  
 External = 17.71  
 Long Chord = 453.85  
 Mid. Ord. = 17.50  
 P.C. Station 781+22.47 N 13,695,508.77 E 2,158,359.29  
 P.T. Station 785+78.11 N 13,695,060.24 E 2,158,428.57  
 C.C. N 13,695,061.26 E 2,156,948.57  
 Back = S 17° 36' 01" E  
 Ahead = S 0° 02' 22" W  
 Chord Bear = S 8° 46' 49" E

Course from PT WW C8 to WW19 S 0° 02' 22" W Dist 1,469.19

Point WW19 N 13,693,591.05 E 2,158,427.56 Sta 800+47.30

Course from WW19 to WW20 S 0° 44' 56" E Dist 1,635.54

Point WW20 N 13,691,955.66 E 2,158,448.94 Sta 816+82.84

Course from WW20 to WW21 S 0° 14' 19" E Dist 2,475.23

Point WW21 N 13,689,480.45 E 2,158,459.24 Sta 841+58.07



Course from WW21 to WW22 S 0° 32' 11" E Dist 3,413.33

Point WW22 N 13,686,067.27 E 2,158,491.20 Sta 875+71.40

Ending chain WW SB description

Plotted on: 9/29/2017

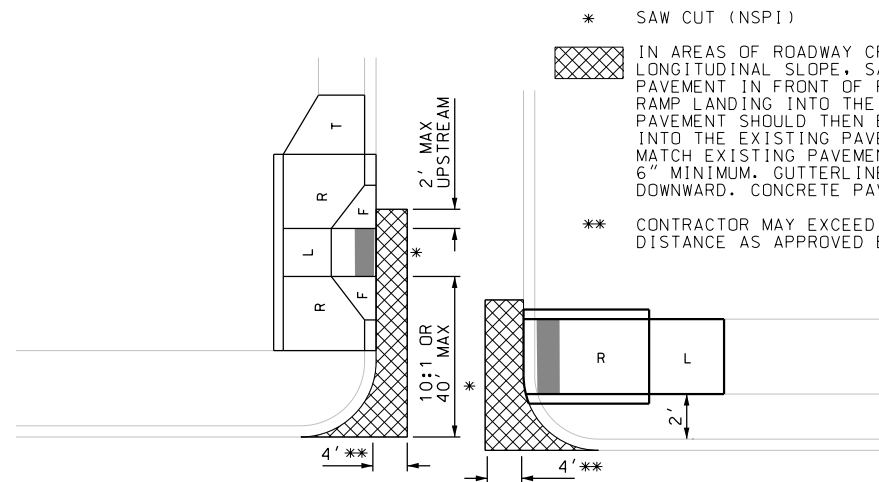
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REV. NO.	DATE	DESCRIPTION	BY
 <p>SAN ANTONIO   AUSTIN   HOUSTON   FORT WORTH   DALLAS                  2000 NW LOOP 410   SAN ANTONIO, TX 78213   210.375.9000                  TBPE FIRM REGISTRATION #470   TBPLS FIRM REGISTRATION #10028800</p>			
 <p>© 2017</p>			
<p>HORIZONTAL ALIGNMENT                  DATA SHEET</p>			
SHEET 6 OF 6			
DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:
CHK:	6	TEXAS	VA
DWG:	DIST.:	COUNTY:	CONT. NO. SECT. NO. JOB NO. SHEET NO.
CHK:	SAT	BEXAR	0915 12 586 70

Plotted on: 9/29/2017

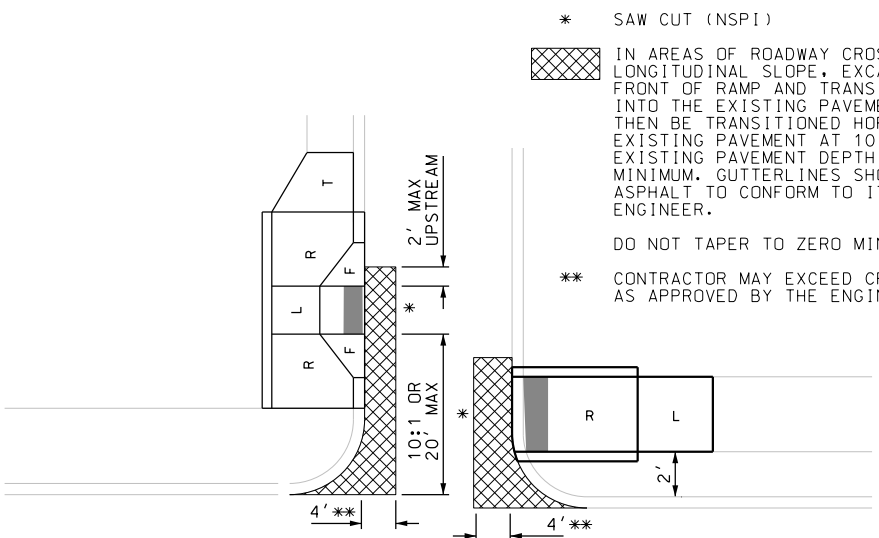
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CONCRETE ROADWAY  
OR  
CURB AND GUTTER SECTION



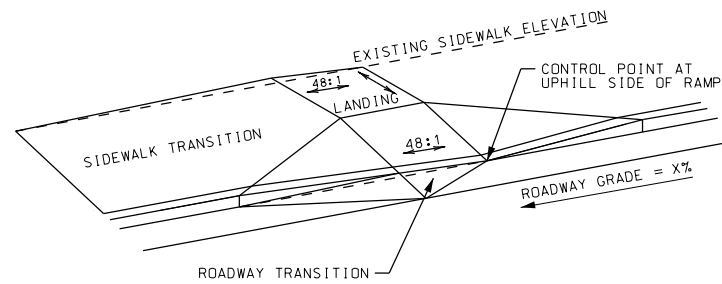
\* SAW CUT (NSPI)  
 IN AREAS OF ROADWAY CROSS SLOPES EXCEEDING 48:1 LONGITUDINAL SLOPE, SAW CUT AND EXCAVATE 4' OF PAVEMENT IN FRONT OF RAMP AND TRANSITION THE RAMP LANDING INTO THE EXISTING PAVEMENT. THE PAVEMENT SHOULD THEN BE TRANSITIONED HORIZONTALLY INTO THE EXISTING PAVEMENT AT 10:1. PAVEMENT SHOULD MATCH EXISTING PAVEMENT DEPTH BUT NOT LESS THAN 6" MINIMUM. GUTTERLINES SHOULD NOT BE ADJUSTED DOWNWARD. CONCRETE PAVEMENT TO CONFORM TO ITEM 360.  
 \*\* CONTRACTOR MAY EXCEED CROSS SLOPE TRANSITION DISTANCE AS APPROVED BY THE ENGINEER.

ASPHALT/SEALCOAT ROADWAY

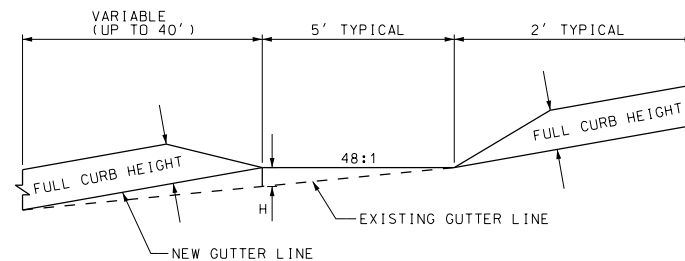


\* SAW CUT (NSPI)  
 IN AREAS OF ROADWAY CROSS SLOPES EXCEEDING 48:1 LONGITUDINAL SLOPE, EXCAVATE 2' OF PAVEMENT IN FRONT OF RAMP AND TRANSITION THE RAMP LANDING INTO THE EXISTING PAVEMENT. THE PAVEMENT SHOULD THEN BE TRANSITIONED HORIZONTALLY INTO THE EXISTING PAVEMENT AT 10:1. PAVEMENT SHOULD MATCH EXISTING PAVEMENT DEPTH BUT NOT LESS THAN 2" MINIMUM. GUTTERLINES SHOULD NOT BE ADJUSTED DOWNWARD. ASPHALT TO CONFORM TO ITEM 340 AS DIRECTED BY THE ENGINEER.  
 DO NOT TAPER TO ZERO MINIMUM 1 1/2" DEPTH @ TIE-IN  
 \*\* CONTRACTOR MAY EXCEED CROSS SLOPE TRANSITION DISTANCE AS APPROVED BY THE ENGINEER.

ROADWAY TRANSITION

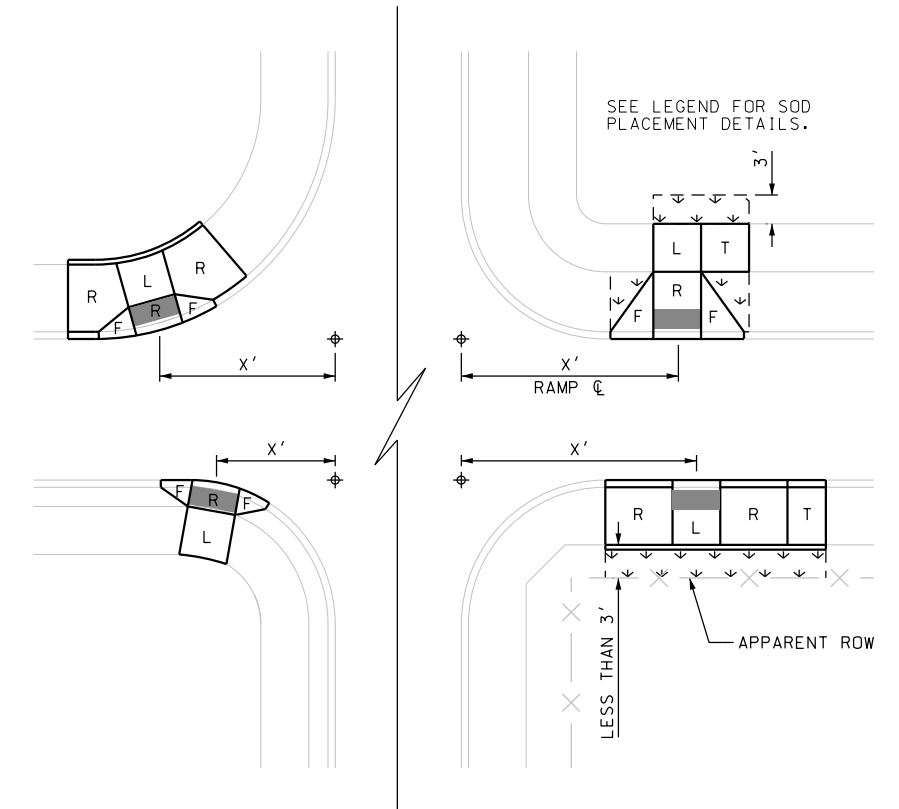


CURB ELEVATION



DIFFERENTIAL BETWEEN RAMP AND ROADWAY LONGITUDINAL SLOPE	H	
1%	0.04'	0.50"
2%	0.08'	1.00"
3%	0.12'	1.50"
4%	0.16'	2.00"
5%	0.20'	2.40"
6%	0.24'	2.90"

HORIZONTAL RAMP CONTROL



DESIGN

INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL

INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SAMPLE ELEVATION TABLE

POINT	NORTHING	EASTING	ELEV	DESC
D00306	13731471.13	2109872.82	931.54	EXIST
D00307	13731564.50	2109803.11	--	ME
D00308	13731481.27	2109859.72	932.64	PROP

EXIST = KNOWN EXISTING GROUND ELEVATION DETERMINED BY TOPOGRAPHIC SURVEY. IF FIELD CONDITIONS DIFFER FROM THAT INDICATED, NOTIFY THE ENGINEER IMMEDIATELY. CONTRACTOR MAY MATCH PROPOSED IMPROVEMENTS FLUSH WITH SURROUNDINGS WITH THE APPROVAL OF THE ENGINEER.

PROP = PROPOSED ELEVATION

ME = CONTRACTOR SHALL MATCH PROPOSED IMPROVEMENTS FLUSH WITH SURROUNDINGS.

SLOPES IDENTIFIED IN THE LEGEND CONTROL ELEMENT COMPONENTS IN THE EVENT OF DISCREPANCIES BETWEEN ELEVATION CALLOUTS AND FIELD CONDITIONS.

LEGEND

- CAMERA POSITION
- FIRE HYDRANT
- GAS METER
- GAS VALVE
- GROUND BOX
- GUY ANCHOR
- IRRIGATION
- JUNCTION BOX
- LIGHT POLE
- LUMINAIRE STANDARD
- MAIL BOX
- MANHOLE
- NSPI NO SEPARATE PAY ITEM
- PEDESTAL SIGNAL POLE
- PI POINT
- POWER/UTILITY POLE
- SEWER VALVE
- SIGN
- TRAFFIC SIGNAL BOX
- TRAFFIC SIGNAL CONTROLLER
- TRAFFIC SIGNAL POLE
- TRANSFORMER
- TREE/BUSHES
- UTILITY PEDESTAL/MARKER
- UTILITY VAULT
- WATER METER
- WATER VALVE

- F = FLARE (10:1 OR LESS)
- R = RAMP (CROSS SLOPE NOT TO EXCEED 48:1; LONGITUDINAL NOT TO EXCEED 12:1)
- L = LANDING (SHALL NOT EXCEED 48:1 SLOPE IN ANY DIRECTION)
- L1 = SHARED LANDING (SHALL NOT EXCEED 48:1 SLOPE IN ANY DIRECTION)
- LS = LEVEL SIDEWALK (SHALL NOT EXCEED 48:1 SLOPE IN ANY DIRECTION)(PAID AS SIDEWALK)
- SL = SLOPED SIDEWALK (LONGITUDINAL SLOPES MAY NOT EXCEED 20:1, CROSS SLOPES MAY NOT EXCEED 48:1)
- T = TRANSITION (PAID FOR UNDER CONC SIDEWALKS)
- TOC = TOP OF CURB
- FOC = FACE OF CURB
- ↘ = BLOCK SOD; PLACED BEHIND CONSTRUCTION LIMITS NEIGHBORING ROW, PLACED FULL LIMITS BETWEEN BACK OF CURB AND CONSTRUCTION IF DIVORCED OR AS SHOWN ON THE PLANS
- X- = EXISTING FENCE
- (NSPI) = ITEM IS INCIDENTAL TO CURB RAMP/SIDEWALK CONSTRUCTION. (NO SEPARATE PAY ITEM)

NOTES

- FLARE (F), RAMP (R), AND LANDING (L), DIRECTLY IN CONTACT WITH THE CURB RAMP ARE PAID FOR UNDER ITEM 531 "CURB RAMPS"
- LEVEL SIDEWALK (LS) AND RAMPS (R) NOT DIRECTLY IN CONTACT WITH THE CURB RAMP ARE PAID FOR UNDER ITEM 531 "SIDEWALK"

REV. NO.	DATE	DESCRIPTION	BY

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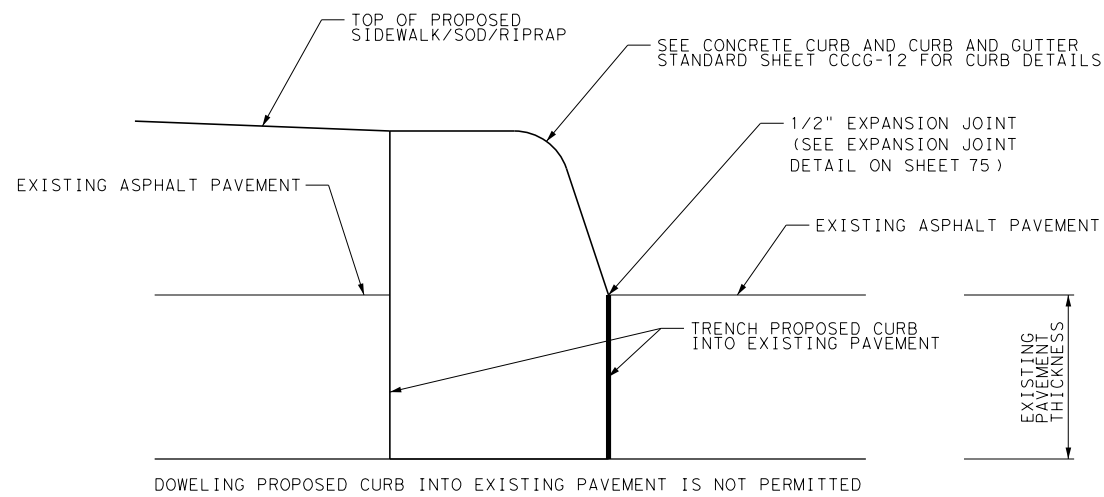
SPECIAL DETAILS

SHEET 1 OF 12

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	71

## CURB TRENCH DETAIL

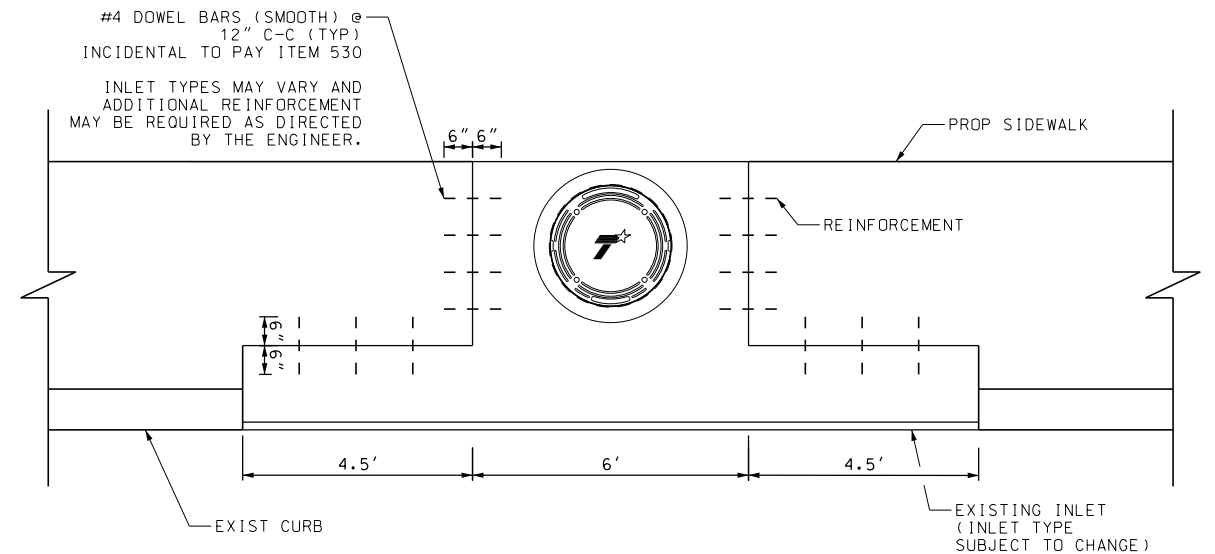
USE WHEN INSTALLING A CURB INTO EXISTING ASPHALT PAVEMENT



DOWELING PROPOSED CURB INTO EXISTING PAVEMENT IS NOT PERMITTED

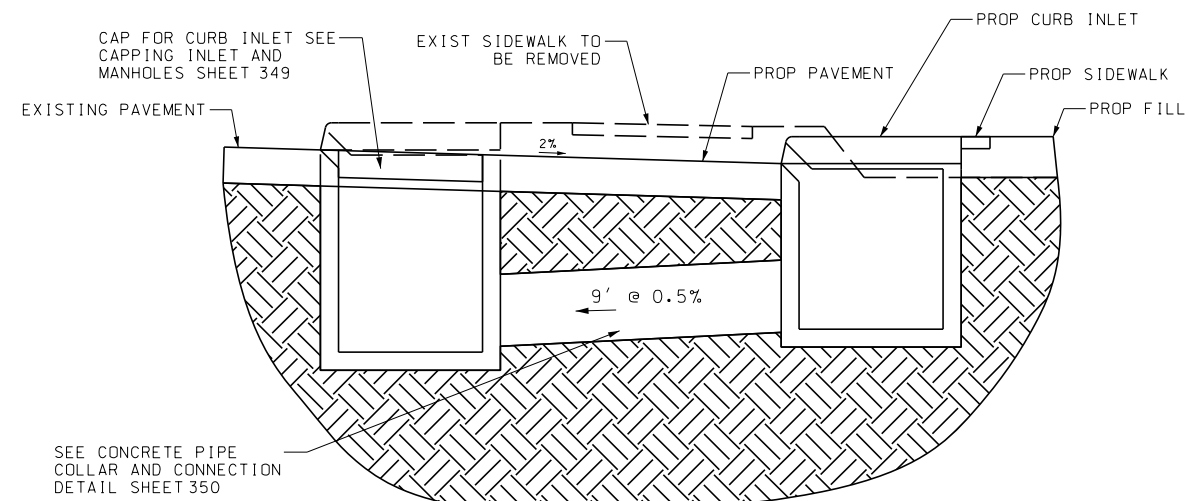
## INLET DOWELING DETAIL

NOT TO SCALE



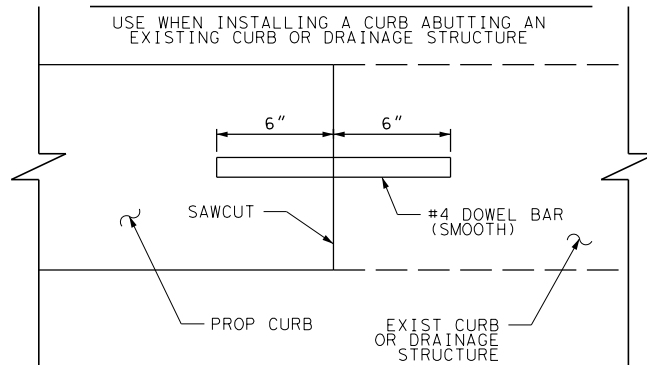
## INLET DETAIL

NOT TO SCALE

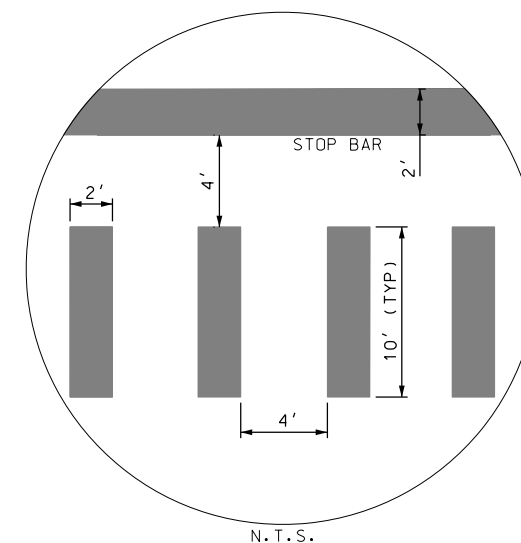


## CURB TIE-IN DETAIL

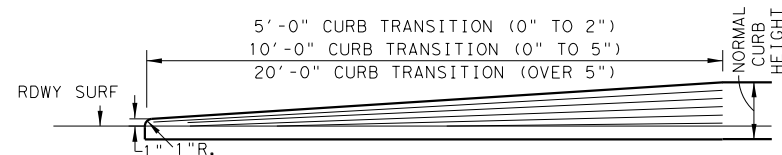
USE WHEN INSTALLING A CURB ABUTTING AN EXISTING CURB OR DRAINAGE STRUCTURE



## TYPICAL CONTINENTAL CROSSWALK DETAIL



## TYPICAL TRANSITION FOR CONCRETE CURB ENDS



### DESIGN

#### INTERIM REVIEW

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P.E. SERIAL NO: 105193  
DATE: 9/29/2017

### REVIEW AND APPROVAL

#### INTERIM REVIEW

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ENGINEER: JAMES A. LUTZ  
P.E. SERIAL NO: 84722  
DATE: 9/29/2017

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## SPECIAL DETAILS

SHEET 2 OF 12

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	72

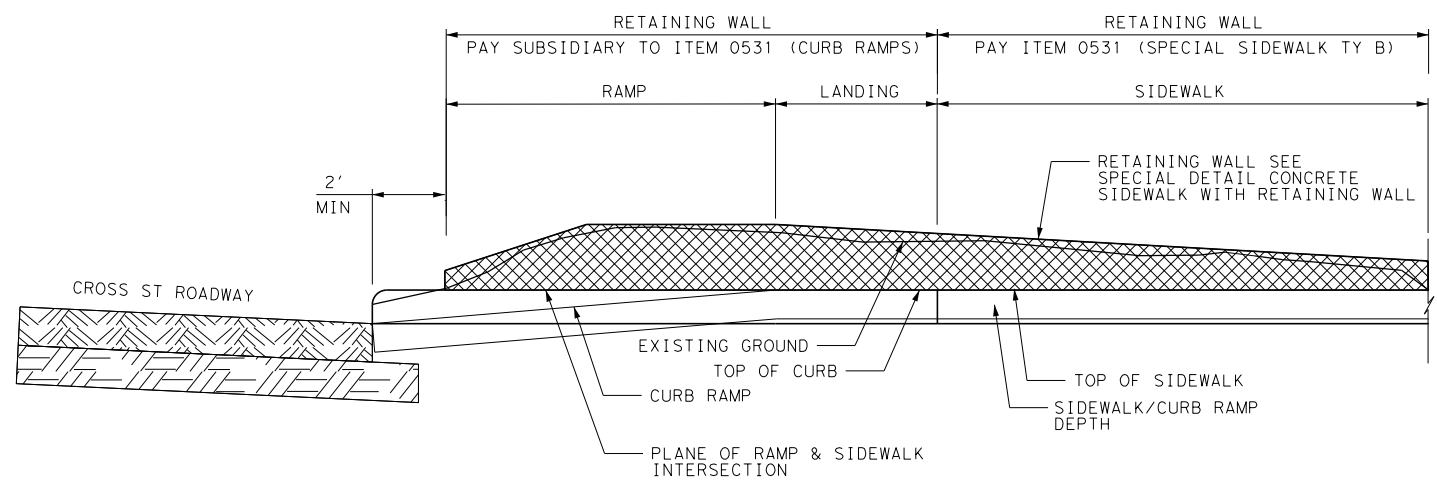
Plotted on: 9/29/2017

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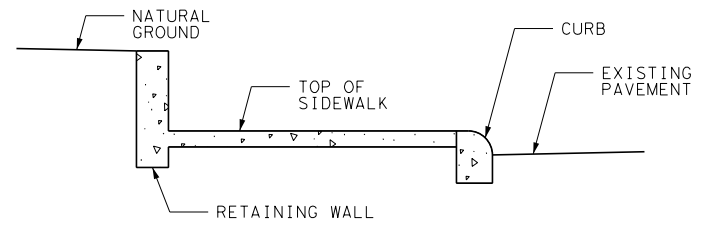


Plotted on: 9/29/2017

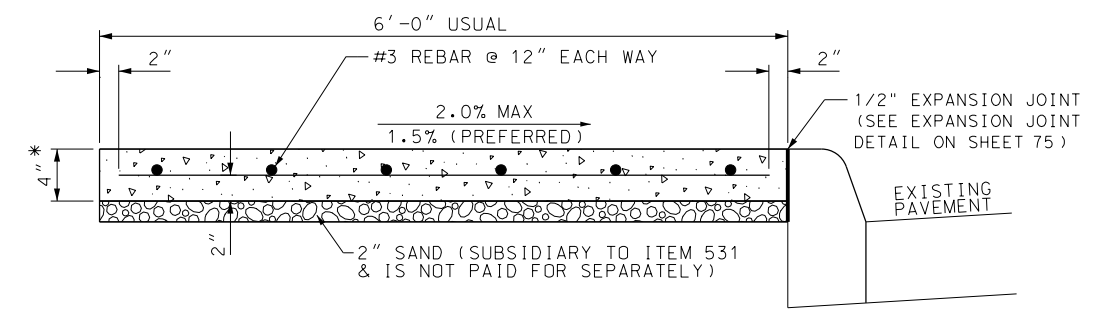
### RETAINING WALL DETAIL



### SECTION



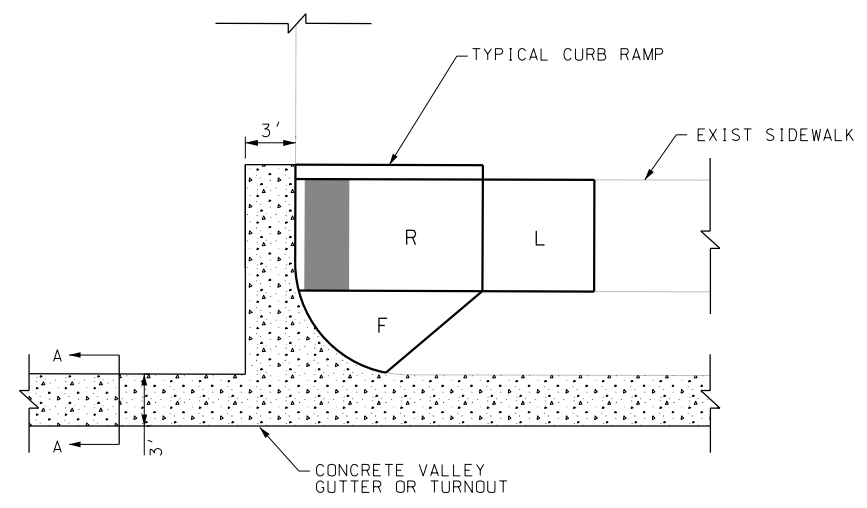
### SIDEWALK DETAILS



PLACE GROOVED JOINTS IN THE SIDEWALK AT A MAX SPACING OF 10 FT  
PLACE 1/2" EXPANSION JOINTS AT A MAX SPACING OF 40FT TO COINCIDE WITH THE CURB EXPANSION JOINTS.

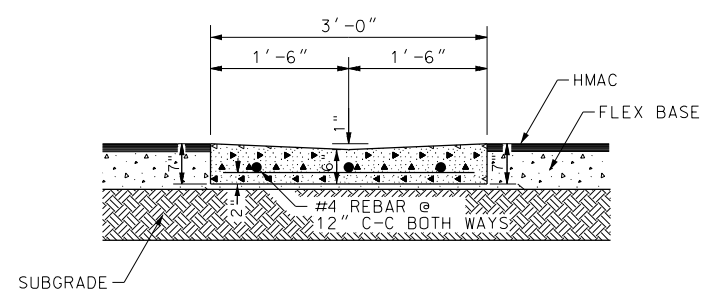
\* UNLESS OTHERWISE SHOWN

### TYPICAL CONC. VALLEY GUTTER



### CONC. VALLEY GUTTER

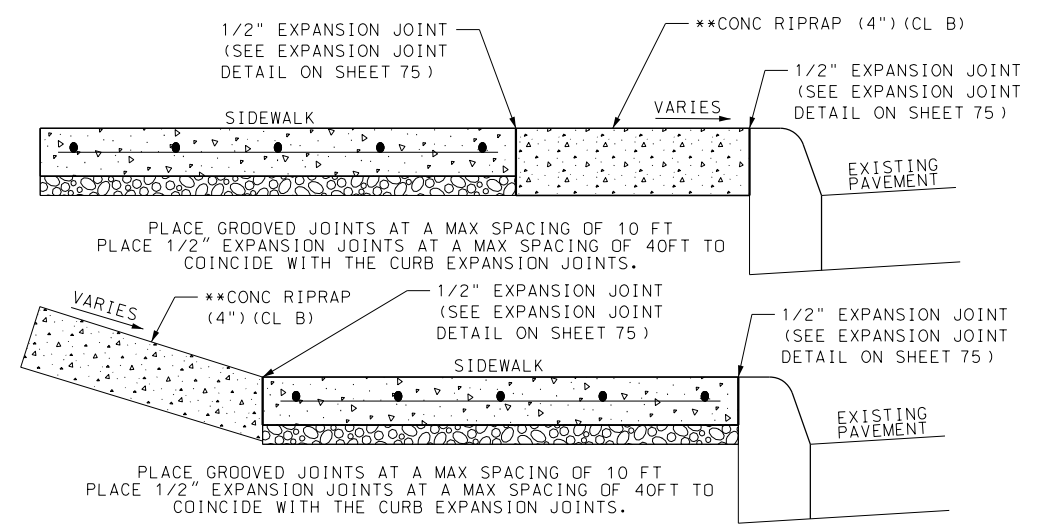
TO BE USED WHERE REQUIRED TO CARRY DRAINAGE ACROSS SIDE STREETS



### SECTION A-A

N. T. S.

### RIPRAP DETAIL



\*\* REINFORCEMENT AS SPECIFIED IN ITEM 432

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DATE:	9/29/2017

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INTERIM REVIEW	
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.	
ENGINEER:	JAMES A. LUTZ
P.E. SERIAL NO:	84722
DATE:	9/29/2017

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## SPECIAL DETAILS

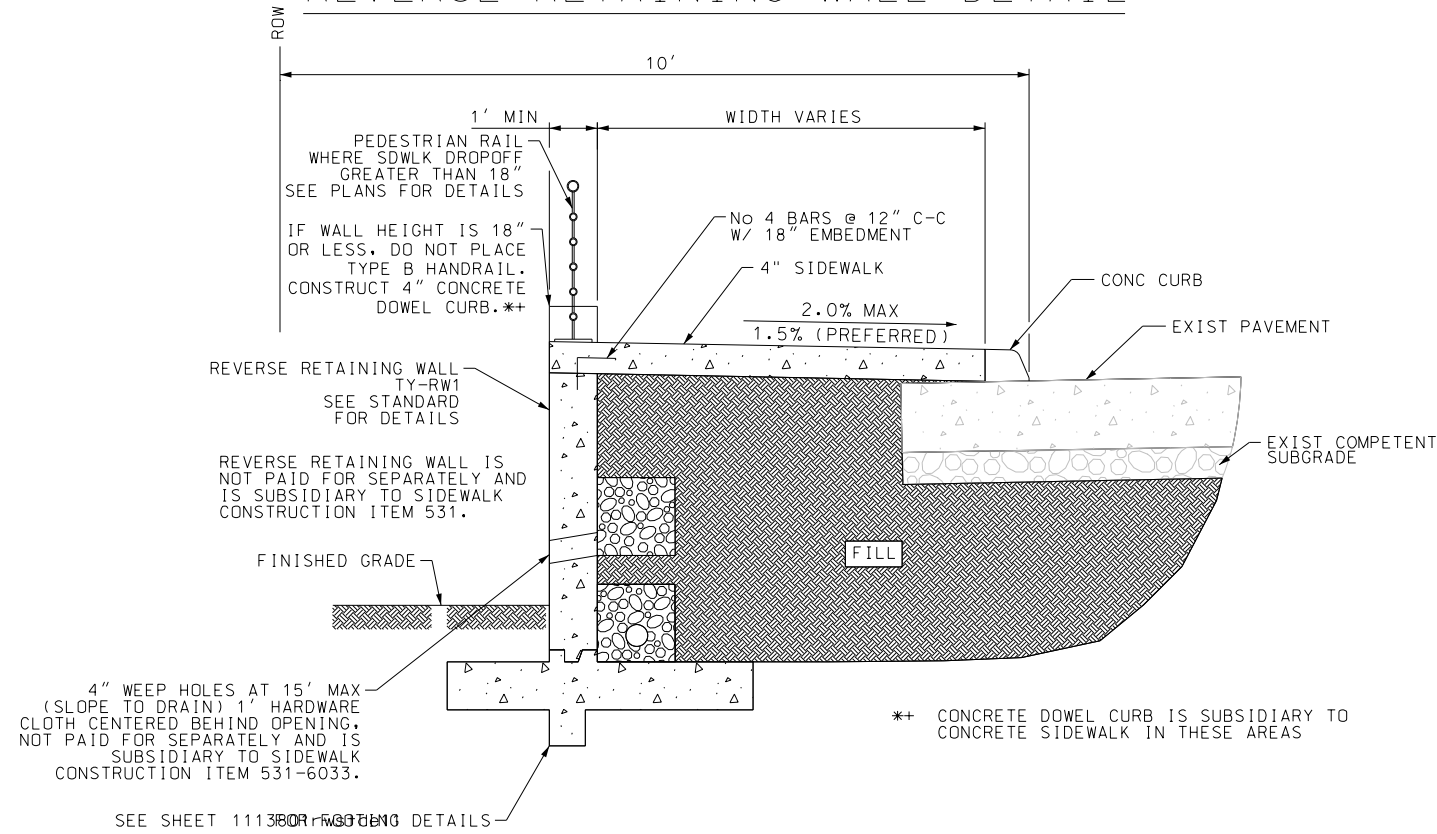
SHEET 3 OF 12					
DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:	
CHK DGN:	6	TEXAS		VA	
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:
CHK DWG:	SAT	BEXAR	0915	12	586

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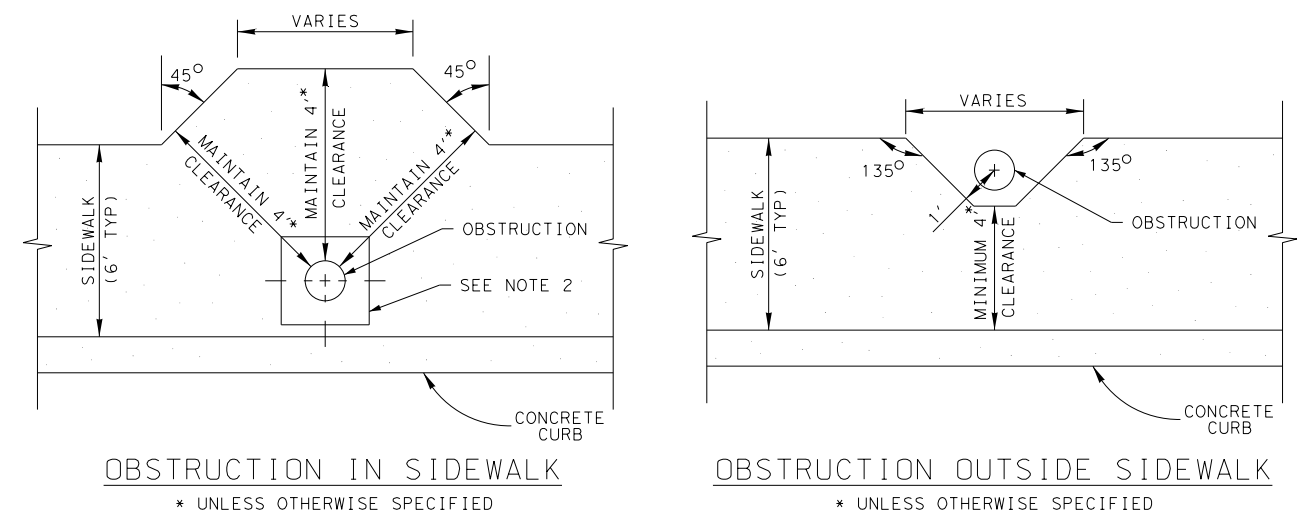
Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\General\1113501\_samp\le04.dgn

### REVERSE RETAINING WALL DETAIL



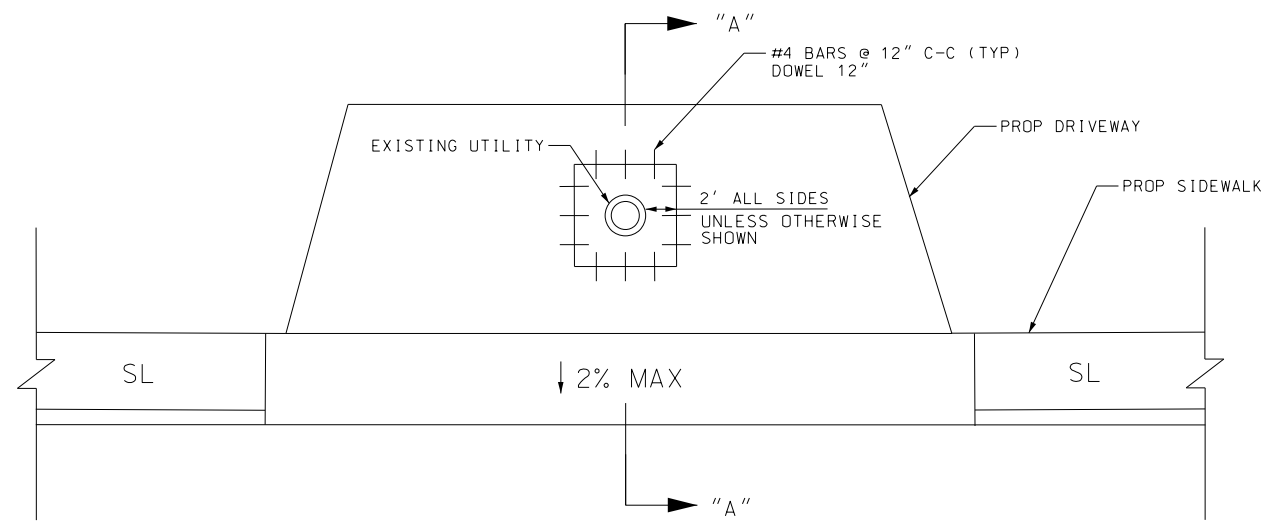
### OBSTRUCTION CONFLICT



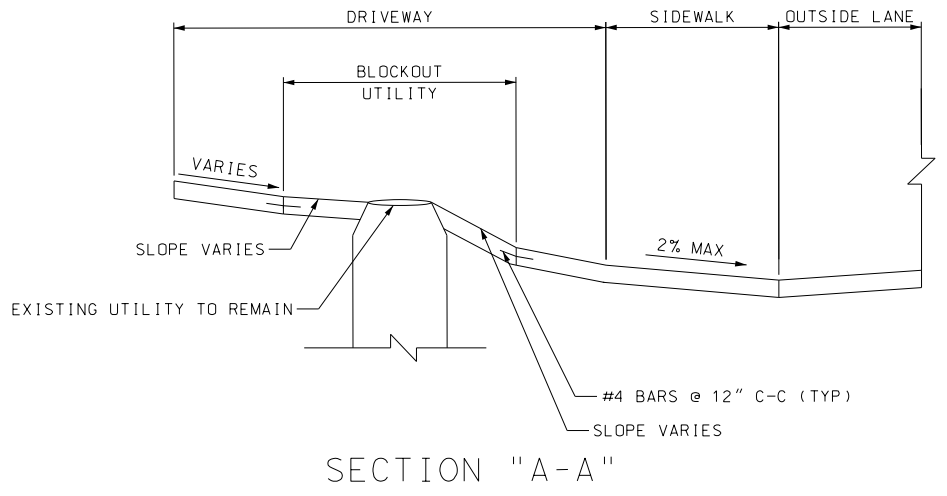
NOTES:

- UTILIZE DETAIL AT OBSTRUCTION ENCROACHMENTS INTO THE PEDESTRIAN ACCESS ROUTE. A MINIMUM UNOBSTRUCTED CLEARANCE OF 4', UNLESS OTHERWISE SPECIFIED, SHOULD BE MAINTAINED AROUND THE OBSTRUCTION MEASURED FROM THE MOST RESTRICTIVE LOCATION OR AS APPROVED BY THE ENGINEER
- IF OBSTRUCTION IS LOCATED WITHIN THE SIDEWALK, CONSTRUCT 2' SQUARE CONSTRUCTION JOINT CENTERED ON OBSTRUCTION TO FACILITATE FUTURE MAINTENANCE WITHOUT FULL SIDEWALK PANEL REMOVAL/REPLACEMENT

### UTILITY BLOCKOUT



- SEQUENCE OF WORK:
- REMOVE EXISTING CONCRETE OR ASPHALT WITHIN LIMITS OF PROPOSED WORK. CONSTRUCT FORMWORK FOR PROPOSED IMPROVEMENTS, INCLUDING UTILITY BLOCKOUT AS SHOWN. EXISTING UTILITY RIM TO REMAIN UNDISTURBED.
  - CONSTRUCT PROPOSED IMPROVEMENTS EXCEPT WITHIN UTILITY BLOCKOUT AREA. ALLOW TIME TO CURE. REMOVE FORMWORK.
  - DOWEL REINFORCEMENT AS SHOWN. CONSTRUCT IMPROVEMENTS WITHIN UTILITY BLOCKOUT AREA FLUSH WITH RIM OF UTILITY AND SURROUNDING (COMPLETED) IMPROVEMENTS.



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**INTERIM REVIEW**  
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 DATE: 9/29/2017

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**Pape-Dawson Engineers**  
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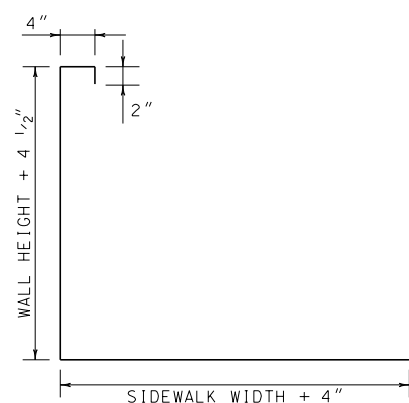
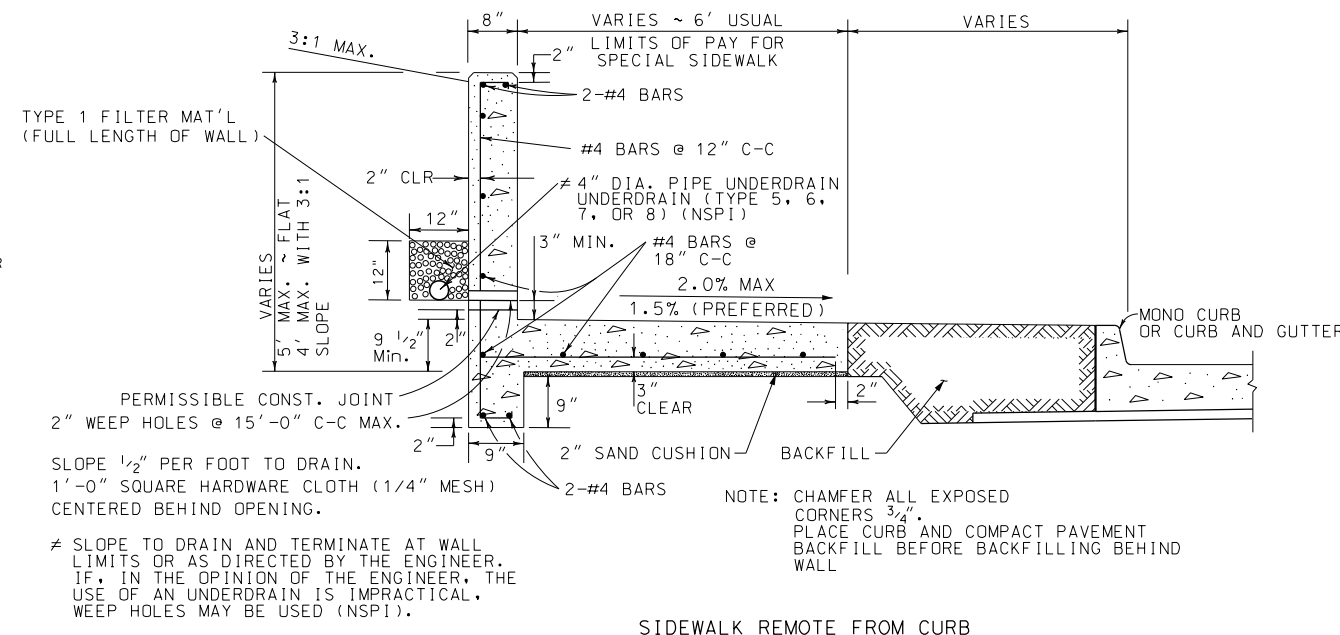
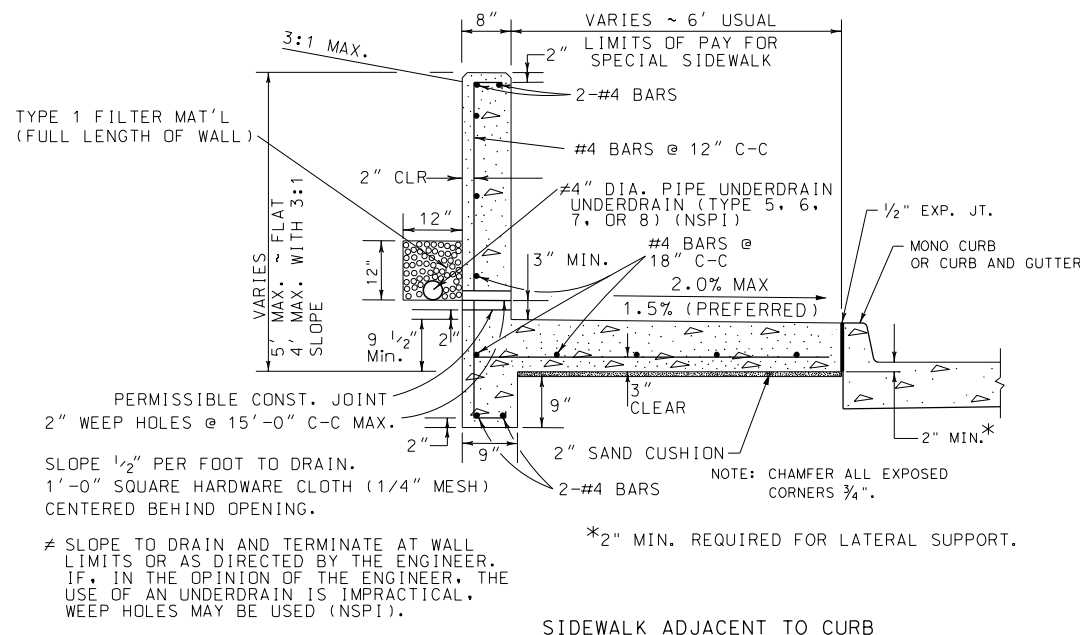
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SPECIAL DETAILS

SHEET 4 OF 12

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.:
				586
				SHEET NO.:
				74

# SPECIAL CONCRETE SIDEWALK w/ RETAINING WALL (CONCRETE SIDEWALK (SPECIAL) (TY B))

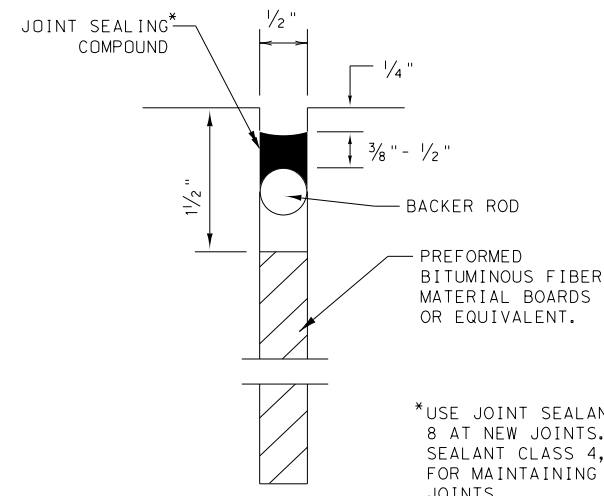


SEE PLAN SHEETS FOR LOCATIONS OF SIDEWALKS AND RETAINING WALLS.

LONGITUDINAL SLOPE OF SIDEWALKS SHALL NOT EXCEED 5% EXCEPT IN CASES WHERE THE ADJACENT ROADWAY SLOPE EXCEEDS 5%. IF ROADWAY SLOPE EXCEEDS 5%, LONGITUDINAL SLOPE OF SIDEWALK MAY MATCH THAT OF ROADWAY.

IF SIDEWALK WIDTH IS LESS THAN 5', PROVIDE 5' x 5' PASSING AREAS AT INTERVALS NOT TO EXCEED 200' SPACING.

WHERE SIDEWALK WITH RETAINING WALL IS SPECIFIED, RETAINING WALL WILL BE SUBSIDIARY TO THE ITEM, "CONCRETE SIDEWALK (SPECIAL) (TYPE B)", ITEM 0531-6033 WITH LIMITS OF PAY AS SHOWN HEREON.



**EXPANSION JOINT DETAIL**

DESIGN

INTERIM REVIEW

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ENGINEER: JOHN A. TYLER

P.E. SERIAL NO: 105193

DATE: 9/29/2017

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INTERIM REVIEW

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ENGINEER: JAMES A. LUTZ

P.E. SERIAL NO: 84722

DATE: 9/29/2017

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## SPECIAL DETAILS

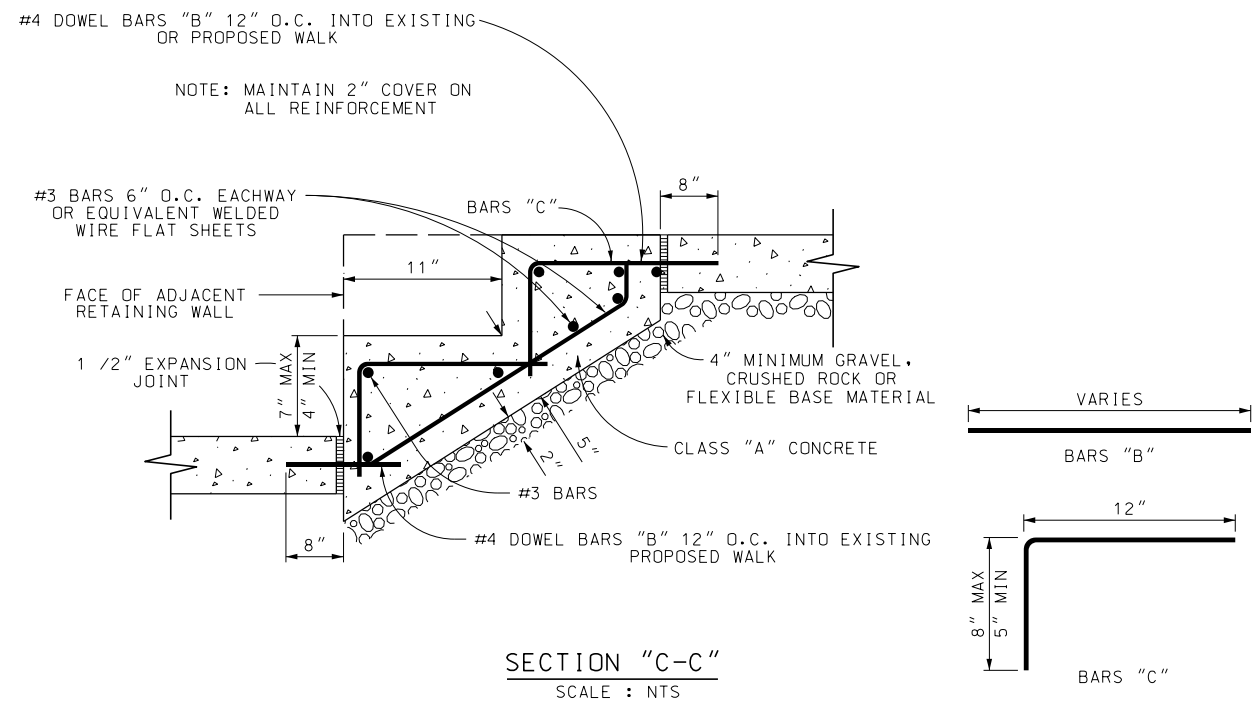
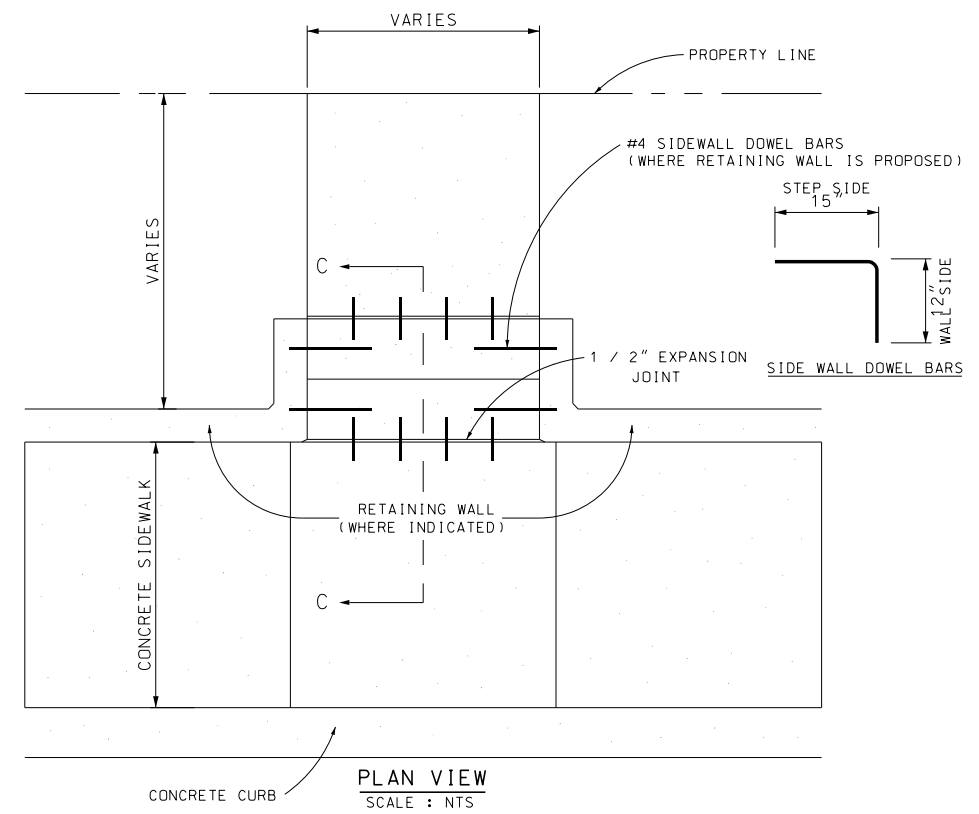
SHEET 5 OF 12

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	75

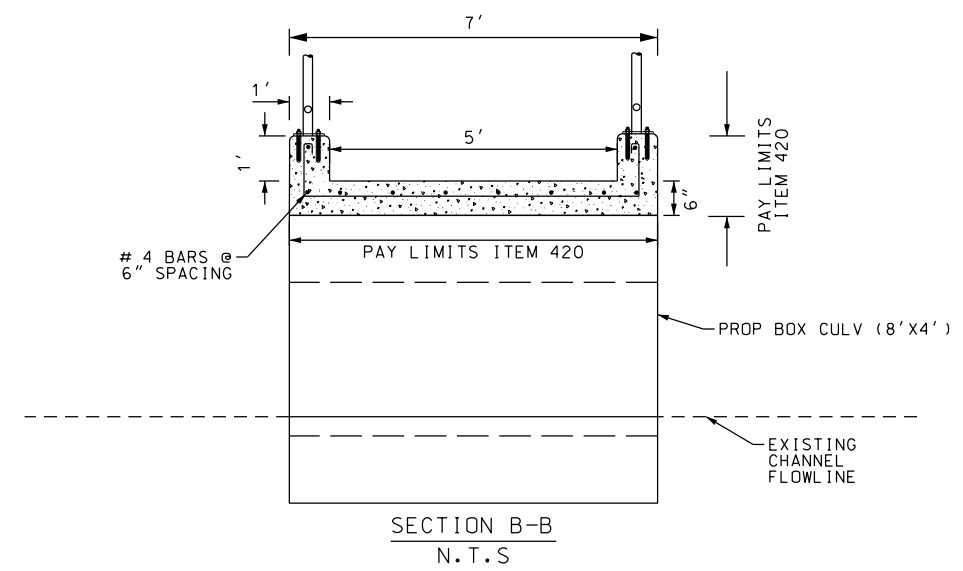
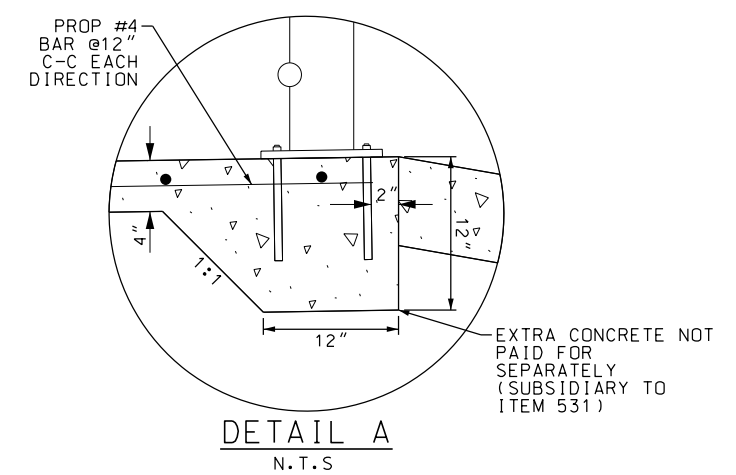
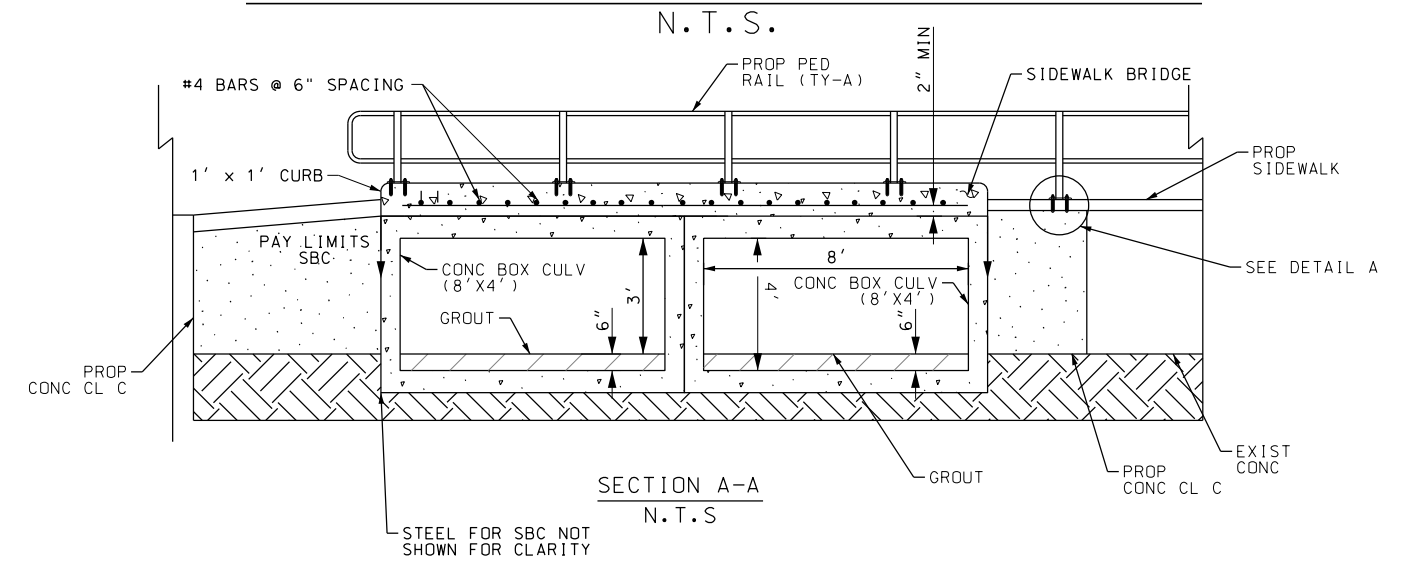
Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\General\1113501\_samp\le06.dgn

# CONCRETE STEPS



# SIDEWALK BRIDGE DETAIL (SHEET 263)



DESIGN

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REVIEW AND APPROVAL

INTERIM REVIEW

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ENGINEER: JAMES A. LUTZ

P.E. SERIAL NO: 84722

DATE: 9/29/2017

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SPECIAL DETAILS

SHEET 6 OF 12

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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	76

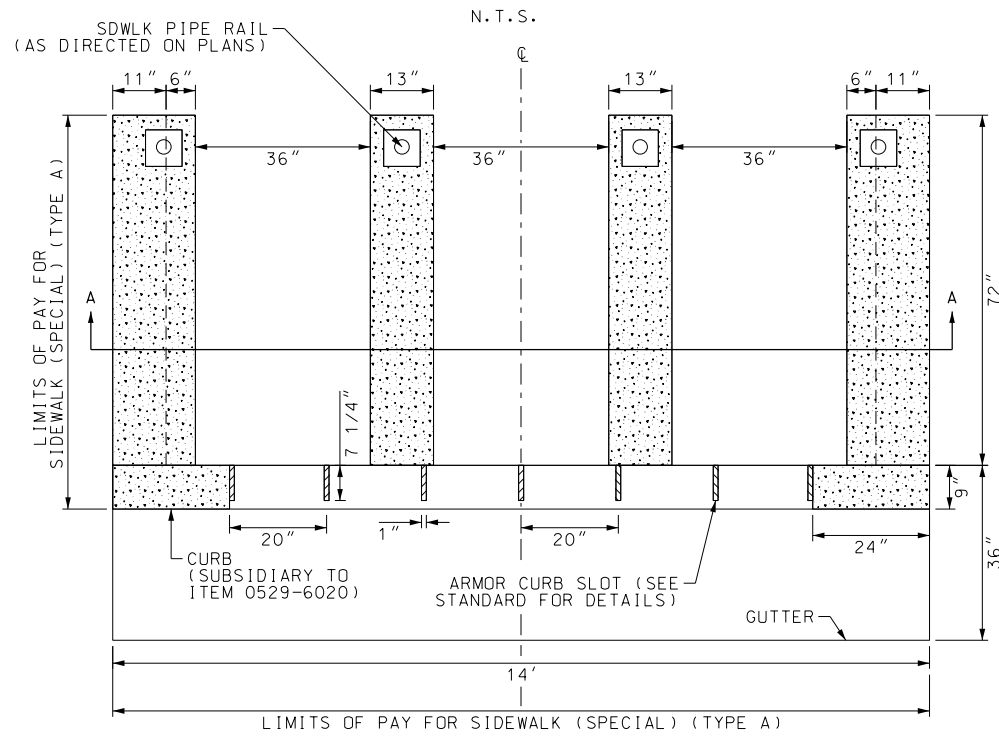
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Plotted on: 9/29/2017

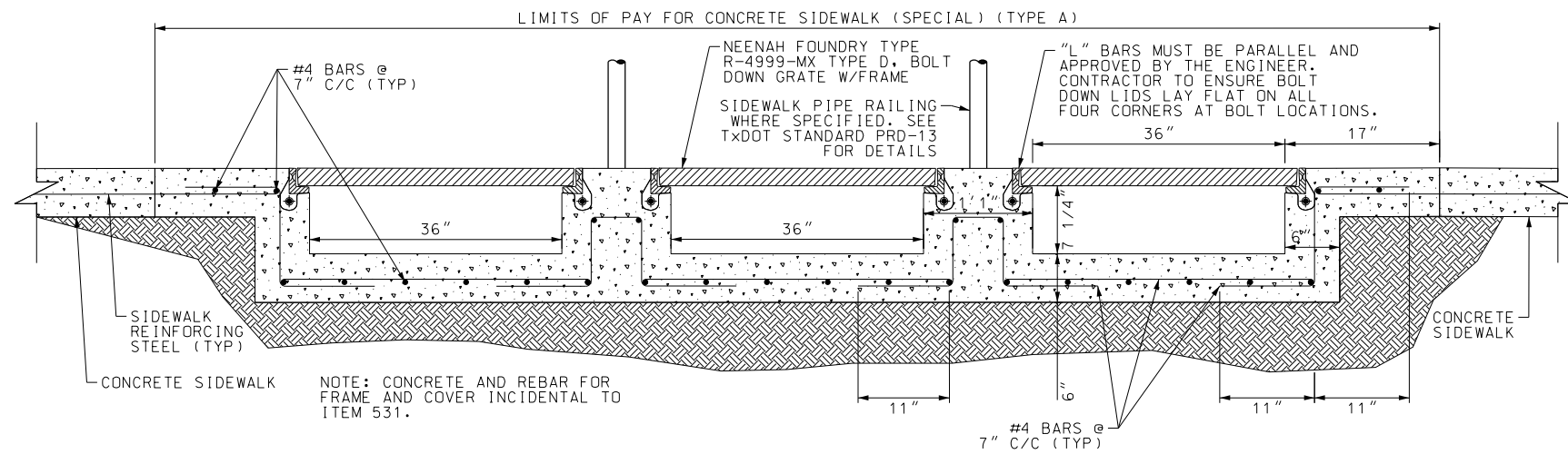
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# CONCRETE SIDEWALK (SPECIAL) (TYPE A) DETAIL



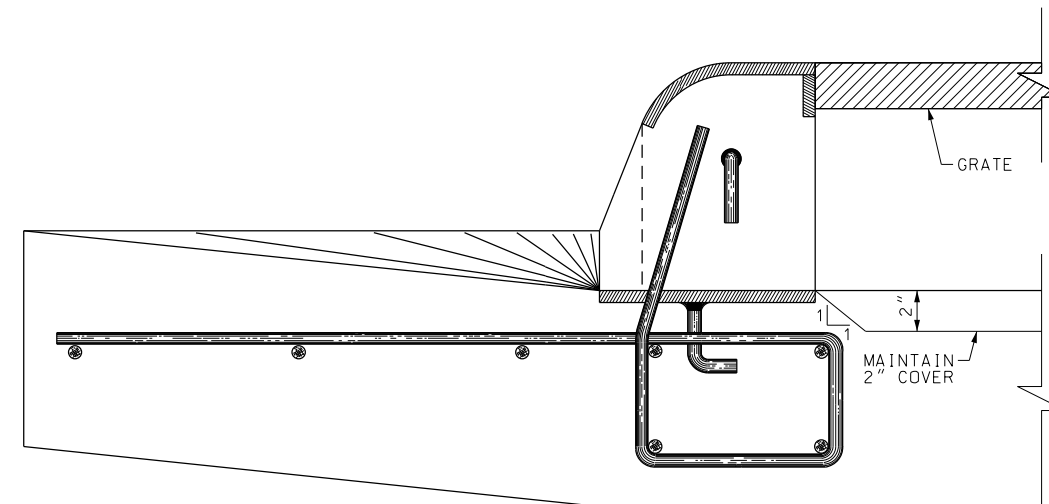
## SECTION A-A

N.T.S.



# ARMOR CURB SLOT DETAIL

N.T.S.



### DESIGN

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DATE: 9/29/2017

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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
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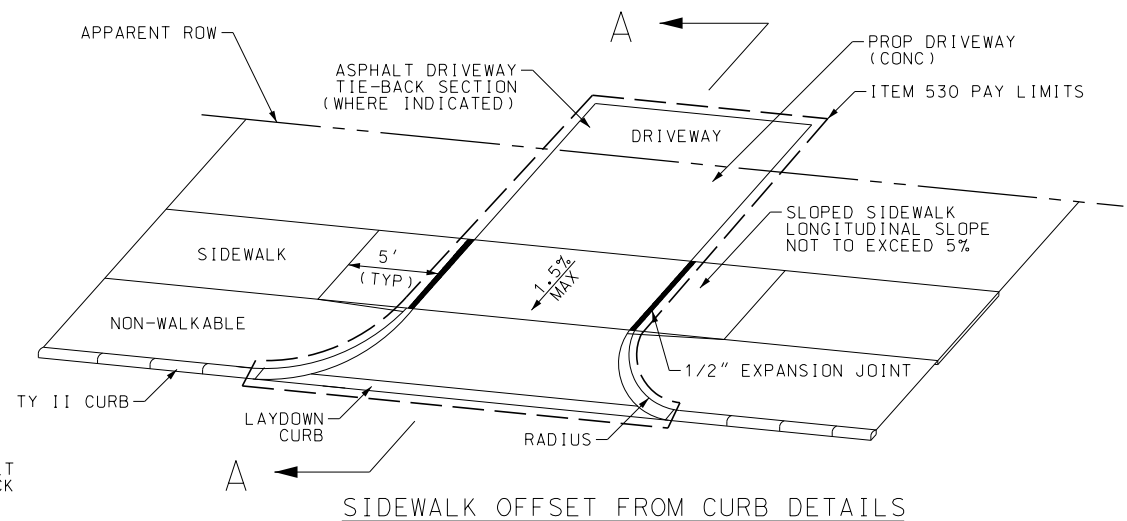
## SPECIAL DETAILS

SHEET 7 OF 12

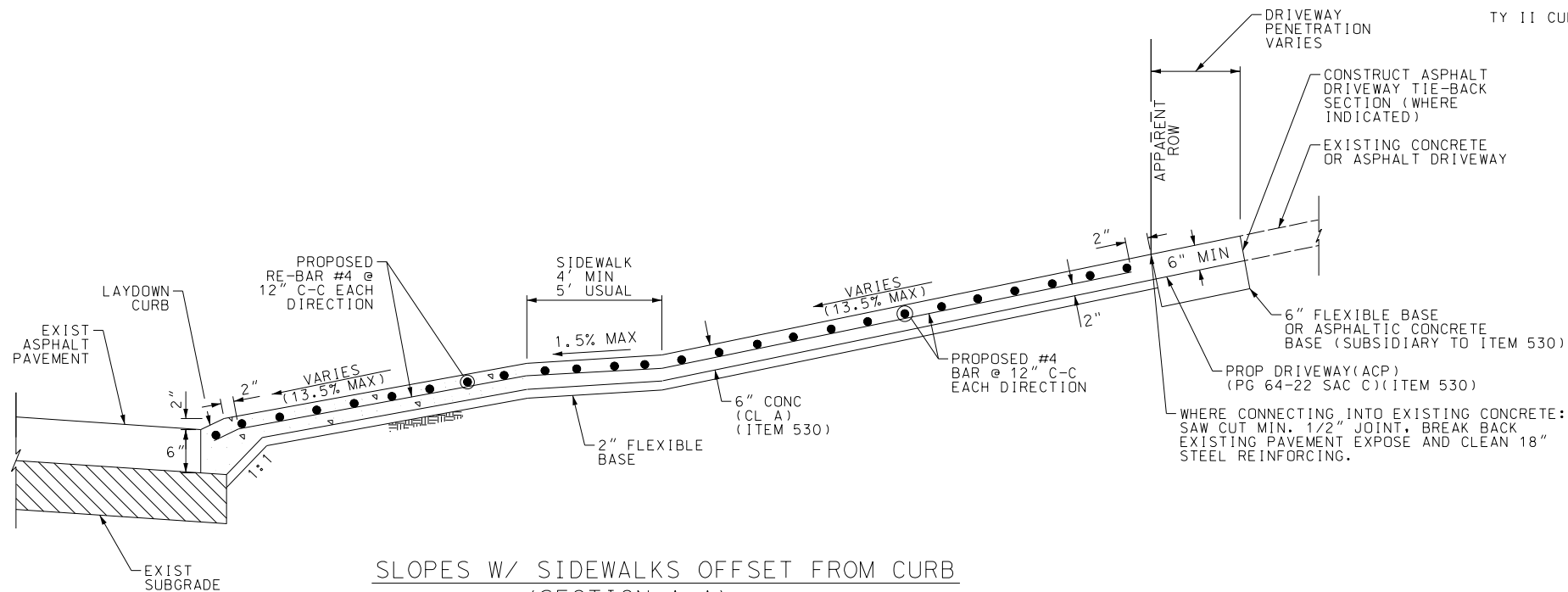
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CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.:
				586
				SHEET NO.:
				77

Plotted on: 9/29/2017

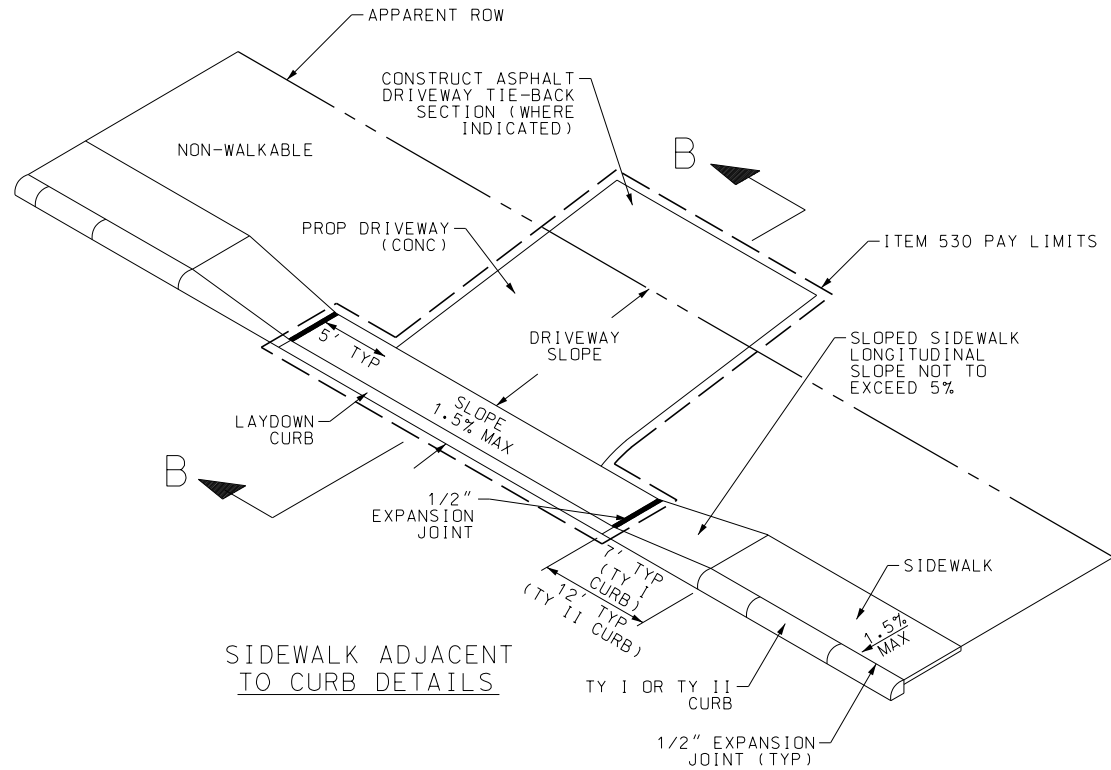
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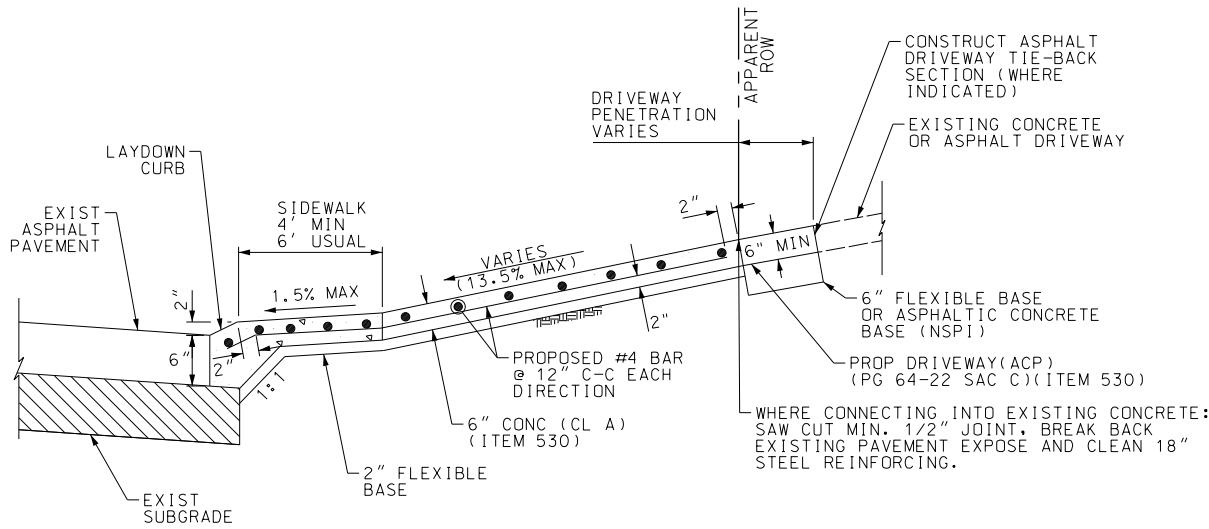
NOTES:  
 SLOPED SIDEWALK SEGMENT LENGTHS ARE SHOWN TO CONSERVATIVELY ACCOMMODATE STANDARD CURB HEIGHTS ON LEVEL STREETS. SOME SLOPED SIDEWALK SEGMENTS MAY REQUIRE ADDITIONAL LENGTH TO ENSURE LONGITUDINAL SLOPES DO NOT EXCEED 5%. WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY EXTEND THE SLOPED SIDEWALK SEGMENT TO THE NEXT PLANAR ELEMENT (L.S., L., S.L., R., T., ETC.) OR UNTIL THE SLOPED SIDEWALK REACHES CURB HEIGHT, WHICHEVER IS SHORTER.



SLOPES W/ SIDEWALKS OFFSET FROM CURB (SECTION A-A)



SIDEWALK ADJACENT TO CURB DETAILS



DRIVEWAY SLOPES W/ SIDEWALKS ADJACENT TO CURB (SECTION B-B)

DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

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

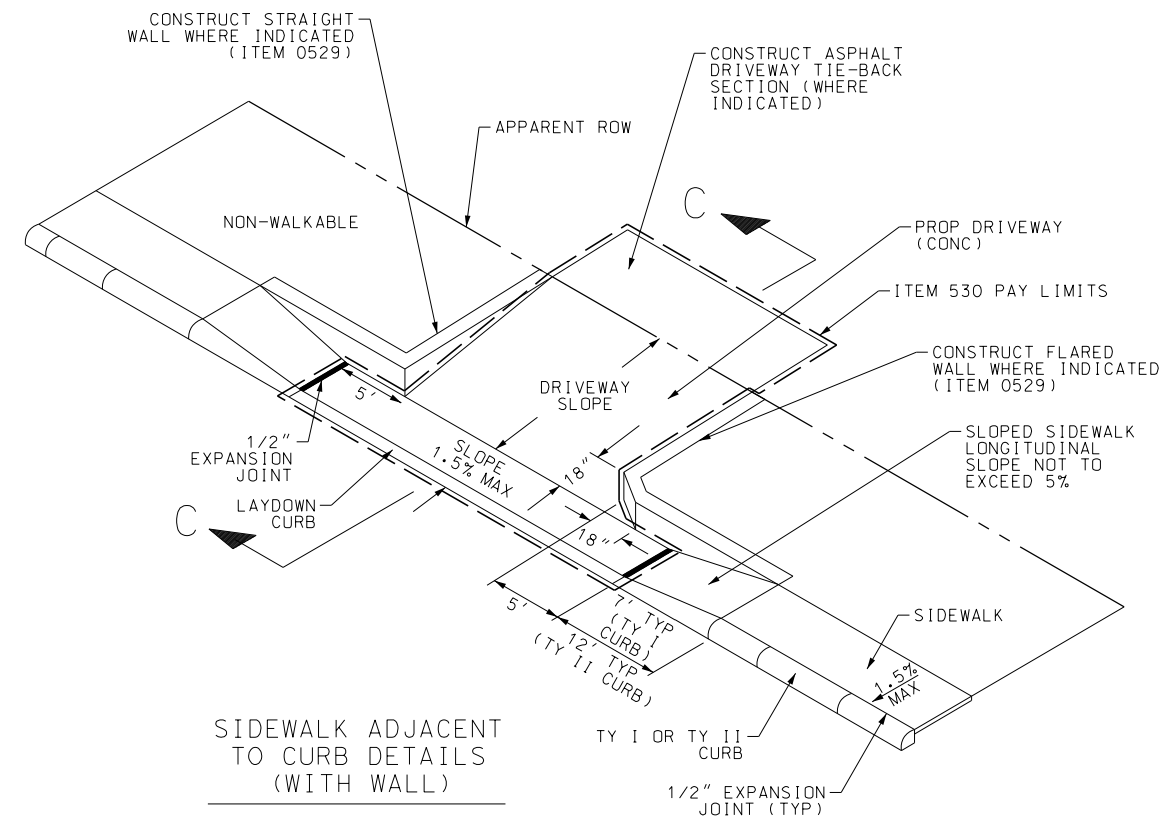
Texas Department of Transportation  
 © 2017

SPECIAL DETAILS

SHEET 8 OF 12

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	78

Plotted on: 9/29/2017



SIDEWALK ADJACENT TO CURB DETAILS (WITH WALL)

NOTES:

SLOPED SIDEWALK SEGMENT LENGTHS ARE SHOWN TO CONSERVATIVELY ACCOMMODATE STANDARD CURB HEIGHTS ON LEVEL STREETS. SOME SLOPED SIDEWALK SEGMENTS MAY REQUIRE ADDITIONAL LENGTH TO ENSURE LONGITUDINAL SLOPES DO NOT EXCEED 5%. WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY EXTEND THE SLOPED SIDEWALK SEGMENT TO THE NEXT PLANAR ELEMENT (LS, L, SL, R, T, ETC.) OR UNTIL THE SLOPED SIDEWALK REACHES THE HEIGHT OF THE ADJACENT CURB, WHICHEVER IS SHORTER.

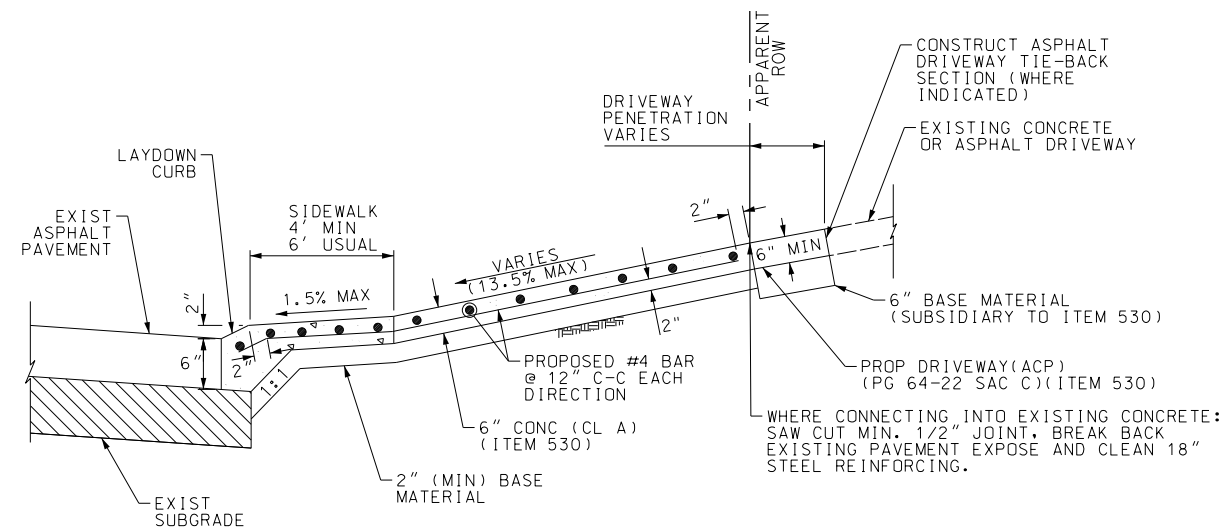
DESIGN

INTERIM REVIEW	
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.	
ENGINEER: JOHN A. TYLER	
P.E. SERIAL NO: 105193	
DATE: 9/29/2017	

REVIEW AND APPROVAL

INTERIM REVIEW	
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.	
ENGINEER: JAMES A. LUTZ	
P.E. SERIAL NO: 84722	
DATE: 9/29/2017	

SCALE: PLAN 1" = 100'  
PROFILE 1" = 10'



DRIVEWAY SLOPES W/ SIDEWALKS ADJACENT TO CURB (SECTION C-C)

REV. NO.	DATE	DESCRIPTION	BY



SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TBPE FIRM REGISTRATION #470 | TPLS FIRM REGISTRATION #10028800



SPECIAL DETAILS

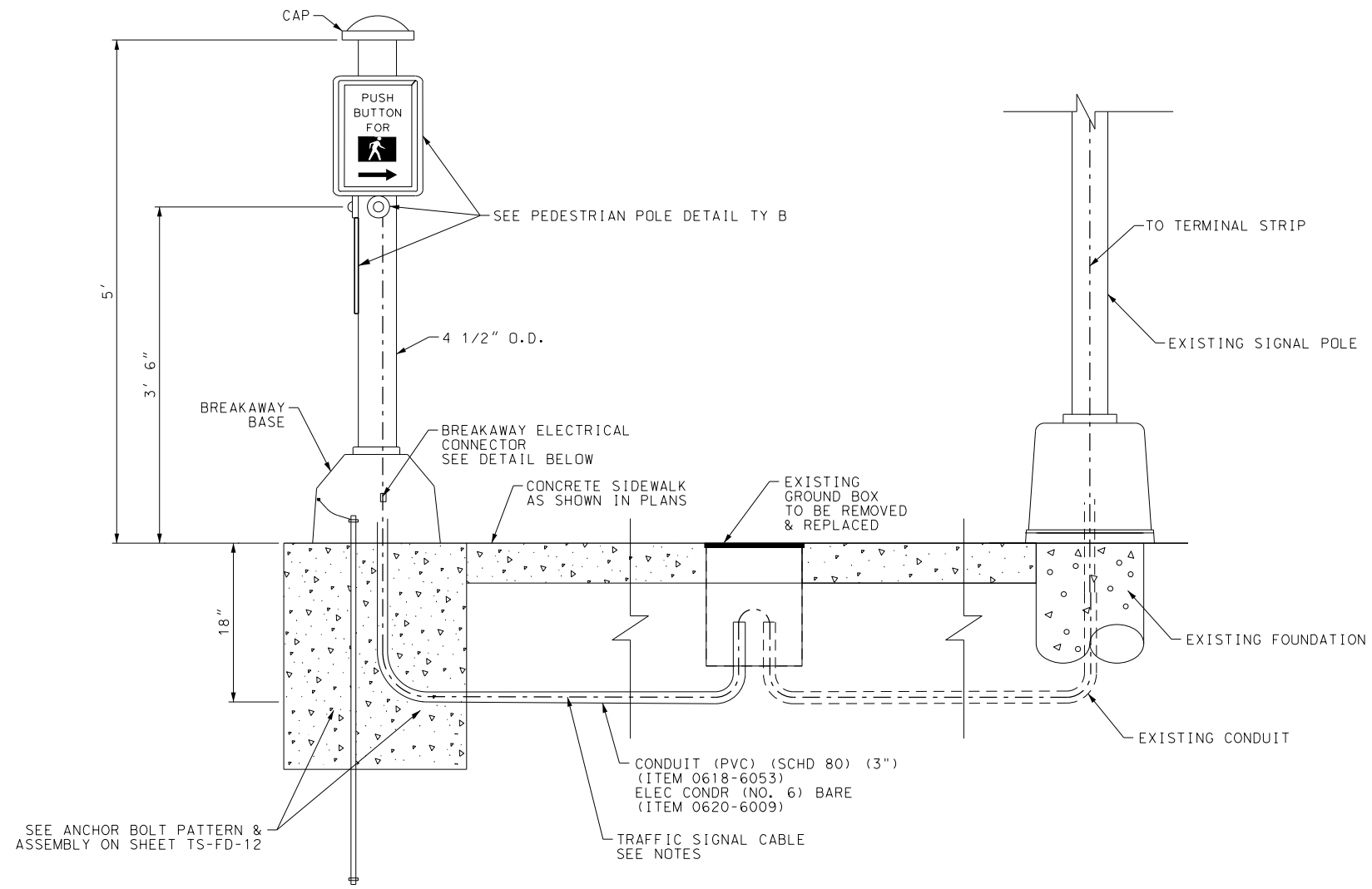
SHEET 9 OF 12

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.:
				586
				SHEET NO.:
				79

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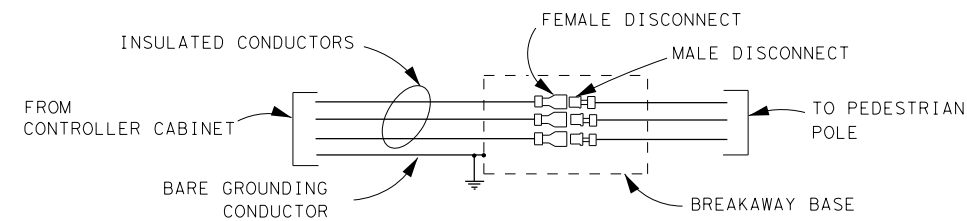
Plotted on: 9/29/2017

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**PEDESTRIAN POLE DETAIL  
TY A**

USE DETAIL TY A FOR INSTALLATION OF NEW POLE.



**BREAKAWAY IN-LINE FUSE HOLDERS**

- NOTE:
1. GROUND ROD, FOUNDATION, BREAKAWAY BASE ARE INCLUSIVE TO PEDESTRIAN POLE ITEM 0687-6001.
  2. PUSH BUTTONS TO BE PAID FOR AS ITEM 0688-6002. ITEM 0688-6002 INCLUDES INSTALLATION OF NEW PUSH BUTTON STATION ASSEMBLY (PELCO SE-2023 OR SE-2019 WITH PUSH BUTTON MEETING REQUIREMENTS OF TMUTCD 4E.08 THROUGH 4E.13 AND R403 OF THE U.S. ACCESS BOARD PROWAG. PUSH BUTTON SHOULD BE NO LESS THAN 2" OF UNOBSTRUCTED SURFACE AREA) AND ALL INCIDENTAL CONSTRUCTION INCLUDING BUT NOT LIMITED TO PLUGGING EXISTING HOLES.
  3. SPLICES AT GROUND BOXES ARE NOT ALLOWED.
  4. FOUNDATION TO BE FLUSH WITH SIDEWALK.
  5. BREAKAWAY ELECTRICAL CONNECTORS ARE REQUIRED.
  6. PUSH BUTTON AND PEDESTRIAN SIGNAL HEAD ADJUSTMENTS ARE TO UTILIZE EXISTING CONDUCTORS.

TRAFFIC SIGNAL CABLE NOTES:

FOR PUSH BUTTONS USE: TY A (14 AWG) (2 CONDR)  
(ITEM 0684-6028)

LENGTH OF PAY: FROM PED POLE TO EXISTING SIGNAL POLE

DESIGN

**INTERIM REVIEW**  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JOHN A. TYLER  
P.E. SERIAL NO: 105193  
DATE: 9/29/2017

REVIEW AND APPROVAL

**INTERIM REVIEW**  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JAMES A. LUTZ  
P.E. SERIAL NO: 84722  
DATE: 9/29/2017

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



**SPECIAL DETAILS**

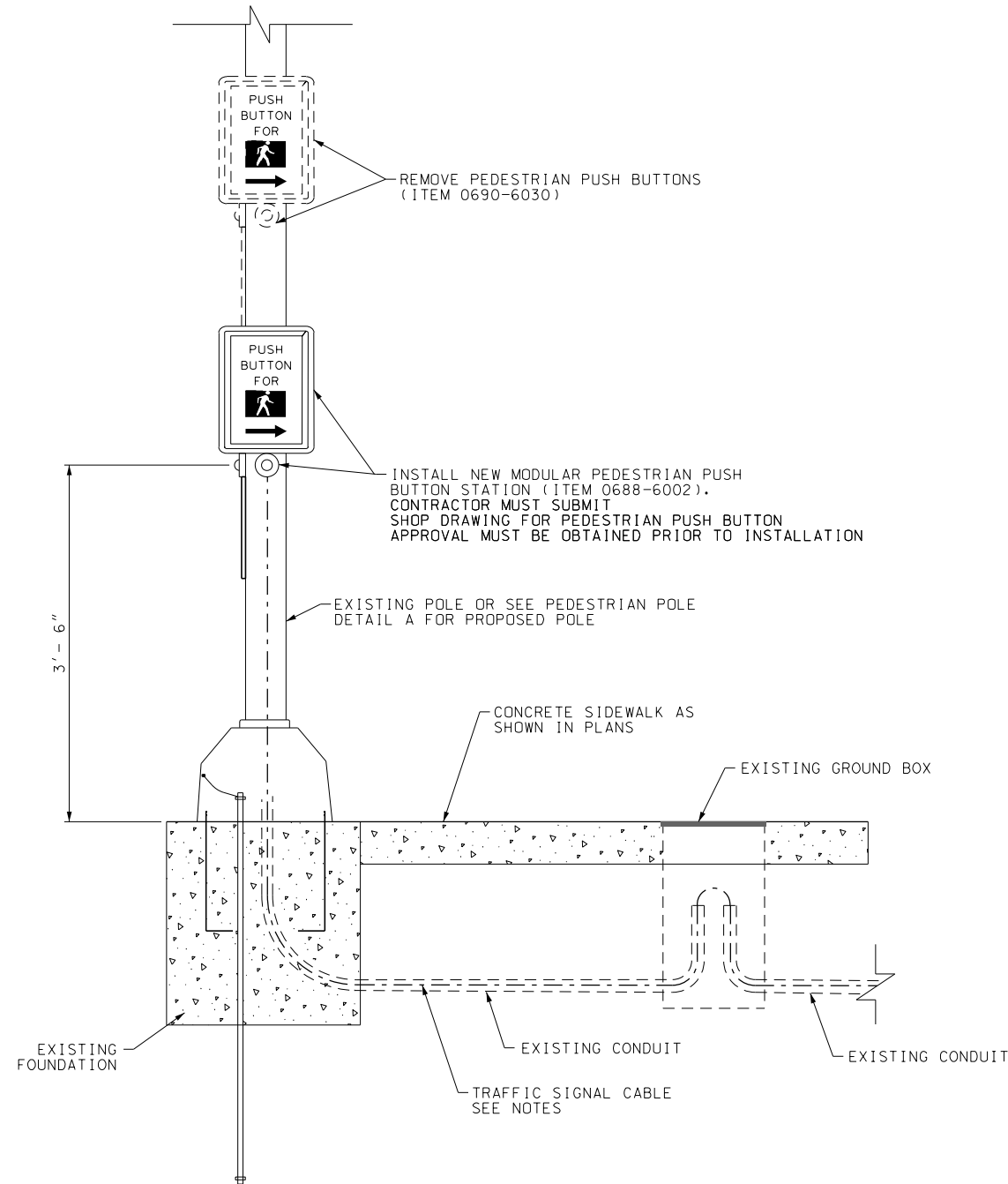
SHEET 10 OF 12

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	80



Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\General\1113501\_samp1e15.dgn



PEDESTRIAN POLE DETAIL  
TY B

USE DETAIL TY B WHEN ADJUSTING PEDESTRIAN PUSH BUTTONS VERTICALLY AND WHEN RELOCATING PEDESTRIAN PUSH BUTTONS FROM EXISTING POLE TO NEW POLE.

- NOTE:
- GROUND ROD, FOUNDATION, BREAKAWAY BASE ARE INCLUSIVE TO PEDESTRIAN POLE ITEM 0687-6001.
  - PUSH BUTTONS TO BE PAID FOR AS ITEM 0688-6002. ITEM 0688-6002 INCLUDES INSTALLATION OF NEW PUSH BUTTON STATION ASSEMBLY (PELCO SE-2023 OR SE-2019 WITH PUSH BUTTON MEETING REQUIREMENTS OF TMUTCD 4E.08 THROUGH 4E.13 AND R403 OF THE U.S. ACCESS BOARD PROWAG. PUSH BUTTON SHOULD BE NO LESS THAN 2" OF UNOBSTRUCTED SURFACE AREA) AND ALL INCIDENTAL CONSTRUCTION INCLUDING BUT NOT LIMITED TO PLUGGING EXISTING HOLES.
  - SPLICES AT GROUND BOXES ARE NOT ALLOWED.
  - FOUNDATION TO BE FLUSH WITH SIDEWALK.
  - BREAKAWAY ELECTRIC CONNECTORS ARE REQUIRED.
  - PUSH BUTTON AND PEDESTRIAN SIGNAL HEAD ADJUSTMENTS ARE TO UTILIZE EXISTING CONDUCTORS.

TRAFFIC SIGNAL CABLE NOTES:

FOR PUSH BUTTONS USE: TY A (14 AWG) (2 COND) (ITEM 0684-6028)

LENGTH OF PAY: FROM PED POLE TO EXISTING SIGNAL POLE

DESIGN

INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JOHN A. TYLER  
P.E. SERIAL NO: 105193  
DATE: 9/29/2017

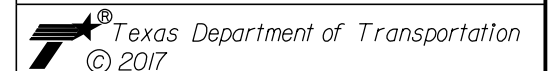
REVIEW AND APPROVAL

INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JAMES A. LUTZ  
P.E. SERIAL NO: 84722  
DATE: 9/29/2017

REV. NO.	DATE	DESCRIPTION	BY



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



SPECIAL DETAILS

SHEET 11 OF 12

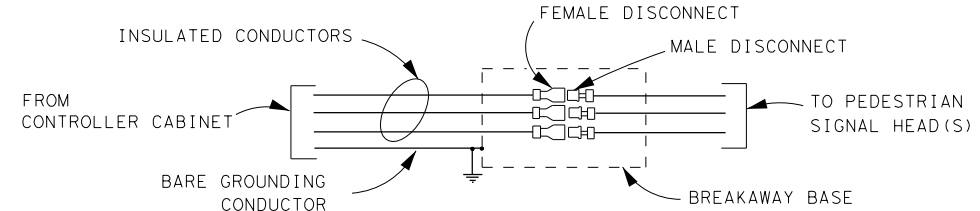
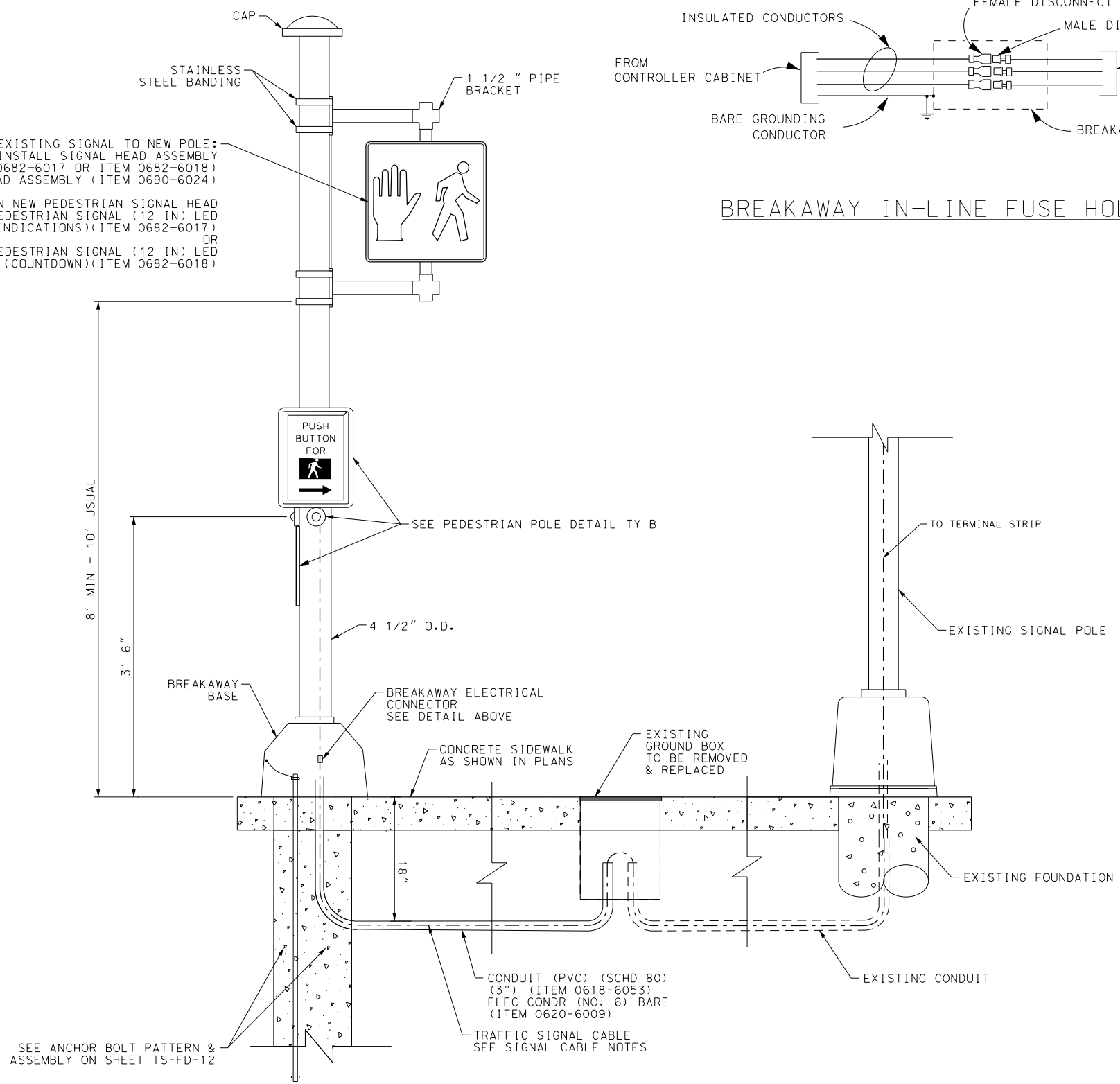
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	81

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\General\1113501\_samp\le16.dgn

WHEN RELOCATING EXISTING SIGNAL TO NEW POLE:  
 INSTALL SIGNAL HEAD ASSEMBLY  
 (ITEM 0682-6017 OR ITEM 0682-6018)  
 REMOVE SIGNAL HEAD ASSEMBLY (ITEM 0690-6024)

WHEN NEW PEDESTRIAN SIGNAL HEAD  
 INSTALL PEDESTRIAN SIGNAL (12 IN) LED  
 (2 INDICATIONS)(ITEM 0682-6017)  
 OR  
 INSTALL PEDESTRIAN SIGNAL (12 IN) LED  
 (COUNTDOWN)(ITEM 0682-6018)



BREAKAWAY IN-LINE FUSE HOLDERS

- NOTE:
1. GROUND ROD, FOUNDATION, BREAKAWAY BASE ARE INCLUSIVE TO PEDESTRIAN POLE ITEM 0687-6001.
  2. PUSH BUTTONS TO BE PAID FOR AS ITEM 0688-6002. ITEM 0688-6002 INCLUDES INSTALLATION OF NEW PUSH BUTTON STATION ASSEMBLY (PELCO SE-2023 OR SE-2019 WITH PUSH BUTTON MEETING REQUIREMENTS OF TMUTCD 4E.08 THROUGH 4E.13 AND R403 OF THE U.S. ACCESS BOARD PROWAG. PUSH BUTTON SHOULD BE NO LESS THAN 2" OF UNOBSTRUCTED SURFACE AREA) AND ALL INCIDENTAL CONSTRUCTION INCLUDING BUT NOT LIMITED TO PLUGGING EXISTING HOLES.
  3. SPLICES AT GROUND BOXES ARE NOT ALLOWED.
  4. FOUNDATION TO BE FLUSH WITH SIDEWALK.
  5. BREAKAWAY ELECTRIC CONNECTORS ARE REQUIRED.
  6. PUSH BUTTON AND PEDESTRIAN SIGNAL HEAD ADJUSTMENTS ARE TO UTILIZE EXISTING CONDUCTORS.

TRAFFIC SIGNAL CABLE NOTES:

FOR PUSH BUTTONS USE: TY A (14 AWG) (2 CONDR)  
 (ITEM 0684-6028)

FOR 3 SECTION SIGNAL HEADS USE:  
 TY A (12 AWG) (4 CONDR)  
 (ITEM 0684-6009)

LENGTH OF PAY: FROM PED POLE TO EXISTING SIGNAL POLE

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

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



PEDESTRIAN POLE DETAIL  
 TY D

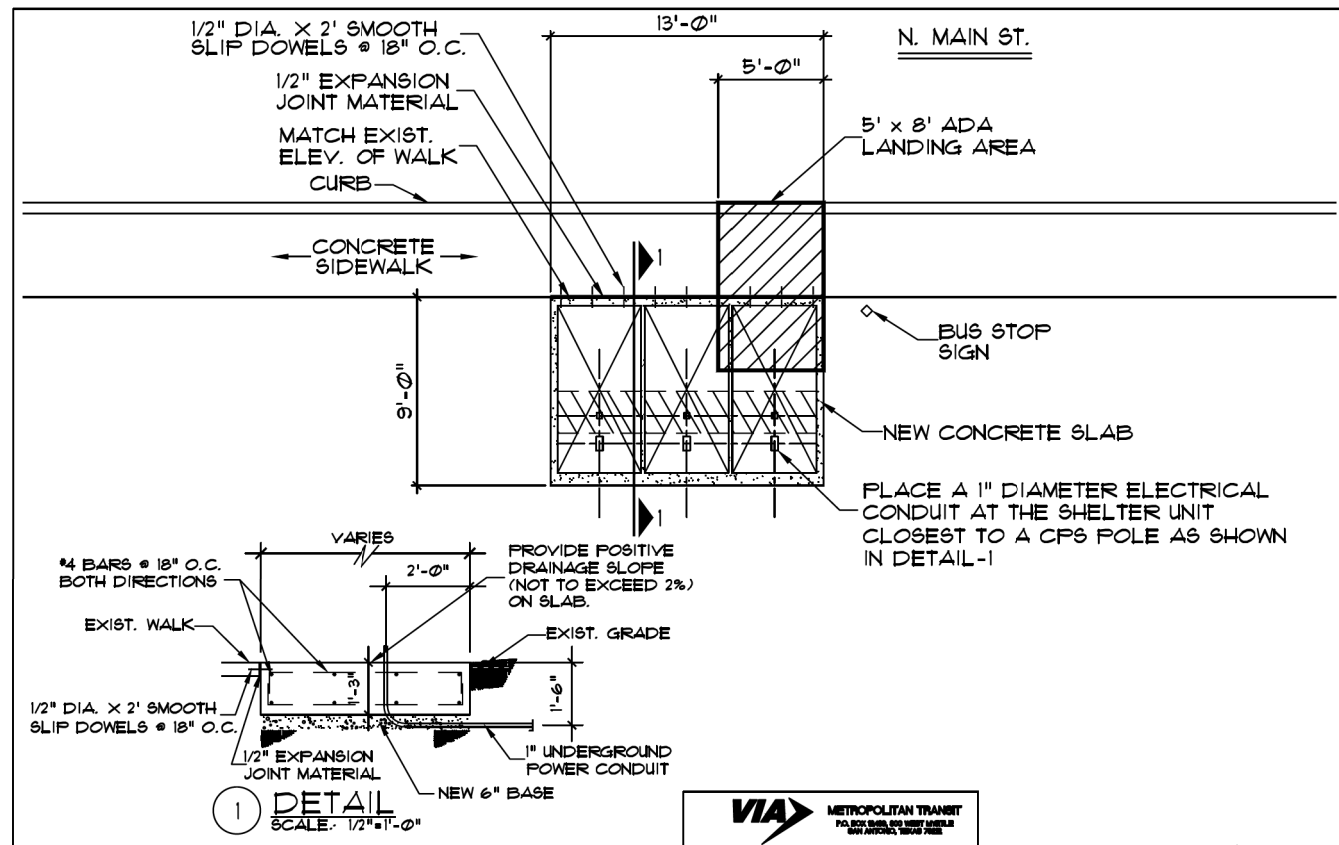
USE DETAIL TY D FOR INSTALLATION OF NEW POLE WITH PEDESTRIAN SIGNAL HEADS.

SPECIAL DETAILS

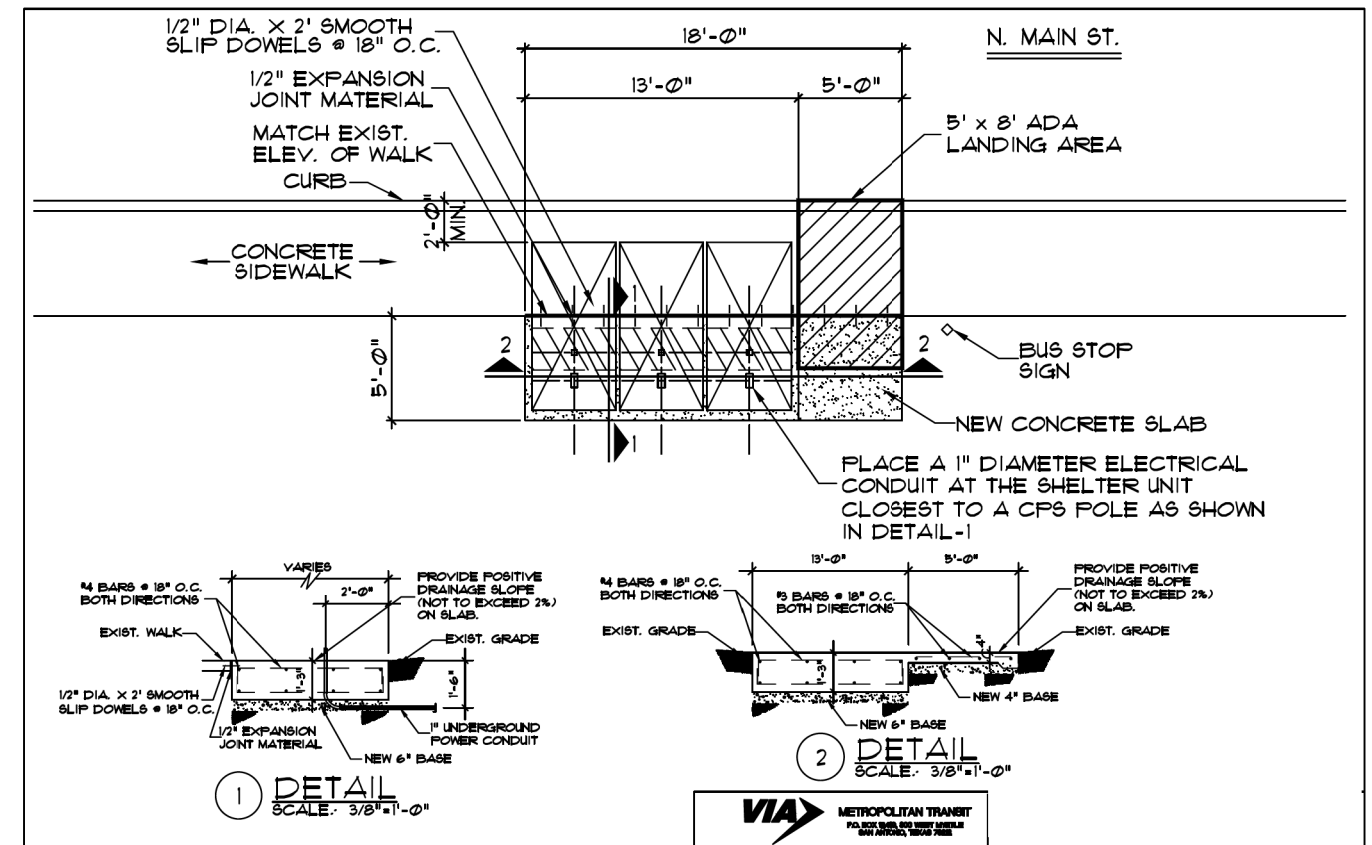
SHEET 12 OF 12

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	82

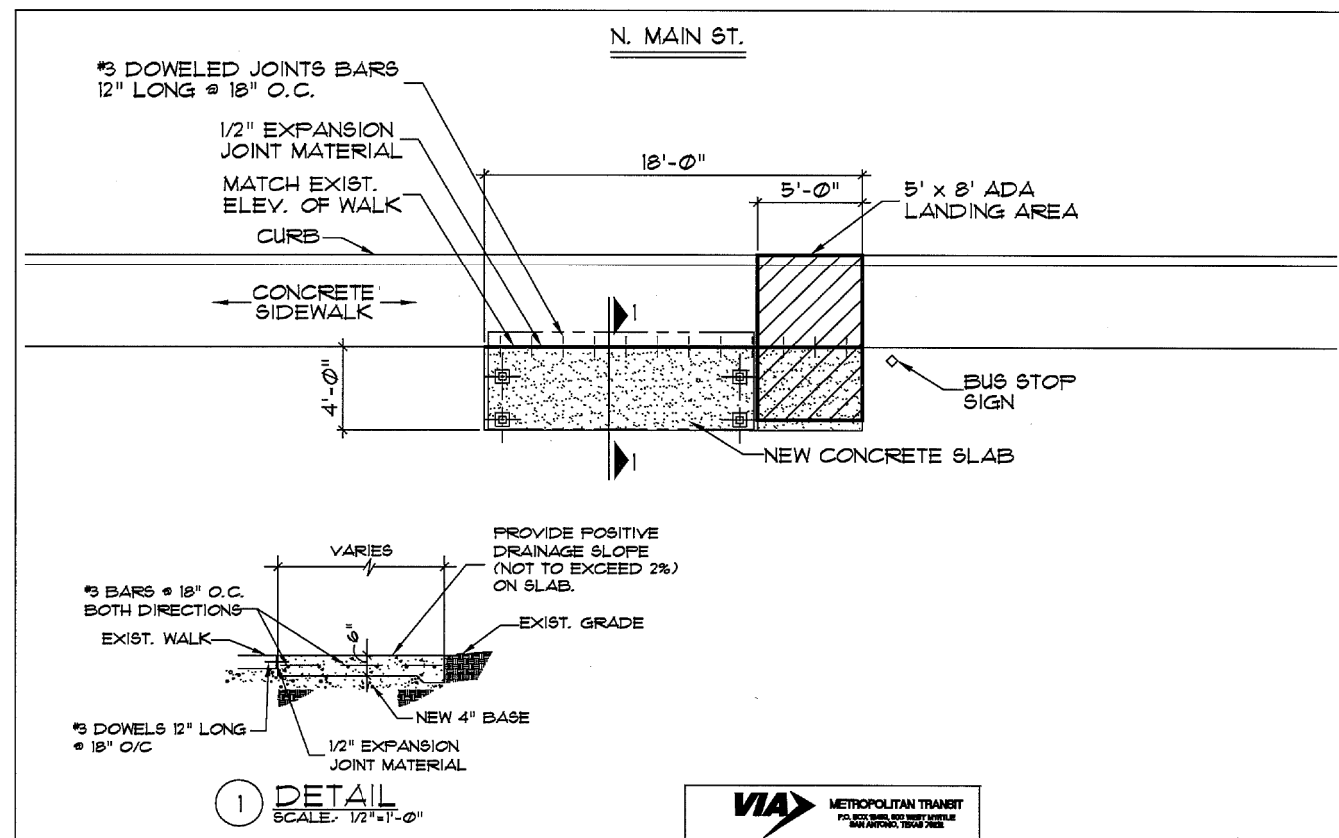
Plotted on: 9/29/2017



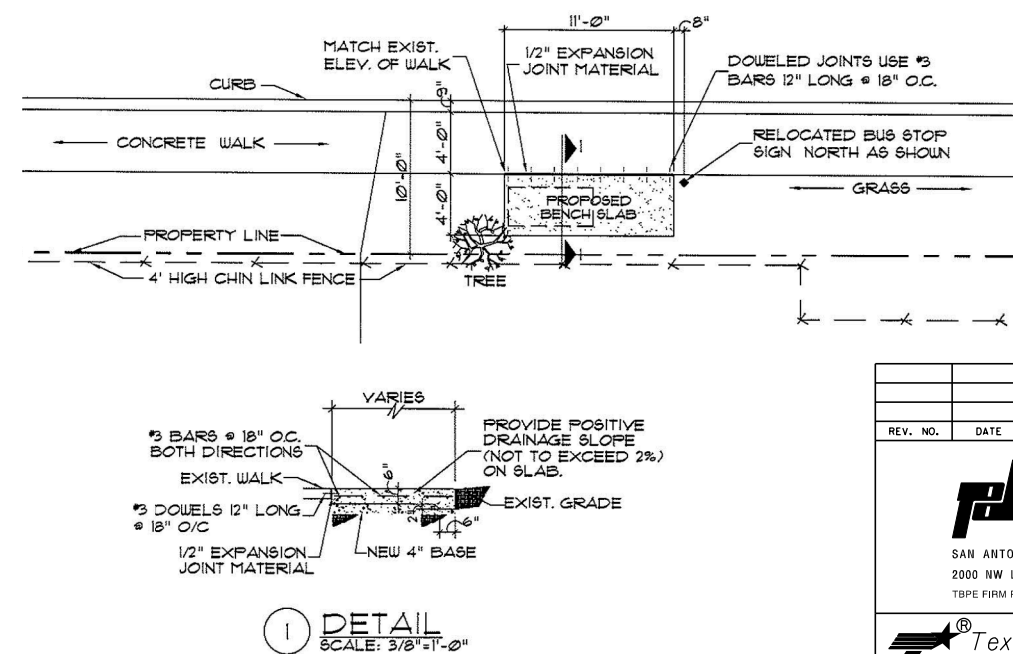
SUFFICIENT ROW DETAIL  
N.T.S.



INSUFFICIENT ROW DETAIL  
N.T.S.



TOLAR DETAIL  
N.T.S.



BENCH SLAB DETAIL  
N.T.S.

Design File name: P:\11135\01\design\Civil\General\1113501\_BUS\_STOP\_DETAILS.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  
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Texas Department of Transportation  
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VIA BUS STOP DETAILS





SHEET 1 OF 1

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.
CHK DGN:	6	TEXAS		VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.
CHK DWG:	SAT	BEXAR	0915	12
				586
				83

# SUMMARY OF SMALL SIGNS

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 9/29/2017 10:14:08 AM  
 FILE: P:\11\35\01\design\C\v1\General\1113501\_Sums16.dgn

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)				BRIDGE MOUNT CLEARANCE SIGNS (See Note 2)
							POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION	
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	PREFABRICATED P = "Plain" T = "T" U = "U"	
133	1-1	R3-7R		36 x 36	X		10BWG	1	SA	P	
134	2-1	R3-18		30 x 36	X		10BWG	1	SA	P	
136	4-1	R3-SPL		36 x 30	X		10BWG	1	SA	P	
136	4-2	R3-SPL		36 x 30	X		10BWG	1	SA	P	

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website:  
<http://www.txdot.gov/>

- NOTE:**
1. Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
  2. For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS) Standard Sheet.
  3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).



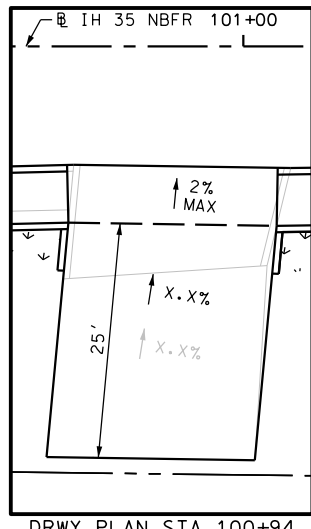
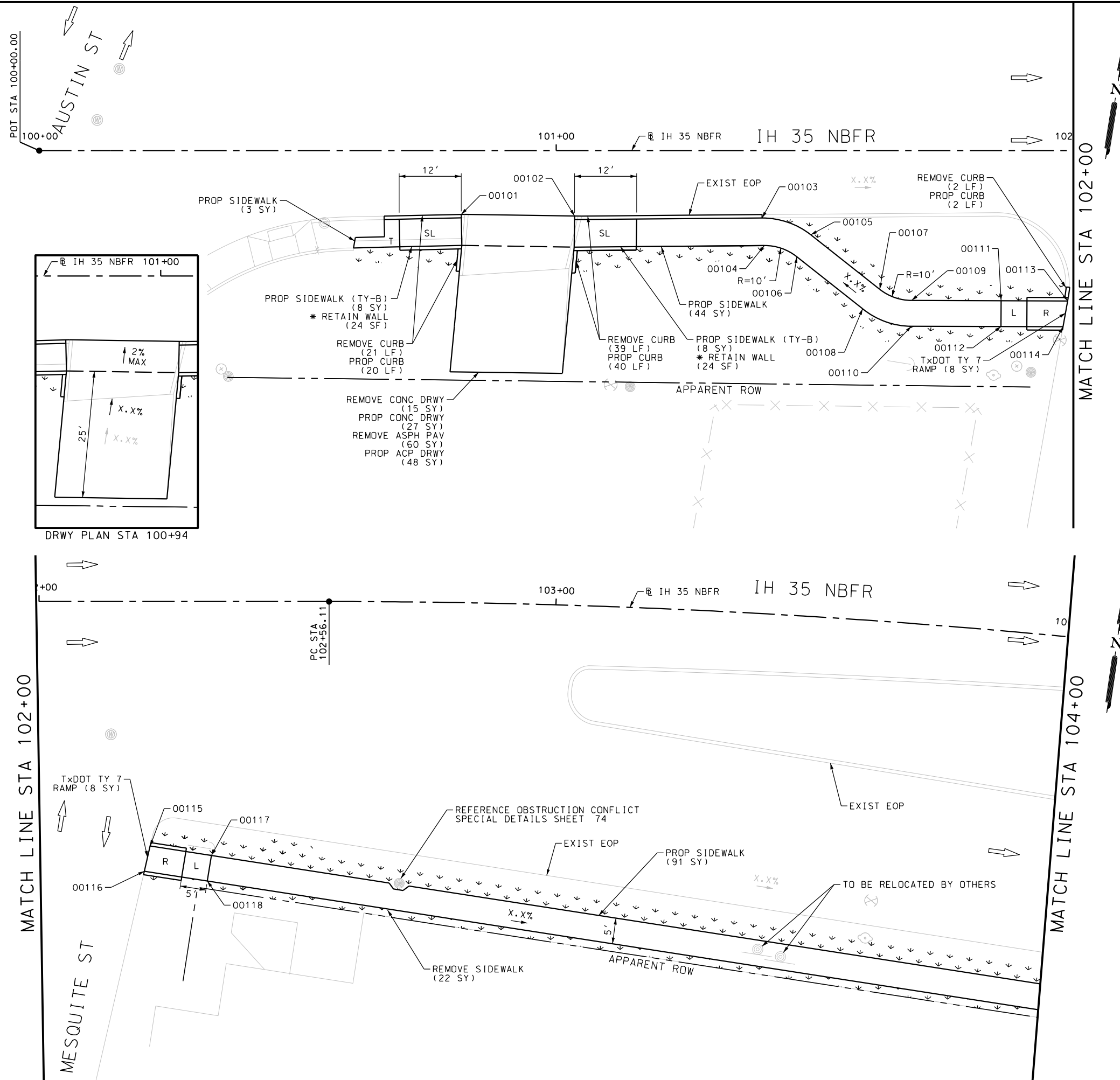
## SUMMARY OF SMALL SIGNS

### SOSS

FILE: sums16.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
4-16	DIST	COUNTY	SHEET NO.	
8-16	SAT	BEXAR	84	

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_NB\_01.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	15
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	62
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	22
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	60
0162-6002	BLOCK SODDING	SY	161
0168-6001	VEGETATIVE WATERING	MG	2.51
0529-6002	CONC CURB (TY II)	LF	62
0530-6004	DRIVEWAYS (CONC)	SY	27
0530-6005	DRIVEWAYS (ACP)	SY	48
0531-6001	CONC SIDEWALKS (4")	SY	138
0531-6024	CURB RAMPS (TY 7)	SY	16
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	16

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



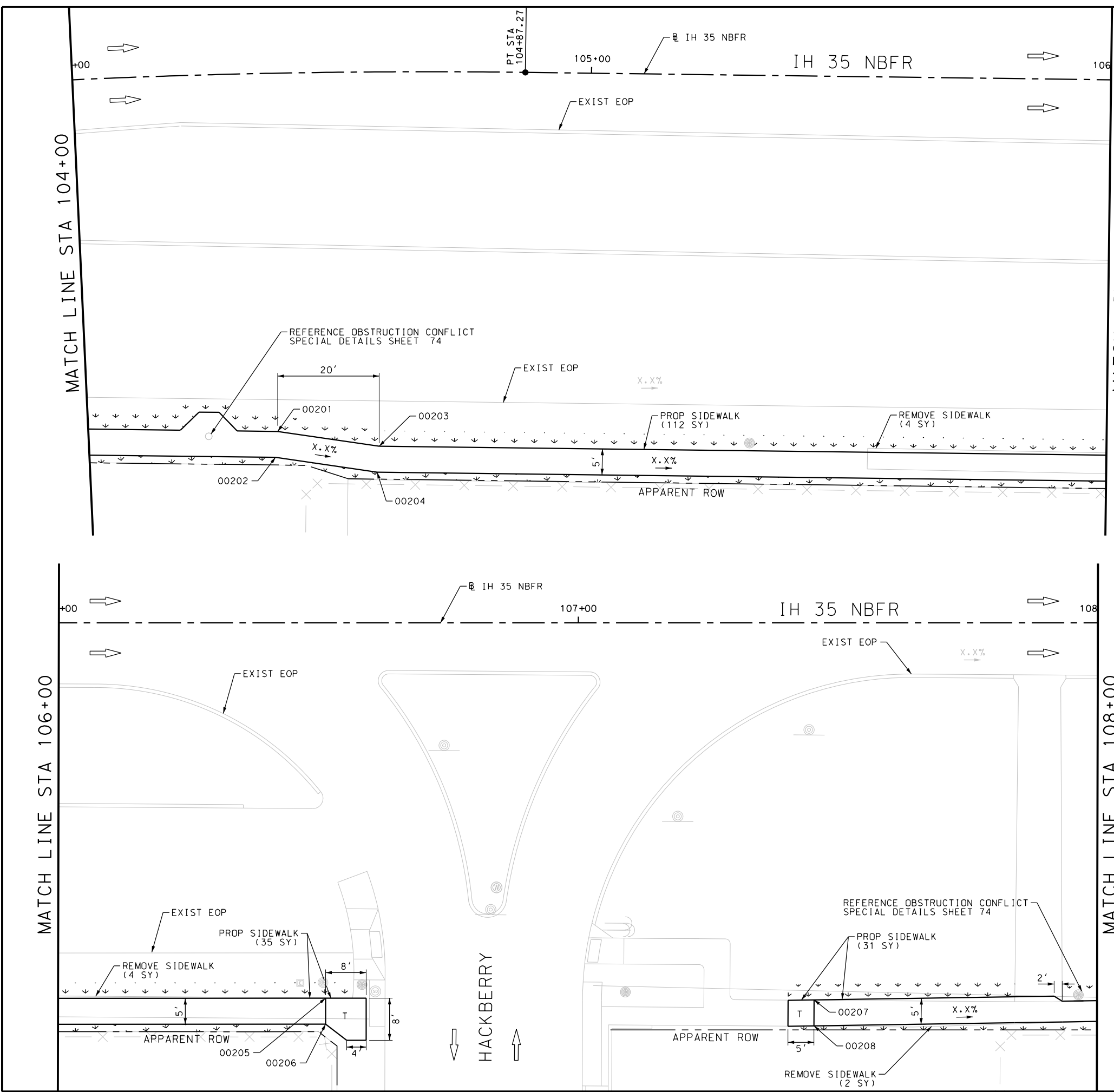
IH 35 NORTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 BEGIN TO STA 104+00

SHEET 1 OF 13

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	85

Plotted on: 9/29/2017

Design File name: P:\1111\35\01\design\Civil\Roadway\IH\_35\11113501\_IH35\_AccessRoad\_NB\_02.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	10
0162-6002	BLOCK SODDING	SY	150
0168-6001	VEGETATIVE WATERING	MG	2.34
0531-6001	CONC SIDEWALKS (4")	SY	178

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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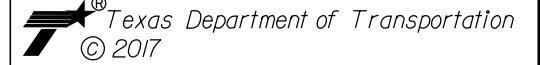
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



IH 35 NORTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 104+00 TO STA 108+00

SHEET 2 OF 13

DWG:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DWG:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	86

Plotted on: 9/29/2017

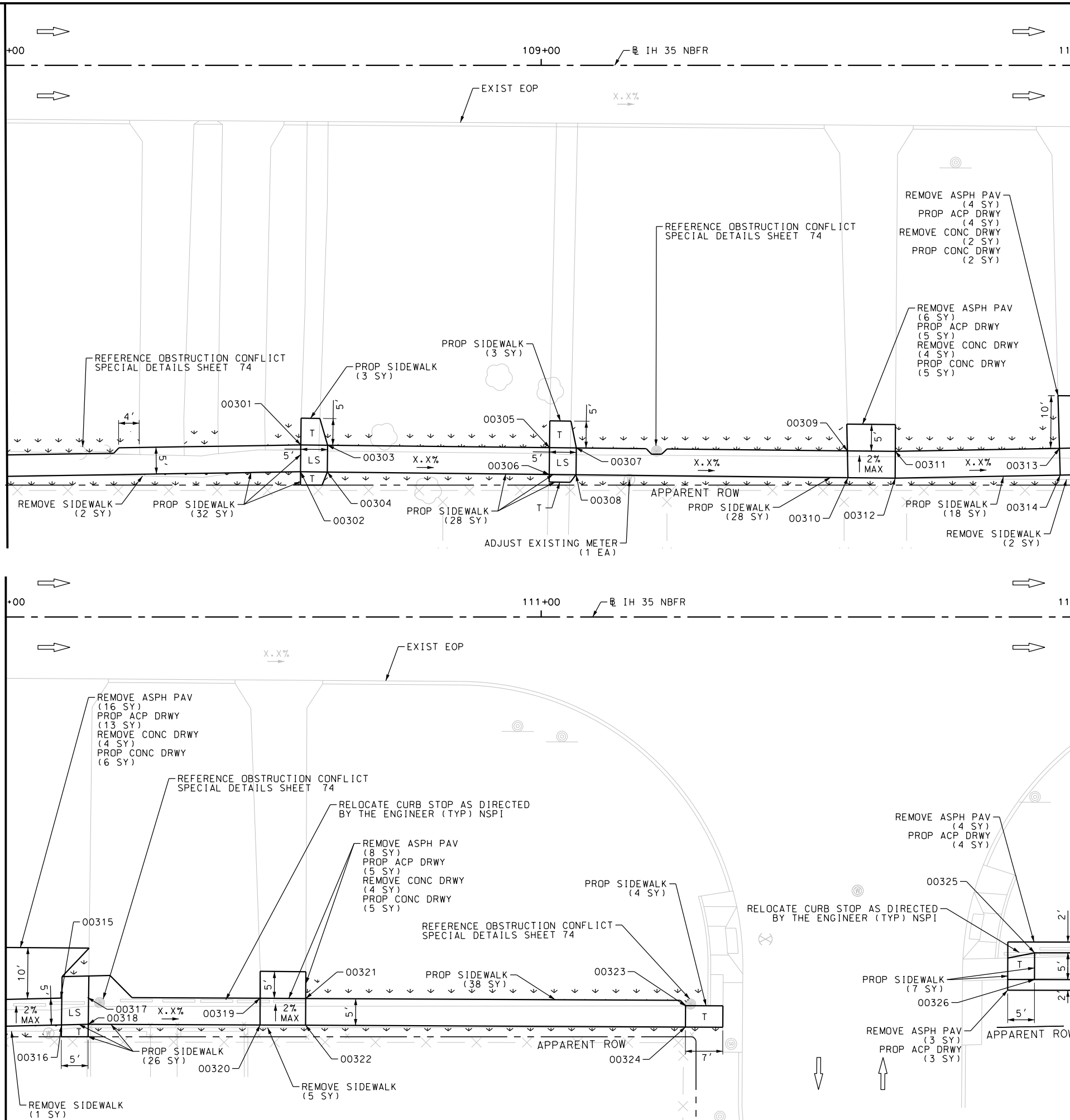
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MATCH LINE STA 108+00

MATCH LINE STA 110+00

MATCH LINE STA 110+00

MATCH LINE STA 112+00



ITEM	DESCRIPTION	UNIT	QTY
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	1
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	14
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	10
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	41
0162-6002	BLOCK SODDING	SY	154
0168-6001	VEGETATIVE WATERING	MG	2.40
0530-6004	DRIVEWAYS (CONC)	SY	18
0530-6005	DRIVEWAYS (ACP)	SY	34
0531-6001	CONC SIDEWALKS (4")	SY	187

NOTES:  
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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
 © 2017

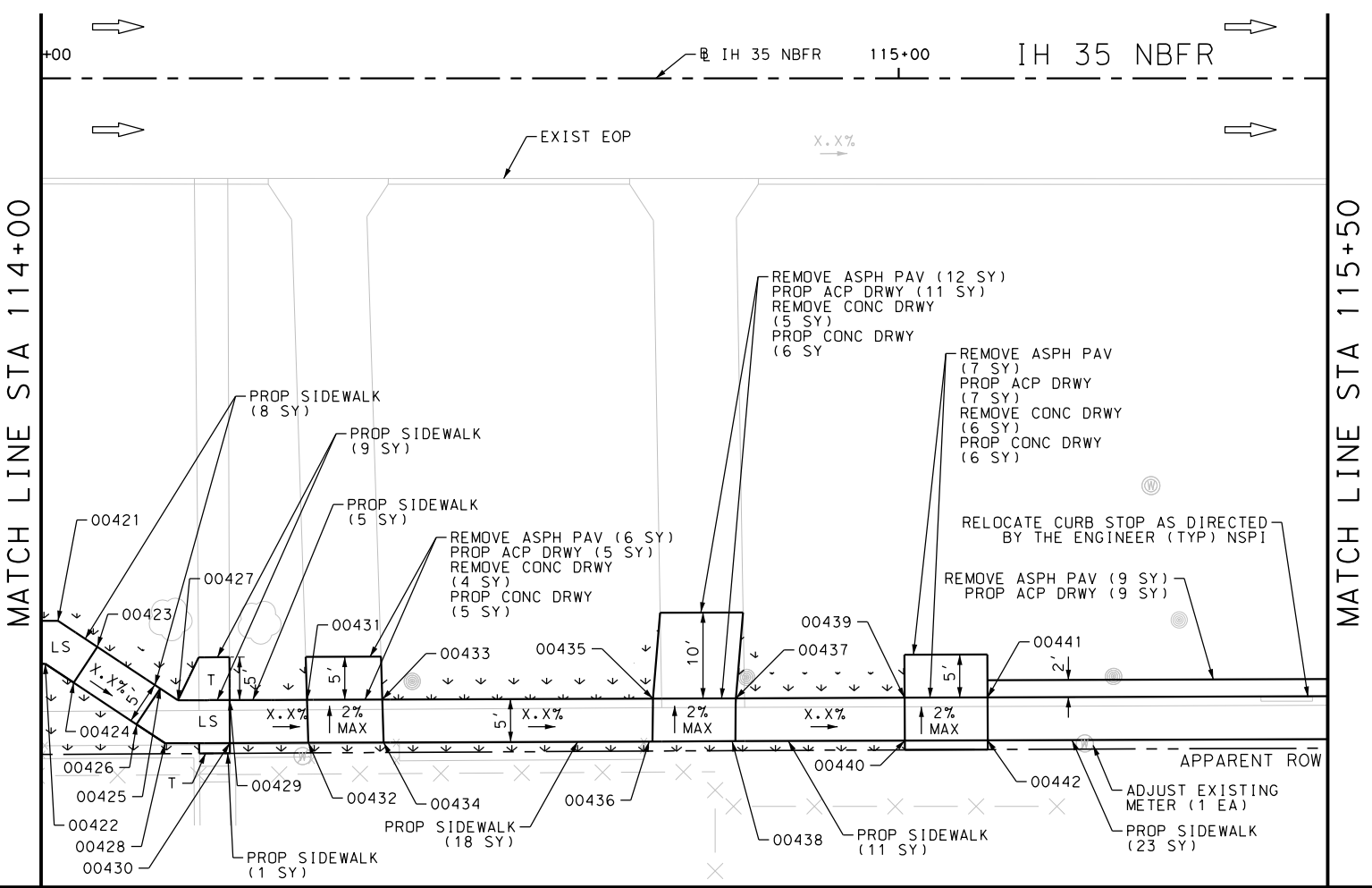
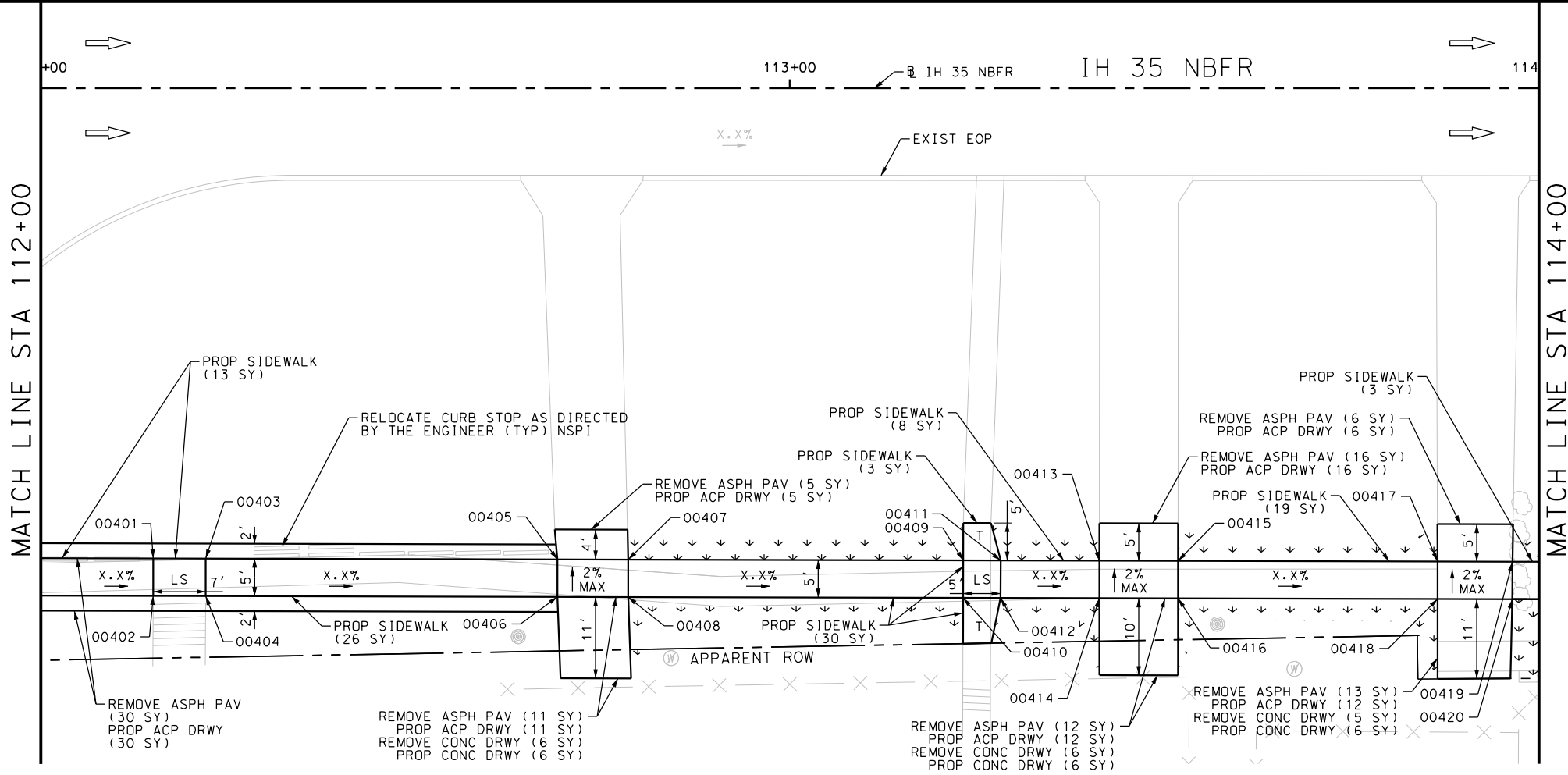
IH 35 NORTHBOUND FRONTAGE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 108+00 TO STA 112+00

SHEET 3 OF 13

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.:
				586
				SHEET NO.:
				87

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_NB\_04.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	1
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	32
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	117
0162-6002	BLOCK SODDING	SY	127
0168-6001	VEGETATIVE WATERING	MG	1.98
0530-6004	DRIVEWAYS (CONC)	SY	35
0530-6005	DRIVEWAYS (ACP)	SY	114
0531-6001	CONC SIDEWALKS (4")	SY	177

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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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IH 35 NORTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 112+00 TO STA 115+50

SHEET 4 OF 13

CHK	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
DGN:	6	TEXAS		VA		
CHK	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
DWG:	SAT	BEXAR	0915	12	586	88

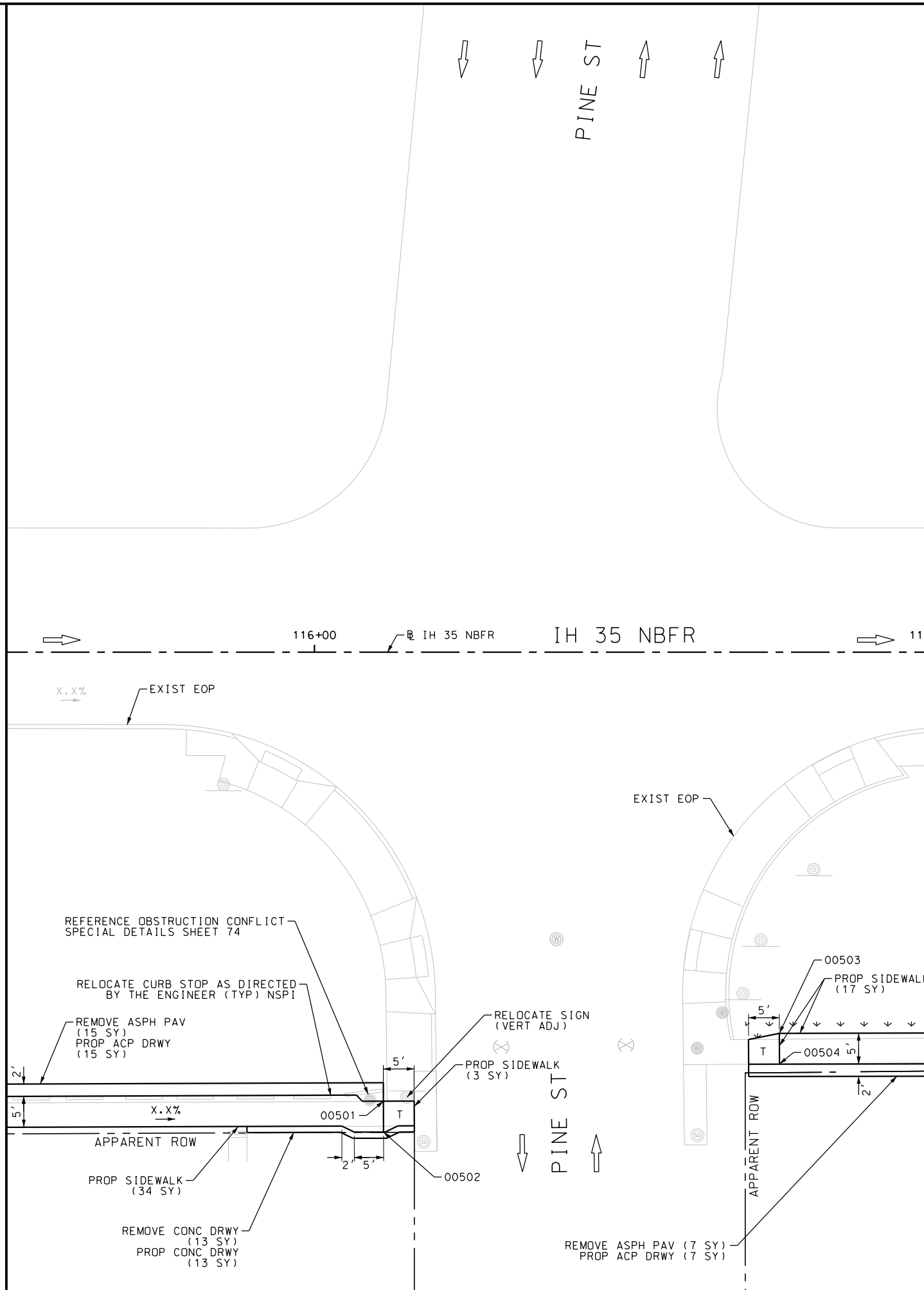


Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_NB\_05.dgn

MATCH LINE STA 115+50

MATCH LINE STA 117+00



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	13
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	22
0162-6002	BLOCK SODDING	SY	11
0168-6001	VEGETATIVE WATERING	MG	0.17
0530-6004	DRIVEWAYS (CONC)	SY	13
0530-6005	DRIVEWAYS (ACP)	SY	22
0531-6001	CONC SIDEWALKS (4")	SY	54
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1



NOTES:  
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DESIGN  
 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



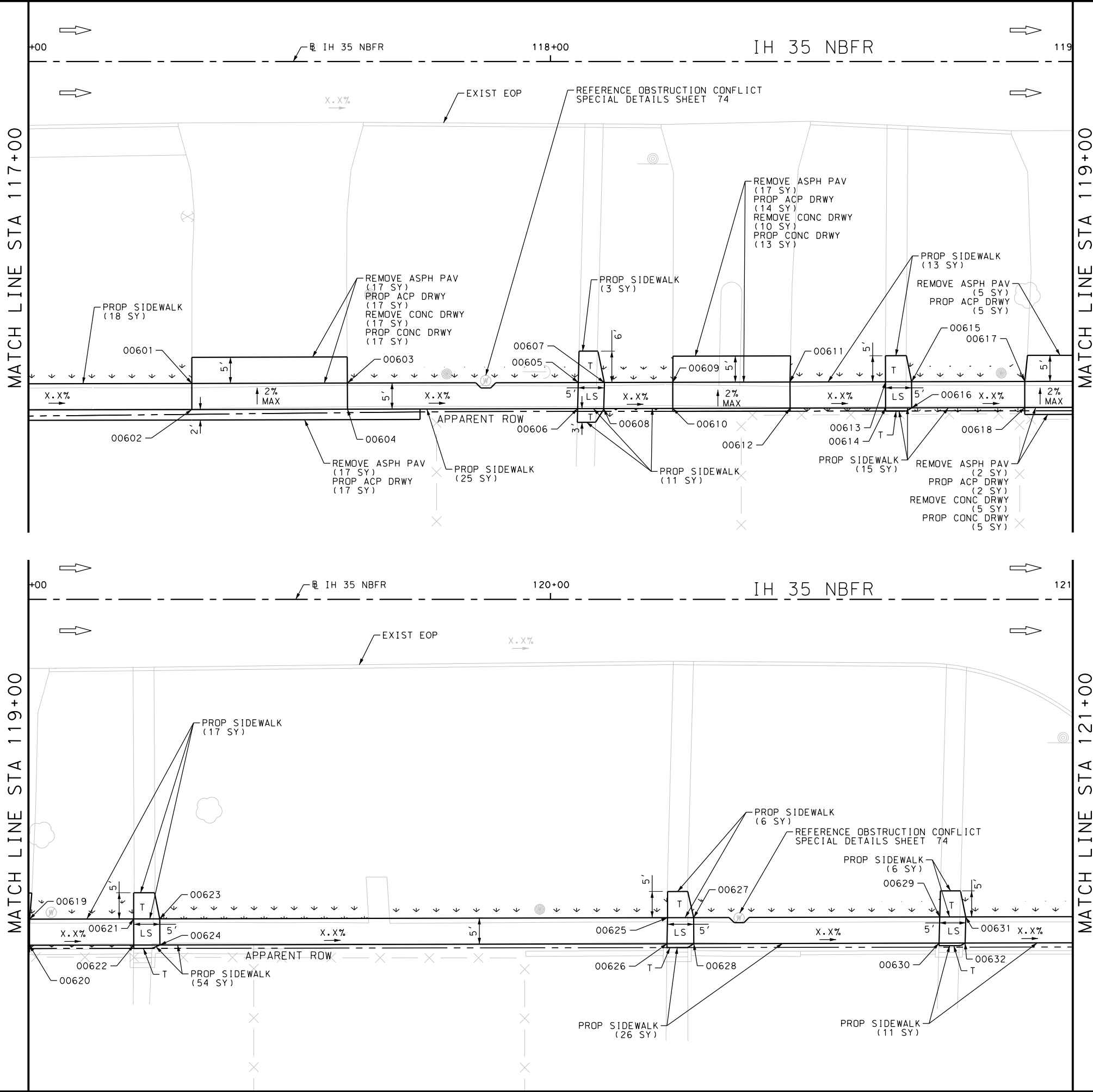
IH 35 NORTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 115+50 TO STA 117+00

SHEET 5 OF 13

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	89

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_NB\_06.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	32
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	58
0162-6002	BLOCK SODDING	SY	117
0168-6001	VEGETATIVE WATERING	MG	1.83
0530-6004	DRIVEWAYS (CONC)	SY	35
0530-6005	DRIVEWAYS (ACP)	SY	55
0531-6001	CONC SIDEWALKS (4")	SY	205

NOTES:  
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DESIGN  
**INTERIM REVIEW**  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



IH 35 NORTHBOUND FRONTAGE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 117+00 TO STA 121+00

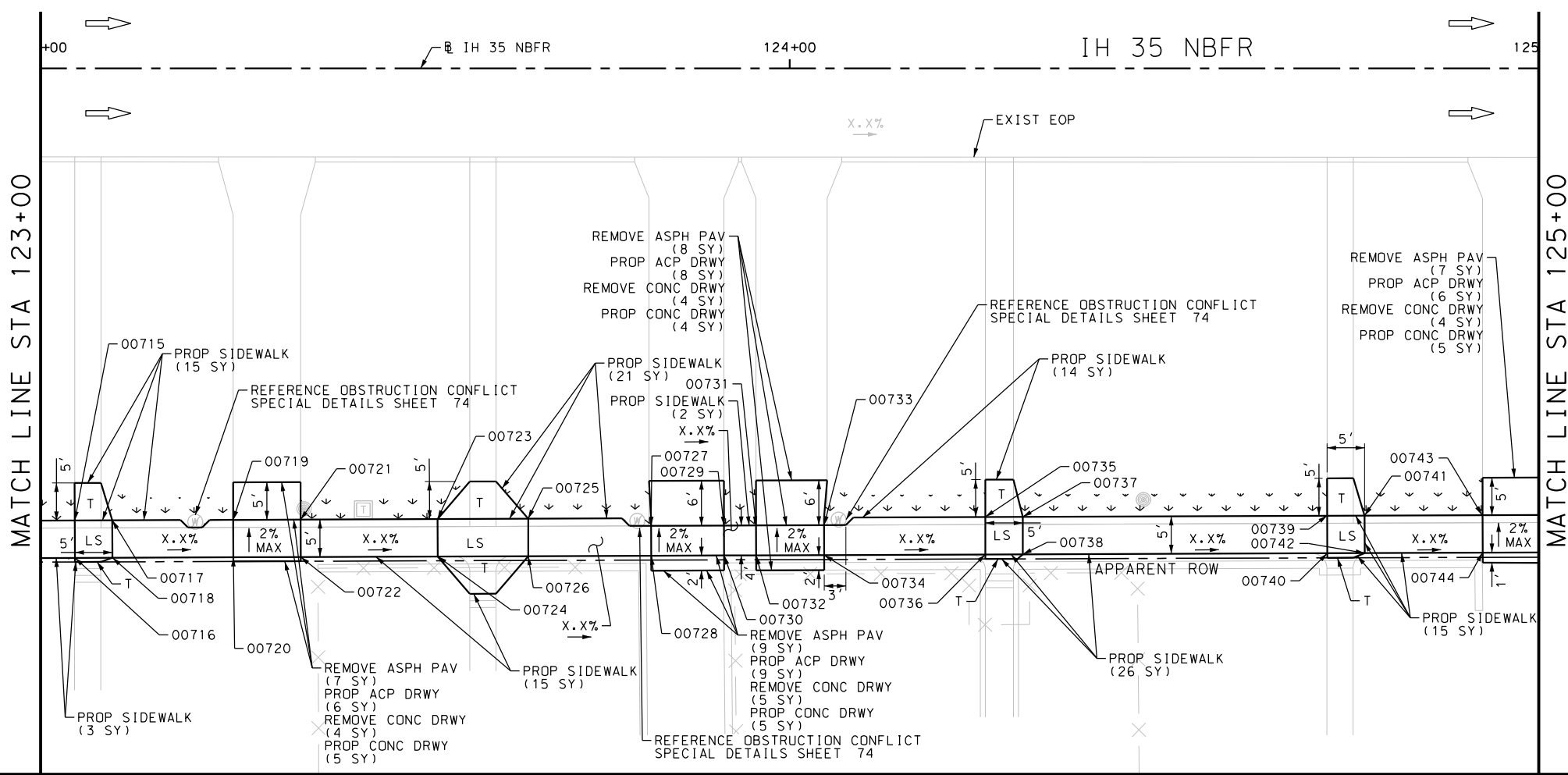
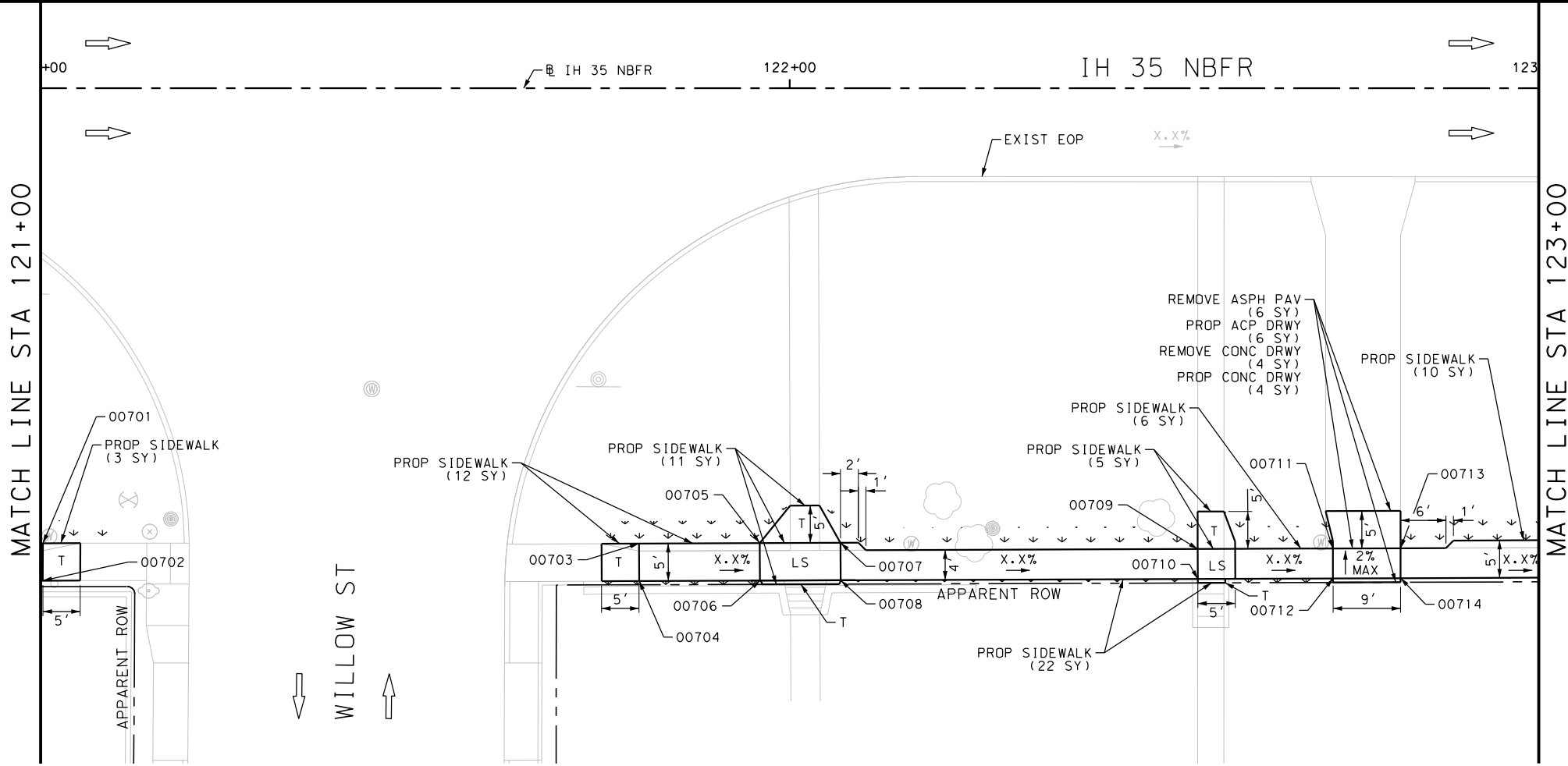
SHEET 6 OF 13

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	90

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_NB\_07.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	21
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	37
0162-6002	BLOCK SODDING	SY	102
0168-6001	VEGETATIVE WATERING	MG	1.59
0530-6004	DRIVEWAYS (CONC)	SY	23
0530-6005	DRIVEWAYS (ACP)	SY	35
0531-6001	CONC SIDEWALKS (4")	SY	207



NOTES:  
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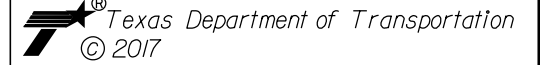
DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



IH 35 NORTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 121+00 TO STA 125+00

SHEET 7 OF 13

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	91

Plotted on: 9/29/2017

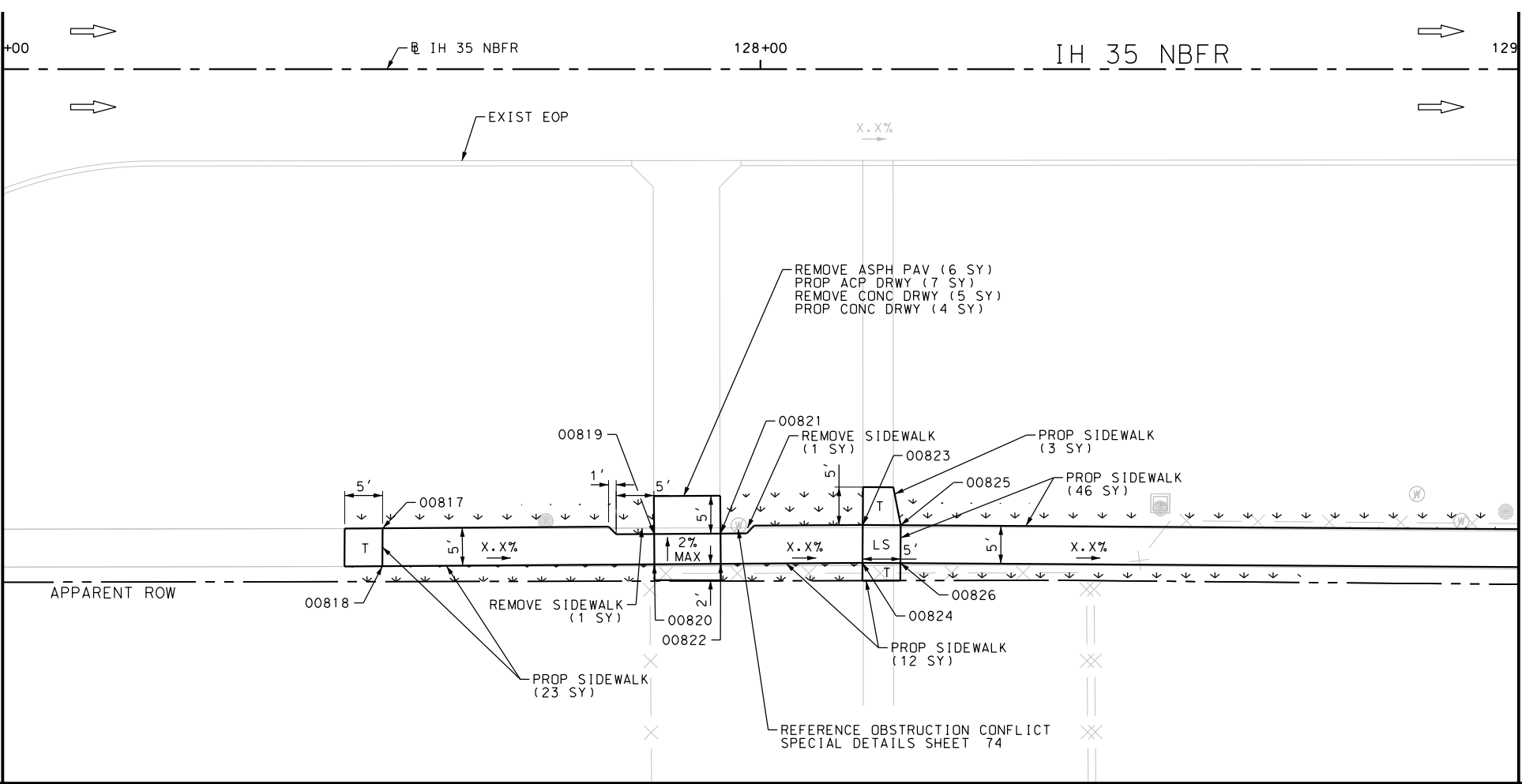
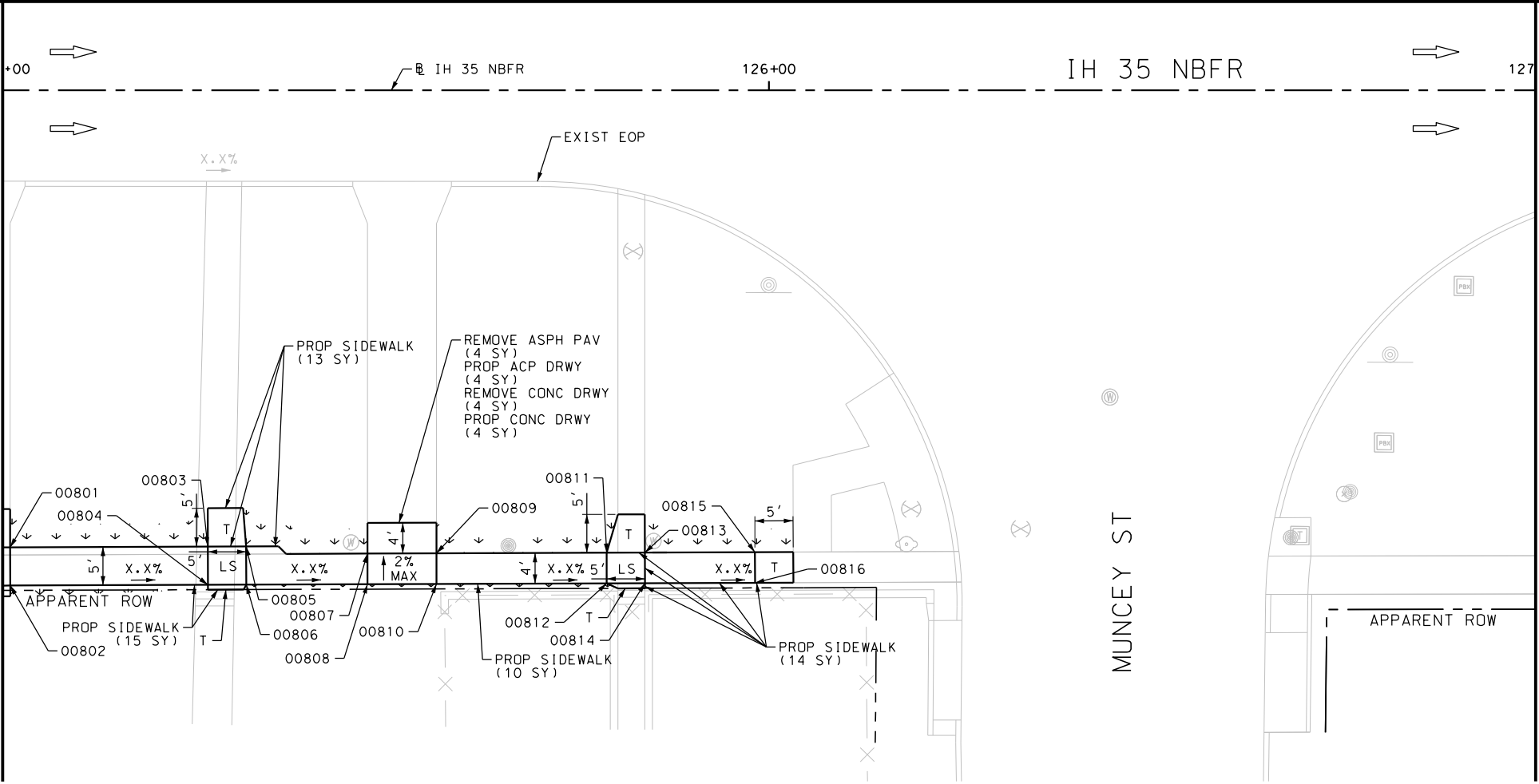
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MATCH LINE STA 125+00

MATCH LINE STA 127+00

MATCH LINE STA 127+00

MATCH LINE STA 129+00



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	9
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	2
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	10
0162-6002	BLOCK SODDING	SY	104
0168-6001	VEGETATIVE WATERING	MG	1.62
0530-6004	DRIVEWAYS (CONC)	SY	8
0530-6005	DRIVEWAYS (ACP)	SY	11
0531-6001	CONC SIDEWALKS (4")	SY	136

NOTES:  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



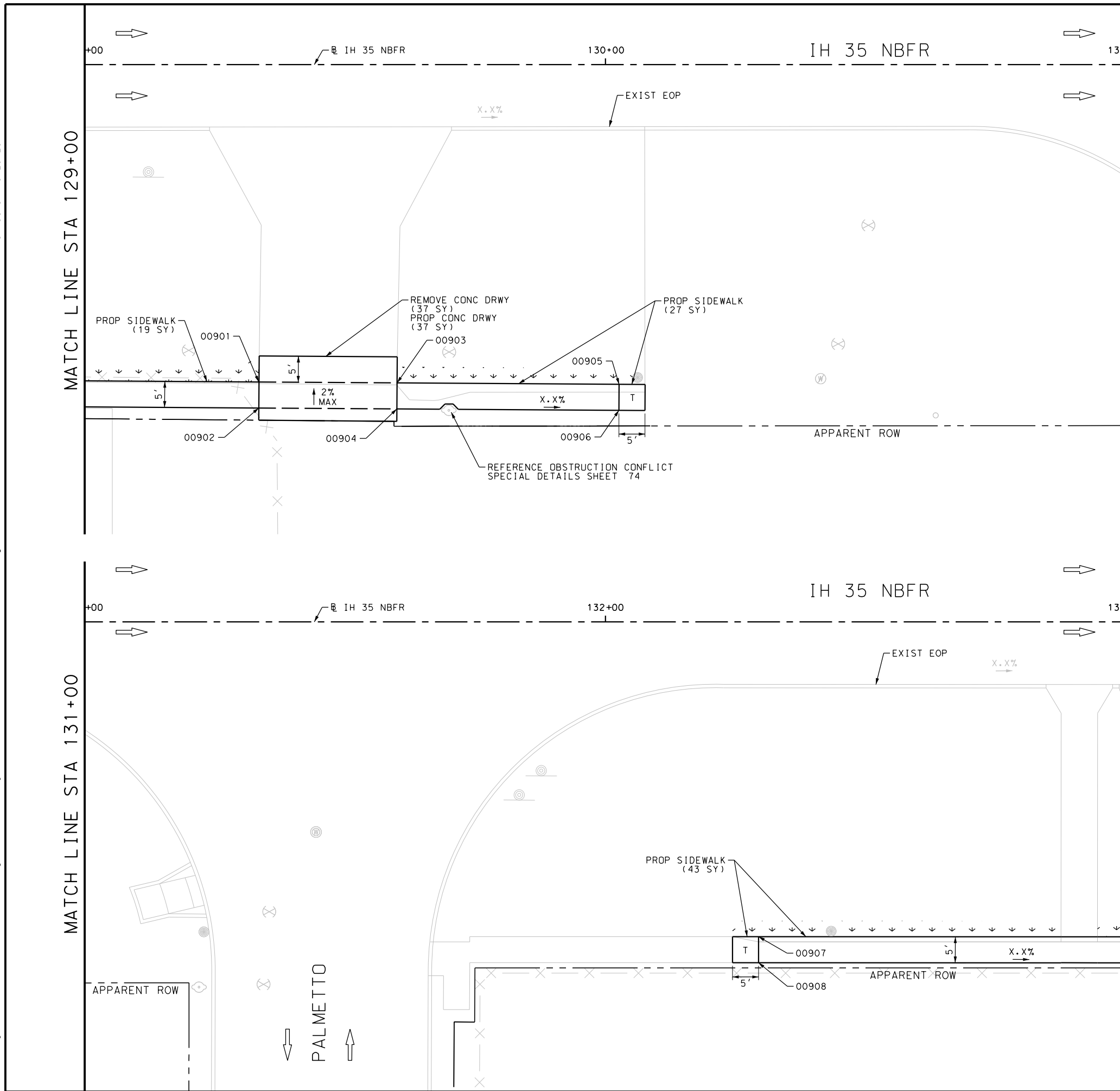
IH 35 NORTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 125+00 TO STA 129+00

SHEET 8 OF 13

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	92

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_NB\_09.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	37
0162-6002	BLOCK SODDING	SY	52
0168-6001	VEGETATIVE WATERING	MG	0.81
0530-6004	DRIVEWAYS (CONC)	SY	37
0531-6001	CONC SIDEWALKS (4")	SY	89

NOTES:  
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DESIGN  
 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
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REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



IH 35 NORTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 129+00 TO STA 133+00

SHEET 9 OF 13

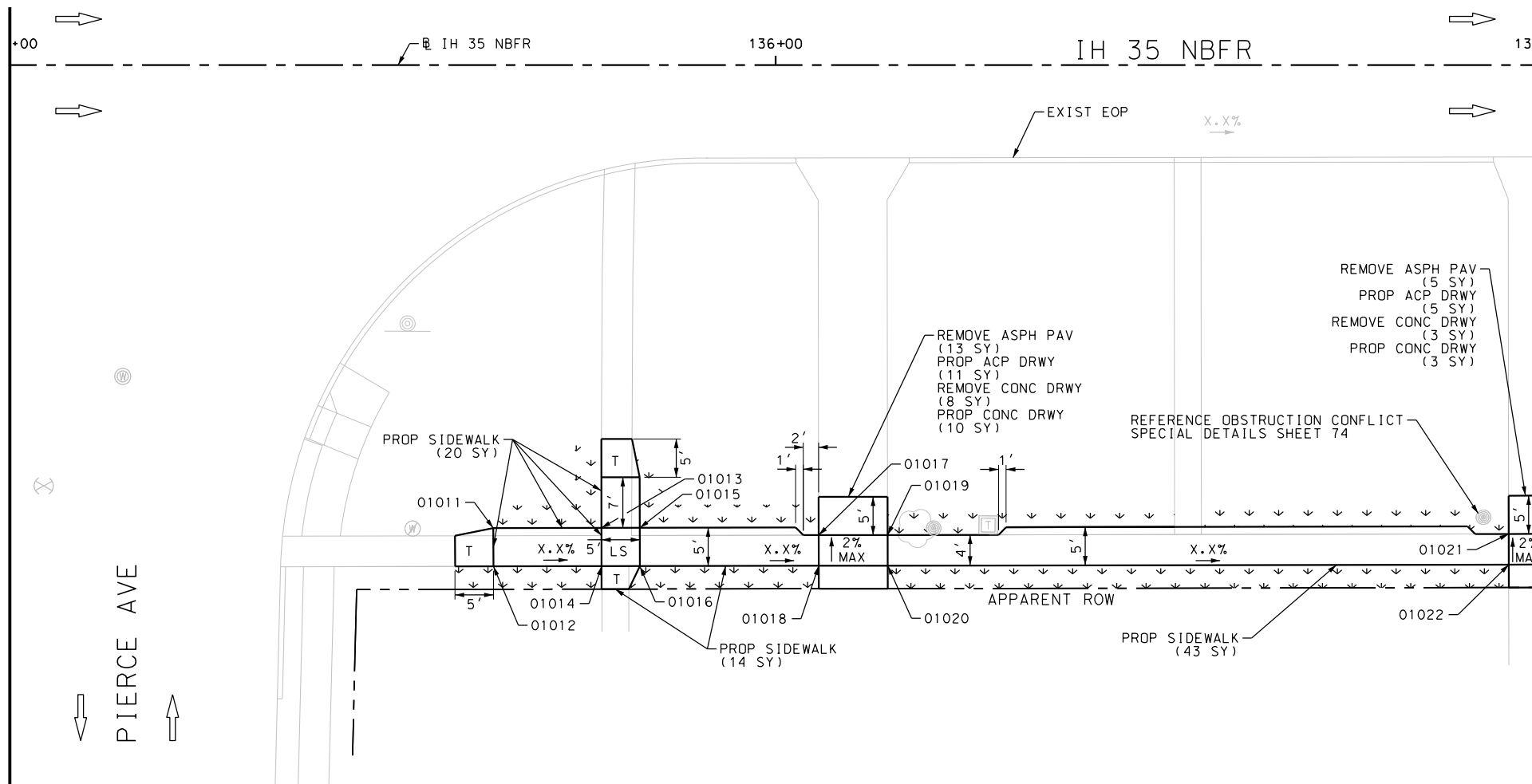
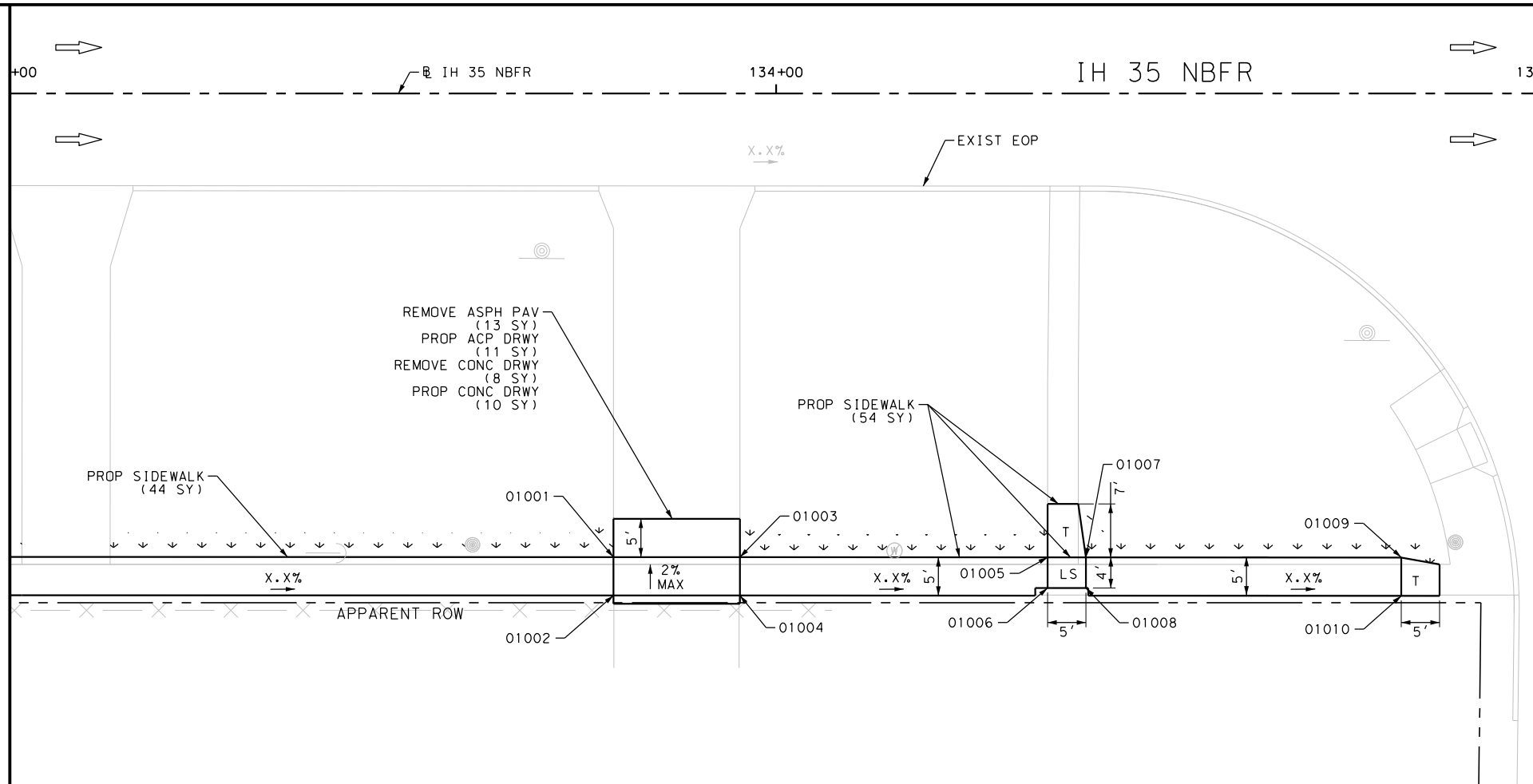
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	93

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_NB\_10.dgn

MATCH LINE STA 133+00

MATCH LINE STA 135+00



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	19
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	31
0162-6002	BLOCK SODDING	SY	123
0168-6001	VEGETATIVE WATERING	MG	1.92
0530-6004	DRIVEWAYS (CONC)	SY	23
0530-6005	DRIVEWAYS (ACP)	SY	27
0531-6001	CONC SIDEWALKS (4")	SY	175

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



IH 35 NORTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 133+00 TO STA 137+00

SHEET 10 OF 13

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	94

Plotted on: 9/29/2017

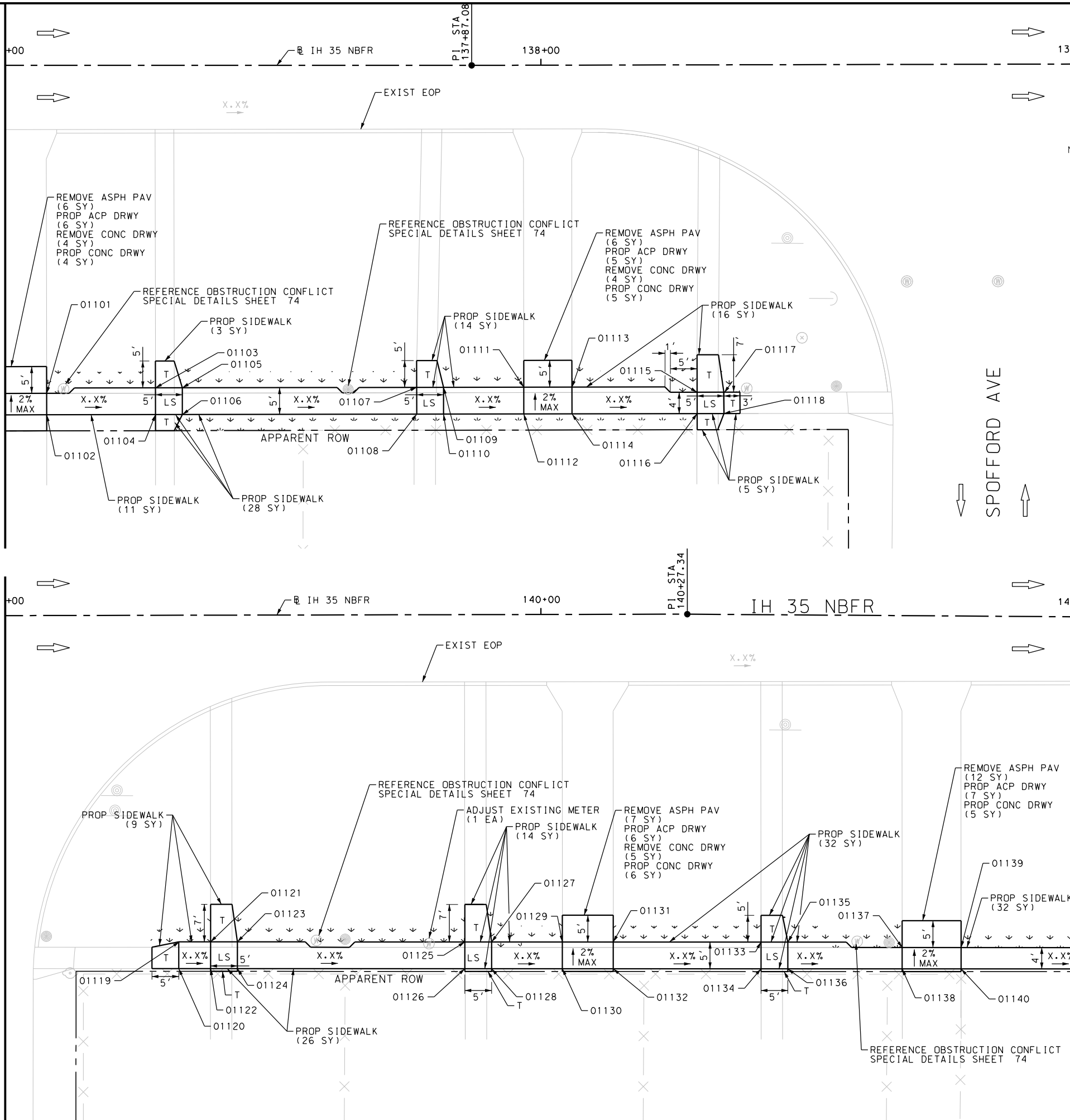
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MATCH LINE STA 137+00

MATCH LINE STA 139+00

MATCH LINE STA 139+00

MATCH LINE STA 141+00



ITEM	DESCRIPTION	UNIT	QTY
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	1
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	13
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	31
0162-6002	BLOCK SODDING	SY	98
0168-6001	VEGETATIVE WATERING	MG	1.53
0530-6004	DRIVEWAYS (CONC)	SY	20
0530-6005	DRIVEWAYS (ACP)	SY	24
0531-6001	CONC SIDEWALKS (4")	SY	190

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



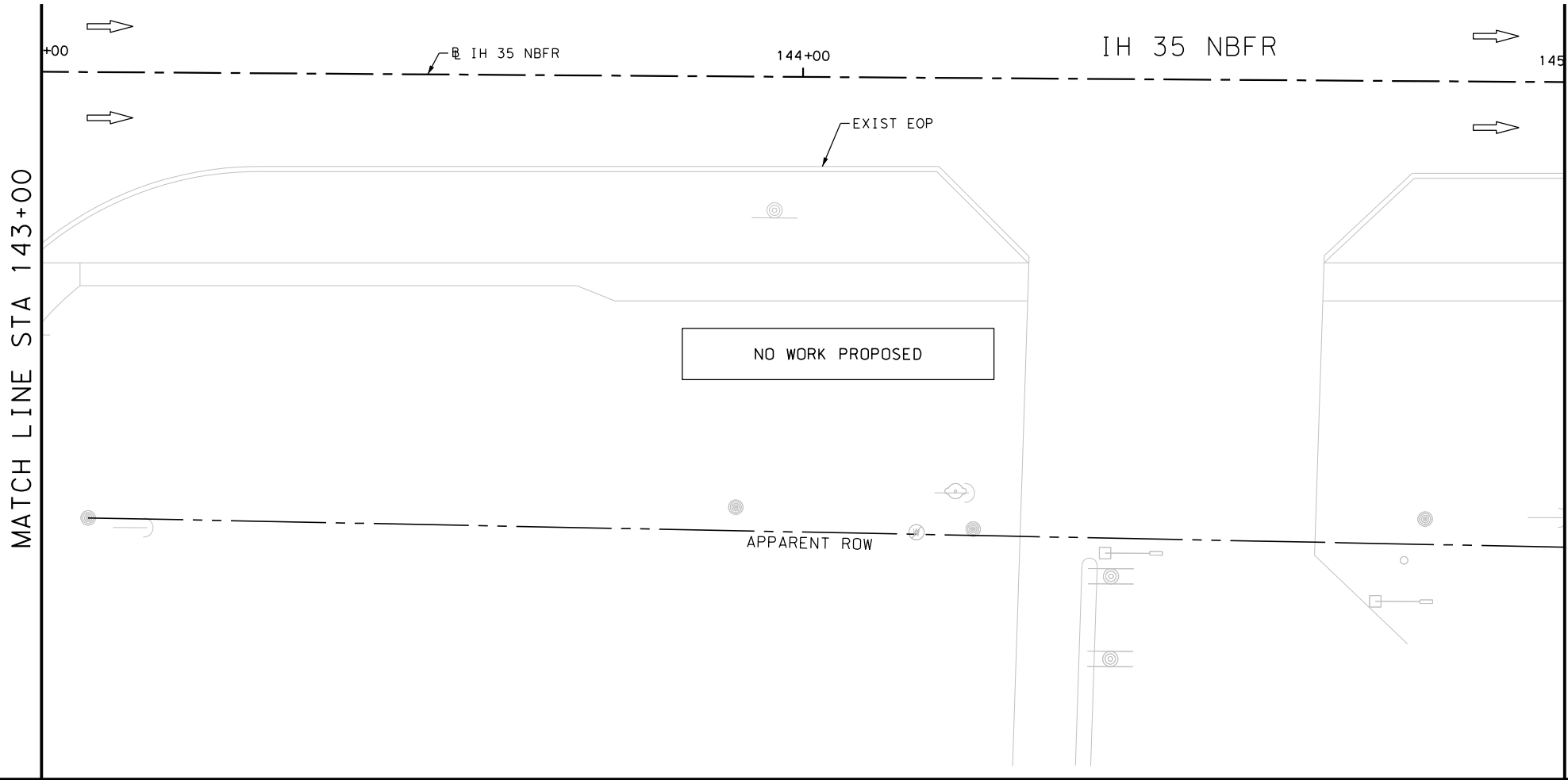
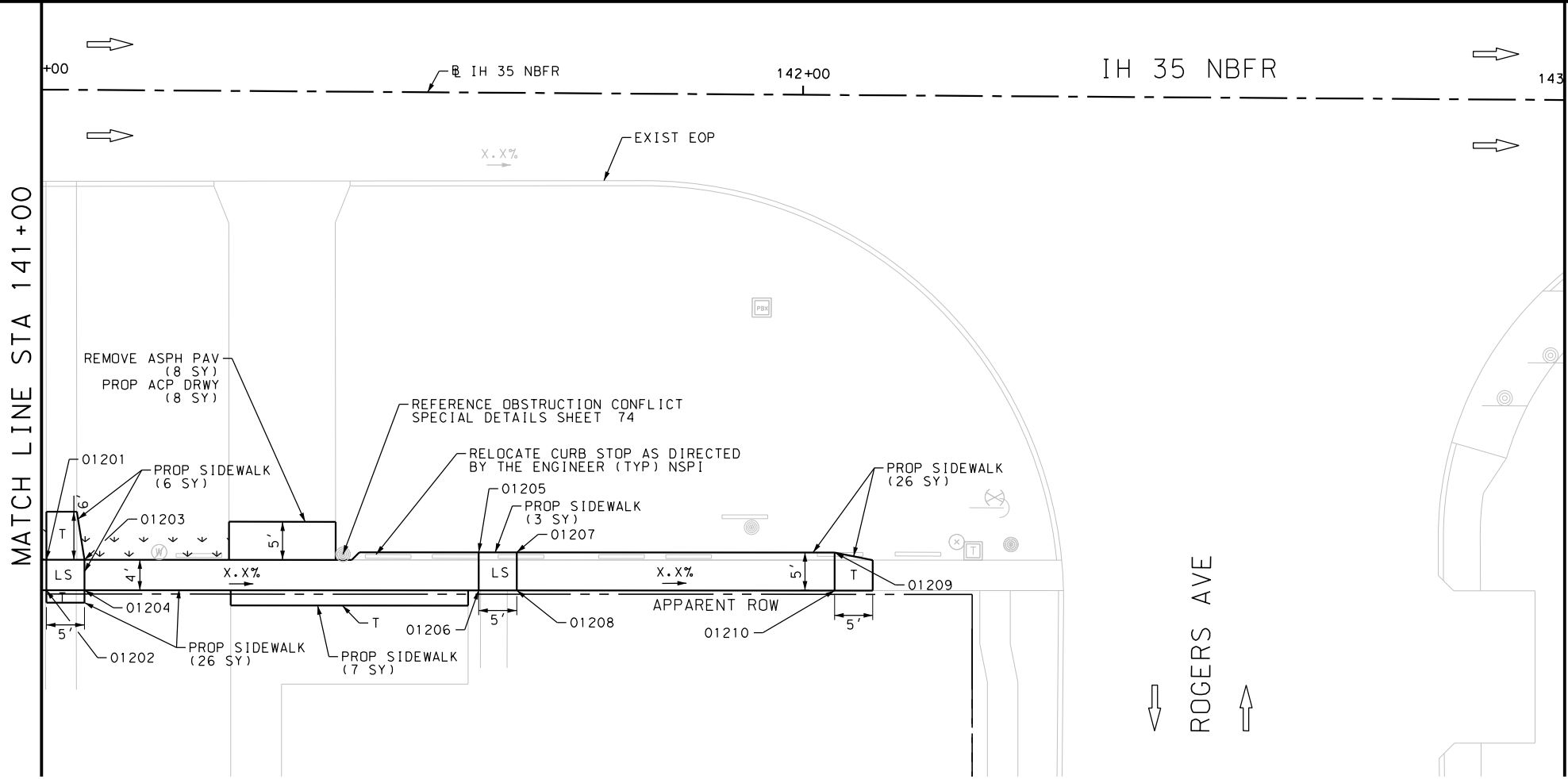
IH 35 NORTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 137+00 TO STA 141+00

SHEET 11 OF 13

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	95

Plotted on: 9/29/2017

Design File name: P:\1111\35\01\design\Civil\Roadway\IH\_35\11113501\_IH35\_AccessRoad\_NB\_12.dgn



ITEM	DESCRIPTION	UNIT	QTY
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	8
0162-6002	BLOCK SODDING	SY	8
0168-6001	VEGETATIVE WATERING	MG	0.12
0530-6005	DRIVEWAYS (ACP)	SY	8
0531-6001	CONC SIDEWALKS (4")	SY	68

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



IH 35 NORTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 141+00 TO STA 145+00

SHEET 12 OF 13

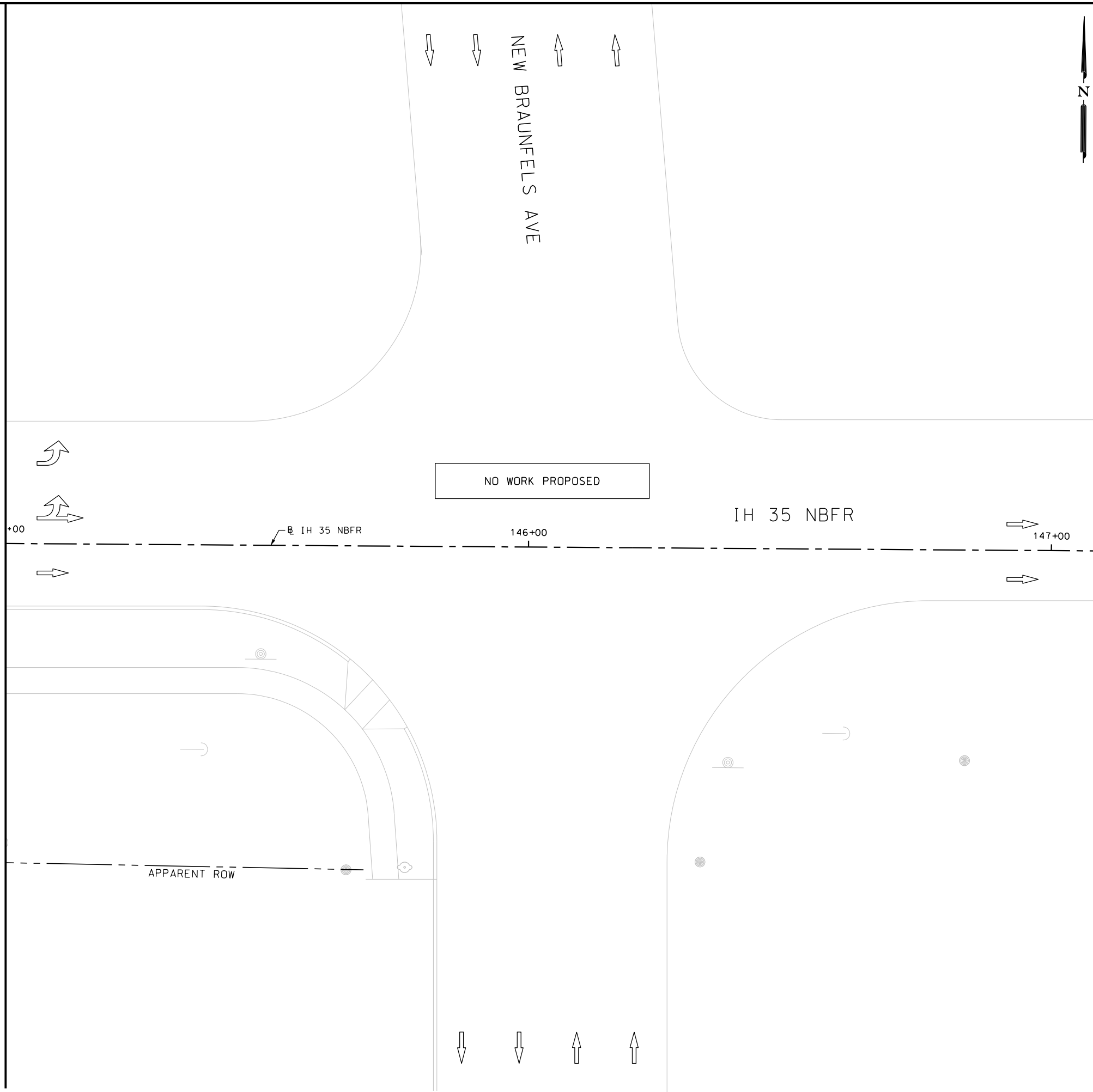
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	96



Plotted on: 9/29/2017

Design File name: P:\1111\35\01\design\Civil\Roadway\IH\_35\11113501\_IH35\_AccessRoad\_NB\_13.dgn

MATCH LINE STA 145+00



NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



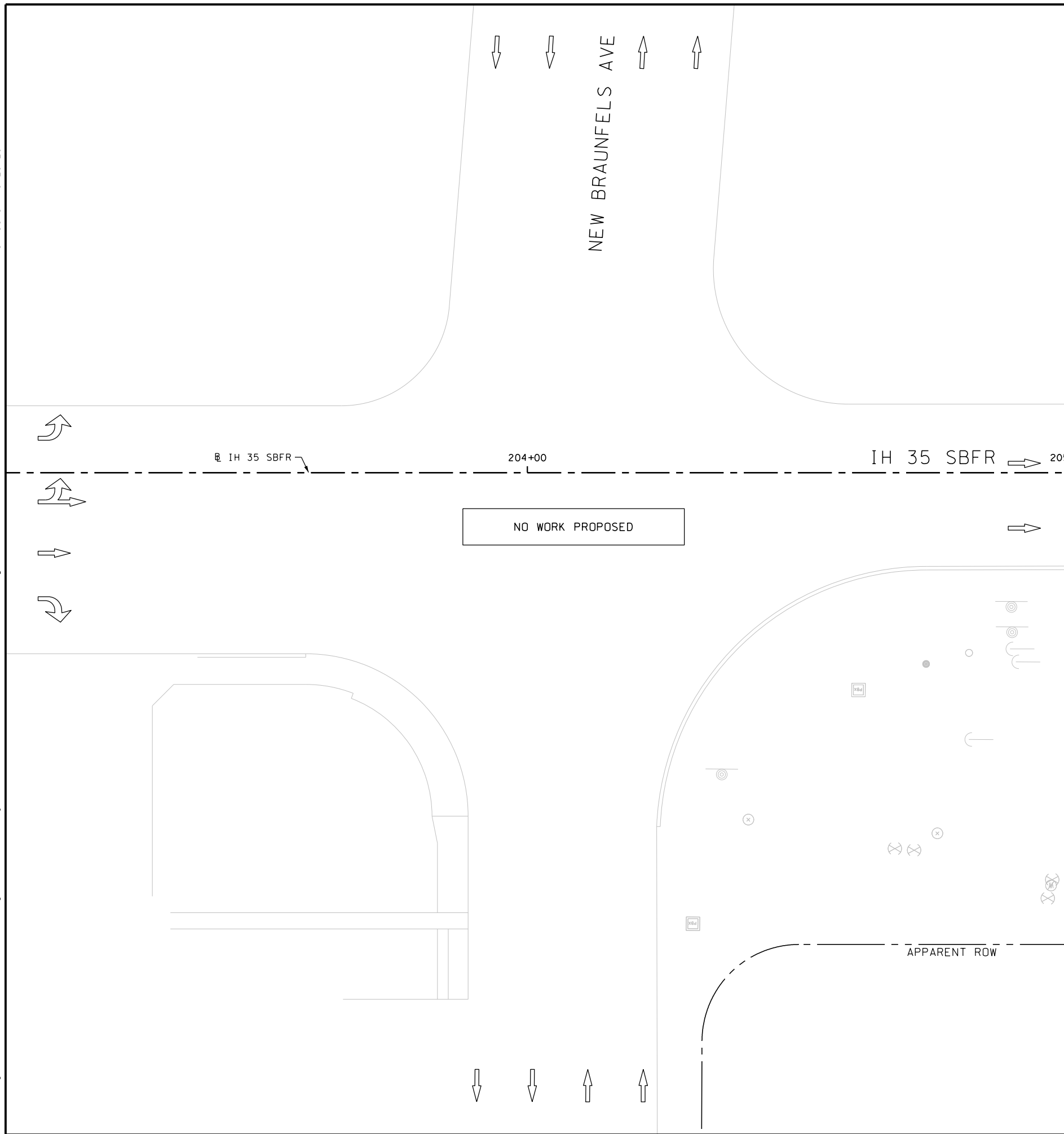
IH 35 NORTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 145+00 TO END PROJECT

SHEET 13 OF 13

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.:
				586
				SHEET NO.:
				97

Plotted on: 9/29/2017

Design File name: P:\1111\35\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_SB\_01.dgn



MATCH LINE STA 205+00



NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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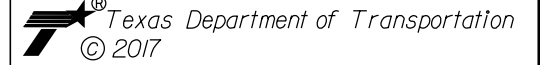
DESIGN  
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 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



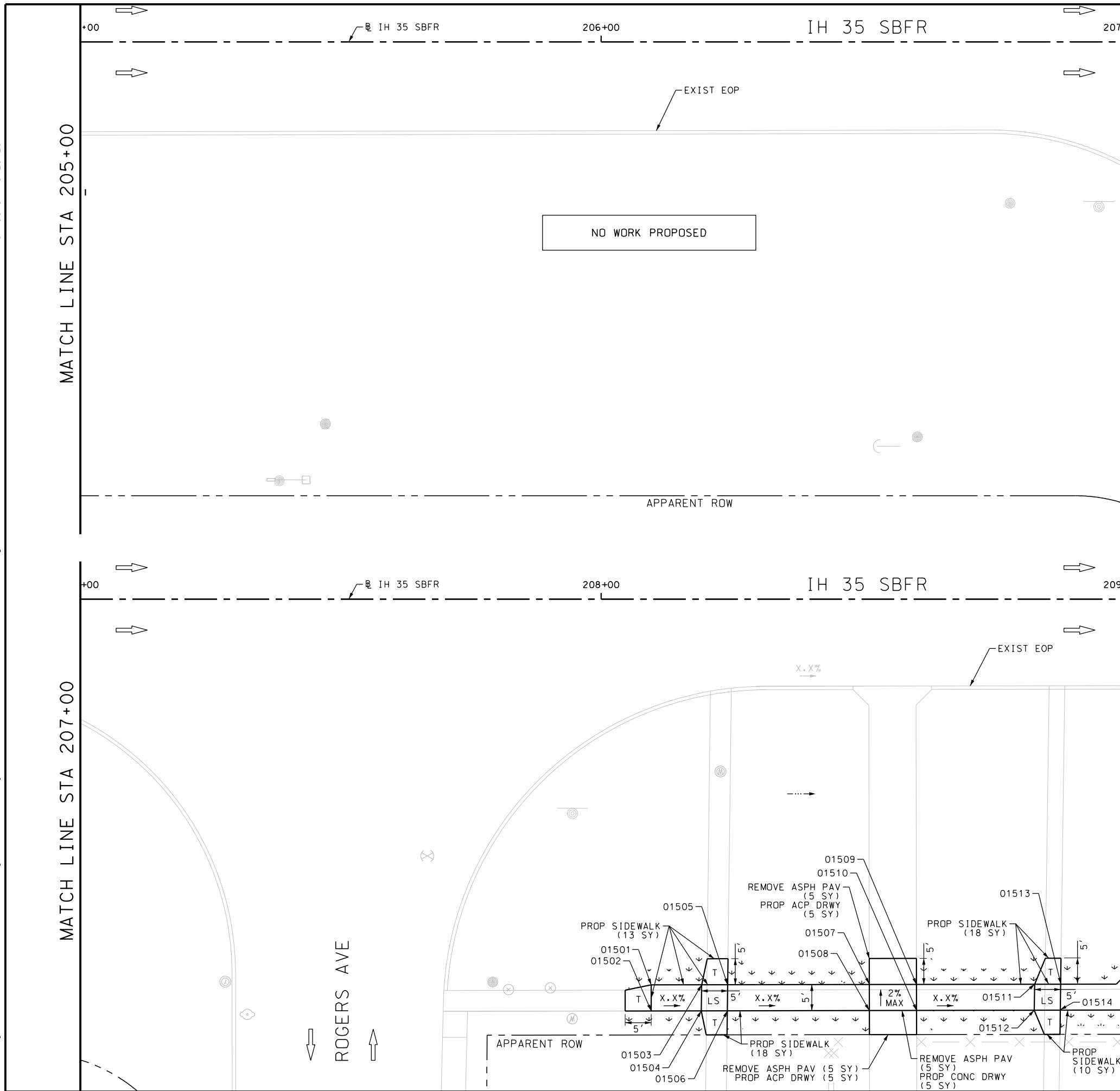
IH 35 SOUTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 BEGIN TO STA 205+00

SHEET 1 OF 12

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:			HIGHWAY NO.:
CHK DGN:	6	TEXAS				VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	98

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_SB\_02.dgn



ITEM	DESCRIPTION	UNIT	QTY
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	15
0162-6002	BLOCK SODDING	SY	60
0168-6001	VEGETATIVE WATERING	MG	0.94
0530-6004	DRIVEWAYS (CONC)	SY	5
0530-6005	DRIVEWAYS (ACP)	SY	10
0531-6001	CONC SIDEWALKS (4")	SY	59

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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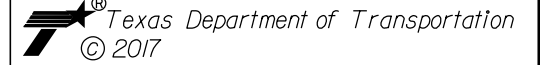
DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



IH 35 SOUTHBOUND FRONTAGE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 205+00 TO STA 209+00

SHEET 2 OF 12

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.:
				586
				SHEET NO.:
				99

Plotted on: 9/29/2017

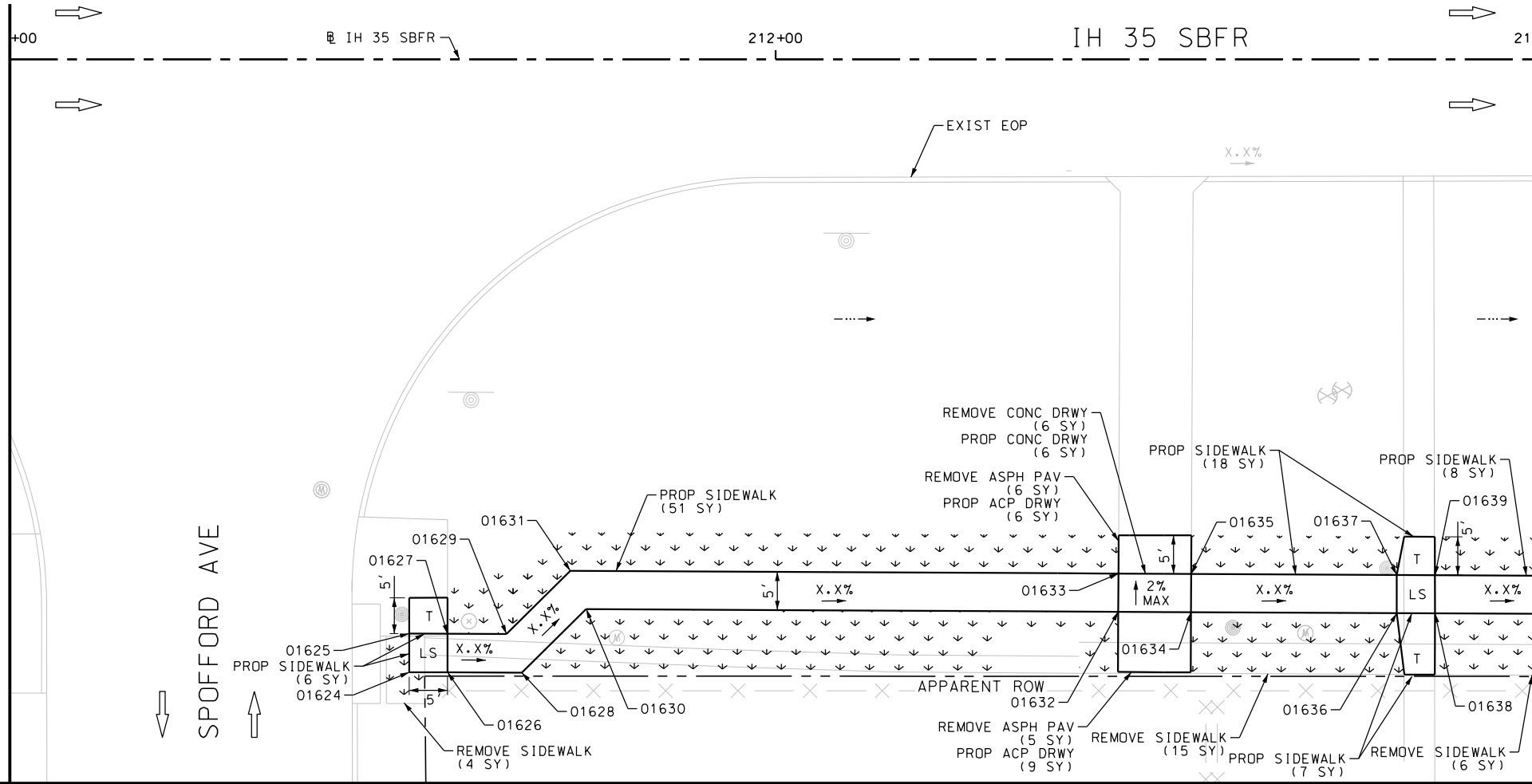
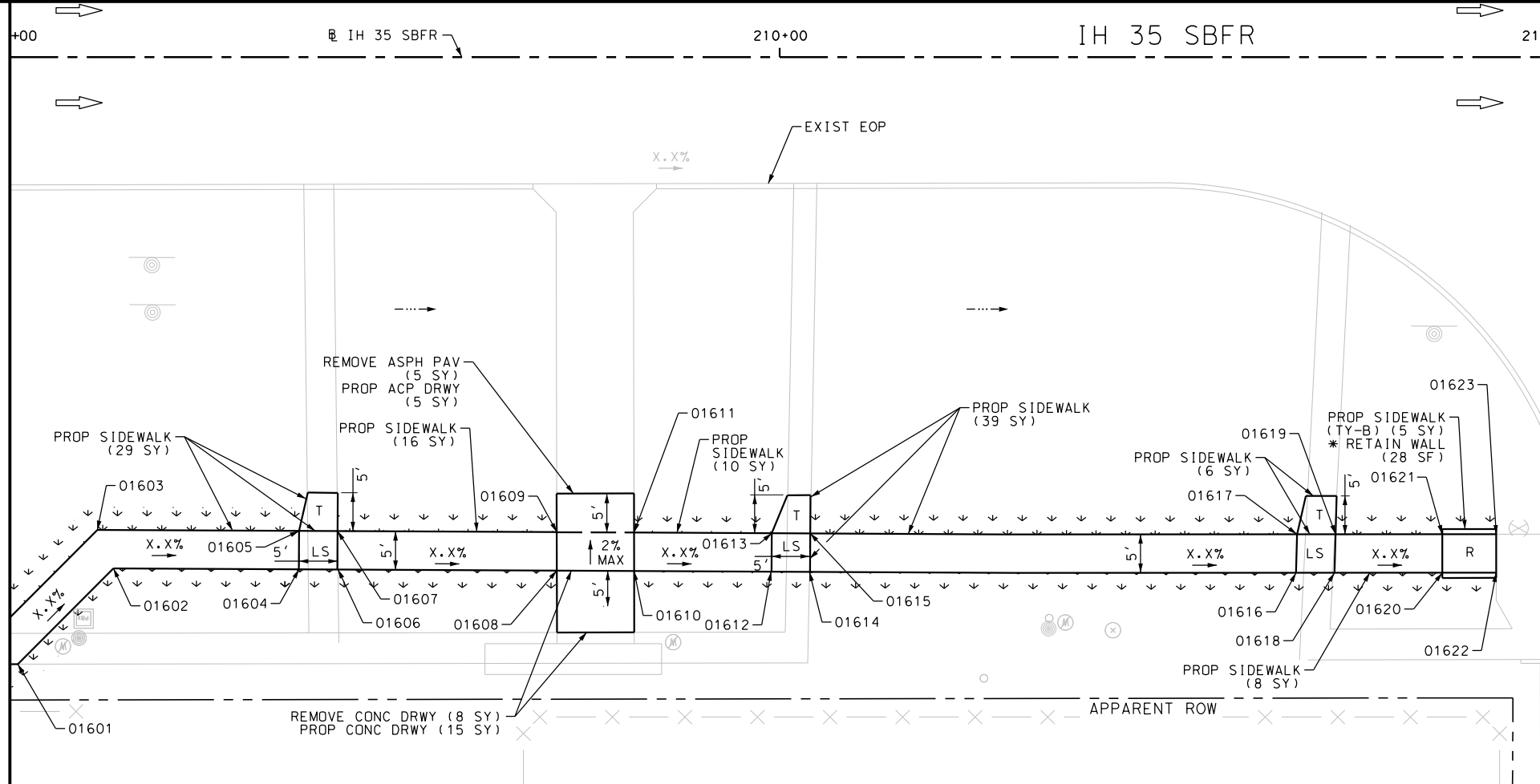
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MATCH LINE STA 209+00

MATCH LINE STA 211+00

MATCH LINE STA 211+00

MATCH LINE STA 213+00



SPOFFORD AVE

ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	14
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	25
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	16
0162-6002	BLOCK SODDING	SY	289
0168-6001	VEGETATIVE WATERING	MG	4.51
0530-6004	DRIVEWAYS (CONC)	SY	21
0530-6005	DRIVEWAYS (ACP)	SY	20
0531-6001	CONC SIDEWALKS (4")	SY	198
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	5

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
 © 2017

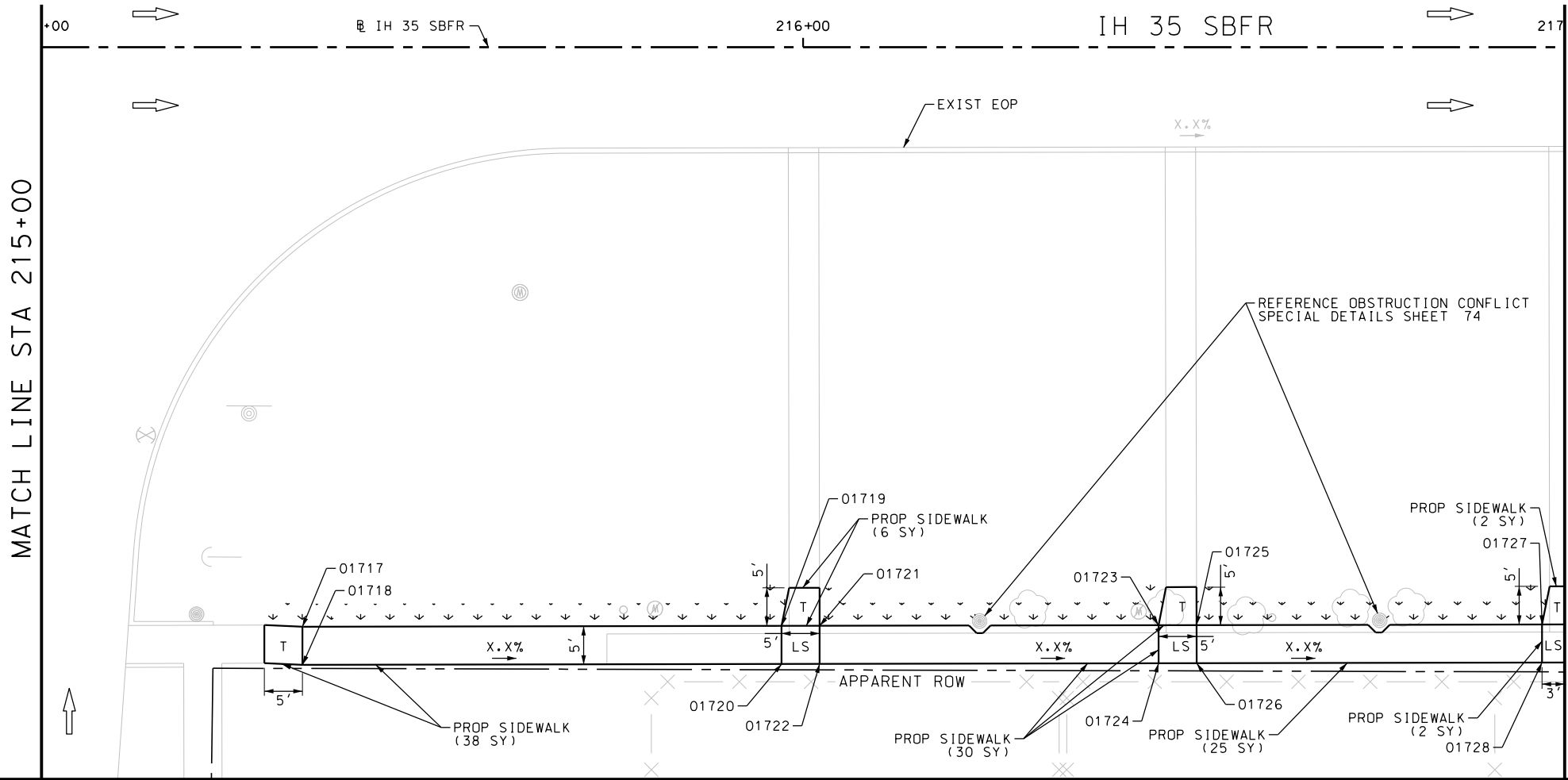
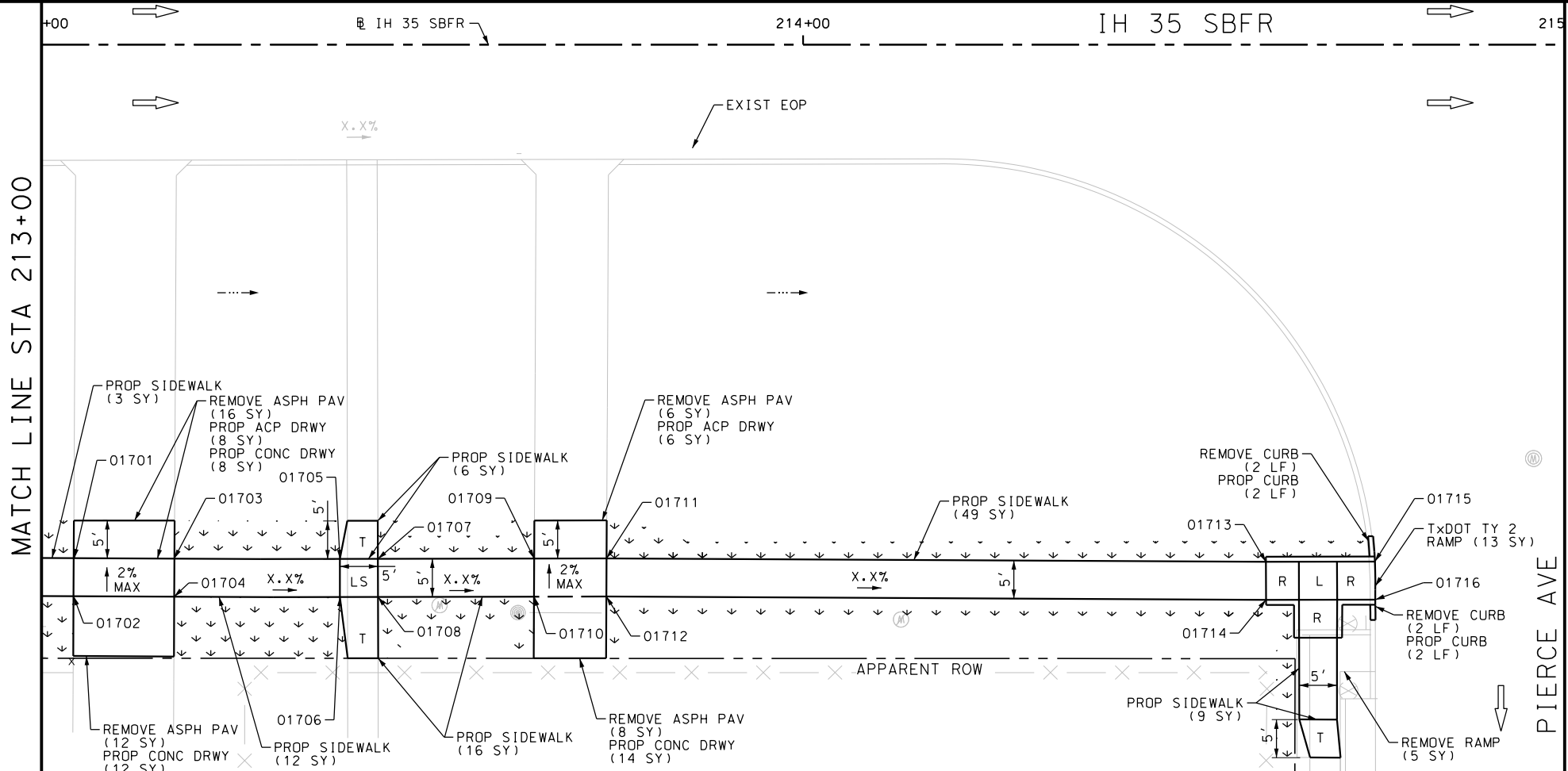
IH 35 SOUTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 209+00 TO STA 213+00

SHEET 3 OF 12

DWG:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DWG:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	100

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_SB\_04.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	4
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	5
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	42
0162-6002	BLOCK SODDING	SY	188
0168-6001	VEGETATIVE WATERING	MG	2.93
0529-6002	CONC CURB (TY II)	LF	4
0530-6004	DRIVEWAYS (CONC)	SY	34
0530-6005	DRIVEWAYS (ACP)	SY	14
0531-6001	CONC SIDEWALKS (4")	SY	198
0531-6019	CURB RAMPS (TY 2)	SY	13

NOTES:  
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DESIGN  
 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



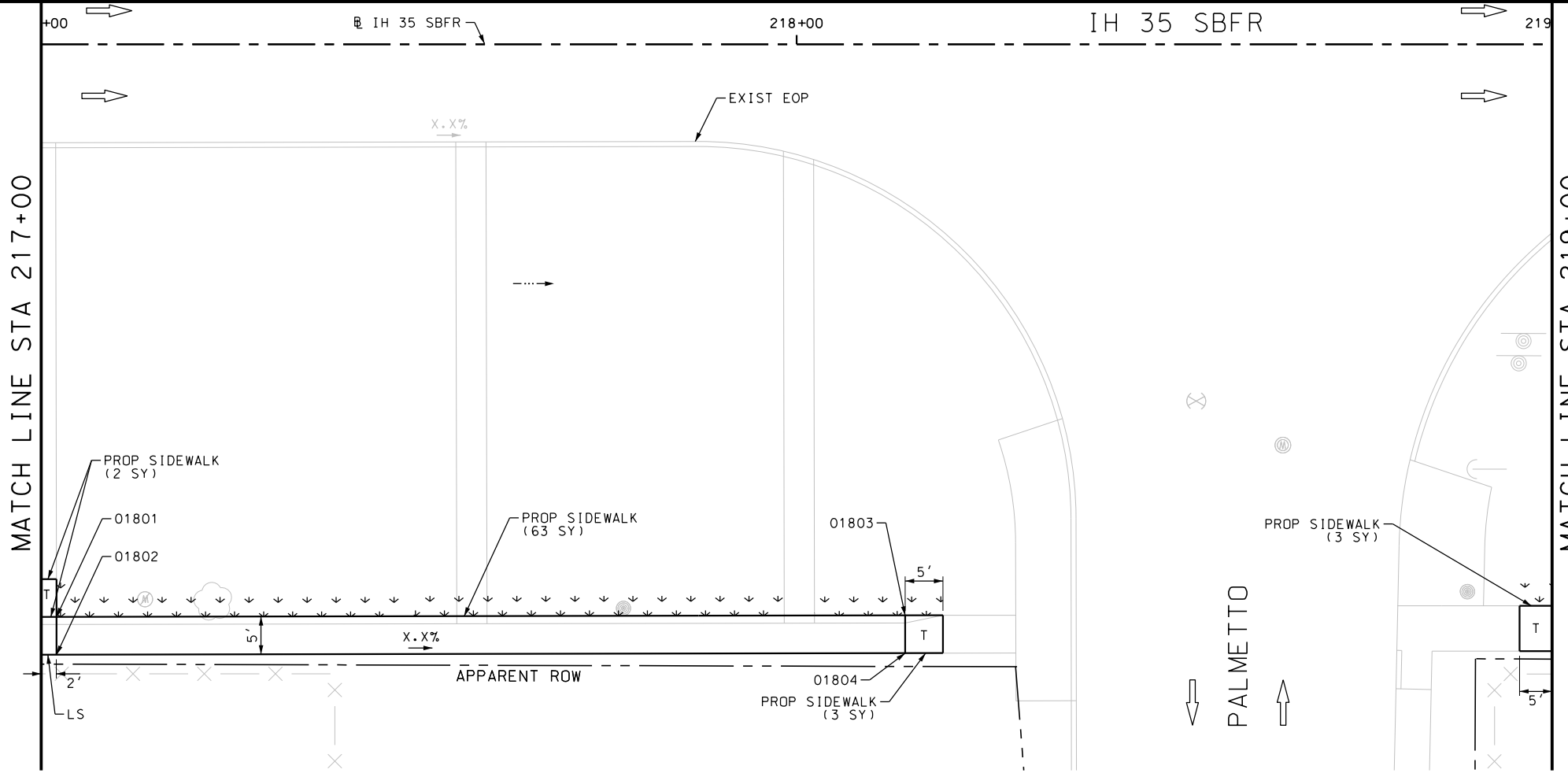
IH 35 SOUTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 213+00 TO STA 217+00

SHEET 4 OF 12

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	101

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_SB\_05.dgn



NOTES:

\* FOR CONTRACTOR INFORMATION ONLY

†: THE EXISTENCE AND LOCATION OF ALL UTILITIES AND STRUCTURES INDICATED IN THESE PLANS ARE FROM THE BEST AVAILABLE INFORMATION AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL VERIFY ALL UTILITIES AND STRUCTURES TO BE REMOVED OR AVOIDED PRIOR TO BEGINNING CONSTRUCTION.

DESIGN

INTERIM REVIEW

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

ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL

INTERIM REVIEW

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

ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



IH 35 SOUTHBOUND FRONTAGE RD

**SIDEWALK CONSTRUCTION PLAN**

STA 217+00 TO STA 221+00

SHEET 5 OF 12

DWG	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK	6	TEXAS		VA		
DWG	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK	SAT	BEXAR	0915	12	586	102

Plotted on: 9/29/2017

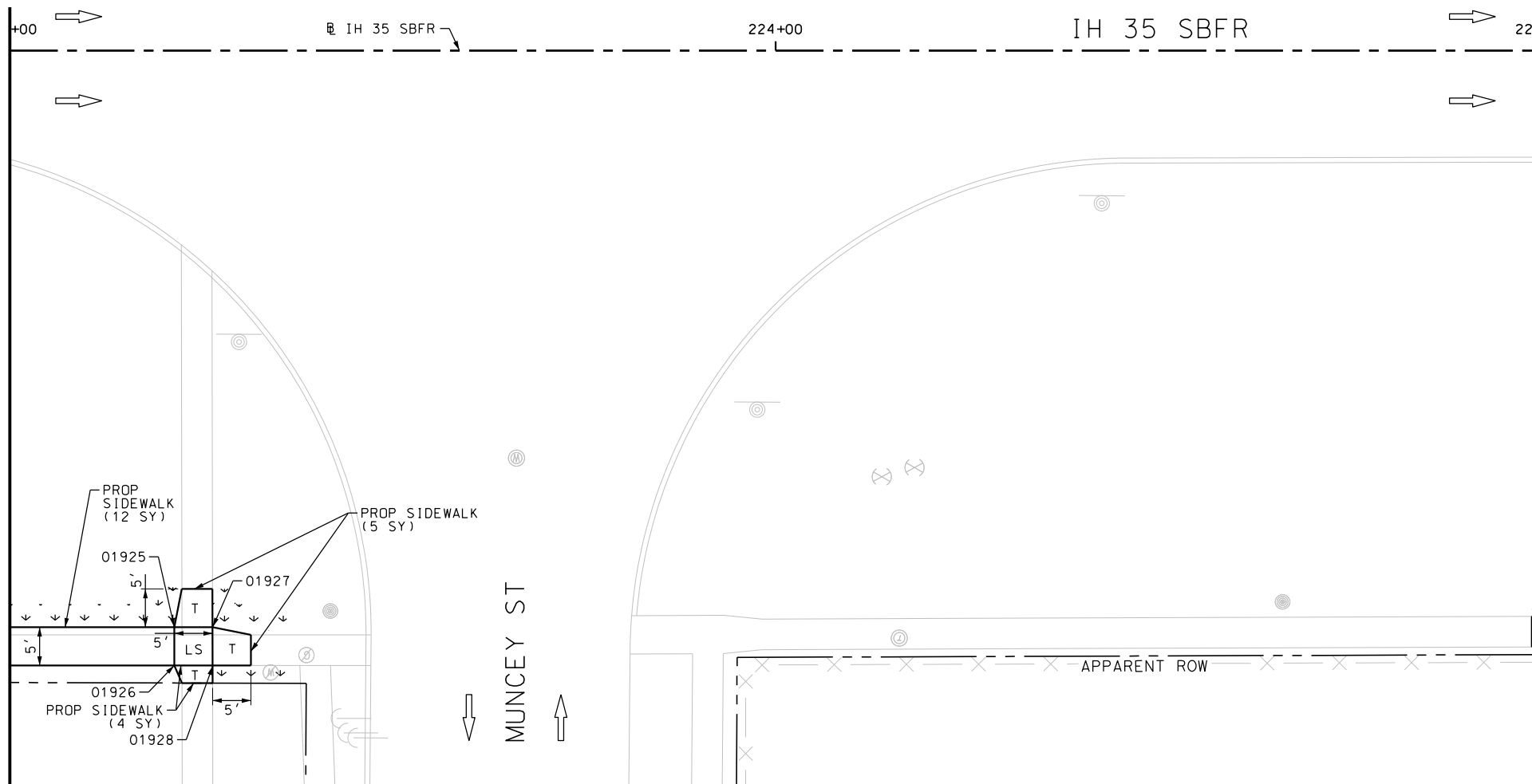
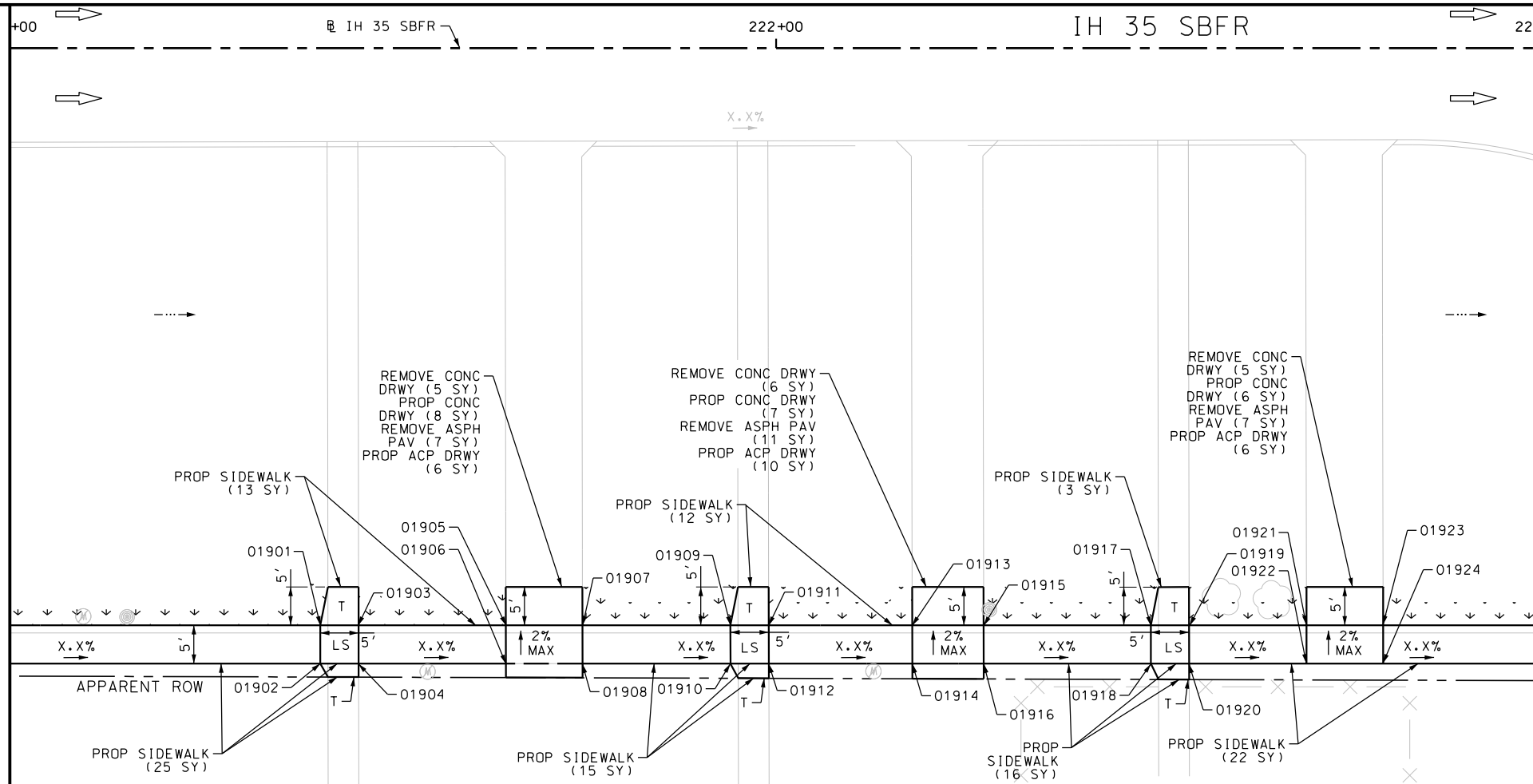
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MATCH LINE STA 221+00

MATCH LINE STA 223+00

MATCH LINE STA 223+00

MATCH LINE STA 225+00



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	16
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	25
0162-6002	BLOCK SODDING	SY	114
0168-6001	VEGETATIVE WATERING	MG	1.78
0530-6004	DRIVEWAYS (CONC)	SY	21
0530-6005	DRIVEWAYS (ACP)	SY	22
0531-6001	CONC SIDEWALKS (4")	SY	127

NOTES:  
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 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



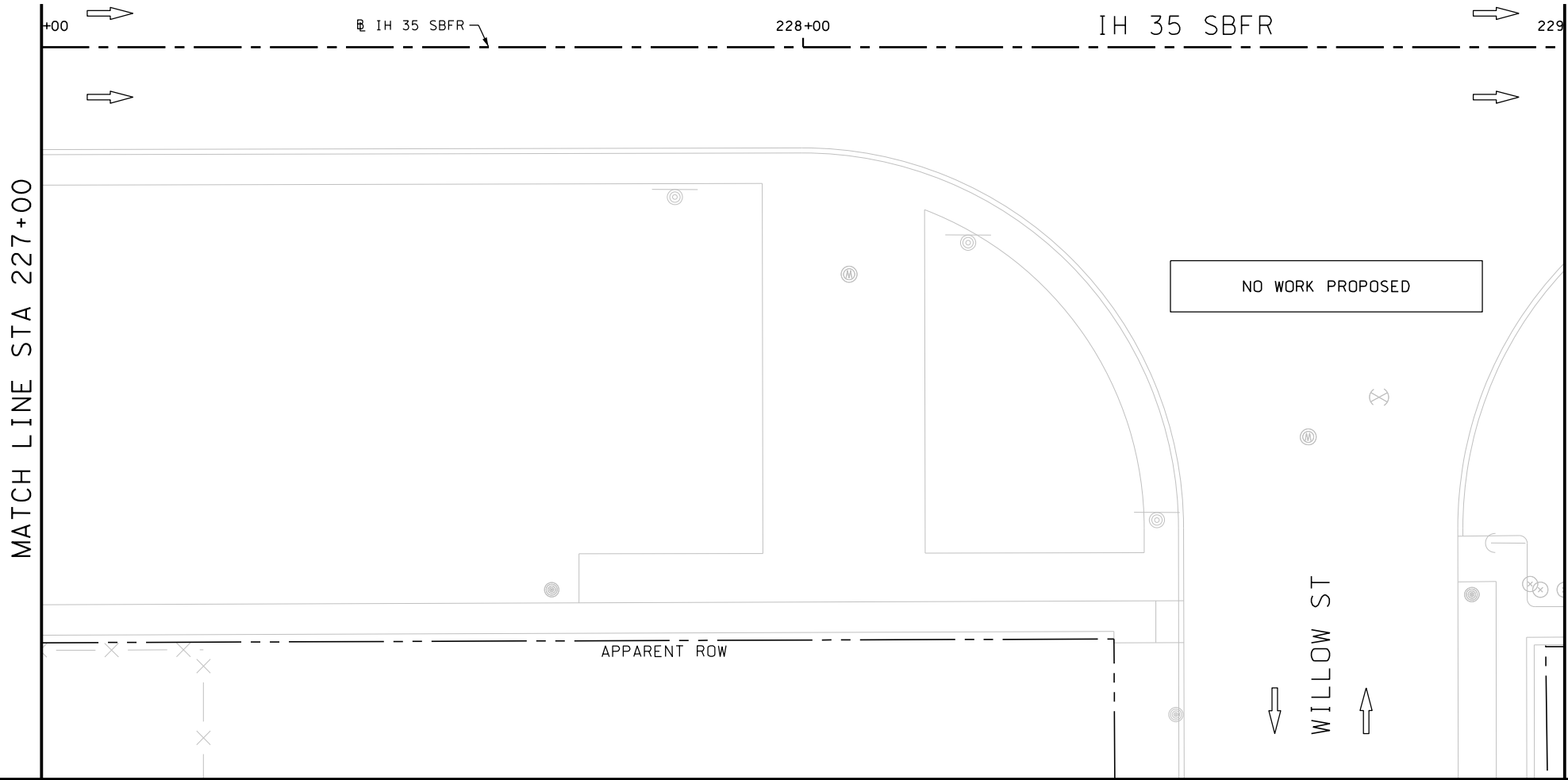
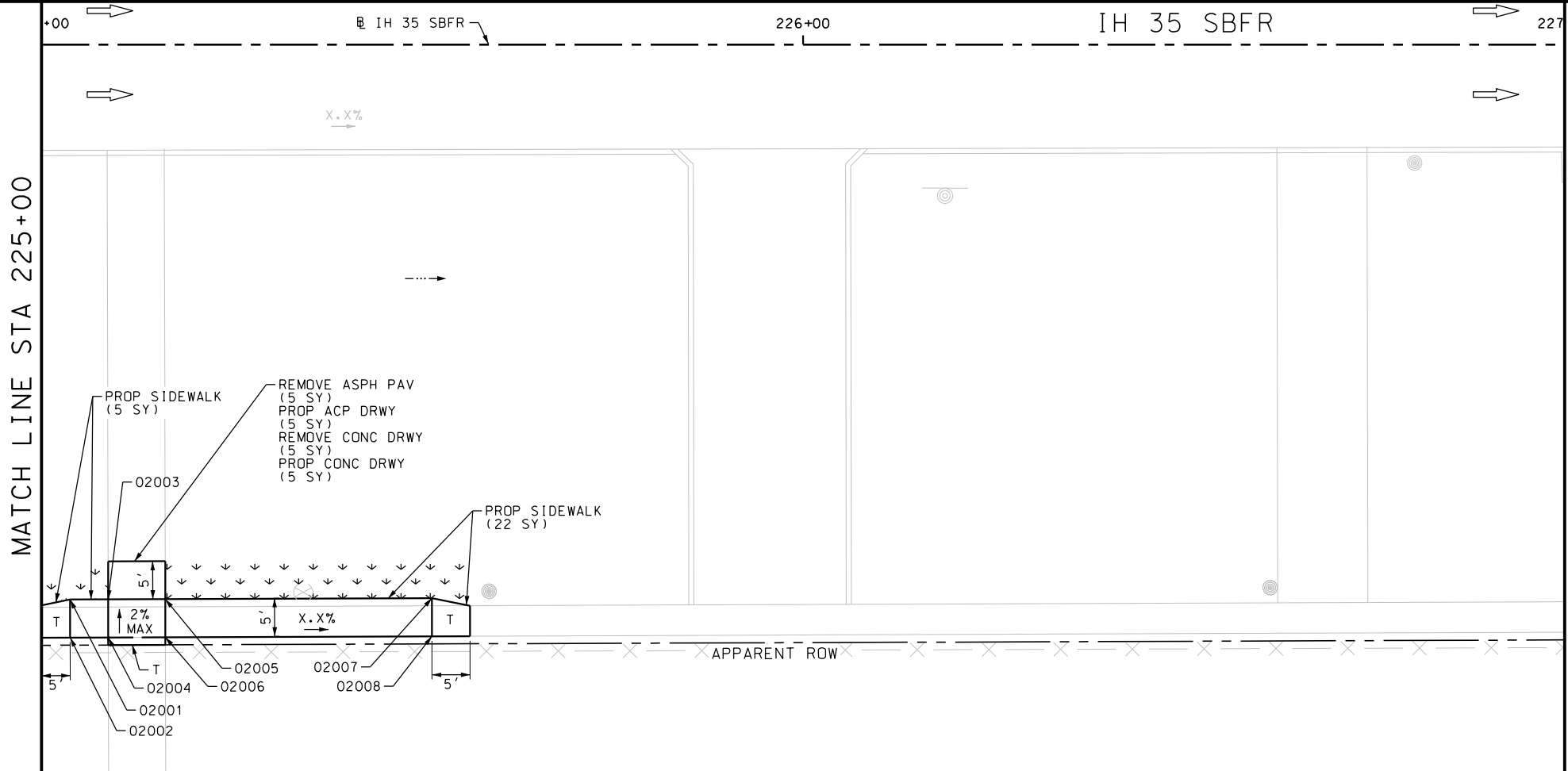
IH 35 SOUTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 221+00 TO STA 225+00

SHEET 6 OF 12

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	103

Plotted on: 9/29/2017

Design File name: P:\1111\35\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_SB\_07.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	5
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	5
0162-6002	BLOCK SODDING	SY	18
0168-6001	VEGETATIVE WATERING	MG	0.28
0530-6004	DRIVEWAYS (CONC)	SY	5
0530-6005	DRIVEWAYS (ACP)	SY	5
0531-6001	CONC SIDEWALKS (4")	SY	27

NOTES:  
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DESIGN  
 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



IH 35 SOUTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 225+00 TO STA 229+00

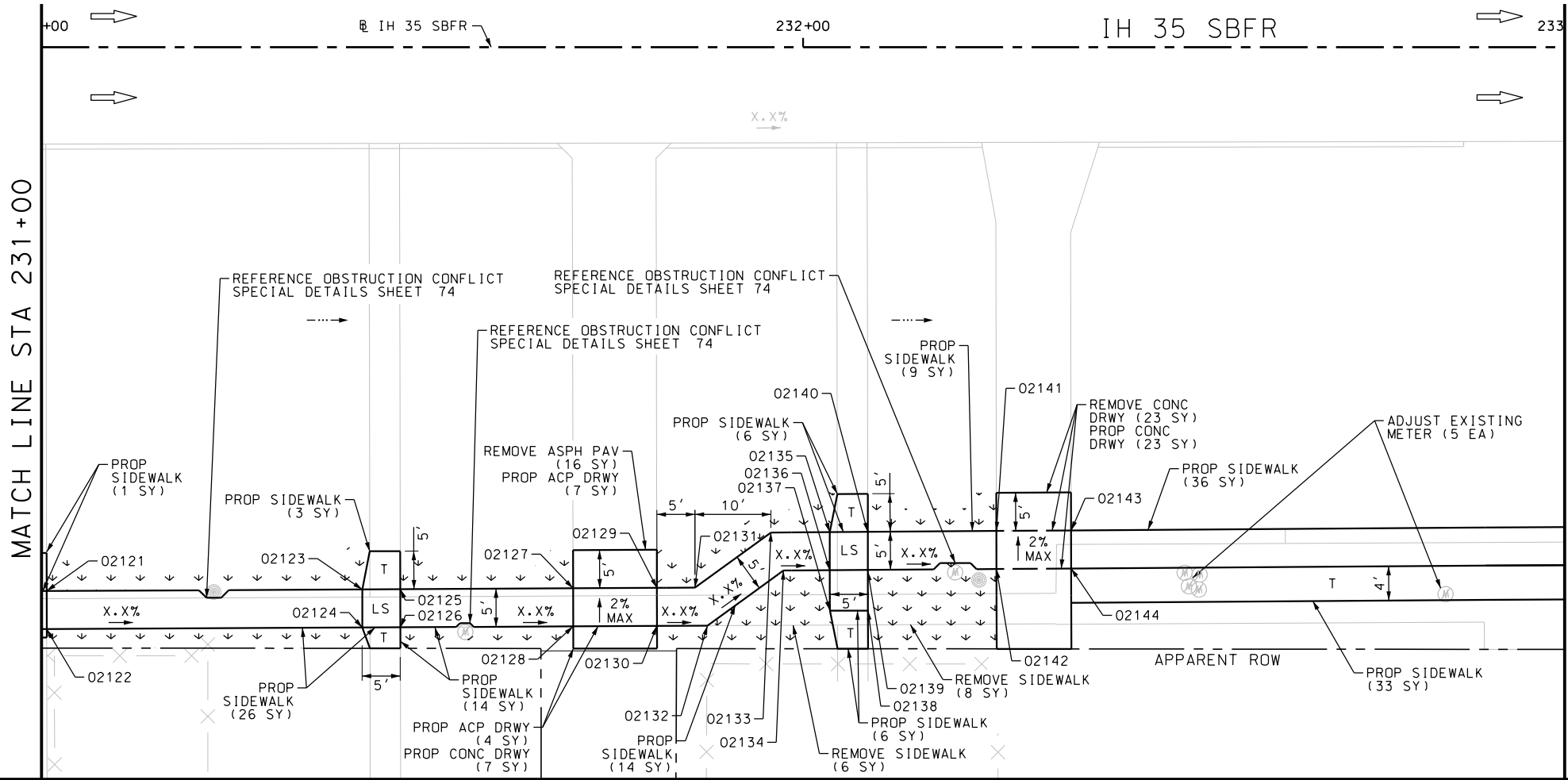
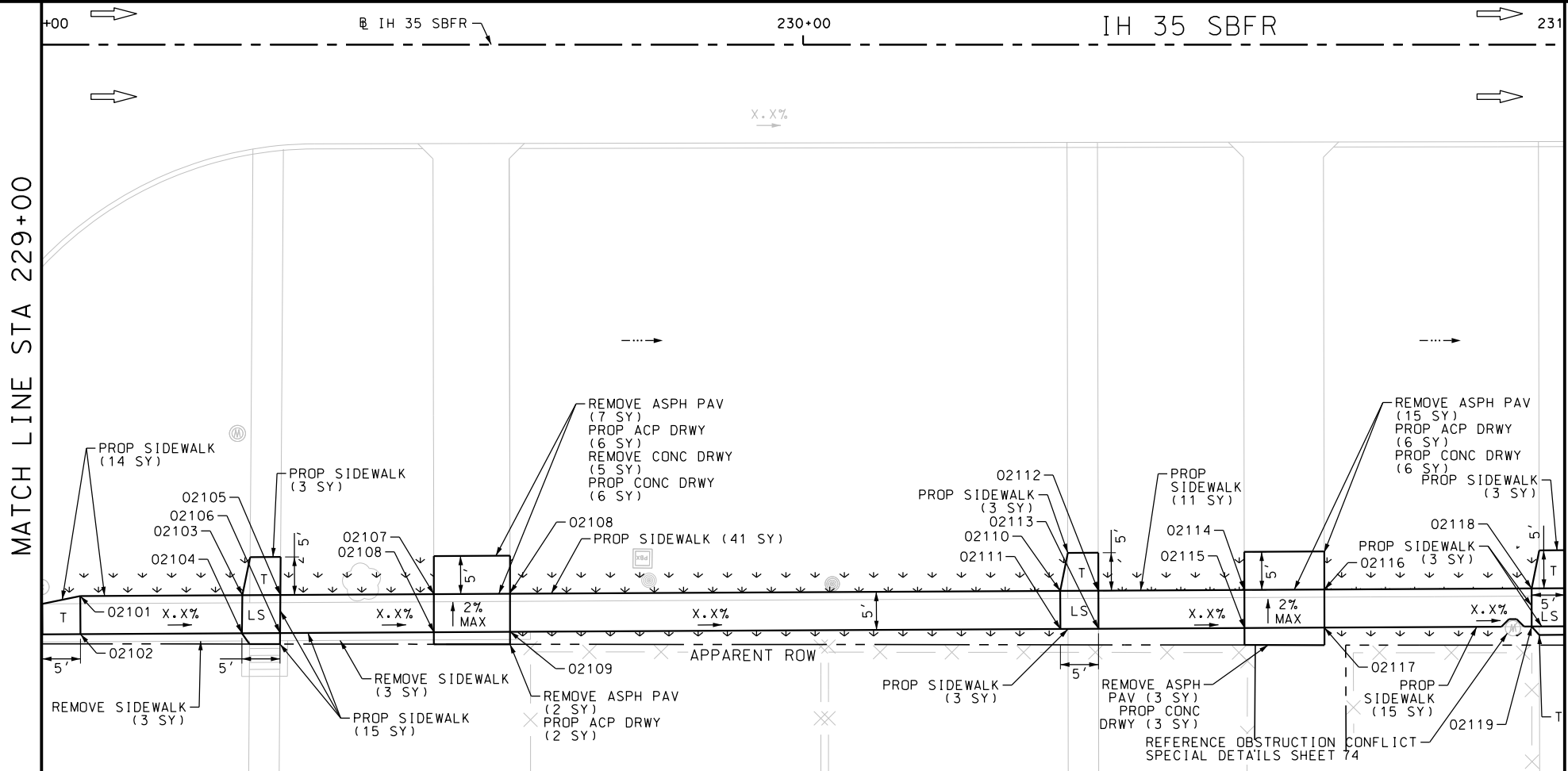
SHEET 7 OF 12

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.:
				586
				SHEET NO.:
				104



Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_SB\_08.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	5
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	28
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	20
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	43
0162-6002	BLOCK SODDING	SY	195
0168-6001	VEGETATIVE WATERING	MG	3.04
0530-6004	DRIVEWAYS (CONC)	SY	45
0530-6005	DRIVEWAYS (ACP)	SY	25
0531-6001	CONC SIDEWALKS (4")	SY	259

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



IH 35 SOUTHBOUND FRONTAGE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 229+00 TO STA 233+00

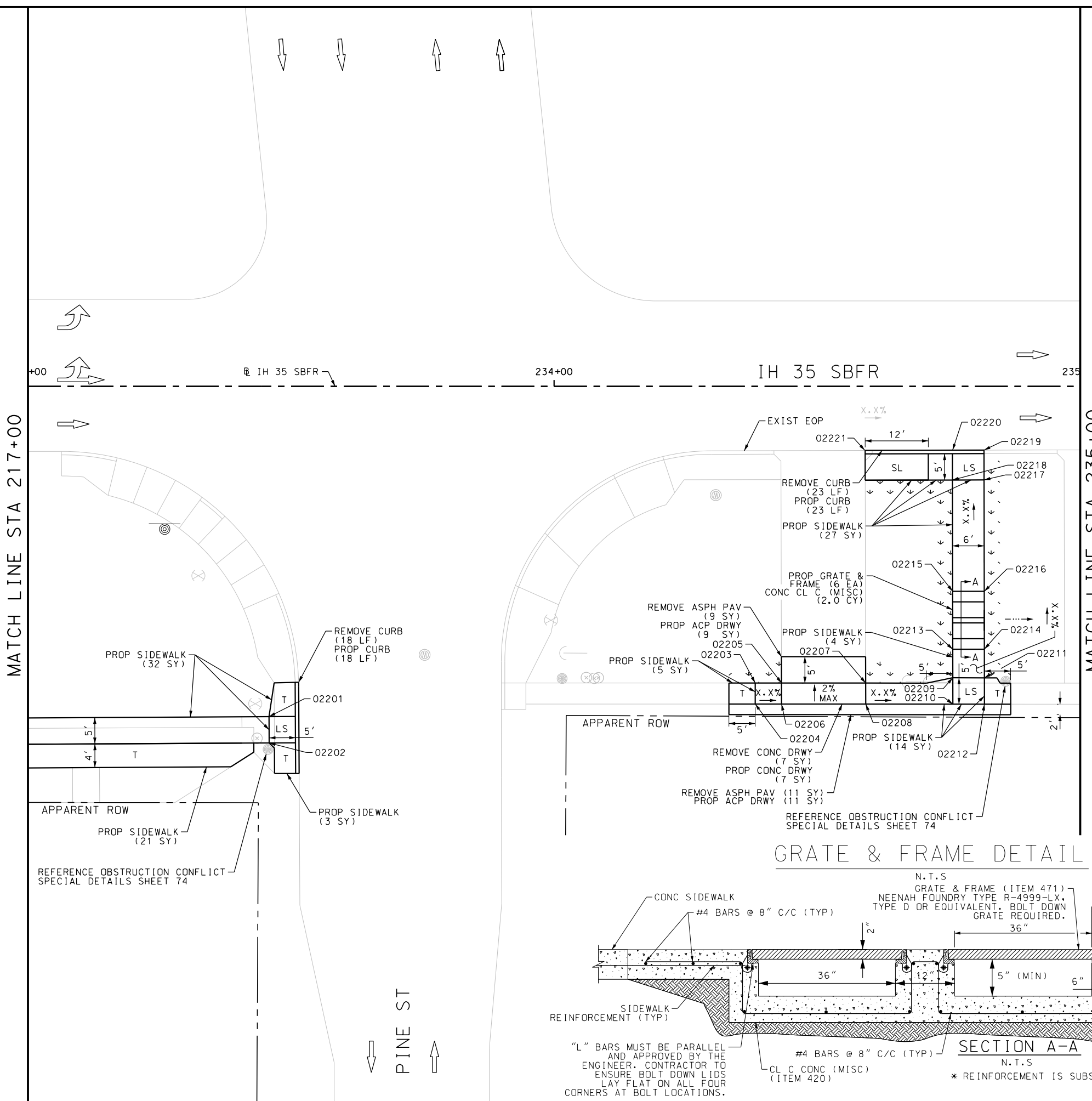
SHEET 8 OF 12

DWG	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DWG	6	TEXAS		VA		
DWG	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG	SAT	BEXAR	0915	12	586	105

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_SB\_09.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	7
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	41
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	20
0162-6002	BLOCK SODDING	SY	42
0168-6001	VEGETATIVE WATERING	MG	0.66
0420-6074	CL C CONC (MISC)	CY	2.0
0471-6003	GRATE & FRAME	EA	6
0529-6002	CONC CURB (TY II)	LF	41
0530-6004	DRIVEWAYS (CONC)	SY	7
0530-6005	DRIVEWAYS (ACP)	SY	20
0531-6001	CONC SIDEWALKS (4")	SY	106



NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

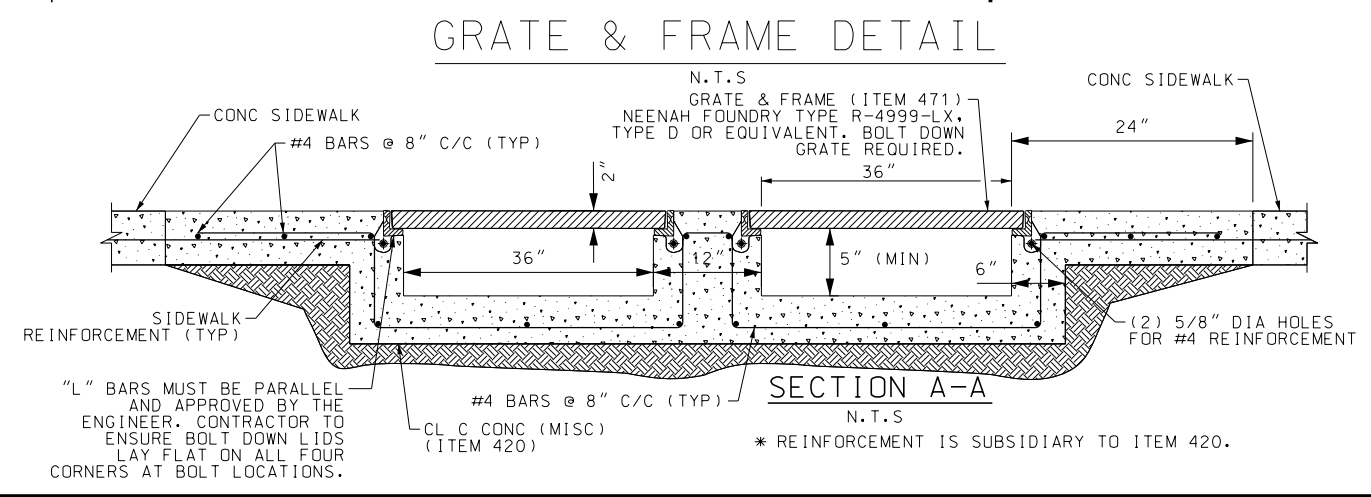
**Pape-Dawson Engineers**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Texas Department of Transportation  
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IH 35 SOUTHBOUND FRONTAGE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 233+00 TO STA 235+00

SHEET 9 OF 12

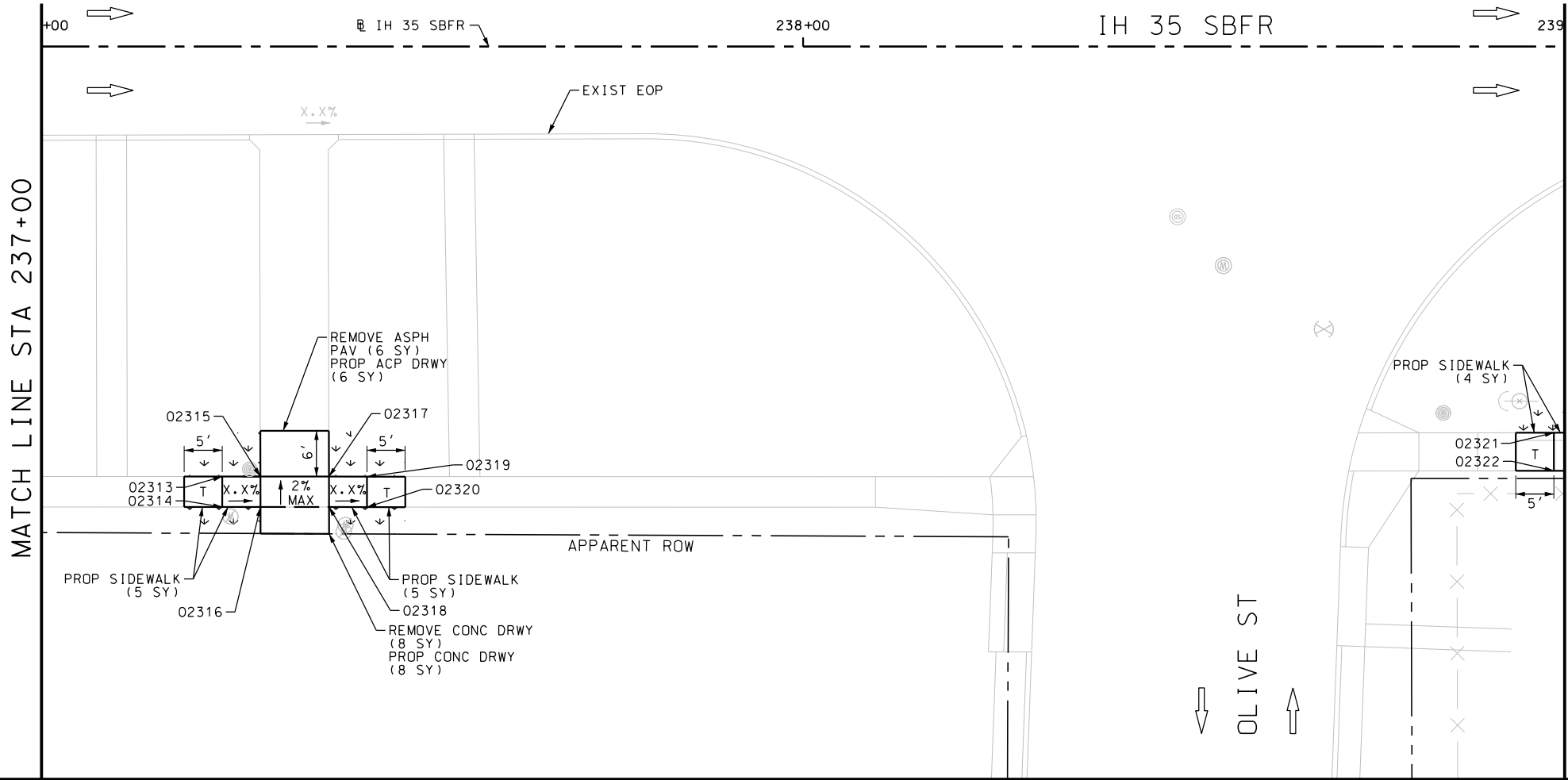
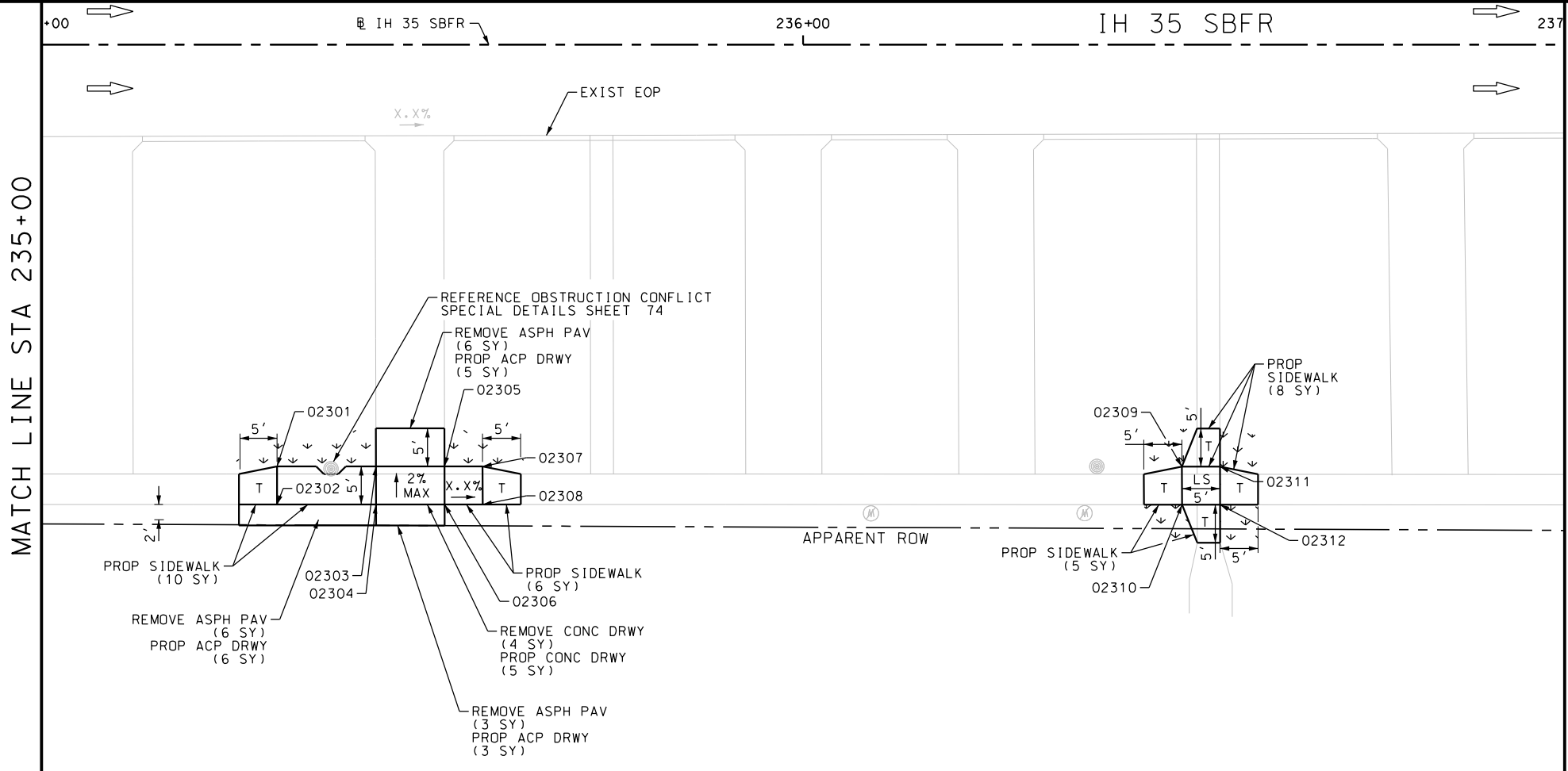
DWG:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DWG:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.:
				586
				SHEET NO.:
				106



"L" BARS MUST BE PARALLEL AND APPROVED BY THE ENGINEER. CONTRACTOR TO ENSURE BOLT DOWN LIDS LAY FLAT ON ALL FOUR CORNERS AT BOLT LOCATIONS.

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_SB\_10.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	12
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	21
0162-6002	BLOCK SODDING	SY	44
0168-6001	VEGETATIVE WATERING	MG	0.69
0530-6004	DRIVEWAYS (CONC)	SY	13
0530-6005	DRIVEWAYS (ACP)	SY	20
0531-6001	CONC SIDEWALKS (4")	SY	43

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



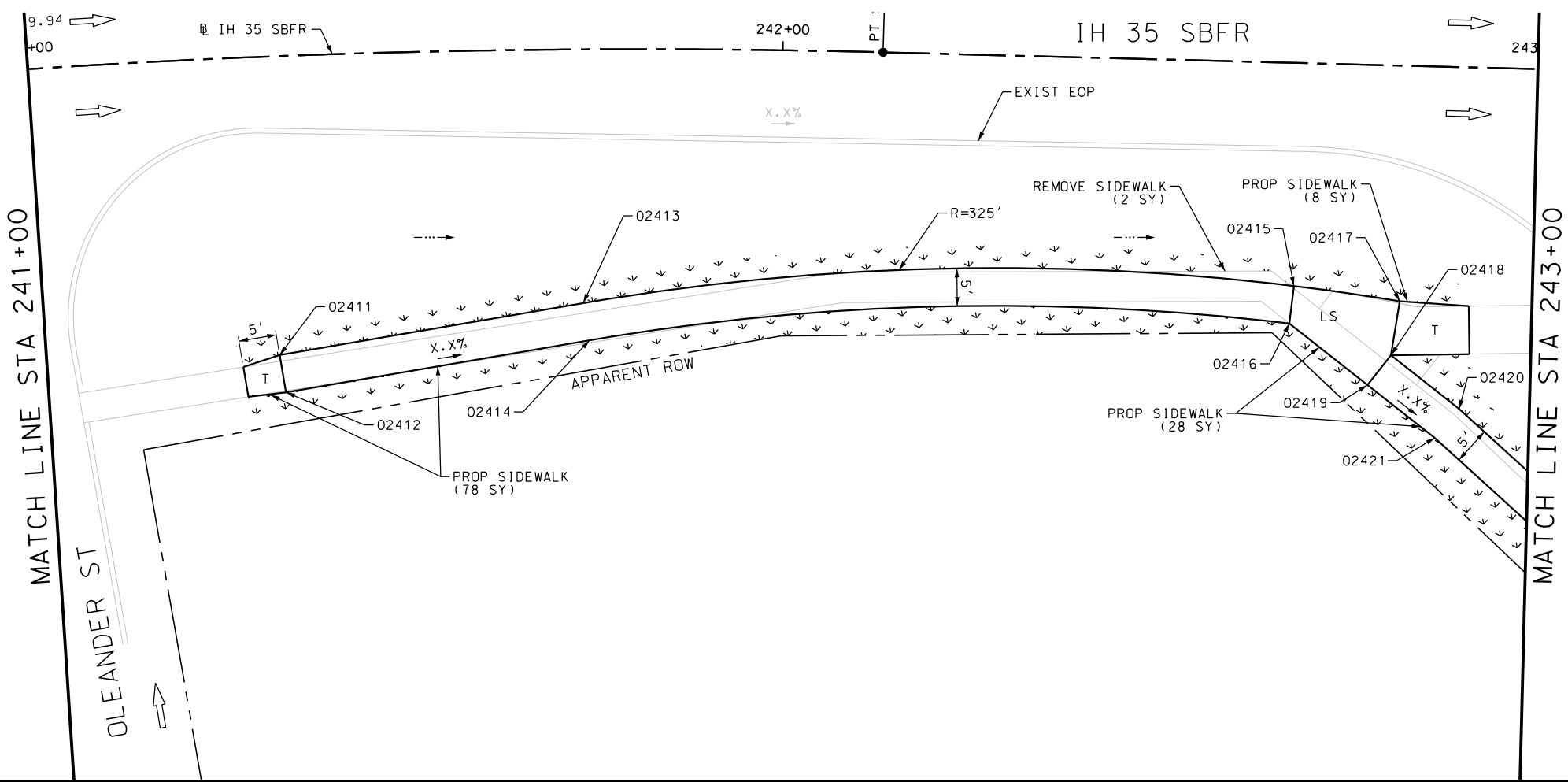
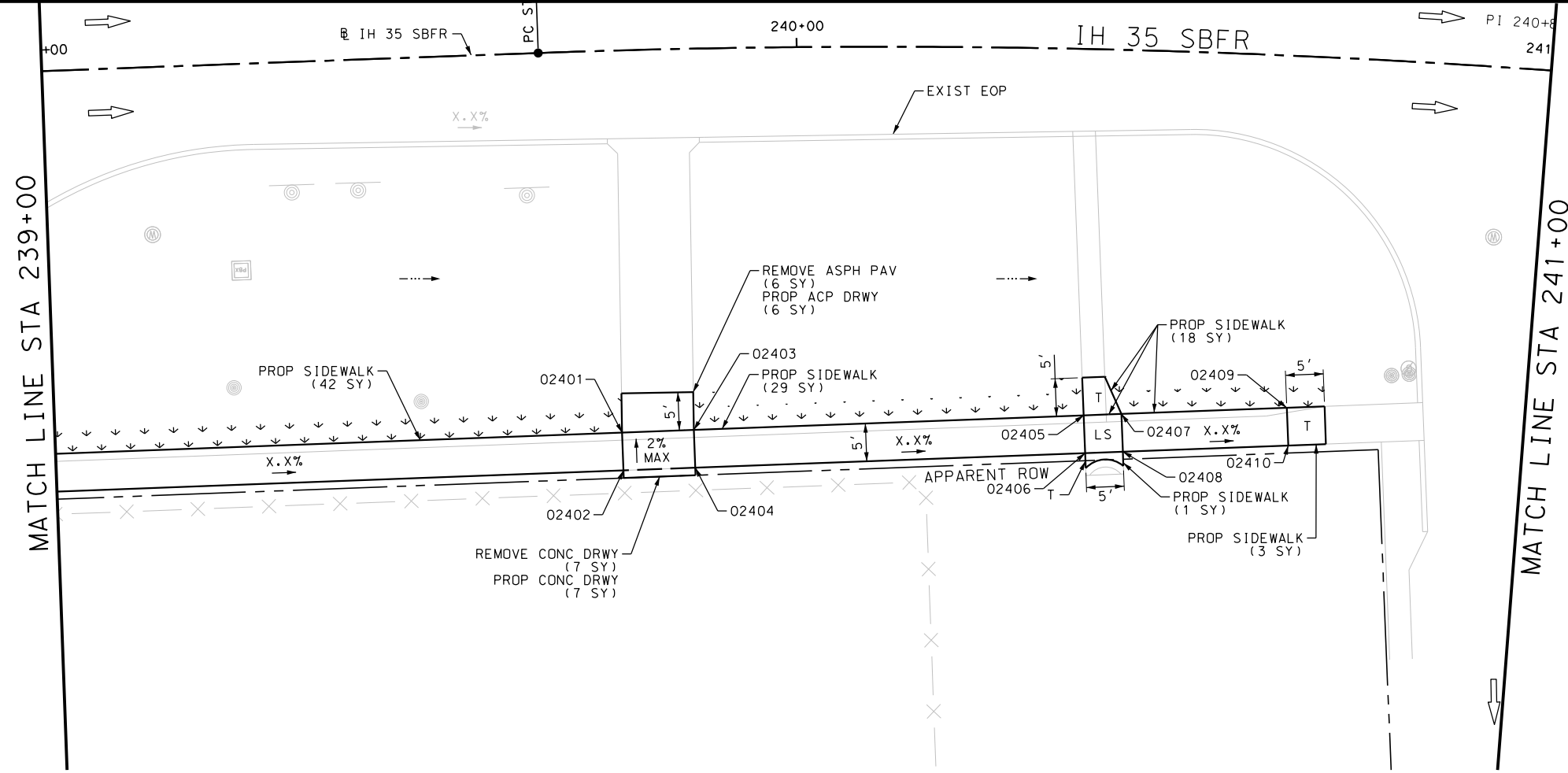
IH 35 SOUTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 235+00 TO STA 239+00

SHEET 10 OF 12

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	107

Plotted on: 9/29/2017

Design File name: P:\1111\35\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_SB\_11.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	7
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	2
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	6
0162-6002	BLOCK SODDING	SY	187
0168-6001	VEGETATIVE WATERING	MG	2.92
0530-6004	DRIVEWAYS (CONC)	SY	7
0530-6005	DRIVEWAYS (ACP)	SY	6
0531-6001	CONC SIDEWALKS (4")	SY	207

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

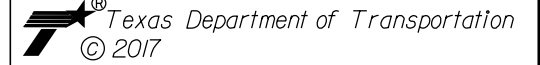
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



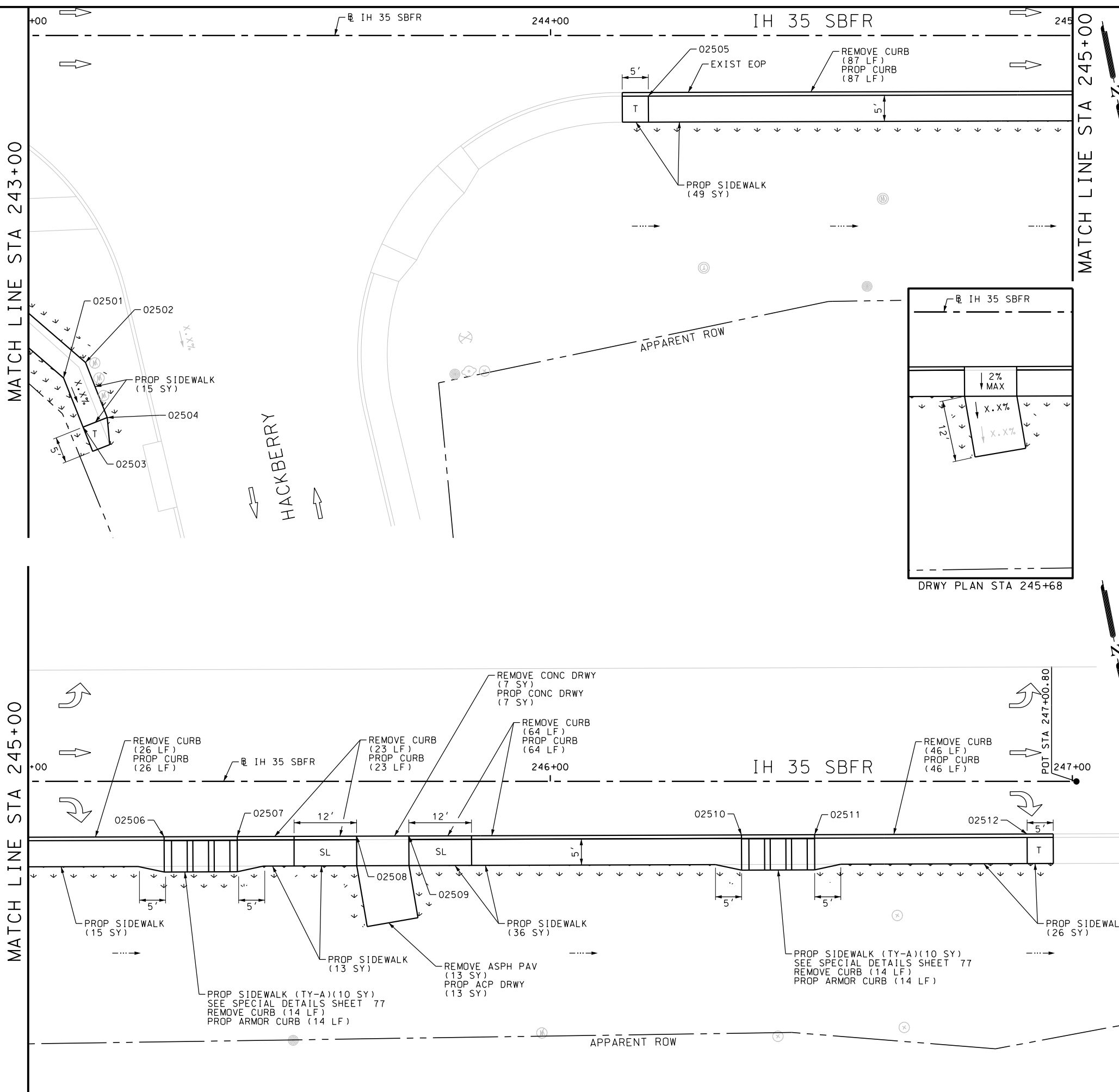
IH 35 SOUTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 239+00 TO STA 243+00

SHEET 11 OF 12

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	108

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\IH\_35\1113501\_IH35\_AccessRoad\_SB\_12.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	7
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	274
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	13
0162-6002	BLOCK SODDING	SY	112
0168-6001	VEGETATIVE WATERING	MG	1.75
0529-6002	CONC CURB (TY II)	LF	246
0529-6020	CONC CURB & GUTTER (ARMOR CURB)	LF	28
0530-6004	DRIVEWAYS (CONC)	SY	7
0530-6005	DRIVEWAYS (ACP)	SY	13
0531-6001	CONC SIDEWALKS (4")	SY	154
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	20

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

**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



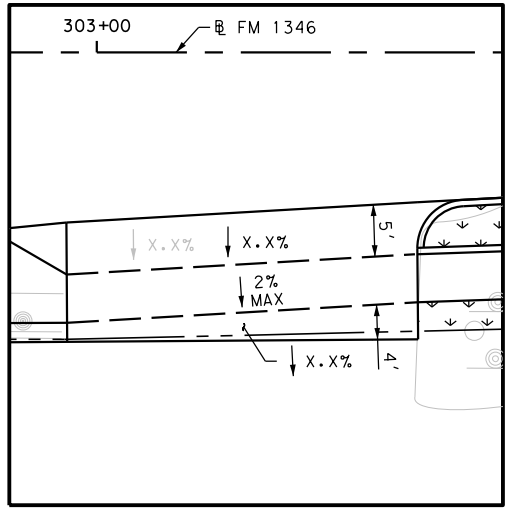
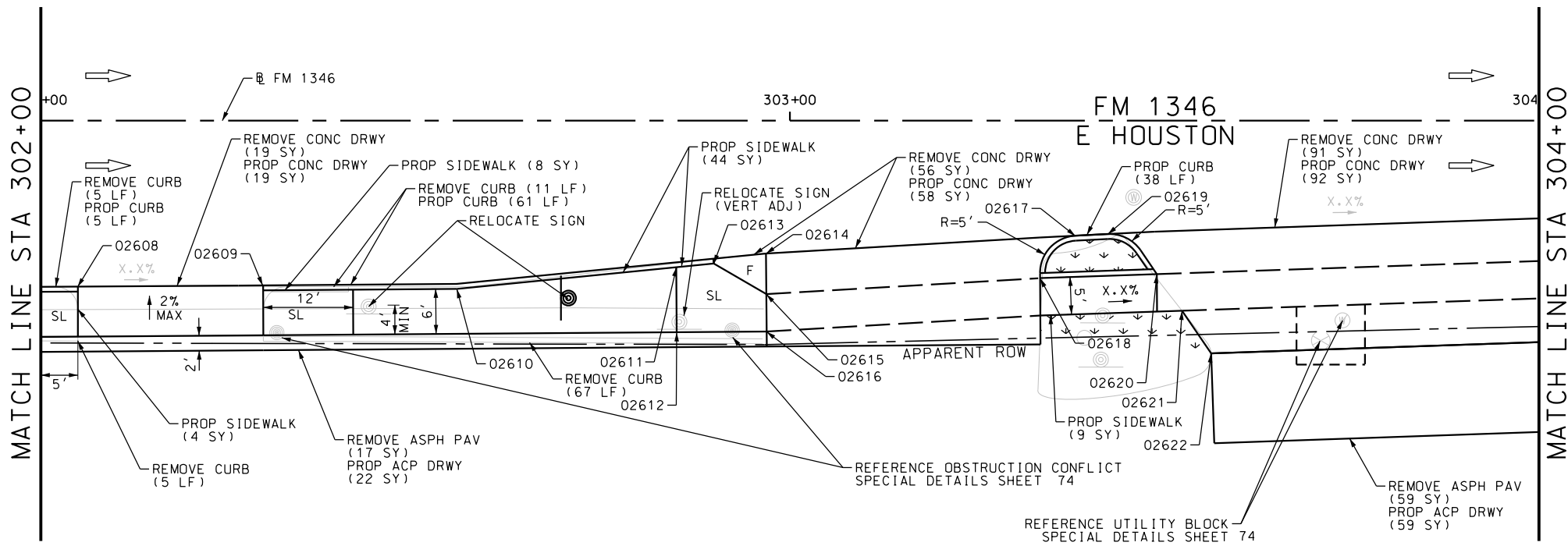
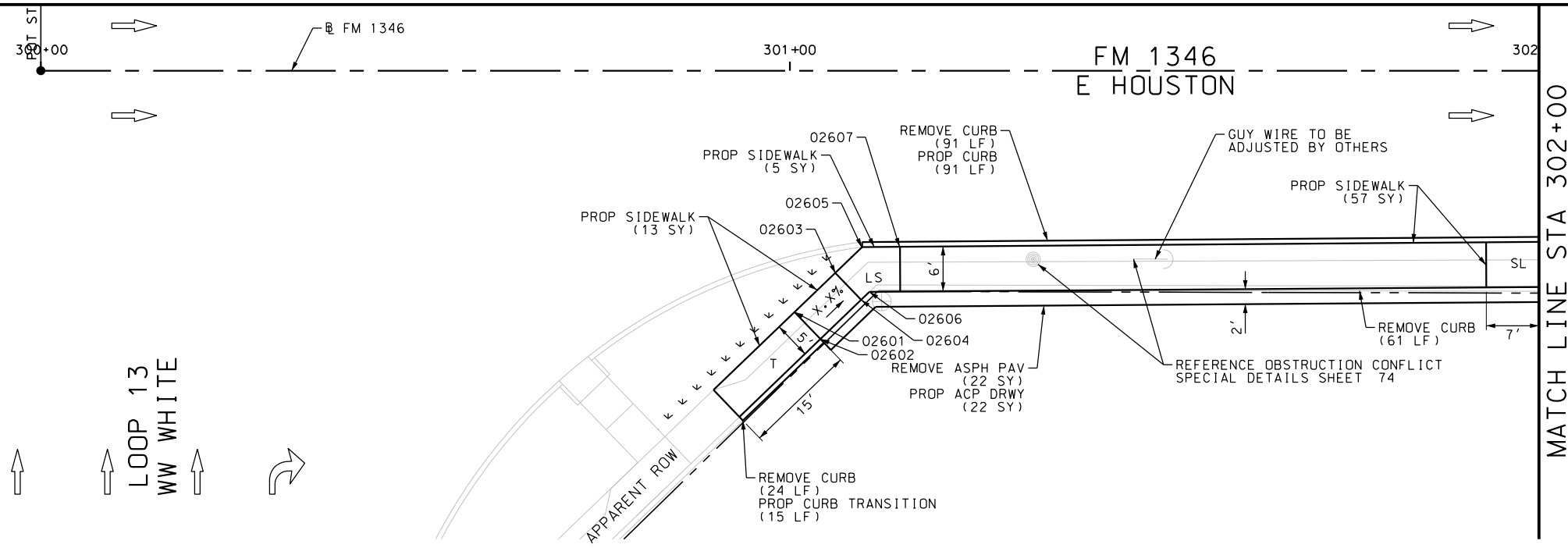
IH 35 SOUTHBOUND FRONTAGE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 243+00 TO END PROJECT

SHEET 12 OF 12

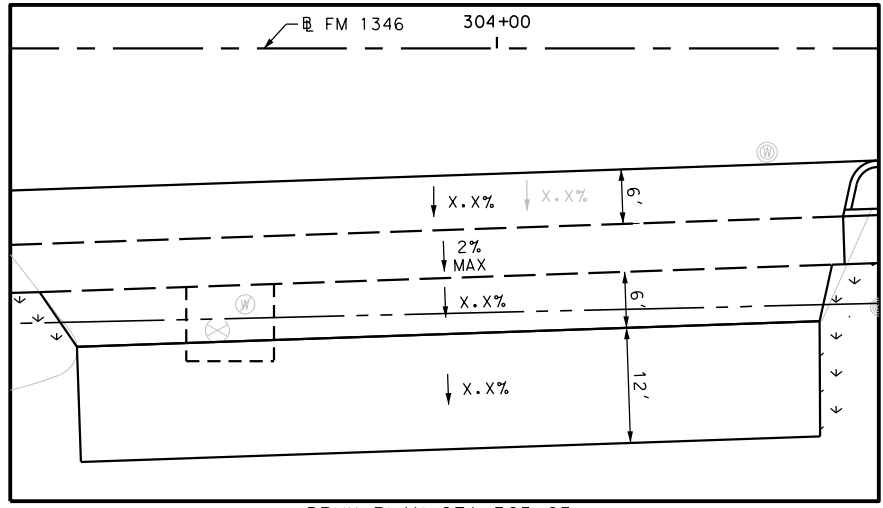
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	109

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\Houston\1113501\_E\_Houston\_01.dgn



DRWY PLAN STA 303+15



DRWY PLAN STA 303+95

ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	166
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	264
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	98
0162-6002	BLOCK SODDING	SY	26
0168-6001	VEGETATIVE WATERING	MG	0.41
0529-6002	CONC CURB (TY II)	LF	210
0530-6004	DRIVEWAYS (CONC)	SY	169
0530-6005	DRIVEWAYS (ACP)	SY	103
0531-6001	CONC SIDEWALKS (4")	SY	140
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	2

DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
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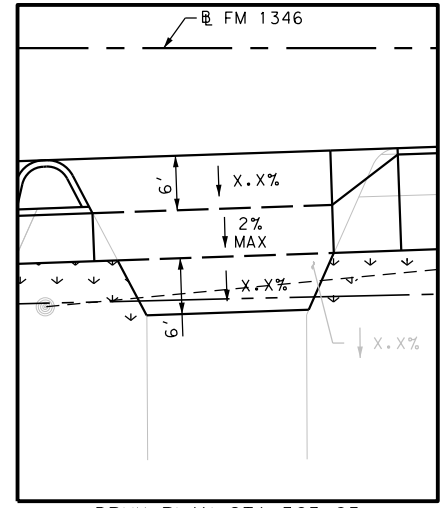
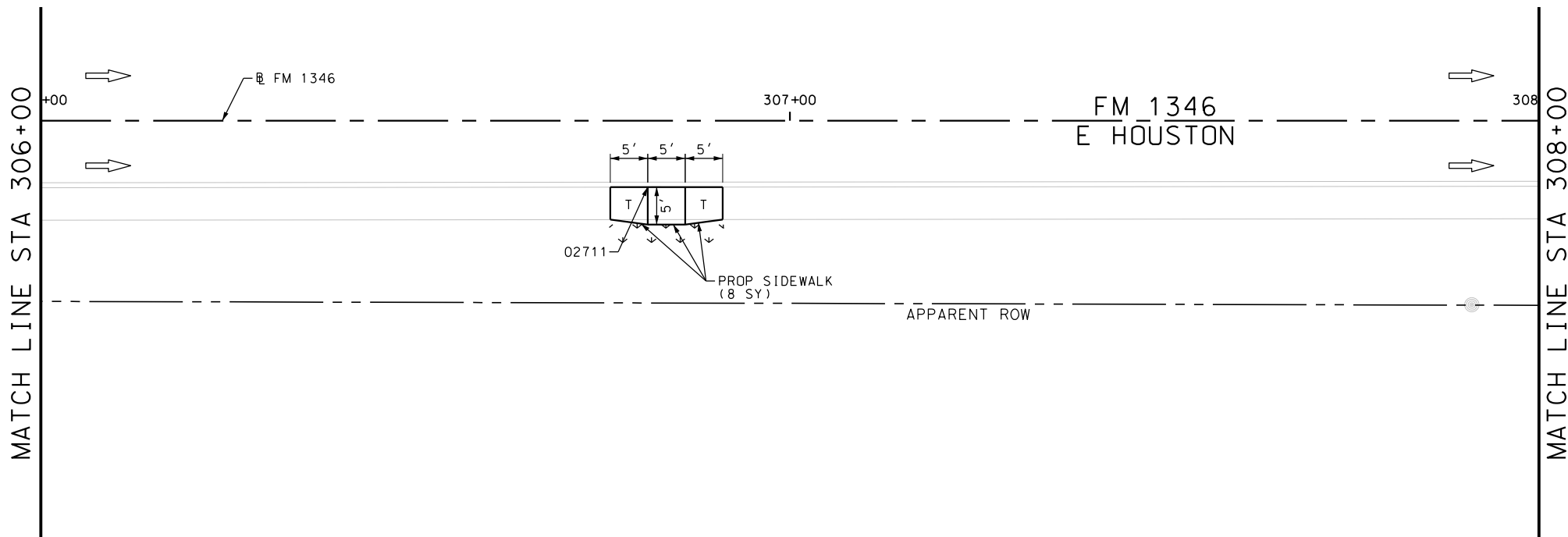
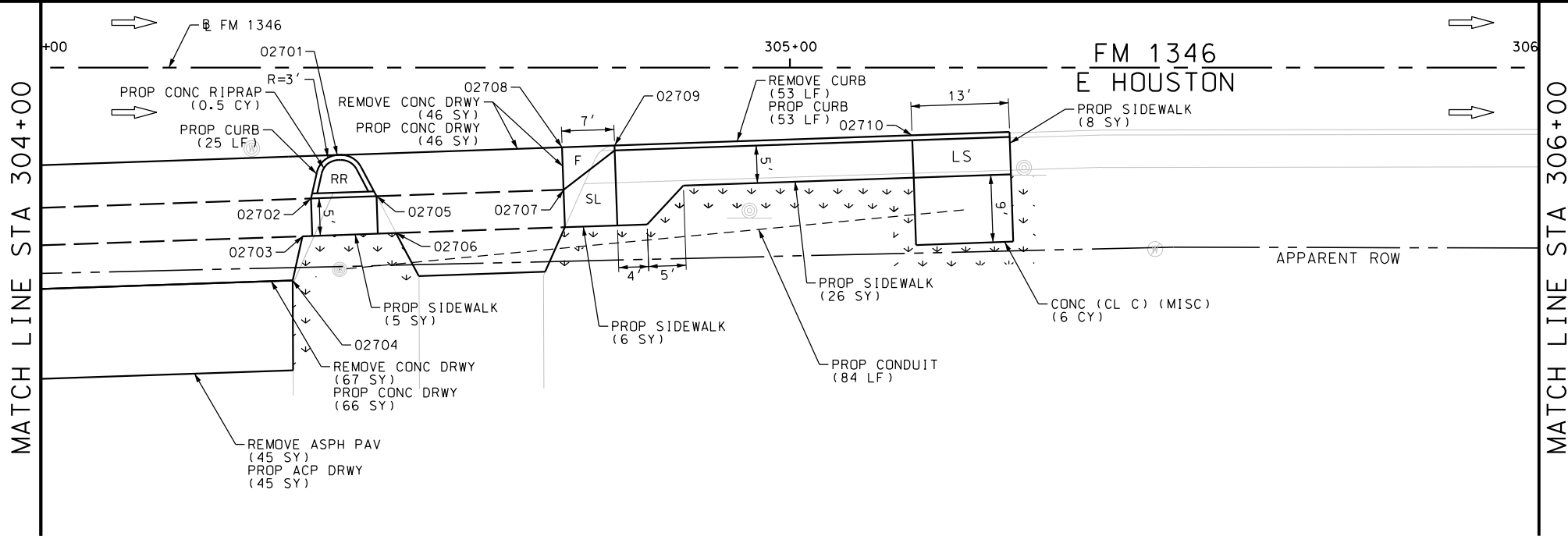
FM 1346  
 E HOUSTON  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 BEGIN TO STA 304+00

SHEET 1 OF 13

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	110

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\E\_Houston\1113501\_E\_Houston\_02.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	113
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	53
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	45
0162-6002	BLOCK SODDING	SY	46
0168-6001	VEGETATIVE WATERING	MG	0.72
0420-6074	CL C CONC (MISC)	CY	6.0
0432-6003	RIPRAP (CONC) (6 IN)	CY	0.5
0529-6002	CONC CURB (TY II)	LF	78
0530-6004	DRIVEWAYS (CONC)	SY	112
0530-6005	DRIVEWAYS (ACP)	SY	45
0531-6001	CONC SIDEWALKS (4")	SY	53
0618-6016	COND (PVC) (SCH 40) (1")	LF	84

DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



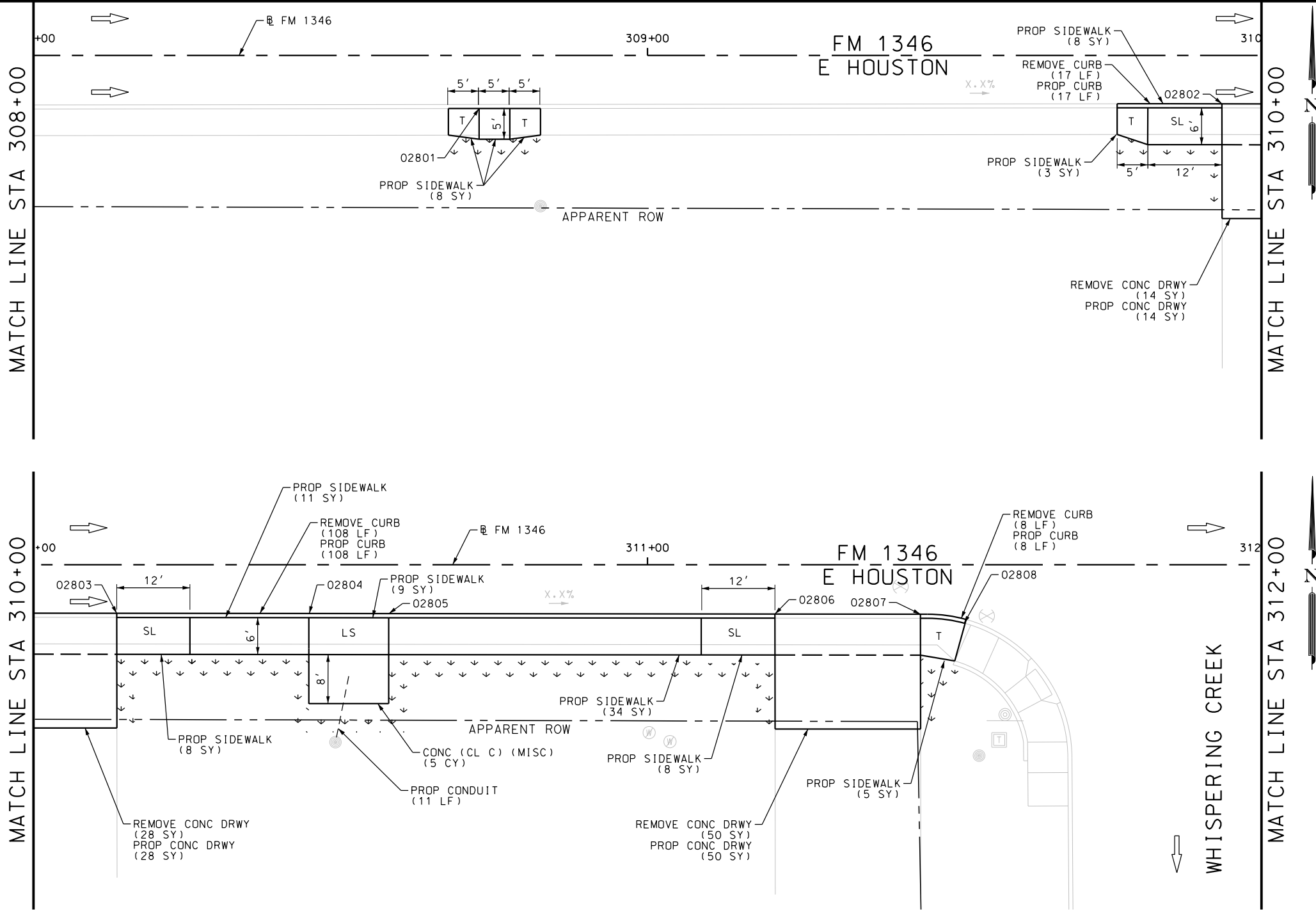
FM 1346  
 E HOUSTON  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 304+00 TO STA 308+00

SHEET 2 OF 13

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	111

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\E\_Houston\1113501\_E\_Houston\_03.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	92
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	133
0162-6002	BLOCK SODDING	SY	78
0168-6001	VEGETATIVE WATERING	MG	1.22
0420-6074	CL C CONC (MISC)	CY	5.0
0529-6002	CONC CURB (TY II)	LF	133
0530-6004	DRIVEWAYS (CONC)	SY	92
0531-6001	CONC SIDEWALKS (4")	SY	96
0618-6016	COND (PVC) (SCH 40) (1")	LF	11

DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY



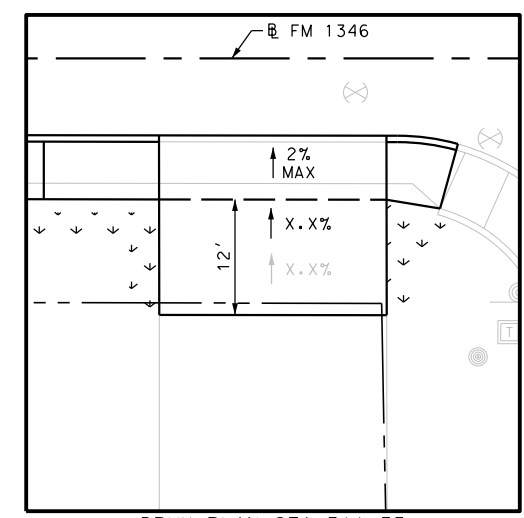
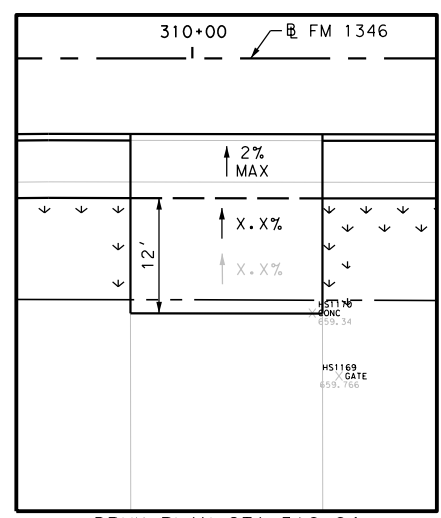
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



FM 1346  
 E HOUSTON  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 308+00 TO STA 312+00

SHEET 3 OF 13

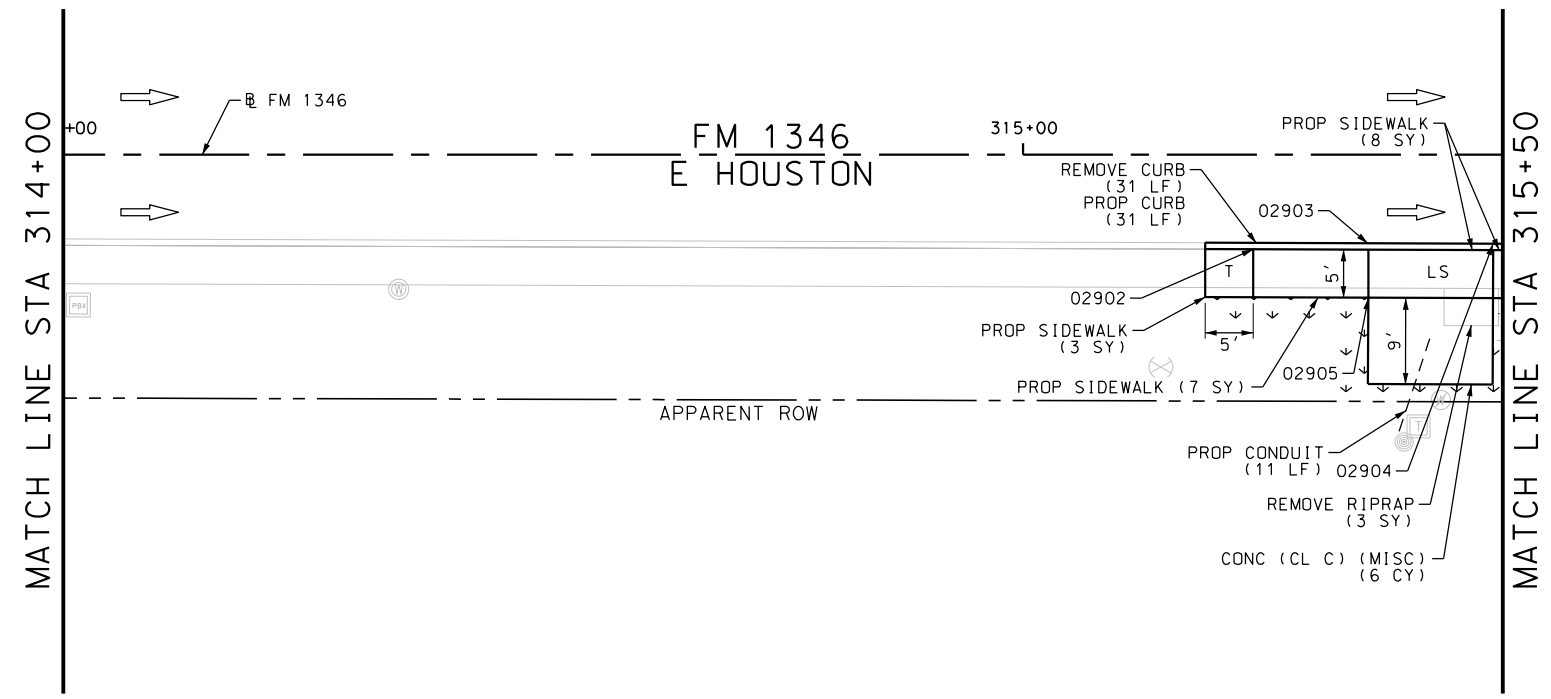
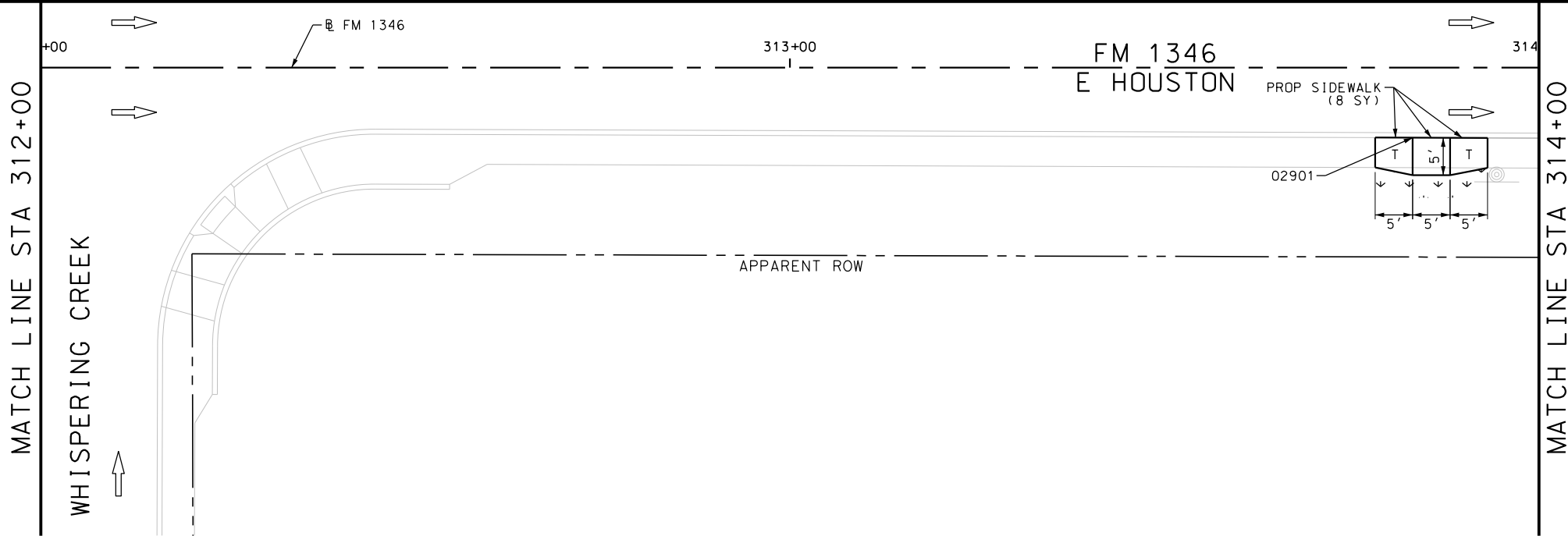
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	112





Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\Houston\1113501\_E\_Houston\_04.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	3
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	31
0162-6002	BLOCK SODDING	SY	18
0168-6001	VEGETATIVE WATERING	MG	0.28
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	31
0531-6001	CONC SIDEWALKS (4")	SY	26
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	11

DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY



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



FM 1346  
 E HOUSTON  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 312+00 TO STA 315+50

SHEET 4 OF 13

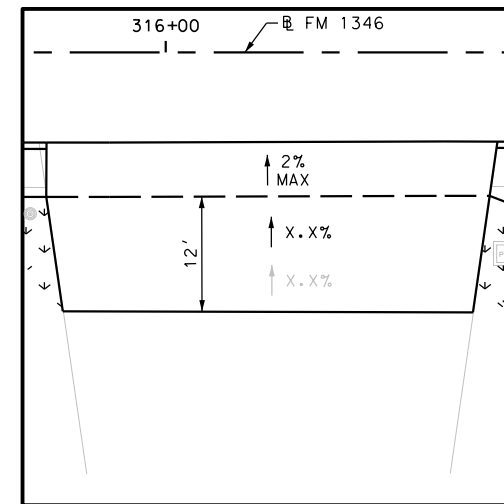
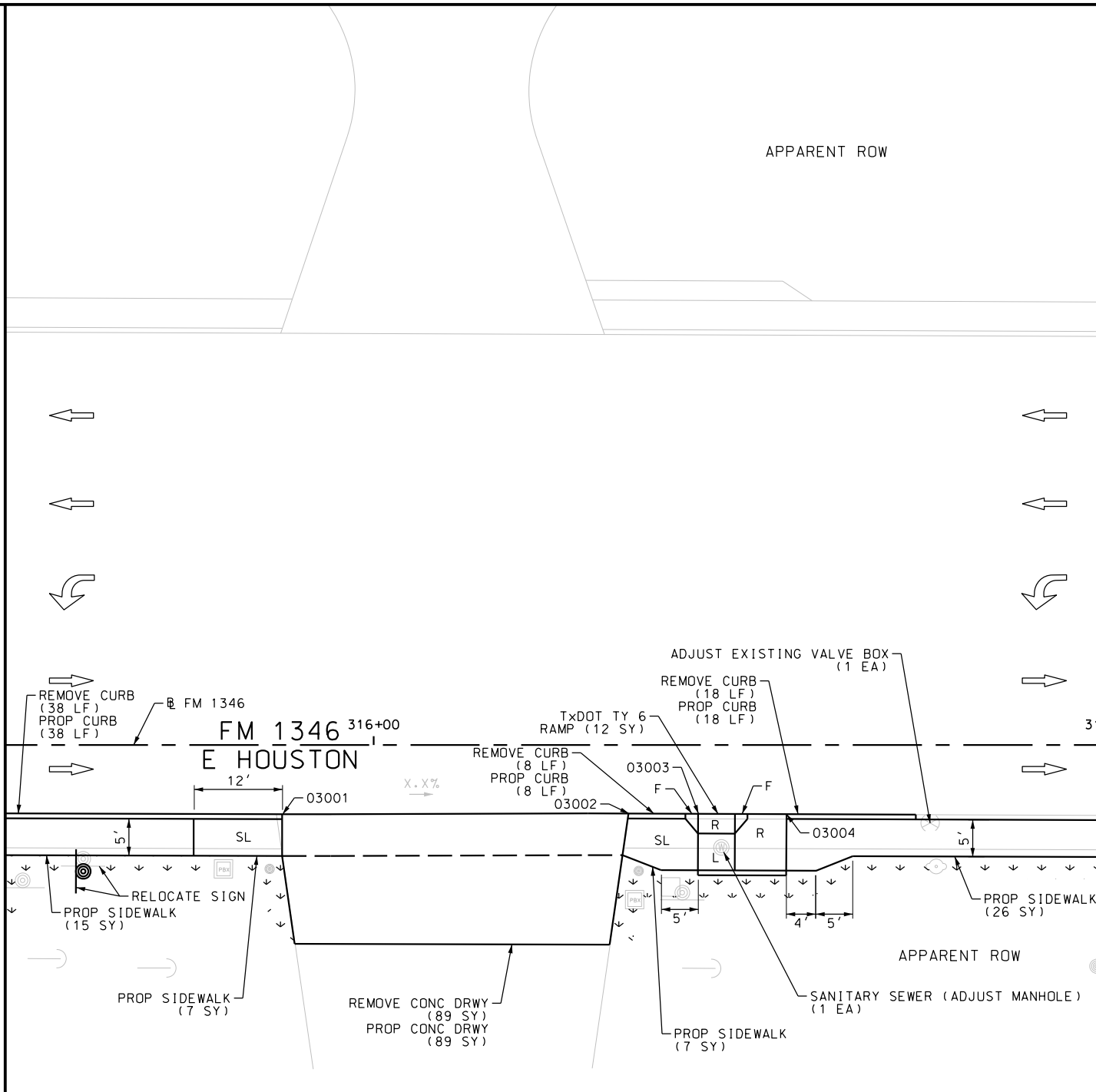
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CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	113

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\E\_Houston\1113501\_E\_Houston\_05.dgn

MATCH LINE STA 315+50

MATCH LINE STA 317+00



ITEM	DESCRIPTION	UNIT	QTY
7090-6001	SANITARY SEWER (ADJUST MANHOLE)	EA	1
7091-6001	ADJUST EXISTING VALVE BOX	EA	1
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	89
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	64
0162-6002	BLOCK SODDING	SY	42
0168-6001	VEGETATIVE WATERING	MG	0.66
0529-6002	CONC CURB (TY II)	LF	64
0530-6004	DRIVEWAYS (CONC)	SY	89
0531-6001	CONC SIDEWALKS (4")	SY	55
0531-6023	CURB RAMPS (TY 6)	SY	12
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



FM 1346  
 E HOUSTON  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 315+50 TO STA 317+00

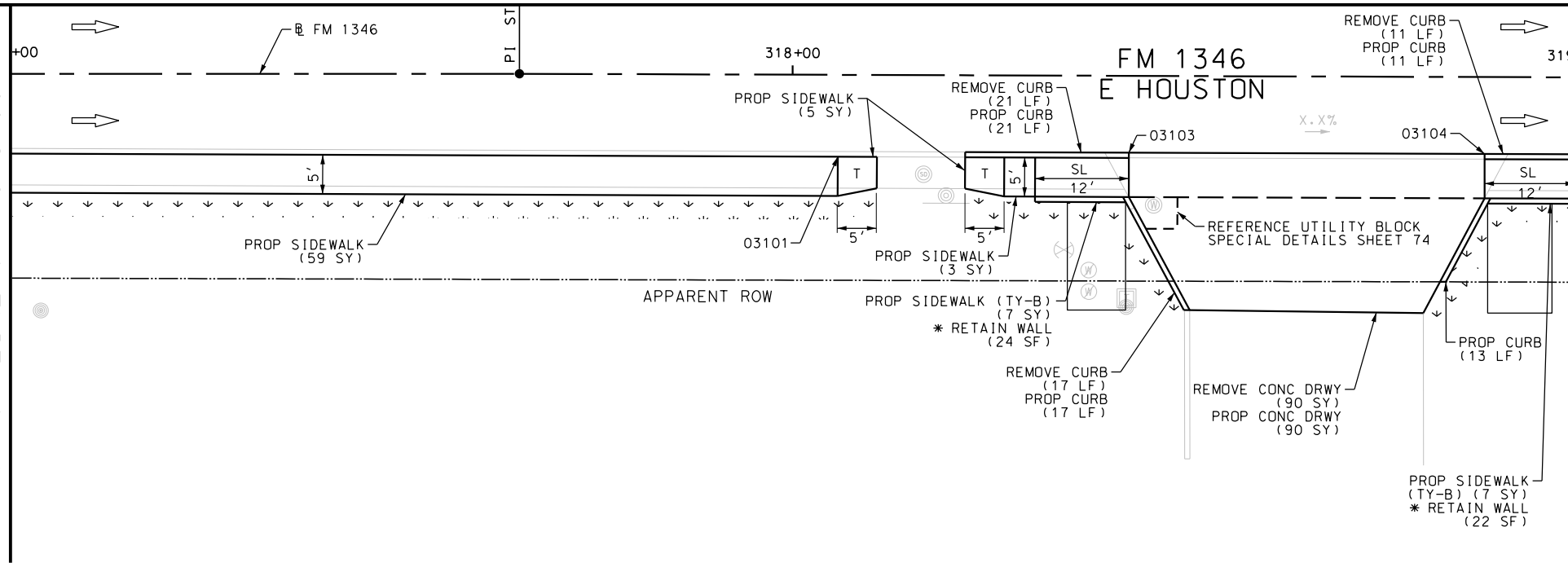
SHEET 5 OF 13

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	114

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Houston\1113501\_E\_Houston\_06.dgn

MATCH LINE STA 316+00



MATCH LINE STA 318+00

ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	90
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	49
0162-6002	BLOCK SODDING	SY	58
0168-6001	VEGETATIVE WATERING	MG	0.90
0529-6002	CONC CURB (TY II)	LF	62
0530-6004	DRIVEWAYS (CONC)	SY	90
0531-6001	CONC SIDEWALKS (4")	SY	67
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	14

DESIGN

INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL

INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY



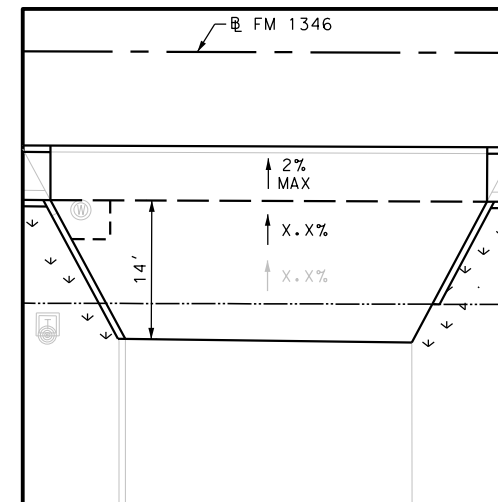
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



FM 1346  
 E HOUSTON  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 317+00 TO STA 319+00

SHEET 6 OF 13

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	115

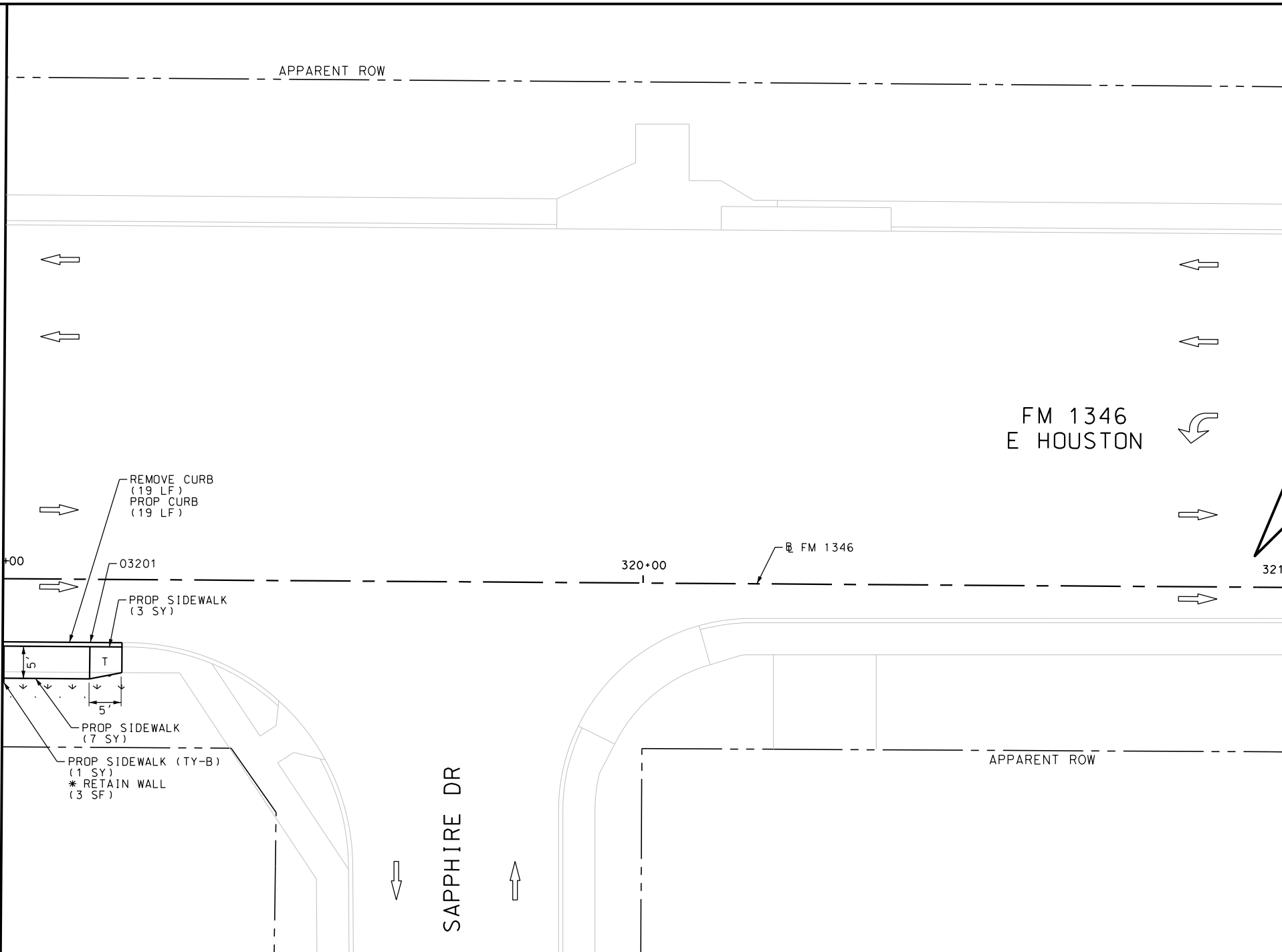


DRWY PLAN STA 318+66

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\Houston\1113501\_E\_Houston\_07.dgn

MATCH LINE STA 319+00



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	19
0162-6002	BLOCK SODDING	SY	7
0168-6001	VEGETATIVE WATERING	MG	0.11
0529-6002	CONC CURB (TY II)	LF	19
0531-6001	CONC SIDEWALKS (4")	SY	10
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	1

DESIGN

INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL

INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



FM 1346  
 E HOUSTON  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 320+00

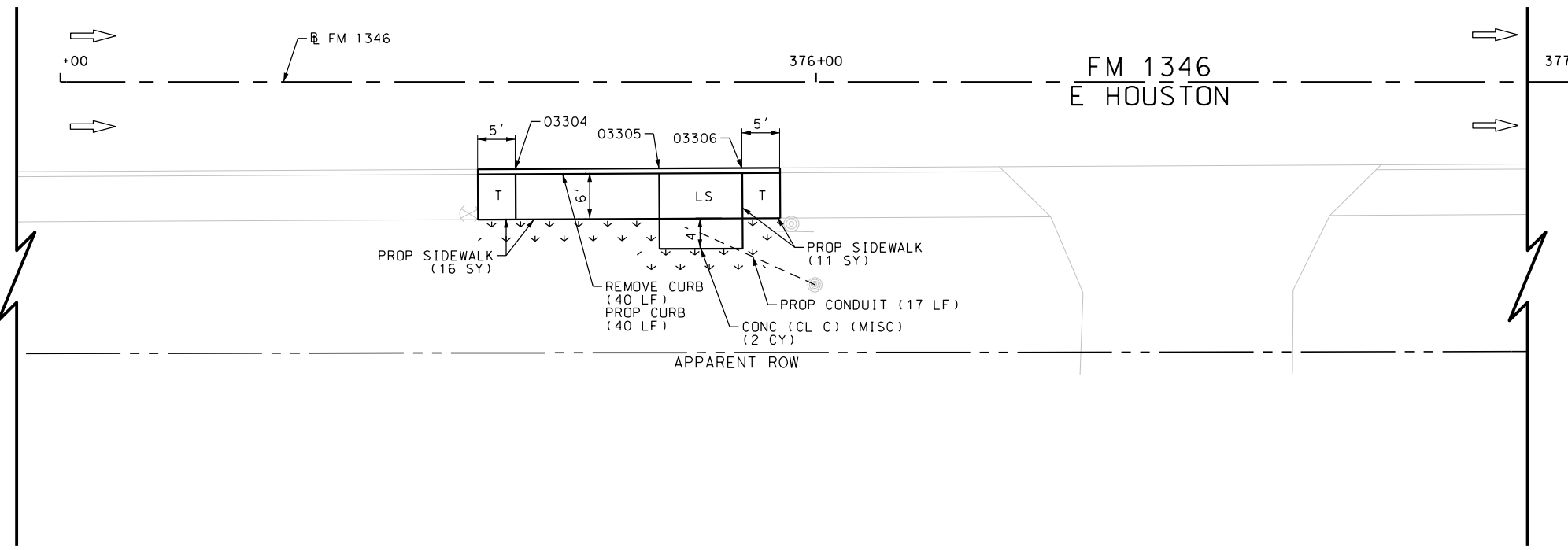
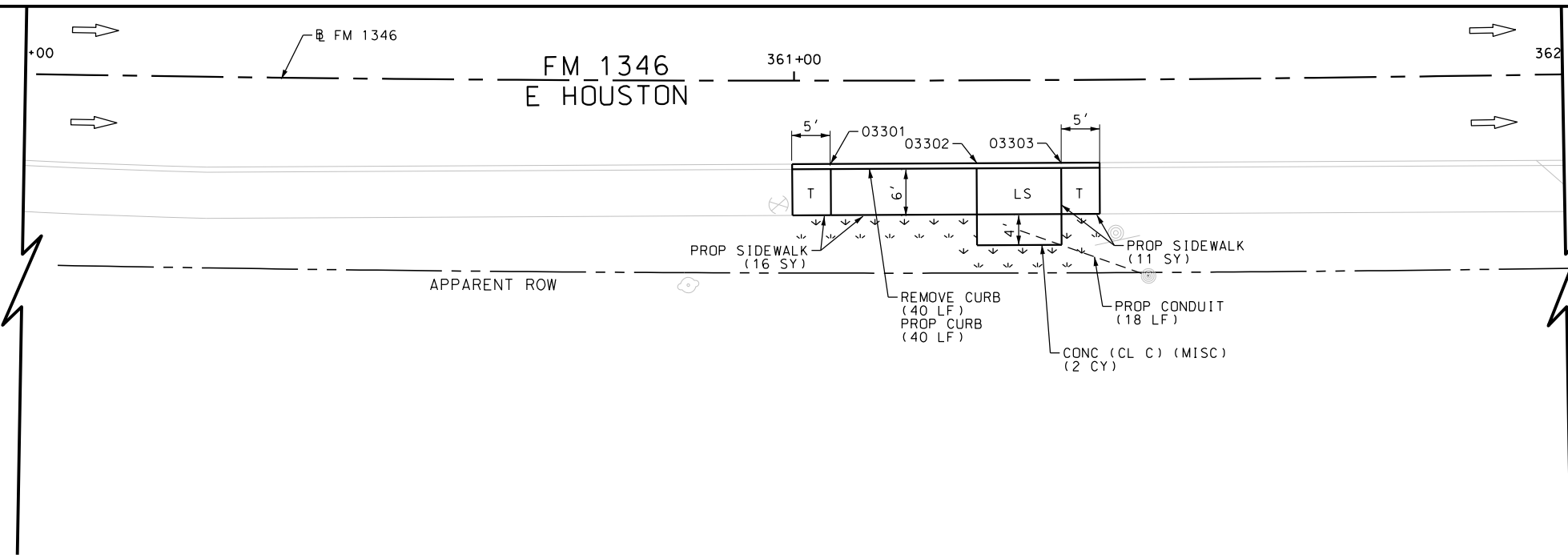
SHEET 7 OF 13

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	116

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\E\_Houston\1113501\_E\_Houston\_08.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	80
0162-6002	BLOCK SODDING	SY	32
0168-6001	VEGETATIVE WATERING	MG	0.50
0420-6074	CL C CONC (MISC)	CY	4.0
0529-6002	CONC CURB (TY II)	LF	80
0531-6001	CONC SIDEWALKS (4")	SY	54
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	35



DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



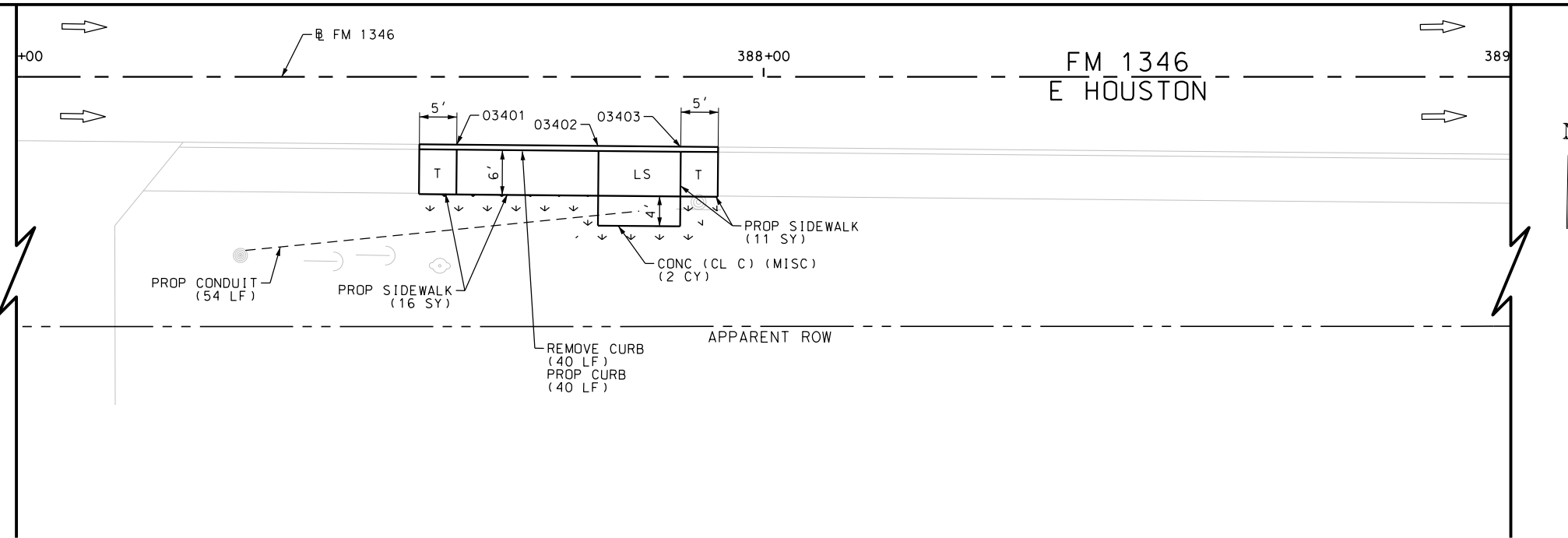
FM 1346  
 E HOUSTON  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 361+00 AND STA 376+00

SHEET 8 OF 13

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	117

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\Houston\1113501\_E\_Houston\_09.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	40
0162-6002	BLOCK SODDING	SY	16
0168-6001	VEGETATIVE WATERING	MG	0.25
0420-6074	CL C CONC (MISC)	CY	2.0
0529-6002	CONC CURB (TY II)	LF	40
0531-6001	CONC SIDEWALKS (4")	SY	27
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	54

DESIGN

INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL

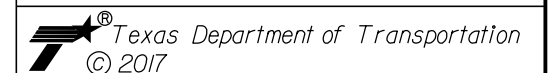
INTERIM REVIEW  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY



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



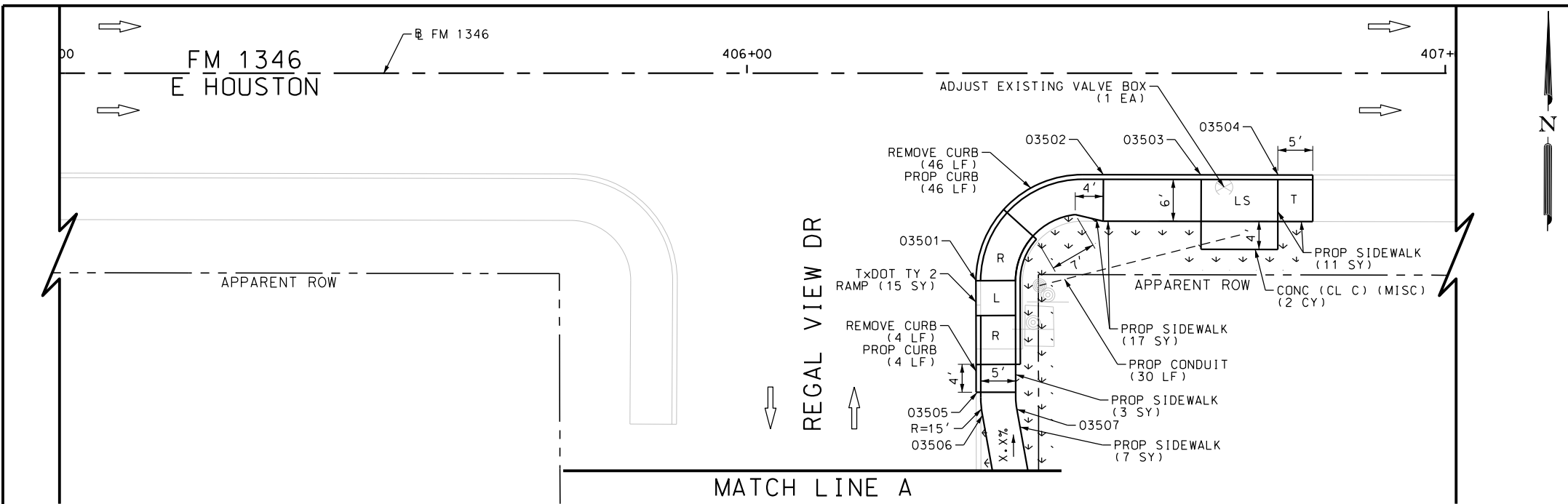
FM 1346  
 E HOUSTON  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 388+00

SHEET 9 OF 13

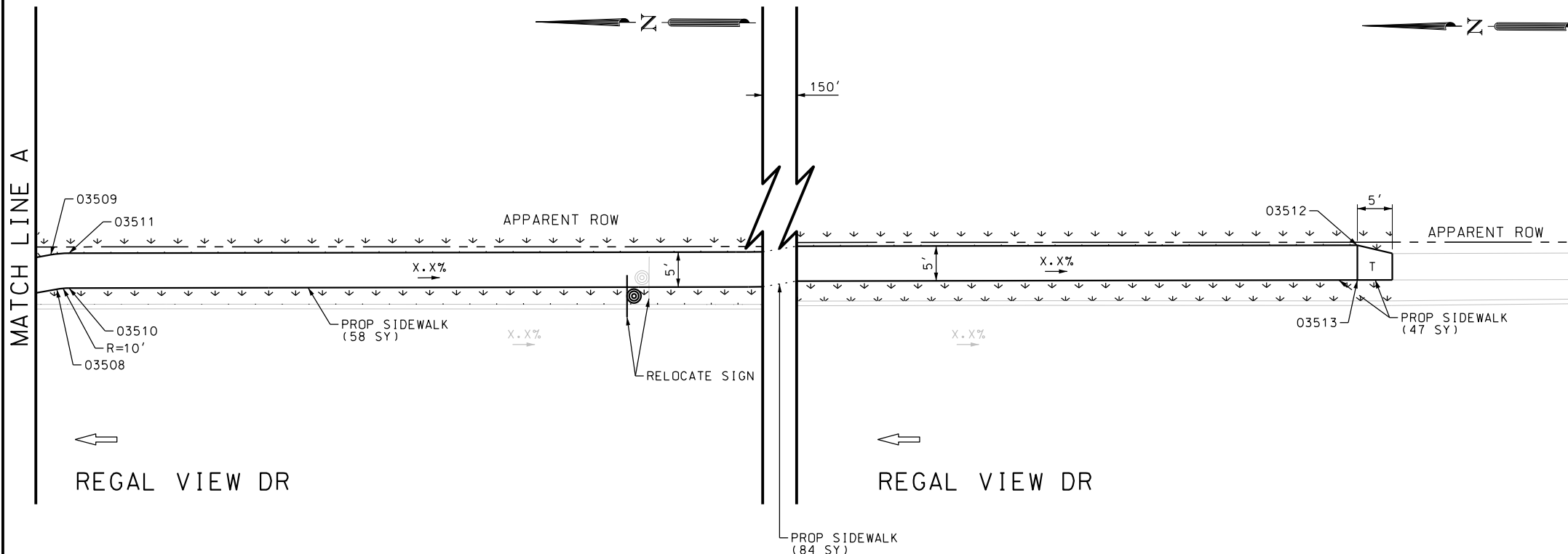
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	118

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Houston\1113501\_E\_Houston\_10.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6001	ADJUST EXISTING VALVE BOX	EA	1
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	50
0162-6002	BLOCK SODDING	SY	234
0168-6001	VEGETATIVE WATERING	MG	3.65
0420-6074	CL C CONC (MISC)	CY	2.0
0529-6002	CONC CURB (TY II)	LF	50
0531-6001	CONC SIDEWALKS (4")	SY	227
0531-6019	CURB RAMPS (TY 2)	SY	15
0618-6016	COND (PVC) (SCH 40) (1")	LF	30
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1



DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

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



FM 1346  
 E HOUSTON  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 406+00

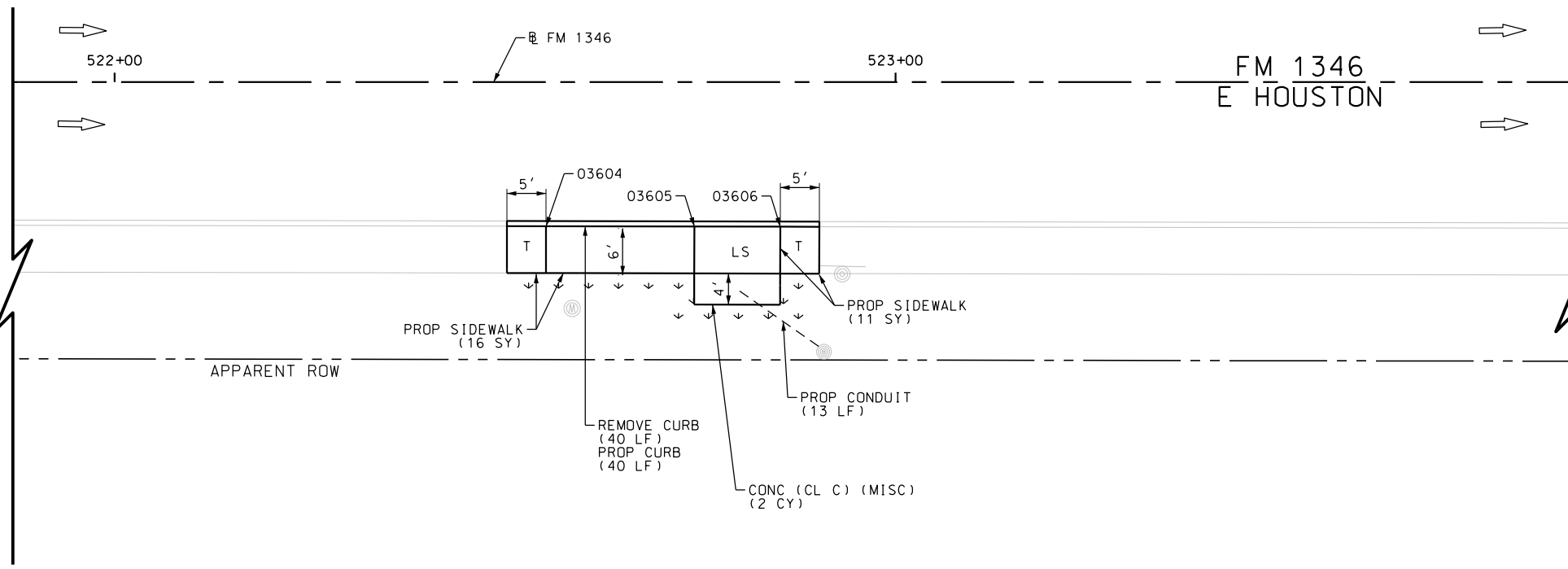
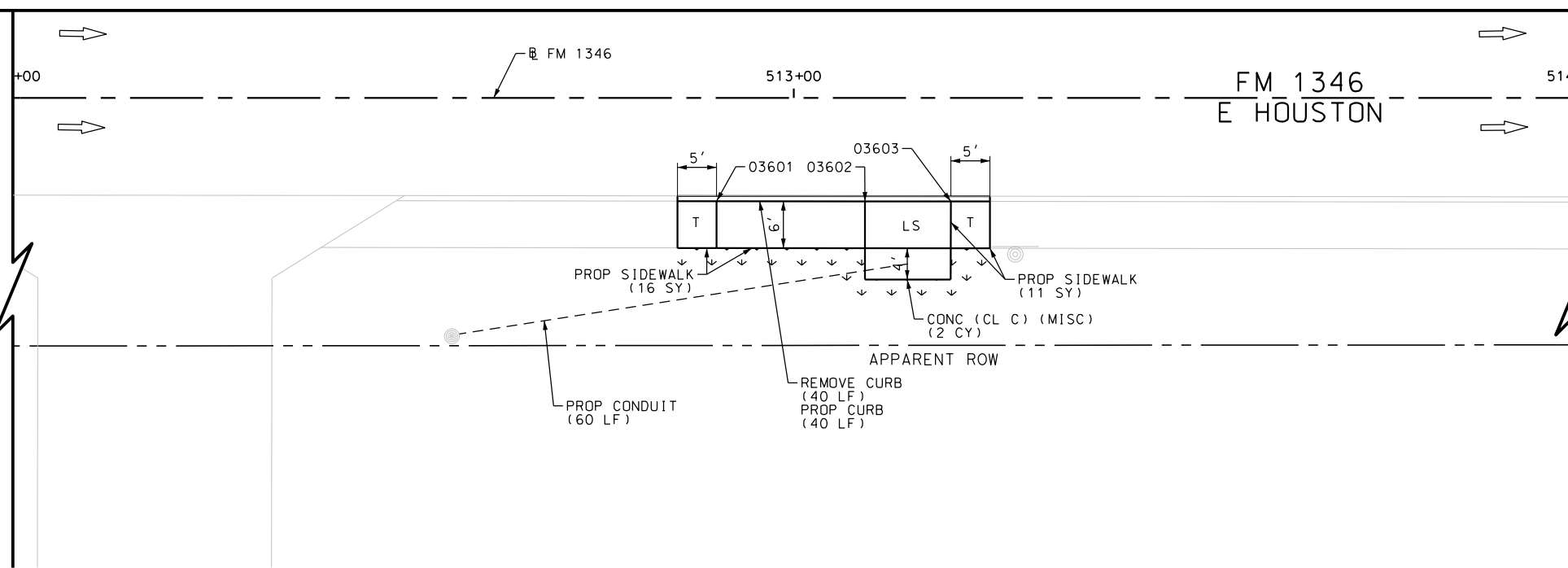
SHEET 10 OF 13

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	119

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\E\_Houston\1113501\_E\_Houston\_11.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	80
0162-6002	BLOCK SODDING	SY	32
0168-6001	VEGETATIVE WATERING	MG	0.50
0420-6074	CL C CONC (MISC)	CY	4.0
0529-6002	CONC CURB (TY II)	LF	80
0531-6001	CONC SIDEWALKS (4")	SY	54
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	73



DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

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



FM 1346  
 E HOUSTON  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 513+00 AND 523+00

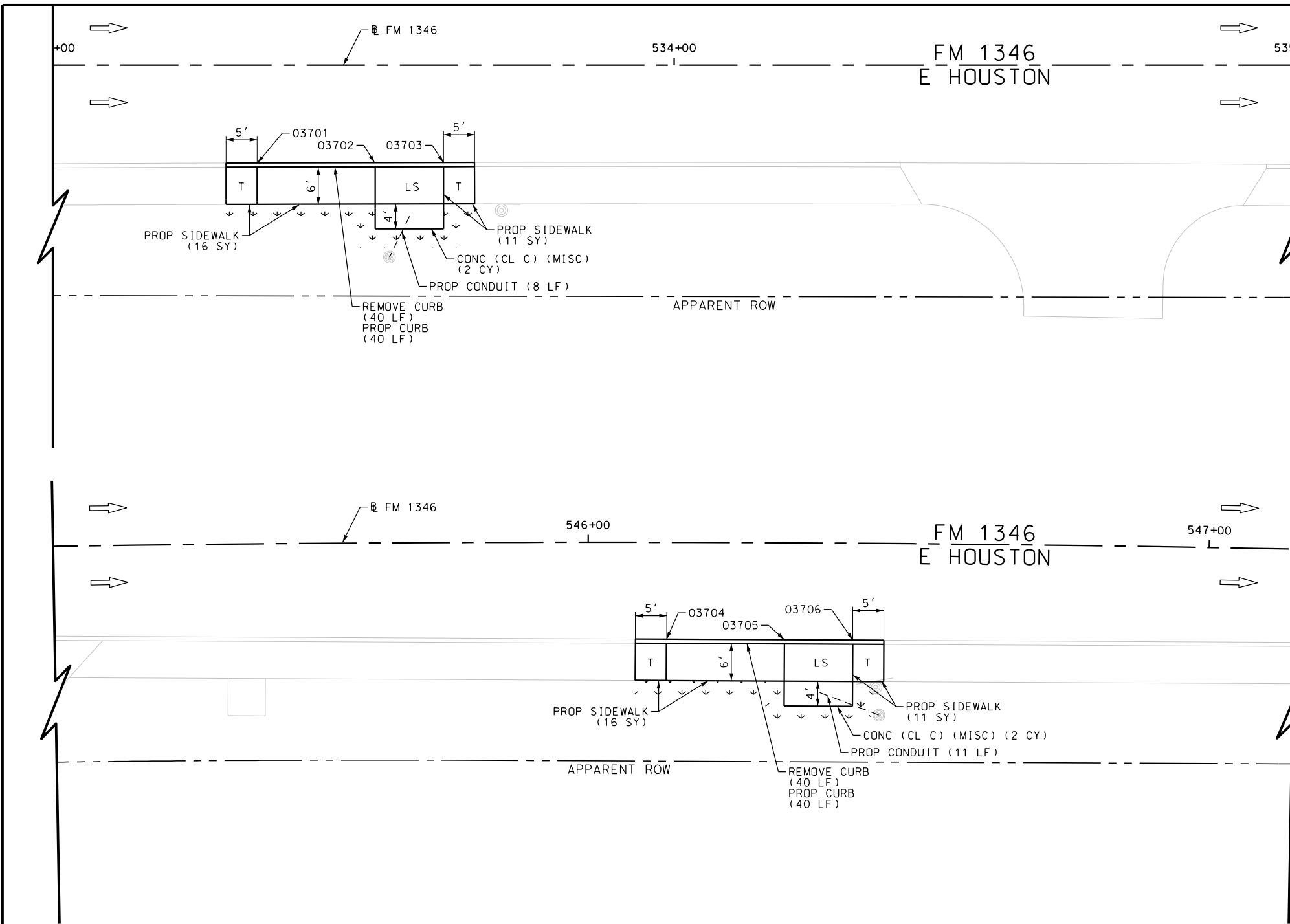
SHEET 11 OF 13

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	120



Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\E Houston\1113501\_E\_Houston\_12.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	80
0162-6002	BLOCK SODDING	SY	32
0168-6001	VEGETATIVE WATERING	MG	0.50
0420-6074	CL C CONC (MISC)	CY	4.0
0529-6002	CONC CURB (TY II)	LF	80
0531-6001	CONC SIDEWALKS (4")	SY	54
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	19

DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

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



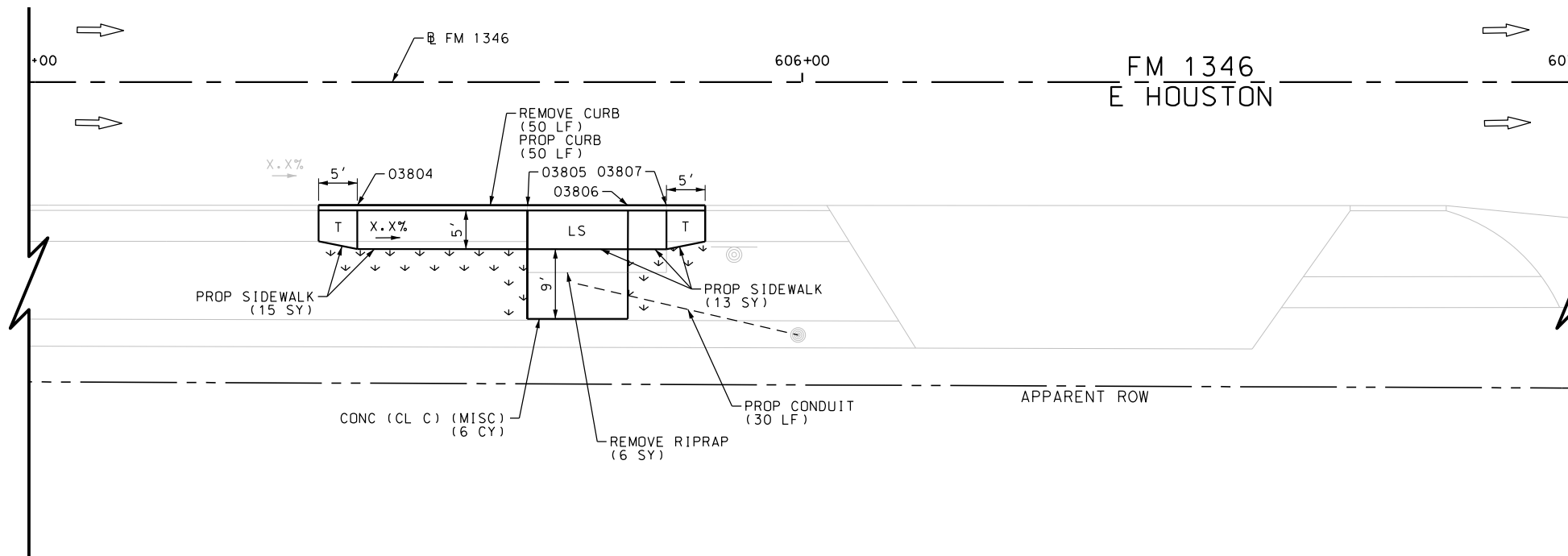
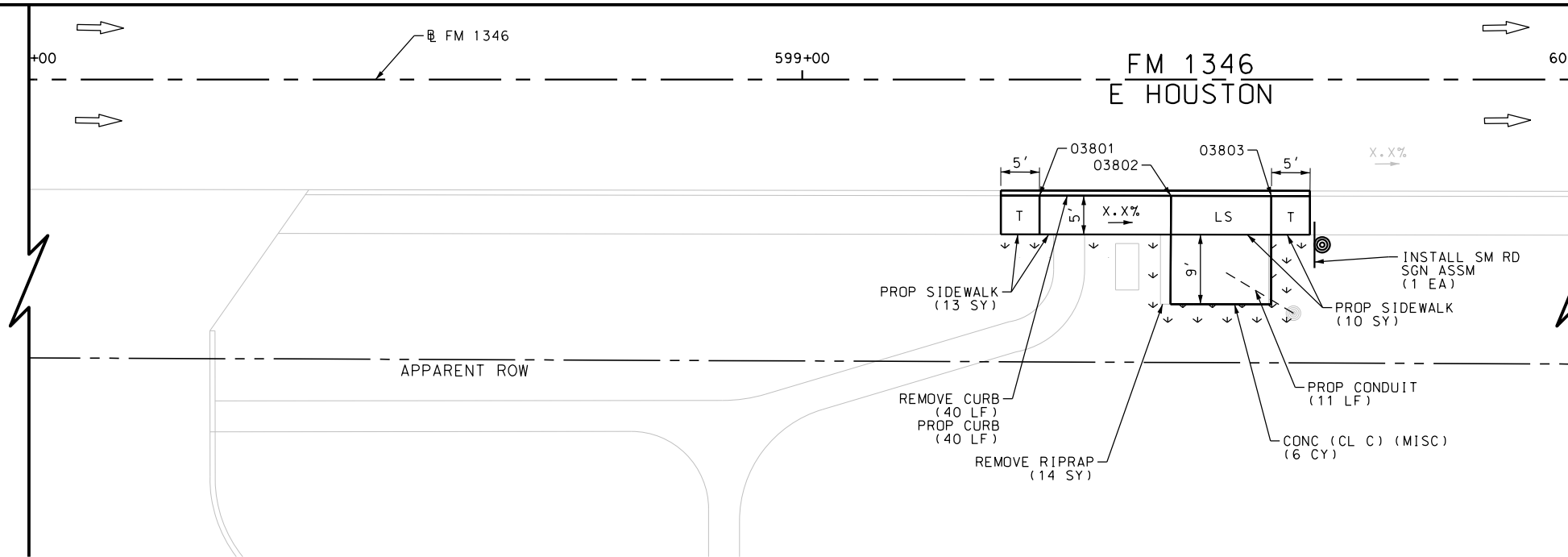
FM 1346  
 E HOUSTON  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 533+00 TO 547+00

SHEET 12 OF 13

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
			JOB NO.:	SHEET NO.:
			586	121

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\E Houston\1113501\_E\_Houston\_13.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	20
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	90
0162-6002	BLOCK SODDING	SY	34
0168-6001	VEGETATIVE WATERING	MG	0.53
0420-6074	CL C CONC (MISC)	CY	12.0
0529-6002	CONC CURB (TY II)	LF	90
0531-6001	CONC SIDEWALKS (4")	SY	51
0618-6016	COND (PVC) (SCH 40) (1")	LF	41
0644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	1

DESIGN

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL

INTERIM REVIEW

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

REV. NO.	DATE	DESCRIPTION	BY



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



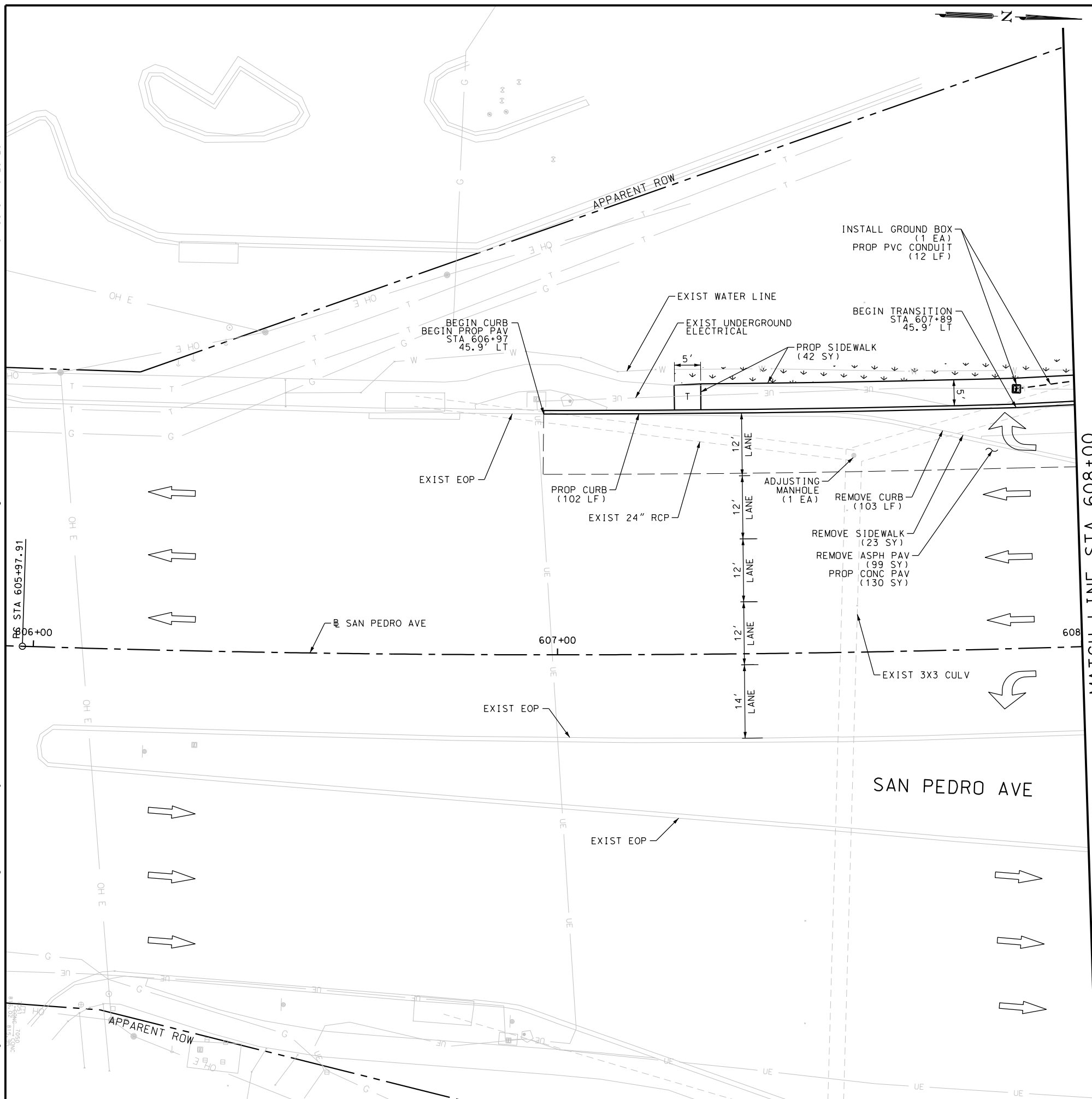
FM 1346  
 E HOUSTON  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 599+00 AND 606+00

SHEET 13 OF 13

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	122

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\San Pedro Transit Center\1113501\_SanPedro\_01.dgn



ITEM	DESCRIPTION	UNIT	QTY
0479-6001	ADJUSTING MANHOLES	EA	1
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	103
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	23
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	99
0162-6002	BLOCK SODDING	SY	26
0168-6001	VEGETATIVE WATERING	MG	0.41
0360-6004	CONC PVMT (CONT REINF - CRCP) (10")	SY	130
0529-6002	CONC CURB (TY II)	LF	102
0531-6001	CONC SIDEWALKS (4")	SY	42
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	12
0624-6009	GROUND BOX TY D (162922)	EA	1

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



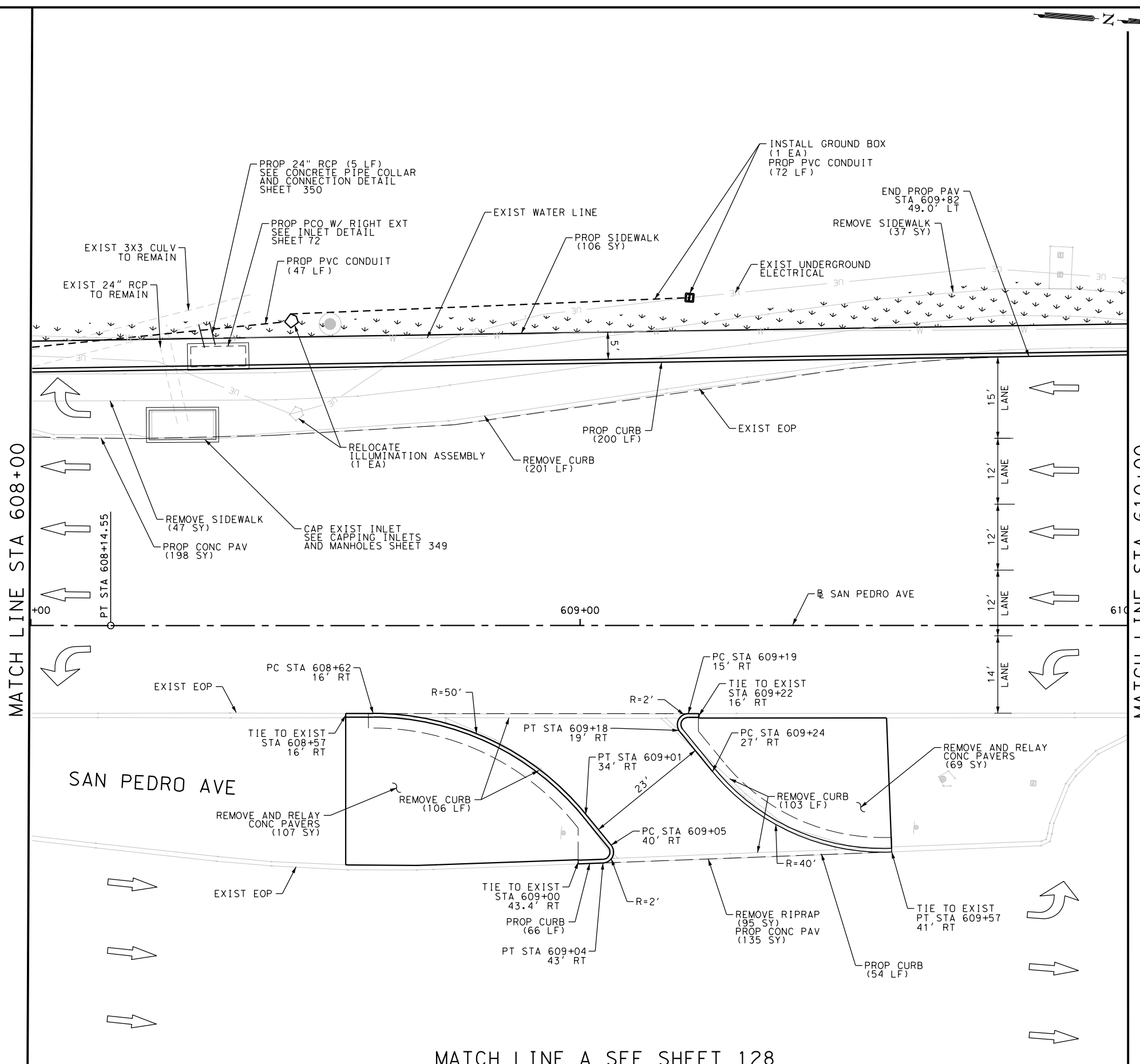
SAN PEDRO AVE  
 TRANSIT CENTER  
 SIDEWALK  
 CONSTRUCTION PLAN  
 BEGIN TO STA 608+00

SHEET 1 OF 6

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	123

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\San Pedro Transit Center\1113501\_SanPedro\_02.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	95
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	410
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	84
0162-6002	BLOCK SODDING	SY	92
0168-6001	VEGETATIVE WATERING	MG	1.44
0360-6004	CONC PVMT (CONT REINF - CRCP) (10")	SY	333
0420-6002	CL A CONC (MISC)	CY	1.0
0464-6005	RC PIPE (CL III) (24 IN)	LF	5
0465-6015	INLET (COMPL) (PCO) (3FT) (RIGHT)	EA	1
0479-6003	ADJUSTING MANHOLES & INLETS	EA	1
0528-6006	REMOVE AND RELAY PAVERS	SY	176
0529-6002	CONC CURB (TY II)	LF	320
0531-6001	CONC SIDEWALKS (4")	SY	106
0610-6004	RELOCATE RD IL ASM (TRANS-BASE)	EA	1
0618-6016	COND (PVC) (SCH 40) (1")	LF	119
0624-6010	GROUND BOX TY D (162922)W/APRON	EA	1

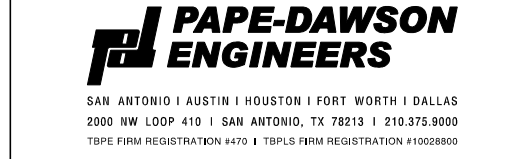
NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY



SAN PEDRO AVE  
 TRANSIT CENTER  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 608+00 TO STA 610+00

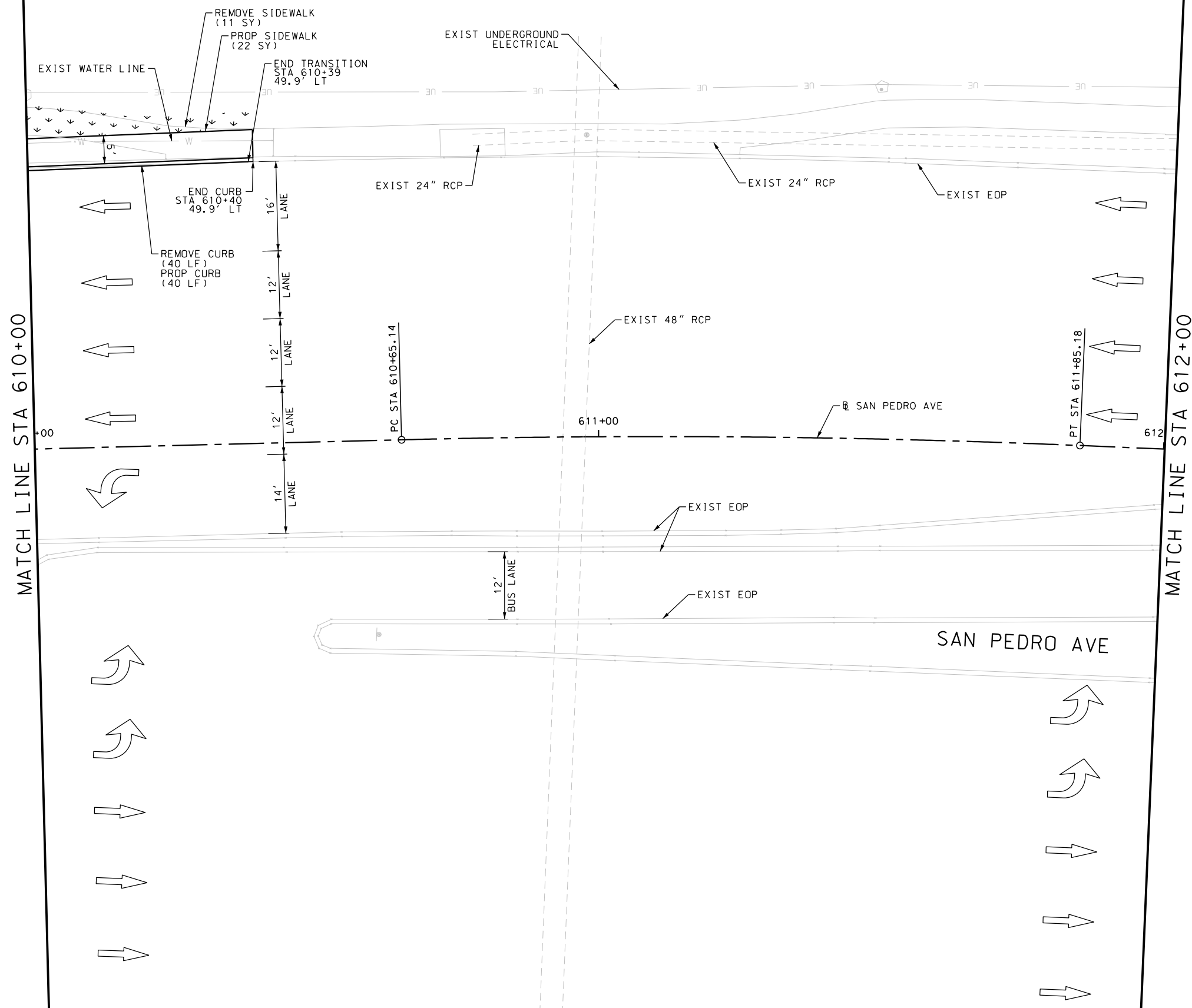
SHEET 2 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	124

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\San Pedro Transit Center\1113501\_SanPedro\_03.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	40
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	11
0162-6002	BLOCK SODDING	SY	17
0168-6001	VEGETATIVE WATERING	MG	0.27
0529-6002	CONC CURB (TY II)	LF	40
0531-6001	CONC SIDEWALKS (4")	SY	22



NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



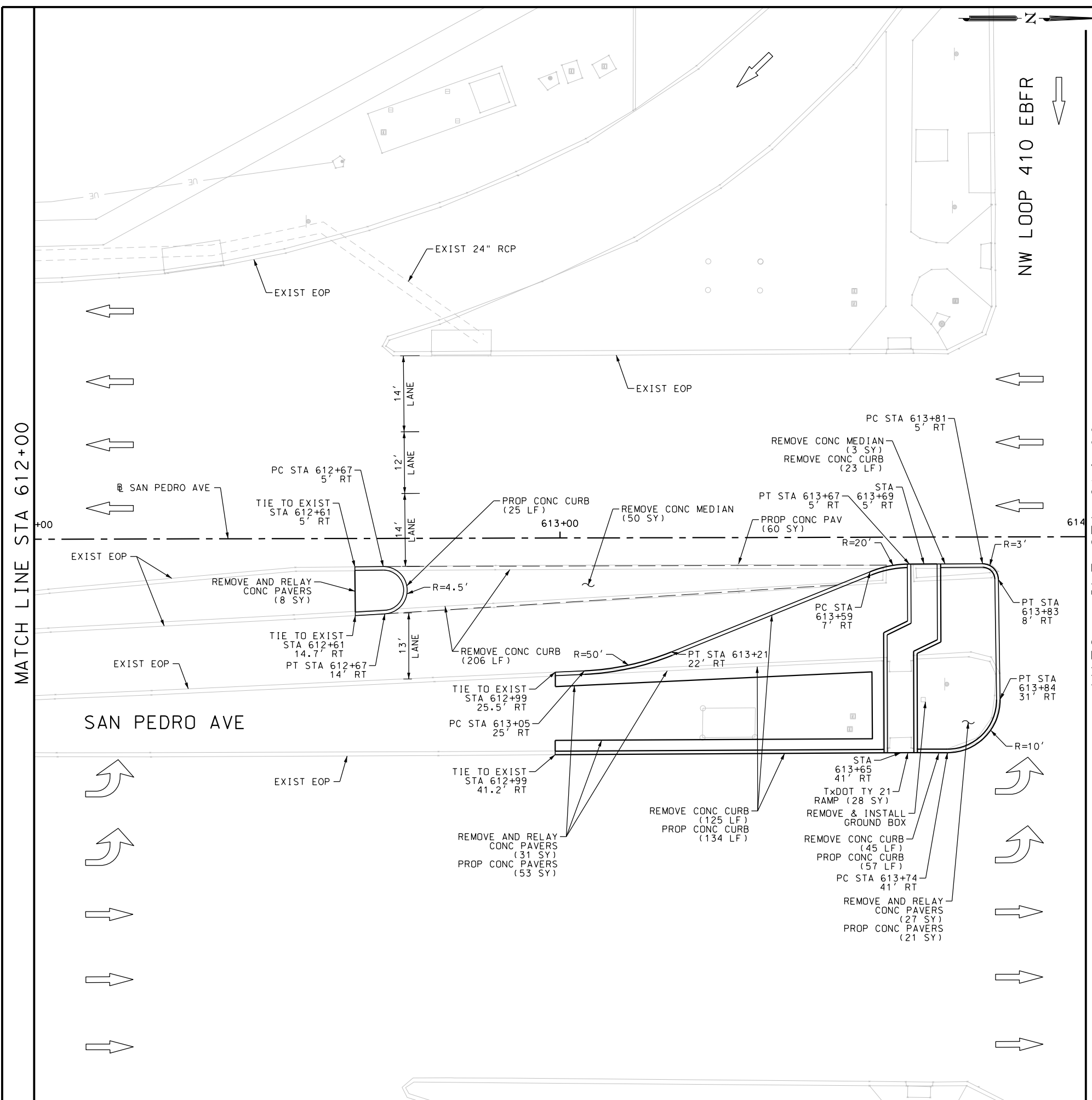
SAN PEDRO AVE  
 TRANSIT CENTER  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 610+00 TO STA 612+00

SHEET 3 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	125

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\San Pedro Transit Center\1113501\_SanPedro\_04.dgn



NW LOOP 410 EBFR

MATCH LINE STA 612+00

MATCH LINE STA 614+00

ITEM	DESCRIPTION	UNIT	QTY
0104-6011	REMOVING CONC (MEDIANS)	SY	53
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	399
0360-6004	CONC PVMT (CONT REINF - CRCP) (10")	SY	60
0528-6004	LANDSCAPE PAVERS	SY	74
0528-6006	REMOVE AND RELAY PAVERS	SY	66
0529-6002	CONC CURB (TY II)	LF	216
0531-6030	CURB RAMPS (TY 21)	SY	28
0624-6009	GROUND BOX TY D (162922)	EA	1
0624-6028	REMOVE GROUND BOX	EA	1

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



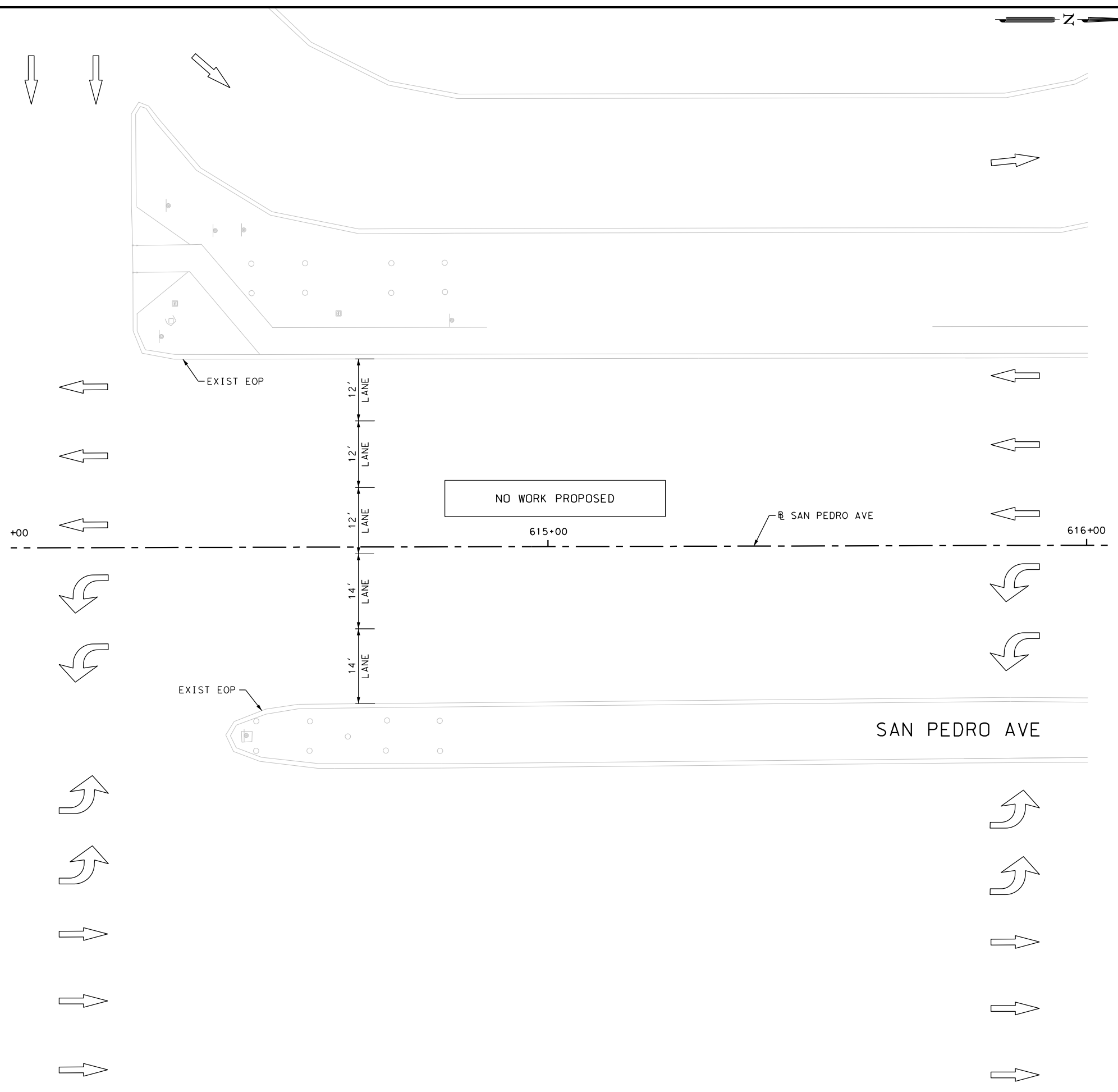
SAN PEDRO AVE  
 TRANSIT CENTER  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 612+00 TO STA 614+00

SHEET 4 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	126

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\San Pedro Transit Center\1113501\_SanPedro\_05.dgn



ITEM	DESCRIPTION	UNIT	QTY
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NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY
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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  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



SAN PEDRO AVE  
 TRANSIT CENTER  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 614+00 TO STA 616+00

SHEET 5 OF 6

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
			JOB NO.:	SHEET NO.:
			586	127

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\San Pedro Transit Center\1113501\_SanPedro\_06.dgn

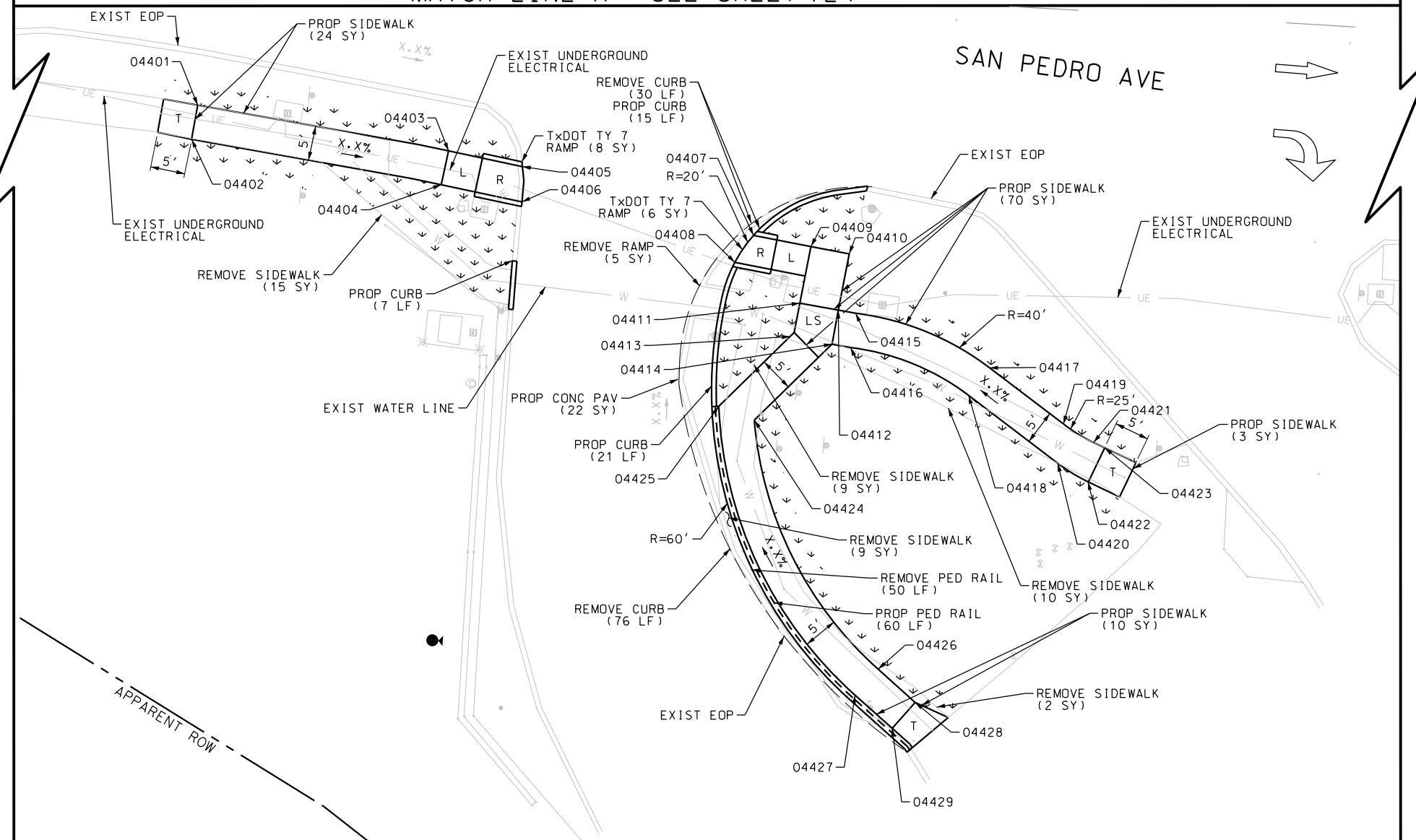
609+00

610+00

SAN PEDRO AVE

MATCH LINE A SEE SHEET 124

SAN PEDRO AVE



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	106
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	50
0162-6002	BLOCK SODDING	SY	130
0168-6001	VEGETATIVE WATERING	MG	2.03
0360-6004	CONC PVMT (CONT REINF - CRCP) (10")	SY	22
0450-6048	RAIL (HANDRAIL) (TY B)	LF	60
0496-6099	REMOVE STR (RAIL)	LF	50
0529-6002	CONC CURB (TY II)	LF	43
0531-6001	CONC SIDEWALKS (4")	SY	107
0531-6024	CURB RAMPS (TY 7)	SY	14

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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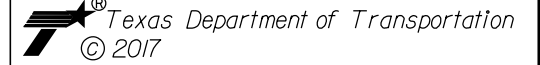
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



SAN PEDRO AVE  
 TRANSIT CENTER  
 SIDEWALK  
 CONSTRUCTION PLAN  
 VIA ENTRANCE DETAIL

SHEET 6 OF 6

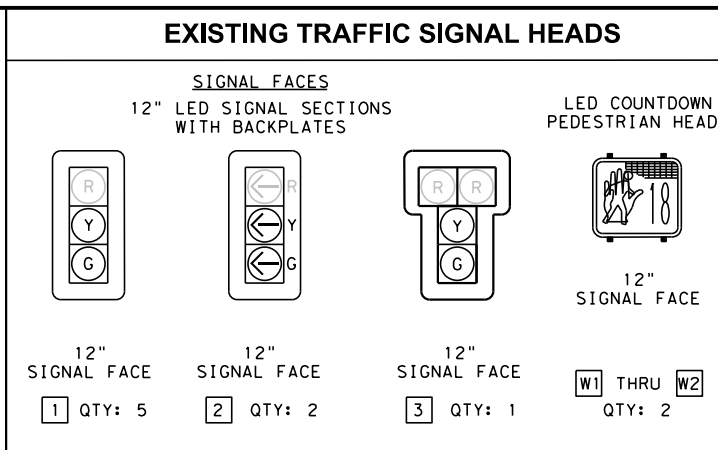
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	128



EXISTING TRAFFIC SIGNS		
SIGN	DESCRIPTION	DESIGNATION
	R10-4BR, (9" x 12")	PB1
	R10-4BL, (9" x 12")	PB2
	R3-2 (36" X 36")	S1
	R5-1 (30" X 30")	S2
	R5-1a (36" X 24")	S3

EXISTING PHASE DIAGRAM			
		NOT USED	NOT USED
$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$
NOT USED	NOT USED	NOT USED	
$\phi 5$	$\phi 6$	$\phi 7$	$\phi 8$

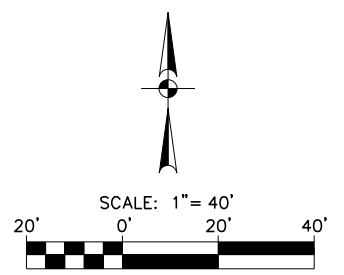
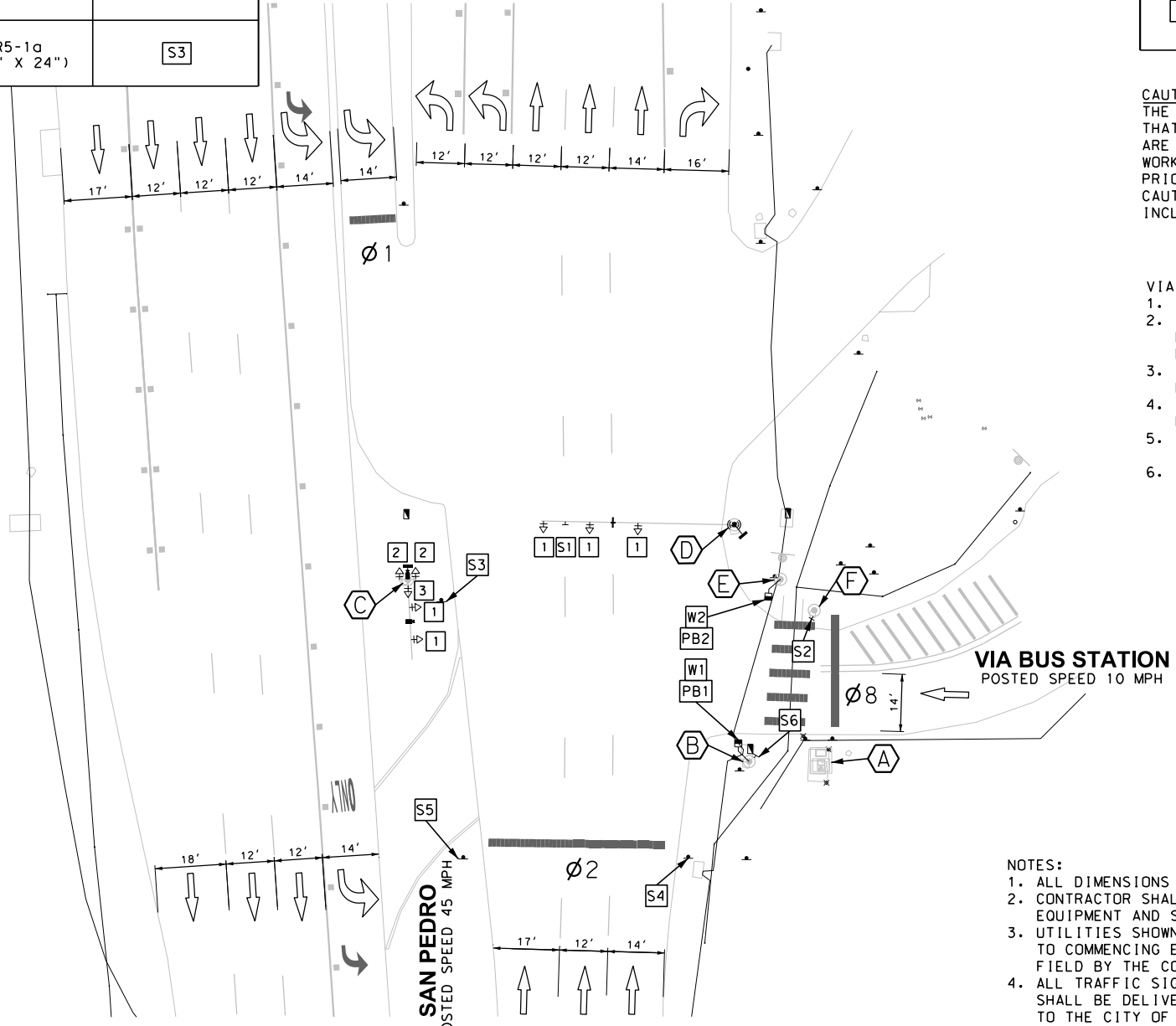
CONFLICT FLASH: RED ALL PHASES  
STARTUP FLASH: YELLOW: 2  $\phi 2$  BUSES ONLY  
RED: 1 + 8



LEGEND	
SYMBOL	DESCRIPTION
	TRAFFIC FLOW
	CONTROLLER CABINET
	TRAFFIC SIGNAL POLE
	VEHICLE SIGNAL HEAD
	PEDESTRIAN SIGNAL
	WIRELESS ACCESS POINT
	MAST ARM MOUNTED SIGN
	POLE OR EQUIPMENT IDENTIFIER
	GROUND MOUNTED SIGN
	EXISTING RADAR PRESENCE DETECTION DEVICE
	EXISTING EMERGENCY PREEMPTION (OPTICOM DETECTOR)
	EXISTING GROUND BOX (TYPE D)

**CAUTION:**  
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT UNDERGROUND UTILITIES INCLUDING GAS ARE KNOWN TO EXIST IN THE VICINITY OF THIS WORK. CONTRACTOR SHALL CALL FOR LOCATES PRIOR TO BEGINNING WORK AND SHALL EXERCISE CAUTION WHEN INSTALLING SIGNAL EQUIPMENT INCLUDING POLE FOUNDATIONS AND CONDUITS

- VIA NOTES:**
1. THE CONTRACTOR SHALL NOT REMOVE ANY VIA FACILITIES.
  2. THE CONTRACTOR SHALL CONTACT VIA FOURTEEN DAYS PRIOR, FOR THE REMOVAL OF BENCHES, STOP POLES OR ANY OTHER VIA FACILITIES THAT MAY BE PRESENT.
  3. THE CONTRACTOR SHALL CONTACT VIA THIRTY DAYS PRIOR TO SHELTER REMOVAL.
  4. THE CONTRACTOR WILL BE LIABLE FOR ANY DAMAGES TO VIA FACILITIES NOT REMOVED BY VIA.
  5. THE CONTRACTOR SHALL REPLACE ALL FLATWORK REMOVED OR DAMAGED IN THE COURSE OF EXECUTING THE CONTRACT UNLESS OTHERWISE NOTED BY VIA.
  6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING VIA FACILITIES ADJACENT TO WORK AREA.



- NOTES:**
1. ALL DIMENSIONS ARE IN FEET UNLESS SPECIFIED OTHERWISE.
  2. CONTRACTOR SHALL COORDINATE ALL REMOVAL OR RELOCATION OF TRAFFIC RELATE EQUIPMENT AND SIGNS WITH COSA.
  3. UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL CALL FOR LOCATES PRIOR TO COMMENCING EXCAVATION. ALL UTILITY LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
  4. ALL TRAFFIC SIGNAL EQUIPMENT DEEMED SALVAGEABLE BY THE CITY INSPECTOR SHALL BE DELIVERED TO THE CITY OF SAN ANTONIO TRAFFIC OPERATIONS FACILITY LOCATED AT 223 SOUTH CHERRY ST. SAN ANTONIO, TX 78203.
  5. ALL SAWCUTS SHALL BE SUBSIDIARY TO VARIOUS PERTINENT PROJECT BID ITEMS THERE SHALL BE NO ADDITIONAL PAYMENT FOR SAWCUTS UNLESS SPECIFIED OTHERWISE IN THIS PLAN SET.
  6. ALL UTILITY VALVE AND/OR METER ADJUSTMENTS SHALL BE SUBSIDIARY TO VARIOUS PERTINENT PROJECT BID ITEMS. THERE SHALL BE NO ADDITIONAL PAYMENT FOR UTILITY VALVE AND/OR METER ADJUSTMENTS UNLESS SPECIFIED OTHERWISE IN THIS PLAN SET.
  7. SEE REMOVAL PLANS FOR ADDITIONAL REMOVAL ITEMS. ALL ITEMS NOT SPECIFICALLY CALLED OUT IN THESE PLANS TO BE REMOVED, SHALL REMAIN.
  8. CONTRACTOR SHALL COORDINATE WITH CPS ENERGY AND COSA TO RELOCATE EXISTING ILLUMINATION POLES AND TO ADJUST EXISTING GAS VALVES TO BE FLUSH WITH FINAL GRADE.
  9. CONTRACTOR SHALL COORDINATE WITH SAWS TO RELOCATE EXISTING FIRE HYDRANTS, AND ADJUST EXISTING WATER VALVES TO BE FLUSH WITH FINAL GRADE.
  10. CONTRACTOR SHALL COORDINATE WITH ALL RELEVANT TELECOMMUNICATIONS SERVICE PURVEYORS TO ADJUST EXISTING BURIED TELECOMMUNICATIONS BOXES TO BE FLUSH WITH FINAL GRADE.

CONTRACTOR SHALL CONTACT DIGTESS @ 1-800-DIG-TESS OR TEXAS-811 FOR UTILITY LOCATION AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION

**DESIGN**

INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JUSTIN W. CLARK  
P.E. SERIAL NO: 118715  
DATE: 9/29/2017

**REVIEW AND APPROVAL**

INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: GILMER D. GASTON  
P.E. SERIAL NO: 80472  
DATE: 9/29/2017

EXISTING POLE & EQUIPMENT INFORMATION	
ID	DESCRIPTION/ATTACHMENTS
A	EXISTING TRAFFIC SIGNAL CONTROLLER PEDESTAL ASSEMBLY
B	EXISTING PEDESTAL POLE WITH ONE COUNTDOWN PEDESTRIAN SIGNAL HEAD, ONE APS PEDESTRIAN PUSH BUTTON, AND ONE R10-11a SIGN, AS ILLUSTRATED.
C	EXISTING SMA, 20 FT ARM, ONE RADAR PRESENCE DETECTOR, TWO VIVIDS CAMERAS, AND FIVE VEHICLE SIGNAL HEADS, AS ILLUSTRATED.
D	EXISTING SMA, 44 FT ARM, ONE RADAR PRESENCE DETECTOR, ONE WIRELESS ACCESS POINT, ONE OPTICOM DETECTOR, ONE R3-2 SIGN, AND THREE VEHICLE SIGNAL HEADS, AS ILLUSTRATED.
E	EXISTING PEDESTAL POLE WITH ONE COUNTDOWN PEDESTRIAN SIGNAL HEAD AND ONE APS PEDESTRIAN PUSH BUTTON, AS ILLUSTRATED.
F	EXISTING RECTANGULAR RAPID FLASHING BEACON SIGNAL WITH ONE R5-1 SIGN, AS ILLUSTRATED.

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

Texas Department of Transportation  
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SAN PEDRO AVE  
TRANSIT CENTER

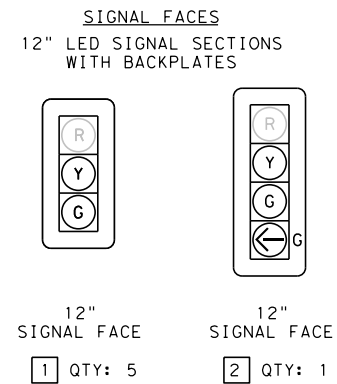
EXISTING CONDITIONS

DWG:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK:	SAT	BEXAR	0915	12
DWG:				JOB NO.:
CHK:				586
DWG:				SHEET NO.:
CHK:				129

**NOTES:**

1. ALL DIMENSIONS SHOWN ARE IN FEET UNLESS SPECIFIED OTHERWISE. (ALL EXISTING FEATURES ARE SHOWN SCREENED BACK i.e. FADED).
2. CONTRACTOR TO POTHOLE SIGNAL POLE LOCATIONS NEAR UNDERGROUND UTILITIES PRIOR TO INSTALLING POLE FOUNDATION.
3. BATTERY BACK UP SYSTEM (BBS) COMPLETE SHALL BE INSTALLED PER CITY OF SAN ANTONIO SPECIAL SPECIFICATION ITEM 633.
4. LOCATION OF TRAFFIC SIGNAL POLES, CONTROLLER ASSEMBLIES, AND ELECTRICAL SERVICE SHALL BE VERIFIED AND APPROVED BY COSA PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL SUPPLY AND INSTALL THE ADDRESS IN PERMANENT NUMBERS AND LETTERS TO THE STREET SIDE OF THE SERVICE ENCLOSURE. SAID ADDRESS SHALL ALSO BE RECORDED AND GIVEN TO THE CITY OF SAN ANTONIO INSPECTOR FOR THE CITY'S RECORDS.
5. AN ADDITIONAL 2" SCHEDULE 80 PVC SHALL BE INSTALLED AT EACH POLE FOUNDATION STUBBED OUT 2' FROM THE FACE OF THE FOUNDATION. STUB OUTS SHALL BE APPROPRIATELY CAPPED BELOW GRADE FOR FUTURE USE.
6. UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL CALL FOR LOCATES PRIOR TO COMMENCING EXCAVATION. ALL UTILITY LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
7. NEATLY CAP/COIL ALL WIRES AND CABLES IN GROUND BOX OR AT TERMINATION.
8. CONTRACTOR SHALL PROVIDE UNIMPEDED VISIBILITY & OPERATION OF ALL SIGNS & TRAFFIC SIGNAL EQUIPMENT. CONTRACTOR SHALL RETAIN THE SERVICES OF A LICENSED ARBORIST TO PERFORM ANY NECESSARY TRIMMING OF TREES.
9. SIGNAL OPERATION WILL BE MONITORED AFTER CONSTRUCTION AND MODIFIED AS NECESSARY.
10. ALL SIGNAL HEADS SHALL HAVE BACK PLATES.
11. CONTRACTOR SHALL CONTACT THE CITY TRAFFIC ENGINEER AT (210) 207-4574 A MINIMUM OF SEVEN (7) DAYS PRIOR TO BEGINNING OF CONSTRUCTION
12. CONTRACTOR SHALL CONTACT THE CITY TRAFFIC ENGINEER AT (210) 207-4574 A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO THE TRAFFIC SIGNAL TURN-ON.
13. ACTUAL POWER SOURCE LOCATION WAS UNIDENTIFIED AT THE TIME OF PLAN PREPARATION. CONDUIT QUANTITY INCLUDES ALLOWANCE FOR 150 LF OF 2 INCH CONDUIT.

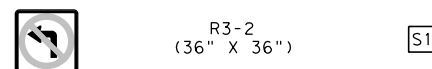
**TRAFFIC SIGNAL HEADS**



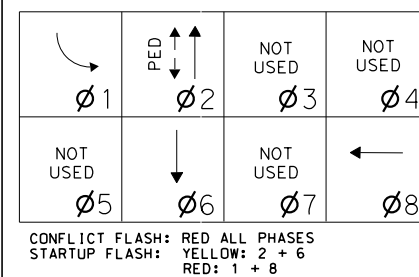
**LEGEND**

SYMBOL	DESCRIPTION
←	TRAFFIC FLOW
⊞	CONTROLLER CABINET (EXISTING)
⊙	TRAFFIC SIGNAL POLE
+	VEHICLE SIGNAL HEAD
⊞	PEDESTRIAN SIGNAL
⊞	LUMINAIRE
⊞	WIRELESS ACCESS POINT
+	MAST ARM MOUNTED SIGN
⊞	PTZ CAMERA
⊞	POLE OR EQUIPMENT IDENTIFIER
⊞	GROUND MOUNTED SIGN
---	RIGHT-OF-WAY
---	PROPOSED CONDUIT

**NEW TRAFFIC SIGNS**



**EXISTING PHASE DIAGRAM**



ITEM	DESCRIPTION	UNIT	QTY
0416-6034	DRILL SHAFT (TRF SIG POLE) (48 IN)	LF	22
0618-6030	CONDT (PVC) (SCH 40) (3") (BORE)	LF	110
0618-6053	CONDT (PVC) (SCH 80) (3")	LF	165
0620-6007	ELEC CONDR (NO.8) BARE	LF	318
0624-6010	GROUND BOX TY D (162922)W/APRON	EA	1
0680-6002	INSTALL HWY TRF SIG (ISOLATED)	EA	1
0682-6001	VEH SIG SEC (12")LED(GRN)	EA	6
0682-6002	VEH SIG SEC (12")LED(GRN ARW)	EA	1
0682-6003	VEH SIG SEC (12")LED(YEL)	EA	6
0682-6005	VEH SIG SEC (12")LED(RED)	EA	6
0682-6023	BACK PLATE (12") (3 SEC)	EA	5
0682-6024	BACK PLATE (12") (4 SEC)	EA	1
0684-6035	TRF SIG CBL (TY A) (14 AWG) (9 CONDR)	LF	340
0686-6061	INS TRF SIG PL AM(S)1 ARM(60')	EA	1
6010-6004	CCTV MOUNT (POLE)	EA	1
6025-6001	RADAR PRESENCE DETECTOR	EA	1
6025-6002	RADAR PRESENCE DETECTOR COMM CABLE	LF	516
6057-6001	RADAR ADVANCED DETECTION DEVICE	EA	1
6057-XXXX	RADAR ADVANCE DETECTOR COMM CABLE	LF	318

**CAUTION:**

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT UNDERGROUND UTILITIES INCLUDING GAS ARE KNOWN TO EXIST IN THE VICINITY OF THIS WORK. CONTRACTOR SHALL CALL FOR LOCATES PRIOR TO BEGINNING WORK AND SHALL EXERCISE CAUTION WHEN INSTALLING SIGNAL EQUIPMENT INCLUDING POLE FOUNDATIONS AND CONDUITS

**DESIGN**

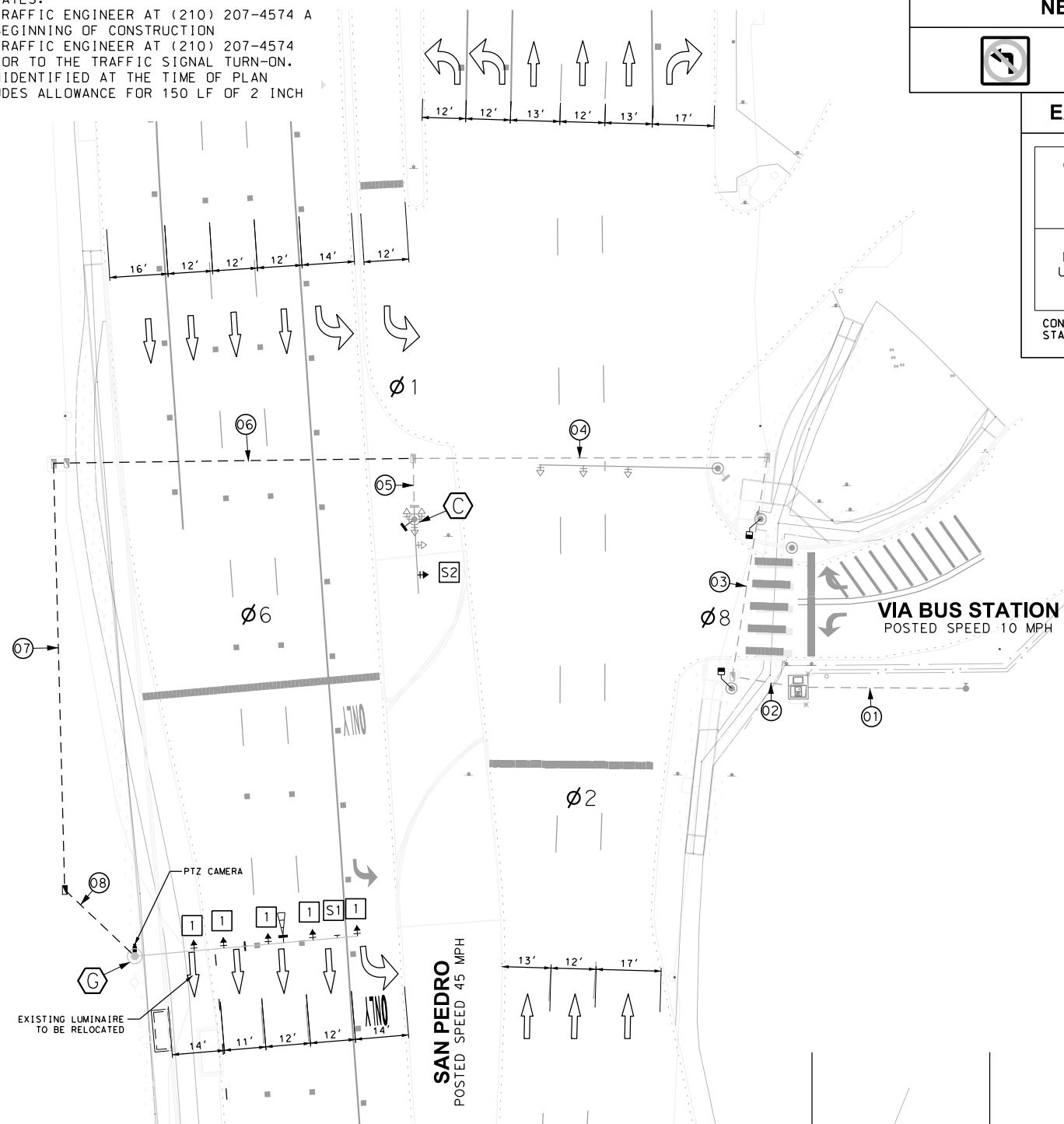
**INTERIM REVIEW**

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JUSTIN W. CLARK  
P.E. SERIAL NO: 118715  
DATE: 9/29/2017

**REVIEW AND APPROVAL**

**INTERIM REVIEW**

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: GILMER D. GASTON  
P.E. SERIAL NO: 80472  
DATE: 9/29/2017



CONTRACTOR SHALL CONTACT DIGTESS @ 1-800-DIG-TESS OR TEXAS-811 FOR UTILITY LOCATION AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION

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

Texas Department of Transportation  
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SAN PEDRO AVE  
TRANSIT CENTER

TRAFFIC SIGNAL PLAN

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.:
				586
				SHEET NO.:
				130

INTERSECTION NAME SAN PEDRO @ VIA BUS STATION									
CONDUIT AND CONDUCTOR SCHEDULE									
	RUN NUMBER	01	02	03	04	05	06	07	08
	CONDUIT SIZE IN INCHES	2	3	3	3	3	3	3	3
	NUMBER OF CONDUITS	1	1	1	1	1	1	1	1
	LENGTH OF RUN (FT)	50	20	60	100	20	100	120	30
	TRENCH (T)/BORE (B)/EXISTING (E)/AERIAL (A)	E	E	E	E	E	B	T	T
CABLE	CIRCUIT	CABLES PULLED BY CPS							
#8 BARE (SOLID)	BARE BOND GROUND	1	1	1		1	1	1	1
9 COND. #14 SOLID TYPE "A"	SIGNALS	∅	1	1	1		1	1	1
		∅	1	1	1	1			
EMERG PREEMPT	M138 OPTICOM CABLE	POLE	1	1	1		1	1	1
POWER CABLE	CCTV CABLE	POLE	1	1	1		1	1	1
ETHERNET CABLE		POLE	1	1	1		1	1	1
POWER & DATA CABLE	RADD	POLE	1	1	1		1	1	1
POWER & DATA CABLE	RPDD	POLE	1	1	1	1			
		POLE	1	1	1		1	1	1

POLE SCHEDULE				
POLE	G	C		
POLE TYPE	LMA	SMA		
POLE HEIGHT (FEET)	19.5	19.5		
MAST ARM LENGTH (FEET)	60	20		
ILSN	NO	NO		
ILSN ARM LENGTH (FEET)	N/A	N/A		
FOUNDATION TYPE	48-A	EXISTING		
FOUNDATION DEPTH (FEET)	21.9	EXISTING		
CABLE	CIRCUIT	NUMBER OF CONDUCTORS		
#8 BARE (SOLID)		1	1	
9 COND. #14 AWG SOLID TYPE "A"	SIGNALS	∅	6	5
		∅	8	1
EMERG PREEMPT	M138 OPTICOM CABLE	POLE	G	1
POWER CABLE	CCTV CABLE	POLE	G	1
ETHERNET CABLE		POLE	G	1
POWER & DATA CABLE	RADAR PRESENCE DETECTION DEVICE (RPDD)	POLE	C	1
POWER & DATA CABLE	RADAR ADVANCE DETECTION DEVICE (RADD)	POLE	G	1

\* SEE PEDESTAL POLE SPECIAL FOUNDATION FOR DETAILS

POLE EQUIPMENT INFORMATION

ID	DESCRIPTION/ATTACHMENTS	NORTHING	EASTING	FND. ELEV
G	INSTALL 19.5 FT LMA, 60 FT ARM ON 21.9 FT DRILLED SHAFT FND (48-A), ONE PTZ MONITORING CAMERA, ONE R3-2 SIGN, AND 5 SIGNAL HEADS, AS ILLUSTRATED.	13738809.9	2128041.7	FLUSH WITH SIDEWALK
C	EXISTING 19.5 FT SMA, 20 FT ARM ON 11.3 FT DRILLED SHAFT FND (30-A), ONE RPDD AND ONE SIGNAL HEAD, AS ILLUSTRATED.	EXISTING	EXISTING	EXISTING

DESIGN

<p>INTERIM REVIEW</p> <p>DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.</p> <p>ENGINEER: JUSTIN W. CLARK</p> <p>P.E. SERIAL NO: 118715</p> <p>DATE: 9/29/2017</p>
---

REVIEW AND APPROVAL

<p>INTERIM REVIEW</p> <p>DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.</p> <p>ENGINEER: GILMER D. GASTON</p> <p>P.E. SERIAL NO: 80472</p> <p>DATE: 9/29/2017</p>
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REV. NO.	DATE	DESCRIPTION	BY

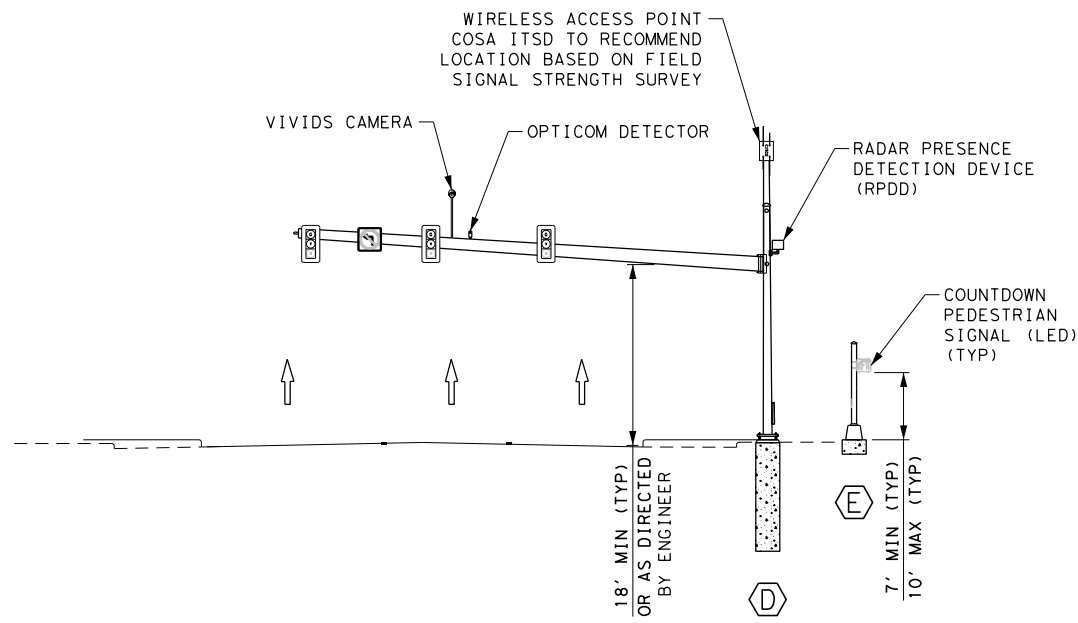


SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

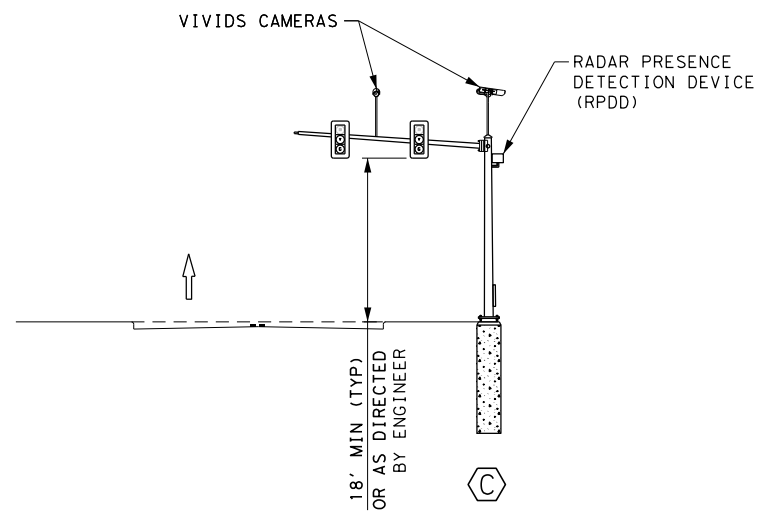


SAN PEDRO AVE  
 TRANSIT CENTER  
 CONDUIT AND  
 CONDUCTOR SCHEDULE

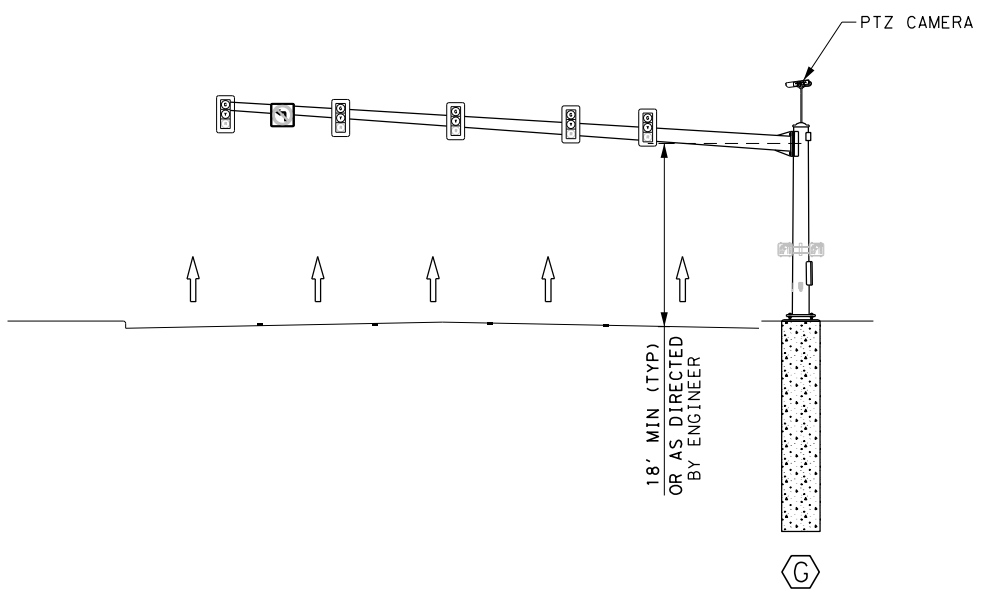
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CHK:	6	TEXAS				VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK:	SAT	BEXAR	0915	12	586	131



**EXISTING NORTHBOUND SAN PEDRO AVE**  
NOT TO SCALE



**EXISTING WESTBOUND NORTH STAR TRANSIT CENTER**  
NOT TO SCALE



**PROPOSED SOUTHBOUND SAN PEDRO AVE**  
NOT TO SCALE

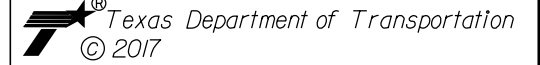
- NOTES:**
1. ALL DIMENSIONS SHOWN ARE IN FEET UNLESS SPECIFIED OTHERWISE. (ALL EXISTING FEATURES ARE SHOWN SCREENED BACK I.E. FADED).
  2. ALL ILSN SIGNS SHALL BE INSTALLED ON THE ILSN MAST ARM AS DIRECTED BY THE ENGINEER.
  3. CONTRACTOR SHALL POTHOLE SIGNAL POLE LOCATIONS NEAR UNDERGROUND UTILITIES PRIOR TO INSTALLING POLE FOUNDATION.
  4. MINIMUM CLEARANCE OF 40" RADIUS FROM NEUTRAL AND 10' RADIUS FROM PRIMARY OR SECONDARY SHALL BE MAINTAINED BETWEEN PROPOSED TRAFFIC SIGNAL EQUIPMENT AND EXISTING OVERHEAD ELECTRICAL LINES.
  5. ALL SIGNAL HEADS SHALL HAVE BACK PLATES.
  6. SEE "SINGLE MAST ARM ASSEMBLY (SMA-80)" STANDARDS FOR SIGNAL POLE AND MAST ARM DETAILS.
  7. SEE "TRAFFIC SIGNAL POLE FOUNDATION (TS-FD)" STANDARDS FOR DRILLED SHAFT DETAILS.
  8. SEE "MISCELLANEOUS TRAFFIC SIGNAL DETAILS (MTS)" STANDARD FOR PEDESTAL POLE DETAILS.

DESIGN  
**INTERIM REVIEW**  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JUSTIN W. CLARK  
P.E. SERIAL NO: 118715  
DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: GILMER D. GASTON  
P.E. SERIAL NO: 80472  
DATE: 9/29/2017

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

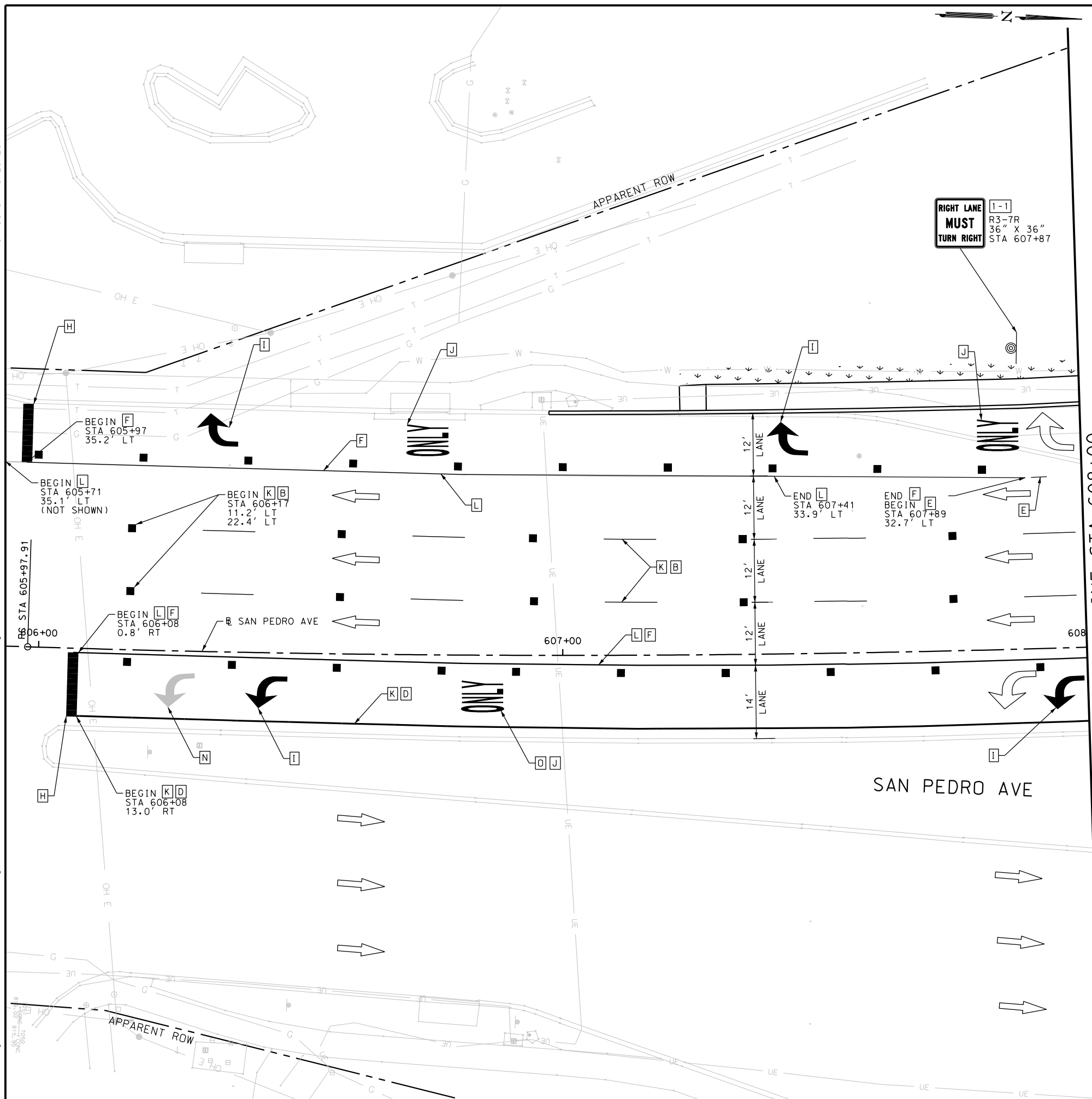


SAN PEDRO AVE  
TRANSIT CENTER  
**TRAFFIC SIGNAL  
ELEVATION**

DWG:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:			HIGHWAY NO.:
CHK DWG:	6	TEXAS				VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	132

Plotted on: 9/29/2017

Design File Name: P:\11135\01\design\Civil\Traffic\113501\_SanPedro\_PMO1.dgn



ITEM	DESCRIPTION	UNIT	QTY
0644-6001	IN SM RD SN SUP&M TY10BWG(1)SA(P)	EA	1
0666-6030	REFL PAV MRK TY I (W)8" (DOT) (100MIL)	LF	3
0666-6036	REFL PAV MRK TY I (W)8" (SLD) (100MIL)	LF	385
0666-6048	REFL PAV MRK TY I (W)24" (SLD) (100MIL)	LF	24
0666-6054	REFL PAV MRK TY I (W) (ARROW) (100MIL)	EA	4
0666-6078	REFL PAV MRK TY I (W) (WORD) (100MIL)	EA	3
0666-6224	PAVEMENT SEALER 4"	LF	294
0666-6226	PAVEMENT SEALER 8"	LF	388
0666-6230	PAVEMENT SEALER 24"	LF	24
0666-6231	PAVEMENT SEALER (ARROW)	EA	4
0666-6232	PAVEMENT SEALER (WORD)	EA	3
0666-6300	RE PM W/RET REQ TY I (W)4" (BRK) (100MIL)	LF	100
0666-6315	RE PM W/RET REQ TY I (Y)4" (SLD) (100MIL)	LF	194
0672-6007	REFL PAV MRKR TY I-C	EA	30
0677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	294
0677-6003	ELIM EXT PAV MRK & MRKS (8")	LF	364
0677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA	1
0677-6012	ELIM EXT PAV MRK & MRKS (WORD)	EA	3
0678-6001	PAV SURF PREP FOR MRK (4")	LF	294
0678-6004	PAV SURF PREP FOR MRK (8")	LF	388
0678-6008	PAV SURF PREP FOR MRK (24")	LF	24
0678-6009	PAV SURF PREP FOR MRK (ARROW)	EA	4
0678-6016	PAV SURF PREP FOR MRK (WORD)	EA	3

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

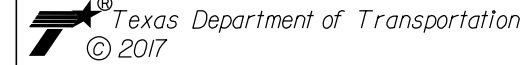
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



SAN PEDRO AVE  
 TRANSIT CENTER  
 SIGNING AND PAVEMENT MARKING  
 BEGIN TO STA 608+00

SHEET 1 OF 6

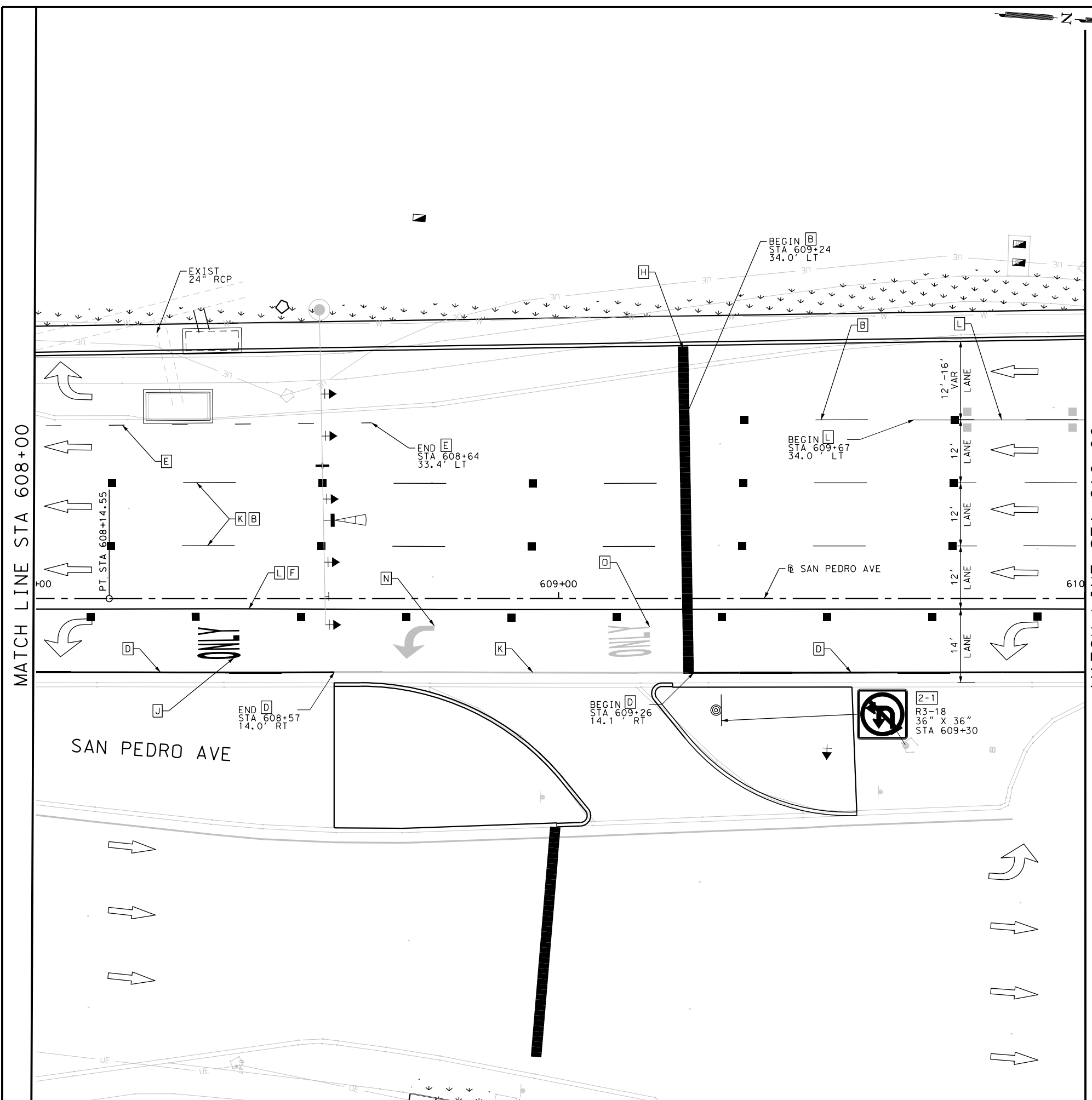
PAVEMENT MARKINGS LEGEND

- A 4" DOT (W) STRIPE
- B 4" BRK (W) STRIPE W/ TY I-C @ 40'
- C 4" SLD (W) STRIPE
- D 4" SLD (Y) STRIPE
- E 8" DOT (W) LANE LINE
- F 8" SLD (W) STRIPE W/ TY I-C @ 20'
- G 24" SLD (W) CROSSWALK
- H 24" SLD (W) STOP BAR
- I WHITE ARROW
- J WHITE WORD
- K REMOVE PAV MRK (4")
- L REMOVE PAV MRK (8")
- M REMOVE PAV MRK (24")
- N REMOVE PAV MRK (ARROW)
- O REMOVE PAV MRK (WORD)
- ← TRAFFIC FLOW ARROWS
- ⊙ PROPOSED SIGN
- 1-1 SIGN DESIGNATION PROPOSED TRAFFIC SIGNAL LANE SIGN

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	133

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Traffic\113501\_SanPedro\_PM02.dgn



ITEM	DESCRIPTION	UNIT	QTY
0644-6001	IN SM RD SN SUP&M TY10BWG(1)SA(P)	EA	1
0666-6030	REFL PAV MRK TY I (W)8" (DOT) (100MIL)	LF	18
0666-6036	REFL PAV MRK TY I (W)8" (SLD) (100MIL)	LF	200
0666-6048	REFL PAV MRK TY I (W)24" (SLD) (100MIL)	LF	63
0666-6078	REFL PAV MRK TY I (W) (WORD) (100MIL)	EA	1
0666-6224	PAVEMENT SEALER 4"	LF	251
0666-6226	PAVEMENT SEALER 8"	LF	218
0666-6230	PAVEMENT SEALER 24"	LF	63
0666-6232	PAVEMENT SEALER (WORD)	EA	1
0666-6300	RE PM W/RET REQ TY I (W)4" (BRK) (100MIL)	LF	120
0666-6315	RE PM W/RET REQ TY I (Y)4" (SLD) (100MIL)	LF	131
0672-6007	REFL PAV MRKR TY I-C	EA	22
0677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	300
0677-6003	ELIM EXT PAV MRK & MRKS (8")	LF	233
0677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA	1
0677-6012	ELIM EXT PAV MRK & MRKS (WORD)	EA	1
0678-6001	PAV SURF PREP FOR MRK (4")	LF	251
0678-6004	PAV SURF PREP FOR MRK (8")	LF	218
0678-6008	PAV SURF PREP FOR MRK (24")	LF	63
0678-6016	PAV SURF PREP FOR MRK (WORD)	EA	1

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

PAVEMENT MARKINGS LEGEND

- A 4" DOT (W) STRIPE
- B 4" BRK (W) STRIPE
- C 4" SLD (W) STRIPE
- D 4" SLD (Y) STRIPE
- E 8" DOT (W) LANE LINE
- F 8" SLD (W) STRIPE
- G 24" SLD (W) CROSSWALK
- H 24" SLD (W) STOP BAR
- I WHITE ARROW
- J WHITE WORD
- K REMOVE PAV MRK (4")
- L REMOVE PAV MRK (8")
- M REMOVE PAV MRK (24")
- N REMOVE PAV MRK (ARROW)
- O REMOVE PAV MRK (WORD)
- ← TRAFFIC FLOW ARROWS
- ⊙ PROPOSED SIGN
- 1-1 SIGN DESIGNATION
- PROPOSED TRAFFIC SIGNAL LANE SIGN

SCALE: PLAN 1" = 20'  
 SCALE: PLAN 1" = 30'

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



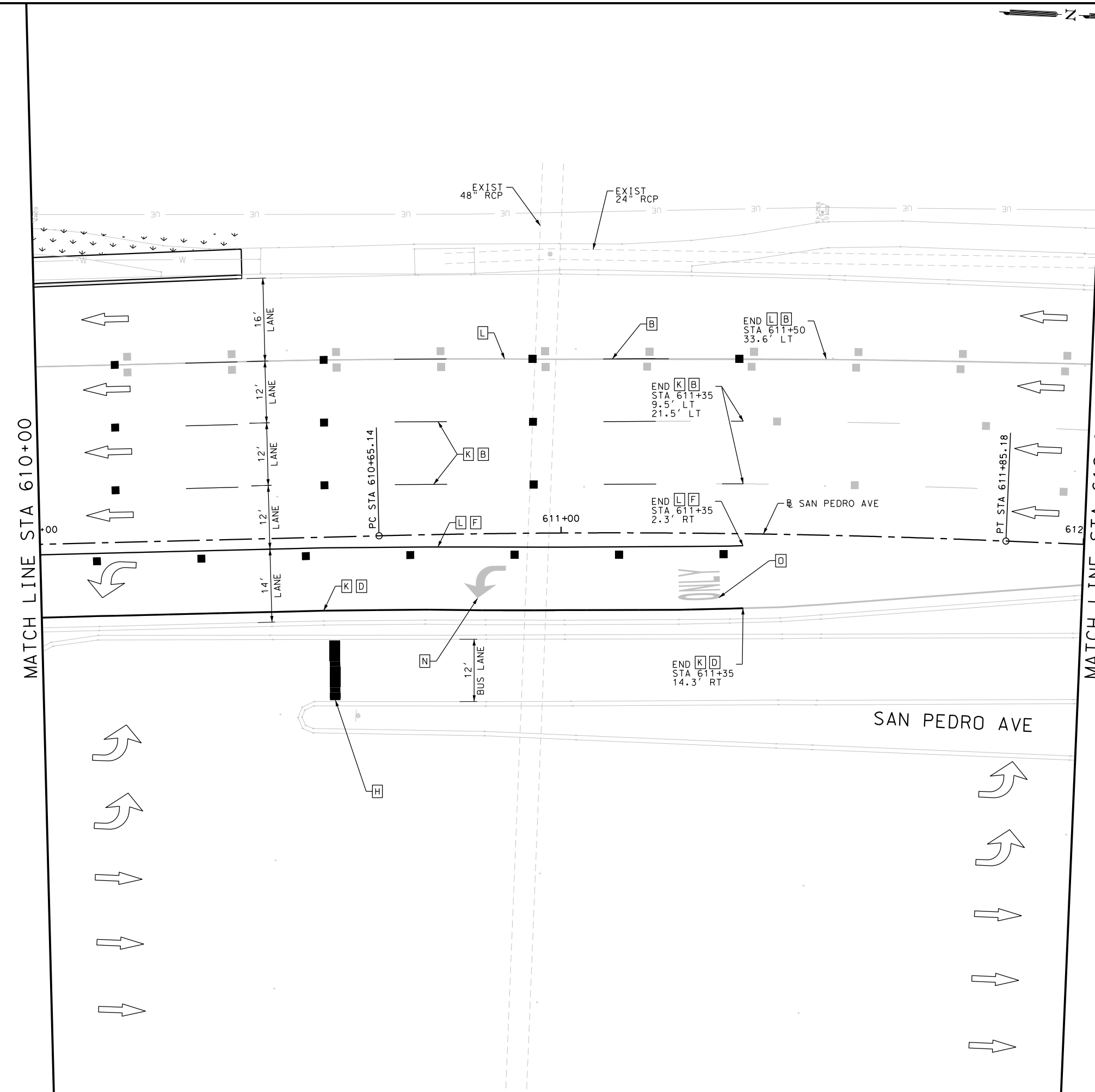
SAN PEDRO AVE  
 TRANSIT CENTER  
 SIGNING AND  
 PAVEMENT MARKING  
 STA 608+00 TO STA 610+00

SHEET 2 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.
CHK DGN:	6	TEXAS		VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.
				586
				SHEET NO.
				134

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Traffic\1113501\_SanPedro\_PM03.dgn



ITEM	DESCRIPTION	UNIT	QTY
0666-6036	REFL PAV MRK TY I (W)8" (SLD) (100MIL)	LF	135
0666-6048	REFL PAV MRK TY I (W)24" (SLD) (100MIL)	LF	12
0666-6224	PAVEMENT SEALER 4"	LF	235
0666-6226	PAVEMENT SEALER 8"	LF	135
0666-6230	PAVEMENT SEALER 24"	LF	12
0666-6300	RE PM W/RET REQ TY I (W)4" (BRK) (100MIL)	LF	100
0666-6315	RE PM W/RET REQ TY I (Y)4" (SLD) (100MIL)	LF	135
0672-6007	REFL PAV MRKR TY I-C	EA	17
0677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	195
0677-6003	ELIM EXT PAV MRK & MRKS (8")	LF	287
0677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA	1
0677-6012	ELIM EXT PAV MRK & MRKS (WORD)	EA	1
0678-6001	PAV SURF PREP FOR MRK (4")	LF	235
0678-6004	PAV SURF PREP FOR MRK (8")	LF	135
0678-6008	PAV SURF PREP FOR MRK (24")	LF	12

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

PAVEMENT MARKINGS LEGEND

- A 4" DOT (W) STRIPE
- B 4" BRK (W) STRIPE
- C 4" SLD (W) STRIPE
- D 4" SLD (Y) STRIPE
- E 8" DOT (W) LANE LINE
- F 8" SLD (W) STRIPE
- G W/ TY I-C @ 20'
- H 24" SLD (W) CROSSWALK
- I 24" SLD (W) STOP BAR
- J WHITE ARROW
- K WHITE WORD
- L REMOVE PAV MRK (4")
- M REMOVE PAV MRK (8")
- N REMOVE PAV MRK (24")
- O REMOVE PAV MRK (ARROW)
- P REMOVE PAV MRK (WORD)
- Q TRAFFIC FLOW ARROWS
- R PROPOSED SIGN
- S SIGN DESIGNATION
- T PROPOSED TRAFFIC SIGNAL LANE SIGN

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



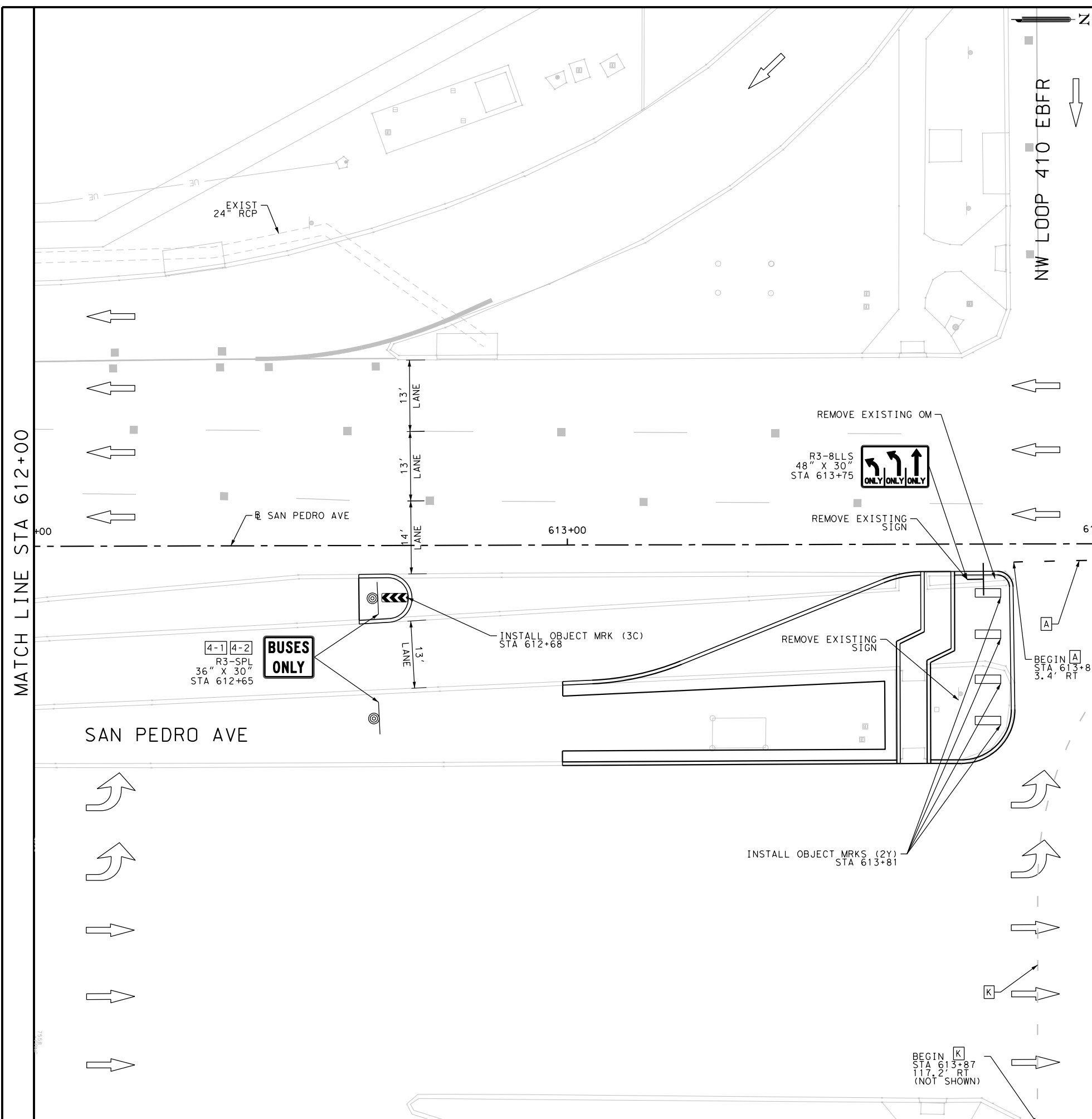
SAN PEDRO AVE  
 TRANSIT CENTER  
 SIGNING AND  
 PAVEMENT MARKING  
 STA 610+00 TO STA 612+00

SHEET 3 OF 6

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	135

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Traffic\1113501\_SanPedro\_PM04.dgn



ITEM	DESCRIPTION	UNIT	QTY
0644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	2
0644-6076	REMOVE SM RD SN SUP&AM	EA	1
0658-6047	INSTL OM ASSM (OM-2Y) (WC)GND	EA	4
0658-6058	INSTL OM ASSM (OM-3C) (FLX)SRF	EA	1
0658-6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	1
0666-6006	REFL PAV MRK TY I (W)4" (DOT) (100MIL)	LF	10
0666-6224	PAVEMENT SEALER 4"	LF	10
0677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	48
0678-6001	PAV SURF PREP FOR MRK (4")	LF	10
0690-6027	REMOVAL OF SIGNAL RELATED SIGNS	EA	1
0690-6029	INSTALL OF SIGNAL RELATED SIGNS	EA	1

NOTES:  
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DESIGN  
 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'  
 SCALE: PLAN 1" = 30'

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



SAN PEDRO AVE  
 TRANSIT CENTER  
 SIGNING AND  
 PAVEMENT MARKING  
 STA 612+00 TO STA 614+00

SHEET 4 OF 6

PAVEMENT MARKINGS LEGEND

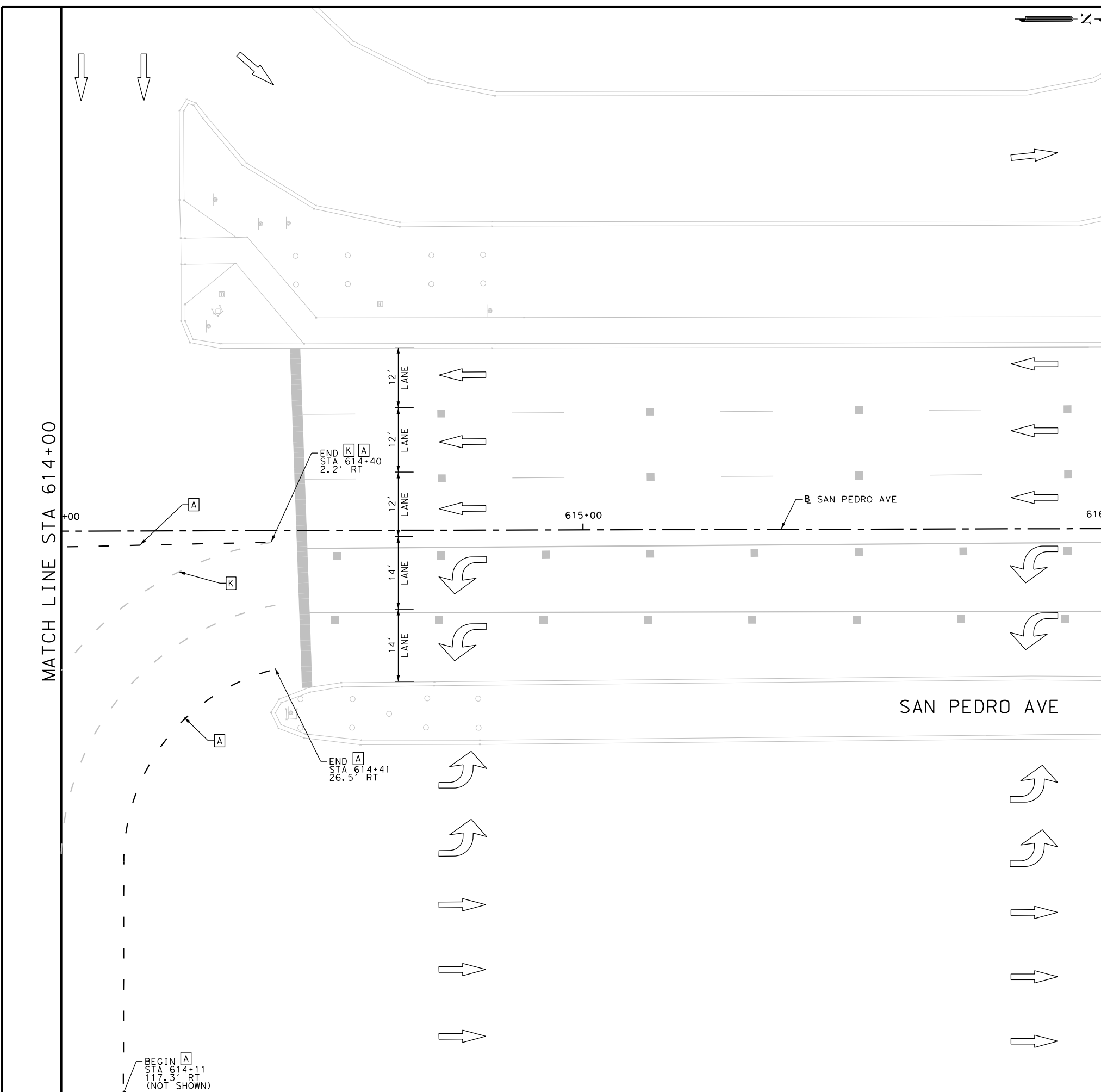
- A 4" DOT (W) STRIPE
- B 4" BRK (W) STRIPE
- C 4" SLD (W) STRIPE
- D 4" SLD (Y) STRIPE
- E 8" DOT (W) LANE LINE
- F 8" SLD (W) STRIPE
- G 24" SLD (W) CROSSWALK
- H 24" SLD (W) STOP BAR
- I WHITE ARROW
- J WHITE WORD
- K REMOVE PAV MRK (4")
- L REMOVE PAV MRK (8")
- M REMOVE PAV MRK (24")
- N REMOVE PAV MRK (ARROW)
- O REMOVE PAV MRK (WORD)
- TRAFFIC FLOW ARROWS
- PROPOSED SIGN
- 1-1 SIGN DESIGNATION
- PROPOSED TRAFFIC SIGNAL LANE SIGN

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	136



Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Traffic\113501\_SanPedro\_PM05.dgn



ITEM	DESCRIPTION	UNIT	QTY
0666-6006	REFL PAV MRK TY I (W) 4" (DOT) (100MIL)	LF	76
0666-6224	PAVEMENT SEALER 4"	LF	76
0677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	26
0678-6001	PAV SURF PREP FOR MRK (4")	LF	76

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

PAVEMENT MARKINGS LEGEND

- A 4" DOT (W) STRIPE
- B 4" BRK (W) STRIPE
- C 4" SLD (W) STRIPE
- D 4" SLD (Y) STRIPE
- E 8" DOT (W) LANE LINE
- F 8" SLD (W) STRIPE
- G 24" SLD (W) CROSSWALK
- H 24" SLD (W) STOP BAR
- I WHITE ARROW
- J WHITE WORD
- K REMOVE PAV MRK (4")
- L REMOVE PAV MRK (8")
- M REMOVE PAV MRK (24")
- N REMOVE PAV MRK (ARROW)
- O REMOVE PAV MRK (WORD)
- ← TRAFFIC FLOW ARROWS
- ⊙ PROPOSED SIGN
- I-1 SIGN DESIGNATION
- ⊥ PROPOSED TRAFFIC SIGNAL LANE SIGN

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



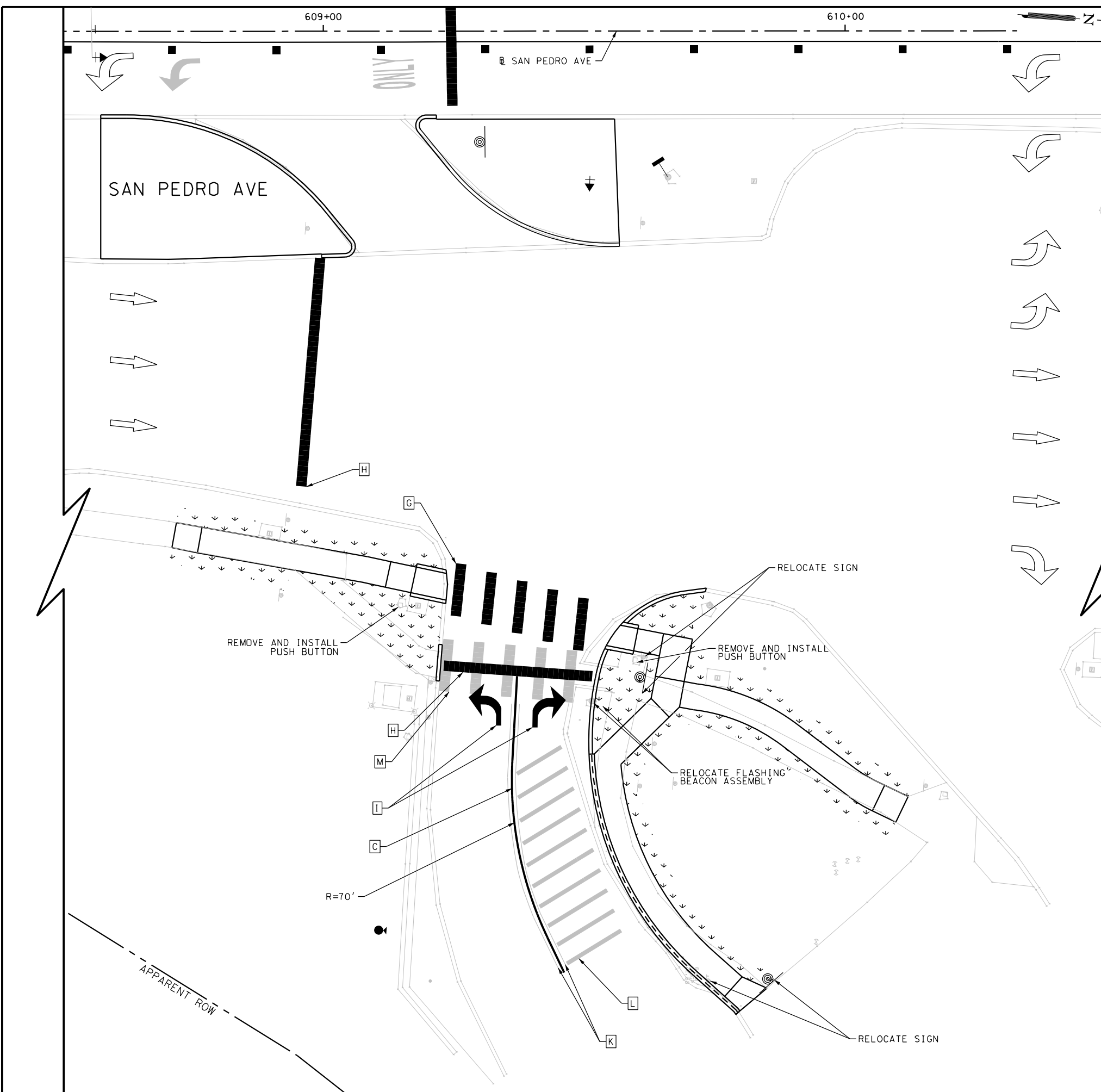
SAN PEDRO AVE  
 TRANSIT CENTER  
 SIGNING AND  
 PAVEMENT MARKING  
 STA 614+00 TO STA 616+00

SHEET 5 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	137

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Traffic\113501\_SanPedro\_PM06.dgn



ITEM	DESCRIPTION	UNIT	QTY
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	2
0666-6048	REFL PAV MRK TY I (W) 24" (SLD) (100MIL)	LF	123
0666-6054	REFL PAV MRK TY I (W) (ARROW) (100MIL)	EA	2
0666-6224	PAVEMENT SEALER 4"	LF	52
0666-6230	PAVEMENT SEALER 24"	LF	123
0666-6231	PAVEMENT SEALER (ARROW)	EA	2
0666-6303	RE PM W/RET REQ TY I (W) 4" (SLD) (100MIL)	LF	52
0677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	105
0677-6003	ELIM EXT PAV MRK & MRKS (8")	LF	125
0677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	50
0678-6001	PAV SURF PREP FOR MRK (4")	LF	52
0678-6008	PAV SURF PREP FOR MRK (24")	LF	123
0678-6009	PAV SURF PREP FOR MRK (ARROW)	EA	2
0685-6002	RELOCATE RDS FLASH BEACON ASSEMBLY	EA	1
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	2
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	2

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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

PAVEMENT MARKINGS LEGEND

- A 4" DOT (W) STRIPE
- B 4" BRK (W) STRIPE W/ TY I-C @ 40'
- C 4" SLD (W) STRIPE
- D 4" SLD (Y) STRIPE
- E 8" DOT (W) LANE LINE
- F 8" SLD (W) STRIPE W/ TY I-C @ 20'
- G 24" SLD (W) CROSSWALK
- H 24" SLD (W) STOP BAR
- I WHITE ARROW
- J WHITE WORD
- K REMOVE PAV MRK (4")
- L REMOVE PAV MRK (8")
- M REMOVE PAV MRK (24")
- N REMOVE PAV MRK (ARROW)
- O REMOVE PAV MRK (WORD)
- TRAFFIC FLOW ARROWS
- PROPOSED SIGN
- 1-1 SIGN DESIGNATION
- PROPOSED TRAFFIC SIGNAL LANE SIGN

SCALE: PLAN 1" = 20'  
 SCALE: PLAN 1" = 30'

REV. NO.	DATE	DESCRIPTION	BY

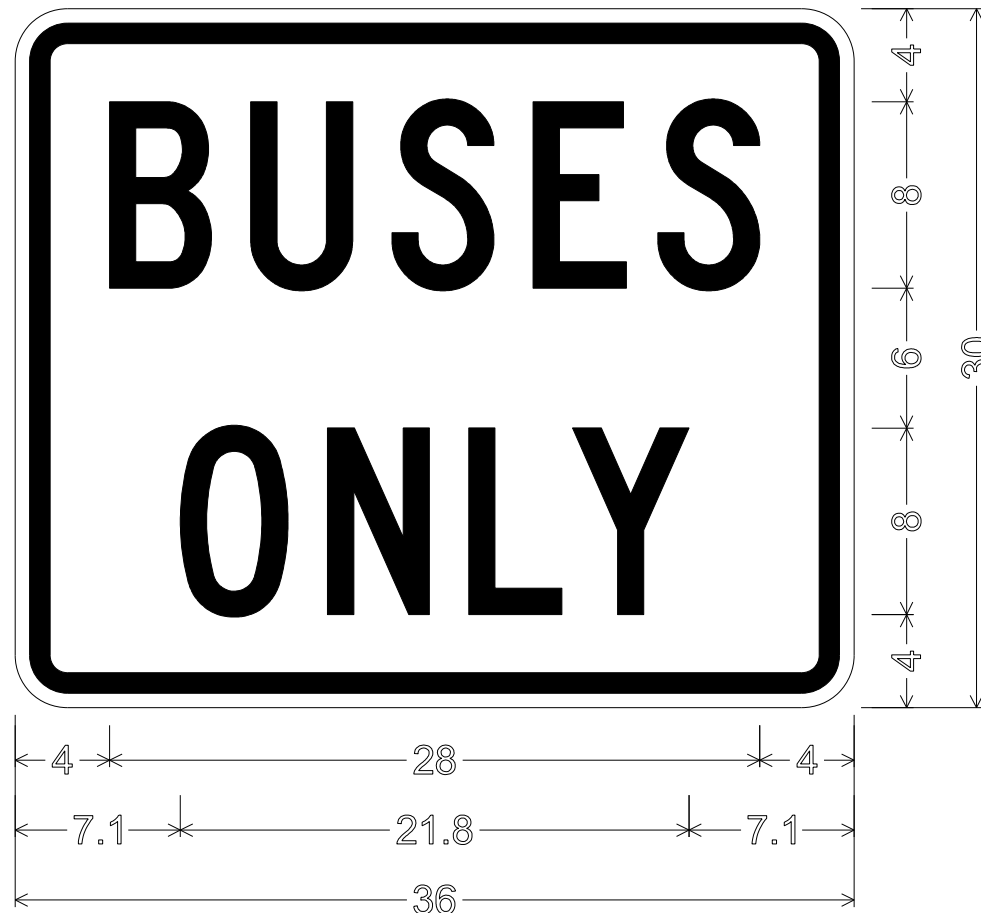
**Pape-Dawson Engineers**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



SAN PEDRO AVE  
 TRANSIT CENTER  
 SIGNING AND  
 PAVEMENT MARKING  
 VIA ENTRANCE DETAIL

SHEET 6 OF 6

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	138



R3-SPL\_36x30;

2.3" Radius, 0.9" Border, 0.6" Indent, Black on White;

"BUSES" C; "ONLY" C;

DESIGN

INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JOHN A. TYLER  
P.E. SERIAL NO: 105193  
DATE: 9/29/2017

REVIEW AND APPROVAL

INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JAMES A. LUTZ  
P.E. SERIAL NO: 84722  
DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY



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



SAN PEDRO AVE  
TRANSIT CENTER

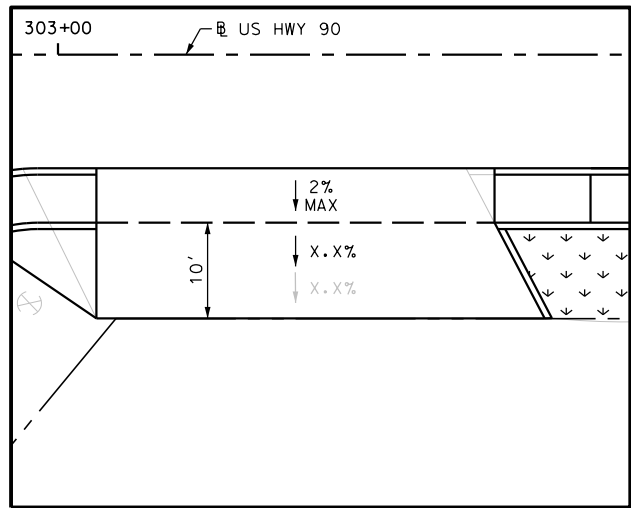
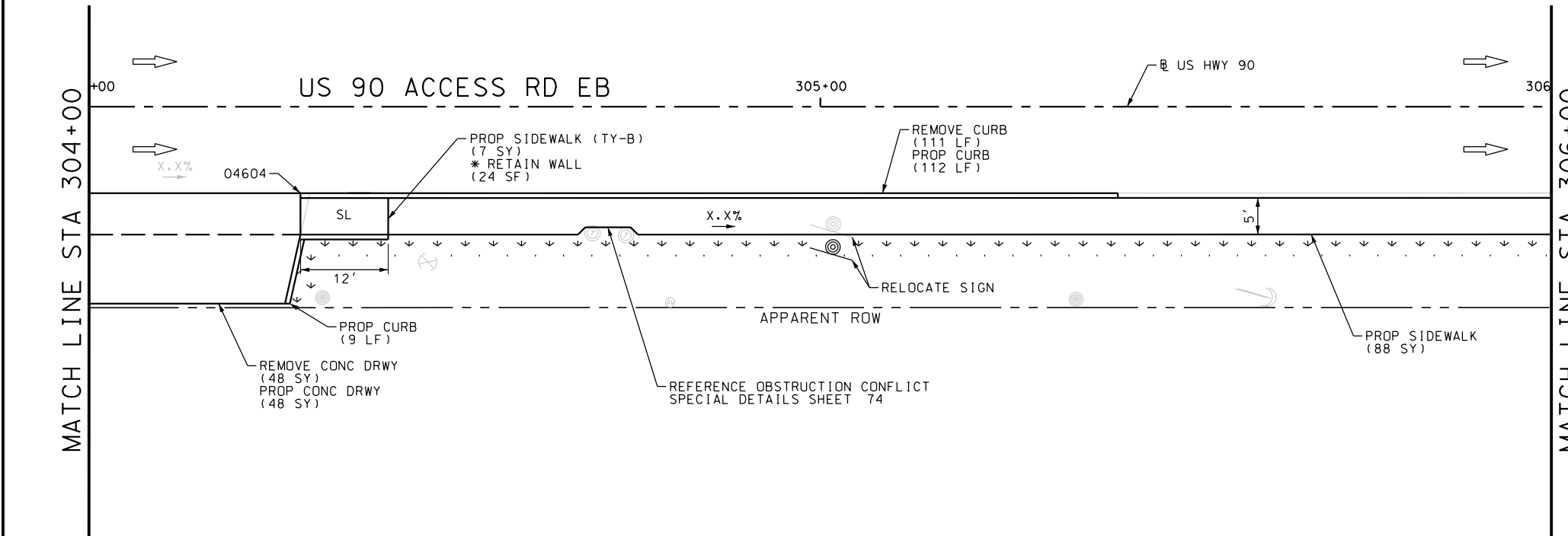
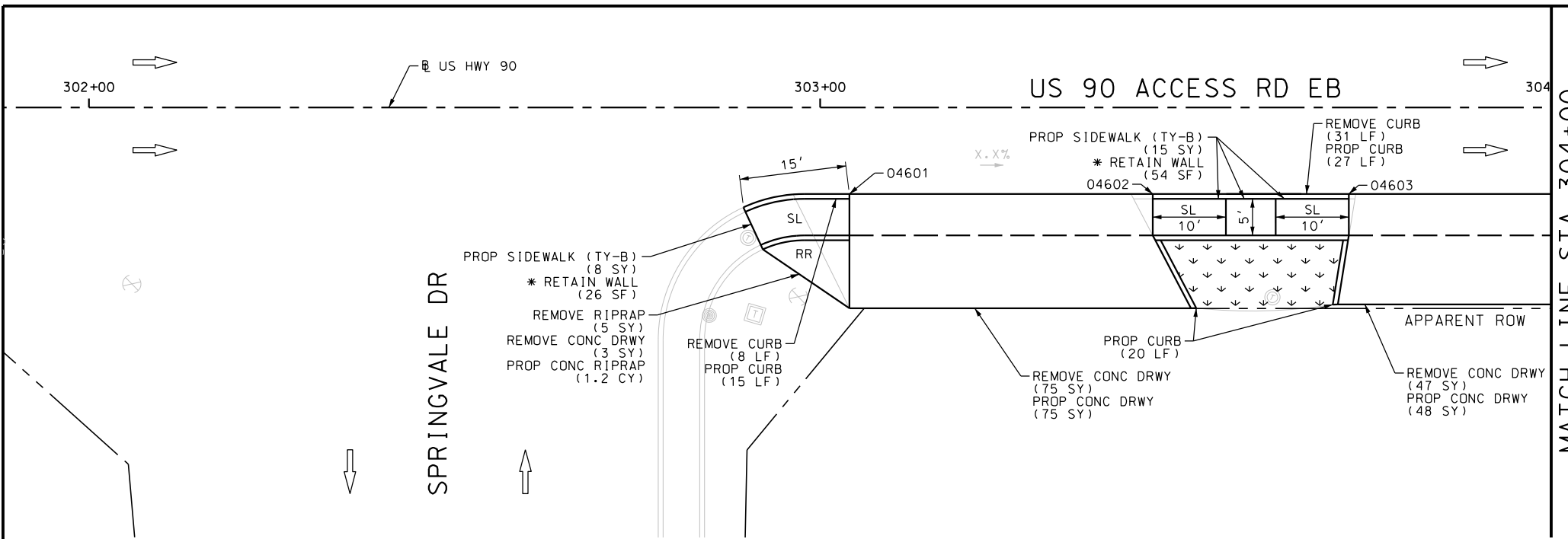
SIGNING DETAILS

SHEET 1 OF 1

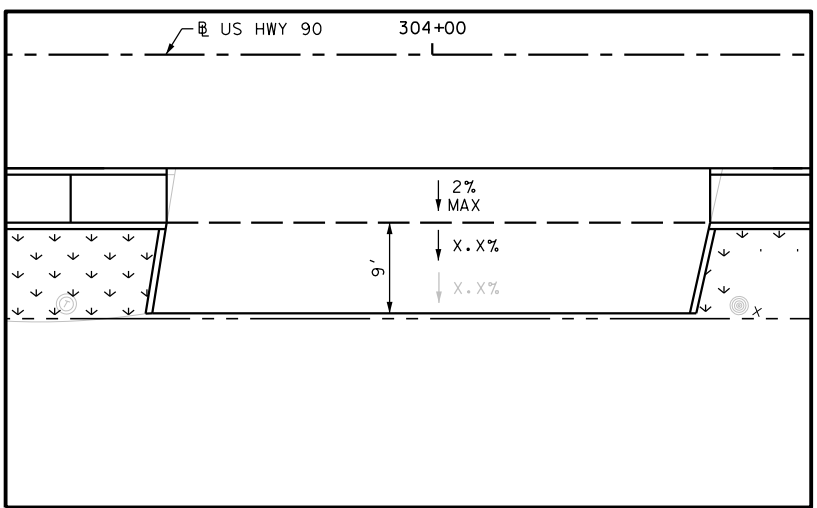
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	139

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\US 90\1113501-Hwy90-EB-01.dgn



DRWY PLAN STA 303+28



DRWY PLAN STA 303+98

ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	5
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	173
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	150
0162-6002	BLOCK SODDING	SY	81
0168-6001	VEGETATIVE WATERING	MG	1.26
0432-6003	RIPRAP (CONC) (6 IN)	CY	1.2
0529-6002	CONC CURB (TY II)	LF	183
0530-6004	DRIVEWAYS (CONC)	SY	171
0531-6001	CONC SIDEWALKS (4")	SY	88
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	30
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

NOTES:  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



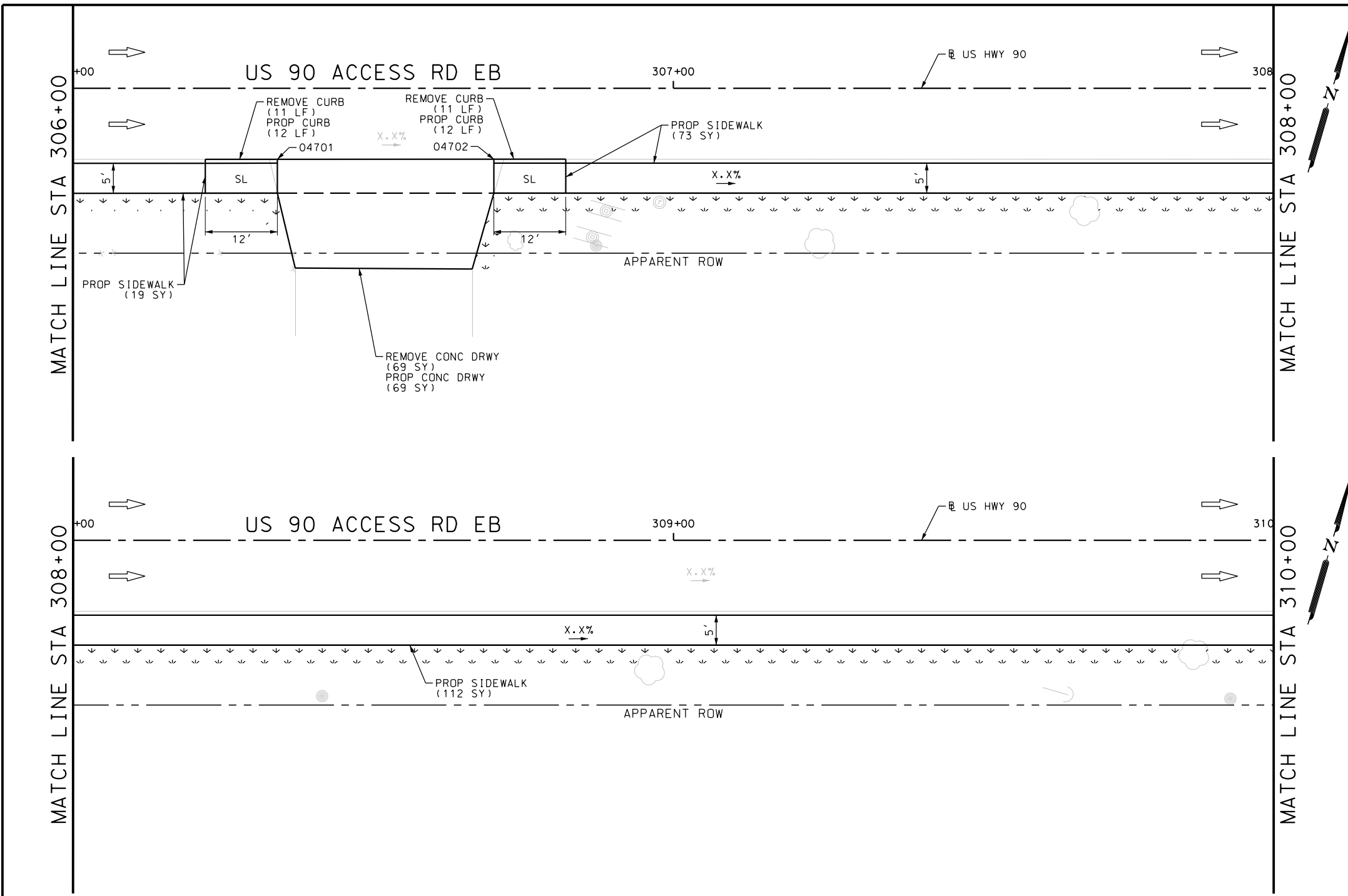
US HIGHWAY 90  
 ACCESS ROAD EASTBOUND  
**SIDEWALK CONSTRUCTION PLAN**  
 BEGIN TO STA 306+00

SHEET 1 OF 9

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	140

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_EB\_02.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	69
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	22
0162-6002	BLOCK SODDING	SY	56
0168-6001	VEGETATIVE WATERING	MG	0.87
0529-6002	CONC CURB (TY II)	LF	24
0530-6004	DRIVEWAYS (CONC)	SY	69
0531-6001	CONC SIDEWALKS (4")	SY	204

NOTES:  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

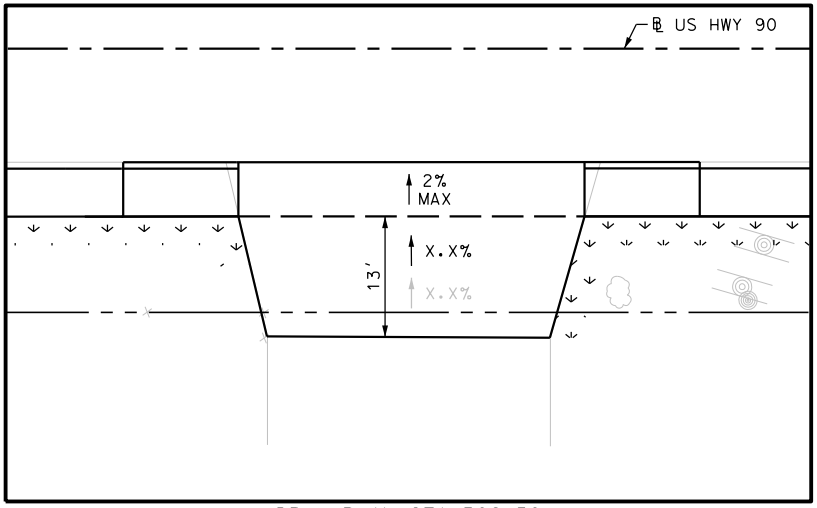
**PAPE-DAWSON ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



US HIGHWAY 90  
 ACCESS ROAD EASTBOUND  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 306+00 TO STA 310+00

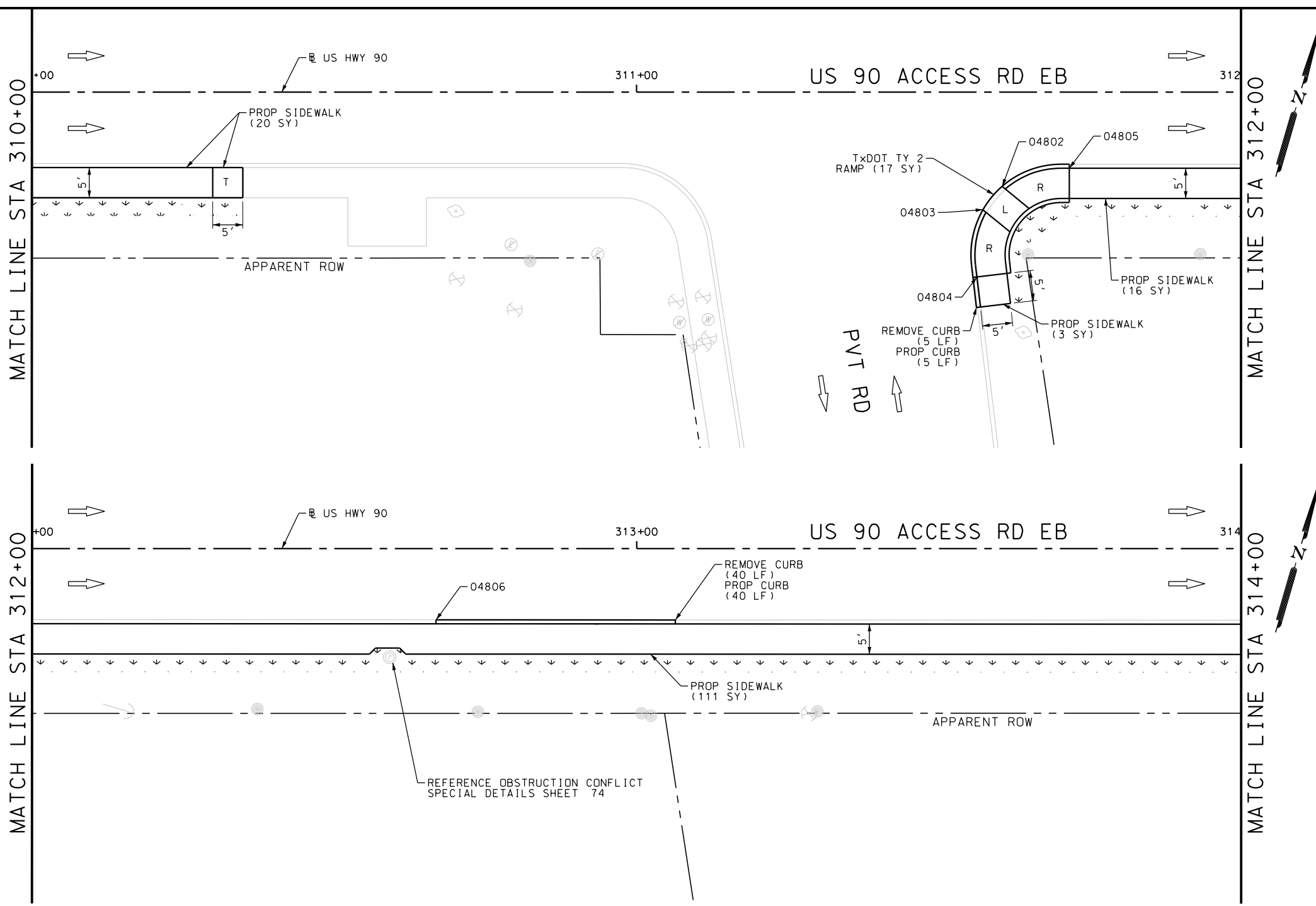
SHEET 2 OF 9

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	141



Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_EB\_03.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	45
0162-6002	BLOCK SODDING	SY	94
0168-6001	VEGETATIVE WATERING	MG	1.47
0529-6002	CONC CURB (TY II)	LF	45
0531-6001	CONC SIDEWALKS (4")	SY	150
0531-6019	CURB RAMPS (TY 2)	SY	17

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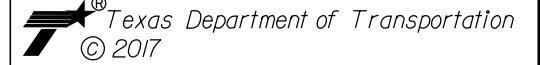
DESIGN  
**INTERIM REVIEW**  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



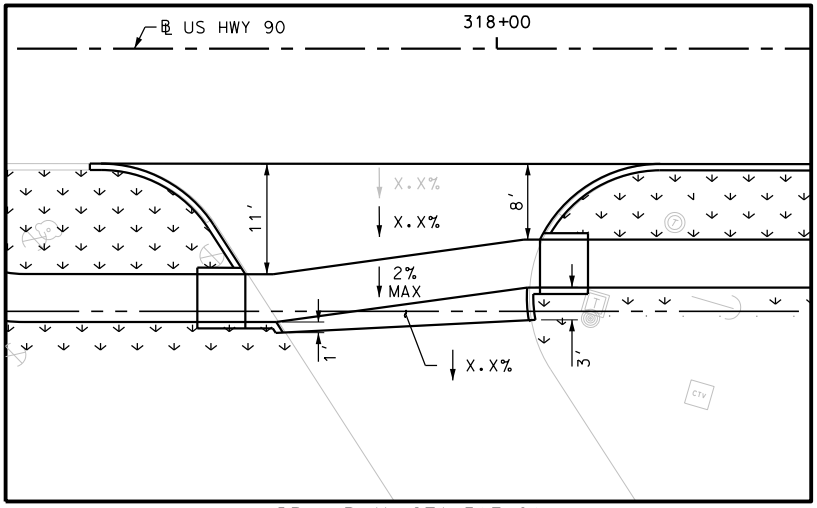
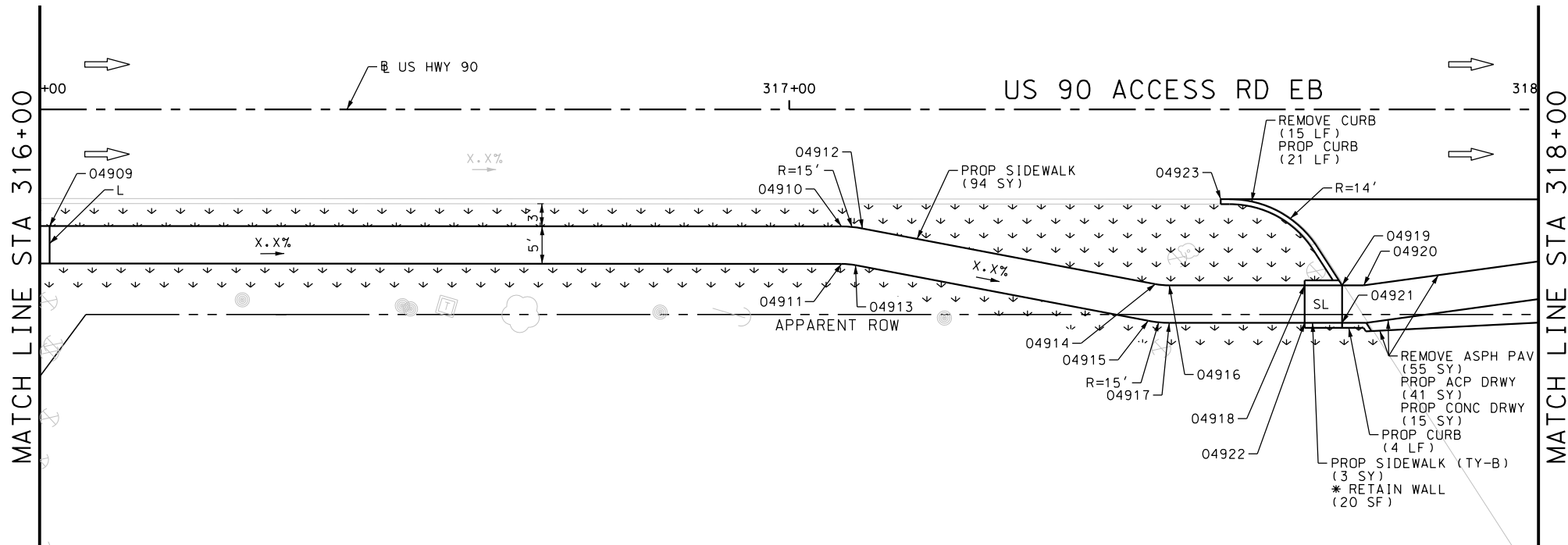
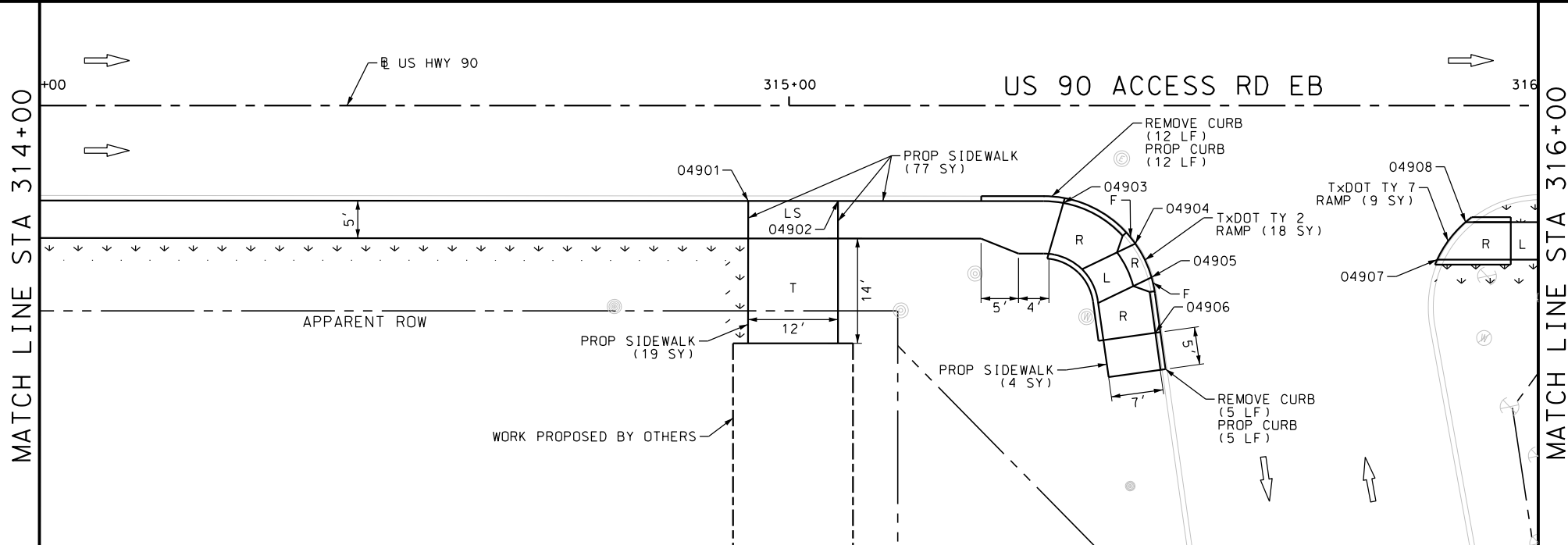
US HIGHWAY 90  
 ACCESS ROAD EASTBOUND  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 310+00 TO STA 314+00

SHEET 3 OF 9

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	142

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_EB\_04.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	32
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	55
0162-6002	BLOCK SODDING	SY	155
0168-6001	VEGETATIVE WATERING	MG	2.42
0529-6002	CONC CURB (TY II)	LF	42
0530-6004	DRIVEWAYS (CONC)	SY	15
0530-6005	DRIVEWAYS (ACP)	SY	41
0531-6001	CONC SIDEWALKS (4")	SY	194
0531-6019	CURB RAMPS (TY 2)	SY	18
0531-6024	CURB RAMPS (TY 7)	SY	9
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	3

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
 © 2017

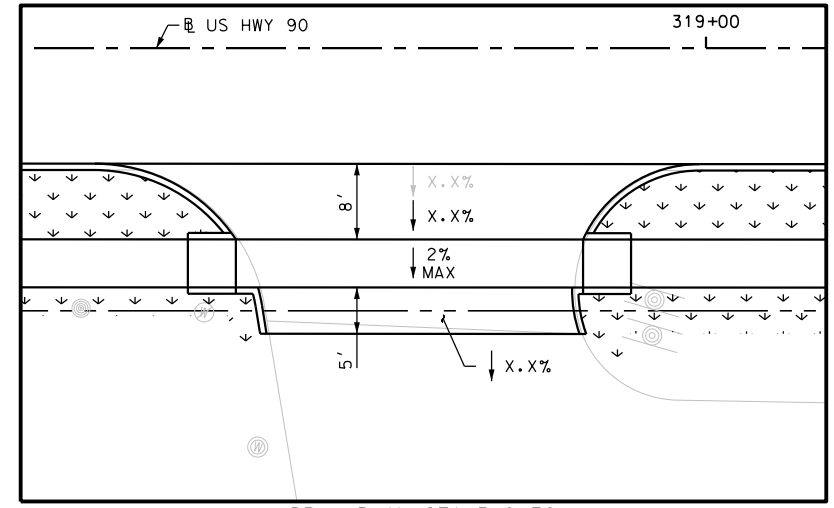
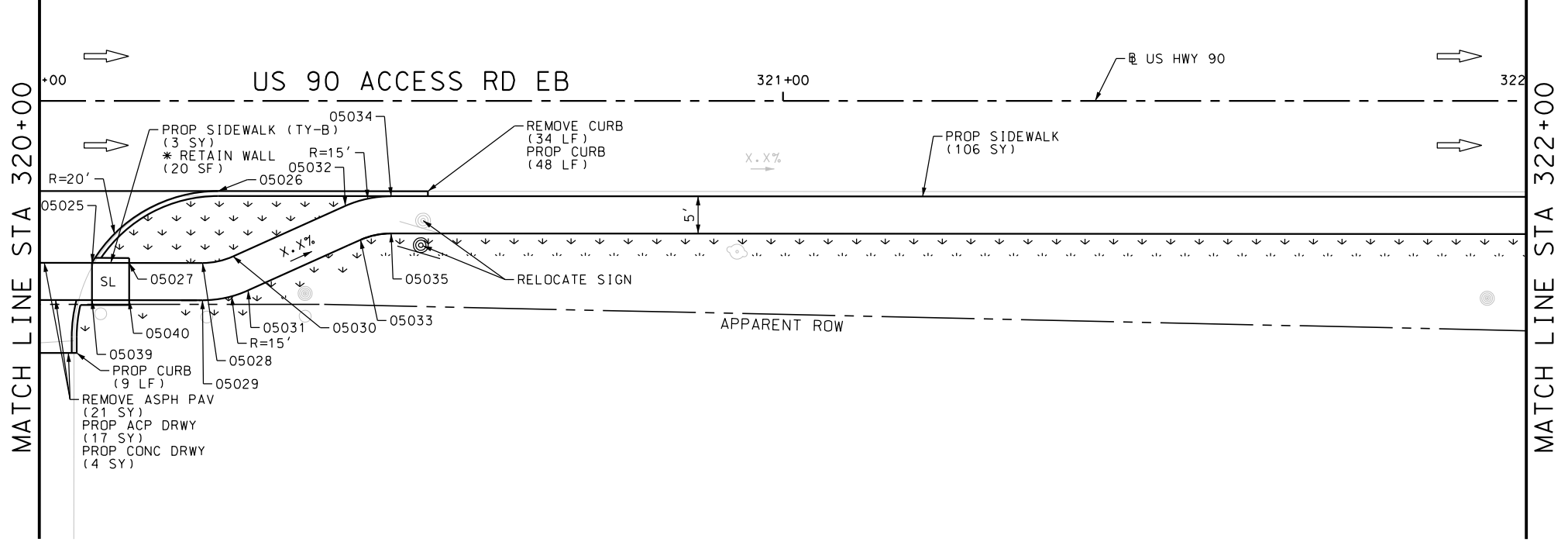
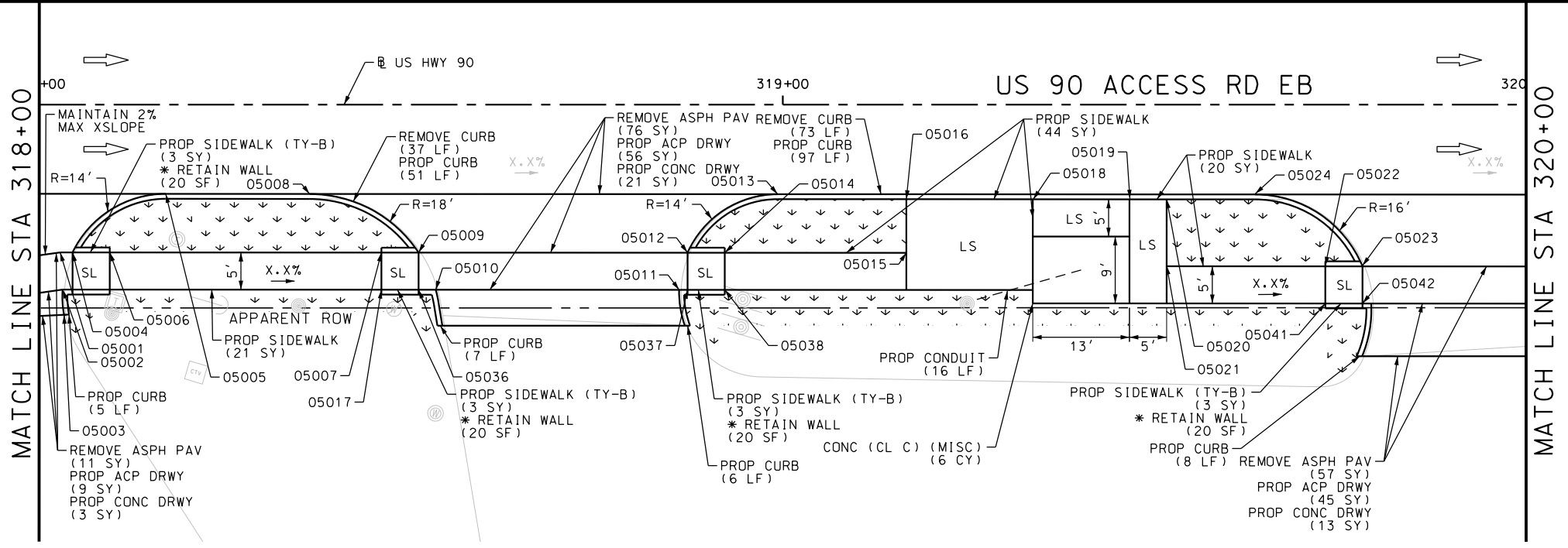
US HIGHWAY 90  
 ACCESS ROAD EASTBOUND  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 314+00 TO STA 318+00

SHEET 4 OF 9

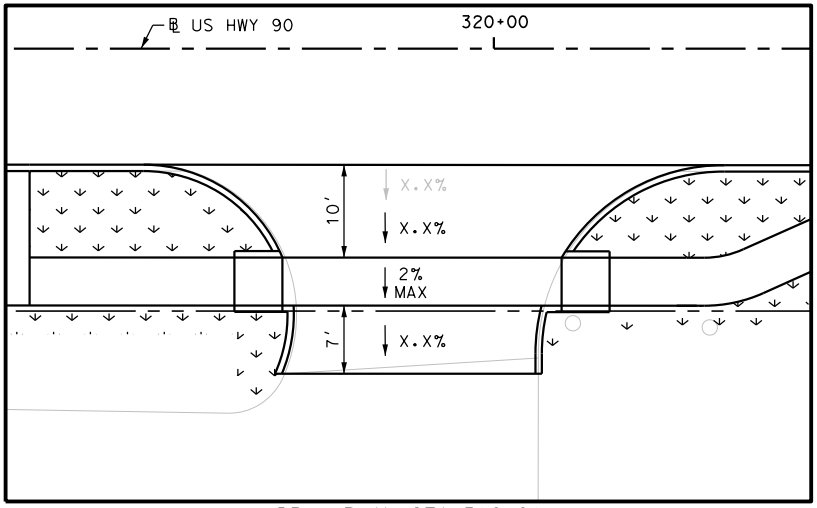
DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	143

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_EB\_05.dgn



DRWY PLAN STA 318+70



DRWY PLAN STA 319+91

ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	144
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	165
0162-6002	BLOCK SODDING	SY	232
0168-6001	VEGETATIVE WATERING	MG	3.62
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	231
0530-6004	DRIVEWAYS (CONC)	SY	41
0530-6005	DRIVEWAYS (ACP)	SY	127
0531-6001	CONC SIDEWALKS (4")	SY	191
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	15
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	16
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

NOTES:  
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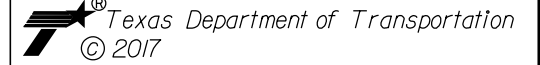
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US HIGHWAY 90  
 ACCESS ROAD EASTBOUND  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 318+00 TO STA 322+00

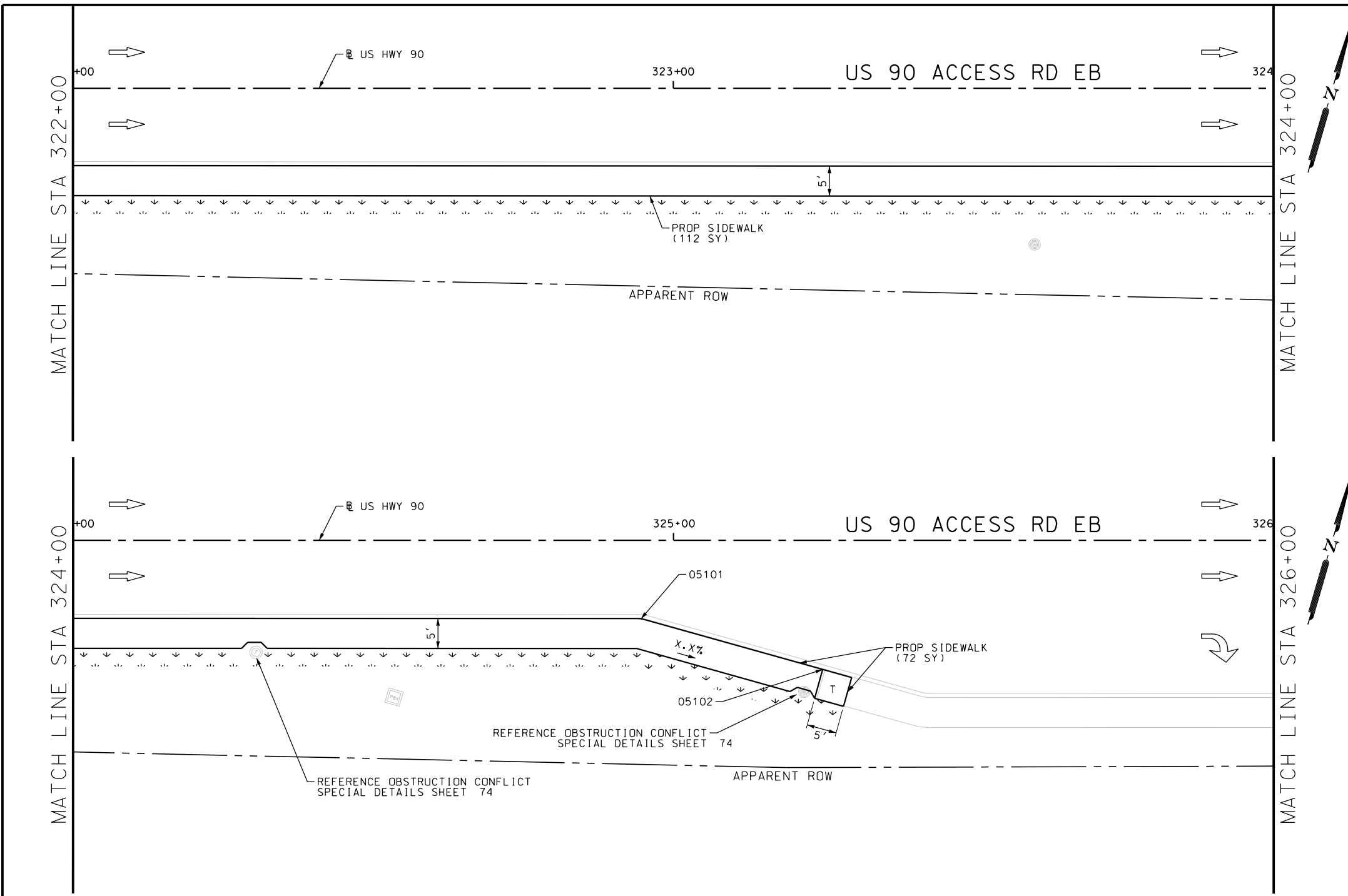
SHEET 5 OF 9

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	144



Plotted on: 9/29/2017

Design File name: P:\1111\35\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_EB\_06.dgn



ITEM	DESCRIPTION	UNIT	QTY
0162-6002	BLOCK SODDING	SY	110
0168-6001	VEGETATIVE WATERING	MG	1.72
0531-6001	CONC SIDEWALKS (4")	SY	184

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US HIGHWAY 90  
 ACCESS ROAD EASTBOUND  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 322+00 TO STA 326+00

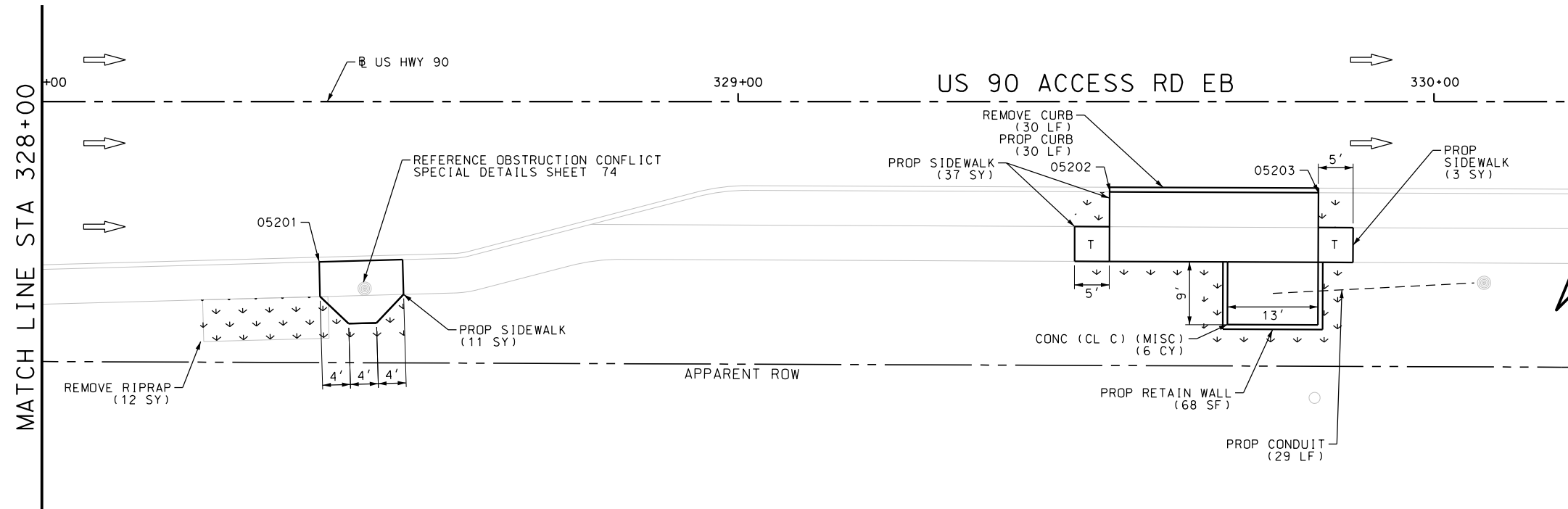
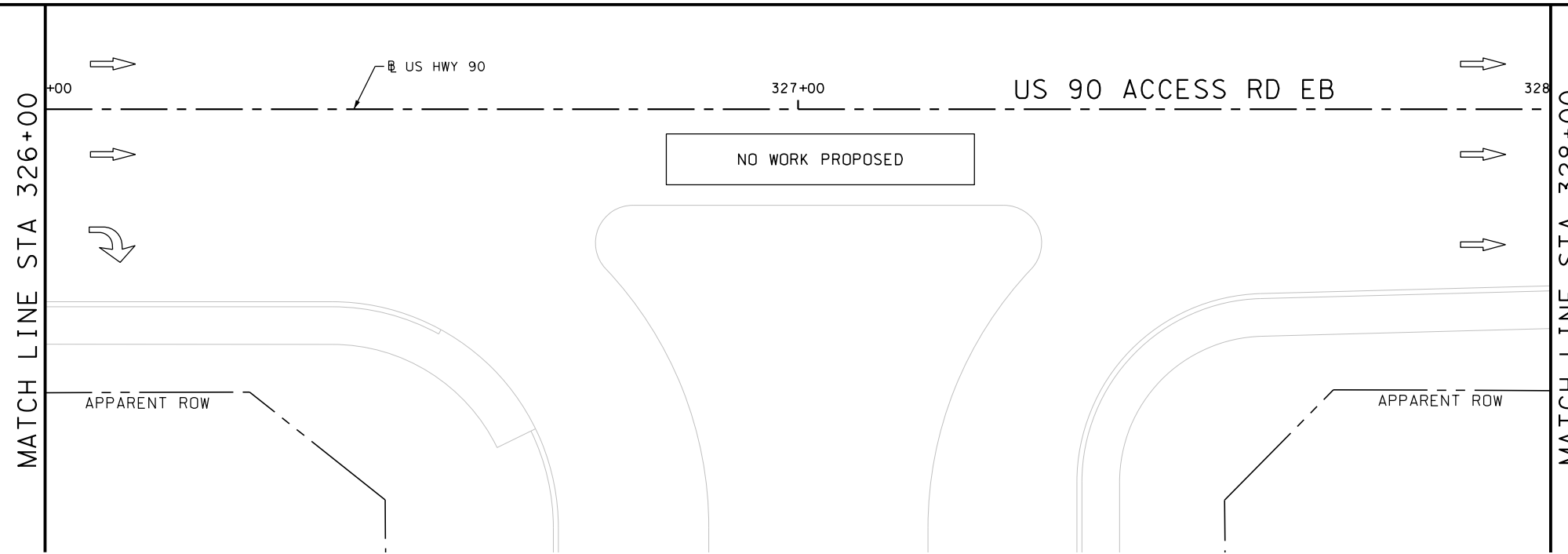
SHEET 6 OF 9

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	145

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_EB\_07.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	12
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	30
0162-6002	BLOCK SODDING	SY	44
0168-6001	VEGETATIVE WATERING	MG	0.69
0420-6074	CL C CONC (MISC)	CY	6.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	68
0529-6002	CONC CURB (TY II)	LF	30
0531-6001	CONC SIDEWALKS (4")	SY	51
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	29



NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



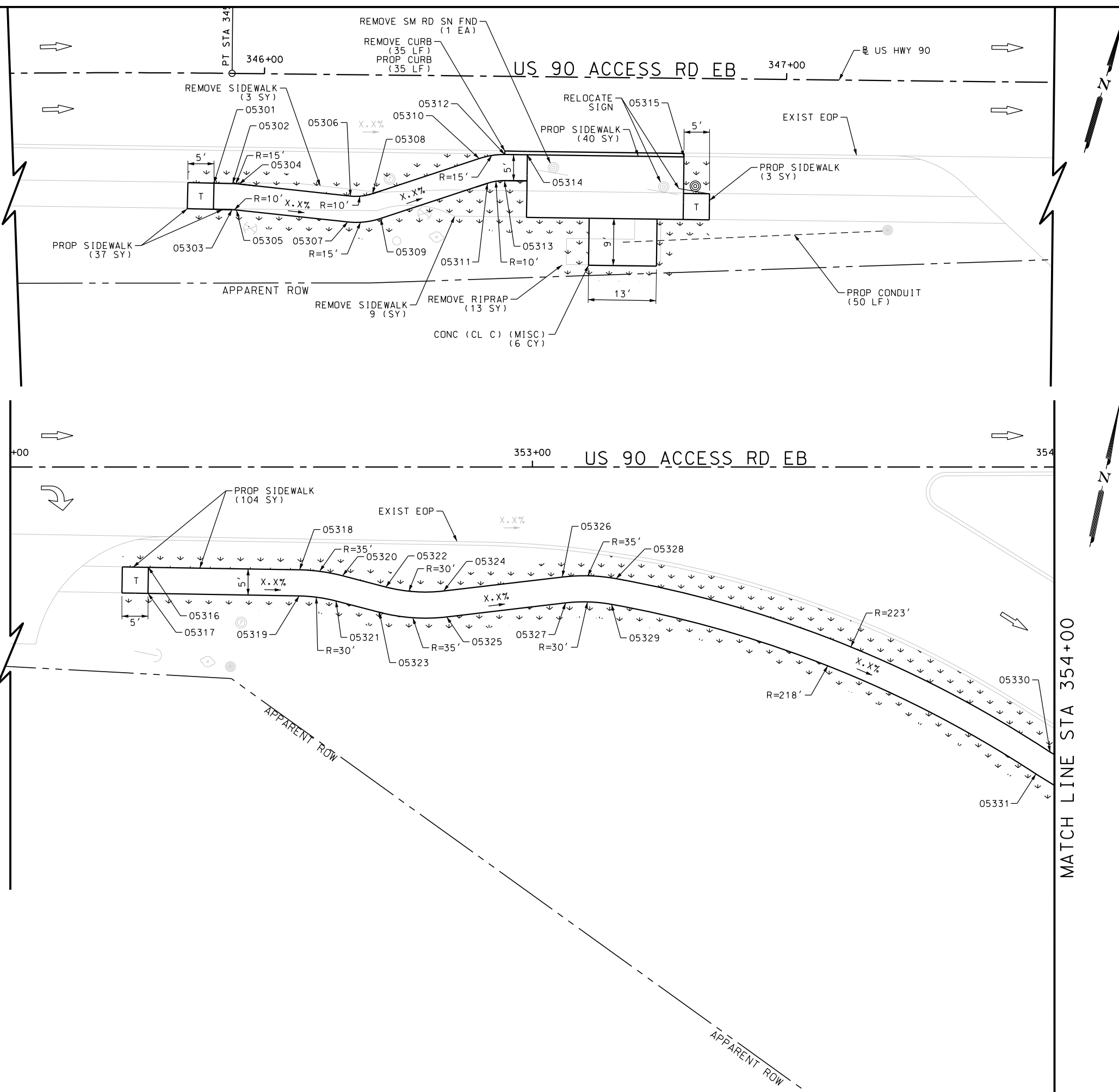
US HIGHWAY 90  
 ACCESS ROAD EASTBOUND  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 326+00 TO STA 330+20

SHEET 7 OF 9

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	146

Plotted on: 9/29/2017

Design File name: P:\1111\35\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_EB\_08.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	13
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	35
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	12
0162-6002	BLOCK SODDING	SY	220
0168-6001	VEGETATIVE WATERING	MG	3.43
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	35
0531-6001	CONC SIDEWALKS (4")	SY	184
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	50
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1
0644-6076	REMOVE SM RD SN SUP&AM	EA	1

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



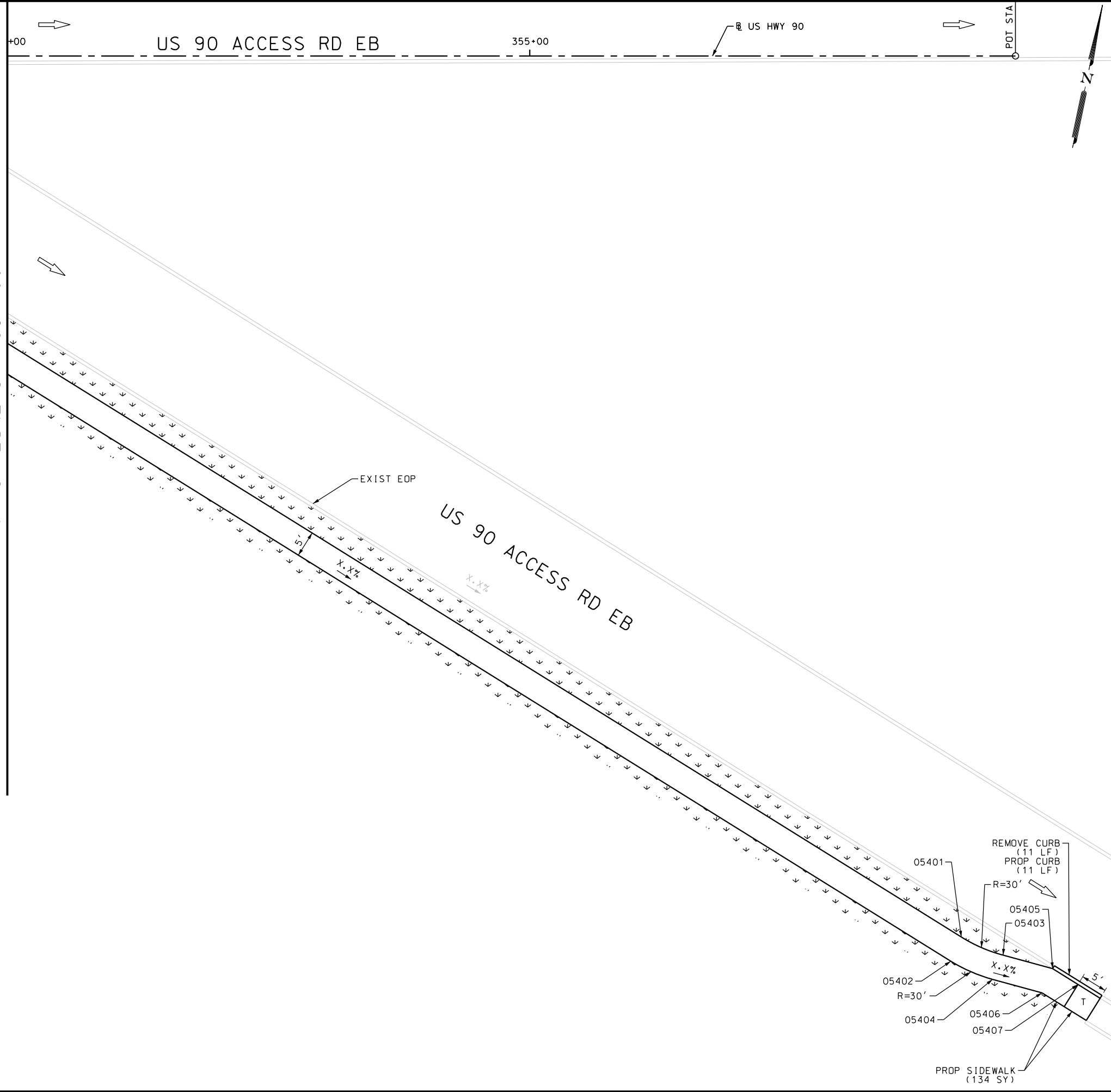
US HIGHWAY 90  
 ACCESS ROAD EASTBOUND  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 345+00 TO 354+00

SHEET 8 OF 9

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	147

Plotted on: 9/29/2017

Design File name: P:\1111\35\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_EB\_09.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	11
0162-6002	BLOCK SODDING	SY	182
0168-6001	VEGETATIVE WATERING	MG	2.84
0529-6002	CONC CURB (TY II)	LF	11
0531-6001	CONC SIDEWALKS (4")	SY	134

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US HIGHWAY 90  
 ACCESS ROAD EASTBOUND  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 354+00 TO END PROJECT

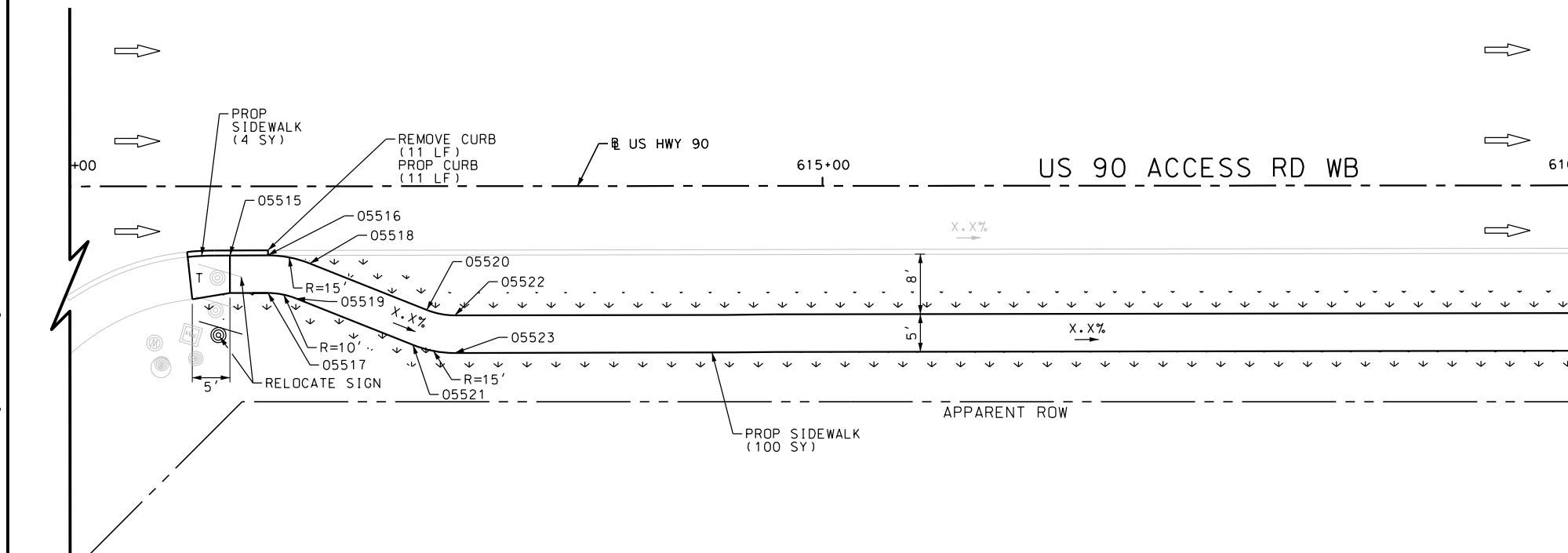
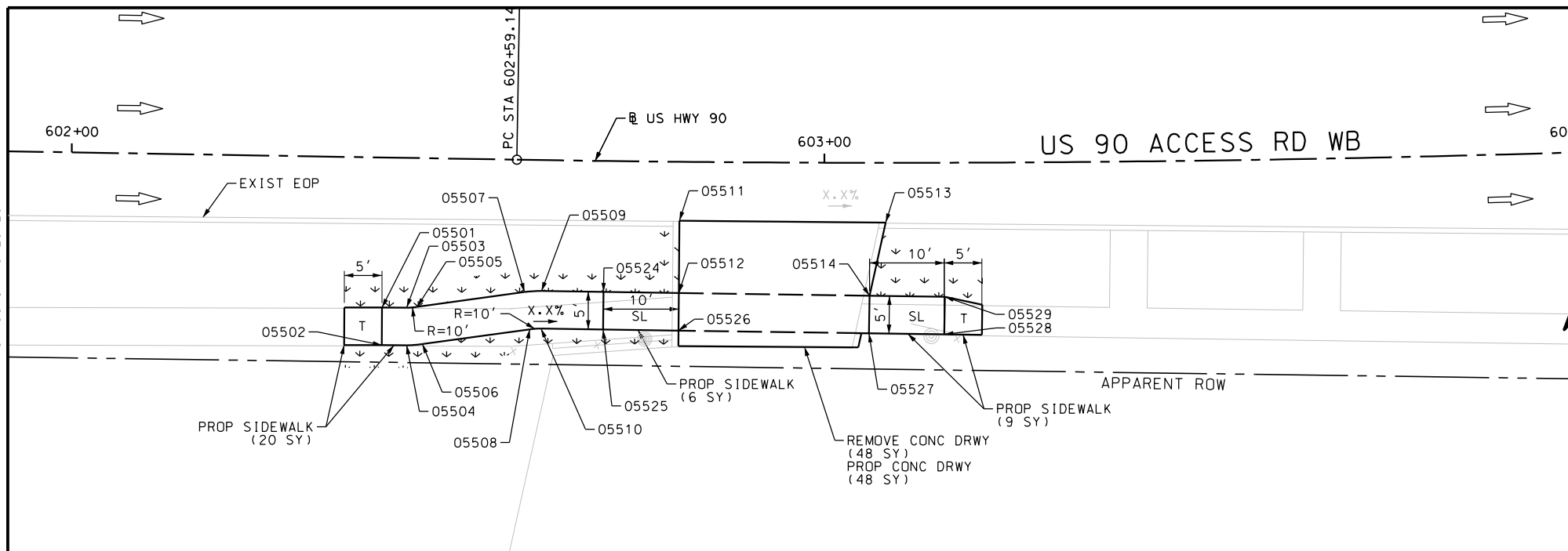
SHEET 9 OF 9

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	148

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_WB\_01.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	48
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	11
0162-6002	BLOCK SODDING	SY	156
0168-6001	VEGETATIVE WATERING	MG	2.43
0529-6002	CONC CURB (TY II)	LF	11
0530-6004	DRIVEWAYS (CONC)	SY	48
0531-6001	CONC SIDEWALKS (4")	SY	139
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1



MATCH LINE STA 616+00

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

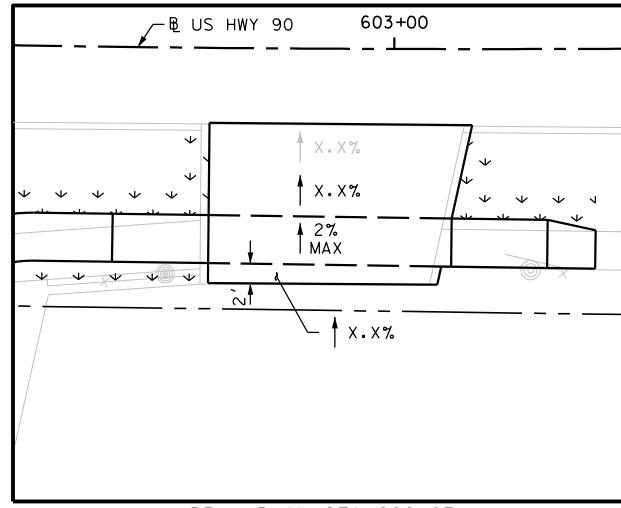
**Pape-Dawson Engineers**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



US HIGHWAY 90  
 ACCESS ROAD WESTBOUND  
 SIDEWALK  
 CONSTRUCTION PLAN  
 BEGIN PROJECT TO STA 616+00

SHEET 1 OF 11

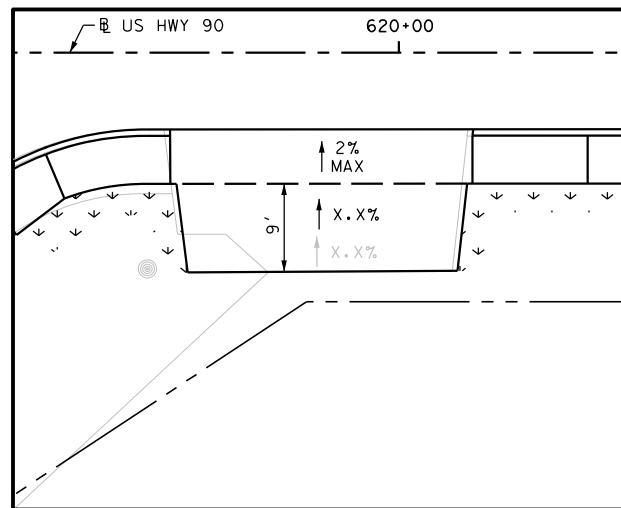
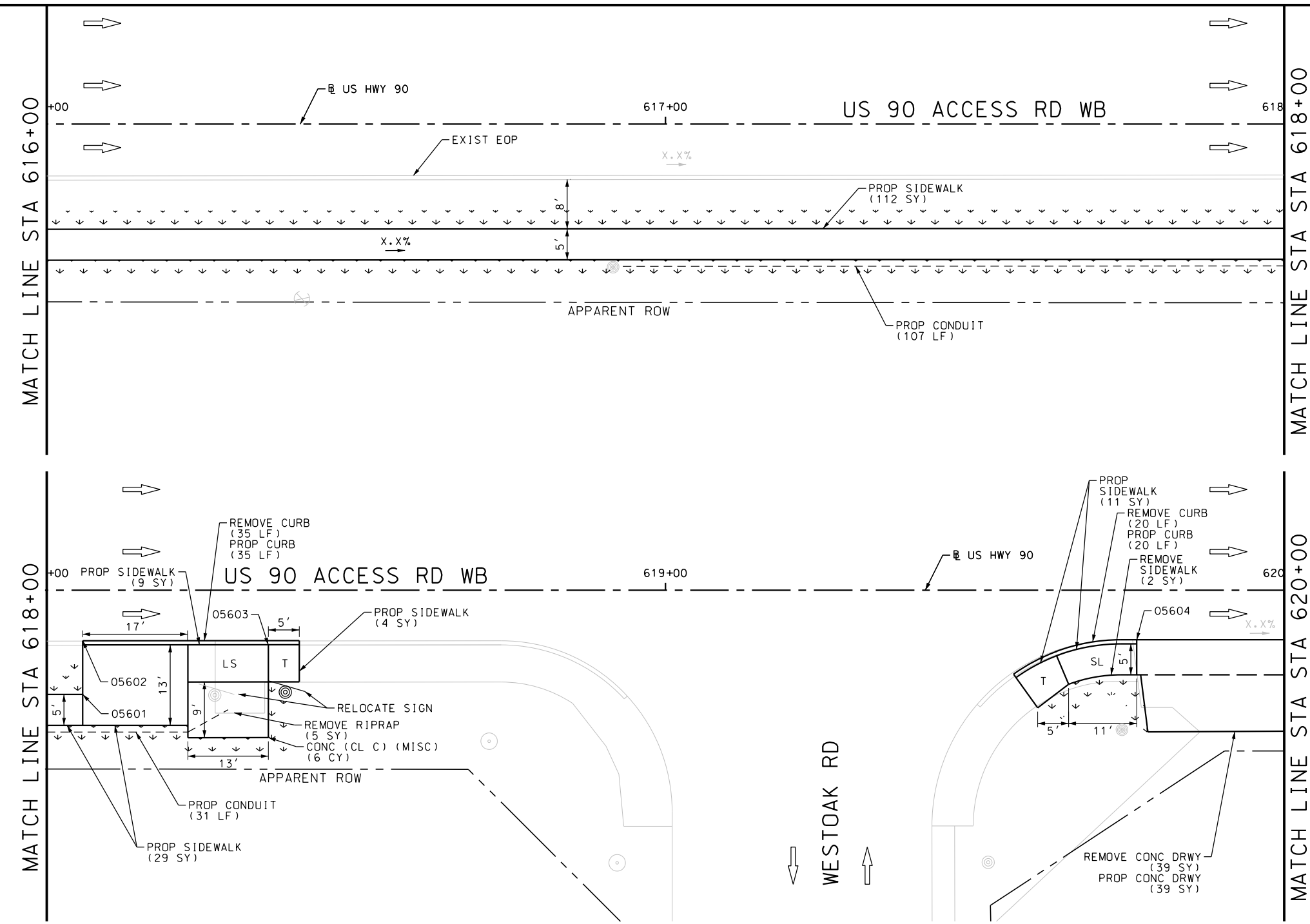
DWG:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DWG:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	149



DRWY PLAN STA 602+93

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_WB\_02.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	5
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	39
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	55
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	2
0162-6002	BLOCK SODDING	SY	162
0168-6001	VEGETATIVE WATERING	MG	2.53
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	55
0530-6004	DRIVEWAYS (CONC)	SY	39
0531-6001	CONC SIDEWALKS (4")	SY	165
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	138
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
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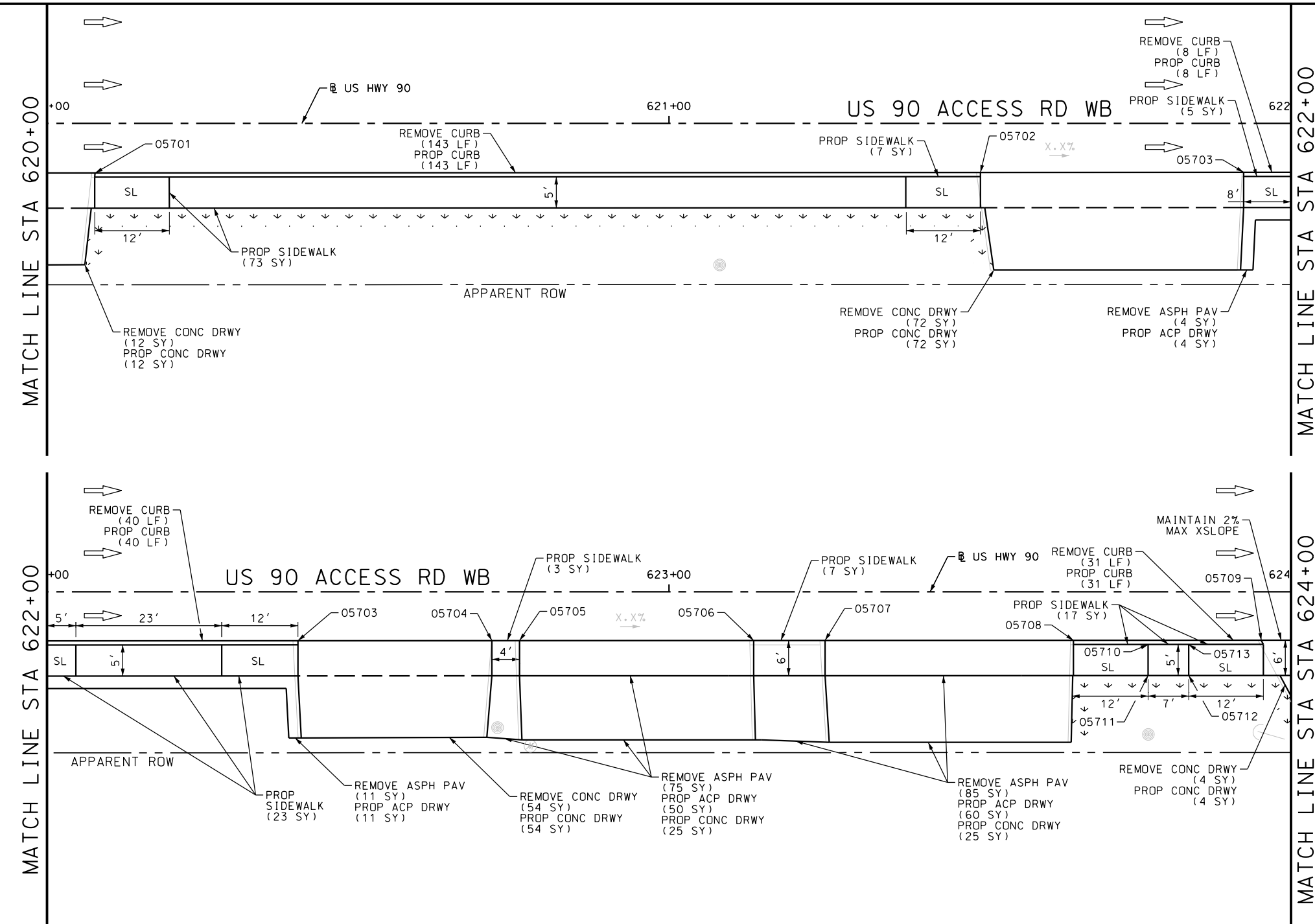
US HIGHWAY 90  
 ACCESS ROAD WESTBOUND  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 616+00 TO STA 620+00

SHEET 2 OF 11

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	150

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\US 90\1113501\_Hwy90\_WB\_03.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	142
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	205
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	175
0162-6002	BLOCK SODDING	SY	68
0168-6001	VEGETATIVE WATERING	MG	1.06
0529-6002	CONC CURB (TY II)	LF	222
0530-6004	DRIVEWAYS (CONC)	SY	192
0530-6005	DRIVEWAYS (ACP)	SY	125
0531-6001	CONC SIDEWALKS (4")	SY	135

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

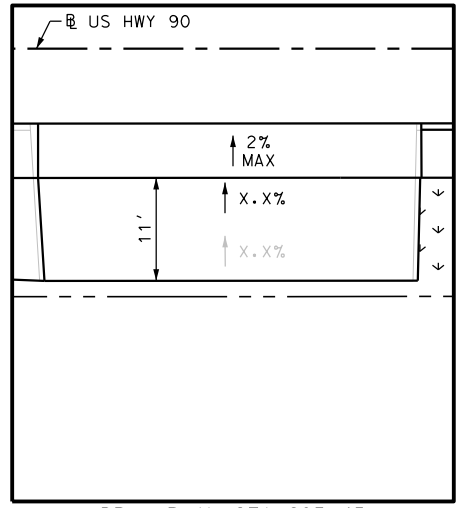
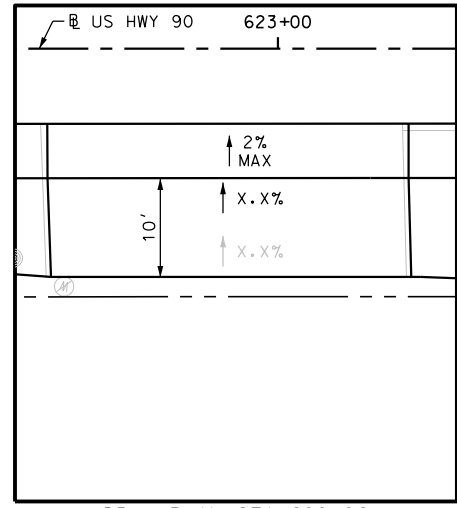
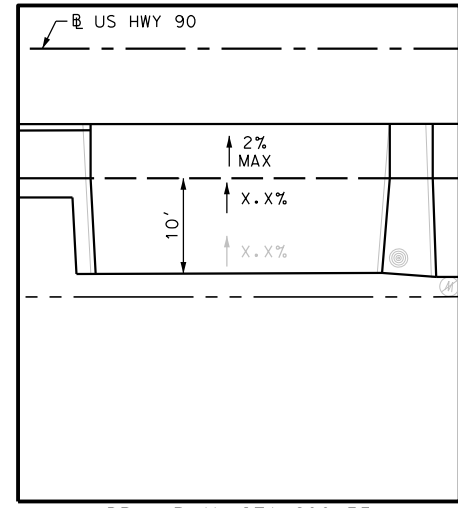
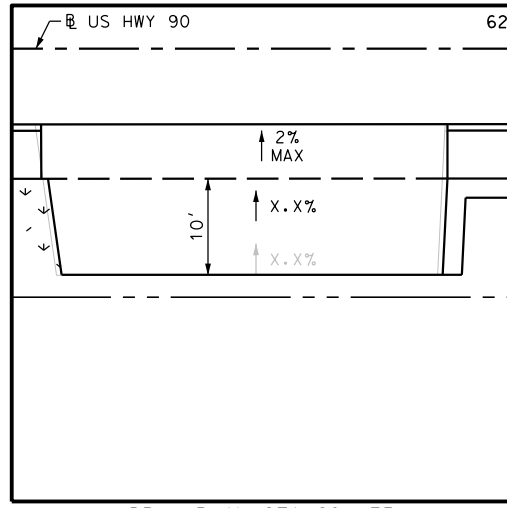
**PAPE-DAWSON ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Texas Department of Transportation  
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US HIGHWAY 90  
 ACCESS ROAD WESTBOUND  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 620+00 TO STA 624+00

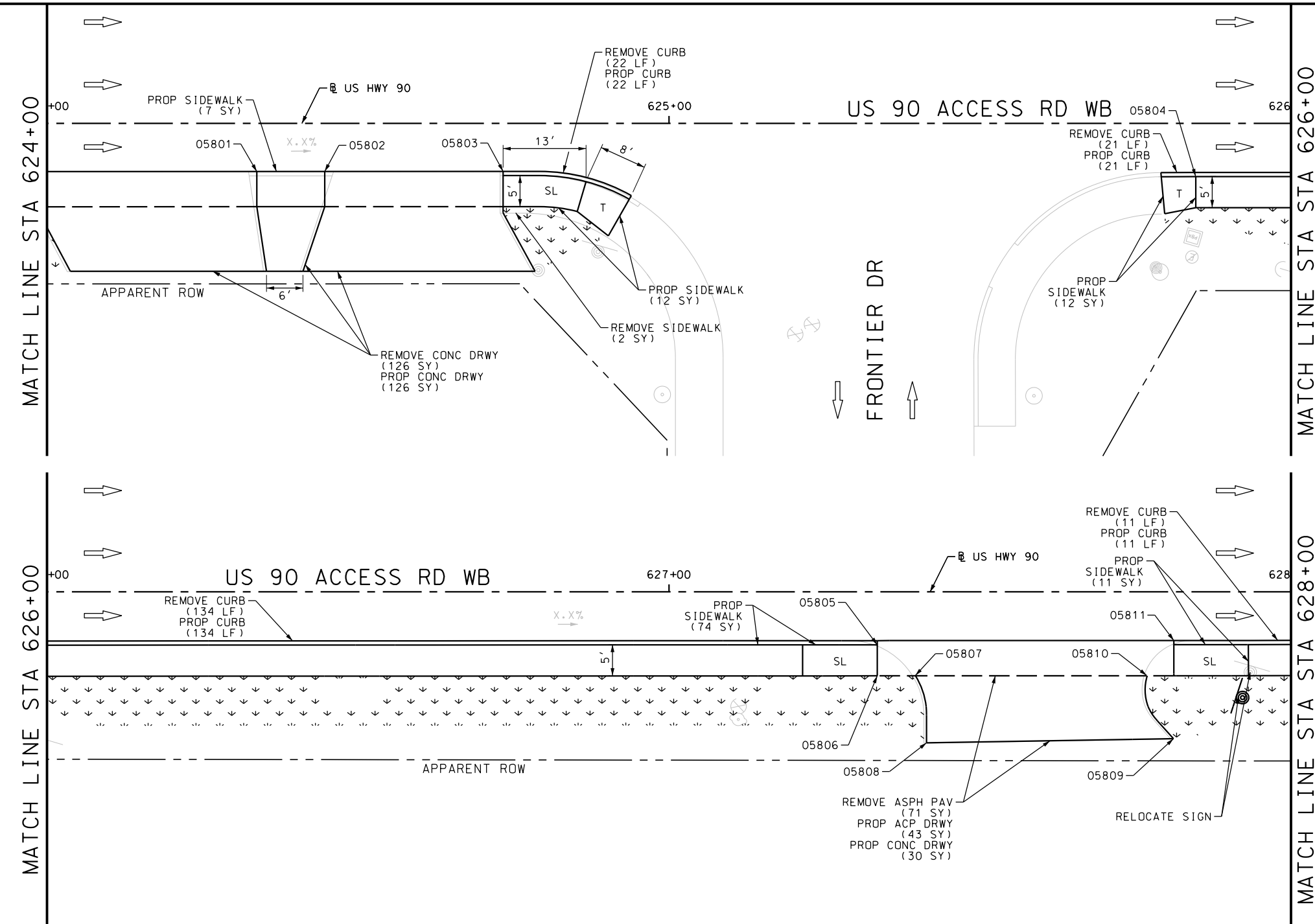
SHEET 3 OF 11

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	151



Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_WB\_04.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	126
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	188
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	2
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	71
0162-6002	BLOCK SODDING	SY	135
0168-6001	VEGETATIVE WATERING	MG	2.11
0529-6002	CONC CURB (TY II)	LF	188
0530-6004	DRIVEWAYS (CONC)	SY	156
0530-6005	DRIVEWAYS (ACP)	SY	43
0531-6001	CONC SIDEWALKS (4")	SY	116
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

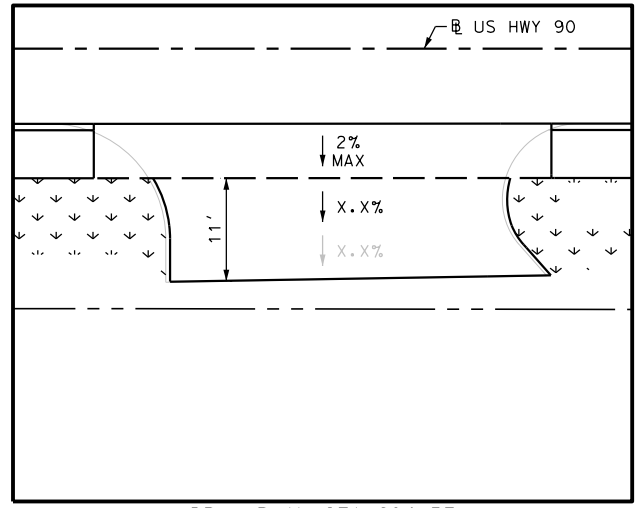
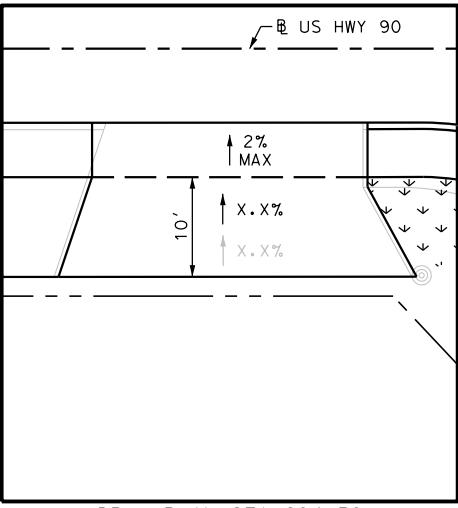
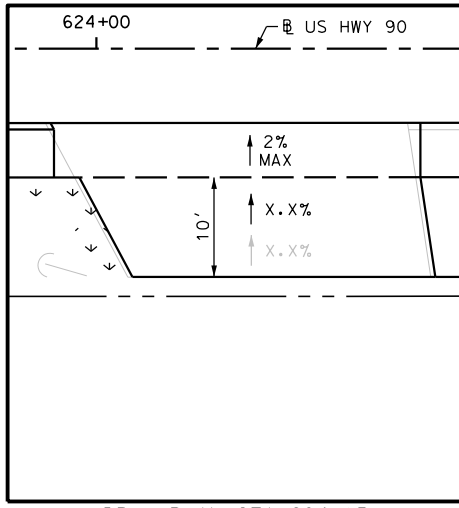
**PAPE-DAWSON ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Texas Department of Transportation  
 © 2017

US HIGHWAY 90  
 ACCESS ROAD WESTBOUND  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 624+00 TO STA 628+00

SHEET 4 OF 11

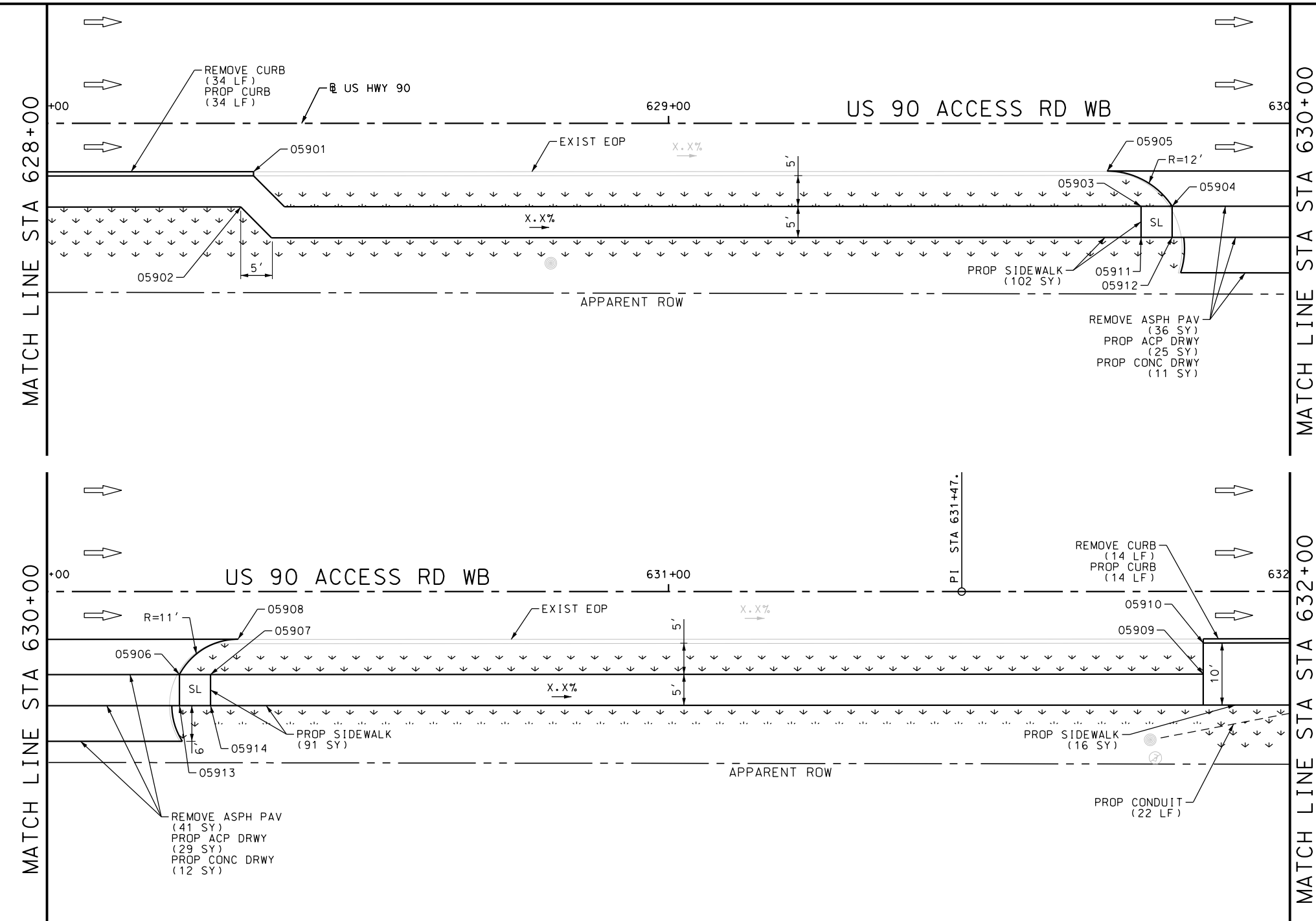
DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	152





Plotted on: 9/29/2017

Design File name: P:\1111\35\01\design\Civil\Roadway\US\_90\11113501\_Hwy90\_WB\_05.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	48
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	77
0162-6002	BLOCK SODDING	SY	246
0168-6001	VEGETATIVE WATERING	MG	3.84
0529-6002	CONC CURB (TY II)	LF	48
0530-6004	DRIVEWAYS (CONC)	SY	23
0530-6005	DRIVEWAYS (ACP)	SY	54
0531-6001	CONC SIDEWALKS (4")	SY	209
0618-6016	COND (PVC) (SCH 40) (1")	LF	22

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY



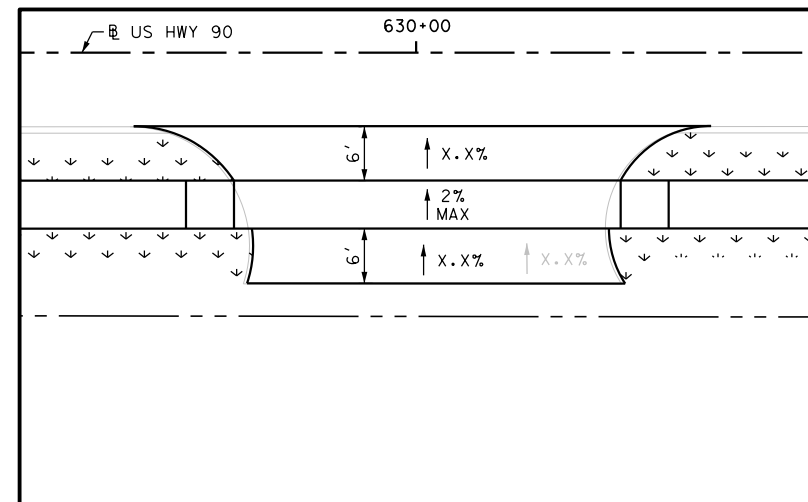
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



US HIGHWAY 90  
 ACCESS ROAD WESTBOUND  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 628+00 TO STA 632+00

SHEET 5 OF 11

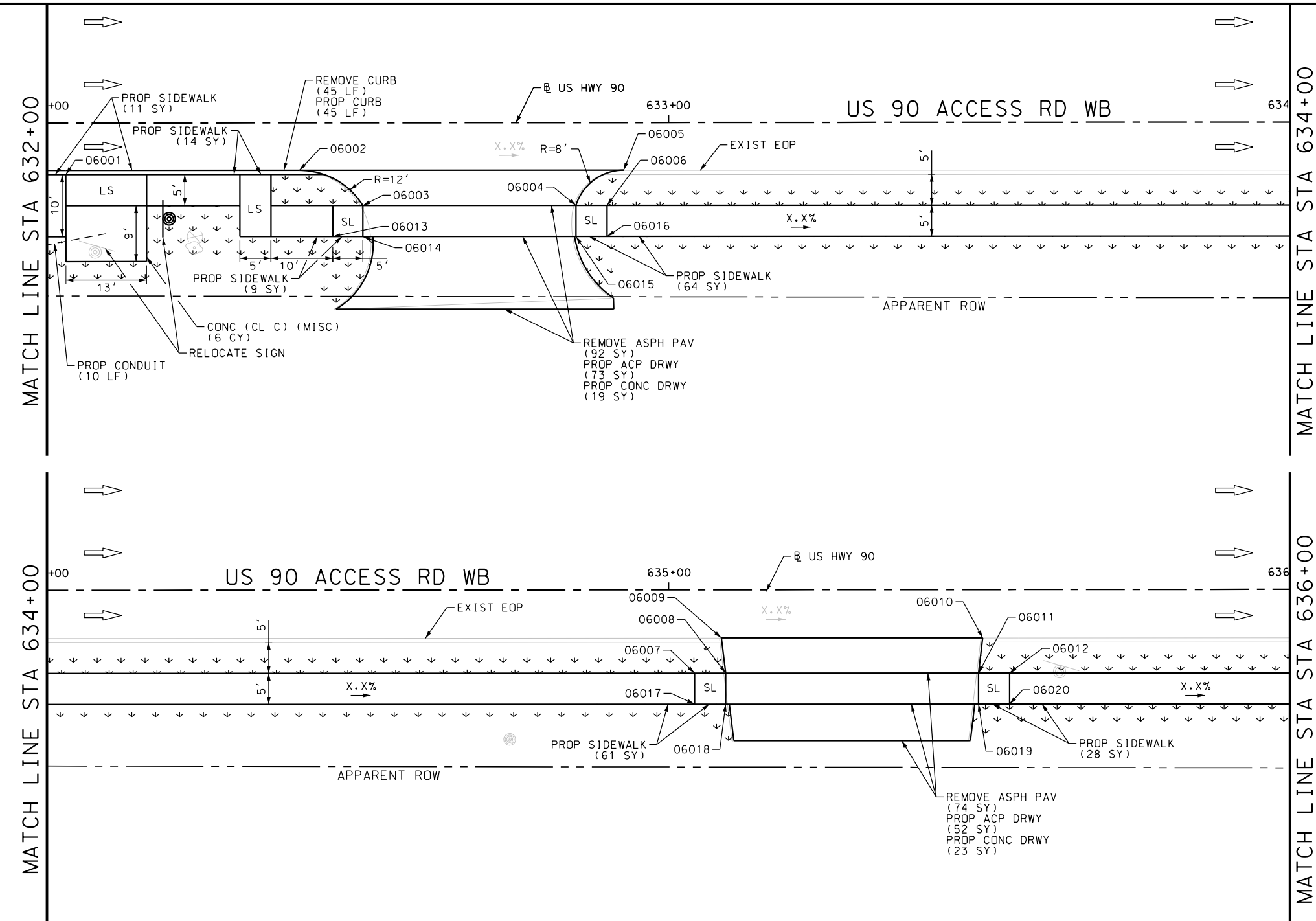
DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	153



DRWY PLAN STA 630+01

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_WB\_06.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	45
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	166
0162-6002	BLOCK SODDING	SY	239
0168-6001	VEGETATIVE WATERING	MG	3.73
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	45
0530-6004	DRIVEWAYS (CONC)	SY	42
0530-6005	DRIVEWAYS (ACP)	SY	125
0531-6001	CONC SIDEWALKS (4")	SY	187
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	10
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

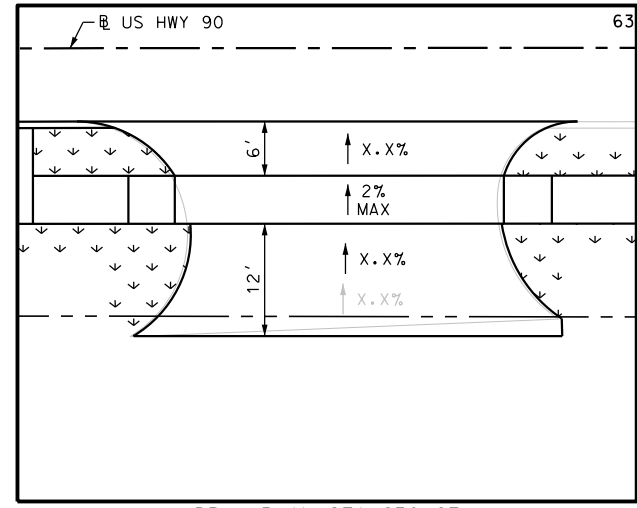
**Pape-Dawson Engineers**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



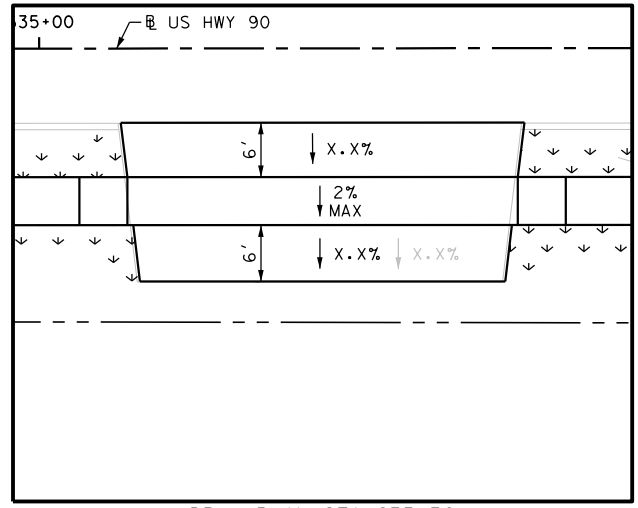
US HIGHWAY 90  
 ACCESS ROAD WESTBOUND  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 632+00 TO STA 636+00

SHEET 6 OF 11

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	154



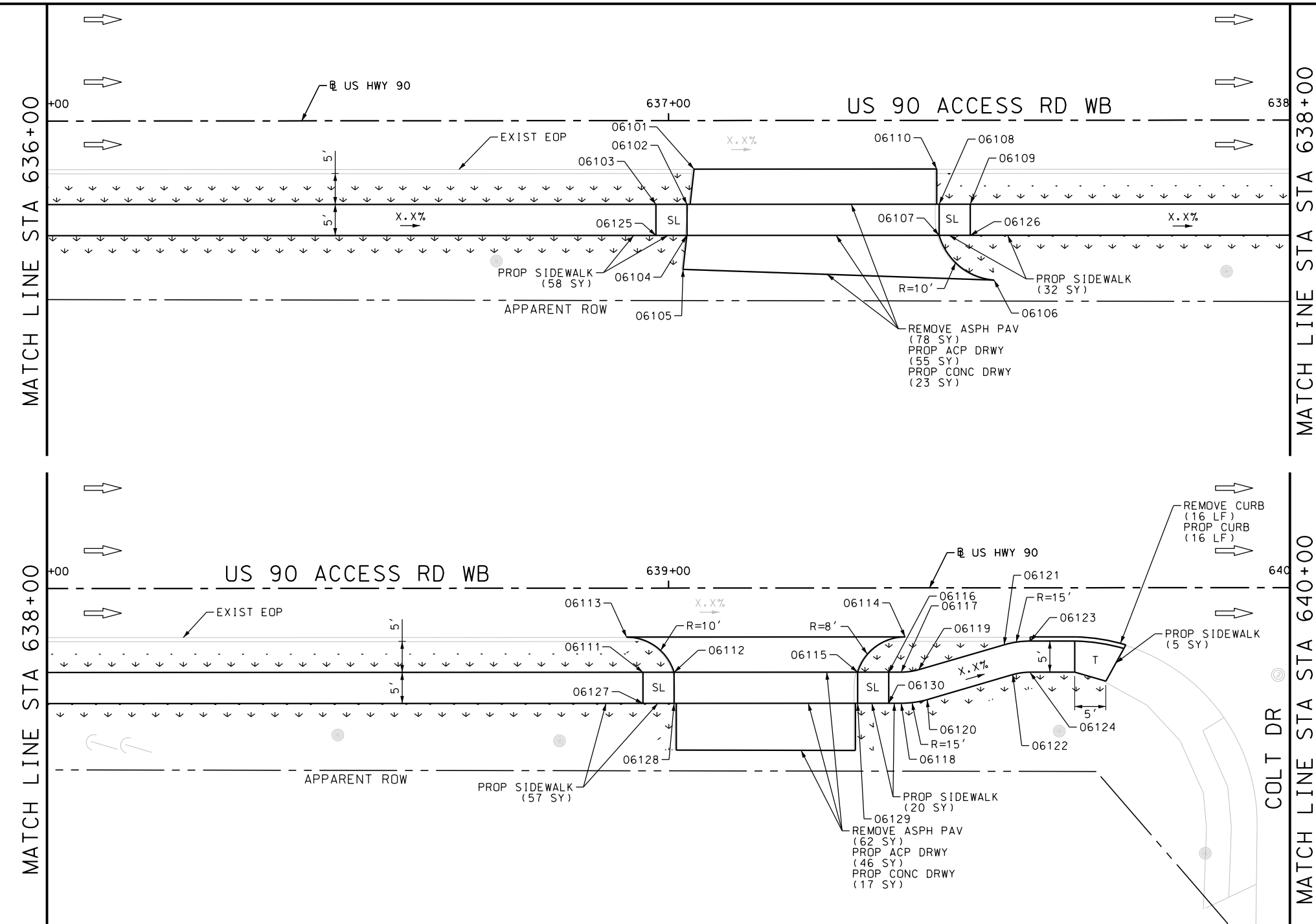
DRWY PLAN STA 632+67



DRWY PLAN STA 635+30

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_WB\_07.dgn



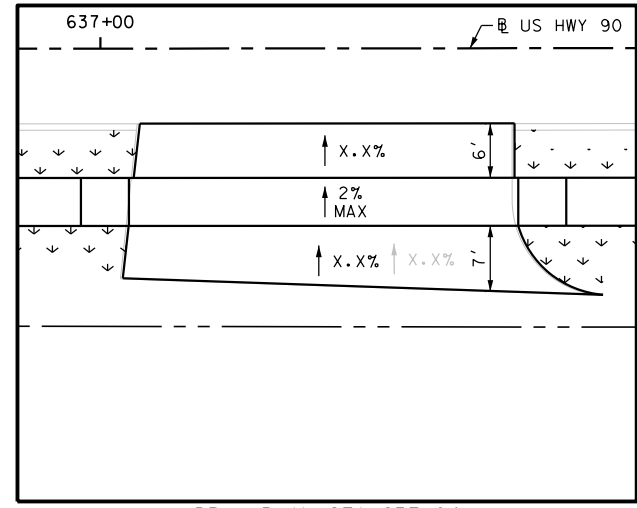
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0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	140
0162-6002	BLOCK SODDING	SY	204
0168-6001	VEGETATIVE WATERING	MG	3.18
0529-6002	CONC CURB (TY II)	LF	16
0530-6004	DRIVEWAYS (CONC)	SY	40
0530-6005	DRIVEWAYS (ACP)	SY	101
0531-6001	CONC SIDEWALKS (4")	SY	172

NOTES:  
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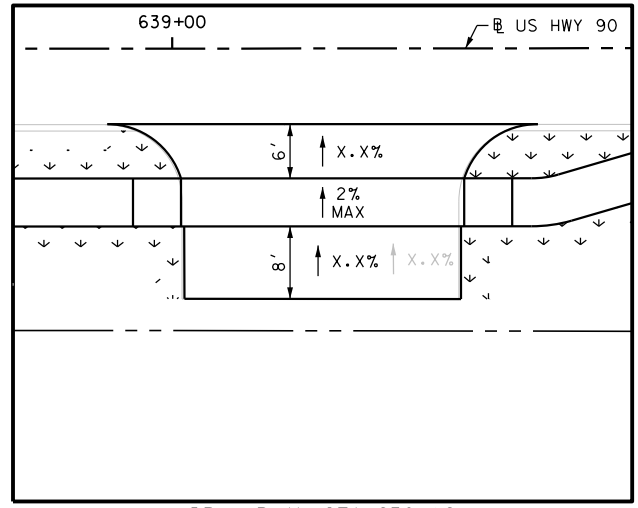
DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'



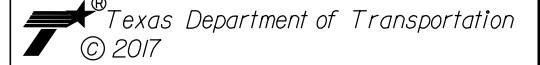
DRWY PLAN STA 637+24



DRWY PLAN STA 639+16

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



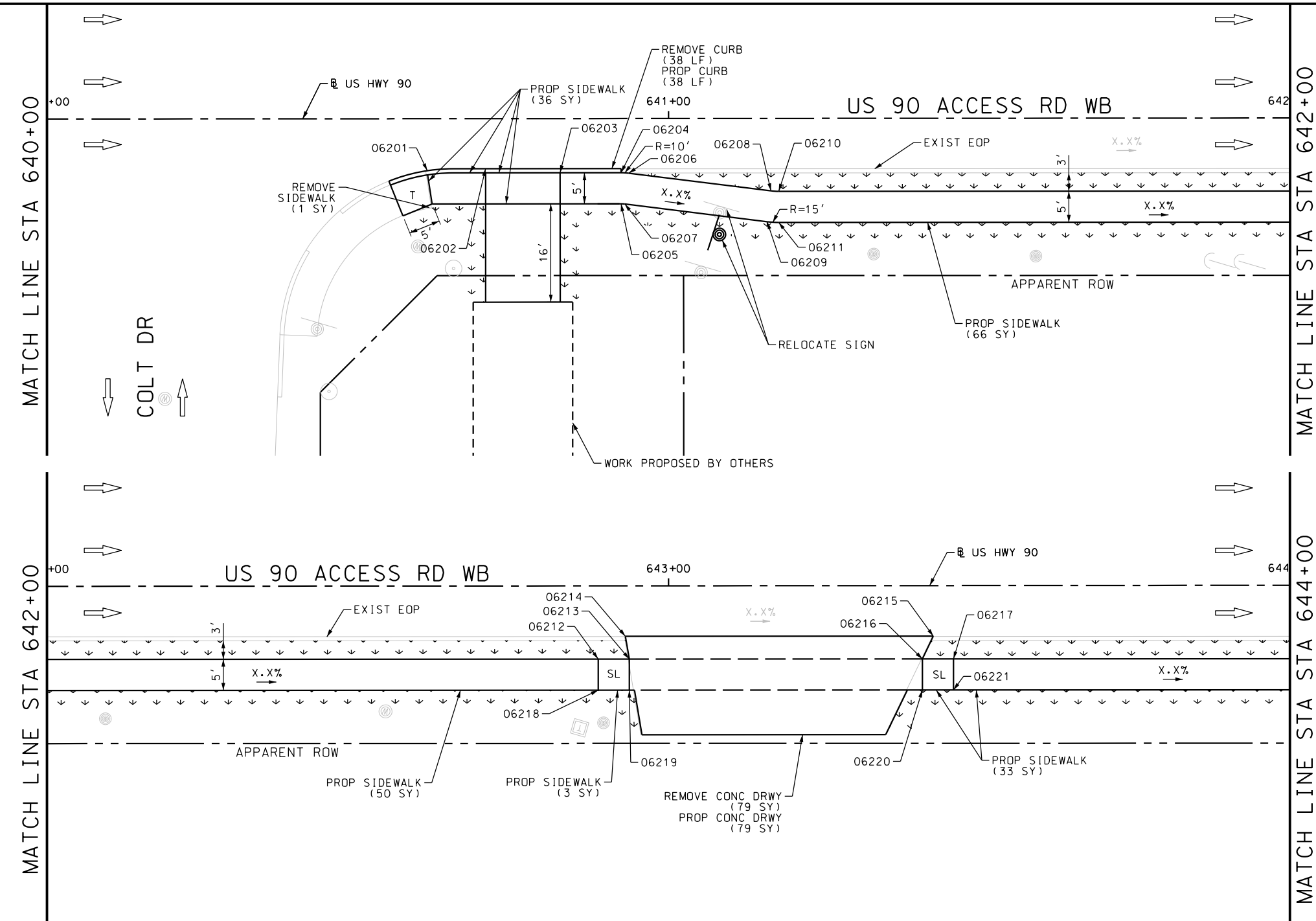
US HIGHWAY 90  
 ACCESS ROAD WESTBOUND  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 636+00 TO STA 634+00

SHEET 7 OF 11

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	155

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_WB\_08.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	79
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	38
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	1
0162-6002	BLOCK SODDING	SY	190
0168-6001	VEGETATIVE WATERING	MG	2.96
0529-6002	CONC CURB (TY II)	LF	38
0530-6004	DRIVEWAYS (CONC)	SY	79
0531-6001	CONC SIDEWALKS (4")	SY	188
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

NOTES:  
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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

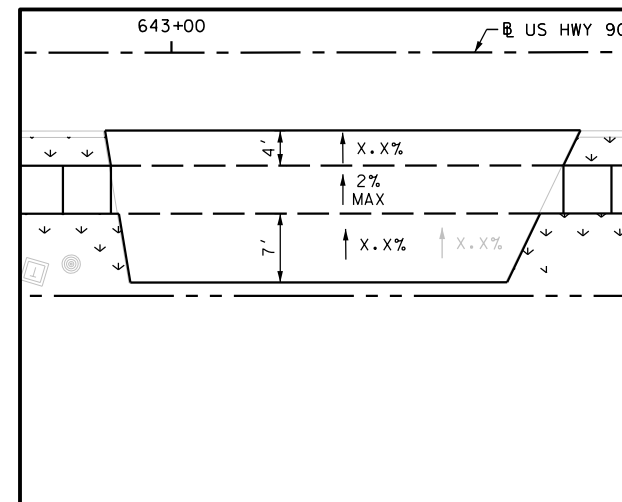
Texas Department of Transportation  
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US HIGHWAY 90  
 ACCESS ROAD WESTBOUND

SIDEWALK  
 CONSTRUCTION PLAN  
 STA 640+00 TO STA 644+00

SHEET 8 OF 11

DWG:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DWG:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	156

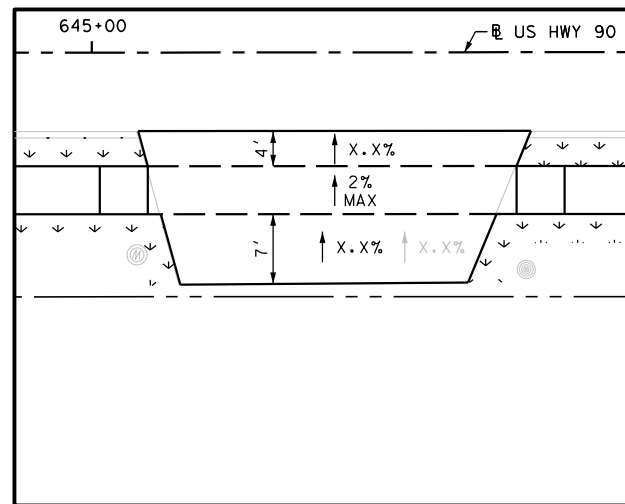
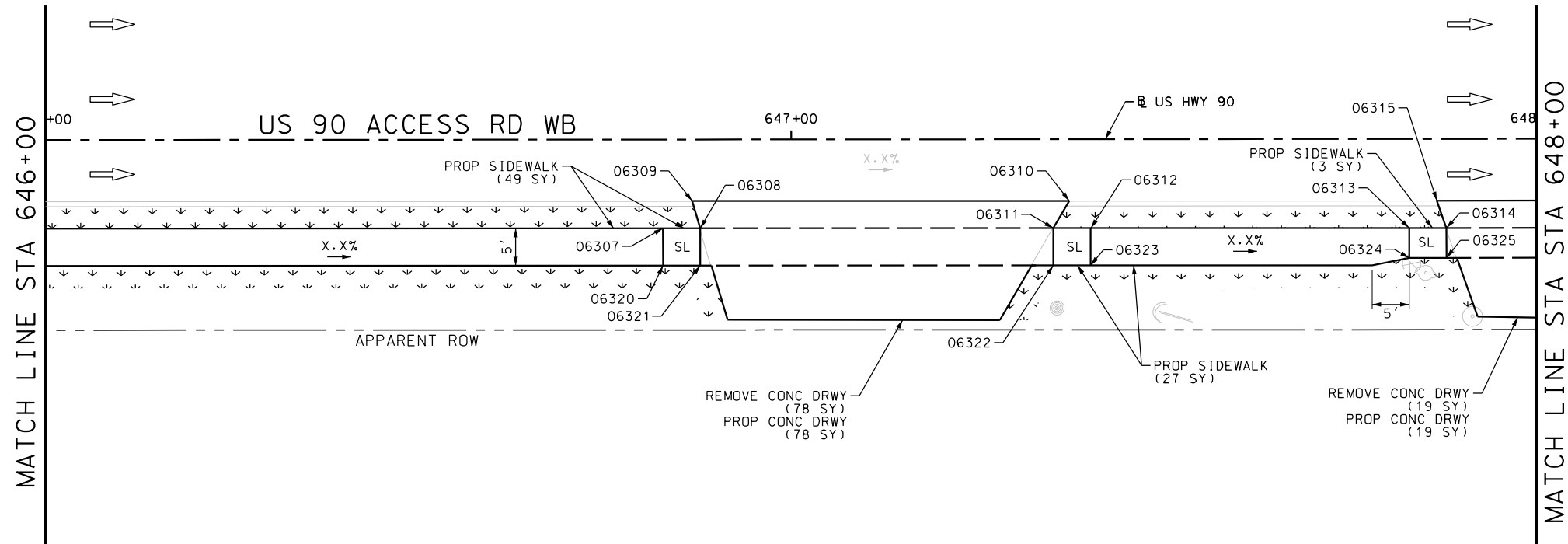
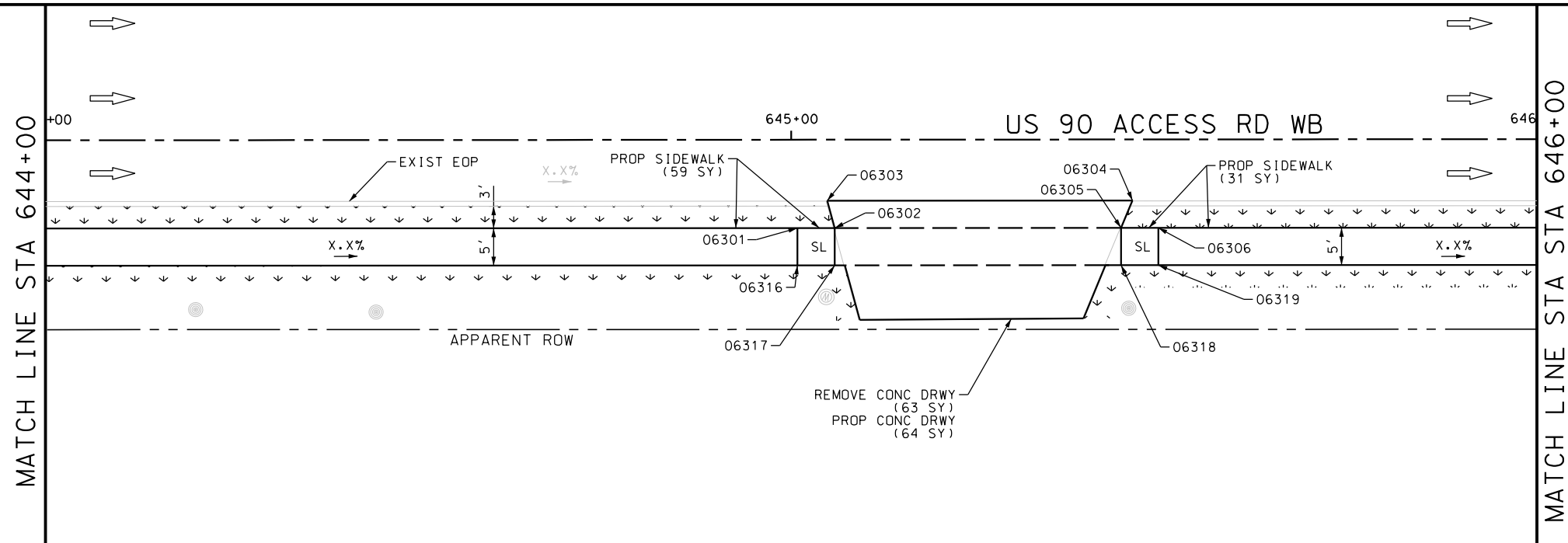


DRWY PLAN STA 643+17

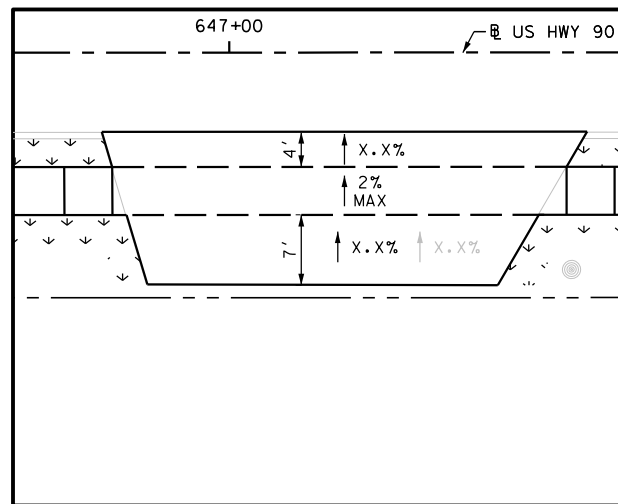
Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_WB\_09.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	160
0162-6002	BLOCK SODDING	SY	220
0168-6001	VEGETATIVE WATERING	MG	3.43
0530-6004	DRIVEWAYS (CONC)	SY	161
0531-6001	CONC SIDEWALKS (4")	SY	169



DRWY PLAN STA 654+25



DRWY PLAN STA 647+10

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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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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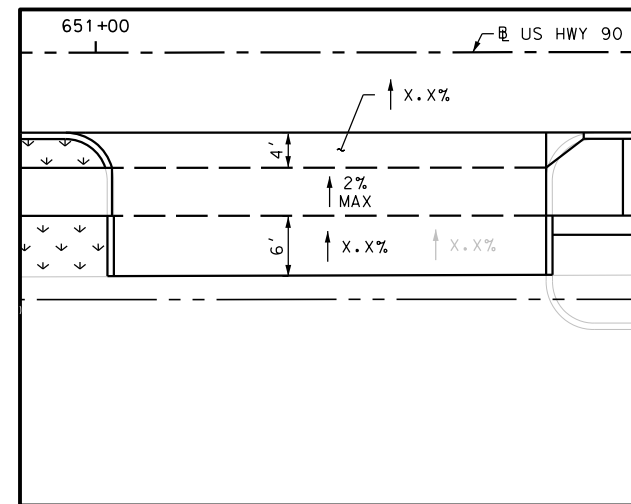
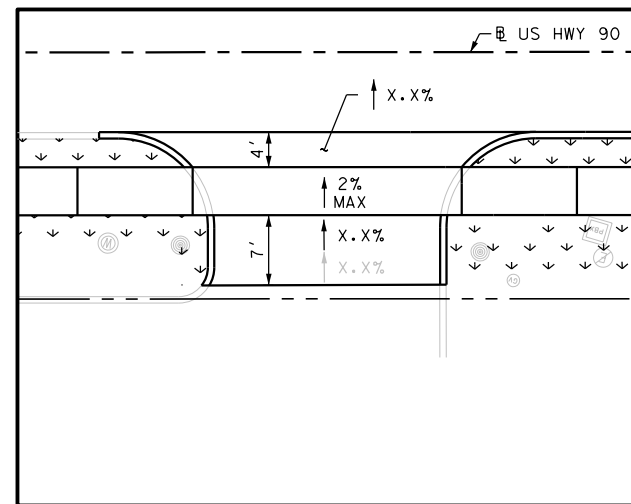
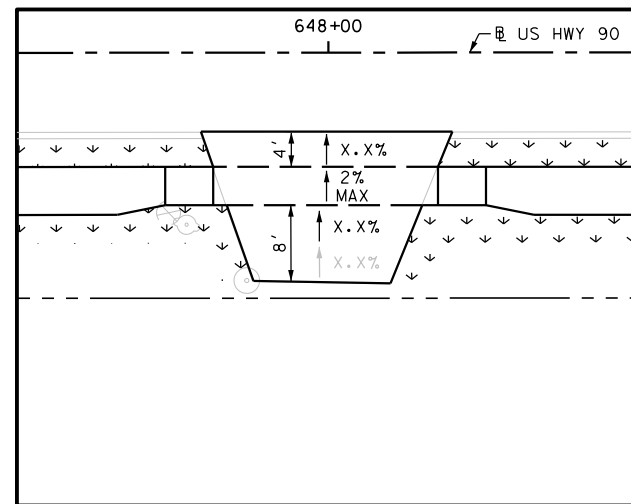
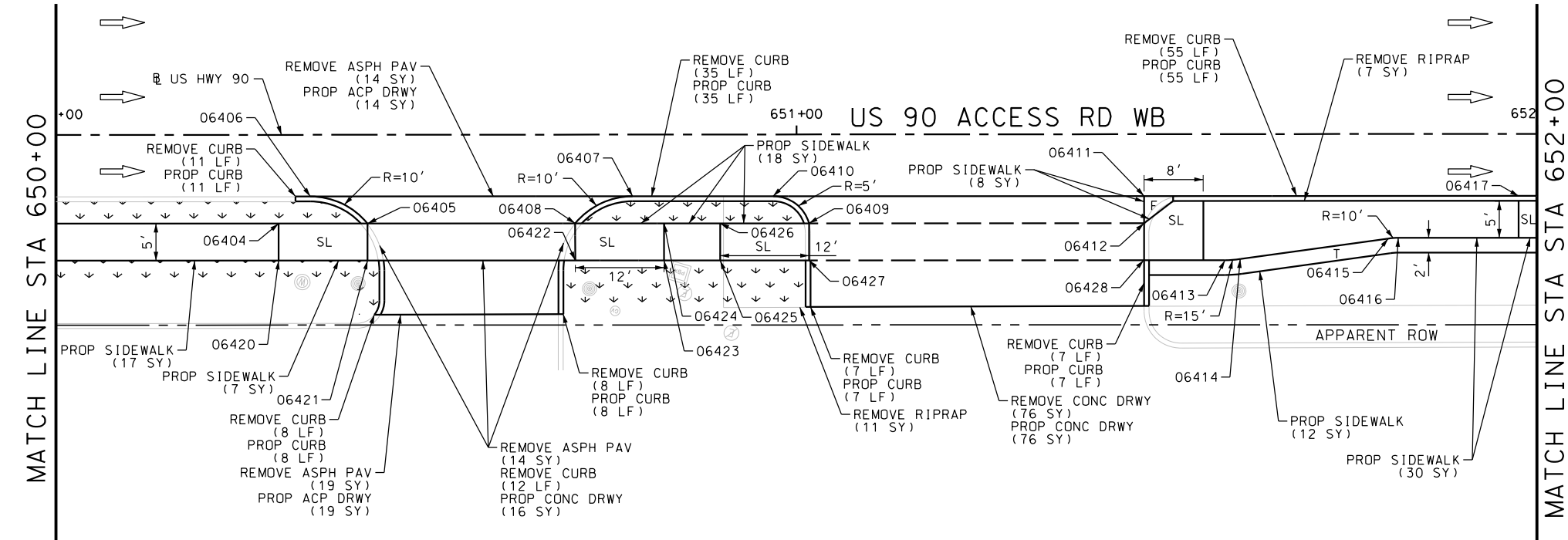
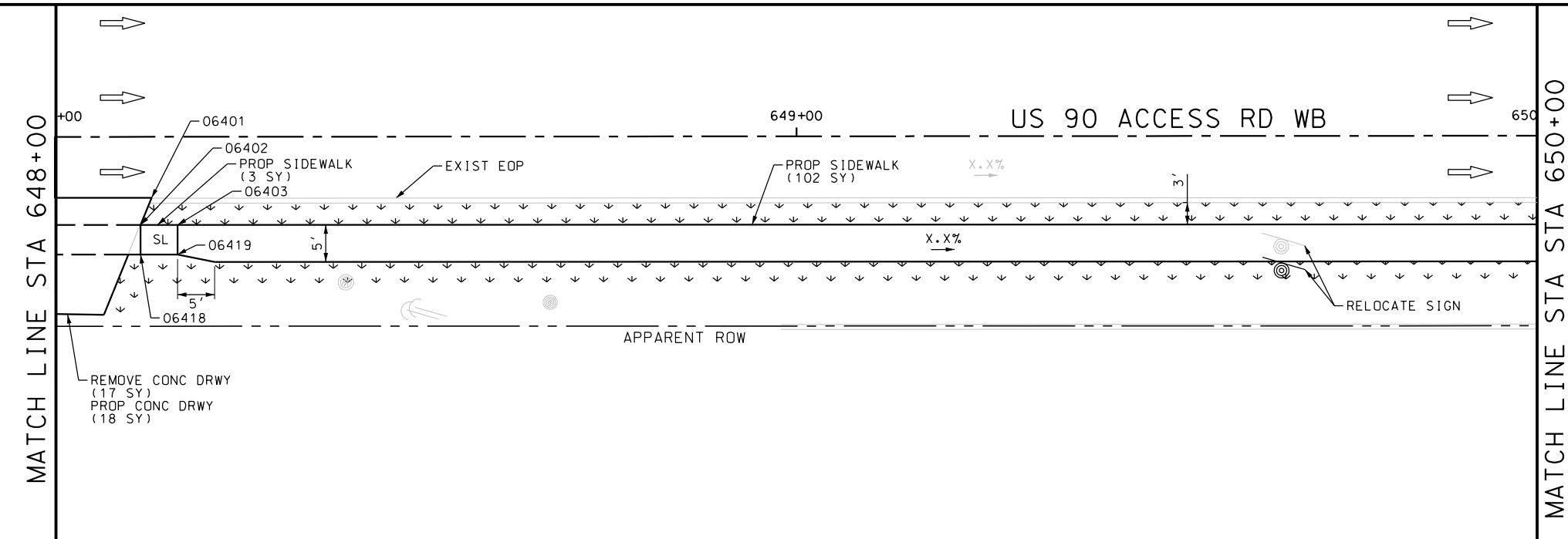
US HIGHWAY 90  
 ACCESS ROAD WESTBOUND  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 644+00 TO STA 648+00

SHEET 9 OF 11

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
			JOB NO.:	SHEET NO.:
			586	157

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\US\_90\1113501\_Hwy90\_WB\_10.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	18
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	93
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	143
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	47
0162-6002	BLOCK SODDING	SY	187
0168-6001	VEGETATIVE WATERING	MG	2.92
0529-6002	CONC CURB (TY II)	LF	131
0530-6004	DRIVEWAYS (CONC)	SY	110
0530-6005	DRIVEWAYS (ACP)	SY	33
0531-6001	CONC SIDEWALKS (4")	SY	197
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
 © 2017

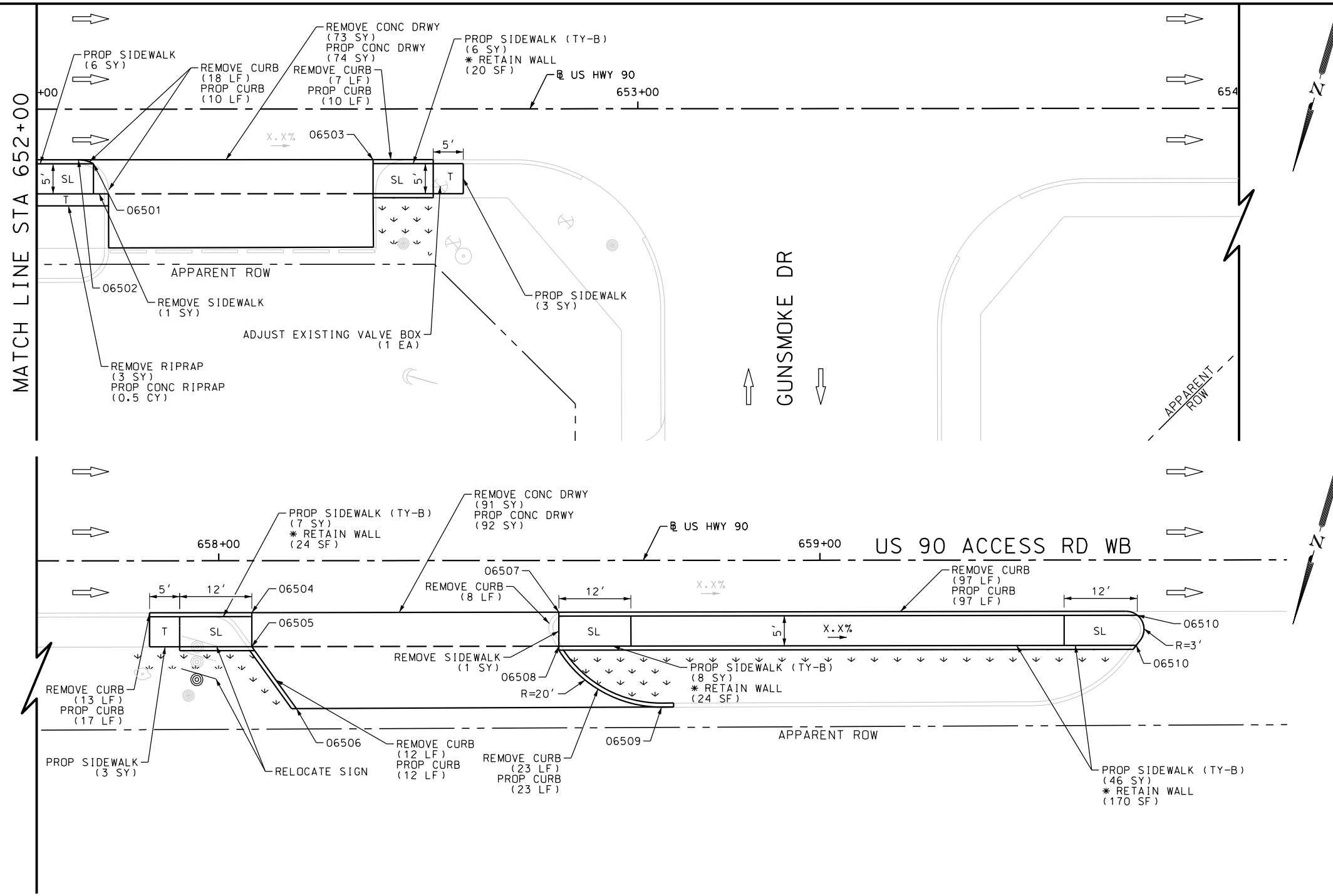
US HIGHWAY 90  
 ACCESS ROAD WESTBOUND  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 648+00 TO STA 652+00

SHEET 10 OF 11

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	158

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\US 90\1113501\_Hwy90\_WB\_11.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6001	ADJUST EXISTING VALVE BOX	EA	1
0104-6009	REMOVING CONC (RIPRAP)	SY	3
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	164
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	178
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	2
0162-6002	BLOCK SODDING	SY	56
0168-6001	VEGETATIVE WATERING	MG	0.87
0432-6003	RIPRAP (CONC) (6 IN)	CY	0.5
0529-6002	CONC CURB (TY II)	LF	169
0530-6004	DRIVEWAYS (CONC)	SY	166
0531-6001	CONC SIDEWALKS (4")	SY	12
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	67
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

NOTES:  
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DESIGN  
 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

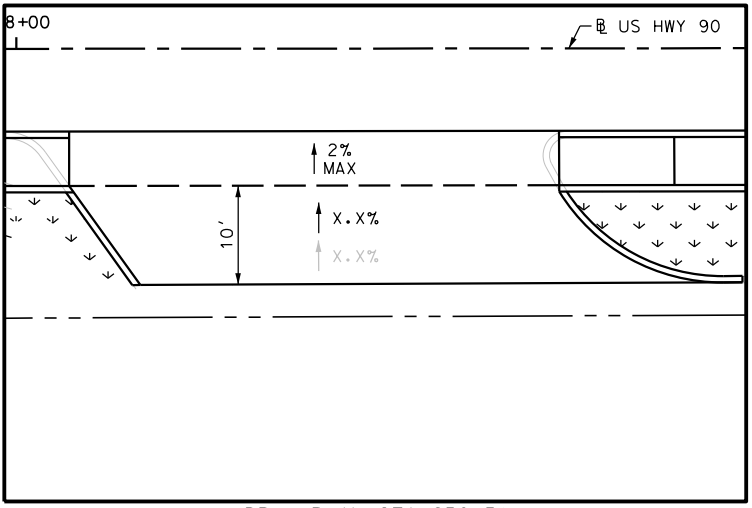
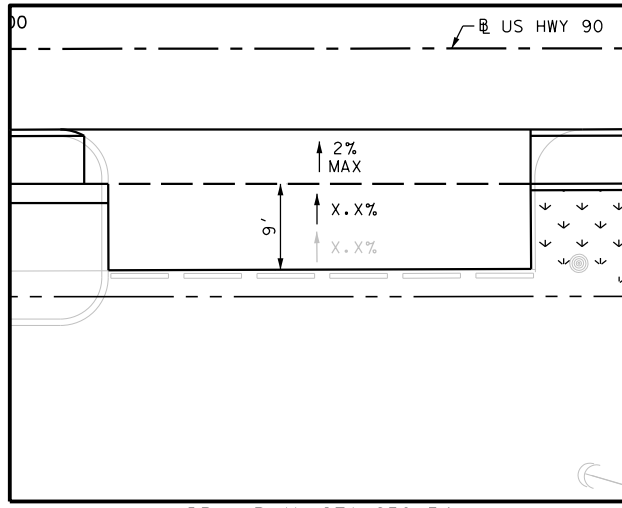
REV. NO.	DATE	DESCRIPTION	BY

**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



US HIGHWAY 90  
 ACCESS ROAD WESTBOUND  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 652+00 TO END PROJECT

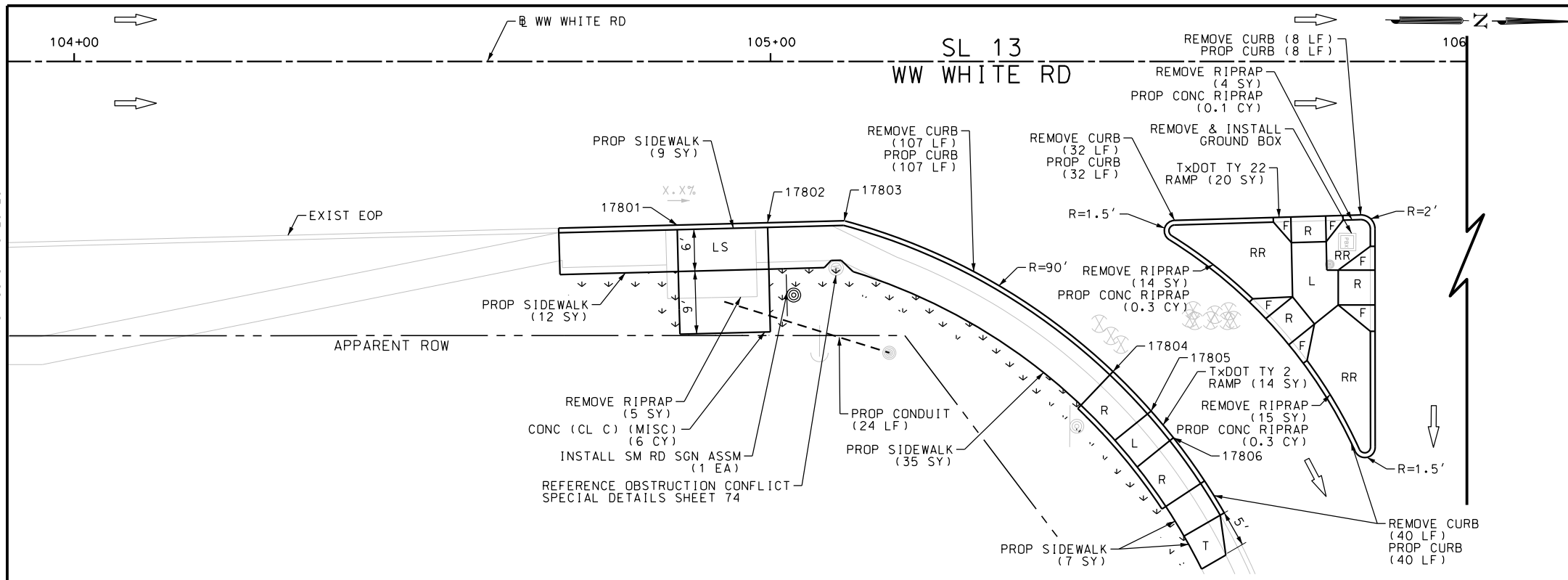
SHEET 11 OF 11



DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	159

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_01.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	38
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	187
0162-6002	BLOCK SODDING	SY	36
0168-6001	VEGETATIVE WATERING	MG	0.56
0420-6074	CL C CONC (MISC)	CY	6.0
0432-6003	RIPRAP (CONC) (6 IN)	CY	0.7
0529-6002	CONC CURB (TY II)	LF	187
0531-6001	CONC SIDEWALKS (4")	SY	66
0531-6019	CURB RAMPS (TY 2)	SY	14
0531-6031	CURB RAMPS (TY 22)	SY	20
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	24
0624-6009	GROUND BOX TY D (162922)	EA	1
0624-6028	REMOVE GROUND BOX	EA	1
0644-6001	IN SM RD SN SUP&M TY10BWG(1)SA(P)	EA	1

NOTES:  
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ENGINEER: JOHN A. TYLER  
P.E. SERIAL NO: 105193  
DATE: 9/29/2017

REVIEW AND APPROVAL  
INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JAMES A. LUTZ  
P.E. SERIAL NO: 84722  
DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



SL 13  
WW WHITE RD  
SIDEWALK  
CONSTRUCTION PLAN  
BEGIN PROJECT TO STA 106+00

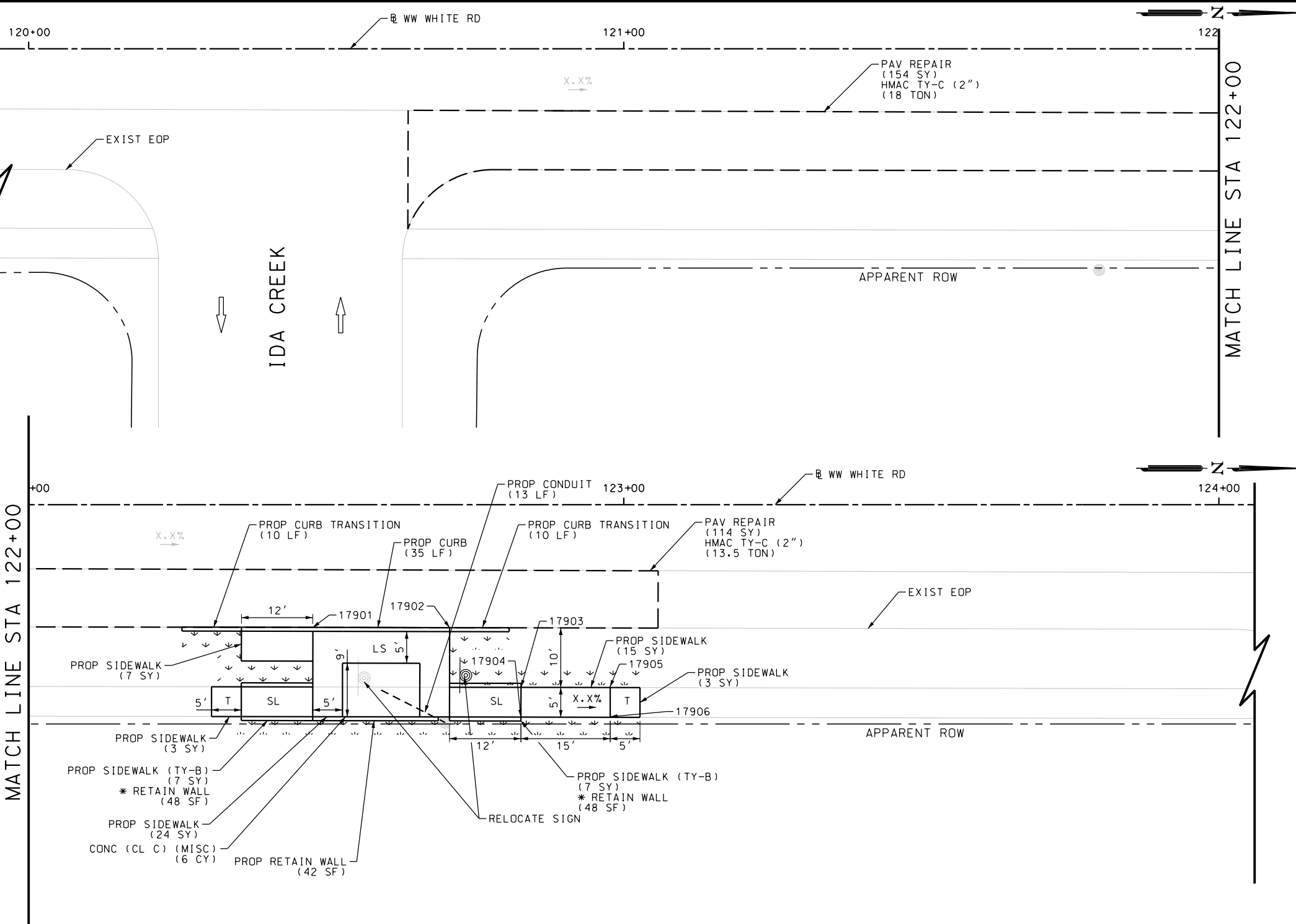
SHEET 1 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	160



Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_02.dgn



ITEM	DESCRIPTION	UNIT	QTY
0162-6002	BLOCK SODDING	SY	50
0168-6001	VEGETATIVE WATERING	MG	0.78
0340-6066	D-GR HMA(SQ) TY-C PG76-22	TON	31.5
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	268
0420-6074	CL C CONC (MISC)	CY	6.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	42
0529-6002	CONC CURB (TY II)	LF	55
0531-6001	CONC SIDEWALKS (4")	SY	52
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	14
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	13
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



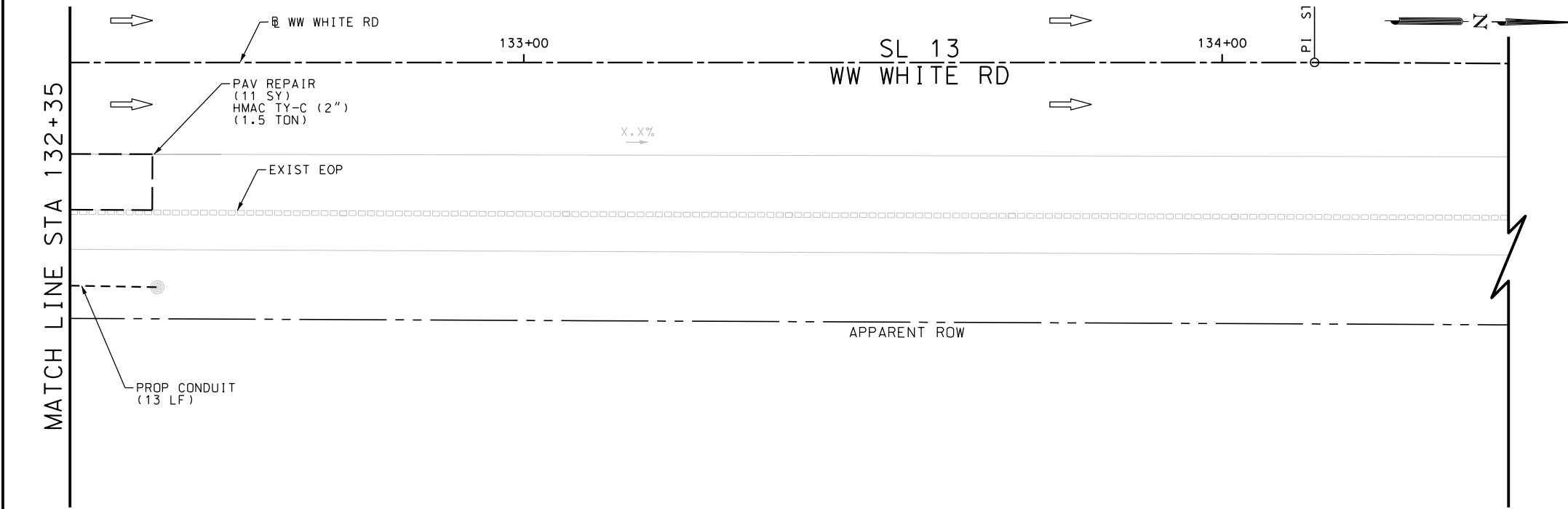
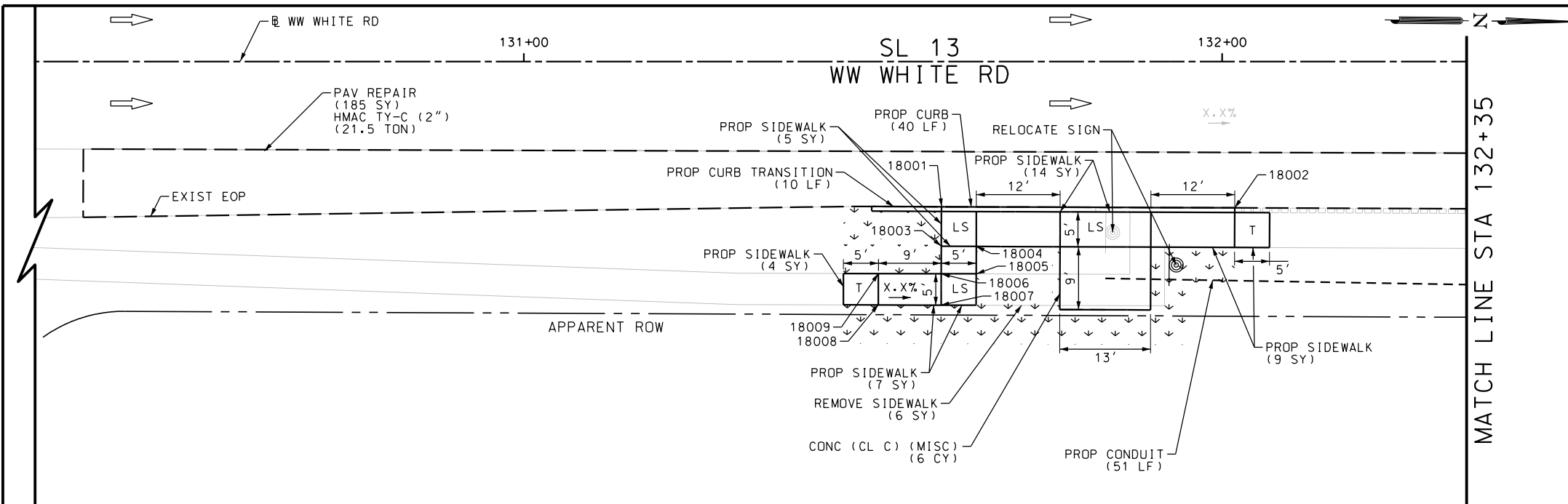
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 120+00 TO STA 124+00

SHEET 2 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	161

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Ww White\1113501\_wwwhite\_03.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	6
0162-6002	BLOCK SODDING	SY	64
0168-6001	VEGETATIVE WATERING	MG	1.00
0340-6066	D-GR HMA (SQ) TY-C PG76-22	TON	23.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	196
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	50
0531-6001	CONC SIDEWALKS (4")	SY	39
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	64
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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DESIGN  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 130+00 TO STA 134+00

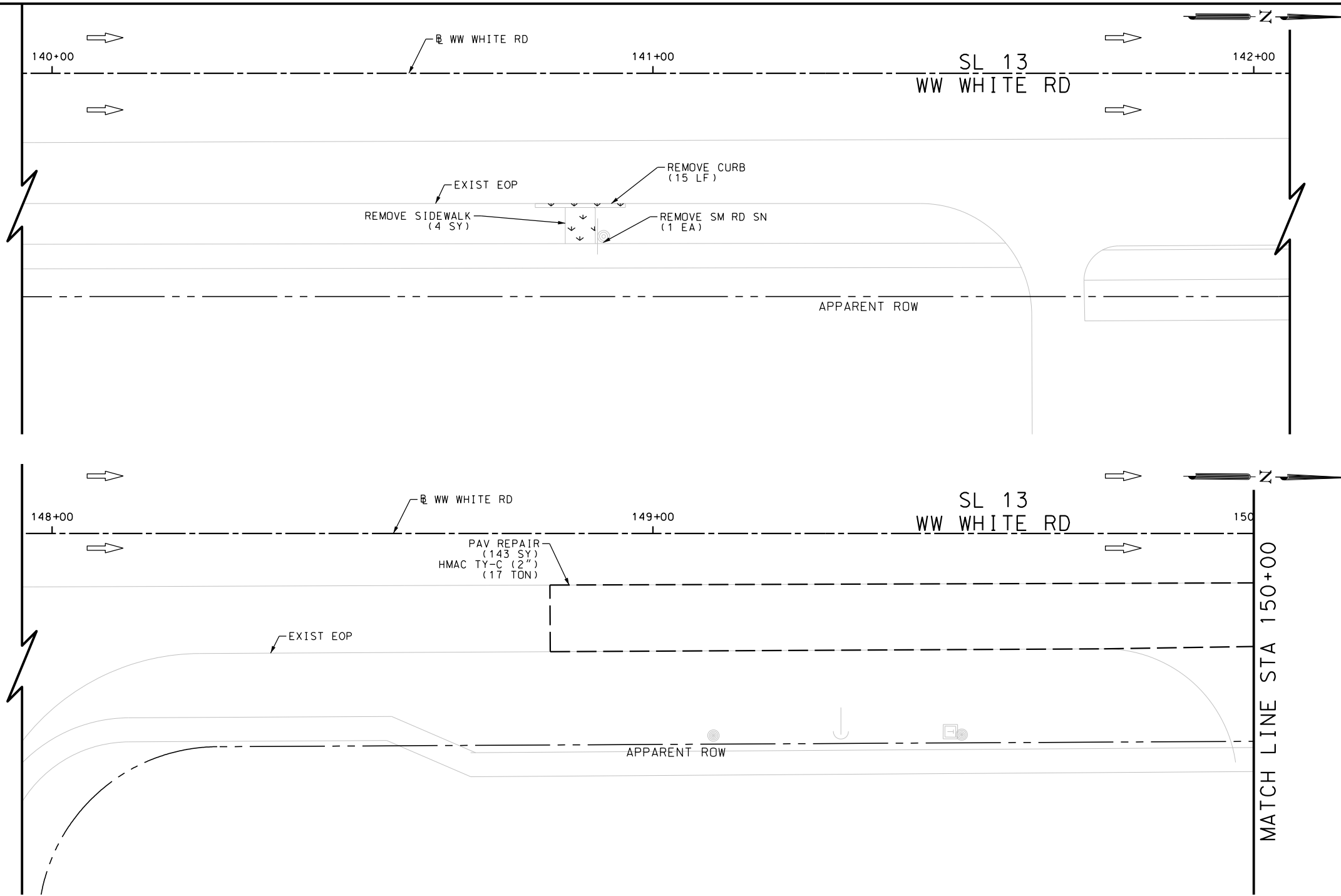
SHEET 3 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	162

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Ww White\1113501\_wwwhite\_04.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	15
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	4
0162-6002	BLOCK SODDING	SY	5
0168-6001	VEGETATIVE WATERING	MG	0.08
0340-6066	D-GR HMA (SQ) TY-C PG76-22	TON	17.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	143
0644-6076	REMOVE SM RD SN SUP&AM	EA	1



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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



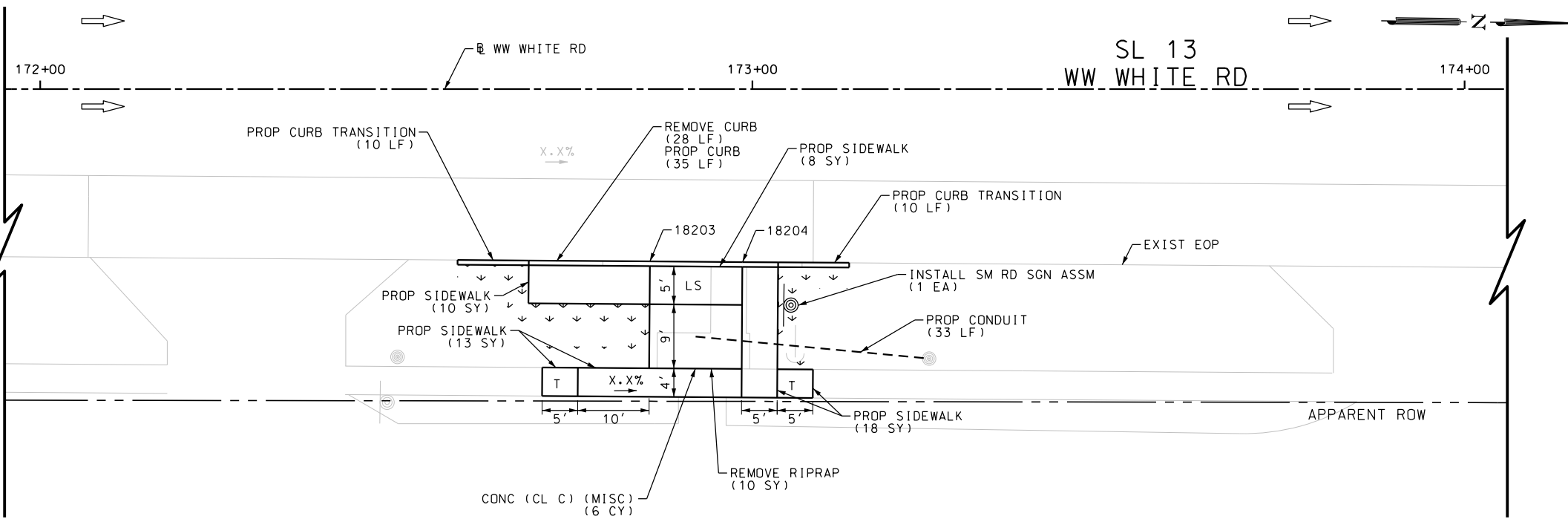
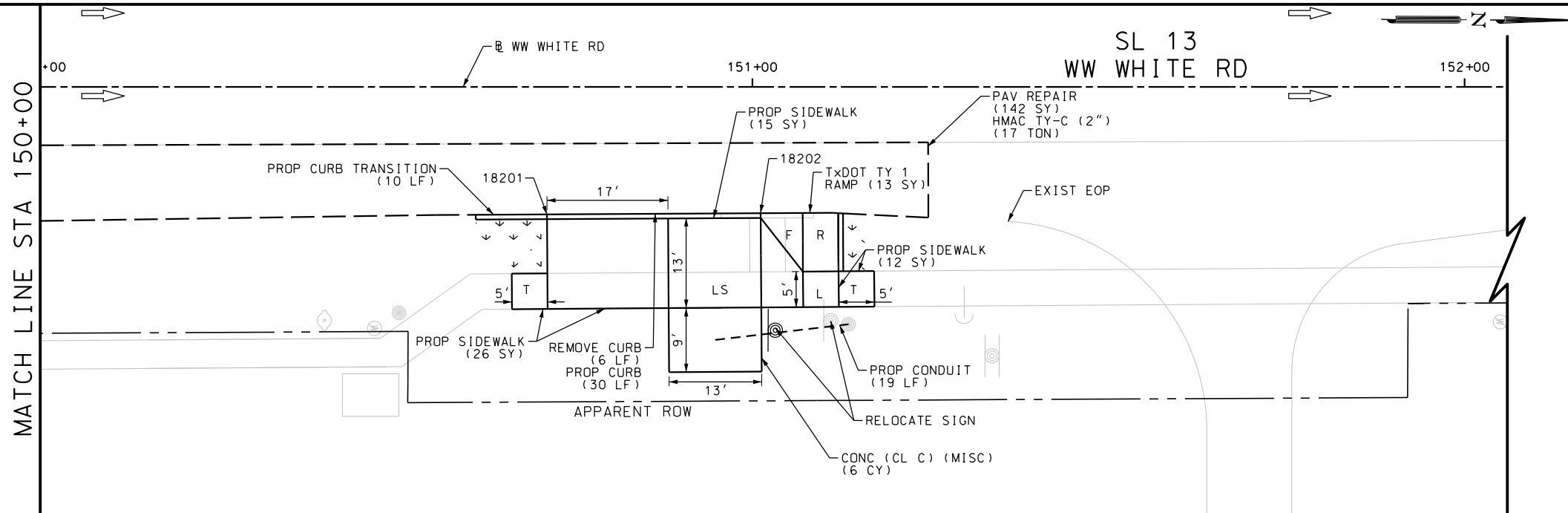
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 140+00 TO STA 150+00

SHEET 4 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	163

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_05.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	10
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	34
0162-6002	BLOCK SODDING	SY	53
0168-6001	VEGETATIVE WATERING	MG	0.83
0340-6066	D-GR HMA (SQ) TY-C PG76-22	TON	17.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	142
0420-6074	CL C CONC (MISC)	CY	12.0
0529-6002	CONC CURB (TY II)	LF	95
0531-6001	CONC SIDEWALKS (4")	SY	106
0531-6018	CURB RAMPS (TY 1)	SY	13
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	51
0644-6001	IN SM RD SN SUP&M TY10BWG(1)SA(P)	EA	1
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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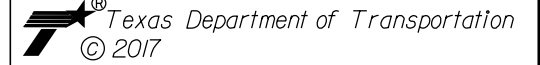
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



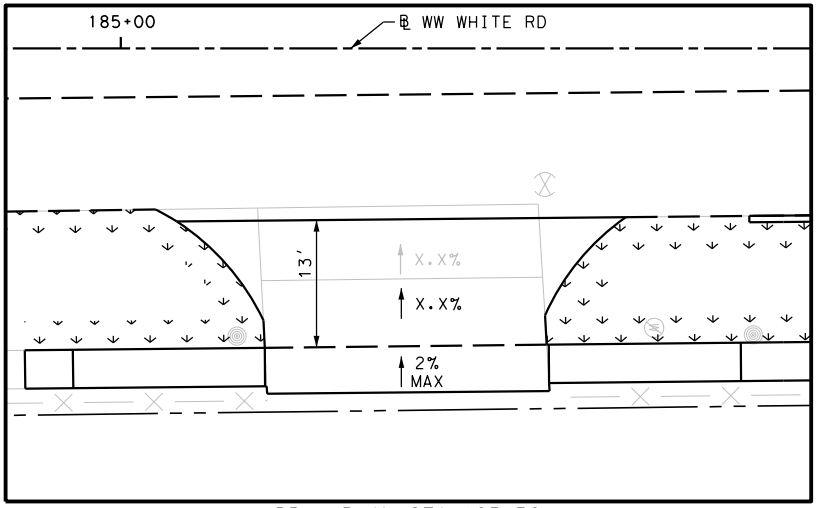
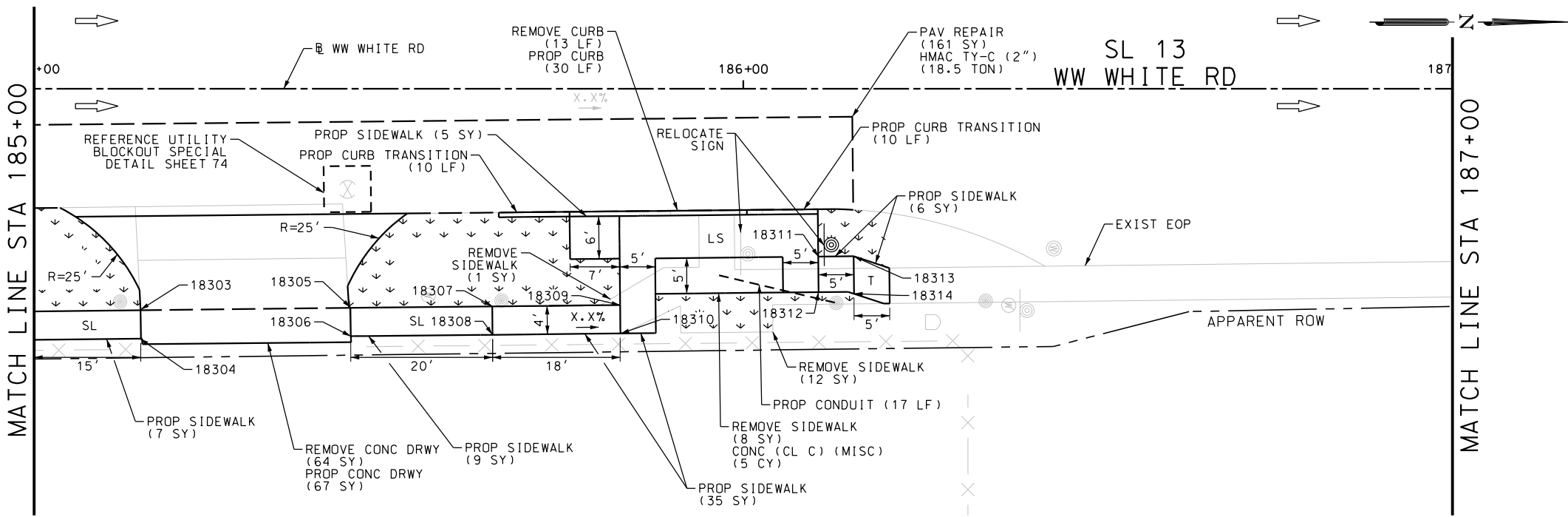
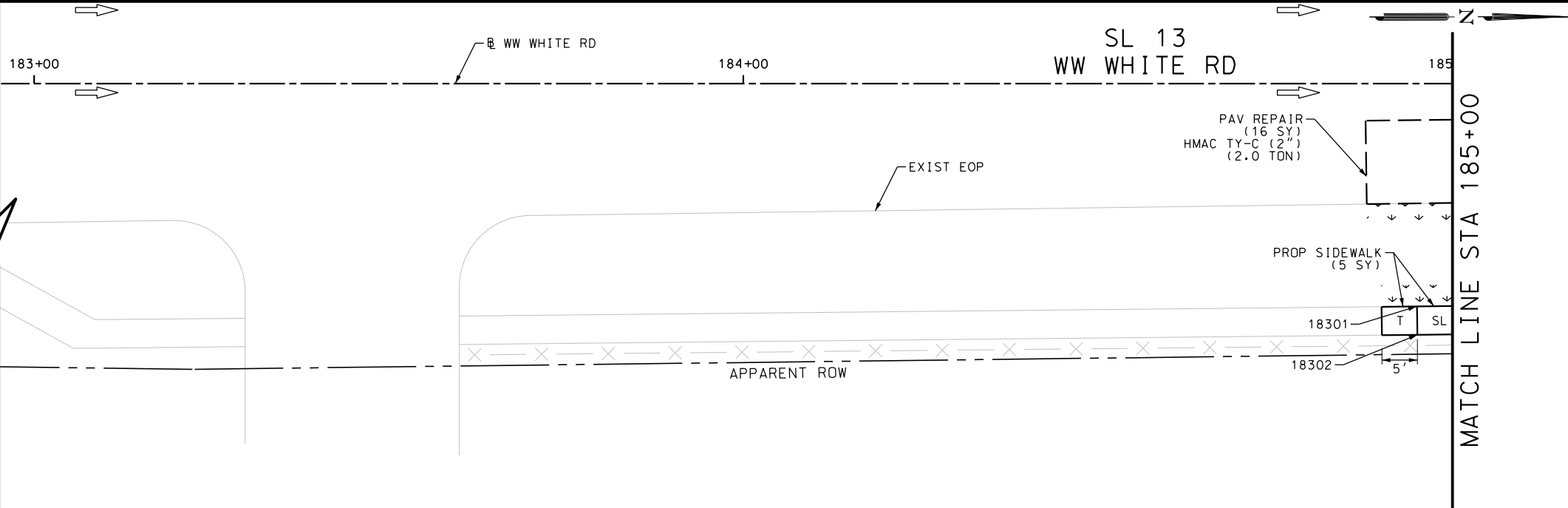
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 150+00 TO STA 174+00

SHEET 5 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	164

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_06.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	64
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	13
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	21
0162-6002	BLOCK SODDING	SY	85
0168-6001	VEGETATIVE WATERING	MG	1.33
0340-6066	D-GR HMA(SQ) TY-C PG76-22	TON	20.5
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	177
0420-6074	CL C CONC (MISC)	CY	5.0
0529-6002	CONC CURB (TY II)	LF	50
0530-6004	DRIVEWAYS (CONC)	SY	67
0531-6001	CONC SIDEWALKS (4")	SY	67
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	17
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



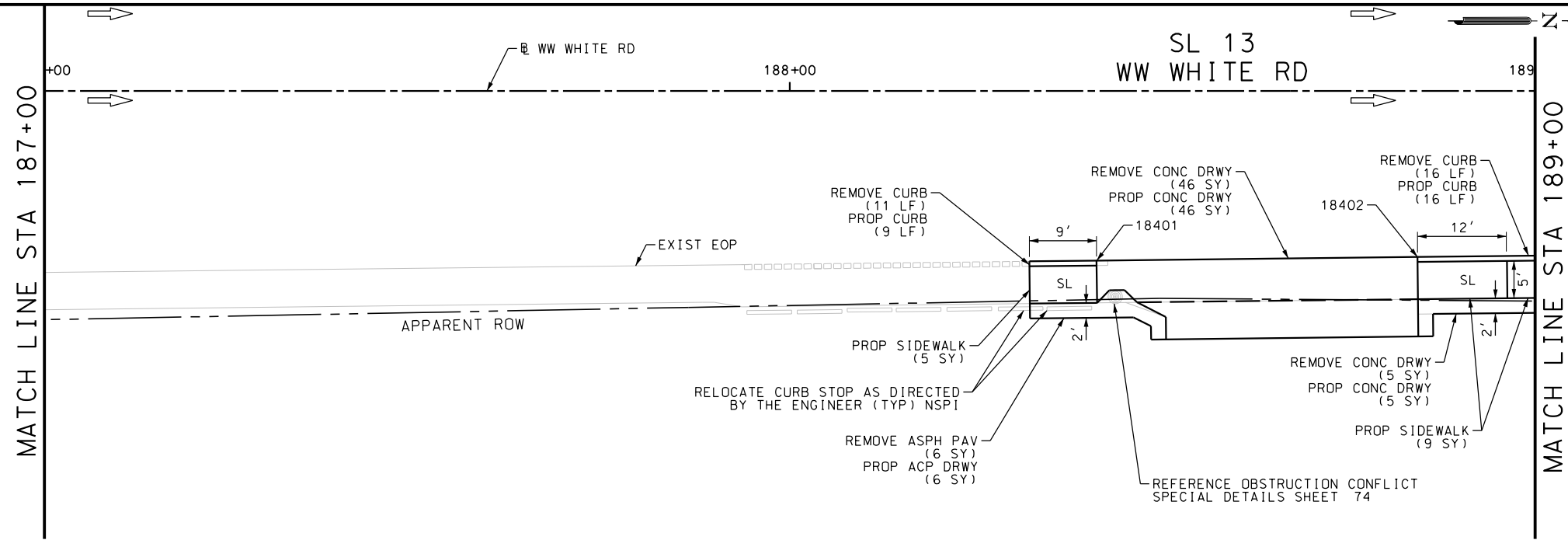
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 183+00 TO STA 187+00

SHEET 6 OF 51

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	165

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_07.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	51
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	27
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	6
0529-6002	CONC CURB (TY II)	LF	25
0530-6004	DRIVEWAYS (CONC)	SY	51
0530-6005	DRIVEWAYS (ACP)	SY	6
0531-6001	CONC SIDEWALKS (4")	SY	14

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

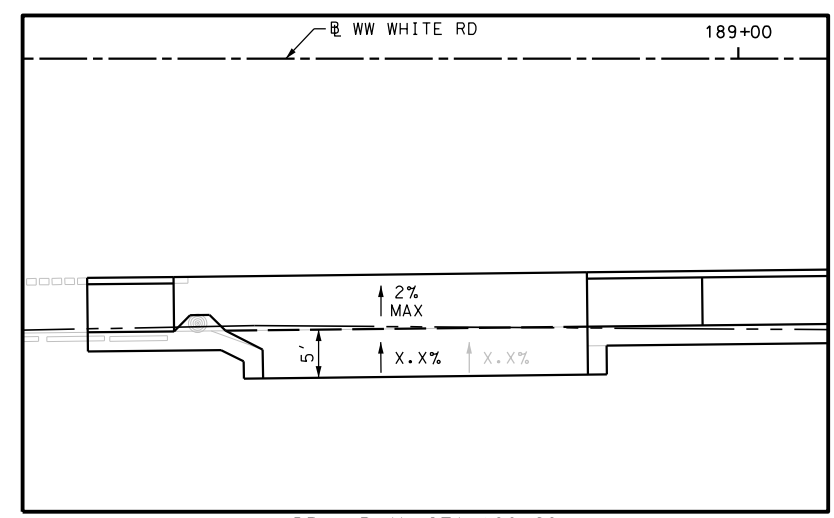
**Pape-Dawson Engineers**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 187+00 TO STA 189+00

SHEET 7 OF 51

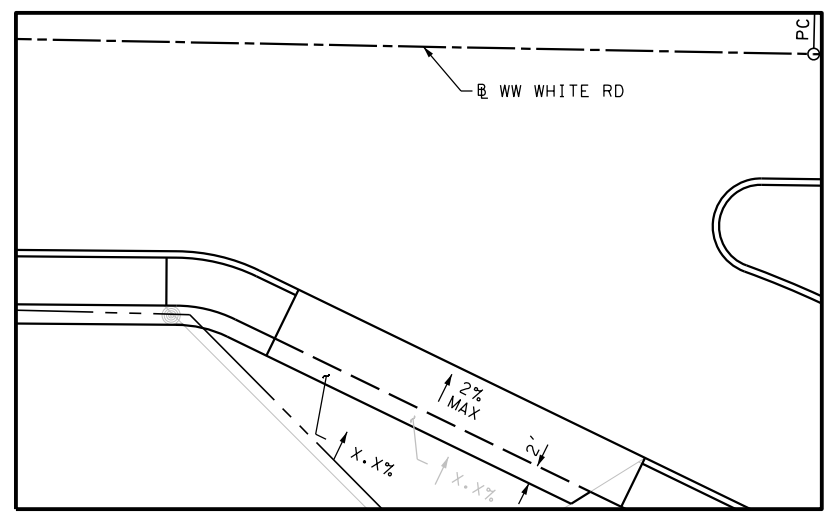
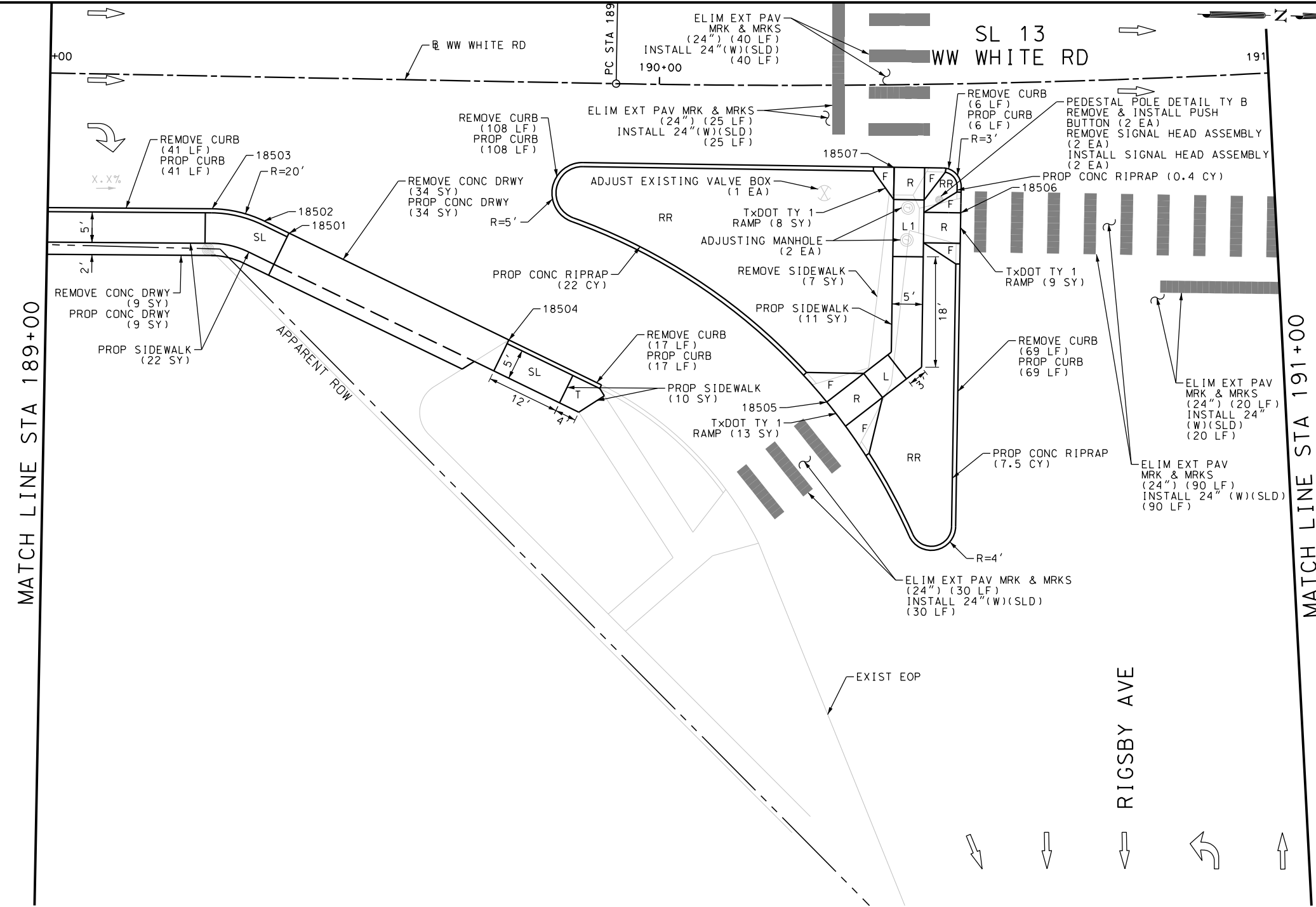
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	166



DRWY PLAN STA 188+68

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_08.dgn



ITEM	DESCRIPTION	UNIT	QTY
0479-6001	ADJUSTING MANHOLES	EA	2
7091-6001	ADJUST EXISTING VALVE BOX	EA	1
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	43
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	241
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	7
0432-6003	RIPRAP (CONC) (6 IN)	CY	29.9
0529-6002	CONC CURB (TY II)	LF	241
0530-6004	DRIVEWAYS (CONC)	SY	43
0531-6001	CONC SIDEWALKS (4")	SY	43
0531-6018	CURB RAMPS (TY 1)	SY	30
0666-6048	REFL PAV MRK TY I (W) 24" (SLD) (100MIL)	LF	205
0666-6230	PAVEMENT SEALER 24"	LF	205
0677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	205
0678-6008	PAV SURF PREP FOR MRK (24")	LF	205
0682-6017	PED SIG SEC (LED) (2 INDICATIONS)	EA	2
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	2
0690-6024	REMOVAL OF SIGNAL HEAD ASSM	EA	2
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	2

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



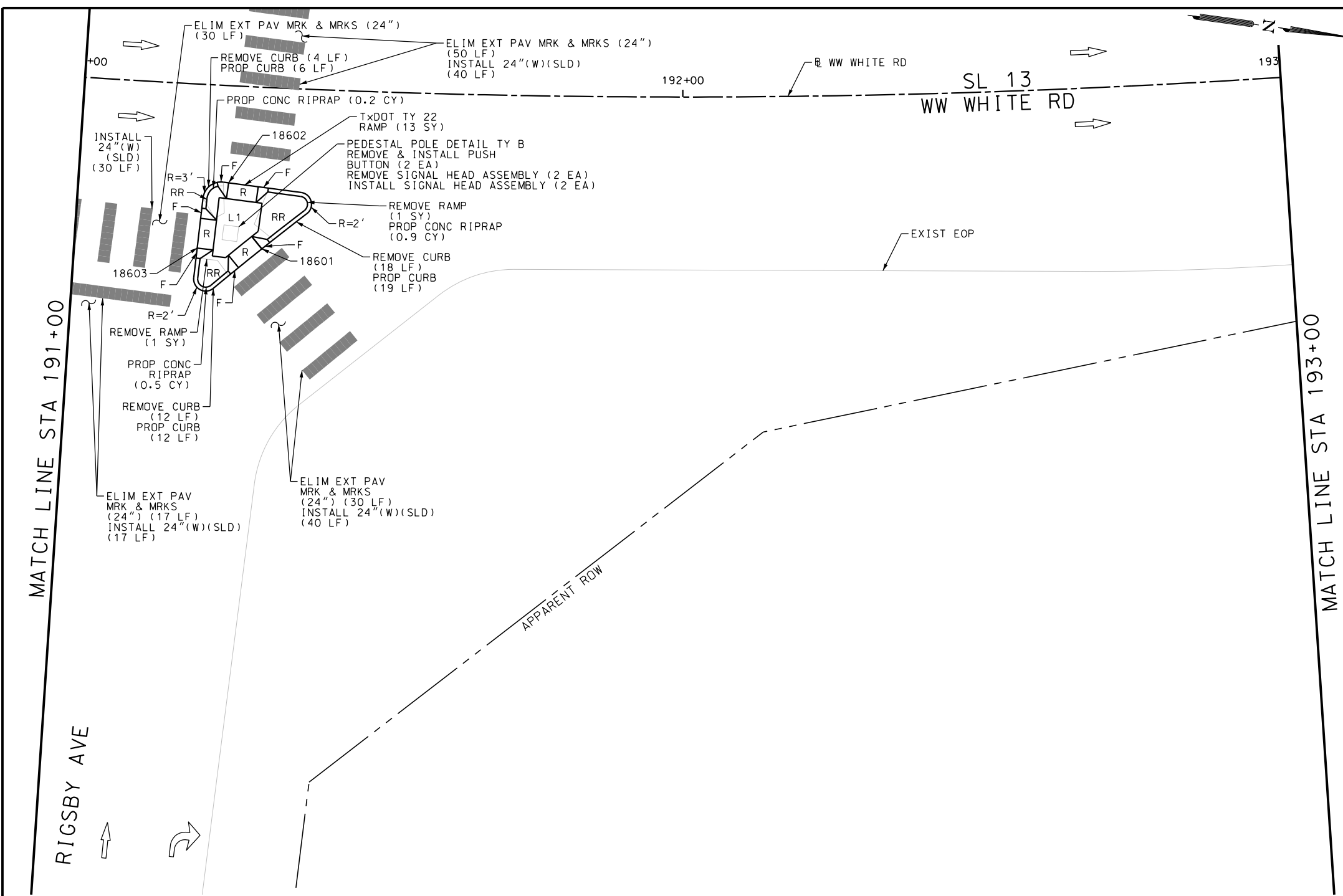
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 189+00 TO STA 191+00

SHEET 8 OF 51

CHK	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK	6	TEXAS		VA		
CHK	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK	SAT	BEXAR	0915	12	586	167

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_09.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	34
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	2
0432-6003	RIPRAP (CONC) (6 IN)	CY	1.6
0529-6002	CONC CURB (TY II)	LF	37
0531-6031	CURB RAMPS (TY 22)	SY	13
0666-6048	REFL PAV MRK TY I (W)24"(SLD) (100MIL)	LF	127
0666-6230	PAVEMENT SEALER 24"	LF	127
0677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	127
0678-6008	PAV SURF PREP FOR MRK (24")	LF	127
0682-6017	PED SIG SEC (LED) (2 INDICATIONS)	EA	2
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	2
0690-6024	REMOVAL OF SIGNAL HEAD ASSM	EA	2
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	2

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 191+00 TO STA 193+00

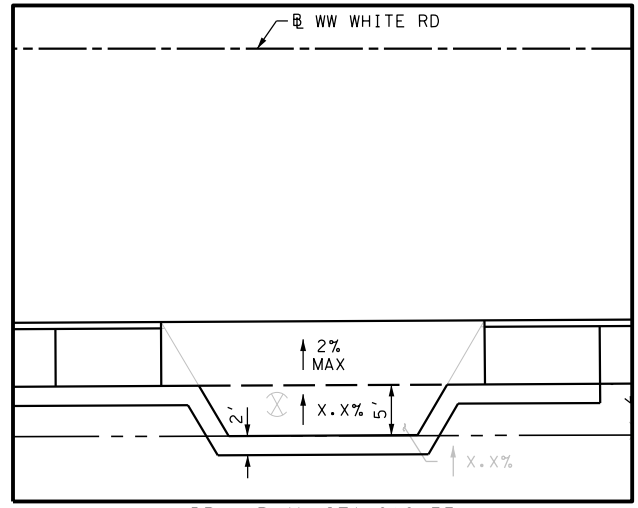
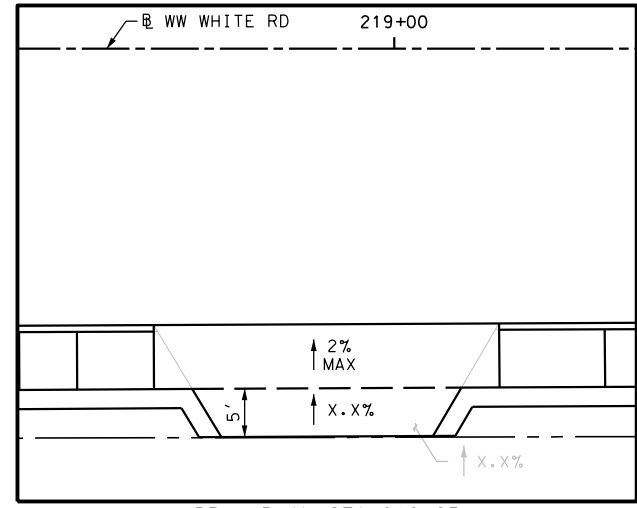
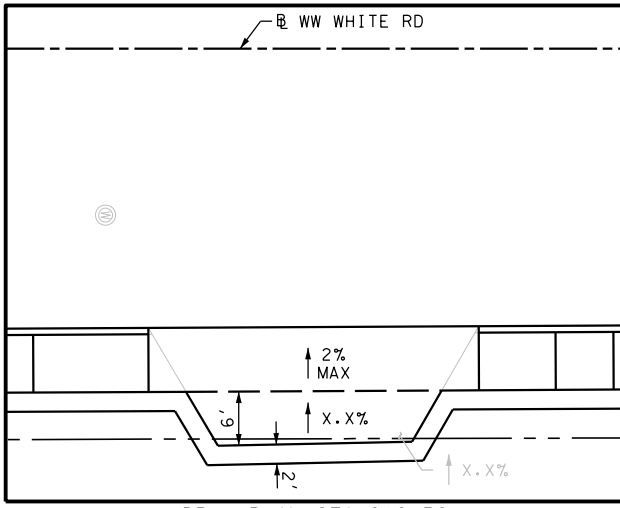
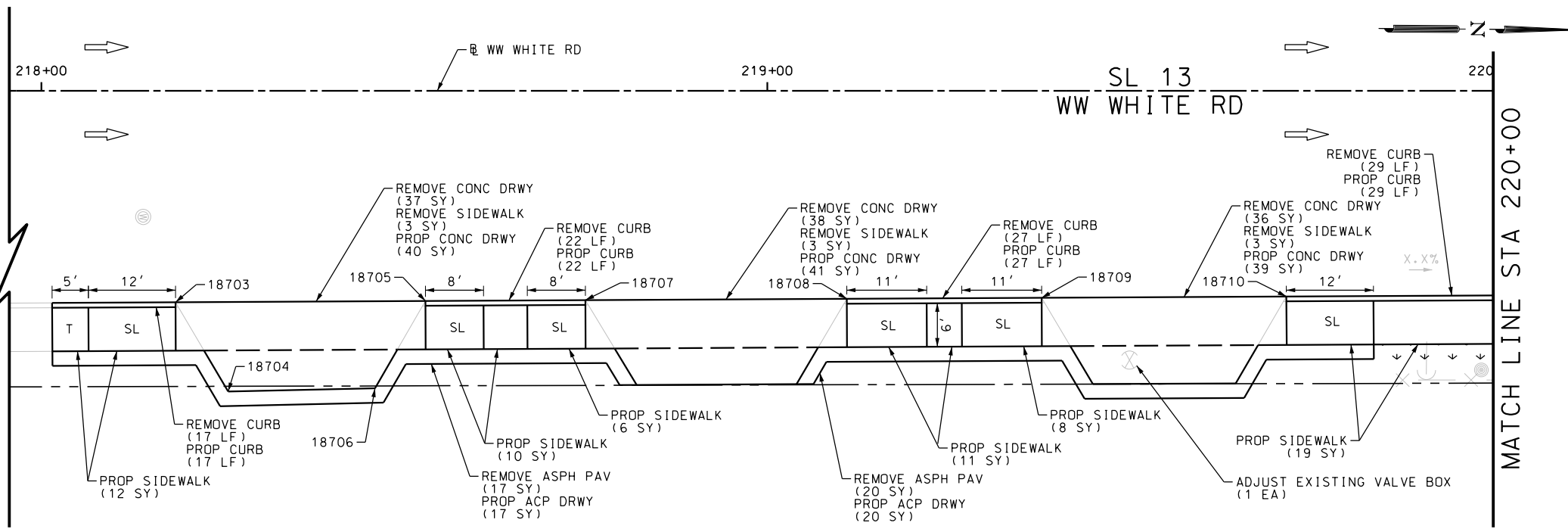
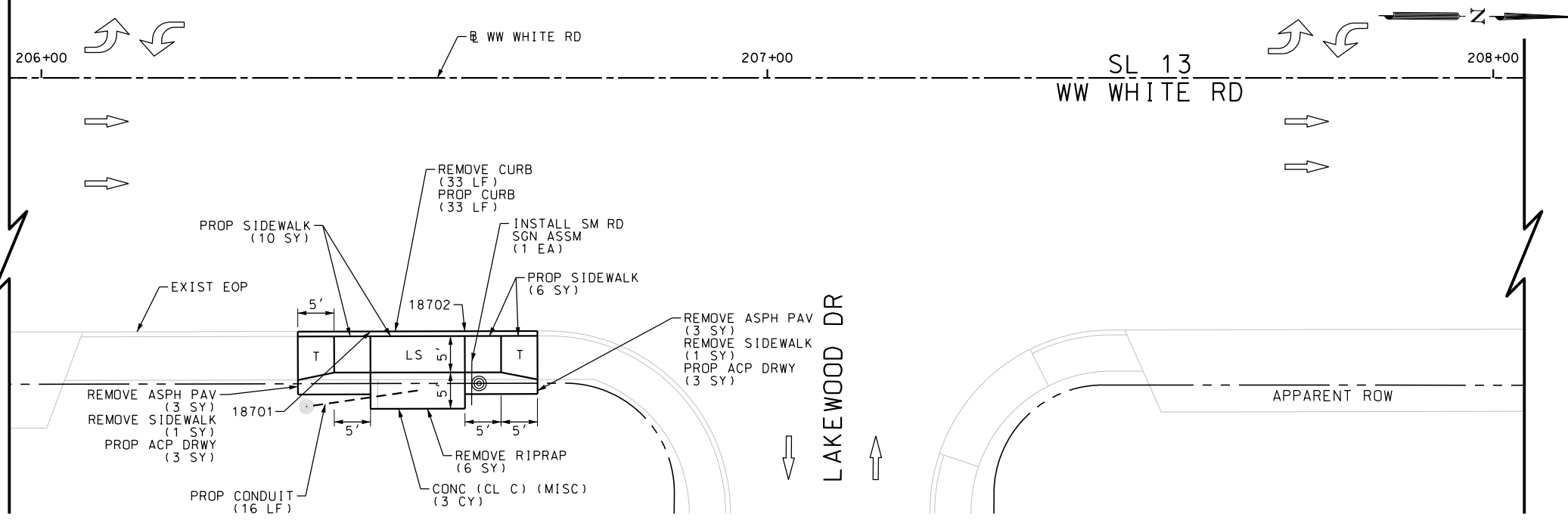
SHEET 9 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	168



Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_10.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6001	ADJUST EXISTING VALVE BOX	EA	1
0104-6009	REMOVING CONC (RIPRAP)	SY	6
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	111
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	128
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	11
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	43
0420-6074	CL C CONC (MISC)	CY	3.0
0529-6002	CONC CURB (TY II)	LF	128
0530-6004	DRIVEWAYS (CONC)	SY	120
0530-6005	DRIVEWAYS (ACP)	SY	43
0531-6001	CONC SIDEWALKS (4")	SY	82
0618-6016	COND (PVC) (SCH 40) (1")	LF	16
0644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	1

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



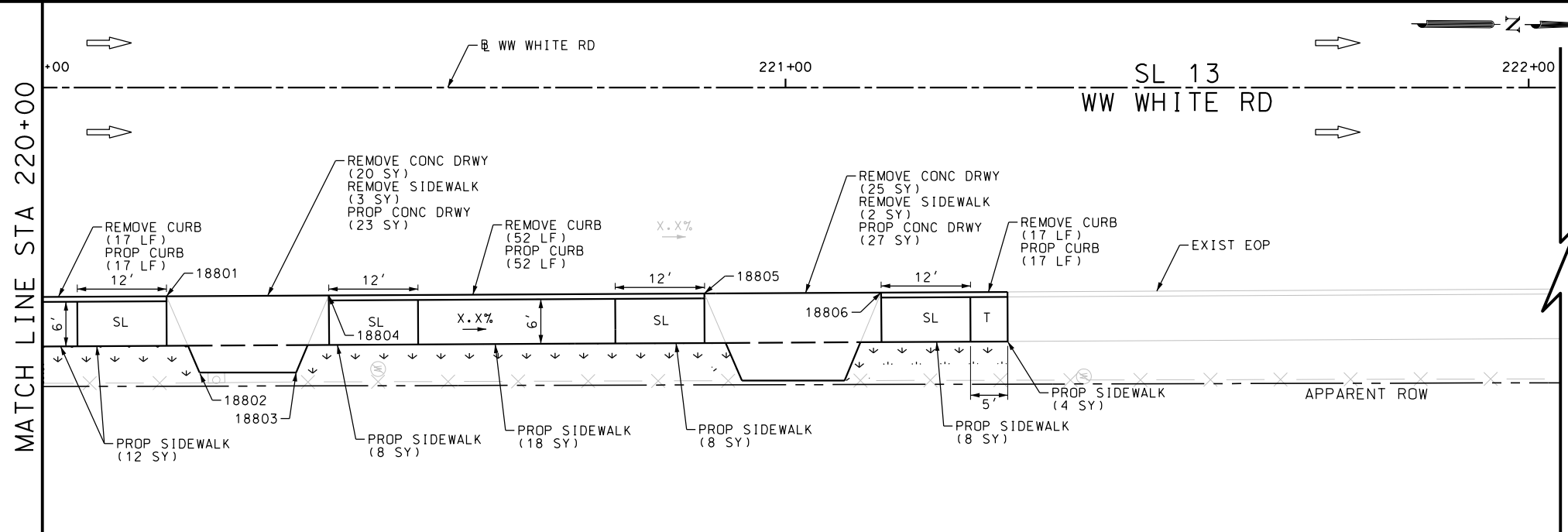
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 206+00 TO STA 220+00

SHEET 10 OF 51

DWG:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DWG:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	169

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Ww White\1113501\_wwwhite\_11.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	45
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	86
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	5
0162-6002	BLOCK SODDING	SY	42
0168-6001	VEGETATIVE WATERING	MG	0.66
0529-6002	CONC CURB (TY II)	LF	86
0530-6004	DRIVEWAYS (CONC)	SY	50
0531-6001	CONC SIDEWALKS (4")	SY	58

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY



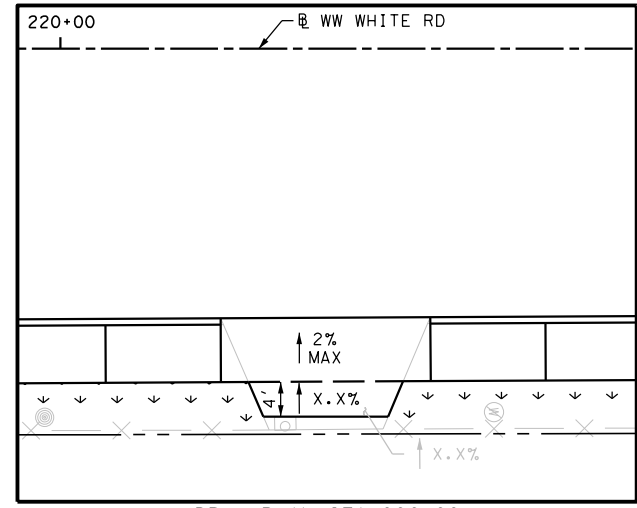
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



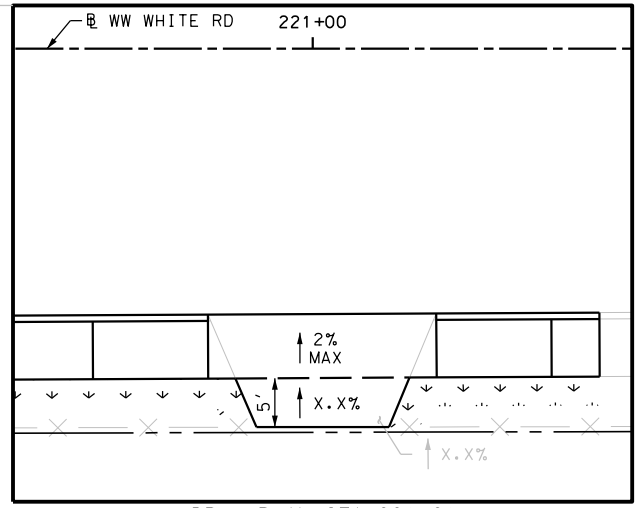
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 220+00 TO STA 222+00

SHEET 11 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	170



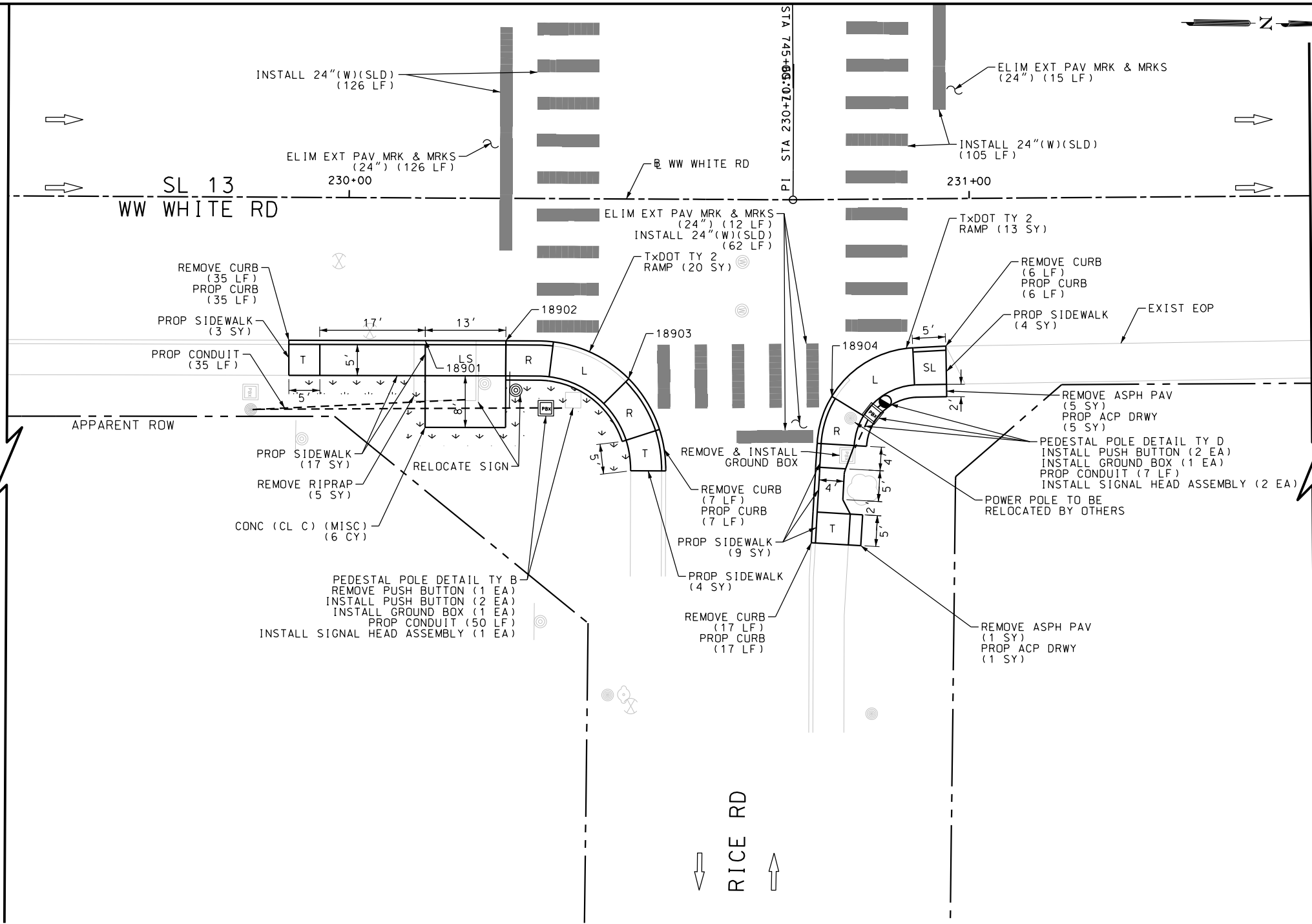
DRWY PLAN STA 220+28



DRWY PLAN STA 221+01

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_12.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	5
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	65
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	6
0162-6002	BLOCK SODDING	SY	27
0168-6001	VEGETATIVE WATERING	MG	0.42
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	65
0530-6005	DRIVEWAYS (ACP)	SY	6
0531-6001	CONC SIDEWALKS (4")	SY	37
0531-6019	CURB RAMPS (TY 2)	SY	33
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	92
0620-6009	ELEC CONDR (NO.6) BARE	LF	57
0624-6009	GROUND BOX TY D (162922)	EA	2
0624-6010	GROUND BOX TY D (162922)W/APRON	EA	1
0624-6028	REMOVE GROUND BOX	EA	1
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1
0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	293
0666-6230	PAVEMENT SEALER 24"	LF	293
0677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	153
0678-6008	PAV SURF PREP FOR MRK (24")	LF	293
0682-6017	PED SIG SEC (LED) (2 INDICATIONS)	EA	4
0684-6009	TRF SIG CBL (TY A) (12 AWG) (4 CONDR)	LF	230
0684-6028	TRF SIG CBL (TY A) (14 AWG) (2 CONDR)	LF	230
0687-6001	PED POLE ASSEMBLY	EA	1
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	4
0690-6024	REMOVAL OF SIGNAL HEAD ASSM	EA	1
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	1

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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



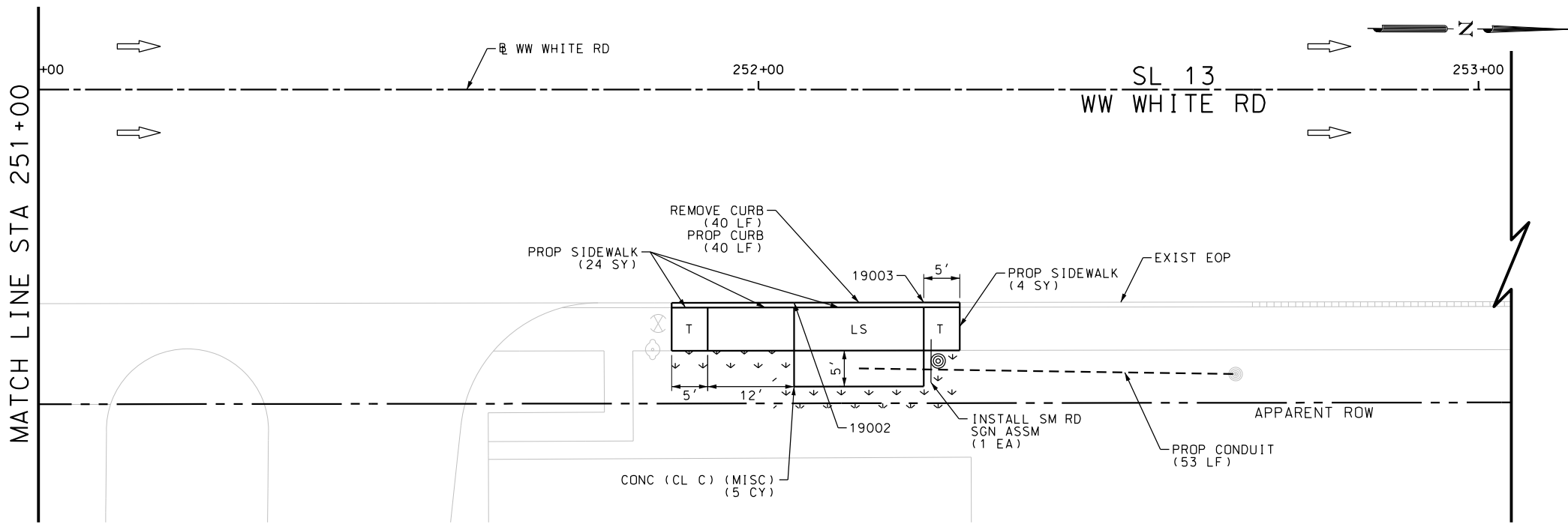
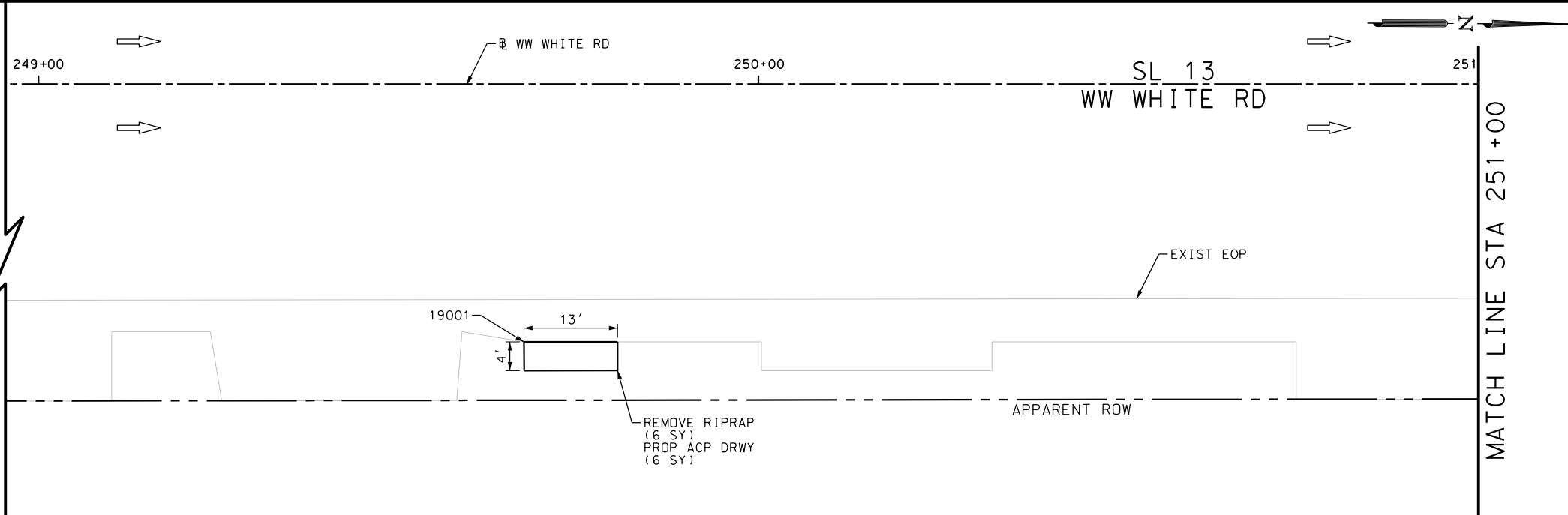
SL 13  
 WW WHITE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 230+65

SHEET 12 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	171

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_13.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	6
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	40
0162-6002	BLOCK SODDING	SY	18
0168-6001	VEGETATIVE WATERING	MG	0.28
0420-6074	CL C CONC (MISC)	CY	5.0
0529-6002	CONC CURB (TY II)	LF	40
0530-6005	DRIVEWAYS (ACP)	SY	6
0531-6001	CONC SIDEWALKS (4")	SY	28
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	53
0644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	1

NOTES:  
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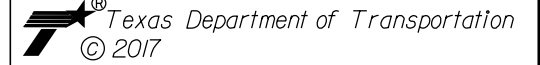
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



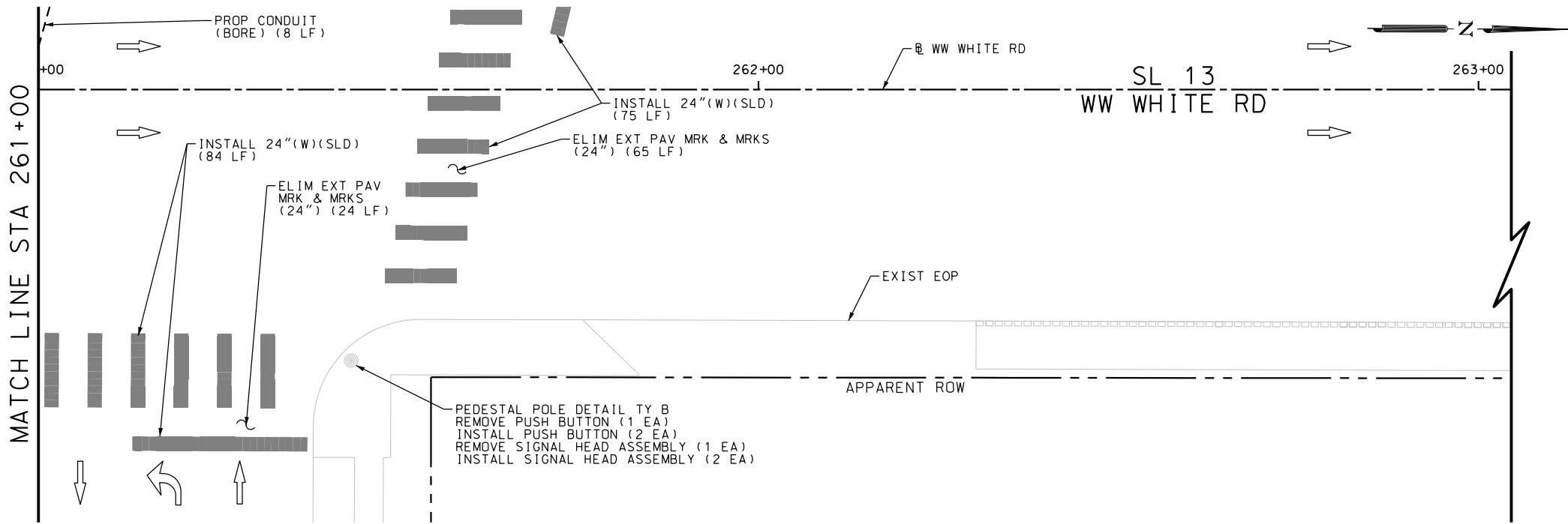
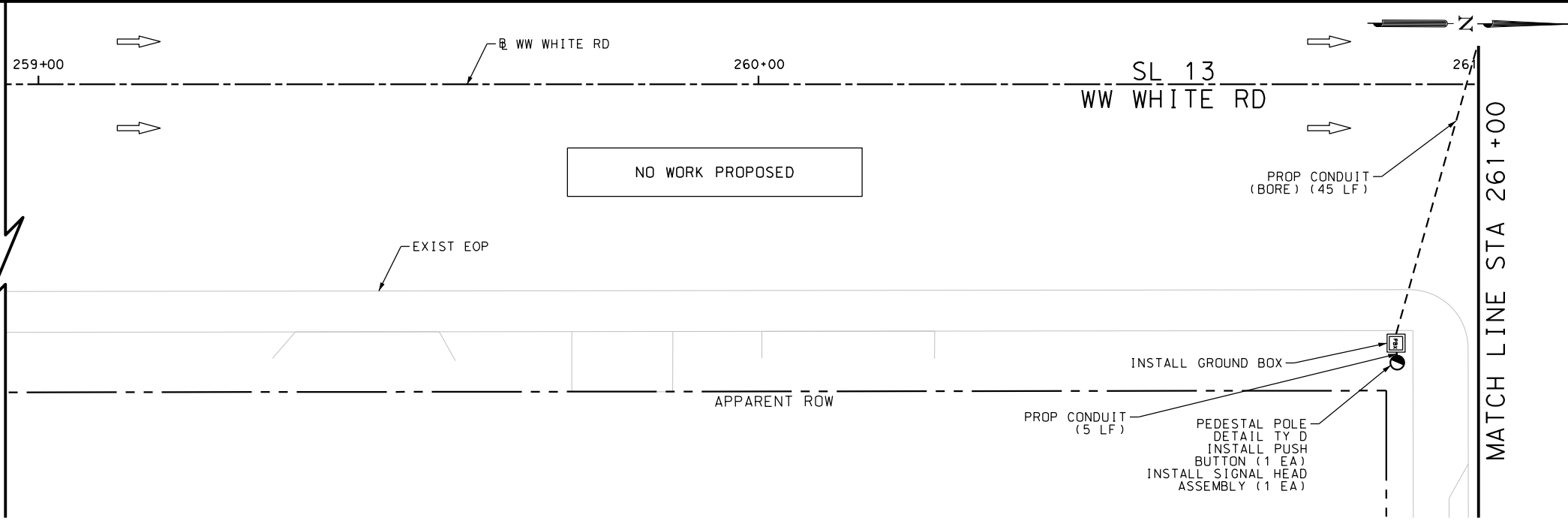
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 249+00 TO STA 253+00

SHEET 13 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	172

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_14.dgn



ITEM	DESCRIPTION	UNIT	QTY
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	5
0618-6017	CONDT (PVC) (SCH 40) (1") (BORE)	LF	53
0620-6009	ELEC CONDR (NO.6) BARE	LF	58
0624-6010	GROUND BOX TY D (162922)W/APRON	EA	1
0666-6048	REFL PAV MRK TY I (W)24" (SLD) (100MIL)	LF	159
0666-6230	PAVEMENT SEALER 24"	LF	159
0677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	89
0678-6008	PAV SURF PREP FOR MRK (24")	LF	159
0682-6017	PED SIG SEC (LED) (2 INDICATIONS)	EA	3
0684-6009	TRF SIG CBL (TY A) (12 AWG) (4 CONDR)	LF	158
0684-6028	TRF SIG CBL (TY A) (14 AWG) (2 CONDR)	LF	158
0687-6001	PED POLE ASSEMBLY	EA	1
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	3
0690-6024	REMOVAL OF SIGNAL HEAD ASSM	EA	1
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	1

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



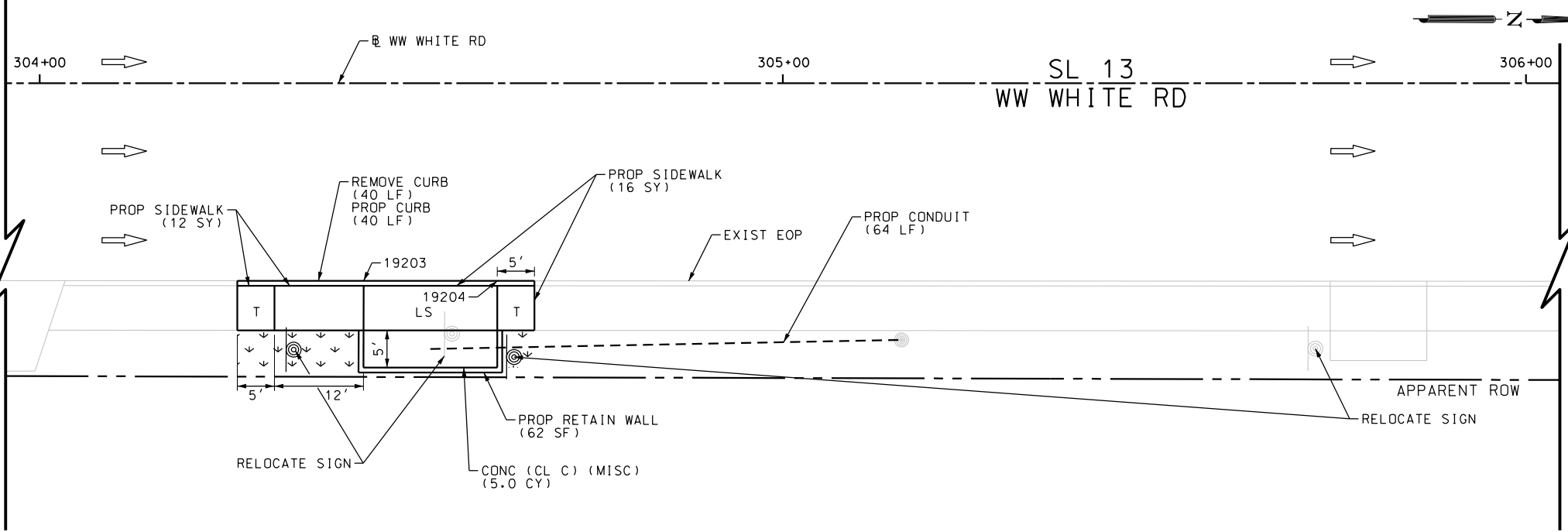
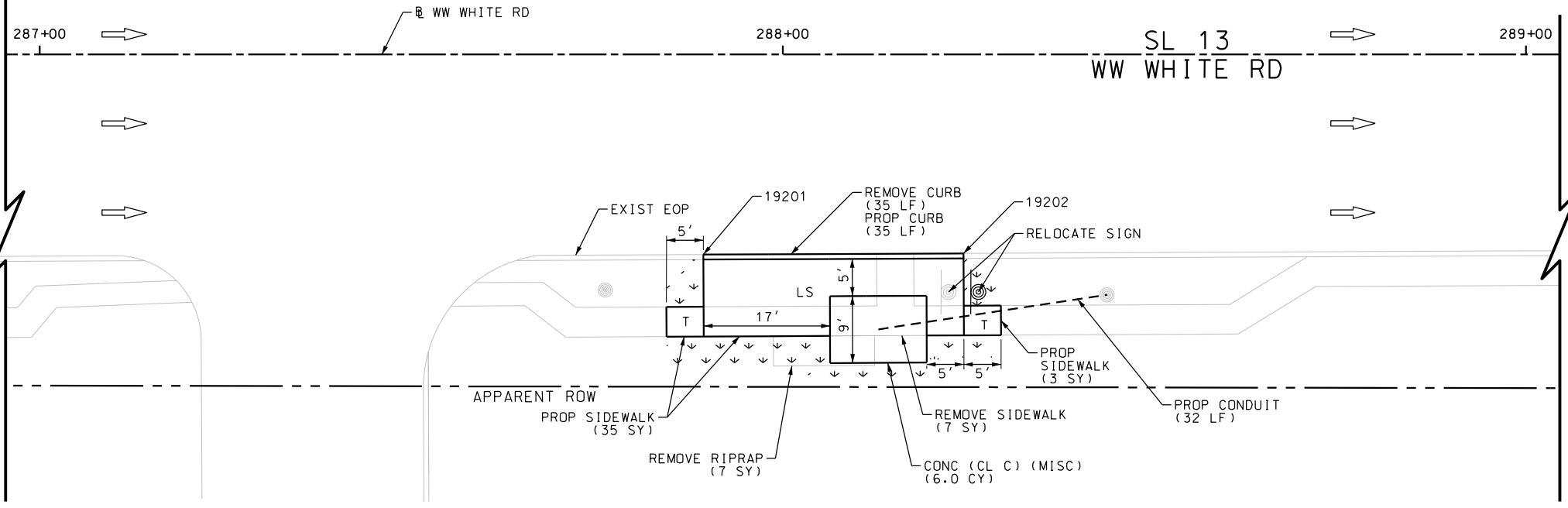
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 259+00 TO STA 263+00

SHEET 14 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	173

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_15.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	7
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	75
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	7
0162-6002	BLOCK SODDING	SY	38
0168-6001	VEGETATIVE WATERING	MG	0.59
0420-6074	CL C CONC (MISC)	CY	11.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	62
0529-6002	CONC CURB (TY II)	LF	75
0531-6001	CONC SIDEWALKS (4")	SY	66
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	96
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	3

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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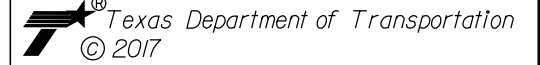
DESIGN  
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 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



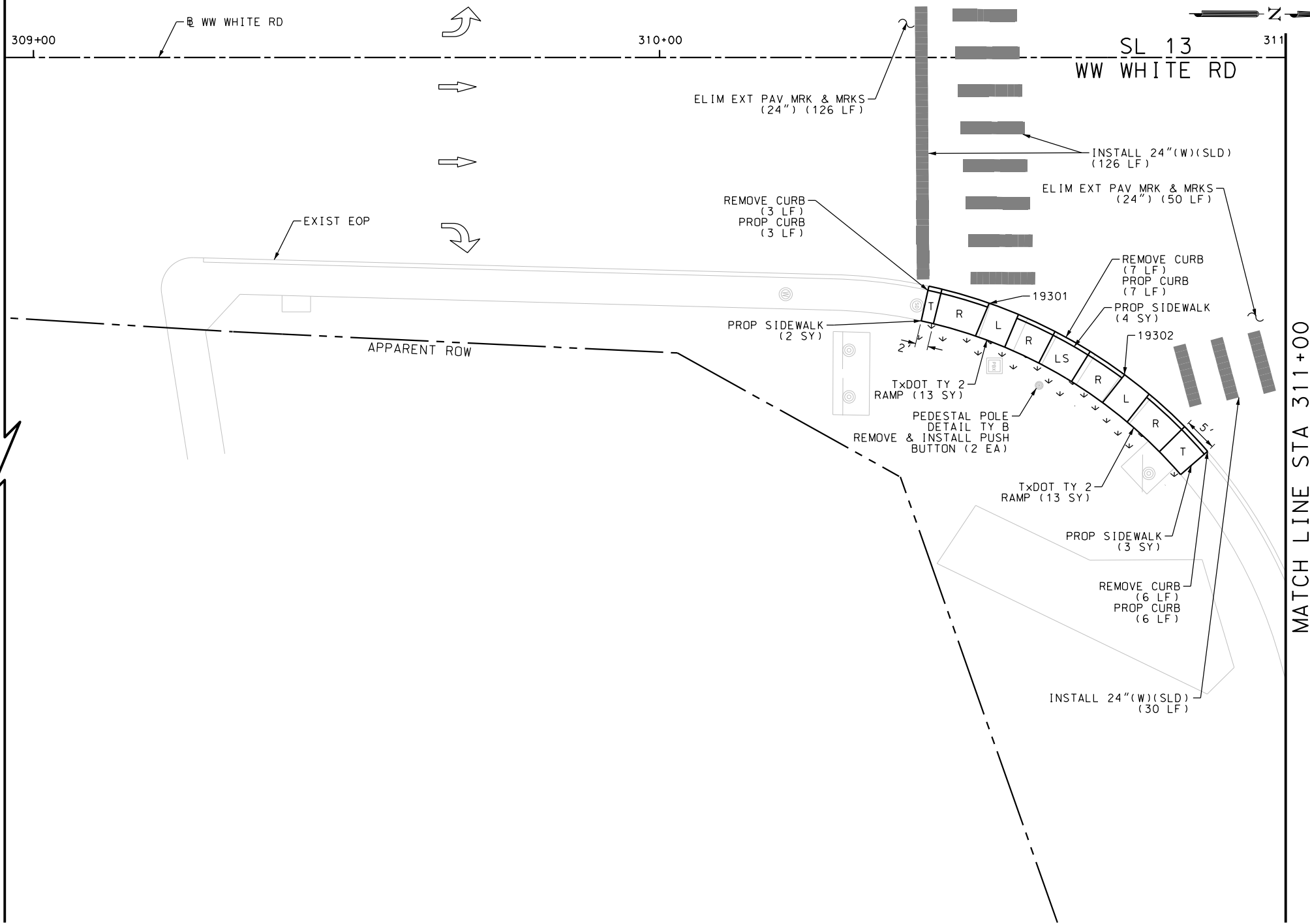
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 287+00 TO STA 306+00

SHEET 15 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	174

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_16.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	16
0162-6002	BLOCK SODDING	SY	14
0168-6001	VEGETATIVE WATERING	MG	0.22
0529-6002	CONC CURB (TY II)	LF	16
0531-6001	CONC SIDEWALKS (4")	SY	9
0531-6019	CURB RAMPS (TY 2)	SY	26
0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	156
0666-6230	PAVEMENT SEALER 24"	LF	156
0677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	176
0678-6008	PAV SURF PREP FOR MRK (24")	LF	156
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	2
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	2

NOTES:  
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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



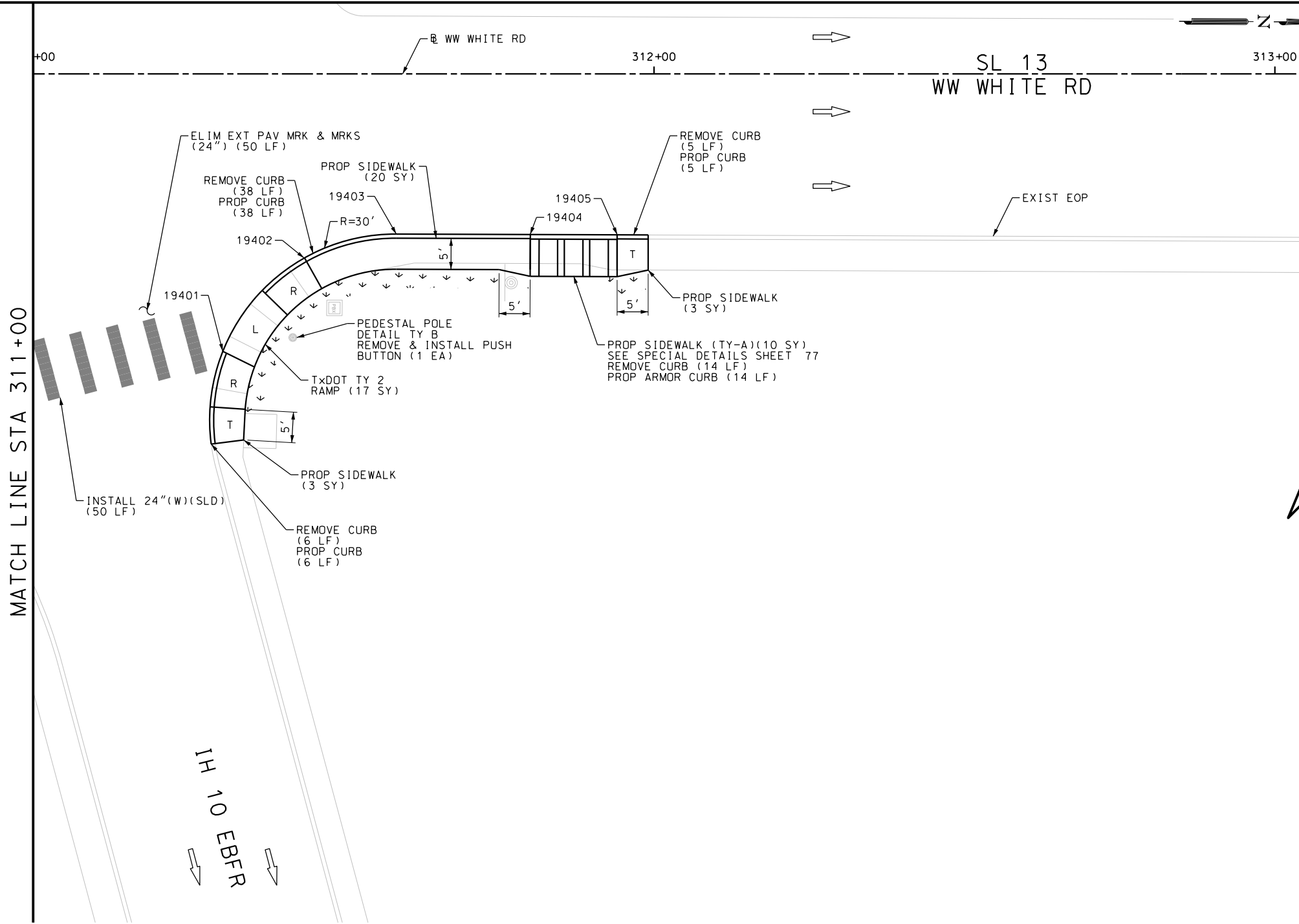
SL 13  
 WW WHITE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 309+00 TO STA 311+00

SHEET 16 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	175

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Ww White\1113501\_wwwhite\_17.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	63
0162-6002	BLOCK SODDING	SY	20
0168-6001	VEGETATIVE WATERING	MG	0.31
0529-6002	CONC CURB (TY II)	LF	49
0529-6020	CONC CURB & GUTTER (ARMOR CURB)	LF	14
0531-6001	CONC SIDEWALKS (4")	SY	26
0531-6019	CURB RAMPS (TY 2)	SY	17
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	10
0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	50
0666-6230	PAVEMENT SEALER 24"	LF	50
0677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	50
0678-6008	PAV SURF PREP FOR MRK (24")	LF	50
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	1
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	1

NOTES:  
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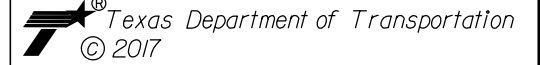
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 311+00 TO STA 313+00

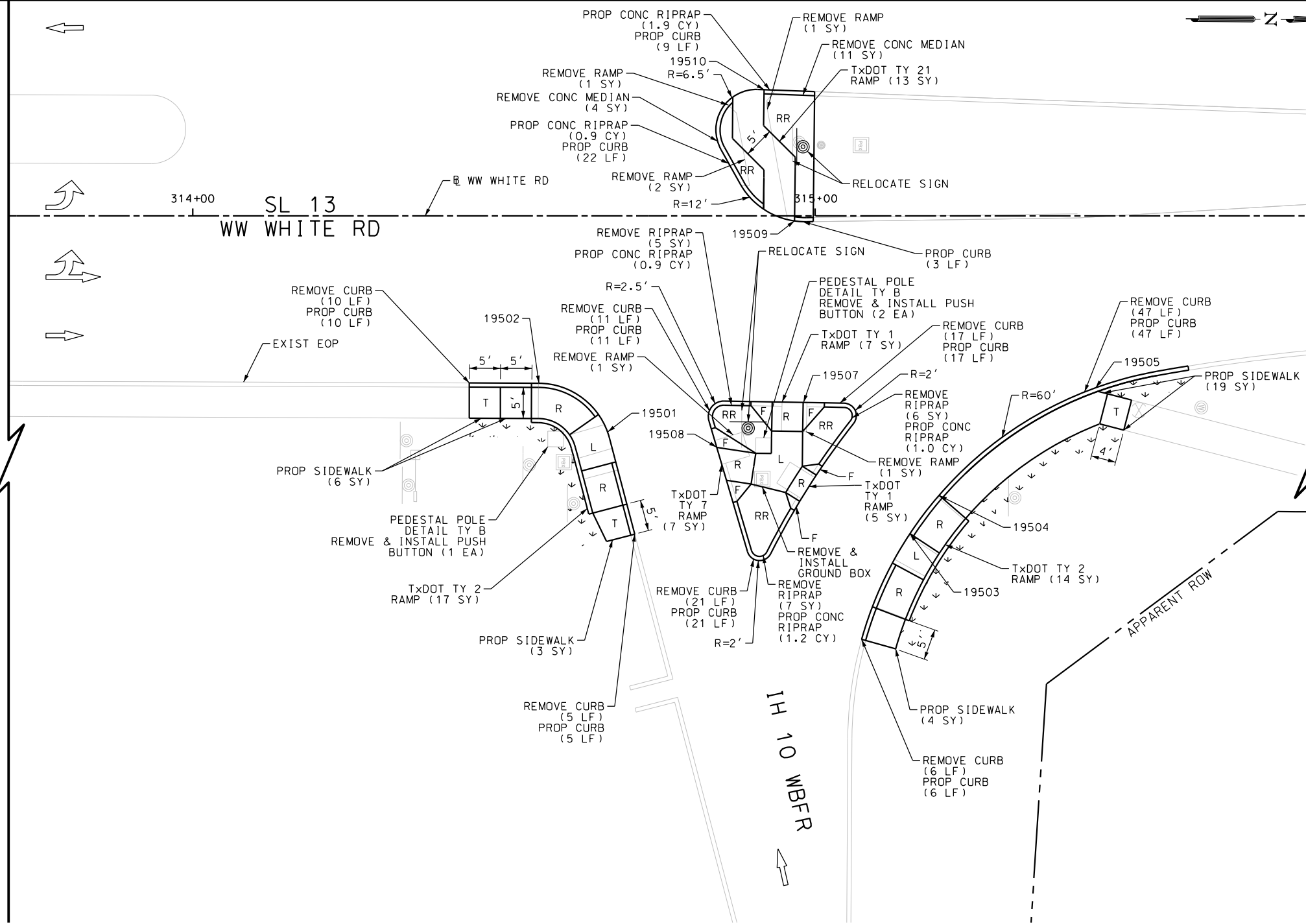
SHEET 17 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	176



Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_18.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	18
0104-6011	REMOVING CONC (MEDIANS)	SY	15
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	117
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	6
0162-6002	BLOCK SODDING	SY	31
0168-6001	VEGETATIVE WATERING	MG	0.48
0432-6003	RIPRAP (CONC) (6 IN)	CY	5.9
0529-6002	CONC CURB (TY II)	LF	151
0531-6001	CONC SIDEWALKS (4")	SY	32
0531-6018	CURB RAMPS (TY 1)	SY	12
0531-6019	CURB RAMPS (TY 2)	SY	31
0531-6024	CURB RAMPS (TY 7)	SY	7
0531-6030	CURB RAMPS (TY 21)	SY	13
0624-6009	GROUND BOX TY D (162922)	EA	1
0624-6028	REMOVE GROUND BOX	EA	1
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	2
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	3
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	3

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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



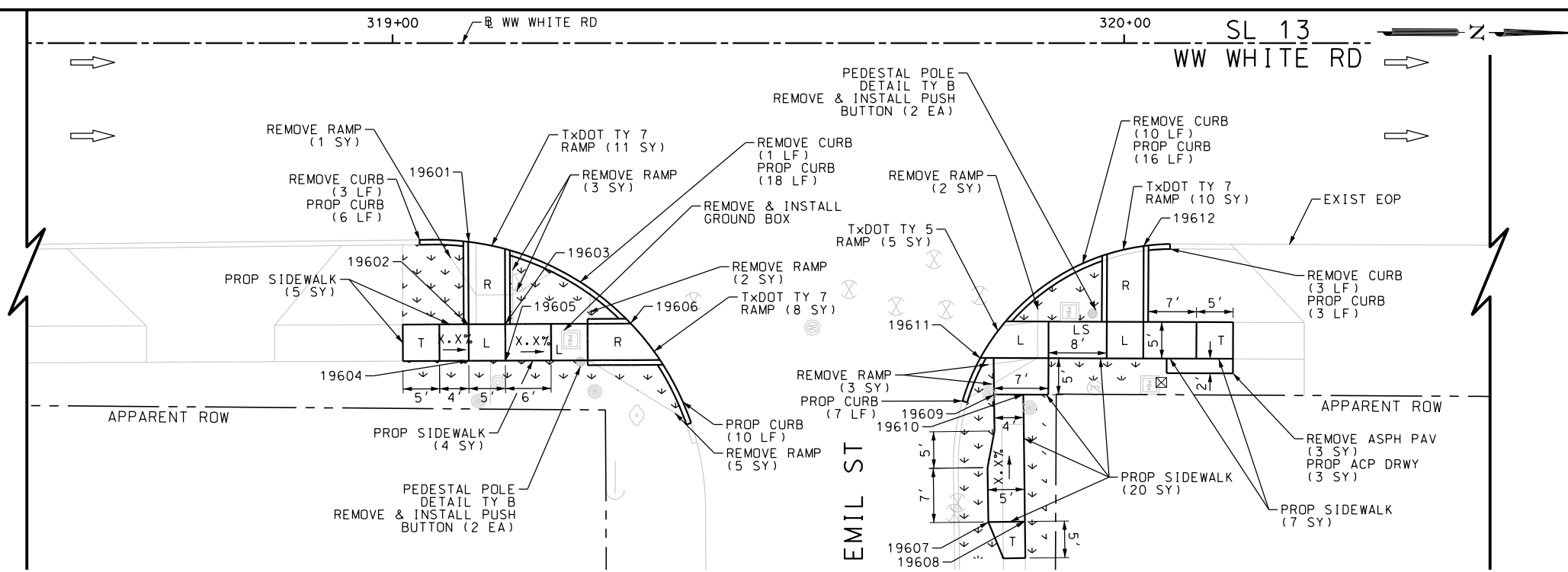
SL 13  
 WW WHITE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 313+70 TO STA 315+80

SHEET 18 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	177

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Ww White\1113501\_wwwhite\_19.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	87
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	17
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	16
0105-6037	REMOVING STAB BASE AND ASPH PAV(0"-16")	SY	3
0162-6002	BLOCK SODDING	SY	81
0168-6001	VEGETATIVE WATERING	MG	1.26
0529-6002	CONC CURB (TY II)	LF	60
0530-6004	DRIVEWAYS (CONC)	SY	88
0530-6005	DRIVEWAYS (ACP)	SY	3
0531-6001	CONC SIDEWALKS (4")	SY	47
0531-6022	CURB RAMPS (TY 5)	SY	5
0531-6024	CURB RAMPS (TY 7)	SY	29
0624-6009	GROUND BOX TY D (162922)	EA	1
0624-6028	REMOVE GROUND BOX	EA	1
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	4
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	4

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

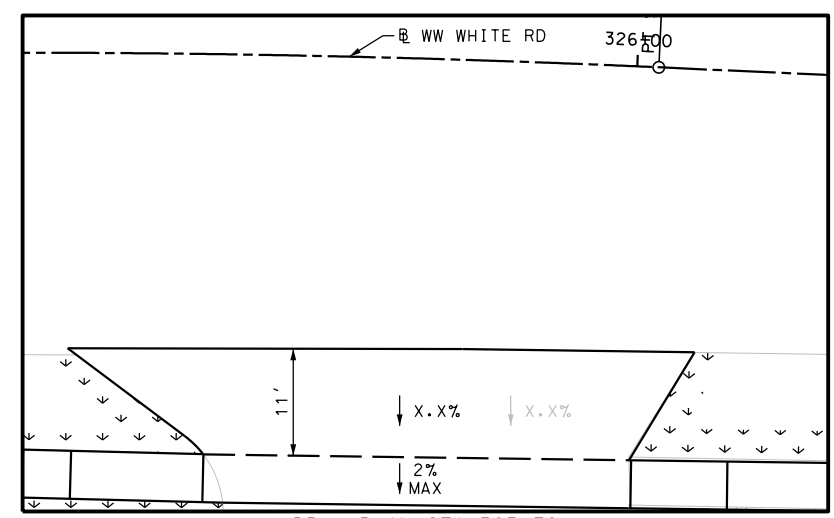
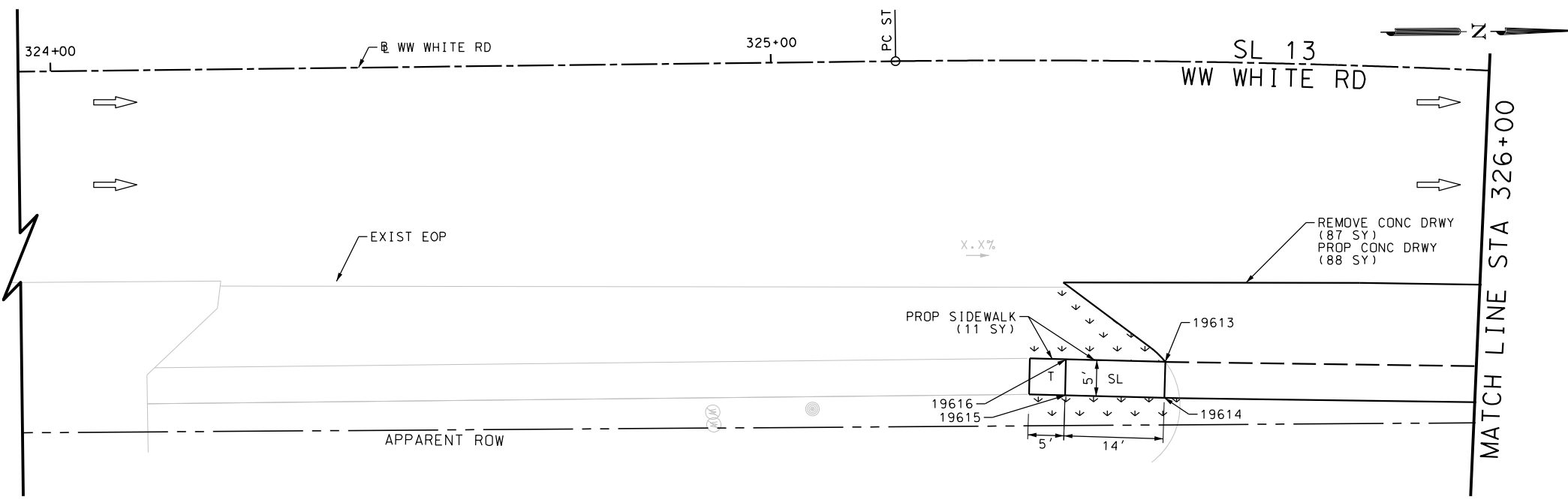
**Pape-Dawson Engineers**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 318+50 TO STA 326+00

SHEET 19 OF 51

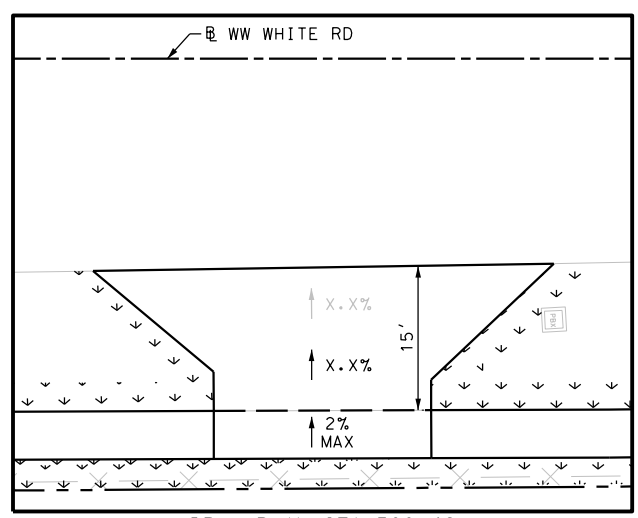
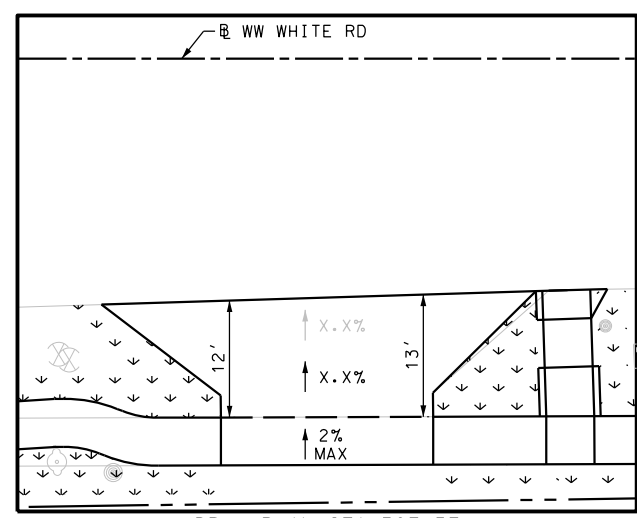
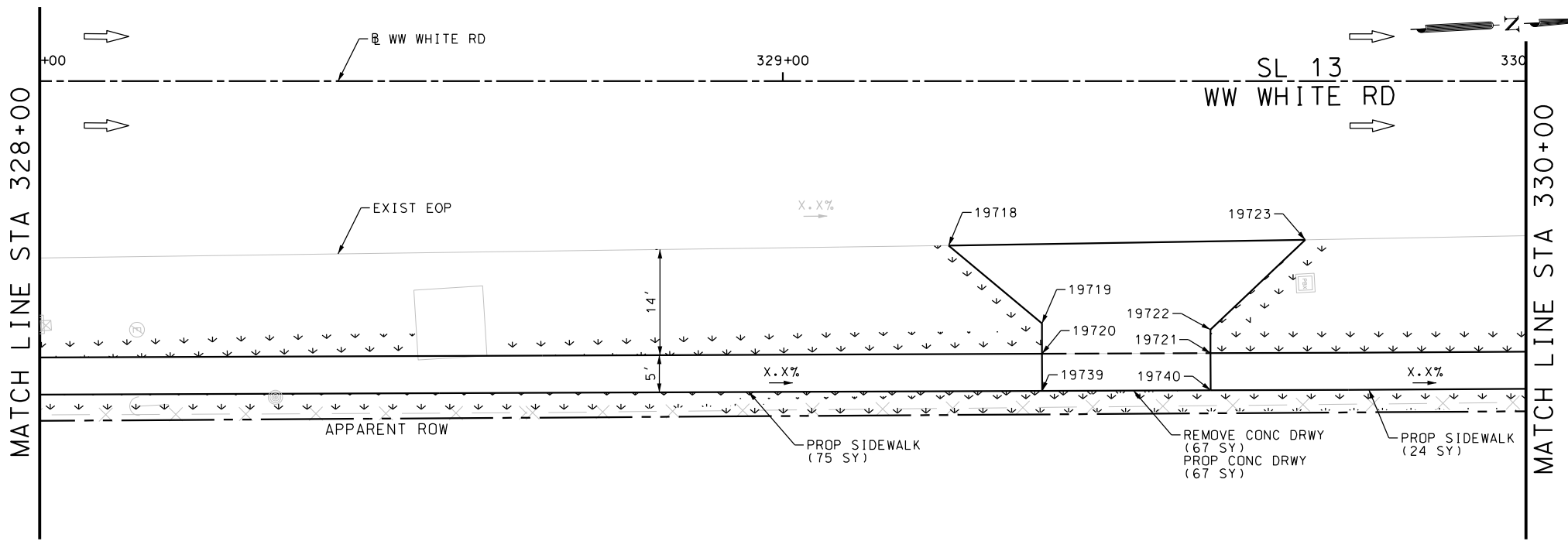
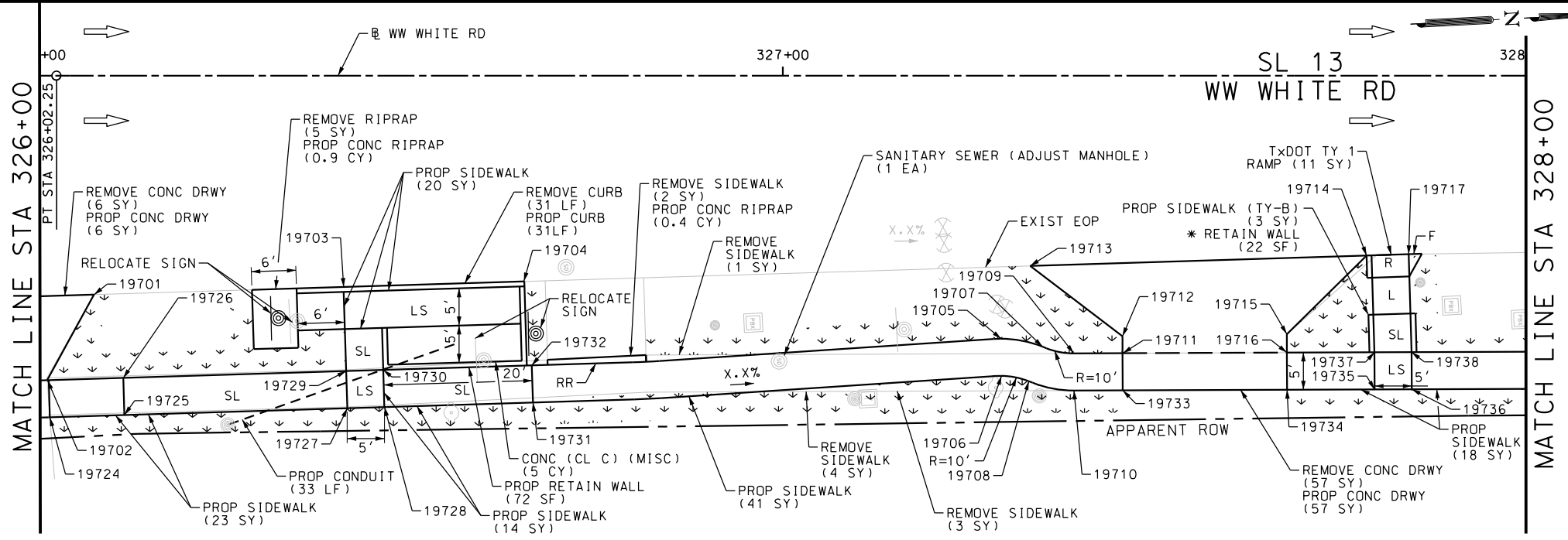
DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	178



DRWY PLAN STA 325+78

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_20.dgn



ITEM	DESCRIPTION	UNIT	QTY
7090-6001	SANITARY SEWER (ADJUST MANHOLE)	EA	1
0104-6009	REMOVING CONC (RIPRAP)	SY	5
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	130
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	10
0162-6002	BLOCK SODDING	SY	279
0168-6001	VEGETATIVE WATERING	MG	4.35
0420-6074	CL C CONC (MISC)	CY	5.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	72
0432-6003	RIPRAP (CONC) (6 IN)	CY	1.3
0529-6002	CONC CURB (TY II)	LF	31
0530-6004	DRIVEWAYS (CONC)	SY	130
0531-6001	CONC SIDEWALKS (4")	SY	215
0531-6018	CURB RAMPS (TY 1)	SY	5
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	2

NOTES:  
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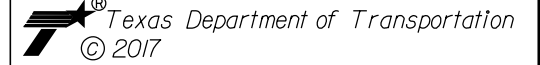
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



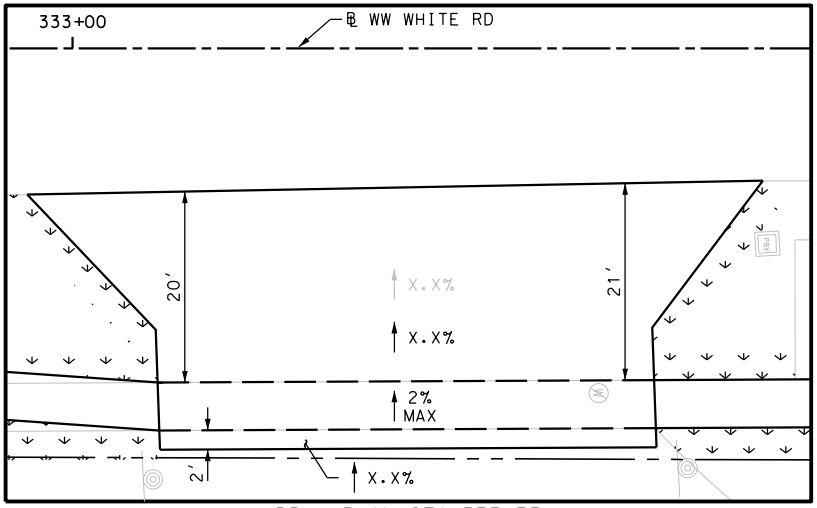
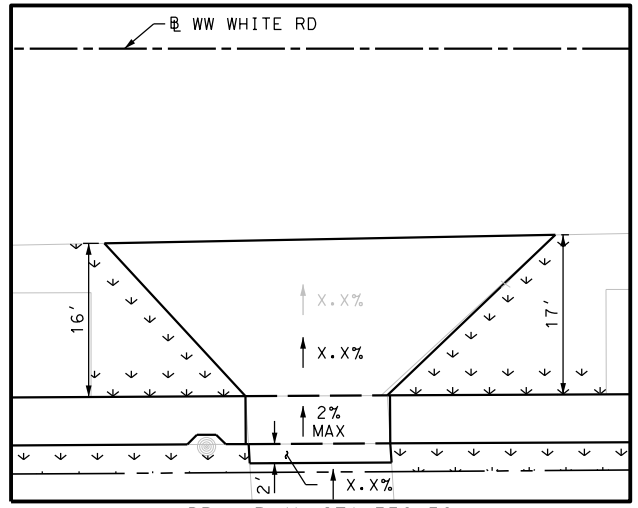
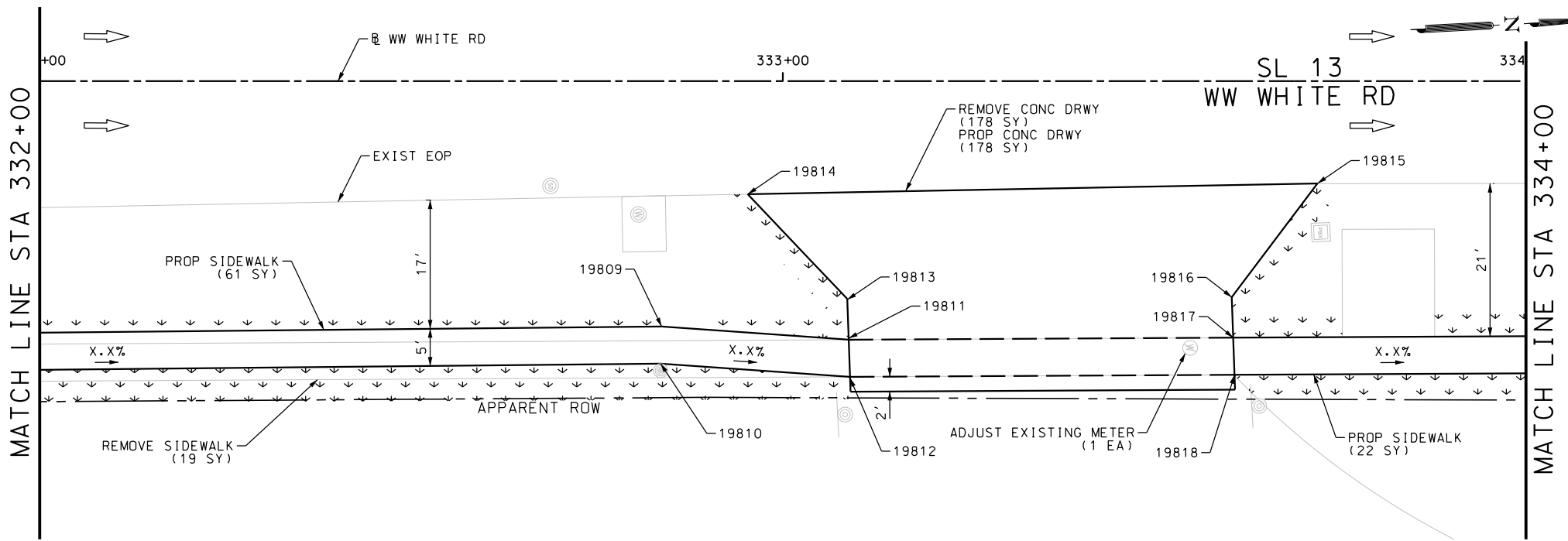
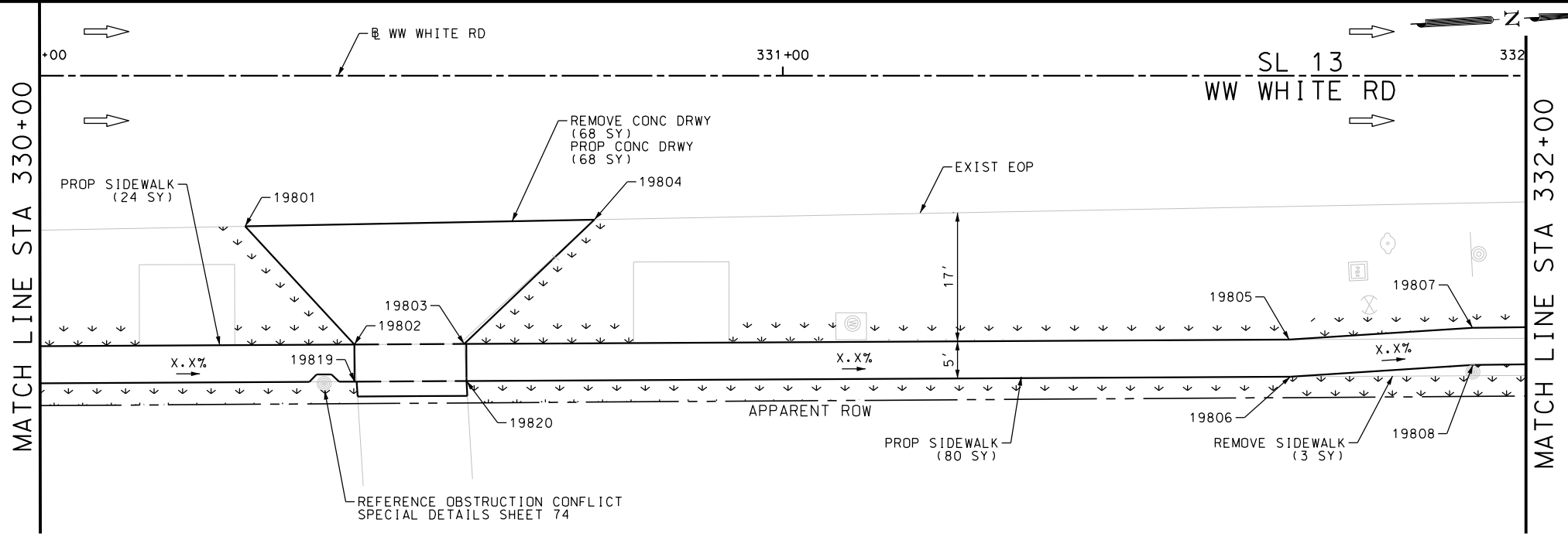
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 326+00 TO STA 330+00

SHEET 20 OF 51

DWG:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DWG:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	179

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_21.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	1
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	246
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	22
0162-6002	BLOCK SODDING	SY	312
0168-6001	VEGETATIVE WATERING	MG	4.87
0530-6004	DRIVEWAYS (CONC)	SY	246
0531-6001	CONC SIDEWALKS (4")	SY	187

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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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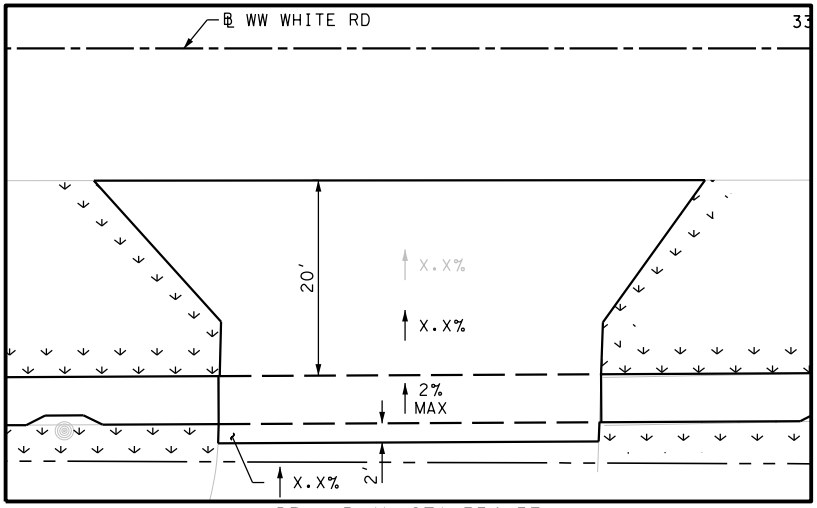
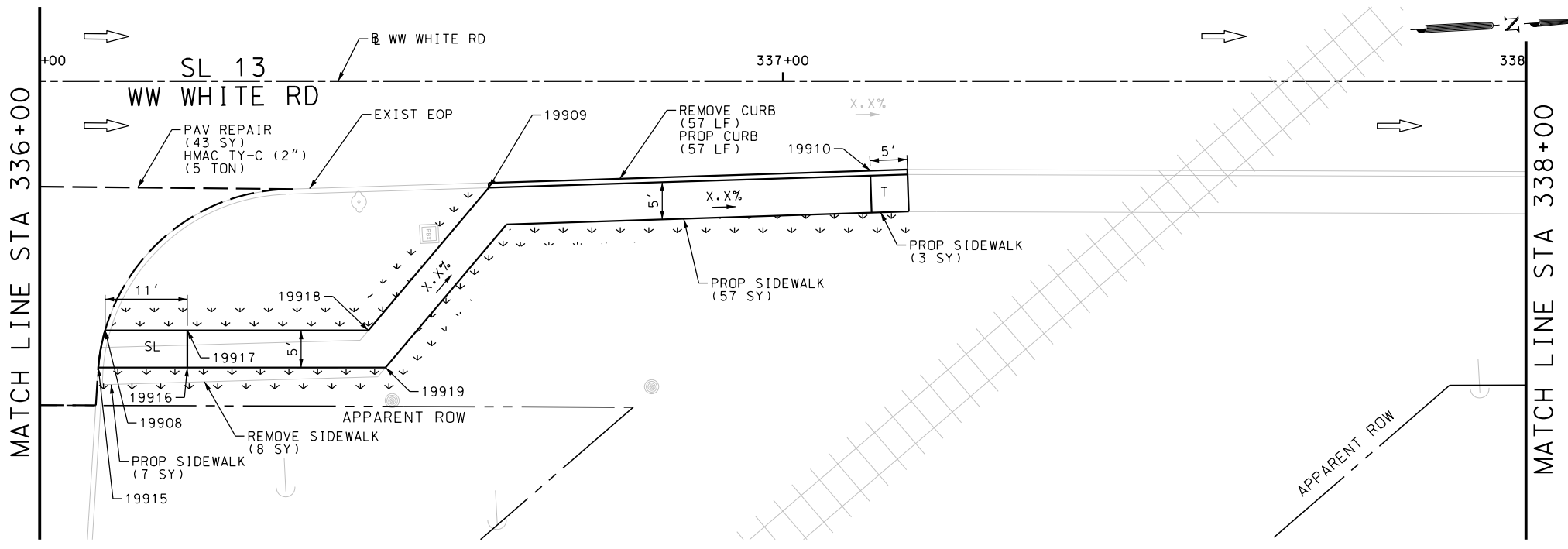
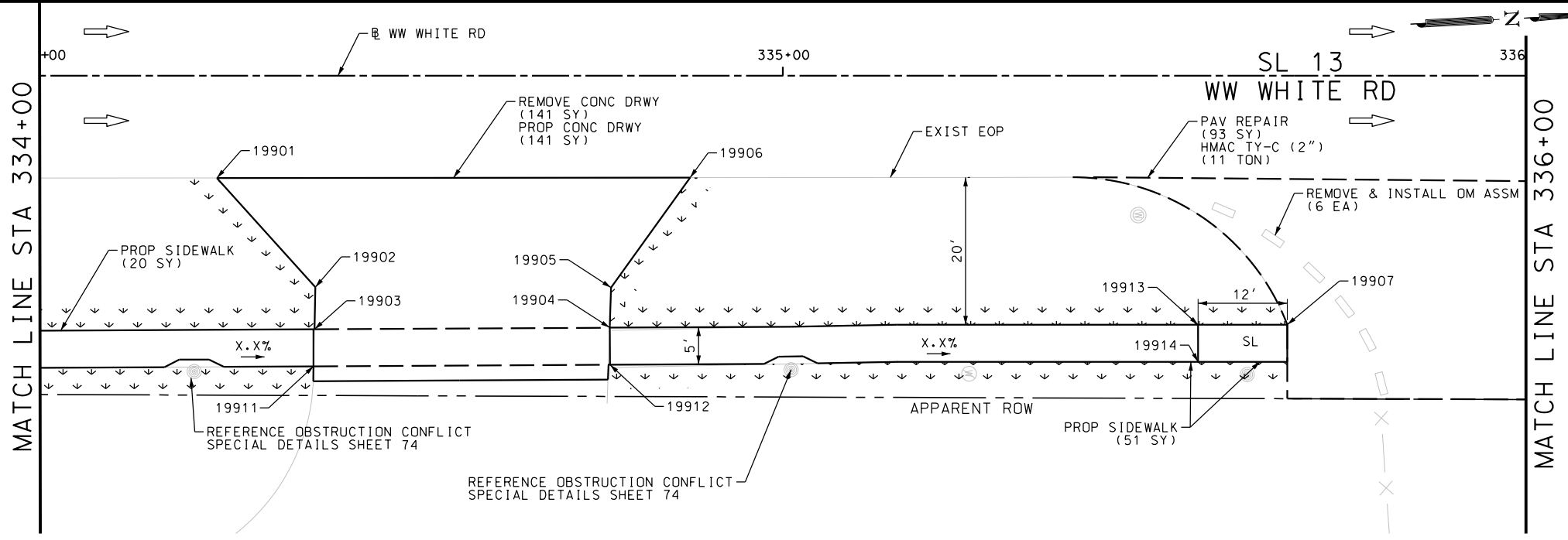
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 330+00 TO STA 334+00

SHEET 21 OF 51

CHK	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
DGN:	6	TEXAS		VA		
CHK	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
DWG:	SAT	BEXAR	0915	12	586	180

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_22.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	141
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	57
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	8
0162-6002	BLOCK SODDING	SY	130
0168-6001	VEGETATIVE WATERING	MG	2.03
0340-6066	D-GR HMA(SQ) TY-C PG76-22	TON	16.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	136
0529-6002	CONC CURB (TY II)	LF	57
0530-6004	DRIVEWAYS (CONC)	SY	141
0531-6001	CONC SIDEWALKS (4")	SY	138
0658-6058	INSTL OM ASSM (OM-3C) (FLX)SRF	EA	6
0658-6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	6

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



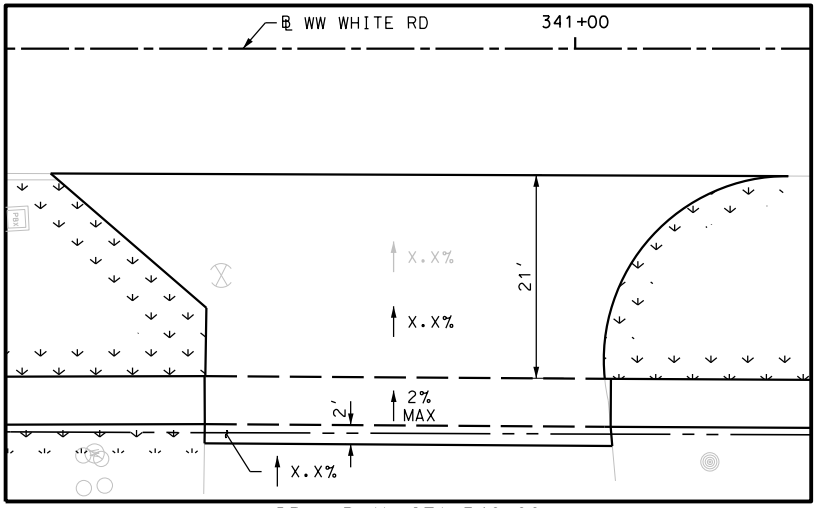
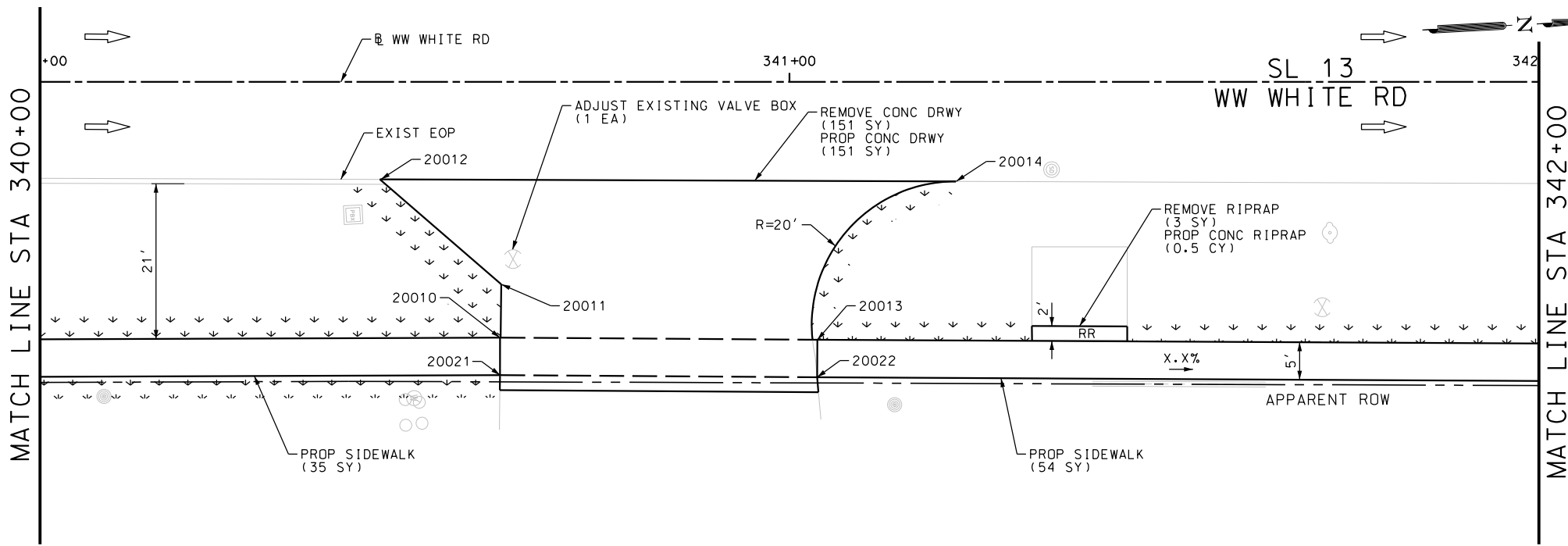
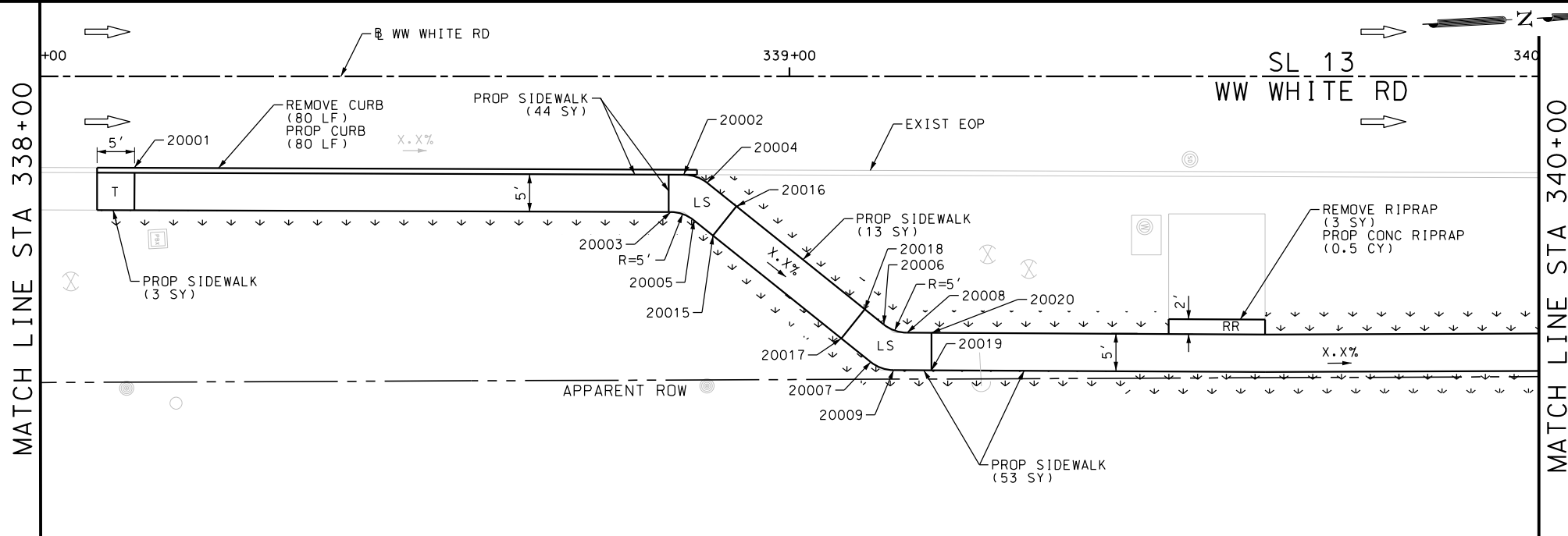
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 334+00 TO STA 338+00

SHEET 22 OF 51

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	181

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_23.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6001	ADJUST EXISTING VALVE BOX	EA	1
0104-6009	REMOVING CONC (RIPRAP)	SY	6
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	151
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	80
0162-6002	BLOCK SODDING	SY	197
0168-6001	VEGETATIVE WATERING	MG	3.07
0432-6003	RIPRAP (CONC) (6 IN)	CY	1.0
0529-6002	CONC CURB (TY II)	LF	80
0530-6004	DRIVEWAYS (CONC)	SY	151
0531-6001	CONC SIDEWALKS (4")	SY	202

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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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SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 338+00 TO STA 342+00

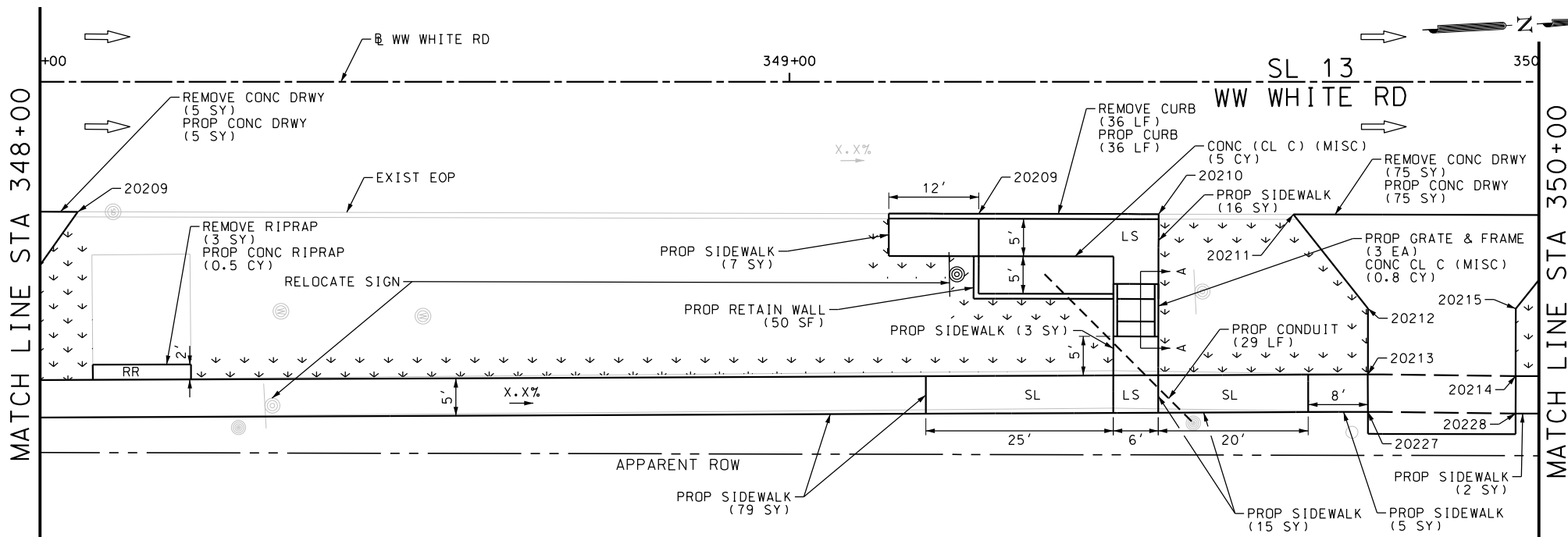
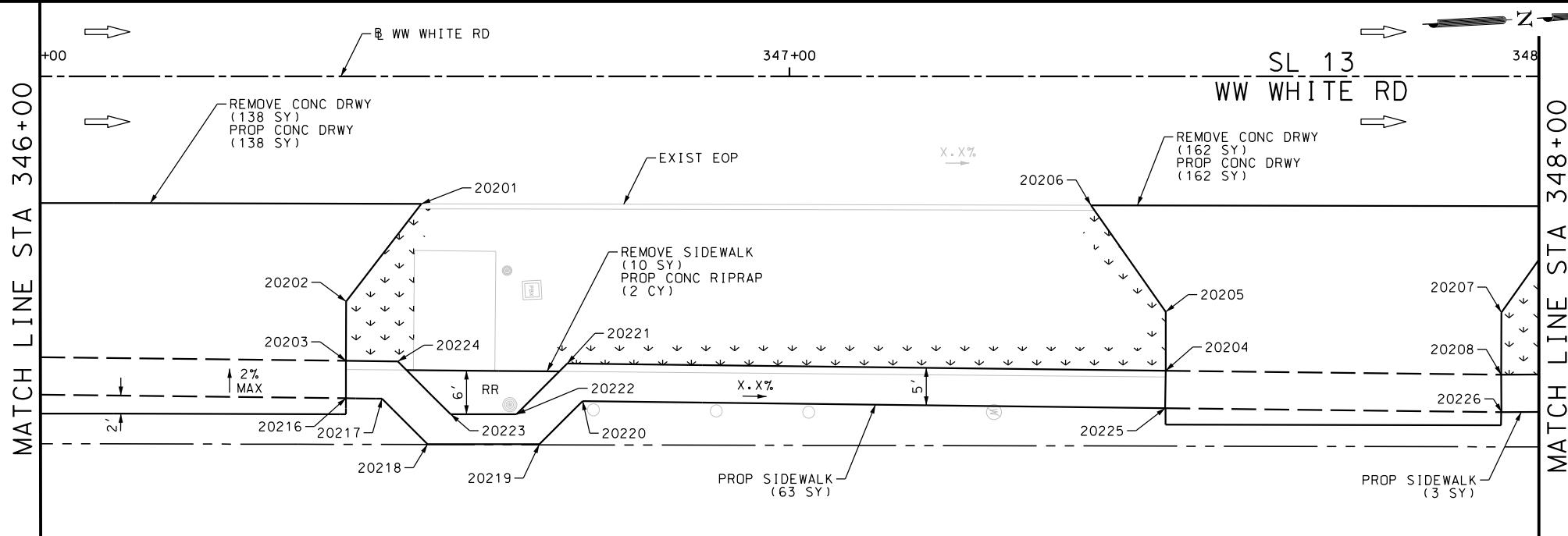
SHEET 23 OF 51

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	182



Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_25.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	3
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	380
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	36
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	10
0162-6002	BLOCK SODDING	SY	120
0168-6001	VEGETATIVE WATERING	MG	1.87
0420-6074	CL C CONC (MISC)	CY	5.8
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	50
0432-6003	RIPRAP (CONC) (6 IN)	CY	2.5
0471-6003	GRATE & FRAME	EA	3
0529-6002	CONC CURB (TY II)	LF	36
0530-6004	DRIVEWAYS (CONC)	SY	380
0531-6001	CONC SIDEWALKS (4")	SY	193
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	29
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

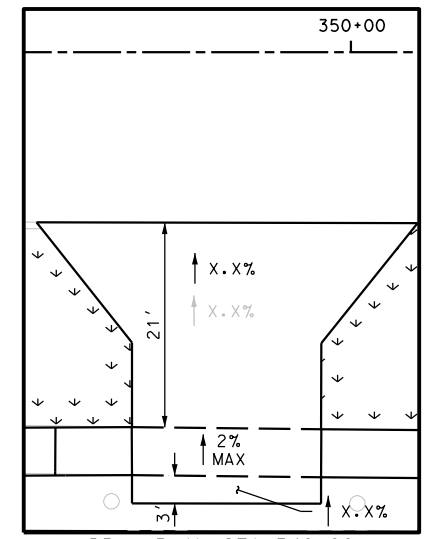
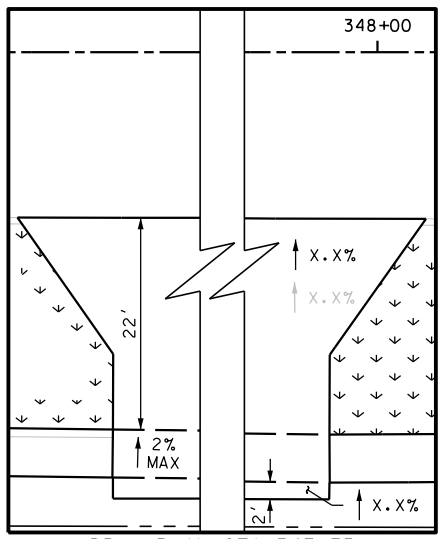
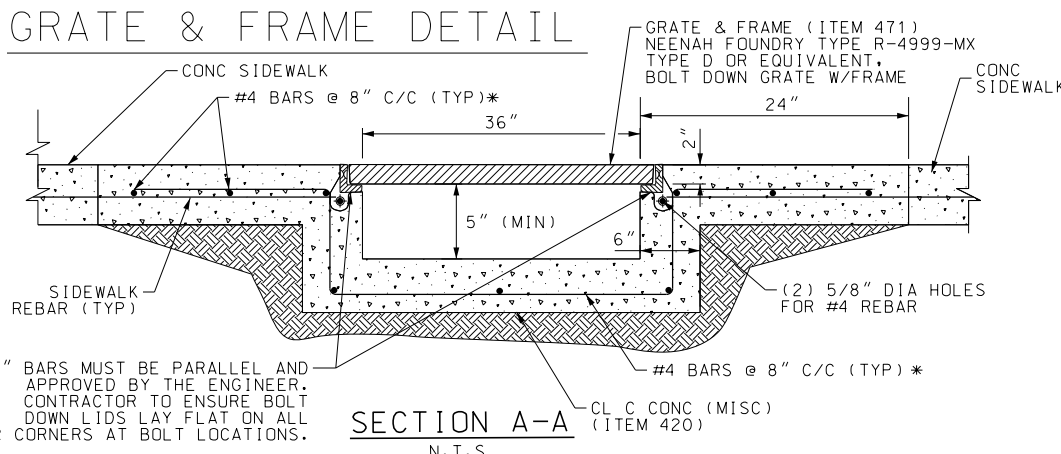
**Pape-Dawson Engineers**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

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SL 13  
 WW WHITE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 346+00 TO STA 350+00

SHEET 25 OF 51

DWG	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DWG	6	TEXAS		VA		
DWG	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG	SAT	BEXAR	0915	12	586	184

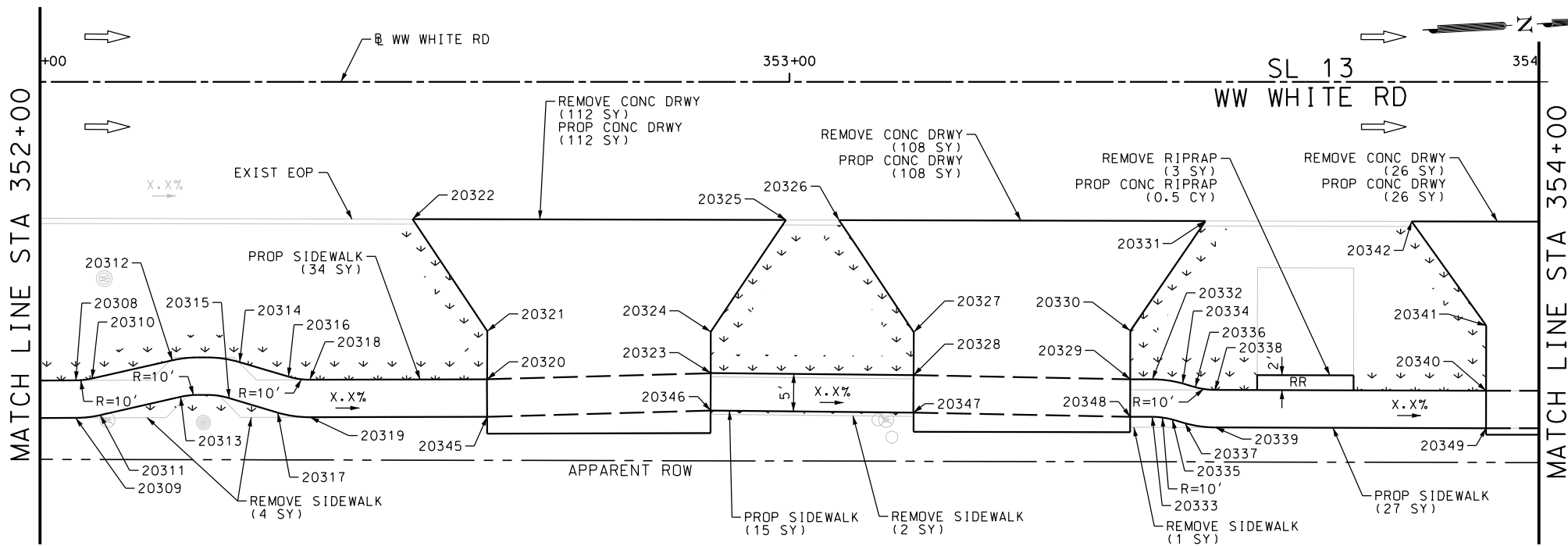
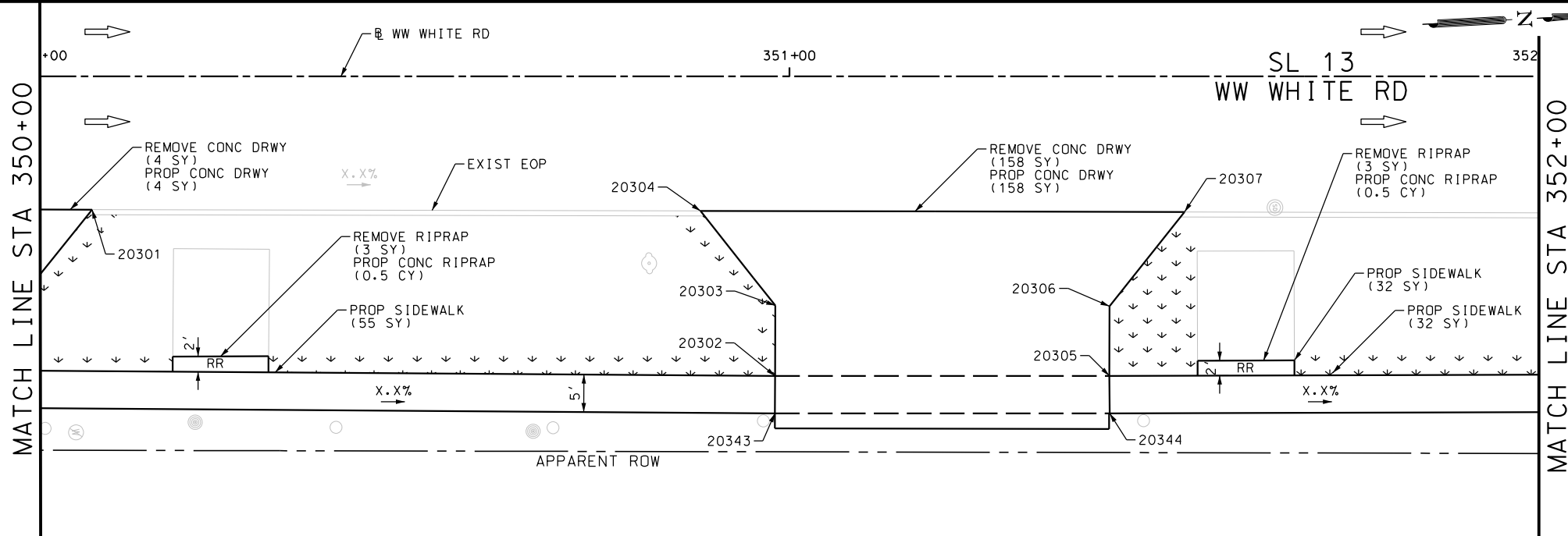




Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_26.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	9
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	408
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	7
0162-6002	BLOCK SODDING	SY	153
0168-6001	VEGETATIVE WATERING	MG	2.39
0432-6003	RIPRAP (CONC) (6 IN)	CY	1.5
0530-6004	DRIVEWAYS (CONC)	SY	408
0531-6001	CONC SIDEWALKS (4")	SY	163



NOTES:  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

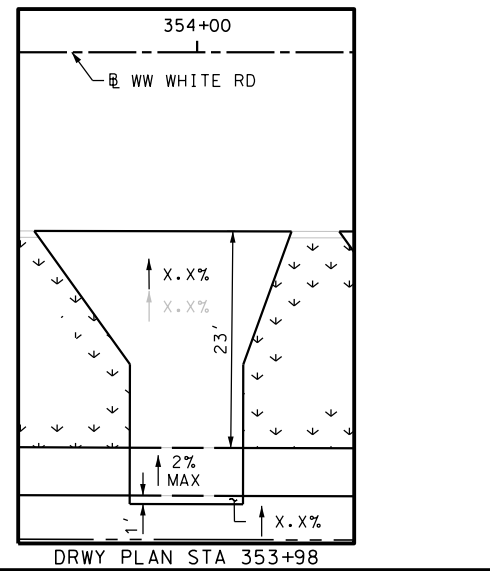
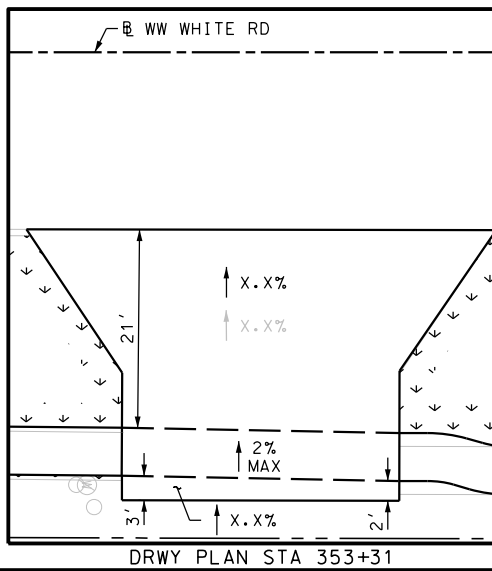
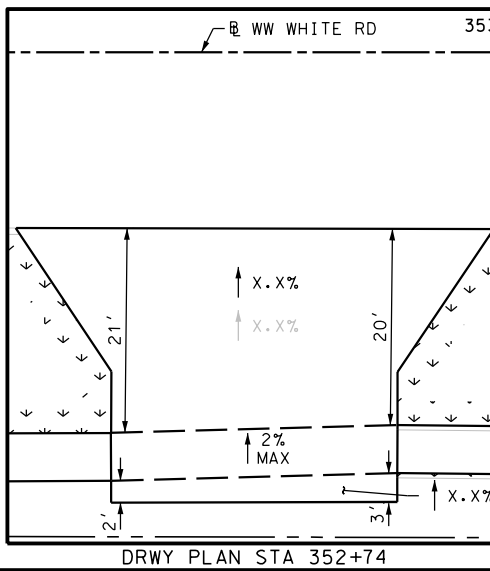
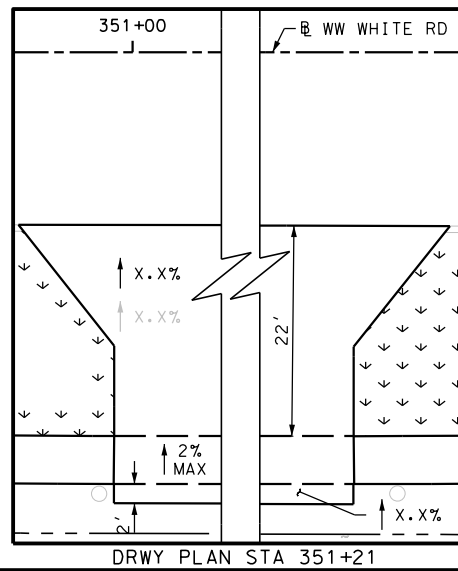
**Pape-Dawson Engineers**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 350+00 TO STA 354+00

SHEET 26 OF 51

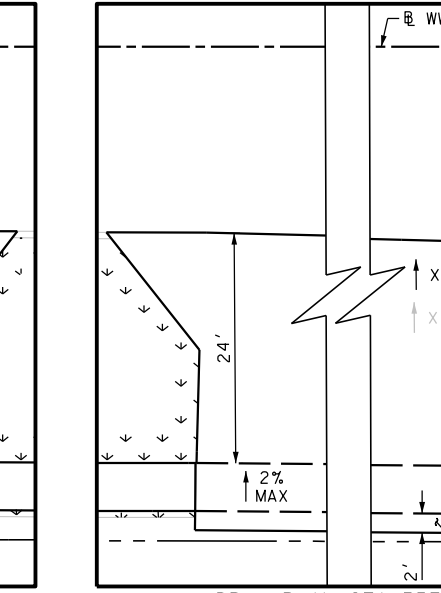
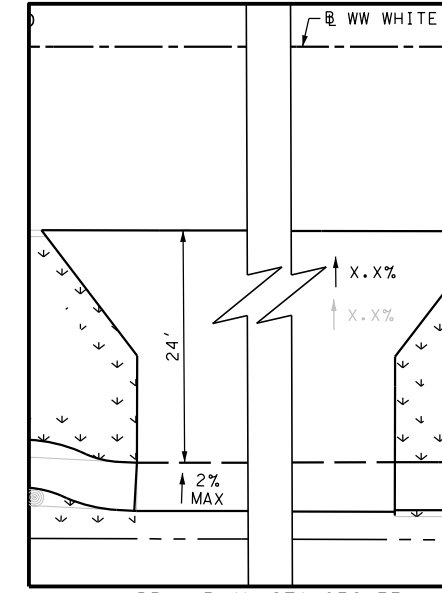
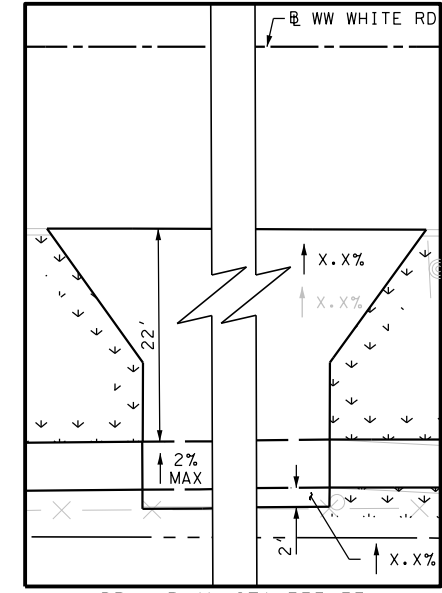
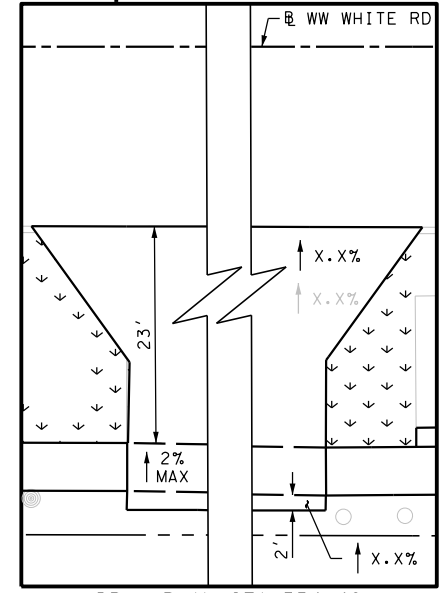
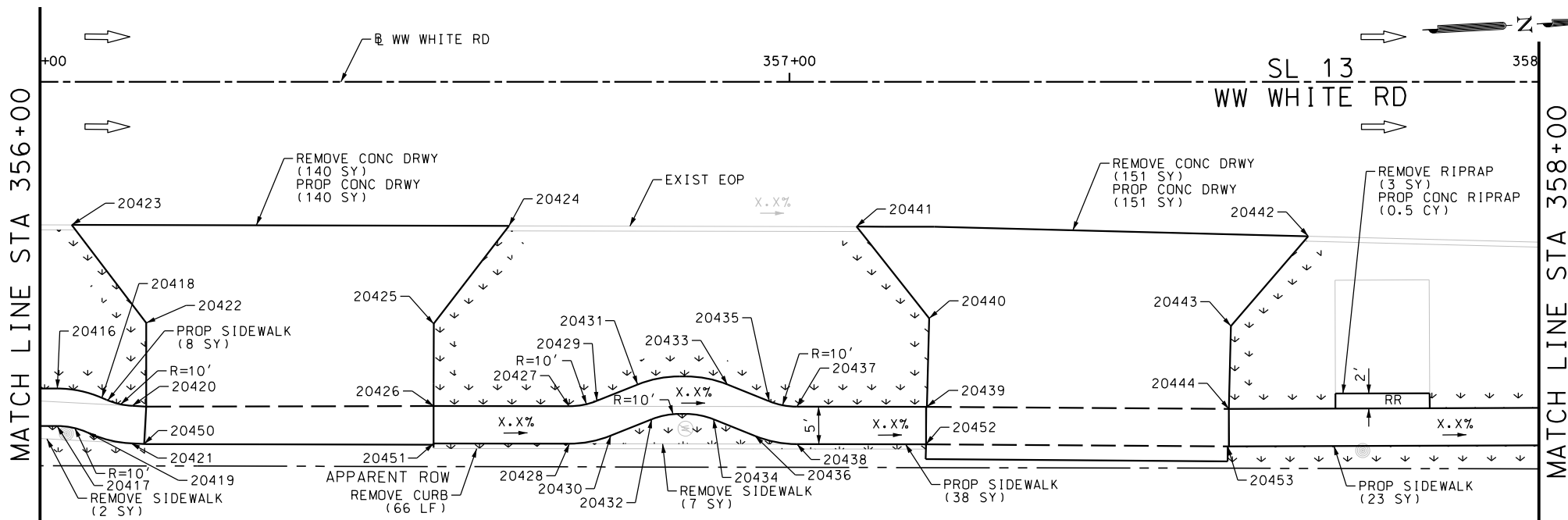
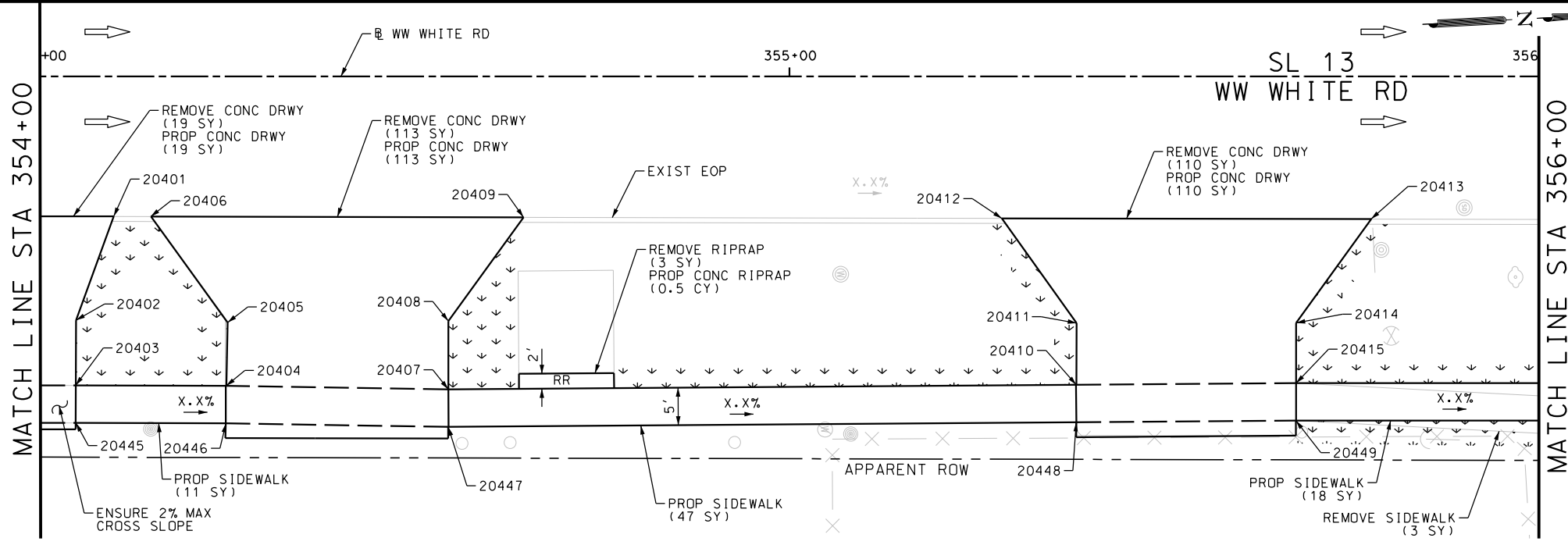
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CHK DWG:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	185



Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_27.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	6
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	533
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	66
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	12
0162-6002	BLOCK SODDING	SY	189
0168-6001	VEGETATIVE WATERING	MG	2.95
0432-6003	RIPRAP (CONC) (6 IN)	CY	1.0
0530-6004	DRIVEWAYS (CONC)	SY	533
0531-6001	CONC SIDEWALKS (4")	SY	145



NOTES:  
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DESIGN  
 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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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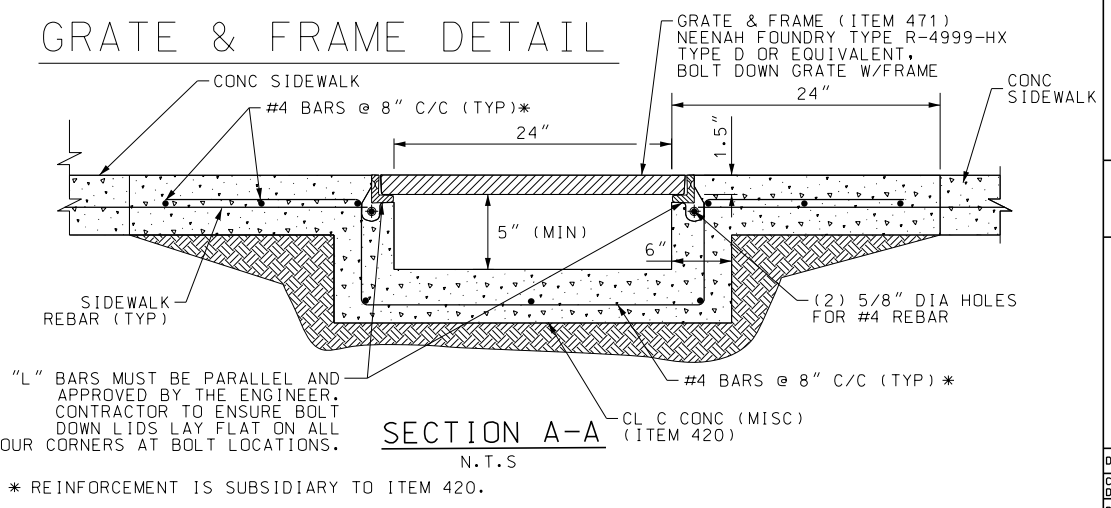
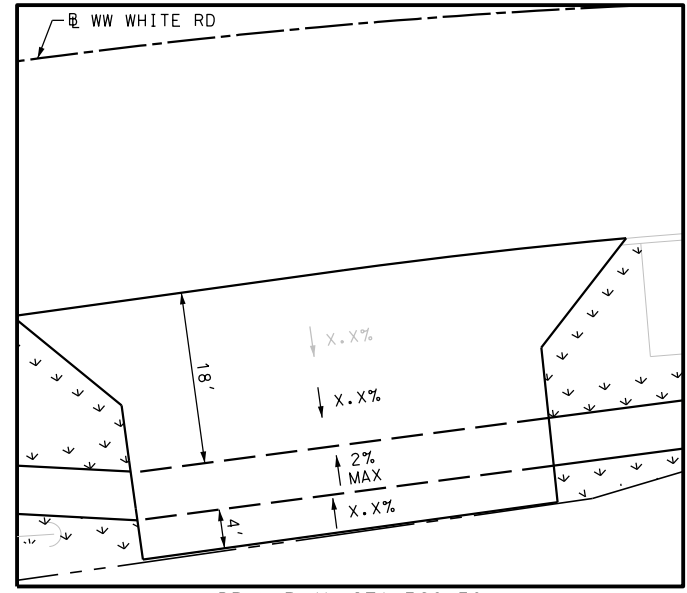
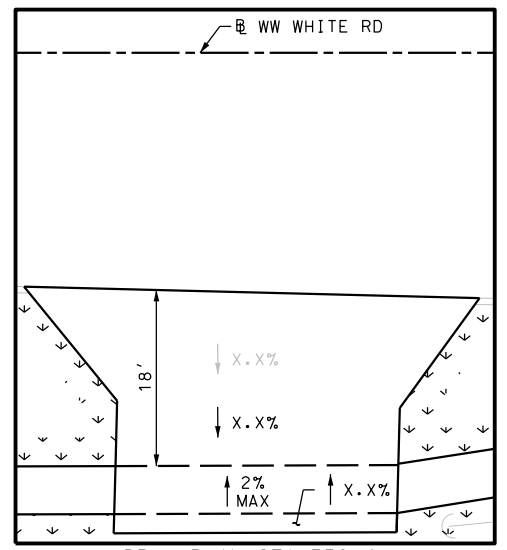
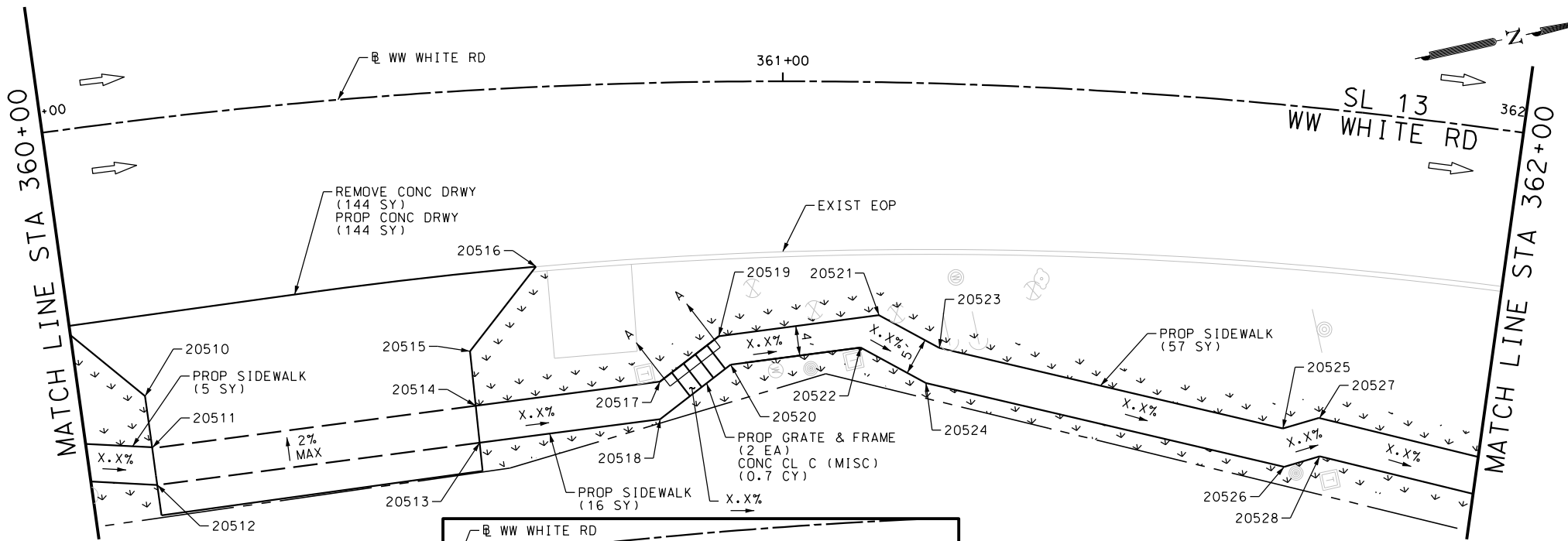
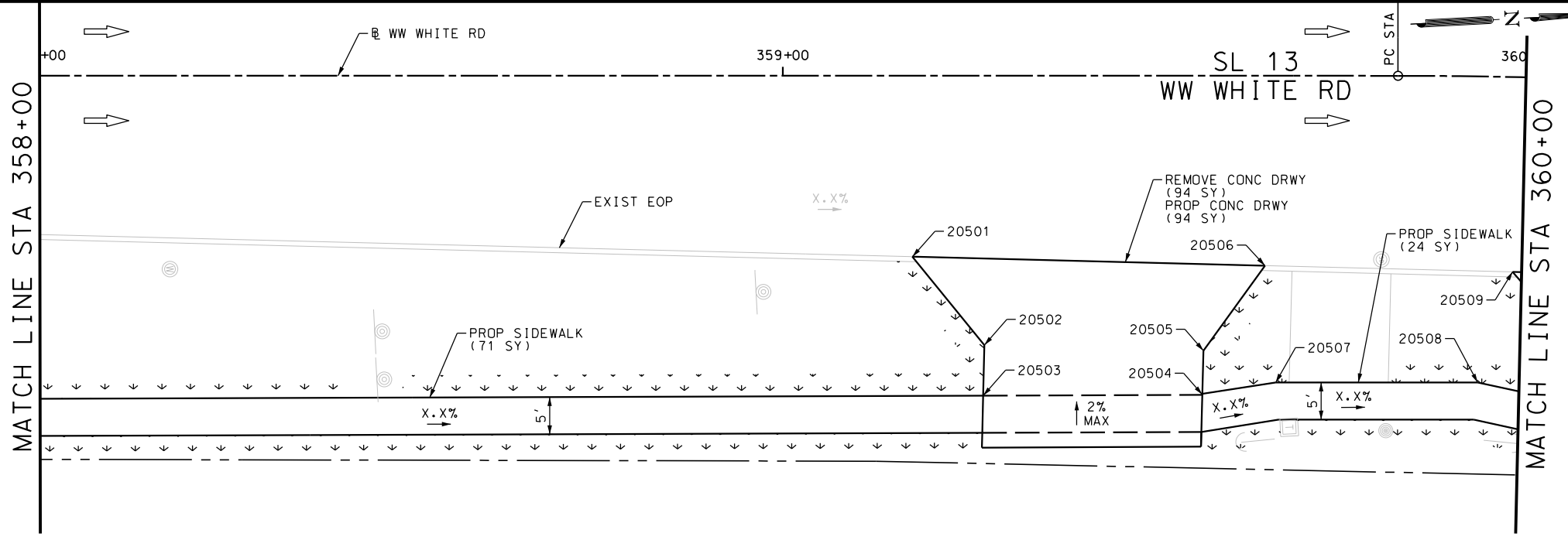
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 354+00 TO STA 358+00

SHEET 27 OF 51

DWG	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DWG	6	TEXAS		VA		
DWG	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG	SAT	BEXAR	0915	12	586	186

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_28.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	238
0162-6002	BLOCK SODDING	SY	222
0168-6001	VEGETATIVE WATERING	MG	3.46
0420-6074	CL C CONC (MISC)	CY	0.7
0471-6003	GRATE & FRAME	EA	2
0530-6004	DRIVEWAYS (CONC)	SY	238
0531-6001	CONC SIDEWALKS (4")	SY	173

NOTES:  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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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SL 13  
 WW WHITE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 358+00 TO STA 362+00

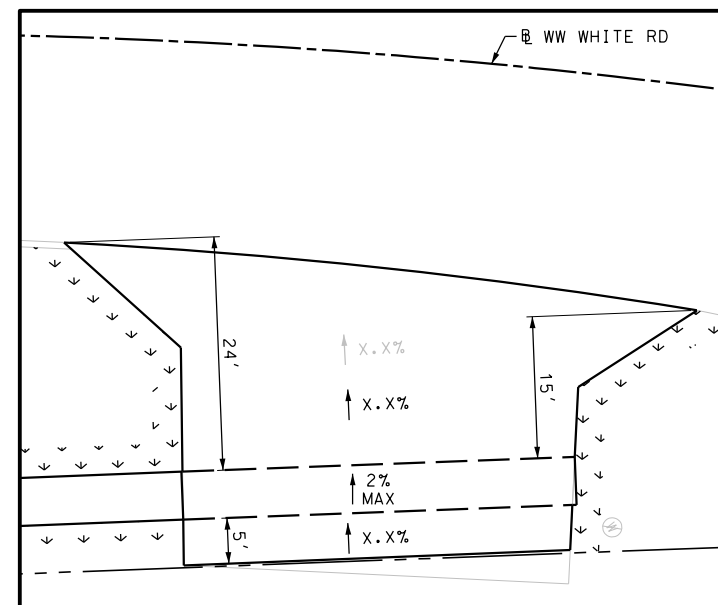
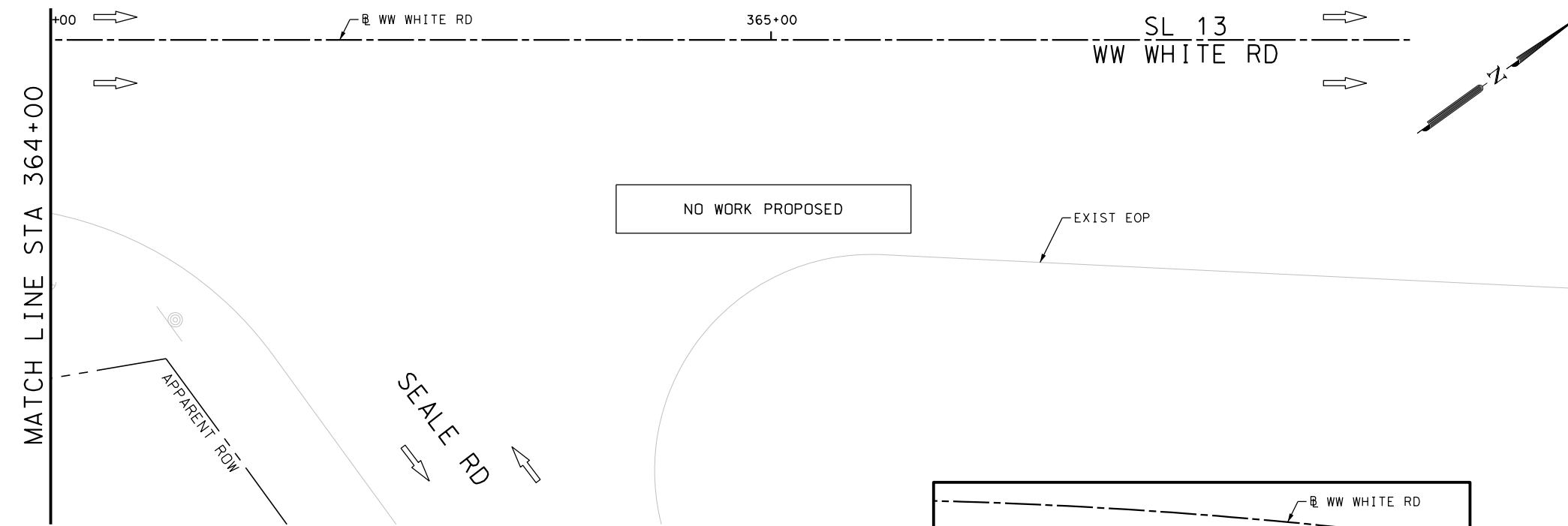
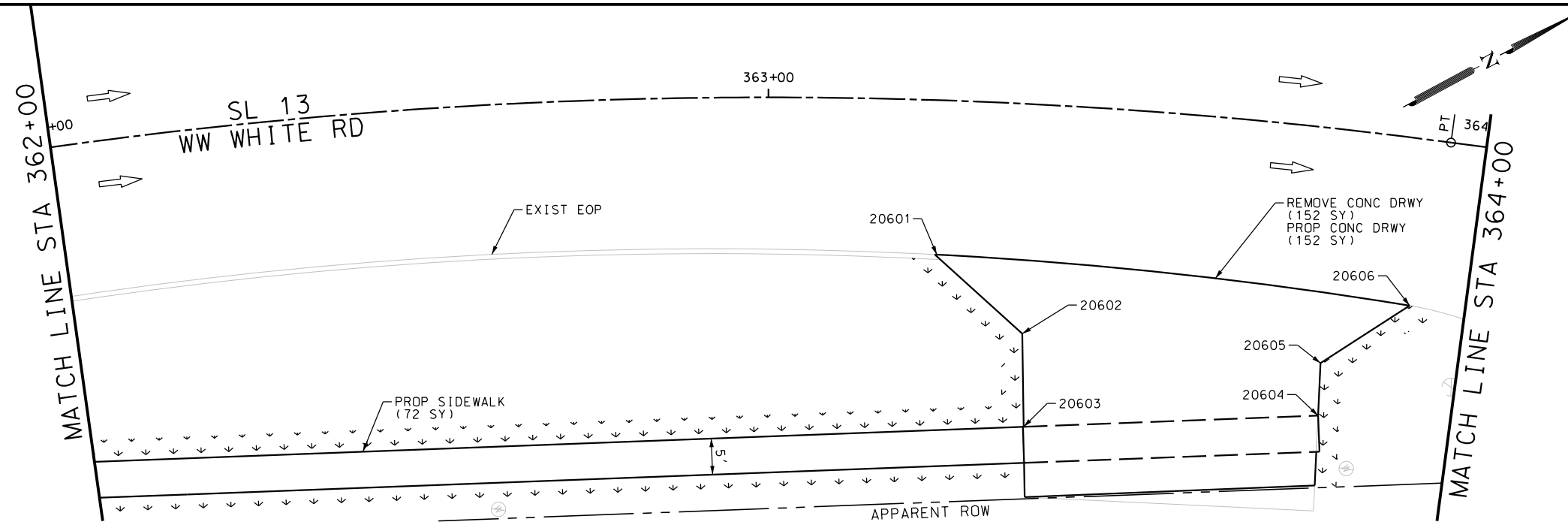
SHEET 28 OF 51

DWG	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DWG	6	TEXAS		VA		
DWG	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG	SAT	BEXAR	0915	12	586	187

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_29.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	152
0162-6002	BLOCK SODDING	SY	106
0168-6001	VEGETATIVE WATERING	MG	1.65
0530-6004	DRIVEWAYS (CONC)	SY	152
0531-6001	CONC SIDEWALKS (4")	SY	72



DRWY PLAN STA 363+56

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



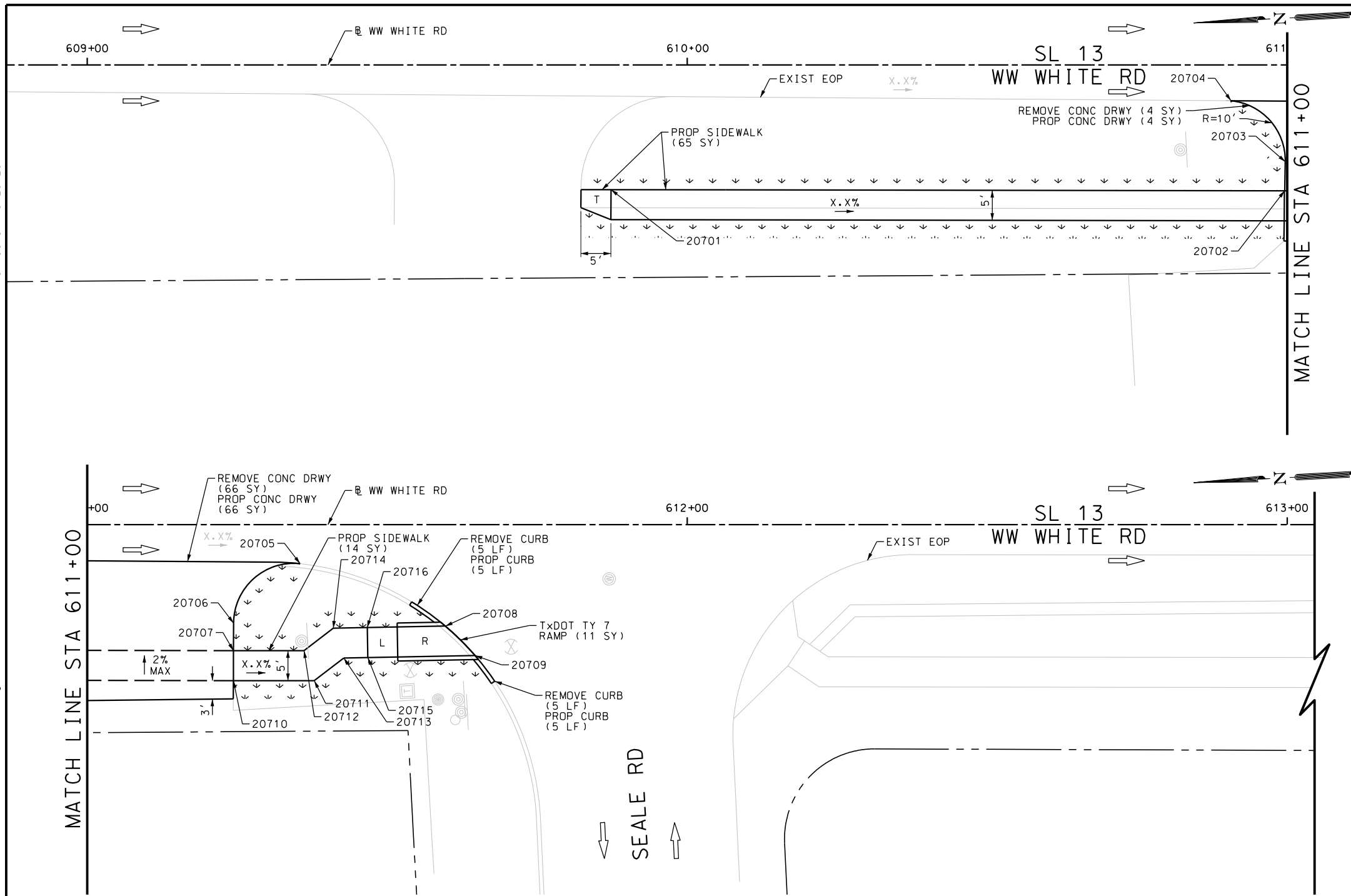
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 362+00 TO END PROJECT

SHEET 29 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	188

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Ww White\1113501\_wwwhite\_30.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	70
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	10
0162-6002	BLOCK SODDING	SY	117
0168-6001	VEGETATIVE WATERING	MG	1.83
0529-6002	CONC CURB (TY II)	LF	10
0530-6004	DRIVEWAYS (CONC)	SY	70
0531-6001	CONC SIDEWALKS (4")	SY	79
0531-6024	CURB RAMPS (TY 7)	SY	11

NOTES:  
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DESIGN  
 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

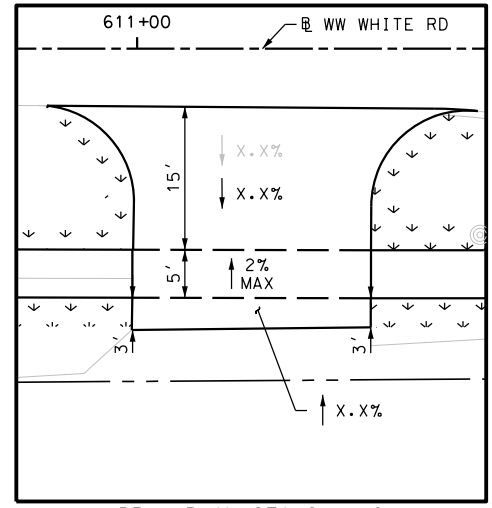
**Pape-Dawson ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 609+00 TO STA 613+00

SHEET 30 OF 51

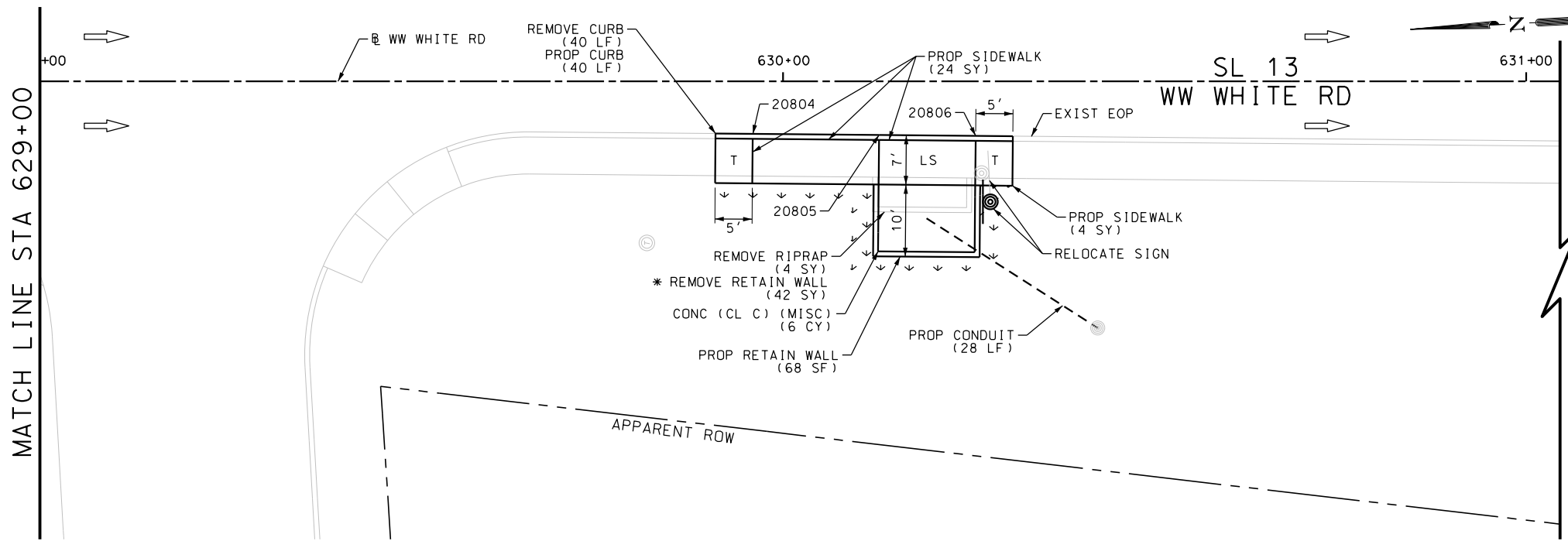
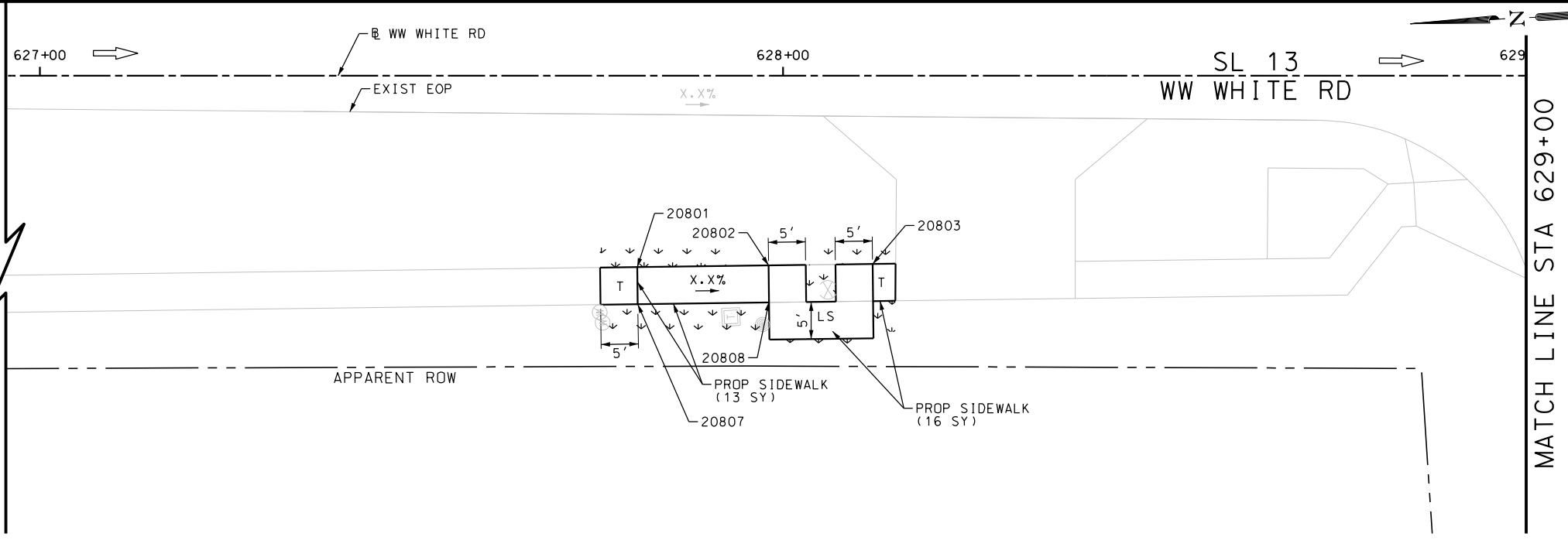
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	189



DRWY PLAN STA 611+12

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Ww White\1113501\_wwwhite\_31.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	4
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	40
0162-6002	BLOCK SODDING	SY	23
0168-6001	VEGETATIVE WATERING	MG	0.36
0420-6074	CL C CONC (MISC)	CY	6.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	68
0529-6002	CONC CURB (TY II)	LF	40
0531-6001	CONC SIDEWALKS (4")	SY	57
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	28
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



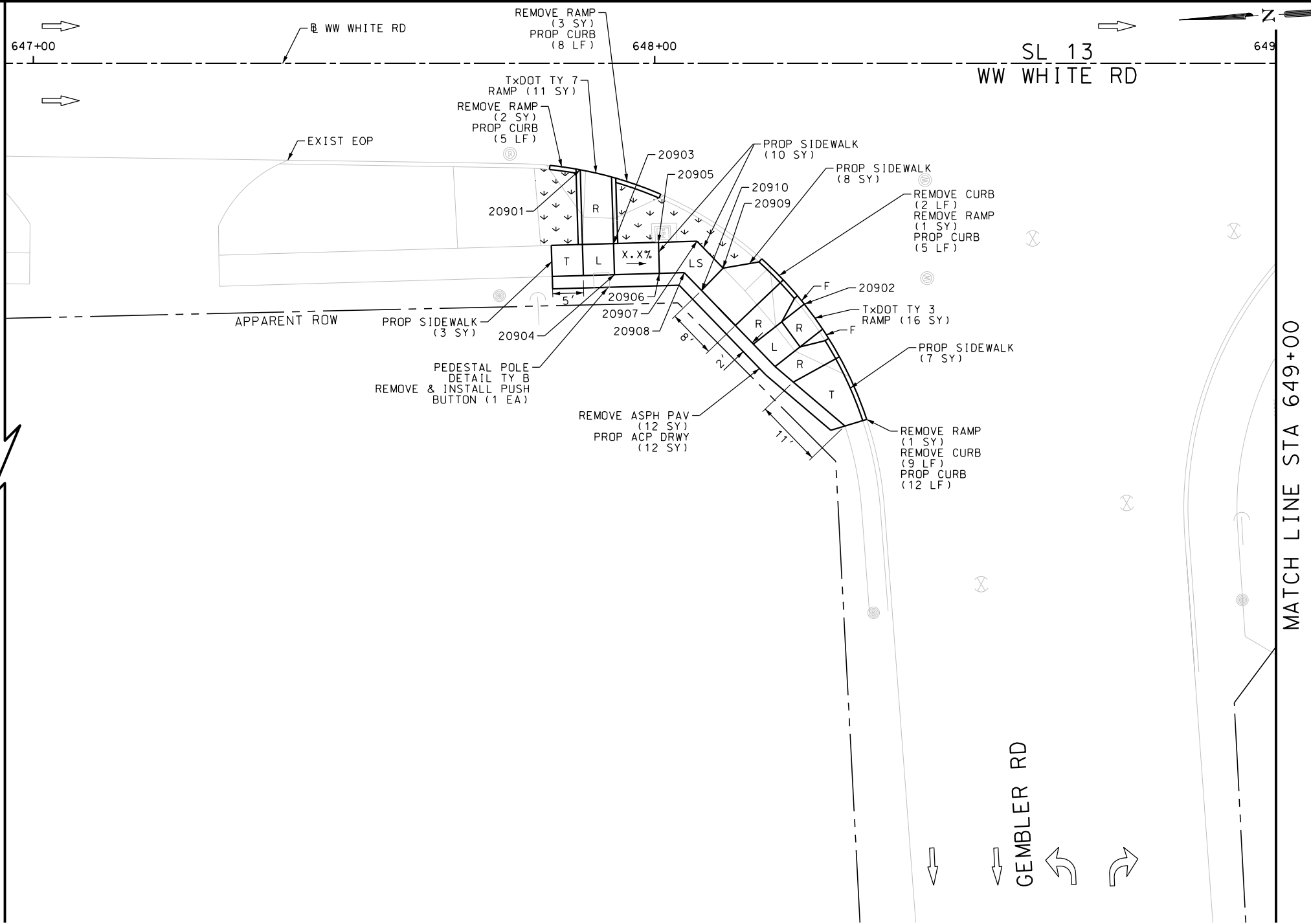
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 627+00 TO STA 631+00

SHEET 31 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	190

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Ww White\1113501\_wwwhite\_32.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	11
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	7
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	12
0162-6002	BLOCK SODDING	SY	25
0168-6001	VEGETATIVE WATERING	MG	0.39
0529-6002	CONC CURB (TY II)	LF	30
0530-6005	DRIVEWAYS (ACP)	SY	12
0531-6001	CONC SIDEWALKS (4")	SY	28
0531-6020	CURB RAMPS (TY 3)	SY	16
0531-6024	CURB RAMPS (TY 7)	SY	11
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	1
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	1

NOTES:  
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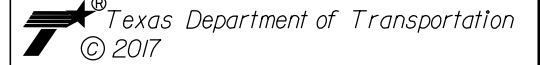
DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



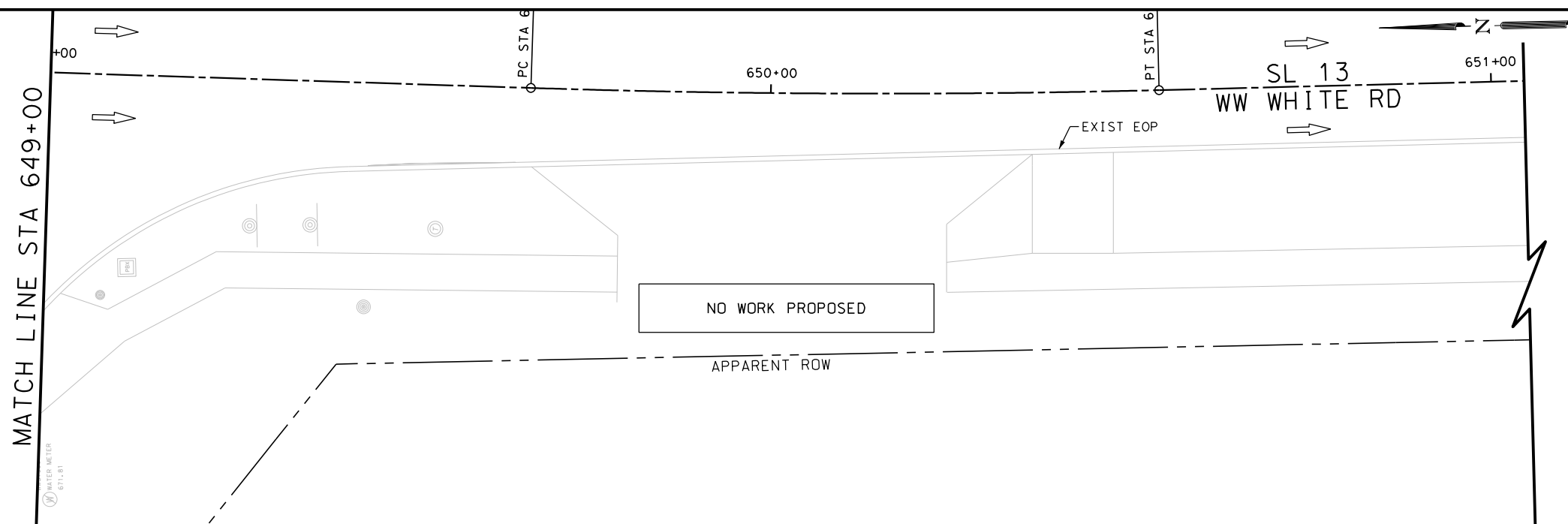
SL 13  
 WW WHITE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 647+00 TO STA 649+00

SHEET 32 OF 51

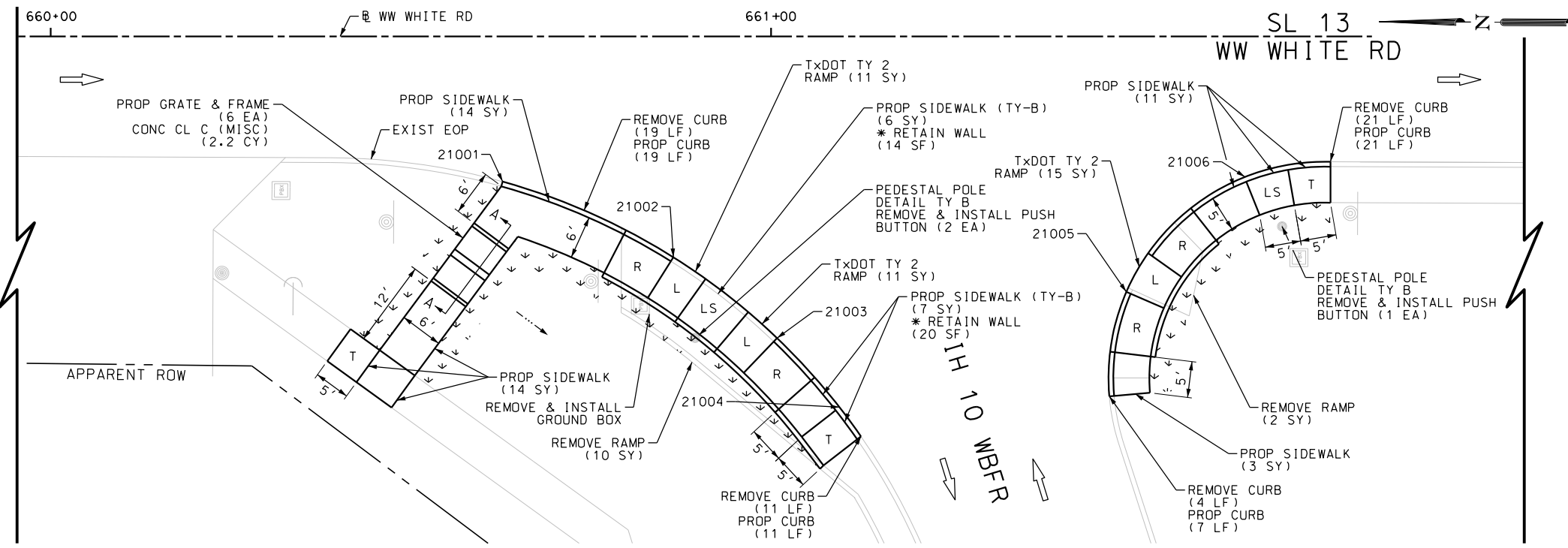
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	191

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_33.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	55
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	12
0162-6002	BLOCK SODDING	SY	45
0168-6001	VEGETATIVE WATERING	MG	0.70
0420-6074	CL C CONC (MISC)	CY	2.2
0471-6003	GRATE & FRAME	EA	6
0529-6002	CONC CURB (TY II)	LF	58
0531-6001	CONC SIDEWALKS (4")	SY	42
0531-6019	CURB RAMPS (TY 2)	SY	37
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	13
0624-6009	GROUND BOX TY D (162922)	EA	1
0624-6028	REMOVE GROUND BOX	EA	1
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	3
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	3



NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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 | TBPFS FIRM REGISTRATION #10028800

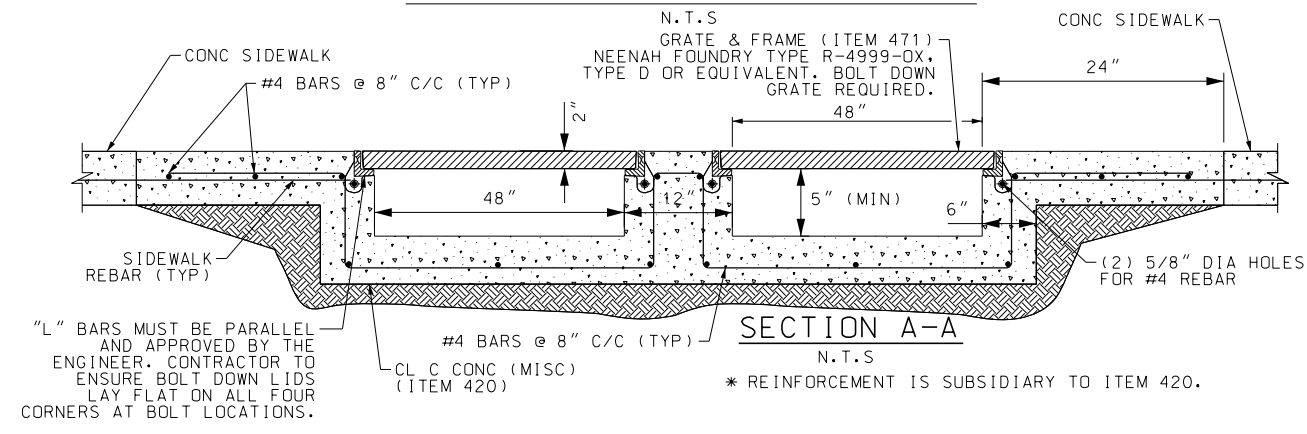
Texas Department of Transportation  
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SL 13  
 WW WHITE RD  
 SIDEWALK CONSTRUCTION PLAN  
 STA 649+00 TO STA 662+00

SHEET 33 OF 51

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	192

GRATE & FRAME DETAIL



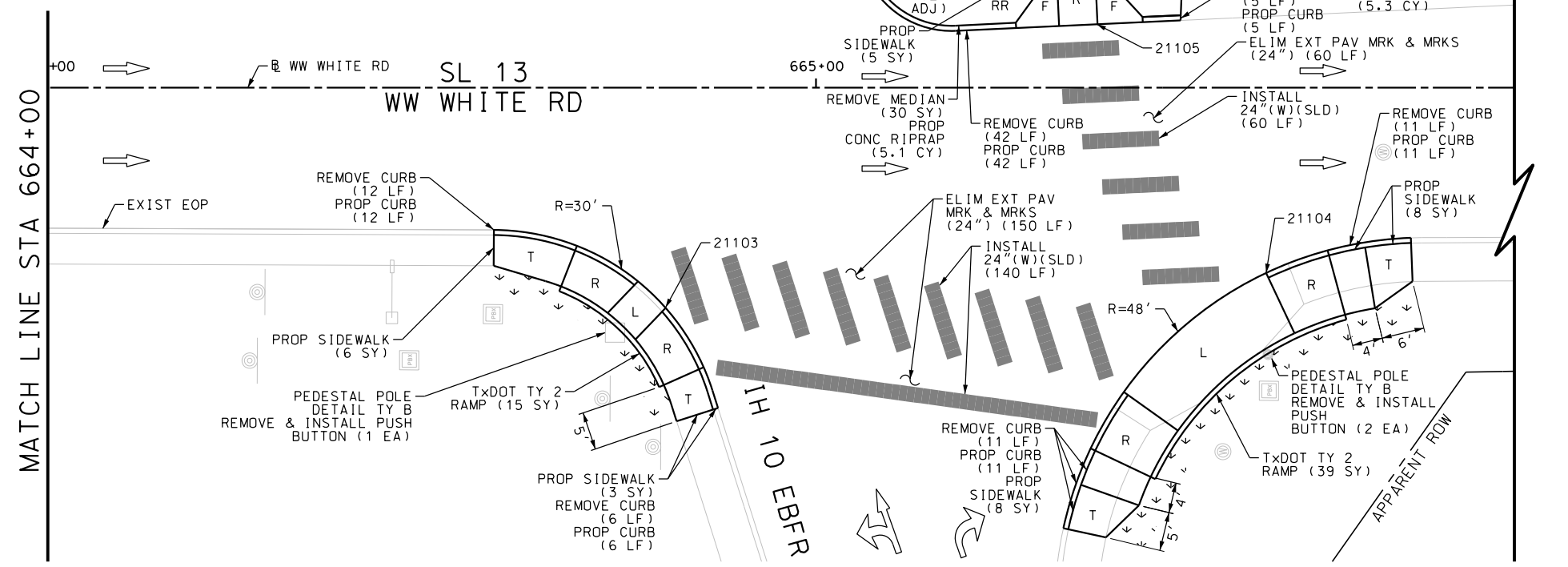
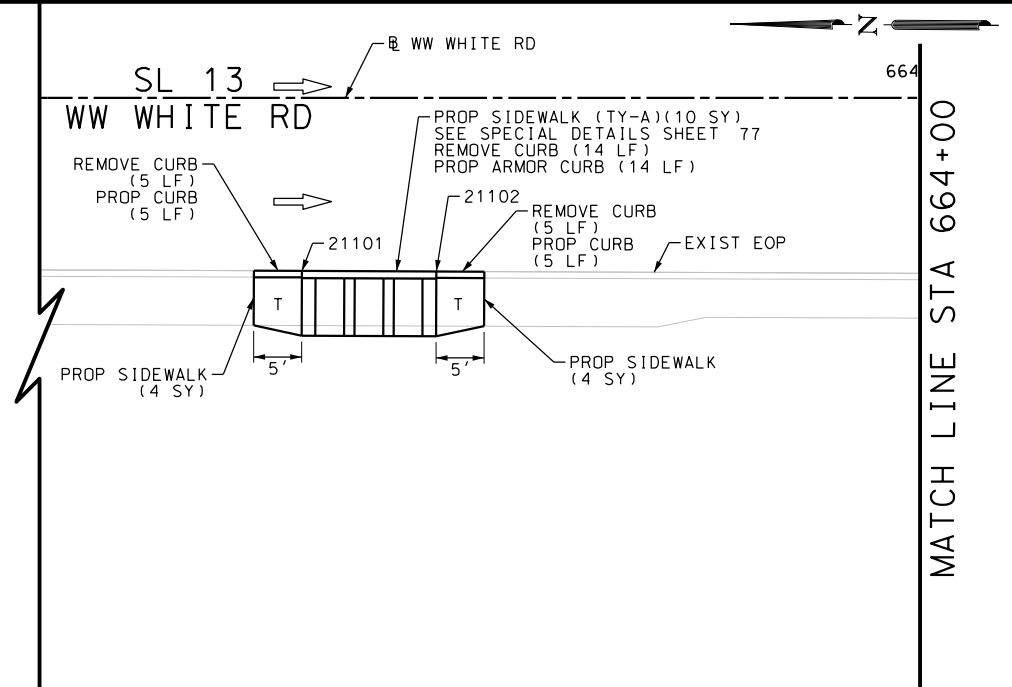
SECTION A-A

\* REINFORCEMENT IS SUBSIDIARY TO ITEM 420.



Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_34.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6011	REMOVING CONC (MEDIANS)	SY	61
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	133
0162-6002	BLOCK SODDING	SY	31
0168-6001	VEGETATIVE WATERING	MG	0.48
0432-6003	RIPRAP (CONC) (6 IN)	CY	10.4
0529-6002	CONC CURB (TY II)	LF	119
0529-6020	CONC CURB & GUTTER (ARMOR CURB)	LF	14
0531-6001	CONC SIDEWALKS (4")	SY	38
0531-6018	CURB RAMPS (TY 1)	SY	22
0531-6019	CURB RAMPS (TY 2)	SY	54
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	10
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1
0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	200
0666-6230	PAVEMENT SEALER 24"	LF	200
0677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	210
0678-6008	PAV SURF PREP FOR MRK (24")	LF	200
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	3
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	3

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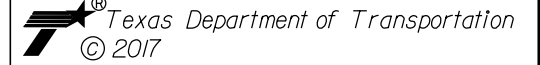
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



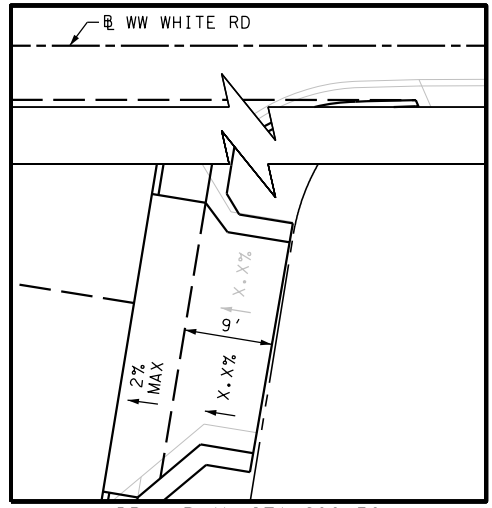
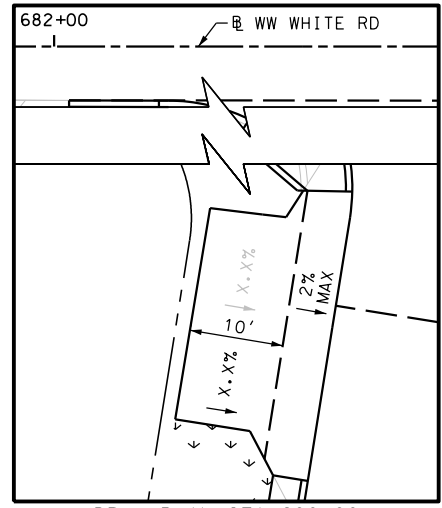
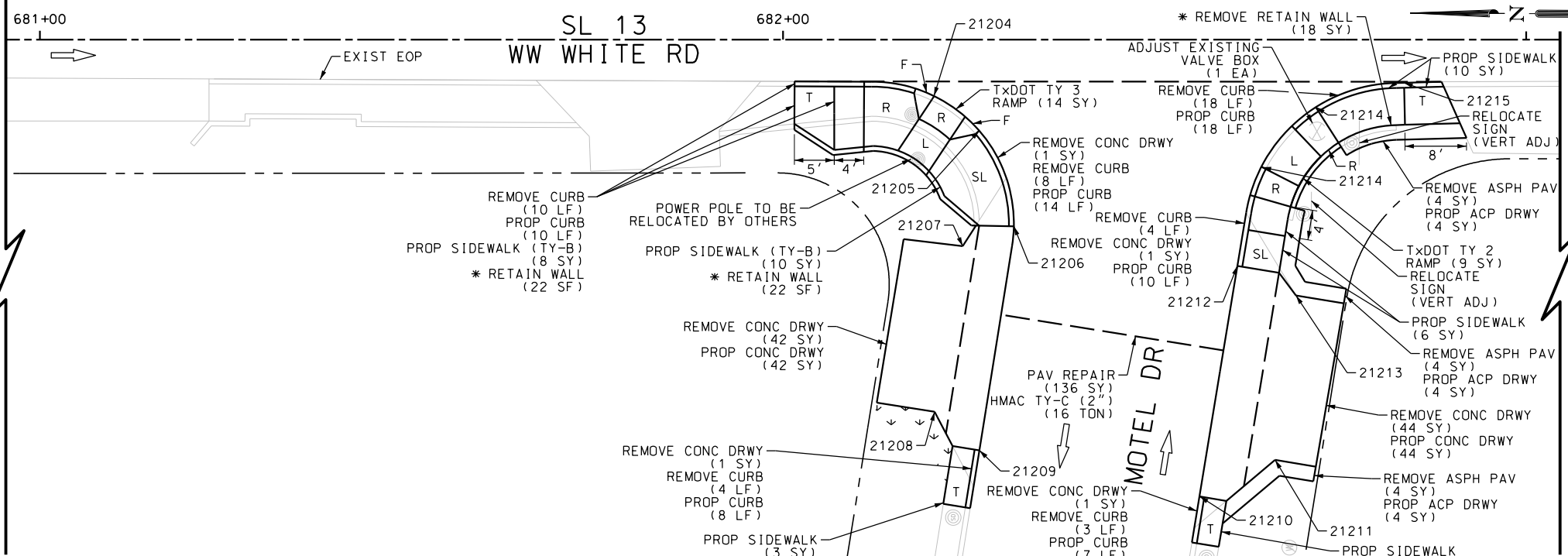
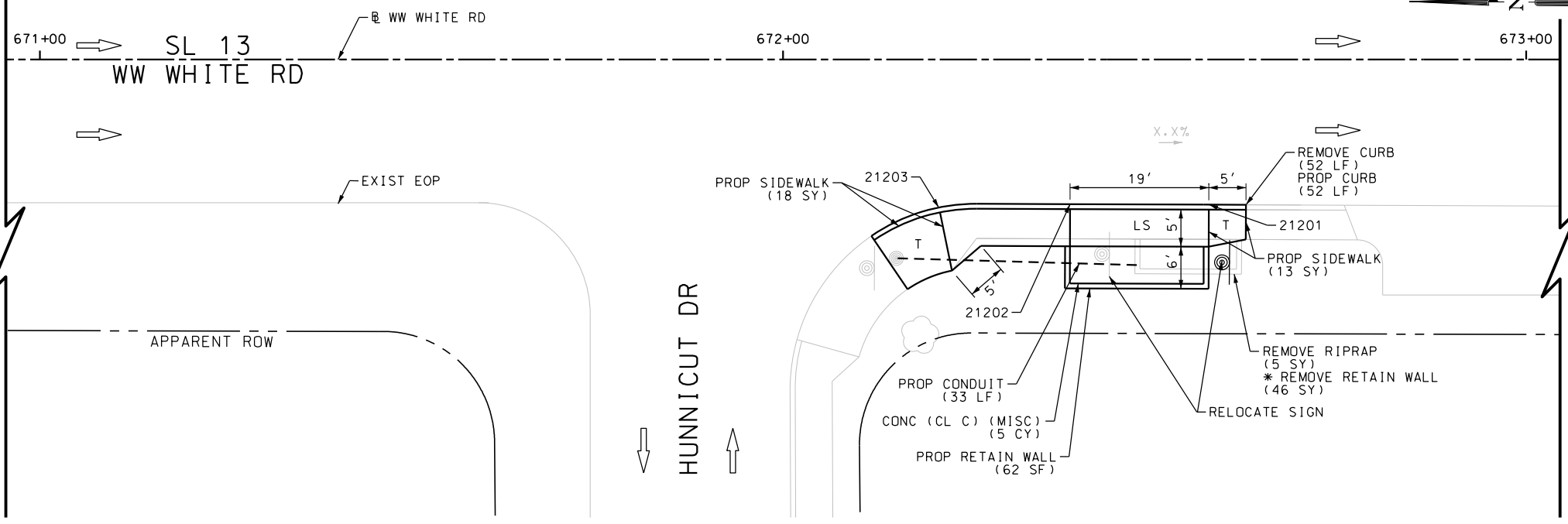
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 663+00 TO STA 666+00

SHEET 34 OF 51

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	193

Plotted on: 9/29/2017

Design File name: P:\1111\35\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_35.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6001	ADJUST EXISTING VALVE BOX	EA	1
0104-6009	REMOVING CONC (RIPRAP)	SY	5
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	90
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	99
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	12
0162-6002	BLOCK SODDING	SY	27
0168-6001	VEGETATIVE WATERING	MG	0.42
0340-6066	D-GR HMA (SQ) TY-C PG76-22	TON	16.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	136
0420-6074	CL C CONC (MISC)	CY	5.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	CF	62
0529-6002	CONC CURB (TY I)	LF	119
0530-6004	DRIVEWAYS (CONC)	SY	86
0530-6005	DRIVEWAYS (ACP)	SY	12
0531-6001	CONC SIDEWALKS (4")	SY	53
0531-6019	CURB RAMPS (TY 2)	SY	9
0531-6020	CURB RAMPS (TY 3)	SY	14
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	18
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	33
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	3

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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
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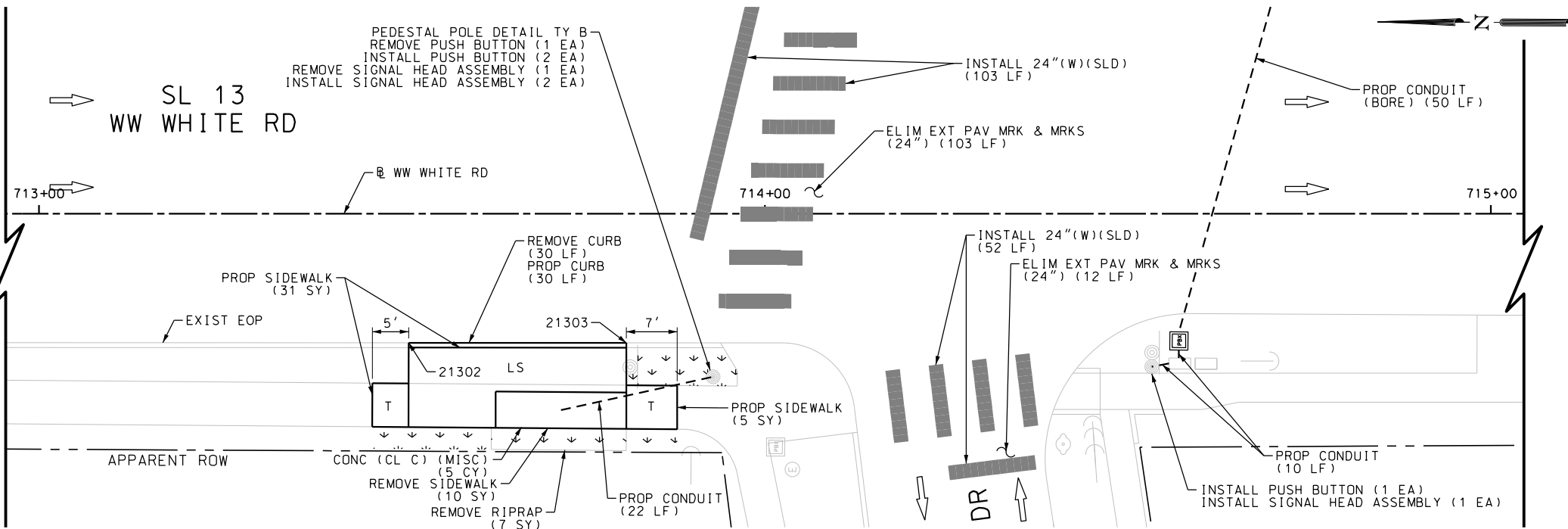
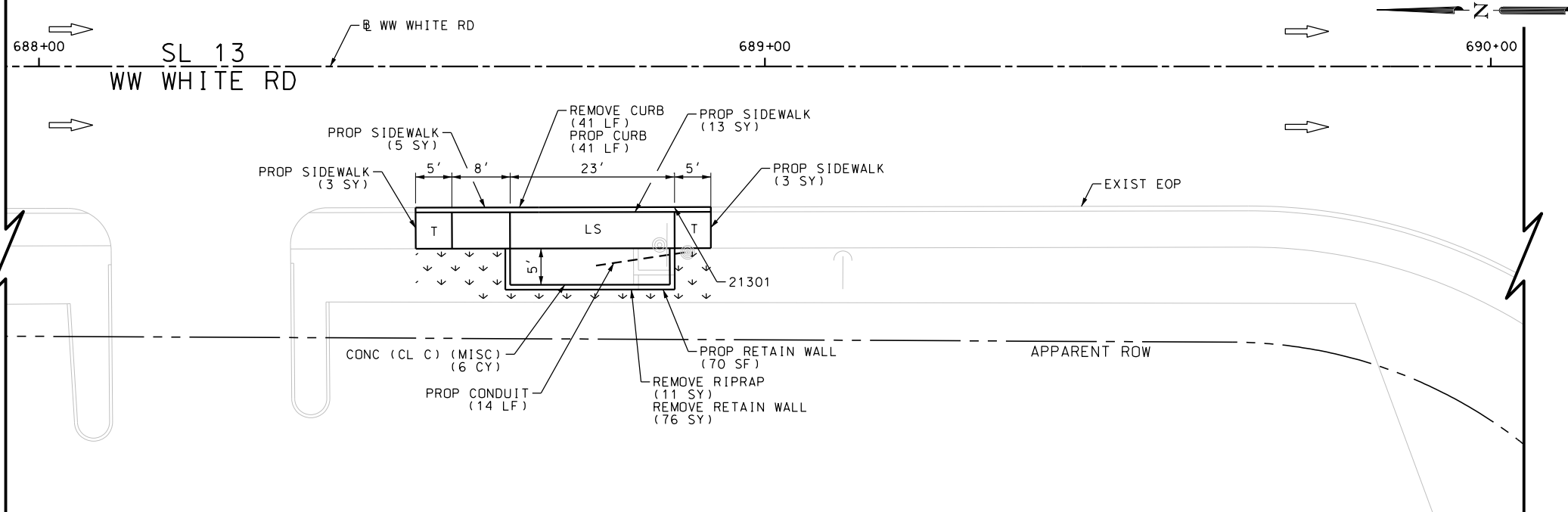
SL 13  
 WW WHITE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 671+00 TO STA 683+00

SHEET 35 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	194

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_36.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	18
0104-6024	REMOVING CONC (RETAINING WALLS)	SY	76
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	71
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	10
0162-6002	BLOCK SODDING	SY	31
0168-6001	VEGETATIVE WATERING	MG	0.48
0420-6074	CL C CONC (MISC)	CY	11.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	70
0529-6002	CONC CURB (TY II)	LF	71
0531-6001	CONC SIDEWALKS (4")	SY	60
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	46
0618-6017	CONDT (PVC) (SCH 40) (1") (BORE)	LF	50
0620-6009	ELEC CONDR (NO.6) BARE	LF	60
0624-6010	GROUND BOX TY D (162922)W/APRON	EA	1
0666-6048	REFL PAV MRK TY I (W)24" (SLD) (100MIL)	LF	155
0666-6230	PAVEMENT SEALER 24"	LF	155
0677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	115
0678-6008	PAV SURF PREP FOR MRK (24")	LF	155
0682-6017	PED SIG SEC (LED) (2 INDICATIONS)	EA	3
0684-6009	TRF SIG CBL (TY A) (12 AWG) (4 CONDR)	LF	305
0684-6028	TRF SIG CBL (TY A) (14 AWG) (2 CONDR)	LF	305
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	3
0690-6024	REMOVAL OF SIGNAL HEAD ASSM	EA	1
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	1

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



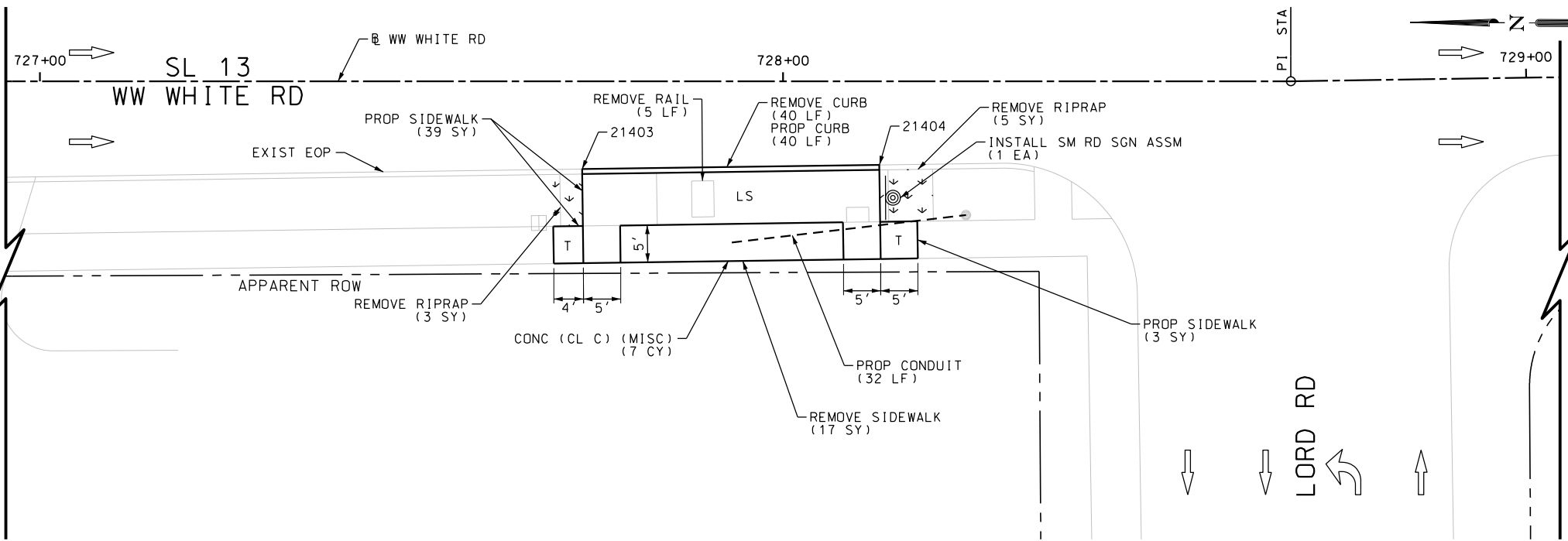
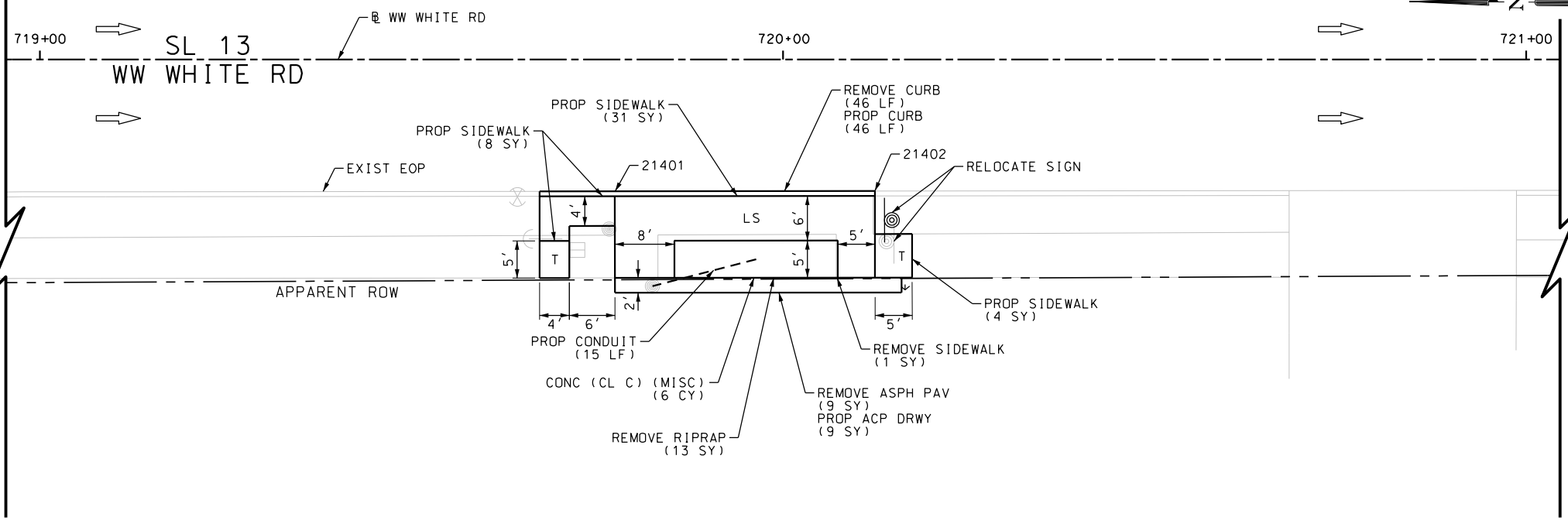
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 688+00 TO STA 715+00

SHEET 36 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	195

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_37.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	21
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	86
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	18
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	9
0162-6002	BLOCK SODDING	SY	9
0168-6001	VEGETATIVE WATERING	MG	0.14
0420-6074	CL C CONC (MISC)	CY	13.0
0496-6099	REMOVE STR (RAIL)	LF	5
0529-6002	CONC CURB (TY II)	LF	86
0530-6005	DRIVEWAYS (ACP)	SY	9
0531-6001	CONC SIDEWALKS (4")	SY	128
0618-6016	COND (PVC) (SCH 40) (1")	LF	47
0644-6001	IN SM RD SN SUP&M TY10BWG(1)SA(P)	EA	1
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



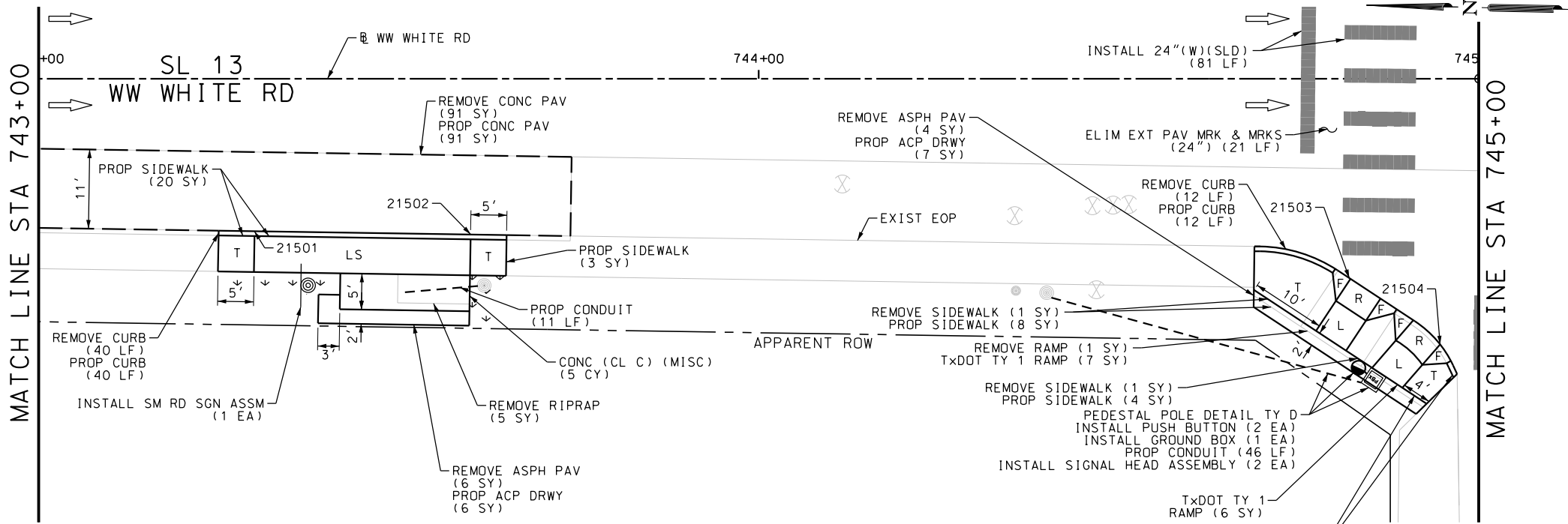
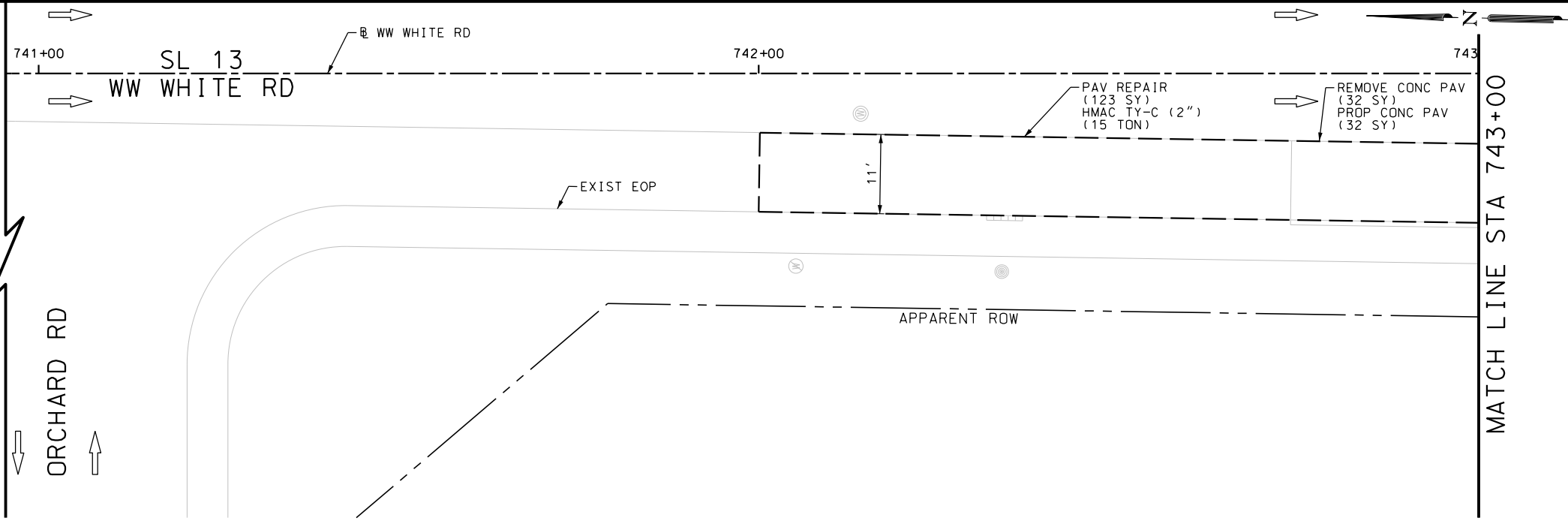
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 719+00 TO STA 729+00

SHEET 37 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	196

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_38.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6001	REMOVING CONC (PAV)	SY	123
0104-6009	REMOVING CONC (RIPRAP)	SY	5
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	55
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	3
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	10
0162-6002	BLOCK SODDING	SY	9
0168-6001	VEGETATIVE WATERING	MG	0.14
0340-6066	D-GR HMA (SQ) TY-C PG76-22	TON	15.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	123
0360-6032	CONC PAV (JOINT REINF) (10")	SY	123
0420-6074	CL C CONC (MISC)	CY	5.0
0529-6002	CONC CURB (TY II)	LF	55
0530-6005	DRIVEWAYS (ACP)	SY	13
0531-6001	CONC SIDEWALKS (4")	SY	38
0531-6018	CURB RAMPS (TY I)	SY	13
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	57
0620-6009	ELEC CONDR (NO.6) BARE	LF	46
0624-6009	GROUND BOX TY D (162922)	EA	1
0644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	1
0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	81
0666-6230	PAVEMENT SEALER 24"	LF	81
0677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	21
0678-6008	PAV SURF PREP FOR MRK (24")	LF	81
0682-6017	PED SIG SEC (LED) (2 INDICATIONS)	EA	2
0684-6009	TRF SIG CBL (TY A) (12 AWG) (4 CONDR)	LF	150
0684-6028	TRF SIG CBL (TY A) (14 AWG) (2 CONDR)	LF	150
0687-6001	PED POLE ASSEMBLY	EA	1
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	2

NOTES:  
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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



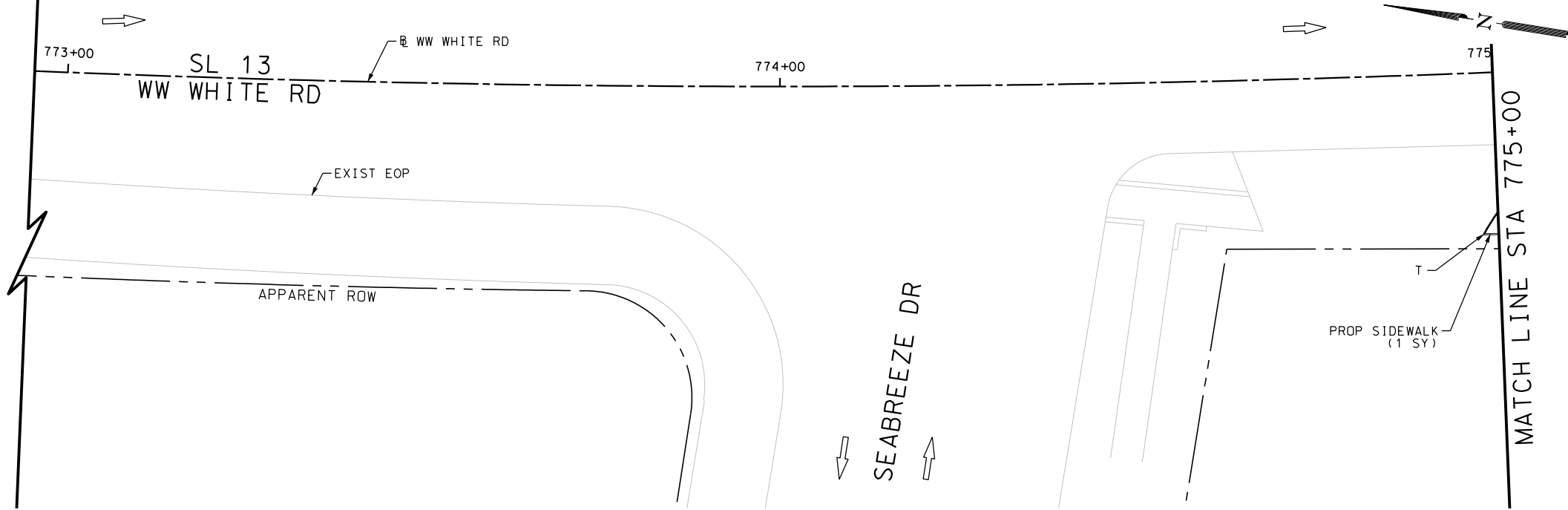
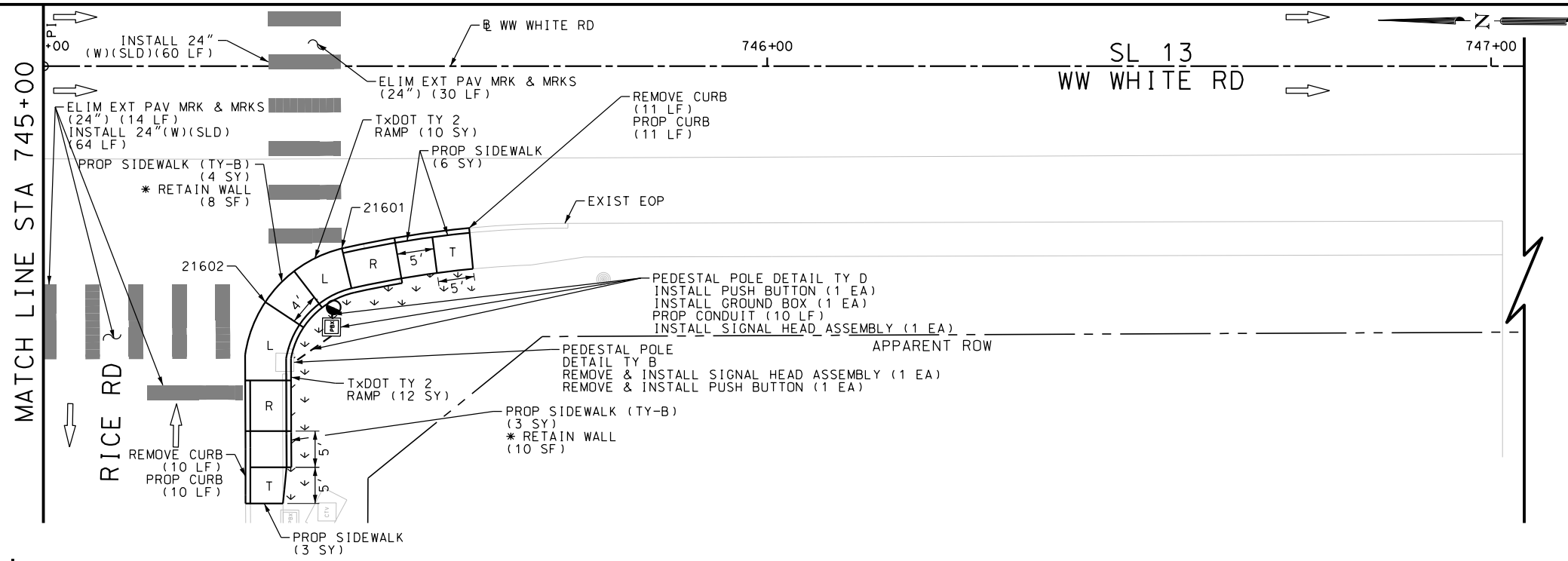
SL 13  
 WW WHITE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 741+00 TO STA 745+00

SHEET 38 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	197

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_39.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	21
0162-6002	BLOCK SODDING	SY	17
0168-6001	VEGETATIVE WATERING	MG	0.27
0529-6002	CONC CURB (TY II)	LF	21
0531-6001	CONC SIDEWALKS (4")	SY	9
0531-6019	CURB RAMPS (TY 2)	SY	22
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	7
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	10
0620-6009	ELEC CONDR (NO.6) BARE	LF	10
0624-6010	GROUND BOX TY D (162922)W/APRON	EA	1
0666-6048	REFL PAV MRK TY I (W)24" (SLD) (100MIL)	LF	124
0666-6230	PAVEMENT SEALER 24"	LF	124
0677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	44
0678-6008	PAV SURF PREP FOR MRK (24")	LF	124
0682-6017	PED SIG SEC (LED) (2 INDICATIONS)	EA	2
0684-6009	TRF SIG CBL (TY A) (12 AWG) (4 CONDR)	LF	150
0684-6028	TRF SIG CBL (TY A) (14 AWG) (2 CONDR)	LF	150
0687-6001	PED POLE ASSEMBLY	EA	1
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	2
0690-6024	REMOVAL OF SIGNAL HEAD ASSM	EA	1
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	1

NOTES:  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 745+00 TO STA 775+00

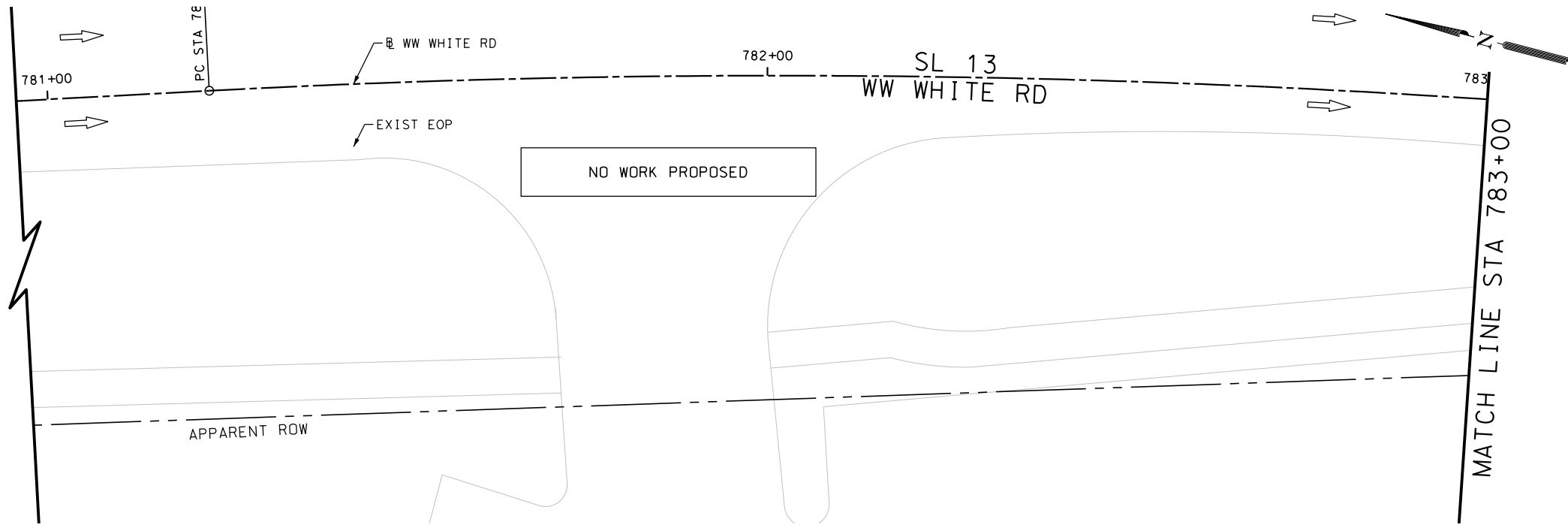
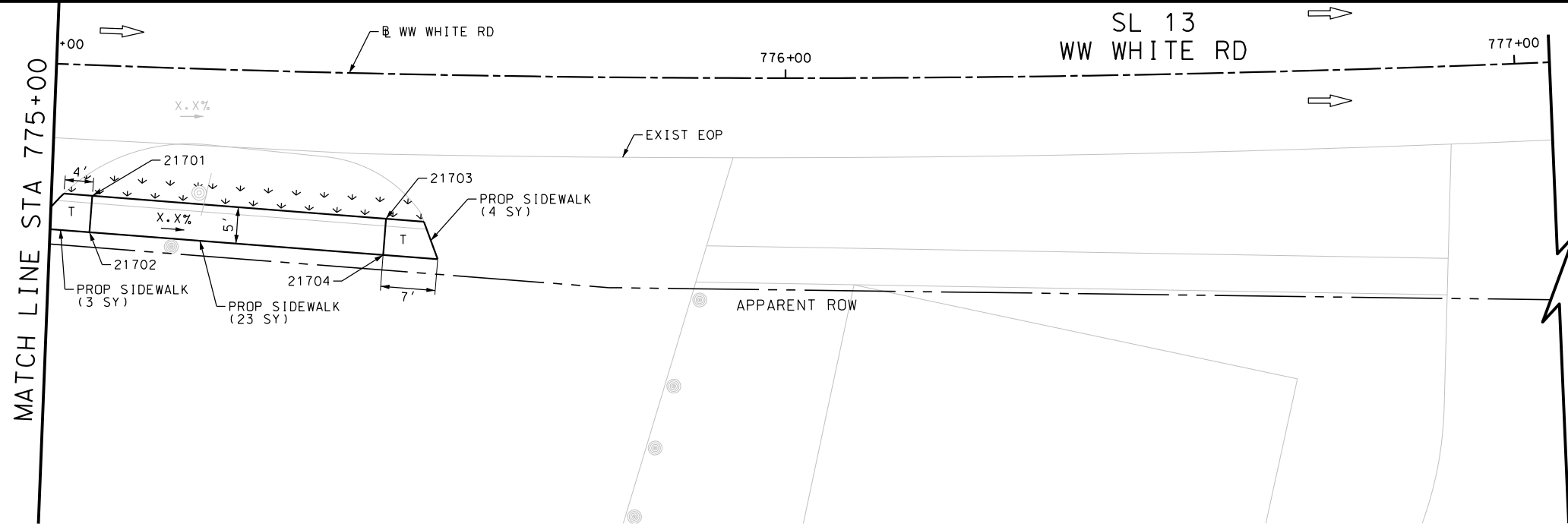
SHEET 39 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	198

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_40.dgn

ITEM	DESCRIPTION	UNIT	QTY
0162-6002	BLOCK SODDING	SY	16
0168-6001	VEGETATIVE WATERING	MG	0.25
0531-6001	CONC SIDEWALKS (4")	SY	30



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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



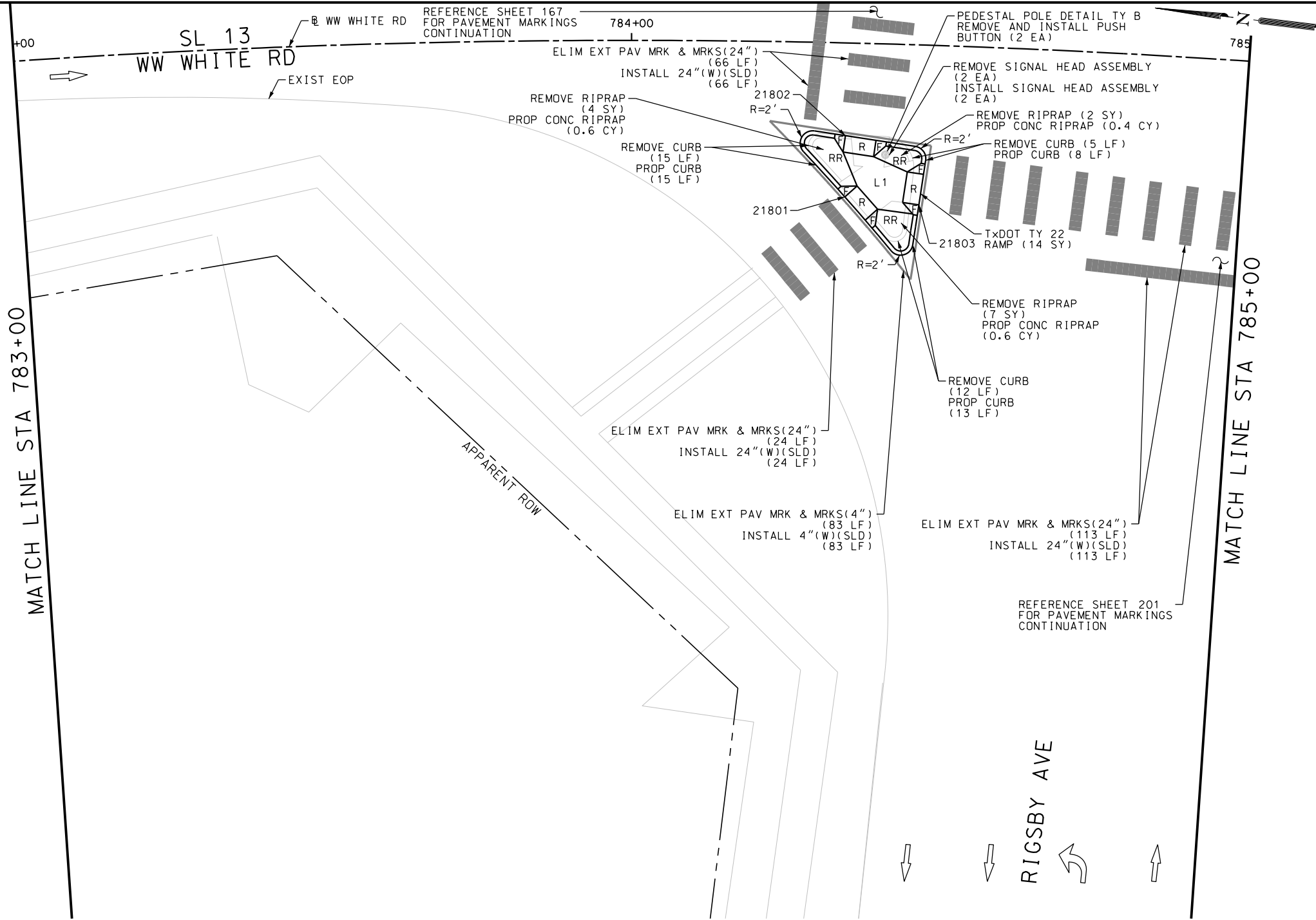
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 775+00 TO STA 783+00

SHEET 40 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	199

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_41.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	13
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	32
0432-6003	RIPRAP (CONC) (6 IN)	CY	1.6
0529-6002	CONC CURB (TY II)	LF	36
0531-6031	CURB RAMPS (TY 22)	SY	14
0666-6147	REFL PAV MRK TY I (Y)24"(SLD) (100MIL)	LF	203
0666-6224	PAVEMENT SEALER 4"	LF	83
0666-6230	PAVEMENT SEALER 24"	LF	203
0666-6303	RE PM W/RET REQ TY I (W)4"(SLD) (100MIL)	LF	83
0677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	83
0677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	203
0678-6001	PAV SURF PREP FOR MRK (4")	LF	83
0678-6008	PAV SURF PREP FOR MRK (24")	LF	203
0682-6017	PED SIG SEC (LED) (2 INDICATIONS)	EA	2
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	2
0690-6024	REMOVAL OF SIGNAL HEAD ASSM	EA	2
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	2

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ENGINEER: JOHN A. TYLER  
P.E. SERIAL NO: 105193  
DATE: 9/29/2017

REVIEW AND APPROVAL  
INTERIM REVIEW  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JAMES A. LUTZ  
P.E. SERIAL NO: 84722  
DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



SL 13  
WW WHITE RD  
SIDEWALK  
CONSTRUCTION PLAN  
STA 783+00 TO STA 785+00

SHEET 41 OF 51

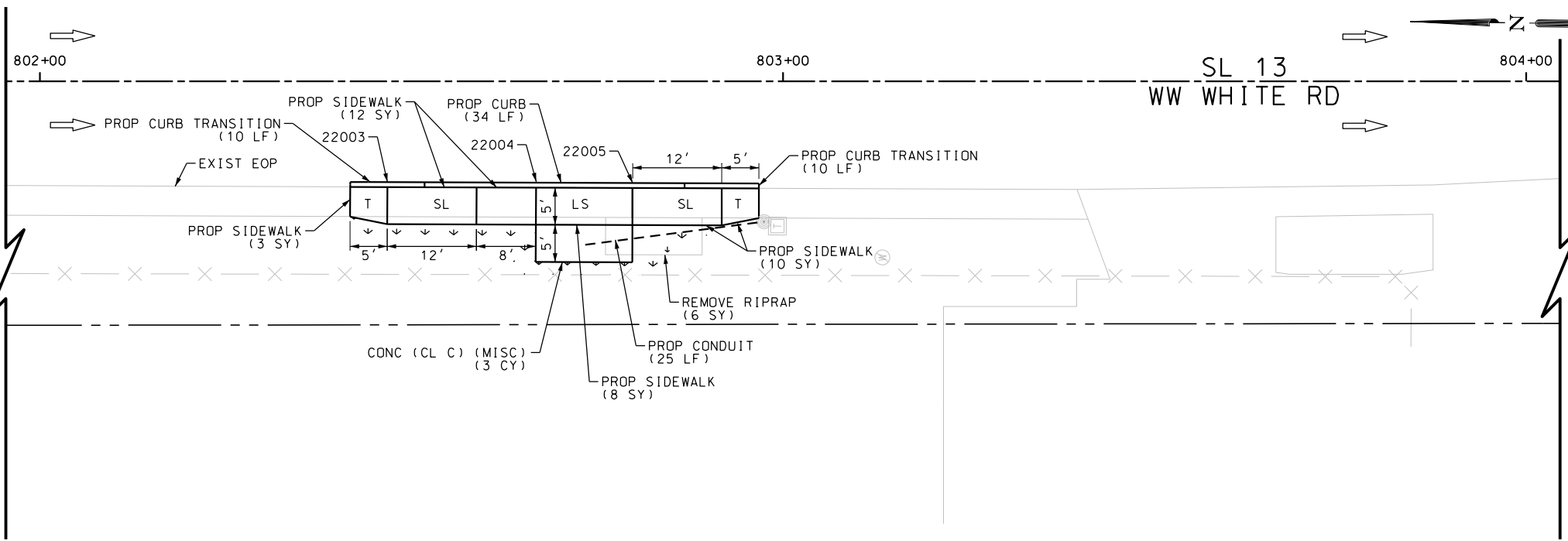
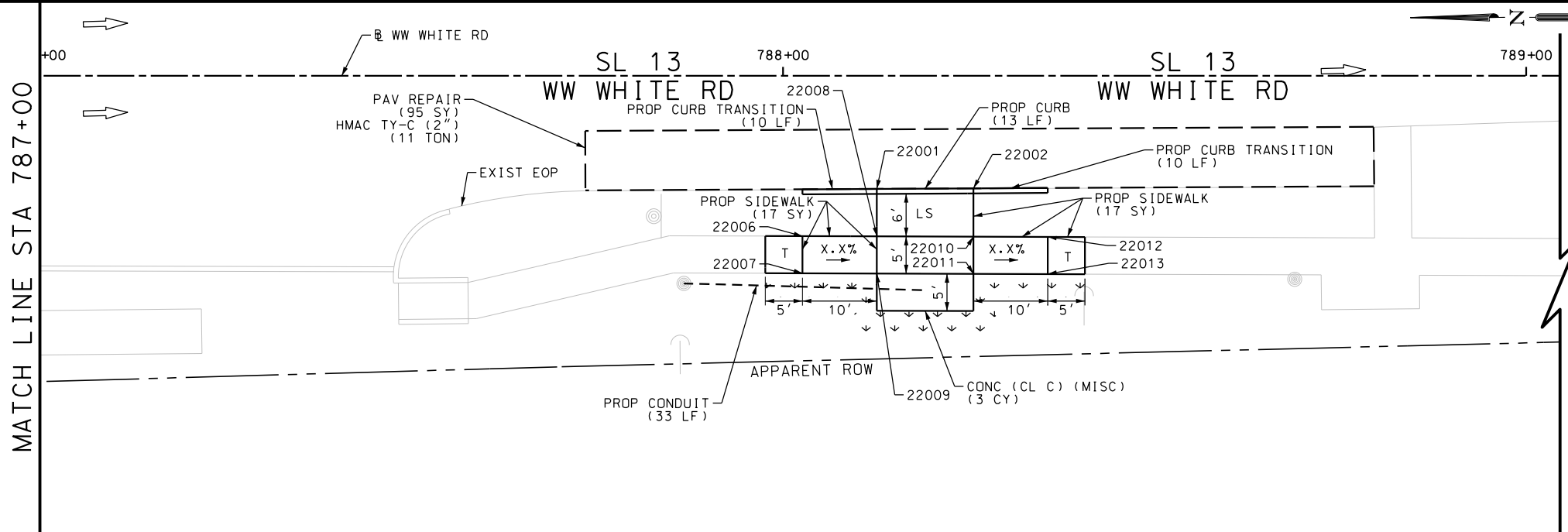
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	200





Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_43.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	6
0162-6002	BLOCK SODDING	SY	38
0168-6001	VEGETATIVE WATERING	MG	0.59
0340-6066	D-GR HMA(SQ) TY-C PG76-22	TON	11.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	95
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	87
0531-6001	CONC SIDEWALKS (4")	SY	67
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	58

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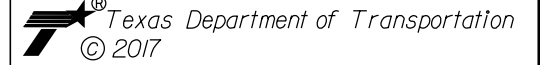
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



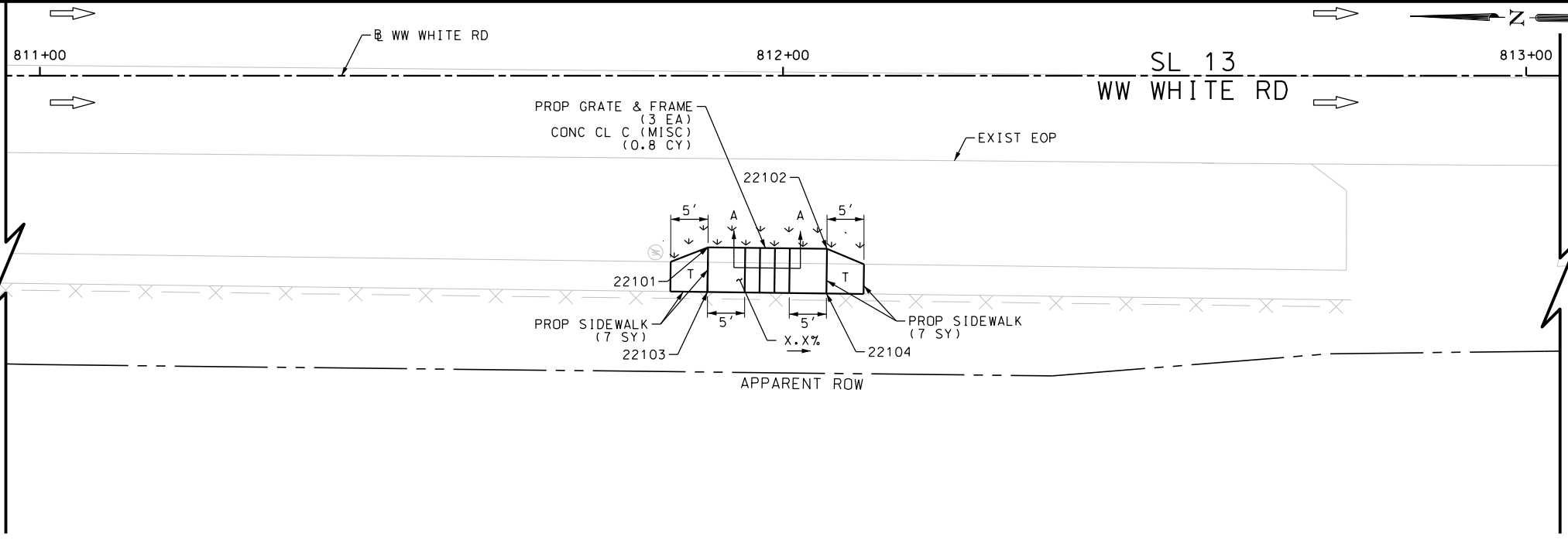
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 787+00 TO STA 804+00

SHEET 43 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	202

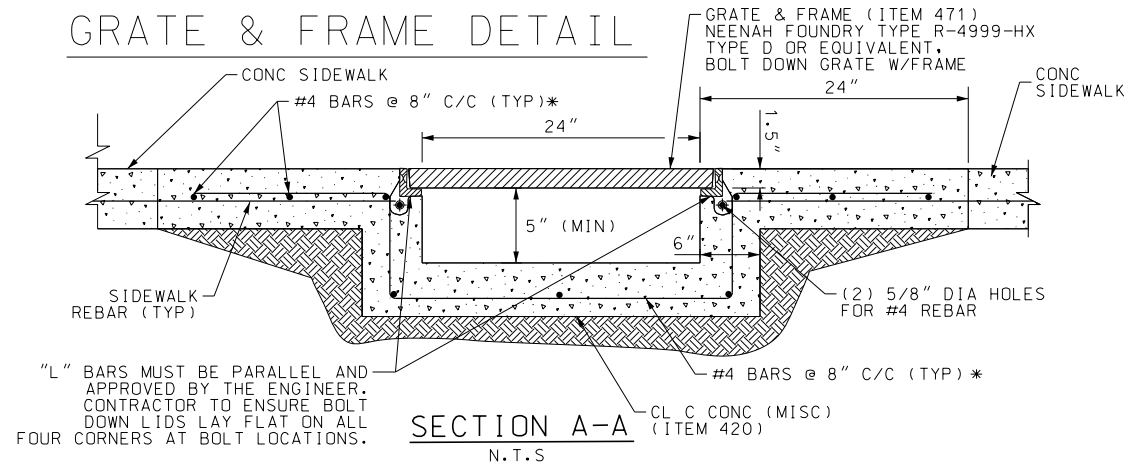
Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_44.dgn



ITEM	DESCRIPTION	UNIT	QTY
0162-6002	BLOCK SODDING	SY	10
0168-6001	VEGETATIVE WATERING	MG	0.16
0420-6074	CL C CONC (MISC)	CY	0.8
0471-6003	GRATE & FRAME	EA	3
0531-6001	CONC SIDEWALKS (4")	SY	14

**GRATE & FRAME DETAIL**



"L" BARS MUST BE PARALLEL AND APPROVED BY THE ENGINEER. CONTRACTOR TO ENSURE BOLT DOWN LIDS LAY FLAT ON ALL FOUR CORNERS AT BOLT LOCATIONS.

**SECTION A-A**  
N.T.S

\* REINFORCEMENT IS SUBSIDIARY TO ITEM 420.

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DESIGN  
**INTERIM REVIEW**  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JOHN A. TYLER  
P.E. SERIAL NO: 105193  
DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JAMES A. LUTZ  
P.E. SERIAL NO: 84722  
DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



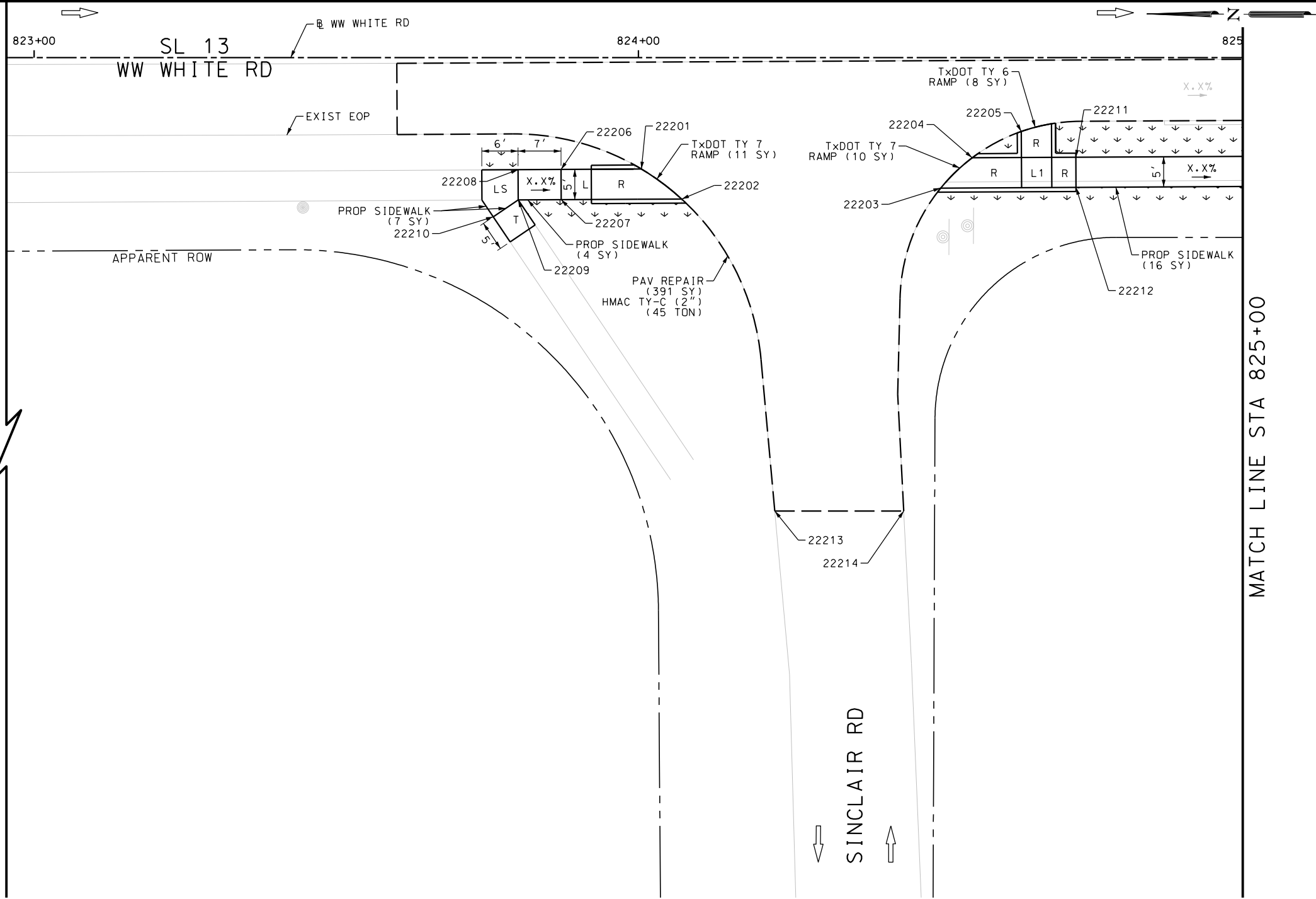
SL 13  
WW WHITE RD  
**SIDEWALK CONSTRUCTION PLAN**  
STA 811+00 TO STA 813+00

SHEET 44 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	203

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Ww White\1113501\_wwwhite\_45.dgn



ITEM	DESCRIPTION	UNIT	QTY
0162-6002	BLOCK SODDING	SY	51
0168-6001	VEGETATIVE WATERING	MG	0.80
0340-6066	D-GR HMA (SQ) TY-C PG76-22	TON	45.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	391
0531-6001	CONC SIDEWALKS (4")	SY	27
0531-6023	CURB RAMPS (TY 6)	SY	8
0531-6024	CURB RAMPS (TY 7)	SY	21

NOTES:  
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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



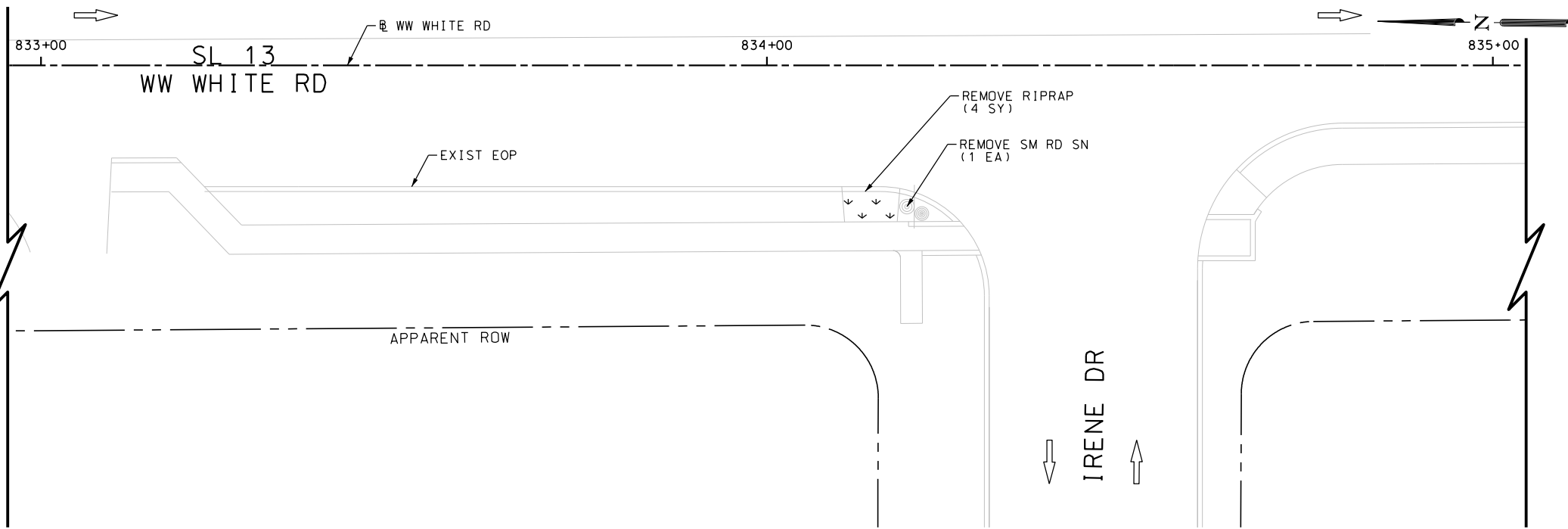
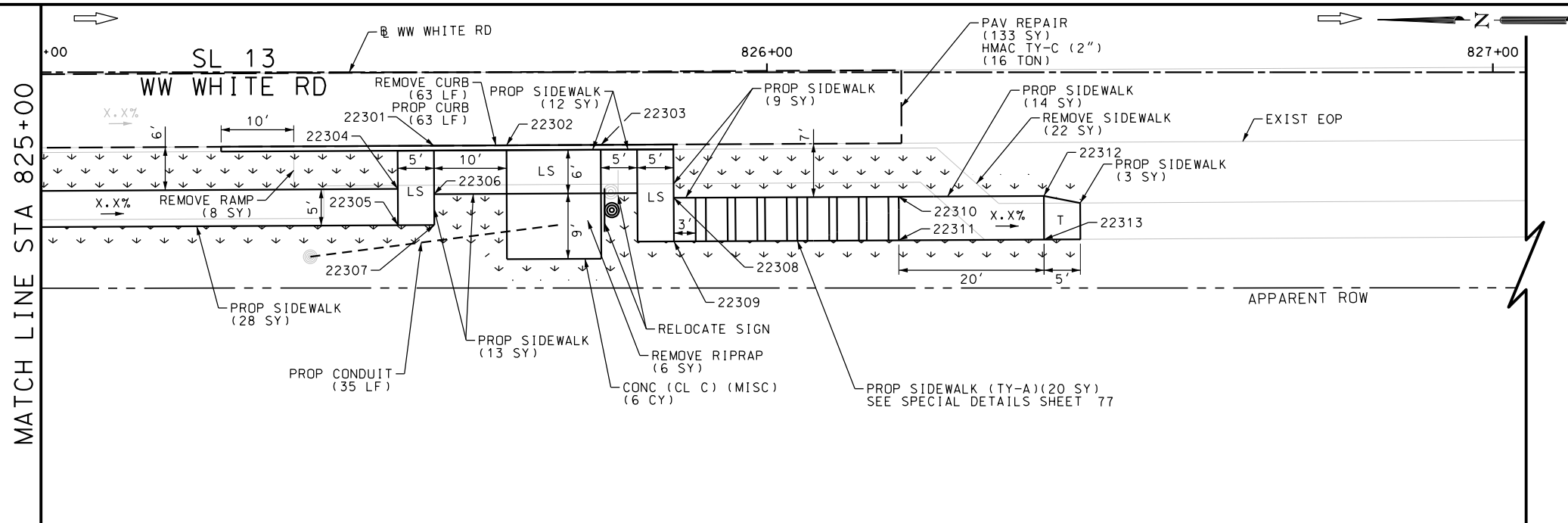
SL 13  
 WW WHITE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 823+00 TO STA 825+00

SHEET 45 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	204

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Ww White\1113501\_wwwhite\_46.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	10
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	63
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	30
0162-6002	BLOCK SODDING	SY	128
0168-6001	VEGETATIVE WATERING	MG	2.00
0340-6066	D-GR HMA(SQ) TY-C PG76-22	TON	16.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	133
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	63
0531-6001	CONC SIDEWALKS (4")	SY	79
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	20
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	35
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1
0644-6076	REMOVE SM RD SN SUP&M	EA	1

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DESIGN  
 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 825+00 TO STA 835+00

SHEET 46 OF 51

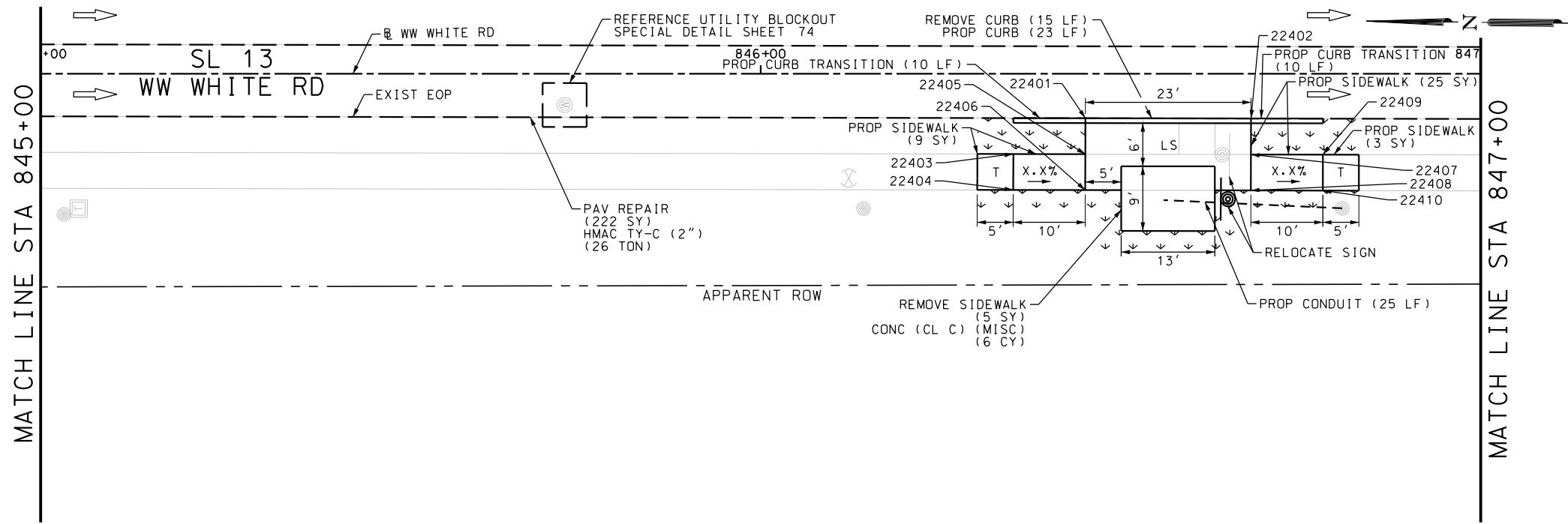
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	205

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_47.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	15
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	5
0162-6002	BLOCK SODDING	SY	37
0168-6001	VEGETATIVE WATERING	MG	0.58
0340-6066	D-GR HMA (SQ) TY-C PG76-22	TON	33.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	278
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	43
0531-6001	CONC SIDEWALKS (4")	SY	37
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	25
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1



NOTES:  
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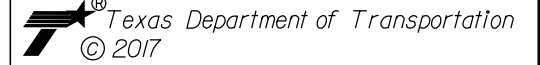
DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



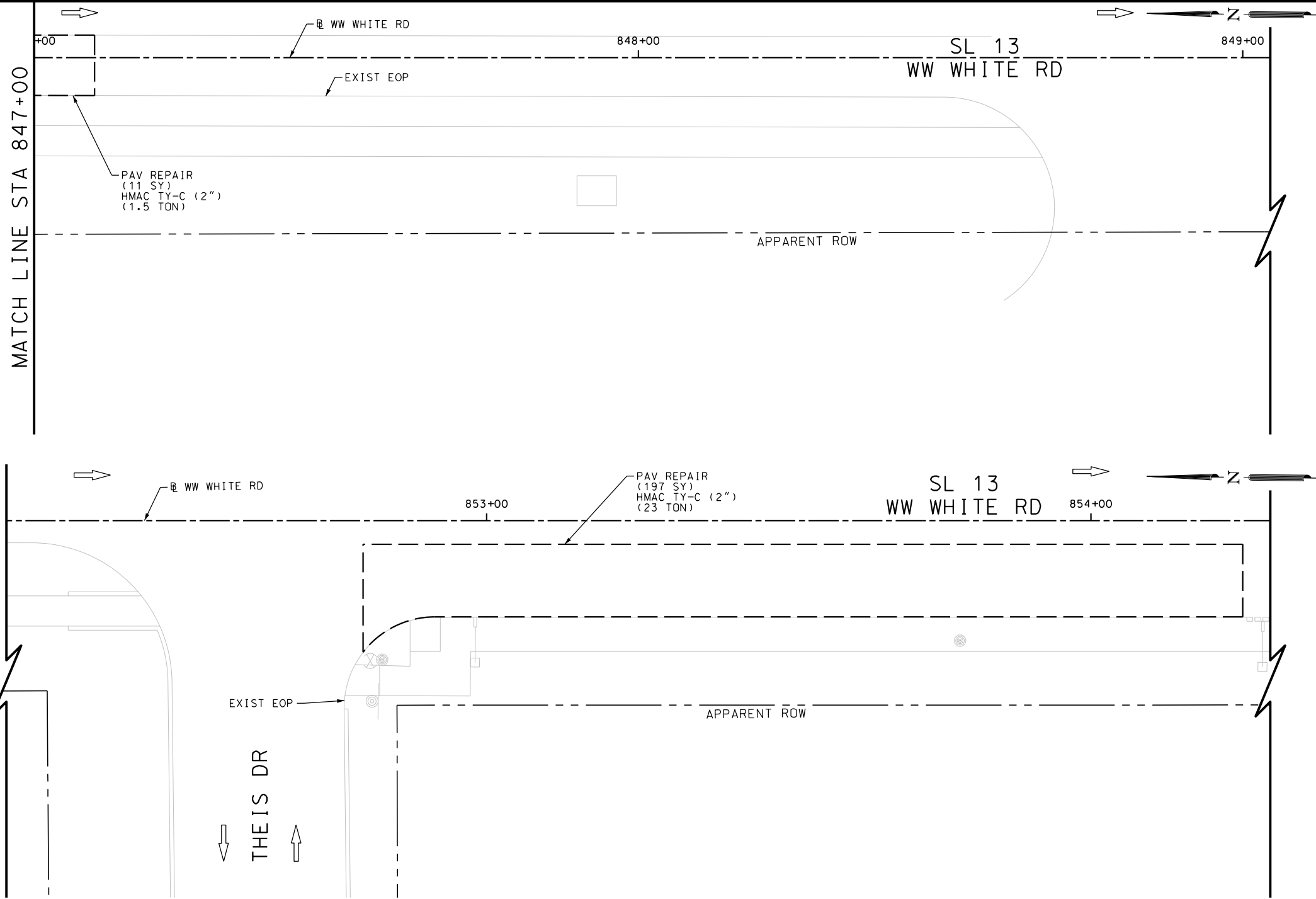
SL 13  
 WW WHITE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 843+00 TO STA 847+00

SHEET 47 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
	SAT	BEXAR	0915	12	586	206

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\WW White\1113501\_WWWhite\_48.dgn



ITEM	DESCRIPTION	UNIT	QTY
0340-6066	D-GR HMA (SQ) TY-C PG76-22	TON	24.5
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	208

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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



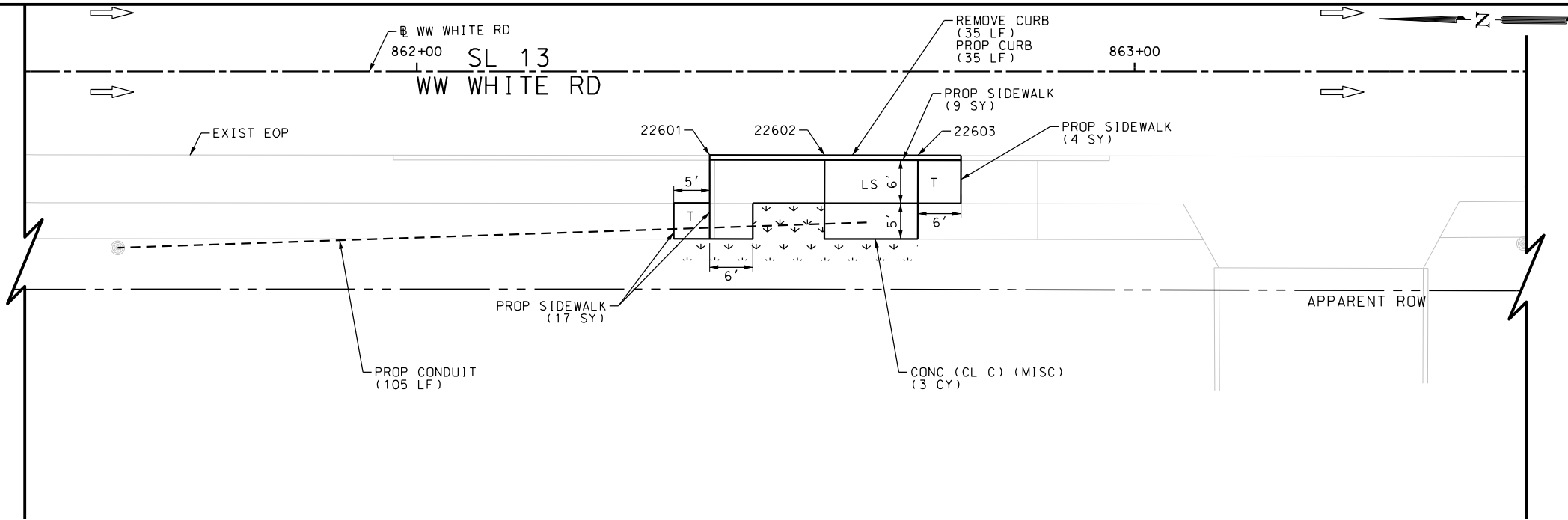
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 847+00 TO STA 854+00

SHEET 48 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	207

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_49.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	35
0162-6002	BLOCK SODDING	SY	14
0168-6001	VEGETATIVE WATERING	MG	0.22
0420-6074	CL C CONC (MISC)	CY	3.0
0529-6002	CONC CURB (TY II)	LF	35
0531-6001	CONC SIDEWALKS (4")	SY	30
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	105

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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 861+50 TO STA 863+50

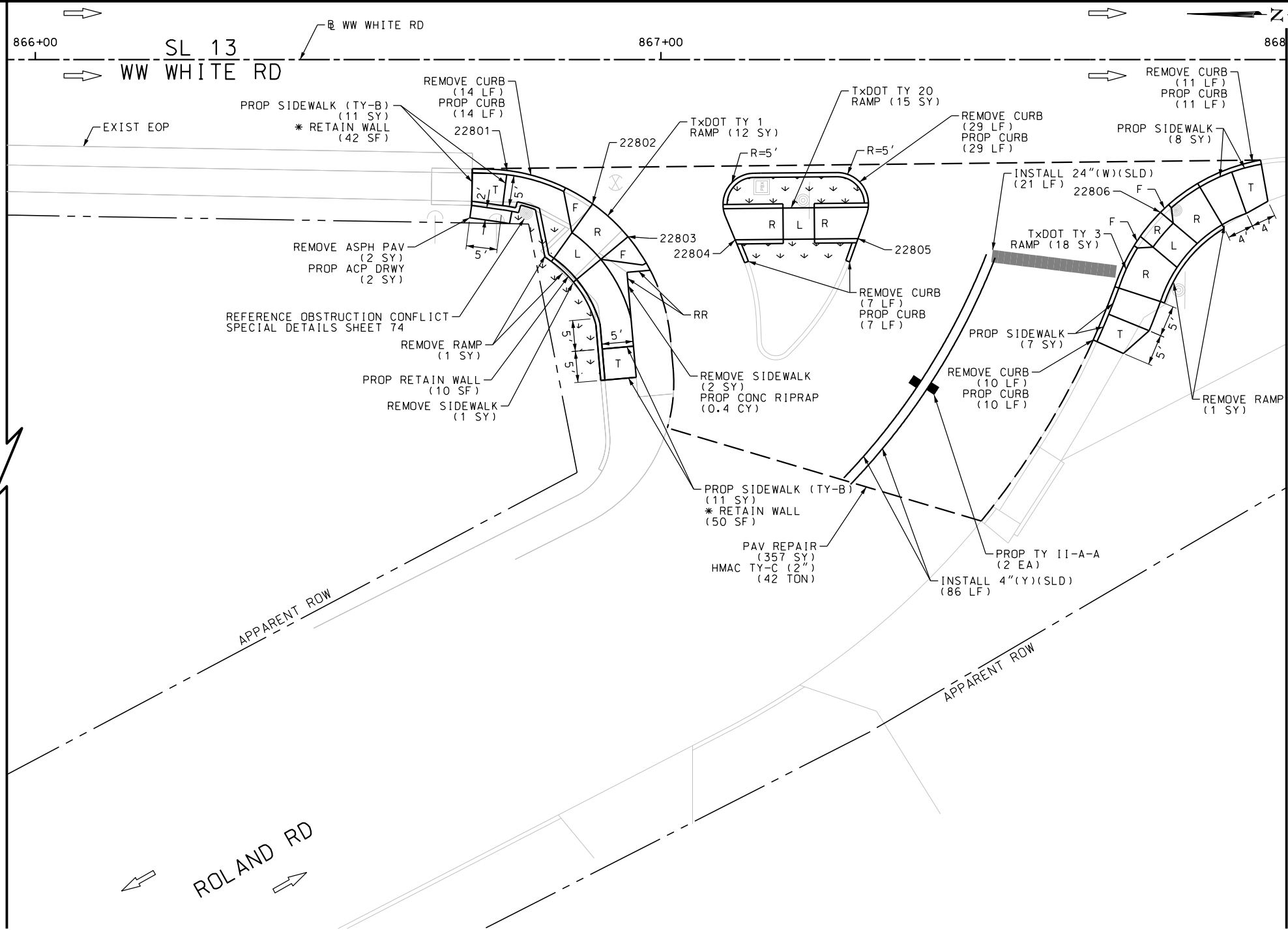
SHEET 49 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	208



Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\WW White\1113501\_wwwhite\_50.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	71
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	5
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	2
0162-6002	BLOCK SODDING	SY	25
0168-6001	VEGETATIVE WATERING	MG	0.39
0340-6066	D-GR HMA(SQ) TY-C PG76-22	TON	42.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	357
0432-6003	RIPRAP (CONC) (6 IN)	CY	0.4
0529-6002	CONC CURB (TY II)	LF	71
0530-6005	DRIVEWAYS (ACP)	SY	2
0531-6001	CONC SIDEWALKS (4")	SY	15
0531-6018	CURB RAMPS (TY 1)	SY	12
0531-6020	CURB RAMPS (TY 3)	SY	18
0531-6029	CURB RAMPS (TY 20)	SY	15
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	22
0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	21
0666-6224	PAVEMENT SEALER 4"	LF	86
0666-6230	PAVEMENT SEALER 24"	LF	21
0666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF	86
0672-6009	REFL PAV MRKR TY II-A-A	EA	2
0678-6001	PAV SURF PREP FOR MRK (4")	LF	86
0678-6008	PAV SURF PREP FOR MRK (24")	LF	21

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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



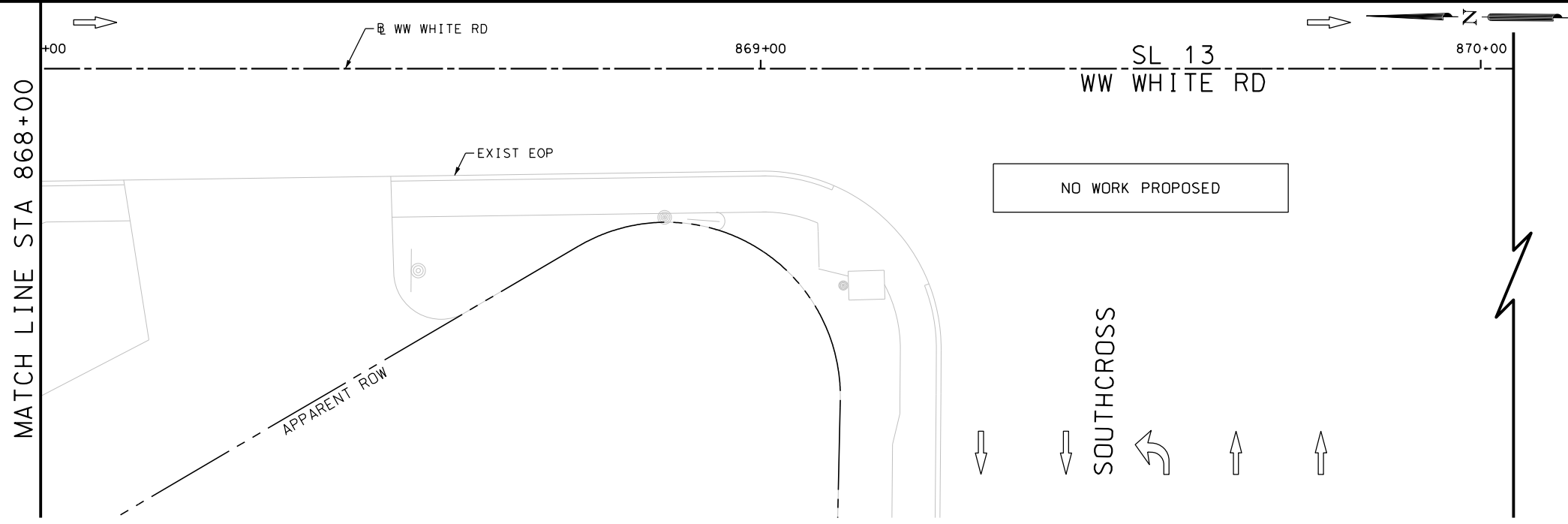
SL 13  
 WW WHITE RD  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 866+00 TO STA 868+00

SHEET 50 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	209

Plotted on: 9/29/2017

Design File name: P:\1111\35\01\design\Civil\Roadway\Ww White\1113501\_wwwhite\_51.dgn



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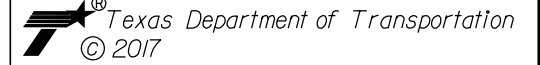
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REV. NO.	DATE	DESCRIPTION	BY

**Pape-Dawson Engineers**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



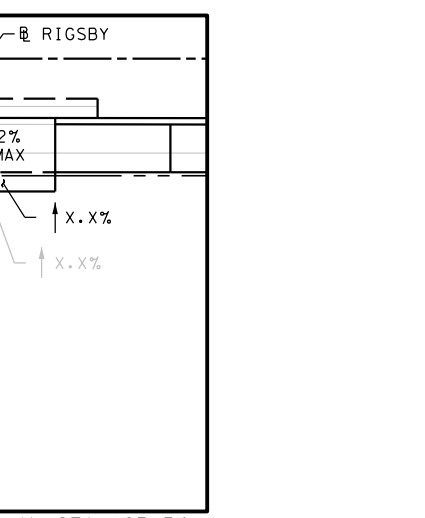
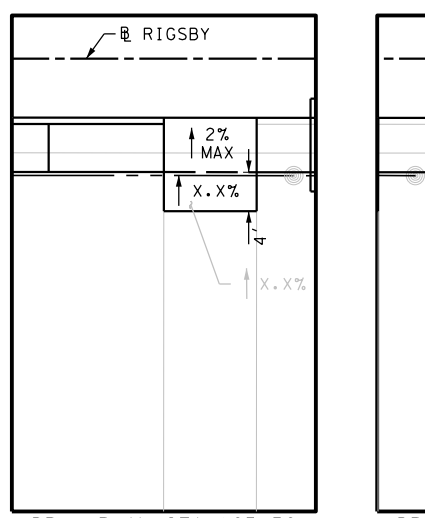
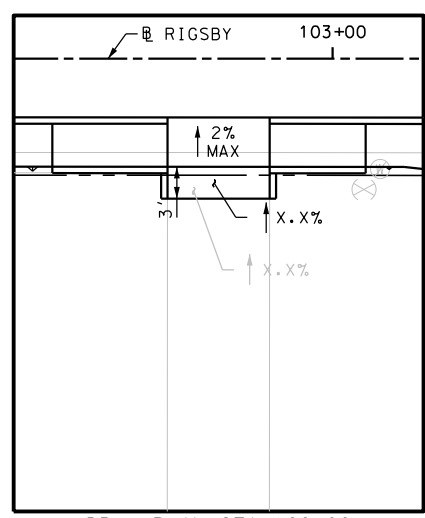
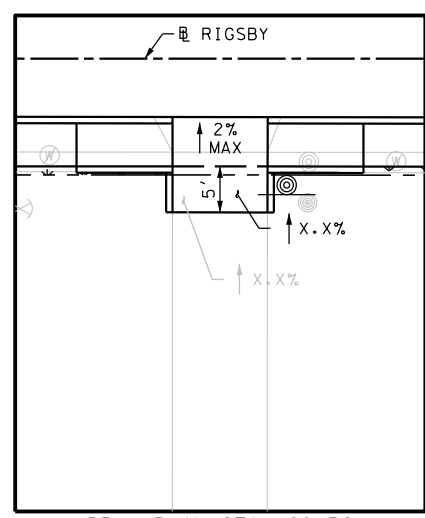
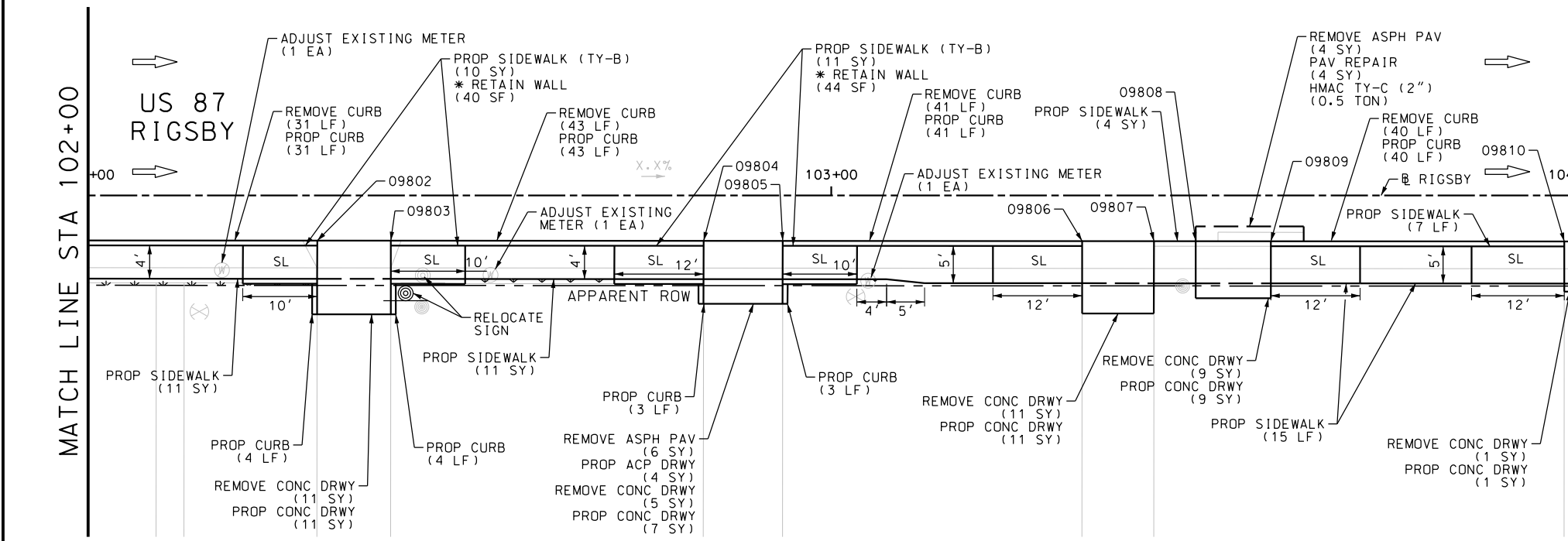
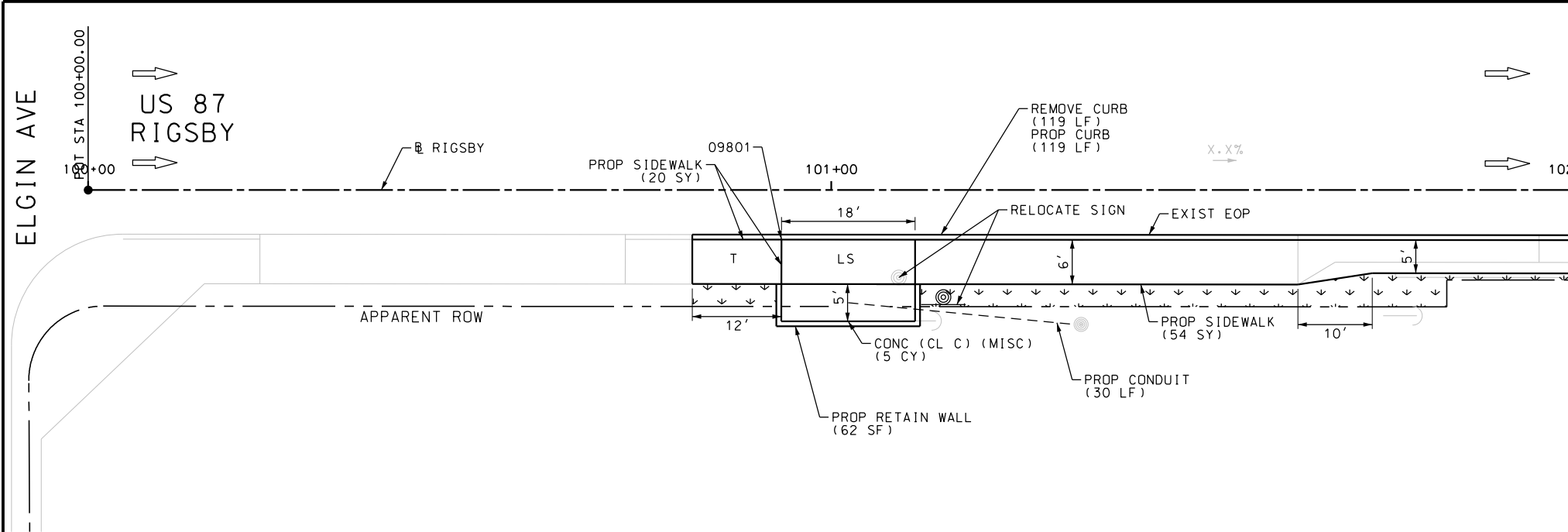
SL 13  
 WW WHITE RD  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 868+00 TO STA 870+00

SHEET 51 OF 51

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.		HIGHWAY NO.
CHK DGN:	6	TEXAS			VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.
CHK DWG:	SAT	BEXAR	0915	12	586

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_01.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	3
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	37
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	274
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	10
0162-6002	BLOCK SODDING	SY	29
0168-6001	VEGETATIVE WATERING	MG	0.45
0340-6066	D-GR HMA(SQ) TY-C PG76-22	TON	0.5
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	4
0420-6074	CL C CONC (MISC)	CY	5.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	62
0529-6002	CONC CURB (TY II)	LF	288
0530-6004	DRIVEWAYS (CONC)	SY	39
0530-6005	DRIVEWAYS (ACP)	SY	4
0531-6001	CONC SIDEWALKS (4")	SY	122
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	21
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	30
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	2

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 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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 | TBPFS FIRM REGISTRATION #10028800



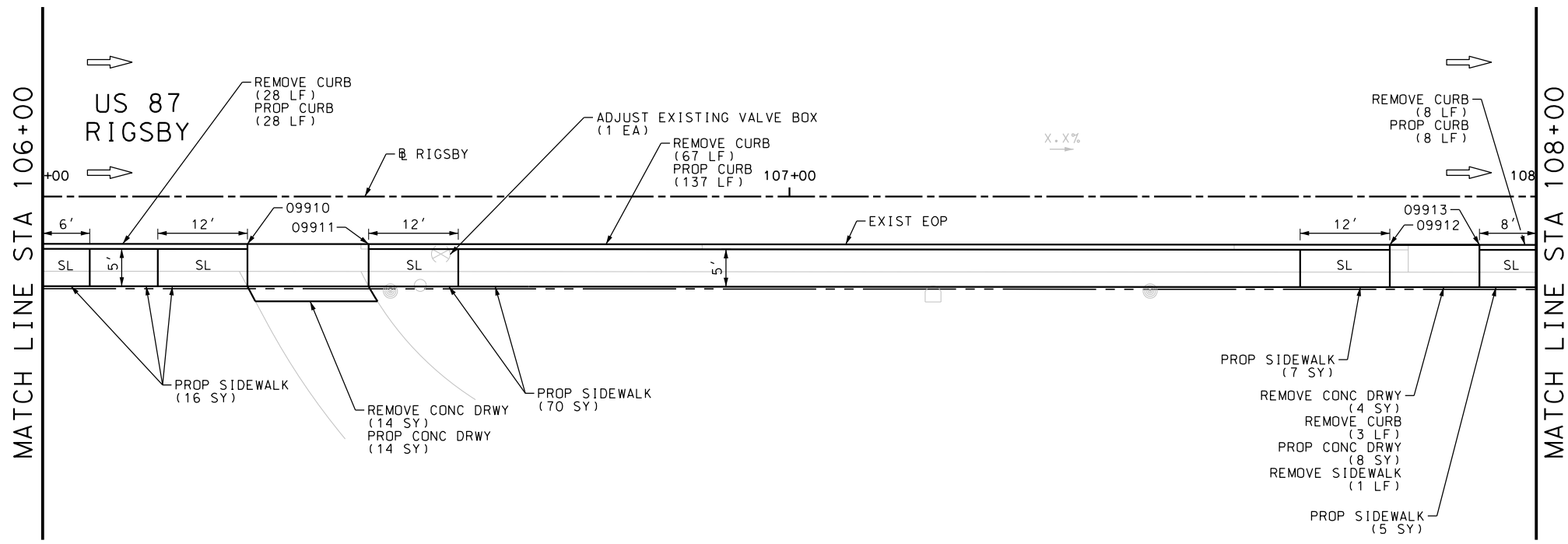
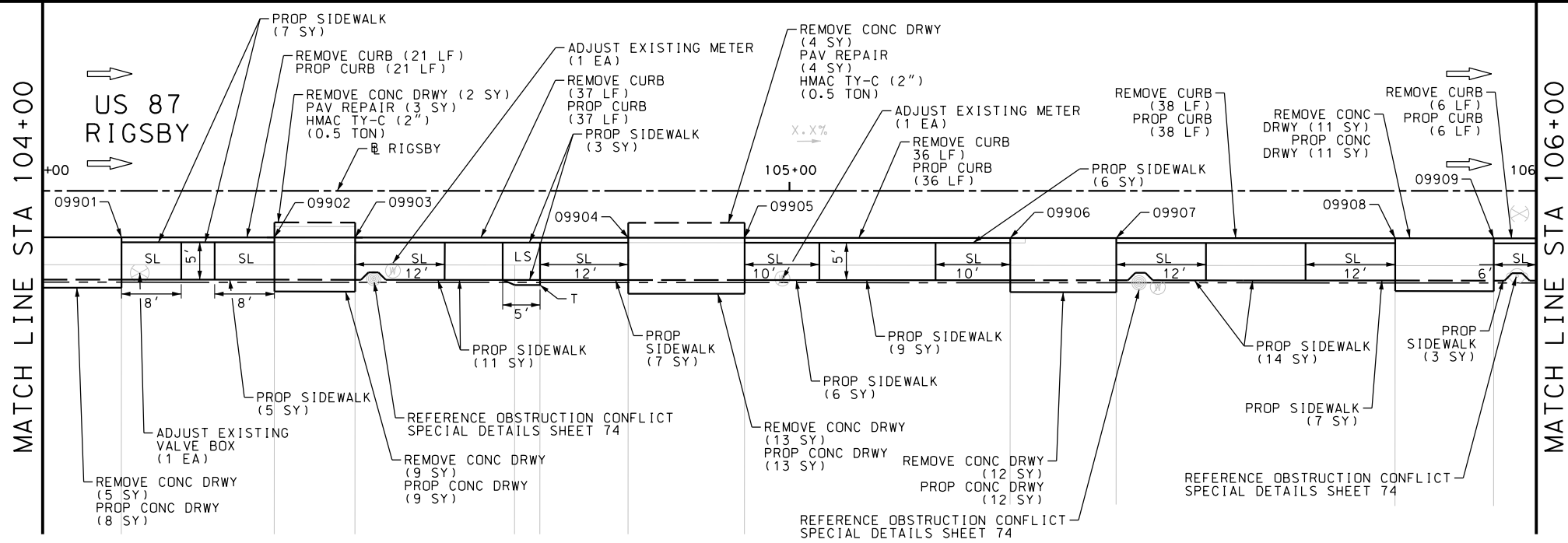
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 BEGIN PROJECT TO STA 104+00

SHEET 1 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	211

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_02.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6001	ADJUST EXISTING VALVE BOX	EA	2
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	2
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	74
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	244
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	1
0340-6066	D-GR HMA(SQ) TY-C PG76-22	TON	1.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	7
0529-6002	CONC CURB (TY II)	LF	311
0530-6004	DRIVEWAYS (CONC)	SY	75
0531-6001	CONC SIDEWALKS (4")	SY	176

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

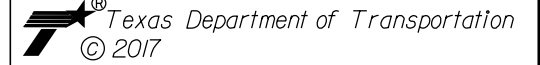
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

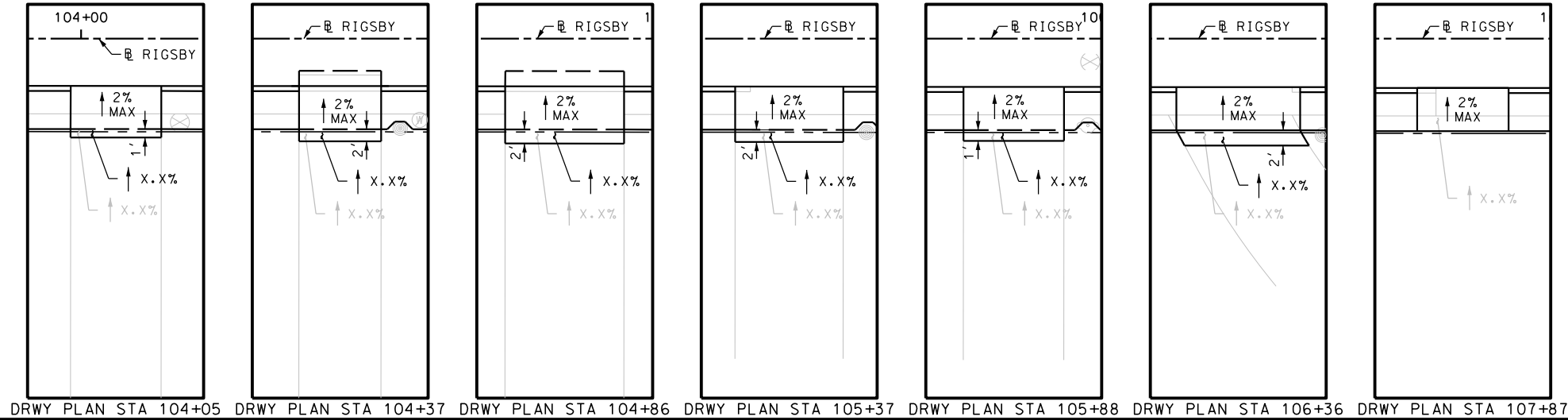
**PAPE-DAWSON ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 104+00 TO STA 108+00

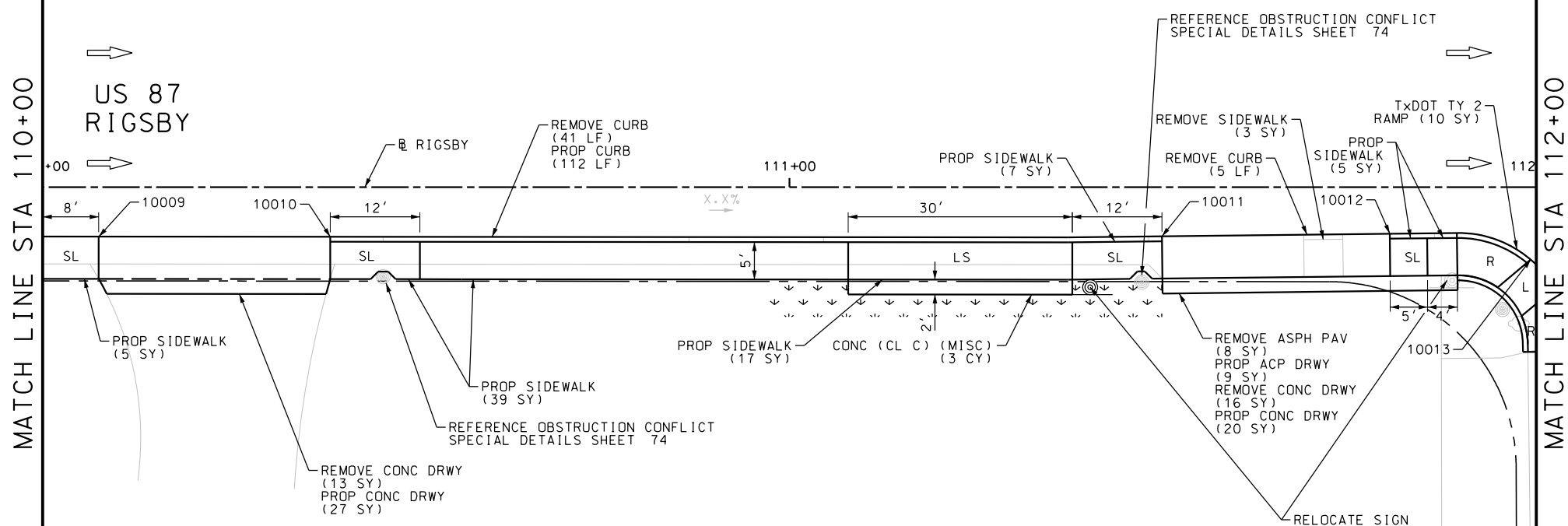
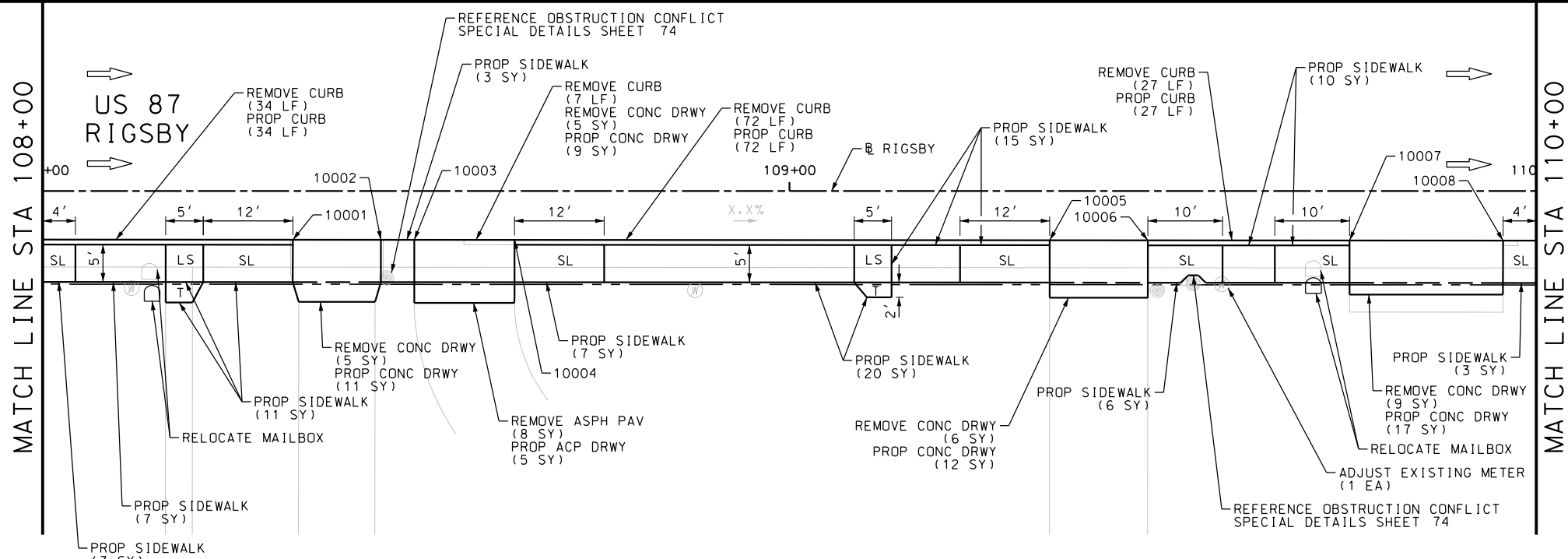
SHEET 2 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	212



Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_03.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	1
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	54
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	186
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	3
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	16
0162-6002	BLOCK SODDING	SY	28
0168-6001	VEGETATIVE WATERING	MG	0.44
0420-6074	CL C CONC (MISC)	CY	3.0
0529-6002	CONC CURB (TY II)	LF	245
0530-6004	DRIVEWAYS (CONC)	SY	96
0530-6005	DRIVEWAYS (ACP)	SY	14
0531-6001	CONC SIDEWALKS (4")	SY	158
0531-6019	CURB RAMPS (TY 2)	SY	10
0560-6014	MAILBOX INSTALL-S (TWG-POST) TY 4	EA	1
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

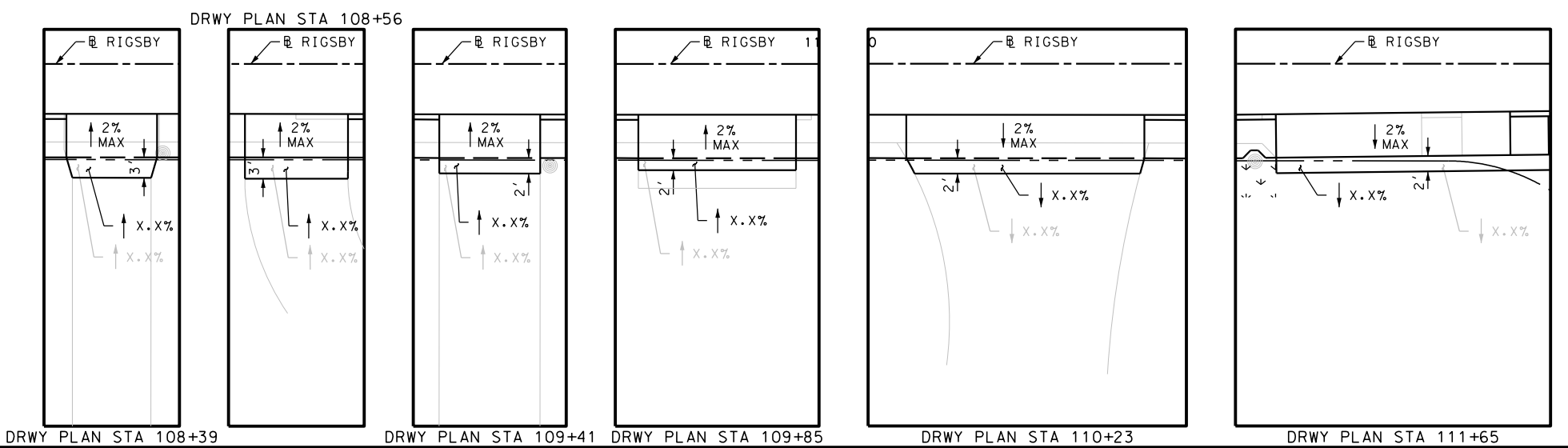
**Pape-Dawson ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 108+00 TO STA 112+00

SHEET 3 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	213



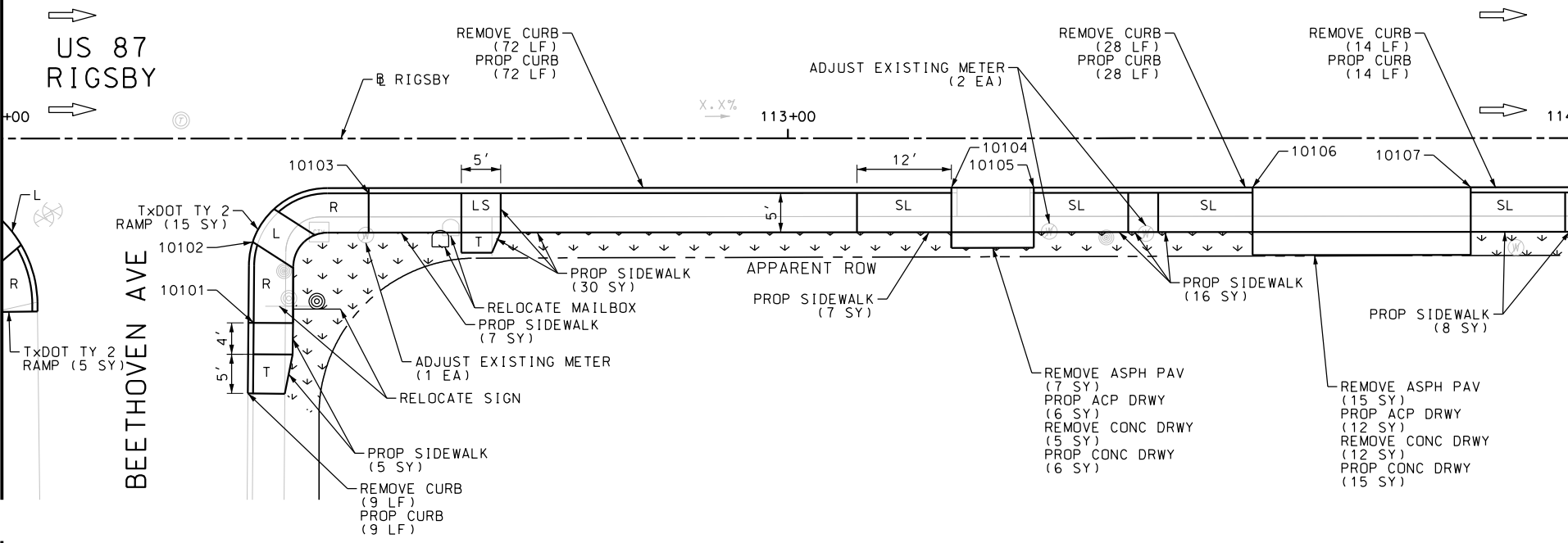
Plotted on: 9/29/2017

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MATCH LINE STA 112+00

US 87  
RIGSBY

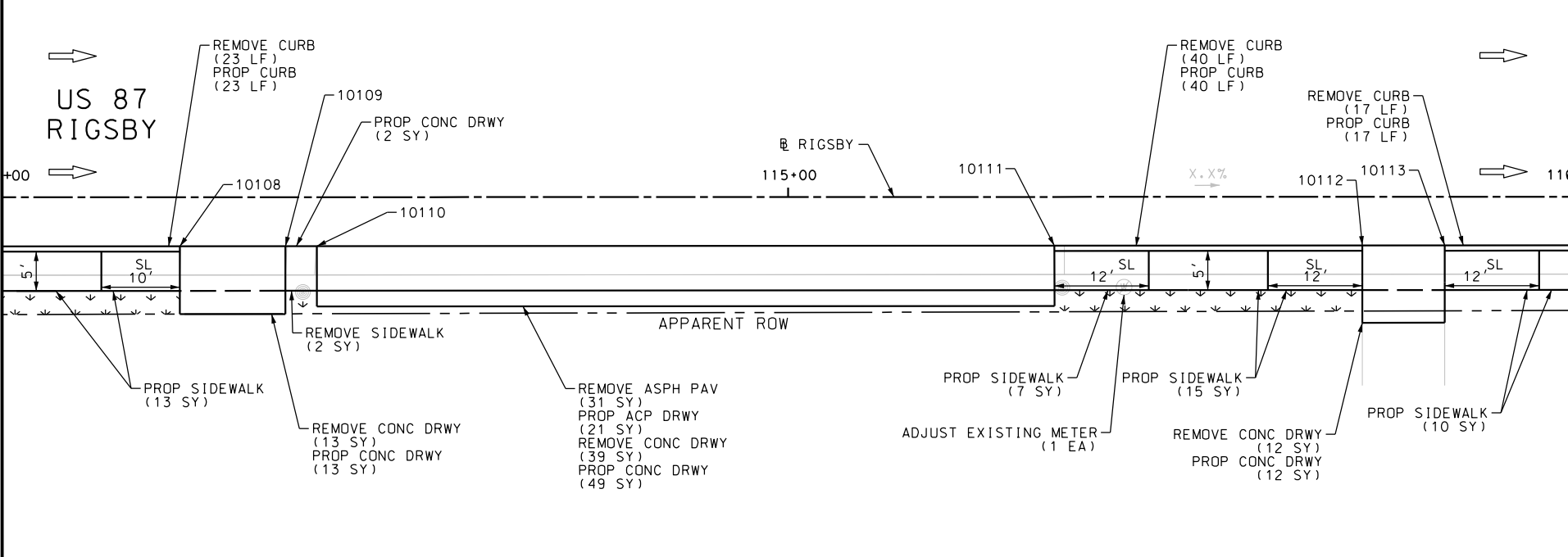
BEETHOVEN AVE



MATCH LINE STA 114+00

MATCH LINE STA 114+00

US 87  
RIGSBY



MATCH LINE STA 116+00

ITEM	DESCRIPTION	UNIT	QTY
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	4
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	81
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	203
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	2
0105-6037	REMOVING STAB BASE AND ASPH PAV(0"-16")	SY	53
0162-6002	BLOCK SODDING	SY	79
0168-6001	VEGETATIVE WATERING	MG	1.23
0529-6002	CONC CURB (TY II)	LF	203
0530-6004	DRIVEWAYS (CONC)	SY	97
0530-6005	DRIVEWAYS (ACP)	SY	39
0531-6001	CONC SIDEWALKS (4")	SY	118
0531-6019	CURB RAMPS (TY 2)	SY	20
0560-6014	MAILBOX INSTALL-S (TWG-POST) TY 4	EA	1
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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DESIGN  
 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

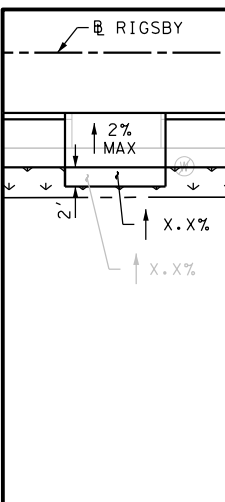
**PAPE-DAWSON ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



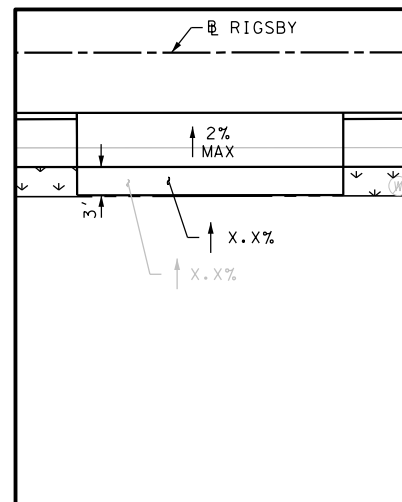
US 87  
RIGSBY  
SIDEWALK  
CONSTRUCTION PLAN  
STA 112+00 TO STA 116+00

SHEET 4 OF 80

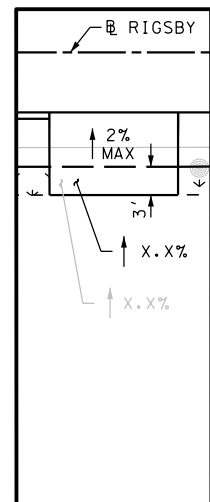
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	214



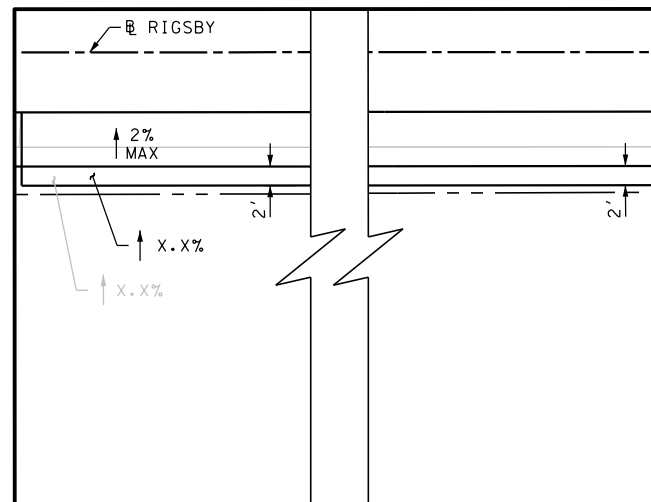
DRWY PLAN STA 113+26



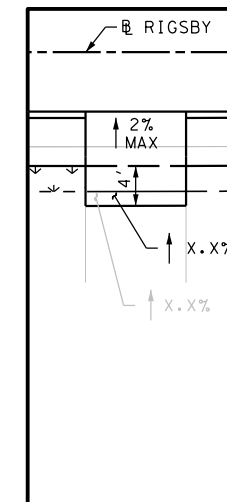
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DRWY PLAN STA 114+29



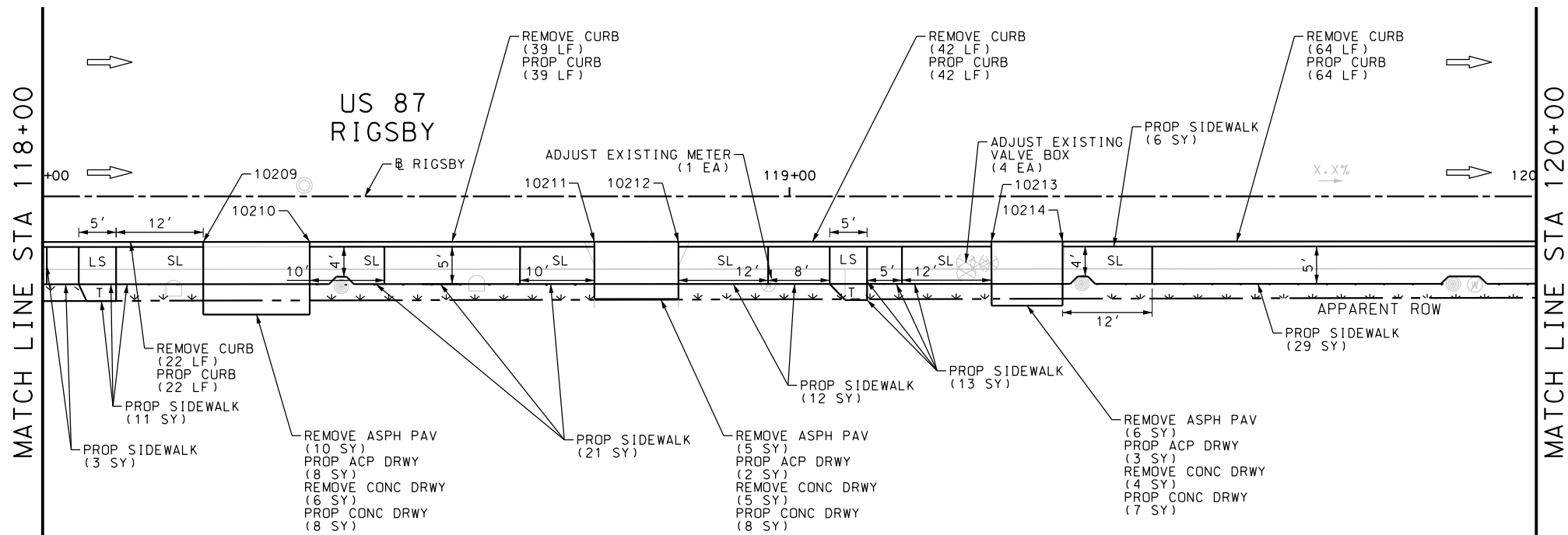
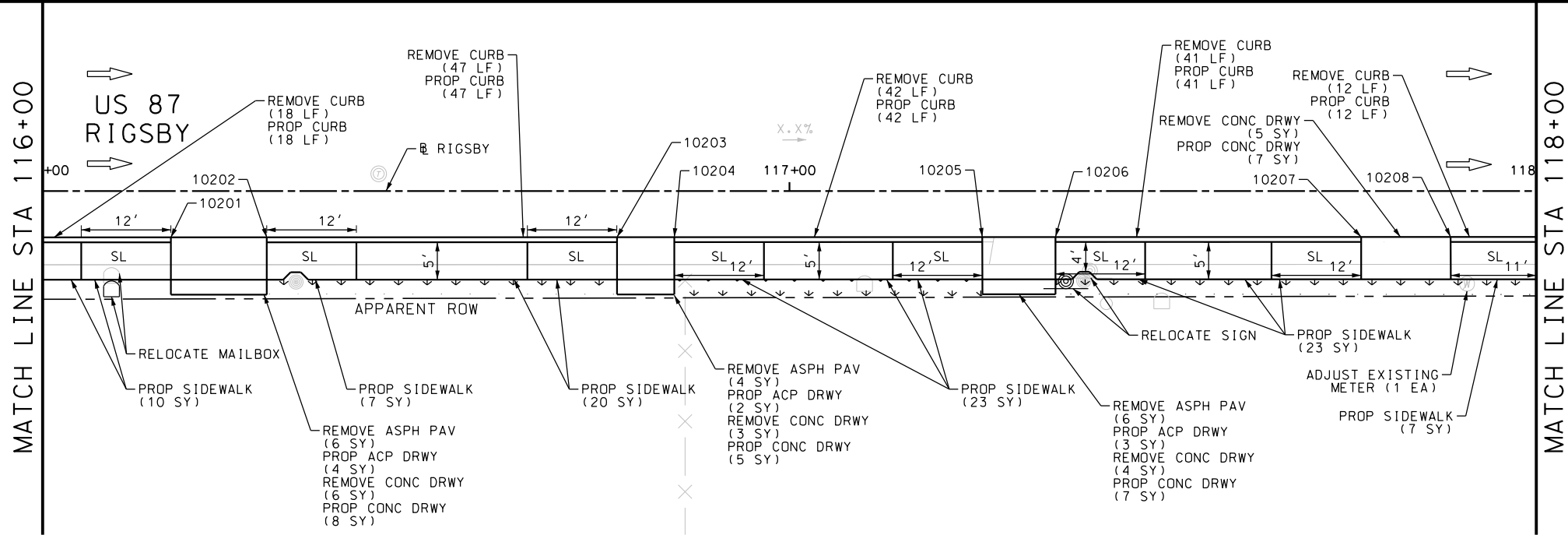
DRWY PLAN STA 114+87



DRWY PLAN STA 115+78

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_05.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6001	ADJUST EXISTING VALVE BOX	EA	4
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	2
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	33
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	327
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	37
0162-6002	BLOCK SODDING	SY	75
0168-6001	VEGETATIVE WATERING	MG	1.17
0529-6002	CONC CURB (TY II)	LF	327
0530-6004	DRIVEWAYS (CONC)	SY	50
0530-6005	DRIVEWAYS (ACP)	SY	22
0531-6001	CONC SIDEWALKS (4")	SY	185
0560-6014	MAILBOX INSTALL-S (TWG-POST) TY 4	EA	1
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 116+00 TO STA 120+00

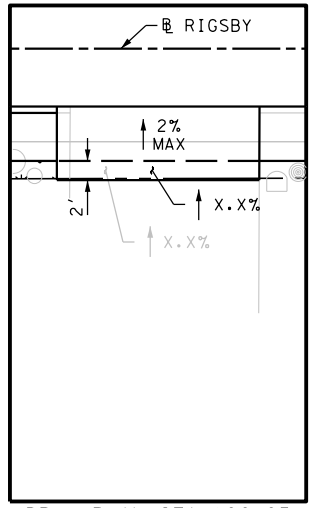
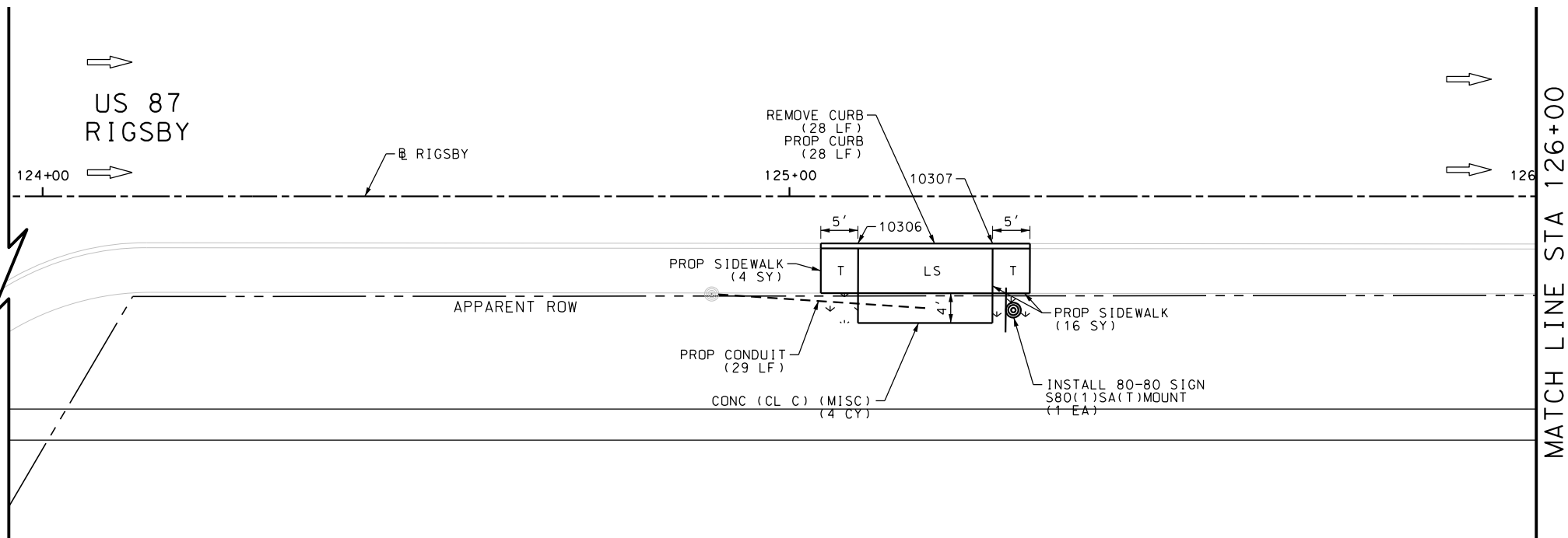
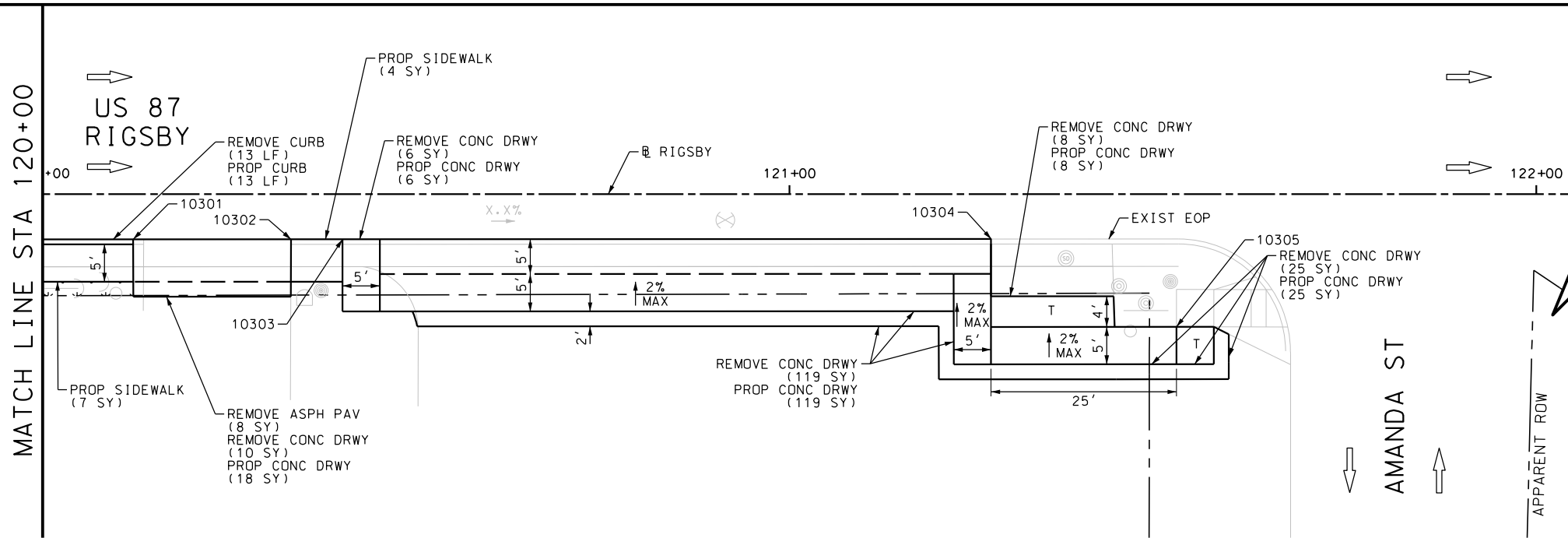
SHEET 5 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	215

DRWY PLAN STA 116+24 DRWY PLAN STA 116+81 DRWY PLAN STA 117+31 DRWY PLAN STA 117+83 DRWY PLAN STA 118+29 DRWY PLAN STA 118+80 DRWY PLAN STA 119+32

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_06.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	168
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	41
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	8
0162-6002	BLOCK SODDING	SY	8
0168-6001	VEGETATIVE WATERING	MG	0.12
0420-6074	CL C CONC (MISC)	CY	4.0
0529-6002	CONC CURB (TY II)	LF	41
0530-6004	DRIVEWAYS (CONC)	SY	176
0530-6005	DRIVEWAYS (ACP)	SY	8
0531-6001	CONC SIDEWALKS (4")	SY	31
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	29
0644-6001	IN SM RD SN SUP&M TY10BWG(1)SA(P)	EA	1

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 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 120+00 TO STA 126+00

SHEET 6 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	216

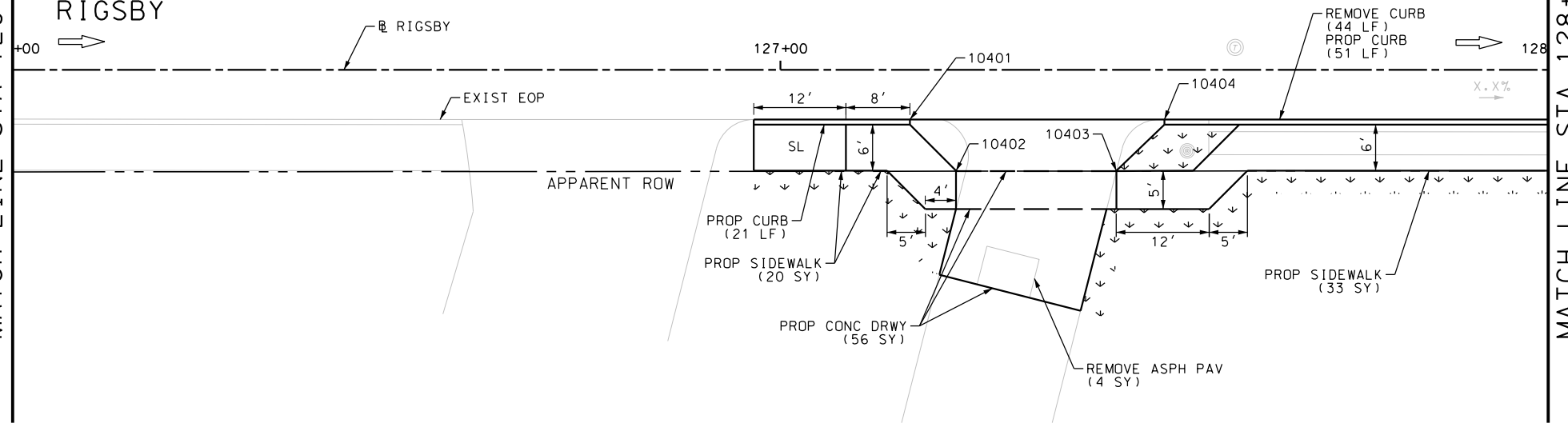


Plotted on: 9/29/2017

Design File name: P:\11135\01\des\ign\Civil\Roadway\Rigsby\1113501\_Rigsby\_07.dgn

MATCH LINE STA 126+00

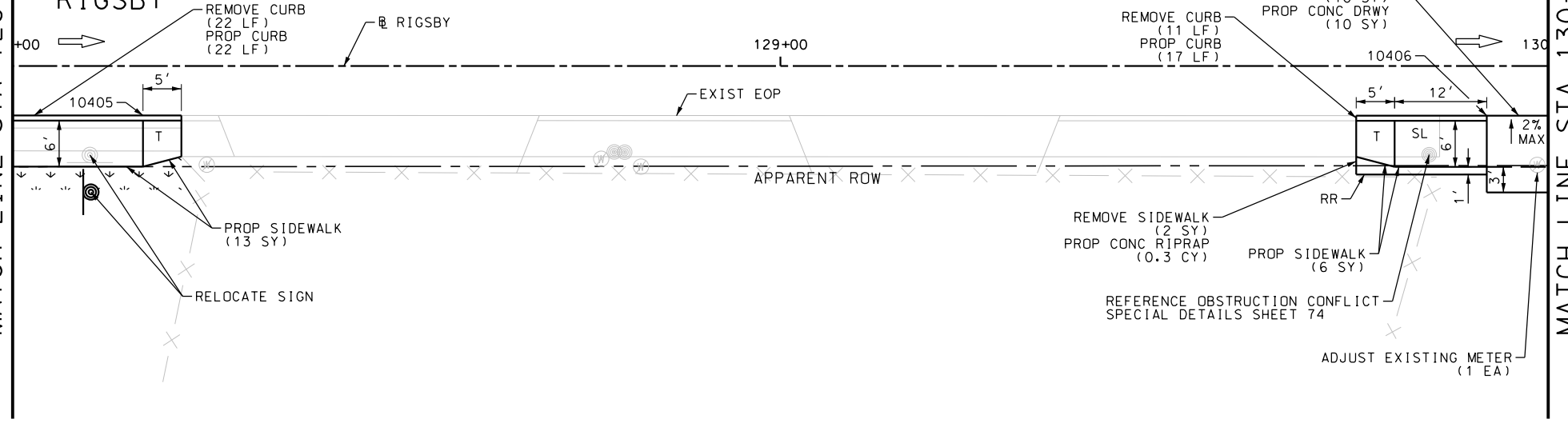
US 87  
RIGSBY



MATCH LINE STA 128+00

MATCH LINE STA 128+00

US 87  
RIGSBY



MATCH LINE STA 130+00

ITEM	DESCRIPTION	UNIT	QTY
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	1
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	10
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	77
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	2
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	9
0162-6002	BLOCK SODDING	SY	45
0168-6001	VEGETATIVE WATERING	MG	0.70
0529-6002	CONC CURB (TY II)	LF	111
0530-6004	DRIVEWAYS (CONC)	SY	66
0530-6005	DRIVEWAYS (ACP)	SY	5
0531-6001	CONC SIDEWALKS (4")	SY	74

NOTES:  
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DESIGN  
**INTERIM REVIEW**  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JOHN A. TYLER  
P.E. SERIAL NO: 105193  
DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
ENGINEER: JAMES A. LUTZ  
P.E. SERIAL NO: 84722  
DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

**PAPE-DAWSON ENGINEERS**

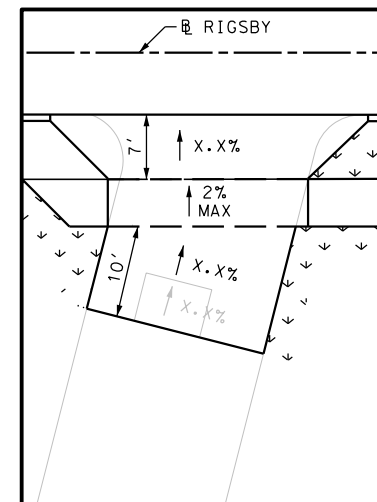
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Texas Department of Transportation  
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US 87  
RIGSBY  
**SIDEWALK CONSTRUCTION PLAN**  
STA 126+00 TO STA 130+00

SHEET 7 OF 80

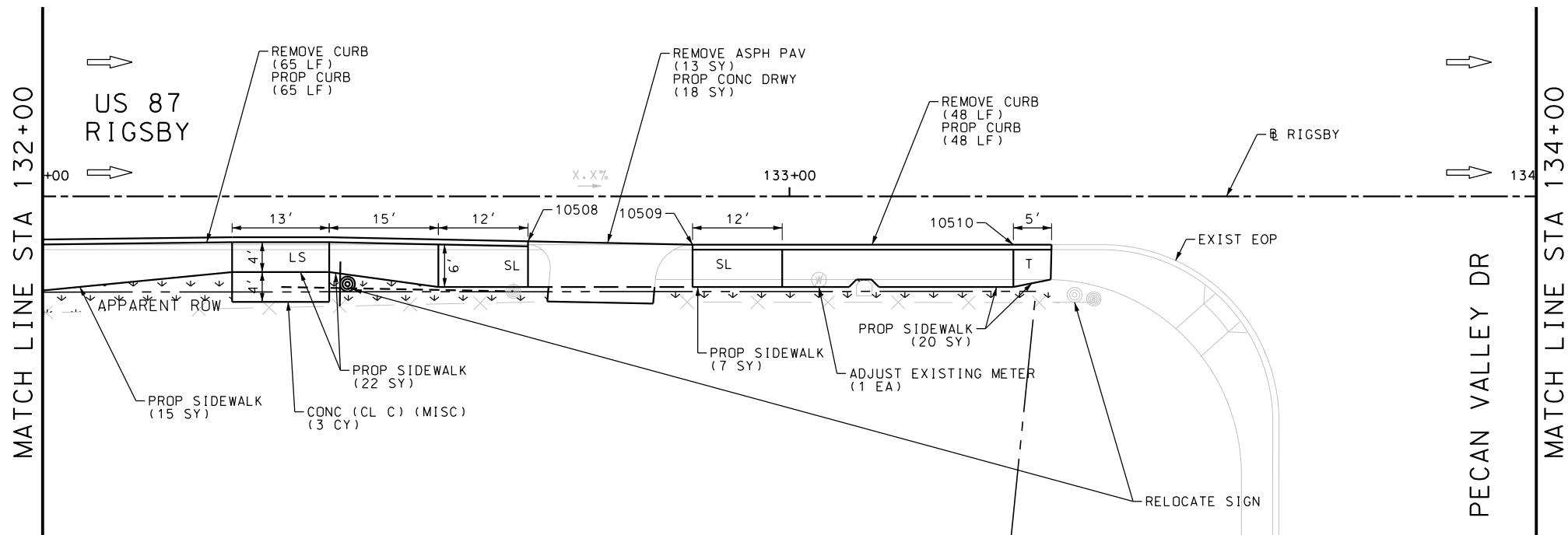
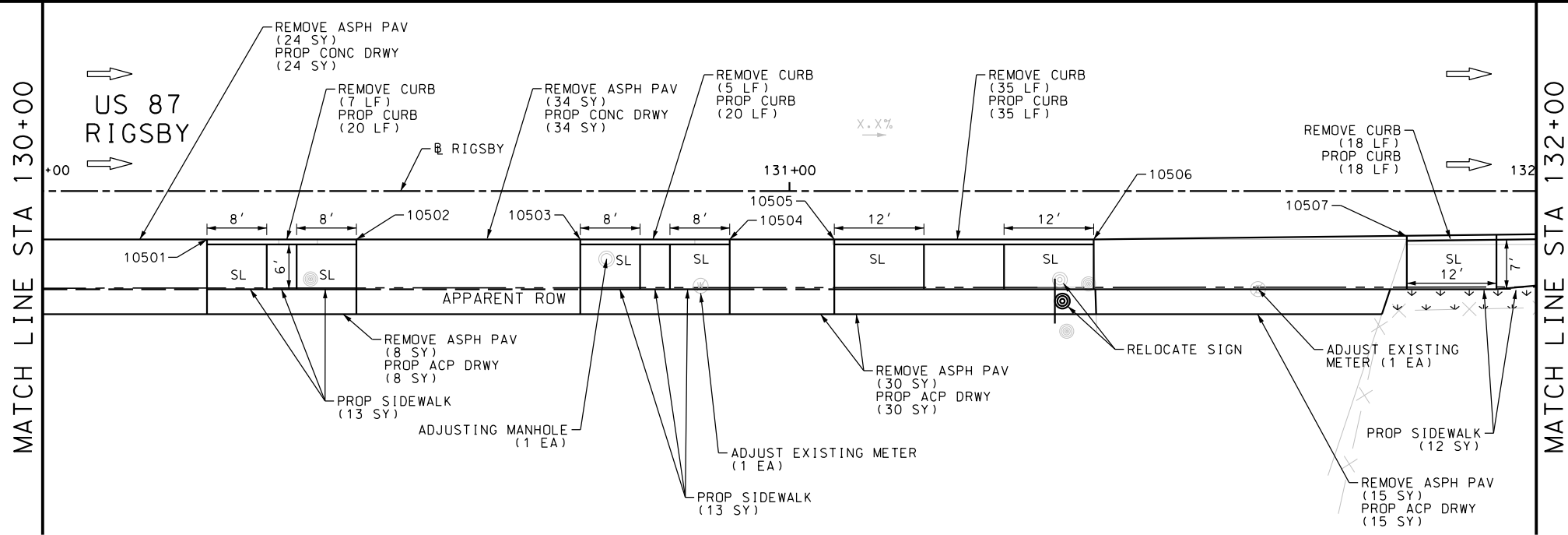
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	217



DRWY PLAN STA 127+33

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_08.dgn



ITEM	DESCRIPTION	UNIT	QTY
7090-6001	SANITARY SEWER (ADJUST MANHOLE)	EA	1
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	3
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	160
0105-6037	REMOVING STAB BASE AND ASPH PAV(0"-16")	SY	111
0162-6002	BLOCK SODDING	SY	48
0168-6001	VEGETATIVE WATERING	MG	0.75
0420-6074	CL C CONC (MISC)	CY	3.0
0529-6002	CONC CURB (TY II)	LF	178
0530-6004	DRIVEWAYS (CONC)	SY	76
0530-6005	DRIVEWAYS (ACP)	SY	53
0531-6001	CONC SIDEWALKS (4")	SY	102
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	2

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

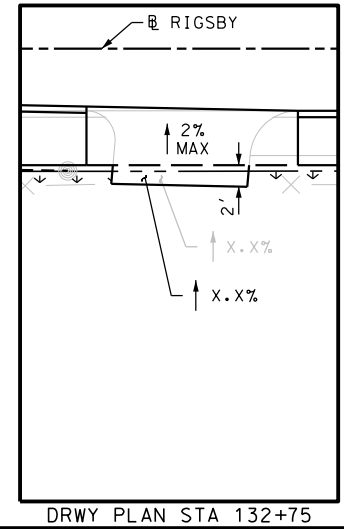
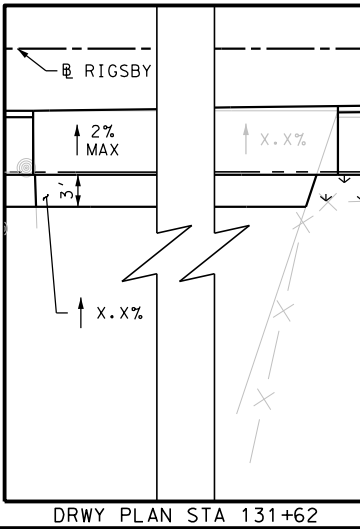
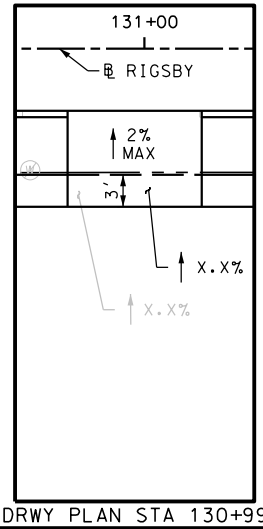
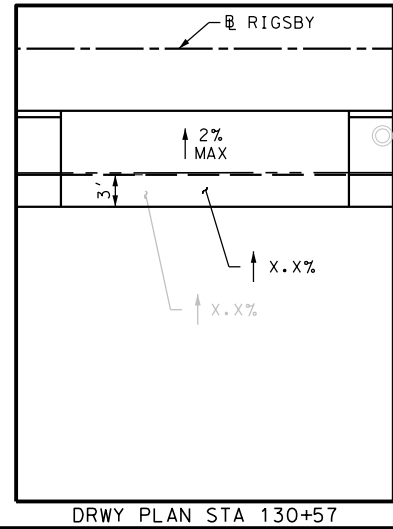
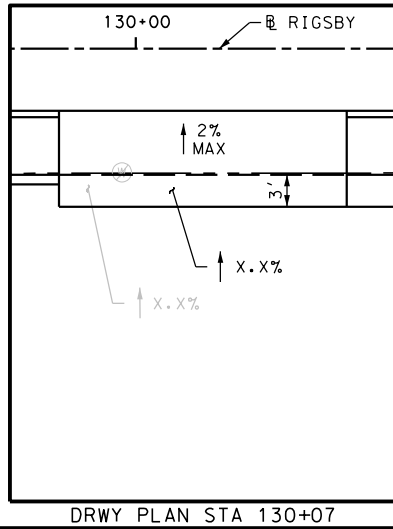
**PAPE-DAWSON ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 130+00 TO STA 134+00

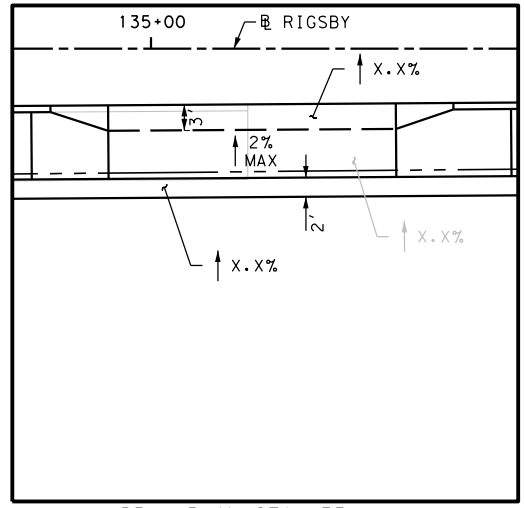
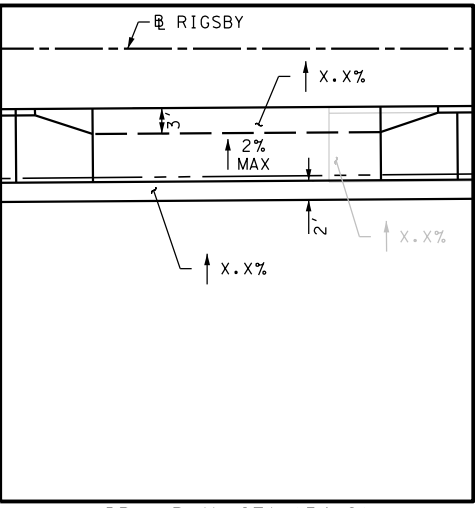
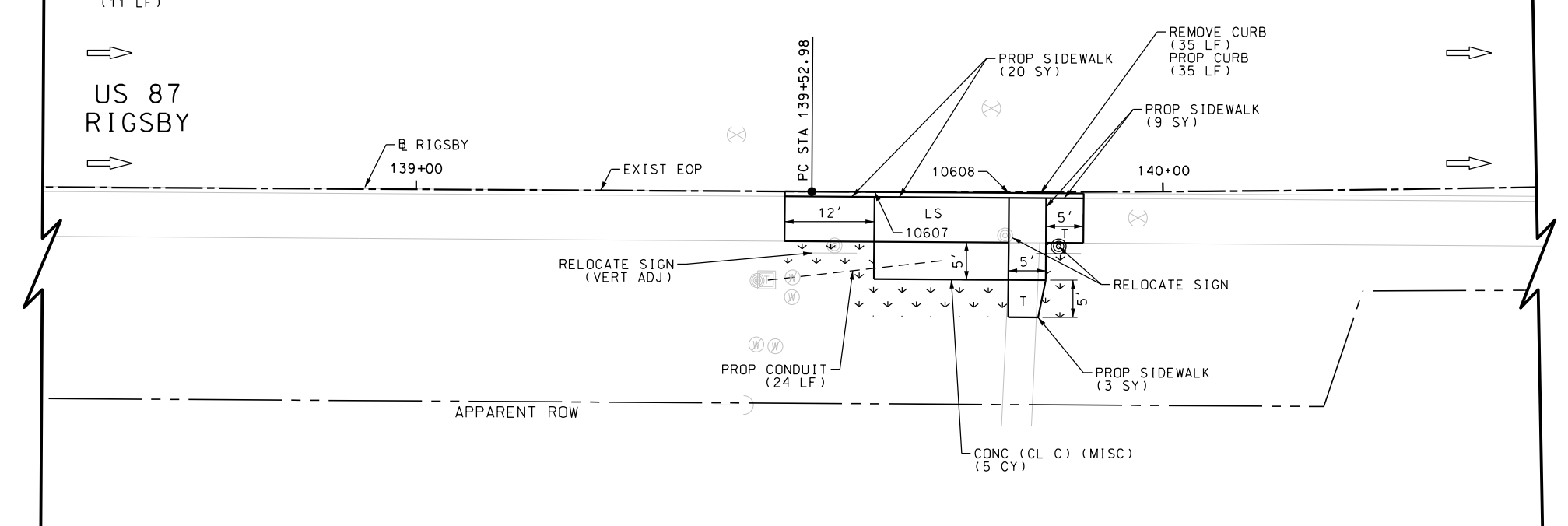
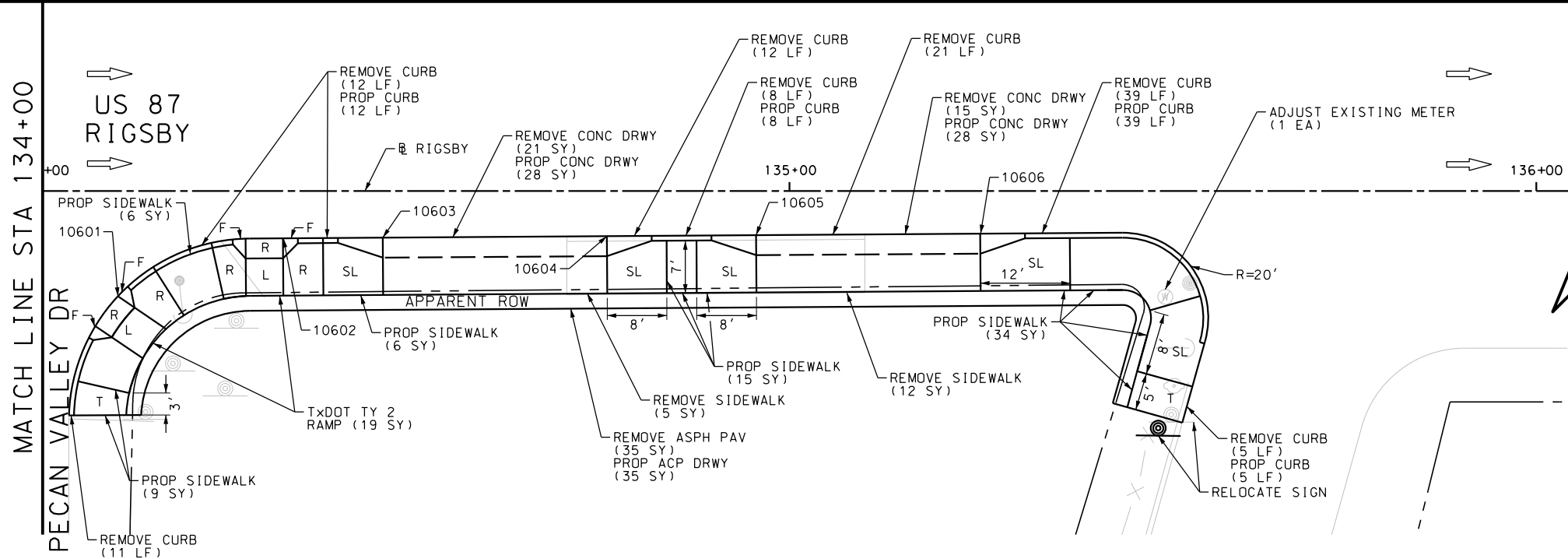
SHEET 8 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	218



Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\113501\_Rigsby\_09.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	1
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	36
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	121
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	17
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	35
0162-6002	BLOCK SODDING	SY	20
0168-6001	VEGETATIVE WATERING	MG	0.31
0420-6074	CL C CONC (MISC)	CY	5.0
0529-6002	CONC CURB (TY II)	LF	110
0530-6004	DRIVEWAYS (CONC)	SY	56
0530-6005	DRIVEWAYS (ACP)	SY	35
0531-6001	CONC SIDEWALKS (4")	SY	102
0531-6019	CURB RAMPS (TY 2)	SY	19
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	24
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	2

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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 134+00 TO STA 140+00

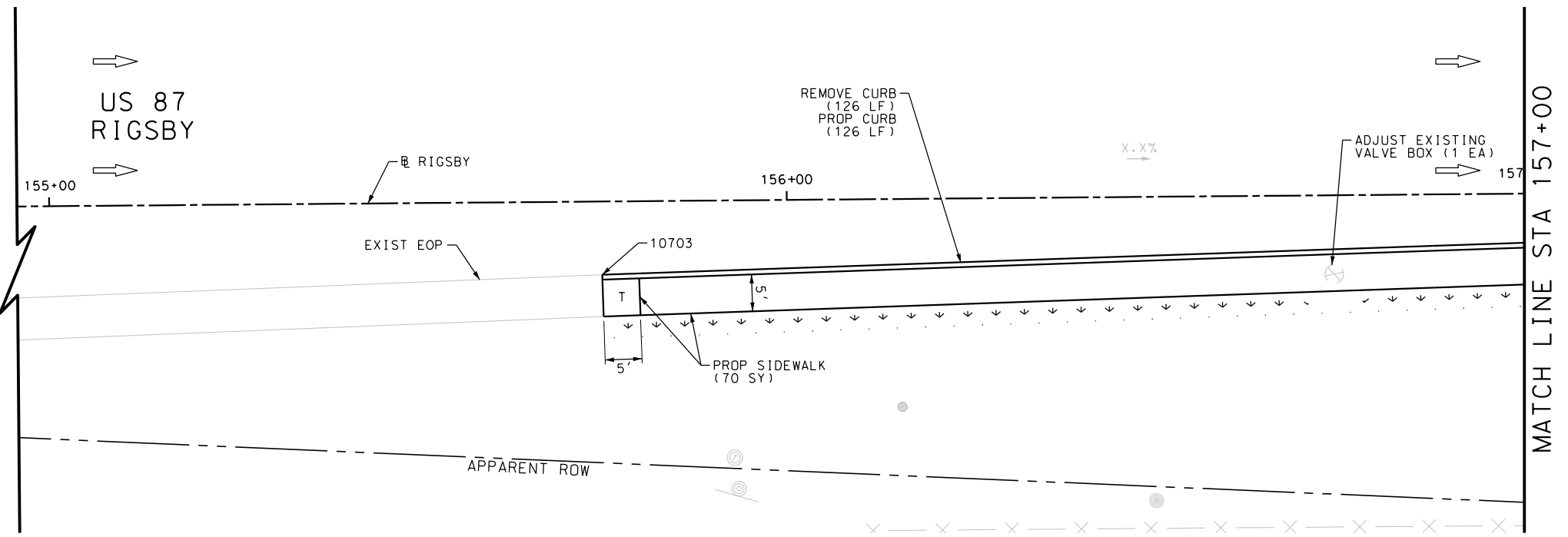
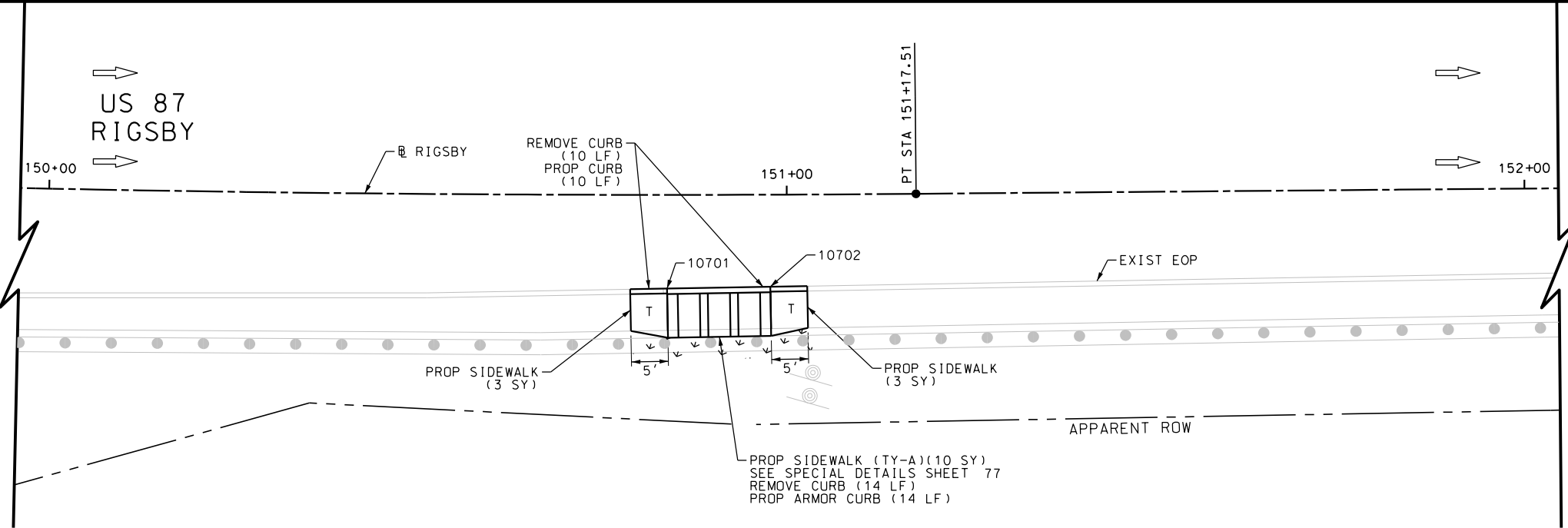
SHEET 9 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	219

Plotted on: 9/29/2017

Design File name: P:\111135\01\des\ign\Civil\Roadway\Rigsby\1113501\_Rigsby\_10.dgn

ITEM	DESCRIPTION	UNIT	QTY
7091-6001	ADJUST EXISTING VALVE BOX	EA	1
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	140
0529-6002	CONC CURB (TY II)	LF	136
0529-6020	CONC CURB & GUTTER (ARMOR CURB)	LF	14
0531-6001	CONC SIDEWALKS (4")	SY	76
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	10



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 ENGINEER: JOHN A. TYLER  
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REVIEW AND APPROVAL  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



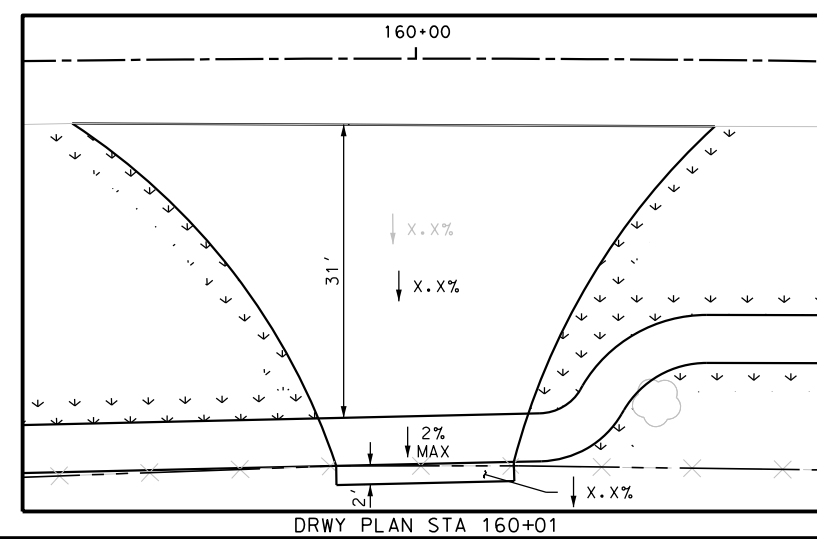
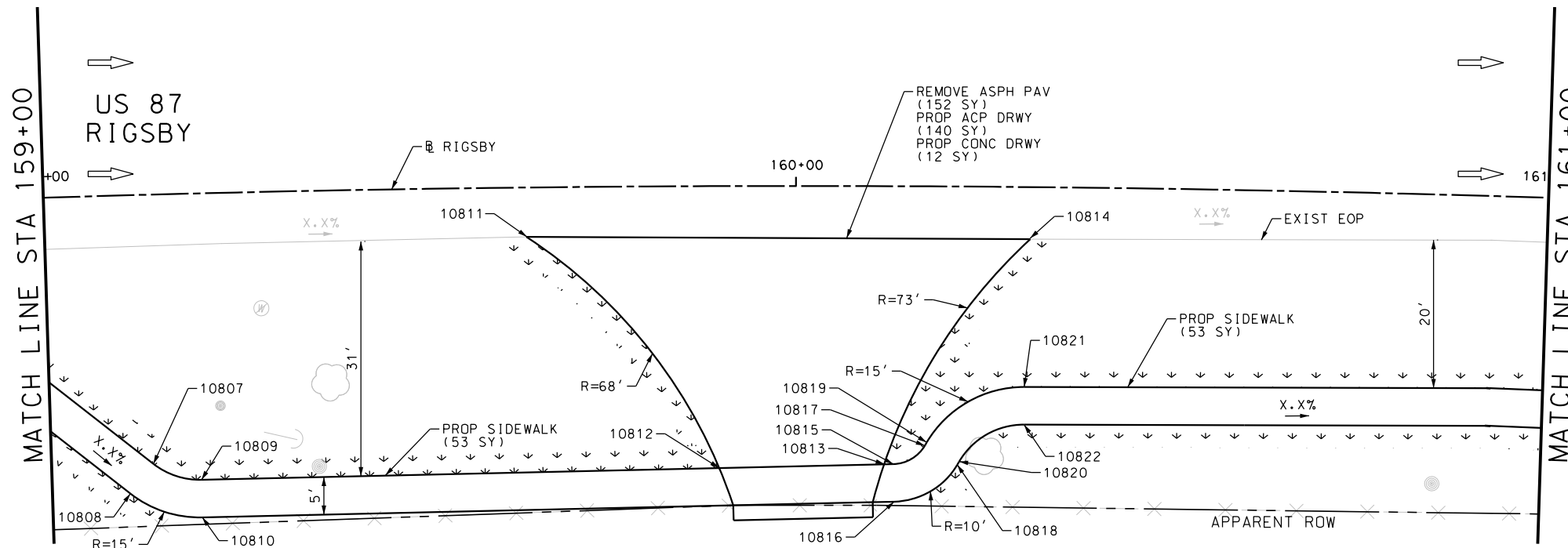
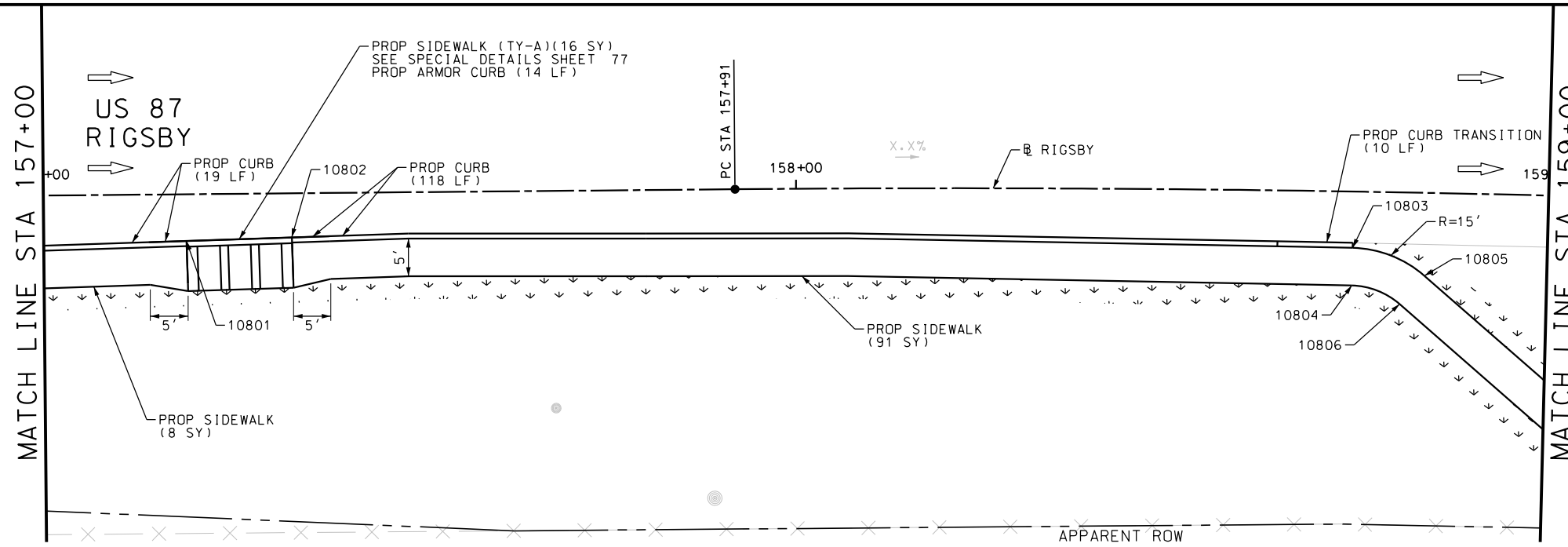
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 151+00 TO STA 157+00

SHEET 10 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	220

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\113501\_Rigsby\_11.dgn



ITEM	DESCRIPTION	UNIT	QTY
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	152
0162-6002	BLOCK SODDING	SY	50
0168-6001	VEGETATIVE WATERING	MG	0.78
0529-6002	CONC CURB (TY II)	LF	147
0529-6020	CONC CURB & GUTTER (ARMOR CURB)	LF	14
0530-6004	DRIVEWAYS (CONC)	SY	12
0530-6005	DRIVEWAYS (ACP)	SY	140
0531-6001	CONC SIDEWALKS (4")	SY	205
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	16

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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 157+00 TO STA 161+00

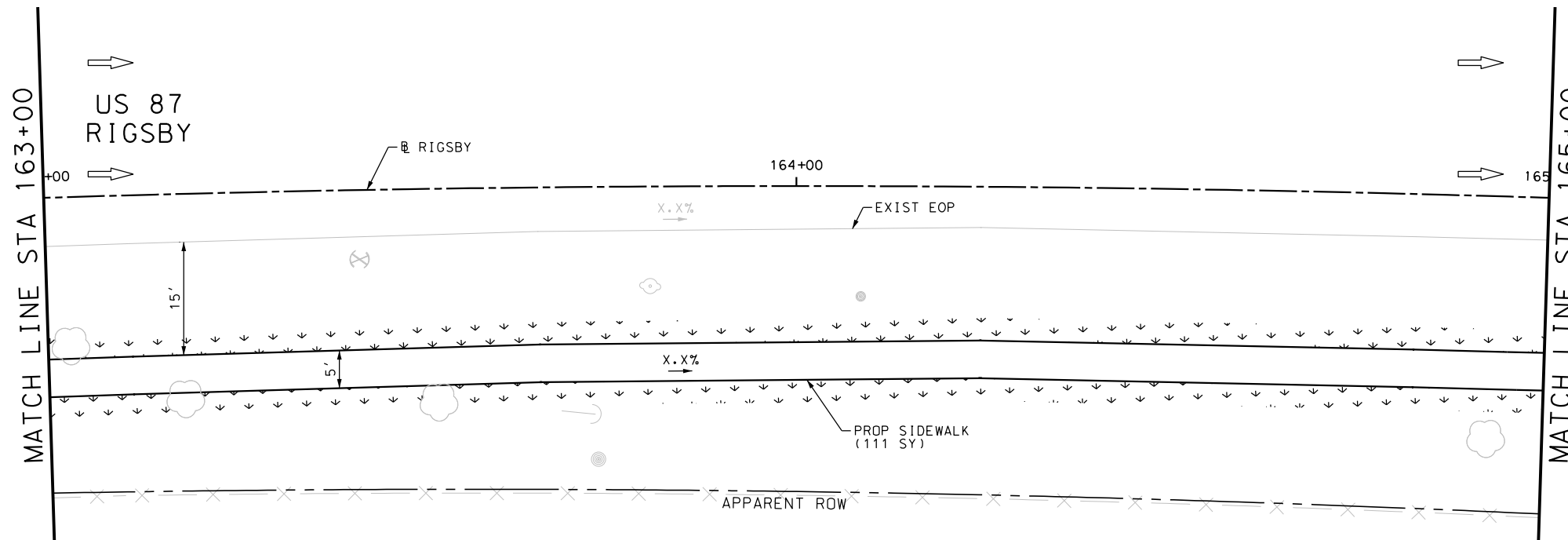
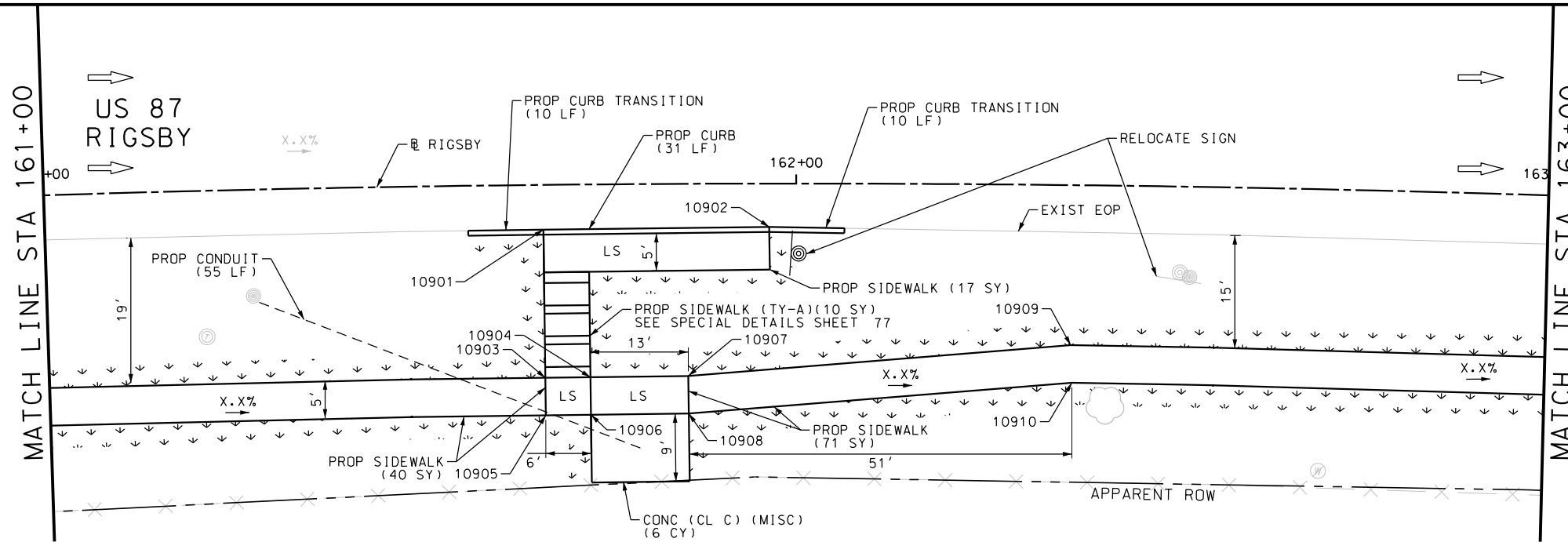
SHEET 11 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	221

Plotted on: 9/29/2017

Design File name: P:\11135\01\des\ign\Civil\Roadway\Rigsby\1113501\_Rigsby\_12.dgn

ITEM	DESCRIPTION	UNIT	QTY
0162-6002	BLOCK SODDING	SY	317
0168-6001	VEGETATIVE WATERING	MG	4.95
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	51
0531-6001	CONC SIDEWALKS (4")	SY	239
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	10
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	55



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 ENGINEER: JAMES A. LUTZ  
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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  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



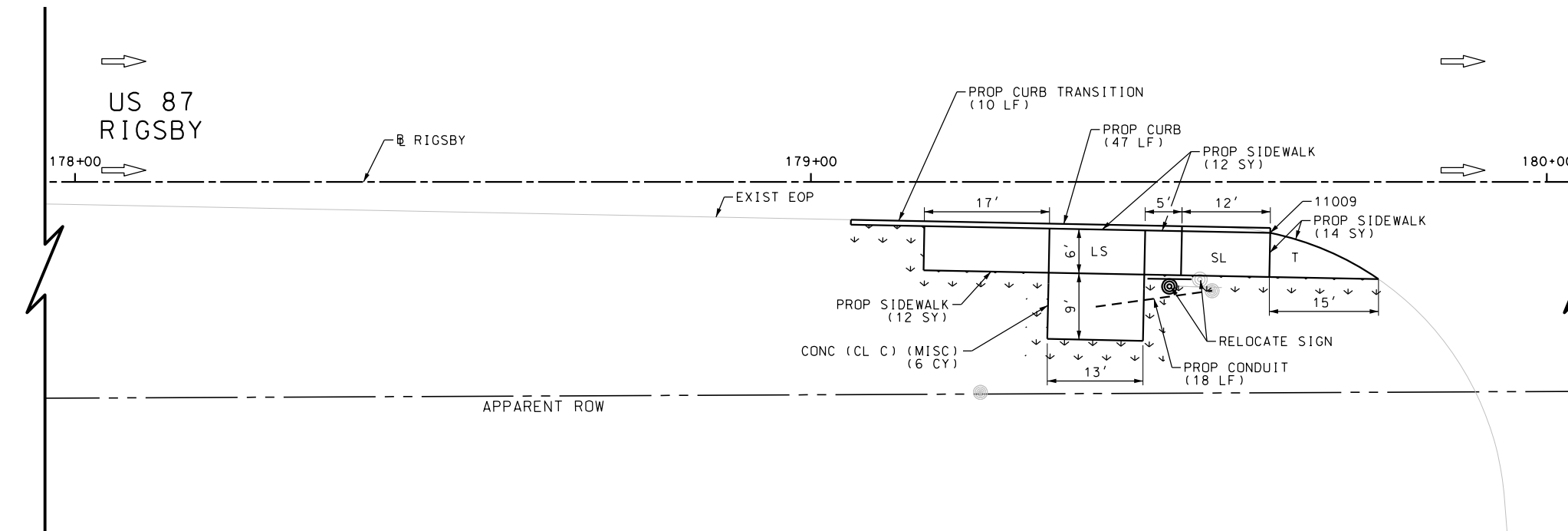
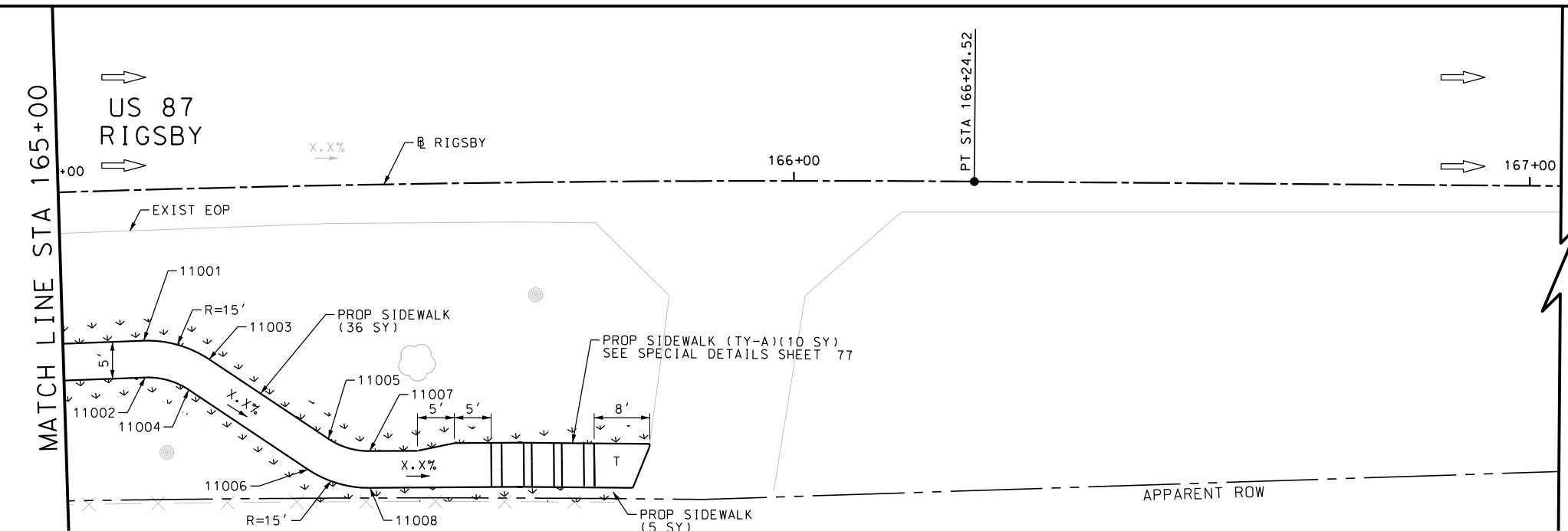
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 161+00 TO STA 165+00

SHEET 12 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	222

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_13.dgn



ITEM	DESCRIPTION	UNIT	QTY
0162-6002	BLOCK SODDING	SY	65
0168-6001	VEGETATIVE WATERING	MG	1.01
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	57
0531-6001	CONC SIDEWALKS (4")	SY	62
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	10
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	18
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 165+00 TO STA 180+00

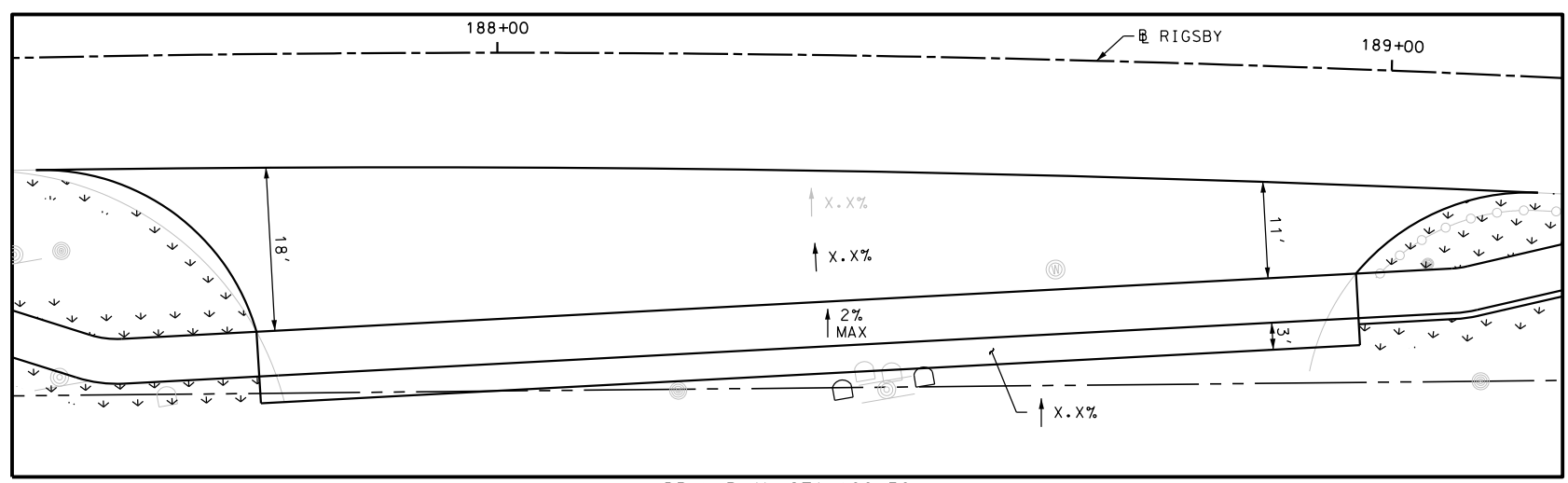
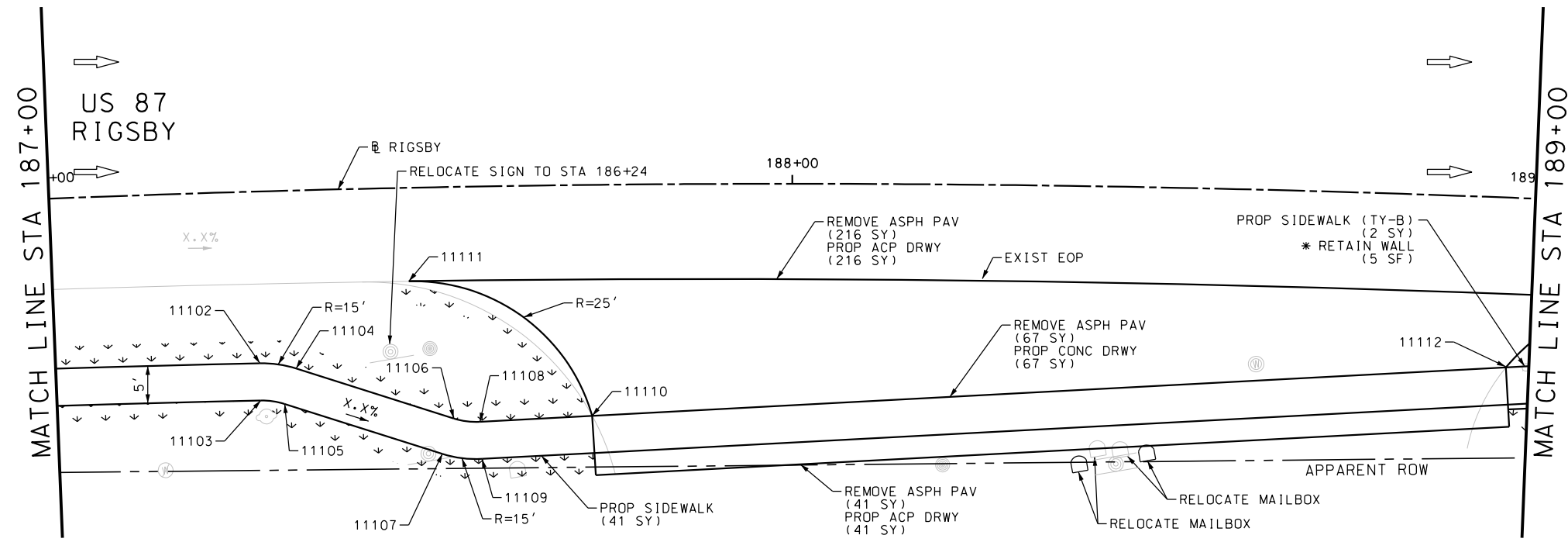
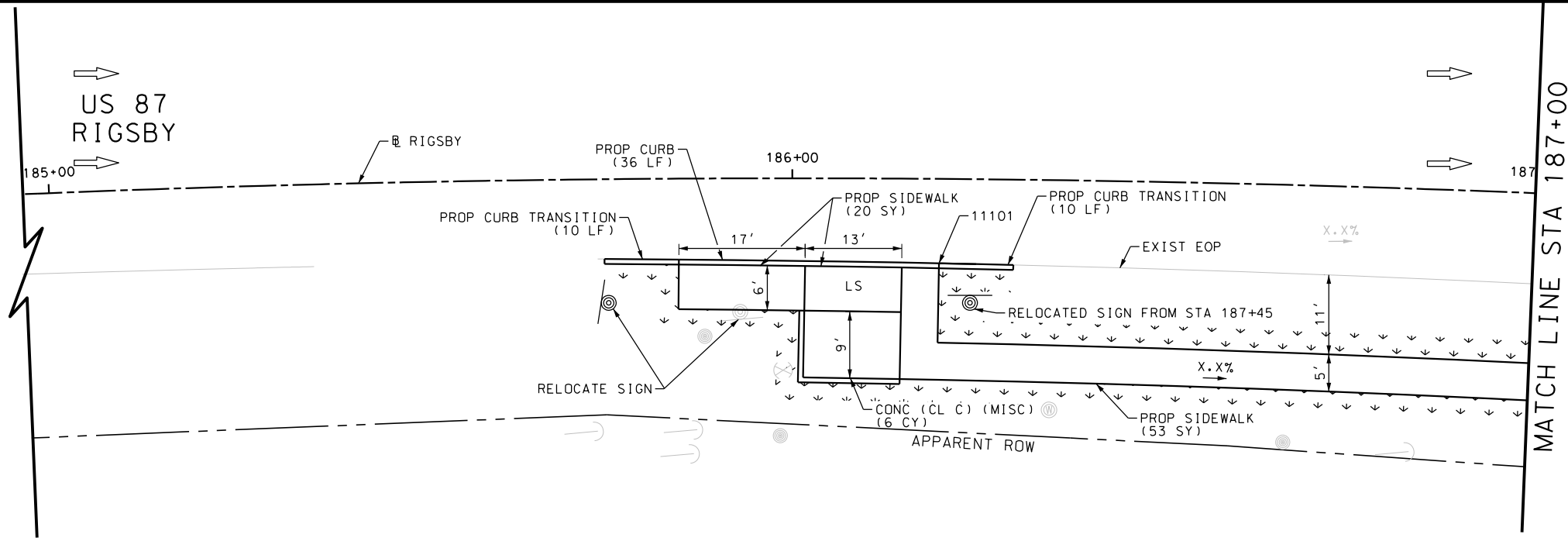
SHEET 13 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	223

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_14.dgn

ITEM	DESCRIPTION	UNIT	QTY
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	324
0162-6002	BLOCK SODDING	SY	200
0168-6001	VEGETATIVE WATERING	MG	3.12
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	56
0530-6004	DRIVEWAYS (CONC)	SY	67
0530-6005	DRIVEWAYS (ACP)	SY	257
0531-6001	CONC SIDEWALKS (4")	SY	114
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	2
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	2
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	2



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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  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 185+00 TO STA 189+00

SHEET 14 OF 80

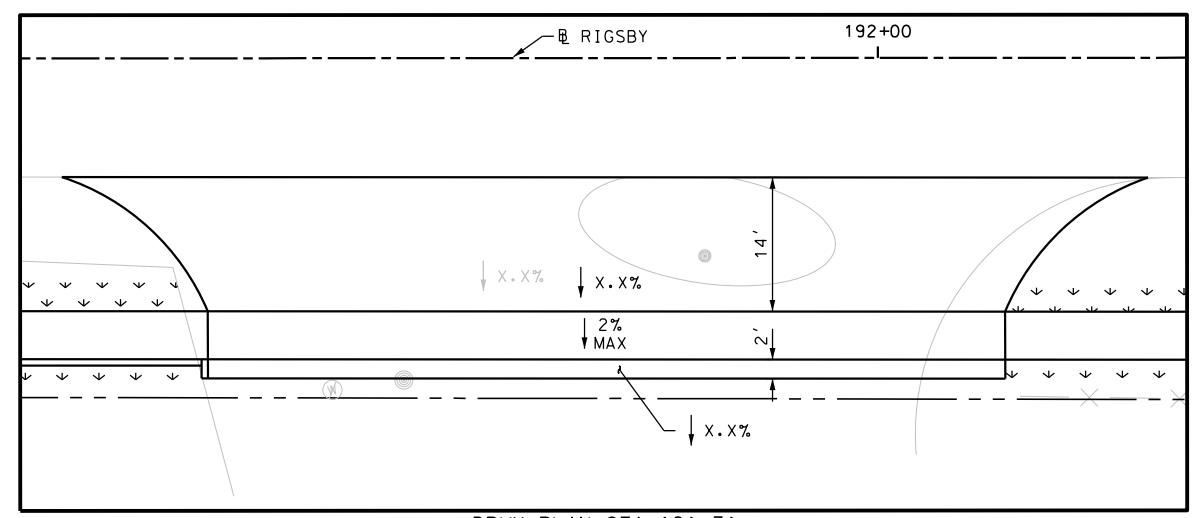
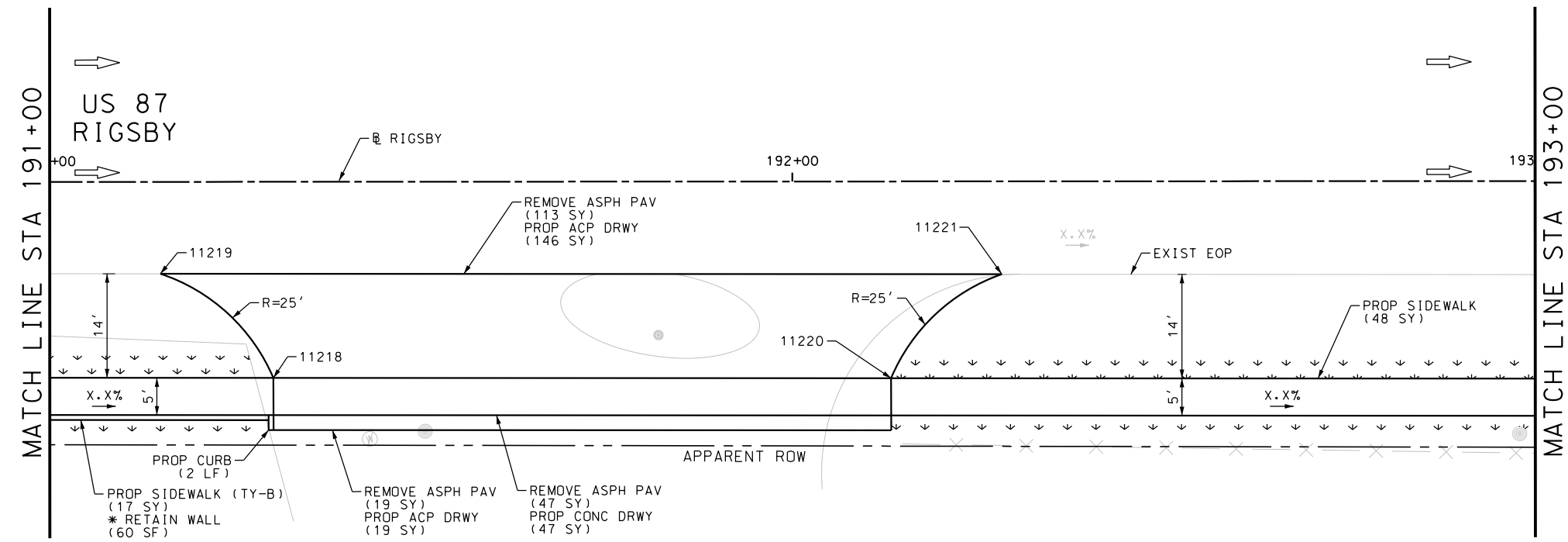
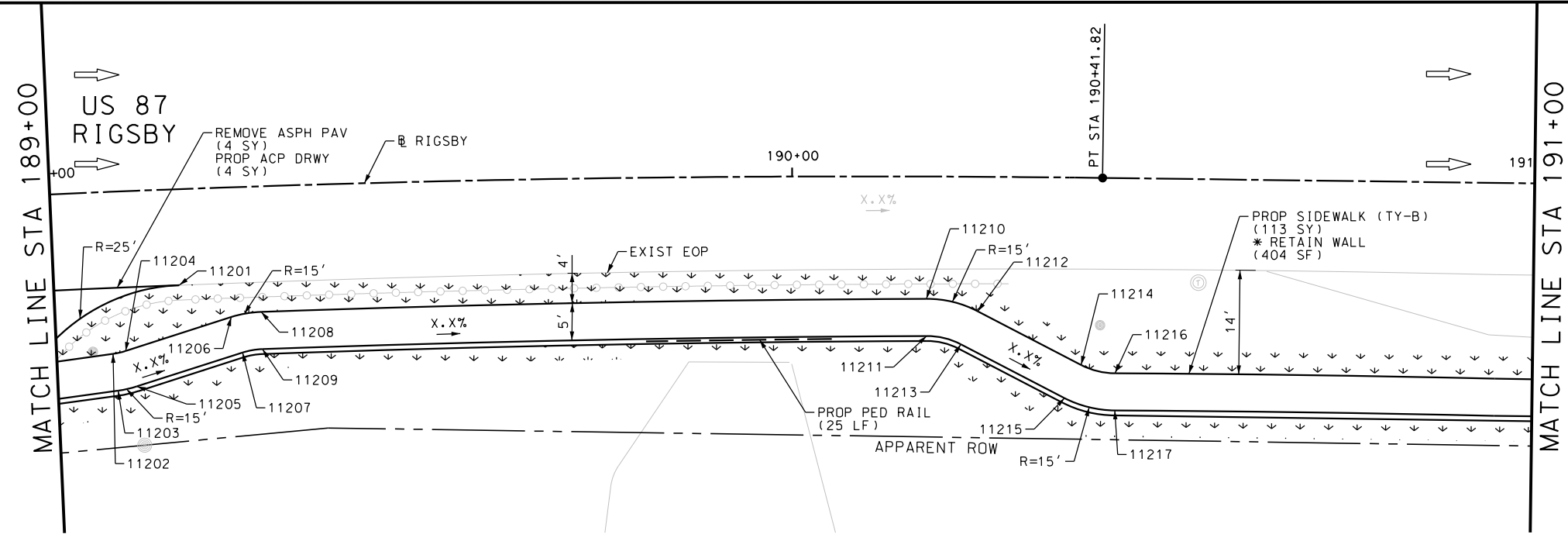
DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	224



Plotted on: 9/29/2017

Design File name: P:\11135\01\des\ign\Civil\Roadway\Rigsby\1113501\_Rigsby\_15.dgn

ITEM	DESCRIPTION	UNIT	QTY
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	183
0162-6002	BLOCK SODDING	SY	207
0168-6001	VEGETATIVE WATERING	MG	3.23
0450-6048	RAIL (HANDRAIL) (TY B)	LF	25
0529-6002	CONC CURB (TY II)	LF	2
0530-6004	DRIVEWAYS (CONC)	SY	47
0530-6005	DRIVEWAYS (ACP)	SY	169
0531-6001	CONC SIDEWALKS (4")	SY	48
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	130



DRWY PLAN STA 191+71

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 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 189+00 TO STA 193+00

SHEET 15 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	225

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_16.dgn

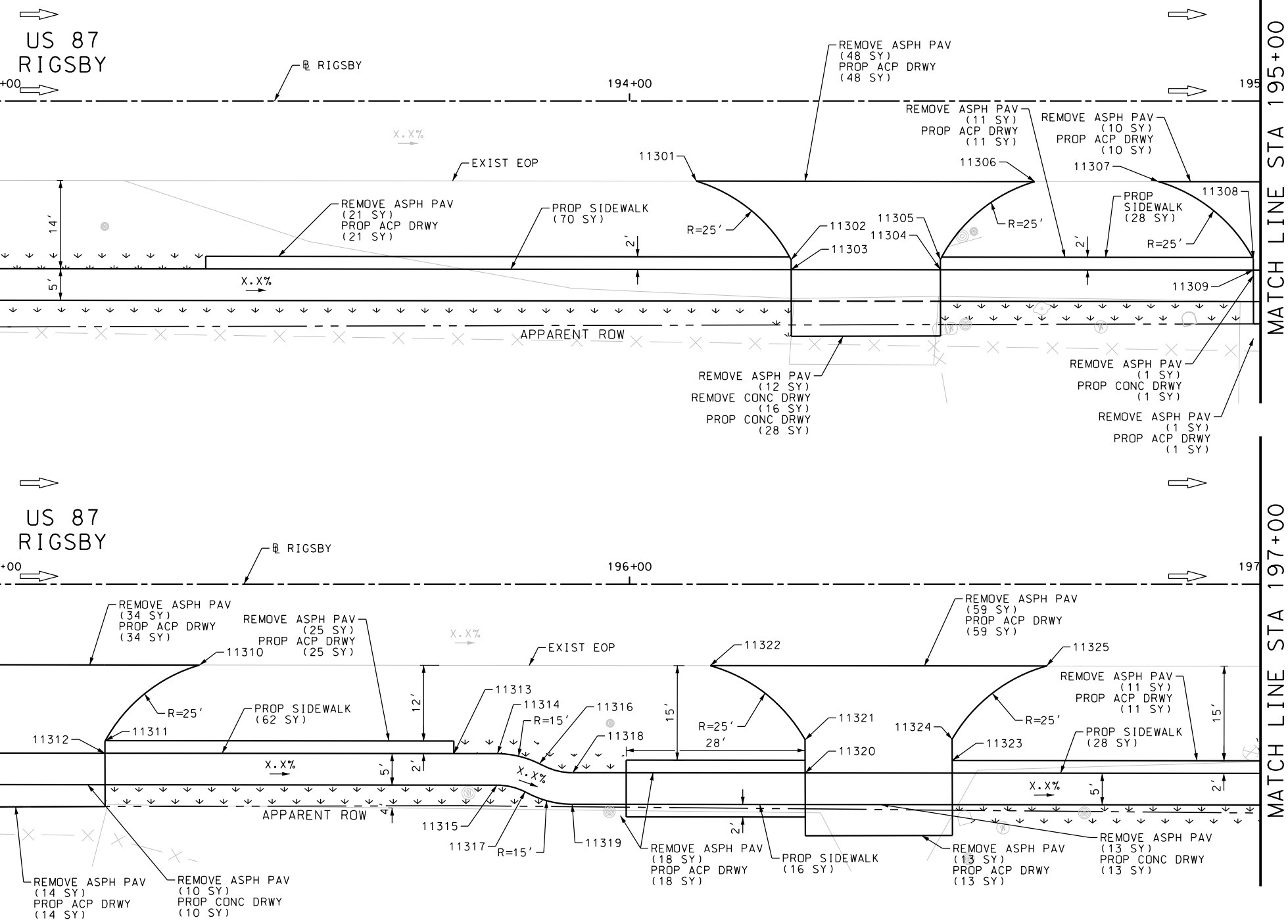
ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	16
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	302
0162-6002	BLOCK SODDING	SY	93
0168-6001	VEGETATIVE WATERING	MG	1.45
0530-6004	DRIVEWAYS (CONC)	SY	52
0530-6005	DRIVEWAYS (ACP)	SY	230
0531-6001	CONC SIDEWALKS (4")	SY	204

MATCH LINE STA 193+00

MATCH LINE STA 195+00

MATCH LINE STA 195+00

MATCH LINE STA 197+00



NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

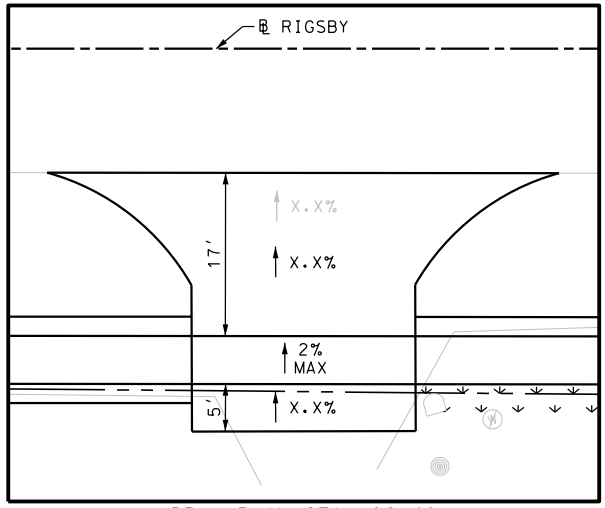
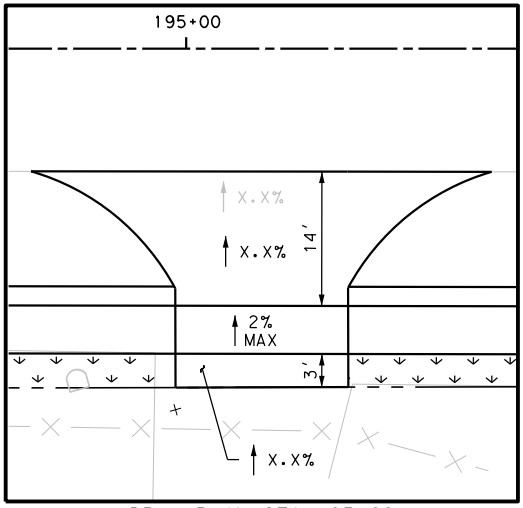
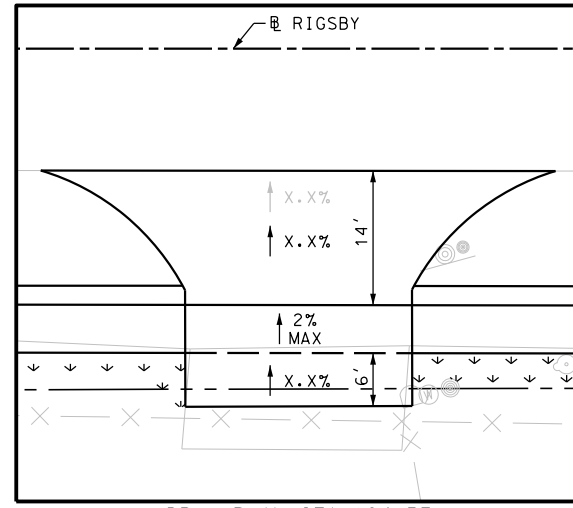
**PAPE-DAWSON ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 193+00 TO STA 197+00

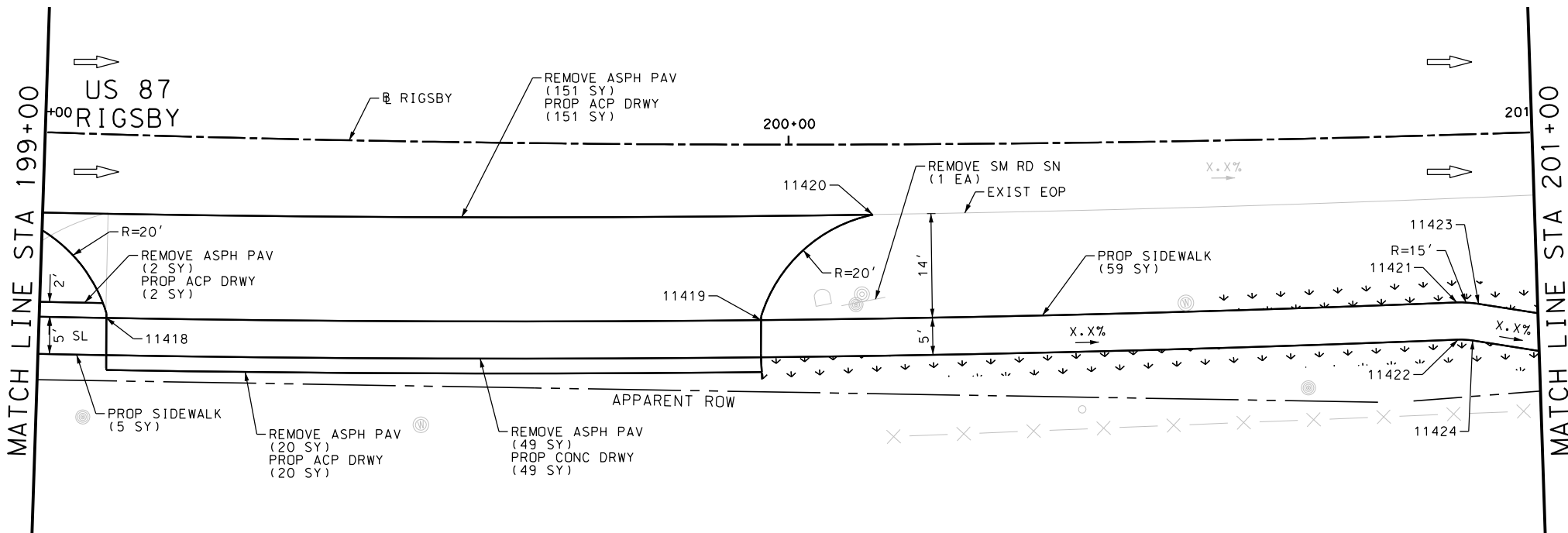
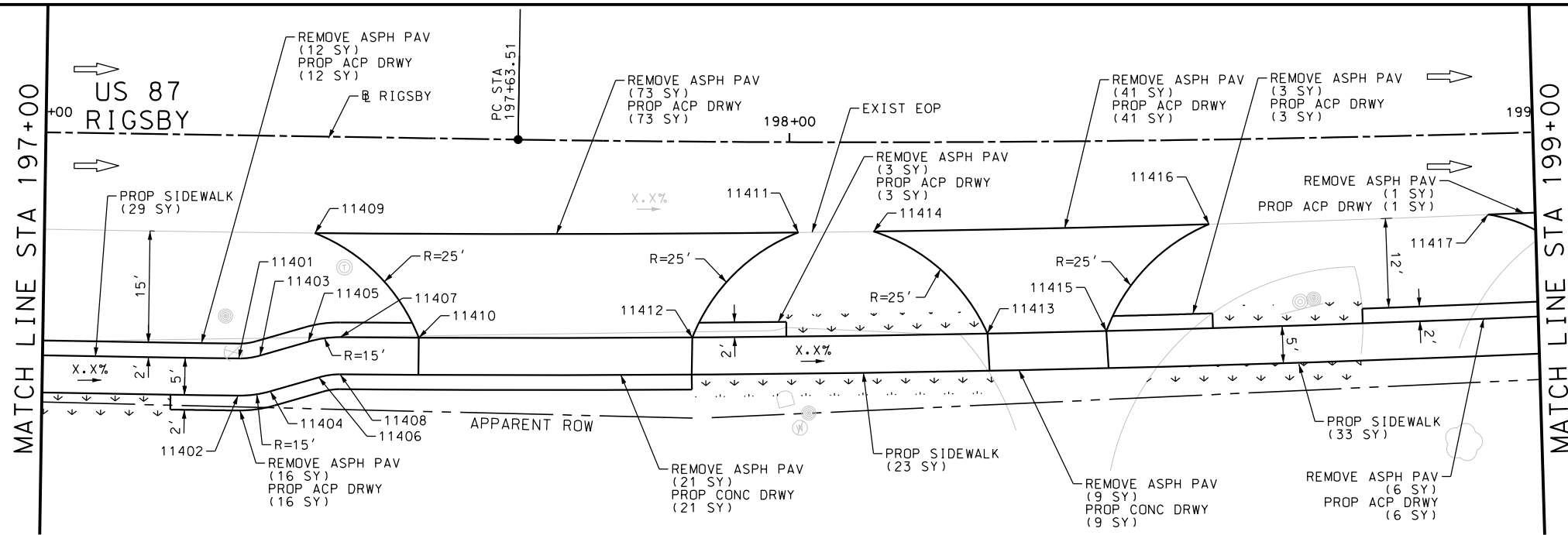
SHEET 16 OF 80

DWG:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DWG:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	226



Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_17.dgn



ITEM	DESCRIPTION	UNIT	QTY
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	407
0162-6002	BLOCK SODDING	SY	98
0168-6001	VEGETATIVE WATERING	MG	1.53
0530-6004	DRIVEWAYS (CONC)	SY	79
0530-6005	DRIVEWAYS (ACP)	SY	328
0531-6001	CONC SIDEWALKS (4")	SY	149
0644-6076	REMOVE SM RD SN SUP&AM	EA	1

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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

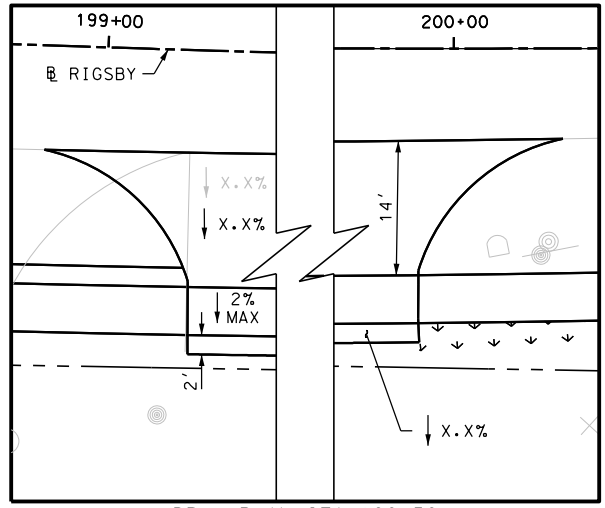
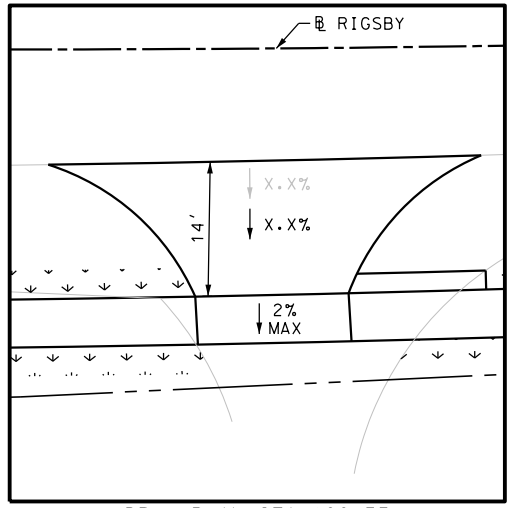
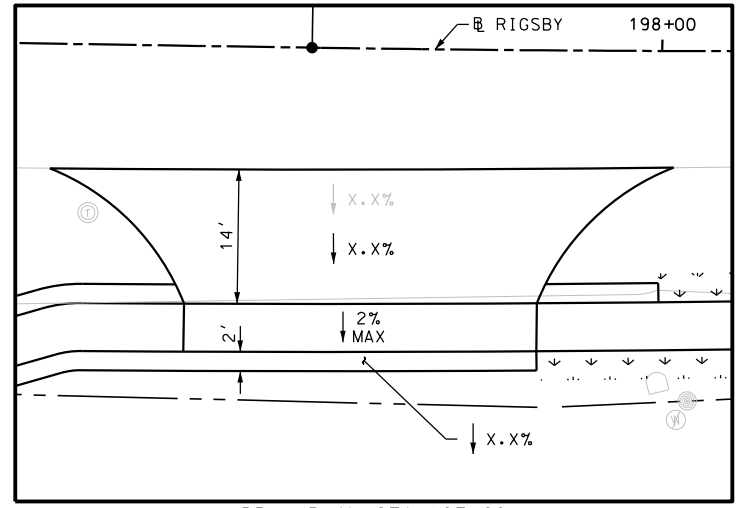
**Pape-Dawson ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 197+00 TO STA 201+00

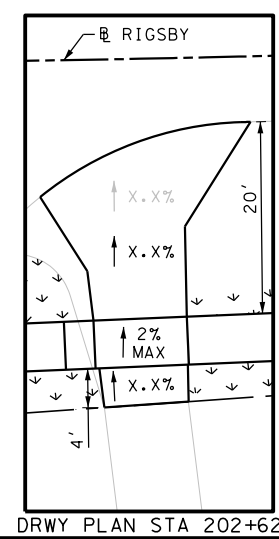
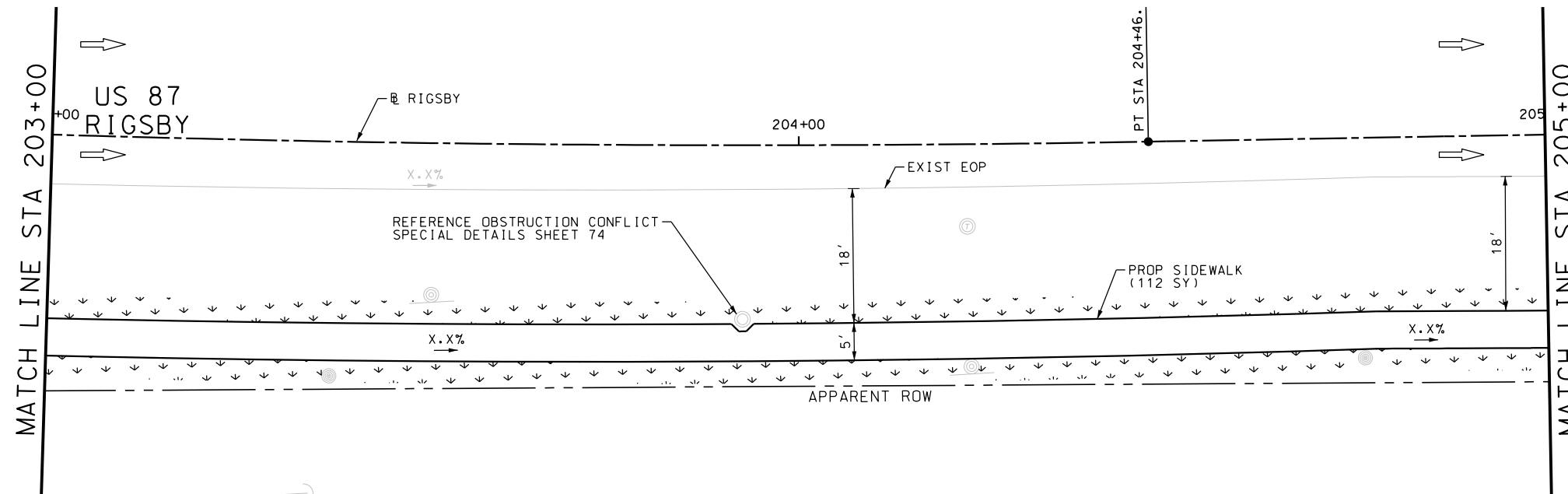
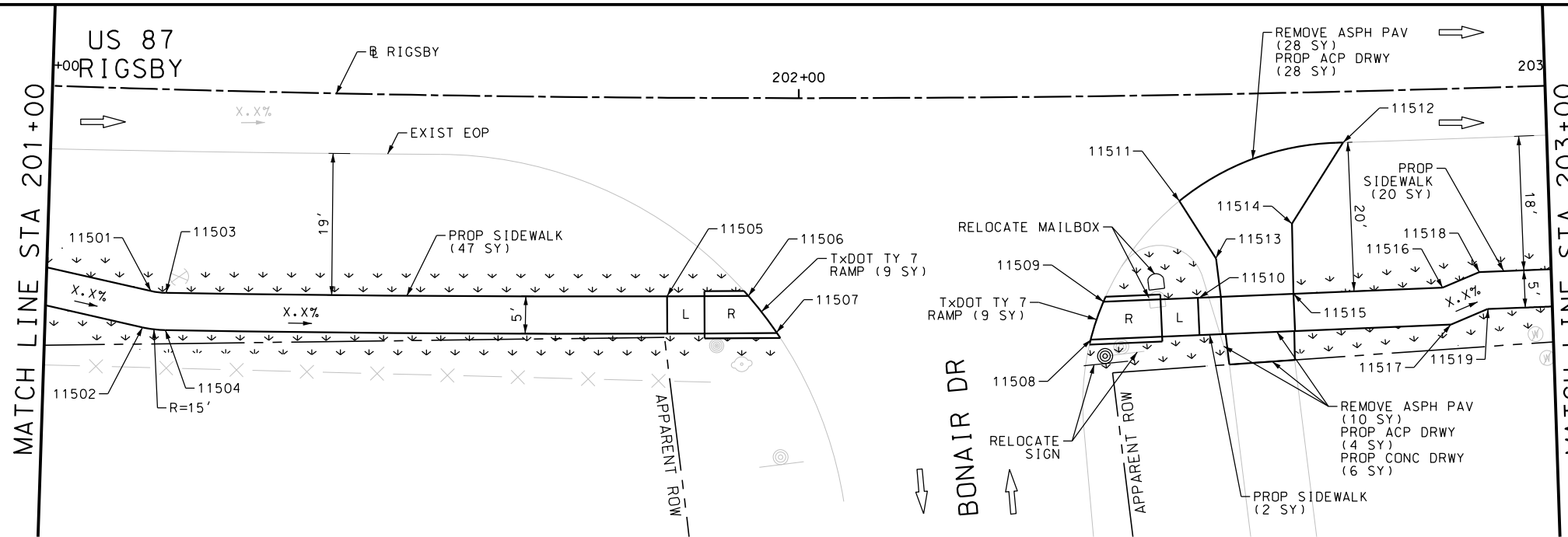
SHEET 17 OF 80

DWG:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DWG:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	227



Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\113501\_Rigsby\_18.dgn



ITEM	DESCRIPTION	UNIT	QTY
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	38
0162-6002	BLOCK SODDING	SY	237
0168-6001	VEGETATIVE WATERING	MG	3.70
0530-6004	DRIVEWAYS (CONC)	SY	6
0530-6005	DRIVEWAYS (ACP)	SY	32
0531-6001	CONC SIDEWALKS (4")	SY	181
0531-6024	CURB RAMPS (TY 7)	SY	18
0560-6014	MAILBOX INSTALL-S (TWG-POST) TY 4	EA	1
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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DESIGN  
 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



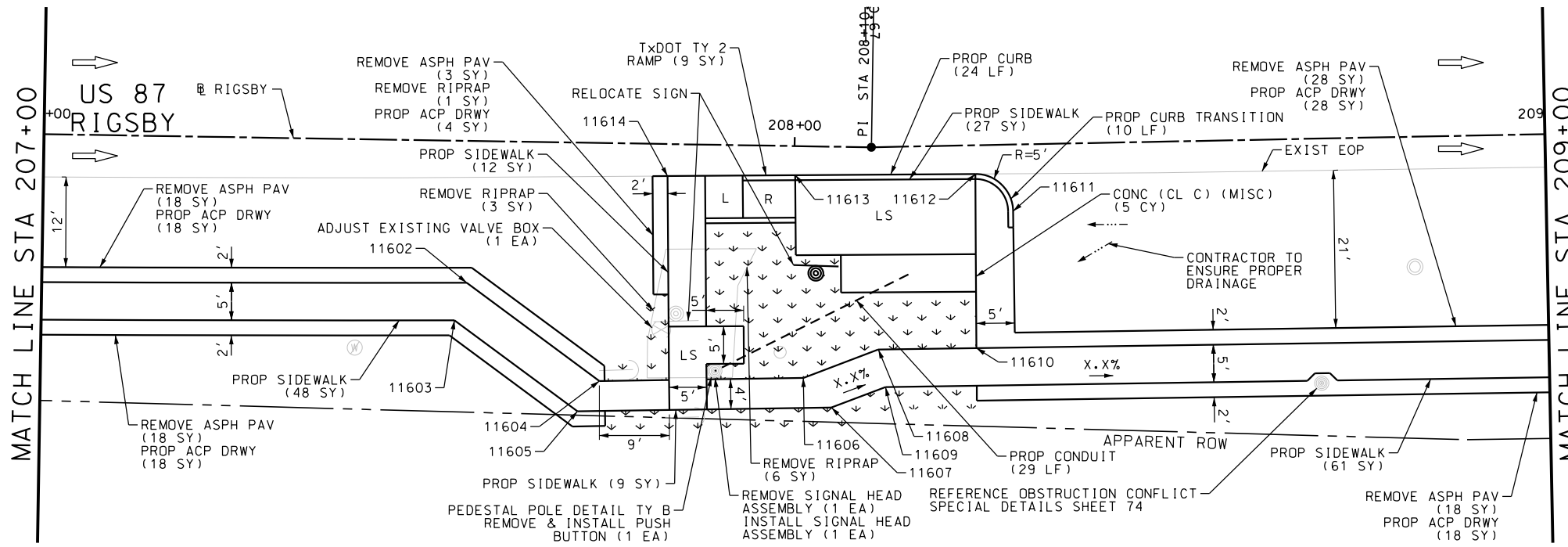
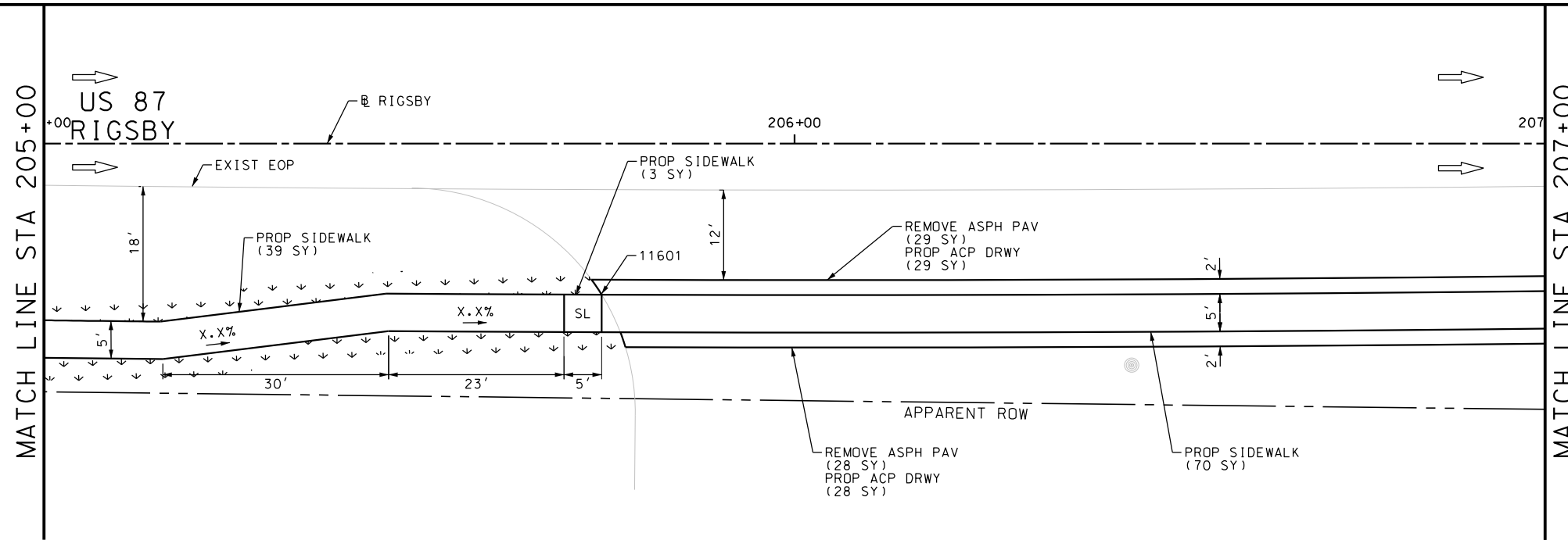
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 201+00 TO STA 205+00

SHEET 18 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	228

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\113501\_Rigsby\_19.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6001	ADJUST EXISTING VALVE BOX	EA	1
0104-6009	REMOVING CONC (RIPRAP)	SY	10
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	142
0162-6002	BLOCK SODDING	SY	129
0168-6001	VEGETATIVE WATERING	MG	2.01
0420-6074	CL C CONC (MISC)	CY	5.0
0529-6002	CONC CURB (TY II)	LF	34
0530-6005	DRIVEWAYS (ACP)	SY	143
0531-6001	CONC SIDEWALKS (4")	SY	269
0531-6019	CURB RAMPS (TY 2)	SY	9
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	29
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1
0682-6017	PED SIG SEC (LED) (2 INDICATIONS)	EA	1
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	1
0690-6024	REMOVAL OF SIGNAL HEAD ASSM	EA	1
0690-6030	REMOVAL OF PEDESTRIAN PUSH BUTTONS	EA	1

NOTES:  
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DESIGN  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



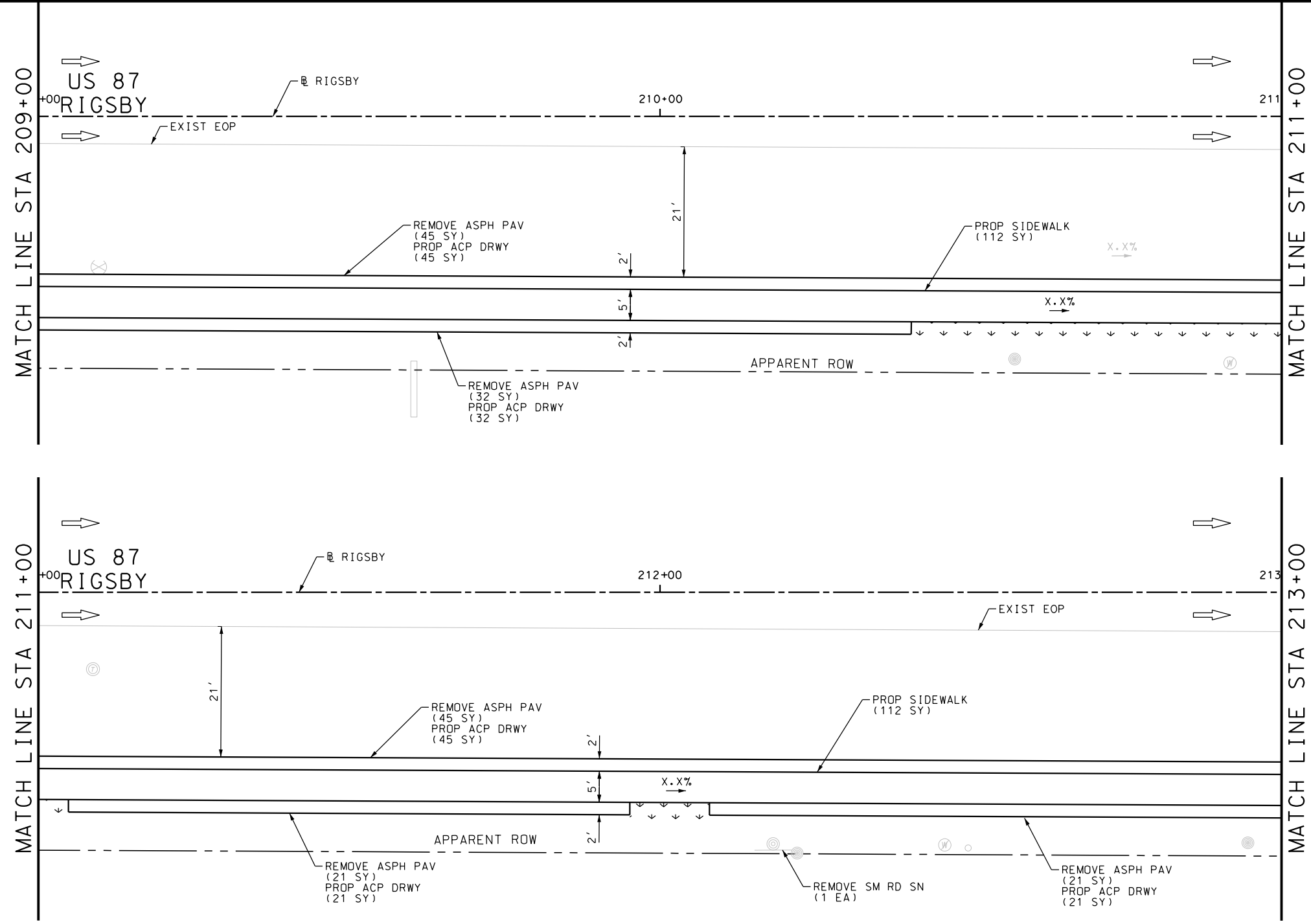
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 205+00 TO STA 209+00

SHEET 19 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	229

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_20.dgn



ITEM	DESCRIPTION	UNIT	QTY
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	164
0162-6002	BLOCK SODDING	SY	27
0168-6001	VEGETATIVE WATERING	MG	0.42
0530-6005	DRIVEWAYS (ACP)	SY	164
0531-6001	CONC SIDEWALKS (4")	SY	224
0644-6076	REMOVE SM RD SN SUP&AM	EA	1

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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



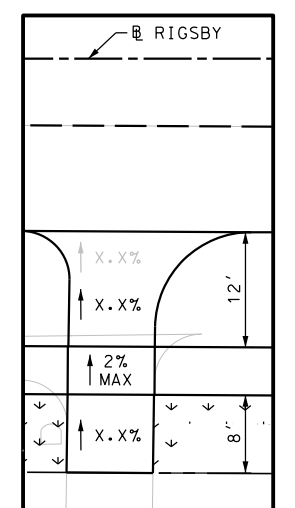
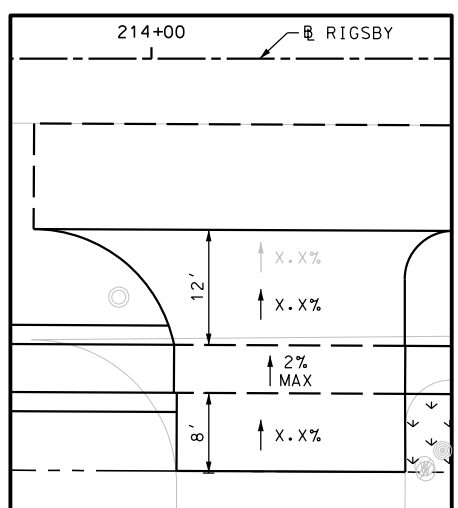
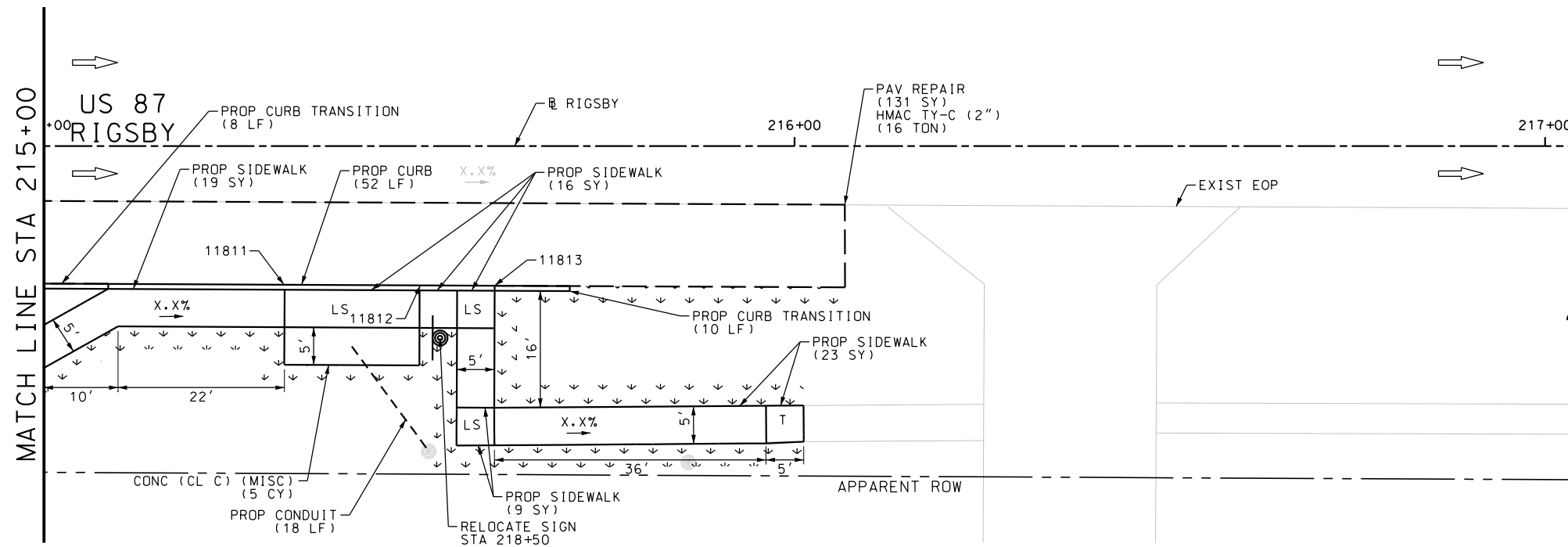
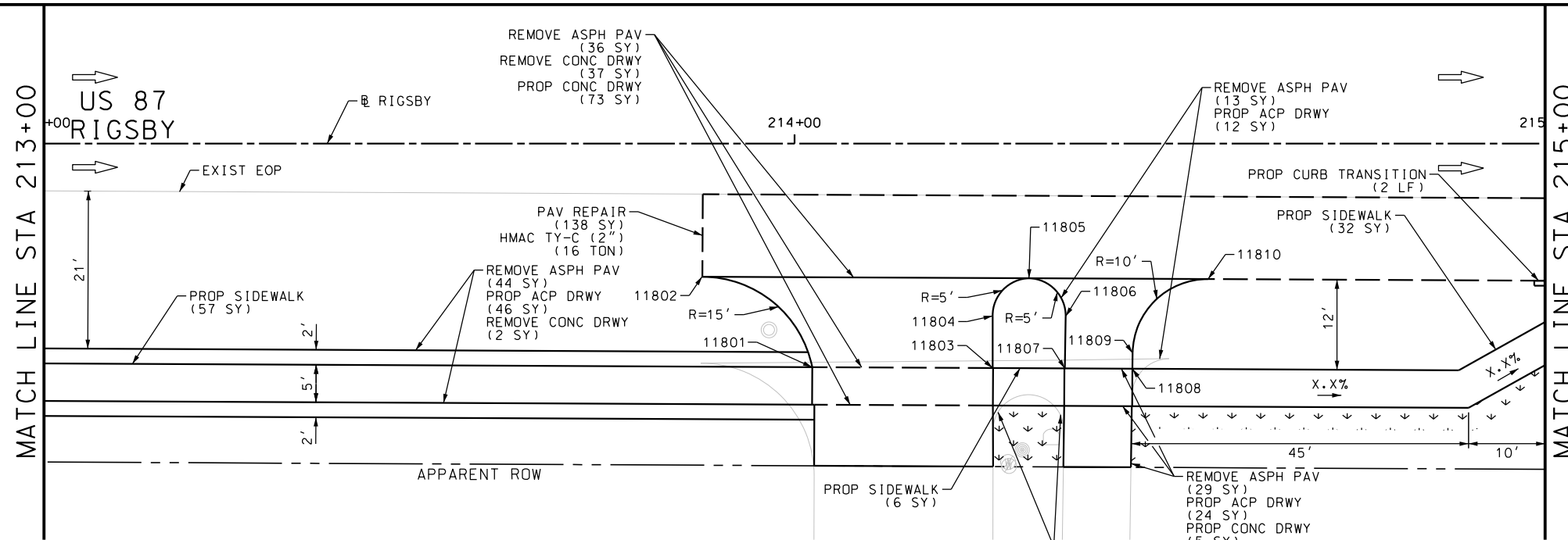
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 209+00 TO STA 213+00

SHEET 20 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	230

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_21.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	39
0105-6037	REMOVING STAB BASE AND ASPH PAV(0"-16")	SY	123
0162-6002	BLOCK SODDING	SY	111
0168-6001	VEGETATIVE WATERING	MG	1.73
0340-6066	D-GR HMA(SQ) TY-C PG76-22	TON	32.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	269
0420-6074	CL C CONC (MISC)	CY	5.0
0529-6002	CONC CURB (TY II)	LF	72
0530-6004	DRIVEWAYS (CONC)	SY	78
0530-6005	DRIVEWAYS (ACP)	SY	82
0531-6001	CONC SIDEWALKS (4")	SY	162
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	18
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

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DESIGN  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



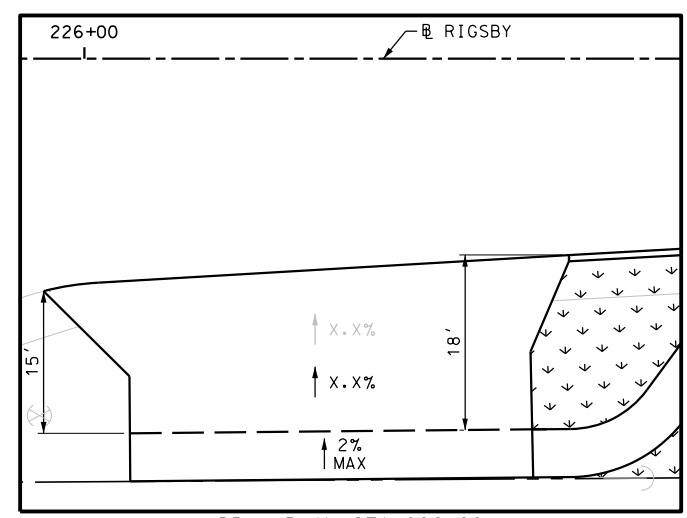
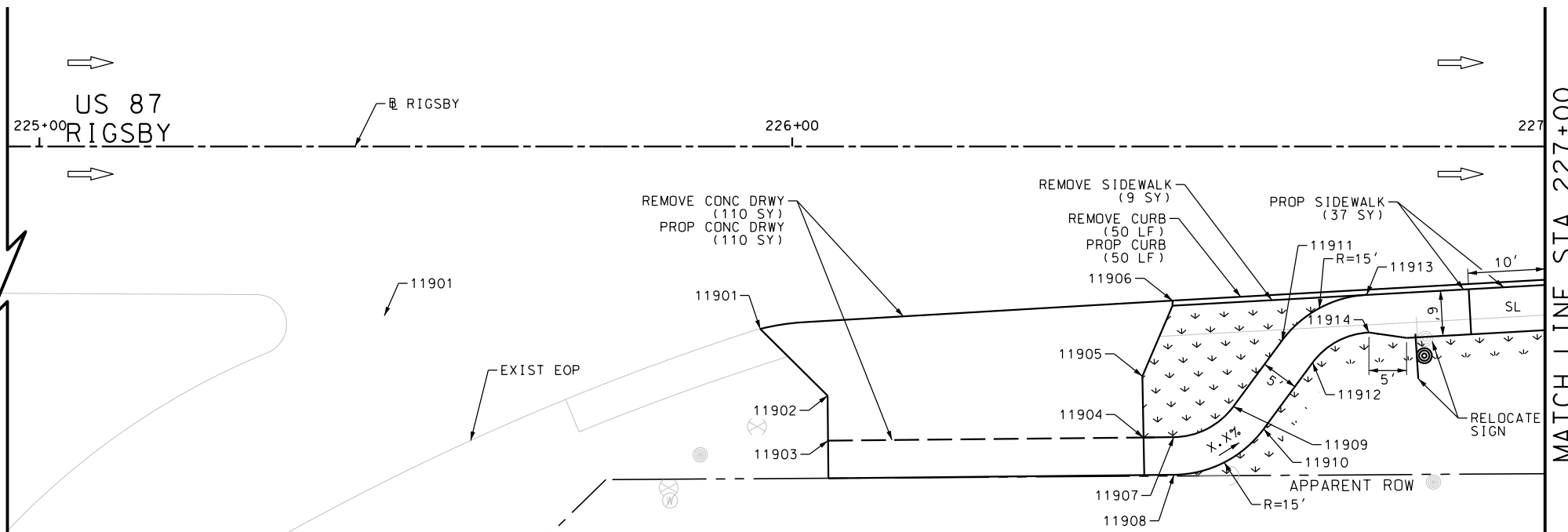
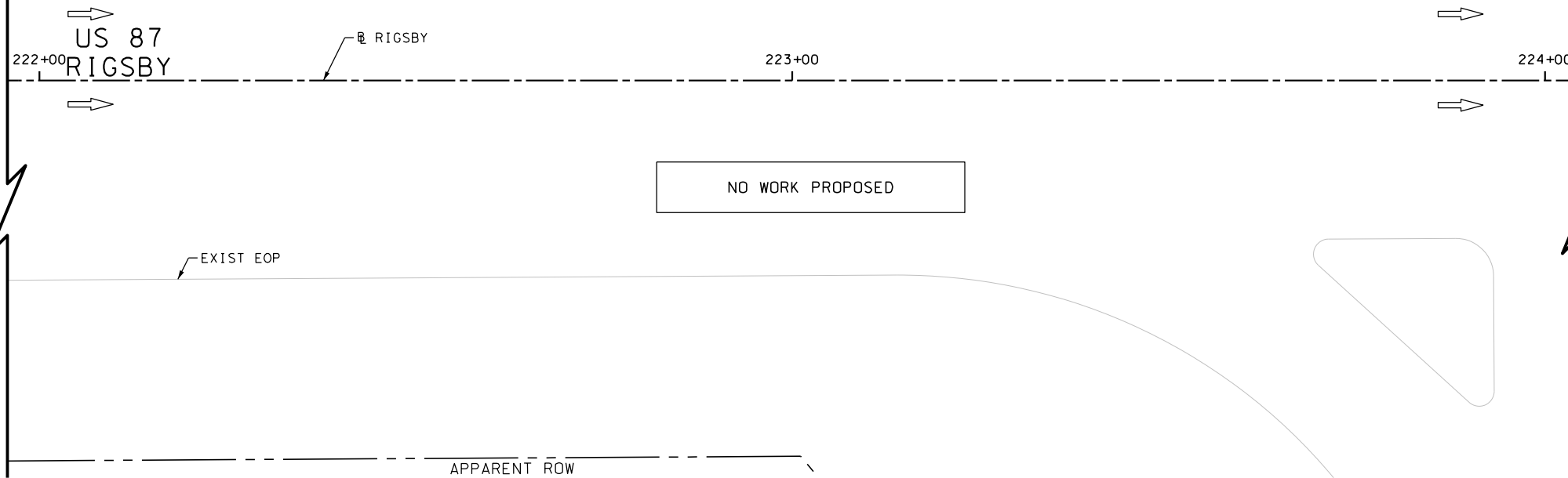
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 213+00 TO STA 217+00

SHEET 21 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	231

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_22.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	110
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	50
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	9
0162-6002	BLOCK SODDING	SY	47
0168-6001	VEGETATIVE WATERING	MG	0.73
0529-6002	CONC CURB (TY II)	LF	50
0530-6004	DRIVEWAYS (CONC)	SY	110
0531-6001	CONC SIDEWALKS (4")	SY	37
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US 87  
 RIGSBY  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 222+00 TO STA 227+00

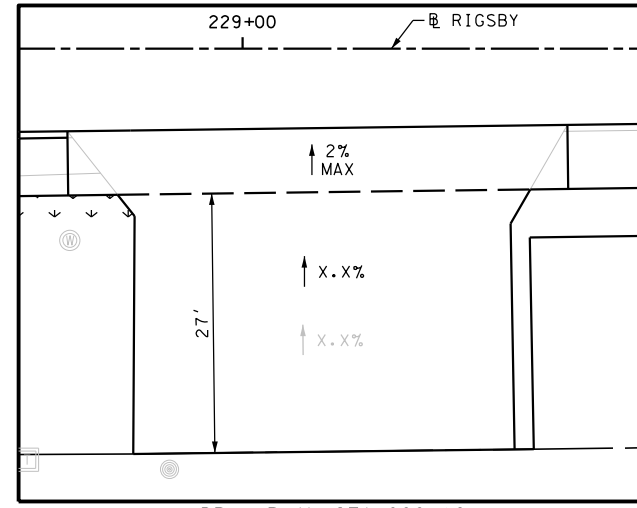
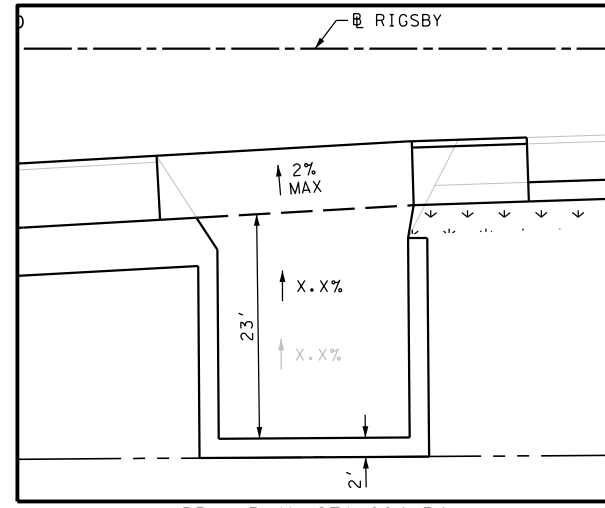
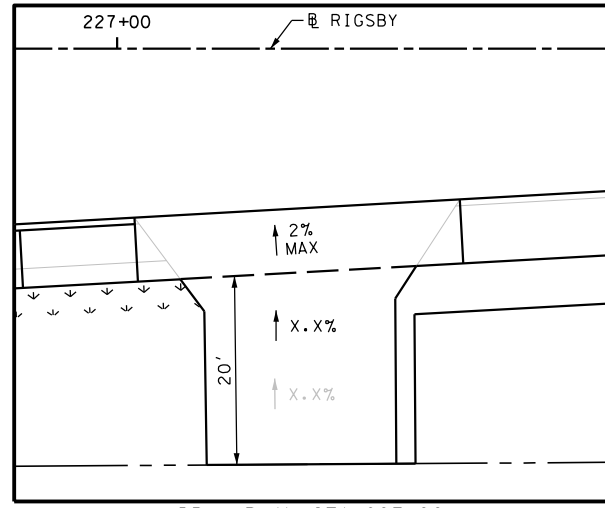
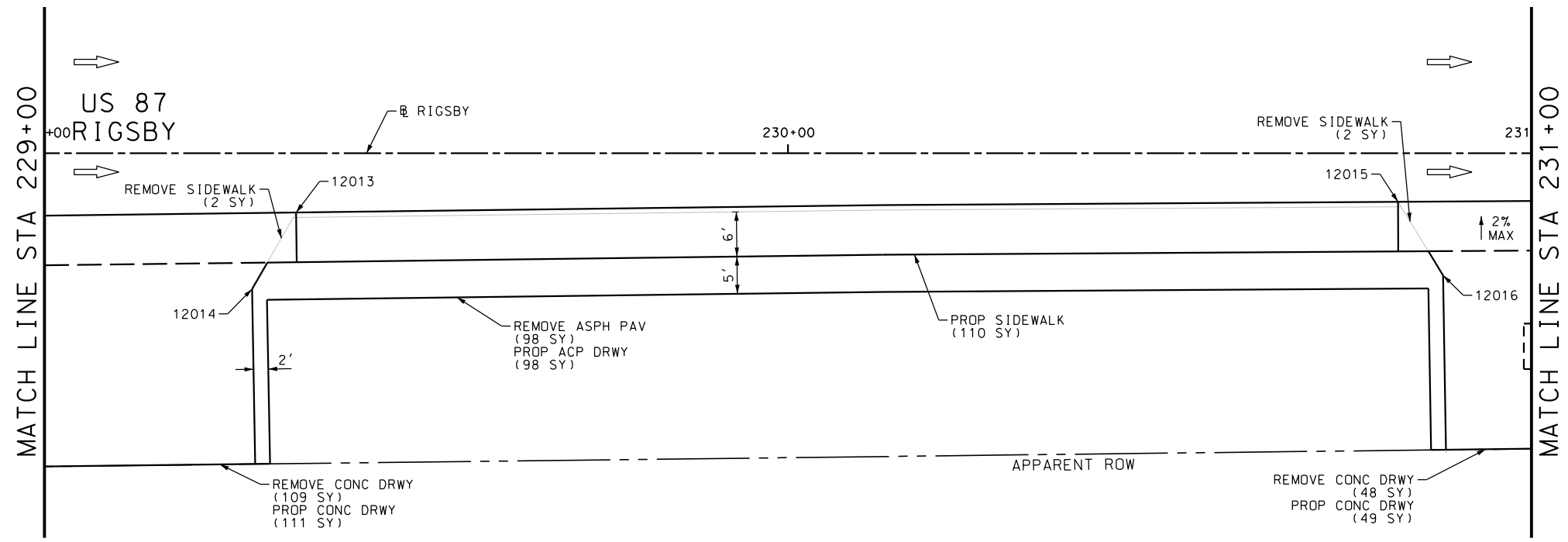
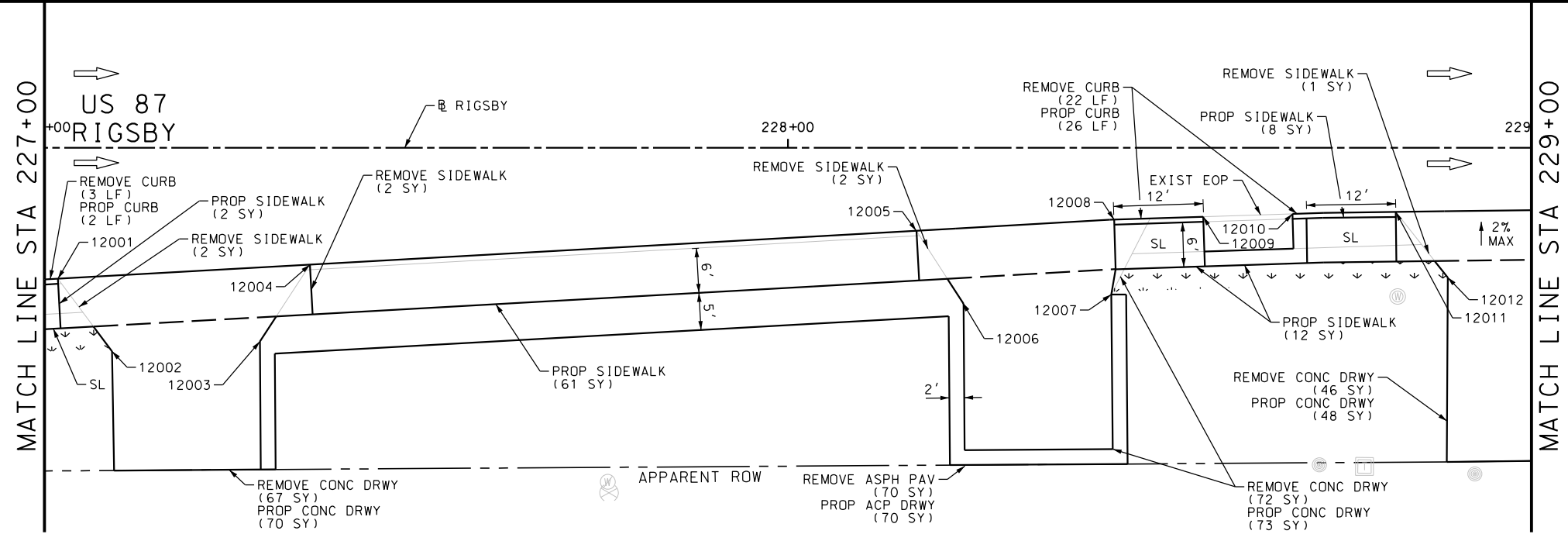
SHEET 22 OF 80

DWG:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DWG:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	232



Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_23.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	342
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	25
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	11
0105-6037	REMOVING STAB BASE AND ASPH PAV(0"-16")	SY	168
0162-6002	BLOCK SODDING	SY	18
0168-6001	VEGETATIVE WATERING	MG	0.28
0529-6002	CONC CURB (TY II)	LF	28
0530-6004	DRIVEWAYS (CONC)	SY	351
0530-6005	DRIVEWAYS (ACP)	SY	168
0531-6001	CONC SIDEWALKS (4")	SY	193

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

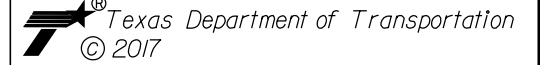
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



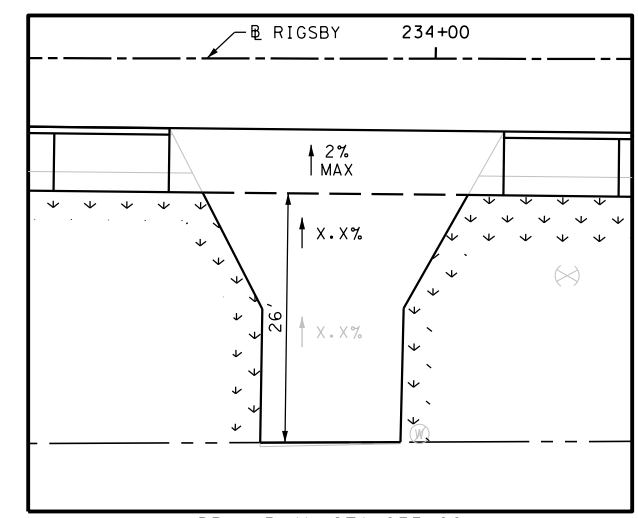
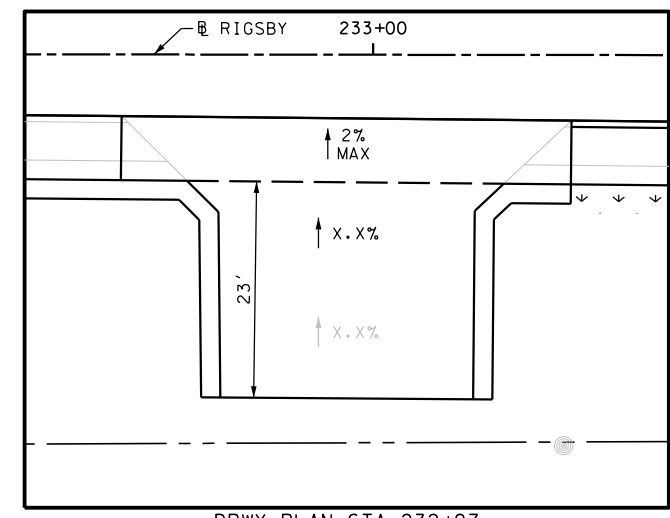
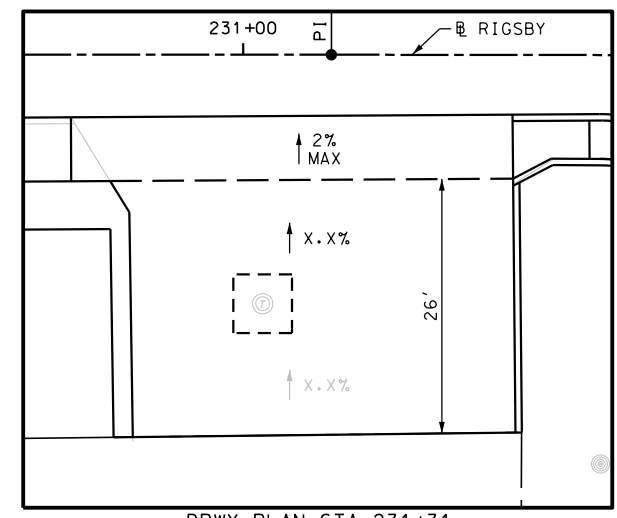
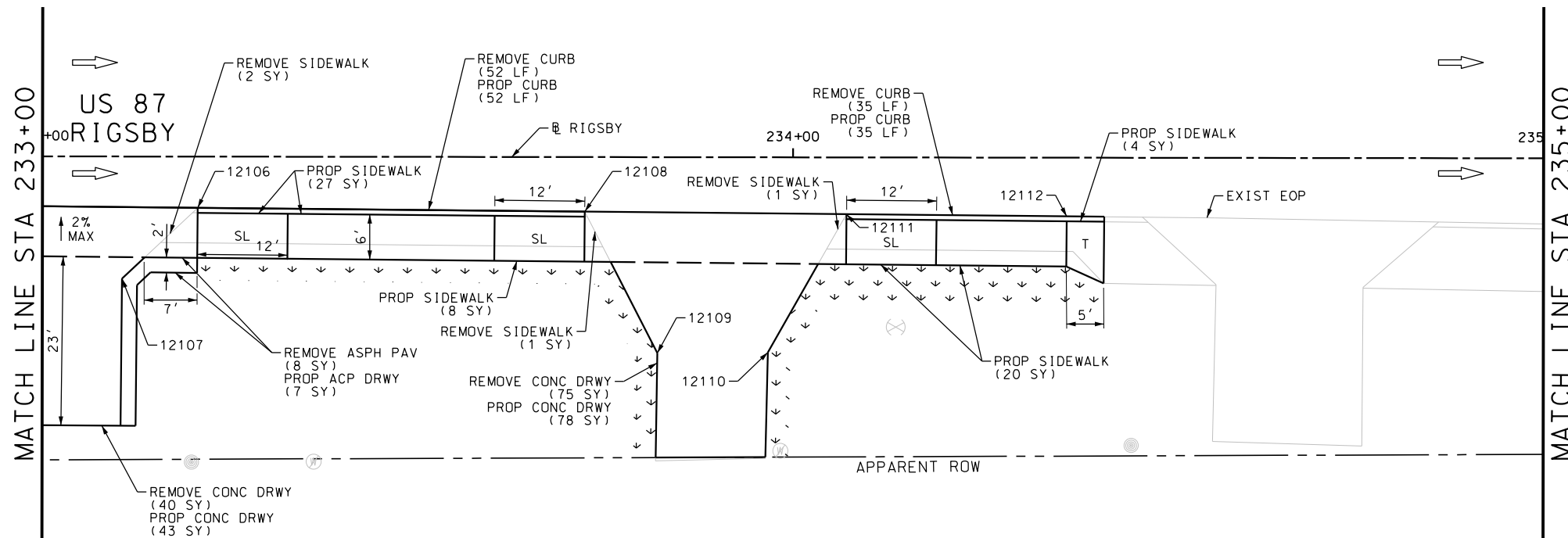
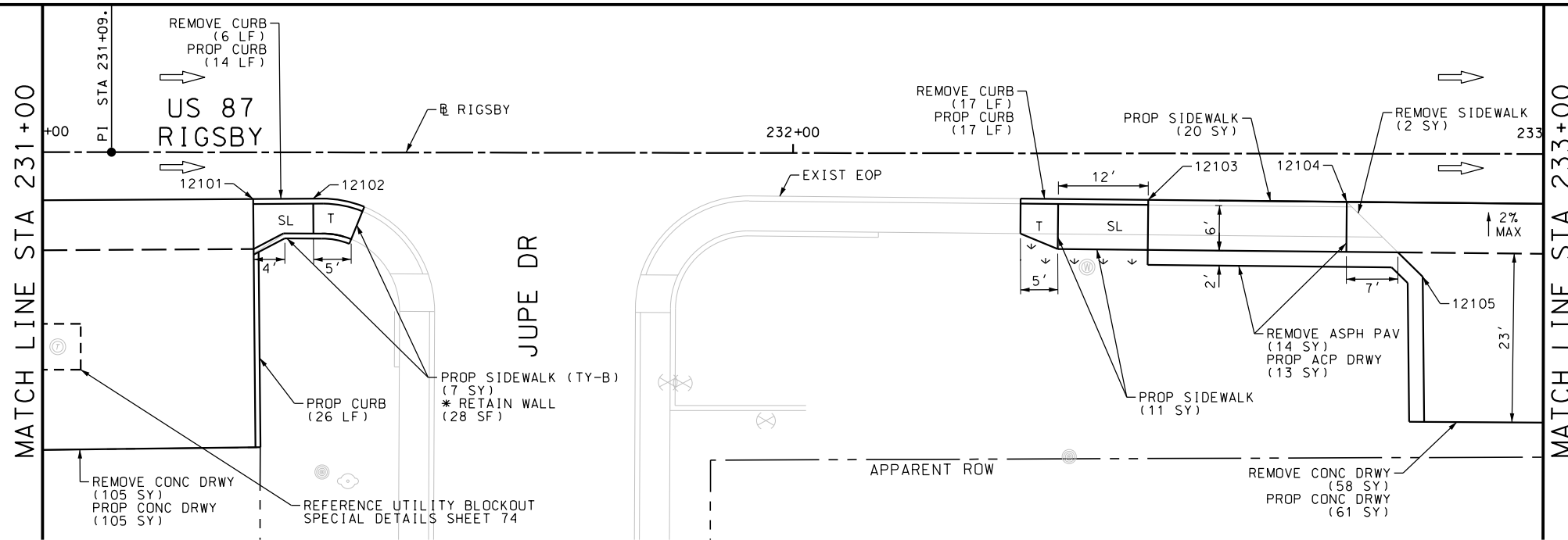
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 227+00 TO STA 231+00

SHEET 23 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	233

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_24.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	278
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	110
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	6
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	22
0162-6002	BLOCK SODDING	SY	63
0168-6001	VEGETATIVE WATERING	MG	0.98
0529-6002	CONC CURB (TY II)	LF	144
0530-6004	DRIVEWAYS (CONC)	SY	287
0530-6005	DRIVEWAYS (ACP)	SY	20
0531-6001	CONC SIDEWALKS (4")	SY	90
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	7

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
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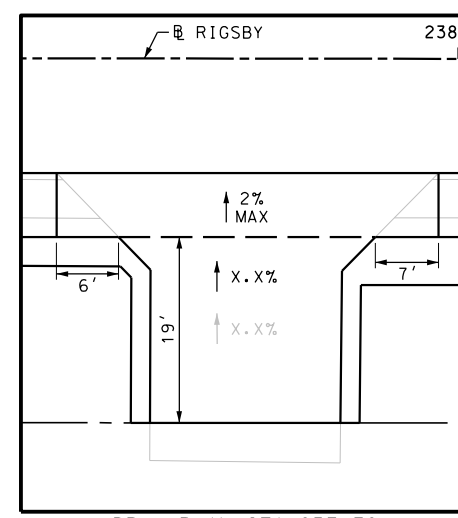
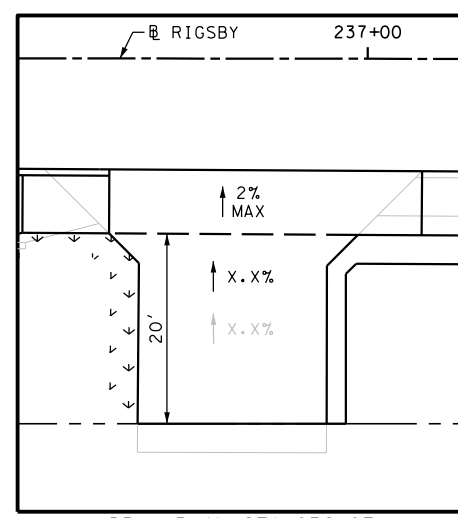
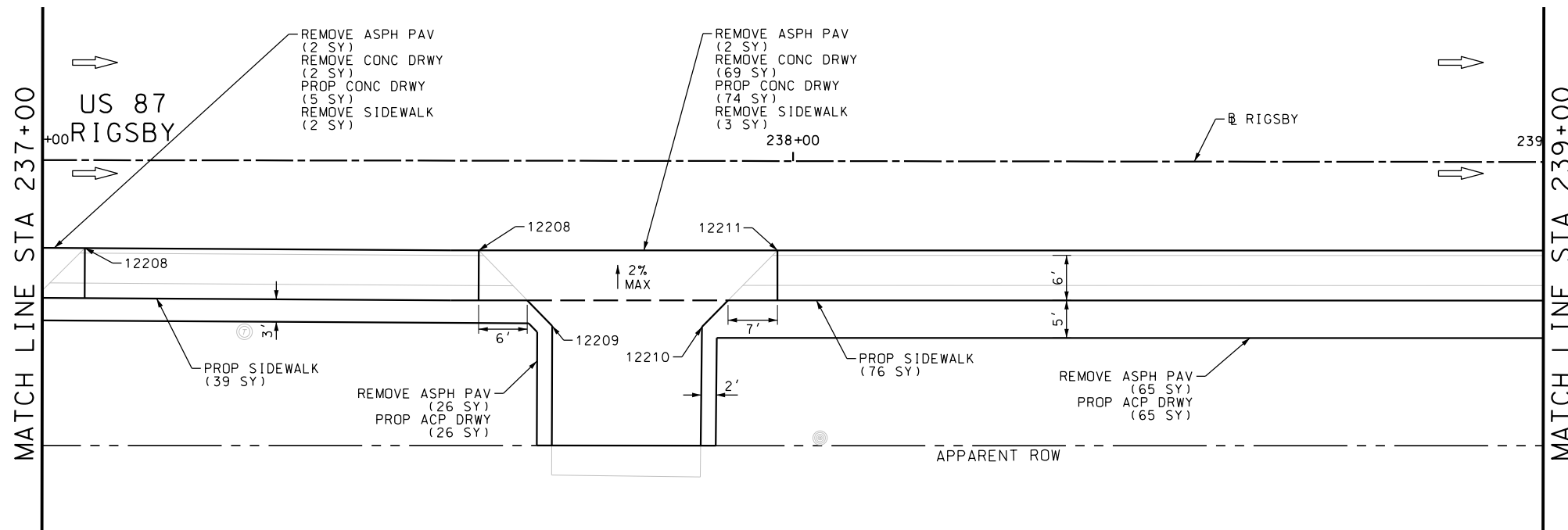
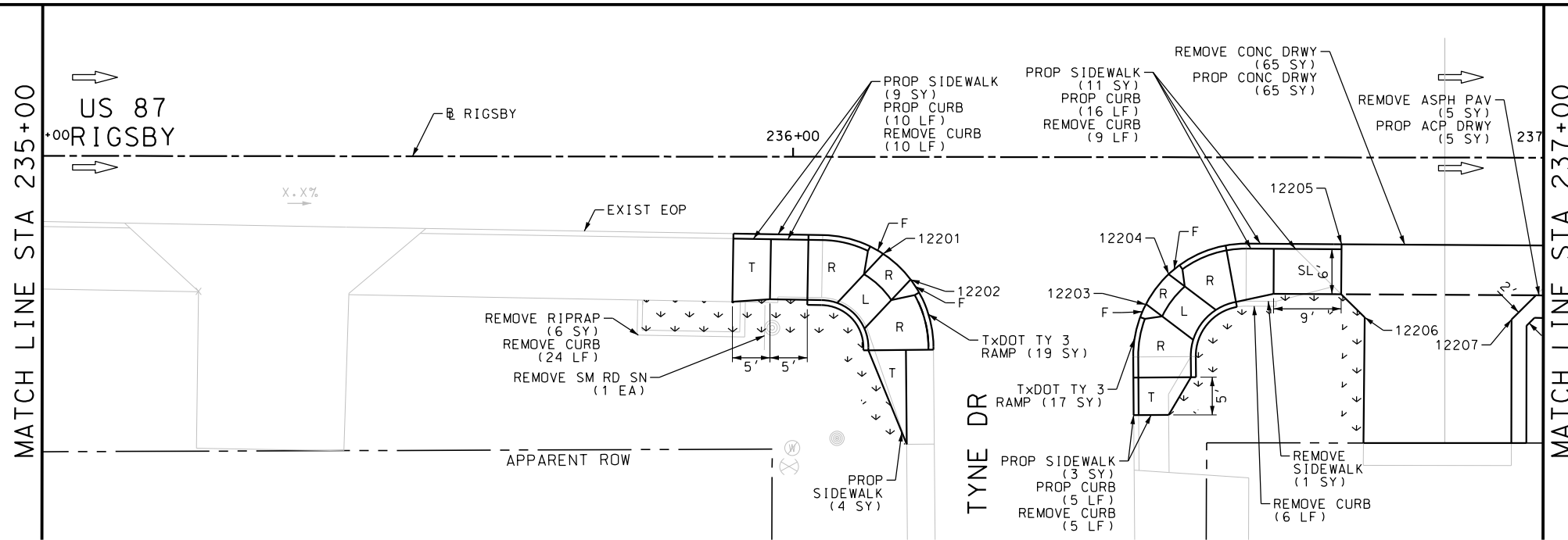
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 231+00 TO STA 235+00

SHEET 24 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	234

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_25.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	6
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	136
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	54
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	6
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	100
0162-6002	BLOCK SODDING	SY	36
0168-6001	VEGETATIVE WATERING	MG	0.56
0529-6002	CONC CURB (TY II)	LF	31
0530-6004	DRIVEWAYS (CONC)	SY	144
0530-6005	DRIVEWAYS (ACP)	SY	96
0531-6001	CONC SIDEWALKS (4")	SY	142
0531-6020	CURB RAMPS (TY 3)	SY	36
0644-6076	REMOVE SM RD SN SUP&AM	EA	1

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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



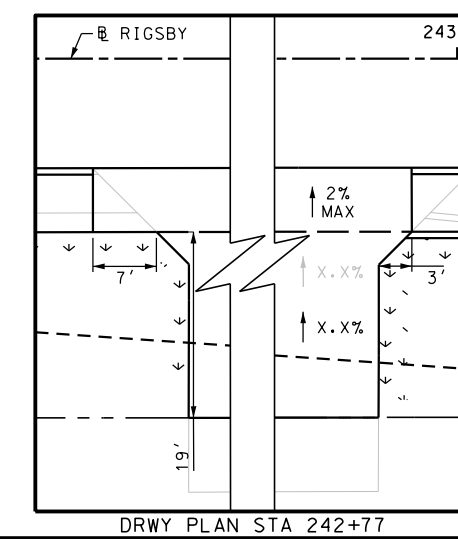
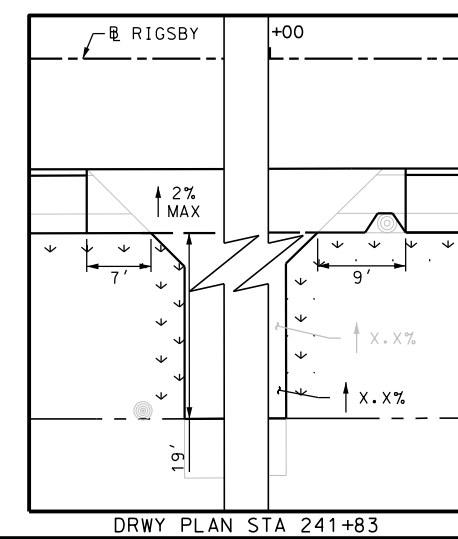
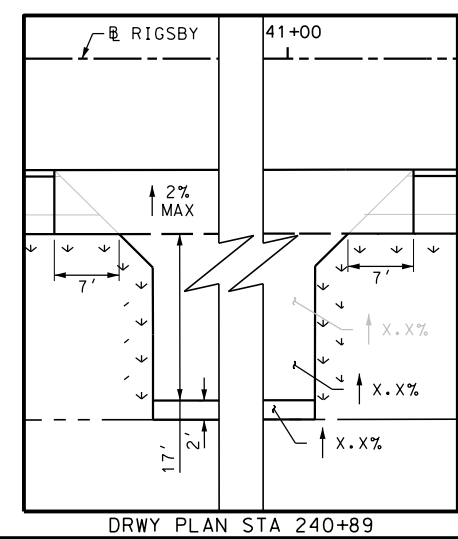
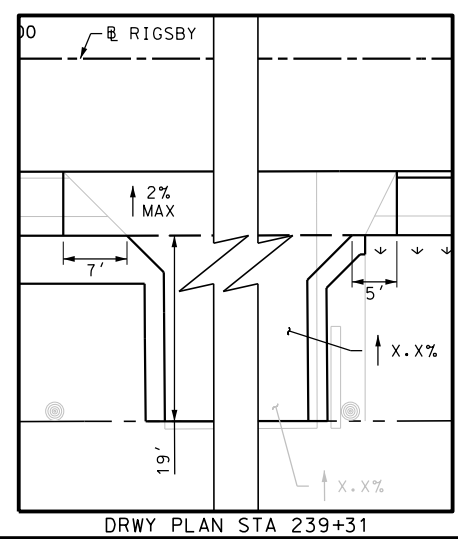
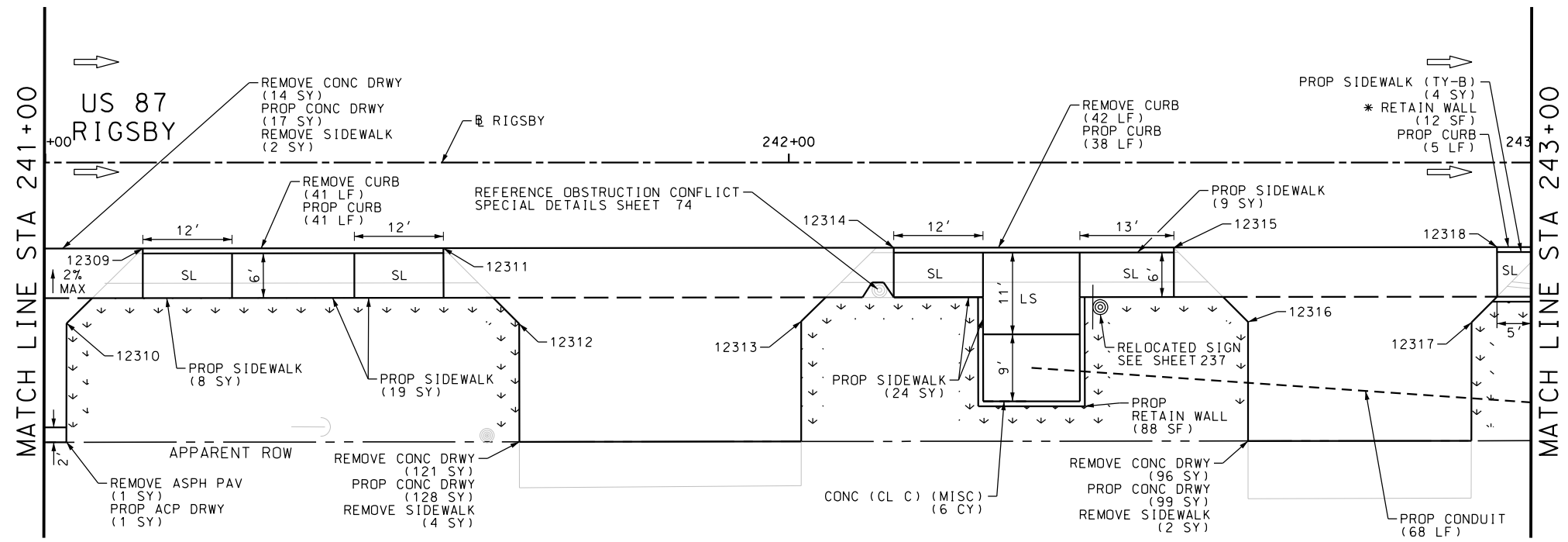
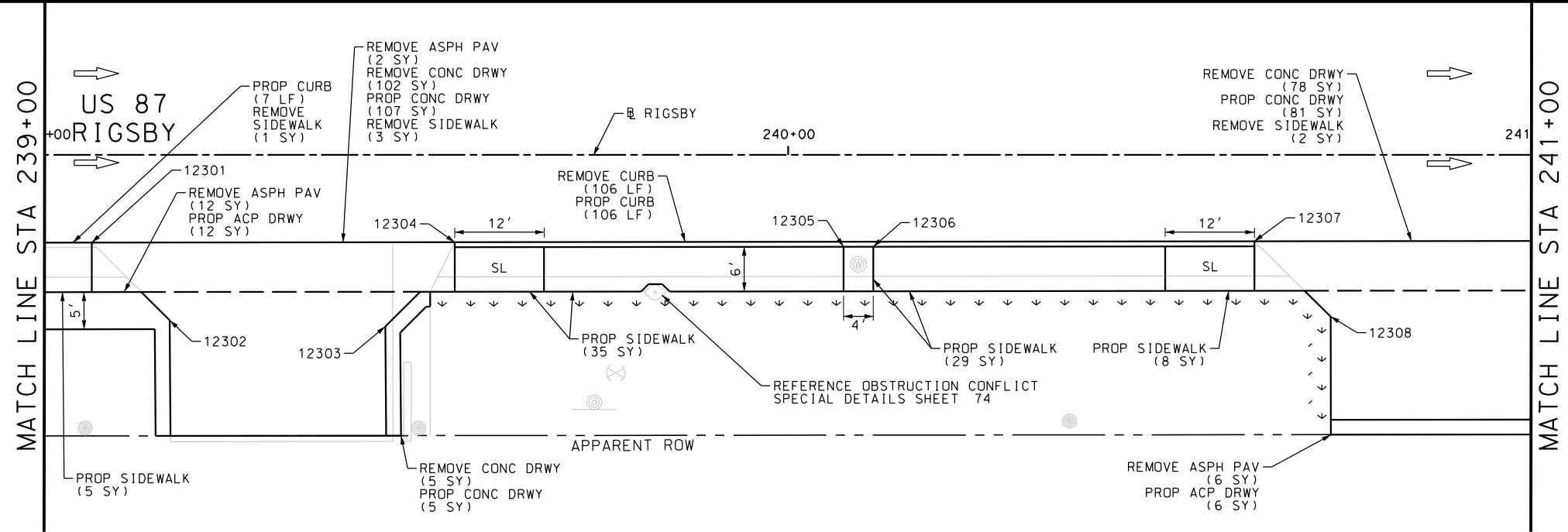
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 235+00 TO STA 239+00

SHEET 25 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	235

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_26.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	416
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	189
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	14
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	21
0162-6002	BLOCK SODDING	SY	125
0168-6001	VEGETATIVE WATERING	MG	1.95
0420-6074	CL C CONC (MISC)	CY	6.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	88
0529-6002	CONC CURB (TY II)	LF	197
0530-6004	DRIVEWAYS (CONC)	SY	437
0530-6005	DRIVEWAYS (ACP)	SY	19
0531-6001	CONC SIDEWALKS (4")	SY	137
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	4
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	68

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



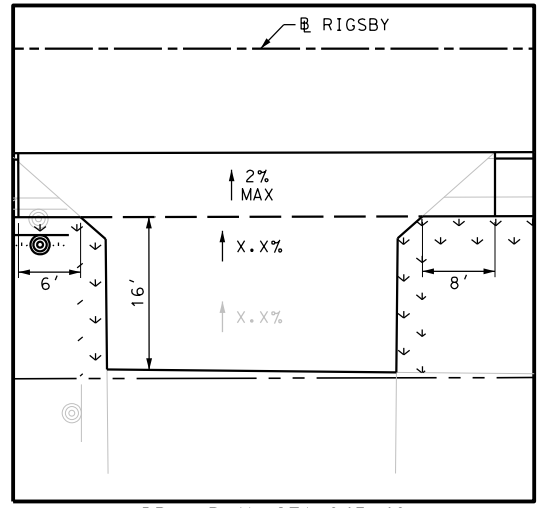
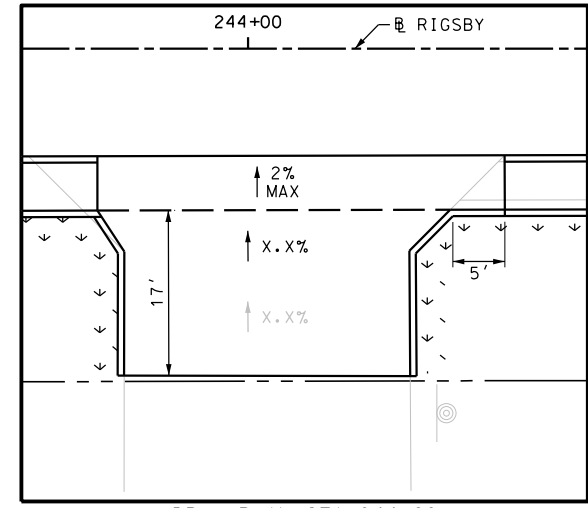
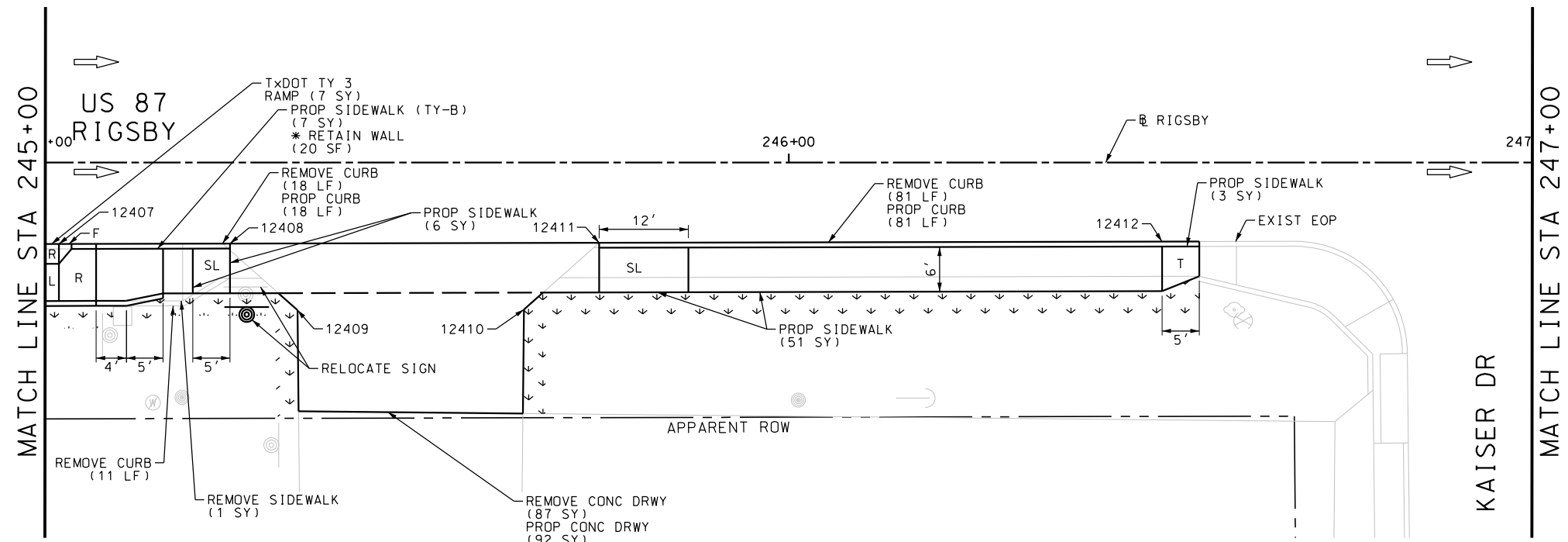
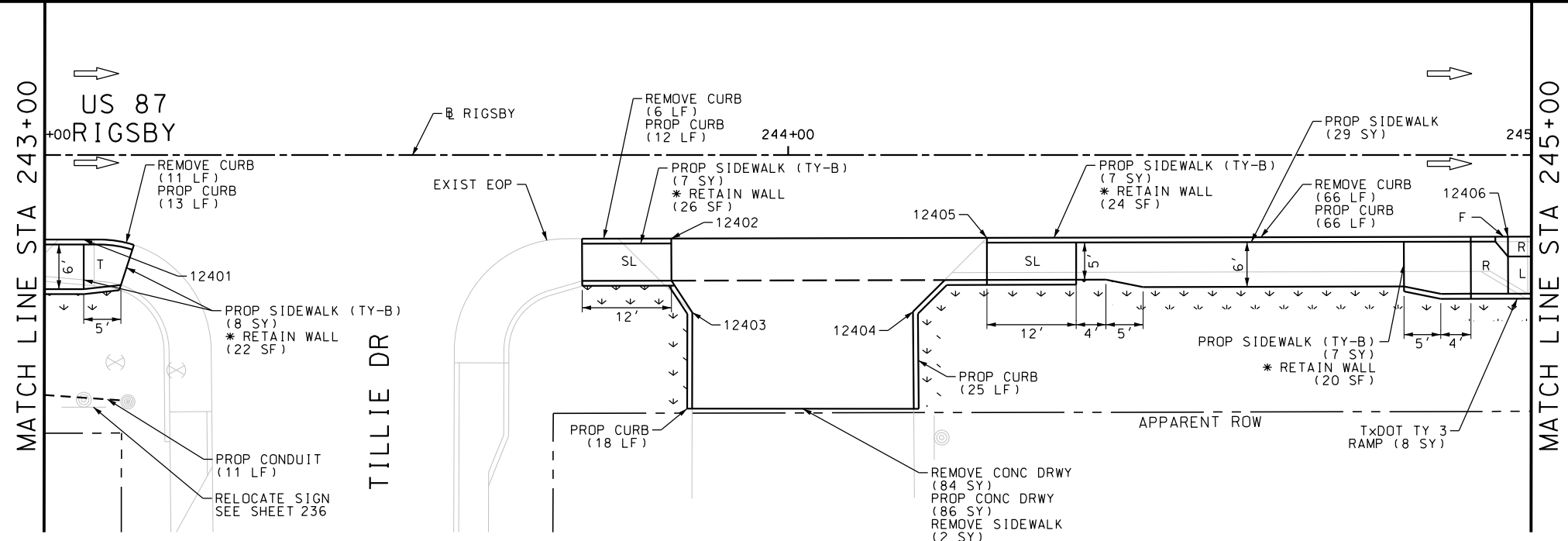
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 239+00 TO STA 243+00

SHEET 26 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	236

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_27.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	171
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	193
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	6
0162-6002	BLOCK SODDING	SY	102
0168-6001	VEGETATIVE WATERING	MG	1.59
0529-6002	CONC CURB (TY II)	LF	233
0530-6004	DRIVEWAYS (CONC)	SY	178
0531-6001	CONC SIDEWALKS (4")	SY	89
0531-6020	CURB RAMPS (TY 3)	SY	15
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	36
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	11
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	2

NOTES:  
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 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
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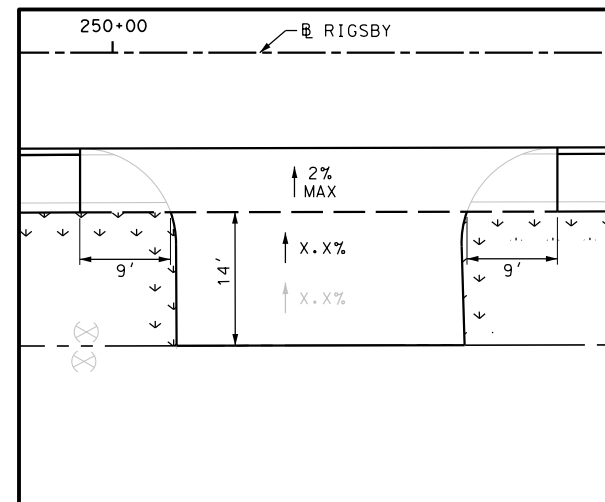
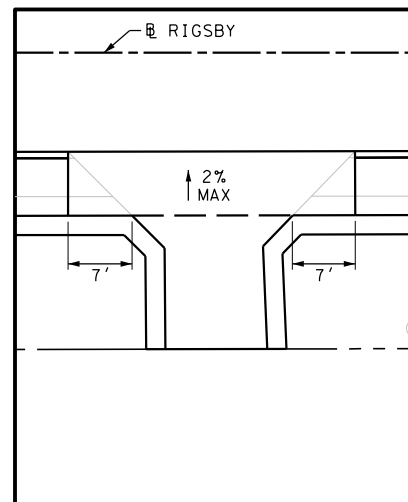
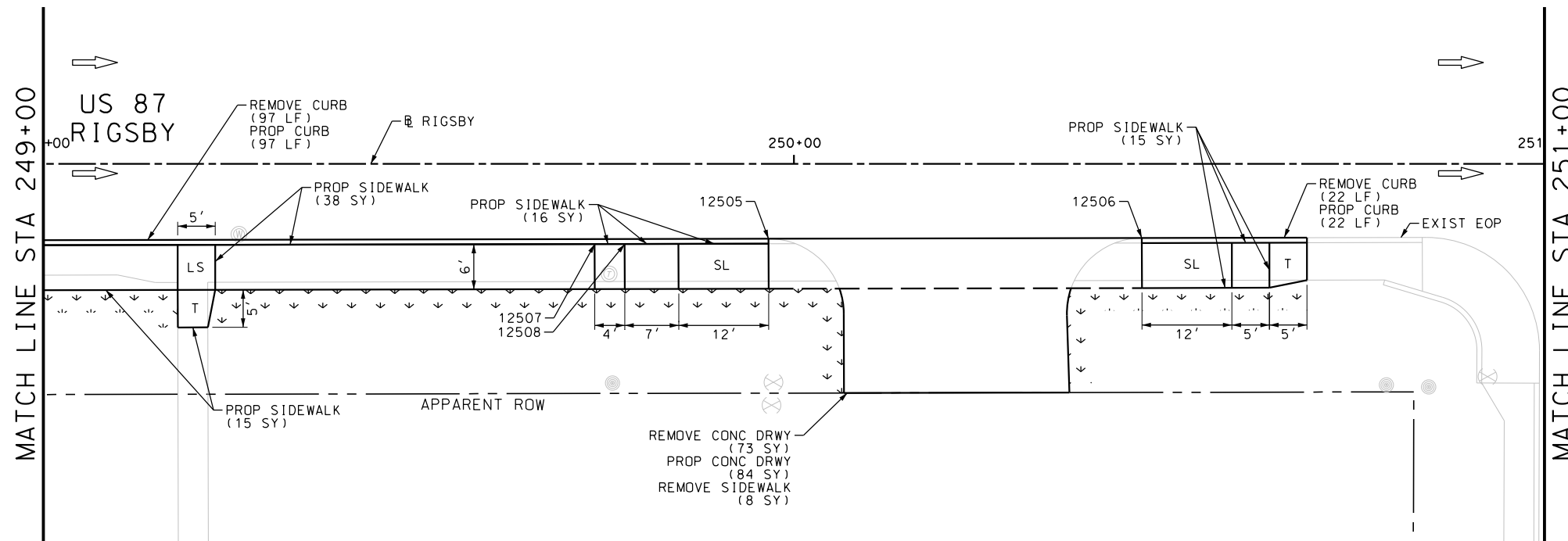
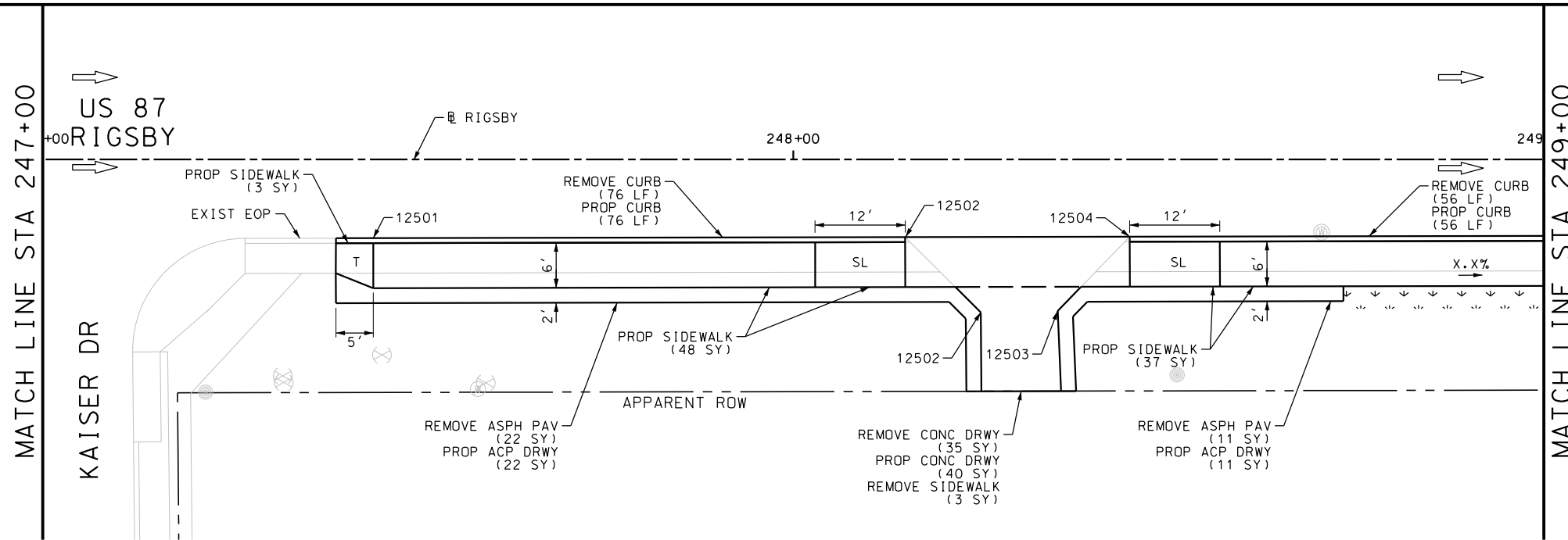
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 243+00 TO STA 247+00

SHEET 27 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	237

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_28.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	108
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	251
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	11
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	33
0162-6002	BLOCK SODDING	SY	57
0168-6001	VEGETATIVE WATERING	MG	0.89
0529-6002	CONC CURB (TY II)	LF	251
0530-6004	DRIVEWAYS (CONC)	SY	124
0530-6005	DRIVEWAYS (ACP)	SY	33
0531-6001	CONC SIDEWALKS (4")	SY	172

NOTES:  
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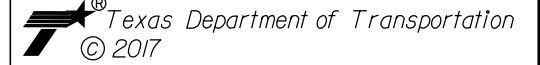
DESIGN  
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 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



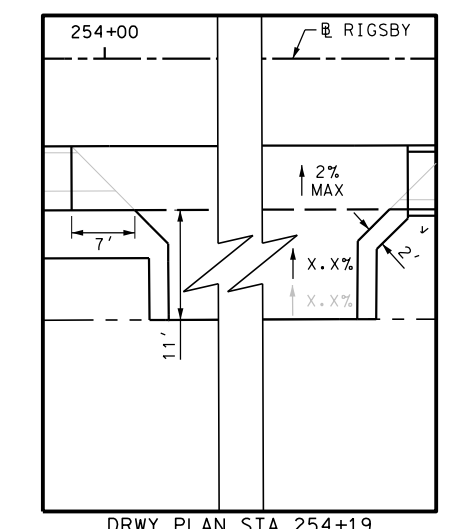
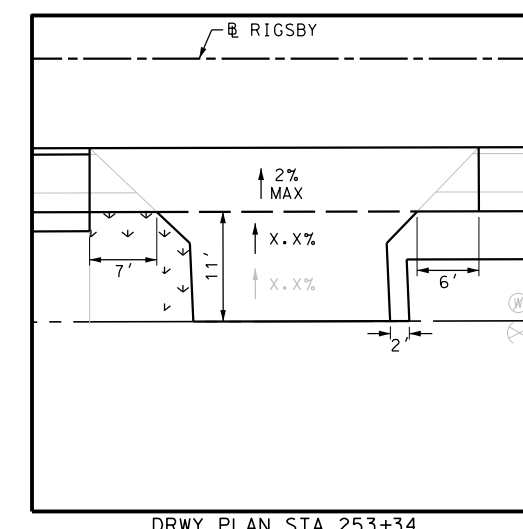
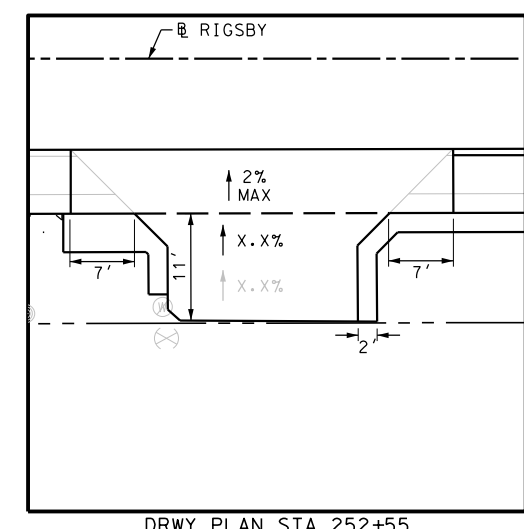
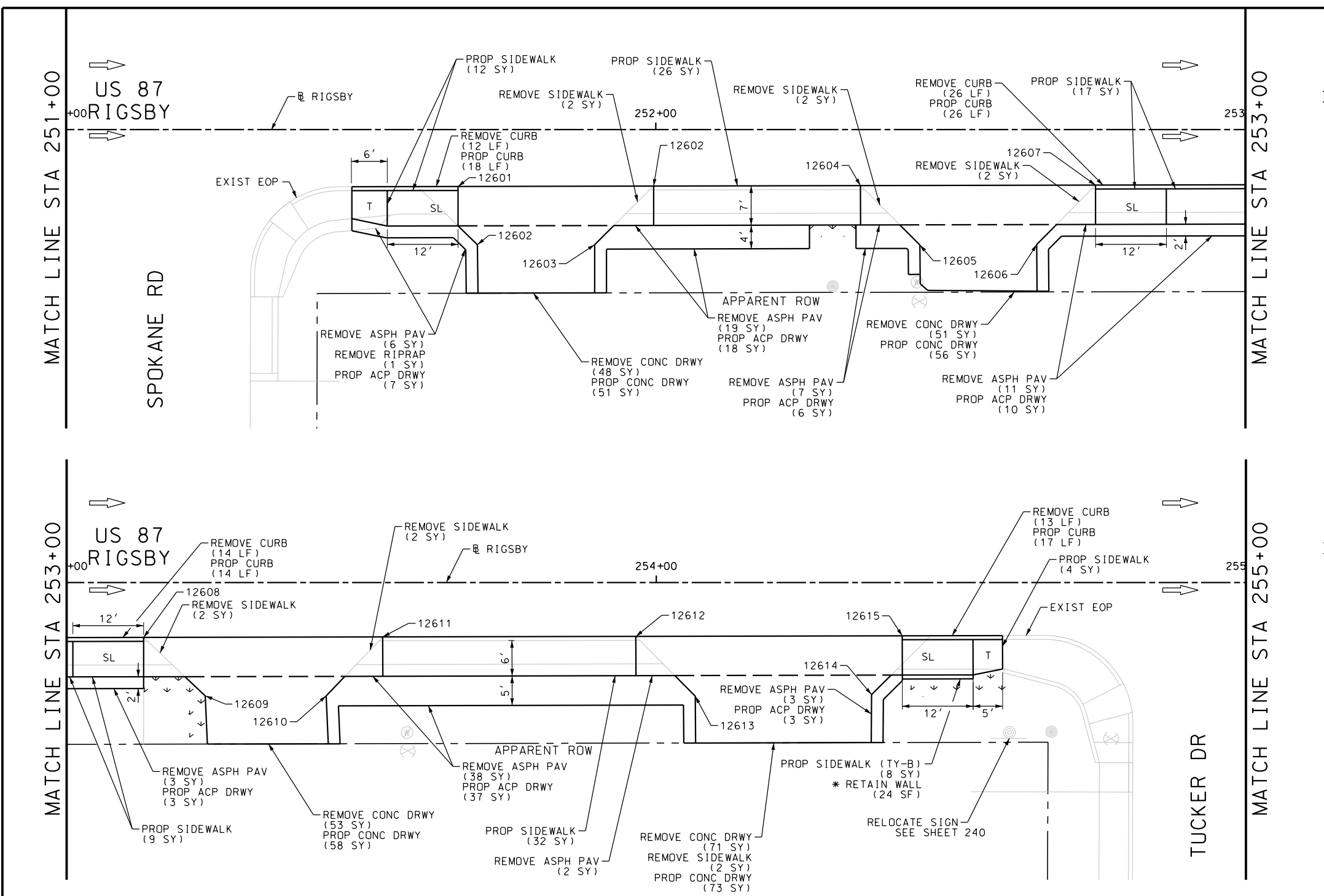
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 247+00 TO STA 251+00

SHEET 28 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	238

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_29.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	1
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	223
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	65
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	12
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	89
0162-6002	BLOCK SODDING	SY	14
0168-6001	VEGETATIVE WATERING	MG	0.22
0529-6002	CONC CURB (TY II)	LF	75
0530-6004	DRIVEWAYS (CONC)	SY	238
0530-6005	DRIVEWAYS (ACP)	SY	84
0531-6001	CONC SIDEWALKS (4")	SY	100
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	8
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

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**INTERIM REVIEW**  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
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 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US 87  
 RIGSBY  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 251+00 TO STA 255+00

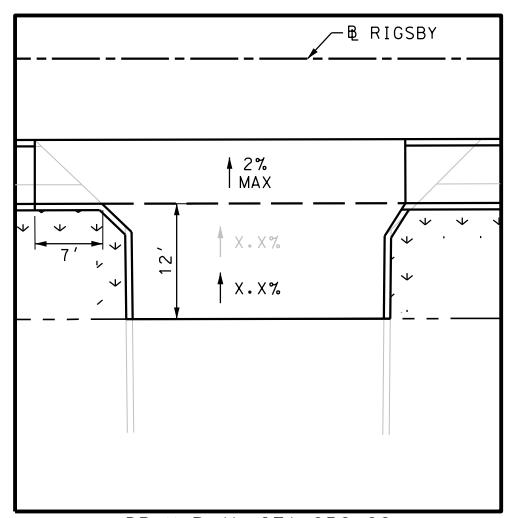
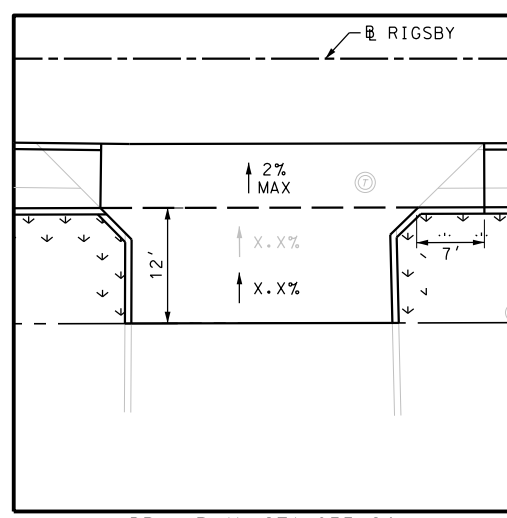
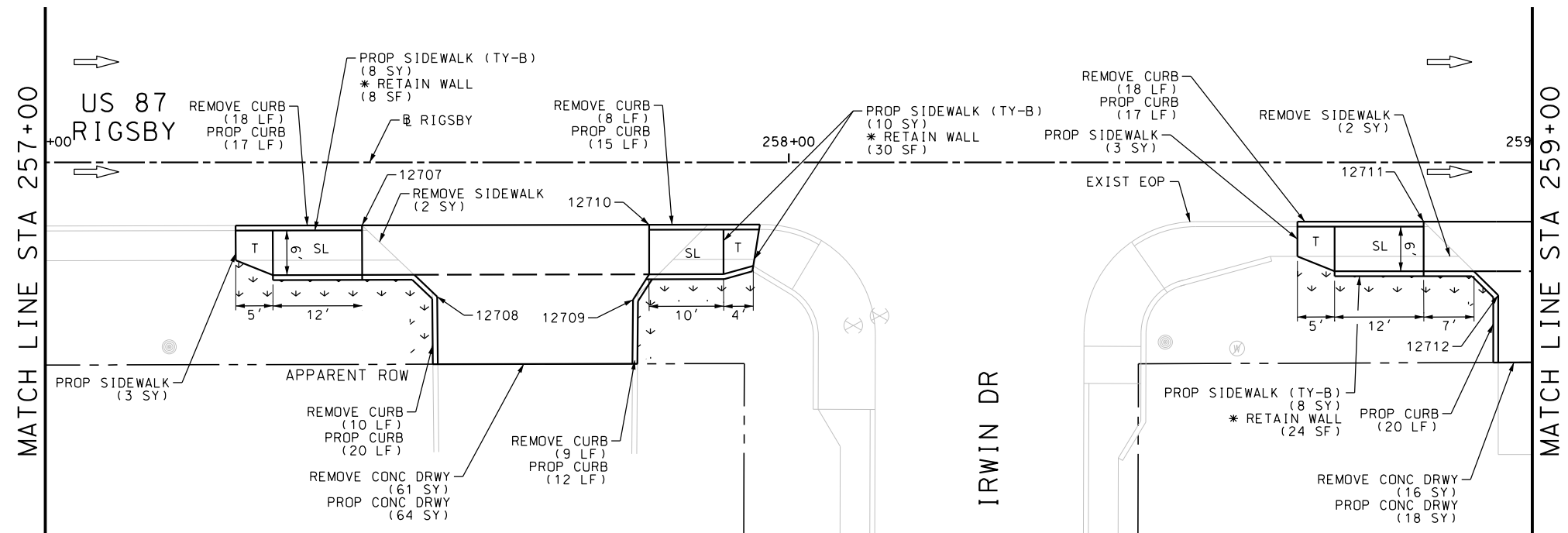
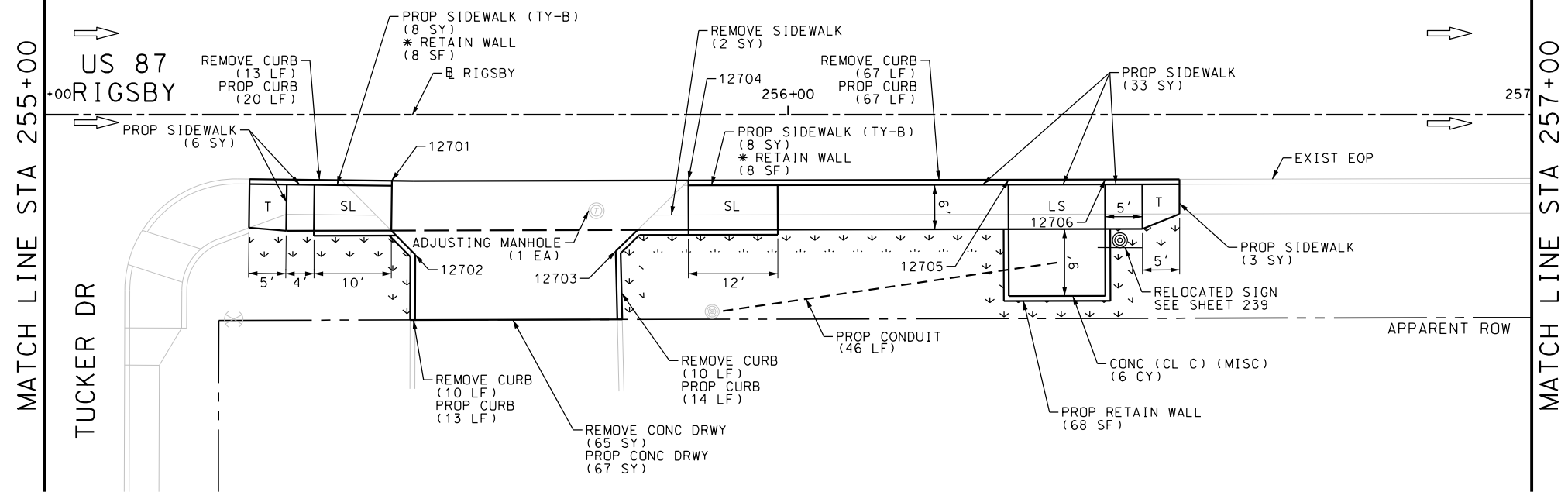
SHEET 29 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	239

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_30.dgn

ITEM	DESCRIPTION	UNIT	QTY
0479-6001	ADJUSTING MANHOLES	EA	1
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	142
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	163
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	6
0162-6002	BLOCK SODDING	SY	74
0168-6001	VEGETATIVE WATERING	MG	1.15
0420-6074	CL C CONC (MISC)	CY	6.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	68
0529-6002	CONC CURB (TY II)	LF	215
0530-6004	DRIVEWAYS (CONC)	SY	149
0531-6001	CONC SIDEWALKS (4")	SY	48
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	42
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	46



NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
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US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 255+00 TO STA 259+00

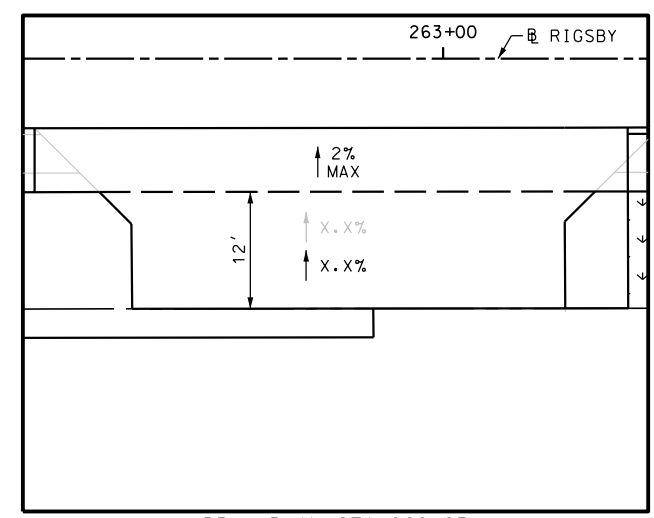
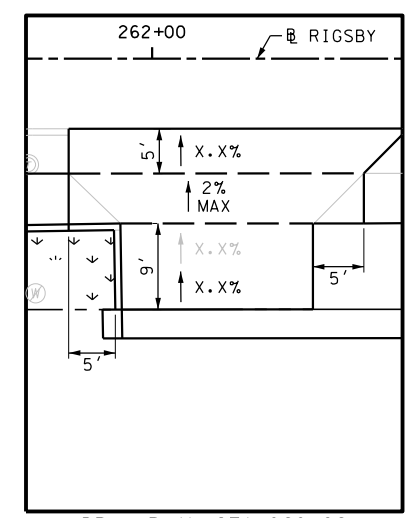
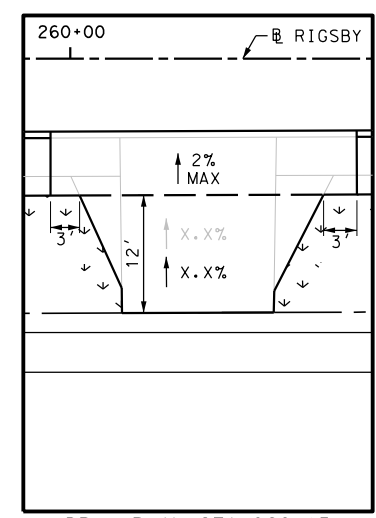
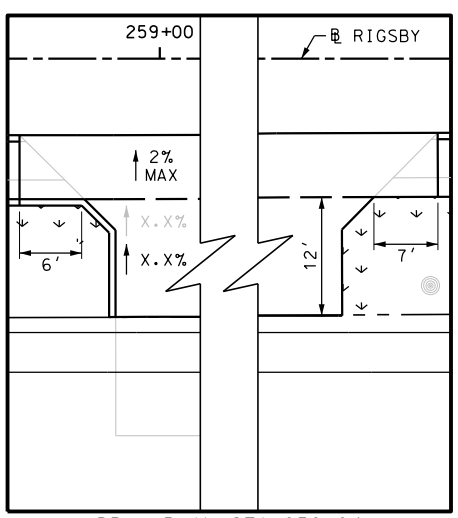
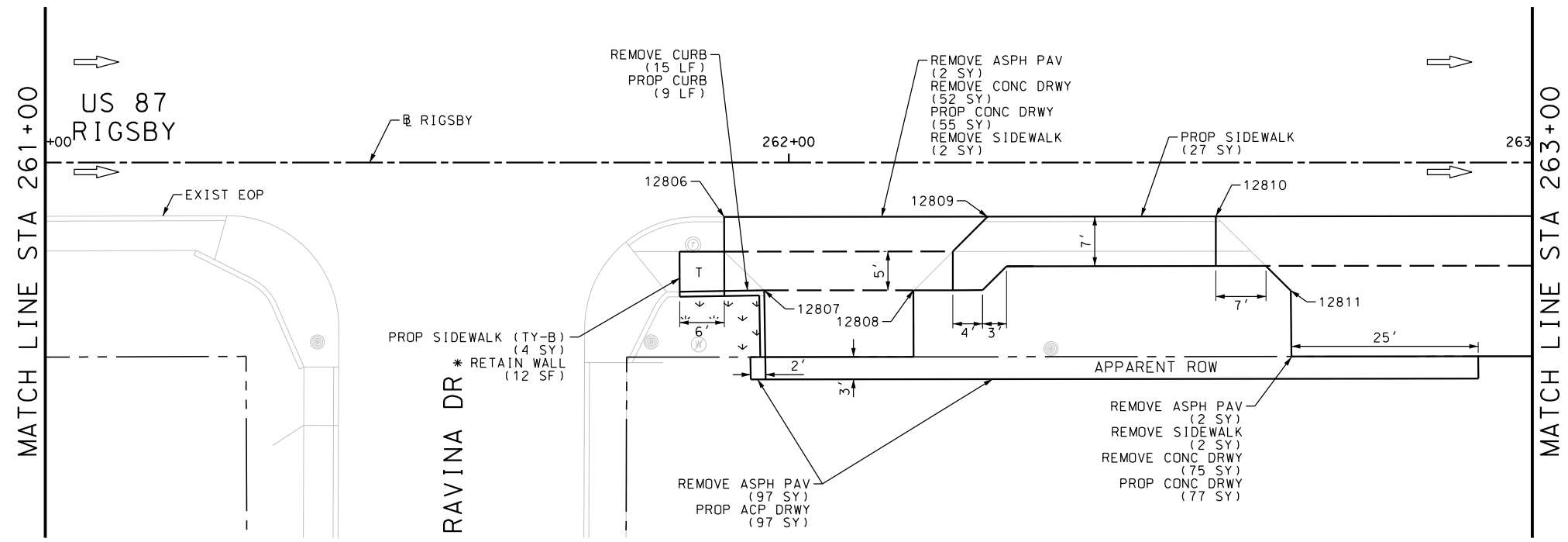
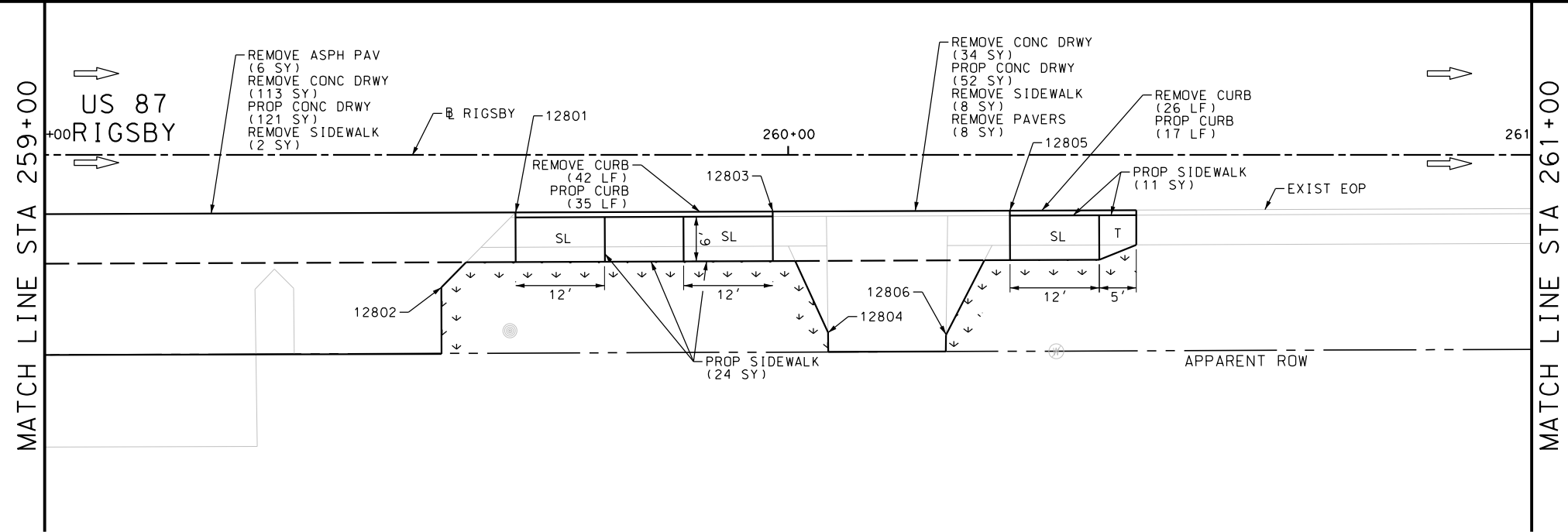
SHEET 30 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	240



Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_31.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	274
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	83
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	14
0104-6040	REMOVING CONC (PAVERS)	SY	8
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	107
0162-6002	BLOCK SODDING	SY	38
0168-6001	VEGETATIVE WATERING	MG	0.59
0529-6002	CONC CURB (TY II)	LF	61
0530-6004	DRIVEWAYS (CONC)	SY	305
0530-6005	DRIVEWAYS (ACP)	SY	97
0531-6001	CONC SIDEWALKS (4")	SY	62
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	4

NOTES:  
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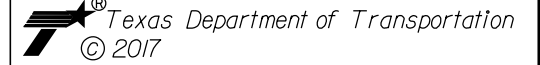
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 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



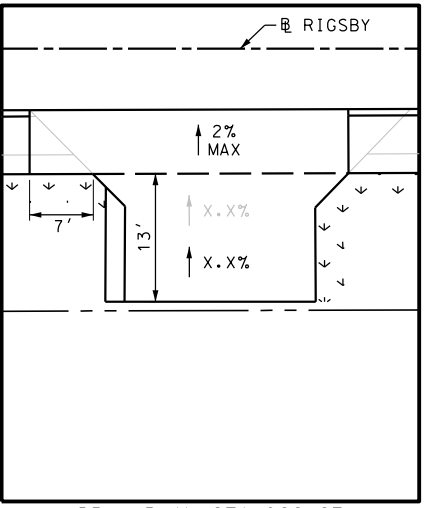
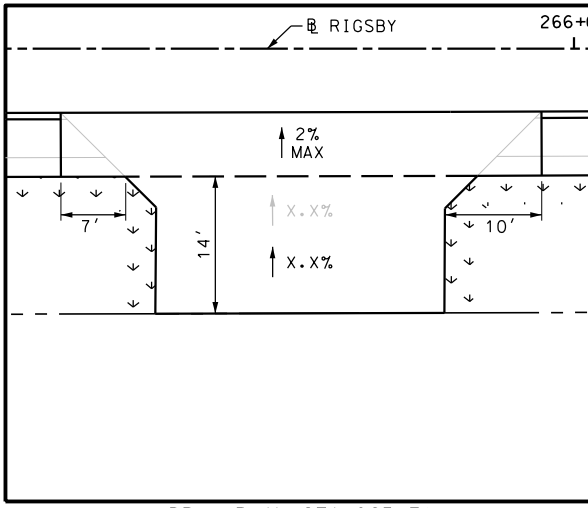
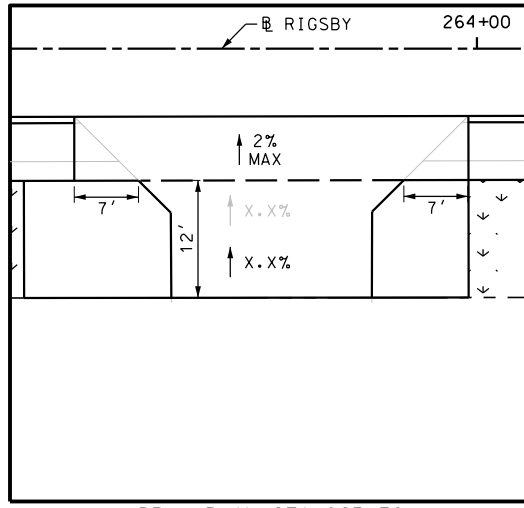
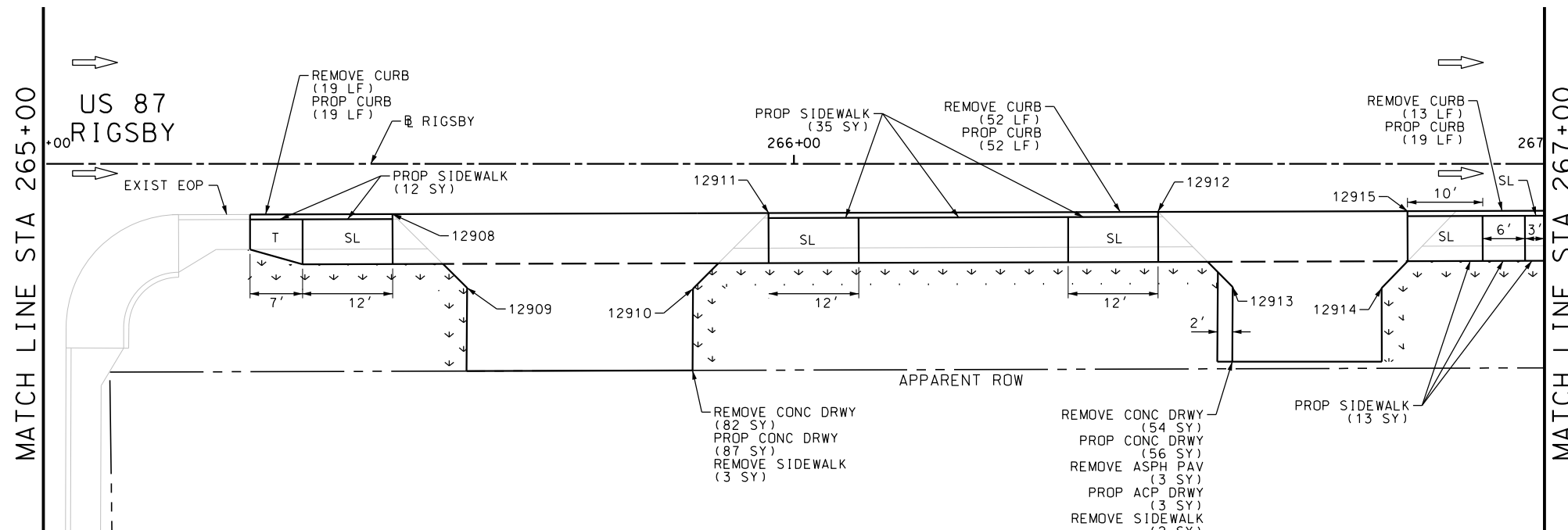
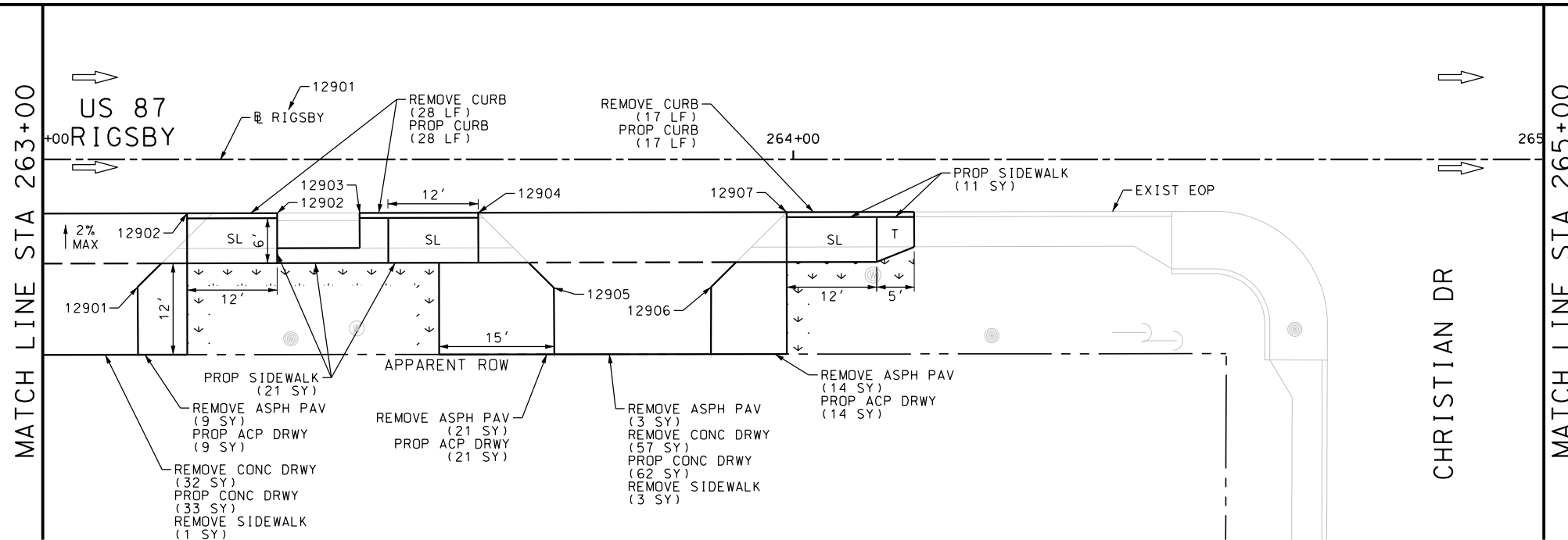
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 259+00 TO STA 263+00

SHEET 31 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	241

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_32.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	225
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	129
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	9
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	50
0162-6002	BLOCK SODDING	SY	78
0168-6001	VEGETATIVE WATERING	MG	1.22
0529-6002	CONC CURB (TY II)	LF	135
0530-6004	DRIVEWAYS (CONC)	SY	238
0530-6005	DRIVEWAYS (ACP)	SY	47
0531-6001	CONC SIDEWALKS (4")	SY	92

NOTES:  
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DESIGN  
 INTERIM REVIEW  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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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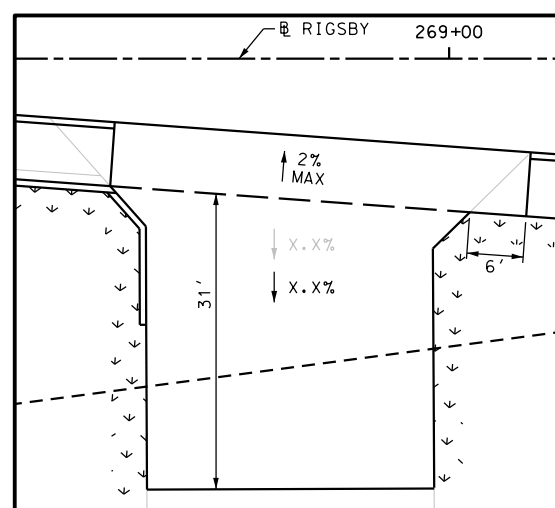
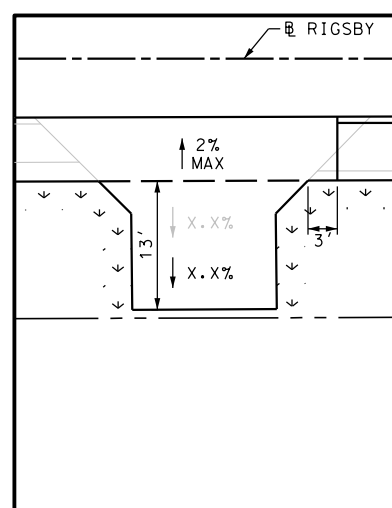
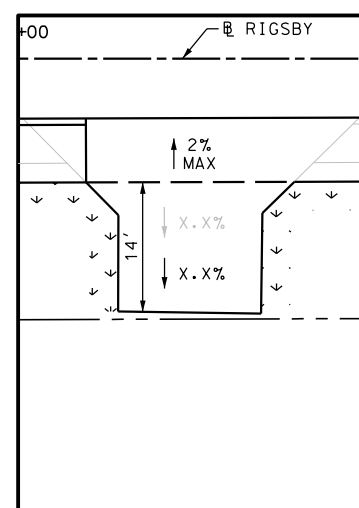
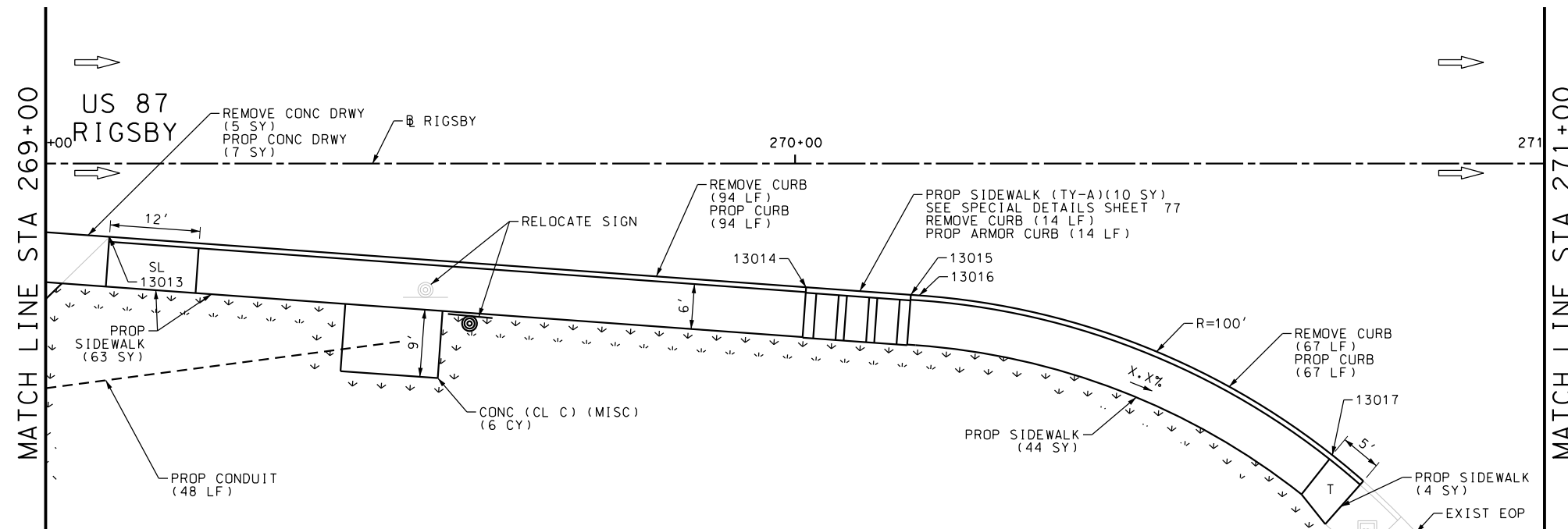
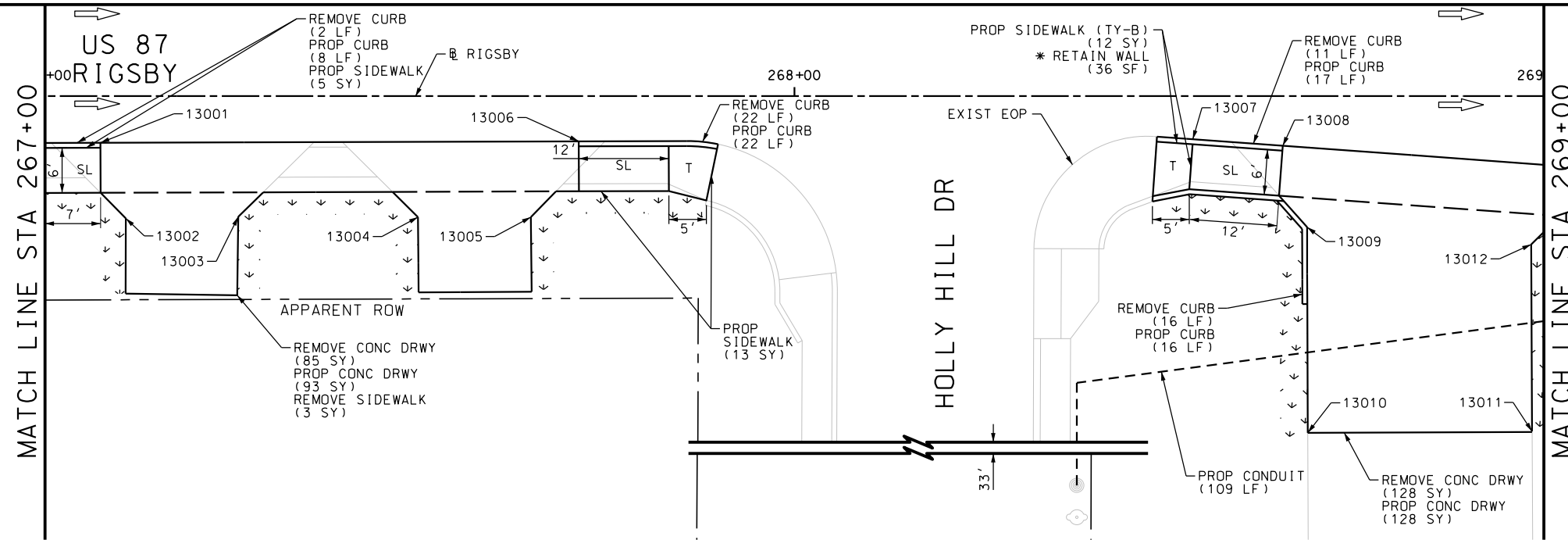
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 263+00 TO STA 267+00

SHEET 32 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	242

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_33.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	218
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	226
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	3
0162-6002	BLOCK SODDING	SY	137
0168-6001	VEGETATIVE WATERING	MG	2.14
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	237
0529-6020	CONC CURB & GUTTER (ARMOR CURB)	LF	14
0530-6004	DRIVEWAYS (CONC)	SY	228
0531-6001	CONC SIDEWALKS (4")	SY	120
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	10
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	12
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	157
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 267+00 TO STA 271+00

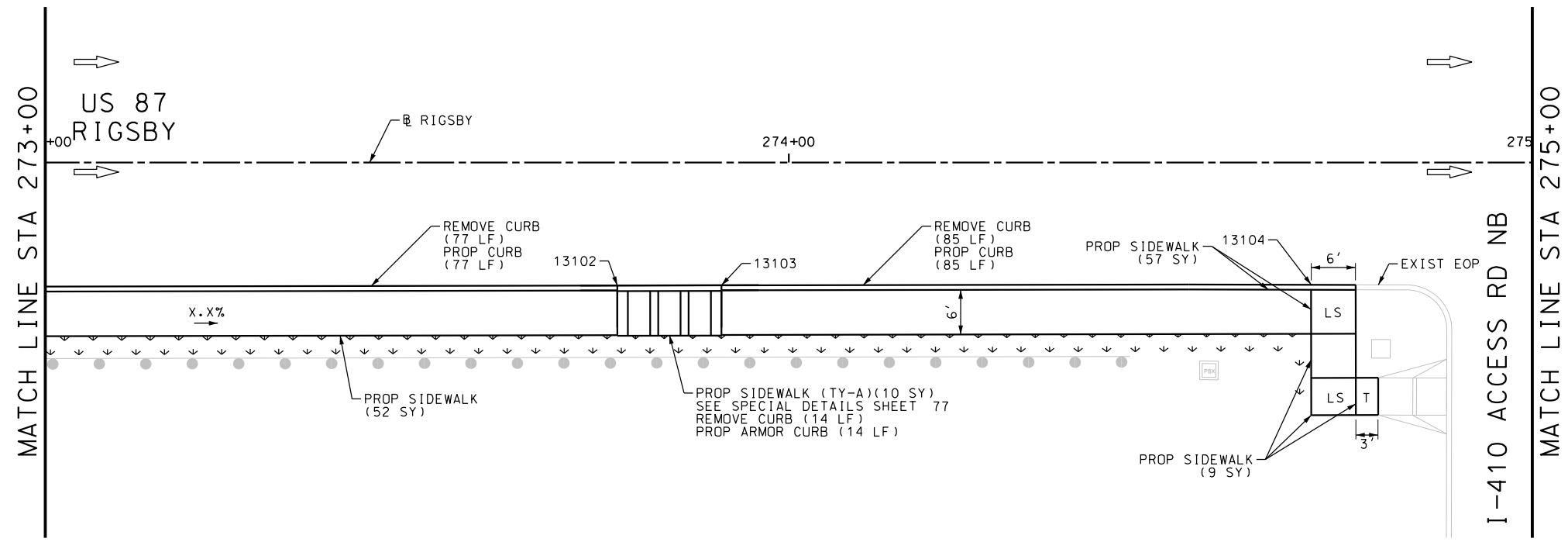
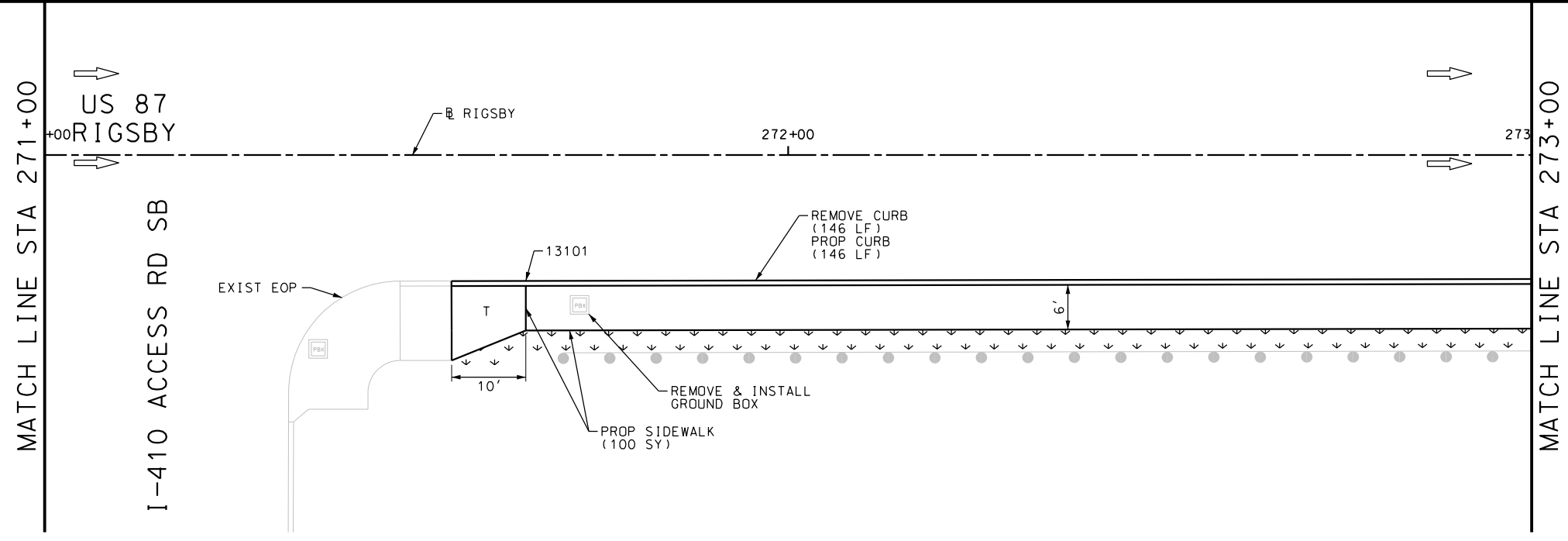
SHEET 33 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	243

Plotted on: 9/29/2017

Design File name: P:\111\35\01\des\ign\Civil\Roadway\Rigsby\113501\_Rigsby\_34.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	322
0162-6002	BLOCK SODDING	SY	105
0168-6001	VEGETATIVE WATERING	MG	1.64
0529-6002	CONC CURB (TY II)	LF	308
0529-6020	CONC CURB & GUTTER (ARMOR CURB)	LF	14
0531-6001	CONC SIDEWALKS (4")	SY	218
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	10
0624-6009	GROUND BOX TY D (162922)	EA	1
0624-6028	REMOVE GROUND BOX	EA	1



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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
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REVIEW AND APPROVAL  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



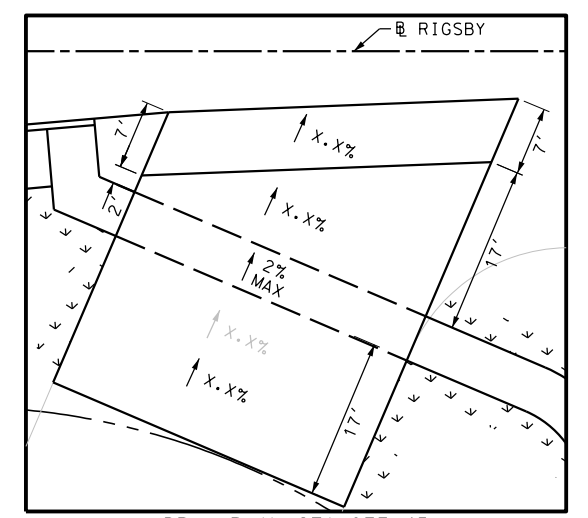
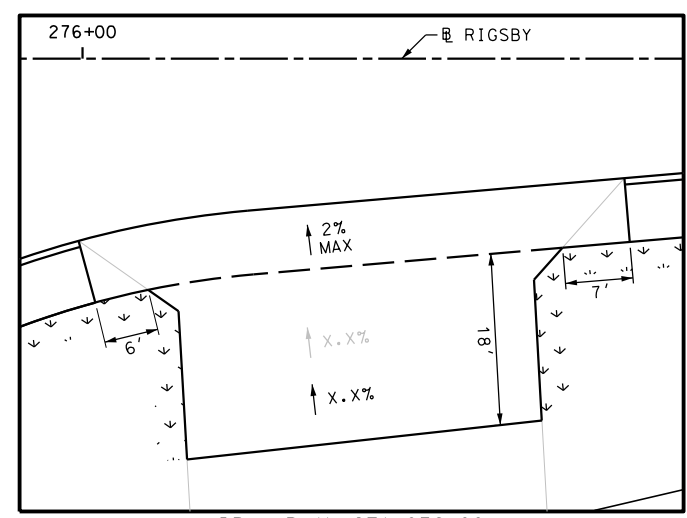
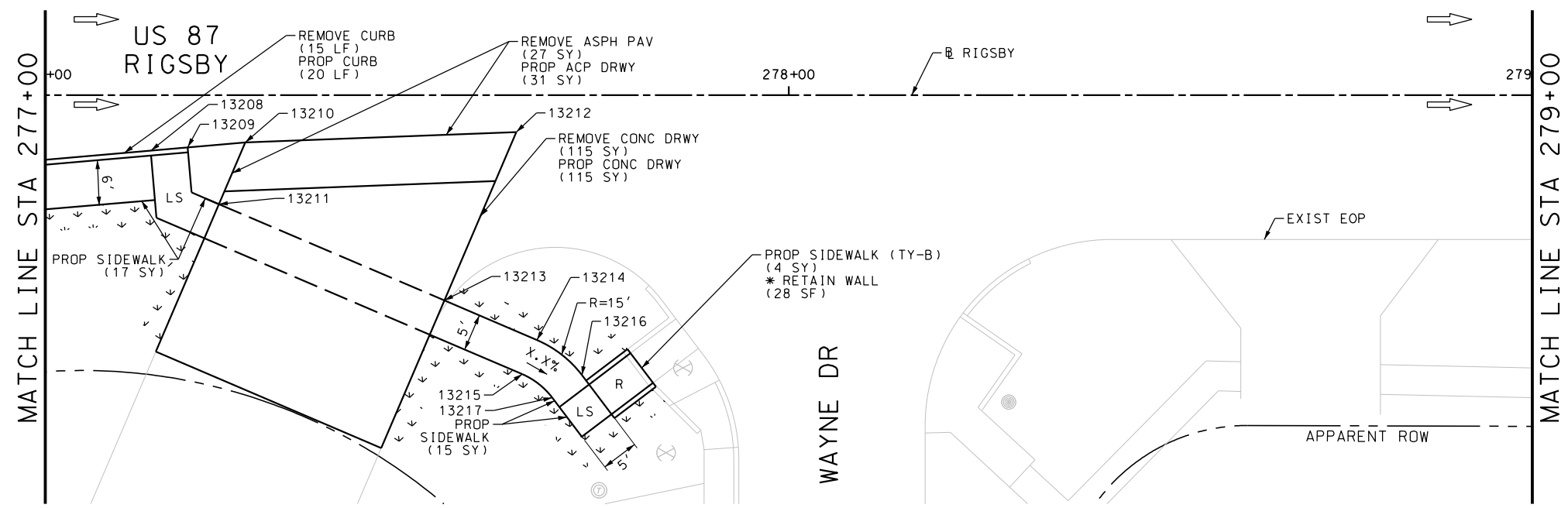
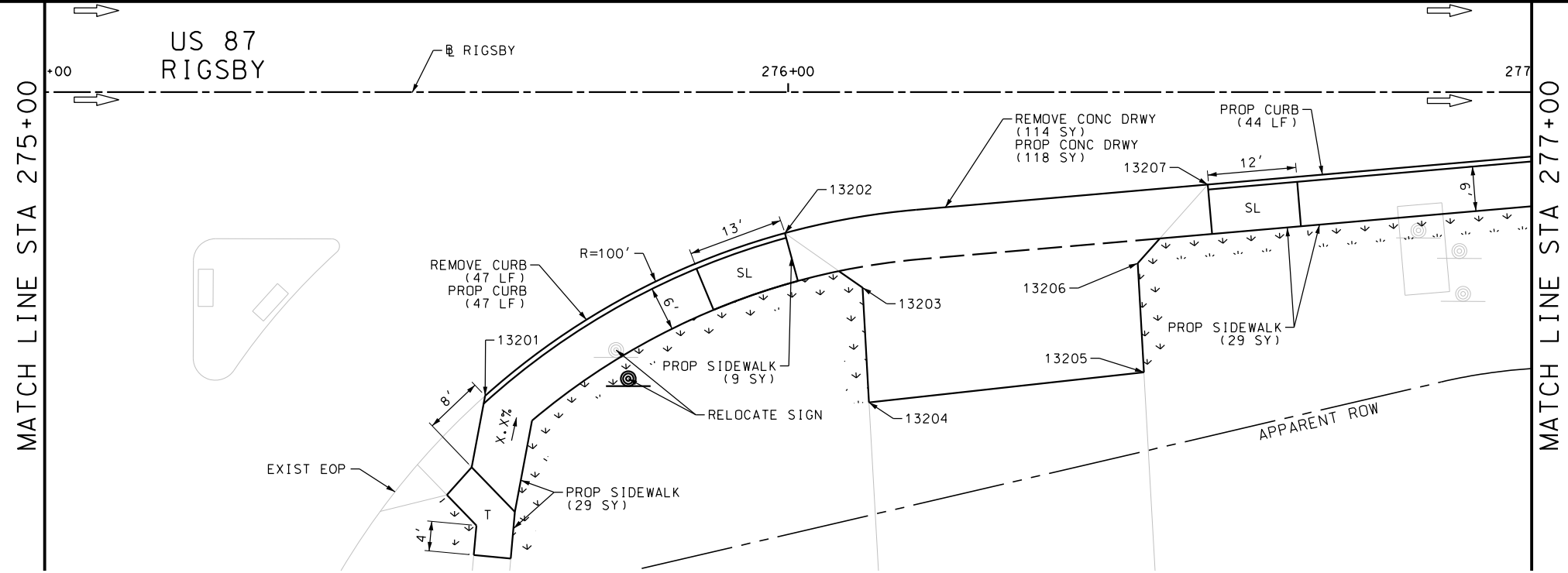
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 271+00 TO STA 275+00

SHEET 34 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	244

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_35.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	229
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	62
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	27
0162-6002	BLOCK SODDING	SY	93
0168-6001	VEGETATIVE WATERING	MG	1.45
0529-6002	CONC CURB (TY II)	LF	111
0530-6004	DRIVEWAYS (CONC)	SY	233
0530-6005	DRIVEWAYS (ACP)	SY	31
0531-6001	CONC SIDEWALKS (4")	SY	99
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	4
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

NOTES:  
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 P.E. SERIAL NO: 105193  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
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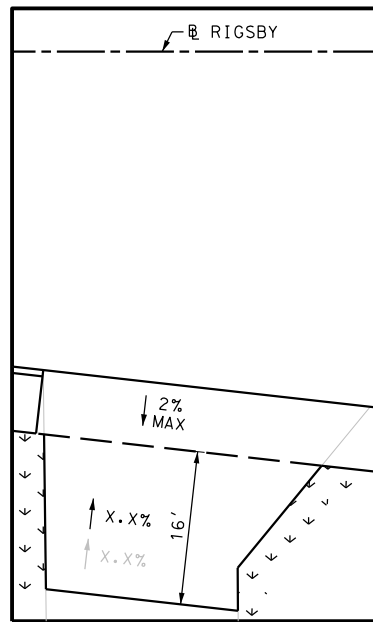
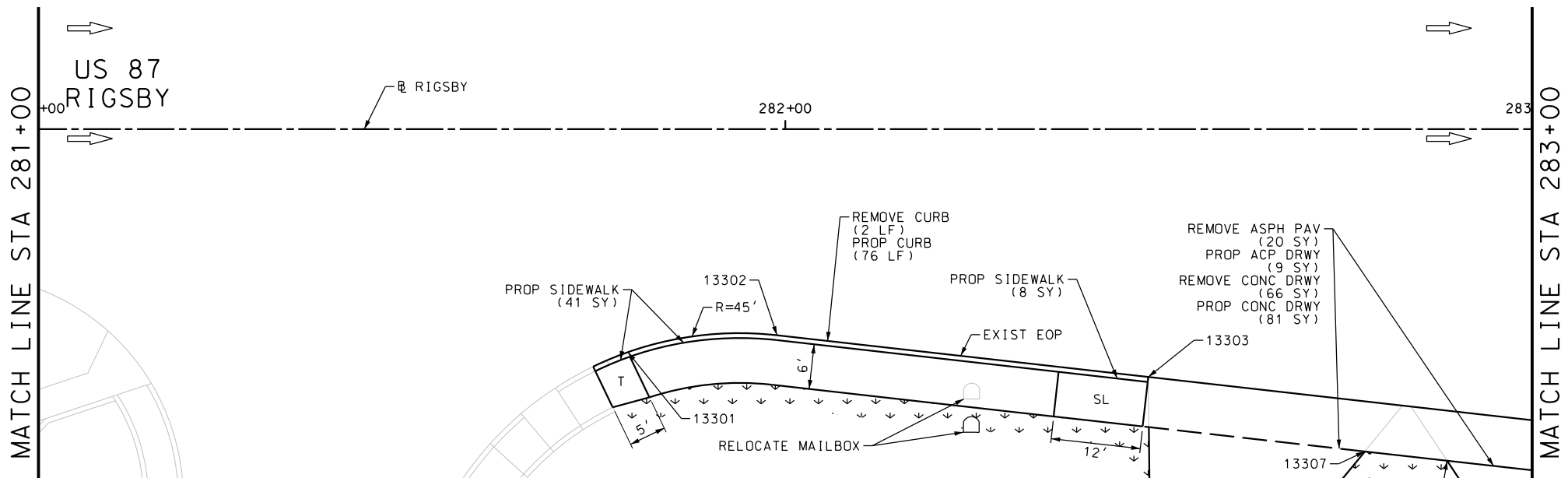
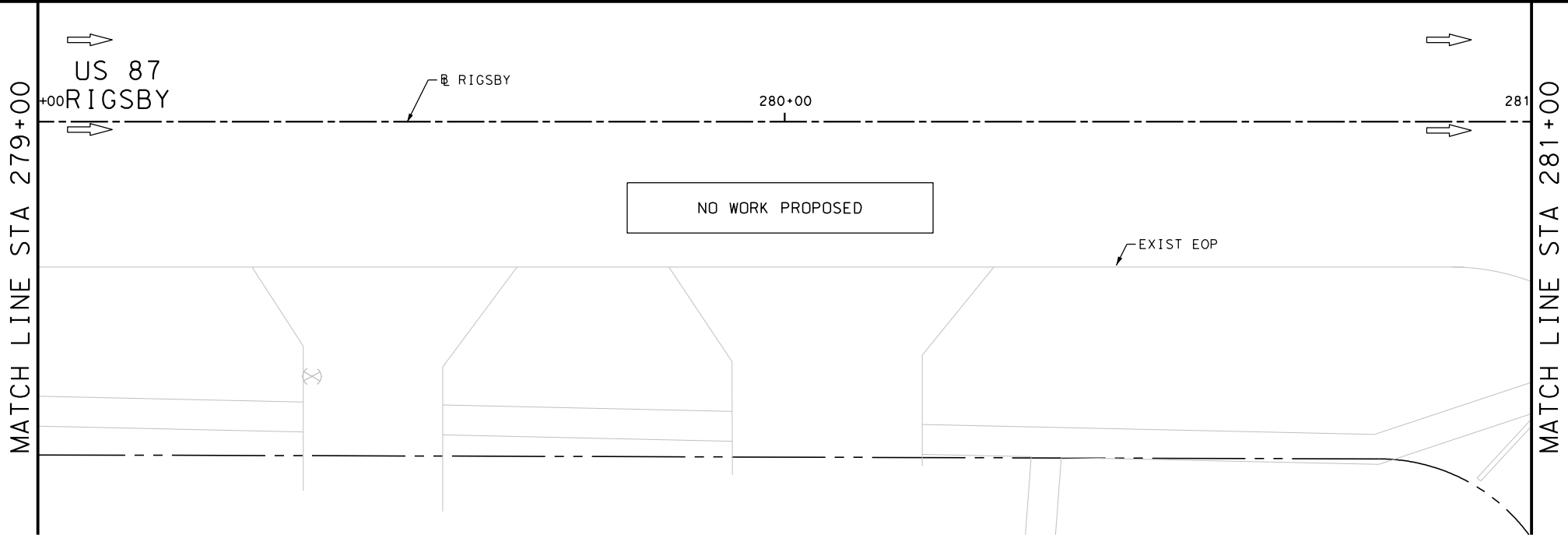
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 275+00 TO STA 279+00

SHEET 35 OF 80

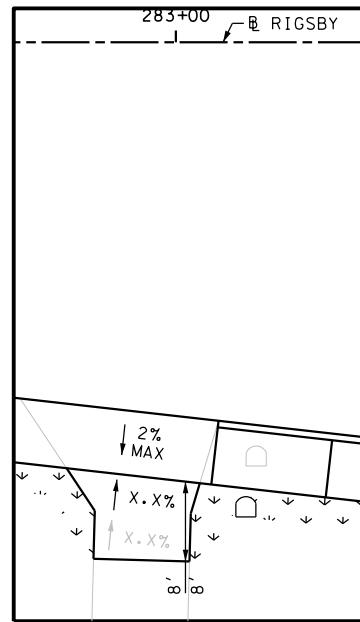
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	245

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_36.dgn



DRWY PLAN STA 282+63



DRWY PLAN STA 282+96

ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	66
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	2
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	20
0162-6002	BLOCK SODDING	SY	42
0168-6001	VEGETATIVE WATERING	MG	0.66
0529-6002	CONC CURB (TY II)	LF	76
0530-6004	DRIVEWAYS (CONC)	SY	81
0530-6005	DRIVEWAYS (ACP)	SY	9
0531-6001	CONC SIDEWALKS (4")	SY	49
0560-6014	MAILBOX INSTALL-S (TWG-POST) TY 4	EA	1

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 279+00 TO STA 283+00

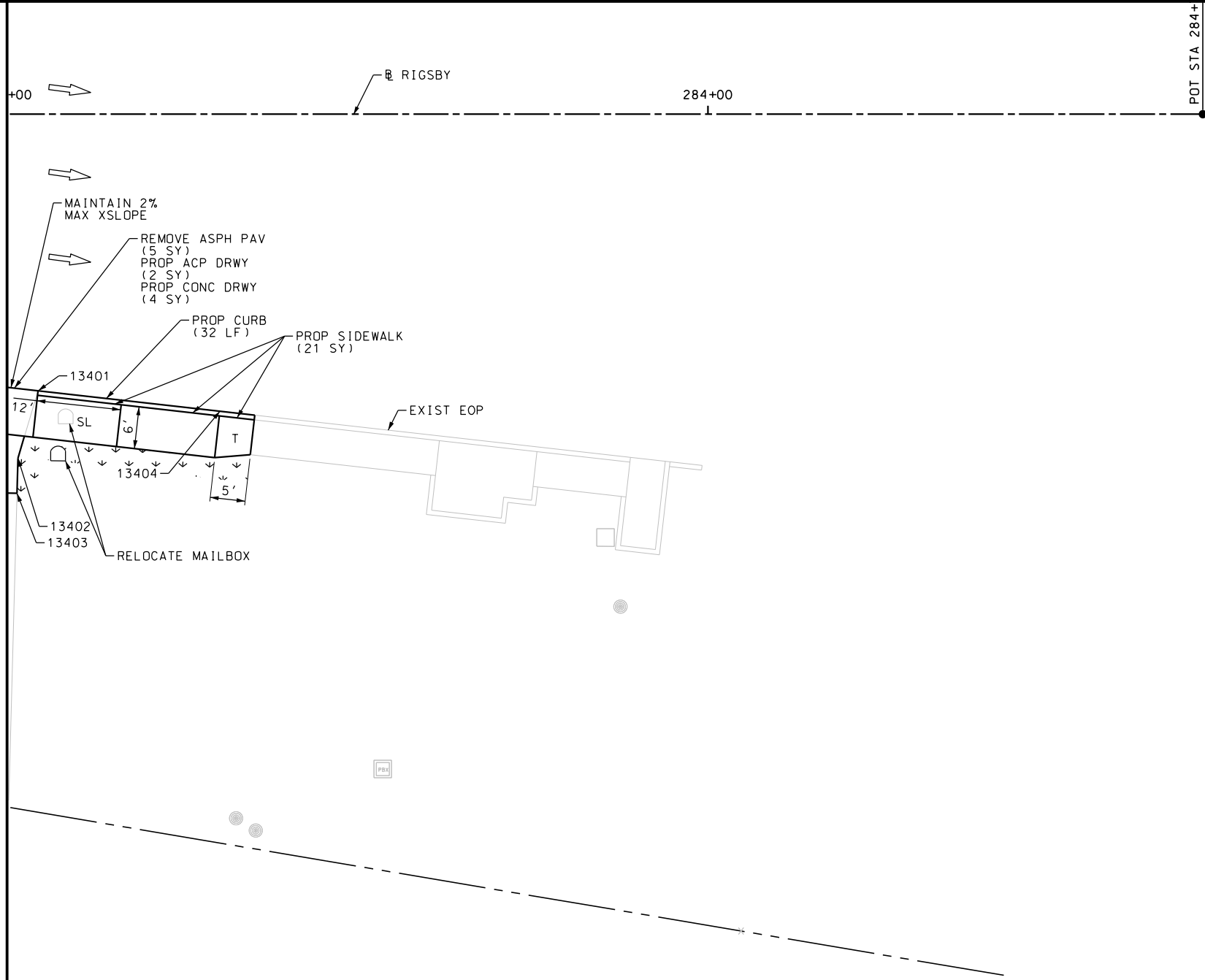
SHEET 36 OF 80

DGN:	FED. RD. DIV. NO.:	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	246

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_37.dgn

MATCH LINE STA 283+00



US 87  
RIGSBY

ITEM	DESCRIPTION	UNIT	QTY
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	5
0162-6002	BLOCK SODDING	SY	25
0168-6001	VEGETATIVE WATERING	MG	0.39
0529-6002	CONC CURB (TY II)	LF	32
0530-6004	DRIVEWAYS (CONC)	SY	4
0530-6005	DRIVEWAYS (ACP)	SY	2
0531-6001	CONC SIDEWALKS (4")	SY	21
0560-6014	MAILBOX INSTALL-S (TWG-POST) TY 4	EA	1

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



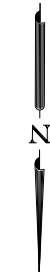
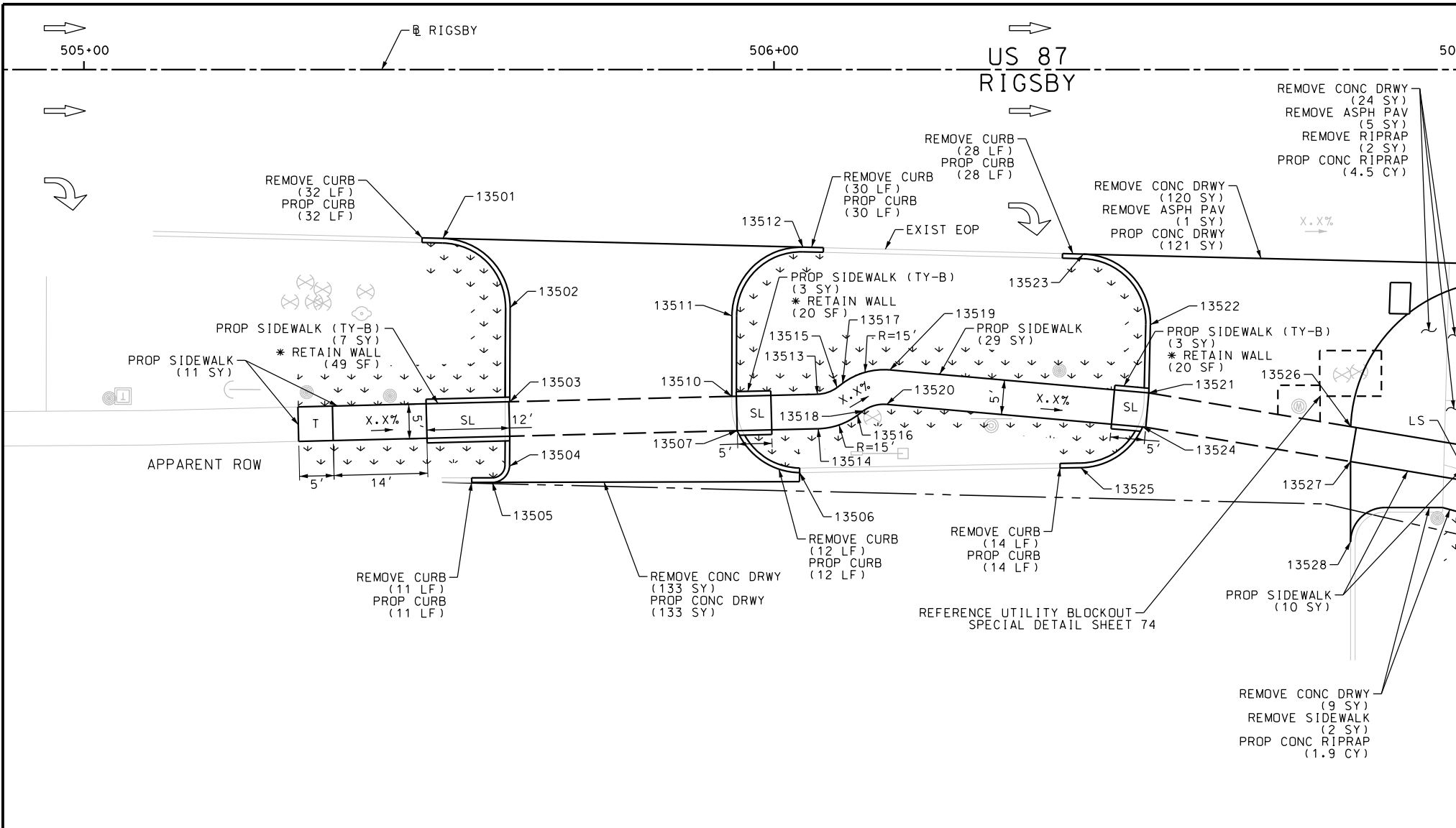
US 87  
RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 283+00 TO END PROJECT

SHEET 37 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	247

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\113501\_Rigsby\_38.dgn



MATCH LINE STA 507+00

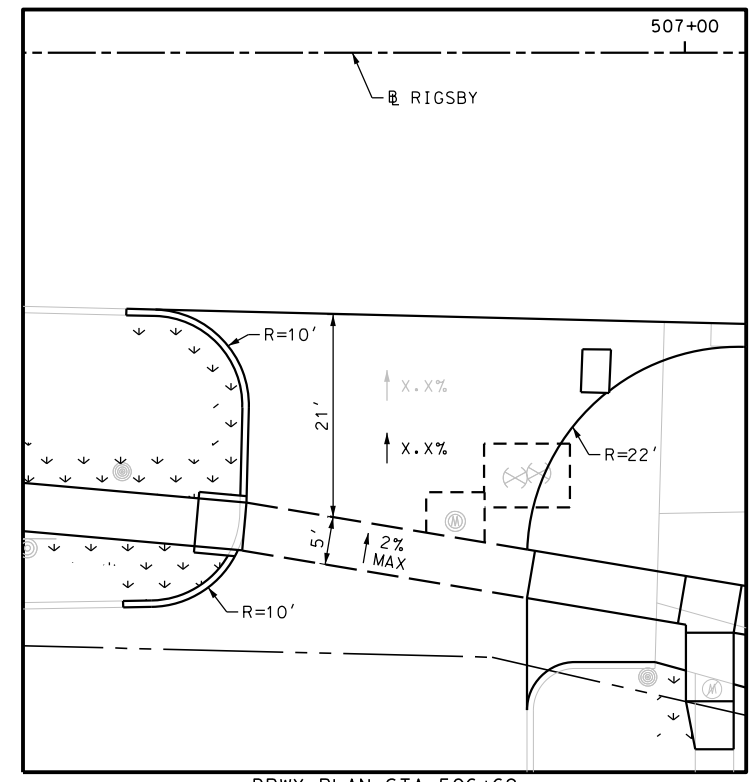
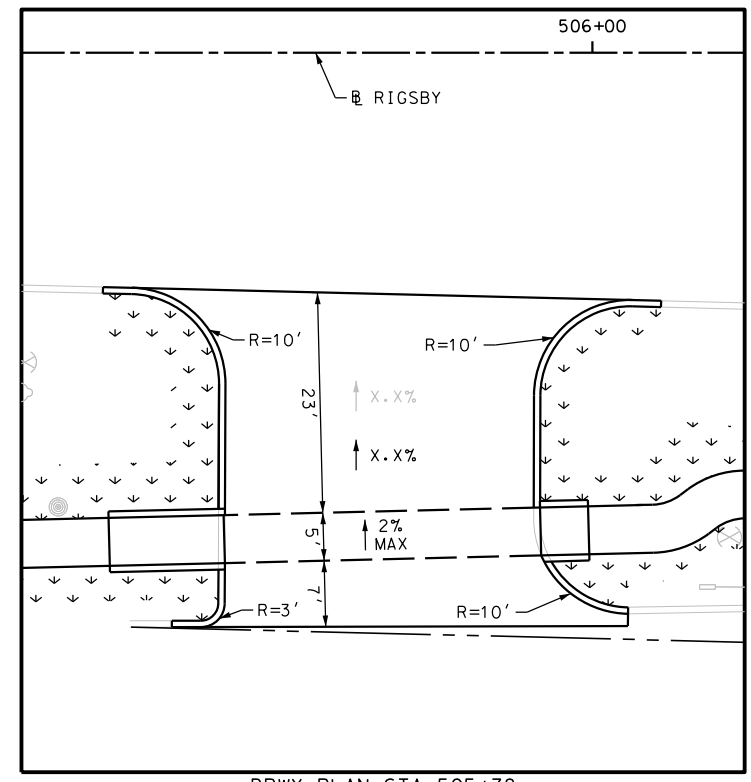
ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	2
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	286
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	127
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	2
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	6
0162-6002	BLOCK SODDING	SY	110
0168-6001	VEGETATIVE WATERING	MG	1.72
0432-6003	RIPRAP (CONC) (6 IN)	CY	6.4
0529-6002	CONC CURB (TY II)	LF	127
0530-6004	DRIVEWAYS (CONC)	SY	254
0531-6001	CONC SIDEWALKS (4")	SY	50
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	13

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'



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

Texas Department of Transportation  
 © 2017

US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 505+00 TO STA 507+00

SHEET 38 OF 80

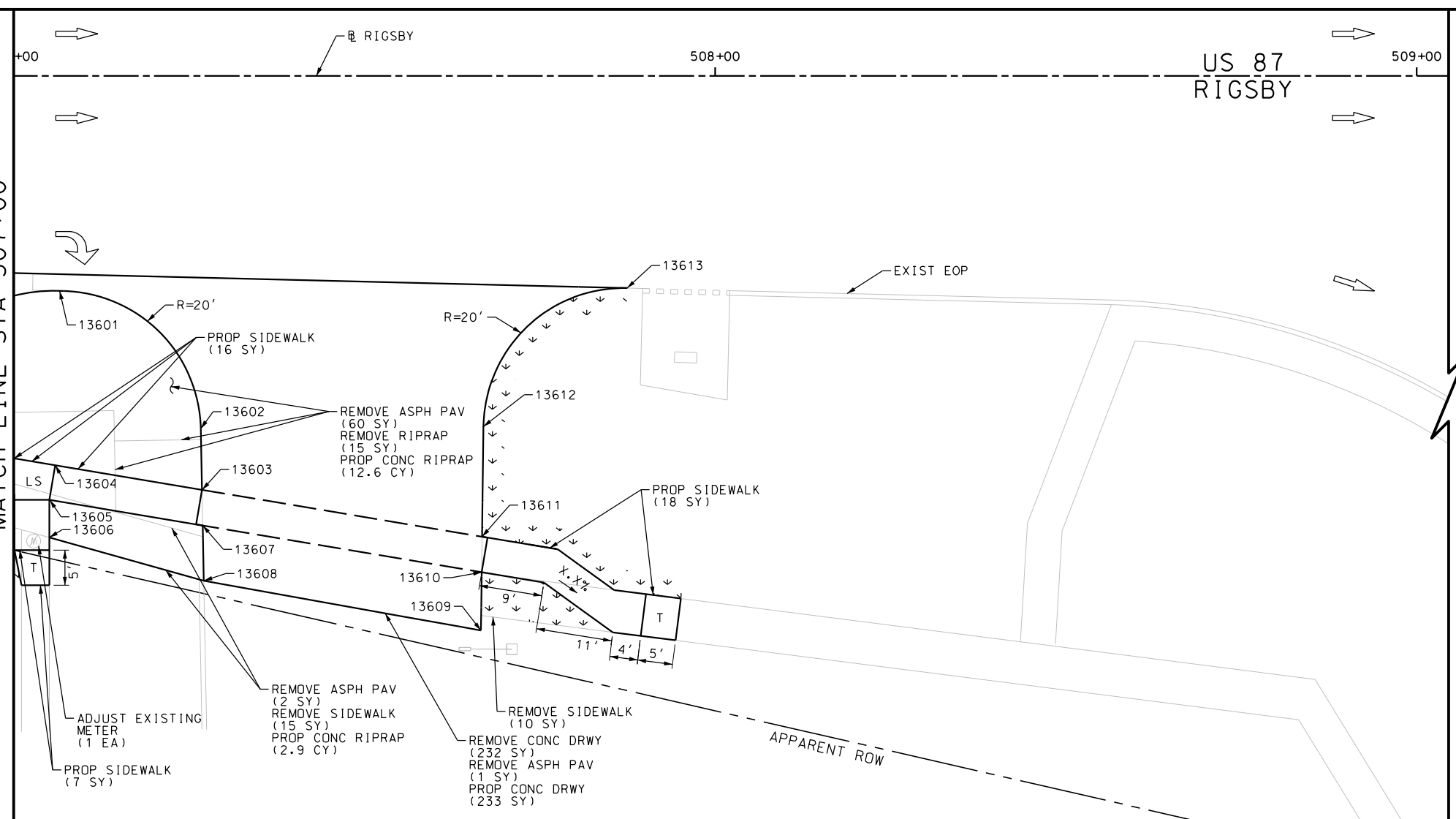
DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	248



Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_39.dgn

MATCH LINE STA 507+00



ITEM	DESCRIPTION	UNIT	QTY
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	1
0104-6009	REMOVING CONC (RIPRAP)	SY	15
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	232
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	25
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	63
0162-6002	BLOCK SODDING	SY	13
0168-6001	VEGETATIVE WATERING	MG	0.20
0432-6003	RIPRAP (CONC) (6 IN)	CY	15.5
0530-6004	DRIVEWAYS (CONC)	SY	233
0531-6001	CONC SIDEWALKS (4")	SY	41

NOTES:  
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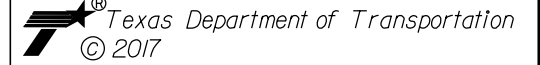
DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



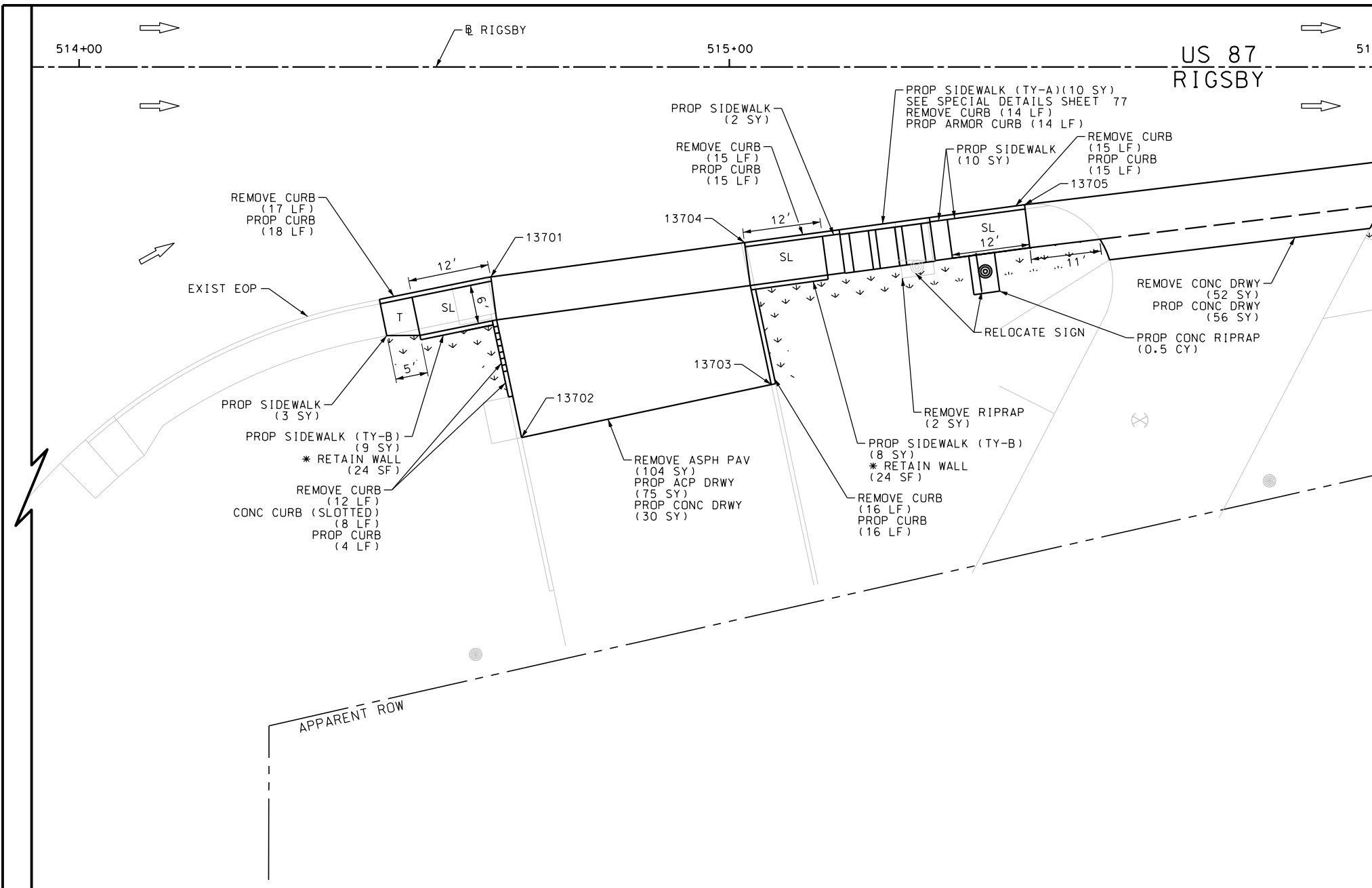
US 87  
 RIGSBY  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 507+00 TO STA 509+00

SHEET 39 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	249

Plotted on: 9/29/2017

Design File name: P:\111.35\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_40.dgn



MATCH LINE STA 516+00

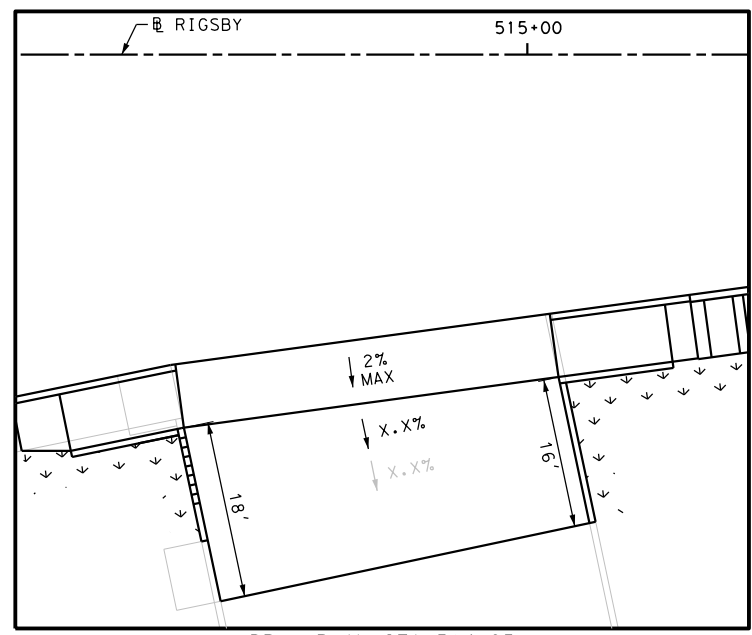
ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	2
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	52
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	89
0105-6037	REMOVING STAB BASE AND ASPH PAV(0"-16")	SY	104
0162-6002	BLOCK SODDING	SY	38
0168-6001	VEGETATIVE WATERING	MG	0.59
0432-6003	RIPRAP (CONC) (6 IN)	CY	0.5
0529-6002	CONC CURB (TY II)	LF	68
0529-6012	CONC CURB (SLOTTED)	LF	8
0529-6020	CONC CURB & GUTTER (ARMOR CURB)	LF	14
0530-6004	DRIVEWAYS (CONC)	SY	86
0530-6005	DRIVEWAYS (ACP)	SY	75
0531-6001	CONC SIDEWALKS (4")	SY	15
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	10
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	17
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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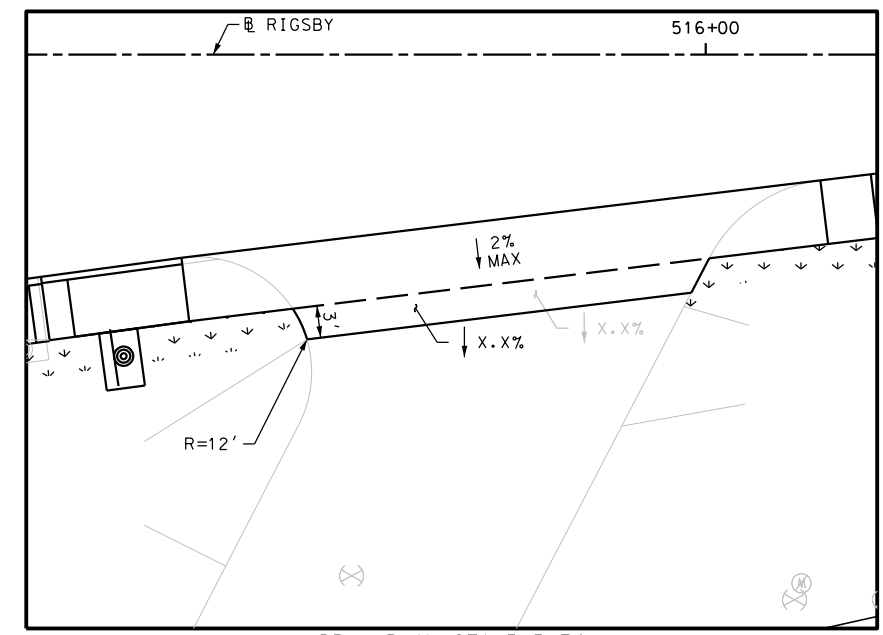
DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'



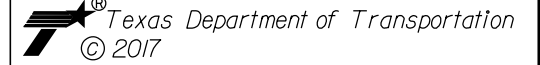
DRWY PLAN STA 514+85



DRWY PLAN STA 515+74

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 | TPLS FIRM REGISTRATION #10028800



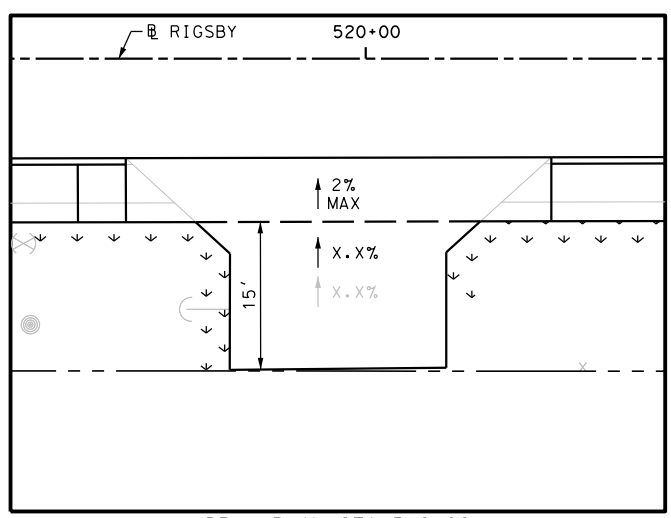
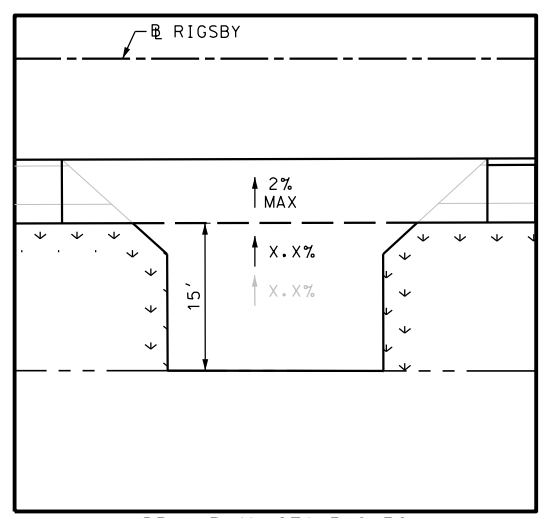
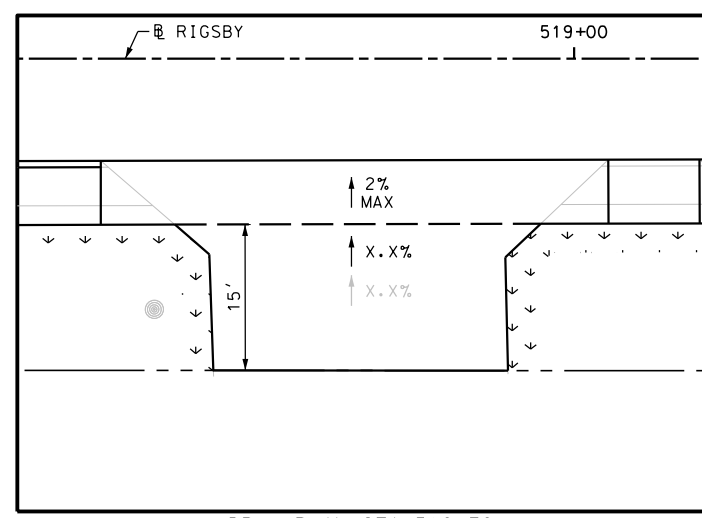
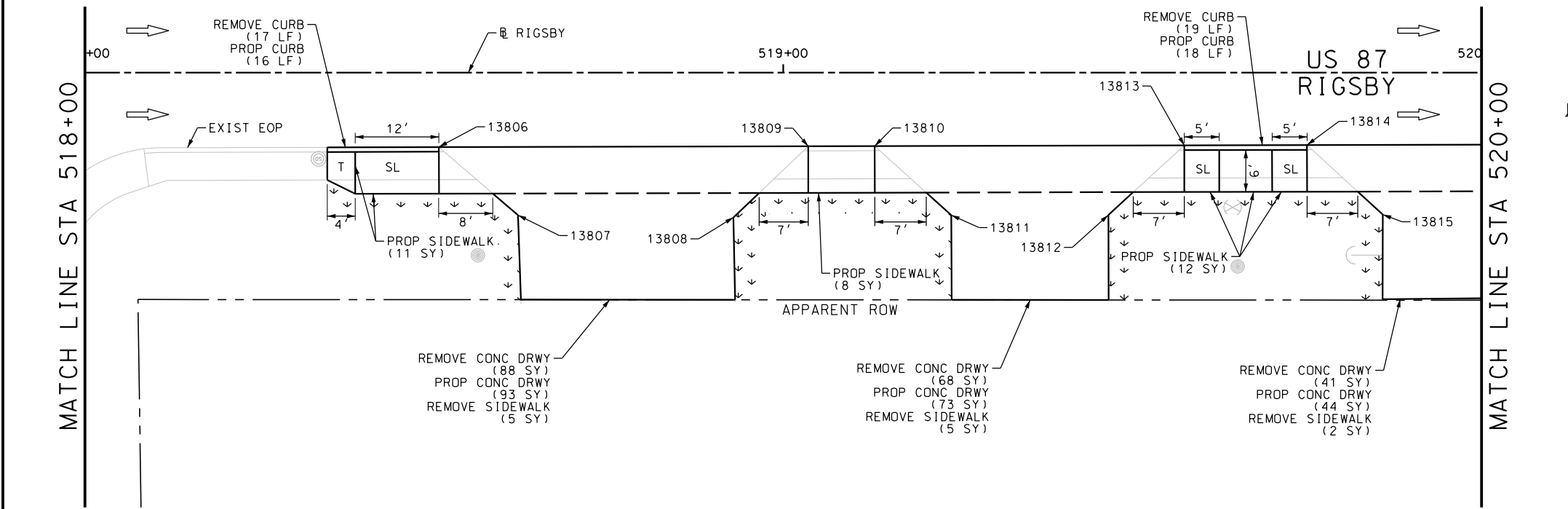
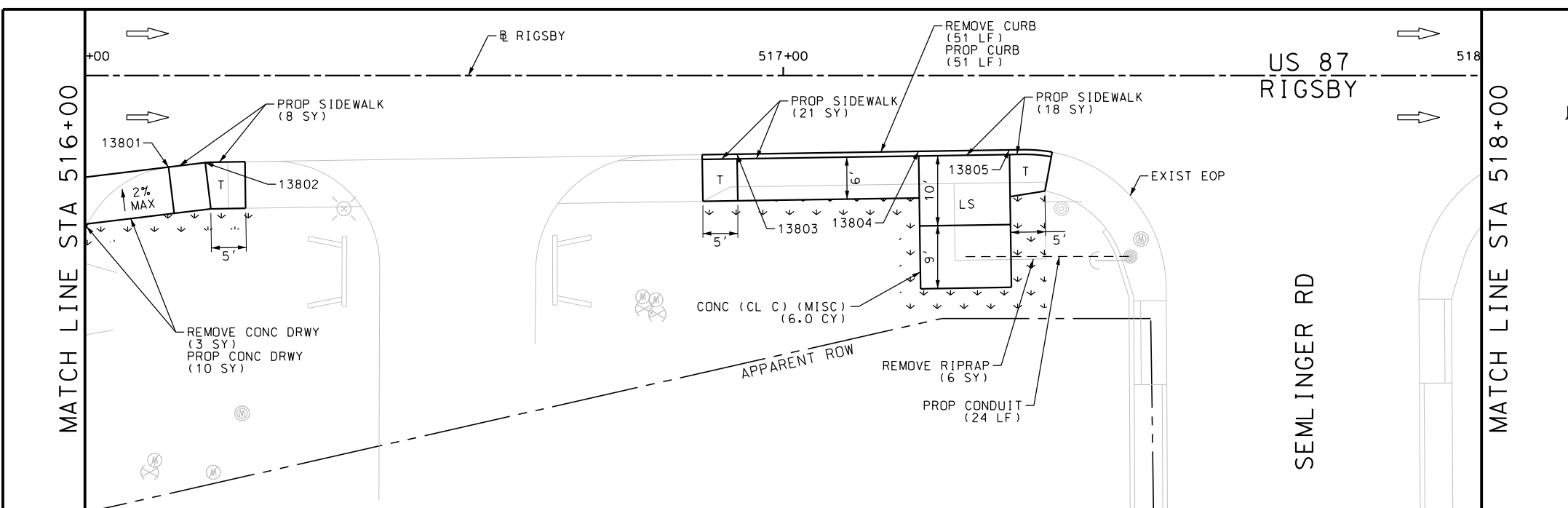
US 87  
 RIGSBY  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 514+00 TO STA 516+00

SHEET 40 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	250

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_41.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	6
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	200
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	87
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	12
0162-6002	BLOCK SODDING	SY	82
0168-6001	VEGETATIVE WATERING	MG	1.28
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	85
0530-6004	DRIVEWAYS (CONC)	SY	220
0531-6001	CONC SIDEWALKS (4")	SY	78
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	24

NOTES:  
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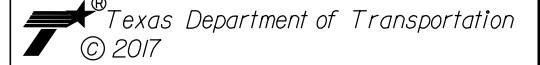
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 516+00 TO STA 520+00

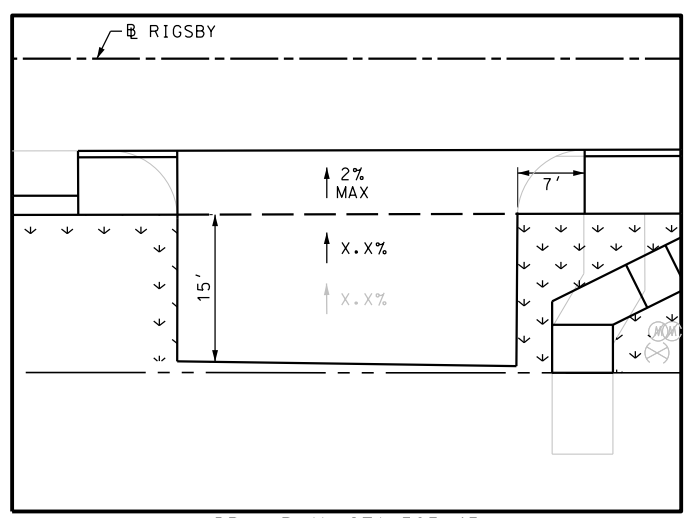
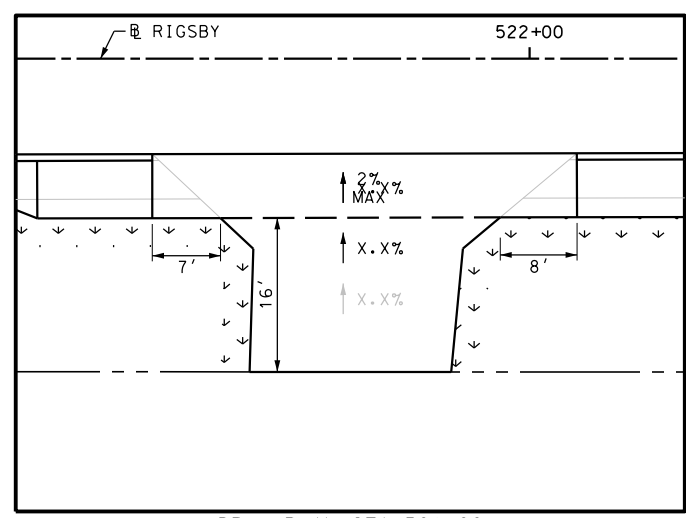
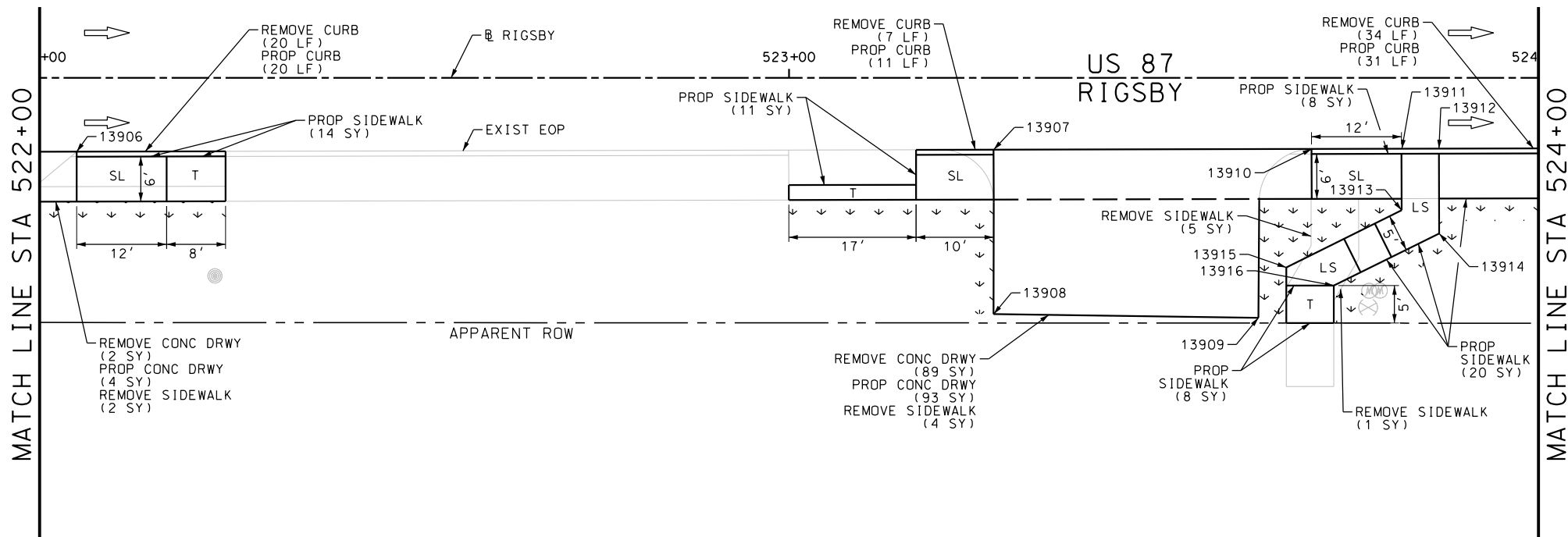
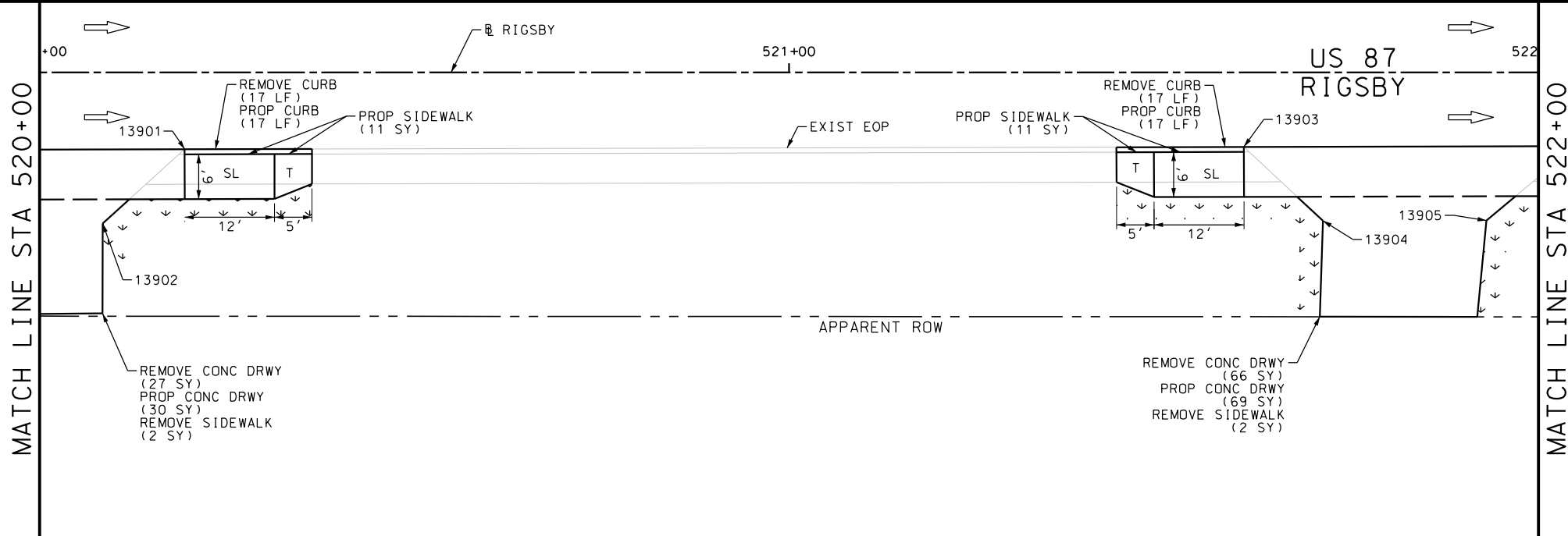
SHEET 41 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	251

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_42.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	184
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	95
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	16
0162-6002	BLOCK SODDING	SY	80
0168-6001	VEGETATIVE WATERING	MG	1.25
0529-6002	CONC CURB (TY II)	LF	96
0530-6004	DRIVEWAYS (CONC)	SY	196
0531-6001	CONC SIDEWALKS (4")	SY	83



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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



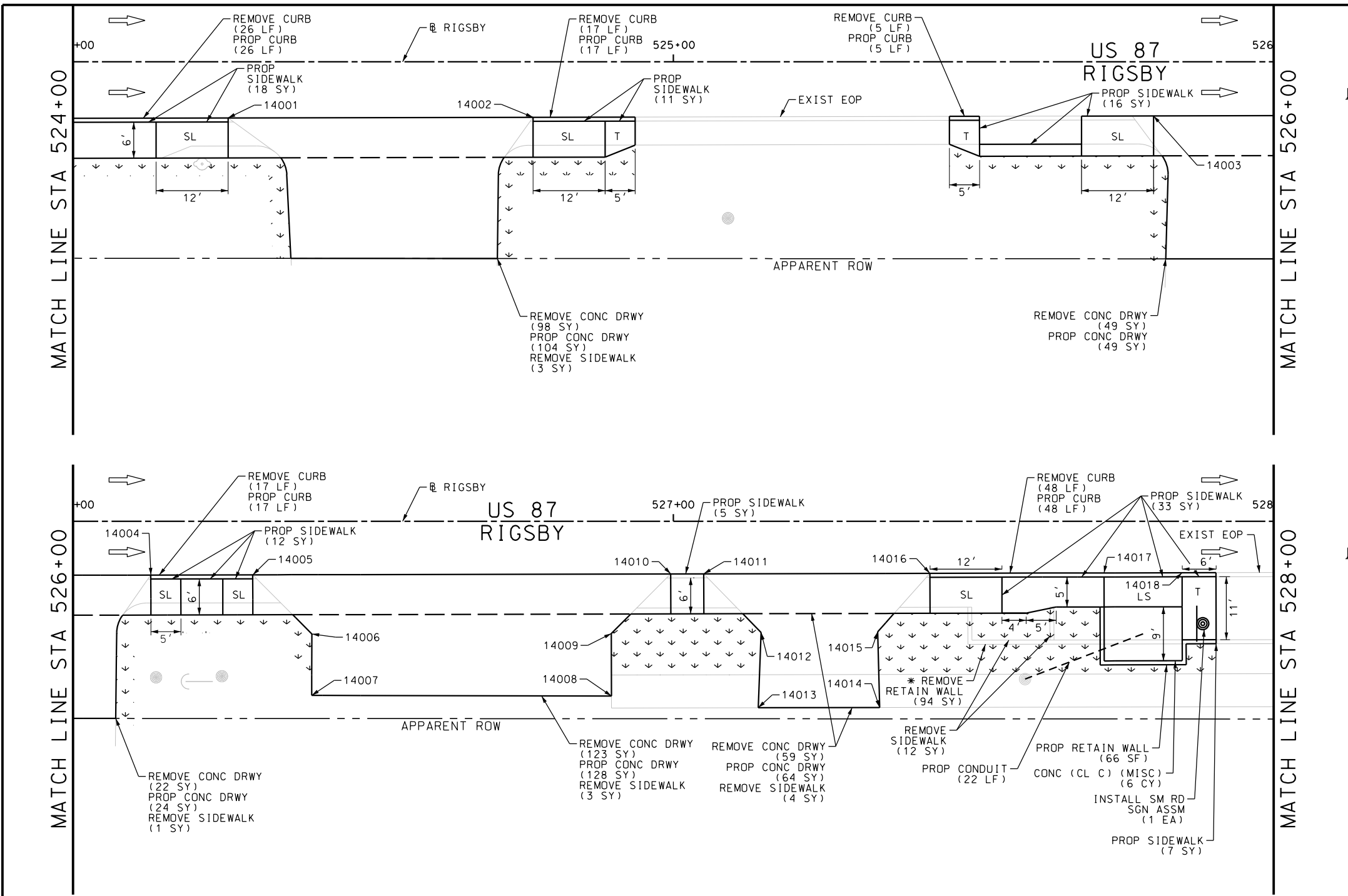
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 520+00 TO STA 524+00

SHEET 42 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	252

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_43.dgn



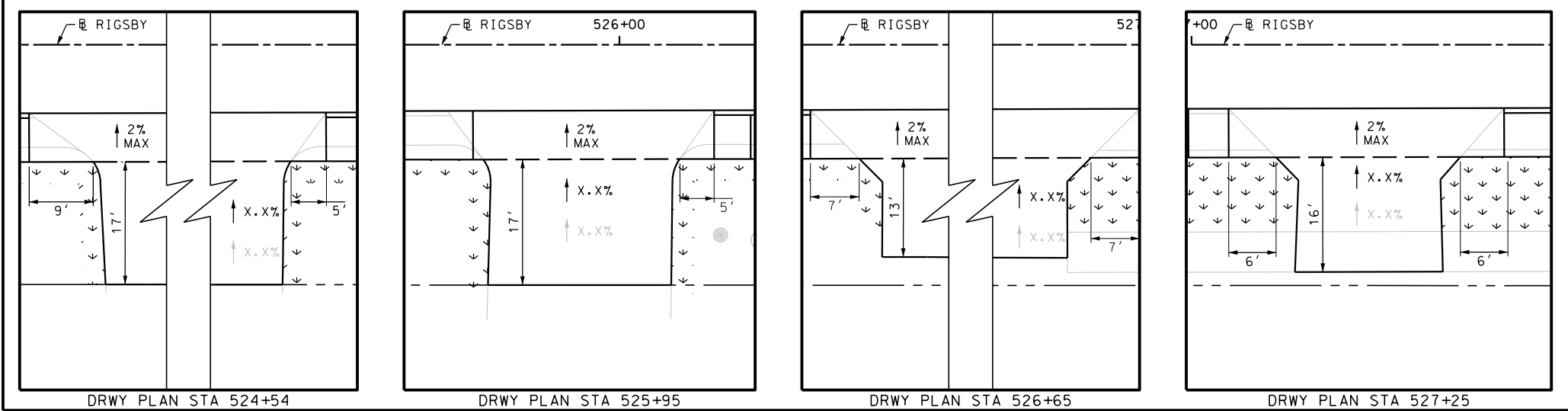
ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	351
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	113
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	23
0162-6002	BLOCK SODDING	SY	141
0168-6001	VEGETATIVE WATERING	MG	2.20
0420-6074	CL C CONC (MISC)	CY	6.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	66
0529-6002	CONC CURB (TY II)	LF	113
0530-6004	DRIVEWAYS (CONC)	SY	369
0531-6001	CONC SIDEWALKS (4")	SY	95
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	22
0644-6001	IN SM RD SN SUP&M TY10BWG(1)SA(P)	EA	1

NOTES:  
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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'



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



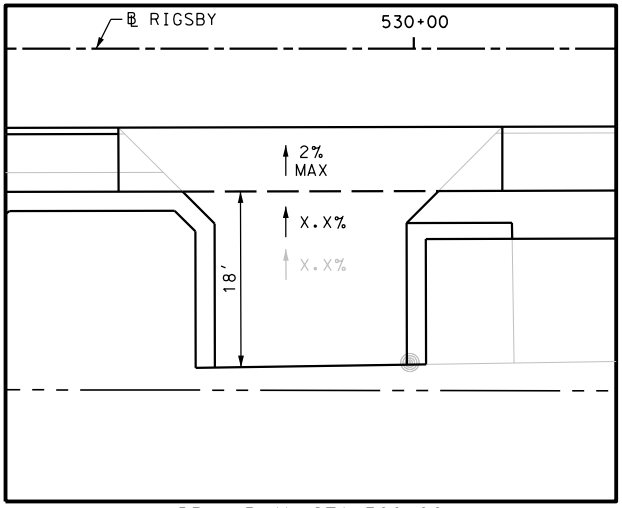
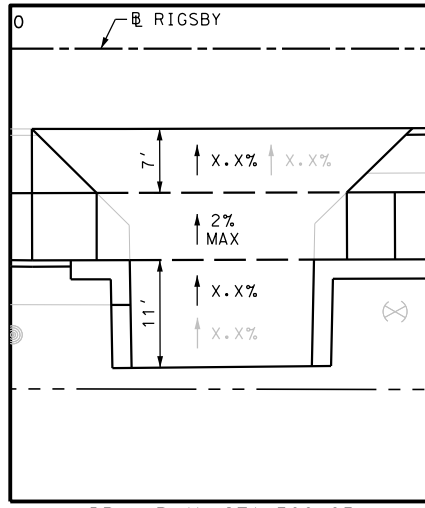
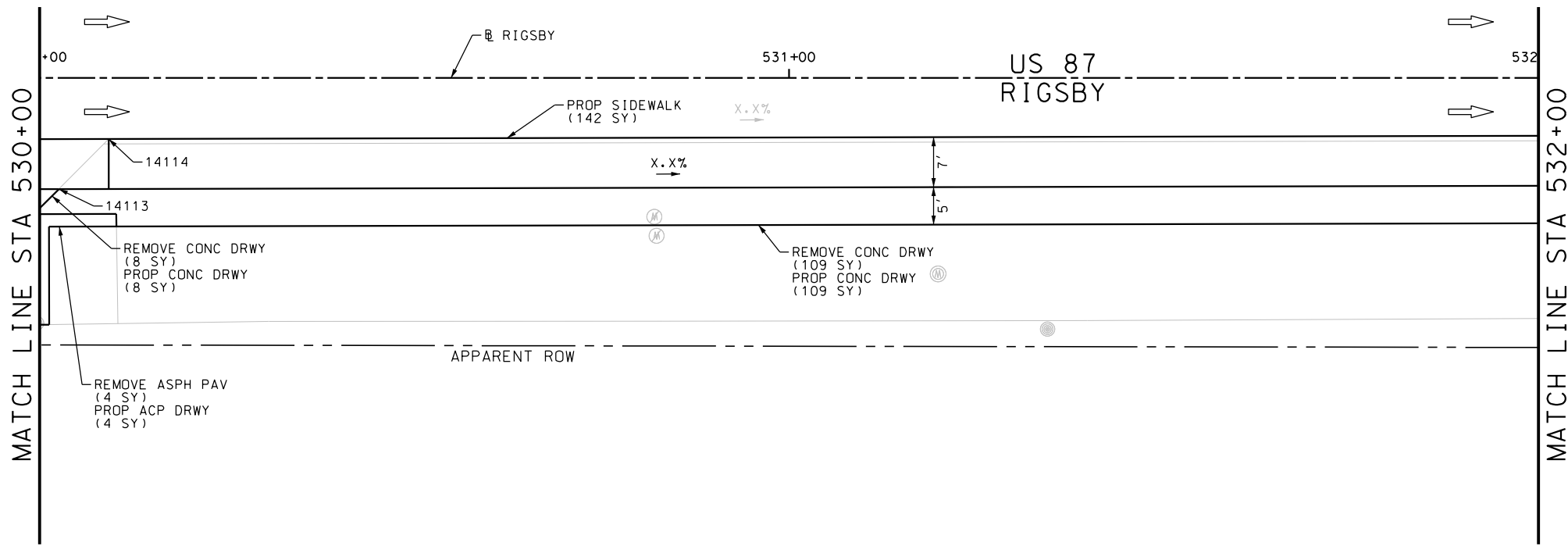
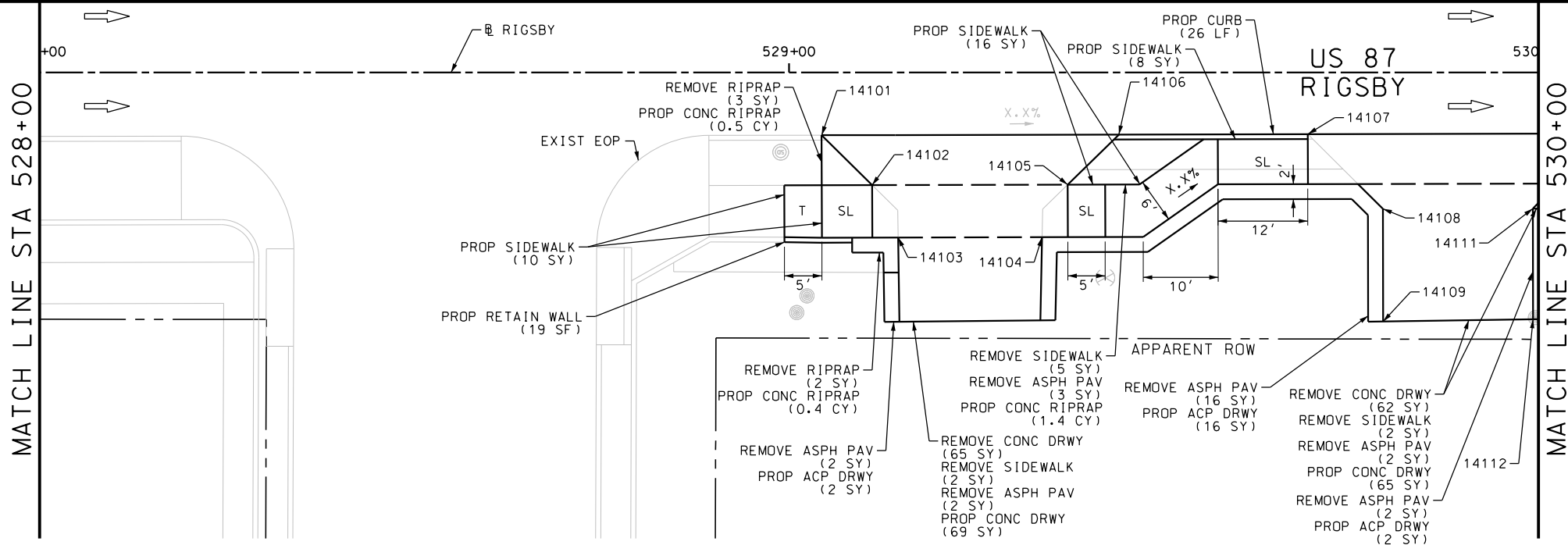
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 524+00 TO STA 528+00

SHEET 43 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
CHK DWG:	SAT	BEXAR	0915	12
				JOB NO.:
				586
				SHEET NO.:
				253

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\113501\_Rigsby\_44.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	5
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	244
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	9
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	31
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	19
0432-6003	RIPRAP (CONC) (6 IN)	CY	2.3
0529-6002	CONC CURB (TY II)	LF	26
0530-6004	DRIVEWAYS (CONC)	SY	251
0530-6005	DRIVEWAYS (ACP)	SY	24
0531-6001	CONC SIDEWALKS (4")	SY	176

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



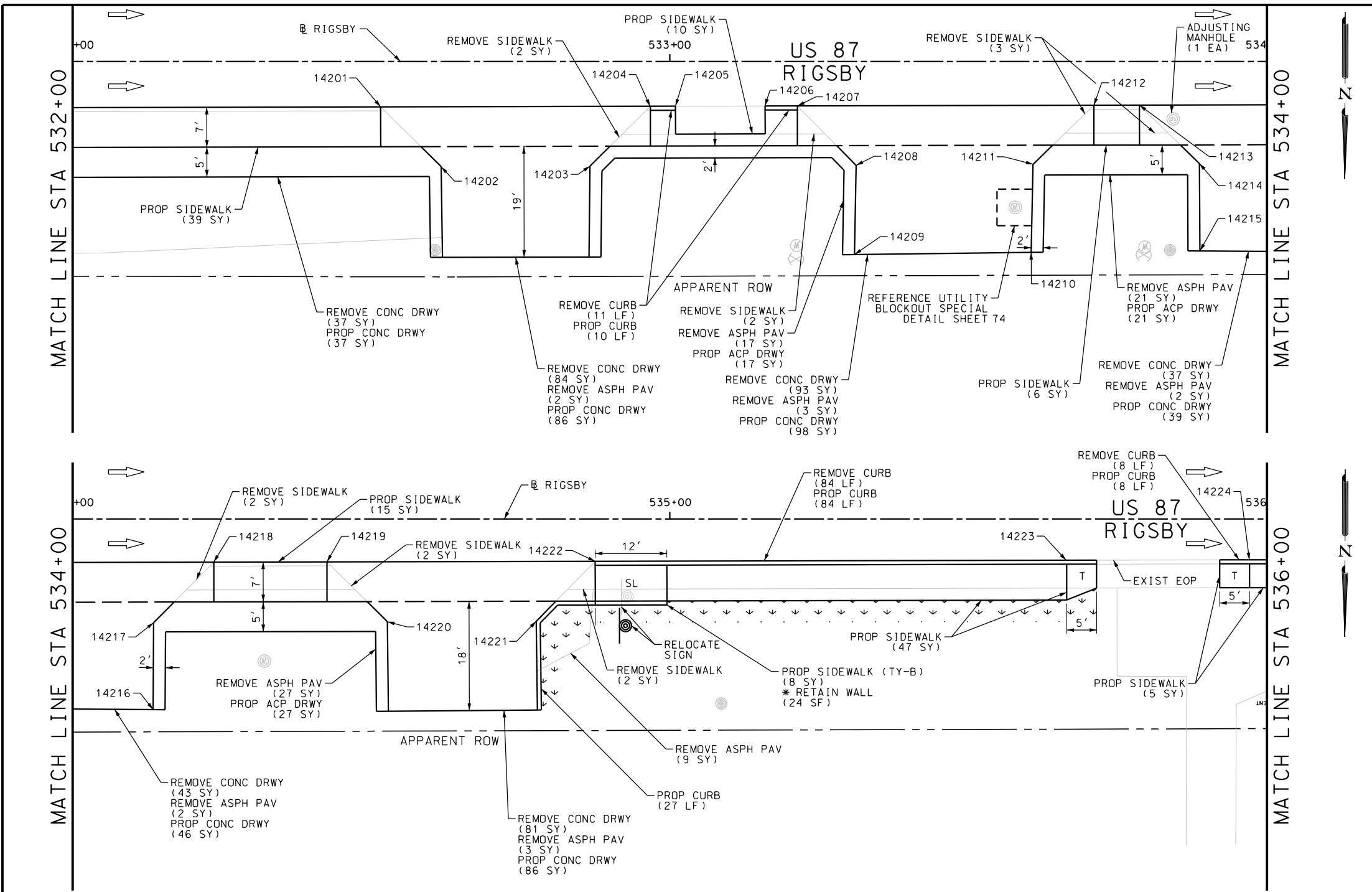
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 528+00 TO STA 532+00

SHEET 44 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	254

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_45.dgn



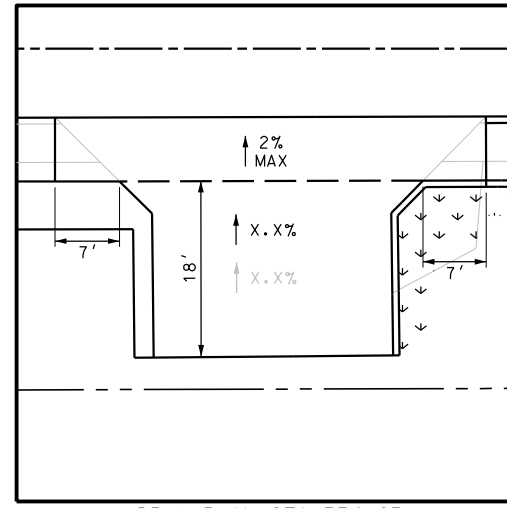
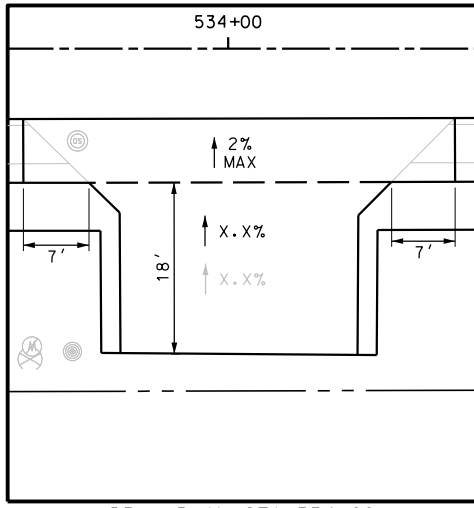
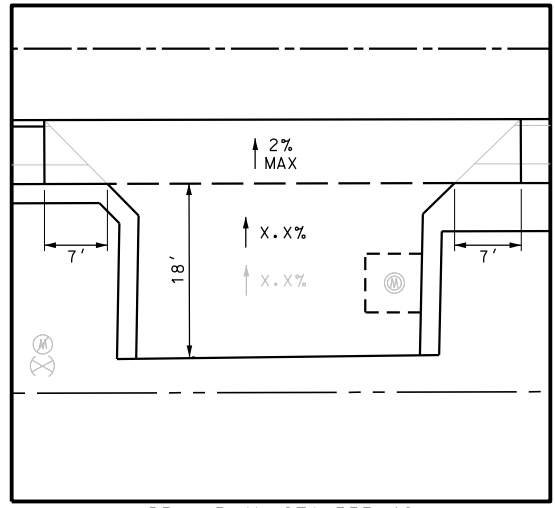
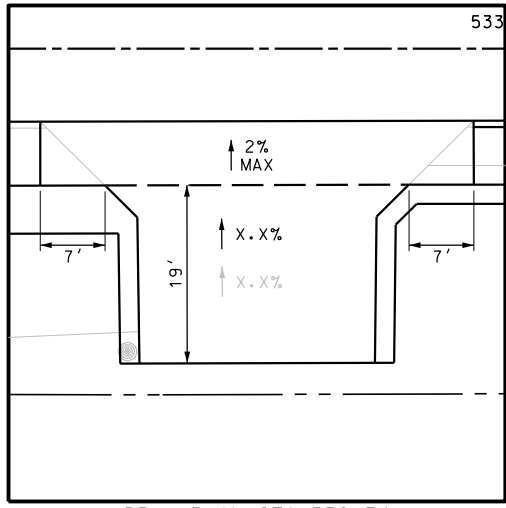
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0479-6001	ADJUSTING MANHOLES	EA	1
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	375
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	103
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	13
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	86
0162-6002	BLOCK SODDING	SY	45
0168-6001	VEGETATIVE WATERING	MG	0.70
0529-6002	CONC CURB (TY II)	LF	102
0530-6004	DRIVEWAYS (CONC)	SY	392
0530-6005	DRIVEWAYS (ACP)	SY	65
0531-6001	CONC SIDEWALKS (4")	SY	122
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	8
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

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**DESIGN**  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

**REVIEW AND APPROVAL**  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'



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

Texas Department of Transportation  
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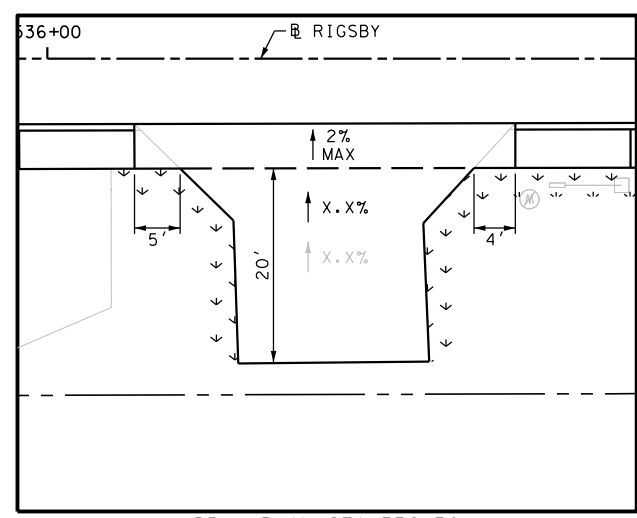
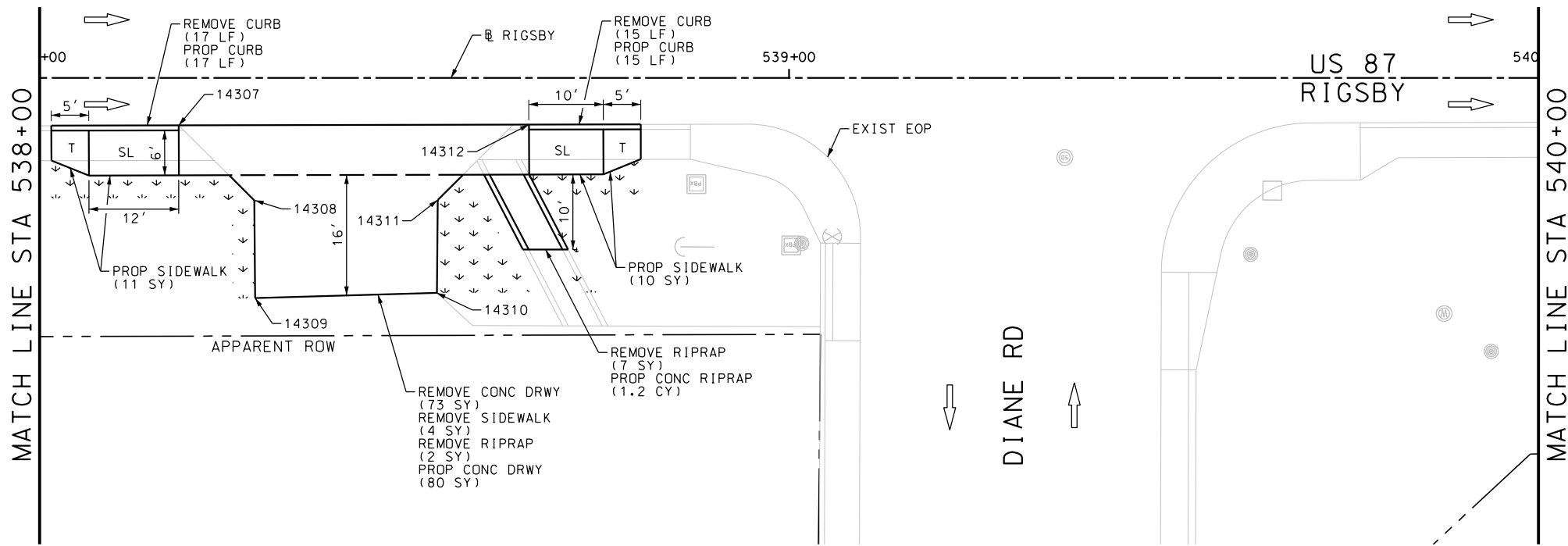
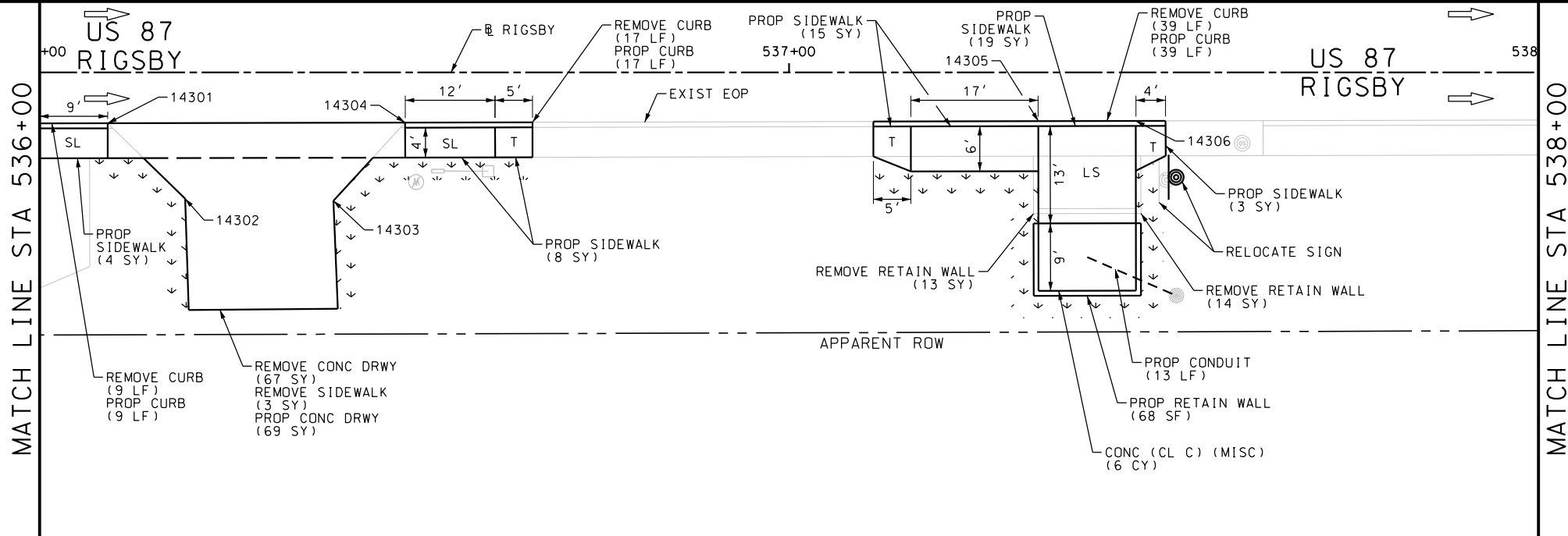
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 532+00 TO STA 536+00

SHEET 45 OF 80

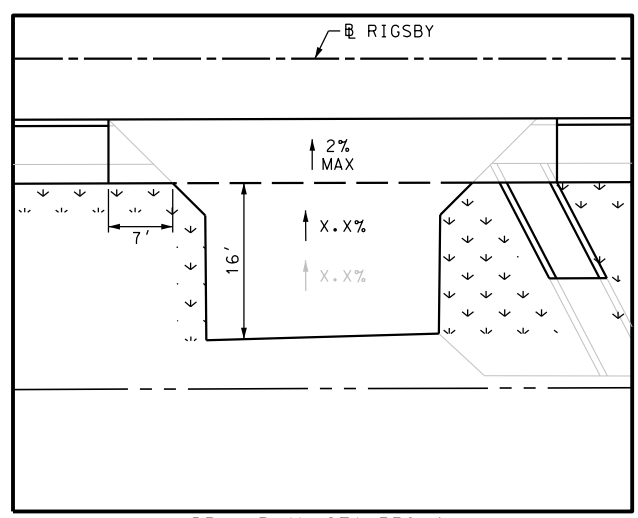
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	255

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_46.dgn



DRWY PLAN STA 536+30



DRWY PLAN STA 538+41

ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	9
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	140
0104-6024	REMOVING CONC (RETAINING WALLS)	SY	27
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	97
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	7
0162-6002	BLOCK SODDING	SY	86
0168-6001	VEGETATIVE WATERING	MG	1.34
0420-6074	CL C CONC (MISC)	CY	6.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	68
0432-6003	RIPRAP (CONC) (6 IN)	CY	1.2
0529-6002	CONC CURB (TY II)	LF	97
0530-6004	DRIVEWAYS (CONC)	SY	149
0531-6001	CONC SIDEWALKS (4")	SY	70
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	13
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

NOTES:  
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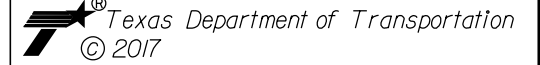
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 536+00 TO STA 540+00

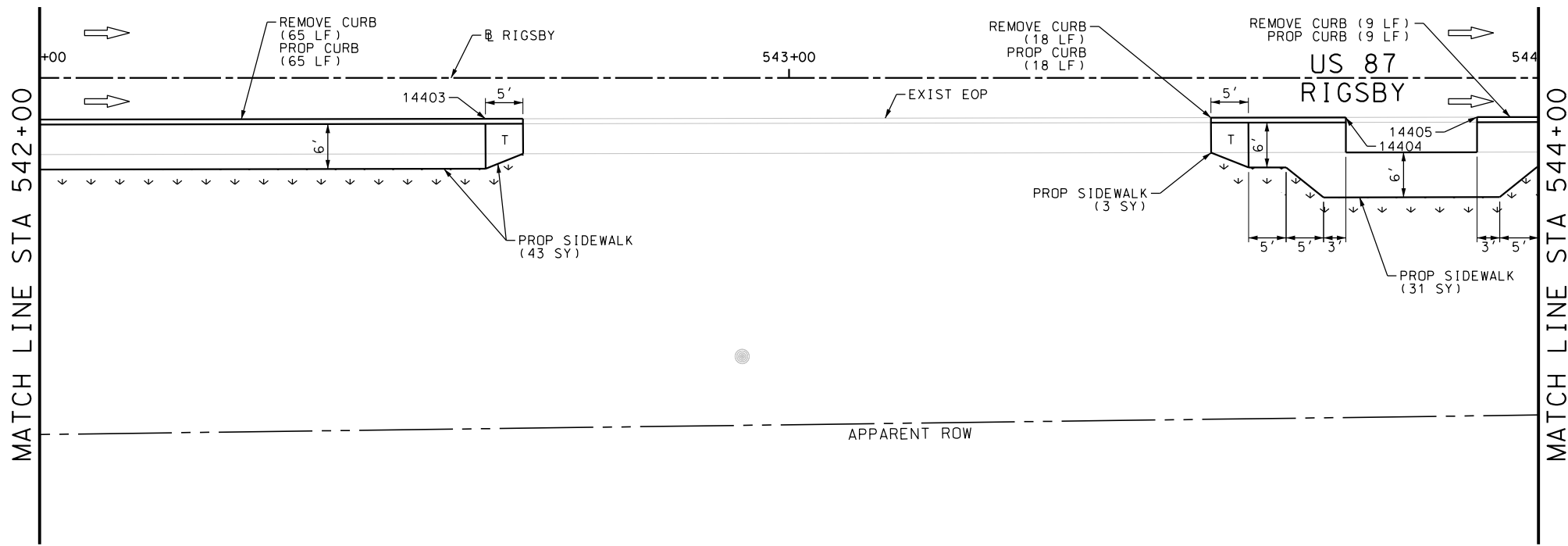
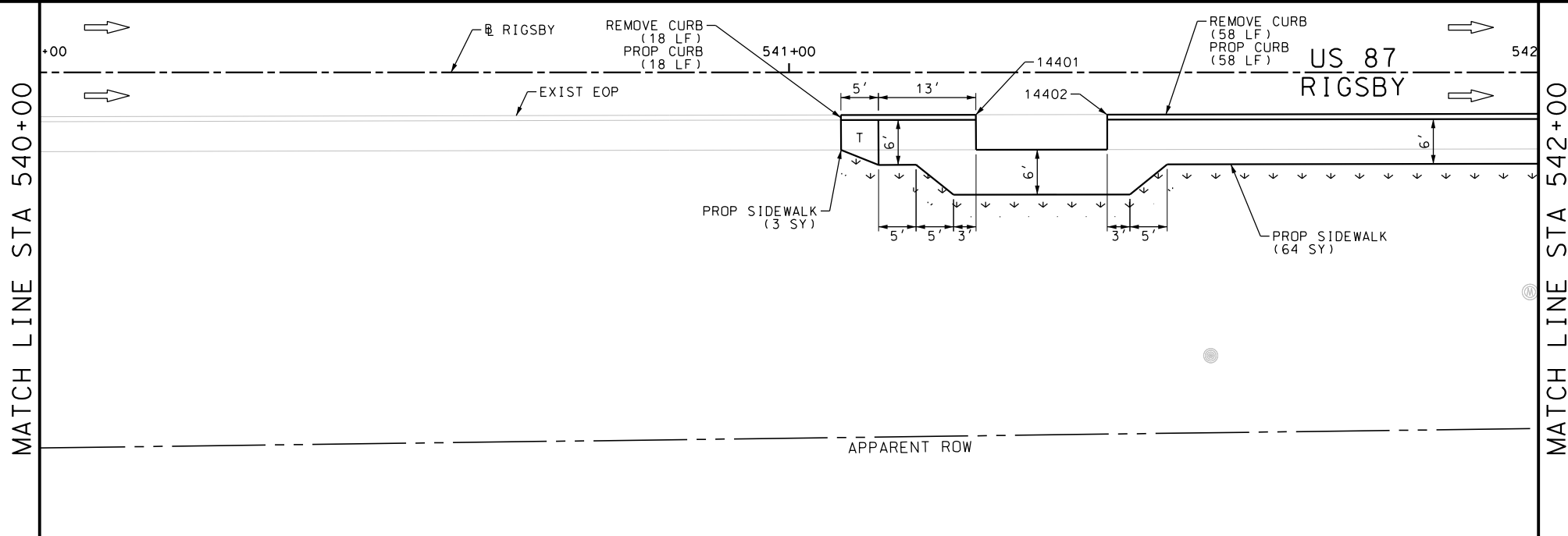
SHEET 46 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	256



Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_47.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	178
0162-6002	BLOCK SODDING	SY	71
0168-6001	VEGETATIVE WATERING	MG	1.11
0529-6002	CONC CURB (TY II)	LF	168
0531-6001	CONC SIDEWALKS (4")	SY	144

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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY



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



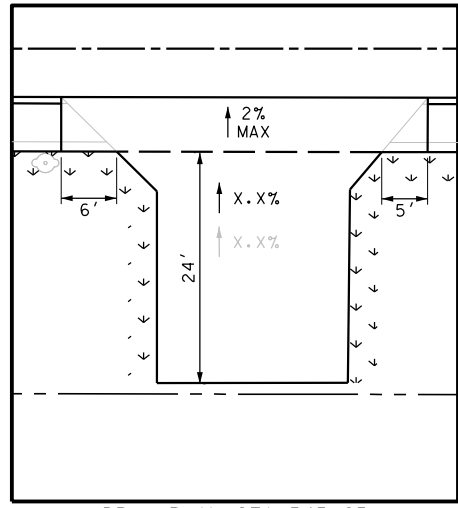
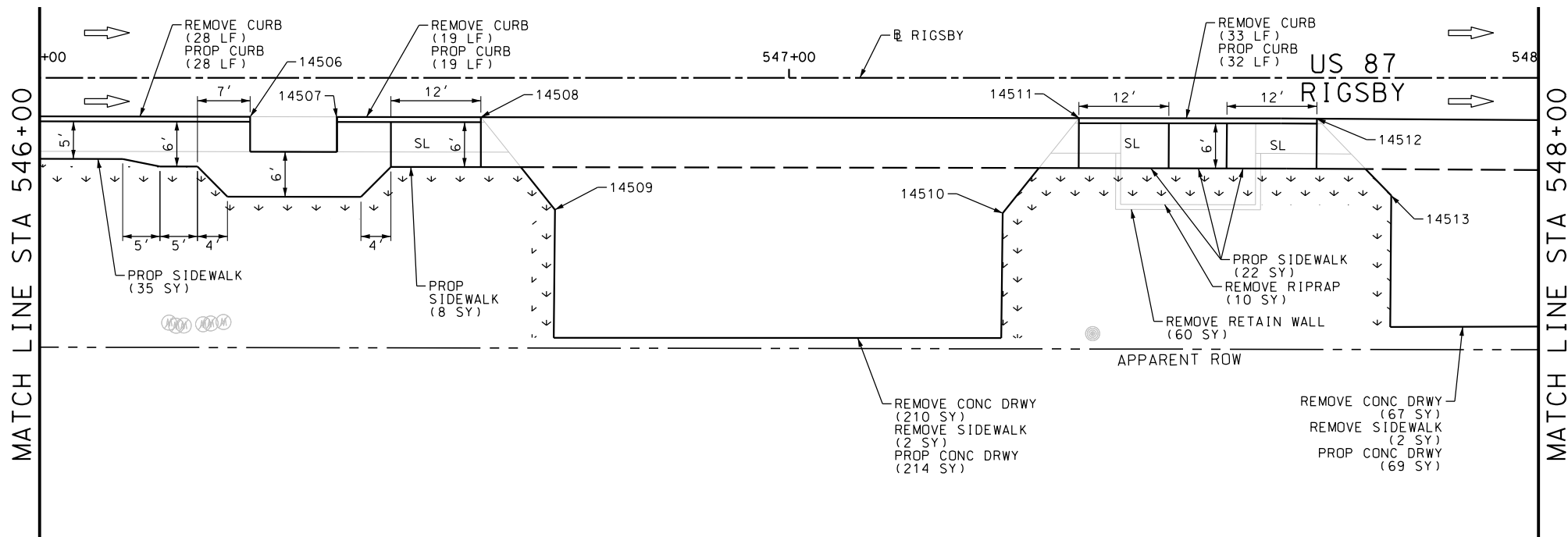
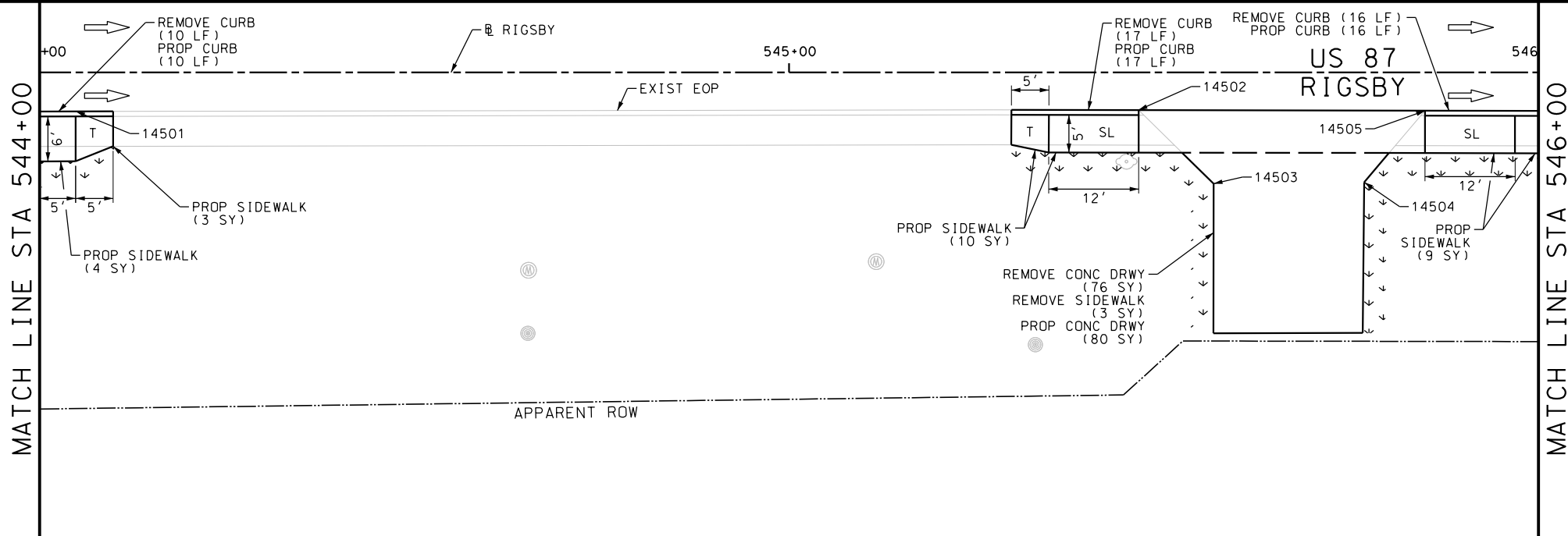
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 540+00 TO STA 544+00

SHEET 47 OF 80

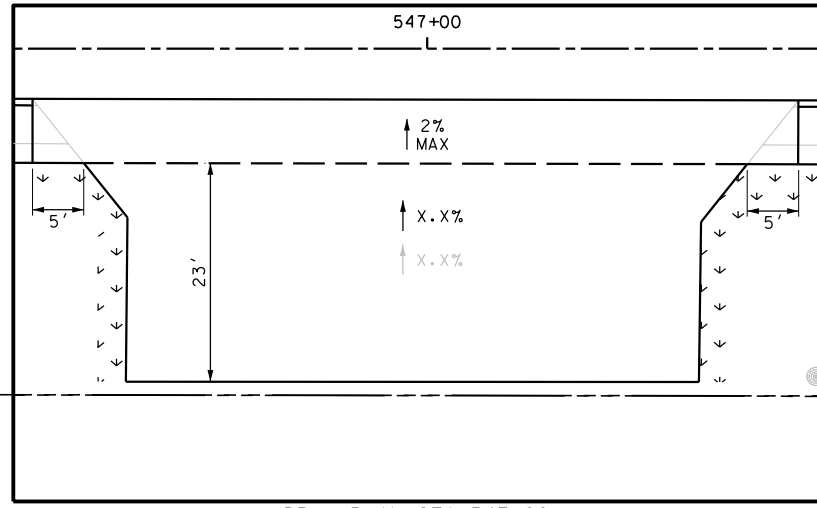
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	257

Plotted on: 9/29/2017

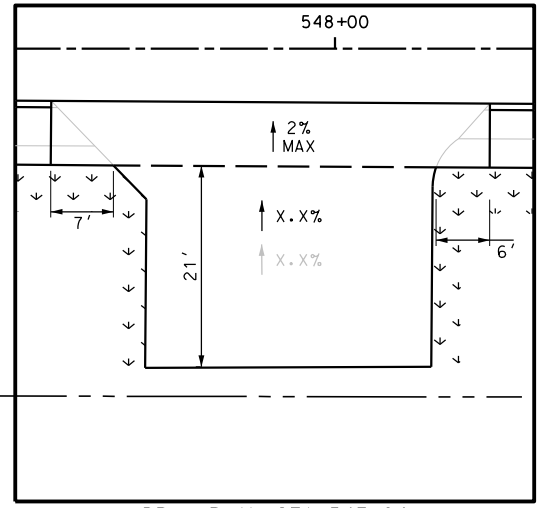
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DRWY PLAN STA 545+65



DRWY PLAN STA 547+99



DRWY PLAN STA 547+94

ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	10
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	353
0104-6024	REMOVING CONC (RETAINING WALLS)	SY	60
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	124
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	7
0162-6002	BLOCK SODDING	SY	103
0168-6001	VEGETATIVE WATERING	MG	1.61
0529-6002	CONC CURB (TY II)	LF	123
0530-6004	DRIVEWAYS (CONC)	SY	363
0531-6001	CONC SIDEWALKS (4")	SY	91

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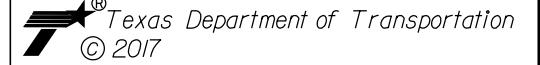
DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

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**INTERIM REVIEW**  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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 | TBPES FIRM REGISTRATION #10028800



US 87  
 RIGSBY  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 544+00 TO STA 548+00

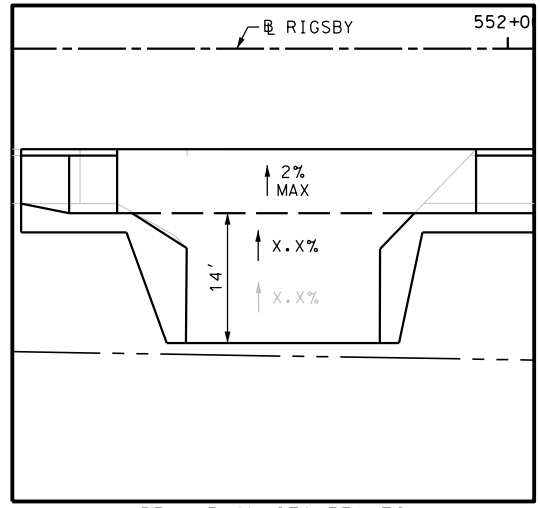
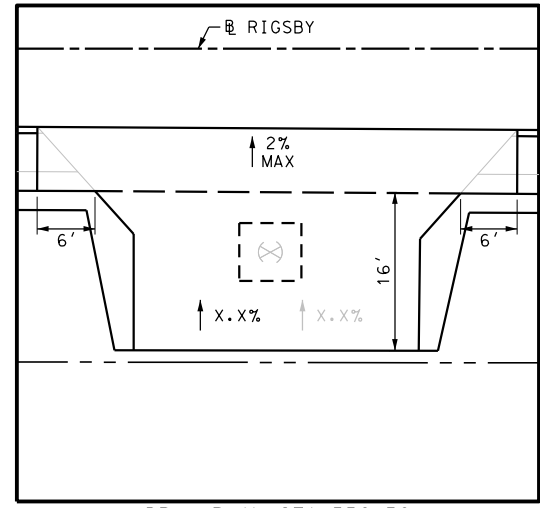
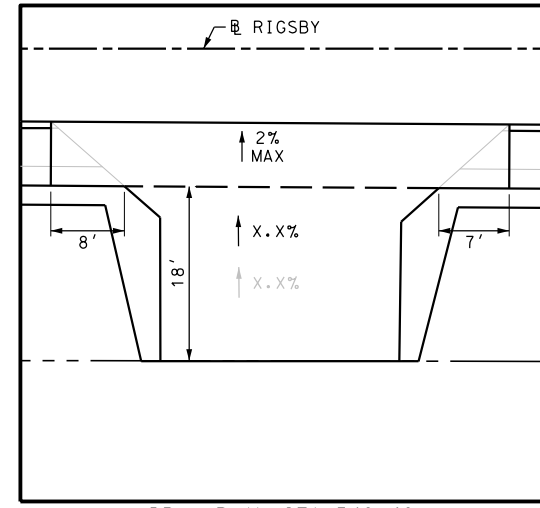
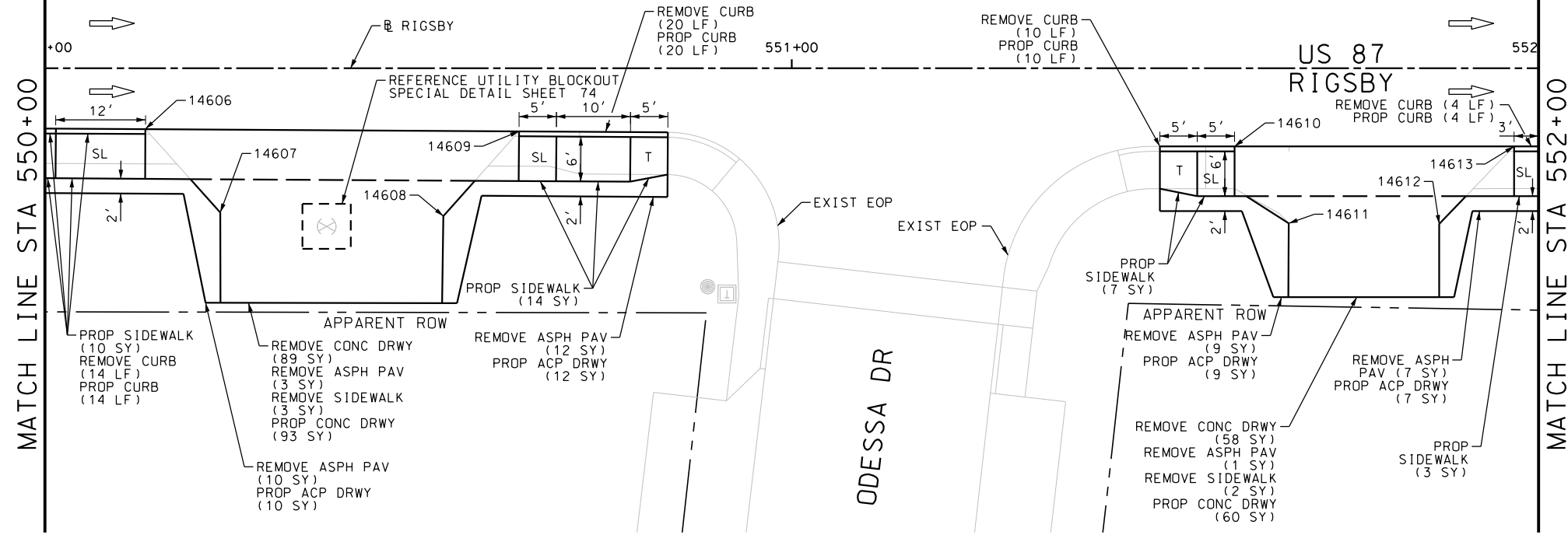
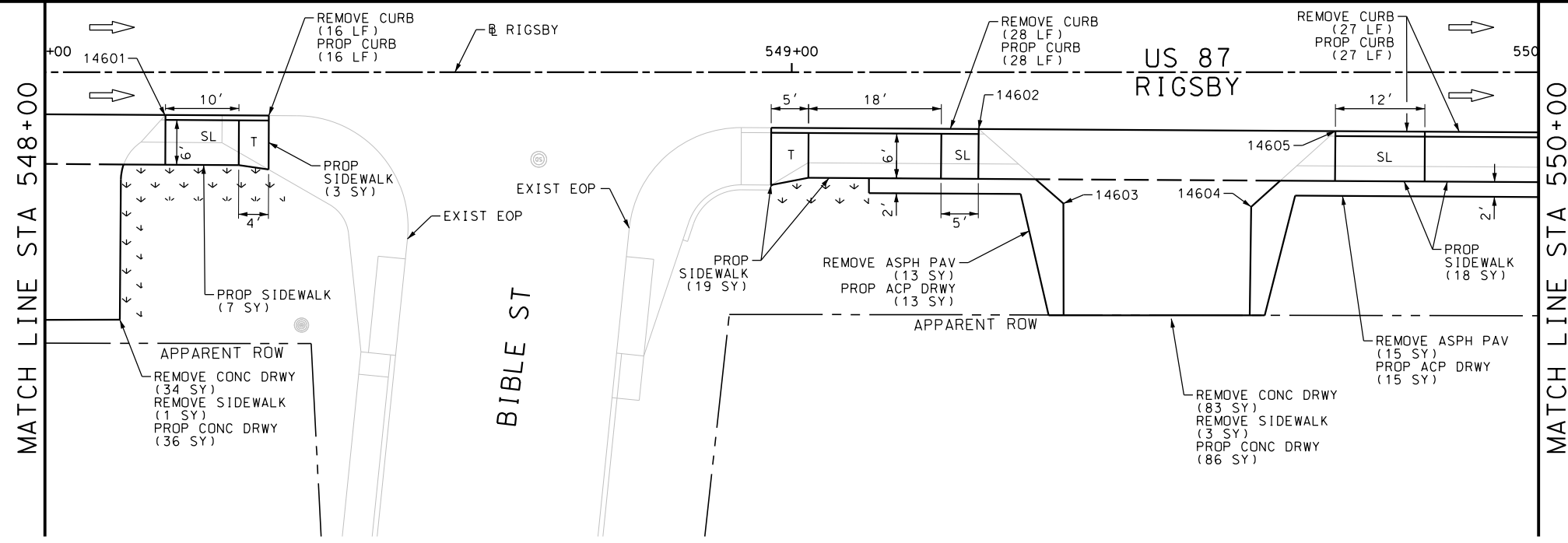
SHEET 48 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	258

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\113501\_Rigsby\_49.dgn

ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	264
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	119
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	9
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	70
0162-6002	BLOCK SODDING	SY	23
0168-6001	VEGETATIVE WATERING	MG	0.36
0529-6002	CONC CURB (TY II)	LF	119
0530-6004	DRIVEWAYS (CONC)	SY	275
0530-6005	DRIVEWAYS (ACP)	SY	66
0531-6001	CONC SIDEWALKS (4")	SY	81



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 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



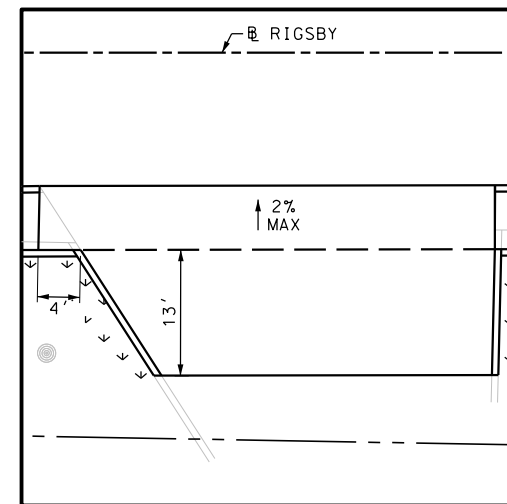
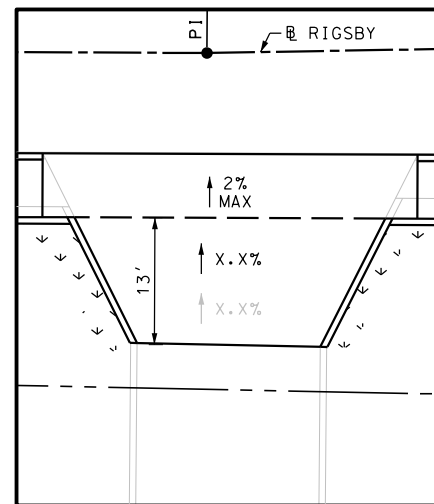
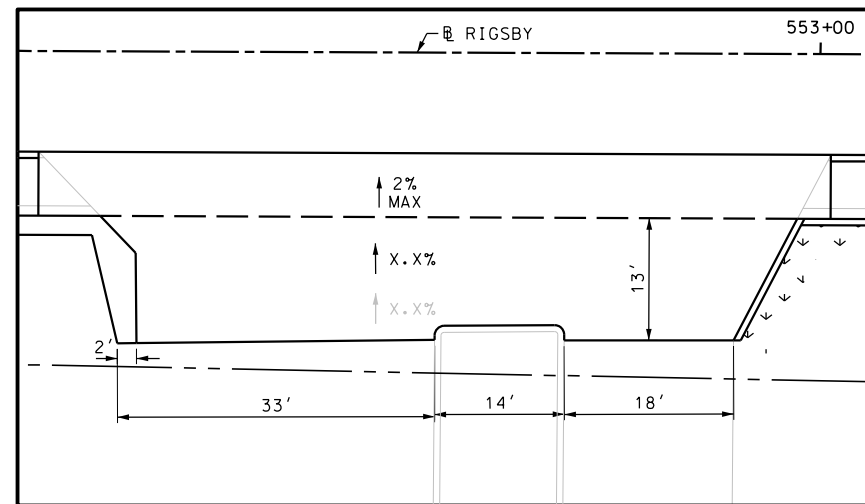
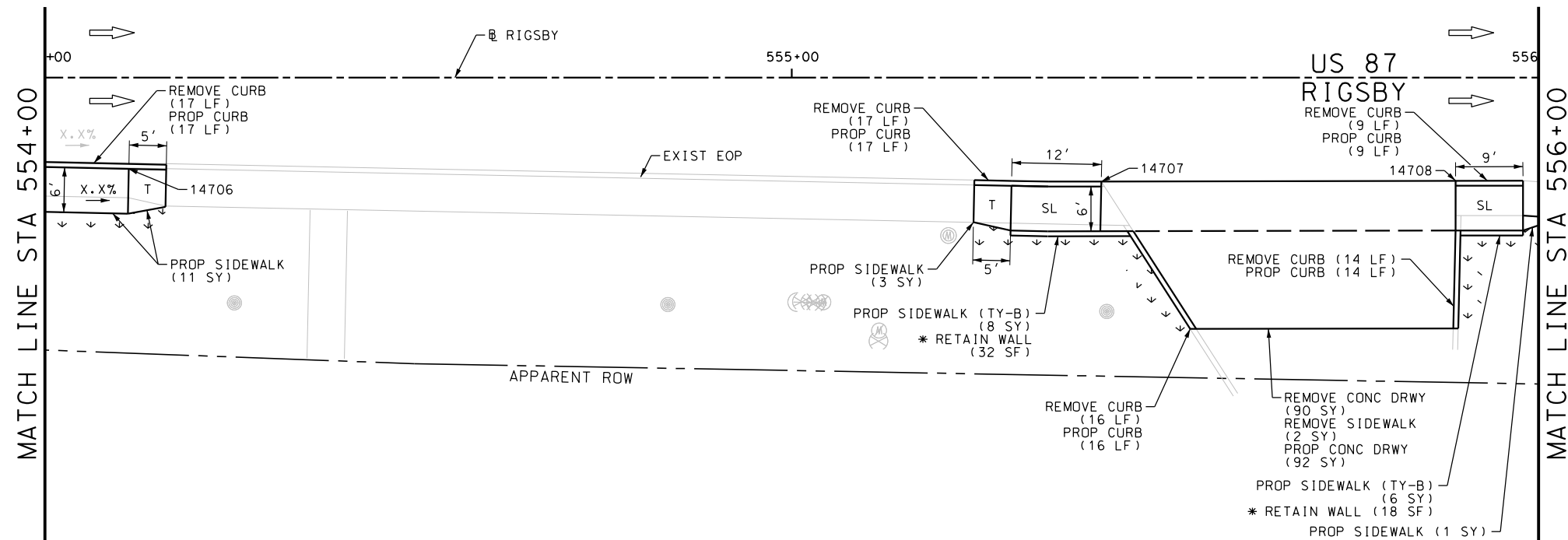
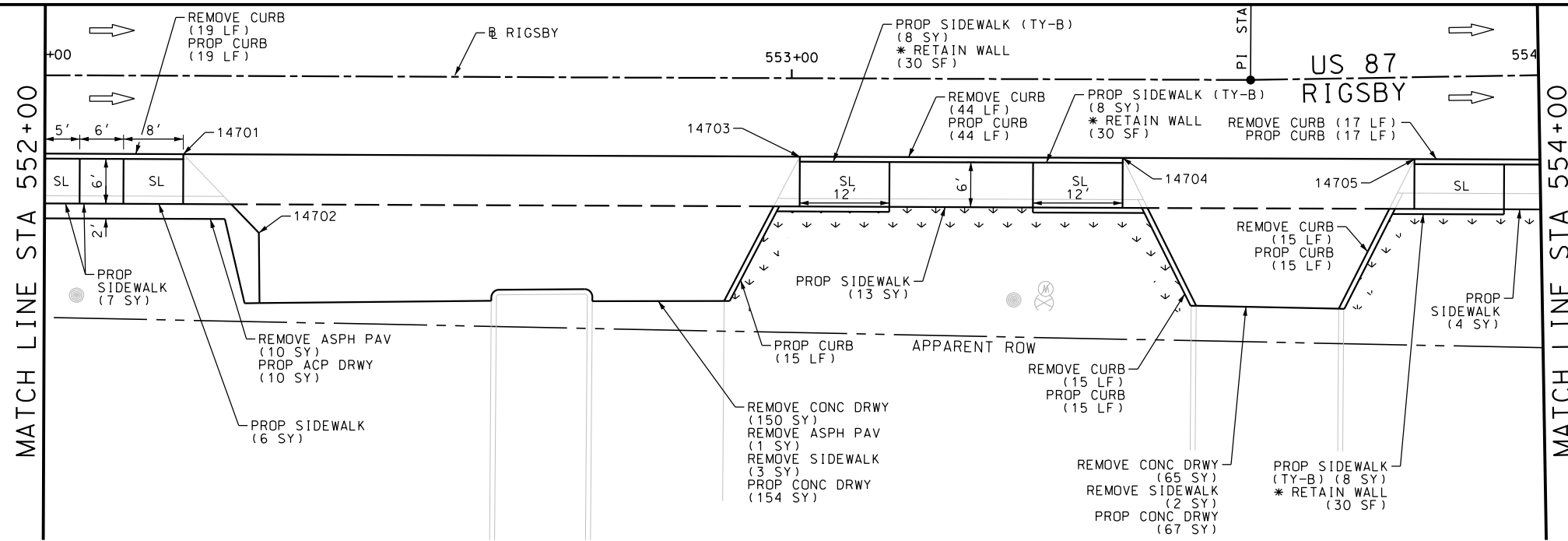
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 548+00 TO STA 552+00

SHEET 49 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	259

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_50.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	305
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	183
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	7
0105-6037	REMOVING STAB BASE AND ASPH PAV(0"-16")	SY	10
0162-6002	BLOCK SODDING	SY	61
0168-6001	VEGETATIVE WATERING	MG	0.95
0529-6002	CONC CURB (TY II)	LF	198
0530-6004	DRIVEWAYS (CONC)	SY	313
0530-6005	DRIVEWAYS (ACP)	SY	10
0531-6001	CONC SIDEWALKS (4")	SY	45
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	38

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



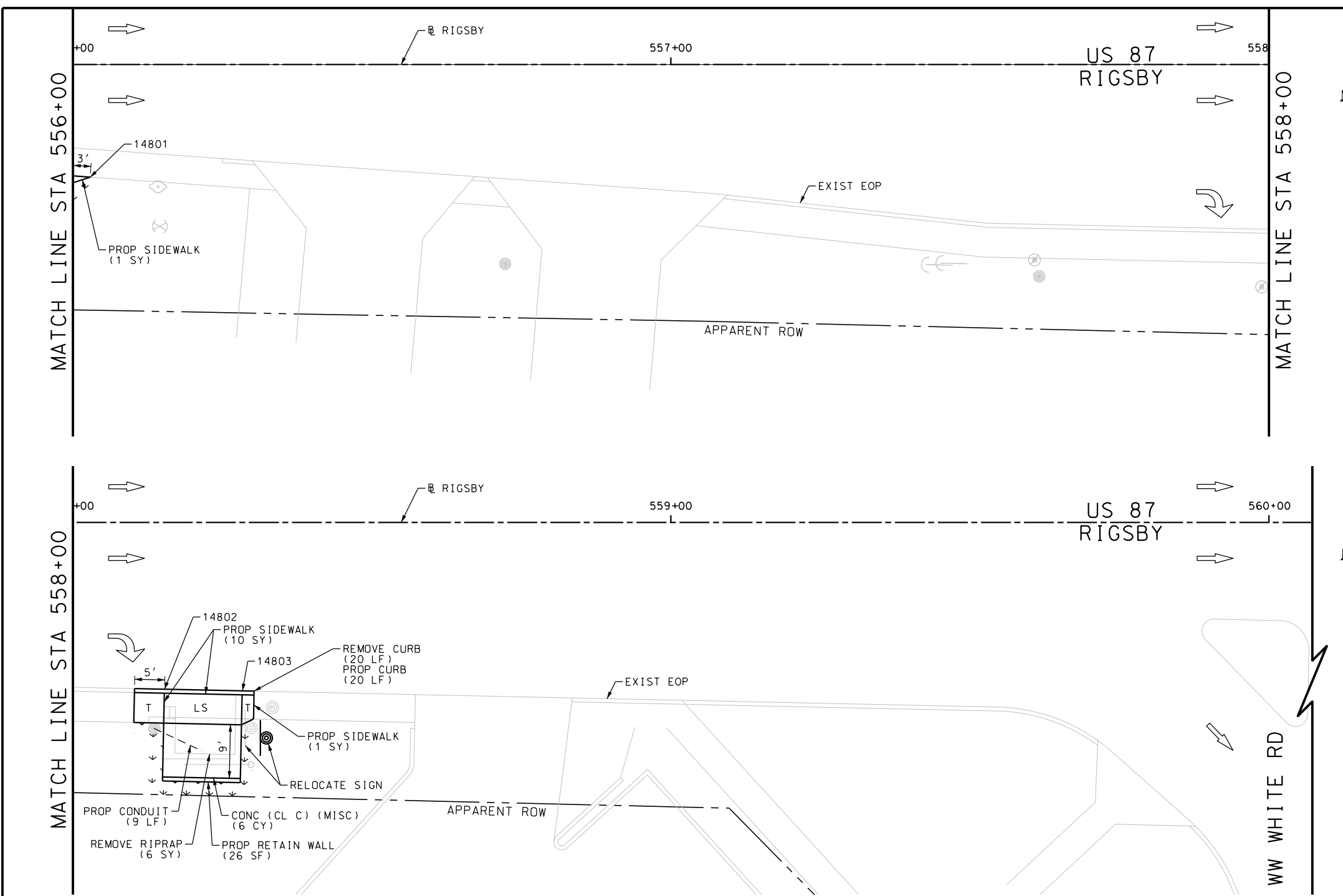
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 552+00 TO STA 556+00

SHEET 50 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	260

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_51.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	6
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	20
0162-6002	BLOCK SODDING	SY	14
0168-6001	VEGETATIVE WATERING	MG	0.22
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	20
0531-6001	CONC SIDEWALKS (4")	SY	12
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	9
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

NOTES:  
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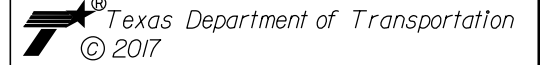
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



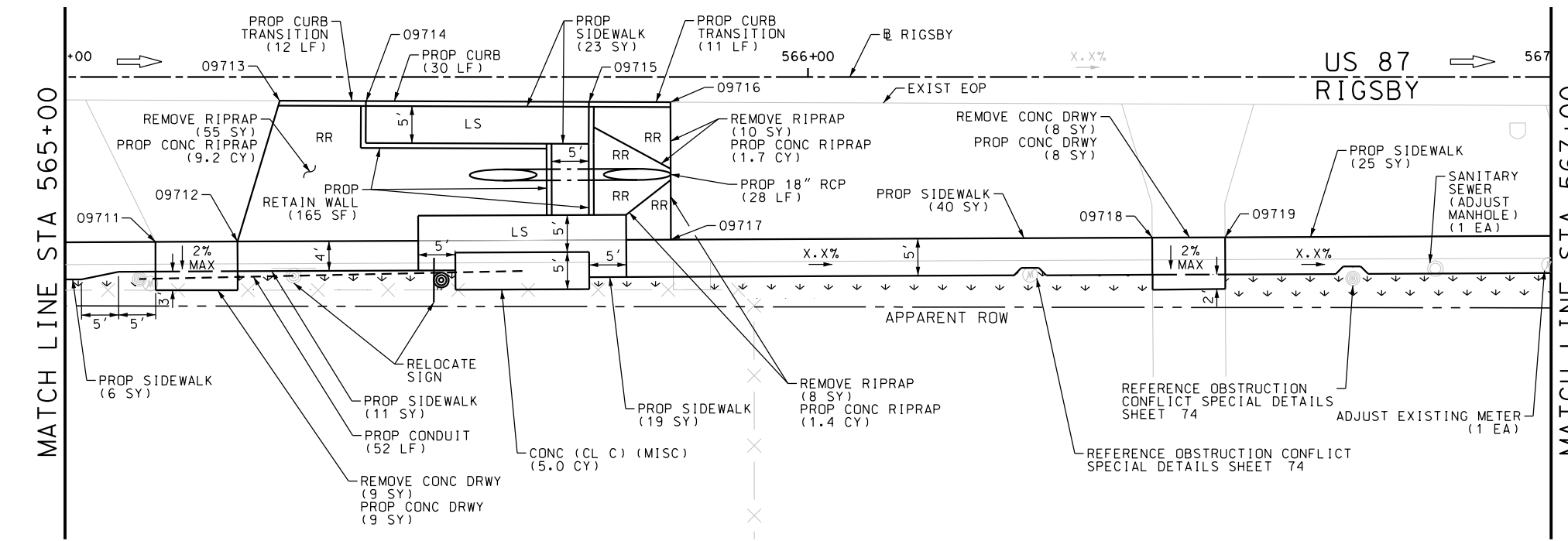
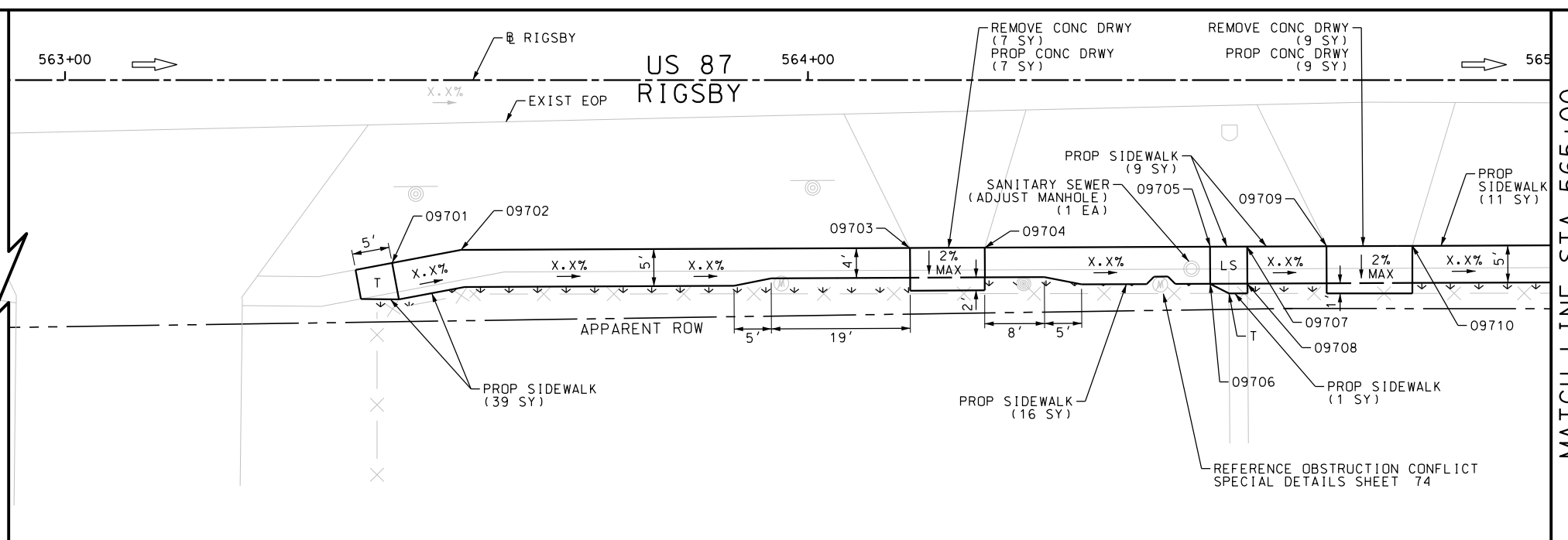
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 556+00 TO STA 560+00

SHEET 51 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	261

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_52.dgn



ITEM	DESCRIPTION	UNIT	QTY
7090-6001	SANITARY SEWER (ADJUST MANHOLE)	EA	2
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	1
0104-6009	REMOVING CONC (RIPRAP)	SY	73
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	33
0162-6002	BLOCK SODDING	SY	69
0168-6001	VEGETATIVE WATERING	MG	1.08
0420-6074	CL C CONC (MISC)	CY	5.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	165
0432-6003	RIPRAP (CONC) (6 IN)	CY	12.3
0464-6003	RC PIPE (CL III) (18 IN)	LF	28
0529-6002	CONC CURB (TY II)	LF	53
0530-6004	DRIVEWAYS (CONC)	SY	33
0531-6001	CONC SIDEWALKS (4")	SY	200
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	52
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

NOTES:  
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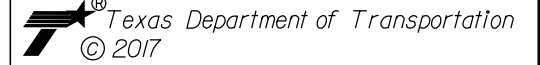
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



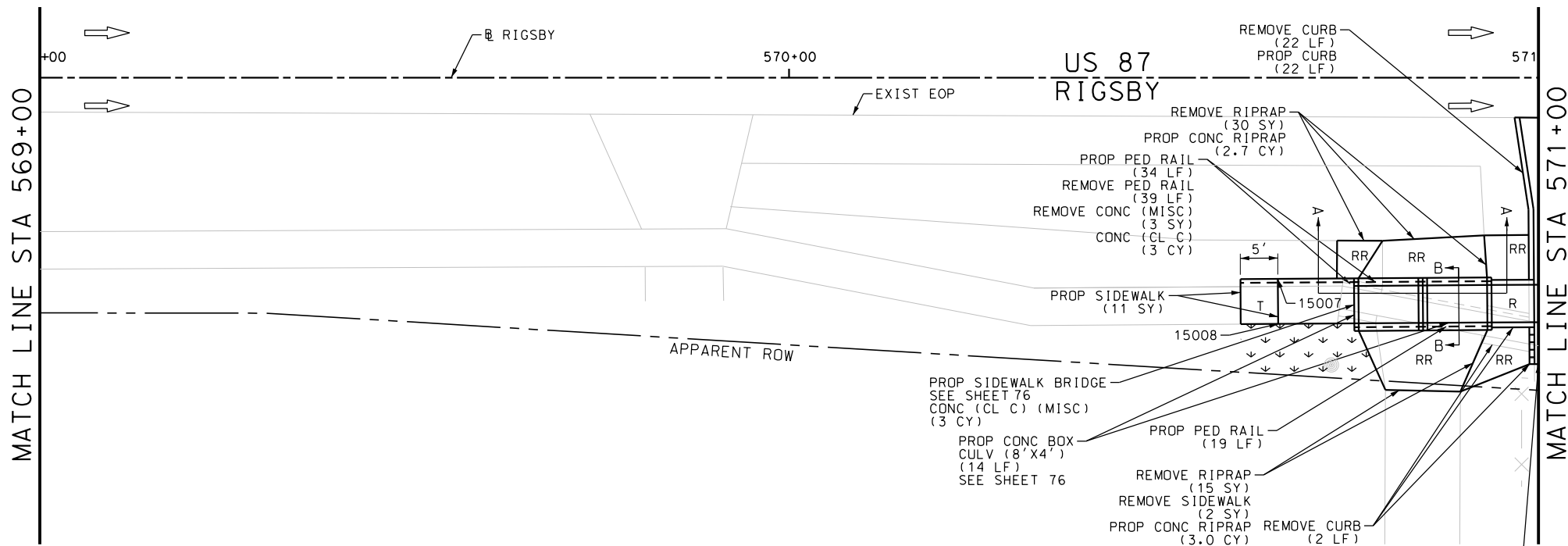
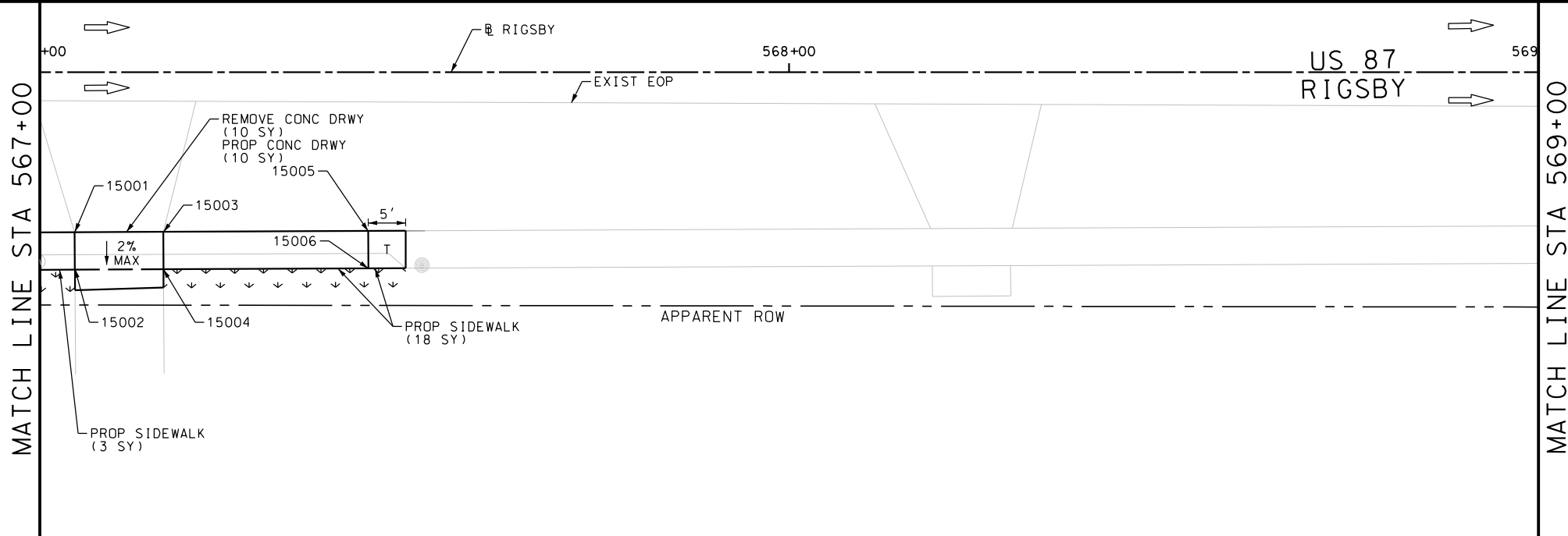
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 563+00 TO STA 567+00

SHEET 52 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	262

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_53.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	45
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	10
0104-6028	REMOVING CONC (MISC)	SY	7
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	24
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	3
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	4
0162-6002	BLOCK SODDING	SY	24
0168-6001	VEGETATIVE WATERING	MG	0.37
0420-6074	CL C CONC (MISC)	CY	11.0
0432-6003	RIPRAP (CONC) (6 IN)	CY	5.7
0450-6047	RAIL (HANDRAIL) (TY A)	LF	53
0462-6019	CONC BOX CULV (8 FT X 4 FT)	LF	14
0496-6099	REMOVE STR (RAIL)	LF	39
0529-6002	CONC CURB (TY 1)	LF	22
0529-6012	CONC CURB (SLOTTED)	LF	5
0530-6004	DRIVEWAYS (CONC)	SY	11
0530-6005	DRIVEWAYS (ACP)	SY	4
0531-6001	CONC SIDEWALKS (4")	SY	32
0531-6018	CURB RAMPS (TY 1)	SY	4

NOTES:  
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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



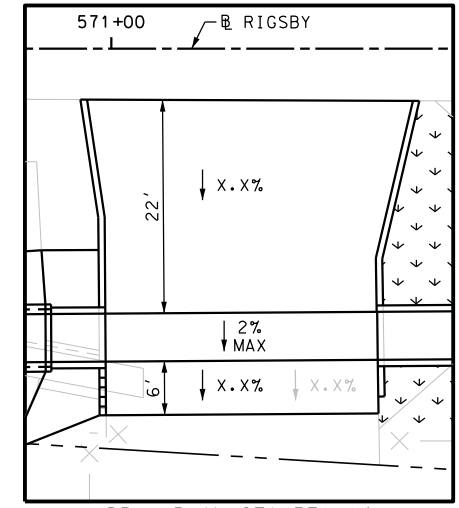
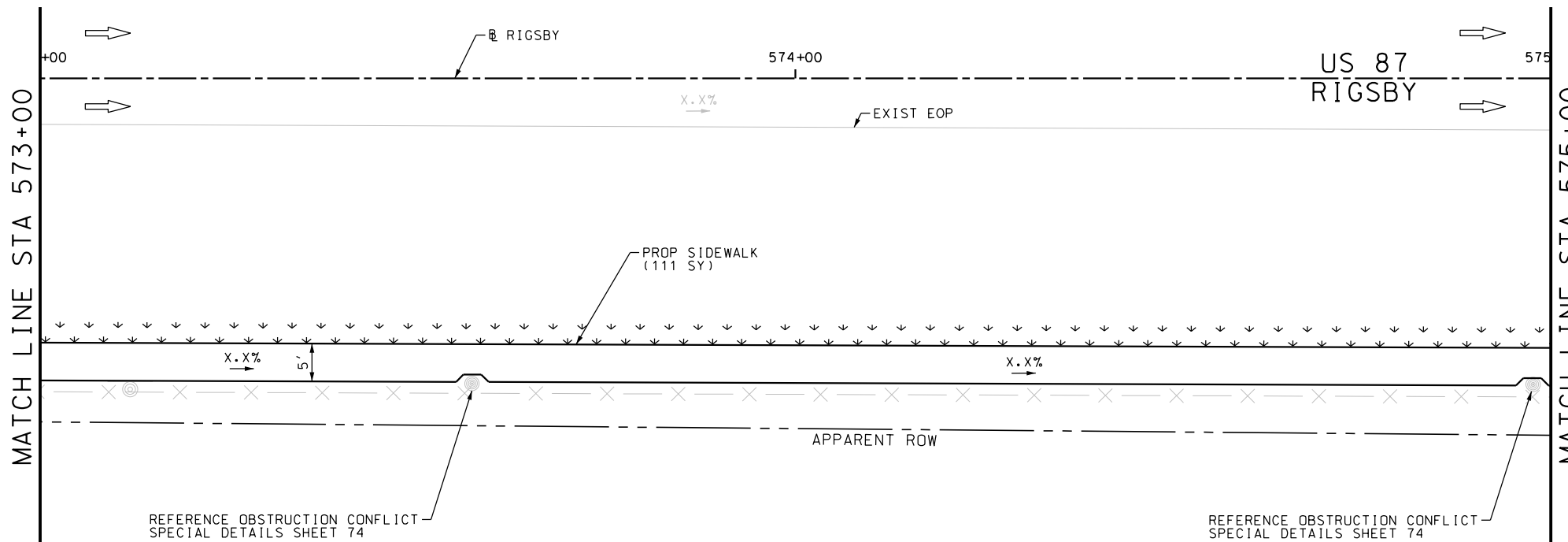
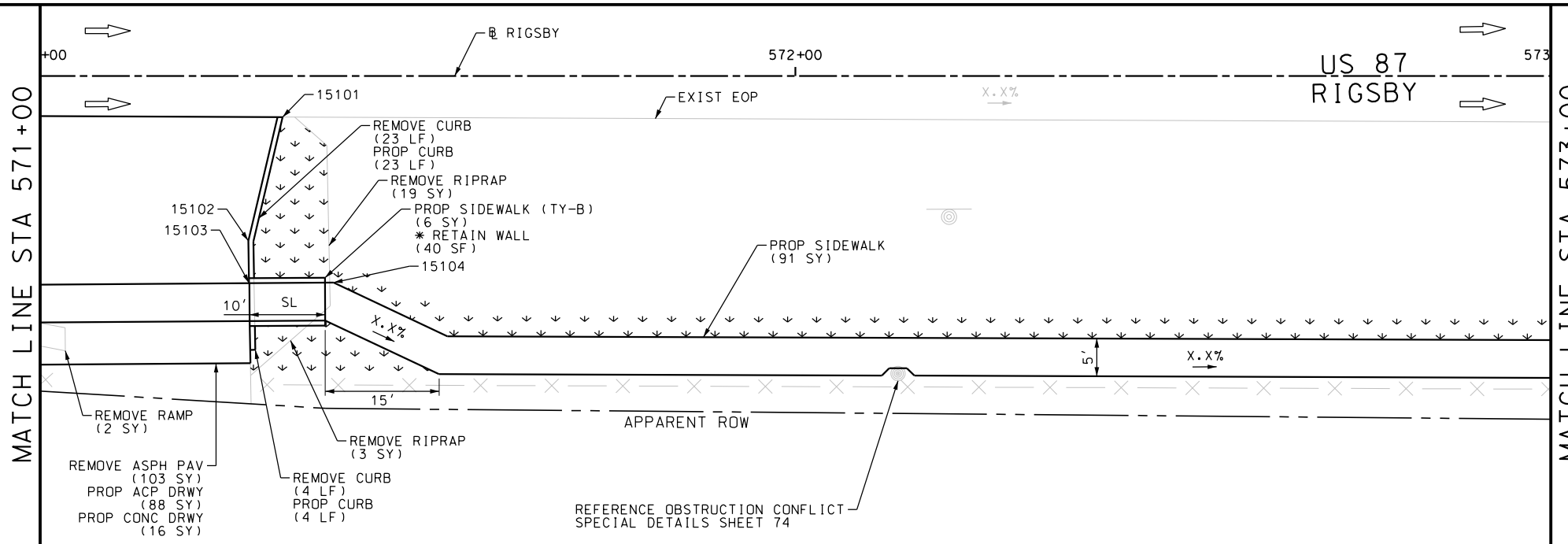
US 87  
 RIGSBY  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 567+00 TO STA 571+00

SHEET 53 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	263

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_54.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	22
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	27
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	2
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	103
0162-6002	BLOCK SODDING	SY	153
0168-6001	VEGETATIVE WATERING	MG	2.39
0529-6002	CONC CURB (TY II)	LF	27
0530-6004	DRIVEWAYS (CONC)	SY	16
0530-6005	DRIVEWAYS (ACP)	SY	88
0531-6001	CONC SIDEWALKS (4")	SY	202
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	6

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 571+00 TO STA 575+00

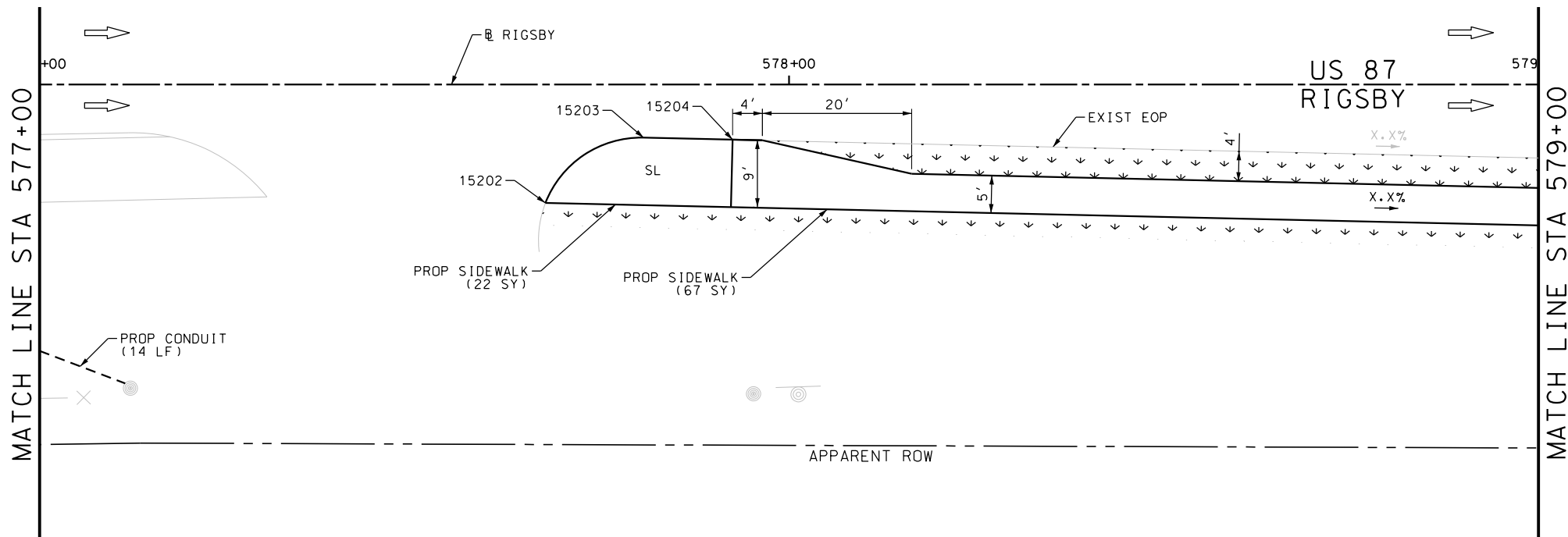
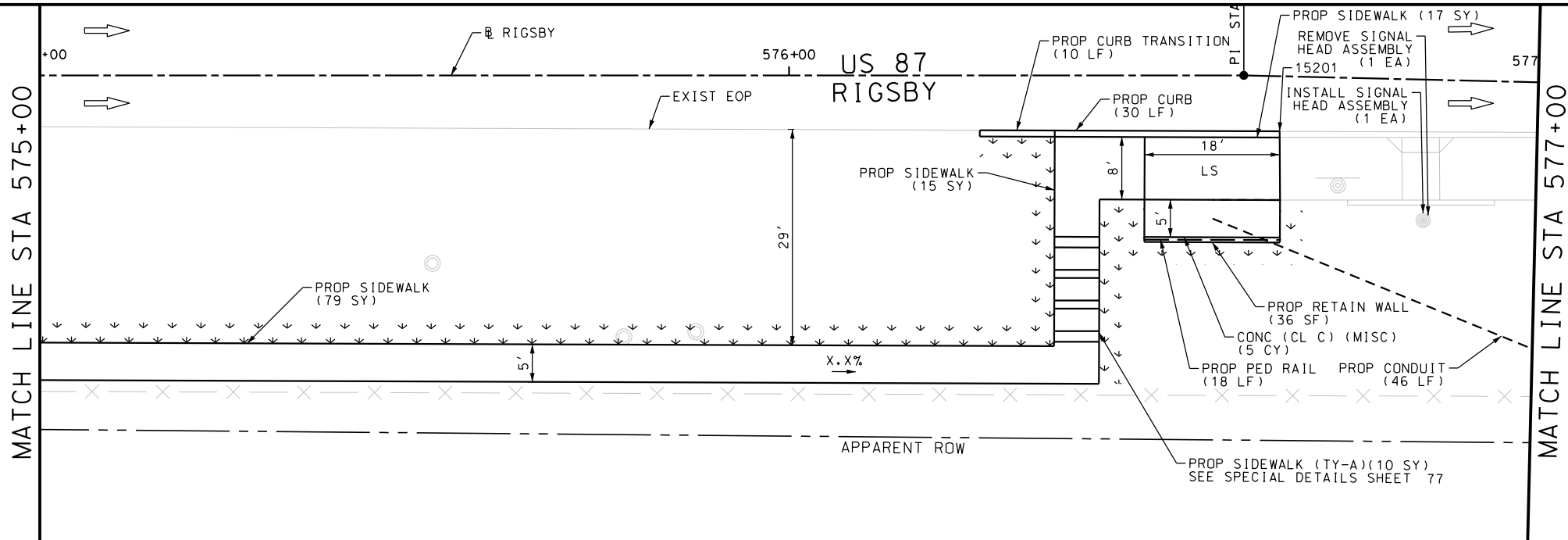
SHEET 54 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	264



Plotted on: 9/29/2017

Design File name: P:\11135\01\des\ign\Civil\Roadway\Rigsby\1113501\_Rigsby\_55.dgn



ITEM	DESCRIPTION	UNIT	QTY
0162-6002	BLOCK SODDING	SY	143
0168-6001	VEGETATIVE WATERING	MG	2.23
0420-6074	CL C CONC (MISC)	CY	5.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	36
0450-6048	RAIL (HANDRAIL) (TY B)	LF	18
0529-6002	CONC CURB (TY II)	LF	40
0531-6001	CONC SIDEWALKS (4")	SY	200
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	10
0618-6016	COND (PVC) (SCH 40) (1")	LF	60
0682-6017	PED SIG SEC (LED) (2 INDICATIONS)	EA	1
0690-6024	REMOVAL OF SIGNAL HEAD ASSM	EA	1

NOTES:  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



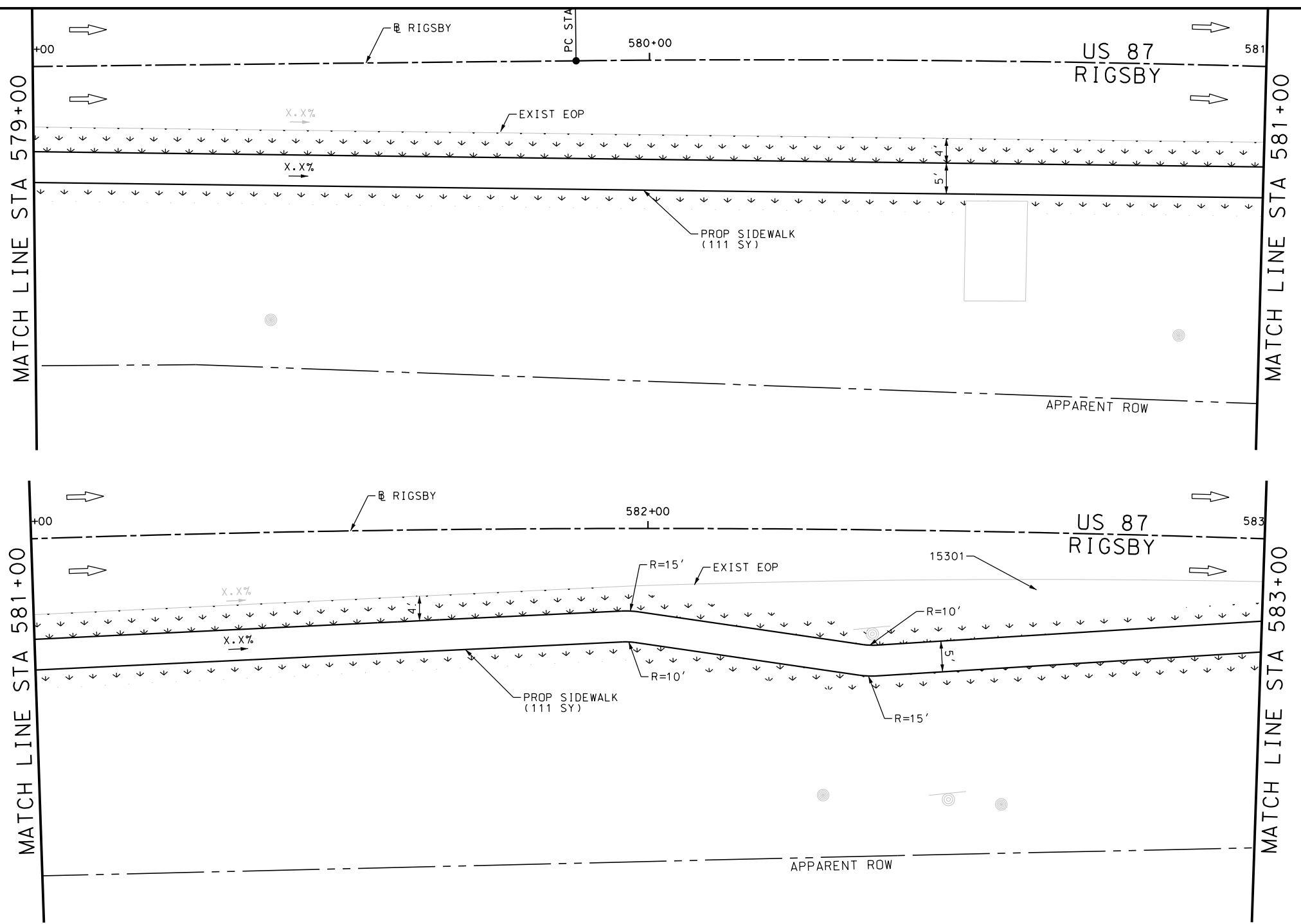
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 575+00 TO STA 579+00

SHEET 55 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	265

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_56.dgn



ITEM	DESCRIPTION	UNIT	QTY
0162-6002	BLOCK SODDING	SY	250
0168-6001	VEGETATIVE WATERING	MG	3.90
0531-6001	CONC SIDEWALKS (4")	SY	222

NOTES:  
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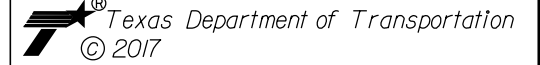
DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



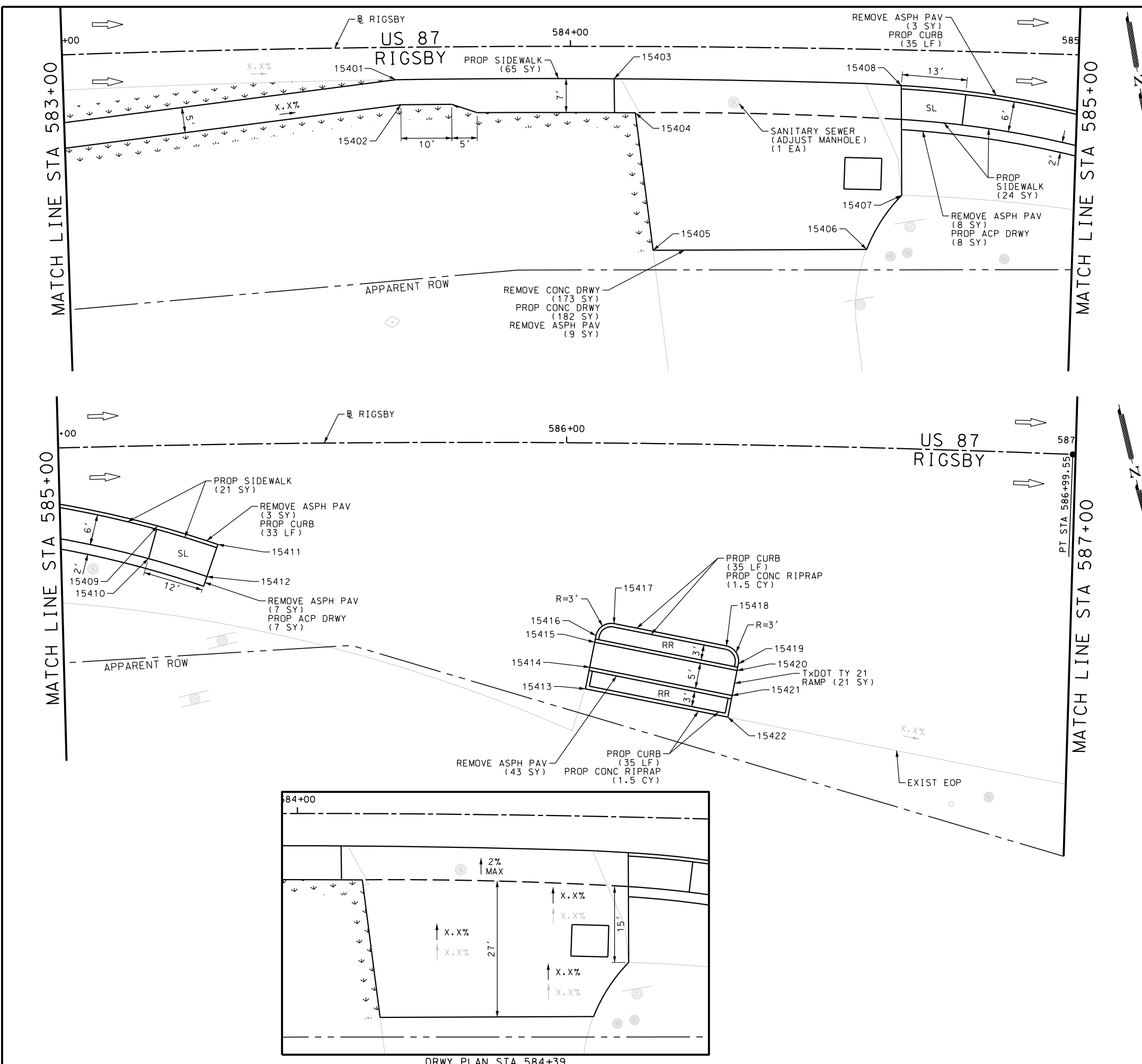
US 87  
 RIGSBY  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 579+00 TO STA 583+00

SHEET 56 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	266

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_57.dgn



ITEM	DESCRIPTION	UNIT	QTY
7090-6001	SANITARY SEWER (ADJUST MANHOLE)	EA	1
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	173
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	73
0162-6002	BLOCK SODDING	SY	80
0168-6001	VEGETATIVE WATERING	MG	1.25
0432-6003	RIPRAP (CONC) (6 IN)	CY	3.0
0529-6002	CONC CURB (TY II)	LF	138
0530-6004	DRIVEWAYS (CONC)	SY	182
0530-6005	DRIVEWAYS (ACP)	SY	15
0531-6001	CONC SIDEWALKS (4")	SY	110
0531-6030	CURB RAMPS (TY 21)	SY	21

NOTES:  
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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



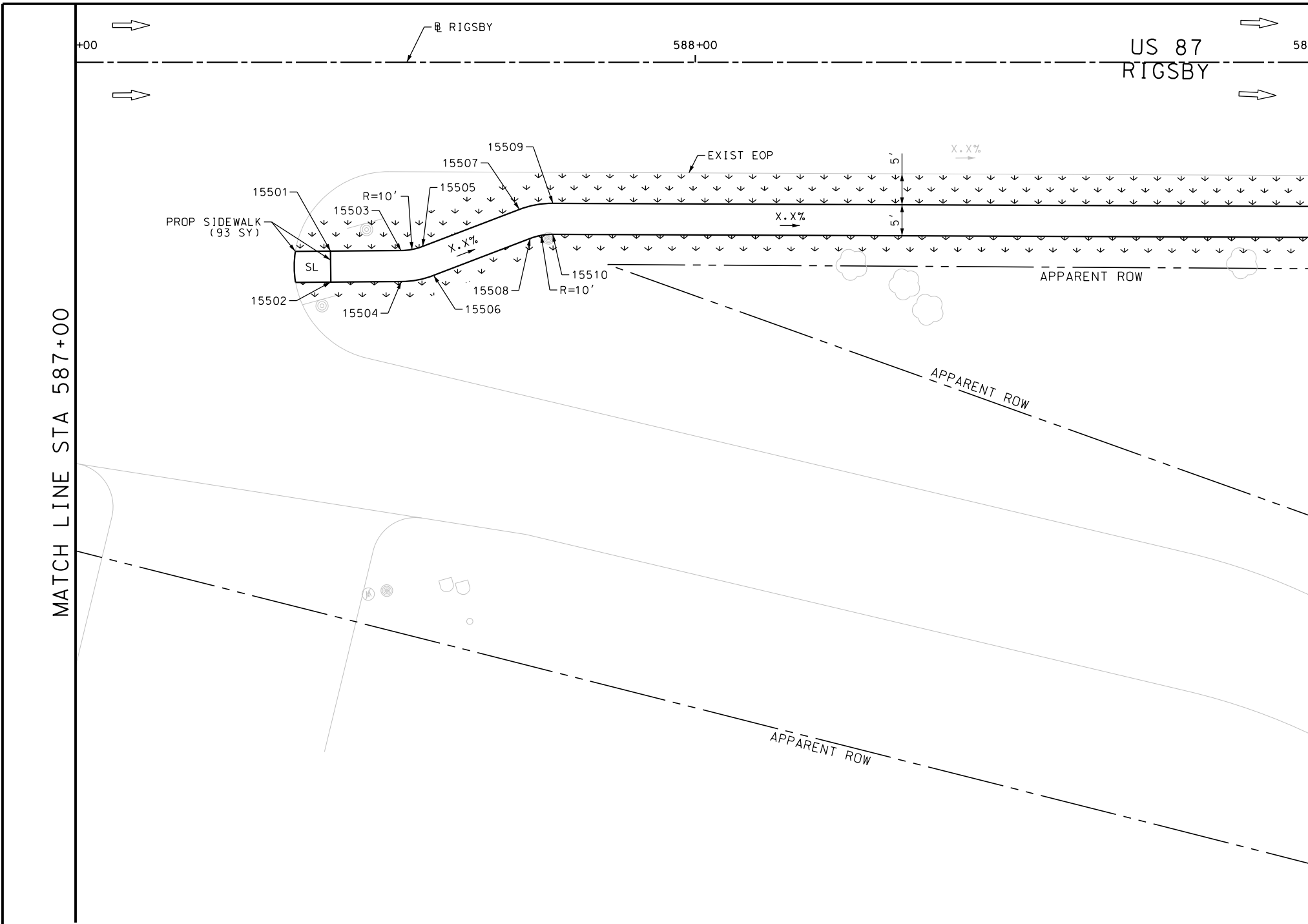
US 87  
 RIGSBY  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 583+00 TO STA 587+00

SHEET 57 OF 80

DWG:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DWG:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	267

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_58.dgn



ITEM	DESCRIPTION	UNIT	QTY
0162-6002	BLOCK SODDING	SY	146
0168-6001	VEGETATIVE WATERING	MG	2.28
0531-6001	CONC SIDEWALKS (4")	SY	93

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 587+00 TO STA 589+00

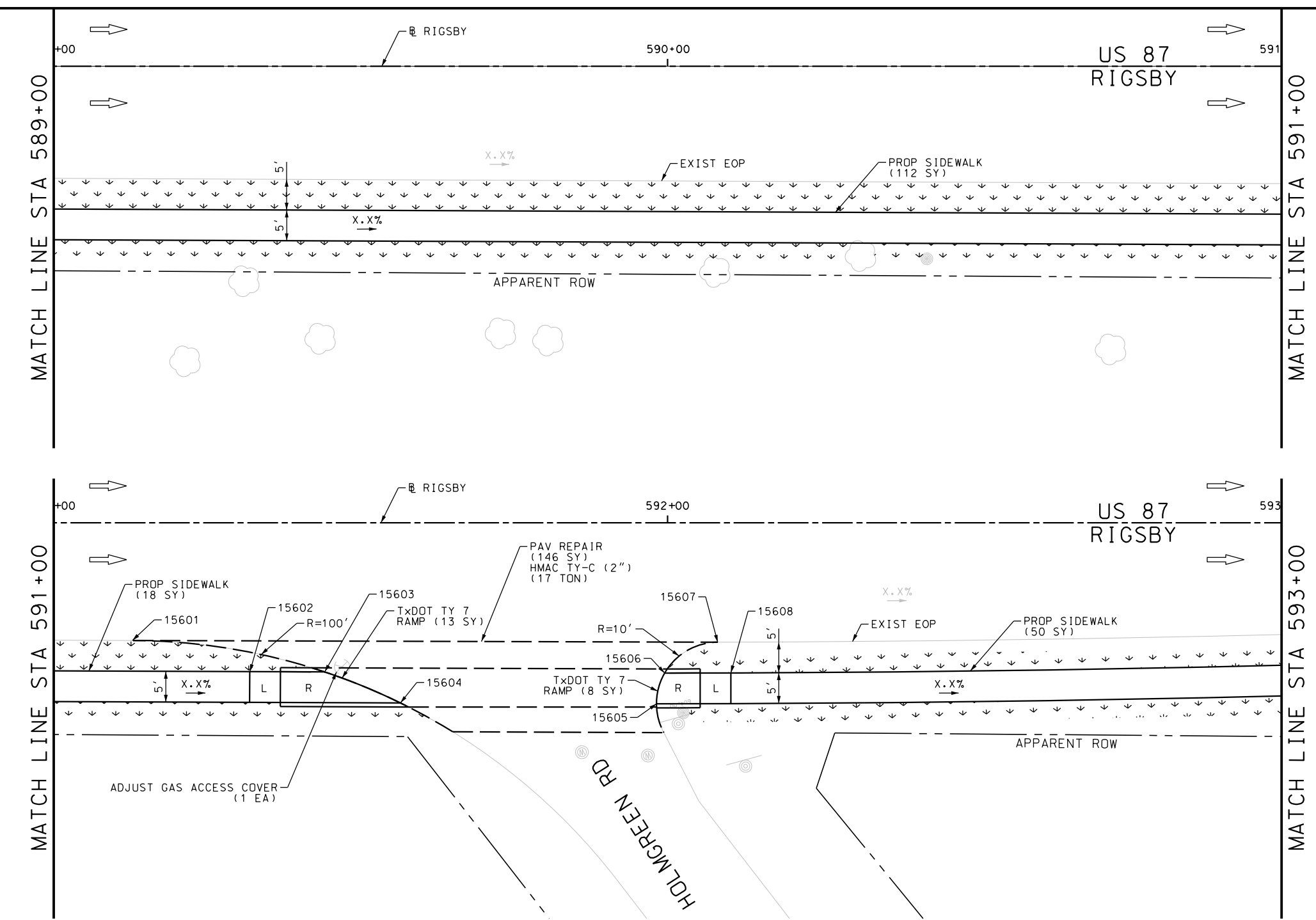
SHEET 58 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
CHK DGN:	6	TEXAS				VA
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	268

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_59.dgn

ITEM	DESCRIPTION	UNIT	QTY
7027-6001	ADJUST GAS ACCESS COVER	EA	1
0162-6002	BLOCK SODDING	SY	234
0168-6001	VEGETATIVE WATERING	MG	3.65
0340-6066	D-GR HMA(SQ) TY-C PG76-22	TON	16.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	85
0531-6001	CONC SIDEWALKS (4")	SY	180
0531-6024	CURB RAMP (TY 7)	SY	21



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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY



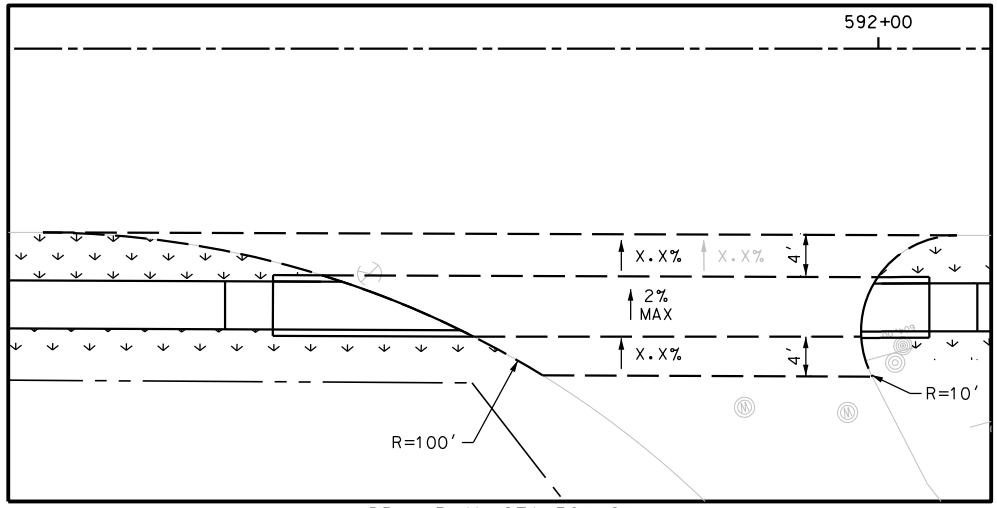
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



US 87  
 RIGSBY  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 589+00 TO STA 593+00

SHEET 59 OF 80

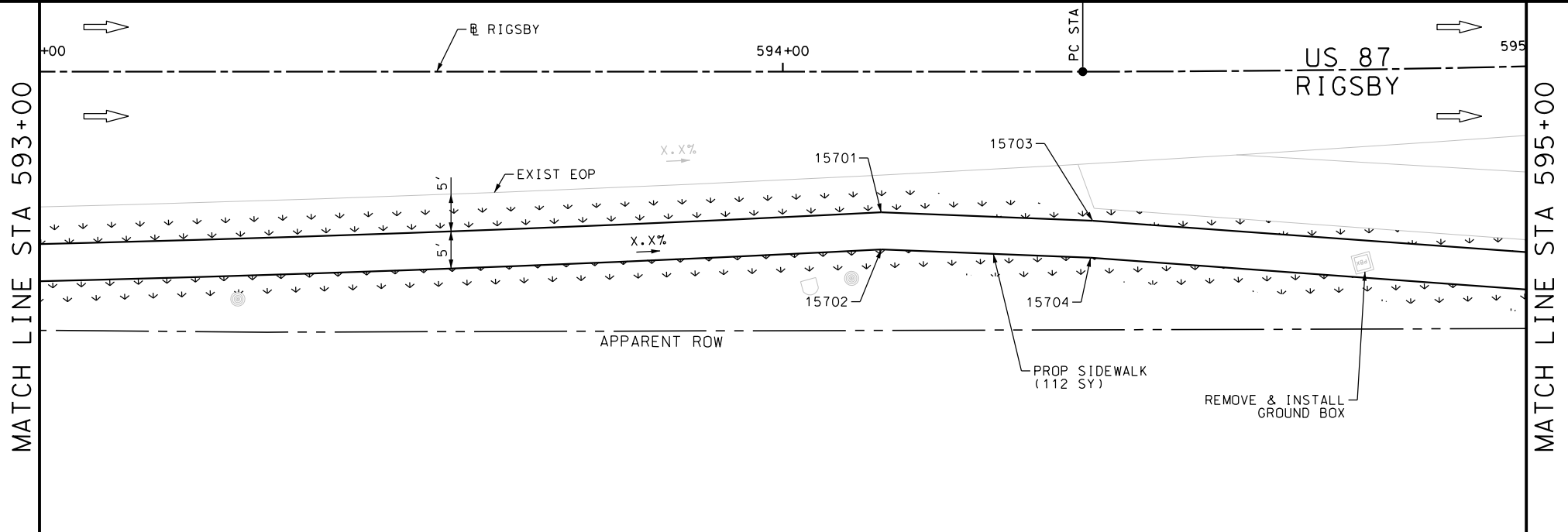
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	269



DRWY PLAN STA 591+61

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_60.dgn



ITEM	DESCRIPTION	UNIT	QTY
0162-6002	BLOCK SODDING	SY	134
0168-6001	VEGETATIVE WATERING	MG	2.09
0531-6001	CONC SIDEWALKS (4")	SY	112
0624-6009	GROUND BOX TY D (162922)	EA	1
0624-6028	REMOVE GROUND BOX	EA	1

NOTES:  
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 ENGINEER: JOHN A. TYLER  
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 DATE: 9/29/2017

REVIEW AND APPROVAL  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



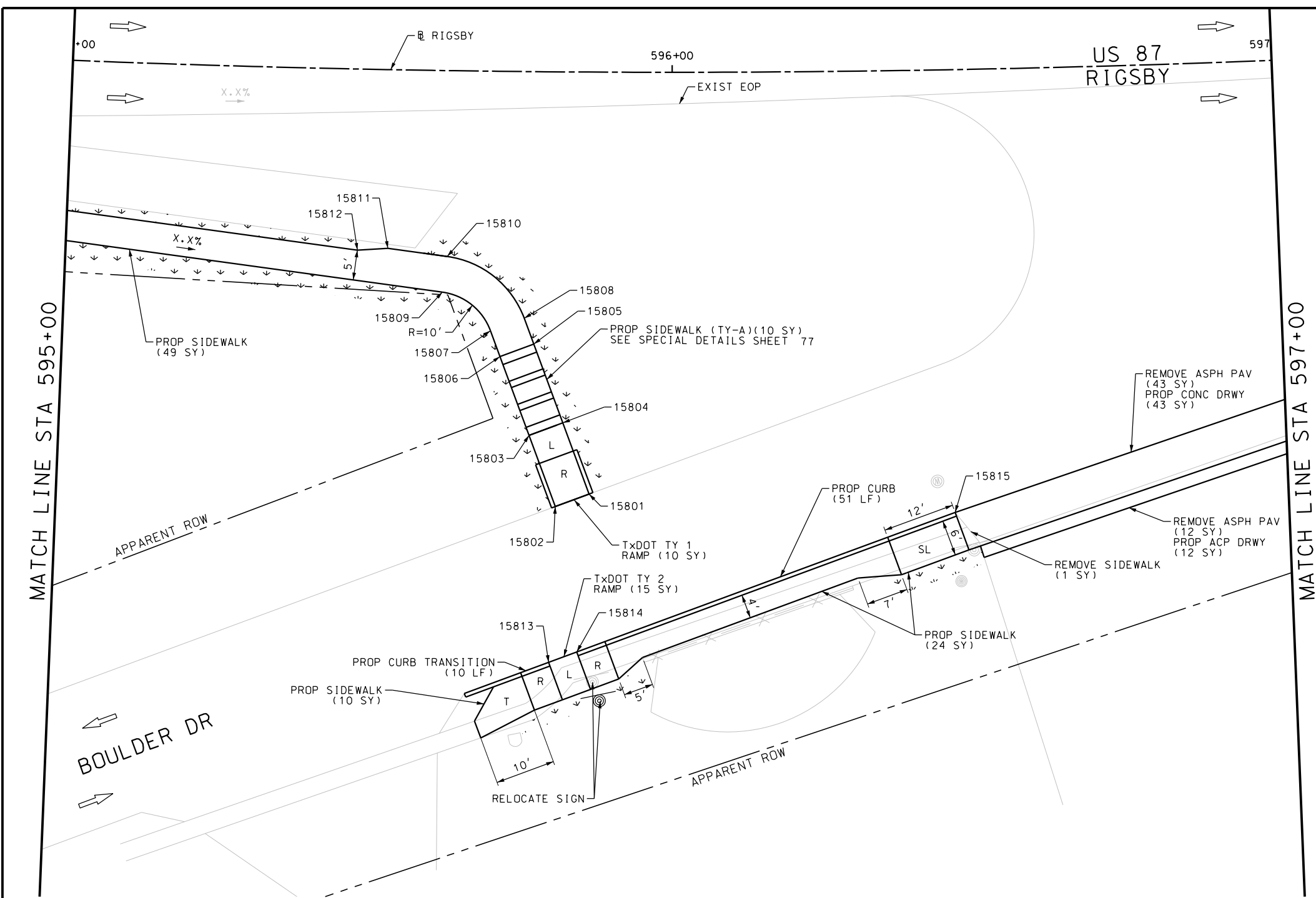
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 593+00 TO STA 595+00

SHEET 60 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	270

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_61.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	1
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	55
0162-6002	BLOCK SODDING	SY	36
0168-6001	VEGETATIVE WATERING	MG	0.56
0529-6002	CONC CURB (TY II)	LF	61
0530-6004	DRIVEWAYS (CONC)	SY	43
0530-6005	DRIVEWAYS (ACP)	SY	12
0531-6001	CONC SIDEWALKS (4")	SY	80
0531-6018	CURB RAMPS (TY 1)	SY	10
0531-6019	CURB RAMPS (TY 2)	SY	15
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	10
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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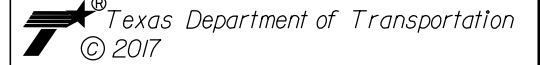
DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

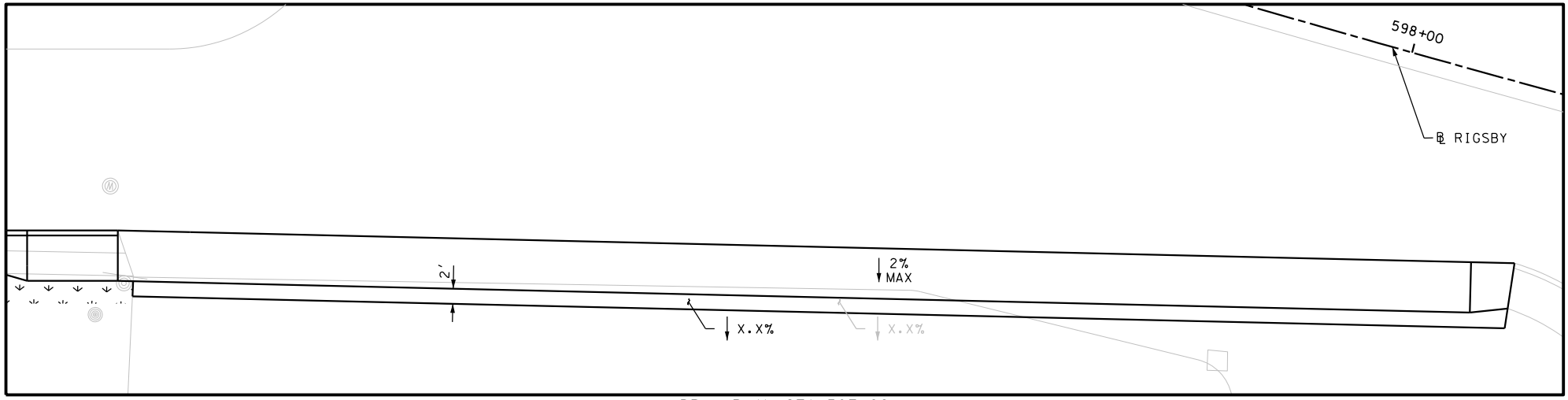
**Pape-Dawson ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 595+00 TO STA 597+00

SHEET 61 OF 80

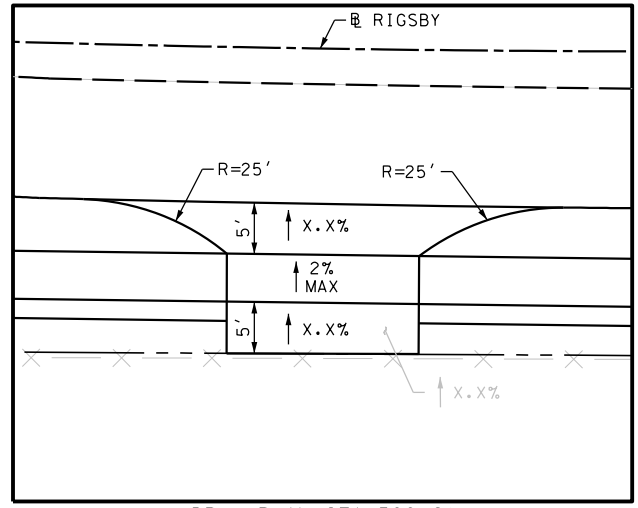
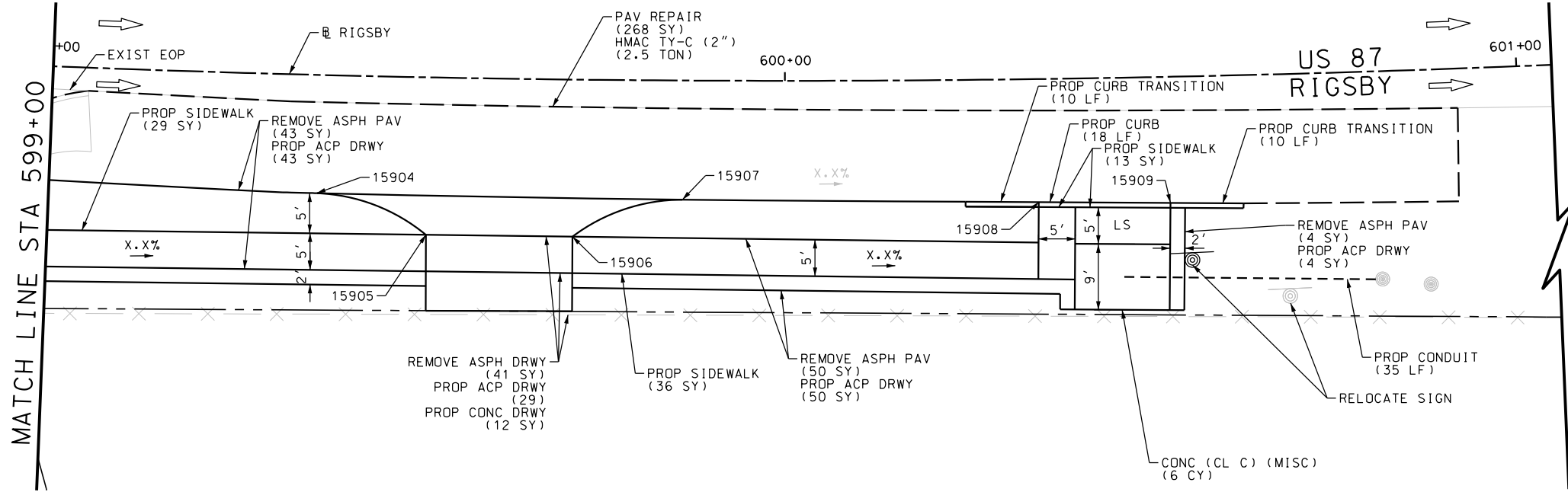
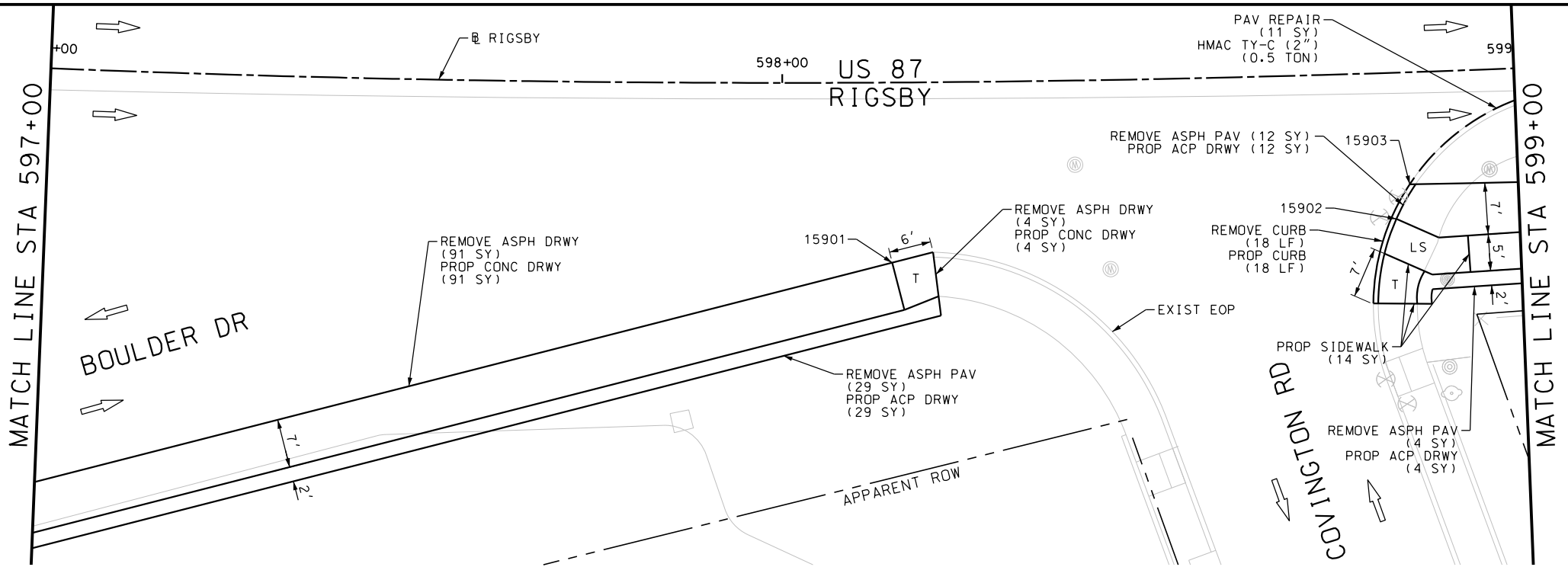
DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	271



DRWY PLAN STA 597+00

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_62.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	18
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	278
0340-6066	D-GR HMA (SQ) TY-C PG76-22	TON	3.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	279
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	56
0530-6004	DRIVEWAYS (CONC)	SY	107
0530-6005	DRIVEWAYS (ACP)	SY	171
0531-6001	CONC SIDEWALKS (4")	SY	92
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	35
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
 © 2017

US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 597+00 TO STA 601+00

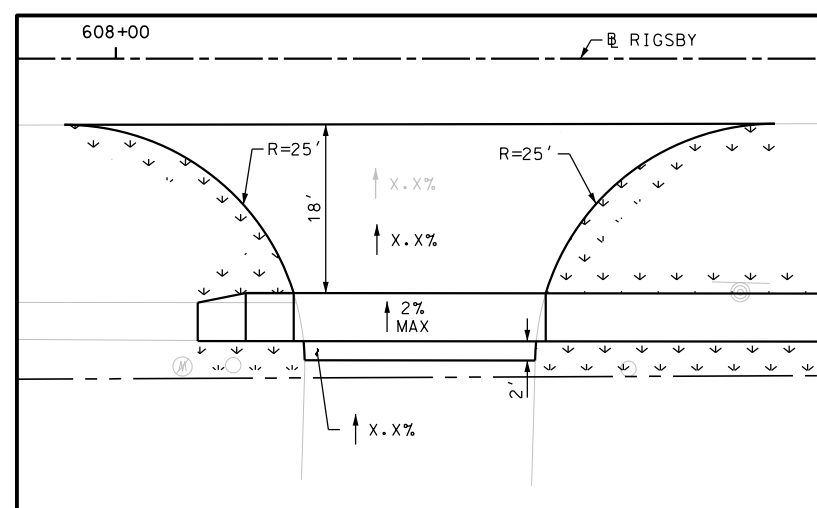
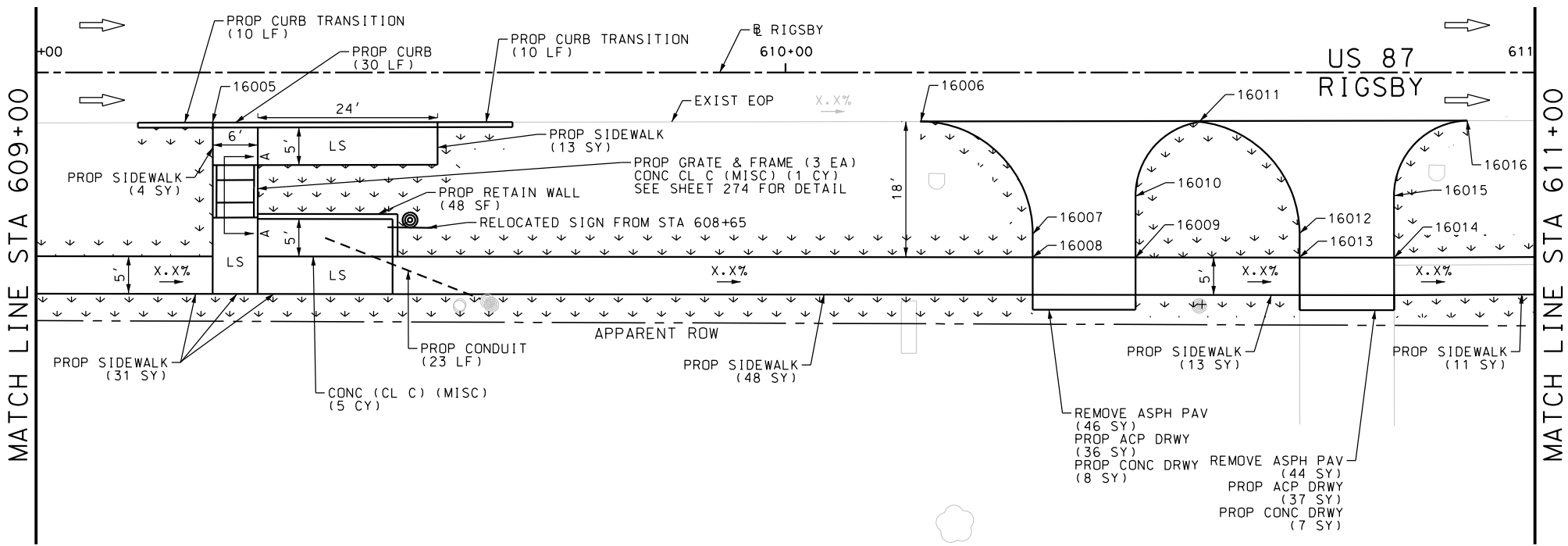
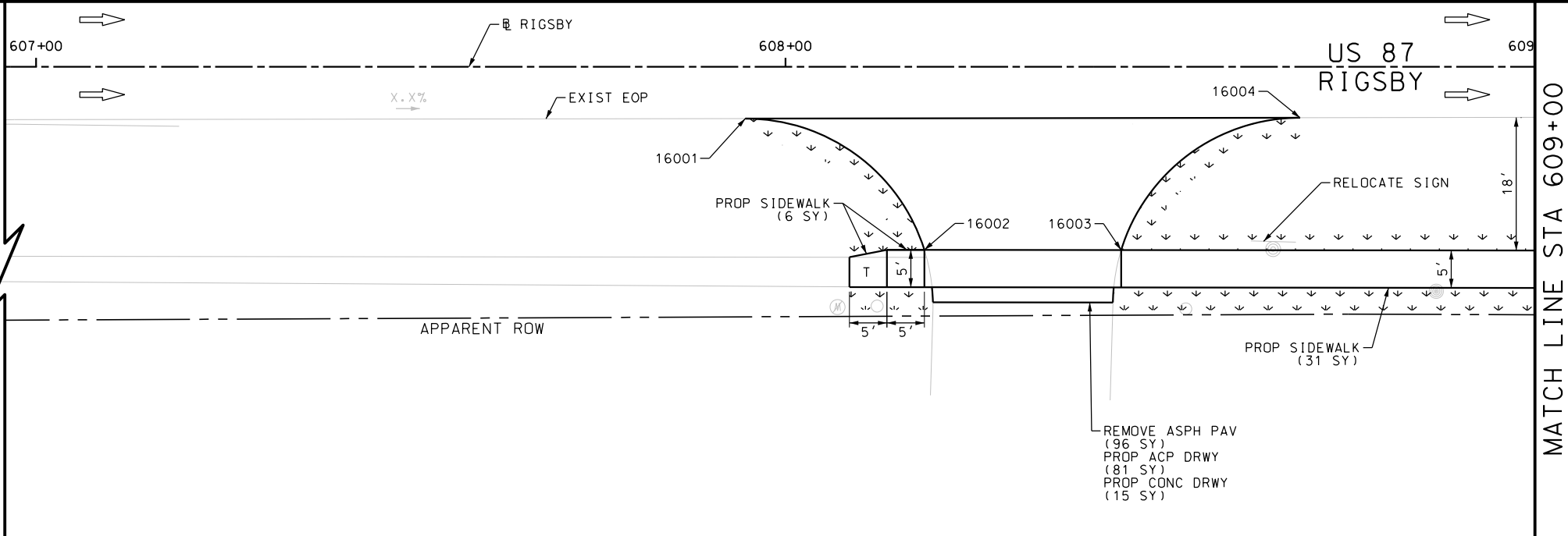
SHEET 62 OF 80

DWG:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DWG:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	272

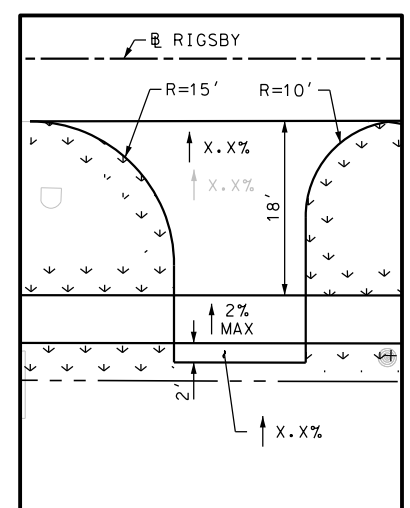


Plotted on: 9/29/2017

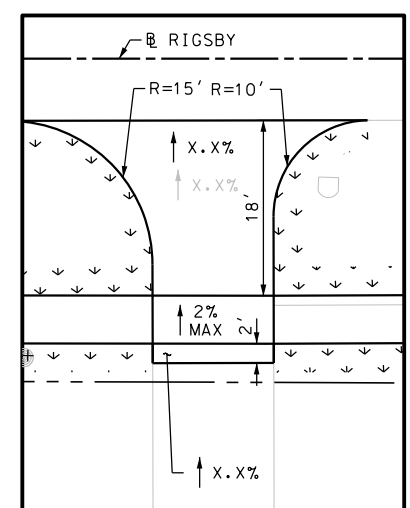
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DRWY PLAN STA 608+32



DRWY PLAN STA 610+40



DRWY PLAN STA 610+75

ITEM	DESCRIPTION	UNIT	QTY
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	186
0162-6002	BLOCK SODDING	SY	230
0168-6001	VEGETATIVE WATERING	MG	3.59
0420-6074	CL C CONC (MISC)	CY	6.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	48
0471-6003	GRATE & FRAME	EA	3
0529-6002	CONC CURB (TY II)	LF	50
0530-6004	DRIVEWAYS (CONC)	SY	30
0530-6005	DRIVEWAYS (ACP)	SY	154
0531-6001	CONC SIDEWALKS (4")	SY	157
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	23
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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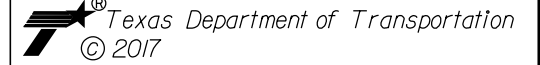
DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



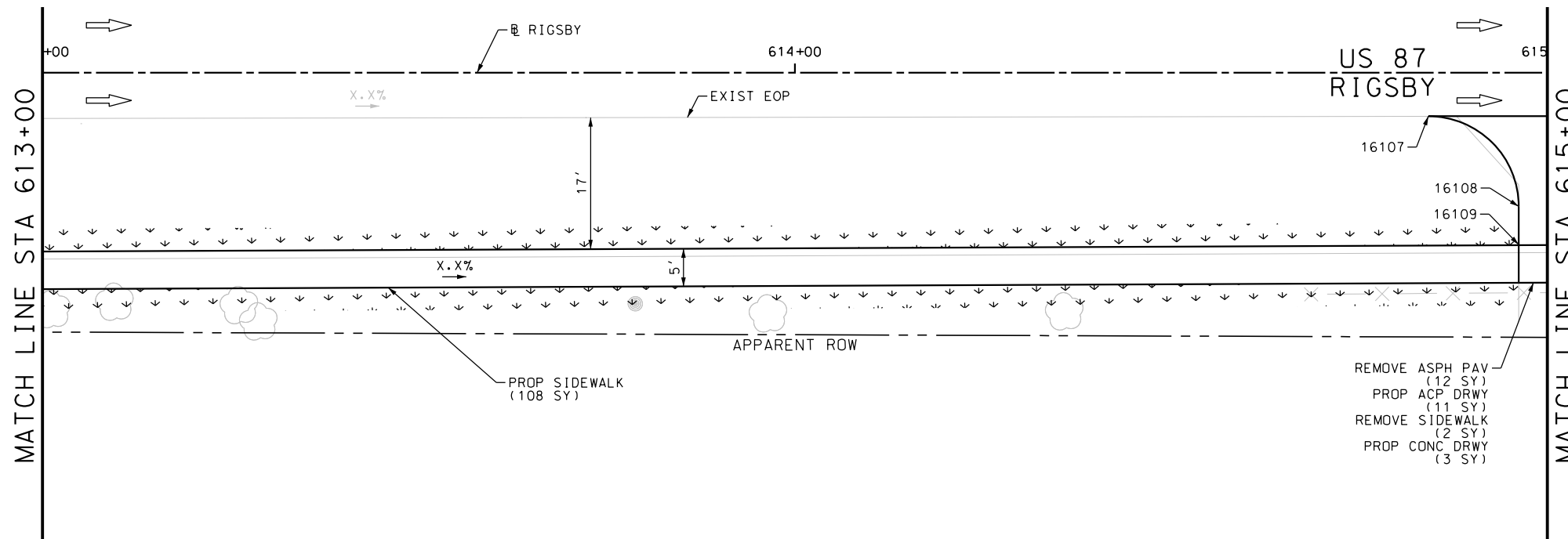
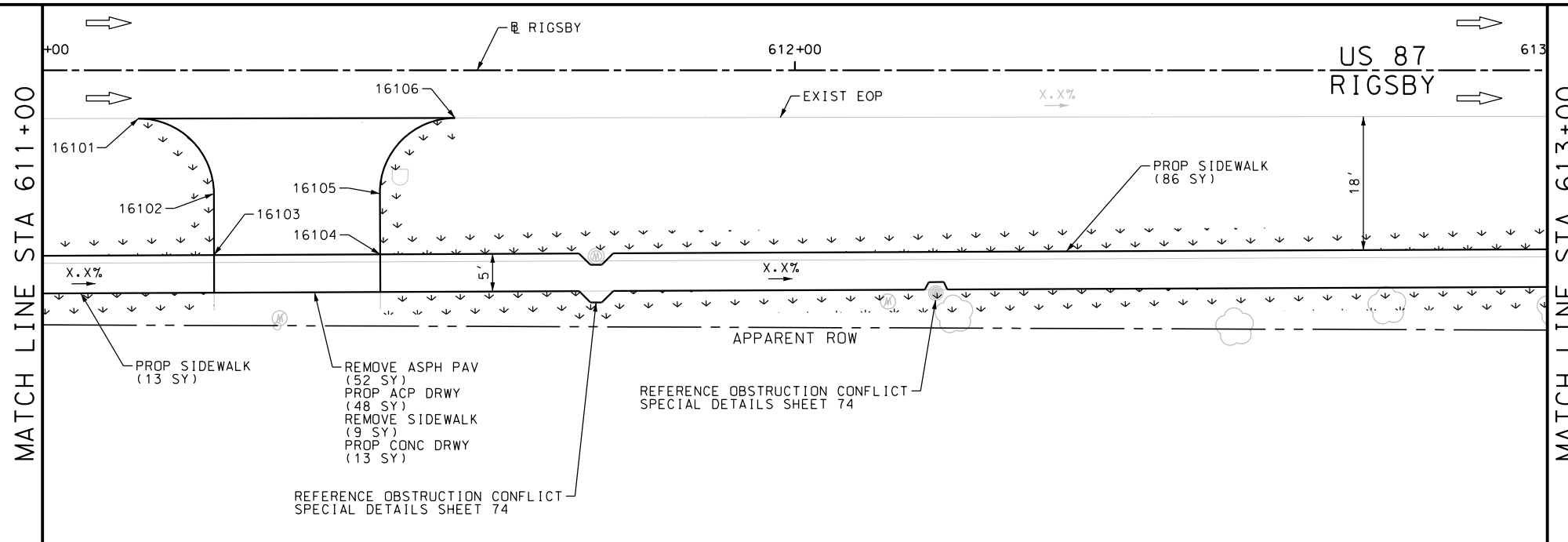
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 607+00 TO STA 611+00

SHEET 63 OF 80

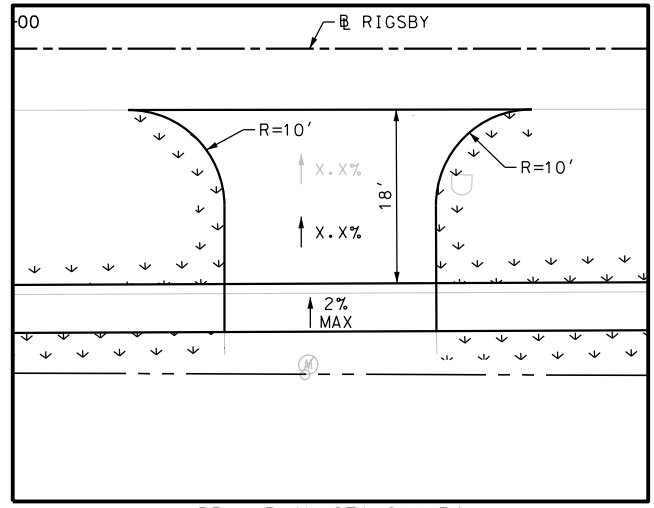
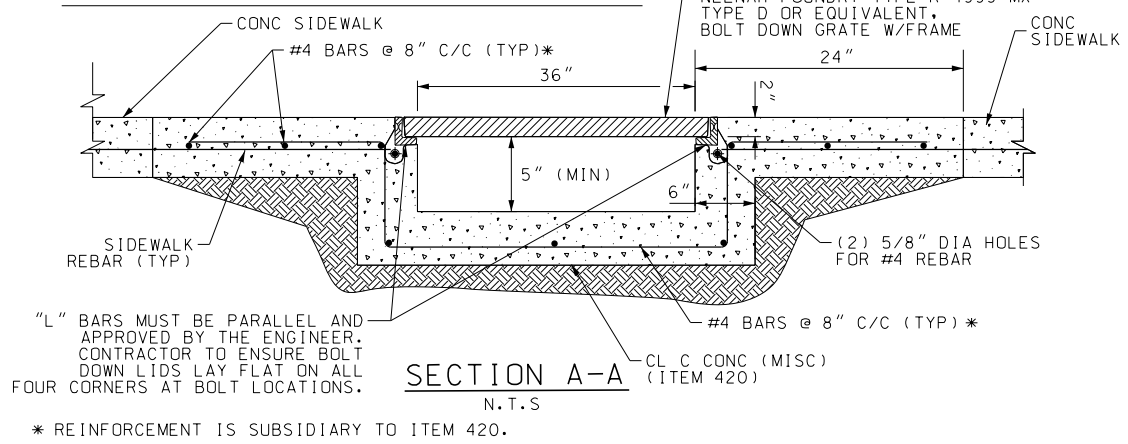
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	273

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_64.dgn



GRATE & FRAME DETAIL



ITEM	DESCRIPTION	UNIT	QTY
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	11
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	64
0162-6002	BLOCK SODDING	SY	263
0168-6001	VEGETATIVE WATERING	MG	4.10
0530-6004	DRIVEWAYS (CONC)	SY	16
0530-6005	DRIVEWAYS (ACP)	SY	59
0531-6001	CONC SIDEWALKS (4")	SY	207

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 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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 | TBPES FIRM REGISTRATION #10028800

Texas Department of Transportation  
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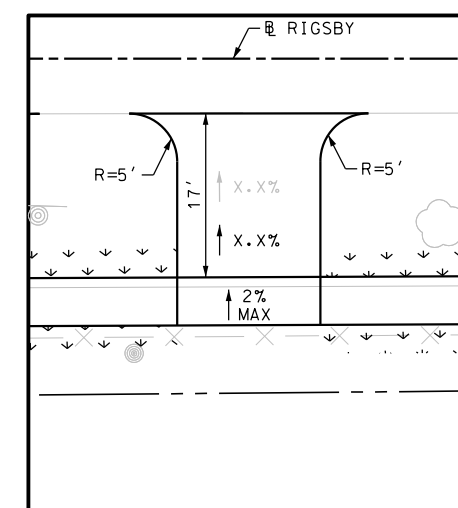
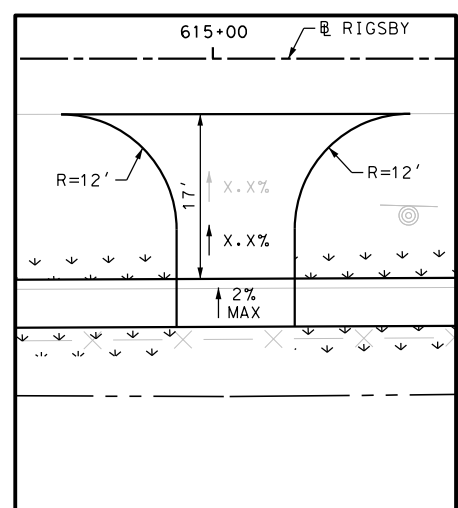
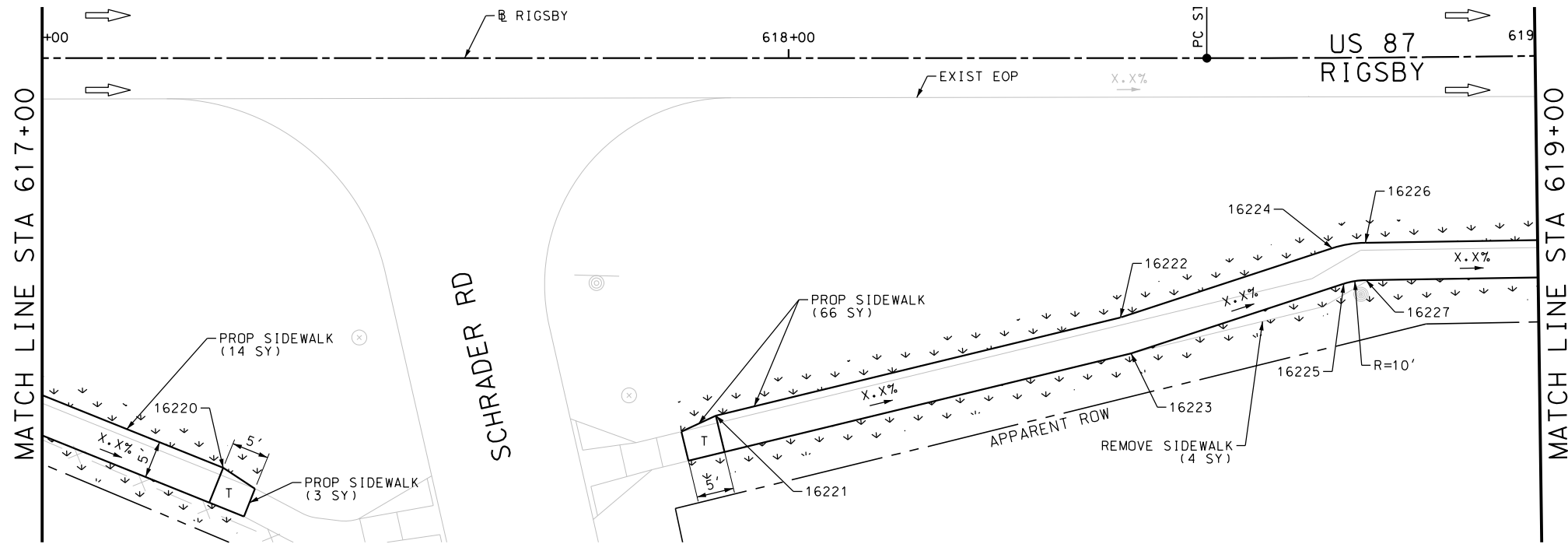
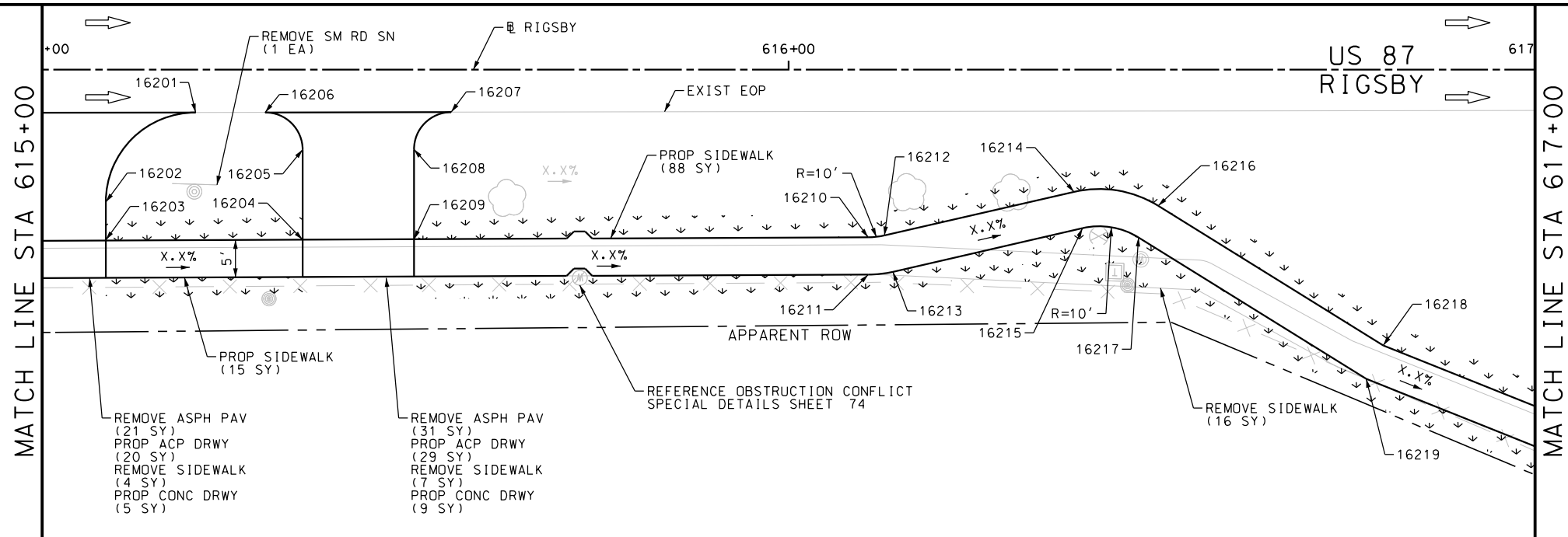
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 611+00 TO STA 615+00

SHEET 64 OF 80

DWG:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DWG:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	274

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_65.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	31
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	52
0162-6002	BLOCK SODDING	SY	223
0168-6001	VEGETATIVE WATERING	MG	3.48
0530-6004	DRIVEWAYS (CONC)	SY	14
0530-6005	DRIVEWAYS (ACP)	SY	49
0531-6001	CONC SIDEWALKS (4")	SY	111
0644-6076	REMOVE SM RD SN SUP&M	EA	1

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 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



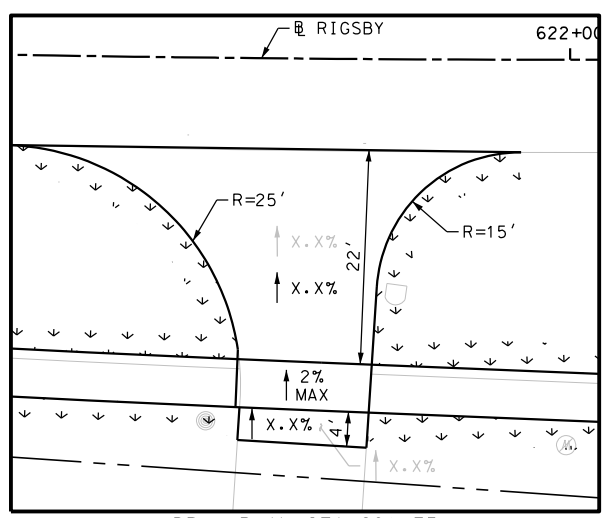
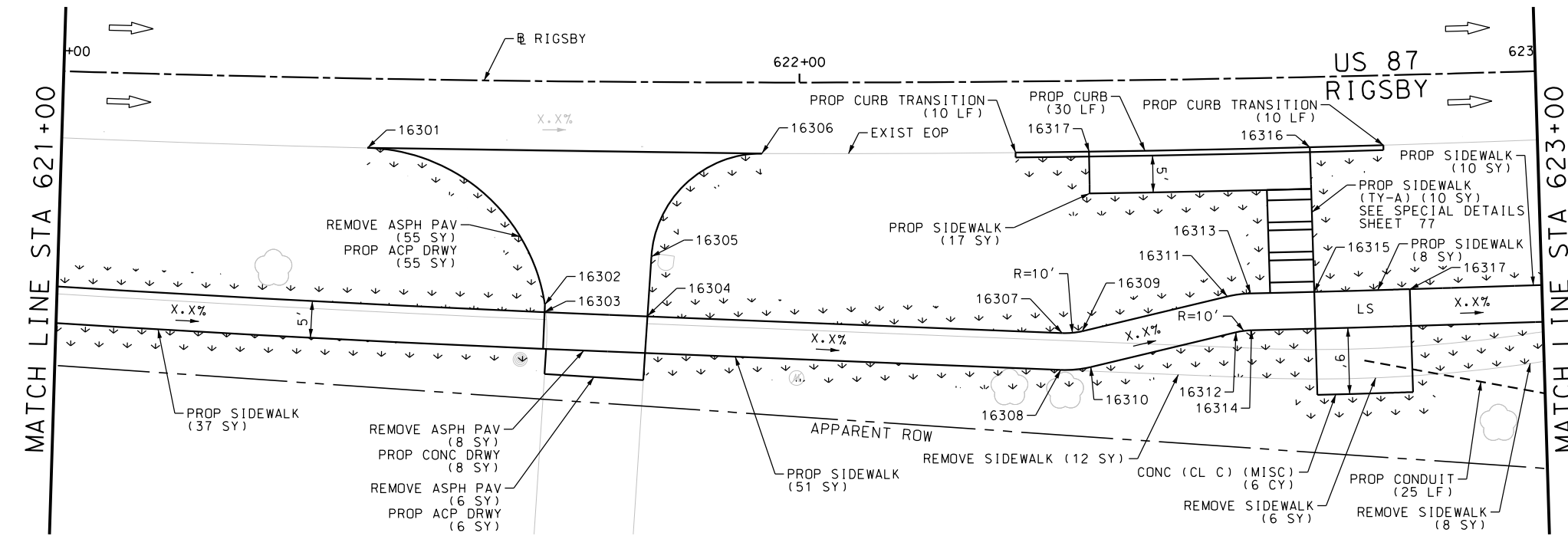
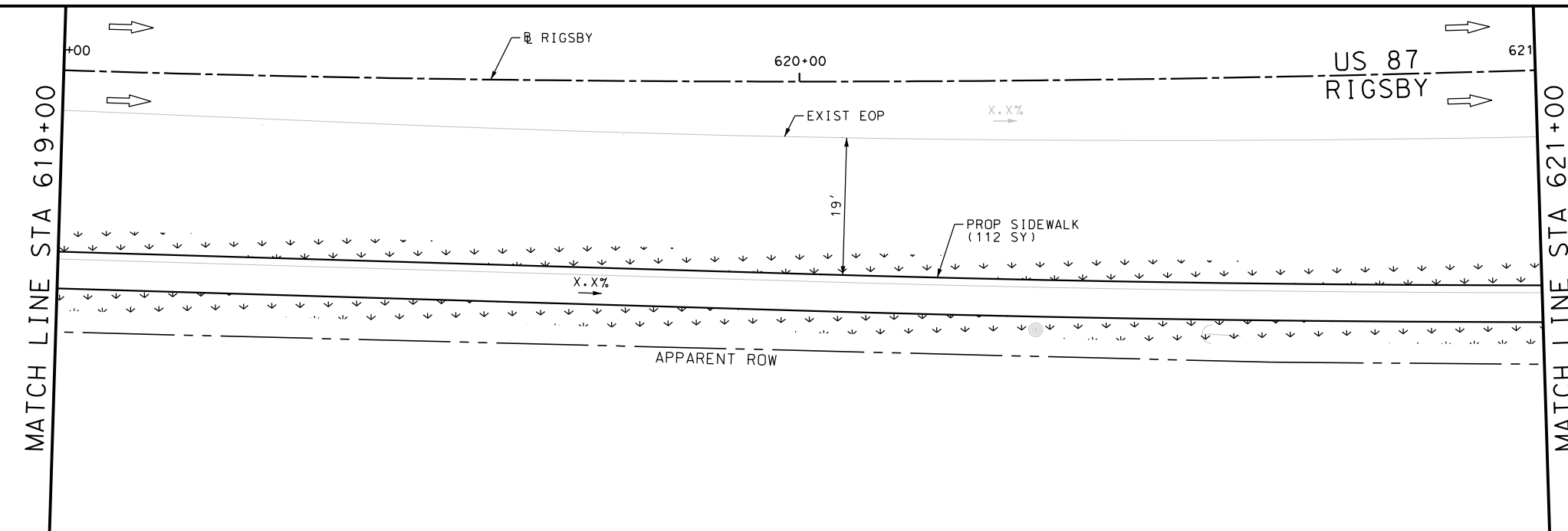
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 615+00 TO STA 619+00

SHEET 65 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	275

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_66.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	26
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	69
0162-6002	BLOCK SODDING	SY	319
0168-6001	VEGETATIVE WATERING	MG	4.98
0420-6074	CL C CONC (MISC)	CY	6.0
0529-6002	CONC CURB (TY II)	LF	50
0530-6004	DRIVEWAYS (CONC)	SY	8
0530-6005	DRIVEWAYS (ACP)	SY	61
0531-6001	CONC SIDEWALKS (4")	SY	235
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	10
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	25

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
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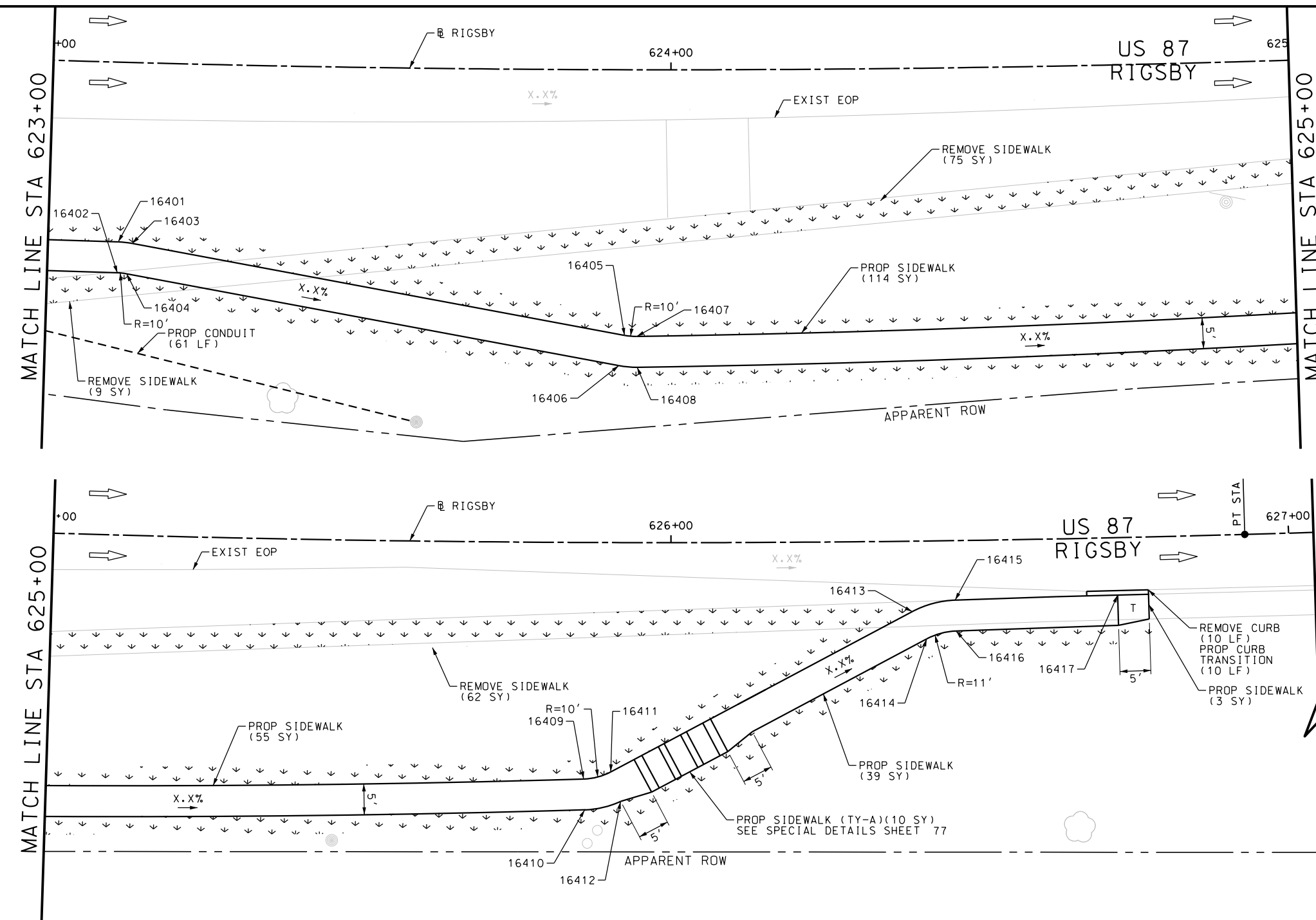
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 619+00 TO STA 623+00

SHEET 66 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	276

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_67.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	10
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	146
0162-6002	BLOCK SODDING	SY	383
0168-6001	VEGETATIVE WATERING	MG	5.97
0529-6002	CONC CURB (TY II)	LF	10
0531-6001	CONC SIDEWALKS (4")	SY	211
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	10
0618-6016	COND (PVC) (SCH 40) (1")	LF	61

NOTES:  
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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: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



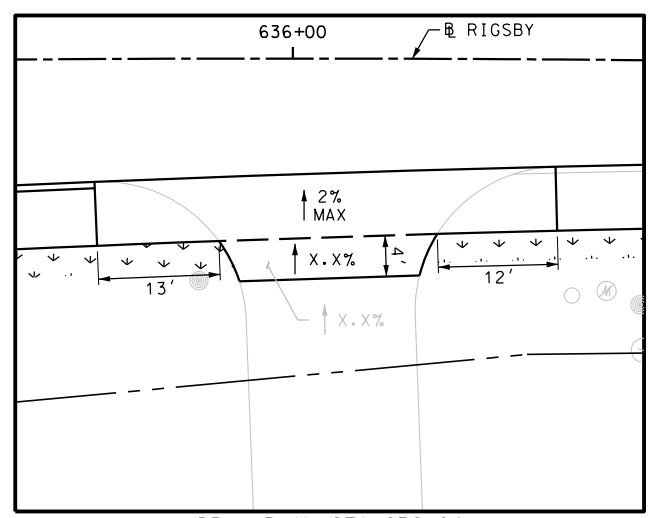
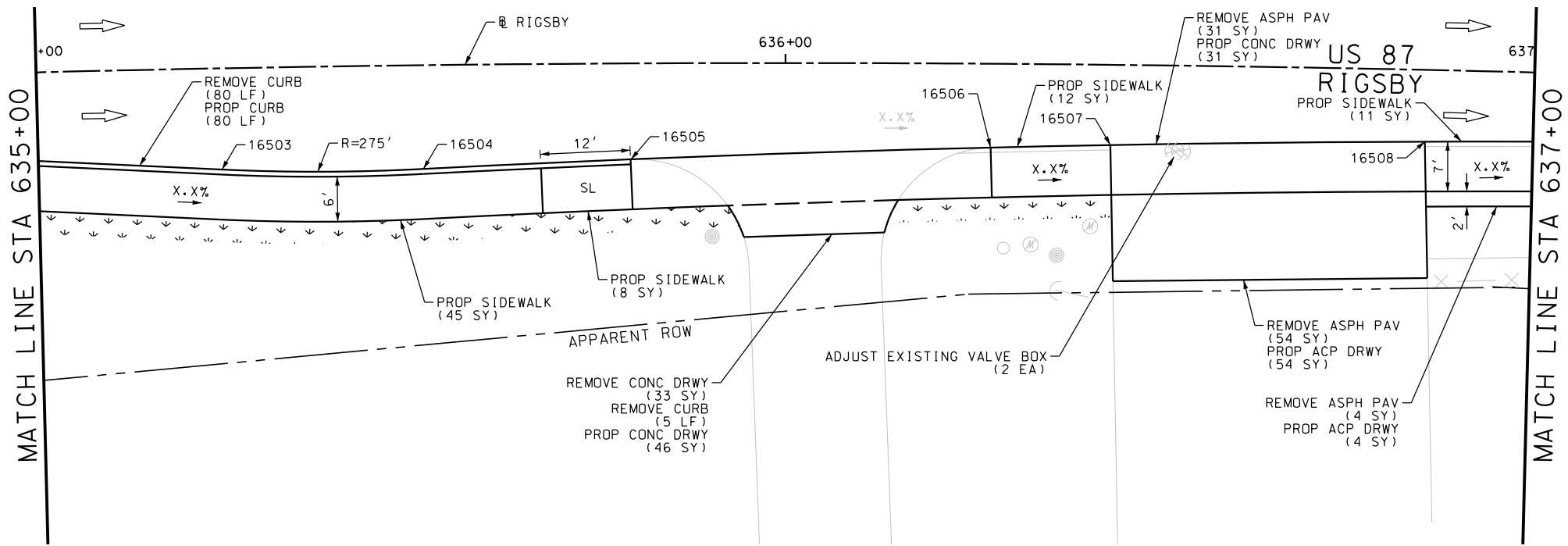
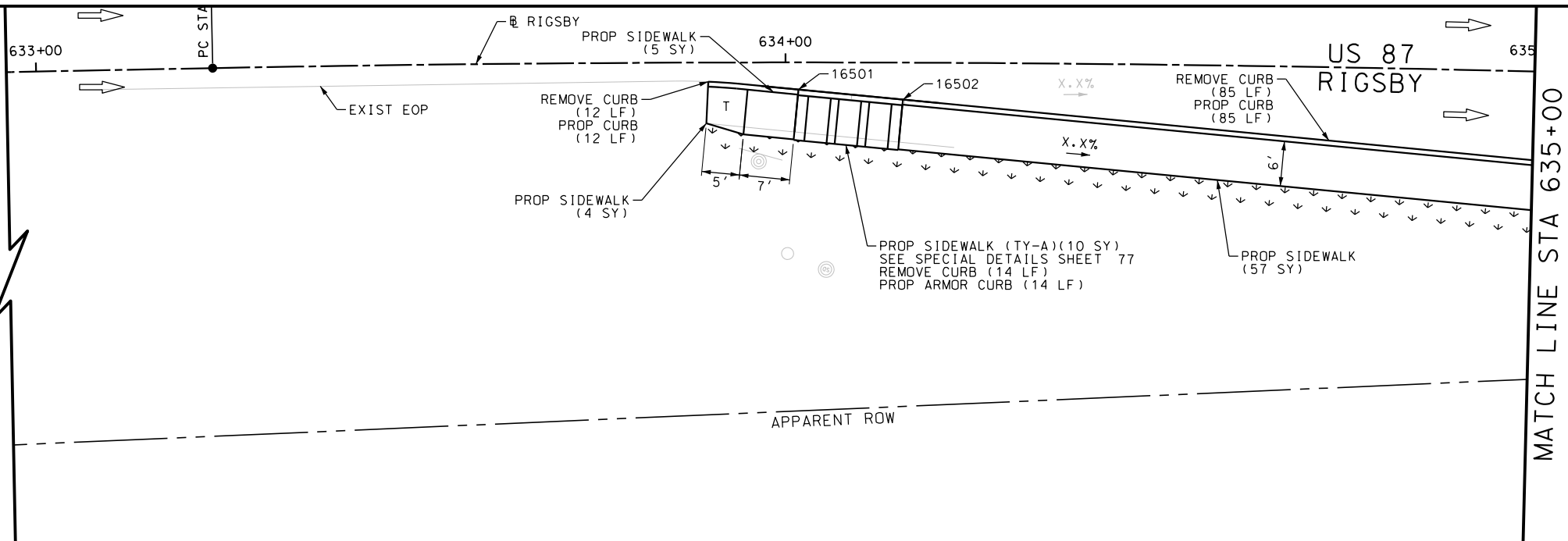
US 87  
 RIGSBY  
**SIDEWALK  
 CONSTRUCTION PLAN**  
 STA 623+00 TO STA 627+00

SHEET 67 OF 80

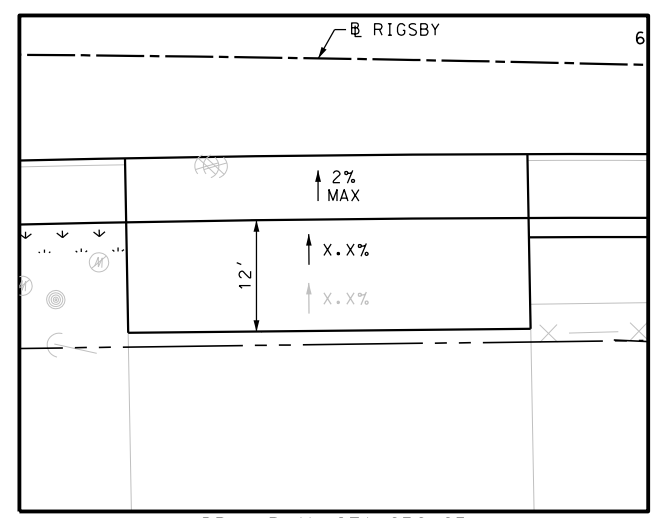
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	277

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_68.dgn



DRWY PLAN STA 636+04



DRWY PLAN STA 636+65

ITEM	DESCRIPTION	UNIT	QTY
7091-6001	ADJUST EXISTING VALVE BOX	EA	2
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	33
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	196
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	89
0162-6002	BLOCK SODDING	SY	79
0168-6001	VEGETATIVE WATERING	MG	1.23
0529-6002	CONC CURB (TY II)	LF	177
0529-6020	CONC CURB & GUTTER (ARMOR CURB)	LF	14
0530-6004	DRIVEWAYS (CONC)	SY	77
0530-6005	DRIVEWAYS (ACP)	SY	58
0531-6001	CONC SIDEWALKS (4")	SY	142
0531-6032	CONC SIDEWALKS (SPECIAL) (TYPE A)	SY	10

NOTES:  
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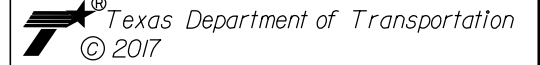
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



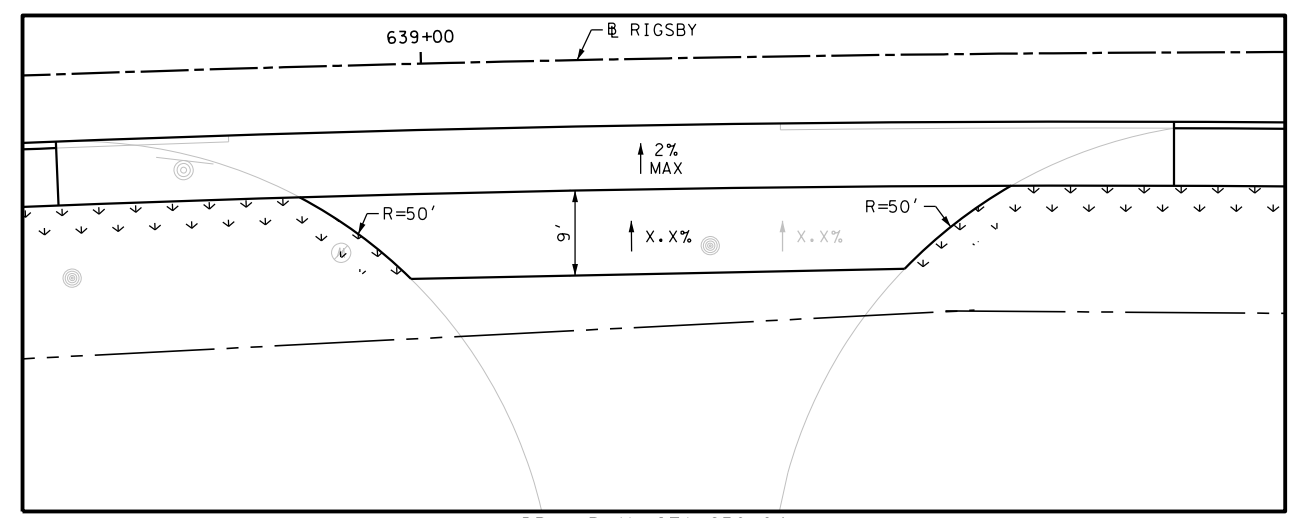
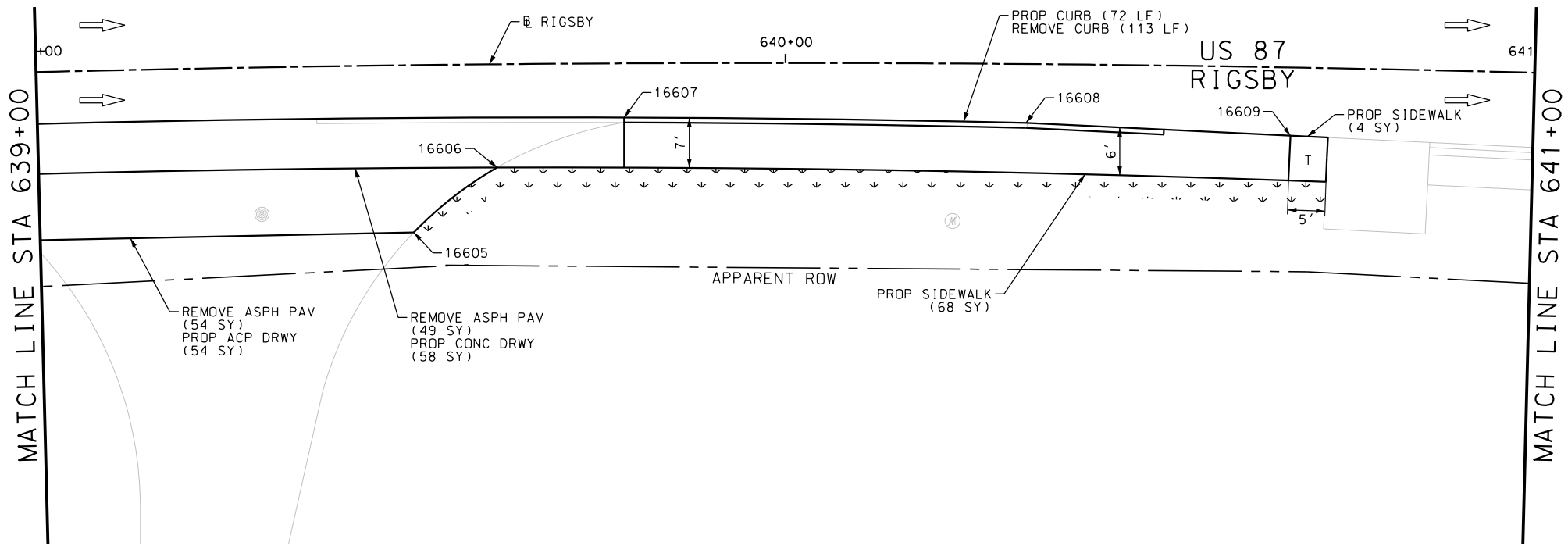
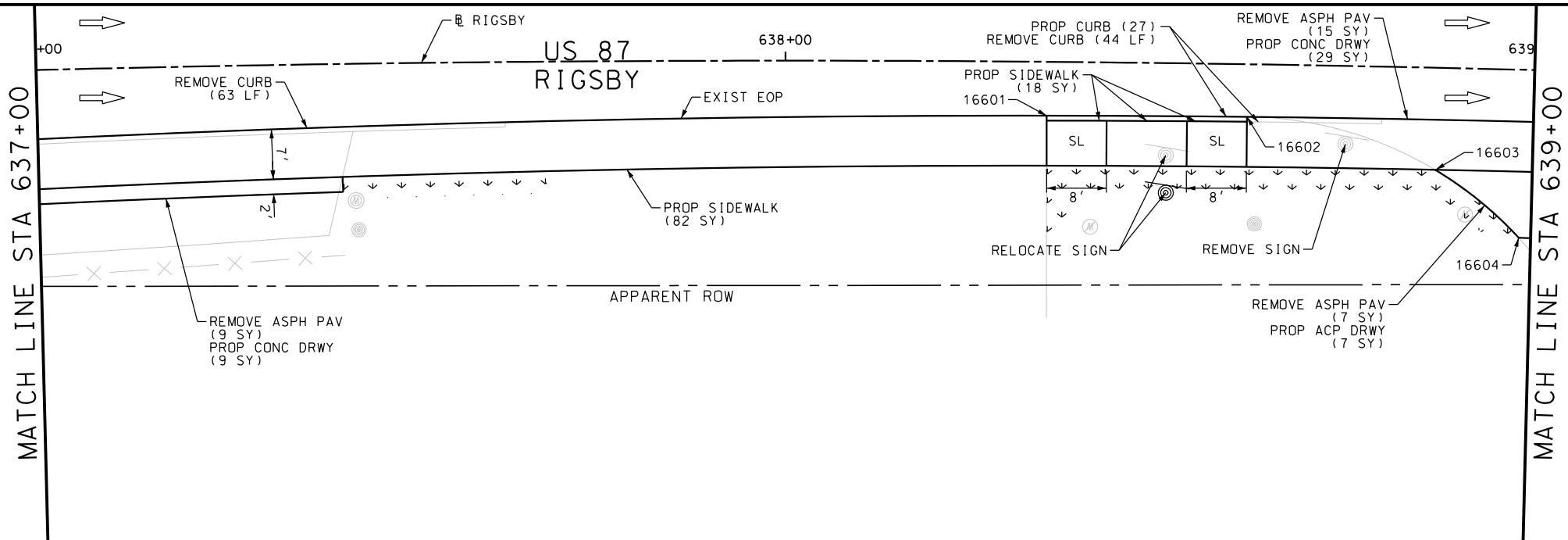
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 633+00 TO STA 637+00

SHEET 68 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	278

Plotted on: 9/29/2017

Design File name: P:\111135\01\des\ign\Civil\Roadway\Rigsby\1113501\_Rigsby\_69.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	220
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	134
0162-6002	BLOCK SODDING	SY	53
0168-6001	VEGETATIVE WATERING	MG	0.83
0529-6002	CONC CURB (TY II)	LF	99
0530-6004	DRIVEWAYS (CONC)	SY	87
0530-6005	DRIVEWAYS (ACP)	SY	70
0531-6001	CONC SIDEWALKS (4")	SY	172
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1
0644-6076	REMOVE SM RD SN SUP&AM	EA	1

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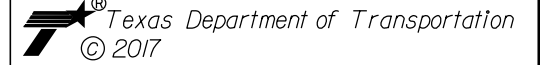
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



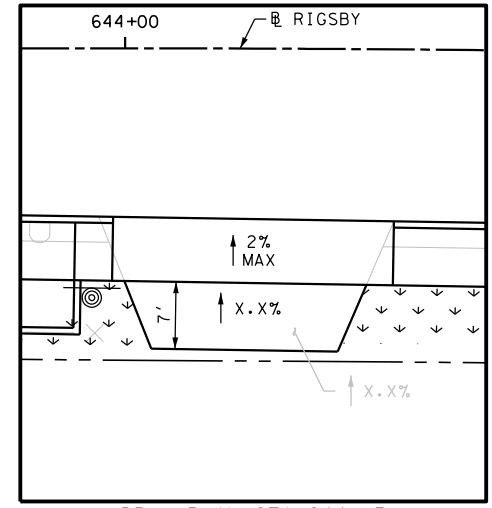
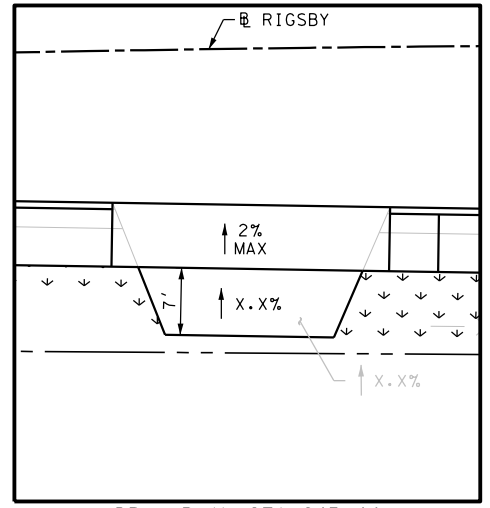
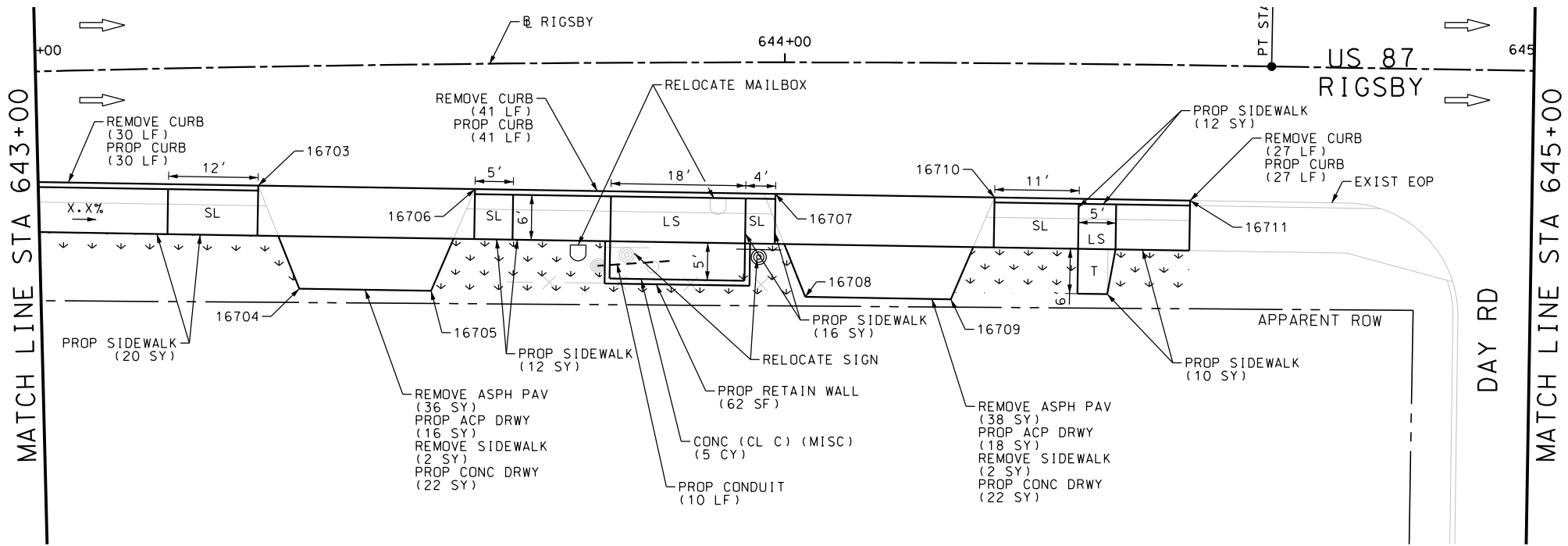
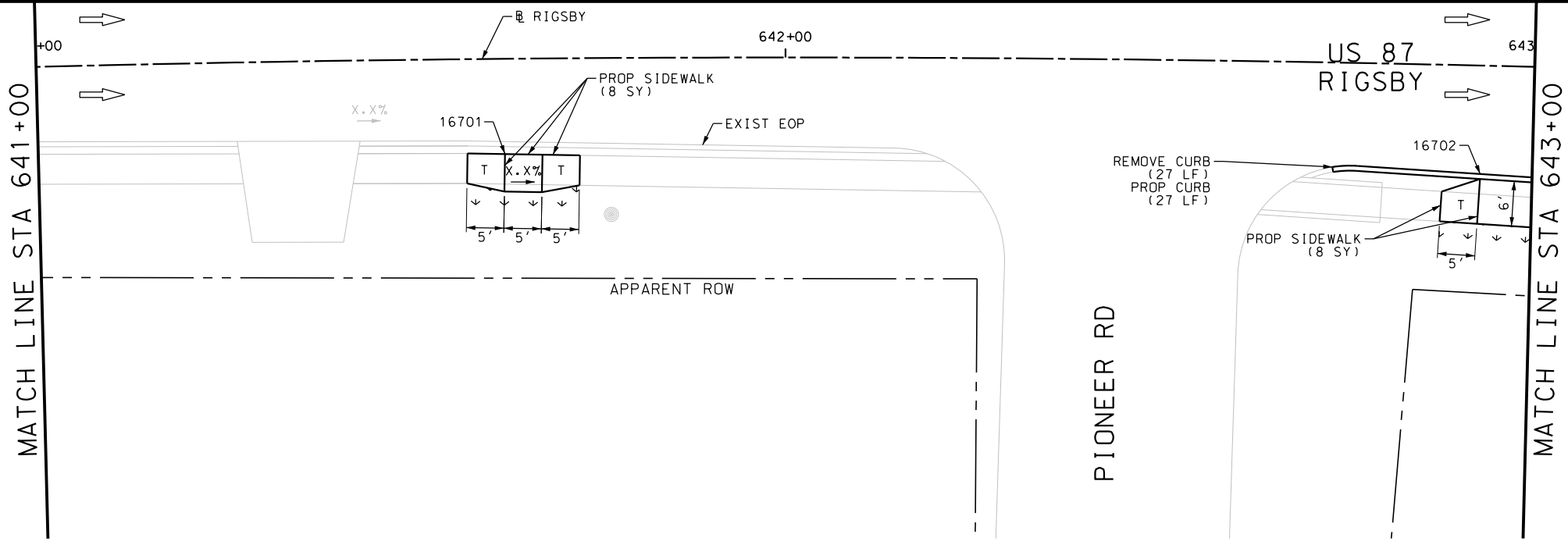
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 637+00 TO STA 641+00

SHEET 69 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	279

Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_70.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	125
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	4
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	74
0162-6002	BLOCK SODDING	SY	57
0168-6001	VEGETATIVE WATERING	MG	0.89
0420-6074	CL C CONC (MISC)	CY	5.0
0423-6008	RETAINING WALL (CAST - IN - PLACE)	SF	62
0529-6002	CONC CURB (TY II)	LF	125
0530-6004	DRIVEWAYS (CONC)	SY	44
0530-6005	DRIVEWAYS (ACP)	SY	34
0531-6001	CONC SIDEWALKS (4")	SY	86
0560-6014	MAILBOX INSTALL-S (TWG-POST) TY 4	EA	1
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	10
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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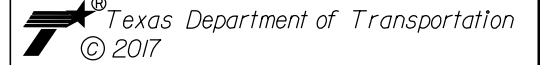
DESIGN  
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 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 641+00 TO STA 645+00

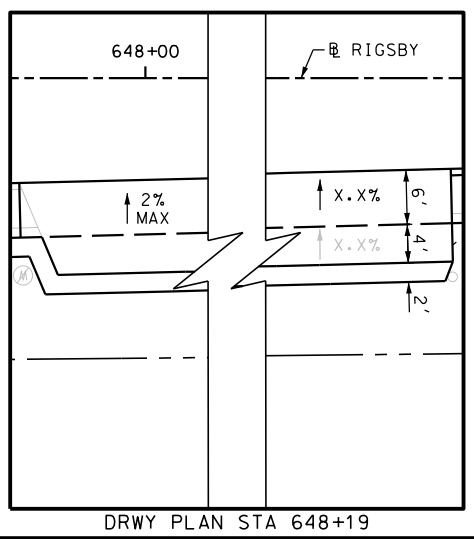
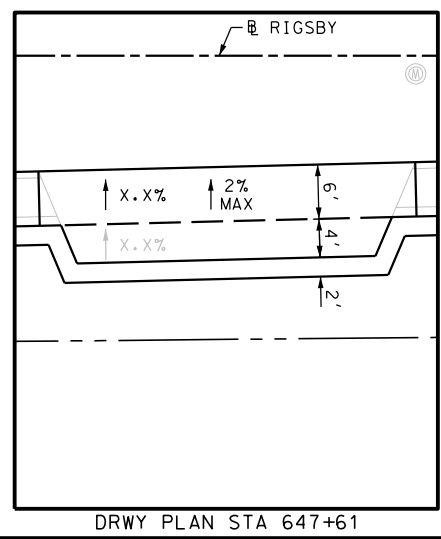
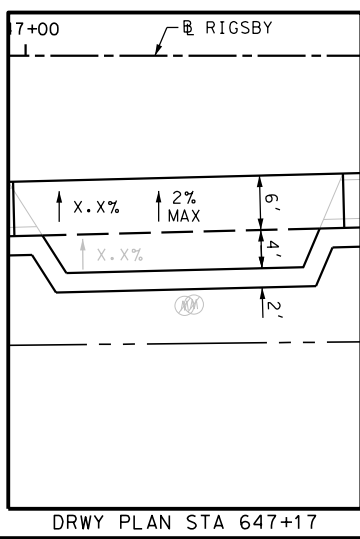
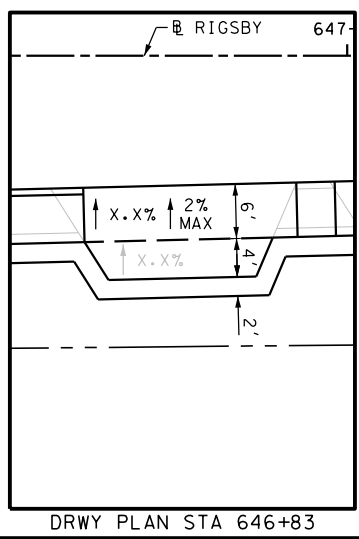
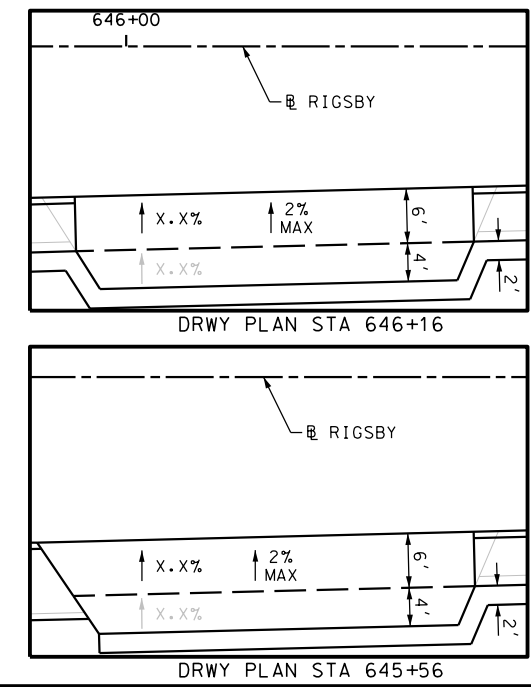
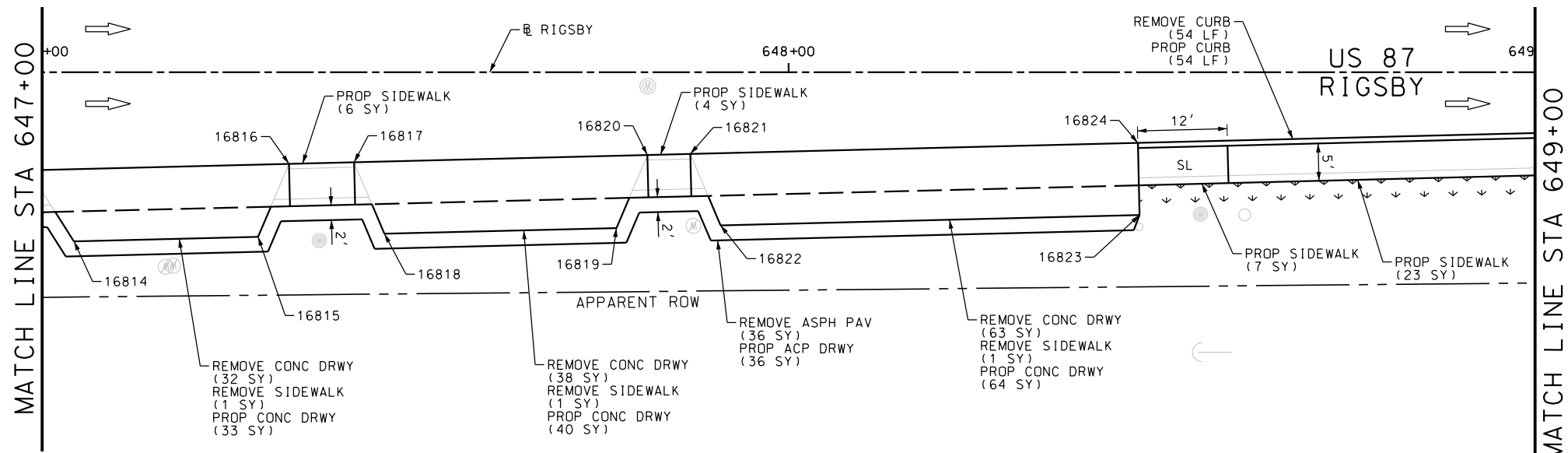
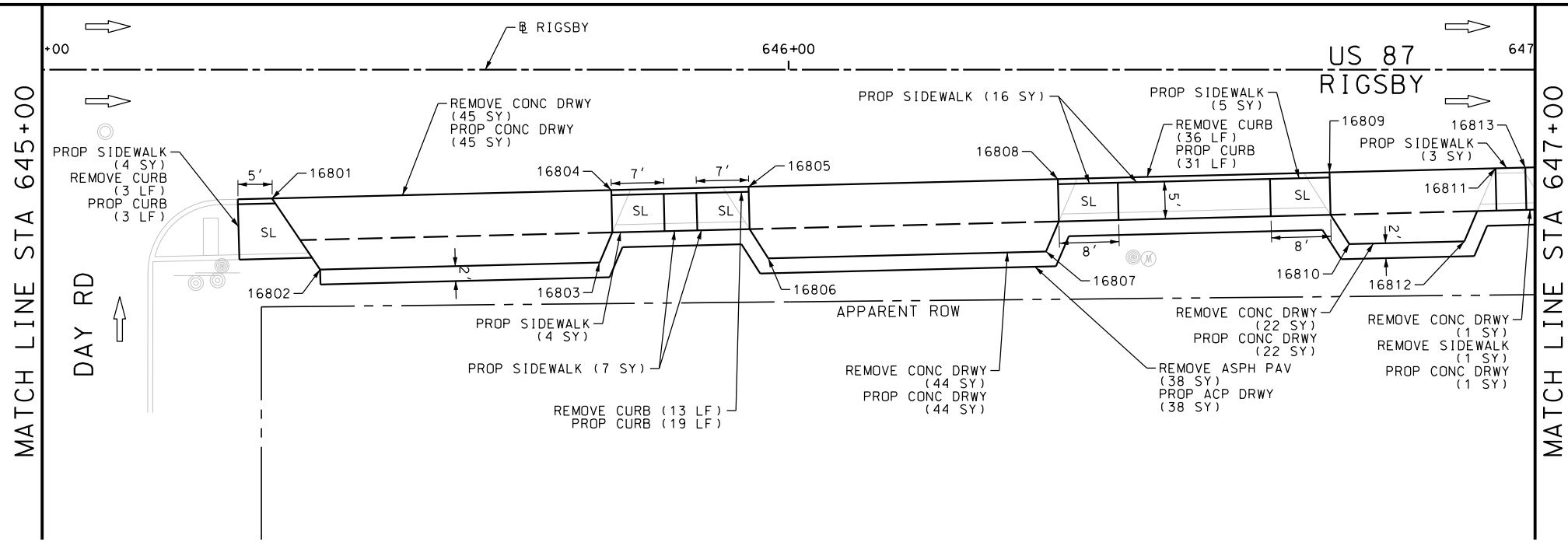
SHEET 70 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	280



Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_71.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	245
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	103
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	4
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	74
0162-6002	BLOCK SODDING	SY	18
0168-6001	VEGETATIVE WATERING	MG	0.28
0529-6002	CONC CURB (TY II)	LF	104
0530-6004	DRIVEWAYS (CONC)	SY	249
0530-6005	DRIVEWAYS (ACP)	SY	74
0531-6001	CONC SIDEWALKS (4")	SY	75

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DESIGN  
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 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
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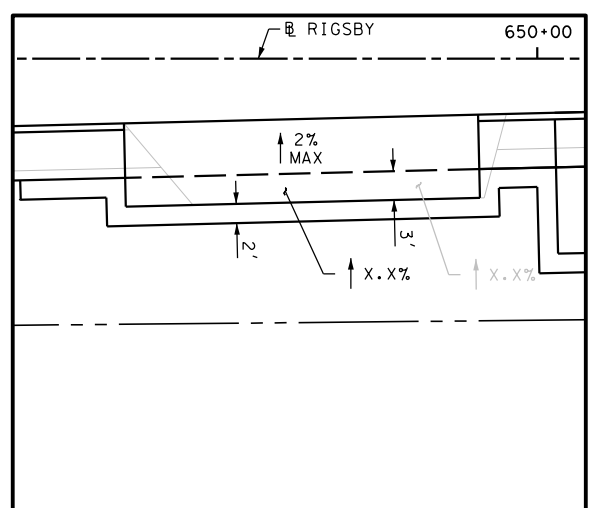
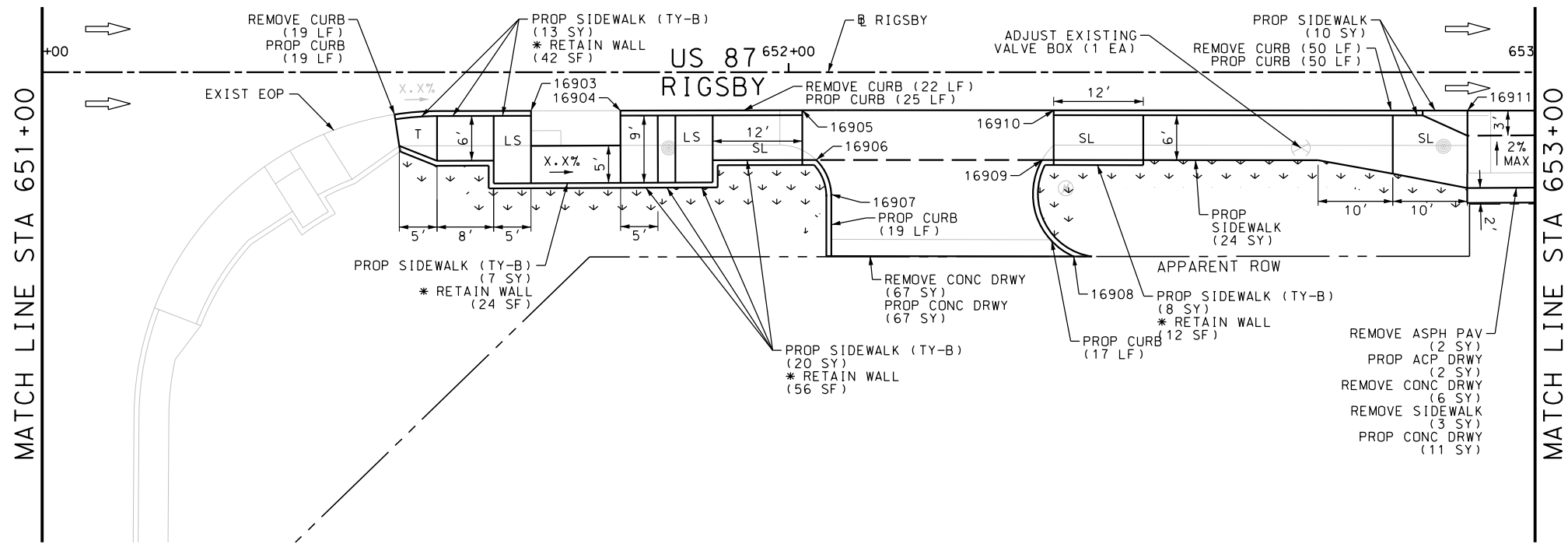
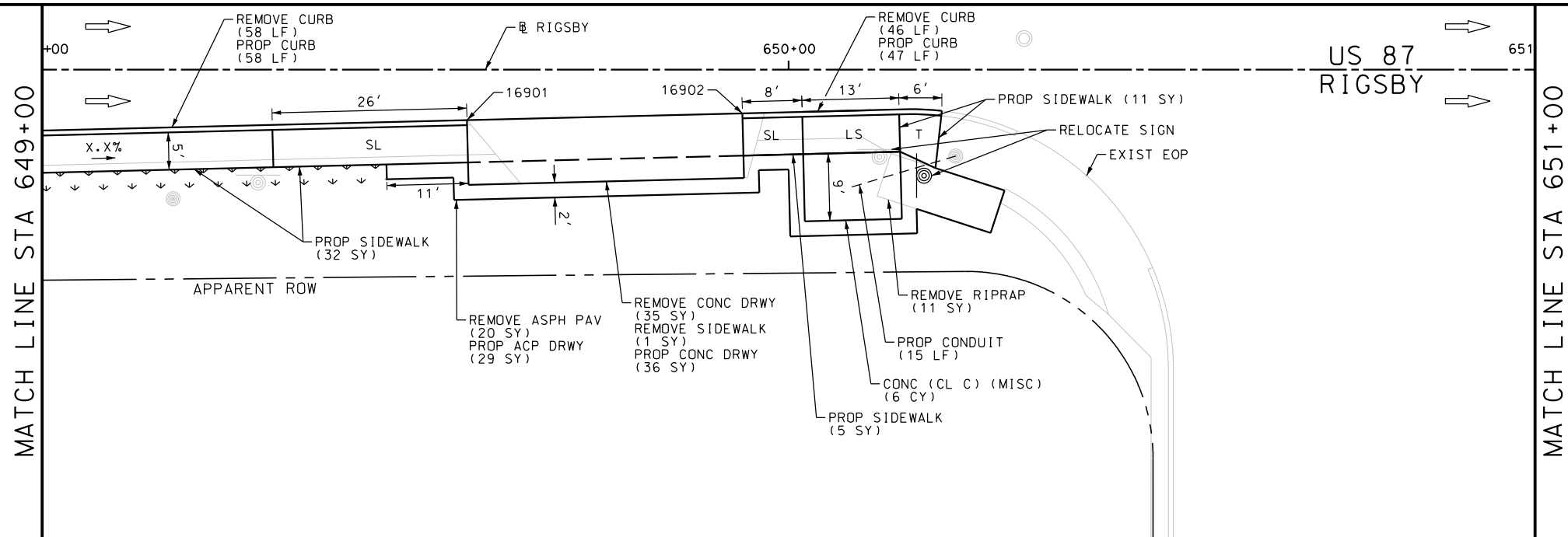
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 645+00 TO STA 649+00

SHEET 71 OF 80

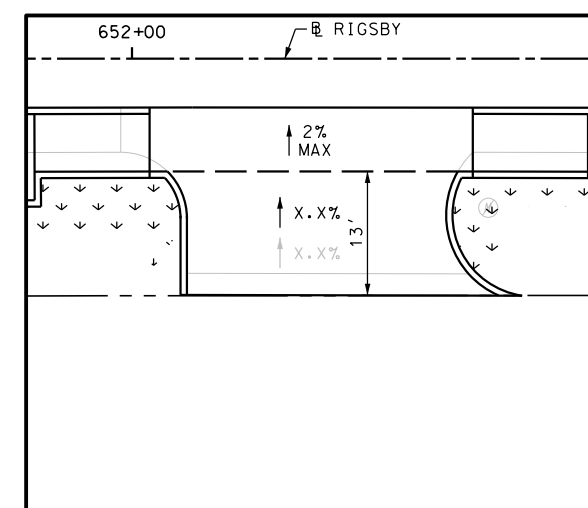
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CHK DWG:	SAT	BEXAR	0915	12	586	281

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_72.dgn



DRWY PLAN STA 649+75



DRWY PLAN STA 652+19

ITEM	DESCRIPTION	UNIT	QTY
7091-6001	ADJUST EXISTING VALVE BOX	EA	1
0104-6009	REMOVING CONC (RIPRAP)	SY	11
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	108
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	195
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	4
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	23
0162-6002	BLOCK SODDING	SY	64
0168-6001	VEGETATIVE WATERING	MG	1.00
0420-6074	CL C CONC (MISC)	CY	1.0
0529-6002	CONC CURB (TY II)	LF	231
0530-6004	DRIVEWAYS (CONC)	SY	112
0530-6005	DRIVEWAYS (ACP)	SY	32
0531-6001	CONC SIDEWALKS (4")	SY	61
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	48
0618-6016	CONDT (PVC) (SCH 40) (1")	LF	15

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
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DESIGN  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
**INTERIM REVIEW**  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



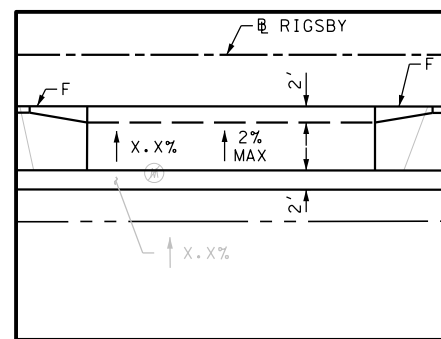
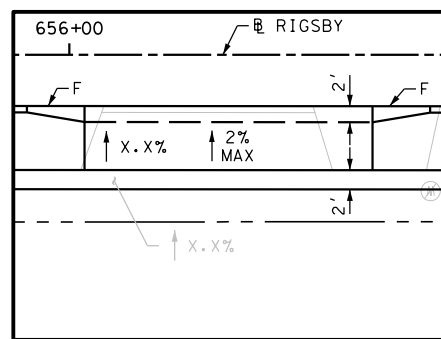
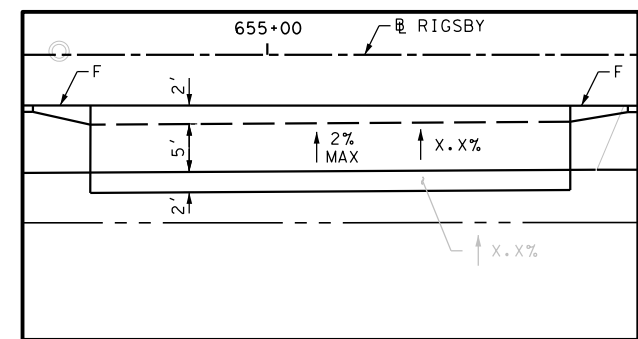
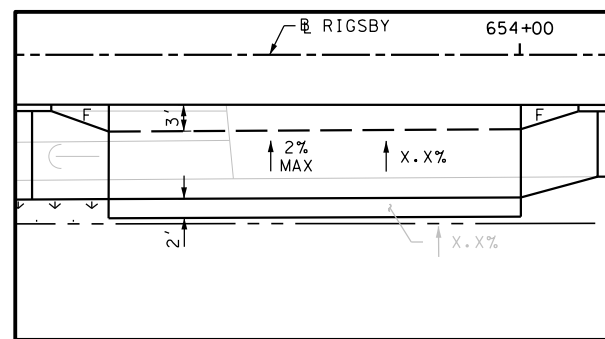
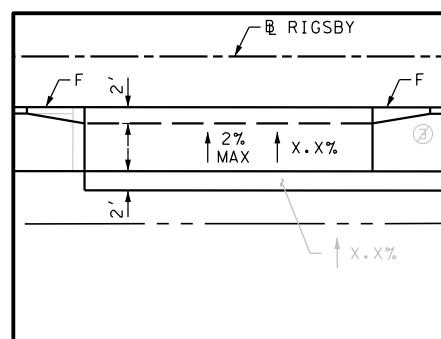
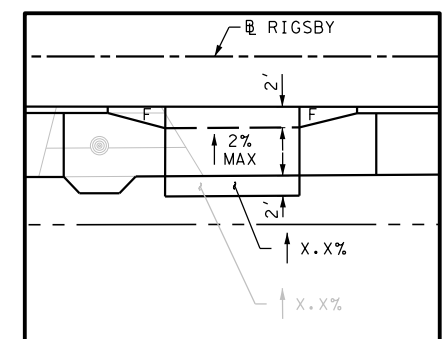
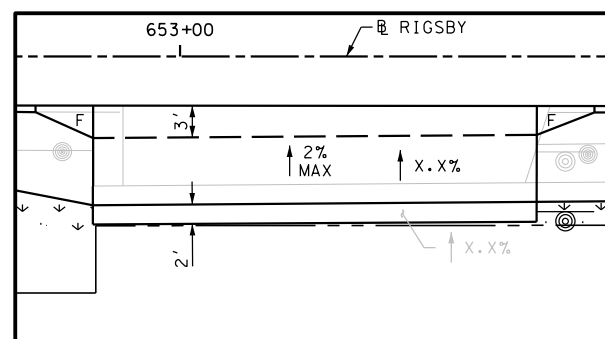
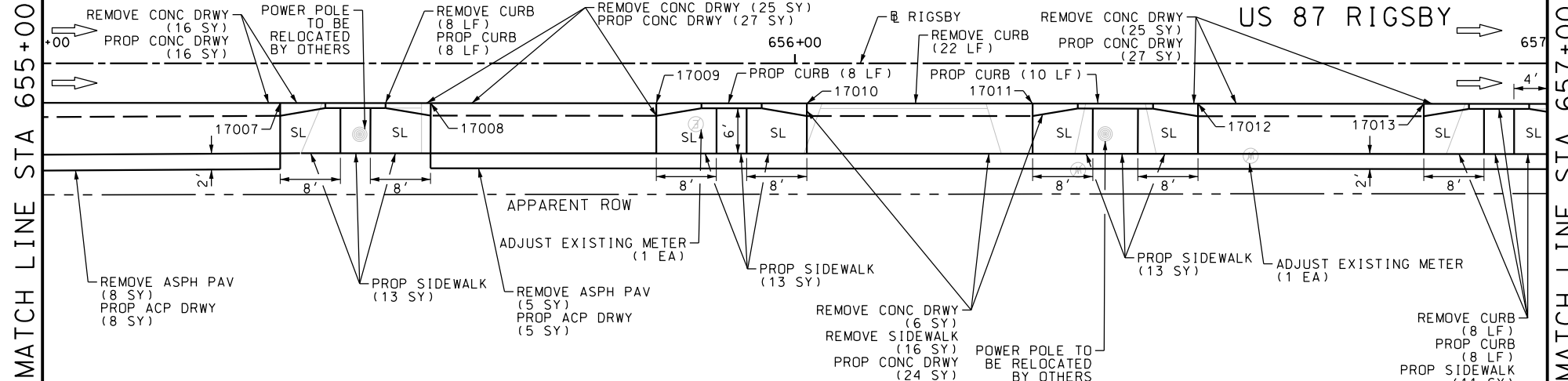
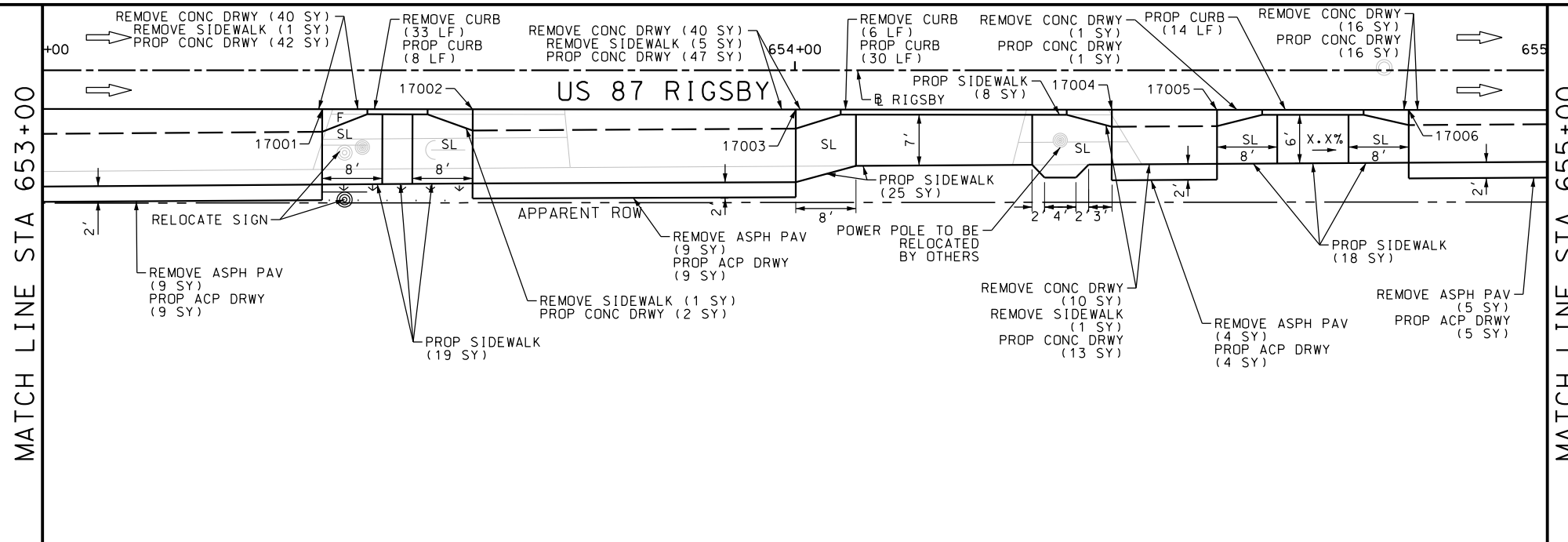
US 87  
 RIGSBY  
**SIDEWALK CONSTRUCTION PLAN**  
 STA 649+00 TO STA 653+00

SHEET 72 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	282

Plotted on: 9/29/2017

Design File name: P:\11135\01\des\ign\Civil\Roadway\Rigsby\1113501\_Rigsby\_73.dgn



ITEM	DESCRIPTION	UNIT	QTY
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	2
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	155
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	77
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	24
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	40
0162-6002	BLOCK SODDING	SY	7
0168-6001	VEGETATIVE WATERING	MG	0.11
0529-6002	CONC CURB (TY II)	LF	86
0530-6004	DRIVEWAYS (CONC)	SY	217
0530-6005	DRIVEWAYS (ACP)	SY	40
0531-6001	CONC SIDEWALKS (4")	SY	120
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



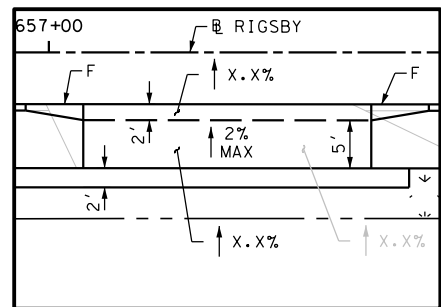
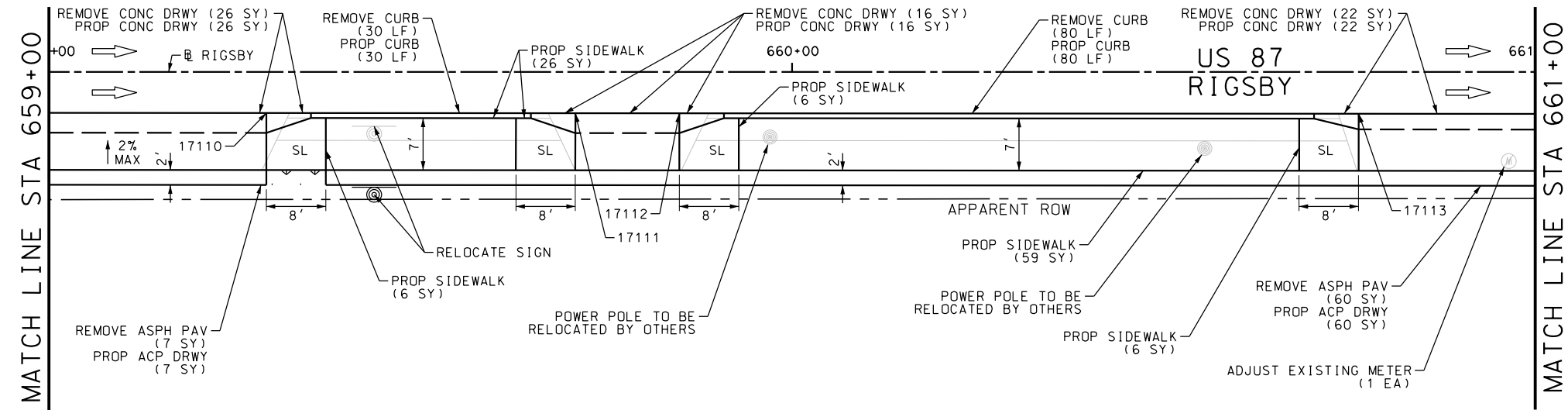
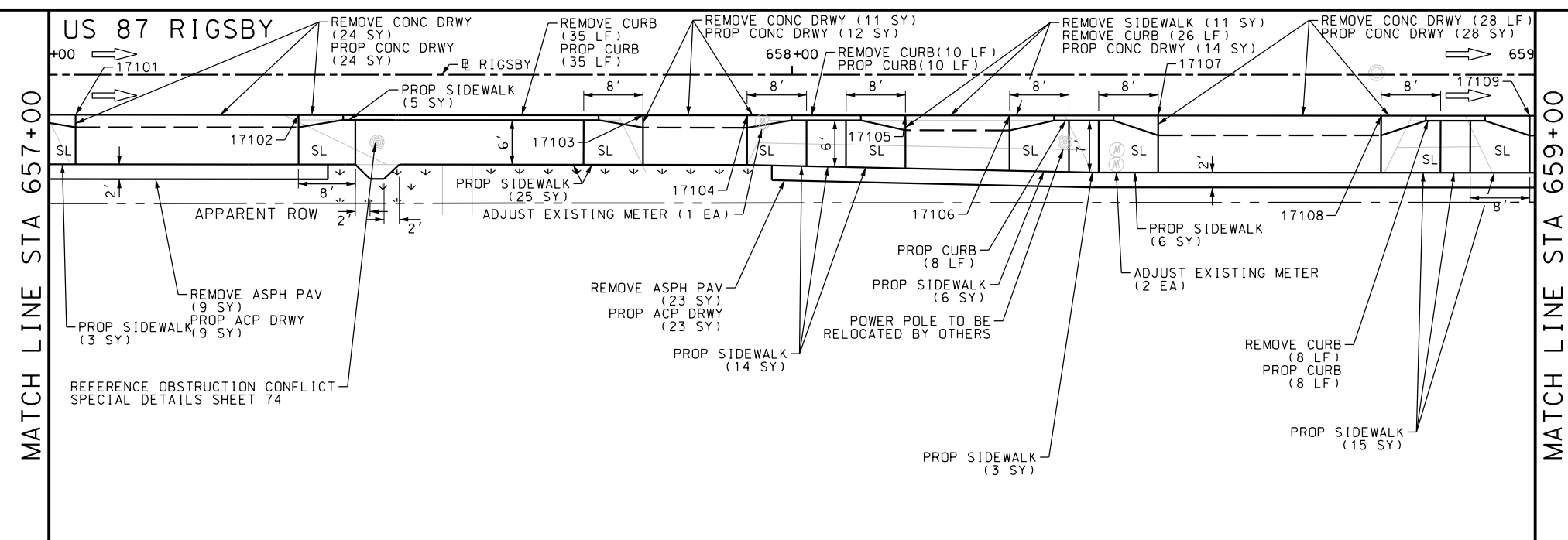
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 653+00 TO STA 657+00

SHEET 73 OF 80

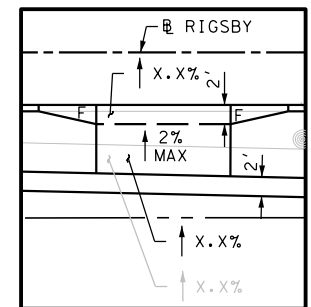
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	283

Plotted on: 9/29/2017

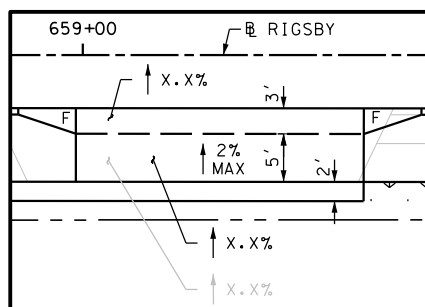
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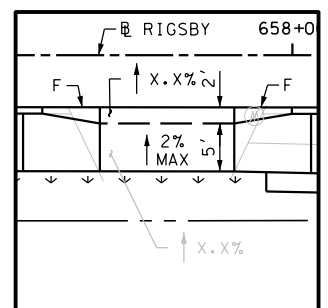
DRWY PLAN STA 657+19



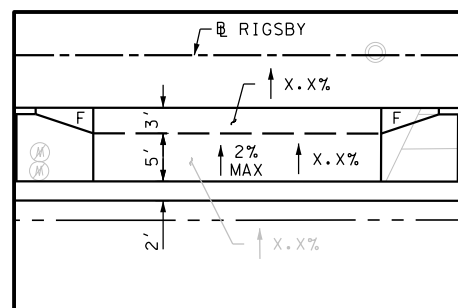
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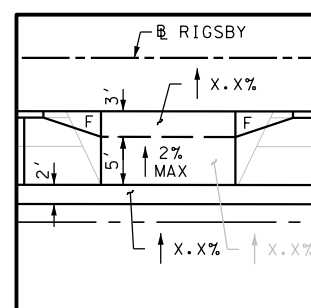
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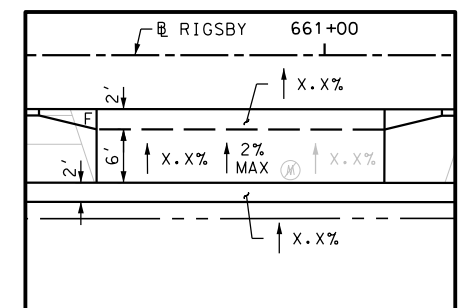
DRWY PLAN STA 657+87



DRWY PLAN STA 658+64



DRWY PLAN STA 659+78



DRWY PLAN STA 660+91

ITEM	DESCRIPTION	UNIT	QTY
7091-6003	ADJUST EXISTING METER AND NEW METER BOX	EA	4
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	127
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	189
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	11
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	99
0162-6002	BLOCK SODDING	SY	21
0168-6001	VEGETATIVE WATERING	MG	0.33
0529-6002	CONC CURB (TY II)	LF	171
0530-6004	DRIVEWAYS (CONC)	SY	142
0530-6005	DRIVEWAYS (ACP)	SY	99
0531-6001	CONC SIDEWALKS (4")	SY	180
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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

Texas Department of Transportation  
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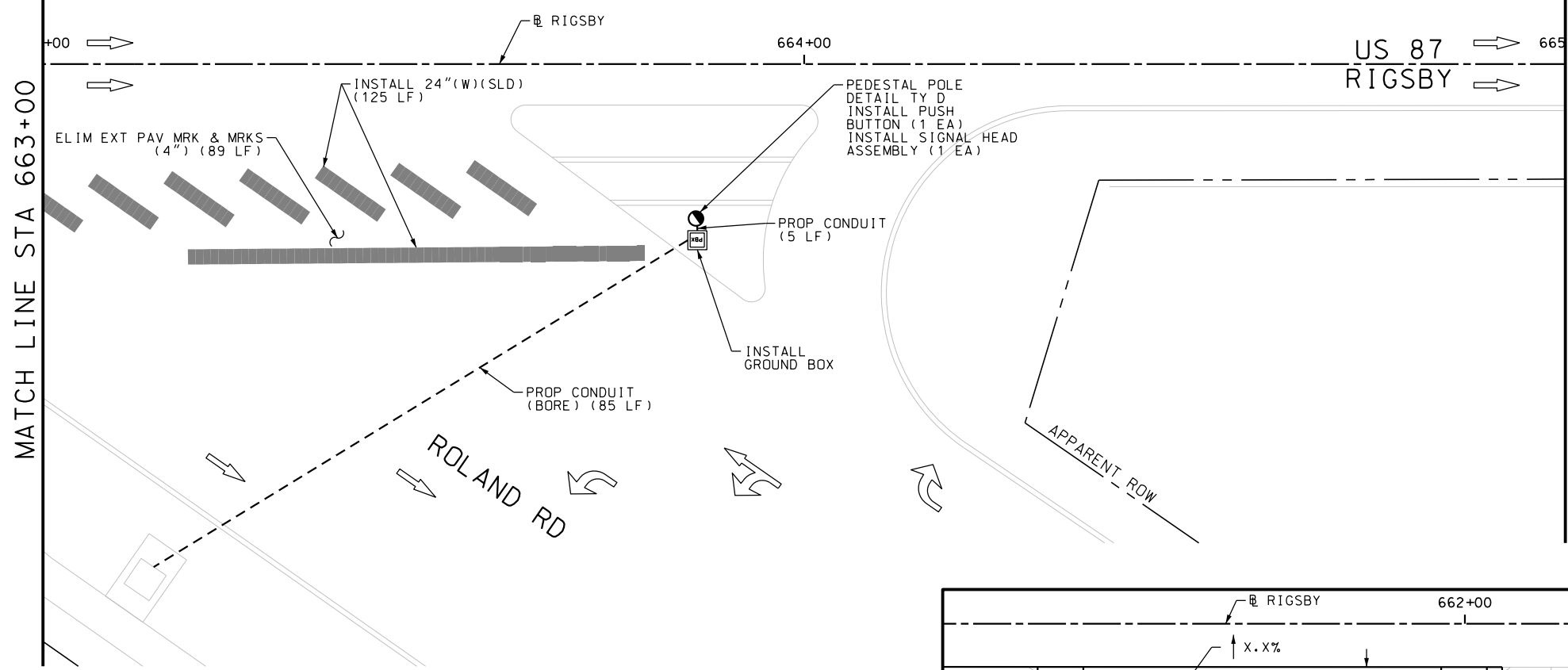
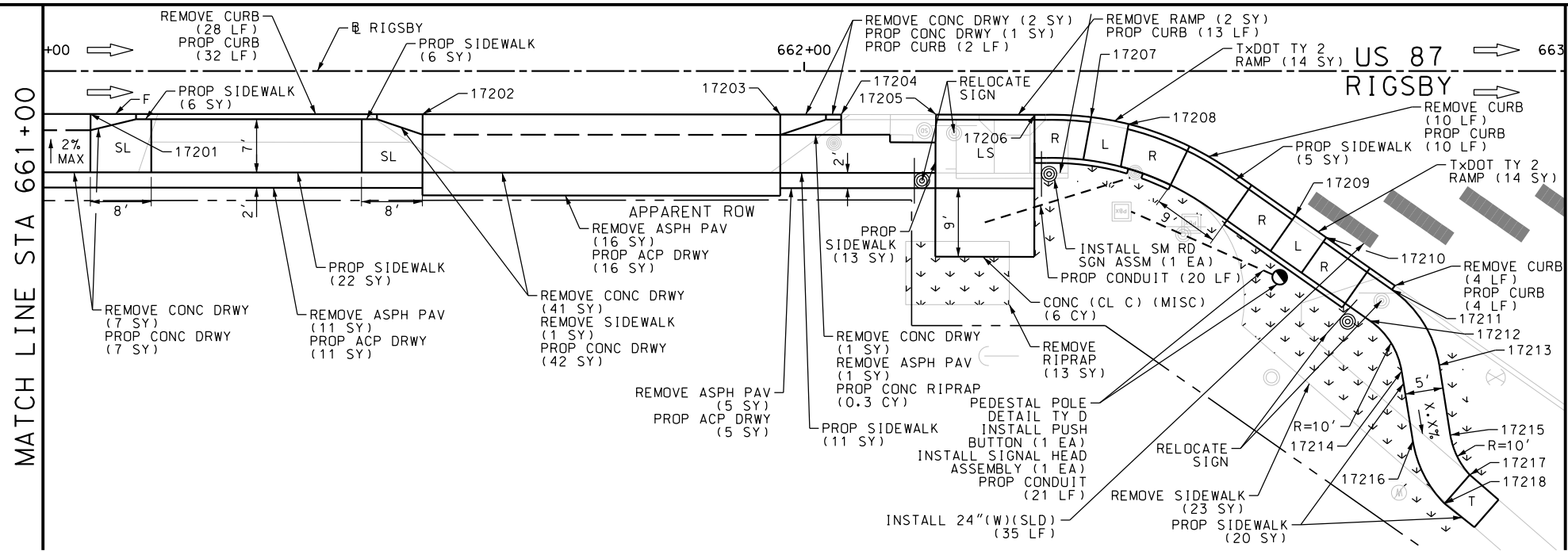
US 87 RIGSBY  
 SIDEWALK CONSTRUCTION PLAN  
 STA 657+00 TO STA 661+00

SHEET 74 OF 80

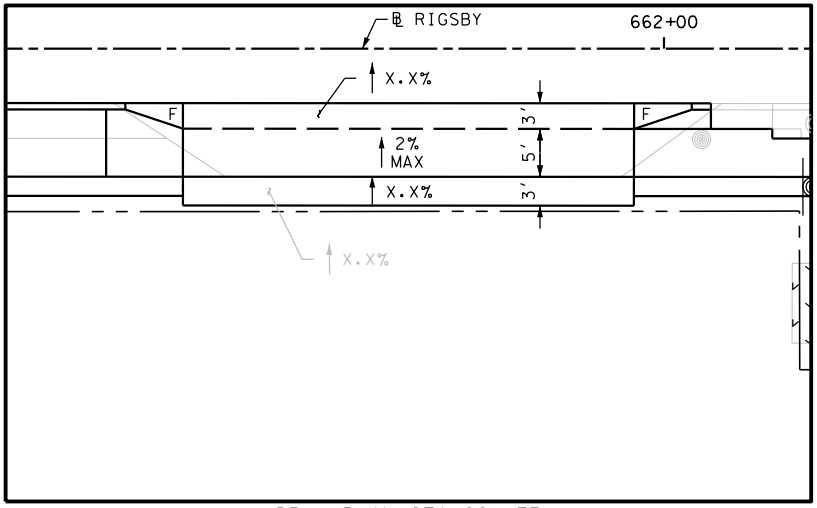
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CHK DGN:	6	TEXAS		VA
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:
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				JOB NO.:
				586
				SHEET NO.:
				284

Plotted on: 9/29/2017

Design File name: P:\11135\01\des\ign\Civil\Roadway\Rigsby\1113501\_Rigsby\_75.dgn



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ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	13
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	51
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	42
0104-6036	REMOVING CONC (SIDEWALK OR RAMP)	SY	26
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	33
0162-6002	BLOCK SODDING	SY	63
0168-6001	VEGETATIVE WATERING	MG	0.98
0420-6074	CL C CONC (MISC)	CY	6.0
0432-6003	RIPRAP (CONC) (6 IN)	CY	0.3
0529-6002	CONC CURB (TY II)	LF	61
0530-6004	DRIVEWAYS (CONC)	SY	50
0530-6005	DRIVEWAYS (ACP)	SY	32
0531-6001	CONC SIDEWALKS (4")	SY	83
0531-6019	CURB RAMPS (TY 2)	SY	28
0618-6016	COND (PVC) (SCH 40) (1")	LF	46
0618-6017	COND (PVC) (SCH 40) (1") (BORE)	LF	85
0620-6009	ELEC CONDR (NO.6) BARE	LF	111
0624-6009	GROUND BOX TY D (162922)	EA	1
0644-6001	IN SM RD SN SUP&M TY10BWG(1)SA(P)	EA	1
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	2
0666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	160
0666-6230	PAVEMENT SEALER 24"	LF	160
0677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	89
0678-6008	PAV SURF PREP FOR MRK (24")	LF	160
0682-6017	PED SIG SEC (LED) (2 INDICATIONS)	EA	2
0684-6009	TRF SIG CBL (TY A) (12 AWG) (4 CONDR)	LF	151
0684-6028	TRF SIG CBL (TY A) (14 AWG) (2 CONDR)	LF	151
0687-6001	PED POLE ASSEMBLY	EA	2
0688-6002	PED DETECT PUSH BUTTON (STANDARD)	EA	2

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 DATE: 9/29/2017

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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



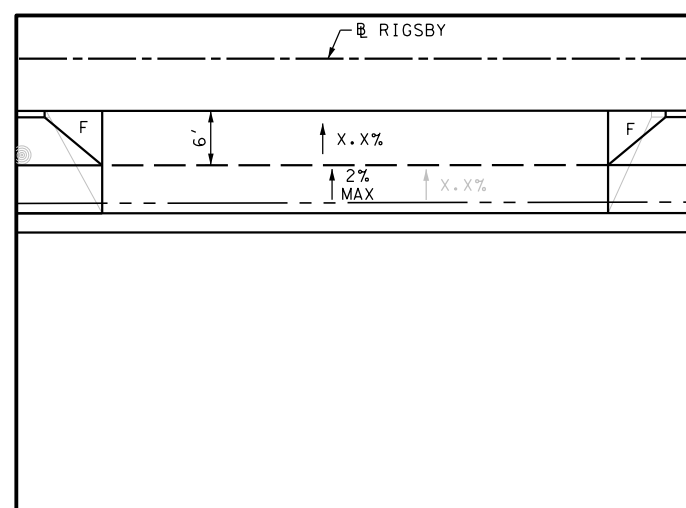
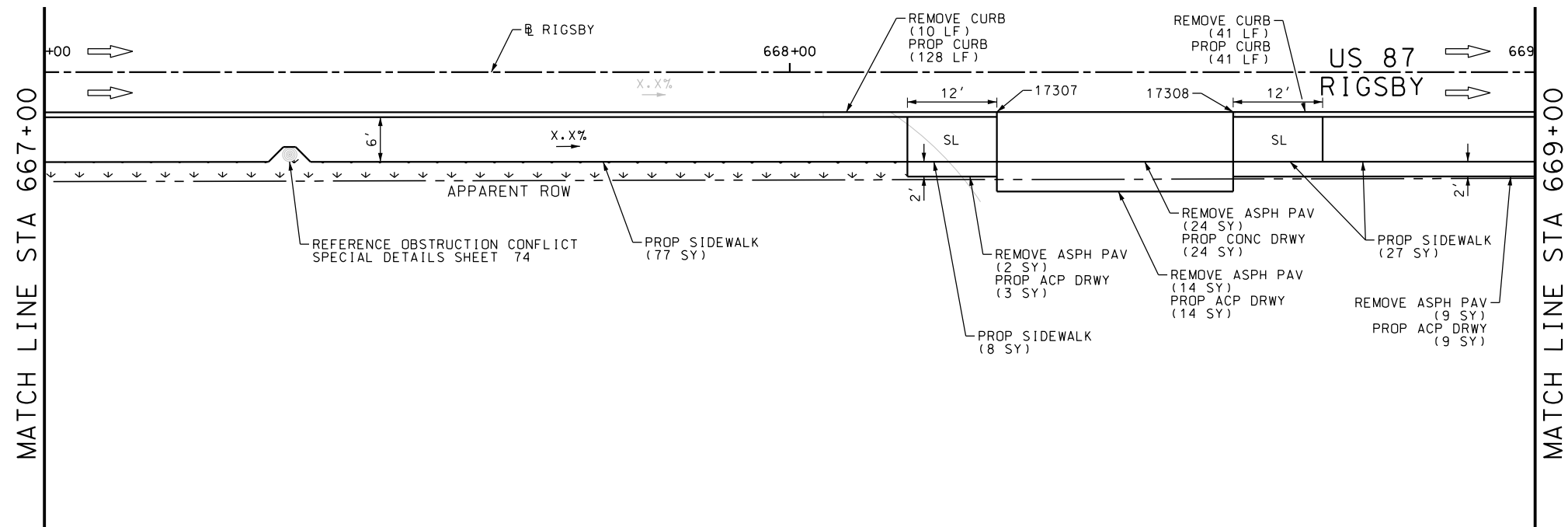
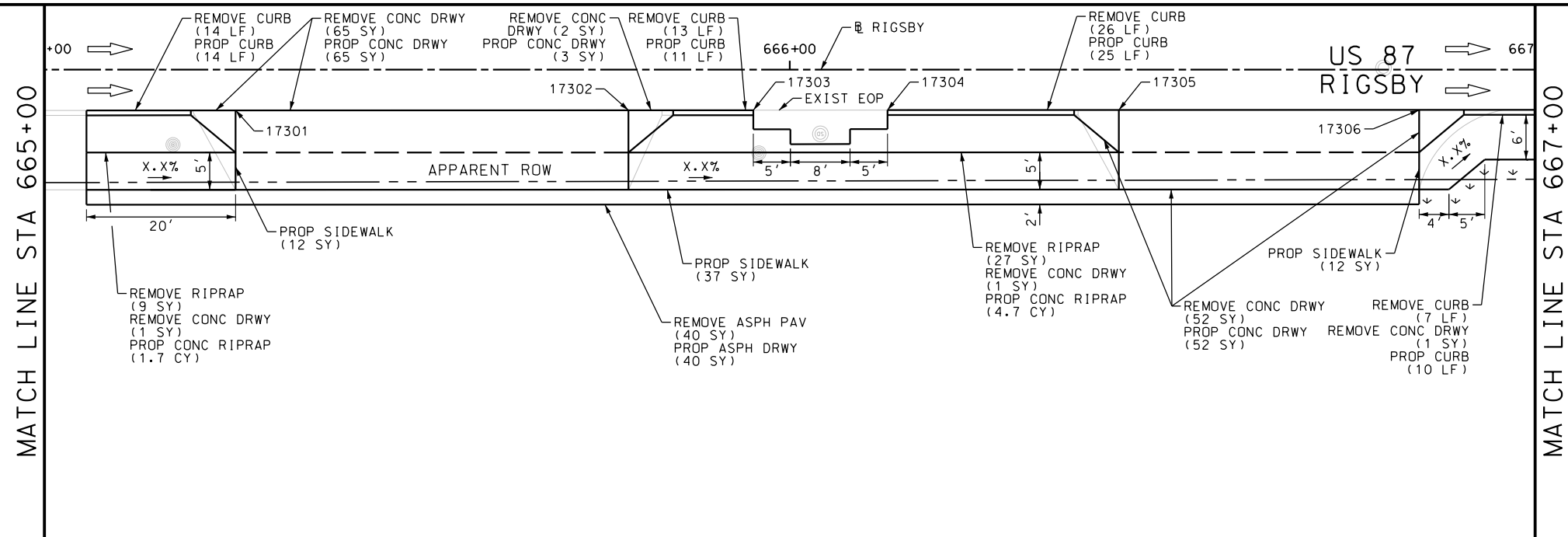
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 661+00 TO STA 665+00

SHEET 75 OF 80

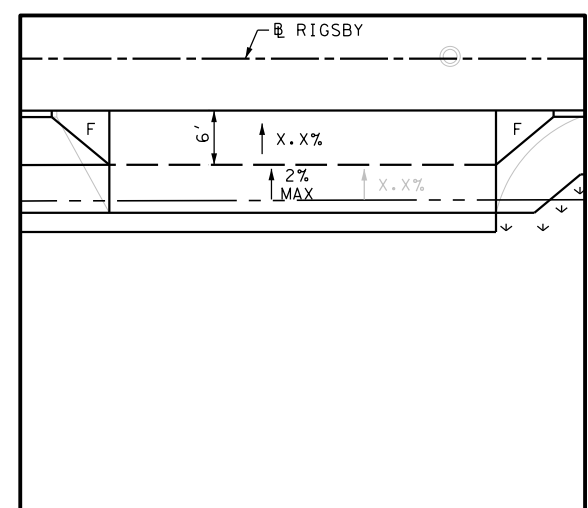
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DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	285

Plotted on: 9/29/2017

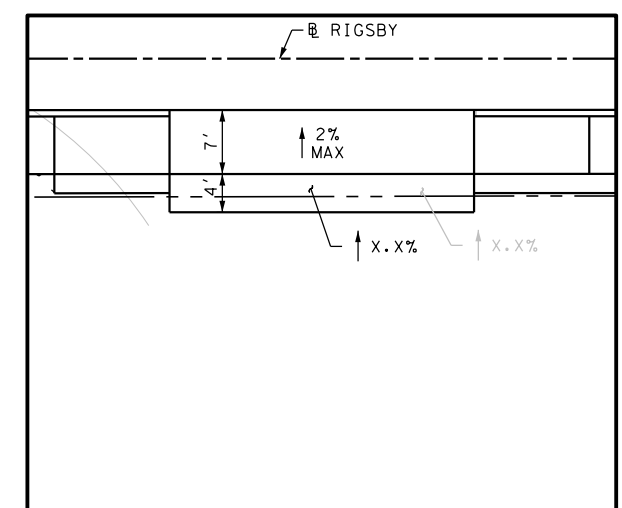
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DRWY PLAN STA 665+52



DRWY PLAN STA 666+64



DRWY PLAN STA 668+44

ITEM	DESCRIPTION	UNIT	QTY
0104-6009	REMOVING CONC (RIPRAP)	SY	36
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	162
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	111
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	89
0162-6002	BLOCK SODDING	SY	40
0168-6001	VEGETATIVE WATERING	MG	0.62
0432-6003	RIPRAP (CONC) (6 IN)	CY	6.4
0529-6002	CONC CURB (TY II)	LF	229
0530-6004	DRIVEWAYS (CONC)	SY	184
0530-6005	DRIVEWAYS (ACP)	SY	66
0531-6001	CONC SIDEWALKS (4")	SY	173

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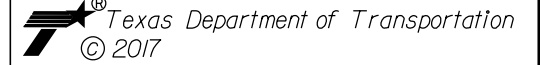
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 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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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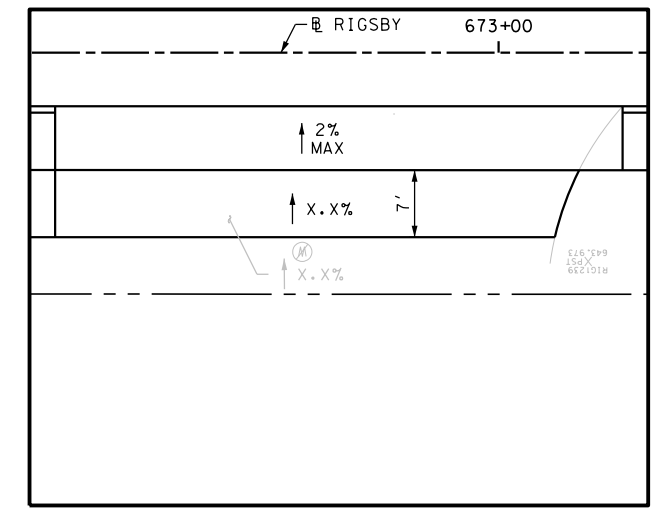
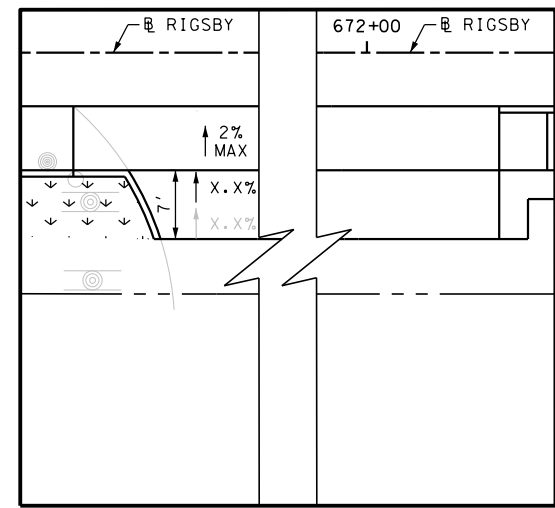
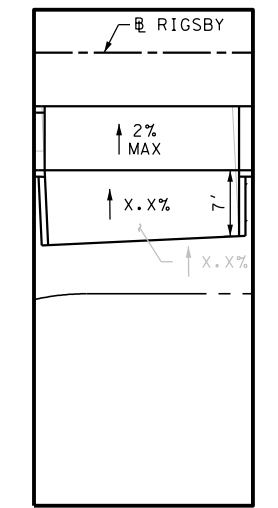
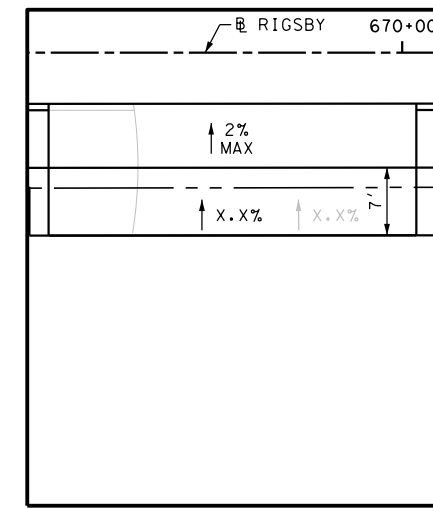
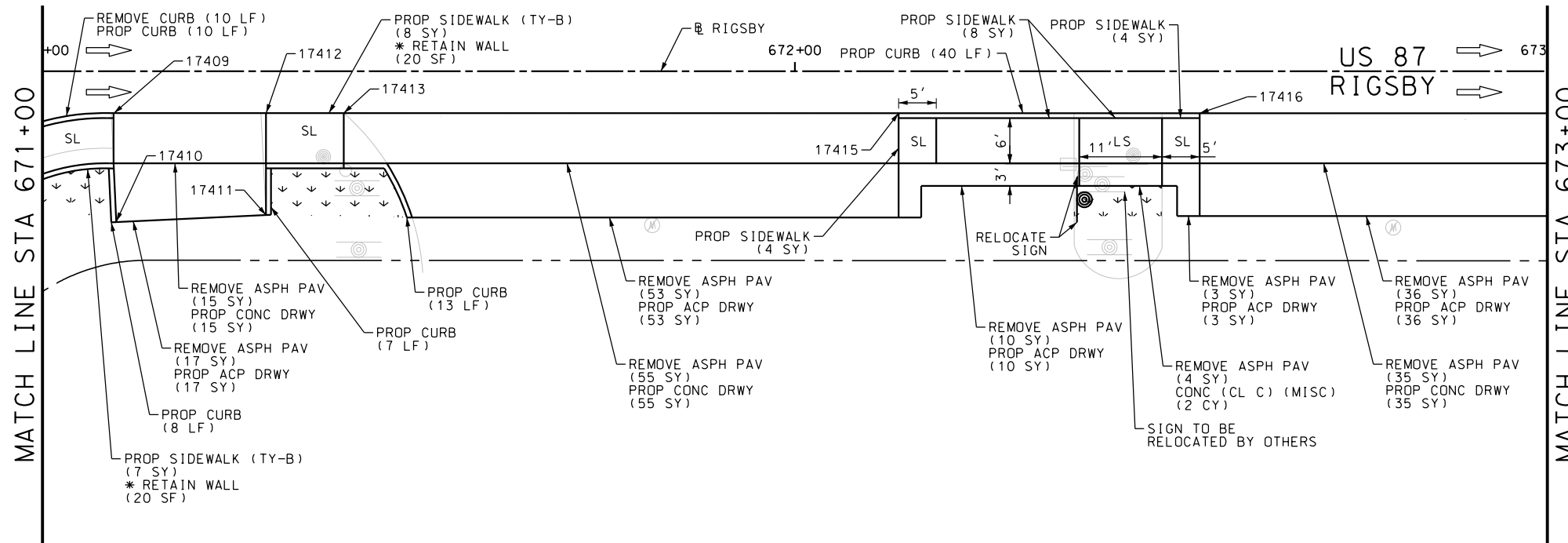
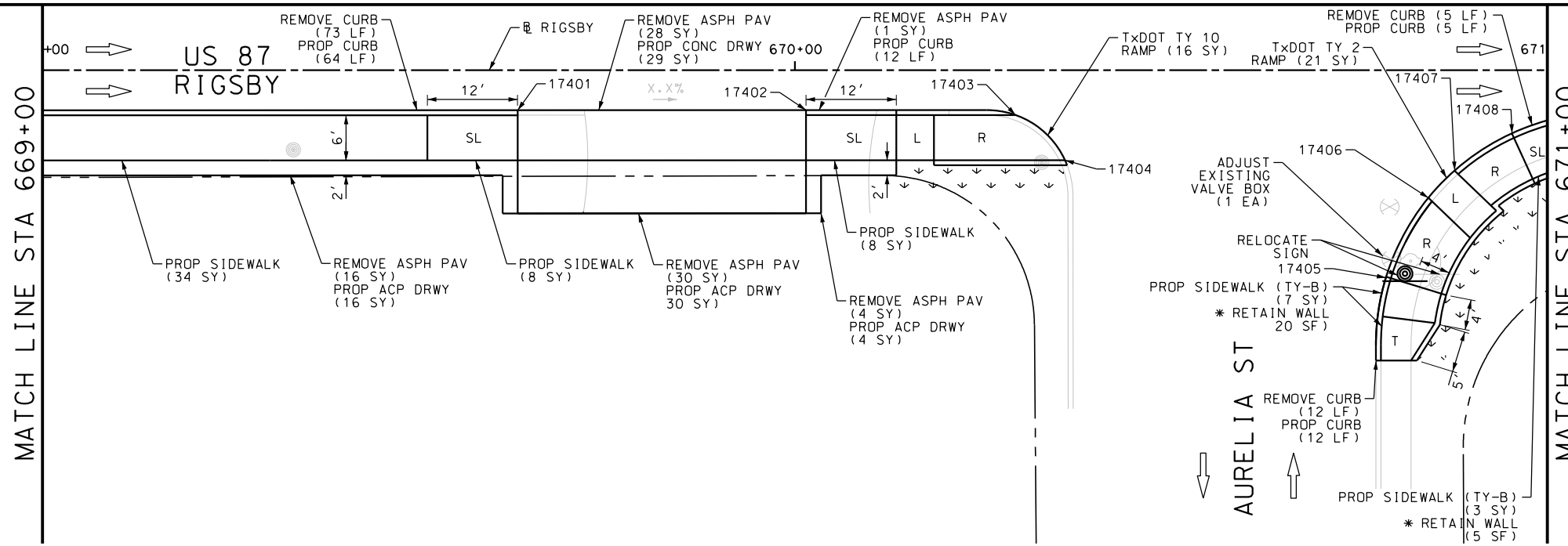
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 665+00 TO STA 669+00

SHEET 76 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	286

Plotted on: 9/29/2017

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ITEM	DESCRIPTION	UNIT	QTY
7091-6001	ADJUST EXISTING VALVE BOX	EA	1
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	100
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	307
0162-6002	BLOCK SODDING	SY	45
0168-6001	VEGETATIVE WATERING	MG	0.70
0420-6074	CL C CONC (MISC)	CY	2.0
0529-6002	CONC CURB (TY II)	LF	171
0530-6004	DRIVEWAYS (CONC)	SY	134
0530-6005	DRIVEWAYS (ACP)	SY	169
0531-6001	CONC SIDEWALKS (4")	SY	66
0531-6019	CURB RAMPS (TY 2)	SY	21
0531-6027	CURB RAMPS (TY 10)	SY	16
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	25
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	2

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REV. NO.	DATE	DESCRIPTION	BY



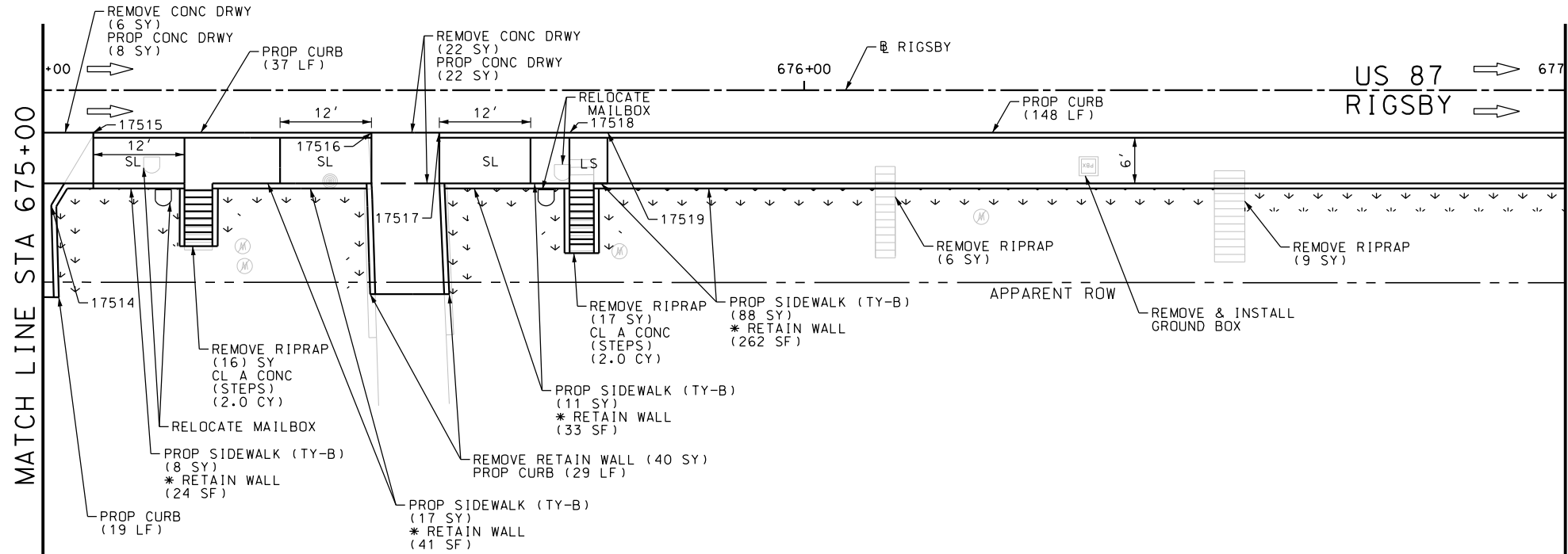
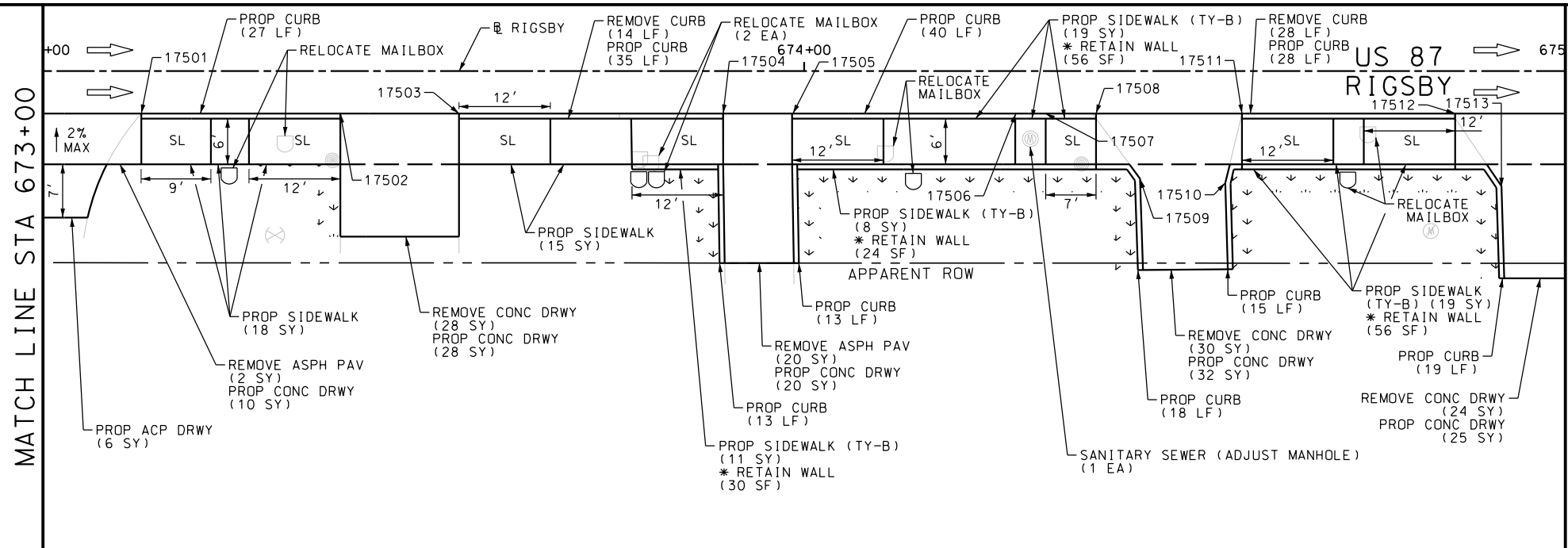
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 669+00 TO STA 673+00

SHEET 77 OF 80

DGN:	FED. RD. DIV. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	287

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_78.dgn



ITEM	DESCRIPTION	UNIT	QTY
7090-6001	SANITARY SEWER (ADJUST MANHOLE)	EA	1
0104-6009	REMOVING CONC (RIPRAP)	SY	48
0104-6017	REMOVING CONC (DRIVEWAYS)	SY	110
0104-6024	REMOVING CONC (RETAINING WALLS)	SY	40
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	42
0105-6037	REMOVING STAB BASE AND ASPH PAV (0"-16")	SY	22
0162-6002	BLOCK SODDING	SY	130
0168-6001	VEGETATIVE WATERING	MG	2.03
0420-6132	CL A CONC (STEPS)	CY	4.0
0529-6002	CONC CURB (TY II)	LF	422
0530-6004	DRIVEWAYS (CONC)	SY	145
0530-6005	DRIVEWAYS (ACP)	SY	6
0531-6001	CONC SIDEWALKS (4")	SY	33
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	181
0560-6014	MAILBOX INSTALL-S (TWG-POST) TY 4	EA	7
0624-6009	GROUND BOX TY D (162922)	EA	1
0624-6028	REMOVE GROUND BOX	EA	1

NOTES:  
 \* FOR CONTRACTOR INFORMATION ONLY  
 1. THE EXISTENCE AND LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES INDICATED IN THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

DESIGN  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

REV. NO.	DATE	DESCRIPTION	BY

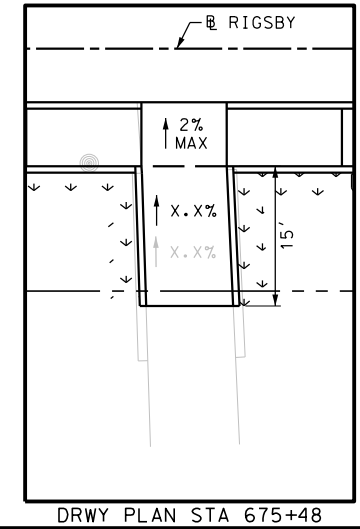
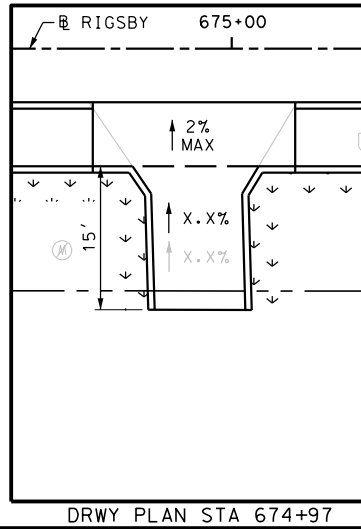
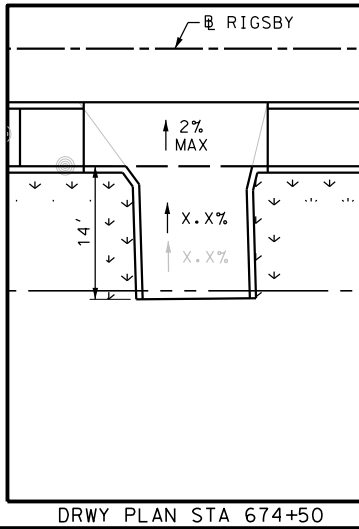
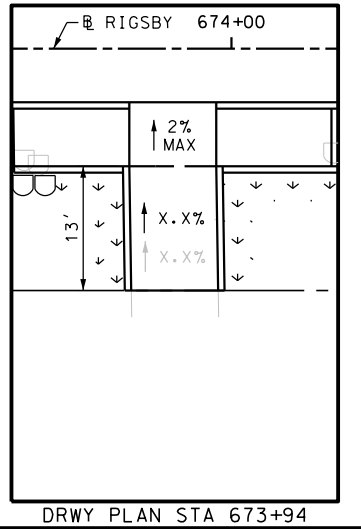
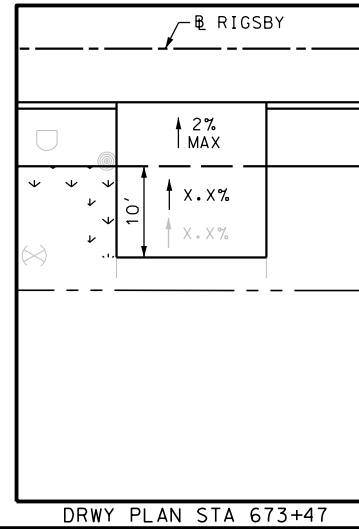
**PAPE-DAWSON ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 673+00 TO STA 677+00

SHEET 78 OF 80

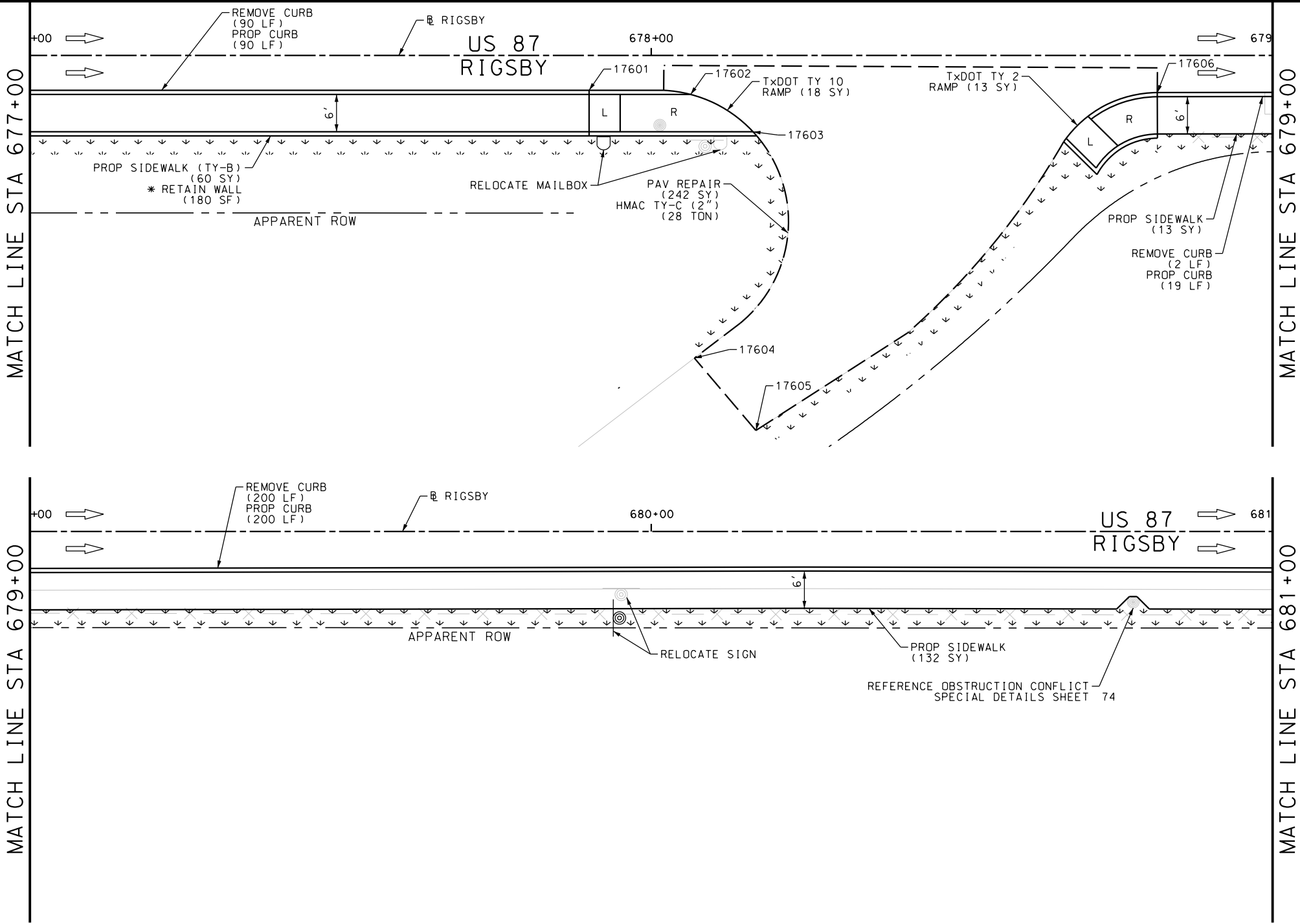
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.:	COUNTY:	CONT. NO.:	SECT. NO.:	JOB NO.:	SHEET NO.:
CHK DWG:	SAT	BEXAR	0915	12	586	288





Plotted on: 9/29/2017

Design File name: P:\111135\01\design\Civil\Roadway\Rigsby\1113501\_Rigsby\_79.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	292
0162-6002	BLOCK SODDING	SY	160
0168-6001	VEGETATIVE WATERING	MG	2.50
0340-6066	D-GR HMA(SQ) TY-C PG76-22	TON	28.0
0351-6028	FLEX PAVE STRUCTURE REPAIR (8"-10")	SY	242
0529-6002	CONC CURB (TY II)	LF	309
0531-6001	CONC SIDEWALKS (4")	SY	145
0531-6019	CURB RAMPS (TY 2)	SY	13
0531-6027	CURB RAMPS (TY 10)	SY	18
0531-6033	CONC SIDEWALKS (SPECIAL) (TYPE B)	SY	60
0560-6014	MAILBOX INSTALL-S (TWG-POST) TY 4	EA	1
0644-6070	RELOCATE SM RD SN SUP&M TY S80	EA	1

NOTES:  
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DESIGN  
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 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

REVIEW AND APPROVAL  
 INTERIM REVIEW  
 DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

SCALE: PLAN 1" = 20'

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



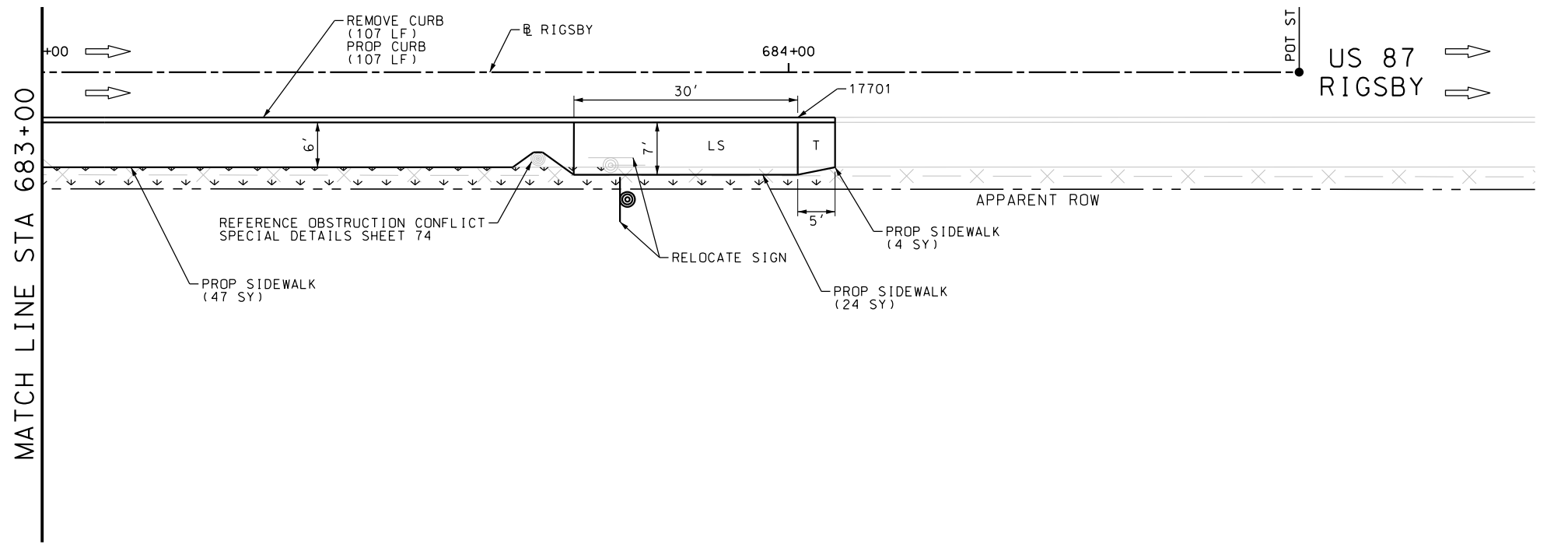
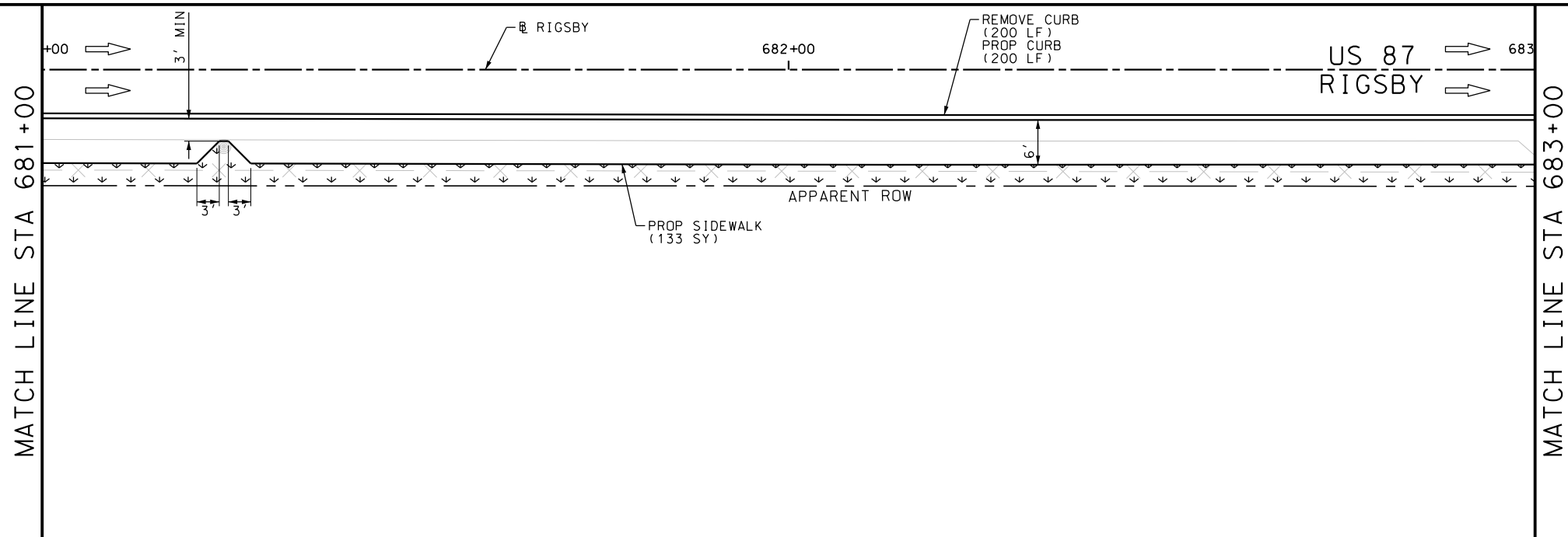
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 677+00 TO STA 681+00

SHEET 79 OF 80

DGN:	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.		
CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	289

Plotted on: 9/29/2017

Design File name: P:\11135\01\design\Civil\Roadway\Rigsby\113501\_Rigsby\_80.dgn



ITEM	DESCRIPTION	UNIT	QTY
0104-6029	REMOVING CONC (CURB OR CURB & GUTTER)	LF	307
0529-6002	CONC CURB (TY II)	LF	307
0531-6001	CONC SIDEWALKS (4")	SY	208
0644-6070	RELOCATE SM RD SN SUP&AM TY S80	EA	1

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 ENGINEER: JAMES A. LUTZ  
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SCALE: PLAN 1" = 20'

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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  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



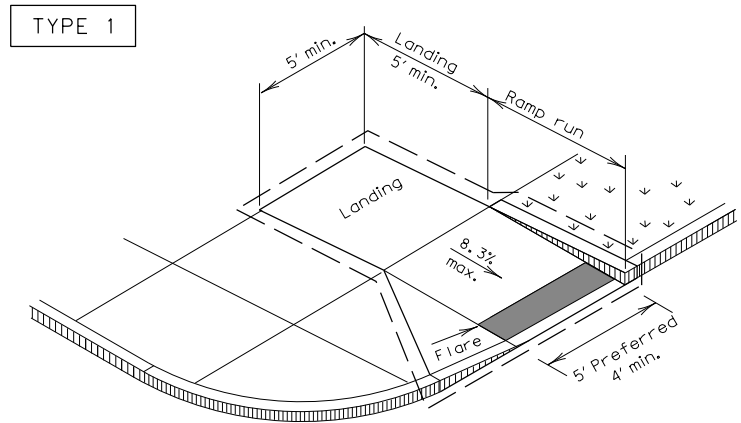
US 87  
 RIGSBY  
 SIDEWALK  
 CONSTRUCTION PLAN  
 STA 681+00 TO END PROJECT

SHEET 80 OF 80

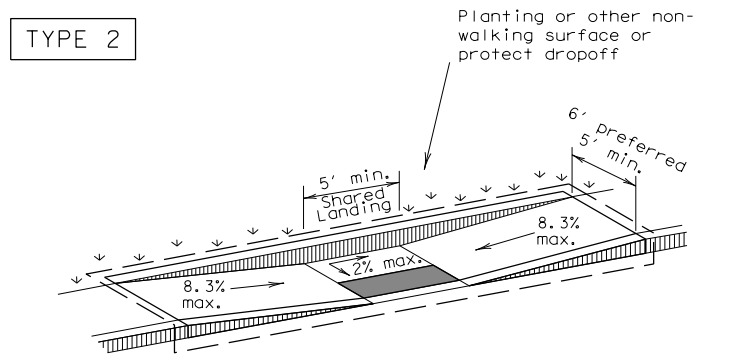
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CHK DGN:	6	TEXAS		VA		
DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
CHK DWG:	SAT	BEXAR	0915	12	586	290

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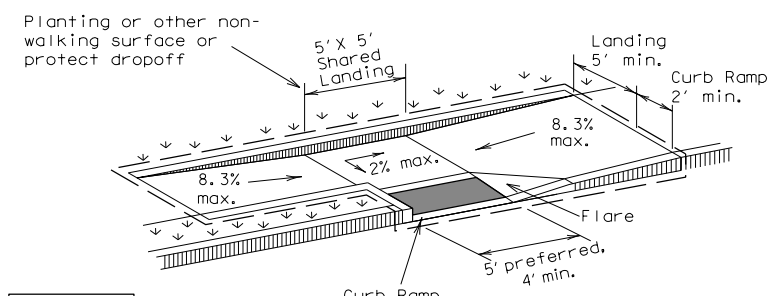
DATE: 9/29/2017  
 FILE: P:\111135\01\design\Civil\Standards\Roadway\ped12a (1).dgn



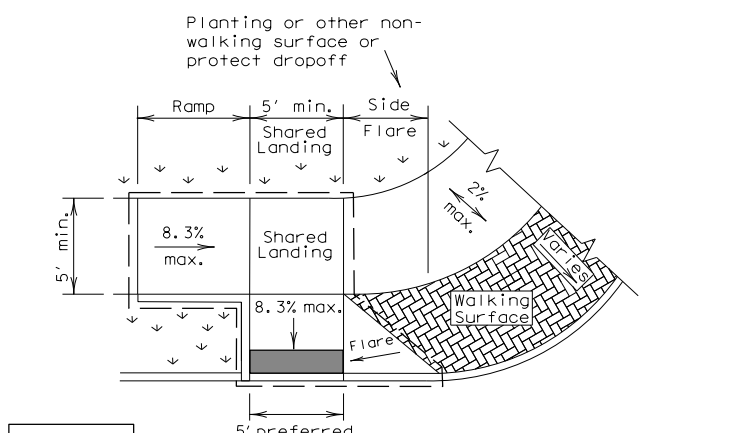
PERPENDICULAR CURB RAMP



PARALLEL CURB RAMP  
(Use only where water will not pond in the landing.)

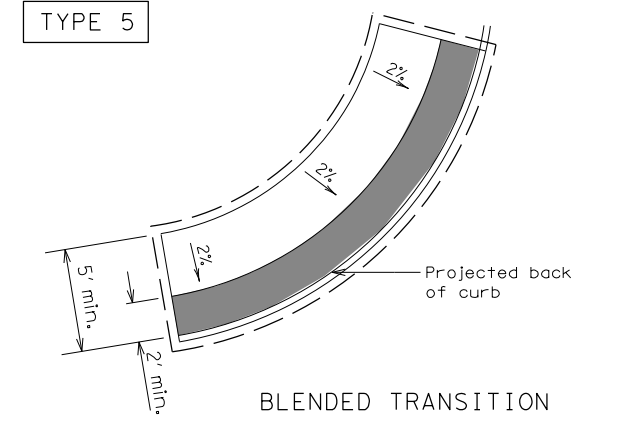


TYPE 3



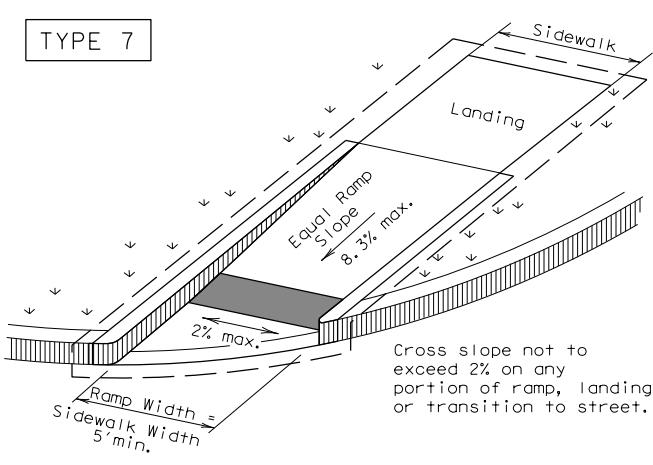
TYPE 6

COMBINATION CURB RAMPS



TYPE 5

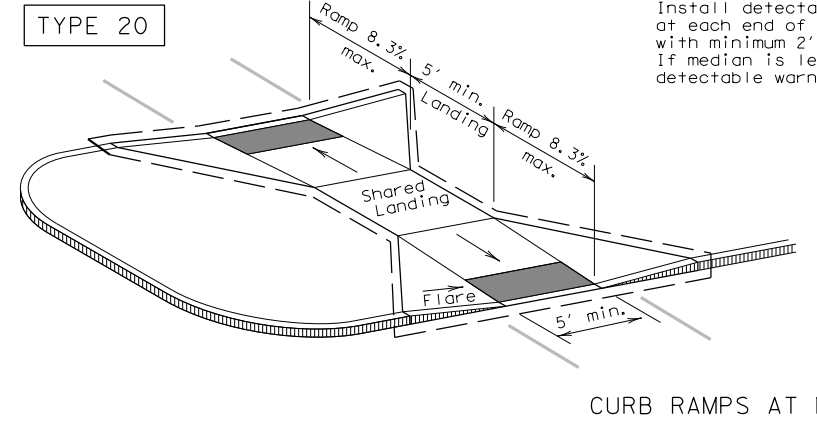
BLENDED TRANSITION



TYPE 7

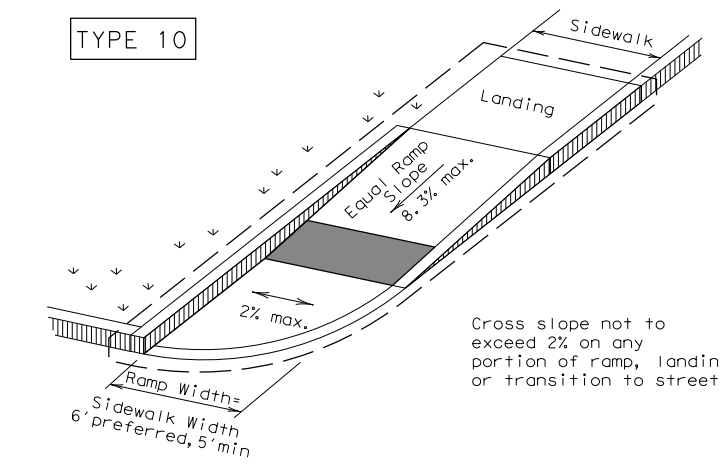
(Sidewalk set back from curb)

DIRECTIONAL RAMPS WITHIN RADIUS



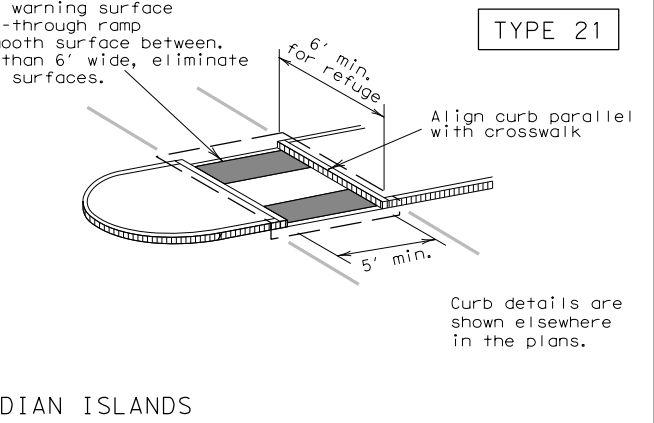
TYPE 20

CURB RAMPS AT MEDIAN ISLANDS



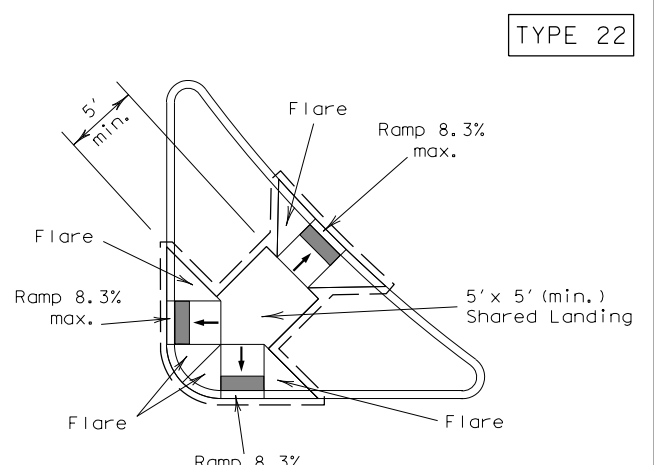
TYPE 10

(Sidewalk adjacent to curb)



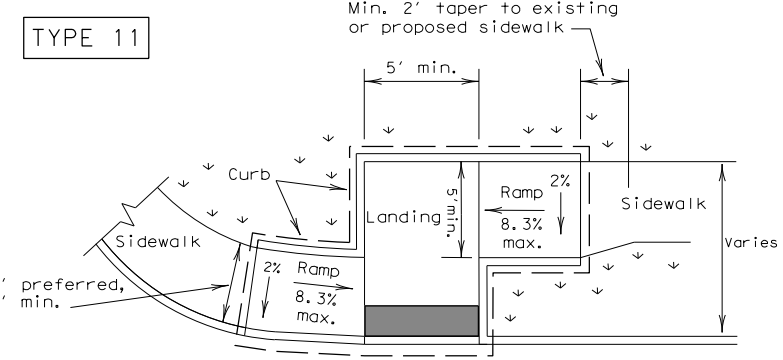
TYPE 21

Curb details are shown elsewhere in the plans.



TYPE 22

COMBINATION ISLAND RAMPS



TYPE 11

OFFSET PARALLEL CURB RAMP

NOTES / LEGEND:

See General Notes on sheet 2 of 4 for more information.

Denotes planting or non-walking surface not part of pedestrian circulation path.

— Ramp Limits of Payment

■ Detectable Warning Surface



PEDESTRIAN FACILITIES  
CURB RAMPS

PED-12A

FILE: ped12a.dgn	DN: TxDOT	CK: RM	DW: TxDOT	CK: VP
©TxDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
VP June 13, 2012	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	291	

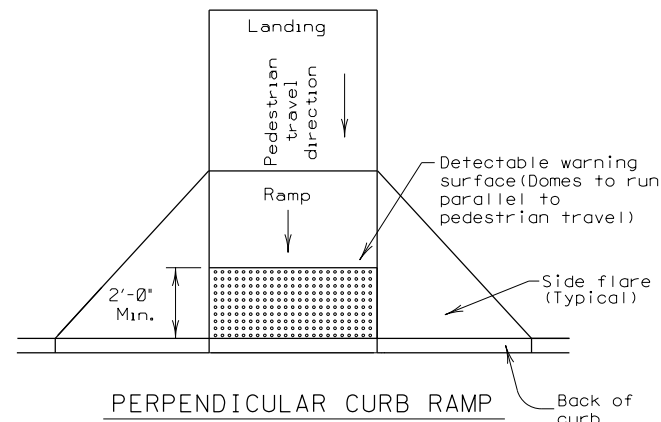
General Notes

**Curb Ramps**

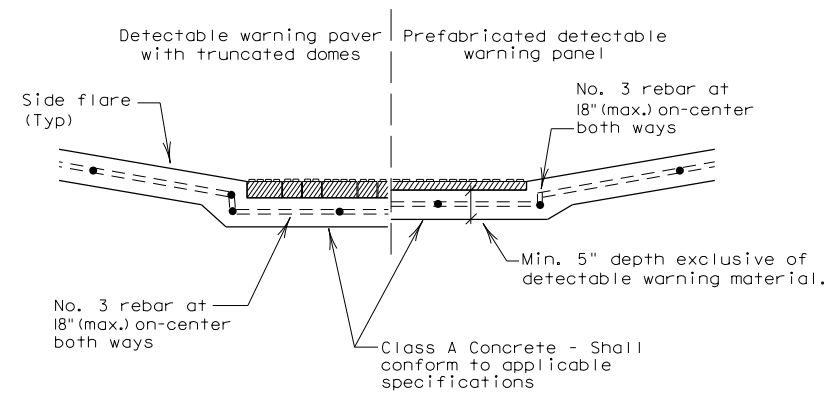
1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Lesser slopes that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5' x 5' passing areas at intervals not to exceed 200' are required.
4. Landings shall be 5' x 5' minimum with a maximum 2% slope in any direction.
5. Maneuvering space at the bottom of curb ramps shall be a minimum of 4' x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
6. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the current edition of the Texas Accessibility Standards (TAS) and 16 TAC 68.102.
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5' x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Handrails are not required on curb ramps. Provide curb ramps wherever on accessible route crosses (penetrates) a curb.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Provide a smooth transition where the curb ramps connect to the street.
16. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
17. Existing features that comply with TAS may remain in place unless otherwise shown on the plans.

**Detectable Warning Material**

18. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with Section 705 of the TAS. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
19. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
20. Detectable warning surfaces must be slip resistant and not allow water to accumulate.
21. Detectable warning surfaces shall be a minimum of 24" in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
22. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb. Align the rows of domes to be perpendicular to the grade break between the ramp run and the street. Detectable warning surfaces may be curved along the corner radius.
23. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.



Typical placement of detectable warning surface on sloping ramp run.



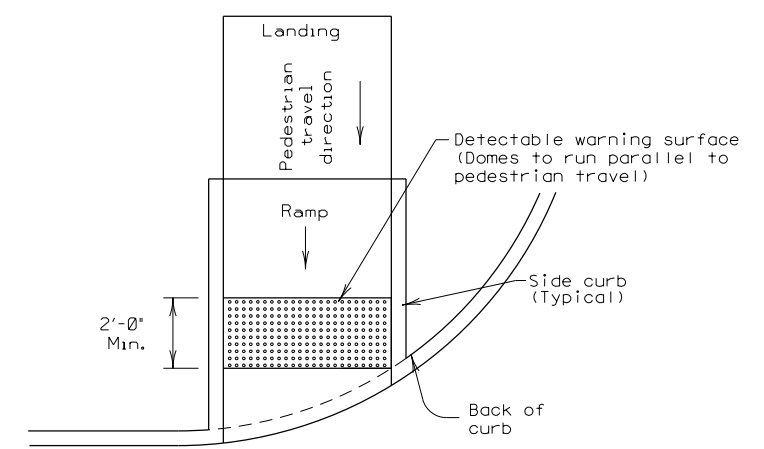
DETECTABLE WARNINGS

**Detectable Warning Pavers**

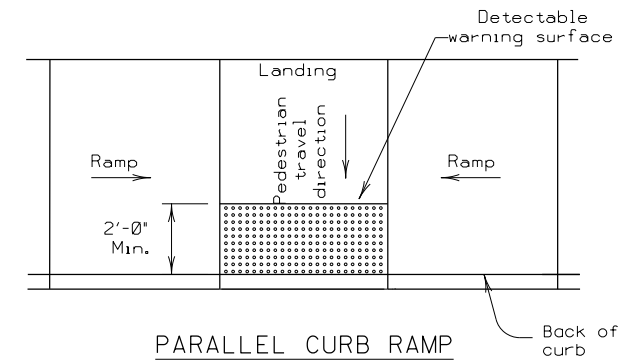
24. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
25. Lay full-size units first followed by closure units consisting of at least 25 percent of a full unit. Cut detectable warning paver units using a power saw.

**Sidewalks**

26. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within one or more reach ranges specified in TAS 308.
27. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
28. Street grades and cross slopes shall be as shown elsewhere in the plans.
29. Changes in level greater than 1/4 inch are not permitted.
30. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than 5% must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with TAS 505.
31. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
32. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
33. Sidewalk details are shown elsewhere in the plans.



Typical placement of detectable warning surface on sloping ramp run.



Typical placement of detectable warning surface on landing at street edge.



PEDESTRIAN FACILITIES  
CURB RAMPS

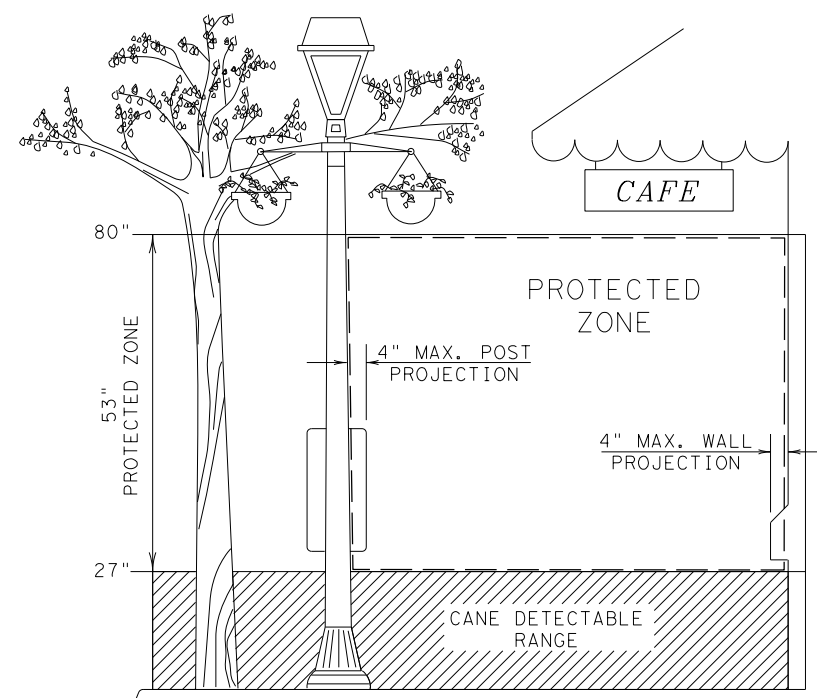
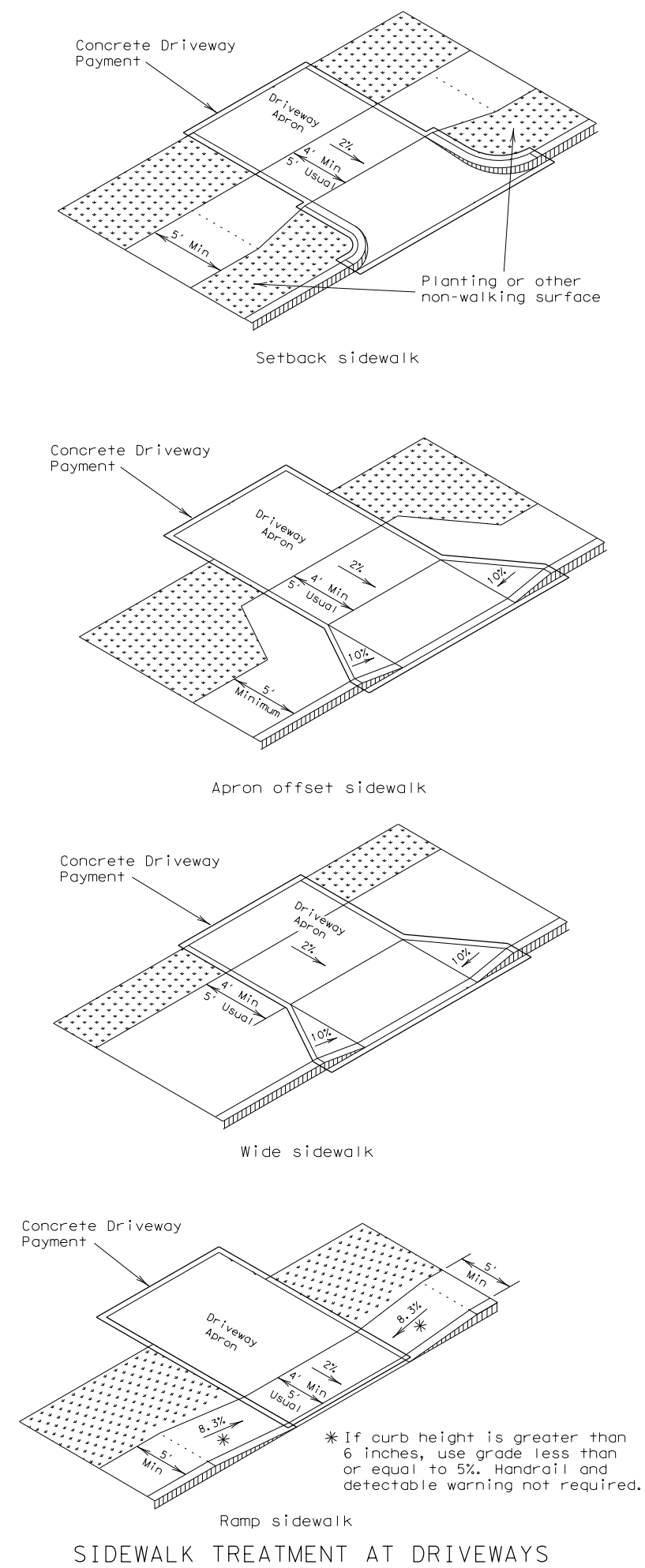
PED-12A

FILE: ped12a.dgn	DN: TxDOT	CK: RM	DW: TxDOT	CK: VP
© TxDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
VP June 13, 2012	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	292	

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 DATE: 9/29/2017  
 FILE: P:\1111\35\01\design\Civil\Standards\Roadway\ped12a (1).dgn

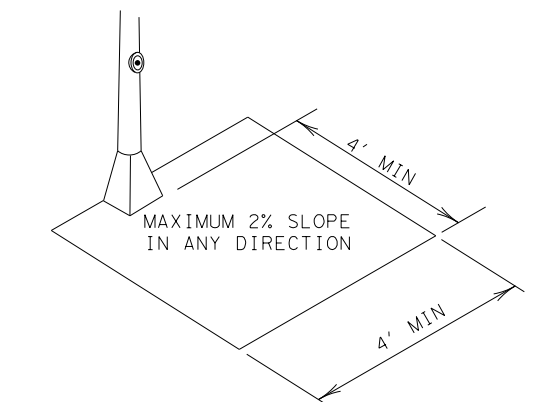
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DATE: 9/29/2017  
 FILE: P:\1111\35\01\design\Civil\Standards\Roadway\ped12a (1).dgn

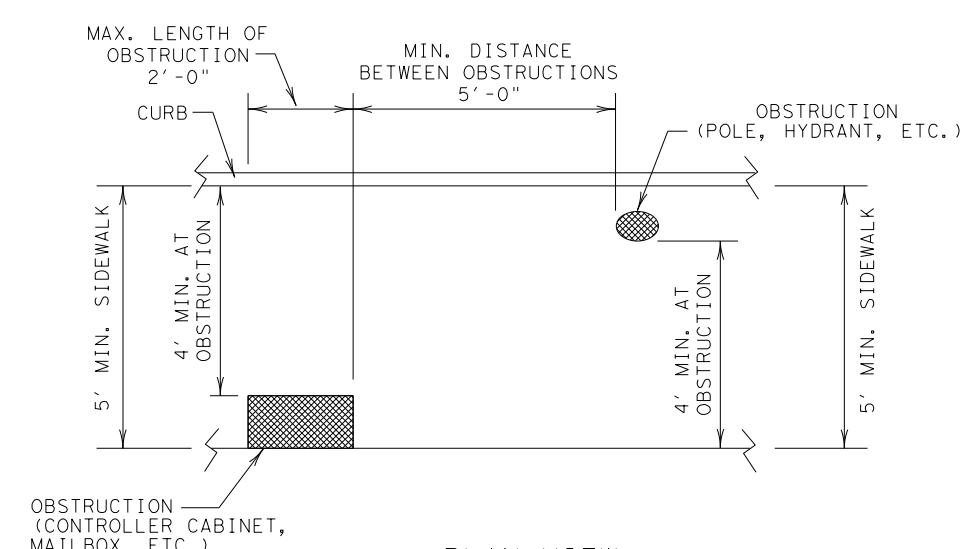


PROTECTED ZONE

In pedestrian circulation area, maximum 4" projection for post or wall mounted objects between 27" and 80" above the surface.



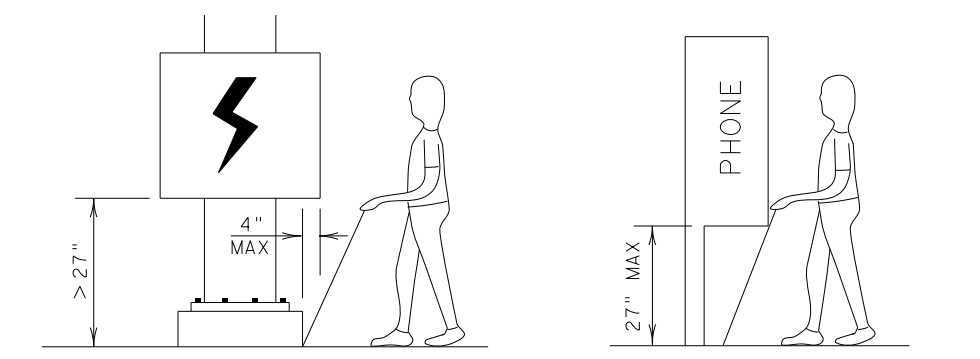
CLEAR GROUND SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



PLAN VIEW

PLACEMENT OF STREET FIXTURES

(ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' x 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.)



When an obstruction of a height greater than 27" from the surface would create a protrusion of more than 4" into the pedestrian circulation area, construct additional curb or foundation at the bottom to provide a maximum 4" overhang.

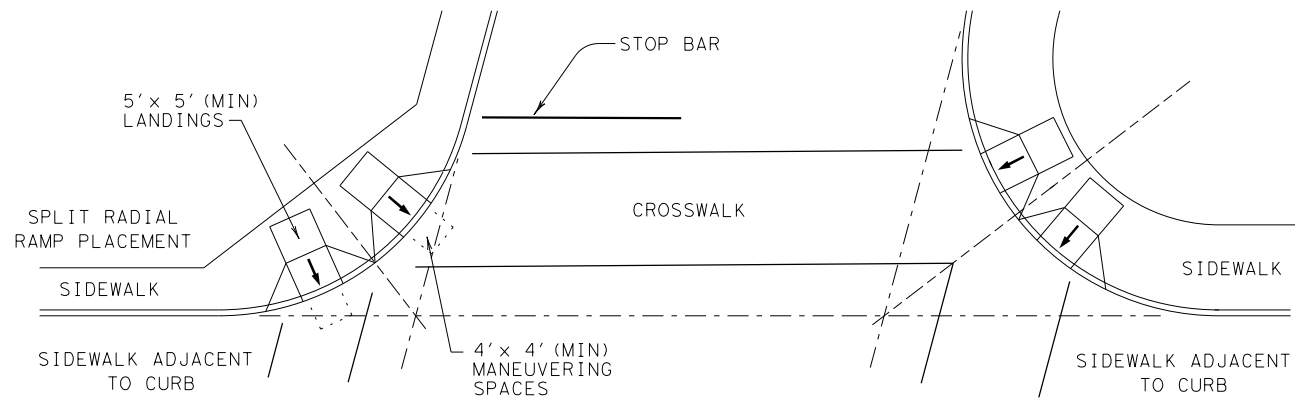
Protruding objects of a height  $\leq$  27" are detectable by cane and do not require additional treatment.

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

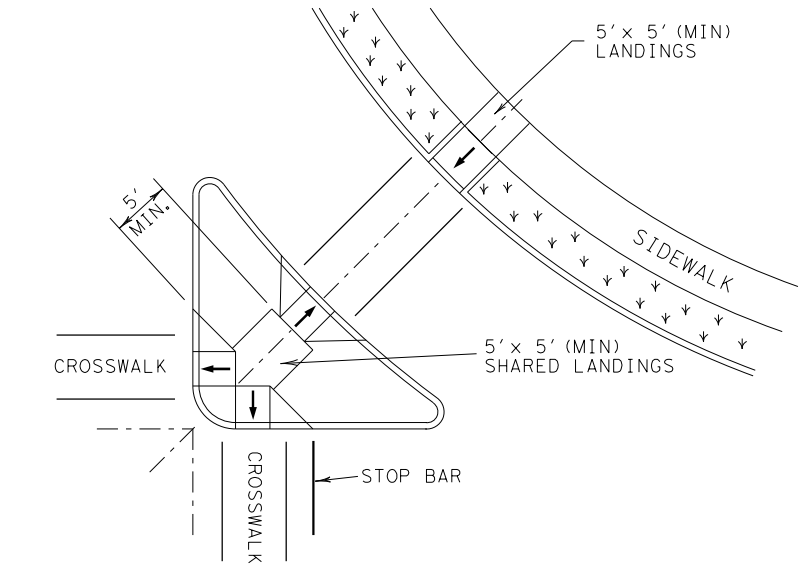
SHEET 3 OF 4

		<b>Design Division Standard</b>	
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FILE: ped12a.dgn	DN: TxDOT	CK: RM	DW: TxDOT
© TxDOT March 2002	CONT	SECT	JOB
REVISIONS	0915	12	586
VP June 13, 2012	DIST	COUNTY	SHEET NO.
	SAT	BEXAR	293

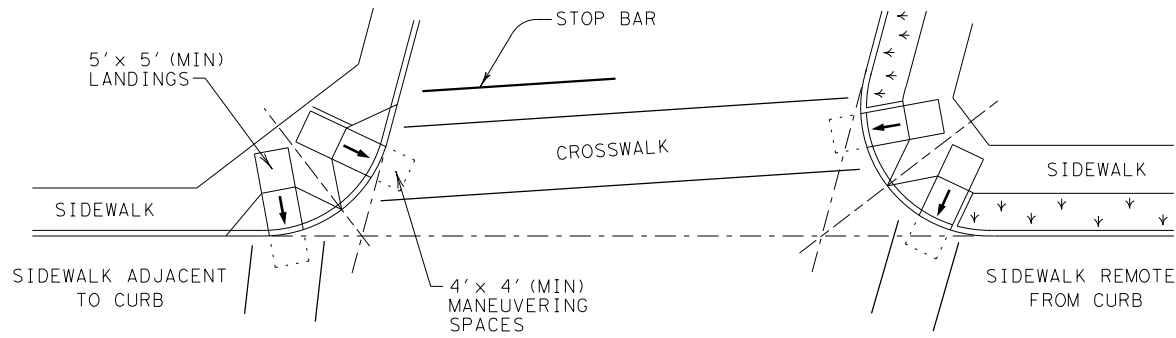
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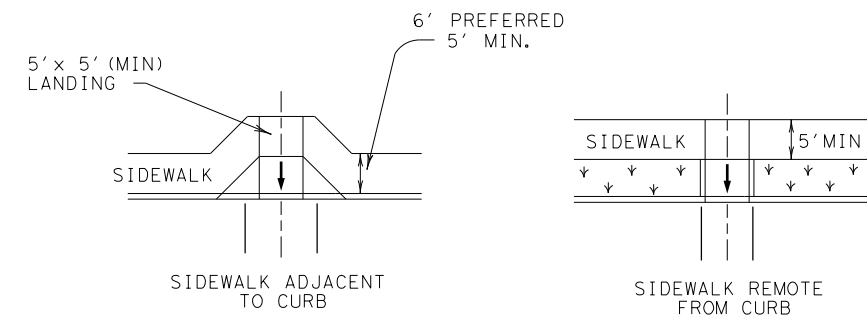
SKewed INTERSECTION WITH "LARGE" RADIUS



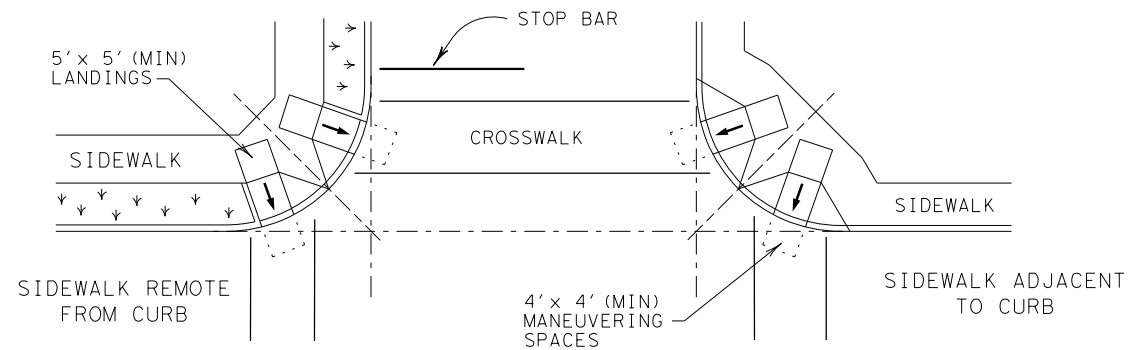
AT INTERSECTION  
 W/FREE RIGHT TURN & ISLAND



SKewed INTERSECTION WITH "SMALL" RADIUS



MID-BLOCK PLACEMENT  
 PERPENDICULAR RAMPS



NORMAL INTERSECTION WITH "SMALL" RADIUS

TYPICAL CROSSING LAYOUTS

SHEET 4 OF 4



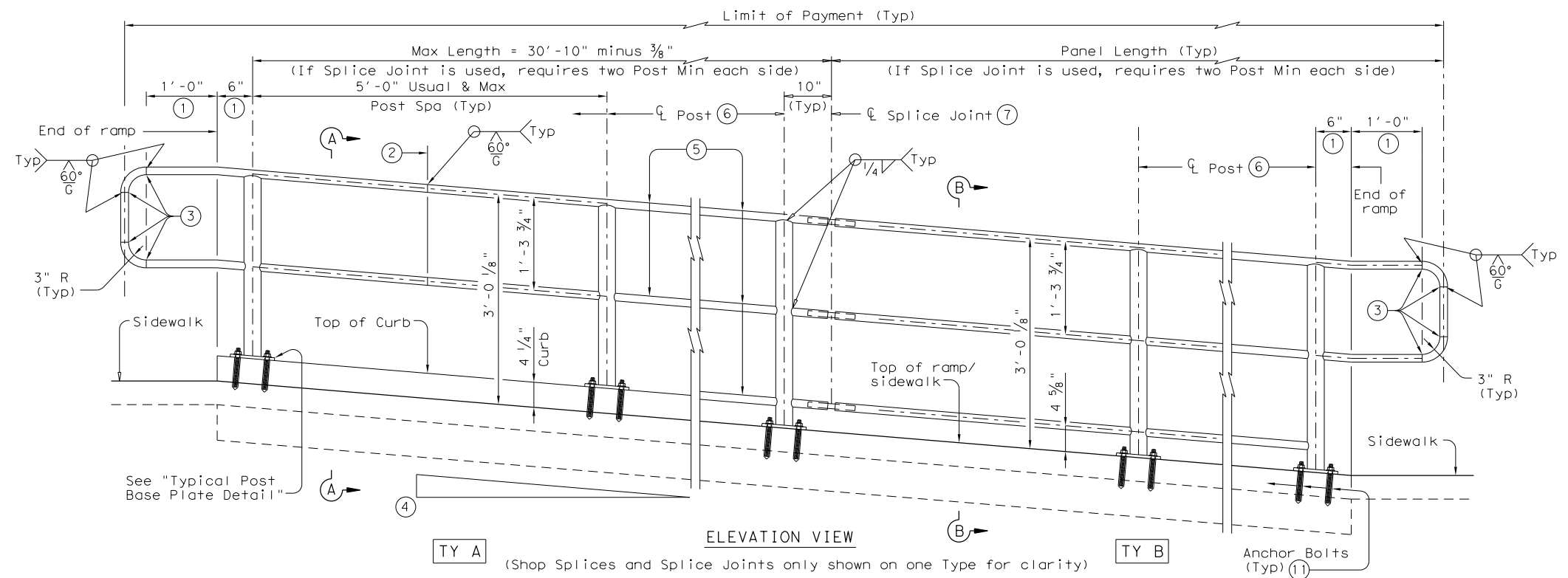
PEDESTRIAN FACILITIES  
 CURB RAMPS

PED-12A

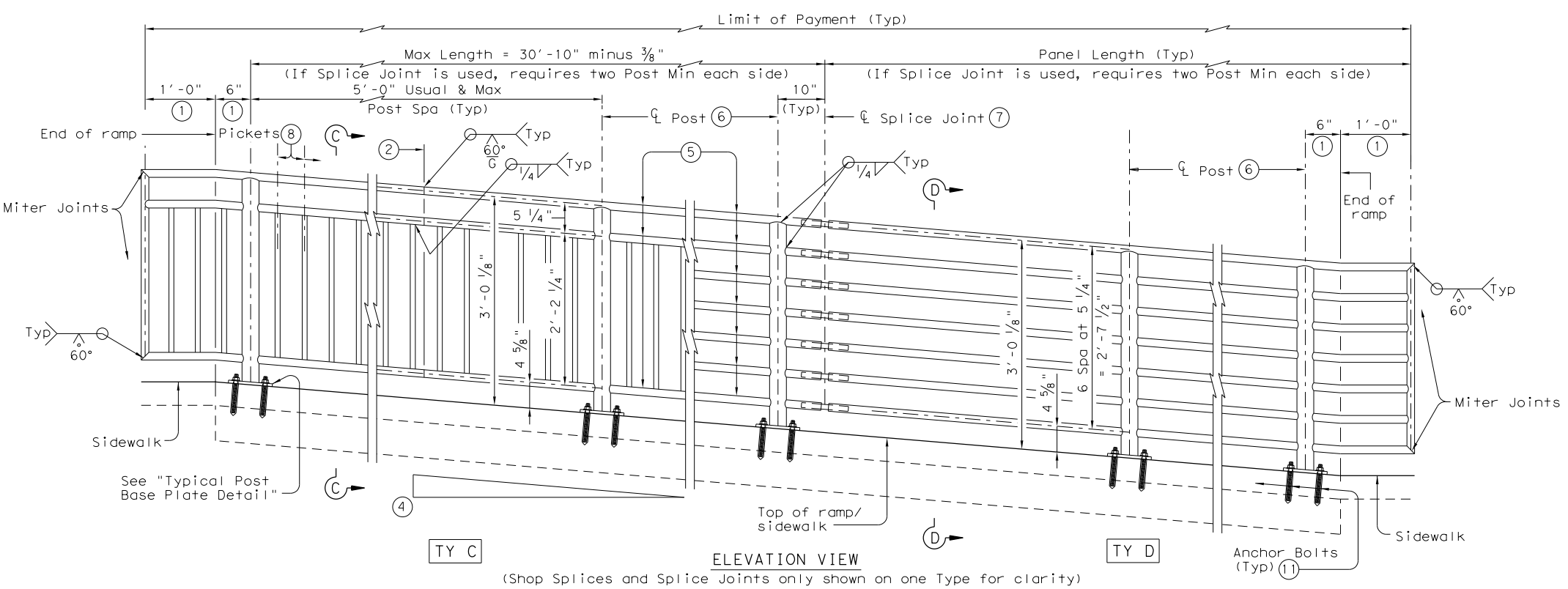
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© TxDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
VP June 13, 2012	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	294	

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DATE: 9/29/2017  
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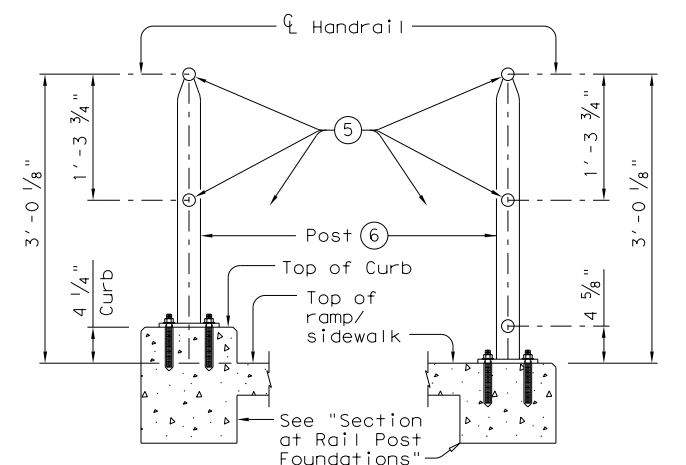


TY A (Shop Splices and Splice Joints only shown on one Type for clarity)  
 TY B

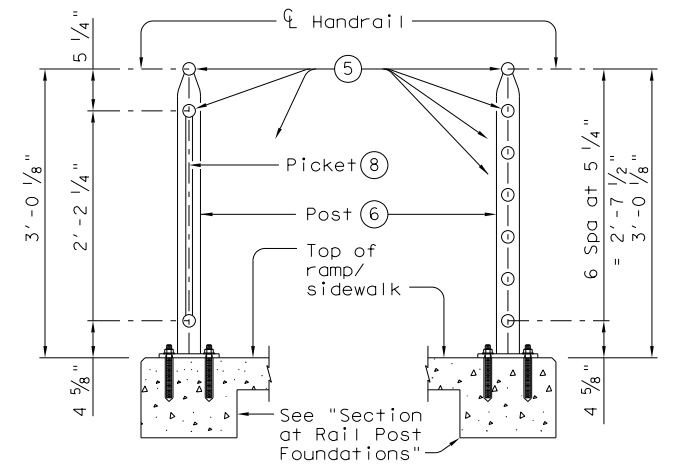


TY C (Shop Splices and Splice Joints only shown on one Type for clarity)  
 TY D

RECOMMENDED USAGE (9) (10)	
Dropoff Height/Condition	Recommended Rail Options
< 30" dropoff	TY A, TY B, TY C, or TY D
≥ 30" dropoff, or along Bike Path	TY E or TY F



SECTION A-A (Showing Handrail TY A)  
 SECTION B-B (Showing Handrail TY B)



SECTION C-C (Showing Handrail TY C)  
 SECTION D-D (Showing Handrail TY D)

SHEET 1 OF 3

- ① Parallel to ground.
- ② One shop splice per panel is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
- ③ Shop splice is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
- ④ See Ramp Details located elsewhere in plans for ramp slope and dimensions. Maximum ramp slope will not exceed 8.3 percent. Level landing required for each 30" rise if grade exceeds 5 percent.
- ⑤ 1 1/2" Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp / sidewalk. Provide holes as needed in 1 1/2" Dia. pipe for galvanizing drainage and venting.
- ⑥ 2 1/2" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). See "Post Mount Detail" for crimping and trimming post to fit Dia. of top rail. Provide holes as needed in post for galvanizing drainage and venting. Plumb all posts.
- ⑦ See "Handrail Fabrication Details" for Splice Joints.
- ⑧ 5/8" Dia. Round Bar equal spacing at 4 1/2" Max. Plumb all pickets.
- ⑨ When needed for accessibility (grade > 5 percent) or as needed for pedestrian safety.
- ⑩ Not to be used on bridges.
- ⑪ See "General Notes" for anchor bolt information.



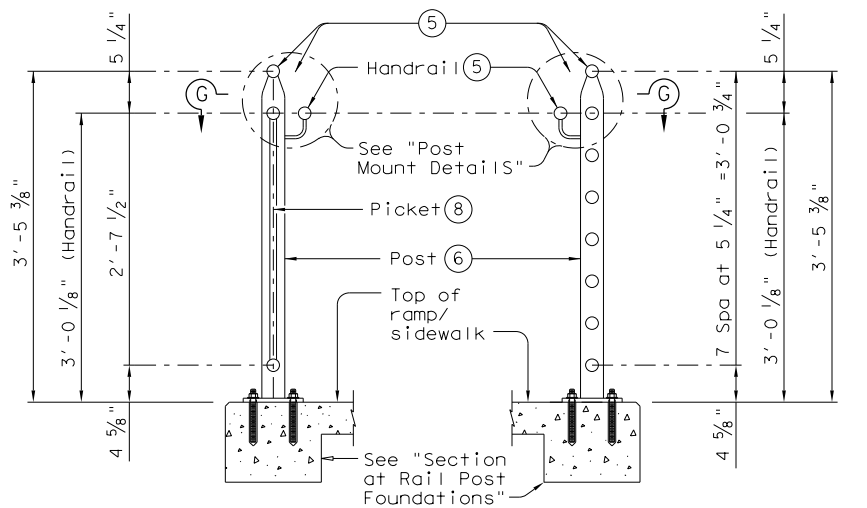
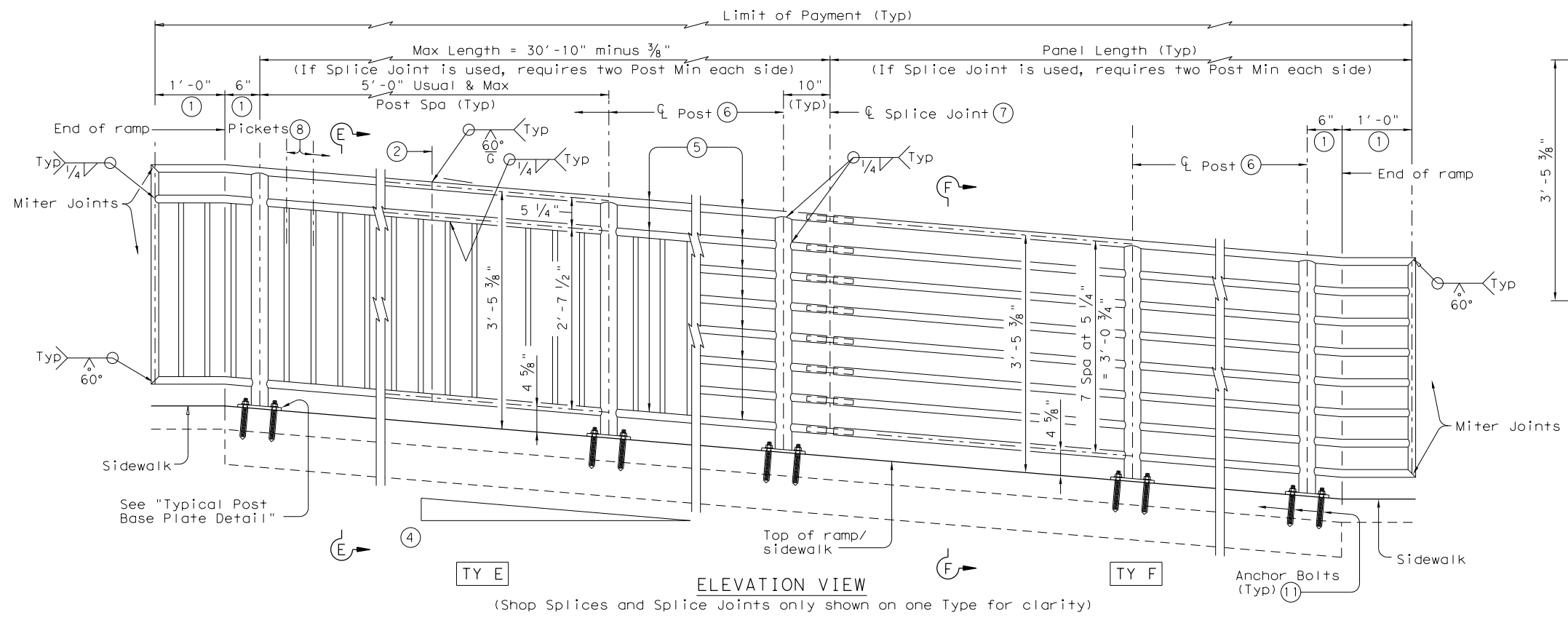
## PEDESTRIAN HANDRAIL DETAILS

### PRD-13

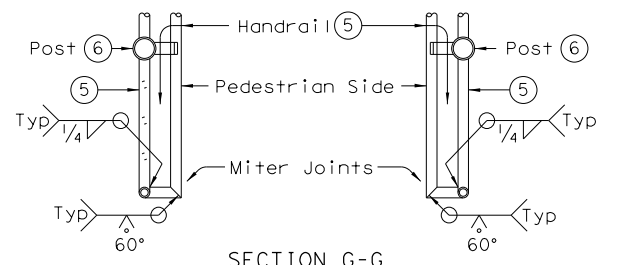
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REVISIONS	0915	12	586	VA
REVISED MAY, 2013 (VP)	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	295	

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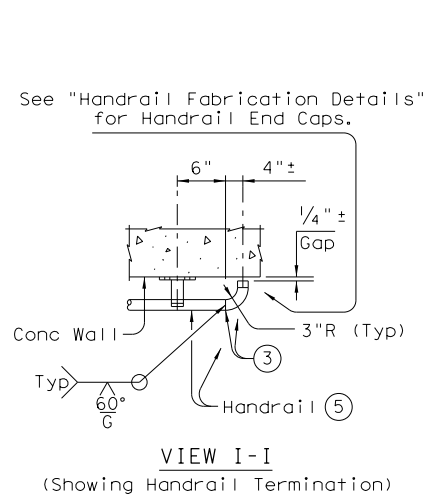
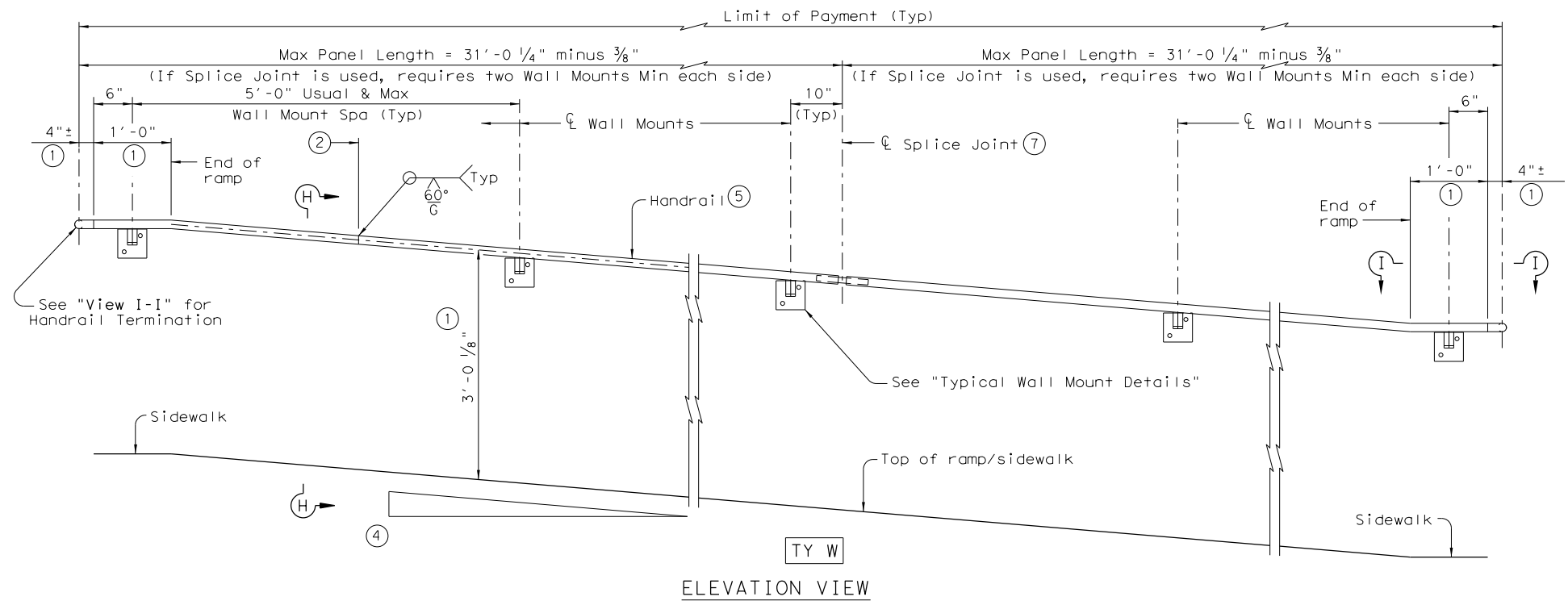
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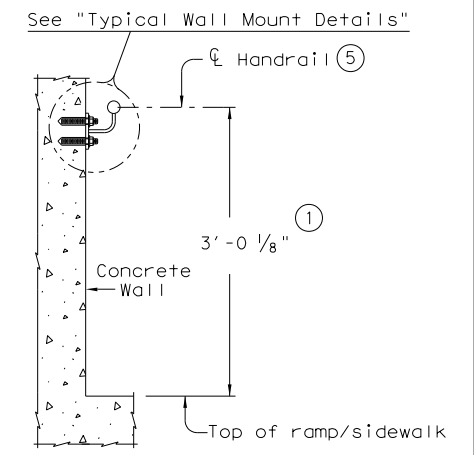
SECTION E-E (Showing Handrail TY E)  
 SECTION F-F (Showing Handrail TY F)



SECTION G-G (Showing Handrail Termination)



VIEW I-I (Showing Handrail Termination)



SECTION H-H (Showing Handrail TY W)

SHEET 2 OF 3

- ① Parallel to ground.
- ② One shop splice per panel is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
- ③ Shop splice is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth.
- ④ See Ramp Details located elsewhere in plans for ramp slope and dimensions. Maximum ramp slope will not exceed 8.3 percent. Level landing required for each 30" rise if grade exceeds 5 percent.
- ⑤ 1 1/2" Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp / sidewalk. Provide holes as needed in 1 1/2" Dia. pipe for galvanizing drainage and venting.

- ⑥ 2 1/2" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). See "Post Mount Detail" for crimping and trimming post to fit Dia. of top rail. Provide holes as needed in post for galvanizing drainage and venting. Plumb all posts.
- ⑦ See "Handrail Fabrication Details" for Splice Joints.
- ⑧ 1/2" Dia. Round Bar equal spacing at 4 1/2" Max. Plumb all pickets.
- ⑪ See "General Notes" for anchor bolt information.

**Texas Department of Transportation** Design Division Standard

## PEDESTRIAN HANDRAIL DETAILS

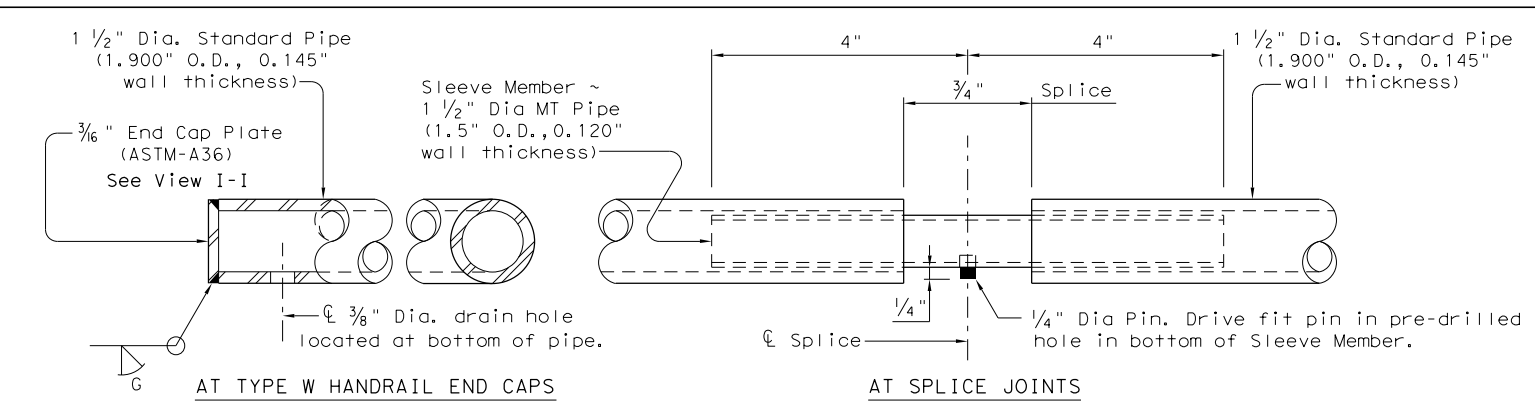
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REVISED MAY, 2013 (VP)	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	296	

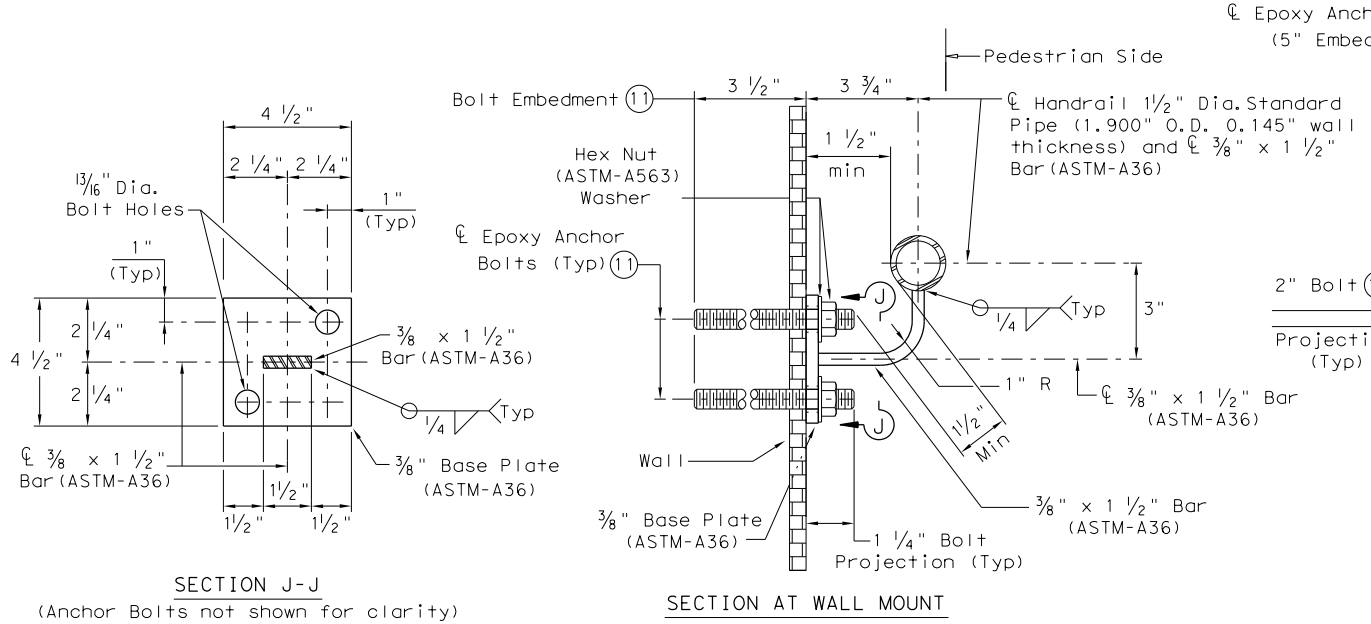


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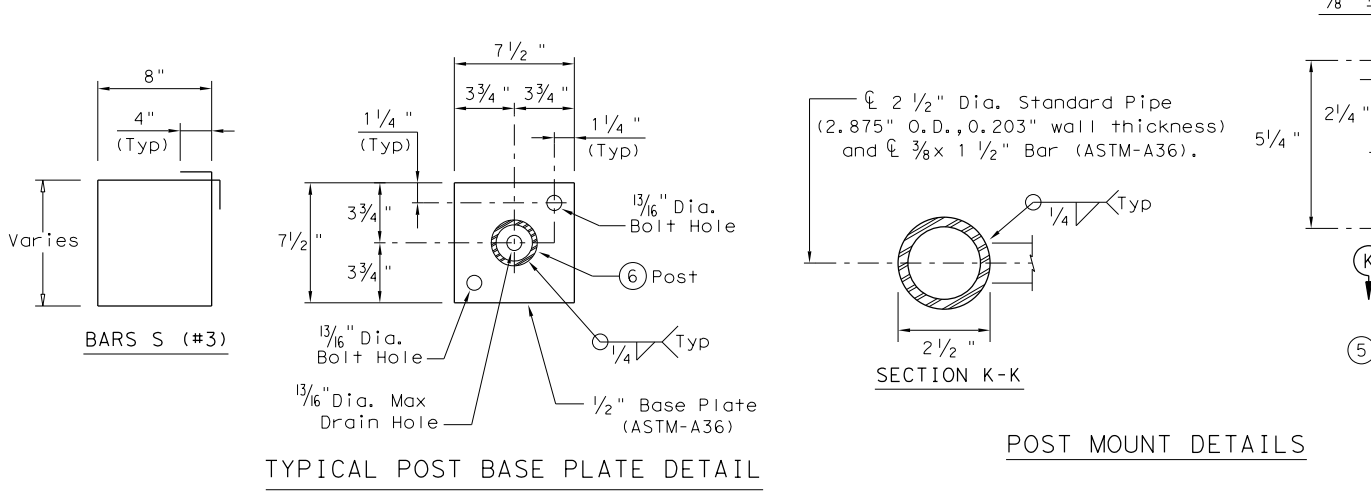


HANDRAIL FABRICATION DETAILS



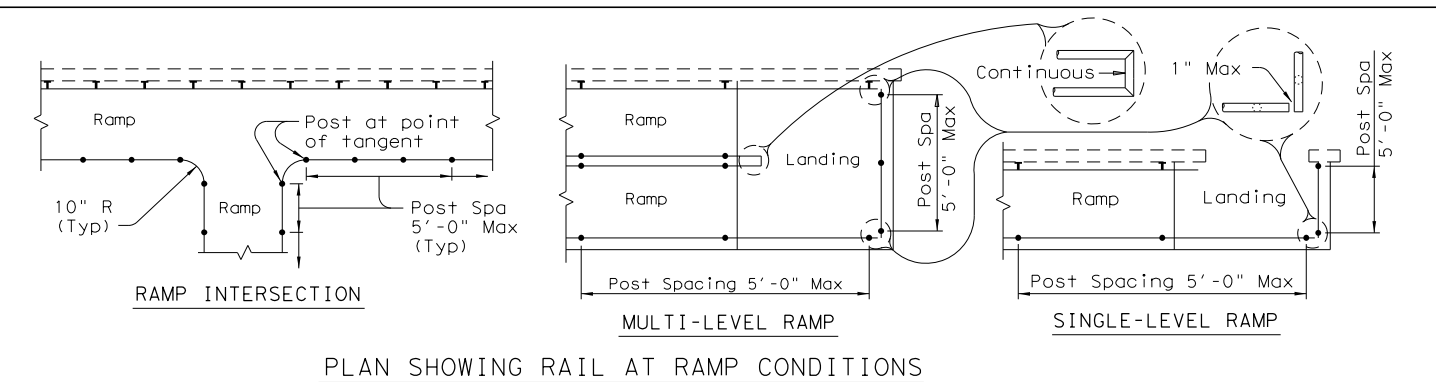
TYPICAL WALL MOUNT DETAILS

- (5) 1 1/2" Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp/sidewalk. Provide holes as needed in 1 1/2" Dia. pipe for galvanizing drainage and venting.
- (6) 2 1/2" Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). Plumb all posts. See "Post Mount Detail" for crimping and trimming post to fit the diameter of top rail. Provide holes as needed in post for galvanizing drainage and venting.
- (11) See "General Notes" for anchor bolt information.
- (12) Bars S(#3) spaced at 12" Max (Spaced 3" from outside edge of overall length of Ramp/Sidewalk).
- (13) Provide 1 1/2" end cover to Bars D(#4) from outside edge of overall length of Ramp/Sidewalk.



TYPICAL POST BASE PLATE DETAIL

POST MOUNT DETAILS



PLAN SHOWING RAIL AT RAMP CONDITIONS

GENERAL NOTES

Designed according to ADAAG, Texas Accessibility Standards, Uniform Building Code, and AASHTO LRFD Specifications.

Handrail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.

Pipe will conform to ASTM-A53 Grade B or A500 Grade B. Steel plates and steel bars will conform to ASTM-A36. Mechanical tubing (MT) will conform to ASTM A513 Grade 1015 or higher. Galvanize all steel components except reinforcing steel unless noted otherwise.

Concrete for foundations will be in accordance with Item 531 "Sidewalks". All reinforcing steel must be Grade 60. Bar laps, where required, will be as follows: Uncoated ~ #4 = 1'-5" Epoxy coated ~ #4 = 2'-1"

When the plans require painted steel, follow the requirements for painting galvanized steel in Item 446, "Cleaning and Painting Steel". Sleeve Members will receive galvanization and only get field painted after installation unless directed otherwise by Engineer.

Epoxy Anchor bolts for wall mount and post base plate will be 5/8" Dia. ASTM A36 threaded rods with one hex nut and one hardened steel washer at each bolt. 5/8" Dia. threaded rod embedment depth for wall mounts is 3 1/2" and embedment depth for post base plate is 5".

Embed threaded rods into concrete with a Type III (Class C) epoxy meeting the requirements of DMS-6100, "Epoxyes and Adhesives". Mix and dispense adhesive with the manufacturer's static mixing nozzle/dual cartridge system. Core drill holes (percussion drilling not permitted).

At the contractor's option the post base plate anchor bolts may be cast with the Ramp/Sidewalk (See Cast-in-Place Anchor Bolt Options).

Optional cast-in-place anchor bolts will be 5/8" Dia ASTM A307 Grade A bolts (or A36 threaded rods with one tack welded hex nut each) with one hex nut and one hardened steel washer at each bolt. Embedment depth of cast-in-place bolt will be 8" for post base plate.

Handrails and any wall or other surface adjacent to them will be free of any sharp or abrasive elements.

Submit shop drawings to the Engineer unless otherwise noted. For curved handrail applications, fabricate the handrail to the curve if radius is less than 600 ft. Shop drawings are required when rail is fabricated to the curve.

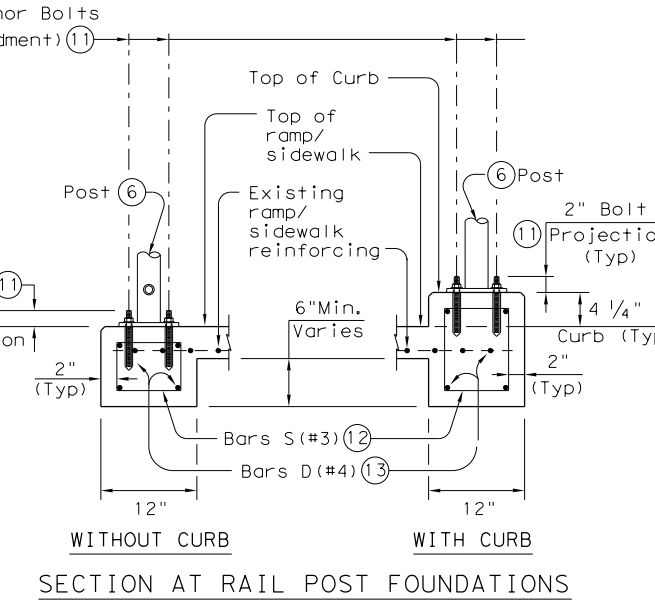
For all handrails, erection drawings will be submitted to the Engineer for approval to ensure proper installation.

Drawings will show handrail mount locations with bolts setting, spacing, ramp slope, and/or splice joint locations, and handrail lengths with identification showing where each handrail goes on the layout.

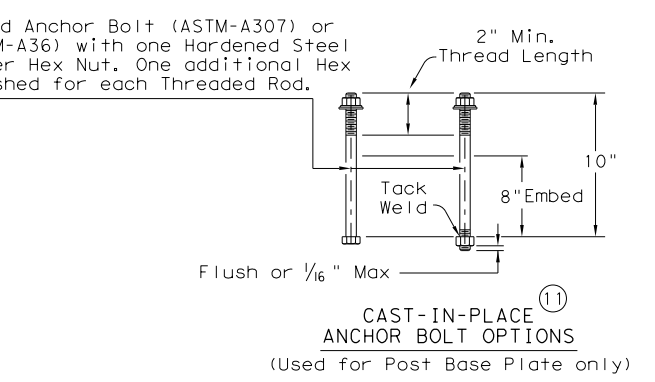
Payment for concrete sidewalks or curb ramps will be paid for in accordance with Item 531 "Sidewalks".

Payment for all items shown is to be included in unit price bid in accordance with Item 450 "Railing" of the type specified.

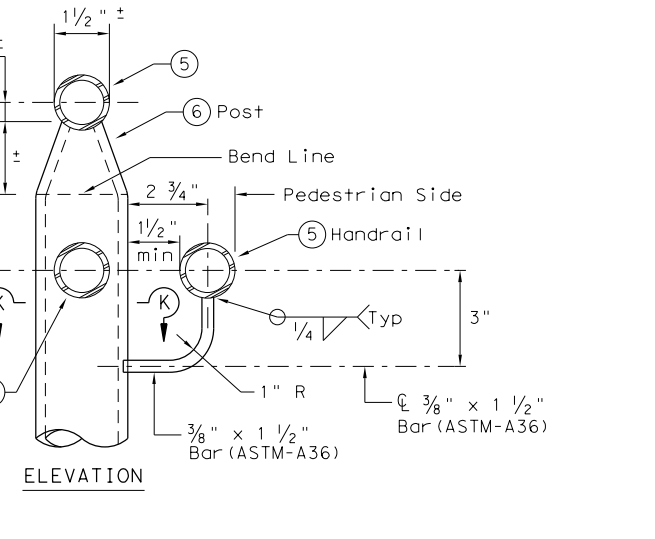
All exposed edges will be rounded or chamfered to approximately 1/8" by grinding.



SECTION AT RAIL POST FOUNDATIONS



CAST-IN-PLACE ANCHOR BOLT OPTIONS (Used for Post Base Plate only)

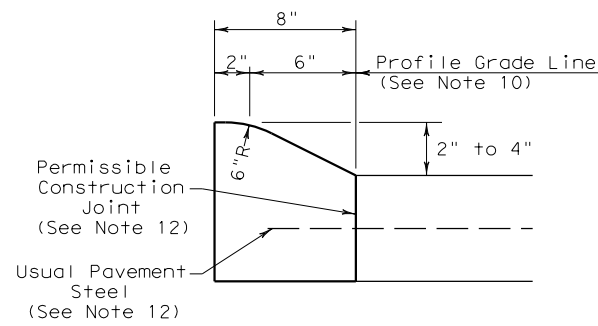


ELEVATION

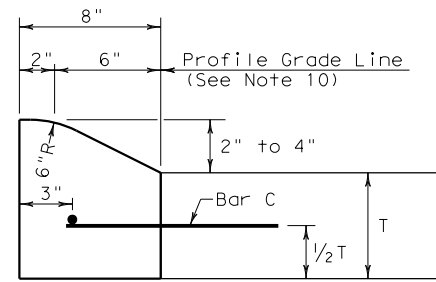
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<h2>PEDESTRIAN HANDRAIL DETAILS</h2> <h3>PRD-13</h3>			
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©TxDOT December 2006	CONT	SECT	JOB
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REVISED MAY, 2013 (VP)	DIST	COUNTY	SHEET NO.
	SAT	BEXAR	297

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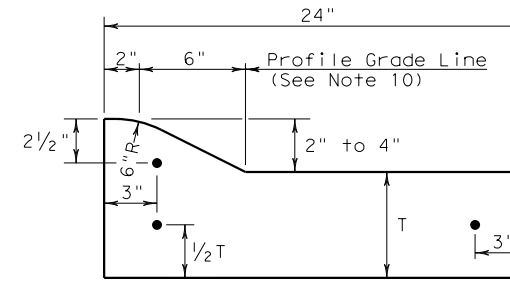
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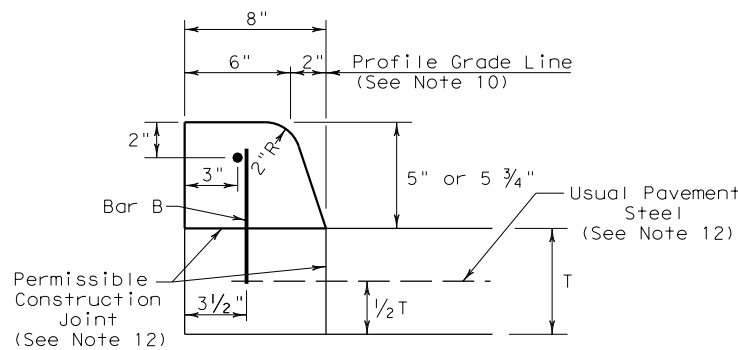
TYPE I CURB (MONOLITHIC)  
 2" - 4" HEIGHT



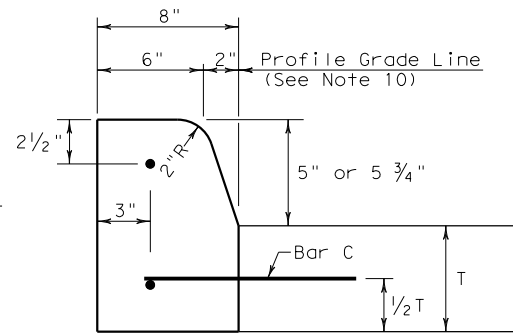
TYPE I CURB AND GUTTER  
 2" - 4" HEIGHT



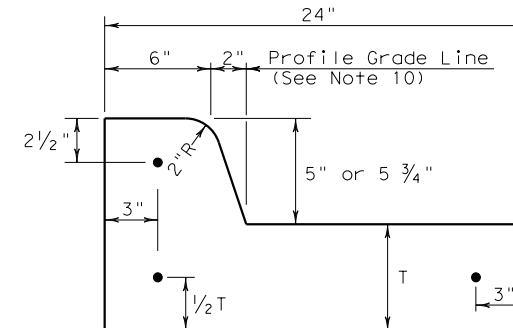
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 2" - 4" HEIGHT



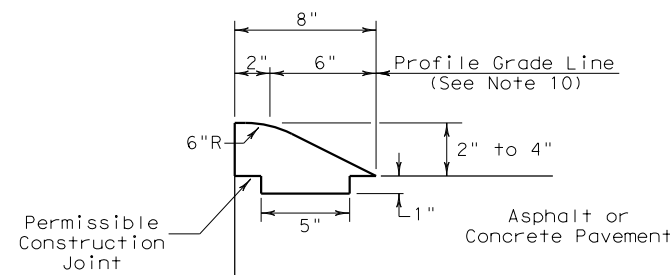
TYPE II CURB (MONOLITHIC)  
 5" - 5 3/4" HEIGHT



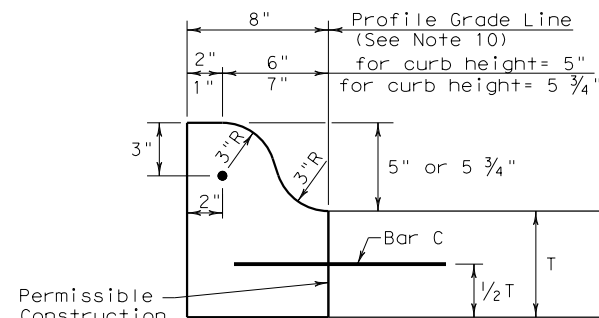
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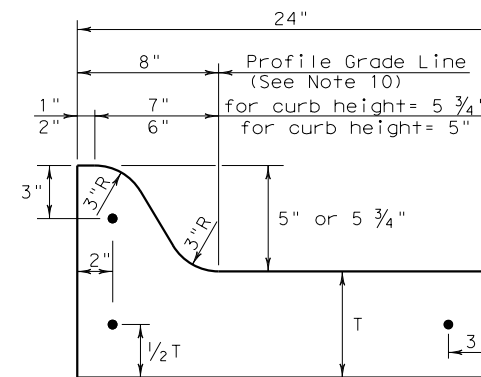
TYPE II CURB AND GUTTER  
 5" - 5 3/4" HEIGHT



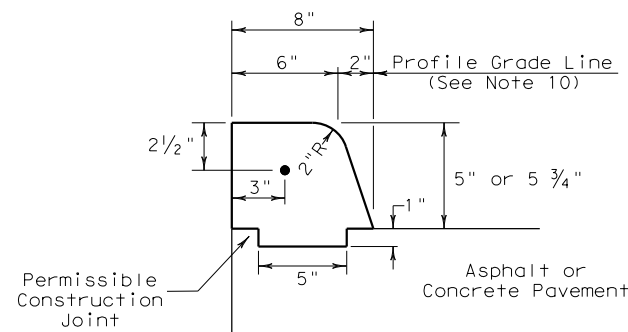
TYPE III CURB (KEYED)  
 2" - 4" HEIGHT



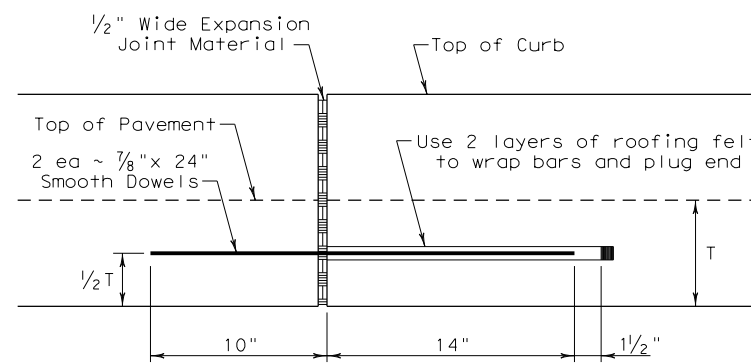
TYPE IIa CURB  
 5" - 5 3/4" HEIGHT



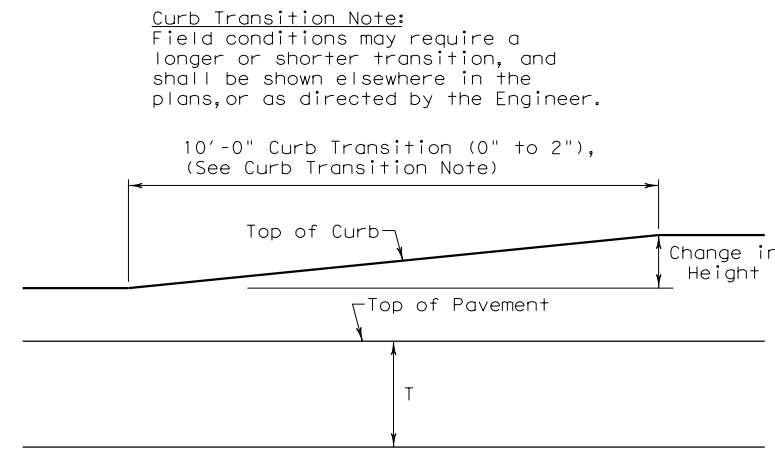
TYPE IIa CURB AND GUTTER  
 5" - 5 3/4" HEIGHT



TYPE IV CURB (KEYED)  
 5" - 5 3/4" HEIGHT



EXPANSION JOINT DETAIL

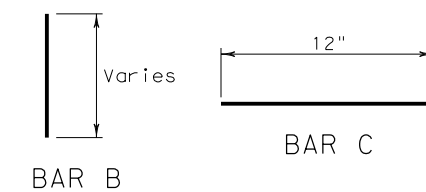


CURB TRANSITION

Note: To be paid for as Highest Curb

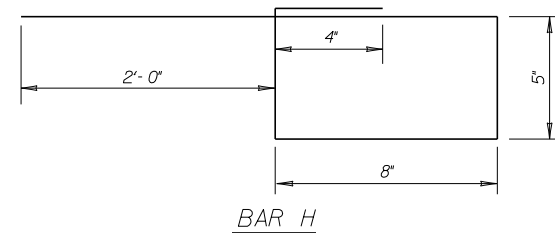
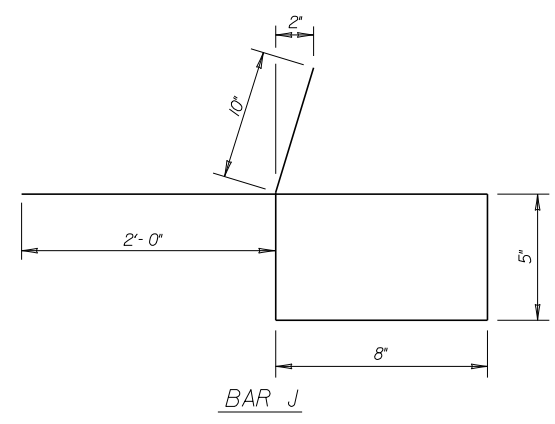
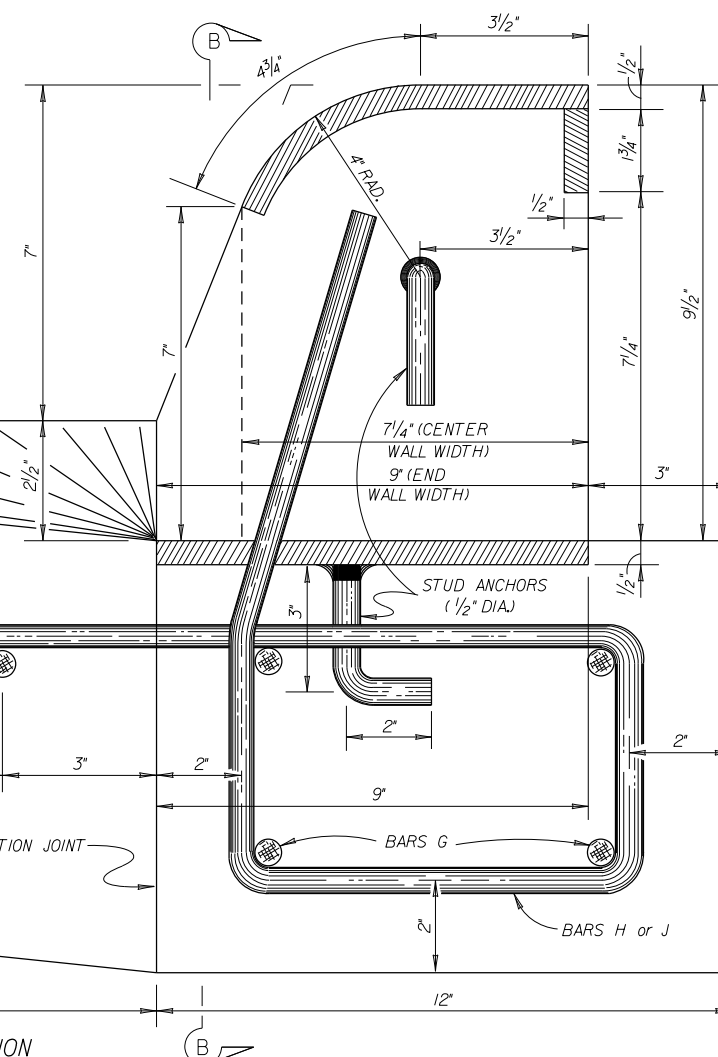
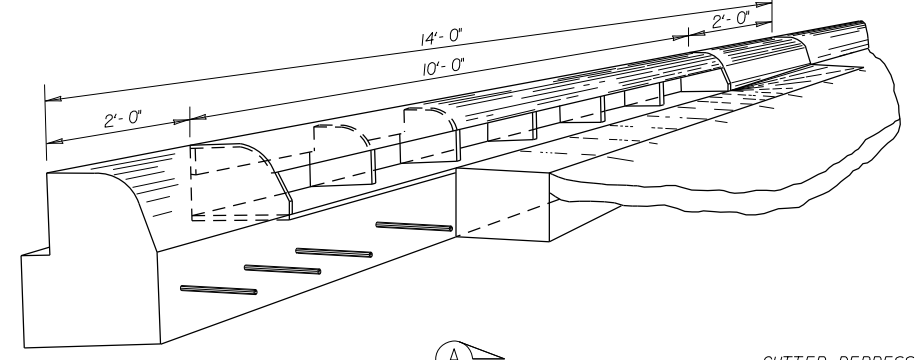
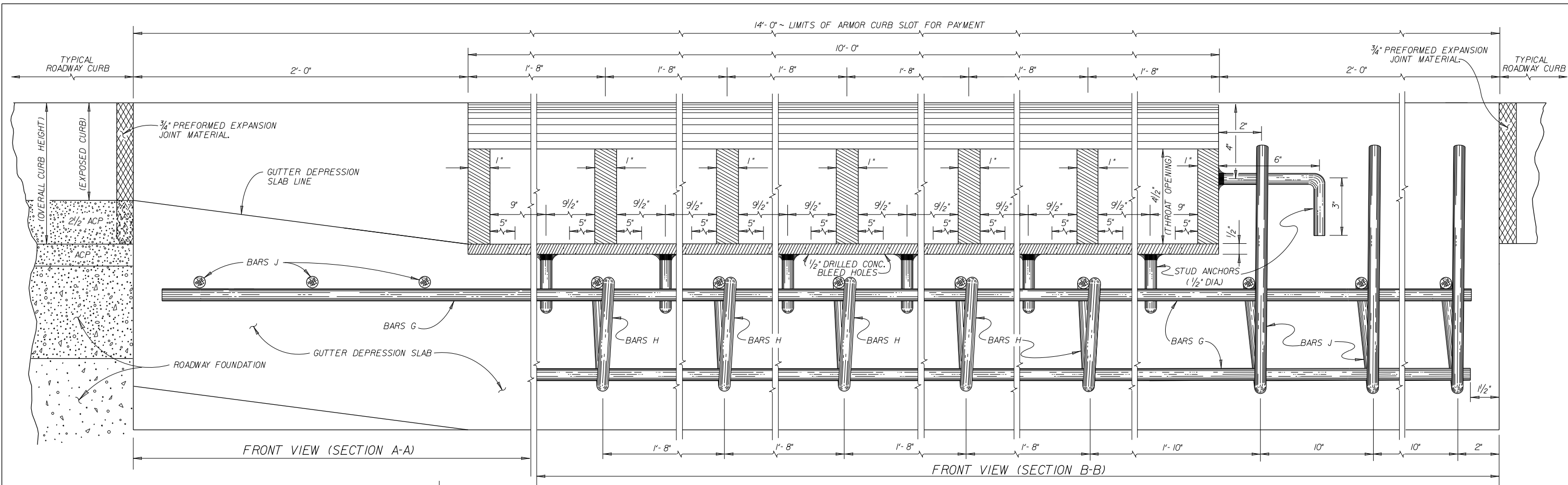
General Notes

- All materials and construction shall be in accordance with Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."
- Concrete shall be Class A.
- When reinforcing bars are used, they shall be No.4 unless otherwise shown. The use of synthetic fiber in lieu of steel reinforcing is acceptable, provided the fiber producer is on the Department Producer List (MPL), maintained by TxDOT, Construction Division.
- Round exposed sharp edges with a rounding tool, to a minimum radius of 1/4 inch.
- All existing curbs and driveways to be removed shall be sawed or removed at existing joints.
- Where concrete curb is placed on existing concrete pavement, the pavement shall be drilled and the reinforcing bars grouted in place.
- Expansion and contraction joints shall be constructed to match pavement joints in all curbs and curb and gutter adjacent to jointed concrete pavement. Where placement of curb or curb and gutter is not adjacent to concrete pavement, expansion joints shall be provided at structures, curb returns at streets, and at locations directed by The Engineer.
- Vertical and horizontal dowel bars and transverse reinforcing bars shall be placed at four feet C-C.
- Dimension 'T' shown is the thickness of concrete pavement. When curb is installed adjacent to flexible pavement dimension 'T' is 8" maximum.
- Usual profile grade line. Refer to typical sections and plan-profile sheets for exact locations.
- One-half inch expansion joint material shall be provided where curb or curb and gutter is adjacent to sidewalk or riprap.
- When vertical permissible construction joints are used, resulting in a longitudinal construction joint in the pavement, the longitudinal pavement steel shall be placed in accordance with pavement details shown elsewhere in the plans for longitudinal construction joints. Reinforcing steel for curb section shall then conform to that required for concrete curb.



Curb Transition Note:  
 Field conditions may require a longer or shorter transition, and shall be shown elsewhere in the plans, or as directed by the Engineer.

				<b>Design Division Standard</b>	
<h2>CONCRETE CURB AND GUTTER</h2> <h3>CCCG-12</h3>					
FILE: cccg12.dgn	DN: TxDOT	CK: AM	DW: VP	CK: VP	
© TxDOT: 1995	CONT	SECT	JOB	HIGHWAY	
UPDATED 2012 - VP	REVISIONS	0915	12	586	VA
	DIST	COUNTY	SHEET NO.		
	SAT	BEXAR	298		



**ESTIMATED QUANTITIES FOR REINFORCING STEEL & CONCRETE**

BAR NO.	SIZE	SPAC.	LENGTH	WEIGHT	
G	#4	SHOWN	13'-9"	64	
H	#4	1'-8"	4'-6"	15	
J	#4	8"	5'-0"	20	
TOTAL WEIGHT *				LBS.	99
CONCRETE FOR FOUNDATION *				C.Y.	0.47
CONCRETE FOR GUTTER DEPRESSION *				C.Y.	0.78

**STRUCTURAL STEEL FOR ARMOR CURB SLOT**

STUD ANCHORS (1/2" DIA)	LBS.	3.5
STEEL PLATE	LBS.	451
TOTAL WEIGHT *	LBS.	454.5

\* FOR CONTRACTORS INFO ONLY.

- GENERAL NOTES:**
- ALL CONCRETE SHALL BE CL#A.
  - ALL STEEL SHALL BE ASTM A36.
  - ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
  - ALL SIDES OF ARMOR CURB SLOT AND STUD ANCHORS SHALL BE 1/4" FILLET WELDS.
  - ALL EXPOSED STRUCTURAL STEEL (ARMOR) SHALL BE GALVANIZED UNDER ITEM 445.
  - ALL EXPOSED EDGES ON ARMOR CURB SHALL RECEIVE A 1/8" BEVEL.
  - THE SHAPE OF THE TYPICAL ROADWAY CURB SHALL TRANSITION TO THE ARMOR CURB AS APPROVED BY THE ENGINEER.

**ARMOR CURB SLOT WITH CONCRETE FOUNDATION**  
**SAN ANTONIO DISTRICT STANDARDS**

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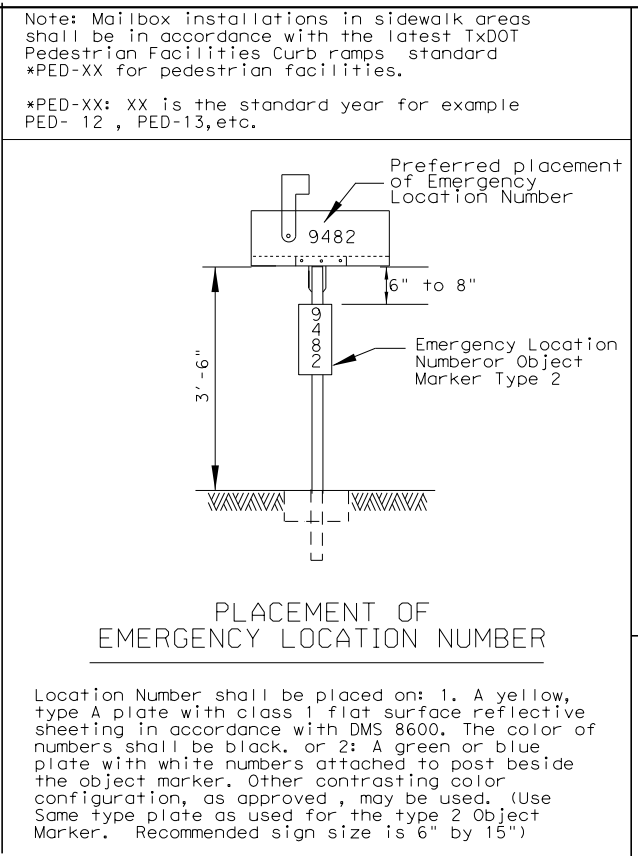
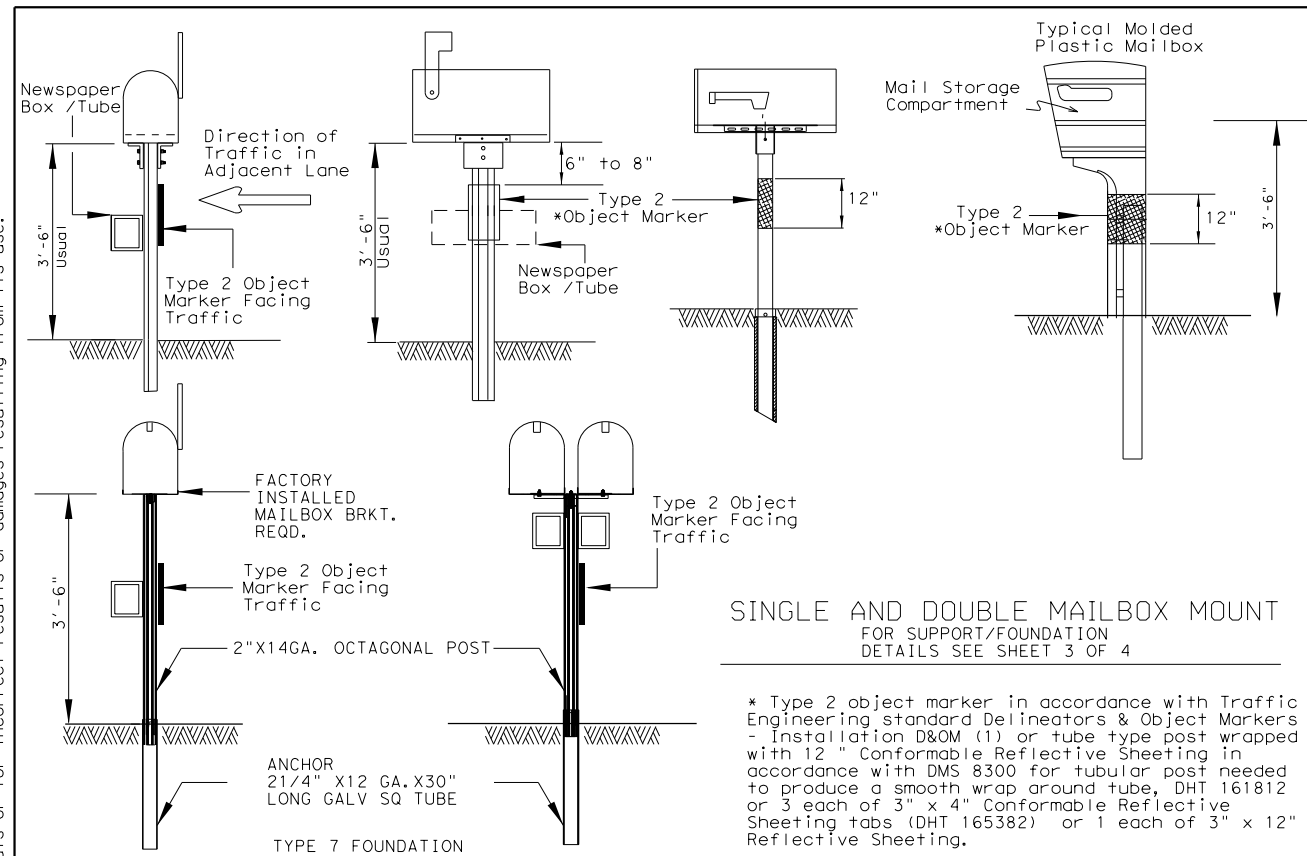
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TEXAS	SAT	BEXAR	
CONT.	SECT.	JOB	HIGHWAY NO.
0915	12	586	VA

10/95  
 REV.07/01  
 REV.12/04

STRUCTURE DESIGN / BRIDGE / STD / ARMORCURBDGN

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9/29/2017 10:17:21 AM P:\111\35\01\design\C\v1\standards\Roadway\MB15(1).dgn



**TYPICAL MAILBOX SIZE**

SIZE	INCHES			POUNDS	
	LENGTH	WIDTH	HEIGHT	MAXIMUM WEIGHT	
SMALL	19 1/2	6	7	5	5
MEDIUM	22 1/2	8	11 1/2	7	7
LARGE	23 1/2*	11 1/2*	13 1/2*	10	10

\* Maximum allowed dimensions for mailbox  
\*\* Excluding Molded Plastic on 4 X 4 Post

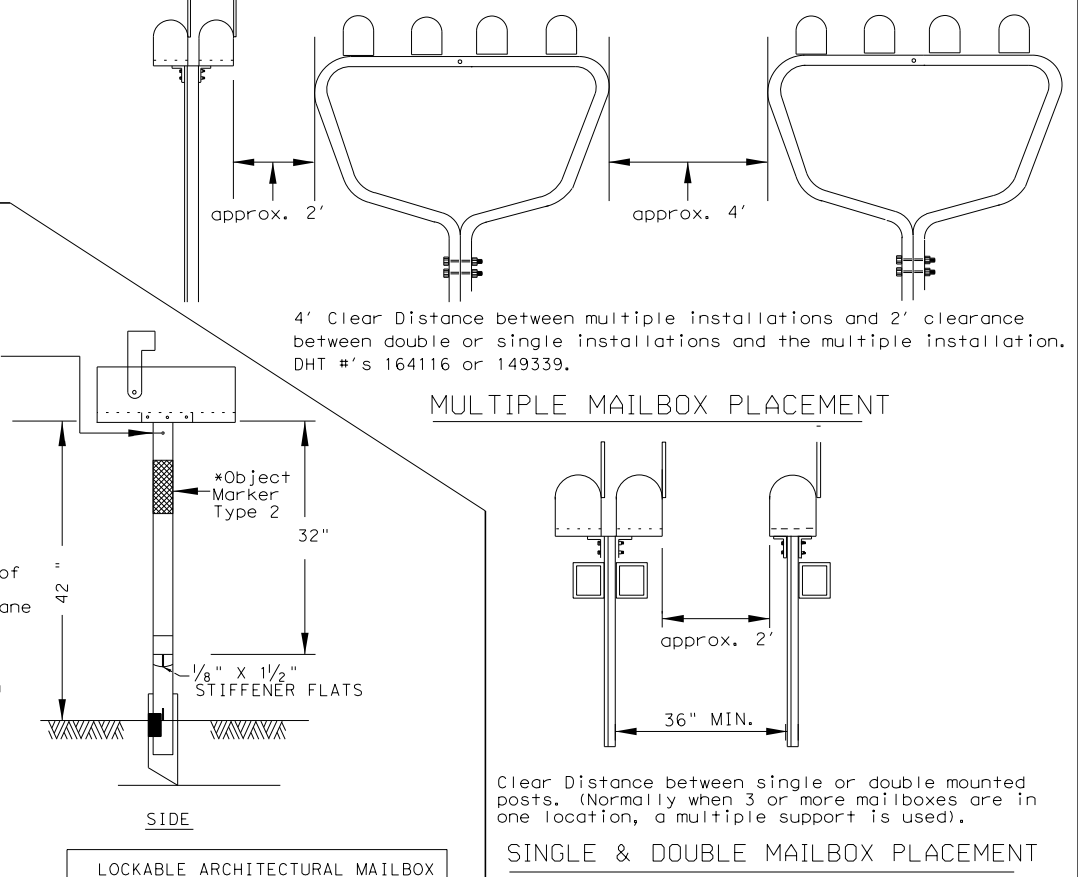
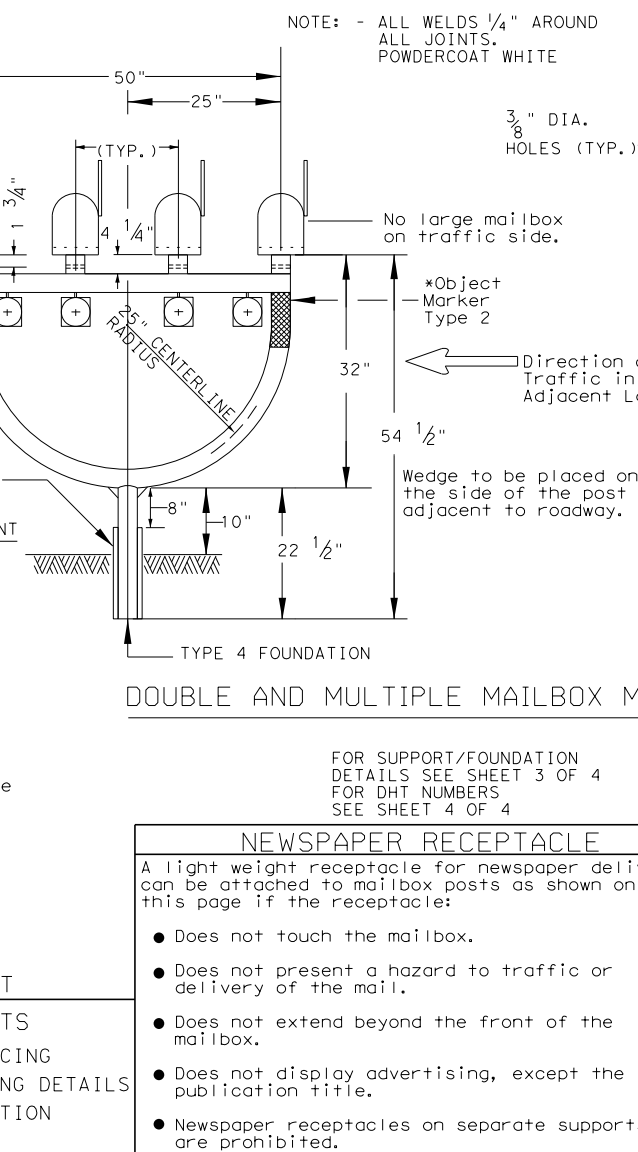
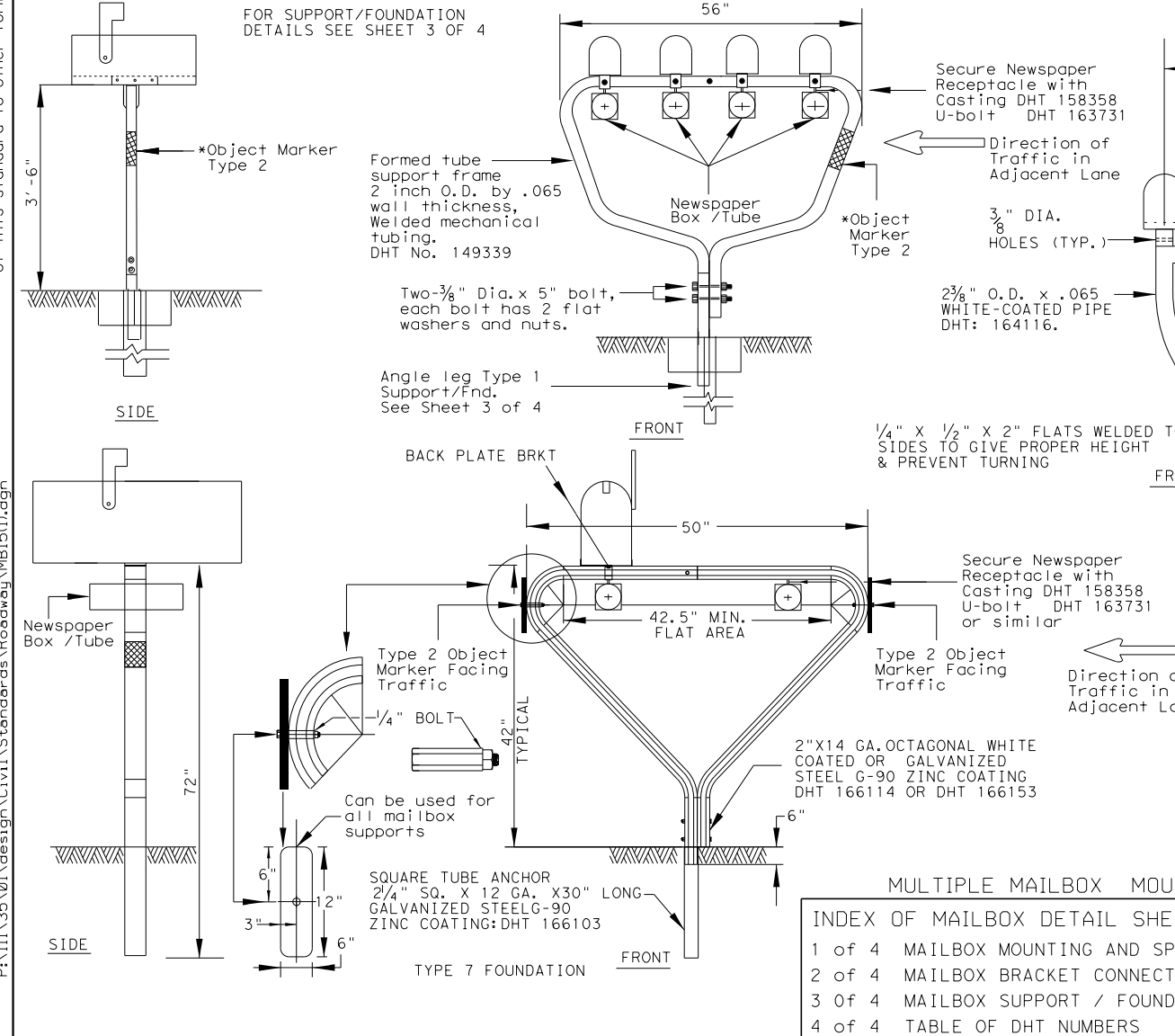
**LOCKABLE ARCHITECTURAL MAILBOX SIZE (INCHES)**

VIEW	TOP	BOTTOM	FRONT SIDE	BACK SIDE	WEIGHT (POUNDS)
SIDE	18	15	18.3	15	
BACK	11 1/2	11 1/2		15	22.4

Mailboxes shall be made of light weight sheet metal or light weight plastic. Lockable architectural mailboxes shall meet the requirements of the above table.

Heavy steel, cast iron or decorative mailboxes shall not be used on the state highway system.

SEE TOP RIGHT CORNER OF SHEET 2 OF 4



LOCKABLE ARCHITECTURAL MAILBOX

SEE SHEET 4 OF 4 FOR DETAILS

PLAN VIEW

ELEVATION VIEW

TYPE 2 Object Marker Facing Traffic

MPACT

42"

17"

30"

12"

0"

1"

2" Traffic side

3"

4"

5"

6"

7"

8"

Ground Line

SHEET 1 OF 4

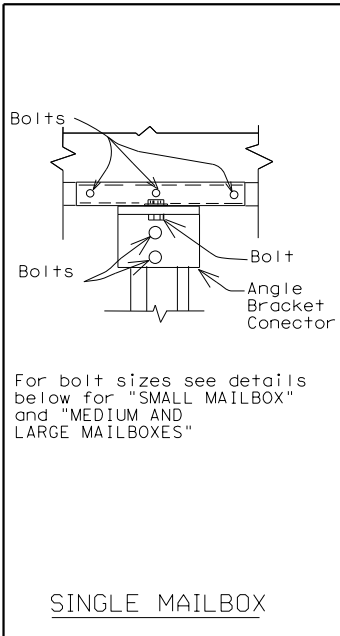
**Texas Department of Transportation**

Maintenance Division Standard

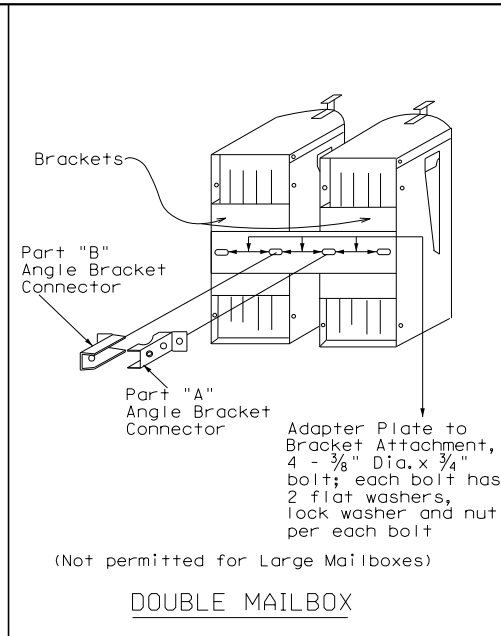
MAILBOX MOUNTING AND SPACING MB-15(1)

FILE: MB15(1).DGN	DWG: JEO	CHK: JEO	DWG:	CK:
© TxDOT APRIL 2015	CONT	SECT	JOB	HIGHWAY
REVISIONS:	0915	12	586	VA
Added additional newspaper receptacle for double mailbox support	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	300	

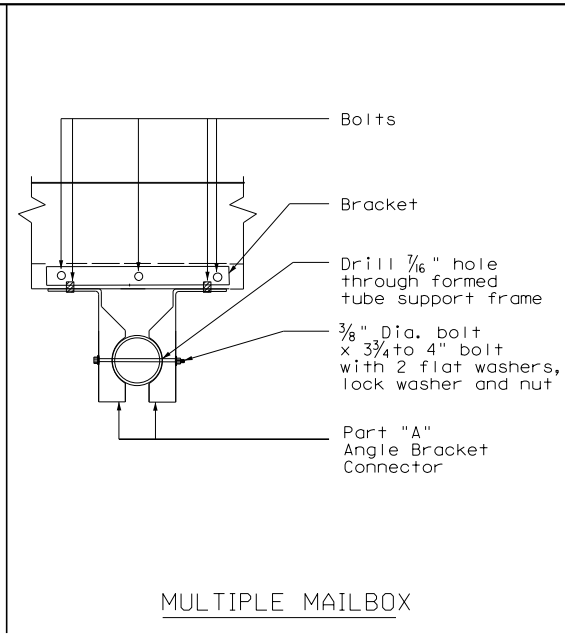
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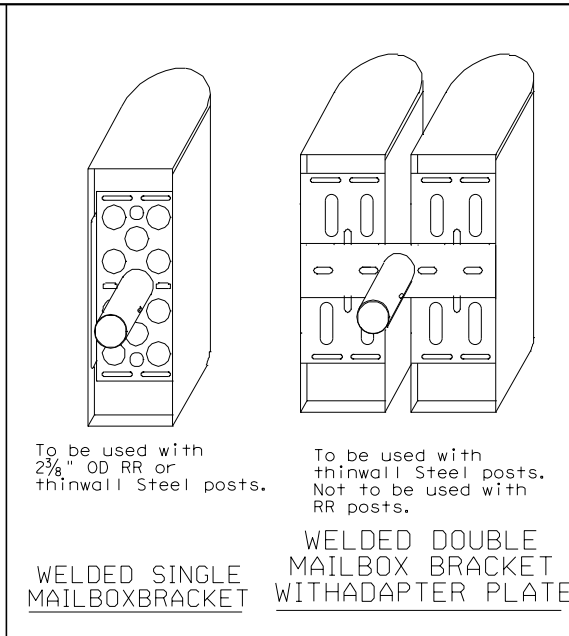
SINGLE MAILBOX



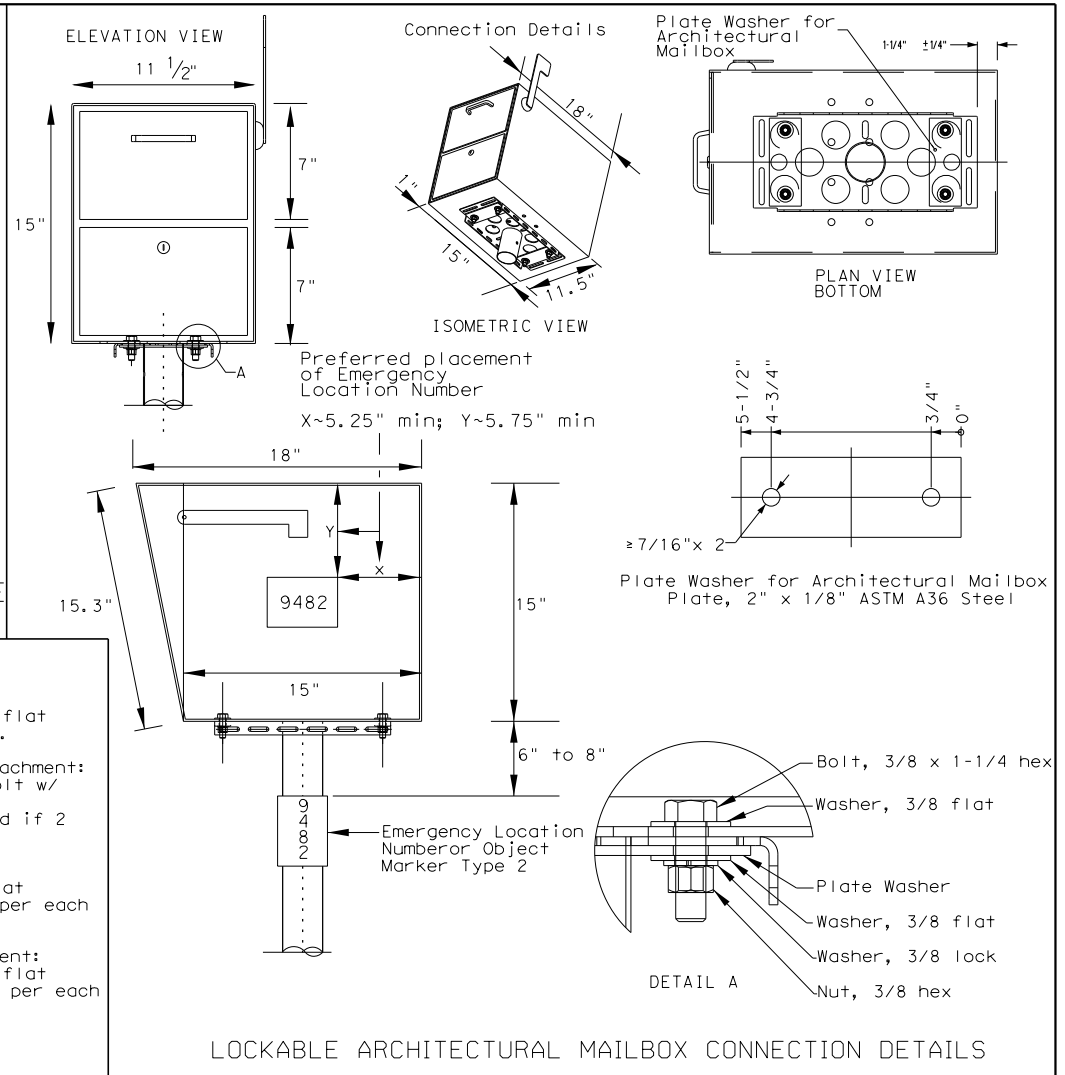
DOUBLE MAILBOX



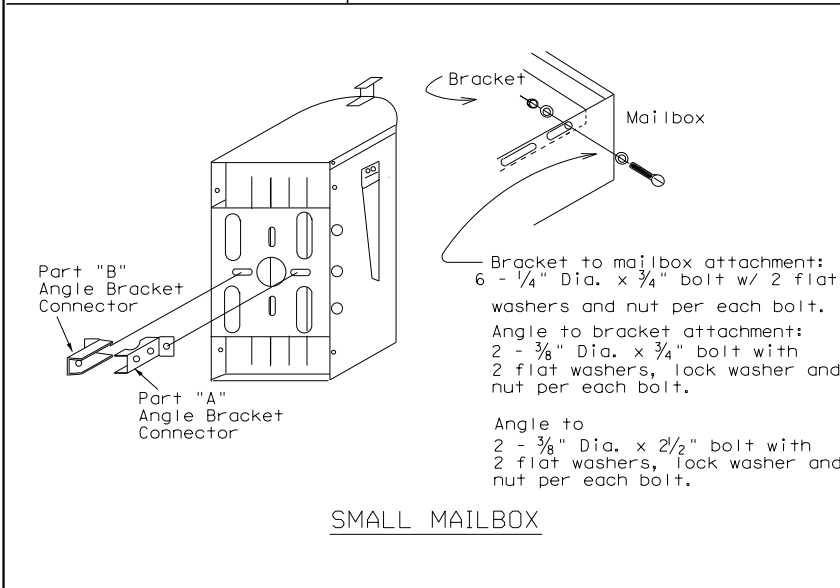
MULTIPLE MAILBOX



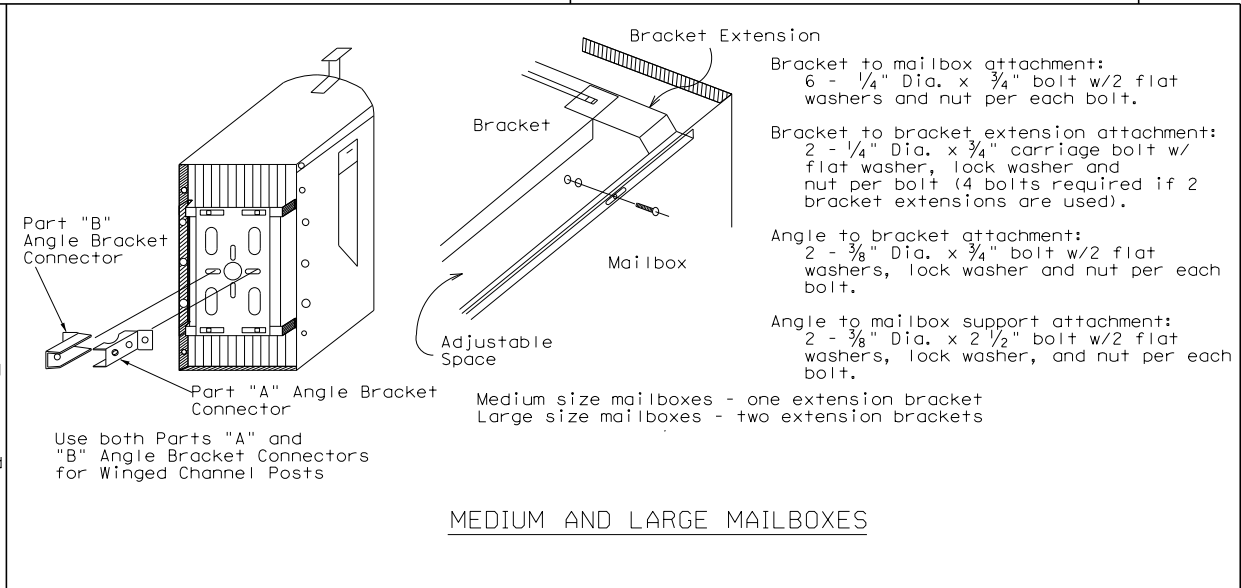
WELDED SINGLE MAILBOX BRACKET W/ADAPTER PLATE WELDED DOUBLE MAILBOX BRACKET



LOCKABLE ARCHITECTURAL MAILBOX CONNECTION DETAILS



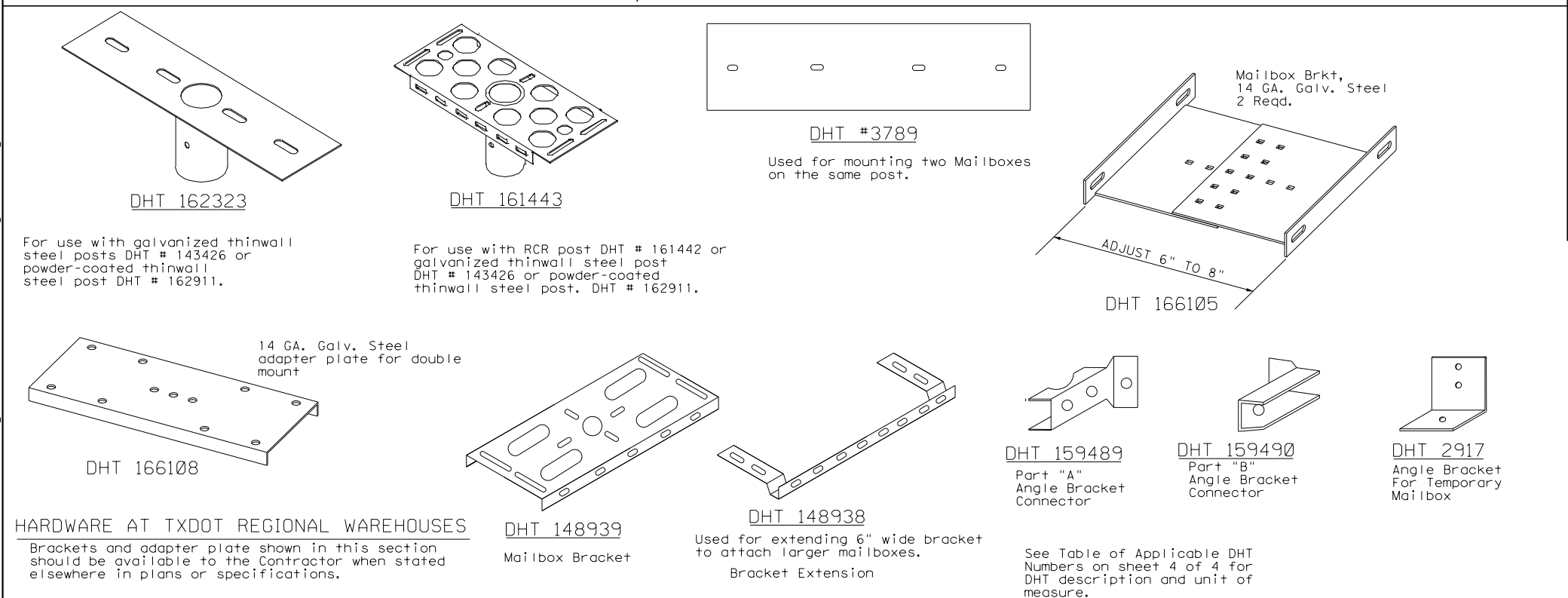
SMALL MAILBOX



MEDIUM AND LARGE MAILBOXES

GENERAL NOTES

- Connecting hardware detailed on this sheet is for the hardware that the Department stocks at the Regional Warehouses. This hardware is available to the contractor only when so stated elsewhere in the plans or specification.
- Hardware for mounting mailboxes to the support/foundation furnished by industry should be used when shown on the Maintenance Divisions "Approved Products List." Only mailbox hardware that have been crash tested in accordance with NCHRP Report 350, will be on the approved list.
- Hardware furnished by industry shall be erected in accordance with the manufacturer's recommendation.
- Bracket and bracket extension shall be constructed of 14 gauge galvanized steel sheet metal.
- The angles, brackets and adapter plates shall be constructed of 12 gauge galvanized steel sheet metal.
- Items with evidence of damage to the galvanized coating or wet storage stains (white rust) will not be accepted.



HARDWARE AT TxDOT REGIONAL WAREHOUSES

Brackets and adapter plate shown in this section should be available to the Contractor when stated elsewhere in plans or specifications.

See Table of Applicable DHT Numbers on sheet 4 of 4 for DHT description and unit of measure.

Texas Department of Transportation Maintenance Division Standard

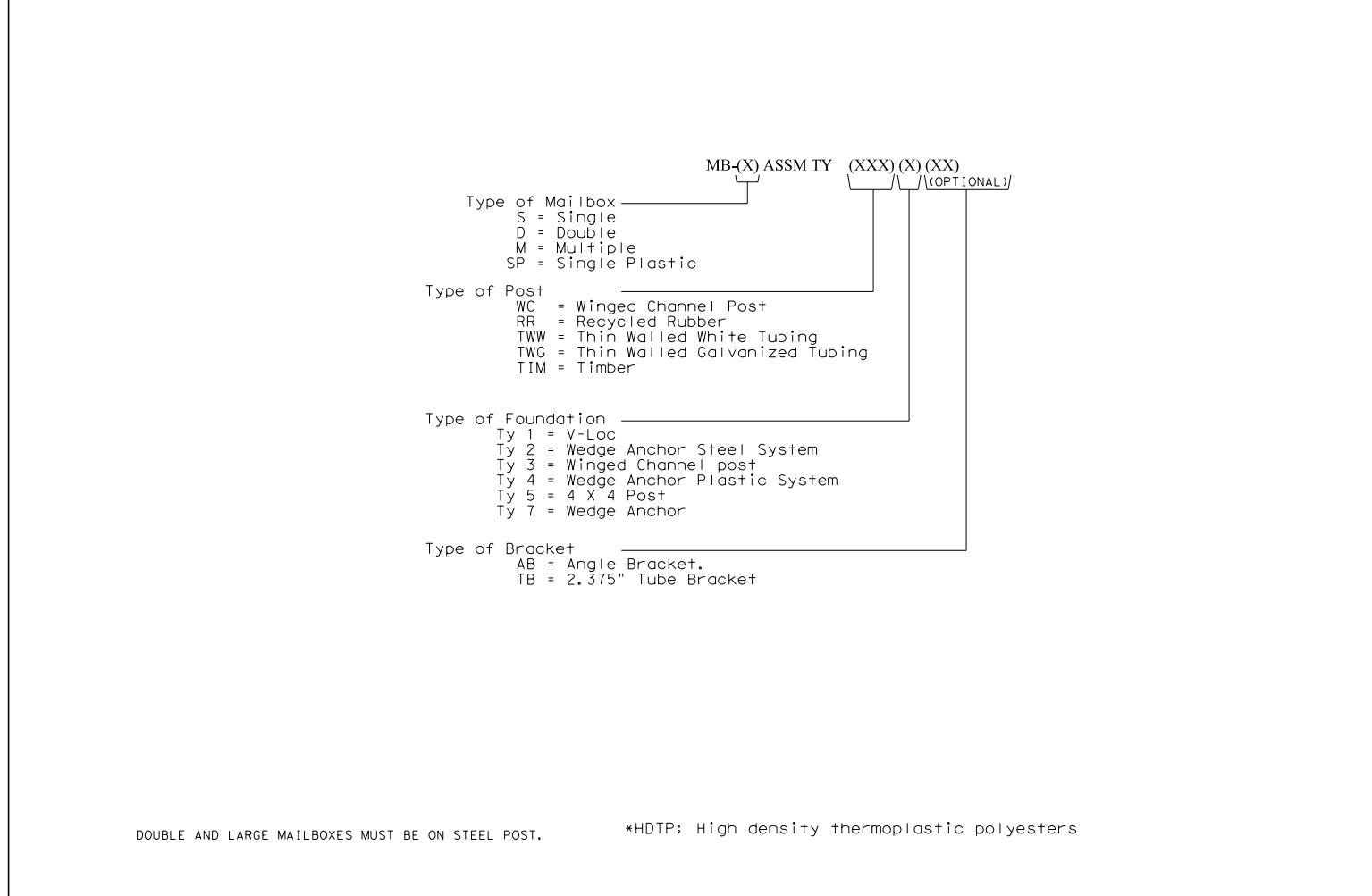
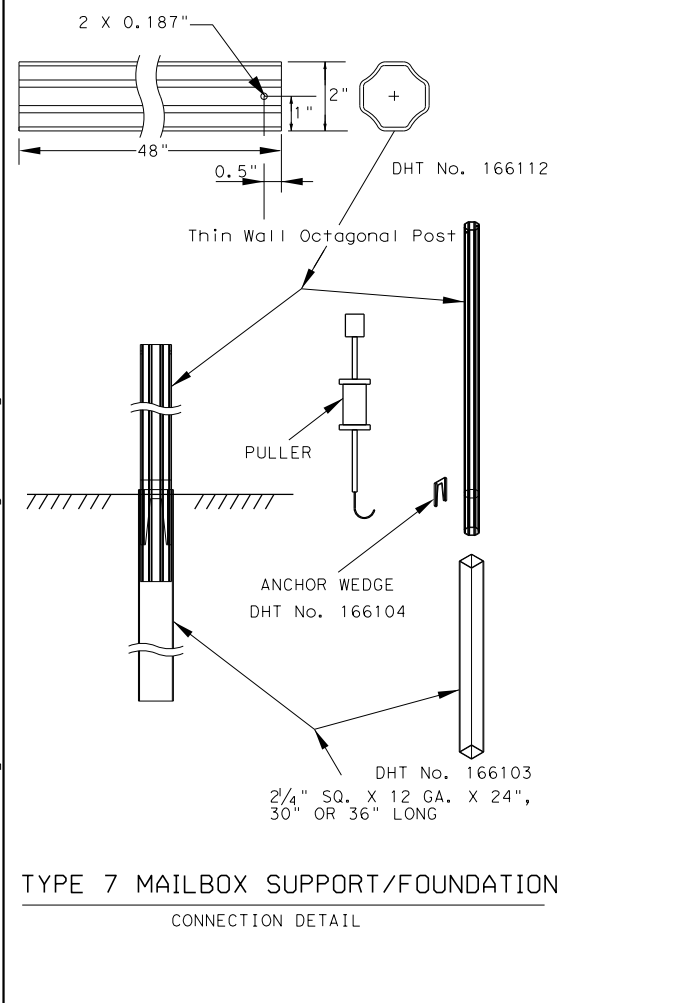
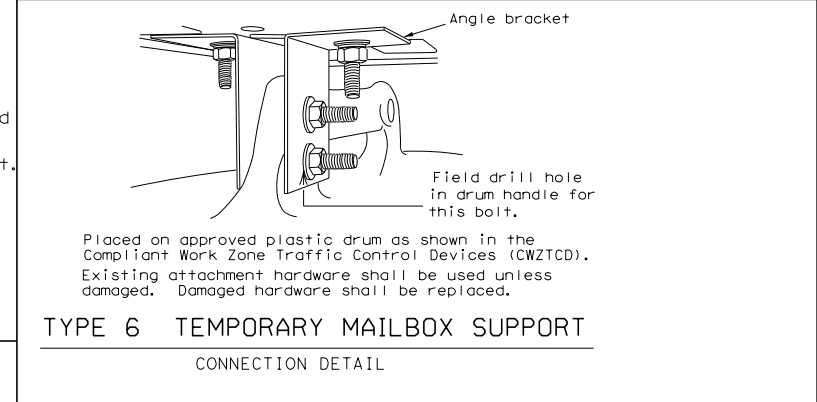
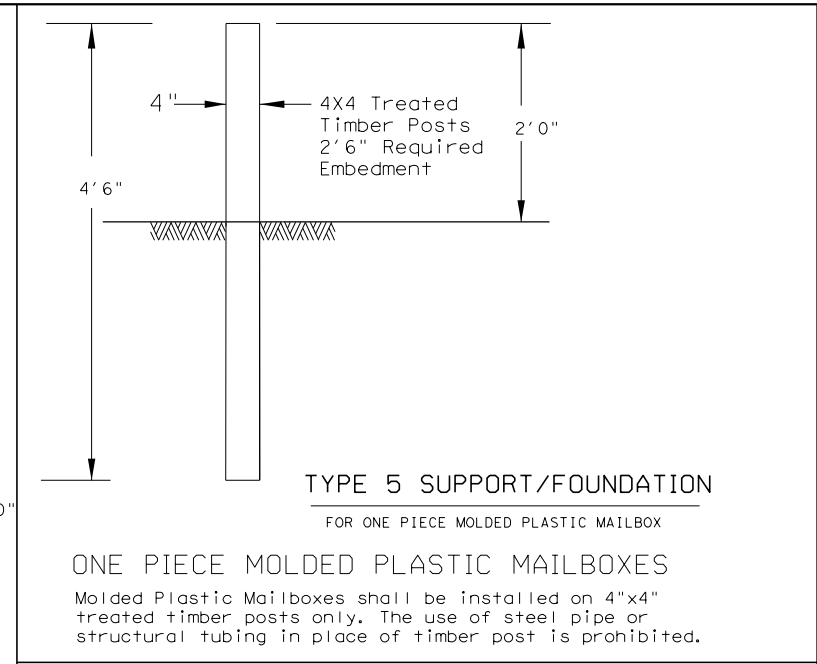
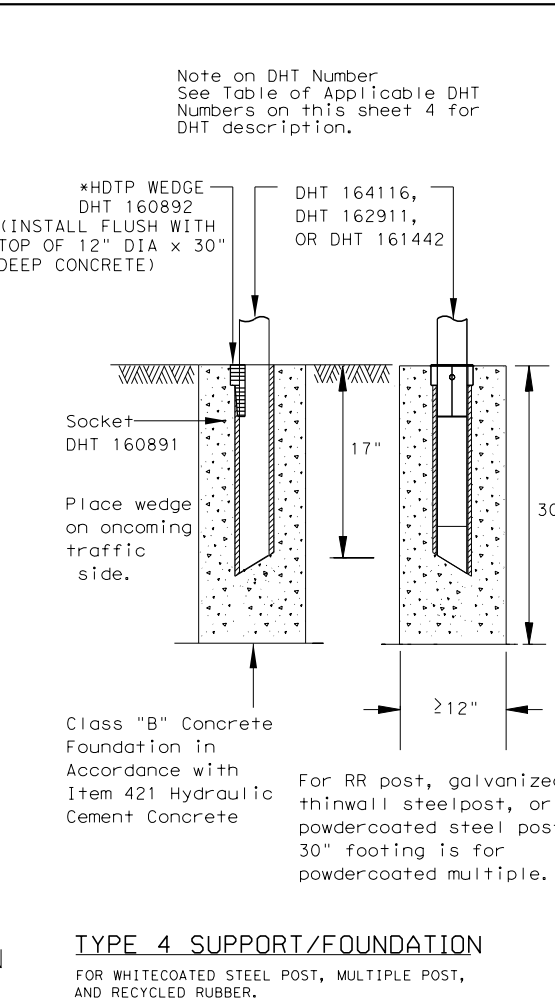
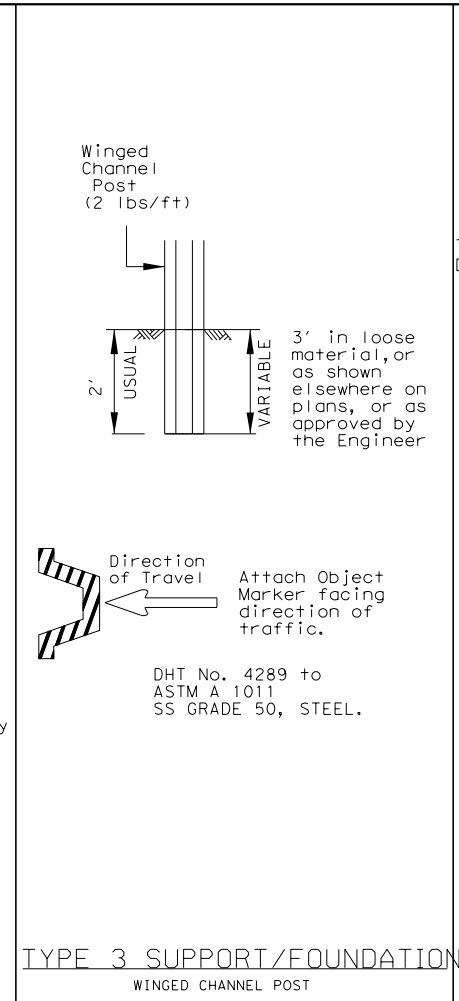
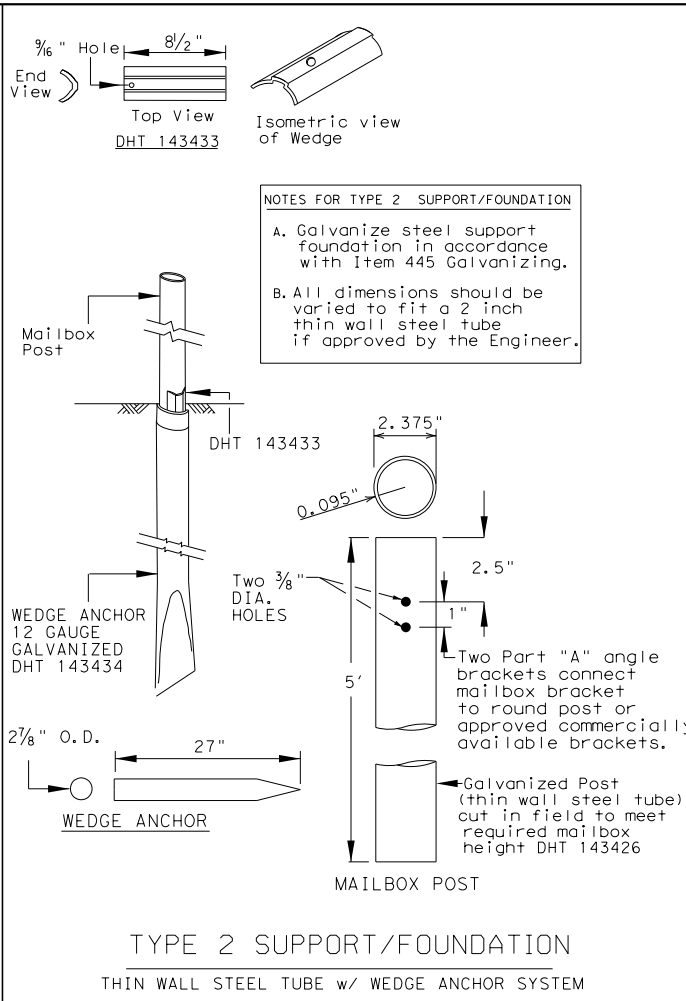
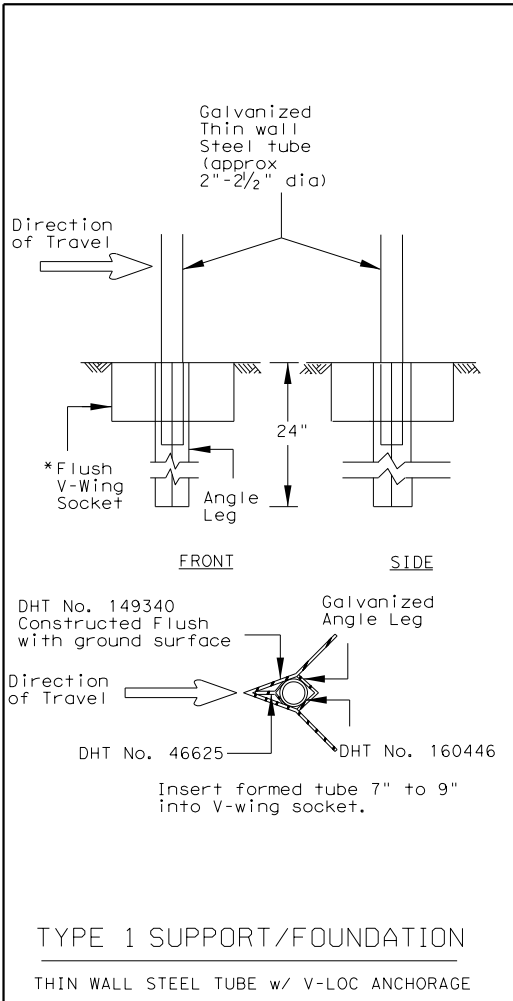
MAILBOX BRACKET CONNECTING DETAILS MB-15(1)

FILE:MB14(1).DGN	DWG: JEO	CK:	DWG: JEO	CK:
© TxDOT APRIL 2015	CONT	SECT	JOB	HIGHWAY
ADDED DHT 163730	0915	12	586	VA
	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	301	

9/29/2017 10:17:27 AM P:\111\35\01\design\C.v11\standards\Roadway\MB15(1).dgn

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- GENERAL NOTES**
- Erect post plumb or vertical.
  - When galvanized part is required galvanize in accordance with Item 445.
  - type 1, 2, 3, 4 or 7 supports or foundation can be used for single or double mailbox installations. The RCR post should be used only for a single installation with a small mailbox. The Type 5 support/foundation is used for the single molded plastic mailbox. The Type 4 support/foundation is used for the 2.375" O.D. RR post, thin wall steel post, and white multiple mailbox post.
  - The Type 1 or type 7 support/foundation can be used for a multiple mailbox mount.
  - The Type 4 support should be used with thin wall steel pipe for the medium, large and double mailbox installations.
  - Use a concrete footing as shown or when directed. Concrete footing will be required when soils do not hold the support/foundations in a stable condition.

SHEET 3 OF 4



MAILBOX SUPPORT AND FOUNDATION  
 MB-15(1)

FILE: MB14(1).DGN	DN: JEO	CK:	DW: JEO	CK:
© TxDOT APRIL 2015	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	302	

DOUBLE AND LARGE MAILBOXES MUST BE ON STEEL POST. \*HOTP: High density thermoplastic polyesters

LOCKABLE ARCHITECTURAL MAILBOX

SINGLE-MOUNT INSTALLATION PARTS			
#	PART NAME	PART/DHT #	QTY
1	SOCKET, TYPE 4 FOUNDATION	160891	1
2	WEDGE FOR TYPE 4 FOUNDATION	160892	1
3	THIN-WALL WHITE STEEL TUBE 2.375 OD	162911	1
4	BRACKET FOR ATTACHING MAILBOX	161443	1
5	ARCHITECTURAL MAILBOX	SEE NOTE	1
6	NUT, 5/16" HEX	NUT, 5/16" HEX	1
7	BOLT, 5/16 X 3 HEX	GRADE 5	1
8	PLATE WASHER FOR ARCHITECTURAL MAILBOX	SEE SEE SHEET 2	2
9	WASHER, 3/8 FLAT		8
10	WASHER, 3/8 LOCK		4
11	NUT, 3/8 HEX		4
12	BOLT, 3/8 X 1-1/4 HEX	GRADE 5	4
13	CONCRETE, CLASS B (2000 PSI)		1

LOCKABLE ARCHITECTURAL MAILBOX DETAILS

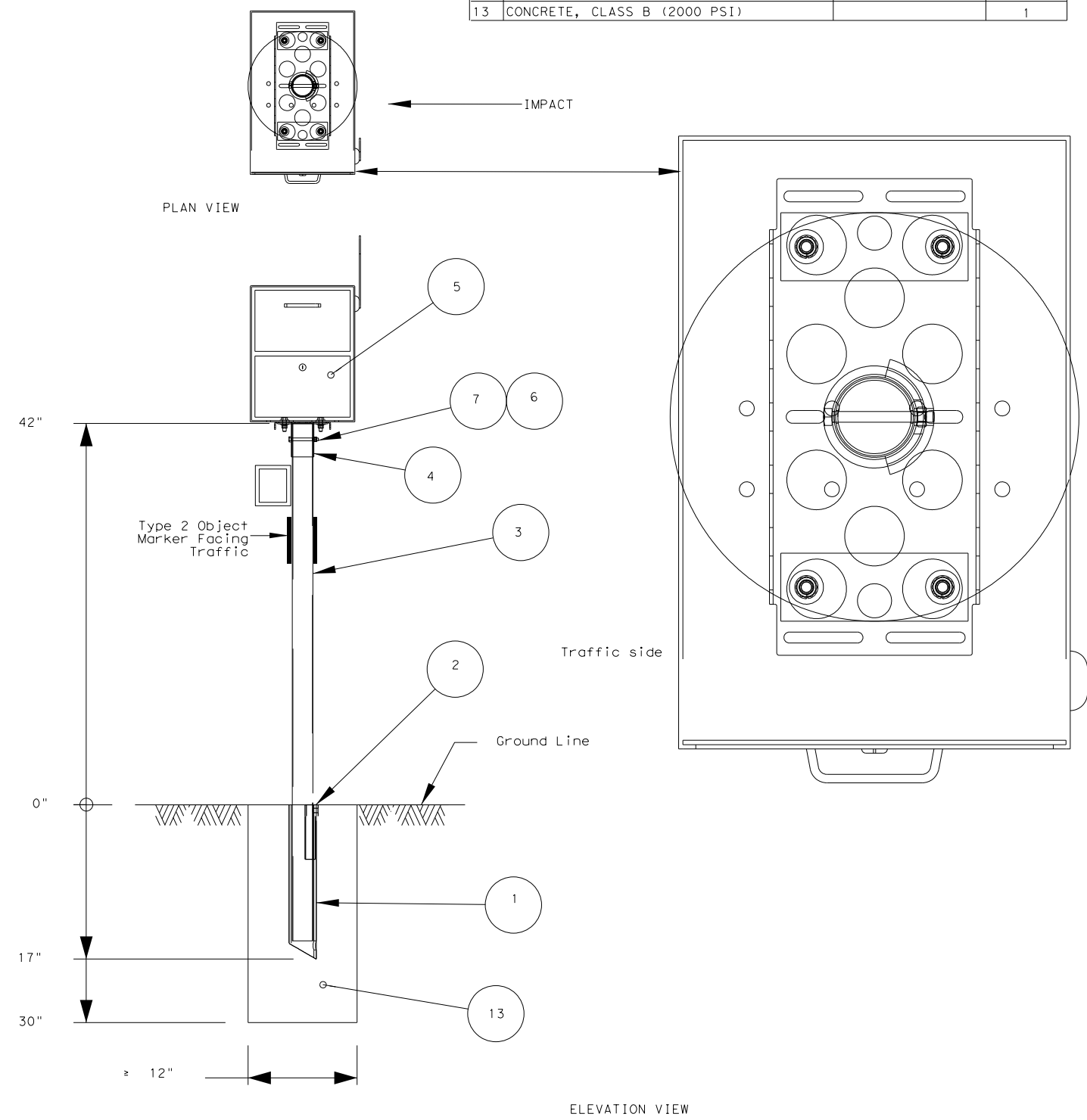


TABLE OF APPLICABLE DHT NUMBERS	
DHT NUMBER	DESCRIPTION
FOUNDATIONS	
46625	WEDGE FOR V-WING SOCKET FOR TYPE 1 FOUNDATION
149340	V-WING SOCKET FOR TYPE 1 FOUNDATION
143433	WEDGE FOR TYPE 2 FOUNDATION
143434	ANCHOR FOR TYPE 2 FOUNDATION
166103	ANCHOR FOR TYPE 7 FOUNDATION
160891	SOCKET FOR TYPE 4 FOUNDATION
160892	WEDGE FOR TYPE 4 FOUNDATION
166104	WEDGE FOR TYPE 7 FOUNDATION
POSTS	
4289	WINGED CHANNEL MAILBOX POST
149339	MULTIPLE MAILBOX POST (GALVANIZED TUBING)
164116	MULTIPLE MAILBOX POST (WHITE COATED)
166114	MULTIPLE MAILBOX POST (WHITE COATED OCTAGONAL)
166153	MULTIPLE MAILBOX POST (GALVANIZED OCTAGONAL)
161442	RECYCLED RUBBER POST. FOR SMALL MAILBOX ONLY
143426	THIN-WALL GALVANIZED STEEL TUBE 2.375" OUTER DIAMETER
162911	THINWALL WHITE STEEL TUBE 2.375" OUTER DIAMETER
	SINGLE OR DOUBLE THIN-WALL MAILBOX POST GALVANIZED
166152	2" OCTAGONAL
	SINGLE OR DOUBLE THIN-WALL MAILBOX POST WHITECOATED
166112	2" OCTAGONAL
REFLECTIVE SHEETING	
161812	REFLECTIVE SHEETING FOR EMERGENCY LOCATION NUMBER PANEL
CONNECTING HARDWARE	
2917	ANGLE BRACKET USED FOR TEMPORARY MAILBOX SUPPORT
166105	BRACKET FOR SINGLE MOUNTING OF MAILBOXES (MOUNTING KIT)
3789	PLATE FOR DOUBLE MOUNTING OF MAILBOXES
166108	BRACKET FOR DOUBLE MOUNTING OF MAILBOXES (MOUNTING KIT)
166111	BRACKET FOR MULTIPLE MOUNTING OF MAILBOXES (MOUNTING KIT)
148939	BRACKET FOR ATTACHING SMALL OR MEDIUM SIZE MAIL BOX
148938	EXTENDER TO BRACKET FOR ATTACHING LARGE MAILBOX
159489	ANGLE BRACKET PART A
159490	ANGLE BRACKET PART B
	BRACKET FOR DOUBLE MOUNTING OF MAILBOXES ON THINWALL
162323	STEEL POST, GALVANIZED OR POWDERCOATED.
	BRACKET FOR ATTACHING MAILBOX TO RECYCLED RUBBER POST
161443	AND TO MULTIPLE WHITE MAILBOX POST
158358	CASTING (NEWSPAPER RECEPTACLE BRACKET)
163731	U-BOLT (NEWSPAPER RECEPTACLE BRACKET)
160698	BOLT; HEX HEAD, GALV; 3/8"DIA X 3/4"L HD, W/2-FLAT WASHERS
163750	BOLT; HEX HEAD, GALV; 3/8" X 1-1/2, 16 NC, W/WASHERS
160701	BOLT; HEX HEAD, GALV; 3/8"DIA X 2-1/2"L, HD, W/2-FLAT WASHERS
163730	BOLT; HEX HEAD, GALV; 3/8" X 3-1/2", NC, W/NUT, 2 FLAT WASHERS
160699	BOLT; HEX HEAD, GALV; 3/8"DIA X 3-3/4"L HD, W/2-FLAT WASHERS
160700	BOLT; HEX HEAD, GALV; 3/8"DIA X 4"L HD, W/2-FLAT WASHERS

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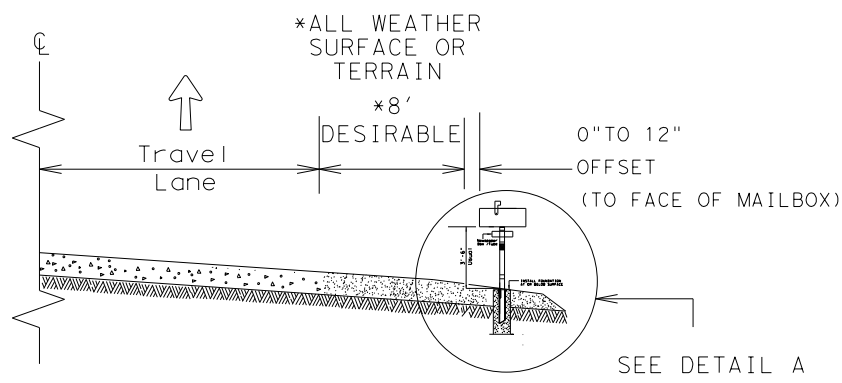


DHT NUMBERS TABLE  
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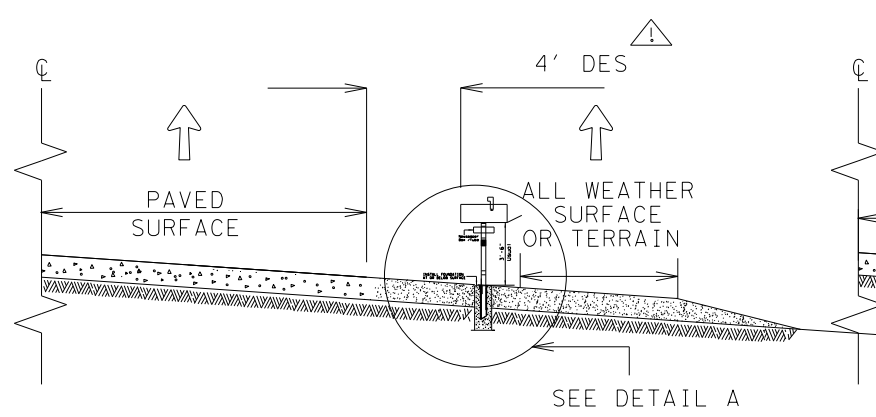
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© TxDOT APRIL 2015	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	303	

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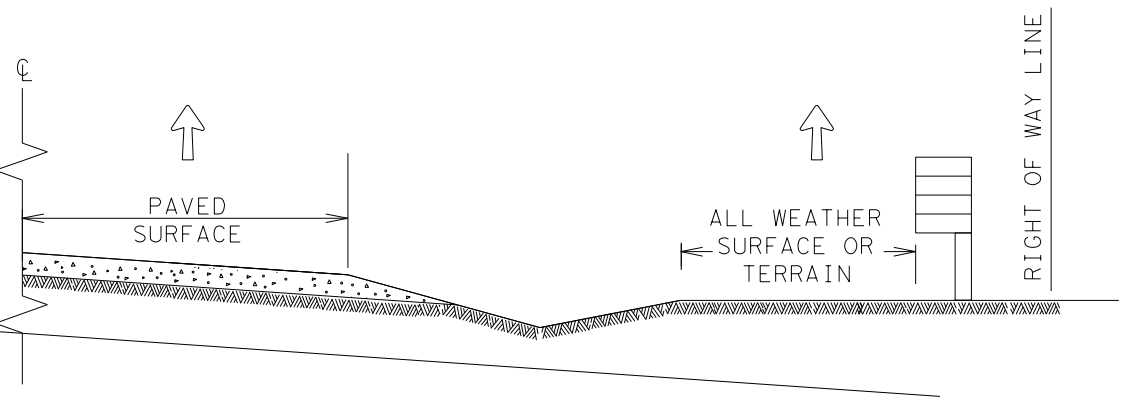
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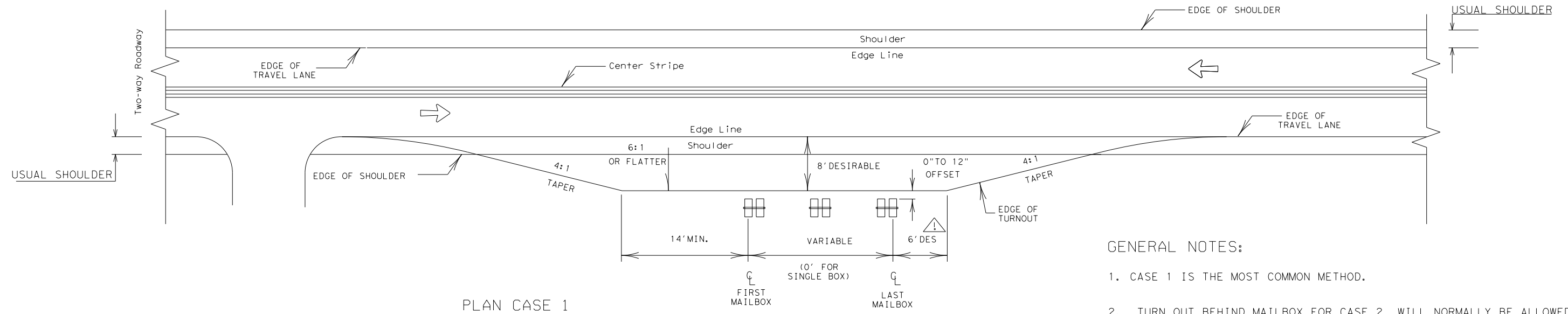
CASE 1. OFF TRAVEL WAY DELIVERY



CASE 2. BACK SIDE DELIVERY



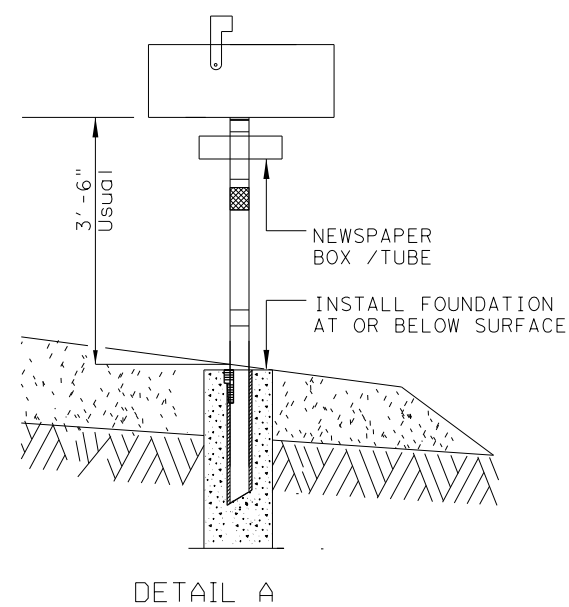
CASE 3. DELIVERY NEAR RIGHT OF WAY LINE



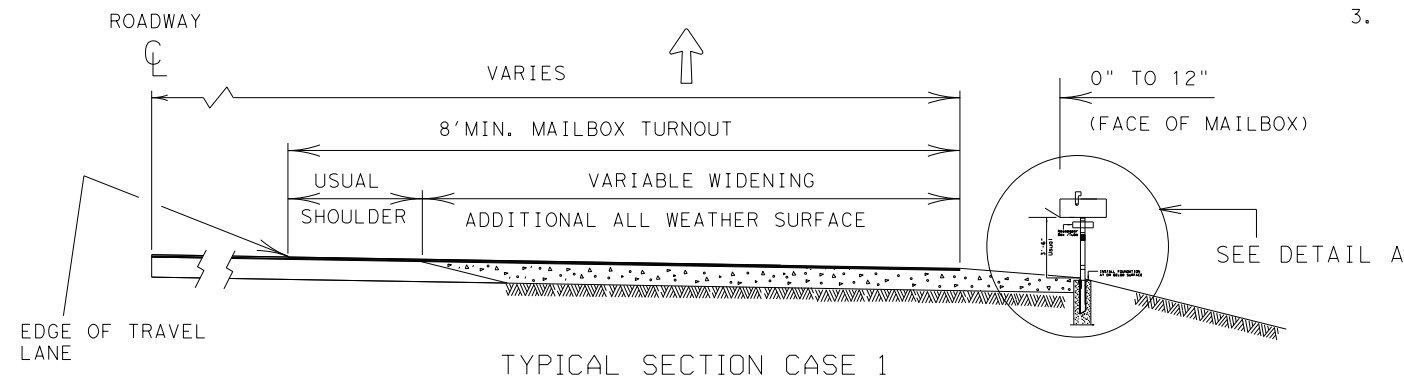
PLAN CASE 1

GENERAL NOTES:

1. CASE 1 IS THE MOST COMMON METHOD.
2. TURN OUT BEHIND MAILBOX FOR CASE 2 WILL NORMALLY BE ALLOWED FOR NATURAL TERRAIN THAT WILL SERVE AS AN ALL WEATHER SURFACE.
3. ALL WEATHER DRIVEWAYS FOR CASE 3 MAILBOXES LOCATED AT THE RIGHT OF WAY LINE SHOULD NORMALLY BE PLACED IN CONJUNCTION WITH COUNTY ROADS OR OTHER CONNECTING COMMUNITY ROADS OR STREETS. IF THE NUMBER OF MAILBOXES EXCEEDS FOUR, A COMMUNITY MAIL BOX SHOULD BE ENCOURAGED AT THESE LOCATIONS.



DETAIL A



TYPICAL SECTION CASE 1

↑ MAIL DELIVERY VEHICLE TRAVEL DIRECTION

SHEET 1 OF 3



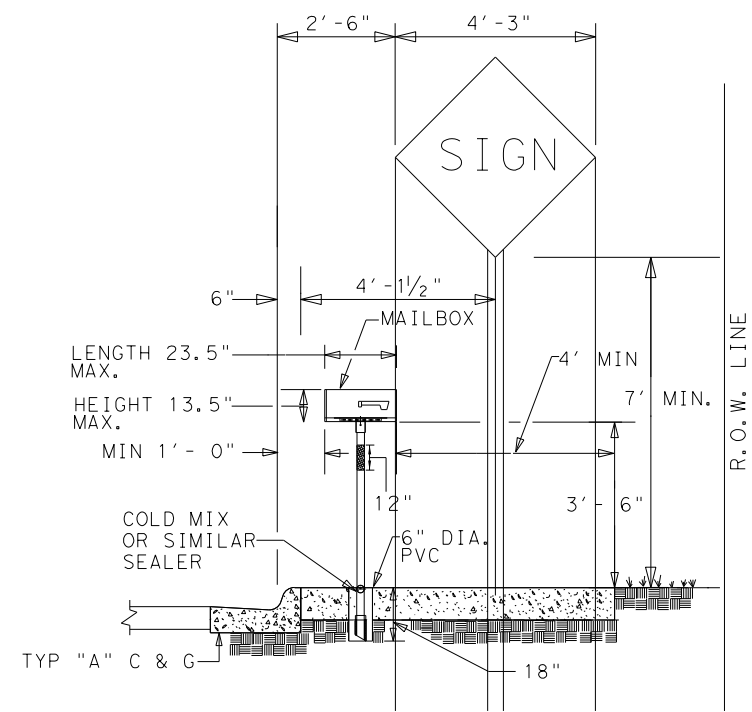
Guideline  
 MAILBOX SIDE ROAD PLACEMENT  
 AND TURNOUTS  
 MB-14(2)

FILE: MB14(2).DGN	DN: JEO	CK:	DW: JEO	CK:
© TxDOT MAY 2014	CONT	SECT	JOB	HIGHWAY
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DECEMBER 2012-NEW TxDOT TITLE BLOCK	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	304	

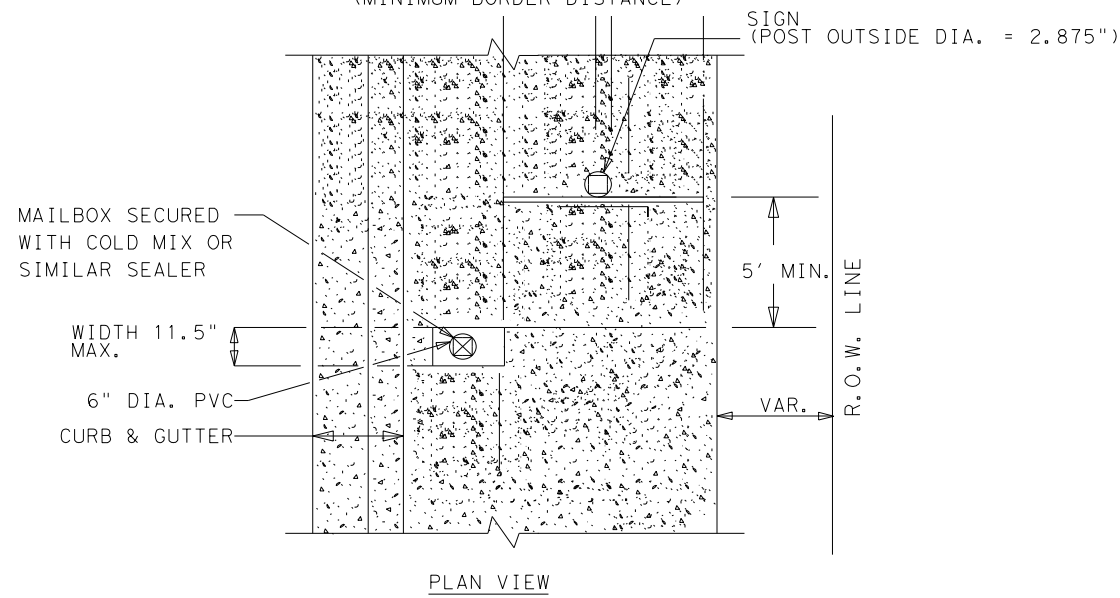


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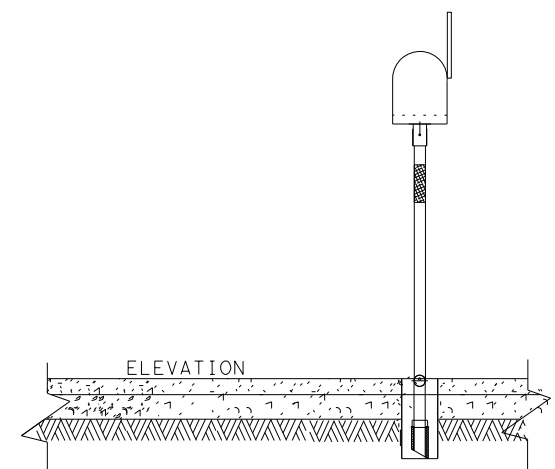
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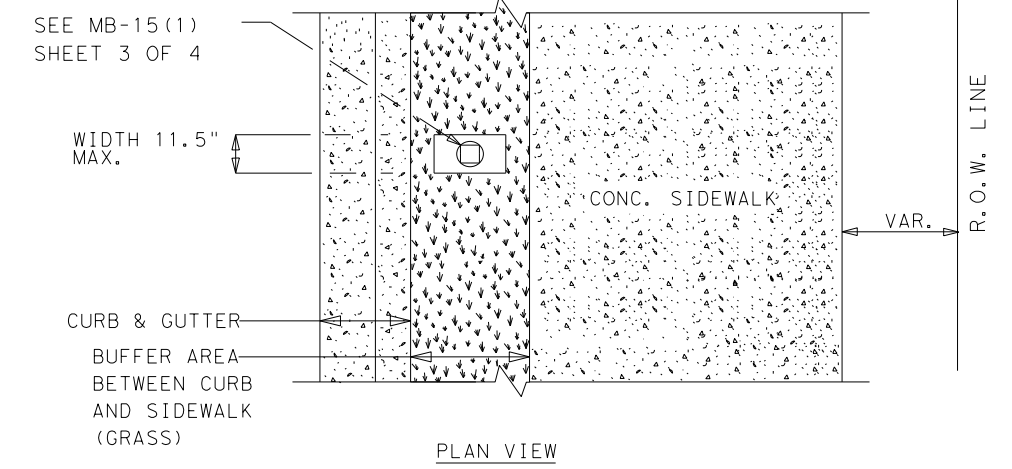
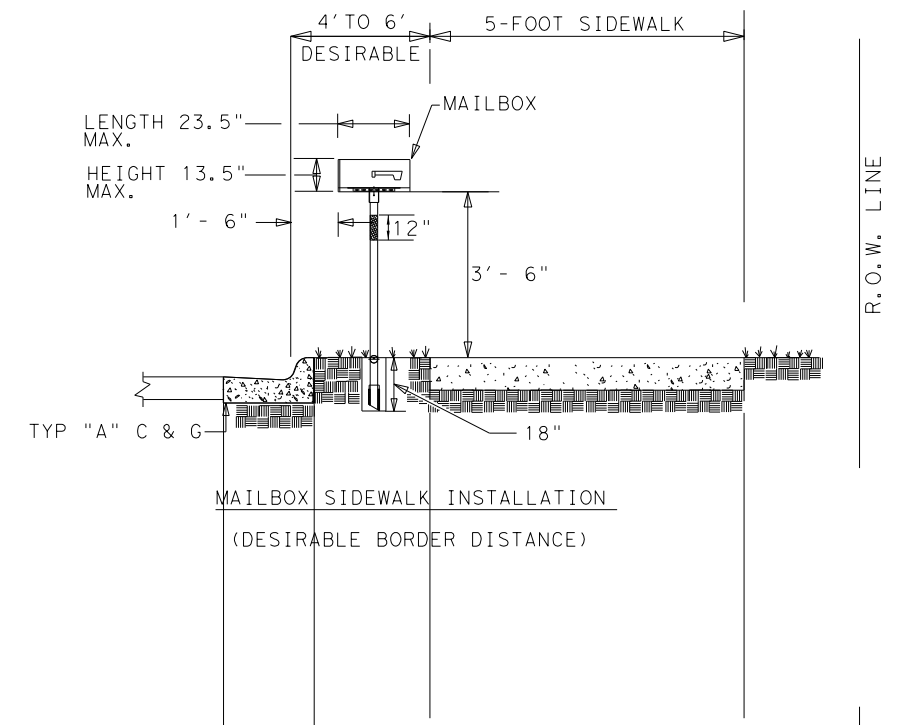
MAILBOX SIDEWALK INSTALLATION RELATIVE TO ANY OTHER OBSTRUCTION SUCH AS A SIGN (MINIMUM BORDER DISTANCE)



PLAN VIEW



ELEVATION



PLAN VIEW

SHEET 2 OF 3

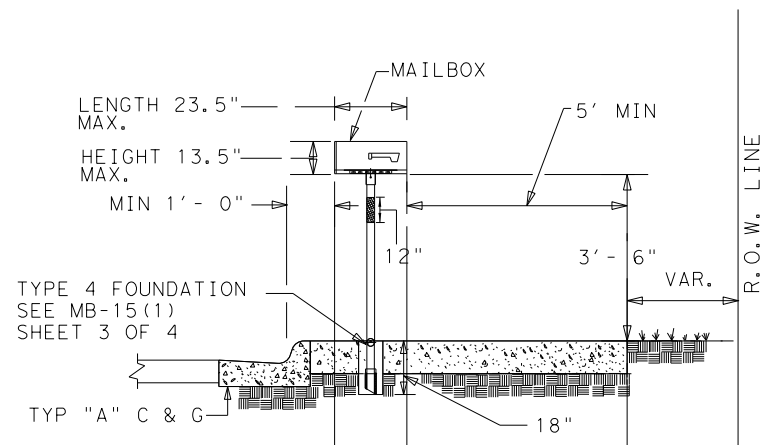


SINGLE MAILBOX PLACEMENT BEHIND CURBS WITH OR WITHOUT SIDEWALKS  
 MB-14(2A)

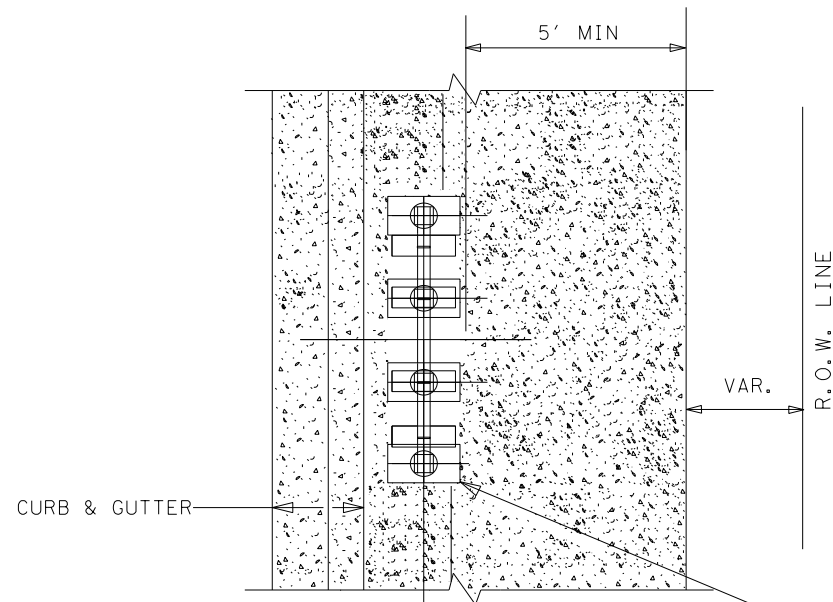
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	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	305	

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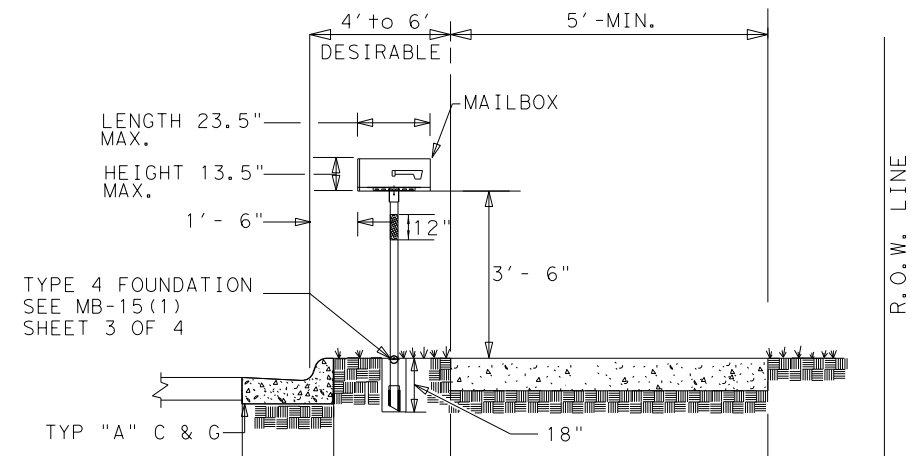
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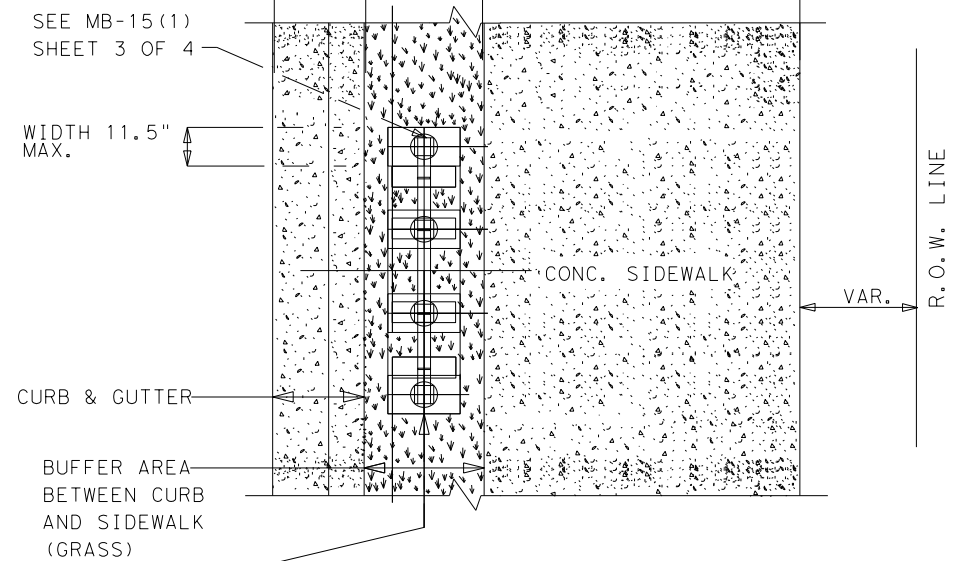
MAILBOX SIDEWALK INSTALLATION RELATIVE TO ANY OTHER OBSTRUCTION SUCH AS A SIGN (MINIMUM BORDER DISTANCE)



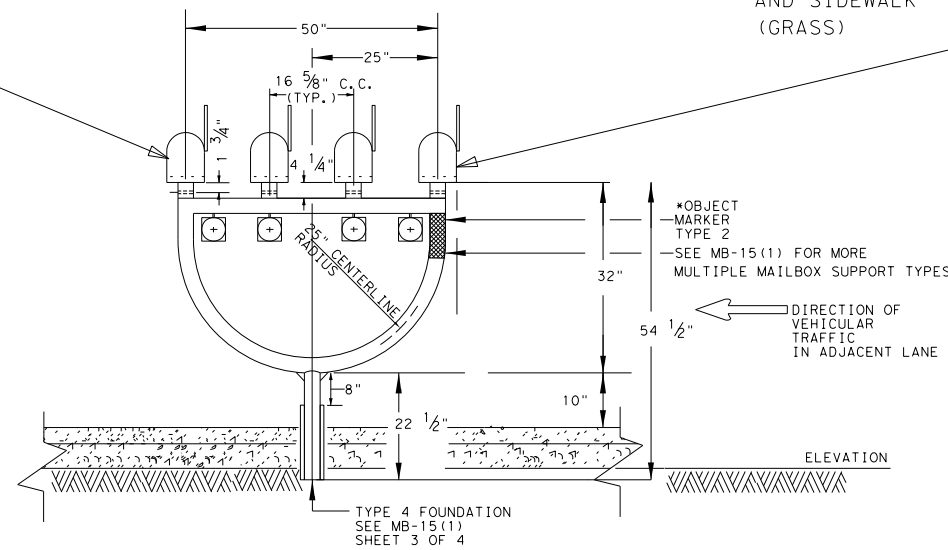
PLAN VIEW



MAILBOX SIDEWALK INSTALLATION (DESIRABLE BORDER DISTANCE)



PLAN VIEW



TYPE 4 FOUNDATION SEE MB-15(1) SHEET 3 OF 4

\*OBJECT MARKER TYPE 2  
 SEE MB-15(1) FOR MORE MULTIPLE MAILBOX SUPPORT TYPES  
 DIRECTION OF VEHICULAR TRAFFIC IN ADJACENT LANE

SHEET 3 OF 3



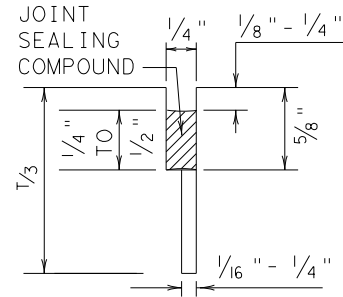
MULTIPLE MAILBOX PLACEMENT BEHIND CURBS WITH OR WITHOUT SIDEWALKS

MB-14(2B)

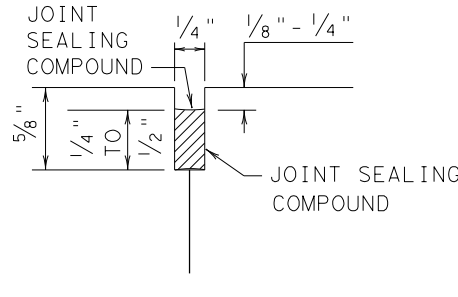
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© TxDOT MAY 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	306	

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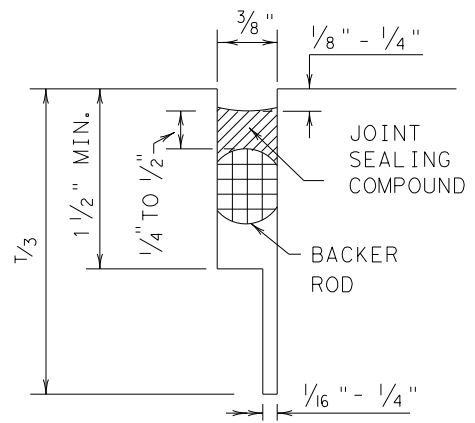
### METHOD B: JOINT SEALING COMPOUND



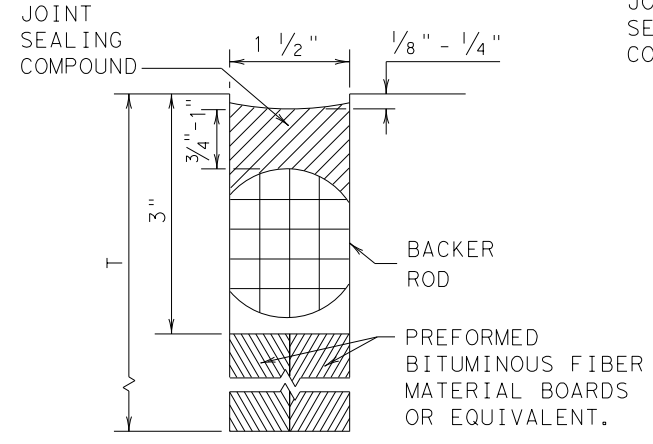
LONGITUDINAL SAWED CONTRACTION JOINT



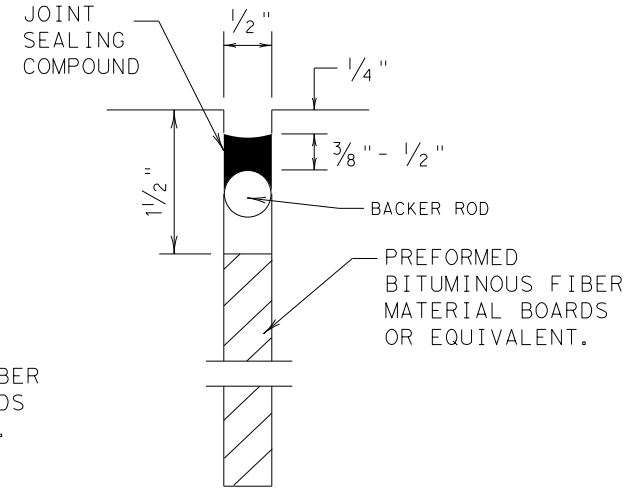
LONGITUDINAL OR TRANSVERSE CONSTRUCTION JOINT



TRANSVERSE SAWED CONTRACTION JOINT

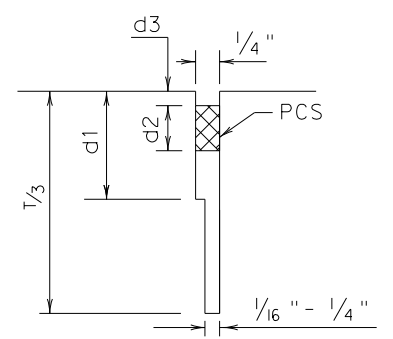


TRANSVERSE FORMED EXPANSION JOINT

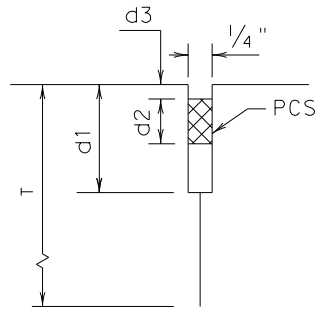


FORMED ISOLATION JOINT

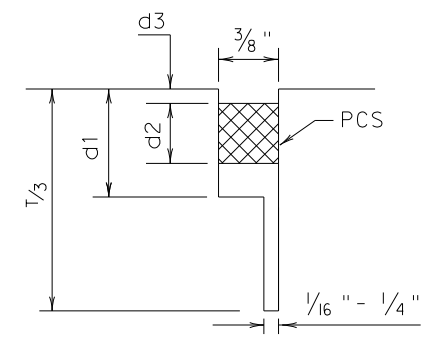
### METHOD A: PREFORMED COMPRESSION SEALS (PCS) (DMS-6310 CLASS 6)



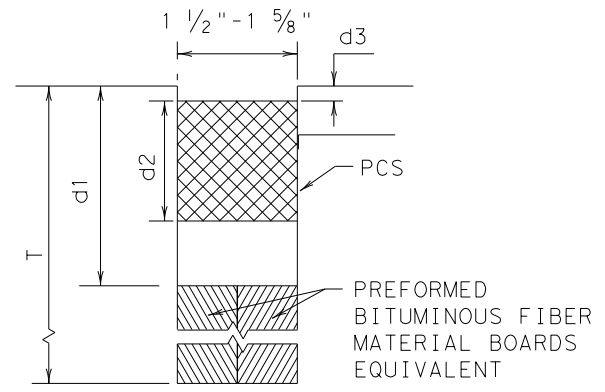
LONGITUDINAL SAWED CONTRACTION JOINT



LONGITUDINAL CONSTRUCTION JOINT



TRANSVERSE SAWED CONTRACTION JOINT



TRANSVERSE FORMED EXPANSION JOINT

### GENERAL NOTES

- UNLESS OTHERWISE SHOWN IN THE PLANS, EITHER METHOD "A" OR METHOD "B" MAY BE USED.
- THE LOCATION OF JOINTS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
- THE JOINT RESERVOIR FOR SEALANT OR PCS SHALL BE SAWED UNLESS OTHERWISE SHOWN ON THE PLANS FOR THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION JOINTS AND THE SAWED JOINTS.
- DIMENSIONS d1, d2, AND d3 SHOWN IN METHOD A SHALL BE IN ACCORDANCE WITH THE PREFORMED COMPRESSION SEAL MANUFACTURER'S RECOMMENDATION.
- REFER TO DMS-6310 "JOINT SEALANTS AND FILLERS" FOR THE CLASSIFICATIONS.
- FOR SAWED LONGITUDINAL JOINT, LONGITUDINAL OR TRANSVERSE CONSTRUCTION JOINT, USE JOINT SEALANT CLASS 5 OR 8 UNLESS OTHERWISE SHOWN ON THE PLAN OR APPROVED.
- FOR TRANSVERSE SAWED CONTRACTION, TRANSVERSE FORMED EXPANSION JOINT, AND ISOLATION JOINT USE JOINT SEALANT CLASS 5 OR 8 AT NEW JOINTS. USE JOINT SEALANT CLASS 4, 5, 7, OR 8 FOR MAINTAINING EXISTING JOINTS.
- THE JOINTS SHALL BE CLEANED IN ACCORDANCE WITH THE ITEM 438 "CLEANING AND SEALING JOINTS" OR ITEM 713 "CLEANING AND SEALING JOINTS AND CRACKS (CONCRETE PAVEMENT)".
- ISOLATION JOINTS ACCOMMODATE HORIZONTAL AND VERTICAL MOVEMENTS THAT OCCUR BETWEEN A PAVEMENT AND A STRUCTURE. ISOLATION JOINTS MAY BE USED FOR BRIDGE ABUTMENTS, INTERSECTIONS, CURB AND GUTTER, OLD AND NEW PAVEMENTS, OR AROUND DRAINAGE INLETS, MANHOLES, FOOTINGS AND LIGHTING STRUCTURES.

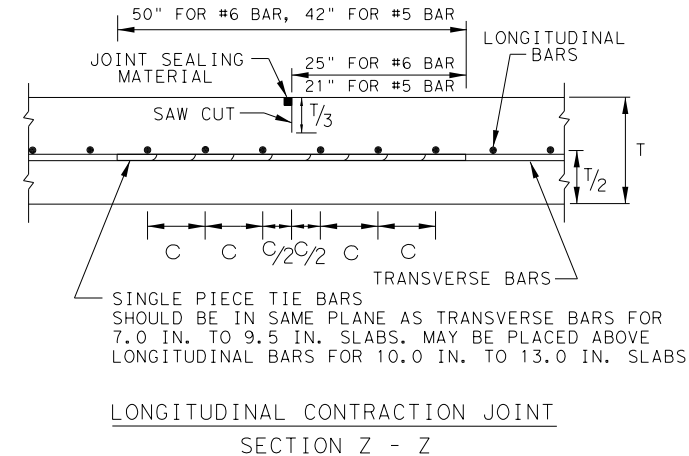
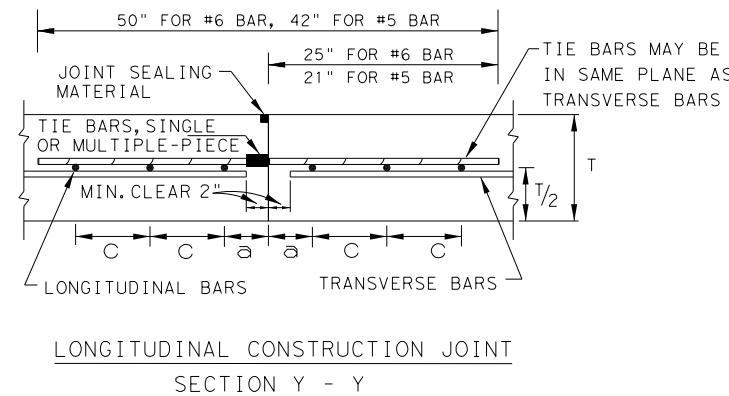
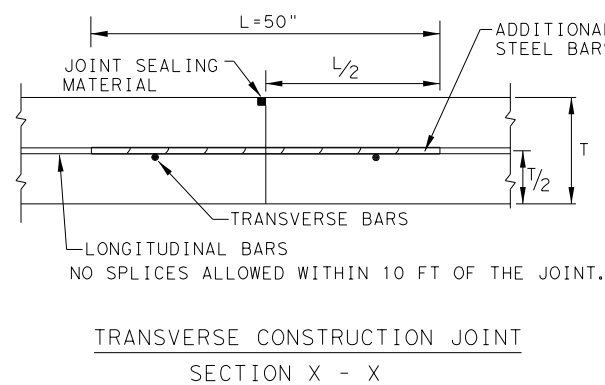
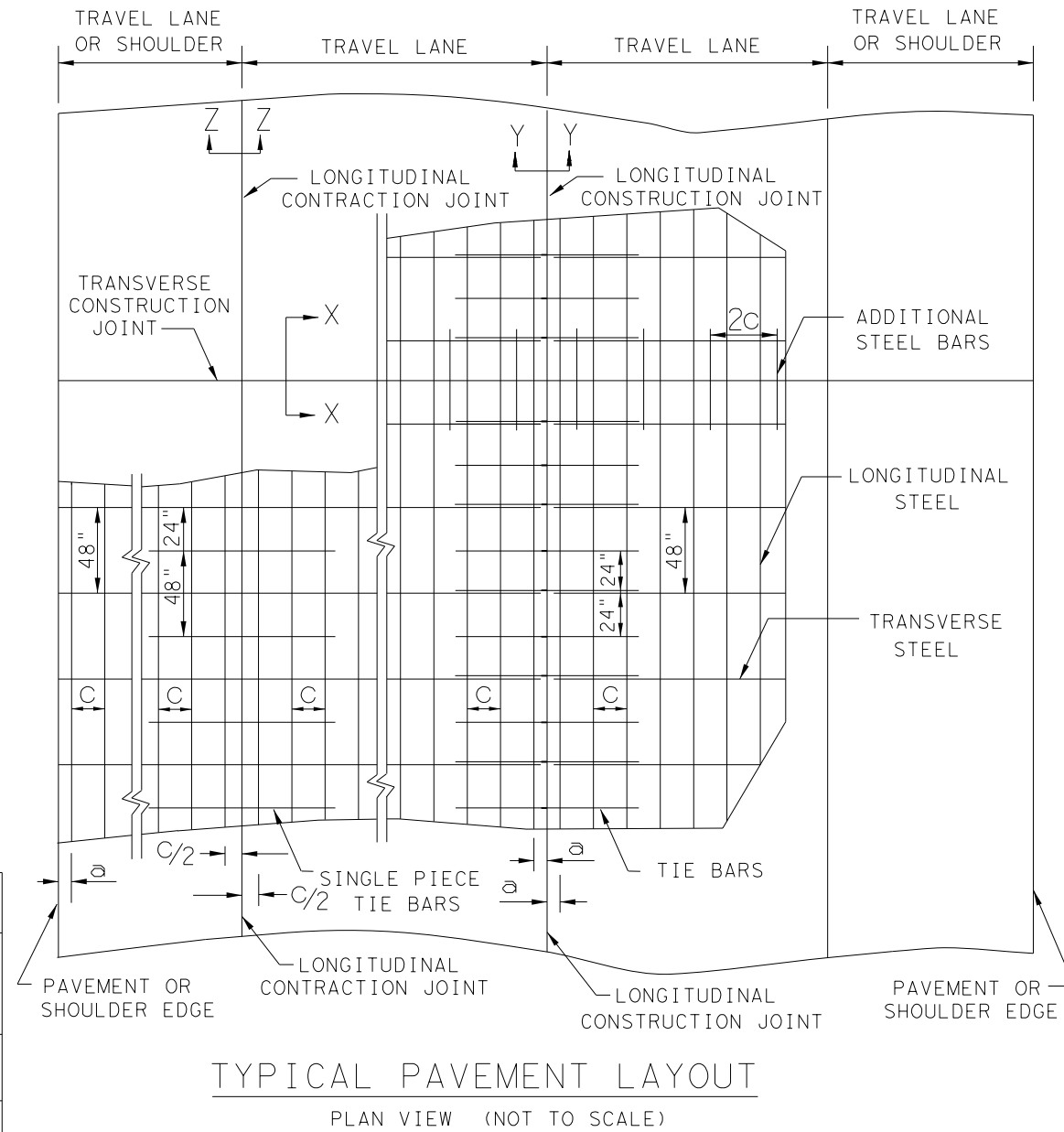
		<b>Design Division Standard</b>	
<h2>CONCRETE PAVING DETAILS</h2> <h3>JOINT SEALS</h3> <h1>JS-14</h1>			
FILE: js14.dgn	DN: TxDOT	DN: HC	CK: AN
© TxDOT: DECEMBER 2014	CONT: 0915	SECT: 12	HIGHWAY: 586 VA
REVISIONS		DIST: SAT	SHEET NO. 307
		COUNTY: BEXAR	

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TABLE NO.1 LONGITUDINAL STEEL					
SLAB THICKNESS AND BAR SIZE		REGULAR STEEL BARS	FIRST SPACING AT EDGE OR JOINT	ADDITIONAL STEEL BARS AT TRANSVERSE CONSTRUCTION JOINT (SECTION X-X)	
T (IN.)	BAR SIZE	SPACING C (IN.)	SPACING a (IN.)	SPACING 2 X C (IN.)	LENGTH L (IN.)
7.0	#5	6.5	3 TO 4	13	50
7.5	#5	6.0	3 TO 4	12	50
8.0	#6	9.0	3 TO 4	18	50
8.5	#6	8.5	3 TO 4	17	50
9.0	#6	8.0	3 TO 4	16	50
9.5	#6	7.5	3 TO 4	15	50
10.0	#6	7.0	3 TO 4	14	50
10.5	#6	6.75	3 TO 4	13.5	50
11.0	#6	6.5	3 TO 4	13	50
11.5	#6	6.25	3 TO 4	12.5	50
12.0	#6	6.0	3 TO 4	12	50
12.5	#6	5.75	3 TO 4	11.5	50
13.0	#6	5.5	3 TO 4	11	50

TABLE NO.2 TRANSVERSE STEEL AND TIE BARS						
SLAB THICKNESS (IN.)	TRANSVERSE STEEL		TIE BARS AT LONGITUDINAL CONTRACTION JOINT (SECTION Z-Z)		TIE BARS AT LONGITUDINAL CONTRACTION JOINT (SECTION Y-Y)	
	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)
7.0 - 7.5	#5	48	#5	48	#5	24
8.0 - 13.0	#5	48	#6	48	#6	24

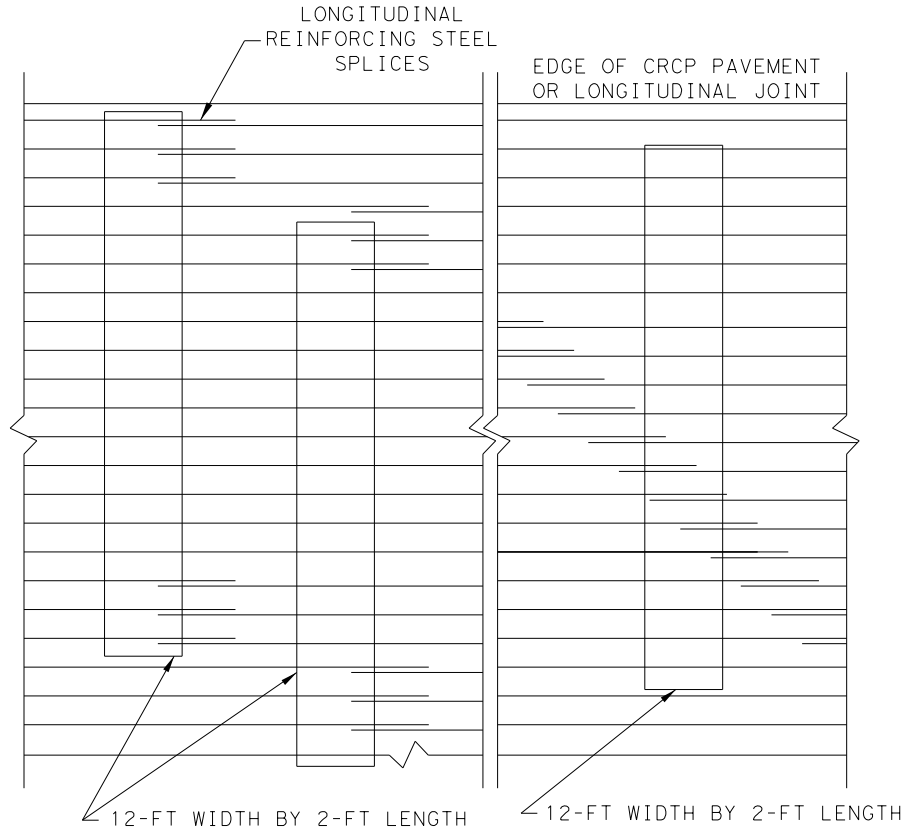
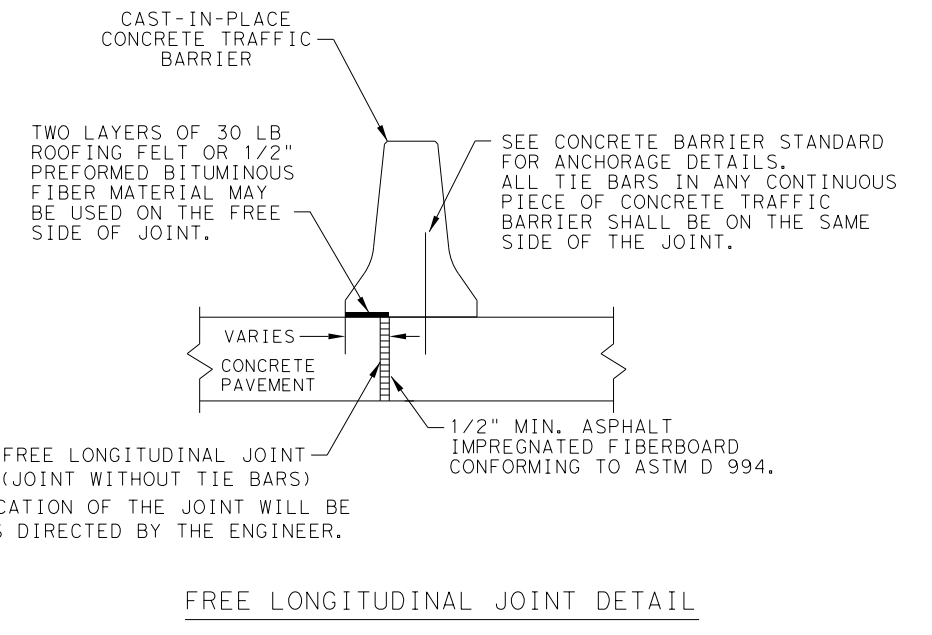
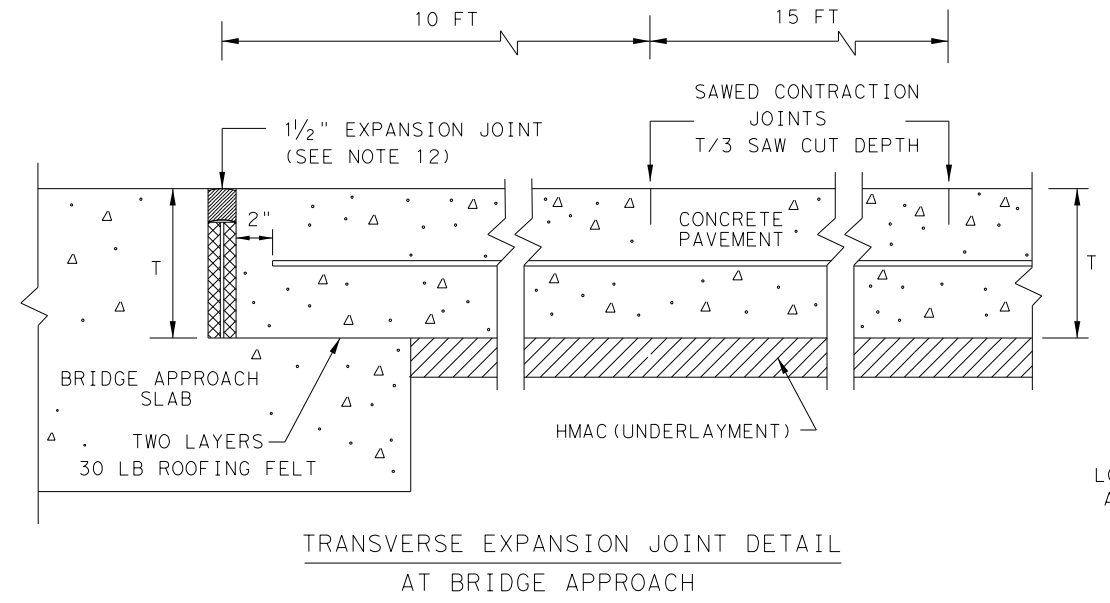


		Design Division Standard	
CONTINUOUSLY REINFORCED CONCRETE PAVEMENT ONE LAYER STEEL BAR PLACEMENT T - 7 TO 13 INCHES CRCP(1)-17			
FILE: crcp117.dgn	DN: TxDOT	CK: AN	DW: HC
© TxDOT: May 2017	CONT	SECT	JOB
10/10/2011 ADD GN #12	0915	12	586
04/09/2013 REMOVE 6" AND 6.5" ADD CTE REQUIREMENTS	DIST	COUNTY	SHEET NO.
05/05/2017 COTE AS RATED 4.3	SAT	BEXAR	308

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 FILE: P:\111\35\01\design\Civil\Standards\Roadway\cr-cp17.dgn  
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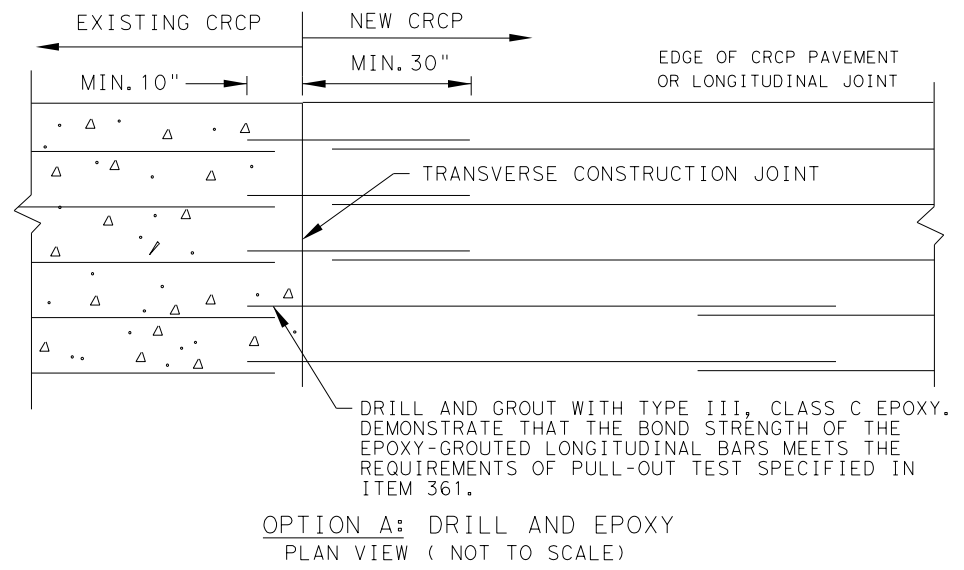
TABLE NO.1A LONGITUDINAL STEEL FOR LOW COTE CONCRETE AS APPROVED BY THE ENGINEER

SLAB THICKNESS AND BAR SIZE		REGULAR STEEL BARS	FIRST SPACING AT EDGE OR JOINT	ADDITIONAL STEEL BARS AT TRANSVERSE CONSTRUCTION JOINT (SECTION X-X)	
T (IN.)	BAR SIZE	SPACING C (IN.)	SPACING a (IN.)	SPACING 2 x c (IN.)	LENGTH L (IN.)
7.0	#5	7.5	3 TO 4	15	50
7.5	#5	7.0	3 TO 4	14	50
8.0	#6	10.0	3 TO 4	20	50
8.5	#6	9.5	3 TO 4	19	50
9.0	#6	9.0	3 TO 4	18	50
9.5	#6	8.5	3 TO 4	17	50
10.0	#6	8.0	3 TO 4	16	50
10.5	#6	7.5	3 TO 4	15	50
11.0	#6	7.0	3 TO 4	14	50
11.5	#6	6.75	3 TO 4	13.5	50
12.0	#6	6.50	3 TO 4	13	50
12.5	#6	6.25	3 TO 4	12.5	50
13.0	#6	6.0	3 TO 4	12	50

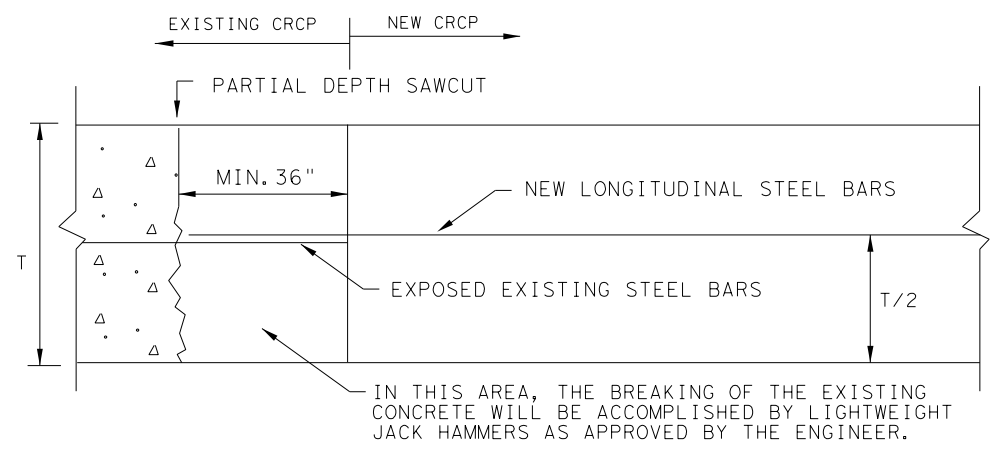


STAGGER THE LAP LOCATIONS SO THAT NO MORE THAN 1/3 OF THE LONGITUDINAL STEEL IS SPLICED IN ANY GIVEN 12-FT. WIDTH AND 2-FT. LENGTH OF THE PAVEMENT. ANY OTHER LAP CONFIGURATION MEETING THIS REQUIREMENT WILL BE ALLOWED.

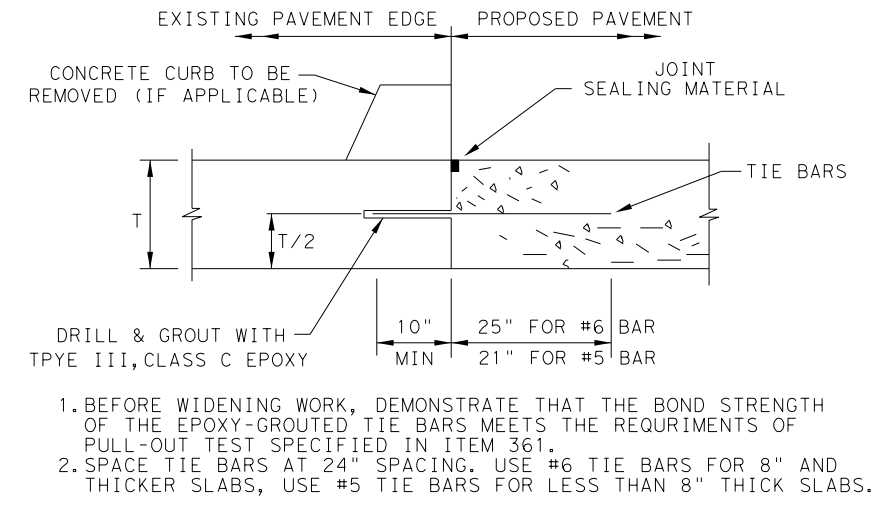
EXAMPLES OF LAP CONFIGURATION PLAN VIEW (NOT TO SCALE)



OPTION A: DRILL AND EPOXY PLAN VIEW (NOT TO SCALE)



OPTION B: BREAKBACK AND LAP TRANSVERSE TIE JOINT DETAIL EXISTING CRCP TO NEW CRCP



LONGITUDINAL WIDENING JOINT DETAIL

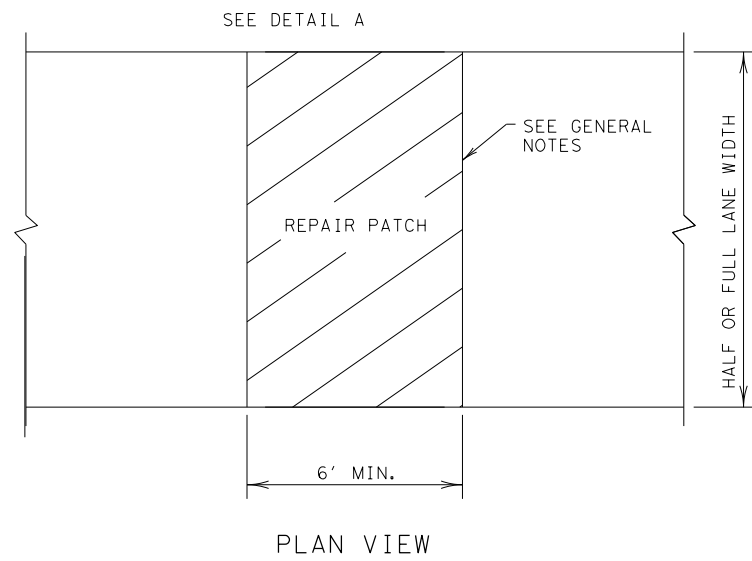
SHEET 2 OF 2

		<b>Design Division Standard</b>		
<b>CONTINUOUSLY REINFORCED CONCRETE PAVEMENT</b> ONE LAYER STEEL BAR PLACEMENT T - 7 TO 13 INCHES <b>CRCP(1)-17</b>				
FILE: crcp17.dgn	DN: TxDOT	CK: AN	DW: HC	CK: VP/KM
© TxDOT: May 2017	CONT: 0915	SECT: 12	JOB: 586	HIGHWAY: VA
REVISIONS		DIST: SAT	COUNTY: BEXAR	SHEET NO.: 309

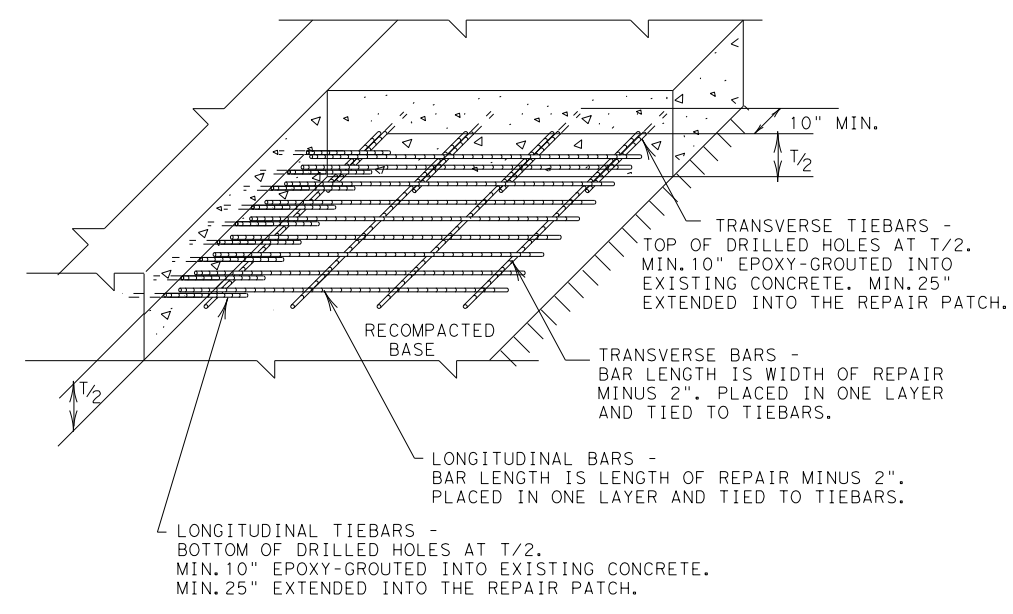
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 FILE: P:\111\35\01\design\Civil\Standards\Roadway\repcp14.dgn

TABLE NO.1 STEEL BAR SIZE AND SPACING						
TYPE PAVEMENT	SLAB THICKNESS AND BAR SIZE		LONGITUDINAL*		TRANSVERSE*	
			REGULAR BARS	TIEBARS	BARS	TIEBARS
	T (IN.)	BAR SIZE	SPACING (IN.)	SPACING (IN.)	SPACING (IN.)	SPACING (IN.)
CRCP	6.0	#5	7.5	7.5	24	24
	6.5		7.0	7.0		
	7.0		6.5	6.5		
	7.5		6.0	6.0		
	8.0	#6	9.0	9.0	24	24
	8.5		8.5	8.5		
	9.0		8.0	8.0		
	9.5		7.5	7.5		
	10.0		7.0	7.0		
	10.5		6.75	6.75		
11.0	6.5	6.5				
11.5	6.25	6.25				
≥12.0	6.0	6.0				
JRCP	<8.0	#5	24.0	12.0	24	24
	≥8.0	#6	24.0	12.0	24	24
CPCD	<8.0	#5	NONE	12.0	NONE	24
	≥8.0	#6	NONE	12.0	NONE	24

\* USE 12" SPACING AS FIRST AND LAST SPACING AT END OR SIDE FOR ALL BARS.



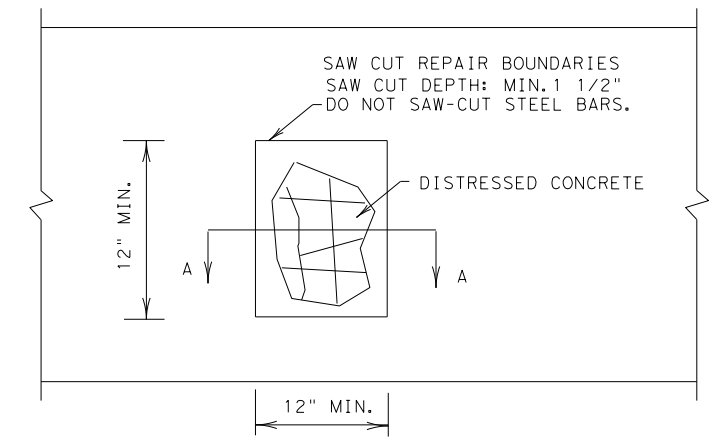
- ### GENERAL NOTES
- ITEM 361, "REPAIR OF CONCRETE PAVEMENT" SHALL GOVERN FOR THIS WORK.
  - MULTIPLE PIECE TIEBARS SHALL BE USED WHEN THE REPAIR AREA MUST BE PLACED IN TWO STAGES DUE TO SEQUENCE OF CONSTRUCTION.
  - FULL DEPTH SAW CUTS SHALL BE MADE AROUND THE PERIMETER OF THE AREA TO BE REPAIRED. THE CUT SHALL BE MADE AT A RIGHT ANGLE TO THE PAVEMENT EDGE AND TO THE CENTER LINE OF THE PAVEMENT.
  - AT LEAST ONE LONGITUDINAL FULL DEPTH SAW CUT SHALL BE AT AN EXISTING LONGITUDINAL JOINT.
  - ADDITIONAL SAW CUTS MAY BE REQUIRED WITHIN THE AREA OF THE REPAIR TO FACILITATE REMOVAL OF THE CONCRETE OR TO ALLEVIATE BINDING OF THE FULL DEPTH SAW CUT AT THE REPAIR EDGE.
  - THE SAW CUTS WHICH EXTEND OUTSIDE THE AREA OF THE REPAIR WILL BE CLEANED AND FILLED WITH A CEMENTITIOUS GROUT APPROVED BY THE ENGINEER.
  - EXISTING LONGITUDINAL AND TRANSVERSE JOINTS REMOVED DUE TO REPAIR OPERATION SHOULD BE RESTORED IN ACCORDANCE WITH STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."



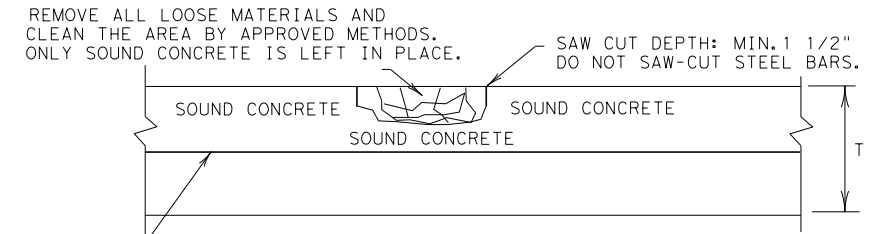
DETAIL A  
GROUTED TIEBARS & REINFORCEMENT

### FULL-DEPTH REPAIR OF CRCP, JRCP, AND CPCD

- ### GENERAL NOTES
- ITEM 361, "REPAIR OF CONCRETE PAVEMENT" SHALL GOVERN FOR THIS WORK.
  - THE SAW CUTS WHICH EXTEND OUTSIDE THE AREA OF THE REPAIR WILL BE CLEANED AND FILLED WITH A CEMENTITIOUS GROUT APPROVED BY THE ENGINEER.
  - EXISTING LONGITUDINAL AND TRANSVERSE JOINTS REMOVED DUE TO REPAIR OPERATION SHOULD BE RESTORED IN ACCORDANCE WITH STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."



PLAN VIEW



LONGITUDINAL STEEL BARS:  
 \*REPAIR AREAS MAY BE ADJUSTED AFTER REMOVING DISTRESSED CONCRETE. SWITCH THE HALF-DEPTH REPAIR TO FULL-DEPTH REPAIR IF EXPOSED EXISTING LONGITUDINAL BARS ARE DEFICIENT, AS APPROVED. COMPENSATION WILL BE MADE FOR UNEXPECTED VOLUMES OF REPAIR AREAS OR CHANGES IN SCOPE OF WORK.

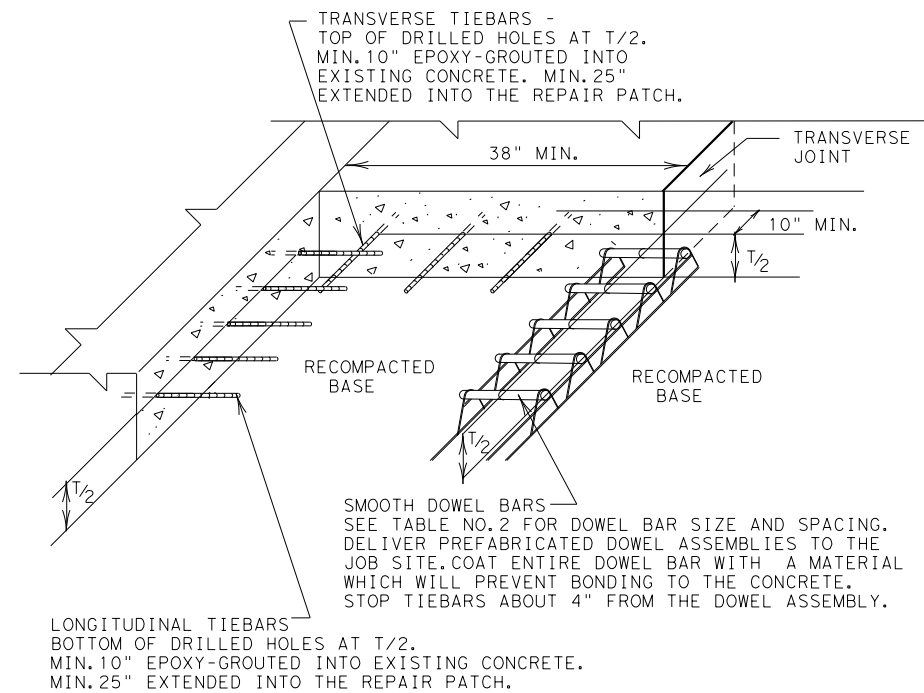
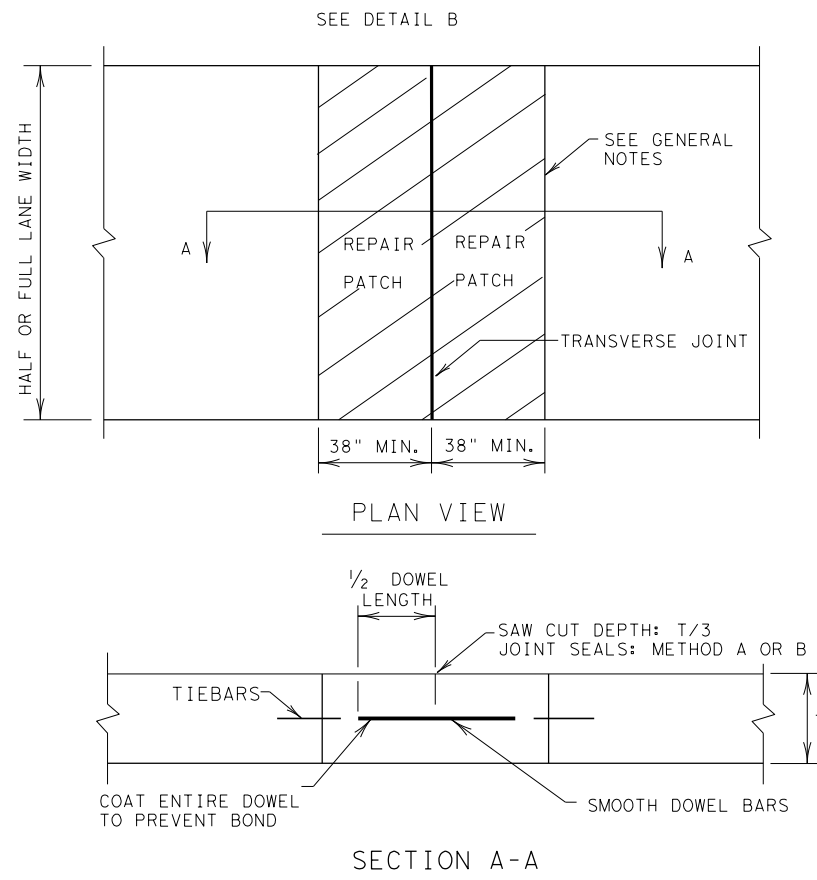
\*INCREASE THE REPAIR AREA AND PERFORM A FULL-DEPTH REPAIR AS DIRECTED IF LONGITUDINAL STEEL BARS WERE DAMAGED BY THE REMOVAL OPERATIONS. NO ADDITIONAL COMPENSATION WILL BE MADE.

SECTION A-A  
HALF-DEPTH REPAIR

				<b>Design Division Standard</b>	
<b>REPAIR OF CONCRETE PAVEMENT</b>					
<b>REPCP-14</b>					
FILE: repcp14.dgn	DN: TxDOT	DN: HC	DW: HC	CK: AN	
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REVISIONS			0915	12	586
			DIST	COUNTY	SHEET NO.
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DETAIL B  
 GROUTED TIEBARS & DOWELS

REPAIR OF TRANSVERSE JOINT OF CPCD

GENERAL NOTES

- ITEM 361, "REPAIR OF CONCRETE PAVEMENT" SHALL GOVERN FOR THIS WORK.
- MULTIPLE PIECE TIEBARS SHALL BE USED WHEN THE REPAIR AREA MUST BE PLACED IN TWO STAGES DUE TO SEQUENCE OF CONSTRUCTION.
- FULL DEPTH SAW CUTS SHALL BE MADE AROUND THE PERIMETER OF THE AREA TO BE REPAIRED. THE CUT SHALL BE MADE AT A RIGHT ANGLE TO THE PAVEMENT EDGE AND TO THE CENTER LINE OF THE PAVEMENT.
- AT LEAST ONE LONGITUDINAL FULL DEPTH SAW CUT SHALL BE AT AN EXISTING LONGITUDINAL JOINT.
- ADDITIONAL SAW CUTS MAY BE REQUIRED WITHIN THE AREA OF THE REPAIR TO FACILITATE REMOVAL OF THE CONCRETE OR TO ALLEVIATE BINDING OF THE FULL DEPTH SAW CUT AT THE REPAIR EDGE.
- THE SAW CUTS WHICH EXTEND OUTSIDE THE AREA OF THE REPAIR WILL BE CLEANED AND FILLED WITH A CEMENTITIOUS GROUT APPROVED BY THE ENGINEER.
- EXISTING LONGITUDINAL AND TRANSVERSE JOINTS REMOVED DUE TO REPAIR OPERATION SHOULD BE RESTORED IN ACCORDANCE WITH STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."
- DOWEL BAR PLACEMENT TOLERANCE SHALL BE +/- 1/4 IN. HORIZONTALLY AND VERTICALLY UNLESS OTHERWISE SPECIFIED. WHERE DOWEL BAR BASKETS ARE USED, REMOVE THE SHIPPING WIRES.

PAVEMENT THICKNESS (INCHES)	SIZE AND DIA.	LENGTH (IN.)	SPACING (IN.)
<10	#8 (1 IN.)	18.0	12.0
≥10	#10 (1 1/4 IN.)		

SHEET 2 OF 2



REPAIR OF CONCRETE PAVEMENT

REPCP - 14

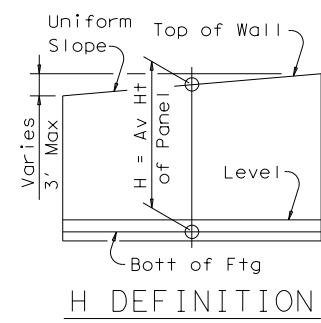
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	SAT	BEXAR	311	



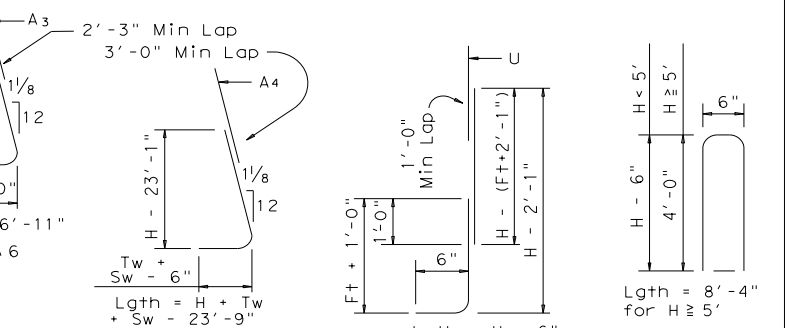
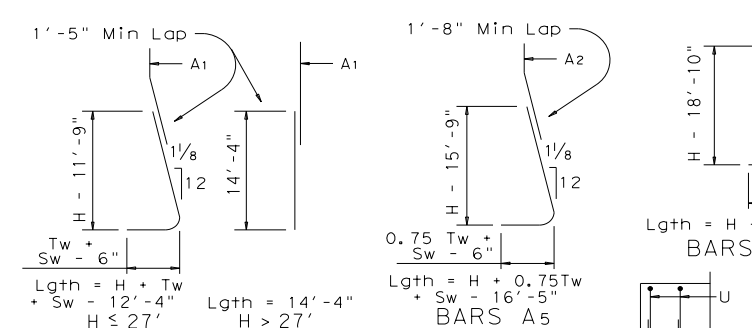
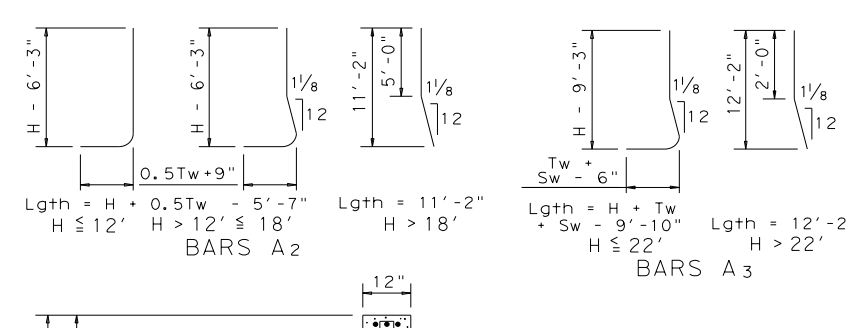
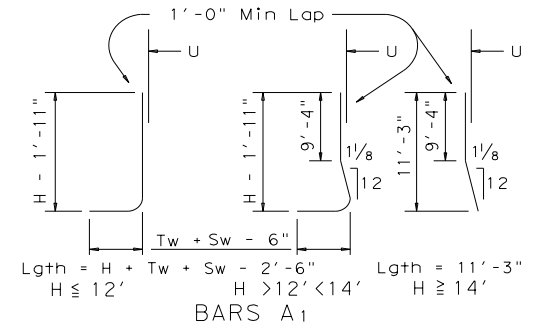


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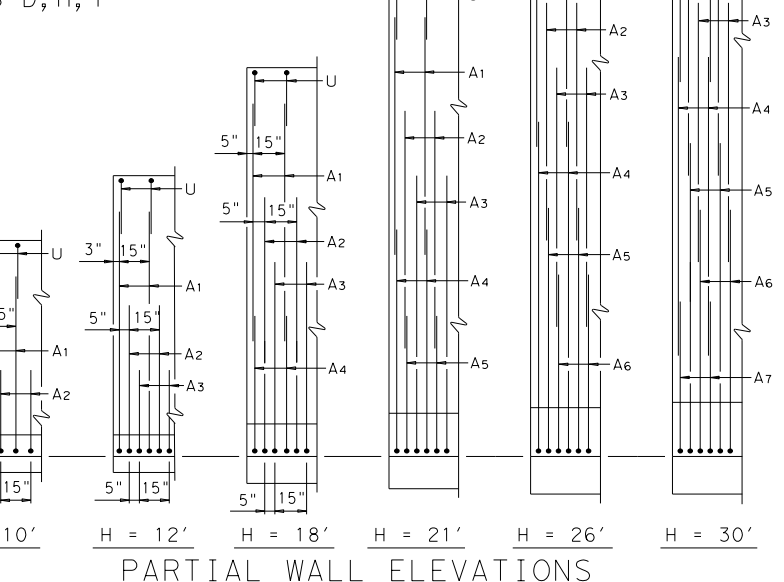
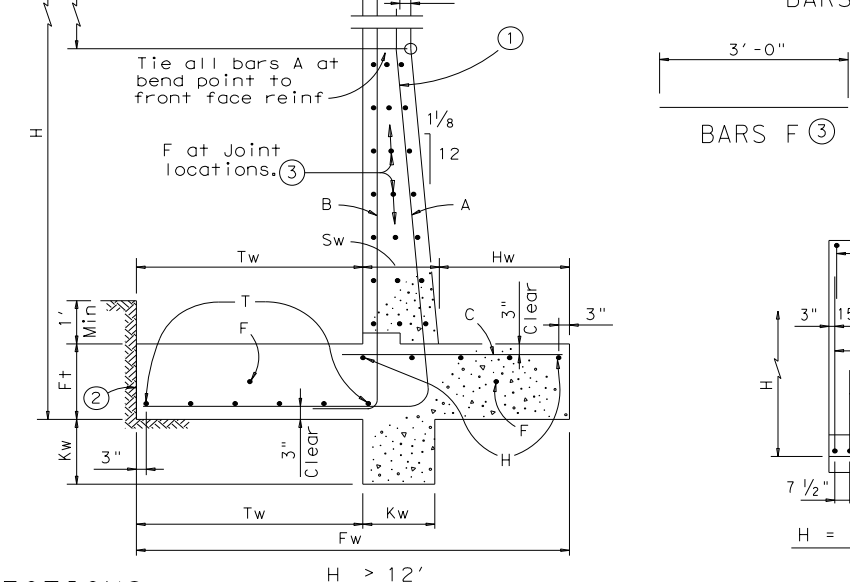
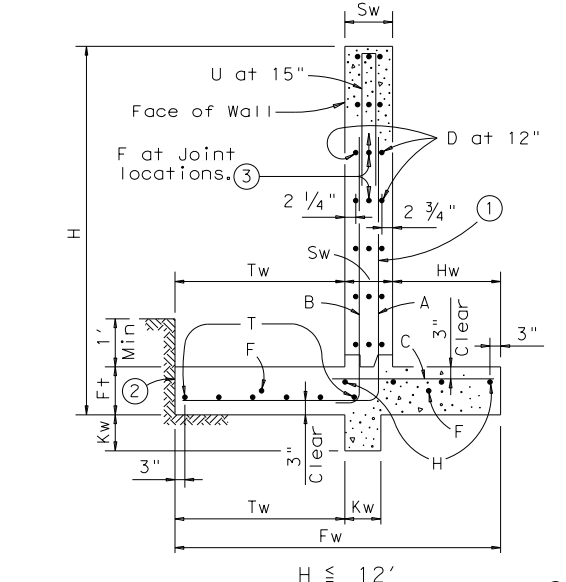


Wall Height "H"	PROPERTIES							REINFORCING STEEL FOR ONE 32' PANEL (DESIGN B)																				QUANTITY FOR ONE 32' PANEL		Wall Height "H"											
	WALL DIMENSIONS							Max Soil Press	A1 ~ 26 #5 at 15" c-c		A2 ~ 25 #6 at 15" c-c		A3 ~ 25 #7 at 15" c-c		A4 ~ 26 #8 at 15" c-c		A5 ~ 25 #9 at 15" c-c		A6 ~ 25 #11 at 15" c-c		A7 ~ 26 #11 at 15" c-c		B ~ 26 #5 at 15" c-c		C				D (#5) at 12" c-c		Dowel F at 12" c-c		H (#5) at 12" c-c		T (#5) at 12" c-c		U ~ 26 #5 at 15" c-c		CONC (CY)	REINF (LB)	
	(Ft)	Fw	Tw	Sw	Hw	Ft	Kw		T/SF	Lgth	Wt	Lgth	Wt	Lgth	Wt	Lgth	Wt	Lgth	Wt	Lgth	Wt	Lgth	Wt	Size	No	Spa	Lgth	Wt	No		Wt	No	Wt	No	Wt	No	Wt	Lgth			Wt
2	2'-8"	1'-4"	1'-0"	4"	1'-0"	9"	0.15																#4	26	15"	1'-10"	32	4	131	4	32	2	66	2	66	3'-4"	90	5.0	418	2	
3	3'-6"	1'-9"	1'-0"	9"	1'-0"	9"	0.18																#4	26	15"	2'-3"	39	6	197	5	40	2	66	3	99	5'-4"	145	7.2	586	3	
4	4'-3"	2'-2"	1'-0"	1'-1"	1'-0"	9"	0.21	4'-8"	127														#4	26	15"	2'-8"	46	8	263	6	48	3	99	3	99	7'-4"	199	9.3	976	4	
5	5'-0"	2'-6"	1'-0"	1'-6"	1'-0"	9"	0.24	6'-0"	163														#4	26	15"	3'-0"	52	10	329	7	56	3	99	3	99	8'-4"	226	11.3	1146	5	
6	5'-8"	2'-10"	1'-0"	1'-10"	1'-0"	9"	0.28	7'-4"	199														#4	26	15"	3'-4"	58	12	394	8	64	3	99	4	131	8'-4"	226	13.3	1321	6	
7	6'-4"	3'-2"	1'-0"	2'-2"	1'-0"	9"	0.31	8'-8"	235														#4	26	15"	3'-8"	64	14	460	9	72	3	99	4	131	8'-4"	226	15.3	1463	7	
8	7'-0"	3'-6"	1'-0"	2'-6"	1'-0"	9"	0.35	10'-0"	271	4'-2"	156												#4	38	10"	4'-0"	102	16	526	10	80	4	131	4	131	8'-4"	226	17.3	1825	8	
9	7'-9"	3'-10"	1'-0"	2'-11"	1'-0"	9"	0.38	11'-4"	307	5'-4"	200												#4	38	10"	4'-4"	102	16	526	10	80	4	131	5	164	8'-4"	226	19.3	2185	9	
10	8'-6"	4'-3"	1'-0"	3'-3"	1'-0"	9"	0.40	12'-9"	346	6'-7"	247												#6	38	10"	4'-9"	271	20	657	12	96	4	131	5	164	8'-4"	226	21.4	2396	10	
11	9'-2"	4'-7"	1'-0"	3'-7"	1'-0"	9"	0.43	14'-1"	382	7'-8"	288	6'-9"	345										#7	38	10"	5'-1"	395	22	723	13	104	5	164	6	197	8'-4"	226	23.4	3103	11	
12	9'-10"	4'-11"	1'-0"	3'-11"	1'-0"	1'-0"	0.46	15'-5"	418	8'-11"	335	8'-1"	413										#8	38	10"	5'-5"	550	24	789	14	112	5	164	6	197	8'-4"	226	25.9	3515	12	
13	10'-6"	5'-3"	1'-1 1/8"	4'-1 7/8"	1'-0"	1'-0"	0.50	16'-10"	456	10'-1"	379	9'-6"	485										#9	38	10"	5'-9"	743	26	854	15	120	6	197	6	197	8'-4"	226	27.9	3996	13	
14	11'-2"	5'-7"	1'-2"	4'-5"	1'-3"	1'-3"	0.55	11'-3"	307	11'-2"	419	10'-11"	558	8'-5"	584								#9	38	10"	6'-1"	786	28	920	16	128	6	197	7	230	8'-4"	226	33.7	4721	14	
15	11'-10"	5'-11"	1'-3 1/8"	4'-7 7/8"	1'-3"	1'-3"	0.59	11'-3"	307	12'-5"	466	12'-4"	630	9'-10"	683								#9	38	10"	6'-5"	829	30	986	17	136	7	230	7	230	8'-4"	226	36.1	5116	15	
16	12'-6"	6'-3"	1'-4"	4'-11"	1'-6"	1'-3"	0.64	11'-3"	307	13'-7"	510	13'-9"	703	11'-2"	775								#9	38	10"	6'-9"	872	30	986	17	136	7	230	8	263	8'-4"	226	41.9	5427	16	
17	13'-3"	6'-7"	1'-5"	5'-3"	1'-6"	1'-6"	0.67	11'-3"	307	14'-9"	554	15'-2"	775	12'-8"	879								#9	38	10"	7'-2"	926	32	1051	18	144	7	230	8	263	8'-4"	226	45.7	5802	17	
18	13'-10"	6'-11"	1'-6 1/4"	5'-4 3/4"	1'-6"	1'-6"	0.71	11'-3"	307	15'-11"	598	16'-7"	847	14'-1"	978								#10	38	10"	7'-5"	1213	34	1117	19	152	8	263	8	263	8'-4"	226	48.5	6439	18	
19	14'-6"	7'-3"	1'-7"	5'-8"	1'-9"	1'-6"	0.76	11'-3"	307	11'-2"	419	18'-0"	920	15'-5"	1070	9'-7"	815						#10	38	10"	7'-9"	1267	36	1183	20	160	8	263	9	296	8'-4"	226	55.4	7428	19	
20	15'-2"	7'-7"	1'-8 1/8"	5'-10 7/8"	1'-9"	1'-6"	0.80	11'-3"	307	11'-2"	419	19'-5"	992	16'-11"	1174	10'-11"	928						#10	38	10"	8'-1"	1322	38	1248	21	168	8	263	9	296	8'-4"	226	58.7	7872	20	
21	16'-0"	8'-0"	1'-9 1/4"	6'-2 3/4"	1'-9"	1'-6"	0.81	11'-3"	307	11'-2"	419	20'-11"	1069	18'-5"	1278	12'-4"	1048						#8	76	5"	8'-6"	1725	40	1314	22	176	9	296	10	329	8'-4"	226	62.4	8743	21	
22	16'-6"	8'-3"	1'-10 1/8"	6'-4 7/8"	2'-0"	1'-6"	0.88	11'-3"	307	11'-2"	419	22'-3"	1137	19'-9"	1371	13'-7"	1155						#8	76	5"	8'-9"	1776	42	1380	23	184	9	296	10	329	8'-4"	226	70.0	9163	22	
23	17'-3"	8'-7"	1'-11 1/4"	6'-8 3/4"	2'-0"	1'-6"	0.91	11'-3"	307	11'-2"	419	12'-2"	622	21'-2"	1469	15'-0"	1275	6'-1"	808				#8	76	5"	9'-2"	1860	44	1446	24	192	9	296	10	329	8'-4"	226	74.0	9859	23	
24	18'-0"	9'-0"	2'-0 1/8"	6'-11 1/8"	2'-3"	1'-6"	0.95	11'-3"	307	11'-2"	419	12'-2"	622	22'-8"	1574	16'-4"	1388	7'-1"	941				#8	76	5"	9'-6"	1928	46	1511	25	200	10	329	11	361	8'-4"	226	82.9	10443	24	
25	18'-6"	9'-4"	2'-1 1/4"	7'-0 3/4"	2'-3"	1'-6"	0.99	11'-3"	307	11'-2"	419	12'-2"	622	24'-1"	1672	17'-8"	1502	8'-1"	1074				#9	76	5"	9'-10"	2541	48	1577	26	208	10	329	11	361	8'-4"	226	86.6	11502	25	
26	19'-3"	9'-7"	2'-2 3/8"	7'-5 5/8"	2'-3"	1'-9"	1.03	11'-3"	307	11'-2"	419	12'-2"	622	25'-5"	1764	19'-0"	1615	9'-1"	1206				#9	76	5"	10'-1"	2606	50	1643	27	217	10	329	12	394	8'-4"	226	92.1	12040	26	
27	20'-0"	10'-0"	2'-3 1/2"	7'-8 1/2"	2'-3"	1'-9"	1.05	11'-3"	307	11'-2"	419	12'-2"	622	27'-0"	1874	20'-5"	1735	10'-1"	1339				#9	76	5"	10'-5"	2692	52	1708	28	225	11	361	12	394	8'-4"	226	96.8	12621	27	
28	20'-6"	10'-4"	2'-4 5/8"	7'-9 3/8"	2'-3"	1'-9"	1.09	11'-3"	307	11'-2"	419	12'-2"	622	14'-4"	995	21'-9"	1849	11'-1"	1472	17'-0"	2348		#10	76	5"	10'-9"	3516	54	1774	29	233	11	361	12	394	8'-4"	226	100.9	15261	28	
29	21'-3"	10'-7"	2'-5 3/4"	8'-2 1/4"	2'-3"	1'-9"	1.12	11'-3"	307	11'-2"	419	12'-2"	622	14'-4"	995	23'-0"	1955	12'-1"	1605	18'-4"	2533		#10	76	5"	11'-2"	3652	56	1840	30	241	11	361	13	427	8'-4"	226	105.8	15955	29	
30	22'-0"	11'-0"	2'-6 1/2"	8'-5 1/2"	2'-6"	1'-9"	1.16	11'-3"	307	11'-2"	419	12'-2"	622	14'-4"	995	24'-5"	2075	13'-1"	1738	19'-10"	2740		#10	76	5"	11'-6"	3761	56	1840	30	241	12	394	13	427	8'-4"	226	116.5	16584	30	



- Place vertical bars inside of horizontal bars (Typ both faces).
- Place footing toe against undisturbed soil.
- See standard RW 2 for size.

GENERAL NOTES:  
 All concrete to be Class "C".  
 All reinforcing steel to be Grade 60.  
 For notes and details not shown on this sheet see sheet RW2.  
 Quantities are based on "H" being average height of panel.  
 Retaining Walls are designed to be coded as follows on Retaining Wall Layout Sheets.  
 HC - 21 - 28  
 LA - 28 - 32  
 Panel Length ~ 32' is standard; 28' requires special quantities.  
 Average Height "H" of panel  
 Design - A = no surcharge or slope above wall  
 B = slopes up to 4:1  
 C = traffic surcharge and/or slopes up to 2.5:1  
 Footing pressure design ~ L = low, H = high



PARTIAL WALL ELEVATIONS  
 (Showing vertical reinforcing pattern in back face)

Texas Department of Transportation  
 Bridge Division Standard

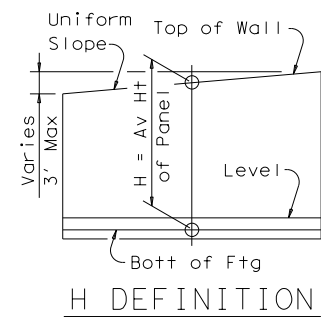
## RETAINING WALLS

### RW 1(L)B

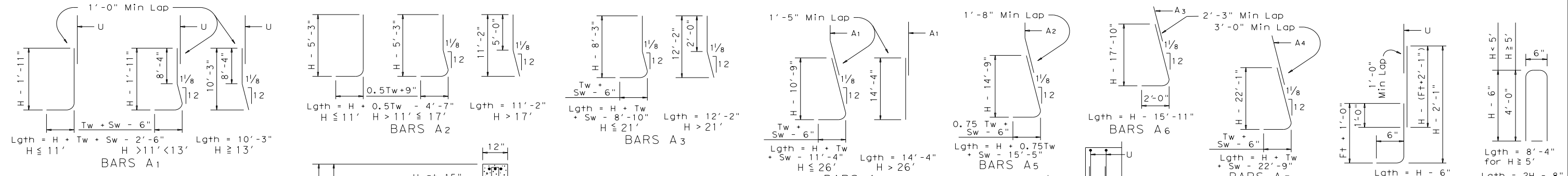
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©TxDOT March 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
DIST	COUNTY	SHEET NO.		
SAT	BEXAR	313		

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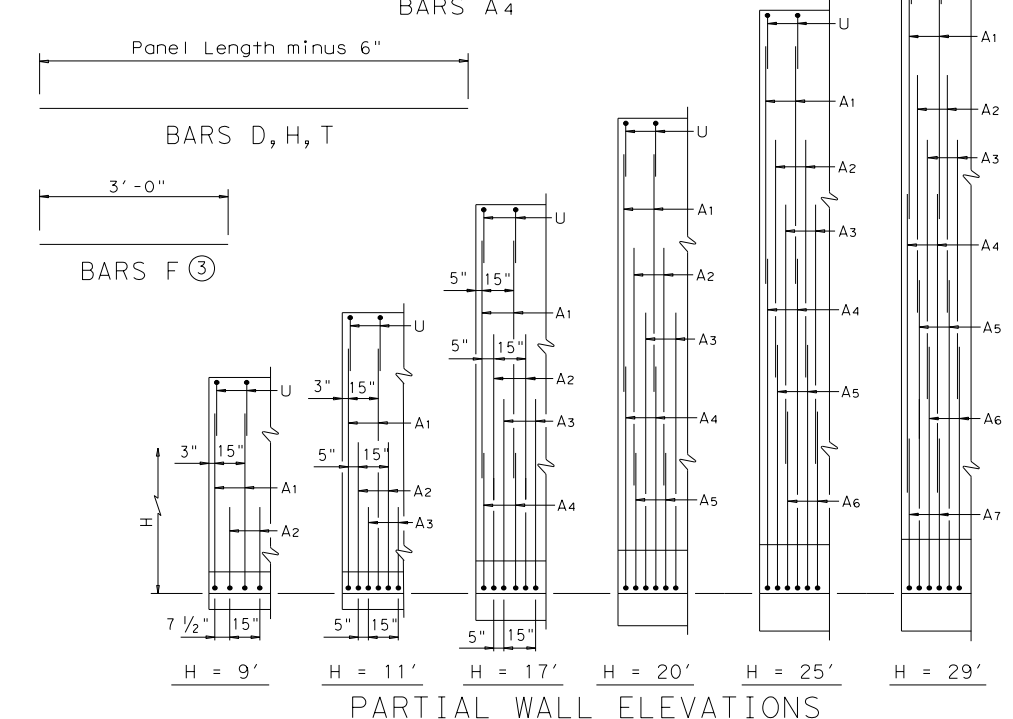
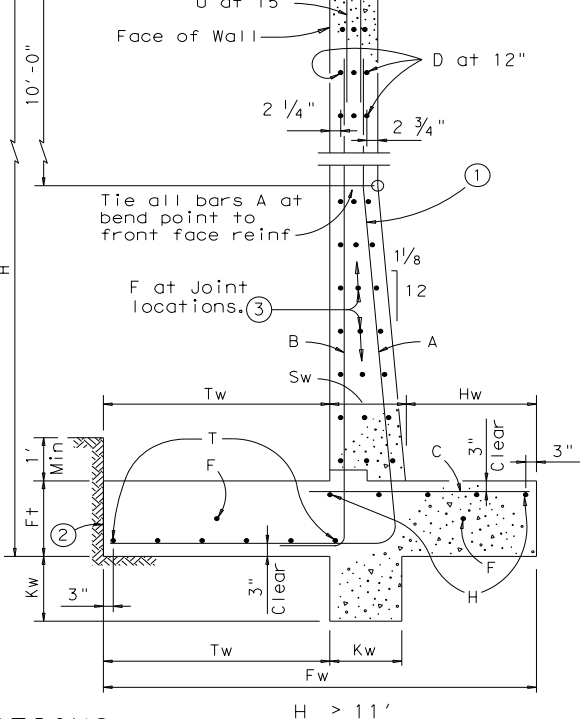
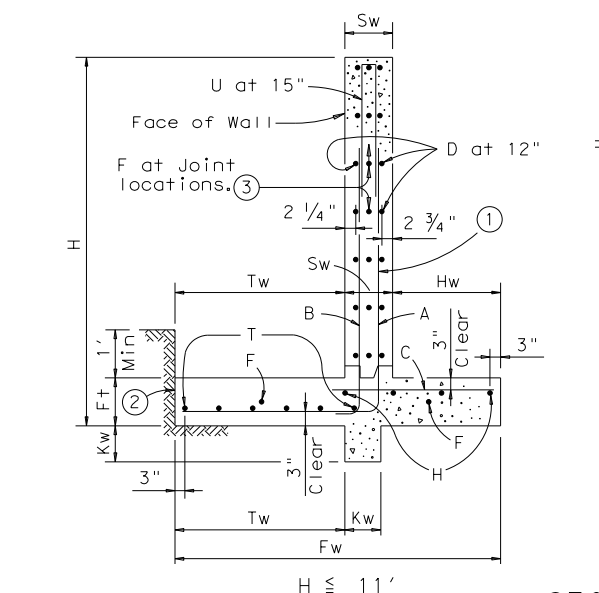
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Wall Height "H"	PROPERTIES							REINFORCING STEEL FOR ONE 32' PANEL (DESIGN C)																				QUANTITY FOR ONE 32' PANEL		Wall Height "H"										
	WALL DIMENSIONS							Max Soil Press	A1 ~ 26 #5 at 15" c-c		A2 ~ 25 #6 at 15" c-c		A3 ~ 25 #7 at 15" c-c		A4 ~ 26 #8 at 15" c-c		A5 ~ 25 #9 at 15" c-c		A6 ~ 25 #11 at 15" c-c		A7 ~ 26 #11 at 15" c-c		B ~ 26 #5 at 15" c-c		C		D (#5) at 12" c-c		F (#5) at 12" c-c		H (#5) at 12" c-c		T (#5) at 12" c-c		U ~ 26 #5 at 15" c-c		CONC (CY)	REINF (LB)		
	(Ft)	Fw	Tw	Sw	Hw	Ft	Kw		T/SF	Lgth	Wt	Lgth	Wt	Lgth	Wt	Lgth	Wt	Lgth	Wt	Lgth	Wt	Lgth	Wt	Size	No	Spa	Lgth	Wt	No		Wt	No	Wt	No	Wt	No			Wt	Lgth
2	3'-6"	1'-9"	1'-0"	9"	1'-0"	9"	0.14																#4	26	15"	2'-3"	39	4	131	4	32	2	66	3	99	3'-4"	90	6.0	458	2
3	4'-3"	2'-2"	1'-0"	1'-1"	1'-0"	9"	0.17																#4	26	15"	2'-8"	46	6	197	5	40	3	99	3	99	5'-4"	145	8.1	626	3
4	5'-0"	2'-6"	1'-0"	1'-6"	1'-0"	9"	0.20	5'-0"	136														#4	26	15"	3'-0"	52	8	263	6	48	3	99	3	99	7'-4"	199	10.1	991	4
5	5'-8"	2'-10"	1'-0"	1'-10"	1'-0"	9"	0.24	6'-4"	172														#4	26	15"	3'-4"	58	10	329	7	56	3	99	4	131	8'-4"	226	12.1	1193	5
6	6'-4"	3'-2"	1'-0"	2'-2"	1'-0"	9"	0.28	7'-8"	208														#4	26	15"	3'-8"	64	12	394	8	64	3	99	4	131	8'-4"	226	14.1	1336	6
7	7'-0"	3'-6"	1'-0"	2'-6"	1'-0"	9"	0.32	9'-0"	244	4'-2"	156												#4	38	10"	4'-0"	102	14	460	9	72	4	131	4	131	8'-4"	226	16.1	1698	7
8	7'-9"	3'-10"	1'-0"	2'-11"	1'-0"	9"	0.35	10'-4"	280	5'-4"	200												#6	38	10"	4'-4"	247	16	526	10	80	4	131	5	164	8'-4"	226	18.1	2056	8
9	8'-6"	4'-3"	1'-0"	3'-3"	1'-0"	9"	0.37	11'-9"	319	6'-7"	247												#6	38	10"	4'-9"	271	18	591	11	88	4	131	5	164	8'-4"	226	20.2	2268	9
10	9'-2"	4'-7"	1'-0"	3'-7"	1'-0"	9"	0.41	13'-1"	355	7'-8"	288	6'-9"	345										#8	38	10"	5'-1"	395	20	657	12	96	5	164	6	197	8'-4"	226	22.2	2981	10
11	9'-10"	4'-11"	1'-0"	3'-11"	1'-0"	1'-0"	0.44	14'-5"	391	8'-11"	335	8'-1"	413										#8	38	10"	5'-5"	550	22	723	13	104	5	164	6	197	8'-4"	226	24.7	3382	11
12	10'-6"	5'-3"	1'-1 1/8"	4'-1 7/8"	1'-0"	1'-0"	0.45	15'-10"	429	10'-1"	379	9'-6"	485										#8	38	10"	5'-9"	743	24	789	14	112	6	197	6	197	8'-4"	226	26.7	3868	12
13	11'-7"	5'-7"	1'-2"	4'-5"	1'-3"	1'-3"	0.54	10'-3"	278	11'-2"	419	10'-11"	558	8'-5"	584								#9	38	10"	6'-1"	786	26	854	15	120	6	197	7	230	8'-4"	226	32.5	4591	13
14	11'-10"	5'-11"	1'-3 1/8"	4'-7 7/8"	1'-3"	1'-3"	0.57	10'-3"	278	12'-5"	466	12'-4"	630	9'-10"	683								#9	38	10"	6'-5"	829	28	920	16	128	7	230	7	230	8'-4"	226	34.9	4986	14
15	12'-6"	6'-3"	1'-4"	4'-11"	1'-6"	1'-3"	0.63	10'-3"	278	13'-7"	510	13'-9"	703	11'-2"	775								#9	38	10"	6'-9"	872	28	920	16	128	7	230	8	263	8'-4"	226	40.8	5298	15
16	13'-3"	6'-7"	1'-5"	5'-3"	1'-6"	1'-6"	0.66	10'-3"	278	14'-9"	554	15'-2"	775	12'-8"	879								#9	38	10"	7'-2"	926	30	986	17	136	7	230	8	263	8'-4"	226	44.5	5672	16
17	13'-10"	6'-11"	1'-6 1/4"	5'-4 3/4"	1'-6"	1'-6"	0.70	10'-3"	278	15'-11"	598	16'-7"	847	14'-1"	978								#10	38	10"	7'-5"	1213	32	1051	18	144	8	263	8	263	8'-4"	226	47.3	6308	17
18	14'-6"	7'-3"	1'-7"	5'-8"	1'-9"	1'-6"	0.76	10'-3"	278	11'-2"	419	18'-0"	920	15'-5"	1070	9'-7"	815						#10	38	10"	7'-9"	1267	34	1117	19	152	8	263	9	296	8'-4"	226	54.2	7298	18
19	15'-2"	7'-7"	1'-8 1/8"	5'-10 7/8"	1'-9"	1'-6"	0.79	10'-3"	278	11'-2"	419	19'-5"	992	16'-11"	1174	10'-11"	928						#10	38	10"	8'-1"	1322	36	1183	20	160	8	263	9	296	8'-4"	226	57.5	7743	19
20	16'-0"	8'-0"	1'-9 1/4"	6'-2 3/4"	1'-9"	1'-6"	0.80	10'-3"	278	11'-2"	419	20'-11"	1069	18'-5"	1278	12'-4"	1048						#10	38	10"	8'-5"	1725	38	1248	21	168	9	296	10	329	8'-4"	226	61.3	8613	20
21	16'-6"	8'-3"	1'-10 1/8"	6'-4 7/8"	2'-0"	1'-6"	0.88	10'-3"	278	11'-2"	419	22'-3"	1137	19'-9"	1371	13'-7"	1155						#10	38	10"	8'-9"	1776	40	1314	22	176	9	296	10	329	8'-4"	226	68.8	9033	21
22	17'-3"	8'-7"	1'-11 1/4"	6'-8 3/4"	2'-0"	1'-6"	0.91	10'-3"	278	11'-2"	419	12'-2"	622	21'-2"	1469	15'-0"	1275	6'-1"	808				#10	38	10"	9'-2"	1860	42	1380	23	184	9	296	10	329	8'-4"	226	72.8	9729	22
23	18'-0"	9'-0"	2'-0 1/8"	6'-11 1/8"	2'-3"	1'-6"	0.95	10'-3"	278	11'-2"	419	12'-2"	622	22'-8"	1574	16'-4"	1388	7'-1"	941				#10	38	10"	9'-6"	1928	44	1446	24	192	10	329	11	361	8'-4"	226	81.7	10314	23
24	18'-6"	9'-4"	2'-1 1/4"	7'-0 3/4"	2'-3"	1'-6"	0.99	10'-3"	278	11'-2"	419	12'-2"	622	24'-1"	1672	17'-8"	1502	8'-1"	1074				#10	38	10"	9'-10"	2541	46	1511	25	200	10	329	11	361	8'-4"	226	85.4	11372	24
25	19'-3"	9'-7"	2'-2 3/8"	7'-5 5/8"	2'-3"	1'-9"	1.03	10'-3"	278	11'-2"	419	12'-2"	622	25'-5"	1764	19'-0"	1615	9'-1"	1206				#10	38	10"	10'-1"	2606	48	1577	26	208	10	329	12	394	8'-4"	226	91.0	11909	25
26	20'-0"	10'-0"	2'-3 1/2"	7'-8 1/2"	2'-3"	1'-9"	1.05	10'-3"	278	11'-2"	419	12'-2"	622	27'-0"	1874	20'-5"	1735	10'-1"	1339				#10	38	10"	10'-5"	2692	50	1643	27	217	11	361	12	394	8'-4"	226	95.6	12491	26
27	20'-6"	10'-4"	2'-4 5/8"	7'-9 3/8"	2'-3"	1'-9"	1.09	10'-3"	278	11'-2"	419	12'-2"	622	14'-4"	995	21'-9"	1849	11'-1"	1472	17'-0"	2348		#10	38	10"	10'-9"	3516	52	1708	28	225	11	361	12	394	8'-4"	226	99.7	15132	27
28	21'-3"	10'-7"	2'-5 3/4"	8'-2 1/4"	2'-3"	1'-9"	1.13	10'-3"	278	11'-2"	419	12'-2"	622	14'-4"	995	23'-0"	1955	12'-1"	1605	18'-4"	2533		#10	38	10"	11'-2"	3652	54	1774	29	233	11	361	13	427	8'-4"	226	104.6	15825	28
29	22'-0"	11'-0"	2'-6 1/2"	8'-5 1/2"	2'-6"	1'-9"	1.17	10'-3"	278	11'-2"	419	12'-2"	622	14'-4"	995	24'-5"	2075	13'-1"	1738	19'-10"	2740		#10	38	10"	11'-6"	3761	54	1774	29	233	12	394	13	427	8'-4"	226	115.3	16454	29



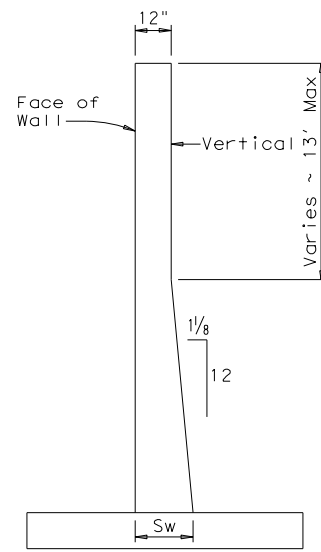
- 1 Place vertical bars inside of horizontal bars (Typ both faces).
- 2 Place footing toe against undisturbed soil.
- 3 See standard RW 2 for size.



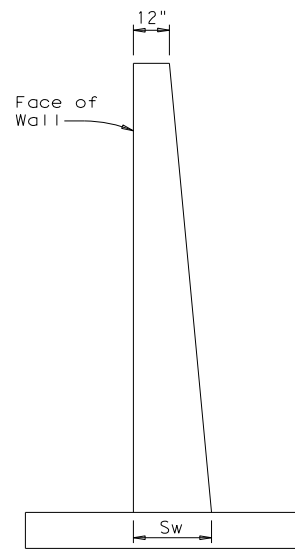
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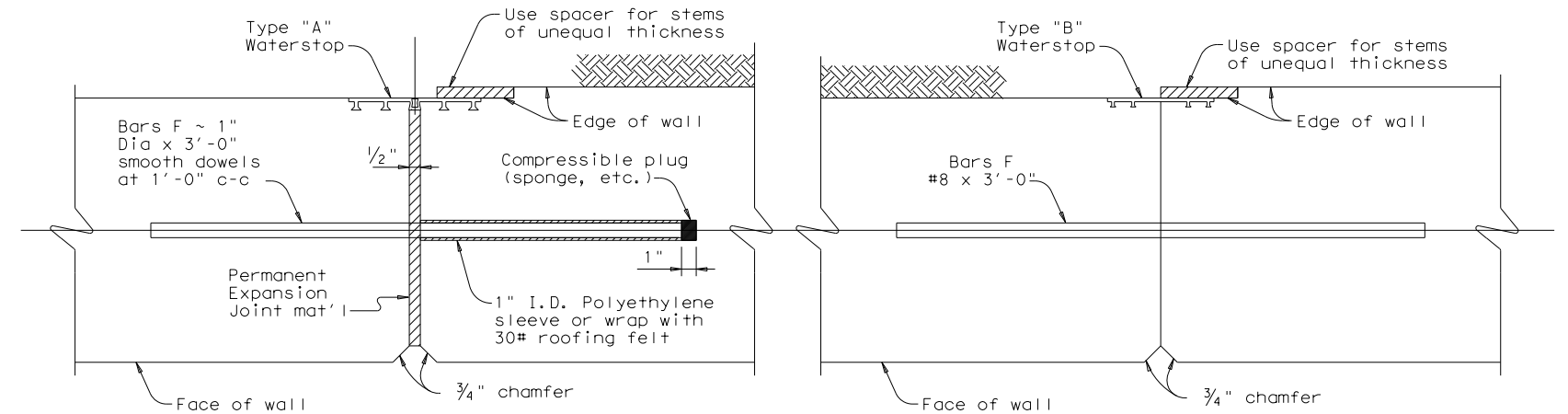
AS DETAILED  
 ALL HEIGHTS  
 (Basis for payment)



FRONT FACE VERTICAL  
 BACK FACE SLOPED

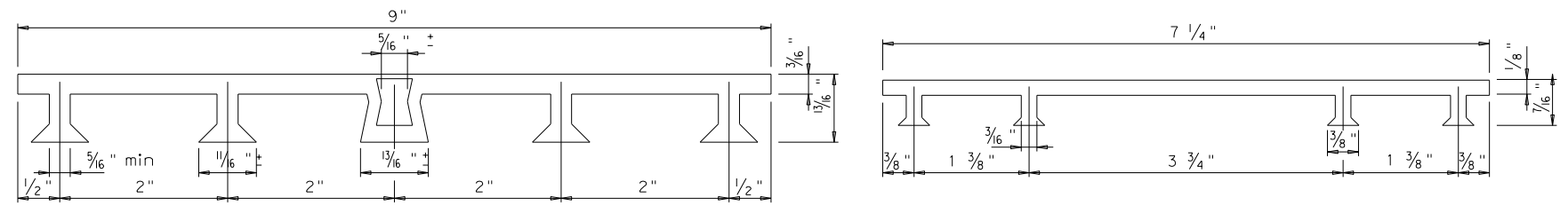
**ALTERNATE STEM SLOPE DETAILS**

Walls with slopes other than those shown may be used after approval by the Engineer. Sw shall not be less than shown in Table on Sheet 1. No payment will be made for excess concrete due to changing of slope of wall stem.



**EXPANSION JOINT**

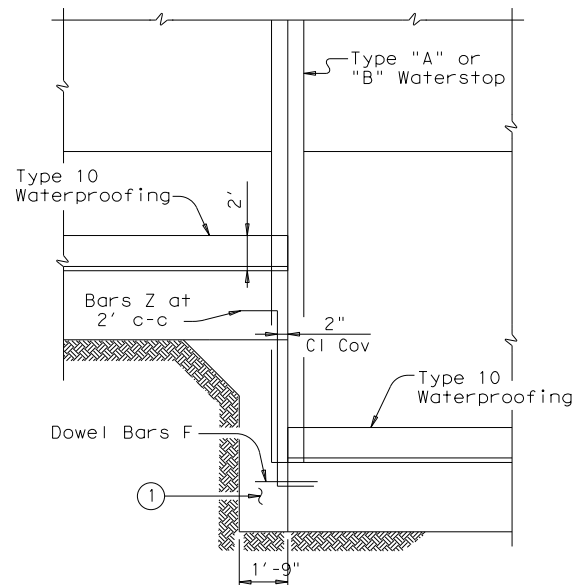
**CONSTRUCTION JOINT**



**PVC WATERSTOP TYPE "A"**

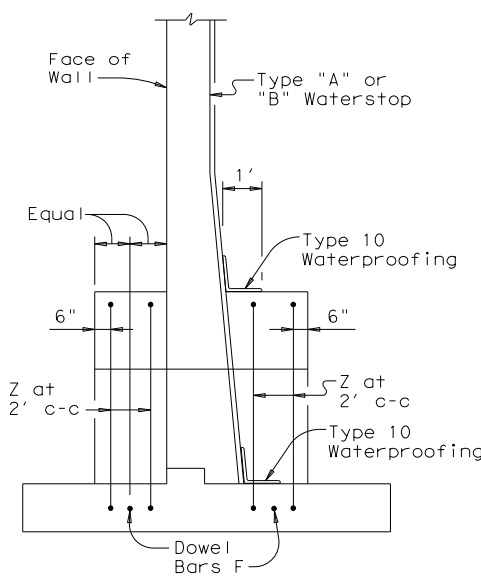
Note: Dimensions and shapes may vary slightly depending on manufacturer.

**PVC WATERSTOP TYPE "B"**

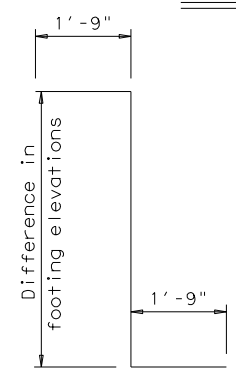


**PARTIAL ELEVATION  
 SHOWING WATERSTOP AT FOOTING JOINT**

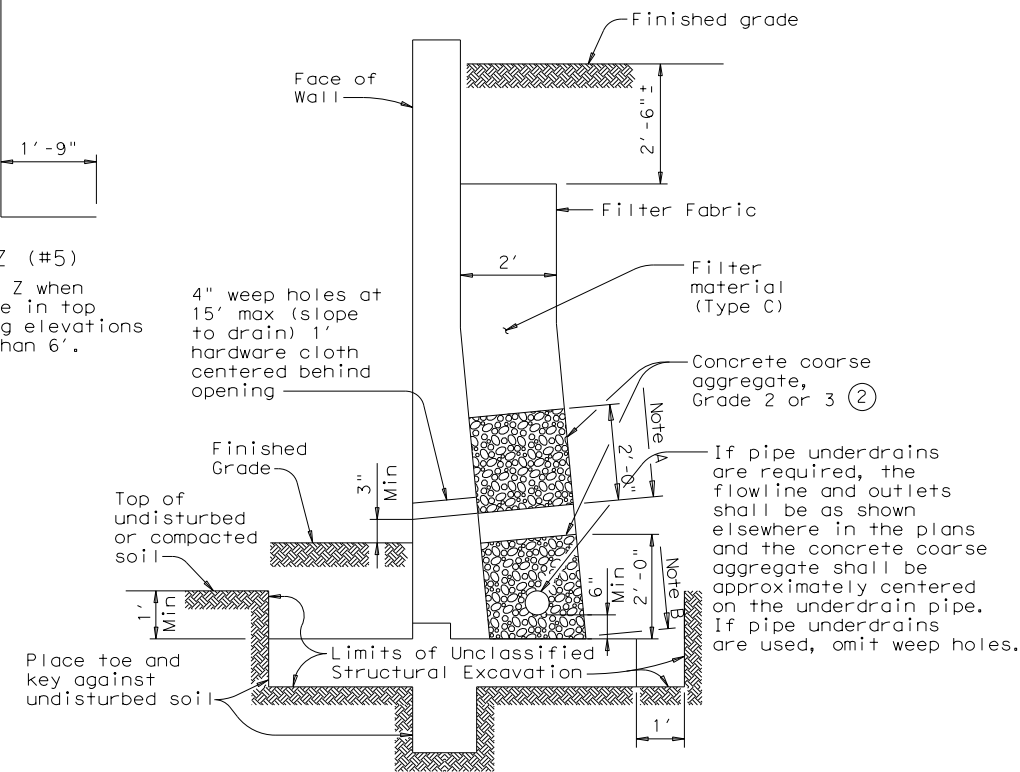
① Unreinforced Class "C" Concrete when difference in top of footing elevations is less than 6'. Omit when Dowel Bars F can be placed between adjacent footings with 4" cover top and bottom.



**PARTIAL SECTION**



**BARS Z (#5)**  
 Omit Bars Z when difference in top of footing elevations is less than 6'.

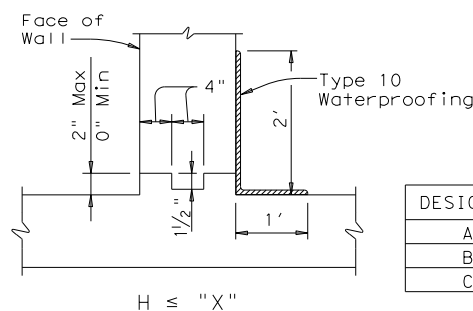


**DRAINAGE DETAILS AND EXCAVATION DIAGRAM**

Note A: Stop coarse aggregate at this level when weep holes are used.  
 Note B: Use coarse aggregate to here with filter material above when underdrains are used.

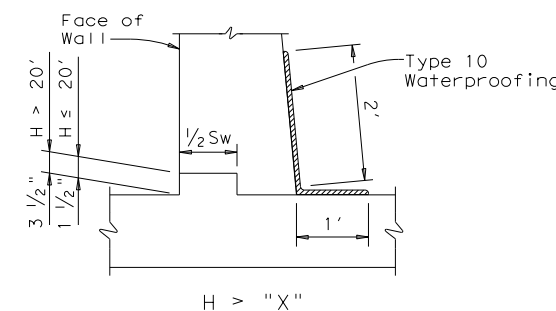
**GENERAL NOTES:**

Walls are designed assuming unit weight of soil = 120 pcf, and coefficient of horizontal earth pressure = 0.33.  
 Walls are designed to provide a minimum factor of safety against sliding of 1.5. The undisturbed or compacted soil depth in front of walls, from bottom of Key up, shall not be less than  $K_w + Ft + 1'$ .  
 Retaining walls are detailed to be placed on grades up thru 10% with footing level, with no changes in reinforcing steel. Steeper grades can be accommodated by shortening Bars A1 and B and increasing length of legs of Bars U by the same amount. No change in Quantities will be involved.  
 Retaining walls may be placed on Horizontal Curves by adjusting lengths of footing Bars T and H. Minor revisions of Concrete Quantities may be required.  
 Designed in accordance with current AASHTO Standard and Interim Specifications.  
 All concrete to be Class "C".  
 All reinforcing steel to be Grade 60.



H ≤ "X"

DESIGN	"X"
A	14'
B	12'
C	11'



H > "X"

**JOINT AND WATERSTOP DETAILS**

		<b>Bridge Division Standard</b>	
<b>RETAINING WALL          MISCELLANEOUS DETAILS</b>			
<b>RW 2</b>			
FILE: rwstde11.dgn	DN: TxDOT	CK: TxDOT	DW: JGD
©TxDOT March 2010	CONT SECT	JOB	HIGHWAY
REVISIONS	0915 12	586	VA
04-11: Added Note 2.	DIST	COUNTY	SHEET NO.
	SAT	BEXAR	315

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## SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

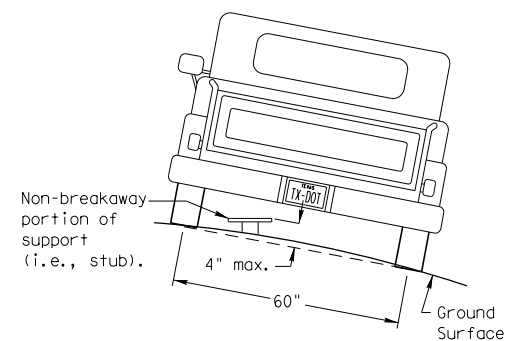
Post Type \_\_\_\_\_  
 FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))  
 TWT = Thin-Walled Tubing (see SMD(TWT))  
 10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))  
 S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2) \_\_\_\_\_

Anchor Type \_\_\_\_\_  
 UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))  
 UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))  
 WS = Wedge Anchor Steel - (see SMD(TWT))  
 WP = Wedge Anchor Plastic (see SMD(TWT))  
 SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))  
 SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation  
 P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))  
 T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))  
 U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))  
 IF REQUIRED  
 1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))  
 BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))  
 WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))  
 EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

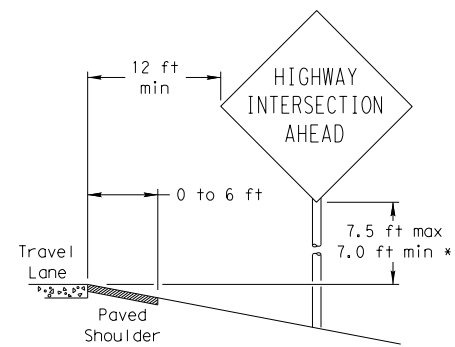
## REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

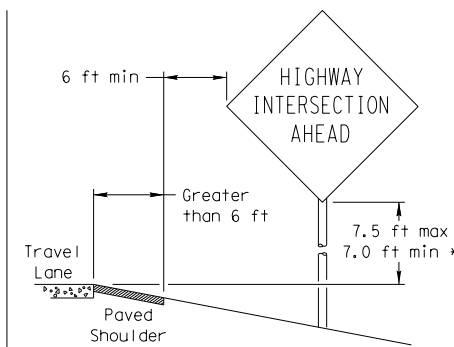
## SIGN LOCATION

### PAVED SHOULDERS



LESS THAN 6 FT. WIDE

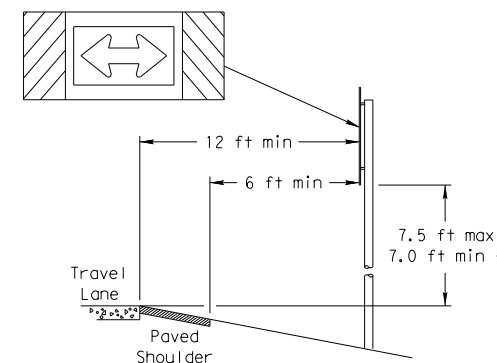
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



GREATER THAN 6 FT. WIDE

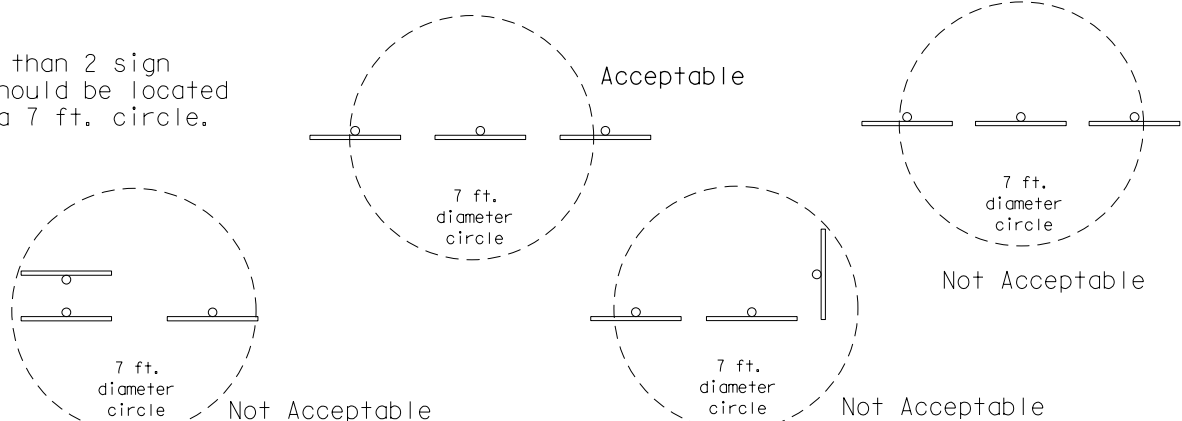
When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

### T-INTERSECTION

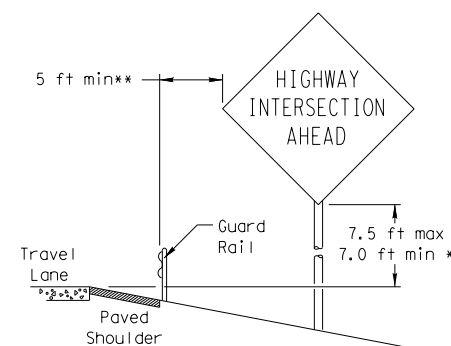


When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.

No more than 2 sign posts should be located within a 7 ft. circle.

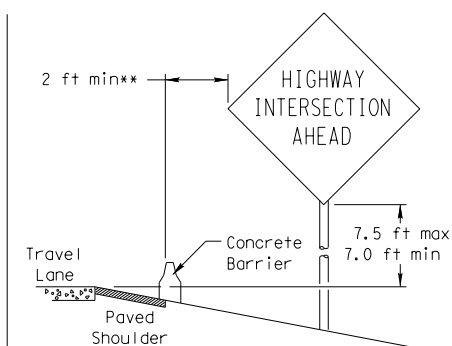


### BEHIND BARRIER



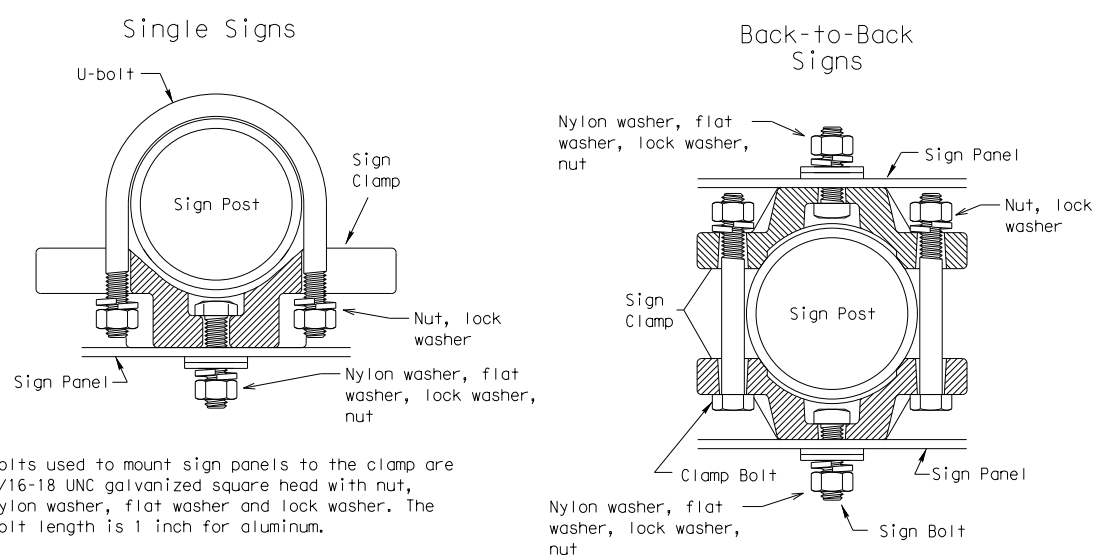
BEHIND GUARDRAIL

\*\*Sign clearance based on distance required for proper guard rail or concrete barrier performance.



BEHIND CONCRETE BARRIER

## TYPICAL SIGN ATTACHMENT DETAIL



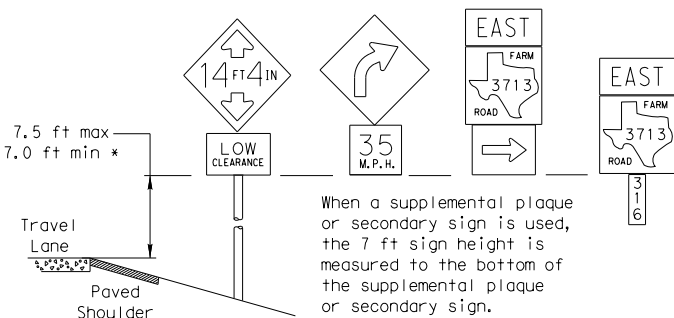
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

Sign clamps may be either the specific size clamp or the universal clamp.

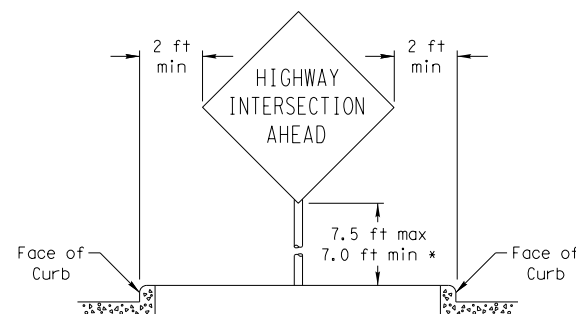
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

### SIGNS WITH PLAQUES

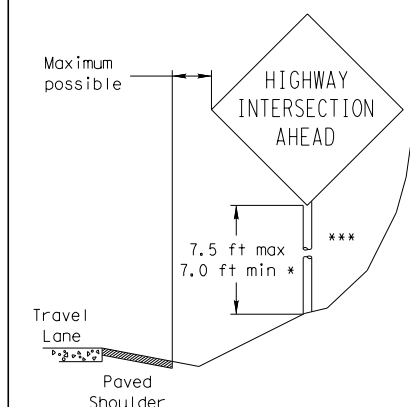


When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

### CURB & GUTTER OR RAISED ISLAND



### RESTRICTED RIGHT-OF-WAY (When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

\*\*\* Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

\* Signs shall be mounted using the following condition that results in the greatest sign elevation:

- (1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or
- (2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

The website address is:  
<http://www.txdot.gov/publications/traffic.htm>



## SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

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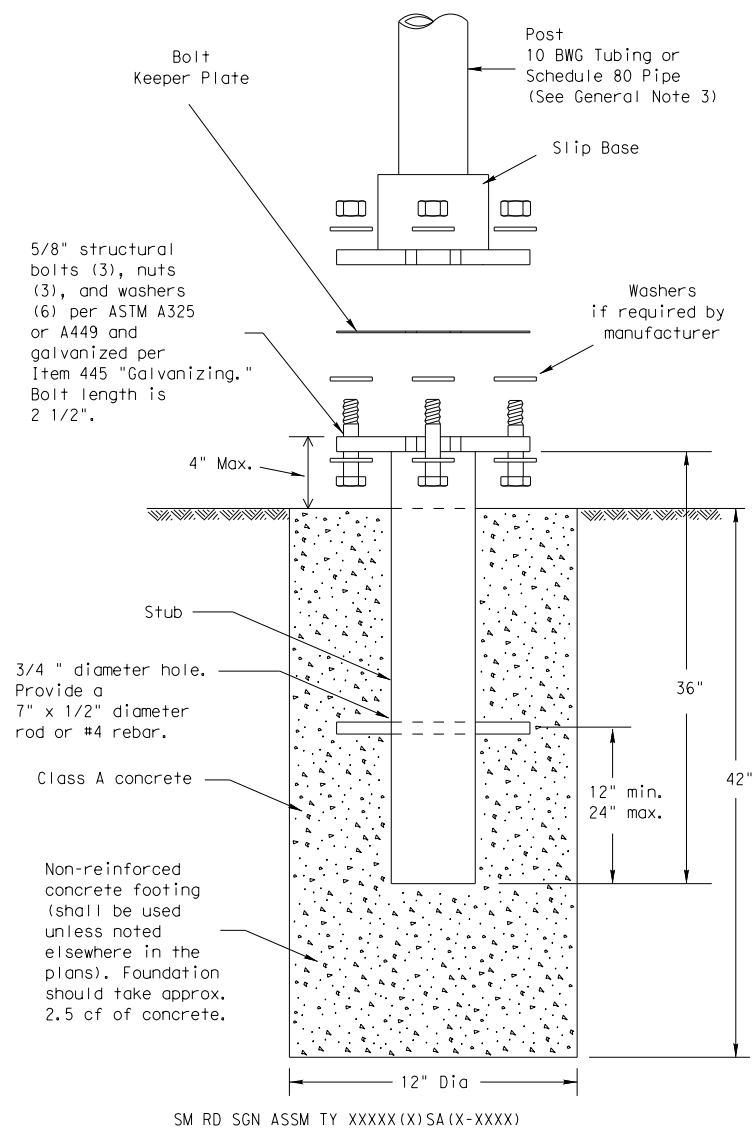
© TxDOT July 2002	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
9-08	REVISIONS	CONT	SECT	JOB	HIGHWAY
		0915	12	586	VA
		DIST	COUNTY		SHEET NO.
		SAT	BEXAR		316

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## TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



### NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. [http://www.txdot.gov/business/producer\\_list.htm](http://www.txdot.gov/business/producer_list.htm) The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

### GENERAL NOTES:

- Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
- Material used as post with this system shall conform to the following specifications:
  - 10 BWG Tubing (2.875" outside diameter)
    - 0.134" nominal wall thickness
    - Seamless or electric-resistance welded steel tubing or pipe
    - Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
    - Other steels may be used if they meet the following:
      - 55,000 PSI minimum yield strength
      - 70,000 PSI minimum tensile strength
      - 20% minimum elongation in 2"
    - Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
    - Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
    - Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
  - Schedule 80 Pipe (2.875" outside diameter)
    - 0.276" nominal wall thickness
    - Steel tubing per ASTM A500 Gr C
    - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
      - 46,000 PSI minimum yield strength
      - 62,000 PSI minimum tensile strength
      - 21% minimum elongation in 2"
    - Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
    - Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
    - Galvanization per ASTM A123
- See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: <http://www.txdot.gov/publications/traffic.htm>
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

### ASSEMBLY PROCEDURE

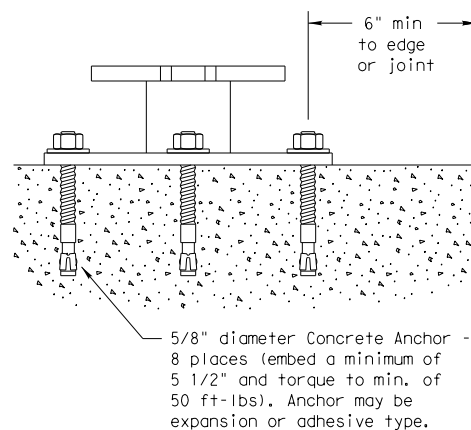
#### Foundation

- Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
- The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
- Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
- Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
- The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

#### Support

- Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
- Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

### CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxyes and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

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 Traffic Operations Division

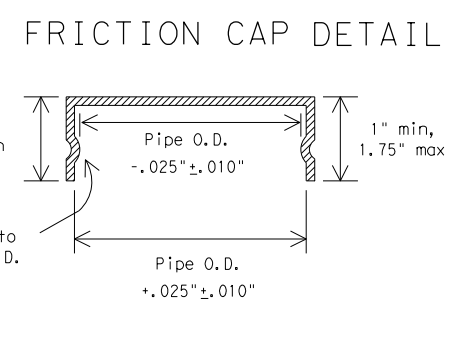
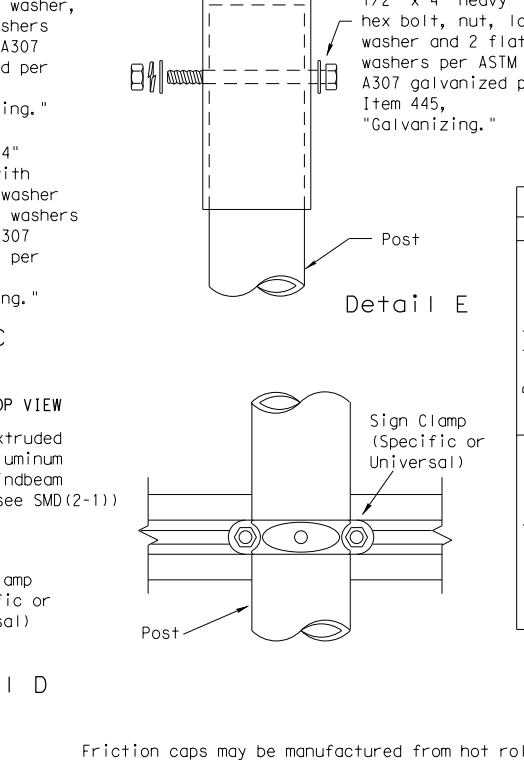
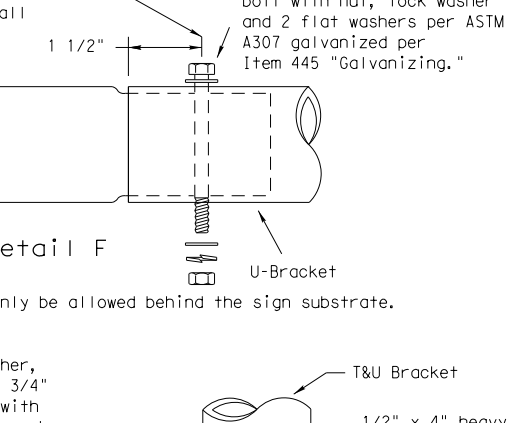
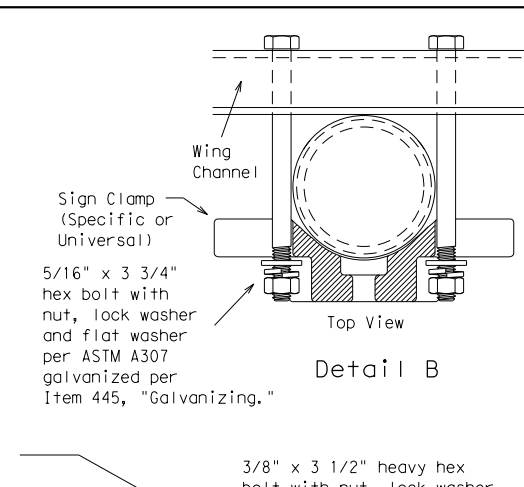
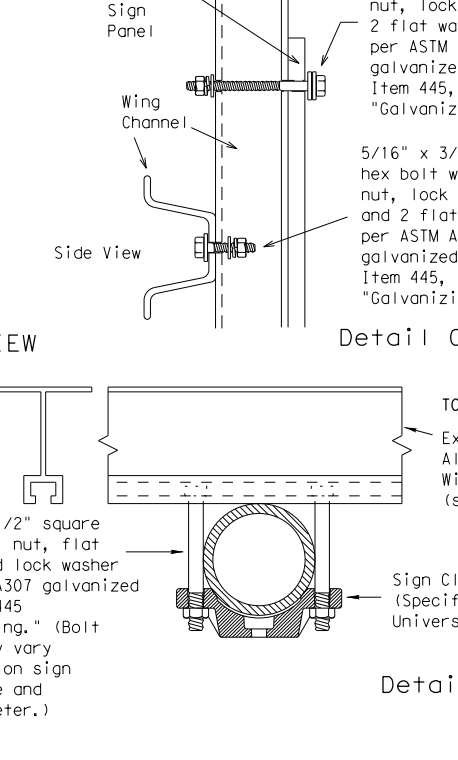
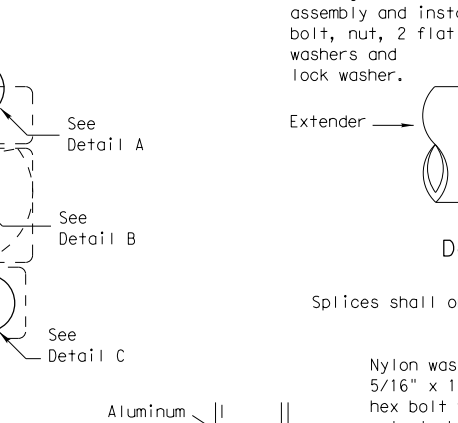
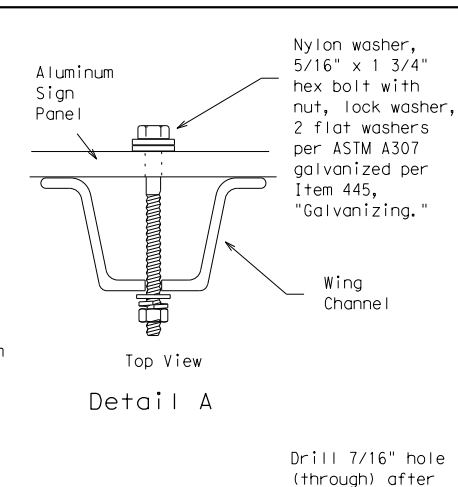
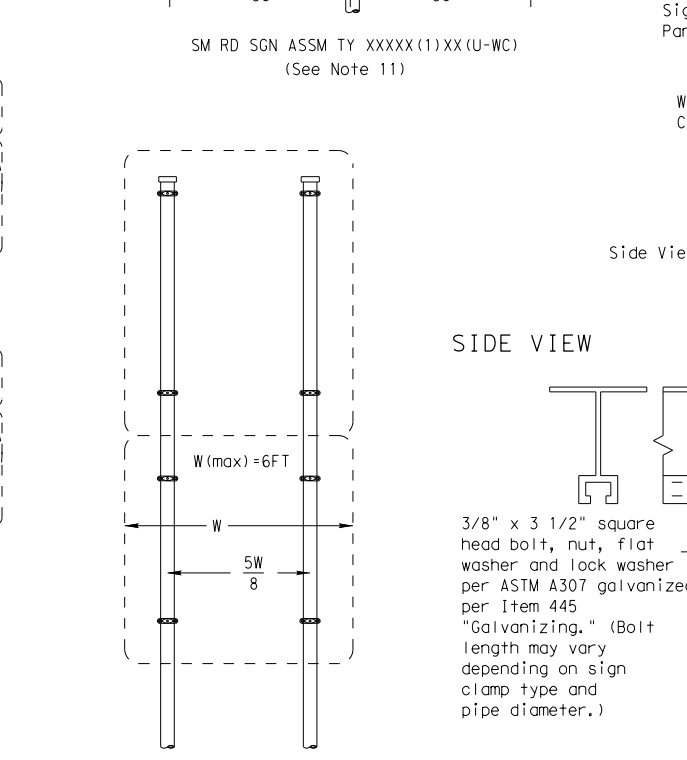
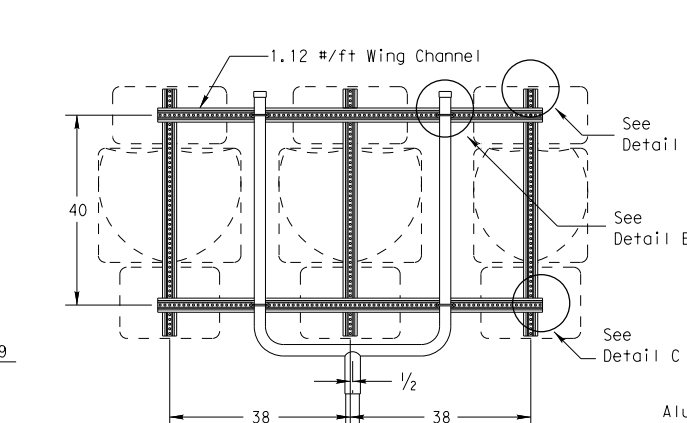
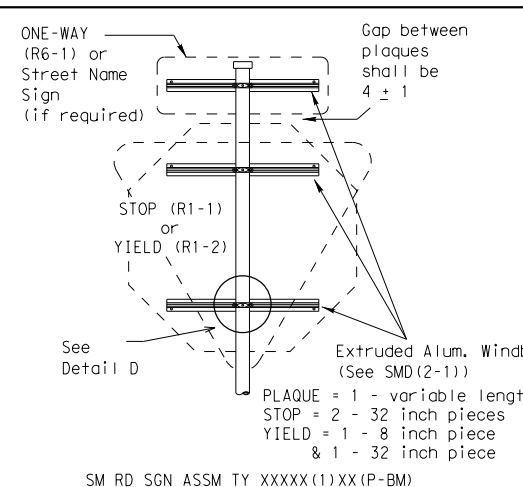
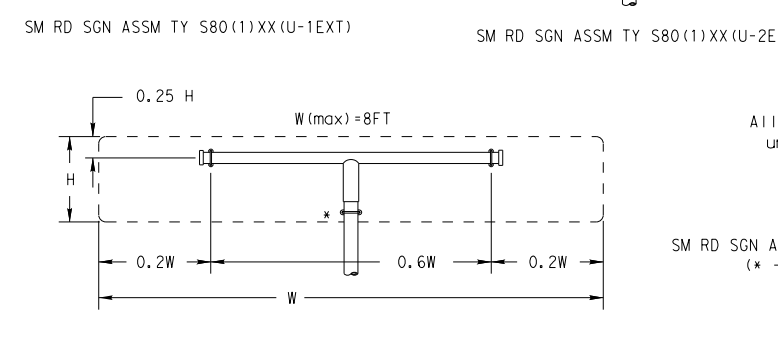
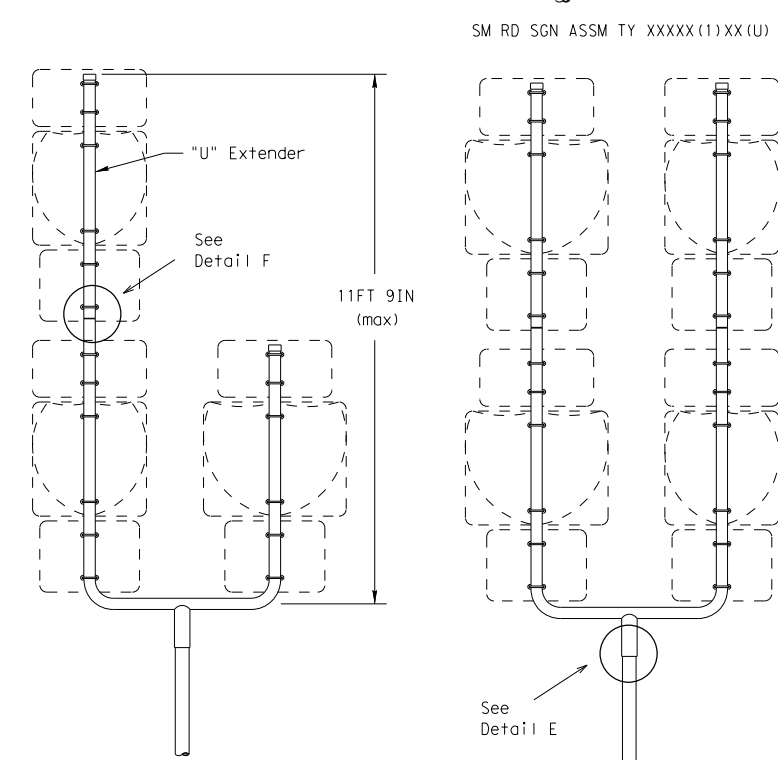
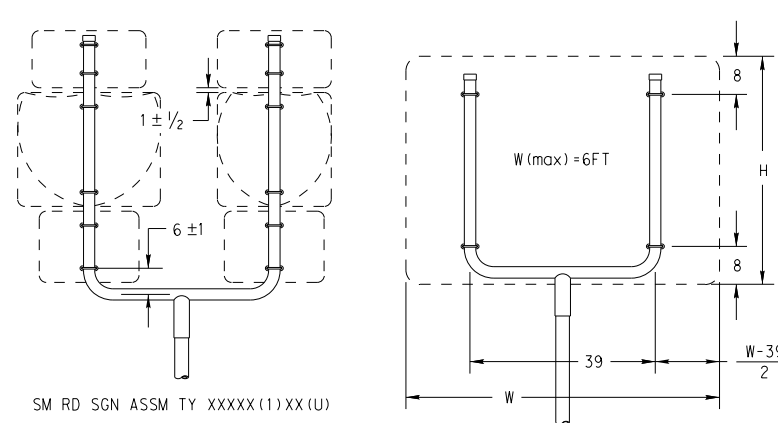
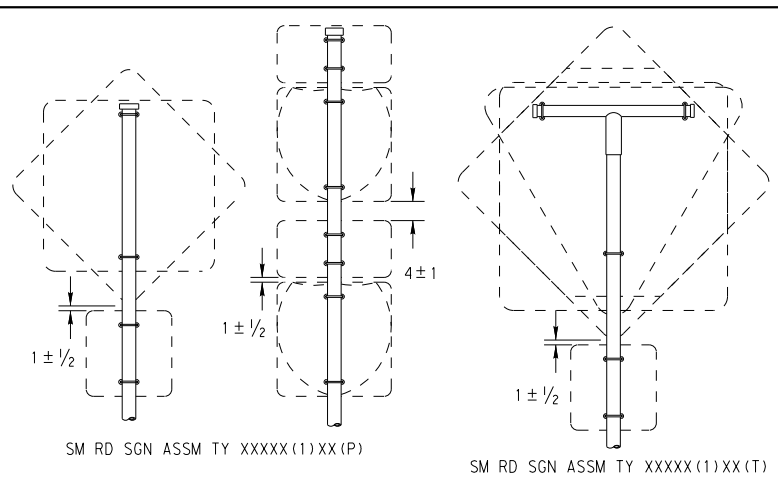
SIGN MOUNTING DETAILS  
 SMALL ROADSIDE SIGNS  
 TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

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9-08	CONT	SECT	JOB	HIGHWAY
	0915	12	586	VA
	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	317	

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All dimensions are in english unless detailed otherwise.

SM RD SGN ASSM TY XXXX(1)XX(T) (\* - See Note 12)

GENERAL NOTES:

- | SIGN SUPPORT | # OF POSTS | MAX. SIGN AREA |
|--------------|------------|----------------|
| 10 BWG       | 1          | 16 SF          |
| 10 BWG       | 2          | 32 SF          |
| Sch 80       | 1          | 32 SF          |
| Sch 80       | 2          | 64 SF          |
- The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
- Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
- Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
- For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
- When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
- Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
- Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
- Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
- Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
- Post open ends shall be fitted with Friction Caps.
- Sign blanks shall be the sizes and shapes shown on the plans.

REQUIRED SUPPORT		
SIGN DESCRIPTION	SUPPORT	
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
Warning	48x60-inch signs	TY S80(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)	

Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes. The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture. Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

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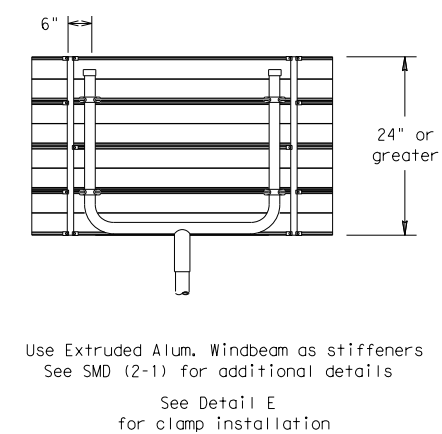
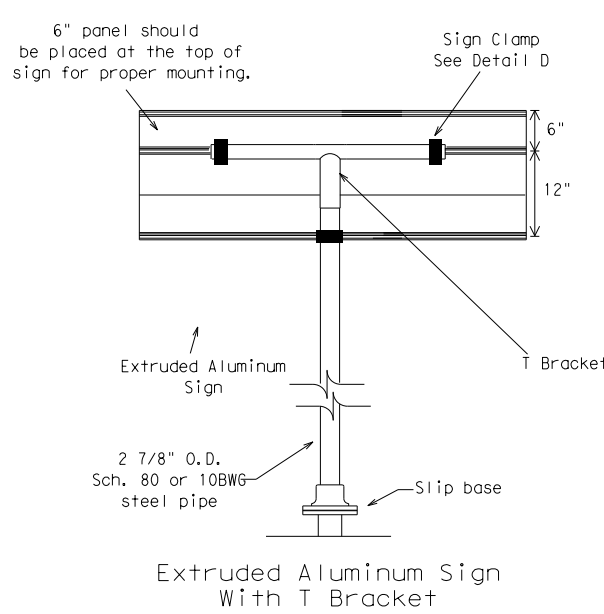
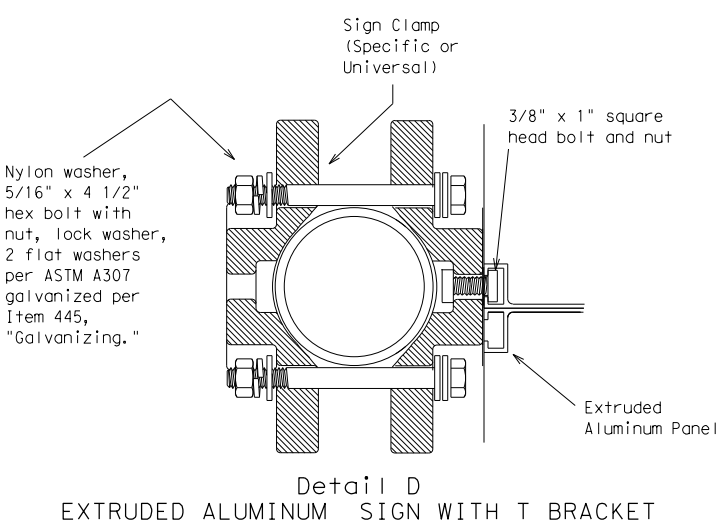
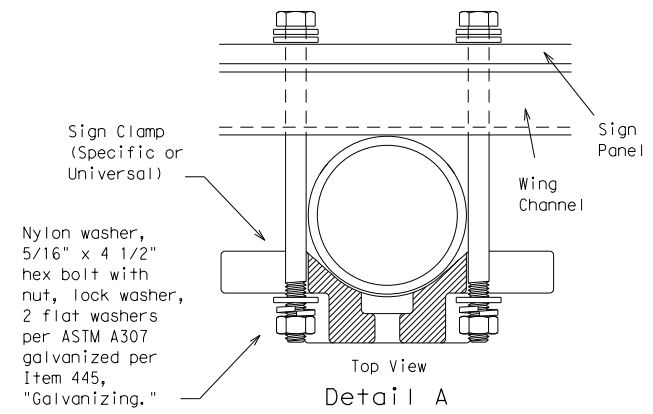
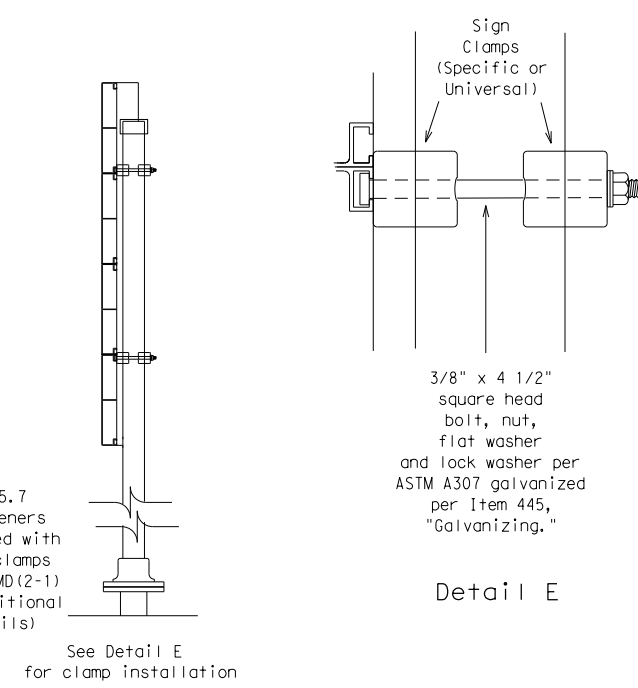
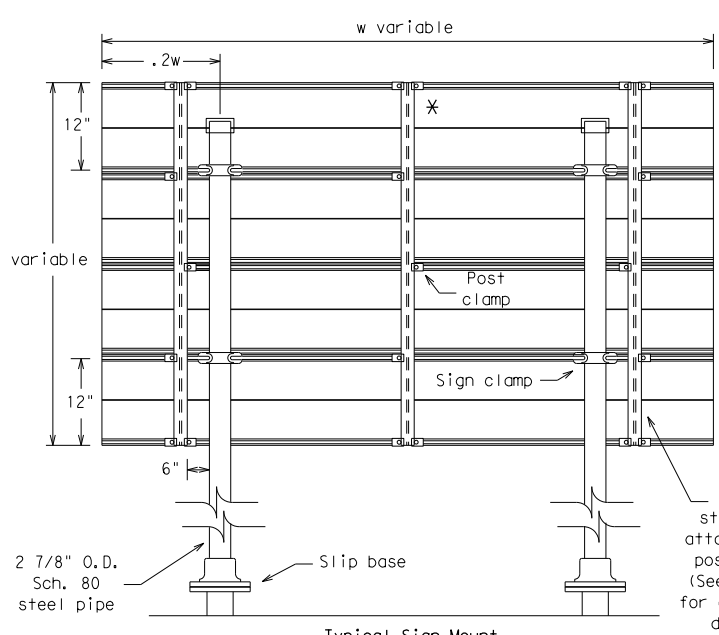
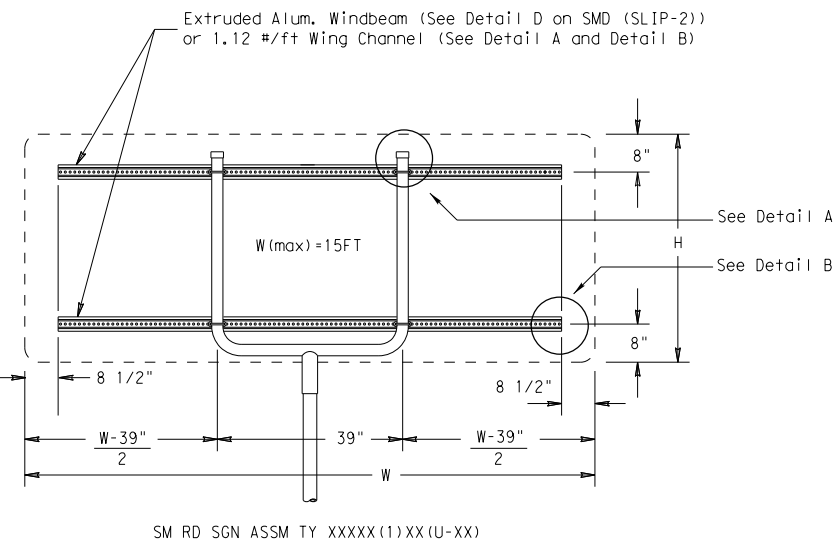
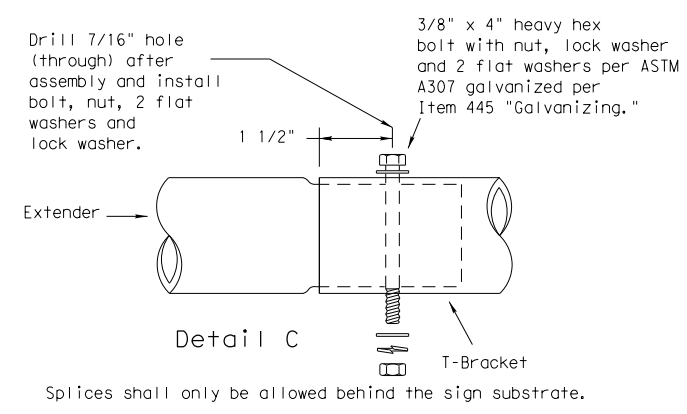
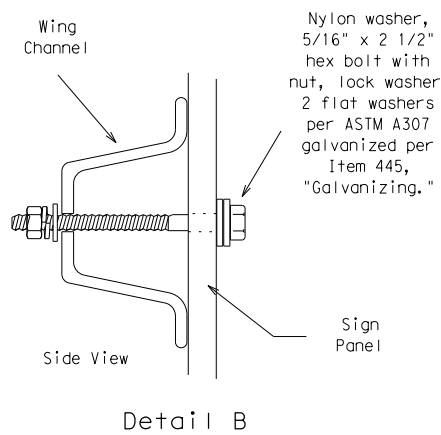
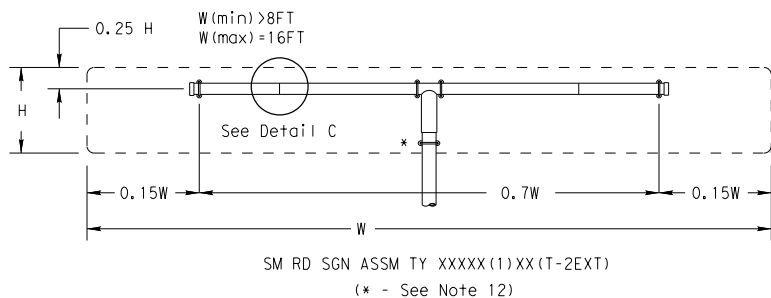
## SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

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9-08	REVISIONS	CONT	SECT	JOB	HIGHWAY
		0915	12	586	VA
		DIST	COUNTY	SHEET NO.	
		SAT	BEXAR	318	

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GENERAL NOTES:

- | SIGN SUPPORT | # OF POSTS | MAX. SIGN AREA |
|--------------|------------|----------------|
| 10 BWG       | 1          | 16 SF          |
| 10 BWG       | 2          | 32 SF          |
| Sch 80       | 1          | 32 SF          |
| Sch 80       | 2          | 64 SF          |
- The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
- Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
- Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
- For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
- When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
- Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
- Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
- Sign blanks shall be the sizes and shapes shown on the plans.
- Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
- Post open ends shall be fitted with Friction Caps.

		REQUIRED SUPPORT	
		SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)		TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)		TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)		TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs		TY 10BWG(1)XX(T)
	48x60-inch signs		TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)		TY 10BWG(1)XX(T)
	48x60-inch signs		TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)		TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)		TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)		TY 10BWG(1)XX(T)


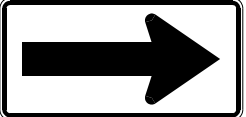


SIGN MOUNTING DETAILS  
 SMALL ROADSIDE SIGNS  
 TRIANGULAR SLIPBASE SYSTEM  
 SMD(SLIP-3) -08


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9-08	REVISIONS	CONT	SECT	JOB	HIGHWAY
		0915	12	586	VA
		DIST	COUNTY	SHEET NO.	
		SAT	BEXAR	319	

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REFLECTOR UNIT SIZES FOR DELINEATORS AND OBJECT MARKERS					DELINEATORS				D & OM DESCRIPTIVE CODES				
DEVICE	SIZE 1	SIZE 2	SIZE 3	SIZE 4	DEVICE	SINGLE		DOUBLE		INSTL DEL ASSM (D-XX)SZ X (XXX)XXX(XX) NUMBER OF REFLECTORS _____ S = Single D = Double COLOR OF REFLECTORS _____ W = White Y = Yellow R = Red REFLECTOR UNIT SIZE _____ 1 or 2 TYPE OF POST OR DELINEATOR _____ WC = Wing Channel Post FLX = Flexible Post BRF = Barrier Reflector TYPE OF MOUNT _____ GND = Embedded (drivable or set in concrete) CTB = Concrete Barrier Mount GF1 or GF2 = Guard Fence Attachment SRF = Surface Mount DIRECTION _____ If Required BI = Bi-Directional BR = Bi-Directional with red on back			
	SHEETING Yellow, White or Red Type B or C reflective sheeting					SHEETING Yellow, White or Red Type B or C Reflective Sheeting							
NOTE	1. Size 1 and 4 - Direct applied reflective sheeting for use on flexible post (flx). 2. Size 2 and 3 - For use on wing channel (wc) post only. Use approved metal, plastic or fiberglass backplate with 17/64" mounting holes.				POST TYPE	WC	FLX	WC	FLX	INSTL OM ASSM (OM-XX) (XXX)XXX(XX) TYPE OF OBJECT MARKER _____ 1, 2, 3, or 4 NUMBER OF REFLECTORS OR DIRECTION _____ X = 3-Size 2 reflector units (Type 2 only) Y = 1-Size 3 reflector unit (Type 2 only) Z = 3-Size 1 or 1-Size 4 reflector unit(s) (Type 2 only) L = Left Side (Type 3 Object Marker only) R = Right Side (Type 3 Object Marker only) C = Center (Type 3 Object Marker only) TYPE OF POST _____ WC = Wing Channel Post FLX = Flexible Post TWT = Thin Walled Tubing TYPE OF MOUNT _____ GND = Embedded (drivable) SRF = Surface Mount WAS = Wedge Anchor Steel WAP = Wedge Anchor Plastic DIRECTION _____ If Required BI = Bi-Directional			
<b>OBJECT MARKERS</b>					MOUNT TYPE	GND	GND, SRF	GND	GND, SRF				
DEVICE	Type 1 (OM-1)		Type 2 (OM-2)		Type 3 (OM-3)			Type 4 (OM-4)		DEPARTMENTAL MATERIAL SPECIFICATIONS FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES) DMS-4400 SIGN FACE MATERIALS DMS-8300 DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS DMS-8600			
	OM-1	OM-2X	OM-2Y	OM-2Z	OM-3L	OM-3R	OM-3C	OM-4					
SHEETING	Yellow-Type B <sub>FL</sub> or C <sub>FL</sub> Sheeting		Yellow - Type B or C Sheeting			Alternating acrylic black and retroreflective yellow - Type B <sub>FL</sub> or C <sub>FL</sub> Sheeting			Red -Type B <sub>FL</sub> or C <sub>FL</sub> Sheeting				
POST TYPE	TWT		WC	WC	FLX	TWT			TWT				
MOUNT TYPE	WAS, WAP		GND	GND	GND, SRF	WAS, WAP			WAS, WAP				
<b>BARRIER REFLECTORS (BRF)</b>					<b>CHEVRONS</b>				<b>ONE DIRECTION LARGE ARROW</b>				
DEVICE	GF1	GF2	CTB		DEVICE	 W1-8				DEVICE	 W1-6		
	1. Barrier reflectors shall meet the requirements of DMS 8600. 2. Approved Barrier Reflectors are listed on the "Barrier Reflectors" Material Producer List at: www.txdot.gov.			SIZE (W x L)		18" x 24" (Conventional)	24" x 30" (Conventional Oversize)	30" x 36" (Expressway)	36" x 48" (Freeway)		SIZE (W x L)	48" x 24" (Conventional)	60" x 30" (Expressway & Freeway)
SHEETING	Yellow, White, Red				MOUNTING HEIGHT	4'-0" or 7'-0"		7'-0" Only	MOUNTING HEIGHT	7'-0"			
NOTE	1. Minimum 9 square inches of reflective sheeting surface area.				NOTE	1. CHEVRON (W1-8) signs and ONE DIRECTION LARGE ARROW (W1-6) Signs shall be installed per Sign Mounting Details (SMD) Standard Sheets and paid under Item 644 (Small Roadside Sign Assemblies). 2. The Texas version of the ONE DIRECTION LARGE ARROW sign (W1-9T) may be used instead of the ONE DIRECTIONAL LARGE ARROW (W1-6).							

**NOTE:**  
 Delineator and object marker backplates and sign substrates shall be 0.080" Aluminum sign blank to conform to ASTM B-209 Alloy 6061-T6 or approved alternative.



**Texas Department of Transportation**

**DELINEATOR & OBJECT MARKER MATERIAL DESCRIPTION**

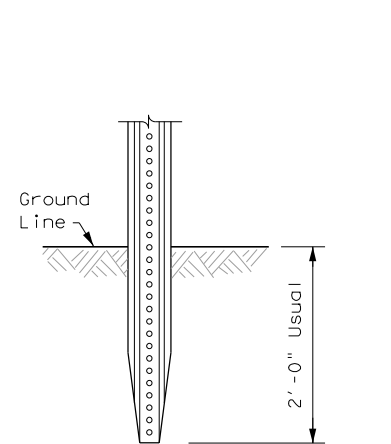
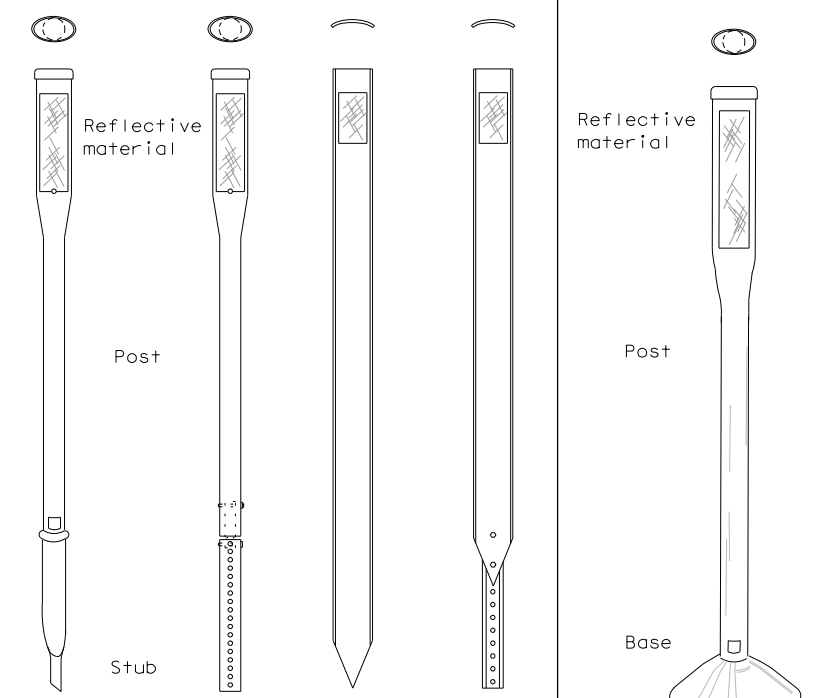
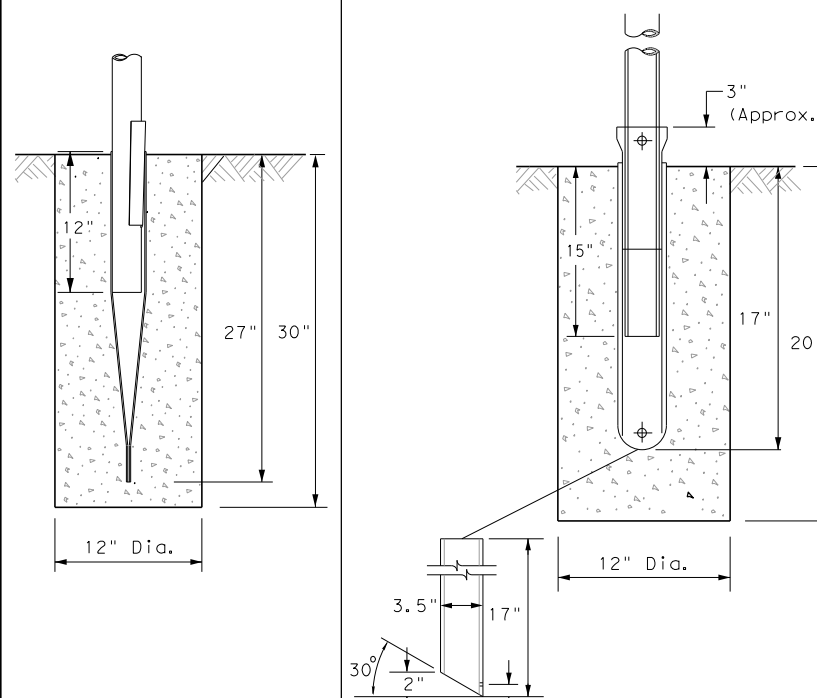
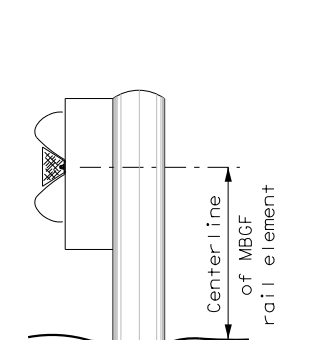
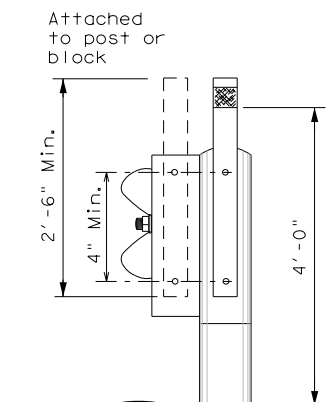
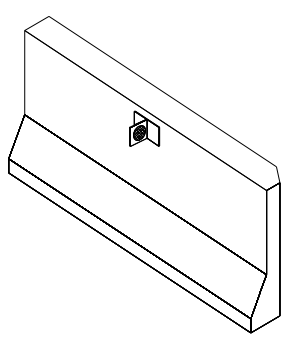
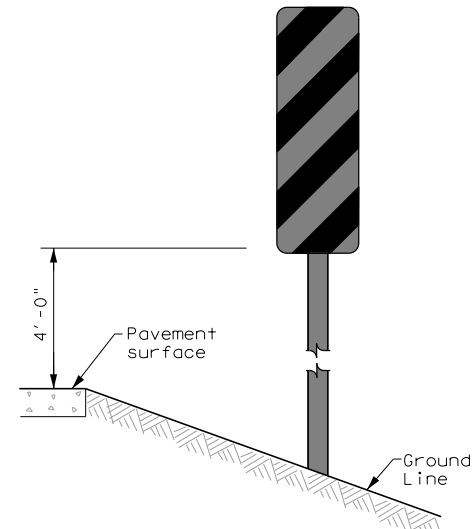
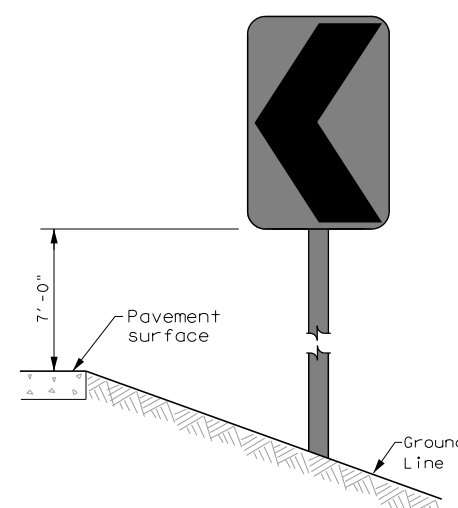
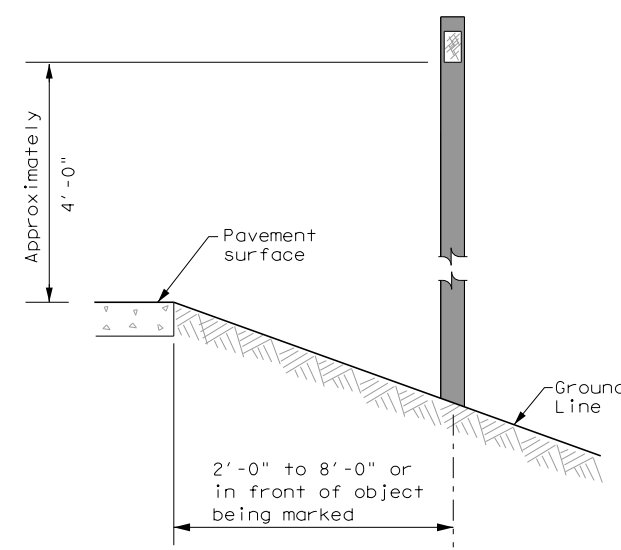

**D & OM(1) - 15**

FILE: dom1-15.dgn	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
© TXDOT August 2004	CONT	SECT	JOB	HIGHWAY
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10-09 3-15	DIST	COUNTY	SHEET NO.	
4-10	SAT	BEXAR	320	



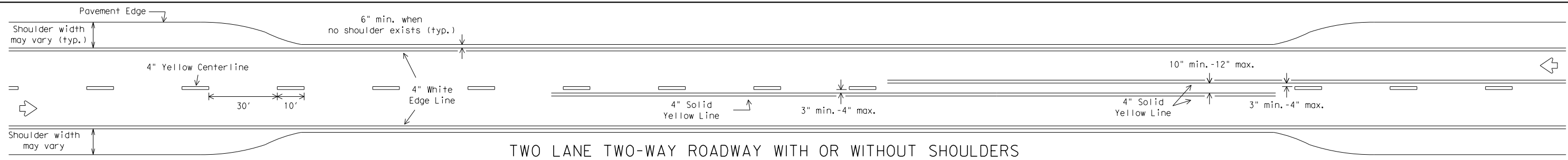
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DATE: 9/29/2017 10:17:37 AM  
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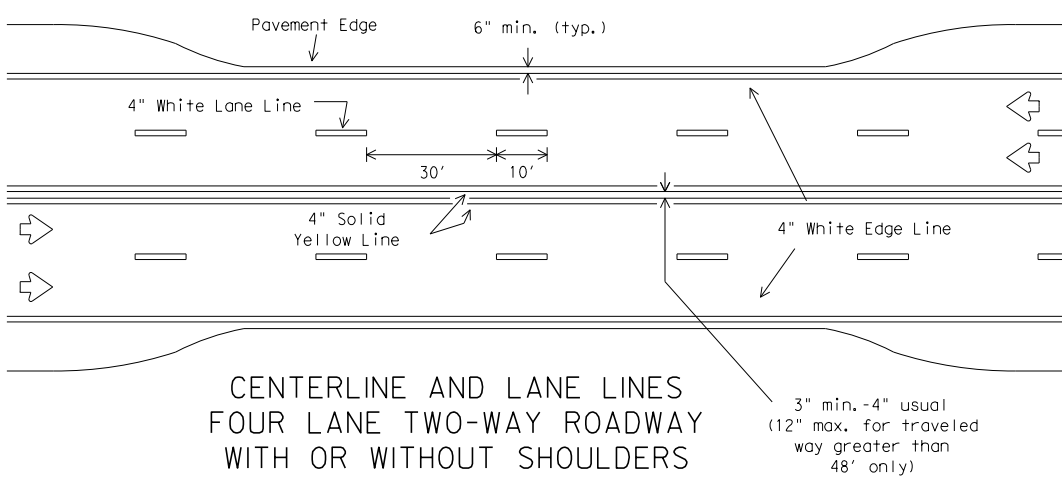
POST TYPE AND SUPPORT FOUNDATION DETAILS					TYPE OF BARRIER MOUNTS		
WING CHANNEL (WC)	FLEXIBLE POSTS (FLX)			WEDGE ANCHOR SYSTEMS		GUARD FENCE ATTACHMENT	
GND	GND	SRF	WAS	WAP	GF1	GF2	
							
	EMBEDDED		SURFACE MOUNT		STEEL		
<b>NOTES</b> 1. Embedded Wing Channel (WC) post option may be used for Type 2 Object Markers and Delineators only. 2. 1.12 lbs/ft steel per ASTM A 1011 SS Gr. 50, or ASTM A499.	<b>NOTES</b> 1. See "Flexible Delineator and Object Marker Posts" Material Producer List for approved devices. 2. Install per manufacturer's recommendations. 3. Post length may vary to meet field conditions.			<b>NOTE</b> 1. Install per manufacturer's recommendations.		<b>CONCRETE BARRIER / BRIDGE RAIL</b>  CTB 	
<b>TYPES 1,3, AND 4 OBJECT MARKERS AND CHEVRONS</b>	<b>CHEVRONS AND ONE DIRECTION LARGE ARROW SIGN</b>		<b>DELINEATORS AND TYPE 2 OBJECT MARKERS</b>				
							
<b>NOTE</b> Mounting at 4 feet to the bottom of the chevron is permitted for chevrons that will not exceed a height of 6'-6" to the top of the chevron (sizes 24" x 30" and smaller)	<b>NOTE</b> Chevrons 30" x 36" and larger shall be mounted at a height of 7' to the bottom of the chevron. Chevron sign and ONE DIRECTIONAL LARGE ARROW sign (W1-9T) shall be installed per SMD standard sheets and paid under item 644.		See general notes 1, 2 and 3.				
					<b>GENERAL NOTES</b> 1. Place delineators on a section of roadway at a consistent distance from the edge of pavement. 2. Where a restriction prevents consistent placement from the pavement edge, place the affected object markers in line with the innermost edge of the obstruction. 3. When Type 2 object markers and delineators are more than 8'-0" from the edge of the pavement, it may not be possible to maintain a height of approximately 4'-0". If this is the case, place the object marker or delineator as close to the desired height as possible. 4. Install all delineators, object markers and barrier reflectors in accordance with the manufacturer's recommendation. 5. Barrier reflectors should be installed a minimum of 18 inches above the edge of the pavement surface.		
					 <b>Texas Department of Transportation</b>		
					<b>Traffic Operations Division Standard</b>		
					<b>DELINEATOR &amp; OBJECT MARKER INSTALLATION</b>		
					<b>D &amp; OM(2) - 15</b>		
FILE: dom2-15.dgn		DN: TxDOT		CK: TxDOT		DW: TxDOT	
© TxDOT August 2004		CONT SECT		JOB		HIGHWAY	
REVISIONS		0915 12		586		VA	
10-09 3-15		DIST		COUNTY		SHEET NO.	
4-10		SAT		BEXAR		321	
						20B	

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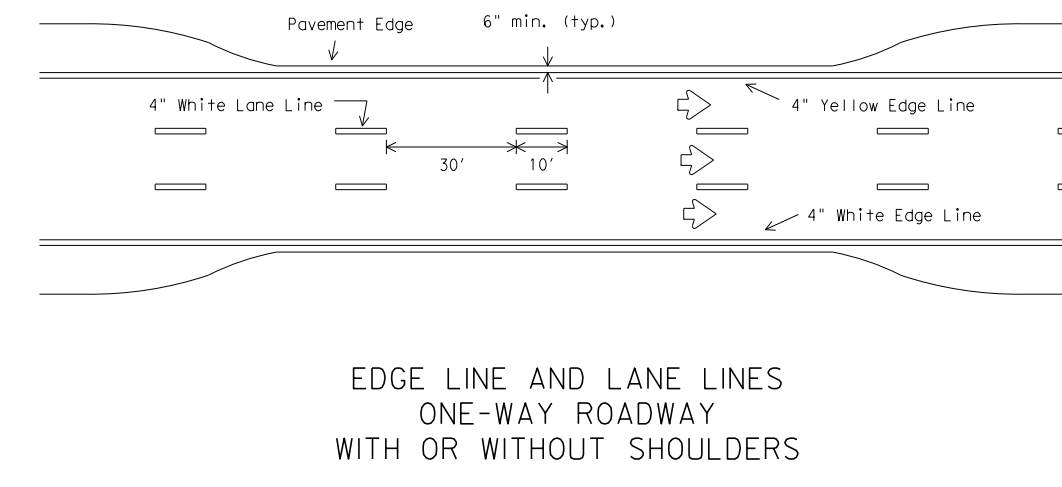
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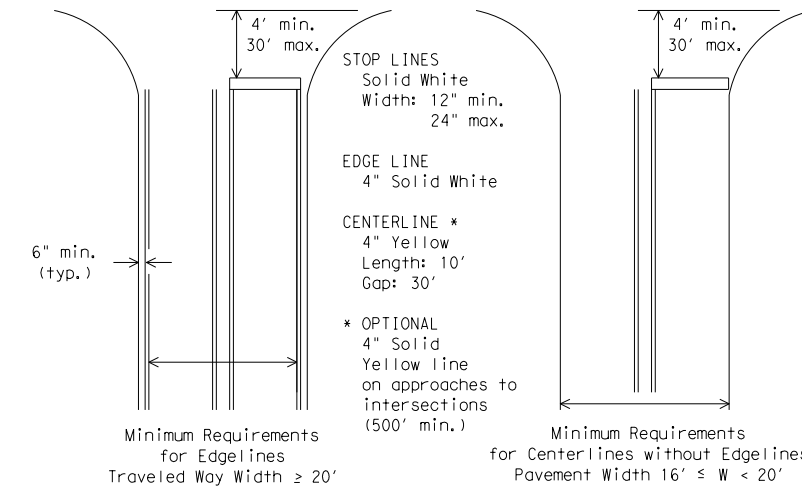
TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



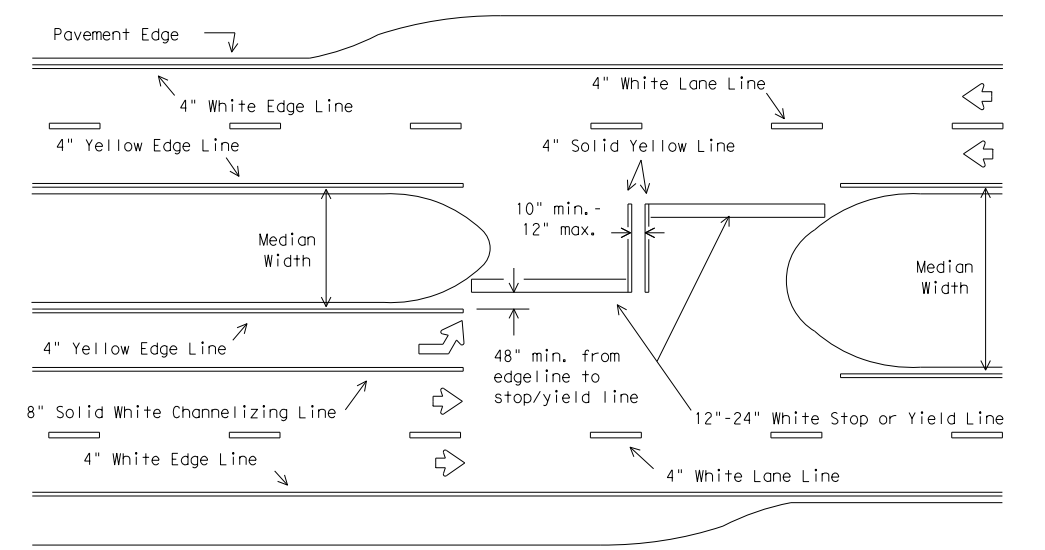
CENTERLINE AND LANE LINES  
 FOUR LANE TWO-WAY ROADWAY  
 WITH OR WITHOUT SHOULDERS



EDGE LINE AND LANE LINES  
 ONE-WAY ROADWAY  
 WITH OR WITHOUT SHOULDERS

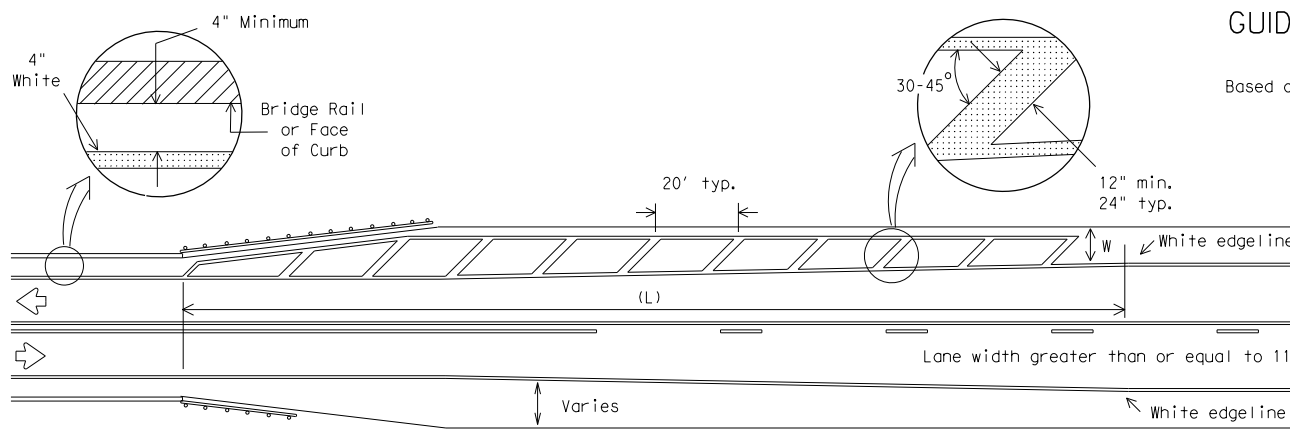


GUIDE FOR PLACEMENT OF STOP LINES,  
 EDGE LINE & CENTERLINE  
 Based on Traveled Way and Pavement Widths for Undivided Highways



FOUR LANE DIVIDED ROADWAY INTERSECTIONS

All medians shall be field measured to determine the location of necessary striping. Stop/Yield bars and centerlines shall be placed when the median width is greater than 30 ft. The median width is defined as the area between two roadways of a divided highway measured from edge of traveled way to edge of traveled way. The median excludes turn lanes. The median width might be different between intersections, interchanges and of opposite approaches of the same intersection. The narrow median width will be the controlling width to determine if markings are required.



ROADWAYS WITH REDUCED SHOULDER  
 WIDTHS ACROSS BRIDGE OR CULVERT

- NOTES:
- No-passing zone on bridge approach is optional but if used, it shall be a minimum 500 feet long.
  - For crosshatching length (L) see Table 1.
  - The width of the offset (W) and the required crosshatching width is the full shoulder width in advance of the bridge.
  - The crosshatching is not required if delineators or barrier reflectors are used along the structure.
  - For guard fence details, refer elsewhere in the plans.

TABLE 1 - TYPICAL LENGTH (L)

Posted Speed *	Formula
≤ 40	$L = \frac{WS^2}{60}$
≥ 45	$L = WS$

\* 85th Percentile Speed may be used on roads where traffic speeds normally exceed the posted speed limit. Crosshatching length should be rounded up to nearest 5 foot increment.  
 L=Length of Crosshatching (FT.) W=Width of Offset (FT.)  
 S=Posted Speed (MPH)

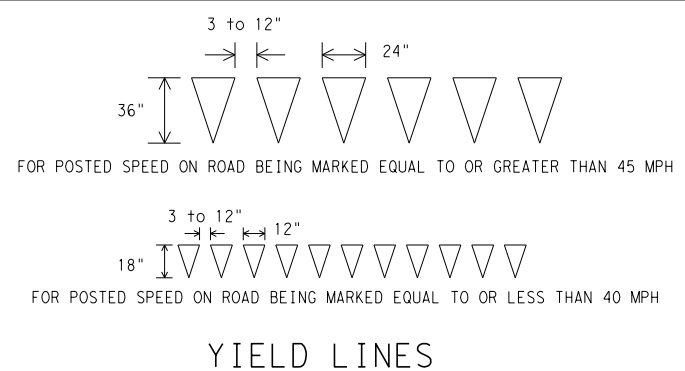
EXAMPLES:  
 An 8 foot shoulder in advance of a bridge reduces to 4 feet on a 70 MPH roadway. The length of the crosshatching should be:  
 $L = 8 \times 70 = 560$  ft.  
 A 4 foot shoulder in advance of a bridge reduces to 2 feet on a 40 MPH roadway. The length of the crosshatching should be:  
 $L = 4(40)^2 / 60 = 106.67$  ft. rounded to 110 ft.

GENERAL NOTES

- Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should typically be placed a minimum of 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.
- The traveled way includes only that portion of the roadway used for vehicular travel and not the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to inside of edgeline of a two lane roadway.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



YIELD LINES

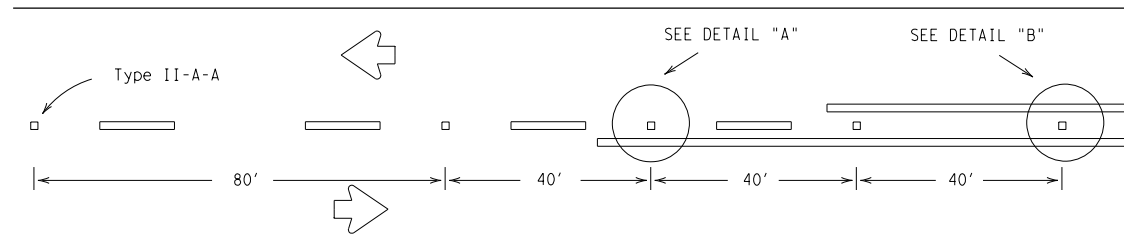
Texas Department of Transportation  
 Traffic Operations Division

TYPICAL STANDARD  
 PAVEMENT MARKINGS

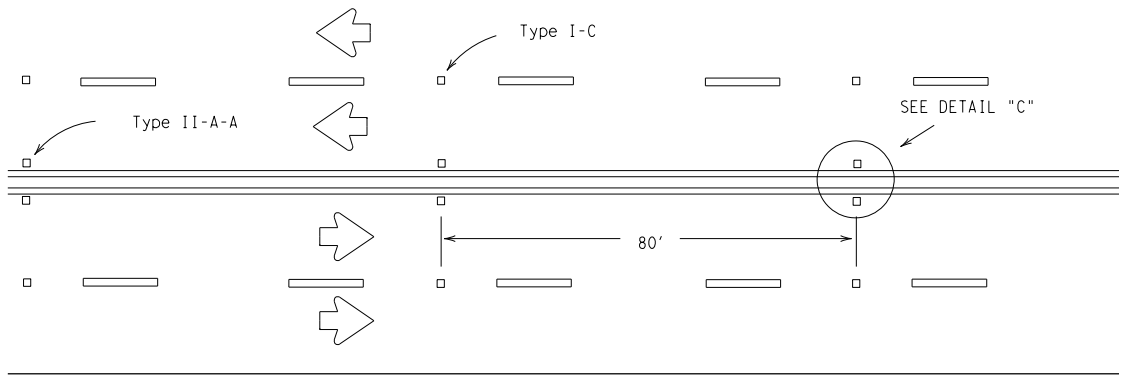
PM(1) - 12

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REVISIONS					
8-95	2-12	CONT	SECT	JOB	HIGHWAY
5-00		0915	12	586	VA
8-00		DIST		COUNTY	SHEET NO.
3-03		SAT		BEXAR	322
22A					

# REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

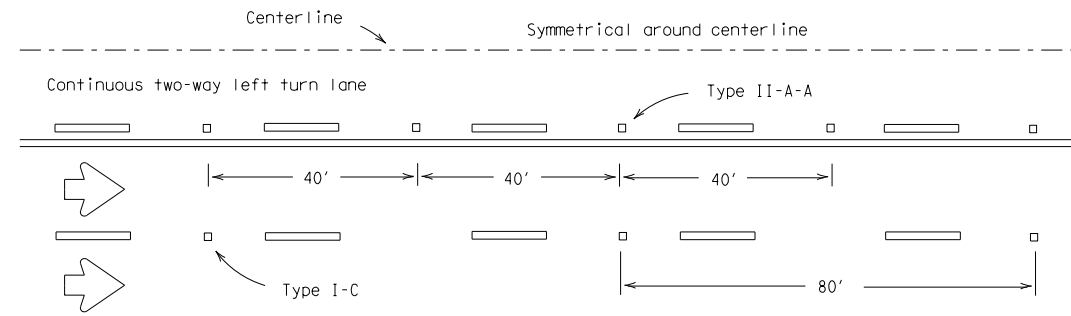


CENTERLINE FOR ALL TWO LANE ROADWAYS

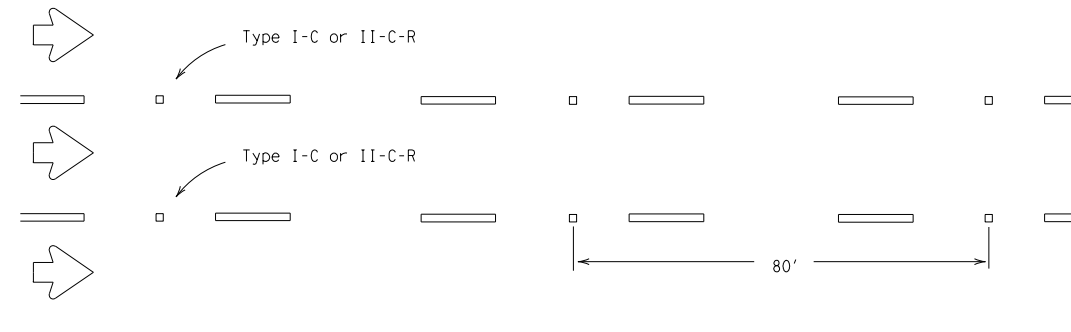


CENTERLINE & LANE LINES  
FOR FOUR LANE TWO-WAY HIGHWAYS

Raised pavement marker Type I-C, clear face toward normal traffic, shall be placed on 80-foot centers.

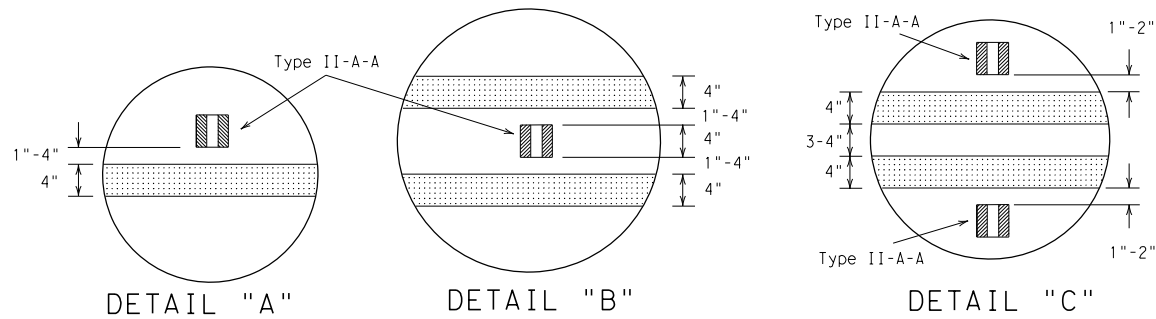


CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

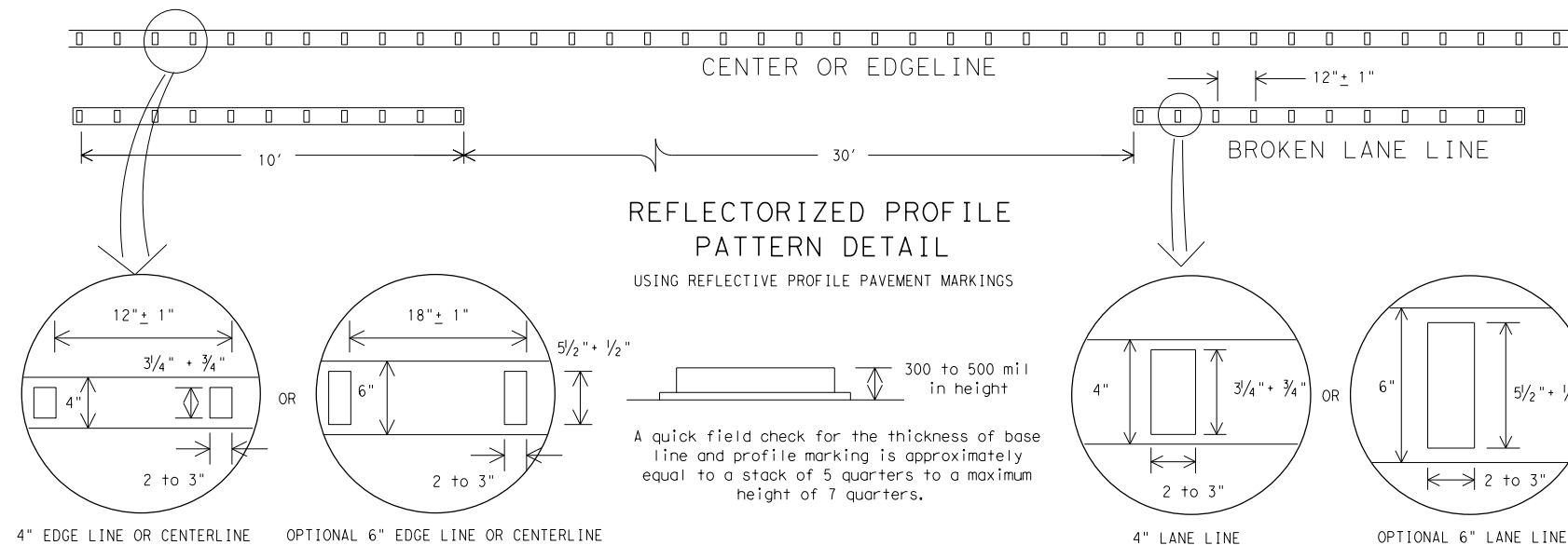
Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.



DETAIL "A"

DETAIL "B"

DETAIL "C"



REFLECTORIZED PROFILE  
PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS

A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

**NOTE:**

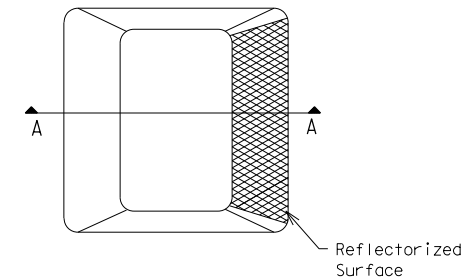
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

**GENERAL NOTES**

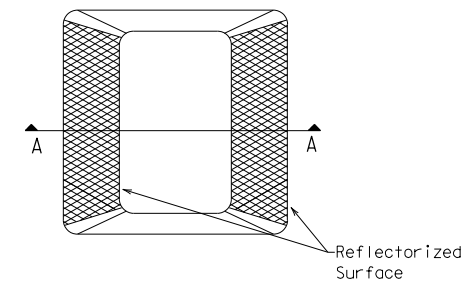
1. All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

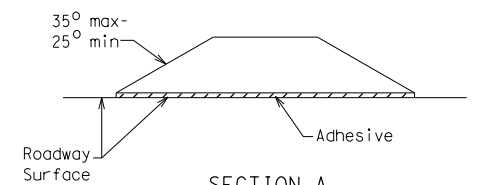
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

## RAISED PAVEMENT MARKERS



## POSITION GUIDANCE USING RAISED MARKERS REFLECTORIZED PROFILE MARKINGS

PM(2) - 12

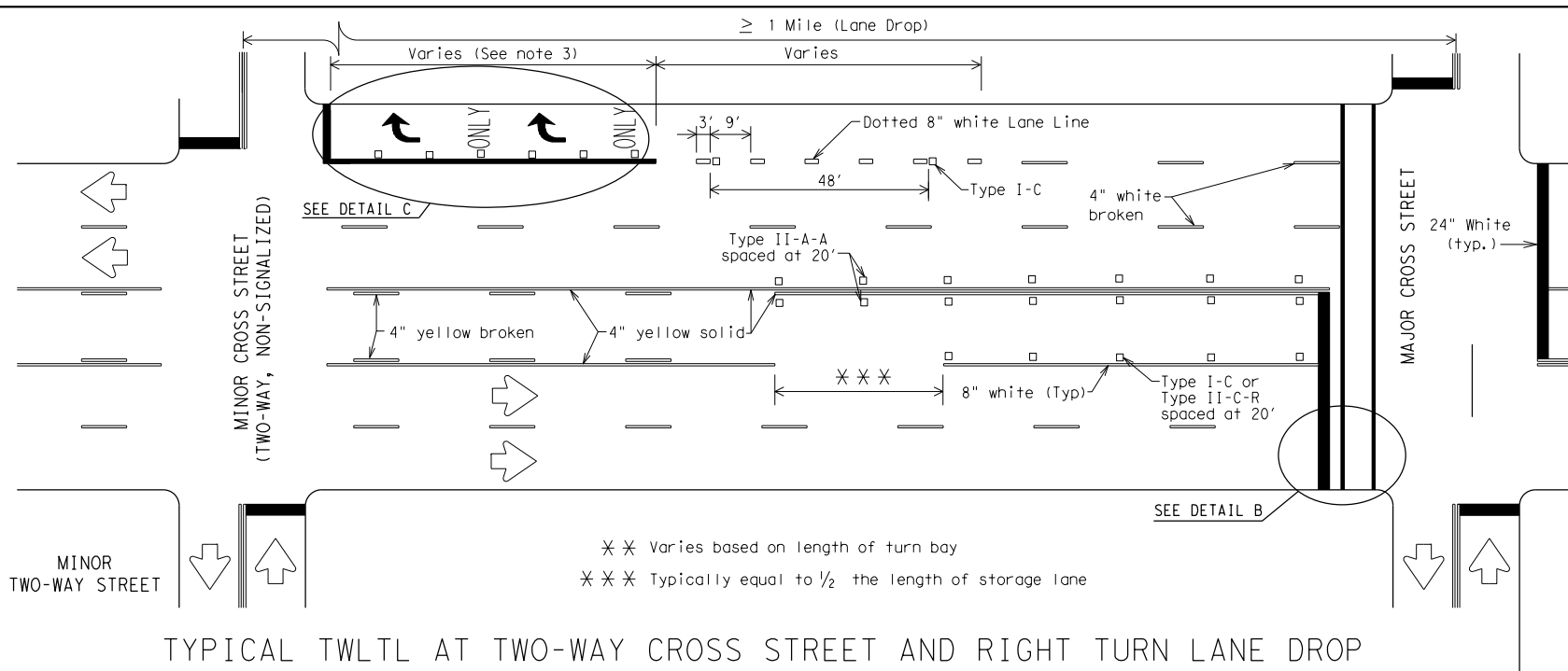
© TxDOT April 1977		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISONS					
4-92	2-10	CONT	SECT	JOB	HIGHWAY
5-00	2-12	0915	12	586	VA
8-00		DIST		COUNTY	SHEET NO.
2-08		SAT		BEXAR	323

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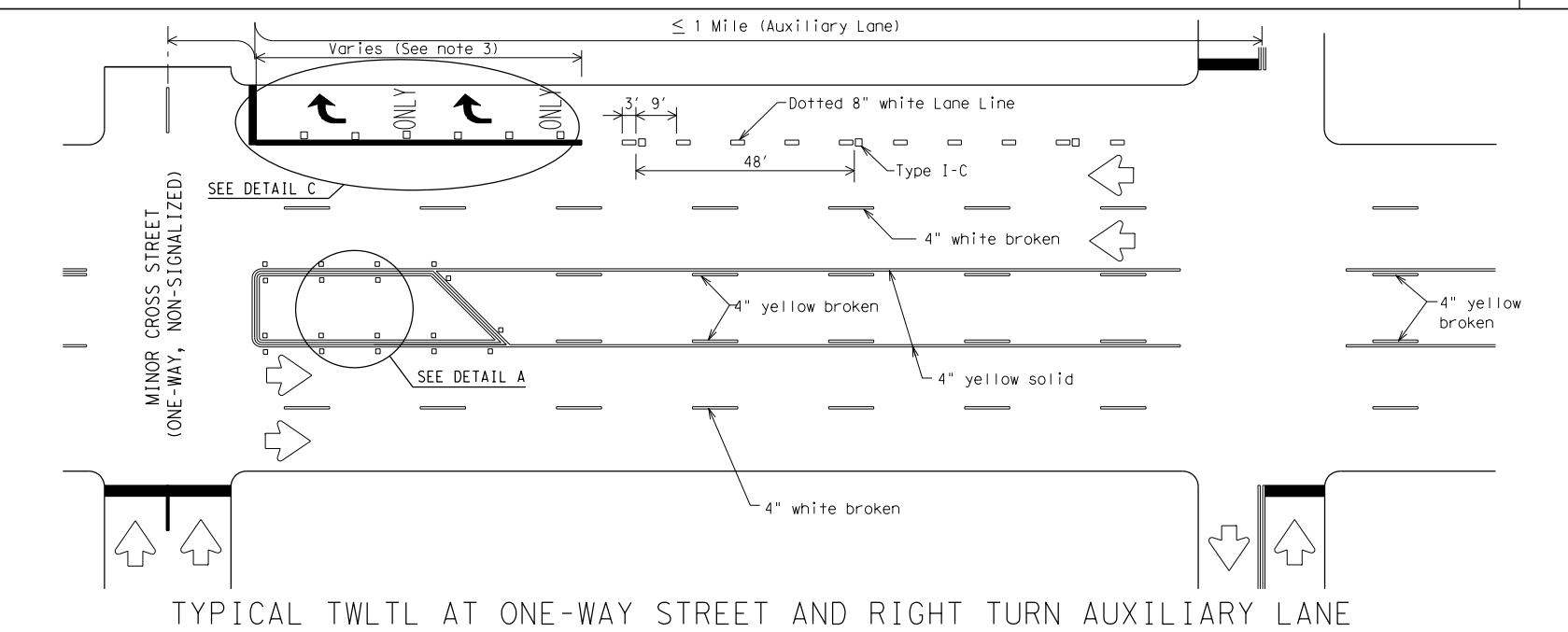
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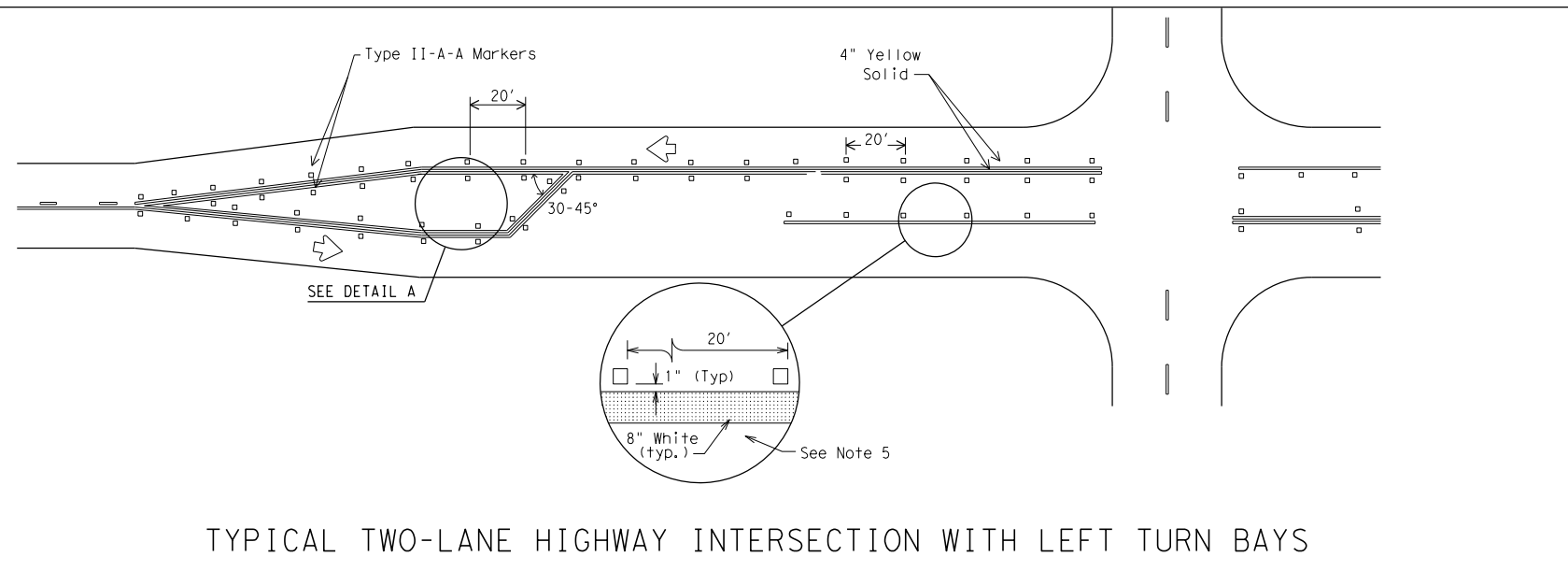
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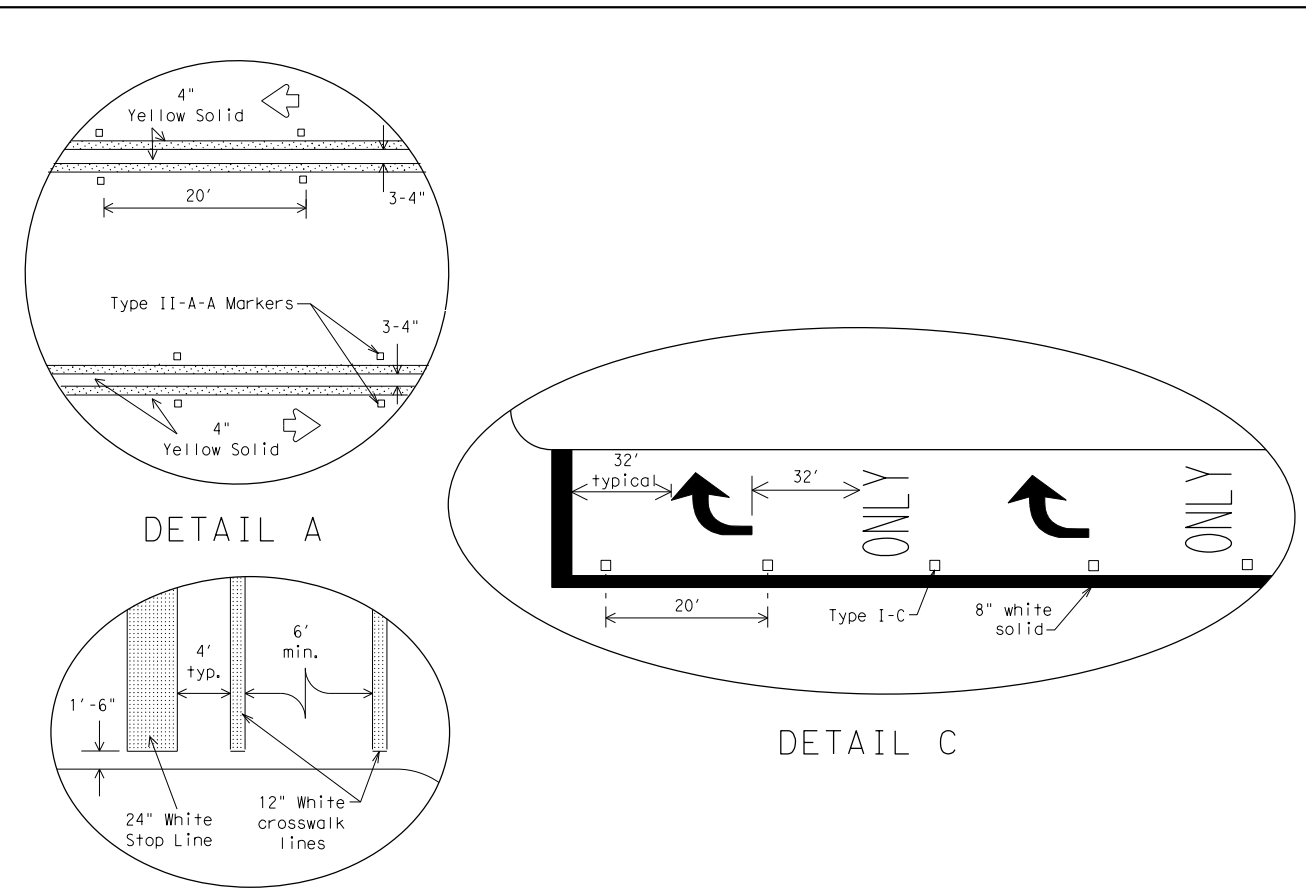
TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



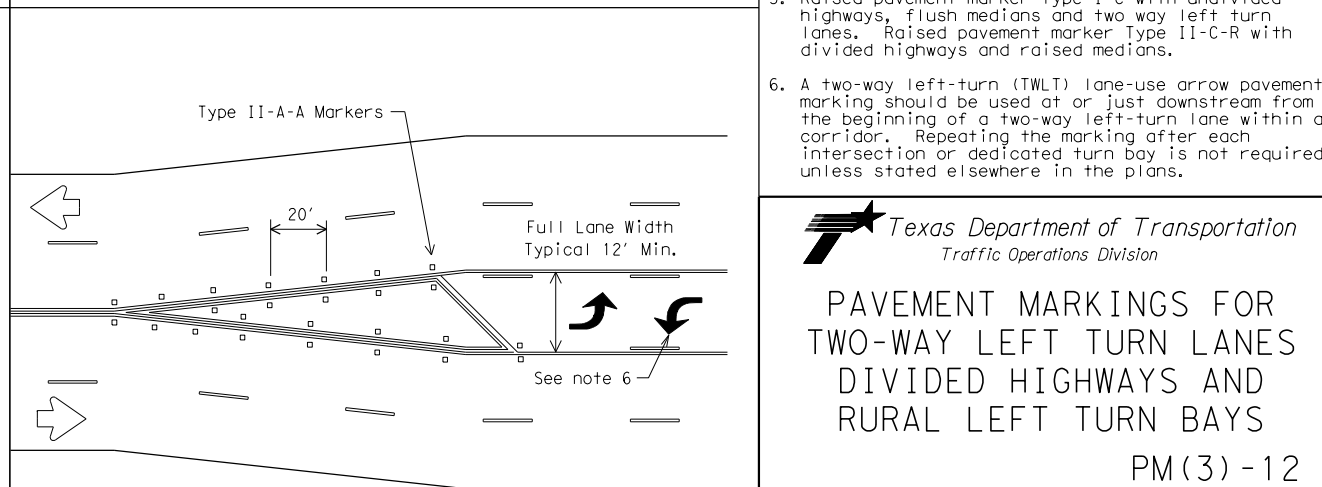
TYPICAL TWO-LANE HIGHWAY INTERSECTION WITH LEFT TURN BAYS



Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

GENERAL NOTES

- Refer elsewhere in plans for additional RPM placement and details.
- Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows as shown in the Standard Highway Sign Designs for Texas.
- When lane used word and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
- Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used.
- Raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Raised pavement marker Type II-C-R with divided highways and raised medians.
- A two-way left-turn (TWL) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.



PAVEMENT MARKINGS FOR TWO-WAY LEFT TURN LANES DIVIDED HIGHWAYS AND RURAL LEFT TURN BAYS

PM(3)-12

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REVISIONS		CONT	SECT	JOB	HIGHWAY
5-00	2-12	0915	12	586	VA
8-00					
3-03					
2-10					
		DIST	COUNTY	SHEET NO.	
		SAT	BEXAR	324	

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**GENERAL NOTES FOR ALL ELECTRICAL WORK**

- The location of all conduits, junction boxes, ground boxes, and electrical services is diagrammatic and may be shifted to accommodate field conditions.
- Provide new and unused materials. Ensure that all materials and installations comply with the applicable articles of the National Electrical Code (NEC), TxDOT standards and specifications, National Electrical Manufacturers Association (NEMA), and are listed by Underwriters Laboratories (UL) or a Nationally Recognized Testing Lab (NRTL). NRTLs such as Canadian Standard Association (CSA), Intertek Testing Services NA Inc., or FM Approvals LLC can be considered equivalent to UL. Where reference is made to NEMA listed devices, International Electrotechnical Commission (IEC) listed devices will not be considered an acceptable equal to a NEMA listed device. Acceptable devices may have both a NEMA and IEC listing. Faulty fabrication or poor workmanship in any material, equipment, or installation is justification for rejection. Replace or reinstall rejected material or equipment at no additional cost to the Department.
- Miscellaneous nuts, bolts and hardware, except for high strength bolts, may be stainless steel when plans specify galvanized, provided the bolt size is 1/2 in. or less in diameter.
- Provide the following test equipment as required by the Engineer to confirm compliance with the contract and the NEC: voltmeter, ammeter, megohm meter (1000 volt DC), ground resistance tester, torque wrenches, and torque screwdrivers. Ensure all equipment has been properly calibrated within the last year. Provide calibration certification to the Engineer upon request. Operate test equipment during inspection as requested by the Engineer.
- Install grounding as shown on the plans and in accordance with the NEC. Ensure all metallic conduits; metal poles; luminaires; and metal enclosures are bonded to the equipment grounding conductor. Provide stranded bare copper or green insulated grounding conductors. Ground rods, connectors, and bonding jumpers are subsidiary to the various bid items.
- When required by the Engineer, notify the Department in writing of materials from the Material Producers List (MPL) intended for use on each project. Prequalified materials are listed on the MPL on TxDOT's website under "Roadway Illumination and Electrical Supplies." No substitutions will be allowed for materials on this list.

**CONDUIT**

**A. MATERIALS**

- Provide conduit, junction boxes, fittings, and hardware as per TxDOT Departmental Material Specification (DMS) 11030 "Conduit" and Item 618 "Conduit" of TxDOT's "Standard Specifications For Construction And Maintenance Of Highways, Streets, And Bridges," latest edition. Provide conduits listed under Item 618 on the MPL under "Roadway Illumination and Electrical Supplies." Provide conduit types according to the descriptive code or as shown on the plans. Do not substitute other types of conduits for those shown. Provide liquidtight flexible metal conduit (LFMC) when flexible conduit is called for on galvanized steel rigid metallic conduit (RMC) systems. Provide liquidtight flexible nonmetallic conduit (LFNC) when flexible conduit is called for on polyvinyl chloride (PVC) systems.
- Provide galvanized steel RMC for all exposed conduits, unless otherwise shown on the plans. Properly bond all metal conduits.
- Unless otherwise shown on the plans, provide junction boxes with a minimum size as shown in the following table, which applies to the greatest number of conductors entering the box through one conduit with no more than four conduits per box. When a mixture of conductor sizes is present, count the conductors as if all are of the larger size. For situations not applicable to the table, size junction boxes in accordance with NEC.


AWG	3 CONDUCTORS	5 CONDUCTORS	7 CONDUCTORS
#1	10" x 10" x 4"	12" x 12" x 4"	16" x 16" x 4"
#2	8" x 8" x 4"	10" x 10" x 4"	12" x 12" x 4"
#4	8" x 8" x 4"	10" x 10" x 4"	10" x 10" x 4"
#6	8" x 8" x 4"	8" x 8" x 4"	10" x 10" x 4"
#8	8" x 8" x 4"	8" x 8" x 4"	8" x 8" x 4"

- Junction boxes with an internal volume of less than 100 cu. in. and supported by entering raceways must have threaded entries or hubs identified for the intended purpose and supported by connection of two or more rigid metal conduits. Secure conduit within 3 ft. of the enclosure or within 18 in. of the enclosure if all conduit entries are on the same side. Mechanically secure all junction boxes with an internal volume greater than 100 cu. inches.
- Provide hot dipped galvanized cast iron or sand cast aluminum outlet boxes for junction boxes containing only 10 AWG or 12 AWG conductors. Do not use die cast aluminum boxes. Size outlet boxes according to the NEC.
- Do not use intermediate metal conduit (IMC) or electrical metallic tubing (EMT) unless specifically required by the plan sheets. When EMT is called for, provide junction boxes made from galvanized steel sheeting, listed and approved for outdoor use, unless otherwise noted on the plans. Size all galvanized steel junction boxes in accordance with the NEC. Provide junction boxes for IMC conduit systems that meet the same requirements for junction boxes used with RMC systems.
- Provide PVC junction boxes intended for outdoor use on PVC conduit systems, unless otherwise noted on the plans.

- Provide PVC elbows in PVC conduit systems, unless otherwise shown on the plans. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the PVC conduit system. When galvanized steel RMC elbows are specifically called for in the plans and any portion of the RMC elbow is buried less than 18 in., ground the RMC elbow by means of a grounding bushing on a rigid metal extension. Grounding of the rigid metal elbow is not required if the entire RMC elbow is encased in a minimum of 2 in. of concrete. PVC extensions are allowed on these concrete encased rigid metal elbows. RMC or PVC elbows are subsidiary to various bid items.
- When required, provide High-Density Polyethylene (HDPE) conduit with factory installed internal conductors according to Item 622 "Duct Cable." At the Contractor's request and with approval by the Engineer, substitute HDPE conduit with no conductors for bored schedule 40 or schedule 80 PVC conduit bid under Item 618. Ensure bored HDPE substituted for PVC is schedule 40 and of the same size PVC called for in the plans. Ensure the substituted HDPE meets the requirements of Item 622, except that the conduit is supplied without factory-installed conductors. Make the transition of the HDPE conduit to PVC (or RMC elbow when required) at the bore pit. Provide conduit of the size and schedule as shown on the plans. Do not extend substituted conduit into ground boxes or foundations. Provide PVC or galvanized steel RMC elbows as called for at all ground boxes and foundations.
- Use two-hole straps when supporting 2 in. and larger conduits. On electrical service poles, properly sized stainless steel or hot dipped galvanized one-hole standoff straps are allowed on the service riser conduit.

**B. CONSTRUCTION METHODS**

- Provide and install expansion joint conduit fittings on all structure-mounted conduits at the structure's expansion joints to allow for movement of the conduit. In addition, provide and install expansion joint fittings on all continuous runs of galvanized steel RMC conduit externally exposed on structures such as bridges at maximum intervals of 150 ft. When requested by the project Engineer, supply manufacturer's specification sheet for expansion joint conduit fittings. Repair or replace expansion joint fittings that do not allow for movement at no additional cost to the Department. Provide the method of determining the amount of expansion to the Engineer upon request. Do not use LFMC or LFNC as a substitute for the required expansion conduit fittings.
- Space all conduit supports at maximum intervals of 5 ft. Install conduit spacers when attaching metal conduit to surface of concrete structures. See "Conduit Mounting Options" on ED(2). Install conduit support within 3 ft. of all enclosures and conduit terminations.
- Do not attach conduit supports directly to pre-stressed concrete beams except as shown specifically in the plans or as approved by the Engineer.
- Unless otherwise shown on the plans, jack or bore conduit placed beneath existing roadways, driveways, sidewalks, or after the base or surfacing operation has begun. Backfill and compact the bore pits below the conduit per Item 476 "Jacking, Boring, or Tunneling Pipe or Box" prior to installing conduit or duct cable to prevent bending of the connections.
- When placing conduit in the sub-grade of new roadways, backfill all trenches with excavated material unless otherwise noted on the plans. When placing conduit in the sub-base of new roadways, backfill all trenches with cement-stabilized base as per requirements of Items 110 "Excavation", 400 "Excavation and Backfill for Structures", 401 "Flowable Backfill", 402 "Trench Excavation Protection", and 403 "Temporary Special Shoring."
- Provide and place warning tape approximately 10 in. above all trenched conduit as per Item 618.
- During construction, temporarily cap or plug open ends of all conduit and raceways immediately after installation to prevent entry of dirt, debris and animals. Temporary caps constructed of durable duct tape are allowed. Tightly fix the tape to the conduit opening. Clean out the conduit and prove it clear in accordance with Item 618 prior to installing any conductors.
- Ensure conduit entry into the top of any enclosure is waterproof by installing conduit sealing hubs or using boxes with threaded bosses. This includes surface mounted safety switches, meter cans, service enclosures, auxiliary enclosures and junction boxes. Grounding bushings on water tight sealing hubs are not required.
- Fit the ends of all PVC conduit terminations with bushings or bell end fittings. Provide and install a grounding type bushing on all metal conduit terminations.
- Install a bonding jumper from each grounding bushing to the nearest ground rod, grounding lug, or equipment grounding conductor. Ensure all bonding jumpers are the same size as the equipment grounding conductor. Bonding of conduit used as a casing under roadways for duct cable is not required, if the duct extends the full length through the casing.
- At all electrical services, install a 6 AWG solid copper grounding electrode conductor.
- Place conduits entering ground boxes so that the conduit openings are between 3 in. and 6 in. from the bottom of the box. See the ground box detail on sheet ED(4).
- Seal ends of all conduits with duct seal, expandable foam, or by other methods approved by the Engineer. Seal conduit immediately after completion of conductor installation and pull tests. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a conduit sealant.
- File smooth the cut ends of all mounting strut and conduit. Before installing, paint the field cut ends of all mounting strut and RMC (threaded or non-threaded) with zinc rich paint (94% or more zinc content) to alleviate overspray. Use zinc rich paint to touch up galvanized material as allowed under Item 445 "Galvanizing." Do not paint non-galvanized material with a zinc rich paint as an alternative for materials required to be galvanized.

		<b>Traffic Operations Division Standard</b>	
<h1>ELECTRICAL DETAILS CONDUITS &amp; NOTES</h1>			
<h2>ED(1) - 14</h2>			
FILE:	ed1-14.dgn	DN:	CK:
© TxDOT	October 2014	CON:	SECT:
REVISIONS		0915	12
		586	VA
		DIST:	COUNTY:
		SAT	BEXAR
		SHEET NO.	
		325	

ELECTRICAL CONDUCTORS

A. MATERIAL INFORMATION

1. Provide Type XHHW insulated conductors in accordance with Departmental Material Specification (DMS)11040 "Conductors" and Item 620 "Electrical Conductors." Provide conductors as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies" Item 620. Color code insulated conductors in conformance with the NEC. Identify grounded (neutral) conductors with white insulation. Identify grounding conductors (ground wires) with green insulation or bare conductors. Identify ungrounded (hot) conductors with any color insulation except green, white, or gray. Keep color scheme consistent throughout the wiring system. Identify conductors 6 American Wire Gauge (AWG) and smaller by continuous color jacket. Identify electrical conductors 4 AWG and larger by continuous color jacket or by colored tape. When identifying conductors with colored tape, mark at least 6 in. of the conductor's insulation with half laps of tape.
2. Provide a solid copper 6 AWG grounding electrode conductor to bond the electrical service equipment to the concrete encased grounding electrode or the ground rod at the service location. Connect the grounding electrode conductor to the ground rod with a UL listed connector in accordance with DMS 11040. Connect the grounding electrode conductor to the concrete encased grounding electrode as shown in the plans.
3. Where two or more circuits are present in one conduit or enclosure, permanently identify the conductors of each branch circuit by attaching a non-metallic tag around both circuit conductors at each accessible location. Provide tags with two straps, large enough to indicate circuit number, letter, or other identification as shown in the plans. Print circuit identification on the tag with a permanent marker.
4. Use listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors for splicing as specified in DMS 11040. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Provide UL listed gel-filled insulating splice covers. Splicing materials, insulating materials, breakaway disconnects, splice covers, and fuse holders are subsidiary to various bid items.

B. CONSTRUCTION METHODS

1. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the conduit system. After installing conductors in conduit, perform conductor pull test. If a conductor cannot be freely pulled, make any needed alterations or repairs at no additional cost to the department. Perform insulation resistance tests in accordance with Item 620. Coordinate with the Engineer to witness the tests.
2. Leave 2 ft. minimum, 3 ft. maximum length for each conductor up to the splice in ground boxes. Leave 3 ft. minimum, 4 ft. maximum length of conductor in ground boxes when pulled through with no splice. Leave 1 ft. minimum, 1.5 ft. maximum length of conductor at enclosures, weatherheads and pole bases.
3. Make splices only in junction boxes, ground boxes, pole bases, or electrical enclosures and use only listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors. Insulate splices with heavy wall heat shrink tubing or gel-filled insulating splice covers to provide a watertight splice. Overlap conductor insulation with heat shrink tubing a minimum of 2 in. past both sides of the splice. Where heat shrink tubing may not shrink sufficiently to provide a watertight seal around the individual conductors, prior to heating the tubing, increase the diameter of the conductor insulation using hot melt adhesive tape to provide a watertight seal between the individual conductors and the heat shrink tubing. Ensure the tape extends past the heat shrink tubing. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Heat shrink tubing that appears to have been burned, or overheated, is considered defective and must be replaced.
4. Size and install gel-filled insulating splice covers according to manufacturer's specifications when used in place of heat shrink tubing.
5. Wire nuts with factory applied waterproof sealant may be used for 8 AWG or smaller conductors in above ground junction boxes, but not in pole bases or ground boxes. Install wire nuts in an upright position to prevent the accumulation of water.
6. Support conductors in illumination poles with a J-hook at the top of the pole.
7. When terminating conductors, remove the insulation and jacketing material without nicking the individual strands of the conductor. Conductors with nicked individual conductor strands or removed strands will be considered damaged.
8. Replace conductors and cables that are damaged beyond repair or that fail an insulation resistance test at no additional cost to the department.
9. Do not repair damaged conductors with duct tape, electrical tape, or wire nuts. Use only approved splicing methods.
10. Do not terminate more than one conductor under a single connector, unless the connector is rated for multiple conductors. Do not exceed the pressure connector's listing for maximum number and size of conductors allowed.
11. Install breakaway connectors on conductors bid under Item 620 whenever those conductors pass through a breakaway support device. Follow manufacturer's instructions when terminating conductors to breakaway connectors. Properly torque threaded connections. Proper terminations are critical to the safe operation of breakaway devices. Trim waterproofing boots on breakaway connectors to fit snugly around the conductor to ensure waterproof connection. Only one conductor may enter a single opening in a boot. Provide waterproof boots with the correct number of openings. Leave unused openings factory sealed. Use prequalified breakaway connectors as shown on the MPL.

12. Provide and install a separate stranded equipment grounding conductor (EGC) in all conduits that contain circuit wiring of 50 volts or more. Unless shown elsewhere, size the EGC to be the same size as the largest current carrying conductor contained in the conduit. Ensure all EGCs are bonded together at every accessible location. For traffic signal installations, provide a minimum size 8 AWG EGC. The EGC is paid for under Item 620.

C. TEMPORARY WIRING

1. Install temporary conductors and electrical equipment in accordance with the NEC article "Temporary Installations" and Department standard sheets.
2. Provide a ground fault circuit interrupter (GFCI) for power outlets for portable electrical equipment, power tools, ice machines, ice storage bins and refrigerators located outdoors at grade. GFCI may be any one of the following: molded cord and plug set, receptacle, or circuit breaker type.
3. Use listed wire nuts with factory applied sealant for temporary wiring where approved.
4. Enclose conductor splices within a listed enclosure or ground box, or ensure the splices are more than 10 ft. above grade vertically and more than 5 ft. horizontally from any metal structure. Where installing temporary conductors in areas subject to vehicle traffic or mobile construction equipment, ensure the vertical clearance to ground is at least 18 ft. when measured at the lowest point. Ground messenger wires that support power conductors in conformance with the NEC.
5. Protect and when necessary repair any existing electrical conduits uncovered during the construction process in a timely manner and in conformance with the NEC.

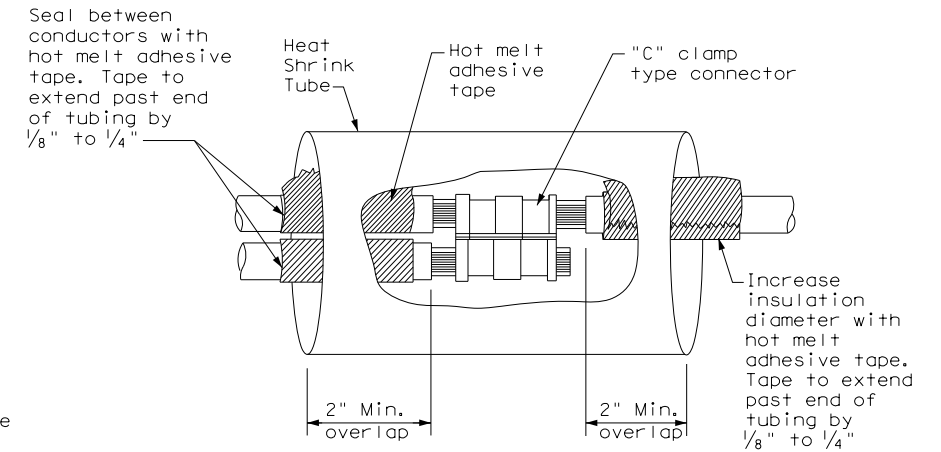
GROUND RODS & GROUNDING ELECTRODES

A. MATERIAL INFORMATION

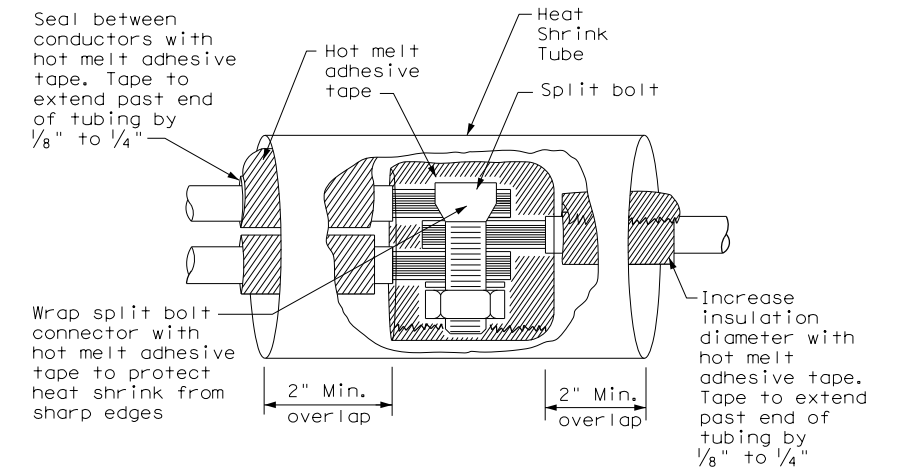
1. Provide and install a grounding electrode at electrical services. Provide ground rods according to DMS 11040 and the plans. Larger diameter or longer length rods may be called for in some specific locations, see the individual plans sheets. Concrete encased grounding electrodes may be called for in specific locations including electrical service, see individual plan sheets.

B. CONSTRUCTION METHODS

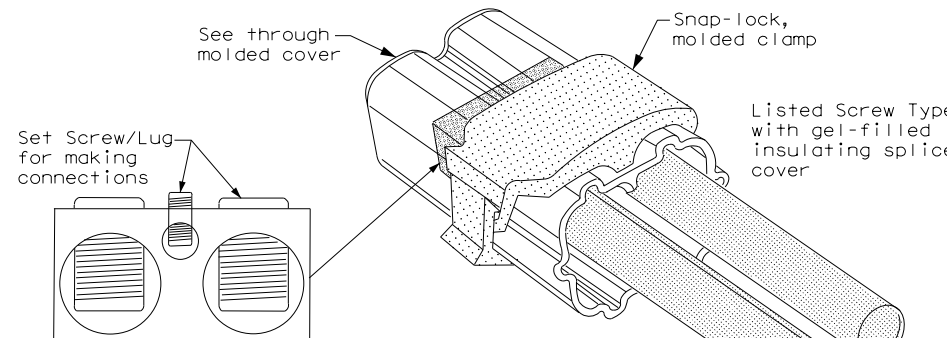
1. Furnish auxiliary ground rods for lightning protection and install in soil, concrete, or both, as called for in the plans. For ground rods installed in concrete, ensure the connection of the conductor to the ground rod is readily accessible for inspection or repairs. For ground rods installed in soil, ensure that the upper end is between 2 to 4 in. below finished grade.
2. Do not place ground rods in the same drilled hole as a timber pole.
3. Install ground rods so the imprinted part number is at the upper end of the rod.
4. Remove all non-conductive coatings such as concrete splatter from the rod at the clamp location.
5. Route all conductors as short and straight as possible for connection to lightning protection ground rods. When a bend is required, ensure a minimum radius bend of four inches for these conductors.
6. Unless otherwise called for in the plans, protect grounding electrode conductors with non-metallic conduit. When protecting grounding electrode conductors with metal conduit, provide and install a grounding type bushing and properly sized bonding jumper on each end of the metal conduit.
7. Written authorization is required before installing a ground rod in a horizontal trench for rocky soil or a solid rock bottom.



SPLICE OPTION 1  
Compression Type



SPLICE OPTION 2  
Split Bolt Type



SPLICE OPTION 3  
Listed Screw Type

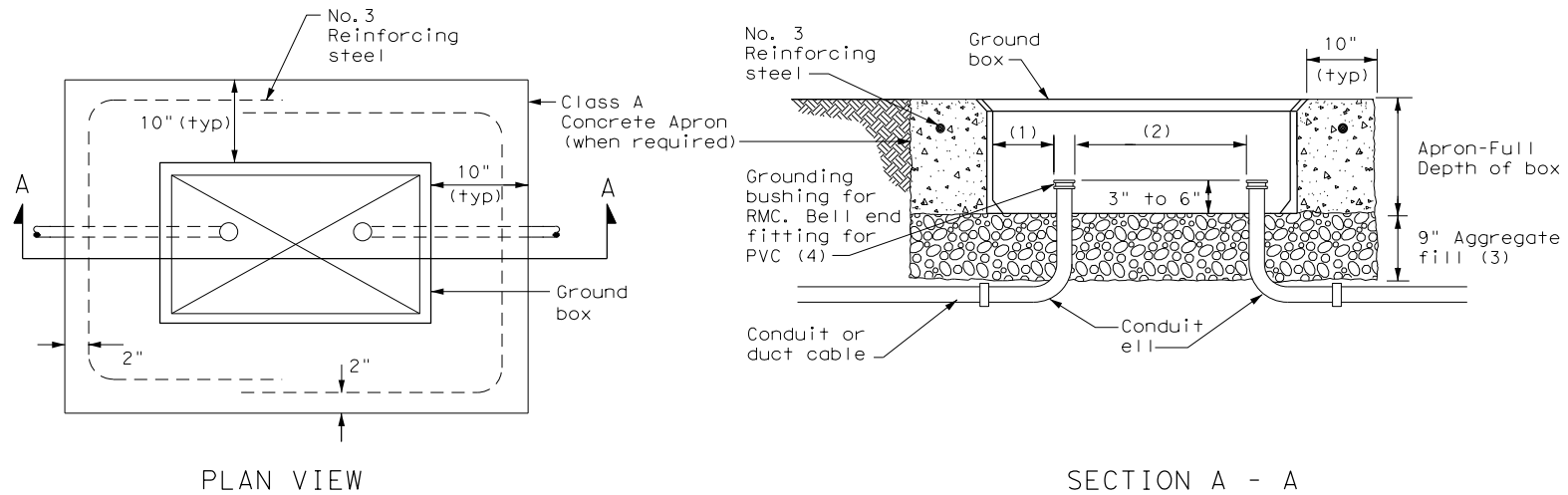
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		<b>Texas Department of Transportation</b>		<b>Traffic Operations Division Standard</b>	
<h2>ELECTRICAL DETAILS CONDUCTORS</h2>					
<h3>ED(3) - 14</h3>					
FILE:	ed3-14.dgn	DN:	TxDOT	CK:	TxDOT
© TxDOT	October 2014	CON:	0915	SECT:	12
REVISIONS		JOB:	586	HIGHWAY:	VA
		DIST:	COUNTY	SHEET NO.	
		SAT:	BEXAR	326	

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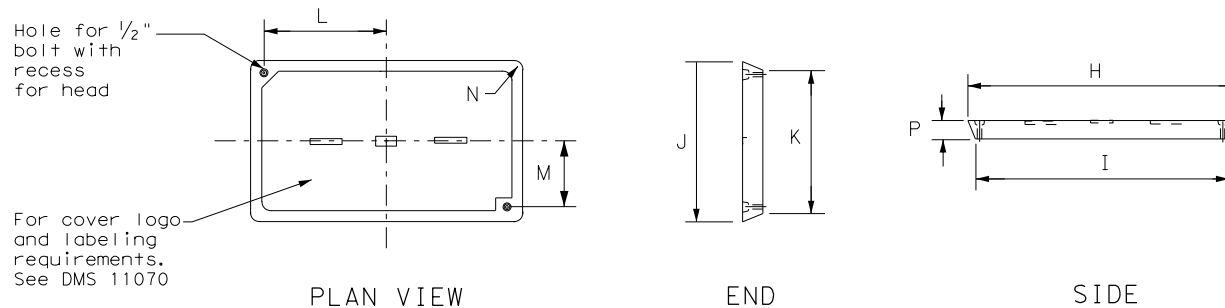


APRON FOR GROUND BOX

- (1) Uniformly space ends of conduits within the ground box. Position ends of conduits so that ground box walls do not interfere with the installation of grounding bushings or bell end fittings.
- (2) Maintain sufficient space between conduits to allow for proper installation of bushings.
- (3) Place aggregate under the box, not in the box. Aggregate should not encroach on the interior volume of the box.
- (4) Install a grounding bushing on the upper end of all RMC terminating in a ground box. Ground RMC elbow when any part of the elbow is less than 18 in. below the bottom of the ground box. Install a PVC bushing or bell end fitting on the upper end of all PVC conduits terminating in a ground box.

GROUND BOX DIMENSIONS	
TYPE	OUTSIDE DIMENSIONS (INCHES) (Width x Length X Depth)
A	12 X 23 X 11
B	12 X 23 X 22
C	16 X 29 X 11
D	16 X 29 X 22
E	12 X 23 X 17

GROUND BOX COVER DIMENSIONS								
TYPE	DIMENSIONS (INCHES)							
	H	I	J	K	L	M	N	P
A, B & E	23 1/4	23	13 3/4	13 1/2	9 7/8	5 1/8	1 3/8	2
C & D	30 1/2	30 1/4	17 1/2	17 1/4	13 1/4	6 3/4	1 3/8	2



GROUND BOX COVER

GROUND BOXES

A. MATERIALS

1. Provide polymer concrete ground boxes measuring 16x30x24 in. (WxLxD) or smaller in accordance with Departmental Material Specification (DMS) 11070 "Ground Boxes" and Item 624 "Ground Boxes."
2. Provide Type A, B, C, D, and E ground boxes as shown in the plans, and as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 624.
3. Ensure ground box cover is correctly labeled in accordance with DMS 11070.
4. Provide larger ground boxes in accordance with Item 624 and as shown in the plans.

B. CONSTRUCTION METHODS

1. Remove all gravel and dirt from conduit. Cap all conduits prior to placing aggregate and setting ground box. Provide Grade 3 or 4 coarse aggregate as shown on Table 2 of Item 302 "Aggregates for Surface Treatments." Ensure aggregate bed is in place and at least 9 inches deep, prior to setting the ground box. Install ground box on top of aggregate.
2. Cast ground box aprons in place. Reinforcing steel may be field bent. Ensure the depth of concrete for the apron extends from finished grade to the top of the aggregate bed under the box. Ground box aprons, including concrete and reinforcing steel, are subsidiary to ground boxes when called for by descriptive code.
3. Keep bolt holes in the box clear of dirt. Bolt covers down when not working in ground boxes.
4. Install all conduits and ells in a neat and workmanlike manner. Uniformly space conduits so grounding bushings and bell end fittings can easily be installed.
5. Temporarily seal all conduits in the ground box until conductors are installed.
6. Permanently seal conduits immediately after the completion of conductor installation and pull tests. Permanently seal the ends of all conduits with duct seal, expandable foam, or other method as approved. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a sealant.
7. When a ground rod is present in a ground box, bond all equipment grounding conductors together and to the ground rod with listed connectors.
8. When a type B or D ground box is stacked to meet volume requirements, it is allowable to cut an appropriately sized hole for conduit entry in the side wall at least 18 inches below grade.
9. If an existing ground box in the contract has a metal cover, bond the cover to the equipment grounding conductor with a 3 ft. long stranded bonding jumper the same size as the grounding conductor. The bonding jumper is subsidiary to various bid items. Verify existing ground boxes with metal covers are shown on the plans, with notes fully describing the work required.
10. If other ground boxes with metal covers are within the project limits but are not part of the contract, the Engineer may direct the Contractor to bond the metal covers, identifying the specific boxes in writing. This work will be paid for separately.
11. Bond metal ground box covers to the grounding conductor with a tank ground type lug.

				<b>Traffic Operations Division Standard</b>	
<h2>ELECTRICAL DETAILS</h2> <h3>GROUND BOXES</h3>					
<h1>ED(4) - 14</h1>					
FILE:	ed4-14.dgn	DN:	TxDOT	CK:	TxDOT
© TxDOT	October 2014	CONT:	0915	SECT:	12
REVISIONS		JOB:	586	HIGHWAY:	VA
		DIST:	COUNTY:	SHEET NO.:	
		SAT:	BEXAR		327

**ELECTRICAL SERVICES NOTES**

1. Provide new materials. Ensure installation and materials comply with the applicable provisions of the National Electrical Code (NEC) and National Electrical Manufacturers Association (NEMA) standards. Ensure material is Underwriters Laboratories (UL) listed. Provide and install electrical service conduits, conductors, disconnects, contactors, circuit breaker panels, and branch circuit breakers as shown on the Electrical Service Data chart in the plans. Faulty fabrication or poor workmanship in material, equipment, or installation is justification for rejection. Where manufacturers provide warranties and guarantees as a customary trade practice, furnish these to the State.
2. Provide electrical services in accordance with Electrical Details standard sheets, Departmental Material Specification (DMS) 11080 "Electrical Services," DMS 11081 "Electrical Services-Type A," DMS 11082 "Electrical Services-Type C," DMS 11083 "Electrical Services-Type D," DMS 11084 "Electrical Services-Type T," DMS 11085 "Electrical Services-Pedestal (PS)", and Item 628 "Electrical Services" of the Standard Specifications. Provide electrical service types A, C, and D, as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 628. Provide other service types as detailed on the plans.
3. Provide all work, materials, services, and any incidentals needed to install a complete electrical service as specified in the plans.
4. Coordinate with the Engineer and the utility provider for metering and compliance with utility requirements. Primary line extensions, connection charges, meter charges, and other charges by the utility company to provide power to the location are paid for in accordance with Item 628. Get approval for the costs associated with these charges prior to engaging the utility company to do the work. Consult with the utility provider to determine costs and requirements, and coordinate the work as approved.
5. The enclosure manufacturer will provide Master Lock Type 2 with brass tumblers keyed #2195 for all custom electrical enclosures. Installing Contractor is to provide Master Lock #2195 Type 2 with brass tumblers for "off the shelf" enclosures. Master Lock #2195 keys and locks become property of the State. Unless otherwise approved, do not energize electrical service equipment until locks are installed.
6. Enclosures with external disconnects that de-energize all equipment inside the enclosure do not need a dead front trim. Protect incoming line terminations from incidental contact as required by the NEC.
7. When galvanized is specified for nuts, screws, bolts or miscellaneous hardware, stainless steel may be used.
8. Provide wiring and electrical components rated for 75°C. Provide red, black, and white colored XHHW service entrance conductors of minimum size 6 American Wire Gauge (AWG). Identify size 6 AWG conductors by continuous color jacket. Identify electrical conductors sized 4 AWG and larger by continuous color jacket or by colored tape. Mark at least 6 inches of the conductor's insulation with half laps of colored tape, when identifying conductors. Ensure each service entrance conductor exits through a separately bushed non-metallic opening in the weatherhead. The lengths of the conductors outside the weatherhead are to be 12 inches minimum, 18 inches maximum, or as required by utility.
9. All electrical service conduit and conductors attached to the electrical service including the riser or the elbow below ground are subsidiary to the electrical service. For an underground utility feed, all service conduit and conductors after the elbow, including service conduit and conductors for the utility pole riser when furnished by the Contractor, will be paid for separately.
10. Provide rigid metal conduit (RMC) for all conduits on service, except for the 1/2 in. PVC conduit containing the electrical service grounding electrode conductor. Size the service entrance conduit as shown in the plans. Ensure conduit for branch circuit entry to enclosure is the same size as that shown on the layout sheets for branch circuit conduit. Extend all rigid metal conduits a minimum of 6 inches underground and then couple to the type and schedule of the conduit shown on the layout for that particular branch circuit. Install a grounding bushing on the RMC where it terminates in the service enclosure.
11. Use of liquidtight flexible metal conduit (LFMC) is allowed between the meter and service enclosure when they are mounted 90 to 180 degrees to each other. Size the LFMC the same size as service entrance conduit. LFMC must not exceed 3 feet in length. Strap LFMC within 1 foot of each end. LFMC less than 12 inches in length need not be strapped. Each end of LFMC must have a grounding bushing or be terminated with a grounding fitting. The LFMC must contain a grounded (neutral) conductor. Ensure any bend in LFMC never exceeds 180 degrees. A pull test is required on all installed conductors, with at least six inches of free conductor movement demonstrated to the satisfaction of the Engineer.
12. Ensure all mounting hardware and installation details of services conform to utility company specifications.
13. For all electrical service enclosures listed under Item 628 on the MPL, the UL 508 enclosure manufacturers will prepare and submit a schematic drawing unique to each service. Before shipment to the job site, place the applicable laminated schematic drawings and the laminated plan sheet showing the electrical service data chart used to build the enclosure in the enclosure's data pocket. The installing contractor will copy and laminate the actual project plan sheets detailing all equipment and branch circuits supplied by that service. The laminated plan sheets are to be placed in the service enclosure's document pocket. Reduce 11 in. x 17 in. plan sheets to 8 1/2 in. x 11 in. before laminating. If the installation differs from the plan sheets, the installing contractor is to redline plan sheets before laminating.
14. When providing an "Off The Shelf" Type D or Type T service, provide laminated plan sheets detailing equipment and branch circuits supplied by that service. Reduce 11 in. x 17 in. plan sheets to 8 1/2 in. x 11 in. before laminating. Deliver these drawings before completion of the work to the Engineer, instead of placing in enclosure that has no door pocket.
15. Do not install conduit in the back wall of a service enclosure where it would penetrate the equipment mounting panel inside the enclosure. Provide grounding bushings on all metal conduits, and terminate bonding jumpers to grounding bus. Grounding bushings are not required when the end of the metal conduit is fitted with a conduit sealing hub or threaded boss, such as a meter base hub.

**SERVICE ASSEMBLY ENCLOSURE**

1. Provide threaded hub for all conduit entries into the top of enclosure.
2. Type galvanized steel (GS) enclosures may be used for Type C panelboards and for Type D and T services that do not use an enclosure mounted photocell or lighting contactor. Provide GS enclosures in accordance with DMS 11080, 11082, 11083, and 11084.
3. Provide aluminum (AL) and stainless steel (SS) enclosures for Types A, C, and D in accordance with DMS 11080, 11081, 11082, 11083, and 11084. Do not paint stainless steel.
4. Provide pedestal service (PS) enclosures in accordance with ED(9) and DMS 11080 and 11085. Do not provide GS pedestal services. If GS is shown in the PS descriptive code, provide an AL enclosure.

**MAIN DISCONNECT & BRANCH CIRCUIT BREAKERS**

1. Field drill flange-mounted remote operator handle if needed, to ensure handle is lockable in both the "On" and "Off" positions.
2. When the utility company provides a transformer larger than 50 KVA, verify that the available fault current is less than the circuit breaker's ampere interrupting capacity (AIC) rating and provide documentation from the electric utility provider to the Engineer.

**PHOTOELECTRIC CONTROL**

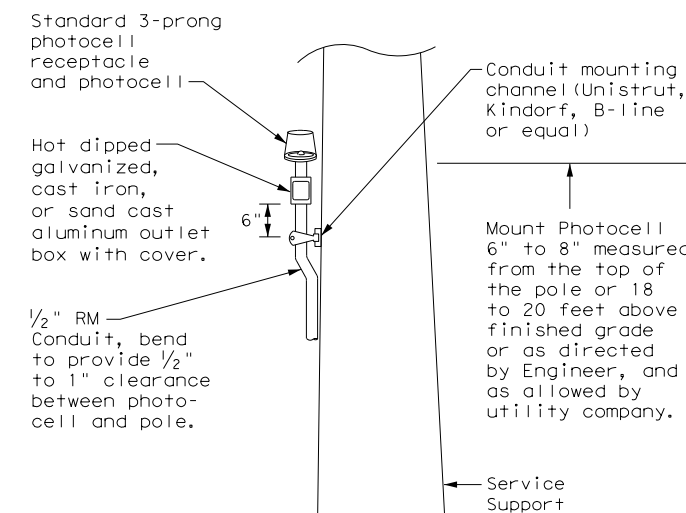
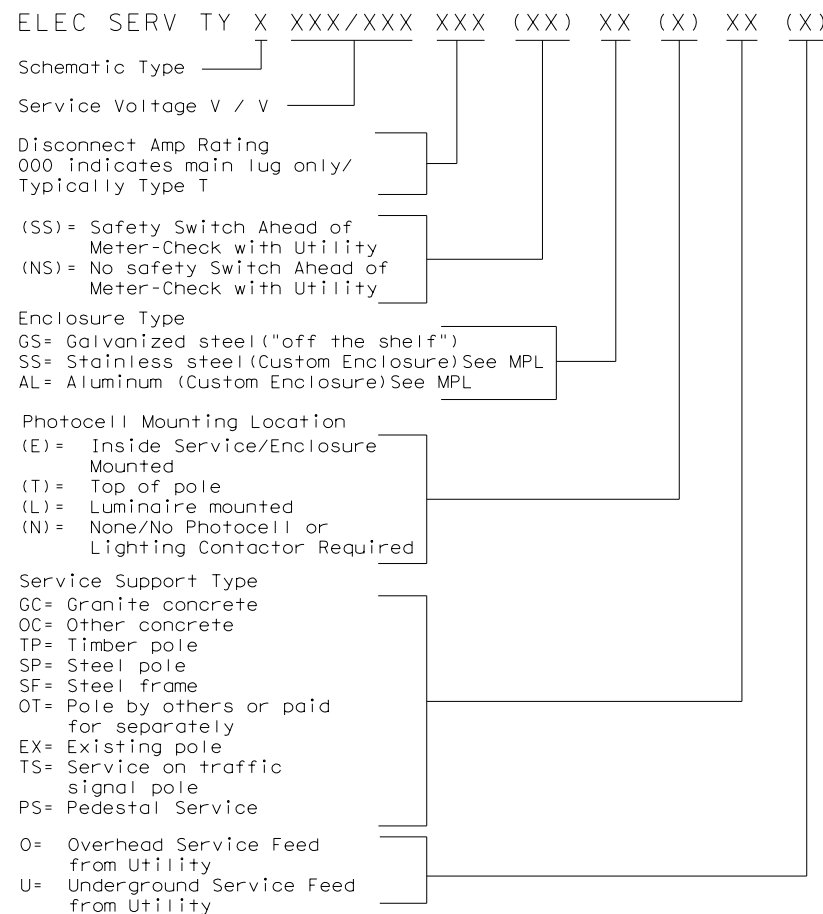
1. Provide photocell as listed on the MPL. Move, adjust, or shield the photocell from stray or ambient night time light to ensure proper operation. Mount photocell facing north when practical. Mount top of pole photocells as shown on Top Mounted Photocell Detail.

* ELECTRICAL SERVICE DATA												
Elec. Service ID	Plan Sheet Number	Electrical Service Description	Service Conduit *xS Size	Service Conductors No./Size	Safety Switch Amps	Main Ckt. Bkr. Pole/Amps	Two-Pole Contractor Amps	Panelbd/ Loadcenter Amp Rating	Branch Circuit ID	Branch Ckt. Bkr. Pole/Amps	Branch Circuit Amps	KVA Load
SB 183	289	ELC SRV TY A 240/480 100(SS)AL(E)SF(U)	2"	3/#2	100	2P/100	100	N/A	Lighting NB	2P/40	26	28.1
									Lighting SB	2P/40	25	
									Underpass	1P/20	15	
NB Access	30	ELC SRV TY D 120/240 060(NS)SS(E)TS(O)	1 1/4"	3/#6	N/A	2P/60		100	Sig. Controller	1P/30	23	5.3
							30		Luminaires	2P/20	9	
									CCTV	1P/20	3	
2nd & Main	58	ELC SRV TY T 120/240 000(NS)GS(N)SP(O)	1 1/4"	3/#6	N/A	N/A	N/A	70	Flashing Beacon 1	1P/20	4	1.0
									Flashing Beacon 2	1P/20	4	

\* Example only, not for construction. All new electrical services must have electrical service data chart specific to that service as shown in the plans.

\*\* Verify service conduit size with utility. Size may change due to utility meter requirements. Ensure conduit size meets the National Electrical Code.

**EXPLANATION OF ELECTRICAL SERVICE DESCRIPTIVE CODE**



**TOP MOUNTED PHOTOCELL**

Install conduit strap maximum 3 feet from box. 5 foot maximum spacing between straps supporting conduit.



**ELECTRICAL DETAILS SERVICE NOTES & DATA**

**ED(5) - 14**

FILE: ed5-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	328	

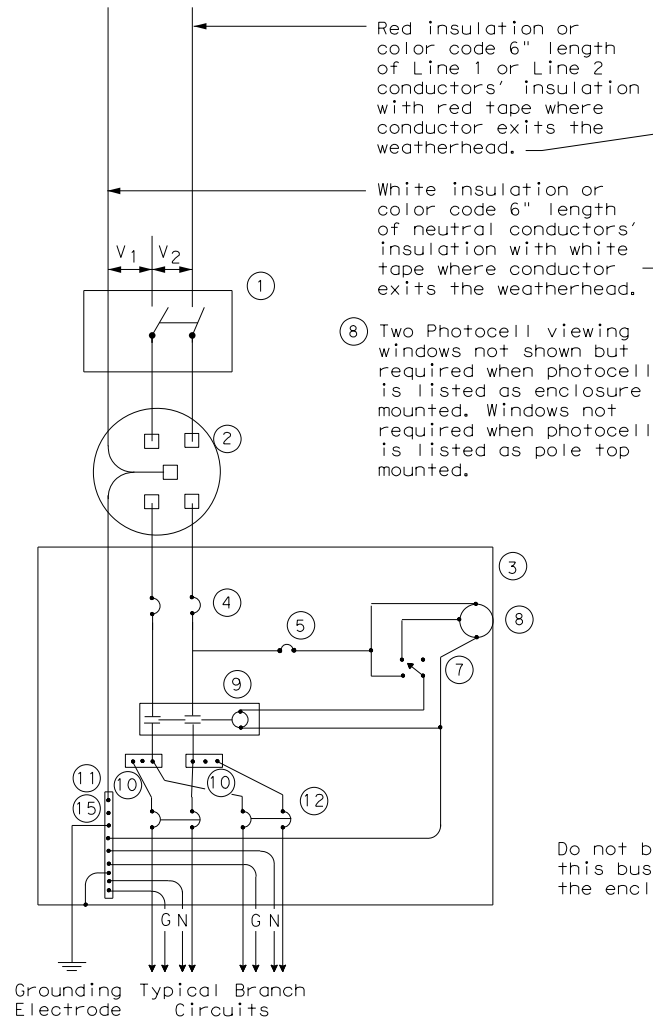
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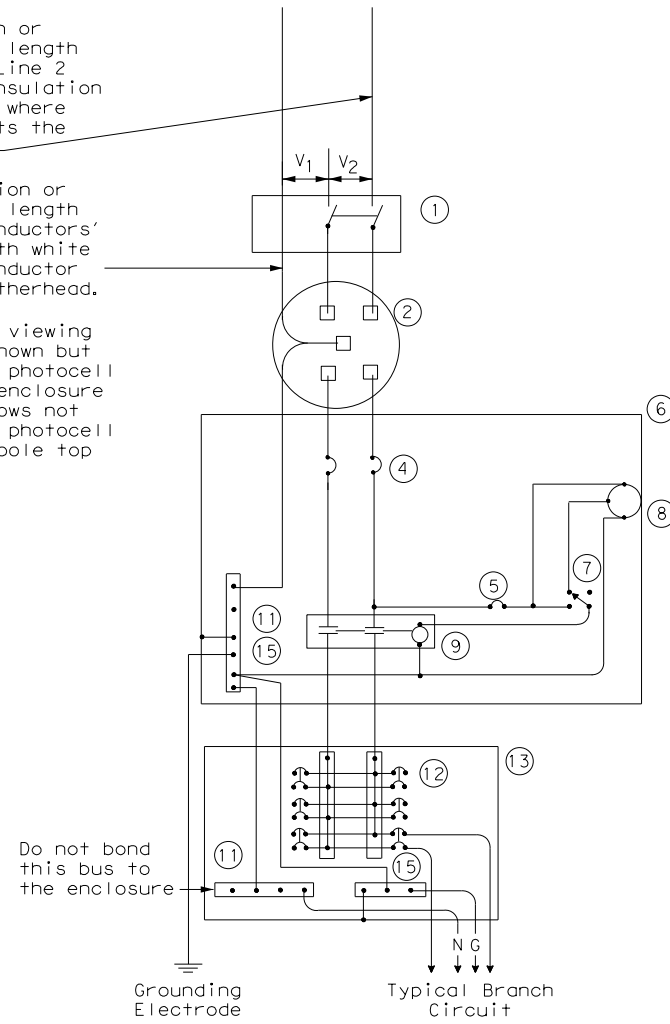
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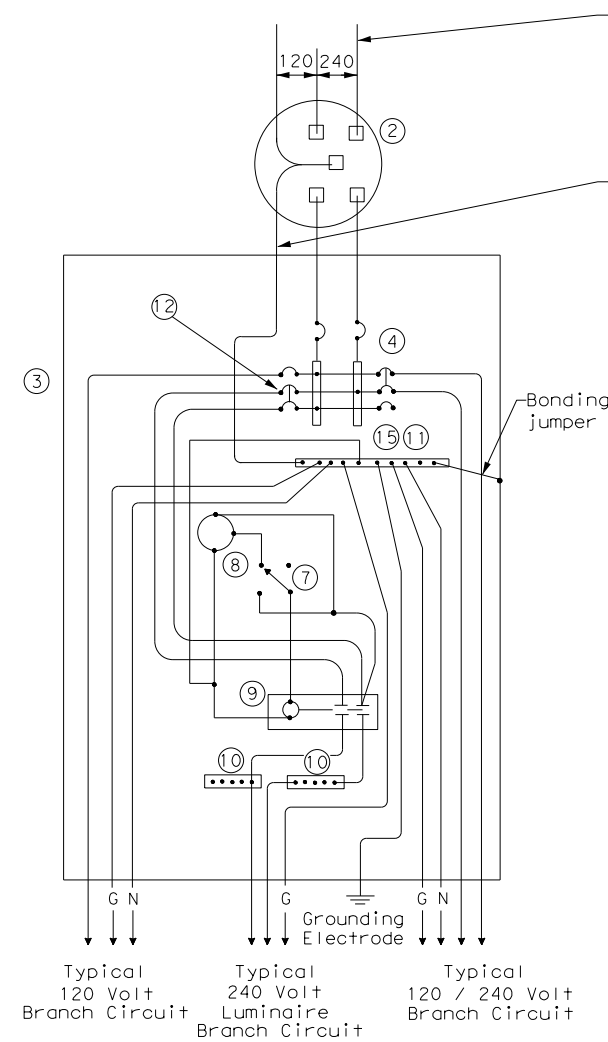


SCHEMATIC TYPE A  
THREE WIRE

WIRING LEGEND	
———	Power Wiring
-----	Control Wiring
—N—	Neutral Conductor
—G—	Equipment grounding conductor-always required

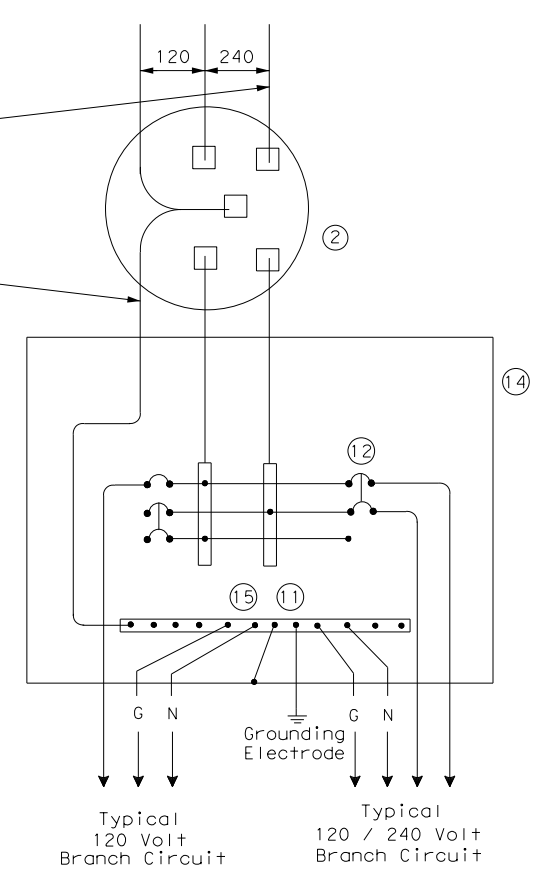


SCHEMATIC TYPE C  
THREE WIRE



SCHEMATIC TYPE D - CUSTOM  
120/240 VOLTS - THREE WIRE

SCHEMATIC LEGEND	
1	Safety Switch (when required)
2	Meter (when required-verify with electric utility provider)
3	Service Assembly Enclosure
4	Main Disconnect Breaker (See Electrical Service Data)
5	Circuit Breaker, 15 Amp (Control Circuit)
6	Auxiliary Enclosure
7	Control Station ("H-O-A" Switch)
8	Photo Electric Control (enclosure-mounted shown)
9	Lighting Contactor
10	Power Distribution Terminal Blocks
11	Neutral Bus
12	Branch Circuit Breaker (See Electrical Service Data)
13	Separate Circuit Breaker Panelboard
14	Load Center
15	Ground Bus



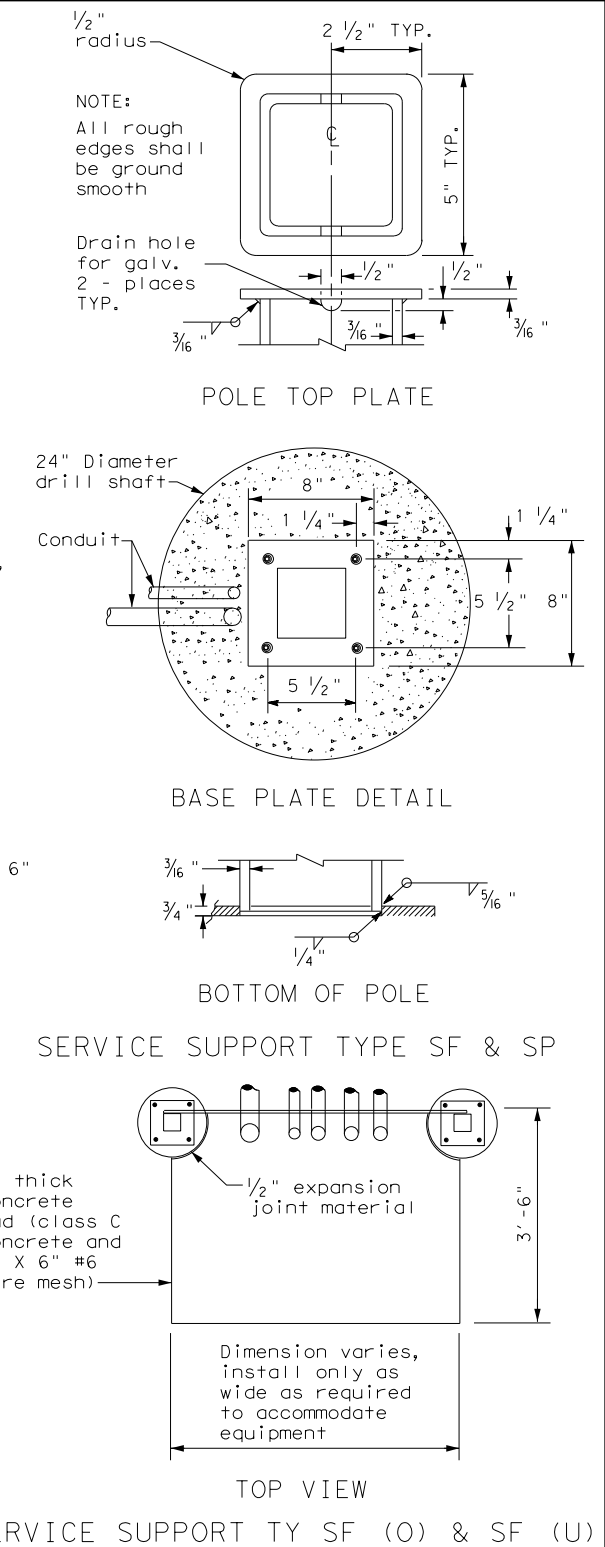
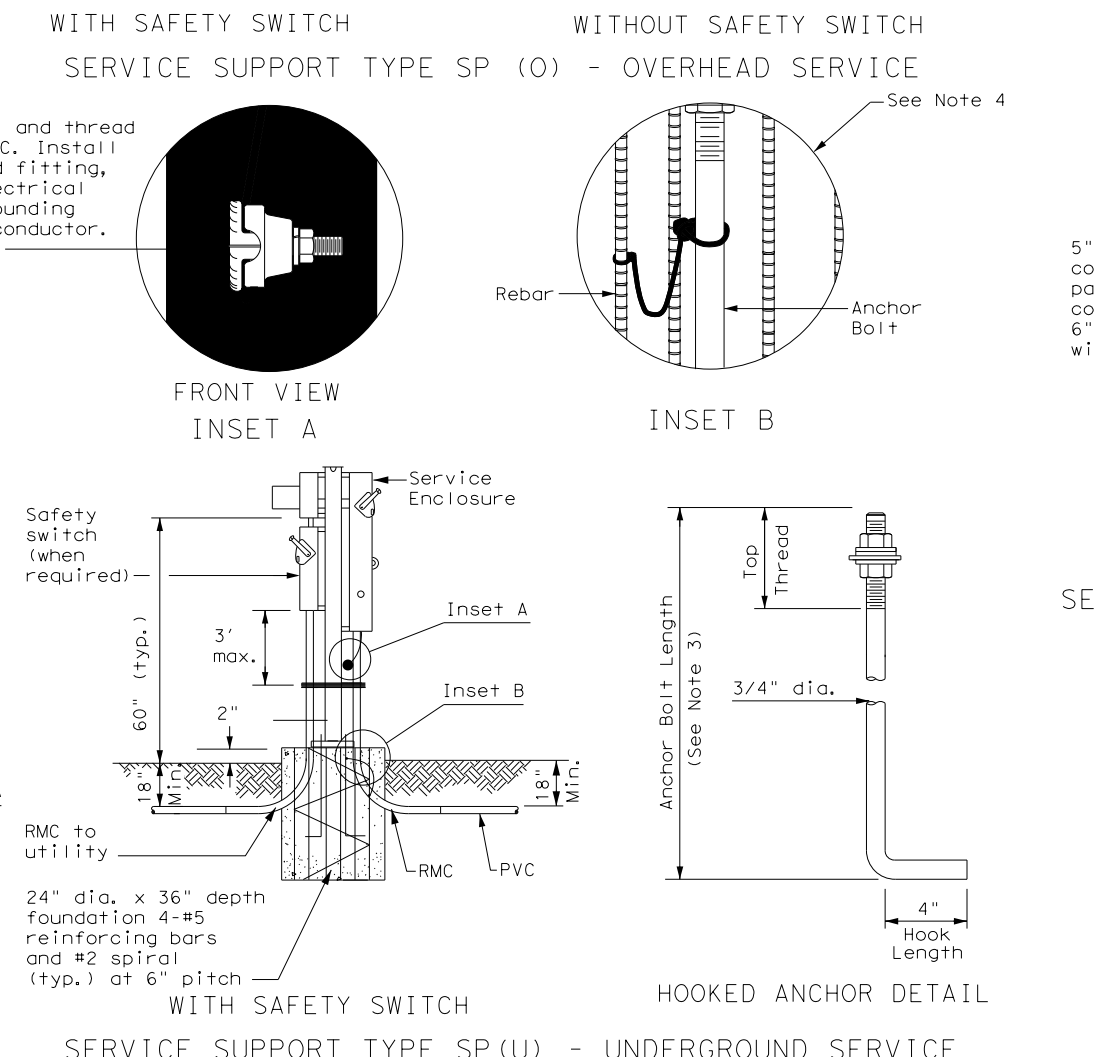
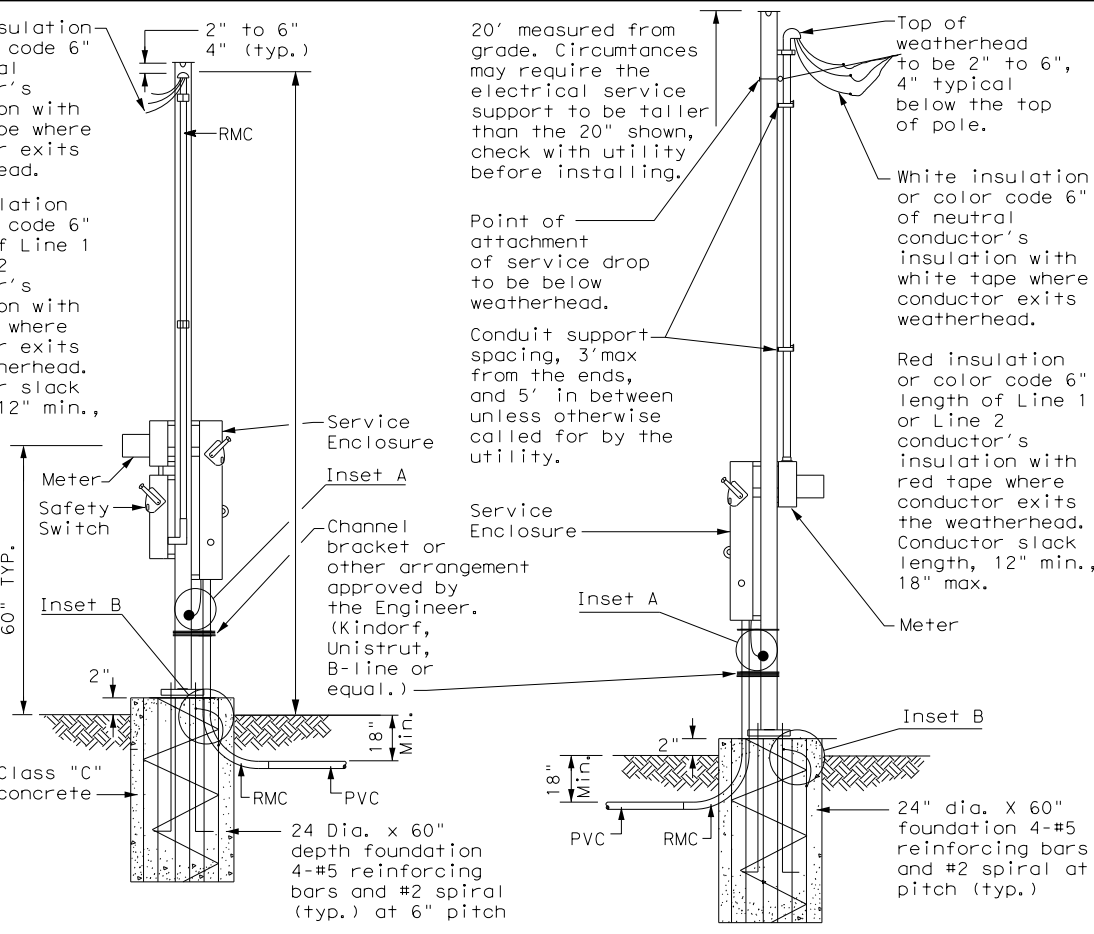
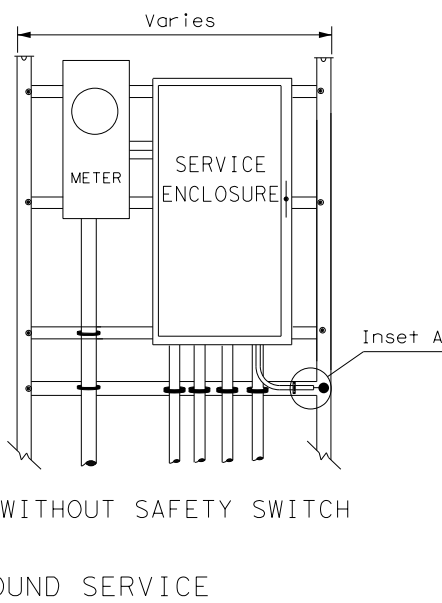
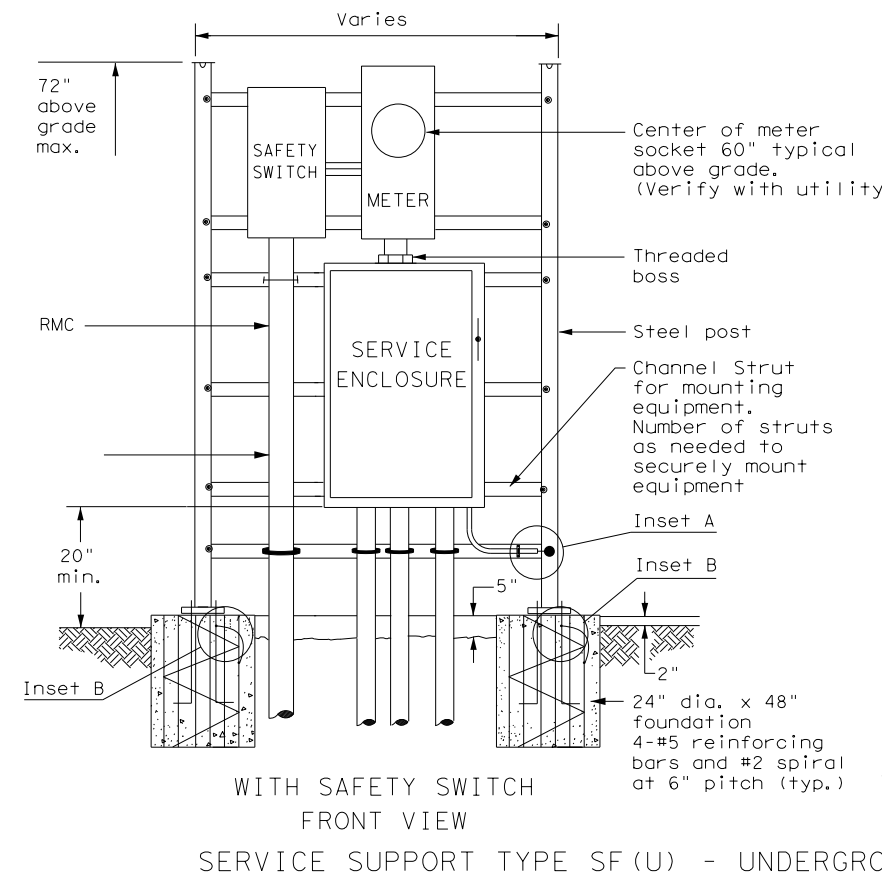
SCHEMATIC TYPE T  
120/240 VOLTS - THREE WIRE  
Galvanized steel-"Buy Off The Shelf" only. When required install photocell top of the pole or on luminaire only, no lighting contractor will be installed.

				<b>Traffic Operations Division Standard</b>	
<b>ELECTRICAL DETAILS SERVICE ENCLOSURE AND NOTES</b>					
<b>ED(6) - 14</b>					
FILE:	ed6-14.dgn	DN:	TxDOT	CK:	TxDOT
© TxDOT	October 2014	CON:	0915	SECT:	12
REVISIONS		JOB:	586	HIGHWAY:	VA
		DIST:	COUNTY	SHEET NO.:	
		SAT:	BEXAR		329

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**SUPPORT TYPE STEEL POLE (SP) AND STEEL FRAME (SF)**

1. Provide steel pole and steel frame supports as per TxDOT Departmental Material Specification (DMS)11080 "Electrical Services." Mount all equipment and conduit on 12 gauge galvanized steel or stainless steel channel strut, 1 1/2 in. or 1 3/8 in. wide by 1 in. up to 3 3/4 in. deep Unistrut, Kindorf, B-line or equal. Bolt or weld all channel and hardware to vertical members as approved. Do not stack channel. File smooth and paint field cut ends of all channel with zinc-rich paint before installing.
2. Provide poles for overhead service with an eyebolt or similar fitting for attachment of the service drop to the pole in conformance with the electric utility provider's specifications.
3. Provide and install galvanized 3/4 in. x 18 in. x 4 in. (dia. x length x hook length) anchor bolts for underground service supports. Provide and install galvanized 3/4 in. x 56 in. x 4 in. anchor bolts for overhead service supports. Ensure anchor bolts have 3 in of thread, with 3 1/4 in. to 3 1/2 in. of the exposed anchor bolt projecting above finished foundation. Provide and install leveling nuts for all anchor bolts.
4. Bond one of the anchor bolts to the rebar cage with 6 AWG bare stranded copper conductor. Use listed mechanical connectors rated for embedment in concrete. See Inset B.
5. Furnish and install rigid metallic ells in all steel pole and steel frame foundations for all conduits entering the service from underground.
6. Use class C concrete for foundations. Ensure reinforcing steel is Grade 60 with 3" of unobstructed concrete cover.
7. Drill and tap steel poles and frames for 1/2 in. X 13 UNC tank ground fitting. For steel pole service supports, provide and install tank ground fitting 4 in. to 6 in. below electrical service enclosure. Provide properly sized hole through the bottom of the enclosure for the service grounding electrode conductor. Ensure electrical service grounding electrode conductor is as short and straight as possible from the enclosure to the tank ground fitting. For steel frame service supports, provide and install tank ground fitting on steel frame post. Install service grounding electrode conductor in a non-metallic conduit or tubing from the enclosure to the steel frame post. Connect electrical service grounding electrode conductor to the tank ground fitting. See steel frame and steel pole details and Inset A for more information. Size service entrance conduit and branch circuit conduit as shown in the plans. For underground conduit runs from the electrical service, extend RMC from the service enclosure to an RMC elbow, and then connect the schedule type and size of conduit shown in the plans. Provide and install grounding bushings where RMC terminates in the enclosure. Grounding bushings are not required when RMC is fitted into a sealing hub or threaded boss.
8. If Steel pole or frame is painted, bond each separate painted piece with a bonding jumper attached to a tapped hole.
9. Provide 1/4" - 20 machine screws for bonding. Do not use sheet metal screws. Remove all non-conductive material at contact points. Terminate bonding jumpers with listed devices. Install minimum size 6 AWG stranded copper bonding jumpers. Make up all threaded bonding connections wrench tight.
10. Avoid contact of the service drop and service entrance conductors with the metal pole to prevent abrasion of the insulated conductors.
11. Shop drawings are not required for service support structure unless specifically stated elsewhere or directed by the Engineer.



**TOP VIEW**  
SERVICE SUPPORT TY SF (O) & SF (U)

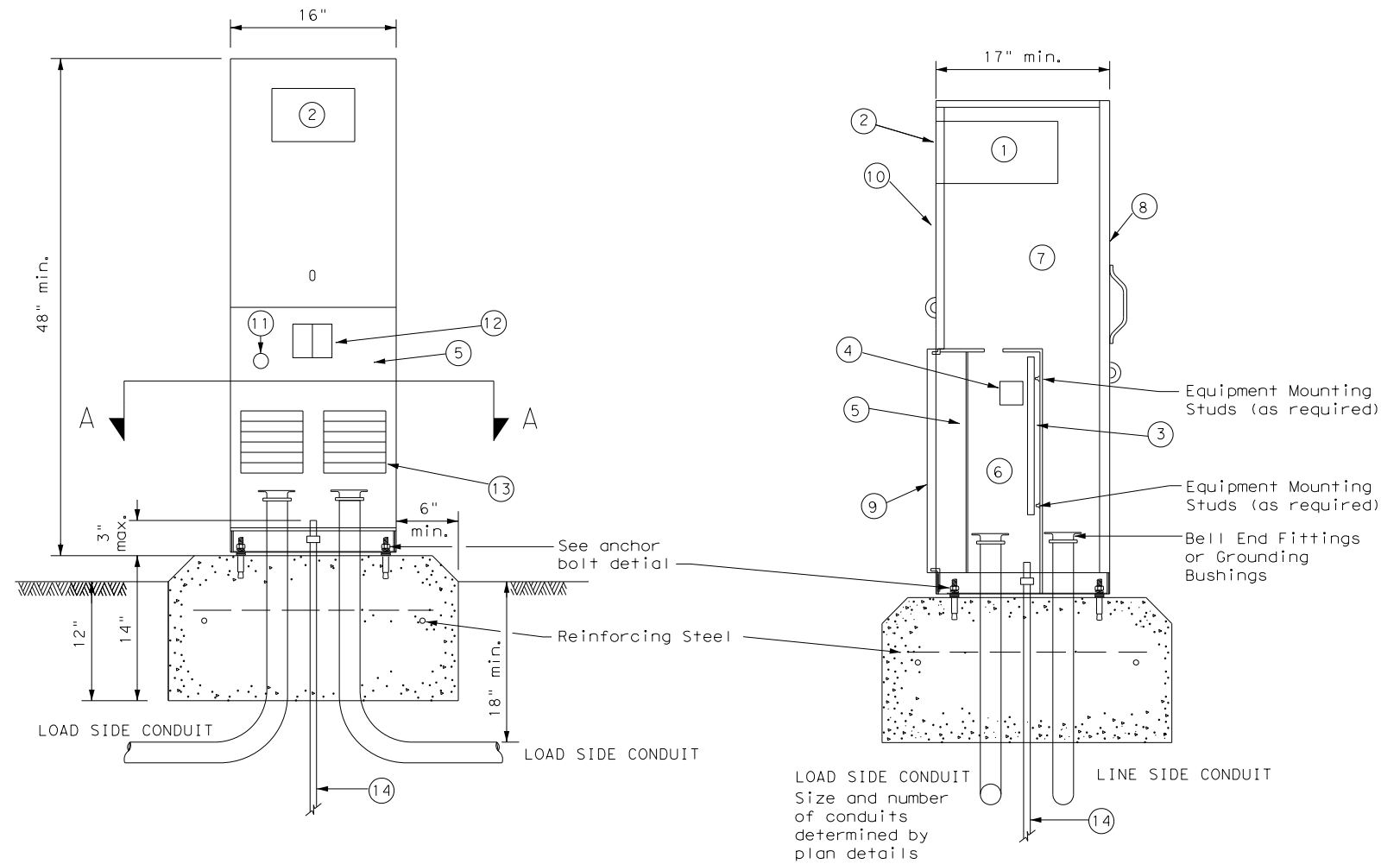
		<b>Traffic Operations Division Standard</b>		
<b>ELECTRICAL DETAILS</b> <b>SERVICE SUPPORT</b> <b>TYPES SF &amp; SP</b> <b>ED(7) - 14</b>				
FILE: ed7-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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			330	

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PEDESTAL SERVICE NOTES

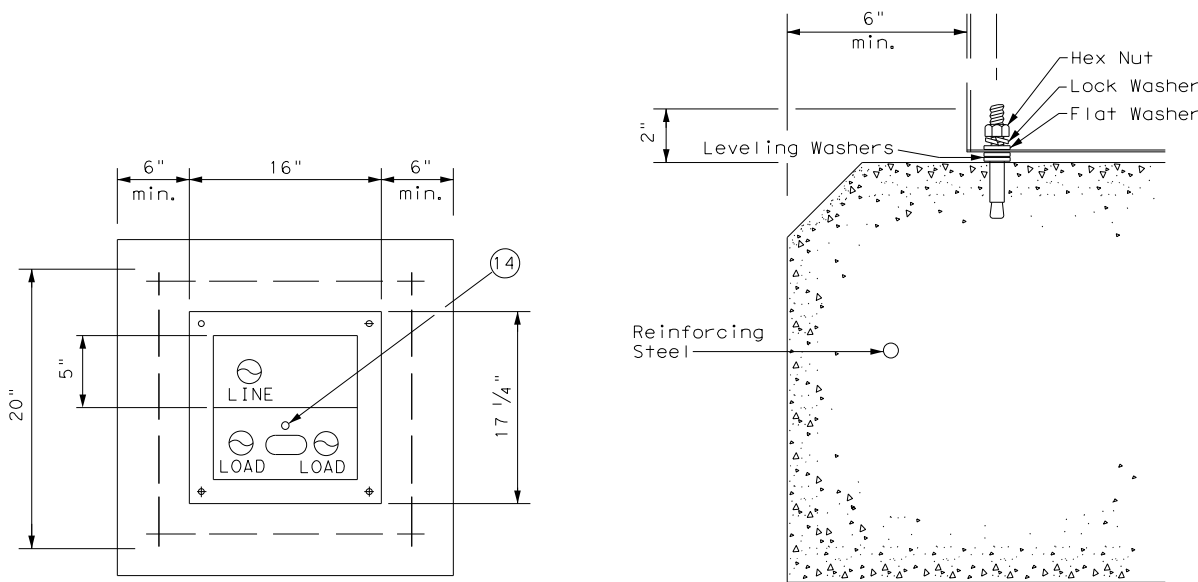
1. Manufacture pedestal electrical services in accordance with Departmental Material Specifications (DMS)11080 "Electrical Services", 11085 "Electrical Services-Pedestal (PS)" and Item 628 "Electrical Services." Provide pedestal electrical services as listed on the Material Producers list (MPL) on the Department's web site under "Roadway Illumination and Electrical Supplies," Item 628. Ensure all mounting hardware and installation details of services meet utility company specifications. Contact the local utility company for approval of pedestal details prior to installing the electrical pedestal service. Submit any changes required by the utility company prior to manufacturing the pedestal enclosure.
2. When a meter socket is required, provide a socket with a minimum 100 amp rating that complies with local utility requirements.
3. Provide Class A or C concrete for pedestal service foundations in accordance with Item 420, "Concrete Substructures," except that concrete will not be paid for directly but is considered subsidiary to Item 628.
4. Provide #4 reinforcing steel for foundations in accordance with Item 440, "Reinforcement for Concrete."
5. Install 1/2 in. X 2 1/16 in. minimum length concrete single expansion type anchors for mounting pedestal enclosure to foundation. Anchor location to match mounting holes in each corner of enclosure. Secure each of the four corners of the pedestal enclosure to the anchors in the foundation with a 1/2 in. galvanized or stainless steel machine thread bolt, a properly sized locknut and a flat washer.
6. Finish top of concrete foundation in a neat and workmanlike manner. If leveling washers are used, ensure no more than 1/8 in. gap at any corner. Do not exceed a maximum dip or rise in the foundation of 1/8 in. per foot. When properly installed, ensure the top of the service enclosure is level front to back and side to side within 1/4 in. Repair rocking or movement of the service enclosure at no additional cost to the department.
7. Do not use liquidtight flexible metal conduit (LFMC) on pedestal type services.
8. Ensure all elbows in the foundation are sized as per utility provider's conduit requirements for underground conduit and feeders. PVC extensions may be installed provided the ends of the rigid metal conduits are more than 2 in. below the top of the concrete foundation. Where extension conduits are metal, grounding bushings must be installed with a bonding jumper properly terminated.



FRONT VIEW

SIDE VIEW

TYPE C shown, TYPE A similar except that TYPE A shall have individual circuit breakers (CB) mounted on an equipment mounting panel. CB Handles shall protrude through hinged deadfront trim.



SECTION A-A

ANCHOR BOLT DETAIL

LEGEND

1	Meter Socket, (when required)
2	Meter Socket Window, (when required)
3	Equipment Mounting Panel
4	Photo Electric Control Window, (When required)
5	Hinged Deadfront Trim
6	Load Side Conduit Trim
7	Line Side Conduit Area
8	Utility Access Door, with handle
9	Pedestal Door
10	Hinged Meter Access
11	Control Station (H-O-A Switch)
12	Main Disconnect
13	Branch Circuit Breakers
14	Copper Clad Ground Rod - 5/8" X 10'



ELECTRICAL DETAILS  
 ELECTRICAL SERVICE SUPPORT  
 PEDESTAL SERVICE TYPE PS

ED (9) - 14

FILE:	ed9-14.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
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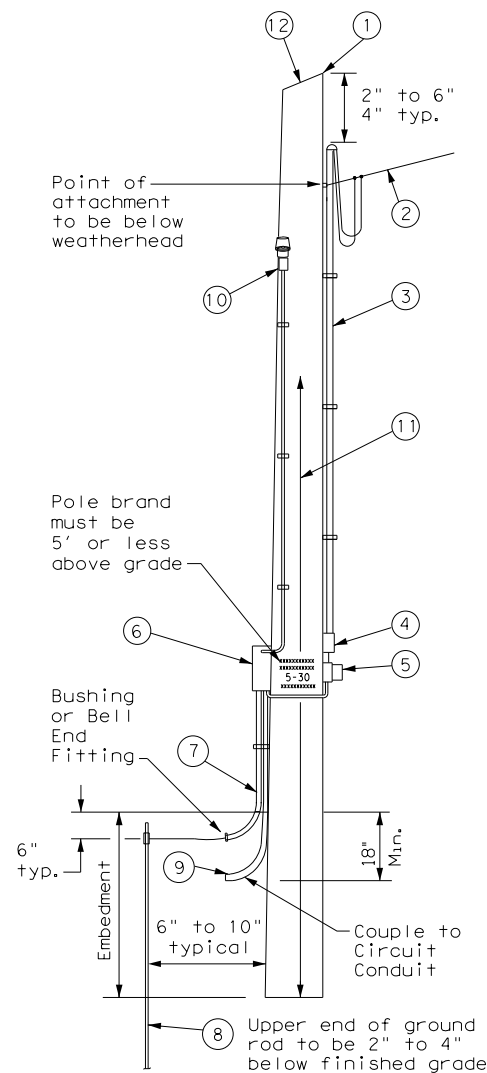
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TIMBER POLE (TP) SERVICE SUPPORT NOTES

1. Ensure electrical service support is a class 5 treated timber pole as per Item 627 "Treated Timber Poles." Embed timber pole to depth required in Item 627.
2. Conduit and electrical conductors attached to the electrical service pole and underground within 12 in. of service pole are not paid for directly but are subsidiary to the electrical service.
3. Install pole-top mounted photocell (T) on north side of pole, or in service enclosure (E) as required. See Electrical Service Data chart in plan set.
4. Gain pole as required to provide flat surface for each channel. Gain timber pole to 3/8 in. max. depth and 1 7/8 in. max. height. Gain pole in a neat and workmanlike manner.
5. Mount meter and service equipment on stainless steel or galvanized channel (Unistrut, Kindorf, or equal). Provide channel sized 1 in. to 3 3/4 in. maximum depth, and 1 1/2 in. to 1 5/8 in. maximum width. File smooth the cut ends of galvanized channel and paint with zinc rich paint before installing on pole. Secure each channel section to timber pole with two galvanized or SS lag bolts, 1/4 in. minimum diameter by 1 1/2 in. minimum length. Use a galvanized or SS flat washer on each lag bolt. Do not stack channel.
6. When excess length must be trimmed from poles, trim from the top end only.

- 1 Class 5 pole, height as required
- 2 Service drop from utility company (attached below weatherhead)
- 3 Service conduit (RMC) and service entrance conductors - One Red, One Black, One White (See Electrical Service Data)
- 4 Safety switch (when required)
- 5 Meter (when required)
- 6 Service enclosure
- 7 6 AWG bare grounding electrode conductor in 1/2 in. PVC to ground rod - extend 1/2 in. PVC 6 in. underground.
- 8 5/8 in. x 8 ft. Copper clad ground rod - drive ground rod to a depth of 2 in. to 4 in. below grade.
- 9 RMC same size as branch circuit conduit.
- 10 See pole-top mounted photocell detail on ED(5).
- 11 When required by the serving utility provide bare 6 AWG copper conductor. Run wire from pole top to butt wrap or copper butt plate. Protect conductor with non-conductive material to a height of 8 ft. above finished grade.
- 12 When required by utility, cut top of pole at an angle to enhance rain run off.

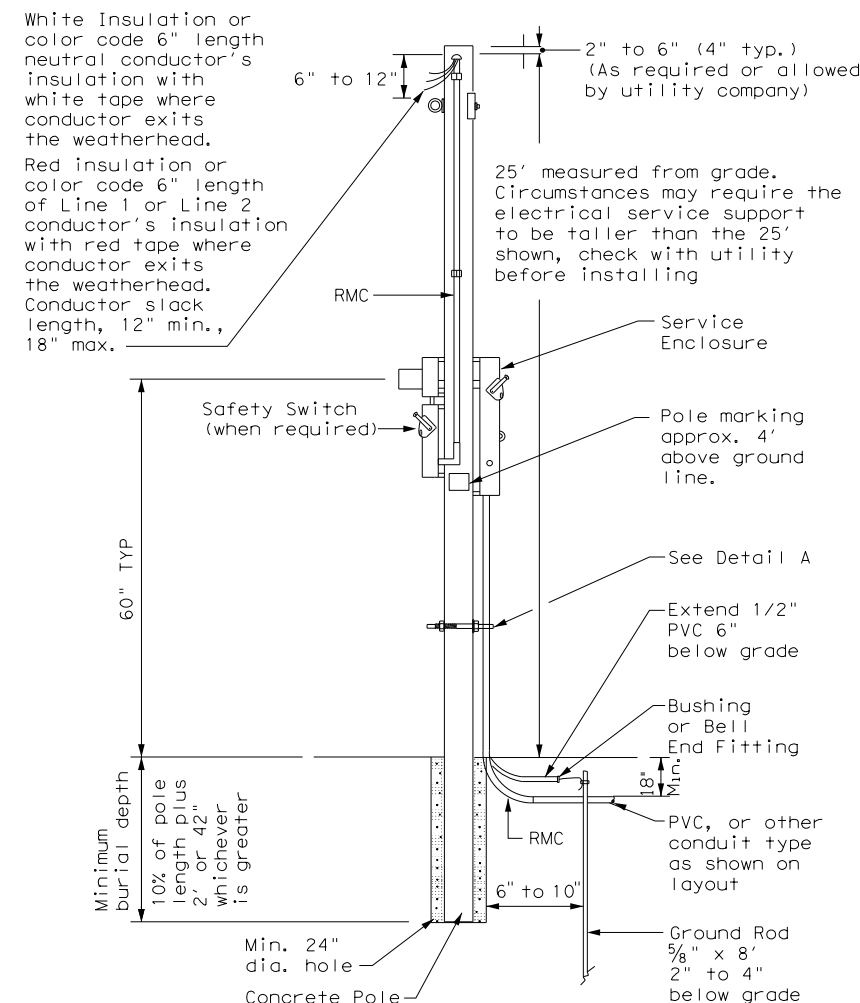


SERVICE SUPPORT TYPE TP (O)

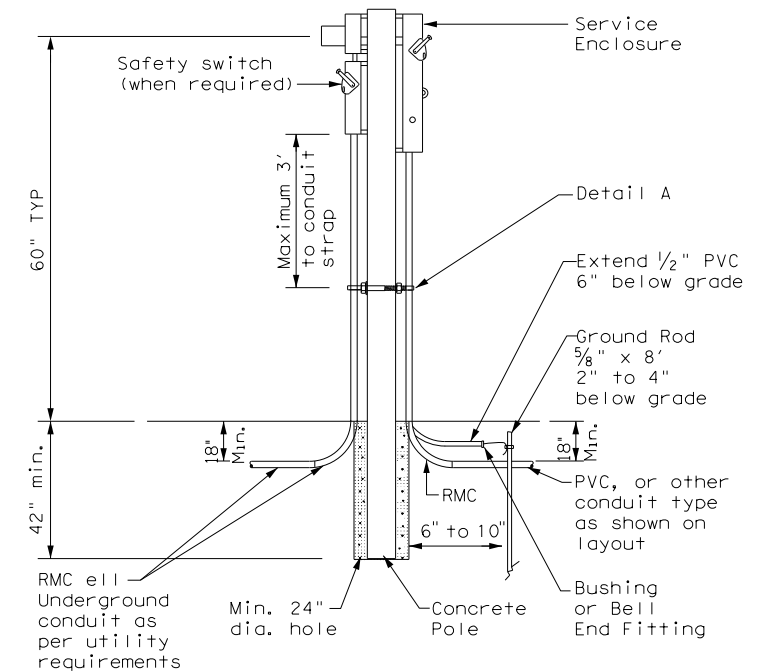
GRANITE CONCRETE (GC) & OTHER CONCRETE (OC) NOTES

Ensure electrical service support structures bid as type Granite Concrete (GC) or Other Concrete (OC) meet the following requirements.

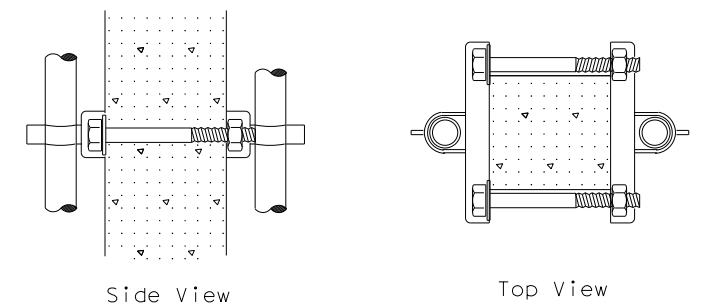
1. Provide GC and OC poles that meet the requirements of DMS 11080 "Electrical Services."
2. Provide prestressed concrete poles suitable for direct embedment into the ground without special foundations.
3. Verify poles are marked as required on DMS 11080. Location of marking should be approximately 4" above final grade. Use the two-point pickup locations when handling pole in horizontal position, and one-point pickup location for use in raising the pole to a vertical position. These marks are small but conspicuous.
4. Embed poles 42 in. or 10% of the length plus 2 ft., whichever is greater.
5. Ensure all installation details of services are in accordance with utility company specifications.
6. Install a one point rack or eye bolt bracket 6 inches to 12 inches below the weatherhead as an overhead service drop anchoring point for the electric utility.
7. Furnish and install galvanized or stainless steel channel strut 1 1/2 in. or 1 5/8 in. wide by 1 in. up to 3 3/4 in. deep (Unistrut, Kindorf, B-line or equal). Attach channel strut with stainless steel concrete anchors (max. 1" depth), square U-bolts or back to back channel strut with long bolts, or other secure mounting as approved by the Engineer. Ensure bolts are galvanized in accordance with ASTM A153. Do not stack channel struts.
8. Backfill the holes thoroughly by tamping in 6 in. lifts. After tamping to grade, place additional backfill material in a 6 inch high cone around the pole to allow for settling. Use material equal in composition and density to the surrounding area. Backfilling will not be paid for directly but is subsidiary to various bid items.



CONCRETE SERVICE SUPPORT Overhead (O)



CONCRETE SERVICE SUPPORT Underground (U)



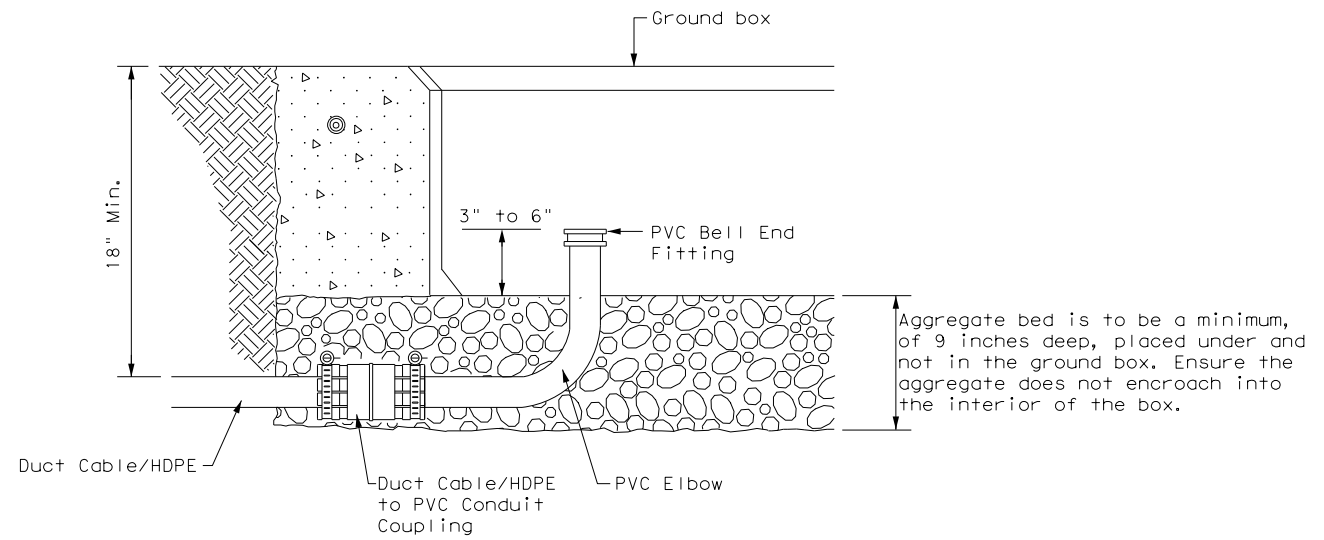
DETAIL A

See Note 7. Before installing channel that has been cut, file sharp edges and paint with zinc-rich paint. Ensure there is no paint splatter on the pole.

		<b>Traffic Operations Division Standard</b>	
<b>ELECTRICAL DETAILS          SERVICE SUPPORT          TYPES GC, OC, &amp; TP</b>			
<b>ED(10)-14</b>			
FILE: ed10-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
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REVISIONS	DIST: SAT	COUNTY: BEXAR	SHEET NO.: 332

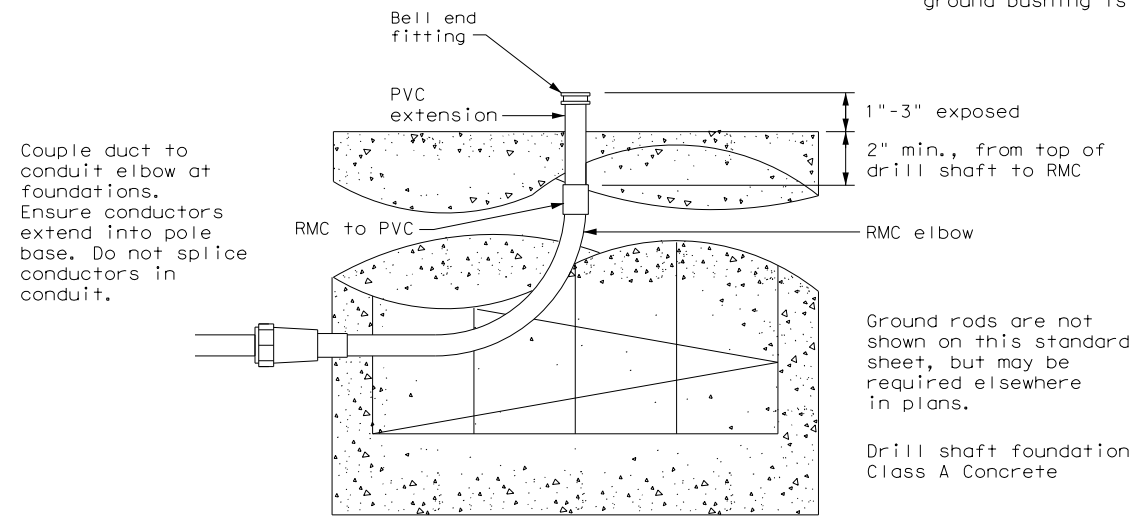
DUCT CABLE & HDPE CONDUIT NOTES

1. Provide duct cable in accordance with Departmental Material Specification (DMS) 11060 "Duct Cable" and Item 622 "Duct Cable." Provide duct cable as listed on the Material Producer List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies" Item 622.
2. Provide High-Density Polyethylene (HDPE) conduit in accordance with DMS 11060 and Item 618, "Conduit." Provide HDPE as listed on the MPL on the Department web site under "Roadway Illumination and Electrical Supplies," Item 618.
3. Supply duct cable with a minimum 2 in. diameter, unless otherwise shown in the plans. Provide duct cable and HDPE conduit as shown by descriptive code or on the plans. Bend duct cable and HDPE conduit as recommended by the manufacturer, with a minimum bending radius of 26 in. for 2 in. duct. Follow manufacturers' recommendations when handling duct cable and HDPE conduit reels and during installation of duct cable and HDPE conduit.
4. Do not splice conductors within duct cable or HDPE conduit. Couple duct cable and HDPE entering a ground box or foundation to a PVC elbow. When galvanized steel RMC elbows are called for in the plans and any portion of the RMC elbow is buried less than 18" from possible contact, ground the RMC elbow.
5. Furnish and install duct cable with factory installed conductors, sized as shown in the plans and as required by the National Electrical Code (NEC). The NEC contains specific requirements for duct cable in Article, "Nonmetallic Underground Conduit with Conductors: Type NUCC."
6. When conduit casing is called for in the plans, extend duct cable or HDPE conduit through the conduit casing in one continuous length without connection to the casing.
7. Seal the ends of duct cable or HDPE conduit with duct seal, expandable foam, or other approved method after completing the pull tests required by Item 622.
8. Provide minimum cover of 24 in. under roadways, 18 in. in other locations, or as shown on the plans.
9. Furnish and install listed fittings to couple duct cable or HDPE conduit to other types of conduit. Duct cable and HDPE conduit may be field-threaded and spliced with PVC or RMC threaded couplings; connected with listed tie-wrap fittings; connected using listed coupling made of HDPE with stainless steel external banding clamps and locking rings; connected with approved electrofusion conduit couplings; or connected using an approved chemical fusion method using an epoxy or adhesive specifically designed for HDPE couplings and connectors all installed in accordance with their manufacturer's instructions. Do not use PVC glue on HDPE. Do not use water pipe fittings, or connect conduit with heat shrink tubing.

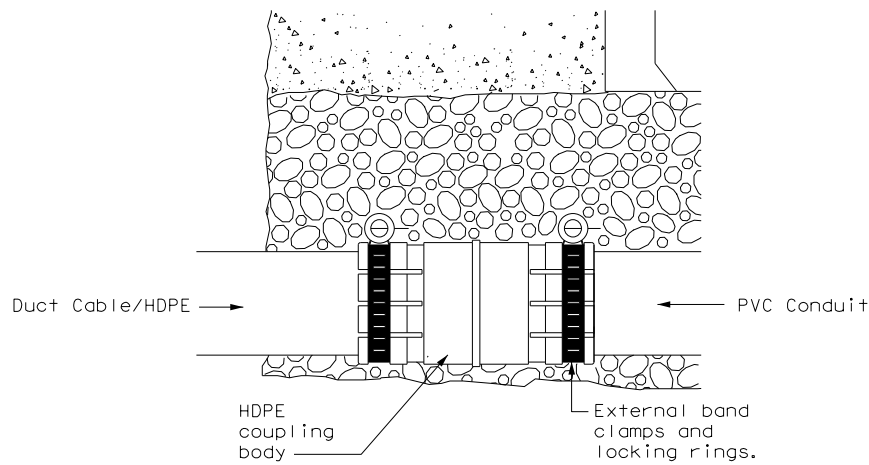


DUCT CABLE/HDPE AT GROUND BOX

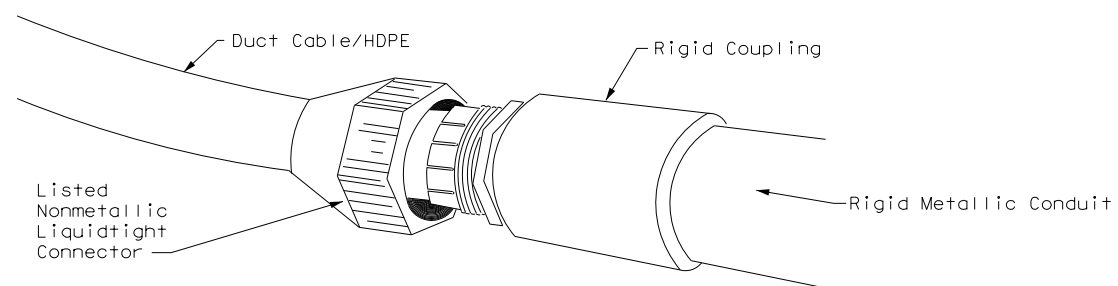
When the upper end of an RMC EII does not enter the ground box, it may be extended with a SCH-40 PVC conduit nipple and bell end, provided there is a minimum of 18" of cover over all parts of the elbow. If not, a rigid extension and ground bushing is required.



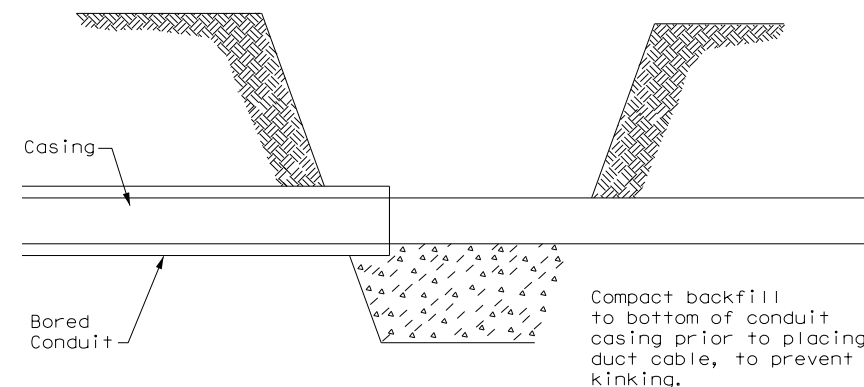
DUCT CABLE / HDPE AT FOUNDATION



DUCT CABLE/HDPE TO PVC



DUCT CABLE/HDPE TO RMC



BORE PIT DETAIL

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				Traffic Operations Division Standard	
<b>ELECTRICAL DETAILS</b> <b>DUCT CABLE / HDPE CONDUIT</b> <b>ED(11)-14</b>					
FILE:	ed11-14.dgn	DN:	TxDOT	CK:	TxDOT
©TxDOT	October 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS		0915	12	586	VA
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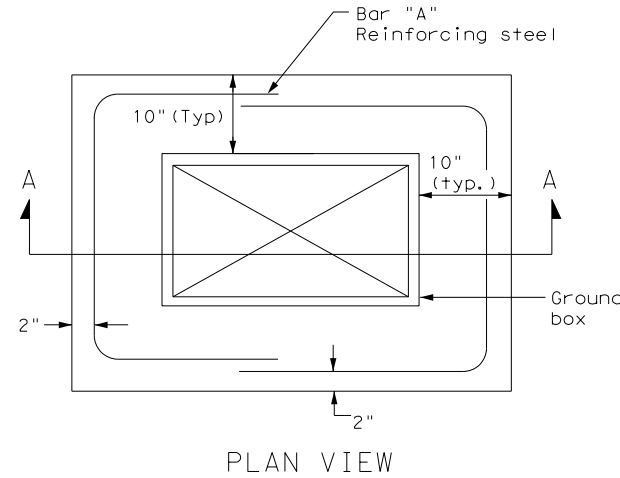
**BATTERY BOX GROUND BOXES NOTES**

**A. MATERIALS**

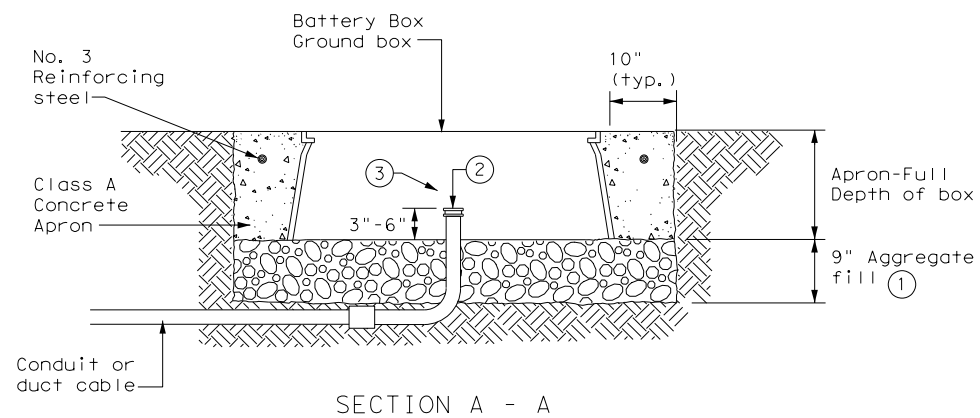
1. Provide polymer concrete or fiberglass reinforced plastic (FRP) battery box ground box and cover in accordance with Departmental Material Specification (DMS) 11071 "Battery Box Ground Boxes." Battery box will accommodate up to 4 batteries, each measuring 8 in. x 13.5 in. x 10 in. (W x L x D). Label battery box ground box cover in accordance with DMS 11071.
2. Supply a marine grade batteries with covers. Secure the marine grade batteries with covers to the stainless steel rack in the bottom of the ground box with tie down straps.

**B. CONSTRUCTION METHODS**

1. Ensure conduit entry will not interfere with placement of the batteries in the battery box ground box.
2. Remove all gravel and dirt from conduit. Cap all conduits prior to placing aggregate and setting battery box ground box. Provide Grade 3 or 4 coarse aggregate as shown on Table 2 of Item 302 "Aggregates for Surface Treatments." Ensure the aggregate bed is in place and is a minimum of 9 in. deep prior to setting the box. Install battery box ground box on top of aggregate.
3. Cast battery box aprons in place. Reinforcing steel may be field bent. Ensure the depth of concrete for the apron extends from finished grade to the top of the aggregate bed under the box. Battery box ground box aprons, including concrete and reinforcing steel, are subsidiary to battery box ground boxes when called for by descriptive code.
4. Bolt covers down when not working in battery box ground boxes. Keep bolt holes in the box clear of dirt.



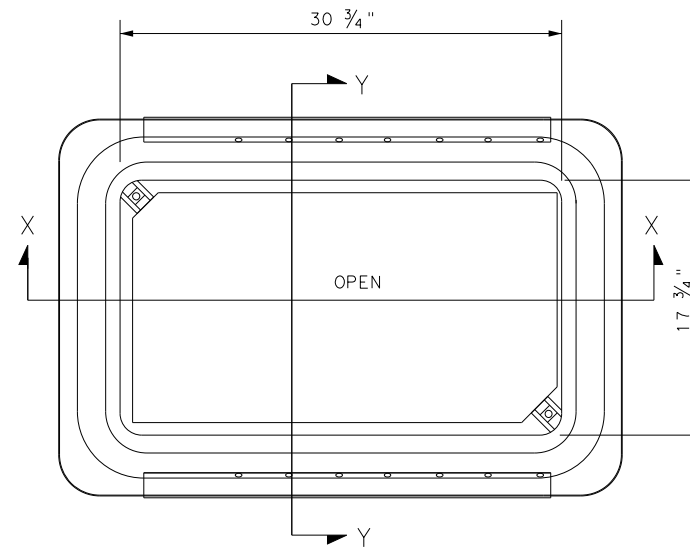
PLAN VIEW



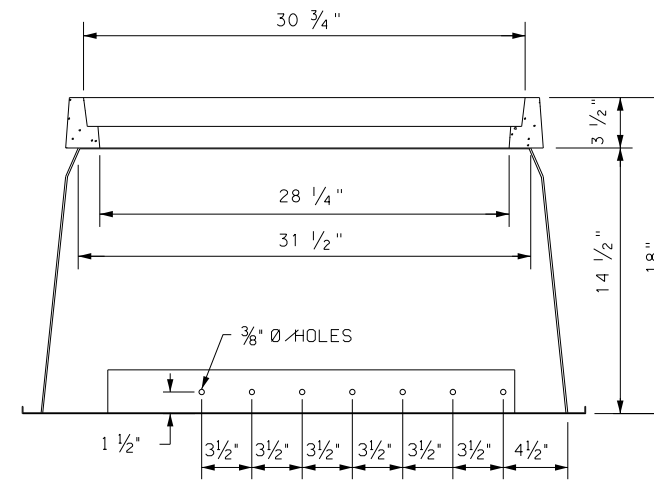
SECTION A - A

**APRON FOR BATTERY BOX GROUND BOXES**

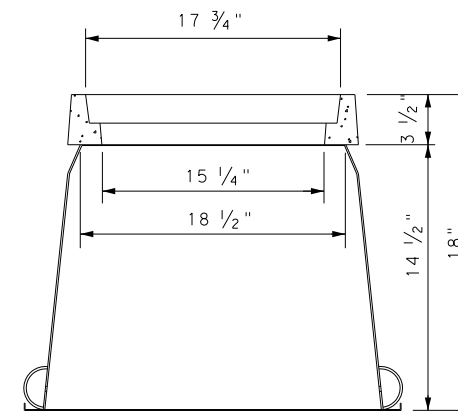
- ① Place aggregate under the box and not in the box. Aggregate should not encroach on the interior volume of the box.
- ② Install bushing or bell end fitting on the upper end of all elbows.
- ③ Install all conduits in a neat and workmanlike manner.



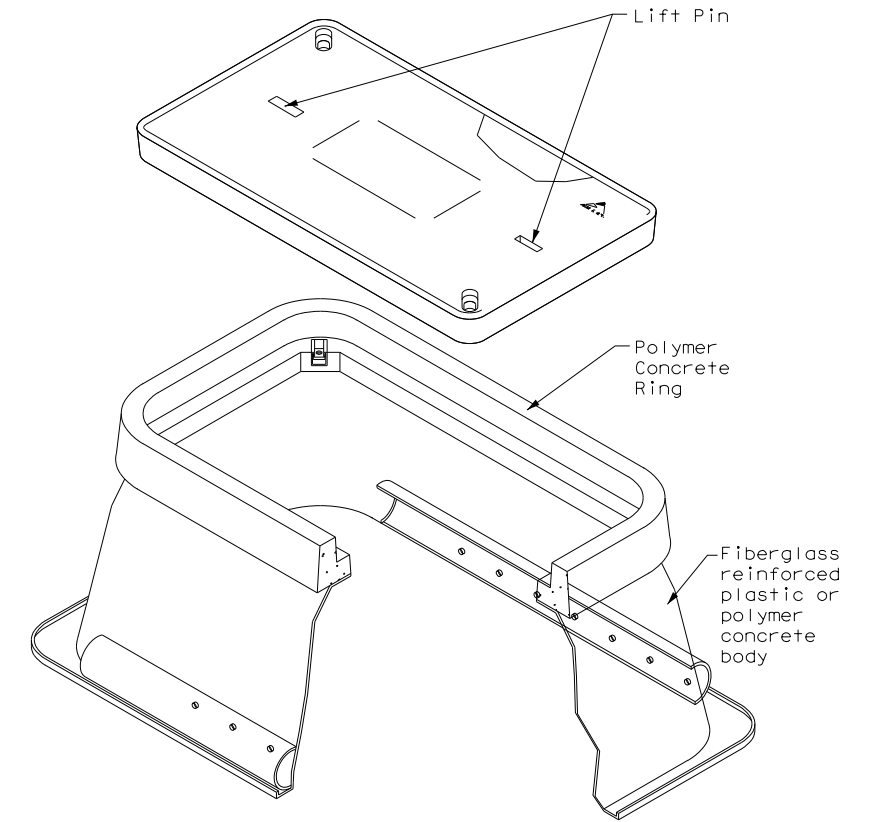
BATTERY BOX TOP VIEW



SECTION X-X



SECTION Y-Y

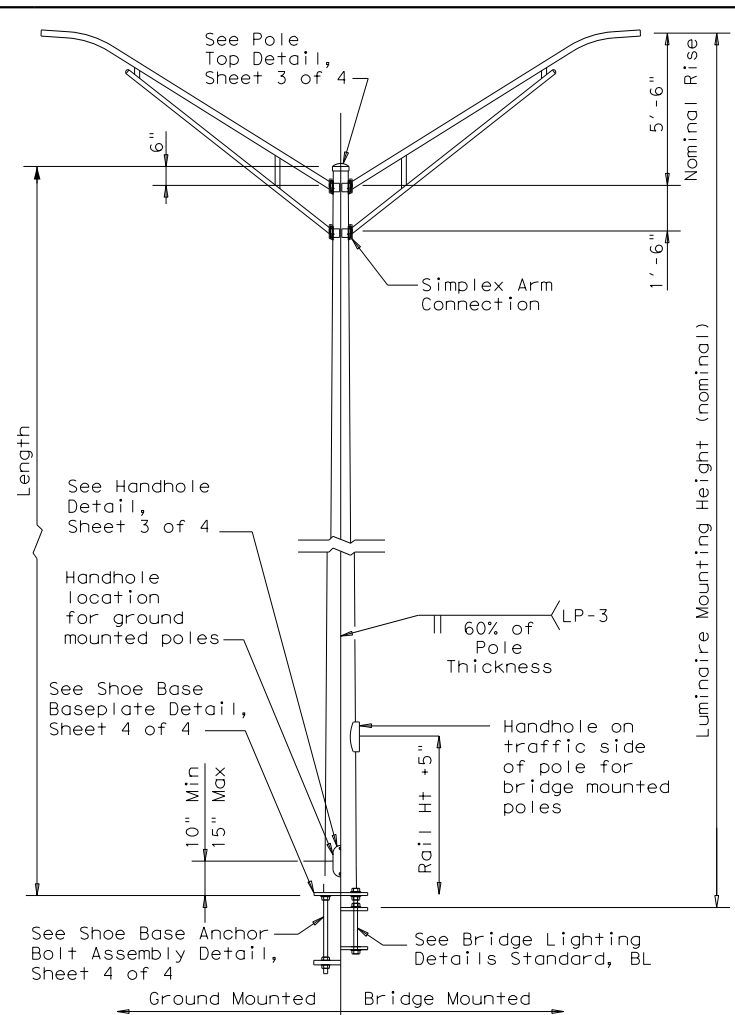


				<b>Traffic Operations Division Standard</b>	
<b>ELECTRICAL DETAILS BATTERY BOX GROUND BOXES</b>					
<b>ED(12)-14</b>					
FILE: ed12-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
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	SAT	BEXAR		334	



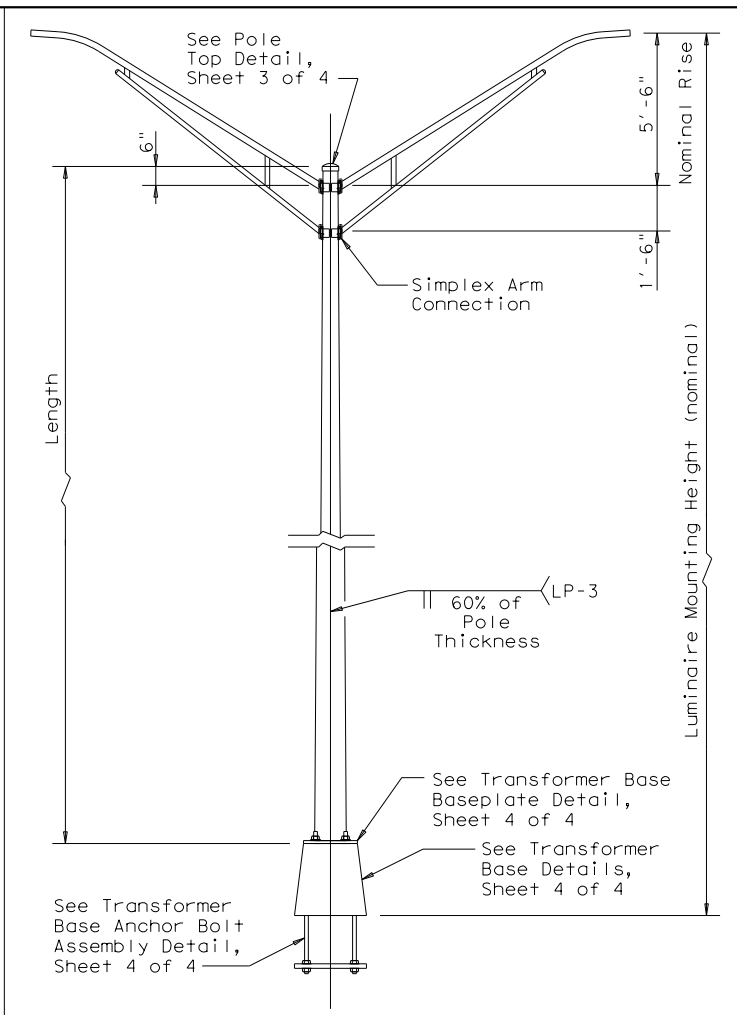
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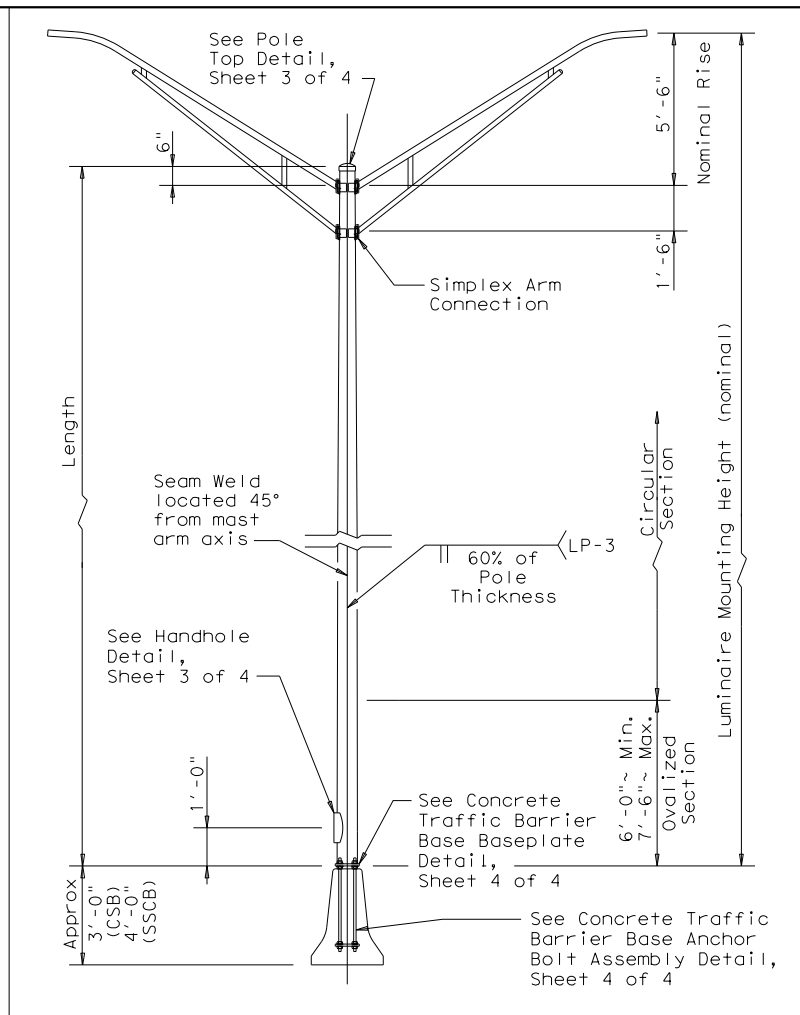
**SHOE BASE POLE**

SHOE BASE POLE					
Luminaire Mounting Height (Nominal) (ft)	Base Diameter (in)	Top Diameter (in)	Length (ft)	Pole Thickness (in)	Design Moment (K-ft)
20.00	7.00	4.90	15.00	0.1196	7.1
30.00	7.50	4.00	25.00	0.1196	13.2
31.00-39.00	8.00	4.36-3.24	26.00-34.00	0.1196	20.7
40.00	8.50	3.60	35.00	0.1196	20.7
50.00	10.50	4.20	45.00	0.1196	30.3



**TRANSFORMER BASE POLE**

TRANSFORMER BASE POLE					
Luminaire Mounting Height (Nominal) (ft)	Base Diameter (in)	Top Diameter (in)	Length (ft)	Pole Thickness (in)	Design Moment (K-ft)
20.00	7.00	5.11	13.50	0.1196	7.1
30.00	7.50	4.21	23.50	0.1196	13.2
31.00-39.00	8.00	4.57-3.45	24.50-32.50	0.1196	20.7
40.00	8.50	3.81	33.50	0.1196	20.7
50.00	10.00	3.41	43.50	0.1196	30.3



**CONCRETE TRAFFIC BARRIER BASE POLE**

CONCRETE TRAFFIC BARRIER BASE POLE (CSB/SSCB)						
Luminaire Mounting Height (Nominal) (ft)	Base Diameter (in)	Top Diameter (in)	Length (ft)	Pole Thickness (in)	Design Moment (K-ft)	
					About Rail	Perp. to Rail
28.00	9.00	5.78	23.00	0.1196	10.3	13.2
38.00	9.00	4.38	33.00	0.1196	16.6	20.8
48.00	10.50	4.48	43.00	0.1345	25.1	30.5

**MATERIAL DATA**

COMPONENT	ASTM DESIGNATION	MIN. YIELD (ksi)
Pole Shaft (0.14"/ft. Taper)	A572 Gr 50, A595 Gr A, A1011 HSLAS Gr 50 Cl 2 ③, or A1008 HSLAS Gr 50 Cl 2	50
Base Plate and Handhole Frame	A572 Gr.50, or A36	36
T-Base Connecting Bolts	A325 ①	92
Anchor Bolts	F1554 Gr 55, A193-B7 or A321	55 105
Anchor Bolt Templates	A36	36
Heavy Hex (H.H.) Nuts	A194 Gr 2H, or A563 Gr DH	
Flat Washers	F436	

**NOTES:**

- Lubricate in the field if necessary instead of the requirements in ASTM A325.
- Before ovalized as shown on Concrete Traffic Barrier Base Baseplate details, Sheet 4 of 4.
- A1011 SS Gr 50 may be used instead of HSLAS, provided the material meets the elongation requirements for HSLAS.

**POLE ASSEMBLY FABRICATION TOLERANCES TABLE**

DIMENSION	TOLERANCE
Shaft length	+1"
I.D. of outside piece of slip fitting pieces	+1/8", -1/16"
O.D. of inside piece of slip fitting pieces	+1/32", -1/8"
Shaft diameter: other	+3/16"
Out of "round"	1/4"
Straightness of shaft	±1/4" in 10 ft
Twist in shaft	4° in 50 ft
Perpendicular to baseplate	1/8" in 24"
Pole centered on baseplate	±1/4"
Location of Attachments	±1/4"
Bolt hole spacing	±1/16"

**GENERAL NOTES:**

- Designs conform to 2001 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications. Design 3-Second Gust Wind Speed equal 110 mph with a 1.14 gust factor. A wind importance factor of 0.80 is applied to adjust the wind speed to a 25 year recurrence interval. Design moments listed in tables assume base of pole is less than 25' above natural ground level.
- Design structures to support two 12' luminaire mast arms and luminaires. Design mast arms for a 60-pound luminaire having an effective projected area of 1.6 square feet.
- Fabrication shall be in accordance with the Specifications and with the details, dimensions, and weld procedures shown herein. Do not submit shop drawings for roadway illumination pole assemblies fabricated in accordance with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Materials, fabrication tolerances, and shipping practices shall meet the requirements of these sheets and the Specifications. In the absence of specified fabrication tolerances, dimensions shall be within the tolerances generally obtainable in normal fabrication practice.
- For mounting heights between values shown in the tables, use base diameter and thickness values for the larger pole.
- Unless otherwise noted, all steel parts shall be galvanized in accordance with Item 445, "Galvanizing."
- Steel poles shall be fabricated in accordance with Item 441, "Steel Structures." Longitudinal seam welds for pole sections shall have 60% minimum penetration. All welding shall be in accordance with the ANSI/AWS Structural Welding Code D1.1.
- Two-section poles joined by circumferential welds will not be permitted, unless otherwise shown on the plans. Poles may be fabricated in two sections and field-assembled by the lap-joint method. The two sections shall telescope together with a lap length of not less than 1-1/2 times the shaft diameter at the lap joint.
- Alternate material equal to or better than material specified may be substituted with the approval of the Engineer.
- Lubricate and tighten anchor bolts, when erecting shoe base poles and concrete traffic barrier base poles, in accordance with Item 449, "Anchor Bolts."
- All poles, except Transformer Base Poles, shall have hand holes with reinforcing frames and covers. Except for poles mounted on a concrete traffic barrier or bridge bracket, hand holes shall be placed 90 degrees to mast arm unless otherwise noted on the plans. For poles mounted on a concrete traffic barrier with one luminaire arm, hand holes shall be located 180 degrees from luminaire arm. For poles mounted on a concrete traffic barrier with two luminaire arms, all hand holes shall be on the same side of the barrier. For poles mounted on a bridge bracket, hand hole shall be on traffic side of the pole, at a height that will clear the barrier.
- The finished pole shall have a smooth, uniform finish free of pits, blisters, or other defects. Scratched, chipped, and other damaged galvanized areas on poles and mast arms shall be repaired in accordance with Item 445, "Galvanizing."
- Pole length is based on a 5'-6" luminaire arm rise. 4 ft. luminaire arms have a 2'-6" rise. A pole with 4 ft. luminaire arms will have an actual mounting height 3'-0" less than the nominal mounting height. Increasing the pole length to meet the nominal mounting height is allowed, but unnecessary unless otherwise directed by the engineer.



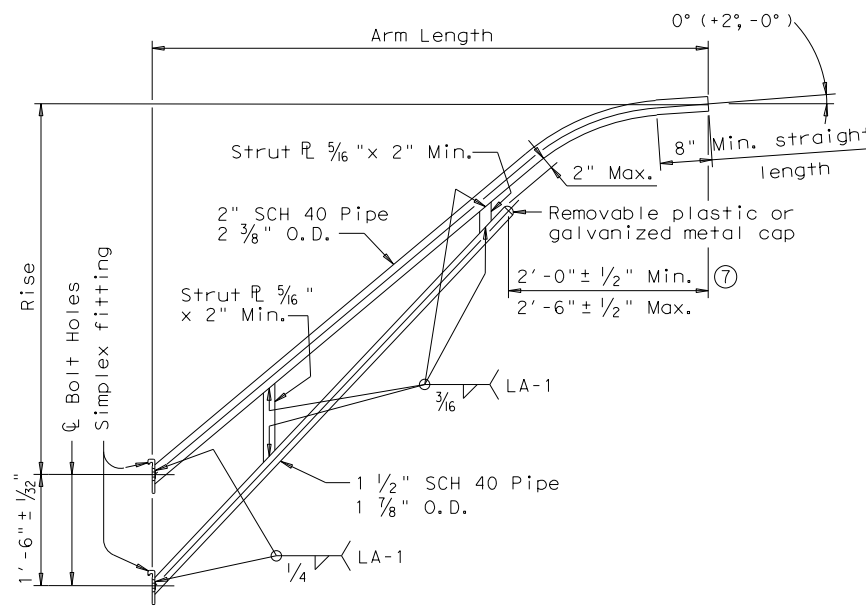
**ROADWAY ILLUMINATION POLES RIP(2) - 17**

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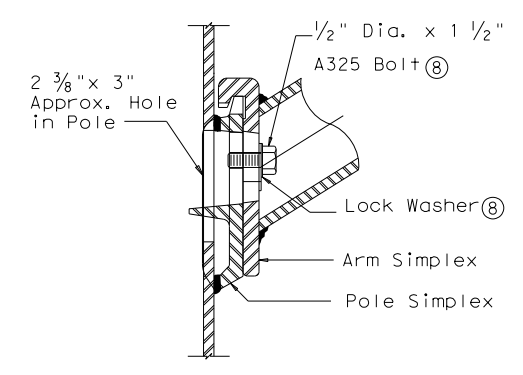
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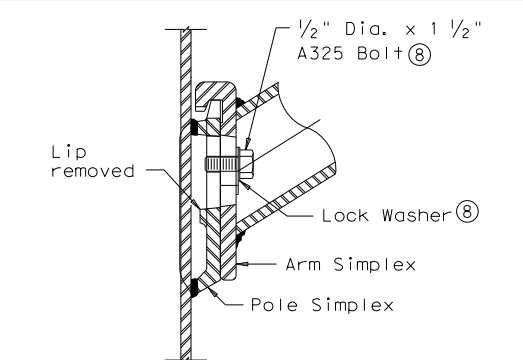
**LUMINAIRE ARM**

LUMINAIRE ARM DIMENSIONS		
Nominal Arm Length	Arm Length	Rise
4'-0"	3'-6"	2'-6" (10)
6'-0"	5'-6"	5'-6"
8'-0"	7'-6"	5'-6"
10'-0"	9'-6"	5'-6"
12'-0"	11'-6"	5'-6"

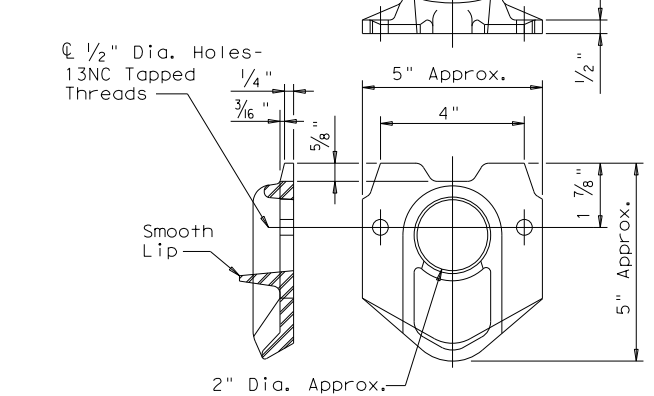
ARM ASSEMBLY FABRICATION TOLERANCES TABLE	
DIMENSION	TOLERANCE
Arm Length	±3"
Arm Rise	+1 3/4" in 10 ft
Arm Diameter	+3/16"
Overall length or width	+1/4"
Thickness	+1/4", -1/16"
Deviation from flat	1/8" in 12"
Spacing between holes	+3/32"
Bolt hole size	±1/16"
Strut location in truss arms	±1 1/2"



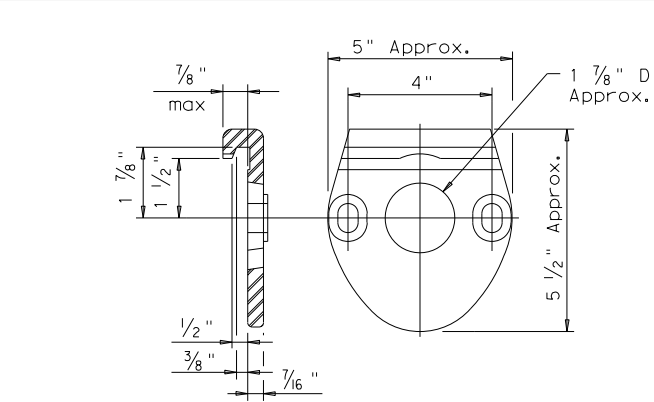
**UPPER SIMPLEX FITTING**  
(Gusset not shown for clarity)



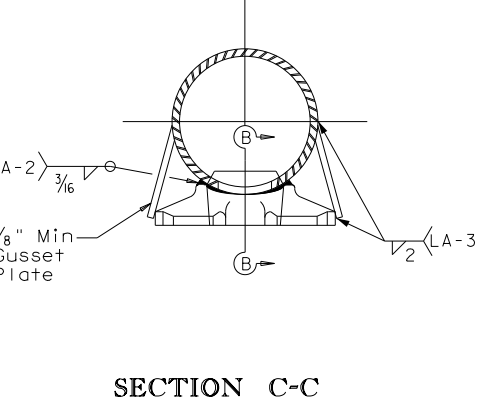
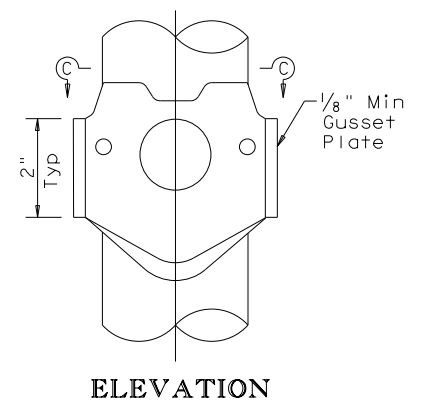
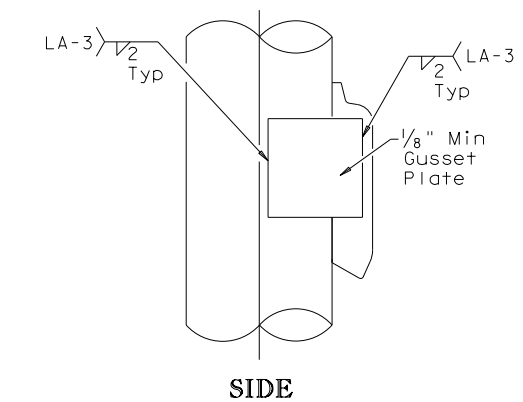
**SECTION B-B**



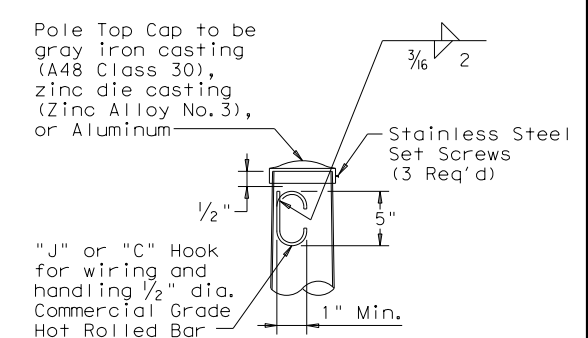
**POLE SIMPLEX DETAIL (9)**



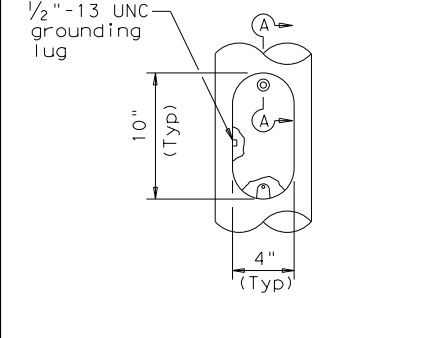
**ARM SIMPLEX DETAIL (9)**



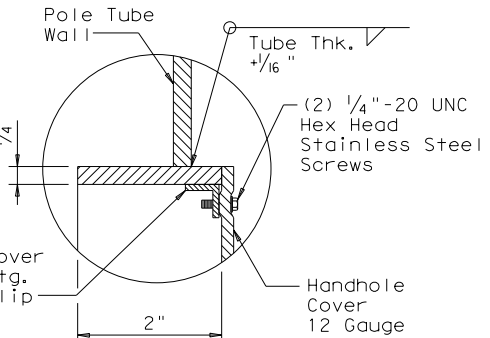
**SIMPLEX ATTACHMENT DETAIL**



**POLE TOP**



**ELEVATION**



**SECTION A-A**

**HANDHOLE**

**NOTES:**

- (4) Any of the materials listed for plates may be used where the drawings do not specify a particular ASTM designation.
- (5) A576 must be suitable for forging and also meet minimum tensile strength of 65 ksi, minimum yield of 35 ksi, and elongation in 2 inches of 22 percent.
- (6) A572, A1008 HSLAS-F, and A1011 HSLAS-F materials may have higher yield strengths but shall not have less elongation than the grade indicated.
- (7) Dimensional limits are given to show acceptable variation in design. All of a Fabricator's production of a particular arm length shall have the same dimensions within specified tolerances.
- (8) Each pole simplex fitting shall be supplied with 2 bolts and 2 lock washers of the size specified. The bolts and lock washers shall be secured to the pole with the other hardware items called for in the plans.
- (9) Proposed deviations in arm simplex dimensions or materials must be submitted to the Department for approval.
- (10) Luminaire mounting heights are based on assumed 5'-6" luminaire arm rise.

**MATERIALS**

Pole or Arm Simplex	ASTM A27 Gr 65-35, A148 Gr 80-50, A576 Gr 1021 (5), or A36 (Arm only)
Arm Pipes	ASTM A53 Gr A or B, A500 Gr B, A501, A 1008 HSLAS-F Gr 50 (6), or A1011 HSLAS-F Gr 50 (6)
Arm Struts and Gusset Plates (4)	ASTM A36, A572 Gr 50 (6), or A588
Misc.	ASTM designations as noted

SHEET 3 OF 4

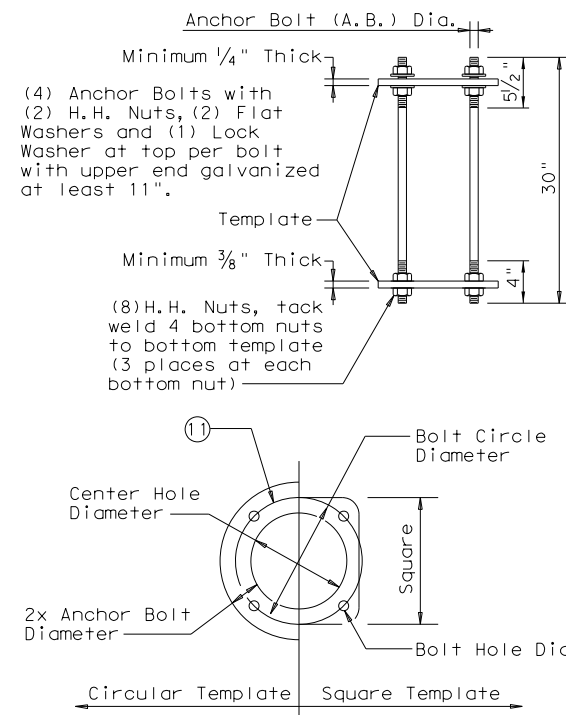


**ROADWAY ILLUMINATION POLES**  
**RIP (3) - 17**

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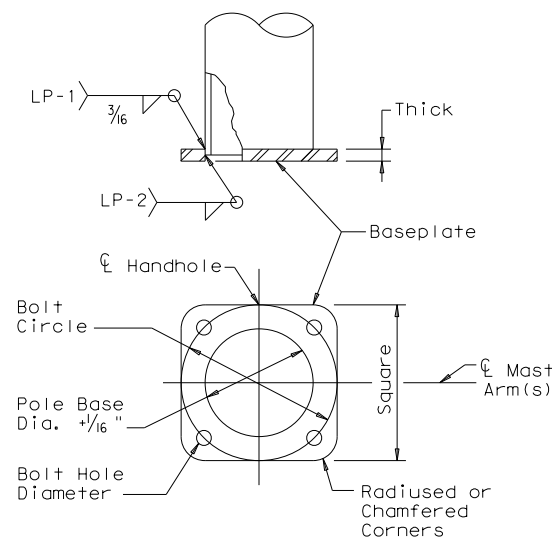
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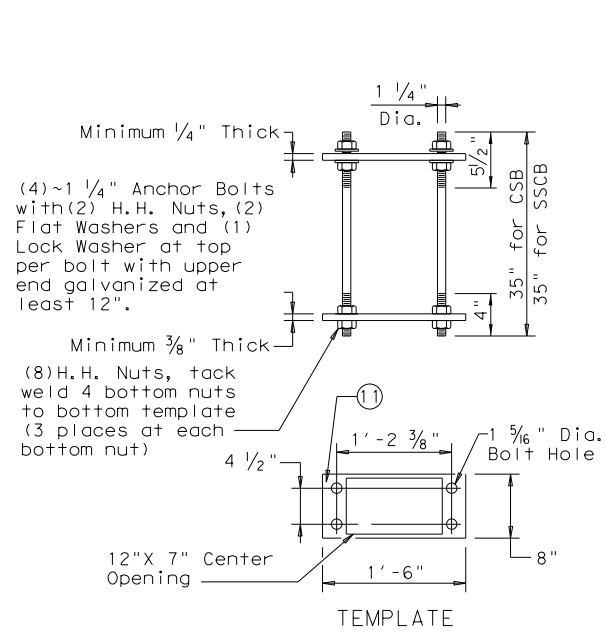
**SHOE BASE ANCHOR BOLT ASSEMBLY**

MOUNTING HEIGHTS (nominal)	A.B. Dia.	BOLT CIRCLE DIAMETER	SQUARE	CTR. HOLE DIAMETER	BOLT HOLE DIAMETER
20' - 39'	1"	13"	13"	11"	1 1/16"
40' - 50'	1 1/4"	15"	14 1/2"	12 1/2"	1 5/16"

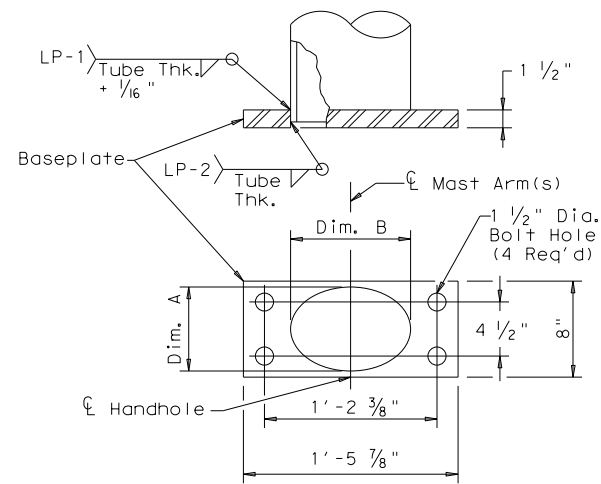


**SHOE BASE BASEPLATE**

MOUNTING HEIGHTS (nominal)	BOLT CIRCLE	SQUARE	THICK	BOLT HOLE DIAMETER
20' - 39'	13"	13"	1 1/4"	1 1/4"
40'	15"	15"	1 1/4"	1 1/2"
50'	15"	15"	1 1/2"	1 1/2"



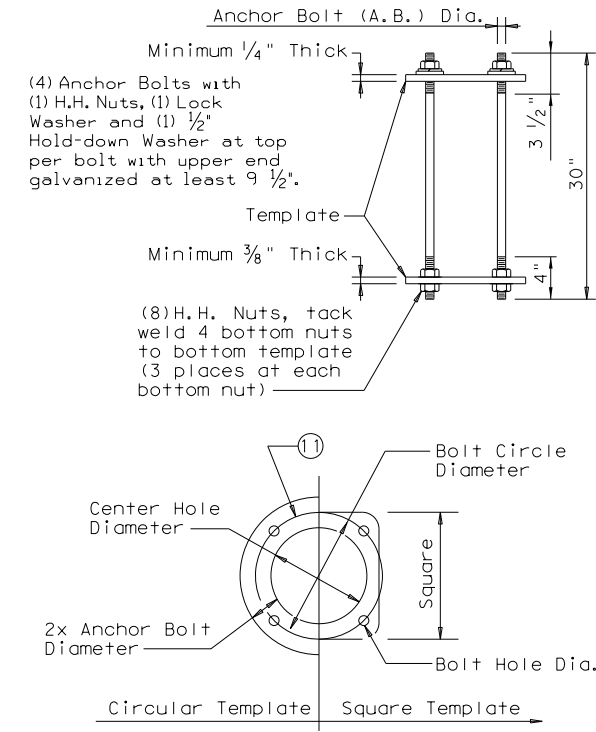
**CONCRETE TRAFFIC BARRIER BASE ANCHOR BOLT ASSEMBLY**



**CONCRETE TRAFFIC BARRIER BASE BASEPLATE**

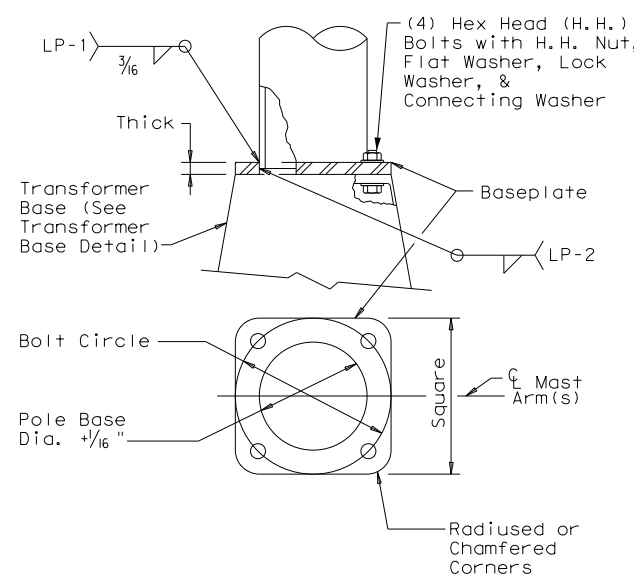
MOUNTING HEIGHTS (nominal)	POLE DIA. (12)	DIM. A	DIM. B
28' - 38'	9"	7" ± 1/4"	10" ± 1/4"
48'	10 1/2"	7" ± 1/4"	13" ± 1/4"

MOUNTING HEIGHTS (nominal)	BOLT CIRCLE	SQUARE	THICK	CONNECTING BOLT DIA.	BOLT HOLE DIAMETER	TRANSFORMER BASE TYPE
20' - 39'	13"	13"	1 1/4"	1"	1 1/4"	A
40'	15"	15"	1 1/4"	1 1/4"	1 1/2"	B
50'	15"	15"	1 1/2"	1 1/4"	1 1/2"	B



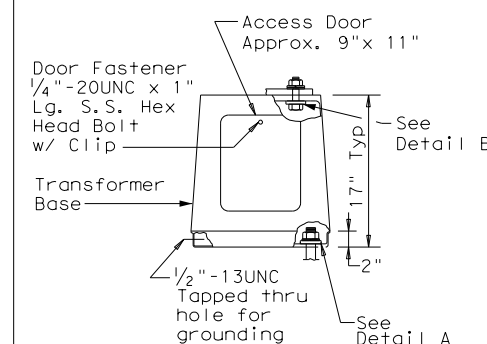
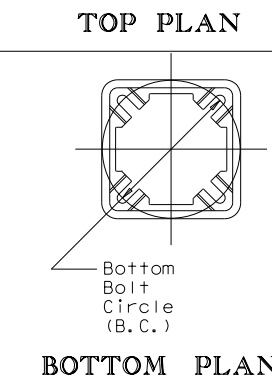
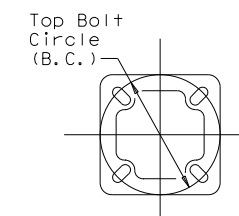
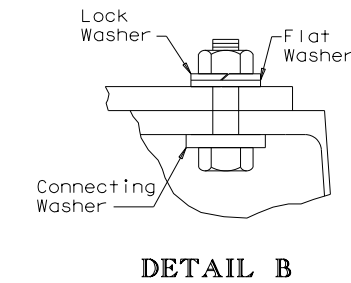
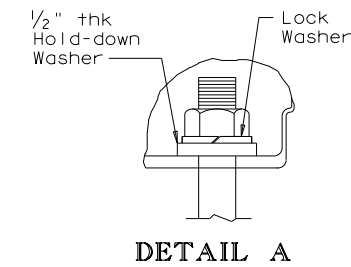
**TRANSFORMER BASE ANCHOR BOLT ASSEMBLY**

MOUNTING HEIGHTS (nominal)	A.B. Dia.	BOLT CIRCLE DIAMETER	SQUARE	CTR. HOLE DIAMETER	BOLT HOLE DIAMETER
20' - 39'	1"	14"	14"	12"	1 1/16"
40' - 50'	1 1/4"	17 1/4"	16 3/4"	14 3/4"	1 5/16"



**TRANSFORMER BASE BASEPLATE**

TYPE	TOP B.C.	BTM. B.C.
A	13"	14"
B	15"	17 1/4"



**TRANSFORMER BASE DETAILS**

**GENERAL NOTES:**

- For mounting heights between those shown in the table, use the values in the table for the larger mounting height.
- All breakaway bases shall meet the breakaway requirements of the 2001 Edition of the AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals," and shall have been tested by FHWA-approved methods. All bases shall have been structurally tested to resist 150% of the design moment.
- Transformer bases shall be cast from aluminum, ASTM B108 or B26 Alloy 356.0-T6, or other material approved by the Engineer. Four Hex Head (H.H.) bolts with four H.H. nuts, four lock washers, four flat washers, and connecting and hold-down washers as recommended by the manufacturer, galvanized to ASTM A153 Class C or D, or B695 Class 50, shall be provided with each transformer base for connecting the pole. Bolts shall be ASTM A325 or approved equal. Nuts shall be ASTM A563 grade DH galvanized.
- Bases shall be stamped, incised or by other approved permanent means, marked to show fabricator's name or logo, and model number. Such information shall be placed in a readily seen location, inside or outside the base, but shall not be placed on the door.
- Doors for transformer bases shall be made of plastic, fiberglass or other non-metallic material approved by the Engineer and shall be attached with stainless steel screws or bolts. Transformer bases shall be cleaned by grit blast cleaning after heat treatment. Certification by the manufacturer of heat treatment shall be furnished with transformer bases. The certification shall show the metal alloy and temper and that the base meets those requirements, chemical and physical. The certification shall also show the material ASTM specification. Transformer bases shall be cast with a removable tab bar for material testing. Some bars may have been removed by the manufacturer for testing.

**NOTES:**

- Anchor Bolt Templates do not need to be galvanized.
- Pole diameter before ovalized.

**ANCHOR BOLT FABRICATION TOLERANCES TABLE**

DIMENSION	TOLERANCE
Length	± 1/2"
Threaded length	± 1/2"
Galvanized length (if required)	- 1/4"

SHEET 4 OF 4



**ROADWAY ILLUMINATION POLES**

RIP(4) - 17

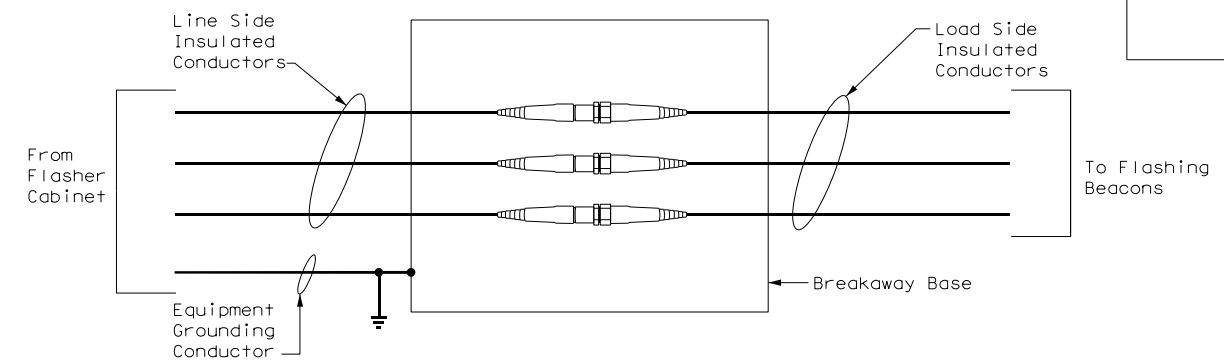
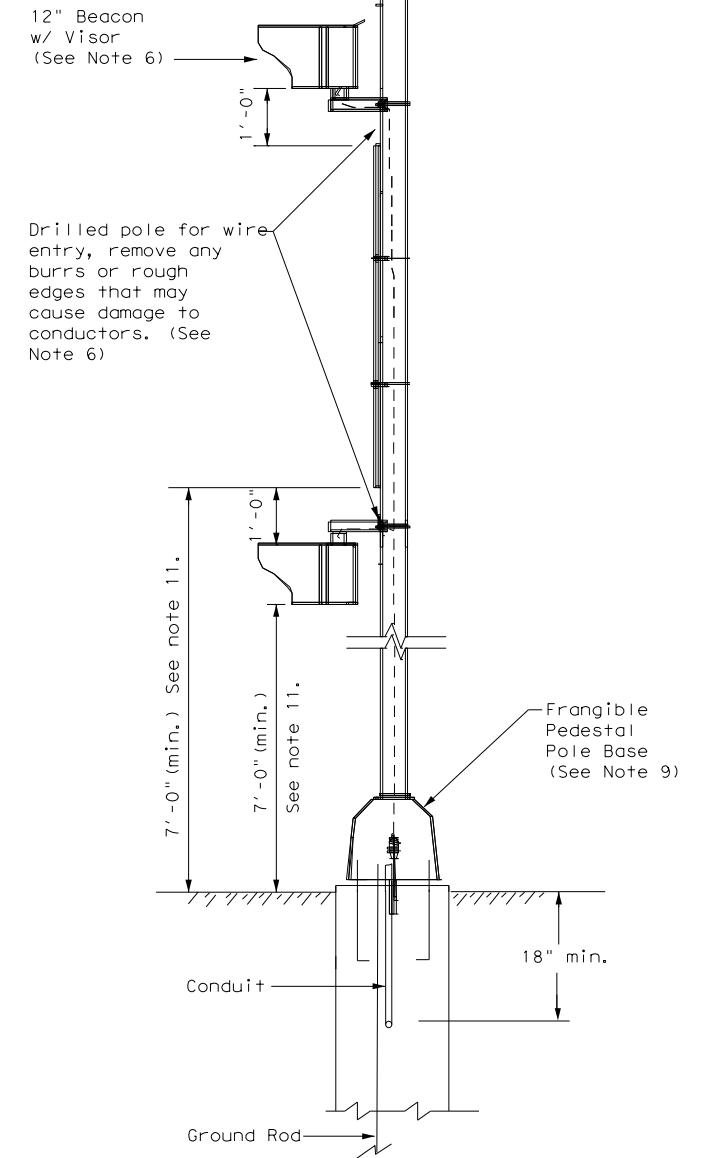
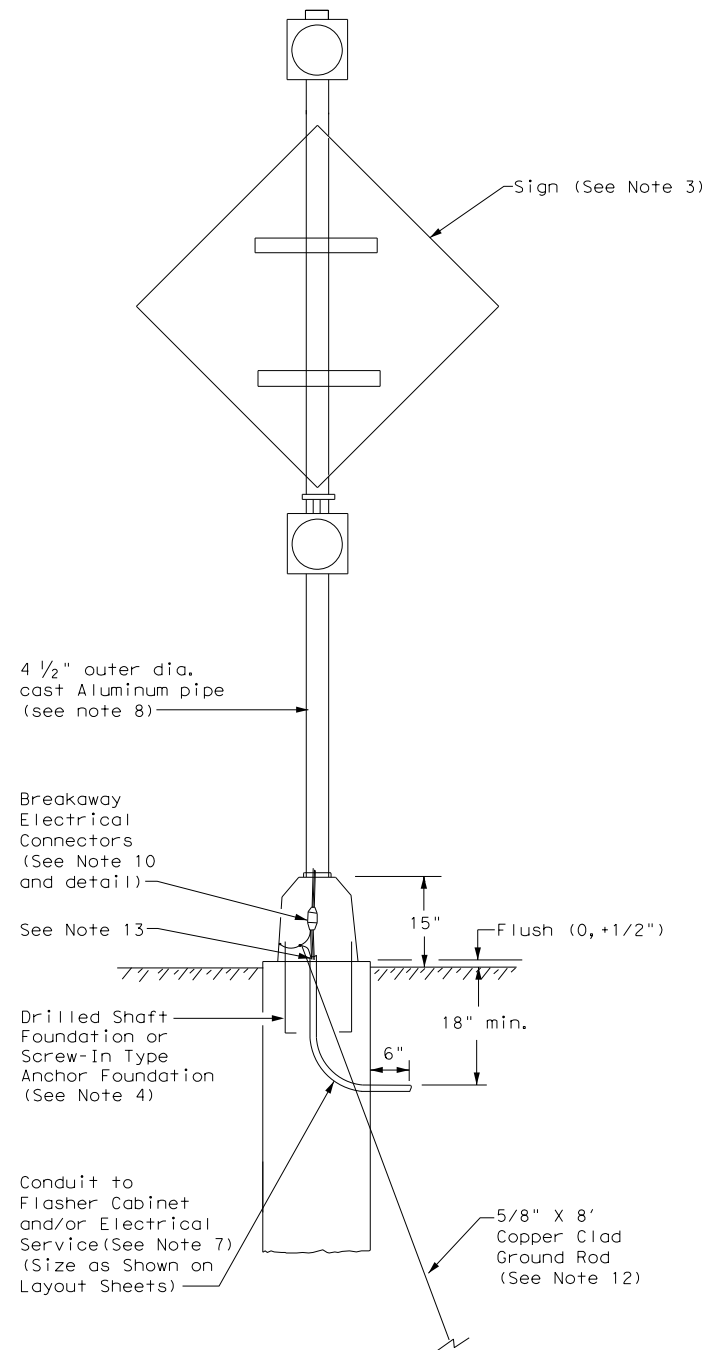
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©TxDOT January 2007	CON:	SECT:	JOB:	HIGHWAY:
7-17	REVISIONS:	0915	12	586
	DIST:	COUNTY:	SHEET NO.	
	SAT:	BEXAR	338	

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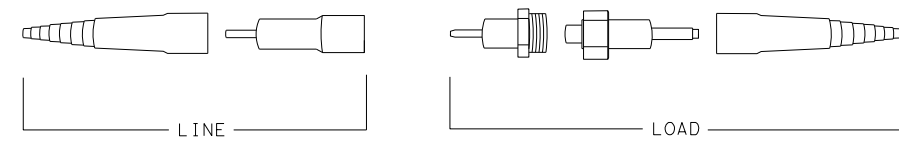
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**GENERAL NOTES:**


1. Details show a typical warning sign with two flashing beacon heads, other arrangements are possible. When only one beacon is required, install the upper beacon.
2. See Item 685, "Roadside Flashing Beacon Assemblies" for further requirements.
3. See SMD standard sheets for lateral and vertical clearances and sign mounting details. Install signs as shown on the sign layout sheets.
4. Use either a Screw-In Type Anchor Foundation or a Drilled Shaft Foundation as shown elsewhere in the plans. When plans require a Drilled Shaft Foundation, see standard sheet TS-FD. Install the Screw-In Type Anchor Foundation as per manufacturer's recommendations. On a slope, install one edge at ground level. Screw-In/Drilled Shaft Foundation is subsidiary to Item 685. Installation of a ground rod is not required for solar powered flashing beacon assemblies.
5. When used, provide Screw-In Type Anchor Foundations as shown on TxDOT's Material Producer List (MPL) in the file "Highway Traffic Signals".
6. Install beacon heads as shown here, as shown elsewhere on the plans, or as directed. Use hardware specifically designed for mounting beacon heads on poles.
7. Conduit in foundation and within 6 in. of foundation is subsidiary to the Item 685, "Roadside Flashing Beacon Assemblies."
8. Unless otherwise shown on the plans, pole shaft shall be one piece, Schedule 40 Aluminum pipe, ASTM B429 or B221 (Alloy 6061-T6 only). Aluminum conduit will not develop the necessary strength and will not be allowed.
9. Per manufacturer's recommendations, engage all threads on the pedestal pole base and pipe unless the pipe is fully seated into base. In high winds, use a pole and base collar assembly to add strength and prevent loosening of connection.
10. Provide single pole non-fused watertight breakaway electrical connectors for frangible pedestal pole bases, as shown on TxDOT's MPL in the file "Roadway Illumination and Electrical Supplies." Approved models are listed under Item 685. For ungrounded (hot) conductors, install a breakaway connector with a dummy fuse slug. For grounded (neutral) conductors, install a breakaway connector with a white colored marking and a permanently installed dummy fuse (slug).
11. Provide clearance as shown above the sidewalk or pavement grade at the edge of the road. When a bottom beacon is not used, mount the bottom of the sign at least 7 ft. above the sidewalk or pavement grade at the edge of the road.
12. Make connections to ground rods according to NEC. Ground rod clamps shall be listed for their intended purpose.
13. Ensure height of conduit and ground rod is below top of anchor bolts.



**NON-FUSED BREAKAWAY ELECTRICAL CONNECTORS**



**NON-FUSED BREAKAWAY ELECTRICAL CONNECTORS  
EXPLODED VIEW**


  
**Texas Department of Transportation**

**Traffic Operations Division Standard**

## ROADSIDE FLASHING BEACON ASSEMBLY

### RFBA-13

FILE: rfa-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT January 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
5-93 12-04	DIST	COUNTY	SHEET NO.	
10-93 3-13	SAT	BEXAR	339	
4-98				

74

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FOUNDATION DESIGN TABLE

FDN TYPE	DRILLED SHAFT DIA	REINFORCING STEEL		EMBEDDED DRILLED SHAFT LENGTH-ft (4), (5), (6)			ANCHOR BOLT DESIGN (1)				FOUNDATION DESIGN LOAD (2)		TYPICAL APPLICATION
		VERT BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER N blows/ft			ANCHOR BOLT DIA	Fy (ksi)	BOLT CIR DIA	ANCHOR TYPE	MOMENT K-ft	SHEAR Kips	
				10	15	40							
24-A	24"	4- #5	#2 at 12"	5.7	5.3	4.5	3/4"	36	12 3/4"	1	10	1	Pedestal pole, pedestal mounted controller.
30-A	30"	8- #9	#3 at 6"	11.3	10.3	8.0	1 1/2"	55	17"	2	87	3	Mast arm assembly. (see Selection Table)
36-A	36"	10- #9	#3 at 6"	13.2	12.0	9.4	1 3/4"	55	19"	2	131	5	Mast arm assembly. (see Selection Table) 30' strain pole with or without luminaire.
36-B	36"	12- #9	#3 at 6"	15.2	13.6	10.4	2"	55	21"	2	190	7	Mast arm assembly. (see Selection Table) Strain pole taller than 30' & strain pole with mast arm
42-A	42"	14- #9	#3 at 6"	17.4	15.6	11.9	2 1/4"	55	23"	2	271	9	Mast arm assembly. (see Selection Table)

NOTES:

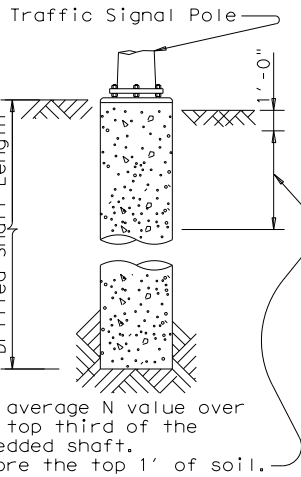
- Anchor bolt design develops the foundation capacity given under Foundation Design Loads.
- Foundation Design Loads are the allowable moments and shears at the base of the structure.
- Foundations may be listed separately or grouped according to similarity of location and type. Quantities are for the Contractor's information only.
- Field Penetrometer readings at a depth of approximately 3 to 5 feet may be used to adjust shaft lengths.
- If rock is encountered, the Drilled Shaft shall extend a minimum of two diameters into solid rock.
- Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

FOUNDATION SUMMARY TABLE (3)

LOCATION IDENTIFICATION	AVG. N BLOW /ft.	FDN TYPE	NO. EA	DRILLED SHAFT LENGTH (6) (FEET)				
				24-A	30-A	36-A	36-B	42-A
RIGSBY SIDEWALK CONSTRUCTION PLAN (SEE SHEET 285)		24-A	2	12				
WW WHITE SIDEWALK CONSTRUCTION PLAN (SEE SHEET 171)		24-A	1	6				
WW WHITE SIDEWALK CONSTRUCTION PLAN (SEE SHEET 173)		24-A	1	6				
WW WHITE SIDEWALK CONSTRUCTION PLAN (SEE SHEET 197)		24-A	1	6				
WW WHITE SIDEWALK CONSTRUCTION PLAN (SEE SHEET 198)		24-A	1	6				
TOTAL DRILLED SHAFT LENGTHS				36				

FOUNDATION SELECTION TABLE FOR STANDARD MAST ARM PLUS ILSN SUPPORT ASSEMBLIES (ft)

80 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH	FDN 30-A	FDN 36-A	FDN 36-B	FDN 42-A
		24' X 24'			
MAXIMUM DOUBLE ARM LENGTH COMBINATIONS	28' X 28'				
	32' X 28'				
		32' X 32'			
		36' X 36'			
		40' X 36'			
		44' X 28'	44' X 36'		
100 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH		36'	44'	
	MAXIMUM DOUBLE ARM LENGTH COMBINATIONS		24' X 24'		
		28' X 28'			
		32' X 24'	32' X 32'		
			36' X 36'		
			40' X 24'	40' X 36'	
				44' X 36'	



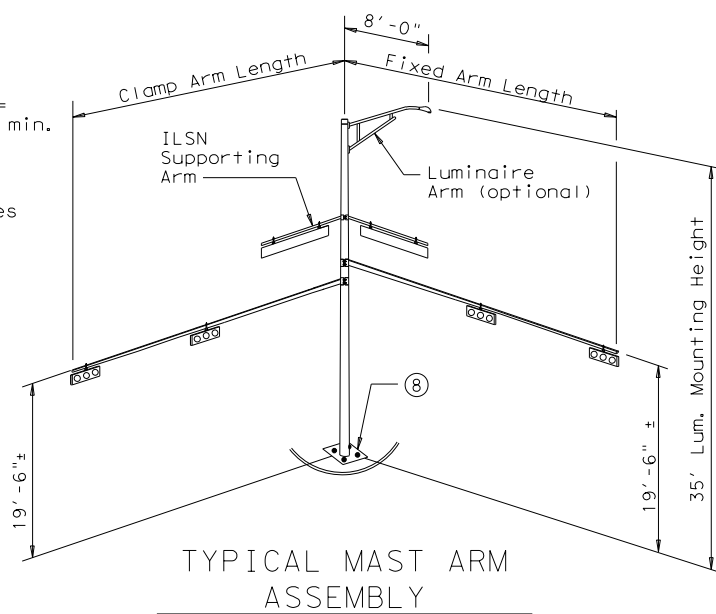
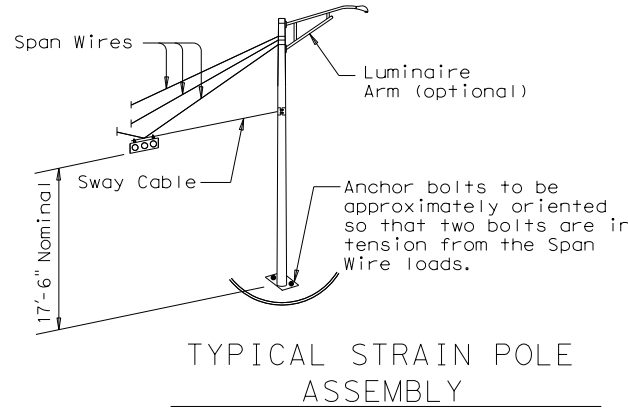
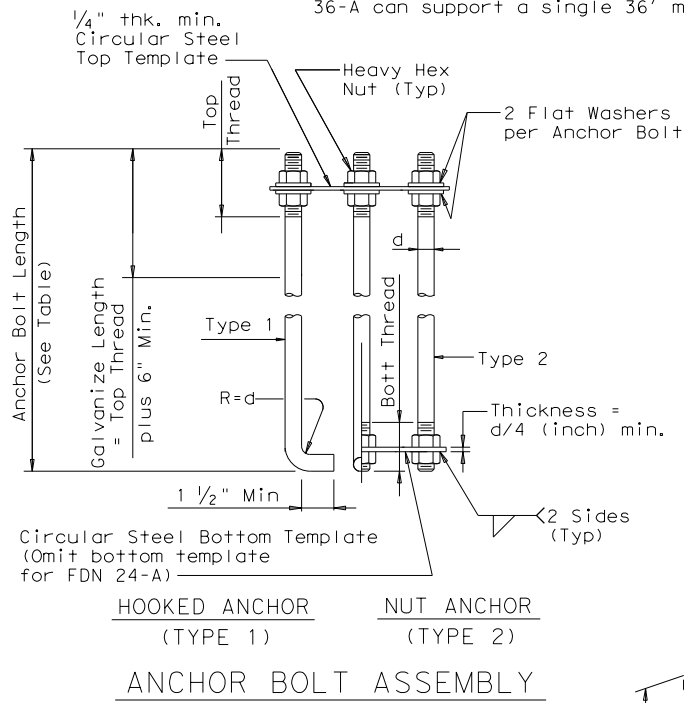
Use average N value over the top third of the embedded shaft. Ignore the top 1' of soil.

ANCHOR BOLT & TEMPLATE SIZES

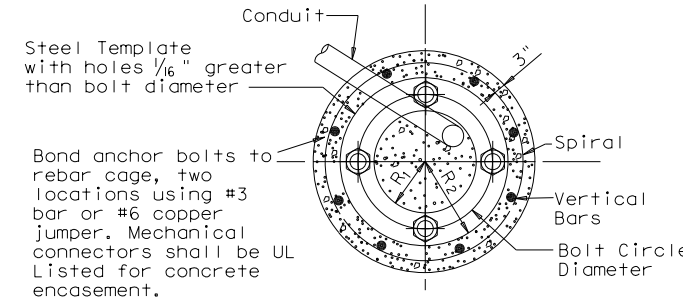
BOLT DIA IN.	(7) BOLT LENGTH	TOP THREAD	BOTTOM THREAD	BOLT CIRCLE	R2	R1
3/4"	1'-6"	3"	—	12 3/4"	7 1/8"	5 5/8"
1 1/2"	3'-4"	6"	4"	17"	10"	7"
1 3/4"	3'-10"	7"	4 1/2"	19"	11 1/4"	7 3/4"
2"	4'-3"	8"	5"	21"	12 1/2"	8 1/2"
2 1/4"	4'-9"	9"	5 1/2"	23"	13 3/4"	9 1/4"

(7) Min dimensions given, longer bolts are acceptable.

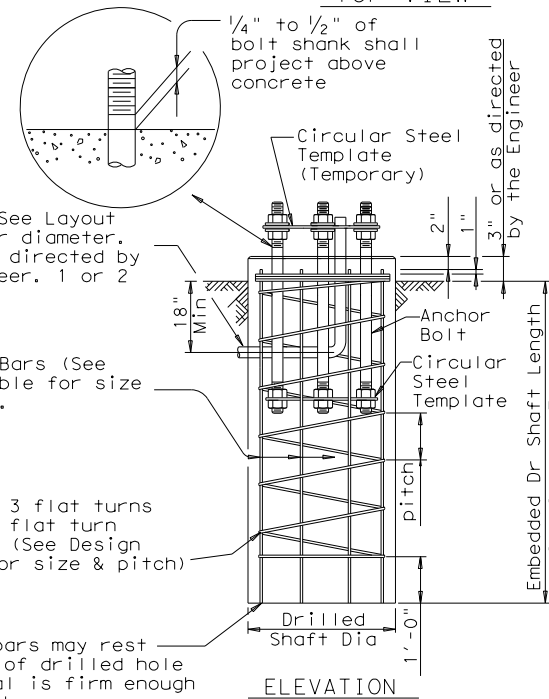
- EXAMPLE:
- For 80mph design wind speed, foundation 30-A can support up to a 32' arm with another arm up to 28'
  - For 100mph design wind speed, foundation 36-A can support a single 36' mast arm.



(8) Orient anchor bolts orthogonal with the fixed arm direction to ensure that two bolts are in tension under dead load.



TOP VIEW



Conduit (See Layout Sheets for diameter. Orient as directed by the Engineer. 1 or 2 required)

Vertical Bars (See Design Table for size & number).

Spiral, 3 flat turns top & 1 flat turn bottom. (See Design Table for size & pitch)

Vertical bars may rest on bottom of drilled hole if material is firm enough to do so when concrete is placed.

FOUNDATION DETAILS

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and interim revisions thereto.

Reinforcing steel shall conform to Item 440, "Reinforcing Steel".

Concrete shall be Class "C".

Threads for anchor bolts and nuts shall be rolled or cut threads of 8UN series up to 2" in diameter or UNC series for all sizes. Bolts and nuts shall have Class 2A and 2B fit tolerances. Galvanized nuts shall be tapped after galvanizing.

Anchor bolts that are larger than 1" in diameter shall conform to "alloy steel" or "medium-strength mild steel" per Item 449, "Anchor Bolts". Anchor bolts that are 1" in diameter or less shall conform to ASTM A36. Galvanize a minimum of the top end thread length plus 6" for all anchor bolts unless otherwise noted. Exposed washers and exposed nuts shall be galvanized. All galvanizing shall be in accordance with Item 445, "Galvanizing".

Templates and embedded nuts need not be galvanized. Lubricate and tighten anchor bolts when erecting the structure in accordance with Item 449, "Anchor Bolts".



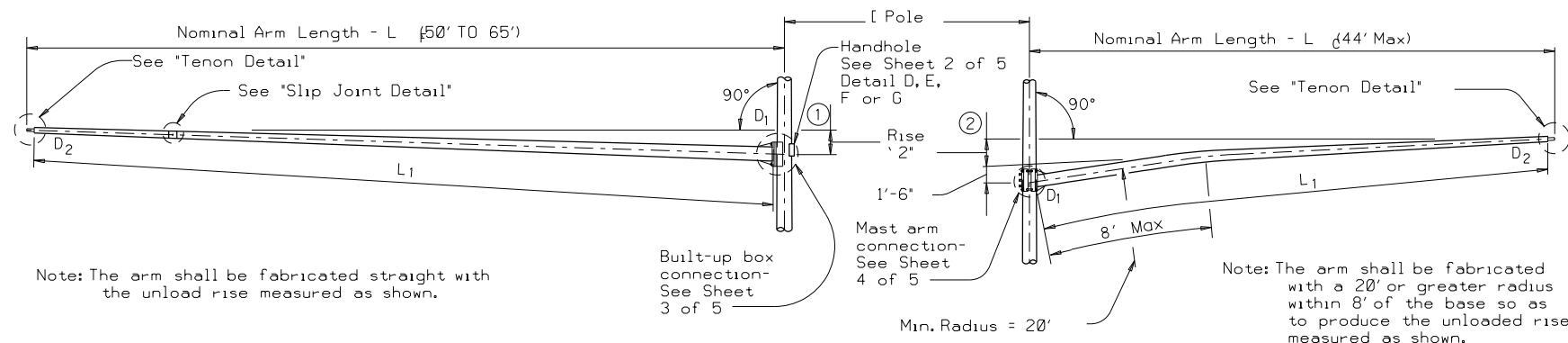
TRAFFIC SIGNAL POLE FOUNDATION

TS-FD-12

© TxDOT August 1995		DN: MS	CK: JSY	DMAO/MMF	CK: JSY/TEB
REVISIONS		CONT	SECT	JOB	HIGHWAY
5-96	11-99	0915	12	586	VA
		DIST	COUNTY	SHEET NO.	
		SAT	BEXAR	340	

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Note: The arm shall be fabricated straight with the unload rise measured as shown.

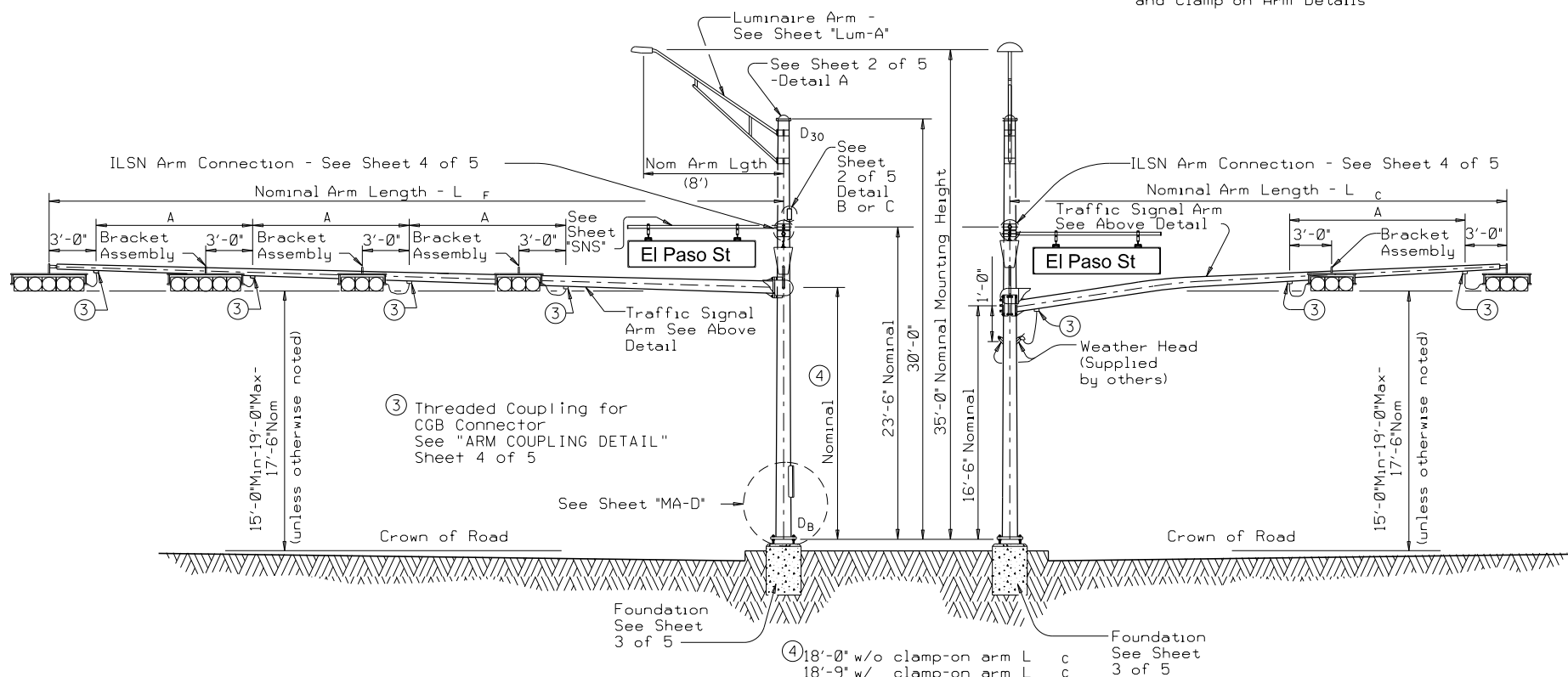
Note: The arm shall be fabricated with a 20' or greater radius within 8' of the base so as to produce the unloaded rise measured as shown.

**FIXED MOUNT TRAFFIC SIGNAL ARM**

① See Sheet 3 of 5 for Arm Rise

**CLAMP-ON TRAFFIC SIGNAL ARM (IF REQUIRED)**

② See Sheet 4 of 5 for Arm Rise and Clamp-on Arm Details



**ELEVATION**

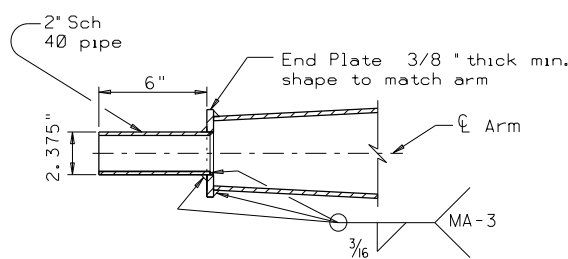
(Showing fixed mount arm)

**STRUCTURE ASSEMBLY**

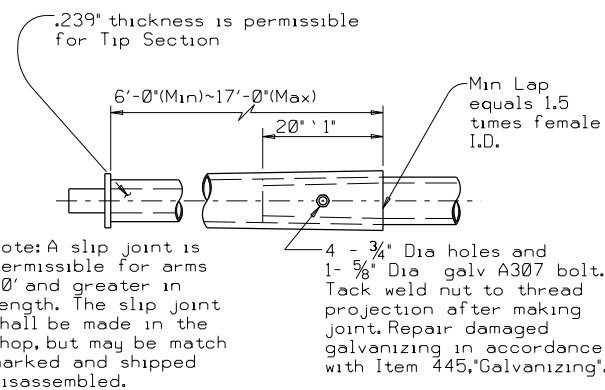
**ELEVATION**

(Showing clamp-on arm)

TABLE OF DIMENSIONS "A"											
Arm Length	24'	28'	32'	36'	40'	44'	50'	55'	60'	65'	
Arm Type II	10'	11'	12'	13'							
Arm Type III			10'	11'	12'	12'					
Arm Type IV							12'	12'	12'	12'	



**TENON DETAIL**



**SLIP JOINT DETAIL (FIXED MOUNT ARM)**

**GENERAL NOTES:**

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications thereto. Design Wind Speed can be either 100 mph or 80 mph plus a 1.3 gust factor. If clamp-on traffic signal is required, designs are based on an arm included angle of 90 degrees or more. Angles of less than approximately 75 degrees will require a special design.

Poles are designed to support one 8'-0" luminaire arm, two 9'-0" internally lighted street name (ILSN) signs and two traffic signal arms with limited length combinations.

Each arm with its related attachment is shown below

Arm	Equivalent DL ⑤	WL EPA ⑤⑥
8' Luminaire Arm	Luminaire 60 lbs	1.6 sq ft
9' ILSN Arm	Sign 85 lbs	11.5 sq ft
50' to 65' Fixed Mount Arm	Signal Loads 310 lbs	52 sq ft
Up to 44' Clamp-on Arm	Signal Loads 180 lbs	32.4 sq ft

⑤ Equivalent dead load plus horizontal wind load applied at the end of arm except ILSN arm, which applied 4.5' from the centerline of the pole.

⑥ Effective projected area (actual area times drag coefficient) for the application of horizontal wind load.

Except as noted in Sheet 1 thru 5 of 5, other details not covered shall refer to Standard Sheet "MA-D" for pole details, "LUM-A" for luminaire arm and connection details, "SNS" for internally lighted street name sign details, and "TS-FD" for anchor bolt and foundation details.

Fabrication shall be in accordance with Item 686, "Traffic Signal Pole Assemblies (Steel)" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Material, fabrication tolerances, and shipping practices shall also meet the requirements of this sheet and Item 686, "Traffic Signal Pole Assemblies (Steel)".

Unless otherwise noted, all parts shall be galvanized in accordance with Item 445, "Galvanizing" after fabrication.

Deviations from the details and dimensions shown herein require submission of shop drawings in accordance with the Item 441, "Steel Structures". Alternate designs are not acceptable.

Installation of damping plate for the long mast arm is not recommended.

Provision of the bracket assembly used to support the traffic signal heads shall be under the direction of the Engineer for approval.

Design also conforms to NCHRP Report 412 for fatigue resistance except that there are no stiffeners at the base plate. TxDOT is conducting tests to determine if stiffeners at the base plate will or will not result in optimal performance; depending upon the results of the tests, poles may need a retrofit to ensure optimal fatigue performance.

Texas Department of Transportation  
 Traffic Operations Division

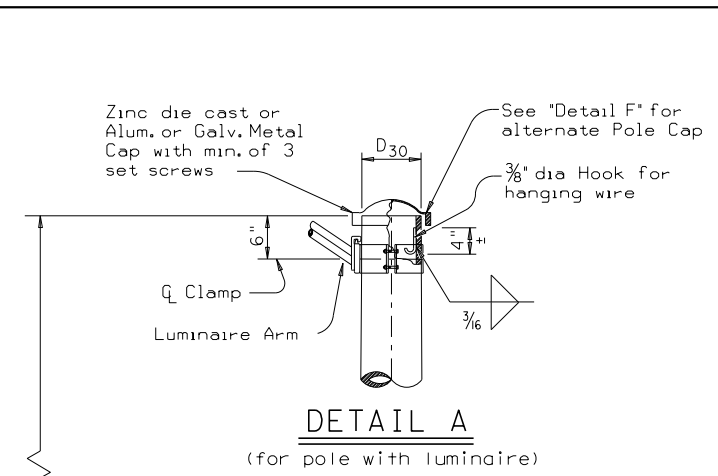
**TRAFFIC SIGNAL  
 SUPPORT STRUCTURES  
 LONG MAST ARM ASSEMBLY  
 (50 TO 65 FT)  
 (80 AND 100 MPH WIND ZONE)  
 LMA(1)-12**

Sheet 1 of 5

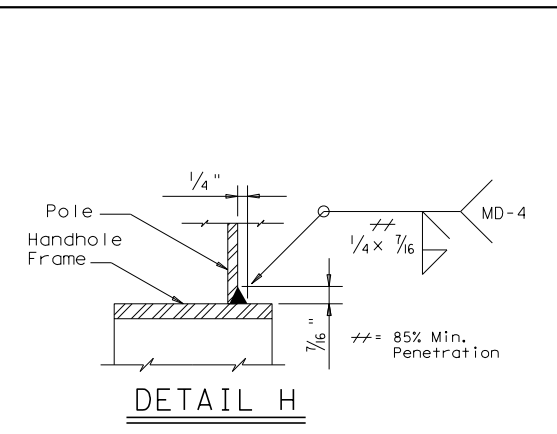
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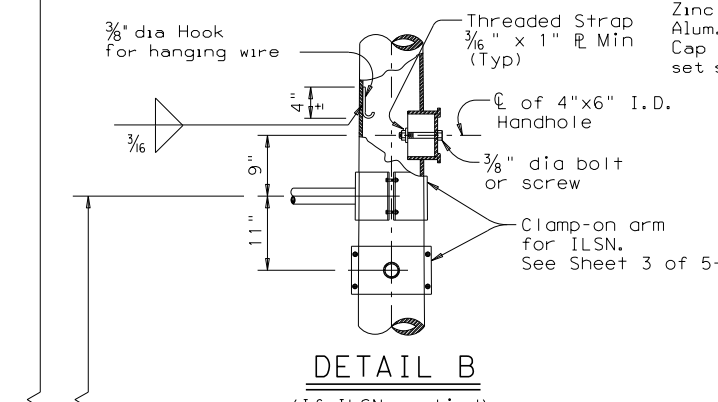
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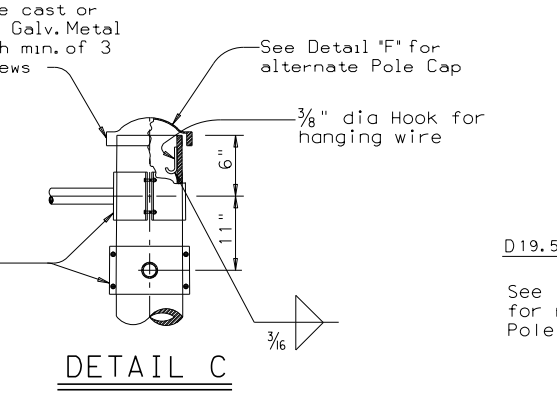
**DETAIL A**  
(for pole with luminaire)



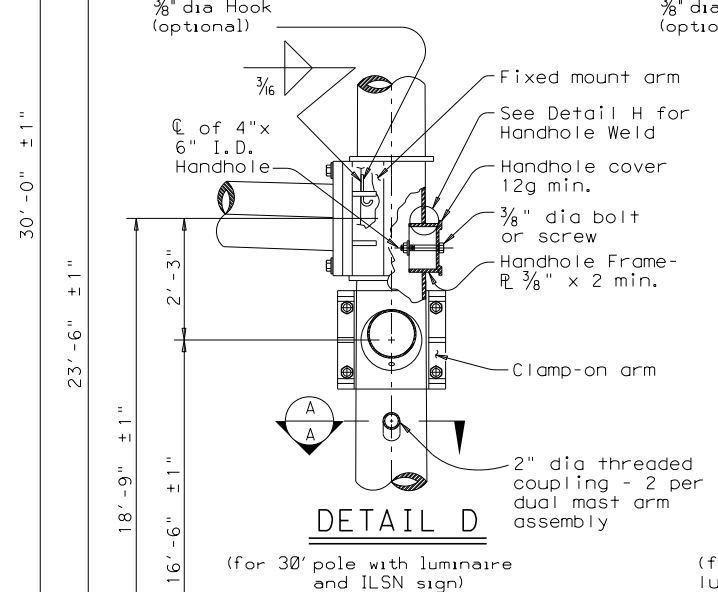
**DETAIL H**



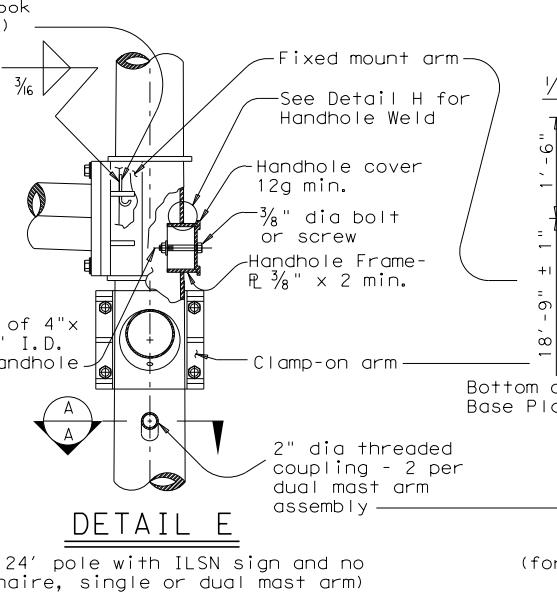
**DETAIL B**  
(If ILSN applied)



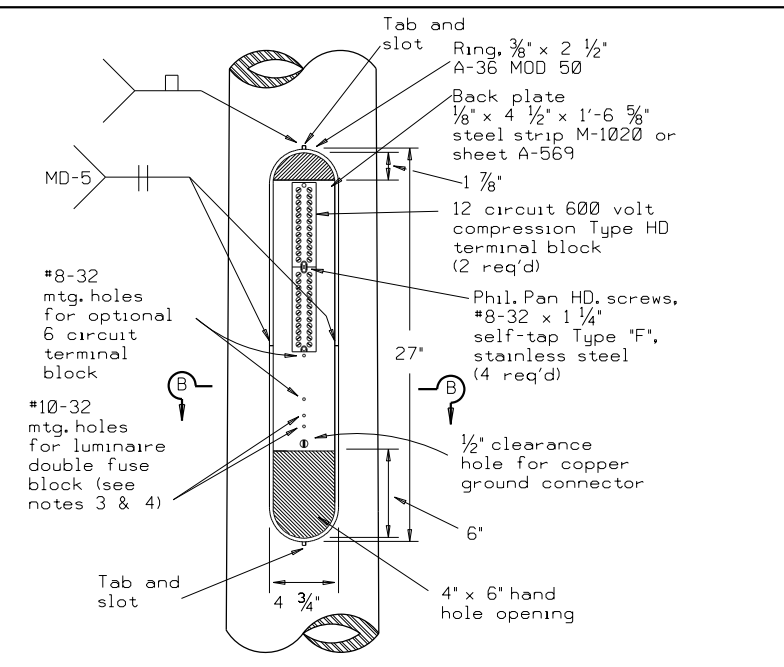
**DETAIL C**



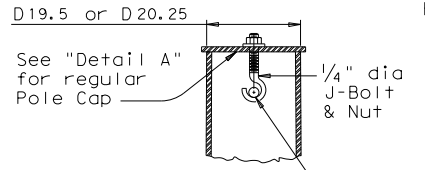
**DETAIL D**  
(for 30' pole with luminaire and ILSN sign)



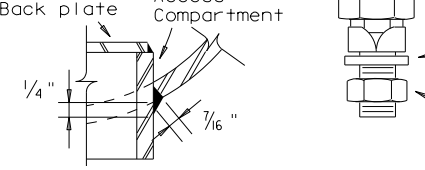
**DETAIL E**  
(for 24' pole with ILSN sign and no luminaire, single or dual mast arm)



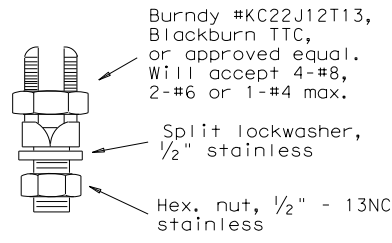
**ACCESS COMPARTMENT**



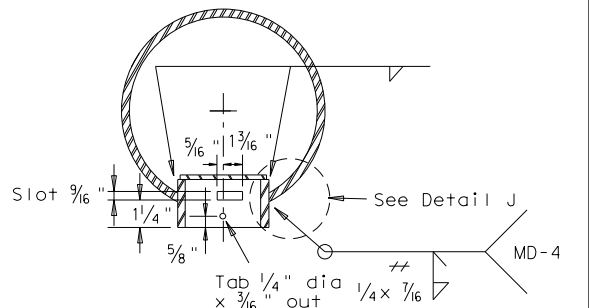
**SECTION Y-Y**



**DETAIL J**



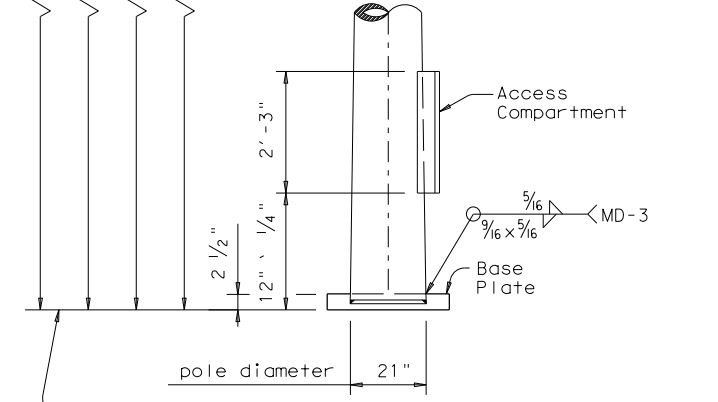
**COPPER GROUND CONNECTOR**



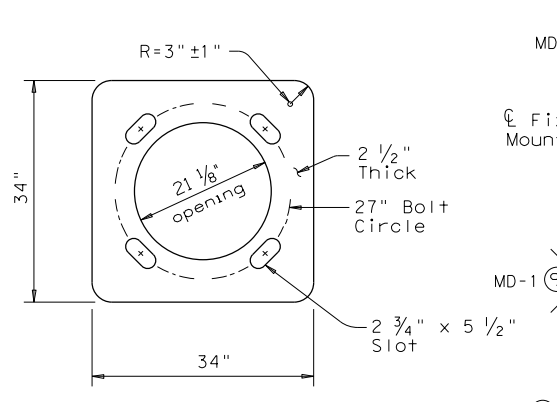
**SECTION B-B**

**ACCESS COMPARTMENT NOTES:**

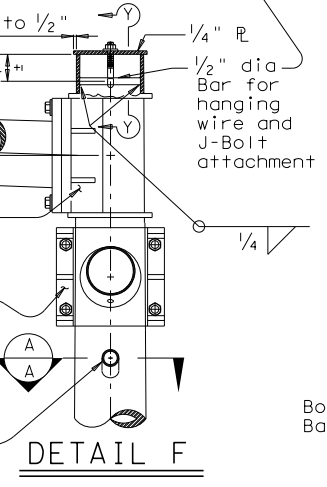
- The cover shall be one piece formed from ABS plastic, shall be a pearl gray color, and shall be suitable for exposure to harsh sunlight and extreme weather. Cover shall latch with two screw latches and shall fit tightly to the enclosure ring to create a rainproof seal. Latch screws shall be 1/4-20 stainless flat socket head screws with tamper proof feature.
- The pole manufacturer shall provide with each pole a separate kit consisting of: one cover with two latching assemblies, two terminal strips (Marathon #985GP12CU or approved equal), four #8-32 x 1 1/4" self tapping type "F" stainless steel pan head screws, and one ground connector (Blackburn TTC, Burndy KC22J12T13, or IlSCO SSS-5). The traffic signal contractor shall install the kit items in the field.
- The screw hole spacing on the enclosure back plate shall be for two Marathon #985GP12 terminal strips, one Marathon #985GP06CU terminal strip, and one Bussmann #BM6032B fuse block.
- Install one Bussmann #BM6032B, Littelfuse #L60030M-2C, or Ferraz-Shawmut #30352 fuse block for poles where luminaires are to be installed.



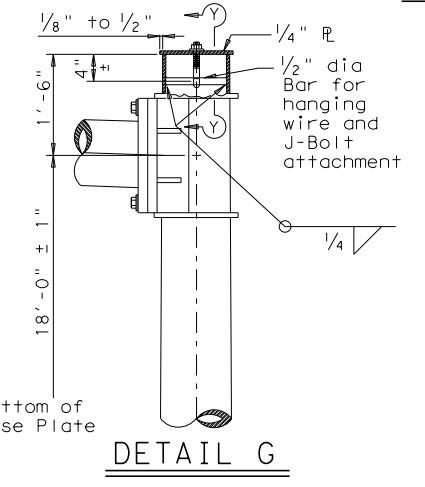
**POLE ELEVATION**



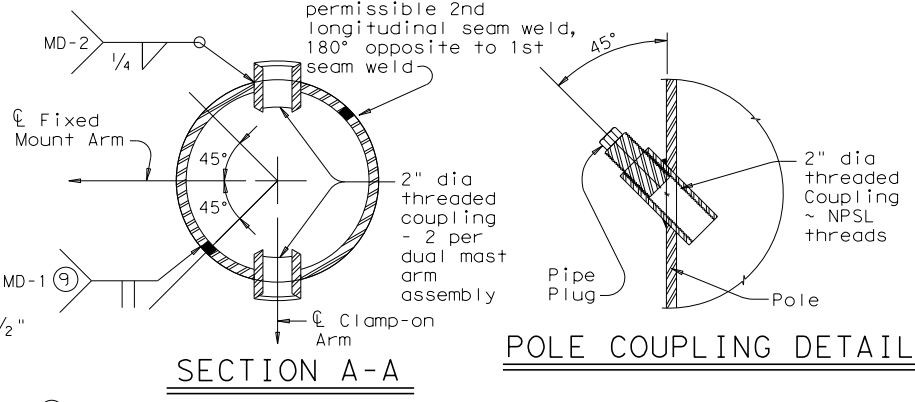
**BASE PLATE**



**DETAIL F**  
(for 20.25' pole with no ILSN sign and no luminaire, dual mast arm)



**DETAIL G**  
(for 19.5' pole with no ILSN sign and no luminaire, single mast arm)



**SECTION A-A**

**POLE COUPLING DETAIL**

⑨ Longitudinal seam weld must be oriented within 90° (45° rotation each side) along the fixed mount arm. 60% min penetration required, 100% penetration within 6" of circumferential base weld.

MATERIALS	
Round Shafts or Polygonal Shafts ⑦	ASTM A595 Gr. A, A588, A1008 HSLAS Gr.50 Class 2, A1011 HSLAS Gr.50 Class 2, A572 Gr.50 or A1011 SS Gr.50 ⑧
Plates ⑦	ASTM A36, A588, or A572 Gr.50
Connection Bolts	ASTM A325, or A449 except where noted
Pin Bolts	ASTM A325
Pipe ⑦	ASTM A53 Gr. B, A501, A1008 HSLAS-F Gr.50, A1011 HSLAS-F Gr.50
Misc. Hardware	Galvanized steel or stainless steel or as noted

- ⑦ ASTM A572, A1008 HSLAS, A1011 HSLAS, A1008 HSLAS-F, A1011 HSLAS-F, or A1011 SS may have higher yield strengths but shall not have less elongation than the grade indicated.
- ⑧ ASTM A1011 SS Gr.50 shall also have a minimum elongation of 18 percent in 8 inches or 23 percent in 2 inches. Material thickness in excess of those stipulated under A1011 SS will be acceptable providing the material meets all other A1011 SS requirements and the requirements of this item.

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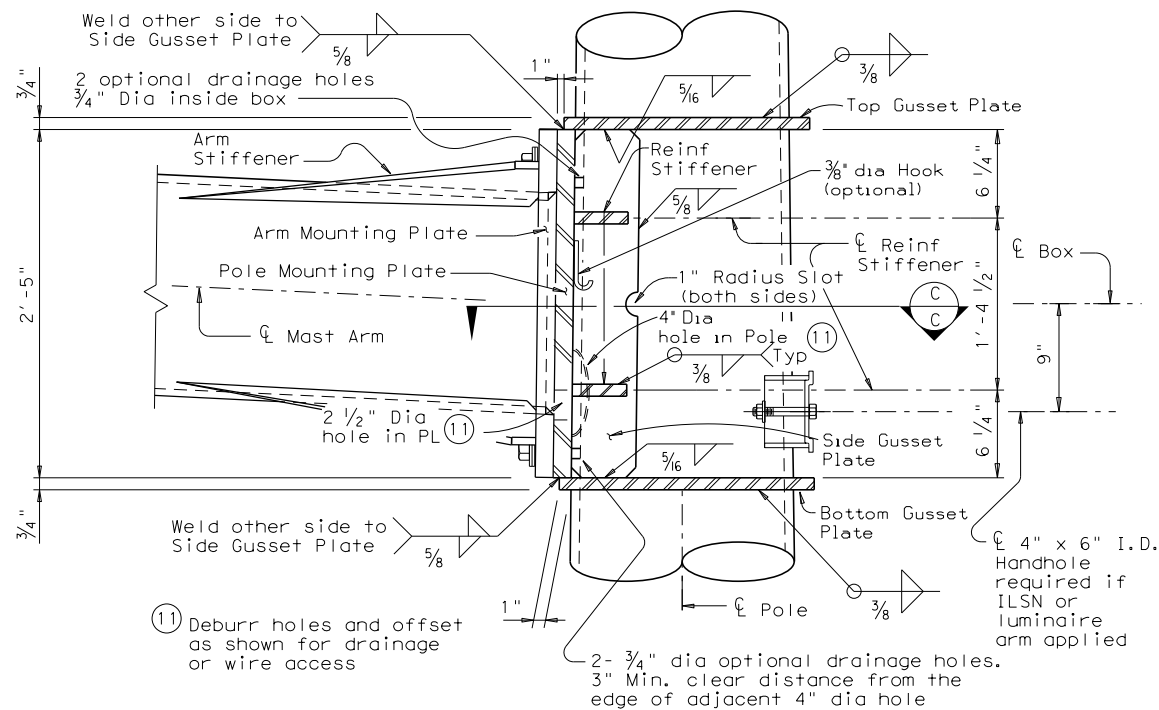
**TRAFFIC SIGNAL SUPPORT STRUCTURES**  
 LONG MAST ARM ASSEMBLY  
 (50 TO 65 FT)  
 (80 AND 100 MPH WIND ZONE)  
 LMA(2)-12

Sheet 2 of 5

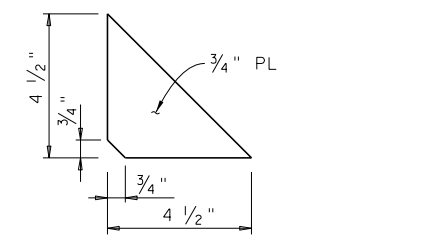
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REVISIONS					
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1-12					
	DIST	COUNTY	SHEET NO.		
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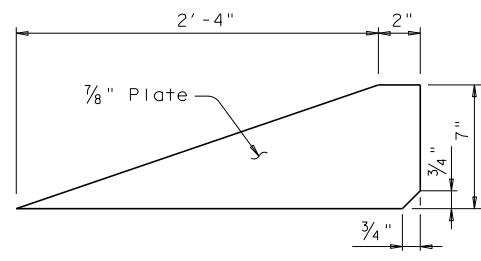
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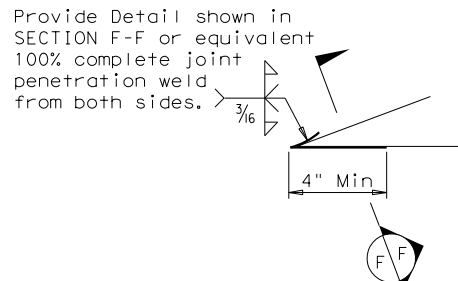
**BUILT-UP BOX CONNECTION**



**REINFORCING STIFFENER**

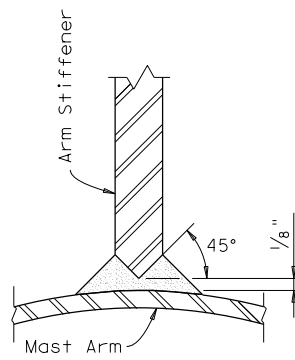


**ARM STIFFENER**  
(Cut to match arm inclination and taper)

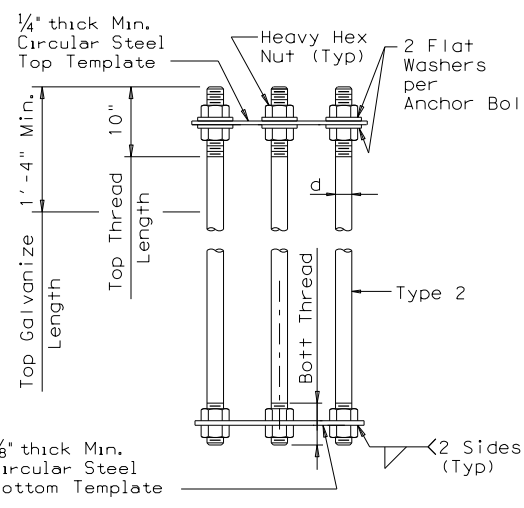


Only 4" length at tip of Arm Stiffener requires a complete joint penetration weld. Smooth weld radius to connect Stiffener. Only a fillet weld is required for the remaining weld length.

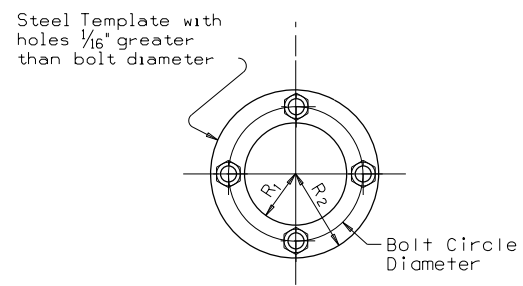
**DETAIL "K"**



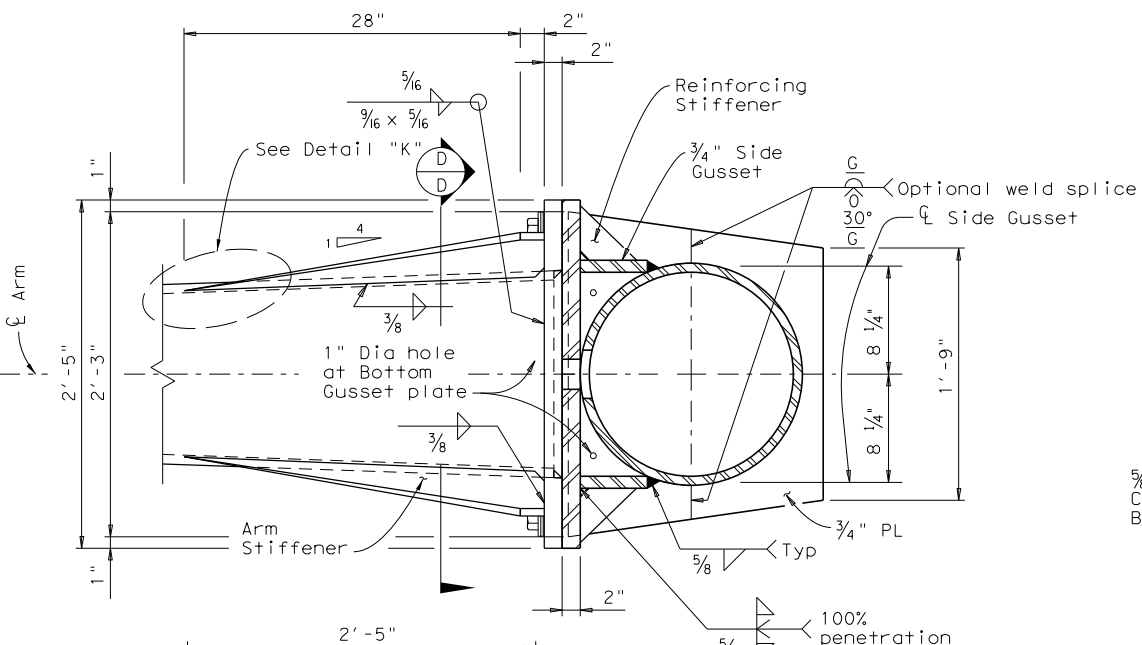
**SECTION F-F**



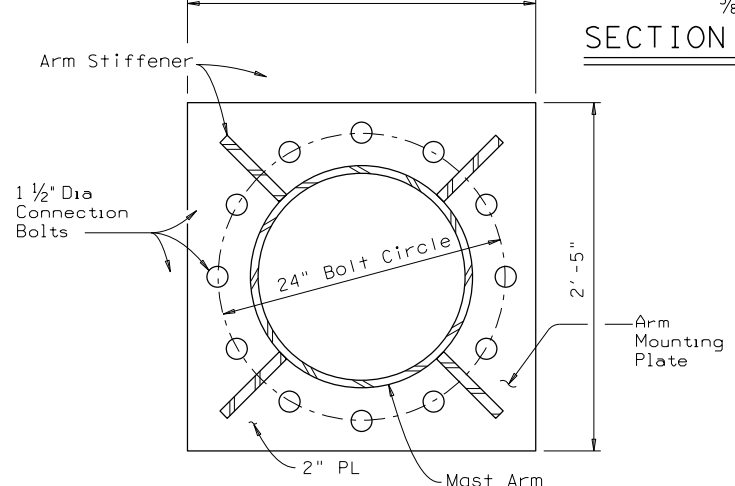
**ANCHOR BOLT ASSEMBLY**



**TEMPLATE DETAIL**



**SECTION C-C**



**SECTION D-D**

FDN TYPE	DRILLED SHAFT DIA	REINFORCING STEEL		DRILLED SHAFT LENGTH-ft (16, 17, 18)			ANCHOR BOLT DESIGN (14)			FOUNDATION DESIGN LOAD (15)		TYPICAL APPLICATION	
		VERT BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER N blows/ft			ANCHOR BOLT DIA	Fy (ksi)	BOLT CIR DIA	ANCHOR TYPE	MOMENT K-ft		SHEAR Kips
				10	15	40							
48-A	48"	20 #9	#4 at 6"	21.9	19.5	14.7	2 1/2"	55	27"	2	490	10	50' to 65' Mast arm assembly.

SEE SHEET "TS-FD" FOR ADDITIONAL DETAILS.

- (14) Anchor bolt design develops the foundation capacity given under Foundation Design Loads.
- (15) Foundation Design Loads are the allowable moments and shears at the base of the structure.
- (16) Field Penetrometer readings at a depth of approximately 3 to 5 feet may be used to adjust shaft lengths.
- (17) If rock is encountered, the Drilled Shaft shall extend a minimum of two diameters into solid rock.
- (18) Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

Fixed Mount Arm L F	ROUND POLES (13)					Foundation Type
	D <sub>B</sub>	D <sub>19.5</sub> or D <sub>20.25</sub>	D <sub>24</sub>	D <sub>30</sub>	(12)thk	
ft.	in.	in.	in.	in.	in.	
50', 55', 60', 65'	21.0	18.2	17.6	16.8	.3125	48-A

Fixed Mount Arm L F	ROUND ARMS (13)				
	L <sub>1</sub>	D <sub>1</sub>	D <sub>2</sub>	(12)thk	Rise
ft.	ft.	in.	in.	in.	
50	49	18.5	11.7	.3125	3'- 3"
55	54	18.5	11.0	.3125	3'- 7"
60	59	18.5	10.3	.3125	3'-11"
65	64	18.5	9.6	.3125	4'- 4"

D<sub>B</sub> = Pole Base O.D.  
 D<sub>19.5</sub> = Pole Top O.D. with no Luminaire and no ILSN (single mast arm)  
 D<sub>20.25</sub> = Pole Top O.D. with no Luminaire and no ILSN (dual mast arm)  
 D<sub>24</sub> = Pole Top O.D. with ILSN w/out Luminaire  
 D<sub>30</sub> = Pole Top O.D. with Luminaire  
 D<sub>1</sub> = Arm Base O.D.  
 D<sub>2</sub> = Arm End O.D.  
 L<sub>1</sub> = Shaft Length  
 L F = Fixed Arm Length

(12) Thickness shown is minimum, thicker materials may be used.

(13) Shaft profile 16-sided or 18-sided is considered to be equivalent to round section.

**GENERAL NOTES:**

Built-up Box Connection: For the welded arm-to-pole connection as a built-up box configuration illustrated here is an example only, fabricators are required to submit a shop drawing of box connection for approval. The drawing shall specify the details of each box element, welds of arm-to-pole connection, arm-to-plate socket connection, and arm rise creation. Specify the proper location of drain holes along the pole. 2 1/2" dia hole in the pole mounting plate and 4" dia hole in the pole need to be aligned for wiring access or drainage. Arm stiffeners cut to match arm inclination and taper shall also be included.

The deviation from flat for either arm or pole mounting plate shall not exceed 3/32 in., which is measured along the center of mounting plate to a radial distance of 13.5 in. The deformed-from-flat connection between arm and pole mounting plates shall not be allowed if the center of both mounting plates cannot contact directly.

Fixed mount details are used for single mast arm assemblies and for the first arm in dual mast arm assemblies.

ANCHOR BOLT & TEMPLATE SIZE						
Bolt Dia in.	Length #	Top Thread	Bottom Thread	Bolt Circle	R <sub>2</sub>	R <sub>1</sub>
2 1/2"	5'-2"	10"	6 1/2"	27"	16"	11"

# Min dimension given, longer bolts are acceptable.

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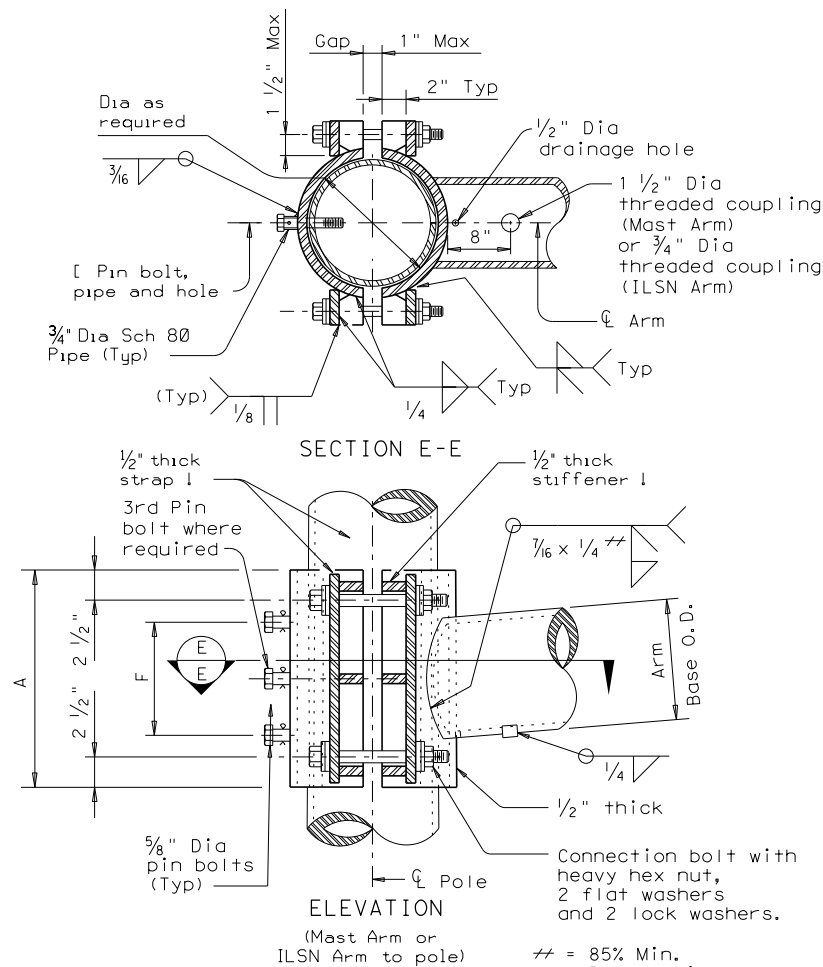
**TRAFFIC SIGNAL SUPPORT STRUCTURES**  
 LONG MAST ARM ASSEMBLY  
 (50 TO 65 FT)  
 (80 AND 100 MPH WIND ZONE)

Sheet 3 of 5 **LMA (3) -12**

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**CLAMP-ON CONNECTION**

80 MPH WIND											
Clamp-on Arm LC	ROUND ARMS					Rise	POLYGONAL ARMS				
	L <sub>1</sub>	D <sub>1</sub>	D <sub>2</sub>	thk (12)	Rise		L <sub>1</sub>	D <sub>1</sub>	D <sub>2</sub>	thk (12)	Rise
ft.	ft.	in.	in.	in.		ft.	in.	in.	in.		
20	19.1	6.5	3.8	.179	1'-9"	19.1	7.0	3.5	.179	1'-8"	
24	23.1	7.5	4.3	.179	1'-10"	23.1	7.5	3.5	.179	1'-9"	
28	27.1	8.0	4.2	.179	1'-11"	27.1	8.0	3.5	.179	1'-10"	
32	31.0	9.0	4.7	.179	2'-0"	31.0	9.0	3.5	.179	2'-0"	
36	35.0	9.5	4.6	.239	2'-4"	35.0	10.0	3.5	.239	2'-1"	
40	39.0	9.5	4.1	.239	2'-8"	39.0	9.5	3.5	.239	2'-3"	
44	43.0	10.0	4.1	.239	2'-11"	43.0	10.0	3.5	.239	2'-6"	

100 MPH WIND											
Clamp-on Arm LC	ROUND ARMS					Rise	POLYGONAL ARMS				
	L <sub>1</sub>	D <sub>1</sub>	D <sub>2</sub>	thk (12)	Rise		L <sub>1</sub>	D <sub>1</sub>	D <sub>2</sub>	thk (12)	Rise
ft.	ft.	in.	in.	in.		ft.	in.	in.	in.		
20	19.1	8.0	5.3	.179	1'-8"	19.1	8.0	3.5	.179	1'-7"	
24	23.1	9.0	5.8	.179	1'-9"	23.1	9.0	3.5	.179	1'-8"	
28	27.1	9.5	5.7	.179	1'-10"	27.1	10.0	3.5	.179	1'-9"	
32	31.0	9.5	5.2	.239	1'-11"	31.0	9.5	3.5	.239	1'-10"	
36	35.0	10.0	5.1	.239	2'-0"	35.0	10.0	3.5	.239	1'-11"	
40	39.0	10.5	5.1	.239	2'-3"	39.0	11.0	3.5	.239	2'-1"	
44	43.0	11.0	5.1	.239	2'-8"	43.0	11.5	4.0	.239	2'-3"	

D<sub>1</sub> = Arm Base O.D.  
 D<sub>2</sub> = Arm End O.D.  
 L<sub>1</sub> = Shaft Length  
 LC = Clamp-on Arm Length

(12) Thickness shown is minimum, thicker materials may be used.

CLAMP-ON ARM CONNECTION					
ILSN Arm Size		A	F	4 Conn. Bolts	5/8" Dia. Pin Bolts
Sch 40 pipe Dia	Thick				
in.	in.	in.	in.	in.	ea
3	.216	10	4	3/4	2

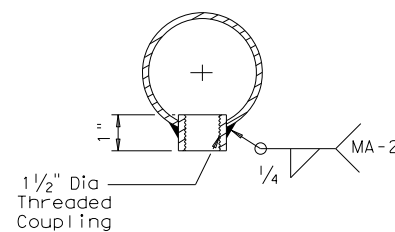
Mast Arm Size		A	F	4 Conn. Bolts	5/8" Dia. Pin Bolts
Base Dia	Thick				
in.	in.	in.	in.	in.	ea
6.5	.179	12	6	1	2
7.5	.179	14	8	1	2
8.0	.179	14	8	1	2
9.0	.179	16	10	1	2
9.5	.179	18	12	1 1/4	3
9.5	.239	18	12	1 1/4	3
10.0	.239	18	12	1 1/4	3
10.5	.239	18	12	1 1/4	3
11.0	.239	18	12	1 1/4	3
11.5	.239	18	12	1 1/4	3

**GENERAL NOTES:**

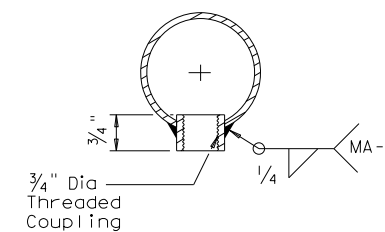
Clamp-on details are used for the second arm on dual mast arm assemblies or ILSN arm support. For a clamp-on mast arm, a maximum 1 1/2" wide vertical slotted hole may be cut in the front clamp plate to facilitate drainage during galvanizing. The slot shall be centered behind the arm and shall be no longer than the arm diameter minus 1". For an ILSN arm, a 1 1/2" diameter hole shall be cut in the front clamp plate for wire access. A matched hole shall be field drilled through the pole to provide wire access after arm is oriented. Deburr both holes.

Where duplicate parts occur on a detail, welds shown for part shall apply to all similar parts on the detail.

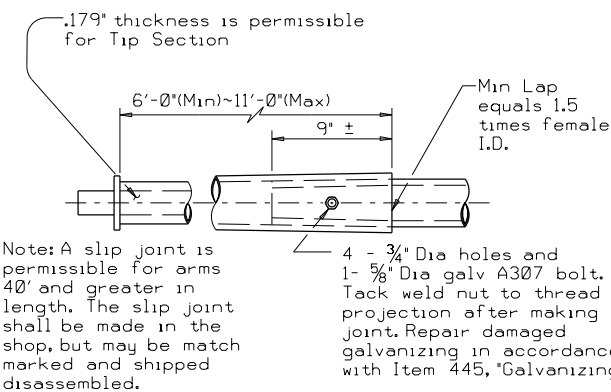
Pin bolts are required to prevent rotation of clamp-on arms under design wind forces. Pin bolts shall be ASTM A325 with threads excluded from the shear plane. Pin bolt and 3/4" diameter pipe shall have 3/16" diameter holes for a 1/8" diameter galvanized cotter pin. Back clamp plate shall be furnished with a 3/4" diameter hole for each pin bolt. An 11/16" diameter hole for each pin bolt shall be field drilled through the pole after arm orientations have been approved by the Engineer.



**ARM COUPLING DETAIL**



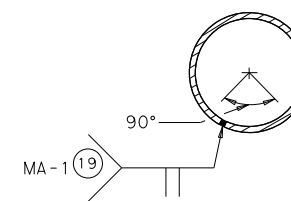
**ILSN ARM COUPLING DETAIL**



**SLIP JOINT DETAIL (CLAMP-ON ARM)**

Stainless steel bands (or Cables) and cast bracket as in "Astro-Brac", "Sky Bracket" or "Easy Bracket" with 1 1/2" Dia Threaded Coupling.

**BRACKET ASSEMBLY**



**ARM WELD DETAIL**

(19) Longitudinal Seam Weld must be oriented within the lower 90° of the signal arm. 60% Min penetration 100% penetration within 6" of circumferential base welds.

Texas Department of Transportation  
 Traffic Operations Division

**TRAFFIC SIGNAL  
 SUPPORT STRUCTURES  
 LONG MAST ARM ASSEMBLY  
 (50 TO 65 FT)  
 (80 AND 100 MPH WIND ZONE)**

Sheet 4 of 5 LMA(4)-12

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Shipping Parts List							
Ship each pole with the following attached: enlarged hand hole, pole cap, fixed arm connection bolts and washers, and any additional hardware listed in the table.							
Nominal Arm Length	30' Poles with Luminaire		24' Poles with ILSN		19.50' (Single Mast Arm) 20.25' (Dual Mast Arm) Poles with no Luminaire and no ILSN		
	See note above plus: one (or two if ILSN attached) small hand hole, clamp-on simplex		See note above plus one small hand hole		See note above		
Single Mast Arm							
Lf ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity	
50	50L		50S		50		
55	55L		55S		55		
60	60L		60S		60		
65	65L		65S		65		
Dual Mast Arm							
Lf ft.	Lc ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
50	20	5020L		5020S		5020	
	24	5024L		5024S		5024	
	28	5028L		5028S		5028	
	32	5032L		5032S		5032	
	36	5036L		5036S		5036	
	40	5040L		5040S		5040	
55	20	5520L		5520S		5520	
	24	5524L		5524S		5524	
	28	5528L		5528S		5528	
	32	5532L		5532S		5532	
	36	5536L		5536S		5536	
	40	5540L		5540S		5540	
60	20	6020L		6020S		6020	
	24	6024L		6024S		6024	
	28	6028L		6028S		6028	
	32	6032L		6032S		6032	
	36	6036L		6036S		6036	
	40	6040L		6040S		6040	
65	20	6520L		6520S		6520	
	24	6524L		6524S		6524	
	28	6528L		6528S		6528	
	32	6532L		6532S		6532	
	36	6536L		6536S		6536	
	40	6540L		6540S		6540	
	44	6544L		6544S		6544	

Foundation Summary Table \*\*

Location Ident.	Avg. N Blow/ft.	No. Each	Drill Shaft *** Length (feet)
			48-A
Total Drill Shaft Length			

Notes

- \*\* Foundations may be listed separately or grouped according to similarity of location and type. Quantities are for the Contractor's information only.
- \*\*\* Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

Abbreviations  
Lf= Fixed Arm Length  
Lc= Clamp-on Arm Length (44' Max.)

Shipping Parts List							
Traffic Signal Arms (Fixed Mount) (1 per pole) Ship each arm with listed equipment attached				Luminaire Arms (1 per 30' pole)			
Nominal Arm Length	Type IV Arm (4 Signals) 3 Bracket Assembly and 4 CGB Connectors			Nominal Arm Length	Quantity		
ft.	Designation	Quantity		8' Arm			
50	50IV			ILSN Arm (Max. 2 per pole) Ship with clamps, bolts and washers			
55	55IV			Nominal Arm Length	Quantity		
60	60IV			7' Arm			
65	65IV			9' Arm			
Traffic Signal Arms (80 MPH Clamp-On Mount) (1 per pole) Ship each arm with listed equipment attached							
Nominal Arm Length	Type I Arm (1 Signal) 2 CGB connector and 1 clamp w/bolts and washers		Type II Arm (2 Signals) 1 Bracket Assembly and 3 CGB connectors, and 1 clamp w/bolts and washers		Type III Arm (3 Signals) 2 Bracket Assembly and 4 CGB connectors, and 1 clamp w/bolts and washers		
ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity	
20	20I-80						
24	24I-80		24II-80				
28	28I-80		28II-80				
32			32II-80		32III-80		
36			36II-80		36III-80		
40					40III-80		
44					44III-80		
Traffic Signal Arms (100 MPH Clamp-On Mount) (1 per pole) Ship each arm with listed equipment attached							
Nominal Arm Length	Type I Arm (1 Signal) 2 CGB connector and 1 clamp w/bolts and washers		Type II Arm (2 Signals) 1 Bracket Assembly and 3 CGB connectors, and 1 clamp		Type III Arm (3 Signals) 2 Bracket Assembly and 4 CGB connectors, and 1 clamp		
ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity	
20	20I-100						
24	24I-100		24II-100				
28	28I-100		28II-100				
32			32II-100		32III-100		
36			36II-100		36III-100		
40					40III-100		
44					44III-100		
Anchor Bolt Assemblies (1 per pole)							
Anchor Bolt Diameter	Anchor Bolt Length	Quantity		Each anchor bolt assembly consists of the following: Top and bottom templates, 4 anchor bolts, 8 nuts, 8 flat washers and 4 nut anchor devices (type 2) per Standard Drawing "TS-FD". Templates may be removed for shipment.			
2 1/2 "	5' - 3"						



LONG MAST  
ARM ASSEMBLY  
PARTS LIST

LMA (5) - 12

Sheet 5 of 5

© TxDOT November 2000		DN: JK	CK: GRB	DW: FDN	CK: CAL
REVISIONS		CONT	SECT	JOB	HIGHWAY
4-20-01 1-12		0915	12	586	VA
		DIST	COUNTY		SHEET NO.
		SAT	BEXAR		345

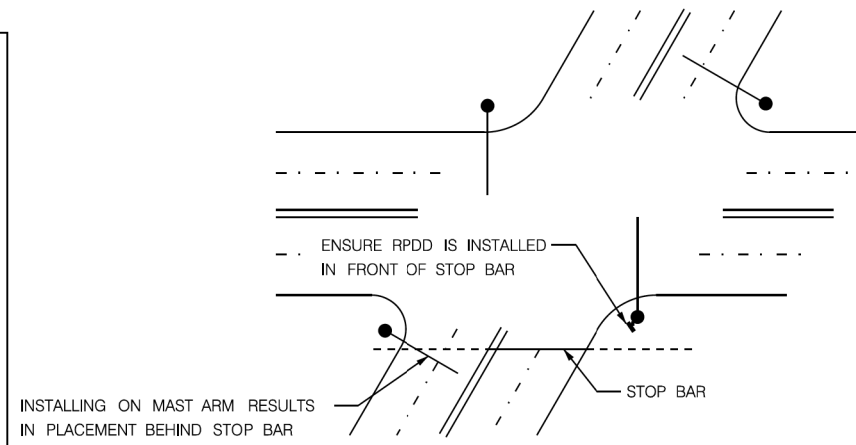
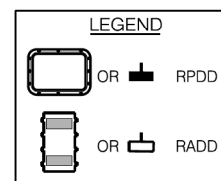
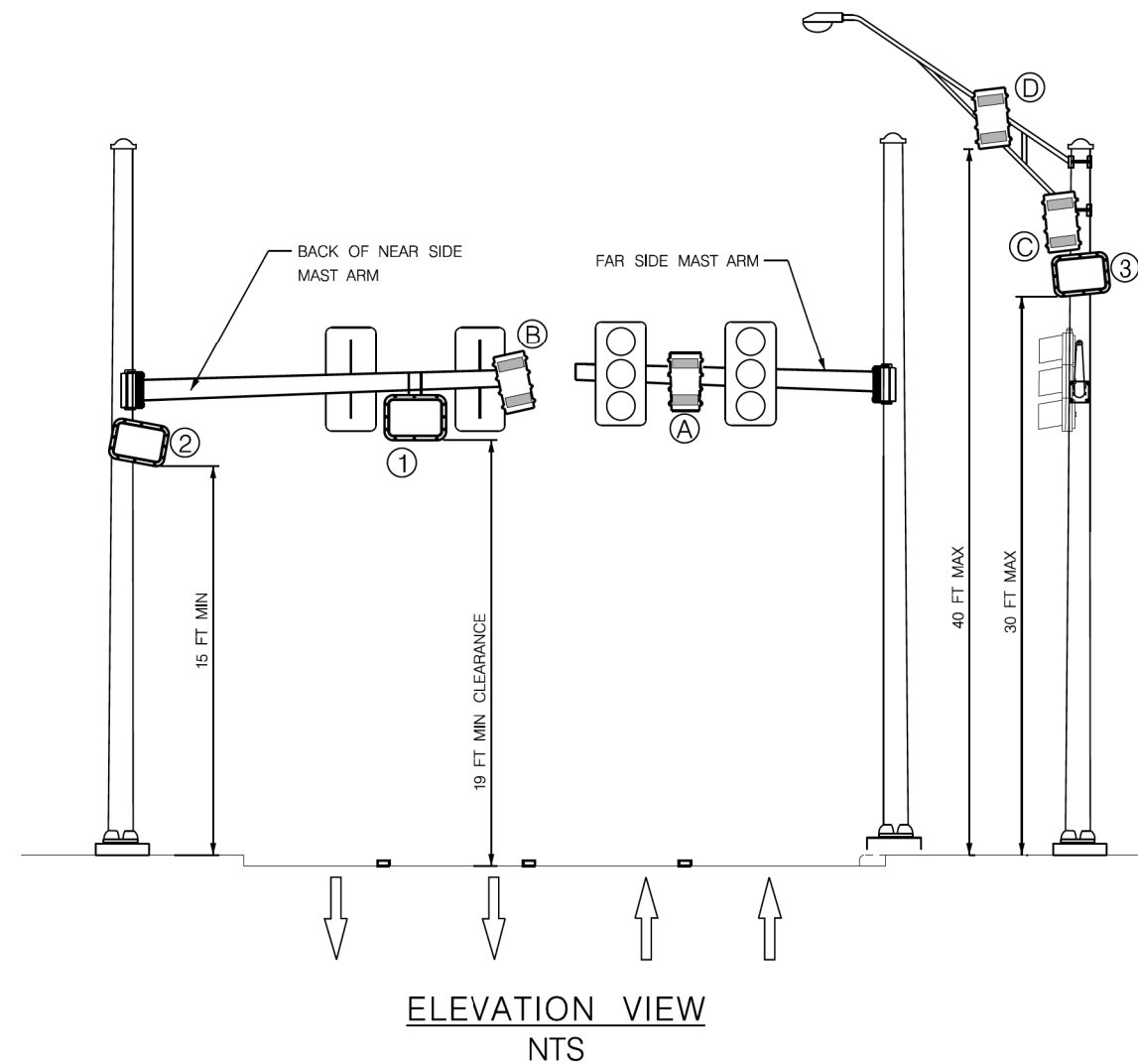
# MOUNTING LOCATIONS

## PRESENCE (RPDD)

- ① PREFERRED PLACEMENT FOR MAST ARMS. MOUNT ON AND BELOW MAST ARM ON NEAR SIDE OF STREET.
- ② PREFERRED PLACEMENT FOR TIMBER POLE OR STRAIN POLE INSTALLATIONS. MOUNT AS HIGH AS POSSIBLE TO A MAXIMUM OF 30 FT ON TIMBER OR SPAN WIRE POLES. ON MAST ARM POLES, MOUNT BELOW CONNECTION OF MAST ARM TO A MINIMUM OF 15 FT.
- ③ ALTERNATE PLACEMENT LOCATION. MOUNT AS HIGH AS POSSIBLE TO A MAXIMUM OF 30 FT TO PREVENT OCCLUSION OF THE LEFT TURN LANES. THIS PLACEMENT TO BE USED ONLY IF RPDD CANNOT BE MOUNTED IN THE PREFERRED PLACEMENT LOCATIONS.

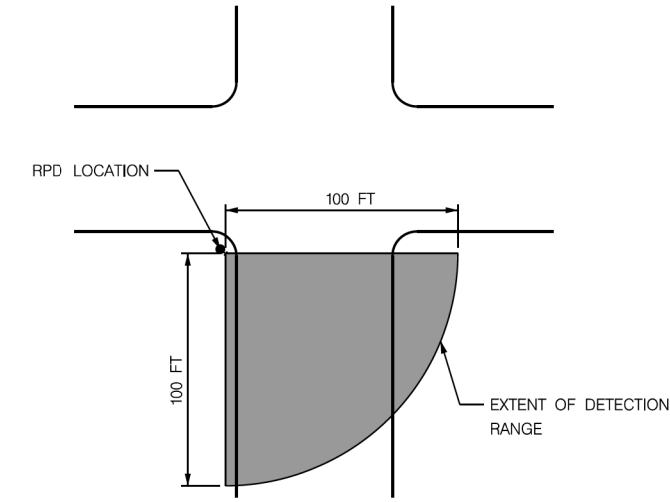
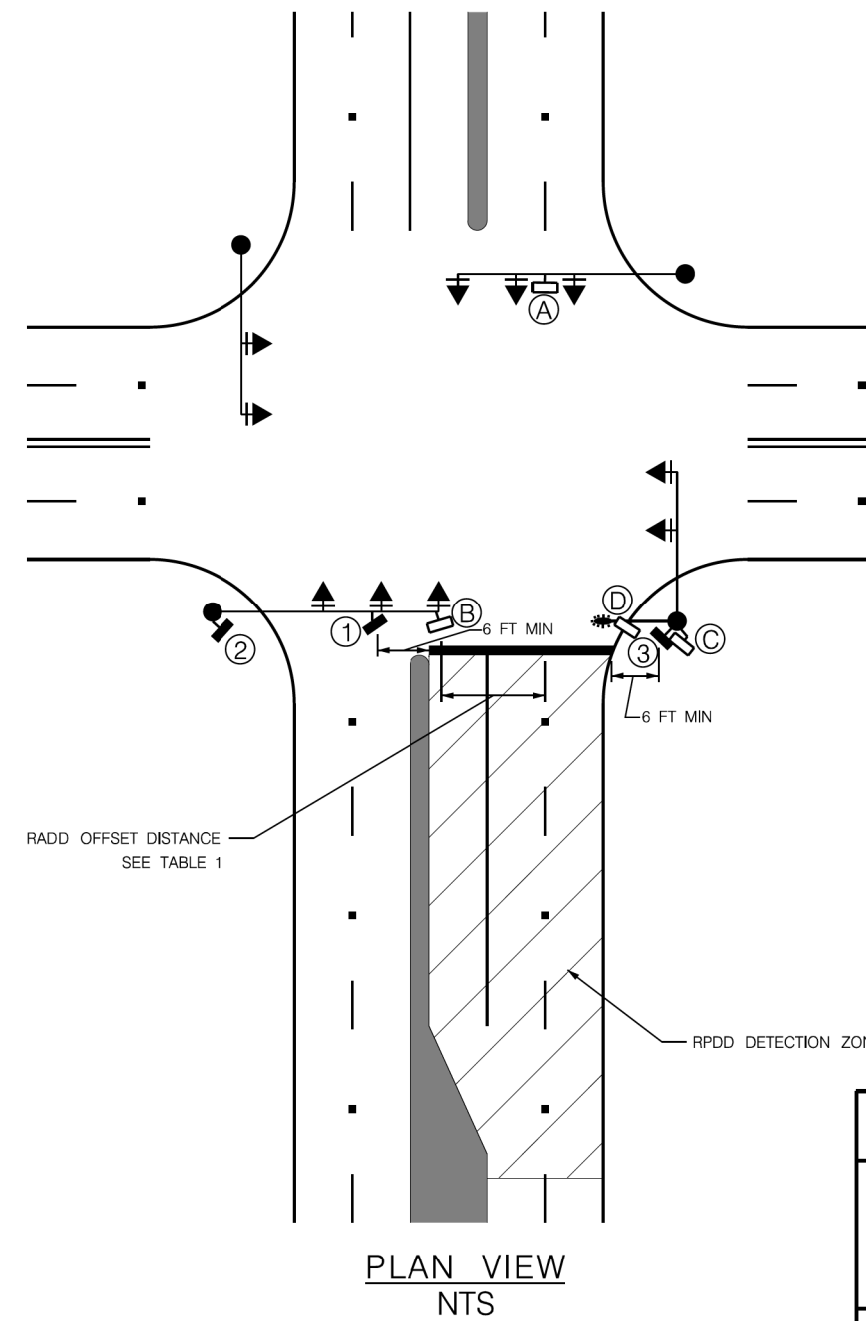
## ADVANCE (RADD)

- Ⓐ PREFERRED PLACEMENT FOR MAST ARMS. ALIGN RADD WITH CENTER OF TRAVEL LANES.
- Ⓑ ALTERNATE PLACEMENT FOR MAST ARMS. MOUNT ON BACK SIDE OF OPPOSING MAST ARM.
- Ⓒ TIMBER OR STRAIN POLE PLACEMENT. MOUNT ON NEAR SIDE POLE.
- Ⓓ ALTERNATE TIMBER OR STRAIN POLE PLACEMENT. MOUNT LUMINAIRE ARM ON NEAR SIDE POLE WITH A MAXIMUM 40 FT MOUNTING HEIGHT.



## SKEWED INTERSECTION RPDD PLACEMENT

NTS



- NOTES:**
- 1) A MINIMUM 6 FT HORIZONTAL OFFSET MUST BE MAINTAINED BETWEEN THE RPDD AND THE DETECTION ZONE
  - 2) THE RPDD SHALL BE MOUNTED SUCH THAT AT LEAST 20 FT ALONG THE FARTHEST LANE TO BE MONITORED IS WITHIN THE FIELD OF VIEW OF THE RPDD
  - 3) AIM RPDD AT THE CENTER OF THE LANES TO BE MONITORED, APPROXIMATELY 50 FT FROM THE RPDD UNIT
  - 4) MOUNT RPDD SO THAT ITS FIELD OF VIEW IS NOT OCCLUDED BY POLES, SIGNS, OR OTHER STRUCTURES
  - 5) RADD MOUNTING HEIGHT SHALL NOT BE LESS THAN 17 FT OR GREATER THAN 40 FT. RADD MOUNTING LOCATION SHALL HAVE A MAXIMUM 50 FT LATERAL OFFSET FROM CENTER OF TRAVEL LANES TO BE MONITORED

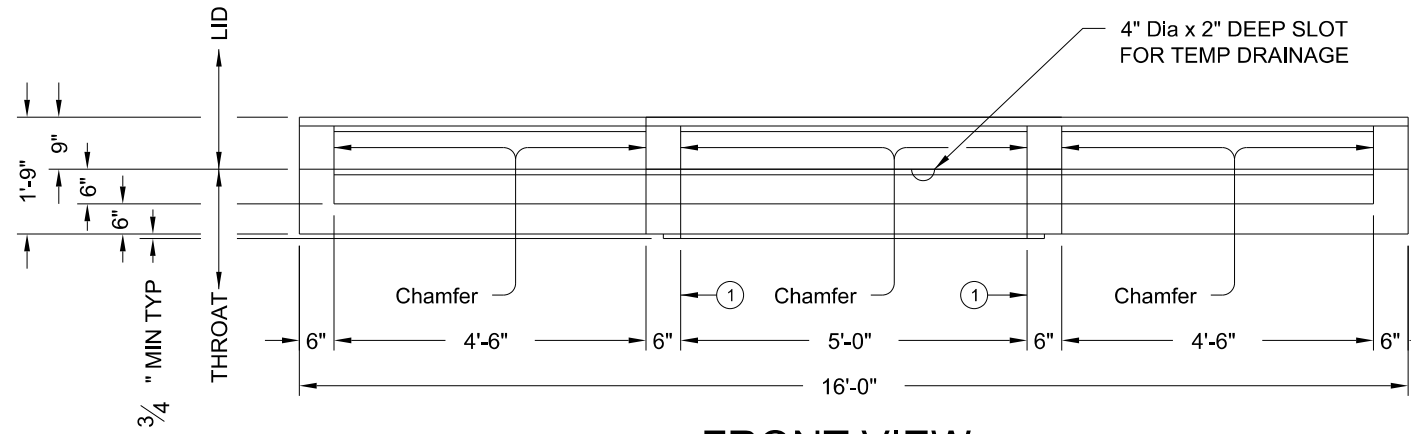
APRIL 2010  
CITY OF SAN ANTONIO  
DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGNAL STANDARDS  
**RADAR PRESENCE DETECTOR (RPDD)  
AND RADAR ADVANCE DETECTOR (RADD)  
PLACEMENT**  
SHEET 1 OF 1      SHEET 346

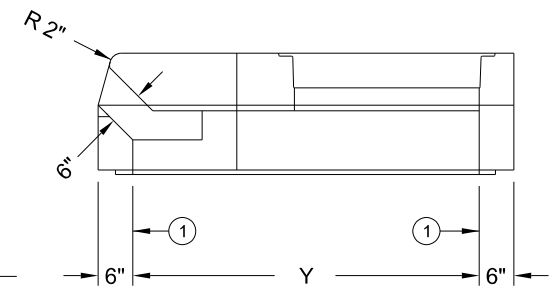
% SUBMITTAL	PROJECT NO.:	DATE:
DRWN. BY: DNM	DSGN. BY: DNM	CHKD. BY: GDG
SHEET NO.:		OF

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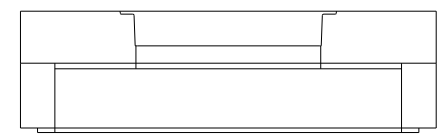
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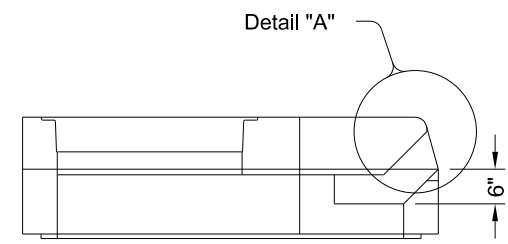
**FRONT VIEW**  
 (SHOWING LEFT AND RIGHT EXTENSIONS)



**RIGHT VIEW**

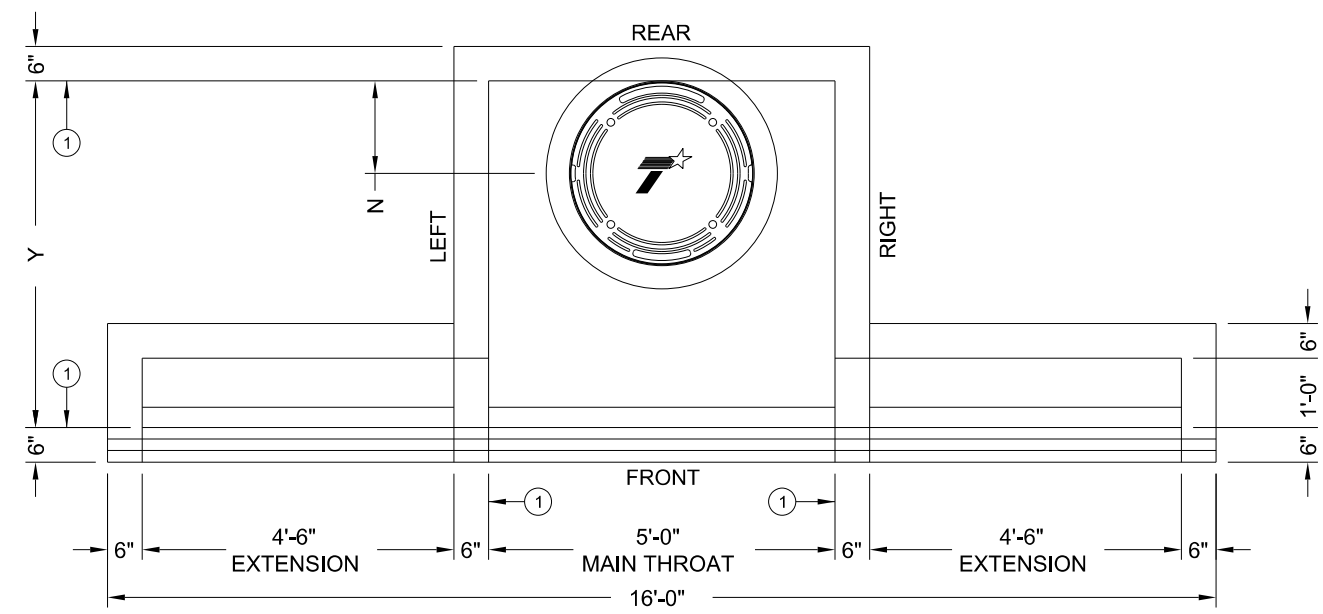


**REAR VIEW**  
 (EXTENSIONS NOT SHOWN)

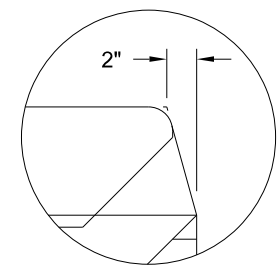


**LEFT VIEW**

① Matches inside face of wall of precast base or riser below inlet.



**PLAN VIEW**  
 (SHOWING LEFT AND RIGHT EXTENSIONS)



**DETAIL "A"**

HS20 LOADING SHEET 1 OF 2



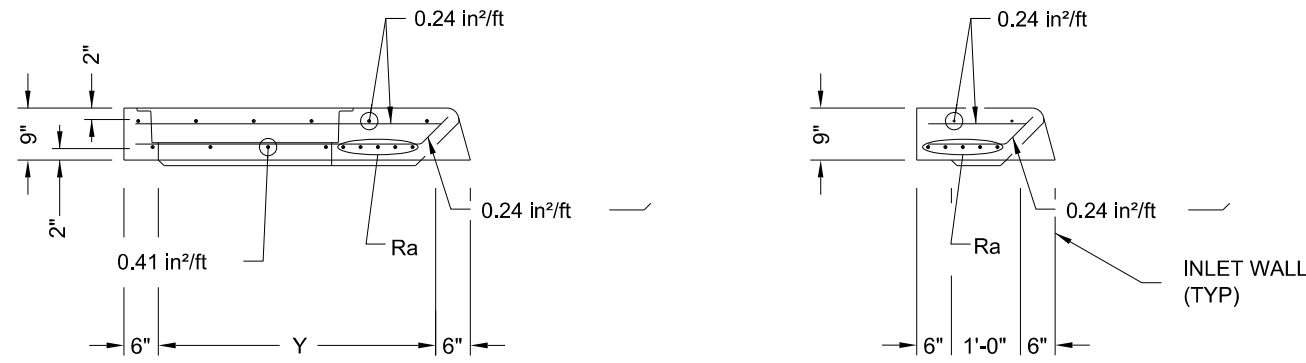
**PRECAST CURB INLET  
 OUTSIDE ROADWAY**

PCO

FILE: prest03.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT January 2015	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	347	

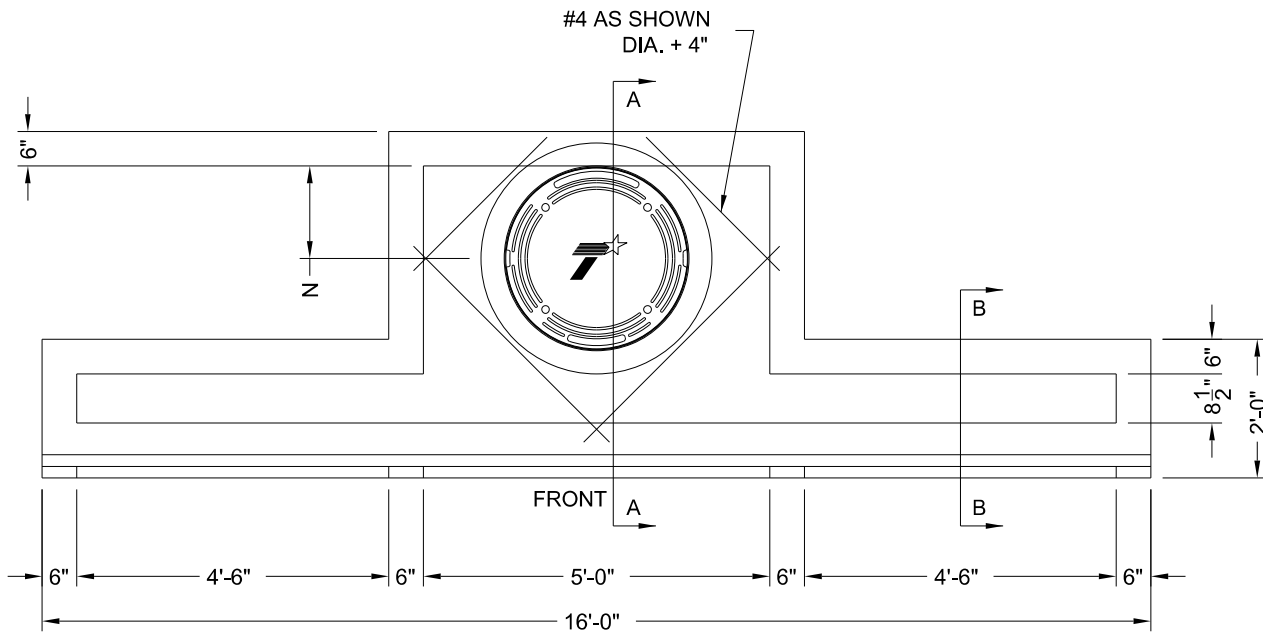
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 9/29/2017 10:18:02 AM  
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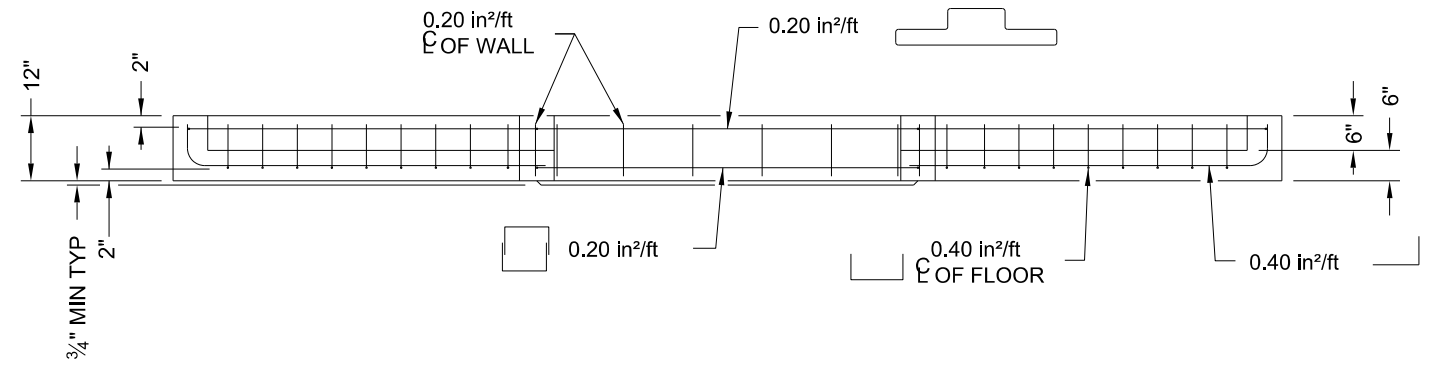


**LID SECTION A-A**

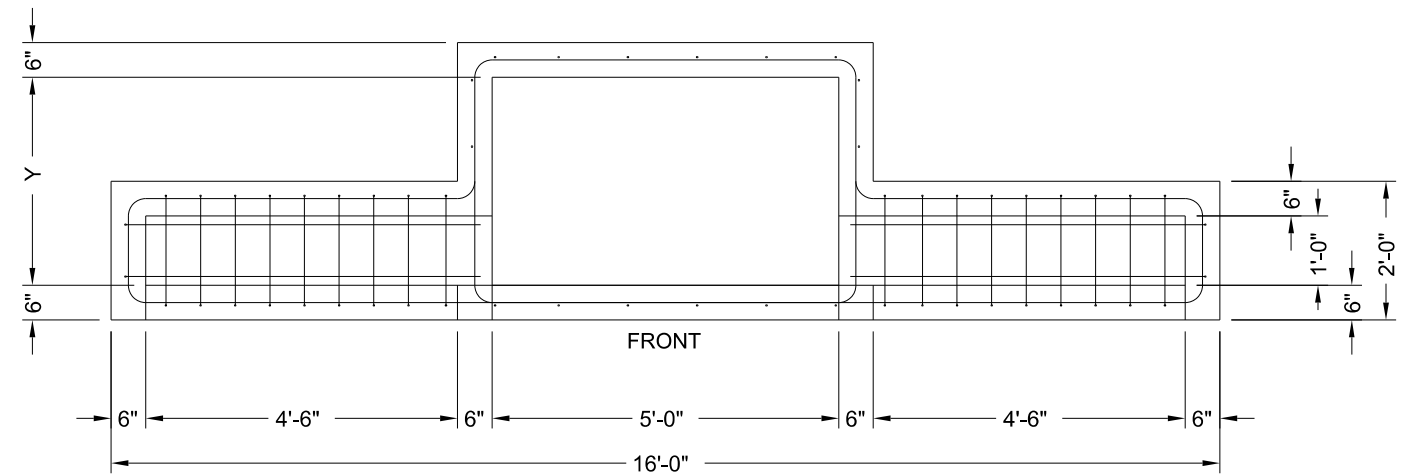
**LID SECTION B-B**



**LID PLAN VIEW**  
 (SHOWING LEFT AND RIGHT EXTENSIONS)



**THROAT ELEVATION VIEW**  
 (SHOWING LEFT AND RIGHT EXTENSIONS)



**THROAT PLAN VIEW**  
 (SHOWING LEFT AND RIGHT EXTENSIONS)

SIZE (Y)	N	MH DIA	*	Ra
3'	9"	18"		(4) #5 Additional
4'	16"	32"		(4) #5 Additional
5'	16"	32"		(4) #5 Additional
6'	16"	32"		(4) #5 Additional

\* Nominal ring and cover size.

**FABRICATION NOTES:**

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Extensions may be right, left, both or none. Provide extensions as specified elsewhere in the plans.
4. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4". Lid may employ a butt joint with dowels at the Contractor's option.
5. Provide lifting devices in conformance with Manufacturer's recommendations.
6. Provide cast iron solid cover, unless noted otherwise elsewhere in the plans.
7. Chamfer vertical edges of inlet lid 3/4" as shown in Front View, sheet 1.

**INSTALLATION NOTES:**

1. Inlet throat and lid are not intended for direct traffic. Do not place in roadway.
2. Seal tongue and groove joints and butt joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.

**GENERAL NOTES:**

1. Designed according to ASTM C913.
2. Open area of main throat = 360 sq in. Open area of one extension throat = 324 sq in.
3. Payment for inlet is per Item 465, "Junction Boxes, Manholes, and Inlets" by type, size, and extension placement. Extensions are subsidiary to inlet.

Cover dimensions are clear dimensions, unless noted otherwise.

HS20 LOADING SHEET 2 OF 2

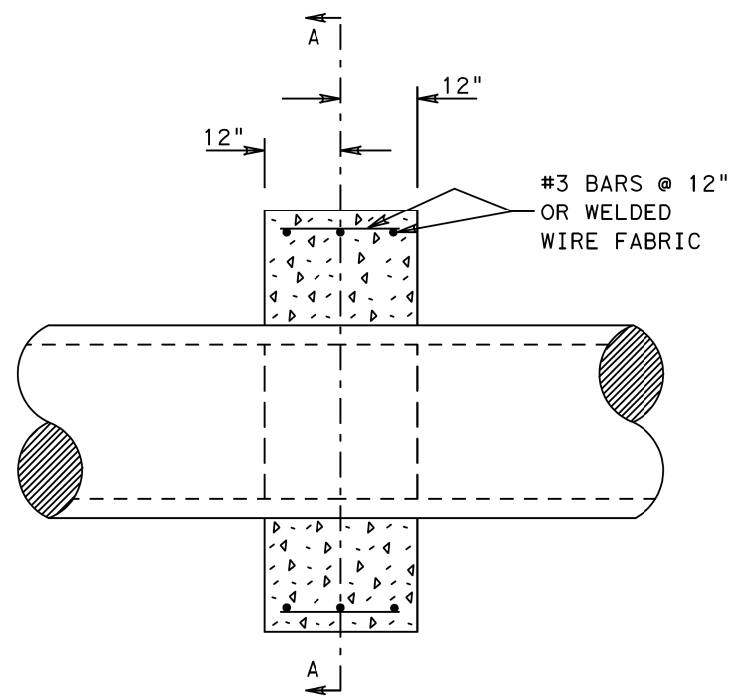


**PRECAST CURB INLET  
 OUTSIDE ROADWAY**

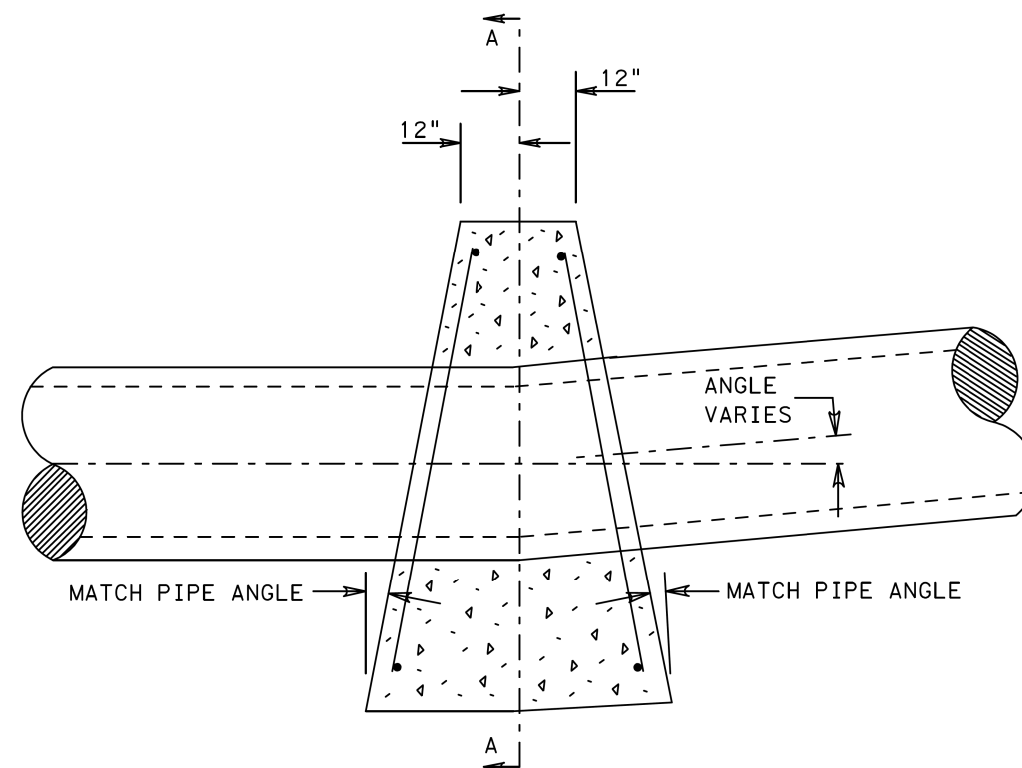
PCO

FILE: prest03.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT January 2015	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	348	

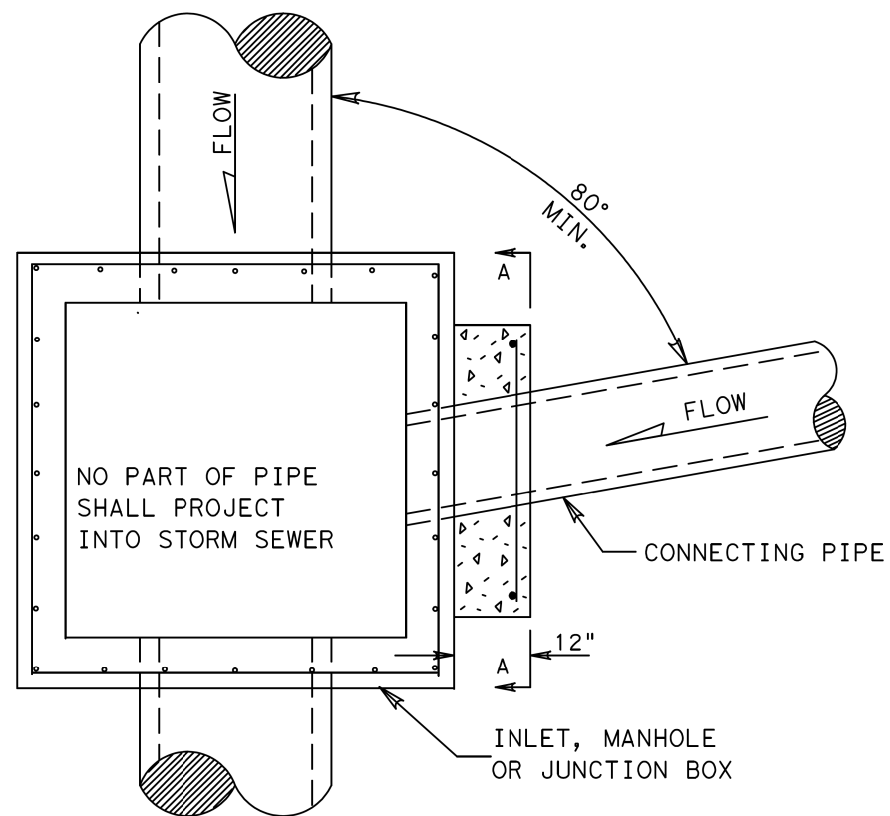




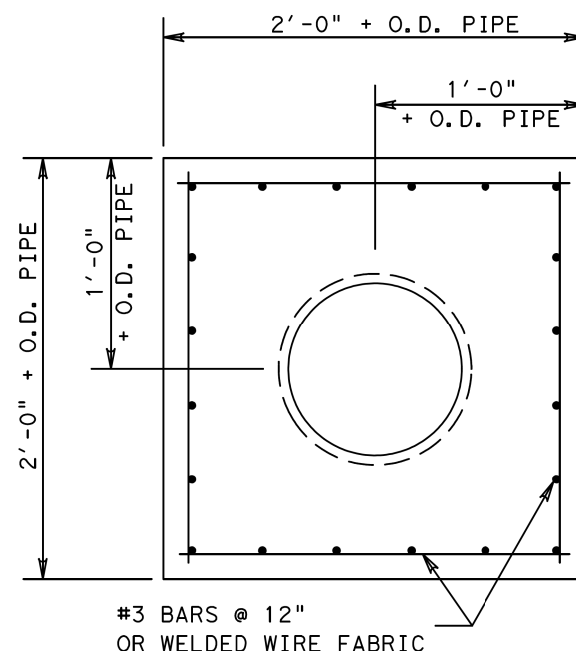
STRAIGHT DRAINAGE PIPE



DRAINAGE PIPE W/HORIZ. & VERT. BENDS



TYPICAL DRAINAGE PIPE CONNECTION WITH MANHOLE




SECTION A-A

NOTES :

1. ALL CONCRETE SHALL BE CLASS "A".
2. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 3 INCHES.
3. COLLAR MAY BE USED FOR CORRUGATED METAL OR REINFORCED CONCRETE PIPES.
4. PIPES MAY BE PLACED ON ANY SIDE AS INDICATED IN THE PLANS.
5. PROPOSED CONCRETE COLLAR WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE SUBSIDIARY TO THE VARIOUS BID ITEMS.

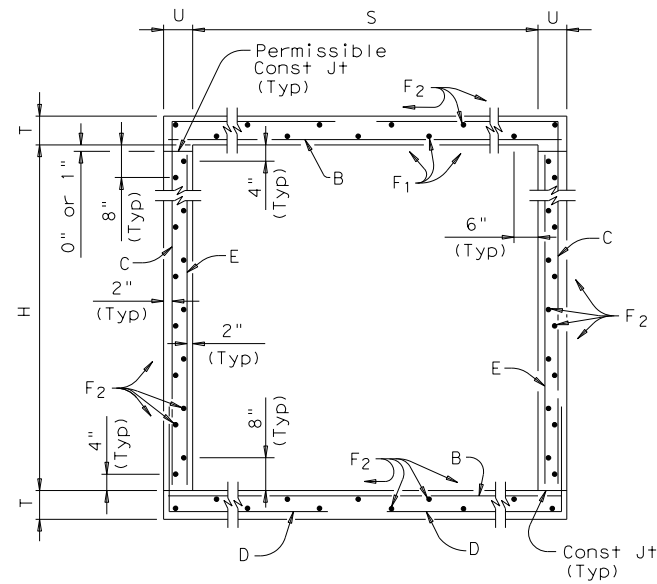
DETAIL FOR CONCRETE COLLARS FOR DRAINAGE PIPE CONNECTIONS AND DRAINAGE PIPE JUNCTIONS

 TEXAS DEPARTMENT OF TRANSPORTATION  
**CONCRETE PIPE COLLAR AND CONNECTION DETAIL**

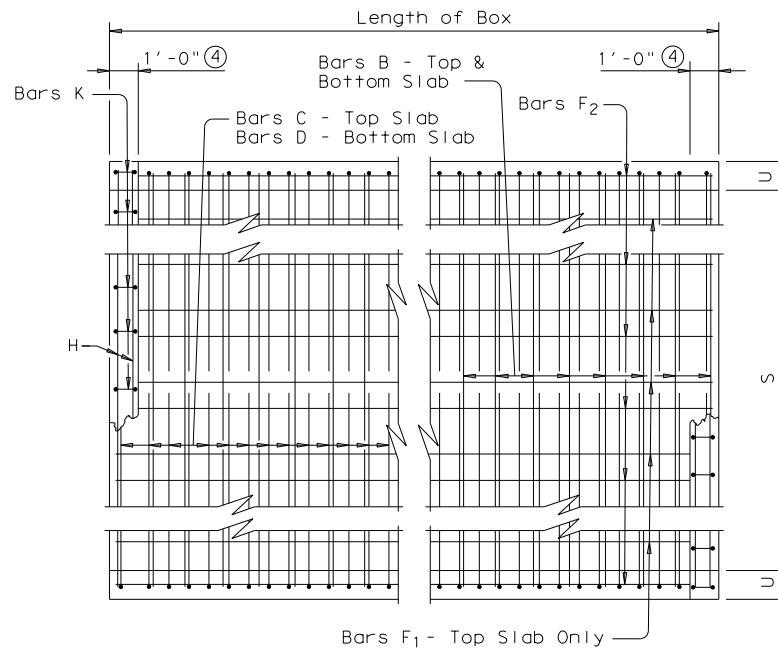
FED. RD. DIST. NO.	FEDERAL AID PROJECT NO.	FILE NO.	SHEET NO.
6			350
STATE	STATE DIST. NO.	COUNTY	CONT. SECT. JOB HIGHWAY NO.
TEXAS	15	BEXAR	0915 12 586 VA

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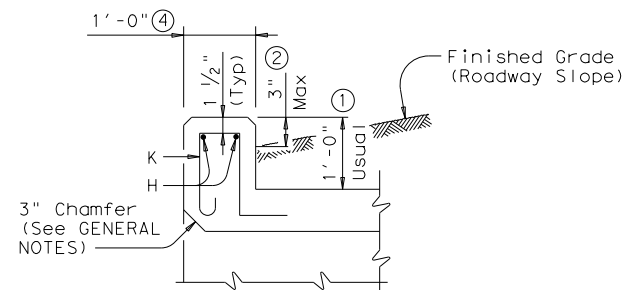
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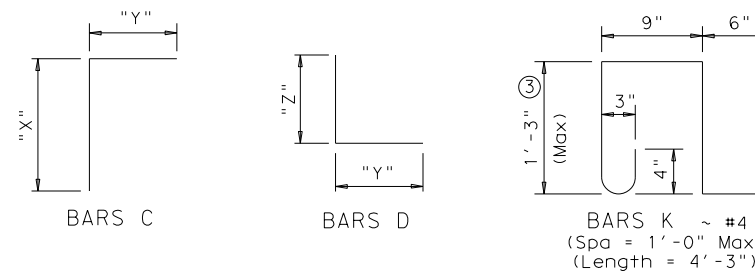
TYPICAL SECTION



PLAN OF REINF STEEL



SECTION THRU CURB



- ① 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail or curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with traffic rail, other than T6, refer to RAC standard.
- ② For vehicle safety, the following requirements must be met:
  - For structures without bridge rail, curbs shall project no more than 3" above finished grade.
  - For structures with bridge rail, curbs shall be flush with finished grade.
 Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- ③ For curbs less than 1'-0" high, tilt bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, bars K may be omitted.
- ④ 1'-0" typical. 2'-0" when RAC standard is referred to elsewhere in the plans.

Deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064 may be used to replace conventional reinforcement shown at the Contractor's option. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes.

Example Conversion: Replacement of No. 6 Gr 60 at 6" Spacing with WWR.  
 $WWR \text{ required} = (0.44 \text{ sq in} / 0.5') \times (60 \text{ ksi} / 70 \text{ ksi}) = 0.754 \text{ sq in/ft}$   
 If D30.6 wire is used to meet the 0.754 sq in/ft requirement in this example, the required spacing =  $(0.306 \text{ sq in} / 0.754 \text{ sq in/ft}) \times 12 \text{ in/ft} = 4.87" \text{ Max spacing}$ .  
 Required lap length for the provided D30.6 wire is 2'-2" (Lap required for uncoated No. 5 bars, as shown in Item 440).

GENERAL NOTES:

- Designed according to AASHTO LRFD Specifications.
- Designed to the maximum fill height shown.
- All reinforcing steel shall be Grade 60.
- All concrete shall be Class "C" with these exceptions: use Class "S" for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.
- Class "C" concrete shall have a minimum compressive strength of 3,600 psi. Class "S" concrete shall have a minimum compressive strength of 4,000 psi.
- The use of permanent forms is not allowed.
- The bottom edge of the top slab shall be chamfered 3" at the entrance.
- Reinforcing bars shall be adjusted to provide a minimum of 1 1/4" clear cover.
- Construction joints shown at the flow line may be raised a maximum of 6" at the Contractor's option. If this option is used, Bars E may be cut off or raised, and Bars C and D may be reversed.
- See standard SCC-MD for skewed ends, angle sections and lengthening details.

HL93 LOADING

SHEET 1 OF 2



**SINGLE BOX CULVERTS  
CAST-IN-PLACE  
0' TO 30' FILL**

SCC-8

FILE: sc08ste.dgn	DN: GAF	CK: LMW	DW: BWH/TXDOT	CK: GAF
©TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
10-12: Added WWR	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	351	

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DATE: 9/29/2017 10:18:17 AM  
 FILE: P:\111\35\01\design\C.v1\standards\Drainage\sc08ste.dgn


SECTION DIMENSIONS				FILL HEIGHT ⑤	BILLS OF REINFORCING STEEL (For Box Length = 40 feet)																						QUANTITIES																
					Bars B					Bars C						Bars D				Bars E~#4 at 18" Max			Bars F <sub>1</sub> ~#4		Bars F <sub>2</sub> ~#4 at 18" Max		Bars H 4~#4		Bars K		Per foot of Barrel		Curb		Total								
S	H	T	U		No.	Size	Spd	Length	Weight	No.	Size	Spd	Length	Weight	"X"	"Y"	No.	Size	Spd	Length	Weight	"Y"	"Z"	No.	Length	Wt	No.	Spd	Length	Wt	No.	Length	Wt	Length	Wt	No.	Wt	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)
8'-0"	4'-0"	7"	7"	13'	162	#6	6"	8'-11"	2,170	194	#5	5"	8'-8"	1,754	4'-5"	4'-3"	194	#5	5"	6'-10"	1,383	4'-3"	2'-7"	56	4'-0"	150	13	7"	39'-9"	345	32	39'-9"	850	8'-11"	24	20	57	0.569	166.3	0.7	81	23.5	6,733
8'-0"	4'-0"	8"	7"	16'	194	#6	5"	8'-11"	2,598	194	#5	5"	8'-9"	1,770	4'-6"	4'-3"	194	#5	5"	6'-11"	1,400	4'-3"	2'-8"	56	4'-0"	150	6	18"	39'-9"	159	32	39'-9"	850	8'-11"	24	20	57	0.626	173.2	0.7	81	25.7	7,008
8'-0"	4'-0"	9"	8"	20'	194	#6	5"	9'-1"	2,647	194	#5	5"	8'-10"	1,787	4'-7"	4'-3"	194	#5	5"	7'-0"	1,416	4'-3"	2'-9"	56	4'-0"	150	6	18"	39'-9"	159	32	39'-9"	850	9'-1"	24	22	62	0.716	175.2	0.7	86	29.3	7,095
8'-0"	4'-0"	10"	8"	23'	194	#6	5"	9'-1"	2,647	138	#6	7"	8'-11"	1,848	4'-8"	4'-3"	138	#6	7"	7'-6"	1,555	4'-3"	3'-3"	56	4'-0"	150	6	18"	39'-9"	159	32	39'-9"	850	9'-1"	24	22	62	0.774	180.2	0.7	86	31.7	7,295
8'-0"	4'-0"	11"	9"	30'	162	#7	6"	9'-3"	3,063	194	#5	5"	9'-0"	1,821	4'-9"	4'-3"	194	#5	5"	7'-2"	1,450	4'-3"	2'-11"	56	4'-0"	150	6	18"	39'-9"	159	34	39'-9"	903	9'-3"	25	22	62	0.867	188.7	0.7	87	35.4	7,633
8'-0"	5'-0"	7"	7"	13'	162	#6	6"	8'-11"	2,170	194	#5	5"	9'-8"	1,956	5'-5"	4'-3"	194	#5	5"	6'-10"	1,383	4'-3"	2'-7"	56	5'-0"	187	13	7"	39'-9"	345	36	39'-9"	956	8'-11"	24	20	57	0.612	174.9	0.7	81	25.2	7,078
8'-0"	5'-0"	8"	7"	16'	194	#6	5"	8'-11"	2,598	194	#5	5"	9'-9"	1,973	5'-6"	4'-3"	194	#5	5"	6'-11"	1,400	4'-3"	2'-8"	56	5'-0"	187	6	18"	39'-9"	159	36	39'-9"	956	8'-11"	24	20	57	0.669	181.8	0.7	81	27.5	7,354
8'-0"	5'-0"	9"	8"	20'	194	#6	5"	9'-1"	2,647	194	#5	5"	9'-10"	1,990	5'-7"	4'-3"	194	#5	5"	7'-0"	1,416	4'-3"	2'-9"	56	5'-0"	187	6	18"	39'-9"	159	36	39'-9"	956	9'-1"	24	22	62	0.765	183.9	0.7	86	31.3	7,441
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8'-0"	5'-0"	11"	9"	30'	194	#7	5"	9'-3"	3,668	194	#5	5"	10'-0"	2,023	5'-9"	4'-3"	194	#5	5"	7'-2"	1,450	4'-3"	2'-11"	56	5'-0"	187	6	18"	39'-9"	159	38	39'-9"	1,009	9'-3"	25	22	62	0.923	212.4	0.7	87	37.6	8,583
8'-0"	6'-0"	7"	7"	13'	194	#6	5"	8'-11"	2,598	162	#5	6"	10'-8"	1,802	6'-5"	4'-3"	162	#5	6"	6'-10"	1,155	4'-3"	2'-7"	56	6'-0"	224	13	7"	39'-9"	345	40	39'-9"	1,062	8'-11"	24	20	57	0.655	179.7	0.7	81	26.9	7,267
8'-0"	6'-0"	8"	7"	16'	194	#6	5"	8'-11"	2,598	194	#5	5"	10'-9"	2,175	6'-6"	4'-3"	194	#5	5"	6'-11"	1,400	4'-3"	2'-8"	56	6'-0"	224	6	18"	39'-9"	159	40	39'-9"	1,062	8'-11"	24	20	57	0.712	190.5	0.7	81	29.2	7,699
8'-0"	6'-0"	9"	8"	20'	194	#6	5"	9'-1"	2,647	194	#5	5"	10'-10"	2,192	6'-7"	4'-3"	194	#5	5"	7'-0"	1,416	4'-3"	2'-9"	56	6'-0"	224	6	18"	39'-9"	159	40	39'-9"	1,062	9'-1"	24	22	62	0.815	192.5	0.7	86	33.3	7,786
8'-0"	6'-0"	10"	8"	23'	194	#6	5"	9'-1"	2,647	194	#5	5"	10'-11"	2,209	6'-8"	4'-3"	194	#5	5"	7'-1"	1,433	4'-3"	2'-10"	56	6'-0"	224	6	18"	39'-9"	159	40	39'-9"	1,062	9'-1"	24	22	62	0.872	193.4	0.7	86	35.6	7,820
8'-0"	6'-0"	11"	9"	30'	194	#7	5"	9'-3"	3,668	194	#5	5"	11'-0"	2,226	6'-9"	4'-3"	194	#5	5"	7'-2"	1,450	4'-3"	2'-11"	56	6'-0"	224	6	18"	39'-9"	159	42	39'-9"	1,115	9'-3"	25	22	62	0.978	221.1	0.7	87	39.8	8,929
8'-0"	7'-0"	7"	7"	13'	194	#6	5"	8'-11"	2,598	194	#5	5"	11'-8"	2,361	7'-5"	4'-3"	194	#5	5"	6'-10"	1,383	4'-3"	2'-7"	56	7'-0"	262	13	7"	39'-9"	345	40	39'-9"	1,062	8'-11"	24	20	57	0.699	200.3	0.7	81	28.7	8,092
8'-0"	7'-0"	8"	7"	16'	194	#6	5"	8'-11"	2,598	194	#5	5"	11'-9"	2,378	7'-6"	4'-3"	194	#5	5"	6'-11"	1,400	4'-3"	2'-8"	56	7'-0"	262	6	18"	39'-9"	159	40	39'-9"	1,062	8'-11"	24	20	57	0.755	196.5	0.7	81	30.9	7,940
8'-0"	7'-0"	9"	8"	20'	194	#6	5"	9'-1"	2,647	194	#5	5"	11'-10"	2,394	7'-7"	4'-3"	194	#5	5"	7'-0"	1,416	4'-3"	2'-9"	56	7'-0"	262	6	18"	39'-9"	159	40	39'-9"	1,062	9'-1"	24	22	62	0.864	198.5	0.7	86	35.3	8,026
8'-0"	7'-0"	10"	8"	23'	162	#7	6"	9'-1"	3,008	194	#5	5"	11'-11"	2,411	7'-8"	4'-3"	194	#5	5"	7'-1"	1,433	4'-3"	2'-10"	56	7'-0"	262	6	18"	39'-9"	159	40	39'-9"	1,062	9'-1"	24	22	62	0.922	208.4	0.7	86	37.6	8,421
8'-0"	7'-0"	11"	9"	30'	194	#7	5"	9'-3"	3,668	194	#5	5"	12'-0"	2,428	7'-9"	4'-3"	194	#5	5"	7'-2"	1,450	4'-3"	2'-11"	56	7'-0"	262	6	18"	39'-9"	159	42	39'-9"	1,115	9'-3"	25	22	62	1.034	227.1	0.7	87	42.1	9,169
8'-0"	8'-0"	7"	7"	13'	194	#6	5"	8'-11"	2,598	194	#5	5"	12'-8"	2,563	8'-5"	4'-3"	194	#5	5"	6'-10"	1,383	4'-3"	2'-7"	56	8'-0"	299	13	7"	39'-9"	345	44	39'-9"	1,168	8'-11"	24	20	57	0.742	208.9	0.7	81	30.4	8,437
8'-0"	8'-0"	8"	7"	16'	194	#6	5"	8'-11"	2,598	194	#5	5"	12'-9"	2,580	8'-6"	4'-3"	194	#5	5"	6'-11"	1,400	4'-3"	2'-8"	56	8'-0"	299	6	18"	39'-9"	159	44	39'-9"	1,168	8'-11"	24	20	57	0.798	205.1	0.7	81	32.6	8,285
8'-0"	8'-0"	9"	8"	20'	194	#6	5"	9'-1"	2,647	194	#5	5"	12'-10"	2,597	8'-7"	4'-3"	194	#5	5"	7'-0"	1,416	4'-3"	2'-9"	56	8'-0"	299	6	18"	39'-9"	159	44	39'-9"	1,168	9'-1"	24	22	62	0.914	207.2	0.7	86	37.3	8,372
8'-0"	8'-0"	10"	8"	23'	162	#7	6"	9'-1"	3,008	194	#5	5"	12'-11"	2,614	8'-8"	4'-3"	194	#5	5"	7'-1"	1,433	4'-3"	2'-10"	56	8'-0"	299	6	18"	39'-9"	159	44	39'-9"	1,168	9'-1"	24	22	62	0.971	217.0	0.7	86	39.5	8,767
8'-0"	8'-0"	11"	9"	30'	194	#7	5"	9'-3"	3,668	194	#5	5"	13'-0"	2,630	8'-9"	4'-3"	194	#5	5"	7'-2"	1,450	4'-3"	2'-11"	56	8'-0"	299	6	18"	39'-9"	159	46	39'-9"	1,221	9'-3"	25	22	62	1.090	235.7	0.7	87	44.3	9,514

⑤ For each box size, minimum fill height shown shall be used for all culverts with less than 2'-0" of fill.

Deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064 may be used to replace conventional reinforcement shown at the Contractor's option. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes.

Example Conversion: Replacement of No. 6 Gr 60 at 6" Spacing with WWR.  
 WWR required = (0.44 sq in/ 0.5') x (60 ksi/70 ksi) = 0.754 sq in/ft.  
 If D30.6 wire is used to meet the 0.754 sq in/ft requirement in this example, the required spacing = (0.306 sq in/ 0.754 sq in/ft) x 12 in/ft = 4.87" Max spacing.  
 Required lap length for the provided D30.6 wire is 2'-2" (Lap required for uncoated No. 5 bars, as shown in Item 440).

HL93 LOADING SHEET 2 OF 2

 <b>Texas Department of Transportation</b>		<b>Bridge Division Standard</b>	
<b>SINGLE BOX CULVERTS          CAST-IN-PLACE          0' TO 30' FILL</b>			
<b>SCC-8</b>			
FILE: sc08ste.dgn	DN: GAF	ck: LMW	DW: BWH/TXDOT
©TxDOT February 2010	CONT	SECT	JOB
REVISIONS	0915	12	586
10-12: Added WWR	DIST	COUNTY	SHEET NO.
	SAT	BEXAR	352



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**I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402**

Texas Pollutant Discharge Elimination System (TPDES) TXR 150000: Stormwater Discharge Permit or Construction General Permit (CGP) required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.

No Action Required       Required Action

Action No.

1. Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000.
2. Comply with the Storm Water Pollution Prevention Plan (SW3P) and revise when necessary to control pollution or required by the Engineer.
3. Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and Texas Commission on Environmental Quality (TCEQ), Environmental Protection Agency (EPA) or other inspectors.
4. When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, Contractor shall submit Notice of Intent (NOI) to TCEQ and the Engineer.
5. NOI required:  Yes  No

Note: If amount of soil disturbance changes, permit requirements may change.

**II. WORK IN OR NEAR STREAMS, WATERBODIES AND WETLANDS CLEAN WATER ACT SECTIONS 401 AND 404**

US Army Corps of Engineers (USACE) Permit required for filling, dredging, excavating or other work in any potential USACE jurisdictional water, such as, rivers, creeks, streams, or wetlands.

The Contractor shall adhere to all of the terms and conditions associated with the following permit(s):

- No Permit Required
- Nationwide Permit (NWP) 14 - Pre-construction Notice (PCN) not Required
- Nationwide Permit 14 - PCN Required
- Individual 404 Permit Required
- Other Nationwide Permit Required: NWP# \_\_\_\_\_

Required Actions: List waters of the US permit applies to, location in project and check Best Management Practices (BMPs) planned to control erosion, sedimentation and post-project total suspended solids (TSS).

- 1.
- 2.
- 3.
- 4.

401 Best Management Practices: (Not applicable if no USACE permit)

Erosion	Sedimentation	Post-Construction TSS
<input type="checkbox"/> Temporary Vegetation	<input type="checkbox"/> Silt Fence	<input type="checkbox"/> Vegetative Filter Strips
<input type="checkbox"/> Blankets/Matting	<input type="checkbox"/> Rock Berm	<input type="checkbox"/> Retention/Irrigation Systems
<input type="checkbox"/> Mulch	<input type="checkbox"/> Triangular Filter Dike	<input type="checkbox"/> Extended Detention Basin
<input type="checkbox"/> Sodding	<input type="checkbox"/> Sand Bag Berm	<input type="checkbox"/> Constructed Wetlands
<input type="checkbox"/> Interceptor Swale	<input type="checkbox"/> Straw Bale Dike	<input type="checkbox"/> Wet Basin
<input type="checkbox"/> Diversion Dike	<input type="checkbox"/> Brush Berms	<input type="checkbox"/> Erosion Control Compost
<input type="checkbox"/> Erosion Control Compost	<input type="checkbox"/> Erosion Control Compost	<input type="checkbox"/> Mulch Filter Berm and Socks
<input type="checkbox"/> Mulch Filter Berm and Socks	<input type="checkbox"/> Mulch Filter Berm and Socks	<input type="checkbox"/> Compost Filter Berm and Socks
<input type="checkbox"/> Compost Filter Berm and Socks	<input type="checkbox"/> Compost Filter Berm and Socks	<input type="checkbox"/> Vegetation Lined Ditches
	<input type="checkbox"/> Stone Outlet Sediment Traps	<input type="checkbox"/> Sand Filter Systems
	<input type="checkbox"/> Sediment Basins	<input type="checkbox"/> Sedimentation Chambers
		<input type="checkbox"/> Grassy Swales

**III. CULTURAL RESOURCES**

Refer to TxDOT Standard Specifications in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately.

No Action Required       Required Action

Action No.

- 1.
- 2.
- 3.
- 4.

**IV. VEGETATION RESOURCES**

Preserve native vegetation to the extent practical. Contractor must adhere to Construction Specification Requirements Specs 162,164, 192, 193, 506, 730, 751, 752 in order to comply with requirements for invasive species, beneficial landscaping, and tree/brush removal commitments.

No Action Required       Required Action

Action No.

- 1.
- 2.
- 3.
- 4.

**V. FEDERAL LISTED, PROPOSED THREATENED, ENDANGERED SPECIES, CRITICAL HABITAT, STATE LISTED SPECIES, CANDIDATE SPECIES AND MIGRATORY BIRDS.**

No Action Required       Required Action

Action No.

1. MIGRATORY BIRD NESTS: Schedule construction activities as needed to meet the following requirements:

- A. Do not remove or destroy any active migratory bird nests (nests containing eggs and/or flightless birds) at any time of year. If there are any active nests, they shall not be removed until the nests become inactive.
- B. On/in structures, if there are any active nests, they shall not be removed until all nests become inactive. After inactive nests are removed and/or before nest activity begins, deterrent materials may be applied to the structures to prevent future nest building.

2. See Item 5 in General Notes.

- 3.
- 4.

If any of the listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediated area, and contact the Engineer immediately.

**VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES**

General (applies to all projects):

Comply with the Hazard Communication Act (the Act) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used.

Obtain and keep on-site Material Safety Data Sheets (MSDS) for all hazardous products used on the project, which may include, but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling as required by the Act.

Maintain an adequate supply of on-site spill response materials, as indicated in the MSDS. In the event of a spill, take actions to mitigate the spill as indicated in the MSDS, in accordance with safe work practices, and contact the District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the following are detected:

- \* Dead or distressed vegetation (not identified as normal)
- \* Trash piles, drums, canister, barrels, etc.
- \* Undesirable smells or odors
- \* Evidence of leaching or seepage of substances

Hazardous Materials or Contamination Issues Specific to this Project:

No Action Required       Required Action

Action No.

- 1.
- 2.
- 3.

Does the project involve the demolition of a span bridge?

Yes       No (No further action required)

If "Yes", a pre-demolition notification must be submitted to the Texas Department of State Health Services. The contractor shall contact TxDOT's Project Engineer 25 calendar days prior to the demolition of the bridges(s) on the project to assist with the notification.

**VII. OTHER ENVIRONMENTAL ISSUES**

(includes regional issues such as Edwards Aquifer District, etc.)

No Action Required       Required Action

Action No.

- 1.
- 2.
- 3.



**ENVIRONMENTAL PERMITS,  
ISSUES AND COMMITMENTS**

EPIC

FILE: epic_2015-10-09_SAT.dgn	DN: TxDOT	CK: TxDOT	DW: BW	CK: GAG
© TxDOT OCTOBER 2015	CONT	SECT	JOB	HIGHWAY
REVISIONS	0915	12	586	VA
	DIST	COUNTY	SHEET NO.	
	SAT	BEXAR	353	

**A. GENERAL SITE DATA**

- PROJECT LIMITS:** Same as stated on the Title Sheet
- PROJECT SITE MAPS:**
  - \* Project Latitude \_\_\_\_\_ Project Longitude \_\_\_\_\_
  - \* Project Location Map: Shown on Title Sheet
  - \* Drainage Patterns: Shown on Drainage Area Maps (Sheets X-Y)
  - \* Approx. Slopes Anticipated After Major Gradings and Areas of Soil Disturbance: Shown on Typical Sections (Sheets X-Y)
  - \* Major Controls and Locations of Stabilization Practices: Shown on SW3P Sheets (Sheets X-Y)
  - \* Project Specific Locations: Off-site waste, borrow, or storage areas are not part of this SW3P.
  - \* Surface Waters and Discharge Locations: Shown on Drainage and Culvert Layout Sheets (Sheets X-Y)
- PROJECT DESCRIPTION:** Same description as stated on Title Sheet
  - \* Joint-bid utilities are covered by this SW3P (Sheets X-Y)
  - Non-Joint Bid Utilities are not part of this SW3P.
- FOR MAJOR SOIL DISTURBING ACTIVITIES SEQUENCE OF EVENTS:**
  - Install controls down-slope of work area and initiate inspection and maintenance activities.
  - Begin phased construction with interim stabilization practices. Adjust erosion and sedimentation controls during construction to meet requirements and changing conditions and as directed/ approved by the Engineer.
  - Major soil disturbing activities may include but are not limited to: right-of-way preparation, cut and/or fill to improve roadway profile, final grading and placement of topsoil and the following (if marked):
    - \_\_\_\_\_ Placement of road base
    - \_\_\_\_\_ Extensive ditch grading
    - \_\_\_\_\_ Upgrading or replacing culverts or bridges
    - \_\_\_\_\_ Temporary detour road(s)
    - \_\_\_\_\_ Other: \_\_\_\_\_
- EXISTING AND PROPOSED CONDITIONS:**

Description of existing vegetative cover: (Provide type and description of vegetative cover)

Percentage of existing vegetative cover: (Provide percentage)

Existing vegetative cover: (mark one) \_\_\_\_\_ Thick or uniformly established  
 \_\_\_\_\_ Thin and Patchy  
 \_\_\_\_\_ None or minimal cover

Description of soils: (Provide classification and description of soils)

Site Acreage: \_\_\_\_\_ Acreage disturbed: \_\_\_\_\_

Site runoff coefficient (pre-construction): \_\_\_\_\_ Site runoff coefficient (post-construction): \_\_\_\_\_
- RECEIVING WATERS:** (Mark all that apply)
  - \_\_\_\_\_ A classified stream does not pass through project.
  - \_\_\_\_\_ A classified stream passes through project. Name \_\_\_\_\_ Segment Number \_\_\_\_\_

Name of receiving waters that will receive discharges from disturbed areas of the project: \_\_\_\_\_

Site is in a Municipal Separate Storm Sewer System (MS4). MS4 Operator (name): \_\_\_\_\_

**B. BEST MANAGEMENT PRACTICES**

General timing or sequence for implementation of BMPs shall be as required and/or as directed/approved by the Engineer to provide adequate controls. BMPs shown on plan sheets are to be considered "proposed" unless/until install date is shown. BMPs are to reduce sediments from road construction activities.

- SOIL STABILIZATION PRACTICES:** (Select T = Temporary or P = Permanent, as applicable)
  - \_\_\_\_\_ SEEDING
  - \_\_\_\_\_ MULCHING (Hay or Straw)
  - \_\_\_\_\_ BUFFER ZONES
  - \_\_\_\_\_ PLANTING
  - \_\_\_\_\_ COMPOST/MULCH FILTER BERM
  - \_\_\_\_\_ SODDING
  - \_\_\_\_\_ PRESERVATION OF NATURAL RESOURCES
  - \_\_\_\_\_ FLEXIBLE CHANNEL LINER
  - \_\_\_\_\_ RIGID CHANNEL LINER
  - \_\_\_\_\_ SOIL RETENTION BLANKET
  - \_\_\_\_\_ COMPOST MANUFACTURED TOPSOIL
  - \_\_\_\_\_ OTHER: (Specify Practice)
- STRUCTURAL PRACTICES:** (Select T = Temporary or P = Permanent, as applicable)
  - \_\_\_\_\_ SILT FENCES
  - \_\_\_\_\_ HAY BALES
  - \_\_\_\_\_ ROCK FILTER DAMS
  - \_\_\_\_\_ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
  - \_\_\_\_\_ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
  - \_\_\_\_\_ DIVERSION DIKE AND SWALE COMBINATIONS
  - \_\_\_\_\_ PIPE SLOPE DRAINS
  - \_\_\_\_\_ PAVED FLUMES
  - \_\_\_\_\_ ROCK BEDDING AT CONSTRUCTION EXIT
  - \_\_\_\_\_ TIMBER MATTING AT CONSTRUCTION EXIT
  - \_\_\_\_\_ CHANNEL LINERS
  - \_\_\_\_\_ SEDIMENT TRAPS
  - \_\_\_\_\_ SEDIMENT BASINS
  - \_\_\_\_\_ STORM INLET SEDIMENT TRAP
  - \_\_\_\_\_ STONE OUTLET STRUCTURES
  - \_\_\_\_\_ CURBS AND GUTTERS
  - \_\_\_\_\_ STORM SEWERS
  - \_\_\_\_\_ VELOCITY CONTROL DEVICES
  - \_\_\_\_\_ OTHER: (Specify Practice)
- STORM WATER MANAGEMENT:**

The proposed facility was designed in consideration of hydraulic design standards to convey stormwater in a manner that is protective of public safety and property. The control of erosion from the facility is inherent to the design. Additional factors affecting post-construction stormwater at the project location include: (mark all that apply)

  - \_\_\_\_\_ Existing or new vegetation provides natural filtration.
  - \_\_\_\_\_ The design includes provisions for permanent erosion controls provided by strategically placed pervious and impervious surfaces.
  - \_\_\_\_\_ Project includes permanent sedimentation controls (other than grass).
  - \_\_\_\_\_ Velocities do not require dissipation devices.
  - \_\_\_\_\_ Velocity-dissipation devices included in the design.
  - \_\_\_\_\_ Other : \_\_\_\_\_
- NON-STORM WATER DISCHARGES:**

Off-site discharges are prohibited except as follows:

  - Discharges from fire fighting activities and/or fire hydrant flushings.
  - Vehicle, external building, and pavement wash water where detergents and soaps are not used and where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed).
  - Plain water used to control dust.
  - Plain water originating from potable water sources.
  - Uncontaminated groundwater, spring water or accumulated stormwater.
  - Foundation or footing drains where flows are not contaminated with process materials such as solvents.
  - Other: \_\_\_\_\_

Concrete truck wash water discharges on the site should be prohibited or minimized. If allowed by the Engineer, they must be managed in a manner so as not to contaminate surface water. They must not be located in areas of concentrated flow. Concrete truck wash-out locations must be shown on the SW3P Layout and included in the inspections.

Hazardous material spill/leak shall be prevented or minimized. At a minimum, this includes asphalt products, fuels, oils, lubricants, solvents, paints, acids, concrete curing compounds and chemical additives for soil stabilization. BMPs shall be implemented to the storage areas of these products. All spills must be cleaned and disposed properly and reported to the Engineer. Report any release at or above the reportable quantity during a 24 hour period to the National Response Center at 1-800-424-8802.

**C. OTHER REQUIREMENTS & PRACTICES**

- MAINTENANCE:**

All erosion and sediment controls shall be maintained in good working order. If a repair is necessary, it shall be performed before the next anticipated storm event but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from equipment. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable. Disturbed areas on which construction activities have ceased, temporarily or permanently, shall be stabilized within 14 calendar days unless they are scheduled to and do resume within 21 calendar days. The areas adjacent to creeks and drainageways shall have priority followed by protecting storm sewer inlets.
- INSPECTION:**

For areas of the construction site that have not been finally stabilized, areas used for storage of materials, structural control measures, and locations where vehicles enter or exit the site, personnel provided by the permittee and familiar with the SW3P must inspect disturbed areas at least once every seven (7) calendar days. An Inspection and Maintenance Report shall be prepared for each inspection and the controls shall be revised on the SW3P within seven (7) calendar days following the inspection.
- WASTE MATERIALS:**

All non-hazardous municipal waste materials such as litter, rubbish, trash and garbage located on or originating from the project shall be collected and stored in a securely lidded metal dumpster, provided by the Contractor. The dumpster shall be emptied as necessary or as required by local regulation and the trash shall be hauled to a permitted disposal facility. The burying of non-hazardous municipal waste on the project shall not be permitted. Construction material waste sites, stockpiles and haul roads shall be constructed to minimize and control the amount of sediment that may enter receiving waters. Construction material waste sites shall not be located in any wetland, water body or stream bed. Construction staging areas and vehicle maintenance areas shall be constructed in a manner to minimize the runoff of pollutants.
- OFFSITE VEHICLE TRACKING:**

Off-site vehicle tracking of sediments and the generation of dust must be minimized. Excess sediments on road shall be removed on a regular basis as directed/approved by the Engineer.
- OTHER:**

See the EPIC sheet for additional environmental information.

Note To Designer:  
 1. Do not alter Sheet Design or Font style, size or weight - match text attributes.  
 2. If additional space is needed for a numbered section, fence and adjust sections up or down as needed for proportioning and readability but do not relocate from its relative position.

Design Consultant Logo here - delete block if not applicable

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Reserved Space  
For Seal

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STORM WATER POLLUTION PREVENTION PLAN (SW3P)

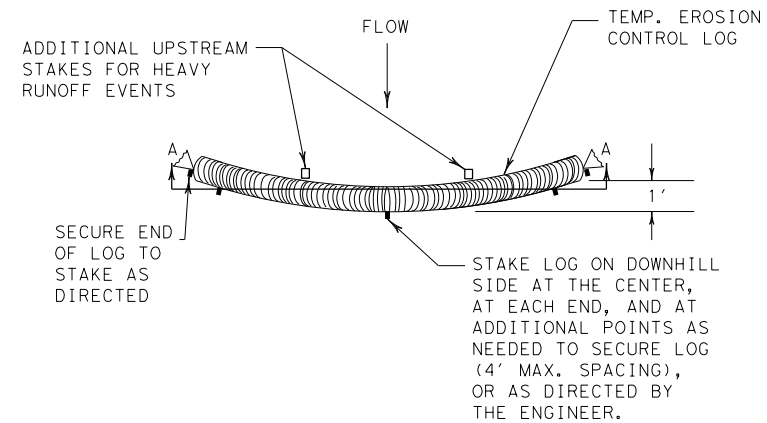
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6				
STATE	DISTRICT	COUNTY		VA
TEXAS	SAT	BEXAR		
CONTROL	SECTION	JOB		SHEET NO.
0915	12	586		354

\_\_\_\_\_, P. E.  
Signature of Registrant & Date

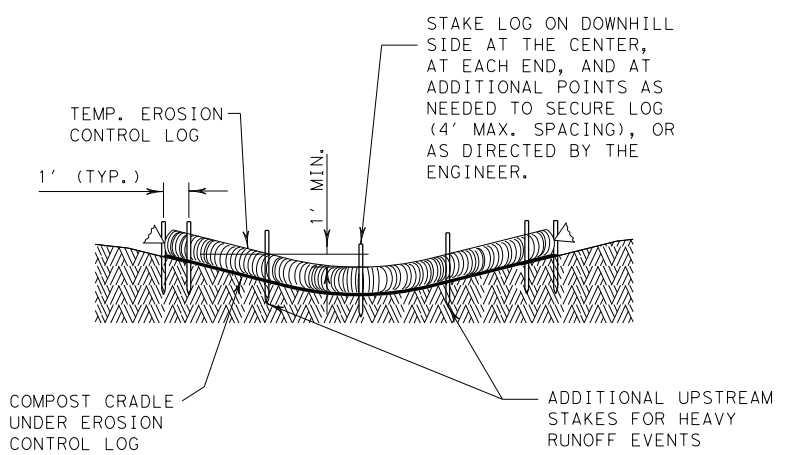
REVISION DATE: 10/12

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DATE: 9/29/2017  
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PLAN VIEW

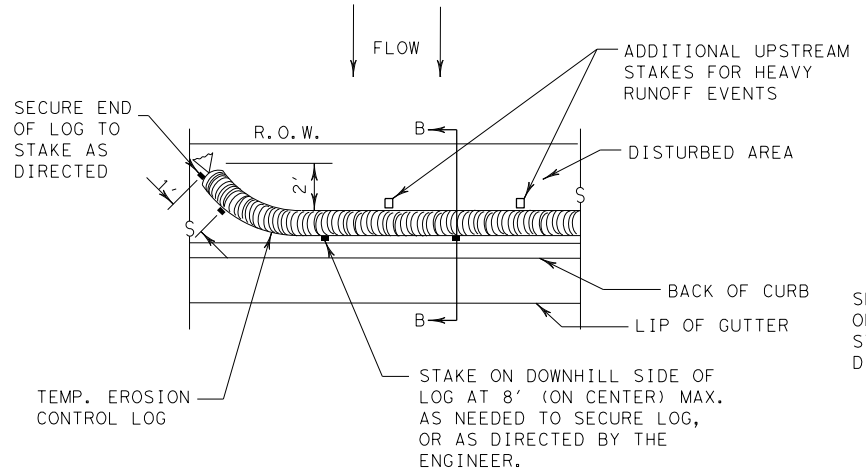


SECTION A-A

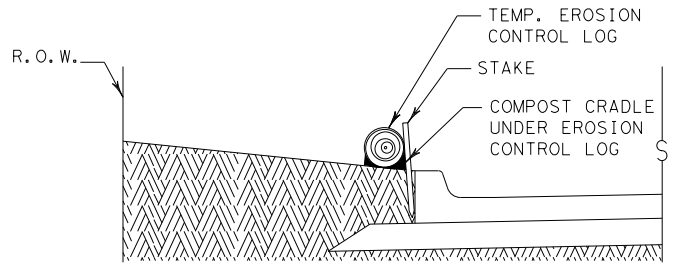
EROSION CONTROL LOG DAM

CL-D

- LEGEND**
- CL-D EROSION CONTROL LOG DAM
  - CL-BOC EROSION CONTROL LOG AT BACK OF CURB
  - CL-ROW EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY
  - CL-SST EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING
  - CL-SSL EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING
  - CL-DI EROSION CONTROL LOG AT DROP INLET
  - CL-CI EROSION CONTROL LOG AT CURB INLET
  - CL-GI EROSION CONTROL LOG AT CURB & GRATE INLET



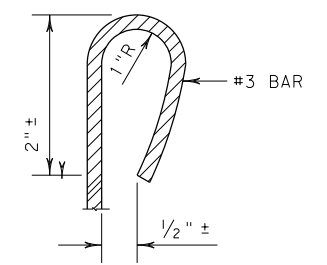
PLAN VIEW



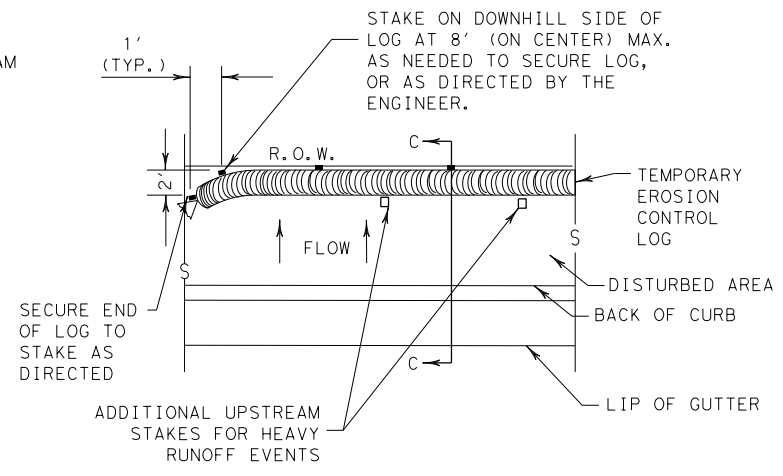
SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

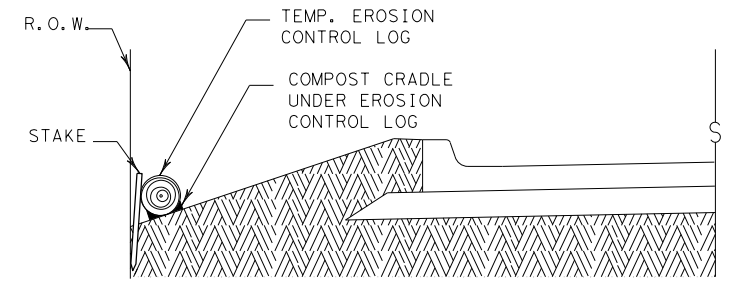
CL-BOC



REBAR STAKE DETAIL



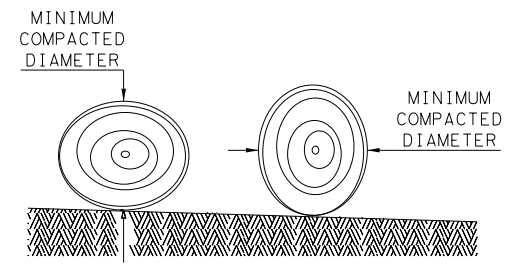
PLAN VIEW



SECTION C-C

EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

**SEDIMENT BASIN & TRAP USAGE GUIDELINES**

An erosion control log sediment trap may be used to filter sediment out of runoff draining from an unstabilized area.

**Log Traps:** The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Control logs should be placed in the following locations:

1. Within drainage ditches spaced as needed or min. 500' on center
2. Immediately preceding ditch inlets or drain inlets
3. Just before the drainage enters a water course
4. Just before the drainage leaves the right of way
5. Just before the drainage leaves the construction limits where drainage flows away from the project.

The logs should be cleaned when the sediment has accumulated to a depth of 1/2 the log diameter.

Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.

**GENERAL NOTES:**

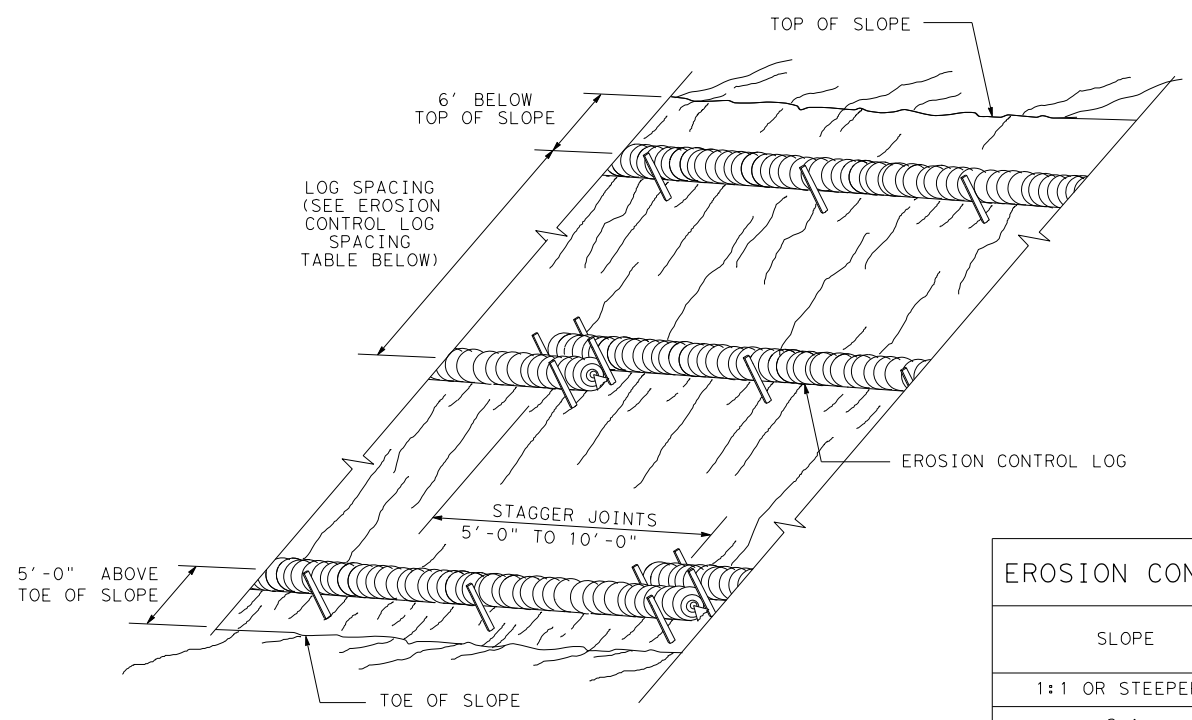
1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
2. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
3. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
4. FILL LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE THE MINIMUM COMPACTED DIAMETER SPECIFIED IN THE PLANS WITHOUT EXCESSIVE DEFORMATION.
5. STAKES SHALL BE 2" X 2" WOOD OR #3 REBAR, 2'-4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED BY THE ENGINEER.
6. DO NOT PLACE STAKES THROUGH CONTAINMENT MESH.
7. COMPOST CRADLE MATERIAL IS INCIDENTAL & WILL NOT BE PAID FOR SEPARATELY.
8. SANDBAGS USED AS ANCHORS SHALL BE PLACED ON TOP OF LOGS & SHALL BE OF SUFFICIENT SIZE TO HOLD LOGS IN PLACE.
9. TURN THE ENDS OF EACH ROW OF LOGS UPSLOPE TO PREVENT RUNOFF FROM FLOWING AROUND THE LOG.
10. FOR HEAVY RUNOFF EVENTS, ADDITIONAL UPSTREAM STAKES MAY BE NECESSARY TO KEEP LOG FROM FOLDING IN ON ITSELF.

SHEET 1 OF 3

		<b>Design Division Standard</b>	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES</b> <b>EROSION CONTROL LOG</b> <b>EC (9) - 16</b>			
FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT
© TxDOT: JULY 2016	CONT	SECT	JOB
REVISIONS	0915	12	586
	DIST	COUNTY	SHEET NO.
	SAT	BEXAR	355

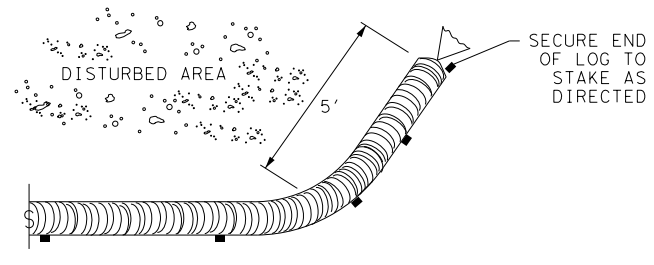
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DATE: 9/29/2017  
 FILE: P:\1111\35\01\design\Civil\Standards\SW3P\ec9[6].dgn

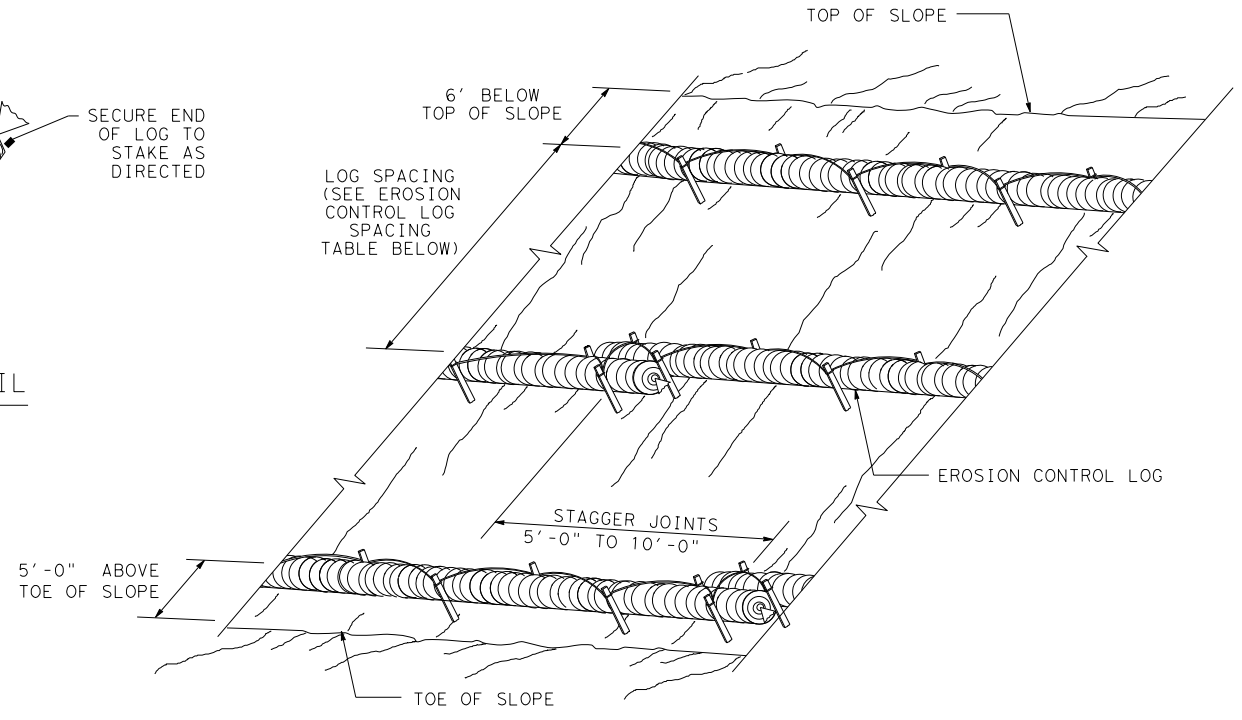


EROSION CONTROL LOGS ON SLOPES  
 STAKE AND TRENCHING ANCHORING

CL-SST



END SECTION RAP DETAIL

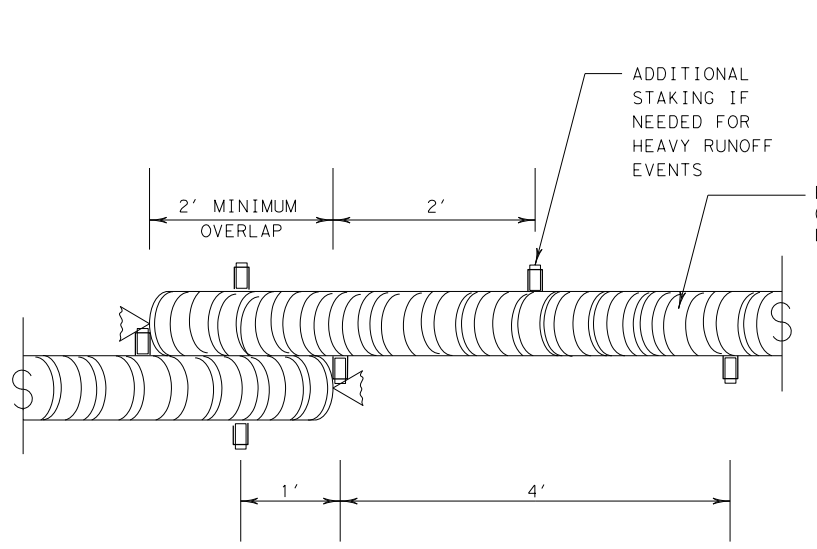


EROSION CONTROL LOGS ON SLOPES  
 STAKE AND LASHING ANCHORING

CL-SSL

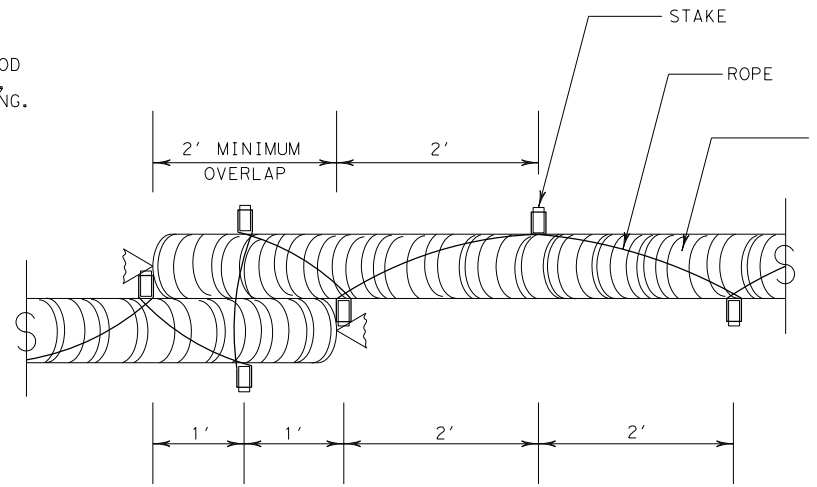
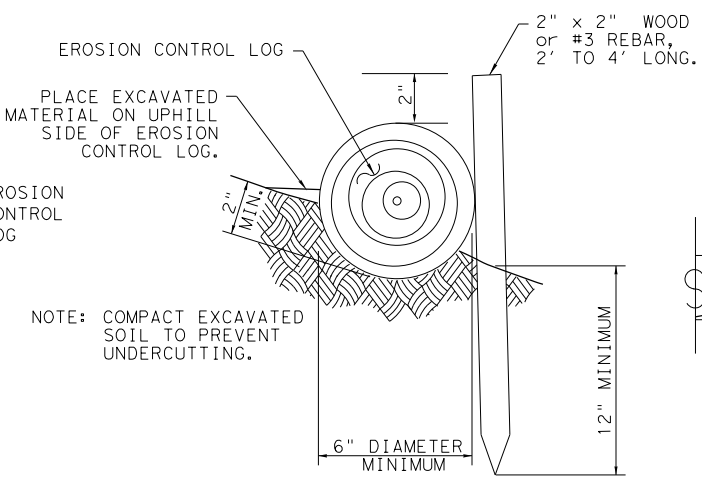
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

\* ADJUSTMENTS CAN BE MADE FOR SOIL TYPE:  
 SOFT, LOAMY SOILS-ADJUST ROWS CLOSER TOGETHER;  
 HARD, ROCKY SOILS- ADJUST ROWS FARTHER APART



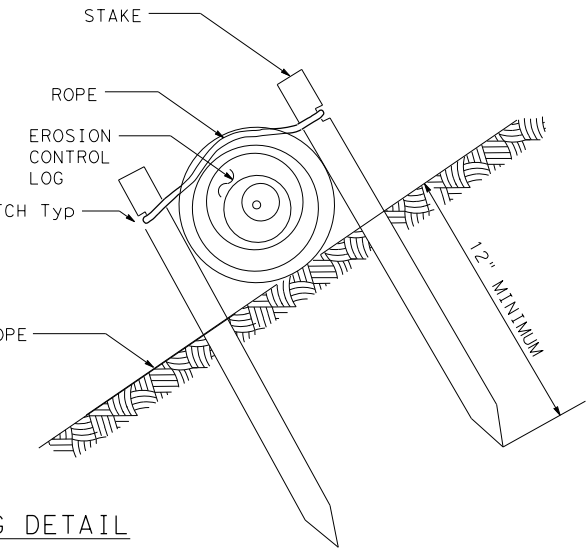
STAKE AND TRENCHING ANCHORING DETAIL

CL-SST

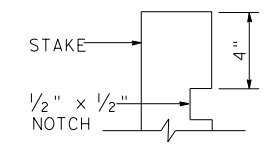


STAKE AND LASHING ANCHORING DETAIL

CL-SSL



TRENCH DEPTH TABLE	
LOG DIAMETER	DEPTH
6"	2"
8"	3"
12"	4"
18"	5"

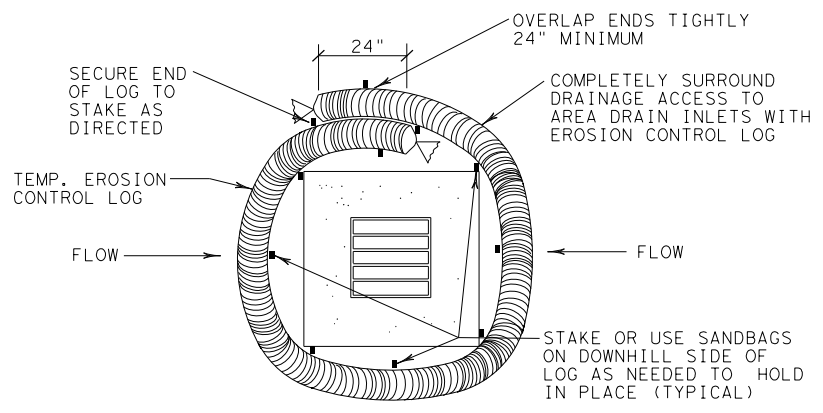


STAKE NOTCH DETAIL

SHEET 2 OF 3

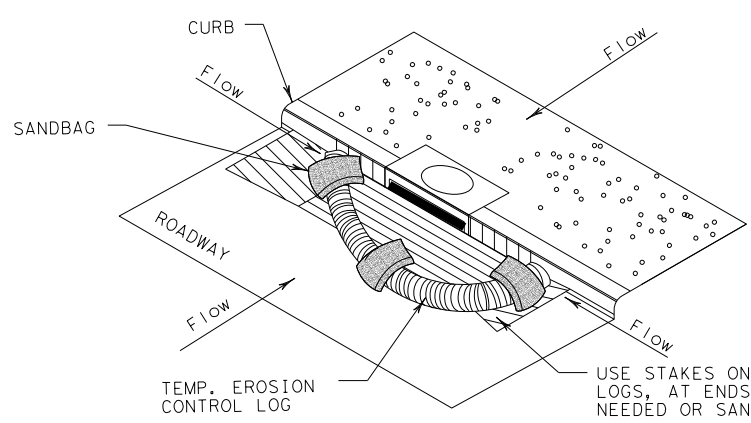
				<b>Design Division Standard</b>	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG EC(9) - 16					
FILE: ec116	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS	
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY	
REVISIONS	0915	12	586	VA	
	DIST	COUNTY	SHEET NO.		
	SAT	BEXAR	356		

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 DATE: 9/29/2017  
 FILE: P:\1111\35\01\design\Civil\Standards\SW3P\ec916.dgn



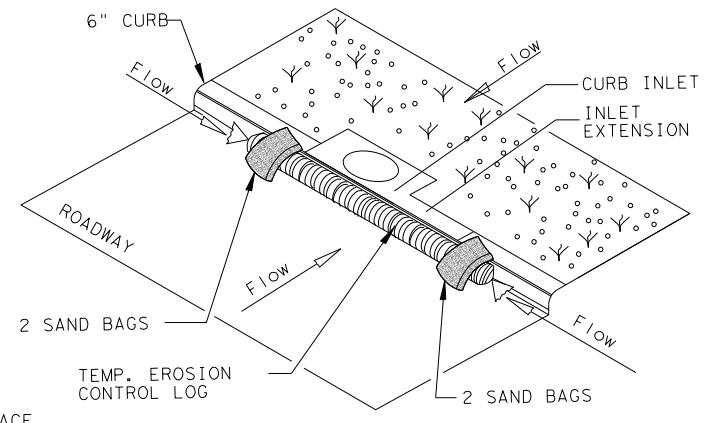
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

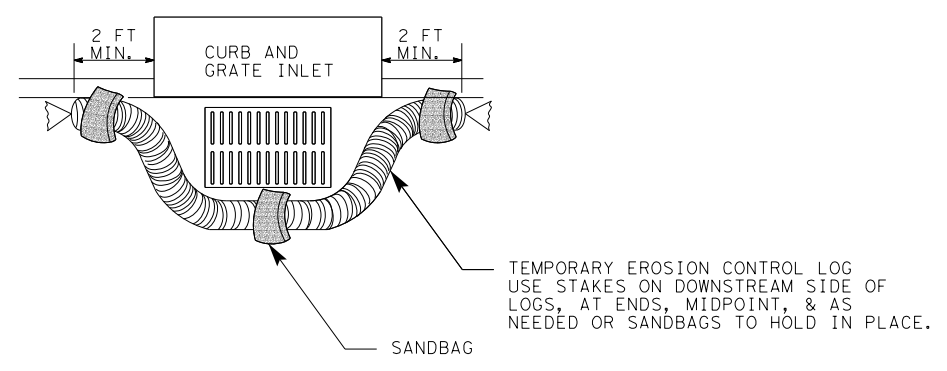
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EROSION CONTROL LOG AT CURB INLET

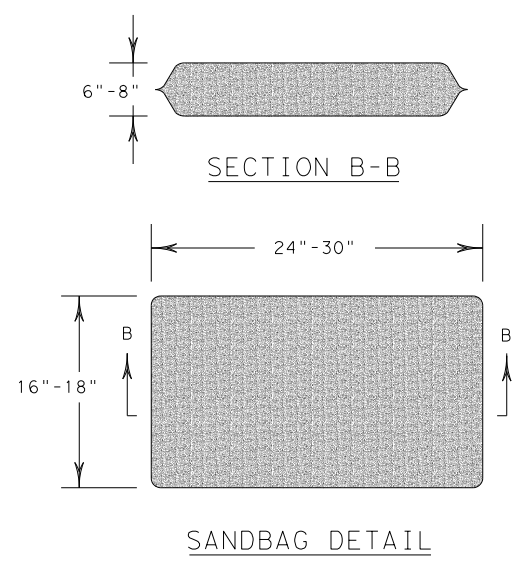
CL-CI

NOTE:  
 EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.



EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI

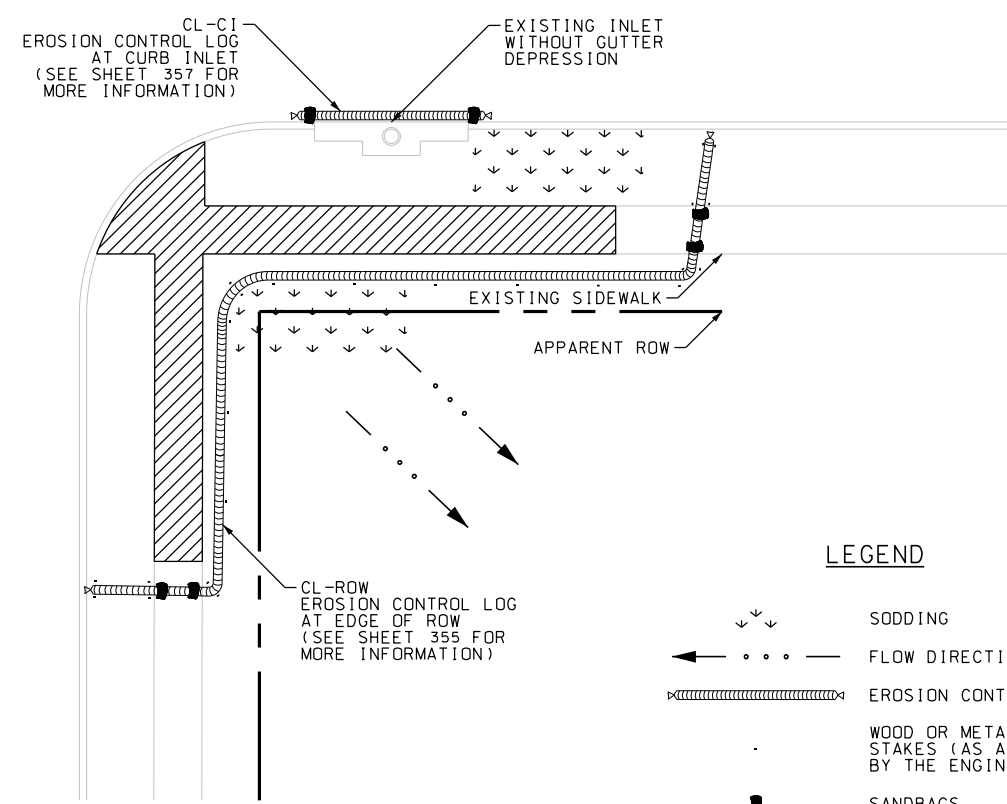
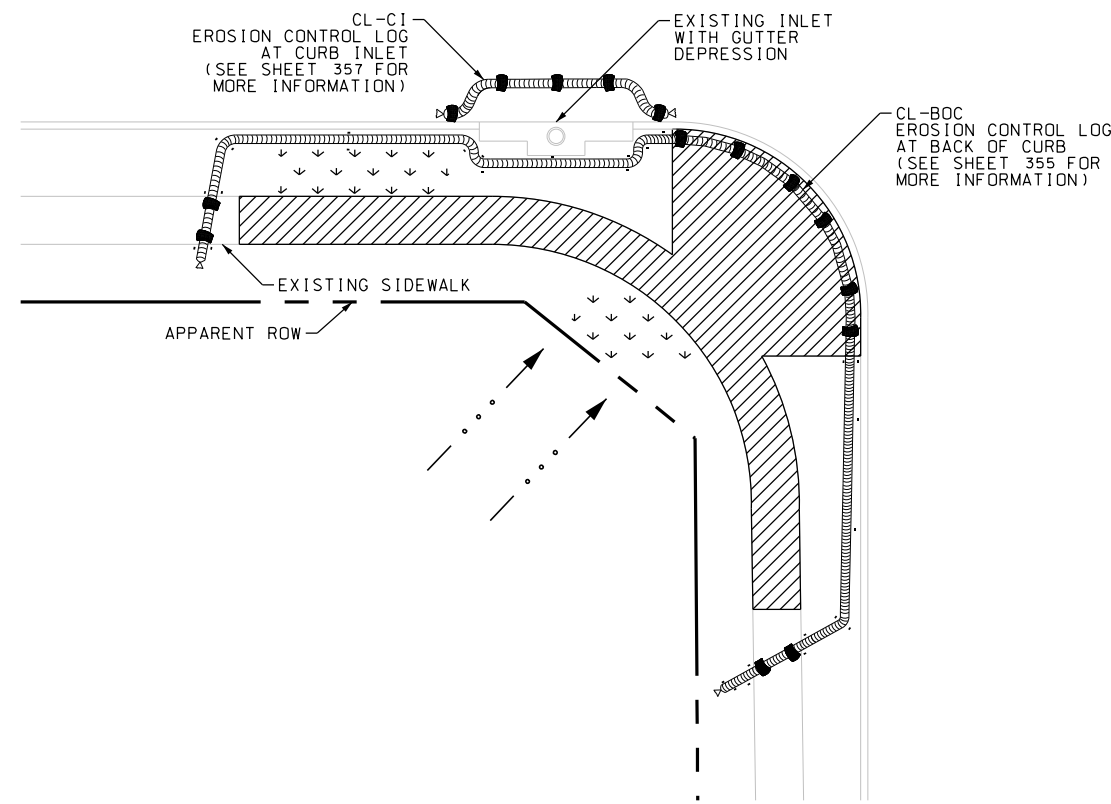
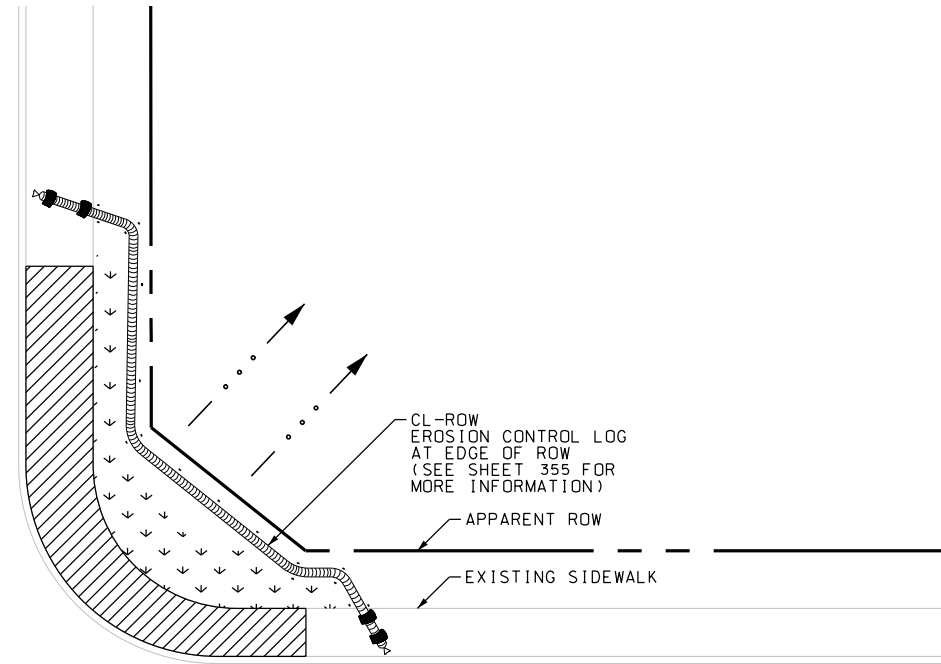
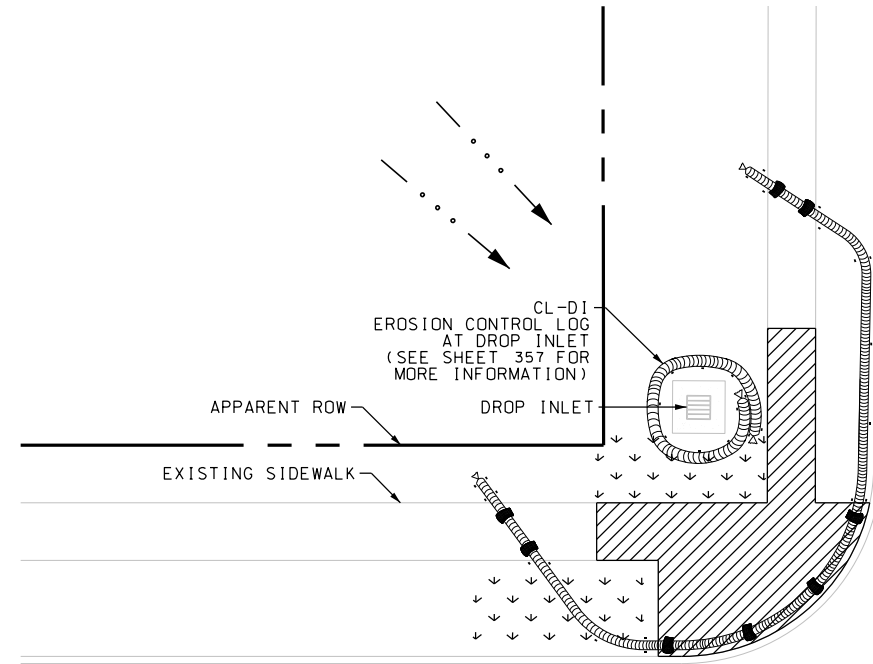


SHEET 3 OF 3

		<b>Design Division Standard</b>	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG EC (9) - 16			
FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT
© TxDOT: JULY 2016	CONT	SECT	JOB
REVISIONS	0915	12	586
	DIST	COUNTY	SHEET NO.
	SAT	BEXAR	357

Plotted on: 9/29/2017

Design File name: P:\111\35\01\design\Civil\General\1113501\_sw3pex01.dgn



**LEGEND**

- SODDING
- FLOW DIRECTION
- EROSION CONTROL LOG
- WOOD OR METAL STAKES (AS APPROVED BY THE ENGINEER)
- SANDBAGS
- EXISTING FEATURES
- PROPOSED WORK AREA

**NOTES:**

REFERENCE ENVIRONMENTAL PERMITS, ISSUES, AND COMMITMENTS (EPIC) AND STORM WATER POLLUTION PREVENTION PLAN (SW3P) SHEETS FOR SPECIFIC CONSTRUCTION CONSIDERATIONS OR REQUIREMENTS.

EXAMPLES SHOWN ON THE SHEET ARE FOR GENERAL GUIDANCE AND MAY BE MODIFIED AS DIRECTED BY THE ENGINEER.

SITE CONDITIONS MAY DICTATE ADDITIONAL COUNTERMEASURES AS DIRECTED BY THE ENGINEER.

USE ADDITIONAL STAKES OR SAND BAGS AS NEEDED TO HOLD IN PLACE (NSPI)

INSTALLATION OF COUNTERMEASURES MUST BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.

**DESIGN**

**INTERIM REVIEW**

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JOHN A. TYLER  
 P.E. SERIAL NO: 105193  
 DATE: 9/29/2017

**REVIEW AND APPROVAL**

**INTERIM REVIEW**

DOCUMENT INCOMPLETE. NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.  
 ENGINEER: JAMES A. LUTZ  
 P.E. SERIAL NO: 84722  
 DATE: 9/29/2017

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



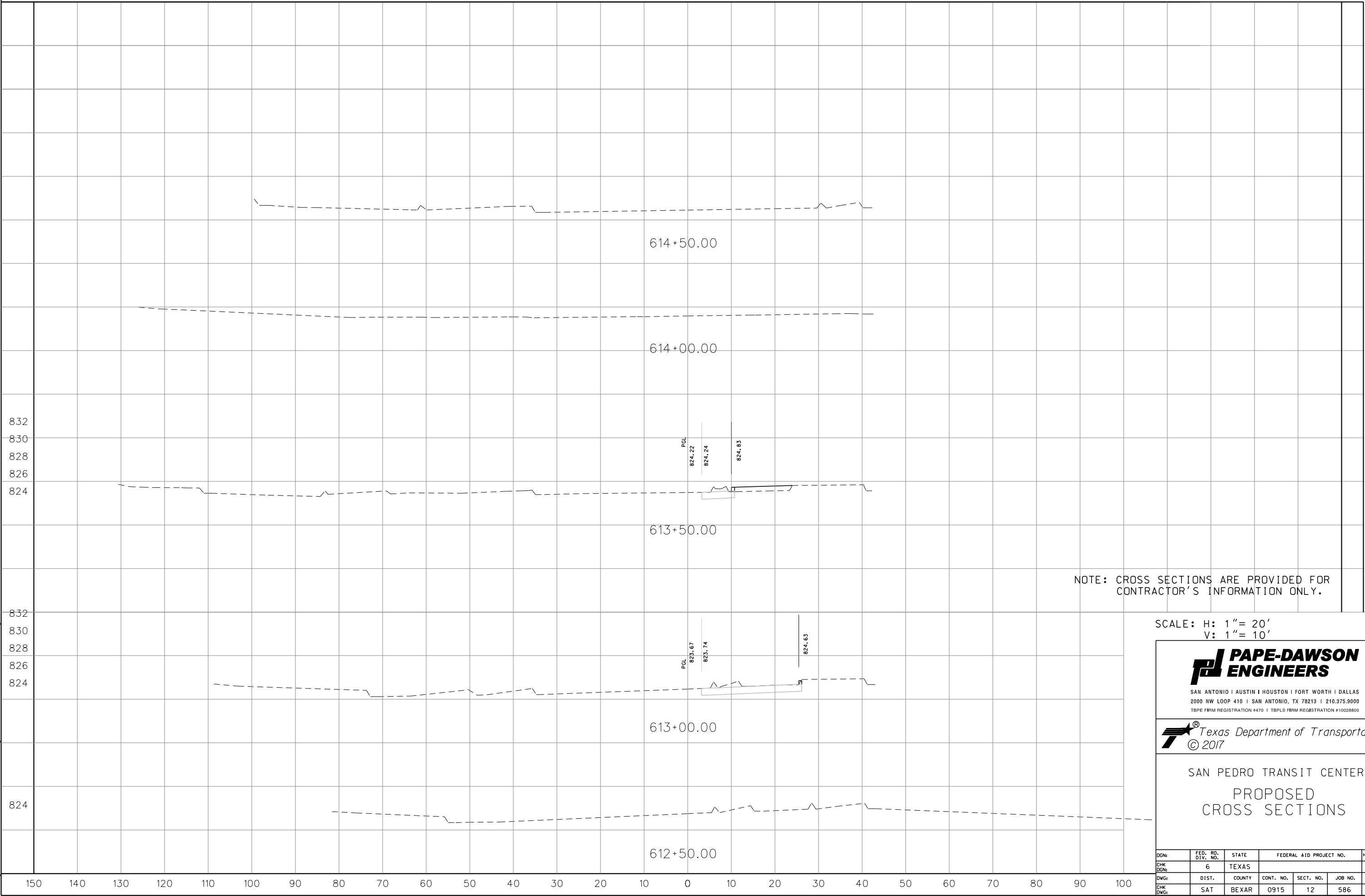
**SWP3 EXAMPLE INTERSECTION**

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DWG:	DIST.	COUNTY	CONT. NO.	SECT. NO.	JOB NO.	SHEET NO.
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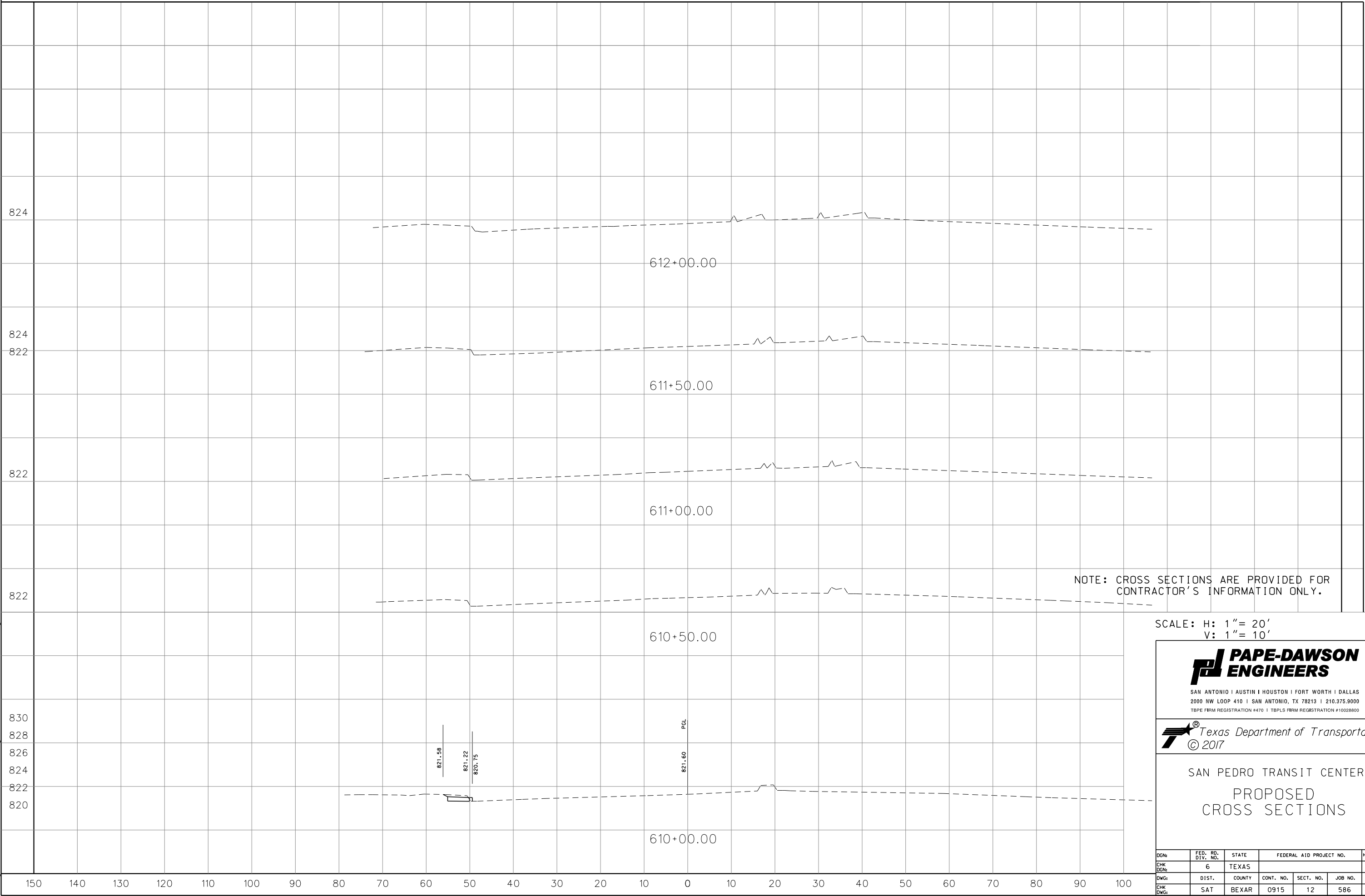
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SAN PEDRO TRANSIT CENTER  
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Plotted on: 9/29/2017

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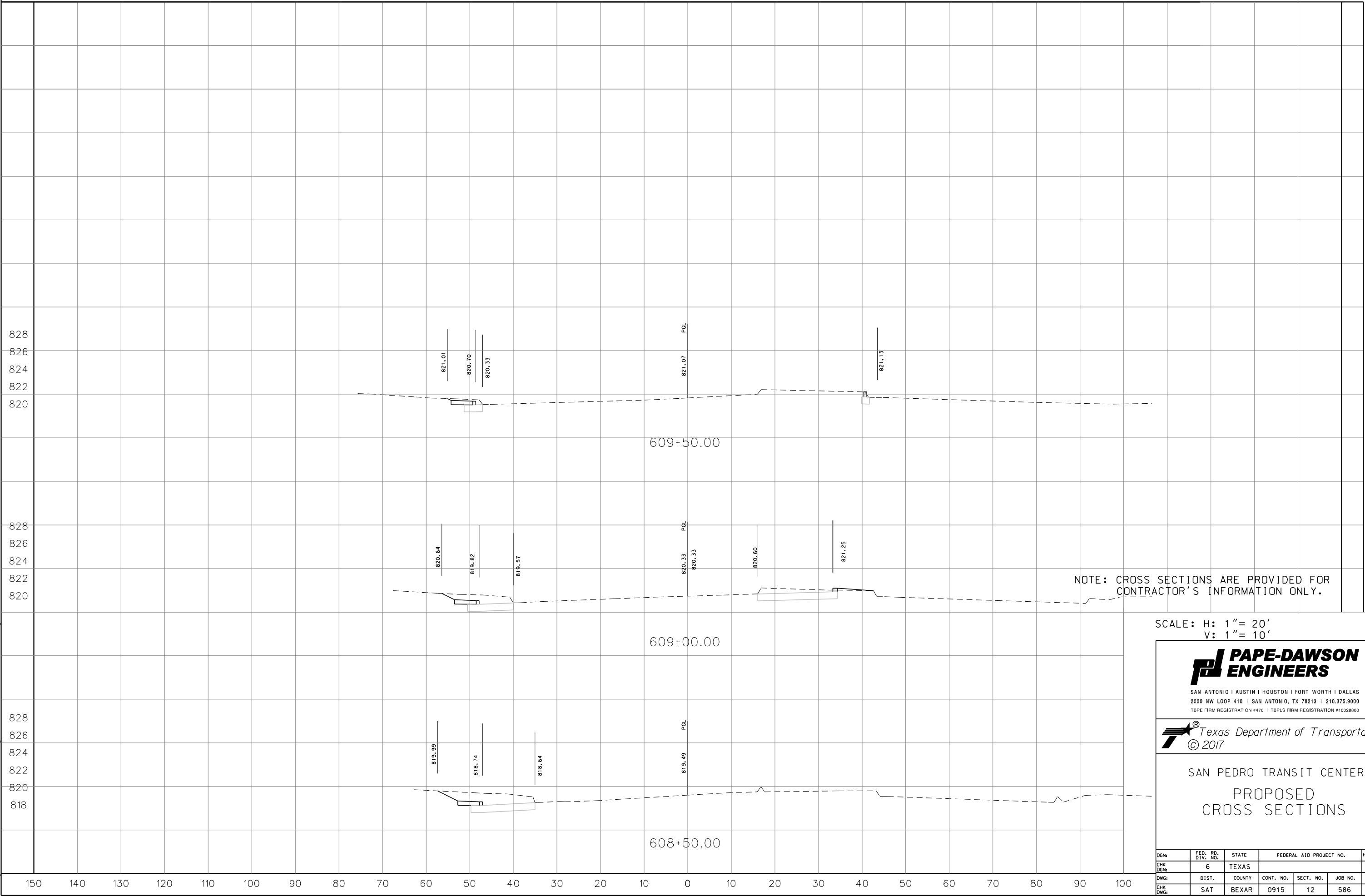
SAN PEDRO TRANSIT CENTER  
 PROPOSED  
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Plotted on: 9/29/2017

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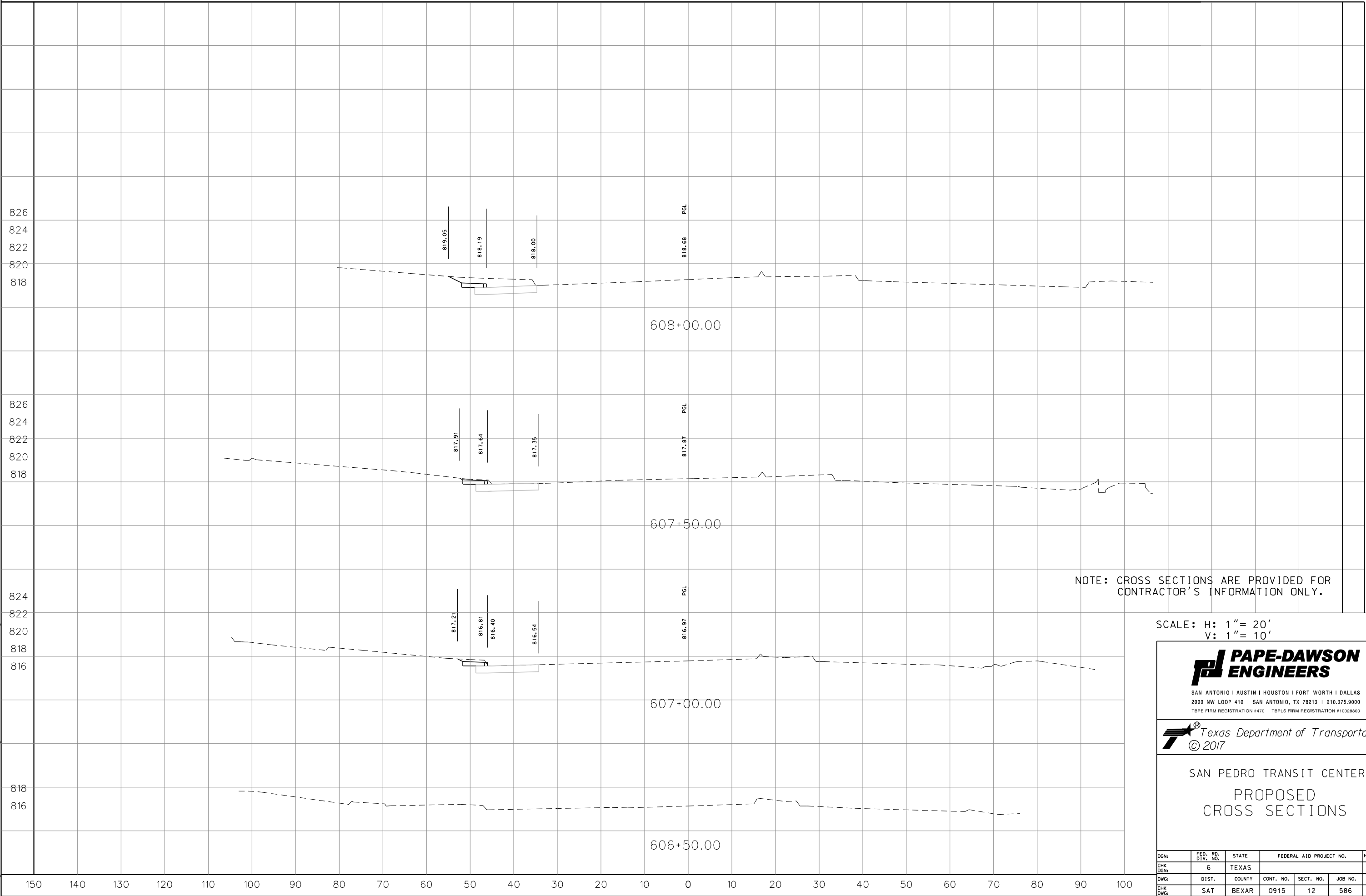
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Plotted on: 9/29/2017

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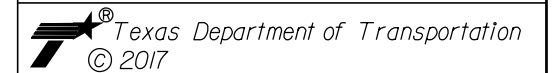


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