APPENDIX D

EPSC PLANS
VOLUME 3
SYSTEM V2

STATE PROJECT NO.			
( )			
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1074

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1074	TITLE SHEET
1075-1083	INDEX OF SHEETS

CAMINO REAL REGIONAL MOBILITY AUTHORITY

PLANS OF PROPOSED URBAN STREETCAR

PROJECT NO. ( )

CITY OF EL PASO STREETCAR
EL PASO COUNTY

VOLUME 3 OF 4 - SYSTEMS

FOR THE CONSTRUCTION OF AN URBAN STREETCAR SYSTEM CONSISTING OF GRADING, STRUCTURES, SURFACE AND SUBSURFACE IMPROVEMENTS, TRACKWORK, AND MAINTENANCE/STORAGE FACILITY

FINAL PLANS

LETTING DATE: _____

DATE CONTRACTOR BEGAN WORK: _____

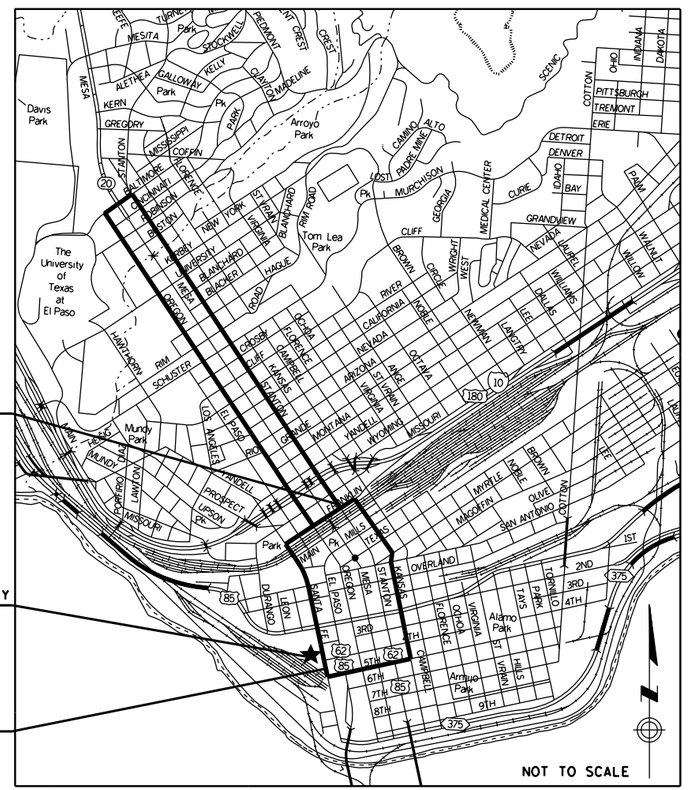
DATE WORK WAS COMPLETED & ACCEPTED: _____

FINAL CONTRACT COST: $ _____

CONTRACTOR : _____

REGISTERED ACCESSIBILITY SPECIALIST (RAS) INSPECTION REQUIRED
TDLR No. EABPRJB5819210

REQUIRED SIGNS SHALL BE IN ACCORDANCE WITH BC (1)- 14 THRU BC (12)- 14 AND THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".



LIMITS:

DOWNTOWN LOOP LIMITS:

FROM INTERSECTION OF FATHER RAHM AVE AND SANTA FE ST, ALONG SANTA FE ST TO FRANKLIN AVE, ALONG FRANKLIN AVE TO KANSAS ST, ALONG KANSAS ST TO FATHER RAHM AVE, ALONG FATHER RAHM AVE TO SANTA FE ST.

STANTON/OREGON LOOP LIMITS:

FROM INTERSECTION OF STANTON ST AND FRANKLIN AVE, ALONG STANTON TO BALTIMORE DR, ALONG BALTIMORE DR TO OREGON ST, ALONG OREGON ST TO FRANKLIN AVE.

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468

TBPE REGISTRATION NO. F-3162

STATE OF TEXAS
DEREK E. BENEDICT
112544
LICENSED
PROFESSIONAL ENGINEER
7/24/15

CAMINO REAL
REGIONAL MOBILITY
AUTHORITY

SUBMITTED FOR LETTING:

PROJECT MANAGER
CAMINO REAL REGIONAL MOBILITY AUTHORITY

COUNTY _____ PROJ. NO. _____
HWY. NO. _____ LETTING DATE _____
DATE ACCEPTED _____

VOLUME 1 OF 4 - CIVIL/TRACK

GENERAL DRAWINGS

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
1	G000	VOLUME 1 OF 4 - CIVIL/TRACK	
2	G001	INDEX OF SHEETS	VOLUME 1 CIVIL/TRACK
3	G002	INDEX OF SHEETS	VOLUME 1 CIVIL/TRACK
4	G002A	INDEX OF SHEETS	VOLUME 1 CIVIL/TRACK
5	G002B	INDEX OF SHEETS	VOLUME 1 CIVIL/TRACK
6	G003	INDEX OF SHEETS	VOLUME 2 CIVIL/TRACK
7	G004	INDEX OF SHEETS	VOLUME 2 CIVIL/TRACK
8	G005	INDEX OF SHEETS	VOLUME 2 CIVIL/TRACK
9	G006	INDEX OF SHEETS	VOLUME 3 SYSTEMS
10	G007	INDEX OF SHEETS	VOLUME 4 MAINTENANCE & STORAGE FACILITY
11	G008	GENERAL NOTES	
12	G009	GENERAL NOTES	
13	G010	GENERAL NOTES	
14	G011	QUANTITY SUMMARY	
15	G012	QUANTITY SUMMARY	
16	G013	QUANTITY SUMMARY	
17	G014	QUANTITY SUMMARY	
18	G015	QUANTITY SUMMARY	
19	G016	QUANTITY SUMMARY	
20	G017	QUANTITY SUMMARY	
21	G018	QUANTITY SUMMARY	
22	G019	QUANTITY SUMMARY	
23	G020	QUANTITY SUMMARY	
24	G021	QUANTITY SUMMARY	
25	G022	QUANTITY SUMMARY	
26	G023	QUANTITY SUMMARY	
27	G025	KEY MAP	
28	G026	KEY MAP	
29	G027	KEY MAP	
30	G100	CONTROL SHEET	
31	K000	HORIZONTAL ALIGNMENT DATA	DT LOOP
32	K001	HORIZONTAL ALIGNMENT DATA	DT LOOP
33	K002	HORIZONTAL ALIGNMENT DATA	DT LOOP
34	K003	HORIZONTAL ALIGNMENT DATA	DT LOOP
35	K004	HORIZONTAL ALIGNMENT DATA	ST-OR LOOP
36	K005	HORIZONTAL ALIGNMENT DATA	ST-OR LOOP
37	K006	HORIZONTAL ALIGNMENT DATA	ST-OR LOOP
38	K007	HORIZONTAL ALIGNMENT DATA	ST-OR LOOP
39	K008	HORIZONTAL ALIGNMENT DATA	ST-OR LOOP
40	K008A	HORIZONTAL ALIGNMENT DATA	ST-OR LOOP
41	K009	HORIZONTAL ALIGNMENT DATA	CROSS STREETS

TRACK PLAN AND PROFILE

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
42	K100	TRACK PLAN AND PROFILE	BEGIN DT LOOP - 13+00
43	K101	TRACK PLAN AND PROFILE	STA 13+00 - 17+00
44	K102	TRACK PLAN AND PROFILE	STA 17+00 - 21+00
45	K103	TRACK PLAN AND PROFILE	STA 21+00 - 25+00
46	K104	TRACK PLAN AND PROFILE	STA 25+00 - 29+00
47	K105	TRACK PLAN AND PROFILE	STA 29+00 - 33+00
48	K106	TRACK PLAN AND PROFILE	STA 33+00 - 36+00
49	K107	TRACK PLAN AND PROFILE	STA 36+00 - 40+00
50	K108	TRACK PLAN AND PROFILE	STA 40+00 - 44+00
51	K109	TRACK PLAN AND PROFILE	STA 44+00 - 48+00
52	K110	TRACK PLAN AND PROFILE	STA 48+00 - 52+00
53	K111	TRACK PLAN AND PROFILE	STA 52+00 - 56+00
54	K112	TRACK PLAN AND PROFILE	STA 56+00 - 60+00
55	K113	TRACK PLAN AND PROFILE	STA 60+00 - 64+00
56	K114	TRACK PLAN AND PROFILE	STA 64+00 - 68+00
57	K115	TRACK PLAN AND PROFILE	STA 68+00 - 72+00
58	K116	TRACK PLAN AND PROFILE	STA 72+00 - 76+00
59	K117	TRACK PLAN AND PROFILE	STA 76+00 - 80+00
60	K118	TRACK PLAN AND PROFILE	STA 80+00 - 84+00
61	K119	TRACK PLAN AND PROFILE	STA 84+00 - 87+00
62	K120	TRACK PLAN AND PROFILE	STA 87+00 - 91+00
63	K121	TRACK PLAN AND PROFILE	STA 91+00 - 95+00
64	K122	TRACK PLAN AND PROFILE	STA 95+00 - 99+00
65	K123	TRACK PLAN AND PROFILE	STA 99+00 - 103+00
66	K124	TRACK PLAN AND PROFILE	STA 103+00 - END DT
67	K125	TRACK PLAN AND PROFILE	BEGIN ST-OR -203+00
68	K126	TRACK PLAN AND PROFILE	STA 203+00 - 207+00
69	K127	TRACK PLAN AND PROFILE	STA 207+00 - 211+00
70	K128	TRACK PLAN AND PROFILE	STA 211+00 - 215+00

TRACK PLAN AND PROFILE (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
71	K129	TRACK PLAN AND PROFILE	STA 215+00 - 219+00
72	K130	TRACK PLAN AND PROFILE	STA 219+00 - 223+00
73	K131	TRACK PLAN AND PROFILE	STA 223+00 - 227+00
74	K132	TRACK PLAN AND PROFILE	STA 227+00 - 231+00
75	K133	TRACK PLAN AND PROFILE	STA 231+00 - 235+00
76	K134	TRACK PLAN AND PROFILE	STA 235+00 - 239+00
77	K135	TRACK PLAN AND PROFILE	STA 239+00 - 243+00
78	K136	TRACK PLAN AND PROFILE	STA 243+00 - 247+00
79	K137	TRACK PLAN AND PROFILE	STA 247+00 - 251+00
80	K138	TRACK PLAN AND PROFILE	STA 251+00 - 255+00
81	K139	TRACK PLAN AND PROFILE	STA 255+00 - 259+00
82	K140	TRACK PLAN AND PROFILE	STA 259+00 - 263+00
83	K141	TRACK PLAN AND PROFILE	STA 263+00 - 267+00
84	K142	TRACK PLAN AND PROFILE	STA 267+00 - 271+00
85	K143	TRACK PLAN AND PROFILE	STA 271+00 - 275+00
86	K144	TRACK PLAN AND PROFILE	STA 275+00 - 278+00
87	K145	TRACK PLAN AND PROFILE	STA 278+00 - 282+00
88	K146	TRACK PLAN AND PROFILE	STA 282+00 - 286+00
89	K147	TRACK PLAN AND PROFILE	STA 286+00 - 290+00
90	K148	TRACK PLAN AND PROFILE	STA 290+00 - 294+00
91	K149	TRACK PLAN AND PROFILE	STA 294+00 - 298+00
92	K150	TRACK PLAN AND PROFILE	STA 298+00 - 302+00
93	K151	TRACK PLAN AND PROFILE	STA 302+00 - 306+00
94	K152	TRACK PLAN AND PROFILE	STA 306+00 - 310+00
95	K153	TRACK PLAN AND PROFILE	STA 310+00 - 314+00
96	K154	TRACK PLAN AND PROFILE	STA 314+00 - 318+00
97	K155	TRACK PLAN AND PROFILE	STA 318+00 - 322+00
98	K156	TRACK PLAN AND PROFILE	STA 322+00 - 326+00
99	K157	TRACK PLAN AND PROFILE	STA 326+00 - 330+00
100	K158	TRACK PLAN AND PROFILE	STA 330+00 - 334+00
101	K159	TRACK PLAN AND PROFILE	STA 334+00 - 338+00
102	K160	TRACK PLAN AND PROFILE	STA 338+00 - 342+00
103	K161	TRACK PLAN AND PROFILE	STA 342+00 - 346+00
104	K162	TRACK PLAN AND PROFILE	STA 346+00 - 350+00
105	K163	TRACK PLAN AND PROFILE	STA 350+00 - 354+00
106	K164	TRACK PLAN AND PROFILE	STA 354+00 - 358+00
107	K165	TRACK PLAN AND PROFILE	STA 358+00 - END ST-OR

CROSS STREET PLAN AND PROFILE

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
108	K202	CROSS STREET PLAN AND PROFILE	MESA ST & FRANKLIN AVE
109	K205	CROSS STREET PLAN AND PROFILE	TEXAS AVE & KANSAS ST
110	K211	CROSS STREET PLAN AND PROFILE	WYOMING AVE & STANTON ST
111	K212	CROSS STREET PLAN AND PROFILE	YANDELL DR & STANTON ST
112	K213	CROSS STREET PLAN AND PROFILE	MONTANA AVE & STANTON ST
113	K214	CROSS STREET PLAN AND PROFILE	ARIZONA AVE & STANTON ST
114	K215	CROSS STREET PLAN AND PROFILE	SCHUSTER AVE & STANTON ST
115	K216	CROSS STREET PLAN AND PROFILE	HAGUE RD & STANTON ST
116	K217	CROSS STREET PLAN AND PROFILE	BLACKER AVE & STANTON ST
117	K219	CROSS STREET PLAN AND PROFILE	UNIVERSITY AVE & OREGON ST
118	K220	CROSS STREET PLAN AND PROFILE	SCHUSTER AVE & OREGON ST
119	K221	CROSS STREET PLAN AND PROFILE	YANDELL DR & OREGON ST
120	K222	CROSS STREET PLAN AND PROFILE	WYOMING AVE & OREGON ST

TRACKWORK - TRACK DETAILS

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
121	K930	HORIZONTAL AND VERTICAL CURVE EQUATIONS	
122	K940	TRACK SLAB DETAILS	
123	K941	TRACK SWITCH DRAIN DETAILS	
124	K942	TRACK DETAILS	25M TURNOUT W/ CURVED
125	K943	TRACK DETAILS	25M TURNOUT W/ STRAIGHT
126	K944	TRACK INSTALLATION DETAIL	
127	K945	TRACK SLAB DETAILS ON HIGHWAY STRUCTURES	
128	K946	TRACK SLAB DETAILS AT TRAINWAY STRUCTURE	
129	K947	MSF TRACK DETAILS	
130	K948	TRACK DIAGRAM	
131	K949	MAINTENANCE FACILITY RETURN	UNITS #1 S&4TH 25M
132	K950	MAINTENANCE FACILITY LEAD TRACK	UNIT #2 S&3RD 25M

TRACKWORK - TRACK DETAILS (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
133	K951	FRANKLIN/OREGON	UNIT #3 F&O 25M TURNOUT
134	K952	FRANKLIN/STANTON	UNIT #4 F&S 25M TURNOUT
135	K953	MAINTENANCE FACILITY STORAGE TRACKS	UNITS #5 S1, S2, S3 25M TURNOUTS
136	K954	MAINTENANCE FACILITY BUILDING ENTRANCE	UNITS #6 MF1, #7 MF2 & #8 MF3 25M TURNOUTS
137	K955	TRACK DRAIN DETAIL	
138	K956	REDUCED THICKNESS TRACK SLAB DETAILS	

ROADWAY TYPICALS

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
139	C050	ROADWAY TYPICAL SECTIONS	
140	C051	ROADWAY TYPICAL SECTIONS	
141	C052	ROADWAY TYPICAL SECTIONS	

STREET RECONSTRUCTION

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
142	C100	DOWNTOWN LOOP - STREET RECONSTRUCTION	STA 9+90 - 17+00
143	C101	DOWNTOWN LOOP - STREET RECONSTRUCTION	STA 17+00 - 25+00
144	C102	DOWNTOWN LOOP - STREET RECONSTRUCTION	STA 25+00 - 33+00
145	C103	DOWNTOWN LOOP - STREET RECONSTRUCTION	STA 33+00 - 40+00
146	C104	DOWNTOWN LOOP - STREET RECONSTRUCTION	STA 40+00 - 48+00
147	C105	DOWNTOWN LOOP - STREET RECONSTRUCTION	STA 48+00 - 56+00
148	C106	DOWNTOWN LOOP - STREET RECONSTRUCTION	STA 56+00 - 64+00
149	C107	DOWNTOWN LOOP - STREET RECONSTRUCTION	STA 64+00 - 72+00
150	C108	DOWNTOWN LOOP - STREET RECONSTRUCTION	STA 72+00 - 80+00
151	C112	DOWNTOWN LOOP - STREET RECONSTRUCTION	STA 103+00 - 104+71.44
152	C113	STANTON-OREGON - STREET RECONSTRUCTION	STA 200+00 - 207+00
153	C114	STANTON-OREGON - STREET RECONSTRUCTION	STA 207+00 - 215+00
154	C115	STANTON-OREGON - STREET RECONSTRUCTION	STA 215+00 - 223+00
155	C116	STANTON-OREGON - STREET RECONSTRUCTION	STA 223+00 - 231+00
156	C117	STANTON-OREGON - STREET RECONSTRUCTION	STA 231+00 - 239+00
157	C118	STANTON-OREGON - STREET RECONSTRUCTION	STA 239+00 - 247+00
158	C119	STANTON-OREGON - STREET RECONSTRUCTION	STA 247+00 - 255+00
159	C120	STANTON-OREGON - STREET RECONSTRUCTION	STA 255+00 - 263+00
160	C121	STANTON-OREGON - STREET RECONSTRUCTION	STA 263+00 - 271+00
161	C122	STANTON-OREGON - STREET RECONSTRUCTION	STA 271+00 - 278+00
162	C123	STANTON-OREGON - STREET RECONSTRUCTION	STA 278+00 - 286+00
163	C124	STANTON-OREGON - STREET RECONSTRUCTION	STA 286+00 - 294+00
164	C125	STANTON-OREGON - STREET RECONSTRUCTION	STA 294+00 - 302+00
165	C126	STANTON-OREGON - STREET RECONSTRUCTION	STA 302+00 - 310+00
166	C127	STANTON-OREGON - STREET RECONSTRUCTION	STA 310+00 - 318+00
167	C128	STANTON-OREGON - STREET RECONSTRUCTION	STA 318+00 - 326+00
168	C129	STANTON-OREGON - STREET RECONSTRUCTION	STA 326+00 - 334+00
169	C130	STANTON-OREGON - STREET RECONSTRUCTION	STA 334+00 - 342+00
170	C131	STANTON-OREGON - STREET RECONSTRUCTION	STA 342+00 - 350+00
171	C132	STANTON-OREGON - STREET RECONSTRUCTION	STA 350+00 - 358+00
172	C133	STANTON-OREGON - STREET RECONSTRUCTION	STA 358+00 - 359+47.23
173	C134	DOWNTOWN LOOP - STREET RECONSTRUCTION INTERSECTIONS	SHEET 1 OF 11
174	C135	DOWNTOWN LOOP - STREET RECONSTRUCTION INTERSECTIONS	SHEET 2 OF 11
175	C136	DOWNTOWN LOOP - STREET RECONSTRUCTION INTERSECTIONS	SHEET 3 OF 11
176	C137	DOWNTOWN LOOP - STREET RECONSTRUCTION INTERSECTIONS	SHEET 4 OF 11
177	C138	DOWNTOWN LOOP - STREET RECONSTRUCTION INTERSECTIONS	SHEET 5 OF 11
178	C139	DOWNTOWN LOOP - STREET RECONSTRUCTION INTERSECTIONS	SHEET 6 OF 11

NO	DATE	REVISION	APPROVED
	/ /		
	/ /		
	/ /		
	/ /		

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

INDEX OF SHEETS

G001

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1075

DATE: 7/24/2015 3:22:32 PM
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VOLUME 1 OF 4 - CIVIL/TRACK

STREET RECONSTRUCTION (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
179	C140	DOWNTOWN LOOP - STREET RECONSTRUCTION INTERSECTIONS	SHEET 7 OF 11
180	C141	DOWNTOWN LOOP - STREET RECONSTRUCTION INTERSECTIONS	SHEET 8 OF 11
181	C142	DOWNTOWN LOOP - STREET RECONSTRUCTION INTERSECTIONS	SHEET 9 OF 11
182	C143	DOWNTOWN LOOP - STREET RECONSTRUCTION INTERSECTIONS	SHEET 10 OF 11
183	C144	DOWNTOWN LOOP - STREET RECONSTRUCTION INTERSECTIONS	SHEET 11 OF 11
184	C145	STANTON-OREGON - STREET RECONSTRUCTION INTERSECTIONS	SHEET 1 OF 10
185	C146	STANTON-OREGON - STREET RECONSTRUCTION INTERSECTIONS	SHEET 2 OF 10
186	C147	STANTON-OREGON - STREET RECONSTRUCTION INTERSECTIONS	SHEET 3 OF 10
187	C148	STANTON-OREGON - STREET RECONSTRUCTION INTERSECTIONS	SHEET 4 OF 10
188	C149	STANTON-OREGON - STREET RECONSTRUCTION INTERSECTIONS	SHEET 5 OF 10
189	C150	STANTON-OREGON - STREET RECONSTRUCTION INTERSECTIONS	SHEET 6 OF 10
190	C151	STANTON-OREGON - STREET RECONSTRUCTION INTERSECTIONS	SHEET 7 OF 10
191	C152	STANTON-OREGON - STREET RECONSTRUCTION INTERSECTIONS	SHEET 8 OF 10
192	C153	STANTON-OREGON - STREET RECONSTRUCTION INTERSECTIONS	SHEET 9 OF 10
193	C154	STANTON-OREGON - STREET RECONSTRUCTION INTERSECTIONS	SHEET 10 OF 10
194	C162	MANHOLE IN TRACK SLAB DETAIL	
195	C163	SIDEWALK DETAILS	
196	C164	TYPE 1 DROP INLET & FRAME AND GRATE DETAILS	
197	C165	DRIVEWAY DETAILS	

PLATFORM / STOP PLANS

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
198	C501	STOP PLAN	SANTA FE ST AND 4TH AVE
199	C502	STOP PLAN	SANTA FE ST AND OVERLAND AVE
200	C503	STOP PLAN	SANTA FE ST AND SHELDON CT
201	C504	STOP PLAN	FRANKLIN AVE AND EL PASO ST
202	C505	STOP PLAN	FRANKLIN AVE AND MESA ST
203	C506	STOP PLAN	KANSAS ST AND MILLS AVE
204	C507	STOP PLAN	KANSAS ST AND SAN ANTONIO AVE
205	C508	STOP PLAN	KANSAS ST AND 1ST AVE
206	C510	STOP PLAN	FATHER RAHM AVE AND STANTON ST
207	C511	STOP PLAN	FATHER RAHM AVE AND EL PASO ST
208	C512	STOP PLAN	STANTON ST AND MISSOURI AVE
209	C513	STOP PLAN	STANTON ST AND YANDELL DR
210	C514	STOP PLAN	STANTON ST AND ARIZONA AVE
211	C515	STOP PLAN	STANTON ST AND CALIFORNIA AVE
212	C516	STOP PLAN	STANTON ST AND RIM RD
213	C517	STOP PLAN	STANTON ST AND KERBEY AVE
214	C518	STOP PLAN	STANTON ST AND ROBINSON AVE
215	C519	STOP PLAN	BALTIMORE DR AND MESA ST
216	C520	STOP PLAN	OREGON ST AND GLORY RD
217	C521	STOP PLAN	OREGON ST AND BOSTON AVE
218	C522	STOP PLAN	OREGON ST AND UNIVERSITY AVE
219	C523	STOP PLAN	OREGON ST AND HAGUE RD
220	C524	STOP PLAN	OREGON ST AND RIM RD
221	C525	STOP PLAN	OREGON ST AND RIVER AVE
222	C526	STOP PLAN	OREGON ST AND RIO GRANDE AVE
223	C527	STOP PLAN	OREGON ST AND YANDELL DR
224	C528	STOP PLAN	OREGON ST AND MISSOURI AVE
225	C551	STOP DETAILS	
226	C552	STOP DETAILS	
227	C553	STOP DETAILS	
228	L101	LANDSCAPE PLAN	
229	L102	LANDSCAPE DETAILS	
230	L103	IRRIGATION PLAN	
231	L104	LANDSCAPE DETAILS	
232	L105	LANDSCAPE DETAILS	
233	L106	IRRIGATION DETAILS	
234	L107	IRRIGATION DETAILS	

SYSTEMS - CIVIL

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
235	J700	OCS FOUNDATION DETAILS	
236	J701	OCS FOUNDATION DETAILS	
237	J702	OCS FOUNDATION DETAILS	
238	J703	OCS FOUNDATION DETAILS	
239	J710	TPSS A1 SITE PLAN	
240	J711	TPSS A2 SITE PLAN	
241	J712	TPSS A3 SITE PLAN	
242	J713	TPSS A4 SITE PLAN	
243	J720	SUBSTATION FOUNDATION DETAILS	

DRAINAGE

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
244	C600	OVERALL WATERSHED MAP	SHEET 1 OF 1
245	C601	DRAINAGE AREA MAP	SHEET 1 OF 2
246	C602	DRAINAGE AREA MAP	SHEET 2 OF 2
247	C603	DOWNTOWN LOOP - DRAINAGE AREA MAP	SHEET 1 OF 5
248	C604	DOWNTOWN LOOP - DRAINAGE AREA MAP	SHEET 2 OF 5
249	C605	DOWNTOWN LOOP - DRAINAGE AREA MAP	SHEET 3 OF 5
250	C606	DOWNTOWN LOOP - DRAINAGE AREA MAP	SHEET 4 OF 5
251	C607	DOWNTOWN LOOP - DRAINAGE AREA MAP	SHEET 5 OF 5
252	C608	STANTON-OREGON - DRAINAGE AREA MAP	SHEET 1 OF 9
253	C609	STANTON-OREGON - DRAINAGE AREA MAP	SHEET 2 OF 9
254	C610	STANTON-OREGON - DRAINAGE AREA MAP	SHEET 3 OF 9
255	C611	STANTON-OREGON - DRAINAGE AREA MAP	SHEET 4 OF 9
256	C612	STANTON-OREGON - DRAINAGE AREA MAP	SHEET 5 OF 9
257	C613	STANTON-OREGON - DRAINAGE AREA MAP	SHEET 6 OF 9
258	C614	STANTON-OREGON - DRAINAGE AREA MAP	SHEET 7 OF 9
259	C615	STANTON-OREGON - DRAINAGE AREA MAP	SHEET 8 OF 9
260	C616	STANTON-OREGON - DRAINAGE AREA MAP	SHEET 9 OF 9
261	C617	DOWNTOWN LOOP - EXISTING HYDRAULIC COMPUTATIONS	SHEET 1 OF 2
262	C618	DOWNTOWN LOOP - EXISTING HYDRAULIC COMPUTATIONS	SHEET 2 OF 2
263	C619	STANTON-OREGON EXISTING HYDRAULIC COMPUTATIONS	SHEET 1 OF 2
264	C620	STANTON-OREGON EXISTING HYDRAULIC COMPUTATIONS	SHEET 2 OF 2
265	C621	HYDROLOGIC COMPUTATION TABLES	SHEET 1 OF 1
266	C622	DOWNTOWN LOOP - STORM SEWER PLAN & PROFILE	SHEET 1 OF 3
267	C623	DOWNTOWN LOOP - STORM SEWER PLAN & PROFILE	SHEET 2 OF 3
268	C624	DOWNTOWN LOOP - STORM SEWER PLAN & PROFILE	SHEET 3 OF 3
269	C629	STANTON-OREGON - STORM SEWER PLAN & PROFILE	SHEET 1 OF 5
270	C630	STANTON-OREGON - STORM SEWER PLAN & PROFILE	SHEET 2 OF 5
271	C631	STANTON-OREGON - STORM SEWER PLAN & PROFILE	SHEET 3 OF 5
272	C632	STANTON-OREGON - STORM SEWER PLAN & PROFILE	SHEET 4 OF 5
273	C633	STANTON-OREGON - STORM SEWER PLAN & PROFILE	SHEET 5 OF 5
273A		SWITCH DRAIN CONNECTION POINTS	SHEET 1 OF 2
273B		SWITCH DRAIN CONNECTION POINTS	SHEET 2 OF 2

TRAFFIC CONTROL PLANS

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
274	TC100	CONSTRUCTION NARRATIVE	
275	TC101	PAVEMENT MARKING AND SIGNS DETAIL	
275A	TC102	FATHER RAHM TCP PHASE 1	
275B	TC103	FATHER RAHM TCP PHASE 2	
275C	TC104	FATHER RAHM TCP PHASE 3	
275D	TC105	FATHER RAHM TCP PHASE 4	
276	TC106	FRANKLIN AVE TCP PHASE 1	
277	TC107	FRANKLIN AVE TCP PHASE 2	
278	TC108	FRANKLIN AVE TCP PHASE 3	
279	TC109	GLORY RD TCP PHASE 1	
280	TC110	GLORY RD TCP PHASE 1	
281	TC111	GLORY RD TCP PHASE 2A	
282	TC112	GLORY RD TCP PHASE 2B	
283	TC113	GLORY RD TCP PHASE 3	

TRAFFIC CONTROL PLANS (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
284	TC114	GLORY RD TCP PHASE 3	
285	TC115	KANSAS ST TCP PHASE 1	
286	TC116	KANSAS ST TCP PHASE 1	
287	TC117	KANSAS ST TCP PHASE 2	
288	TC118	KANSAS ST TCP PHASE 2	
289	TC119	KANSAS ST TCP PHASE 3	
290	TC120	KANSAS ST TCP PHASE 3	
291	TC121	KANSAS ST TCP PHASE 4	
292	TC122	KANSAS ST TCP PHASE 4	
293	TC123	KANSAS ST TCP PHASE 5	
294	TC124	KANSAS ST TCP PHASE 5	
295	TC125	KANSAS ST TCP PHASE 6	
296	TC126	KANSAS ST TCP PHASE 6	
296A	TC127	KANSAS ST TCP PHASE 7a	
296B	TC127	KANSAS ST TCP PHASE 7b	
296C	TC128	KANSAS ST TCP PHASE 8	
296D	TC129	KANSAS ST TCP PHASE 8	
296E	TC130	KANSAS ST TCP PHASE 9	
296F	TC131	KANSAS ST TCP PHASE 9	
297	TC132	OREGON ST TCP PHASE 1	
298	TC133	OREGON ST TCP PHASE 1	
299	TC134	OREGON ST TCP PHASE 2	
300	TC135	OREGON ST TCP PHASE 2	
301	TC136	OREGON ST TCP PHASE 3	
302	TC137	OREGON ST TCP PHASE 3	
303	TC138	OREGON ST TCP PHASE 4	
304	TC139	OREGON ST TCP PHASE 4	
305	TC140	OREGON ST TCP PHASE 4	
306	TC141	OREGON ST TCP PHASE 5	
307	TC142	OREGON ST TCP PHASE 6	
308	TC143	OREGON ST TCP PHASE 7	
309	TC144	SANTA FE TCP PHASE 1	
310	TC145	SANTA FE TCP PHASE 1	
311	TC146	SANTA FE TCP PHASE 2	
312	TC147	SANTA FE TCP PHASE 2	
313	TC148	SANTA FE TCP PHASE 3	
314	TC149	SANTA FE TCP PHASE 3	
315	TC150	SANTA FE TCP PHASE 4	
316	TC151	SANTA FE TCP PHASE 4	
317	TC152	SANTA FE TCP PHASE 5A	
317A	TC152A	SANTA FE TCP PHASE 5B	
318	TC153	SANTA FE TCP PHASE 6	
319	TC154	SANTA FE TCP PHASE 7	
320	TC155	SANTA FE TCP PHASE 8	
321	TC156	N STANTON ST TCP PHASE 1	
322	TC157	N STANTON ST TCP PHASE 1	
323	TC158	N STANTON ST TCP PHASE 2	
324	TC159	N STANTON ST TCP PHASE 2	
325	TC160	N STANTON ST TCP PHASE 3	
326	TC161	N STANTON ST TCP PHASE 3	
327	TC162	N STANTON ST TCP PHASE 4	
328	TC163	N STANTON ST TCP PHASE 4	
329	TC164	N STANTON ST TCP PHASE 5	
330	TC165	N STANTON ST TCP PHASE 5	
331	TC166	N STANTON ST TCP PHASE 6	
332	TC167	N STANTON ST TCP PHASE 6	
333	TC168	N STANTON ST TCP PHASE 7	
334	TC169	N STANTON ST TCP PHASE 7	
335	TC170	N STANTON ST TCP PHASE 8	
336	TC171	N STANTON ST TCP PHASE 8	
337	TC172	N STANTON ST TCP PHASE 9	
338	TC173	N STANTON ST TCP PHASE 10	
339	TC174	N STANTON ST TCP PHASE 10	
340	TC175	N STANTON ST TCP PHASE 11	
341	TC176	IH 10 EB FULL CLOSURE TCP	
342	TC177	IH 10 EB FULL CLOSURE TCP	
343	TC178	IH 10 EB FULL CLOSURE TCP	
344	TC179	IH 10 EB FULL CLOSURE TCP	
345	TC180	IH 10 EB FULL CLOSURE TCP	
346	TC181	IH 10 WB FULL CLOSURE TCP	
347	TC182	IH 10 WB FULL CLOSURE TCP	
348	TC183	IH 10 WB FULL CLOSURE TCP	
349	TC184	IH 10 WB FULL CLOSURE TCP	
349A	TC184	IH 10 WB FULL CLOSURE TCP	

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INDEX OF SHEETS

G002

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1076

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TRAFFIC CONTROL PLANS (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
350	TC185	IH 10 TCP	
351	TC186	IH 10 TCP	
352	TC187	IH 10 TCP	
353	TC188	IH 10 TCP	
354	TC189	IH 10 TCP	
355	TC190	IH 10 TCP	
356	TC191	IH 10 TCP	
357	TC192	IH 10 TCP	
358	TC193	IH 10 TCP	
359	TC194	IH 10 TCP	
360		NOT USED	
361		NOT USED	
362		NOT USED	
363	TC198	PEDESTRIAN PATH DETAILS	

TEMPORARY EROSION CONTROL

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
364	E100	SWPPP NOTES	SHEET 1 OF 2
365	E101	SWPPP NOTES	SHEET 2 OF 2
366	E102	EPIC	
367	E103	DOWNTOWN LOOP SWPPP	STA 9+90 - 13+00
368	E104	DOWNTOWN LOOP SWPPP	STA 13+00 - 17+00
369	E105	DOWNTOWN LOOP SWPPP	STA 17+00 - 21+00
370	E106	DOWNTOWN LOOP SWPPP	STA 21+00 - 25+00
371	E107	DOWNTOWN LOOP SWPPP	STA 25+00 - 29+00
372	E108	DOWNTOWN LOOP SWPPP	STA 29+00 - 33+00
373	E109	DOWNTOWN LOOP SWPPP	STA 33+00 - 36+00
374	E110	DOWNTOWN LOOP SWPPP	STA 36+00 - 40+00
375	E111	DOWNTOWN LOOP SWPPP	STA 40+00 - 44+00
376	E112	DOWNTOWN LOOP SWPPP	STA 44+00 - 48+00
377	E113	DOWNTOWN LOOP SWPPP	STA 48+00 - 52+00
378	E114	DOWNTOWN LOOP SWPPP	STA 52+00 - 56+00
379	E115	DOWNTOWN LOOP SWPPP	STA 56+00 - 60+00
380	E116	DOWNTOWN LOOP SWPPP	STA 60+00 - 64+00
381	E117	DOWNTOWN LOOP SWPPP	STA 64+00 - 68+00
382	E118	DOWNTOWN LOOP SWPPP	STA 68+00 - 72+00
383	E119	DOWNTOWN LOOP SWPPP	STA 72+00 - 76+00
384	E120	DOWNTOWN LOOP SWPPP	STA 76+00 - 80+00
385	E127	DOWNTOWN LOOP SWPPP	STA 103+00 - 104+72
386	E128	STANTON-OREGON SWPPP	STA 200+00 - 203+00
387	E129	STANTON-OREGON SWPPP	STA 203+00 - 207+00
388	E130	STANTON-OREGON SWPPP	STA 207+00 - 211+00
389	E131	STANTON-OREGON SWPPP	STA 211+00 - 215+00
390	E132	STANTON-OREGON SWPPP	STA 215+00 - 219+00
391	E133	STANTON-OREGON SWPPP	STA 219+00 - 223+00
392	E134	STANTON-OREGON SWPPP	STA 223+00 - 227+00
393	E135	STANTON-OREGON SWPPP	STA 227+00 - 231+00
394	E136	STANTON-OREGON SWPPP	STA 231+00 - 235+00
395	E137	STANTON-OREGON SWPPP	STA 235+00 - 239+00
396	E138	STANTON-OREGON SWPPP	STA 239+00 - 243+00
397	E139	STANTON-OREGON SWPPP	STA 243+00 - 247+00
398	E140	STANTON-OREGON SWPPP	STA 247+00 - 251+00
399	E141	STANTON-OREGON SWPPP	STA 251+00 - 255+00
400	E142	STANTON-OREGON SWPPP	STA 255+00 - 259+00
401	E143	STANTON-OREGON SWPPP	STA 259+00 - 263+00
402	E144	STANTON-OREGON SWPPP	STA 263+00 - 267+00
403	E145	STANTON-OREGON SWPPP	STA 267+00 - 271+00
404	E146	STANTON-OREGON SWPPP	STA 271+00 - 275+00
405	E147	STANTON-OREGON SWPPP	STA 275+00 - 278+00
406	E148	STANTON-OREGON SWPPP	STA 278+00 - 282+00
407	E149	STANTON-OREGON SWPPP	STA 282+00 - 286+00
408	E150	STANTON-OREGON SWPPP	STA 286+00 - 290+00
409	E151	STANTON-OREGON SWPPP	STA 290+00 - 294+00
410	E152	STANTON-OREGON SWPPP	STA 294+00 - 298+00
411	E153	STANTON-OREGON SWPPP	STA 298+00 - 302+00
412	E154	STANTON-OREGON SWPPP	STA 302+00 - 306+00
413	E155	STANTON-OREGON SWPPP	STA 306+00 - 310+00
414	E156	STANTON-OREGON SWPPP	STA 310+00 - 314+00
415	E157	STANTON-OREGON SWPPP	STA 314+00 - 318+00
416	E158	STANTON-OREGON SWPPP	STA 318+00 - 322+00
417	E159	STANTON-OREGON SWPPP	STA 322+00 - 326+00
418	E160	STANTON-OREGON SWPPP	STA 326+00 - 330+00
419	E161	STANTON-OREGON SWPPP	STA 330+00 - 334+00
420	E162	STANTON-OREGON SWPPP	STA 334+00 - 338+00
421	E163	STANTON-OREGON SWPPP	STA 338+00 - 342+00
422	E164	STANTON-OREGON SWPPP	STA 342+00 - 346+00
423	E165	STANTON-OREGON SWPPP	STA 346+00 - 350+00

TEMPORARY EROSION CONTROL (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
424	E166	STANTON-OREGON SWPPP	STA 350+00 - 354+00
425	E167	STANTON-OREGON SWPPP	STA 354+00 - 358+00
426	E168	STANTON-OREGON SWPPP	STA 358+00 - 359+50
427	E169	MSF SWPPP	
428	E170	MSF SWPPP	
429	E171	SWPPP DETAILS	SHEET 1 OF 3
430	E172	SWPPP DETAILS	SHEET 2 OF 3
431	E173	SWPPP DETAILS	SHEET 3 OF 3
432	E174	TREE PROTECTION DETAILS	

CENTRAL BUSINESS DISTRICT (PHASE IV)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
433		TITLE SHEET	SHEET 1 OF 1
434		INDEX SHEET	SHEET 1 OF 1
435		GENERAL NOTES	SHEET 1 OF 6
436		GENERAL NOTES	SHEET 2 OF 6
437		GENERAL NOTES	SHEET 3 OF 6
438		GENERAL NOTES	SHEET 4 OF 6
439		GENERAL NOTES	SHEET 5 OF 6
440		GENERAL NOTES	SHEET 6 OF 6
441		TYPICAL CROSS SECTION KANSAS ST.	
442		TYPICAL CROSS SECTIONS FATHER RAHM AVE.	
443		SUMMARY SHEET	SHEET 1 OF 2
444		SUMMARY SHEET	SHEET 2 OF 2
445		TRAFFIC CONTROL	
446	BC(1)-13	BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS	SHEET 1 OF 12
447	BC(2)-13	BARRICADE AND CONSTRUCTION PROJECT LIMIT STANDARD	SHEET 2 OF 12
448	BC(3)-13	BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT STANDARD	SHEET 3 OF 12
449	BC(4)-13	BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES STANDARD	SHEET 4 OF 12
450	BC(5)-13	BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT STANDARD	SHEET 5 OF 12
451	BC(6)-13	BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) STANDARD	SHEET 6 OF 12
452	BC(7)-13	BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS AND ATTENUATOR STANDARD	SHEET 7 OF 12
453	BC(8)-13	BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES STANDARD	SHEET 8 OF 12
454	BC(9)-13	BARRICADE AND CONSTRUCTION CHANNLEIZING DEVICES STANDARD	SHEET 9 OF 12
455	BC(10)-13	BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES STANDARD	SHEET 10 OF 12
456	BC(11)-13	BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS STANDARD	SHEET 11 OF 12
457	BC(12)-13	BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS STANDARD	SHEET 12 OF 12
458	WZ(TD)-13	TRAFFIC CONTROL PLAN TYPICAL DETAILS	
459	WZ(STPM)-13	WORK ZONE SHORT TERM PAVEMENT MARKINGS	
460	WZ(RCD)-13	WORK ZONE ROAD CLOSURE DETAILS	
461		KANSAS STREET DEMOLITION PLAN	STA 0+00 TO 6+00
462		KANSAS STREET DEMOLITION PLAN	STA 6+00 TO 12+00
463		FATHER RAHM AVE DEMOLITION PLAN	STA 0+25.00 TO 8+00
464		FATHER RAHM AVE DEMOLITION PLAN	STA 8+00 TO 16+00
465		FATHER RAHM AVE DEMOLITION PLAN	STA 16+00 TO 16+75.58
466		KANSAS STREET PLAN & PROFILE	STA 0+00 TO 10+50
467		FATHER RAHM AVE PLAN & PROFILE	STA 0+41.62 TO 10+00
468		FATHER RAHM AVE PLAN & PROFILE	STA 10+00 TO 16+76
469		FATHER RAHM AVE TEMPORARY PAVEMENT PLAN	STA 0+25 TO 8+00
470		FATHER RAHM AVE TEMPORARY PAVEMENT PLAN	STA 8+00 TO 16+75.58
471		DETAILS	SHEET 1 OF 2
472		DETAILS	SHEET 2 OF 2
473		KANSAS STREET CROSS SECTIONS	STA 0+42 TO 3+00
474		KANSAS STREET CROSS SECTIONS	STA 3+00 TO 6+50
475		KANSAS STREET CROSS SECTIONS	STA 7+00 TO 9+50
476		FATHER RAHM AVE CROSS SECTIONS	STA 0+30 TO 2+50
477		FATHER RAHM AVE CROSS SECTIONS	STA 3+00 TO 6+00
478		FATHER RAHM AVE CROSS SECTIONS	STA 6+50 TO 9+50
479		FATHER RAHM AVE CROSS SECTIONS	STA 10+16 TO 12+12.28
480		FATHER RAHM AVE CROSS SECTIONS	STA 12+50 TO 15+50
481		FATHER RAHM AVE CROSS SECTIONS	STA 16+00 TO 19+00
482		FATHER RAHM AVE AND SANTA FE ST INTERSECTION PLAN	SHEET 1 OF 6
483		FATHER RAHM AVE AND EL PASO ST INTERSECTION PLAN	SHEET 2 OF 6

CENTRAL BUSINESS DISTRICT (PHASE IV) (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
484		FATHER RAHM AVE AND OREGON ST INTERSECTION PLAN	SHEET 3 OF 6
485		FATHER RAHM AVE AND MESA ST INTERSECTION PLAN	SHEET 4 OF 6
486		FATHER RAHM AVE AND STANTON ST INTERSECTION PLAN	SHEET 5 OF 6
487		FATHER RAHM AVE AND KANSAS AVE INTERSECTION PLAN	SHEET 6 OF 6
488	JS-14	CONCRETE PAVING DETAILS JOINT SEALS	
489	PED-12A	PEDSTRIAN FACILTIES CURB RAMPS	SHEET 1 OF 4
490	PED-12A	PEDSTRIAN FACILTIES CURB RAMPS	SHEET 2 OF 4
491	PED-12A	PEDSTRIAN FACILTIES CURB RAMPS	SHEET 3 OF 4
492	PED-12A	PEDSTRIAN FACILTIES CURB RAMPS	SHEET 4 OF 4
493	CCCG-12	CONCRETE CURB AND CURB AND GUTTER	
494	CRCP(1)-13	CRCP ONE LAYER STEEL BAR PLACEMENT T-7 TO 13 INCHES	SHEET 1 OF 2
495	CRCP(1)-13	CRCP ONE LAYER STEEL BAR PLACEMENT T-7 TO 13 INCHES	SHEET 2 OF 2
496		PROPOSED OVERALL STORM SEWER SYSTEM	
497		KANSAS STREET STORM SEWER PLAN & PROFILE	STA 0+00 TO 9+00
498		KANSAS STREET STORM SEWER PLAN & PROFILE	STA 9+00 TO 18+00
499		KANSAS STREET STORM SEWER	
500		FATHER RAHM AVENUE STORM SEWER PLAN & PROFILE	STA 0+41.62 TO 10+00
501		FATHER RAHM AVENUE STORM SEWER PLAN & PROFILE	STA 10+00 TO 20+00
502		FATHER RAHM AVENUE STORM SEWER LATERALS	
503	PB	PRECAST BASE	HL 93 LOADING
504	PJB	PRECAST JUNCTION BOX	
505	PDD	DESIGN DATA FOR PRECAST BASE AND JUNCTION BOX	
506	PRM	PRECAST ROUND MANHOLE	
507	PCU	PRECAST CURB INLET UNDER ROADWAY	SHEET 1 OF 2
508	PCU	PRECAST CURB INLET UNDER ROADWAY	SHEET 2 OF 2
509	PSL	PRECAST SOLID LID	SHEET 1 OF 2
510	PSL	PRECAST SOLID LID	SHEET 2 OF 2
511	CGT-PCU	CURB AND GUTTER TRANSITION DETAILS FOR PCU INLET	
512		KANSAS STREET SIGNING & STRIPING PLAN	STA 0+00 TO 6+00
513		KANSAS STREET SIGNING & STRIPING PLAN	STA 6+00 TO 12+00
514		FATHER RAHM AVENUE SIGNING & STRIPING PLAN	STA 0+00 TO 8+00
515		FATHER RAHM AVENUE SIGNING & STRIPING PLAN	STA 8+00 TO 16+00
516		FATHER RAHM AVENUE SIGNING & STRIPING PLAN	STA 16+00 TO 19+68
517	TSR(1)-13	TYPICAL SIGN REQUIREMENTS	SHEET 1 OF 5
518	TSR(2)-13	TYPICAL SIGN REQUIREMENTS	SHEET 2 OF 5
519	TSR(3)-13	TYPICAL SIGN REQUIREMENTS	SHEET 3 OF 5
520	TSR(4)-13	TYPICAL SIGN REQUIREMENTS	SHEET 4 OF 5
521	TSR(5)-13	TYPICAL SIGN REQUIREMENTS	SHEET 5 OF 5
522	PM(1)-12	TYPICAL STANDARD PAVEMENT MARKINGS	
523	PM(2)-12	POSITION GUIDANCE USING RAISED MARKERS REFLECTORIZED PROFILE MARKINGS	
524	PM(3)-12	PAVEMENT MARKINGS FOR TWO-WAY LEFT TURN LANES DIVIDED HIGHWAYS AND RURAL LEFT TURN BAYS	
525	PM(4)-12	EXIT NUMBER GORE MARKINGS FOR AERIAL VIEW DETAIL	
526	PM(AP)-98	PAVEMENT MARKINGS AND SIGNING FOR ACCESSIBLE PARKING	
527	SMD(GEN)-08	SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS	
528	SMD(SLIP-1)-08	SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS	
529	SMD(SLIP-2)-08	SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS	
530	SMD(SLIP-3)-08	SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS	
531	SMD(TWT)-08	SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST	

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INDEX OF SHEETS

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CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1077

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CENTRAL BUSINESS DISTRICT (PHASE IV) (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
532	SMD(FRP)-08	SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS UNIVERSAL ANCHOR SYSTEM WITH FRP POST	
533		IRRIGATION CONDUIT PLAN	SHEET 1 OF 2
534	L 1.02	IRRIGATION CONDUIT PLAN	SHEET 2 OF 2
535		FATHER RAHM AVENUE ILLUMINATION CONDUIT PLAN	STA 0+41.62TO10+00
536		FATHER RAHM AVENUE ILLUMINATION CONDUIT PLAN	STA 10+00 TO20+00
537		KANSAS STREET ILLUMINATION CONDUIT PLAN	STA 0+00 TO9+00
538		SWPPP NOTES	
539		KANSAS STREET SWPPP PLAN	
540		FATHER RAHM AVENUE SWPPP PLAN	
541	EC(1)-09	TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES	
542	EC(3)-93	TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES	
543	EC(6)-93	TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES SEDIMENT BASINS AND TRAPS	
544		NOT USED	
545		NOT USED	
546		NOT USED	
547		NOT USED	
548		NOT USED	
549		NOT USED	
550		NOT USED	
551		NOT USED	
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597		NOT USED	

CENTRAL BUSINESS DISTRICT (PHASE IV) (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
598		NOT USED	
599		NOT USED	
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672		NOT USED	

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
673		NOT USED	
674		NOT USED	
675		NOT USED	
676		NOT USED	

NO	DATE	REVISION	APPROVED
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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

INDEX OF SHEETS

G002B

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1078

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VOLUME 2 OF 4 - CIVIL/TRACK

GENERAL DRAWINGS

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
677	G028	VOLUME 2 OF 4 - CIVIL/TRACK	
678	G001	INDEX OF SHEETS	VOLUME 1 CIVIL/TRACK
679	G002	INDEX OF SHEETS	VOLUME 1 CIVIL/TRACK
680	G002A	INDEX OF SHEETS	VOLUME 1 CIVIL/TRACK
681	G002B	INDEX OF SHEETS	VOLUME 1 CIVIL/TRACK
682	G003	INDEX OF SHEETS	VOLUME 2 CIVIL/TRACK
683	G004	INDEX OF SHEETS	VOLUME 2 CIVIL/TRACK
684	G005	INDEX OF SHEETS	VOLUME 2 CIVIL/TRACK
685	G006	INDEX OF SHEETS	VOLUME 3 SYSTEMS
686	G007	INDEX OF SHEETS	VOLUME 4 MAINTENANCE & STORAGE FACILITY

BRIDGE PLANS

687	S100	OREGON STREET UNDERPASS PLAN & PROFILE	
688	S101	OREGON STREET UNDERPASS TYPICAL SECTION	
689	S102	STANTON STREET UNDERPASS PLAN & PROFILE	
690	S103	STANTON STREET UNDERPASS TYPICAL SECTION	
691	S104	UNDERPASSES BRIDGE OVERLAY DETAILS	
692	S105	UNDERPASSES JOINT DETAILS	
693	S106	UNDERPASSES BENT MODIFICATIONS	
693A	S107		
694	S200	FENCE GROUNDING DETAIL	
695	S210	STANTON BRIDGE GROUTING WORK PLAN	

ILLUMINATION

696	N100	ELECTRIC CONDUIT RUNS	STOPS C501 - C504
697	N101	ELECTRIC CONDUIT RUNS	STOPS C505 - C507
698	N102	ELECTRIC CONDUIT RUNS	STOPS C508 & C510
699	N103	ELECTRIC CONDUIT RUNS	STOPS C511 - C514
700	N104	ELECTRIC CONDUIT RUNS	STOPS C515 - C518
701	N105	ELECTRIC CONDUIT RUNS	STOPS C519 - C520
702	N106	ELECTRIC CONDUIT RUNS	STOPS C521 - C523
703	N107	ELECTRIC CONDUIT RUNS	STOPS C524 - C526
704	N108	ELECTRIC CONDUIT RUNS	STOPS C527 - C528
705	N109	JOINT-USE OCS CONDUIT DETAIL	
706	N110	MISCELLANEOUS ATTACHMENT DETAILS	
707	N111	MISCELLANEOUS ATTACHMENT DETAILS	
708	N112	ORNAMENTAL LIGHT DETAILS	
709	N113	LIGHTING FOUNDATION DETAIL	

TRAFFIC SIGNALS

710	T100	OREGON-ROBINSON	DEMOLITION PLAN
711	T101	OREGON-ROBINSON	SIGNAL PLAN
712	T102	OREGON-ROBINSON	SIGNAL PLAN
713	T103	OREGON-UNIVERSITY	DEMOLITION PLAN
714	T104	OREGON-UNIVERSITY	SIGNAL PLAN
715	T105	OREGON-UNIVERSITY	SIGNAL PLAN
716	T121	OREGON FLASHER	DEMOLITION PLAN
717	T122	OREGON FLASHER	SIGNAL PLAN
718	T123	OREGON FLASHER	SIGNAL PLAN
719	T109	OREGON-HAGUE	DEMOLITION PLAN
720	T110	OREGON-HAGUE	SIGNAL PLAN
721	T111	OREGON-HAGUE	SIGNAL PLAN
722	T112	OREGON-RIM	DEMOLITION PLAN
723	T113	OREGON-RIM	SIGNAL PLAN
724	T114	OREGON-RIM	SIGNAL PLAN
725	T115	OREGON-SCHUSTER	DEMOLITION PLAN
726	T116	OREGON-SCHUSTER	SIGNAL PLAN
727	T117	OREGON-SCHUSTER	SIGNAL PLAN
728	T118	OREGON-ARIZONA	DEMOLITION PLAN
729	T119	OREGON-ARIZONA	SIGNAL PLAN
730	T120	OREGON-ARIZONA	SIGNAL PLAN
731	T106	OREGON FLASHER	DEMOLITION PLAN
732	T107	OREGON FLASHER	SIGNAL PLAN
733	T108	OREGON FLASHER	SIGNAL PLAN
734	T124	OREGON-MONTANA	DEMOLITION PLAN
735	T125	OREGON-MONTANA	SIGNAL PLAN
736	T126	OREGON-MONTANA	SIGNAL PLAN
737	T127	OREGON-YANDELL	DEMOLITION PLAN
738	T128	OREGON-YANDELL	SIGNAL PLAN
739	T129	OREGON-YANDELL	SIGNAL PLAN
740	T130	OREGON-WYOMING	DEMOLITION PLAN

TRAFFIC SIGNALS (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
741	T131	OREGON-WYOMING	SIGNAL PLAN
742	T132	OREGON-WYOMING	SIGNAL PLAN
743	T133	OREGON-MISSOURI	DEMOLITION PLAN
744	T134	OREGON-MISSOURI	SIGNAL PLAN
745	T135	OREGON-MISSOURI	SIGNAL PLAN
746	T136	FRANKLIN-OREGON	DEMOLITION PLAN
747	T137	FRANKLIN-OREGON	SIGNAL PLAN
748	T138	FRANKLIN-OREGON	SIGNAL PLAN
749	T139	FRANKLIN-MESA	DEMOLITION PLAN
750	T140	FRANKLIN-MESA	SIGNAL PLAN
751	T141	FRANKLIN-MESA	SIGNAL PLAN
752	T142	FRANKLIN-STANTON	DEMOLITION PLAN
753	T143	FRANKLIN-STANTON	SIGNAL PLAN
754	T144	FRANKLIN-STANTON	SIGNAL PLAN
755	T145	FRANKLIN-STANTON	SIGNAL PLAN
756	T146	FRANKLIN-KANSAS	DEMOLITION PLAN
757	T147	FRANKLIN-KANSAS	SIGNAL PLAN
758	T148	FRANKLIN-KANSAS	SIGNAL PLAN
759	T149	KANSAS-MAIN	DEMOLITION PLAN
760	T150	KANSAS-MAIN	SIGNAL PLAN
761	T151	KANSAS-MAIN	SIGNAL PLAN
762	T152	KANSAS-MILLS	DEMOLITION PLAN
763	T153	KANSAS-MILLS	SIGNAL PLAN
764	T154	KANSAS-MILLS	SIGNAL PLAN
765	T156	KANSAS-TEXAS	SIGNAL PLAN
766	T157	KANSAS-TEXAS	SIGNAL PLAN
767	T158	KANSAS-MYRTLE	DEMOLITION PLAN
768	T159	KANSAS-MYRTLE	SIGNAL PLAN
769	T160	KANSAS-MYRTLE	SIGNAL PLAN
770	T161	KANSAS-OVERLAND	DEMOLITION PLAN
771	T162	KANSAS-OVERLAND	SIGNAL PLAN
772	T163	KANSAS-OVERLAND	SIGNAL PLAN
772A	T164	KANSAS-PAISANO	DEMOLITION PLAN
772B	T165	KANSAS-PAISANO	SIGNAL PLAN
772C	T166	KANSAS-PAISANO	SIGNAL PLAN
772D	T167	STANTON-FATHER RAHM	DEMOLITION PLAN
772E	T168	STANTON-FATHER RAHM	SIGNAL PLAN
772F	T169	STANTON-FATHER RAHM	SIGNAL PLAN
773	T170	SANTA FE-4TH	DEMOLITION PLAN
774	T171	SANTA FE-4TH	SIGNAL PLAN
775	T172	SANTA FE-3RD	SIGNAL PLAN
776	T173	SANTA FE-4TH	SIGNAL PLAN
777	T174	SANTA FE-PAISANO	DEMOLITION PLAN
778	T175	SANTA FE-PAISANO	SIGNAL PLAN
779	T176	SANTA FE-PAISANO	SIGNAL PLAN
780	T177	SANTA FE-OVERLAND	DEMOLITION PLAN
781	T178	SANTA FE-OVERLAND	SIGNAL PLAN
782	T179	SANTA FE-OVERLAND	SIGNAL PLAN
783	T180	SANTA FE-SAN ANTONIO	DEMOLITION PLAN
784	T181	SANTA FE-SAN ANTONIO	SIGNAL PLAN
785	T182	SANTA FE-SAN ANTONIO	SIGNAL PLAN
786	T183	SANTA FE-SHELDON	DEMOLITION PLAN
787	T184	SANTA FE-SHELDON	SIGNAL PLAN
788	T185	SANTA FE-SHELDON	SIGNAL PLAN
789	T186	SANTA FE-MAIN	DEMOLITION PLAN
790	T187	SANTA FE-MAIN	SIGNAL PLAN
791	T188	SANTA FE-MAIN	SIGNAL PLAN
792	T189	STANTON-MISSOURI	DEMOLITION PLAN
793	T190	STANTON-MISSOURI	SIGNAL PLAN
794	T191	STANTON-MISSOURI	SIGNAL PLAN
795	T192	STANTON-WYOMING	DEMOLITION PLAN
796	T193	STANTON-WYOMING	SIGNAL PLAN
797	T194	STANTON-WYOMING	SIGNAL PLAN
798	T195	STANTON-YANDELL	DEMOLITION PLAN
799	T196	STANTON-YANDELL	SIGNAL PLAN
800	T197	STANTON-YANDELL	SIGNAL PLAN
801	T198	STANTON-MONTANA	DEMOLITION PLAN
802	T199	STANTON-MONTANA	SIGNAL PLAN
803	T200	STANTON-MONTANA	SIGNAL PLAN
804	T201	STANTON-RIO GRANDE	DEMOLITION PLAN
805	T202	STANTON-RIO GRANDE	SIGNAL PLAN
806	T203	STANTON-RIO GRANDE	SIGNAL PLAN
807	T204	STANTON-ARIZONA	DEMOLITION PLAN
808	T205	STANTON-ARIZONA	SIGNAL PLAN

TRAFFIC SIGNALS (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
809	T206	STANTON-ARIZONA	SIGNAL PLAN
810	T207	STANTON-SCHUSTER	DEMOLITION PLAN
811	T208	STANTON-SCHUSTER	SIGNAL PLAN
812	T209	STANTON-SCHUSTER	SIGNAL PLAN
813	T210	STANTON-RIM	DEMOLITION PLAN
814	T211	STANTON-RIM	SIGNAL PLAN
815	T212	STANTON-RIM	SIGNAL PLAN
816	T213	STANTON-UNIVERSITY	DEMOLITION PLAN
817	T214	STANTON-UNIVERSITY	SIGNAL PLAN
818	T215	STANTON-UNIVERSITY	SIGNAL PLAN
819	T216	STANTON-KERBEY	DEMOLITION PLAN
820	T217	STANTON-KERBEY	SIGNAL PLAN
821	T218	STANTON-KERBEY	SIGNAL PLAN
822	T219	MESA-BALTIMORE	DEMOLITION PLAN
823	T220	MESA-BALTIMORE	SIGNAL PLAN
824	T221	MESA-BALTIMORE	SIGNAL PLAN
825	T222	STANTON-BALTIMORE	DEMOLITION PLAN
826	T223	STANTON-BALTIMORE	SIGNAL PLAN
827	T224	STANTON-BALTIMORE	SIGNAL PLAN
828	T229	TRAIN TO WAYSIDE DETECTION	
829		NOT USED	

SIGNING AND PAVEMENT MARKING

830	T001	KEY MAP	
831	T002	KEY MAP	
832	T003	KEY MAP	
833	T300	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 9+90 - 13+00
834	T301	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 13+00 - 17+00
835	T302	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 17+00 - 21+00
836	T303	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 21+00 - 25+00
837	T304	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 25+00 - 29+00
838	T305	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 29+00 - 33+00
839	T306	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 33+00 - 36+00
840	T307	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 36+00 - 40+00
841	T308	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 40+00 - 44+00
842	T309	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 44+00 - 48+00
843	T310	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 48+00 - 52+00
844	T311	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 52+00 - 56+00
845	T312	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 56+00 - 60+00
846	T313	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 60+00 - 64+00
847	T314	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 64+00 - 68+00
848	T315	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 68+00 - 72+00
849	T316	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 72+00 - 76+00
850	T317	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 76+00 - 80+00
851	T324	DOWNTOWN LOOP PAVEMENT MARKING PLAN	STA 103+00 - 104+72
852	T325	STANTON-OREGON PAVEMENT MARKING PLAN	STA 200+00 - 203+00
853	T326	STANTON-OREGON PAVEMENT MARKING PLAN	STA 203+00 - 207+00
854	T327	STANTON-OREGON PAVEMENT MARKING PLAN	STA 207+00 - 211+00
855	T328	STANTON-OREGON PAVEMENT MARKING PLAN	STA 211+00 - 215+00
856	T329	STANTON-OREGON PAVEMENT MARKING PLAN	STA 215+00 - 219+00
857	T330	STANTON-OREGON PAVEMENT MARKING PLAN	STA 219+00 - 223+00
858	T331	STANTON-OREGON PAVEMENT MARKING PLAN	STA 223+00 - 227+00
859	T332	STANTON-OREGON PAVEMENT MARKING PLAN	STA 227+00 - 231+00
860	T333	STANTON-OREGON PAVEMENT MARKING PLAN	STA 231+00 - 235+00
861	T334	STANTON-OREGON PAVEMENT MARKING PLAN	STA 235+00 - 239+00
862	T335	STANTON-OREGON PAVEMENT MARKING PLAN	STA 239+00 - 243+00
863	T336	STANTON-OREGON PAVEMENT MARKING PLAN	STA 243+00 - 247+00
864	T337	STANTON-OREGON PAVEMENT MARKING PLAN	STA 247+00 - 251+00

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INDEX OF SHEETS

G003

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1079

CK: URS
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DN: URS

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SIGNING AND PAVEMENT MARKING (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
865	T338	STANTON-OREGON PAVEMENT MARKING PLAN	STA 251+00 - 255+00
866	T339	STANTON-OREGON PAVEMENT MARKING PLAN	STA 255+00 - 259+00
867	T340	STANTON-OREGON PAVEMENT MARKING PLAN	STA 259+00 - 263+00
868	T341	STANTON-OREGON PAVEMENT MARKING PLAN	STA 263+00 - 267+00
869	T342	STANTON-OREGON PAVEMENT MARKING PLAN	STA 267+00 - 271+00
870	T343	STANTON-OREGON PAVEMENT MARKING PLAN	STA 271+00 - 275+00
871	T344	STANTON-OREGON PAVEMENT MARKING PLAN	STA 275+00 - 278+00
872	T345	STANTON-OREGON PAVEMENT MARKING PLAN	STA 278+00 - 282+00
873	T346	STANTON-OREGON PAVEMENT MARKING PLAN	STA 282+00 - 286+00
874	T347	STANTON-OREGON PAVEMENT MARKING PLAN	STA 286+00 - 290+00
875	T348	STANTON-OREGON PAVEMENT MARKING PLAN	STA 290+00 - 294+00
876	T349	STANTON-OREGON PAVEMENT MARKING PLAN	STA 294+00 - 298+00
877	T350	STANTON-OREGON PAVEMENT MARKING PLAN	STA 298+00 - 302+00
878	T351	STANTON-OREGON PAVEMENT MARKING PLAN	STA 302+00 - 306+00
879	T352	STANTON-OREGON PAVEMENT MARKING PLAN	STA 306+00 - 310+00
880	T353	STANTON-OREGON PAVEMENT MARKING PLAN	STA 310+00 - 314+00
881	T354	STANTON-OREGON PAVEMENT MARKING PLAN	STA 314+00 - 318+00
882	T355	STANTON-OREGON PAVEMENT MARKING PLAN	STA 318+00 - 322+00
883	T356	STANTON-OREGON PAVEMENT MARKING PLAN	STA 322+00 - 326+00
884	T357	STANTON-OREGON PAVEMENT MARKING PLAN	STA 326+00 - 330+00
885	T358	STANTON-OREGON PAVEMENT MARKING PLAN	STA 330+00 - 334+00
886	T359	STANTON-OREGON PAVEMENT MARKING PLAN	STA 334+00 - 338+00
887	T360	STANTON-OREGON PAVEMENT MARKING PLAN	STA 338+00 - 342+00
888	T361	STANTON-OREGON PAVEMENT MARKING PLAN	STA 342+00 - 346+00
889	T362	STANTON-OREGON PAVEMENT MARKING PLAN	STA 346+00 - 350+00
890	T363	STANTON-OREGON PAVEMENT MARKING PLAN	STA 350+00 - 354+00
891	T364	STANTON-OREGON PAVEMENT MARKING PLAN	STA 354+00 - 358+00
892	T365	STANTON-OREGON PAVEMENT MARKING PLAN	STA 358+00 - 359+00
893	T366	SIGNING AND PAVEMENT DETAILS	
894	T367	SUMMARY OF SMALL SIGNS	
895	T368	SUMMARY OF SMALL SIGNS	
896	T369	SUMMARY OF SMALL SIGNS	
897	T370	SUMMARY OF SMALL SIGNS	
898	T371	SUMMARY OF SMALL SIGNS	

EXISTING UTILITY PLANS

899	U100	DOWNTOWN LOOP - EXISTING UTILITIES EXHIBIT	STA 9+90 - 17+00
900	U101	DOWNTOWN LOOP - EXISTING UTILITIES EXHIBIT	STA 17+00 - 25+00
901	U102	DOWNTOWN LOOP - EXISTING UTILITIES EXHIBIT	STA 25+00 - 33+00
902	U103	DOWNTOWN LOOP - EXISTING UTILITIES EXHIBIT	STA 33+00 - 40+00
903	U104	DOWNTOWN LOOP - EXISTING UTILITIES EXHIBIT	STA 40+00 - 48+00
904	U105	DOWNTOWN LOOP - EXISTING UTILITIES EXHIBIT	STA 48+00 - 56+00
905	U106	DOWNTOWN LOOP - EXISTING UTILITIES EXHIBIT	STA 56+00 - 64+00
906	U107	DOWNTOWN LOOP - EXISTING UTILITIES EXHIBIT	STA 64+00 - 72+00
907	U108	DOWNTOWN LOOP - EXISTING UTILITIES EXHIBIT	STA 72+00 - 80+00
908	U109	DOWNTOWN LOOP - EXISTING UTILITIES EXHIBIT	STA 80+00 - 87+00
909	U110	DOWNTOWN LOOP - EXISTING UTILITIES EXHIBIT	STA 87+00 - 95+00
910	U111	DOWNTOWN LOOP - EXISTING UTILITIES EXHIBIT	STA 95+00 - 103+00
911	U112	DOWNTOWN LOOP - EXISTING UTILITIES EXHIBIT	STA 103+00 - 104+71.44
912	U113	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 200+00 - 207+00
913	U114	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 207+00 - 215+00

EXISTING UTILITY PLANS (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
914	U115	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 215+00 - 223+00
915	U116	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 223+00 - 231+00
916	U117	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 231+00 - 239+00
917	U118	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 239+00 - 247+00
918	U119	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 247+00 - 255+00
919	U120	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 255+00 - 263+00
920	U121	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 263+00 - 271+00
921	U122	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 271+00 - 278+00
922	U123	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 278+00 - 286+00
923	U124	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 286+00 - 294+00
924	U125	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 294+00 - 302+00
925	U126	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 302+00 - 310+00
926	U127	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 310+00 - 318+00
927	U128	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 318+00 - 326+00
928	U129	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 326+00 - 334+00
929	U130	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 334+00 - 342+00
930	U131	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 342+00 - 350+00
931	U132	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 350+00 - 358+00
932	U133	STANTON-OREGON - EXISTING UTILITIES EXHIBIT	STA 358+00 - 359+47
933	U134	DOWNTOWN LOOP - UTILITY CONFLICT DATA TABLES	SHEET 1 OF 2
934	U135	DOWNTOWN LOOP - UTILITY CONFLICT DATA TABLES	SHEET 2 OF 2
935	U136	STANTON-OREGON - UTILITY CONFLICT DATA TABLES	SHEET 1 OF 3
936	U137	STANTON-OREGON - UTILITY CONFLICT DATA TABLES	SHEET 2 OF 3
937	U138	STANTON-OREGON - UTILITY CONFLICT DATA TABLES	SHEET 3 OF 3
938	U139	T.P.S.S. - EXISTING UTILITIES EXHIBIT	SHEET 1 OF 2
939	U140	T.P.S.S. - EXISTING UTILITIES EXHIBIT	SHEET 2 OF 2

PROPOSED UTILITY PLANS

940		GENERAL NOTES	SHEET 1 OF 52
941		INDEX AND LEGEND SHEET	SHEET 2 OF 52
942		GENERAL MAP	SHEET 3 OF 52
943		GENERAL MAP	SHEET 4 OF 52
944		WASTEWATER REPLACEMENT & RELOCATION	SHEET 5 OF 52
945		WASTEWATER REPLACEMENT & RELOCATION	SHEET 6 OF 52
946		WASTEWATER REPLACEMENT & RELOCATION	SHEET 7 OF 52
947		WASTEWATER REPLACEMENT & RELOCATION	SHEET 8 OF 52
948		WASTEWATER REPLACEMENT & RELOCATION	SHEET 9 OF 52
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954		WASTEWATER REPLACEMENT & RELOCATION	SHEET 15 OF 52
955		WASTEWATER REPLACEMENT & RELOCATION	SHEET 16 OF 52
956		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 17 OF 52
957		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 18 OF 52
958		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 19 OF 52
959		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 20 OF 52
960		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 21 OF 52
961		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 22 OF 52

PROPOSED UTILITY PLANS (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
962		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 23 OF 52
963		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 24 OF 52
964		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 25 OF 52
965		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 26 OF 52
966		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 27 OF 52
967		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 28 OF 52
968		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 29 OF 52
969		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 30 OF 52
970		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 31 OF 52
971		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 32 OF 52
972		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 33 OF 52
973		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 34 OF 52
974		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 35 OF 52
975		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 36 OF 52
976		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 37 OF 52
977		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 38 OF 52
978		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 39 OF 52
979		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 40 OF 52
980		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 41 OF 52
981		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 42 OF 52
982		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 43 OF 52
983		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 44 OF 52
984		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 45 OF 52
985		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 46 OF 52
986		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 47 OF 52
987		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 48 OF 52
988		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 49 OF 52
989		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 50 OF 52
990		POTABLE WATER REPLACEMENT AND RELOCATION	SHEET 51 OF 52
991		STANDARD DETAILS	SHEET 52 OF 52
992		20" WATER LINE RELOCATION	
993		20" WATER LINE RELOCATION	
994		20" WATER LINE RELOCATION	
995		NOT USED	
996		NOT USED	

STANDARDS

997	CCCG-12	CONCRETE CURB AND CURB AND GUTTER	
998	TE (HMAC) - 11	TAPERED EDGE DETAILS HMAC PAVEMENT	
999	CRCP(1) -13	CRCP ONE LAYER STEEL BAR PLACEMENT	
1000	CRCP(1) -13	CRCP ONE LAYER STEEL BAR PLACEMENT	
1001	CRCP(2) -13	CRCP ONE LAYER STEEL BAR PLACEMENT	
1002	CRCP(2) -13	CRCP ONE LAYER STEEL BAR PLACEMENT	
1003	PED-12A	PEDESTRIAN FACILITIES CURB RAMPS (SHEET 1 OF 4)	
1004	PED-12A	PEDESTRIAN FACILITIES CURB RAMPS (SHEET 2 OF 4)	
1005	PED-12A	PEDESTRIAN FACILITIES CURB RAMPS (SHEET 3 OF 4)	
1006	PED-12A	PEDESTRIAN FACILITIES CURB RAMPS (SHEET 4 OF 4)	
1007	PRD-13	PEDESTRIAN HANDRAIL DETAILS (SHEET 1 OF 3)	
1008	PRD-13	PEDESTRIAN HANDRAIL DETAILS (SHEET 2 OF 3)	
1009	PRD-13	PEDESTRIAN HANDRAIL DETAILS (SHEET 3 OF 3)	

NO	DATE	REVISION	APPROVED
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URS
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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

INDEX OF SHEETS

G004

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1080

DATE: 7/24/2015 4:07:43 PM
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CK: URS
DW: URS
CK: URS
DN: URS

VOLUME 2 OF 4 - CIVIL/TRACK

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
		STANDARDS (CONT.)	
1010	MH-M	MANHOLE TYPE M (JUNCTION BOX WITH	
1011	HIL-CI	CURB INLET TYPE C1	
1012	HIL-A	INLET TYPE A	
1013	JS-14	CONCRETE PAVING DETAILS JOINT SEALS	
1014	IL-C	CURB INLET TYPE C AND EXTENSION TYPE E (5'-0" INLET)	
1015	CLF-10	CHAIN LINK FENCE	
1016	CSB(2)-13	CONCRETE SAFETY BARRIER (F-SHAPE)	
1016A	CSB(3)-10	CONCRETE SAFETY BARRIER (F-SHAPE)	
1016B	CSB(6)-10	CONCRETE SAFETY BARRIER (F-SHAPE)	
1017		EROSION CONTROL LOGS (1 OF 2)	
1018		EROSION CONTROL LOGS (2 OF 2)	
1019	CPCD-14	CONCRETE PAVEMENT DETAILS CONTRACTION DESIGN T-6 TO 12 INCHES (1 OF 2)	
1020	CPCD-14	CONCRETE PAVEMENT DETAILS CONTRACTION DESIGN T-6 TO 12 INCHES (2 OF 2)	
1021	BC(1)-14	BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS (1 OF 12)	
1022	BC(2)-14	BARRICADE AND CONSTRUCTION PROJECT LIMIT STANDARD (2 OF 12)	
1023	BC(3)-14	BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT STANDARD (3 OF 12)	
1024	BC(4)-14	BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES STANDARD (4 OF 12)	
1025	BC(5)-14	BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT STANDARD (5 OF 12)	
1026	BC(6)-14	BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) STANDARD (6 OF 12)	
1027	BC(7)-14	BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS AND ATTENUATOR STANDARD (7 OF 12)	
1028	BC(8)-14	BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES STANDARD (8 OF 12)	
1029	BC(9)-14	BARRICADE AND CONSTRUCTION CHANNLEIZING DEVICES STANDARD (9 OF 12)	
1030	BC(10)-14	BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES STANDARD (10 OF 12)	
1031	BC(11)-14	BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS STANDARD (11 OF 12)	
1032	BC(12)-14	BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS STANDARD (12 OF 12)	
1033	CFA-12	CLAMP ON FITTING ASSEMBLY FOR LUMINAIRE MAST ARM	
1034	DMA-80 (1)-12	TRAFFIC SIGNAL SUPPORT STRUCTURES DUAL MAST ARM ASSEMBLY (SHEET 1 OF 3)	
1035	DMA-80 (2)-12	TRAFFIC SIGNAL SUPPORT STRUCTURES DUAL MAST ARM ASSEMBLY (SHEET 2 OF 3)	
1036	DMA-80 (3)-12	TRAFFIC SIGNAL SUPPORT STRUCTURES DUAL MAST ARM ASSEMBLY (SHEET 3 OF 3)	
1037		TRAFFIC SIGNAL SUPPORT STRUCTURES SINGLE MAST ARM ASSEMBLY (80 MPH WIND ZONE)	
1038		TRAFFIC SIGNAL SUPPORT STRUCTURES MAST ARM POLE DETAILS	
1039		TRAFFIC SIGNAL POLE FOUNDATION	
1040	ED(1)-14	ELECTRICAL DETAILS - CONDUITS & NOTES	
1041	ED(2)-14	ELECTRICAL DETAILS - CONDUIT SUPPORTS	
1042	ED(3)-14	ELECTRICAL DETAILS - CONDUCTORS	
1043	ED(5)-14	ELECTRICAL DETAILS - SERVICE NOTES & DATA	
1044	ED(7)-14	ELECTRICAL DETAILS - SERVICE SUPPORT TYPES SF AND SP	
1045	ED(9)-14	ELECTRICAL DETAILS - SERVICE SUPPORT PEDESTAL SERVICE TYPE PS	
1046	ED(10)-14	ELECTRICAL DETAILS - SERVICES SUPPORT TYPES GC, OC, AND TP	

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
		STANDARDS (CONT.)	
1047	RFBA-13	ROADSIDE FLASHING BEACON ASSEMBLY	
1048	PM(1)-12	TYPICAL STANDARD PAVEMENT MARKINGS	
1049	PM(2)-12	POSITION GUIDANCE USING RAISED MARKERS REFLECTORIZED PROFILE MARKINGS	
1050	PM(3)-12	PAVEMENT MARKINGS FOR TWO-WAY LEFT TURN LANES DIVIDED HIGHWAYS AND RURAL LEFT TURN BAYS	
1051	SMD(GEN)-08	SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS	
1052	SMD(SLIP-1)-08	SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM	
1053	SMD(SLIP-2)-08	SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM	
1054	SMD(SLIP-3)-08	SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM	
1055	SMD(TWT)-08	SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST	
1056	SMD(FRP)-08	SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS UNIVERSAL ANCHOR SYSTEM WITH FRP POST	
1057	TCP(1-2)-12	TRAFFIC CONTROL PLAN ONE-LANE TWO-WAY TRAFFIC CONTROL	
1058	TCP(1-3)-12	TRAFFIC CONTROL PLAN TRAFFIC SHIFTS ON TWO LANE ROADS	
1059	TCP(1-4)-12	TRAFFIC CONTROL PLAN LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS	
1060	TCP(1-6)-12	TRAFFIC CONTROL PLAN AUTOMATED FLAGGER ASSISTANCE DEVICES (AFADS)	
1061	TCP(2-2)-12	TRAFFIC CONTROL PLAN ONE-LANE TWO-WAY TRAFFIC CONTROL	
1062	TCP(2-3)-12	TRAFFIC CONTROL PLAN TRAFFIC SHIFTS ON TWO LANE ROADS	
1063	TCP(2-4)-12	TRAFFIC CONTROL PLAN LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS	
1064	TCP(2-6)-12	TRAFFIC CONTROL PLAN LANE CLOSURES ON DIVIDED HIGHWAYS	
1065	EC(1)-09	TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE & BALED HAY	
1066	EC(3)-93	TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES CONTRUCTION EXITS	
1067	EC(6)-93	TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES SEDIMENT BASINS AND TRAPS	
1068		TRENCHING DETAILS	
1069		TRENCHING DETAILS	
1070	TCP (6-1) -12	TRAFFIC CONTROL PLAN FREEWAY LANE CLOSURES	
1071	TCP (6-7) -12	TRAFFIC CONTROL PLAN SHORT DURATION FREEWAY CLOSURE SEQUENCE	
1072	TCP (5-1) -12	TRAFFIC CONTROL PLAN SHOULDER WORK FOR FREEWAYS/EXPRESSWAYS	
1073	CSMD TC8010 -09	CONSTRUCTION SEQUENCE FOR MISCELLANEOUS DRIVES	
1073A	BAS-C	BRIDGE APPROACH SLAB CONCRETE PAVEMENT	
*		CITY OF EL PASO DESIGN STANDARDS FOR CONSTRUCTION ADOPTED 6/3/08.	

* NOT INCLUDED WITH PLAN SET

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INDEX OF SHEETS

G005

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1081

DATE: 7/24/2015 8:28:29 PM
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VOLUME 3 OF 4 - SYSTEMS

GENERAL DRAWINGS

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
1074	G029	VOLUME 3 OF 4 - SYSTEMS	
1075	G001	INDEX OF SHEETS	VOLUME 1 CIVIL/TRACK
1076	G002	INDEX OF SHEETS	VOLUME 1 CIVIL/TRACK
1077	G002A	INDEX OF SHEETS	VOLUME 1 CIVIL/TRACK
1078	G002B	INDEX OF SHEETS	VOLUME 1 CIVIL/TRACK
1079	G003	INDEX OF SHEETS	VOLUME 2 CIVIL/TRACK
1080	G004	INDEX OF SHEETS	VOLUME 2 CIVIL/TRACK
1081	G005	INDEX OF SHEETS	VOLUME 2 CIVIL/TRACK
1082	G006	INDEX OF SHEETS	VOLUME 3 SYSTEMS
1083	G007	INDEX OF SHEETS	VOLUME 4 MAINTENANCE & STORAGE FACILITY

OVERHEAD CONTACT SYSTEM

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
1084	J001	ABBREVIATIONS & GENERAL NOTES	
1085	J002	STANDARD SYMBOLS	
1086	J003	CONDUCTOR PARTICULARS	
1087	J004	VERTICAL ELECTRICAL CLEARANCE REQUIREMENTS	
1088	J005	UNIVERSAL PANTOGRAPH CLEARANCE ENVELOPE	
1089	J006	VERTICAL, WIND AND RADIAL LOADS	
1090	J007	AS-BUILT STRUCTURE RECORD POLE NO. XXXX DRAWING	
1091	J009	INSTALLATION TENSIONS AND CONDUCTOR SAGS	
1092	J015	KEY MAP	
1093	J090	FOUNDATION SCHEDULE	STA 510+87 - 74+96
1094	J091	FOUNDATION SCHEDULE	STA 75+92 - 238+80
1095	J092	FOUNDATION SCHEDULE	STA 243+70 - 331+40
1096	J093	FOUNDATION SCHEDULE	STA 332+01 - 510+05
1096A	J093A	FOUNDATION SCHEDULE (ALTERNATE)	STA 332+01 - 510+05
1097	J100	OCS WIRING LAYOUT PLANS	STA 103+80 - 13+00
1098	J100A	OCS WIRING LAYOUT PLANS	SANTA FE ST & YARD EXIT
1099	J101	OCS WIRING LAYOUT PLANS	STA 13+00 - 17+00
1100	J101A	OCS WIRING LAYOUT PLANS	SANTA FE ST & YARD
1101	J102	OCS WIRING LAYOUT PLANS	STA 17+00 - 21+00
1102	J103	OCS WIRING LAYOUT PLANS	STA 21+00 - 24+00
1103	J104	OCS WIRING LAYOUT PLANS	STA 24+00 - 29+00
1104	J105	OCS WIRING LAYOUT PLANS	STA 29+00 - 33+00
1105	J106	OCS WIRING LAYOUT PLANS	STA 33+00 - 37+00
1106	J106A	OCS WIRING LAYOUT PLANS	SANTA FE ST & FRANKLIN AVE
1107	J107	OCS WIRING LAYOUT PLANS	STA 37+00 - 40+00
1108	J108	OCS WIRING LAYOUT PLANS	STA 40+00 - 44+00
1109	J108A	OCS WIRING LAYOUT PLANS	FRANKLIN AVE & OREGON ST
1110	J109	OCS WIRING LAYOUT PLANS	STA 44+00 - 48+00
1111	J110	OCS WIRING LAYOUT PLANS	STA 50+00 - 53+00
1112	J110A	OCS WIRING LAYOUT PLANS	FRANKLIN AVE & KANSAS ST
1113	J111	OCS WIRING LAYOUT PLANS	STA 53+00 - 56+00
1114	J112	OCS WIRING LAYOUT PLANS	STA 56+00 - 60+20
1115	J113	OCS WIRING LAYOUT PLANS	STA 60+20 - 64+00
1116	J114	OCS WIRING LAYOUT PLANS	STA 64+00 - 68+00
1117	J115	OCS WIRING LAYOUT PLANS	STA 68+00 - 72+00
1118	J116	OCS WIRING LAYOUT PLANS	STA 72+00 - 76+20
1119	J117	OCS WIRING LAYOUT PLANS	STA 76+20 - 80+00
1120	J118	OCS WIRING LAYOUT PLANS	STA 80+00 - 84+00
1121	J119	OCS WIRING LAYOUT PLANS	STA 84+00 - 87+40
1122	J119A	OCS WIRING LAYOUT PLANS	KANSAS ST & FATHER RAHM AVE
1123	J120	OCS WIRING LAYOUT PLANS	STA 87+40 - 91+00
1124	J121	OCS WIRING LAYOUT PLANS	STA 91+00 - 95+00
1125	J122	OCS WIRING LAYOUT PLANS	STA 95+00 - 99+60
1126	J123	OCS WIRING LAYOUT PLANS	STA 99+60 - 103+80
1127	J123A	OCS WIRING LAYOUT PLANS	FATHER RAHM AVE & SANTA FE ST
1128	J124	OCS WIRING LAYOUT PLANS	STA 48+00 - 50+00
1129	J124A	OCS WIRING LAYOUT PLANS	FRANKLIN AVE & STANTON ST
1130	J125	OCS WIRING LAYOUT PLANS	STA 203+00 - 207+00
1131	J126	OCS WIRING LAYOUT PLANS	STA 207+00 - 211+00
1132	J127	OCS WIRING LAYOUT PLANS	STA 211+00 - 215+00
1133	J128	OCS WIRING LAYOUT PLANS	STA 215+00 - 219+00
1134	J129	OCS WIRING LAYOUT PLANS	STA 219+00 - 223+00
1135	J130	OCS WIRING LAYOUT PLANS	STA 223+00 - 227+00
1136	J131	OCS WIRING LAYOUT PLANS	STA 227+00 - 231+00
1137	J132	OCS WIRING LAYOUT PLANS	STA 231+00 - 235+00
1138	J133	OCS WIRING LAYOUT PLANS	STA 235+00 - 239+00
1139	J134	OCS WIRING LAYOUT PLANS	STA 239+00 - 243+00
1140	J135	OCS WIRING LAYOUT PLANS	STA 243+00 - 247+00

OVERHEAD CONTACT SYSTEM (CONT.)

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
1141	J136	OCS WIRING LAYOUT PLANS	STA 247+00 - 251+00
1142	J137	OCS WIRING LAYOUT PLANS	STA 251+00 - 255+00
1143	J138	OCS WIRING LAYOUT PLANS	STA 255+00 - 259+00
1144	J139	OCS WIRING LAYOUT PLANS	STA 259+00 - 263+00
1145	J140	OCS WIRING LAYOUT PLANS	STA 263+00 - 267+00
1146	J141	OCS WIRING LAYOUT PLANS	STA 267+00 - 271+00
1147	J142	OCS WIRING LAYOUT PLANS	STA 271+00 - 275+00
1148	J143	OCS WIRING LAYOUT PLANS	STA 275+00 - 278+00
1149	J143A	OCS WIRING LAYOUT PLANS	STANTON ST & BALTIMORE DR
1150	J144	OCS WIRING LAYOUT PLANS	STA 278+00 - 282+00
1151	J145	OCS WIRING LAYOUT PLANS	STA 282+00 - 285+80
1152	J145A	OCS WIRING LAYOUT PLANS	BALTIMORE DR & OREGON ST
1153	J146	OCS WIRING LAYOUT PLANS	STA 285+80 - 289+80
1154	J147	OCS WIRING LAYOUT PLANS	STA 289+80 - 294+00
1155	J148	OCS WIRING LAYOUT PLANS	STA 294+00 - 298+00
1156	J149	OCS WIRING LAYOUT PLANS	STA 298+00 - 302+00
1157	J150	OCS WIRING LAYOUT PLANS	STA 302+00 - 306+00
1158	J151	OCS WIRING LAYOUT PLANS	STA 306+00 - 310+00
1159	J152	OCS WIRING LAYOUT PLANS	STA 310+00 - 314+00
1160	J153	OCS WIRING LAYOUT PLANS	STA 314+00 - 318+00
1161	J154	OCS WIRING LAYOUT PLANS	STA 318+00 - 322+00
1162	J155	OCS WIRING LAYOUT PLANS	STA 322+00 - 326+00
1163	J156	OCS WIRING LAYOUT PLANS	STA 326+00 - 330+00
1164	J157	OCS WIRING LAYOUT PLANS	STA 330+00 - 334+00
1165	J158	OCS WIRING LAYOUT PLANS	STA 334+00 - 338+00
1166	J159	OCS WIRING LAYOUT PLANS	STA 338+00 - 342+00
1167	J160	OCS WIRING LAYOUT PLANS	STA 342+00 - 346+00
1168	J161	OCS WIRING LAYOUT PLANS	STA 346+00 - 350+00
1169	J162	OCS WIRING LAYOUT PLANS	STA 350+00 - 354+00
1170	J163	OCS WIRING LAYOUT PLANS	STA 354+00 - 358+00
1171	J164	OCS WIRING LAYOUT PLANS	STA 502+05 - 504+80
1172	J165	OCS WIRING LAYOUT PLANS	STA 504+80 - 507+70
1172A	J165A	OCS WIRING LAYOUT PLANS (ALTERNATE)	STA 504+80 - 507+70
1173	J165B	OCS WIRING LAYOUT PLANS	YARD
1173A	J165C	OCS WIRING LAYOUT PLANS (ALTERNATE)	YARD
1174	J166	OCS WIRING LAYOUT PLANS	SHOP
1175	J166A	OCS WIRING LAYOUT PLANS	SHOP-EXTERIOR
1176	J166B	OCS WIRING LAYOUT PLANS	SHOP-INTERIOR
1177	J201	OVERLAPS ON CANTILEVER STRUCTURES	
1178	J206	CROSS-SPAN	
1179	J207	OCS POLES	
1180	J208	DISCONNECT STRUCTURES	
1181	J215	GROUNDING ASSEMBLIES	GR-01, GR-02, & GR-03
1182	J219	ORNAMENTAL POLE ASSEMBLIES	P1O, AND P2O
1183	J220	TUBULAR POLE ASSEMBLIES	P1, P2, P3, AND P4
1184	J221	POLE ATTACHMENT ASSEMBLIES	F, L, AND T
1185	J222	POLE BRACKET ASSEMBLIES	BT-01, BT-02, AND BT-02A
1186	J222A	POLE BRACKET ASSEMBLIES	PHASE 1
1187	J223	LIGHT RADIAL LOAD	SCA-01L
1188	J224	MEDIUM RADIAL LOAD	SCA-01M/02M
1189	J225	HEAVY RADIAL LOAD	SCA-01H/02H
1190	J226	TWO C/W	SCA-04HA/04HB/04HC
1191	J227	SI SUPPORTING	SCA-05
1192	J228	CROSS-SPAN ASSEMBLIES	CS-01, AND CS-02
1193	J229	HEAD-SPAN ASSEMBLIES	HS-02
1194	J230	REGISTRATION ASSEMBLIES	HR-1L, HR-1M, HR-1H, AND HR-1O
1195	J231	BRIDLE ASSEMBLIES	BB-01, BB-02, BB-03, BB-04, AND BB-05
1196	J232	PULL-OFF ASSEMBLIES	PO-1M AND PO-1H
1197	J233	IN-SPAN ASSEMBLIES	KN-01/02, CC/JC/FC-01, AND SI-01/02
1198	J234	FIXED TERMINATION ASSEMBLIES	FT-01
1199	J235	FIXED TERMINATION ASSEMBLIES	FTY-01
1200	J236	DISCONNECT SWITCH ASSEMBLIES	DS-01, AND DS-02
1201	J237	SHOP DISCONNECT SWITCH	SDS-01
1202	J238	LIGHTNING ARRESTER ASSEMBLY	LA-01
1203	J239	SHOP HANGER ASSEMBLY	SH-01
1204	J240	SHOP DOOR BRIDGE ASSEMBLY	DB-01
1205	J241	POLE ID TAG ASSEMBLY	SD-01
1206	J242	MEDIUM RADIAL LOAD	SCA-06M/07M
1207	J243	WALL MOUNT BRACKET	BT-03
1208	J244	AERIAL FEEDER ASSEMBLY	AF-01
1209	J245	BLUE LIGHT ASSEMBLY	BL-01

TRACTION ELECTRIFICATION PLANS

SHEET NO.	DRAWING NO.	SHEET TITLE	LOCATION/DESCRIPTION
1210	J600	COVER SHEET, INDEX, AND GENERAL NOTES	
1211	J601	SYMBOLS	
1212	J602	ABBREVIATIONS	
1213	J603	SECTIONALIZING DIAGRAM MAINLINE	
1214	J604	SECTIONALIZING DIAGRAM YARD/SHOP	
1215	J605	KEY MAP	
1216	J610	TPSS A1 CONDUIT LAYOUT PLAN	
1217	J611	TPSS A1 SITE ELECTRICAL PLAN	
1218	J612	TPSS A1 FEDDER/DUCTBANK SCHEDULE	
1219	J615	TPSS A2 CONDUIT LAYOUT PLAN	
1220	J616	TPSS A2 SITE ELECTRICAL PLAN	
1221	J617	TPSS A2 FEEDER/DUCTBANK SCHEDULE	
1222	J620	TPSS A3 CONDUIT LAYOUT PLAN	
1223	J621	TPSS A3 SITE ELECTRICAL PLAN	
1224	J622	TPSS A3 FEEDER/DUCTBANK SCHEDULE	
1225	J625	TPSS A4 CONDUIT LAYOUT PLAN	
1226	J626	TPSS A4 SITE ELECTRICAL PLAN	
1227	J627	TPSS A4 FEEDER/DUCTBANK SCHEDULE	
1228	J630	TYPICAL PREFABRICATED TPSS GROUND GRID DETAIL	
1229	J640	TYPICAL MAINLINE TPSS SINGLE LINE DIAGRAM	
1230	J641	TYPICAL PREFABRICATED TPSS EQUIPMENT LAYOUT PLAN	
1231	J642	TYPICAL PREFABRICATED PTSS EXTERIOR ELEVATIONS	
1232	J643	TPYICAL PREFABRICATED TPSS INTERIOR ELEVATIONS	
1233	J650	TPSS S1 SHOP CONDUIT LAYOUT PLAN	
1234	J651	TPSS S1 SHOP EQUIPMENT LAYOUT	
1235	J652	TPSS S1 SHOP FEEDER/CONDUIT SCHEDULE	
1236	J653	TPSS S1 SHOP SINGLE LINE DIAGRAM	
1237	J654	TPSS S1 SHOP INTERIOR ELEVATIONS	
1238	J655	TPSS S1 SHOP DC CONTACTOR PANEL DETAIL	
1239	J657	TPSS S1 SHOP GROUNDING PLAN	
1240	J658	TPSS S1 SHOP INTERLOCKING SCHEMATICS	
1241	J670	TYPICAL TRACK BLOCKOUT DETAIL	
1242	J671	TYPICAL DC FEEDER MANHOLE DETAILS	
1243	J672	TYPICAL GROUNDING DETAIL	
1244	J673	TYPICAL SURGE ARRESTER INSTALLATION DETAILS	
1245	J676	TYPICAL DUCTBANK INSTALLATION DETAIL	SHEET 1 OF 2
1246	J677	TYPICAL DUCTBANK INSTALLATION DETAIL	SHEET 2 OF 2
1246A	J667A	TYPICAL DUCTBANK BORING INSTALLATION	
1247	J678	TYPICAL HANDHOLE DETAIL	
1248	J681	TYPICAL TPSS HMI CONTROL SCREEN LAYOUT	
1249	J682	TYPICAL TPSS HMI ALARM SCREEN LAYOUT	
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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

INDEX OF SHEETS

G006

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0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1082

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VOLUME 4 OF 4 - MAINTENANCE & STORAGE FACILITY

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1397	P5.3	PLUMBING HOT AND COLD RISER DIAGRAM	
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DIST		COUNTY	SHEET NO.
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ABBREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
ACI	AMERICAN CONCRETE INSTITUTE
ADJ	ADJACENT
A/G	AT GRADE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ANC	ANCHOR
APPROX	APPROXIMATE
AREMA	AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY OF TESTING & MATERIALS
AT	AUTOMATIC TENSION
ATM	ALONG TRACK MOVEMENT
ATR	ABOVE TOP OF RAIL
ATS	AUTOTENSIONED SYSTEM
AWG	AMERICAN WIRE GAUGE
AWS	AMERICAN WELDING SOCIETY
AUX	AUXILIARY
BAT	BATTERY
B/B	BACK TO BACK
BC	BOLT CIRCLE
BEG	BEGIN
BK	BACK
BKR	BREAKER
BL	BASE LINE
BLDG	BUILDING
BO	BLOW-OFF
BR	BRIDGE
BRKT	BRACKET
BTWN	BETWEEN
BW	BALANCE WEIGHT
BWA	BALANCE WEIGHT ANCHOR
CAB	CABINET
CANT	CANTILEVER
CF	CUBIC FEET
CLR	CLEARANCE
C	CENTER LINE
COMM	COMMUNICATION
CONST	CONSTRUCTION
CONTR	CONTRACTOR
CR	CONDUIT RISER
CS	CURVE TO SPIRAL
CTR	CENTER
CTRS	CENTERS
C TO C	CENTER LINE TO CENTER LINE
CU	COPPER
CW	CONTACT WIRE
CWA	CONTACT WIRE ANCHOR
CWB	CONTACT WIRE BRIDGE
CWH	CONTACT WIRE HEIGHT
DEG	DEGREE
DET	DETAIL
DGA	DOWN GUY ANCHOR
DIA OR ø	DIAMETER
DIM	DIMENSION
DISC	DISCONNECT
DISC SW	DISCONNECT SWITCH
DSG	DISCONNECT SWITCH GROUP
DSC	DISCONNECT SWITCH NORMALLY CLOSED
DWG.	DRAWING
(E).EXIST	EXISTING
E	EAST
EA	EACH
EB	EASTBOUND
ELEC	ELECTRIC, ELECTRICAL
EL	ELEVATION
EQ	EQUAL
EQN	EQUATION
EQUIP	EQUIPMENT
EOS	ELECTRICAL OPERATED SWITCH
ES	EXTRA STRENGTH

F	FAHRENHEIT
F/F	FACE TO FACE
FBO	FURNISHED BY OTHERS
FDN	FOUNDATION
FDR	FEEDER
FFJ	FULL FEEDING JUMPER
FG	FINISH GRADE
FJ	FEEDER JUMPER
FOP	FACE OF POLE
FOS	FACTOR OF SAFETY
FP	FEEDER POLE
FT	FOOT, FEET
GA	GAUGE
GALV	GALVANIZED
G/L	GROUND LINE
GND	GROUND
GRS	GALVANIZED RIGID STEEL
GRX	GRADE CROSSING
GW	GUY WIRE
H	HEAVY LOADING
HD	HARD DRAWN
HDG	HOT DIP GALVANIZED
HEX	HEXAGONAL
HH	HANDHOLE
HO	HAND OPERATED
HORZ	HORIZONTAL
HRL	HIGH RAIL LEVEL
H/SPAN	HEADSPAN
HS	HIGH STRENGTH
HT	HEIGHT
HWY	HIGHWAY
IB	IMPEDANCE BOND
ID	INSIDE DIAMETER
IMP	INSULATED MIDPOINT
IN	INCH
INSUL	INSULATION
IR	IN-RUNNING (RIDING CONTACT WIRE)
I/S	IN-SPAN
I/SJ	IN-SPAN JUMPER
J	JUMPER
JB	JUNCTION BOX
JCT	JUNCTION
K	KIP, KILO
KCMIL	THOUSAND CIRCULAR MILS
KSF	KIPS PER SQUARE FEET
KSI	KIPS PER SQUARE INCH
KW	KILOWATT
L	LIGHT LOADING
LA	LIGHTNING ARRESTER
LB	POUND
LB/FT	POUNDS PER FOOT
LF	LINEAR FOOT
LG	LONG
LGTH	LENGTH
LOC	LOCATION
LR	LOW RAIL
LRT	LIGHT RAIL TRANSIT
LRV	LIGHT RAIL VEHICLE
LT	LEFT

M	MEDIUM LOADING
MAX	MAXIMUM
MCM	SEE KCMIL
MD	MAXIMUM DISPLACEMENT
MH	MANHOLE
MIN	MINIMUM
ML	MAIN LINE
MOP	MOTOR OPERATED
MOS	MANUALLY OPERATED SWITCH
MOW	MAINTENANCE OF WAY
MPA	MIDPOINT ANCHOR
MPH	MILES PER HOUR
MSO	MIDSPAN OFFSET
MW	MESSENGER WIRE
N	NORTH
N/A	NOT APPLICABLE
NB	NORTHBOUND
NBR	NONBRIDGING (NOTE 15)
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NESC	NATIONAL ELECTRICAL SAFETY CODE
NF	NEAR FACE
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
No	NUMBER
NOM	NOMINAL
NR	NOT REGISTERED
NS	NOT SUPPORTED
NSR	NOT SUPPORTED OR REGISTERED
NTS	NOT TO SCALE
OC	ON CENTER
OCS	OVERHEAD CONTACT SYSTEM
OD	OUTSIDE DIAMETER
OFF	OFFSET
OHD	OVERHEAD
OL	OVERLAP
OLF	OVERLOAD FACTOR
OOR	OUT-OF-RUNNING (NONRIDING CONTACT WIRE)
PAN	PANTOGRAPH
PB	PULL BOX
PC	POINT OF CURVE
PEJ	POTENTIAL EQUALIZING JUMPER
PF	POINT OF FROG
PI	POINT OF INTERSECTION
PITO	POINT OF INTERSECTION OF TURNOUT
PKT	POCKET TRACK
P/L	PROPERTY LINE
PS	POINT OF SWITCH
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE
PNL	PANEL
PO	PULL OFF
QTY	QUANTITY
RAD	RADIUS
RE	RUNNING EDGE OF RAIL
REF	REFERENCE
RC	REINFORCED CONCRETE
RD	ROAD
RE-BAR	CONCRETE REINFORCING BAR
REINF	REINFORCED
REQD	REQUIRED
RETWALL	RETAINING WALL
REV	REVISION
R/L	RIGHT/LEFT
ROW	RIGHT-OF-WAY
RT	RIGHT
RTU	REMOTE TERMINAL UNIT
RR	RAILROAD
RRX	RAILROAD GRADE CROSSING
RGS	RIGID GALVANIZED STEEL

S	SOUTH
SB	SOUTHBOUND
SCADA	SUPERVISORY CONTROL & DATA ACQUISITION
SC	SPIRAL TO CURVE
SCAT	SIMPLE CATENARY AUTO TENSION
SE	SUPER ELEVATION
SECT	SECTION
SHT	SHEET
SI	SECTION INSULATOR (NOTE 15)
SIG	SIGNAL
SL	STRINGLINE
SOP	SETOUT POINT
SP	SPRING
SPEC	SPECIFICATION
SPS	SMALL PART STEELWORK
SPST	SINGLE POLE SINGLE THROW
SQ.	SQUARE
S/SPAN	STEADY SPAN
SST	STAINLESS STEEL
ST	SPIRAL TO TANGENT
STA	STATION, STATIONING
STC	SINGLE TRACK CANTILEVER
STD	STANDARD
STL	STEEL
STRUCT/STR	STRUCTURE
SUB	SUBSTATION
SW	SWITCH
SWA	SINGLE WIRE ANCHOR
SWAT	SINGLE WIRE AUTO TENSION
SWFT	SINGLE WIRE-FIXED TERMINATED
SWST	SINGLE WIRE SPRING TENSION
TAN	TANGENT
TBD	TO BE DETERMINED
TC	TRACK CENTER
TEMP	TEMPERATURE
TEM	TEMPORARY
TERM	TERMINATION
TOF	TOP OF FOUNDATION
T/G	TOP OF FINISH GRADE
TL	TENSION LENGTH
T/LR	TOP OF LOW RAIL
T/C	TOP OF CURB, TOP OF CONCRETE
TPSS	TRACTION POWER SUBSTATION
TOR	TOP OF RAIL (NEAREST HIGH RAIL)
TRK/TK	TRACK
TS	TANGENT TO SPIRAL
TTC	TWO TRACK CANTILEVER
TWA	TIE WIRE ANCHOR
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UG	UNDERGRADE, UNDERGROUND
UGB	UNDERGRADE BRIDGE
UPRR	UNION PACIFIC RAIL ROAD
U/S	UNDERSIDE
UNINS	UNINSULATED
UTL	UTILITY
VAR	VARIES
VERT	VERTICAL
VLM	VEHICLE LATERAL MOVEMENT
W	WEST, WATT
WR	WIRE RUN
WB	WESTBOUND
WP	WOOD POLE
WT	WEIGHT
WW	WALKWAY
WWF	WELDED WIRE FABRIC
XING	CROSSING
X/O	CROSSOVER
X/SECT	CROSS SECTION
X/CAT	CROSS CATENARY
X/SPAN	CROSS SPAN

GENERAL NOTES

1. ASSEMBLIES AND COMPONENTS IN THE DRAWING PACKAGE ARE GENERIC IN NATURE. SUPPLIERS SHALL PROVIDE SHOP DRAWINGS FOR EACH ASSEMBLY USE TO CONSTRUCT THIS PROJECT UTILIZING THE SAME IDENTICAL ASSEMBLY REFERENCE AS SHOWN IN THESE DRAWINGS. CONTRACTOR SHOP DRAWINGS SHALL SHOW ASSEMBLIES AND COMPONENTS THAT MEET THE SPECIFIED DIMENSIONS AND LOADING REQUIREMENTS, AND ARE PROVEN IN SIMILAR APPLICATIONS.
2. DETAILING OF THE OCS ASSEMBLIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY. ALL ASSEMBLIES SHALL MEET THE REQUIREMENTS OF THE SPECIFICATION. ALL OCS SUPPORT AND REGISTRATION ASSEMBLIES SHALL CLEAR THE PANTOGRAPH CLEARANCE ENVELOPE.
3. AESTHETICS SHALL BE A MAJOR CONSIDERATION IN THE DESIGN, IN ORDER TO MINIMIZE VISUAL IMPACT. WHERE PRACTICAL WIRES SHALL BE USED AS TENSION MEMBERS IN CANTILEVERS.
4. LOADINGS SHOWN ON ASSEMBLY DRAWINGS ARE FOR REFERENCE AND INFORMATION ONLY. THE CONTRACTOR SHALL DETERMINE THE ACTUAL LOADING RANGES FOR THE HARDWARE AND ASSEMBLIES BEING FURNISHED.
5. ALL POLE ATTACHMENTS SHALL BE SUITABLE FOR THE APPLICATION FOR WHICH IT IS INTENDED.
6. STRAIN INSULATORS SHALL BE OF THE NONCERAMIC ROD TYPE, WITHOUT WEATHER SHEDS.
7. OVERHEAD CONTACT WIRE HEIGHTS ARE REFERENCED TO THE TOP OF HIGH RAIL LEVEL OF THE TRACK AT EACH SUPPORT LOCATION.
8. INSTALLATION OF THE OVERHEAD CATENARY SYSTEM SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS AND THE LOCAL CODES.
9. ALONG TRACK STATIONING AND OFFSET OF THE CATENARY POLE FOUNDATIONS SHALL BE VERIFIED FROM AS BUILT TRACK BY THE CONTRACTOR PRIOR TO COMMENCING WORK.
10. CATENARY POLE OFFSET DIMENSIONS, UNLESS OTHERWISE INDICATED, ARE MEASURED FROM THE CENTERLINE OF MAINLINE TRACK TO THE CENTERLINE OF POLE AT TRACK LEVEL, AND MUST BE VERIFIED PRIOR TO THE FABRICATION OF ANY CATENARY ASSEMBLIES.
11. THE OCS STRUCTURE LAYOUT AND STATIONING ARE BASED ON THE ALIGNMENT PLAN AND PROFILE DRAWINGS. CHANGES TO THE ALIGNMENT IN ANY LINE SECTION MAY REQUIRE REVISIONS TO THE ASSOCIATED CATENARY LAYOUT PLAN OR PLANS.
12. SECTION INSULATORS SHALL BE BRIDGING TYPE UNLESS ANNOTATED 'NBR' – NON-BRIDGING TYPE.
13. LOADINGS GIVEN IN ASSEMBLY DRAWINGS SHALL BE CONSIDERED AS MAXIMUM FOR THE ASSEMBLY ANNOTATED.
14. ALL CURRENT CARRYING CLAMPS ON JUMPERS AND CABLES SHALL BE "DUPLICATE."
15. OCS SUPPLIER TO ENSURE ALL INSULATION REQUIREMENTS ARE MET.
16. MAXIMUM CONTACT WIRE DEVIATION SHALL BE 7 DEGREES PER STEADY ARM.

TERMINOLOGY:
FOR PREFERED OCS TERMINOLOGY SEE IEEE P1791 DRAFT RECOMMENDED PRACTICE FOR TERMINOLOGY USED FOR DIRECT CURRENT ELECTRIC TRANSIT OVERHEAD CONTACT SYSTEMS.

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
TECHNICAL SHEET
ABBREVIATIONS & GENERAL NOTES

J001

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1084

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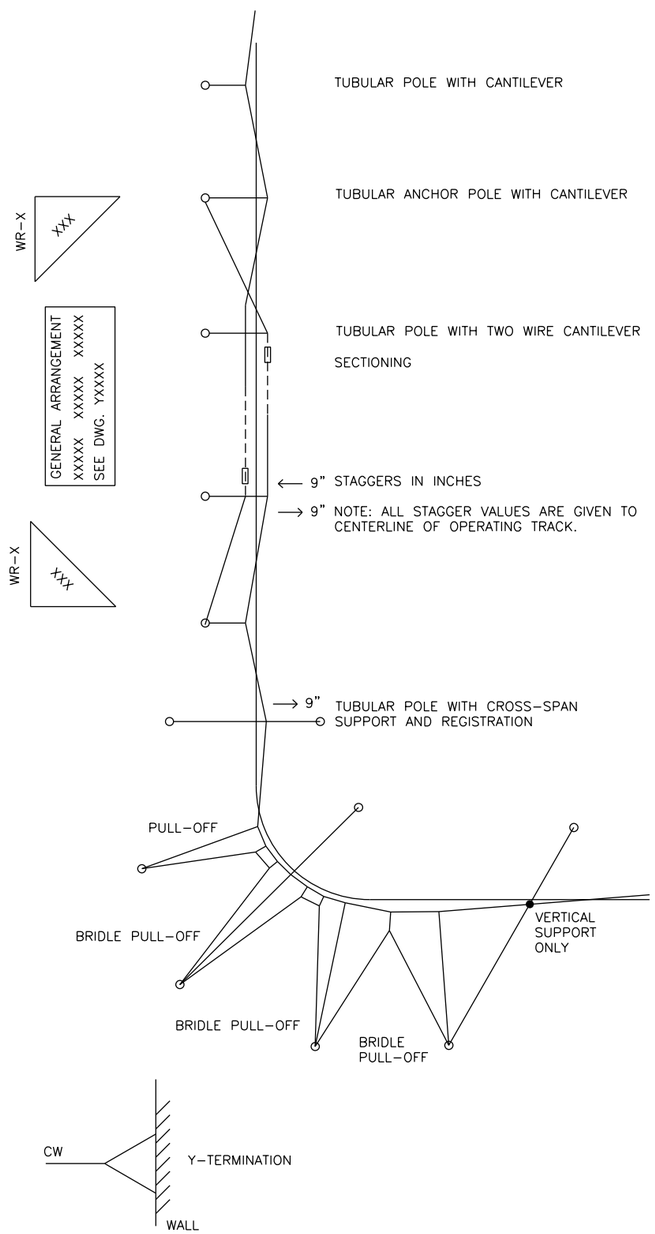
FILE: X:\El Paso.2012\CADD\TYPICALS\Technical Sheets\J001 - Abbreviations and General Notes.dgn
DN: URS CK: URS DW: URS CK: URS

SYMBOLS

SAMPLE OCS WIRING LAYOUT



DSC	DISCONNECT SWITCH (NORMALLY CLOSED)
FP	FEEDER POLE
WR-X	WIRE RUN (NUMBER)
0"	ZERO STAGGER
CWB	CONTACT WIRE BRIDGE
	JUMPER, IN-SPAN
	JUMPER, POTENTIAL EQUALIZING
100'	OCS SPAN LENGTH
SI	SECTION INSULATOR
WR-X XXX	CONTACT WIRE TERMINATION WITH WIRE NUMBER CALLOUT (X) AND WIRE RUN LENGTH (XXX)
TPSS # XX	TRACTION POWER SUBSTATION
	PASSENGER STATION
GENERAL ARRANGEMENT XXXXX XXXXX XXXXX SEE DWG. YXXXX	WIRING REFERENCE DRAWING CALLOUT

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
TECHNICAL SHEET
STANDARD SYMBOLS

J002

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1085

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FILE: X:\El Paso, 2012\CADD\TYPICALS\Technical Sheets\J002 - Standard Symbols and Structural Notes.dgn

DN: URS CK: URS DW: URS CK: URS

OVERHEAD CONDUCTOR PROPERTIES		
DESIGN ITEM	UNITS	CONTACT WIRE
MAKE UP OF CONDUCTOR	-	350 KCMIL GROOVED
MATERIAL	-	HARD DRAWN COPPER
DIAMETER	IN	0.620
CROSS SECTIONAL AREA	SQ. IN	0.276
WEIGHT OF CONDUCTOR	LB/FT	1.063
RADIAL THICKNESS OF ICE	IN	0.250
WEIGHT OF ICE	LB/FT	0.262
WEIGHT OF CONDUCTOR WITH ICE	LB/FT	1.325
BREAKING STRENGTH OF CONDUCTOR	LB/FT	11810
MODULUS OF ELASTICITY OF CONDUCTOR	PSI	17×10^{6}
COEFFICIENT OF THERMAL EXPANSION OF CONDUCTOR	PER DEG F	9.4×10^{-6}

NOTES:

1. FOR ABBREVIATIONS AND GENERAL NOTES, SEE OVERHEAD CONTACT SYSTEM TECHNICAL SHEETS.
2. FOR SYMBOLS SEE OVERHEAD CONTACT SYSTEM TECHNICAL SHEETS.
3. ICE CONDITION IS WITH ONE QUARTER INCH RADIAL ICE THICKNESS ON CONTACT WIRE.
4. OPERATING AND NON-OPERATING CONDITIONS MUST BE COMPARED TO DETERMINE WORST POSSIBLE LOAD COMBINATION FOR STRUCTURAL AND OCS COMPONENT DESIGN CONSIDERATION.
5. IT IS ASSUMED THAT 40 MPH IS THE MAXIMUM WIND SPEED WHERE ICE ON THE CONDUCTORS IS STILL CAPABLE OF ADHERING. IN EXCESS OF 40 MPH WIND SPEED ALL ICE ON THE CONDUCTORS IS CONSIDERED TO BE BLOWN AWAY.
6. THE EQUIVALENT SPAN LENGTH USED IN DETERMINING TENSIONS IN THE FIXED TERMINATION CONDITION FOR CONTACT WIRE IS 80 FEET.
7. NORMAL CONDITIONS ARE CONSIDERED TO BE 60 DEGREES FAHRENHEIT WITH A CONTACT WIRE TENSION OF 3500 POUNDS.
8. MAXIMUM MAINLINE STAGGER SHALL NOT EXCEED 9 INCHES PLUS CONSTRUCTION TOLERANCES OUTLINED IN THE SPECIFICATIONS. MAXIMUM SHOP/YARD STAGGER SHALL NOT EXCEED 12 INCHES PLUS CONSTRUCTION TOLERANCES OUTLINED IN THE SPECIFICATIONS.

LOADING CONDITIONS					
OPERATING CONDITIONS	TEMP (DEG)	WIND (MPH)	RADIAL ICE (IN)	TENSION CW (LB)	BLOW-OFF (IN)
OC - 1	60	0	0	3500	0.0
OC - 2	120	55	0	1516	4.0
OC - 3	-20	40	0	6931	0.5
OC - 4	32	40	0.25	4728	1.2
OC - 5	32	0	0.25	4718	0.0
OC - 6	120	0	0	1467	0.0
OC - 7	-20	40	0	6930	0.5
NON-OPERATING CONDITIONS					
NOC - 1	-20	40	0.25	6953	N/A
NOC - 2	60	105	0	3705	N/A
NOC - 3	60	116	0	3794	N/A

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COEP STREETCAR

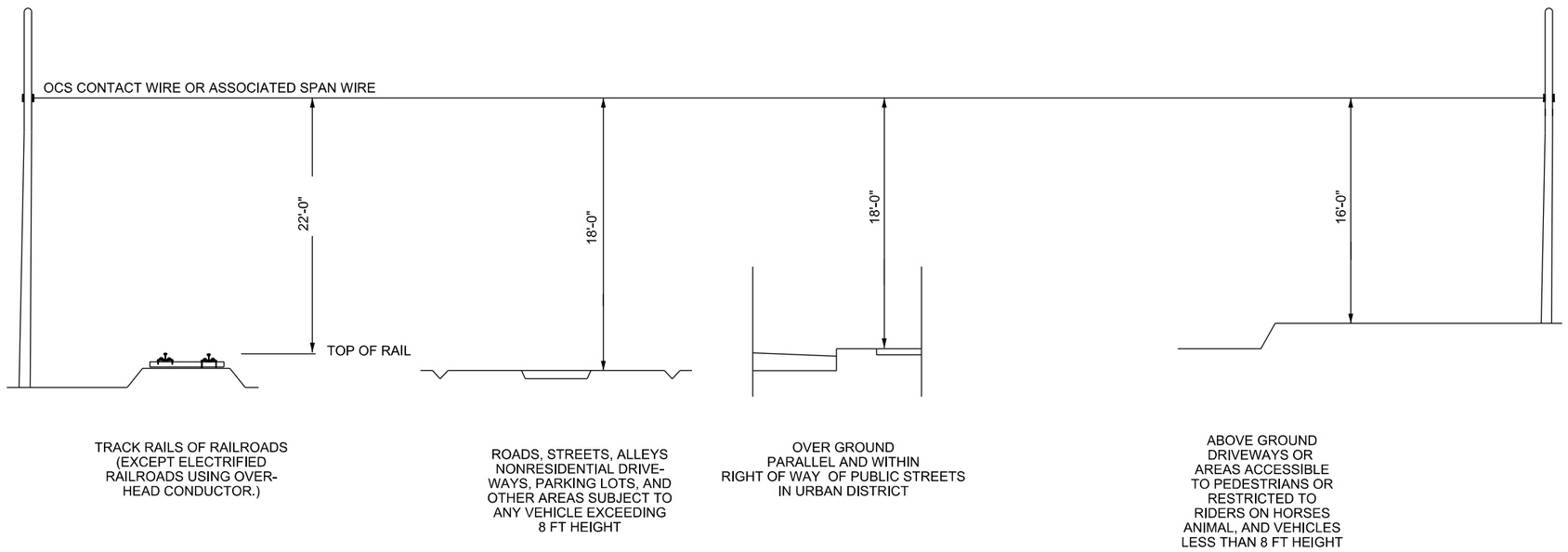
OVERHEAD CONTACT SYSTEM
TECHNICAL SHEET
CONDUCTOR PARTICULARS

J003

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1086

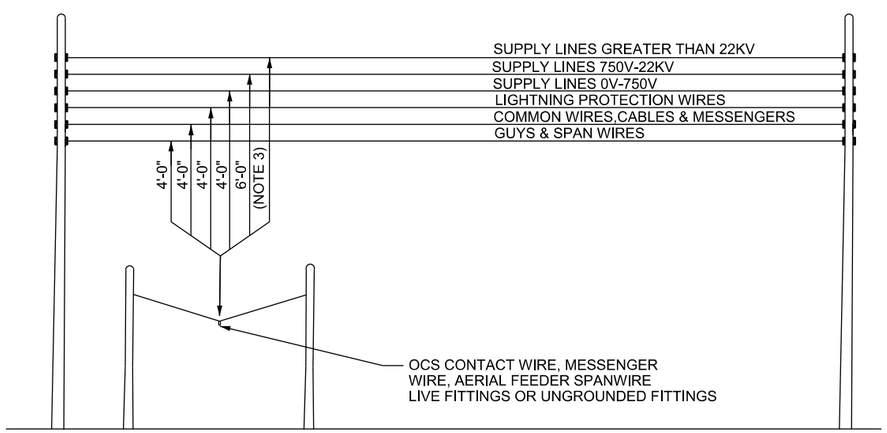
DN: URS CK: URS DN: URS CK: URS

DATE: 5/31/2013 3:07:53 PM
FILE: X:\El Paso. 2012\CADD\TYPICALS\Technical Sheets\J003 - Conductor Particulars.dgn



MINIMUM OCS WIRE CLEARANCES ABOVE GROUND OR RAILS

SEE NOTE 2



NON-OCS WIRE CROSSING CLEARANCES TO OCS WIRES AND EQUIPMENT

SEE NOTE 4

NOTES:

1. ALL CLEARANCES ARE MINIMUM.
2. VERTICAL CLEARANCES APPLY UNDER ALL WEATHER CONDITIONS:
   - A. CONDUCTOR TEMPERATURE RANGE OF -20° TO 120° F, NO WIND, WITH FINAL UNLOADED SAG IN THE WIRE.
   - B. SINGLE CONTACT WIRE SPAN LENGTHS NOT GREATER THAN 110 FT.
3. FOR VOLTAGES EXCEEDING 22KV (UP TO 470KV) THE CLEARANCE SHALL BE INCREASED BY 0.4 INCHES FOR EACH 1KV, OR FRACTION THEREOF.
4. VERTICAL CLEARANCES TO NON-OCS CONDUCTORS APPLY UNDER THE FOLLOWING CONDITIONS WHICHEVER PRODUCES THE LARGEST SAG IN THE CONDUCTOR:
   - A. CONDUCTOR SAG AT 120° F NO WIND DISPLACEMENT, OR
   - B. MAXIMUM CONDUCTOR DESIGNED OPERATING TEMPERATURE IF GREATER THAN 120° F, OR
   - C. 32° F WITH RADIAL ICE OF 0.25 INCHES
5. ALL ELECTRICAL CLEARANCES SHALL COMPLY WITH NATIONAL ELECTRICAL SAFETY CODE. AT LOCATIONS WHERE THERE ARE DISCREPANCIES BETWEEN NESC ICE THICKNESS VALUES FOR CLEARANCE AND STRUCTURAL LOADS, THE MORE CONSERVATIVE VALUE FOR THE APPLICATION SHALL BE USED.
6. NON-OCS EQUIPMENT SHALL NOT BE WITHIN 10 FEET OF OCS EQUIPMENT. NO GROUNDED ITEM SHALL BE WITHIN 4 FEET OF THE OCS WITHOUT ELECTRICAL SHEETING PER SPECIFICATION.

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
TECHNICAL SHEET
VERTICAL ELECTRICAL CLEARANCE REQUIREMENTS

J004

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1087

DN: URS CK: URS DW: URS CK: URS

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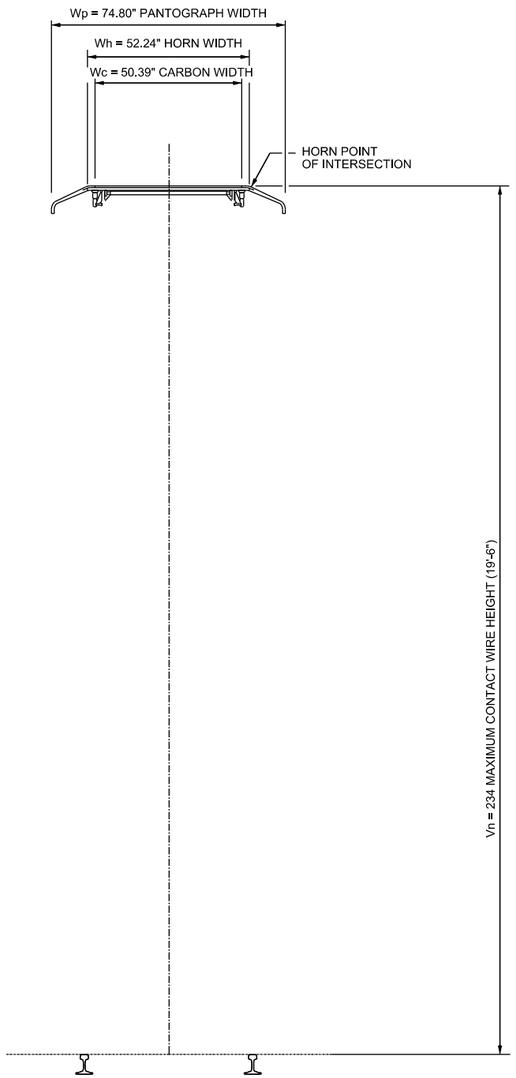
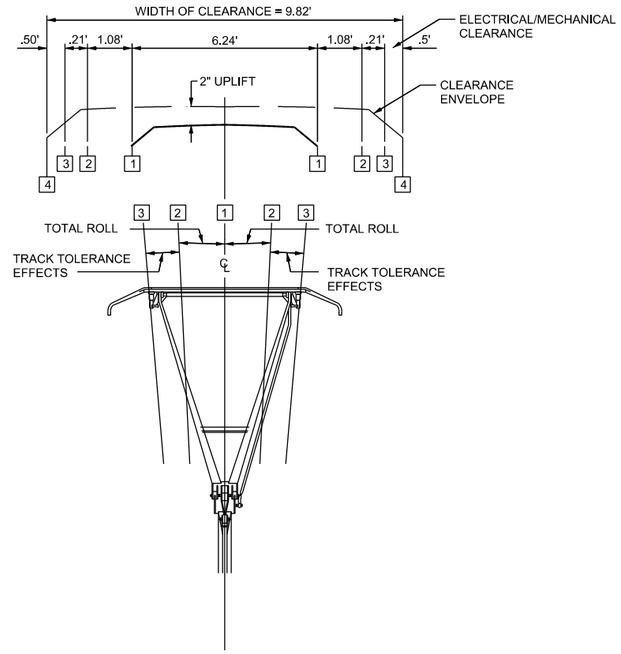
PAN HEAD PLAN



CONTACT WIRE OPERATING HEIGHTS



SELECTED MAIN LINE TRACK PARAMETERS FOR CLEARANCE ENVELOPE		
DESCRIPTION	IN	FT
GAUGE	56.50	4.71
HORIZONTAL ALIGNMENT TOLERANCE	0.50	.04
CROSS LEVEL TOLERANCE	0.50	.04
RAIL CENTERS	59.22	4.94

VEHICLE PARAMETERS		
DESCRIPTION	IN.	FT.
TRUCK ROLL CENTER HEIGHT	25.15	2.10
LATERAL SHIFT AT TRUCK ROLL CENTER	2.00	0.17
MAXIMUM VEHICLE REPETITIVE ROLL ANGLE	3 DEGREES	

PANTOGRAPH PARAMETERS		
DESCRIPTION	IN	FT
OVERALL WIDTH OVER HORNS	74.80	6.23
PANTOGRAPH ROLL AT ALL HEIGHTS	2.00	0.17
PANTOGRAPH UPLIFT ALLOWANCE	2.00	0.17
MAXIMUM PANTOGRAPH OPERATING HEIGHT	234.00	19.50
MINIMUM PANTOGRAPH OPERATING HEIGHT	156.00	13.00

OVERHEAD CONTACT SYSTEM PARAMETERS		
DESCRIPTION	IN	FT
MAXIMUM CONTACT WIRE HEIGHT FOR DESIGN	234.00	19.50
CONTACT WIRE UPLIFT ALLOWANCE	2.00	0.17

CLEARANCE ENVELOPE DETAILS:

WORST CASE CONDITIONS ARE WITH FULL VEHICLE ROLL WITHOUT WIND AT 19'6":

HALF WIDTH OF PANTOGRAPH: TO [1] IN DIAGRAM = 6.23 FT /2 = 3.12 FT

FULL ROLL OF VEHICLE = 3.00 DEGREES EACH SIDE OF CENTERLINE

FULL ROLL

OPERATING HEIGHT	MAX =	19.50 FT		
TOP OF RAIL TO CENTER OF ROLL	=	2.10 FT	(-)	
TOP OF PANTOGRAPH TO CENTER OF ROLL		17.40 FT		
FULL ROLL = 17.40 TAN (3.00)	=	10.94 IN		
ROLL OF PANTOGRAPH	=	2.00 IN	(+)	
		12.94 IN		
TOTAL ROLL, [1] TO [2]	=	12.94 IN	=	1.08 FT
TRACK ALIGNMENT:				
TRACK ALLOWANCES ALIGNMENT	=	0.50 IN		
CROSS LEVEL EFFECTS	=	1.98 IN	(+)	
		2.48 IN		
TOTAL TRACK TOLERANCE EFFECTS, [2] TO [3]		2.48 IN	=	0.21 FT
ELECTRICAL/MECHANICAL CLEARANCE ALLOWANCE [3] TO [4]		6.00 IN	=	0.50 FT
REQUIRED CLEARANCE ENVELOPE (ONE HALF)			=	4.91 FT
REQUIRED CLEARANCE ENVELOPE (TOTAL)			=	9.82 FT

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
TECHNICAL SHEET
UNIVERSAL PANTOGRAPH
CLEARANCE ENVELOPE

J005

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1088

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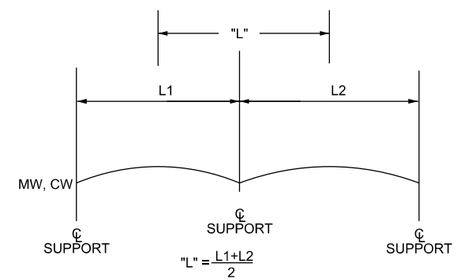
VERTICAL AND WIND LOADS													
	VERTICAL LOAD (LB)		WIND LOAD (LB) - (NOTE 5)										
			PARAMETER	OC - 1	OC - 2	OC - 3	OC - 4	OC - 5	OC - 6	OC - 7	NOC - 1	NOC - 2	NOC - 3
SPAN "L"	1.063	1.325	WIND SPEED (MPH)	0	55	40	40	0	0	40	40	105	116
(FT)	W/O ICE	W/ 1/4" ICE	RADIAL ICE (IN)	0	0	0	0.25	0.25	0	0	0.25	0	0
30	32	40		0	12	6	11	0	0	6	12	44	53
35	37	46		0	14	7	13	0	0	7	14	51	62
40	43	53		0	16	8	15	0	0	8	16	58	71
45	48	60		0	18	10	17	0	0	10	18	66	80
50	53	66		0	20	11	19	0	0	11	20	73	89
55	58	73		0	22	12	21	0	0	12	22	80	98
60	64	80		0	24	13	23	0	0	13	24	87	107
65	69	86		0	26	14	25	0	0	14	26	95	116
70	74	93		0	28	15	27	0	0	15	28	102	125
75	80	99		0	30	16	29	0	0	16	30	109	133
80	85	106		0	32	17	31	0	0	17	33	117	142
85	90	113		0	34	18	32	0	0	18	35	124	151
90	96	119		0	36	19	34	0	0	19	37	131	160
95	101	126		0	38	20	36	0	0	20	39	139	169
100	106	133		0	40	21	38	0	0	21	41	146	178
105	112	139		0	42	22	40	0	0	22	43	153	187
110	117	146		0	44	23	42	0	0	23	45	160	196
115	122	152		0	46	24	44	0	0	24	47	168	205
120	128	159		0	48	25	46	0	0	25	49	175	214

NOTES:

1. ALL OPERATING AND NON–OPERATING CONDITIONS ARE DEFINED ON OVERHEAD CONTACT SYSTEM TECHNICAL SHEET CONDUCTOR PARTICULARS.
2. TANGENT TRACK RADIAL LOADS ASSUME A 9" STAGGER AT EACH END OF THE SPAN.
3. FOR MAXIMUM TENSIONS IN CONDUCTORS SEE OVERHEAD CONTACT SYSTEM TECHNICAL SHEET CONDUCTOR PARTICULARS.
4. OCS EQUIPMENT SHALL BE DESIGNED OR SELECTED TO HAVE MAXIMUM LOADS THAT EXCEED LOADS FOR THE CONDITIONS SHOWN.

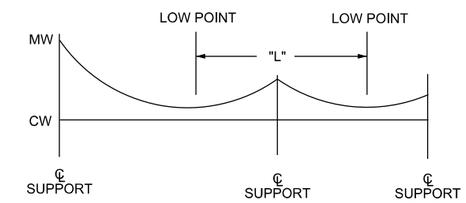
RADIAL LOADS - TANGENT TRACK		
	OPERATING	NON-OPERATING
	TENSION (NORMAL)	TENSION (MAXIMUM)
SPAN "L"	CW	CW
(FT)	3500	6953
30	350	695
35	300	596
40	263	521
45	233	464
50	210	417
55	191	379
60	175	348
65	162	321
70	150	298
75	140	278
80	131	261
85	124	245
90	117	232
95	111	220
100	105	209
105	100	199
110	95	190
115	91	181
120	88	174

RADIAL LOADS BY ANGLE		
	OPERATING	NON-OPERATING
	TENSION (NORMAL)	TENSION (MAXIMUM)
ANGLE "A"	CW	CW
DEGREES	3500	6953
1	61	121
2	122	243
3	183	364
4	244	485
5	305	607
6	366	728
7	427	849
8	488	970
9	549	1091
10	610	1212
11	671	1333
12	732	1454
13	792	1574
14	853	1695



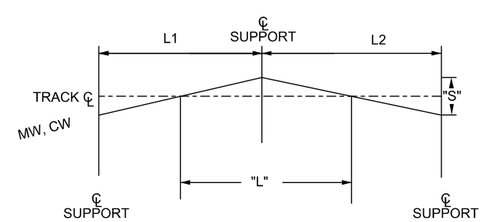
$$"L" = \frac{L1+L2}{2}$$

PLAN
WIND LOAD



"L" = SUM OF THE DISTANCE TO THE LOW POINT OF THE MESSENGER ON BOTH SIDES OF CENTER SUPPORT.

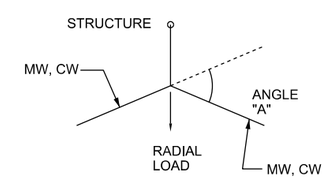
ELEVATION
VERTICAL LOAD



$$\text{RADIAL LOAD} = \frac{4\ T\ S}{L}$$

"T" = TENSION IN CONDUCTOR
"S" = STAGGER (FT)

PLAN AT SUPPORT
RADIAL LOAD - TANGENT TRACK



$$\text{RADIAL LOAD} = T * \sin\left(\frac{A}{2}\right) X\ 2$$

PLAN AT SUPPORT
RADIAL LOAD BY ANGLE

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OVERHEAD CONTACT SYSTEM
TECHNICAL SHEET
VERTICAL, WIND AND RADIAL LOADS

J006

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1089

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INSERT COLOR PHOTO OF STRUCTURE HERE

ITEM	DIMENSIONAL DATA H = HEIGHT ABOVE TOP OF RAIL O = OFFSET: DESIGN NOTE 1	AS - BUILT	ASSEMBLY DATA: DESCRIPTION	ALLOCATED: WIRE RUN (RULE 2)	ALLOCATED: WIRE RUN (RULE 2)	AS-BUILT: WIRE RUN (RULE 2)	AS-BUILT: WIRE RUN (RULE 2)
1	O =	O =	FOUNDATION (NOTE 4) OFFSET				
2	O =	O =	TIE FOUNDATION (NOTE 4) OFFSET				
3	O =	O =	POLE ASSEMBLY				
4	H =	H =	ANCHOR BRACKET HEIGHT(1)				
5	H =	H =	ANCHOR BRACKET HEIGHT(2)				
7	H =	H =	CW FIXED TERMINATION HEIGHT				
8	H =	H =	BALANCE WEIGHT TERMINATION HEIGHT				
9	H =	H =	BACKBONE BRACKET HEIGHT				
10	H =	H =	CONTACT WIRE HEIGHT				
12	FT IN	FT IN	SYSTEM HEIGHT				
13	H =	H =	CONTACT WIRE HEIGHT (OOR)				
15	FT IN	FT IN	OOR SYSTEM HEIGHT				
16	IN	IN	STAGGER RIGHT/LEFT (R/L)				
17	IN	IN	HEEL SETTING ABOVE CW LEVEL				
18	IN	IN	STAGGER (OOR)				
19	FT	FT	SPAN AHEAD LENGTH TO NEAREST FOOT (NOTE 3)				
20	H =	H =	MIDSPAN C.W. HEIGHT (NOTE 3)				
21	IN	IN	MIDSPAN OFFSET R/L (NOTE 3)				
22	IN	IN	TRACK SUPER ELEVATION (NOTE 2)				
23	H =	H =	TOP OF FOUNDATION ABOVE RAIL (RULE 4)				
27							
28			DOWN GUY ASSEMBLY				
29			CONDUIT RISER ASSEMBLY				
30			CANTILEVER (CA) ASSEMBLY				
31			PULLOFF (POP) ASSEMBLY				
32			POLE BRACKET ASSEMBLY				
33			SURGE ARRESTER ASSEMBLY				
34			DISCONNECT SWITCH ASSEMBLY				
35			MIDPOINT SPAN GUY ASSEMBLY				
36			JUMPER ASSEMBLY				
37			FEEDER JUMPER CONNECTION ASSEMBLY				
38			BRIDLE PULLOFF ASSEMBLY				
39			SECTION INSULATOR ASSEMBLY				
40			IN SPAN JUMPER ASSEMBLY				
42			CONTACT WIRE BRIDGE ASSEMBLY				
43			IN SPAN INSULATOR ASSEMBLY				
44			STATIONING LABEL ASSEMBLY				
45			FIXED TERMINATION ASSEMBLY				
47			ANCHOR BRACKET ASSEMBLY				
48			TWIN CANTILEVER BRACKET ASSEMBLY				
49							
50							

APPLICATION RULES

1. DRAWING NUMBER TO BE INSERTED BY CONTRACTOR.
2. INSERT APPLICABLE WIRE RUN NUMBER.
3. ONE AS-BUILT STRUCTURE RECORD DRAWING IS REQUIRED FOR EACH POLE OR OCS SUPPORT LOCATION.
4. STATE 'BELOW' WITH VALUE IF APPROPRIATE.

NOTES:

1. ALLOCATED DATA TAKEN FROM WIRING LAYOUT XXXX (RULE 1).
2. SUPER ELEVATIONS: " + " TRACK SLOPES AWAY FROM POLE " - " TRACK SLOPES TOWARDS POLE".
3. IN SPAN DATA IS FOR SPAN AHEAD VIEWED IN DIRECTION OF INCREASING STATIONING.
4. FOUNDATION AS-BUILT ASSEMBLY REFERENCES SHALL BE RECORDED ON AS-BUILT FOUNDATION SCHEDULES.
5. FOR OCS ITEMS NOT INSTALLED, OR NOT APPLICABLE TO PROJECT CONTRACTOR SHALL INSERT "N/A" INTO TABLE.

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
TECHNICAL SHEET
AS-BUILT STRUCTURE RECORD
POLE NO. XXXX DRAWING

J007

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1090

DN: URS CK: URS DW: URS CK: URS

DATE: 5/31/2013 3:10:28 PM
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CONTACT WIRE SAG (IN)													
ACTUAL SPAN LENGTH (FT)	EQUIVALENT SPAN LENGTH - 80 FT TEMPERATURE - DEGREES F												
	0	10	20	30	40	50	60	70	80	90	100	110	120
20	0.11	0.11	0.12	0.13	0.15	0.16	0.18	0.21	0.24	0.27	0.32	0.38	0.45
25	0.16	0.18	0.19	0.21	0.23	0.25	0.28	0.32	0.37	0.43	0.50	0.59	0.70
30	0.24	0.25	0.28	0.30	0.33	0.37	0.41	0.46	0.53	0.62	0.72	0.85	1.00
35	0.32	0.35	0.38	0.41	0.45	0.50	0.56	0.63	0.72	0.84	0.99	1.16	1.36
40	0.42	0.45	0.49	0.53	0.59	0.65	0.73	0.83	0.95	1.10	1.29	1.52	1.78
45	0.53	0.57	0.62	0.68	0.74	0.82	0.92	1.04	1.20	1.39	1.63	1.92	2.26
50	0.66	0.71	0.77	0.84	0.92	1.02	1.14	1.29	1.48	1.72	2.01	2.37	2.79
55	0.79	0.86	0.93	1.01	1.11	1.23	1.38	1.56	1.79	2.08	2.43	2.87	3.37
60	0.95	1.02	1.10	1.20	1.32	1.47	1.64	1.86	2.13	2.47	2.90	3.41	4.01
65	1.11	1.20	1.30	1.41	1.55	1.72	1.92	2.18	2.50	2.90	3.40	4.01	4.71
70	1.29	1.39	1.50	1.64	1.80	1.99	2.23	2.53	2.90	3.36	3.94	4.65	5.46
75	1.48	1.59	1.72	1.88	2.07	2.29	2.56	2.90	3.32	3.86	4.53	5.34	6.27
80	1.68	1.81	1.96	2.14	2.35	2.60	2.92	3.30	3.78	4.39	5.15	6.07	7.13
85	1.90	2.05	2.22	2.42	2.65	2.94	3.29	3.73	4.27	4.96	5.81	6.85	8.05
90	2.13	2.29	2.48	2.71	2.97	3.30	3.69	4.18	4.79	5.56	6.52	7.68	9.03
95	2.37	2.55	2.77	3.02	3.31	3.67	4.11	4.65	5.33	6.19	7.26	8.56	10.06
100	2.63	2.83	3.07	3.34	3.67	4.07	4.56	5.16	5.91	6.86	8.04	9.49	11.14
105	2.90	3.12	3.38	3.69	4.05	4.49	5.02	5.69	6.52	7.56	8.87	10.46	12.28
110	3.18	3.43	3.71	4.05	4.44	4.92	5.51	6.24	7.15	8.30	9.73	11.48	13.48

INSTALLATION TENSIONS (LB)		
EQUIVALENT SPAN LENGTH - 80 FEET		
INSTALLATION TEMPERATURE (DEG F)	0	6068
	10	5633
	20	5200
	30	4769
	40	4342
	50	3918
	60	3500
	70	3092
	80	2698
	90	2324
	100	1982
	110	1681
	120	1431

NOTES:

1. THE EQUIVALENT SPAN FOR THE SINGLE CONTACT WIRE SYSTEM IS DETERMINED BY THE FOLLOWING FORMULA:

$$\sqrt{\frac{L_1^3 + L_2^3 + L_3^3 + - - - - L_N^3}{L_1 + L_2 + L_3 + - - - - L_N}}$$

WHERE L_1, L_2, L_3, L_N ARE THE LENGTHS OF THE INDIVIDUAL SPANS IN EACH FULL TENSION LENGTH (ANCHOR TO ANCHOR).

NO.	DATE	REVISION	APPROVED
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	/ /		

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

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2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
TECHNICAL SHEET
INSTALLATION TENSIONS AND
CONDUCTOR SAG

J009

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1091

DN: URS CK: URS DW: URS CK: URS

DATE: 5/31/2013 3:11:21 PM
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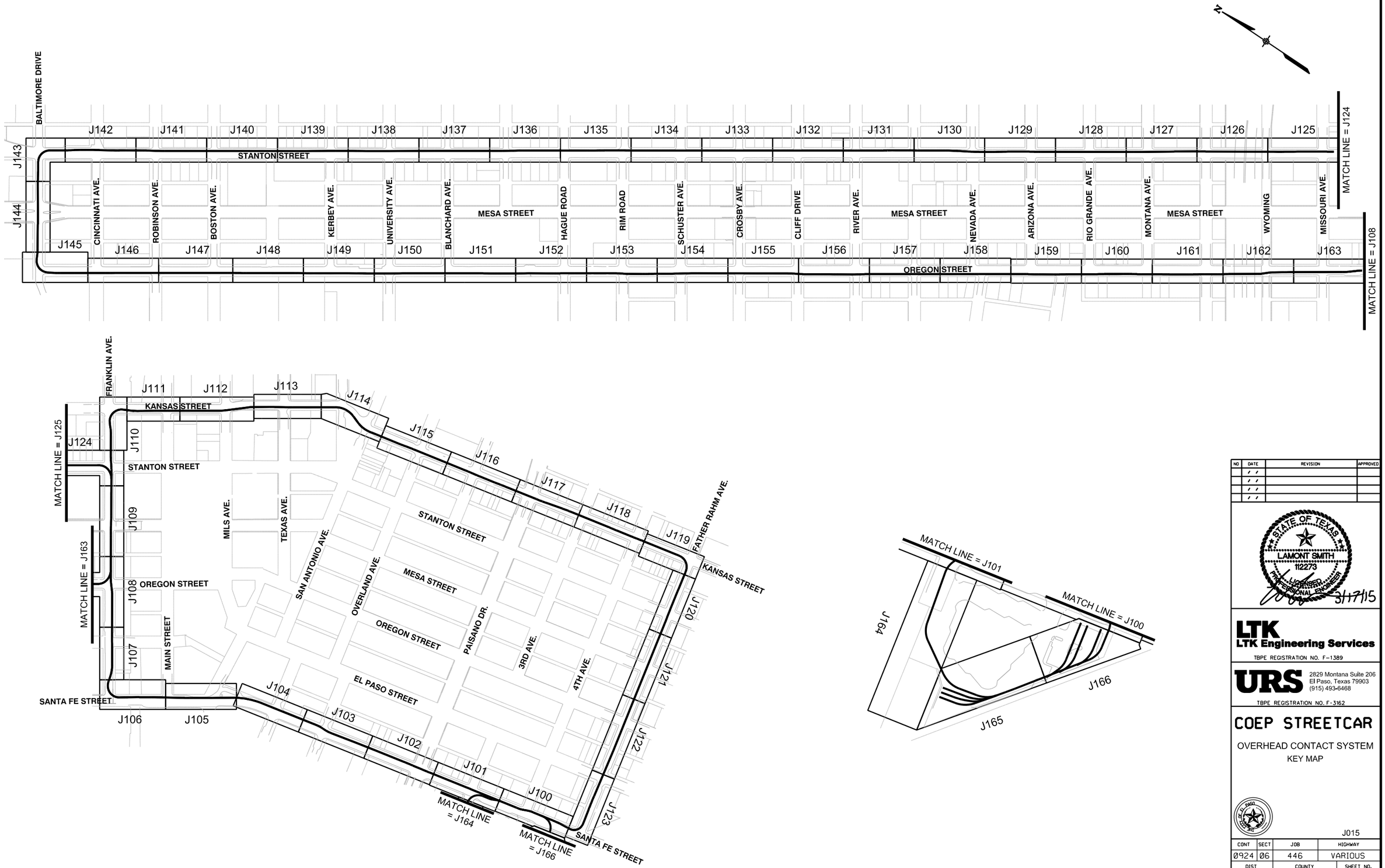

DATE: 3/17/2015 2:29:36 PM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J015.dgn

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
3/17/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

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2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
KEY MAP

J015

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1092

STATION	510+78	510+87	104+39	9+97		511+57	10+39	10+94	11+08	11+66	11+75	12+54	13+31	500+41	500+66	13+92	14+36	501+68	15+04	501+90	15+97	16+89	17+40	17+45	18+26	18+35	19+24	20+16
POLE TYPE	P3-28	P3-28	P4-28	P4-28-L		P3-28	P3-28	P4-28-L	P2O-28	P2O-28	P4-28	P4-28	P2O-28-L	P3-28	P2O-28	P3-28	P3-28	P3-28	P4-30	P4-28	P2O-30	P2O-30	P2O-30	P2O-28	P2O-28	P2O-30	P1O-30	P1O-30-L
OFFSET	32.26	30.36	7.07	7.8		64.43	8.25	6.33	21.17	28.01	57.58	17.2	16.93	45.49	40.95	17.59	18.47	42.14	18.28	33.86	17.56	17.68	55.8	28.73	31.91	44.4	17.55	17.87
OFFSET DIRECTION	L	R	R	R		L	R	R	R	R	L	R	R	L	L	R	R	L	R	R	R	R	L	R	R	L	R	R
FOUNDATION TYPE	A	A	A	B		A	A	B	A	A	A	B	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B
FOUNDATION DEPTH (FT)	16	16	20	20		16	16	20	12	12	20	20	12	16	12	16	16	16	20	20	12	12	12	12	12	12	11	11
NORTHING	10654159.44	10654103.03	10654127.41	10654165.59		10654192.83	10654207.79	10654261.17	10654279.22	10654337.6	10654320.21	10654417.11	10654482.89	10654471.32	10654504.63	10654552.48	10654595.79	10654562.29	10654662.34	10654640.06	10654753.14	10654843.36	10654878.53	10654899.86	10654979.7	10654974.22	10655073.96	10655164.03
EASTING	384244.44	384272.61	384324.28	384317.5		384237.35	384309.47	384296.79	384308.02	384292.89	384208.56	384264.09	384250.2	384182.47	384175.58	384236.48	384228.41	384152.68	384214.38	384153.24	384194.59	384175.78	384093.33	384175.24	384163.02	384086.37	384128.96	384110.27
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01		GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS																												
OCS WIRING LAYOUT REF.	J100												J101										J102					

STATION	21+11	21+14	21+94A	21+94B	22+78	22+79	23+29	23+31	24+08	25+01	25+96	26+91	27+86	28+53	29+06	29+76	30+56	31+48	32+41	33+25	34+03	34+98	35+67	35+66	35+98
POLE TYPE	P2O-28	P2O-28	P2O-28	P2O-28	P2O-28	P2O-28	P3O-28	P2O-28	P4-28	P3-28	P3-28	P4-28	P1O-28	P1O-28	P1O-28	P1O-28-L	P1O-28	P1O-28-L	P1O-28	P1O-28-T	P1O-28-L	P1O-28		P2O-28	P2O-28
OFFSET	18.29	38.72	38.09	18.44	18.84	38.27	38.34	18.32	7.62	6.33	7.26	11.26	8.01	8.39	6.79	6.25	10.47	7.5	7.5	14.26	7.56	13.51		7.08	14.81
OFFSET DIRECTION	R	L	L	R	R	L	L	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	L	R	R
FOUNDATION TYPE	A	A	A	A	A	A	A	A	A	B	B	A	A	A	A	B	A	B	A	B	B	A		A	A
FOUNDATION DEPTH (FT)	12	12	12	12	12	12	16	12	20	16	16	20	11	11	11	11	11	11	11	11	11	11		12	12
NORTHING	10655257.04	10655247.22	10655325.91	10655337.59	10655420.2	10655408.41	10655457.99	10655471.05	10655545.42	10655636.21	10655729.36	10655823.26	10655915.9	10655980	10656026.27	10656084.67	10656152.56	10656227.19	10656304.77	10656379.96	10656441.16	10656523.9		10656578.21	10656602.86
EASTING	384090.88	384034.68	384017.88	384073.19	384055.1	383999.22	383988.11	384043.28	384027.44	384007.18	383988.31	383972.58	383948.4	383924.39	383896.9	383856.92	383815.36	383761.72	383711.47	383671.5	383623.68	383575.59		383534.24	383533.38
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01		GR-01	GR-01
REMARKS																							NOTE 6		
OCS WIRING LAYOUT REF.	J103					J104									J105					J106					

STATION	36+06	36+28	36+35	36+77	36+89	37+37	37+84	38+80	39+55	40+34	41+21	42+01	42+13	358+52	358+34	42+73	358+30	358+91	43+18A	43+18B	43+91	44+64	45+35	46+22	46+82
POLE TYPE		P2O-28	P3-28	P3-28	P2O-28	P1O-28	P1O-28	P1O-28	P1O-28	P1O-28-L	P1O-28	P1O-28	P4-30	P3-28	P3-28	P3-28	P2-28	P3-28	P3-28	P3-28	P2O-28	P2O-28	P2O-28-L	P2O-28	P2O-28
OFFSET		23.14	28.02	35.74	21.76	12.03	8.41	9.12	10.34	10.19	9.96	10.44	27.78	27.65	24.8	26.44	27.89	31.26	36.8	16	16.04	15.91	15.72	11.42	11.08
OFFSET DIRECTION	L	R	L	L	R	R	R	R	R	R	R	R	R	R	R	R	L	L	L	R	R	R	R	R	R
FOUNDATION TYPE		A	A	A	A	B	A	A	A	B	B	A	A	A	A	A	A	A	A	A	A	A	B	A	A
FOUNDATION DEPTH (FT)		12	16	16	12	11	11	11	11	11	11	11	20	16	16	16	12	16	16	16	12	12	12	12	12
NORTHING		10656617.6	10656652.86	10656691.4	10656642.54	10656669.56	10656697.34	10656748.93	10656790.71	10656834.4	10656883.03	10656927.9	10656922.53	10656989.58	10657014.53	10656959.31	10657043.9	10657023.49	10657036.84	10656992.96	10657034.61	10657074.15	10657113.65	10657164.47	10657197.67
EASTING		383544.1	383505.72	383547.62	383580.26	383621.05	383662.12	383740.6	383802.9	383868.36	383941.1	384008.51	384029.4	383986.55	383970.2	384072.31	384013.95	384045.37	384074.37	384103.75	384166.05	384224.91	384283.8	384354.55	384404.44
POLE GROUND ASSY.		GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS	NOTE 6																								
OCS WIRING LAYOUT REF.		J106				J107				J108												J109			

STATION	47+36	50+30	51+13	51+14	51+80	51+85	52+24	52+27	52+47	52+98	53+05	53+78	53+79	54+71	54+72	55+73A	55+73B	56+61A	56+61B	57+40	57+42	58+19	58+23	58+97	59+88
POLE TYPE	P2O-28-L	P2O-28-L	P3-28	P2O-28	P3-28	P2O-28-L	P4-28	P2O-28-T	P3-28	P3-28	P2-28	P2-28	P2-28	P2O-28-L	P2-28	P2-28	P2-28	P2-28	P2-28	P2-28	P2-28	P2-28	P2-28	P1-28-T	P1-28
OFFSET	6.5	15.73	36.29	16.6	33.62	20.75	89.35	14.25	37.42	35.08	18.54	14.14	39.73	37.53	15.92	37.71	16.07	37.91	15.73	38.11	15.79	45.04	15.7	8.16	14.33
OFFSET DIRECTION	R	R	L	R	L	R	L	R	L	L	R	R	L	L	R	L	R	L	R	L	R	L	R	R	R
FOUNDATION TYPE	B	B	A	A	A	B	A	B	A	A	A	A	A	B	A	A	A	A	A	A	A	A	A	B	A
FOUNDATION DEPTH (FT)	12	12	16	12	16	12	20	12	16	16	12	12	12	12	12	12	12	12	12	12	12	12	12	11	11
NORTHING	10657231.11	10657389.24	10657477.53	10657436.85	10657520.96	10657471.13	10657576.04	10657476.46	10657510.41	10657454.43	10657424.33	10657361.24	10657391.43	10657314.58	10657282.08	10657229.88	10657199.87	10657090.95	10657059.53	10657029.25	10656991.84	10657029.25	10656991.84	10656937.09	10656865.72
EASTING	384446.96	384695.25	384732.68	384766.48	384796.32	384818.53	384878.51	384849.61	384894.13	384931.62	384886.69	384928.64	384973.26	385024.04	384981.54	385081.31	385036.68	385174.46	385130.63	385223.98	385175.99	385223.98	385175.99	385230.2	385284.41
POLE GROUND ASSY.	GR-01	GR-03 (2)	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-03	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS		NOTE 1&4																		NOTE 1&4					
OCS WIRING LAYOUT REF.	J109	J110								J111								J112							

STATION		60+53	61+50	62+41	63+07	64+02	64+86A	64+86B	65+29	65+78	65+80	66+63	66+84	67+48	68+25	69+23	69+99A	69+99B	70+82	71+70	72+41	73+24	74+02	74+96
POLE TYPE		P1-28	P2-28	P1-28	P1-28	P1-28	P3-28	P2-28	P3-28	P2-28	P3-28	P3-28	P3-28	P3-28	P1-28	P1-28	P2-28	P2-28	P4-28	P3-28-F	P3-28-F	P4-28	P1-28	P1-30
OFFSET		16.41	8.75	7.26	7.97	7.84	49.27	7.62	42.42	7.73	35.1	8.4	24.68	13.62	6.54	14.17	42.19	28.3	15.62	15.49	15.92	15.54	7.26	14.41
OFFSET DIRECTION		R	R	R	R	R	L	R	L	R	L	R	R	R	R	R	L	R	R	R	R	R	R	R
FOUNDATION TYPE		B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C	C	A	A	A
FOUNDATION DEPTH (FT)		11	12	11	11	11	16	12	16	12	16	16	16	16	11	11	12	12	20	16	16	20	11	11
NORTHING		10656812.96	10656735.1	10656661.15	10656606.07	10656527.12	10656487.57	10656458.03	10656430.7	10656374.46	10656364.18	10656294.73	10656273.89	10656205.8	10656131.2	10656033.8	10655971.7	10655957.17	10655878.99	10655791.84	10655722.85	10655641.14	10655567.06	10655472.6
EASTING		385319.16	385377.83	385430.58	385467.11	385520.36	385615.53	385566.91	385630.96	385582.39	385624.01	385556	385536.26	385553.79	385576.46	385588.99	385660.9	385591.93	385621.09	385638.12	385653.16	385670.48	385693.23	385705.62
POLE GROUND ASSY.		GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-02	GR-01	GR-01	GR-01
REMARKS																								
OCS WIRING LAYOUT REF.		J113				J114									J115						J116			

NOTES:

1. POLE LOCATED OVER BASEMENT, REFER TO SHEET J701.
2. OFFSET DIRECTION IS ORIENTED LOOKING IN INCREASING STATION ON THE MAINLINE TRACK WITH THE APPROPRIATE STATIONING.
3. POLE OFFSET IS FROM CENTERLINE OF TRACK TO CENTERLINE OF FOUNDATION, AT THE CORRESPONDING STATIONING.
4. FOUNDATIONS THAT ARE INSTALLED IN BASEMENTS REQUIRE GR-03 TYPE GROUND ROD ASSEMBLIES. GR-03 ASSEMBLIES SHALL BE INSTALLED TO THE EXTERIOR OF THE FOUNDATION PIER.
5. CONTRACTOR TO VERIFY NORTHING AND EASTING INFORMATION PRIOR TO FOUNDATION INSTALLATION.
6. BUILDING ATTACHMENT INTEGRATED INTO BALLPARK STRUCTURE.
7. POLES SHALL BE LOCATED USING STATION AND OFFSET. NORTHING AND EASTING IS SUPPLIED FOR INFORMATION ONLY. IF THERE IS A DISCREPENCY BETWEEN THE STATION AND OFFSET AND THE NORTHING AND EASTING CONTACT THE ENGINEER.

NO.	DATE	REVISION	APPROVED
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	/ /		
	/ /		

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
7/21/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

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2829 Montana Suite 206
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(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS FOUNDATION SCHEDULE
STA. 510+87 TO STA. 74+96

J090

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1093

DATE: 7/21/2015 10:01:10 AM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\TYPICALS\Technical Sheets\J090 - Foundation Schedule 1 of 4.dgn
DN: URS CK: URS DN: URS CK: URS

STATION	75+92	76+51	77+49	77+58	78+06	79+01A	79+01B	79+84A	79+84B	80+73	80+76	81+60A	81+60B	82+55	83+20	NOT USED	84+06	NOT USED	85+01	85+81A	85+81B	86+36	NOT USED	86+58
POLE TYPE	P1-30	P2-30	P3-30	P2O-28-L	P1-28	P2-28	P2-28	P2-28	P2-28	P2-28	P2-28	P2-28	P2-28	P1O-28-L	P1-28		P1O-28-L		P2-28	P3-28	P2-28	P3-28		P2O-28-L
OFFSET	15.53	15.58	35.69	9.15	10.37	30.12	25.95	29.41	26.98	27.07	26.58	26.61	27.22	7.28	8.86		15.57		15.65	26.81	15.57	33.91		13.06
OFFSET DIRECTION	R	R	L	R	R	L	R	L	R	R	L	L	R	R	R		R		R	L	R	L		R
FOUNDATION TYPE	A	A	A	B	A	A	A	B	A	A	A	A	A	B	A		B		A	A	A	A		B
FOUNDATION DEPTH (FT)	11	12	16	12	11	12	12	12	12	12	12	12	12	11	11		12		12	16	12	16		12
NORTHING	10655379.1	10655321.76	10655236.16	10655217.67	10655170.68	10655088.9	10655074.61	10655005.94	10654994.45	10654909.12	10654915.78	10654833.27	10654822.33	10654732.93	10654668.9		10654583.94		10654490.83	10654421.14	10654412.42	10654358.07		10654345.92
EASTING	385724.94	385736.91	385807.24	385765.35	385775.41	385837.84	385783.61	385855.66	385800.46	385829.97	385871.54	385888.76	385836.05	385874.3	385885.93		385897.59		385916.89	385974.78	385933.3	385989.53		385937.82
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01		GR-01		GR-01	GR-01	GR-01	GR-01		GR-01
REMARKS																								
OCS WIRING LAYOUT REF.	J116	J117								J118						J119								

STATION	86+67	86+93	87+19A	87+19B	NOT USED	87+72	88+86	89+39	NOT USED	90+35	NOT USED	91+07	NOT USED	91+78	92+64	93+61	94+11	95+01	95+86	96+81	97+96	98+71	99+46	100+26
POLE TYPE	P4-28	P3-28	P3-28	P2-28		P2-30	P1-30	P1O-30-L		P2-30		P2-30		P2-30	P1-30	P1-30	P1-30	P1O-30-L	P1O-30-L	P1-30	P1-30	P1O-30-L	P1-30	P1O-30-L
OFFSET	68.07	36.99	28.43	23.58		23.46	7.47	7.47		23.91		23.77		23.85	23.57	23.68	23.88	24.16	23.69	24.05	24.19	22.9	24.33	7.18
OFFSET DIRECTION	L	L	L	R		R	R	R		R		R		R	R	R	R	R	R	R	R	R	R	R
FOUNDATION TYPE	A	A	A	A		A	A	B		A		A		A	A	B	A	B	B	A	A	B	A	B
FOUNDATION DEPTH (FT)	20	16	16	12		12	11	11		12		12		12	11	11	11	11	11	11	11	11	11	11
NORTHING	10654294.84	10654283.64	10654276.7	10654326.91		10654312.31	10654277.87	10654267.2		10654262.88		10654248.09		10654233.64	10654215.86	10654196.15	10654186.13	10654168.14	10654150.53	10654131.38	10654112.48	10654092.67	10654079.35	10654047.34
EASTING	386001.85	385947.68	385910.81	385897.22		385827	385738.08	385685.96		385589.25		385519.02		385449.22	385364.53	385269.77	385220.87	385133.08	385049.89	384956.54	384863.71	384770.89	384697.21	384621.8
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01		GR-01	GR-01	GR-01		GR-01		GR-01		GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS																								
OCS WIRING LAYOUT REF.	J119				J120						J121								J122					J123

STATION	101+15	101+93	102+64	102+77	102+82	103+03	103+09	103+32	103+68A	103+68B	48+31	48+79	200+61	49+44	49+52	201+09	201+43	202+38	203+28A	203+28B	204+27	205+15	206+09
POLE TYPE	P1-30	P1-30	P3-28	P3-28	P2-28	P2-28	P4-28	P3-28	P3-28	P2O-28	P3-28	P4-28	P3-28	P4-30	P4-28-L	P2-28	P2-28	P2-28	P2-28	P2-28	P1-28	P1O-33-L	P1-30
OFFSET	20.21	21	30.96	34.2	18.28	10.85	68.58	44.11	42.83	12.73	13.33	24.43	34.68	16.68	36.78	17.11	16.63	16.2	38.77	18.37	7	14.77	15.79
OFFSET DIRECTION	R	R	L	L	R	R	L	L	L	R	R	R	L	R	L	R	R	R	L	R	R	R	R
FOUNDATION TYPE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	A	A	B	A	A	A	A	A
FOUNDATION DEPTH (FT)	11	11	16	16	12	12	20	16	16	12	16	20	14	20	20	11	11	11	11	11	10	10	10
NORTHING	10654043.16	10654027.51	10653961.39	10653957.41	10654010.29	10654008.75	10653950.01	10654001.65	10654051.33	10654057.84	10657277.8	10657295.08	10657349.44	10657338.7	10657388.81	10657396.7	10657426.8	10657505.63	10657550.33	10657581.96	10657658.47	10657735.25	10657813.69
EASTING	384531.49	384455.22	384394.54	384374.66	384374.27	384358.45	384304.38	384294.1	384283.49	384338.67	384530.1	384576.39	384529.88	384622.47	384600.33	384572.74	384552.95	384500.07	384404.38	384451.97	384388.2	384346.14	384293.27
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-03	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS														NOTE 1&4									
OCS WIRING LAYOUT REF.	J123										J124								J125				

STATION	206+78	207+41	207+44	208+26	208+29	209+25	209+26	210+10A	210+10B	210+86	210+89	211+80	212+22	212+80	213+35	213+37	214+15	214+23	214+84	215+48	216+33	216+49	217+36	217+48	218+26
POLE TYPE	P1O-33-LT	P2-28-T	P2-30	P2-28	P2-30	P2-30	P2-28	P2-30	P2-28	P2-30	P2-28	P1-28-L	P1-28	P1-28	P2-28	P2-28	P2-28-T	P2-28	P1-28	P1-28	P1-28	P1-28	P2-28	P2-28	P1-28
OFFSET	15.29	20.6	43.78	24.21	47.79	44.82	21.29	45.33	21.78	45.64	20.99	6.49	8.75	15.52	37.44	21.16	21.98	36.92	15.56	15.79	15.59	15.53	35.25	22.28	14.69
OFFSET DIRECTION	R	R	L	R	L	L	R	L	R	L	R	R	R	R	L	R	R	L	R	R	R	R	L	R	R
FOUNDATION TYPE	C	B	A	A	A	A	A	A	A	A	A	B	A	A	A	A	B	A	B	A	A	A	A	A	A
FOUNDATION DEPTH (FT)	10	11	11	11	11	11	11	11	11	11	11	10	10	10	11	11	11	11	10	10	10	10	11	11	10
NORTHING	10657870.91	10657925.82	10657892.69	10657998.57	10657960.97	10658043.2	10658080.32	10658113.41	10658150.51	10658177.56	10658216.07	10658283.47	10658319.51	10658371.59	10658386.34	10658421.5	10658486.63	10658459.41	10658539.52	10658592.9	10658663.48	10658693.59	10658728.2	10658762.74	10658823.39
EASTING	384254.42	384224.27	384168.99	384180.22	384118.76	384067.64	384122.35	384020.33	384076.25	383978.04	384032.49	383969.62	383947.82	383920.17	383845.7	383892.63	383848.76	383795.99	383805.3	383769.95	383722.63	383702.46	383618.31	383664.44	383614.84
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS																									
OCS WIRING LAYOUT REF.	J125	J126										J127								J128					

STATION	219+20	220+00	220+86	221+80	222+58	223+26	224+11	224+97	225+79	226+66	227+31	228+26	229+21	229+98	230+76	231+40	232+04	232+99	233+94	234+88	235+74	236+46	237+25	237+95	238+80
POLE TYPE	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P4-28	P3-28-F	P3-28-F	P4-28
OFFSET	14.66	15.11	6.76	13.31	14.78	14.94	13.25	12.37	15.18	17.1	6.79	6.78	8.64	9.41	9.17	8.81	8.44	9.12	8.82	8.49	8.79	8.84	7.97	7.96	8
OFFSET DIRECTION	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
FOUNDATION TYPE	A	A	A	A	A	A	A	A	B	A	A	A	A	A	A	A	A	A	A	A	A	A	C	C	A
FOUNDATION DEPTH (FT)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	17	14	14	17
NORTHING	10658901.39	10658967.75	10659036.42	10659117.61	10659182.52	10659239.17	10659310.06	10659383.03	10659453.91	10659526.6	10659575.86	10659654.92	10659733.93	10659798.49	10659862.92	10659915.83	10659968.75	10660048.07	10660126.86	10660204.79	10660276.4	10660336.23	10660401.64	10660459.8	10660530.46
EASTING	383562.76	383518.19	383464.85	383417.77	383374.43	383336.73	383290.93	383245.71	383201.73	383155.48	383111.92	383059.27	383006.62	382964.4	382920.5	382884.64	382848.78	382796.5	382743.41	382690.85	382643.27	382603.28	382558.46	382519.51	382472.27
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-02	GR-01
REMARKS																									
OCS WIRING LAYOUT REF.	J129					J130					J131					J132					J133				

NOTES:

1. POLE LOCATED OVER BASEMENT, REFER TO SHEET J701.
2. OFFSET DIRECTION IS ORIENTED LOOKING IN INCREASING STATION ON THE MAINLINE TRACK WITH THE APPROPRIATE STATIONING.
3. POLE OFFSET IS FROM CENTERLINE OF TRACK TO CENTERLINE OF FOUNDATION, AT THE CORRESPONDING STATIONING.
4. FOUNDATIONS THAT ARE INSTALLED IN BASEMENTS REQUIRE GR-03 TYPE GROUND ROD ASSEMBLIES. GR-03 ASSEMBLIES SHALL BE INSTALLED TO THE EXTERIOR OF THE FOUNDATION PIER.
5. CONTRACTOR TO VERIFY NORTHING AND EASTING INFORMATION PRIOR TO FOUNDATION INSTALLATION.
6. POLES SHALL BE LOCATED USING STATION AND OFFSET. NORTHING AND EASTING IS SUPPLIED FOR INFORMATION ONLY. IF THERE IS A DISCREPENCY BETWEEN THE STATION AND OFFSET AND THE NORTHING AND EASTING CONTACT THE ENGINEER.

NO	DATE	REVISION	APPROVED
-	08/07/15	CONFORMED SET	-
1	05/27/16	FATHER RAHM REDESIGN	-

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
5/27/16

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS FOUNDATION SCHEDULE
STA. 75+92 TO STA. 238+80

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J091

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1094

DN: URS CK: URS DW: URS CK: URS

DATE: 6/16/2016 11:03:46 AM
FILE: C:\pwworking\eslazar\transportationus\dms40883\J091 - Foundation Schedule 2 of 4.dgn

STATION	75+92	76+51	77+49	77+58	78+06	79+01A	79+01B	79+84A	79+84B	80+73	80+76	81+60A	81+60B	82+55	83+20	84+06A	84+06B	85+01A	85+01B	85+81A	85+81B	86+36A	86+36B	86+67
POLE TYPE	P1-30	P2-30	P3-30	P2O-28-L	P1-28	P2-28	P2-28	P2-28	P2-28	P2-28	P2-28	P2-28	P2-28	P1O-28-L	P1-28	P2-28	P1O-28-L	P2-28	P2-28	P3-28	P2-28	P3-28	P2-28	P2O-28-L
OFFSET	15.53	15.58	35.69	9.15	10.37	30.12	25.95	29.41	26.98	27.07	26.58	26.61	27.22	7.28	8.86	26.7	27.16	26.73	27.17	26.81	27.22	38.29	13.67	19.1
OFFSET DIRECTION	R	R	L	R	R	L	R	L	R	R	L	L	R	R	R	L	R	L	R	L	R	L	R	R
FOUNDATION TYPE	A	A	A	B	A	A	A	B	A	A	A	A	A	B	A	A	B	A	A	A	A	A	A	B
FOUNDATION DEPTH (FT)	11	12	16	12	11	12	12	12	12	12	12	12	12	11	11	12	12	12	12	16	12	16	12	12
NORTHING	10655379.1	10655321.76	10655236.16	10655217.67	10655170.68	10655088.9	10655074.61	10655005.94	10654994.45	10654909.12	10654915.78	10654833.27	10654822.33	10654732.93	10654668.9	10654592.55	10654581.57	10654499.73	10654488.41	10654421.14	10654410.03	10654357.58	10654363.37	10654342.86
EASTING	385724.94	385736.91	385807.24	385765.35	385775.41	385837.84	385783.61	385855.66	385800.46	385829.97	385871.54	385888.76	385836.05	385874.3	385885.93	385938.97	385886.24	385958.34	385905.63	385974.78	385921.9	385993.89	385942.25	385929.09
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS																								
OCS WIRING LAYOUT REF.	J116	J117								J118										J119				

STATION	86+72	86+95	87+19A	87+19B	87+72A	87+72B	88+86	89+39	90+35A	90+35B	91+07A	91+07B	91+78A	91+78B	92+69	93+55	94+11	94+91	95+86	96+81	97+96	98+71	99+31	100+26
POLE TYPE	P4-28	P3-28	P3-28	P2-28	P2-28	P2-28	P1-28	P1O-28-L	P2-28	P2-28	P2-28	P2-28	P2-28	P2-28	P1-28	P1-28	P1-28	P1O-28-L	P1O-28-L	P1-28	P1-28	P1O-28-L	P1-28	P1O-28-L
OFFSET	76.02	46.85	28.43	18.73	28.36	18.58	7.47	7.47	27.57	20.36	27.83	25.87	27.64	31.05	16.28	16.25	16.23	16.65	16.17	16.62	16.72	15.41	14.48	6.45
OFFSET DIRECTION	L	L	L	R	L	R	R	R	L	R	L	R	L	R	R	R	R	R	R	R	R	R	R	R
FOUNDATION TYPE	A	A	A	A	A	A	A	B	A	A	A	A	A	A	A	B	A	B	B	A	A	B	A	B
FOUNDATION DEPTH (FT)	20	16	16	12	12	12	11	11	12	12	12	12	12	12	11	11	11	11	11	11	11	11	11	11
NORTHING	10654281.22	10654273.58	10654276.7	10654322.23	10654261.57	10654307.53	10654277.87	10654267.2	10654212.51	10654259.41	10654197.58	10654250.16	10654183.22	10654240.69	10654207.57	10654190.13	10654178.63	10654162.82	10654142.97	10654123.5	10654104.16	10654084.77	10654072.44	10654046.63
EASTING	386001.78	385950.29	385910.81	385898.49	385837.56	385827.99	385738.08	385685.96	385599.94	385589.99	385529.54	385518.59	385459.62	385447.76	385361.12	385277.54	385222.43	385144.39	385051.47	384958.16	384865.44	384772.52	384713.41	384621.94
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS																								
OCS WIRING LAYOUT REF.	J119				J120						J121									J122				J123

STATION	101+15	101+93	102+64	102+77	102+82	103+03	103+09	103+32	103+68A	103+68B	48+31	48+79	200+61	49+44	49+52	201+09	201+43	202+38	203+28A	203+28B	204+27	205+15	206+09
POLE TYPE	P1-28	P1-28	P3-28	P3-28	P2-28	P2-28	P4-28	P3-28	P3-28	P2O-28	P3-28	P4-28	P3-28	P4-30	P4-28-L	P2-28	P2-28	P2-28	P2-28	P2-28	P1-28	P1O-33-L	P1-30
OFFSET	14.21	14.75	30.96	34.2	12.33	10.85	68.58	44.11	42.83	12.73	13.33	24.43	34.68	16.68	36.78	17.11	16.63	16.2	38.77	18.37	7	14.77	15.79
OFFSET DIRECTION	R	R	L	L	R	R	L	L	L	R	R	R	L	R	L	R	R	R	L	R	R	R	R
FOUNDATION TYPE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	A	A	B	A	A	A	A	A
FOUNDATION DEPTH (FT)	11	11	16	16	12	12	20	16	16	12	16	20	14	20	20	11	11	11	11	11	10	10	10
NORTHING	10654037.29	10654021.41	10653961.39	10653957.41	10654004.24	10654008.75	10653950.01	10654001.65	10654051.33	10654057.84	10657277.8	10657295.08	10657349.44	10657338.7	10657388.81	10657396.7	10657426.8	10657505.63	10657550.33	10657581.96	10657658.47	10657735.25	10657813.69
EASTING	384532.7	384456.58	384394.54	384374.66	384374.32	384358.45	384304.38	384294.1	384283.49	384338.67	384530.1	384576.39	384529.88	384622.47	384600.33	384572.74	384552.95	384500.07	384404.38	384451.97	384388.2	384346.14	384293.27
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-03	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS														NOTE 1&4									
OCS WIRING LAYOUT REF.	J123										J124								J125				

STATION	206+78	207+41	207+44	208+26	208+29	209+25	209+26	210+10A	210+10B	210+86	210+89	211+80	212+22	212+80	213+35	213+37	214+15	214+23	214+84	215+48	216+33	216+49	217+36	217+48	218+26
POLE TYPE	P1O-33-LT	P2-28-T	P2-30	P2-28	P2-30	P2-30	P2-28	P2-30	P2-28	P2-30	P2-28	P1-28-L	P1-28	P1-28	P2-28	P2-28	P2-28-T	P2-28	P1-28	P1-28	P1-28	P1-28	P2-28	P2-28	P1-28
OFFSET	15.29	20.6	43.78	24.21	47.79	44.82	21.29	45.33	21.78	45.64	20.99	6.49	8.75	15.52	37.44	21.16	21.98	36.92	15.56	15.79	15.59	15.53	35.25	22.28	14.69
OFFSET DIRECTION	R	R	L	R	L	L	R	L	R	L	R	R	R	R	L	R	R	L	R	R	R	R	L	R	R
FOUNDATION TYPE	C	B	A	A	A	A	A	A	A	A	A	B	A	A	A	A	B	A	B	A	A	A	A	A	A
FOUNDATION DEPTH (FT)	10	11	11	11	11	11	11	11	11	11	11	10	10	10	11	11	11	11	10	10	10	10	11	11	10
NORTHING	10657870.91	10657925.82	10657892.69	10657998.57	10657960.97	10658043.2	10658080.32	10658113.41	10658150.51	10658177.56	10658216.07	10658283.47	10658319.51	10658371.59	10658386.34	10658421.5	10658486.63	10658459.41	10658539.52	10658592.9	10658663.48	10658693.59	10658728.2	10658762.74	10658823.39
EASTING	384254.42	384224.27	384168.99	384180.22	384118.76	384067.64	384122.35	384020.33	384076.25	383978.04	384032.49	383969.62	383947.82	383920.17	383845.7	383892.63	383848.76	383795.99	383805.3	383769.95	383722.63	383702.46	383618.31	383664.44	383614.84
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS																									
OCS WIRING LAYOUT REF.	J125	J126										J127								J128					

STATION	219+20	220+00	220+85	221+80	222+58	223+26	224+11	224+97	225+79	226+66	227+31	228+26	229+21	229+98	230+76	231+40	232+04	232+99	233+94	234+88	235+74	236+46	237+25	237+95	238+80
POLE TYPE	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P4-28	P3-28-F	P3-28-F	P4-28
OFFSET	14.66	15.11	6.76	13.31	14.78	14.94	13.25	12.37	15.18	17.1	6.79	6.78	8.64	9.41	9.17	8.81	8.44	9.12	8.82	8.49	8.79	8.84	7.97	7.96	8
OFFSET DIRECTION	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
FOUNDATION TYPE	A	A	A	A	A	A	A	A	B	A	A	A	A	A	A	A	A	A	A	A	A	A	C	C	A
FOUNDATION DEPTH (FT)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	17	14	14	17
NORTHING	10658901.39	10658967.75	10659036.42	10659117.61	10659182.52	10659239.17	10659310.06	10659383.03	10659453.91	10659526.6	10659575.86	10659654.92	10659733.93	10659798.49	10659862.92	10659915.83	10659968.75	10660048.07	10660126.86	10660204.79	10660276.4	10660336.23	10660401.64	10660459.8	10660530.46
EASTING	383562.76	383518.19	383464.85	383417.77	383374.43	383336.73	383290.93	383245.71	383201.73	383155.48	383111.92	383059.27	383006.62	382964.4	382920.5	382884.67	382848.78	382796.5	382743.41	382690.85	382643.27	382603.28	382558.46	382519.51	382472.27
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-02	GR-01
REMARKS																									
OCS WIRING LAYOUT REF.	J129					J130						J131					J132				J133				

NOTES:

1. POLE LOCATED OVER BASEMENT. REFER TO SHEET J701.
2. OFFSET DIRECTION IS ORIENTED LOOKING IN INCREASING STATION ON THE MAINLINE TRACK WITH THE APPROPRIATE STATIONING.
3. POLE OFFSET IS FROM CENTERLINE OF TRACK TO CENTERLINE OF FOUNDATION, AT THE CORRESPONDING STATIONING.
4. FOUNDATIONS THAT ARE INSTALLED IN BASEMENTS REQUIRE GR-03 TYPE GROUND ROD ASSEMBLIES. GR-03 ASSEMBLIES SHALL BE INSTALLED TO THE EXTERIOR OF THE FOUNDATION PIER.
5. CONTRACTOR TO VERIFY NORTHING AND EASTING INFORMATION PRIOR TO FOUNDATION INSTALLATION.
6. POLES SHALL BE LOCATED USING STATION AND OFFSET. NORTHING AND EASTING IS SUPPLIED FOR INFORMATION ONLY. IF THERE IS A DISCREPENCY BETWEEN THE STATION AND OFFSET AND THE NORTHING AND EASTING CONTACT THE ENGINEER.

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED
PROFESSIONAL ENGINEER
7/14/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS FOUNDATION SCHEDULE
STA. 75+92 TO STA. 238+80

J091

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1094

Superseded

DATE: 7/14/2015 9:43:34 AM
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CK: URS
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CK: URS
DN: URS

STATION	239+70	240+65	241+39	242+15	242+91	243+75	244+20	244+95	245+89	246+47	247+24	248+20	248+80	249+62	250+28	250+30	251+20	252+01	252+94	253+89	254+78	255+56	256+27	257+21A	257+21B
POLE TYPE	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28-L	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P2-28	P2-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P2-28	P2-28
OFFSET	10.27	11.5	11.05	7.67	7.77	8.63	6.85	8.42	8.53	8.34	8.23	9.37	9.19	9.3	52.48	20.95	16.83	16.52	16.94	17.13	16.95	17.48	17.64	44.89	18.4
OFFSET DIRECTION	R	R	R	R	R	R	R	R	R	R	R	R	R	R	L	R	R	R	R	R	R	R	R	L	R
FOUNDATION TYPE	A	A	A	B	A	A	A	B	A	A	A	A	A	A	A	A	A	B	A	A	A	A	A	A	A
FOUNDATION DEPTH (FT)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	11	11	10	10	10	10	10	10	10	11	11
NORTHING	10660606	10660685.63	10660747.3	10660808.75	10660872.08	10660942.8	10660978.61	10661042.02	10661119.82	10661167.75	10661232.32	10661312.18	10661361.9	10661429.96	10661449.53	10661492.7	10661564.98	10661631.6	10661709	10661788.05	10661862.49	10661926.92	10661985.75	10662028.53	10662064.32
EASTING	382424.43	382372.62	382330.8	382285.59	382243.33	382198.15	382172.18	382131.76	382078.27	382046.08	382003.78	381950.29	381916.7	381871.03	381782.66	381842.08	381788.34	381743.38	381692.09	381639.4	381588.95	381546.1	381506.56	381402.4	381454.6
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS																									
OCS WIRING LAYOUT REF.	J134					J135					J136						J137					J138			

STATION	258+08	258+68	259+63	260+38	261+29	262+19	263+12	264+06	265+04	266+00	266+79A	266+79B	267+73	268+79	269+65A	269+65B	270+65	271+62	272+59	273+49	273+55	274+45	275+28	275+83	276+13
POLE TYPE	P1-28	P1-28	P1O-28-L	P1-28-T	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P2-28	P2-28	P1-28	P1-28	P2-28	P2-28	P1-28	P1-28	P1-28	P2-28	P2-28	P1-28	P1-30	P3-28	P4-30
OFFSET	17.17	17.79	6.25	17.42	15.54	15.49	18	15.67	15.76	15.28	61.8	22.18	17.26	17.24	55.56	21.62	10.63	7.29	12.05	62.98	23.07	16.92	17.86	17.52	30.41
OFFSET DIRECTION	R	R	R	R	R	R	R	R	R	R	L	R	R	R	L	R	R	R	R	L	R	R	R	R	R
FOUNDATION TYPE	A	A	B	A	A	B	A	A	A	A	A	A	A	A	A	A	A	A	B	A	A	A	A	A	A
FOUNDATION DEPTH (FT)	10	10	10	10	10	10	10	10	10	10	11	11	10	10	11	11	10	10	10	11	11	10	10	14	17
NORTHING	10662135.87	10662186.8	10662259.27	10662327.95	10662402.18	10662476.34	10662555.56	10662632.44	10662713.62	10662793.06	10662816.81	10662862.39	10662939.31	10663018.24	10663057.61	10663100.26	10663178.58	10663260.2	10663340.79	10663376	10663428.06	10663499.69	10663567.28	10663613.54	10663649.84
EASTING	381405.24	381373.22	381311.1	381277.94	381224.94	381175.3	381125.35	381071.16	381016.99	380963.3	380854.71	380925.24	380867.8	380815.12	380701.43	380765.77	380702.96	380645.08	380597.44	380486.07	380554.83	380498.62	380451.84	380420.9	380402.75
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS																									
OCS WIRING LAYOUT REF.	J138		J139				J140						J141					J142					J143		

STATION	276+15	276+37	276+77	276+78	277+55	278+27	279+02A	279+02B	280+50A	280+50B	281+48A	281+48B	282+30	282+37	282+67	282+88	282+96	283+34	283+69	284+14	285+01	285+95	286+87	287+78	288+54
POLE TYPE	P3-30	P4-30	P3-28	P4-30	P1-28	P1-33	P4-30	P4-30	P4-30	P4-30	P2-28	P2-28	P2-28	P3-28	P4-28	P3-30	P4-30	P4-28	P2-28	P4-28	P3-28-F	P3-28-F	P4-28	P1-28	P1-28
OFFSET	50.34	60.26	25.31	34.84	17.84	15.62	29.44	15.94	32.86	17.73	32.76	21.75	40.28	16.47	19.29	42.08	38.84	27.1	8.61	10.73	8.03	7.92	7.98	9.22	8.94
OFFSET DIRECTION	L	R	L	R	R	R	L	R	L	R	L	R	L	R	R	L	R	R	R	R	R	R	R	R	R
FOUNDATION TYPE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C	C	A	A	A
FOUNDATION DEPTH (FT)	14	17	14	17	10	10	17	17	17	17	11	11	11	14	17	14	17	17	11	17	14	14	17	10	10
NORTHING	10663582.62	10663692.54	10663606.62	10663661.36	10663603.64	10663563.15	10663484.94	10663522.56	10663400.95	10663443.04	10663346.7	10663392.08	10663296.32	10663341.59	10663321.72	10663275.28	10663292.39	10663235.05	10663209.51	10663170.06	10663104.5	10663025.83	10662949.34	10662872.91	10662809.99
EASTING	380357.97	380376.75	380334.1	380309.15	380249.12	380188.83	380153.45	380128.08	380029.06	380001.01	379947.49	379917.29	379880.46	379845.55	379816.12	379858.99	379779.67	379793.19	379826.16	379849.28	379897.75	379950.57	380000.44	380051.44	380093.89
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-02	GR-01	GR-01	GR-01
REMARKS																									
OCS WIRING LAYOUT REF.	J143					J144							J145									J146			

STATION	289+17	290+04	290+90	291+85	292+80	293+75	294+70	295+44	296+39	297+34	298+27	299+15	300+05	300+92	301+58	302+46	303+41	304+37	305+32	306+21	307+16	308+05	308+94	309+89	310+85
POLE TYPE	P1-28	P1O-28-L	P1-28	P1O-28-L	P1-28	P1-28	P1O-28-L	P1O-28-L	P1O-28-L	P1-28	P1-28	P1-28	P1-28	P1-28	P1O-28-L	P1O-28	P1O-28-L	P1-28	P1-28	P1-28	P1-28	P1O-28-L	P1-28	P1O-28-L	P1-28
OFFSET	8.94	9.52	8.9	9.11	9.21	8.99	7.83	7.69	10.35	9.97	7.61	9.06	8.77	7.9	7.96	10.63	9.2	9.19	9.25	8.76	9.04	8.99	7.73	7.75	9
OFFSET DIRECTION	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
FOUNDATION TYPE	A	B	B	B	A	A	B	B	B	A	A	A	A	B	B	A	B	A	A	A	A	B	A	B	B
FOUNDATION DEPTH (FT)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
NORTHING	10662757.63	10662685.1	10662613.97	10662534.9	10662455.89	10662377.06	10662298.13	10662237.01	10662156.64	10662077.7	10662001.33	10661927.38	10661852.66	10661779.9	10661725.43	10661651.6	10661573.27	10661493.49	10661414.35	10661340.64	10661261.54	10661188.25	10661114.14	10661035.34	10660955.37
EASTING	380128.93	380179.77	380225.11	380277.77	380330.52	380383.55	380436.26	380477.42	380528.14	380580.99	380634.15	380681.86	380732.04	380780.59	380816.9	380864.63	380918.99	380972.4	381025.28	381075.19	381127.79	381176.89	381226.3	381279.35	381332.78
POLE GROUND ASSY.	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02
REMARKS																									
OCS WIRING LAYOUT REF.	J146	J147					J148				J149					J150				J151					J152

STATION	311+34	312+28	313+11	313+96	314+68	315+63	316+46	317+29	318+22	318+83	319+77	320+72	321+43	322+28	323+18	324+13	324+91	325+51	326+46	327+21	328+16	328+84	329+80	330+54	331+40
POLE TYPE	P1-28	P1O-28-L	P1-28	P1-28	P1-28	P1O-28-L	P1-28	P1O-28-L	P1-28	P1O-28-L	P1-28	P4-28	P3-28-F	P3-28-F	P4-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28	P1-28-L	P1-28	P1-28	P1-28
OFFSET	15.14	8.91	8.95	10.6	10.07	10.64	7.65	7.6	8.9	8.43	11.16	8.77	8.51	8.09	8.16	8.01	8.04	7.89	7.7	8.66	7.46	6.69	7.62	7.65	7.74
OFFSET DIRECTION	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
FOUNDATION TYPE	A	B	A	A	A	B	A	B	A	B	A	A	C	C	A	A	A	A	A	A	A	B	A	A	A
FOUNDATION DEPTH (FT)	10	10	10	10	10	10	10	10	10	10	10	17	14	14	17	10	10	10	10	10	10	10	10	10	10
NORTHING	10660910.67	10660836.71	10660766.96	10660695.94	10660636.25	10660556.99	10660488.6	10660419.32	10660341.93	10660291.08	10660213.04	10660135.36	10660076.36	10660005.93	10659931.53	10659852.59	10659787.68	10659737.44	10659656.16	10659593.3	10659515.36	10659458.26	10659378.87	10659317.44	10659245.91
EASTING	381355.26	381411.99	381458.79	381505.08	381545.69	381598.06	381643.51	381688.92	381740.79	381775.56	381827.1	381882.33	381921.99	381969.48	382019.03	382071.88	382115.13	382148.67	382198.37	382239.31	382292.16	382330.54	382384.51	382425.76	382473.52
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS																									
OCS WIRING LAYOUT REF.	J152				J153				J154					J155					J156					J157	

NOTES:

1. POLE LOCATED OVER BASEMENT, REFER TO SHEET J701.
2. OFFSET DIRECTION IS ORIENTED LOOKING IN INCREASING STATION ON THE MAINLINE TRACK WITH THE APPROPRIATE STATIONING.
3. POLE OFFSET IS FROM CENTERLINE OF TRACK TO CENTERLINE OF FOUNDATION, AT THE CORRESPONDING STATIONING.
4. FOUNDATIONS THAT ARE INSTALLED IN BASEMENTS REQUIRE GR-03 TYPE GROUND ROD ASSEMBLIES. GR-03 ASSEMBLIES SHALL BE INSTALLED TO THE EXTERIOR OF THE FOUNDATION PIER.
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NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
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LICENSED
PROFESSIONAL ENGINEER
7/14/15

LTK
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2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS FOUNDATION SCHEDULE
STA. 239+70 TO STA. 331+40

J092

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1095

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DW: URS
CK: URS
DN: URS

STATION	332+01	332+96	333+91	334+73	335+44	336+01	336+96	337+91	338+61	339+56	340+46	341+41	342+25	343+20	344+20	345+06	345+90	346+85	347+79	348+56	349+52	350+25	351+20	352+12	352+82
POLE TYPE	P1-28	P1-28	P1O-28-L	P1-28	P1O-28-L	P1-28	P1-28	P1O-28	P1O-28-L	P1-28	P1-28	P1-28-T	P1-28	P1O-28-L	P1-28	P1-28	P1-28	P1-28	P1-28	P1O-28-L	P1-28	P1O-32-L	P1-28	P2-30	P2-28
OFFSET	7.64	7.81	8.24	8.23	8.22	7.93	8.22	8.34	8.3	11.36	7.86	6.63	7.28	7.71	8.22	8.2	9.08	6.8	6.97	8.14	9.09	12.45	16.46	14.88	15.8
OFFSET DIRECTION	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
FOUNDATION TYPE	A	A	B	A	B	B	A	A	B	A	A	B	A	B	A	A	B	A	A	B	A	B	A	A	A
FOUNDATION DEPTH (FT)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	11	11
NORTHING	10659195.27	10659116.23	10659037.04	10658968.9	10658910.16	10658862.53	10658783.65	10658704.64	10658646.96	10658565.98	10658514.59	10658414.18	10658344.42	10658265.7	10658183.19	10658111.26	10658041	10657962.24	10657883.27	10657819.53	10657739.71	10657677.39	10657596.68	10657520.63	10657467.25
EASTING	382507.53	382560.22	382612.71	382658.32	382697.65	382729.88	382782.48	382835.21	382873.84	382924.36	382976.35	383029.65	383076.34	383129.53	383186.03	383234.34	383279.05	383332.18	383384.97	383427.47	383479.77	383518.62	383568.8	383622.49	383666.68
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS																									
OCS WIRING LAYOUT REF.	J157			J158					J159				J160					J161				J162			

STATION	352+84	353+78	354+57	355+23	356+05	356+69	357+38	357+41	357+68	502+12	502+78	502+91	503+23	503+75	504+05	504+17	504+19	505+03	505+33	29+93	19+93	9+93	505+52	505+71	506+02
POLE TYPE	P3-28	P1-30	P1-30	P1O-32-L	P2-28	P1O-28-L	P2-28	P2-28	P2O-28-L	P3-28	P3-28	P3-30	P2-28	P3-28	P3-28	P2-30	P2-28	P1-28	P1-28	P4-28	P4-28	P4-28	P1-28	P1-28	P4-28-F
OFFSET	44.44	17.33	17.3	17.56	17.38	6.81	27.19	30.61	28.59	29.91	35	68.4	7.27	10.23	27.04	74.58	46.2	10.75	17.98	0	0	0	8.5	8.17	7
OFFSET DIRECTION	L	R	R	R	R	R	R	L	L	R	R	L	R	R	R	L	R	R	R	N/A	N/A	N/A	R	R	R
FOUNDATION TYPE	A	A	A	B	B	B	A	A	B	A	A	A	B	A	A	A	A	A	A	A	A	A	A	A	D
FOUNDATION DEPTH (FT)	14	10	10	10	11	10	11	11	11	16	16	16	12	16	16	12	12	11	11	20	20	20	11	11	20
NORTHING	10657467.25	10657387.7	10657322.01	10657267.31	10657199.06	10657152.48	10657083.43	10657118.79	10657094.42	10654634.45	10654621.19	10654518.04	10654582.41	10654570.64	10654562.06	10654495.67	10654556.33	10654466.43	10654440.76	10654432.86	10654430.21	10654427.15	10654416.99	10654395.71	10654365.22
EASTING	383666.68	383719.55	383763.83	383800.36	383846.56	383890.67	383918.07	383963.87	383980.52	384121.56	384054.42	384069.43	384018.52	383967.23	383926.77	384003.54	383899.07	383885.96	383863.83	383852.5	383838.97	383824.9	383867.52	383867.22	383875.1
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02
REMARKS																									
OCS WIRING LAYOUT REF.	J162		J163							J164								J165							

STATION	10+64	10+97	11+18	11+34	11+52	506+92	507+07	507+34	507+54	507+82	508+41	508+70	508+80	20+42	509+33	10+90	20+63	509+75	509+91	30+52	510+05	510+14	510+42
POLE TYPE	P4-28	P4-28	P4-28	P4-28	P3-28	P2-28	P4-28	P4-28	P4-28	P4-28	P2-28	P4-28	P4-28	P2-28	P3-28	P2-28	P2-28	P4-28	P3-28	P1-28	P1-28		
OFFSET	16.3	10.19	8.99	8.54	8.05	7.51	7.11	6.52	6.47	6.48	14.1	6.5	6.5	6.94	6.15	7	8.63	6.64	10.18	6.52	11.88	N/A	N/A
OFFSET DIRECTION	R	R	R	R	R	R	R	R	R	R	L	R	R	L	L	L	R	R	R	L	R	R	R
FOUNDATION TYPE	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
FOUNDATION DEPTH (FT)	20	20	20	20	16	12	20	20	20	20	12	20	20	12	16	12	12	20	16	11	11	N/A	N/A
NORTHING	10654352.26	10654324.79	10654312.2	10654302.7	10654291.57	10654281.28	10654272.69	10654258.09	10654246.18	10654230.45	10654213.61	10654180.04	10654174.32	10654171.66	10654154	10654191.23	10654156.55	10654119.7	10654108.87	10654139.94	10654104.18	N/A	N/A
EASTING	383827.35	383854.45	383872.57	383886.19	383900.4	383915.23	383927.52	383950.18	383967.24	383989.75	384049.86	384061.98	384070.18	384113.97	384121.41	384126.85	384134.09	384148.47	384164	384167.7	384179	N/A	N/A
POLE GROUND ASSY.	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-03	GR-03
REMARKS																						NOTE 4	NOTE 4
OCS WIRING LAYOUT REF.	J165									J166													

NOTES:

1. POLE LOCATED OVER BASEMENT, REFER TO SHEET J701.
2. OFFSET DIRECTION IS ORIENTED LOOKING IN INCREASING STATION ON THE MAINLINE TRACK WITH THE APPROPRIATE STATIONING.
3. POLE OFFSET IS FROM CENTERLINE OF TRACK TO CENTERLINE OF FOUNDATION, AT THE CORRESPONDING STATIONING.
4. COLUMN WALL SHALL BE GROUNDED PRIOR TO SYSTEMS INSTALLATION. IF COLUMN WALL IS NOT GROUNDED, COORDINATE INSTALLATION OF A GR-01 ASSEMBLY FOR THESE COLUMNS.
5. CONTRACTOR TO VERIFY NORTHING AND EASTING INFORMATION PRIOR TO FOUNDATION INSTALLATION.
6. POLES SHALL BE LOCATED USING STATION AND OFFSET. NORTHING AND EASTING IS SUPPLIED FOR INFORMATION ONLY. IF THERE IS A DISCREPENCY BETWEEN THE STATION AND OFFSET AND THE NORTHING AND EASTING CONTACT THE ENGINEER.

NO.	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
7/14/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS FOUNDATION SCHEDULE
STA. 332+01 TO STA. 510+05

J093

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1096

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DN: URS CK: URS DW: URS CK: URS

STATION	332+01	332+96	333+91	334+73	335+44	336+01	336+96	337+91	338+61	339+56	340+46	341+41	342+25	343+20	344+20	345+06	345+90	346+85	347+79	348+56	349+52	350+25	351+20	352+12	352+82
POLE TYPE	P1-28	P1-28	P1O-28-L	P1-28	P1O-28-L	P1-28	P1-28	P1O-28	P1O-28-L	P1-28	P1-28	P1-28-T	P1-28	P1O-28-L	P1-28	P1-28	P1-28	P1-28	P1-28	P1O-28-L	P1-28	P1O-32-L	P1-28	P2-30	P2-28
OFFSET	7.64	7.81	8.24	8.23	8.22	7.93	8.22	8.34	8.3	11.36	7.86	6.63	7.28	7.71	8.22	8.2	9.08	6.8	6.97	8.14	9.09	12.45	16.46	14.88	15.8
OFFSET DIRECTION	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
FOUNDATION TYPE	A	A	B	A	B	B	A	A	B	A	A	B	A	B	A	A	B	A	A	B	A	B	A	A	A
FOUNDATION DEPTH (FT)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	11	11
NORTHING	10659195.27	10659116.23	10659037.04	10658968.9	10658910.16	10658862.53	10658783.65	10658704.64	10658646.96	10658565.98	10658514.59	10658414.18	10658344.42	10658265.7	10658183.19	10658111.26	10658041	10657962.24	10657883.27	10657819.53	10657739.71	10657677.39	10657596.68	10657520.63	10657467.25
EASTING	382507.53	382560.22	382612.71	382658.32	382697.65	382729.88	382782.48	382835.21	382873.84	382924.36	382976.35	383029.65	383076.34	383129.53	383186.03	383234.34	383279.05	383332.18	383384.97	383427.47	383479.77	383518.62	383568.83	383622.49	383666.68
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01
REMARKS																									
OCS WIRING LAYOUT REF.	J157			J158					J159				J160					J161				J162			

STATION	352+84	353+78	354+57	355+23	356+05	356+69	357+38	357+41	357+68	502+12	502+78	502+91	503+23	503+75	504+05	504+17	504+19	505+03	505+33	29+93	19+93	9+93	505+52	505+71	506+02
POLE TYPE	P3-28	P1-30	P1-30	P1O-32-L	P2-28	P1O-28-L	P2-28	P2-28	P2O-28-L	P3-28	P3-28	P3-30	P2-28	P3-28	P3-28	P2-30	P2-28	P1-28	P1-28	P4-28	P4-28	P4-28	P1-28	P1-28	P4-28-F
OFFSET	44.44	17.33	17.3	17.56	17.38	6.81	27.19	30.61	28.59	29.91	35	68.4	7.27	10.23	27.04	74.58	46.2	10.75	17.98	0	0	0	8.5	8.17	7
OFFSET DIRECTION	L	R	R	R	R	R	R	L	L	R	R	L	R	R	R	L	R	R	R	N/A	N/A	N/A	R	R	R
FOUNDATION TYPE	A	A	A	B	B	B	A	A	B	A	A	A	B	A	A	A	A	A	A	A	A	A	A	A	D
FOUNDATION DEPTH (FT)	14	10	10	10	11	10	11	11	11	16	16	16	12	16	16	12	12	11	11	20	20	20	11	11	20
NORTHING	10657467.25	10657387.7	10657322.01	10657267.31	10657199.06	10657152.48	10657083.43	10657118.79	10657094.42	10654634.45	10654621.19	10654518.04	10654582.41	10654570.64	10654562.06	10654495.67	10654556.33	10654466.43	10654440.76	10654432.86	10654430.21	10654427.15	10654416.99	10654395.71	10654365.22
EASTING	383666.68	383719.55	383763.83	383800.36	383846.56	383890.67	383918.07	383963.87	383980.52	384121.56	384054.42	384069.43	384018.52	383967.23	383926.77	384003.54	383899.07	383885.96	383863.83	383852.5	383838.97	383824.9	383867.52	383867.22	383875.1
POLE GROUND ASSY.	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-02
REMARKS																									
OCS WIRING LAYOUT REF.	J162		J163							J164								J165							

STATION	10+64	10+97	11+18	11+34	11+52	506+92	507+07	507+34	507+54	507+82	508+41	508+70	508+80	20+42	509+33	10+90	20+63	509+75	509+91	30+52	510+05	510+14	510+42
POLE TYPE	P4-28	P4-28	P4-28	P4-28	P3-28	P2-28	P4-28	P4-28	P4-28	P4-28	P2-28	P4-28	P4-28	P2-28	P3-28	P2-28	P2-28	P4-28	P3-28	P1-28	P1-28		
OFFSET	16.3	10.19	8.99	8.54	8.05	7.51	7.11	6.52	6.47	6.48	14.1	6.5	6.5	6.94	6.15	7	8.63	6.64	10.18	6.52	11.88	N/A	N/A
OFFSET DIRECTION	R	R	R	R	R	R	R	R	R	R	L	R	R	L	L	L	R	R	R	L	R	R	R
FOUNDATION TYPE	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	N/A	N/A
FOUNDATION DEPTH (FT)	20	20	20	20	16	12	20	20	20	20	12	20	20	12	16	12	12	20	16	11	11	N/A	N/A
NORTHING	10654352.26	10654324.79	10654312.2	10654302.7	10654291.57	10654281.28	10654272.69	10654258.09	10654246.18	10654230.45	10654213.61	10654180.04	10654174.32	10654171.66	10654154	10654191.23	10654156.56	10654119.7	10654108.87	10654139.94	10654104.18	N/A	N/A
EASTING	383827.35	383854.45	383872.57	383886.19	383900.4	383915.23	383927.52	383950.18	383967.24	383989.75	384049.86	384061.98	384070.18	384113.97	384121.41	384126.85	384134.09	384148.47	384164	384167.7	384179	N/A	N/A
POLE GROUND ASSY.	GR-02	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-01	GR-03	GR-03
REMARKS																						NOTE 4	NOTE 4
OCS WIRING LAYOUT REF.	J165									J166													

NOTES:

1. POLE LOCATED OVER BASEMENT, REFER TO SHEET J701.
2. OFFSET DIRECTION IS ORIENTED LOOKING IN INCREASING STATION ON THE MAINLINE TRACK WITH THE APPROPRIATE STATIONING.
3. POLE OFFSET IS FROM CENTERLINE OF TRACK TO CENTERLINE OF FOUNDATION, AT THE CORRESPONDING STATIONING.
4. COLUMN WALL SHALL BE GROUNDED PRIOR TO SYSTEMS INSTALLATION. IF COLUMN WALL IS NOT GROUNDED, COORDINATE INSTALLATION OF A GR-01 ASSEMBLY FOR THESE COLUMNS.
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NO.	DATE	REVISION	APPROVED
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	/ /		

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
7/14/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS FOUNDATION SCHEDULE
STA. 332+01 TO STA. 510+05
(ALTERNATE)

J093A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1096A

DN: URS CK: URS DW: URS CK: URS

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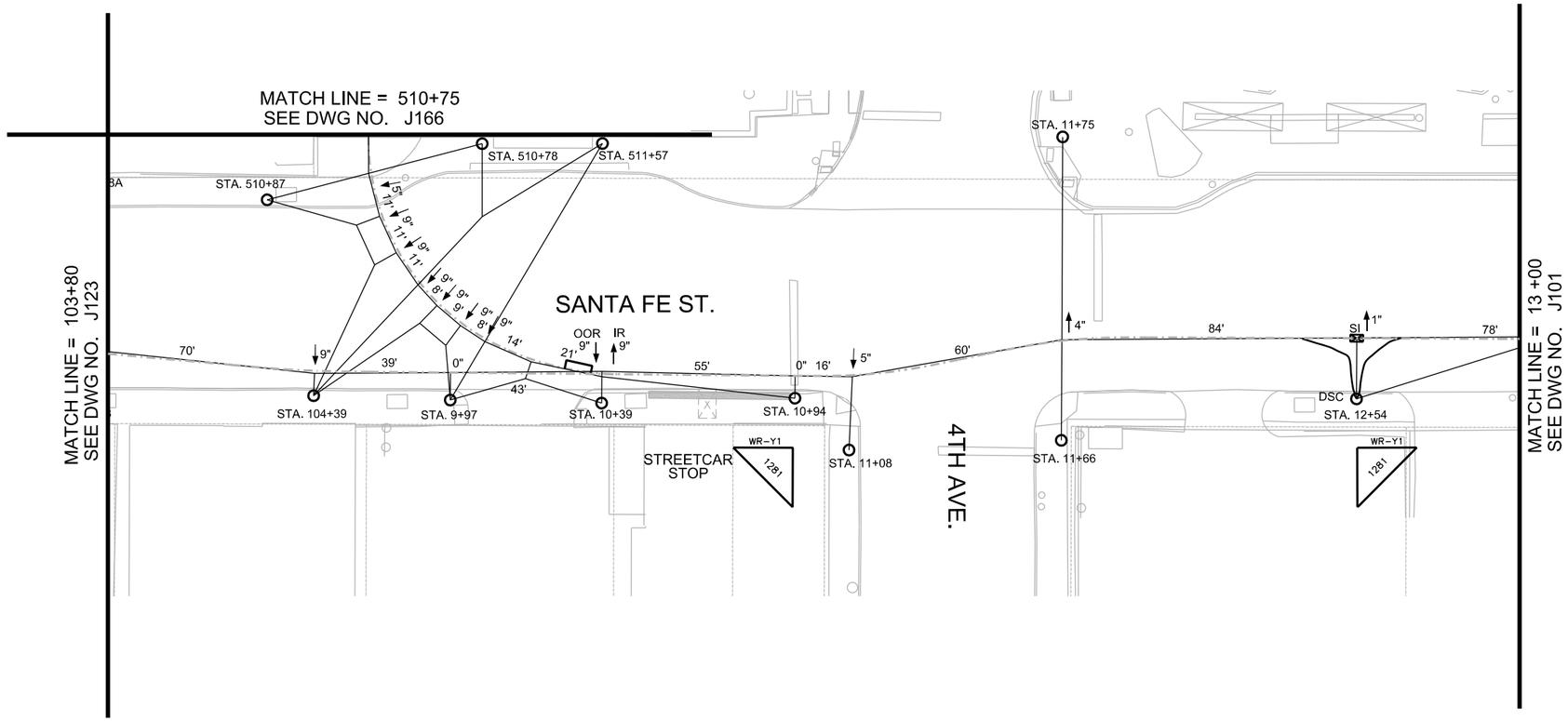
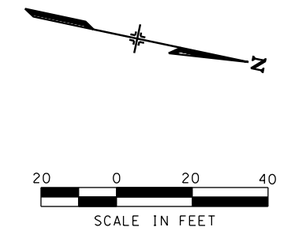
FILE: W:\Projects\El Paso Streetcar\CADD\Bid concept drawings\Sheets\J093A - Alternate.dgn





NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
510+78		P3-28	TURNOUT	Y1	19' 6"		SEE DWG J100A						
510+87		P3-28	TURNOUT	Y1	19' 6"		SEE DWG J100A						
104+39		P4-28	MAINLINE	3, Y1	19' 6"		SEE DWG J100A						
9+97	L	P4-28-L	MAINLINE	3, Y1	19' 6"		SEE DWG J100A						
510+93		P3-28	TURNOUT	Y1	19' 6"		SEE DWG J100A						
511+57		P3-28	MAINLINE	3, Y1	19' 6"		SEE DWG J100A						
10+39		P3-28	MAINLINE	3, Y1	19' 6"		SEE DWG J100A						
10+94	L	P4-28-L	MAINLINE	3	19' 6"	20' 6"	16	0	SCA-01L		BT-01 (2)	SD-01, BT-02	FT-01
11+08	O	P2O-28	MAINLINE	3	19' 6"		60	5		PO-1M	BT-02	SD-01	
11+66	O	P2O-28	MAINLINE	3	19' 6"		84	-4	CS-01	HR-1H	BT-02	SD-01	
11+75		P4-28	MAINLINE	3	19' 6"						BT-02	SD-01	
12+54		P4-28	MAINLINE	3	19' 6"	20' 6"	68	-1	SCA-05		BT-01 (2)	SD-01, FC-01 (2)	CC-01, JC-01, SI-01, DS-02, FT-01
												BT-02	LA-01 (2)

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
2/26/14

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 103+80 TO STA. 13+00
AND STA. 510+75

J100

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1097

DATE: 2/26/2014 2:00:10 PM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J100.dgn

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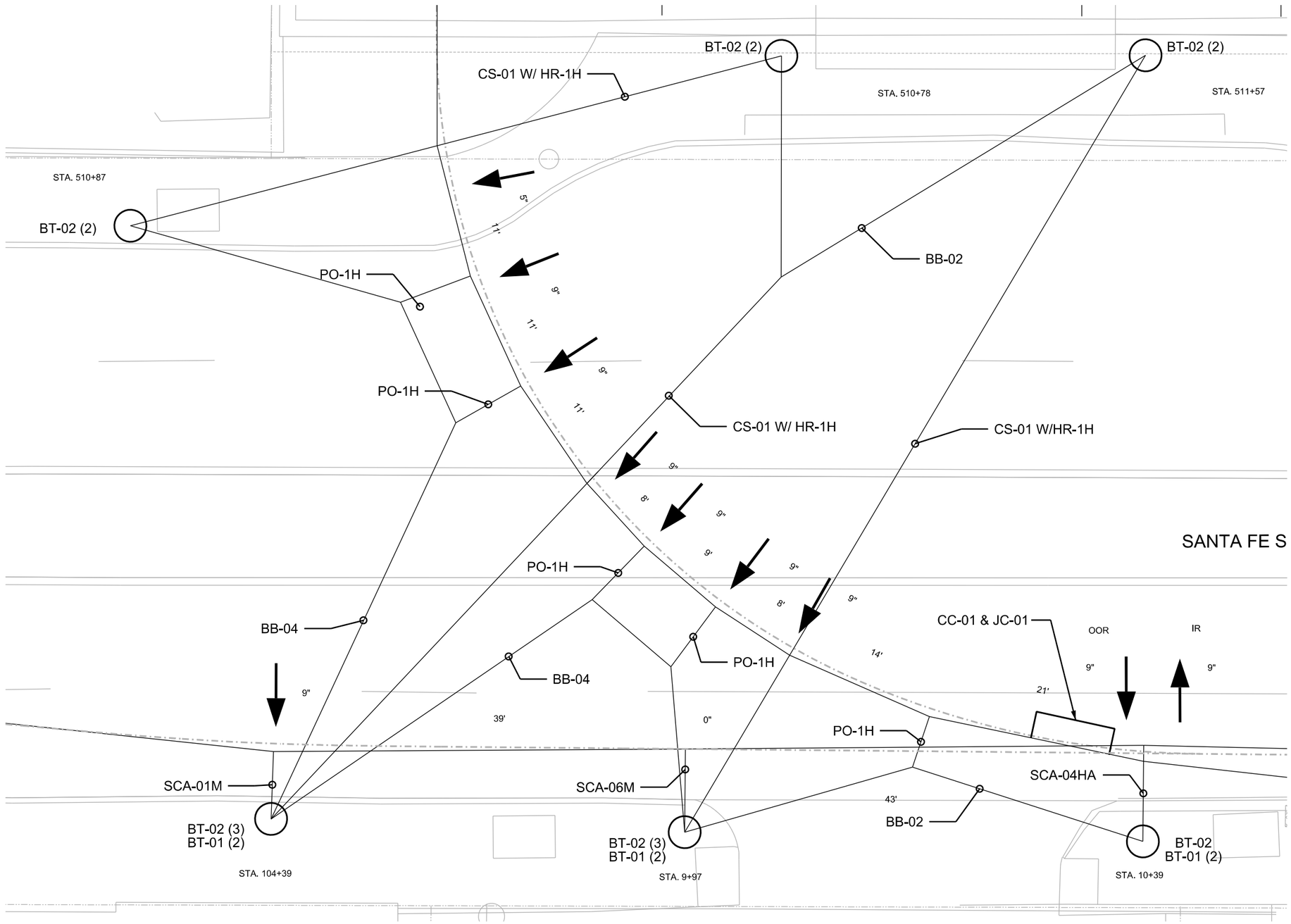

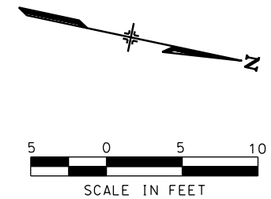

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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
2/26/14

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
INTERSECTION OF SANTA FE ST. AND YARD EXIT

J100A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1098

DN: URS CK: URS DW: URS CK: URS

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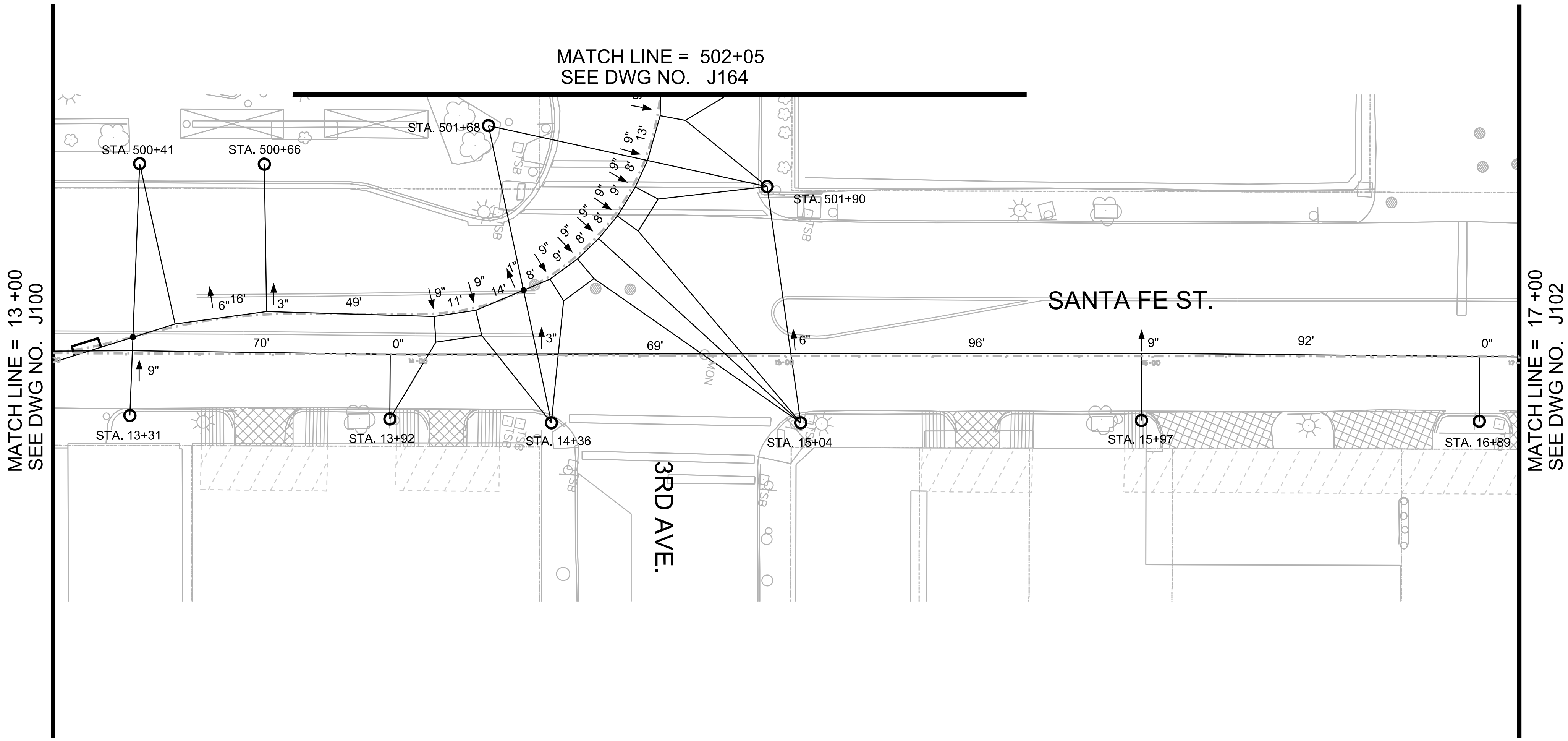

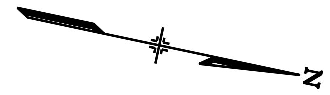

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. THE CONTRACTOR SHALL MAINTAIN A 6" CLEARANCE BETWEEN CROSS-SPANS AND CONTACT WIRE OR INSTALL A SPACE INSULATOR BETWEEN CROSS SPAN WIRE AND CONTACT WIRE.
4. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
13+31	L,O	P2O-28-L	MAINLINE	3, Y1	19' 6"		SEE DWG J101A						
500+41		P3-28	TURNOUT	3, Y1	19' 6"		SEE DWG J101A						
500+66	O	P2O-28	TURNOUT	Y1	19' 6"		SEE DWG J101A						
13+92		P3-28	MAINLINE	3, Y1	19' 6"		SEE DWG J101A						
14+36		P3-28	MAINLINE	3, Y1	19' 6"		SEE DWG J101A						
501+68		P3-28	TURNOUT	3, Y1	19' 6"		SEE DWG J101A						
15+04		P4-30	MAINLINE	3, Y1	20' 2"		SEE DWG J101A						
501+90		P4-28	TURNOUT	3, Y1	(Y1)		SEE DWG J101A						
15+97	O	P2O-30	MAINLINE	3	21'-4"		92	-9	SCA-01L		BT-01 (2)	SD-01	
16+89	O	P2O-30	MAINLINE	3	22'-6"		54	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
5/18/15

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TBPE REGISTRATION NO. F-1389

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2829 Montana Suite 206
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(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 13+00 TO STA. 17+00
AND STA. 502+05

J101

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1099

DATE: 5/15/2015 9:35:00 AM
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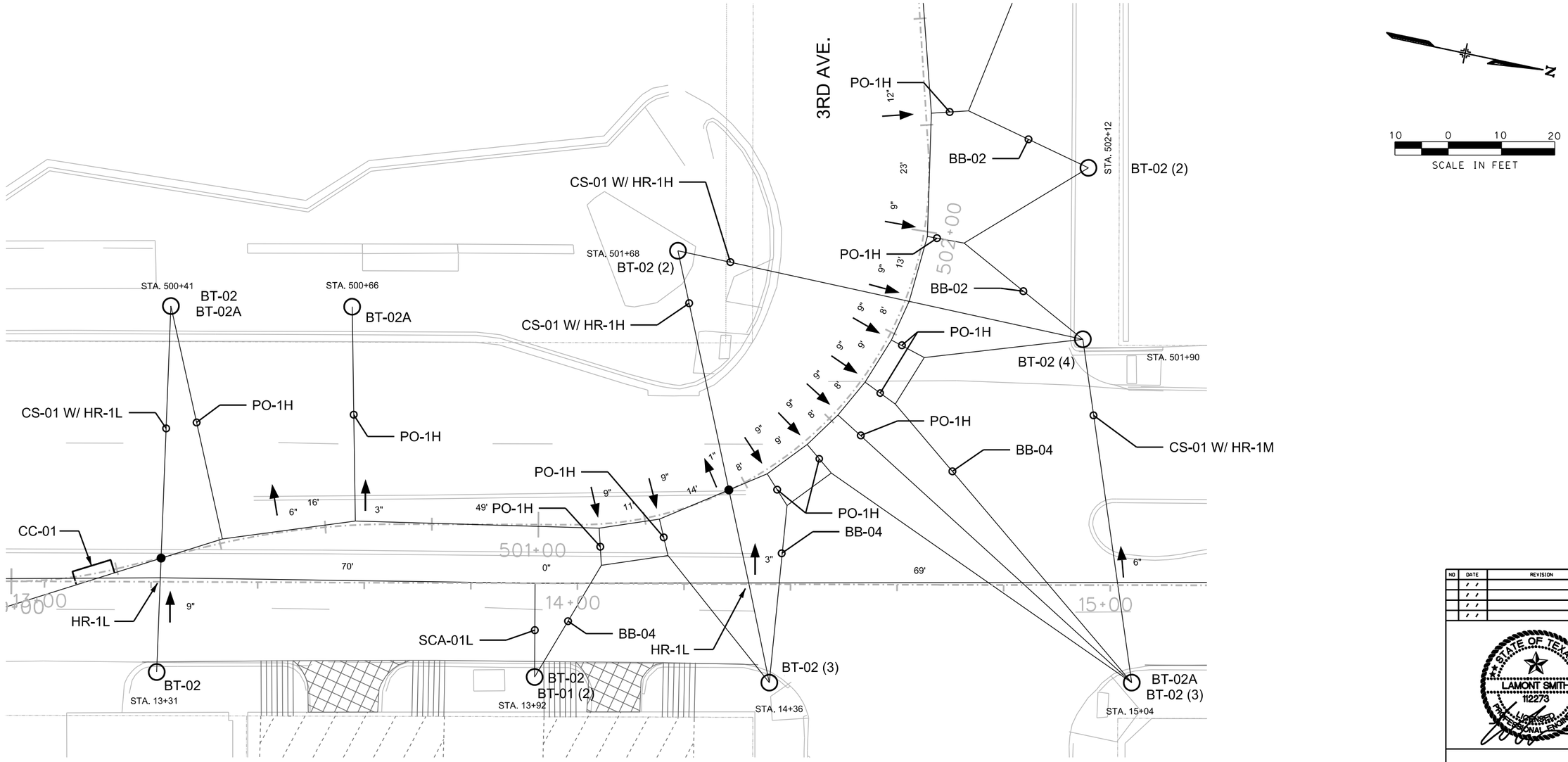

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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

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(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
INTERSECTION OF SANTA FE ST. AND YARD ENTRANCE

J101A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1100

DN: URS CK: URS DW: URS CK: URS

DATE: 6/3/2013 9:12:09 AM
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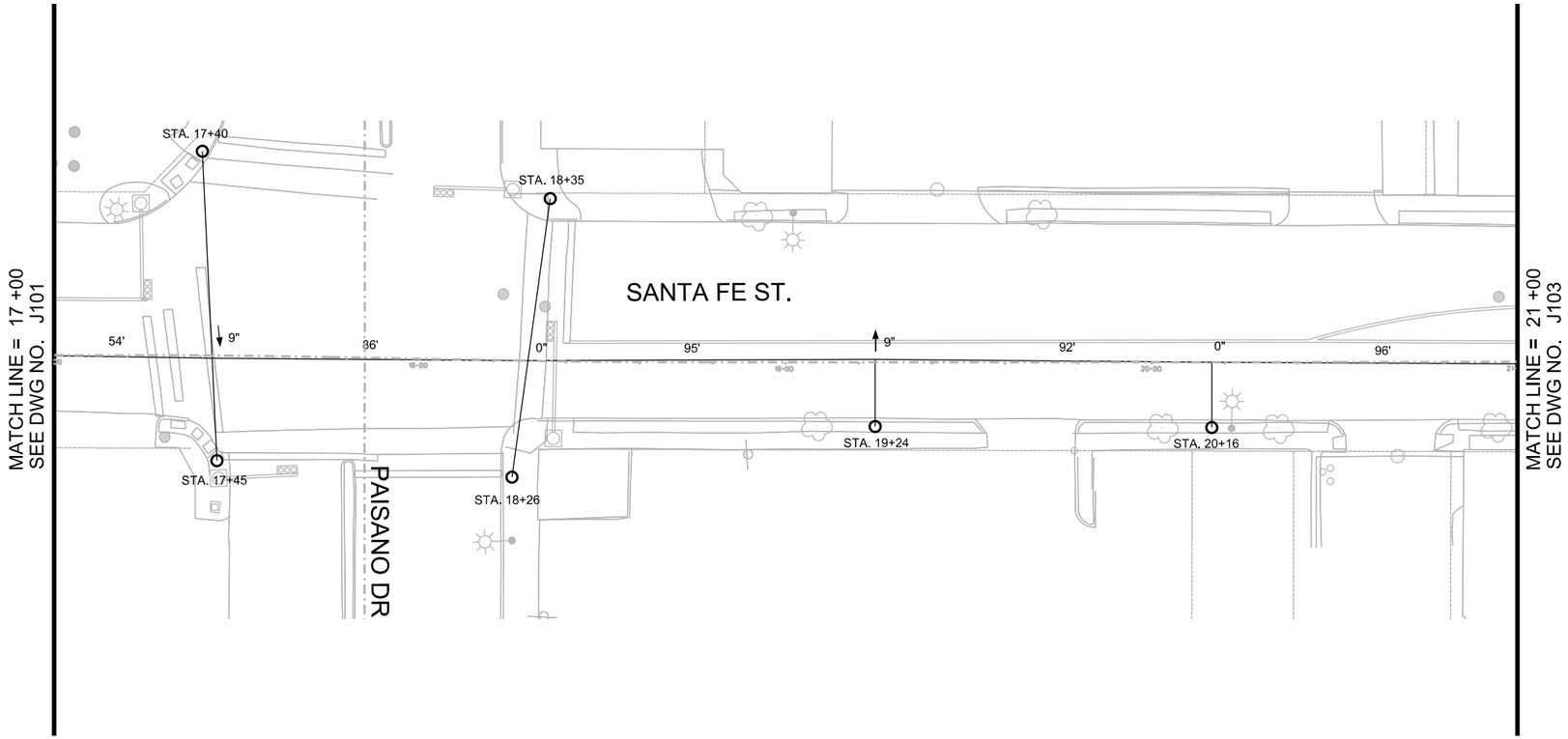

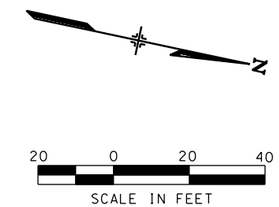

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
17+40	O	P2O-30	MAINLINE	3	23' 0"		86	9	CS-01	HR-1L	BT-02	SD-01	
17+45	O	P2O-28	MAINLINE	3	23' 0"						BT-02	SD-01	
18+26	O	P2O-28	MAINLINE	3	23' 0"		95	0	CS-01	HR-1L	BT-02	SD-01	
18+35	O	P2O-30	MAINLINE	3	23' 0"						BT-02	SD-01	
19+24	O	P1O-30	MAINLINE	3	22' 3"		92	-9	SCA-O1L		BT-01 (2)	SD-01	
20+16	L, O	P1O-30-L	MAINLINE	3	21' 6"		96	0	SCA-O1L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
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7/14/15

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URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 17+00 TO STA. 21+00

J102

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1101

DATE: 7/13/2015 6:17:02 PM
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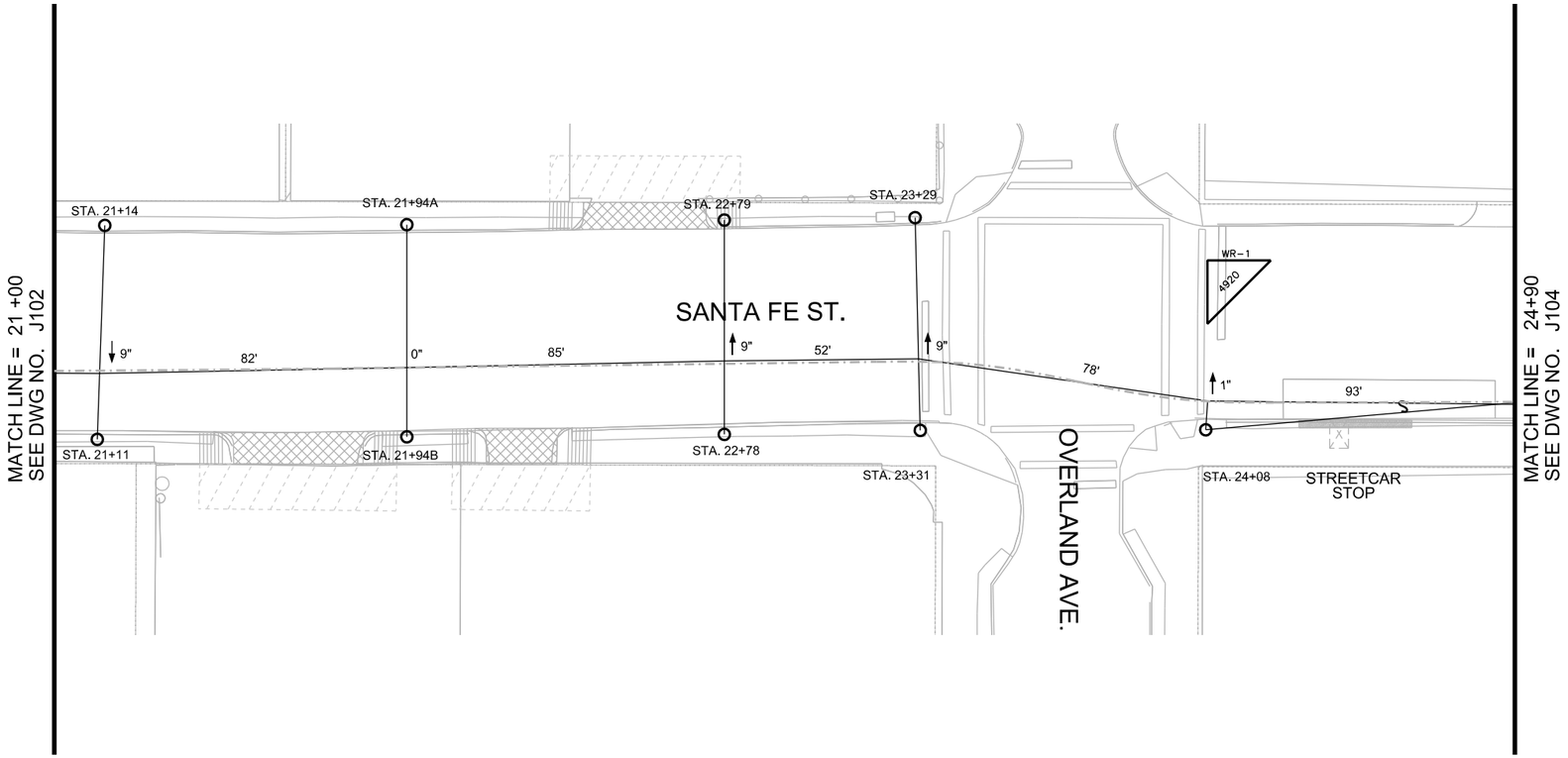

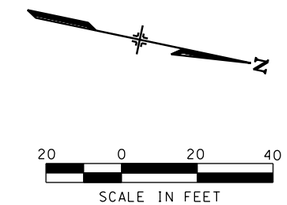

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

GENERAL ARRANGEMENT
OVERLAPS OR CANTILEVERS
SEE DWG. J201

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
21+11	O	P2O-28	MAINLINE	3	20' 8"		82	9	CS-01	HR-1L	BT-02	SD-01	
21+14	O	P2O-28	MAINLINE	3	20' 8"						BT-02	SD-01	
21+94A	O	P2O-28	MAINLINE	3	20' 0"		85	0	CS-01	HR-1L	BT-02	SD-01	
21+94B	O	P2O-28	MAINLINE	3	20' 0"						BT-02	SD-01	
22+78	O	P2O-28	MAINLINE	3	19' 6"		52	-9	CS-01	HR-1L	BT-02	SD-01	
22+79	O	P2O-28	MAINLINE	3	19' 6"						BT-02	SD-01	
23+29	O	P3O-28	MAINLINE	3	19' 6"		78	-9	CS-01	HR-1H	BT-02	SD-01	
23+31	O	P2O-28	MAINLINE	3	19' 6"						BT-02	SD-01	
24+08		P4-28	MAINLINE	3	19' 6"	21' 6"	93	-1	SCA-01H		BT-01 (2)	SD-01, BT-02	JC-01, FT-01

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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
5/18/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 21+00 TO STA. 24+90

J103

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1102

DATE: 5/18/2015 11:28:57 AM
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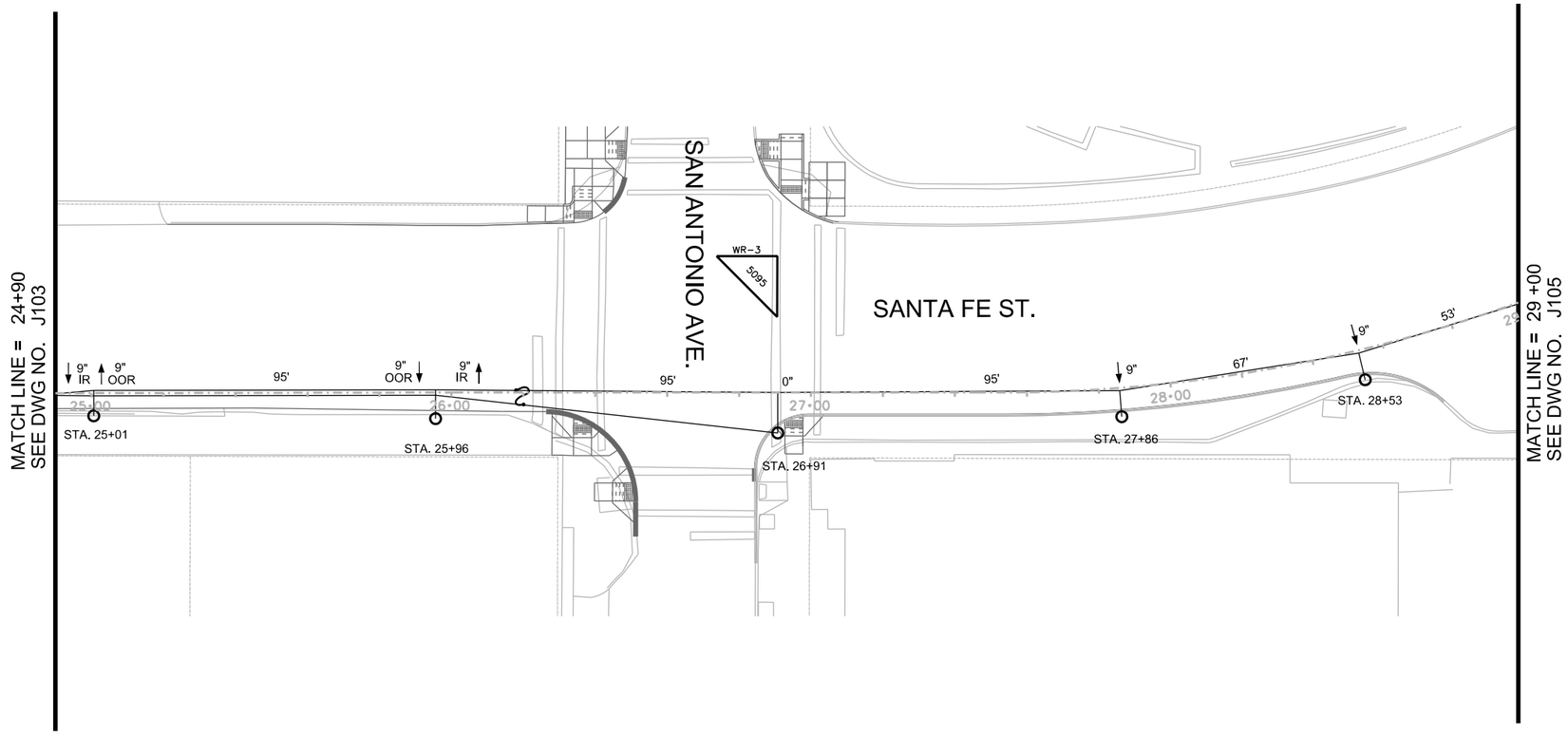

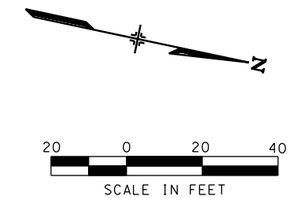

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
25+01		P3-28	MAINLINE	OOR 1, IR 3	20' 0", 19' 6"		95	OOR -9, IR 9	SCA-04HA		BT-01 (2)	SD-01	LA-01
25+96		P3-28	MAINLINE	OOR 3, IR 1	20' 0", 19' 6"		95	OOR 9, IR -9	SCA-04HB		BT-01 (2)	SD-01	JC-01, LA-01
26+91		P4-28	MAINLINE	1	19' 6"	21' 6"	95	0	SCA-01L		BT-01 (2)	SD-01, BT-02	FT-01
27+86	O	P1O-28	MAINLINE	1	19' 6"		67	9	SCA-01H		BT-01 (2)	SD-01	
28+53	O	P1O-28	MAINLINE	1	19' 6"		53	9	SCA-01H		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

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TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 24+90 TO STA. 29+00

J104

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1103

DN: URS CK: URS DW: URS CK: URS

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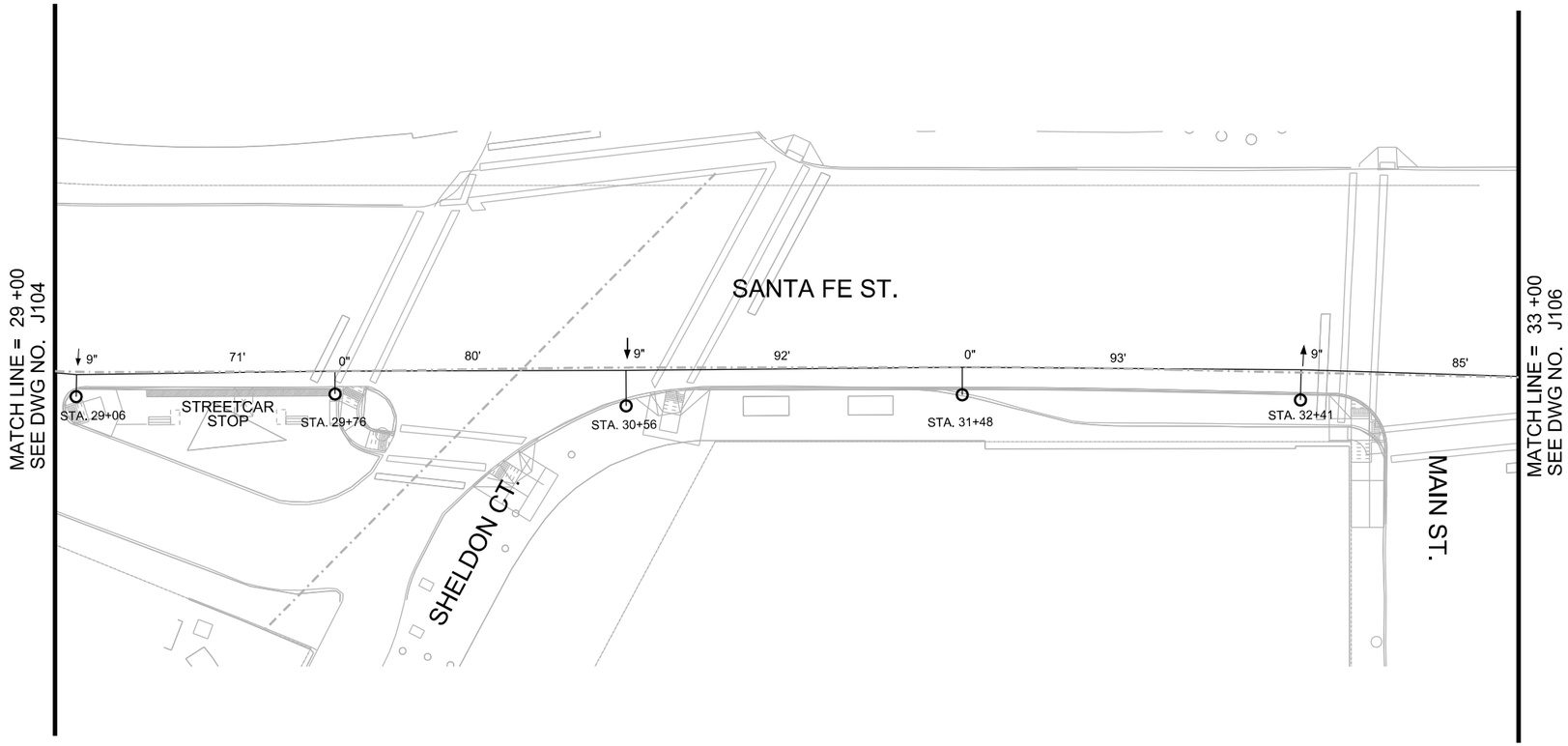

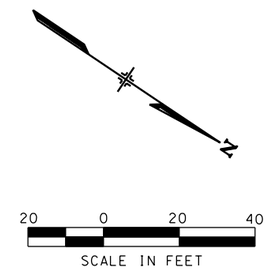

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
29+06	O	P1O-28	MAINLINE	1	19' 6"		71	9	SCA-01M		BT-01 (2)	SD-01	
29+76	L,O	P1O-28-L	MAINLINE	1	19' 6"		80	0	SCA-01L		BT-01 (2)	SD-01	
30+56	O	P1O-28	MAINLINE	1	19' 6"		92	9	SCA-01L		BT-01 (2)	SD-01	
31+48	L,O	P1O-28-L	MAINLINE	1	19' 6"		93	0	SCA-07M		BT-01 (2)	SD-01	
32+41	O	P1O-28	MAINLINE	1	19' 6"		85	-9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
2/26/14

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LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 29+00 TO STA. 33+00

J105

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1104

DATE: 2/26/2014 2:01:58 PM
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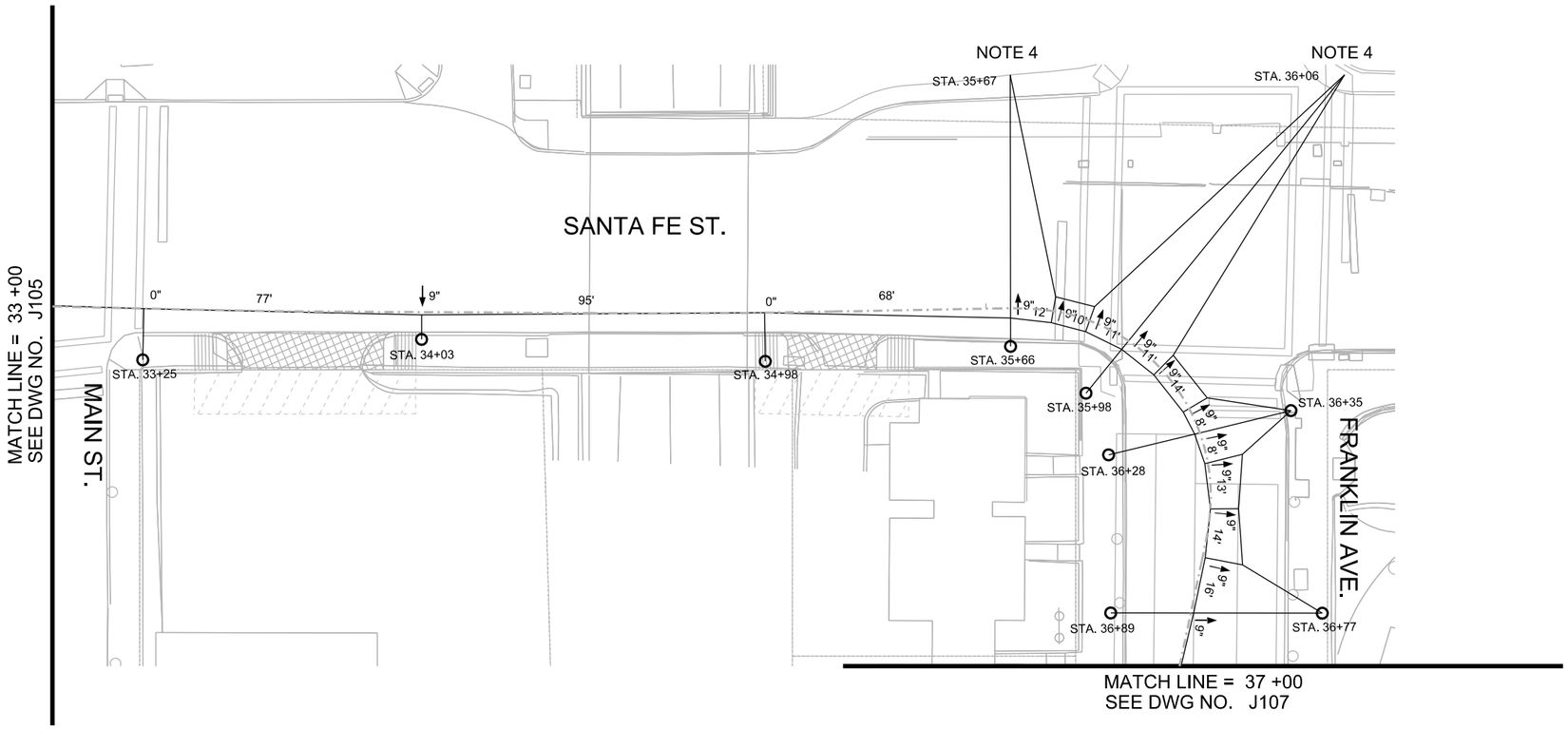

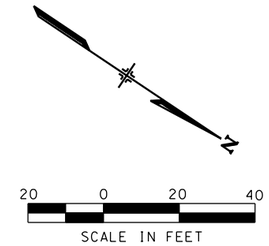

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.
4. WIRE ASSEMBLIES ATTACHED TO BALLPARK STRUCTURE BUILDING ATTACHMENTS.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
33+25	O,T	P1O-28-T	MAINLINE	1	19' 6"		77	0	SCA-01L		BT-01 (2)	SD-01	
34+03	L,O	P1O-28-L	MAINLINE	1	19' 6"		95	9	SCA-01L		BT-01 (2)	SD-01	
34+98	O	P1O-28	MAINLINE	1	19' 6"		68	0	SCA-01L		BT-01 (2)	SD-01	
35+66	O	P2O-28	MAINLINE	1	19' 6"		SEE DWG J106A						
35+67			MAINLINE	1	19' 6"		SEE DWG J106A						
35+97	L, O	P2O-28	MAINLINE	1	19' 6"		SEE DWG J106A						
36+06			MAINLINE	1	19' 6"		SEE DWG J106A						
36+28	O	P2O-28	MAINLINE	1	19' 6"		SEE DWG J106A						
36+35		P3-28	MAINLINE	1	19' 6"		SEE DWG J106A						
36+77		P3-28	MAINLINE	1	19' 6"		SEE DWG J106A						
36+89	O	P2O-28	MAINLINE	1	19' 6"		SEE DWG J106A						

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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
2/16/15

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2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 33+00 TO STA. 37+00

J106

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1105

DN: URS CK: URS DW: URS CK: URS

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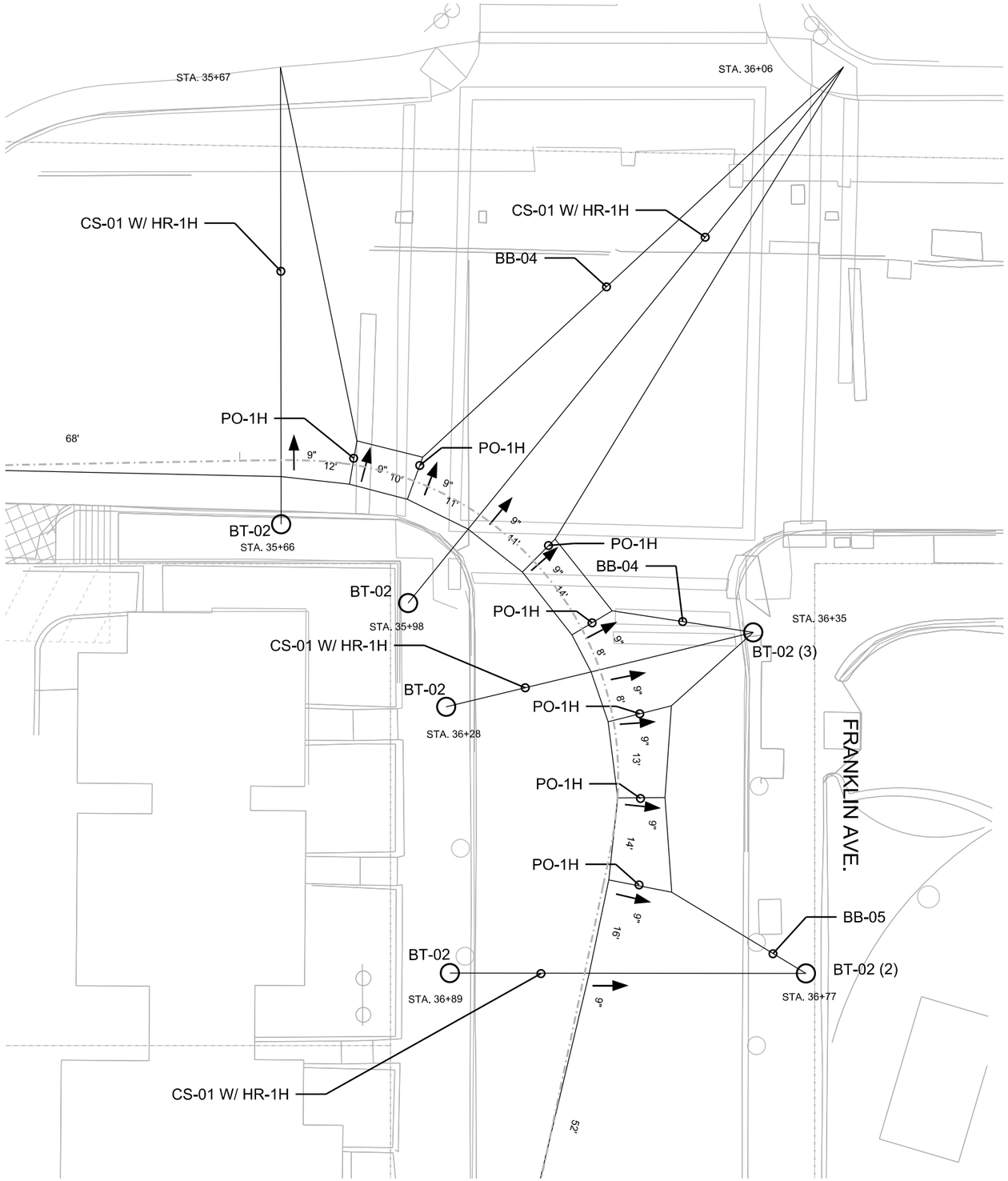

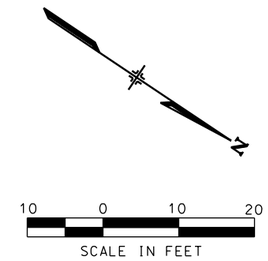

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STATE OF TEXAS
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2/16/15

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2829 Montana Suite 206
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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
INTERSECTION OF SANTA FE ST.
AND FRANKLIN AVE.

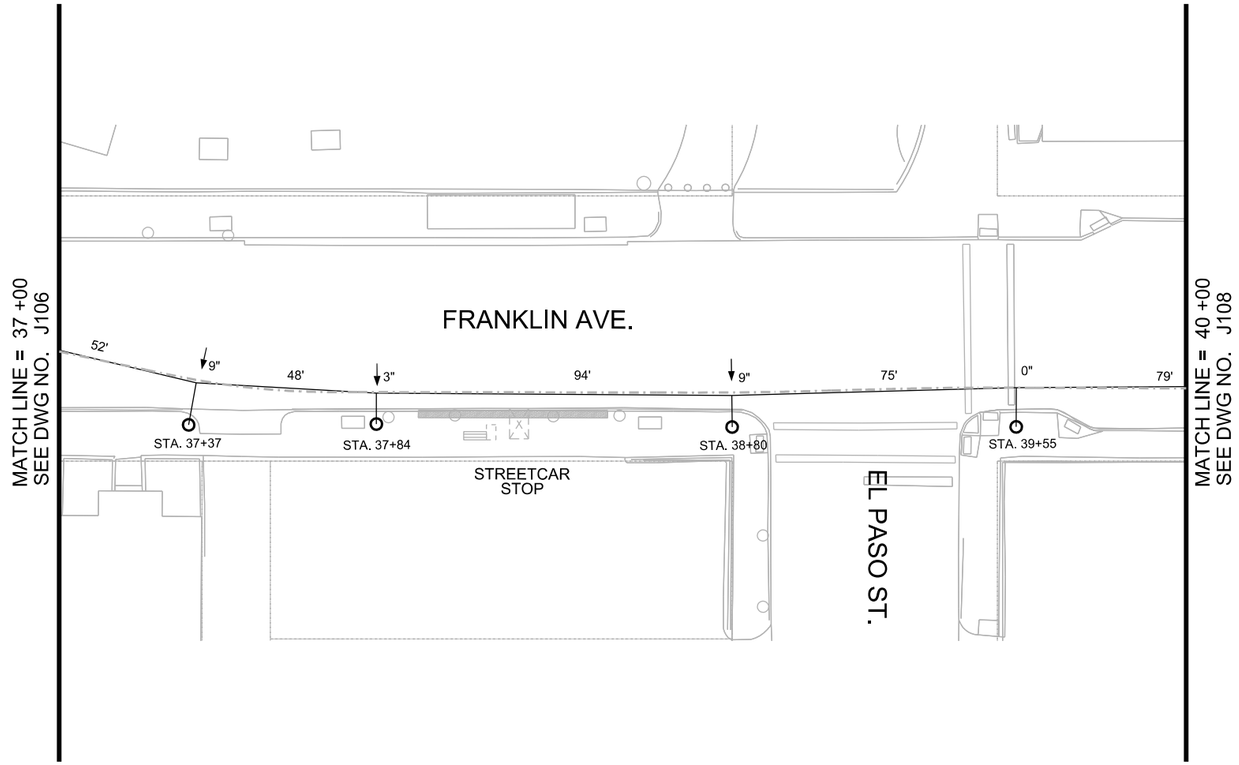
EL PASO
TEXAS

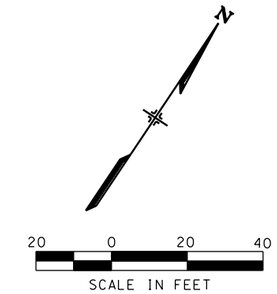
J106A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1106

DN: URS | CK: URS | DW: URS | CK: URS

DATE: 2/16/2015 8:57:02 AM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J106A.dgn





NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
37+37	O	P1O-28	MAINLINE	1	19' 6"		48	9	SCA-01H		BT-01 (2)	SD-01	LA-01
37+84	O	P1O-28	MAINLINE	1	19' 6"		94	3	SCA-01L		BT-01 (2)	SD-01	
38+80	O	P1O-28	MAINLINE	1	19' 6"		75	9	SCA-01L		BT-01 (2)	SD-01	
39+55	O	P1O-28	MAINLINE	1	19' 6"		79	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
2/26/14

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 37+00 TO STA. 40+00

J107

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1107

DATE: 2/26/2014 2:02:49 PM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J107.dgn

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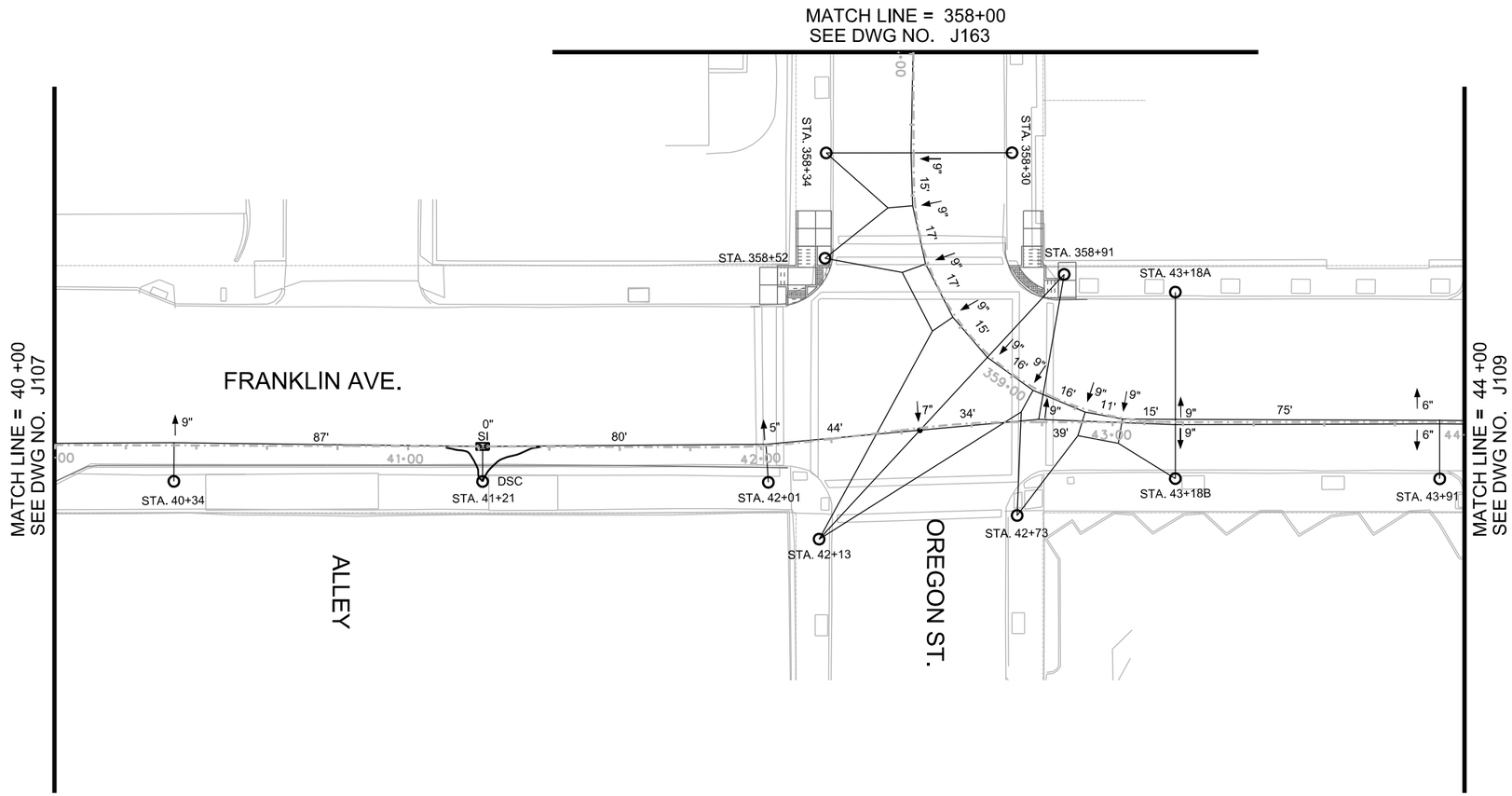

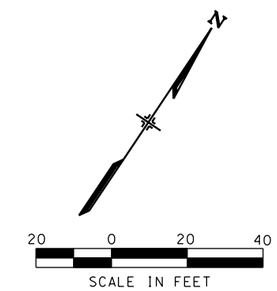

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. AT HIS OPTION THE CONTRACTOR SHALL MAINTAIN A 6" CLEARANCE BETWEEN CROSS-SPANS AND CONTACT WIRE OR INSTALL A SPACE INSULATOR BETWEEN CROSS SPAN WIRE AND CONTACT WIRE.
4. SCA-05 MAY NEED MODIFICATION TO WORK WITH LIGHTING ON POLE.
5. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
40+34	L,O	P1O-28-L	MAINLINE	1	19' 6"		87	-9	SCA-07M		BT-01 (2)	SD-01	
41+21	O	P1O-28	MAINLINE	1	19' 6"		80	0	SCA-05		BT-01 (2)	SD-01, FC-01 (2)	SI-01, DS-02 (NOTE 4), LA-01 (2)
42+01	O	P1O-28	MAINLINE	1	19' 6"		SEE DWG J108A						
42+13		P4-30	MAINLINE	6, 1	19' 6"		SEE DWG J108A						
358+52		P3-28	MAINLINE	6	19' 6"		SEE DWG J108A						
358+34		P3-28	MAINLINE	6	19' 6"		SEE DWG J108A						
42+73		P3-28	MAINLINE	6	19' 6"		SEE DWG J108A						
358+30		P2-28	MAINLINE	6	19' 6"		SEE DWG J108A						
358+91		P3-28	MAINLINE	6, 1	19' 6"		SEE DWG J108A						
43+18A		P3-28	MAINLINE	6, 1	19' 6"		SEE DWG J108A						
43+18B		P3-28	MAINLINE	6, 1	19' 6"		SEE DWG J108A						
43+91	O	P2O-28	MAINLINE	6, 1	19' 6"		75	6, -6	SCA-04HC		BT-01 (2)	SD-01	JC-01

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 40+00 TO STA. 44+00
AND STA. 358+00

J108

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1108

DATE: 6/4/2013 2:53:08 PM
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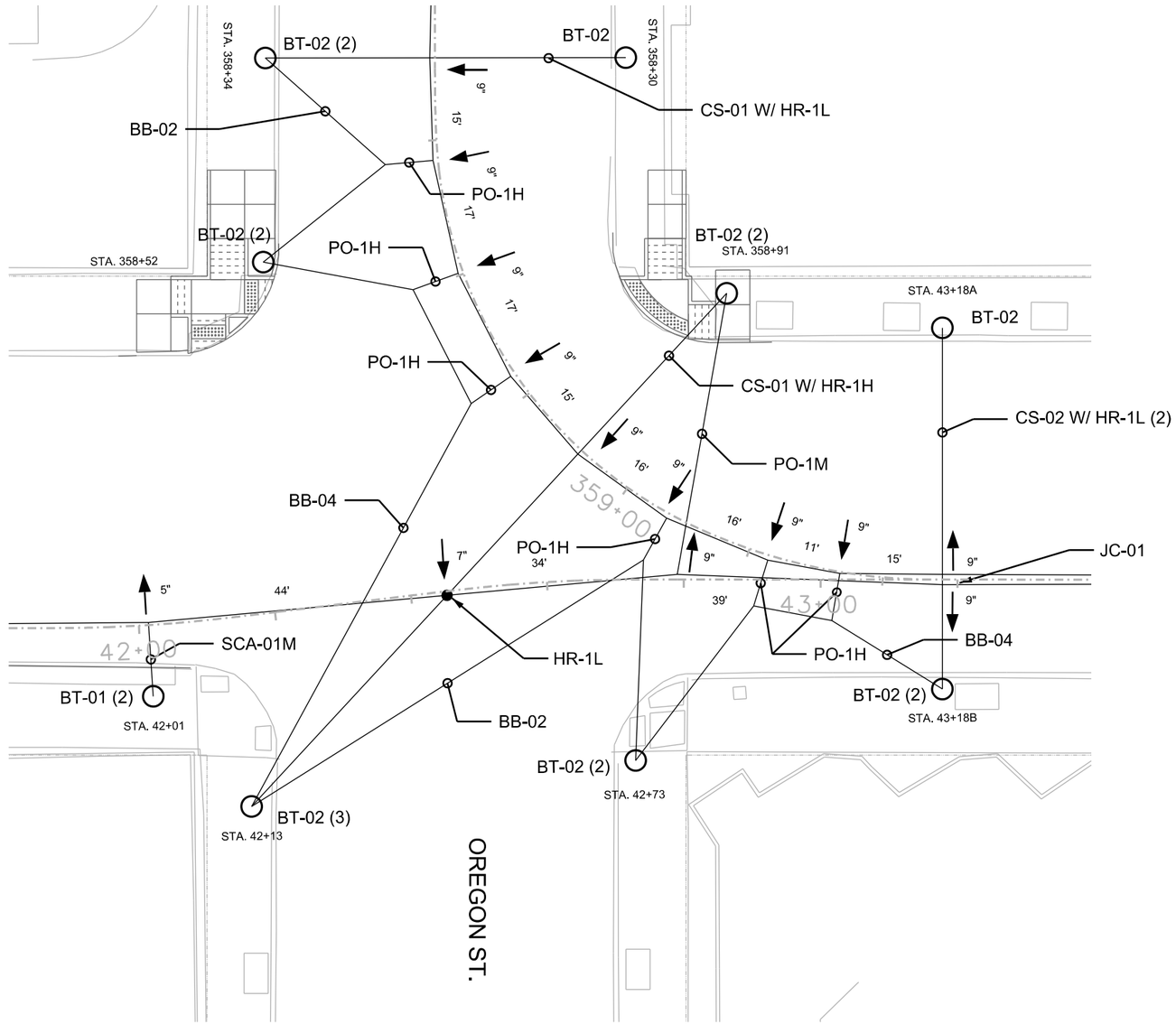

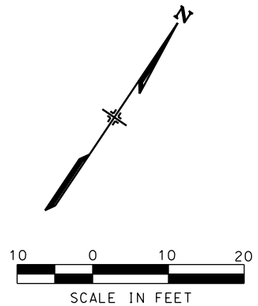

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
INTERSECTION OF FRANKLIN AVE.
AND OREGON ST.

J108A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1109

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 2:54:08 PM
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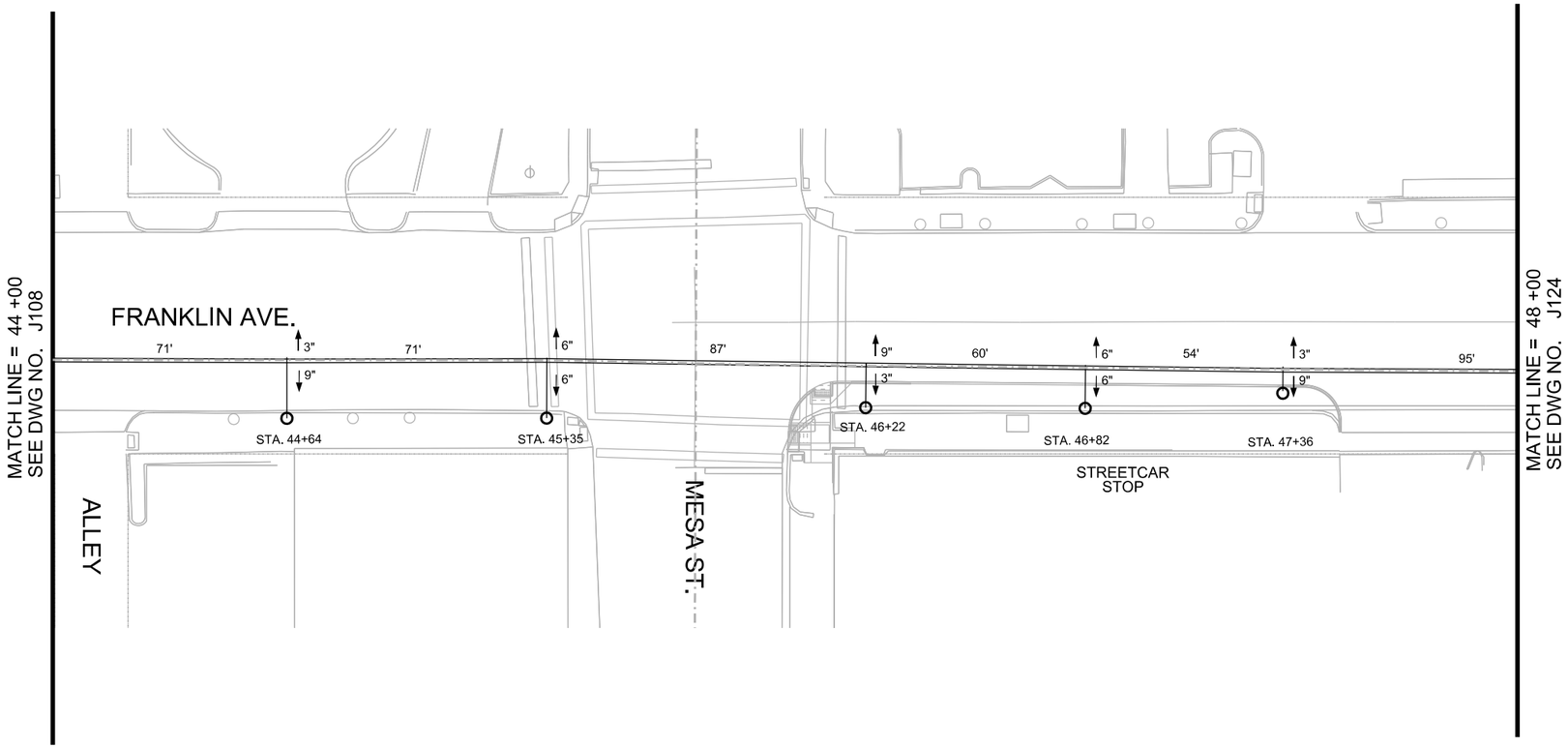

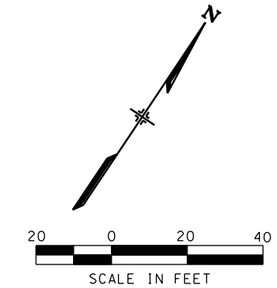

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
44+64	O	P2O-28	MAINLINE	6, 1	19' 6"		71	9, -3	SCA-04HC		BT-01 (2)	SD-01	JC-01
45+35	L,O	P2O-28-L	MAINLINE	6, 1	19' 6"		87	6, -6	SCA-04HC		BT-01 (2)	SD-01	JC-01
46+22	O	P2O-28	MAINLINE	6, 1	19' 6"		60	3, -9	SCA-04HC		BT-01 (2)	SD-01	JC-01
46+82	O	P2O-28	MAINLINE	6, 1	19' 6"		54	6, -6	SCA-04HC		BT-01 (2)	SD-01	JC-01
47+36	L,O	P2O-28-L	MAINLINE	6, 1	19' 6"		95	9, -3	SCA-04HC		BT-01 (2)	SD-01	JC-01

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/3/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 44+00 TO STA. 48+00

J109

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1110

DATE: 6/3/2015 11:26:51 AM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J109.dgn

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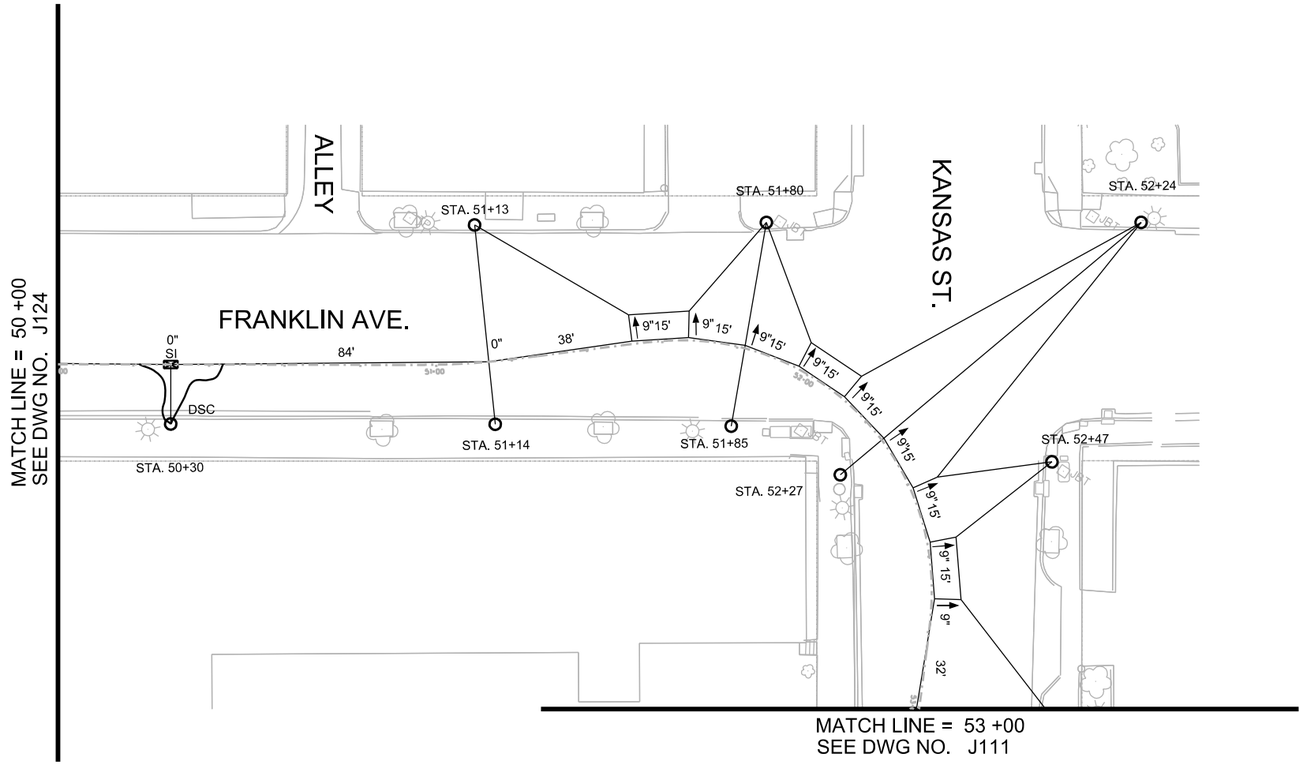

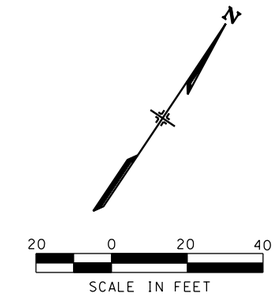

NOTES:

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
50+30	L,O	P2O-28-L	MAINLINE	1	19' 6"		84	0	SCA-05		BT-01 (2)	SD-01, FC-01 (2)	SI-01, DS-02, LA-01 (2)
51+13		P3-28	MAINLINE	1	19' 6"		SEE DWG J110A						
51+14	O	P2O-28	MAINLINE	1	19' 6"		SEE DWG J110A						
51+80		P3-28	MAINLINE	1	19' 6"		SEE DWG J110A						
51+85	L,O	P2O-28-L	MAINLINE	1	19' 6"		SEE DWG J110A						
52+24		P4-28	MAINLINE	1	19' 6"		SEE DWG J110A						
52+27	O,T	P2O-28-T	MAINLINE	1	19' 6"		SEE DWG J110A						
52+47		P3-28	MAINLINE	1	19' 6"		SEE DWG J110A						

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/3/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 50+00 TO STA. 53+00

J110

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1111

DN: URS CK: URS DW: URS CK: URS

DATE: 6/3/2015 11:36:30 AM
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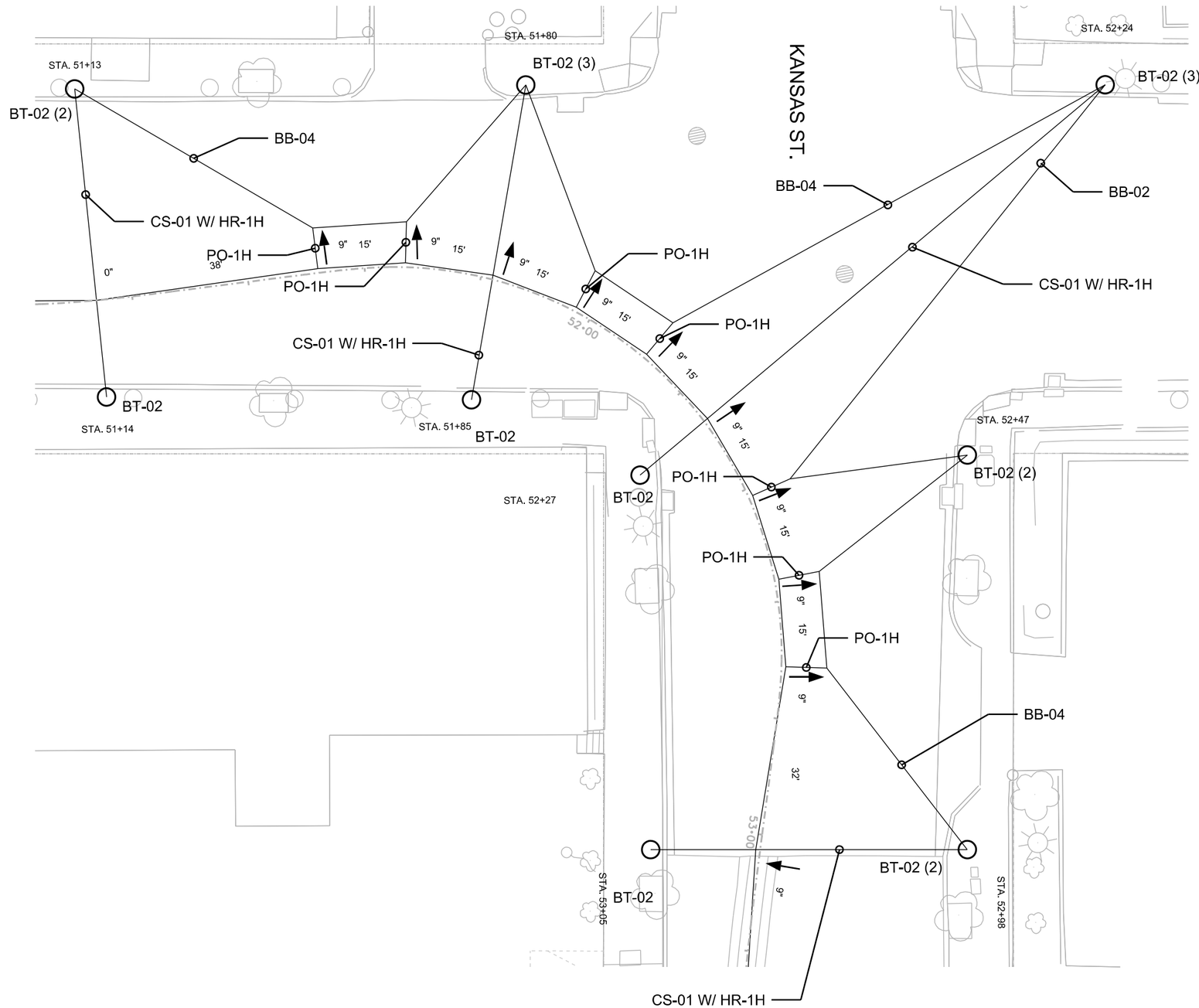

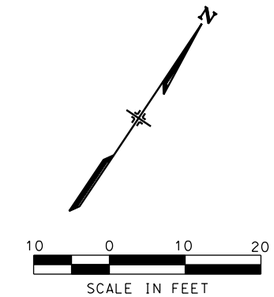

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/3/15

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TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
INTERSECTION OF KANSAS ST.
AND FRANKLIN AVE.

J110A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1112

DATE: 6/3/2015 11:45:32 AM
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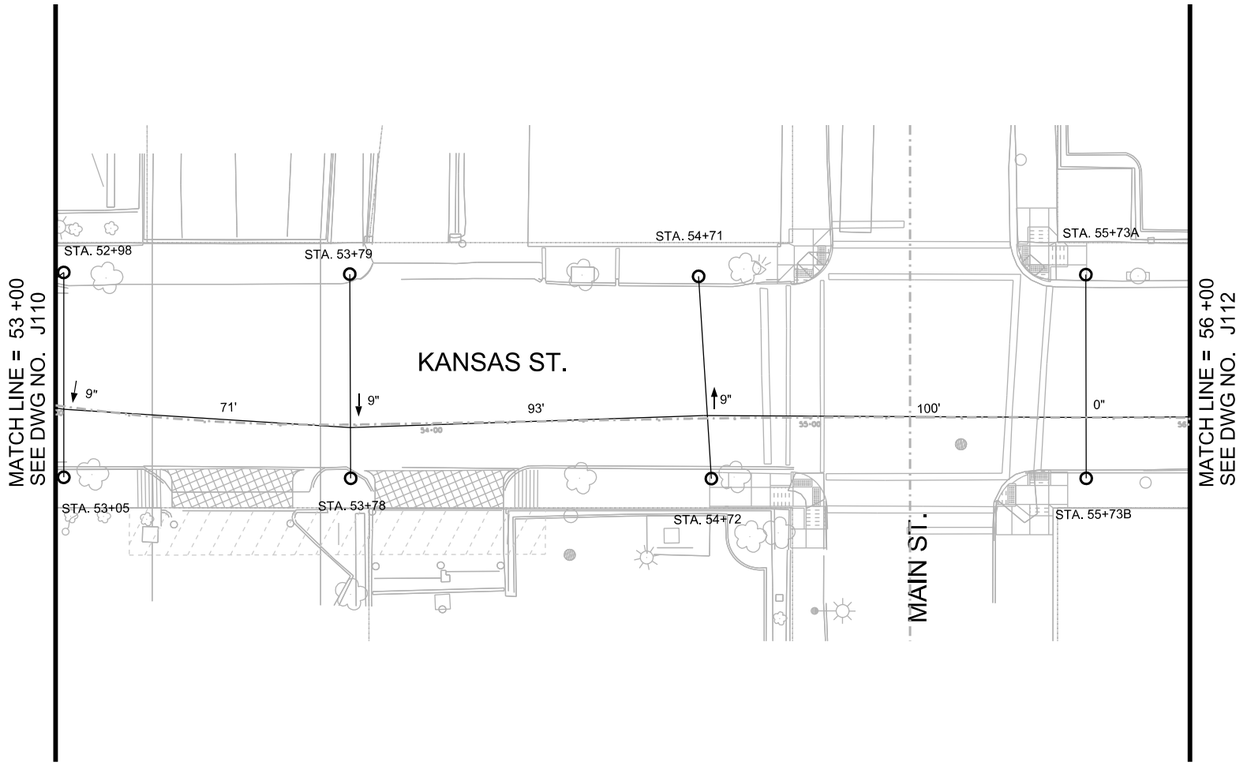
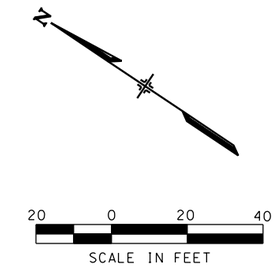
DN: URS CK: URS DW: URS CK: URS





NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
52+98		P3-28	MAINLINE	1	19' 6"		SEE DWG J110A						
53+05		P2-28	MAINLINE	1	19' 6"		SEE DWG J110A						
53+78		P2-28	MAINLINE	1	19' 6"		93	9	CS-01	HR-1L	BT-02	SD-01	
53+79		P2-28	MAINLINE	1	19' 6"						BT-02	SD-01	
54+71	L,O	P2O-28-L	MAINLINE	1	19' 6"		100	-9	CS-01	HR-1L	BT-02	SD-01	
54+72		P2-28	MAINLINE	1	19' 6"						BT-02	SD-01	
55+73A		P2-28	MAINLINE	1	19' 6"		88	0	CS-01	HR-1L	BT-02	SD-01	
55+73B		P2-28	MAINLINE	1	19' 6"						BT-02	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/3/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 53+00 TO STA. 56+00

J111

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1113

DATE: 6/3/2015 11:50:05 AM
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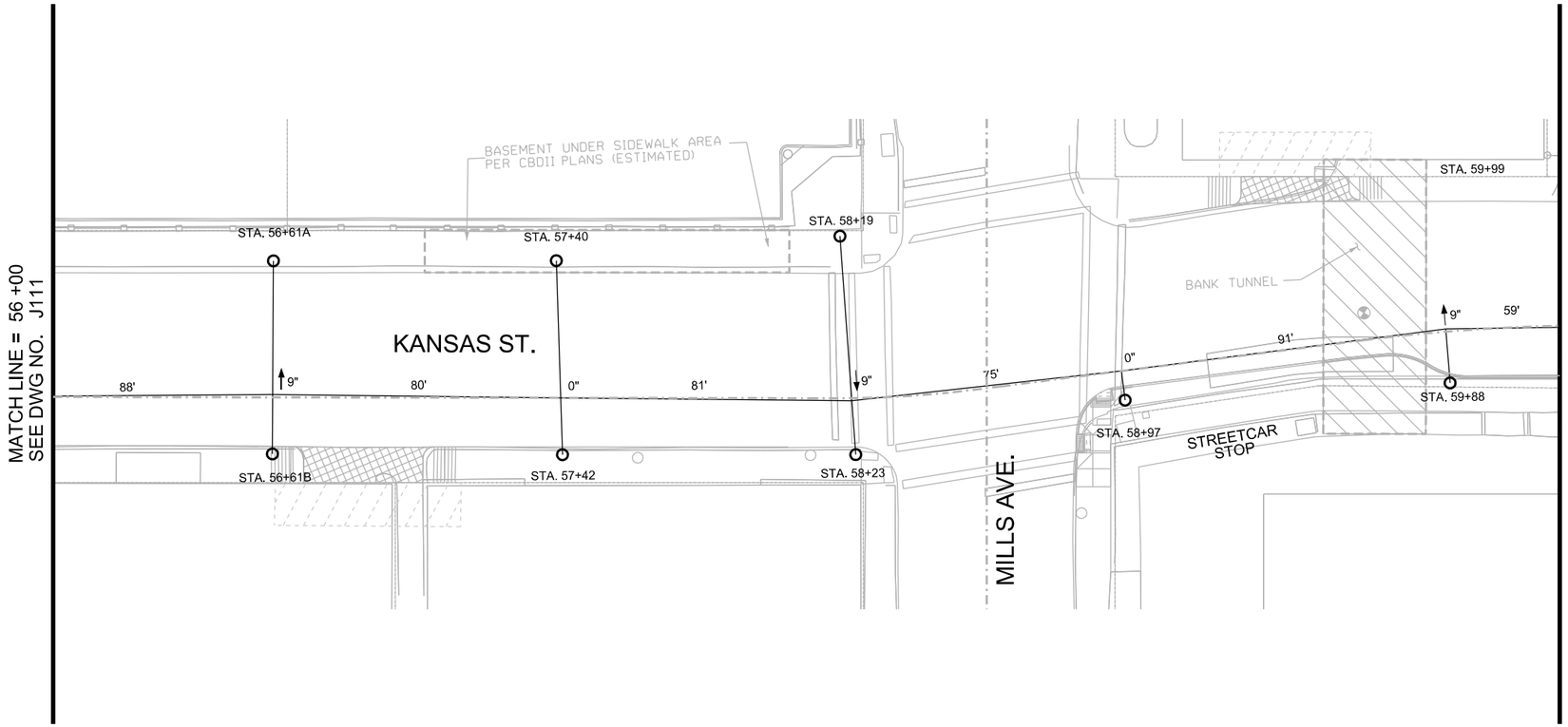

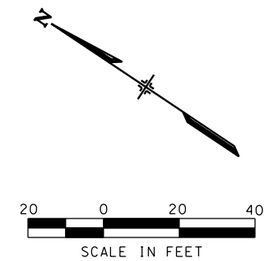

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
56+61A		P2-28	MAINLINE	1	19' 6"		80	-9	CS-01	HR-1L	BT-02	SD-01	
56+61B		P2-28	MAINLINE	1	19' 6"						BT-02	SD-01	
57+40		P2-28	MAINLINE	1	19' 6"		81	0	CS-01	HR-1L	BT-02	SD-01	
57+42		P2-28	MAINLINE	1	19' 6"						BT-02	SD-01	
58+19		P2-28	MAINLINE	1	19' 6"		75	9	CS-01	HR-1M	BT-02	SD-01	
58+23		P2-28	MAINLINE	1	19' 6"						BT-02	SD-01	
58+97	T	P1-28-T	MAINLINE	1	19' 6"		91	0	SCA-01L		BT-01 (2)	SD-01	
59+88		P1-28	MAINLINE	1	19' 6"		59	-9	SCA-02M		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
7/21/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 56+00 TO STA. 60+20

J112

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1114

DN: URS CK: URS DW: URS CK: URS

DATE: 7/21/2015 10:33:46 AM
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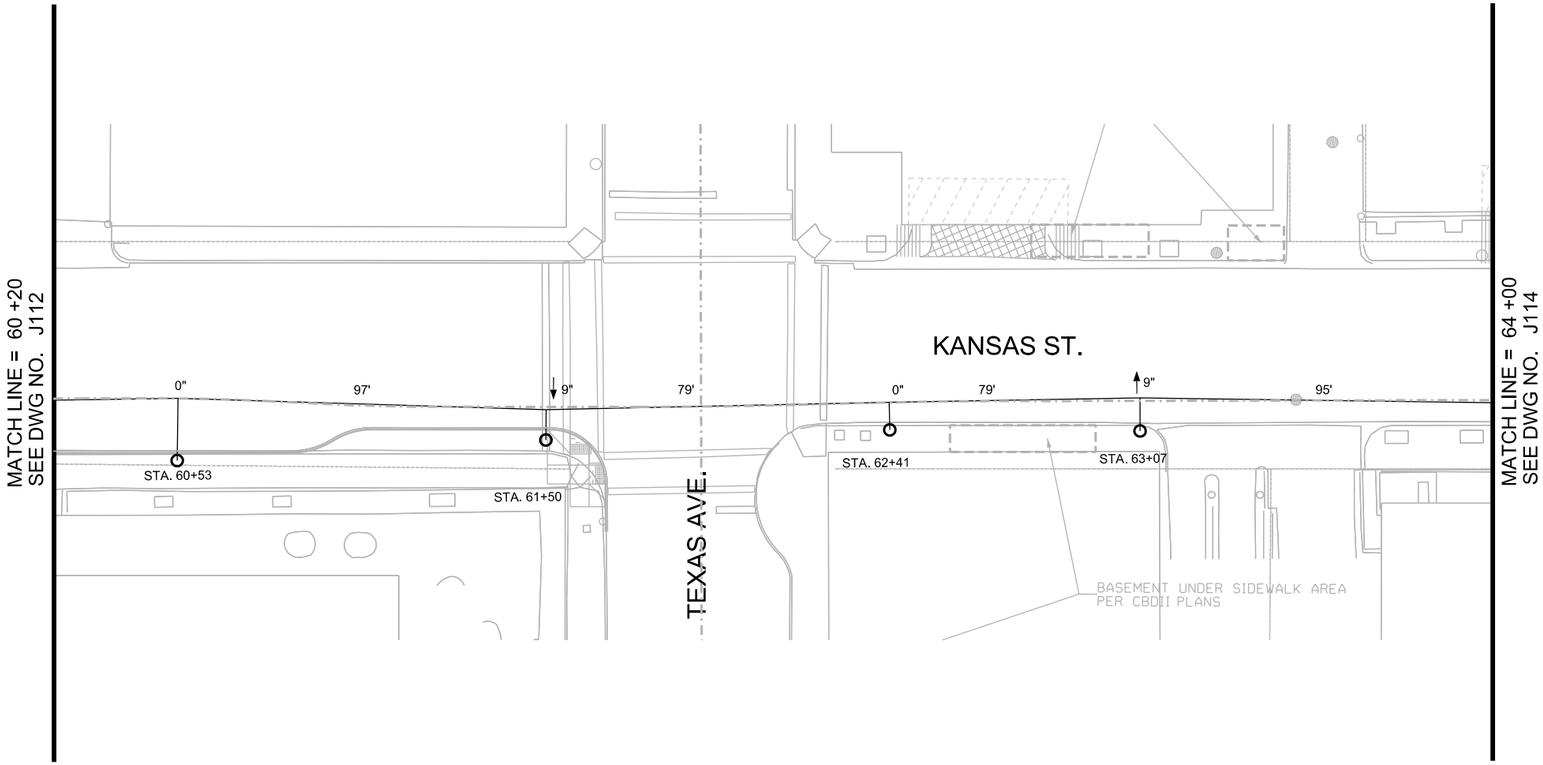

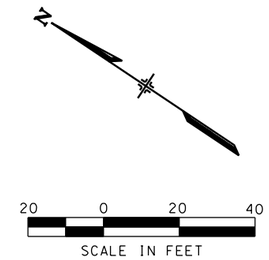

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
60+53		P1-28	MAINLINE	1	19' 6"		97	0	SCA-01L		BT-01 (2)	SD-01	LA-01
61+50		P1-28	MAINLINE	1	19' 6"		79	9	SCA-01L		BT-01 (2)	SD-01	
62+41		P2-28	MAINLINE	1	19' 6"		66	0	SCA-01L		BT-01 (2)	SD-01	
63+07		P1-28	MAINLINE	1	19' 6"		95	-9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
7/21/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 60+20 TO STA. 64+00

J113

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1115

DATE: 7/21/2015 9:29:33 AM
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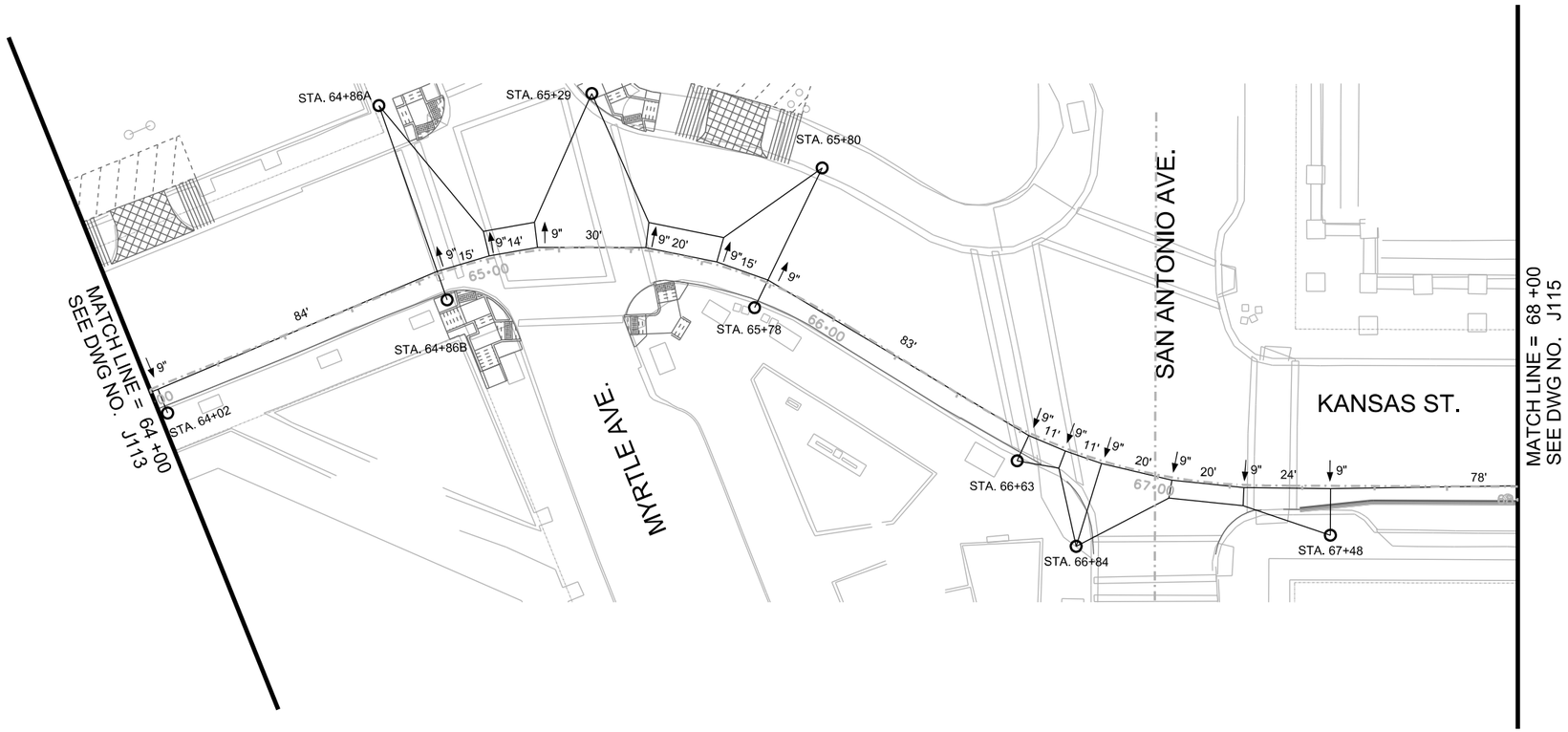

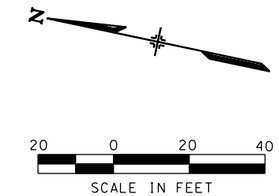

NOTES:

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2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
64+02		P1-28	MAINLINE	1	19' 6"		84	9	SCA-01L		BT-01 (2)	SD-01	
64+86A		P3-28	MAINLINE	1	19' 6"		94	-9	CS-01	HR-1M	BT-02(2)	SD-01	
64+86B		P2-28	MAINLINE	1	19' 6"						BT-02	SD-01	
65+29		P3-28	MAINLINE	1	19' 6"				BB-04 (2)		BT-02 (2)	SD-01	PO-1H (4)
65+78		P2-28	MAINLINE	1	19' 6"		83	-9	CS-01	HR-1H	BT-02	SD-01	
65+80		P3-28	MAINLINE	1	19' 6"						BT-02	SD-01	
66+63		P3-28	MAINLINE	1	19' 6"		22	9	SCA-01H		BT-01 (2)	SD-01, BT-02	BB-01, PO-1M
66+84		P3-28	MAINLINE	1	19' 6"		64	9	BB-03	PO-1M (3)	BT-02 (3)	SD-01	
67+48		P3-28	MAINLINE	1	19' 6"		78	9	SCA-01L		BT-01 (2)	SD-01, BT-02	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
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6/7/13

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 64+00 TO STA. 68+00

J114

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1116

DATE: 6/3/2013 2:46:05 PM
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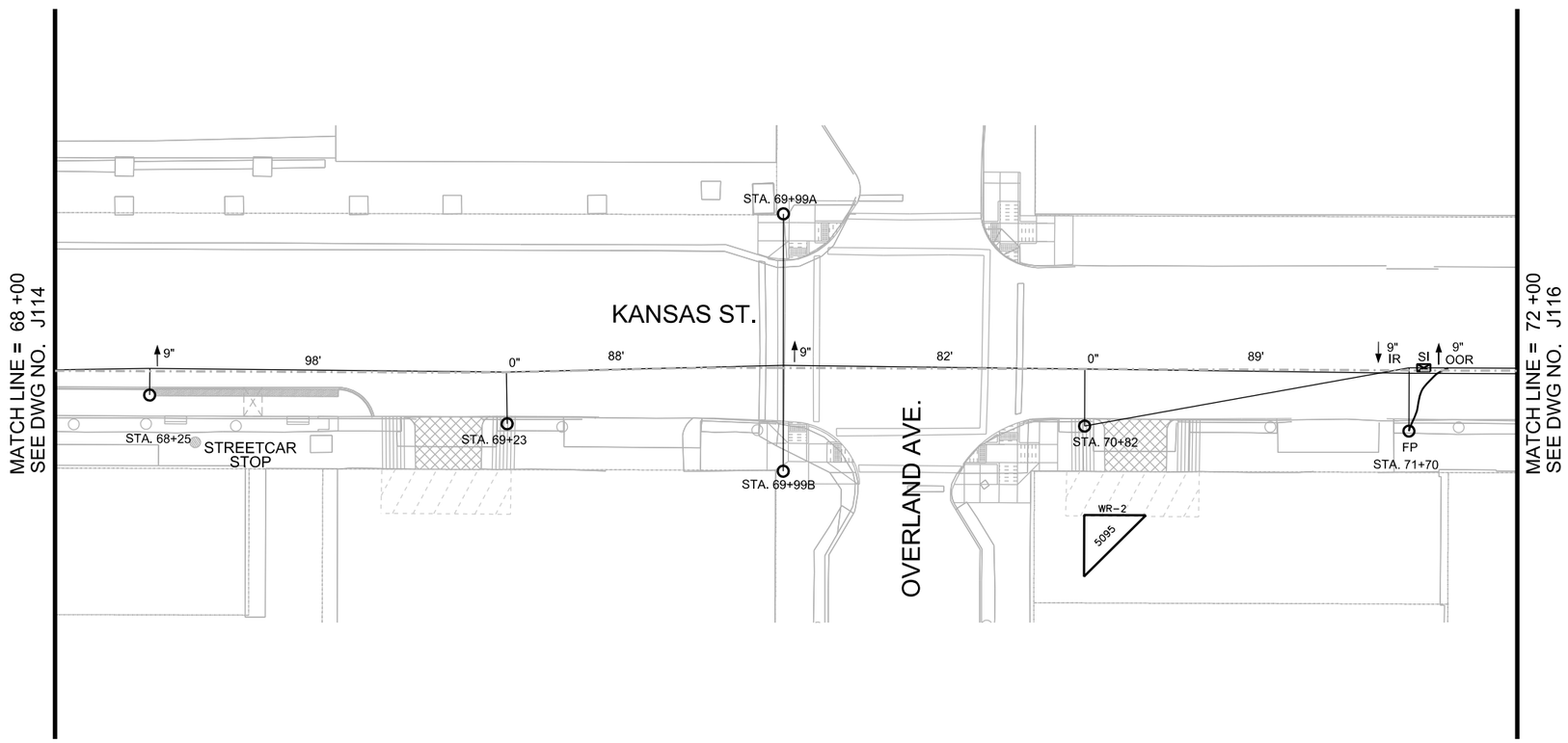

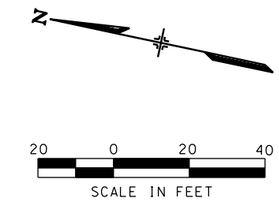

NOTES:

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GENERAL ARRANGEMENT
OVERLAPS OR CANTILEVERS
SEE DWG. J201

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
68+25		P1-28	MAINLINE	1	19' 6"		98	-9	SCA-01L		BT-01 (2)	SD-01	
69+23		P1-28	MAINLINE	1	19' 6"		76	0	SCA-01L		BT-01 (2)	SD-01	
69+99A		P2-28	MAINLINE	1	19' 6"		83	-9	CS-01	HR-1L	BT-02	SD-01	
69+99B		P2-28	MAINLINE	1	19' 6"						BT-02	SD-01	
70+82		P4-28	MAINLINE	1	19' 6"	21' 6"	89	0	SCA-01L		BT-01 (2)	SD-01, BT-02	JC-01, FT-01
71+70	F	P3-28-F	MAINLINE	OOR 3, IR 1	20' 0", 19' 6"		71	OOR -9, IR 9	SCA-04HA		BT-01 (2)	SD-01	LA-01, DS-01, FC-01 (2), SI-02 (2)

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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2/26/14

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 68+00 TO STA. 72+00

J115

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1117

DATE: 2/26/2014 1:57:13 PM
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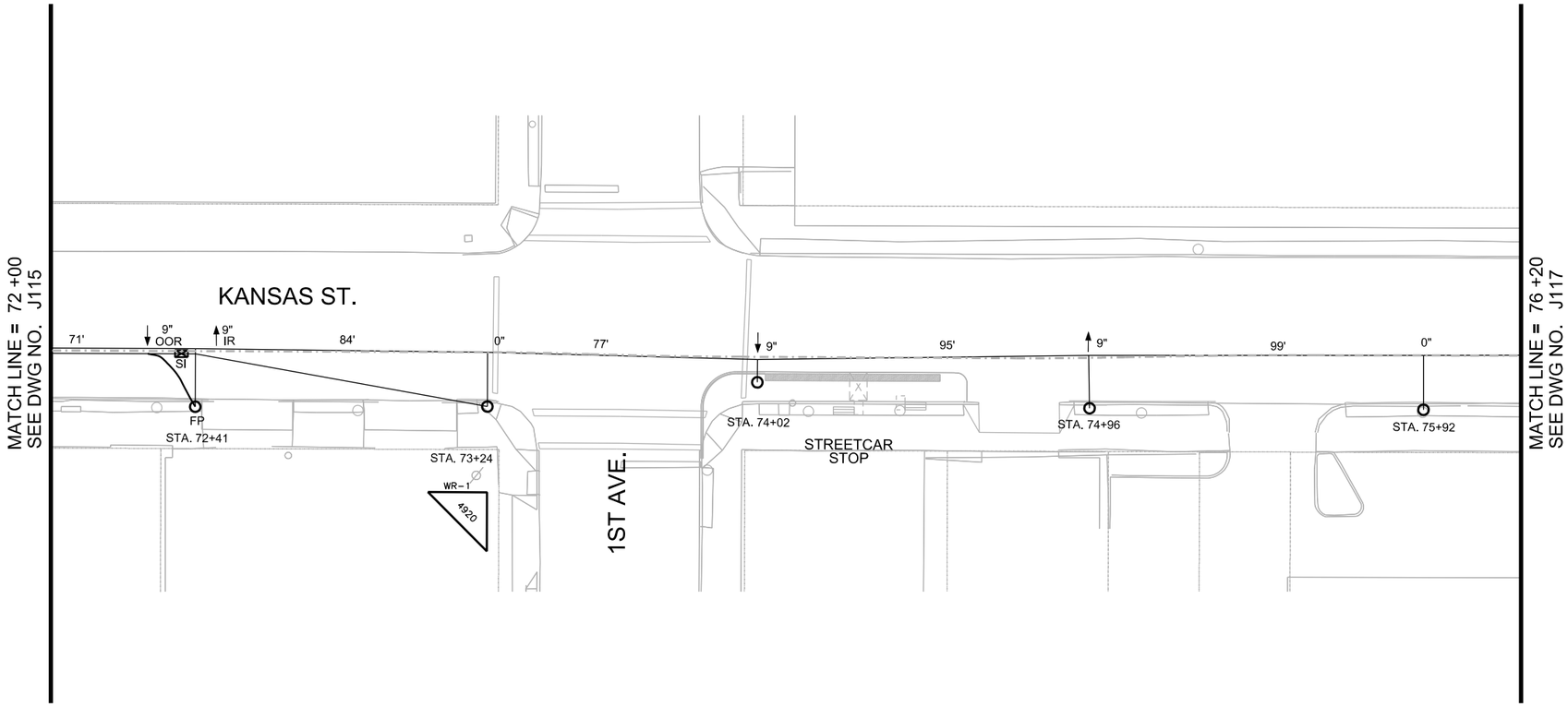

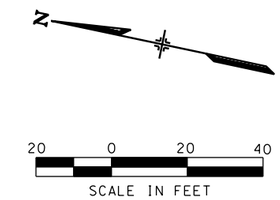

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
72+41	F	P3-28-F	MAINLINE	OOR 1, IR 3	20' 0", 19' 6"		84	OOR 9, IR -9	SCA-04HB		BT-01 (2)	SD-01	JC-01, LA-01, DS-01, FC-01 (2)
73+24		P4-28	MAINLINE	3	19' 6"	21' 6"	77	0	SCA-01L		BT-01 (2)	SD-01, BT-02	FT-01
74+02		P1-28	MAINLINE	3	20' 0"		95	9	SCA-01L		BT-01 (2)	SD-01	
74+96		P1-30	MAINLINE	3	21' 0"		96	-9	SCA-01L		BT-01 (2)	SD-01	
75+92		P1-30	MAINLINE	3	22' 0"		90	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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112273
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5/18/15

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(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 72+00 TO STA. 76+20

J116

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1118

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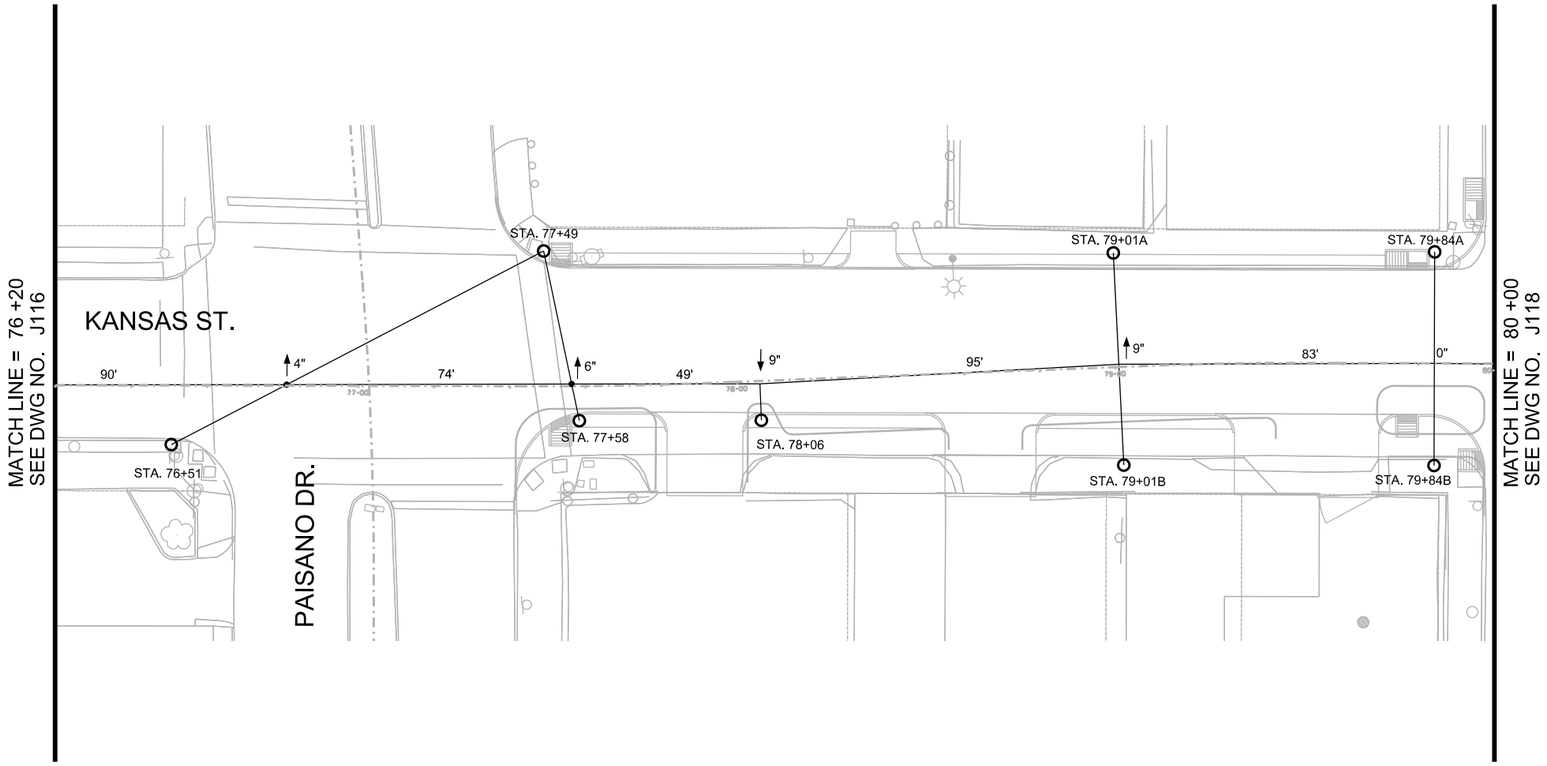

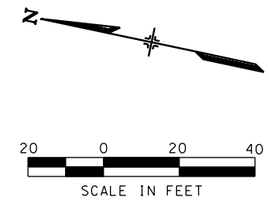

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
76+51		P2-30	MAINLINE	3	22' 9"		74	-4	CS-01	HR-1L	BT-02	SD-01	
77+49		P3-30	MAINLINE	3	22' 9"		49	-6	CS-01	HR-1L	BT-02 (2)	SD-01	
77+58	L,O	P2O-28-L	MAINLINE	3	22' 9"						BT-02	SD-01	
78+06		P1-28	MAINLINE	3	22' 6"		95	9	SCA-01L		BT-01 (2)	SD-01	
79+01A		P2-28	MAINLINE	3	21' 6"		83	-9	CS-01	HR-1L	BT-02	SD-01	
79+01B		P2-28	MAINLINE	3	21' 6"						BT-02	SD-01	
79+84A		P2-28	MAINLINE	3	20' 9"		86	0	CS-01	HR-1L	BT-02	SD-01	LA-01
79+84B		P2-28	MAINLINE	3	20' 9"						BT-02	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
7/14/15

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URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 76+20 TO STA. 80+00

J117

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1119

DN: URS CK: URS DW: URS CK: URS

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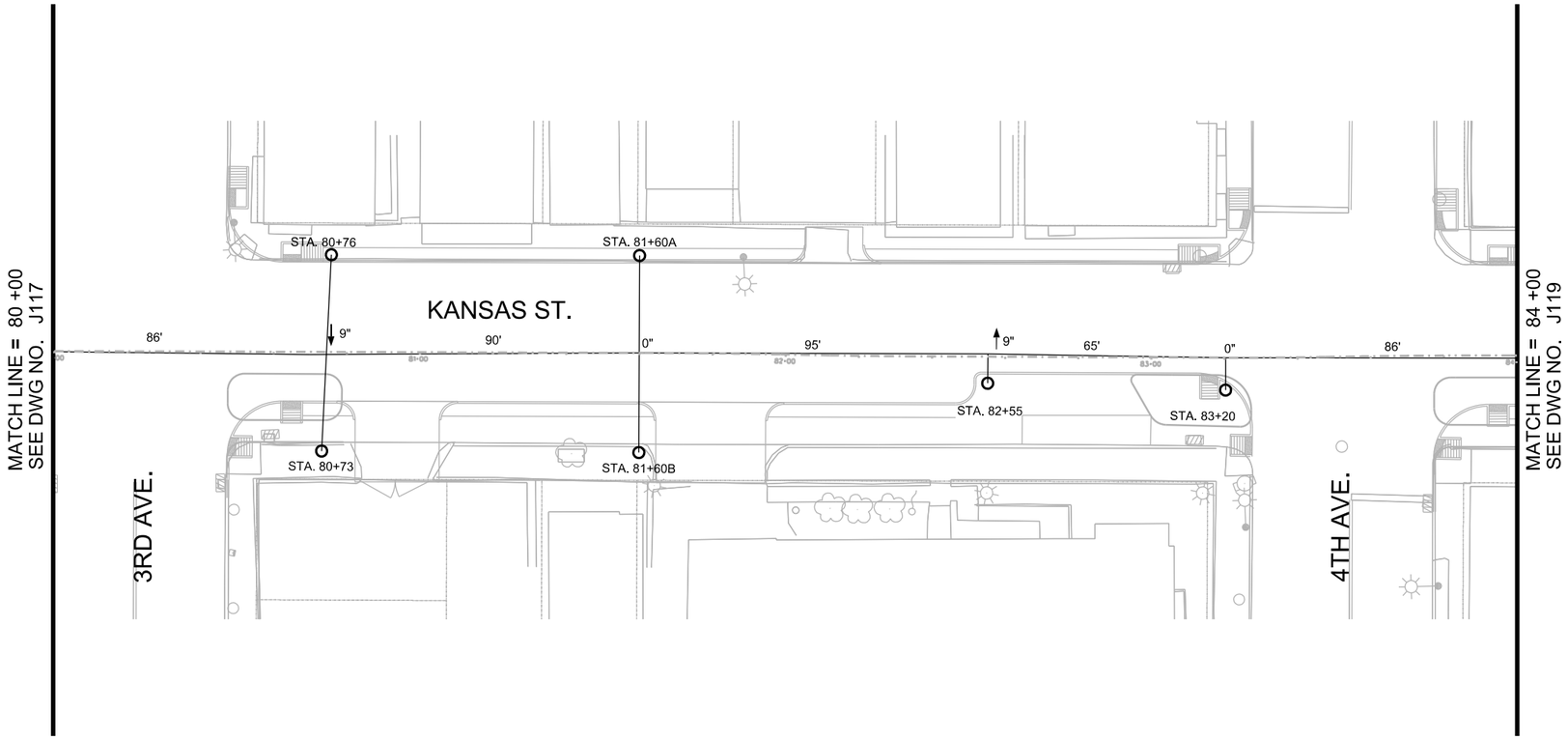

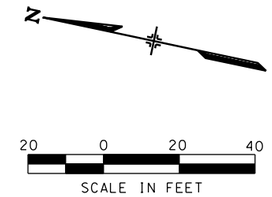

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
80+73		P2-28	MAINLINE	3	20' 0"		90	9	CS-01	HR-1L	BT-02	SD-01	
80+76		P2-28	MAINLINE	3	20' 0"						BT-02	SD-01	
81+60A		P2-28	MAINLINE	3	19' 6"		95	0	CS-01	HR-1L	BT-02	SD-01	
81+60B		P2-28	MAINLINE	3	19' 6"						BT-02	SD-01	
82+55	L,O	P1O-28-L	MAINLINE	3	19' 6"		65	-9	SCA-01L		BT-01 (2)	SD-01	
83+20		P1-28	MAINLINE	3	19' 6"		86	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
7/14/15

LTK
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TBPE REGISTRATION NO. F-1389

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2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 80+00 TO STA. 84+00

J118

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1120

DATE: 7/13/2015 6:21:39 PM
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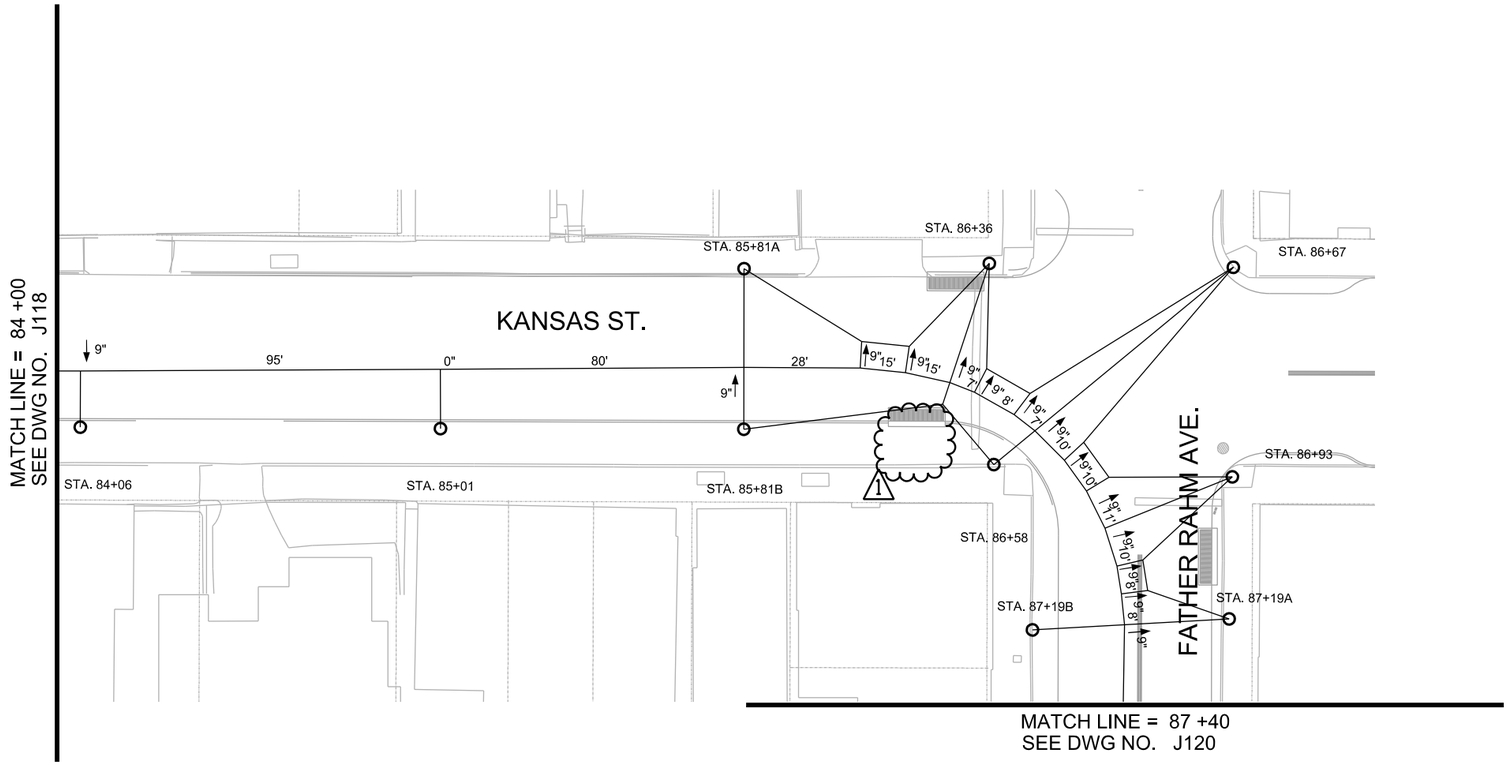

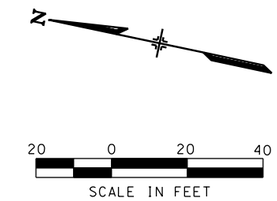

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2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
84+06	L,O	P2O-28-L	MAINLINE	3	19' 6"		95	9	SCA-01L		BT-01 (2)	SD-01	
85+01		P2-28	MAINLINE	3	19' 6"		80	0	SCA-01L		BT-01 (2)	SD-01	
85+81A		P3-28	MAINLINE	3	19' 6"	SEE DWG J119A							
85+81B		P2-28	MAINLINE	3	19' 6"	SEE DWG J119A							
86+36		P3-28	MAINLINE	3	19' 6"	SEE DWG J119A							
86+58	L,O	P2O-28-L	MAINLINE	3	19' 6"	SEE DWG J119A							
86+67		P4-28	MAINLINE	3	19' 6"	SEE DWG J119A							
86+93		P3-28	MAINLINE	3	19' 6"	SEE DWG J119A							
87+19A		P3-28	MAINLINE	3	19' 6"	SEE DWG J119A							
87+19B		P2-28	MAINLINE	3	19' 6"	SEE DWG J119A							

NO	DATE	REVISION	APPROVED
-	08/07/15	CONFORMED SET	-
1	05/27/16	FATHER RAHM REDESIGN	-

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
5/27/16

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 84+00 TO STA. 87+40

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J119

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1121

DATE: 6/16/2016 10:35:49 AM
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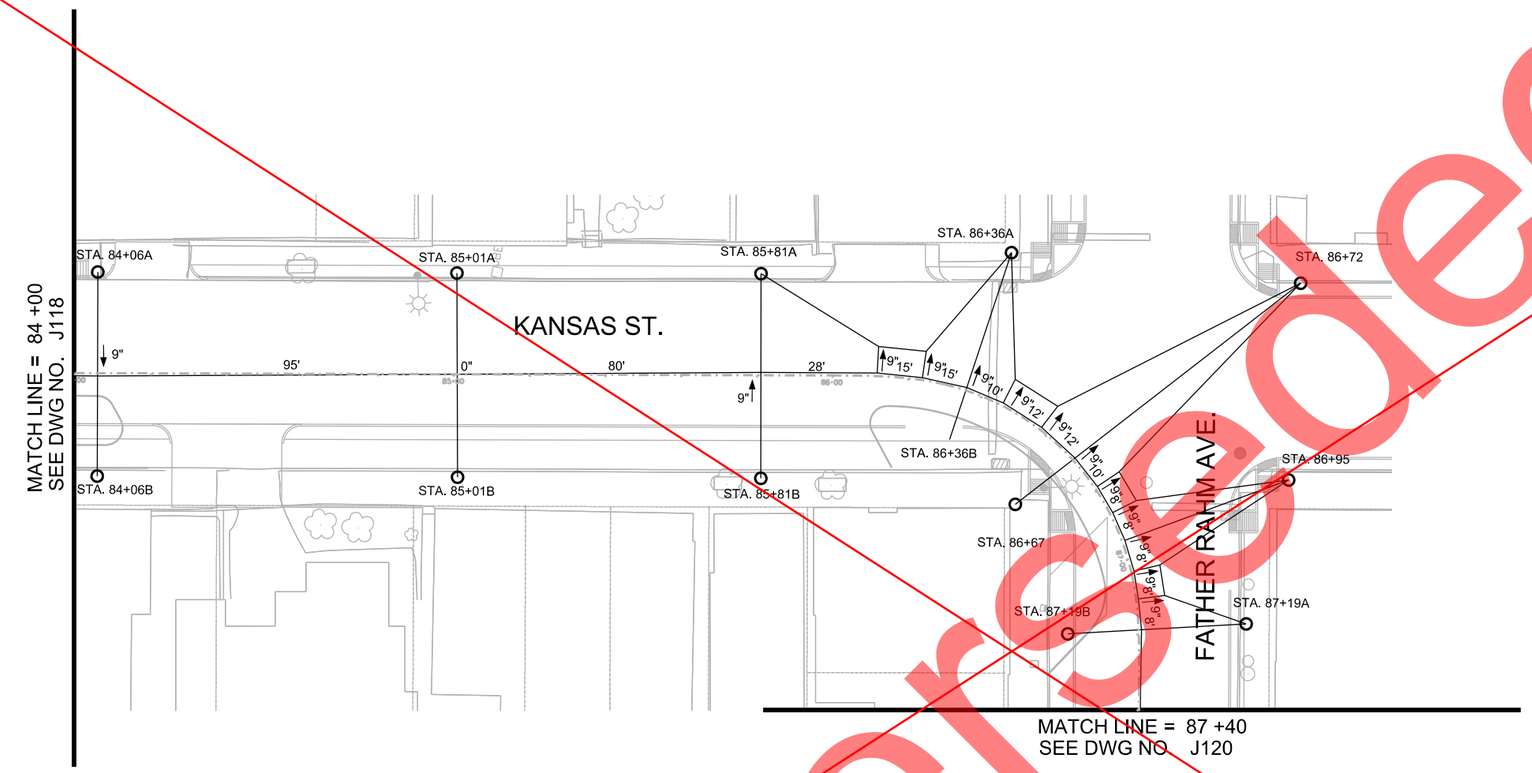

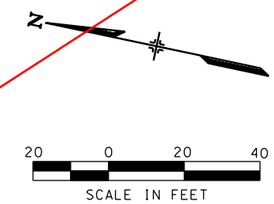

NOTES:

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
84+06A		P2-28	MAINLINE	3	19' 6"		95	9	CS-01	HR-1L	BT-02	SD-01	
84+06B	L,O	P2O-28-L	MAINLINE	3	19' 6"						BT-02	SD-01	
85+01A		P2-28	MAINLINE	3	19' 6"		80	0	CS-01	HR-1L	BT-02	SD-01	
85+01B		P2-28	MAINLINE	3	19' 6"						BT-02	SD-01	
85+81A		P3-28	MAINLINE	3	19' 6"	SEE DWG J119A							
85+81B		P2-28	MAINLINE	3	19' 6"	SEE DWG J119A							
86+36A		P3-28	MAINLINE	3	19' 6"	SEE DWG J119A							
86+36B		P2-28	MAINLINE	3	19' 6"	SEE DWG J119A							
86+67	L,O	P2O-28-L	MAINLINE	3	19' 6"	SEE DWG J119A							
86+72		P4-28	MAINLINE	3	19' 6"	SEE DWG J119A							
86+95		P3-28	MAINLINE	3	19' 6"	SEE DWG J119A							
87+19A		P3-28	MAINLINE	3	19' 6"	SEE DWG J119A							
87+19B		P2-28	MAINLINE	3	19' 6"	SEE DWG J119A							

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
7/14/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 84+00 TO STA. 87+40

J119

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1121

DATE: 7/13/2015 6:22:50 PM
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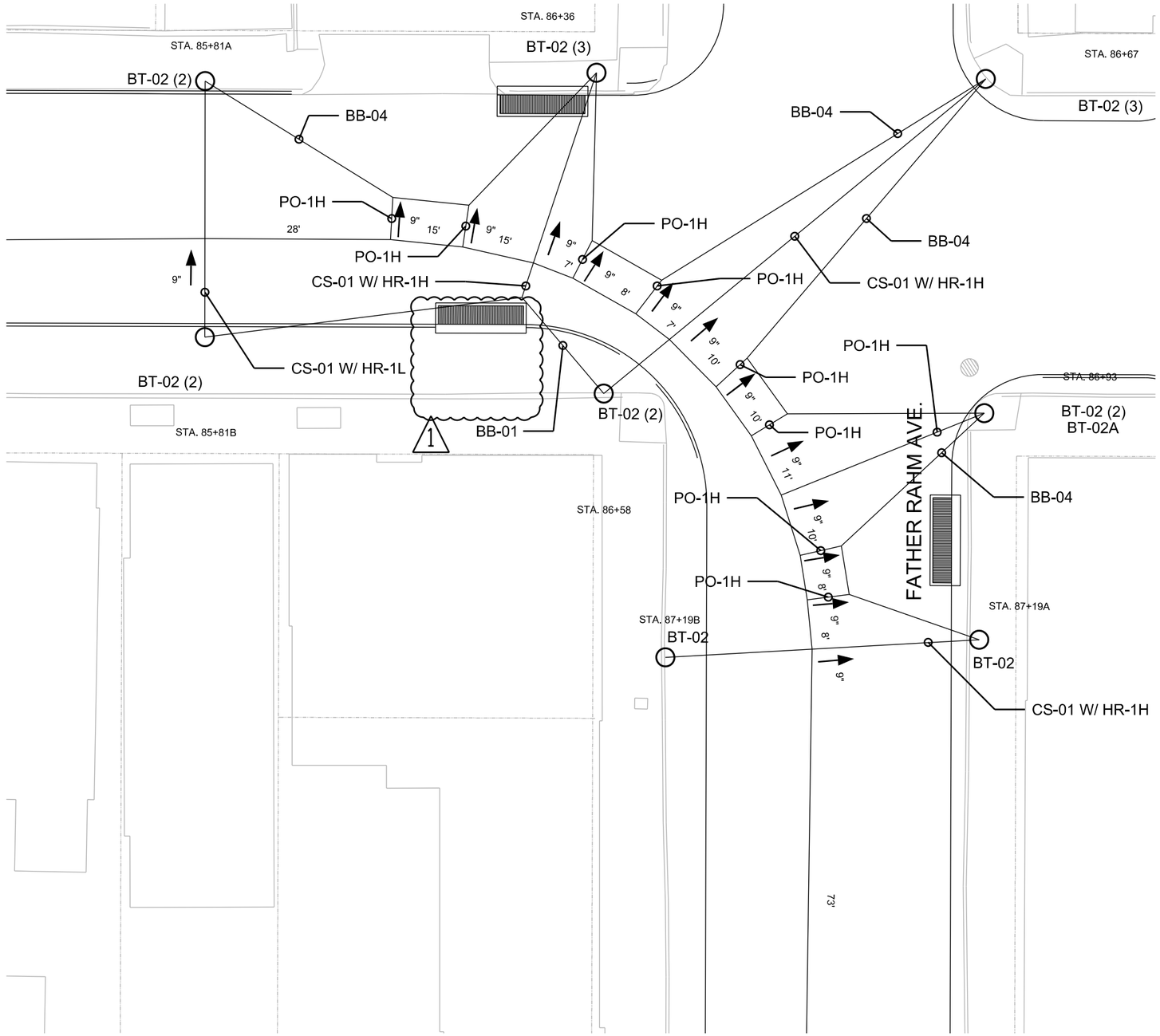

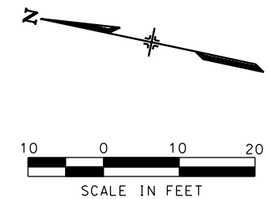

NO	DATE	REVISION	APPROVED
-	08/07/15	CONFORMED SET	-
1	05/27/16	FATHER RAHM REDESIGN	-

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
5/27/16

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OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
INTERSECTION OF KANSAS ST.
AND FATHER RAHM AVE.

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J119A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1122

DATE: 6/16/2016 10:31:49 AM
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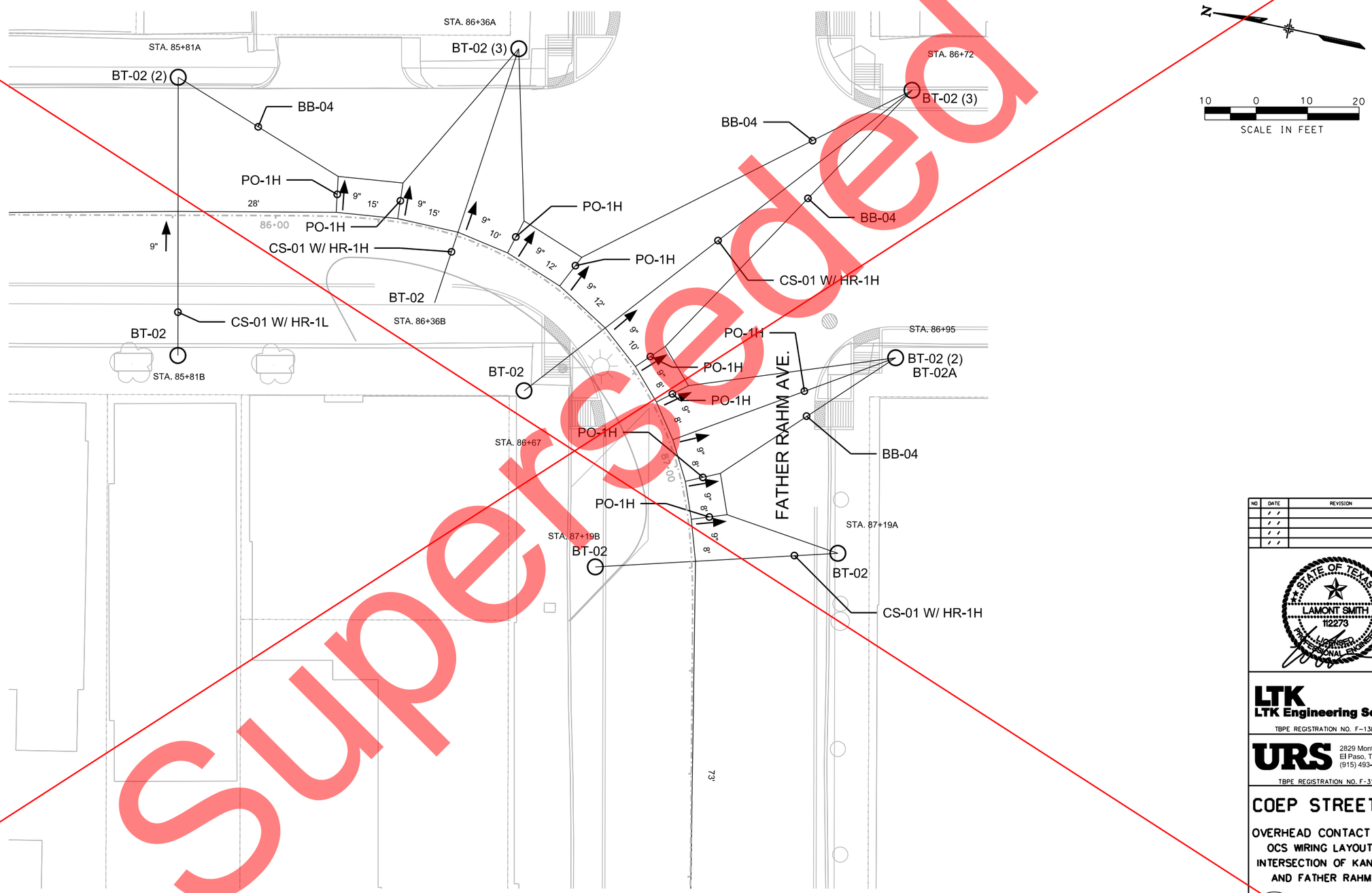

Superseded

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
7/14/15

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
INTERSECTION OF KANSAS ST.
AND FATHER RAHM AVE.

J119A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1122

DATE: 7/13/2015 6:23:58 PM
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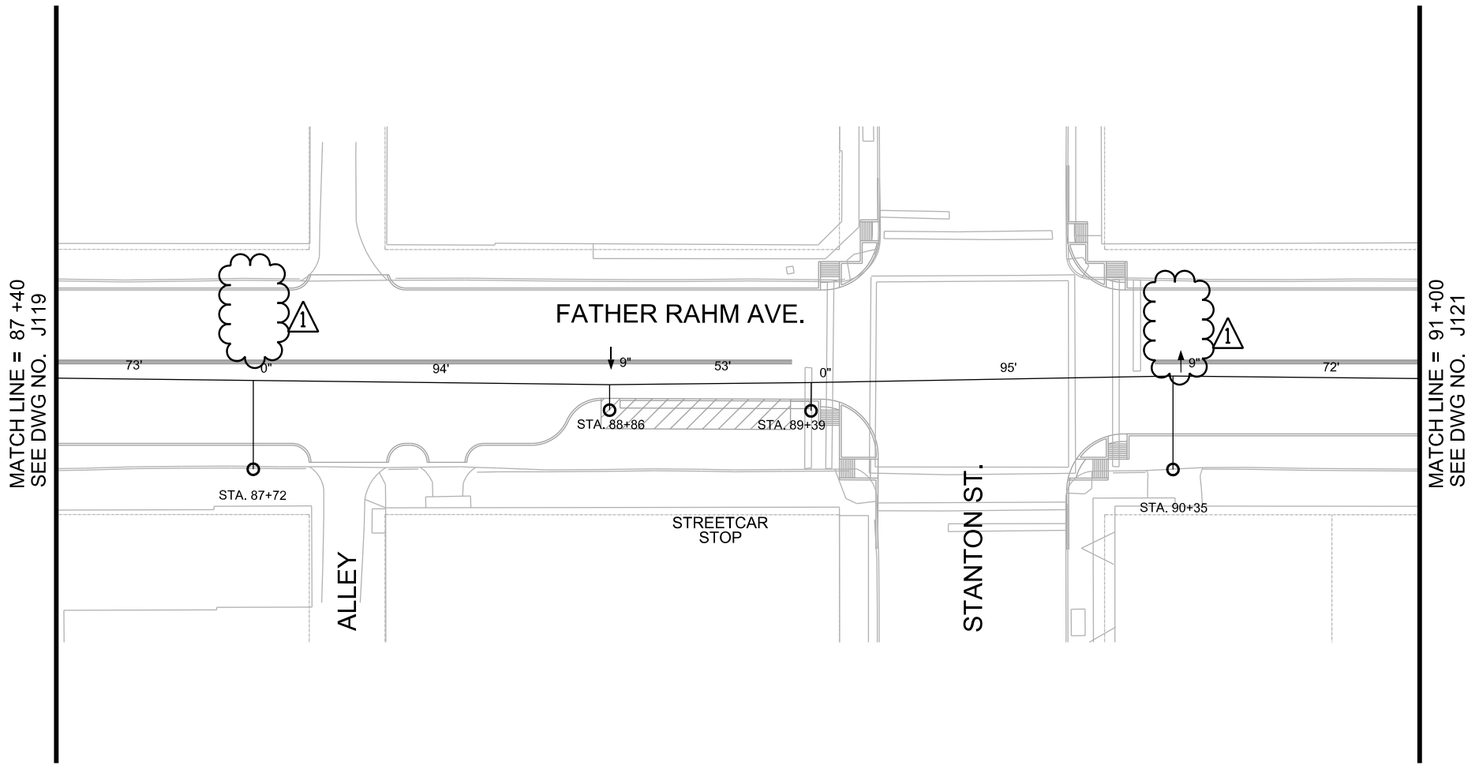

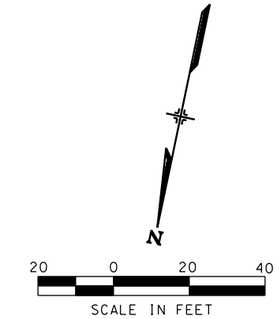

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
87+72		P2-30	MAINLINE	3	19' 6"		94	0	SCA-01LR		BT-01 (2)	SD-01	
88+86		P1-30	MAINLINE	3	19' 6"		53	9	SCA-01L		BT-01 (2)	SD-01	
89+39	L,O	P1O-30-L	MAINLINE	3	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
90+35		P2-30	MAINLINE	3	19' 6"		72	-9	SCA-01LR		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
-	08/07/15	CONFORMED SET	-
1	05/27/16	FATHER RAHM REDESIGN	-

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
5/27/16

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STA. 87+40 TO STA. 91+00

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J120

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1123

DN: URS CK: URS DW: URS CK: URS

DATE: 6/16/2016 10:51:02 AM
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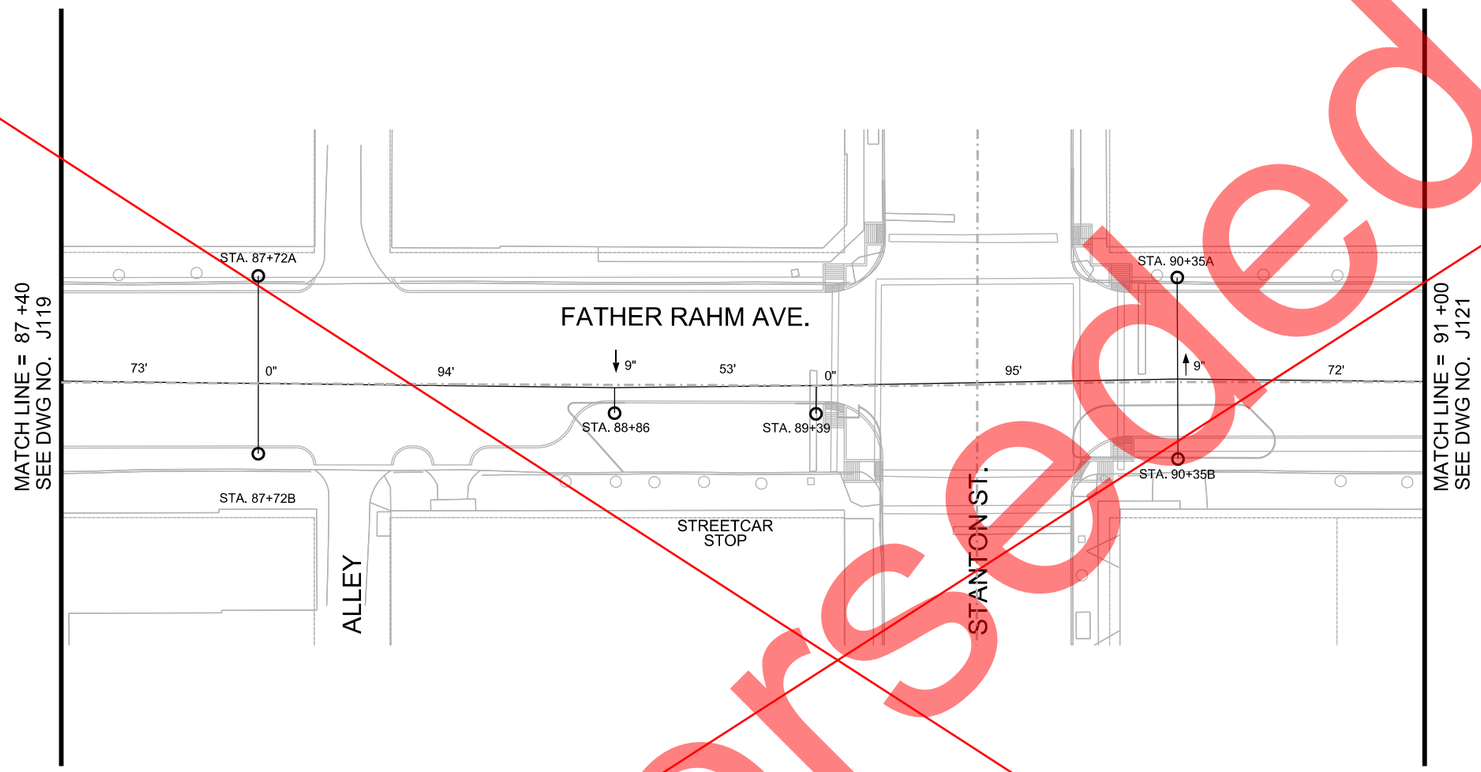

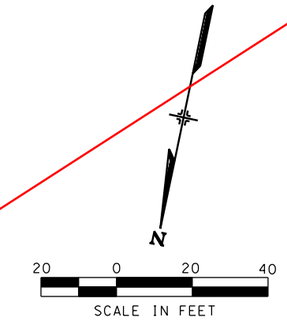

NOTES:

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2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
87+72A		P2-28	MAINLINE	3	19' 6"		94	0	CS-01	HR-1L	BT-02	SD-01	
87+72B		P2-28	MAINLINE	3	19' 6"						BT-02	SD-01	
88+86		P1-28	MAINLINE	3	19' 6"		53	9	SCA-01L		BT-01 (2)	SD-01	
89+40	L,O	P1O-28-L	MAINLINE	3	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
90+35A		P2-28	MAINLINE	3	19' 6"		72	-9	CS-01	HR-1L	BT-02	SD-01	
90+35B		P2-28	MAINLINE	3	19' 6"						BT-02	SD-01	

NO	DATE	REVISION	APPROVED
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	/ /		

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
7/14/15

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 87+40 TO STA. 91+00

J120

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1123

DATE: 7/13/2015 6:25:15 PM
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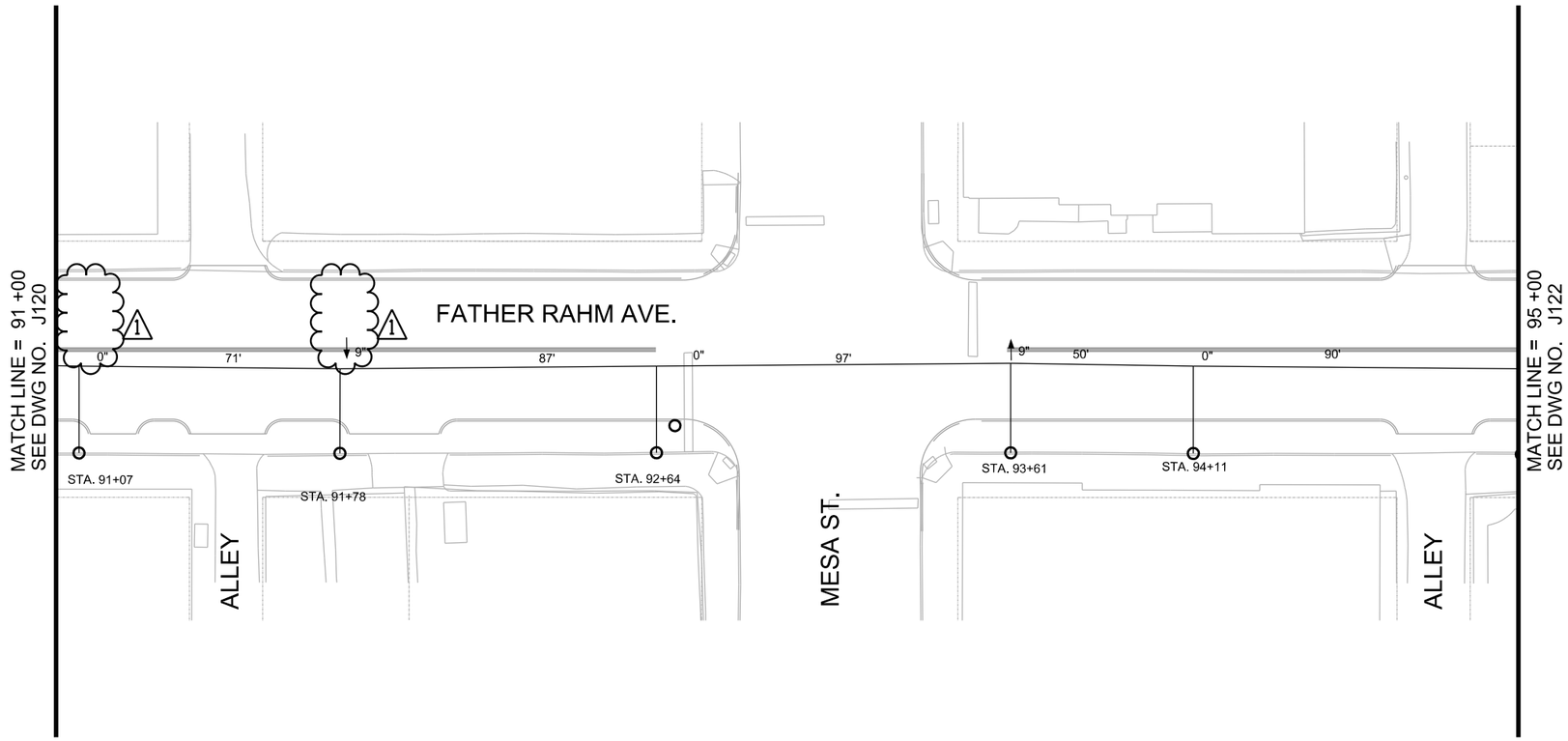
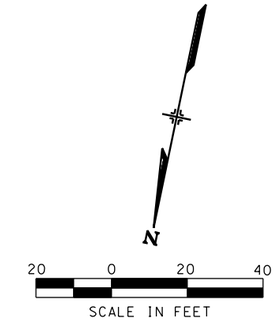
DN: URS CK: URS DW: URS CK: URS

Superseded





NOTES:

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
91+07		P2-30	MAINLINE	3	19' 6"		71	0	SCA-01LR		BT-01 (2)	SD-01	
91+78		P2-30	MAINLINE	3	19' 6"		87	9	SCA-01LR		BT-01 (2)	SD-01	
92+64		P1-30	MAINLINE	3	19' 6"		97	0	SCA-01LR		BT-01 (2)	SD-01	
93+61		P1-30	MAINLINE	3	19' 6"		50	-9	SCA-01LR		BT-01 (2)	SD-01	LA-01
94+11		P1-30	MAINLINE	3	19' 6"		90	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
-	08/07/15	CONFORMED SET	-
1	05/27/16	FATHER RAHM REDESIGN	-

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
5/27/16

LTK
LTK Engineering Services
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 91+00 TO STA. 95+00

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J121

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1124

DATE: 6/16/2016 10:51:50 AM
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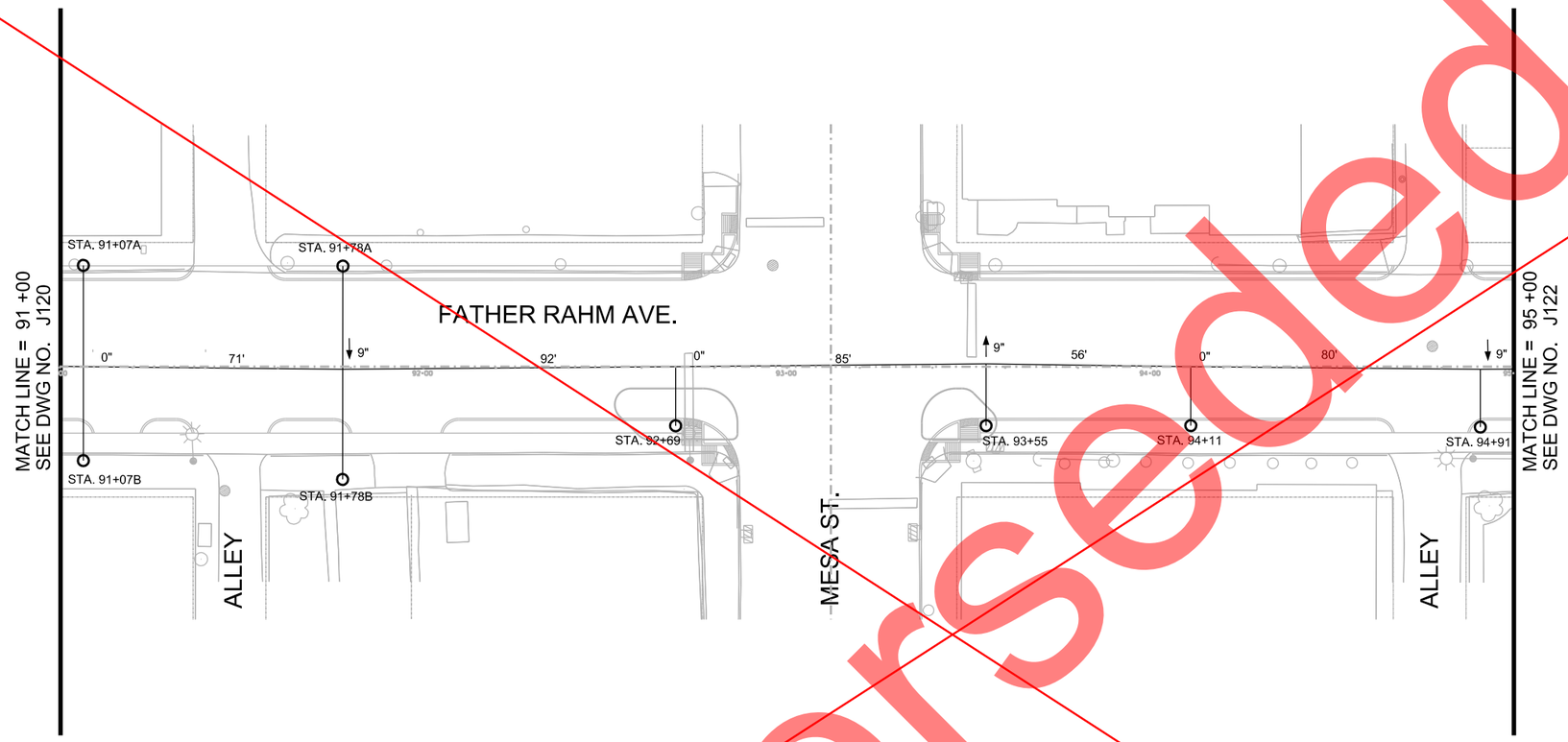

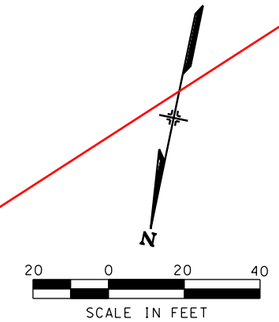

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
91+07A		P2-28	MAINLINE	3	19' 6"		71	0	CS-01	HR-1L	BT-02	SD-01	
91+07B		P2-28	MAINLINE	3	19' 6"						BT-02	SD-01	
91+78A		P2-28	MAINLINE	3	19' 6"		92	9	CS-01	HR-1L	BT-02	SD-01	
91+78B		P2-28	MAINLINE	3	19' 6"						BT-02	SD-01	
92+69		P1-28	MAINLINE	3	19' 6"		85	0	SCA-01L		BT-01 (2)	SD-01	
93+55		P1-28	MAINLINE	3	19' 6"		56	-9	SCA-01L		BT-01 (2)	SD-01	LA-01
94+11		P1-28	MAINLINE	3	19' 6"		80	0	SCA-01L		BT-01 (2)	SD-01	
94+91	L,O	P1O-28-L	MAINLINE	3	19' 6"		95	9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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	/ /		

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
7/14/15

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 91+00 TO STA. 95+00

J121

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1124

DATE: 7/13/2015 6:26:21 PM
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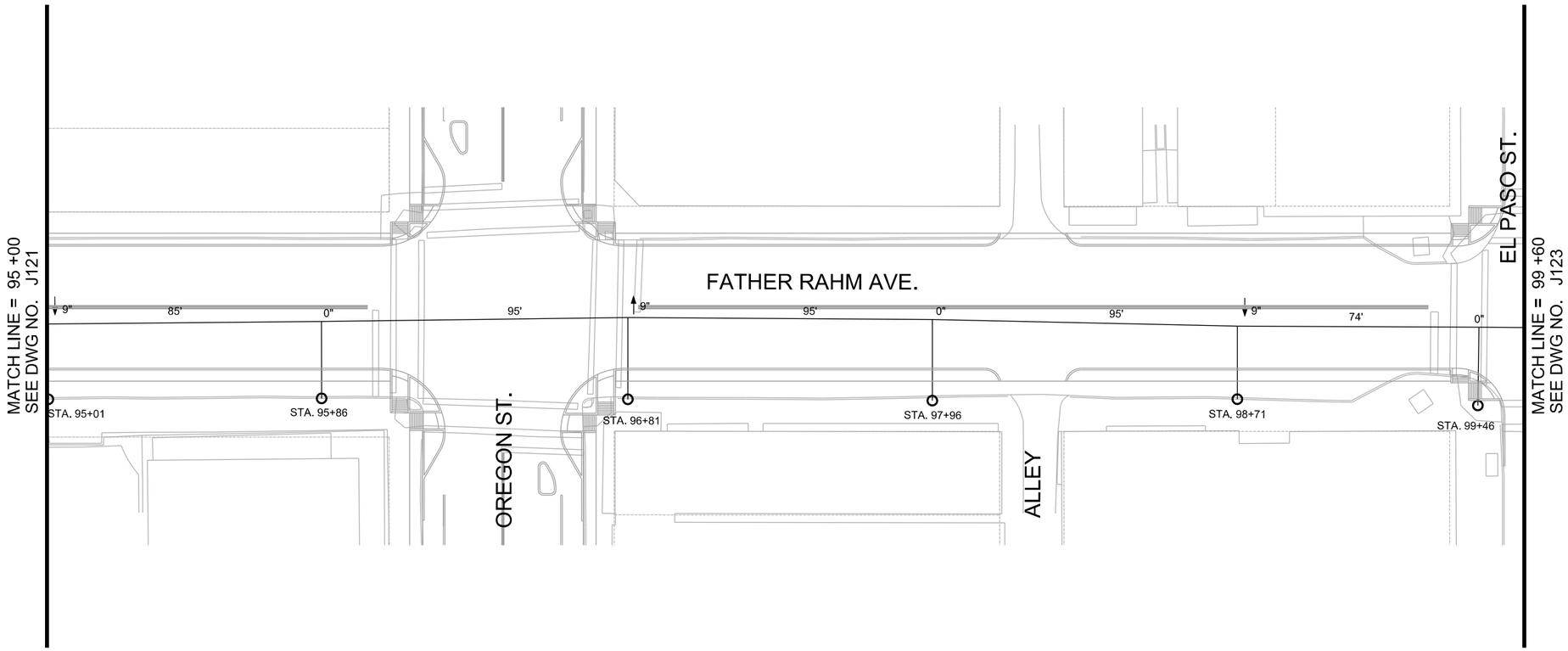
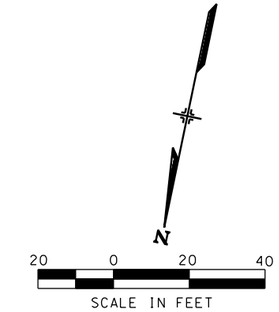
Superseded





NOTES:

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
1 95+01	L,O	P1O-30-L	MAINLINE	3	19' 6"		85	9	SCA-01LR		BT-01 (2)	SD-01	
95+86	L,O	P1O-30-L	MAINLINE	3	19' 6"		95	0	SCA-01LR		BT-01 (2)	SD-01	
96+81		P1-30	MAINLINE	3	19' 6"		95	-9	SCA-01LR		BT-01 (2)	SD-01	
97+96		P1-30	MAINLINE	3	19' 6"		95	0	SCA-01LR		BT-01 (2)	SD-01	
98+71	L,O	P1O-30-L	MAINLINE	3	19' 6"		74	9	SCA-01LR		BT-01 (2)	SD-01	
1 99+46		P1-30	MAINLINE	3	19' 6"		80	0	SCA-01LR		BT-01 (2)	SD-01	
							1						

NO	DATE	REVISION	APPROVED
-	08/07/15	CONFORMED SET	-
1	05/27/16	FATHER RAHM REDESIGN	-

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
5/27/16

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OVERHEAD CONTACT SYSTEM
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STA. 95+00 TO STA. 99+60

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J122

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1125

DATE: 6/16/2016 10:58:21 AM
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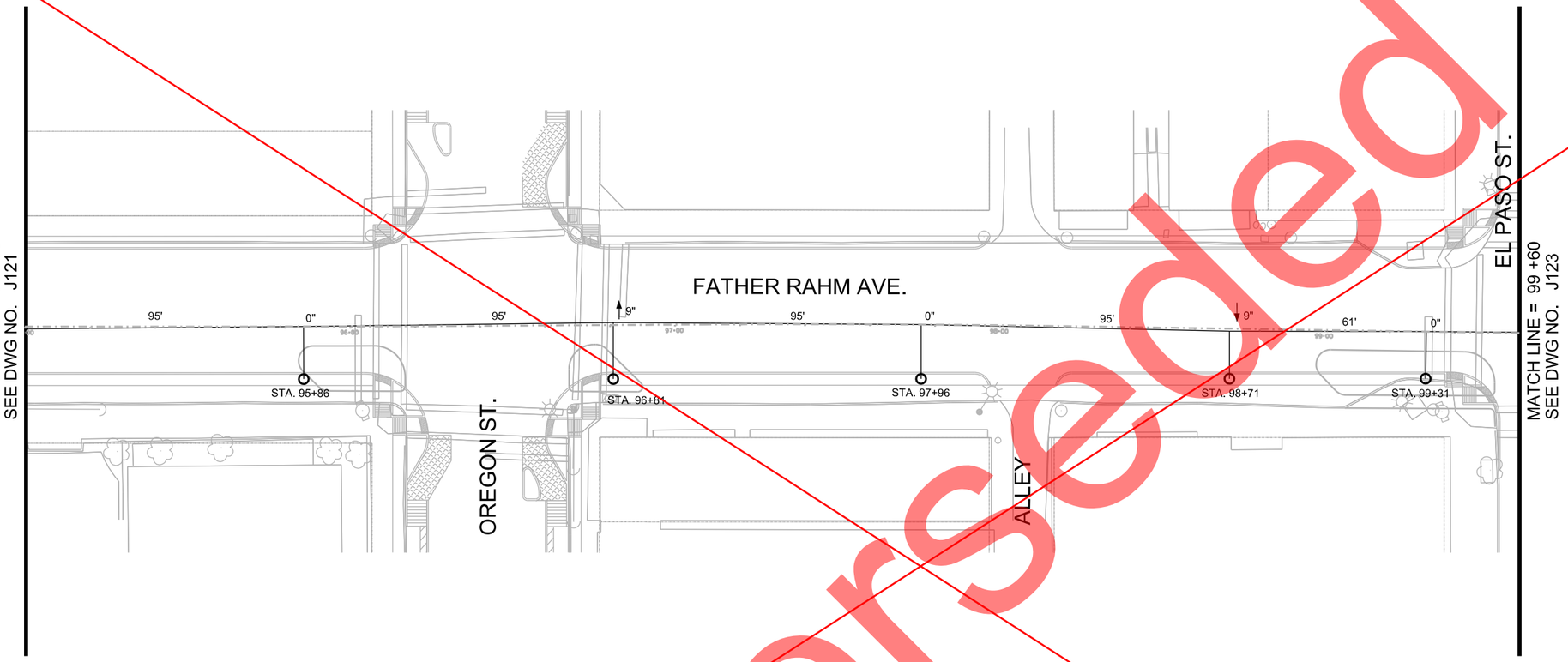

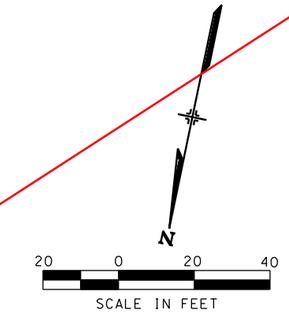

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
95+86	L,O	P1O-28-L	MAINLINE	3	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
96+81		P1-28	MAINLINE	3	19' 6"		95	-9	SCA-01L		BT-01 (2)	SD-01	
97+96		P1-28	MAINLINE	3	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
98+71	L,O	P1O-28-L	MAINLINE	3	19' 6"		61	9	SCA-01L		BT-01 (2)	SD-01	
99+31		P1-28	MAINLINE	3	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
7/14/15

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 95+00 TO STA. 99+60

J122

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1125

DN: URS CK: URS DW: URS CK: URS

DATE: 7/13/2015 6:27:20 PM
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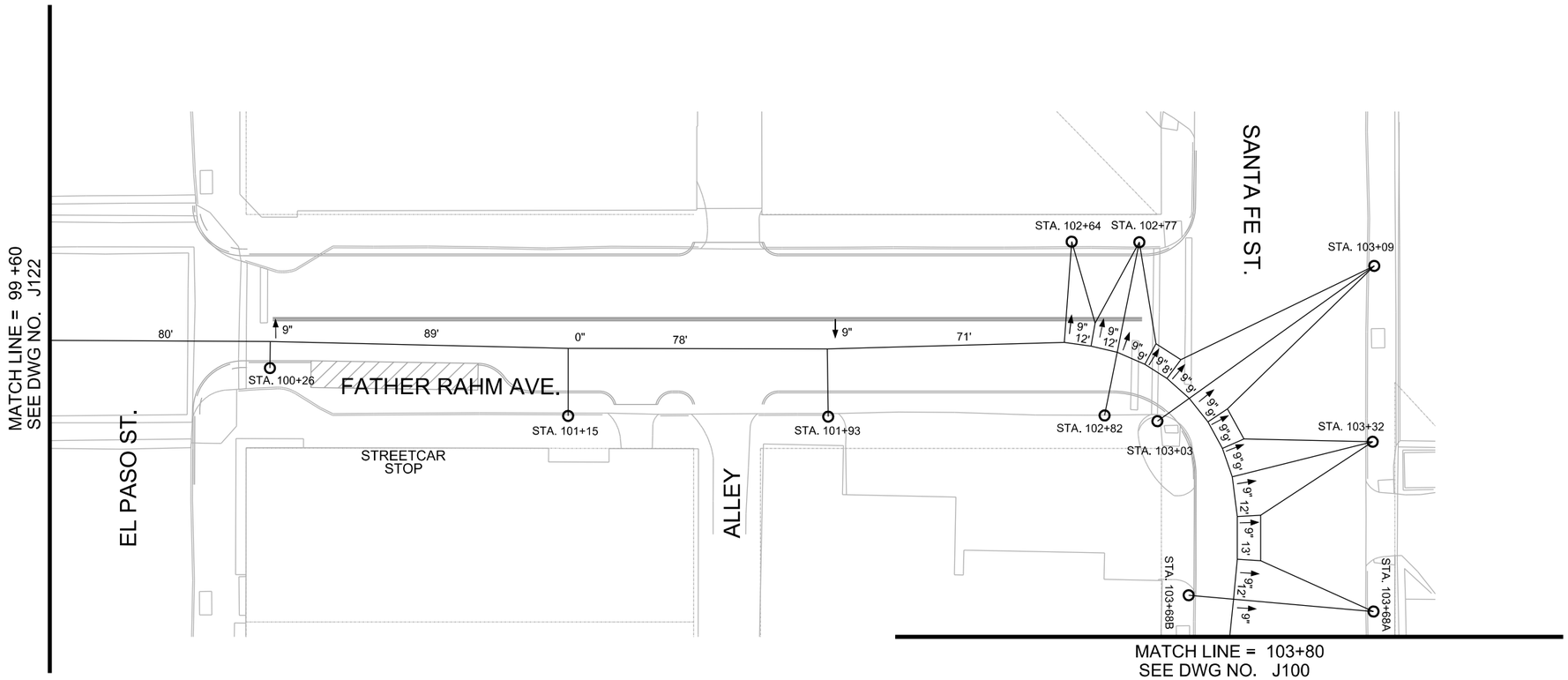
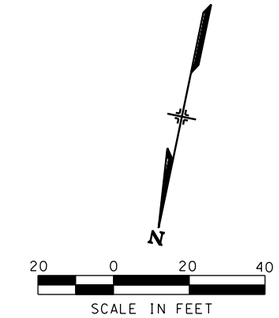
Superseded





NOTES:

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
100+26	L,O	P1O-28-L	MAINLINE	3	19' 6"		89	-9	SCA-01L		BT-01 (2)	SD-01	
101+15		P1-30	MAINLINE	3	19' 6"		78	0	SCA-01LR		BT-01 (2)	SD-01	
101+93	L,O	P1O-30-L	MAINLINE	3	19' 6"		71	9	SCA-01LR		BT-01 (2)	SD-01	
102+64		P3-28 1	MAINLINE	3	19' 6"		1			SEE DWG J123A			
102+77		P3-28	MAINLINE	3	19' 6"		SEE DWG J123A						
102+82		P2-28	MAINLINE	3	19' 6"		SEE DWG J123A						
103+03		P2-28	MAINLINE	3	19' 6"		SEE DWG J123A						
103+09		P4-28	MAINLINE	3	19' 6"		SEE DWG J123A						
103+32		P3-28	MAINLINE	3	19' 6"		SEE DWG J123A						
103+68A		P3-28	MAINLINE	3	19' 6"		SEE DWG J123A						
103+68B	O	P2O-28	MAINLINE	3	19' 6"		SEE DWG J123A						

NO	DATE	REVISION	APPROVED
-	08/07/15	CONFORMED SET	-
1	05/27/16	FATHER RAHM REDESIGN	-

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
5/27/16

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 99+60 TO STA. 103+80

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J123

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1126

DN: URS CK: URS DW: URS CK: URS

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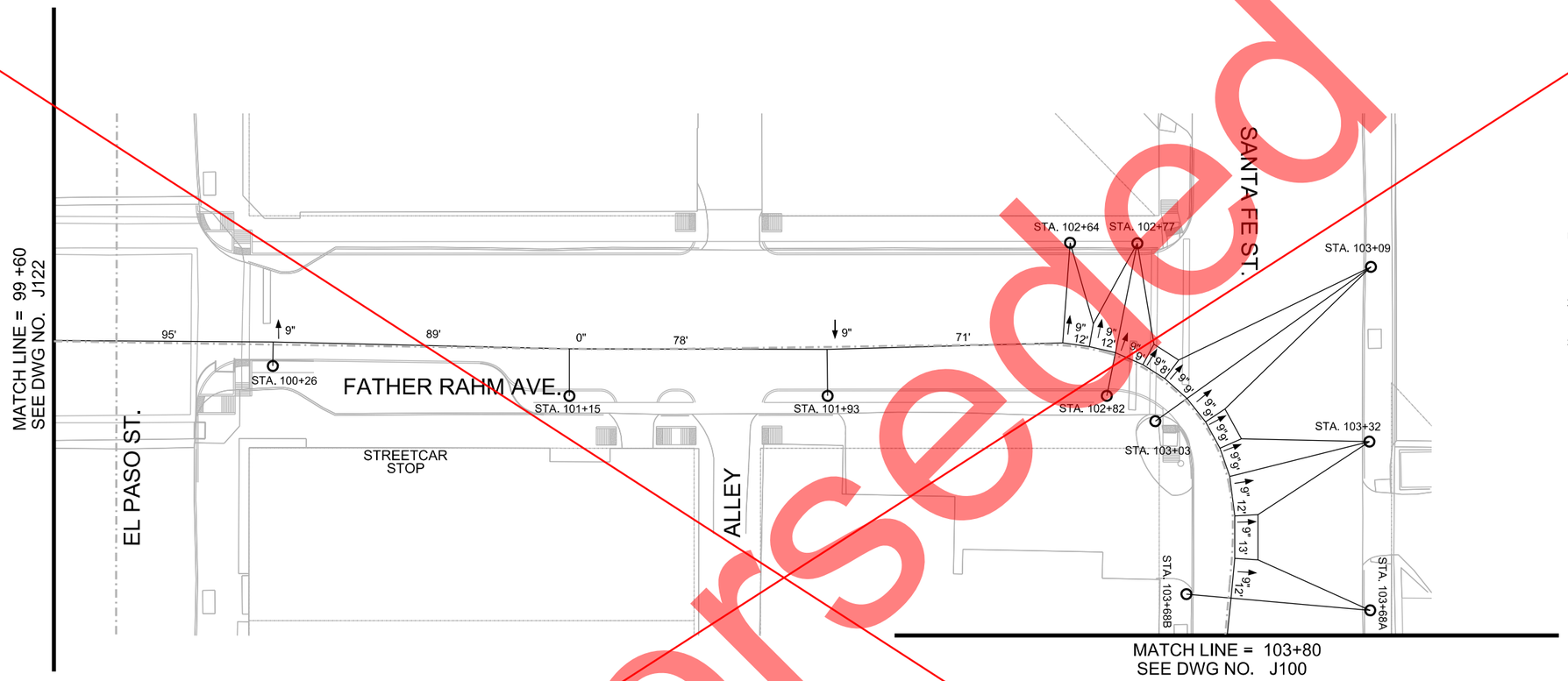

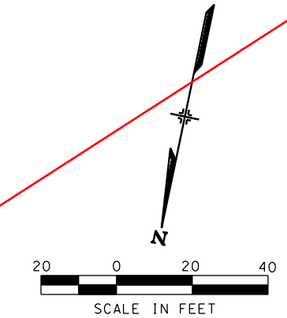

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
100+26	L,O	P1O-28-L	MAINLINE	3	19' 6"		89	-9	SCA-01L		BT-01 (2)	SD-01	
101+15		P1-28	MAINLINE	3	19' 6"		78	0	SCA-01L		BT-01 (2)	SD-01	
101+93	L,O	P1O-28-L	MAINLINE	3	19' 6"		71	9	SCA-01L		BT-01 (2)	SD-01	
102+64		P3-28	MAINLINE	3	19' 6"		SEE DWG J123A						
102+77		P3-28	MAINLINE	3	19' 6"		SEE DWG J123A						
102+82		P2-28	MAINLINE	3	19' 6"		SEE DWG J123A						
103+03		P2-28	MAINLINE	3	19' 6"		SEE DWG J123A						
103+09		P4-28	MAINLINE	3	19' 6"		SEE DWG J123A						
103+32		P3-28	MAINLINE	3	19' 6"		SEE DWG J123A						
103+68A		P3-28	MAINLINE	3	19' 6"		SEE DWG J123A						
103+68B	O	P2O-28	MAINLINE	3	19' 6"		SEE DWG J123A						

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 99+60 TO STA. 103+80

J123

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1126

DATE: 7/13/2015 6:28:21 PM
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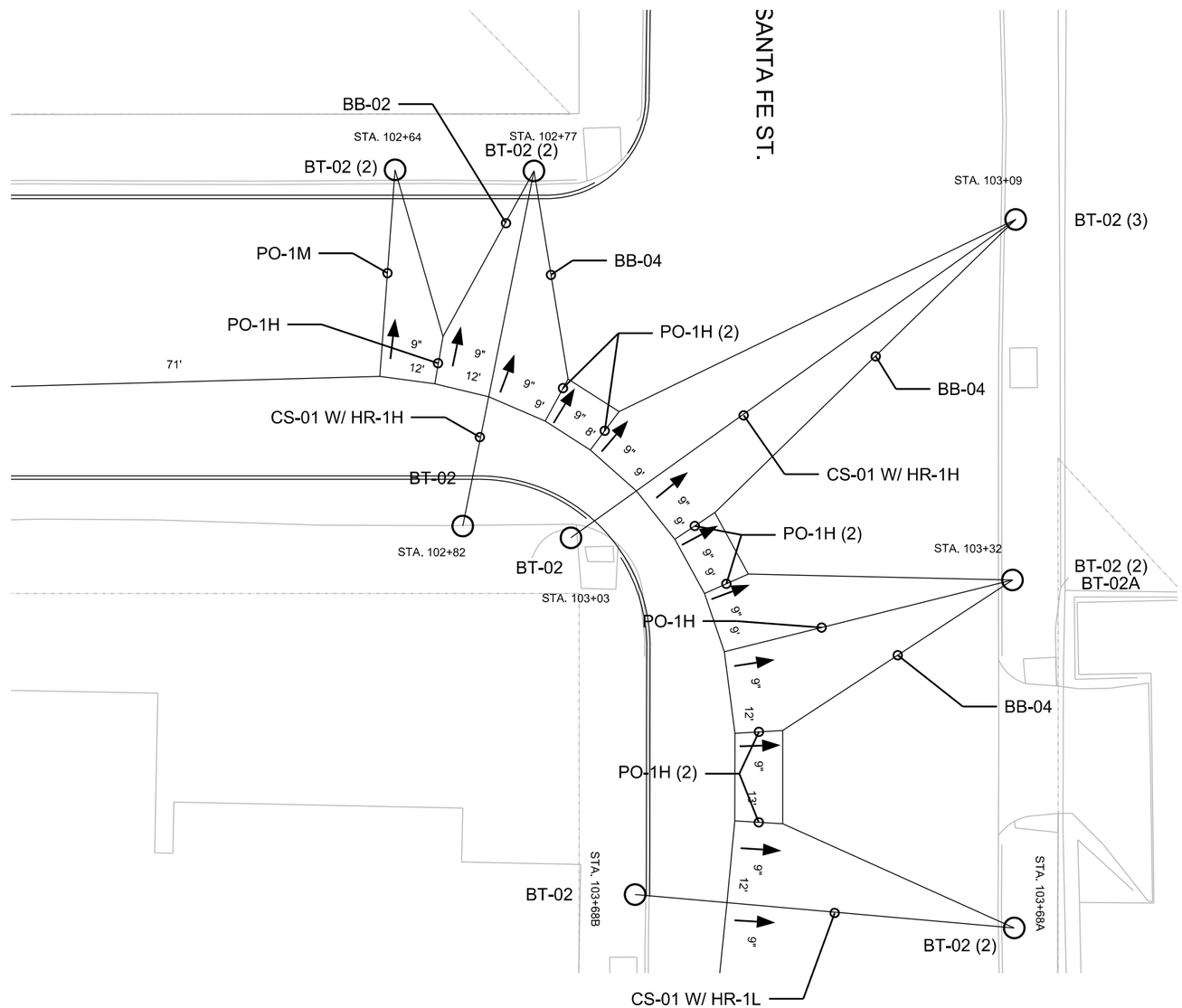
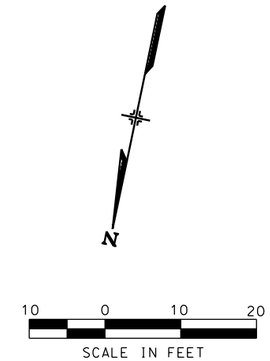
Superseded





NO	DATE	REVISION	APPROVED
-	08/07/15	CONFORMED SET	-
1	05/27/16	FATHER RAHM REDESIGN	-

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
5/27/16

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OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
INTERSECTION OF FATHER
RAHM AVE. AND SANTA FE ST.

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J123A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1127

DN: URS CK: URS DW: URS CK: URS

DATE: 6/16/2016 11:03:08 AM
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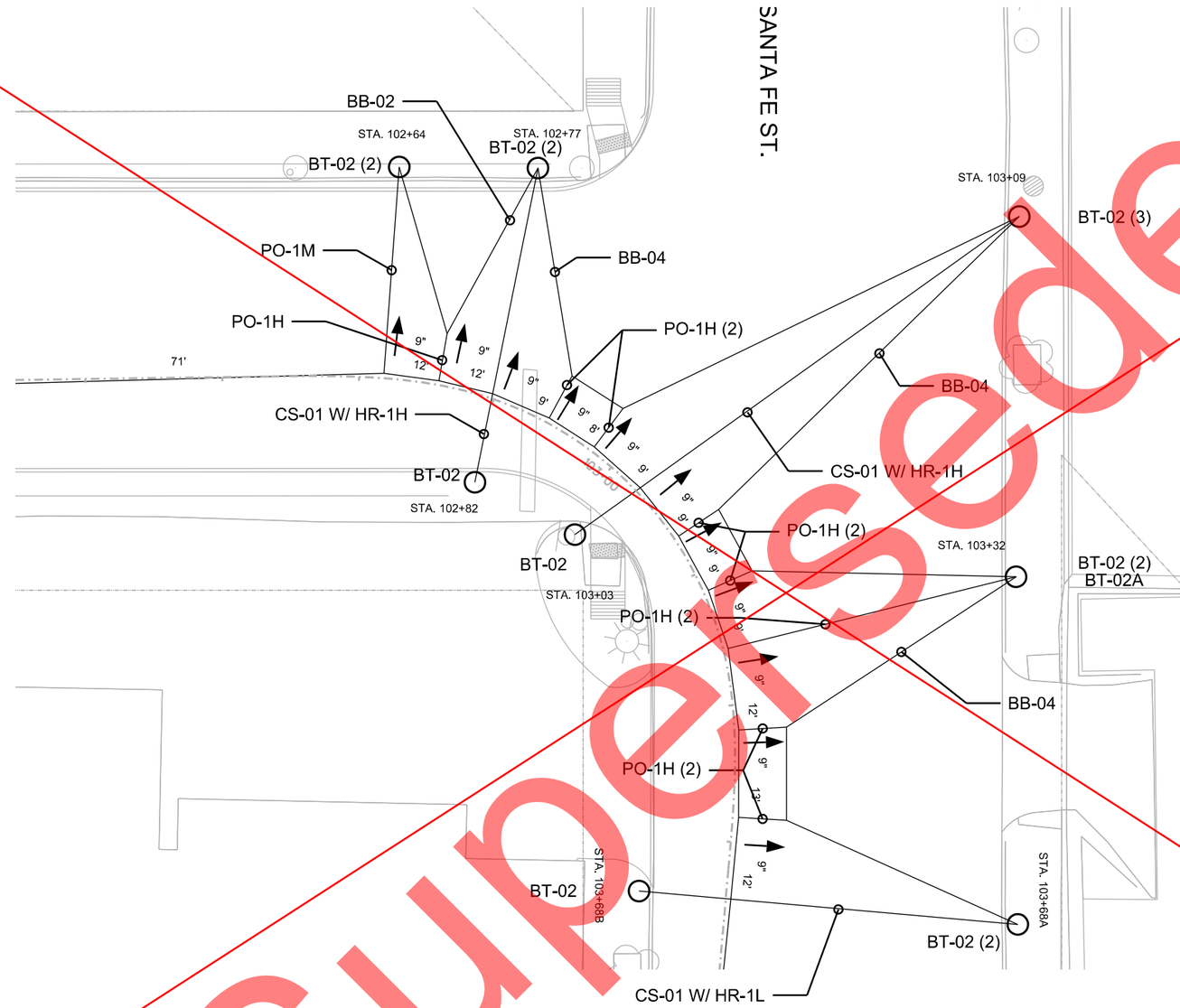

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Superseded

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
7/14/15

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
INTERSECTION OF FATHER
RAHM AVE. AND SANTA FE ST.

J123A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1127

DATE: 7/13/2015 6:29:33 PM
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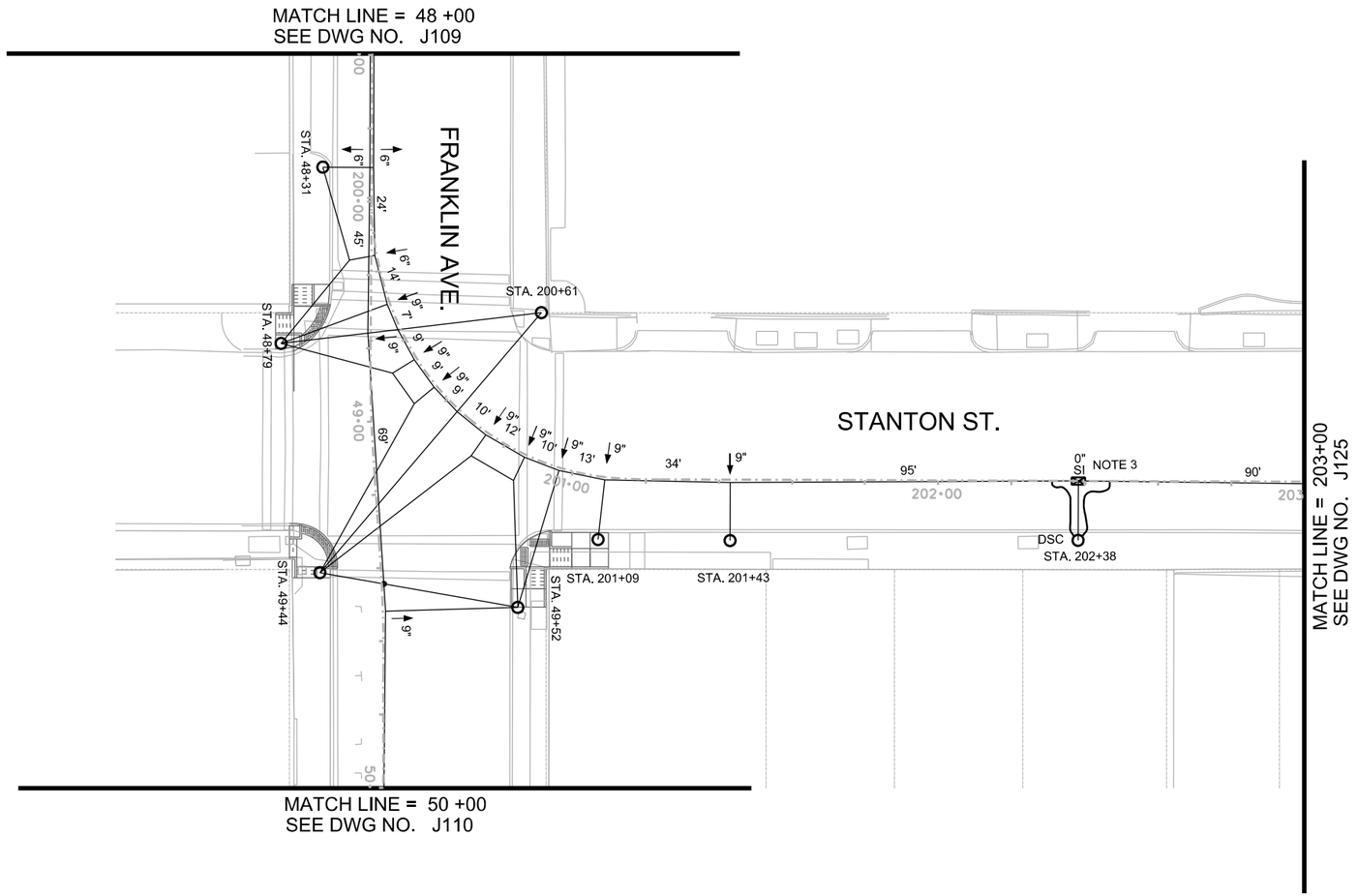

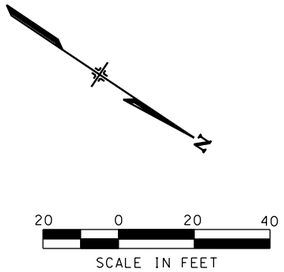

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. POSSIBLE LOCATION FOR BREAKING WIRE RUN 6 INTO MANAGEABLE NEW LENGTHS.
4. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
48+31		P3-28	MAINLINE	6, 1	19' 6"		SEE DWG J124A						
48+79		P4-28	MAINLINE	6, 1	19' 6"		SEE DWG J124A						
200+61		P3-28	MAINLINE	6, 1	19' 6"		SEE DWG J124A						
49+44		P4-30	MAINLINE	6, 1	19' 6"		SEE DWG J124A						
49+52	L	P4-28-L	MAINLINE	6, 1	19' 6"		SEE DWG J124A						
201+09		P2-28	MAINLINE	6	19' 6"		SEE DWG J124A						
201+43		P2-28	MAINLINE	6	19' 6"		SEE DWG J124A						
202+38		P2-28	MAINLINE	6	19' 6"		90	0	SCA-05		BT-01 (2)	SD-01, FC-01 (2)	SI-01, DS-02, LA-01 (2)

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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112273
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6/7/13

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 48+00 TO STA. 50+00
AND STA. 203+00

J124

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1128

DN: URS CK: URS DW: URS CK: URS

DATE: 6/3/2013 2:53:16 PM
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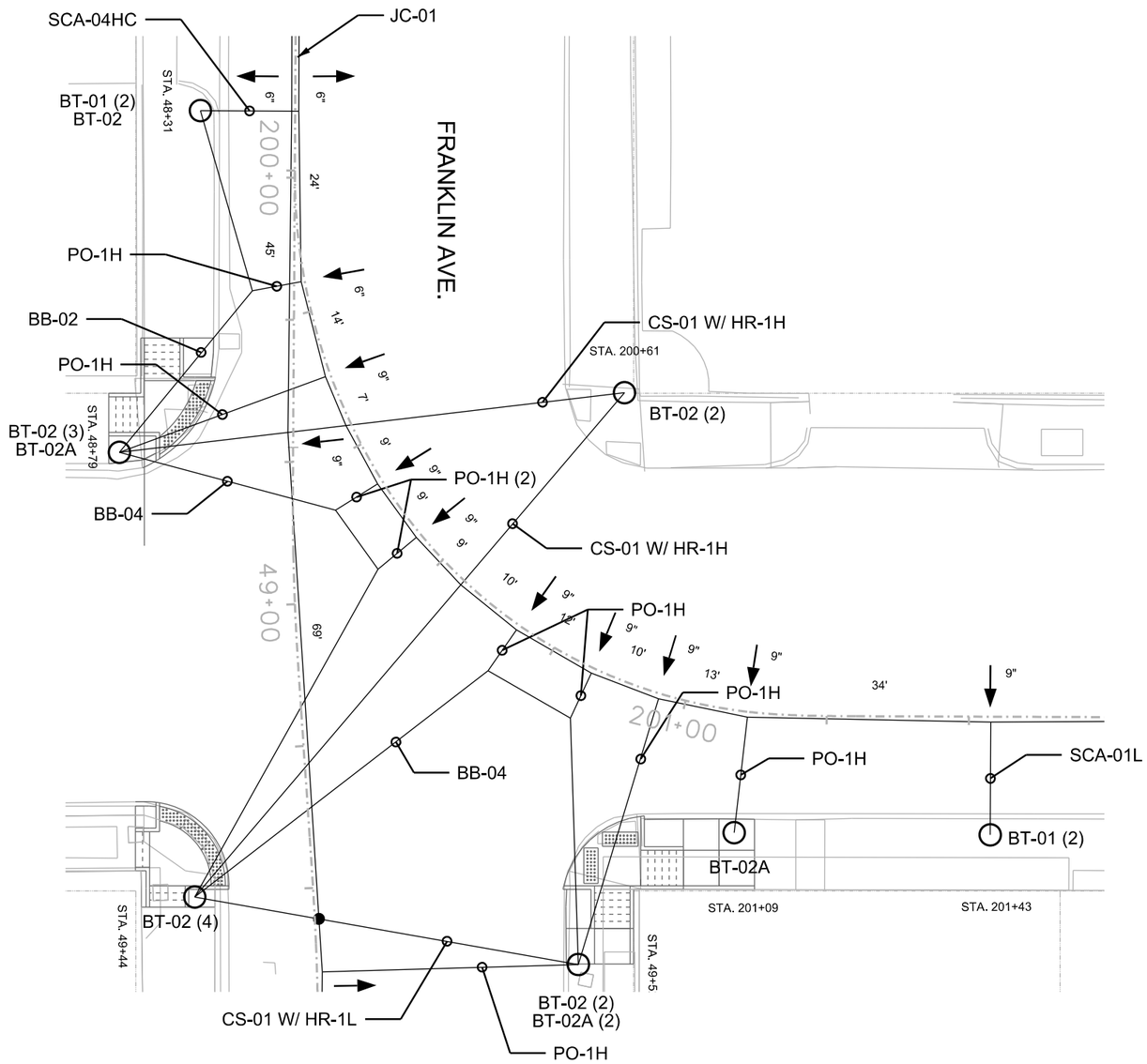

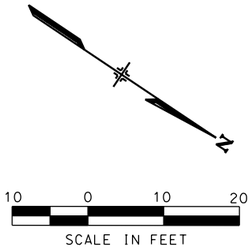

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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6/7/13

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM OCS WIRING LAYOUT PLAN INTERSECTION OF FRANKLIN AVE. AND STANTON ST.

J124A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1129

DATE: 6/3/2013 10:10:45 AM
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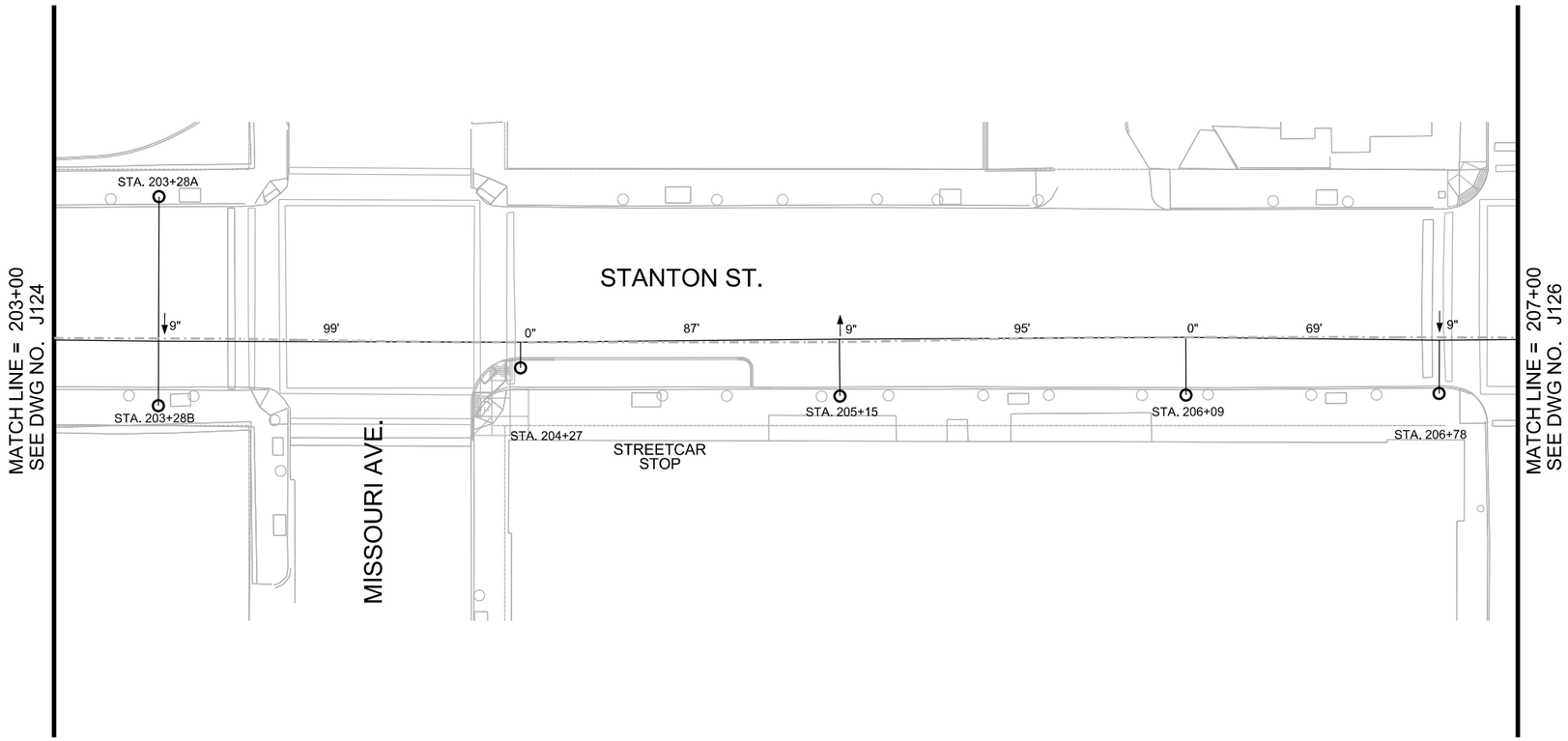
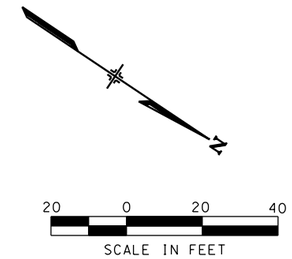
DN: URS CK: URS DW: URS CK: URS DN: URS





NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
203+28A		P2-28	MAINLINE	6	19' 6"		99	9	CS-01	HR-1L	BT-02	SD-01	
203+28B		P2-28	MAINLINE	6	19' 6"						BT-02	SD-01	
204+27		P1-28	MAINLINE	6	20' 8"		87	0	SCA-01L		BT-01 (2)	SD-01	
205+15	O	P1O-28	MAINLINE	6	21' 3"		95	-9	SCA-07M		BT-01 (2)	SD-01	
206+09		P1-30	MAINLINE	6	22' 0"		69	0	SCA-01L		BT-01 (2)	SD-01	
206+78	L,O,T	P1O-33-LT	MAINLINE	6	22' 6"		63	9	SCA-06M		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/3/15

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2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 203+00 TO STA. 207+00

J125

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1130

DATE: 6/3/2015 12:23:26 PM
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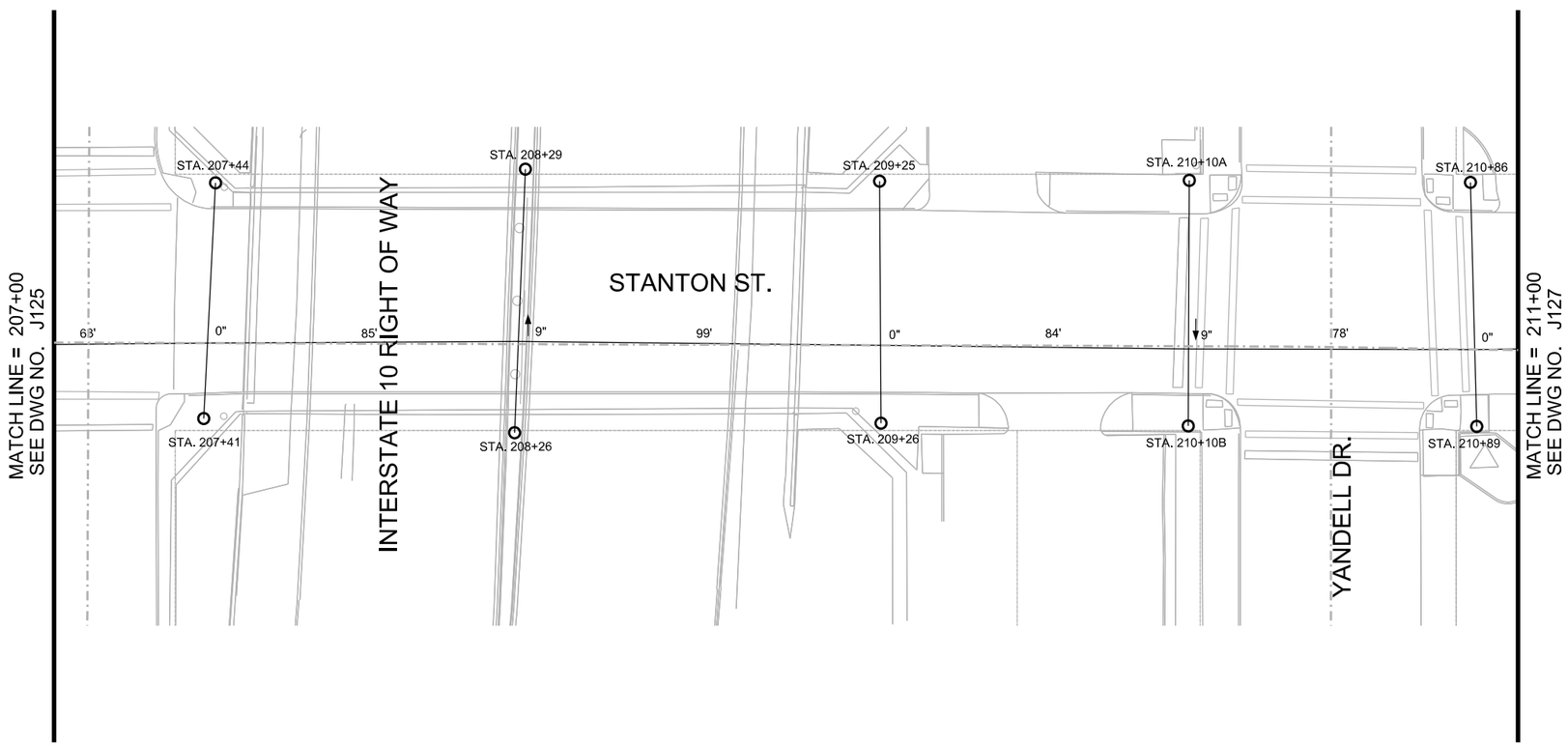
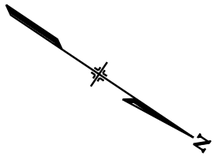
DN: URS CK: URS DN: URS CK: URS

ADDENDUM 4 - JULY 31, 2015





20 0 20 40
SCALE IN FEET

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
207+41	T	P2-28-T	MAINLINE	6	23' 0"		85	0	CS-01	HR-1L	BT-02	SD-01	
207+44		P2-30	MAINLINE	6	23' 0"						BT-02	SD-01	
208+26		P2-28	MAINLINE	6	23' 0"		99	-9	CS-01	HR-1L	BT-02	SD-01	
208+29		P2-30	MAINLINE	6	23' 0"						BT-02	SD-01	
209+25		P2-30	MAINLINE	6	23' 0"		84	0	CS-01	HR-1L	BT-02	SD-01	
209+26		P2-28	MAINLINE	6	23' 0"						BT-02	SD-01	
210+10A		P2-30	MAINLINE	6	22' 6"		78	9	CS-01	HR-1L	BT-02	SD-01	
210+10B		P2-28	MAINLINE	6	22' 6"						BT-02	SD-01	
210+86		P2-30	MAINLINE	6	22' 0"		91	0	CS-01	HR-1L	BT-02	SD-01	
210+89		P2-28	MAINLINE	6	22' 0"						BT-02	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 207+00 TO STA. 211+00

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J126

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1131

DATE: 7/13/2015 6:31:06 PM
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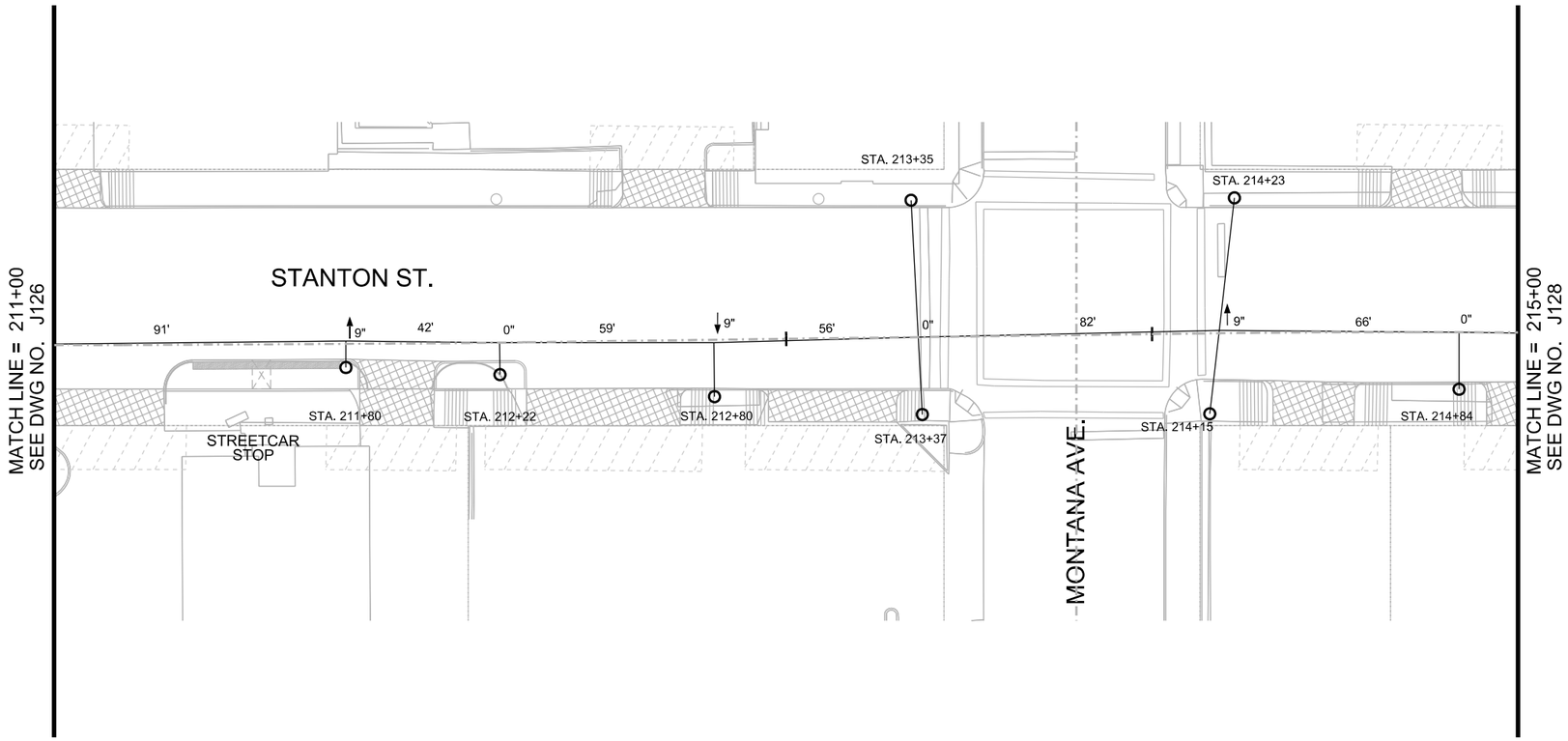

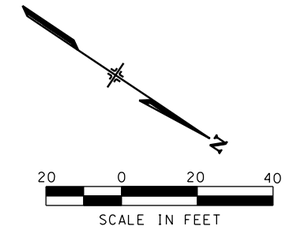

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
211+80	L,O	P1-28-L	MAINLINE	6	21' 0"		42	-9	SCA-01L		BT-01 (2)	SD-01	
212+22		P1-28	MAINLINE	6	20' 6"		59	0	SCA-01L		BT-01 (2)	SD-01	
212+80		P1-28	MAINLINE	6	19' 9"		56	9	SCA-01L		BT-01 (2)	SD-01	
213+35		P2-28	MAINLINE	6	19' 6"		82	0	CS-01	HR-1L	BT-02	SD-01	
213+37		P2-28	MAINLINE	6	19' 6"						BT-02	SD-01	
214+15	T	P2-28-T	MAINLINE	6	19' 6"		66	-9	CS-01	HR-1L	BT-02	SD-01	
214+23		P2-28	MAINLINE	6	19' 6"						BT-02	SD-01	
214+84		P1-28	MAINLINE	6	19' 6"		64	0	SCA-01L		BT-01 (2)	SD-01	LA-01

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
5/18/15

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2829 Montana Suite 206
El Paso, Texas 79903
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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 211+00 TO STA. 215+00

J127

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1132

DATE: 5/15/2015 10:49:12 AM
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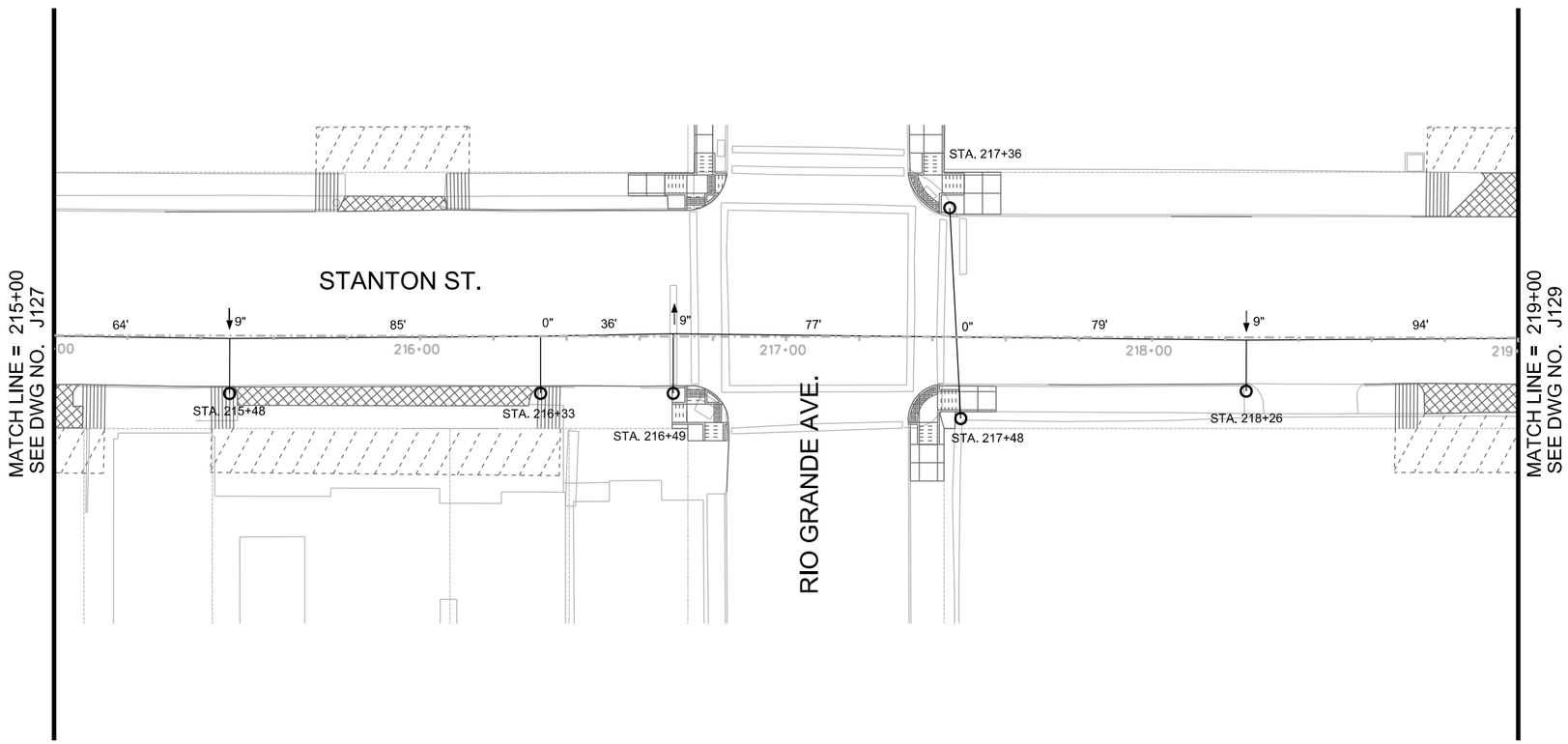

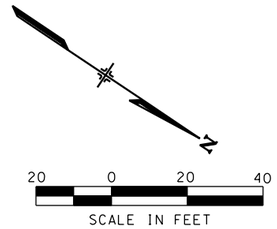

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
215+48		P1-28	MAINLINE	6	19' 6"		85	9	SCA-01L		BT-01 (2)	SD-01	
216+33		P1-28	MAINLINE	6	19' 6"		36	0	SCA-01L		BT-01 (2)	SD-01	
216+49		P1-28	MAINLINE	6	19' 6"		77	-9	SCA-01L		BT-01 (2)	SD-01	
217+36		P2-28	MAINLINE	6	19' 6"		79	0	CS-01	HR-1L	BT-02	SD-01	
217+48		P2-28	MAINLINE	6	19' 6"						BT-02	SD-01	
218+26		P1-28	MAINLINE	6	19' 6"		94	9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 215+00 TO STA. 219+00

J128

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1133

DN: URS CK: URS DW: URS CK: URS

DATE: 6/3/2013 10:27:01 AM
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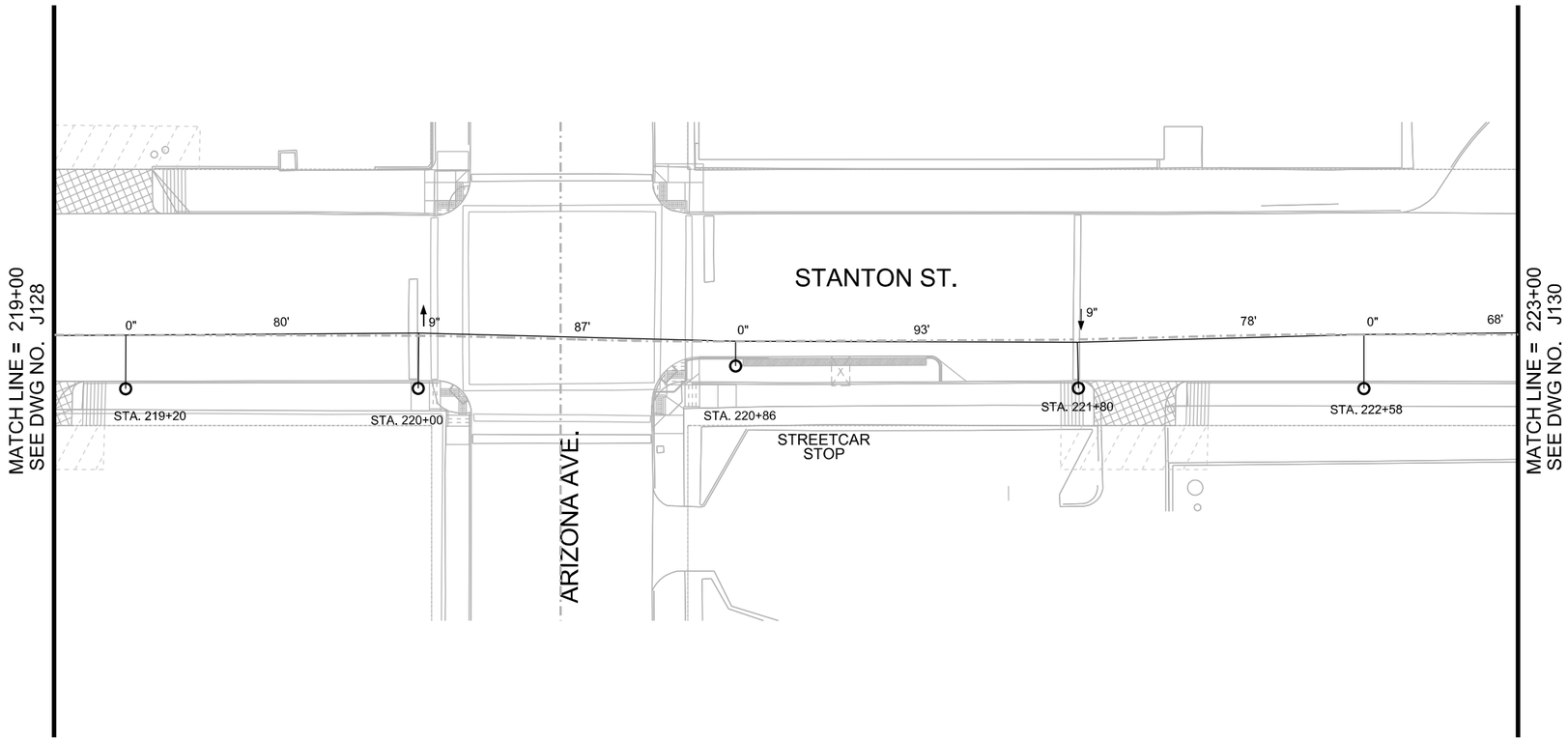

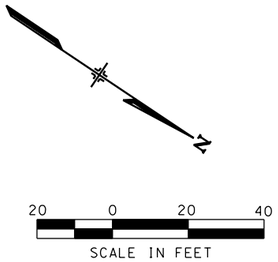

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
219+20		P1-28	MAINLINE	6	19' 6"		80	0	SCA-01L		BT-01 (2)	SD-01	
220+00		P1-28	MAINLINE	6	19' 6"		87	-9	SCA-01L		BT-01 (2)	SD-01	
220+86		P1-28	MAINLINE	6	19' 6"		93	0	SCA-01L		BT-01 (2)	SD-01	
221+80		P1-28	MAINLINE	6	19' 6"		78	9	SCA-01L		BT-01 (2)	SD-01	
222+58		P1-28	MAINLINE	6	19' 6"		68	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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2/26/14

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2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 219+00 TO STA. 223+00

J129

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1134

DATE: 2/26/2014 1:53:31 PM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J129.dgn

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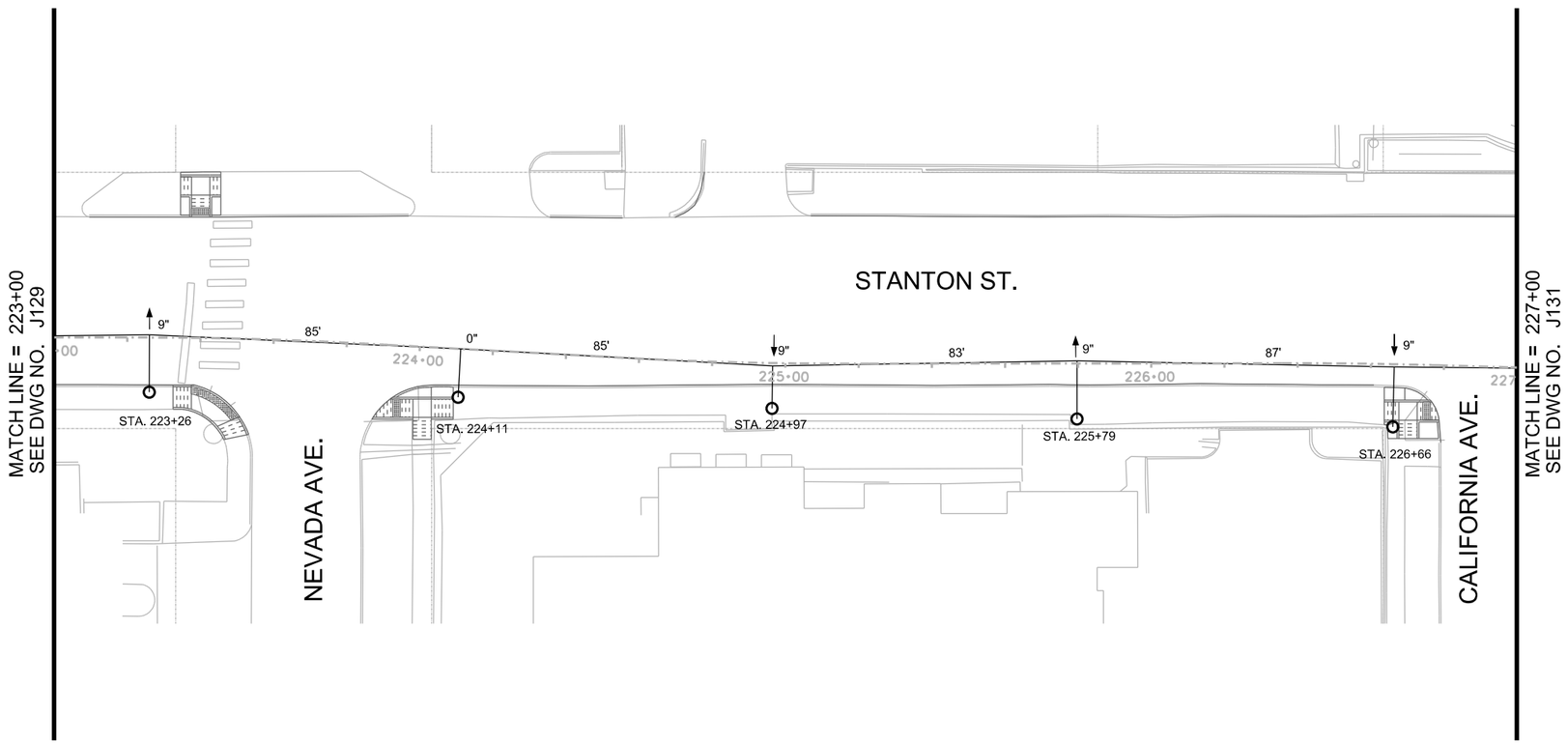

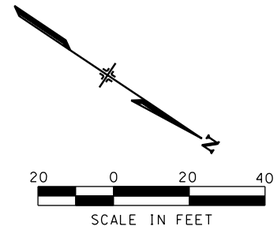

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
223+26		P1-28	MAINLINE	6	19' 6"		85	-9	SCA-01L		BT-01 (2)	SD-01	
224+11		P1-28	MAINLINE	6	19' 6"		85	0	SCA-01L		BT-01 (2)	SD-01	
224+97		P1-28	MAINLINE	6	19' 6"		83	9	SCA-01L		BT-01 (2)	SD-01	
225+79		P1-28	MAINLINE	6	19' 6"		87	-9	SCA-01L		BT-01 (2)	SD-01	LA-01
226+66		P1-28	MAINLINE	6	19' 6"		65	9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

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TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

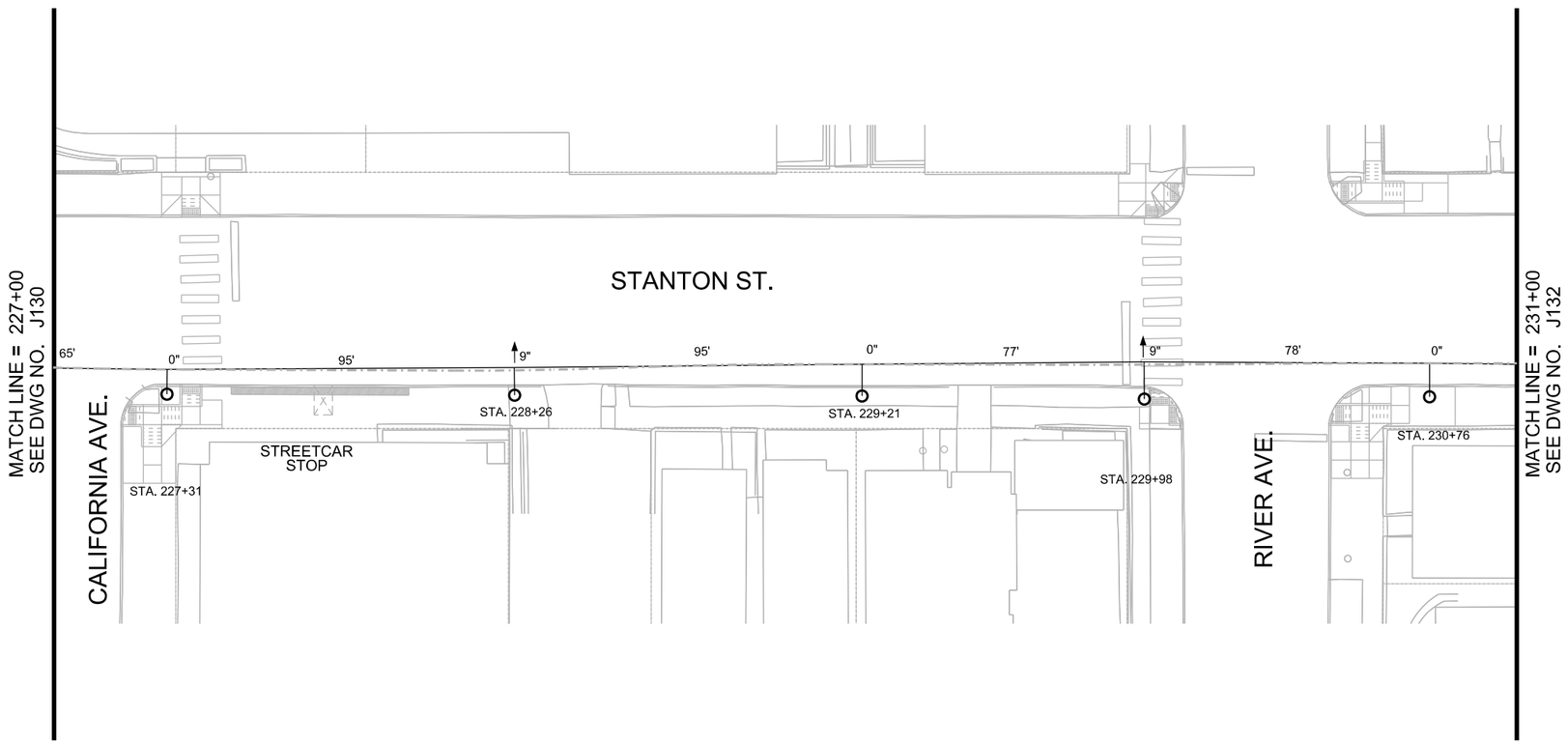
OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 223+00 TO STA. 227+00

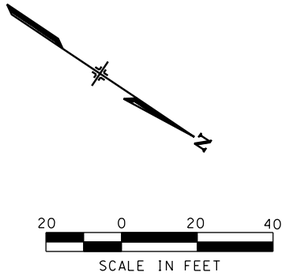
J130

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1135

DATE: 6/3/2013 10:31:21 AM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J130.dgn

DN: URS CK: URS DW: URS CK: URS





NOTES:

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
227+31		P1-28	MAINLINE	6	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
228+26		P1-28	MAINLINE	6	19' 6"		95	-9	SCA-01L		BT-01 (2)	SD-01	
229+21		P1-28	MAINLINE	6	19' 6"		77	0	SCA-01L		BT-01 (2)	SD-01	
229+98		P1-28	MAINLINE	6	19' 6"		78	-9	SCA-01L		BT-01 (2)	SD-01	
230+76		P1-28	MAINLINE	6	19' 6"		64	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
2/26/14

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

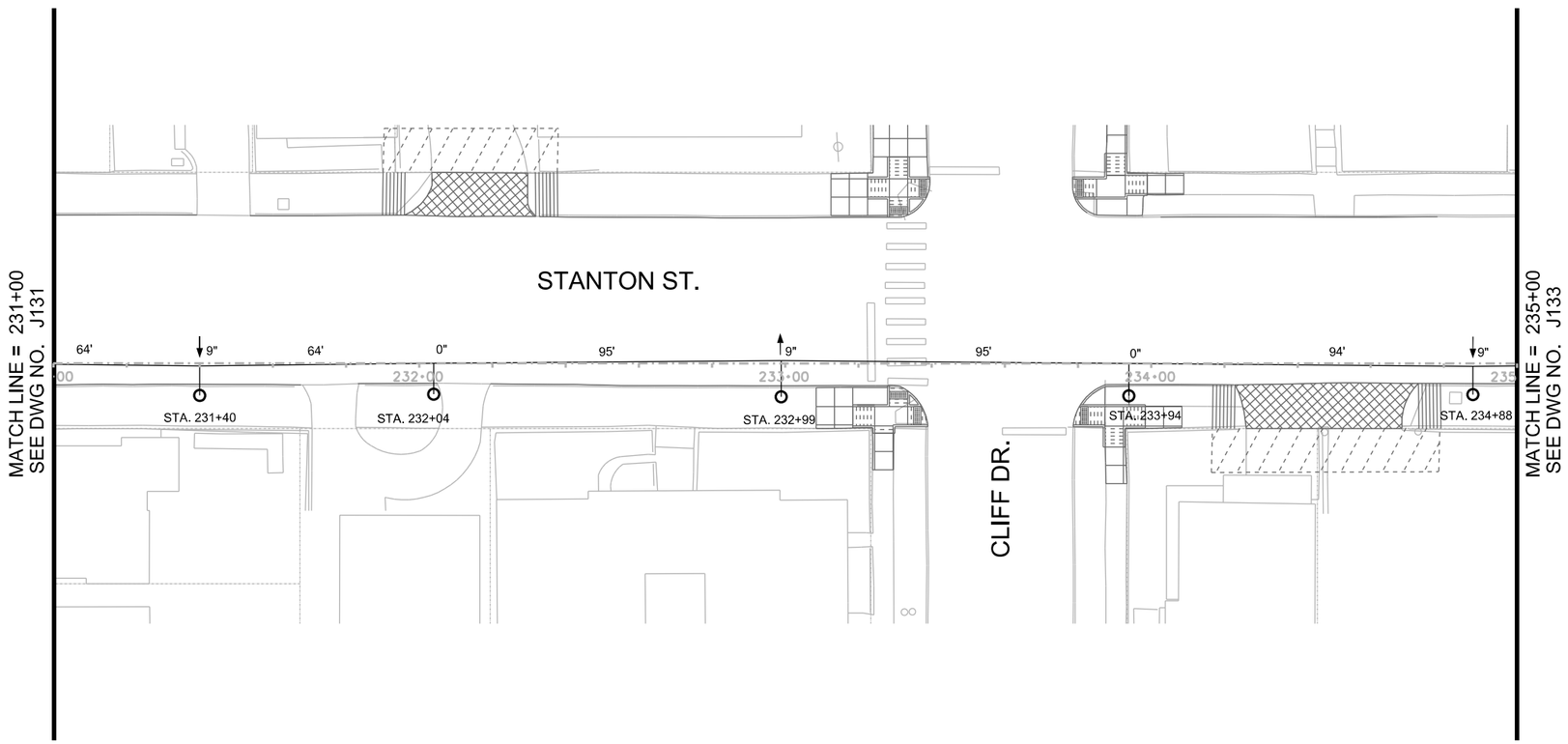
OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 227+00 TO STA. 231+00

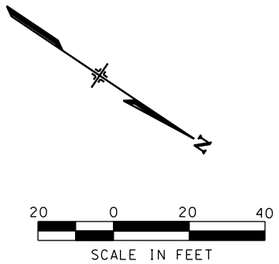
J131

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1136

DATE: 2/26/2014 1:52:54 PM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J131.dgn

DN: URS CK: URS DW: URS CK: URS





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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
231+40		P1-28	MAINLINE	6	19' 6"		64	9	SCA-01L		BT-01 (2)	SD-01	
232+04		P1-28	MAINLINE	6	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
232+99		P1-28	MAINLINE	6	19' 6"		95	-9	SCA-01L		BT-01 (2)	SD-01	
233+94		P1-28	MAINLINE	6	19' 6"		94	0	SCA-01L		BT-01 (2)	SD-01	
234+88		P1-28	MAINLINE	6	19' 6"		86	9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

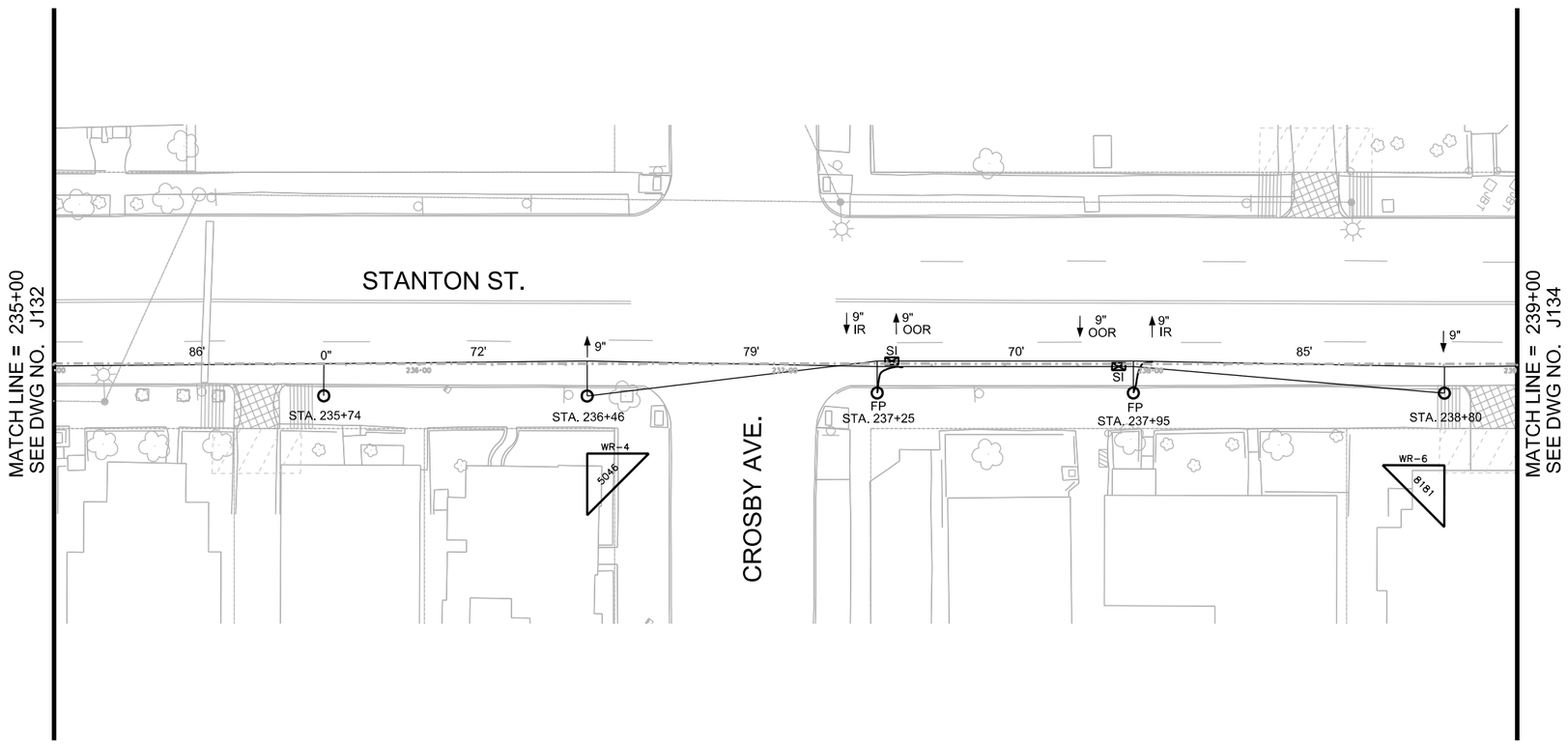
OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 231+00 TO STA. 235+00

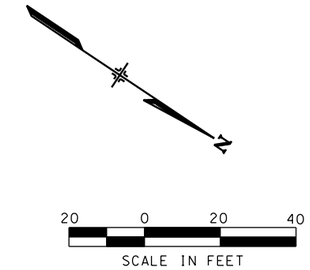
J132

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1137

DATE: 6/3/2013 10:35:07 AM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J132.dgn

DN: URS CK: URS DW: URS CK: URS





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GENERAL ARRANGEMENT
OVERLAPS OR CANTILEVERS
SEE DWG. J201

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
235+74		P1-28	MAINLINE	6	19' 6"		72	0	SCA-01L		BT-01 (2)	SD-01	
236+46		P4-28	MAINLINE	6	19' 6"	22' 0"	79	-9	SCA-01L		BT-01 (2)	SD-01, BT-02	JC-01, FT-01
237+25	F	P3-28-F	MAINLINE	OOR 4, IR 6	20' 0", 19' 6"		70	OOR -9, IR 9	SCA-04HA		BT-01 (2)	SD-01	LA-01, DS-01, FC-01(2), SI-02(2), BL-01
237+95	F	P3-28-F	MAINLINE	OOR 6, IR 4	20' 0", 19' 6"		85	OOR 9, IR -9	SCA-04HB		BT-01 (2)	SD-01	JC-01, LA-01, DS-01, FC-01 (2)
238+80		P4-28	MAINLINE	4	19' 6"	22' 0"	89	9	SCA-01L		BT-01 (2)	SD-01, BT-02	FT-01

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
2/16/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 235+00 TO STA. 239+00

J133

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1138

DATE: 2/16/2015 9:01:19 AM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J133.dgn

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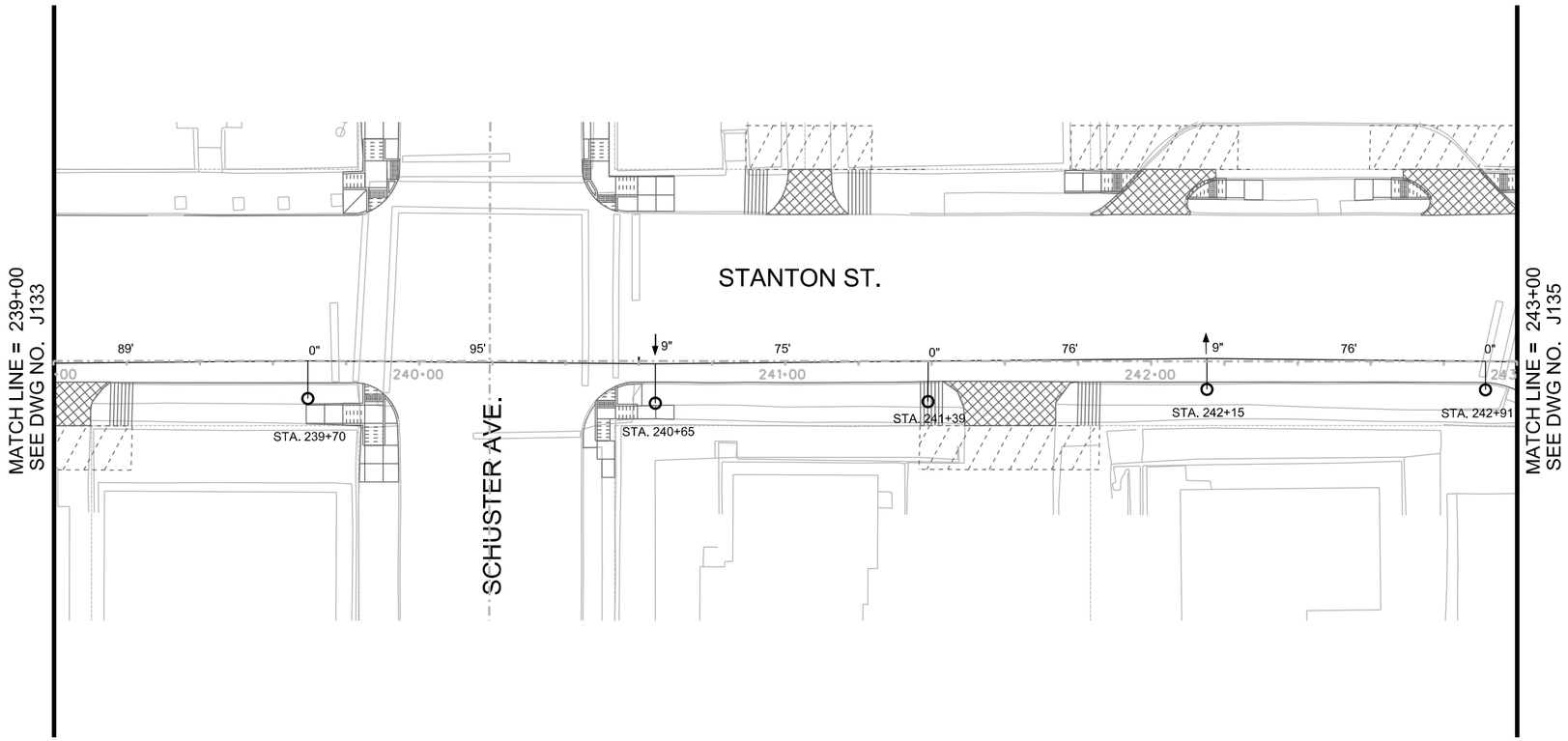

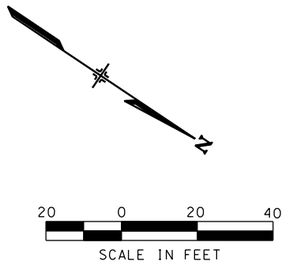

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
239+70		P1-28	MAINLINE	4	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
240+65		P1-28	MAINLINE	4	19' 6"		75	9	SCA-01L		BT-01 (2)	SD-01	
241+39		P1-28	MAINLINE	4	19' 6"		76	0	SCA-01L		BT-01 (2)	SD-01	
242+15		P1-28	MAINLINE	4	19' 6"		76	-9	SCA-01L		BT-01 (2)	SD-01	LA-01
242+91		P1-28	MAINLINE	4	19' 6"		84	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 239+00 TO STA. 243+00

J134

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1139

DATE: 6/3/2013 10:41:46 AM
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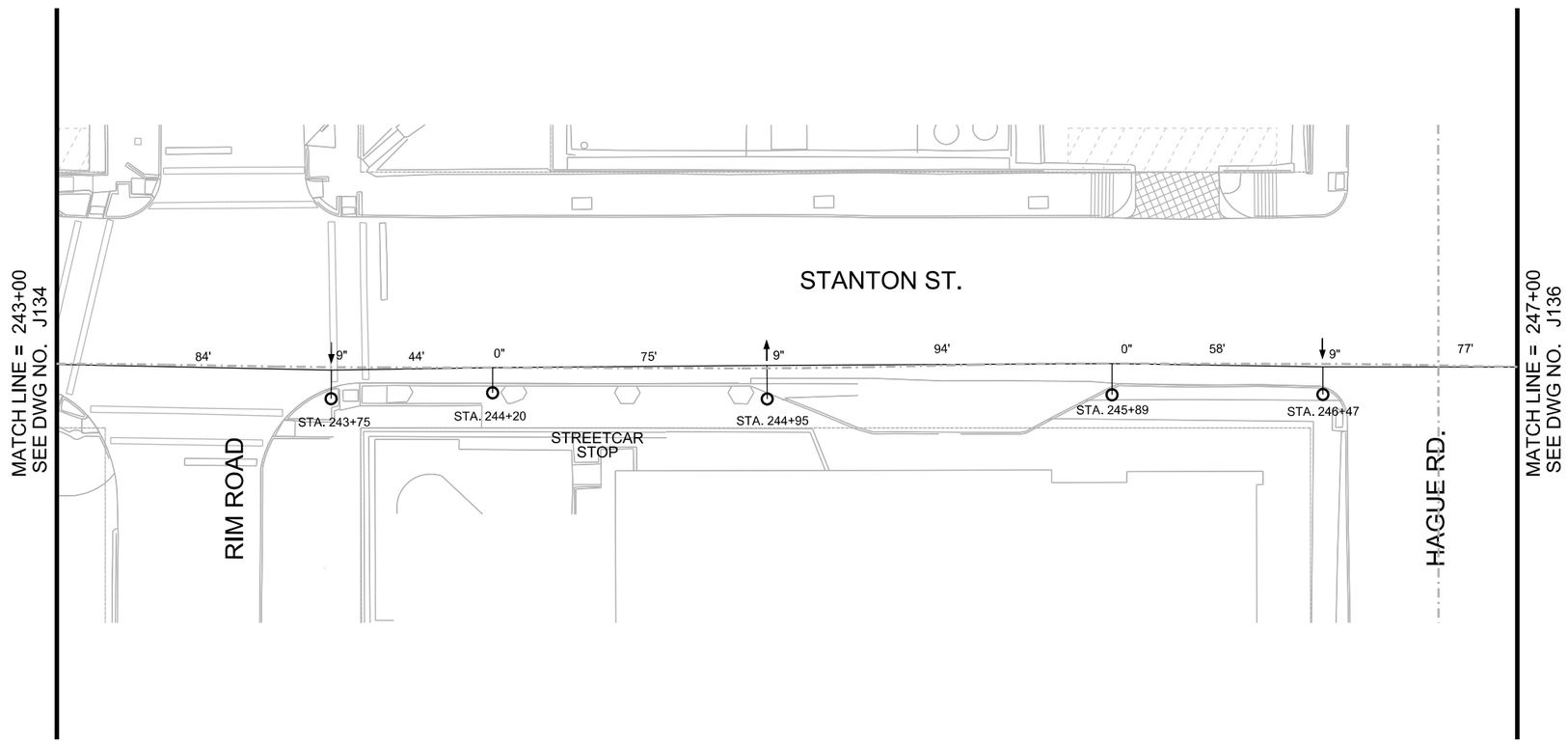

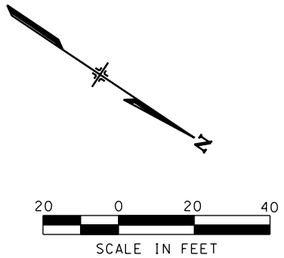

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
243+75		P1-28	MAINLINE	4	19' 6"		44	9	SCA-01L		BT-01 (2)	SD-01	
244+20		P1-28	MAINLINE	4	19' 6"		75	0	SCA-01L		BT-01 (2)	SD-01	
244+95	L	P1-28-L	MAINLINE	4	19' 6"		94	-9	SCA-07M		BT-01 (2)	SD-01	
245+89		P1-28	MAINLINE	4	19' 6"		58	0	SCA-01L		BT-01 (2)	SD-01	
246+47		P1-28	MAINLINE	4	19' 6"		77	9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/3/15

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LTK Engineering Services
TBPE REGISTRATION NO. F-1389

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2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 243+00 TO STA. 247+00

J135

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1140

DN: URS CK: URS DW: URS CK: URS

DATE: 6/3/2015 1:03:03 PM
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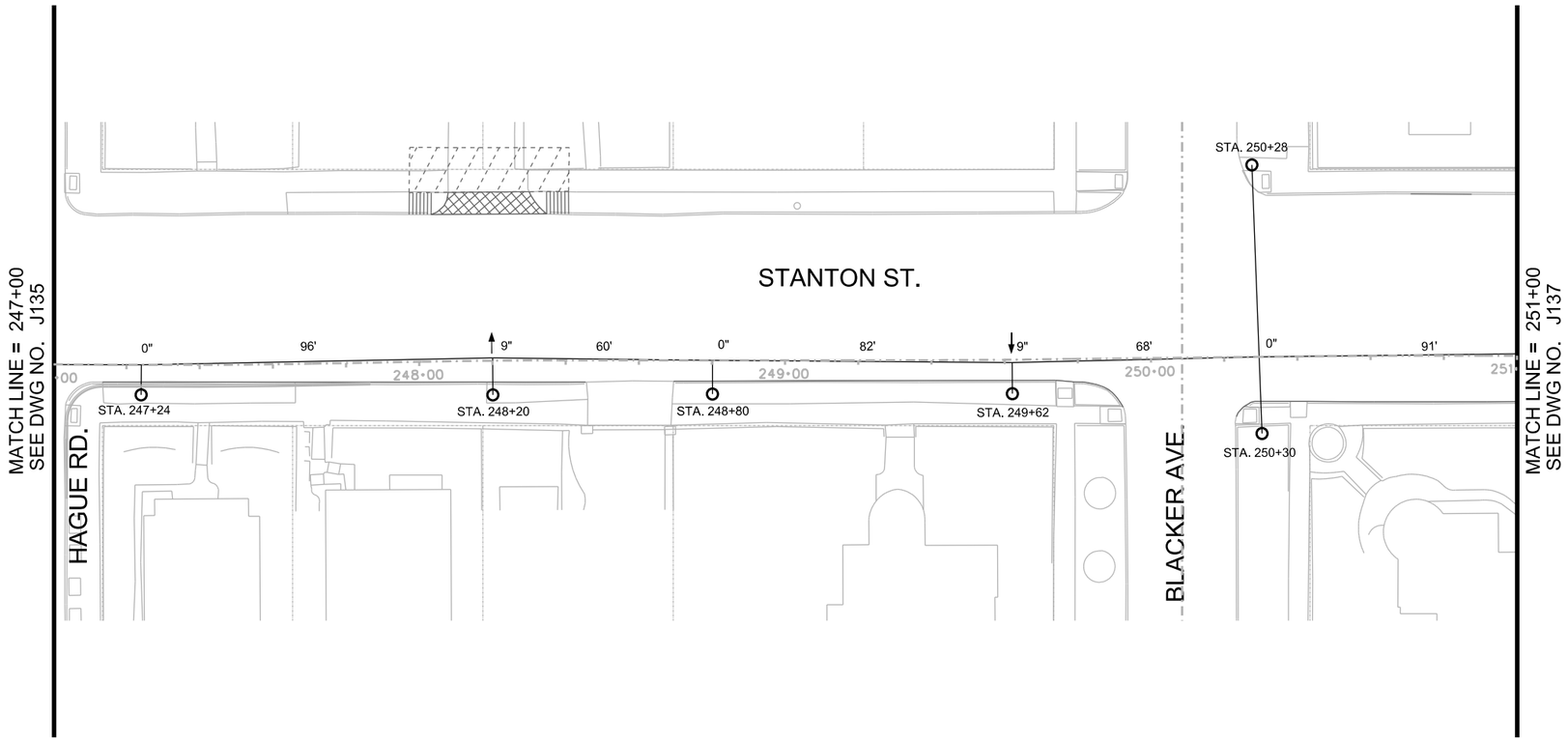

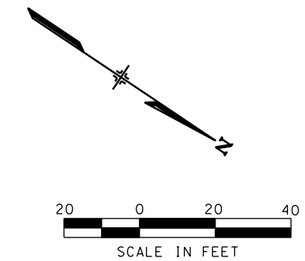

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
247+24		P1-28	MAINLINE	4	19' 6"		96	0	SCA-01L		BT-01 (2)	SD-01	
248+20		P1-28	MAINLINE	4	19' 6"		60	-9	SCA-01L		BT-01 (2)	SD-01	
248+80		P1-28	MAINLINE	4	19' 6"		82	0	SCA-01L		BT-01 (2)	SD-01	
249+62		P1-28	MAINLINE	4	19' 6"		68	9	SCA-01L		BT-01 (2)	SD-01	
250+28		P2-28	MAINLINE	4	19' 6"		91	0	CS-01	HR-1L	BT-02	SD-01	
250+30		P2-28	MAINLINE	4	19' 6"						BT-02	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 247+00 TO STA. 251+00

J136

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1141

DN: URS CK: URS DW: URS CK: URS

DATE: 6/3/2013 10:45:23 AM
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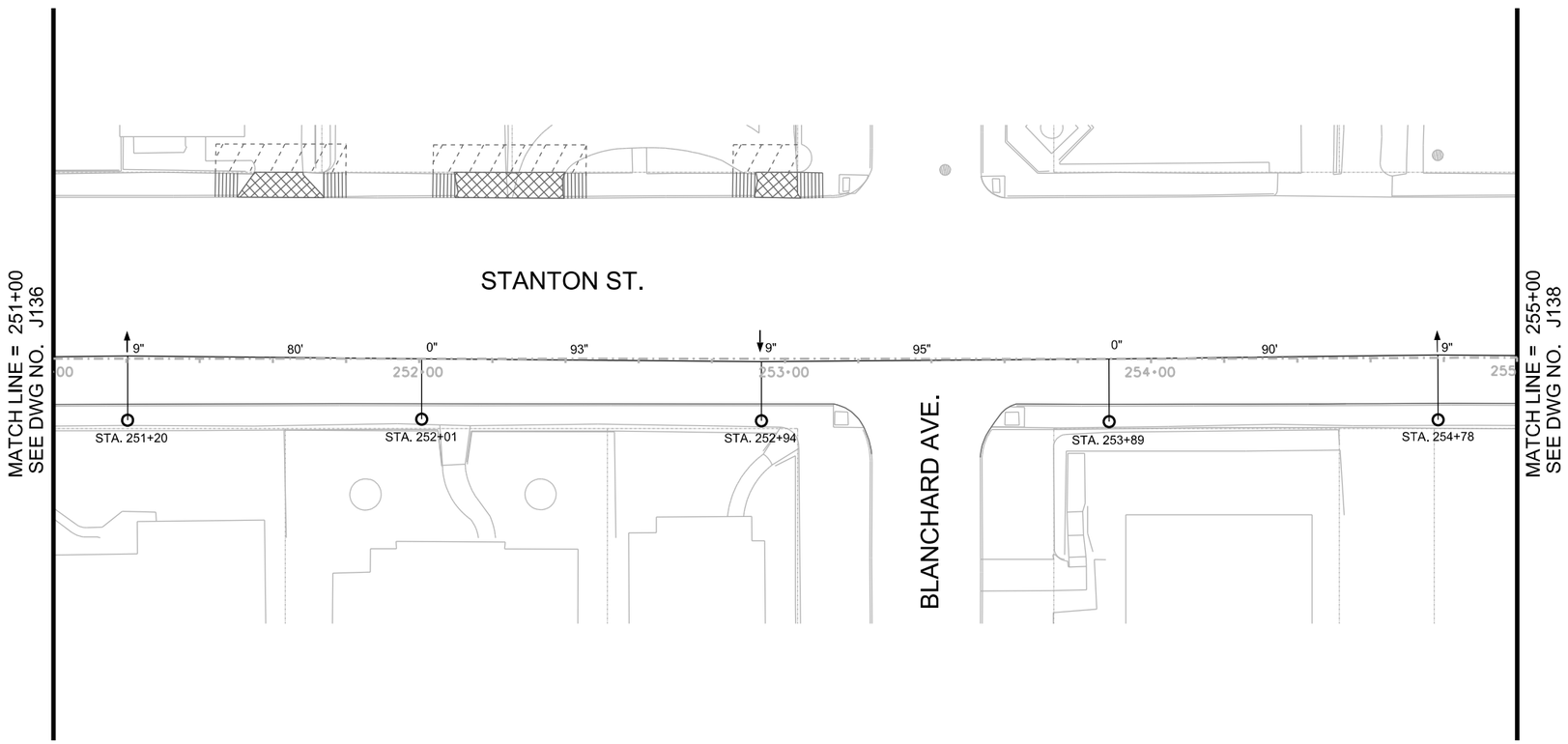

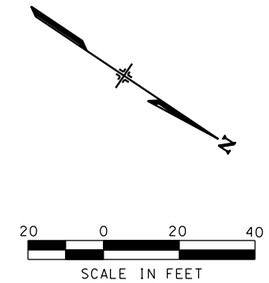

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
251+20		P1-28	MAINLINE	4	19' 6"		80	-9	SCA-01L		BT-01 (2)	SD-01	
252+01		P1-28	MAINLINE	4	19' 6"		93	0	SCA-01L		BT-01 (2)	SD-01	LA-01
252+94		P1-28	MAINLINE	4	19' 6"		95	9	SCA-01L		BT-01 (2)	SD-01	
253+89		P1-28	MAINLINE	4	19' 6"		90	0	SCA-01L		BT-01 (2)	SD-01	
254+78		P1-28	MAINLINE	4	19' 6"		77	-9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

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URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 251+00 TO STA. 255+00

J137

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1142

DATE: 6/3/2013 10:47:07 AM
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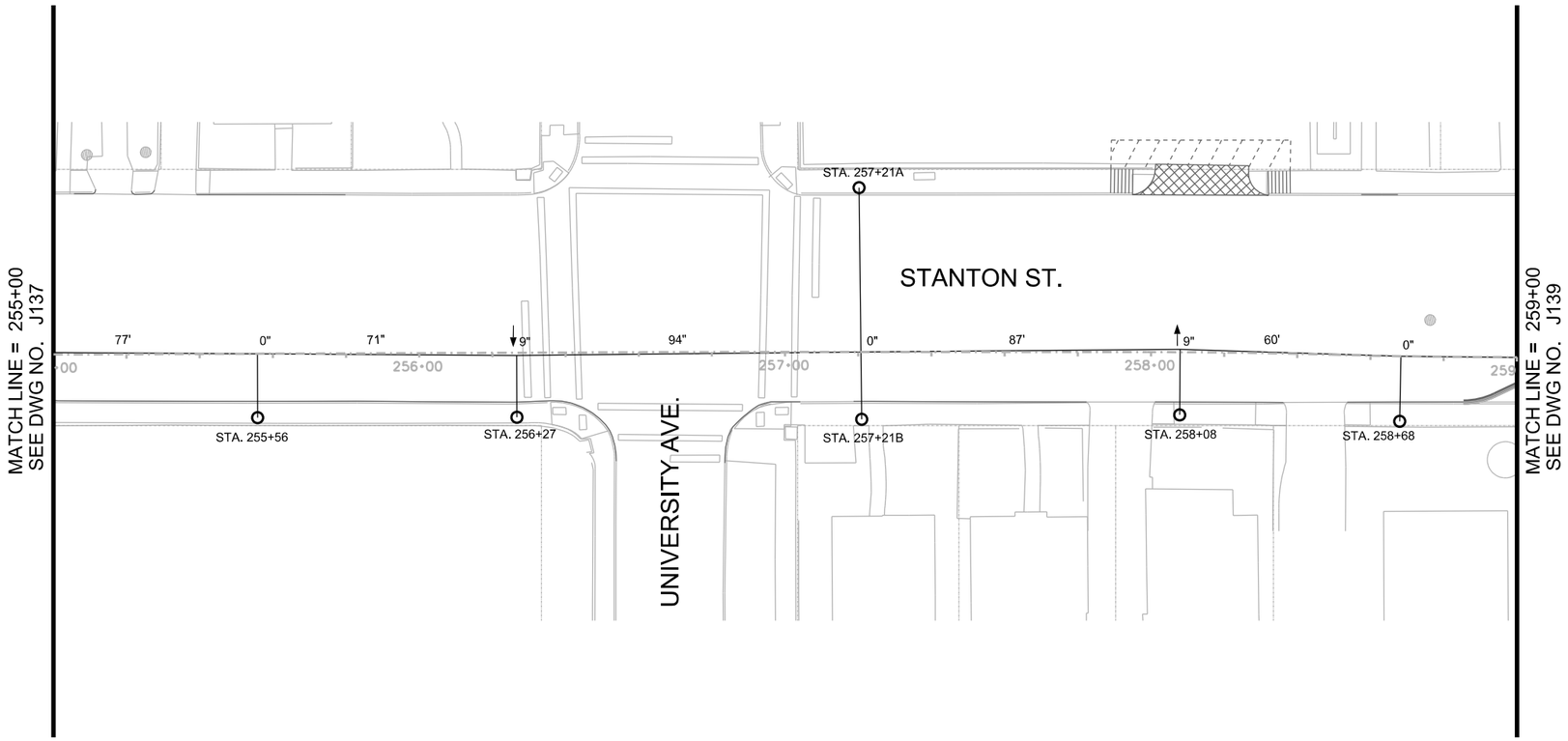

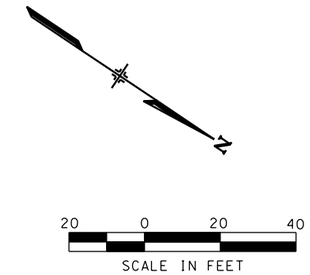

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
255+56		P1-28	MAINLINE	4	19' 6"		71	0	SCA-01L		BT-01 (2)	SD-01	
256+27		P1-28	MAINLINE	4	19' 6"		94	9	SCA-01L		BT-01 (2)	SD-01	
257+21A		P2-28	MAINLINE	4	19' 6"		87	0	CS-01	HR-1L	BT-02	SD-01	
257+21B		P2-28	MAINLINE	4	19' 6"						BT-02	SD-01	
258+08		P1-28	MAINLINE	4	19' 6"		60	-9	SCA-01L		BT-01 (2)	SD-01	
258+68		P1-28	MAINLINE	4	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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112273
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6/7/13

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URS
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El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 255+00 TO STA. 259+00

J138

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1143

DATE: 6/3/2013 10:48:54 AM
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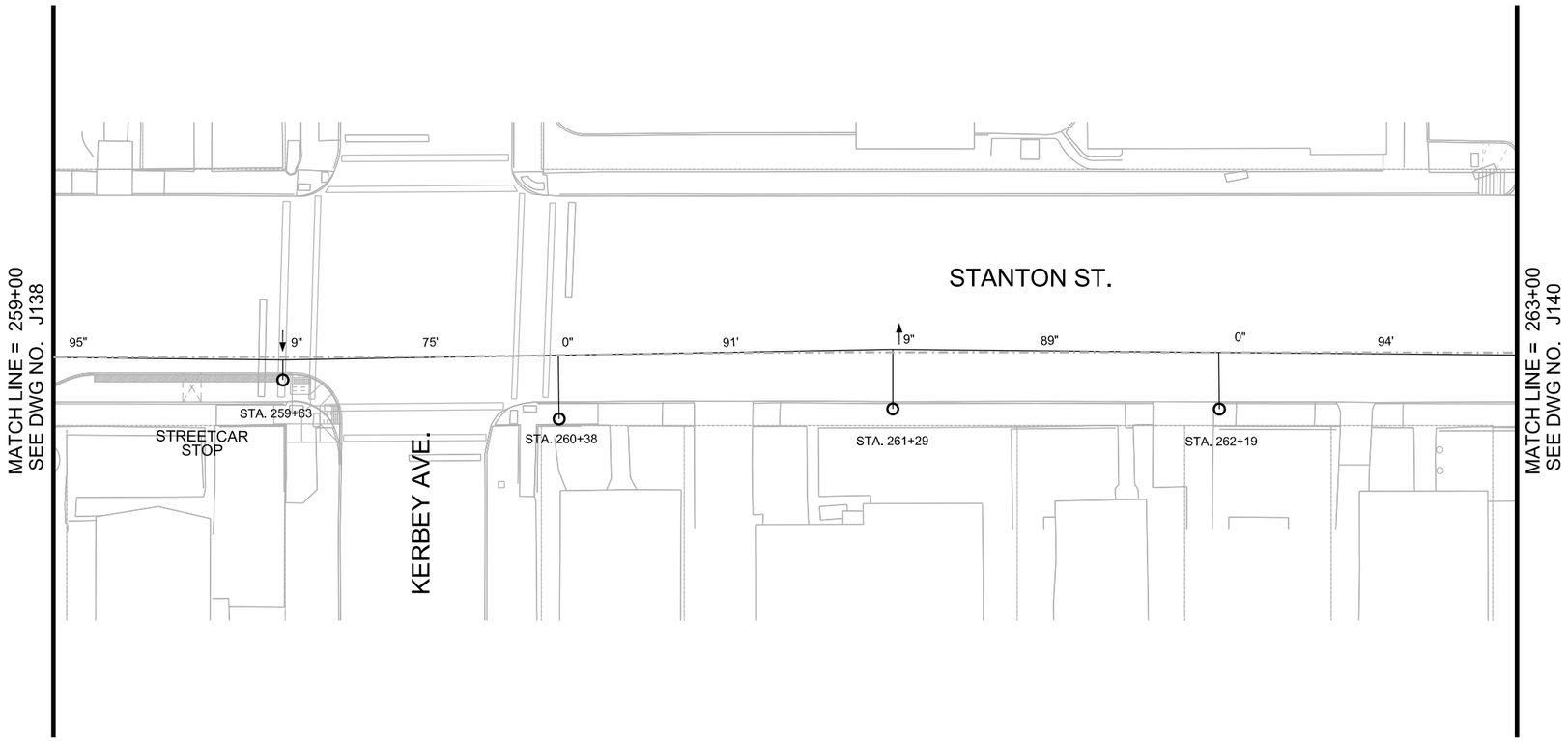
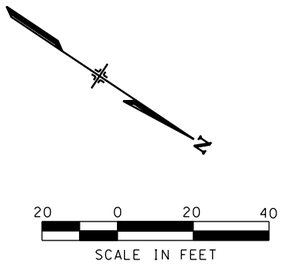
DN: URS CK: URS DW: URS CK: URS





NOTES:

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
259+63	L,O	P1O-28-L	MAINLINE	4	19' 6"		75	9	SCA-01L		BT-01 (2)	SD-01	
260+38	T	P1-28-T	MAINLINE	4	19' 6"		91	0	SCA-01L		BT-01 (2)	SD-01	
261+29		P1-28	MAINLINE	4	19' 6"		89	-9	SCA-01L		BT-01 (2)	SD-01	
262+19		P1-28	MAINLINE	4	19' 6"		94	0	SCA-01L		BT-01 (2)	SD-01	LA-01

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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112273
LICENSED PROFESSIONAL ENGINEER
2/26/14

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2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 259+00 TO STA. 263+00

J139

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1144

DATE: 2/26/2014 1:51:37 PM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J139.dgn

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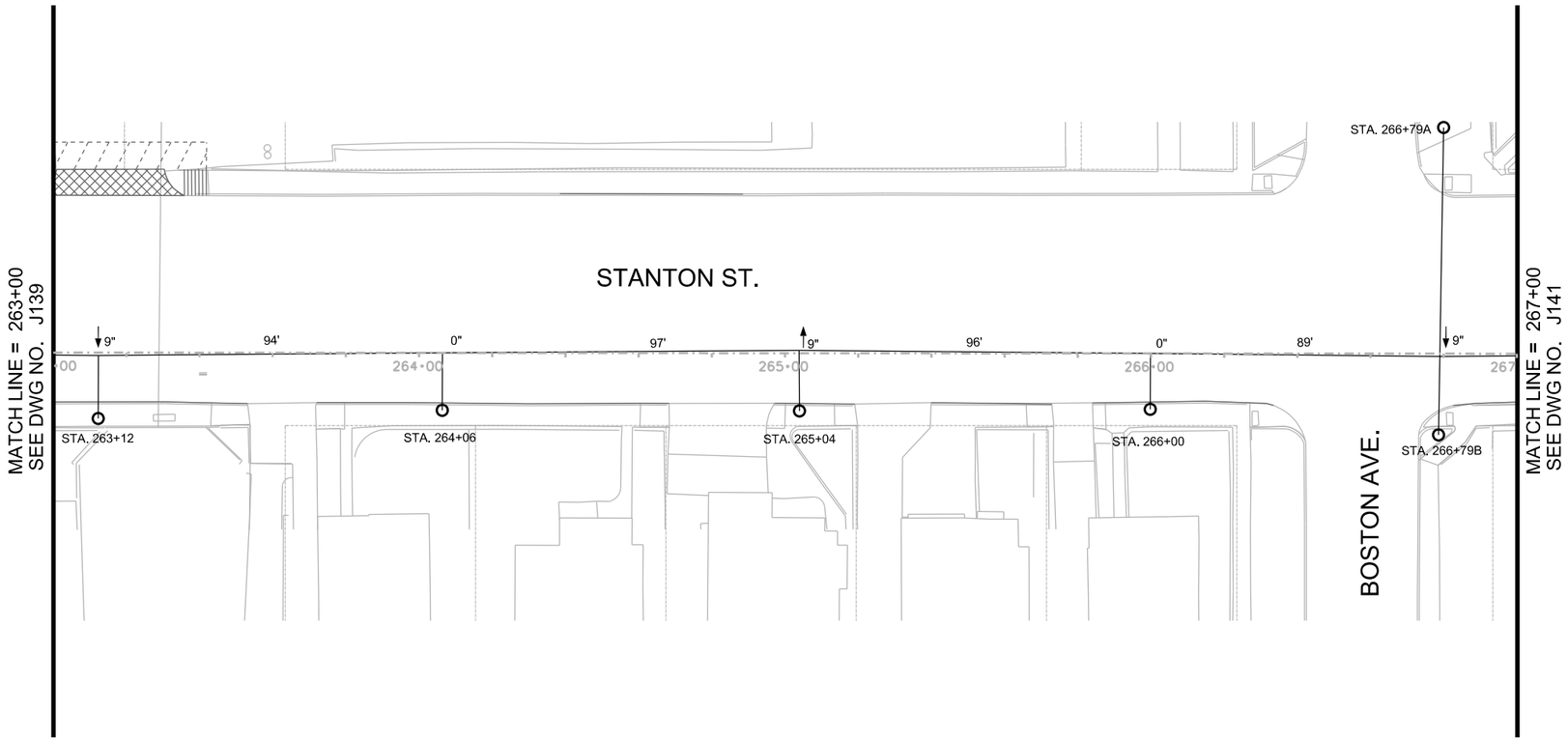

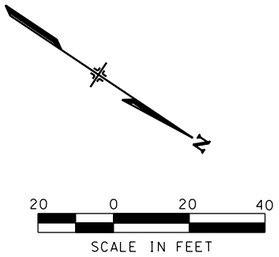

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
263+12		P1-28	MAINLINE	4	19' 6"		94	9	SCA-01L		BT-01 (2)	SD-01	
264+06		P1-28	MAINLINE	4	19' 6"		97	0	SCA-01L		BT-01 (2)	SD-01	
265+04		P1-28	MAINLINE	4	19' 6"		96	-9	SCA-01L		BT-01 (2)	SD-01	
266+00		P1-28	MAINLINE	4	19' 6"		79	0	SCA-01L		BT-01 (2)	SD-01	
266+79A		P2-28	MAINLINE	4	19' 6"		95	9	CS-01	HR-1L	BT-02	SD-01	
266+79B		P2-28	MAINLINE	4	19' 6"						BT-02	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 263+00 TO STA. 267+00

J140

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1145

DATE: 6/3/2013 10:52:28 AM
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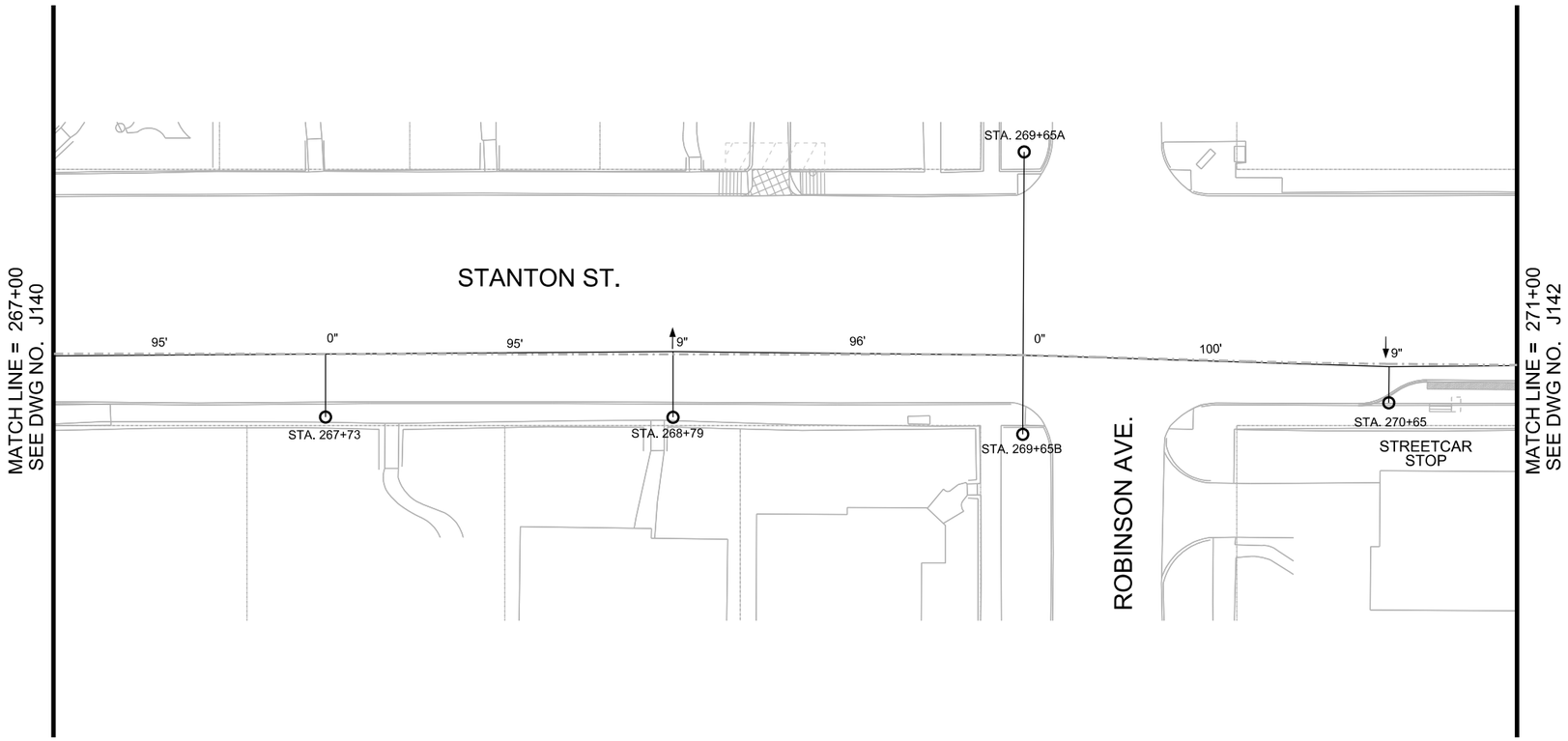

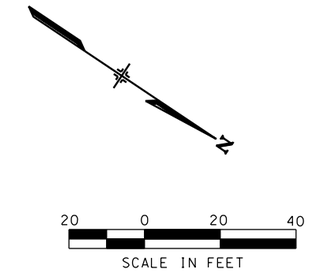

NOTES:

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
267+73		P1-28	MAINLINE	4	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
268+79		P1-28	MAINLINE	4	19' 6"		96	-9	SCA-01L		BT-01 (2)	SD-01	
269+65A		P2-28	MAINLINE	4	19' 6"		100	0	CS-01	HR-1L	BT-02	SD-01	
269+65B		P2-28	MAINLINE	4	19' 6"						BT-02	SD-01	
270+65		P1-28	MAINLINE	4	19' 6"		97	9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
2/26/14

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 267+00 TO STA. 271+00

J141

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1146

DATE: 2/26/2014 1:51:03 PM
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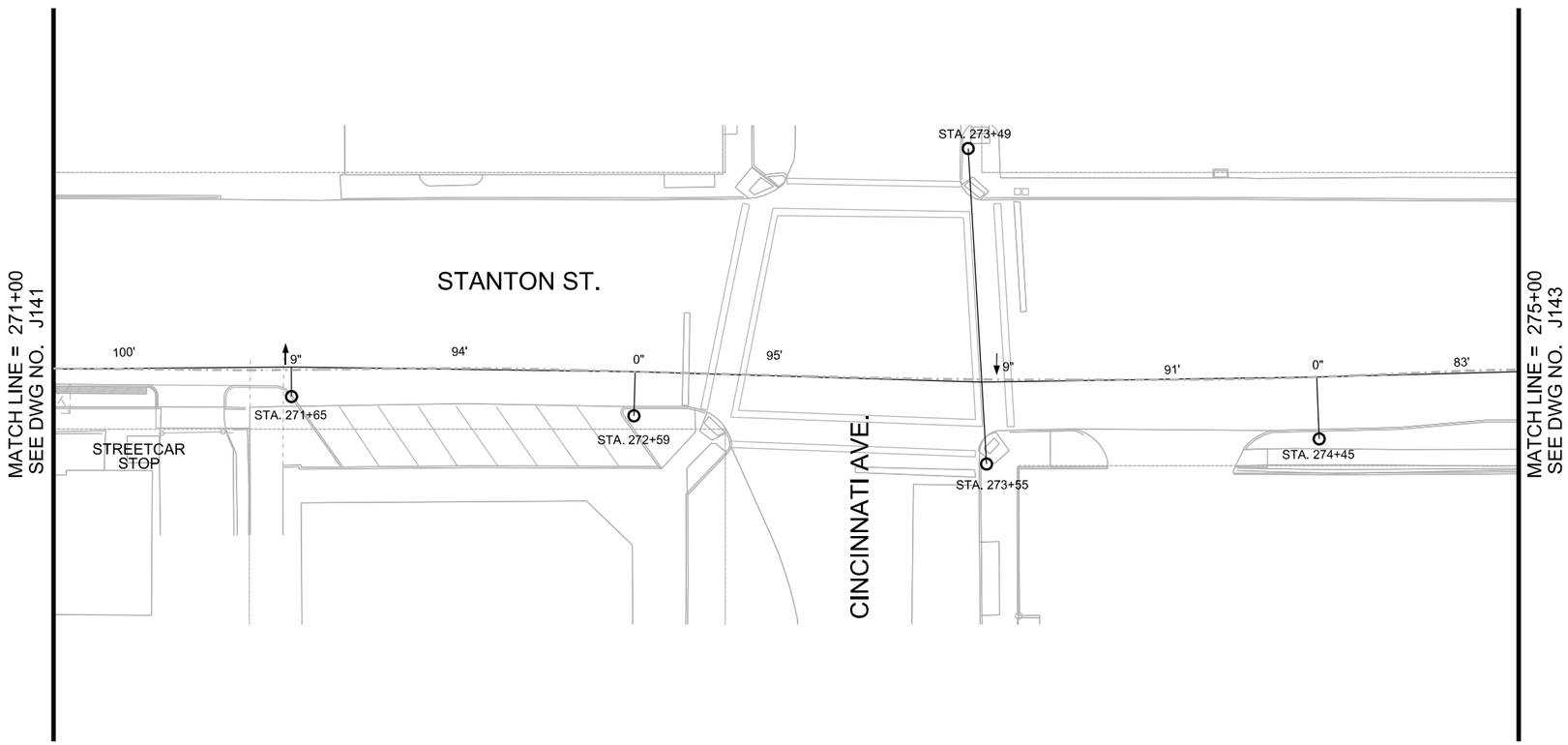

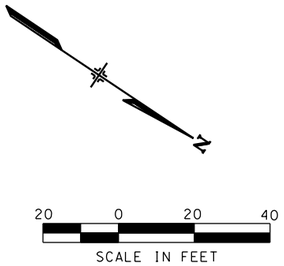

NOTES:

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
271+62		P1-28	MAINLINE	4	19' 6"		97	-9	SCA-01L		BT-01 (2)	SD-01	
272+59		P1-28	MAINLINE	4	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	LA-01
273+49		P2-28	MAINLINE	4	19' 6"		91	9	CS-01	HR-1M	BT-02	SD-01	
273+55		P2-28	MAINLINE	4	19' 6"						BT-02	SD-01	
274+45		P1-28	MAINLINE	4	20'-2"		83	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
5/18/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 271+00 TO STA. 275+00

J142

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1147

DATE: 5/15/2015 4:47:51 PM
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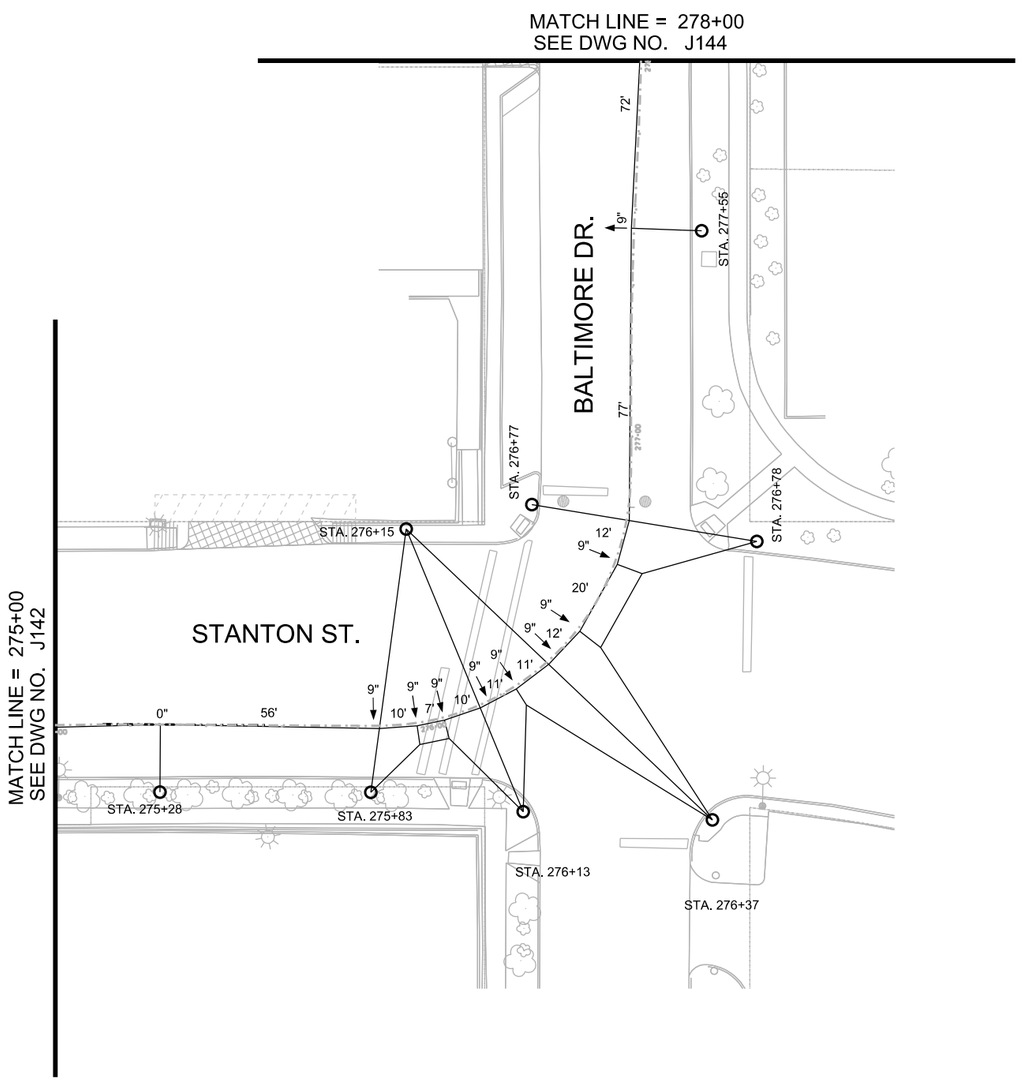

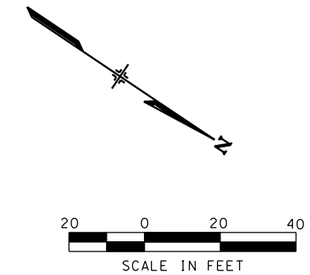

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
275+28		P1-30	MAINLINE	4	21' 4"		56	0	SCA-01L		BT-01 (2)	SD-01	
275+83		P3-28	MAINLINE	4	21' 7"		SEE DWG J143A						
276+13		P4-30	MAINLINE	4	21' 7"		SEE DWG J143A						
276+15		P3-30	MAINLINE	4	21' 7"		SEE DWG J143A						
276+37		P4-30	MAINLINE	4	21' 7"		SEE DWG J143A						
276+77		P3-28	MAINLINE	4	21' 7"		SEE DWG J143A						
276+78		P4-30	MAINLINE	4	21' 7"		SEE DWG J143A						
277+55		P1-28	MAINLINE	4	22' 0"		72	-9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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	/ /		

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
5/18/15

LTK
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2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 275+00 TO STA. 278+00

J143

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1148

DN: URS CK: URS DW: URS CK: URS

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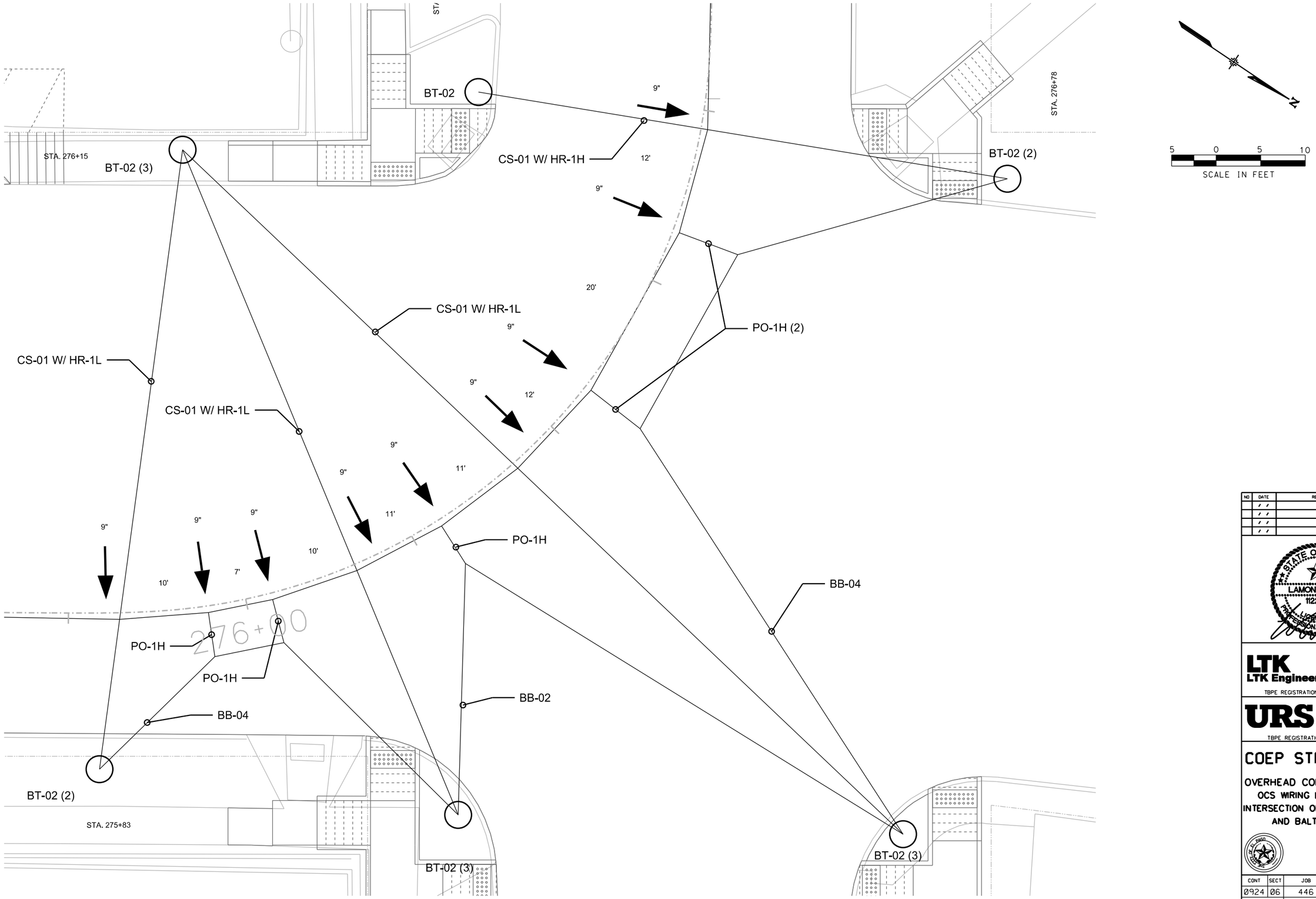

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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

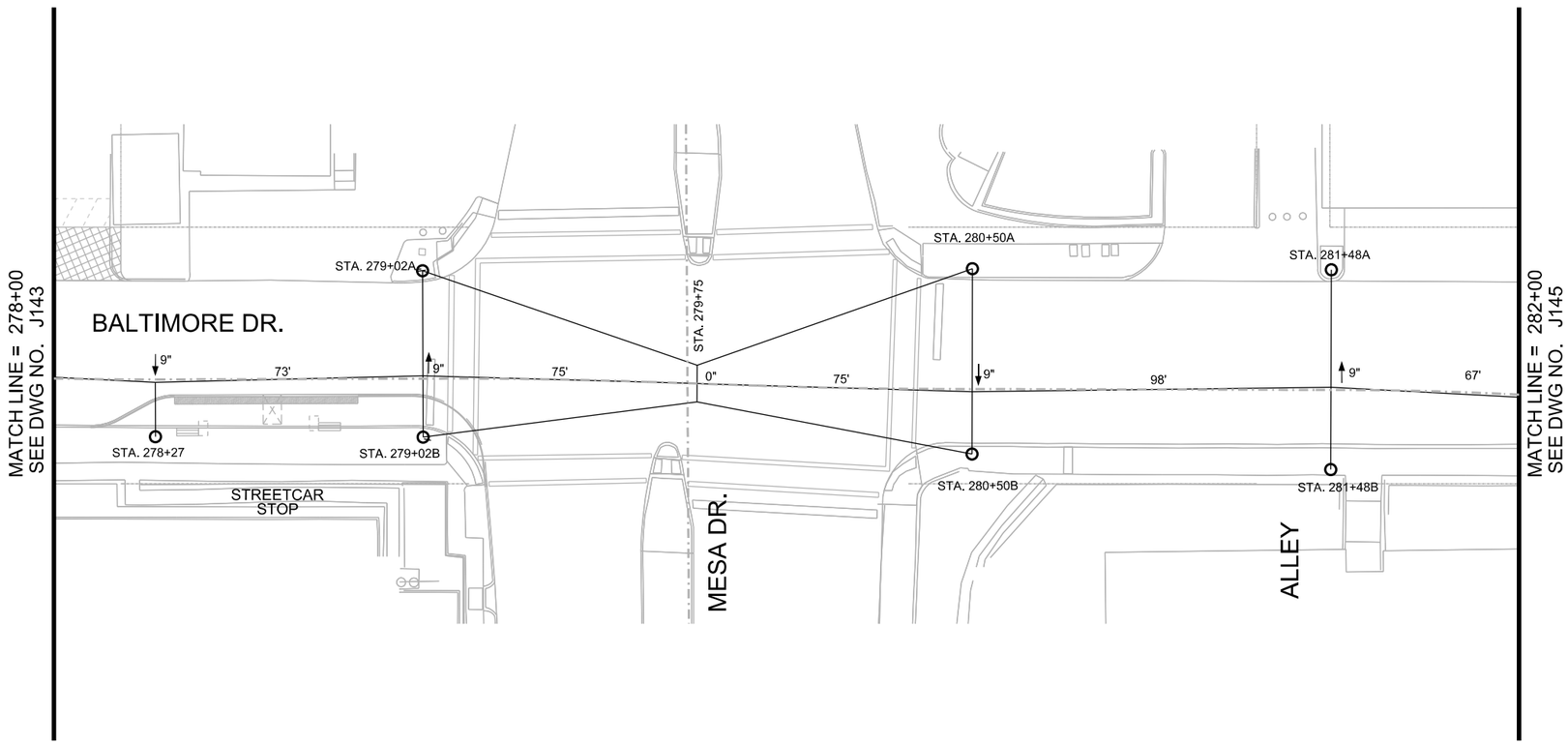
URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

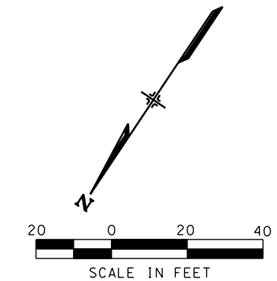
COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
INTERSECTION OF STANTON AVE.
AND BALTIMORE DR.

J143A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1149





NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
278+27		P1-33	MAINLINE	4	22' 6"		73	9	SCA-06M		BT-01 (2)	SD-01	
279+02A		P4-30	MAINLINE	4	23' 0"		75	9	CS-01	HR-1L	BT-02(2)	SD-01	BB-02
279+02B		P4-30	MAINLINE	4	23' 0"						BT-02(2)	SD-01	BB-02
279+75			MAINLINE	4	23' 0"		75	0	CS-01	HR-1L			
280+50A		P4-30	MAINLINE	4	23' 0"		98	-9	CS-01	HR-1L	BT-02(2)	SD-01	
280+50B		P4-30	MAINLINE	4	23' 0"						BT-02(2)	SD-01	
281+48A		P2-28	MAINLINE	4	22' 3"		67	-9	CS-01	HR-1L	BT-02	SD-01	
281+48B		P2-28	MAINLINE	4	22' 3"						BT-02	SD-01	

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STATE OF TEXAS
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2829 Montana Suite 206
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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 278+00 TO STA. 282+00

J144

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1150

DN: URS CK: URS DW: URS CK: URS

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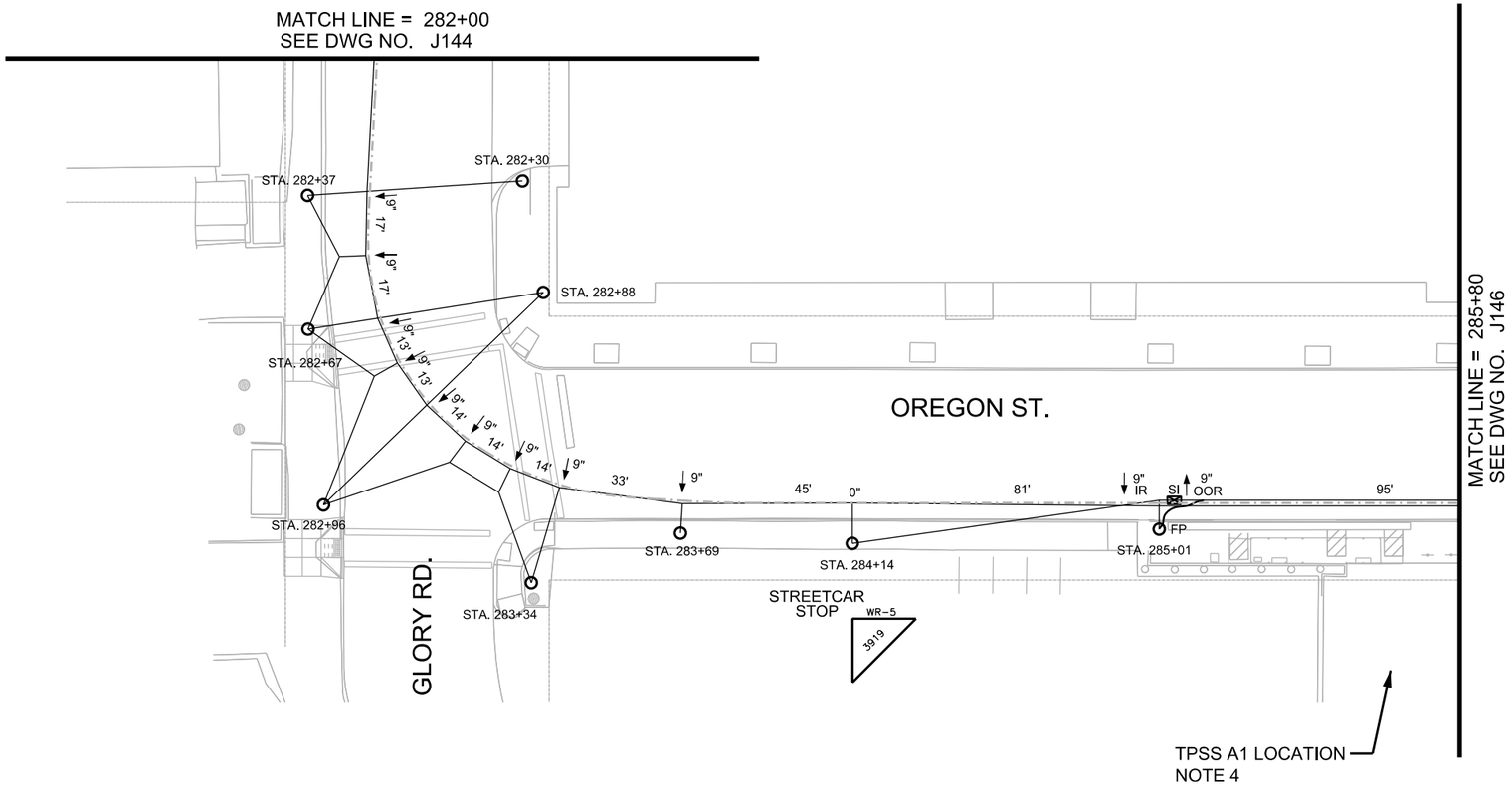

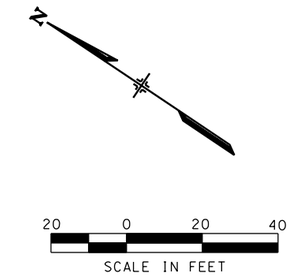

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.
4. FOR TPSS SITE LOCATION DETAILS SEE VOL. 3 TRACTION POWER PLANS.

GENERAL ARRANGEMENT
OVERLAPS OR CANTILEVERS
SEE DWG. J201

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
282+30		P2-28	MAINLINE	4	22' 0"		SEE DWG J145A						
282+37		P3-28	MAINLINE	4	22' 0"		SEE DWG J145A						
282+67		P4-28	MAINLINE	4	22' 0"		SEE DWG J145A						
282+88		P3-30	MAINLINE	4	22' 0"		SEE DWG J145A						
282+96		P4-30	MAINLINE	4	22' 0"		SEE DWG J145A						
283+34		P4-28	MAINLINE	4	22' 0"		SEE DWG J145A						
283+69		P2-28	MAINLINE	4	22' 0"		SEE DWG J145A						
284+14		P4-28	MAINLINE	4	21' 9"	23' 6"	81	0	SCA-01H		BT-01 (2)	SD-01, BT-02	JC-01, FT-01
285+01	F	P3-28-F	MAINLINE	OOR 5, IR 4	22' 0", 21' 6"		95	OOR -9, IR 9	SCA-04HA		BT-01 (2)	SD-01	LA-01, DS-01, FC-01 (2), SI-02 (2)

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 282+00 TO STA. 285+80

J145

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1151

DATE: 6/3/2015 3:24:13 PM
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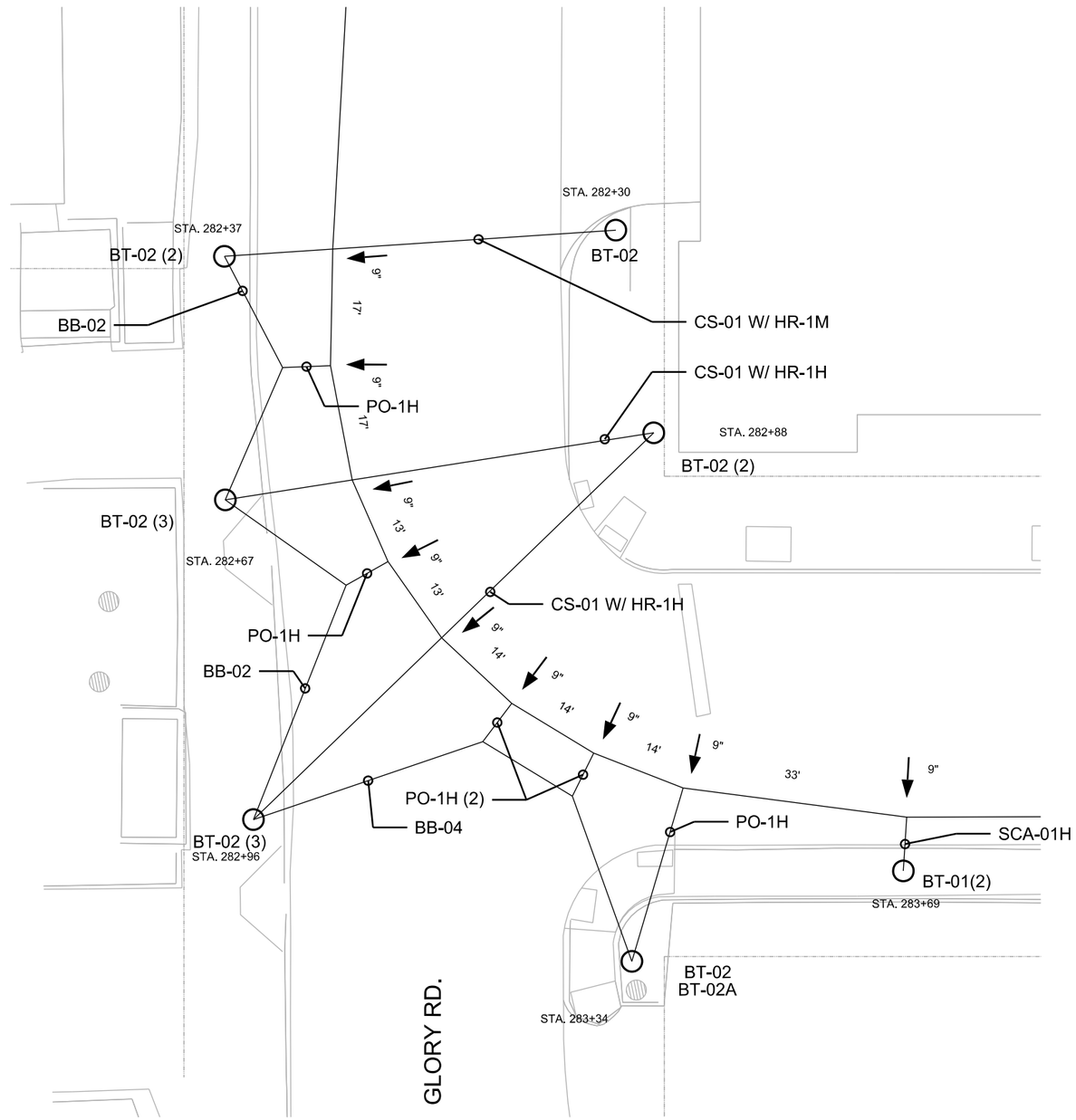

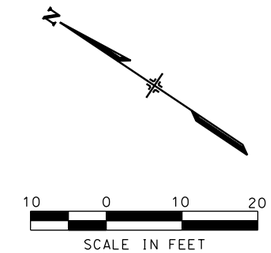

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
INTERSECTION OF BALTIMOR DR.
AND OREGON ST.

J145A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1152

DN: URS	CK: URS	DW: URS	CK: URS

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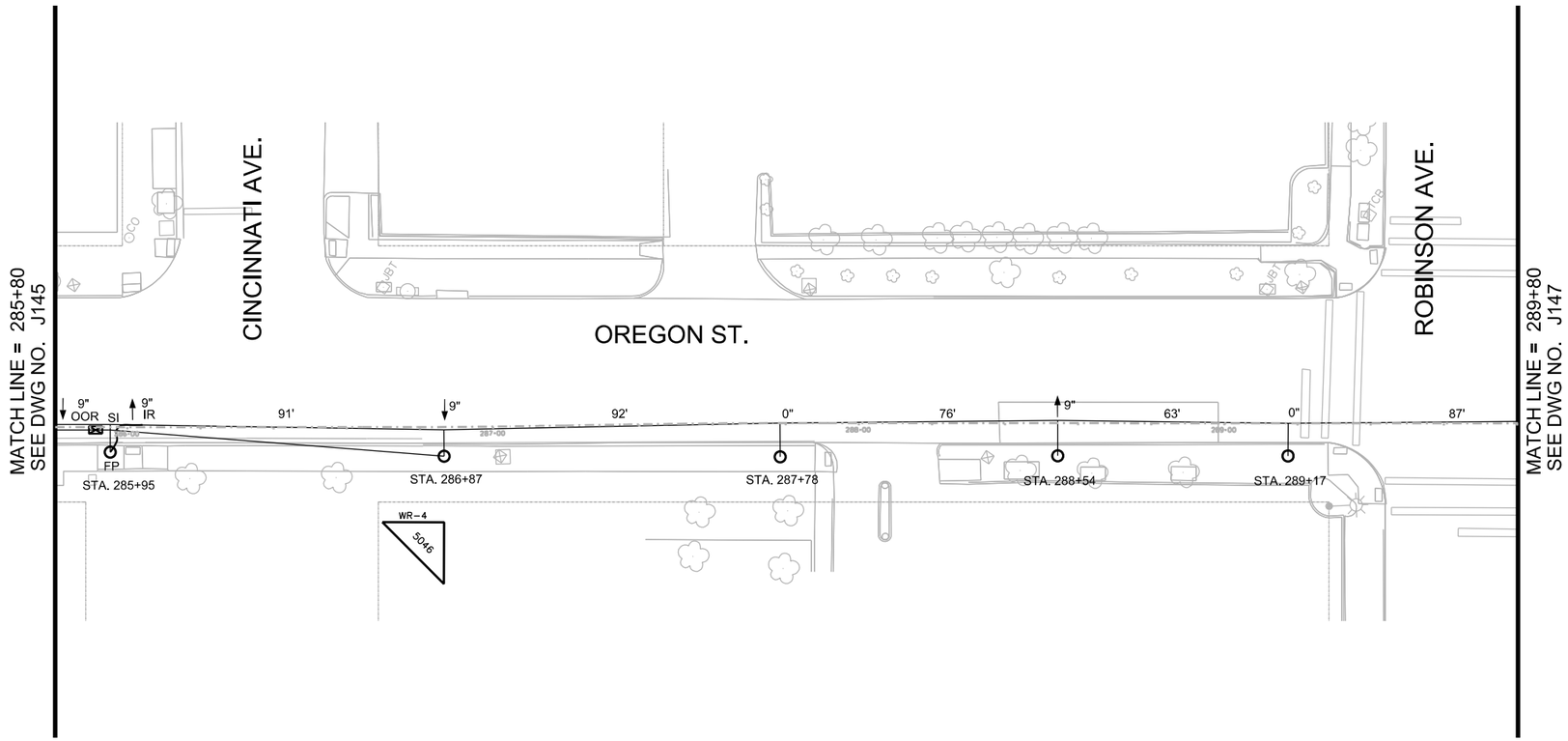

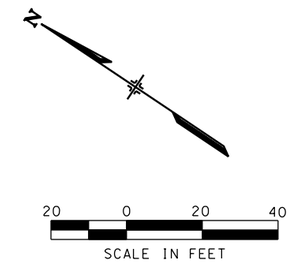

NOTES:

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2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
285+95	F	P3-28-F	MAINLINE	OOR 4, IR 5	22' 0", 21' 6"		91	OOR 9, IR -9	SCA-04HB		BT-01 (2)	SD-01	JC-01, LA-01, DS-01, FC-01 (2)
286+87		P4-28	MAINLINE	5	20' 9"	23' 6"	92	9	SCA-01L		BT-01 (2)	SD-01, BT-02	FT-01
287+78		P1-28	MAINLINE	5	20' 0"		76	0	SCA-01L		BT-01 (2)	SD-01	
288+54		P1-28	MAINLINE	5	19' 6"		63	-9	SCA-01L		BT-01 (2)	SD-01	
289+17		P1-28	MAINLINE	5	19' 6"		87	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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112273
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6/3/15

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 285+80 TO STA. 289+80

J146

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1153

DATE: 6/3/2015 1:31:25 PM
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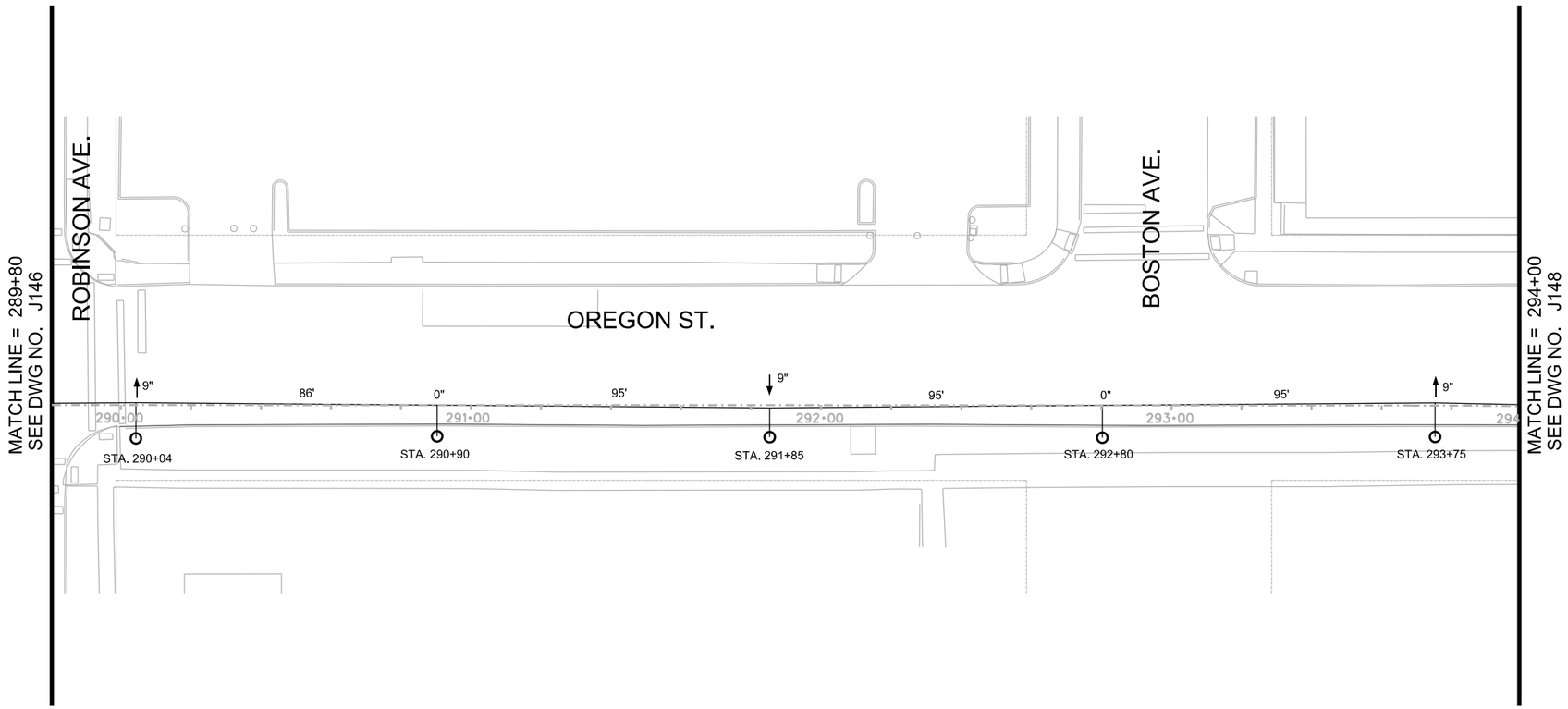

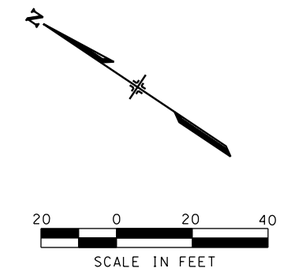

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
290+04	L,O	P1O-28-L	MAINLINE	5	19' 6"		86	-9	SCA-07M		BT-01 (2)	SD-01	
290+90		P1-28	MAINLINE	5	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	LA-01
291+85	L,O	P1O-28-L	MAINLINE	5	19' 6"		95	9	SCA-06M		BT-01 (2)	SD-01	
292+80		P1-28	MAINLINE	5	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
293+75		P1-28	MAINLINE	5	19' 6"		95	-9	SCA-01L		BT-01 (2)	SD-01	

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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

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LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 289+80 TO STA. 294+00

J147

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1154

DATE: 6/3/2013 11:28:34 AM
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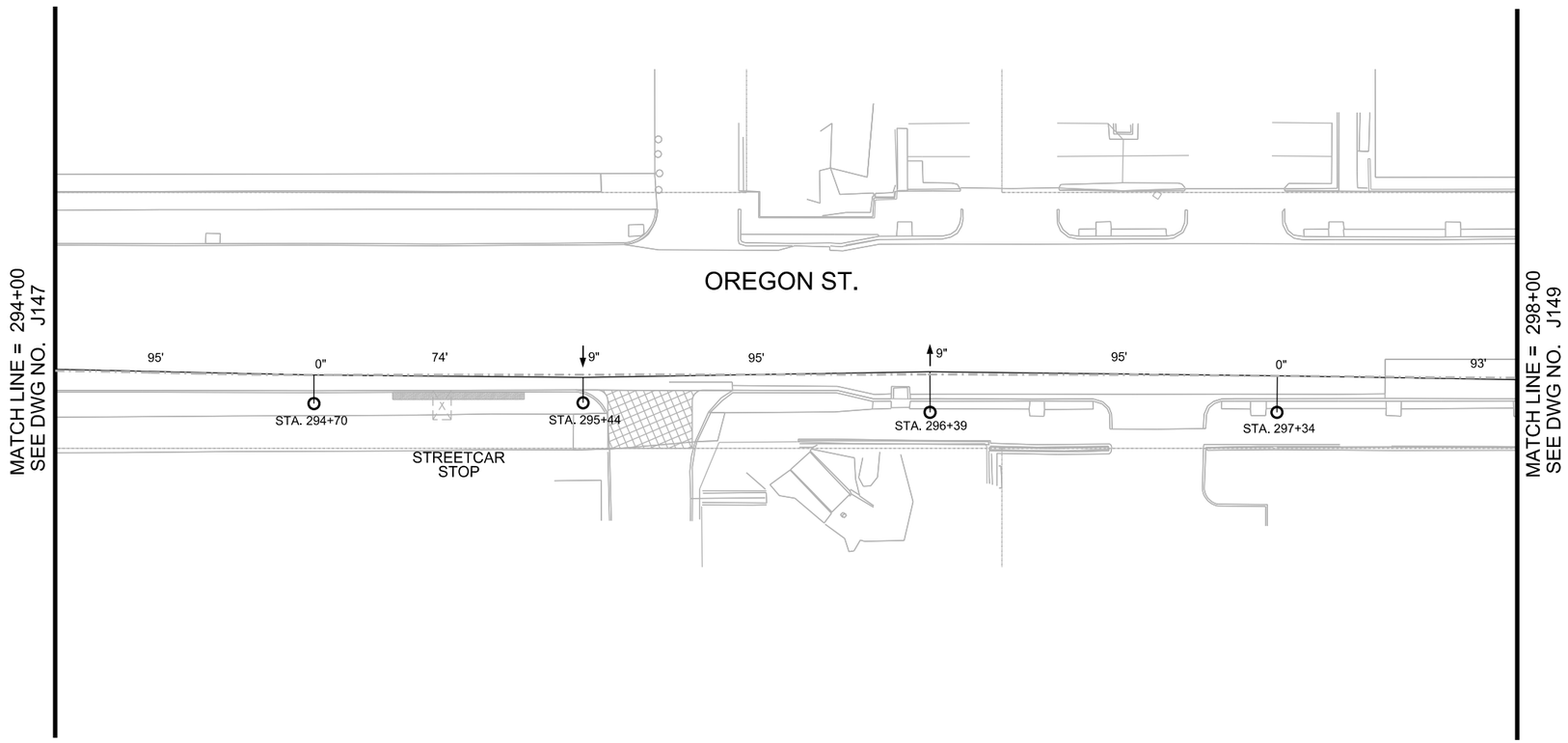

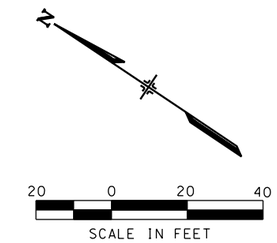

NOTES:

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
294+70	L,O	P1O-28-L	MAINLINE	5	19' 6"		74	0	SCA-06M		BT-01 (2)	SD-01	
295+44	L,O	P1O-28-L	MAINLINE	5	19' 6"		95	9	SCA-06M		BT-01 (2)	SD-01	
296+39	L,O	P1O-28-L	MAINLINE	5	19' 6"		95	-9	SCA-07M		BT-01 (2)	SD-01	
297+34		P1-28	MAINLINE	5	19' 6"		93	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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112273
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2/26/14

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 294+00 TO STA. 298+00

J148

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1155

DATE: 2/26/2014 1:48:51 PM
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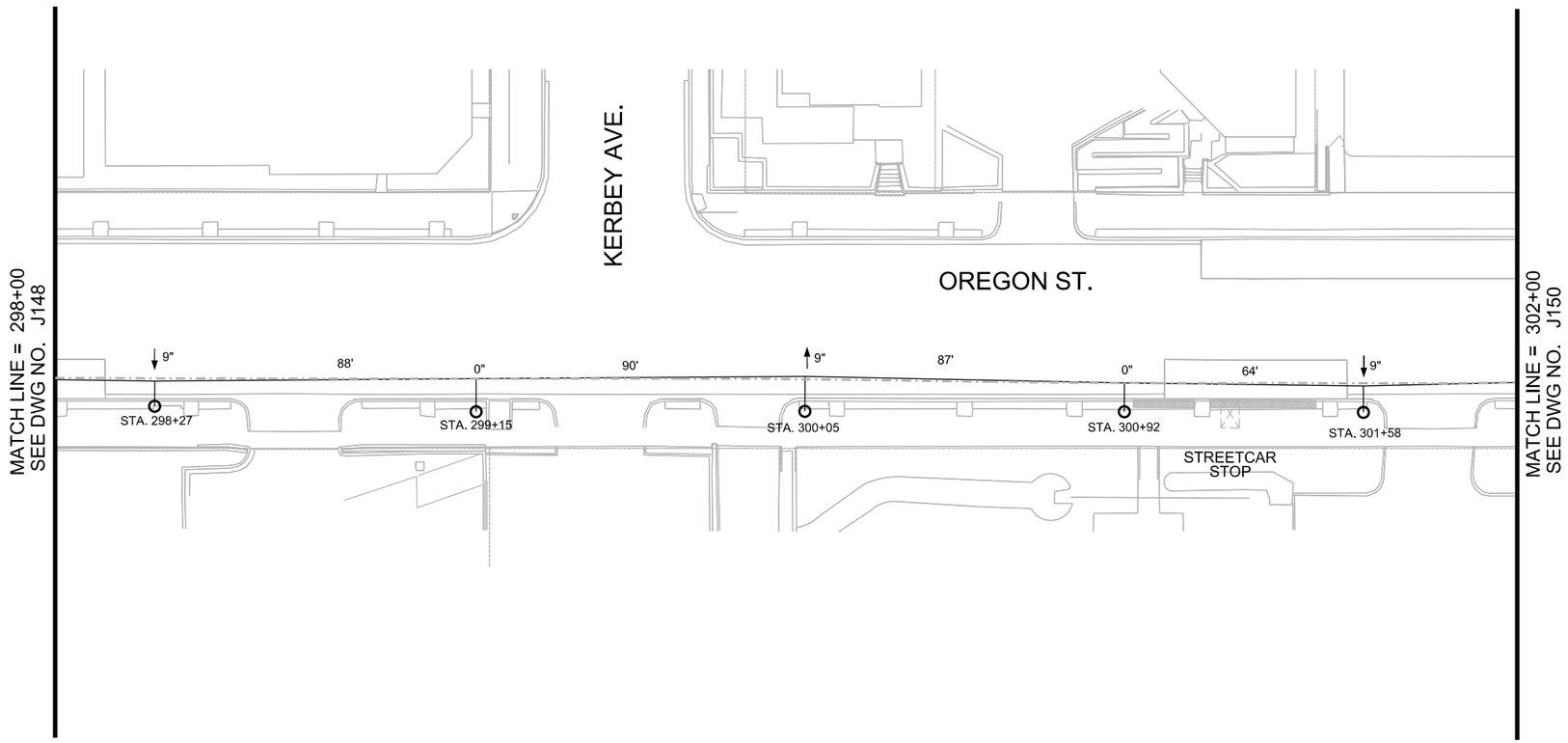

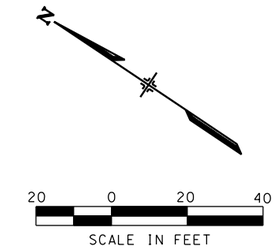

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
298+27		P1-28	MAINLINE	5	19' 6"		88	9	SCA-01L		BT-01 (2)	SD-01	
299+15		P1-28	MAINLINE	5	19' 6"		90	0	SCA-01L		BT-01 (2)	SD-01	
300+05		P1-28	MAINLINE	5	19' 6"		87	-9	SCA-01L		BT-01 (2)	SD-01	
300+92		P1-28	MAINLINE	5	19' 6"		64	0	SCA-01L		BT-01 (2)	SD-01	LA-01
301+58	L,O	P1O-28-L	MAINLINE	5	19' 6"		88	9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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2/26/14

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(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 298+00 TO STA. 302+00

J149

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1156

DATE: 2/26/2014 1:48:22 PM
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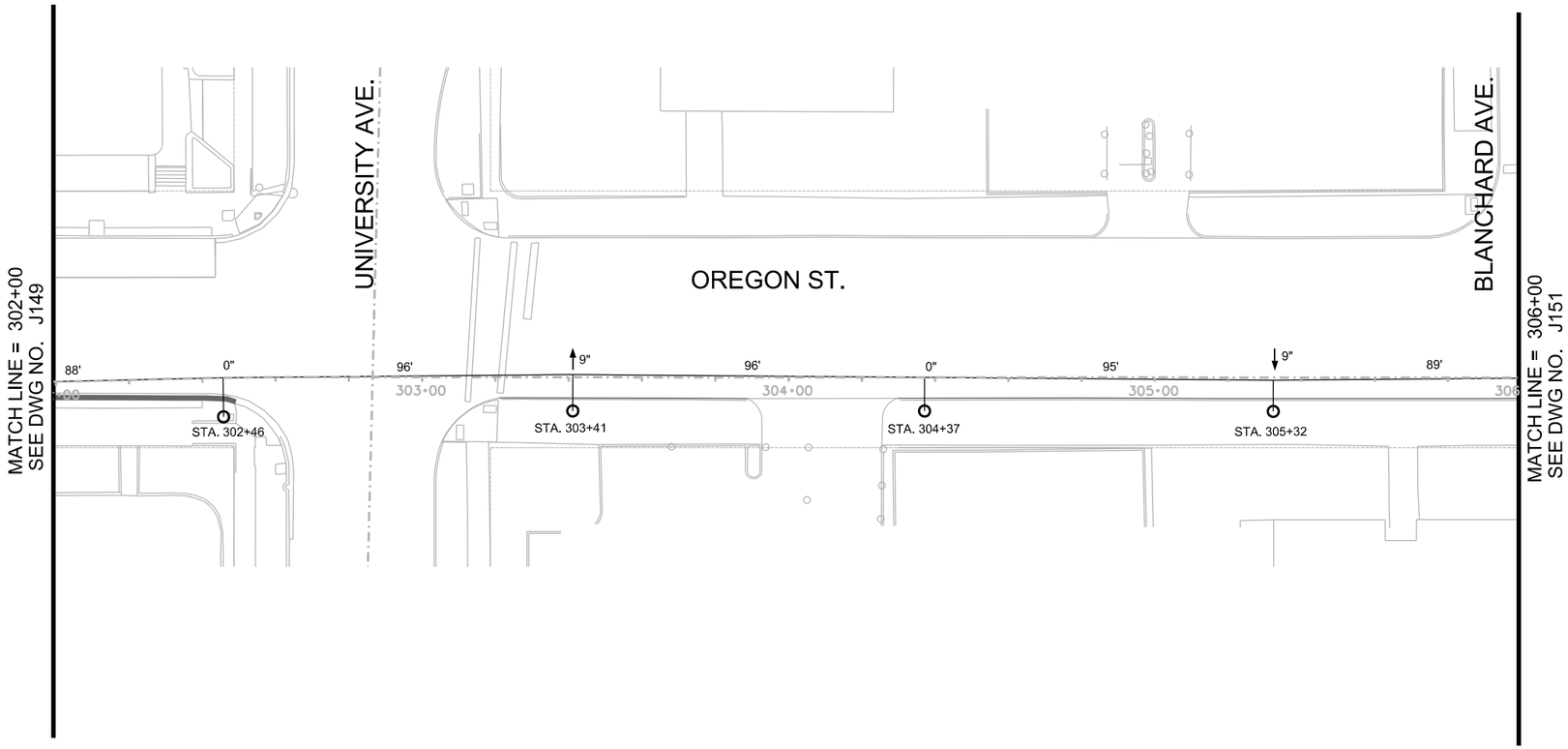

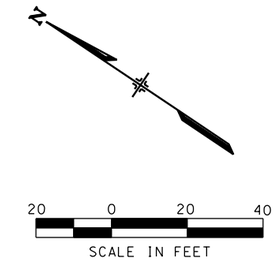

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
302+46	O	P1O-28	MAINLINE	5	19' 6"		96	0	SCA-01L		BT-01 (2)	SD-01	
303+41	L,O	P1O-28-L	MAINLINE	5	19' 6"		96	-9	SCA-07M		BT-01 (2)	SD-01	
304+37		P1-28	MAINLINE	5	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
305+32		P1-28	MAINLINE	5	19' 6"		89	9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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6/7/13

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COEP STREETCAR

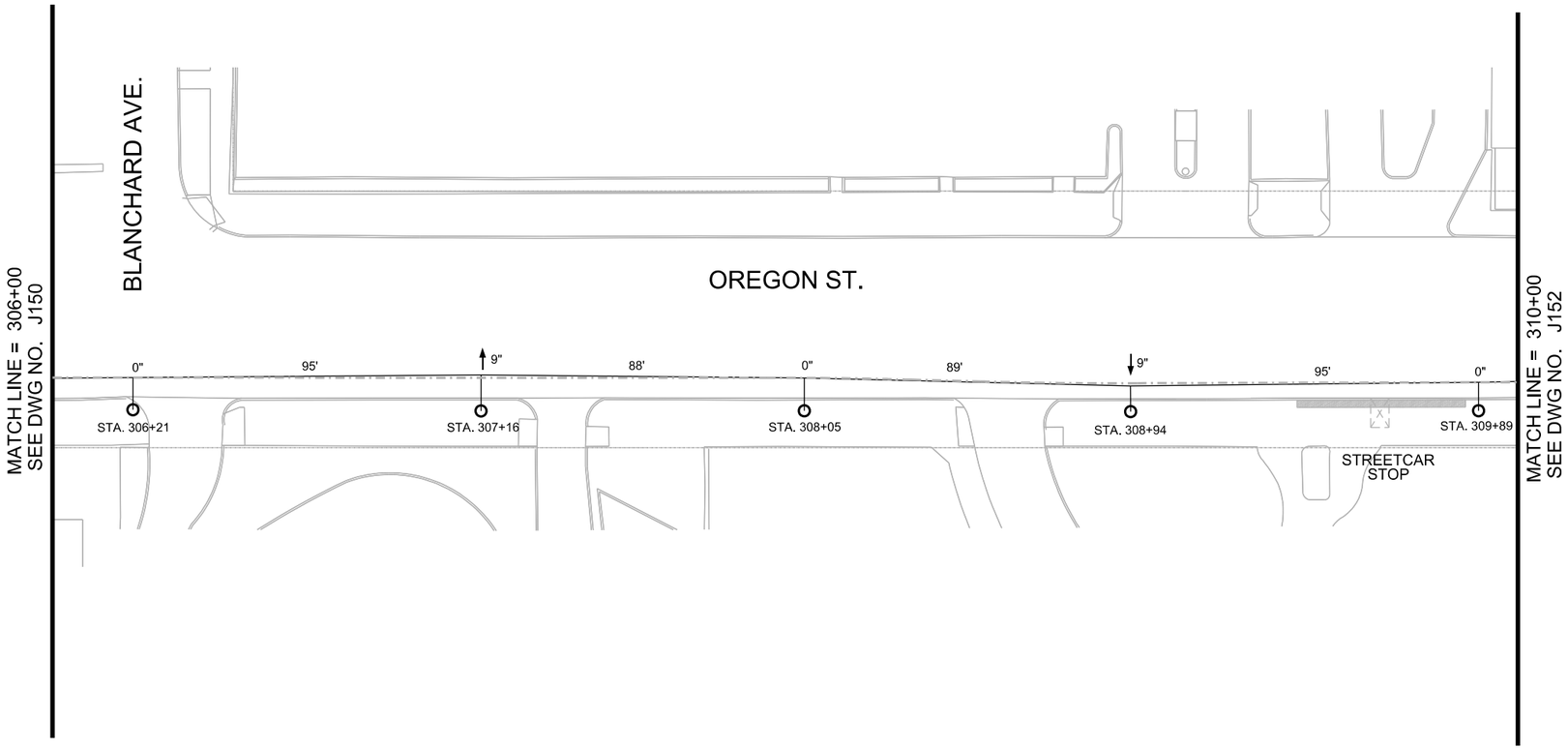
OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 302+00 TO STA. 306+00

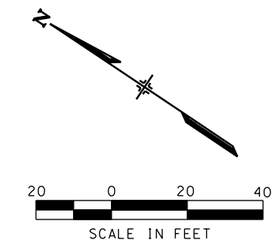
J150

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1157

DATE: 6/3/2013 11:34:27 AM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J150.dgn

DN: URS CK: URS DW: URS CK: URS





NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
306+21		P1-28	MAINLINE	5	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
307+16		P1-28	MAINLINE	5	19' 6"		88	-9	SCA-01L		BT-01 (2)	SD-01	
308+05	L,O	P1O-28-L	MAINLINE	5	19' 6"		89	0	SCA-01L		BT-01 (2)	SD-01	
308+94		P1-28	MAINLINE	5	19' 6"		95	9	SCA-01L		BT-01 (2)	SD-01	
309+89	L,O	P1O-28-L	MAINLINE	5	19' 6"		96	0	SCA-06M		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
2/26/14

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 306+00 TO STA. 310+00

J151

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1158

DN: URS CK: URS DW: URS CK: URS

DATE: 2/26/2014 1:47:51 PM
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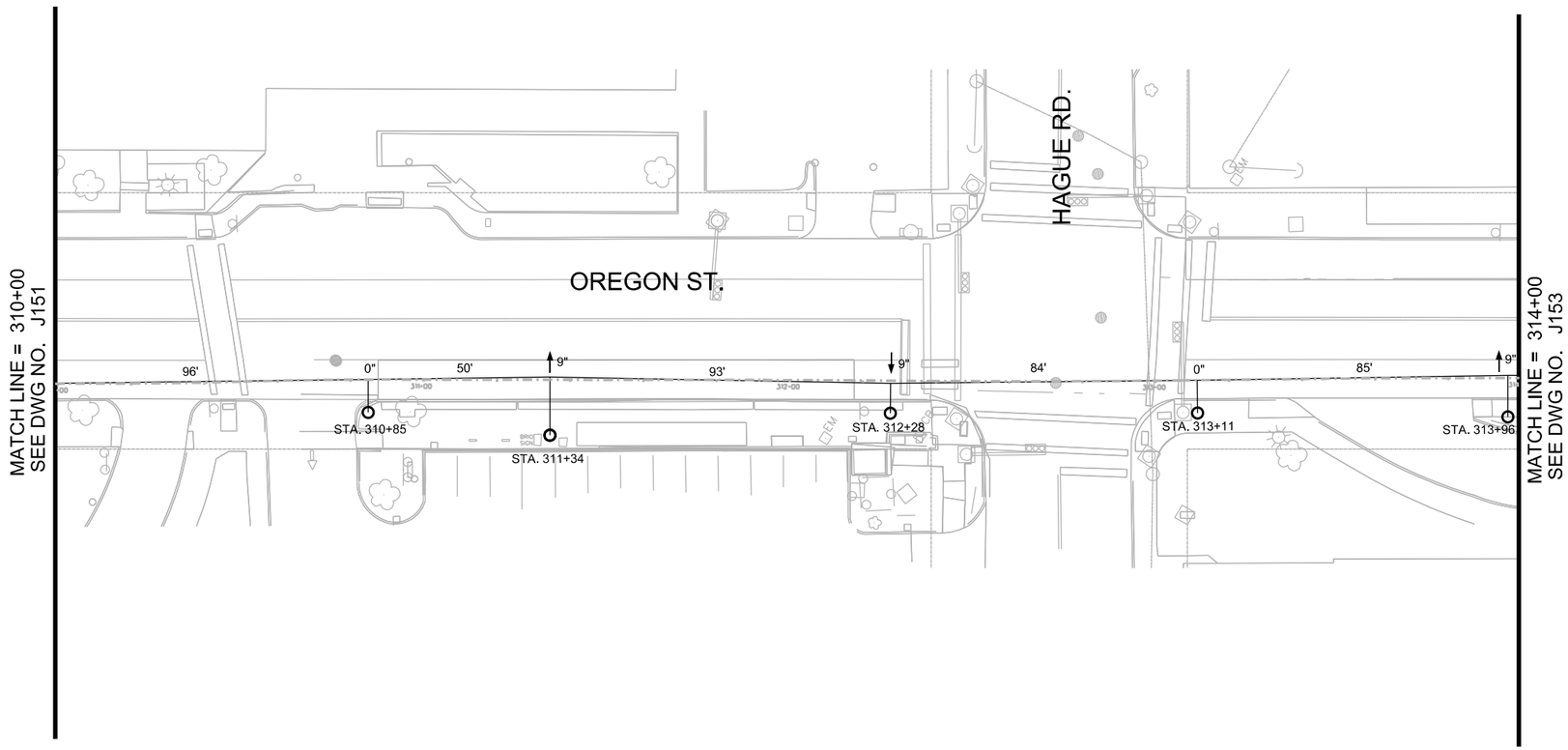

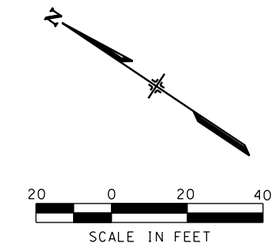

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
310+85		P1-28	MAINLINE	5	19' 6"		79	0	SCA-01L		BT-01 (2)	SD-01	LA-01
311+34		P1-28	MAINLINE	5	19' 6"		64	-9	SCA-01L		BT-01 (2)	SD-01	
312+28	L,O	P1O-28-L	MAINLINE	5	19' 0"		84	9	SCA-06M		BT-01 (2)	SD-01	
313+11		P1-28	MAINLINE	5	18' 9"		85	0	SCA-01L		BT-01 (2)	SD-01	
313+96		P1-28	MAINLINE	5	15' 11"		72	-9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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112273
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2/16/15

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TBPE REGISTRATION NO. F-1389

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2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 310+00 TO STA. 314+00

J152

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1159

DATE: 2/16/2015 9:11:11 AM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J152.dgn

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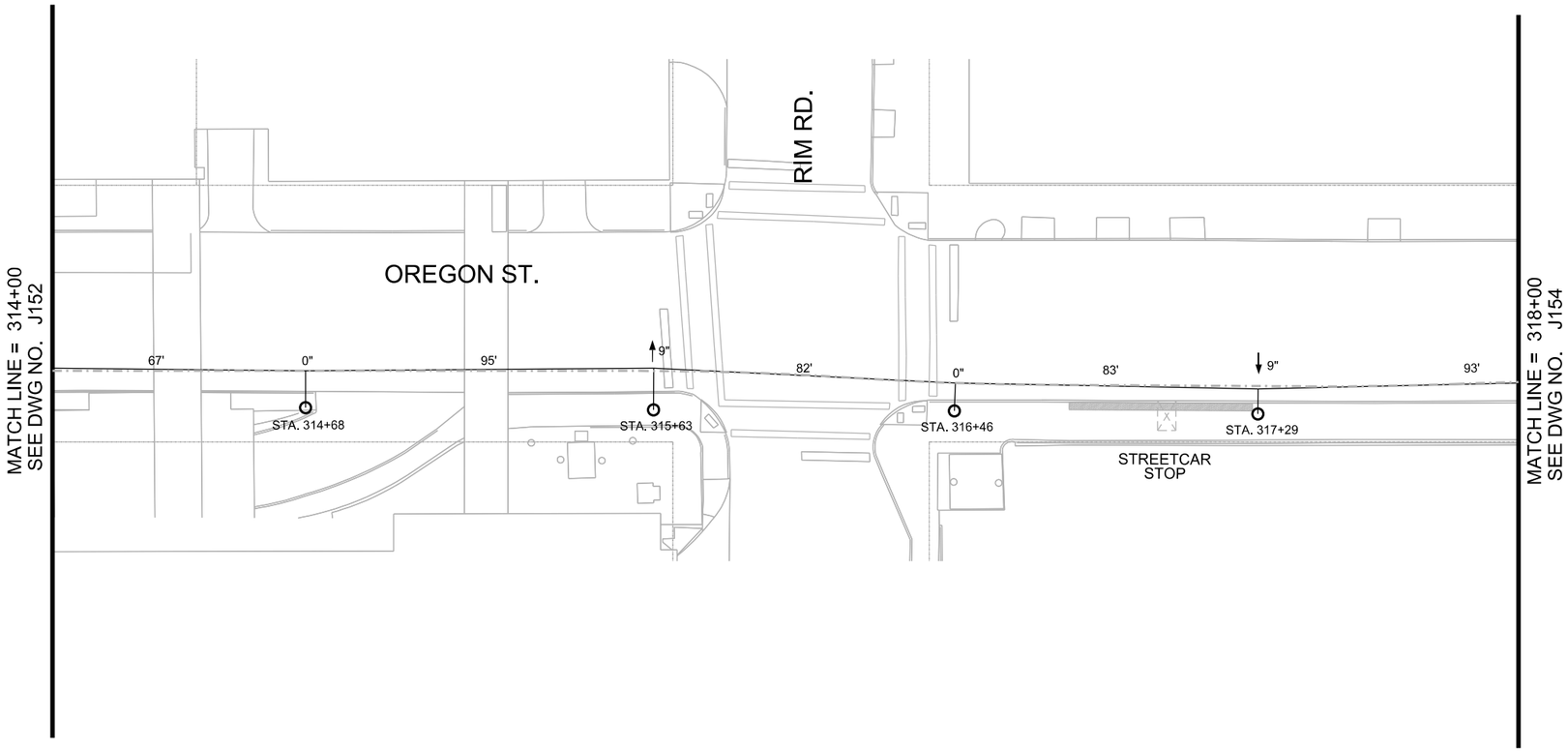

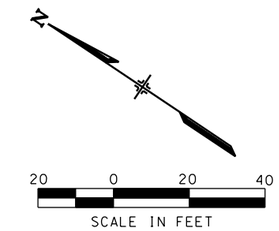

NOTES:

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2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
314+68		P1-28	MAINLINE	5	15' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
315+63	L,O	P1O-28-L	MAINLINE	5	18' 0"		82	-9	SCA-07M		BT-01 (2)	SD-01	
316+46		P1-28	MAINLINE	5	19' 6"		83	0	SCA-01L		BT-01 (2)	SD-01	
317+29	L,O	P1O-28-L	MAINLINE	5	19' 6"		93	9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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2/26/14

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URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 314+00 TO STA. 318+00

J153

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1160

DATE: 2/26/2014 1:47:24 PM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J153.dgn

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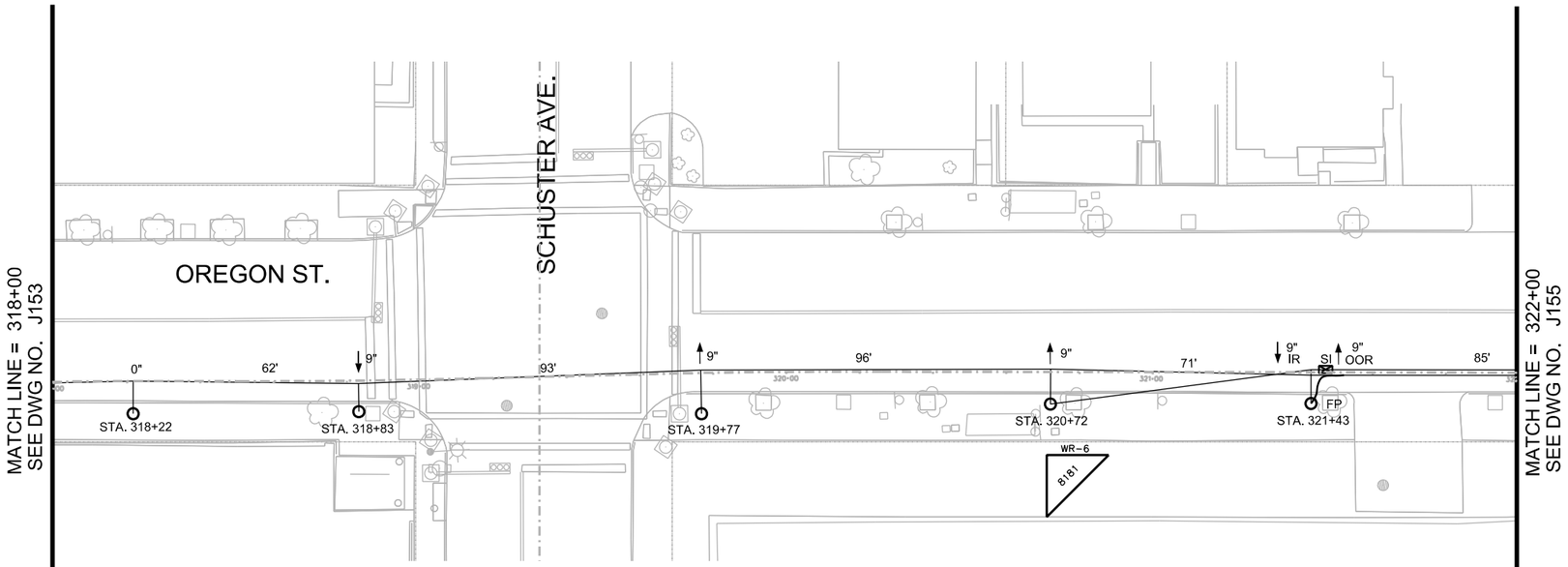

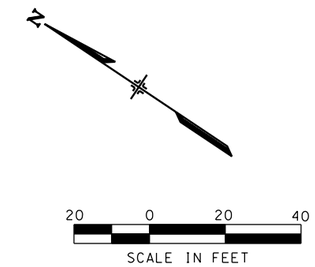

NOTES:

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GENERAL ARRANGEMENT
OVERLAPS OR CANTILEVERS
SEE DWG. J201

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
318+22		P1-28	MAINLINE	5	19' 6"		62	0	SCA-01L		BT-01 (2)	SD-01	
318+83	L,O	P1O-28-L	MAINLINE	5	19' 6"		93	9	SCA-01L		BT-01 (2)	SD-01	
319+77		P1-28	MAINLINE	5	19' 6"		96	-9	SCA-01L		BT-01 (2)	SD-01	
320+72		P4-28	MAINLINE	5	19' 6"	22' 0"	71	-9	SCA-01L		BT-01 (2)	SD-01, BT-02	JC-01, FT-01
321+43		P3-28-F	MAINLINE	OOR 6, IR 5	20' 0", 19' 6"		85	OOR -9, IR 9	SCA-04HA		BT-01 (2)	SD-01	LA-01, DS-01, FC-01(2), SI-02(2), BL-01

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
2/16/15

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TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 318+00 TO STA. 322+00

J154

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1161

DATE: 2/16/2015 9:16:28 AM
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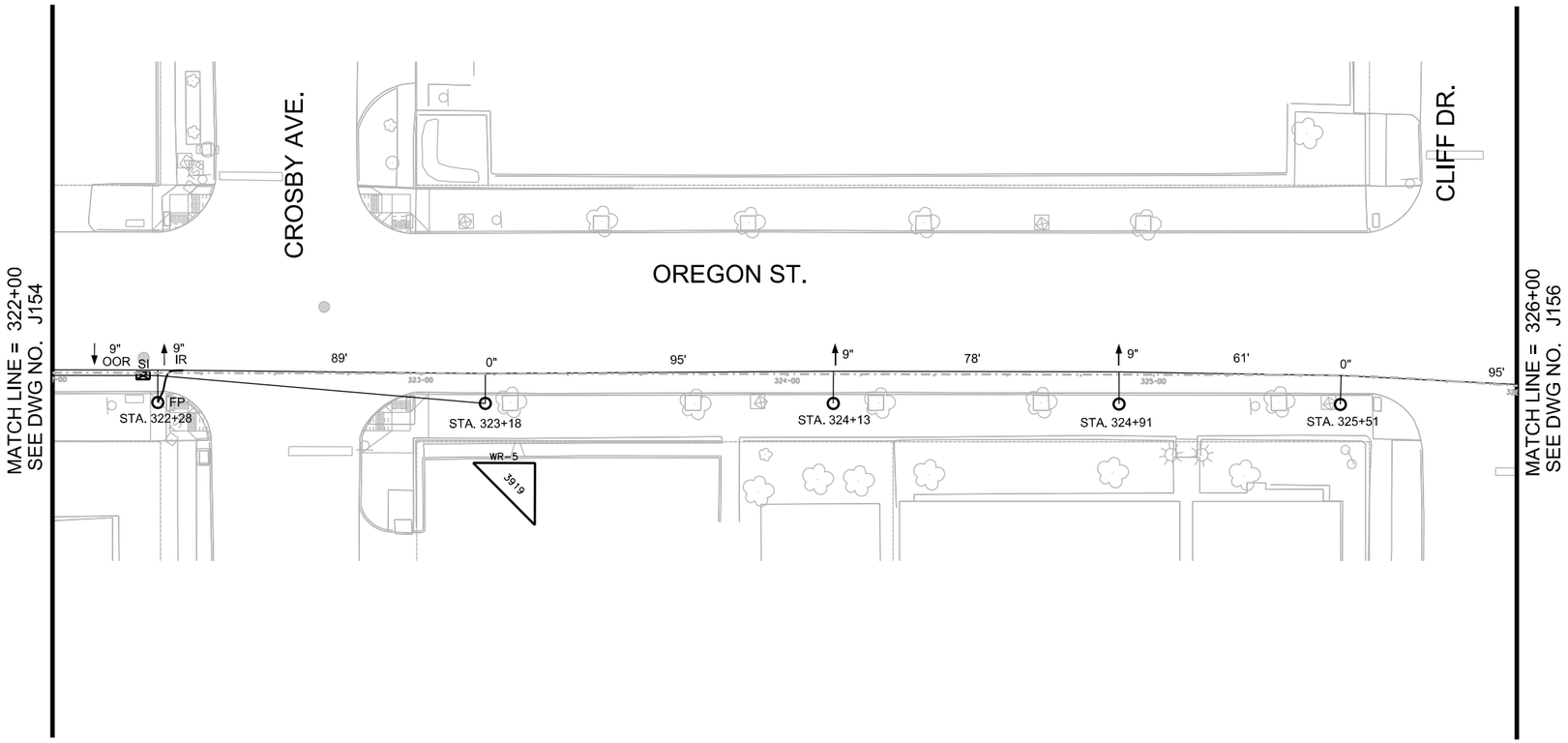

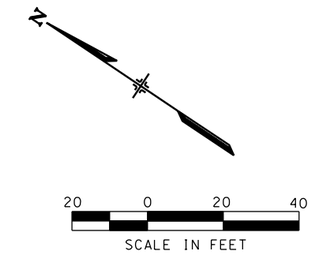

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
322+28	F	P3-28-F	MAINLINE	IR 6, OOR 5	20' 0", 19' 6"		89	OOR 9, IR -9	SCA-04HB		BT-01 (2)	SD-01	JC-01, LA-01, DS-01, FC-01 (2)
323+18		P4-28	MAINLINE	6	19' 6"	22' 0"	95	0	SCA-01L		BT-01 (2)	SD-01, BT-02	FT-01
324+13		P1-28	MAINLINE	6	19' 6"		78	-9	SCA-01L		BT-01 (2)	SD-01	
324+91		P1-28	MAINLINE	6	19' 6"		61	-9	SCA-01L		BT-01 (2)	SD-01	
325+51		P1-28	MAINLINE	6	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/3/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 322+00 TO STA. 326+00

J155

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1162

DATE: 6/3/2015 1:34:10 PM
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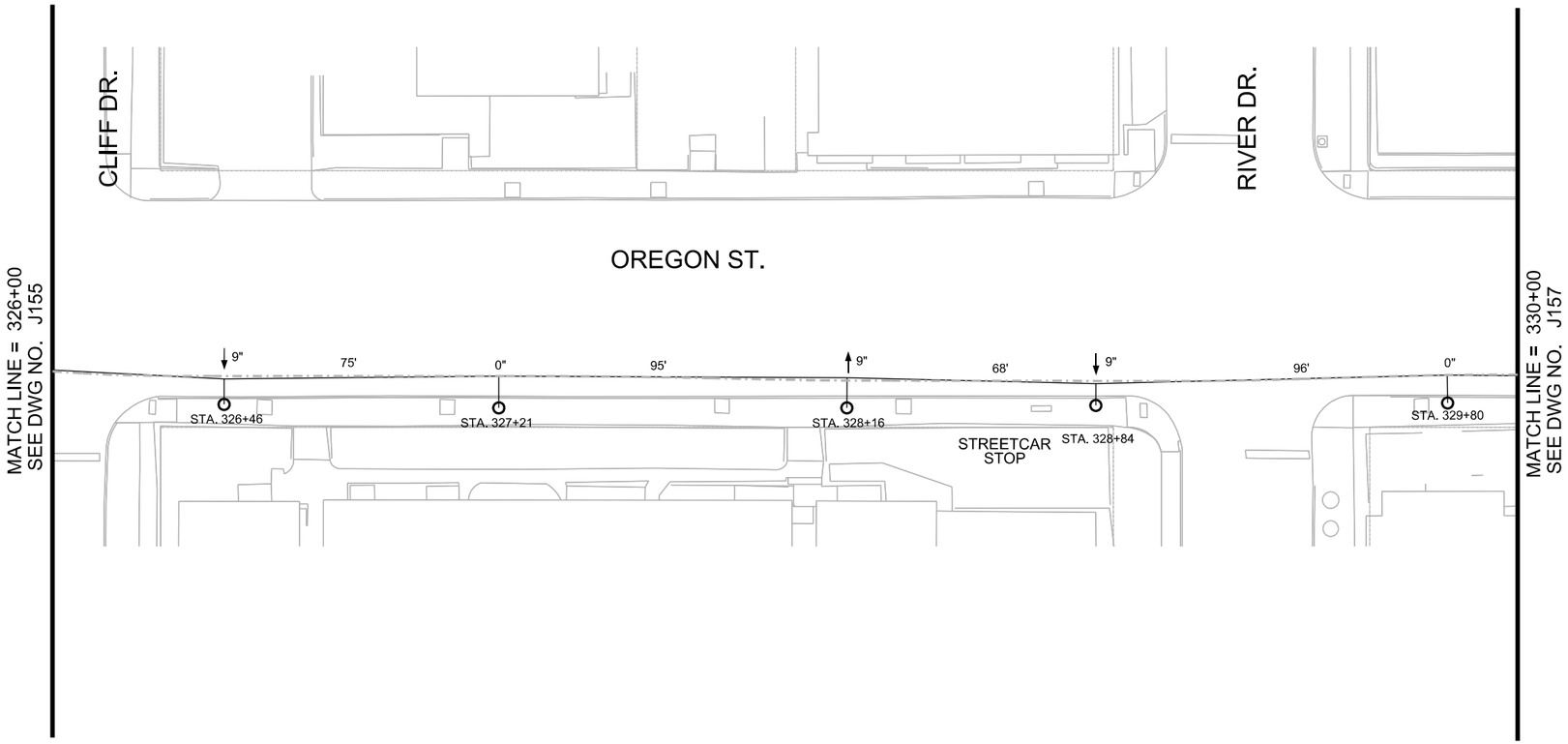

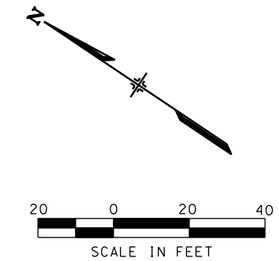

NOTES:

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
326+46		P1-28	MAINLINE	6	19' 6"		75	9	SCA-01L		BT-01 (2)	SD-01	
327+21		P1-28	MAINLINE	6	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
328+16		P1-28	MAINLINE	6	19' 6"		68	-9	SCA-01L		BT-01 (2)	SD-01	
328+84	L	P1-28-L	MAINLINE	6	19' 6"		96	9	SCA-01L		BT-01 (2)	SD-01	
329+80		P1-28	MAINLINE	6	19' 6"		74	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/3/15

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 326+00 TO STA. 330+00

J156

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1163

DATE: 6/3/2015 1:37:38 PM
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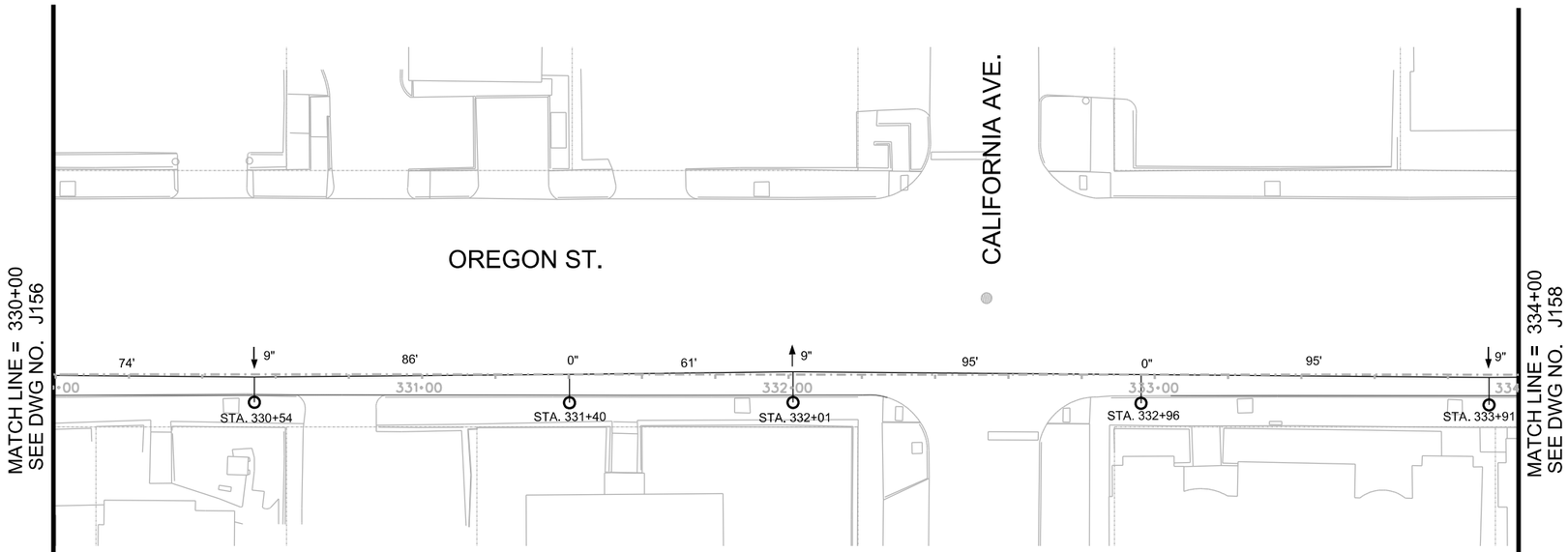

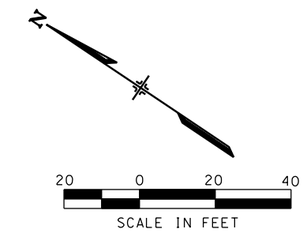

NOTES:

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
330+54		P1-28	MAINLINE	6	19' 6"		86	9	SCA-01L		BT-01 (2)	SD-01	
331+40		P1-28	MAINLINE	6	19' 6"		61	0	SCA-01L		BT-01 (2)	SD-01	
332+01		P1-28	MAINLINE	6	19' 6"		95	-9	SCA-01L		BT-01 (2)	SD-01	
332+96		P1-28	MAINLINE	6	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
333+91	L,O	P1O-28-L	MAINLINE	6	19' 6"		82	9	SCA-06M		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 330+00 TO STA. 334+00

J157

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1164

DATE: 6/3/2013 1:47:56 PM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J157.dgn

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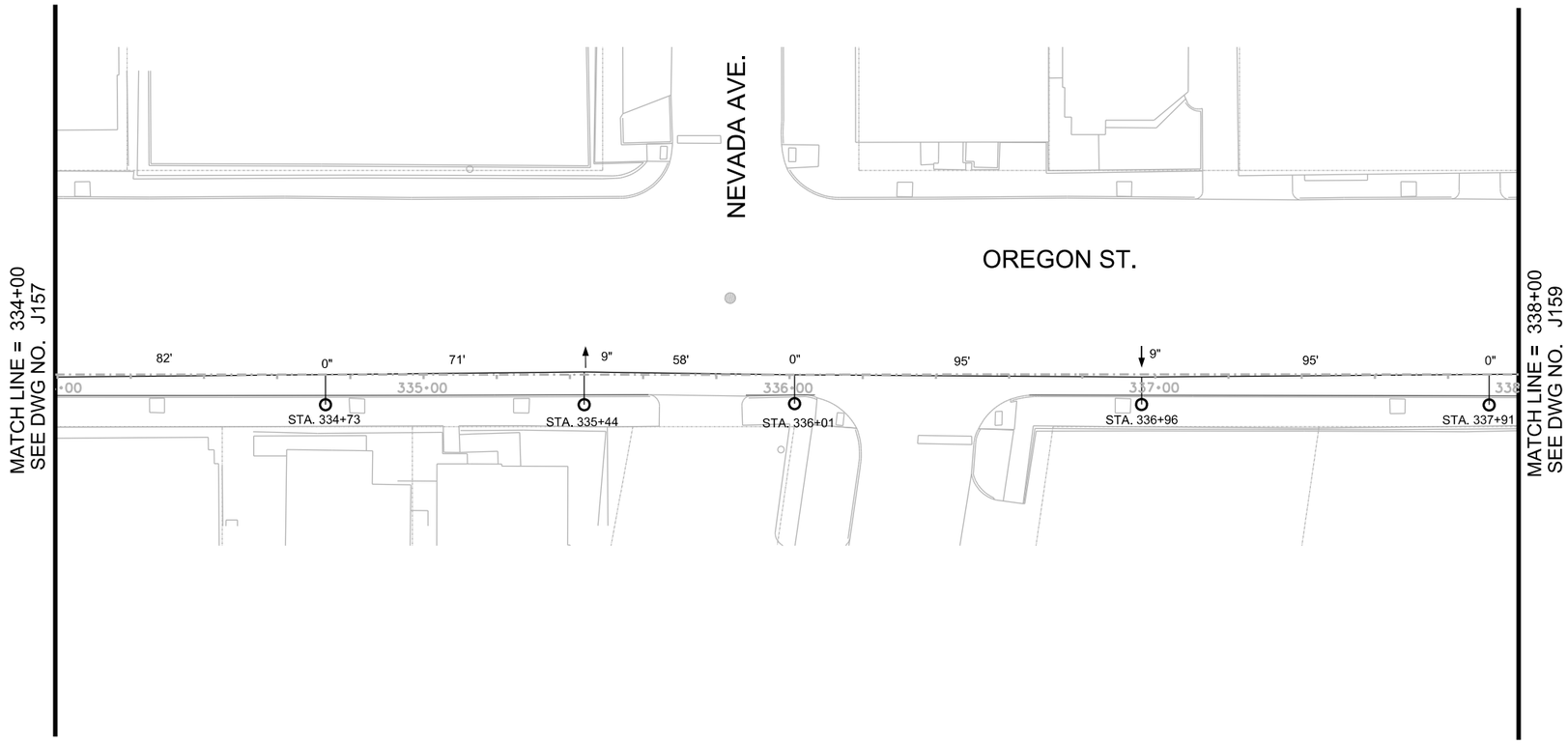

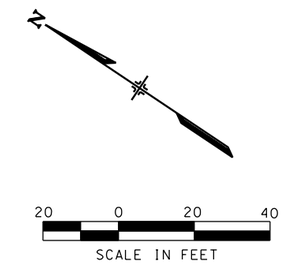

NOTES:

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STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
334+73		P1-28	MAINLINE	6	19' 6"		71	0	SCA-01L		BT-01 (2)	SD-01	
335+44	L,O	P1O-28-L	MAINLINE	6	19' 6"		58	-9	SCA-01L		BT-01 (2)	SD-01	
336+01		P1-28	MAINLINE	6	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	LA-01
336+96		P1-28	MAINLINE	6	19' 6"		95	9	SCA-01L		BT-01 (2)	SD-01	
337+91	O	P1O-28	MAINLINE	6	19' 6"		69	0	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

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2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 334+00 TO STA. 338+00

J158

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1165

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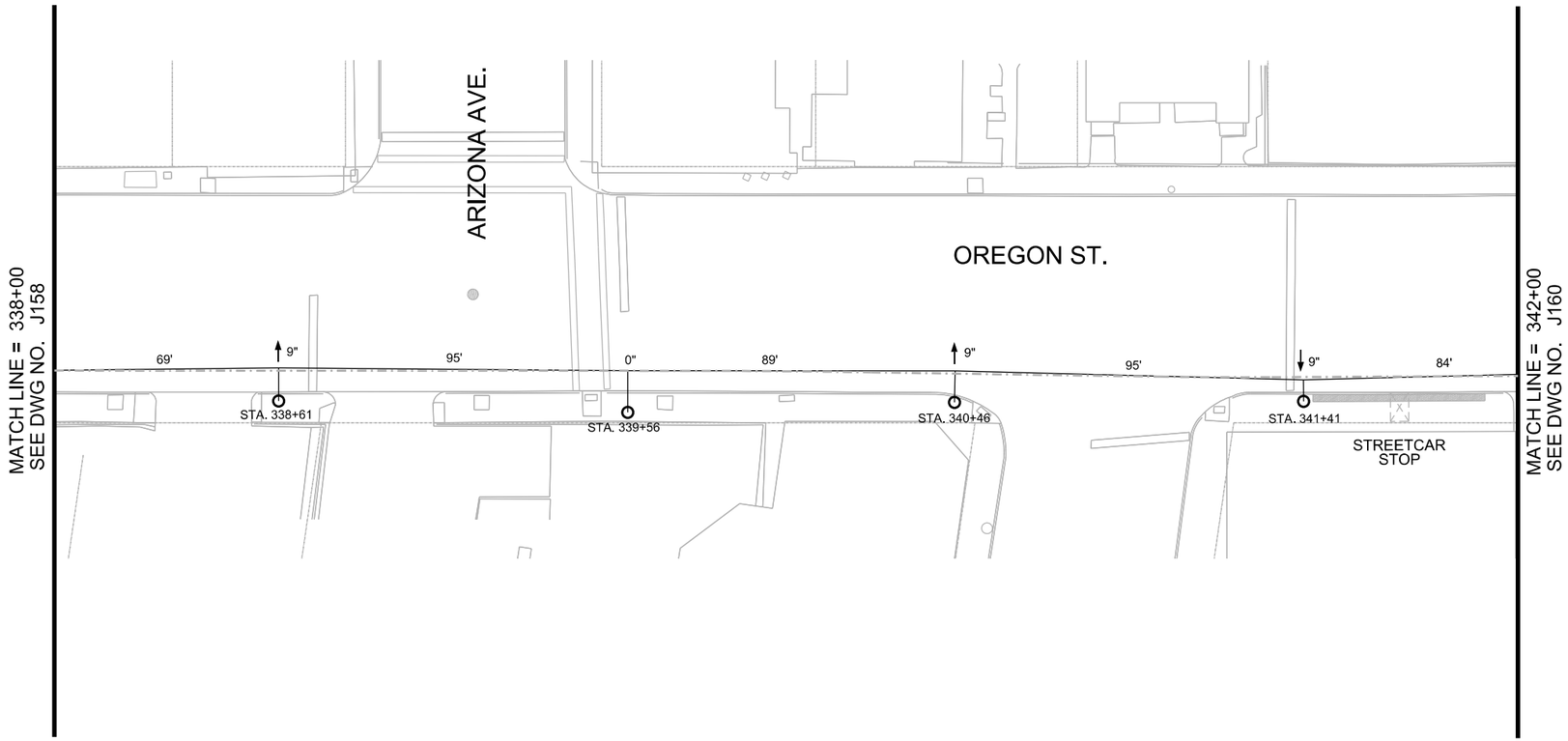

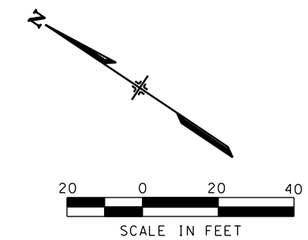

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
338+61	L,O	P1O-28-L	MAINLINE	6	19' 6"		95	-9	SCA-07M		BT-01 (2)	SD-01	
339+56		P1-28	MAINLINE	6	19' 6"		89	0	SCA-01L		BT-01 (2)	SD-01	
340+46		P1-28	MAINLINE	6	19' 6"		95	-9	SCA-01L		BT-01 (2)	SD-01	
341+41	T	P1-28-T	MAINLINE	6	19' 6"		84	9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 338+00 TO STA. 342+00

J159

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1166

DATE: 2/26/2014 1:46:17 PM
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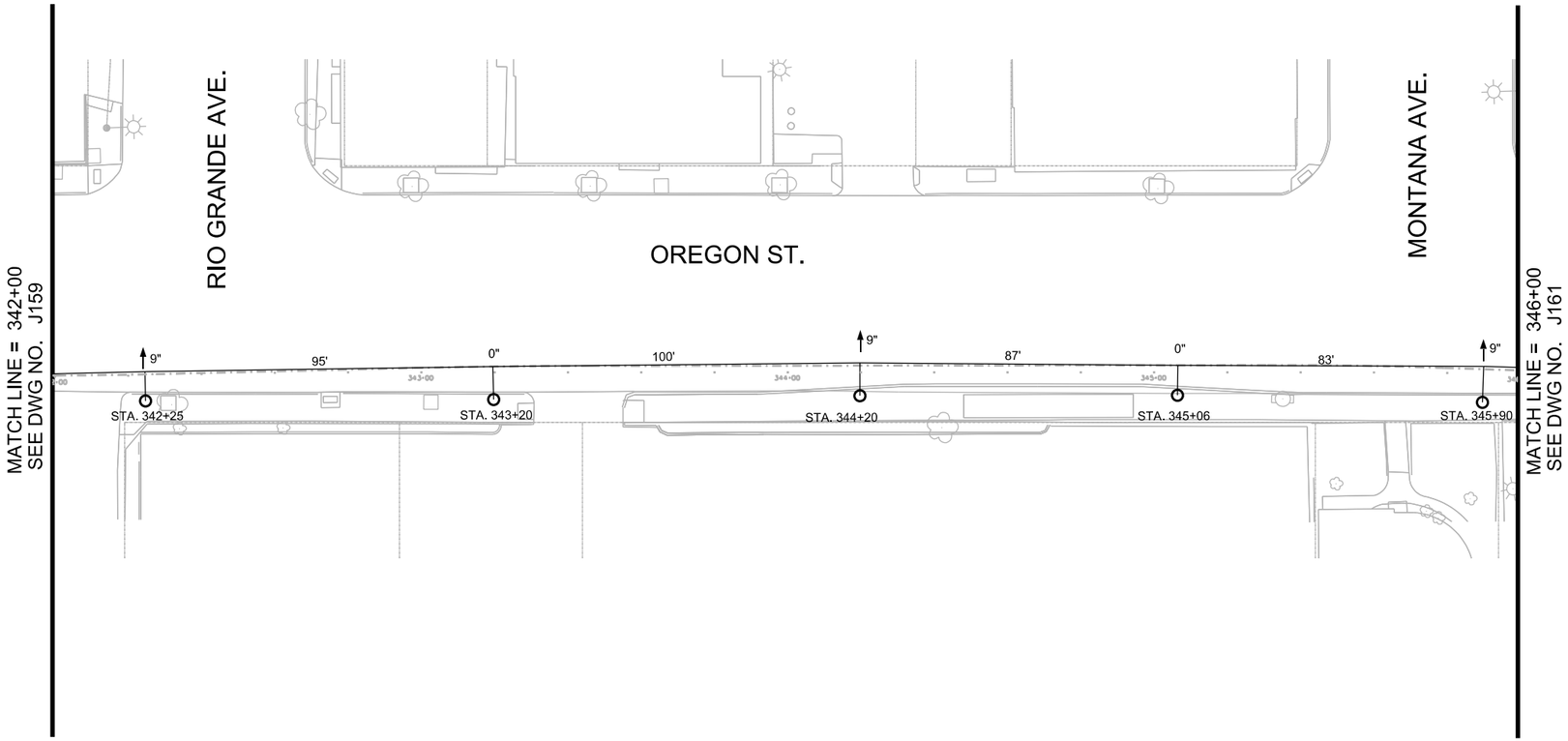

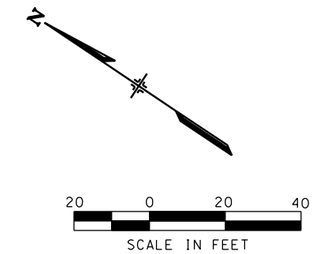

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
342+25		P1-28	MAINLINE	6	19' 6"		95	-9	SCA-01L		BT-01 (2)	SD-01	
343+20	L,O	P1O-28-L	MAINLINE	6	19' 6"		100	0	SCA-06M		BT-01 (2)	SD-01	
344+20		P1-28	MAINLINE	6	19' 6"		87	-9	SCA-01L		BT-01 (2)	SD-01	
345+06		P1-28	MAINLINE	6	19' 6"		83	0	SCA-01L		BT-01 (2)	SD-01	
345+90		P1-28	MAINLINE	6	19' 6"		95	9	SCA-01L		BT-01 (2)	SD-01	LA-01

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STATE OF TEXAS
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112273
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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 342+00 TO STA. 346+00

J160

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1167

DATE: 6/3/2015 1:41:41 PM
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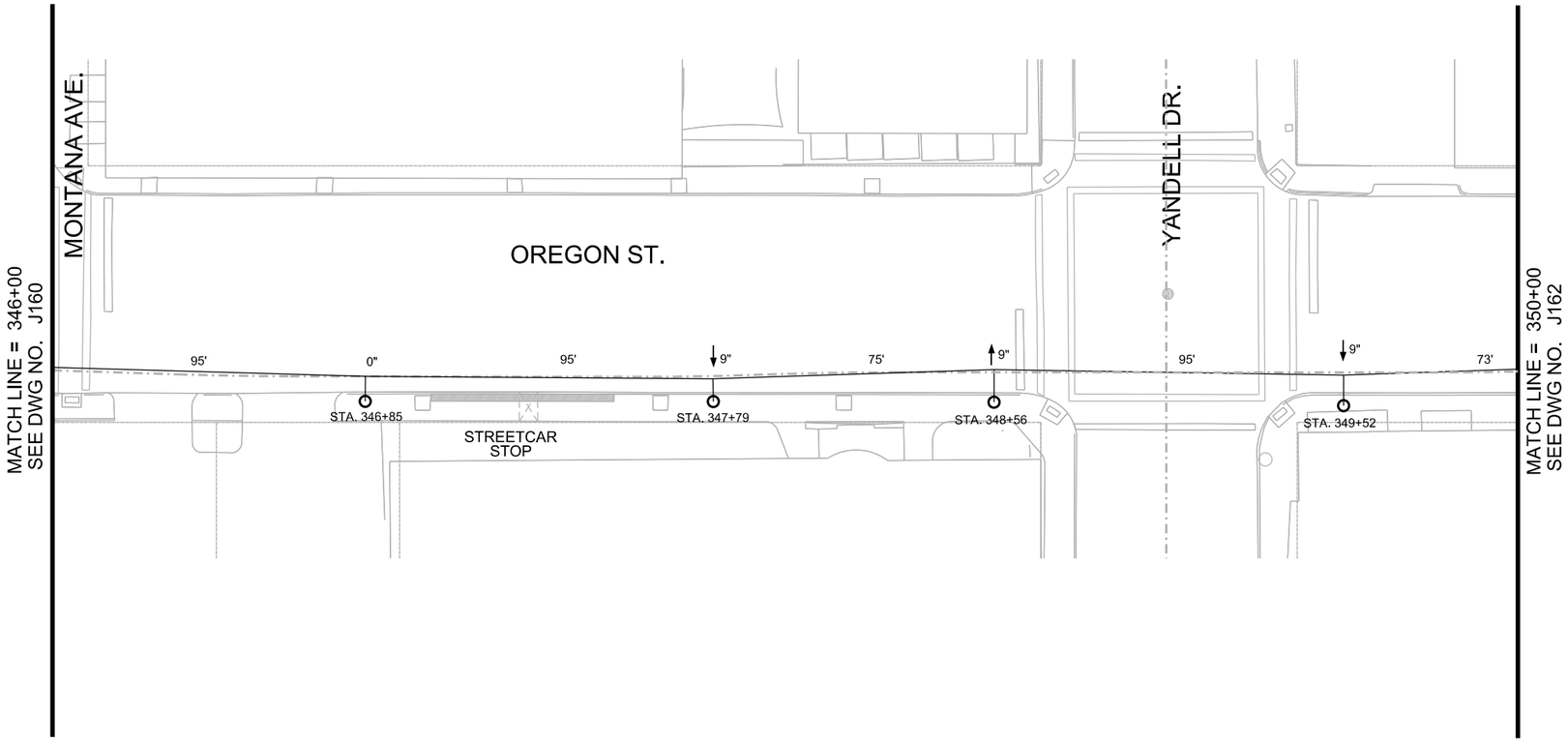

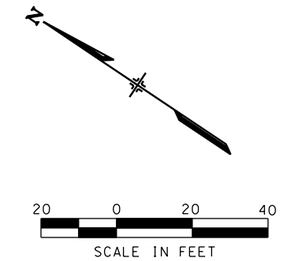

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
346+85		P1-28	MAINLINE	6	19' 6"		95	0	SCA-01L		BT-01 (2)	SD-01	
347+79		P1-28	MAINLINE	6	19' 6"		77	9	SCA-01L		BT-01 (2)	SD-01	
348+56	L,O	P1O-28-L	MAINLINE	6	19' 6"		95	-9	SCA-07M		BT-01 (2)	SD-01	
349+52		P1-28	MAINLINE	6	20' 3"		73	9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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2829 Montana Suite 206
El Paso, Texas 79903
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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 346+00 TO STA. 350+00

J161

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1168

DATE: 5/15/2015 4:35:35 PM
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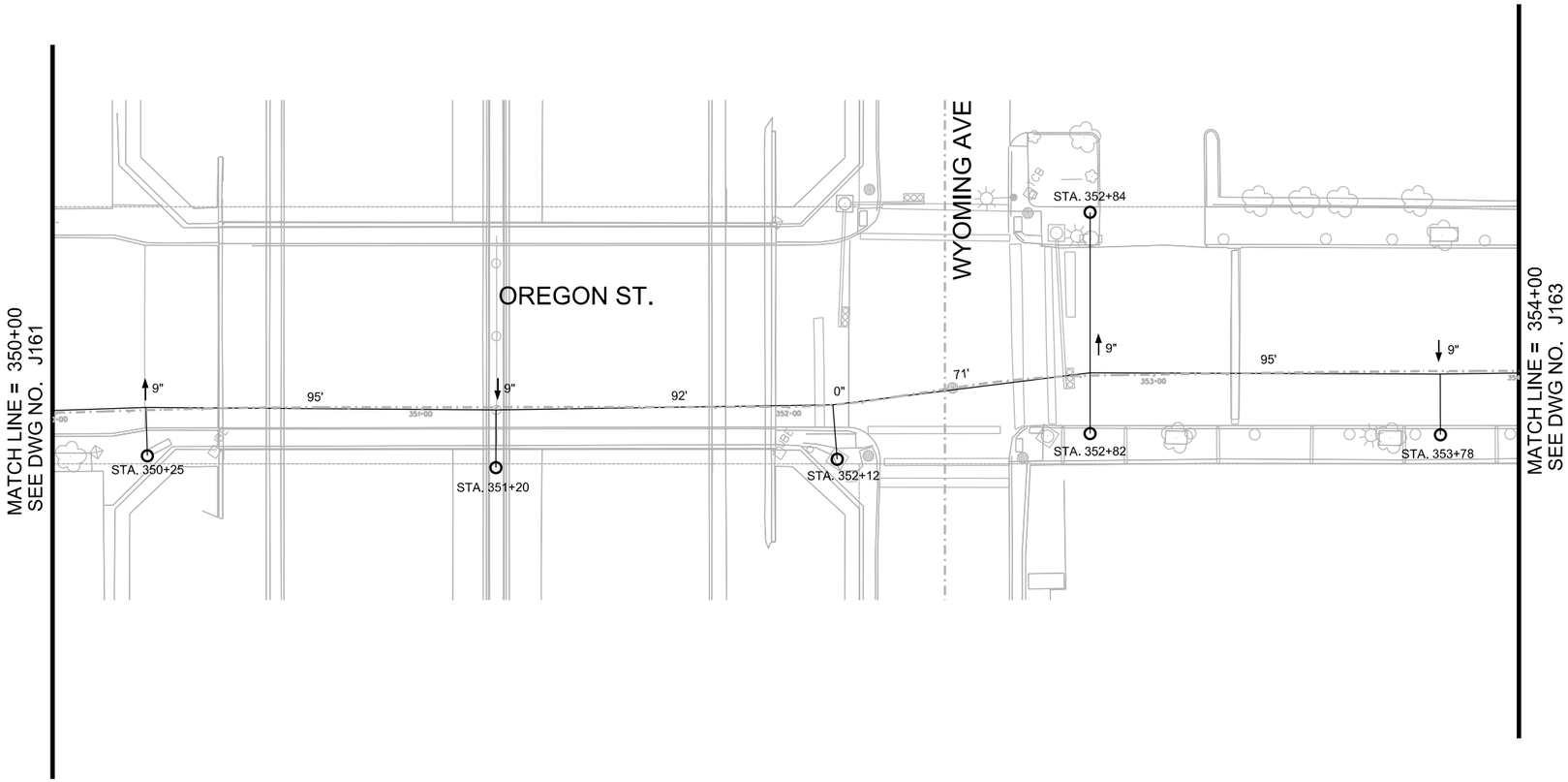

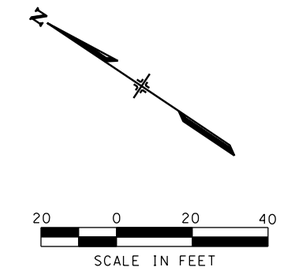

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
350+25	L,O	P1O-32-L	MAINLINE	6	21' 1"		95	-9	SCA-07M		BT-01 (2)	SD-01	
351+20		P1-28	MAINLINE	6	22' 3"		92	9	SCA-01L		BT-01 (2)	SD-01	
352+12		P2-30	MAINLINE	6	22' 9"		71	0	SCA-01M		BT-01 (2)	SD-01	
352+82		P2-28	MAINLINE	6	22' 9"		95	-9	CS-01	HR-1H	BT-02	SD-01	
352+84		P3-28	MAINLINE	6	22' 9"						BT-02	SD-01	
353+78		P1-30	MAINLINE	6	22' 0"		79	9	SCA-01L		BT-01 (2)	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 350+00 TO STA. 354+00

J162

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1169

DATE: 7/13/2015 6:32:12 PM
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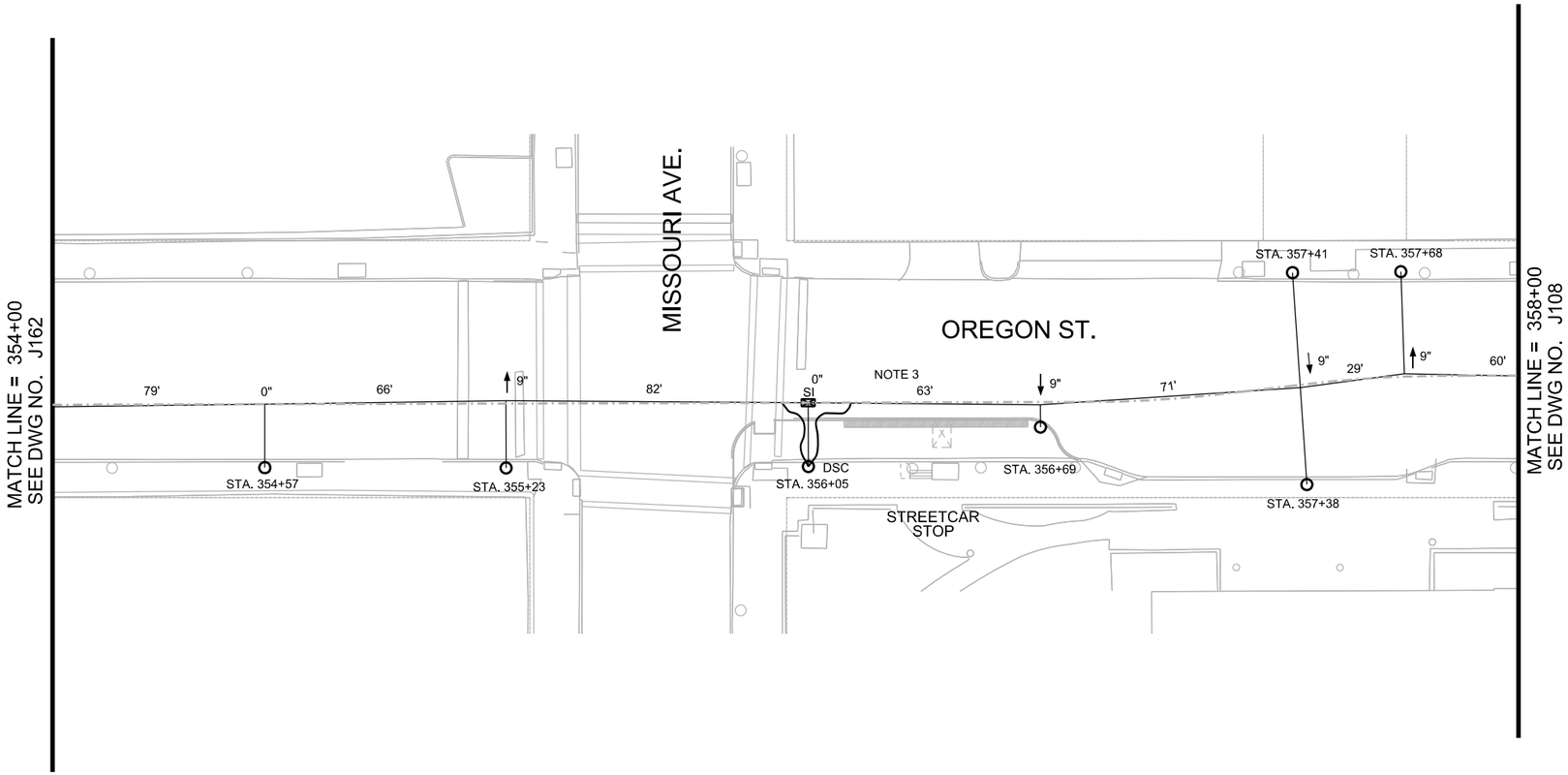

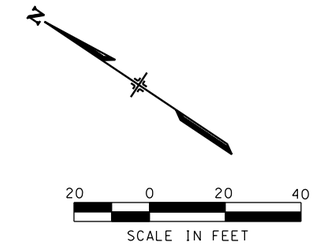

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. POSSIBLE LOCATION FOR BREAKING WIRE RUN 6 INTO MANAGEABLE NEW LENGTHS.
4. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
354+57		P1-30	MAINLINE	6	21' 0"		66	0	SCA-01L		BT-01 (2)	SD-01	
355+23	L,O	P1O-32-L	MAINLINE	6	20' 3"		82	-9	SCA-07M		BT-01 (2)	SD-01	
356+05		P2-28	MAINLINE	6	19' 6"		63	0	SCA-05		BT-01 (2)	SD-01	LA-01 (2), DS-02, FC-01(2)
													S1-01
356+69	L,O	P1O-28-L	MAINLINE	6	19' 6"		71	9	SCA-06M		BT-01 (2)	SD-01	
357+38		P2-28	MAINLINE	6	19' 6"		29	9	CS-01	HR-1M	BT-02	SD-01	
357+41		P2-28	MAINLINE	6	19' 6"						BT-02	SD-01	
357+68	L,O	P2O-28-L	MAINLINE	6	19' 6"		60	-9	PO-1H		BT-02A	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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2829 Montana Suite 206
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(915) 493-6468
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 354+00 TO STA. 358+00

J163

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1170

DATE: 5/18/2015 11:40:03 AM
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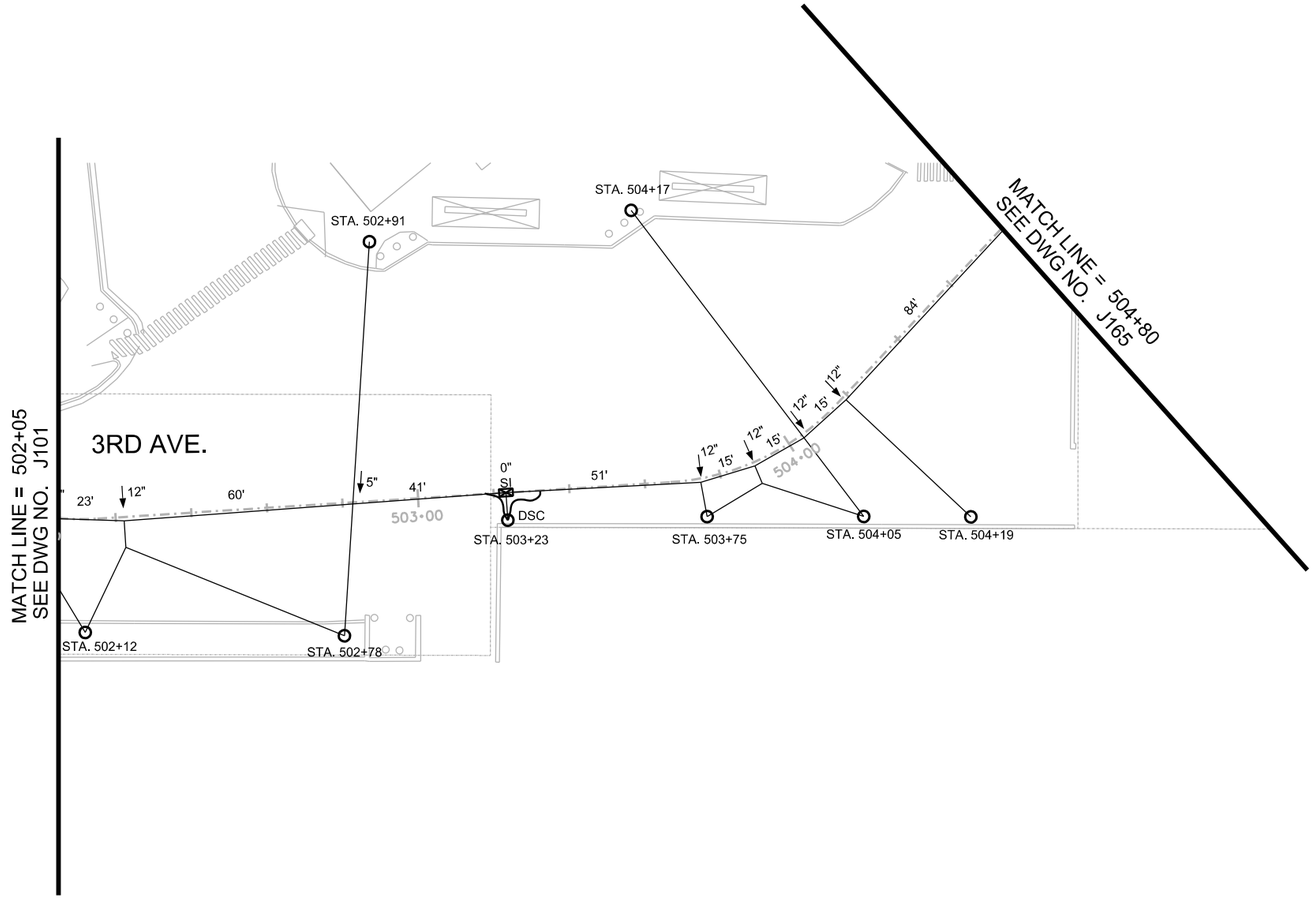

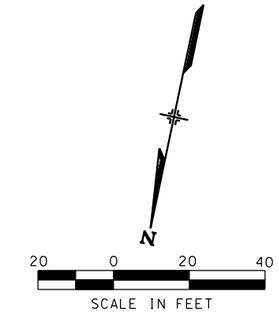

NOTES:

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2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
502+12		P3-28	MAINLINE	Y1	19' 6"		SEE DWG J101A						
502+78		P3-28	MAINLINE	Y1	19' 6"		41	5	CS-01	HR-1L	BT-02	SD-01	
502+91		P3-30	MAINLINE	Y1	19' 6"						BT-02	SD-01	
503+23		P2-28	MAINLINE	Y1	19' 6"		51	0	SCA-05		BT-01 (2)	SD-01, FC-01 (2)	SI-01, DS-02, LA-01 (2)
503+75		P3-28	MAINLINE	Y1	19' 6"		30	12	SCA-01H	PO-1H	BT-01 (2)	SD-01, BT-02	BB-02, PO-1H
504+05		P3-28	MAINLINE	Y1	19' 6"		15	12	CS-01	HR-1H	BT-02 (2)	SD-01	
504+17		P2-30	MAINLINE	Y1	19' 6"						BT-02	SD-01	
504+19		P2-28	MAINLINE	Y1	19' 6"		84	12	PO-1M		BT-02	SD-01	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 502+05 TO STA. 504+80

J164

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1171

DATE: 6/3/2013 2:11:44 PM
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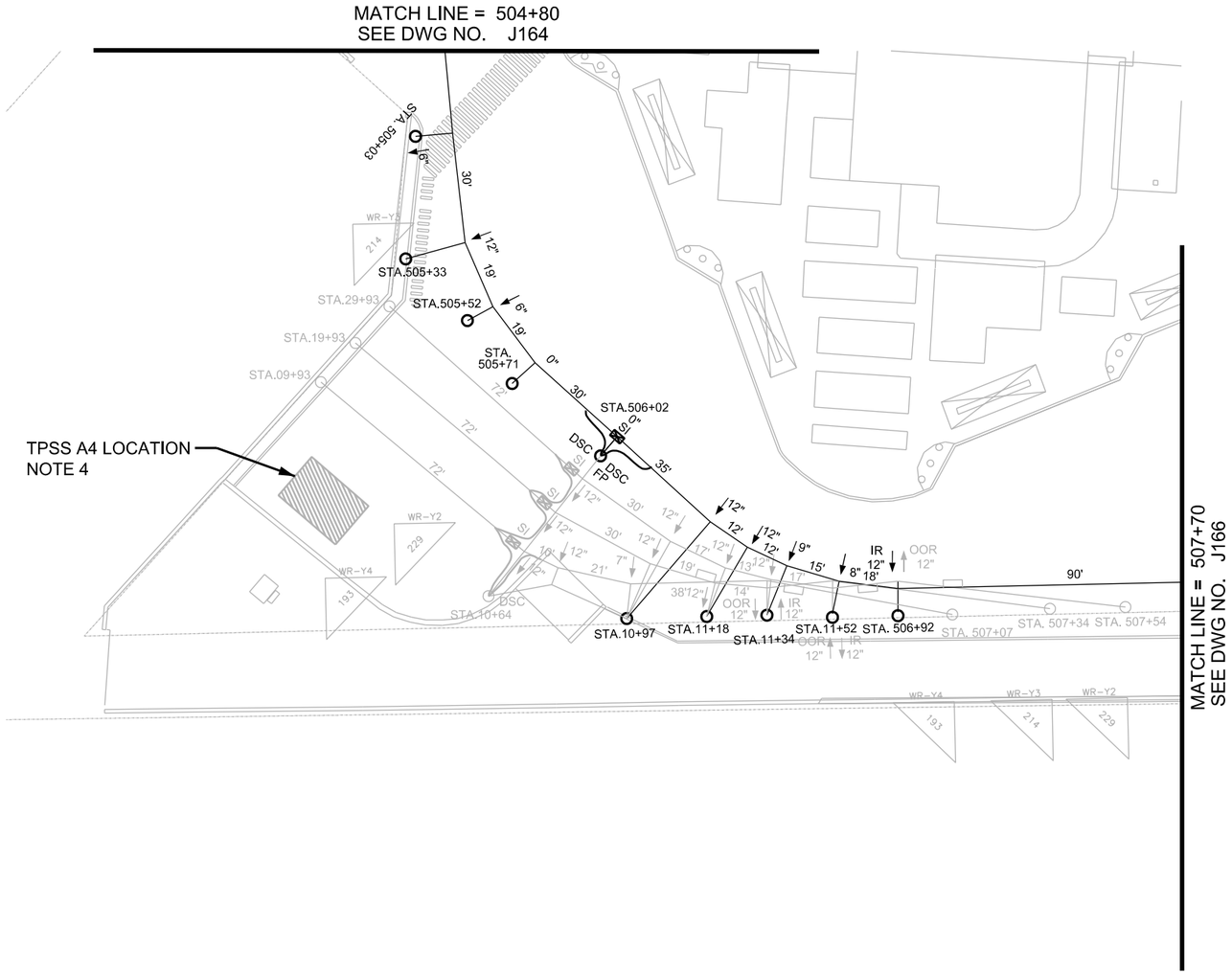

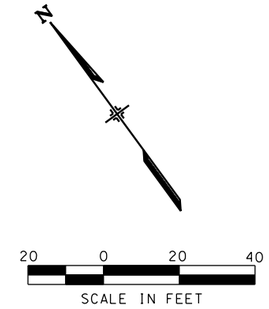

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.
4. FOR TPSS SITE LOCATION DETAILS SEE VOL. 3 TRACTION POWER PLANS.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
505+03		P1-28	MAINLINE	Y1	19' 6"		30	6	SCA-01L		BT-01 (2)	SD-01	
505+33		P1-28	MAINLINE	Y1	19' 6"		19	12	SCA-01M		BT-01 (2)	SD-01	
29+93		P4-28	STORAGE			20' 0"	72				BT-02	SD-01	FT-01, SI-01
19+93		P4-28	STORAGE			20' 0"	72				BT-02	SD-01	FT-01, SI-01
09+93		P4-28	STORAGE			20' 0"	72				BT-02	SD-01	FT-01, SI-01
505+52		P1-28	MAINLINE	Y1	19' 6"		19	6	SCA-01H		BT-01 (2)	SD-01	
505+71		P1-28	MAINLINE	Y1	19' 6"		30	0	SCA-01H		BT-01 (2)	SD-01	
506+02	F	P4-28-F	MAINLINE	Y4,Y3,Y2,Y1	ALL 19' 0"		35	Y1, 0	SCA-05		BT-01 (2)	SD-01, FC-01 (2)	SI-01, DS-01 (2), LA-01 (2), AF-01
								Y2,Y3,Y4 12					
10+64		P4-28	STORAGE	Y4,Y3,Y2	ALL 19' 0"		31	ALL 12	HS-03	HR-1H (3)	BT-02 (2)	SD-01	BB-02, PO-1H, DS-02, FC-01 (2), LA-01 (2)
10+97		P4-28	STORAGE	Y4,Y3,Y2,Y1	ALL 19' 0"		38	SEE J165A	SCA-01H	PO-1H (3)	BT-01 (2)	BT-02A (3), BT-02	SD-01
11+18		P4-28	STORAGE	Y3,Y2,Y1	ALL 19' 0"		14	SEE J165A		PO-1H (3)		SD-01, BT-02A (3)	CC-01, JC-01
11+34		P4-28	STORAGE	Y4,Y3,Y2,Y1	ALL 19' 0"		17	SEE J165A	SCA-04HA	PO-1H (2)	BT-01 (2)	SD-01, BT-02A (2)	
11+52		P3-28	STORAGE	Y3, Y2, Y1	19' 1", 19' 0"		18	SEE J165A	SCA-04HA	PO-1H	BT-01 (2)	SD-01, BT-02A	CC-01, JC-01; Y1 WIRE HEIGHT 18' 0"
506+92		P2-28	MAINLINE	Y2, Y1	19' 1", 19' 0"		90	OOR -12,IR 12	SCA-01H		BT-01 (2)	SD-01	CC-01, JC-01
507+07		P4-28	MAINLINE			20' 0"					BT-02	SD-01	FT-01
507+34		P4-28	MAINLINE			20' 0"					BT-02	SD-01	FT-01
507+54		P4-28	MAINLINE			20' 0"					BT-02	SD-01	FT-01

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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112273
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7/14/15

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 504+80 TO STA. 507+70

J165

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1172

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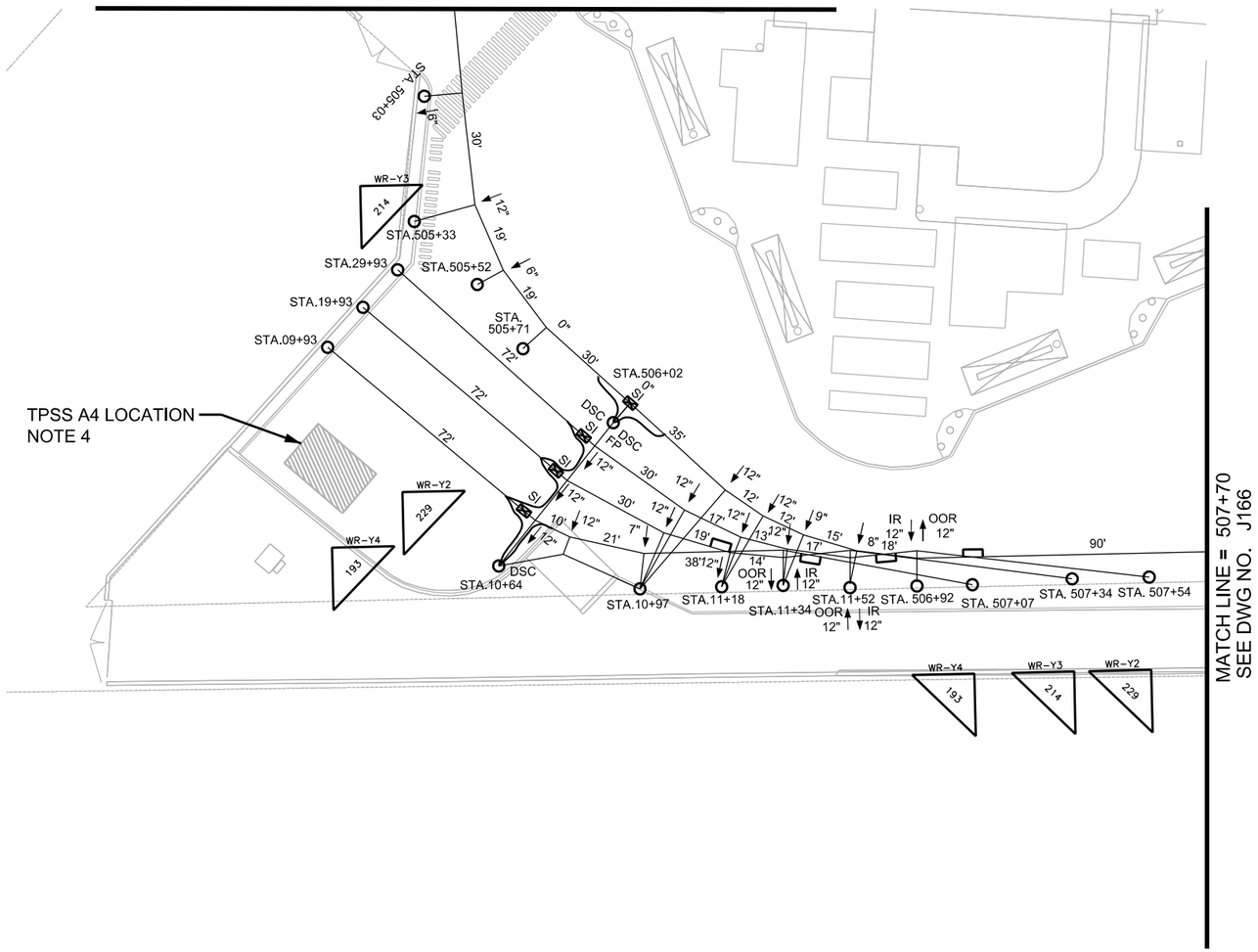

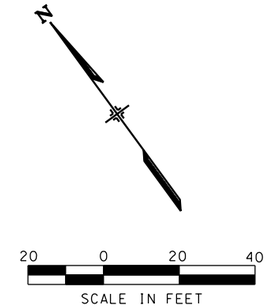

NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.
4. FOR TPSS SITE LOCATION DETAILS SEE VOL. 3 TRACTION POWER PLANS.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
505+03		P1-28	MAINLINE	Y1	19' 6"		30	6	SCA-01L		BT-01 (2)	SD-01	
505+33		P1-28	MAINLINE	Y1	19' 6"		19	12	SCA-01M		BT-01 (2)	SD-01	
29+93		P4-28	STORAGE			20' 0"	72				BT-02	SD-01	FT-01, SI-01
19+93		P4-28	STORAGE			20' 0"	72				BT-02	SD-01	FT-01, SI-01
09+93		P4-28	STORAGE			20' 0"	72				BT-02	SD-01	FT-01, SI-01
505+52		P1-28	MAINLINE	Y1	19' 6"		19	6	SCA-01H		BT-01 (2)	SD-01	
505+71		P1-28	MAINLINE	Y1	19' 6"		30	0	SCA-01H		BT-01 (2)	SD-01	
506+02	F	P4-28-F	MAINLINE	Y4,Y3,Y2,Y1	ALL 19' 0"		35	Y1, 0	SCA-05		BT-01 (2)	SD-01, FC-01 (2)	SI-01, DS-01 (2), LA-01 (2), AF-01
								Y2,Y3,Y4 12					
10+64		P4-28	STORAGE	Y4,Y3,Y2	ALL 19' 0"		31	ALL 12	HS-03	HR-1H (3)	BT-02 (2)	SD-01	BB-02, PO-1H, DS-02, FC-01 (2), LA-01 (2)
10+97		P4-28	STORAGE	Y4,Y3,Y2,Y1	ALL 19' 0"		38	SEE J165A	SCA-01H	PO-1H (3)	BT-01 (2)	BT-02A (3), BT-02	SD-01
11+18		P4-28	STORAGE	Y3,Y2,Y1	ALL 19' 0"		14	SEE J165A		PO-1H (3)		SD-01, BT-02A (3)	CC-01, JC-01
11+34		P4-28	STORAGE	Y4,Y3,Y2,Y1	ALL 19' 0"		17	SEE J165A	SCA-04HA	PO-1H (2)	BT-01 (2)	SD-01, BT-02A (2)	
11+52		P3-28	STORAGE	Y3, Y2, Y1	19' 1", 19' 0"		18	SEE J165A	SCA-04HA	PO-1H	BT-01 (2)	SD-01, BT-02A	CC-01, JC-01; Y1 WIRE HEIGHT 18' 0"
506+92		P2-28	MAINLINE	Y2, Y1	19' 1", 19' 0"		90	OOR -12,IR 12	SCA-04HA		BT-01 (2)	SD-01	CC-01, JC-01
507+07		P4-28	MAINLINE			20' 0"					BT-02	SD-01	FT-01
507+34		P4-28	MAINLINE			20' 0"					BT-02	SD-01	FT-01
507+54		P4-28	MAINLINE			20' 0"					BT-02	SD-01	FT-01

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
STA. 504+80 TO STA. 507+70
(ALTERNATE)

J165A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1172A

DATE: 7/13/2015 6:07:08 PM
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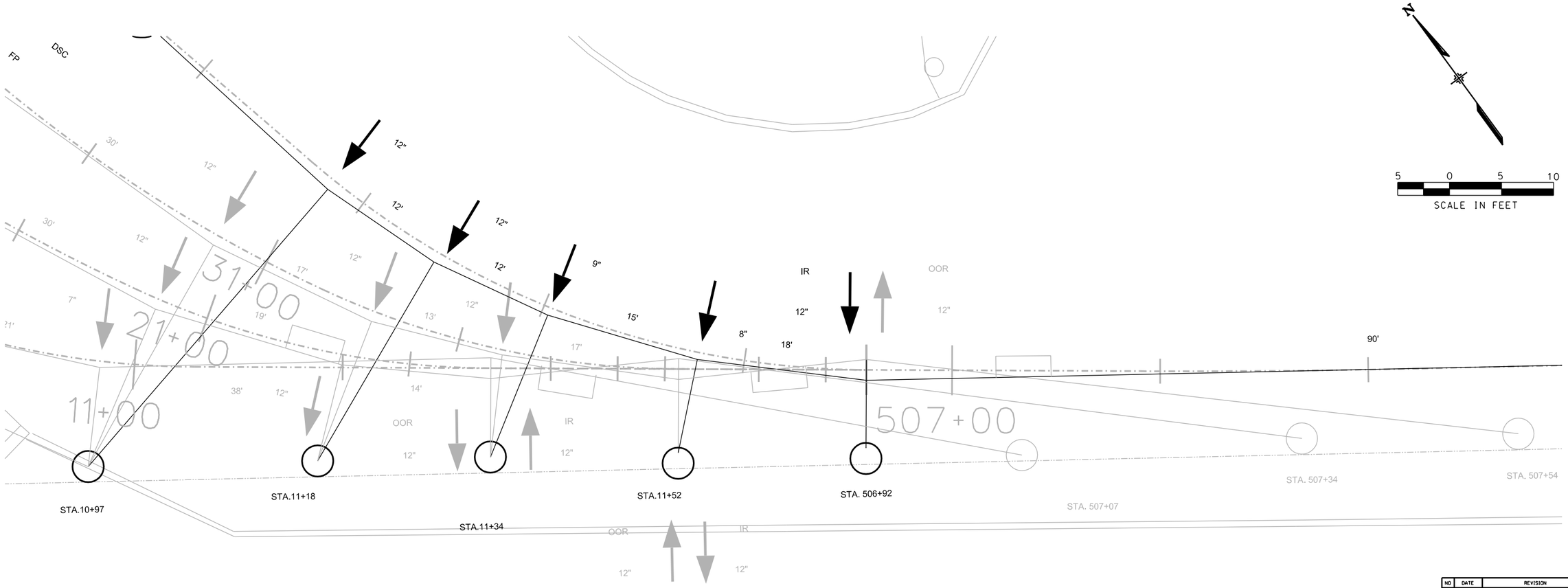

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
YARD

J165B

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1173

DATE: 7/13/2015 6:08:35 PM
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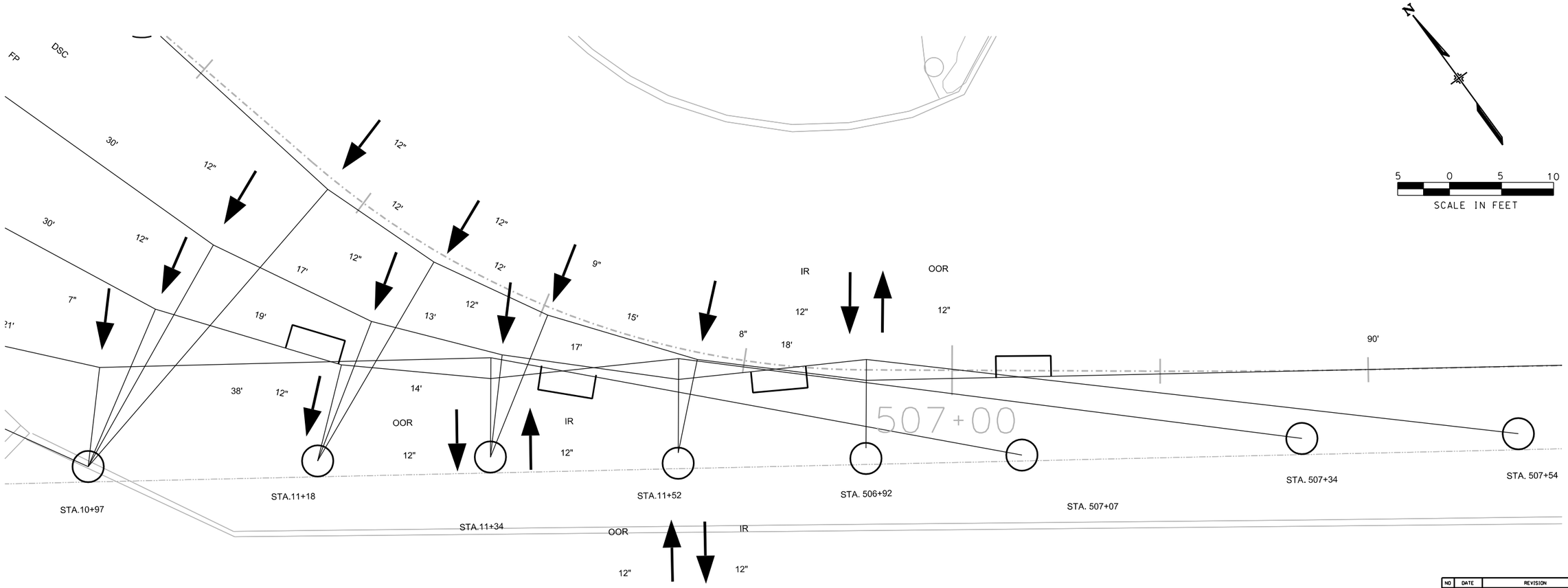

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
YARD
(ALTERNATE)

J165C

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1173A

DATE: 7/13/2015 6:09:57 PM
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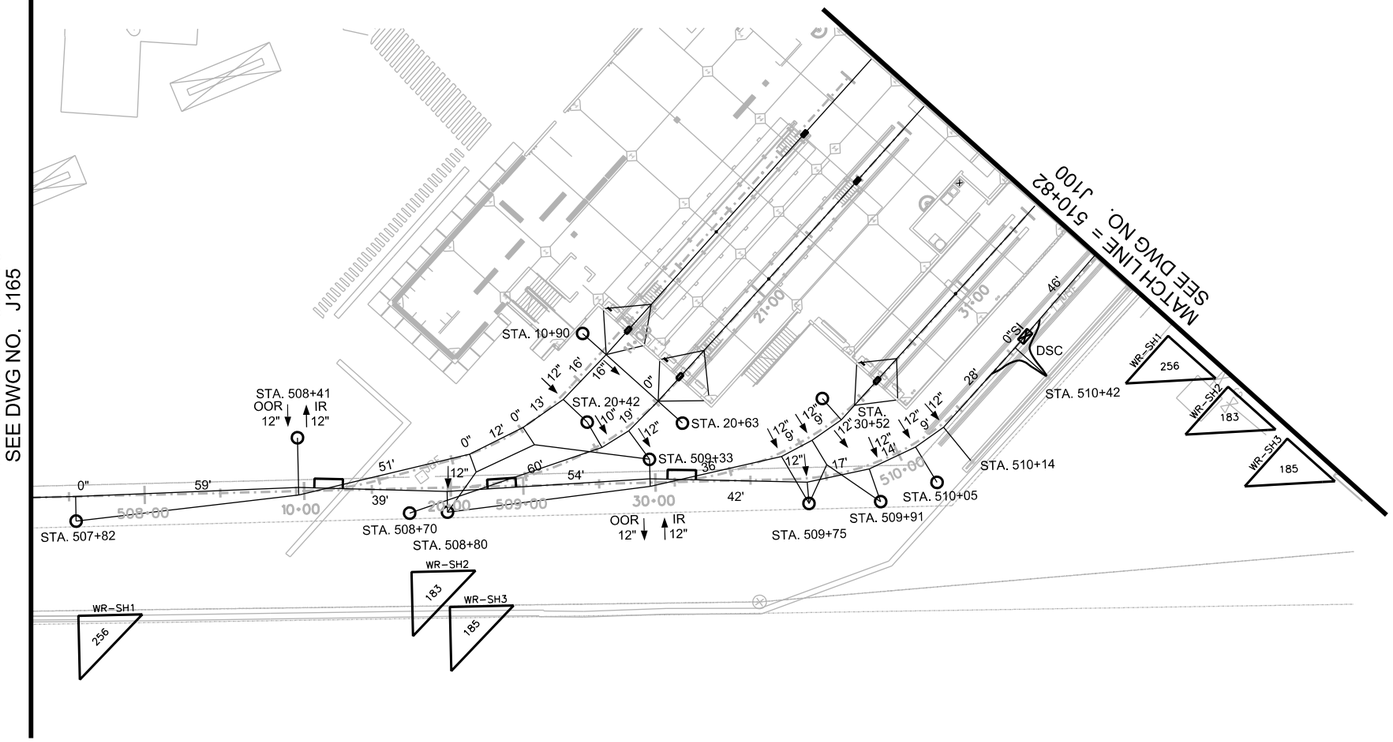
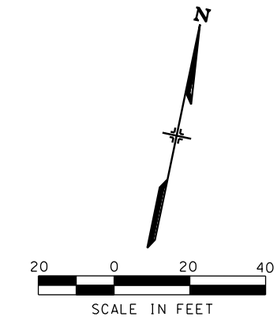
CK: URS
DN: URS





NOTES:

1. FOR POLE USE AND POLE TYPE DETAILS REFER TO POLE ASSEMBLY REFERENCE DRAWING.
2. ALL SPANS ARE MEASURED BETWEEN SUPPORTS AND REGISTRATIONS AND ROUNDED.
3. FOR POLE ALLOCATION DETAILS REFER TO POLE ASSEMBLY DRAWINGS AND POLE ATTACHMENT DRAWING.

STATION	POLE USE	POLE TYPE	REFERENCE TRACK	WIRE RUN NUMBER	CW HT. (FT.-IN.)	TERMINATION HT. (FT.-IN.)	SPAN (FT.)	STAGGER (IN.)	SUPPORT TYPE	REGISTRATION ASSEMBLY	POLE BRACKET	MISC. ASSEMBLY	REMARKS
507+82		P4-28	MAINLINE	Y1	18' 4"		59	0	SCA-01L		BT-01 (2)	SD-01	FT-01, BT-02
508+41		P2-28	MAINLINE	SH1, Y1	18' 1", 18' 0"		47	12, -12	SCA-04HA		BT-01 (2)	SD-01	CC-01, JC-01
508+70		P4-28	MAINLINE			19' 0"						SD-01	FT-01, BT-02
508+80		P4-28	MAINLINE	SH1	18' 0"	19' 0"	54	12	SCA-01M	PO-1H (2)	BT-01 (2)	SD-01, BT-02	CC-01, JC-01, FT-01, BB-04
20+42		P2-28	STORAGE	SH2, SH1	18' 0", 18' 0"		19	10, 12	SCA-01H		BT-01 (4)	SD-01	SCA-02H
509+33		P3-28	MAINLINE	SH2,SH3,Y1	18' 1", 18' 0"		42	SEE J166A	SCA-04HA	PO-1H	BT-01 (2)	SD-01, BT-02	CC-01, JC-01, BT-02A; SH1 WIRE HEIGHT 18' 0"
10+90		P2-28	STORAGE	SH1	18' 0"			16	CS-02	HR-1L		SD-01, BT-02	
20+63		P2-28	STORAGE	SH2	18' 0"			0		HR-1L		SD-01, BT-02	
509+75		P4-28	MAINLINE	Y1, SH3	18' 1", 18' 0"		17	SEE J166A	SCA-01H	PO-1H(2)	BT-01 (2)	BT-02A, BT-02	SD-01, BB-02
509+91		P3-28	MAINLINE	Y1	18' 3"		14	12		PO-1H	BT-02	SD-01, BT-02A	
30+52		P1-28	STORAGE	SH3	18' 0"			12	SCA-01H		BT-01 (2)	SD-01	
510+05		P1-28	MAINLINE	Y1	18' 5"		9	12	SCA-01H		BT-01 (2)	SD-01	
510+14			MAINLINE	Y1	18' 6"		28	12		PO-1H	BT-03	SD-01	SUPPORT ON WALL
510+42			MAINLINE	Y1	18' 9"		46	0	SCA-01L		BT-03	SD-01, FC-01 (2)	SI-01, DS-02, LA-01 (2); SUPPORT ON WALL

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
SHOP

J166

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1174

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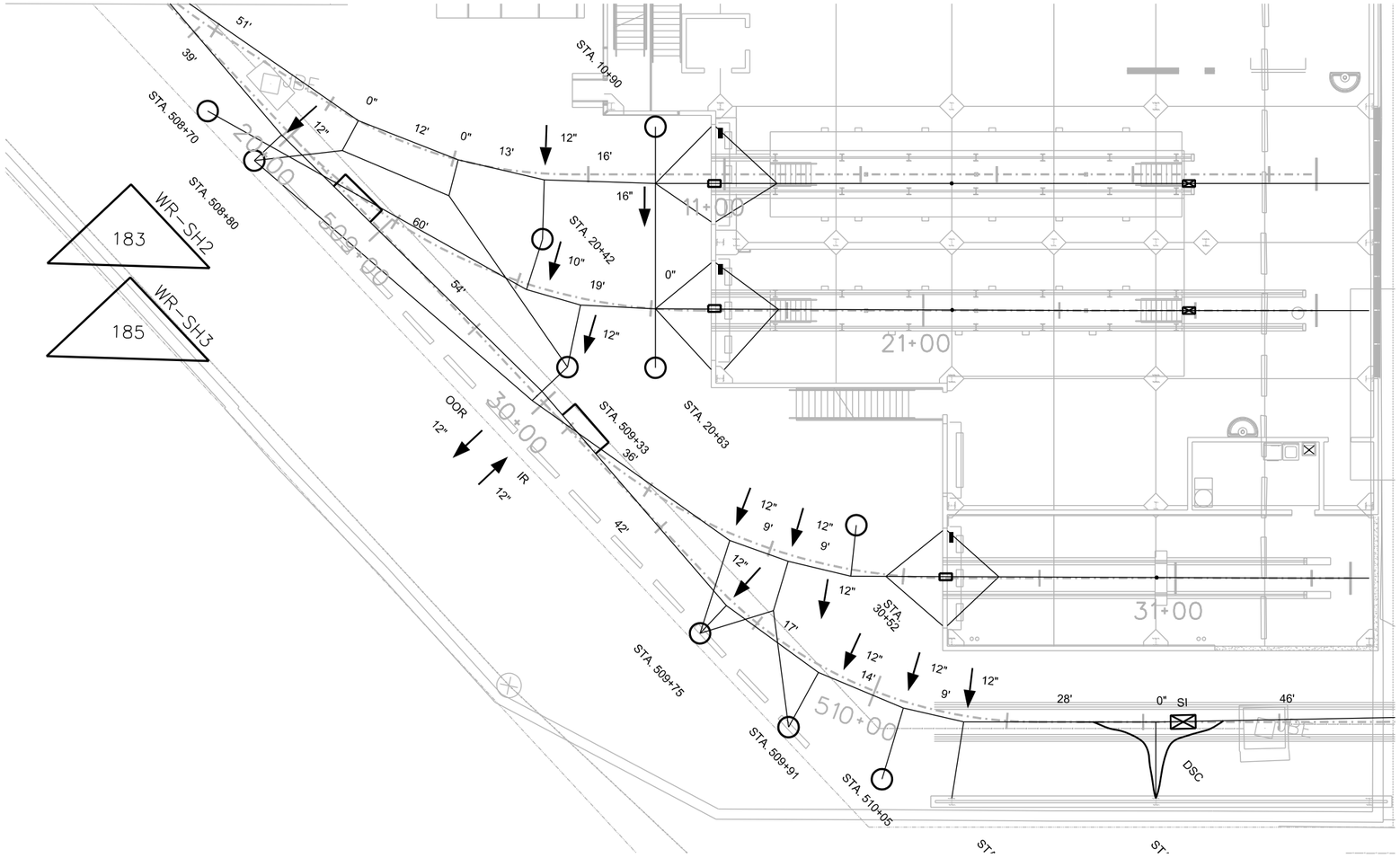

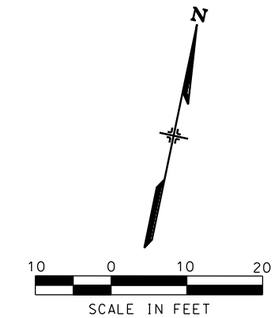

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
SHOP - EXTERIOR

J166A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1175

DATE: 6/3/2013 2:20:00 PM
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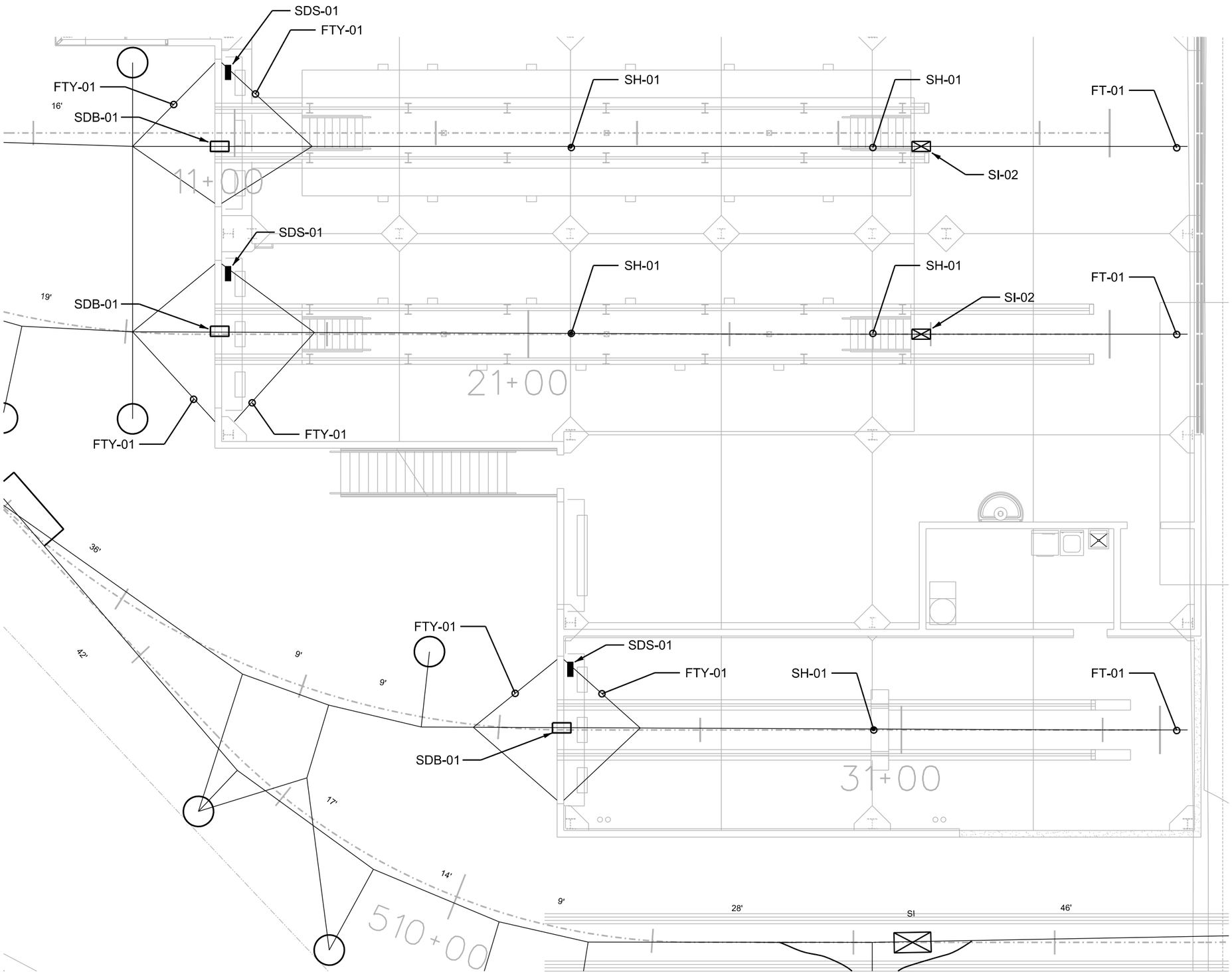

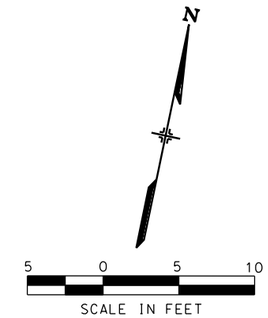

NOTES:

1. CONTRACTOR TO COORDINATE ANCHOR AND ATTACHEMENT POINTS WITH BUILDING CONTRACTOR AND DESIGNER.

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
OCS WIRING LAYOUT PLAN
SHOP - INTERIOR

J166B

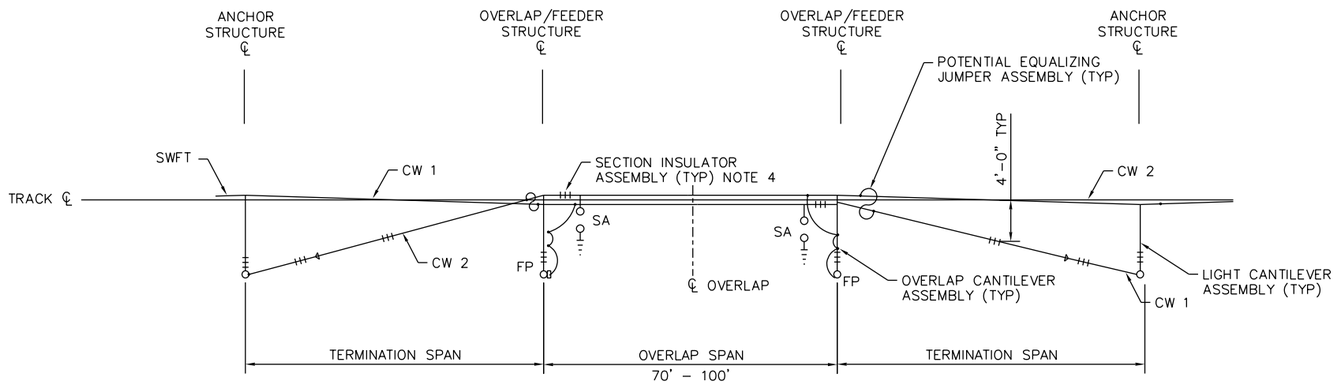
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1176

DATE: 6/4/2013 8:49:09 AM
FILE: W:\Projects\El Paso Streetcar\CADD\OCS\SHEETS\J166B.dgn

DN: URS CK: URS DW: URS CK: URS

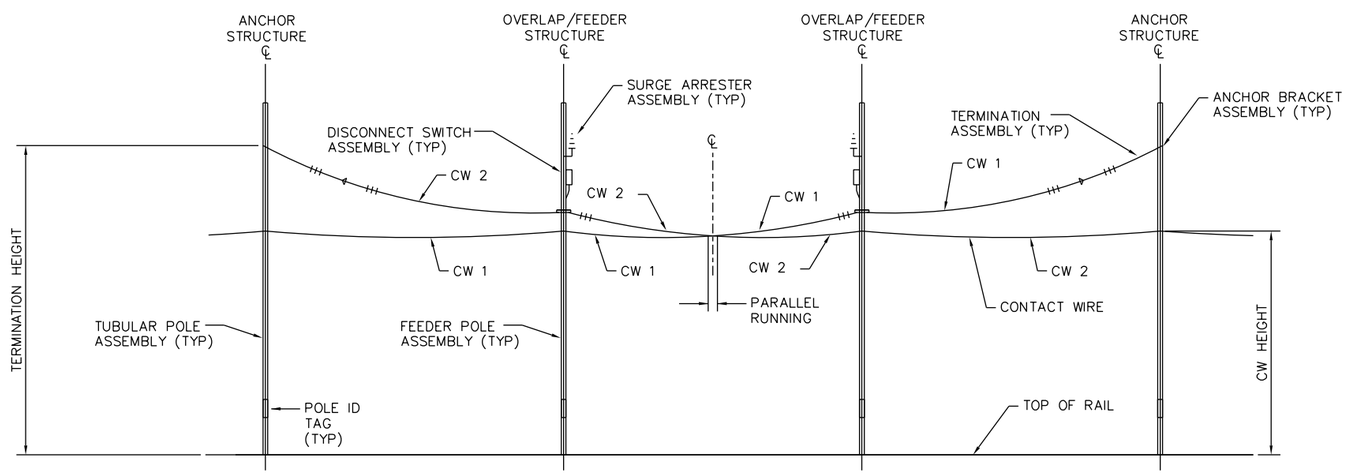
NOTES:

1. FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES SEE OVERHEAD CONTACT SYSTEM TECHNICAL SHEETS.
2. FOR WIRE HEIGHTS, SPAN LENGTHS, STAGGER VALUE AND DIRECTION SEE WIRING LAYOUT PLANS.
3. ALL CANTILEVERS SHALL BE SET TO BE PERPENDICULAR TO THE TRACK AT 60°F.
4. FOR UN-INSULATED OVERLAPS, SECTION INSULATORS IN THE OVERLAP SPAN ARE NOT REQUIRED.



PLAN

INSULATED OVERLAP SHOWN – NOTE 2



ELEVATION

NOTE 2

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COEP STREETCAR

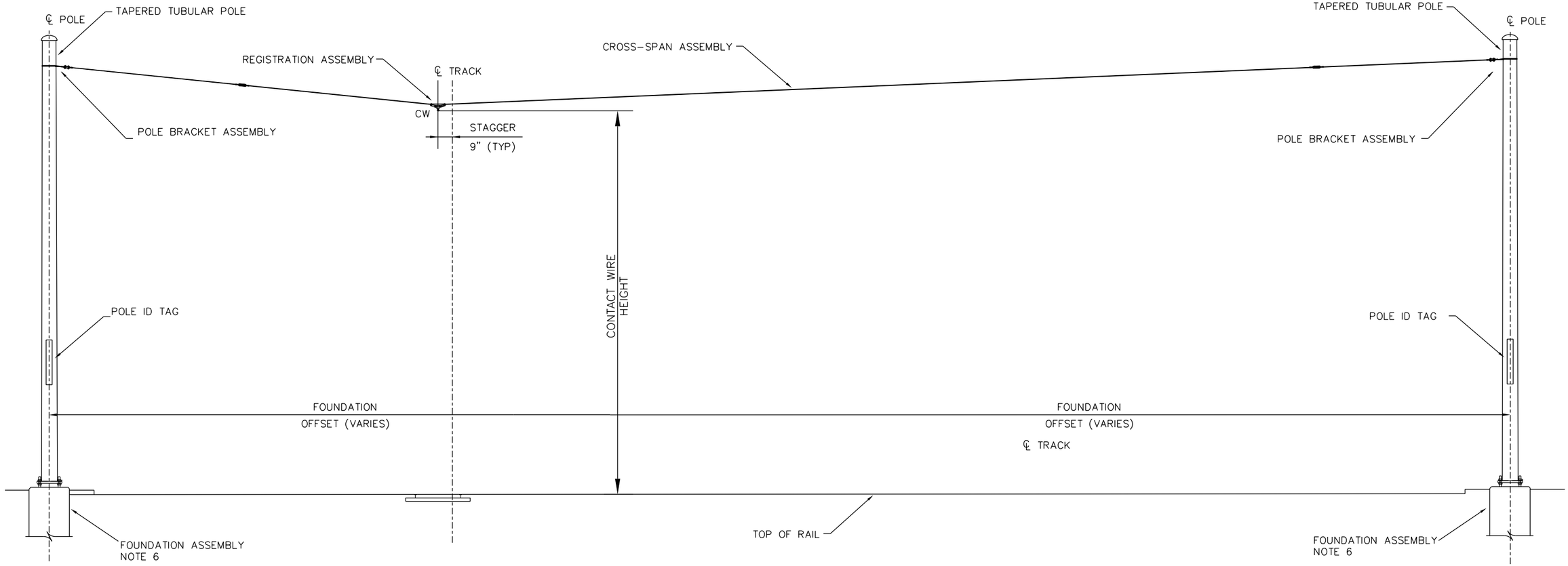
OVERHEAD CONTACT SYSTEM
GENERAL ARRANGEMENT
OVERLAPS ON
CANTILEVER STRUCTURES

J201

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1177

DN: URS | CK: URS | DW: URS | CK: URS

DATE: 5/31/2013 2:59:56 PM
FILE: X:\El Paso.2012\CADD\TYPICALS\General Arrangements\J201 - Insulated Overlap on Cantilever Structures.dgn



TYPICAL CROSS-SPAN STRUCTURE

SCALE: NTS

NOTES:

1. FOR ABBREVIATIONS AND GENERAL NOTES SEE OVERHEAD CONTACT SYSTEM TECHNICAL SHEETS.
2. FOR DIMENSIONS AND ASSEMBLY REQUIREMENTS AT EACH LOCATION SEE APPROPRIATE OCS WIRING LAYOUT PLANS.
3. FOR POLE, FOUNDATION TYPES AND DIMENSIONS AT A SPECIFIC SITE, SEE OCS WIRING LAYOUT PLANS.
4. CONTRACTOR TO DETERMINE POLE BRACKET HEIGHTS.
5. SECOND LEVEL INSULATION ADJACENT TO POLE SHALL BE LOCATED 10' FROM TRACK CENTERLINE. EXCEPT IN CASES WHERE POLE FACE SETOUT IS LESS THAN 11'-3", A MINIMUM OF 1'-3" FROM FACE OF POLE IS REQUIRED.
6. FOR FOUNDATION ASSEMBLY ALLOCATIONS SEE OCS WIRING LAYOUT PLANS. FOR GROUNDING DETAILS SEE FOUNDATION ASSEMBLY DRAWING. FOR POLE GROUND ATTACHMENT DETAILS SEE TUBULAR POLE ASSEMBLY DRAWING.

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
TYPICAL STRUCTURE DRAWING
CROSS-SPAN

J206

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1178

DN: URS CK: URS DN: URS CK: URS

DATE: 5/31/2013 3:01:21 PM
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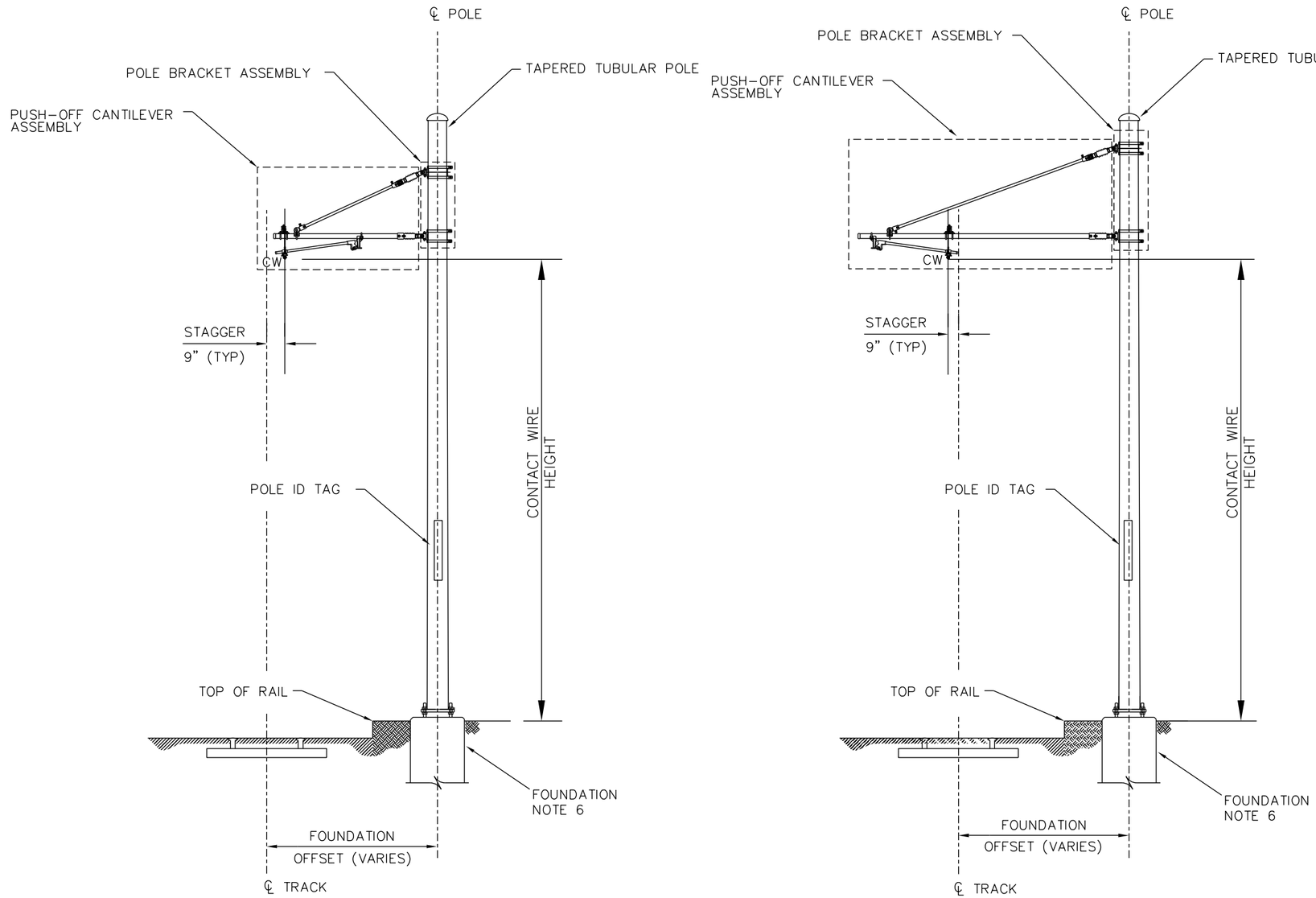

1 TYPICAL OCS POLES
SCALE: NTS

NOTES:

1. FOR ABBREVIATIONS AND GENERAL NOTES SEE OVERHEAD CONTACT SYSTEM TECHNICAL SHEETS.
2. FOR DIMENSIONS AND ASSEMBLY REQUIREMENTS AT EACH LOCATION SEE APPROPRIATE OCS WIRING LAYOUT PLANS.
3. FOR POLE AND FOUNDATION TYPES AND DIMENSIONS AT A SPECIFIC SITE, SEE OCS WIRING LAYOUT PLANS.
4. CONTRACTOR TO DETERMINE POLE BRACKET ATTACHMENT HEIGHTS.
5. CONTRACTOR TO ENSURE THAT PANTOGRAPH CLEARANCE, STEADY ARM CLEARANCE REQUIREMENTS AND ELECTRICAL CLEARANCE REQUIREMENTS ARE MET.
6. FOR FOUNDATION ASSEMBLY ALLOCATIONS SEE OCS WIRING LAYOUT PLANS. FOR GROUNDING DETAILS SEE FOUNDATION ASSEMBLY DRAWING. FOR POLE GROUND ATTACHMENT DETAILS SEE TUBULAR POLE ASSEMBLY DRAWING.

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
TYPICAL STRUCTURE DRAWING
OCS POLES

J207

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1179

DN: URS CK: URS DW: URS CK: URS

DATE: 5/31/2013 3:02:00 PM
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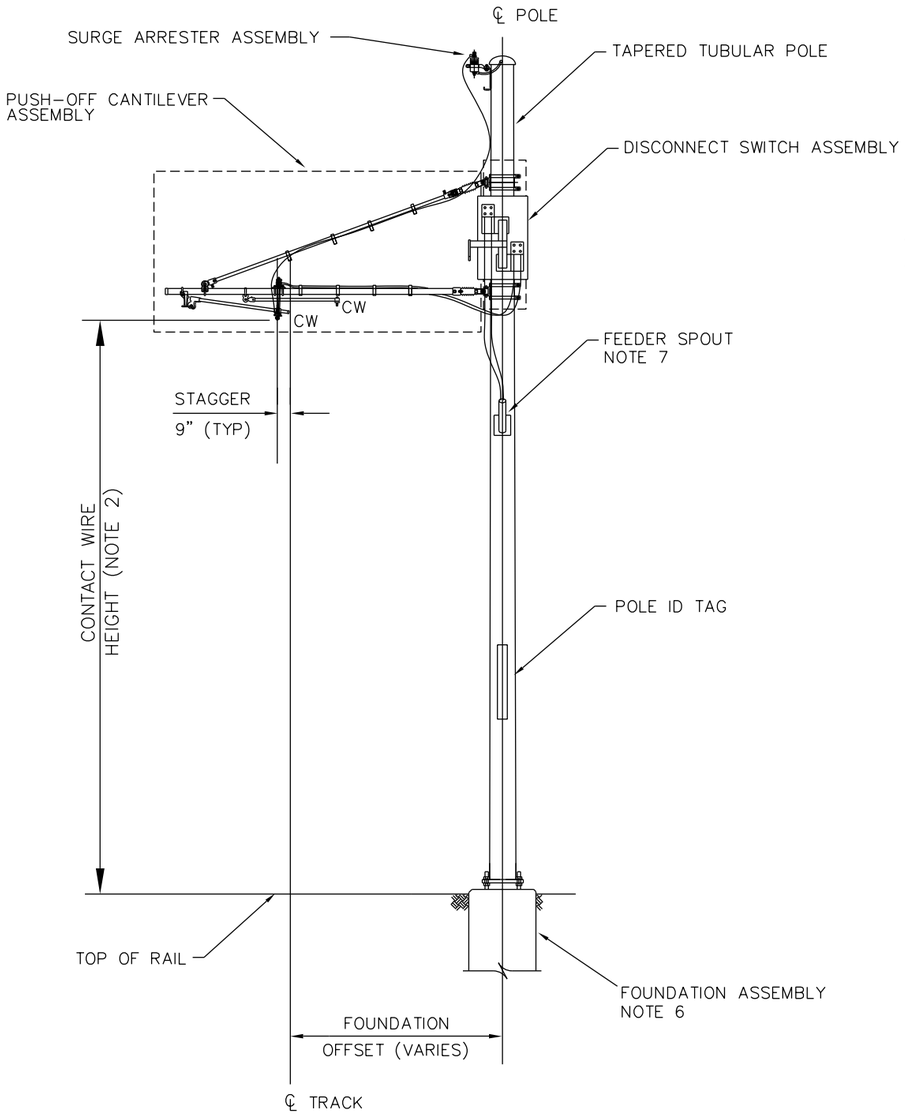
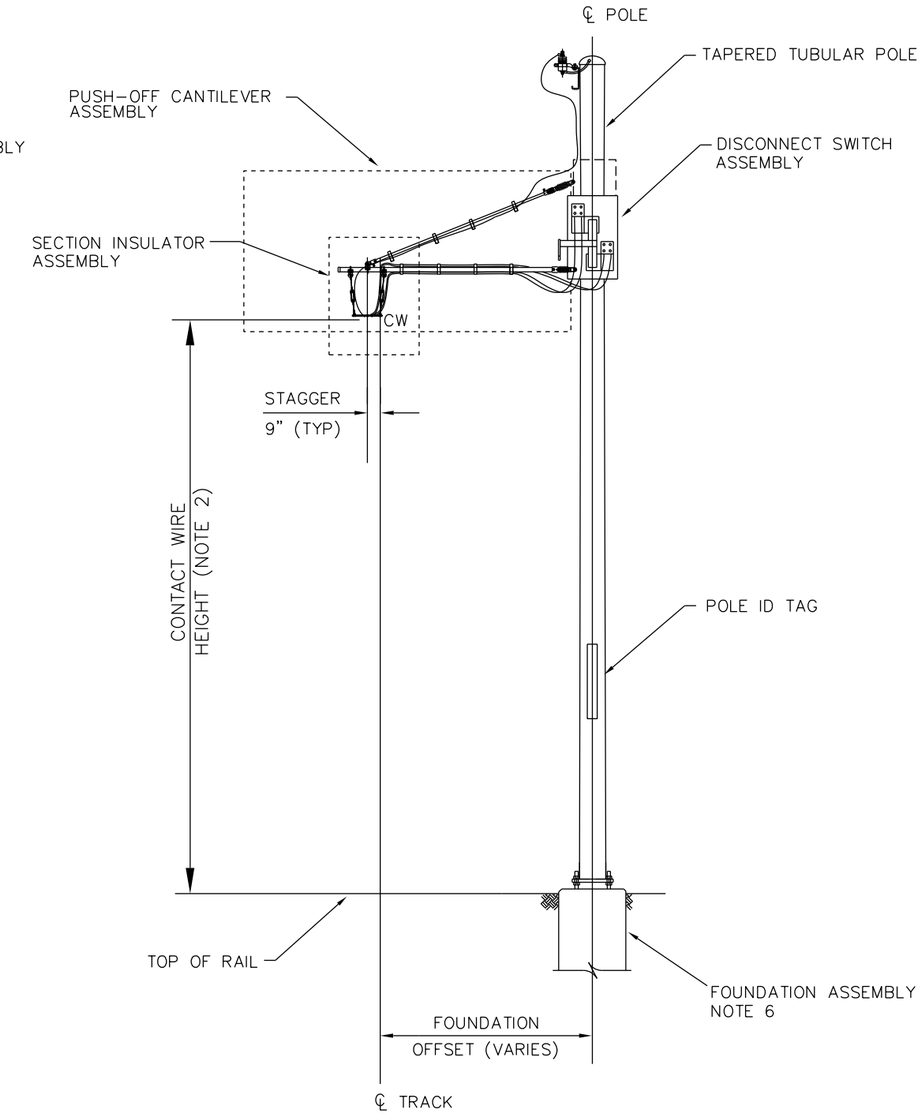


1 TYPICAL FEEDING DISCONNECT STRUCTURE AT OVERLAP

SCALE: NTS
POLE BRACKETS OMITTED FOR CLARITY



2 TYPICAL BYPASS DISCONNECT STRUCTURE AT SECTION INSULATOR

SCALE: NTS
POLE BRACKETS OMITTED FOR CLARITY

NOTES:

1. FOR ABBREVIATIONS AND GENERAL NOTES SEE OVERHEAD CONTACT SYSTEM TECHNICAL SHEETS.
2. FOR DIMENSIONS AND ASSEMBLY REQUIREMENTS AT EACH LOCATION SEE APPROPRIATE OCS WIRING LAYOUT PLANS.
3. FOR POLE AND FOUNDATION ASSEMBLIES AND DIMENSIONS AT A SPECIFIC SITE, SEE OCS WIRING LAYOUT PLANS.
4. CONTRACTOR TO DETERMINE POLE BRACKET ATTACHMENT HEIGHTS.
5. CONTRACTOR TO ENSURE THAT PANTOGRAPH CLEARANCE, STEADY ARM CLEARANCE REQUIREMENTS AND ELECTRICAL CLEARANCE REQUIREMENTS ARE MET.
6. FOR FOUNDATION ASSEMBLY ALLOCATIONS SEE OCS WIRING LAYOUT PLANS. FOR GROUNDING DETAILS SEE FOUNDATION ASSEMBLY DRAWING. FOR POLE GROUND ATTACHMENT DETAILS SEE TUBULAR POLE ASSEMBLY DRAWING.
7. FOR HEIGHT OF FEEDER SPOUT SEE FEEDER POLE ASSEMBLY DRAWING.

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
TYPICAL STRUCTURE DRAWING
DISCONNECT STRUCTURES

J208

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1180

DATE: 5/31/2013 3:03:45 PM
FILE: X:\El Paso, 2012\CADD\TYPICALS\Structures\J208 - Typical Structure Drawing Disconnect Structures.dgn

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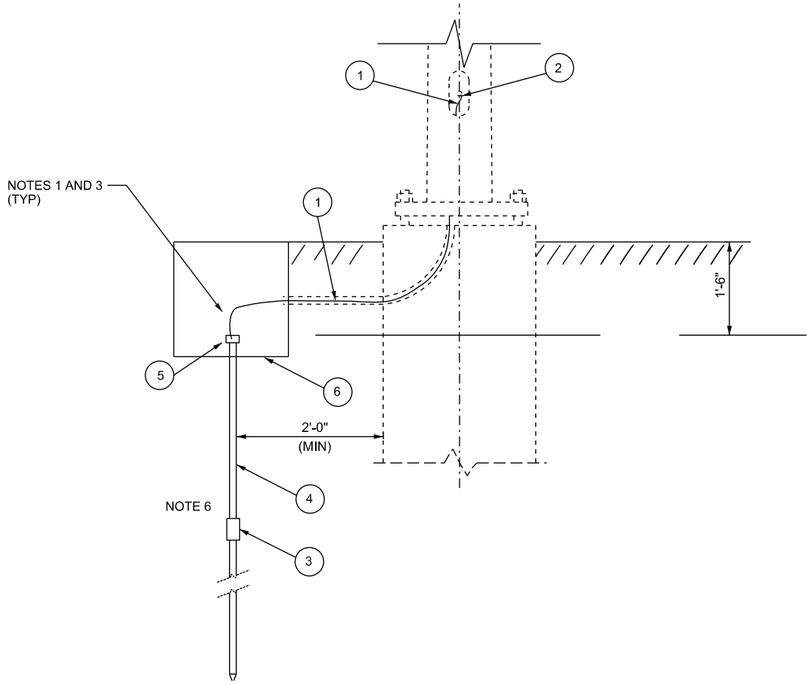
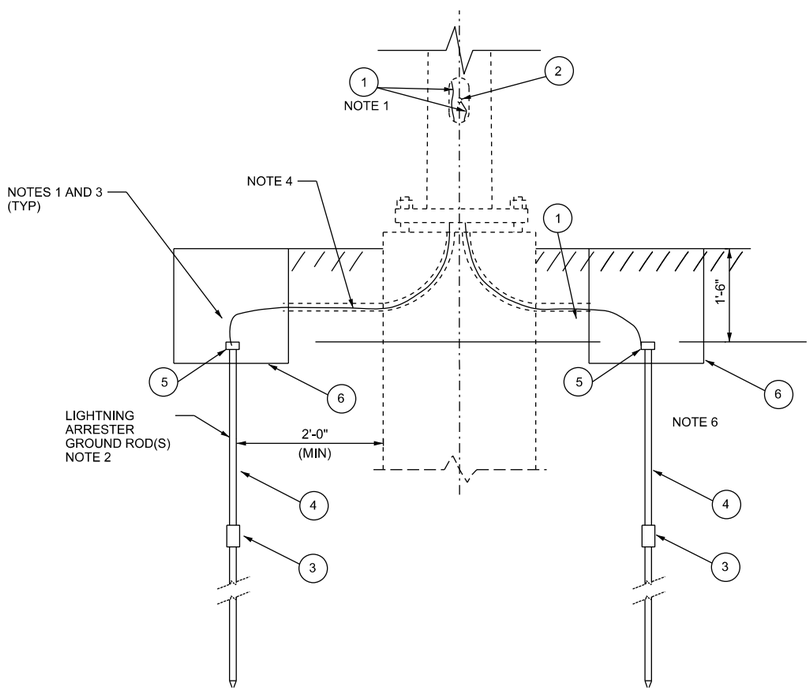
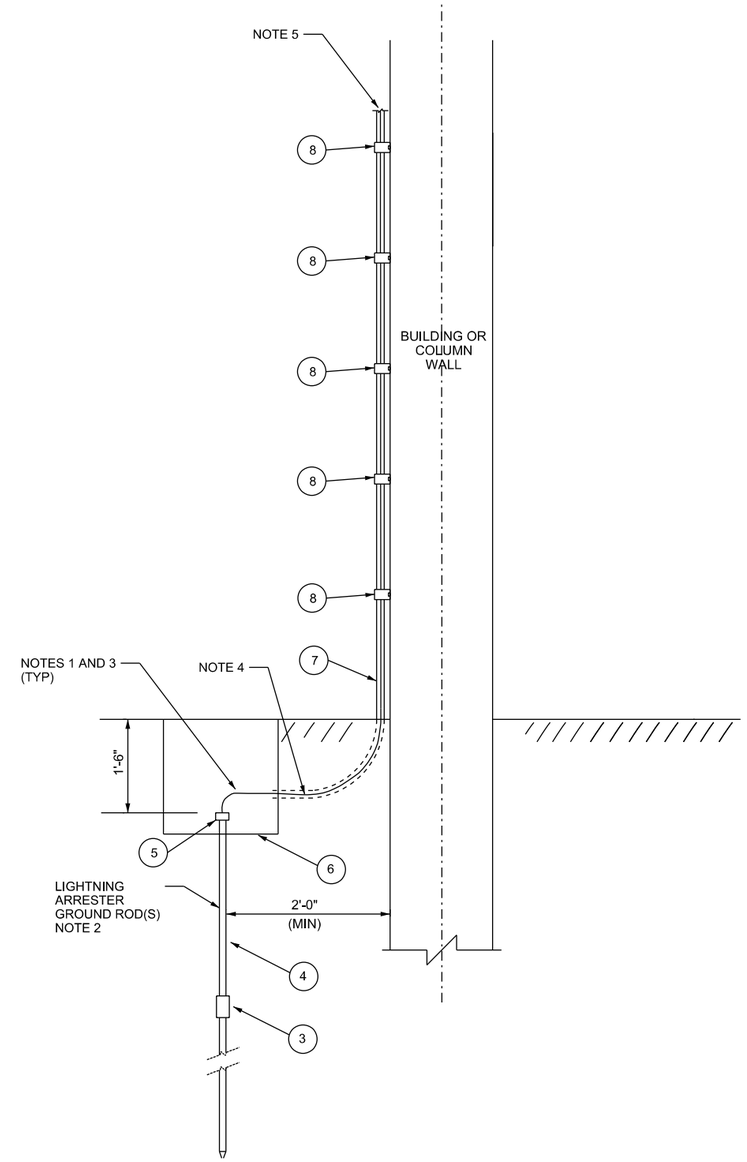


POLE GROUND ASSEMBLY
GR-01



POLE AND LIGHTNING ARRESTER GROUND ASSEMBLY
GR-02



COLUMN WALL MOUNTED
LIGHTNING ARRESTER GROUND ASSEMBLY
GR-03

NOTES:

1. THE GROUND CABLE(S) SHALL GO DIRECTLY TO THE GROUND ROD(S) BY THE SHORTEST POSSIBLE ROUTE. NO SPLICES OR MECHANICAL JOINTS SHALL BE MADE IN THE CABLE. THE POLE SHALL NOT BE USED AS A GROUND CONDUCTOR. A MINIMUM OF ONE GROUND ROD TO BE SUPPLIED AND INSTALLED FOR THIS ASSEMBLY.
2. LIGHTNING ARRESTER GROUND RESISTANCE TESTING DETAILS SHALL BE FOUND ON THE LIGHTNING ARRESTER ASSEMBLY DRAWING AND THE SYSTEMS SPECIFICATIONS.
3. ALL BENDS IN LIGHTNING ARRESTER HV CABLES AND GROUNDING CABLES SHALL BE MINIMUM 8 INCH RADIUS.
4. LIGHTNING ARRESTER ASSEMBLY INSTALLATION DETAILS SHALL BE FOUND ON THE LIGHTNING ARRESTER ASSEMBLY DRAWING.
5. CONDUIT AND CABLE CONTINUE UP TO CANTILEVER, WHERE CABLE IS TRAINED OUT TO THE CONTACT WIRE AS SHOWN ON THE LIGHTNING ARRESTER ASSEMBLY DRAWING.
6. POLE GROUND TEST PROCEDURE SHALL BE THE SAME AS THE LIGHTNING ARRESTER GROUND TEST PROCEDURE AS DESCRIBED IN THE SPECIFICATIONS. POLE GROUND ACCEPTABLE GROUND RESISTANCE MEASUREMENTS SHALL BE LESS THAN 25 OHMS.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
4/0 AWG 2000 VOLT INSULATED CABLE	1	
TERMINAL LUGS FOR 4/0 AWG CABLE	2	
GROUND ROD COUPLER	3	
COPPER CLAD GROUND ROD – 3/4" X 10'	4	
EXOTHERMIC WELD	5	
FIBERGLASS REINFORCED CONCRETE JUNCTION BOX – 2' X 3'	6	HS–20 RATED
2" CONDUIT	7	
CONDUIT STRAPS W/ DRIVE IN EXPANSION ANCHORS	8	SPACED EVERY 2' (TYP)

NO	DATE	REVISION	APPROVED
	/ /		
	/ /		
	/ /		
	/ /		

STATE OF TEXAS
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PROFESSIONAL ENGINEER
2/16/15

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR
OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
GR-01, GR-02, & GR-03
GROUNDING ASSEMBLIES

J215

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1181

DATE: 2/17/2015 1:26:51 PM
FILE: W:\Projects\El Paso Streetcar\CADD\DCS\SHEETS\TYPICALS\Assemblies\J215 - Grounding Assemblies.dgn

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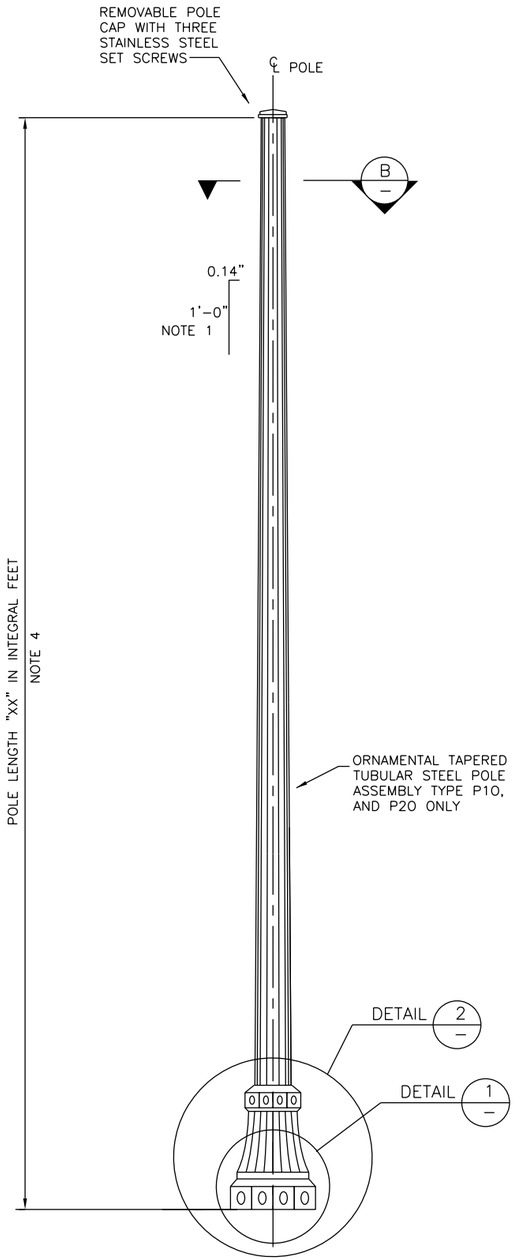
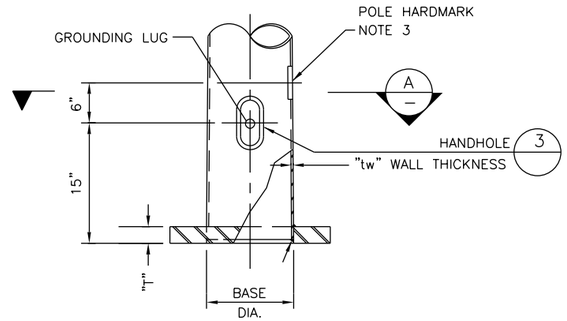
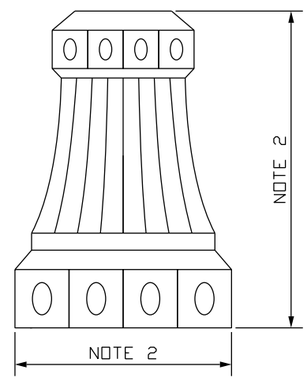


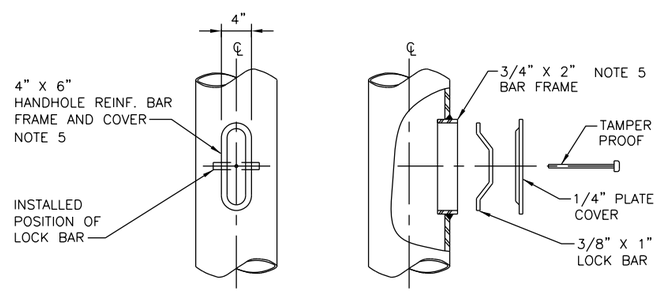
ORNAMENTAL TAPERED TUBULAR POLE
ASSEMBLY P_O – XX – Y



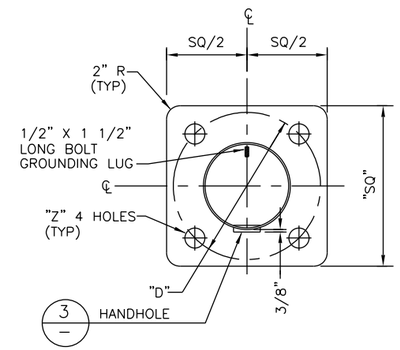
1 POLE BASE DETAILS
SCALE: NTS – NOTE 8
ORNAMENTAL FLUTING AND CLAMSHELL COVER OMITTED FOR CLARITY



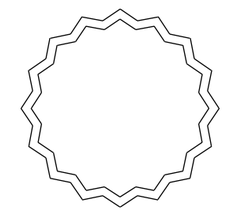
2 ORNAMENTAL CLAMSHELL COVER
SCALE: NTS – NOTE 8
HANDHOLE AND BASEPLATE OMITTED FOR CLARITY



3 HANDHOLE
SCALE: NTS
ORNAMENTAL FLUTING AND CLAMSHELL COVER OMITTED FOR CLARITY
HANDHOLE REQUIRED FOR ALL POLES



A SECTION
SCALE: NTS



B SECTION
ORNAMENTAL FLUTING – NOTE 8

NOTES:

1. POLE SHALL HAVE A UNIFORM TAPER OF APPROXIMATELY FOURTEEN HUNDREDTHS (.14) OF AN INCH PER LINEAR FOOT.
2. THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS FOR EACH POLE ASSEMBLY REFERENCE REQUIRED. THE SPECIFIC SIZES AND STYLES OF MATERIALS SHALL BE COORDINATED WITH THE OWNER AND APPROVED THROUGH THE SHOP DRAWING SUBMITTAL PROCESS IN CONJUNCTION WITH THE SPECIFICATIONS.
3. POLE HARDMARK SHALL INCORPORATE POLE ASSEMBLY REFERENCE.
4. ALLOCATE POLES WITH LENGTH IN INTEGRAL FEET, SHOWN AS "XX" IN THE POLE ASSEMBLY REFERENCE. ALLOCATE POLES WITH SPECIFIC POLE ATTACHMENT, SHOWN AS "Y" IN THE POLE ASSEMBLY REFERENCE. FOR POLE LENGTH, SEE OCS WIRING LAYOUT PLANS.
5. THE HANDHOLE SHALL BE REINFORCED TO MEET THE ALLOWABLE BENDING MOMENT SHOWN IN THE POLE SCHEDULE TABLE.
6. INSTALL POLE SUCH THAT THE HAND HOLE IS LOCATED SO THAT IT FACES PERPINDICULAR AWAY FROM THE TRACK. WHERE POLES ARE BETWEEN TWO TRACKS INSTALL THE POLE SUCH THAT THE HAND HOLE IS LOCATED SO THAT IT FACES THE DIRECTION OF INCREASING TRACK STATIONING.
7. ALLOWABLE BENDING MOMENT SHOWN IN THE POLE SCHEDULE IS THE REQUIRED ALLOWABLE BENDING MOMENT AT POLE BASE. POLE SHAFT SHALL HAVE A MINIMUM YIELD STRESS OF 55,000 PSI.
8. ORNAMENTAL TYPE POLES SHALL BE FLUTED IN ACCORDANCE WITH THE SPECIFICATIONS, AND SHALL HAVE ORNAMENTAL CLAMSHELL COVERS.
9. ORNAMENTAL CLAMSHELL DIMENSIONS SHALL BE COORDINATED TO MEET ALL REQUIREMENTS OF ADA.

POLE SCHEDULE – ORNAMENTAL POLES

POLE ASSEMBLY REFERENCE NOTE 4	POLE BASE OUTSIDE DIA. (IN)	WALL THICK-NESS "tw" (IN)	POLE BASE SQUARE "SQ" (IN)	POLE BASE BOLT CIRCLE "D" (IN)	POLE BASE THK "T" (IN)	POLE BASE HOLE "Z" (IN)	ANCHOR BOLT DIA. (IN)	ALLOW. BENDING MOMENT (KIP-FT)
P1O-XX-Y	9	3/16	17	15	2	1 13/16	1-1/2	29
P2O-XX-Y	10	1/4	19	16	2	2 5/16	2	47

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
P1O, AND P2O
ORNAMENTAL POLE ASSEMBLIES

J219

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1182

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 9:03:33 AM
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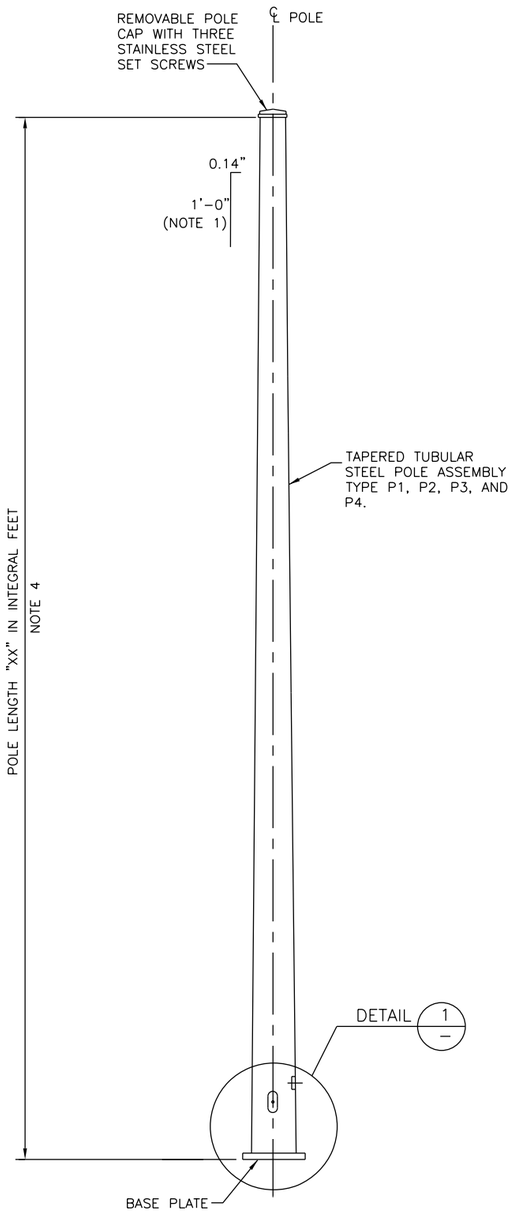
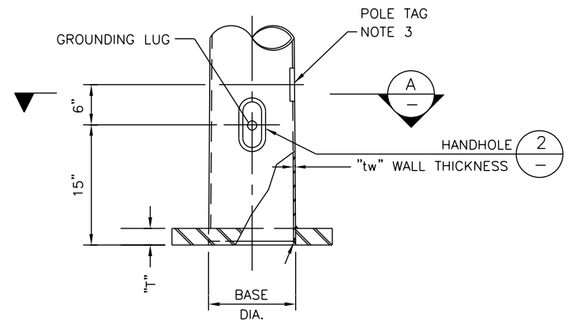
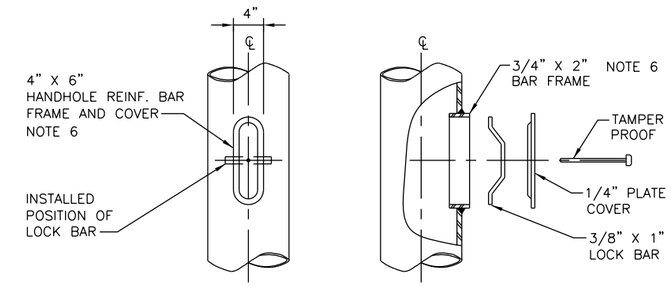


STANDARD TAPERED TUBULAR POLE
P_ – XX – Y

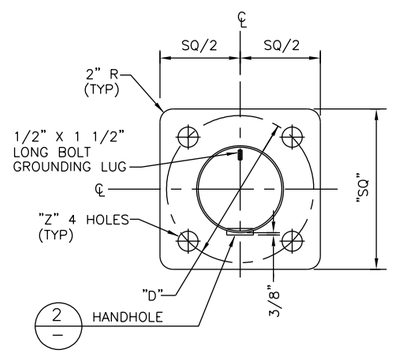


1 POLE BASE DETAILS
SCALE: NTS – NOTE 12



2 HANDHOLE
SCALE: NTS

HANDHOLE REQUIRED FOR ALL POLES



A SECTION
SCALE: NTS

NOTES:

1. POLE SHALL HAVE A UNIFORM TAPER OF APPROXIMATELY FOURTEEN HUNDREDTHS (.14) OF AN INCH PER LINEAR FOOT.
2. THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS FOR EACH POLE ASSEMBLY REFERENCE REQUIRED. THE SPECIFIC SIZES AND STYLES OF MATERIALS SHALL BE COORDINATED WITH THE OWNER AND APPROVED THROUGH THE SHOP DRAWING SUBMITTAL PROCESS IN CONJUNCTION WITH THE SPECIFICATIONS.
3. POLE HARDMARK SHALL INCORPORATE POLE ASSEMBLY REFERENCE.
4. ALLOCATE POLES WITH LENGTH IN INTEGRAL FEET, SHOWN AS "XX" IN THE POLE ASSEMBLY REFERENCE. ALLOCATE POLES WITH SPECIFIC POLE ATTACHMENT, SHOWN AS "Y" IN THE POLE ASSEMBLY REFERENCE. FOR POLE LENGTH, SEE OCS WIRING LAYOUT PLANS.
5. STRUCTURE NUMBER DECALS SHALL FACE ALONG TRACK EACH WAY. TWO NUMBER DECALS ARE REQUIRED PER POLE.
6. THE HANDHOLE SHALL BE REINFORCED TO MEET THE ALLOWABLE BENDING MOMENT SHOWN IN THE POLE SCHEDULE TABLE.
7. INSTALL POLE SUCH THAT THE HAND HOLE IS LOCATED SO THAT IT FACES THE DIRECTION OF INCREASING TRACK STATIONING.
8. ALLOWABLE BENDING MOMENT SHOWN IN THE POLE SCHEDULE IS THE MAXIMUM ALLOWABLE BENDING MOMENT AT POLE BASE, AND ASSUMES LOAD IS APPLIED AT THE CONTACT WIRE HEIGHT FROM TOP OF THE BASE PLATE. POLE SHAFT SHALL HAVE A MINIMUM YIELD STRESS OF 55,000 PSI.

POLE SCHEDULE – STANDARD POLES

POLE ASSEMBLY REFERENCE NOTE 6	POLE BASE OUTSIDE DIA. (IN)	WALL THICK-NESS "tw" (IN)	POLE BASE				ANCHOR BOLT DIA. (IN)	ALLOW. BENDING MOMENT (KIP-FT)
			SQUARE "SQ" (IN)	BOLT CIRCLE "D" (IN)	THK "T" (IN)	HOLE "Z" (IN)		
P1-XX-Y	9	3/16	17	15	2	1 13/16	1-1/2	29
P2-XX-Y	10	1/4	19	16	2	2 5/16	2	47
P3-XX-Y	11	1/2	20	17	2	2 5/16	2	112
P4-XX-Y	13	5/8	23	20	2	2 13/16	2-1/2	195

NO.	DATE	REVISION	APPROVED
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STATE OF TEXAS
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
P1, P2, P3, & P4
TUBULAR POLE ASSEMBLIES

J220

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1183

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 9:04:01 AM
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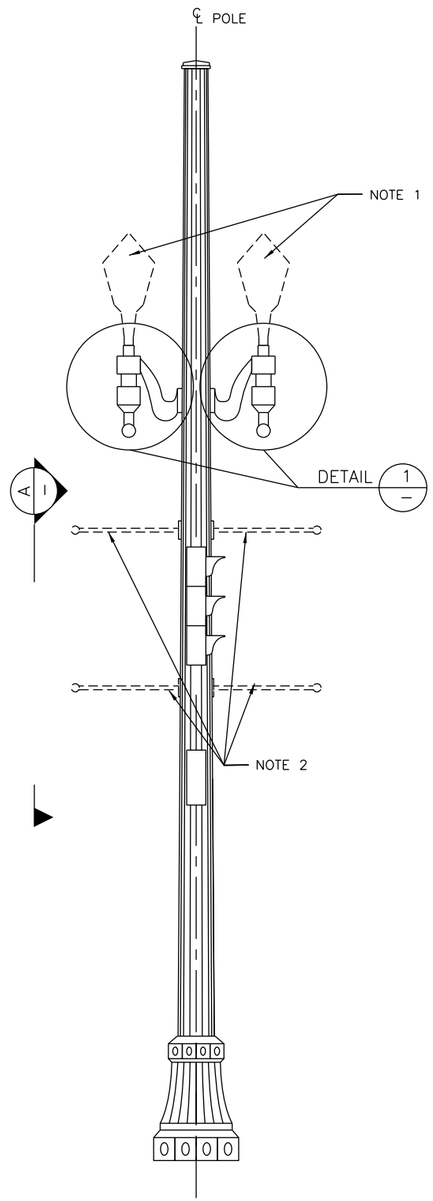
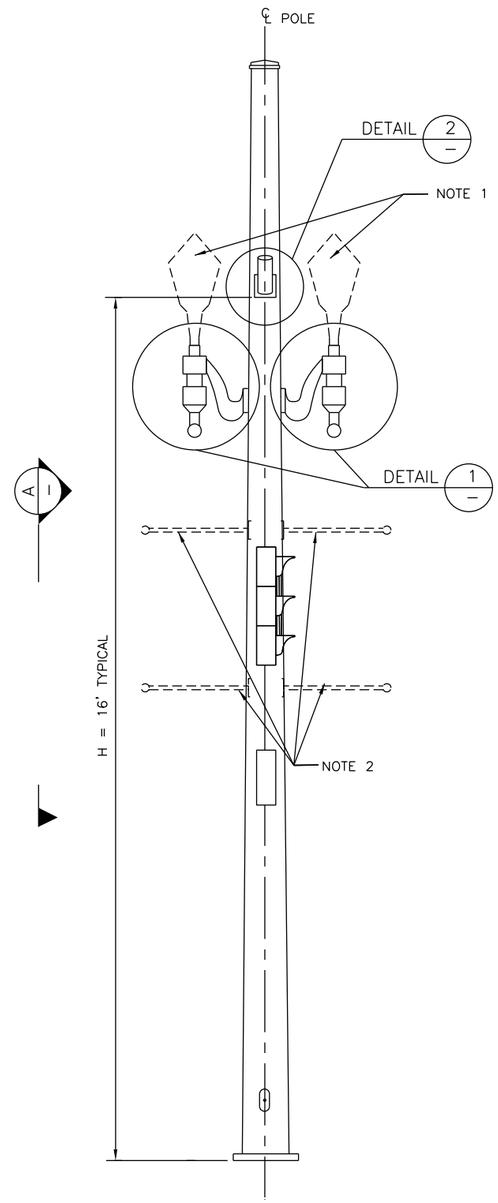


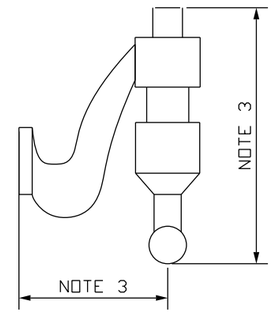
ORNAMENTAL TAPERED TUBULAR POLE

ALL ALLOWABLE POLE ATTACHMENT ASSEMBLIES SHOWN



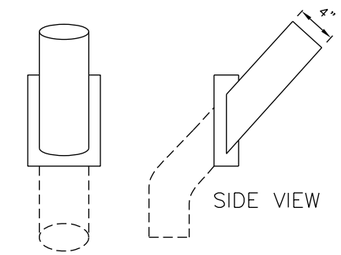
STANDARD TAPERED TUBULAR POLE

ALL ALLOWABLE POLE ATTACHMENT ASSEMBLIES SHOWN



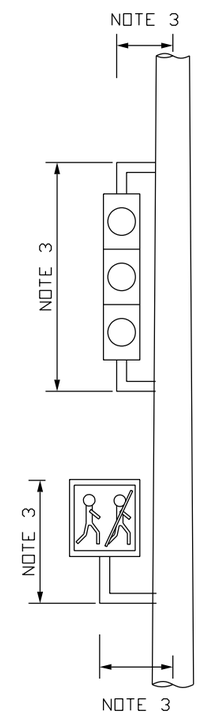
1 LIGHTING POLE ATTACHMENT

SCALE: NTS – NOTE 12



2 FEEDER POLE SPOUT

SCALE: NTS – NOTE 12



A SECTION

TRAFFIC SIGNAL ATTACHMENTS (TYPICAL)

ORNAMENTAL FLUTING OMITTED FOR CLARITY
NOTE 8

NOTES:

1. LIGHT FIXTURES AND LIGHTING DESIGN SHALL BE COORDINATED WITH THE OWNER.
2. BANNER SUPPORT TYPES AND ORIENTATION SHALL BE COORDINATED WITH THE OWNER.
3. THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS FOR EACH POLE ASSEMBLY REFERENCE REQUIRED. THE SPECIFIC SIZES AND STYLES OF MATERIALS SHALL BE COORDINATED WITH THE OWNER AND APPROVED THROUGH THE SHOP DRAWING SUBMITTAL PROCESS IN CONJUNCTION WITH THE SPECIFICATIONS.
4. POLE ASSEMBLY DETAILS SHALL BE FOUND ON THE ORNAMENTAL POLE ASSEMBLY DRAWING AND THE TUBULAR POLE ASSEMBLY DRAWING.
5. ALLOCATE POLES WITH LENGTH IN INTEGRAL FEET, SHOWN AS "XX" IN THE POLE ASSEMBLY REFERENCE DRAWINGS. ALLOCATE POLES WITH SPECIFIC APPLICATION TYPE, SHOWN AS "Y" IN THE POLE ASSEMBLY REFERENCE.

   F = FEEDER POLE SPOUT
   L = LIGHTING POLE ATTACHMENT
   T = TRAFFIC SIGNAL ATTACHMENT
6. FOR POLE LENGTH, AND POLE ATTACHMENT ALLOCATION SEE OCS WIRING LAYOUT PLANS.
7. LIGHTING POLE ATTACHMENT TYPE POLES SHALL HAVE ATTACHMENTS FOR LIGHTS SPECIFIED IN A SEPARATE CONTRACT. CONTRACTOR TO COORDINATE WITH THE OWNER TO OBTAIN LIGHT FIXTURE SPECIFICATIONS FOR POLE MANUFACTURING COORDINATION.
8. TRAFFIC SIGNAL ATTACHMENT DETAILS SHALL BE FOUND IN VOLUME 2: TRAFFIC SIGNAL PLANS.
9. LIGHTING POLES SHALL HAVE A KNOCK-OUT THROUGH THE POLE WALL TO TRAIN THE LIGHTING CABLES THROUGH THE INSIDE OF THE MOUNTING ARM.
10. CONTRACTOR SHALL COORDINATE WITH OWNER, THE INTEGRATION OF ALL NON-STANDARD POLE FEATURES INTO EACH SPECIFIC POLE LOCATION.
11. POLES SHALL BE ORIENTED WITH LIGHTING FIXTURES PARALLEL TO TRACK ALIGNMENT.
12. FEEDER POLE SPOUTS AND LIGHTING ATTACHMENTS SHALL NOT BE INSTALLED ON THE SAME POLES.

NO	DATE	REVISION	APPROVED
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
POLE ATTACHMENT ASSEMBLIES

J221

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1184

DN: URS CK: URS DN: URS CK: URS

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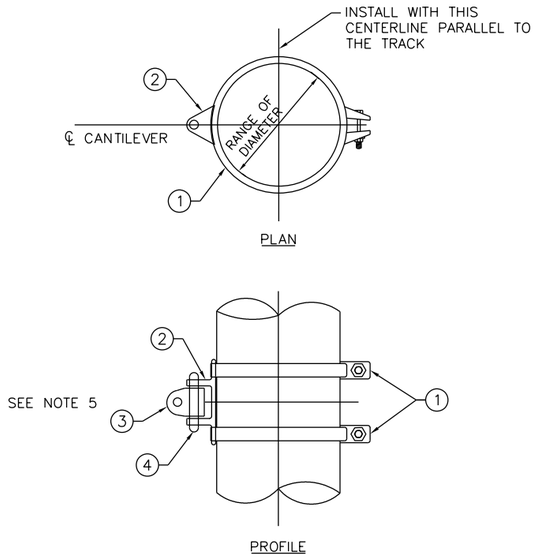
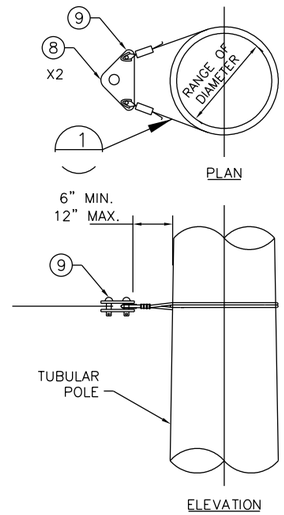


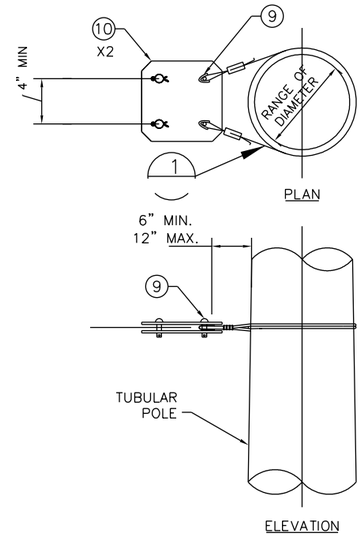
HINGE BRACKET ASSEMBLY FOR A SINGLE CANTILEVER/ SINGLE PULL-OFF

SCALE: NTS ASSEMBLY BT-01
NOTE: TWO HINGE BRACKET ASSEMBLIES PER BT-01 ASSEMBLY



POLE WRAP ASSEMBLY FOR CROSS-SPANS AND TERMINATIONS

SCALE: NTS ASSEMBLY BT-02

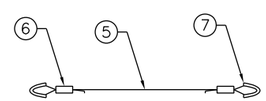


POLE WRAP ASSEMBLY FOR DOUBLE TERMINATIONS

SCALE: NTS ASSEMBLY BT-02A

NOTES:

1. THE BILL OF MATERIALS DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE IN SHOP DRAWINGS WITH DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
2. CONTRACTOR TO DETERMINE POLE SIZE AT ATTACHMENT HEIGHT, AND COORDINATE DESIGN OF POLE BRACKET PRIOR TO FABRICATION.
3. ALL DIMENSIONS AND BOLT SIZES SHALL BE DETERMINED BY CONTRACTOR BASED ON FURNISHED CATENARY COMPONENTS PRIOR TO FABRICATION.
4. BOLT THREAD PROJECTION THROUGH NUTS SHALL NOT EXCEED 2 INCHES IN LENGTH.
5. SWIVEL SHALL BE DESIGNED BY THE CONTRACTOR TO SUIT MATING CANTILEVER ASSEMBLY COMPONENTS.
6. NO POLE BRACKET ASSEMBLIES MAY BE MOUNTED WITHIN THE TOP 6" OF THE OCS POLE.



1 POLE SLING SUB-ASSEMBLY

SCALE: NTS

EQUATION FOR LENGTH OF POLE SLING:

L = (2 X PI X D) + D

WHERE D = POLE DIAMETER AT ATTACHMENT HEIGHT

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
POLE BAND CLAMP ASSY	1	TWO PER BT-01 ASSEMBLY
POLE CLEVIS	2	TWO PER BT-01 ASSEMBLY
SWIVEL	3	TWO PER BT-01 ASSEMBLY
SPIT PIN	4	TWO PER BT-01 ASSEMBLY
STAINLESS STEEL WIRE ROPE	5	
COMPRESSION SLEEVE	6	
THIMBLE	7	
PLATE, 3 PIN	8	
PIN, WITH SLIT PIN	9	
PLATE, 4 PIN	10	

NO	DATE	REVISION	APPROVED
	/ /		
	/ /		
	/ /		
	/ /		

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

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LTK Engineering Services
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URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
POLE BRACKET ASSEMBLIES
BT-01, BT-02 & BT-02A

J222

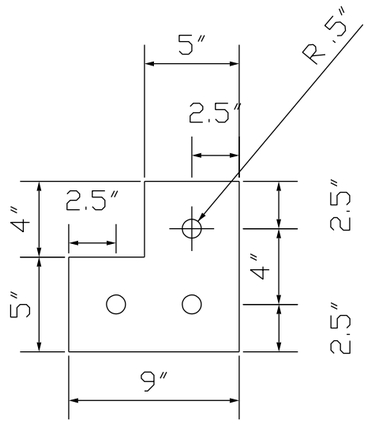
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1185

DATE: 6/4/2013 9:06:50 AM
FILE: X:\El Paso.2012\CADD\TYPICALS\Assemblies\J222 - Pole Band Assemblies.dgn

DN: URS CK: URS DW: URS CK: URS

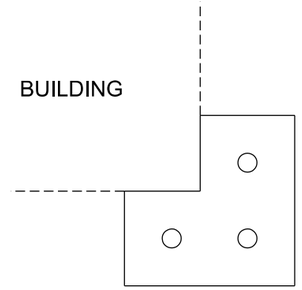
NOTES:

1. BRACKETS ARE INSTALLED HORIZONTALLY, AND ATTACHMENT HEIGHT IS WITH RESPECT TO THE TOP OF RAIL OF THE STREETCAR ALIGNMENT.
2. SEE OCS WIRING LAYOUT PLANS FOR THE ASSEMBLY REFERENCES TO BE ATTACHED TO THESE BRACKETS.



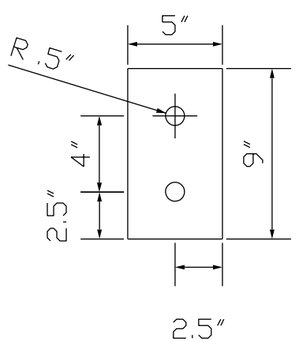
PLAN VIEW - STATION 36+06 - ATTACHMENT DETAILS

⅜" THICK PLATE STEEL
EXTERIOR TO BUILDING
ON CORNER OF GRID LINES WW AND 40



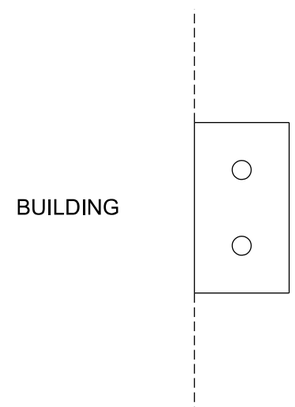
LOADING DIAGRAM

APPROXIMATE ATTACHMENT HEIGHT – 29.2'
ABOVE TOP OF RAIL



PLAN VIEW - STATION 35+67 - ATTACHMENT DETAILS

⅜" THICK PLATE STEEL
EXTERIOR TO BUILDING
IN LINE WITH BALLPARK GRID LINE 37



LOADING DIAGRAM

APPROXIMATE ATTACHMENT HEIGHT – 25.3'
ABOVE TOP OF RAIL

NO.	DATE	REVISION	APPROVED
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	/ /		
	/ /		
	/ /		

STATE OF TEXAS
LAMONT SMITH
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LICENSED PROFESSIONAL ENGINEER
6/3/15

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
BALLPARK ATTACHMENT

J222A

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1186

DN: URS CK: URS DW: URS CK: URS

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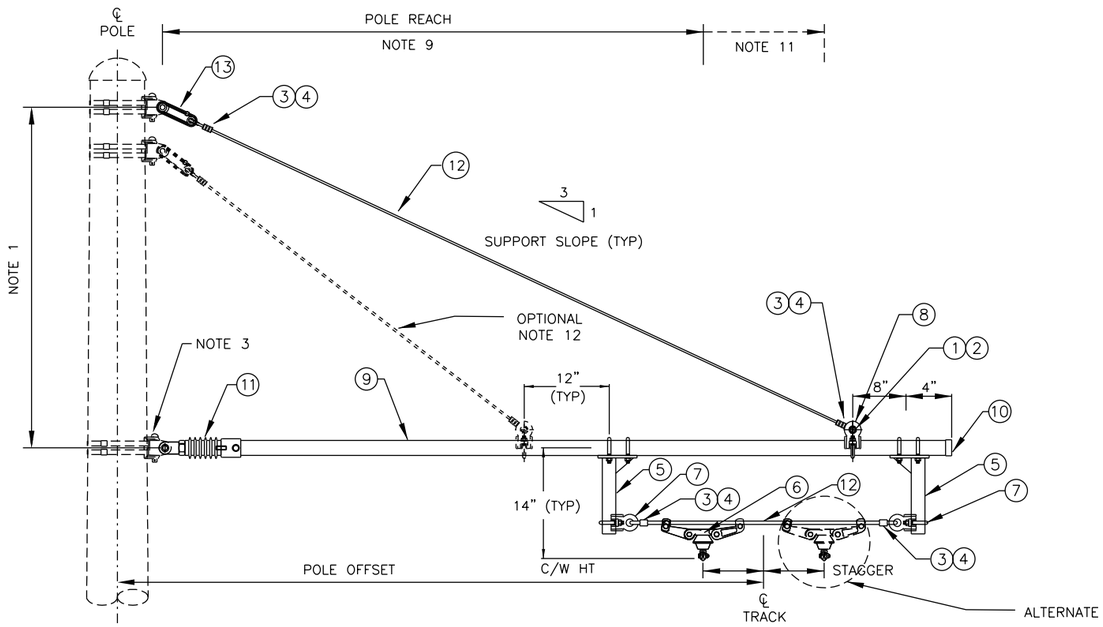

1 CANTILEVER DIRECT SUSPENSION – LIGHT RADIAL LOAD SCA-01L AND LONG REACH SCA-01LR

– RADIAL LOAD LESS THAN 500 LB

NOTES:

1. CANTILEVER BRACKET SEPARATION SHALL BE DETERMINED USING THE TYPICAL 1:3 SUPPORT SLOPE AS A BASIS. IN SOME LOCATIONS THE SLOPE MAY BE INCREASED TO AVOID CONFLICTS WITH OTHER HARDWARE MOUNTED ON THE POLES.
2. REFER TO OCS WIRING LAYOUTS FOR CONTACT WIRE HEIGHT AND STAGGER DIMENSIONS.
3. CANTILEVER SWIVEL AND CLEVIS IS ALLOCATED WITH THE BRACKET ASSEMBLIES, TO BE CALLED OFF SEPARATELY.
4. FOR ABBREVIATIONS AND GENERAL NOTES SEE TECHNICAL SHEET ABBREVIATIONS AND GENERAL NOTES.
5. THE BILL OF MATERIAL DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE WITH THE DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
6. CONTRACTOR TO DETERMINE POLE BRACKET AND ATTACHMENT HEIGHTS.
7. THE CONTRACTOR SHALL FIELD VERIFY POLE FACE SETOUT DIMENSION PRIOR TO FABRICATION OF CANTILEVER PIPES AND WIRE.
8. CONTRACTOR TO ENSURE THAT THE CANTILEVER ARM DESIGN ALLOWS FOR THE PANTOGRAPH CLEARANCE ENVELOPE.
9. POLE REACH IS CENTERLINE HINGE TO CENTERLINE CONTACT WIRE. MAXIMUM REACH OF SCA-01L SHALL BE 18'-0". MAXIMUM REACH OF SCA-01LR SHALL BE 28'-0".
10. STAINLESS STEEL WIRE MAY BE REPLACED BY A SMALL DIAMETER PIPE FOR STRUT SUPPORT AT CONTRACTOR/OCS SUPPLIER DISCRETION.
11. ASSEMBLY CAN ACCOMMODATE STAGGERS AWAY FROM OR TOWARDS POLE WITH RESPECT TO THE CENTERLINE OF TRACK. TOWARDS POLE STAGGER DEPICTED.
12. SUPPLIER TO DETERMINE IF OPTIONAL SUPPORT TO BE USED TO LIMIT DEFLECTION IN THE CANTILEVER PIPE ON SCA-01LR LONG REACH CANTILEVERS

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
PIN WITH ROUND HEAD	1	
SPLIT PIN	2	
THIMBLE	3	
OVAL SLEEVE	4	
DROP BRACKET INCL. U-BOLT, NUTS & WASHERS	5	
LINE HANGER WITH CONTACT WIRE CLAMP	6	
EYE CLAMP WITH U-BOLTS, NUTS & WASHERS	7	
CLEVIS CLAMP WITH U-BOLTS, NUTS & WASHERS	8	
PIPE GALVANIZED	9	
SYNTHETIC CAP PVC SOFT BLACK	10	
REGISTRATION INSULATOR	11	
STAINLESS STEEL WIRE	12	NOTE 10
LOOP INSULATOR	13	

NO	DATE	REVISION	APPROVED
-	08/07/15	CONFORMED SET	-
1	05/27/16	FATHER RAHM REDESIGN	-

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
5/27/16

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR
OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENE DRAWING
CANTILEVER ASSEMBLIES
LIGHT RADIAL LOAD SCA-01L
AND SCA-01LR

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J223

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1187

DATE: 6/16/2016 11:04:20 AM
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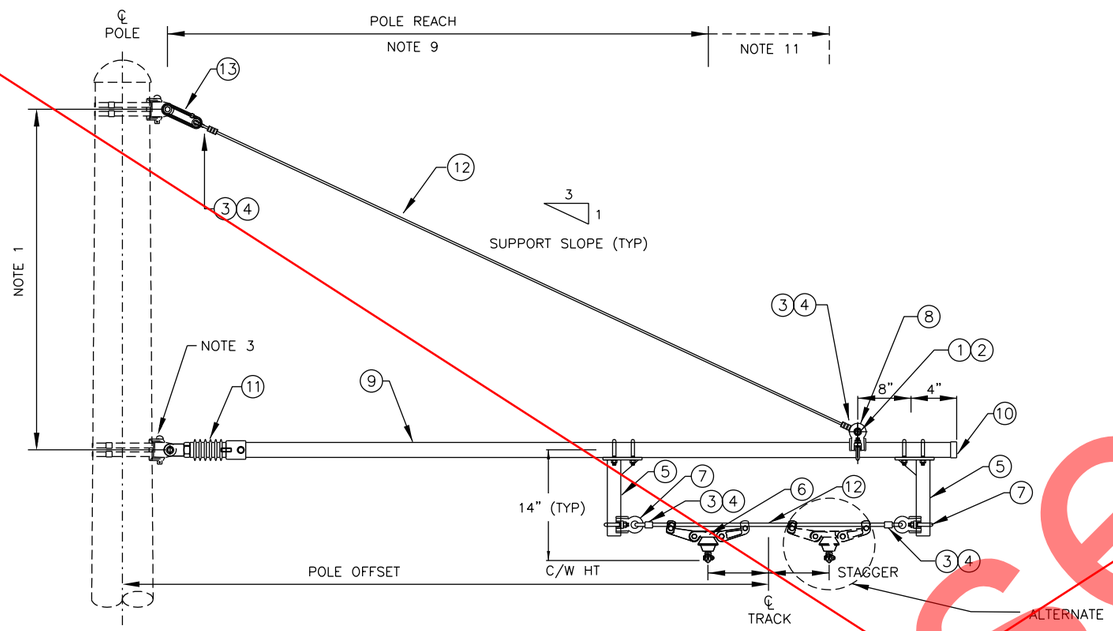

1 CANTILEVER DIRECT SUSPENSION – LIGHT RADIAL LOAD SCA-01L

RADIAL LOAD LESS THAN 500 LB

NOTES:

1. CANTILEVER BRACKET SEPARATION SHALL BE DETERMINED USING THE TYPICAL 1:3 SUPPORT SLOPE AS A BASIS. IN SOME LOCATIONS THE SLOPE MAY BE INCREASED TO AVOID CONFLICTS WITH OTHER HARDWARE MOUNTED ON THE POLES.
2. REFER TO OCS WIRING LAYOUTS FOR CONTACT WIRE HEIGHT AND STAGGER DIMENSIONS.
3. CANTILEVER SWIVEL AND CLEVIS IS ALLOCATED WITH THE BRACKET ASSEMBLIES, TO BE CALLED OFF SEPARATELY.
4. FOR ABBREVIATIONS AND GENERAL NOTES SEE TECHNICAL SHEET ABBREVIATIONS AND GENERAL NOTES.
5. THE BILL OF MATERIAL DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE WITH THE DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
6. CONTRACTOR TO DETERMINE POLE BRACKET AND ATTACHMENT HEIGHTS.
7. THE CONTRACTOR SHALL FIELD VERIFY POLE FACE SETOUT DIMENSION PRIOR TO FABRICATION OF CANTILEVER PIPES AND WIRE.
8. CONTRACTOR TO ENSURE THAT THE CANTILEVER ARM DESIGN ALLOWS FOR THE PANTOGRAPH CLEARANCE ENVELOPE.
9. POLE REACH IS CENTERLINE HINGE TO CENTERLINE CONTACT WIRE. MAXIMUM REACH OF CA-01L SHALL BE 18'-0".
10. STAINLESS STEEL WIRE MAY BE REPLACED BY A SMALL DIAMETER PIPE FOR STRUT SUPPORT AT CONTRACTOR/OCS SUPPLIER DISCRETION.
11. SCA-01L ASSEMBLY CAN ACCOMMODATE STAGGERS AWAY FROM OR TOWARDS POLE WITH RESPECT TO THE CENTERLINE OF TRACK. TOWARDS POLE STAGGER DEPICTED.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
PIN WITH ROUND HEAD	1	
SPLIT PIN	2	
THIMBLE	3	
OVAL SLEEVE	4	
DROP BRACKET INCL. U-BOLT, NUTS & WASHERS	5	
LINE HANGER WITH CONTACT WIRE CLAMP	6	
EYE CLAMP WITH U-BOLTS, NUTS & WASHERS	7	
CLEVIS CLAMP WITH U-BOLTS, NUTS & WASHERS	8	
PIPE GALVANIZED	9	
SYNTHETIC CAP PVC SOFT BLACK	10	
REGISTRATION INSULATOR	11	
STAINLESS STEEL WIRE	12	NOTE 10
LOOP INSULATOR	13	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED REGISTERED PROFESSIONAL ENGINEER
6/7/13

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TBPE REGISTRATION NO. F-1389

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2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENE DRAWING
CANTILEVER ASSEMBLIES
LIGHT RADIAL LOAD SCA-01L

J223

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1187

DATE: 6/4/2013 9:07:22 AM
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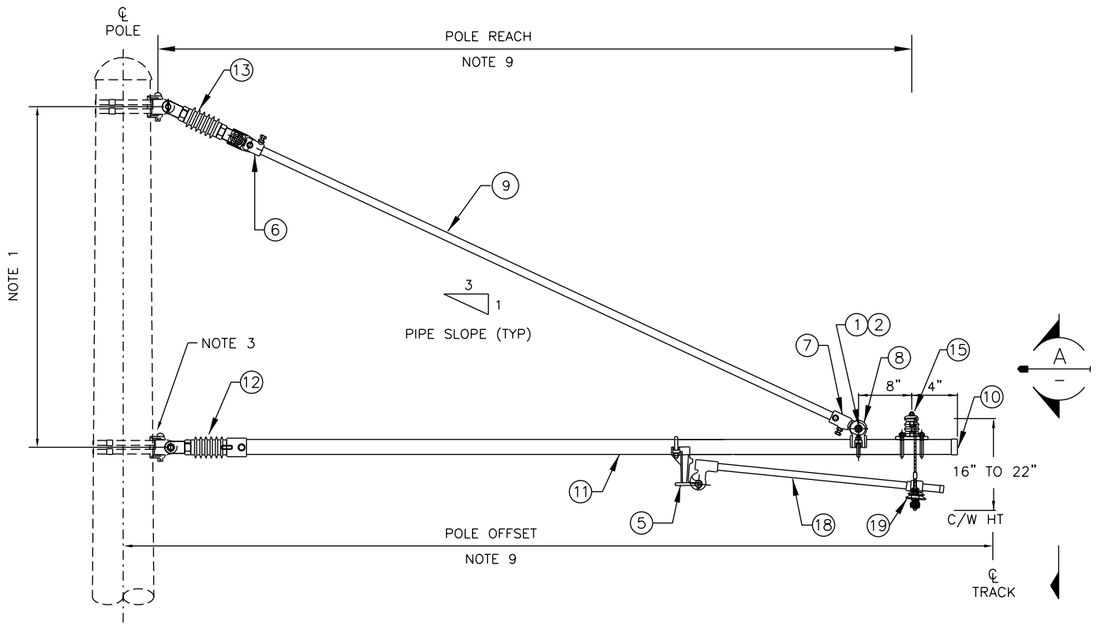
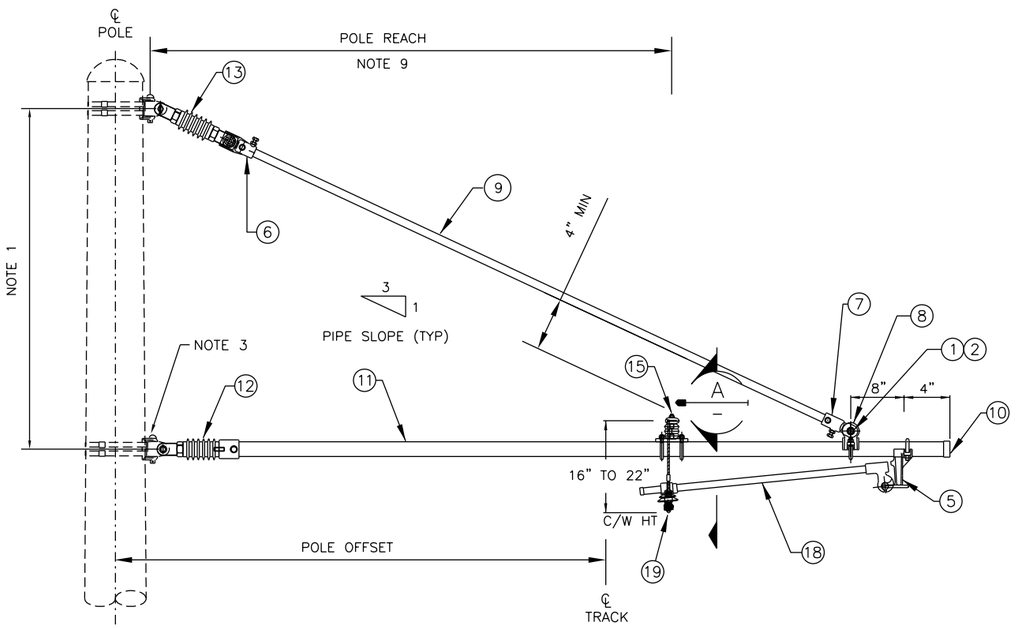
Superseded



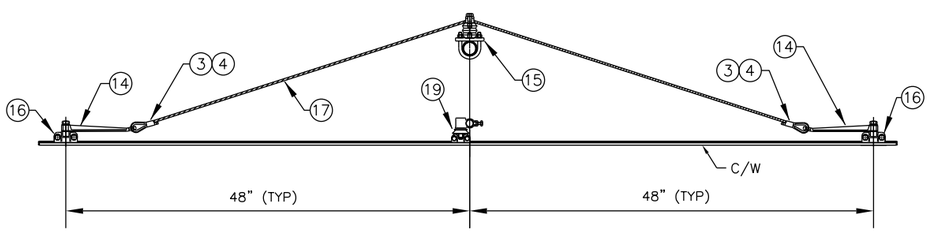
CANTILEVER PULL OFF - MEDIUM LOAD SCA-01M

RADIAL LOAD LESS THAN 850 LB
MAXIMUM CONTACT WIRE DEVIATION ANGLE 7 DEGREES



CANTILEVER PUSH OFF - MEDIUM RADIAL LOAD SCA-02M

RADIAL LOAD LESS THAN 850 LB
MAXIMUM CW DEVIATION ANGLE 7 DEGREES PER STEADY ARM



A SECTION

NOTES:

1. CANTILEVER BRACKET SEPARATION SHALL BE DETERMINED USING THE TYPICAL 1:3 PIPE SLOPE AS A BASIS. IN SOME LOCATIONS THE SLOPE MAY BE INCREASED TO AVOID CONFLICTS WITH OTHER HARDWARE MOUNTED ON THE POLES.
2. REFER TO OCS WIRING LAYOUTS FOR CONTACT WIRE HEIGHT AND STAGGER DIMENSIONS.
3. CANTILEVER SWIVEL AND CLEVIS IS ALLOCATED WITH THE BRACKET ASSEMBLIES, TO BE CALLED OFF SEPARATELY.
4. FOR ABBREVIATIONS AND GENERAL NOTES SEE TECHNICAL SHEET ABBREVIATIONS AND GENERAL NOTES.
5. THE BILL OF MATERIAL DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE IN SHOP DRAWINGS WITH THE DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
6. CONTRACTOR TO DETERMINE POLE BRACKET AND ATTACHMENT HEIGHTS.
7. THE CONTRACTOR SHALL FIELD VERIFY POLE OFFSET DIMENSION PRIOR TO FABRICATION OF CANTILEVER PIPES AND WIRE.
8. CONTRACTOR TO ENSURE THAT THE CANTILEVER ARM DESIGN ALLOWS FOR THE PANTOGRAPH CLEARANCE ENVELOPE.
9. POLE REACH IS CENTERLINE HINGE TO CENTERLINE CONTACT WIRE.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
PIN WITH ROUND HEAD	1	
SPLIT PIN	2	
THIMBLE	3	
OVAL SLEEVE	4	
DROP BRACKET INCL. U-BOLT, NUTS & WASHERS	5	
SPADE END FITTING	6	
CLEVIS END FITTING	7	
EYE CLAMP WITH U-BOLTS, NUTS & WASHERS	8	
PIPE GALVANIZED	9	
SYNTHETIC CAP PVC SOFT BLACK	10	
PIPE GALVANIZED	11	
REGISTRATION INSULATOR	12	
SUPPORT TUBE INSULATOR	13	
PULL OFF ARM - FOR BRIDLE & PULLEY SUSPENSION	14	
BRIDLE SUPPORT INSULATOR	15	
BRIDLE CLAMP	16	
STAINLESS STEEL WIRE	17	
STEADY ARM W/ OFFSET HOOK END FITTING	18	
CONTACT WIRE SWIVEL CLAMP AND STEADY ARM INSULATOR	19	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
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LICENSED PROFESSIONAL ENGINEER
6/7/13

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(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
CANTILEVER ASSEMBLIES
MEDIUM RADIAL LOAD SCA-01M/02M

J224

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1188

DATE: 6/4/2013 9:08:06 AM
FILE: X:\El Paso.2012\CADD\TYPICALS\Assemblies\J224 - Medium Pushoff and Pulloff Cantilever.dgn

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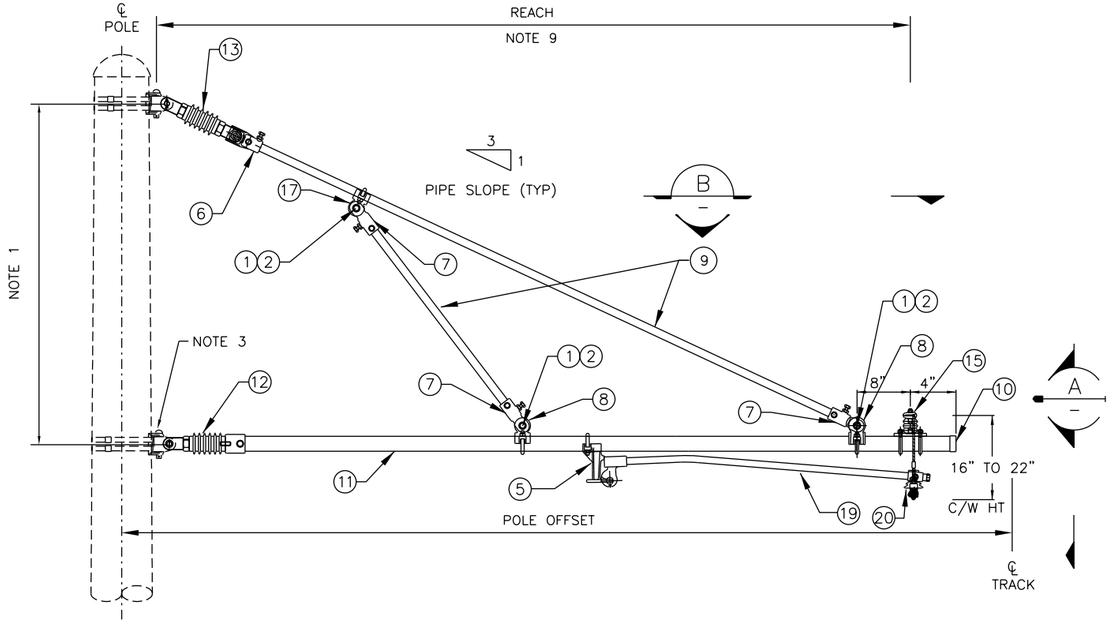
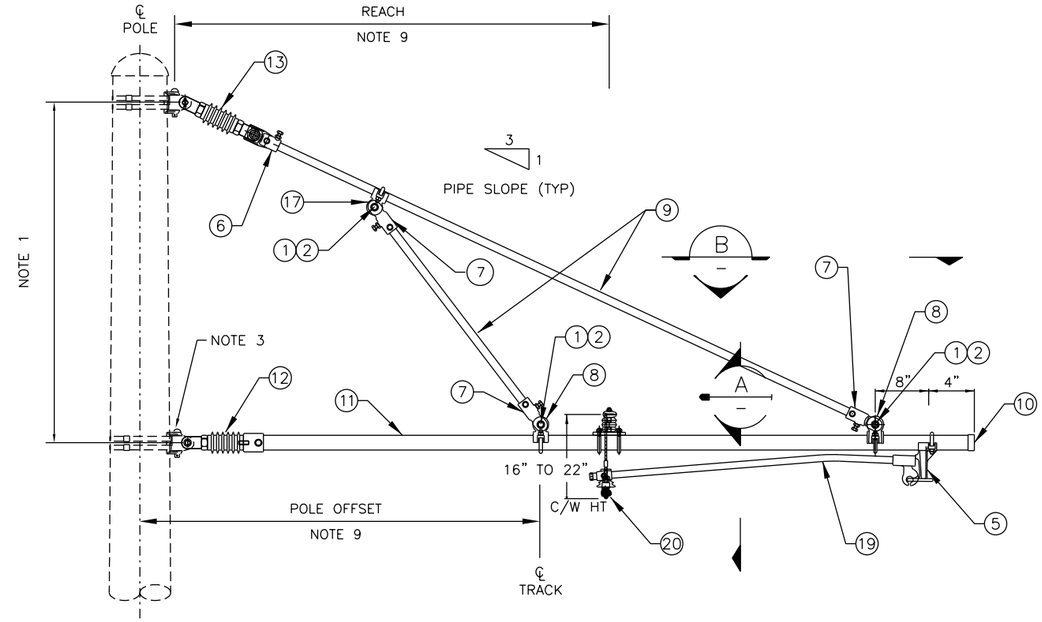


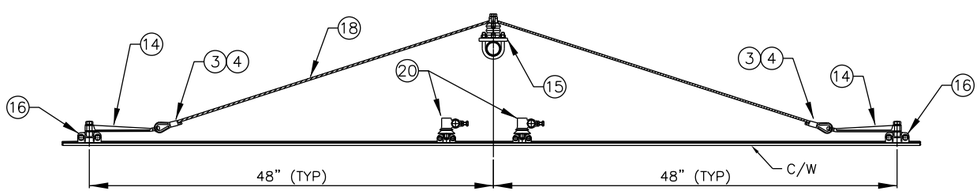
CANTILEVER PULL OFF - HEAVY LOAD SCA-01H

RADIAL LOAD 850 TO 1700 LB.
MAXIMUM CONTACT WIRE DEVIATION IS 7 DEGREES PER STEDY ARM

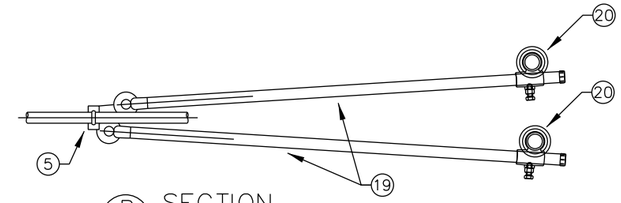


CANTILEVER PUSH OFF - HEAVY LOAD SCA-02H

RADIAL LOAD 850 TO 1700 LB.
MAXIMUM CONTACT WIRE DEVIATION IS 7 DEGREES PER STEDY ARM



A SECTION



B SECTION

NOTES:

1. CANTILEVER BRACKET SEPARATION SHALL BE DETERMINED USING THE TYPICAL 1:3 PIPE SLOPE AS A BASIS. IN SOME LOCATIONS SLOPE MAY BE INCREASED TO AVOID CONFLICTS WITH OTHER HARDWARE MOUNTED ON THE POLES.
2. REFER TO OCS WIRING LAYOUT PLANS FOR CONTACT WIRE HEIGHT AND STAGGER DIMENSIONS.
3. CANTILEVER SWIVEL AND CLEVIS IS ALLOCATED WITH THE BRACKET ASSEMBLIES, TO BE CALLED OFF SEPARATELY.
4. FOR ABBREVIATIONS AND GENERAL NOTES SEE TECHNICAL SHEET ABBREVIATIONS AND GENERAL NOTES.
5. THE BILL OF MATERIAL DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE IN SHOP DRAWINGS WITH THE DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
6. CONTRACTOR TO DETERMINE POLE BRACKET AND ATTACHMENT HEIGHTS.
7. THE CONTRACTOR SHALL FIELD VERIFY POLE OFFSET DIMENSION PRIOR TO FABRICATION OF CANTILEVER PIPES AND WIRE.
8. CONTRACTOR TO ENSURE THAT THE CANTILEVER ARM DESIGN ALLOWS FOR THE PANTOGRAPH CLEARANCE ENVELOPE.
9. POLE REACH IS FROM CENTERLINE OF HINGE TO CENTERLINE OF CONTACT WIRE.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
PIN WITH ROUND HEAD	1	
SPLIT PIN	2	
THIMBLE	3	
OVAL SLEEVE	4	
DOUBLE DROP BRACKET	5	
SPACE END FITTING	6	
CLEVIS END FITTING	7	
EYE CLAMP WITH U-BOLTS, NUTS & WASHERS	8	
PIPE GALVANIZED	9	
SYNTHETIC CAP PVC SOFT BLACK	10	
PIPE GALVANIZED	11	
REGISTRATION INSULATOR	12	
SUPPORT INSULATOR	13	
PULL OFF ARM - FOR BRIDLE & PULLEY SUSPENSION	14	
BRIDLE SUPPORT INSULATOR	15	
BRIDLE CLAMP	16	
EYE CLAMP WITH U-BOLTS, NUTS & WASHERS	17	
STAINLESS STEEL WIRE	18	
STEADY ARM W/ OFFSET HOOK END FITTING	19	
CONTACT WIRE SWIVEL CLAMP AND INSULATOR	20	

NO	DATE	REVISION	APPROVED
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	/ /		
	/ /		

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
CANTILEVER ASSEMBLIES
HEAVY RADIAL LOAD SCA-01H/02H

J225

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1189

DATE: 6/4/2013 9:08:46 AM
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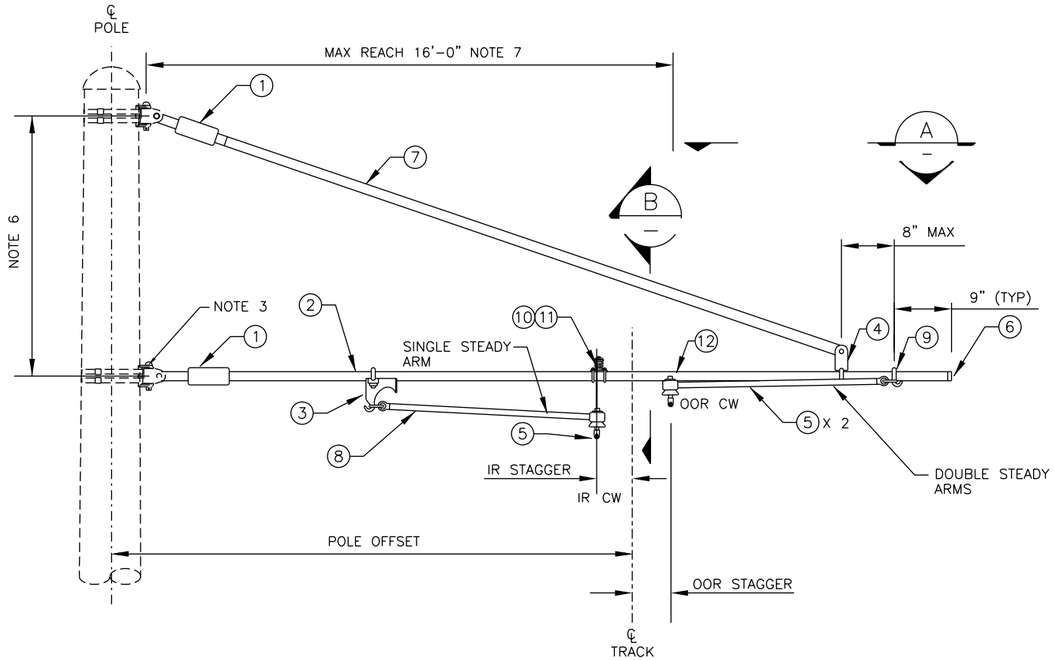
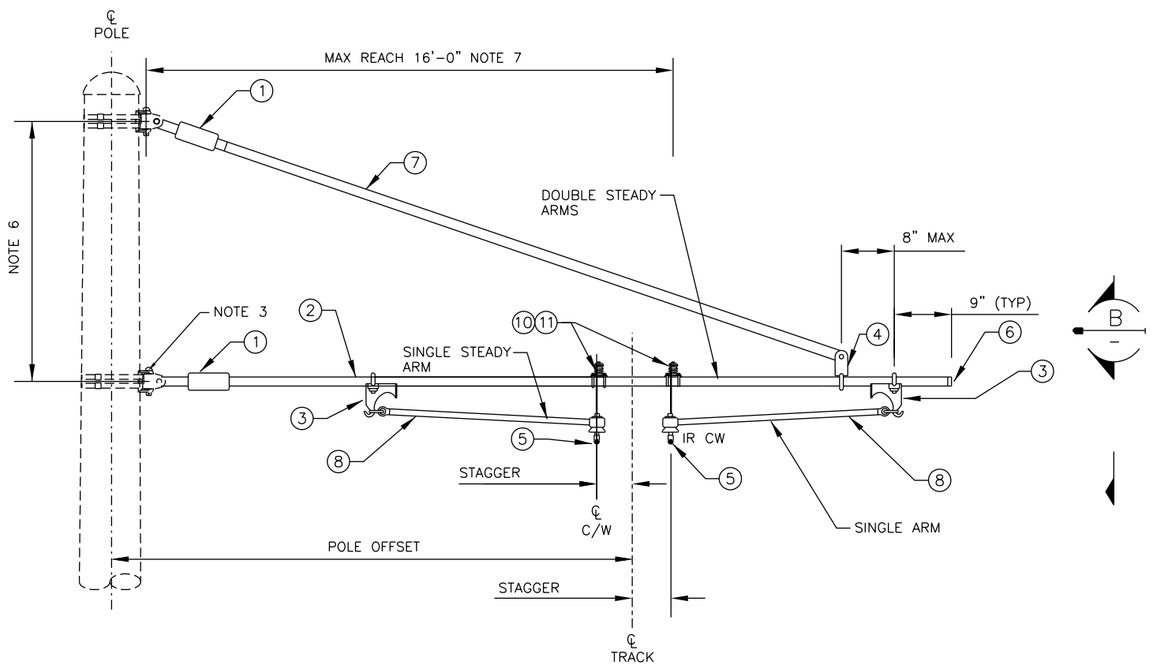


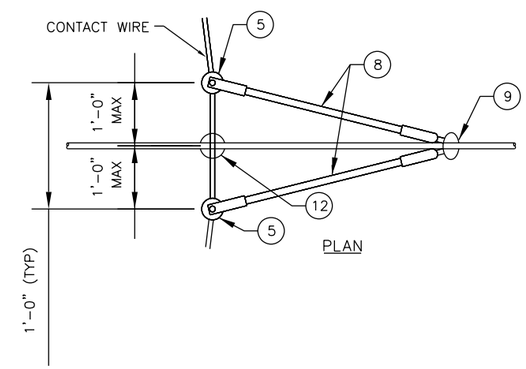
TWO CONTACT WIRE CANTILEVER ASSEMBLY SCA-04HA/04HB

HEAVY LOAD OVERLAP CANTILEVER MAXIMUM RADIAL LOAD 1700LB, DOUBLE OOR STEADY ARMS
SCA-04HA SHALL HAVE CONTACT WIRE FURTHER FROM POLE
SCA-04HB SHALL HAVE CONTACT WIRE NEAR POLE (SEE DETAIL 1)



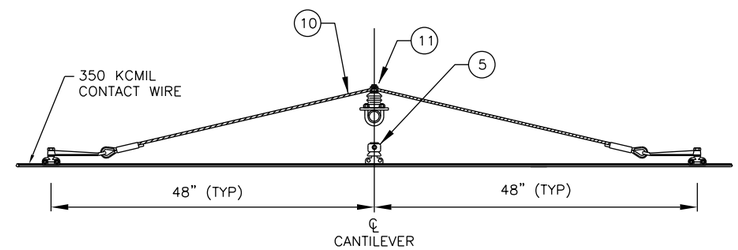
TWO CONTACT WIRE CANTILEVER ASSEMBLY SCA-04HC

LIGHT LOAD CROSSOVER CANTILEVER MAXIMUM RADIAL LOAD 850LB
MAXIMUM C/W DEVIATION IS 7° PER STEADY ARM



A SECTION – OOR DOUBLE STEADY ARMS

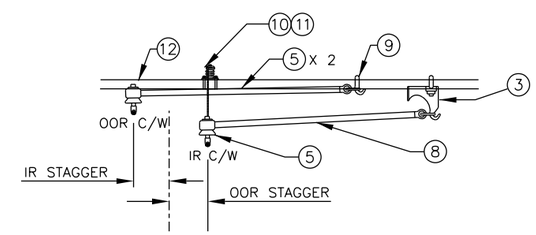
SCALE: NTS
MAXIMUM CW DEVIATION IS 7° PER STEADY ARM



ELEVATION

B SECTION – BRIDLE/ SUPPORT

SCALE: NTS



1 DETAIL – SCA-04HB REGISTRATION

SCALE: NTS
MAXIMUM CW DEVIATION IS 7° PER STEADY ARM

NOTES:

1. CANTILEVER BRACKET SEPARATION SHALL BE DETERMINED USING THE TYPICAL 1:3 PIPE SLOPE AS A BASIS. IN SOME LOCATIONS SLOPE MAY BE INCREASED TO AVOID CONFLICTS WITH OTHER HARDWARE MOUNTED ON THE POLES.
2. REFER TO OCS WIRING LAYOUT PLANS FOR CONTACT WIRE HEIGHT AND STAGGER DIMENSIONS.
3. CANTILEVER SWIVEL AND CLEVIS IS ALLOCATED WITH THE BRACKET ASSEMBLIES.
4. FOR ABBREVIATIONS AND GENERAL NOTES SEE TECHNICAL SHEET ABBREVIATIONS AND GENERAL NOTES.
5. THE BILL OF MATERIAL DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE IN SHOP DRAWINGS WITH THE DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
6. CONTRACTOR TO DETERMINE POLE BRACKET AND ATTACHMENT HEIGHTS.
7. POLE REACH IS FROM CENTERLINE OF HINGE TO CENTERLINE OF FURTHER CONTACT WIRE.
8. CONTRACTOR TO ENSURE THAT THE CANTILEVER ARM DESIGN ALLOWS FOR THE PANTOGRAPH CLEARANCE ENVELOPE.
9. FOR CONTACT WIRE RADIAL LOADS GREATER THAN 850 LB, DOUBLE STEADY ARMS SHALL BE USED, SEE DETAIL A.
10. TOP TIE WIRE OR PIPE AT CONTRACTOR OPTION.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
INSULATOR WITH EYE	1	
PIPE ASSEMBLY	2	
DROP BRACKET	3	
CLEVIS END FITTING	4	
C/W SWIVEL CLAMP & INSULATION	5	
SYNTHETIC CAP PVC SOFT BLACK	6	
TOP TIE/ PIPE ASSEMBLY	7	NOTE 10
STEADY ARM	8	
DOUBLE EYE CLAMP	9	
STAINLESS STEEL WIRE	10	
BRIDLE SUPPORT INSULATOR	11	
UNDER HUNG MESSENGER SUPPORT	12	

NO	DATE	REVISION	APPROVED
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	/ /		
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STATE OF TEXAS
LAMONT SMITH
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6/7/13

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

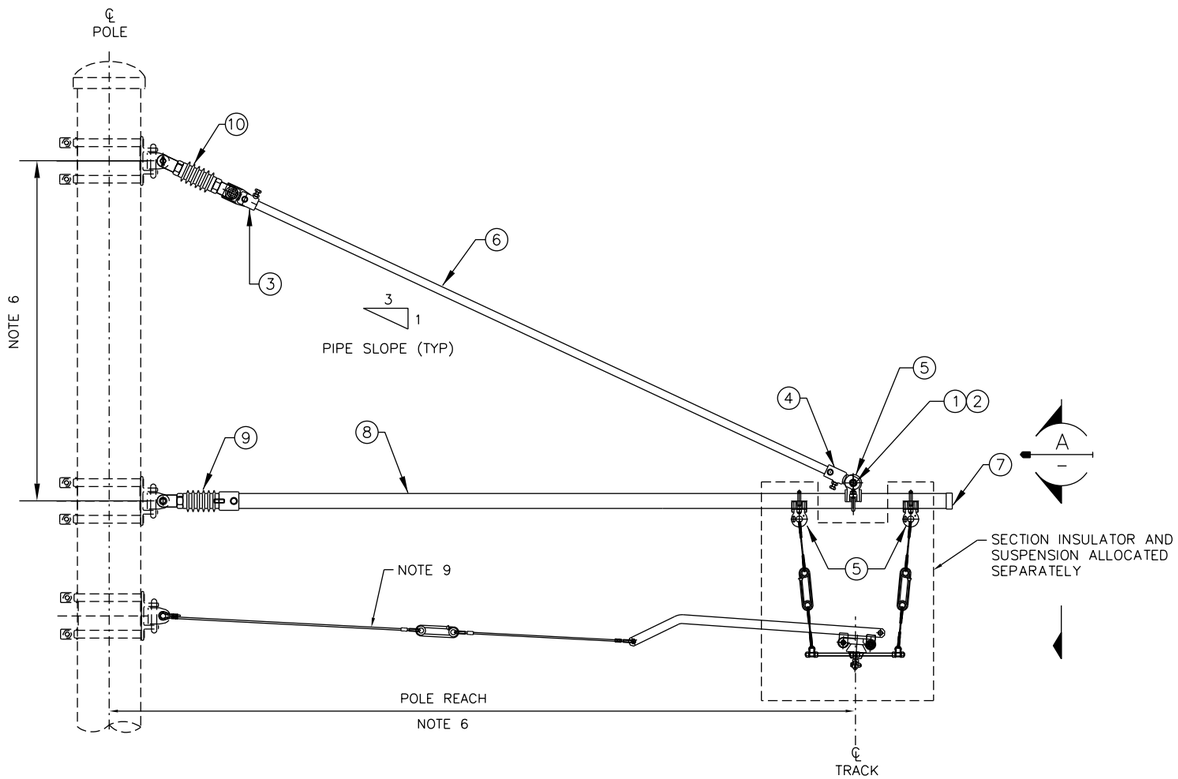
OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
CANTILEVER ASSEMBLIES
TWO C/W SCA-04HA/04HB/04HC

J226

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1190

DATE: 6/4/2013 9:09:14 AM
FILE: X:\El Paso, 2012\CADD\TYPICALS\Assemblies\J226 - Two Wire Overlap Cantilever.dgn

DN: URS CK: URS DW: URS CK: URS



1 SECTION INSULATOR SUPPORT CANTILEVER ASSEMBLY SCA-05

RADIAL LOAD SEE NOTE 10
NOTE 10

NOTES:

1. CANTILEVER BRACKET SEPARATION SHALL BE DETERMINED USING A TYPICAL 1:3 PIPE SLOPE AS A BASIS. IN SOME LOCATIONS SLOPE MAY BE INCREASED TO AVOID CONFLICTS WITH OTHER HARDWARE MOUNTED ON THE POLES.
2. REFER TO OCS WIRING LAYOUT PLANS FOR CONTACT WIRE HEIGHT, STAGGER DIMENSIONS.
3. FOR ABBREVIATIONS AND GENERAL NOTES SEE TECHNICAL SHEET ABBREVIATIONS AND GENERAL NOTES.
4. THE BILL OF MATERIAL DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE WITH THE DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
5. CONTRACTOR TO DETERMINE POLE BRACKET AND ATTACHMENT HEIGHTS.
6. THE CONTRACTOR SHALL FIELD VERIFY POLE FACE SETOUT DIMENSION PRIOR TO FABRICATION OF CANTILEVER PIPES AND WIRE.
7. CONTRACTOR TO ENSURE THAT THE CANTILEVER ARM DESIGN ALLOWS FOR THE PANTOGRAPH CLEARANCE ENVELOPE.
8. REACH SHALL BE FROM CENTER OF POLE TO CENTER OF MAINLINE TRACK. MAXIMUM REACH OF CA-05 SHALL BE 15'-0".
9. PULL-OFF ASSEMBLIES ARE REQUIRED IF RADIAL LOADS ARE PRESENT AND ACTING ON THE SECTION INSULATOR AND SHALL BE ALLOCATED SEPARATELY.
10. FOR DISCONNECT SWITCH DETAILS SEE ASSEMBLY DRAWING DISCONNECT SWITCHES. SEE TYPICAL STRUCTURE DRAWING DISCONNECT SWITCHES FOR FEEDER CABLE ROUTING AND CONNECTION DETAILS.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
PIN WITH ROUND HEAD	1	
SPLIT PIN	2	
SPADE END FITTING	3	
CLEVIS END FITTING	4	
EYE CLAMP WITH U-BOLTS, NUTS & WASHERS	5	
PIPE GALVANIZED	6	
SYNTHETIC CAP PVC SOFT BLACK	7	
PIPE GALVANIZED	8	
REGISTRATION INSULATION	9	
INSULATION	10	

NO	DATE	REVISION	APPROVED
	/ /		
	/ /		
	/ /		
	/ /		

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
CANTILEVER ASSEMBLIES
SI SUPPORTING SCA-05

J227

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1191

DATE: 6/4/2013 9:09:46 AM
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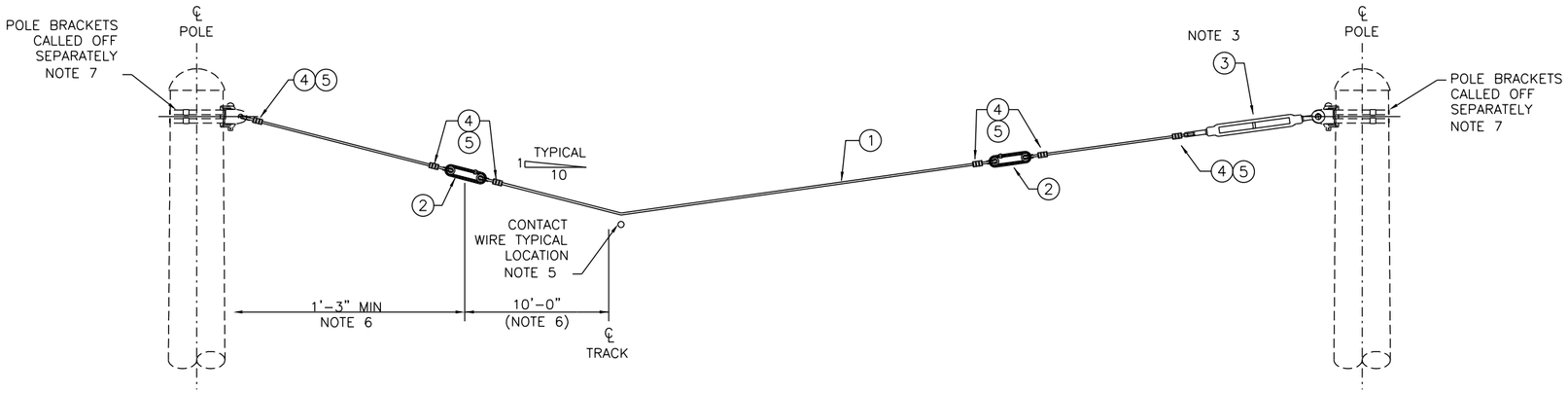
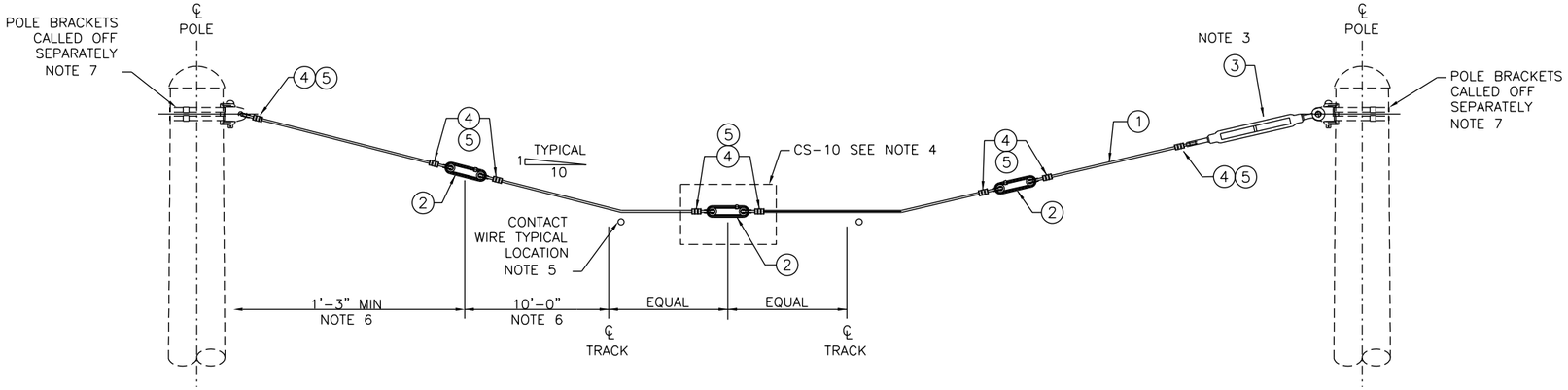
DN: URS CK: URS DW: URS CK: URS



CROSS SPAN ASSEMBLY

ASSEMBLY TYPE CS-01 FOR ONE TRACK



CROSS SPAN ASSEMBLY

ASSEMBLY TYPE CS-02 FOR TWO TRACK
WITH OPTIONAL INTERTRACK INSULATION

NOTES:

1. THE BILL OF MATERIALS DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTORS SHOP DRAWINGS SHALL ITEMIZE THE TABLE WITH DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
2. REFER TO OCS WIRING LAYOUT PLANS FOR CONTACT WIRE HEIGHTS AND STAGGERS.
3. LOCATE TURNBUCKLE ON THE SLACK SIDE OF THE SPAN WIRES THIS IS TYPICALLY INSIDE OF CURVES.
4. INTERTRACK INSULATION ASSEMBLIES ARE REQUIRED TO BE INSTALLED BETWEEN TRACKS WHERE CONTACT WIRES ARE FED ELECTRICALLY THROUGH DIFFERENT SWITCHES, OR HAVE UNINSULATED WIRE SUPPORT ASSEMBLIES. SEE SECTIONALIZING DIAGRAMS AND OCS WIRING LAYOUT PLANS.
5. THE CONTACT WIRE SHALL BE ATTACHED TO THESE SPAN WIRES USING INSULATED CONTACT WIRE SUPPORT AND REGISTRATION ASSEMBLIES, TO BE CALLED OFF SEPARATELY.
6. SECOND LEVEL INSULATION TO BE LOCATED 10 FT FROM TRACK CENTERLINE EXCEPT IN CASES WHEN THE POLE FACE IS LESS THAN 11'-3" FROM TRACK CENTERLINE, A MINIMUM OF 1'-3" FROM FACE OF POLE IS REQUIRED.
7. CONTRACTOR TO DETERMINE POLE BRACKET AND ATTACHMENT HEIGHT.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
STAINLESS STEEL WIRE	1	LENGTH AS REQ'D
INSULATOR, STRAIN TYPE	2	
TURNBUCKLE	3	SEE NOTE 3
COMPRESSION CONNECTOR	4	
THIMBLE	5	

NO	DATE	REVISION	APPROVED
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	/ /		
	/ /		

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OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
CROSS-SPAN ASSEMBLIES
CS-01 & CS-02

J228

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1192

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 9:10:29 AM
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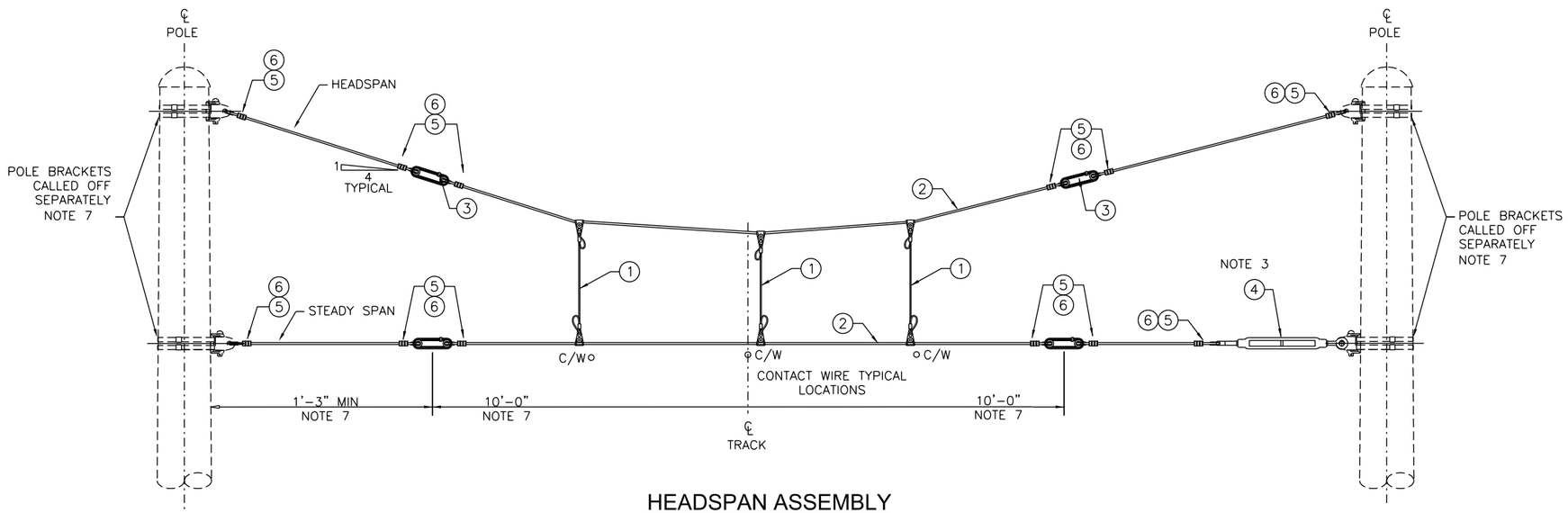

HEADSPAN ASSEMBLY

ASSEMBLY HS-03 SHOWN

NOTES:

1. THE BILL OF MATERIALS DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE IN SHOP DRAWINGS WITH DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
2. REFER TO OCS WIRING LAYOUT PLANS FOR CONTACT WIRE HEIGHTS AND STAGGER.
3. LOCATE TURNBUCKLE ON THE SLACK SIDE OF THE SPAN WIRES THIS IS TYPICALLY INSIDE OF CURVES.
4. TYPICALLY LOCATE A SPAN WIRE HANGER ABOVE OR NEAR EACH ATTACHED CONTACT WIRE SUPPORT.
5. THE CONTACT WIRE SHALL BE ATTACHED TO THESE SPAN WIRES USING INSULATED CONTACT WIRE SUPPORT AND REGISTRATION ASSEMBLIES, TO BE CALLED OFF SEPARATELY.
6. SECOND LEVEL INSULATION TO BE LOCATED 10 FT FROM TRACK CENTERLINE EXCEPT IN CASES WHEN THE POLE FACE IS LESS THAN 11'-3" FROM TRACK CENTERLINE, A MINIMUM OF 1'-3" FROM FACE OF POLE IS REQUIRED.
7. CONTRACTOR TO DETERMINE POLE BRACKET AND ATTACHMENT HEIGHT.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
HANGER ASSEMBLY	1	
STAINLESS STEEL WIRE	2	LENGTH AS REQ'D
INSULATOR, STRAIN TYPE	3	
TURNBUCKLE	4	SEE NOTE 3
COMPRESSION CONNECTOR	5	
THIMBLE	6	

NO.	DATE	REVISION	APPROVED
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
HEADSPAN ASSEMBLIES
HS-03

J229

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1193

DATE: 6/4/2013 9:11:00 AM
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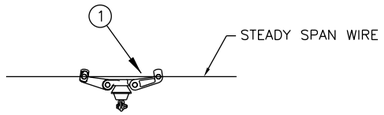
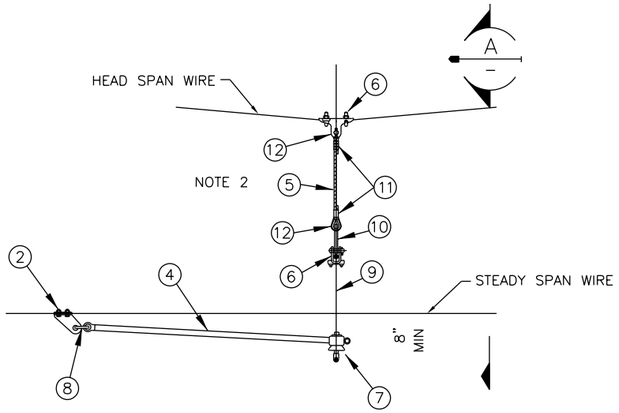


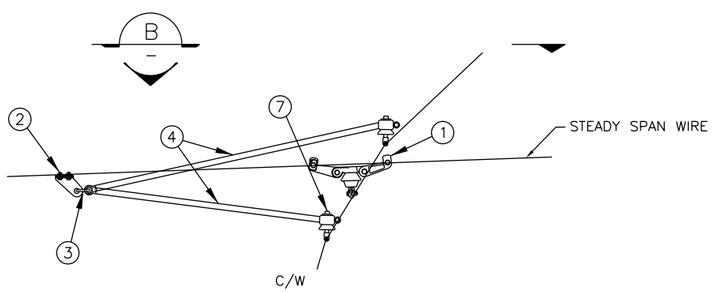
LIGHT LOAD SUPPORT & REGISTRATION-F/T SINGLE CONTACT WIRE

ASSEMBLY HR-1L
UP TO 200LB RADIAL LOAD
NOTE 3



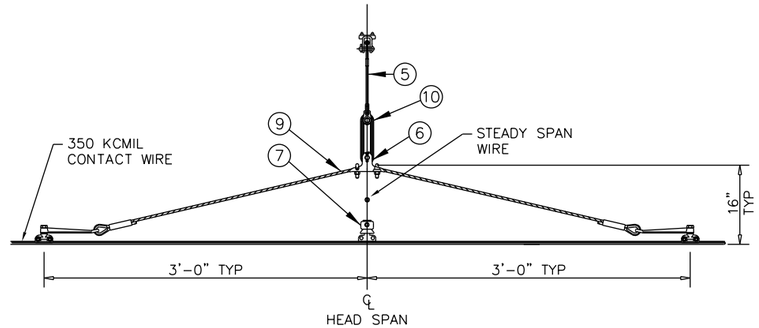
MEDIUM LOAD SUPPORT & REGISTRATION-SINGLE CONTACT WIRE

ASSEMBLY HR-1M
UP TO 850LB RADIAL LOAD
NOTE 6

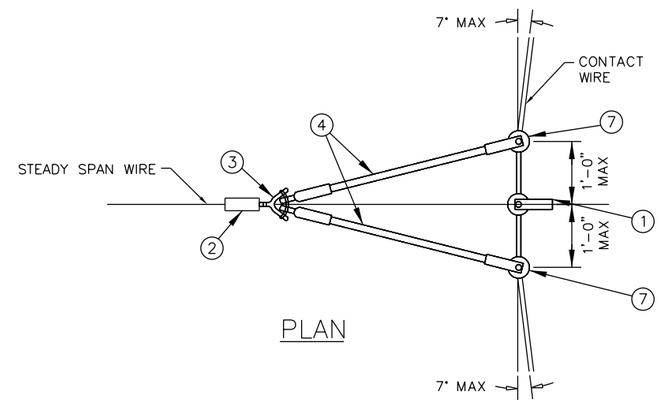


HEAVY LOAD SUPPORT & REGISTRATION-SINGLE CONTACT WIRE

ASSEMBLY HR-1H
UP TO 1700LB RADIAL LOAD
NOTE 6



A SECTION
SCALE: NTS (SHOWN WITH STEADY ARM OMITTED FOR CLARITY)

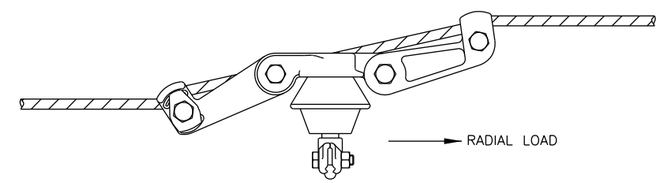


PLAN

B SECTION
SCALE: NTS
NOTE 6

NOTES:

1. THE BILL OF MATERIALS DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE WITH DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
2. HANGER SUB-ASSEMBLIES SHALL BE FIELD ADJUSTED TO ACHIEVE SPECIFIED CONTACT WIRE HEIGHT.
3. SUPPORTING HANGERS FOR STEADY SPAN WIRE OR HEAD SPAN WIRE TO BE CALLED OUT SEPARATELY FROM HEADSPAN SUPPORT ASSEMBLIES.
4. FOR CONTACT WIRE HEIGHT OVER EACH TRACK, SEE OCS WIRING LAYOUTS.
5. FOR REQUIRED STAGGER VALUES AND DIRECTION, SEE OCS WIRING LAYOUTS.
6. MAXIMUM CW DEVIATION SHALL NOT EXCEED 7 DEGREES PER STEADY ARM.



HR-10 IN MEDIUM LOAD APPLICATION

UP TO 850LB (7° DEVIATION)

BILL OF MATERIALS		
DESCRIPTION	ITEM NO.	PART NO./ REMARKS
INSULATED C/W LINE CLAMP	1	
CROSS SPAN EYE CLAMP	2	
Y-CLEVIS OR SHACKLE	3	
STEADY ARM	4	
HANGER WIRE	5	
WIRE SUSPENSION CLAMP	6	
C.W. SWIVEL CLAMP & INSULATOR	7	
SHACKLE	8	
SUPPORT BRIDLE	9	
INSULATOR	10	
COMPRESSION SLEEVE	11	
THIMBLE	12	

NO	DATE	REVISION	APPROVED
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	/ /		

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
REGISTRATION ASSEMBLIES
HR-1L, HR-1M, HR-1H & HR-10

J230

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1194

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 9:11:26 AM
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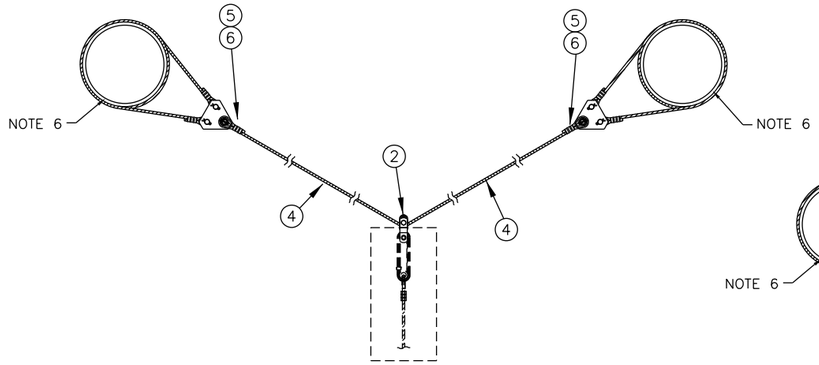
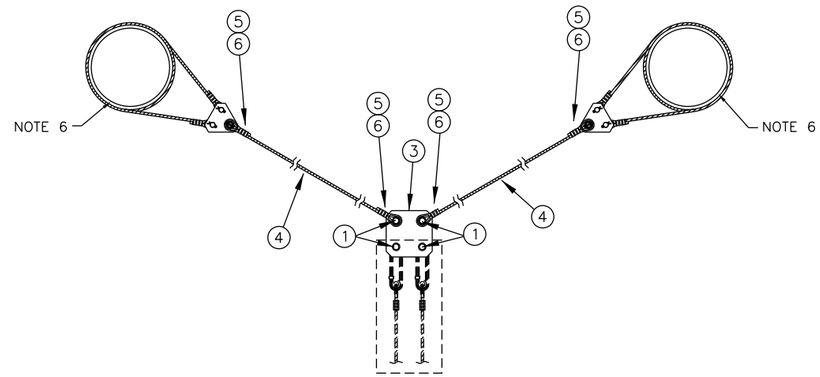


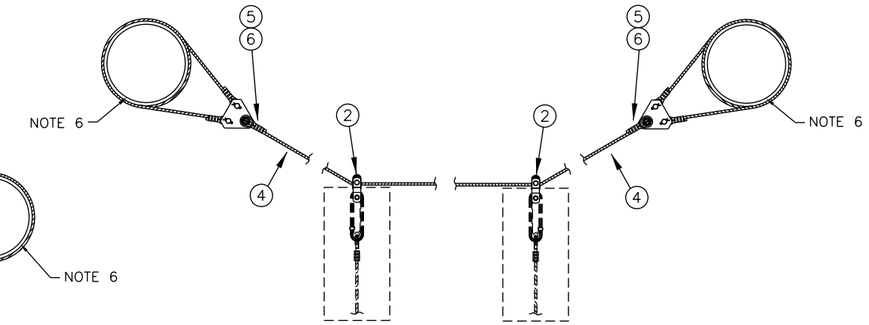
PLAN VIEW

1 BRIDLE BB-01
BB01 – ONE SINGLE PULL-OFF



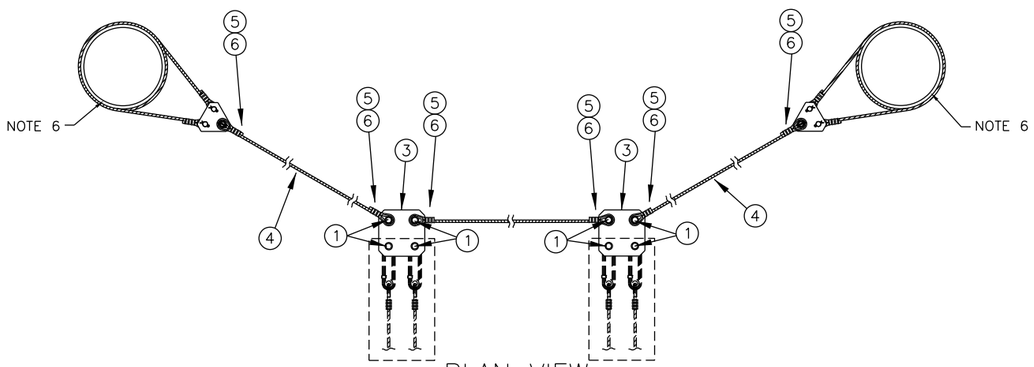
PLAN VIEW

2 BRIDLE BB-02
BB02 – ONE DOUBLE PULL-OFF



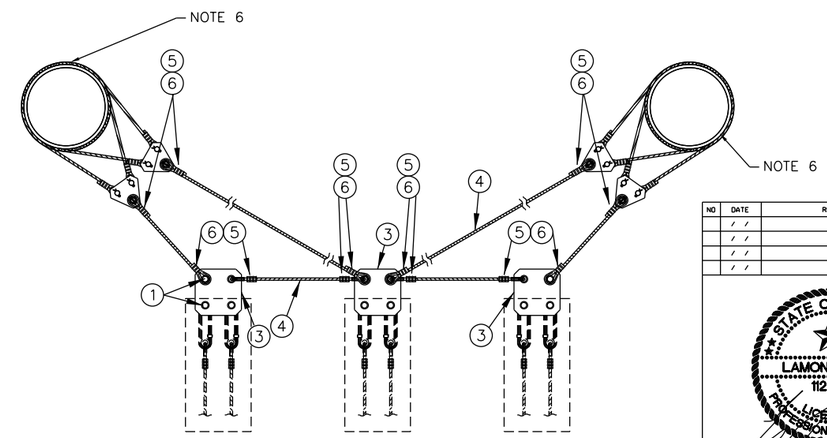
PLAN VIEW

3 DOUBLE BRIDLE BB-03
BB03 – TWO SINGLE PULL-OFFS



PLAN VIEW

4 BRIDLE BB-04
BB04 – TWO DOUBLE PULL-OFFS



PLAN VIEW

5 BRIDLE BB-05
BB05 – THREE DOUBLE PULL-OFFS

NOTES:

1. THE CONTRACTOR SHALL PROVIDE MAXIMUM LOAD CAPACITIES FOR THESE ASSEMBLIES.
2. THE CONTRACTOR SHALL USE IN-LINE INSULATION AS NECESSARY TO GUARANTEE DOUBLE INSULATION.
3. ITEMS 2 AND 3 MAY BE SUBSTITUTED BY A SUITABLY SIZED BULL-RING.
4. THE BILL OF MATERIALS DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE WITH DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
5. CONTRACTOR TO DETERMINE POLE BRACKET AND ATTACHMENT HEIGHT.
6. POLE BRACKETS TO BE CALLED OFF SEPARATELY.
7. ASSEMBLIES SHALL BE RATED TO HANDLE LOADING OF PULL-OFFS AND CROSS-SPANS.
8. STAINLESS STEEL WIRE SHALL BE RATED TO SUIT THE MAXIMUM THEORETICAL LOAD IN ANY BRIDLE ON THE PROJECT, AND THE SAME STEEL WIRE SHALL BE UNIVERSALLY APPLIES TO ALL BB-XX ASSEMBLIES.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
PIN & SPLIT PIN	1	
PULL-OFF CLAMP	2	
4 PIN STRAP	3	
STAINLESS STEEL WIRE	4	NOTE 8
THIMBLE	5	
OVAL SLEEVE	6	

NO	DATE	REVISION	APPROVED
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
BRIDLE ASSEMBLIES
BB-01, BB-02, BB-03, BB-04, & BB-05

J231

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1195

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 9:11:54 AM
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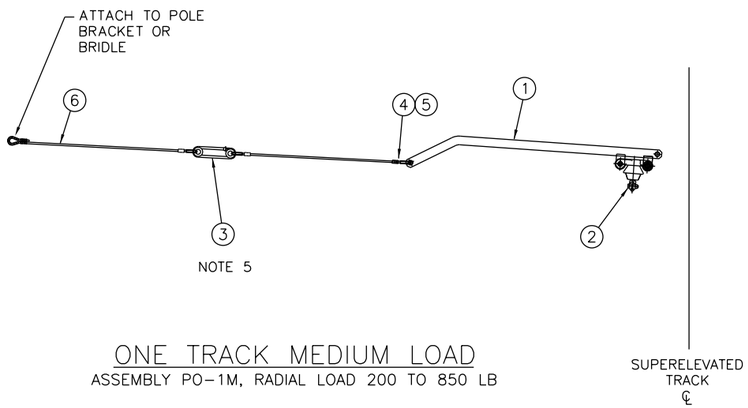
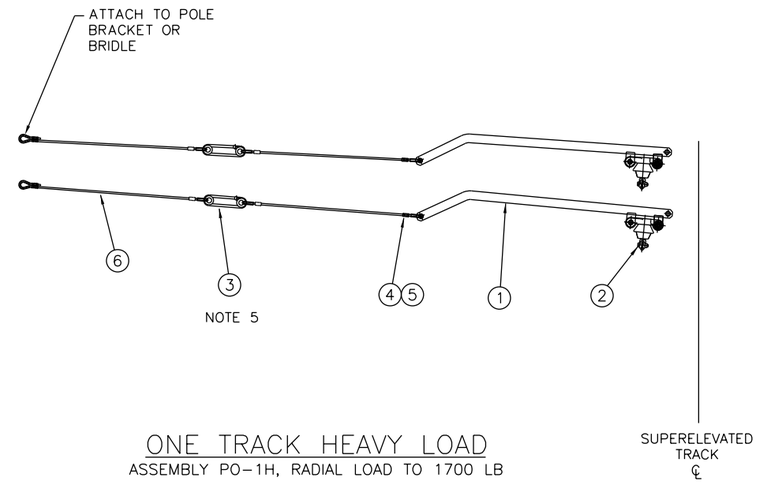


ONE TRACK MEDIUM LOAD

ASSEMBLY PO-1M, RADIAL LOAD 200 TO 850 LB



ONE TRACK HEAVY LOAD

ASSEMBLY PO-1H, RADIAL LOAD TO 1700 LB

NOTES:

1. TWO STEADY ARMS SHALL BE USED FOR HEAVY RADIAL LOADS.
2. THE PULL-OFF ASSEMBLY SHALL ONLY BE USED WHEN THERE IS SUFFICIENT LATERAL TENSION TO PREVENT THE ASSEMBLY FROM SAGGING.
3. TRACK SEPARATION AND POLE OFFSETS SHALL BE DETERMINED FROM ON-SITE MEASUREMENTS.
4. FOR CONTACT WIRE HEIGHT, REFER TO OCS WIRING LAYOUT PLAN.
5. THE SECOND LEVEL OF INSULATION ADJACENT TO POLE SHALL BE LOCATED 10' FROM TRACK CENTERLINE, EXCEPT IN CASES WHERE THE POLE OFFSET IS LESS THAN 11'-3" FROM TRACK. A MINIMUM OF 1'-3" FROM FACE OF POLE TO INSULATOR IS REQUIRED.
6. THE BILL OF MATERIALS DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE IN SHOP DRAWINGS WITH DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
DEEP CURVED STEADY ARM	1	
CONTACT WIRE SWIVEL AND INSULATION	2	
LOOP INSULATOR	3	
THIMBLE	4	
COMPRESSION OVAL SLEEVE	5	
STAINLESS STEEL WIRE	6	

NO.	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
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COEP STREETCAR

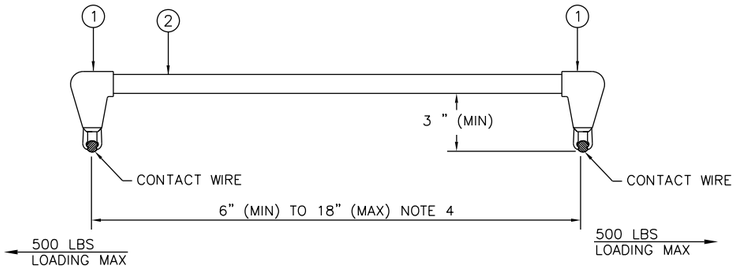
OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
PULL-OFF ASSEMBLIES
PO-1M & PO-1H

J232

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1196

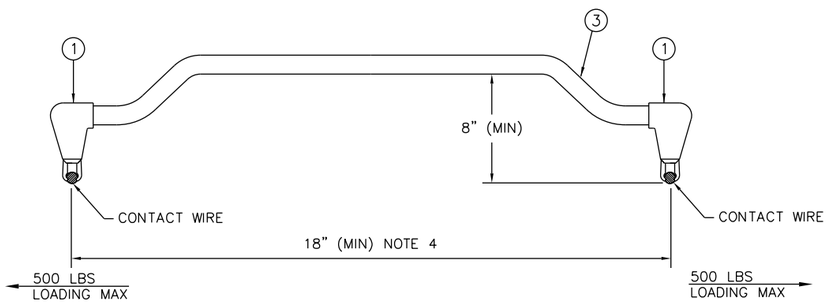
DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 9:12:26 AM
FILE: X:\El Paso. 2012\CADD\TYPICALS\Assemblies\J232 - Pulloff.dgn



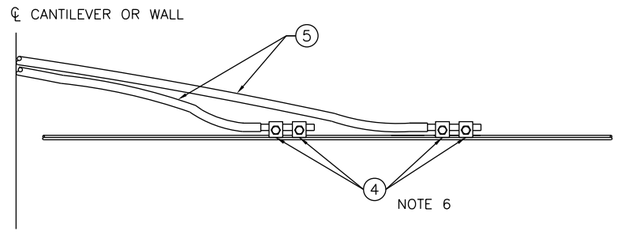
CONTACT WIRE KNUCKLE

ASSEMBLY KN-01



LONG CONTACT WIRE KNUCKLE

ASSEMBLY KN-02

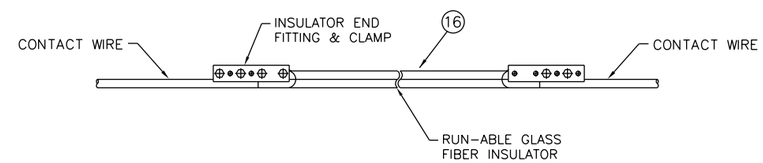


FEEDER CONNECTION

ASSEMBLY FC-01

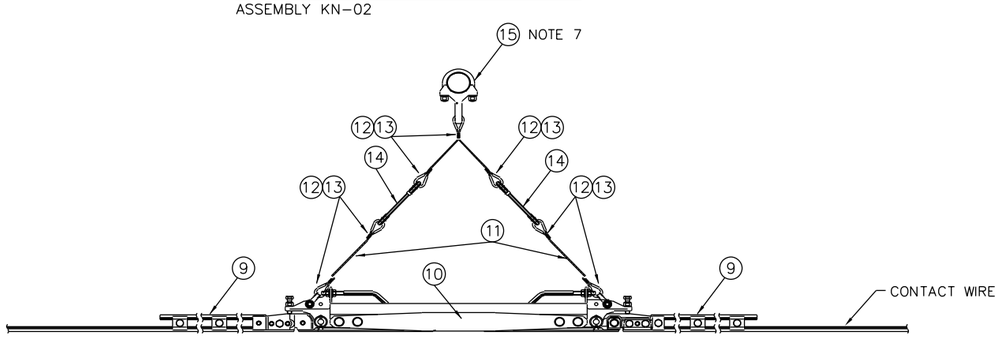
NOTES:

1. POSITION THE JUMPER BETWEEN THE SINGLE CONTACT WIRES SO IT WILL BE CLEAR OF THE PANTOGRAPH UNDER ALL CONDITIONS.
2. THE LENGTH OF THE BRIDGE ROD OR WIRE SHALL BE INCREASED AS NECESSARY WHEN THE CROSSING ANGLE PRODUCES LESS THAN 1.5" HORIZONTAL CLEARANCE AT EACH CLAMP.
3. IF CONTACT WIRE IS USED FOR THE CROSS CONTACT BRIDGING ROD, IT SHALL BE STRAIGHTENED IN THE SHOP. FIELD STRAIGHTENED WIRE SHALL NOT BE USED.
4. KNUCKLES SHALL BE USED ONLY IN TENSION.
5. THE BILL OF MATERIALS DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE WITH DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
6. CUT ENDS OF JUMPER WIRE SHALL PROTRUDE TYPICALLY 1" BEYOND ADJACENT CLAMP. ENDS TO BE BOUND TO PREVENT FRAYING.
7. WHERE SECTION INSULATORS ARE SUPPORTED OFF OF HEADSPANS, THE SECTION INSULATOR WILL BE OFFSET FROM THE CENTERLINE OF THE SPAN WIRES AND SHALL BE SUPPORTED OFF OF THE HEADSPAN WIRE.



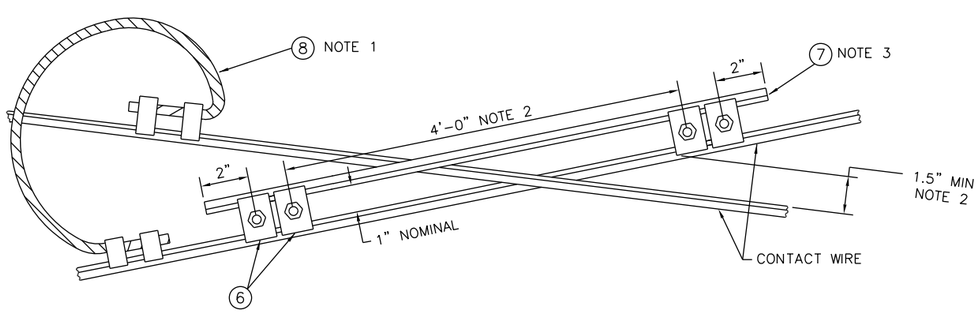
SECTION INSULATOR

ASSEMBLY SI-02
RUN-ABLE SECTION INSULATOR



SECTION INSULATOR

ASSEMBLY SI-01 (BRIDGING)
FOR USE WITH ASSEMBLY SCA-05



SINGLE CONTACT SYSTEM CROSS CONTACT BRIDGE AND JUMPER

ASSEMBLY CC-01 AND JC-01

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
CONTACT WIRE CLAMP	1	
STRAIGHT PIPE	2	
CURVED PIPE	3	
CONTACT WIRE CLAMP	4	
250KCMIL 2KV FEEDER CABLE	5	
PARALLEL GROOVE CLAMP	6	
BRIDGE ROD OR PIPE, CU, CU ALLOY	7	SEE NOTE 3
FULL FEEDING JUMPER	8	ASSEMBLY TYPE JC-01
CONTACT WIRE STIFFENER WITH CLAMPS	9	
SECTION INSULATOR WITH HORNS	10	
STAINLESS STEEL WIRE ROPE	11	
THIMBLE	12	
CRIMP	13	
LOOP INSULATOR	14	
EYE-CLAMP FOR 2" PIPE	15	
SECTION INSULATOR - ROD TYPE	16	

NO	DATE	REVISION	APPROVED
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	/ /		

STATE OF TEXAS
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
IN-SPAN ASSEMBLIES
KN-01/02, CC/JC/FC-01, AND SI-01/02

J233

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1197

DATE: 6/4/2013 9:12:51 AM
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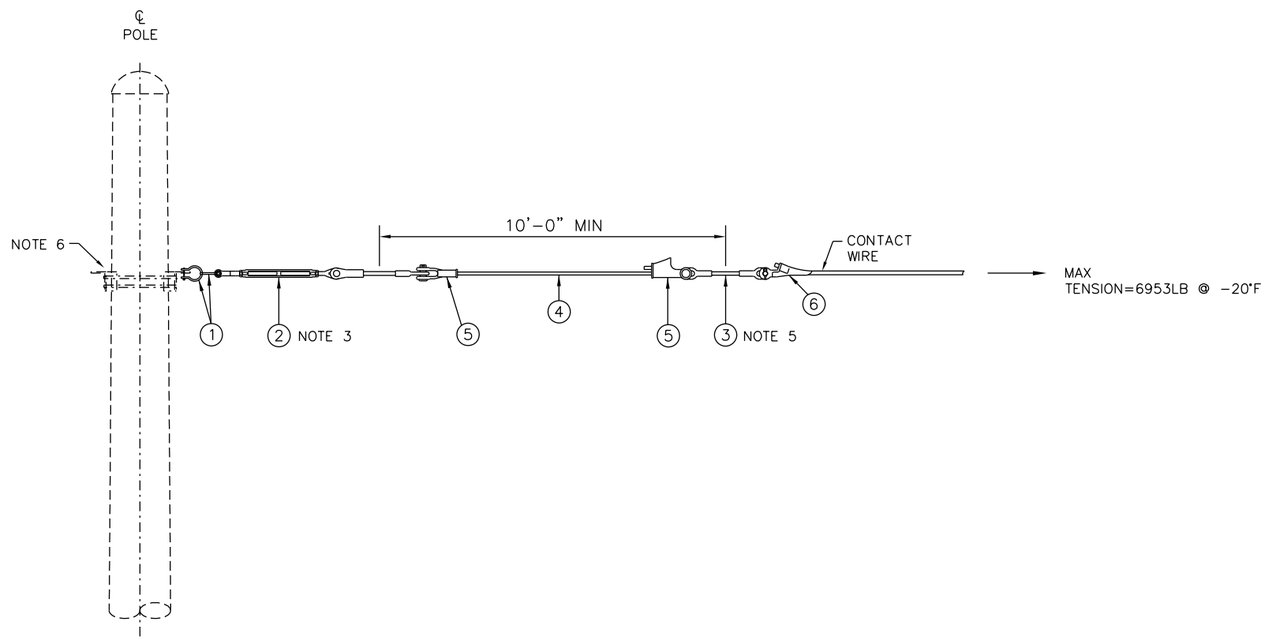

NOTES:

1. THE BILL OF MATERIALS DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE IN SHOP DRAWINGS WITH DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
2. FOR ANCHOR HEIGHTS, REFER TO OCS WIRING LAYOUT PLANS.
3. AFTER FINAL ADJUSTMENT OF WIRING, TURNBUCKLES SHALL HAVE HALF OF THEIR OVERALL ADJUSTABLE LENGTH AVAILABLE FOR FUTURE ADJUSTMENT.
4. FOR CONDUCTOR TENSIONS AND DETAILS, SEE TECHNICAL SHEET CONDUCTOR PARTICULARS.
5. THE CONTACT WIRE TAIL WIRE INSULATORS ARE TO BE NO CLOSER THAN 4'-0" TO SUPERELEVATED TRACK CENTERLINE.
6. POLE ANCHOR BRACKET TO BE CALLED OFF SEPARATELY.

FIXED TERMINATION ASSEMBLY FOR SINGLE CONTACT WIRE

SCALE: NTS ASSEMBLY FT-01

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
SHACKLE	1	
TURNBUCKLE	2	NOTE 3
STRAIN INSULATOR	3	
STAINLESS STEEL WIRE ROPE	4	
WIRE END FITTING	5	
CONTACT WIRE DEADEND CLAMP	6	

NO	DATE	REVISION	APPROVED
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
FIXED TERMINATION - FT-01
TERMINATION ASSEMBLIES

J234

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1198

DATE: 6/4/2013 9:13:26 AM
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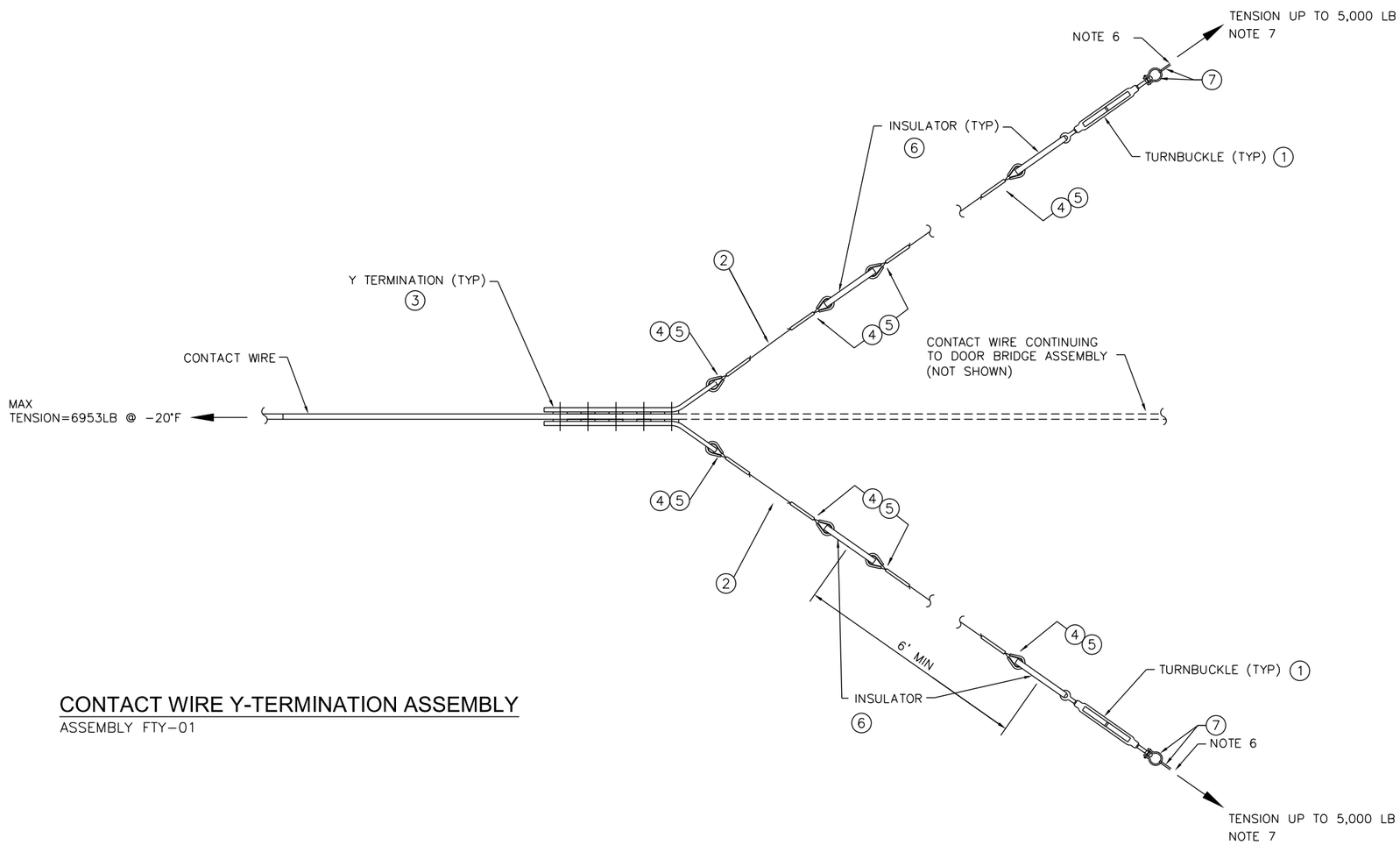

CONTACT WIRE Y-TERMINATION ASSEMBLY

ASSEMBLY FTY-01

NOTES:

1. DETAILS OF BUILDING ATTACHMENTS FOR TENSION REDUCERS AND SHOP DOOR ARRANGEMENTS TO BE COORDINATED WITH SHOP BUILDING CONTRACTOR.
2. THE BILL OF MATERIALS DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE IN SHOP DRAWINGS WITH DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
3. FOR ANCHOR HEIGHTS, REFER TO OCS WIRING LAYOUT PLANS.
4. AFTER FINAL ADJUSTMENT OF WIRING, TURNBUCKLES SHALL HAVE HALF OF THEIR OVERALL ADJUSTABLE LENGTH AVAILABLE FOR FUTURE ADJUSTMENT.
5. FOR TERMINATION TO BUILDING, SEE MAINTENANCE FACILITY ARCHITECTURAL PLANS FOR DETAIL OF ATTACHMENT.
6. POLE BRACKET TO BE CALLED OFF SEPARATELY.
7. BUILDING ATTACHMENTS SHALL CONNECT TO STRUCTURAL BEAM INSIDE THE BUILDING. EXTERIOR ATTACHMENTS SHALL BE MADE THROUGH THE CMU PORTION OF THE BUILDING WALL.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
TURNBUCKLE	1	
STAINLESS STEEL CABLE	2	
C/W Y TERMINATION	3	
THIMBLE	4	
SLEEVE	5	
INSULATOR, STRAIN	6	
SHACKLE	7	

NO.	DATE	REVISION	APPROVED
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
TERMINATION ASSEMBLIES
FIXED TERMINATION - FTY-01

J235

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1199

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 9:13:52 AM
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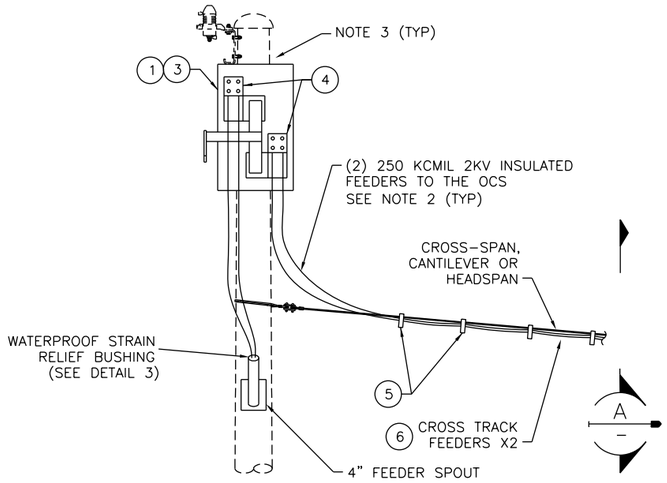
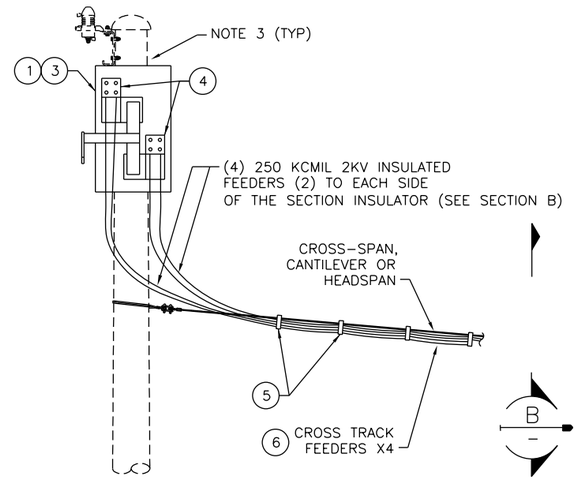


DISCONNECT SWITCH ASSEMBLY FOR FEEDERS

SCALE: NTS ASSEMBLY DS-01

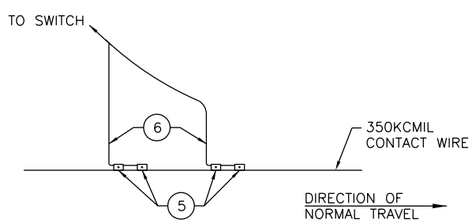


BYPASS DISCONNECT SWITCH ASSEMBLY

SCALE: NTS ASSEMBLY DS-02

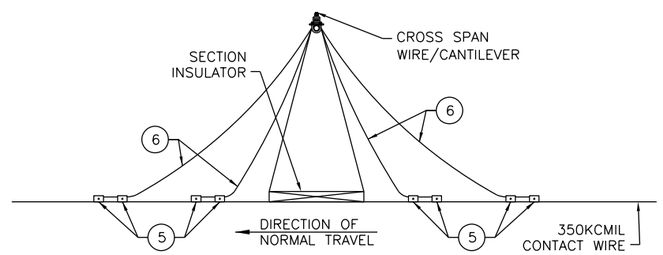
NOTES:

1. THE BILL OF MATERIALS DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE IN SHOP DRAWINGS WITH DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
2. THE CONTRACTOR SHALL INCLUDE CABLE SUPPORTS WHERE CABLE WEIGHT MAY AFFECT SWITCH OPERATION AND ALONG OCS SUPPORT.
3. ALL DISCONNECT SWITCHES MOUNTED ON POLES AND EXPOSED TO WEATHER SHALL HAVE SURGE ARRESTERS PROTECTING EACH SIDE OF THE SWITCH.
4. FOR FEEDER CABLES RUNNING ALONG HEADSPANS, THE CABLE SHALL RUN ALONG TOP SPAN BEFORE REACHING CONTACT WIRE.
5. FEEDER CABLES SHALL ONLY ENTER OR EXIT BOTTOM SIDE OF DISCONNECT SWITCH.



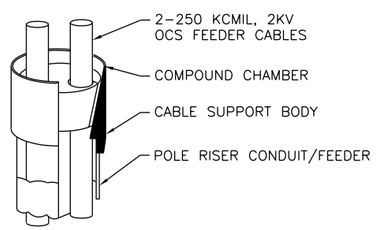
A SECTION

SCALE: NTS



B SECTION

SCALE: NTS



3 TYPICAL CABLE SUPPORT FITTING

SCALE: NTS FOR CONDUIT/FEEDER SPOUT (MFG. O-Z/GEDNEY, TYPE-'C' OR APPROVED EQUAL)

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
SWITCH ASSEMBLY	1	
SURGE ARRESTER ASSEMBLY	2	SEE NOTE 3
SWITCH SUPPORT	3	
CABLE LUGS OR CLAMPS	4	
CLAMP, FEEDER TO CONTACT WIRE	5	
FEEDER CABLE, 250KCMIL, 2KV INSULATED	6	
INSULATED CABLE SUPPORT	7	

NO.	DATE	REVISION	APPROVED
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COEP STREETCAR

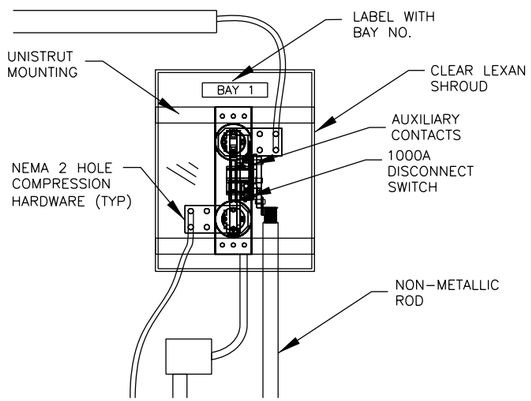
OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
DISCONNECT SWITCH ASSEMBLIES
DS-01 & DS-02

J236

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1200

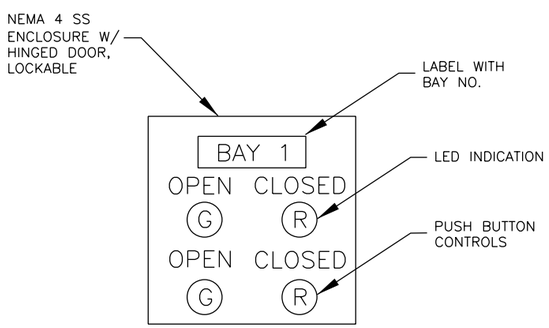
DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 9:14:29 AM
FILE: X:\El Paso. 2012\CADD\TYPICALS\Assemblies\J236 - Single Feed and Bypass Disconnect Switch.dgn



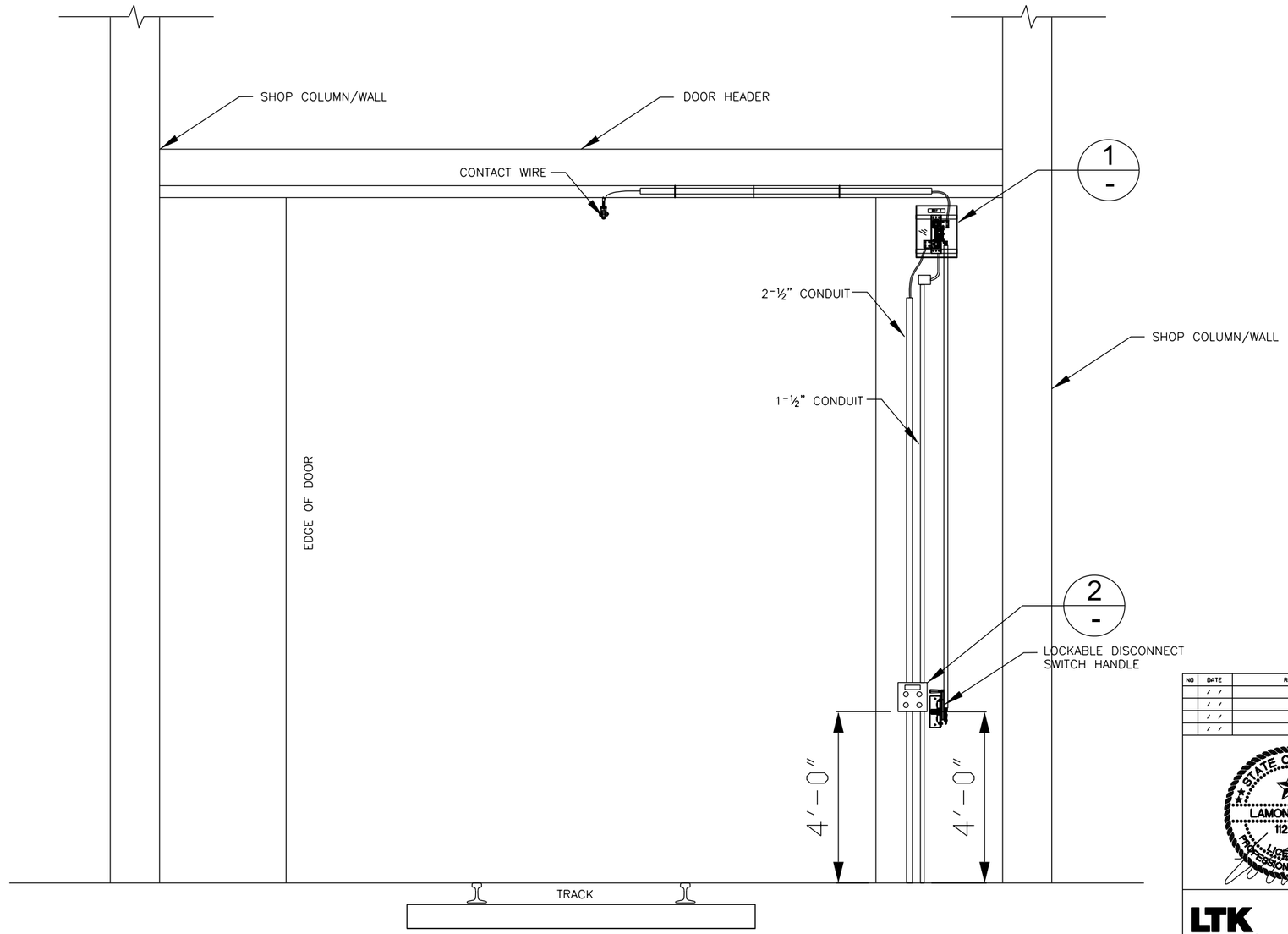
DISCONNECT SWITCH WITH ENCLOSURE

SCALE: NTS



CONTACTOR CONTROL PANEL 2 -

SCALE: NTS



SHOP DISCONNECT SWITCH ASSEMBLY

SCALE: NTS
SEE DOOR BRIDGE ASSEMBLY FOR FURTHER CLARITY

NOTES:

1. THE BILL OF MATERIALS DETAILS ARE TYPICAL FOR THE ASSEMBLY SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE IN SHOP DRAWINGS WITH DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY
2. CONTRACTOR TO COORDINATE WITH THE MAINTENANCE FACILITY ARCHITECT AND THE OWNER TO POSITION DISCONNECT SWITCH AND EMERGENCY PUSH BUTTON.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
DISCONNECT SWITCH	1	
EMERGENCY PUSH BUTTON	2	
OPERATING HANDLE	3	
FEEDER CABLE	4	
CONTACT WIRE CLAMPS FOR FEEDER CABLE	5	

NO	DATE	REVISION	APPROVED
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COEP STREETCAR
OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
SHOP DISCONNECT SWITCH
SDS-01

J237

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1201

DATE: 6/4/2013 9:15:15 AM
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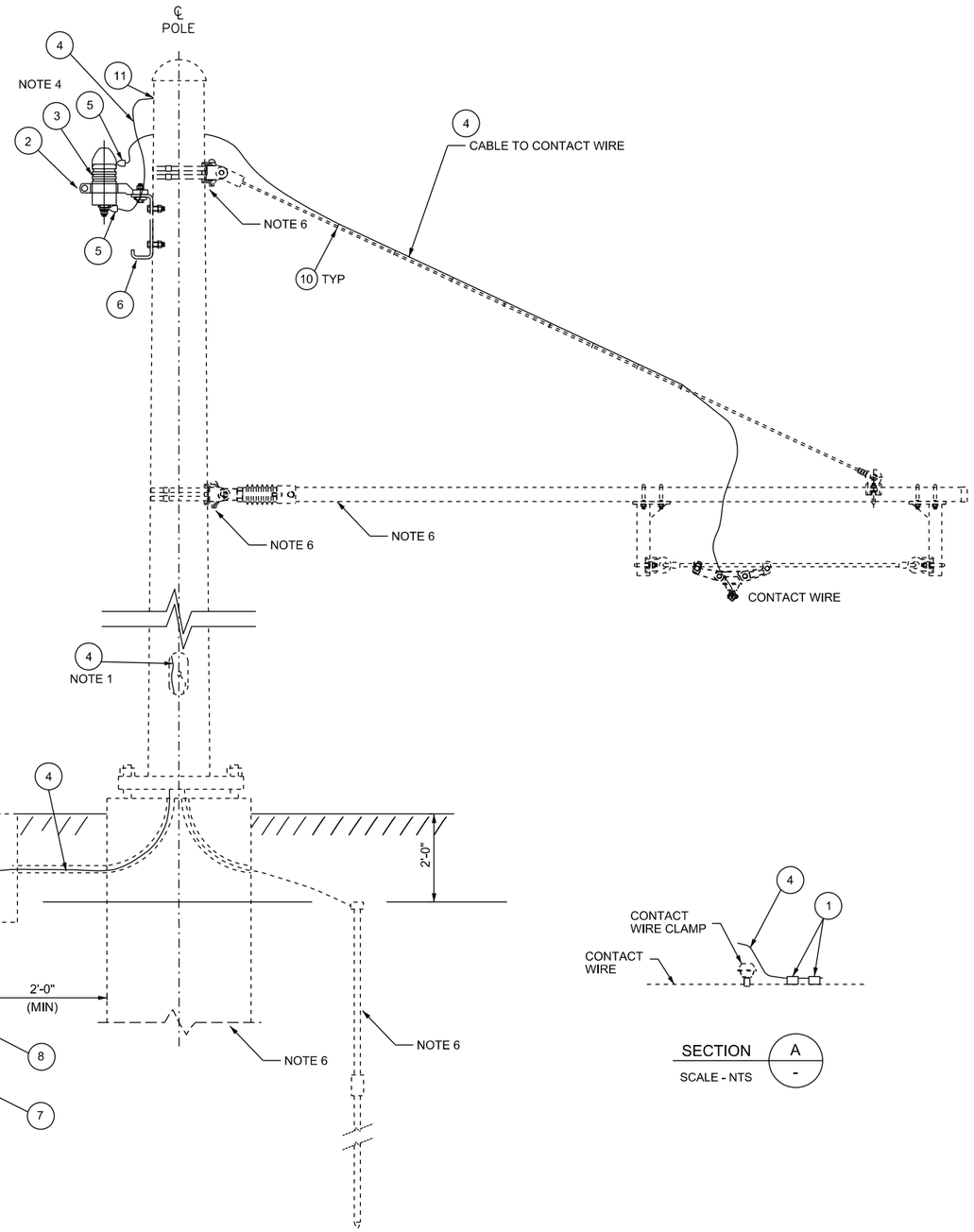
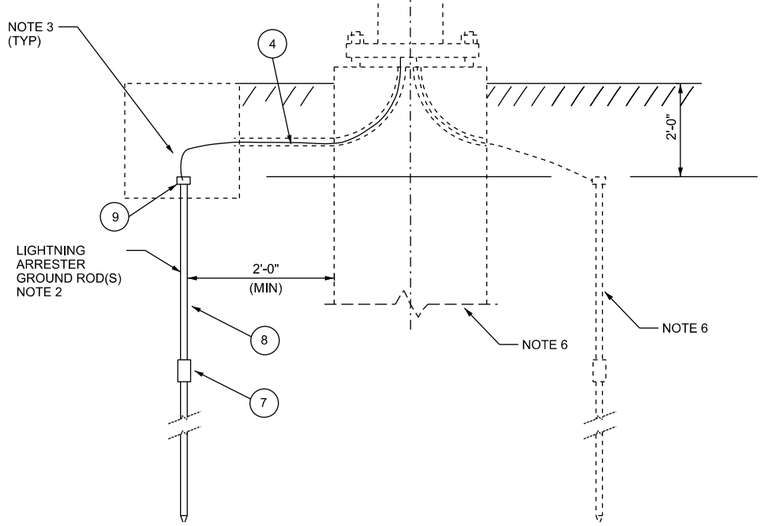


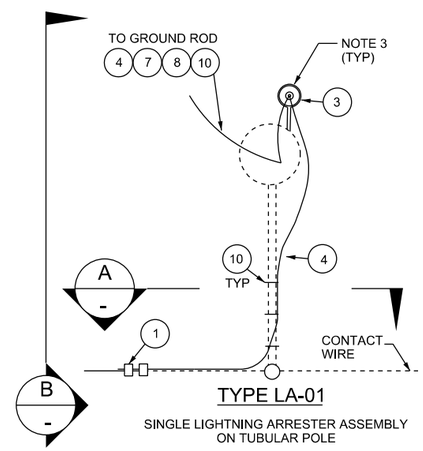


SECTION B
SCALE - NTS

SECTION A
SCALE - NTS

NOTES:

1. THE GROUND CABLE FROM THE LIGHTNING ARRESTER SHALL GO DIRECTLY TO THE GROUND RODS BY THE SHORTEST POSSIBLE ROUTE. NO SPLICES OR MECHANICAL JOINTS SHALLBE MADE IN THE CABLE. THE POLE SHALL NOT BE USED AS A GROUND CONDUCTOR FOR THE LIGHTNING ARRESTERS. A MINIMUM OF ONE GROUND ROD TO BE SUPPLIED AND INSTALLED FOR THIS ASSEMBLY.
2. LIGHTNING ARRESTER GROUND RESISTANCE SHALL BE LESS THAN 5 OHMS. ADDITIONAL GROUND RODS SHALL BE INSTALLED AS NEEDED TO OBTAIN THIS RESISTANCE. IF ADDITIONAL RODS ARE REQUIRED THEY SHALL BE INSTALLED IN TANDEM UNLESS REFUSAL IS MET. IF REFUSAL IS MET ADDITIONAL GROUND RODS SHALL BE INSTALLED 10 FEET APART. LIGHTNING ARRESTER GROUND RODS SHALL BE ON OPPOSITE SIDE OF FOUNDATION AS THE POLE GROUND RODS.
3. ALL BENDS IN LIGHTNING ARRESTER HV CABLES AND GROUNDING CABLES SHALL BE MINIMUM 8 INCH RADIUS.
4. INSTALL TOP OF LIGHTNING ARRESTER APPROXIMATELY LEVEL WITH UPPER POLE BRACKET. INSTALLATION SHALL ALLOW FOR A MINIMUM OF 8" CLEARANCE FROM BOTTOM LUG OF LIGHTNING ARRESTER TO ANY OTHER METALLIC BRACKET OR STRUCTURE. SUFFICIENT SLACK SHALL BE LEFT IN THE CABLE INSTALLED TO THE BOTTOM SIDE OF THE LIGHTNING ARRESTER.
5. WIRES OR CABLES SHALL NOT BE TIED TO INSULATORS.
6. CANTILEVERS, POLE BRACKETS, AND FOUNDATION CALLED OFF SEPARATELY.
7. ALL FIELD DRILLED HOLES SHALL BE TOUCHED UP IN ACCORDANCE WITH THE POLE PAINT SPECIFICATIONS PRIOR TO INSERTING GROMMETS OR CABLES.



TYPE LA-01

SINGLE LIGHTNING ARRESTER ASSEMBLY
ON TUBULAR POLE

PLAN

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
PARALLEL CLAMP 4/0 TO 350 KCMIL	1	
CLAMPING BAND	2	
LIGHTNING ARRESTER	3	
4/0 FLEX 2000 VOLT INSULATED CABLE	4	
TERMINAL LUGS	5	
BRACKET	6	
BRONZE GROUND ROD COUPLER	7	
COPPER CLAD GROUND ROD	8	SEE NOTE 2
EXOTHERMIC WELD	9	
CABLE TIES	10	
GROMMET – INSERTED IN TO FIELD DRILLED HOLE	11	SEE NOTE 7

NO	DATE	REVISION	APPROVED
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	/ /		

STATE OF TEXAS
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COEP STREETCAR
OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
LA-01
LIGHTNING ARRESTER ASSEMBLY

J238

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1202

DATE: 2/17/2015 1:29:51 PM
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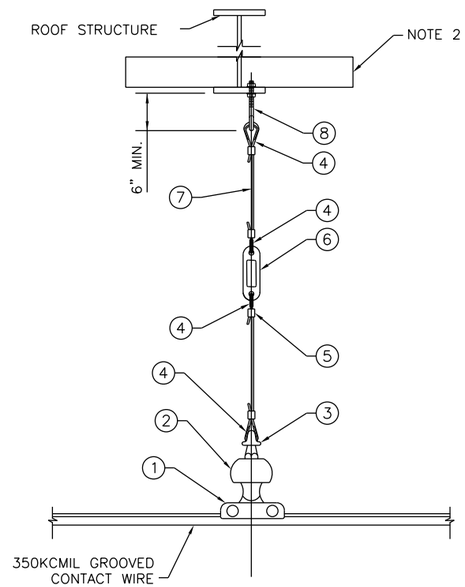

OCS SHOP HANGER

SCALE: NTS ASSEMBLY SH-01

NOTES:

1. THE BILL OF MATERIALS DETAILS ARE TYPICAL FOR THE ASSEMBLY SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE IN SHOP DRAWINGS WITH DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY
2. CONTRACTOR TO FIELD DRILL HOLE TO MOUNT SHACKLE ATTACHMENT. A BRACKET CAN BE USED IN LIEU OF FIELD DRILLING, AND SHALL BE COORDINATED WITH THE MAINTENANCE FACILITY ARCHITECT AND THE OWNER. CONTRACTOR RESPONSIBLE FOR LOCATION OF THE HOLE OR BRACKET TO PROVIDE PROPER STRENGTH FOR SUPPORT HANGER AND CONTACT WIRE.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
CONTACT WIRE CLAMP	1	
INSULATOR BODY	2	
HOOK OR EYE	3	
THIMBLE	4	
COMPRESSION SLEEVE	5	
LOOP INSULATOR	6	
STAINLESS STEEL WIRE	7	
SHACKLE	8	

NO.	DATE	REVISION	APPROVED
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	/ /		
	/ /		
	/ /		

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

LTK
LTK Engineering Services
TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
SHOP ASSEMBLIES
SHOP HANGER - SH-01

J239

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1203

DN: URS CK: URS DW: URS CK: URS

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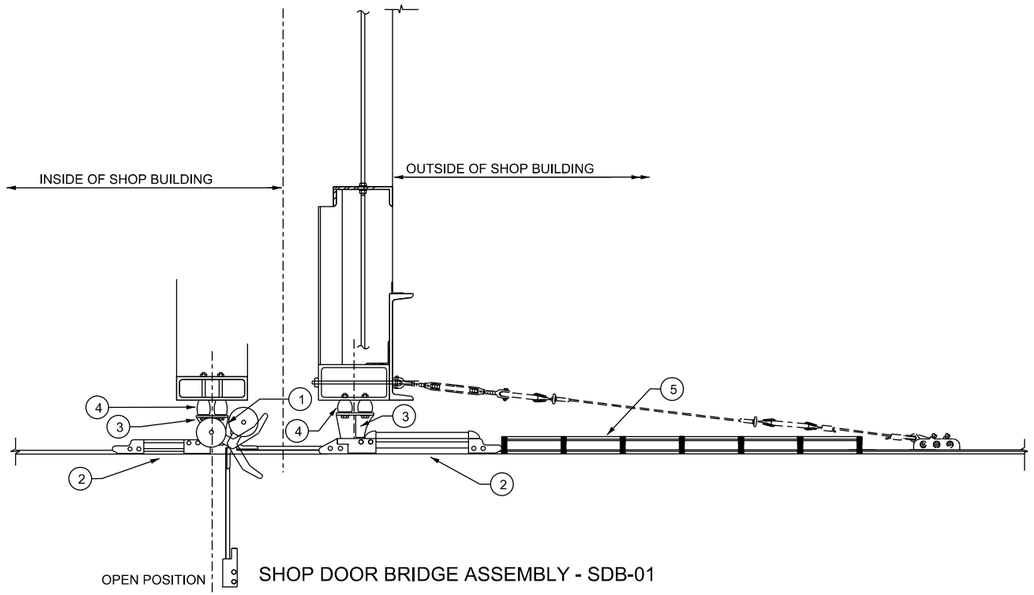
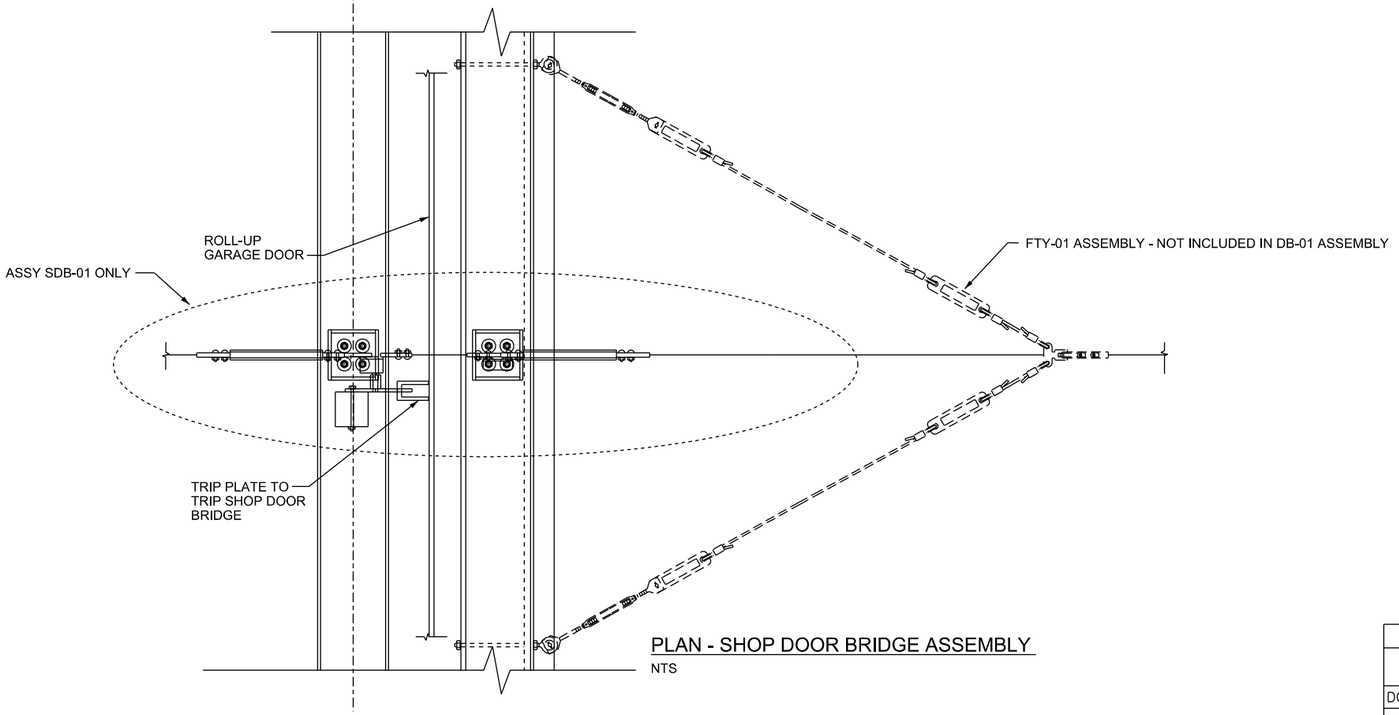


SHOP DOOR BRIDGE ASSEMBLY - SDB-01



PLAN - SHOP DOOR BRIDGE ASSEMBLY

NTS

NOTES:

1. THE ASSEMBLY SHOWN IS TYPICAL. COORDINATE ALL ATTACHMENT LOCATIONS AND DETAILS WITH SHOP BUILDING CONTRACTOR.
2. TRIP PLATE SIZE AND LOCATION TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
3. PROVIDE "FOG TYPE" INSULATORS IN WASH TRACK OCS TO CATER FOR CONTAMINATION WASH SPRAY AND MIST.
4. ALL SUPPORTING FITTINGS AND HARDWARE ON THE WASH TRACK SHALL BE CORROSION RESISTANT AND SUITABLE FOR USE IN THE CONTAMINATED ENVIRONMENT.
5. COORDINATE ALL ATTACHMENT LOCATIONS AND DETAILS WITH SHOP BUILDING CONTRACTOR.
6. MINIMUM DIMENSION FROM LIVE METAL TO GROUNDED METAL SHALL BE 4" MINIMUM, 6" IS PREFERRED.
7. CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS OF THE ASSEMBLY FOR REVIEW AND APPROVAL.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
DOOR BRIDGE	1	
NON BRIDGING INSULATOR	2	
MOUNTING BRACKET	3	
SPOOL INSULATORS	4	
STIFFENING ROD WITH C/W CLAMPS	5	

NO.	DATE	REVISION	APPROVED
	/ /		
	/ /		
	/ /		
	/ /		

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
SHOP DOOR BRIDGE
SDB-01

EL PASO

J240

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1204

DATE: 6/4/2013 9:17:06 AM
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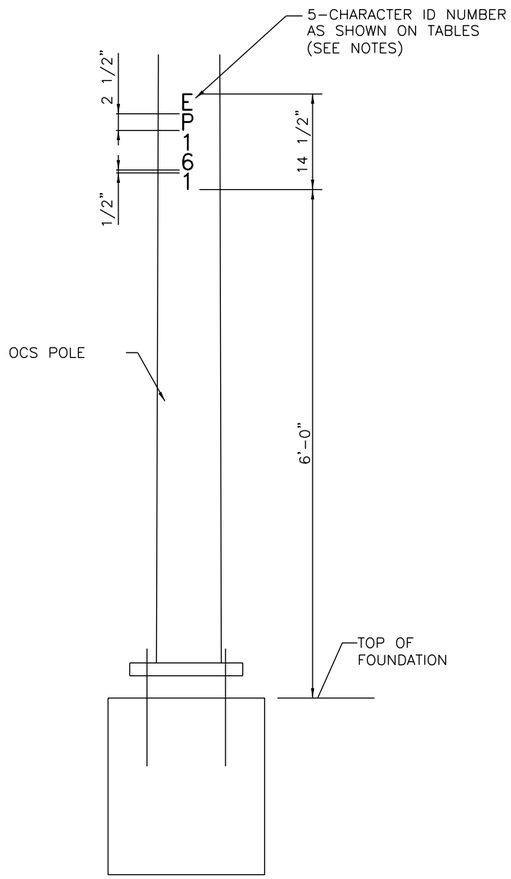
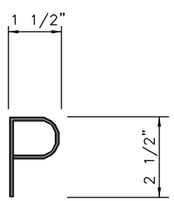


POLE ELEVATION

LOOKING ALONG TRACK



CHARACTER DIMENSIONS

NOTES:

1. ALL OCS POLES SHALL BE IDENTIFIED USING CONSECUTIVE NUMBERED REFLECTIVE SELF-ADHESIVE BLACK DECALS, POSITIONED AS SHOWN.
2. ONE STRUCTURE DECAL ASSEMBLY SD-01 COMPRISING TWO DECAL NUMBERS SHALL BE INSTALLED PER POLE.
3. POLE ID TAGS SHALL BE INSTALLED FACING ALONG TRACK FACING APPROACHING TRAIN.
4. DECALS SHALL BE PERMANENTLY FIXED TO EACH POLE. ALL SURFACE PREPARATION SHALL BE IN ACCORDANCE WITH DECAL MANUFACTURER INSTRUCTIONS.
5. CONTRACTOR SHALL PROVIDE SHOP DRAWING SUBMITTAL FOR APPROVAL.

POLE STATION	POLE ID	POLE STATION	POLE ID	POLE STATION	POLE ID	POLE STATION	POLE ID	POLE STATION	POLE ID	POLE STATION	POLE ID	POLE STATION	POLE ID	POLE STATION	POLE ID
10+39	EP001	46+22	EP061	78+06	EP121	200+61	EP181	240+65	EP241	281+48B	EP301	328+96	EP361	29+93	EP421
10+94	EP002	46+79	EP062	79+00	EP122	201+09	EP182	241+39	EP242	282+30	EP302	329+80	EP362	505+52	EP422
11+08	EP003	47+36	EP063	79+01	EP123	201+43	EP183	242+15	EP243	282+37	EP303	330+54	EP363	505+71	EP423
11+66	EP004	48+31	EP064	79+84	EP124	202+38	EP184	242+91	EP244	282+67	EP304	331+40	EP364	506+02	EP424
11+75	EP005	48+79	EP065	80+65	EP125	203+28A	EP185	243+75	EP245	282+88	EP305	332+01	EP365	10+64	EP425
12+54	EP006	49+44	EP066	81+60A	EP126	203+28B	EP186	244+20	EP246	282+96	EP306	332+96	EP366	10+97	EP426
13+31	EP007	49+52	EP067	81+60B	EP127	204+27	EP187	244+95	EP247	283+34	EP307	333+91	EP367	11+18	EP427
13+92	EP008	50+30	EP068	82+55A	EP128	205+15	EP188	245+89	EP248	283+69	EP308	334+73	EP368	11+34	EP428
14+36	EP009	51+13	EP069	82+55B	EP129	206+09	EP189	246+47	EP249	284+26	EP309	335+44	EP369	11+52	EP429
15+04	EP010	51+14	EP070	83+16	EP130	206+78	EP190	247+24	EP250	285+14	EP310	336+01	EP370	506+92	EP430
15+97	EP011	51+80	EP071	84+06	EP131	207+41	EP191	248+20	EP251	286+09	EP311	336+96	EP371	507+07	EP431
16+89	EP012	51+85	EP072	85+01A	EP132	207+44	EP192	248+80	EP252	286+67	EP312	337+91	EP372	507+34	EP432
17+40	EP013	52+24	EP073	85+01B	EP133	208+26	EP193	249+62	EP253	287+78	EP313	338+61	EP373	507+54	EP433
17+45	EP014	52+27	EP074	85+81A	EP134	208+28	EP194	250+28	EP254	288+54	EP314	339+56	EP374	507+82	EP434
18+25	EP015	52+47	EP075	85+81B	EP135	209+25	EP195	250+30	EP255	289+17	EP315	340+46	EP375	508+41	EP435
18+35	EP016	53+03	EP076	86+36A	EP136	209+26	EP196	251+20	EP256	290+04	EP316	341+41	EP376	508+68	EP436
19+24	EP017	53+10	EP077	86+36B	EP137	210+10A	EP197	252+01	EP257	290+90	EP317	342+25	EP377	508+80	EP437
20+16	EP018	53+78	EP078	86+67A	EP138	210+10B	EP198	252+94	EP258	291+85	EP318	343+20	EP378	20+42	EP438
21+11	EP019	53+79	EP079	86+67B	EP139	210+86	EP199	253+89	EP259	292+80	EP319	344+15	EP379	509+33	EP439
21+14	EP020	54+78A	EP080	86+95	EP140	210+89	EP200	254+78	EP260	293+75	EP320	345+06	EP380	10+90	EP440
21+94A	EP021	54+78B	EP081	87+19A	EP141	211+80	EP201	255+56	EP261	294+70	EP321	345+90	EP381	20+63	EP441
21+94B	EP022	55+73A	EP082	87+19B	EP142	212+22	EP202	256+27	EP262	295+44	EP322	346+85	EP382	509+75	EP442
22+78	EP023	55+73B	EP083	87+72A	EP143	212+80	EP203	257+21A	EP263	296+39	EP323	347+79	EP383	509+91	EP443
22+79	EP024	56+61A	EP084	87+72B	EP144	213+35	EP204	257+21B	EP264	297+34	EP324	348+56	EP384	30+52	EP444
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25+01	EP028	58+19	EP088	90+35	EP148	214+84	EP208	260+38	EP268	300+92	EP328	350+25	EP388	510+78	EP448
25+96	EP029	58+23	EP089	91+11A	EP149	215+48	EP209	261+29	EP269	301+58	EP329	351+20	EP389	510+87	EP449
26+91	EP030	58+97	EP090	91+11B	EP150	216+33	EP210	262+19	EP270	302+46	EP330	352+12	EP390	510+93	EP450
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28+53	EP032	60+28	EP092	91+85B	EP152	217+36	EP212	264+06	EP272	304+37	EP332	352+84	EP392		
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33+25	EP038	64+07	EP098	94+91B	EP158	221+80	EP218	268+79	EP278	309+89	EP338	357+38	EP398		
34+03	EP039	64+86A	EP099	95+86	EP159	222+58	EP219	269+65A	EP279	310+85	EP339	357+41	EP399		
34+98	EP040	64+86B	EP100	96+91A	EP160	223+26	EP220	269+65B	EP280	311+64	EP340	357+68	EP400		
35+97	EP041	65+29	EP101	96+91B	EP161	224+11	EP221	270+65	EP281	312+28	EP341	358+30	EP401		
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37+84	EP048	69+23	EP108	101+15	EP168	229+98	EP228	275+83	EP288	318+22	EP348	501+90	EP408		
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45+35	EP060	77+58	EP120	104+39	EP180	239+70	EP240	281+48A	EP300	328+16	EP360	19+93	EP420		

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED
PROFESSIONAL ENGINEER
2/26/14

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TBPE REGISTRATION NO. F-1389

URS
2829 Montana Suite 206
El Paso, Texas 79903
(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
POLE ID TAG ASSEMBLY
SD-01

J241

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1205

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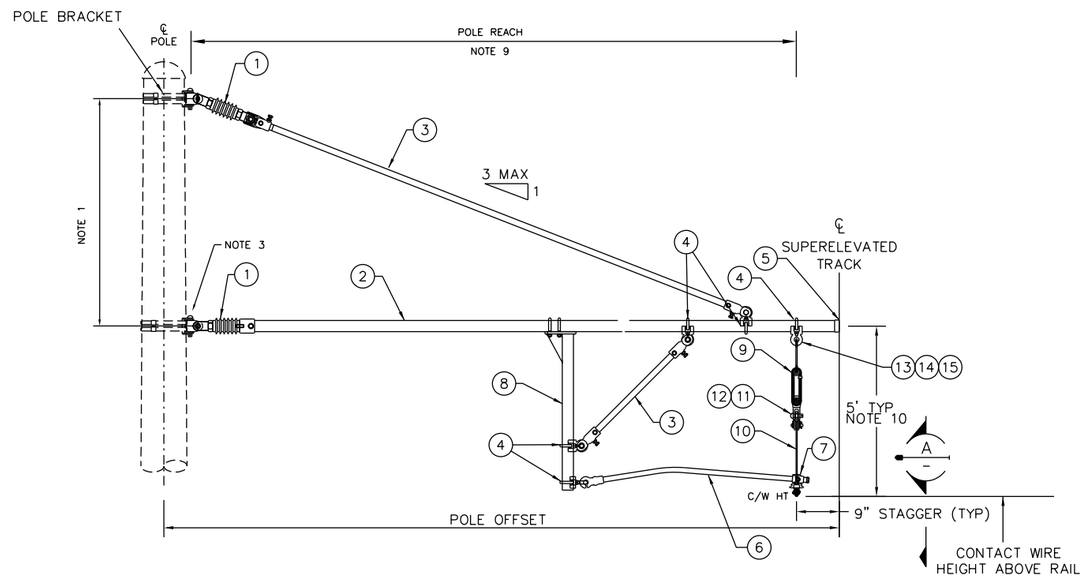
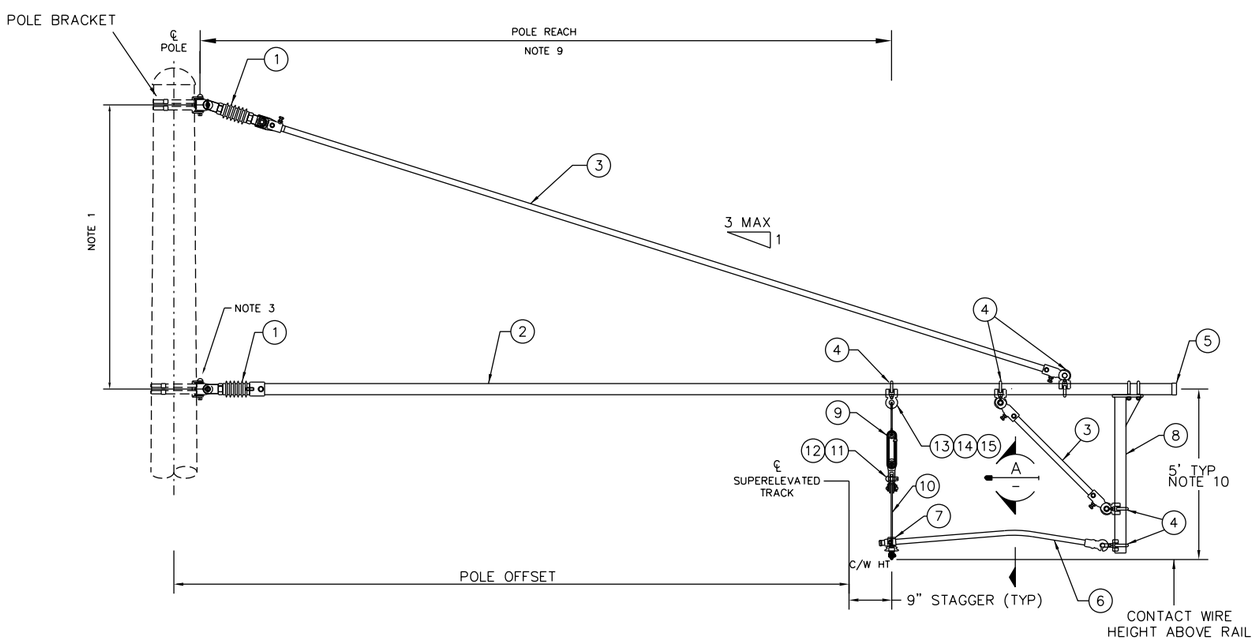


CANTILEVER PULL OFF - MEDIUM RADIAL LOAD SCA-06M

RADIAL LOAD LESS THAN 850 LB
MAXIMUM CW DEVIATION ANGLE 7 DEGREES PER STEADY ARM

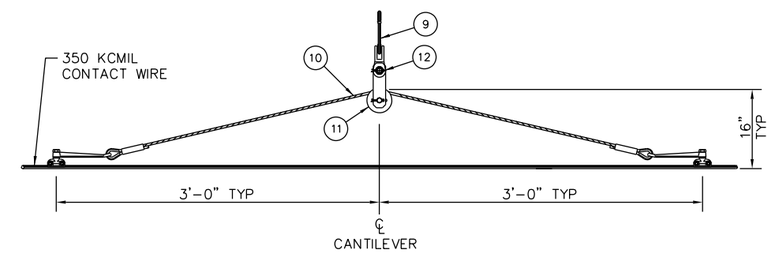


CANTILEVER PUSH OFF - MEDIUM RADIAL LOAD SCA-07M

RADIAL LOAD LESS THAN 850 LB
MAXIMUM CW DEVIATION ANGLE 7 DEGREES PER STEADY ARM

NOTES:

1. CANTILEVER BRACKET SEPARATION SHALL BE DETERMINED USING THE TYPICAL 1:3 PIPE SLOPE AS A BASIS. IN SOME LOCATIONS THE SLOPE MAY BE INCREASED TO AVOID CONFLICTS WITH OTHER HARDWARE MOUNTED ON THE POLES.
2. REFER TO OCS WIRING LAYOUTS FOR CONTACT WIRE HEIGHT AND STAGGER DIMENSIONS.
3. CANTILEVER SWIVEL AND CLEVIS IS ALLOCATED WITH THE BRACKET ASSEMBLIES, TO BE CALLED OFF SEPARATELY.
4. FOR ABBREVIATIONS AND GENERAL NOTES SEE TECHNICAL SHEET ABBREVIATIONS AND GENERAL NOTES.
5. THE BILL OF MATERIAL DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE IN SHOP DRAWINGS WITH THE DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
6. CONTRACTOR TO DETERMINE POLE BRACKET AND ATTACHMENT HEIGHTS.
7. THE CONTRACTOR SHALL FIELD VERIFY POLE OFFSET DIMENSION PRIOR TO FABRICATION OF CANTILEVER PIPES AND WIRE.
8. CONTRACTOR TO ENSURE THAT THE CANTILEVER ARM DESIGN ALLOWS FOR THE PANTOGRAPH CLEARANCE ENVELOPE.
9. POLE REACH IS CENTERLINE HINGE TO CENTERLINE CONTACT WIRE.
10. 5' TYPICAL DROP TUBE LENGTH DEPENDS UPON MOUNTING HEIGHT OF STREET LIGHTING FIXTURES (BY OTHERS). CONTRACTOR TO COORDINATE LIGHTING HEIGHT AND ADJUST CANTILEVER TO MAINTAIN A MINIMUM 6" CLEARANCE BETWEEN ANY CANTILEVER PIPE AND THE LIGHT FIXTURE.



A SECTION
SCALE: NTS

BILL OF MATERIALS

DESCRIPTION	NO. ITEM	REMARKS PART NO./
CANTILEVER INSULATOR	1	
PIPE 2" SCHEDULE 80 GALV.	2	
PIPE 1" SCHEDULE 40 GALV. W/ END FITTING	3	
EYE CLAMP	4	
SYNTHETIC CAP FOR 2" PIPE	5	
STEADY ARM	6	
C/W SWIVEL CLAMP & INSULATOR	7	
DROP BRACKET	8	
LOOP INSULATOR	9	
SUPPORT BRIDLE SUB-ASSEMBLY	10	
BRIDLE PULLEY	11	
CLEVIS - CLEVIS LINK	12	
HANGER WIRE	13	
COMPRESSED SLEEVE	14	
THIMBLE, SST	15	

NO	DATE	REVISION	APPROVED
	/ /		
	/ /		
	/ /		
	/ /		

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
CANTILEVER ASSEMBLIES
MEDIUM RADIAL LOAD SCA-06M/07M

J242

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1206

DN: URS CK: URS DN: URS CK: URS

DATE: 6/4/2013 9:18:17 AM
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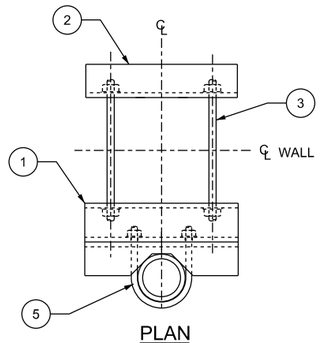
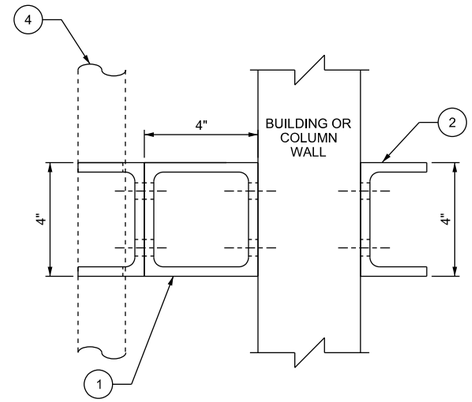
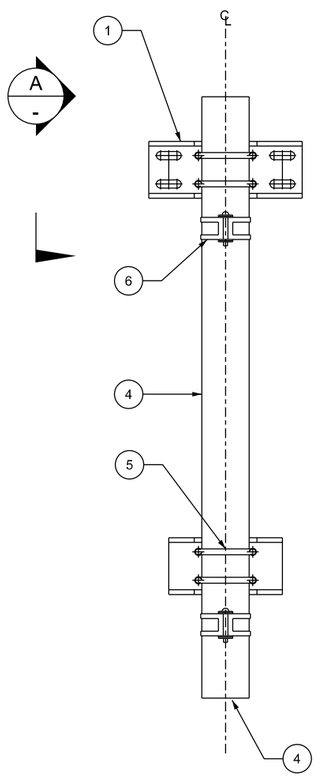


PLAN



SECTION A -



SPECIAL WALL MOUNT
CANTILEVER BRACKET ASSEMBLY
BT-03

FRONT ELEVATION

NOTES:

1. THE ASSEMBLY SHOWN IS TYPICAL. COORDINATE ALL ATTACHMENT LOCATIONS AND DETAILS WITH SHOP BUILDING CONTRACTOR.
2. ALL DIMENSIONS AND BOLT SIZES SHALL BE VERIFIED BY SYSTEMS CONTRACTOR AND SHOWN IN SHOP DRAWINGS.
3. BOLT LENGTHS ARE DEPENDENT UPON COLUMN WALL WIDTH. COORDINATE BOLT LENGTHS WITH COLUMN WIDTH DESIGN/INSTALLATION BY BUILDING CONTRACTOR.
4. BRACKET SPREADER HOLES MAY BE SLOTTED OR MULTIPLE DRILLED FOR UNIVERSAL APPLICATION.
5. COORDINATE ALL ATTACHMENT LOCATIONS AND DETAILS WITH SHOP BUILDING CONTRACTOR.
6. WALL MOUNT BRACKET SHALL BE INSTALLED ON CANOPY COLUMNS PRIOR TO INSTALLATION OF THE COLUMN WALL FACE.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
CANTILEVER SUPPORT PIPE MOUNTING BRACKET	1	
BACK BRACKET	2	
ALL THREAD WITH BOLTS, NUTS, AND WASHERS	3	
4" DIAMETER SCH. 80 PIPE	4	
U-BOLT WITH NUTS AND WASHERS	5	
4" PIPE BRACKET FOR SWIVEL	6	

NO.	DATE	REVISION	APPROVED
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	/ /		

STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
6/7/13

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LTK Engineering Services
TBPE REGISTRATION NO. F-1389

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(915) 493-6468
TBPE REGISTRATION NO. F-3162

COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
WALL MOUNT BRACKET
BT-03

EL PASO

J243

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1207

DN: URS CK: URS DW: URS CK: URS

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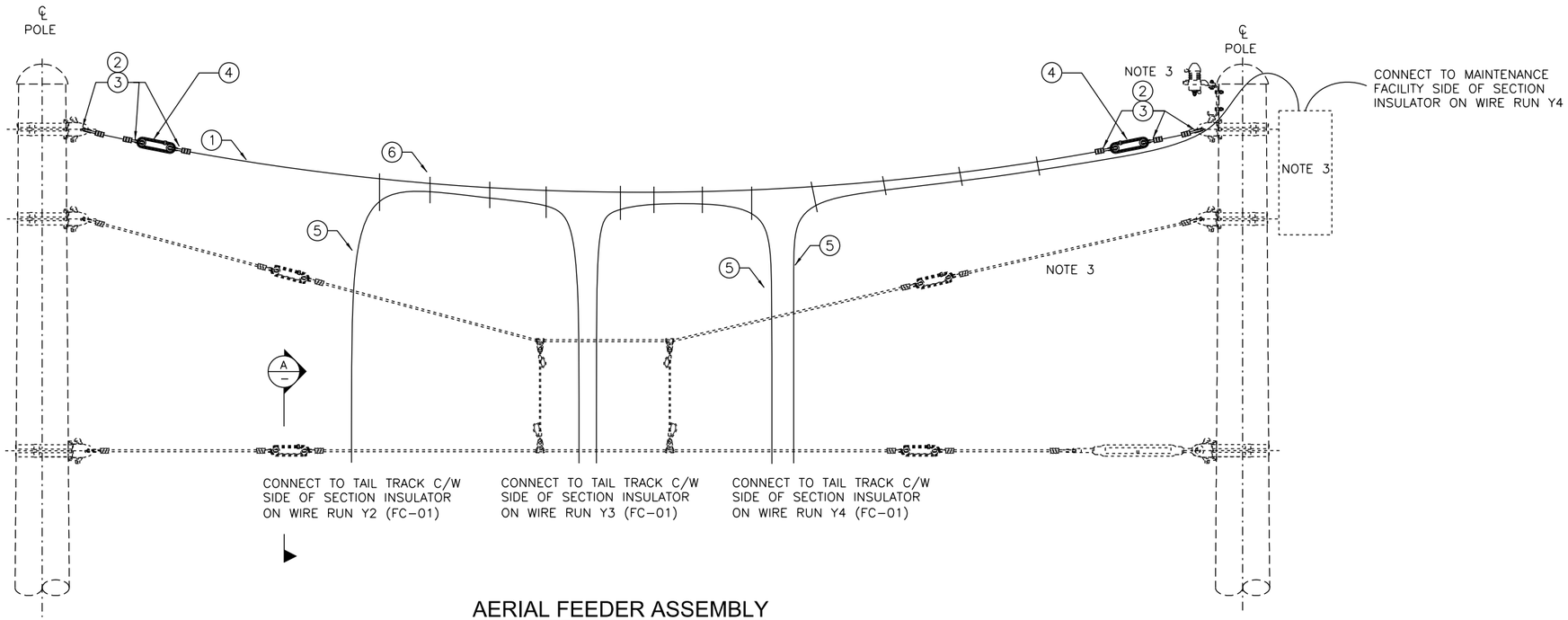
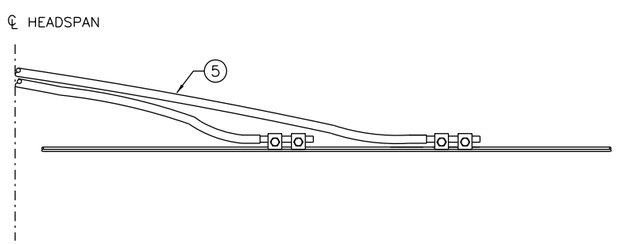


AERIAL FEEDER ASSEMBLY

AF-01 – NOT TO SCALE



FEEDER CONNECTION

ASSEMBLY FC-01 (CALLED OFF SEPARATELY)

SECTION A
SCALE: NTS

NOTES:

1. THE BILL OF MATERIALS DETAILS ARE TYPICAL FOR THE ASSEMBLY STYLES SHOWN. THE CONTRACTOR SHALL ITEMIZE THE TABLE IN SHOP DRAWINGS WITH DESCRIPTIONS AND PART NUMBERS OF COMPONENTS REQUIRED TO COMPLETE EACH ASSEMBLY.
2. REFER TO OCS WIRING LAYOUT PLANS FOR CONTACT WIRE HEIGHTS AND STAGGER.
3. HEADSPAN, DISCONNECT SWITCH, LIGHTNING ARRESTER, POLE BRACKET, FEEDER CONNECTIONS AND SECTION INSULATOR ASSEMBLIES CALLED OFF SEPARATELY.
4. LIGHTNING ARRESTER, AND FEEDER JUMPERS SHALL BE CONNECTED TO THE TAIL TRACK SIDE OF THE SECTION INSULATOR ON WIRE RUN Y4.
5. BYPASS DISCONNECT SWITCH LEADS SHALL CONNECT FROM TAIL TRACK SIDE OF NEAREST CONTACT WIRE TO BYPASS DISCONNECT SWITCH, AND FROM THE BYPASS DISCONNECT SWITCH TO THE MAINTENANCE FACILITY SIDE OF THE SECTION INSULATOR ON THE NEAREST CONTACT WIRE.
6. CONTRACTOR TO DETERMINE POLE BRACKET AND ATTACHMENT HEIGHT.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
WIRE ROPE	1	LENGTH AS REQ'D
CRIMP	2	
THIMBLE	3	
INSULATOR	4	
250 MCM 2KV INSULATED CABLE CU	5	LENGTH AS REQ'D
UV RESISTANT CABLE RESTRAINTS	6	

NO.	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED PROFESSIONAL ENGINEER
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COEP STREETCAR

OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
AERIAL FEEDER ASSEMBLY
AF-01

J244

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1208

DATE: 6/4/2013 9:19:19 AM
FILE: X:\El Paso. 2012\CADD\TYPICALS\Assemblies\J244 - Aerial Feeder.dgn

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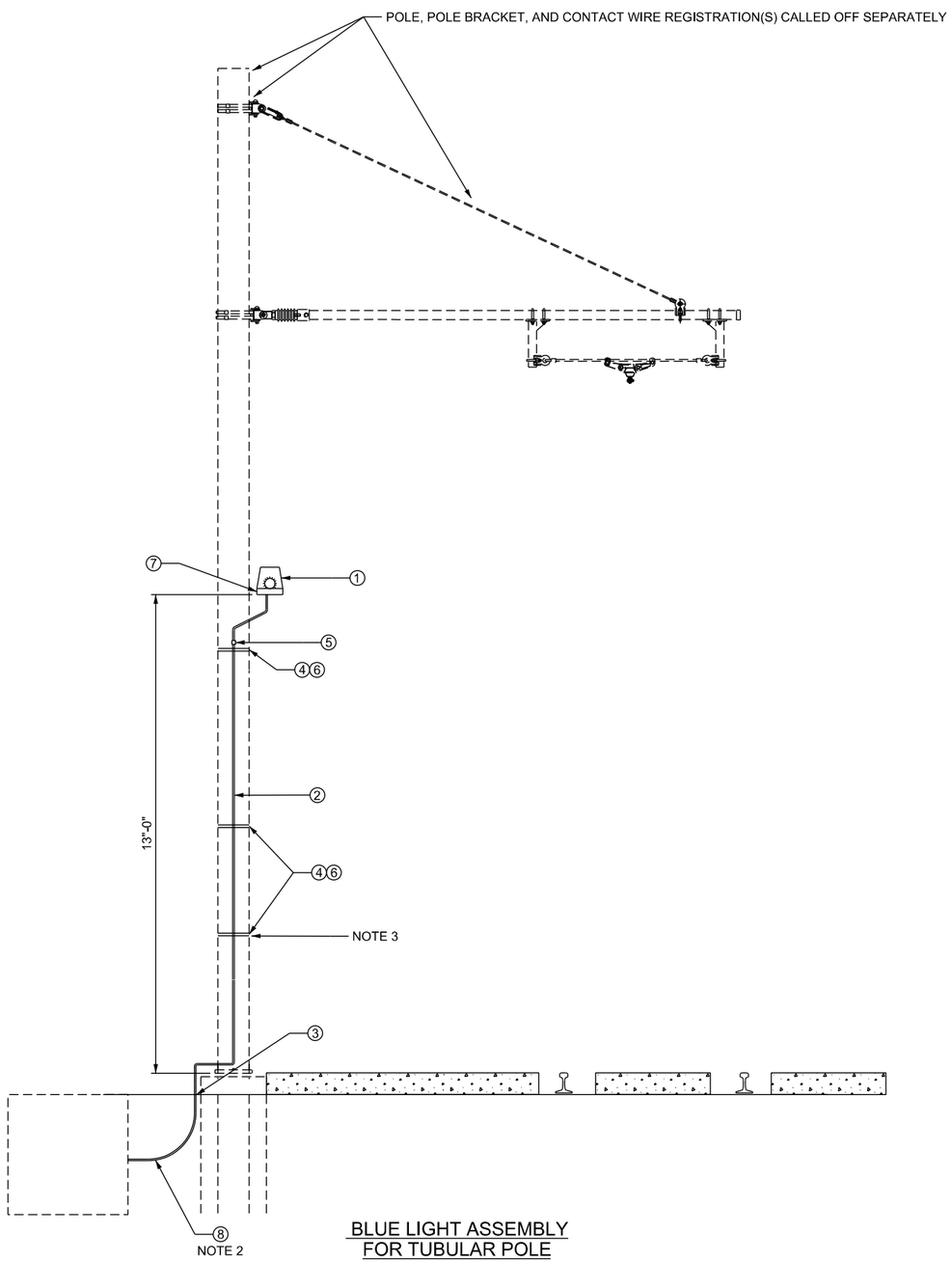

BLUE LIGHT ASSEMBLY
FOR TUBULAR POLE
BL-01

NOTES:

1. FOR BLUE LIGHT DETAILS SEE TRACTION POWER SPECIFICATIONS.
2. CONDUIT FROM TPSS SHALL BE INSTALLED ON A SIDE OF THE FOUNDATION AWAY FROM THE TRACK. SEE TRACTION POWER DRAWINGS FOR HANDHOLE AND CONDUIT ROUTING AND DETAILS.
3. POLE BAND SPACING NOT TO EXCEED 6 FEET.

BILL OF MATERIALS

DESCRIPTION	ITEM NO.	PART NO./ REMARKS
BLUE LIGHT LAMP AND HOUSING	1	
1" GRS CONDUIT	2	
1" PVC ADAPTER	3	
CONDUIT MOUNTING BRACKET	4	
WATER TIGHT CABLE OUTLET	5	
POLE BAND	6	
BLUE LIGHT BRACKET	7	
1" PVC CONDUIT	8	

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
LAMONT SMITH
112273
LICENSED
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COEP STREETCAR
OVERHEAD CONTACT SYSTEM
ASSEMBLY REFERENCE DRAWING
BLUE LIGHT ASSEMBLY
BL-01

J245

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1209

DATE: 2/13/2015 3:58:40 PM
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DN: URS | CK: URS | DW: URS | CK: URS

CITY OF EL PASO STREETCAR
EL PASO COUNTY

TRACTION POWER PLANS

INDEX OF SHEETS

DWG	DESCRIPTION
J600	TRACTION POWER COVER SHEET, INDEX & GENERAL NOTES
J601	TRACTION POWER SYMBOLS
J602	TRACTION POWER ABBREVIATIONS
J603	TRACTION POWER SECTIONALIZING DIAGRAM MAINLINE
J604	TRACTION POWER SECTIONALIZING DIAGRAM YARD/SHOP
J605	TRACTION POWER KEY MAP
J610	TPSS A1 CONDUIT LAYOUT PLAN
J611	TPSS A1 SITE ELECTRICAL PLAN
J612	TPSS A1 FEEDER/DUCTBANK SCHEDULE
J615	TPSS A2 CONDUIT LAYOUT PLAN
J616	TPSS A2 SITE ELECTRICAL PLAN
J617	TPSS A2 FEEDER/DUCTBANK SCHEDULE
J620	TPSS A3 CONDUIT LAYOUT PLAN
J621	TPSS A3 SITE ELECTRICAL PLAN
J622	TPSS A3 FEEDER/DUCTBANK SCHEDULE
J625	TPSS A4 CONDUIT LAYOUT PLAN
J626	TPSS A4 SITE ELECTRICAL PLAN
J627	TPSS A4 FEEDER/DUCTBANK SCHEDULE
J628	TYPICAL PREFABRICATED TPSS FOUNDATION DETAIL
J630	TYPICAL PREFABRICATED TPSS GROUND GRID DETAIL
J640	TYPICAL MAINLINE TPSS SINGLE LINE DIAGRAM
J641	TYPICAL PREFABRICATED TPSS EQUIPMENT LAYOUT PLAN
J642	TYPICAL PREFABRICATED TPSS EXTERIOR ELEVATIONS
J643	TYPICAL PREFABRICATED TPSS INTERIOR ELEVATIONS
J650	TPSS S1 SHOP CONDUIT LAYOUT PLAN
J651	TPSS S1 SHOP EQUIPMENT LAYOUT PLAN
J652	TPSS S1 SHOP FEEDER/CONDUIT SCHEDULE
J653	TPSS S1 SHOP SINGLE LINE DIAGRAM
J654	TPSS S1 SHOP INTERIOR ELEVATIONS
J655	TPSS S1 SHOP DC CONTACTOR PANEL DETAIL
J657	TPSS S1 SHOP GROUNDING PLAN
J658	TPSS S1 SHOP INTERLOCKING SCHEMATICS
J670	TYPICAL TRACK BLOCKOUT DETAIL
J671	TYPICAL DC FEEDER MANHOLE DETAILS
J672	TYPICAL GROUNDING DETAIL
J673	TYPICAL SURGE ARRESTER INSTALLATION DETAILS
J676	TYPICAL DUCTBANK INSTALLATION DETAIL SHEET 1 OF 2
J677	TYPICAL DUCTBANK INSTALLATION DETAIL SHEET 2 OF 2
J678	TYPICAL HANDHOLE DETAIL
J681	TYPICAL TPSS HMI CONTROL SCREEN LAYOUT
J682	TYPICAL TPSS HMI ALARM SCREEN LAYOUT
J683	TYPICAL TPSS HMI EVENT LOG SCREEN LAYOUT
J684	TYPICAL TPSS HMI NETWORK STATUS SCREEN LAYOUT

TRACTION POWER GENERAL NOTES:

1. INVESTIGATE AND VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATION, TRENCHING AND DEMOLITION.
2. COORDINATE CONDUIT ROUTES WITH OTHER SYSTEMS CONDUITS AND UNDERGROUND UTILITIES.
3. CONDUIT ROUTES ARE SHOW SCHEMATICALLY ON DRAWINGS. CONTRACTOR MAY ROUTE DUCTBANKS AS NEEDED TO AVOID UTILITY CONFLICTS PROVIDED THAT THE TOTAL DEGREES OF BEND DOES NOT EXCEED THE LIMIT IN THE SPECIFICATIONS.
4. CONDUIT AND MANHOLES FOR EL PASO ELECTRIC COMPANY (EPE) 480V SERVICE TO TRACTION POWER SUBSTATIONS SHALL BE CONSTRUCTED ACCORDING TO EPEC SERVICE REQUIREMENTS (BLUE BOOK) FOR DISTRIBUTION UNDERGROUND STRUCTURE AND ENGINEERING SPECIFICATION.
5. CONTRACTOR SHALL IMMEDIATELY REPORT ANY DAMAGE TO THE ENGINEER.

NO	DATE	REVISION	APPROVED
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	/ /		

STATE OF TEXAS
DONALD D. ROSS
59778
REGISTERED
PROFESSIONAL ENGINEER
6/7/13
Donald D. Ross

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COEP STREETCAR

TRACTION POWER COVER SHEET, INDEX & GENERAL NOTES

J600

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1210

DN: URS CK: URS DW: URS CK: URS

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TRACTION ELECTRIFICATION SYMBOLS

NO	DISCONNECT SWITCH IS NORMALLY CLOSED, UNLESS DESIGNATED WITH (NO) NORMALLY OPEN
	FUSED DISCONNECT SWITCH
	LOW VOLTAGE CIRCUIT BREAKER
	POTENTIAL TRANSFORMER
	CABLE POTHEAD / CABLE CONNECTOR
OR	CURRENT TRANSFORMER
	SURGE ARRESTER
	TRACTION RECTIFIER
	FUSE
	REMOVABLE FUSE
	SHUNT OR TPSS BUS CONNECTION
	WITHDRAWABLE DC CIRCUIT BREAKER WITH SERIES TRIP UNIT
	DIRECTION OF CONTROL OR RELAY INFLUENCE LINE
	RECTIFIER TRANSFORMER, 12 PULSE
	RECTIFIER TRANSFORMER, 6 PULSE OR POWER TRANSFORMER
	DELTA, TRANSFORMER CONNECTION
	INTERPHASE TRANSFORMER
	DIODE
	CONTACTOR
Y	WYE, TRANSFORMER CONNECTION
X	TEST SWITCH
	OCS SECTION INSULATOR
	OCS INSULATED OVERLAP
	PAIR OF INSULATED JOINTS IN RAIL

A	ANNUNCIATOR / SAS ALARM
A	AMMETER
V	VOLTMETER
KWHR	KILOWATT HOUR METER
KVAR	KILOVAR HOUR METER
AS	AMMETER SWITCH
KW	KILOWATT METER
SC	SCADA
ETS	EMERGENCY TRIP STATION (ETS)
AT	CURRENT TRANSDUCER
VT	VOLTAGE TRANSDUCER
K	MECHANICAL KEY INTERLOCK
	UTILITY GROUND CONNECTION
1	INTERLOCK
SD	SMOKE DETECTOR
	RECEPTACLE
	MH/HH/VAULT
	FLUORESCENT LIGHT
	EMERGENCY LIGHT

	EXTERIOR LIGHT
	GROUND
	CHASSIS

52 / 3 — RELAY OPERATING COIL. INSIDE NUMBER DESIGNATES DEVICE FUNCTION. OUTSIDE NUMBER DESIGNATES QUANTITY OF DEVICES

5	EMERGENCY STOP PUSHBUTTON
26R1	RECTIFIER OVERTEMP ALARM (1ST. STAGE)
26R2	RECTIFIER OVERTEMP TRIP (2ND. STAGE)
27	UNDERVOLTAGE RELAY
32	REVERSE CURRENT RELAY
33A	AC CIRCUIT BREAKER REAR DOOR SWITCH
33F	FEEDER BREAKER REAR DOOR SWITCH
33R	RECTIFIER DOOR SWITCH
33T	TRANSFORMER DOOR SWITCH
47	PHASE SEQUENCE
49T1	TRANSFORMER OVERTEMP ALARM (1ST STAGE)
49T2	TRANSFORMER OVERTEMP TRIP (2ND STAGE)
50/51	PHASE FAULT TIME OVERCURRENT RELAY (INST. AND TIME DELAY)
50N/51N	GROUND FAULT TIME OVERCURRENT RELAY (INST. AND TIME DELAY)
52	AC CIRCUIT BREAKER
59	AC UNDERVOLTAGE
59B	125V DC CONTROL VOLTAGE SHORTED WITH 750VDC
64GS	GROUNDED STRUCTURE
64HS	HOT STRUCTURE
64V	NEGATIVE-TO-EARTH VOLTAGE RELAY
72	DC CIRCUIT BREAKER
76	DC DIRECT ACTING OVERCURRENT TRIP DEVICE
86	AC LOCKOUT RELAY
89N	DC NEGATIVE DISCONNECT SWITCH
89P	DC POSITIVE DISCONNECT SWITCH
98R1	R1 RECTIFIER DIODE FAILURE ALARM
98R2	R2 RECTIFIER DIODE FAILURE TRIP
150	DC INSTANTANEOUS AND OVERCURRENT RELAY
151	DC TIME OVERCURRENT RELAY
182	DC LOAD MEASURING RELAY
183	DC RECLOSING RELAY
185	TRANSFER TRIP RELAY
186	DC LOCKOUT RELAY
ROR	DC RATE OF RISE RELAY

DUCTBANK NUMBERING CONVENTION

TPD – A1 01

- 01 — INDICATES DUCTBANK NUMBER
- A1 — INDICATES TPSS A1
- TPD — TRACTION POWER DUCTBANK

MANHOLE NUMBERING CONVENTION

TPMH – A1 1

- 1 — INDICATES MANHOLE NUMBER
- A1 — INDICATES TPSS NUMBER
- TPMH — INDICATES TRACTION POWER MANHOLE

EQUIPMENT NUMBERING CONVENTION

A1 – PF 2

- 2 — INDICATES EQUIPMENT NUMBER
- PF — INDICATES EQUIPMENT TYPE
- A1 — INDICATES TPSS NO. 1

EQUIPMENT TYPES:

DS	DISCONNECT SWITCH
NR	NEGATIVE FEEDER
PF	POSITIVE FEEDER
DR	DUCTBANK/RACEWAY
AC	AC BREAKER
VT	VAULT
F	DC FEEDER BREAKER

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS — DONALD D. ROSS — 59778 — REGISTERED PROFESSIONAL ENGINEER

Donald D. Ross 6/7/13

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COEP STREETCAR

TRACTION POWER SYMBOLS

J601

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1211

DATE: 6/4/2013 1:07:45 PM
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CK: URS | DN: URS | CK: URS | DN: URS

SYSTEMS ABBREVIATIONS

A

A	AMPERE, ANNUNCIATE, AMMETER
AB	ANCHOR BOLT, AC BREAKER
ABUT	ABUTMENT
ABV	ABOVE
AC	ALTERNATING CURRENT
ACI	AMERICAN CONCRETE INSTITUTE
ADJ	ADJACENT
A/G	AT GRADE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AM	AMMETER
ANC	ANCHOR
AP	APPROACH, AUXILIARY POWER
APS	AUXILIARY POWER SUPPLY
APT	AUXILIARY POWER TRANSFORMER
AREA	AMERICAN RAILWAY ENGINEERING ASSOCIATION
AS	AMMETER SWITCH
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY OF TESTING & MATERIALS
AT	CURRENT TRANSDUCER
A/T	AUTO TENSION (* A.T.)
ATM	ALONG TRACK MOVEMENT
ATR	ABOVE TOP RAIL
AWS	AMERICAN WELDING SOCIETY
AUX	AUXILIARY

B

BAT	BATTERY
B/B	BACK TO BACK
BFA	BY-PASS FEEDER ANCHOR
BIL	BASIC IMPULSE LEVEL
BKR	BREAKER
BL	BASELINE
BM	BEAM
BP	BYPASS
BR	BRIDGE
BRKT	BRACKET
B-SPAN	BODY SPAN
BTM	BOTTOM
B/W	BALANCE WEIGHT
BWA	BALANCE WEIGHT ANCHOR
BZ	BRONZE

C

CAB	CABINET
CANT	CANTILEVER
CB	CIRCUIT BREAKER
CHAM	CHAMFER
CHGR	CHARGER
CKT	CIRCUIT
C TO C	CENTERLINE TO CENTERLINE
CISP	CAST IRON SOIL PIPE
COEP	CITY OF EL PASO
COMM	COMMUNICATIONS
COND	CONDUCTOR
CONT	CONTINUATION , CONTINUOUS
CONTR	CONTRACTOR
CR	CONDUIT RISER , CONTROL RECTIFIER
CT	CURRENT TRANSFORMER
CS	CURVE-TO-SPIRAL OR CONTROL SWITCH
CTR	CENTER
CU	COPPER
C/W	CONTACT WIRE

D

D	DEPTH
DB	DIRECT BURIED
DCL	DOWNTOWN CIRCULATOR LOOP
DEG	DEGREE
DET	DETAIL
DGA	DOWN GUY ANCHOR
DIM.	DIMENSION (*DIM)
DISC	DISCONNECT
DISC SW	DISCONNECT SWITCH
DLGT	DOME LIGHT
DOC	DEGREE OF CURVATURE
DS	DOOR SWITCH, DISCONNECT SWITCH

E

EB	EASTBOUND
Ea	SUPERELEVATION IN INCHES
EHS	EXTRA HIGH STRENGTH
EPE	EL PASO ELECTRIC
EQN	EQUATION
EQPT	EQUIPMENT (*EQUIP)
ES	EXTRA STRENGTH
ESL	ENTIRE SYSTEM LOOP
ETC	ET CETERA
ETS	EMERGENCY TRIP STATION

F

F1	FEEDER No.1
F	FAHRENHEIT
FAC	FACILITY
FDR	FEEDER
FFJ	FULL FEEDING JUMPER
FIN	FINISHED
FJ	FEEDER JUMPER
FREQ	FREQUENCY
FOP	FACE OF POLE
F.O.S.	FACTOR OF SAFETY
FT	FEET, FOOT, FEEDER TAP
F TO F	FACE TO FACE
F/T	FIXED TERMINATION (F.T.)
FTA	FIXED ANCHOR
FUT	FUTURE

G

G	GREEN
GB	GROUND BUS
GFI	GROUND FAULT INTERRUPTER
G/L	GROUND LINE
GRD	GROUNDING DEVICE, GROUND
GRS	GALVANIZED RIGID STEEL
GRSC	GALVANIZED RIGID STEEL CONDUIT
GRX	GRADE CROSSING
GTO	GATE-TURN-OFF THYRISTOR

H

H	HEIGHT
H.D.	HARD DRAWN
HMI	HUMAN MACHINE INTERFACE
HO	HAND OPERATED
H.R.L.	HIGH RAIL LEVEL
H-SPAN	HEAD SPAN
HSS	HIGH STRENGTH STEEL
HV	HIGH VOLTAGE
HVAC	HEATING VENTILATION AIR CONDITIONING
HWY	HIGHWAY
Hz	HERTZ

I

I	INTERLOCK
IB	IMPEDENCE BONDS
IC	INTERRUPTING CAPACITY
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IJ	INSULATED JOINT
INC	INCOMING
INCL	INCLUDE, INCLUDING
INST	INSTRUMENT
INSUL	INSULATION
I.R.	IN RUNNING (RIDING CONTACT WIRE)

J

J	JUMPER
JCT	JUNCTION

K

K	KIP
KCMIL, KCM	THOUSAND CIRCULAR MILS
KA	KILOAMPERE
KVA	KILOVOLT AMPERE
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
KW	KILOWATT
KWH	KILOWATT HOURS
KVAR	KILOVOLT AMPERES REACTANCE

L

LBF	POUNDS FORCE
LB/FT	POUNDS PER FOOT
LED	LIGHT EMITTING DIODE
LG	LONG, LENGTH
LTG	LIGHTING
LPT	LOW POINT
LS	LUMP SUM OR LINE SECTION
LT	LIGHT
LTS	LIGHT TRACTION SYSTEM/SERVICE
LV	LOW VOLTAGE

M

M	METER
M/W	MESSENGER WIRE
mH	MILLIHENRY
MH	MANHOLE
M/L	MAIN LINE
MOP	MOTOR OPERATED
MP	MILE POST, MORE PERMISSIVE SPEED
MPA	MID POINT ANCHOR
MPH	MILES PER HOUR
MSB	MAIN SWITCH BOARD
MSF	MAINTENANCE & STORAGE FACILITY
MTG	MOUNTING
MVA	MEGAVOLT AMPERE
mV	MILLIVOLT
MV	MEDIUM VOLTAGE
MW	MEGAWATT

N

N	NORTH, NEGATIVE
N/A	NOT APPLICABLE
NB	NORTH BOUND
NBR	NON-BRIDGING
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEG	NEGATIVE
NESC	NATIONAL ELECTRICAL SAFETY CODE
NF	NEGATIVE FEEDER
NO	NORMALLY OPEN
No.	NUMBER
NR	NEGATIVE RETURN
NRN	NON-REVENUE NORTHBOUND
NRS	NON-REVENUE SOUTHBOUND
N.R.	NOT REGISTERED
N.S.	NOT SUPPORTED
N.S.R.	NOT SUPPORTED OR REGISTERED
N-SW	NEGATIVE SWITCH

O

OCS	OVERHEAD CONTACT SYSTEM
OHB	OVERHEAD BRIDGE
O/L	OVERLAP
O/R	OUT OF RUNNING (NON-RIDING CONTACT WIRE)

P

P	POSITIVE
PAN	PANTOGRAPH
PB	PULLBOX , PUSH BUTTON
PF	POINT OF FROG, POSITIVE FEEDER
PITO	POINT OF INTERSECTION OF TURNOUT
PLC	PROGRAMMABLE LOGIC CONTROLLER
PL	PROPERTY LINE
PLAT.	PLATFORM
POS	POSITIVE
PS	POINT OF SWITCH
PSF	POUNDS PER SQUARE FEET
P-SW	POSITIVE SWITCH
PT	POINT OF TANGENCY, POCKET TRACK, POTENTIAL TRANSFORMER
PTT	PUSH TO TEST
PVC	POLYVINYL CHLORIDE CONDUIT (PVCC) OR POINT OF VERTICAL CURVE
PWR	POWER

R

R1	RECTIFIER No.1
R	RADIUS OR RED, RECTIFIER
RE	RUNNING EDGE OF RAIL
RECT	RECTIFIER
REV	REVISE, REVISION
ROW	RIGHT OF WAY
RT	RECTIFIER TRANSFORMER
RTU	REMOTE TERMINAL UNIT
RW	RETAINING WALL (R/W)
R2G	RAIL TO GROUND DEVICE

S

SA	SURGE ARRESTER
SAS	SUBSTATION AUTOMATION SYSTEM
SAP	SUBSTATION ALARM PANEL
SB	SOUTHBOUND, SPLICE BOX, OR SWITCHBOARD
SE	SPECIAL EVENTS
SECT	SECTION
SC	SPIRAL TO CURVE OR SIGNAL/COMM, SCADA
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCWAT	SINGLE CONTACT WIRE AUTO TENSION
SD	SMOKE DETECTOR
SHP	SHOP
SI	SECTION INSULATOR
SIG	SIGNAL
S/N	SOLID NEUTRAL
SOP	SET OUT POINT
SPS	SMALL PART STEELWORK
SS	SUBSTATION
SPST	SINGLE POLE SINGLE THROW
SQ FT	SQUARE FEET
SQ IN	SQUARE INCHES
S-SPAN	STEADY SPAN
SST	STAINLESS STEEL
ST	SPIRAL TO TANGENT (CONFLICT STREET)
SUSP	SUSPENDED
SW	SWITCH
SWA	SINGLE WIRE ANCHOR
SWFT	SINGLE WIRE FIXED TERMINATION
SWH	SWITCH HEATER
SWHT	SWITCH HEATER TRANSFORMER

T

TB	TAP BOX
TBD	TO BE DETERMINED
TBR	TO BE REMOVED
TEMP	TEMPERATURE, TEMPORARY
TERM.	TERMINAL, TERMINATION
TES	TRACTION ELECTRIFICATION SYSTEM
T/F	TOP OF FOUNDATION
T/G	TOP OF GROUND LINE
TL	TRACK LIGHTING
T/LR	TOP OF LOW RAIL
TO.	TURNOUT
TOC	TOP OF CONCRETE
TORW	TOP OF RETAINING WALL
TP	TRACTION POWER
TPD	TRACTION POWER DUCTBANK
TPMH	TRACTION POWER MANHOLE
TPSS	TRACTION POWER SUBSTATION
T/R	TOP OF RAIL
TRAC	TRACTION
TRK	TRACK
TS	TANGENT TO SPIRAL OR TEST STATION, TIE SWITCH, TEST SWITCH
TTC	TELEPHONE TERMINAL CABINET
TWA	TIE WIRE ANCHOR
T/L	TENSION LENGTH

U

UF	UNDERGROUND FEEDER
UGB	UNDERGRADE BRIDGE
U/S	UNDERSIDE
UTIL	UTILITY

V

V	VOLT, VOLTMETER
VA	VOLT AMPS
VM	VOLTMETER
V/S	VERSINE
VS	VOLTMETER SWITCH
VT	VOLTAGE TRANSFORMER, VOLTAGE TRANSDUCER

W

W	WEST, WATT, WIDTH OR WIRE
WI	WROUGHT IRON
W/O	WITHOUT
WF	WIDE FLANGE
WWF	WELDED WIRE FABRIC
WB	WESTBOUND

X

XFMR	TRANSFORMER
X-ING	CROSSING
XOVER	CROSSOVER
XPASS	CROSS PASSAGE
X-SECT	CROSS SECTION
X-SPAN	CROSS SPAN

Y

YRD	YARD
YL	YARD LEAD

NOTES:

1. SEE CITY OF EL PASO STANDARD PLANS FOR ADDITIONAL ABBREVIATIONS.

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COEP STREETCAR

TRACTION POWER ABBREVIATIONS

J602

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1212

DATE: 6/4/2013 1:14:50 PM
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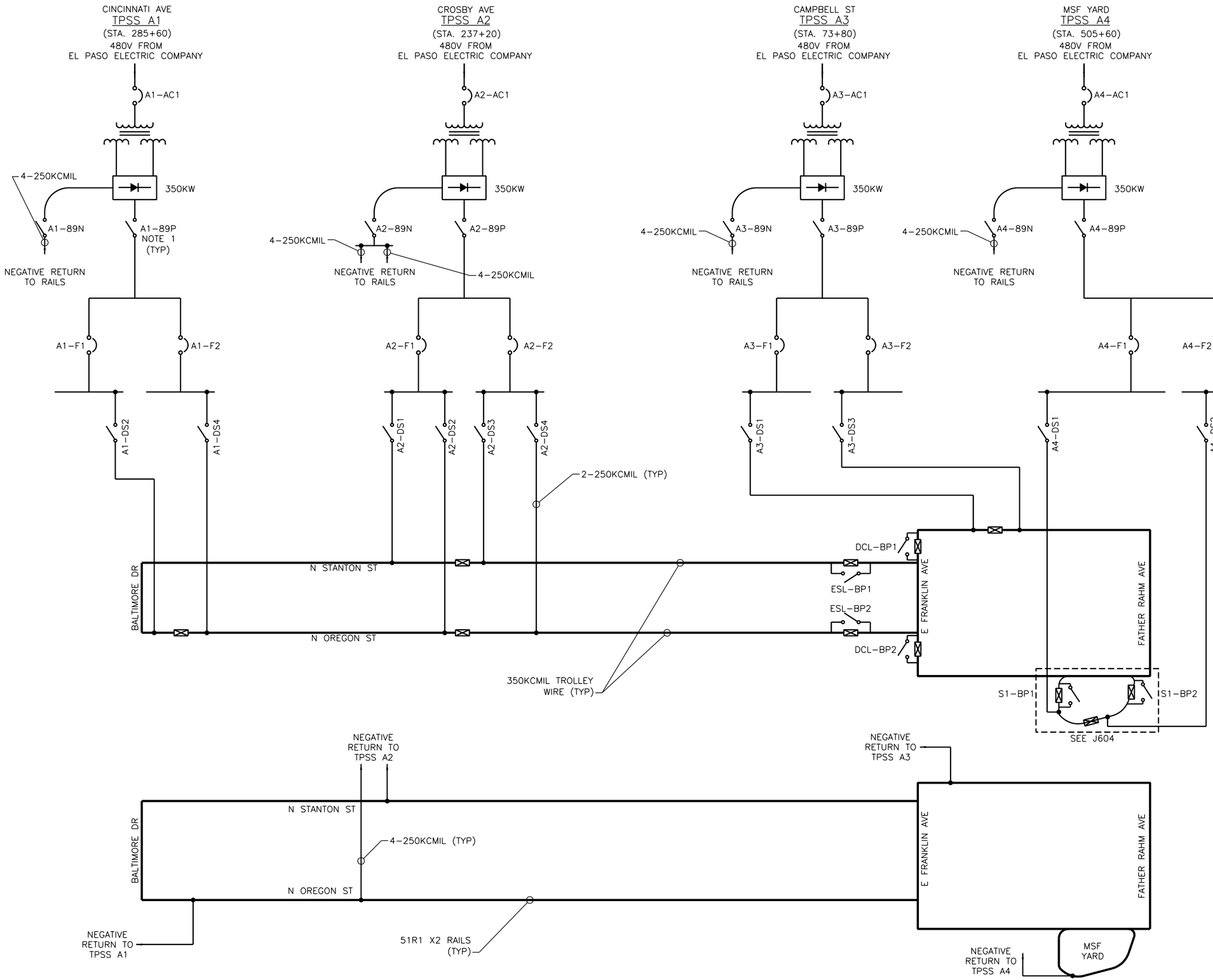

NOTES:

1. SWITCHES ARE NORMALLY CLOSED (NC) UNLESS OTHERWISE NOTED.

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COEP STREETCAR

TRACTION POWER
SECTIONALIZING
DIAGRAM MAINLINE

J603

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1213

DN: URS CK: URS DN: URS CK: URS

DATE: 6/4/2013 7:43:35 AM
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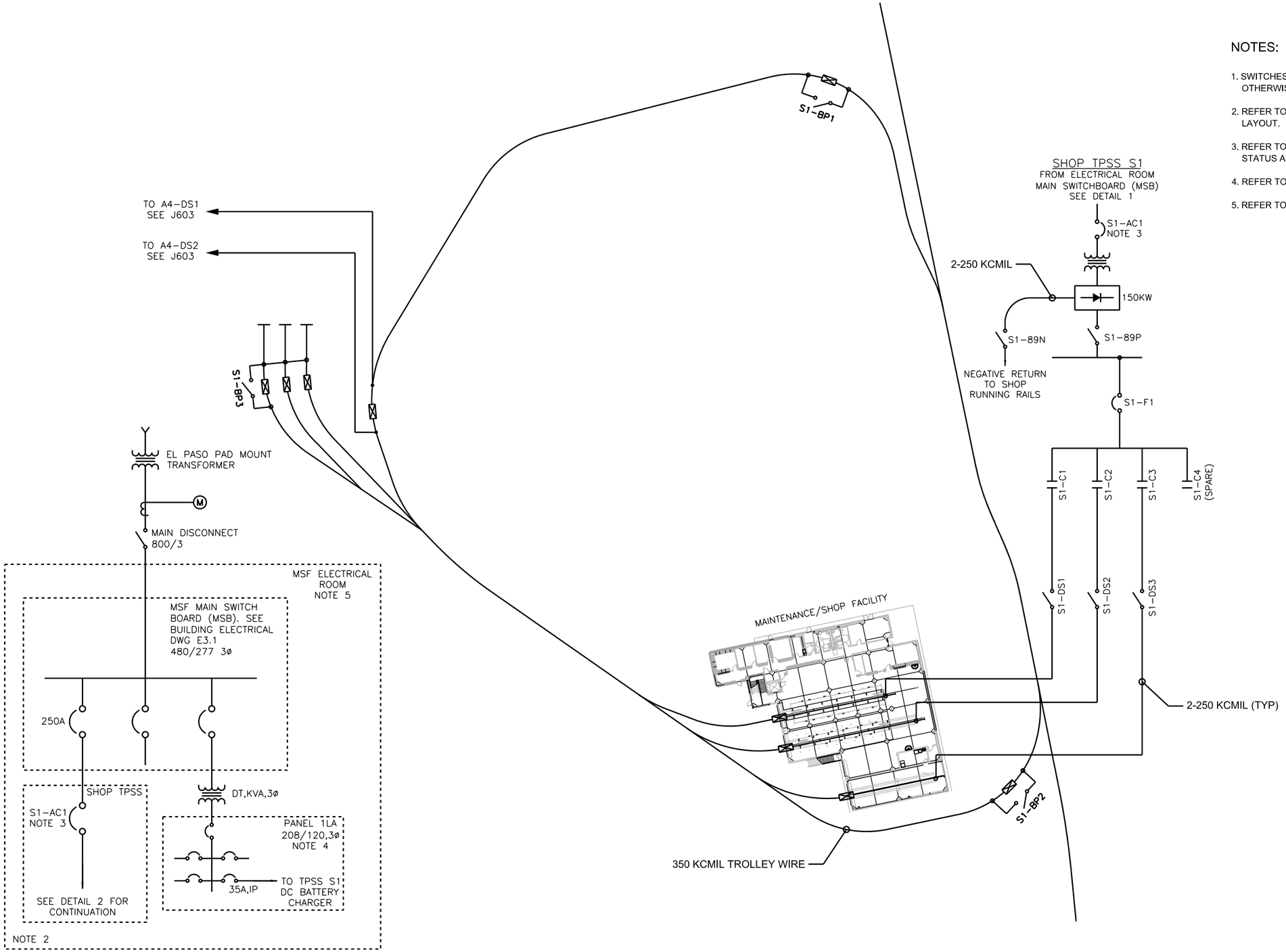

MSF ELECTRICAL ROOM ONE-LINE DIAGRAM

1

SCALE: NTS

SHOP TPSS ONE-LINE DIAGRAM

2

SCALE: NTS

NOTES:

1. SWITCHES ARE NORMALLY CLOSED UNLESS OTHERWISE NOTED.
2. REFER TO J651 FOR TPSS S1 EQUIPMENT LAYOUT.
3. REFER TO J653 FOR TPSS S1 PROTECTION, STATUS AND CONTROL REQUIREMENTS.
4. REFER TO MSF DRAWING E4.2.
5. REFER TO MSF DRAWING E3.1.

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COEP STREETCAR

TRACTION POWER
SECTIONALIZING
DIAGRAM YARD/SHOP

J604

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1214

DN: URS CK: URS DN: URS CK: URS

DATE: 2/16/2015 10:59:33 AM
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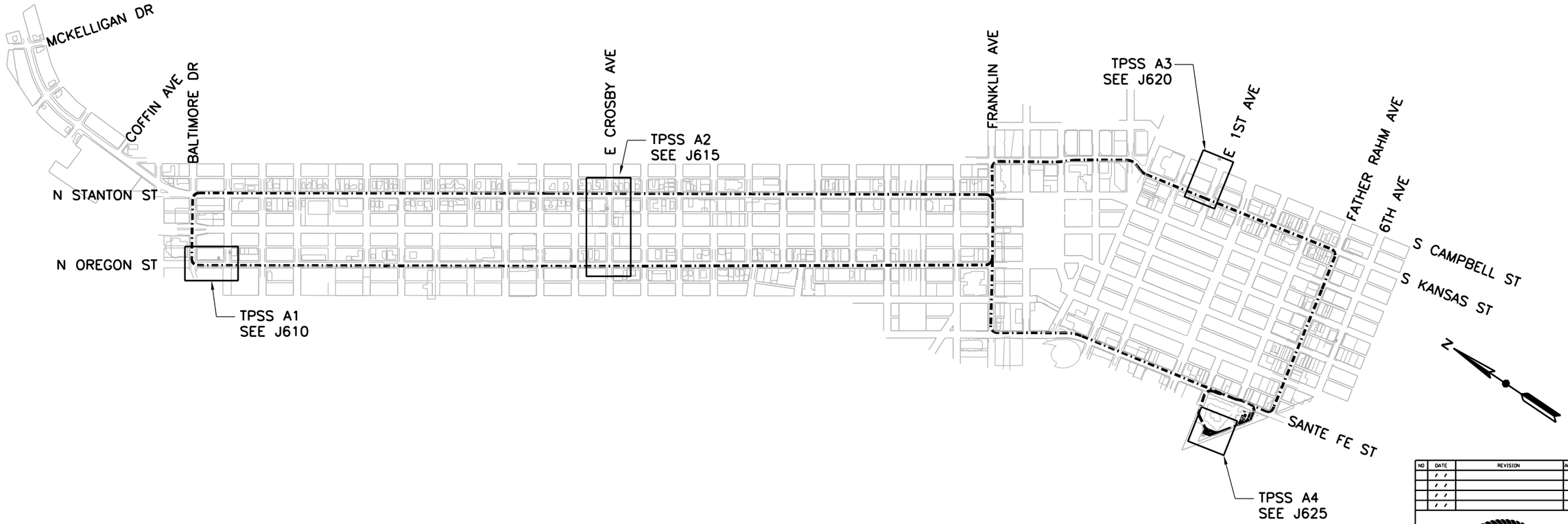

NO	DATE	REVISION	APPROVED
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COEP STREETCAR

TRACTION POWER
KEY MAP

J605

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1215

DN: URS CK: URS DN: URS CK: URS

DATE: 6/4/2013 7:45:25 AM
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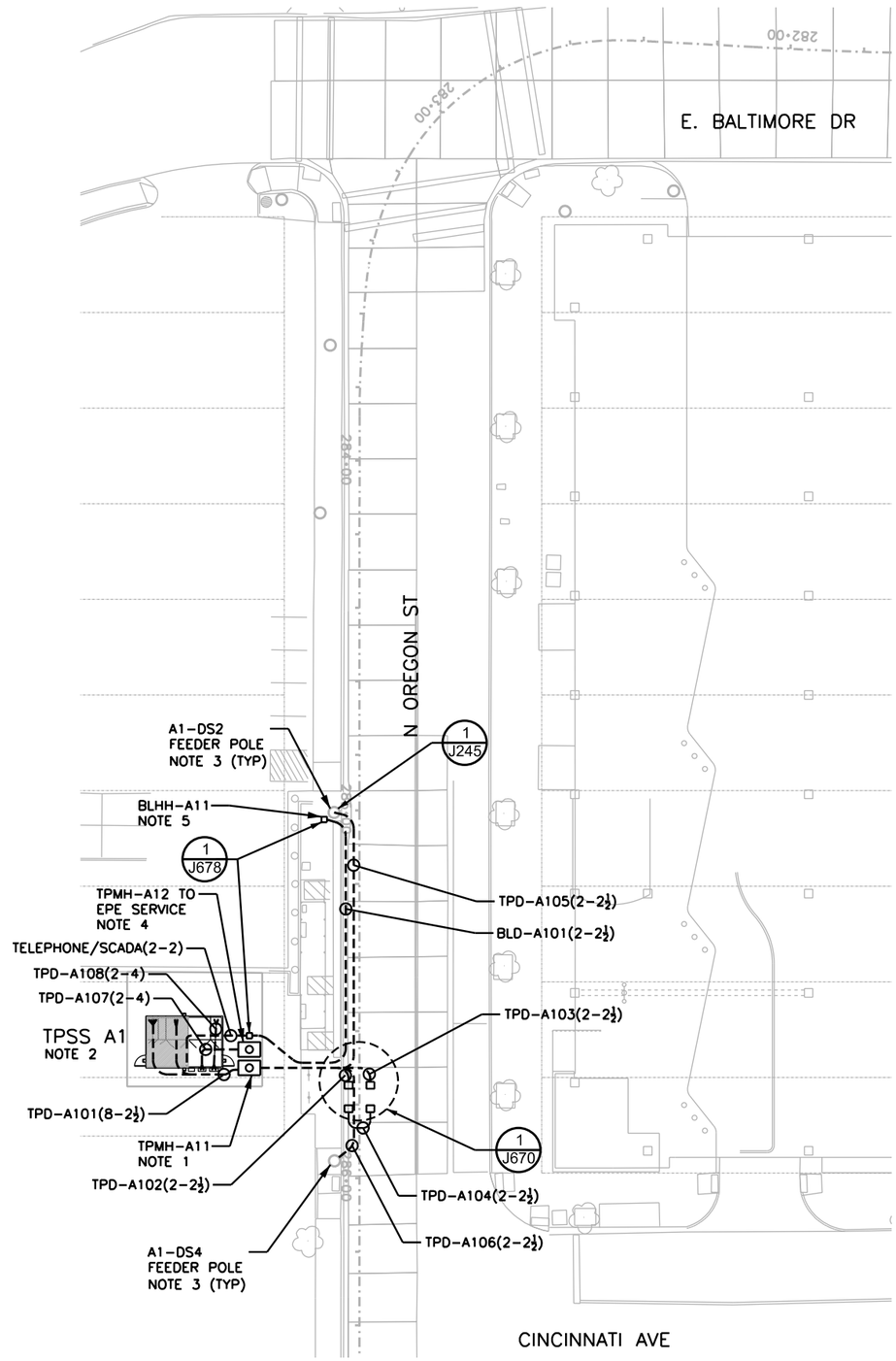
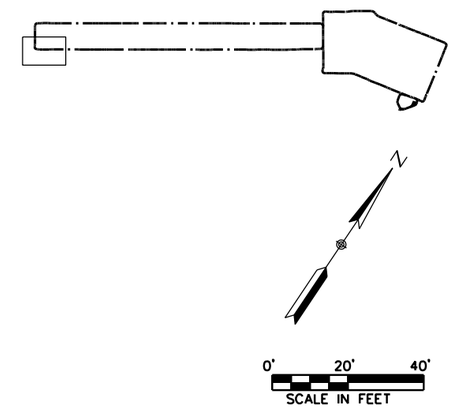


TPSS A1 CONDUIT LAYOUT PLAN

SCALE: 1:20

NOTES:

1. REFER TO THE SPECIFICATIONS FOR INSTALLATION DETAIL OF POSITIVE AND NEGATIVE CABLES IN DUCTBANKS AND MANHOLES.
2. REFER TO J611 AND J628 FOR CONDUIT STUB UP DETAIL AT THE SUBSTATION.
3. REFER TO OCS FOUNDATION DETAILS FOR CONDUIT STUB UP.
4. COORDINATE WITH EPE AND PROVIDE CONDUIT FROM TPSS CT CABINET TO EPE SERVICE POINT.
5. PROVIDE CONDUIT FROM HANDHOLE TO FEEDER POLE PER DRAWING J245.



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COEP STREETCAR

TPSS A1
CONDUIT LAYOUT
PLAN

J610

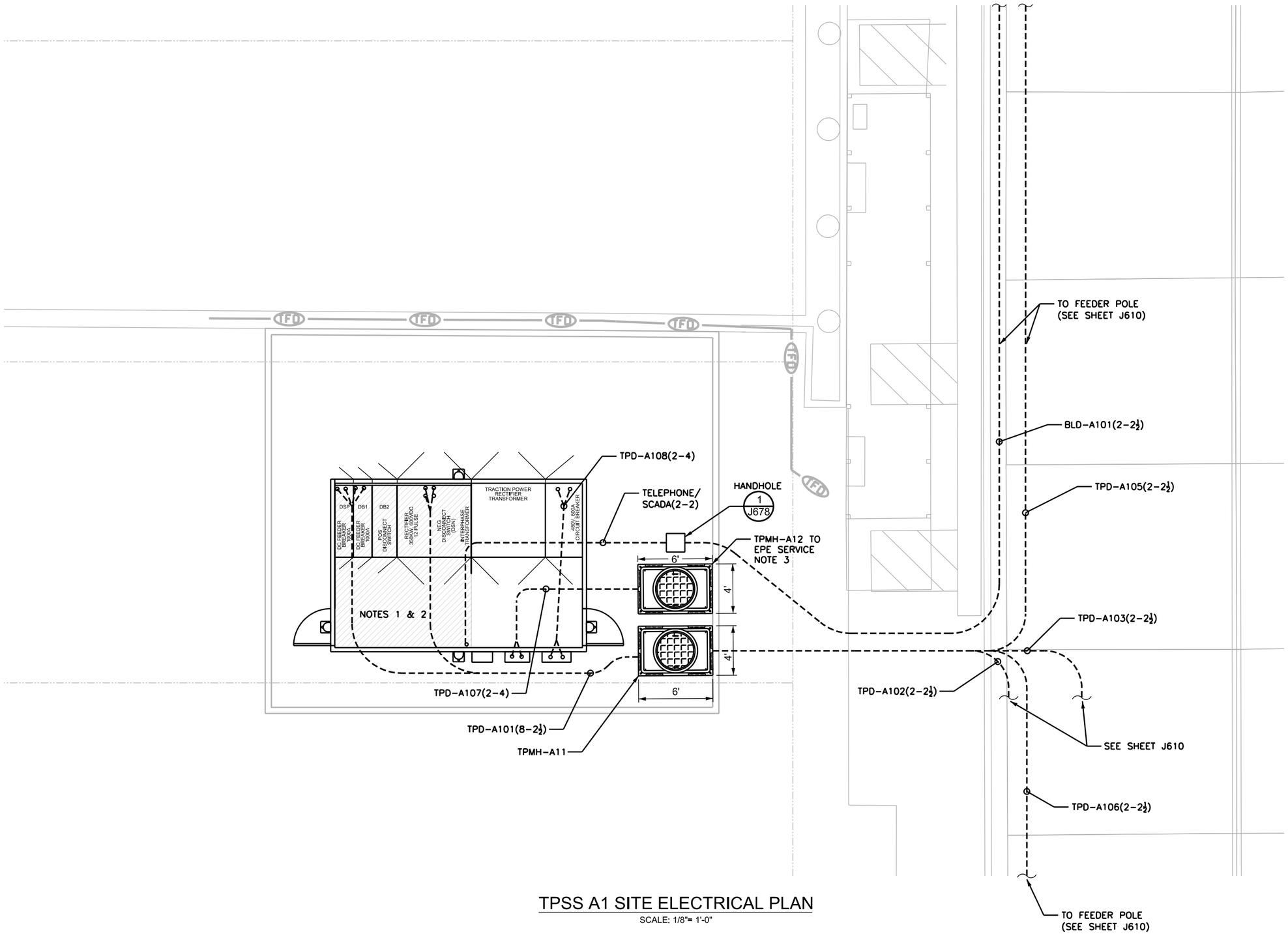
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1216

DN: URS | CK: URS | DW: URS | CK: URS

DATE: 7/14/2015 12:00:41 PM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J610.dgn

NOTES:

1. EQUIPMENT DIMENSIONS ARE APPROXIMATE AND FOR REFERENCE ONLY.
2. COORDINATE EXACT LOCATIONS OF THE CONDUIT STUB UPS WITH THE TPSS MANUFACTURER SHOP DRAWING.
3. COORDINATE WITH EPE AND PROVIDE CONDUIT FROM TPSS CT CABINET TO EPE SERVICE POINT.



TPSS A1 SITE ELECTRICAL PLAN

SCALE: 1/8"= 1'-0"

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TPSS A1
SITE ELECTRICAL
PLAN

J611

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1217

DN: URS CK: URS DW: URS CK: URS

DATE: 7/13/2015 5:29:57 PM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J611.dgn

TPSS A1 - DC FEEDER/DUCTBANK SCHEDULE

FEEDER NUMBER	FROM	TO	VIA DUCTBANK/CONDUIT	CABLE DESCRIPTION				DRAWING NUMBER	COMMENTS
				QUANTITY	SIZE	TYPE	VOLTAGE RATING		
A1-PF1	A1-F1	TPMH-A11	TPD-A101	2	250 KCMIL	EPR	2000 V	J610	POSITIVE FEEDER
	TPMH-A11	A1-DS2 ON OCS FEEDER POLE	TPD-A105	2	250 KCMIL	EPR	2000 V	J610	
	A1-DS2	OCS CONTACT WIRE		2	250 KCMIL	EPR	2000 V	J610	
A1-PF2	A1-F2	TPMH-A11	TPD-A101	2	250 KCMIL	EPR	2000 V	J610	POSITIVE FEEDER
	TPMH-A11	A1-DS4 ON OCS FEEDER POLE	TPD-A106	2	250 KCMIL	EPR	2000 V	J610	
	A1-DS4	OCS CONTACT WIRE		2	250 KCMIL	EPR	2000 V	J610	
A1-NR01	DC NEGATIVE BUS	TPMH-A11	TPD-A101	2	250 KCMIL	EPR	2000 V	J610	NEGATIVE FEEDER
	TPMH-A11	TRACK BLOCKOUT	TPD-A102	2	250 KCMIL	EPR	2000 V	J610	
A1-NR02	DC NEGATIVE BUS	TPMH-A11	TPD-A101	2	250 KCMIL	EPR	2000 V	J610	NEGATIVE FEEDER
	TPMH-A11	TRACK BLOCKOUT	TPD-A103	2	250 KCMIL	EPR	2000 V	J610	
A1-RB01	INSIDE RAIL TRACK BLOCKOUT	OUTSIDE RAIL TRACK BLOCKOUT	TPD-A104	2	250 KCMIL	EPR	2000 V	J610	RAIL JUMPER BOND
A1-EPE1	480V DISCONNECT SWITCH	A1-AC1	TPD-A108	6	500 KCMIL	RHH/RHW-2	600 V	J610	
	CT CABINET	TPMH-A12	TPD-A107	NA	NA	EPR	600 V	J610	COORDINATE WITH EPE FOR FEEDER CABLE
A1-BL1	TPSS A1	TPSS A1 TELEPHONE/SCADA HANDHOLE	2" CONDUIT	2	#10 AWG	XHHW-2	600 V	J620	BLUE LIGHT
	TPSS A1 TELEPHONE/SCADA HANDHOLE	BLHH-A11	BLD-A101	2	#10 AWG	XHHW-2	600 V	J620	

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COEP STREETCAR

TPSS A1
FEEDER/DUCTBANK
SCHEDULE

J612

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1218

DN: URS CK: URS DW: URS CK: URS

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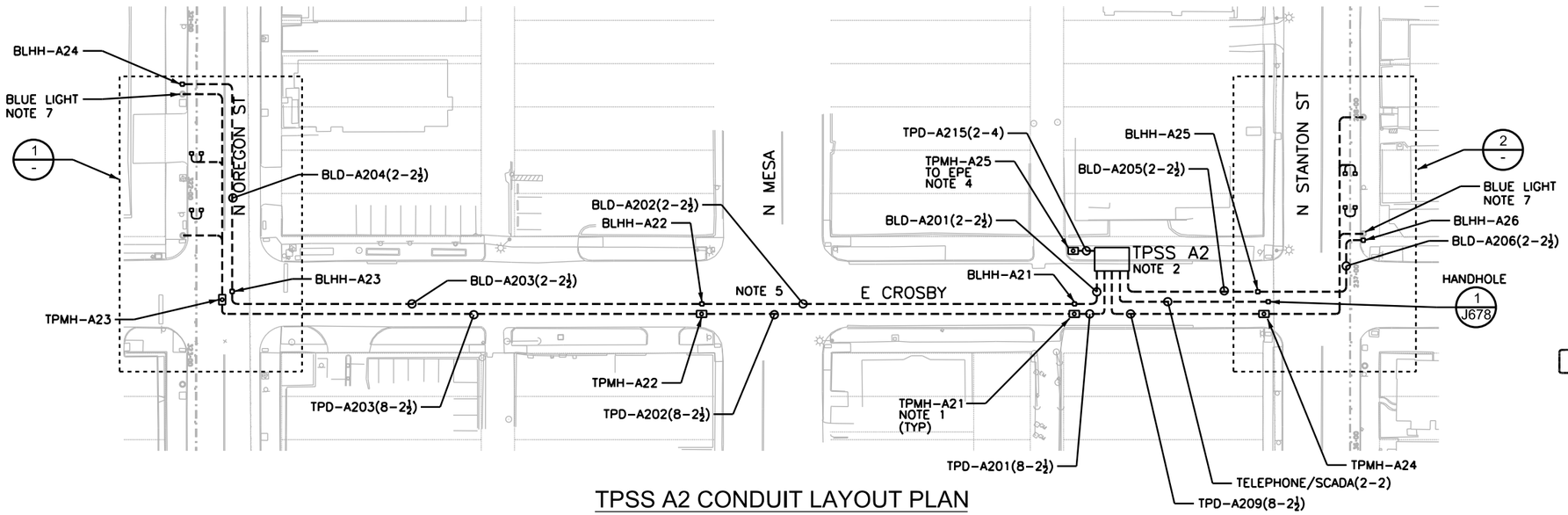
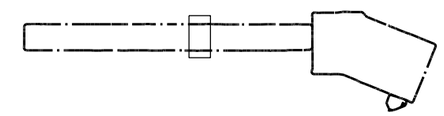


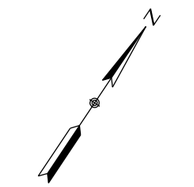
TPSS A2 CONDUIT LAYOUT PLAN

SCALE 1:40

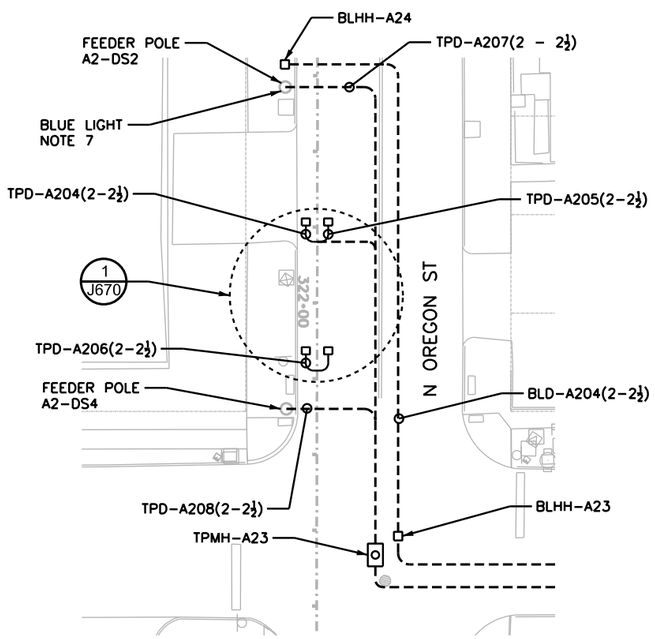
NOTES:

1. REFER TO THESPECIFICATIONS FOR INSTALLATION DETAILS OF POSITIVE AND NEGATIVE CABLE IN DUCTBANKS AND MANHOLES.
2. REFER TO J616 AND J628 FOR CONDUIT STUB UP DETAIL AT THE SUBSTATION.
3. REFER TO OCS FOUNDATION DETAILS FOR CONDUIT STUB UP.
4. COORDINATE WITH EPE AND PROVIDE CONDUIT FROM TPSS CT CABINET TO EPE SERVICE POINT.
5. BORE THE DUCTBANK UNDERNEATH MESA STREET.
6. SEE SHEET J678 FOR BLHH-ANN HAND HOLD DETAIL.
7. BLUE LIGHT INSTALLATION DETAILS SHOWN ON SHEET J245.



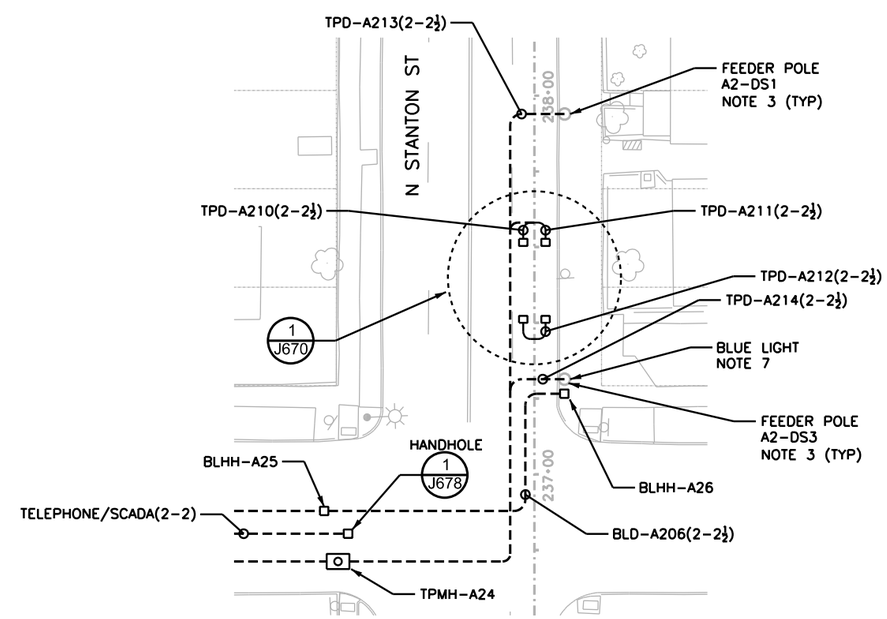


0' 40' 80'
SCALE IN FEET



DETAIL 1

SCALE 1:20



DETAIL 2

SCALE 1:20

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COEP STREETCAR

TPSS A2
CONDUIT LAYOUT
PLAN

J615

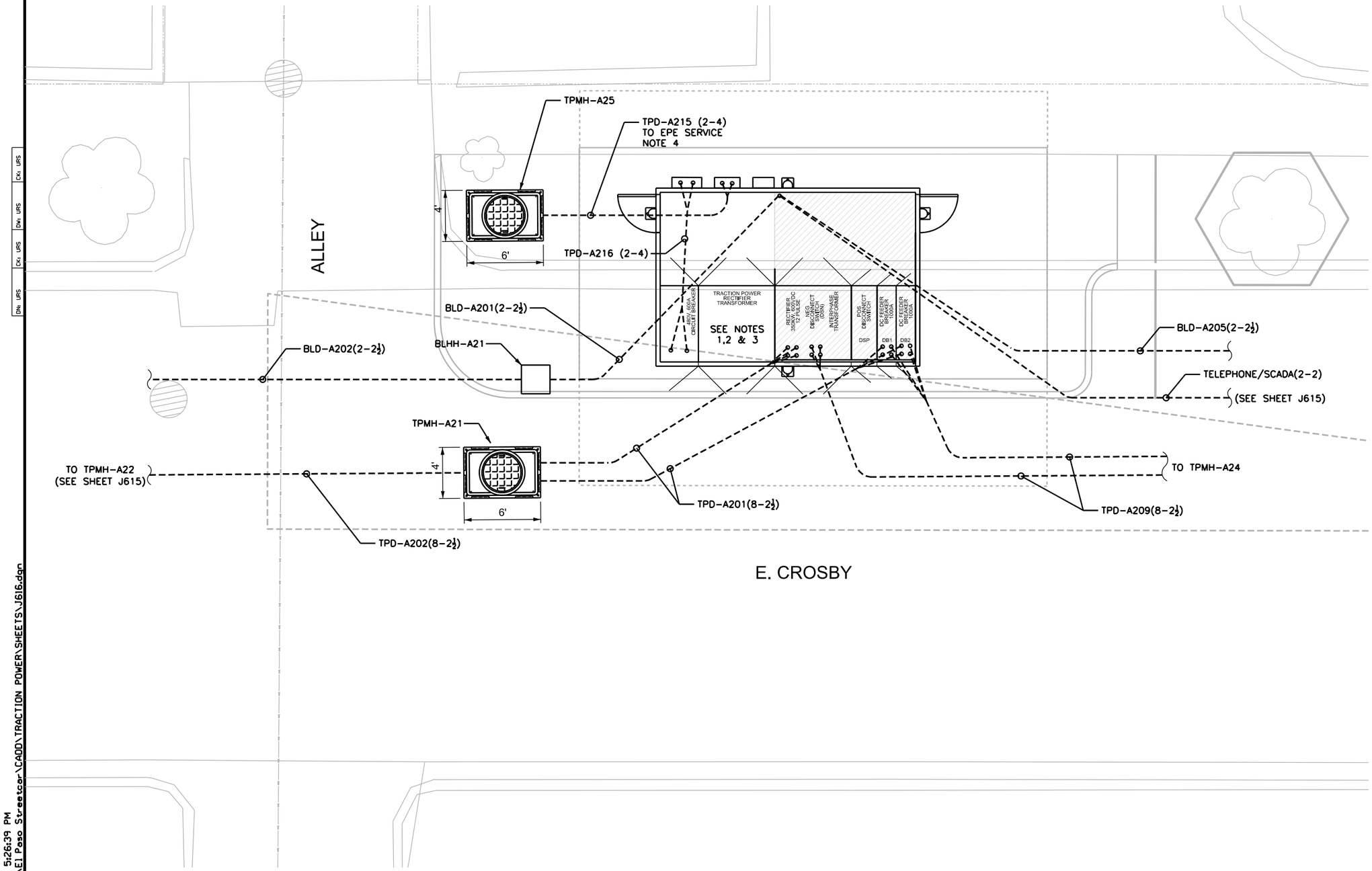
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1219

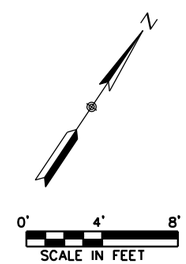
DN: URS CK: URS DW: URS CK: URS

DATE: 2/13/2015 4:18:05 PM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J615.dgn

NOTES:

1. EQUIPMENT DIMENSIONS ARE APPROXIMATE AND FOR REFERENCE ONLY.
2. CONDUITS STUB UP SHALL BE 90° AND IN FLUSH WITH THE TPSS FLOOR.
3. COORDINATE EXACT LOCATIONS OF THE CONDUIT STUB UPS WITH THE TPSS MANUFACTURER SHOP DRAWING.
4. COORDINATE WITH EPE AND PROVIDE CONDUIT FROM TPSS CT CABINET TO EPE SERVICE POINT.
5. SEE SHEET J678 FOR BLHH-ANN HANDHOLE DETAIL.





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TPSS A2
SITE ELECTRICAL
PLAN

J616

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1220

DATE: 7/13/2015 5:26:39 PM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J616.dgn

DN: URS CK: URS DW: URS CK: URS

TPSS A2 SITE ELECTRICAL PLAN

SCALE: 1/8"= 1'-0"

TPSS A2 - DC FEEDER/DUCTBANK SCHEDULE

FEEDER NUMBER	FROM	TO	VIA DUCTBANK/CONDUIT	CABLE DESCRIPTION				DRAWING NUMBER	COMMENTS
				QUANTITY	SIZE	TYPE	VOLTAGE RATING		
A2-PF1	A2-F1	TPMH-A24	TPD-A209	2	250 KCMIL	EPR	2000 V	J615	POSITIVE FEEDER
	TPMH-A24	A2-DS1 ON OCS FEEDER POLE	TPD-A213	2	250 KCMIL	EPR	2000 V	J615	
	A2-DS1	OCS CONTACT WIRE		2	250 KCMIL	EPR	2000 V	J615	
A2-PF2	A2-F1	TPMH-A21	TPD-A201	2	250 KCMIL	EPR	2000 V	J615	POSITIVE FEEDER
	TPMH-A21	TPMH-A22	TPD-A202	2	250 KCMIL	EPR	2000 V	J615	
	TPMH-A22	TPMH-A23	TPD-A203	2	250 KCMIL	EPR	2000 V	J615	
	TPMH-A23	A2-DS2 ON OCS FEEDER POLE	TPD-A207	2	250 KCMIL	EPR	2000 V	J615	
	A2-DS2	OCS CONTACT WIRE		2	250 KCMIL	EPR	2000 V	J615	
A2-PF3	A2-F2	TPMH-A24	TPD-A209	2	250 KCMIL	EPR	2000 V	J615	POSITIVE FEEDER
	TPMH-A24	A2-DS3 ON OCS FEEDER POLE	TPD-A214	2	250 KCMIL	EPR	2000 V	J615	
	A2-DS3	OCS CONTACT WIRE		2	250 KCMIL	EPR	2000 V	J615	
A2-PF4	A2-F2	TPMH-A21	TPD-A201	2	250 KCMIL	EPR	2000 V	J615	POSITIVE FEEDER
	TPMH-A21	TPMH-A22	TPD-A202	2	250 KCMIL	EPR	2000 V	J615	
	TPMH-A22	TPMH-A23	TPD-A203	2	250 KCMIL	EPR	2000 V	J615	
	TPMH-A23	A2-DS4 ON OCS FEEDER POLE	TPD-A208	2	250 KCMIL	EPR	2000 V	J615	
	A2-DS4	OCS CONTACT WIRE		2	250 KCMIL	EPR	2000 V	J615	
A2-NR01	DC NEGATIVE BUS	TPMH-A21	TPD-A201	2	250 KCMIL	EPR	2000 V	J615	NEGATIVE FEEDER
	TPMH-A21	TPMH-A22	TPD-A202	2	250 KCMIL	EPR	2000 V	J615	
	TPMH-A22	TPMH-A23	TPD-A203	2	250 KCMIL	EPR	2000 V	J615	
	TPMH-A23	TRACK BLOCKOUT	TPD-A204	2	250 KCMIL	EPR	2000 V	J615	
A2-NR02	DC NEGATIVE BUS	TPMH-A21	TPD-A201	2	250 KCMIL	EPR	2000 V	J615	NEGATIVE FEEDER
	TPMH-A21	TPMH-A22	TPD-A202	2	250 KCMIL	EPR	2000 V	J615	
	TPMH-A22	TPMH-A23	TPD-A203	2	250 KCMIL	EPR	2000 V	J615	
	TPMH-A23	TRACK BLOCKOUT	TPD-A205	2	250 KCMIL	EPR	2000 V	J615	
A2-NR03	DC NEGATIVE BUS	TPMH-A24	TPD-A209	2	250 KCMIL	EPR	2000 V	J615	NEGATIVE FEEDER
	TPMH-A24	TRACK BLOCKOUT	TPD-A210	2	250 KCMIL	EPR	2000 V	J615	
A2-NR04	DC NEGATIVE BUS	TPMH-A24	TPD-A201	2	250 KCMIL	EPR	2000 V	J615	NEGATIVE FEEDER
	TPMH-A24	TRACK BLOCKOUT	TPD-A211	2	250 KCMIL	EPR	2000 V	J615	
A2-RB01	INSIDE RAIL TRACK BLOCKOUT	OUTSIDE RAIL TRACK BLOCKOUT	TPD-A206	2	250 KCMIL	EPR	2000 V	J615	RAIL JUMPER BOND
A2-RB02	INSIDE RAIL TRACK BLOCKOUT	OUTSIDE RAIL TRACK BLOCKOUT	TPD-A212	2	250 KCMIL	EPR	2000 V	J615	RAIL JUMPER BOND
A2-EPE1	480V DISCONNECT SWITCH	A2-AC1	TPD-A216	6	500 KCMIL	RHH/RHW-2	600V	J615	
	CT CABINET	TPMH-A25	TPD-A215	NA	NA	EPR	600 V	J615	COORDINATE WITH EPE FOR FEEDER CABLE
A2-BL1	TPSS A2	BLHH-A21	BLD-A201	2	#10 AWG	XHHW-2	600 V	J615	BLUE LIGHT
	BLHH-A21	BLHH-A22	BLD-A202	2	#10 AWG	XHHW-2	600 V	J615	
	BLHH-A22	BLHH-A23	BLD-A203	2	#10 AWG	XHHW-2	600 V	J615	
	BLHH-A23	BLHH-A24	BLD-A204	2	#10 AWG	XHHW-2	600 V	J615	
A2-BL2	TPSS A2	BLHH-A25	BLD-A205	2	#10 AWG	XHHW-2	600 V	J615	BLUE LIGHT
	BLHH-A25	BLHH-A26	BLD-A206	2	#10 AWG	XHHW-2	600 V	J615	

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DONALD D. ROSS
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COEP STREETCAR

TPSS A2
FEEDER/DUCTBANK
SCHEDULE

J617

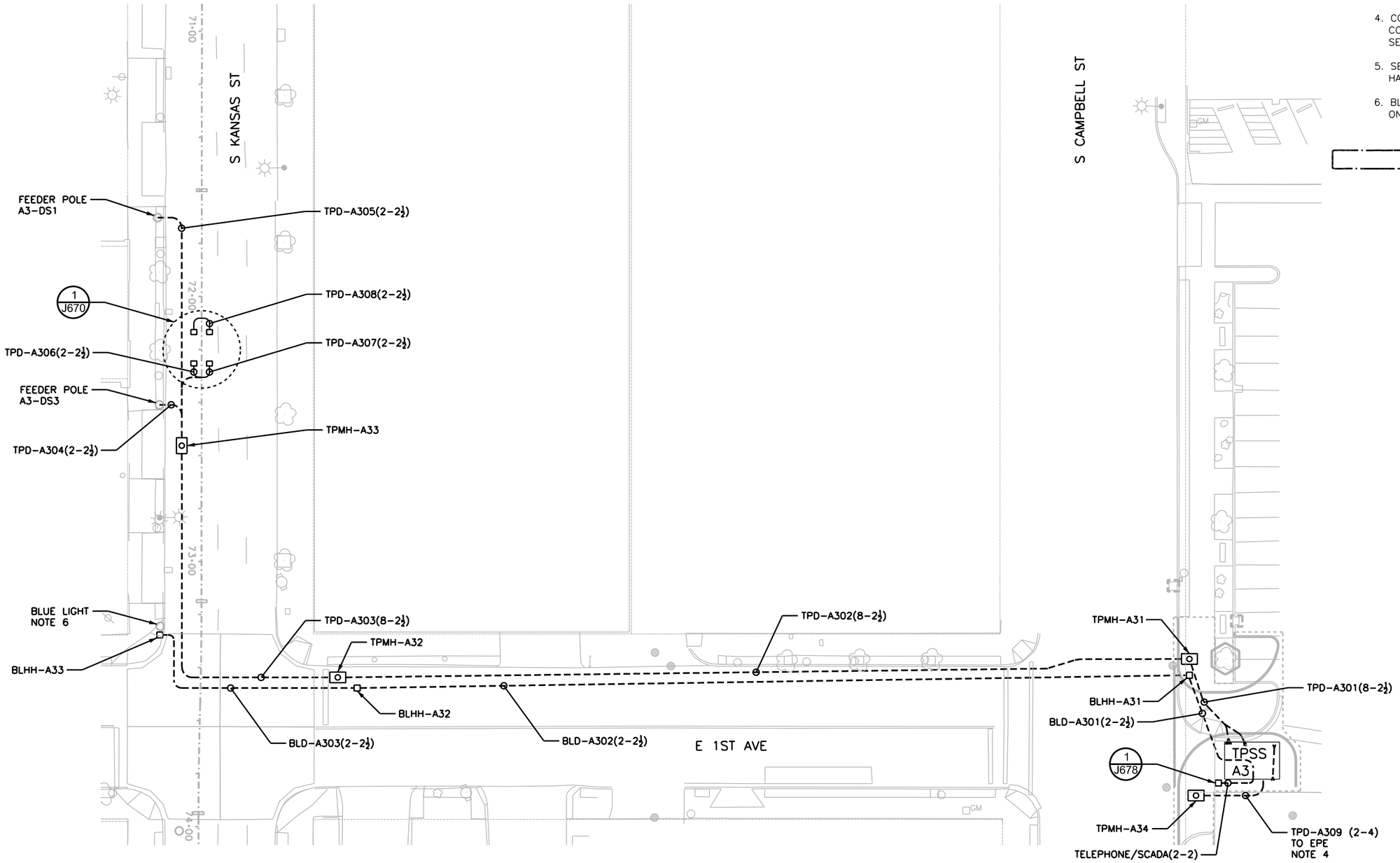
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1221

DN: URS CK: URS DW: URS CK: URS

DATE: 2/13/2015 11:50:17 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J617.dgn

NOTES:

1. EQUIPMENT DIMENSIONS ARE APPROXIMATE AND FOR REFERENCE ONLY.
2. CONDUITS STUB UP SHALL BE 90° AND IN FLUSH WITH THE TPSS FLOOR.
3. COORDINATE EXACT LOCATIONS OF THE CONDUIT STUB UPS WITH THE TPSS MANUFACTURER SHOP DRAWING.
4. COORDINATE WITH EPE AND PROVIDE CONDUIT FROM TPSS CT CABINET TO EPE SERVICE POINT.
5. SEE SHEET J678 FOR BLHH-ANN HANDHOLE DETAIL.
6. BLUE LIGHT INSTALLATION DETAILS SHOWN ON SHEET J245.



TPSS A3 CONDUIT LAYOUT PLAN

SCALE: 1:20

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STATE OF TEXAS
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120654
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TPSS A3
CONDUIT LAYOUT
PLAN

J620

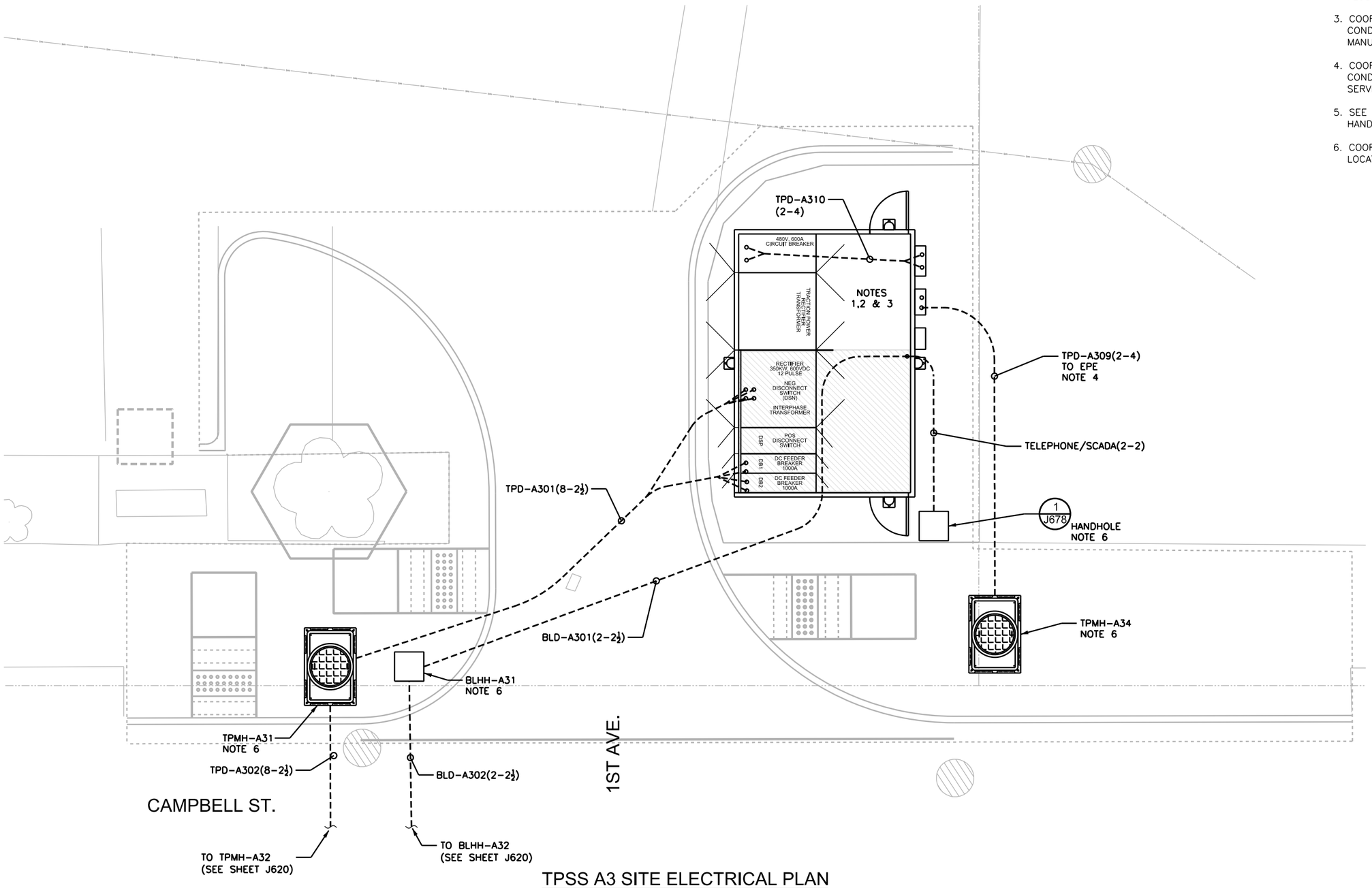
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1222

DN: URS CK: URS DW: URS CK: URS

DATE: 7/14/2015 12:10:53 PM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J620.dgn

NOTES:

1. EQUIPMENT DIMENSIONS ARE APPROXIMATE AND FOR REFERENCE ONLY.
2. CONDUITS STUB UP SHALL BE 90° AND IN FLUSH WITH THE TPSS FLOOR.
3. COORDINATE EXACT LOCATIONS OF THE CONDUIT STUB UPS WITH THE TPSS MANUFACTURER SHOP DRAWING.
4. COORDINATE WITH EPE AND PROVIDE CONDUIT FROM TPSS CT CABINET TO EPE SERVICE POINT.
5. SEE SHEET J678 FOR BLHH-ANN HANDHOLE DETAIL.
6. COORDINATE MANHOLE AND HANDHOLE LOCATIONS WITH ADA RAMPS.



TPSS A3 SITE ELECTRICAL PLAN

SCALE: 1/8"= 1'-0"

N

0' 4' 8'
SCALE IN FEET

NO	DATE	REVISION	APPROVED
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TPSS A3
SITE ELECTRICAL
PLAN

J621

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1223

DN: URS CK: URS DW: URS CK: URS

DATE: 7/13/2015 5:37:57 PM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J621.dgn

TPSS A3 - DC FEEDER/DUCTBANK SCHEDULE

FEEDER NUMBER	FROM	TO	VIA DUCTBANK/CONDUIT	CABLE DESCRIPTION				DRAWING NUMBER	COMMENTS
				QUANTITY	SIZE	TYPE	VOLTAGE RATING		
A3-PF1	A3-F1	TPMH-A31	TPD-A301	2	250 KCMIL	EPR	2000 V	J620	POSITIVE FEEDER
	TPMH-A31	TPMH-A32	TPD-A302	2	250 KCMIL	EPR	2000 V	J620	
	TPMH-A32	TPMH-A33	TPD-A303	2	250 KCMIL	EPR	2000 V	J620	
	TPMH-A33	A3-DS1 ON OCS FEEDER POLE	TPD-A305	2	250 KCMIL	EPR	2000 V	J620	
	A3-DS1	OCS CONTACT WIRE		2	250 KCMIL	EPR	2000 V	J620	
A3-PF2	A3-F2	TPMH-A31	TPD-A301	2	250 KCMIL	EPR	2000 V	J620	POSITIVE FEEDER
	TPMH-A31	TPMH-A32	TPD-A302	2	250 KCMIL	EPR	2000 V	J620	
	TPMH-A32	TPMH-A33	TPD-A303	2	250 KCMIL	EPR	2000 V	J620	
	TPMH-A33	A3-DS3 ON OCS FEEDER POLE	TPD-A304	2	250 KCMIL	EPR	2000 V	J620	
	A3-DS4	OCS CONTACT WIRE		2	250 KCMIL	EPR	2000 V	J620	
A3-NR01	DC NEGATIVE BUS	TPMH-A31	TPD-A301	2	250 KCMIL	EPR	2000 V	J620	NEGATIVE FEEDER
	TPMH-A31	TPMH-A32	TPD-A302	2	250 KCMIL	EPR	2000 V	J620	
	TPMH-A32	TPMH-A33	TPD-A303	2	250 KCMIL	EPR	2000 V	J620	
	TPMH-A33	TRACK BLOCKOUT	TPD-A306	2	250 KCMIL	EPR	2000 V	J620	
A3-NR02	DC NEGATIVE BUS	TPMH-A31	TPD-A301	2	250 KCMIL	EPR	2000 V	J620	NEGATIVE FEEDER
	TPMH-A31	TPMH-A32	TPD-A302	2	250 KCMIL	EPR	2000 V	J620	
	TPMH-A32	TPMH-A33	TPD-A303	2	250 KCMIL	EPR	2000 V	J620	
	TPMH-A33	TRACK BLOCKOUT	TPD-A307	2	250 KCMIL	EPR	2000 V	J620	
A3-RB01	INSIDE RAIL TRACK BLOCKOUT	OUTSIDE RAIL TRACK BLOCKOUT	TPD-A308	2	250 KCMIL	EPR	2000 V	J620	RAIL JUMPER BOND
A3-EPE1	480V DISCONNECT SWITCH	A3-AC1	TPD-A310	6	500 KCMIL	RHH/RHW-2	600 V	J620	
	CT CABINET	TPMH-A34	TPD-A309	NA	NA	EPR	600 V	J620	COORDINATE WITH EPE FOR FEEDER CABLE
A3-BL1	TPSS A3	BLHH-A31	BLD-A301	2	#10 AWG	XHHW-2	600 V	J620	BLUE LIGHT
	BLHH-A31	BLHH-A32	BLD-A302	2	#10 AWG	XHHW-2	600 V	J620	
	BLHH-A32	BLHH-A33	BLD-A303	2	#10 AWG	XHHW-2	600 V	J620	

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COEP STREETCAR

TPSS A3
FEEDER/DUCTBANK
SCHEDULE

J622

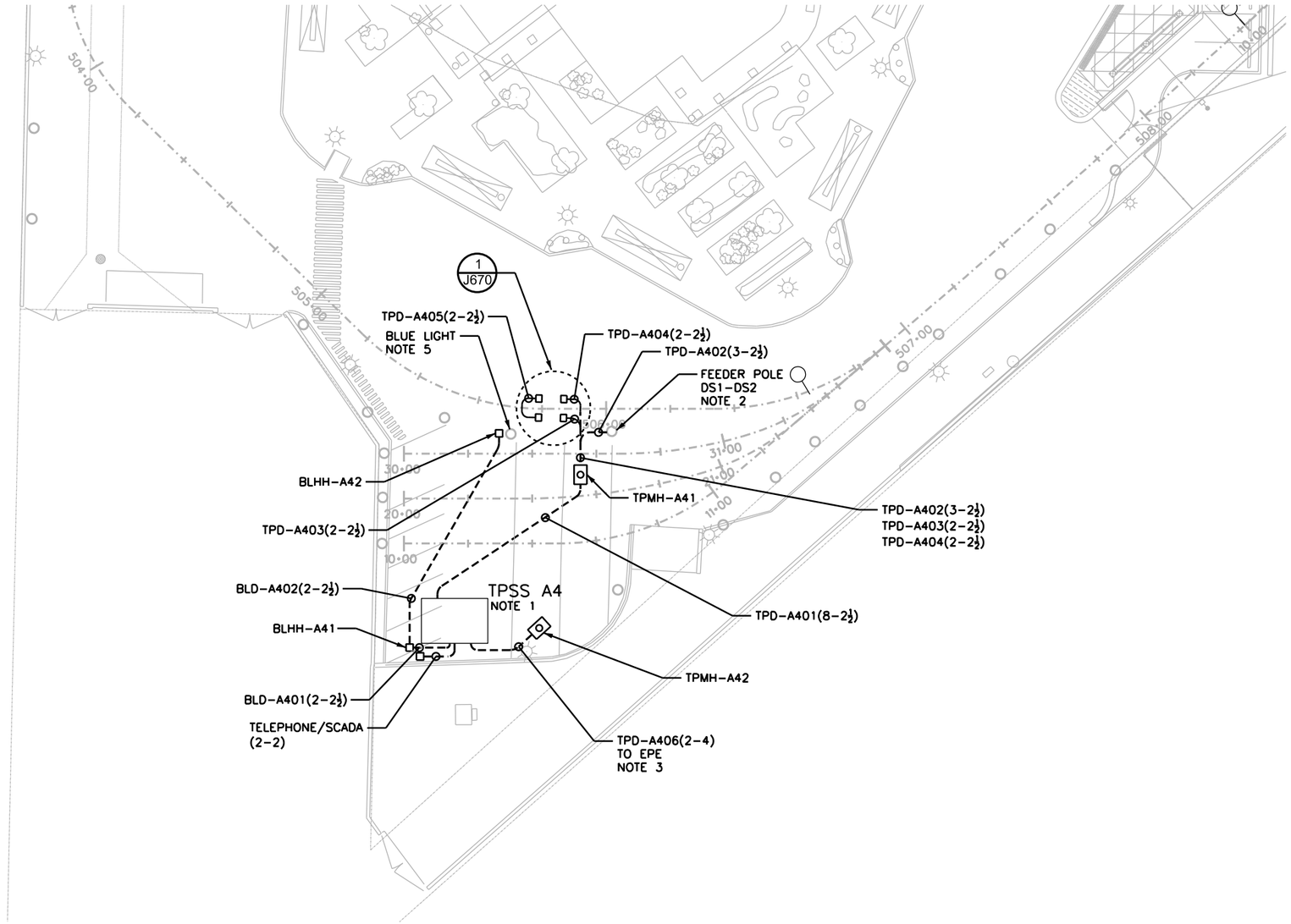
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1224

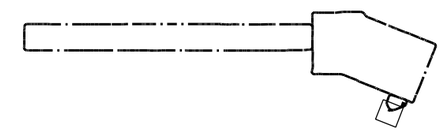
DN: URS CK: URS DW: URS CK: URS

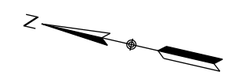
DATE: 2/13/2015 2:01:38 PM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J622.dgn

NOTES:

1. REFER TO J626 AND J628 FOR CONDUIT STUB UP DETAIL AT THE SUBSTATION.
2. REFER TO OCS FOUNDATION DETAILS FOR CONDUIT STUB UP.
3. COORDINATE WITH EPE AND PROVIDE CONDUIT FROM TPSS CT CABINET TO EPE SERVICE POINT.
4. SEE SHEET J678 FOR BLHH-ANN HANDHOLE DETAIL.
5. BLUE LIGHT INSTALLATION DETAILS SHOWN ON SHEET J245. REFER TO DRAWING J245 FOR BLUE LIGHT INSTALLATION DETAILS AND CONTINUE CONDUIT FROM HANDHOLE TO POLE.







TPSS A4 CONDUIT LAYOUT PLAN

SCALE 1:20

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TPSS A4
CONDUIT LAYOUT
PLAN

J625

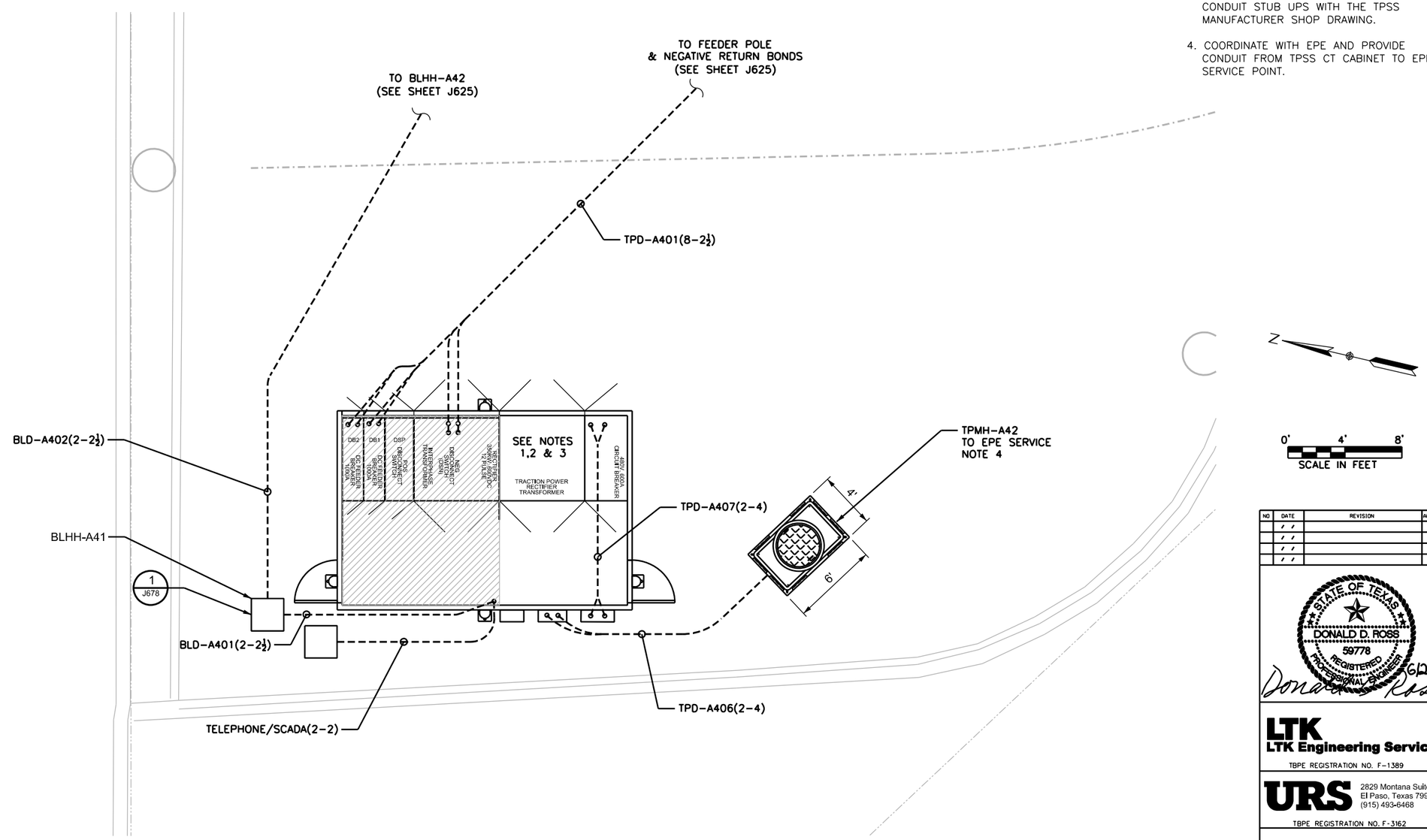
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1225

DN: URS CK: URS DW: URS CK: URS

DATE: 6/25/2015 9:28:03 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J625.dgn

NOTES:

1. EQUIPMENT DIMENSIONS ARE APPROXIMATE AND FOR REFERENCE ONLY.
2. CONDUITS STUB UP SHALL BE 90° AND IN FLUSH WITH THE TPSS FLOOR.
3. COORDINATE EXACT LOCATIONS OF THE CONDUIT STUB UPS WITH THE TPSS MANUFACTURER SHOP DRAWING.
4. COORDINATE WITH EPE AND PROVIDE CONDUIT FROM TPSS CT CABINET TO EPE SERVICE POINT.



TPSS A4 SITE ELECTRICAL PLAN

SCALE: 1/8"= 1'-0"

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TPSS A4
SITE ELECTRICAL
PLAN

J626

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1226

DN: URS CK: URS DW: URS CK: URS

DATE: 6/24/2015 3:58:22 PM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J626.dgn

TPSS A4 - DC FEEDER/DUCTBANK SCHEDULE

FEEDER NUMBER	FROM	TO	VIA DUCTBANK/CONDUIT	CABLE DESCRIPTION				DRAWING NUMBER	COMMENTS
				QUANTITY	SIZE	TYPE	VOLTAGE RATING		
A4-PF1	A4-F1	TPMH-A41	TPD-A401	2	250 KCMIL	EPR	2000 V	J625	POSITIVE FEEDER
	TPMH-A41	A4-DS1 ON OCS FEEDER POLE	TPD-A402	2	250 KCMIL	EPR	2000 V	J625	
	A4-DS1	OCS CONTACT WIRE		2	250 KCMIL	EPR	2000 V	J625	
A4-PF2	A4-F2	TPMH-A41	TPD-A401	2	250 KCMIL	EPR	2000 V	J625	POSITIVE FEEDER
	TPMH-A41	A4-DS2 ON OCS FEEDER POLE	TPD-A402	2	250 KCMIL	EPR	2000 V	J625	
	A4-DS2	OCS CONTACT WIRE		2	250 KCMIL	EPR	2000 V	J625	
A4-NR01	DC NEGATIVE BUS	TPMH-A41	TPD-A401	2	250 KCMIL	EPR	2000 V	J625	NEGATIVE FEEDER
	TPMH-A41	TRACK BLOCKOUT	TPD-A403	2	250 KCMIL	EPR	2000 V	J625	
A4-NR02	DC NEGATIVE BUS	TPMH-A41	TPD-A401	2	250 KCMIL	EPR	2000 V	J625	NEGATIVE FEEDER
	TPMH-A41	TRACK BLOCKOUT	TPD-A404	2	250 KCMIL	EPR	2000 V	J625	
A4-RB01	INSIDE RAIL TRACK BLOCKOUT	OUTSIDE RAIL TRACK BLOCKOUT	TPD-A405	2	250 KCMIL	EPR	2000 V	J625	RAIL JUMPER BOND
A4-EPE1	480V DISCONNECT SWITCH	A4-AC1	TPD-A407	6	500 KCMIL	RHH/RHW-2	600 V	J625	
	CT CABINET	TPMH-A42	TPD-A406	NA	NA	EPR	600 V	J625	COORDINATE WITH EPE FOR FEEDER CABLE
A4-BL1	TPSS A4	BLHH-A41	BLD-A401	2	#10 AWG	XHHW-2	600 V	J625	BLUE LIGHT
	BLHH-A41	BLHH-A42	BLD-A402	2	#10 AWG	XHHW-2	600 V	J625	

NO	DATE	REVISION	APPROVED
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COEP STREETCAR

TPSS A4
FEEDER/DUCTBANK
SCHEDULE

J627

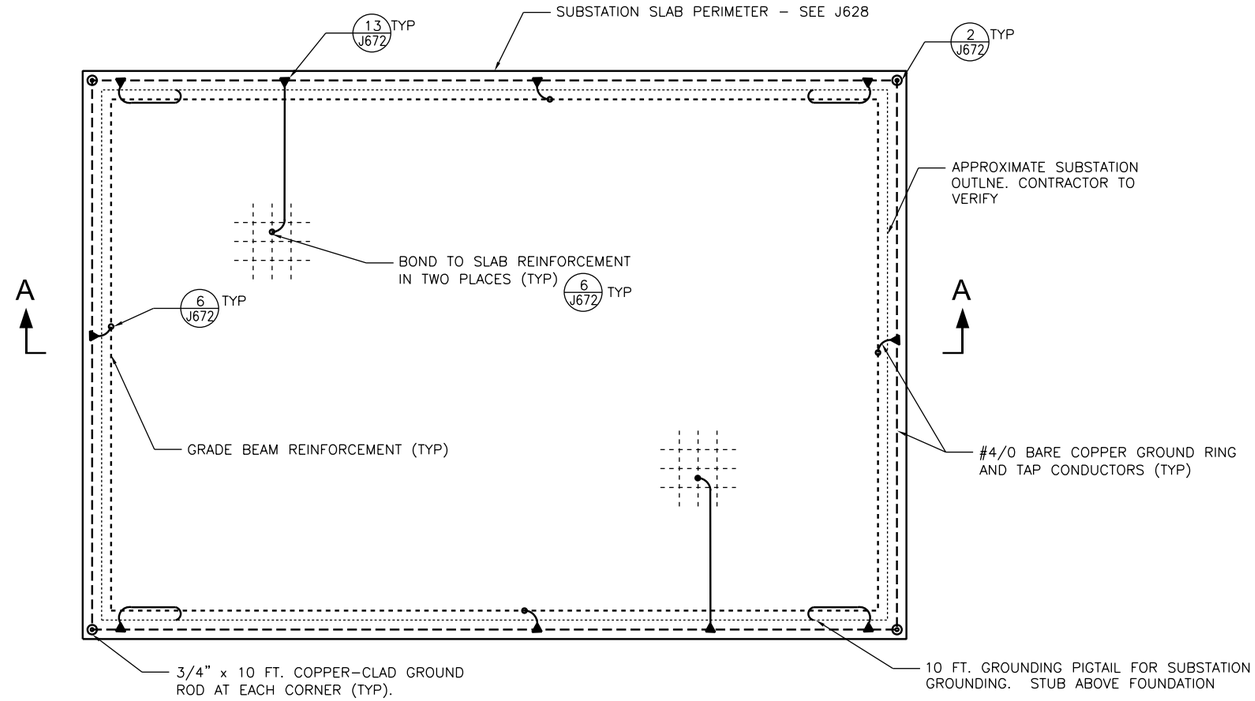
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1227

DN: URS CK: URS DW: URS CK: URS

DATE: 2/13/2015 3:33:48 PM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J627.dgn

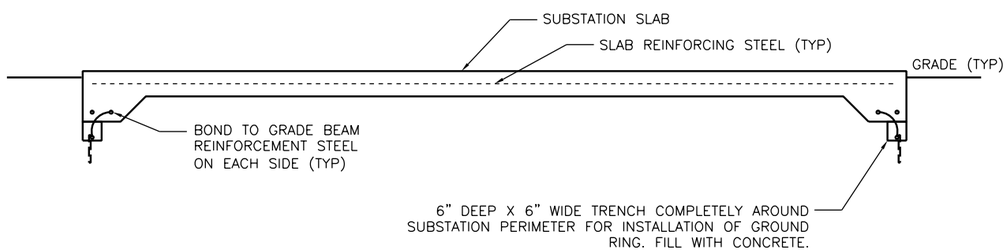
NOTES:

1. SEE J628 FOR THE FOUNDATION DETAILS.



SUBSTATION GROUNDING PLAN

SCALE: 1/2" = 1'-0"



SECTION A-A

SCALE: 1/2" = 1'-0"

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COEP STREETCAR

TYPICAL PREFABRICATED TPSS GROUND GRID DETAIL

J630

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1228

DN: URS CK: URS DW: URS CK: URS

DATE: 2/17/2015 2:54:35 PM
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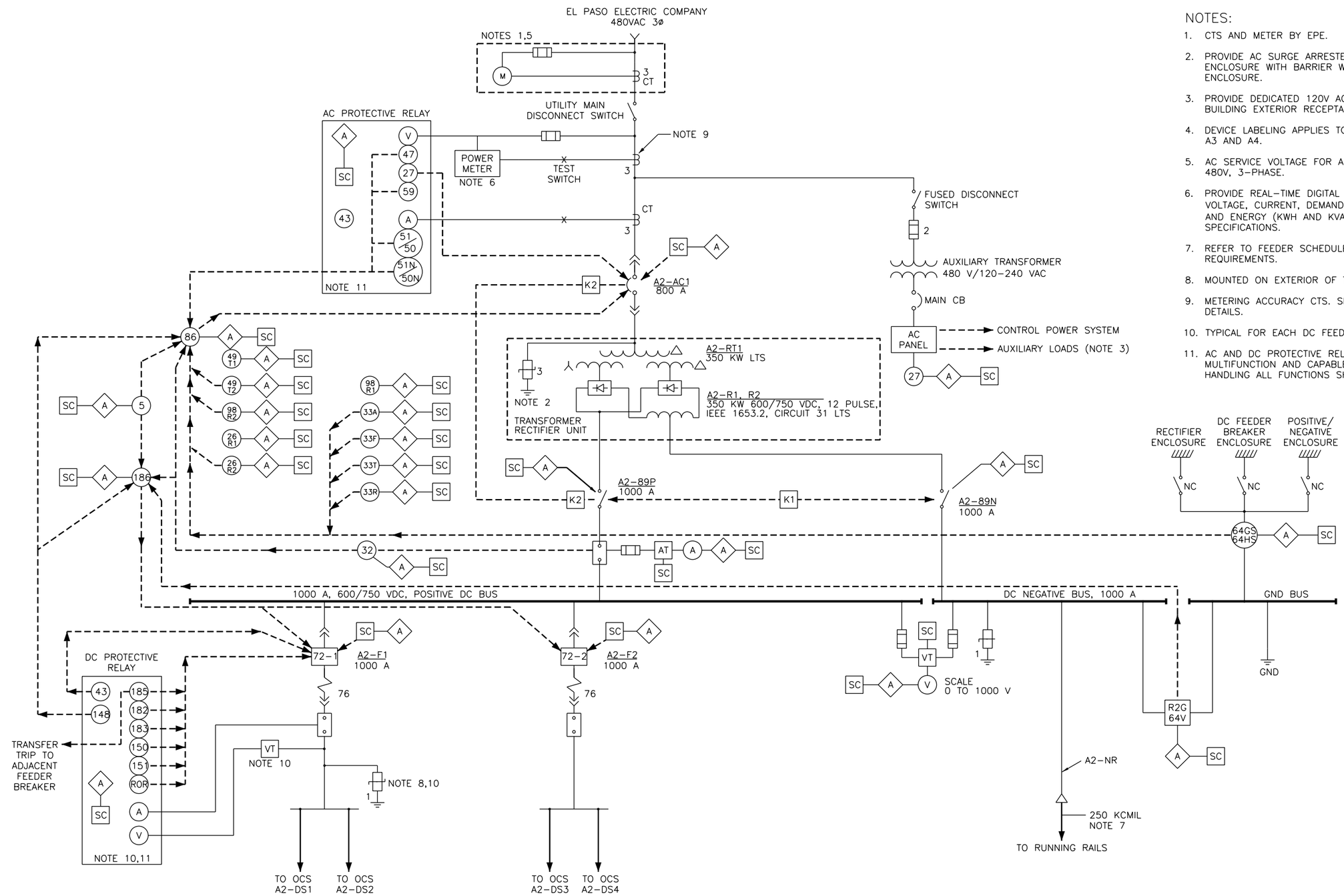

NOTES:

1. CTS AND METER BY EPE.
2. PROVIDE AC SURGE ARRESTER IN A SEPARATE ENCLOSURE WITH BARRIER WITHIN TRANSFORMER ENCLOSURE.
3. PROVIDE DEDICATED 120V AC CIRCUIT FOR TPSS BUILDING EXTERIOR RECEPTACLES.
4. DEVICE LABELING APPLIES TO SUBSTATION A1, A2, A3 AND A4.
5. AC SERVICE VOLTAGE FOR ALL SUBSTATIONS IS 480V, 3-PHASE.
6. PROVIDE REAL-TIME DIGITAL READOUT FOR VOLTAGE, CURRENT, DEMAND (REAL AND APPARENT) AND ENERGY (KWH AND KVARH). SEE SPECIFICATIONS.
7. REFER TO FEEDER SCHEDULE FOR CONDUCTOR REQUIREMENTS.
8. MOUNTED ON EXTERIOR OF TPSS. REFER TO J673.
9. METERING ACCURACY CTS. SEE SPECIFICATIONS FOR DETAILS.
10. TYPICAL FOR EACH DC FEEDER BREAKER.
11. AC AND DC PROTECTIVE RELAYS SHALL BE MULTIFUNCTION AND CAPABLE, AT A MINIMUM, OF HANDLING ALL FUNCTIONS SHOWN.

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COEP STREETCAR

TYPICAL MAINLINE
TPSS SINGLE LINE
DIAGRAM

J640

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1229

DATE: 6/4/2013 7:58:35 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J640.dgn

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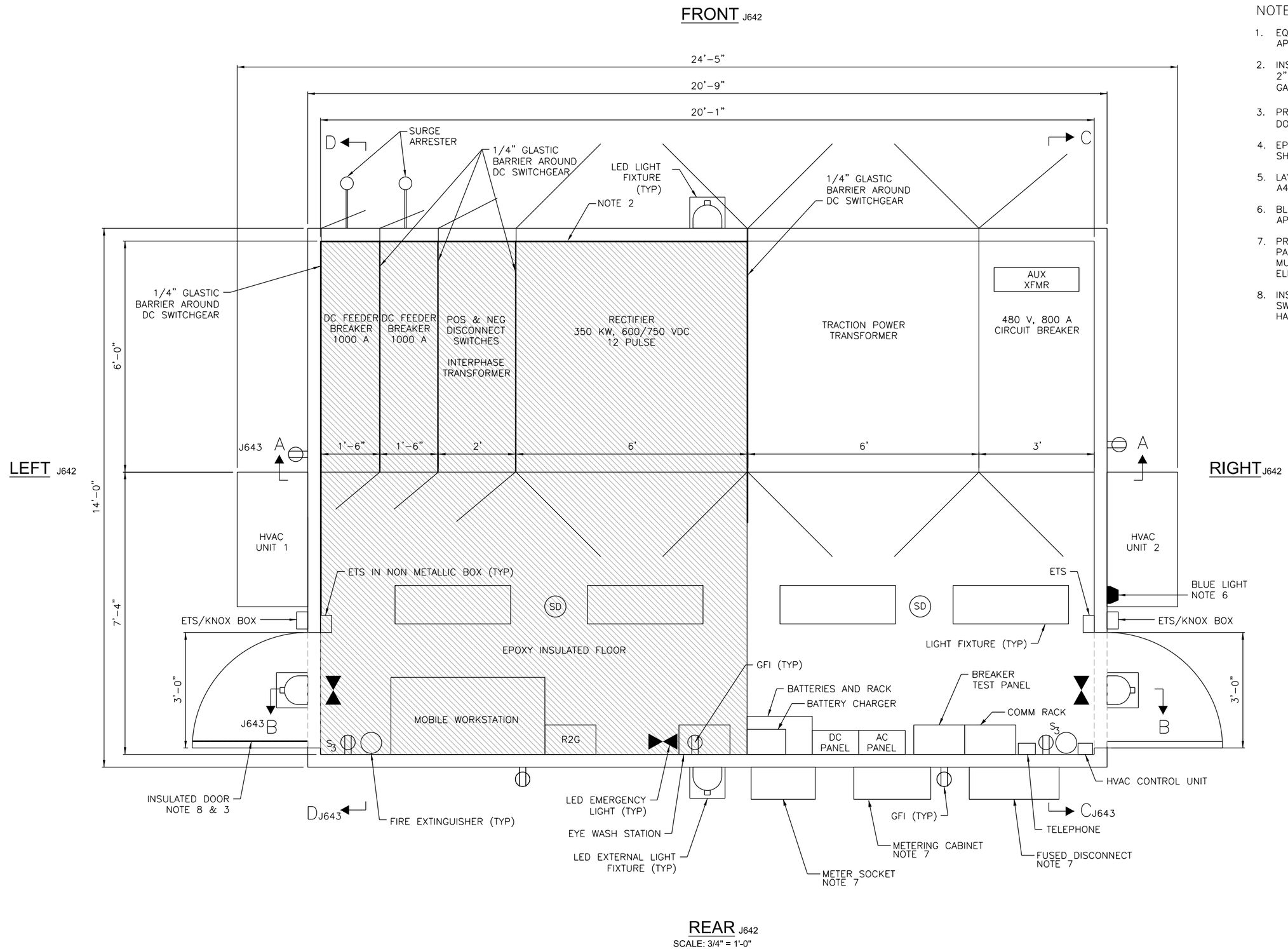

NOTES:

1. EQUIPMENT DIMENSIONS ARE APPROXIMATE.
2. INSTALL RECTIFIER AND DC SWITCHGEAR 2" OFF REAR WALL. THERE SHALL BE NO GAP BEHIND THE AC SWITCHGEAR.
3. PROVIDE $\frac{1}{4}$" GLASTIC ON INTERIOR OF DOOR AND INSULATE OVER PANIC BARS.
4. EPE SERVICE TRANSFORMER IS NOT SHOWN.
5. LAYOUT APPLICABLE TO A1, A2, A3 AND A4.
6. BLUELIGHT STATION LOCATION TO BE APPROVED BY ENGINEER.
7. PROVIDE UTILITY EQUIPMENT PER EL PASO ELECTRIC BLUE BOOK. EQUIPMENT MUST BE APPROVED BY EL PASO ELECTRIC PRIOR TO MANUFACTURING.
8. INSULATE TO 6FT FROM IN FRONT OF DC SWITCHGEAR, INCLUDING DOOR AND HARDWARE.

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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COEP STREETCAR

TYPICAL PREFABRICATED TPSS EQUIPMENT LAYOUT PLAN

J641

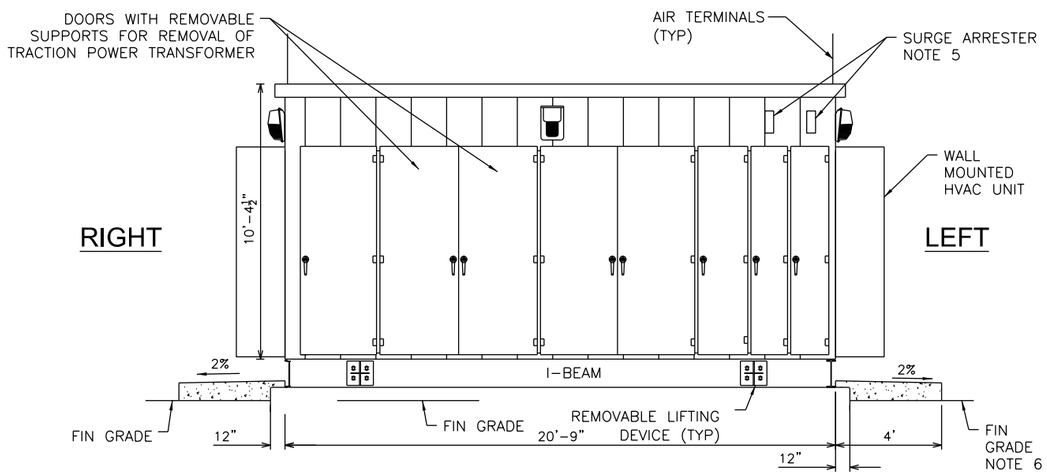
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1230

DN: URS CK: URS DW: URS CK: URS

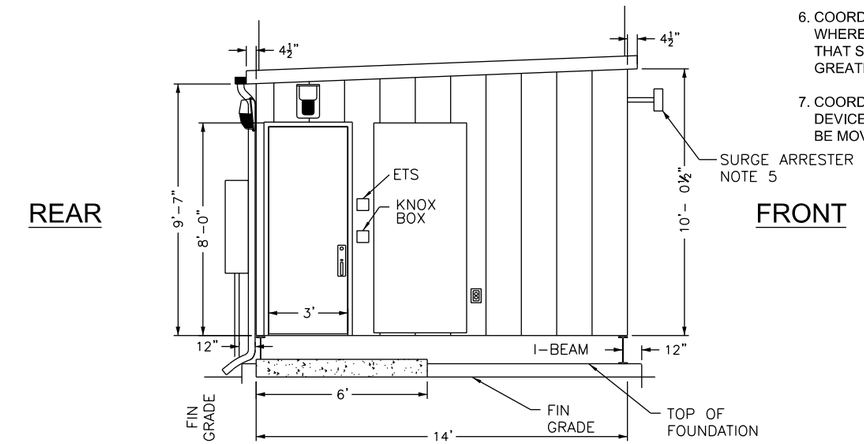
DATE: 6/4/2013 7:59:16 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J641.dgn

NOTES:

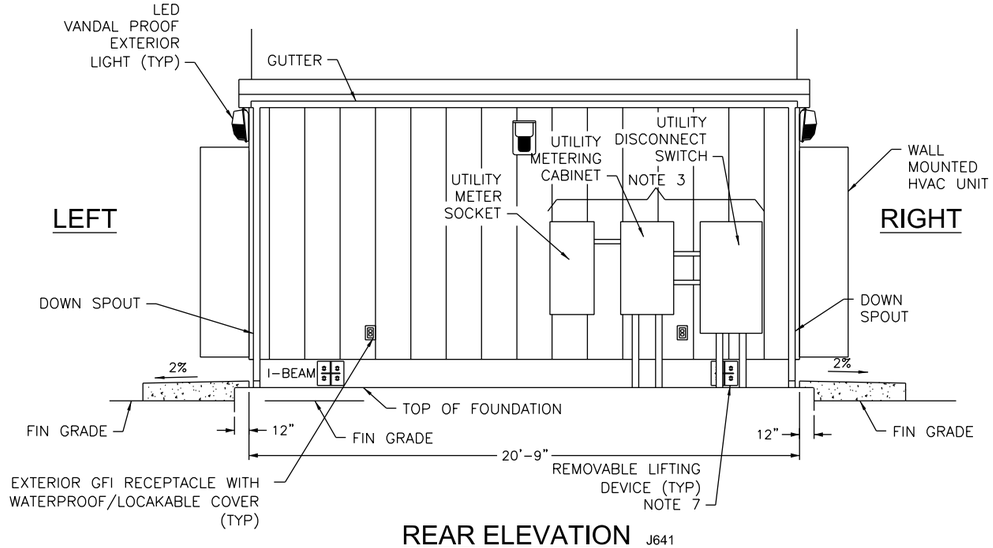
1. ALL DIMENSIONS ARE APPROXIMATE.
2. ELEVATIONS APPLICABLE TO TPSS A1, A2, A3 AND A4 ONLY.
3. PROVIDE UTILITY EQUIPMENT PER EPE BLUE BOOK. DETAILS SUBJECT TO APPROVAL OF UTILITY.
4. BLUELIGHT STATION LOCATION TO BE APPROVED BY ENGINEER.
5. SEE J673 FOR DETAILS.
6. COORDINATE TPSS CONCRETE LANDING AND STEPS WHERE REQUIRED WITH TPSS MANUFACTURER SUCH THAT STEPS, LANDING AND TPSS BASE PROVIDE NO GREATER THAN 8" STEP.
7. COORDINATE LOCATION WITH CONDUITS SO LIFTING DEVICE CAN BE REPLACED IN EVENT TPSS NEEDS TO BE MOVED AT A LATER DATE.



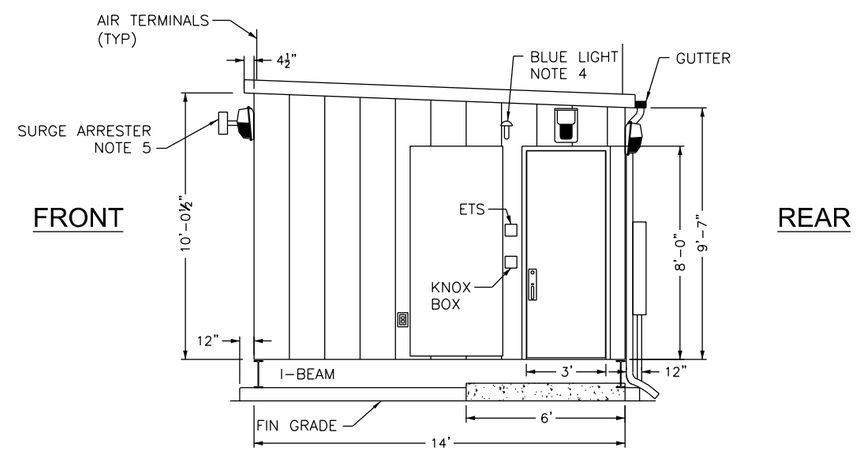
FRONT ELEVATION J641
SCALE: NTS



RIGHT ELEVATION J641
SCALE: NTS



REAR ELEVATION J641
SCALE: NTS



LEFT ELEVATION J641
SCALE: NTS

NO	DATE	REVISION	APPROVED
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	/ /		

STATE OF TEXAS
ETHAN KIM
120654
LICENSED PROFESSIONAL ENGINEER
7/22/15

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COEP STREETCAR

TYPICAL PREFABRICATED TPSS EXTERIOR ELEVATIONS

J642

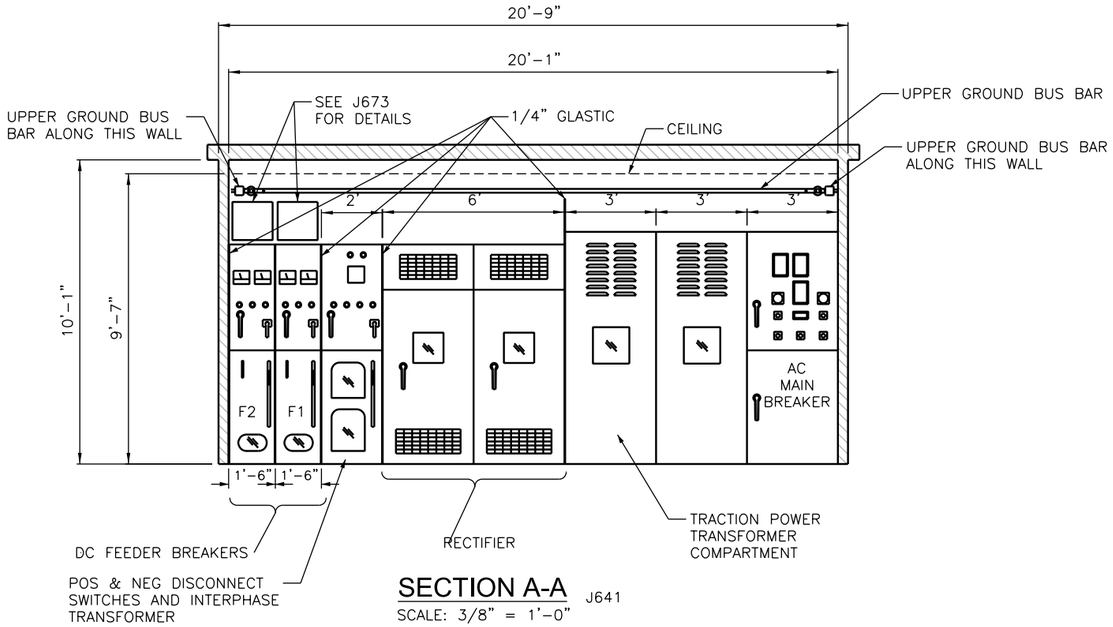
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1231

DN: URS CK: URS DW: URS CK: URS

DATE: 7/22/2015 11:03:39 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J642.dgn

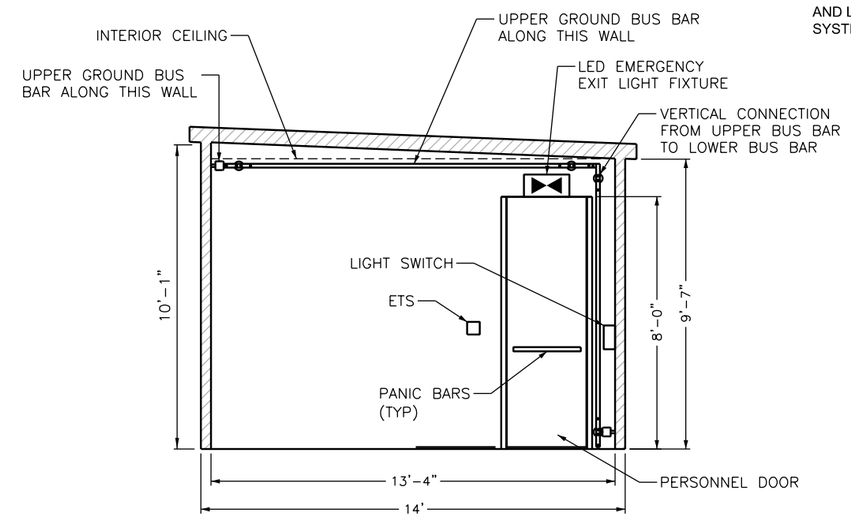
NOTES:

1. ALL DIMENSIONS ARE APPROXIMATE.
2. SECTIONS APPLICABLE TO A1, A2, A3, AND A4.
3. CONTRACTOR TO DETERMINE SIZE AND LOCATION OF TPSS HVAC SYSTEM



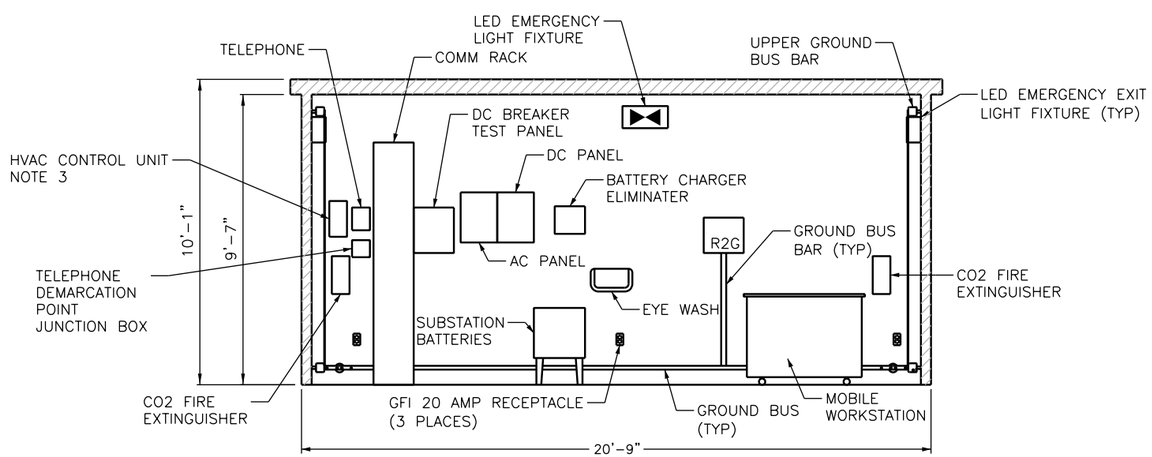
SECTION A-A J641

SCALE: 3/8" = 1'-0"



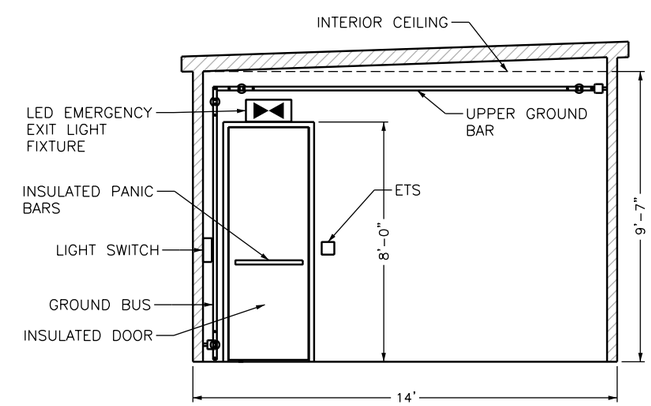
SECTION C-C J641

SCALE: 3/8" = 1'-0"



SECTION B-B J641

SCALE: 3/8" = 1'-0"



SECTION D-D J641

SCALE: 3/8" = 1'-0"

NO	DATE	REVISION	APPROVED
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	/ /		

STATE OF TEXAS
DONALD D. ROSS
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COEP STREETCAR

TYPICAL PREFABRICATED TPSS INTERIOR ELEVATIONS

J643

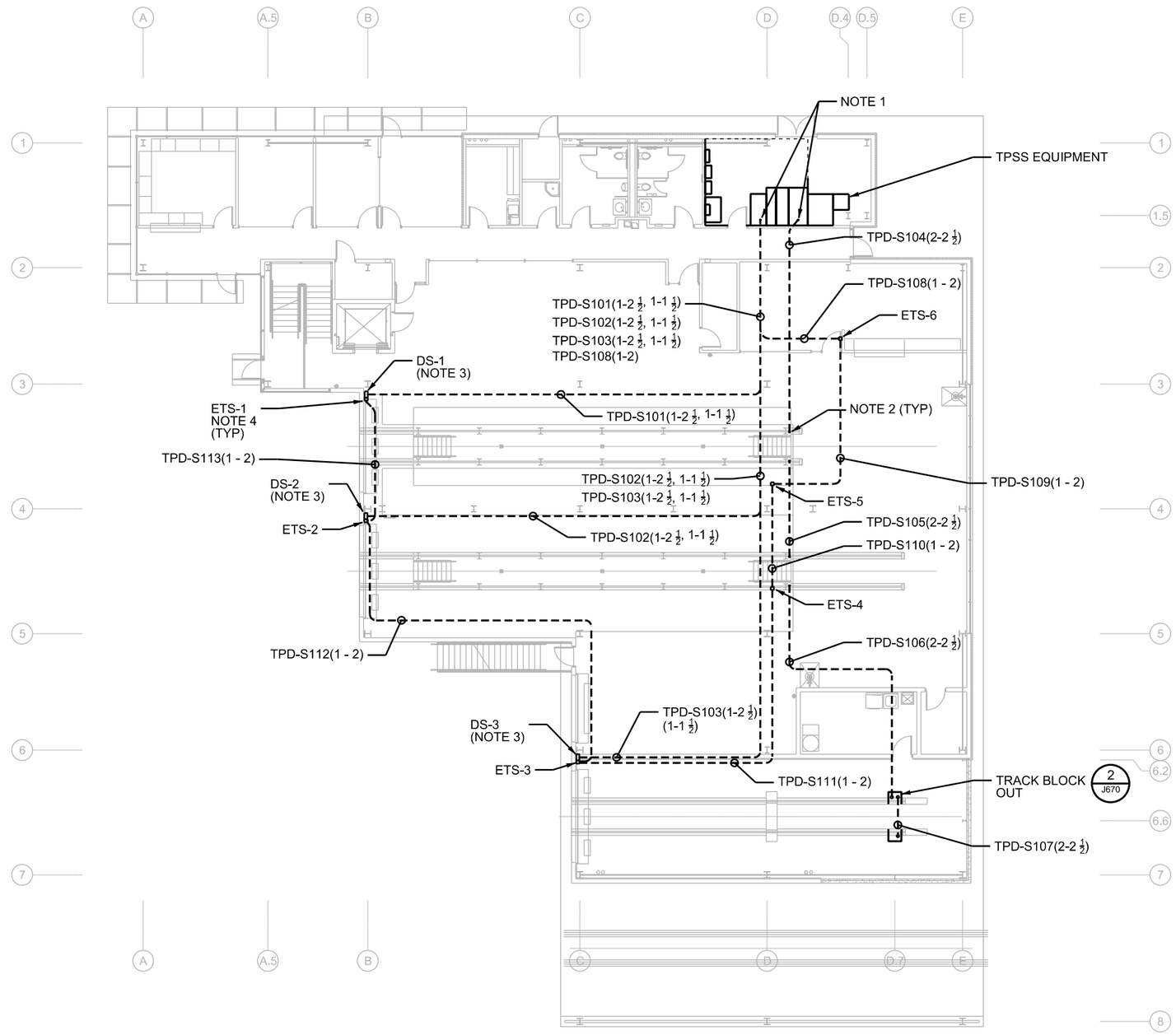
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1232

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 8:01:10 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J643.dgn

NOTES:

1. VERIFY CONDUIT STUB-UP LOCATIONS WITH TPS EQUIPMENT MANUFACTURER PRIOR TO INSTALLATION.
2. CONDUIT TO ENTER IN THE SIDE WALL OF PIT.
3. SEE OCS DRAWING J237 FOR THE DISCONNECT SWITCH DETAIL.
4. REFER TO J658 FOR SHOP ETS CONTROL SCHEMATICS.



N

0' 20' 40'
SCALE IN FEET

NO	DATE	REVISION	APPROVED
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COEP STREETCAR

TPSS S1 SHOP
CONDUIT LAYOUT PLAN

J650

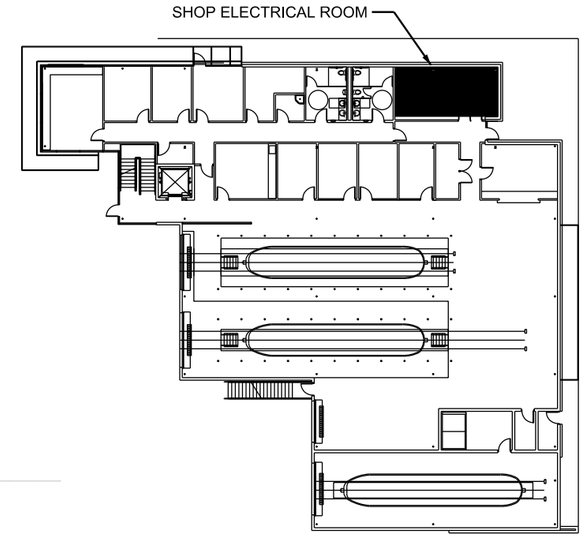
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1233

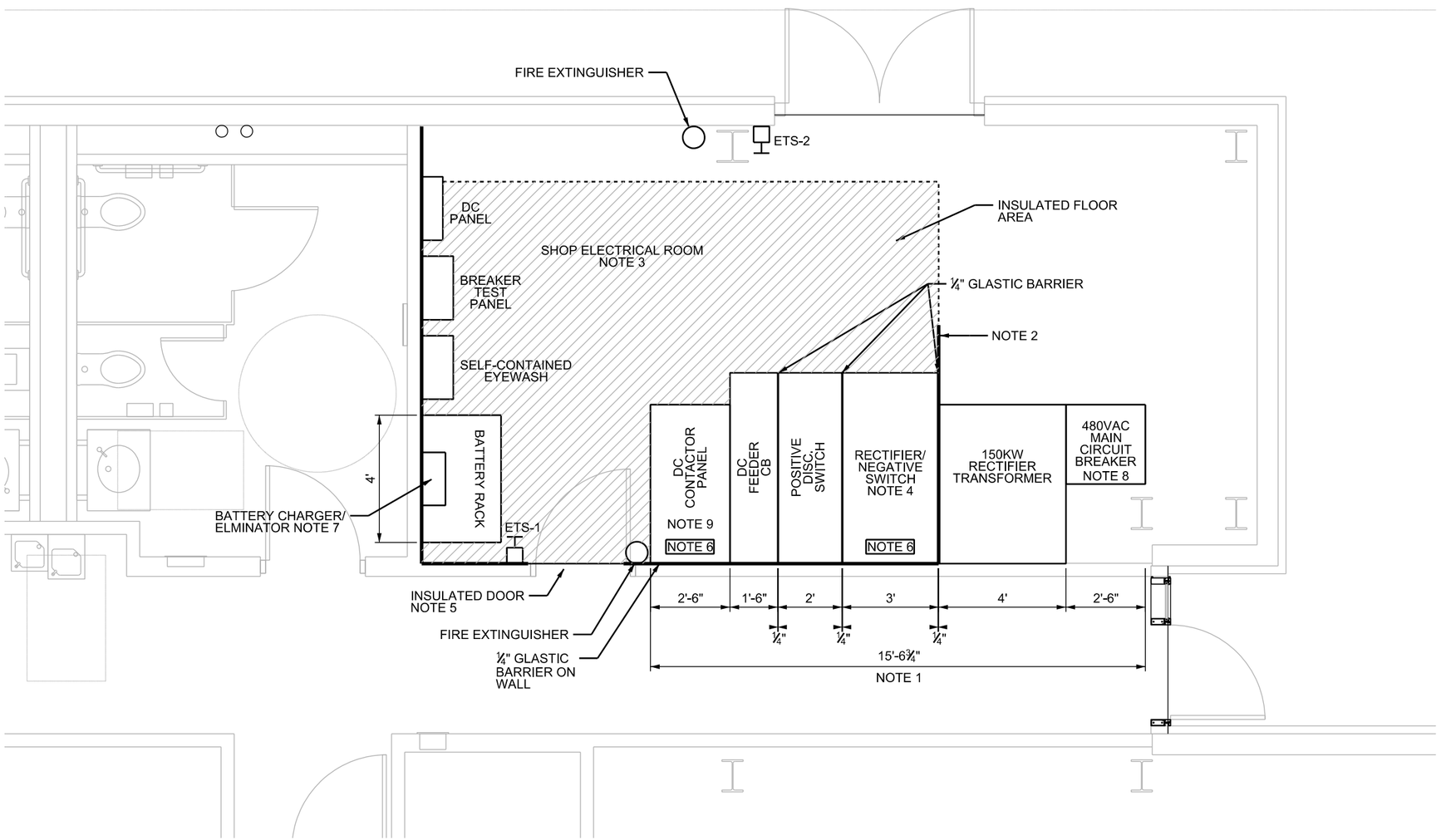
DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 8:01:53 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J650.dgn

NOTES:

1. EQUIPMENT LAYOUT AND DIMENSIONS ARE APPROXIMATE. VERIFY WITH ENGINEER.
2. EXTEND GLASTIC BARRIER BETWEEN TRANSFORMER AND RETIFIER PER SPECIFICATION. THE BARRIER SHALL BE REMOVABLE TYPE.
3. SEE ELECTRICAL ROOM DRAWING E1.13 FOR DETAIL OF THE SHOP ELECTRICAL EQUIPMENT.
4. INSTALL RECTIFIER AND DC SWITCHGEAR 2" OFF REAR WALL THERE SHALL BE NO GAP BEHIND THE AC SWITCHGEAR.
5. PROVIDE 1/4" GLASTIC ON INTERIOR OF DOOR AND INSULATE OVER PANIC BARS.
6. VERIFY CONDUIT STUB-UP LOCATION WITH TPSS EQUIPMENT MANUFACTURER.
7. PROVIDE CONDUIT AND WIRING BETWEEN BATTERY CHARGER AND PANEL 1LA. SEE DRAWING E4.2 FOR CIRCUIT DESIGNATION.
8. PROVIDE FEED FROM MSF MSB. REFER TO DRAWING E3.1.
9. PROVIDE 120VAC TO CONTACTOR PANEL FROM PANEL 1LA FOR INTERLOCKING CIRCUIT.





TPSS S1 EQUIPMENT LAYOUT PLAN

SCALE: 1/4" = 1'-0"

N

0' 2' 4'
SCALE IN FEET

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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TPSS S1 SHOP EQUIPMENT LAYOUT PLAN

J651

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1234

DN: URS CK: URS DW: URS CK: URS

DATE: 2/16/2015 12:01:54 PM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J651.dgn

TPSS S1 - DC FEEDER/DUCTBANK SCHEDULE

FEEDER NUMBER	FROM	TO	VIA DUCTBANK/CONDUIT	CABLE DESCRIPTION				DRAWING NUMBER	COMMENTS
				QUANTITY	SIZE	TYPE	VOLTAGE RATING		
S1-PF1	S1-C1	S1-DS1 ON OCS FEEDER POLE	TPD-S101	1	250 KCMIL	EPR	2000 V	J650	POSITIVE FEEDER
	S1-DS1	OCS CONTACT WIRE		1	250 KCMIL	EPR	2000 V	J650	
S1-PF2	S1-C2	S1-DS2 ON OCS FEEDER POLE	TPD-S102	1	250 KCMIL	EPR	2000 V	J650	POSITIVE FEEDER
	S1-DS2	OCS CONTACT WIRE		1	250 KCMIL	EPR	2000 V	J650	
S1-PF2	S1-C3	S1-DS3 ON OCS FEEDER POLE	TPD-S103	1	250 KCMIL	EPR	2000 V	J650	POSITIVE FEEDER
	S1-DS3	OCS CONTACT WIRE		1	250 KCMIL	EPR	2000 V	J650	
S1-NR01	DC NEGATIVE BUS	OCS BAY A RAIL	TPD-S104	2	250 KCMIL	EPR	2000 V	J650	NEGATIVE RETURN
S1-CB01	OCS BAY A RAIL	OCS BAY B RAIL	TPD-S105	2	250 KCMIL	EPR	2000 V	J650	RAIL CROSSBOND
S1-CB02	OCS BAY B RAIL	OCS WASH BAY RAIL TRACK BLOCKOUT	TPD-S106	2	250 KCMIL	EPR	2000 V	J650	RAIL CROSSBOND
S1-RB01	OCS WASH BAY RAIL TRACK BLOCKOUT	OCS WASH BAY RAIL TRACK BLOCKOUT	TPD-S107	2	250 KCMIL	EPR	2000 V	J650	RAIL JUMPER BOND
	OCS CONTACTOR CONTROL PANEL	DC CONTACTOR CO1	TPD-S101	1	12 #12	XHHW	600 V	J650	INSTALL IN 1-1.5 INCH CONDUIT
	OCS CONTACTOR CONTROL PANEL	DC CONTACTOR CO2	TPD-S102	1	12 #12	XHHW	600 V	J650	INSTALL IN 1-1.5 INCH CONDUIT
	OCS CONTACTOR CONTROL PANEL	DC CONTACTOR CO3	TPD-S103	1	12 #12	XHHW	600 V	J650	INSTALL IN 1-1.5 INCH CONDUIT
	DC CONTACTOR PANEL	ETS-6	TPD-S108	1	4 #12	XHHW	600 V	J650	
	ETS-6	ETS-5	TPD-S109	1	4 #12	XHHW	600 V	J650	
	ETS-5	ETS-4	TPD-S110	1	4 #12	XHHW	600 V	J650	
	ETS-4	ETS-3	TPD-S111	1	4 #12	XHHW	600 V	J650	
	ETS-3	ETS-2	TPD-S112	1	4 #12	XHHW	600 V	J650	
	ETS-2	ETS-1	TPD-S113	1	4 #12	XHHW	600 V	J650	

NO	DATE	REVISION	APPROVED
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COEP STREETCAR

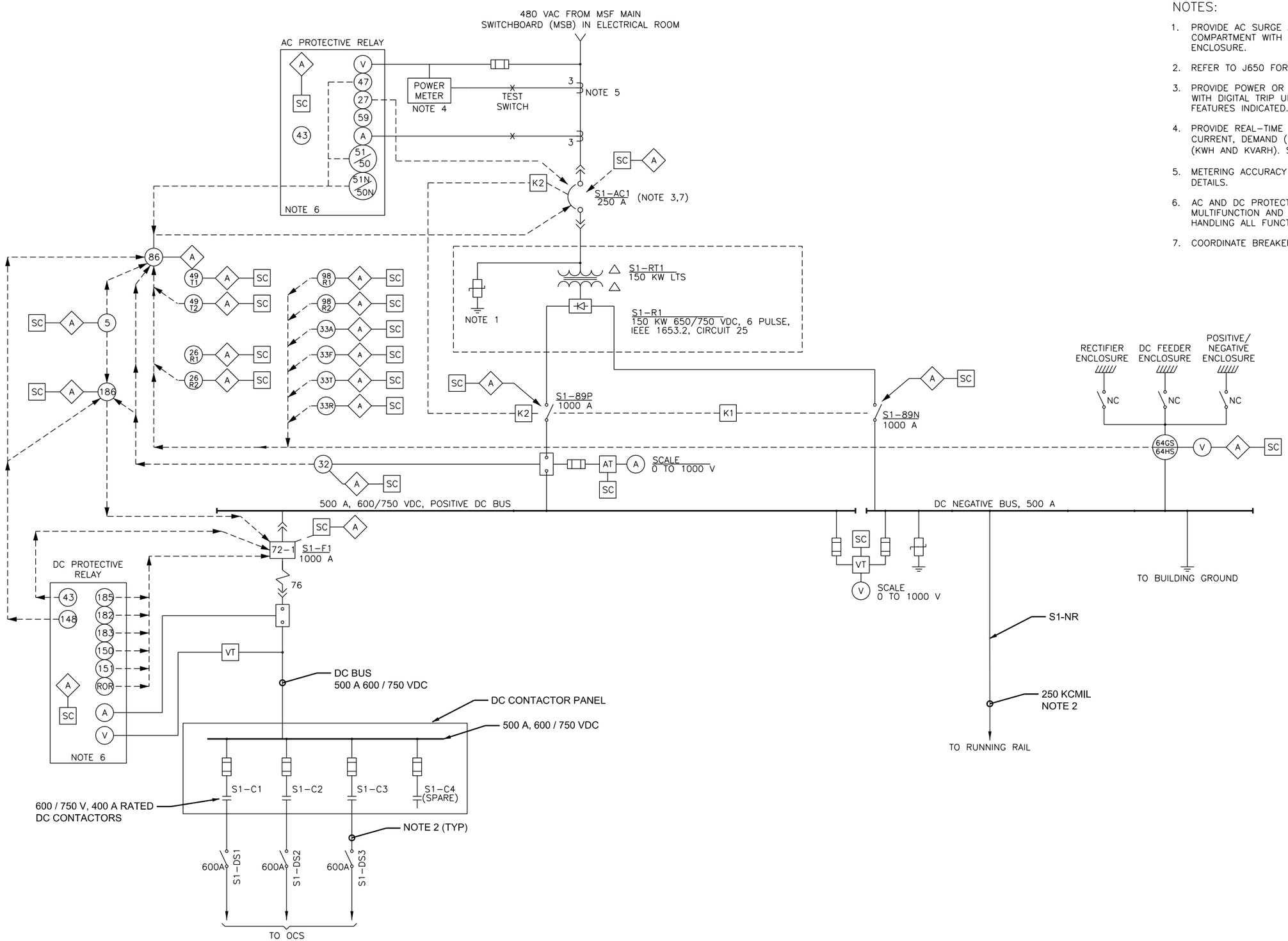
TPSS S1 SHOP
FEEDER/CONDUIT
SCHEDULE

J652

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1235

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 8:03:22 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J652.dgn



NOTES:

1. PROVIDE AC SURGE ARRESTERS IN A SEPARATE COMPARTMENT WITH BARRIER WITHIN TRANSFORMER ENCLOSURE.
2. REFER TO J650 FOR CONDUCTOR QUANTITIES.
3. PROVIDE POWER OR INSULATED CASE CIRCUIT BREAKER WITH DIGITAL TRIP UNIT CONTAINING PROTECTIVE FEATURES INDICATED.
4. PROVIDE REAL-TIME DIGITAL READOUT FOR VOLTAGE, CURRENT, DEMAND (REAL AND APPARENT) AND ENERGY (KWH AND KVARH). SEE SPECIFICATIONS.
5. METERING ACCURACY CT'S. SEE SPECIFICATIONS FOR DETAILS.
6. AC AND DC PROTECTIVE RELAYS SHALL BE MULTIFUNCTION AND CAPABLE, AT A MINIMUM, OF HANDLING ALL FUNCTIONS SHOWN.
7. COORDINATE BREAKER SETTINGS WITH MSB BREAKER.

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COEP STREETCAR

TPSS S1 SHOP
SINGLE LINE
DIAGRAM

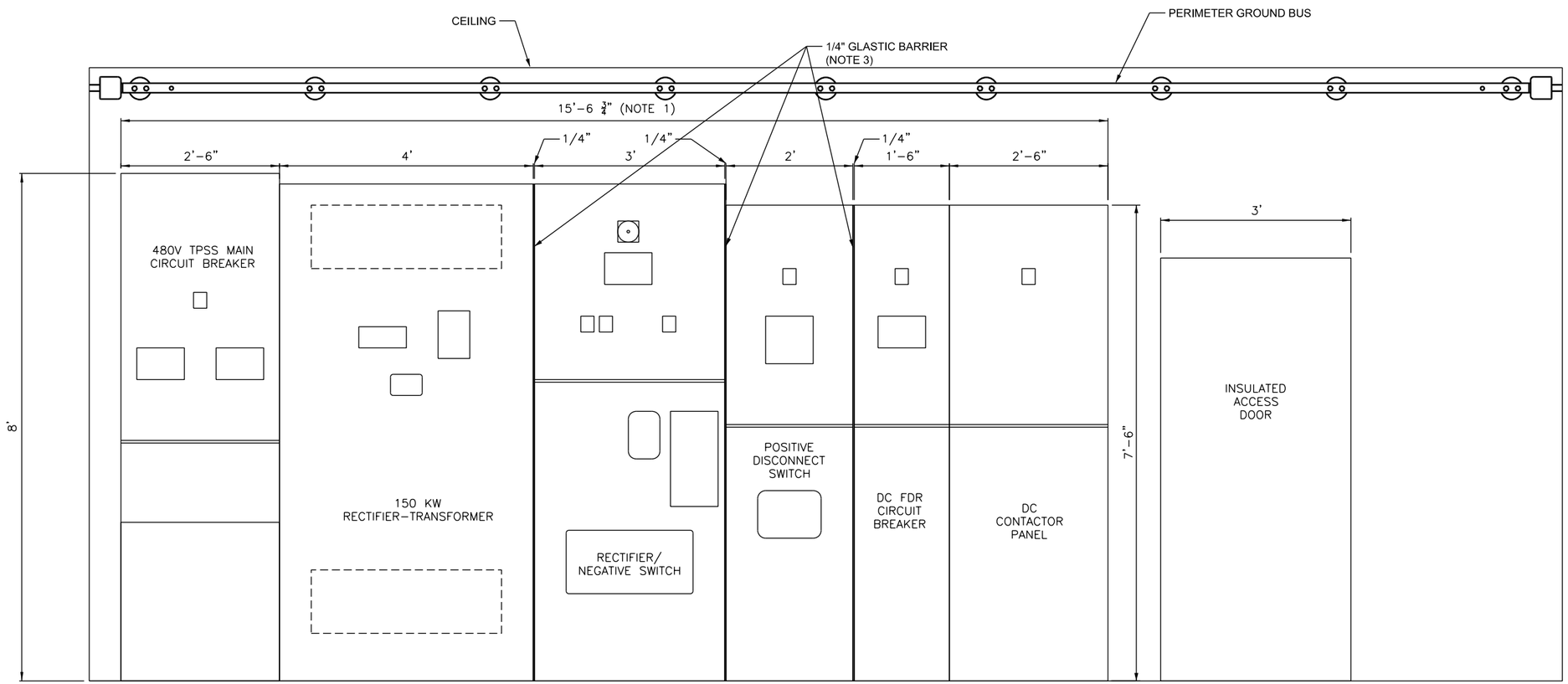
J653

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1236

DATE: 6/4/2013 8:04:01 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J653.dgn

NOTES:

1. DIMENSIONS AND EQUIPMENT LAYOUT ARE APPROXIMATE. VERIFY WITH SUBSTATION MANUFACTURER.
2. FRONT ACCESS ONLY. SEE SPECIFICATIONS FOR DETAILS.
3. THE GLASTIC BARRIER BETWEEN THE RECTIFIER-TRANSFORMER AND THE RECTIFIER SHALL BE A REMOVABLE TYPE.



TPSS S1 INTERIOR ELEVATIONS (FRONT)

SCALE: 1/2" = 1'-0" NOTE 2

NO	DATE	REVISION	APPROVED
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COEP STREETCAR

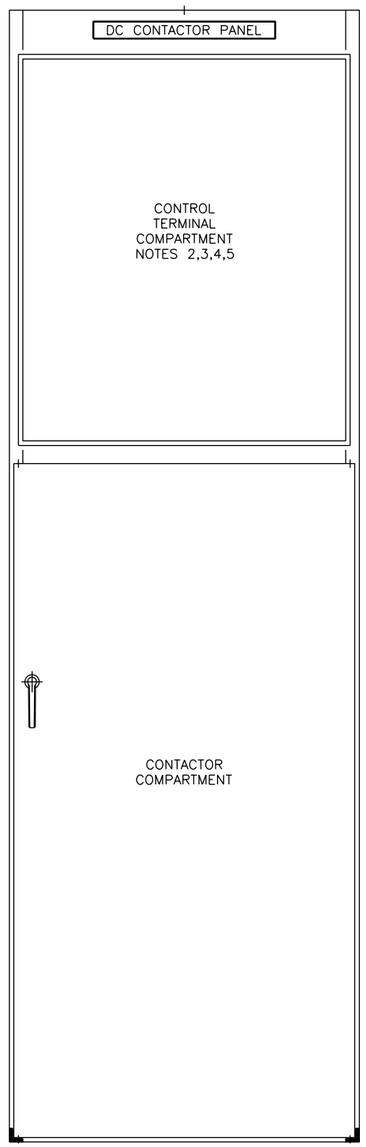
TPSS S1 SHOP INTERIOR ELEVATIONS

J654

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1237

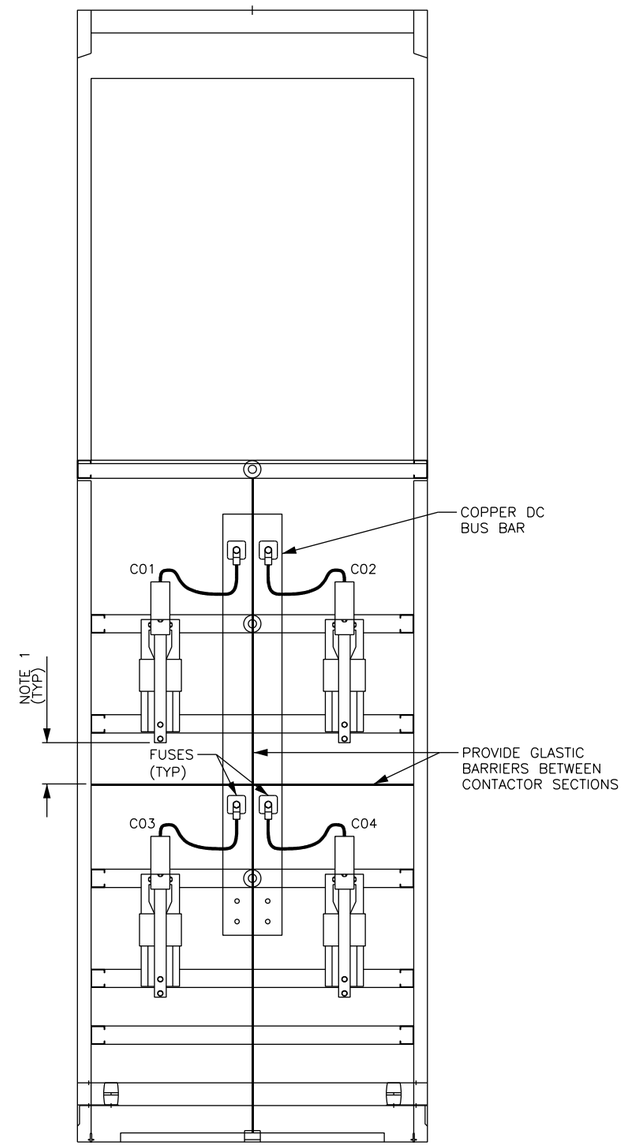
DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 8:05:08 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J654.dgn



FRONT VIEW

SCALE: 3/4" = 1'-0"



FRONT VIEW

SCALE: 3/4" = 1'-0"
(WITHOUT COVERS
AND CONTROL)

NOTES:

1. PROVIDE ADEQUATE CLEARANCE BETWEEN LOAD-SIDE TERMINALS AND BARRIER TO PERMIT TERMINATION OF 250 KCMIL FEEDERS.
2. PROVIDE 125 VAC, 10 A, 3 PDT AUXILIARY RELAYS IN CONTROL TERMINAL COMPARTMENT FOR EACH DC CONTACTOR (FOR FIELD INTERLOCK WIRING)
3. PROVIDE 36-TERMINAL DIN-RAIL MOUNTED TERMINAL STRIP RATED 20 A, 250 V (FOR FIELD INTERLOCK WIRING).
4. PROVIDE REMOVABLE BACK-PANEL FOR MOUNTING OF RELAYS AND TERMINAL STRIPS.
5. PROVIDE 120 VAC FROM PANEL 1LA IN MSF ELECTRICAL ROOM.

NO	DATE	REVISION	APPROVED
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Donald D. Ross 2/16/15

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COEP STREETCAR

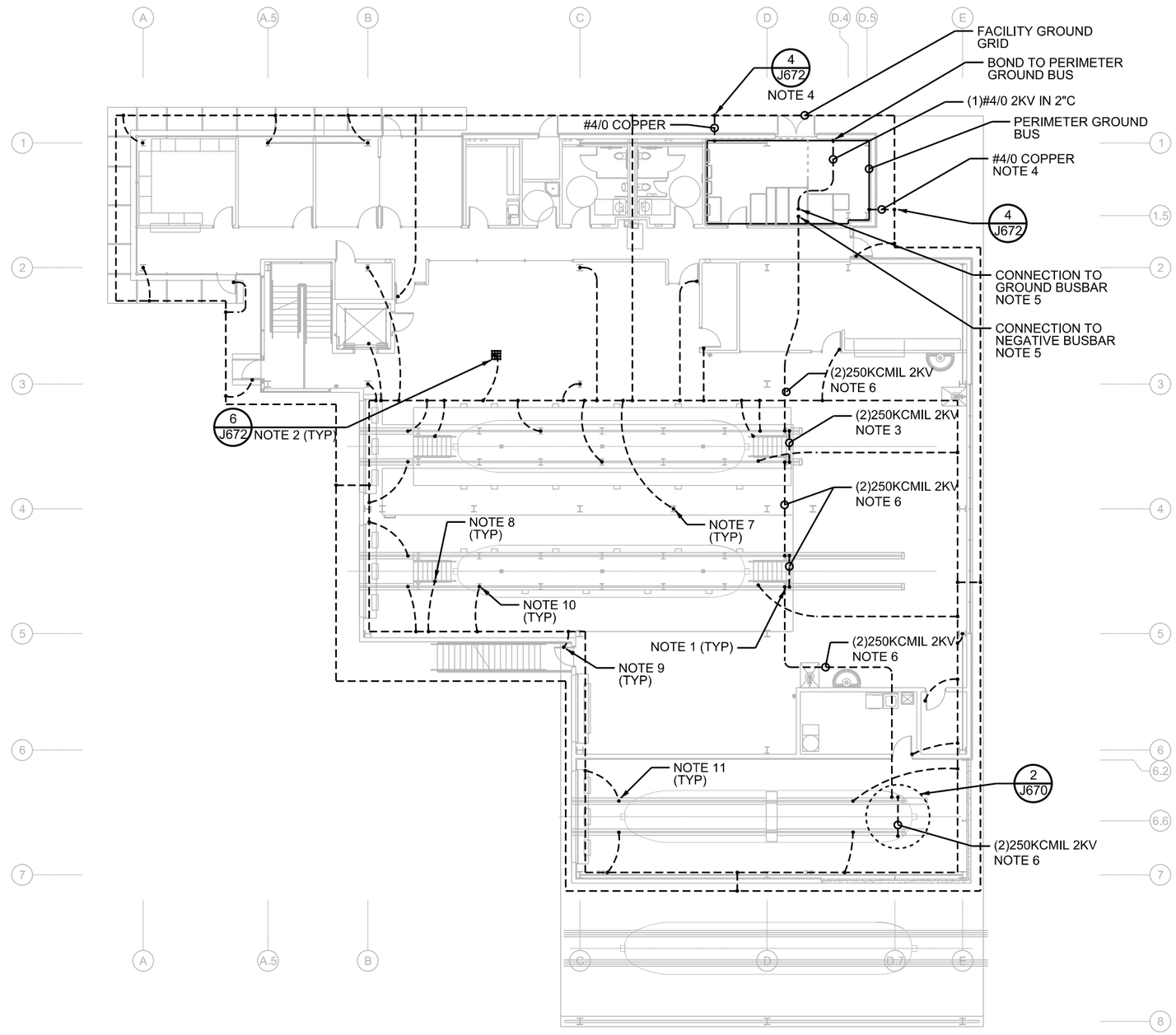
TPSS S1 SHOP
DC CONTACTOR
PANEL DETAIL

J655

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1238

DN: URS | CK: URS | DW: URS | CK: URS

DATE: 2/16/2015 11:25:29 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J655.dgn



NOTES:

1. EXOTHERMIC CONNECTION TO RAIL.
2. EXOTHERMIC CONNECTION TO STRUCTURAL REBAR IN CONCRETE SLAB. USE #4/0 BARE COPPER PIGTAIL.
3. ROUTE CONDUCTORS ON BACK WALL OF PIT AND SECURE USING BRACKETS.
4. TIE THE SUBSTATION GROUND WITH THE BUILDING GROUND. SEE E3.2 FOR THE BUILDING GROUND BUS DETAILS.
5. VERIFY LOCATION OF CONDUIT INSTALLATION AND BONDING LOCATION WITH TPSS EQUIPMENT MANUFACTURER.
6. ROUTE IN CONDUIT. REFER TO J651 AND J652.
7. BOND GROUND MAT TO ALL EXPOSED STEEL COLUMNS. ALL LOCATIONS MAY NOT BE SHOWN.
8. BOND ALL METAL AND HAND RAILS IN THE SHOP AREA TO THE NEAREST GROUNDED STRUCTURE.
9. BOND ALL METAL DOORS / FRAMES IN THE SHOP AREA. ALL DOORS MAY NOT BE SHOWN.
10. BOND ALL RAIL SUPPORT STRUCTURES TO THE GROUND RING.

N

0' 20' 40'
SCALE IN FEET

NO	DATE	REVISION	APPROVED
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6/7/13

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COEP STREETCAR

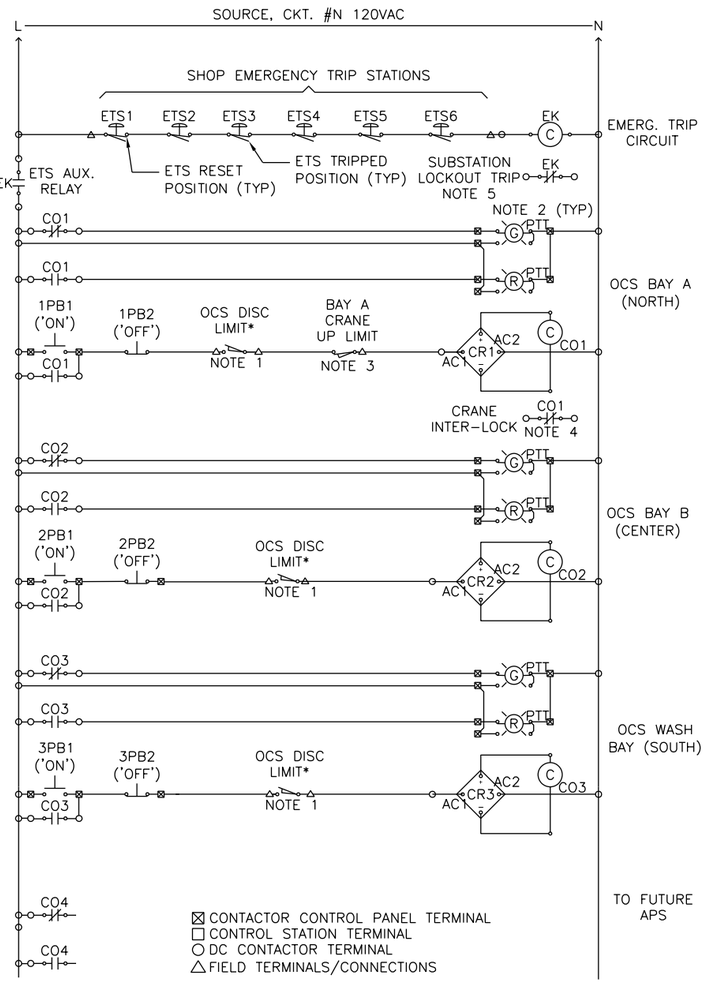
TPSS S1 SHOP
GROUNDING PLAN

J657

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1239

DN: URS CK: URS DW: URS CK: URS

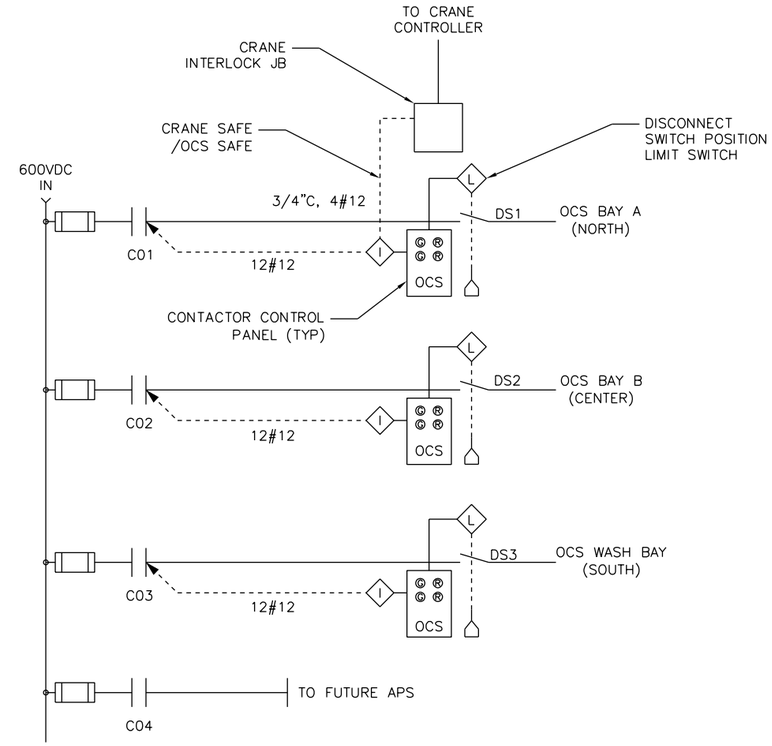
DATE: 1/28/2014 2:09:52 PM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J657.dgn



CONTROL CIRCUIT WIRING DIAGRAM

SCALE: NTS NOTE 6

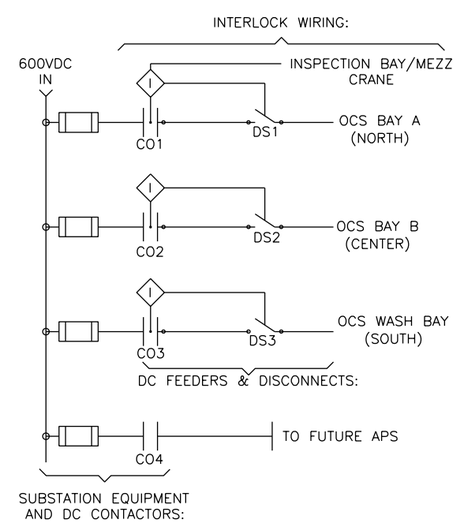
1 / --



ELECTRICAL INTERLOCKING DIAGRAM

SCALE: NTS NOTE 6

2 / --



SHOP DC DISTRIBUTION SCHEMATIC

SCALE: NTS NOTE 6

3 / --

NOTES:

1. LIMIT SWITCH OPENS BEFORE DISCONNECT SWITCH OPENS. LIMIT SWITCH CLOSES AFTER DISCONNECT SWITCH CLOSES.
2. PROVIDE PUSH BUTTON CONTROLS AND INDICATION LIGHTS AT CONTACTOR CONTROL PANEL.
3. CRANE HOIST MUST BE "UP" (FULLY RETRACTED) TO ENERGIZE COIL CO1.
4. CONTACT FOR CRANE CONTROL POWER CIRCUIT.
5. LOCKOUT SHOP DC FEEDER BREAKER WITH ETS TRIP.
6. INTERLOCKING CONTROL CIRCUIT SCHEMATIC IS FOR REFERANCE ONLY. CONTRACTOR SHALL PROVIDE THE FINAL DESIGN AND SUBMIT FOR APPROVAL.

NO	DATE	REVISION	APPROVED
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STATE OF TEXAS
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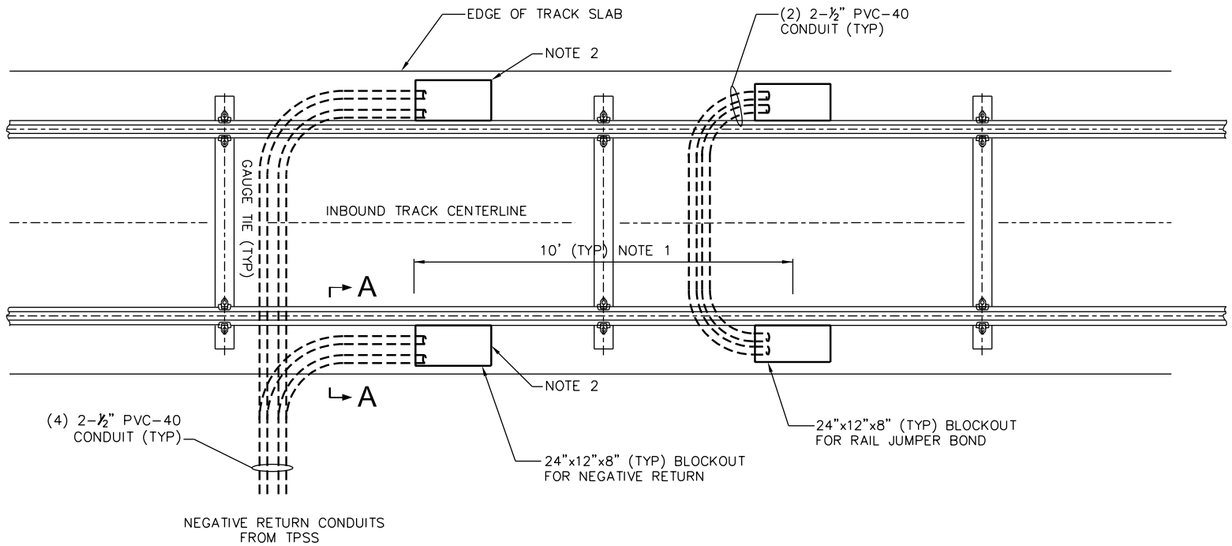
COEP STREETCAR

TPSS S1
SHOP INTERLOCKING SCHEMATICS

J658

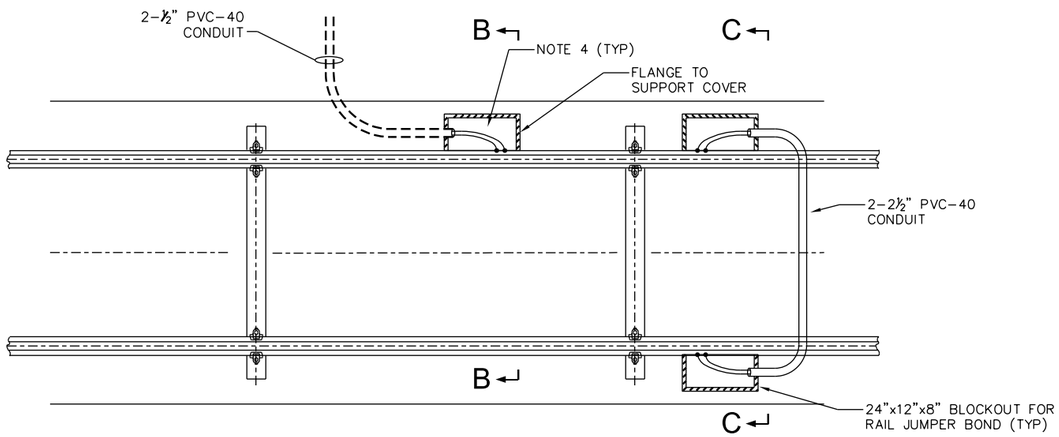
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1240

DATE: 6/4/2013 8:07:55 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J658.dgn



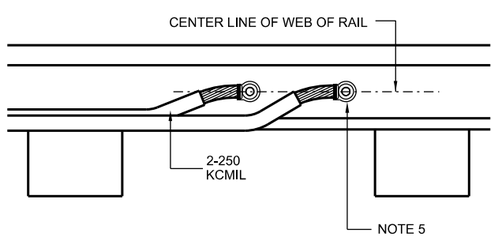
TRACK BLOCKOUT DETAIL (1 / --)

SCALE: NTS NOTE 4



TRACK BLOCKOUT DETAIL FOR SHOP (2 / --)

SCALE: NTS NOTE 4

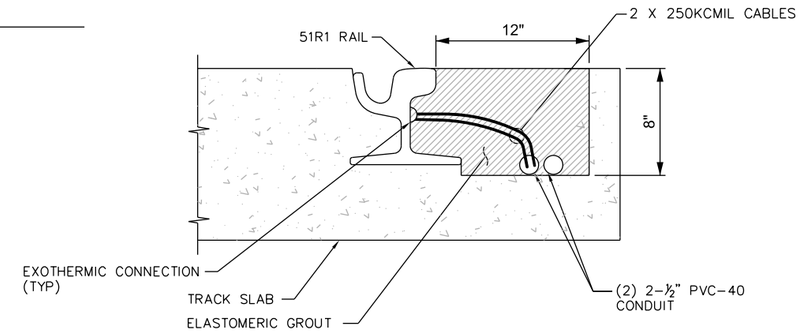


TRACK BONDING DETAIL (3 / --)

SCALE: NTS NOTE 6

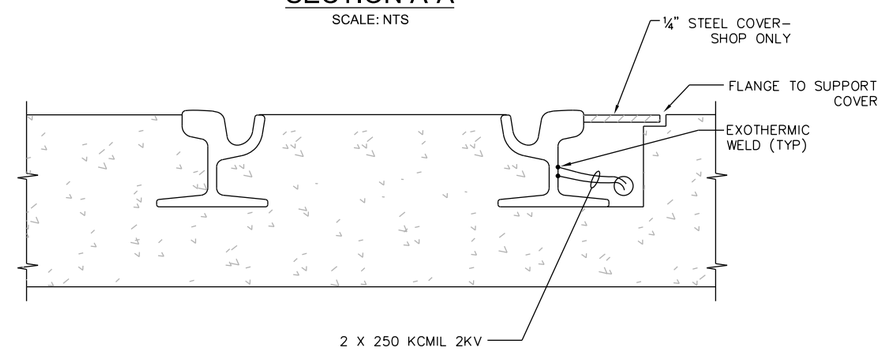
NOTES:

1. RAIL JUMPER BOND BLOCKOUTS, CROSSBOND BLOCKOUTS AND NEGATIVE RETURN BLOCKOUTS SHALL BE OFFSET AT LEAST 10' AWAY FROM EACH OTHER.
2. BLOCKOUT FOR NEGATIVE RETURN MAY BE ON INSIDE OR OUTSIDE OF TRACKWAY. SEE EACH PLAN FOR LOCATION.
3. PROVIDE DRAINAGE FOR BLOCKOUTS IN MSF WASH BAY.
4. SUBMIT FINAL BLOCKOUT DESIGN FOR APPROVAL.
5. EXOTHERMICALLY WELD NEGATIVE RETURN CABLES TO NEUTRAL AXIS ON WEB OF RAIL.
6. PLACEMENT OF CABLES SHALL NOT INTERFERE WITH NORMAL TRACK MAINTENANCE.



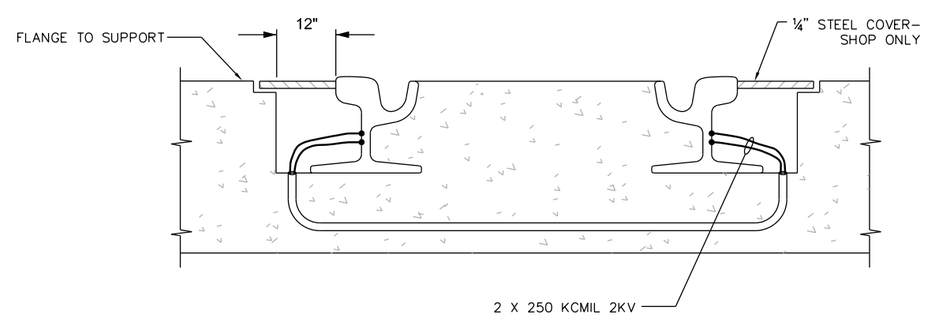
SECTION A-A

SCALE: NTS



SECTION B-B

SCALE: NTS



SECTION C-C

SCALE: NTS

NO	DATE	REVISION	APPROVED
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	/ /		
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COEP STREETCAR

TYPICAL TRACK BLOCKOUT DETAIL

J670

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1241

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 8:09:02 AM
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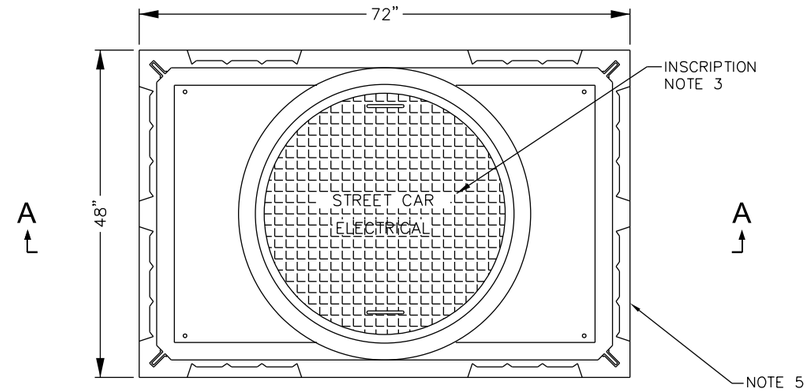
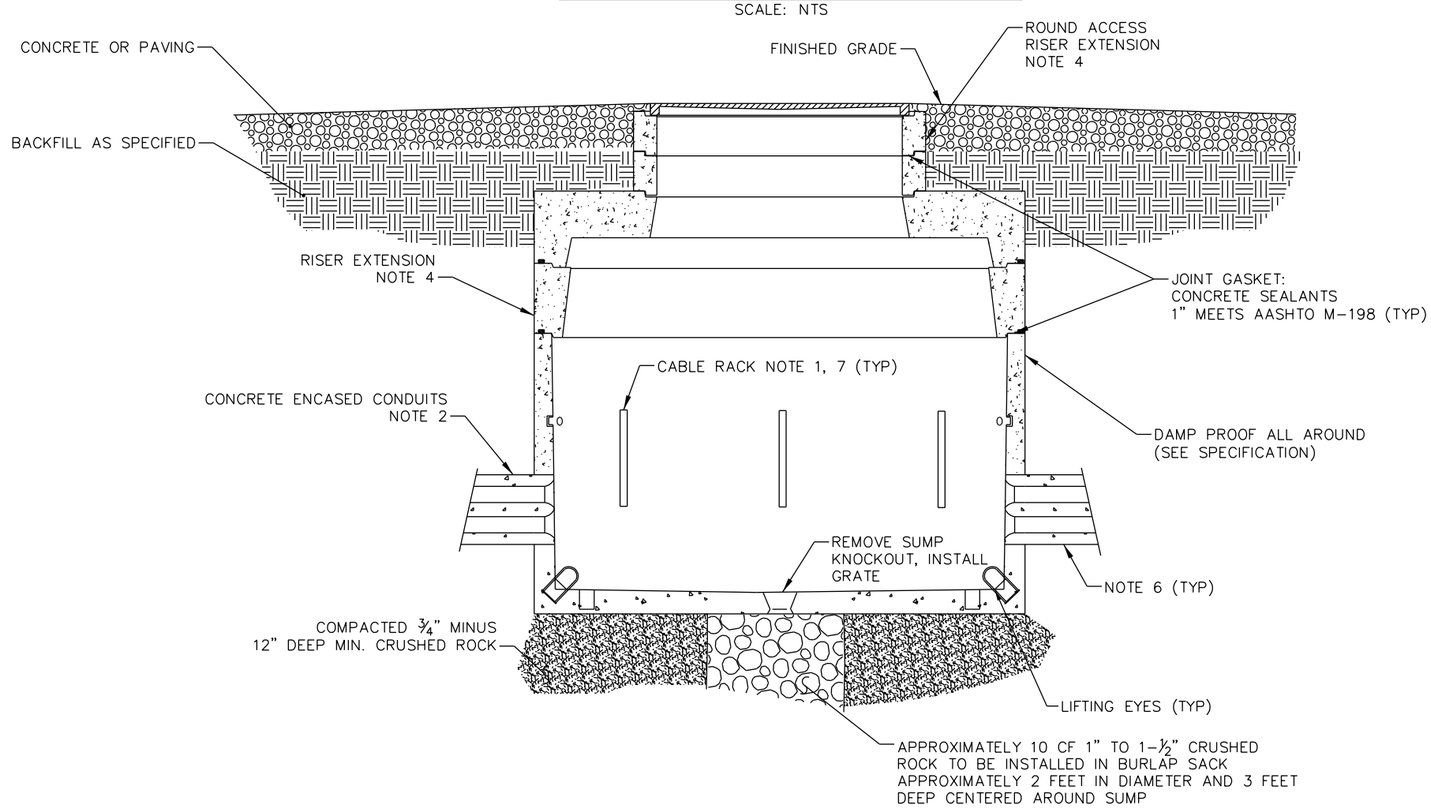


TYPICAL PRE-CAST MANHOLE INSTALLATION PLAN

SCALE: NTS



SECTION A-A

SCALE: NTS

NOTES:

1. PROVIDE NON-METALLIC CABLE RACKS AND LIFTING EYES.
2. ALL CONDUITS SHALL ENTER MANHOLE OR HANDHOLE AT 90° TO WALL.
3. COVERS USED FOR TRACTION ELECTRIFICATION SHALL BE MARKED WITH LETTERING 1-3/4" HIGH.
4. USE RISER EXTENSIONS ON MANHOLES TO ACHIEVE FINAL ELEVATION.
5. MANHOLES SHALL HAVE AN HS20 LOAD RATING.
6. DUCTBANK CONDUIT QUANTITY VARIES DEPENDING ON LOCATION.
7. RACK POSITIVE & NEGATIVE CONDUCTORS ON POPPOSITE SIDES OF MANHOLE.

NO	DATE	REVISION	APPROVED
	/ /		
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	/ /		

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COEP STREETCAR

TYPICAL DC FEEDER MANHOLE DETAILS

J671

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1242

DN: URS | CK: URS | DW: URS | CK: URS

DATE: 6/4/2013 8:09:32 AM
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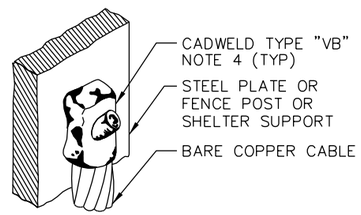
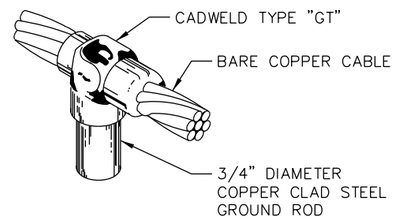
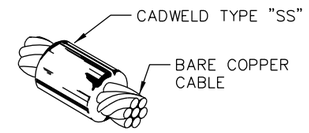


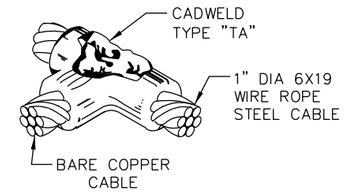
1 STEEL PLATE CONNECTION
SCALE: NTS



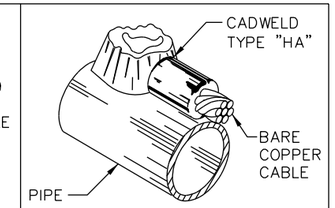
2 GROUND ROD CONNECTION
SCALE: NTS



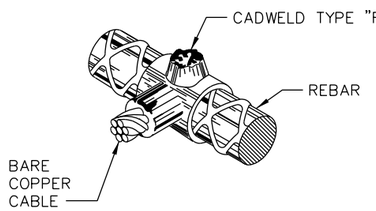
3 GROUND CABLE SPLICING CONNECTION
SCALE: NTS



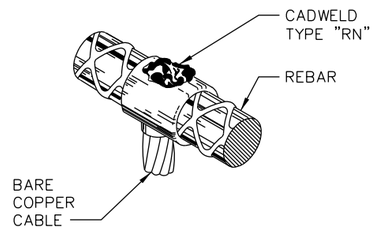
4 WIRE CABLE TEE CONNECTION
SCALE: NTS



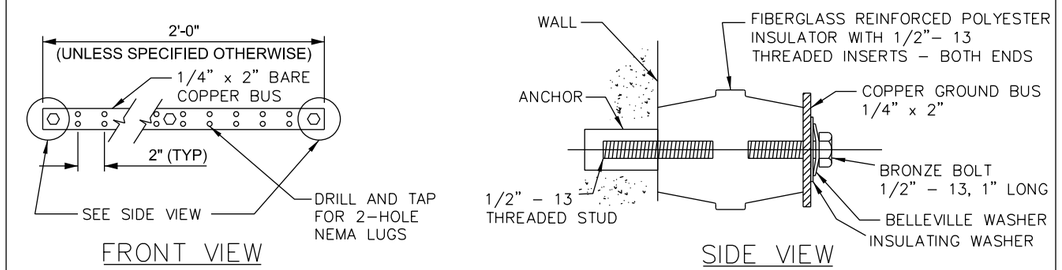
5 GROUND CABLE TO PIPE
SCALE: NTS



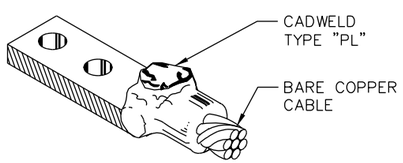
6 GROUND CABLE TO REBAR CONNECTION/HORIZONTAL
SCALE: NTS



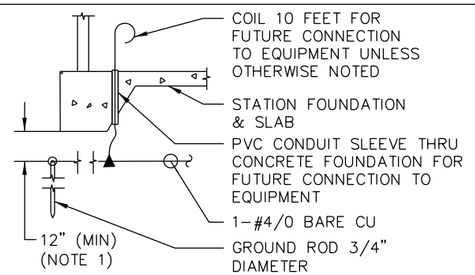
7 GROUND CABLE TO REBAR CONNECTION/VERTICAL
SCALE: NTS



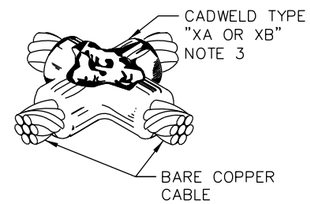
8 GROUND BUS DETAILS
SCALE: NTS



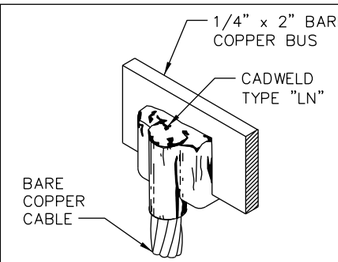
9 GROUND CABLE TO 2-HOLE TERMINAL CONNECTION
SCALE: NTS



10 EQUIPMENT GROUND DETAILS
SCALE: NTS



11 GROUND CABLE CROSS CONNECTION
SCALE: NTS



12 GROUND BUS CONNECTION
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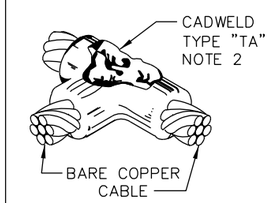

13 GROUND CABLE TEE CONNECTION
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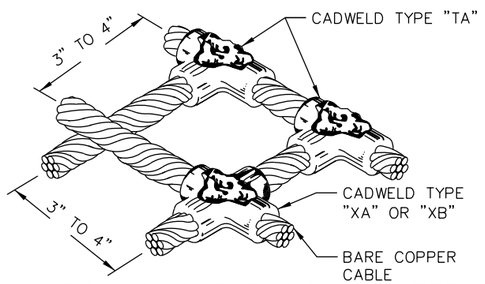
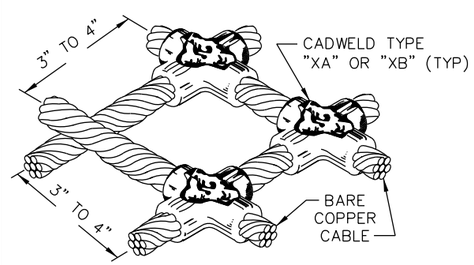
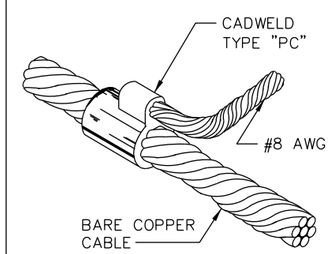


14 GROUND CABLE DOUBLE TEE-SINGLE CROSS CONNECTION
SCALE: NTS



15 GROUND CABLE "TRIPLE CROSS" CONNECTION
SCALE: NTS



16 HORIZONTAL TEE CONNECTION
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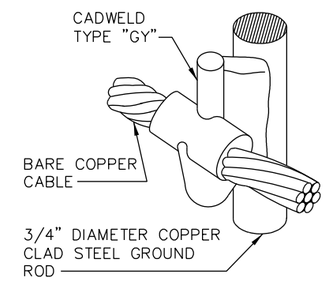

17 GROUND ROD CROSS CONNECTION
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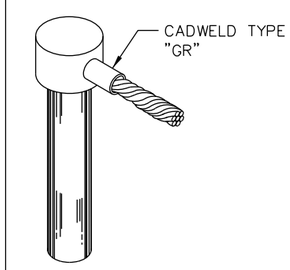

18 GROUND ROD CONNECTION
SCALE: NTS

NO	DATE	REVISION	APPROVED
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COEP STREETCAR

TYPICAL GROUNDING DETAIL

J672

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1243

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 8:10:03 AM
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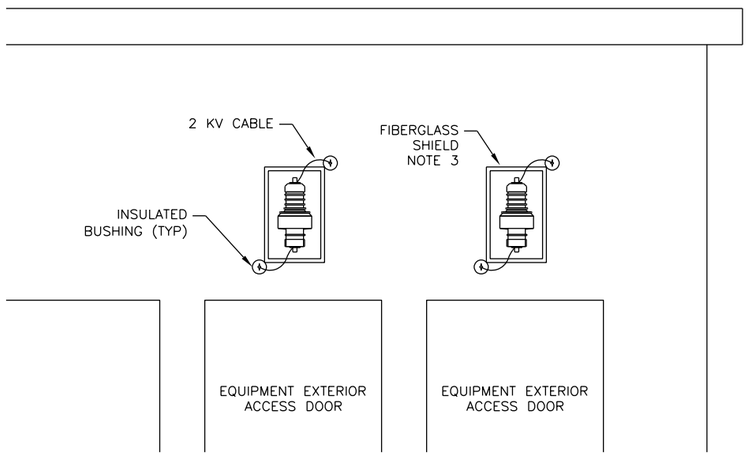
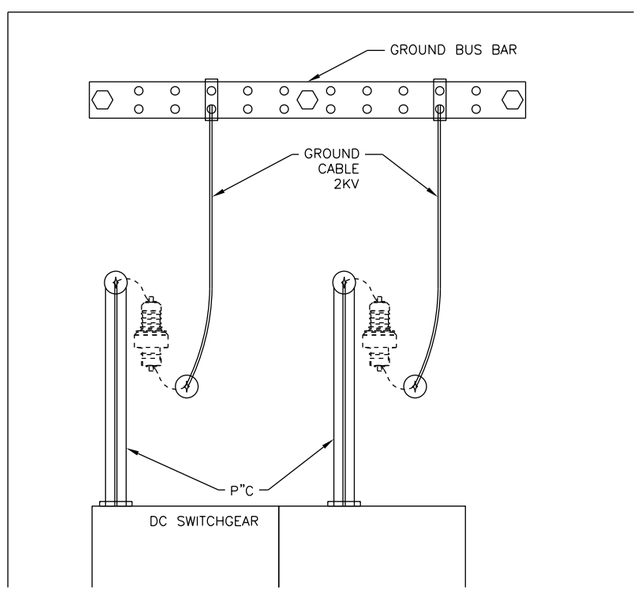


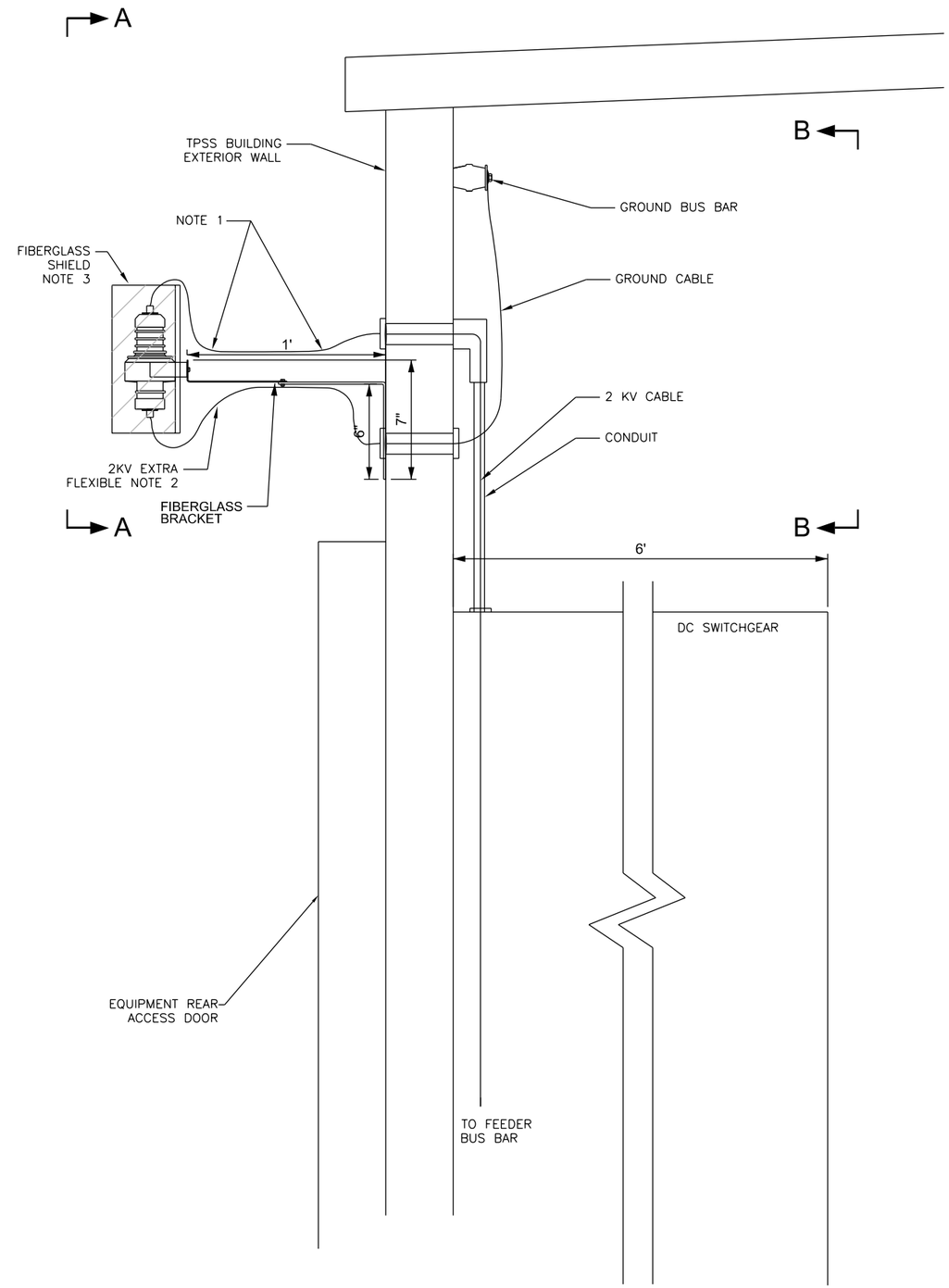
A-A EXTERIOR VIEW

SCALE: 3"=1'-0"



B-B INTERIOR VIEW

SCALE: 3"=1'-0"



SIDE VIEW

SCALE: 3"=1'-0"

NOTES:

1. SECURE CABLES ALONG THE BRACKET.
2. PROVIDE ENOUGH SLACK IN CABLE FOR SURGE ARRESTER TO FALL AWAY FROM BRACKET.
3. PROVIDE FIBERGLASS SHIELD WITH BACK AND SIDE PANELS.

NO	DATE	REVISION	APPROVED
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COEP STREETCAR

TYPICAL SURGE ARRESTER INSTALLATION DETAILS

J673

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1244

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 8:10:42 AM
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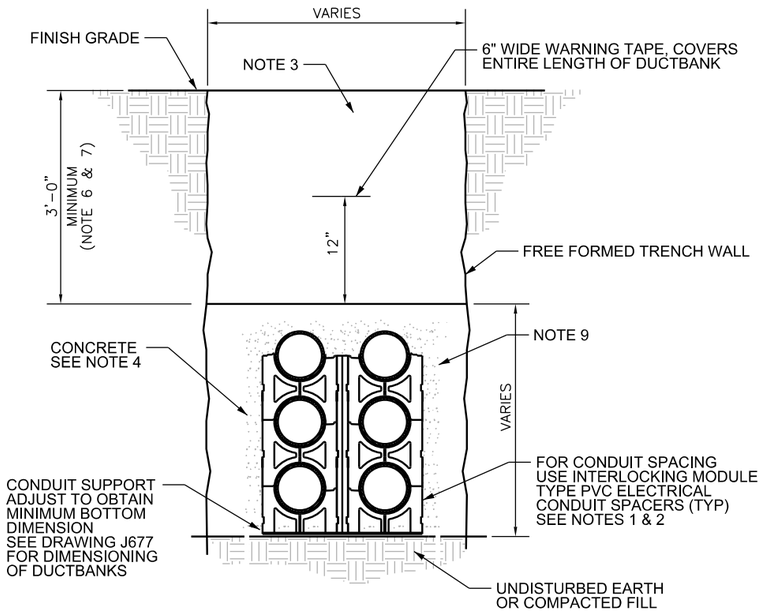
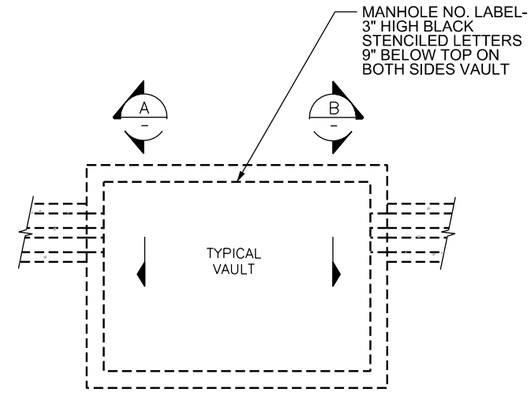


TYPICAL DUCTBANK INSTALLATION (1 / --)

SCALE: NTS



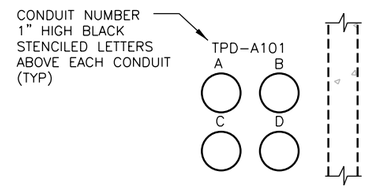
MANHOLE & CONDUIT LABELING - TOP VIEW (2 / --)

SCALE: NTS

NOTE 5

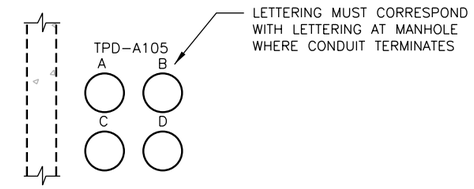
NOTES:

1. USE PVC ELECTRICAL CONDUIT SPACERS TO MAINTAIN A SPACING OF 3" CLEAR BETWEEN CONDUITS.
2. INSTALL INTERLOCKING MODULE CONDUIT SPACERS AT 5'-0" ON CENTERS, MAXIMUM.
3. GROUND COVER OVER TOP OF CONCRETE ENCASED DUCTBANK SHALL BE A MINIMUM OF 36" UNLESS SPECIFIED OTHERWISE. COMPACT PER SPECIFICATIONS.
4. RED CONCRETE MUST BE USED FOR ALL TRACTION ELECTRIFICATION AND EPE DUCTBANK INSTALLATIONS UNLESS NOTED OTHERWISE. REFER TO EPEC ELECTRICAL SERVICE REQUIREMENTS ON DISTRIBUTION UNDERGROUND STRUCTURE FOR CONCRETE MIX REQUIREMENTS.
5. LABELING AS SHOWN IN DETAIL 2 WILL BE TYPICAL FOR ALL MANHOLES.
6. MINIMUM DIMENSIONS DO NOT APPLY AT CROSSING UNDER UTILITY PIPES.
7. REFER TO DRAWING J677 FOR TYPICAL DUCTBANK SECTIONS AND DIMENSIONS.
8. CALL ONE-CALL NOTIFICATION SYSTEM PRIOR TO EXCAVATION.
9. HAND EXCAVATE NEAR ALL KNOWN OR SUSPECTED UTILITIES.



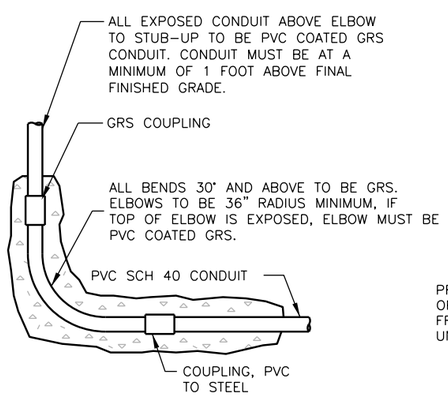
SECTION (A / --)

SCALE: NTS



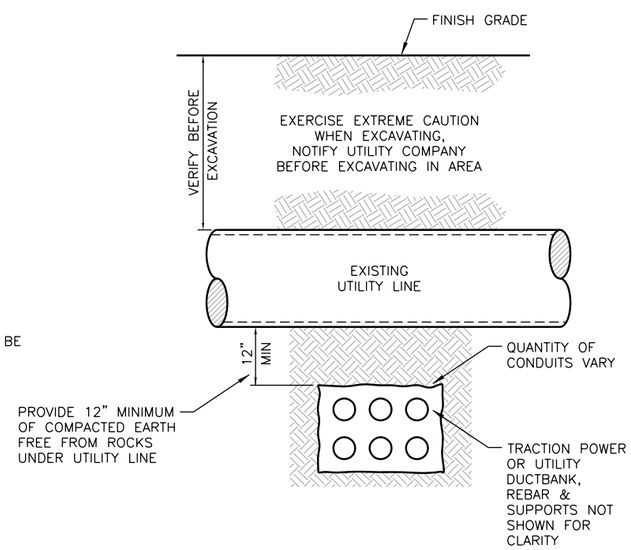
SECTION (B / --)

SCALE: NTS



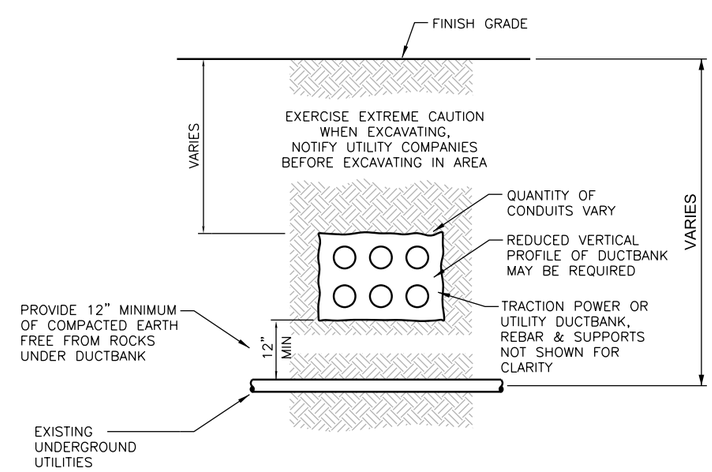
TYPICAL CONDUIT STUB-UP DETAIL (3 / --)

SCALE: NTS



INSTALLATION OF DUCTBANK UNDER UTILITY LINES (4 / --)

SCALE: NTS



INSTALLATION OF DUCTBANK ABOVE UNDERGROUND UTILITIES (5 / --)

SCALE: NTS

NO	DATE	REVISION	APPROVED
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COEP STREETCAR

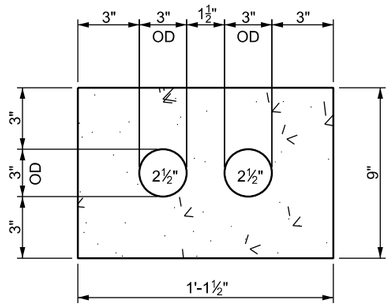
TYPICAL DUCTBANK INSTALLATION DETAIL SHEET 1 OF 2

J676

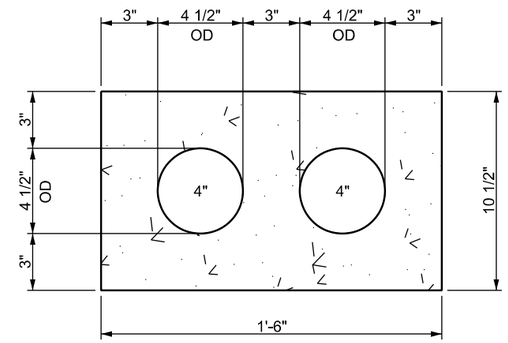
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1245

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 8:11:27 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J676.dgn



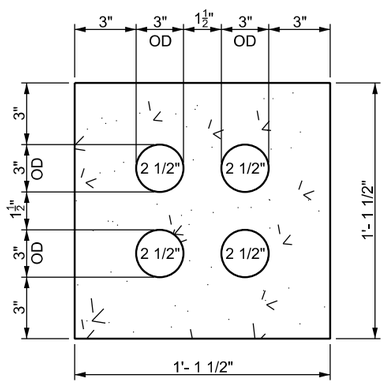
TYPE 2-2 1/2 (C / --)
SCALE: NTS



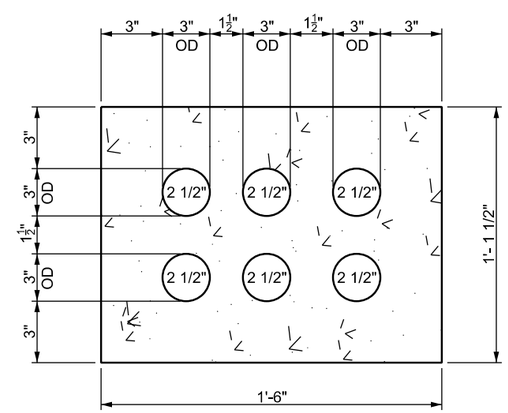
TYPE 2-4 (D / --)
SCALE: NTS

NOTES:

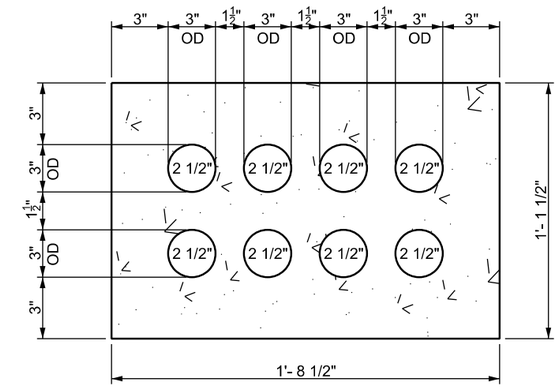
1. TRANSITION FROM MH, HH OR PULLBOX ENTRANCE TO NORMAL DEPTH AS SHOWN ON DUCTBANK SECTIONS MUST BE MADE WITH LONG RAIDUS CONDUIT SWEEPS.
2. RED CONCRETE ENCASEMENT FOR ALL TRACTION ELECTRIFICATION & EL PASO ELECTRIC COMPANY DUCTBANK SECTIONS. REFER TO EL PASO ELECTRIC COMPANY ELECTRICAL SERVICE REQUIREMENTS ON DISTRIBUTION UNDERGROUND STRUCTURES FOR CONCRETE MIX REQUIREMENTS.
3. DUCT BANK EXAMPLE:
   TYPE (2–X), FIRST DIGIT INDICATES NUMBER OF CONDUITS AND SECOND DIGIT INDICATES SIZE OF CONDUITS IN INCHES.
4. SEE PLANS AND SCHEDULES FOR QUANTITIES OF CONDUITS.
5. DUCTBANK SECTIONS ARE SHOWN FOR REFERENCE PURPOSES ONLY, IN ORDER TO IDENTIFY MINIMUM CONCRETE ENCASEMENT REQUIREMENTS AROUND CONDUITS. FINAL DUCTBANK CONFIGURATIONS AND INSTALLATION SHALL BE SUBMITTED FOR APPROVAL.



TYPE 4-2 1/2 (C / --)
SCALE: NTS



TYPE 6-2 1/2 (D / --)
SCALE: NTS



TYPE 8-2 1/2 (E / --)
SCALE: NTS

TYPICAL DUCTBANK SECTIONS

SCALE: NTS

NO	DATE	REVISION	APPROVED
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	/ /		

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DONALD D. ROSS
59778
REGISTERED PROFESSIONAL ENGINEER
6/7/13

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LTK Engineering Services
TBPE REGISTRATION NO. F-1389

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TBPE REGISTRATION NO. F-3162

COEP STREETCAR

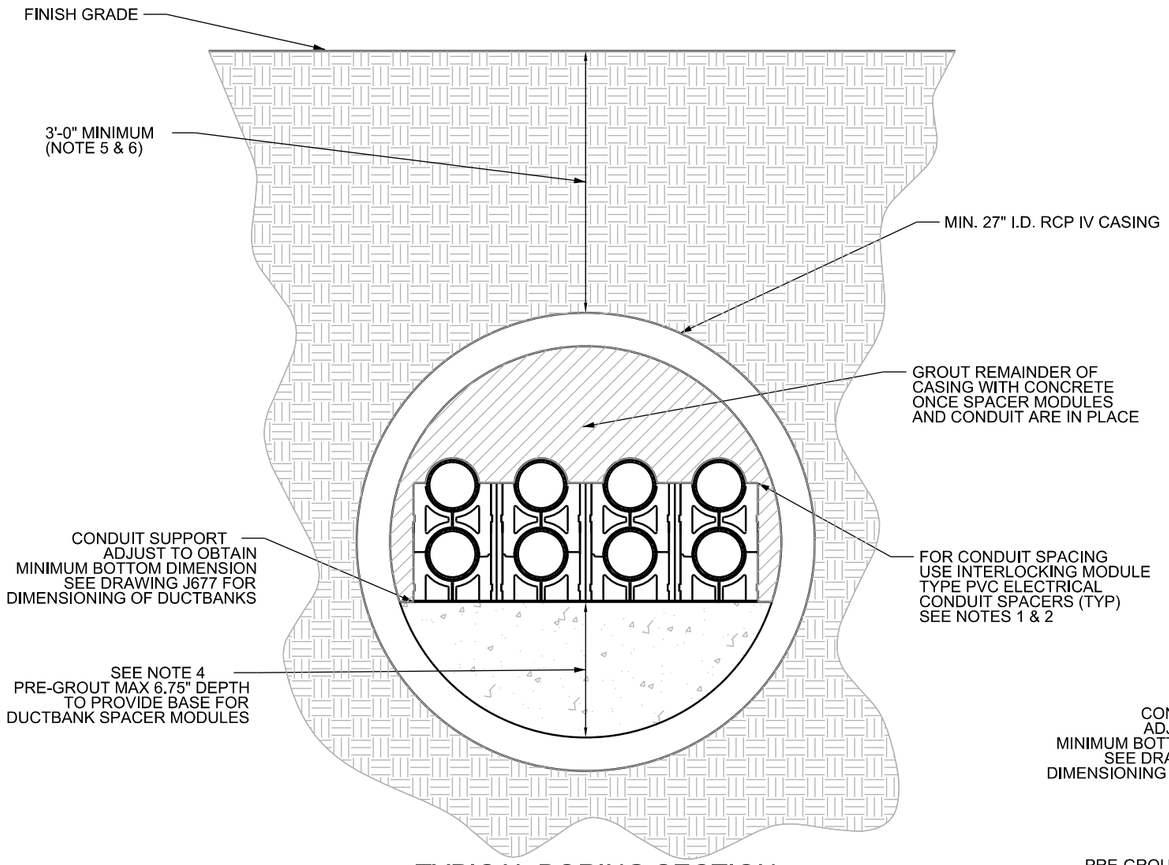
TYPICAL DUCTBANK INSTALLATION DETAIL SHEET 2 OF 2

J677

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1246

DN: URS CK: URS DW: URS CK: URS

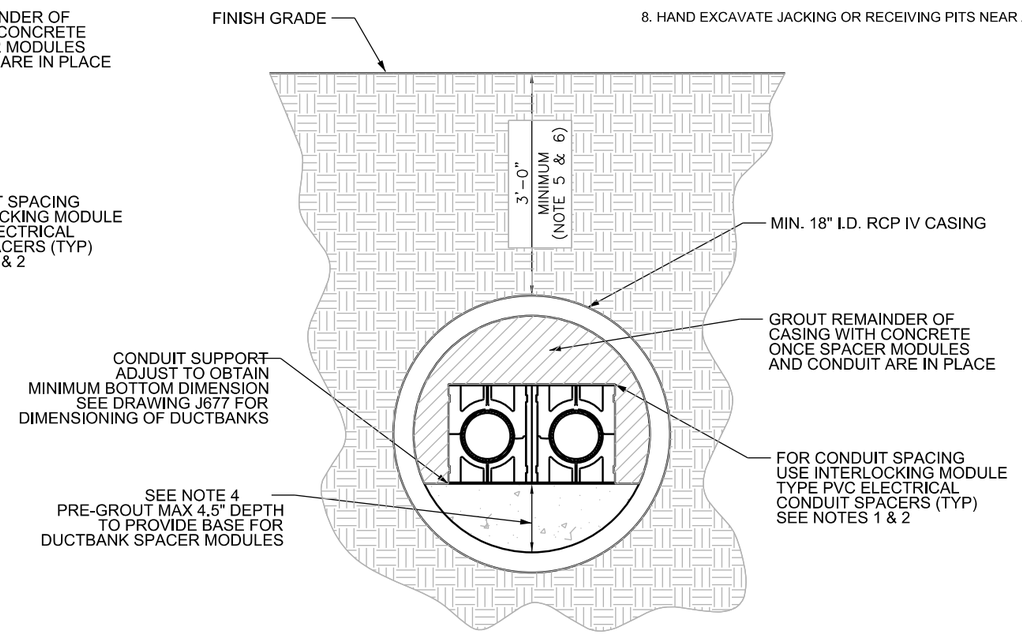
DATE: 6/4/2013 8:11:58 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J677.dgn



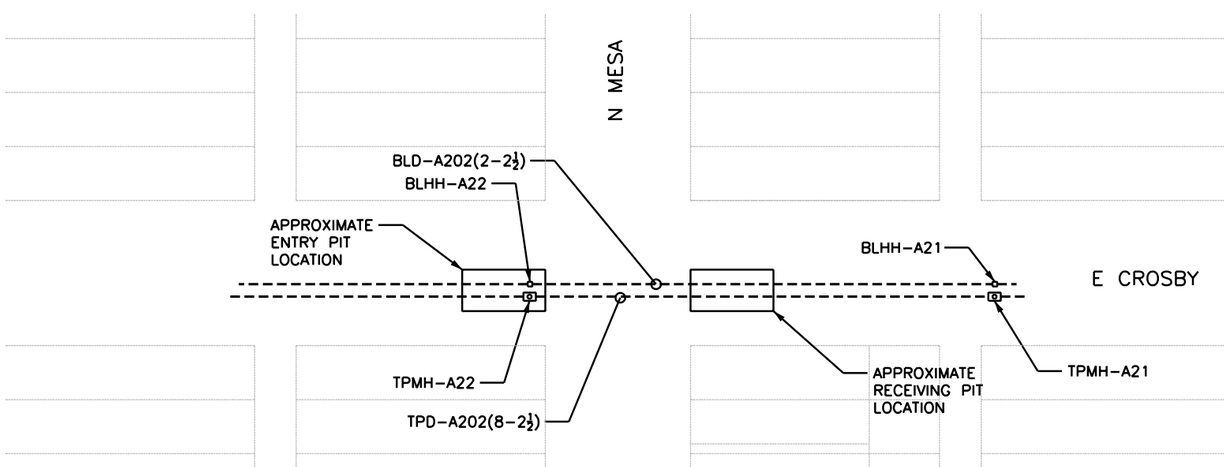
TYPICAL BORING SECTION
BLD-A202 (2 - 2.5)
SCALE: NTS

NOTES:

1. USE PVC ELECTRICAL CONDUIT SPACERS TO MAINTAIN A SPACING OF 3" CLEAR BETWEEN CONDUITS.
2. INSTALL INTERLOCKING MODULE CONDUIT SPACERS AT 5'-0" ON CENTERS, MAXIMUM.
3. GROUND COVER OVER TOP OF CASING SHALL BE A MINIMUM OF 36" UNLESS SPECIFIED OTHERWISE. COMPACT PER SPECIFICATIONS.
4. RED CONCRETE MUST BE USED FOR ALL TRACTION ELECTRIFICATION AND EPE DUCTBANK INSTALLATIONS UNLESS NOTED OTHERWISE. REFER TO EPEC ELECTRICAL SERVICE REQUIREMENTS ON DISTRIBUTION UNDERGROUND STRUCTURE FOR CONCRETE MIX REQUIREMENTS.
5. MINIMUM DIMENSIONS DO NOT APPLY AT CROSSING UNDER UTILITY PIPES.
6. REFER TO DRAWING J677 FOR TYPICAL DUCTBANK SECTIONS AND DIMENSIONS.
7. CALL ONE-CALL NOTIFICATION SYSTEM PRIOR TO EXCAVATION.
8. HAND EXCAVATE JACKING OR RECEIVING PITS NEAR ALL KNOWN OR SUSPECTED UTILITIES.



TYPICAL BORING SECTION
BLD-A202 (2 - 2.5)
SCALE: NTS



TPSS A2 BORING SCHEMATIC PLAN
SCALE: N.T.S.

NO	DATE	REVISION	APPROVED
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	/ /		
	/ /		

STATE OF TEXAS
DEREK E. BENEDICT
112544
LICENSED
PROFESSIONAL ENGINEER
7/24/15

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TBPE REGISTRATION NO. F-3162

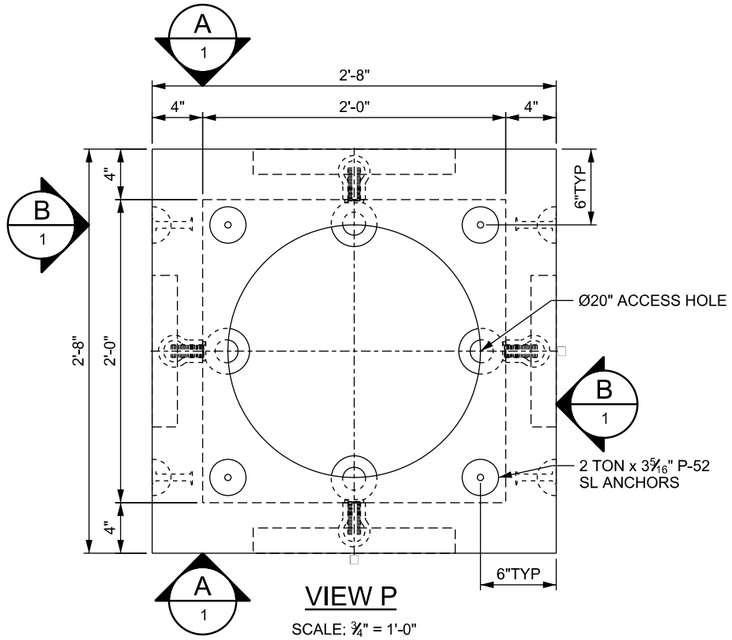
COEP STREETCAR
TYPICAL
DUCTBANK
BORING
INSTALLATION

THE CITY OF EL PASO TEXAS

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1246A

DN: URS CK: URS DW: URS CK: URS

DATE: 7/24/2015 9:28:52 AM
FILE: c:\pwworking\carlo_kenyon\transportationus\dms40876\J677A.dgn

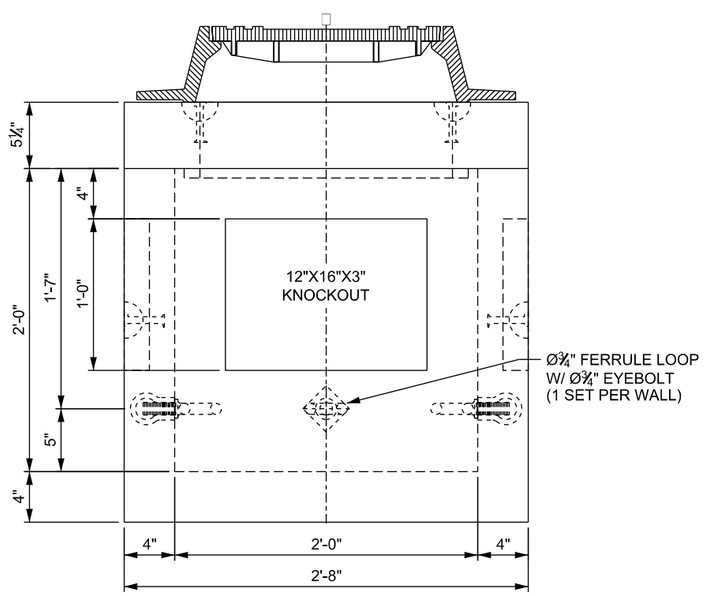


VIEW P

SCALE: ¾" = 1'-0"

NOTES:

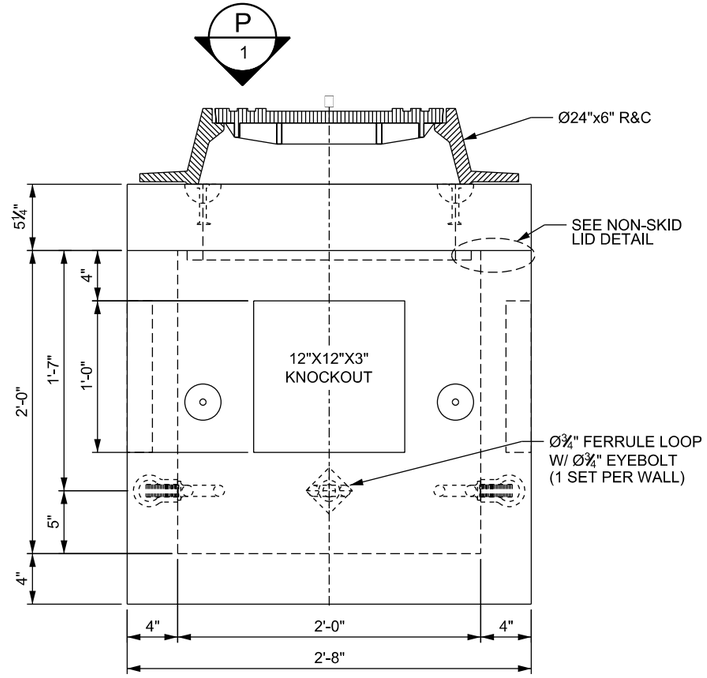
1. PROVIDE HS-20 RATED HANDHOLE WITH NON-SKID LID.
2. HANDHOLE SHALL COMPLY WITH COEP TRAFFIC HANDHOLE STANDARDS.



VIEW A

SCALE: ¾" = 1'-0"

(TYP. OPPOSITE SIDE)



VIEW B

SCALE: ¾" = 1'-0"

(TYP. OPPOSITE SIDE)

NO	DATE	REVISION	APPROVED
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	/ /		

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DONALD D. ROSS
59778
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PROFESSIONAL ENGINEER

Donald D. Ross 6/7/13

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COEP STREETCAR

TYPICAL HANDHOLE DETAIL

J678

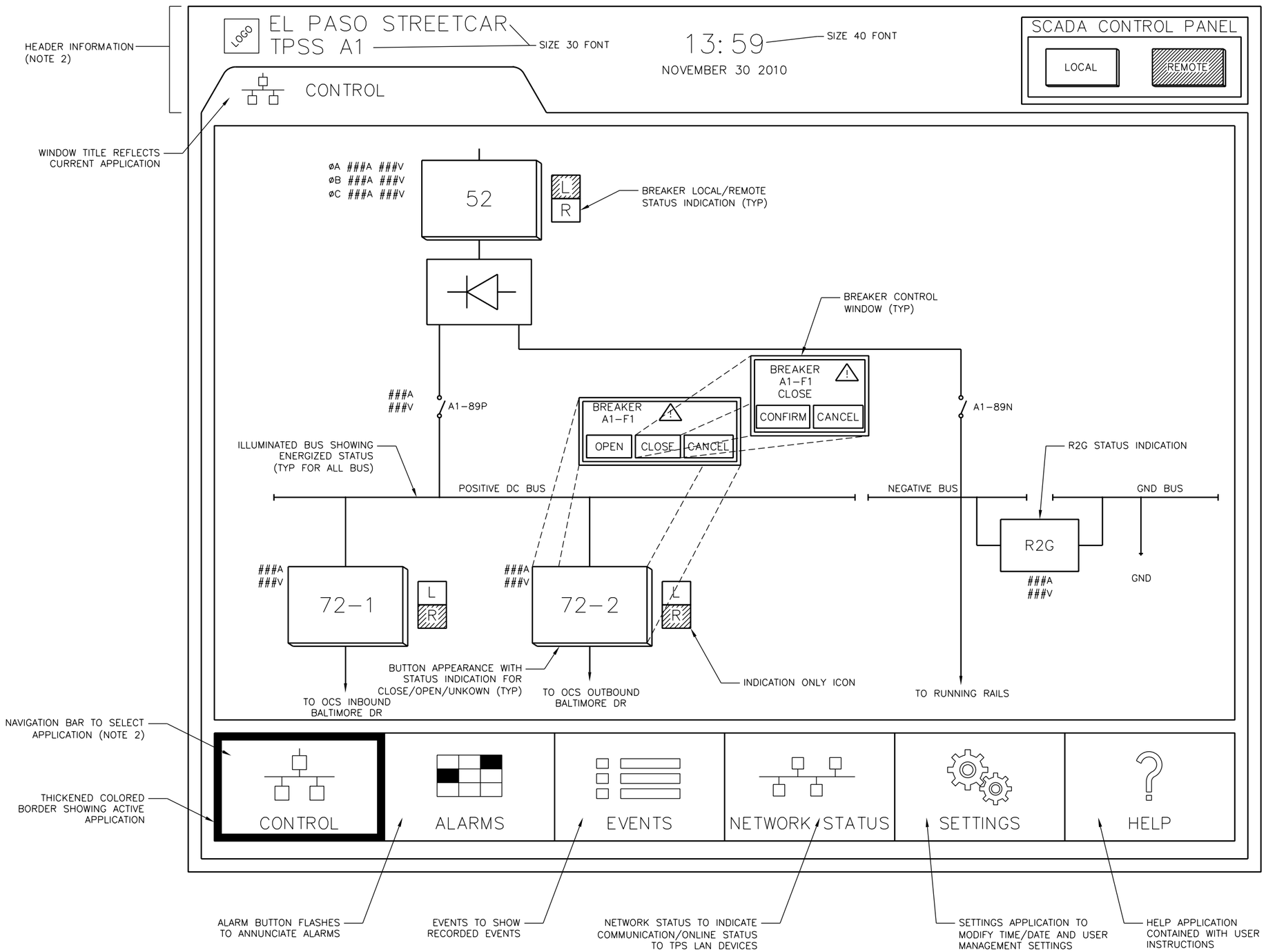
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1247

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 8:12:29 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J678.dgn

NOTES:

1. REFER TO CONTRACT SPECIFICATIONS FOR DETAILED REQUIREMENTS.
2. REMAINS VIEWABLE AT ALL TIMES.



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COEP STREETCAR

TYPICAL TPSS HMI CONTROL SCREEN LAYOUT

J681

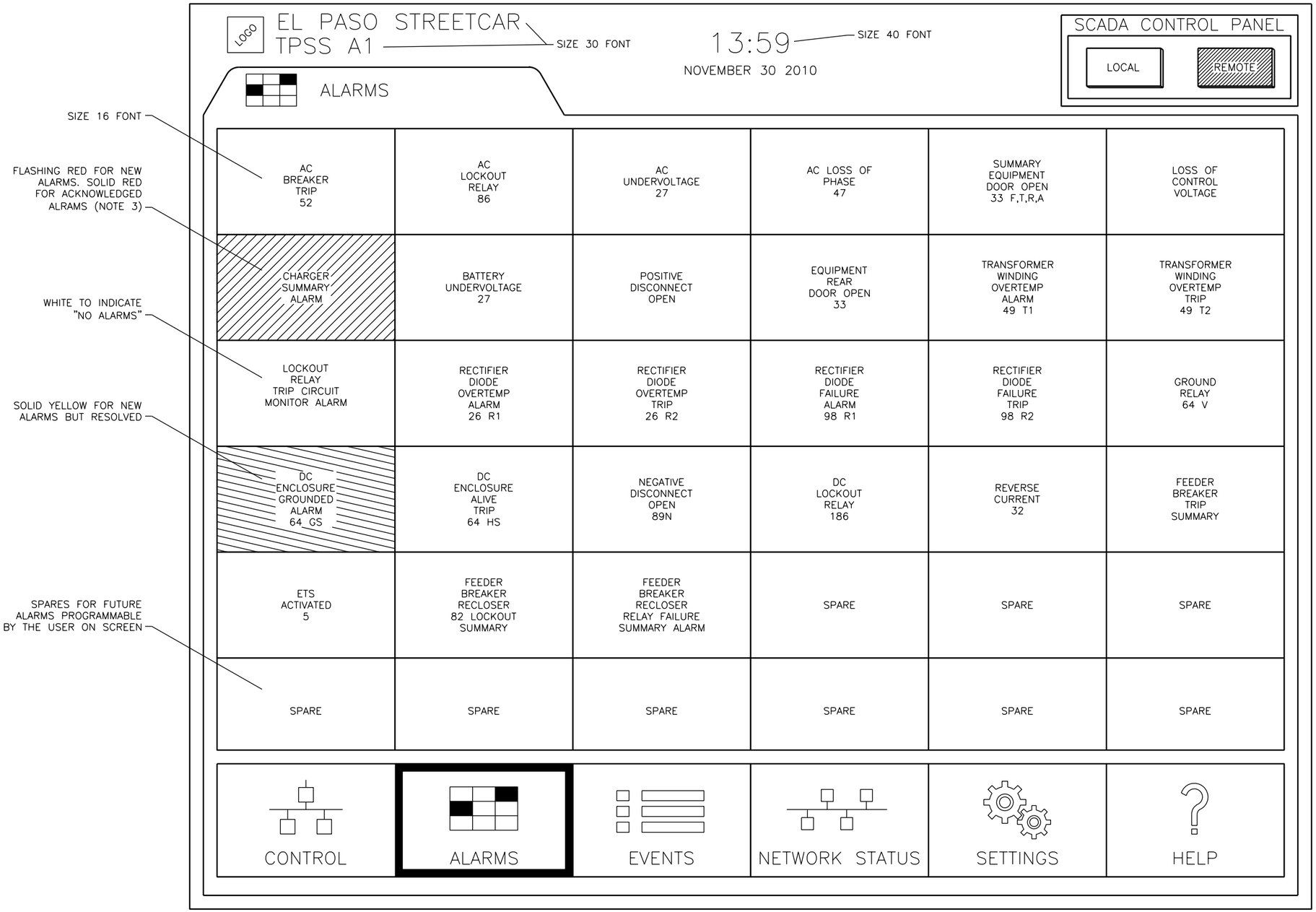
CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1248

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 8:13:14 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J681.dgn

NOTES:

1. REFER TO CONTRACT SPECIFICATIONS FOR DETAILED REQUIREMENTS.
2. 36 POINTS REQUIRED.
3. TOUCH WINDOW TO ACKNOWLEDGE ALARMS.



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COEP STREETCAR

TYPICAL TPSS HMI ALARM SCREEN LAYOUT

J682

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1249

DATE: 6/4/2013 8:13:46 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J682.dgn

DN: URS CK: URS DN: URS CK: URS

NOTES:

1. REFER TO CONTRACT SPECIFICATIONS FOR DETAILED REQUIREMENTS.

LOGO

EL PASO STREETCAR
TPSS A1

SIZE 30 FONT

13:59

SIZE 40 FONT

NOVEMBER 30 2010

SIZE 20 FONT

SCADA CONTROL PANEL

LOCAL | REMOTE

EVENTS

NO.	EVENT	DESCRIPTION	TIME DATE	STATUS
1	AC BREAKER TRIP 52	OVER CURRENT 50/51	11:20:02 11/29/10	
2				
3				
4				
5				
6				
7				
8				
9				
10				

SIZE 16 FONT

SORT WITH MOST CURRENT EVENT ON TOP

PRINT TO EXTERNAL PRINTER

EXPORT TO USB DRIVE

SCROLL BACK ONE PAGE

SCROLL BACK TO FIRST PAGE

SCROLL FORWARD ONE PAGE

SCROLL FORWARD TO LAST PAGE

PAGE BACK | EXPORT | PRINT | PAGE 1 OF 20 | PAGE FORWARD

CONTROL | ALARMS | EVENTS | NETWORK STATUS | SETTINGS | HELP

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 8:14:21 AM
FILE: W:\Projects\El Paso Streetcar\CADD\TRACTION POWER\SHEETS\J683.dgn

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	/ /		

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COEP STREETCAR

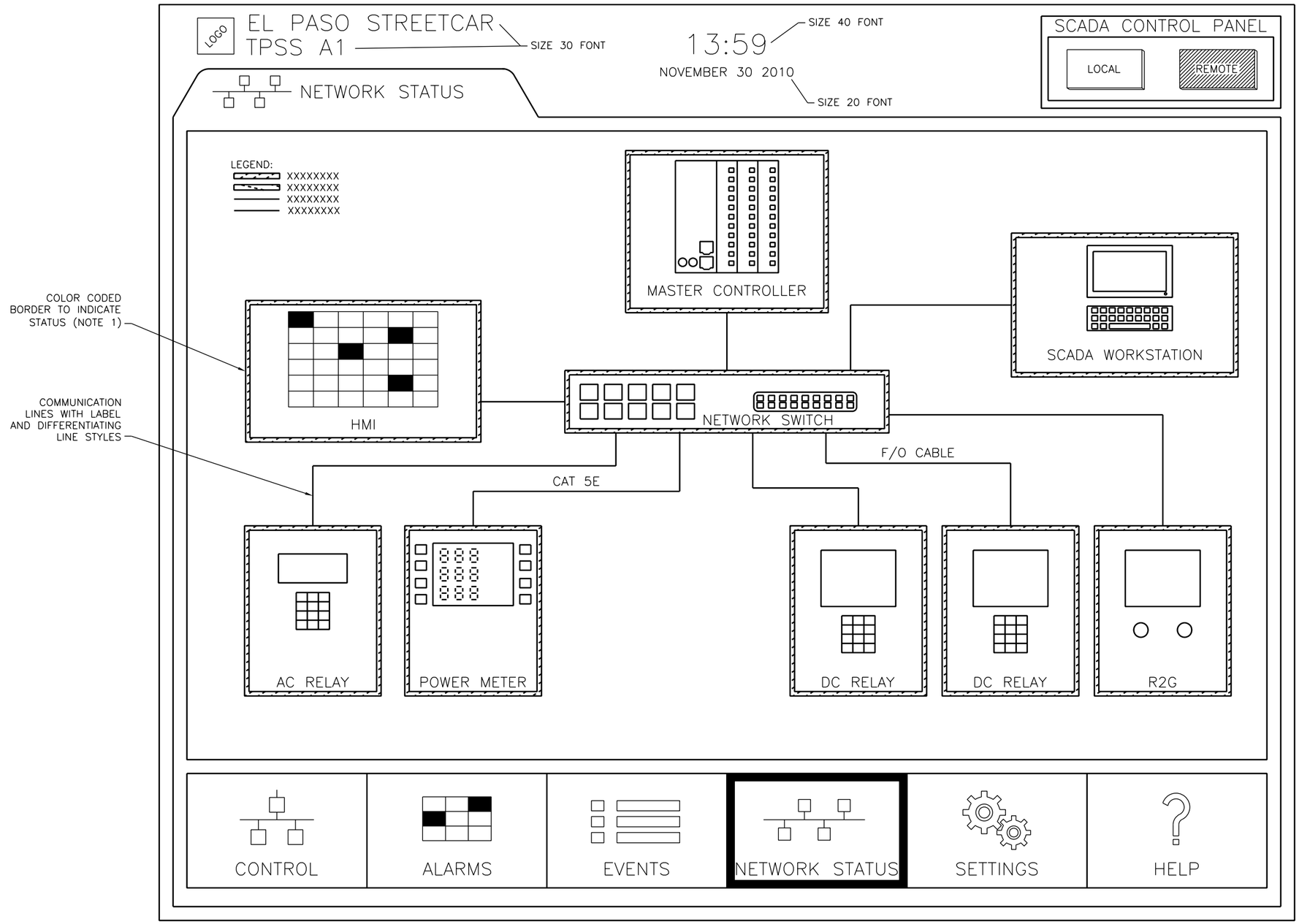
TYPICAL TPSS HMI EVENT LOG SCREEN LAYOUT

J683

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1250

NOTES:

1. REFER TO CONTRACT SPECIFICATIONS FOR DETAILED REQUIREMENTS.



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COEP STREETCAR

TYPICAL TPSS HMI NETWORK STATUS SCREEN LAYOUT

J684

CONT	SECT	JOB	HIGHWAY
0924	06	446	VARIOUS
DIST		COUNTY	SHEET NO.
EL PASO		EL PASO	1251

DN: URS CK: URS DW: URS CK: URS

DATE: 6/4/2013 8:15:14 AM
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