

STATE OF OKLAHOMA  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED  
TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT

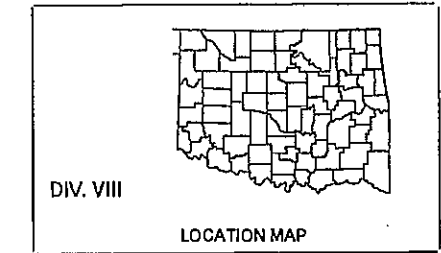
FED. PROJECT NO. SEC 1934-272C (223) TI

STATE PROJECT NO. 23708(06)

TULSA COUNTY

CITY PROJECT NO. 064003A

Account No. 6009-5451101-040753064003



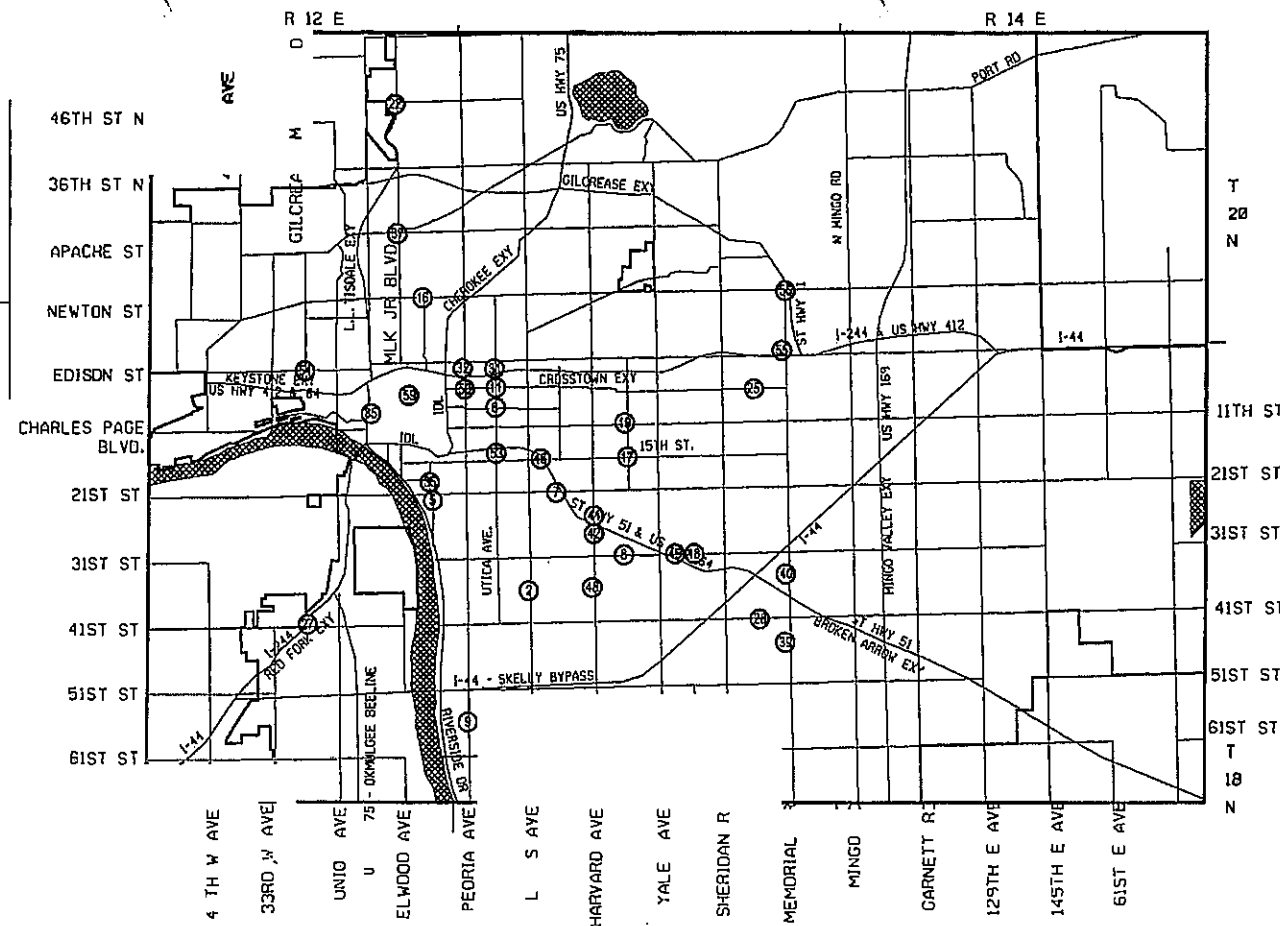
INDEX OF SHEETS

SHEET	DESCRIPTION
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SURVEY CONTROL DATA:  
NO SURVEY DATA

FINAL PLANS

TULSA CO.



UTILITY COORDINATION BOX

PUBLIC WORKS	CONTACT
CITY OF TULSA UTILITY COORDINATOR - CHRIS KOVAC	(918) 596-9649
WATER DESIGN	(918) 596-9568
WASTEWATER DESIGN	(918) 598-0984
TRANSPORTATION DESIGN	(918) 598-9638
TRAFFIC OPERATIONS	(918) 598-9766
STORMWATER DESIGN	(918) 598-9498
OKLAHOMA NATURAL GAS - CRAIG POWELL	(918) 831-8261
COX COMMUNICATIONS - BRANDON WADE	(918) 288-4716
AEP/PSO - MIKE BIBBY	(918) 250-6257
AT&T - STEVE SPRADIN	(918) 576-2142

THE FOLLOWING ODOT STANDARDS WILL BE REQUIRED:

- TRAFFIC CONTROL
- TCS1-1-01
  - TCS2-1-00
  - TCS3-1-01
  - TCS4-1-01
  - TCS5-1-00
  - TCS6-1-02
  - TCS7-1-02
  - TCS8-1-00
  - TCS9-1-01
  - TCS10-1-00
  - TCS11-1-01
  - TCS13-1-00
  - TCS14-1-00
  - TCS17-1-00
  - TCS18-1-01
  - TCS19-1-01
  - TCS20-1-00
  - TCS21-1-02
  - TCS24-1-02
  - TCS25-1-00

THE FOLLOWING SPECIFICATIONS SHALL GOVERN CONSTRUCTION:  
-CITY OF TULSA CONSTRUCTION SPECIFICATIONS, CURRENT EDITION  
-OKLAHOMA STANDARD SPECIFICATION FOR HIGHWAY CONSTRUCTION, APPROVED BY THE DEPARTMENT OF TRANSPORTATION, 2008

**JACOBS**  
10816 EXECUTIVE CENTER DR. STE. 300  
LITTLE ROCK, AR 72211

BEFORE YOU DIG! CALL OKIE 1-800-522-6543

UTILITIES LOCATION SHOWN ON PLAN AND PROFILE WERE OBTAINED FROM INFORMATION PROVIDED BY UTILITY SYSTEM OWNER IN CONJUNCTION WITH EXISTING PHYSICAL FEATURES VISIBLE AT THE TIME OF THE TOPOGRAPHIC SURVEY. LOCATIONS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

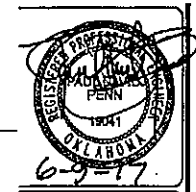
APPROVED

*Zoll*  
Streets and Stormwater Director  
City of Tulsa  
DATE 6/12/17

ROADWAY

PREPARED BY:  
JACOBS ENGINEERING GROUP INC.

DATE AUGUST 28, 2014  
OKLA. REG. NO. 15598



OKLAHOMA DEPARTMENT OF TRANSPORTATION  
DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

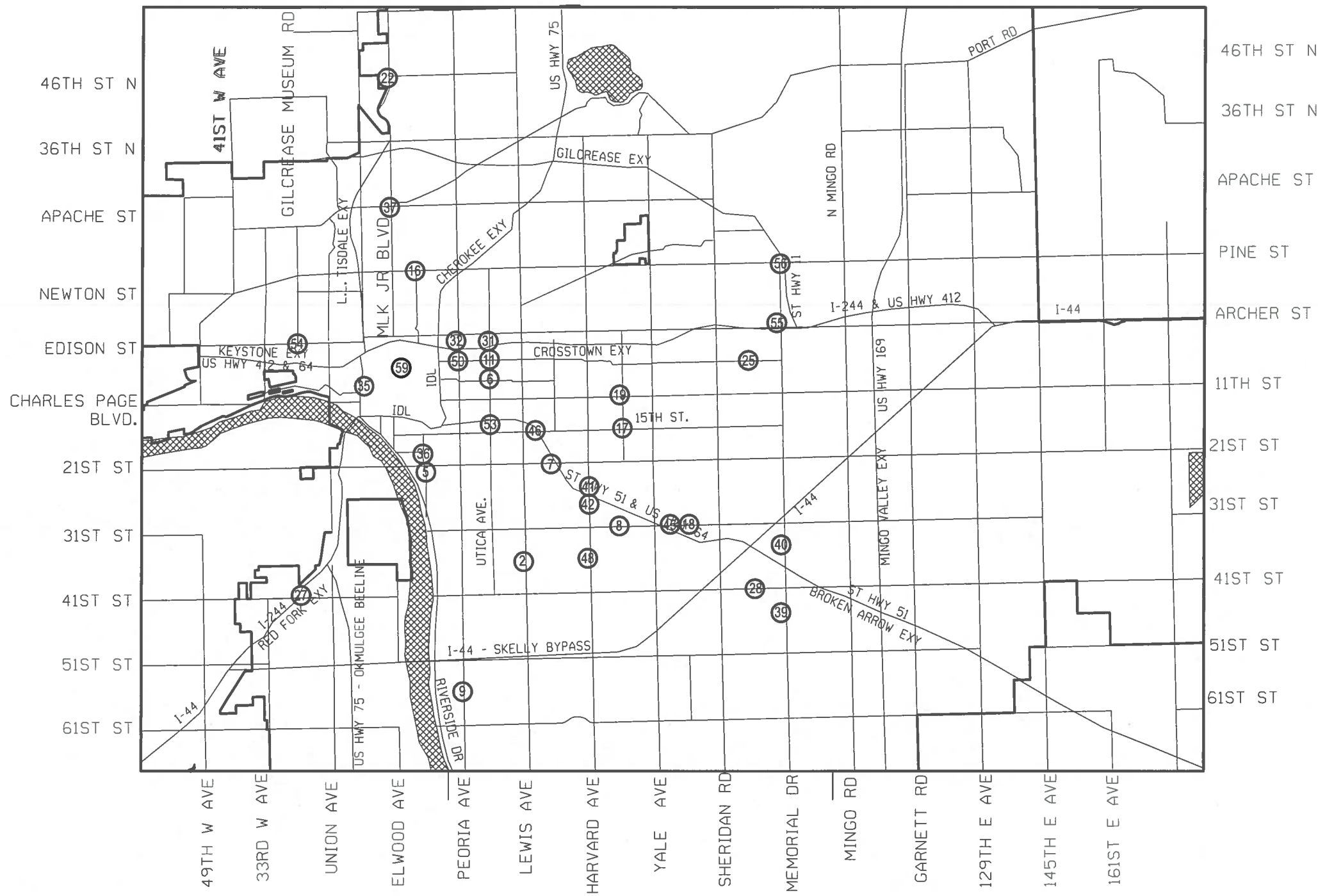
DATE APPROVED BY \_\_\_\_\_  
BY \_\_\_\_\_ CHIEF ENGINEER

DATE APPROVED BY \_\_\_\_\_  
BY \_\_\_\_\_ DIVISION ADMINISTRATOR

PROJECT NO. SEC 1934-172C 336 TI SHEET NO. 1

TULSA COUNTY

T:\Job\10004700 Tulsa Green Artn Project\100 CAD Files\10 Traffic Files\10 Tulsa Green Artn Drawing Files\COVER SHEET.dgn

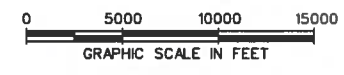


LIST OF INTERSECTIONS		
NO.	EAST/WEST	NORTH/SOUTH
2.	36th Street South	Lewis Ave.
5.	21st Street	Cincinnati Ave.
6.	6th Street	Utica Ave.
7.	21st Street	Columbia Ave.
8.	31st Street	New Haven
9.	56th Street	Peoria Ave.
11.	3rd Street	Utica Ave.
16.	Pine Street	Greenwood
17.	15th Street	Delaware Ave.
18.	31st Street	Hudson
19.	11th Street	Pittsburg Ave.
22.	46th Street North	MLK
25.	4th Place	73rd Ave. East
27.	41st Street West	Southwest Blvd.
28.	41st Street	73rd E Ave.
31.	Admiral Blvd.	Utica Ave.
32.	Admiral Blvd.	Peoria Ave.
35.	1st Street	Guthrie
36.	18th Street	Cincinnati Ave.
37.	Apache Street	MLK
39.	46th Street	Memorial Dr.
40.	35th Street	Memorial Dr.
41.	BA Expy WB Off Ramp	Harvard Ave.
42.	BA Expy EB Off Ramp	Harvard Ave.
45.	31st Street	Broken Arrow Expy WB
46.	15th Street	Broken Arrow Expy
48.	36th Street	Harvard Ave.
50.	3rd Street	Peoria Ave.
53.	14th Street	Utica Ave.
54.	Edison Street	25th Ave. West
55.	I-244	Memorial Dr.
56.	Pine Street	Hwy 11 NB Ramps
59.	1st Street	Boston Ave.
<b>TOTAL: 33 INTERSECTIONS</b>		

PRINT DATE: 3/15/2017 FILE#LS

**SCOPE OF WORK**  
 THE WORK AS DETAILED BY THESE PLANS INCLUDES THE FOLLOWING ITEMS:

- 1) DEMOLITION, INCLUDING REMOVAL OF SIDEWALK, EXISTING POLES, BASES, PULLBOXES, CONDUIT, CONDUCTOR AND ALL OTHER REMOVALS AND DEMOLITION NEEDED TO EFFECT THE DESIGN INTENT AS SHOWN ON THESE PLANS
- 2) INSTALLATION OF POLES, BASES, PULLBOXES, CONDUIT, AND CONDUCTOR
- 3) REPAIR OF SIDEWALK OR OTHER PAVEMENT REMOVED AS PART OF INSTALLATION



**TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT**

**MAP OF INTERSECTIONS**

CITY OF TULSA, OKLAHOMA  
STREETS & STORMWATER DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:  
**JACOBS**  
 10816 EXECUTIVE CENTER DR. STE. 300  
 LITTLE ROCK, ARKANSAS 72211

REVISION	BY	DATE	PLAN SCALE:	DRAWN	JOB	APPROVED
			1" = 10,000'	DESIGNED	BV	
				SURVEY	SH	
				PROFILE SCALE:	PROJ. MGR.	
			HORIZONTAL	LEAD ENGR.		
			VERTICAL	FIELD ENGR.		
				RECOMMENDED:		
				DESIGN MANAGER	DIRECTOR	
			FILE	DRAWING:	DATE:	
			ATLAS PAGE NO.:		SHEET 2 OF 46 SHEETS	

SUMMARY OF QUANTITIES

INT #	EAST/WEST STREET	NORTH/SOUTH STREET	ITEM PAY ITEM	REMOVAL		POLE FOOTING			MAST ARM LENGTH								CONDUIT 2" LF	PULLBOX TYPE 2 EA	SIGNAL HEAD			PED P.B. EA	SIGN O/H SF	S/W 4" SY	SIGNAL WIRE						20-C LF				
				POLE/BASE EA	SIDEWALK SY	24" EA	30" EA	36" EA	12' EA	18' EA	24' EA	30' EA	36' EA	42' EA	48' EA	54' EA			#36 EA	#64L EA	#33 EA				1-C/#6 LF	1-C/#12 LF	2-C LF	4-C LF	7-C LF	16-C LF					
2	36TH STREET SOUTH	LEWIS AVE		1		1						1					10		2		2			1									120		
4	15TH STREET	PEORIA AVE		4		3	1					3	1				40	4	8		8	8			4									315	
5	21ST STREET	CINCINNATI AVE		2	2.3	2						2					20		6		4	4			3.2									145	
6	6TH STREET	UTICA AVE		3	3.13	3						1	2				35	2	6		6	6			4.13									350	
7	21ST STREET	COLUMBIA AVE		4		4						2	1		1		45	4	8		8	8			1									405	
8	31ST STREET	NEW HAVEN		2		2						1	1				35	1	4		4	4												185	
9	56TH STREET	PEORIA AVE		2		1	1					1		1			35	2	4		4	4												125	
11	3RD STREET	UTICA		4		3	1					3	1				50	4	8		8	8			3									390	
12	PINE STREET	YALE AVE		4		3	1					3	1				50	4	8		8	8												320	
13	1ST STREET	UTICA AVE SOUTH		3		2	1					1	1		1		50	3	5		4	4												310	
15	46TH STREET NORTH	MINGO ROAD		4			1	3						1	1	1	50	4	9	2	8	8												320	
16	PINE STREET	GREENWOOD		2			2										30	2	4		4	4			1									250	
17	15TH STREET	DELAWARE AVE.		4		4						4					45	4	8		8	8			2									290	
18	31ST STREET	HUDSON AVE		4		2	2					2	2				40	4	8		8	8												385	
19	11TH STREET	PITTSBURG AVE		4		4						2	2				50	4	8		8	8			3									320	
20	CHARLES PAGE	49TH AVE WEST		4		3	1					3	1				55	3	8		8	8			2									295	
22	46TH STREET NORTH	MLK		4			2	2						1	1	2	40	4	8		8	8			2									280	
23	41ST STREET	LEWIS AVE		4			3	1						3	1		45		8	4	8	8			1									290	
25	4TH PLACE	73RD AVE EAST		4		4						1	3				50	4	8		8	8												345	
27	41ST STREET WEST	SOUTHWEST BLVD		4		2	2					1	1	2			40		8		8	8			3									355	
28	41ST STREET	74TH AVE EAST		4		4						1	2				40		6		4	4			1									355	
31	ADMIRAL BLVD	UTICA AVE NORTH		2		2							1				25	1	3		2	2		4	2									170	
32	ADMIRAL BLVD	PEORIA AVE		1			1								1		15		2		1	1		4	1									30	
35	1ST STREET	GUTHRIE		2		2						2					30	2	4															215	
36	18TH STREET	CINCINNATI AVE		4		3	1					1	2	1			50	4	8		8	8			3									315	
37	APACHE STREET	MLK		2		1	1						1	1			20	2	4		4	4			1									145	
39	46TH STREET	MEMORIAL DR		1			1								1		10	1	2		2	2												35	
40	35TH STREET	MEMORIAL DR		2		1	1						1	1			25		4		3	3												210	
41	BA EXPY	HARVARD AVE NORTH		3		1	1						1	1			25	1	5	1					3									200	
42	BA EXPY	HARVARD AVE SOUTH		3		3					1		2				40	2	8						4										225
45	31ST STREET	BA EXPY WESTBOUND		2		1	1					1		2			20	2	6						1									200	
46	15TH STREET	BROKEN ARROW EXPY		3		2	1						2	1			15	1	7						4									100	
48	36TH STREET	HARVARD AVE		3		2	1						2	1			35	2	6		6	6												345	
50	3RD STREET	PEORIA AVE		3		2	1						2	1			40	2	6		6	6			3									365	
52	ADMIRAL BLVD	PITTSBURG AVE		4		3	1						3	1			50	4	8		2	2			3									365	
53	BA EXPY	UTICA AVE SOUTH END		4		1	2	1						1	1	1	45	4	6	1	4	4			2									480	
54	EDISON STREET	25TH AVE WEST		3			3							3			40	2	6		6	6			1									310	
55	I-244	MEMORIAL DR		1			1						1				30	1	2	1															135
56	PINE STREET	HWY 11 NB RAMP		2		1	1						1		1		35	2	4						4									225	
58	5TH STREET	BOULDER AVE		4		4											45	4	4		8	8			4									375	
59	1ST STREET	BOSTON AVE		2		2											25	2	1		4	4			2									140	
60	5TH STREET	CHEYENNE AVE		4		4											50	4	4		8	8			4									290	



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**JACOBS**  
10816 EXECUTIVE CENTER DR. STE. 300  
LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b>  ENVIRONMENTAL MITIGATION NOTES  PROJECT NO. 23708(06) SHEET NO. 3
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

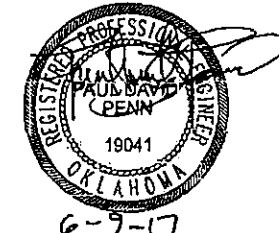
TRAFFIC SIGNAL PAY ITEMS NOTES	
TS-6	SHOP DRAWINGS FOR ATTACHMENT SIGNW TO LIGHT AND/OR SIGNAL POLES AND MAST ARMS SHALL BE SUBMITTED TO THE TRAFFIC ENGINEER FOR APPROVAL BEFORE FABRICATION. NO HOLES SHALL BE PERMITTED IN ANY LIGHT AND/OR SIGNAL POLE OR MAST ARM. THE PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, HARDWARE, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS DIRECTED.
201	QUANTITIES ARE BASED ON MINIMUM RUN LENGTHS BETWEEN THE SIGNAL/PEDESTAL POLE AND THE CONTROLLER CABINET.
202	CONTROLLER AND SERVICE POLE TO BE FIELD LOCATED WITH APPROVAL BY THE ENGINEER.
203	TRAFFIC SIGNAL HEAD FACES ARE TO BE COVERED FROM THE TIME THEY ARE INSTALLED UNTIL PLACED IN FLASHING OR FULL OPERATION. COVERING THE LENSES ONLY IS NOT PERMISSIBLE.
204	PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITIES. SEE OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, SECTION 109.01 (G) PLAN QUANTITIES.
205	SEE CITY OF TULSA STANDARDS FOR CONDUIT INSTALLATION.
206	THIS PAY ITEM INCLUDES THE INSTALLATION OF TRAFFIC SIGNAL HEADS. INCLUDED IN THIS PAY ITEM IS ALL EQUIPMENT; SETUP/INSTALLATION EQUIPMENT, MOUNTS, BRACKETS, HARDWARE, AND ANY OTHER APPURTENANCES.
207	QUANTITY SHOWN IS FOR CITY OF TULSA STANDARD SIZE II PULL BOX.
208	QUANTITY SHOWN IS FOR CITY OF TULSA STANDARD SIZE III PULL BOX.
209	QUANTITY SHOWN IS FOR CITY OF TULSA STANDARD SIZE I PULL BOX.
210	SEE CITY OF TULSA STANDARDS FOR ELECTRICAL CONDUCTOR WIRING DETAILS TO LUMINAIRE.
211	SEE CITY OF TULSA STANDARDS FOR TRAFFIC SIGNAL SERVICE POLE DETAIL.
212	QUANTITY INCLUDES CITY OF TULSA STANDARD 22' 9" TRAFFIC SIGNAL POLE W/12' MAST ARM. - 1 UNIT
213	QUANTITY INCLUDES CITY OF TULSA STANDARD 22' 9" TRAFFIC SIGNAL POLE W/18' MAST ARM. - 4 UNITS
214	QUANTITY INCLUDES CITY OF TULSA STANDARD 22' 9" TRAFFIC SIGNAL POLE W/24' MAST ARM.
215	QUANTITY INCLUDES CITY OF TULSA STANDARD 22' 9" TRAFFIC SIGNAL POLE W/30' MAST ARM.
216	QUANTITY INCLUDES CITY OF TULSA STANDARD 22' 9" TRAFFIC SIGNAL POLE W/36' MAST ARM.
217	QUANTITY INCLUDES CITY OF TULSA STANDARD 22' 9" TRAFFIC SIGNAL POLE W/42' MAST ARM.
218	QUANTITY INCLUDES CITY OF TULSA STANDARD 22' 9" TRAFFIC SIGNAL POLE W/48' MAST ARM. - 1 UNIT
219	QUANTITY INCLUDES CITY OF TULSA STANDARD 22' 9" TRAFFIC SIGNAL POLE W/54' MAST ARM. - 1 UNIT
220	THIS PAY ITEM INCLUDES THE CITY OF TULSA STANDARD 83 - 24" DIA. SIGNAL FOOTING 5-12/24, 35 - 30" DIA. SIGNAL FOOTING 5-30/36, 7 - 36" DIA. SIGNAL FOOTING 5-42/54.
221	QUANTITY INCLUDES CITY OF TULSA STANDARD PUSH BUTTON AND SIGN.
222	QUANTITY INCLUDES CITY OF TULSA STANDARD THREE SECTION HEAD - #36.
223	QUANTITY INCLUDES CITY OF TULSA STANDARD FIVE SECTION HEAD - #64.
224	QUANTITY INCLUDES CITY OF TULSA STANDARD ICC PEDESTRIAN HEAD - #33.
225	QUANTITY INCLUDES CITY OF TULSA STANDARD 5/24 TRAFFIC SIGNAL ELECTRICAL CABLE.
226	QUANTITY INCLUDES CITY OF TULSA STANDARD 4/24 TRAFFIC SIGNAL ELECTRICAL CABLE.
227	QUANTITY INCLUDES CITY OF TULSA STANDARD WHITE #12 TRAFFIC SIGNAL ELECTRICAL CABLE.
228	QUANTITY INCLUDES CITY OF TULSA STANDARD GREEN #6 TRAFFIC SIGNAL ELECTRICAL CABLE.
229	QUANTITY INCLUDES CITY OF TULSA STANDARD GREEN #12 TRAFFIC SIGNAL ELECTRICAL CABLE.
230	QUANTITY INCLUDES CITY OF TULSA STANDARD 18/14 TRAFFIC SIGNAL ELECTRICAL CABLE.
231	QUANTITY INCLUDES CITY OF TULSA STANDARD 20/14 TRAFFIC SIGNAL ELECTRICAL CABLE.
232	QUANTITY INCLUDES CITY OF TULSA STANDARD COMMUNICATIONS CABLE, 12 PAIR 24 AWG, GEL FILLED (250LF)
233	SEE CITY OF TULSA STANDARD 625 REMOVAL OF TRAFFIC ITEMS.
234	QUANTITY INCLUDES CITY OF TULSA STANDARD COMMUNICATIONS CABLE, 6 PAIR 24 AWG, GEL FILLED (250LF)
235	NEW PEDESTAL POLES, SLIP FITTERS, MOUNTING BRACKETS, OCTAGON BASES, SIGNAL HEAD MOUNTING HARDWARE, AND OTHER INCIDENTALS NECESSARY FOR MOUNTING THE SIGNAL HEADS ON THE PEDESTAL POLES SHALL BE INCLUDED AS PART OF THIS PAY ITEM AND SHALL BE POWDER COATED WITH THE STANDARD POWDER COAT USED BY THE CITY OF TULSA IN THE DOWNTOWN DISTRICT. THE SPECIFICATIONS FOR THE COLOR AND TYPE OF POWDER COAT REQUIRED BY THE CITY SHALL BE FURNISHED BY THE TRAFFIC ENGINEER. FOR DOWNTOWN SIGNALS ONLY.
236	IN ORDER TO BE COMPATIBLE WITH EXISTING PUSH BUTTON SYSTEMS, PUSH BUTTONS SHALL BE NON-AUDIBLE PUSH BUTTONS WITH A TWO-WIRE SYSTEM, PELCO SE-2039-08-1-P29 OR APPROVED EQUAL.
237	SEE CITY OF TULSA STANDARDS DETAILS. THE TRAFFIC SIGNAL CONTROLLER PROVIDED SHALL BE A 170/E IN A 332 SIGNAL CABINET. THE CONTRACTOR SHALL DELIVER THE CABINET TO THE COT TRAFFIC OPERATIONS DIVISION FOR WIRING AND SETUP PRIOR TO INSTALLATION IN THE FIELD. COT WILL NOTIFY THE CONTRACTOR WHEN THE CABINET IS READY FOR INSTALLATION. THIS PAY ITEM SHALL ALSO INCLUDE THE CABINET BASE, APRON, AND GUARD PER COT 612.
238	THIS PAY ITEM INCLUDES WHEELCHAIR RAMPS, CURB REMOVAL, SAWING PAVEMENT, AND ALL OTHER MISCELLANEOUS WORK NEEDED TO COMPLETE RAMP AND SIDEWALK REPAIRS.
239	THIS PAY ITEM SHALL INCLUDE REMOVAL AND RESETTING OF AN EXISTING CABINET ON A NEW FOUNDATION PER COT 624 AND SHALL ALSO INCLUDE THE CABINET BASE, APRON, AND GUARD PER COT 612. ALL LABOR TO REESTABLISH THE CONNECTIONS TO THE EXISTING WIRING AND SIGNAL SYSTEM SHALL BE INCLUDED.
240	GREEN #6 THHN ELECTRICAL CONDUCTOR
241	2#12 UF ELECTRICAL CONDUCTOR WITH GROUND
242	VIDEO DETECTION SYSTEM
243	LOOP DETECTORS
244	LOOP DETECTOR WIRE
245	5/14 TRAFFIC SIGNAL ELECTRICAL CABLE
246	7/14 TRAFFIC SIGNAL ELECTRICAL CABLE
247	10/14 TRAFFIC SIGNAL ELECTRICAL CABLE
248	WHITE #12 THHN ELECTRICAL CONDUCTOR
249	GREEN #6 THHN ELECTRICAL CONDUCTOR
250	2#14 SHIELDED ELECTRICAL CONDUCTOR
251	4#14 TRAFFIC SIGNAL ELECTRICAL CABLE
252	INFRARED PRE-EMPTION DETECTOR
253	GROUND SIGN
254	OVERHEAD SIGN
255	1-3/4" SIGN POST
256	2" SIGN POST
257	2-1/2" SIGN POST

TRAFFIC SIGNAL PAY ITEMS NOTES CONTINUED					
258	THIS PAY ITEM SHALL INCLUDE 242 OF THE 3-SECTION BACKPLATES AND 9 OF THE 5-SECTION "DOGHOUSE" STYLE BACKPLATES. ALL BACKPLATES PROVIDED ON THIS PROJECT SHALL BE ALUMINUM, WITH A DURABLE, FACTORY-APPLIED, NON-REFLECTIVE BLACK FINISH (POWDER COATED, BAKED ENAMEL, OR OTHER STYLE, AS APPROVED BY THE TRAFFIC ENGINEER) WITH LOUVERS. ALL BACKPLATES INSTALLED ON SIGNAL HEADS AT THE BROKEN ARROW EXPRESSWAY AND UTICA AVENUE WILL ALSO HAVE A 2" FLUORESCENT YELLOW RETRO-REFLECTIVE BORDER ON THE FRONTWARD FACE FOR ALL SIZES OF BACKPLATES INSTALLED AT THIS INTERCHANGE. THE RETRO-REFLECTIVE BORDER MUST BE FACTORY-APPLIED GRADE XI (11) RETRI-REFLECTIVE SHEETING (GRADE IX (9) RETRO-REFLECTIVE SHEETING MAY BE SUBSTITUTED ONLY WITH APPROVAL OF THE TRAFFIC ENGINEER). THE CONTRACTOR MUST FOLLOW THE SHEETING MANUFACTURER'S RECOMMENDATIONS FOR APPLICATION OF THE SHEETING, AND MUST DISCLOSE WHAT PROCESS WAS USED TO PREPARE THE BACKPLATE FINISH, BEFORE APPLYING THE RETRO-REFLECTIVE SHEETING. SHEETING SHALL NOT BE IN CONTACT WITH THE LOUVERS. ALL OTHER LOCATIONS SHALL NOT HAVE THE RETRO-REFLECTIVE SHEETING.				
259	ETHERNET CABLE USED FOR WIRELESS SIGNAL COMMUNICATIONS SHALL BE INDUSTRIAL GRADE SHIELDED CAT 5E, RATED FOR OUTDOOR USE. SHIELDING SHALL BE RISER RATED, POLYOLEFIN INSULATION SHILED BONDED TO AN OIL RESISTANT AND SUN RESISTANT PVC JACKET. CAT 5E CABLE SHALL BE INSTALLED FROM THE CONTROLLER TO THE SIGNAL POLE. EXCESS CABLE SHOULD BE STORED IN THE HAND HOLE OF THE SIGNAL POLE AND IN PULL BOXES. USE CAUTION WHEN WORKING WITH CAT 5E CABLE NOT TO BEND OR CRIMP THE CABLE.				
260	ESTIMATED QUANTITY TO BE USED ONLY AS DIRECTED BY THE ENGINEER.				
261	THIS PAY ITEM INCLUDES THREE FULL VIDEO DETECTION SYSTEMS AND IS AN ESTIMATE FOR CONTINGENCY PURPOSES AND IS TO BE USED ONLY AS DIRECTED BY THE ENGINEER. EACH VIDEO DETECTION SYSTEM SHOULD BE ASSUMED TO INCLUDE 4 CAMERAS AND A 4-CHANNEL CARD MEETING THE REQUIREMENTS OF COT 620.				
262	ONE SIDEWALK PANEL ON EACH SIDE OF DRIVEWAYS SHALL BE A MINIMUM OF 6" THICK OR MATCH EXISTING DRIVEWAY THICKNESS, WHICHEVER IS GREATER. NO ADDITIONAL PAYMENT SHALL BE MADE FOR THE COST OF THE THICKENED SIDEWALK THROUGH THIS AREA.				
263	ALL PLASTIC PAVEMENT MARKINGS SHALL BE EXTRUDED-APPLIED THERMOPLASTIC. MECHANICALLY APPLIED PREFORMED PLASTIC TAPE ("COLD TAPE") WILL NOT BE ACCEPTED. THERMOPLASTIC PAVEMENT MARKINGS SHALL ONLY BE APPLIED WHEN THE AMBIENT TEMPERATURE EXCEEDS 49°F FOR ALL OF THE SIX HOURS PRIOR TO INSTALLATION AND MAXIMUM WIND GUSTS ARE BELOW 15 MPH AT THE TIME OF APPLICATION. PRICE BID TO INCLUDE FLEX TABS OR UKE FOR POST CONSTRUCTION LANE MARKING/SEPARATION.				
<b>0300 TRAFFIC CONTROL</b>					
ITEM NO.	BAMS	DESCRIPTION	NOTES	UNIT	TOTAL
880 (B)	8818	CONSTRUCTION SIGNS 0 TO 6.25 SF		SD	2630
880 (B)	8821	CONSTRUCTION SIGNS 6.26 TO 15.99 SF		SD	3440
880 (B)	8824	CONSTRUCTION SIGNS 16.00 TO 32.99 SF		SD	5260
880 (C)	8842	BARRICADES (TYPE III)		SD	2630
880 (E)	8860	WARNING LIGHTS (TYPE A)		SD	540
880 (E)	8872	WARNING LIGHTS (TYPE C)		SD	540
880 (F)	8878	DRUMS		SD	540
880 (G)	8890	CHANNELIZER CONES		SD	21040
880 (I)	8902	FLAGGER		SD	58
880 (N)	0100	(SP) TEMPORARY TRAFFIC SIGNAL SPAN WIRE EQUIPMENT	(260)	LS	1
<b>0540 CONSTRUCTION</b>					
ITEM NO.	BAMS	DESCRIPTION	NOTES	UNIT	TOTAL
641	1399	MOBILIZATION		LS	1
<b>0100 ROADWAY</b>					
ITEM NO.	BAMS	DESCRIPTION	NOTES	UNIT	TOTAL
610 (A)	0602	4" CONCRETE SIDEWALK	(238)(262)	SY	200
610 (I)	4610	TACTILE WARNING DEVICE - NEW	(260)	SF	20
610 (I)	4615	TACTILE WARNING DEVICE - RETROFIT	(260)	SF	20
<b>0302 TRAFFIC PAY ITEMS - ADD ALTERNATE * Δ</b>					
ITEM NO.	BAMS	DESCRIPTION	NOTES	UNIT	TOTAL
831	8231	1WAYSSC.ADJ.SIG.HD.S-6	COT 614 (203) (206) (222)	EA	150
831	8286	1WAYSSC.ADJ.SIG.HD.S-19	COT 614 (203) (206) (223)	EA	84
833	3030	BACKPLATE		EA	234

- Δ DELETED PLAN NOTE 6/9/2017
- Δ REVISED PLAN NOTE 6/9/2017
- Δ ADDED PLAN NOTE 6/9/2017
- Δ ADDED CONES 6/9/2017

0301 TRAFFIC PAY ITEMS					
ITEM NO.	BAMS	DESCRIPTION	NOTES	UNIT	TOTAL
802 (B)	8342	2" PVC SCH. 40 PLASTIC CONDUIT TRENCHED	COT 602 (201) (204) (205)	LF	923
802 (B)	8346	3" PVC SCH. 40 PLASTIC CONDUIT TRENCHED	COT 602 (201) (204) (205)	LF	500
802 (C)	8552	2" HIGH DENSITY PE PIPE - BORED	COT 602 (201) (204) (205)(260)	LF	1000
802 (C)	8553	3" HIGH DENSITY PE PIPE - BORED	COT 602 (201) (204) (205)(260)	LF	1000
803 (A)	8065	PULL BOX (SIZE I)	COT 601 (204) (207)	EA	96
803 (A)	8066	PULL BOX (SIZE II)	COT 601 (204) (208)(260)	EA	43
803 (A)	8067	PULL BOX (SIZE III)	COT 601 (204) (209)(260)	EA	11
804 (A)	2915	STRUCTURAL CONCRETE	(220)	CY	241
804 (B)	2916	REINFORCING STEEL	(220)	LB	75668
805 (A)	8726	(PL) REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	(233)	LS	1
805 (D)	8742	REMOVE & RESET TRAFFIC SIGNAL EQUIPMENT	(COT 624) (239)	LS	1
806 (A)	8724	POLE & 20' TS MST. ARM (G.STL.)	(COT 603) (COT 617) (212) (213)	EA	5
806 (A)	8726	POLE & 25' TS MST. ARM (G.STL.)	(COT 603) (COT 617) (214)	EA	20
806 (A)	8728	POLE & 30' TS MST. ARM (G.STL.)	(COT 603) (COT 617) (215)	EA	9
806 (A)	8730	POLE & 35' TS MST. ARM (G.STL.)	(COT 603) (COT 617) (216)	EA	6
806 (A)	8734	POLE & 45' TS MST. ARM (G.STL.)	(COT 603) (COT 617) (217)	EA	3
806 (A)	8736	POLE & 50' TS MST. ARM (G.STL.)	(COT 603) (COT 617) (218) (219)	EA	2
806 (B)	8894	MTG. HT. TS PED. POLE (G. STL.)	(COT 617) (235)	EA	10
810 (A)	3118	SERVICE POLE	(COT 607) (260)	EA	5
811	8040	1/2" NO. 6 ELECTRICAL CONDUCTOR	(COT 611) (240)	LF	250
811	8052	2/2" NO. 12 ELECTRICAL CONDUCTOR	(COT 611) (241)	LF	250
825	8550	TRAFFIC SIGNAL CONTROLLER ASSEMBLY	(COT 610(A-C)) (202) (237) (260)	EA	3
828	8132	(PL) DETECTION SYSTEM (VIDEO)	(COT 620) (242) (261)	LS	1
828 (A)	8142	VEHICLE LOOP DETECTOR	(COT 604) (243) (260)	EA	10
828 (B)	8136	LOOP DETECTOR WIRE	(COT 604) (244) (260)	LF	200
830	8000	PEDESTRIAN PUSH BUTTON	COT 613 (231) (236)	EA	96
831	8231	1WAYSSC.ADJ.SIG.HD.S-6	COT 614 (203) (206) (222)	EA	295
831	8286	1WAYSSC.ADJ.SIG.HD.S-19	COT 614 (203) (206) (223)	EA	119
831	8295	1WAY25EC.ADJ.PED.SIG.HD.S-20	COT 614 (203) (206) (224)	EA	48
833	3030	BACKPLATE	(258)	EA	541
834 (A)	8207	5/C TRAF.SIG.EL.CABLE	(COT 611) (245)	LF	250
834 (A)	8208	7/C TRAF.SIG.EL.CABLE	(COT 611) (246)	LF	250
834 (A)	8209	9/C TRAF.SIG.EL.CABLE	(COT 611) (247)	LF	250
834 (A)	8210	12/C TRAF.SIG.EL.CABLE	(COT 611) (248)	LF	250
834 (A)	8211	15/C TRAF.SIG.EL.CABLE	(COT 607) (COT 611) (201) (204) (230)	LF	260
834 (A)	8212	18/C TRAF.SIG.EL.CABLE	(COT 611) (249)	LF	250
834 (A)	8213	21/C TRAF.SIG.EL.CABLE	(COT 607) (COT 611) (201) (204) (231)	LF	4800
834 (B)	8220	2/C SHIELDED LOOP DETECTOR LEAD-IN CABLE	(COT 611) (250)	LF	250
834 (B)	8225	4/C SHIELDED LOOP DETECTOR LEAD-IN CABLE	(COT 611) (251)	LF	250
834 (C)	8358	(SP) UNDERGROUND COMMUNICATIONS CABLE	(COT 611) (232) (234) (260)	LF	500
834 (C)	8359	UNDERGROUND COMMUNICATION CABLE	(COT 611) (COT 621) (259) (260)	LF	450
840 (B)	8593	E.P.S. OPTICAL DETECTOR	(COT 606) (252) (260)	EA	5
840 (C)	8594	E.P.S. OPTICAL DETECTOR CABLE	(COT 606) (260)	LF	450
850 (A)	8110	SHEET ALUMINUM SIGNS	(COT 608) (253) (260)	SF	10
850 (C)	8118	MAST ARM MOUNTED SIGN (ALUMINUM)	(COT 608) (254) (260)	SF	8
851 (C)	8321	1 3/4" SQUARE TUBE POST	(COT 608) (255) (260)	LF	10
851 (C)	8324	2" SQUARE TUBE POST	(COT 608) (256) (260)	LF	10
851 (C)	8330	2 1/2" SQUARE TUBE POST	(COT 608) (257) (260)	LF	10
855 (A)	8812	TRAFFIC STRIPE (PLASTIC) (4" WIDE)	(260)(263)	LF	500
855 (B)	8818	TRAFFIC STRIPE (PLASTIC) (ARROWS)	(260)(263)	EA	20
855 (B)	8821	TRAFFIC STRIPE (PLASTIC) (WORDS)	(260)(263)	EA	5
855 (B)	8824	TRAFFIC STRIPE (PLASTIC) (SYMBOLS)	(260)(263)	EA	5
857 (F)	8006	PAVEMENT MARKING REMOVAL (TRAFFIC STRIPE)	(260)	LF	500
857 (F)	8007	PAVEMENT MARKING REMOVAL (ARROWS)	(260)	EA	20
857 (F)	8008	PAVEMENT MARKING REMOVAL (WORDS)	(260)	EA	5
857 (F)	8009	PAVEMENT MARKING REMOVAL (SYMBOLS)	(260)	EA	5

BEFORE YOU DIG  
CALL OKIE  
811



**JACOBS**  
10816 EXECUTIVE CENTER DR. STE. 300  
LITTLE ROCK, ARKANSAS 72211

DESIGN		DRAWN		CHECKED		APPROVED		SQUAD	
BLV	JAS	JAS	JAS	BLV	BLV	JACOBS	JACOBS	JACOBS	JACOBS

OKLAHOMA DEPARTMENT OF TRANSPORTATION  
DESIGN DIVISION

PAY ITEM NOTES

PROJECT NO. 23708(06) SHEET NO. 4

NOTES

(C-4)

ADDED PLAN NOTE 6/9/17

SCOPE OF WORK

- THE WORKS AS DETAILED BY THESE PLANS INCLUDES THE FOLLOWING ITEMS:
- 1) DEMOLITION, INCLUDING REMOVAL OF SIDEWALK, EXISTING POLES, BASES, PULLBOXES, CONDUIT, CONDUCTOR AND ALL OTHER REMOVALS AND DEMOLITION NEEDED TO EFFECT THE DESIGN INTENT AS SHOWN ON THESE PLANS
- 2) INSTALLATION OF POLES, BASES, PULLBOXES, CONDUIT, AND CONDUCTOR
- 3) REPAIR OF SIDEWALK OR OTHER PAVEMENT REMOVED AS PART OF INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR ELECTRICAL INSPECTION ON ALL SIGNAL AND LIGHTING WORK PER COT SPECIFICATION 626 TRAFFIC SIGNAL CONSTRUCTION AND OPERATION. ADDRESSING FOR THE PERMIT SHALL BE PROVIDED BY THE CITY OF TULSA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF ALL EXISTING TRAFFIC SIGNS AND MARKINGS REMOVED OR DAMAGED AS PART OF THIS PROJECT. ALL SIGNS AND POLES PROVIDED SHALL BE NEW AND UNMAYED AND SHALL MEET THE REQUIREMENTS OF COT SPECIFICATION 608 TRAFFIC SIGNS.

UNLESS SITE SPECIFIC GEOTECHNICAL DATA IS AVAILABLE, FOUNDATION SHALL BE DESIGNED UTILIZING THESE PARAMETERS: SHEAR STRENGTH OF THE COHESIVE SOIL (C) OF 500 PCF; ANGLE OF INTERNAL FRICTION ( $\phi$ ) OF 22 DEGREES, AND EFFECTIVE UNIT WEIGHT OF SOIL ( $\gamma$ ) OF 120 PCF.

THE CONTRACTOR SHALL PICK UP THE LUMINAIRE(S) AND RELATED EQUIPMENT (200W HPS LUMINAIRE, 200W HPS LAMP, 120V PHOTO CELL, IN-LINE FUSE HOLDER, AND BAMP KIT FUSE) AT THE AEPPO WAREHOUSE ON 16TH STREET NEAR FULTON AVENUE IN TULSA.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE THAT HE MAY INFLECT TO THE EXISTING UNDERGROUND UTILITIES WITHIN THE PROJECT AREA AS A RESULT OF HIS DIGGING, TRENCHING, BORING, ETC PRIOR TO DIGGING NEAR THE UTILITIES. THE CONTRACTOR SHALL CALL FOR THE OKIE NOTIFICATION CENTER 1-800-522-6543. THE LOCAL COUNTY CLERKS OFFICE.

DEPTH OF THE EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE PEDESTRIAN SIGNAL INDICATIONS FURNISHED ON THIS PROJECT SHALL INCLUDE AUDIBLE INDICATIONS TO SERVE VISUALLY IMPAIRED PEDESTRIANS. THE AUDIBLE INDICATIONS SHALL BE U.S. TRAFFIC CORPORATION / IDC MODEL APS-10, OR APPROVED EQUAL, WITH INTERNAL SPEAKERS OR APPROVED EQUAL. IT SHALL PROVIDE AN ELECTRONIC BIRD SOUND WITH CUCKOO FOR NORTH/SOUTH AND PEEP-PEEP FOR EAST/WEST. THE OUTPUT VOLUME SHALL ADJUST AUTOMATICALLY TO CHANGING AMBIENT NOISE LEVELS. ALL PEDESTRIAN SIGNAL INDICATIONS SHALL ALSO INCLUDE COUNTDOWN TIMERS.

THE STRUCTURAL DESIGN OF ALL POLES, MAST ARMS, HIGH-MAST POLES, AND OTHER SUPPORTS FOR SIGNS, LUMINAIRES, AND SIGNALS AS WELL AS THEIR CONNECTIONS SHALL BE IN ACCORDANCE WITH THE 2000 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. THE MANUFACTURER SHALL ENSURE THE FOLLOWING ARE APPLIED TO THE DESIGN:

THE MINIMUM DESIGN WIND SPEED AND DESIGN LIFE AS REQUIRED IN THE AASHTO SPECIFICATIONS;

THE CALCULATED STRESSES AND FORCES FROM THE DESIGN LOADINGS DO NOT EXCEED THOSE REQUIRED IN THE AASHTO SPECIFICATIONS;

ALL MEMBERS ARE AT LEAST THE MINIMUM THICKNESS AS REQUIRED IN THE AASHTO SPECIFICATIONS;

LUMINAIRE MAST ARMS, POLES, AND ANCHOR BOLTS SHALL BE DESIGNED TO MEET ALL REQUIREMENTS OF THE CITY OF TULSA STANDARDS 603 FOR SIGNAL POLE FOOTINGS AND 617 FOR SIGNAL POLES AND MAST ARMS; AND

UNLESS SITE SPECIFIC GEOTECHNICAL DATA IS AVAILABLE, FOUNDATION SHALL BE DESIGNED UTILIZING THESE PARAMETERS: SHEAR STRENGTH OF THE COHESIVE SOIL (C) OF 500 PCF; ANGLE OF INTERNAL FRICTION ( $\phi$ ) OF 22 DEGREES, AND EFFECTIVE UNIT WEIGHT OF SOIL ( $\gamma$ ) OF 120 PCF.

COT 607 SIGNAL SERVICE

THE INSTALLED SERVICE SHALL BE FULLY OPERATIONAL AND ANY COSTS CHARGED BY THE UTILITY COMPANY FOR THE SERVICE INSTALLATION SHALL BE PAID BY THE CONTRACTOR AND IS INCLUDED IN THIS PAY ITEM.

COT 614 LED TRAFFIC SIGNAL HEADS

HEADS SHALL BE LOCATED TO THE LEFT SIDE FOR 3-SECTION SIGNAL HEADS AND TOWARD THE OUTSIDE EDGES FOR A 2-SECTION SIGNAL HEAD.

COT 617 TRAFFIC SIGNAL MAST ARMS & POLES LUMINAIRE EXTENSIONS

THE CONTRACTOR SHALL PICK UP THE LUMINAIRE(S) AND RELATED EQUIPMENT (200W HPS LUMINAIRE, 200W HPS LAMP, 120V PHOTO CELL, IN-LINE FUSE HOLDER, AND BAMP KIT FUSE) AT THE AEPPO WAREHOUSE ON 16TH STREET NEAR FULTON AVENUE IN TULSA.

COT 622 WIRELESS TRAFFIC SIGNAL COMMUNICATIONS SYSTEM

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE THAT HE MAY INFLECT TO THE EXISTING UNDERGROUND UTILITIES WITHIN THE PROJECT AREA AS A RESULT OF HIS DIGGING, TRENCHING, BORING, ETC PRIOR TO DIGGING NEAR THE UTILITIES. THE CONTRACTOR SHALL CALL FOR THE OKIE NOTIFICATION CENTER 1-800-522-6543. THE LOCAL COUNTY CLERKS OFFICE.

COT 628 REMOVAL OF TRAFFIC ITEMS

THIS PAY ITEM INCLUDES THE REMOVAL AND DELIVERY OF THE FOLLOWING EQUIPMENT TO THE CITY OF TULSA TRAFFIC OPERATIONS SHOP AT 440 W. 23RD, WHICH IS TO REMAIN THE PROPERTY OF THE CITY OF TULSA:

ALL EXISTING TRAFFIC SIGNAL SIGNS, MAST ARMS, POLES, AND SUPPORTS SHALL BE REMOVED AND DELIVERED TO THE CITY OF TULSA TRAFFIC OPERATIONS SHOP AT 440 W. 23RD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF TRANSPORTATION AND DELIVERY TO THE SHOP. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COST OF REMOVAL AND DELIVERY OF ALL EXISTING TRAFFIC SIGNAL SIGNS, MAST ARMS, POLES, AND SUPPORTS TO THE SHOP. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COST OF REMOVAL AND DELIVERY OF ALL EXISTING TRAFFIC SIGNAL SIGNS, MAST ARMS, POLES, AND SUPPORTS TO THE SHOP.

INTERSECTIONS MAY BE CONTROLLED WITH MULTI-WAY STOP SIGNS DURING SIGNAL CONSTRUCTION ACTIVITIES WHICH REQUIRE THE POWER TO BE DISCONNECTED OR WHEN CABLES ARE BEING REPLACED. THE TIME THAT THE SIGNALS ARE OUT OF SERVICE IS TO BE MINIMIZED TO THE EXTENT POSSIBLE AND ONLY WITH APPROVAL OF THE TRAFFIC ENGINEER. THE CITY'S INTENT IS TO PROVIDE TRAFFIC SIGNAL CONTROL THROUGHOUT THE CONSTRUCTION PROJECT AT ALL INTERSECTIONS, EXCEPT FOR BRIEF PERIODS OF TIME (NOT TO EXCEED 24 HOURS). TEMPORARY SIGNALS ARE INCLUDED AS A CONTINGENCY AND MAY BE USED ONLY AT THE DISCRETION OF THE TRAFFIC ENGINEER. IN THE EVENT THAT POWER CANNOT BE MAINTAINED TO THE SIGNAL, THE CONTRACTOR SHALL PLACE MULTI-WAY STOP SIGNS IN ACCORDANCE WITH THE MUTCD AND WITH THE APPROVAL OF THE TRAFFIC ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR AND INCIDENTALS NECESSARY TO MAKE CONNECTIONS FROM NEWLY INSTALLED EQUIPMENT TO OLD EQUIPMENT IN ORDER TO MAKE THE SIGNAL FUNCTIONAL AGAIN. WHERE A PAVEMENT MARKING HAS BEEN ONLY PARTIALLY REMOVED, IT SHALL BE REPLACED IN ITS ENTIRETY. INSTALLATION OF PAVEMENT MARKINGS INCLUDES THE SCARIFYING OF THE PAVEMENT SURFACE AND THE APPLICATION OF THE APPROPRIATE QUALITY AND QUANTITY OF PRIMER.

ALL CABLES IN DISTURBED CONDUITS ARE TO BE REMOVED AND REPLACED WITH NEW CABLE. CABLES IN ABANDONED CONDUITS ARE TO BE REMOVED. ALL REMOVED CABLE SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL WORK IN COOPERATION WITH THE CITY OF TULSA TO ESTABLISH, INSTALL, MAINTAIN, AND OPERATE COMPLETE, ADEQUATE, AND SAFE TRAFFIC CONTROLS DURING THE ENTIRE CONSTRUCTION PERIOD. ALL FLAGGERS, BARRICADES, AND TRAFFIC CONTROL DEVICES SHALL BE APPROVED BY THE FIELD ENGINEERING REPRESENTATIVE.

CONSTRUCTION SIGNS SHALL BE INSTALLED IN A MANNER APPROVED BY THE ENGINEER AND SHALL BE PROVIDED WITHIN THE LIMITED CONTROL PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO BEGINNING OF WORK. PRICE BID SHALL BE PAYMENT IN FULL FOR THE INSTALLATION, MAINTENANCE, AND SUBSEQUENT REMOVAL OF ALL NECESSARY CONSTRUCTION TRAFFIC CONTROL REQUIRED FOR COMPLETION OF THE PROJECT.

HOLES IN THE SIDEWALK RESULTING FROM THE REMOVAL OF SIGN POSTS OR TRAFFIC SIGNAL EQUIPMENT SHALL BE NEATLY REPAIRED TO PREVENT TRIPPING HAZARDS. ALL CUTS IN THE SIDEWALK SHALL BE SAWS IN ORDER TO PROVIDE CLEAN EDGES FOR SIDEWALK REPAIRS.

THE CONTRACTOR SHALL OBTAIN THE NECESSARY PERMITS FOR ELECTRICAL INSPECTION ON ALL SIGNAL AND LIGHTING WORK PER COT SPECIFICATION 626 TRAFFIC SIGNAL CONSTRUCTION AND OPERATION. ADDRESSING FOR THE PERMIT SHALL BE PROVIDED BY THE CITY OF TULSA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF ALL EXISTING TRAFFIC SIGNS AND MARKINGS REMOVED OR DAMAGED AS PART OF THIS PROJECT. ALL SIGNS AND POLES PROVIDED SHALL BE NEW AND UNMAYED AND SHALL MEET THE REQUIREMENTS OF COT SPECIFICATION 608 TRAFFIC SIGNS.

CONSTRUCTION TIME OF 270 DAYS IS TO INCLUDE THE BASE BID WORK AS WELL AS THE AD-ALTERNATE.

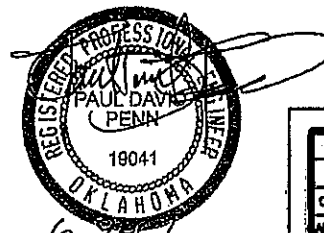
GREEN POLE REMOVAL, AND NEW POLE CONSTRUCTION WORK SHALL BE LIMITED TO THREE (3) INTERSECTIONS PER DAY. SIGNAL HEAD REPLACEMENT, AND BACK PLATE WORK CAN BE DONE AT THE CONTRACTOR'S DISCRETION. ALL TRAFFIC MATERIALS REMOVED SHALL BE HANDLED PER COT SPECIFICATION 625 REMOVAL OF TRAFFIC ITEMS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE THAT HE MAY INFLECT TO THE EXISTING UNDERGROUND UTILITIES WITHIN THE PROJECT AREA AS A RESULT OF HIS DIGGING, TRENCHING, BORING, ETC PRIOR TO DIGGING NEAR THE UTILITIES. THE CONTRACTOR SHALL CALL FOR

THE OKIE NOTIFICATION CENTER 1-800-522-6543.  
THE LOCAL COUNTY CLERKS OFFICE.

DEPTH OF THE EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE PEDESTRIAN SIGNAL INDICATIONS FURNISHED ON THIS PROJECT SHALL INCLUDE AUDIBLE INDICATIONS TO SERVE VISUALLY IMPAIRED PEDESTRIANS. THE AUDIBLE INDICATIONS SHALL BE U.S. TRAFFIC CORPORATION / IDC MODEL APS-10, OR APPROVED EQUAL, WITH INTERNAL SPEAKERS OR APPROVED EQUAL. IT SHALL PROVIDE AN ELECTRONIC BIRD SOUND WITH CUCKOO FOR NORTH/SOUTH AND PEEP-PEEP FOR EAST/WEST. THE OUTPUT VOLUME SHALL ADJUST AUTOMATICALLY TO CHANGING AMBIENT NOISE LEVELS. ALL PEDESTRIAN SIGNAL INDICATIONS SHALL ALSO INCLUDE COUNTDOWN TIMERS.

BEFORE YOU DIG  
CALL OKIE  
811



**JACOBS**  
10816 EXECUTIVE CENTER DR. STE. 300  
LITTLE ROCK, ARKANSAS 72211

DESIGN	BY	
DRAWN	BY	
CHECKED	BY	
APPROVED	BY	
SCALE		

OKLAHOMA DEPARTMENT OF TRANSPORTATION  
DESIGN DIVISION

GENERAL NOTES

PROJECT NO. 23708(06) SHEET NO. 5

**GENERAL NOTES**

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE 2009 OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE CURRENT CITY OF TULSA ENGINEERING SERVICES DEPARTMENT'S STANDARD SPECIFICATIONS AND STANDARD DETAILS AND STANDARD DRAWINGS AND CITY OF TULSA SPECIAL PROVISIONS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS GOVERNING SAFETY, HEALTH AND SANITATION. THE CONTRACTOR SHALL PROVIDE ALL SAFEGUARDS, SAFETY DEVICES AND PROTECTIVE EQUIPMENT, AND TAKE ANY OTHER NEEDED ACTION ON AS HIS OWN RESPONSIBILITY OR AS THE ENGINEER MAY DETERMINE REASONABLY NECESSARY TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACT.
3. PAY ITEMS SHALL BE AS SPECIFIED ON THE CITY OF TULSA OR ON THE ODOT STANDARD DRAWINGS EXCEPT AS MODIFIED BY THE CONTRACT.
4. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK IN EACH AREA. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM HIS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES.
5. THE LOCATIONS OF THE UTILITIES ARE SHOWN ACCORDING TO ALL AVAILABLE INFORMATION. THE CONTRACTOR SHALL NOTIFY EACH UTILITY OWNER PRIOR TO COMMENCEMENT OF WORK TO VERIFY BOTH HORIZONTAL AND VERTICAL LOCATIONS. THE FOLLOWING IS A LIST OF UTILITY OWNERS: GAS (ONG), COX COMMUNICATIONS, MCI/VERIZON, EASYTEL COMMUNICATIONS, WELLSCO VALLOR TELECOM, CITY OF TULSA-WATER AND SEWER, CITY OF TULSA-TRAFFIC OPERATIONS. SEE TITLE SHEET FOR CONTACT INFORMATION.
6. THE CONTRACTOR SHALL GIVE THE NOTIFICATION CENTER OF OKLAHOMA ONE-CALL SYSTEM, INC. NOTICE OF ANY EXCAVATION NO SOONER THAN TEN DAYS NOR LATER THAN 48 HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, PRIOR TO THE COMMENCEMENT OF WORK. PHONE 1-800-522-6543.
7. THE CONTRACTOR SHALL TAKE REASONABLE PRECAUTIONS TO PREVENT EXCESS MOISTURE FROM INCLEMENT WEATHER OR OTHER SOURCES FROM ENTERING ANY STREET EXCAVATION. IF EXCESS MOISTURE DOES ENTER THE EXCAVATION THROUGH THE NEGLIGENCE OF THE CONTRACTOR AND THE ADJOINING PAVEMENT IS ADVERSELY EFFECTED BY THE EXCESS MOISTURE, GENERAL CONSTRUCTION NOTES THE CONTRACTOR SHALL REPLACE THE ADJOINING PAVEMENT AND SUBBASE GENERAL CONSTRUCTION NOTES THE CONTRACTOR SHALL REPLACE THE ADJOINING PAVEMENT AND SUBBASE AT HIS SOLE EXPENSE.
8. THE CONTRACTOR SHALL PRESERVE THE INTEGRITY OF THE SANITARY SEWER STRUCTURES AND ALL OTHER UTILITY STRUCTURES WITHIN THE PROJECT EXTENTS.
9. THE CONTRACTOR SHALL WORK IN COOPERATION WITH THE CITY OF TULSA TO ESTABLISH, INSTALL, MAINTAIN, AND OPERATE COMPLETE, TULSA TO ESTABLISH, INSTALL, MAINTAIN, AND OPERATE COMPLETE, ADEQUATE, AND SAFE TRAFFIC CONTROLS DURING THE ENTIRE CONSTRUCTION PERIOD. ALL FLAGMEN, BARRICADES, AND TRAFFIC CONTROL DEVICES SHALL BE APPROVED BY THE FIELD ENGINEERING REPRESENTATIVE.
10. CONSTRUCTION SIGNAGE WILL BE INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT ADDITION, AND APPLICABLE ODOT STANDARD DRAWINGS. THE CONTRACTOR SHALL PROVIDE A PROPOSED TRAFFIC CONTROL PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO BEGINNING WORK.
11. THE CONTRACTOR SHALL NOTIFY THE CITY OF TULSA FIELD ENGINEERING, 918-596-9404, A MINIMUM OF 48 HOURS PRIOR TO COMMENCING WORK OR PRIOR TO REMOVING TRAFFIC SIGNS. ALL SIGNS SHALL BE HANDLED IN A MANNER SO AS NOT TO DAMAGE THE SIGN AND/OR SHALL BE HANDLED IN A MANNER SO AS NOT TO DAMAGE THE SIGN AND/OR POST. ALL TRAFFIC SIGNS REMOVED DUE TO CONSTRUCTION SHALL BE REINSTALLED BY THE CITY/CONTRACTOR.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF ALL EXISTING TRAFFIC SIGNS AND MARKINGS REMOVED OR DAMAGED AS PART OF THIS PROJECT. ALL SIGNS AND POLES PROVIDED SHALL BE NEW AND UNDAMAGED AND SHALL MEET THE REQUIREMENTS OF COT SPECIFICATION 608 TRAFFIC SIGNS. ALL TRAFFIC MATERIALS REMOVED SHALL BE HANDLED PER COT SPECIFICATION 625 REMOVAL OF TRAFFIC ITEMS.
13. LOCAL AND THROUGH TRAFFIC SHALL BE MAINTAINED THROUGH THE PROJECT AT ALL TIMES.
14. ALL PUBLIC AND PRIVATE STREETS AND DRIVES SHALL BE ACCESSIBLE AT ALL TIMES.
15. ALL BROKEN CONCRETE, WASTE MATERIAL, AND OTHER DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED GENERAL CONSTRUCTION NOTES FROM THE LIMITS OF THE PROJECT AND DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE DISPOSAL OF THIS MATERIAL.
16. ALL EXCAVATED MATERIAL NOT REQUIRED IN THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY THE CONTRACTOR IN A MANNER ACCEPTABLE TO THE ENGINEER WITHOUT COST TO THE CITY. THE CONTRACTOR WILL BE REQUIRED TO OBTAIN AN EARTH CHANGE PERMIT IF ANY MATERIAL IS STORED ON THE PROJECT SITE AND/OR DISPOSED OF WITHIN THE CITY LIMITS.
17. ALL TREES, BRUSH AND OTHER DEBRIS THAT MIGHT INTERFERE WITH THE FLOW OF WATER IS TO BE CLEANED OUT TO THE RIGHT-OF-WAY LINE IN A MANNER APPROVED BY THE ENGINEER. ALL COST TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK. TREES OUTSIDE THE FILL SLOPES AND THE TOP OF CUT SLOPES SHALL NOT BE DISTURBED EXCEPT WITH THE WRITTEN APPROVAL OF THE ENGINEER.
18. WHERE MATERIALS ARE TRANSPORTED IN THE PROSECUTION OF WORK, VEHICLES SHALL NOT BE LOADED BEYOND THE CAPACITY RECOMMENDED BY THE VEHICLE MANUFACTURER OR AS PRESCRIBED BY ANY FEDERAL, STATE OR LOCAL LAW OR REGULATION.
19. ANY DAMAGE TO THE ROADWAY PAVEMENT, CURB, DRIVEWAYS OR SIDEWALK CAUSED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED TO THE ENGINEER'S SATISFACTION AND SHALL BE ACCOMPLISHED AT THE CONTRACTOR'S SOLE EXPENSE. ALL DISTURBED ITEMS SHALL BE REPAIRED TO MATCH EXISTING MATERIALS AND PATTERNING.
20. IF THE CONTRACTOR ENCOUNTERS VOIDS WHEN PATCHING STREETS, THE CONTRACTOR SHALL CALL FIELD ENGINEERING AT 918-596-9404 FOR AN INSPECTION BEFORE PROCEEDING WITH WORK.
21. MASONRY STRUCTURES SHALL NOT BE CONSTRUCTED WITHIN THE STREET RIGHT-OF-WAY.
22. ALL CONCRETE CURB AND GUTTERS SHALL BE MONOLITHIC POURS. DOWELED-ON CURBS WILL NOT BE ALLOWED.
23. HANDICAP RAMP CONSTRUCTION SHALL COMPLY WITH THE CURRENT AMERICANS WITH DISABILITIES ACT STANDARDS.
24. REFLECTORIZED SHEETING ON SIGNS AND BARRICADES SHALL BE OF A CUBIC PRISMATIC TYPE AND SHALL MEET THE SPECIFICATIONS ESTABLISHED FOR ASTM D 4956-01 TYPE IX RETROREFLECTIVE SHEETING. REFLECTORIZED SHEETING ON DRUMS AND TUBE CHANNELIZERS SHALL BE OF A HIGHINTENSITY TYPE AND SHALL MEET THE SPECIFICATIONS ESTABLISHED FOR ASTM D 4956-01 TYPE III RETROREFLECTIVE SHEETING.
25. STRAW OR HAY BALES AS STORMWATER BEST MANAGEMENT PRACTICES ARE NO LONGER ALLOWED ON CONSTRUCTION PROJECTS.
26. THE CONTRACTOR MUST CALL 1-800-458-4251 IMMEDIATELY IF A NATURAL GAS PIPELINE IS CUT, DAMAGED, OR OTHERWISE DISTURBED.

**ENVIRONMENTAL MITIGATION NOTES**

1.

"LATITUDE/LONGITUDE	OCC FAC./CASE NO.	FACILITY
36.1042, -95.8946	72-07720/064-FH	CONTINENTAL INDUST.
36.1924, -95.9935	72-10894/064-1314	PAYLESS FOODS
36.1924, -95.9933	72-0450/064-2247	NAFEH'S PIE N PLAY
36.1251, -95.9402	72-06197/6E-888	SPRAKER VW
36.1186, -95.9226	72-06743/6E-539	RAPID MUFFLER
36.1185, -95.9224	72-04939/064-2853	PHILLIPS
36.1114, -95.9401	72-03513/064-2441	GAS N GRUB2
36.1620, -96.0177	72-00368/SOR-3456	G & A STOP
36.1606, -95.8881	72-00203/064-237 4	KERR MCGEE# 6804
36.1606, -95.8879	72-04941/064-FA	PHILLIPS

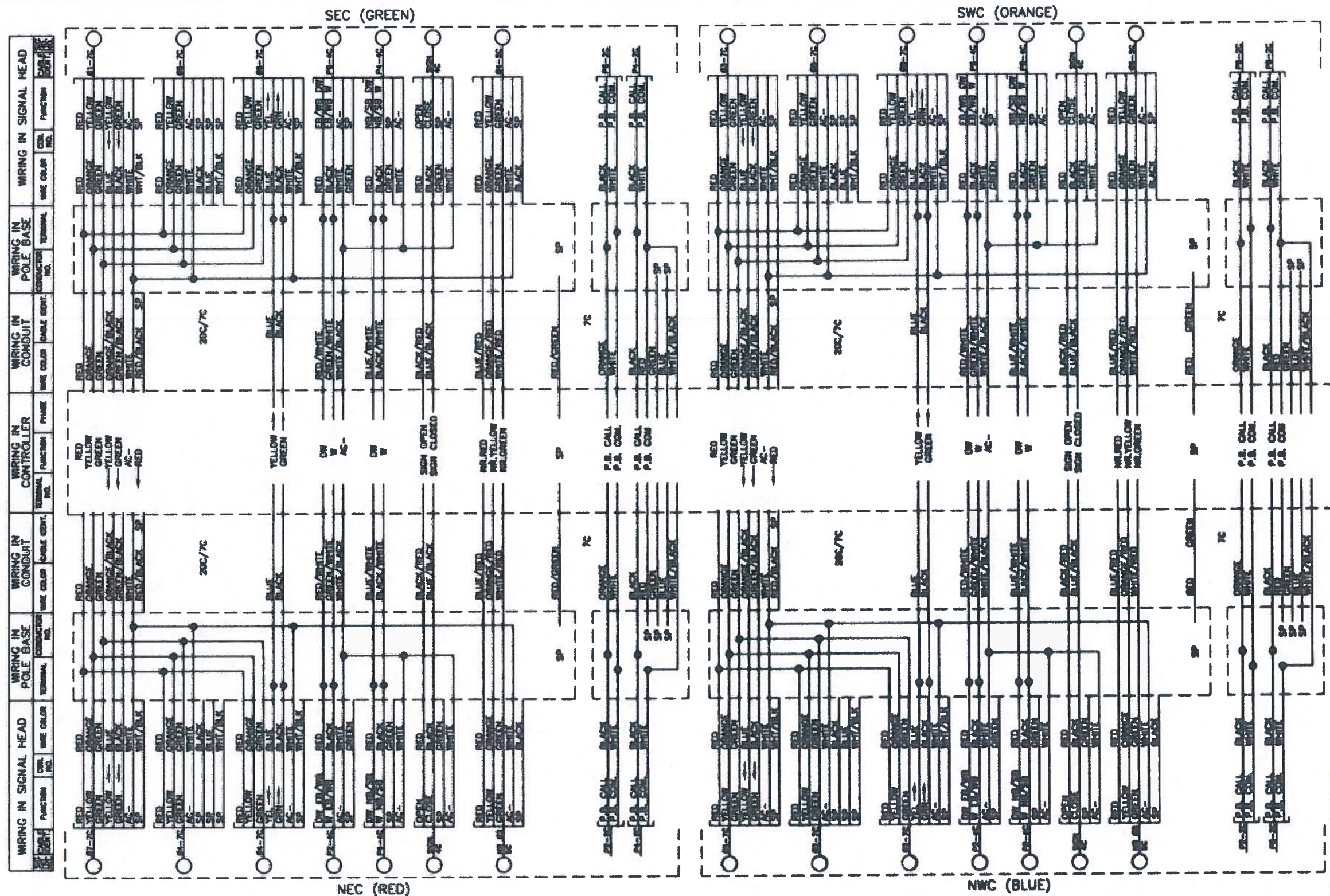
PETROLEUM CONTAMINATION MAY EXIST AT OR NEAR THE REFERENCED LEAKING UNDERGROUND STORAGE TANK (LUST) SITES. BASED ON THE AVAILABLE INFORMATION, CONTAMINATION IS NOT EXPECTED TO AFFECT CONSTRUCTION ACTIVITIES, BUT IS STILL POSSIBLE. IN THE EVENT CONTAMINATED SOIL OR GROUNDWATER IS ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE CITY OF TULSA WHO IN TURN SHALL CONTACT THE OKLAHOMA COPORATION COMMISSION AT (405)521-3107 FOR ASSISTANCE.
2. TULSA INTERNATIONAL AIRPORT, TULSA DOWNTOWN AIRPARK, AND HARVEY YOUNG AIRPORT ARE LOCATED WITHIN 4 MILES OF THIS PROJECT. THIS ACTION MAY REQUIRE NOTIFYING THE FEDERAL AVIATION ADMINISTRATION (FAA) OF PROPOSED CONSTRUCTION VIA FAA FORM 7460-1 PRIOR TO CONSTRUCTION.

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LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION  <b>GENERAL NOTES</b>  PROJECT NO. 23708(06) SHEET NO. 6
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		



PLACE HOLDER -  
JOB NUMBER  
NEEDS TO BE  
UPDATED



NOTE:  
IF JUMPERS OR OTHER CONNECTIONS ARE MADE IN THE FIELD DURING INSTALLATION,  
AND ARE ACCEPTED BY THE ENGINEER, THIS SHOULD BE SHOWN ON THE WIRING  
DIAGRAM FOR FUTURE REFERENCE.



REVISION	BY	DATE	DESCRIPTION
UPDATE	JSS	03-07	1" = N/A
			1" = N/A
			1" = N/A

WIRING DIAGRAM:

STATE JOB NUMBER  
23708(04)










CITY OF TULSA, OKLAHOMA  
PUBLIC WORKS DEPARTMENT  
ENGINEERING SERVICES DIVISION

DESIGNED BY: JSS 12/03  
CHECKED BY: N/A 12/03  
SURVEY BY: N/A 12/03

FIELD ENG. \_\_\_\_\_  
OFFICE ENG. \_\_\_\_\_  
CHIEF ENG. \_\_\_\_\_

DATE: DEC 29, 2003

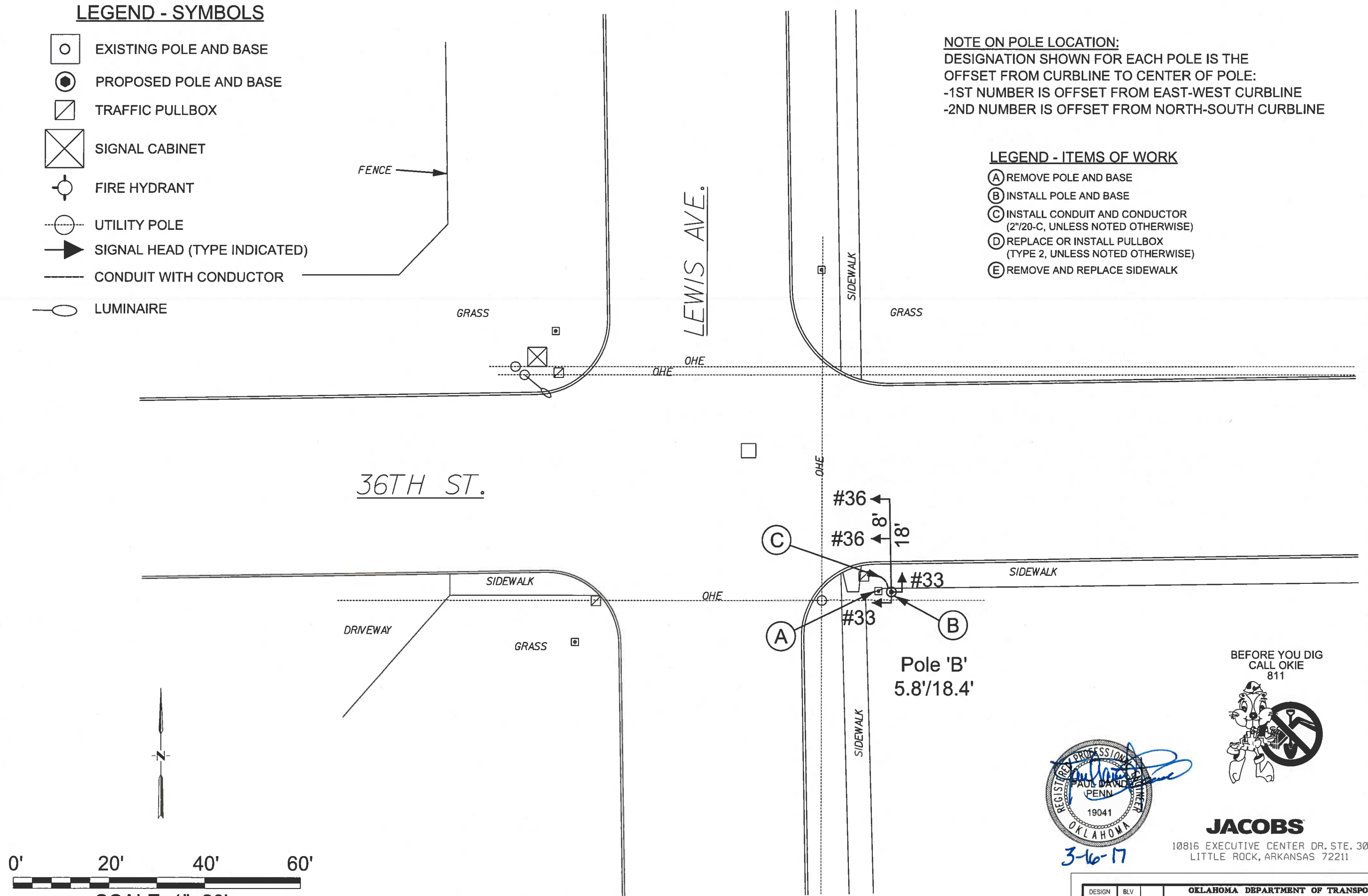
**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

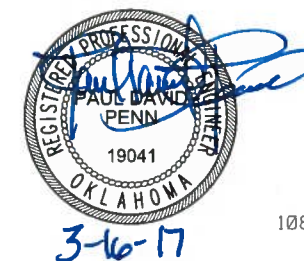
**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR  
(2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK



BEFORE YOU DIG  
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10816 EXECUTIVE CENTER DR. STE. 300  
 LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION                  DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT ② REPLACEMENT PLAN (36TH ST. & LEWIS AVE.) PROJECT NO. 23708(06) SHEET NO. 8
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

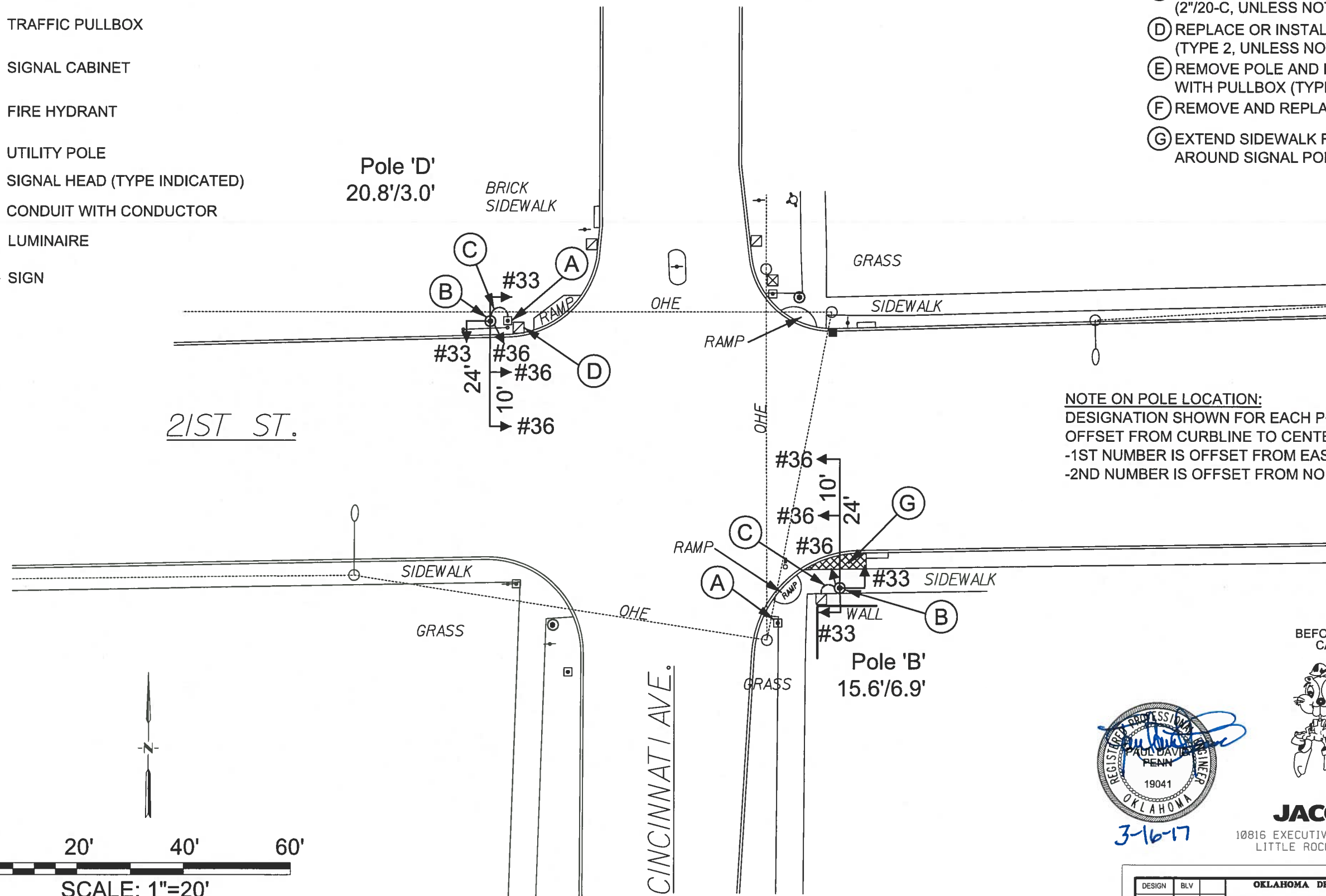


**LEGEND - SYMBOLS**

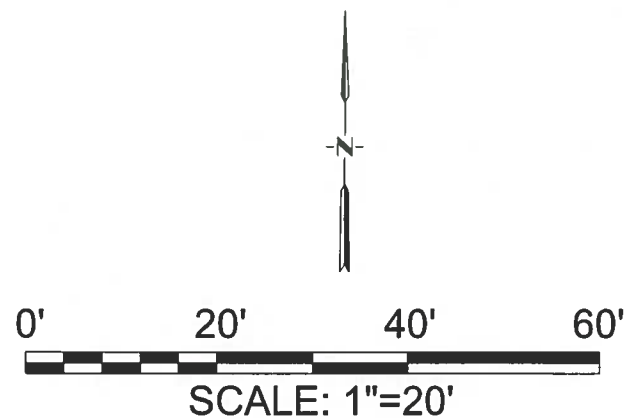
- EXISTING POLE AND BASE
- PROPOSED POLE AND BASE
- TRAFFIC PULLBOX
- SIGNAL CABINET
- FIRE HYDRANT
- UTILITY POLE
- SIGNAL HEAD (TYPE INDICATED)
- CONDUIT WITH CONDUCTOR
- LUMINAIRE
- SIGN

**LEGEND - ITEMS OF WORK**

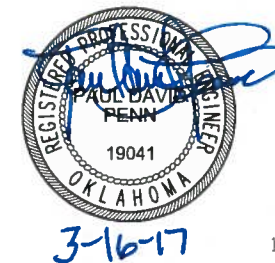
- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE POLE AND BASE, REPLACE WITH PULLBOX (TYPE 2)
- (F) REMOVE AND REPLACE SIDEWALK
- (G) EXTEND SIDEWALK FOR ADA PASSAGE AROUND SIGNAL POLE



**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE



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DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION                  DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (21st ST. & CINCINNATI AVE.) PROJECT NO. 23708(06) SHEET NO. 9
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

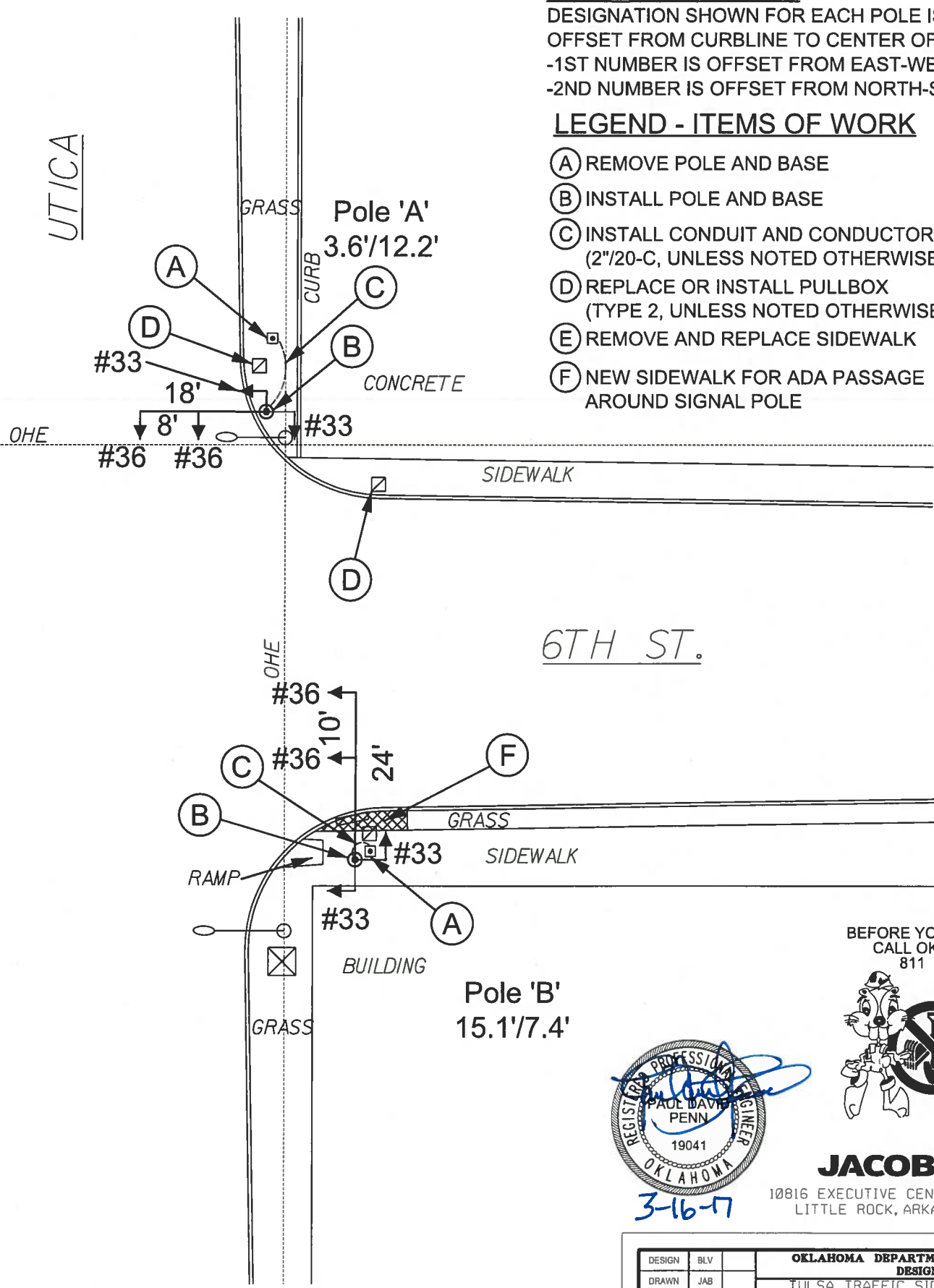
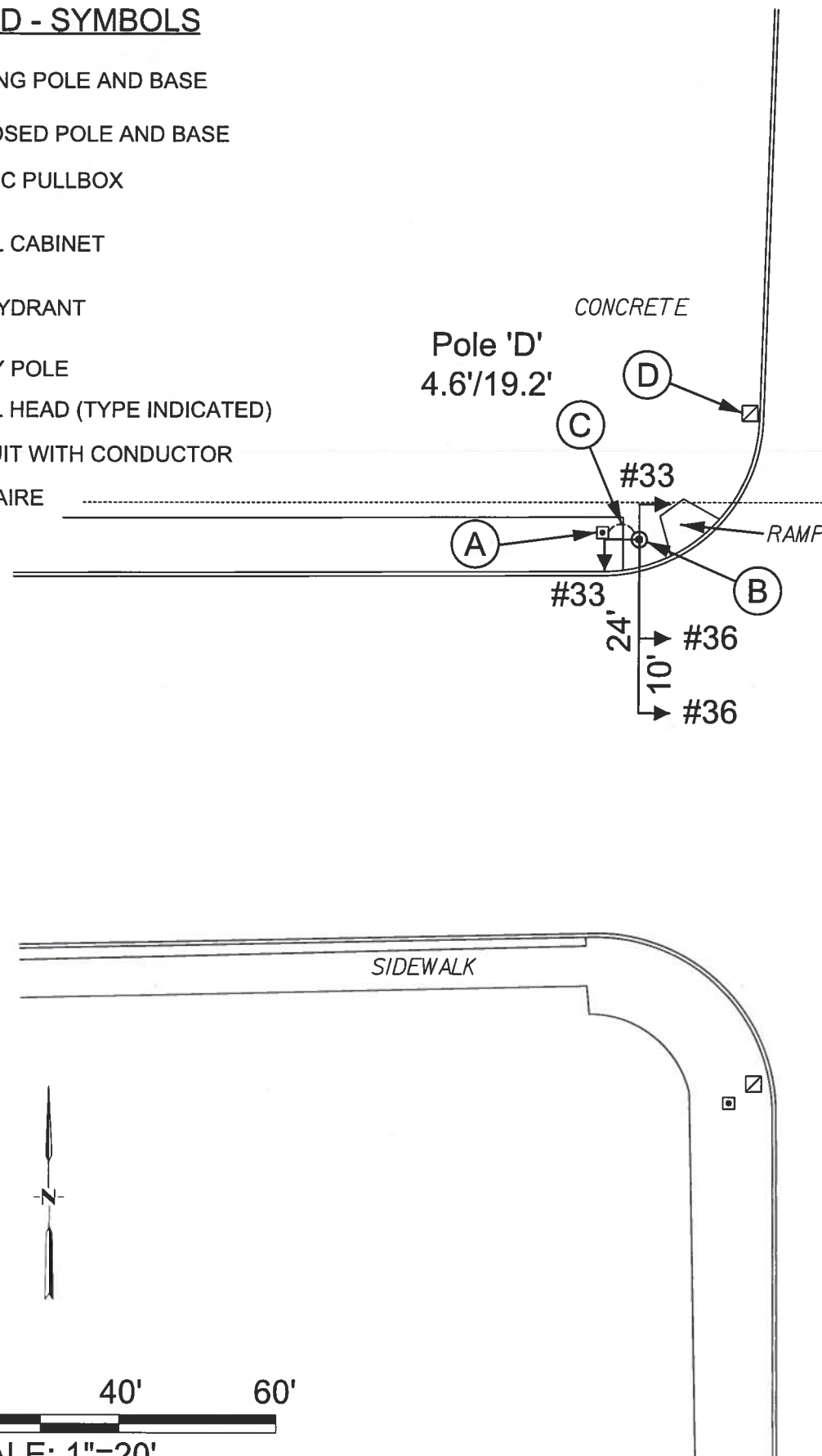
**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

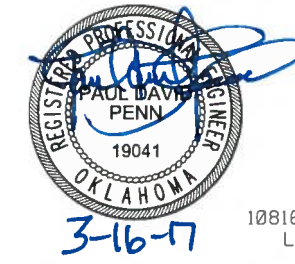
**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK
- (F) NEW SIDEWALK FOR ADA PASSAGE AROUND SIGNAL POLE



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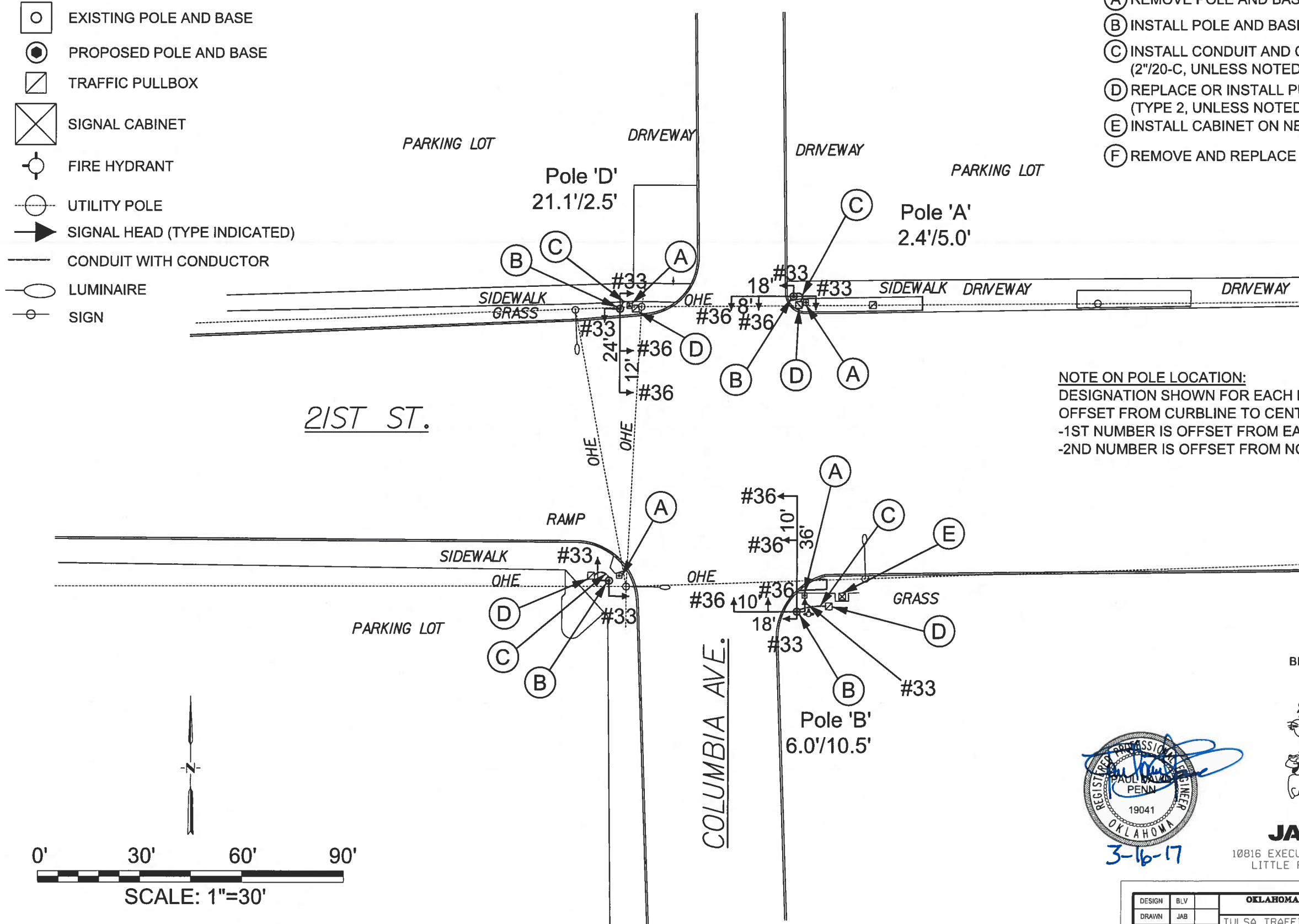
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DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

**LEGEND - SYMBOLS**

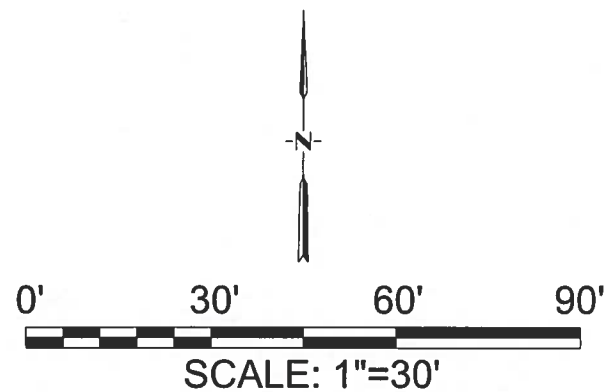
- EXISTING POLE AND BASE
- PROPOSED POLE AND BASE
- TRAFFIC PULLBOX
- SIGNAL CABINET
- FIRE HYDRANT
- UTILITY POLE
- SIGNAL HEAD (TYPE INDICATED)
- CONDUIT WITH CONDUCTOR
- LUMINAIRE
- SIGN

**LEGEND - ITEMS OF WORK**

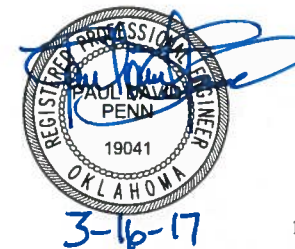
- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (E) INSTALL CABINET ON NEW BASE
- (F) REMOVE AND REPLACE SIDEWALK



**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE



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DESIGN	BLV		<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (21st ST. & COLUMBIA AVE.) PROJECT NO. 23708(06) SHEET NO. 11
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		

PRINT DATE: 3/15/2017 \$FILEL\$

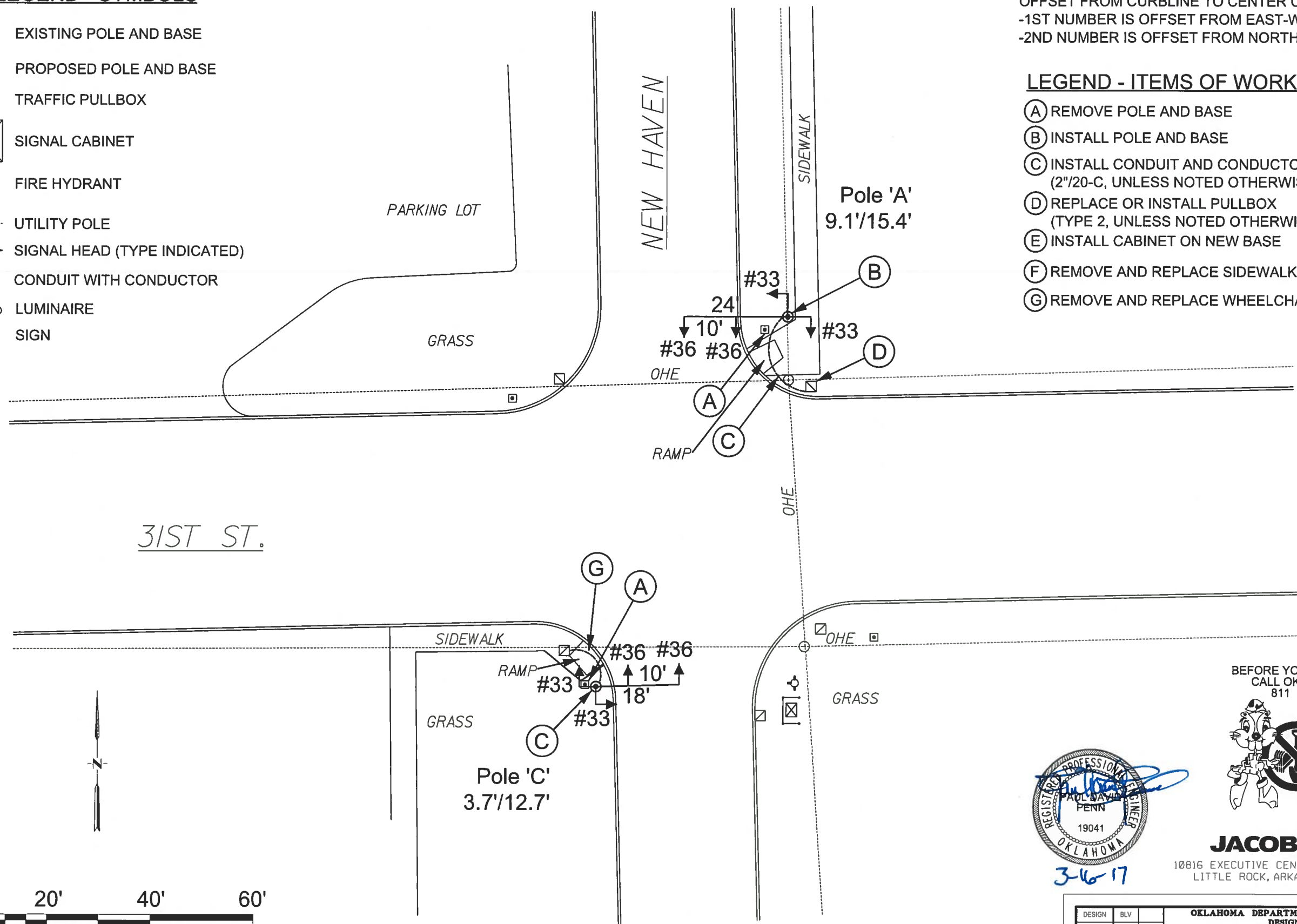
**LEGEND - SYMBOLS**

- EXISTING POLE AND BASE
- PROPOSED POLE AND BASE
- TRAFFIC PULLBOX
- SIGNAL CABINET
- FIRE HYDRANT
- UTILITY POLE
- SIGNAL HEAD (TYPE INDICATED)
- CONDUIT WITH CONDUCTOR
- LUMINAIRE
- SIGN

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

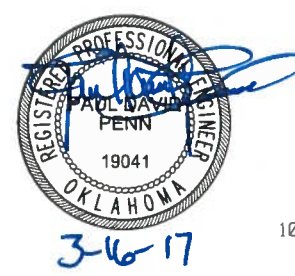
**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR  
(2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
- (E) INSTALL CABINET ON NEW BASE
- (F) REMOVE AND REPLACE SIDEWALK
- (G) REMOVE AND REPLACE WHEELCHAIR RAMP



31ST ST.

NEW HAVEN



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DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (31st ST. & NEW HAVEN AVE.) PROJECT NO. 23708(06) SHEET NO. 12
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CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

PRINT DATE: 3/15/2017 SFELELS

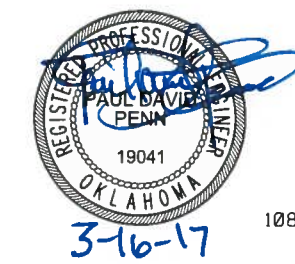
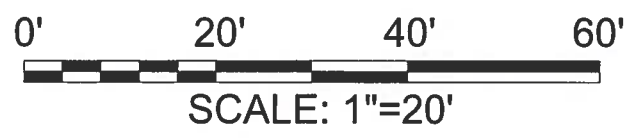
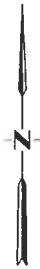
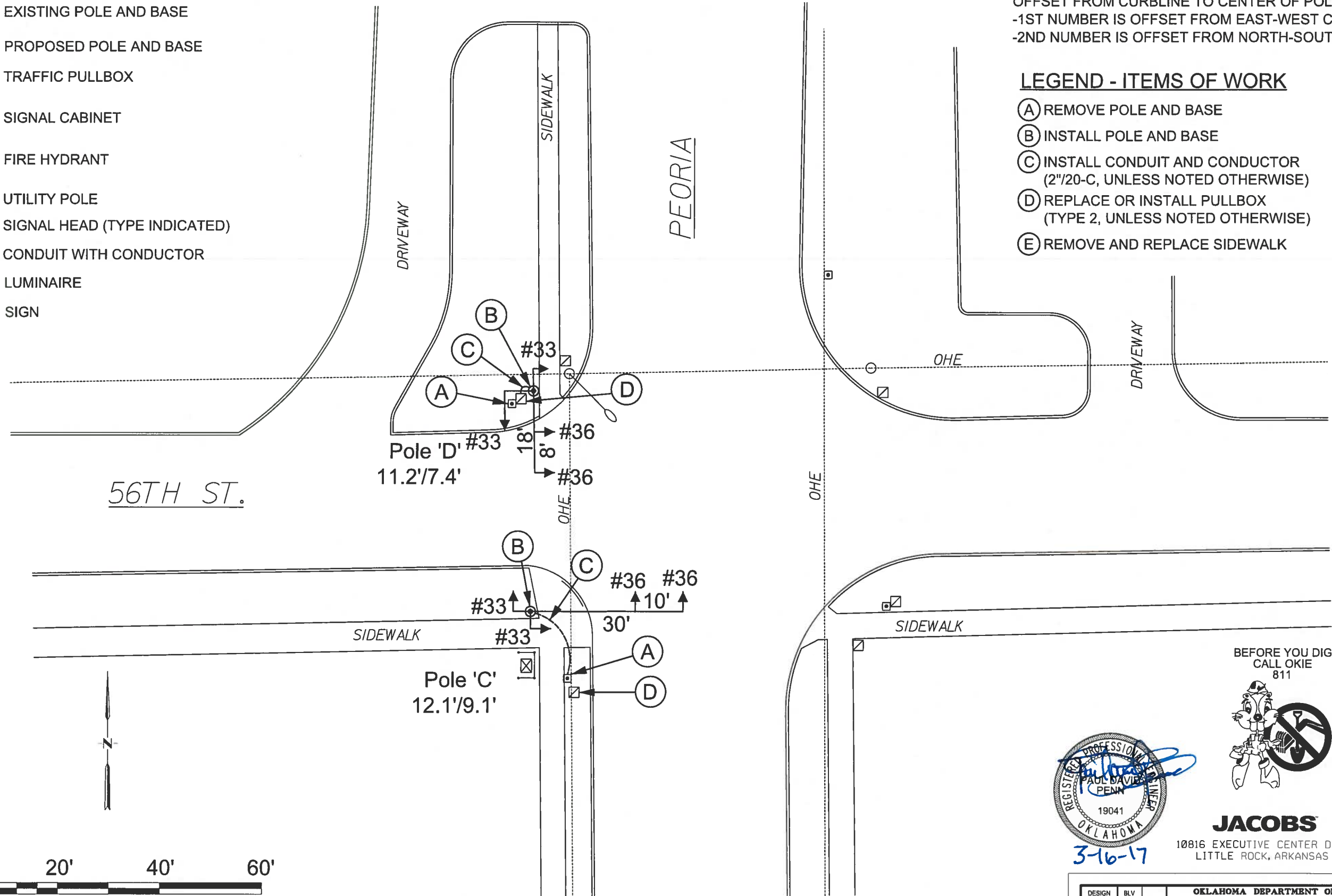
**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE
-  SIGN

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR  
(2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK












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DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (56th ST. & PEORIA AVE.) PROJECT NO. 23708(06) SHEET NO. 13
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

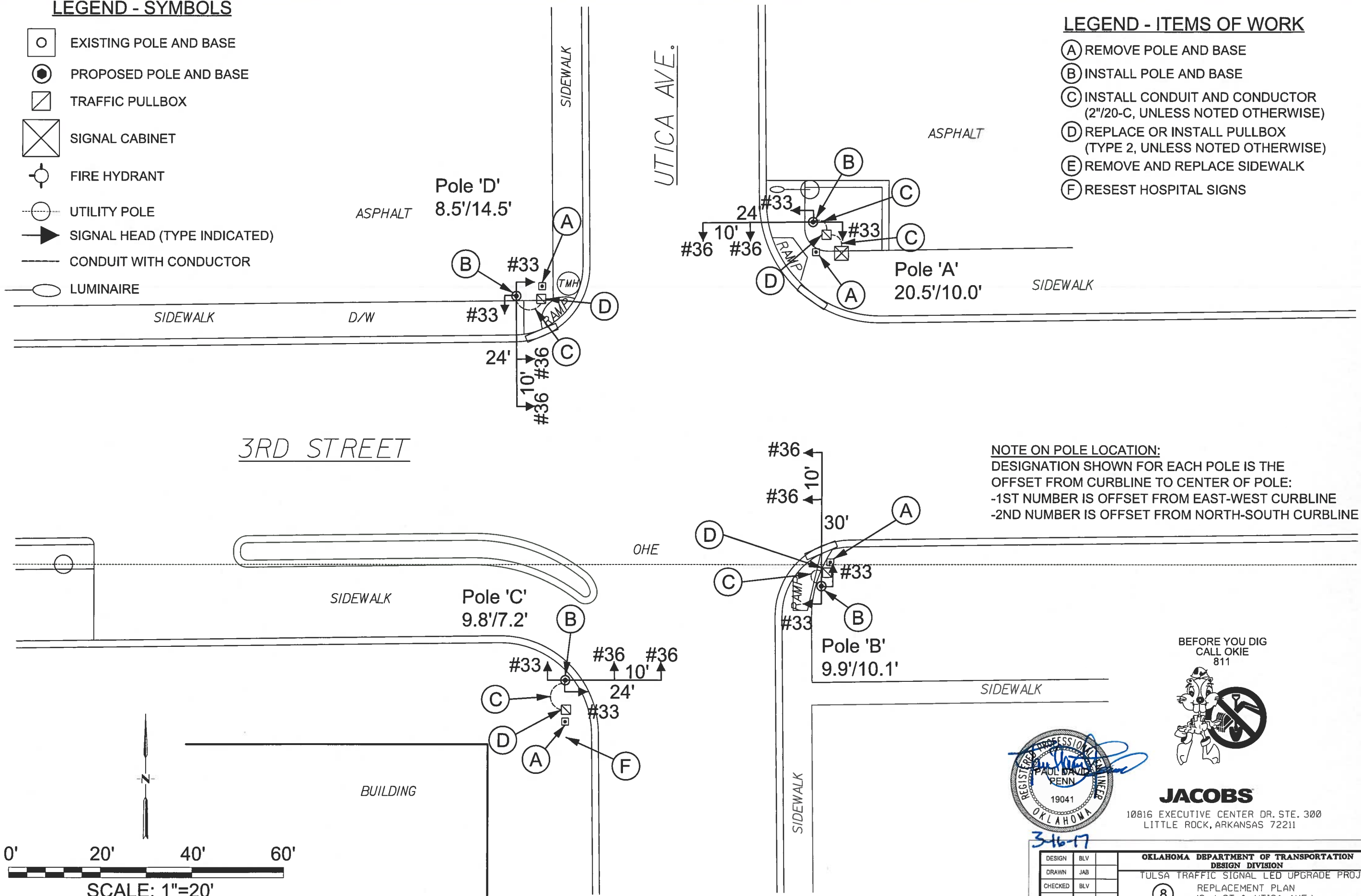
PRINT DATE: 3/15/2017 8FILELS

**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK
- (F) RESEST HOSPITAL SIGNS

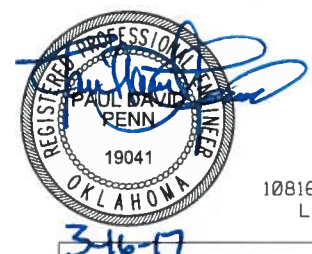


**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

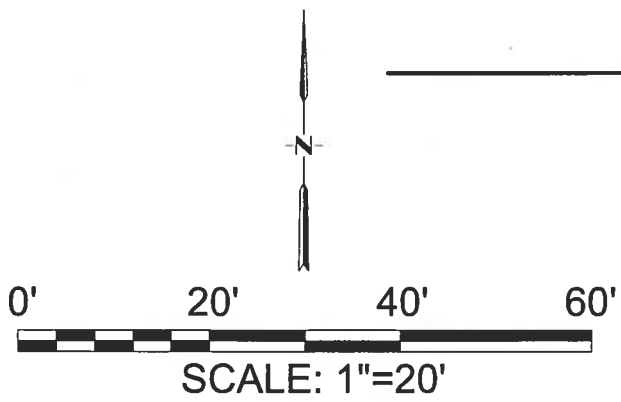
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 LITTLE ROCK, ARKANSAS 72211












PRINT DATE: 3/15/2017 BRLELS



DESIGN	BLV		<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (3-rd ST. & UTICA AVE.) PROJECT NO. 23708(06) SHEET NO. 14
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		

**LEGEND - SYMBOLS**

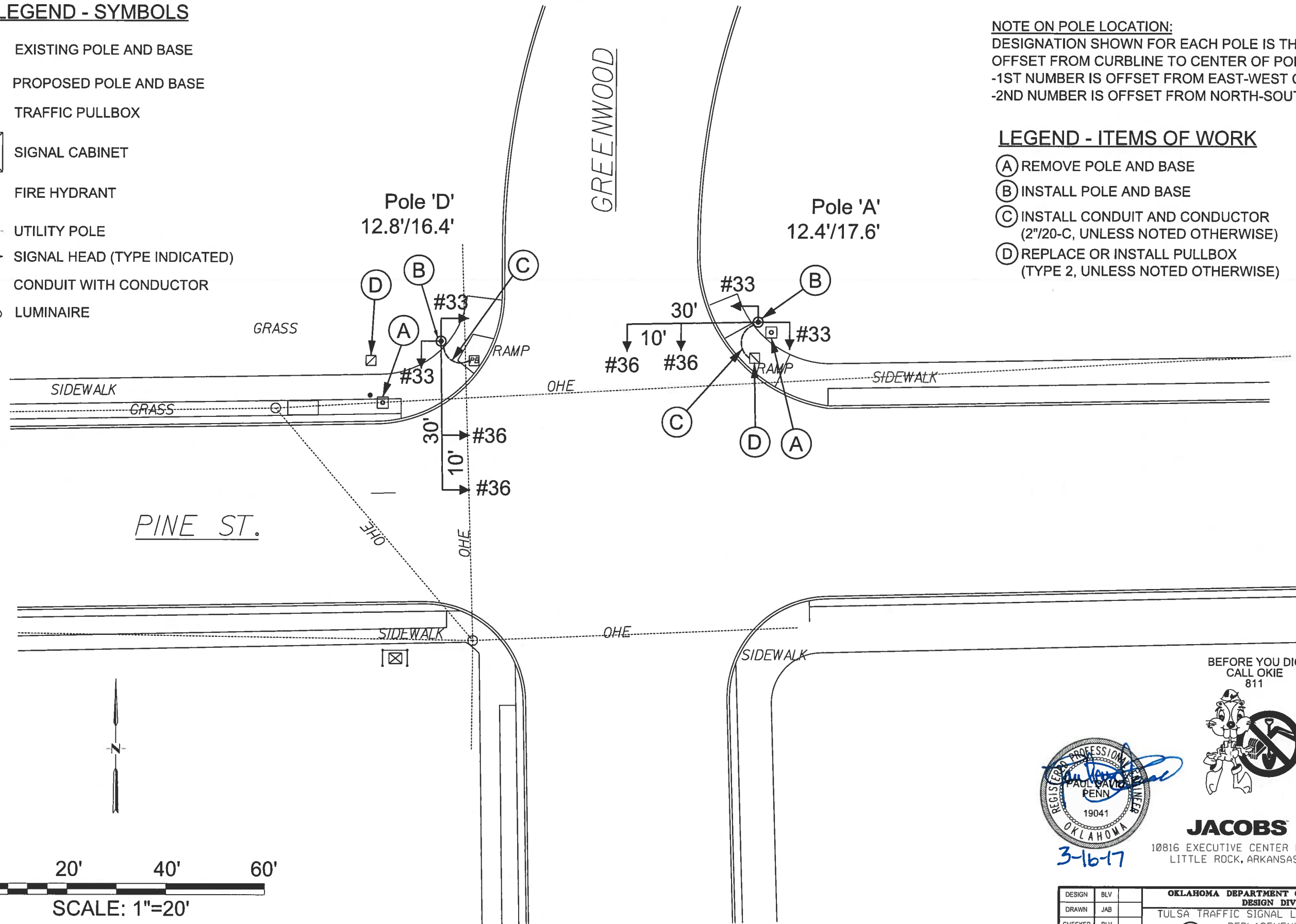
-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**

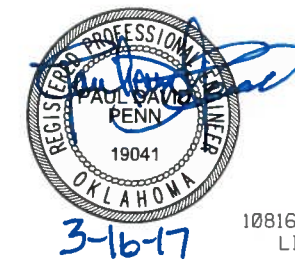
DESIGNATION SHOWN FOR EACH POLE IS THE OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)












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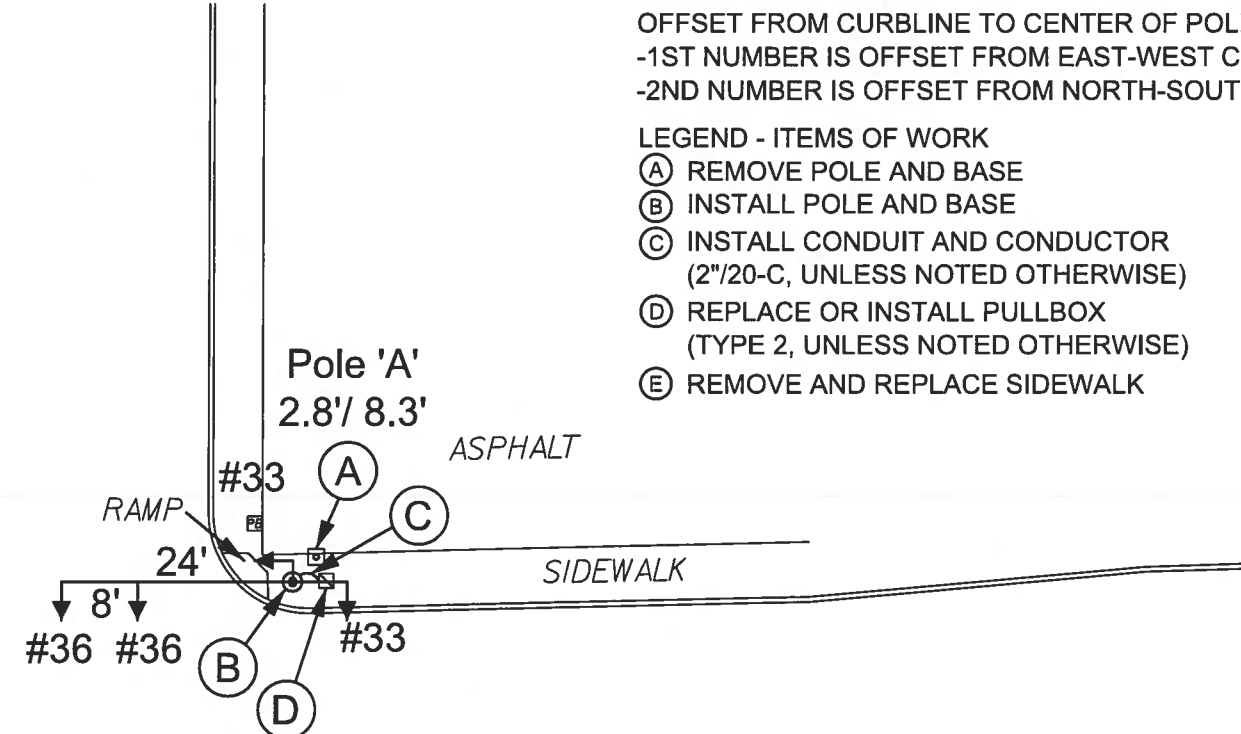
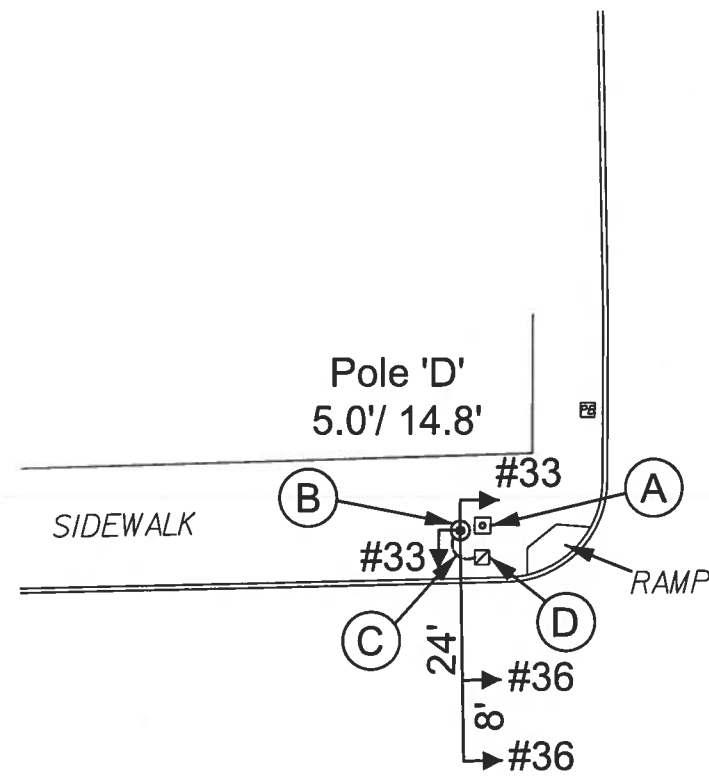
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DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

**LEGEND - SYMBOLS**

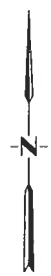
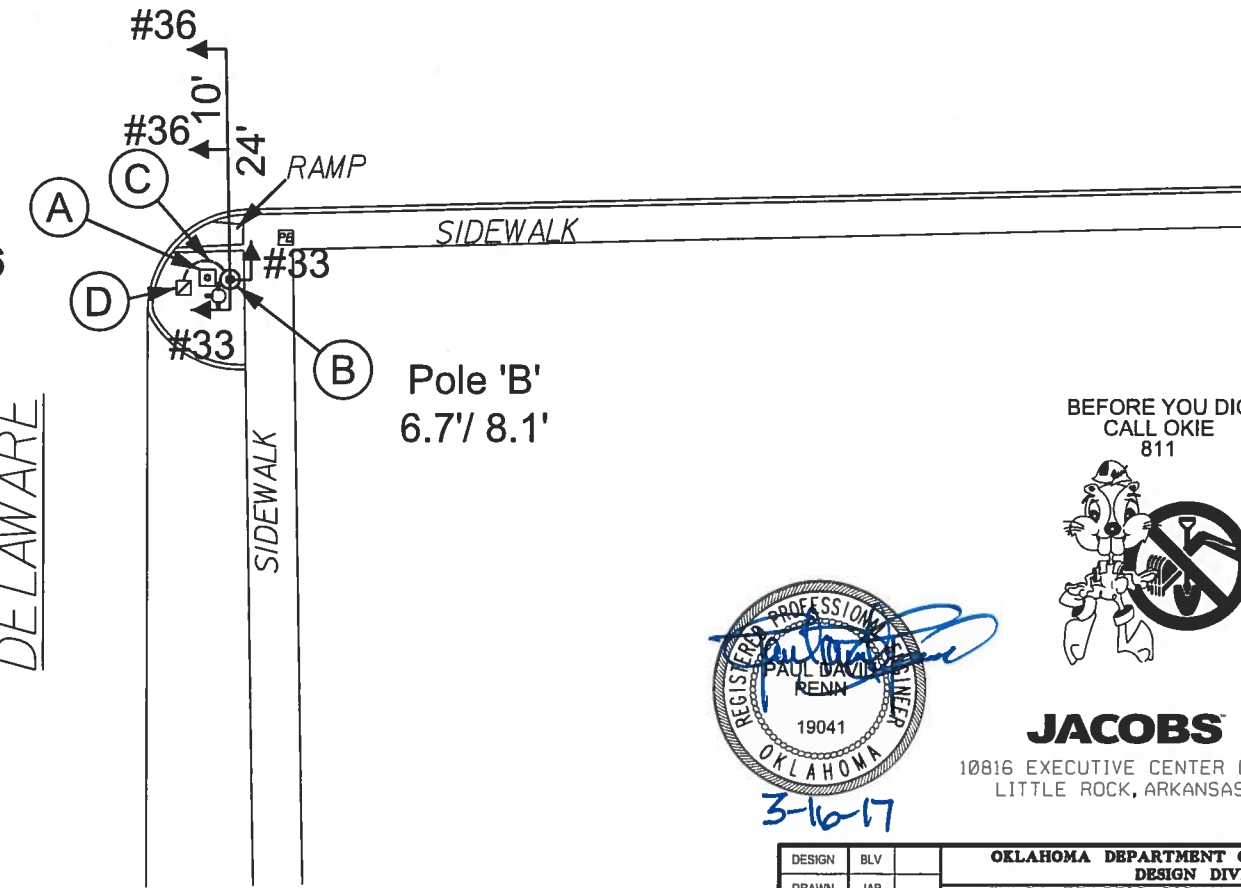
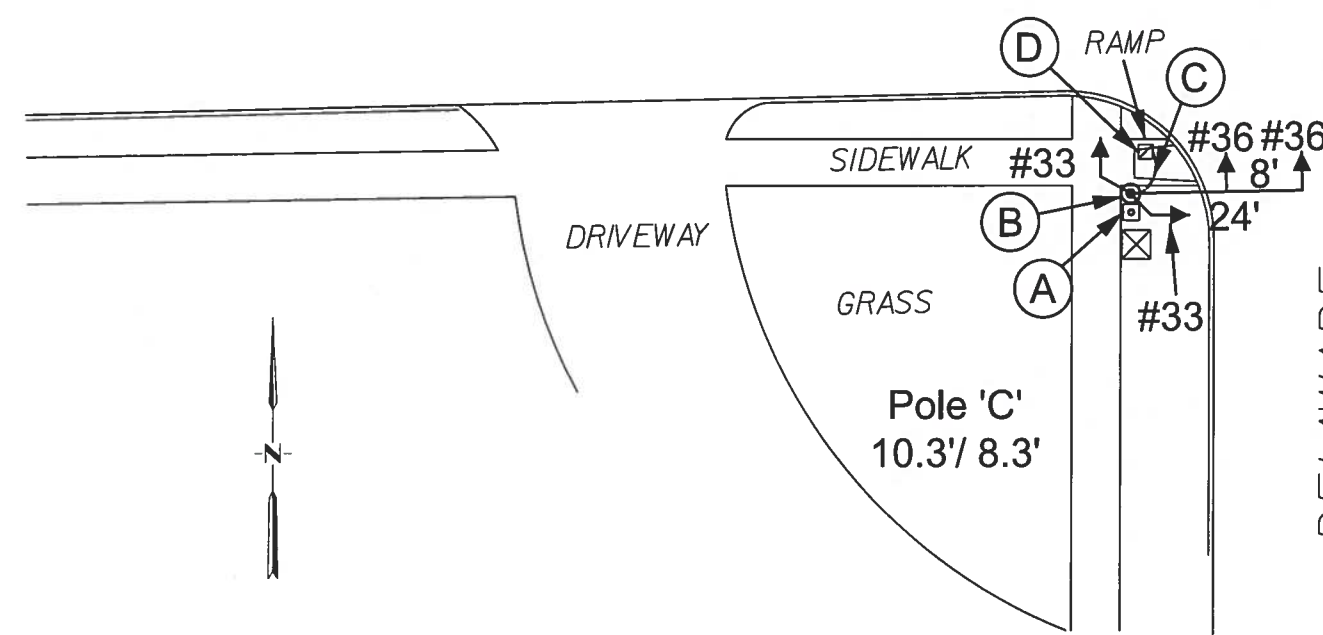
-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

- LEGEND - ITEMS OF WORK**
- (A) REMOVE POLE AND BASE
  - (B) INSTALL POLE AND BASE
  - (C) INSTALL CONDUIT AND CONDUCTOR  
(2"/20-C, UNLESS NOTED OTHERWISE)
  - (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
  - (E) REMOVE AND REPLACE SIDEWALK



*E. 15th ST.*



BEFORE YOU DIG  
 CALL OKIE  
 811












**JACOBS**  
 10816 EXECUTIVE CENTER DR. STE. 300  
 LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (15th ST. & DELEWARE AVE.) PROJECT NO. 23708(06) SHEET NO. 16
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	



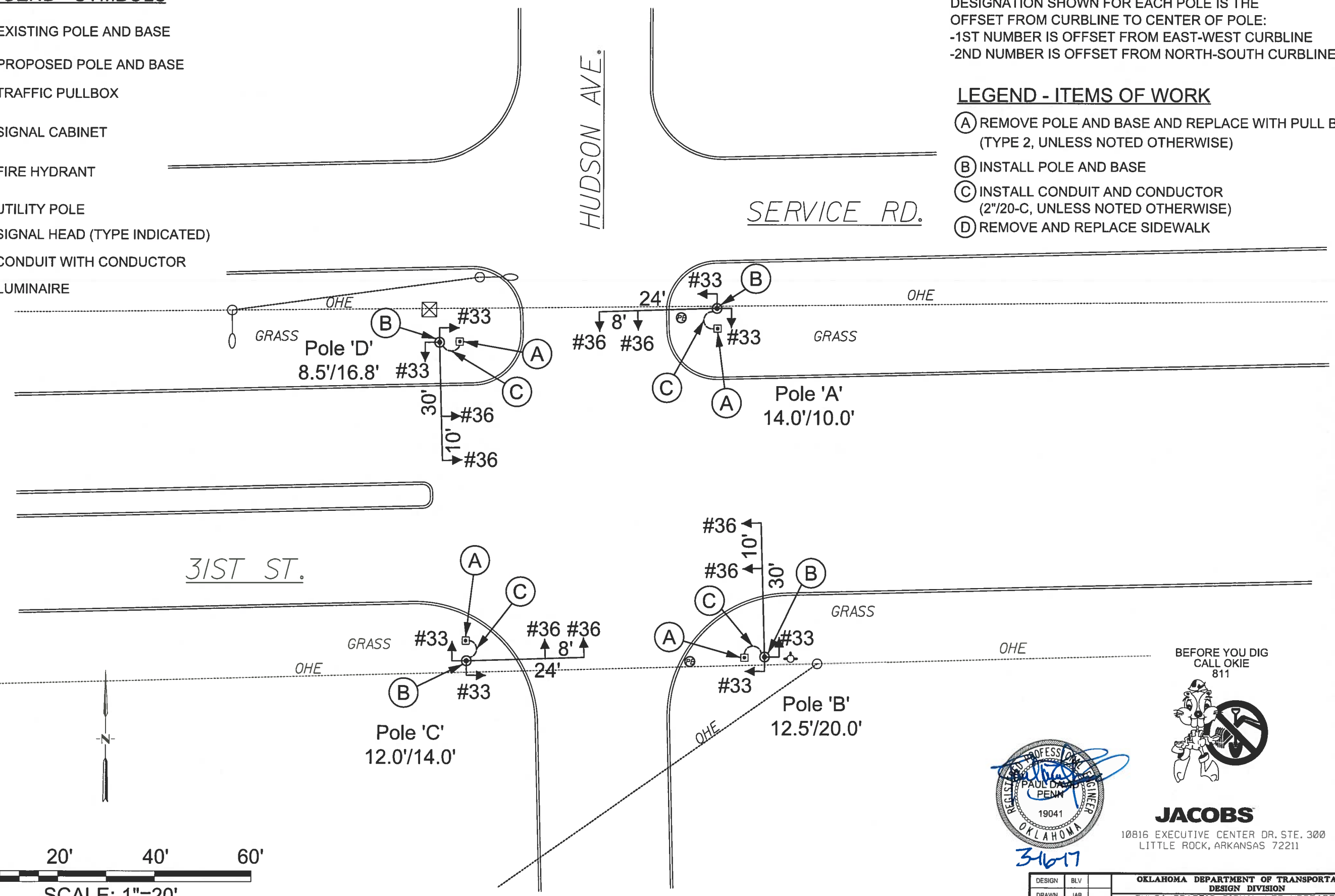
**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

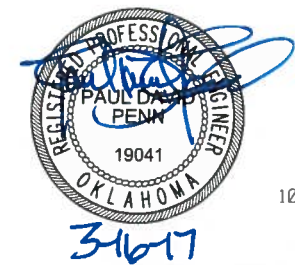
**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE AND REPLACE WITH PULL BOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2" / 20-C, UNLESS NOTED OTHERWISE)
- (D) REMOVE AND REPLACE SIDEWALK












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 CALL OKIE  
 811



**JACOBS**  
 10816 EXECUTIVE CENTER DR. STE. 300  
 LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV	OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (31st. ST. & HUDSON AVE.) PROJECT NO. 23708(06) SHEET NO. 17
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

**LEGEND - SYMBOLS**

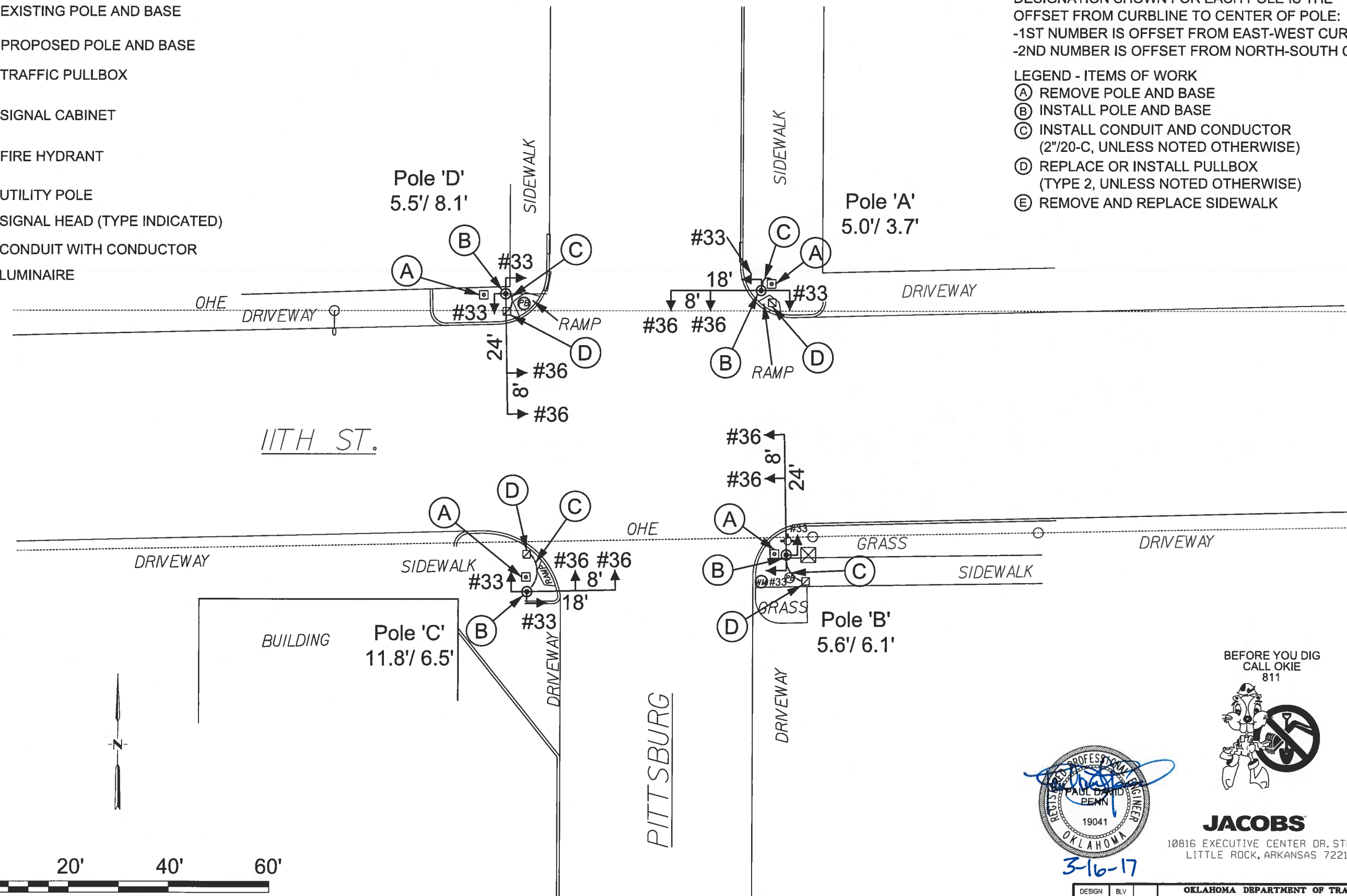
-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**

DESIGNATION SHOWN FOR EACH POLE IS THE OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR  
(2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK



11TH ST.

PITTSBURG

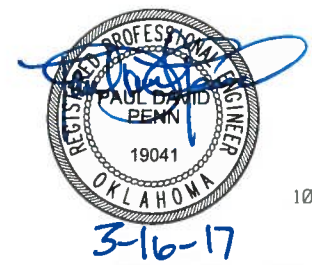


BEFORE YOU DIG  
CALL OKIE  
811



**JACOBS**










10816 EXECUTIVE CENTER DR. STE. 300  
LITTLE ROCK, ARKANSAS 72211



3-16-17

DESIGN	BLV		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (11th ST. & PITTSBURG AVE.) PROJECT NO. 23708(06) SHEET NO. 18
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		

**LEGEND - SYMBOLS**

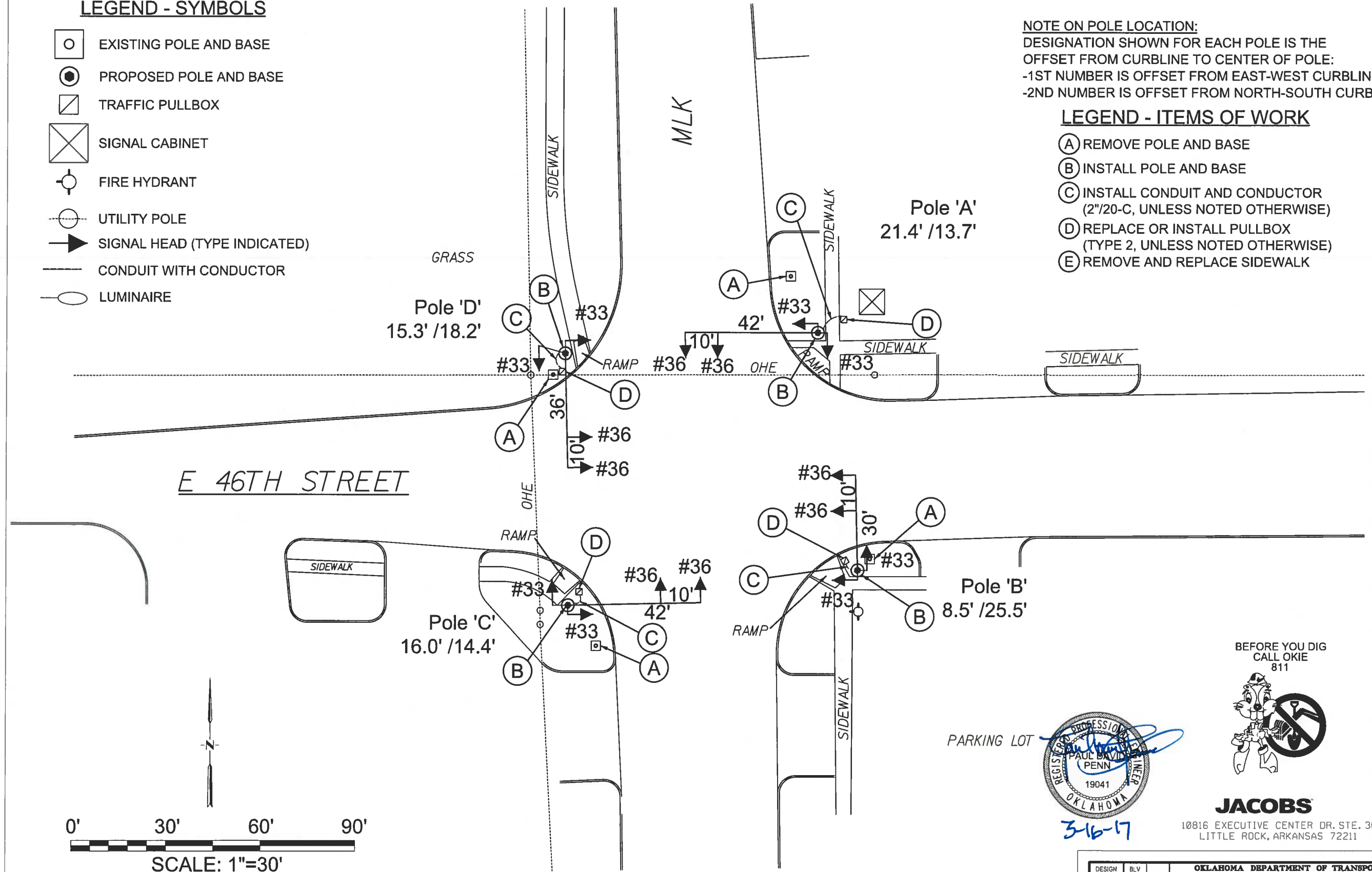
-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**

DESIGNATION SHOWN FOR EACH POLE IS THE OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK

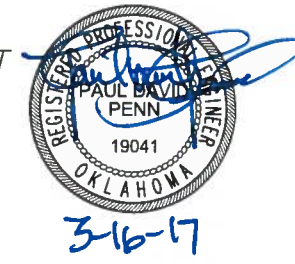


BEFORE YOU DIG  
CALL OKIE  
811












**JACOBS**

10816 EXECUTIVE CENTER DR. STE. 300  
LITTLE ROCK, ARKANSAS 72211



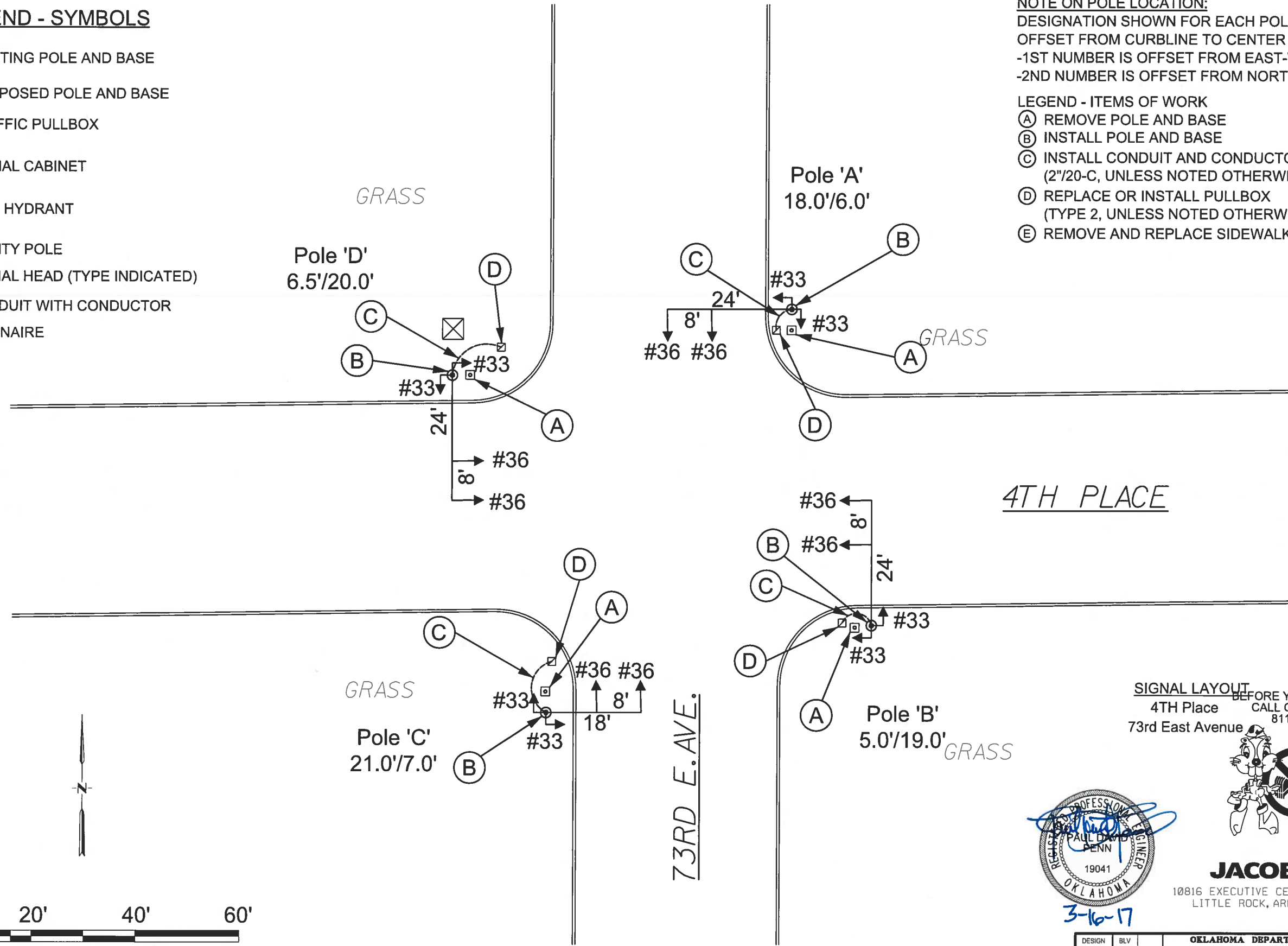
DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (46th ST. NORTH & MLK) PROJECT NO. 23708(06) SHEET NO. 19
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

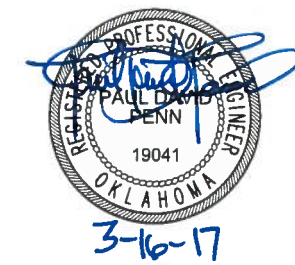
- LEGEND - ITEMS OF WORK**
- (A) REMOVE POLE AND BASE
  - (B) INSTALL POLE AND BASE
  - (C) INSTALL CONDUIT AND CONDUCTOR  
(2" / 20-C, UNLESS NOTED OTHERWISE)
  - (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
  - (E) REMOVE AND REPLACE SIDEWALK



4TH PLACE

73RD E. AVE.

**SIGNAL LAYOUT BEFORE YOU DIG**  
 4TH Place CALL OKIE 811  
 73rd East Avenue












**JACOBS**

10816 EXECUTIVE CENTER DR. STE. 300  
 LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV	OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (4th PLACE & 73rd AVE.) PROJECT NO. 23708(06) SHEET NO. 20
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

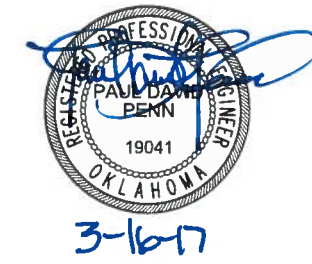
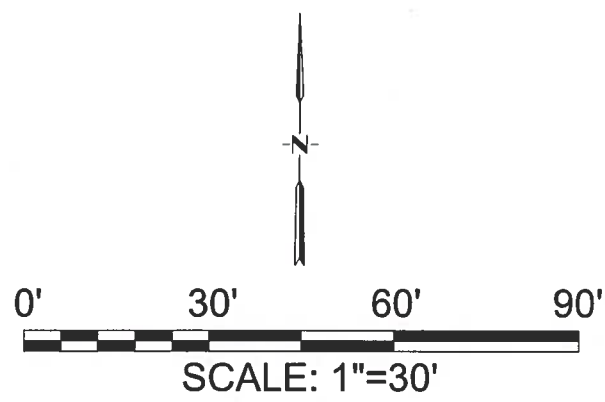
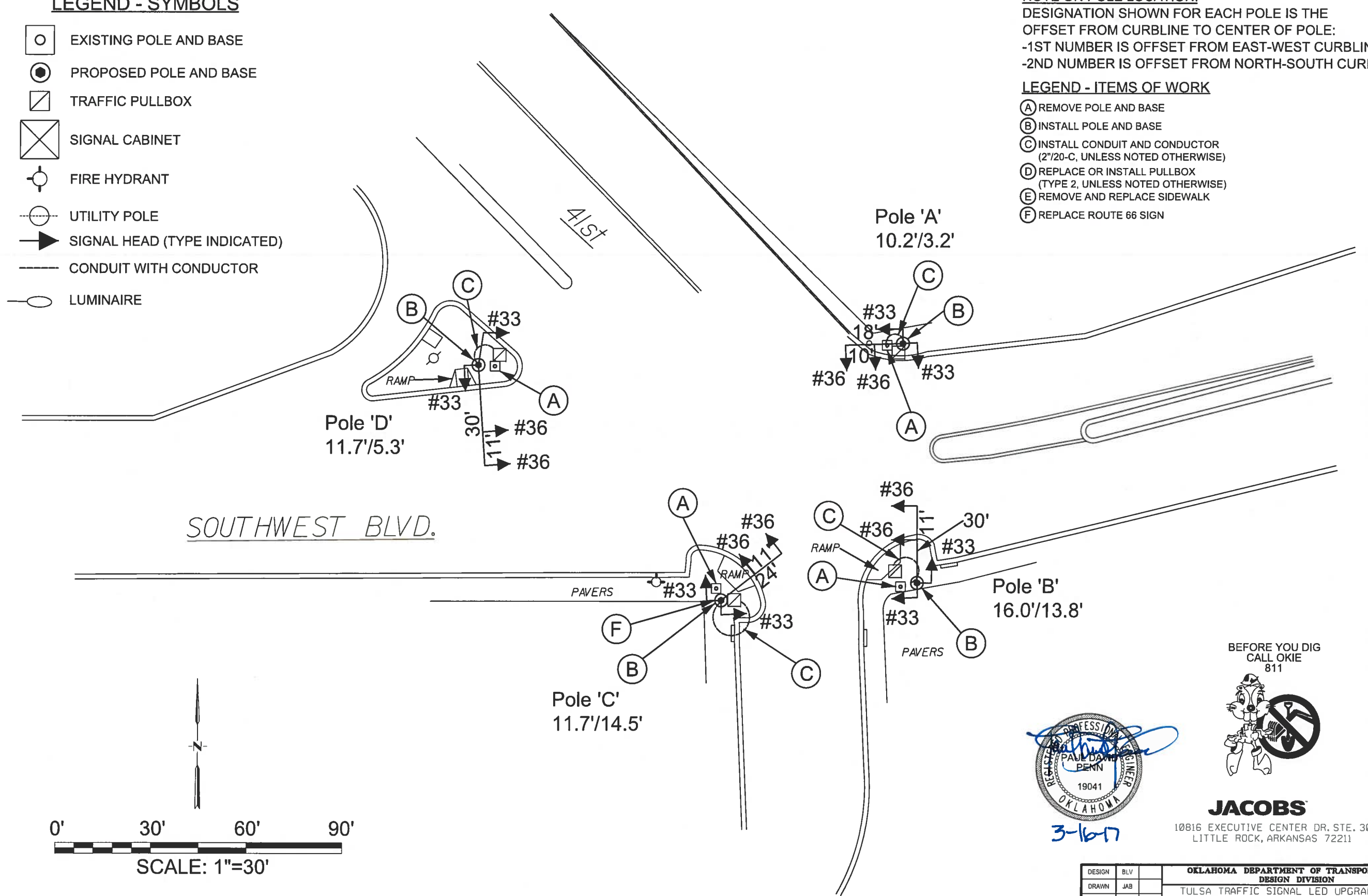
**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR  
(2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK
- (F) REPLACE ROUTE 66 SIGN



BEFORE YOU DIG  
 CALL OKIE  
 811












**JACOBS**

10816 EXECUTIVE CENTER DR. STE. 300  
 LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV		<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION                  DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (41st ST. & SOUTHWEST BLVD.) PROJECT NO. 23708(06) SHEET NO. 21
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		

**LEGEND - SYMBOLS**

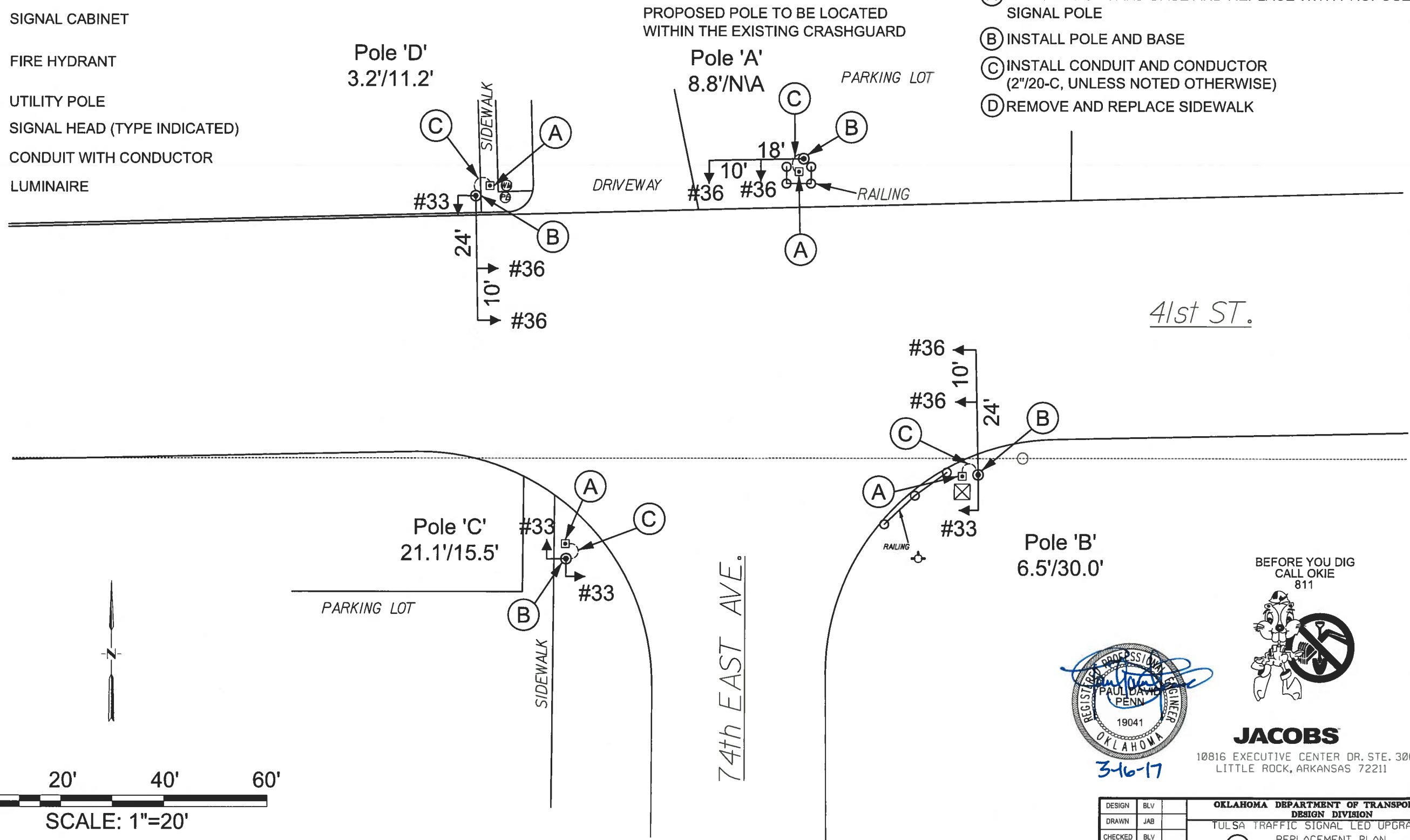
-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**

DESIGNATION SHOWN FOR EACH POLE IS THE OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE AND REPLACE WITH PROPOSED SIGNAL POLE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REMOVE AND REPLACE SIDEWALK












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 10816 EXECUTIVE CENTER DR. STE. 300  
 LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV		<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (41st ST. & 74th AVE.) PROJECT NO. 23708(06) SHEET NO. 22
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		

PRINT DATE: 3/15/2017 SEI/ELS

**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**LEGEND - ITEMS OF WORK**

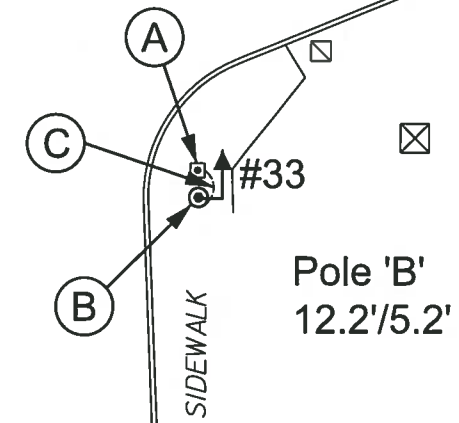
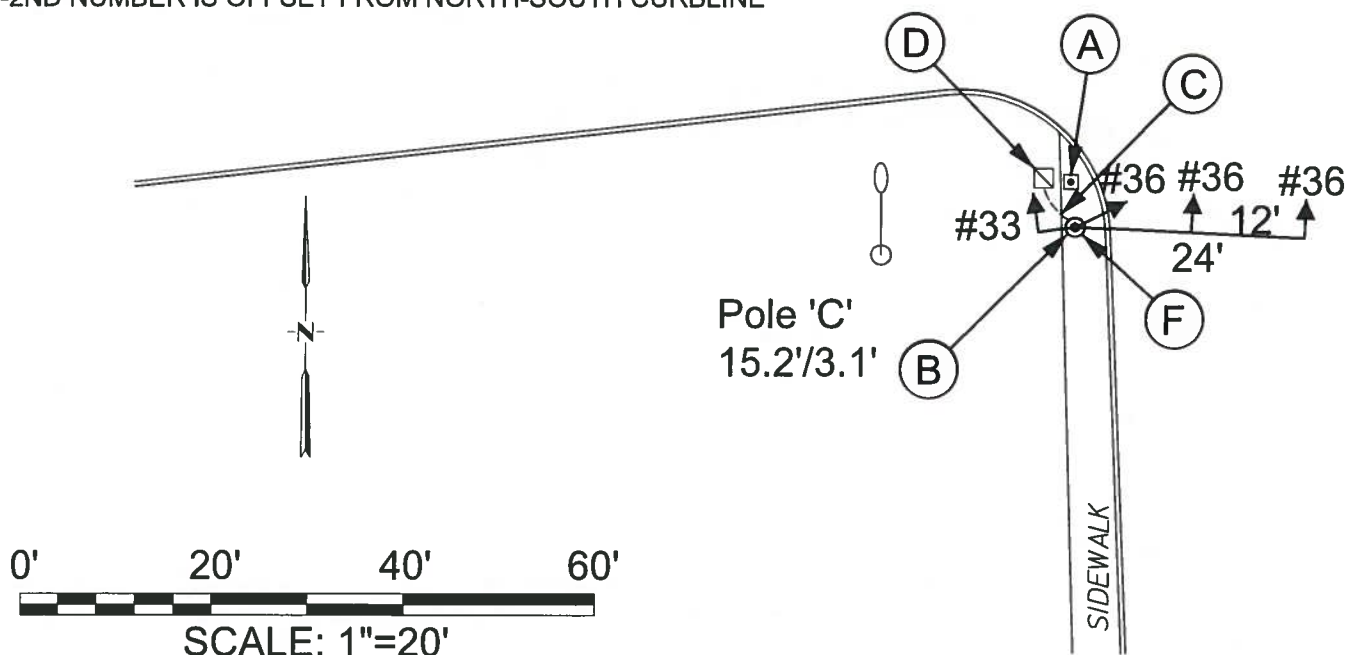
- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK
- (F) REPLACE ONE-WAY SIGNS AND ADD NO LEFT TURN SIGN TO MAST ARM

UTICA AVE.

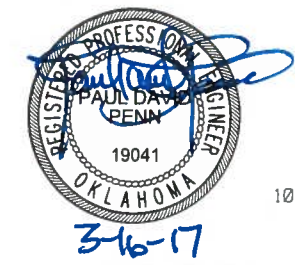
ADMIRAL BLVD.

**NOTE ON POLE LOCATION:**

DESIGNATION SHOWN FOR EACH POLE IS THE OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE












BEFORE YOU DIG  
CALL OKIE  
811



**JACOBS**  
 10816 EXECUTIVE CENTER DR. STE. 300  
 LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (ADMIRAL BLVD. & NORTH UTICA AVE.) PROJECT NO. 23708(06) SHEET NO. 23
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		

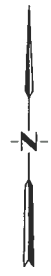
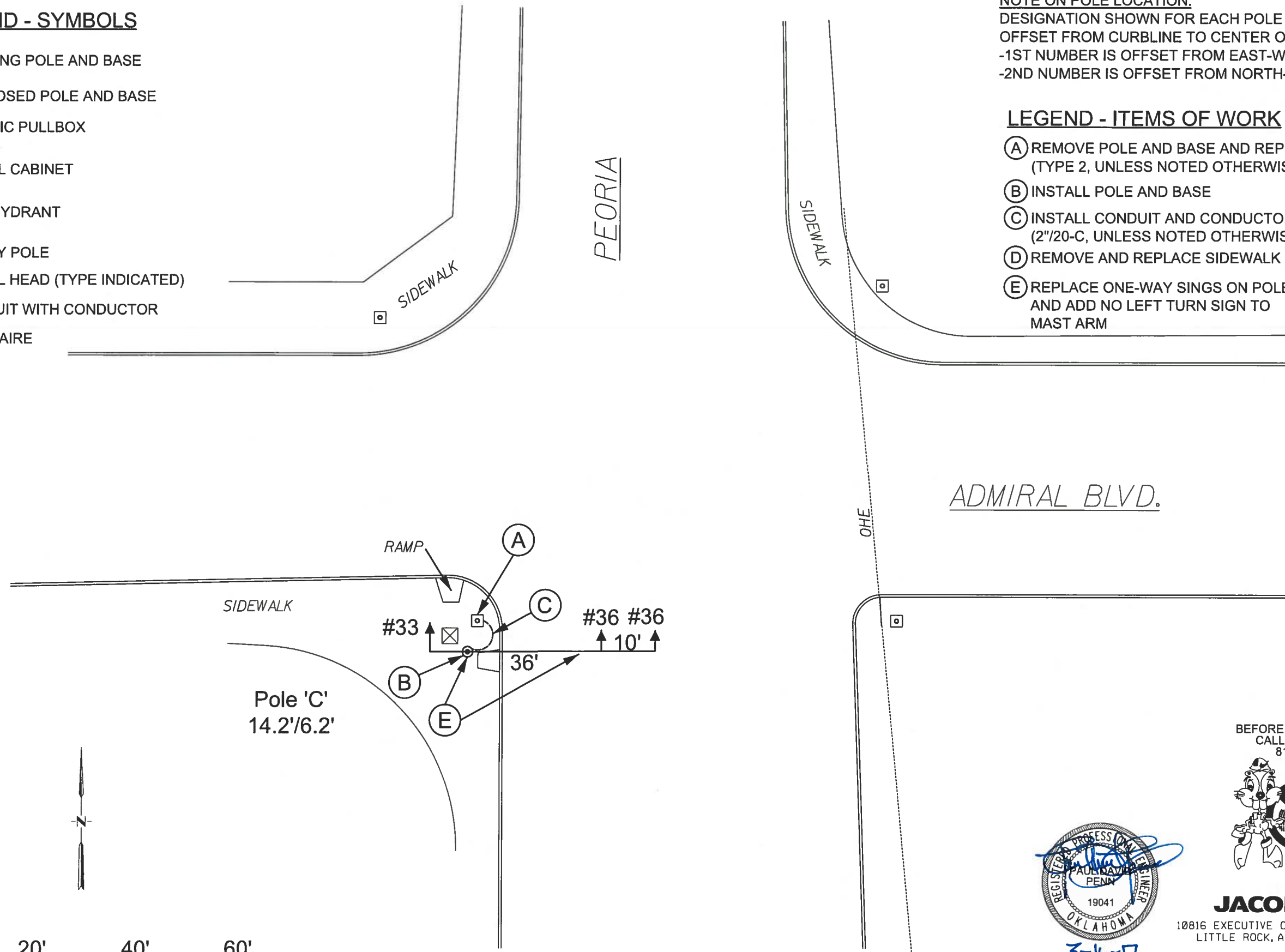
**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE AND REPLACE WITH PULL BOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REMOVE AND REPLACE SIDEWALK
- (E) REPLACE ONE-WAY SIGNS ON POLE AND ADD NO LEFT TURN SIGN TO MAST ARM



3-16-17

BEFORE YOU DIG  
 CALL OKIE  
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**JACOBS**

10816 EXECUTIVE CENTER DR. STE. 300  
 LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (ADMIRAL BLVD. & PEORIA AVE.) PROJECT NO. 23708(06) SHEET NO. 24
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		



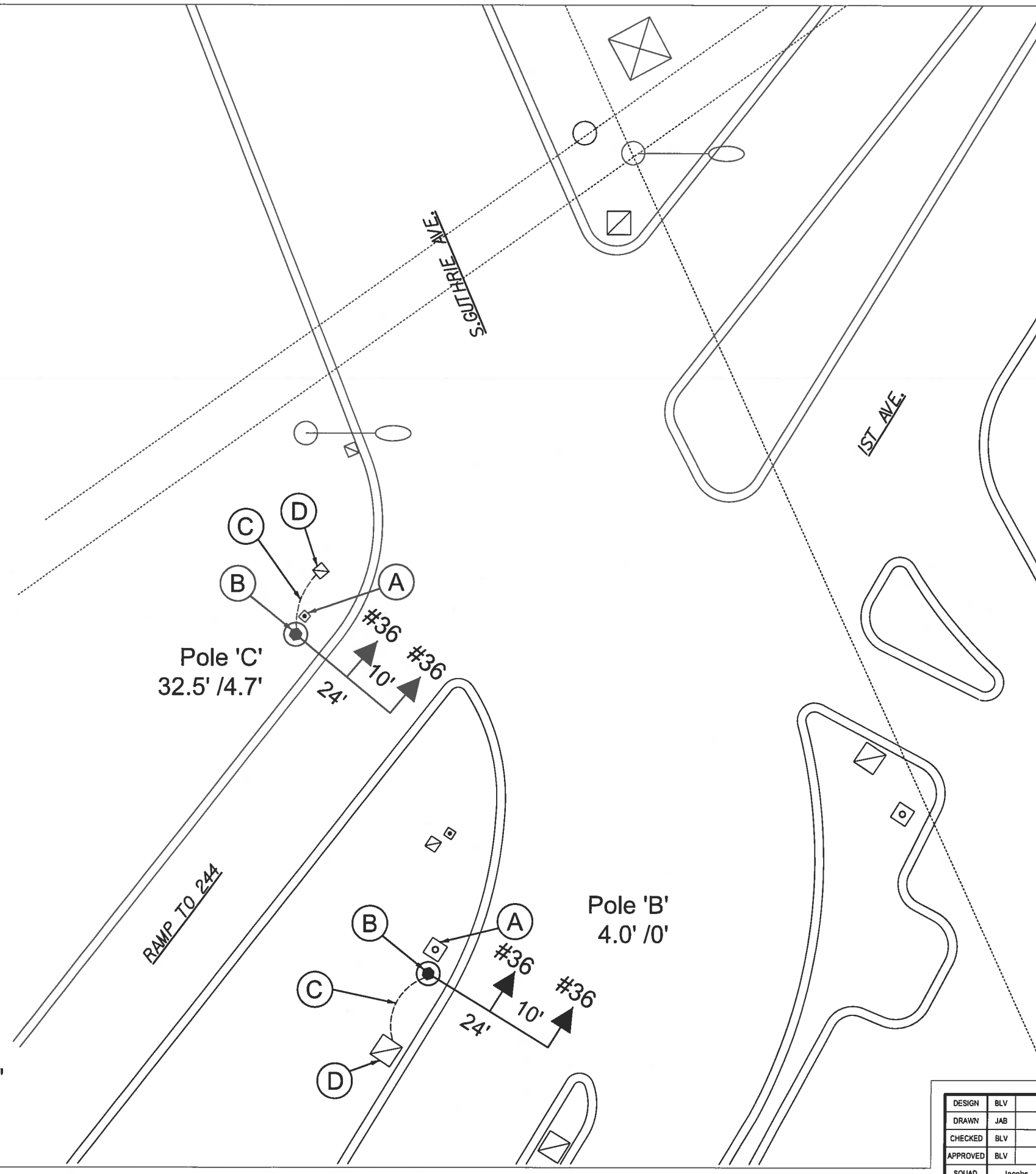
**LEGEND - SYMBOLS**

- EXISTING POLE AND BASE
- PROPOSED POLE AND BASE
- TRAFFIC PULLBOX
- SIGNAL CABINET
- FIRE HYDRANT
- UTILITY POLE
- SIGNAL HEAD (TYPE INDICATED)
- CONDUIT WITH CONDUCTOR
- LUMINAIRE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE



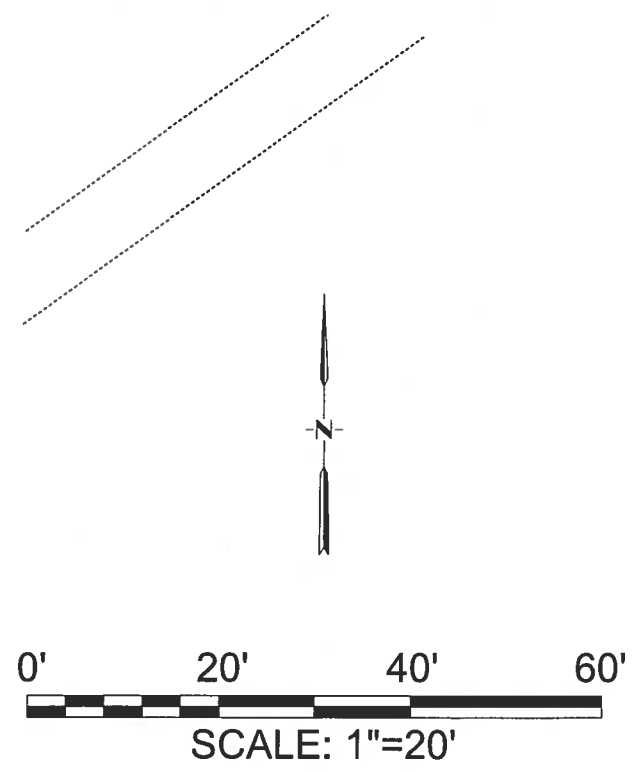
3-16-17

BEFORE YOU DIG  
 CALL OKIE  
 811



**JACOBS**










10816 EXECUTIVE CENTER DR. STE. 300  
 LITTLE ROCK, ARKANSAS 72211



DESIGN	BLV		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (1st ST. & GUTHRIE AVE.) PROJECT NO. 23708(06) SHEET NO. 25
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		

PRINT DATE: 3/15/2017 \$FILELS

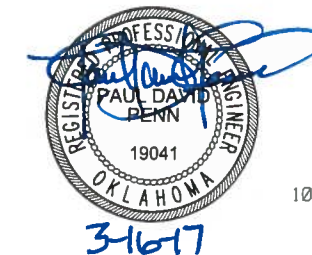
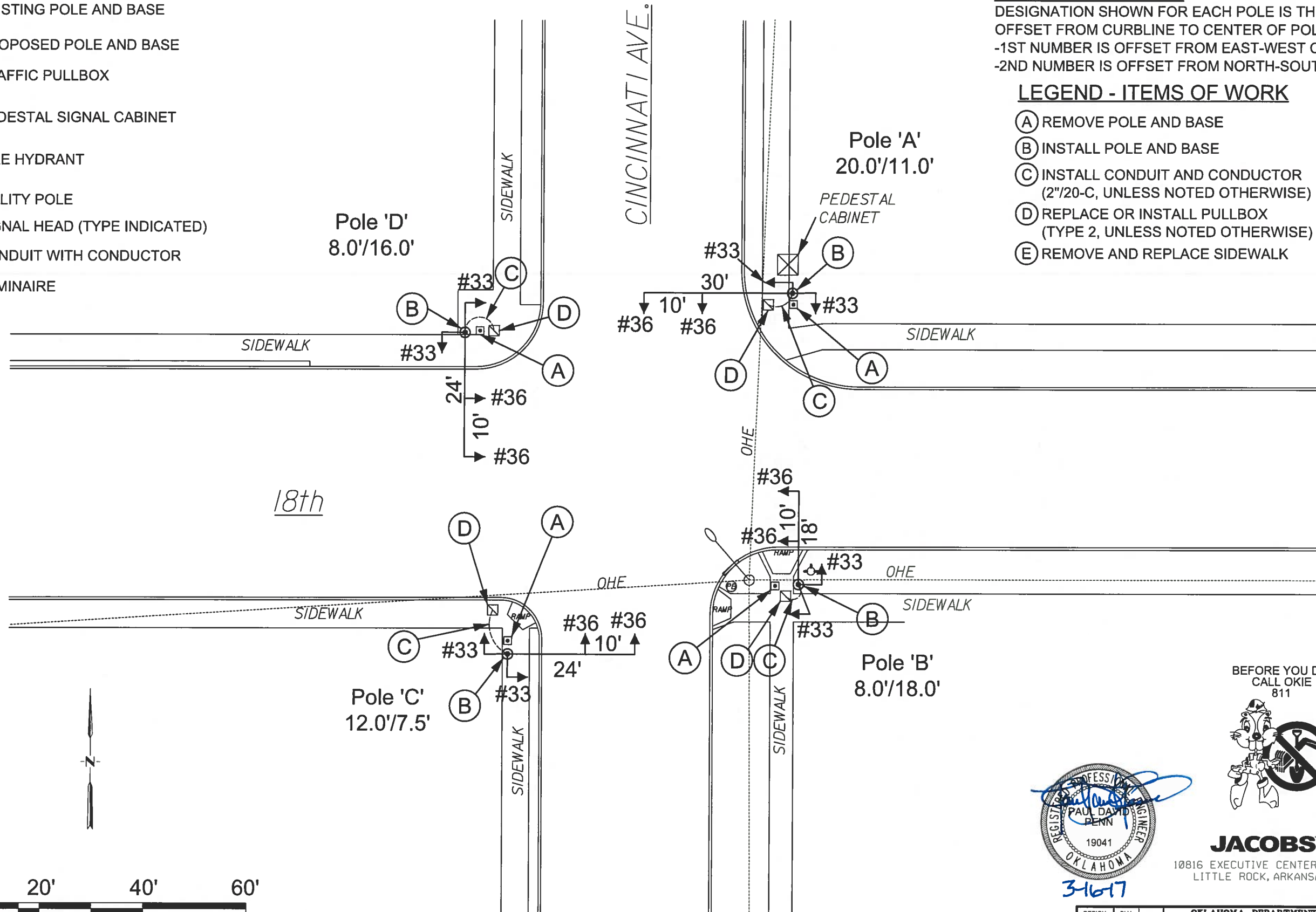
**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  PEDESTAL SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR  
(2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK



BEFORE YOU DIG  
 CALL OKIE  
 811












**JACOBS**

10816 EXECUTIVE CENTER DR. STE. 300  
 LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (18th ST. & CINCINNATI AVE.) PROJECT NO. 23708(06) SHEET NO. 26
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		

**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

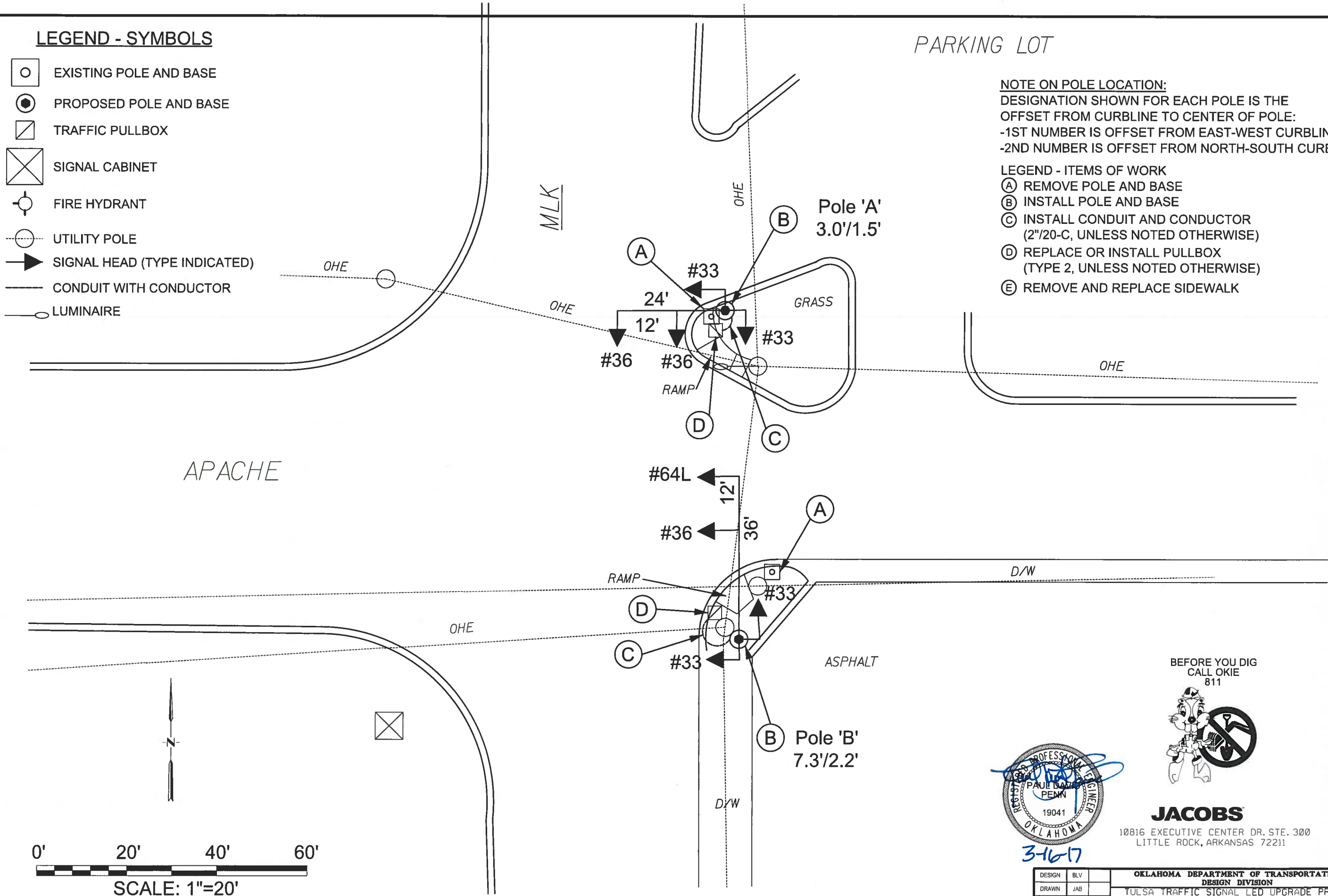
PARKING LOT

**NOTE ON POLE LOCATION:**

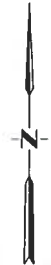
DESIGNATION SHOWN FOR EACH POLE IS THE OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK



APACHE



SCALE: 1"=20'

BEFORE YOU DIG  
CALL OKIE  
811



**JACOBS**










10816 EXECUTIVE CENTER DR. STE. 300  
LITTLE ROCK, ARKANSAS 72211



DESIGN	BLV
DRAWN	JAB
CHECKED	BLV
APPROVED	BLV
SQUAD	Jacobs

OKLAHOMA DEPARTMENT OF TRANSPORTATION  
 DESIGN DIVISION  
 TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT  
 REPLACEMENT PLAN  
 (APACHE ST. & MLK BLVD.)  
 PROJECT NO. 23708(06) SHEET NO. 27

**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

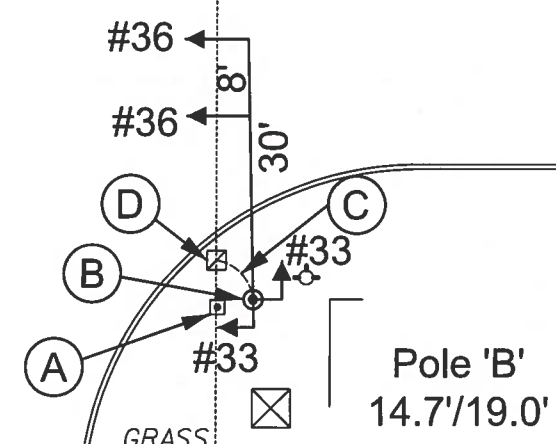
**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR  
(2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK

46TH ST.

MEMORIAL



0'      20'      40'      60'

SCALE: 1"=20'

BEFORE YOU DIG  
 CALL OKIE  
 811













**JACOBS**

10816 EXECUTIVE CENTER DR. STE. 300  
 LITTLE ROCK, ARKANSAS 72211



DESIGN	BLV		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (46th ST. & MEMORIAL DR.) PROJECT NO. 23708(06) SHEET NO. 28
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		

**LEGEND - SYMBOLS**

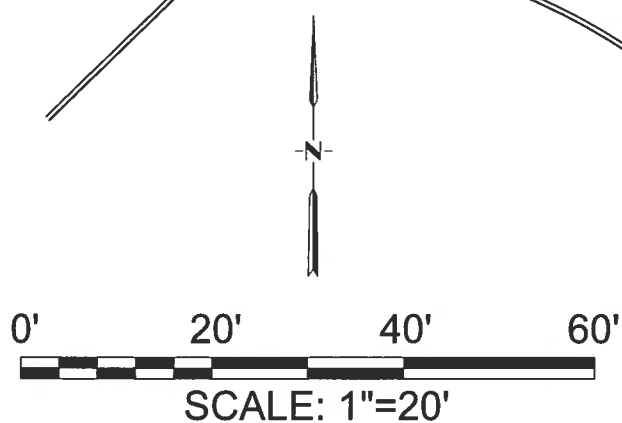
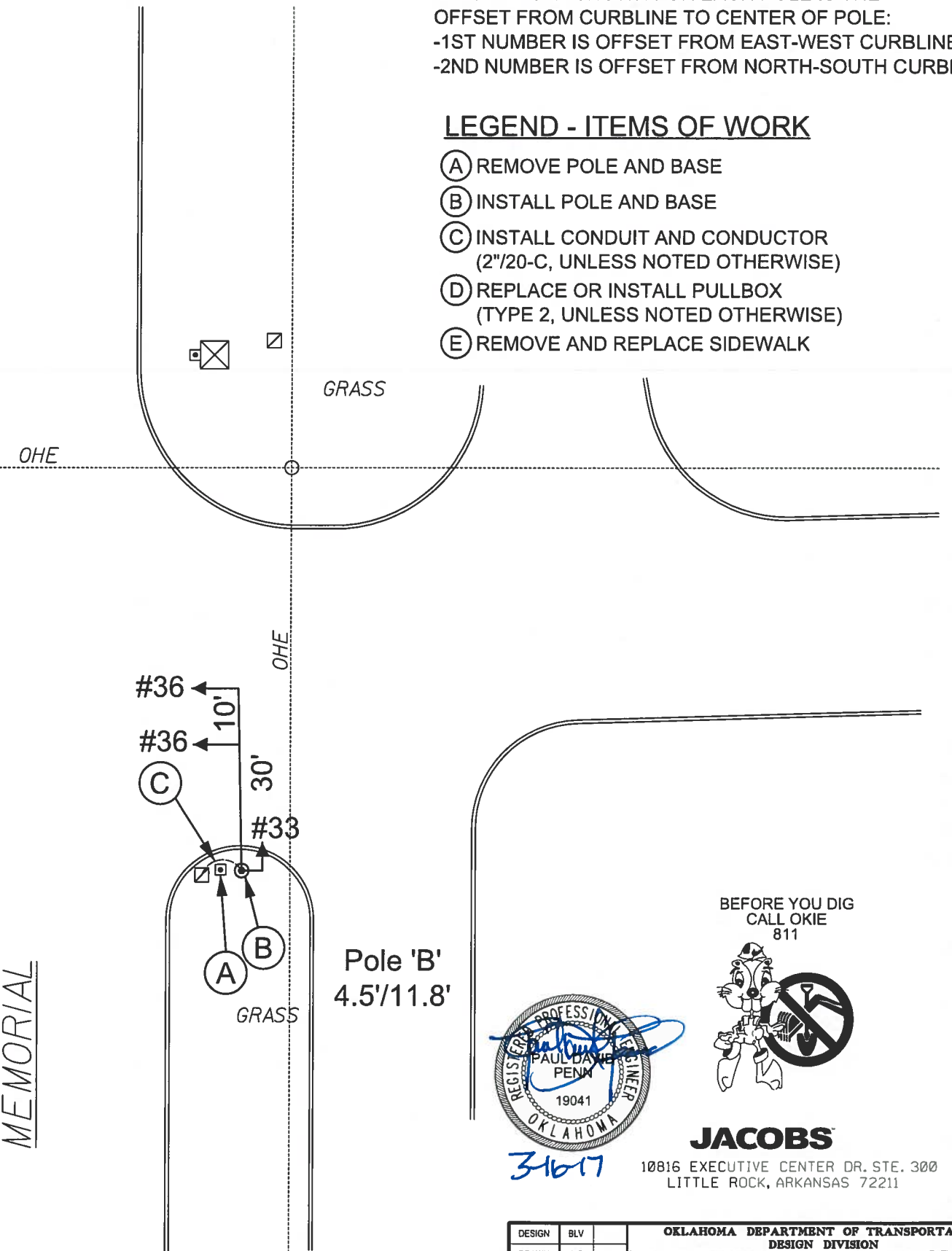
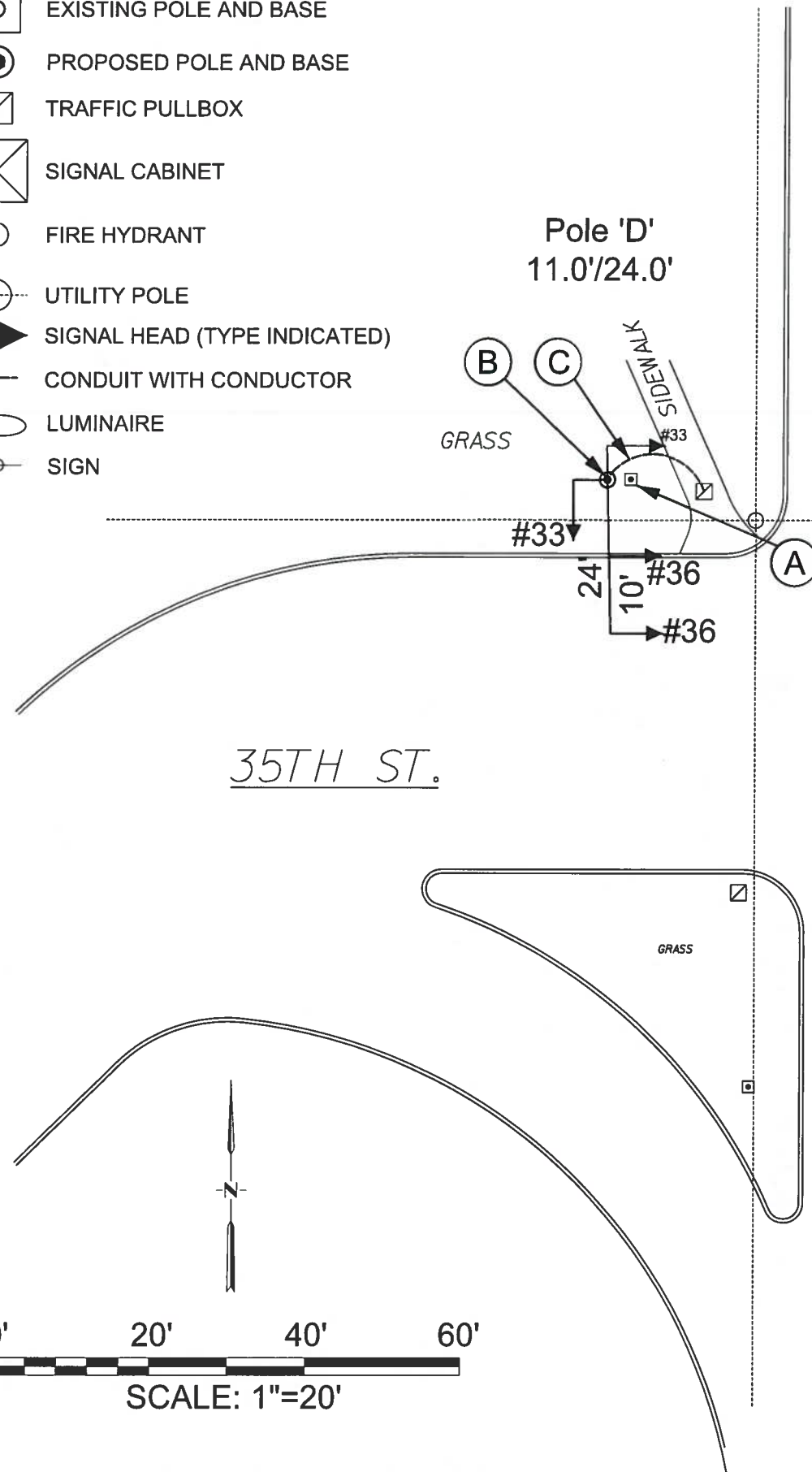
-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE
-  SIGN

**NOTE ON POLE LOCATION:**


DESIGNATION SHOWN FOR EACH POLE IS THE OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

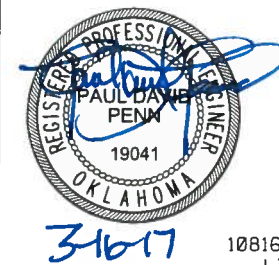
- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK



BEFORE YOU DIG  
CALL OKIE  
811












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 LITTLE ROCK, ARKANSAS 72211



DESIGN	BLV	OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT (35th ST. & MEMORIAL DR.) 40 REPLACEMENT PLAN PROJECT NO. 23708(06) SHEET NO. 29
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

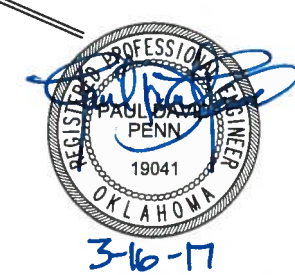
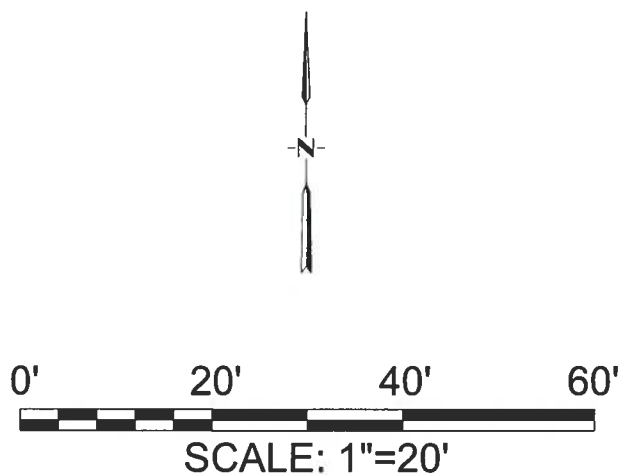
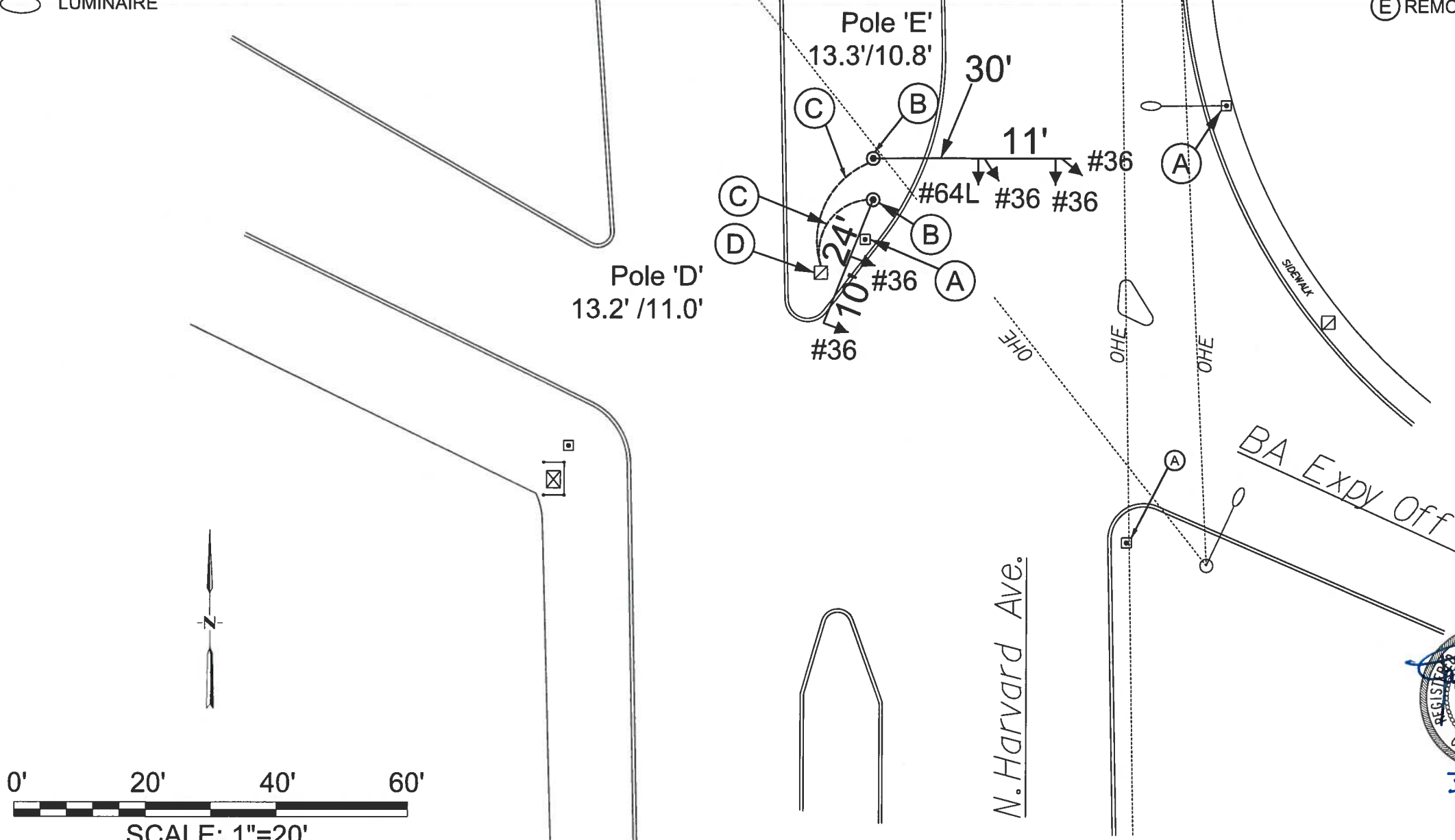
**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM EAST CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR  
(2" / 20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE POLE BASE WITH PULLBOX OR  
INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK












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DESIGN	BLV	OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (BA EXPY & HARVARD AVE. NORTH) PROJECT NO. 23708(06) SHEET NO. 30
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

BA Expy Off Ramp

BA Expy

**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK

Pole 'C'  
2.7' / 22.0'

Pole 'B'  
3.5' / 3.5'

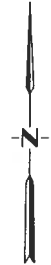
Pole 'C'  
3.0' / 6.1'

Pole 'A'  
2.2' / N/A

N. Harvard Ave.

SIDEWALK

OFF SIDEWALK



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316-17

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10816 EXECUTIVE CENTER DR. STE. 300  
LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (BA EXPY & HARVARD AVE. SOUTH) PROJECT NO. 23708(06) SHEET NO. 31
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

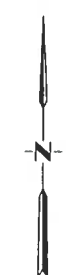
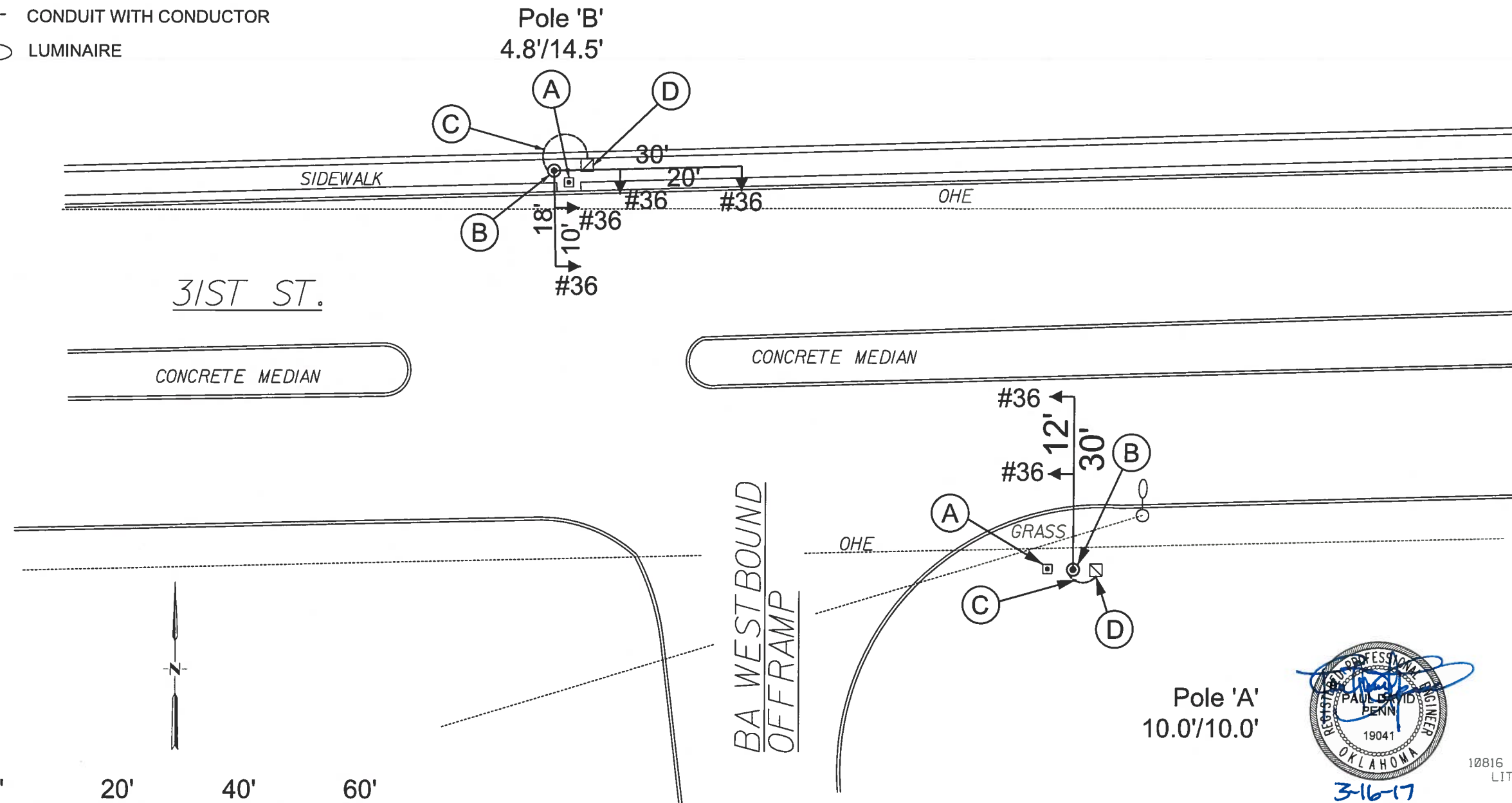
**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR  
(2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK



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 LITTLE ROCK, ARKANSAS 72211



DESIGN	BLV		<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (31st ST. & BA EXPY WESTBOUND) PROJECT NO. 23708(06) SHEET NO. 32
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		

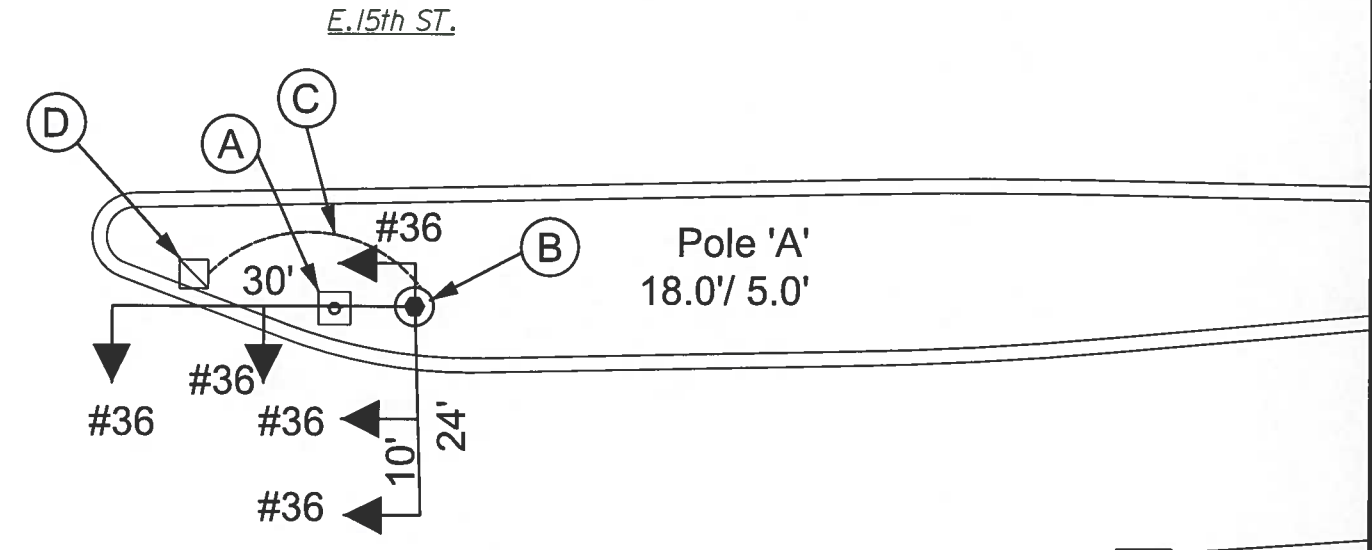
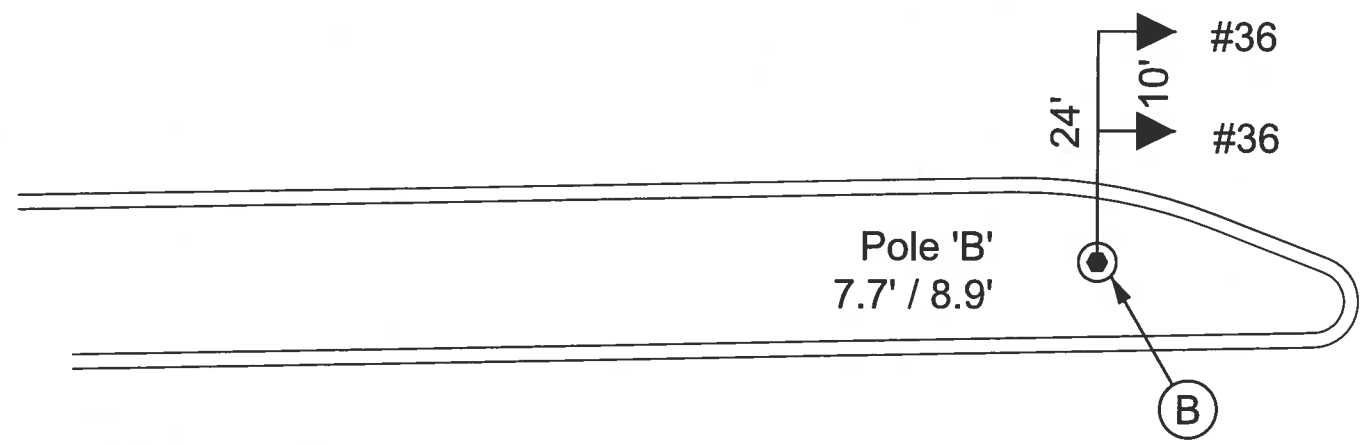
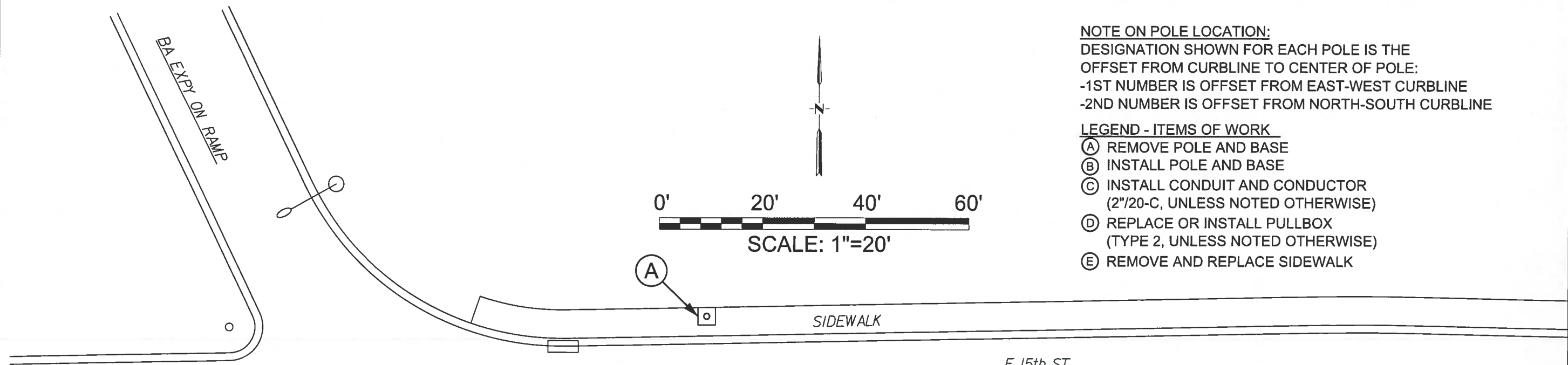


BA EXPY ON RAMP



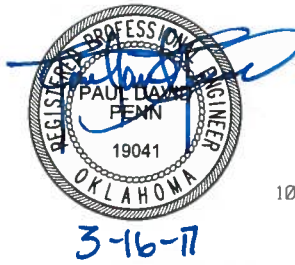
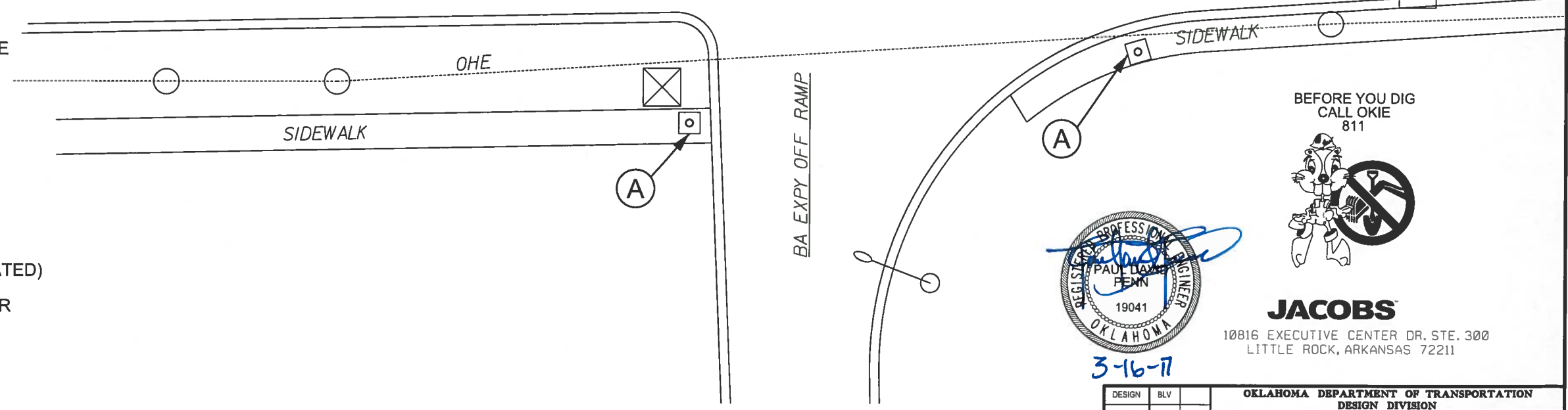
**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

- LEGEND - ITEMS OF WORK**
- (A) REMOVE POLE AND BASE
  - (B) INSTALL POLE AND BASE
  - (C) INSTALL CONDUIT AND CONDUCTOR  
(2"/20-C, UNLESS NOTED OTHERWISE)
  - (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
  - (E) REMOVE AND REPLACE SIDEWALK



**LEGEND - SYMBOLS**










- EXISTING POLE AND BASE
- PROPOSED POLE AND BASE
- TRAFFIC PULLBOX
- SIGNAL CABINET
- FIRE HYDRANT
- UTILITY POLE
- SIGNAL HEAD (TYPE INDICATED)
- CONDUIT WITH CONDUCTOR
- LUMINAIRE



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 LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV		<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (15th ST. & BA EXPY.) PROJECT NO. 23708(06) SHEET NO. 33
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		

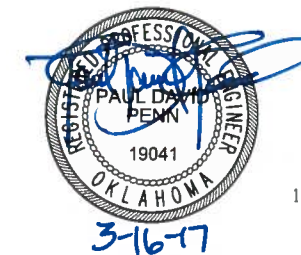
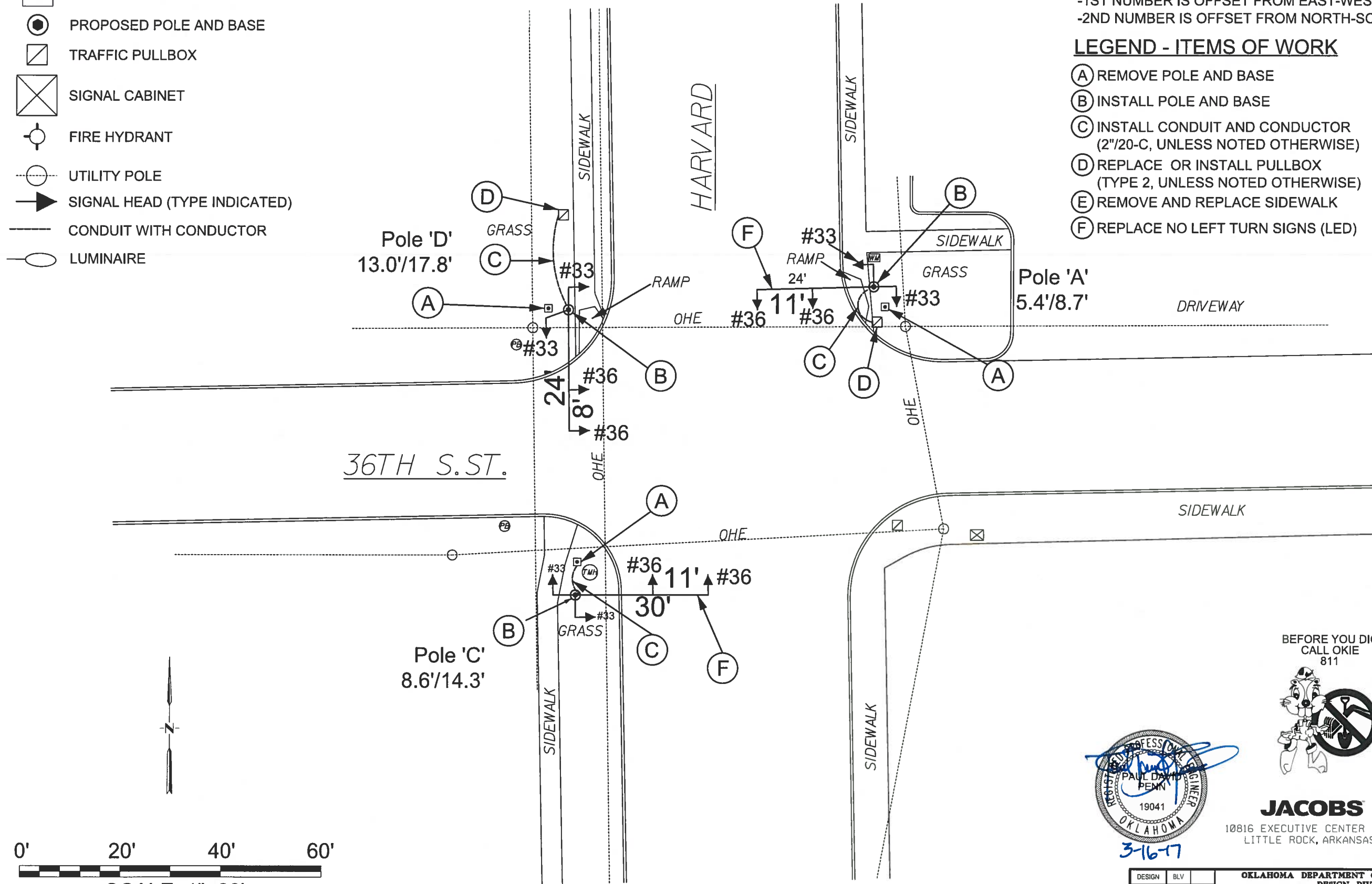
**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR  
(2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK
- (F) REPLACE NO LEFT TURN SIGNS (LED)



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 LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV	OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (36th ST. & HARVARD AVE.) PROJECT NO. 23708(06) SHEET NO. 34
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

**LEGEND - SYMBOLS**

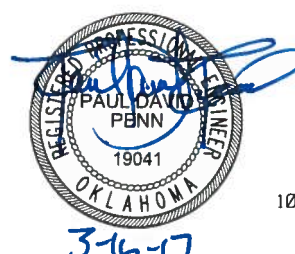
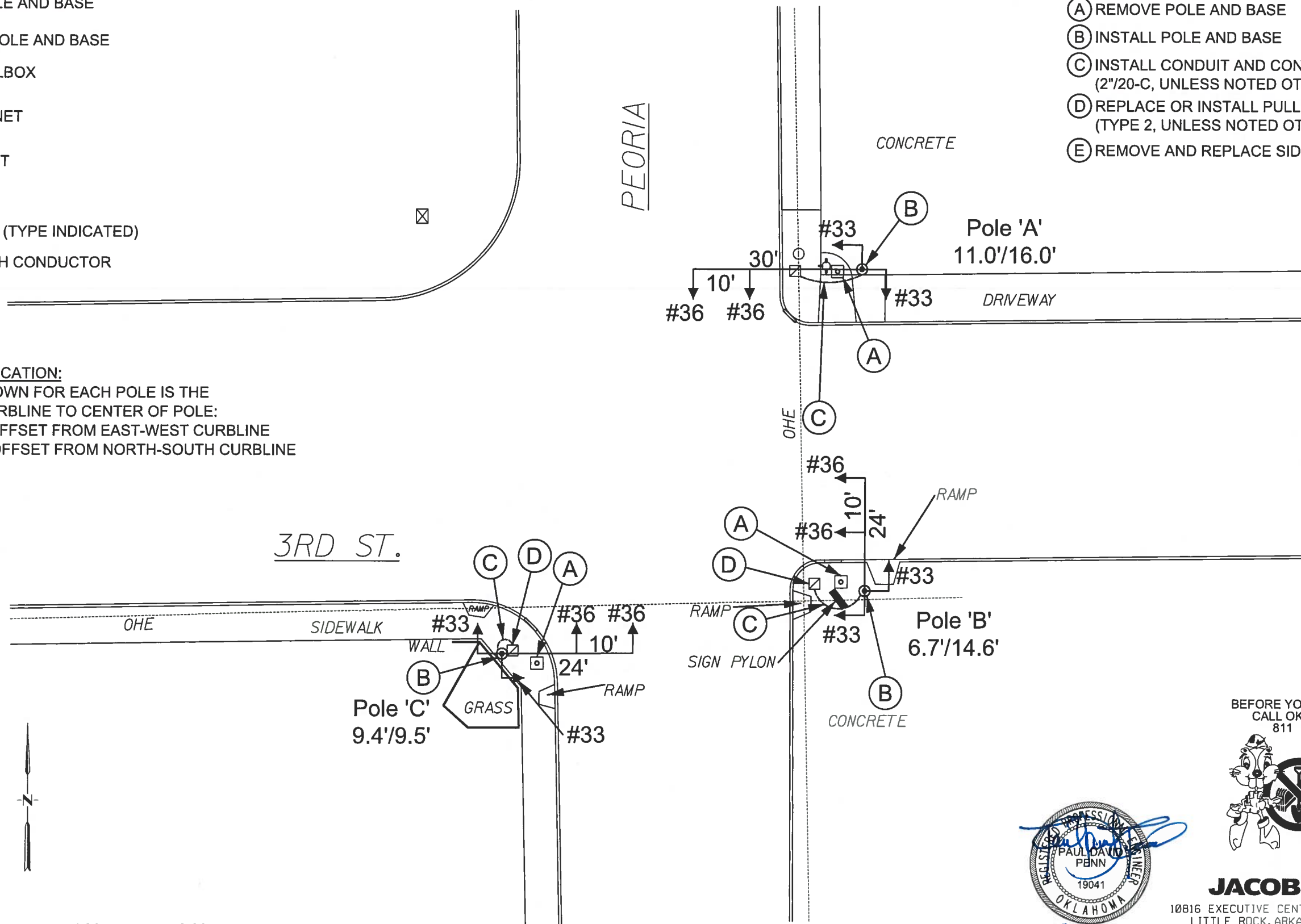
- EXISTING POLE AND BASE
- PROPOSED POLE AND BASE
- TRAFFIC PULLBOX
- SIGNAL CABINET
- FIRE HYDRANT
- UTILITY POLE
- SIGNAL HEAD (TYPE INDICATED)
- CONDUIT WITH CONDUCTOR
- LUMINAIRE
- SIGN

**NOTE ON POLE LOCATION:**

DESIGNATION SHOWN FOR EACH POLE IS THE OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK



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 LITTLE ROCK, ARKANSAS 72211

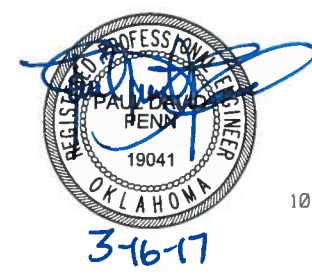
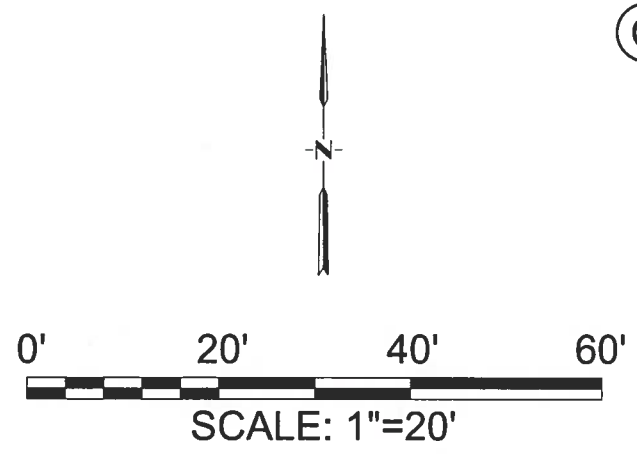
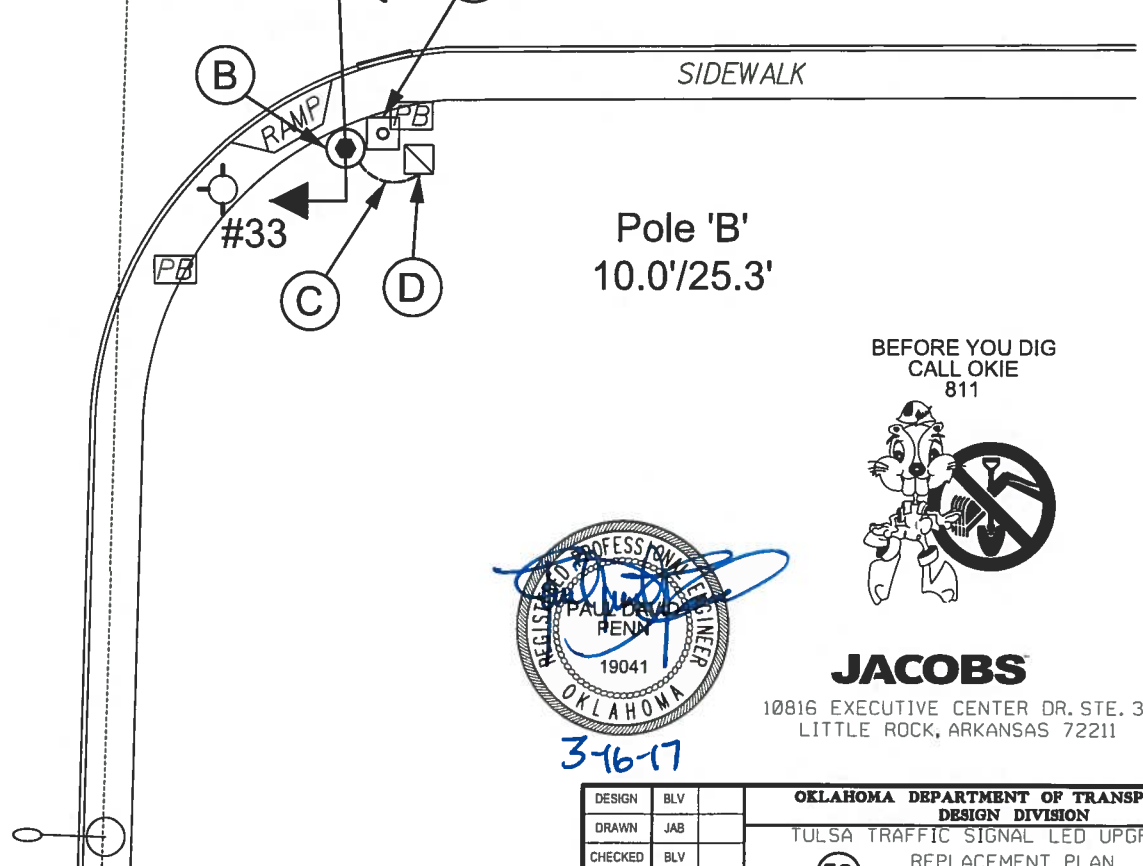
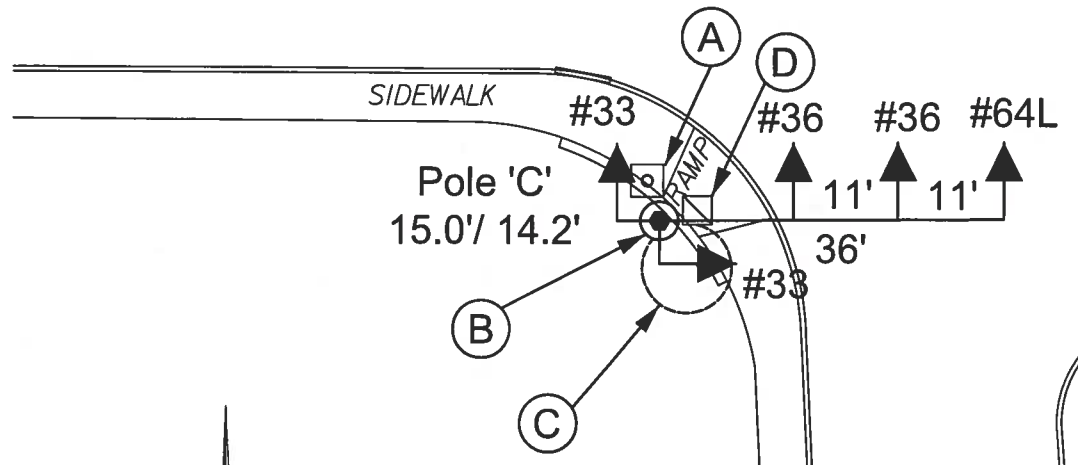
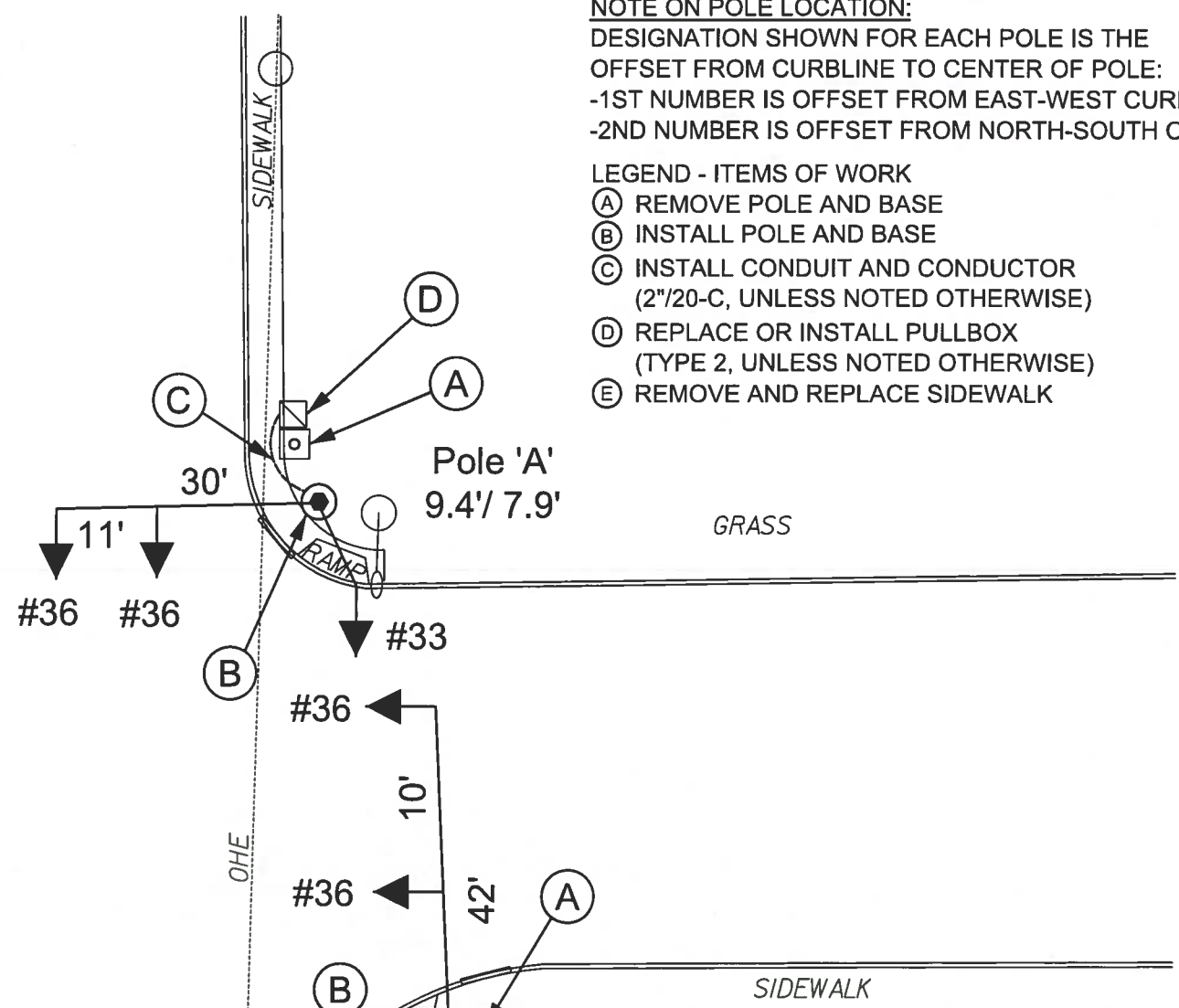
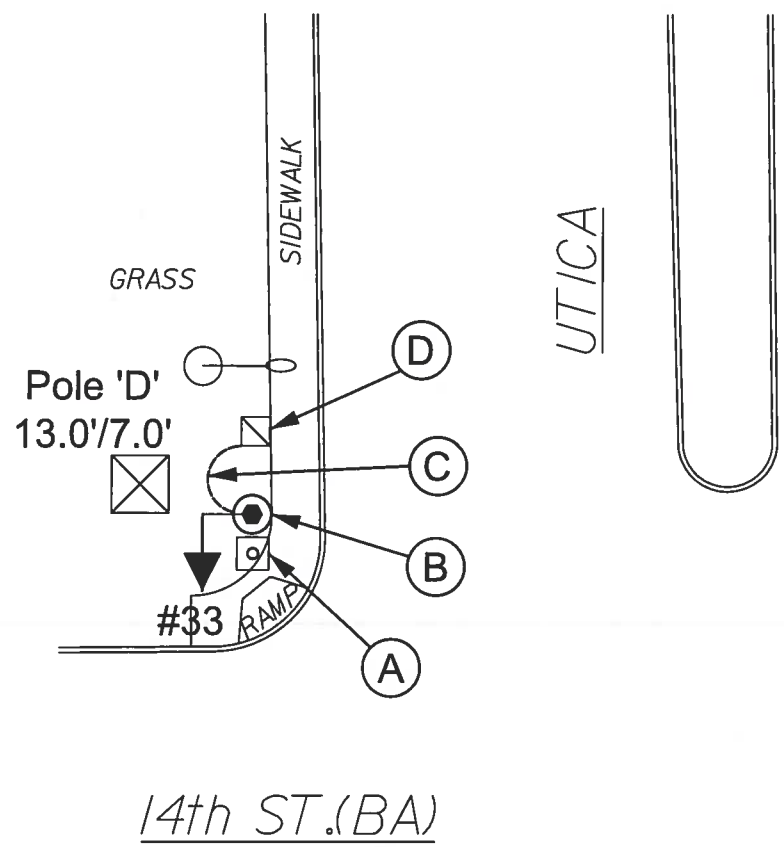
DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (3rd ST. & PEORIA AVE.) PROJECT NO. 23708(06) SHEET NO. 35
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

**LEGEND - SYMBOLS**

- EXISTING POLE AND BASE
- PROPOSED POLE AND BASE
- TRAFFIC PULLBOX
- SIGNAL CABINET
- FIRE HYDRANT
- UTILITY POLE
- SIGNAL HEAD (TYPE INDICATED)
- CONDUIT WITH CONDUCTOR
- LUMINAIRE

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE










- LEGEND - ITEMS OF WORK**
- (A) REMOVE POLE AND BASE
  - (B) INSTALL POLE AND BASE
  - (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
  - (D) REPLACE OR INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)
  - (E) REMOVE AND REPLACE SIDEWALK



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DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (BA EXPY. & SOUTH UTICA AVE.) PROJECT NO. 23708(06) SHEET NO. 36
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

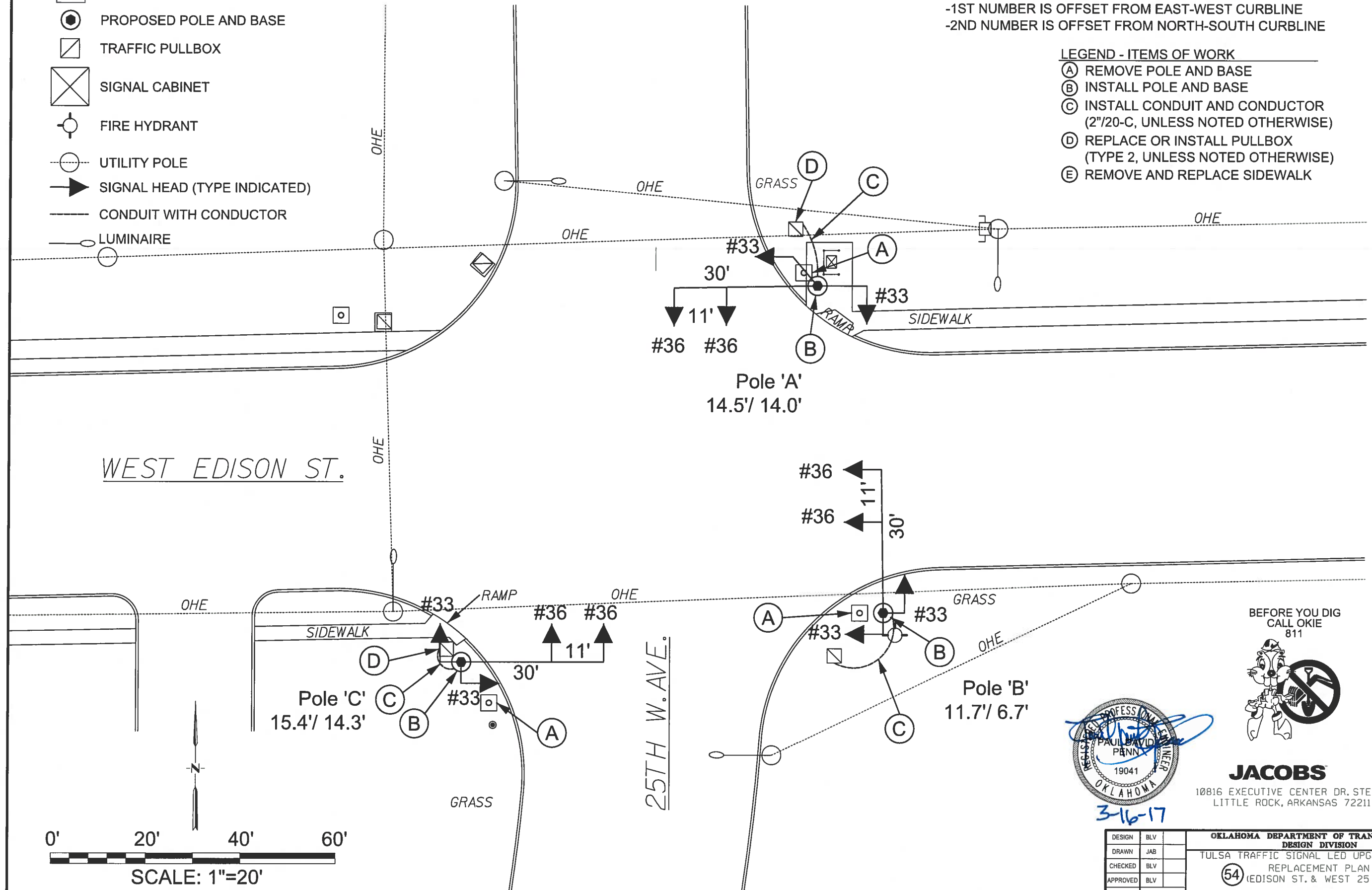
**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR  
(2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK



BEFORE YOU DIG  
 CALL OKIE  
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 LITTLE ROCK, ARKANSAS 72211



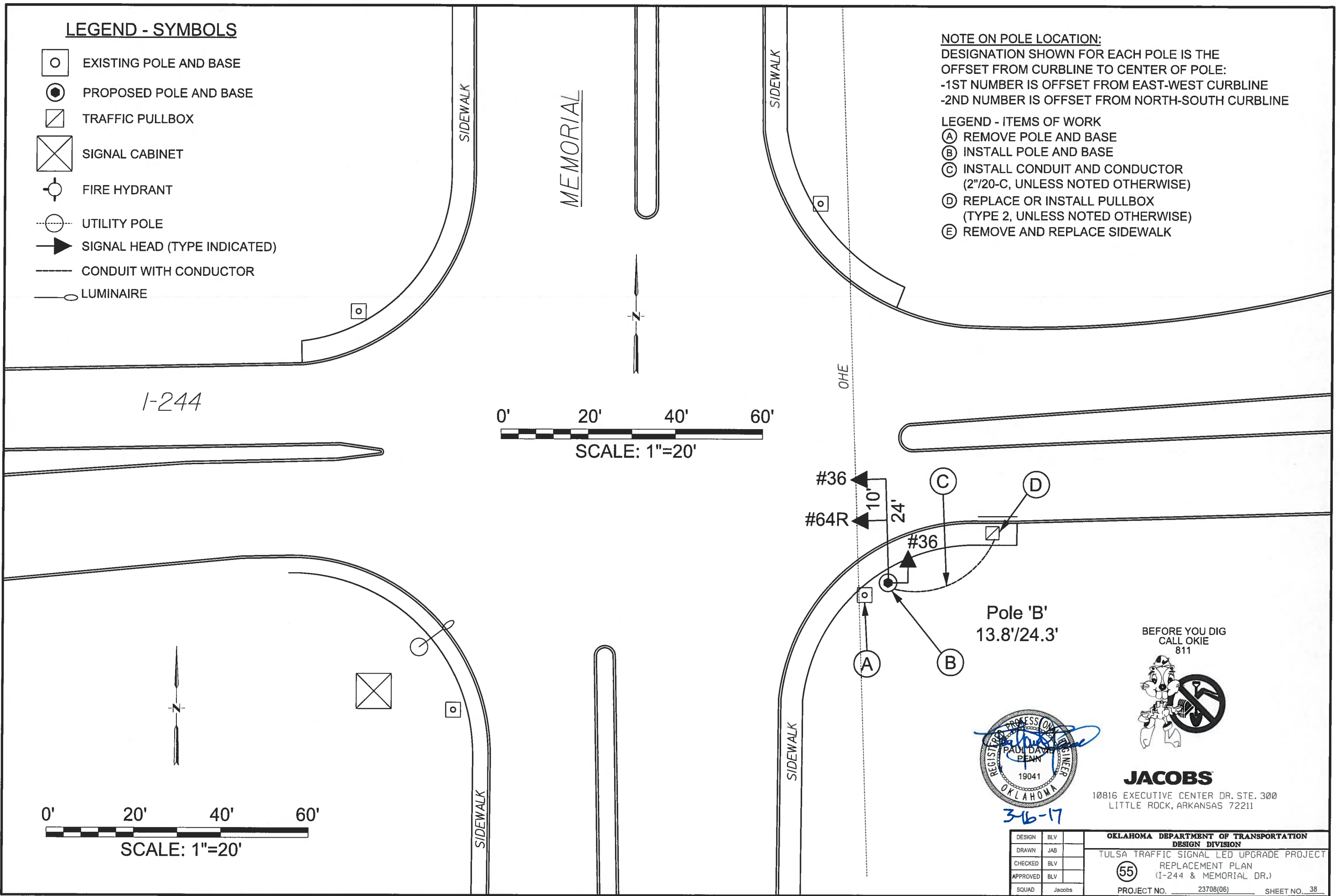
DESIGN	BLV	OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (EDISON ST. & WEST 25 TH AVE.) PROJECT NO. 23708(06) SHEET NO. 37
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

- LEGEND - ITEMS OF WORK**
- (A) REMOVE POLE AND BASE
  - (B) INSTALL POLE AND BASE
  - (C) INSTALL CONDUIT AND CONDUCTOR  
(2"/20-C, UNLESS NOTED OTHERWISE)
  - (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
  - (E) REMOVE AND REPLACE SIDEWALK



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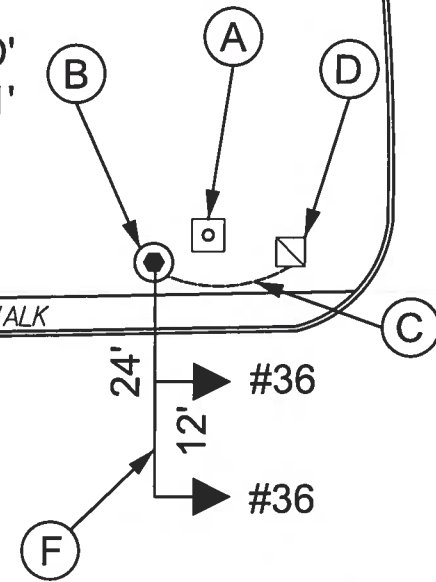


DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (I-244 & MEMORIAL DR.) PROJECT NO. 23708(06) SHEET NO. 38
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

Pole 'D'  
19.5'/8.1'



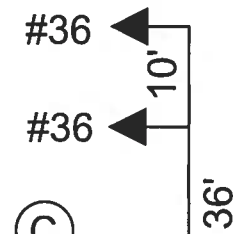
**NOTE ON POLE LOCATION:**

DESIGNATION SHOWN FOR EACH POLE IS THE OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE

**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR (2"/20-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX (TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK
- (F) ADD NO LEFT TURN SIGN

*PINE*

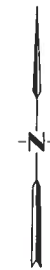


Pole 'B'  
27.8'/11.2'

HWY 11 NB RAMPS

OHE

GRASS

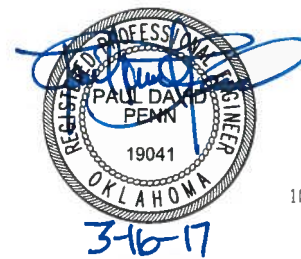


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LITTLE ROCK, ARKANSAS 72211

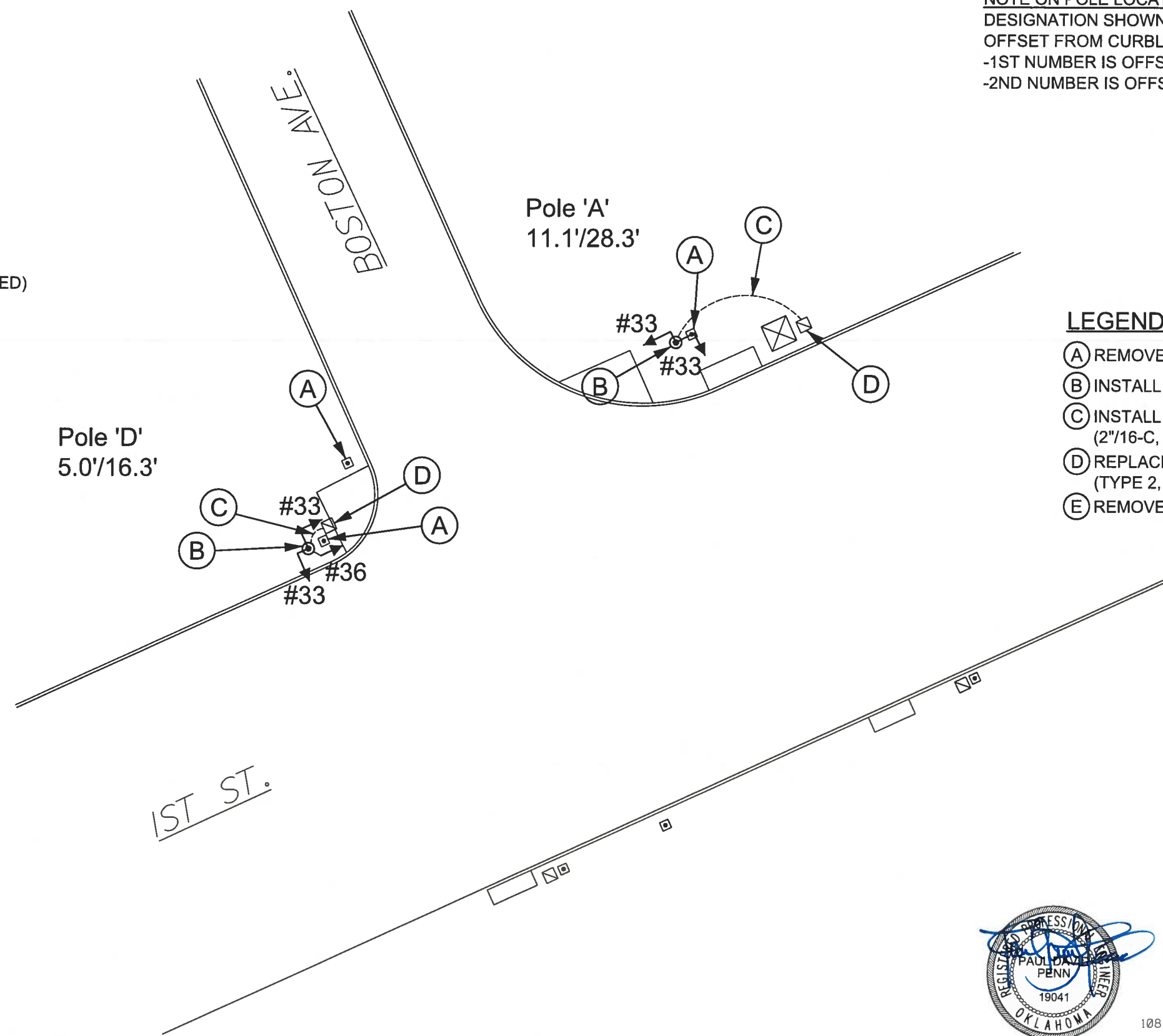


DESIGN	BLV		<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (PINE ST. & HWY. 11 NB RAMPS) PROJECT NO. 23708(06) SHEET NO. 39
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		

**LEGEND - SYMBOLS**

-  EXISTING POLE AND BASE
-  PROPOSED POLE AND BASE
-  TRAFFIC PULLBOX
-  SIGNAL CABINET
-  FIRE HYDRANT
-  UTILITY POLE
-  SIGNAL HEAD (TYPE INDICATED)
-  CONDUIT WITH CONDUCTOR
-  LUMINAIRE

**NOTE ON POLE LOCATION:**  
 DESIGNATION SHOWN FOR EACH POLE IS THE  
 OFFSET FROM CURBLINE TO CENTER OF POLE:  
 -1ST NUMBER IS OFFSET FROM EAST-WEST CURBLINE  
 -2ND NUMBER IS OFFSET FROM NORTH-SOUTH CURBLINE



**LEGEND - ITEMS OF WORK**

- (A) REMOVE POLE AND BASE
- (B) INSTALL POLE AND BASE
- (C) INSTALL CONDUIT AND CONDUCTOR  
(2"/16-C, UNLESS NOTED OTHERWISE)
- (D) REPLACE OR INSTALL PULLBOX  
(TYPE 2, UNLESS NOTED OTHERWISE)
- (E) REMOVE AND REPLACE SIDEWALK

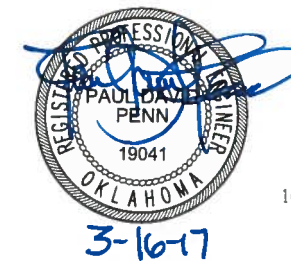


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**JACOBS**

10816 EXECUTIVE CENTER DR. STE. 300  
 LITTLE ROCK, ARKANSAS 72211



DESIGN	BLV		OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION TULSA TRAFFIC SIGNAL LED UPGRADE PROJECT REPLACEMENT PLAN (1st ST. & BOSTON AVE.) PROJECT NO. 23708(06) SHEET NO. 40
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		

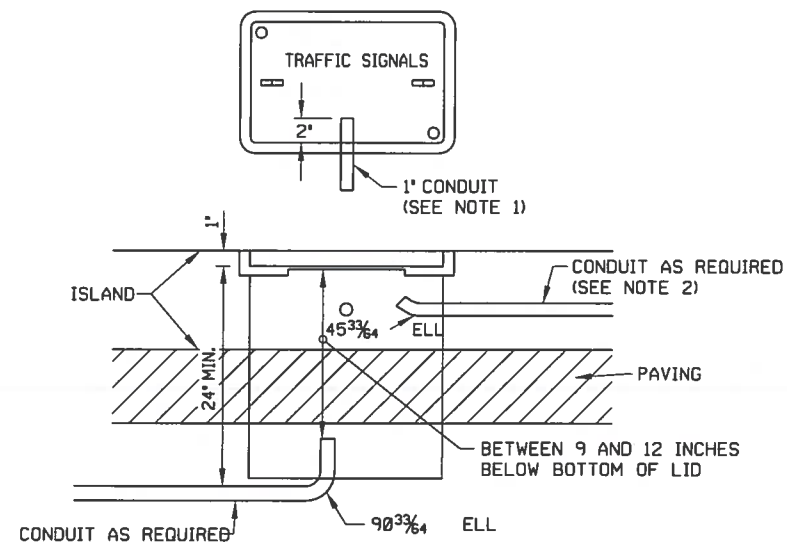


**NOTES:**

1) DRILL OR POUR IN PLACE 1" CONDUIT FOR EACH LOOP DETECTOR SPACED 2 INCHES APART FOR LOOP WIRE. BACKFILL THE CONDUIT WITH ASPHALTIC JOINT SEALER (ONLY). COST TO BE INCLUDED IN LOOP WIRE. SEE COT SPECIFICATION 604 AND STANDARD DRAWINGS 604A AND B FOR MORE INFORMATION.

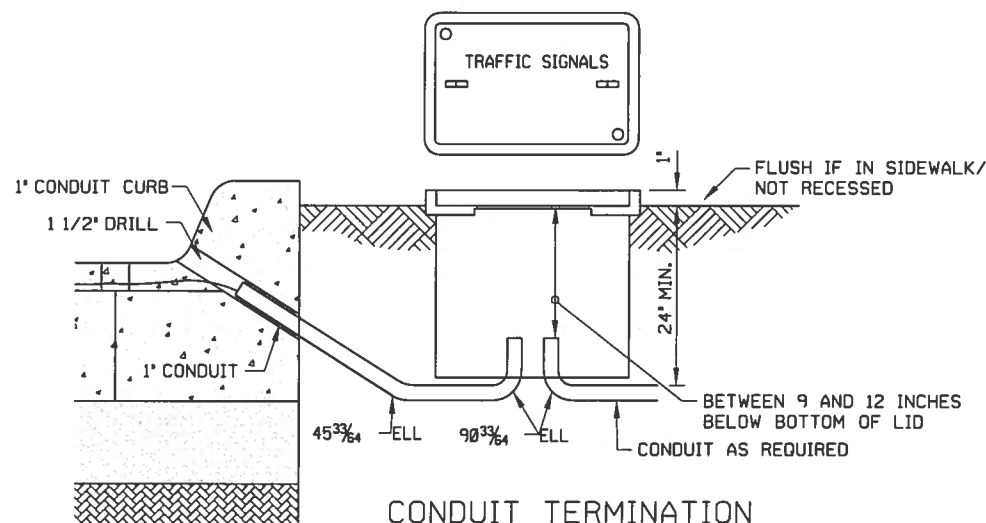
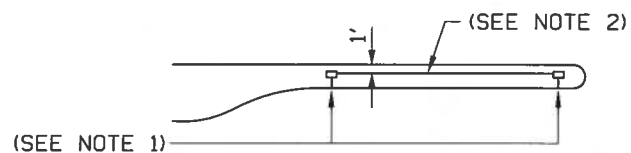
2) IF CONDUIT IS INSTALLED ON TOP OF SLAB SURFACE, IT SHALL BE ANCHORED OR STAKED EVERY 8 FEET TO PREVENT RISING (FLOATING) DURING ISLAND FORMING. CONDUITS SHALL BE INSTALLED 1' FROM ONE EDGE OF ISLAND OR NOT CENTERED IN THE ISLAND.

3) ALL SCHEDULE 40 PVC CONDUIT ATTACHED TO SCHEDULE 40 HDPE BORED CONDUIT SHALL BE ATTACHED BY MEANS OF AN E-LOC COUPLING OR APPROVED EQUAL, SUITED FOR THIS PURPOSE. NORMAL PRIMER AND PVC CEMENT SHALL NOT BE USED.



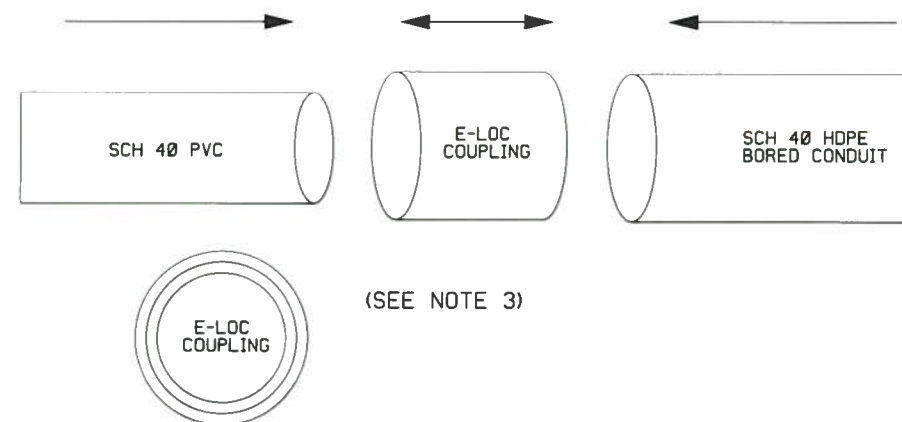
**CONDUIT TERMINATION  
(IN ISLAND)**

ALL CONDUIT INSTALLATION SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC)



**CONDUIT TERMINATION**

EXAMPLE SHOWN IS FOR LOOP WIRE INSTALLATION FOR MORE INFORMATION SEE COT STANDARD DRAWINGS 604 A AND B



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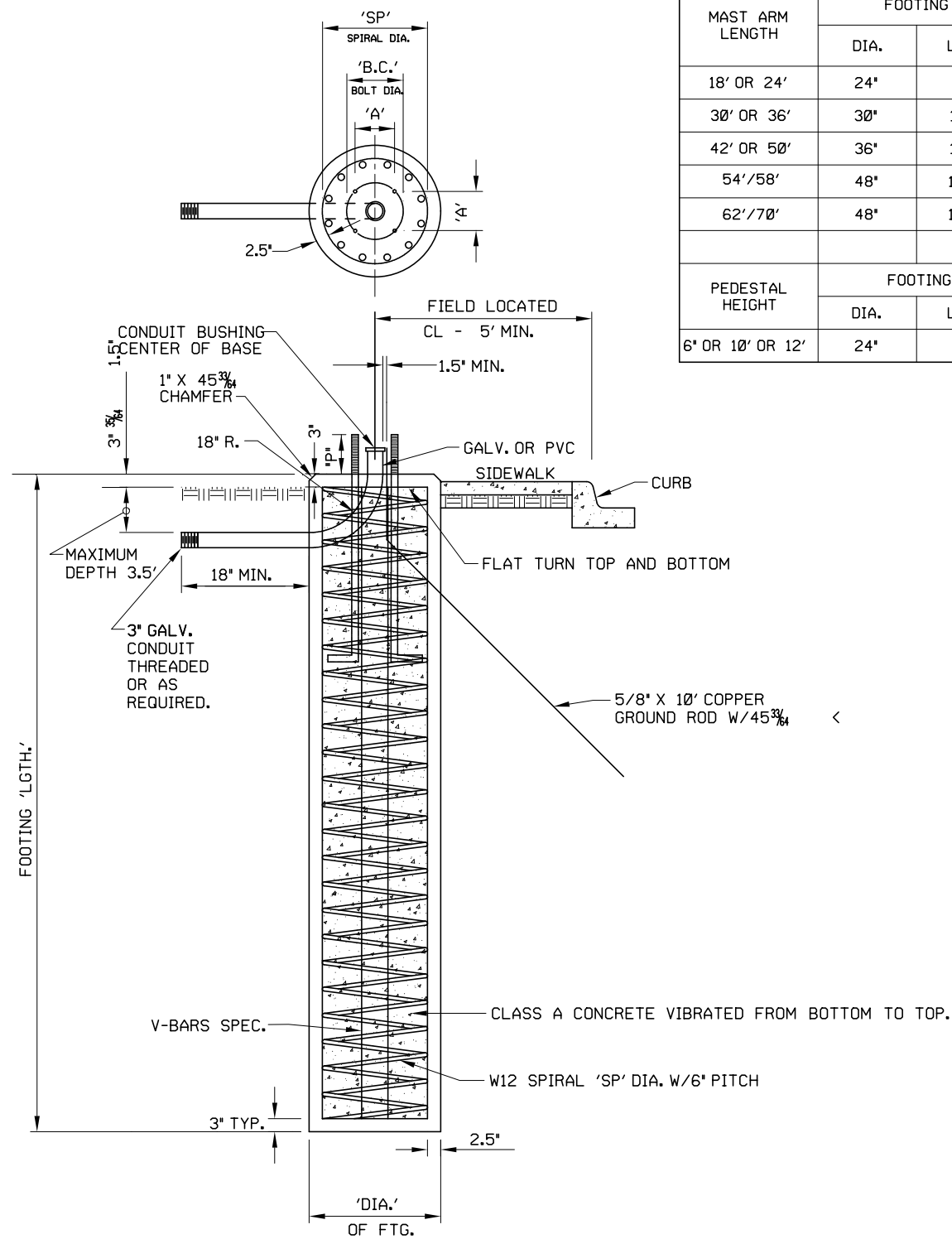
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DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION</b>  CONDUIT INSTALLATION    STD. 602  PROJECT NO. 23708(06)    SHEET NO. 41
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

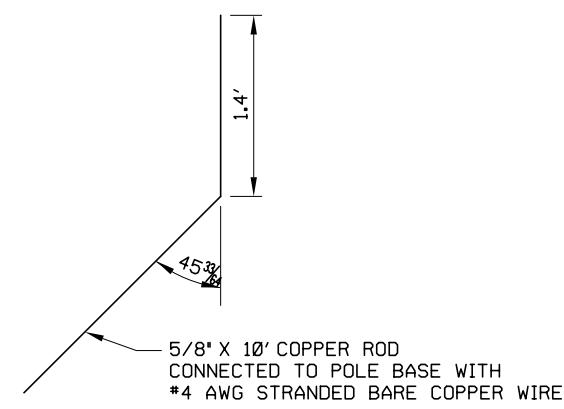
## MAST ARM BASE AND PEDESTAL BASE

MAST ARM LENGTH	FOOTING		RE-BAR			ANCHOR BOLTS			TEMPLATE				FOOTING DESIGN NO.
	DIA.	LGTH.	'SP'	V-BARS	SPIRAL	DIA.	LGTH.	'P'	B.C.	SQ.#1	'A'	B. HOLE	
18' OR 24'	24"	9.0'	20"	6-#8	W-12	1.5"	54"	6.5"	16.5"	17"	11-11/16"	1.625"	S-18/24
30' OR 36'	30"	10.5'	25"	9-#8	W-12	1.5"	54"	6.5"	18.5"	19"	13-1/16"	1.625"	S-30/36
42' OR 50'	36"	12.0'	31"	10-#9	W-12	1.75"	84"	7.5"	20.5"	21"	14-1/2"	1.875"	S-42/50
54' /58'	48"	18.5'	42"	15-#10	W-20	1.75"	84"	9"	22.5"	23"	15-15/16"	2.00"	S-54/58
62' /70'	48"	18.5'	42"	15-#10	W-20	2.00"	90"	9"	26"	27"	18-3/8"	2.25"	S-62/70
PEDESTAL HEIGHT	FOOTING		RE-BAR				REINFORCING STEEL	STRUCTURAL CONC.	ANCHOR BOLTS		FOOTING DESIGN NO.		
	DIA.	LGTH.	'SP'	V-BARS	W-20	LGTH.			W12 SPIRAL LGTH.	DIA.		LGTH.	
6' OR 10' OR 12'	24"	36"	20"	6-#8	W-20	32"	40 FEET	27 LBS.	0.35 C.Y.	3/4"	8"	F-1	



**NOTE:**

1. MIN. SIZE OF 1/2" STEEL TEMPLATE WITH 6" MIN. CENTER HOLE OR APPROVED EQUAL.



GROUND ROD DETAIL

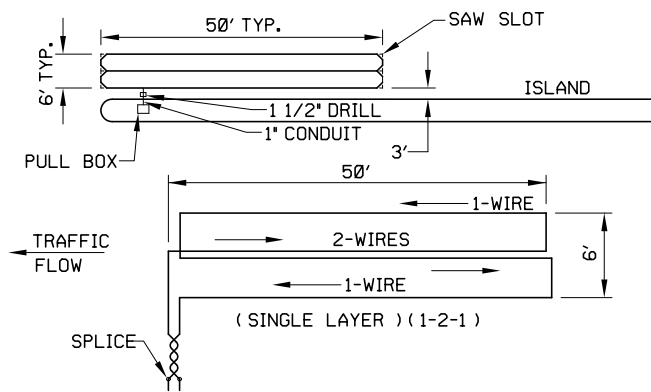
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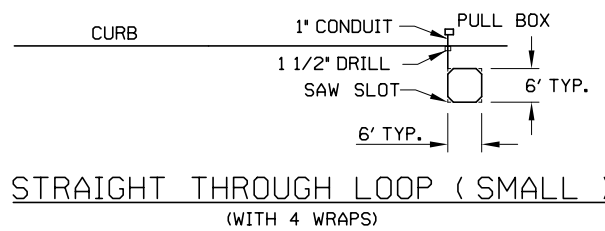
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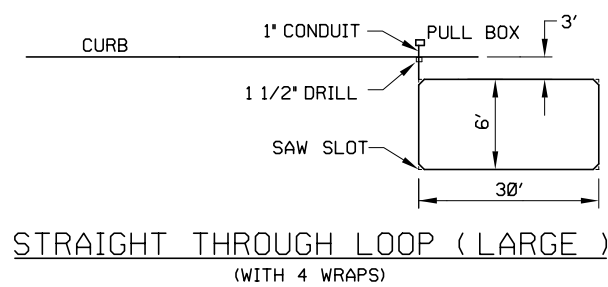
DESIGN	BLV		<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION</b>			
DRAWN	JAB		SIGNAL POLE FOOTING DETAILS    STD. 603			
CHECKED	BLV					
APPROVED	BLV					
SQUAD	Jacobs		PROJECT NO. 23708(06)    SHEET NO. 42			



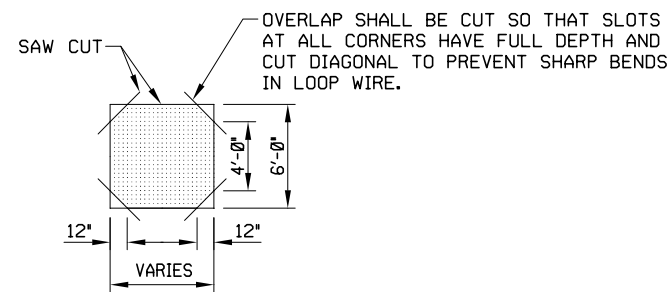
LEFT TURN QUADRUPOLE LOOP  
WINDING INSTRUCTIONS



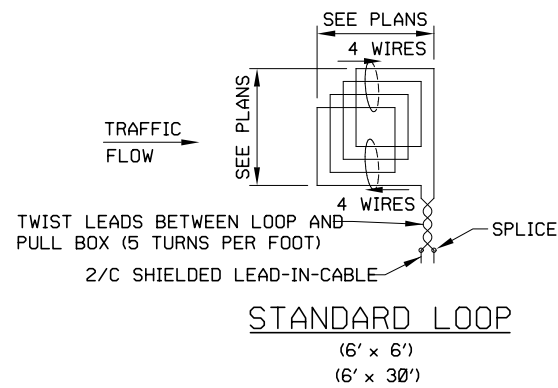
STRAIGHT THROUGH LOOP (SMALL)  
(WITH 4 WRAPS)



STRAIGHT THROUGH LOOP (LARGE)  
(WITH 4 WRAPS)



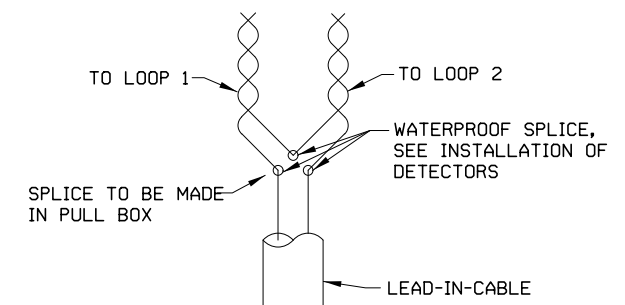
ALL SAW CUT CORNERS - DIAGRAM



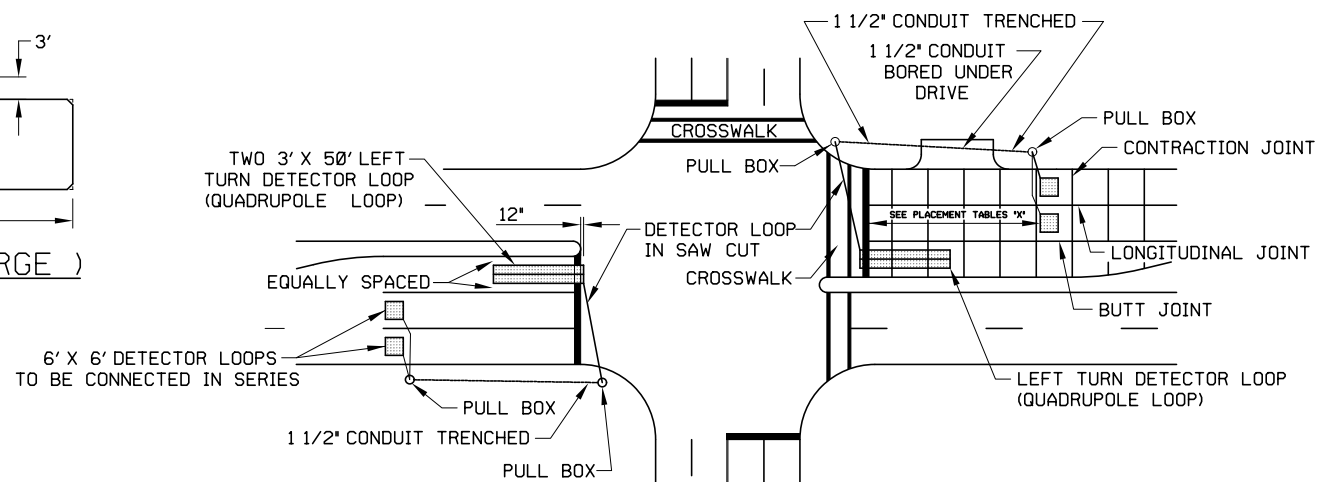
STANDARD LOOP  
(6' x 6')  
(6' x 30')

SAW CUT DEPTH CHART (IN.)					
NUMBER OF WIRES	1-2	3	4	5	6
CONCRETE	1 1/4	1 3/4	2	2 1/2	2 3/4
ASPHALT	1 3/4	2 1/4	2 1/2	3	3 1/4

PLACEMENT TABLE	
DESIGN SPEED MPH	DISTANCE 'X' FT.
30	220
35	256
40	293
45	330



TYPICAL LOOP DETECTOR WIRE  
CONNECTION IN SERIES



TYPICAL DETECTOR WIRE AND LOOP PLACEMENT

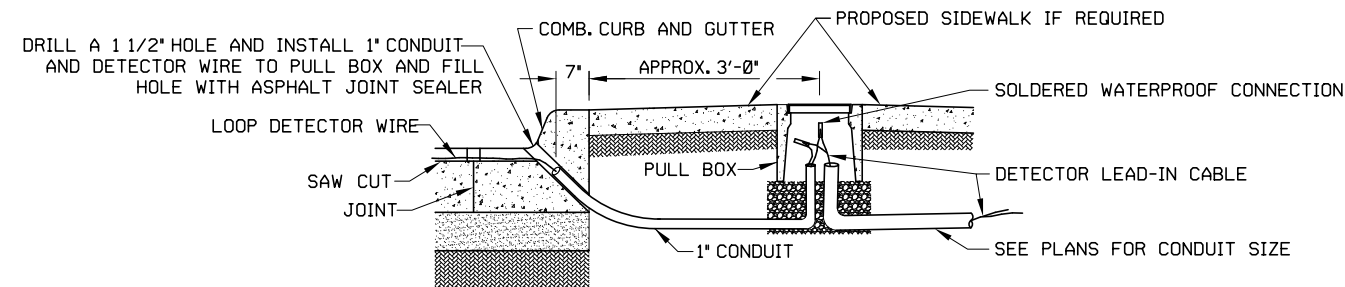
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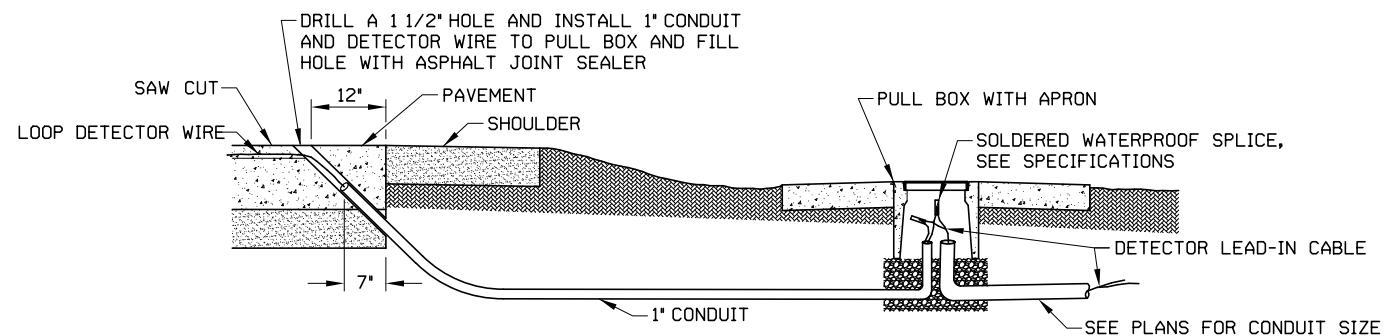
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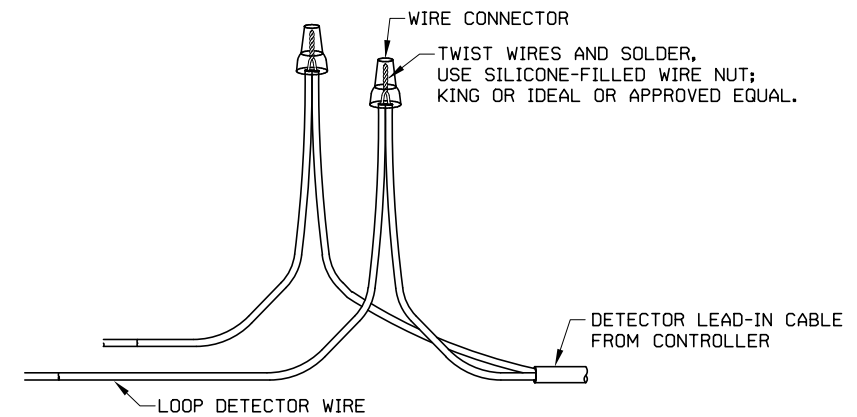
DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION</b>
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	INSTALLATION OF DETECTORS    STD. 604A PROJECT NO. 23708(06)    SHEET NO. 43



SECTION VIEW OF DETECTOR WIRE THROUGH EXISTING CURB TO PULL BOX



SECTION VIEW OF DETECTOR WIRE THROUGH PAVEMENT TO PULL BOX



LOOP DETECTOR WIRE CONNECTION DETAIL

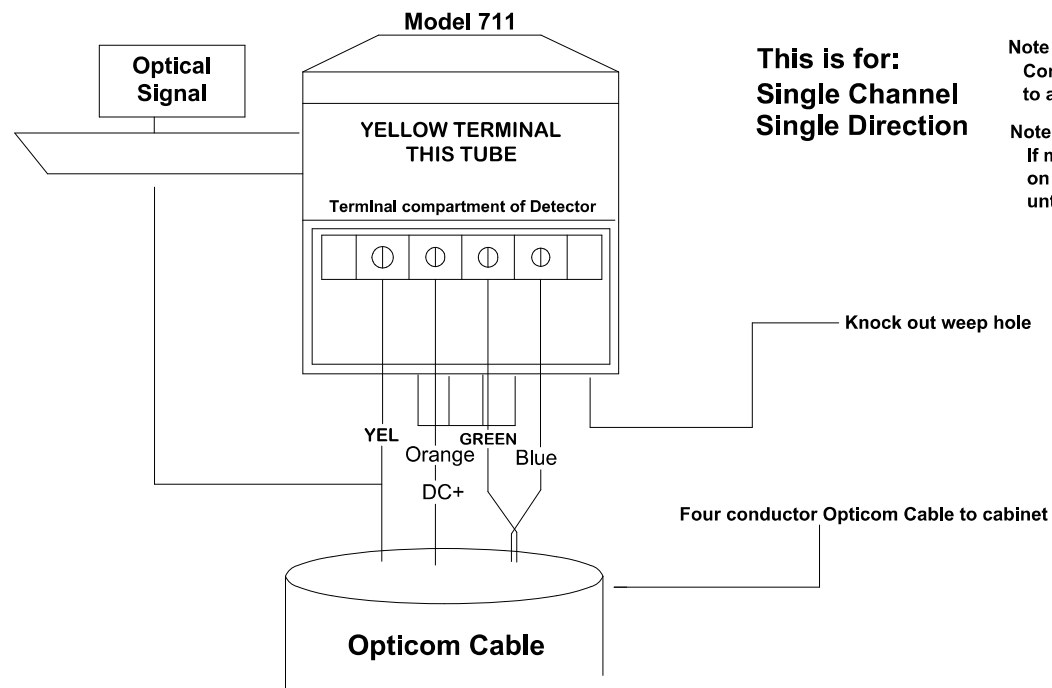
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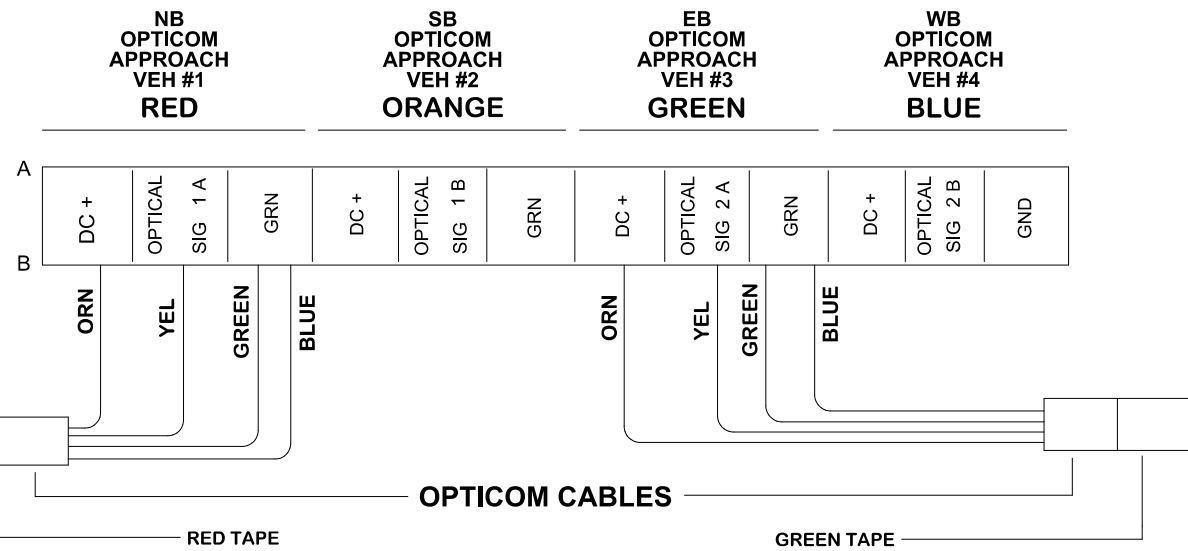
DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION</b>  DETECTOR WIRE INSTALLATION STD. 604B  PROJECT NO. 23708(06) SHEET NO. 44
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	



This is for:  
Single Channel  
Single Direction

- Note 1 -  
Connect cable power ground to earth ground  
to allow dissipation of static charges on cable.
- Note 2 -  
If mounted and not hooked up, strip insulation  
on each cable and connect to earth ground  
until installation can be complete.

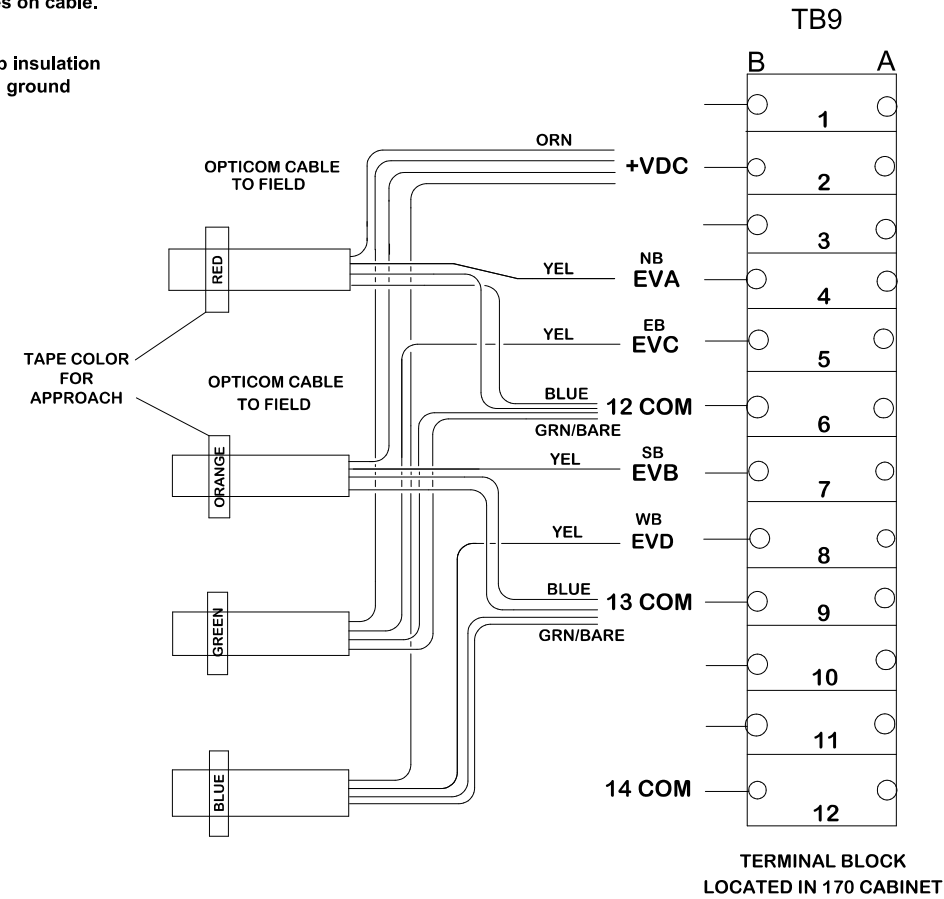
**Opticom Detector Termination Panel**



**Single Channel Cabinet connections  
Single Direction**

Connect Yellow wire to appropriate Optical Signal Terminal

**OPTICOM CABLES  
SINGLE CHANNEL 170 CABINET CONNECTIONS  
SINGLE DIRECTION**



TERMINAL BLOCK  
LOCATED IN 170 CABINET

**NOTE:**  
THE CONTROLLER INPUTS SHALL BE FIELD MODIFIED  
AT THE BACK OF THE INPUT FILE TO WHERE:  
EVA = NB APPROACH    EVB=SB APPROACH  
EVC = EB APPROACH    EVD=WB APPROACH

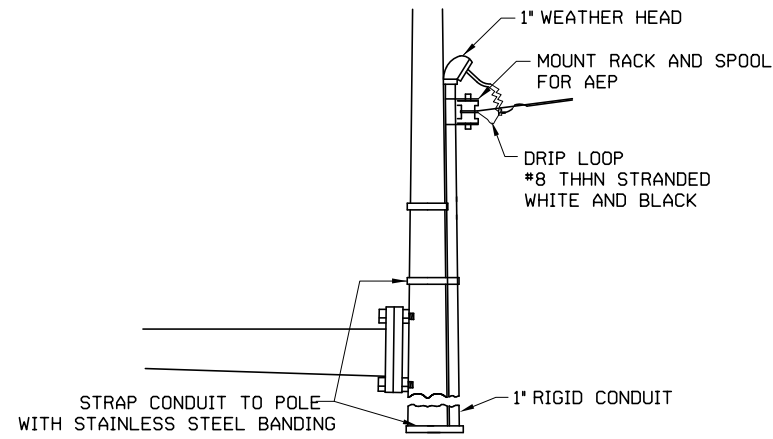
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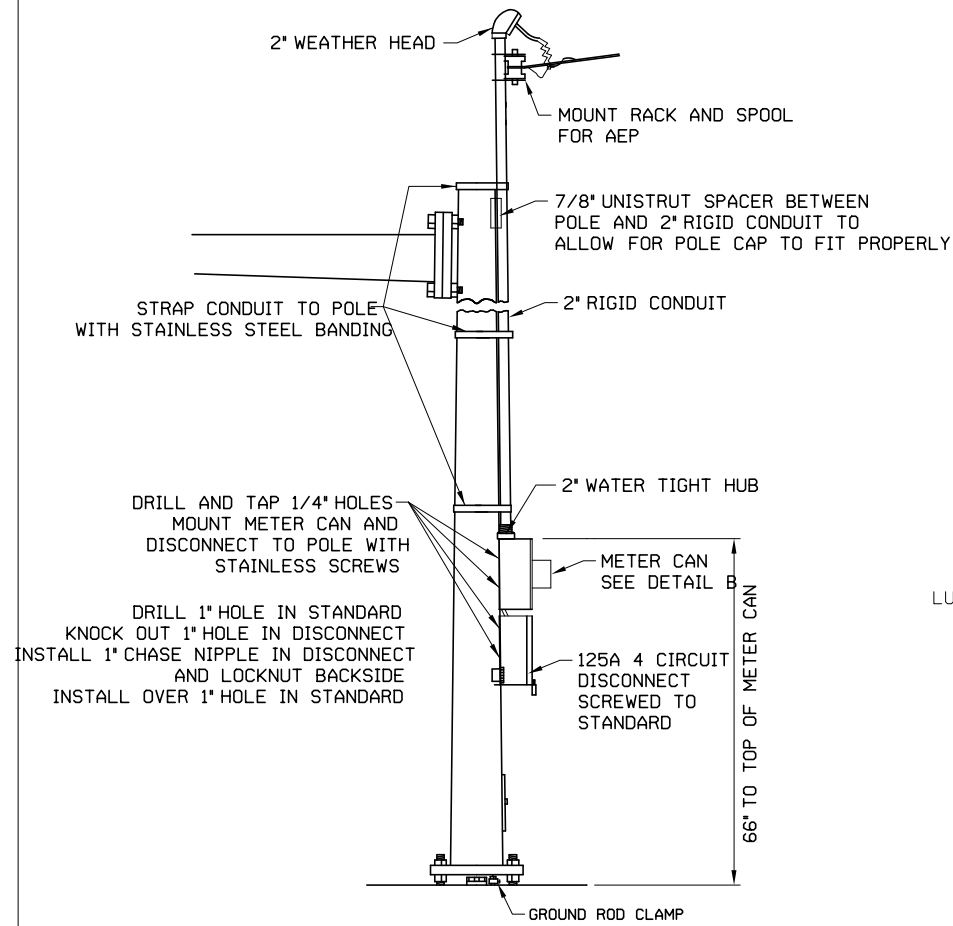
**JACOBS**

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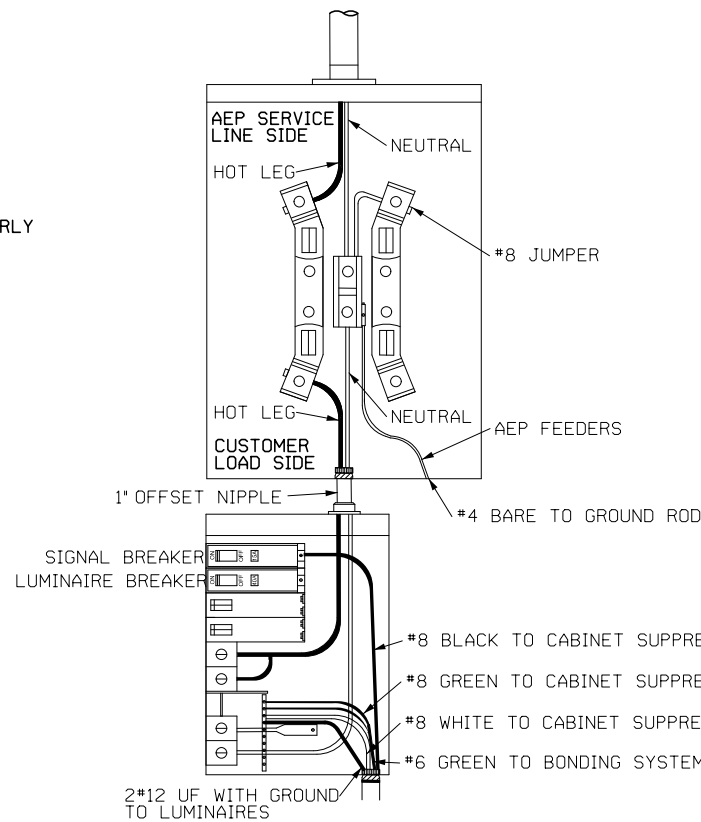
DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION</b>  EMERGENCY PRE-EMPTION DETAIL    STD. 606  PROJECT NO. 23708(06)    SHEET NO. 45
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	



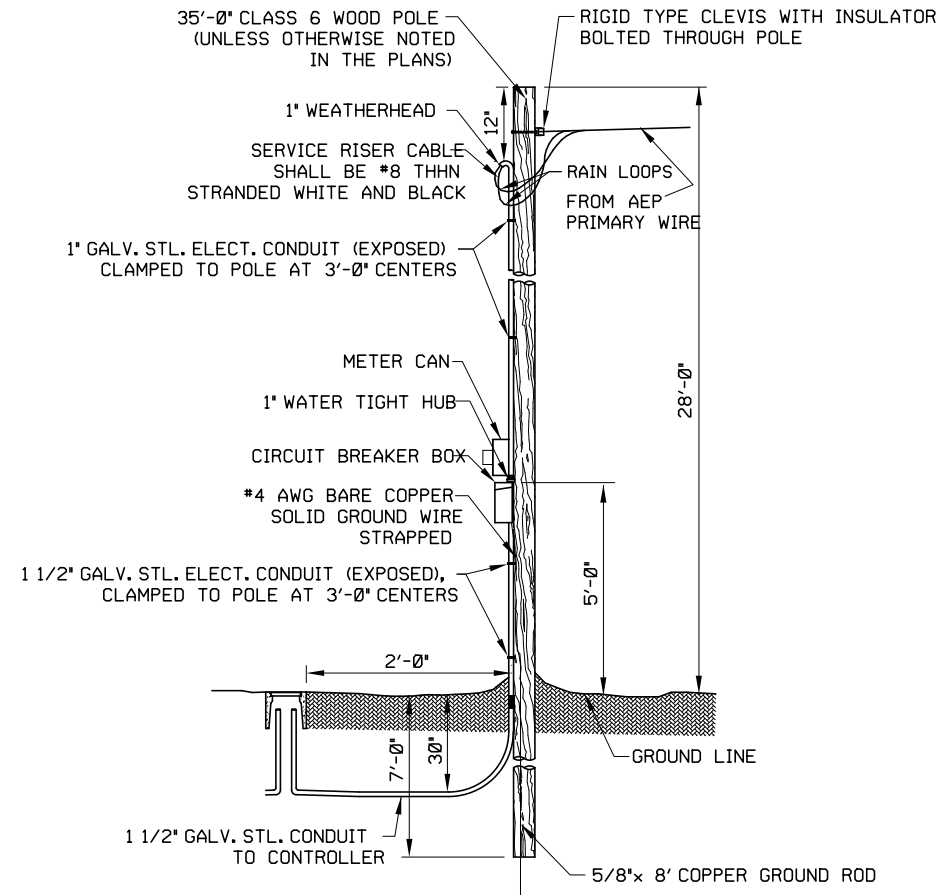
**SERVICE TO SIGNAL STANDARD WITH LUMINAIRE**



**SERVICE TO SIGNAL STANDARD**



**METER AND DISCONNECT WIRING**



**OVERHEAD SERVICE TO SERVICE POLE**

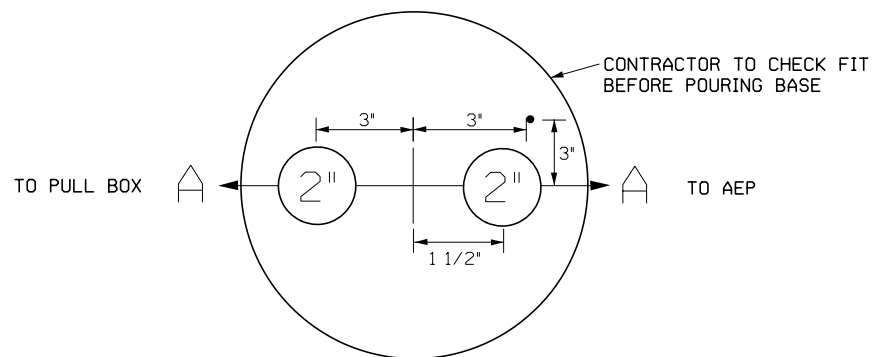
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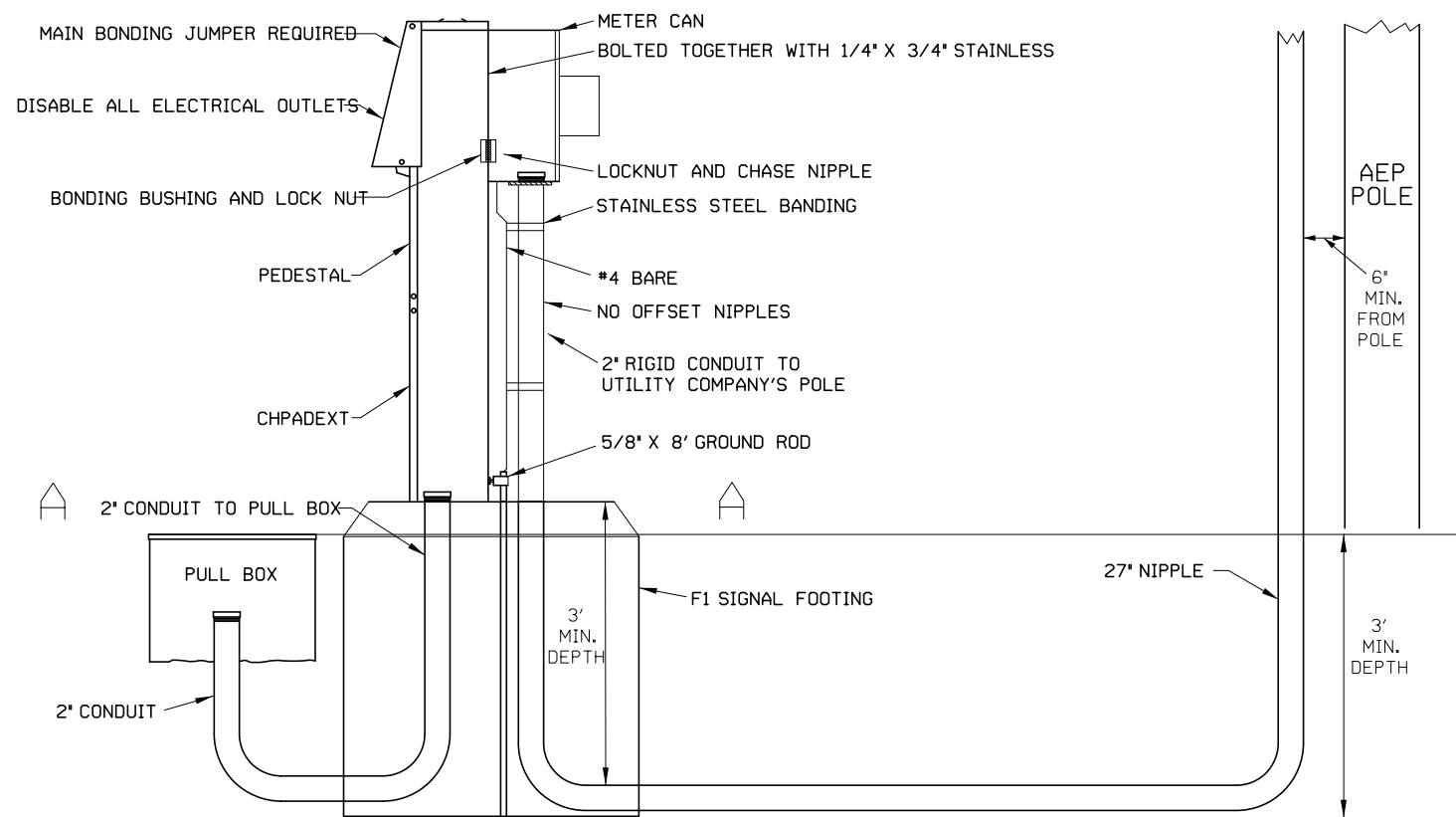
**JACOBS**

10816 EXECUTIVE CENTER DR. STE. 300  
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DESIGN	BLV		<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION</b>  <b>TRAFFIC SIGNAL SERVICE POLE AND SERVICE SIGNAL STANDARD STD. 607A</b>  PROJECT NO. 23708(06) SHEET NO. 46
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		



**PEDESTAL SERVICE INSTALLATION - SECTION A-A**



**PEDESTAL SERVICE INSTALLATION**  
CUTLER HAMMER CHU4N7NP, CHPADEXT

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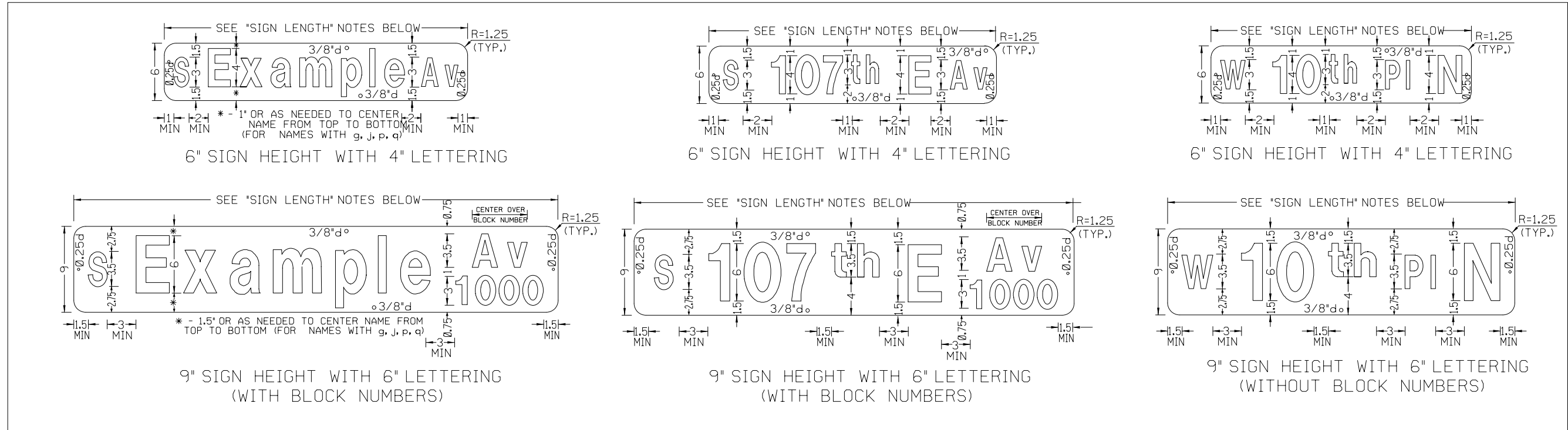


**JACOBS**

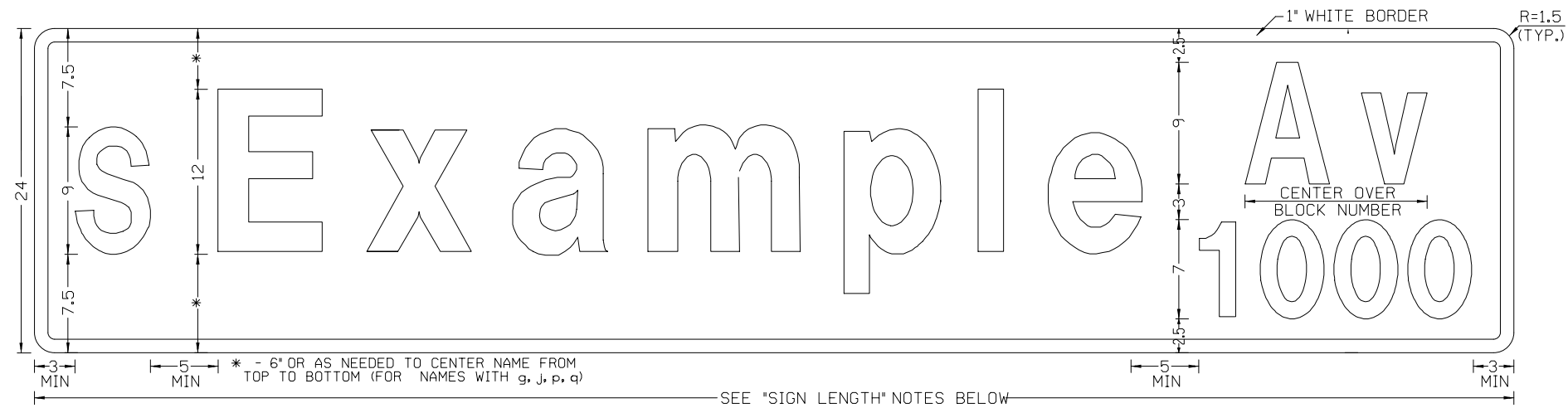
10816 EXECUTIVE CENTER DR. STE. 300  
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DESIGN	BLV		<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION</b>
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		
			TRAFFIC SIGNAL PEDESTAL SERVICE STD. 607B
			PROJECT NO. 23708(06) SHEET NO. 47

# GROUND SIGNS



OVERHEAD SIGN



24" SIGN HEIGHT WITH 12" LETTERING  
(BLOCK NUMBERS REQUIRED)

**NOTES:**

- 1) THE EXAMPLES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. ACTUAL STREET NAMES SHALL MATCH THE OFFICIAL STREET NAME..
- 2) FONT SHALL BE SERIES C, STANDARD HIGHWAY.
- 3) DIMENSIONS AND MINIMUMS ARE PROVIDED FOR GENERAL GUIDANCE. EACH SIGN SHALL BE CUSTOM FORMATTED AS NEEDED TO MAINTAIN A CONSISTENT AND BALANCED APPEARANCE. ADJUSTMENTS SHALL BE KEPT TO THE MINIMUM NECESSARY.
- 4) ALL DIMENSIONS SHOWN ARE IN INCHES
- 5) BOLT HOLES SHALL BE CENTERED ON SIGN, 1/2" O.C. FROM EDGE

**SIGN LENGTH:**

- 1) SIGN LENGTH SHALL BE AS NEEDED TO MEET LETTERING WIDTHS AND MINIMUM SPACINGS SHOWN.
- 2) ROUND UP SIGN LENGTH TO NEAREST 6" INCREMENT (48" MAXIMUM FOR GROUND-MOUNT SIGNS).
- 3) EXTRA SPACING TO BE EVENLY DIVIDED AMONG MINIMUM SPACINGS SHOWN.

**COLOR LEGEND:**

PUBLIC STREETS: WHITE LETTERING ON GREEN BACKGROUND  
PRIVATE STREETS: WHITE LETTERING ON BLACK BACKGROUND

REVISION

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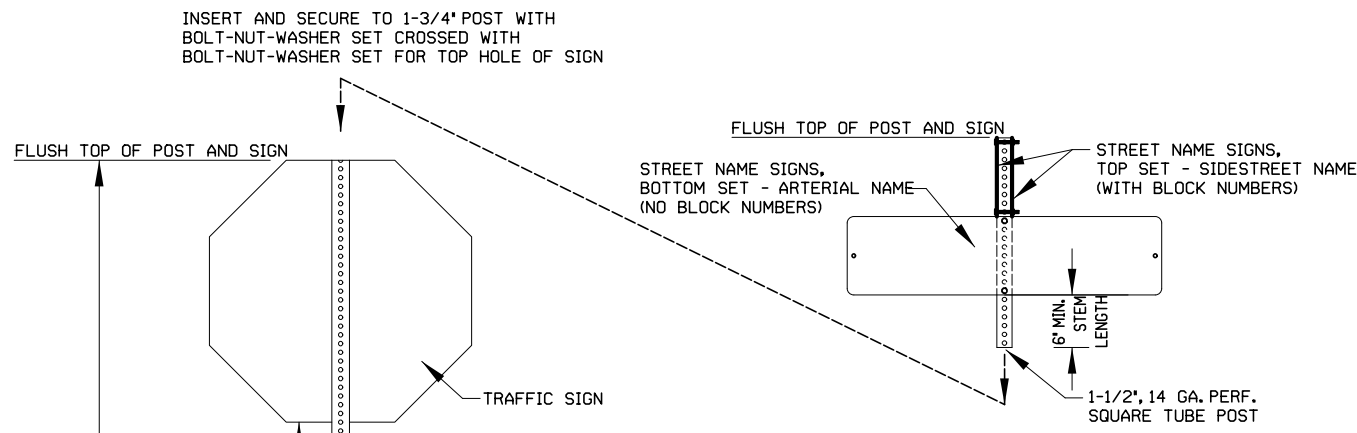


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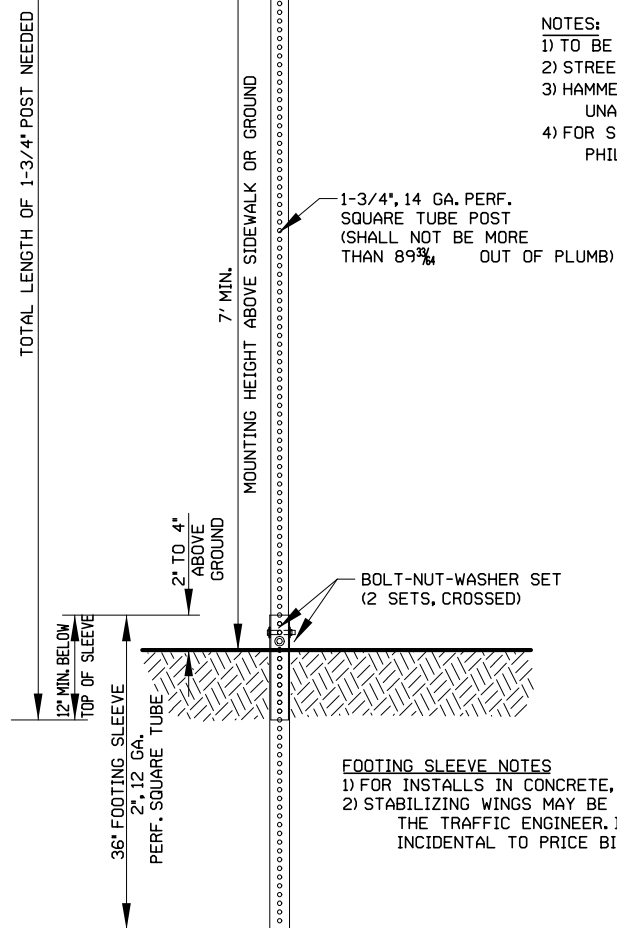
DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION</b>
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	
STREET NAME SIGNS		608A
PROJECT NO. 23708(06)		SHEET NO. 48





**STREET NAME SIGN INSERT DETAIL (WHERE REQUIRED)**

- NOTES:  
 1) TO BE USED FOR ALL STREET NAME SIGN INSTALLATIONS, WITH OR WITHOUT OTHER TRAFFIC SIGNS.  
 2) STREET NAME SIGNS SHALL NOT BE ATTACHED DIRECTLY TO 1-3/4" POST.  
 3) HAMMER-BEND ALL BOLTS AFTER INSTALLATION (EXCEPT FOOTING SLEEVE) TO PREVENT UNAUTHORIZED REMOVAL OF SIGNS AND INSERT.  
 4) FOR SIGN LENGTHS 30" AND OVER, ENDS SHALL BE PINCHED-BOLTED USING \*10-24 x 1/2" PHILLIPS/SLOTTED PAN HEAD BOLT, NUT, AND 2 WASHERS.

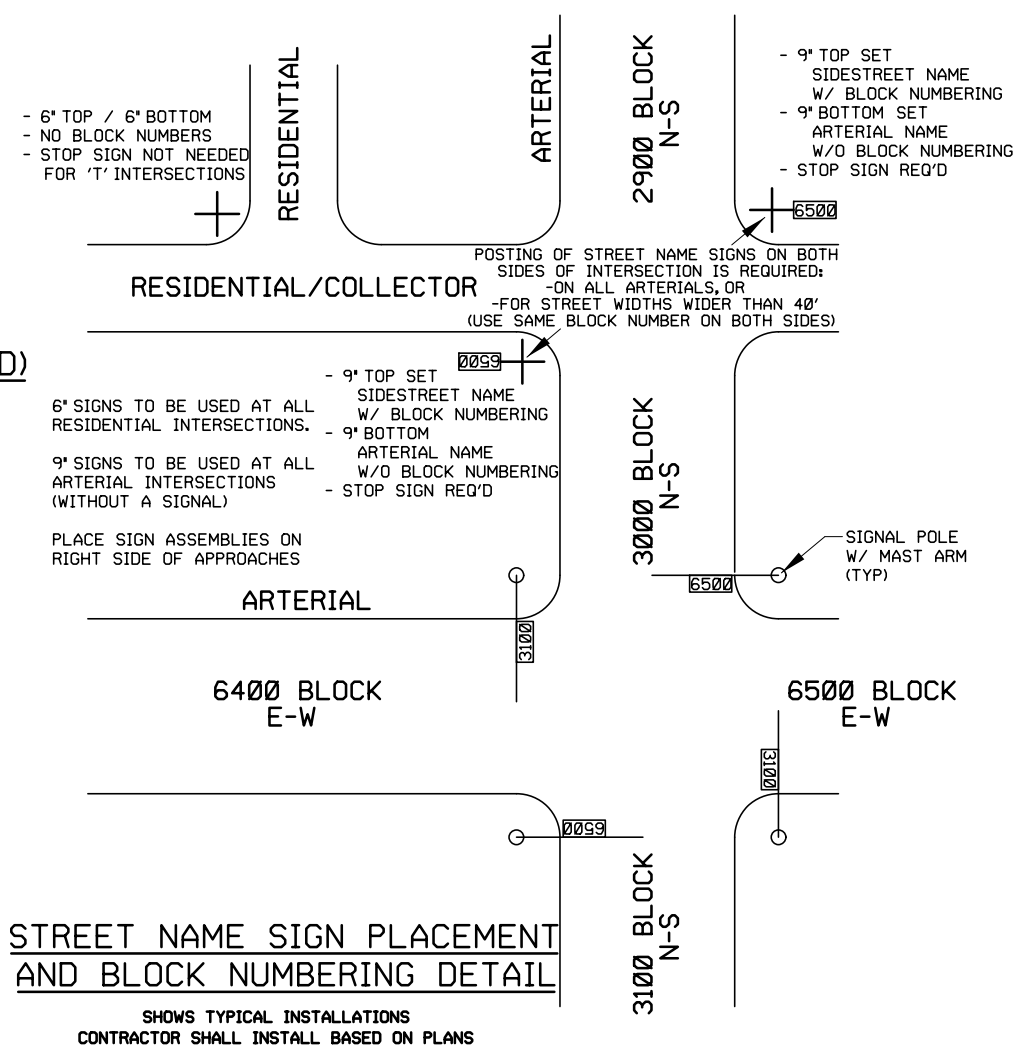


**SIGN INSTALLATION DETAIL**

- FOOTING SLEEVE NOTES  
 1) FOR INSTALLS IN CONCRETE, USE 12" MIN. FOOTING SLEEVE.  
 2) STABILIZING WINGS MAY BE REQUIRED, AS DETERMINED BY THE TRAFFIC ENGINEER. IF REQUIRED, COSTS SHALL BE INCIDENTAL TO PRICE BID FOR 2" SQUARE TUBE POST.

PAY ITEM	DESCRIPTION	UNIT	USE FOR:
608(A)	GROUND SIGN	S.F.	POST-MOUNTED TRAFFIC / STREET NAME SIGNS
608(B)	OVERHEAD SIGN	S.F.	MAST-ARM MOUNTED SIGNS
608(C)	1-1/2" SIGN POST	L.F.	STREET NAME SIGN INSERT
608(D)	1-3/4" SIGN POST	L.F.	MAIN SIGN POST
608(E)	2" SIGN POST	L.F.	FOOTING SLEEVE

**SIGN PAY ITEM TABLE**



**STREET NAME SIGN PLACEMENT AND BLOCK NUMBERING DETAIL**

SHOWS TYPICAL INSTALLATIONS  
 CONTRACTOR SHALL INSTALL BASED ON PLANS

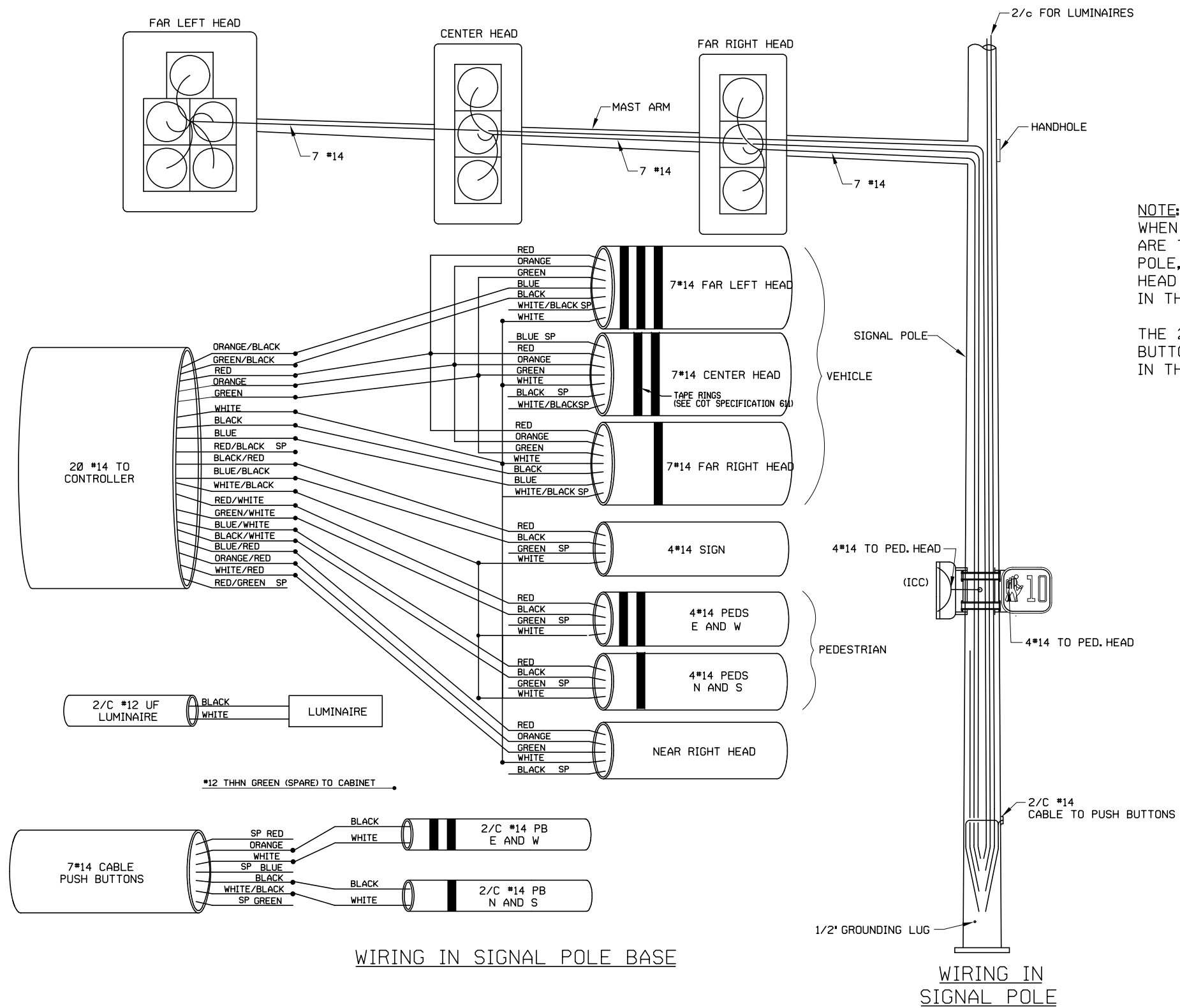
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**JACOBS**

10816 EXECUTIVE CENTER DR. STE. 300  
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OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION			
DESIGN	BLV		
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		
TRAFFIC SIGNS		STD. 608B	
PROJECT NO. 23708(06)		SHEET NO. 49	



**NOTE:**  
 WHEN PEDESTRIAN HEADS AND PUSH BUTTONS ARE TO BE LOCATED ON SEPERATE PEDESTAL POLE, THE 4 CONDUCTOR FOR THE PEDESTRIAN HEAD SHALL BE SPLICED TO THE 2Ø CONDUCTOR IN THE SIGNAL BASE AND RAN TO THE PEDESTAL  
 THE 2 CONDUCTOR FOR THE PEDESTRIAN PUSH BUTTON SHALL BE SPLICED TO THE 7 CONDUCTOR IN THE SIGNAL BASE AND RAN TO THE PEDESTAL.

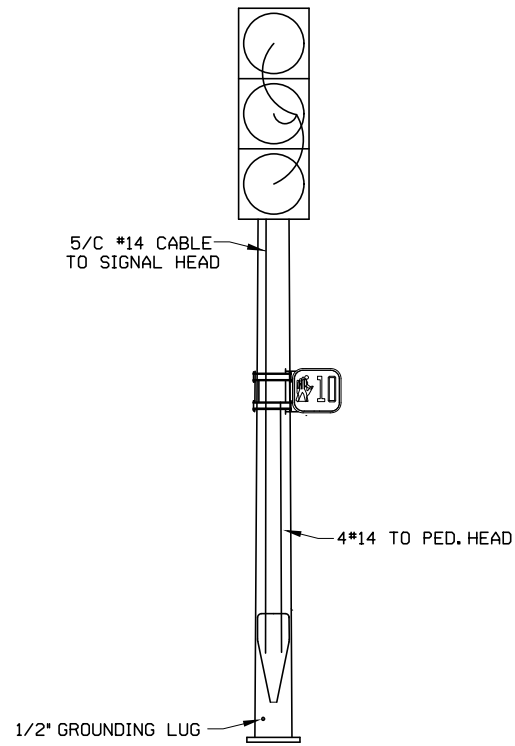
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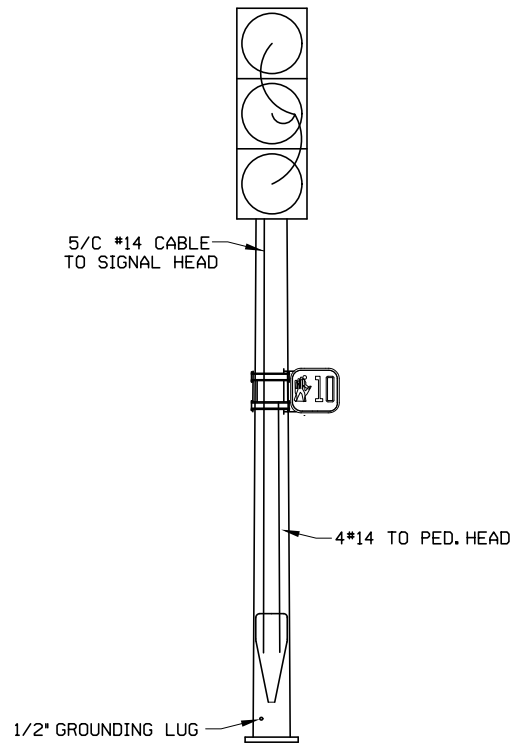
**JACOBS**

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DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION          DESIGN DIVISION</b>  <b>POLE WIRING DETAIL</b> STD. 611A  PROJECT NO. 23708(06)      SHEET NO. 50
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

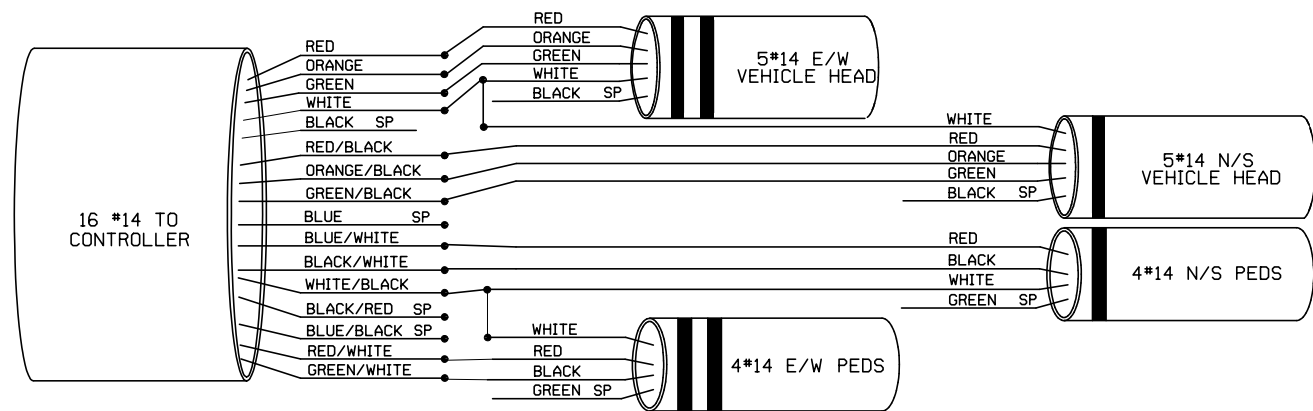


WIRING IN PEDESTAL POLE  
FOR EAST/WEST TRAFFIC



WIRING IN PEDESTAL POLE  
FOR NORTH/SOUTH TRAFFIC

NOTE:  
ALL SPLICING SHALL BE DONE IN THE FIRST PEDESTAL WIRED.  
NO SPLICES SHALL BE MADE IN SECOND PEDESTAL.



WIRING CONNECTIONS  
IN E/W  
PEDESTAL POLE BASE

WIRING CONNECTIONS  
IN N/S  
PEDESTAL POLE BASE

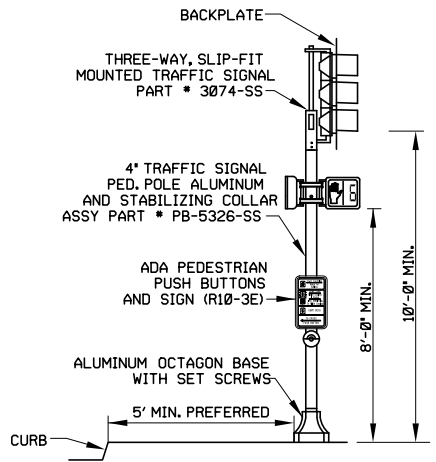
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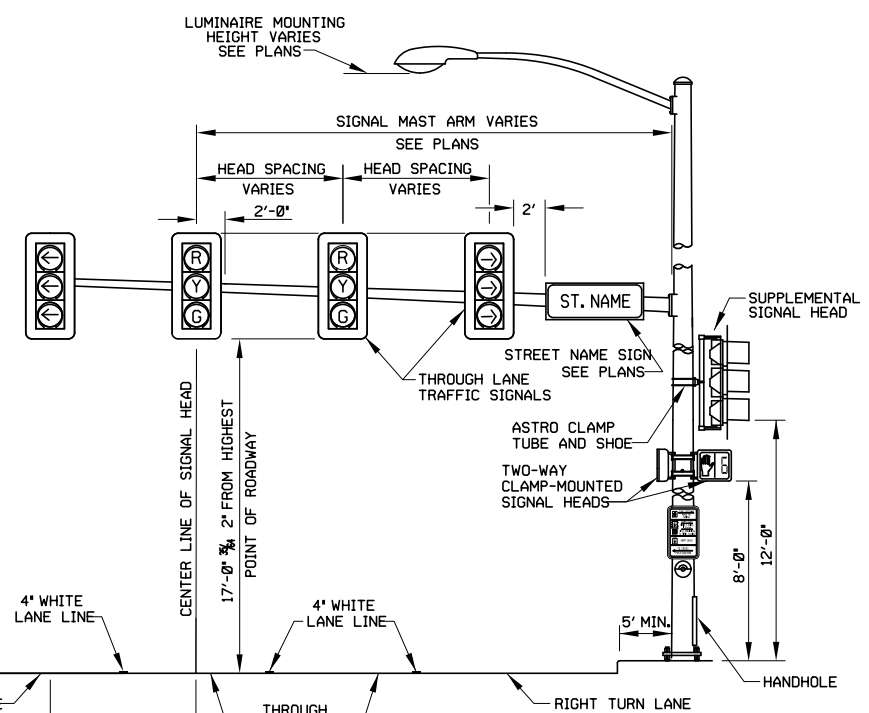
**JACOBS**

10816 EXECUTIVE CENTER DR. STE. 300  
LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV		<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION</b>  DOWNTOWN PEDESTAL WIRING DETAIL STD. 611B  PROJECT NO. 23708(06) SHEET NO. 51
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		

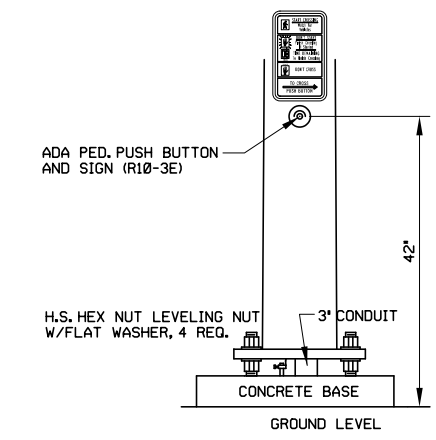


**TYPICAL MOUNTING DETAILS FOR PEDESTAL MOUNTED SLIP FITTER SIGNAL**

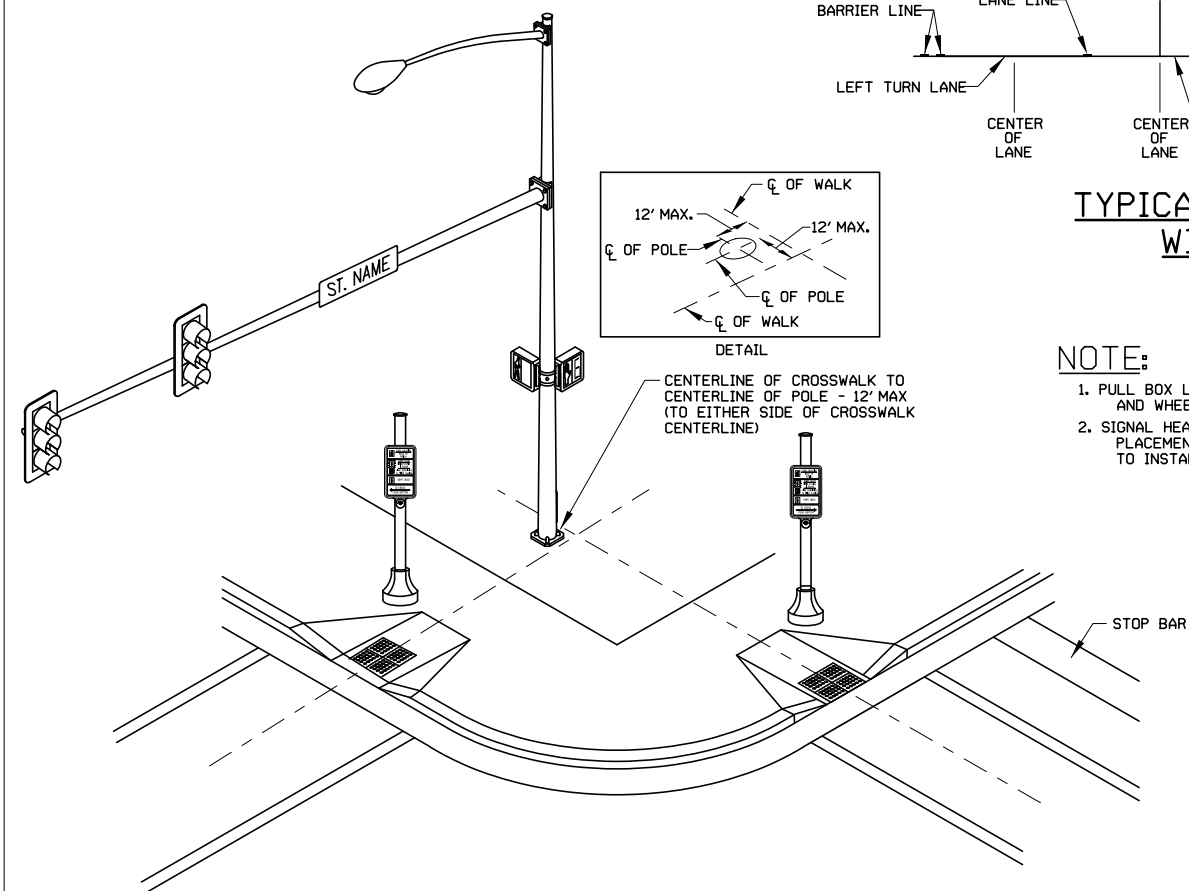


**TYPICAL SIGNAL EQUIPMENT PLACEMENT WITH PROTECTED ONLY HEADS**

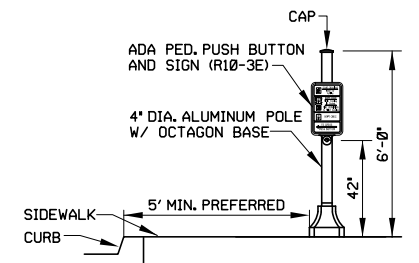
- NOTE:**
1. PULL BOX LOCATIONS SHALL BE OUTSIDE OF WHEELCHAIR RAMPS AND WHEEL DRAG PATH.
  2. SIGNAL HEAD, PEDESTRIAN HEAD, AND PEDESTRIAN PUSH BUTTON PLACEMENT TO BE APPROVED BY THE TRAFFIC ENGINEER PRIOR TO INSTALLATION.



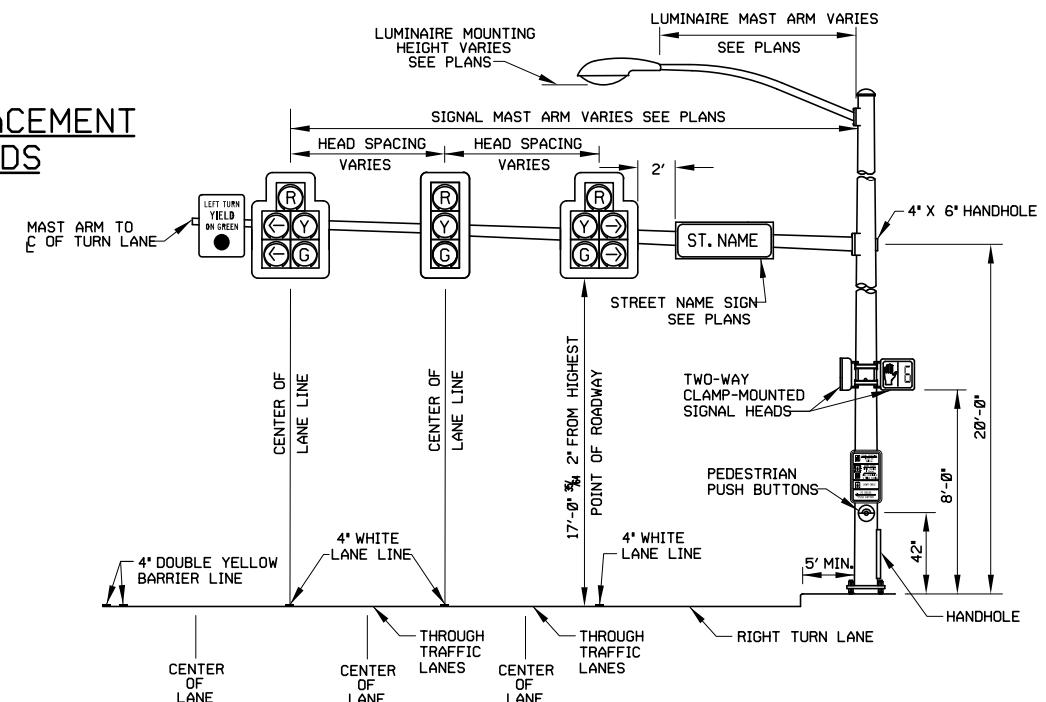
**TYPICAL MOUNTING DETAILS FOR MAST ARM POLE**



**TYPICAL SIGNAL POLE PLACEMENT FOR PEDESTRIAN CROSSWALKS**



**TYPICAL MOUNTING DETAILS FOR PEDESTRIAN PUSH BUTTON POLE**



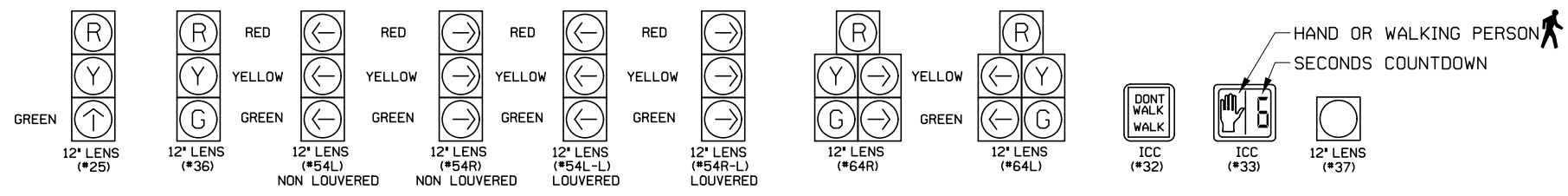
**TYPICAL SIGNAL EQUIPMENT PLACEMENT WITH PROTECTED/PERMISSIVE HEADS**

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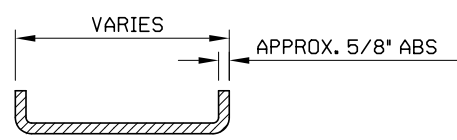
**JACOBS**  
10816 EXECUTIVE CENTER DR. STE. 300  
LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION</b>  PEDESTAL AND MAST ARM POLE DETAILS STD. 613  PROJECT NO. 23708(06) SHEET NO. 52
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

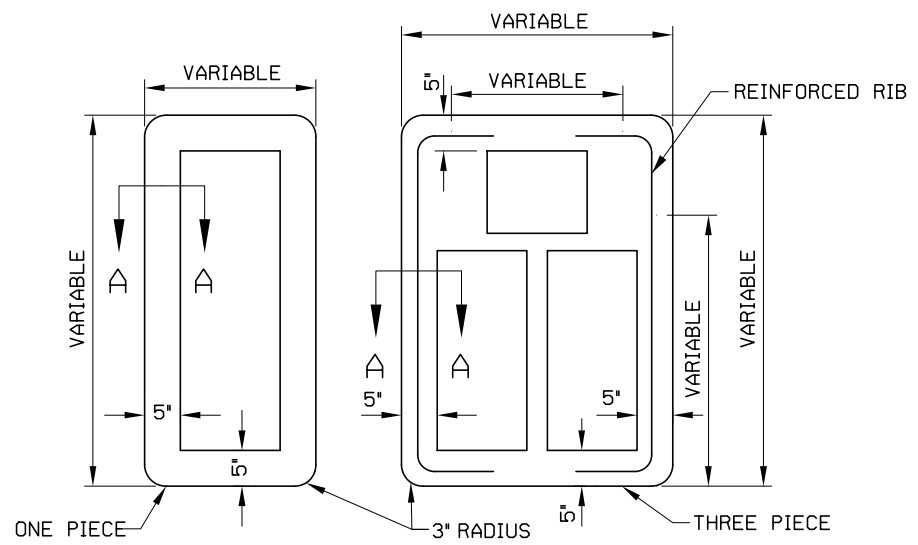


**SIGNAL FACE TYPES**

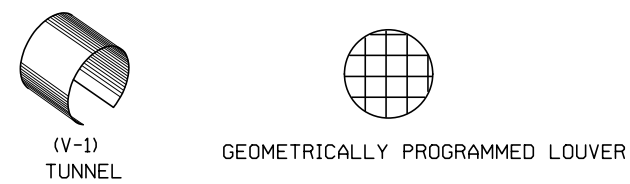
R = RED  
Y = YELLOW  
G = GREEN



**SECTION A-A**  
(ENLARGED)



**TYPE B-2 (5" BACKPLATE)**



**VISOR TYPE**

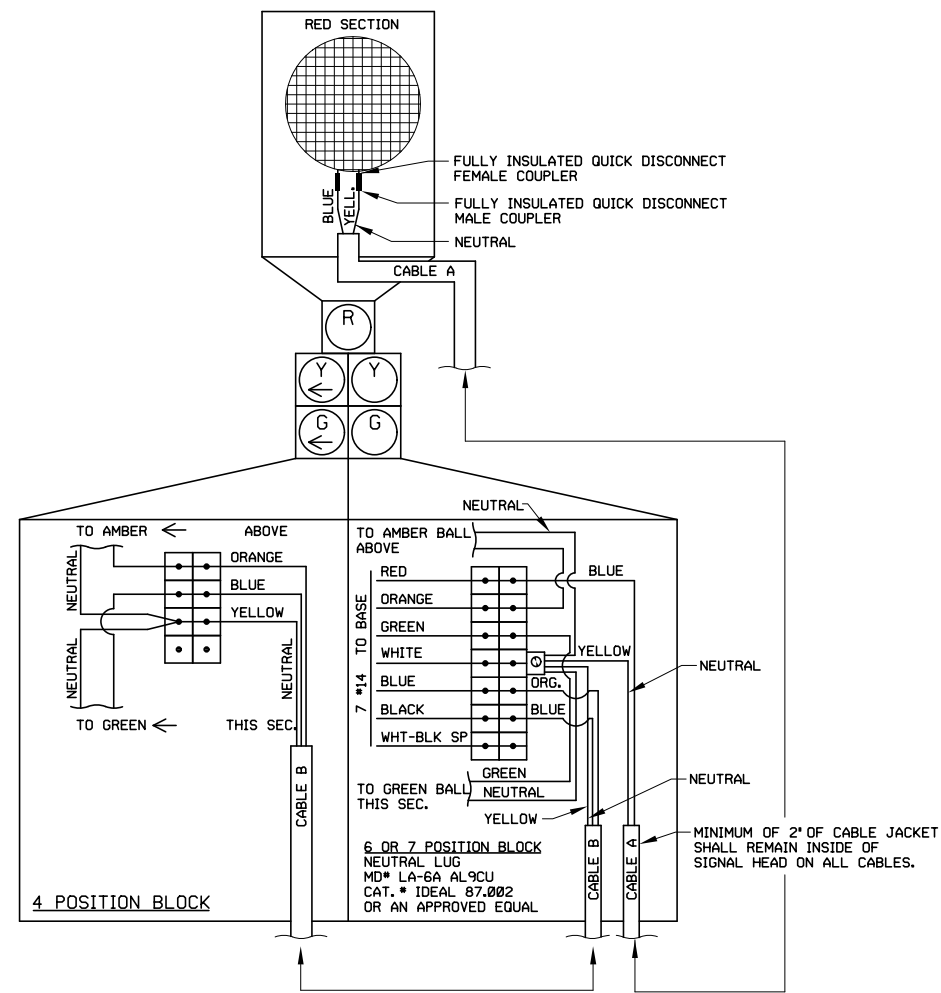
BEFORE YOU DIG  
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811



**JACOBS**

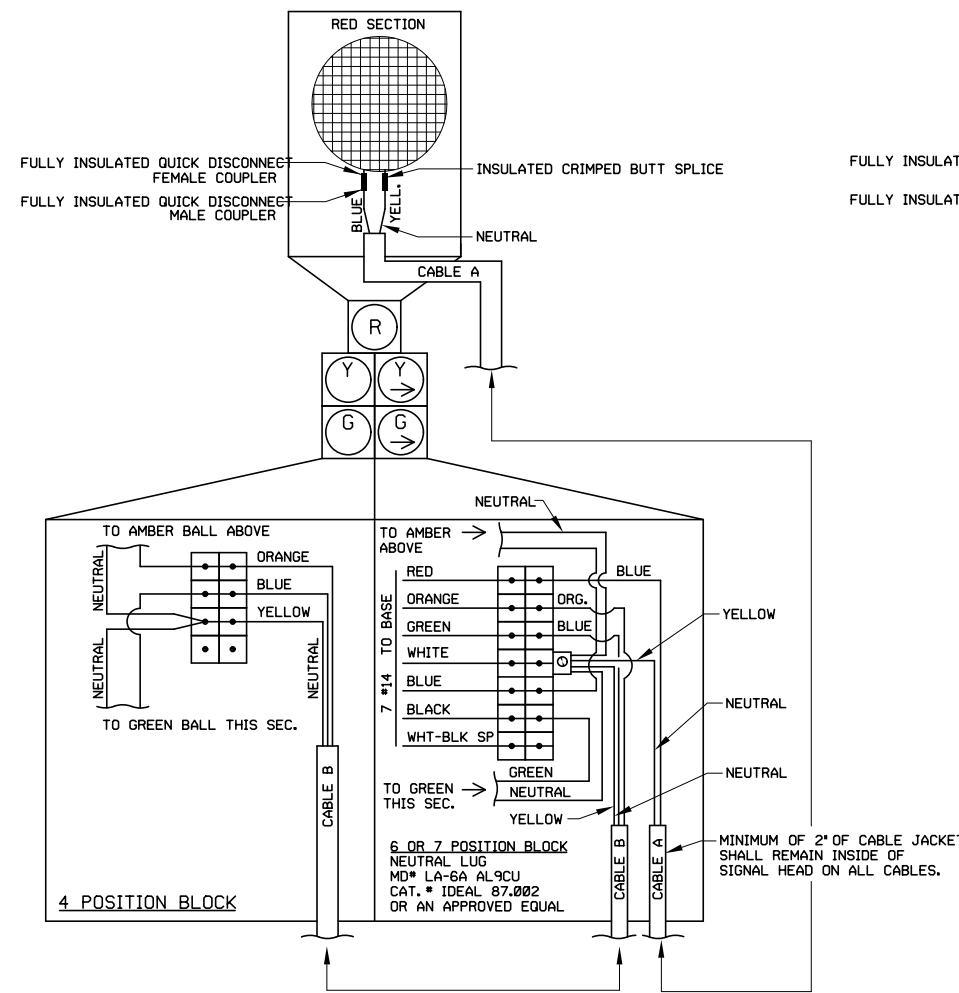
10816 EXECUTIVE CENTER DR. STE. 300  
LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV		<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION</b>  <b>TRAFFIC SIGNALS AND ACCESSORIES STD. 614A</b>  PROJECT NO. 23708(06) SHEET NO. 53
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		



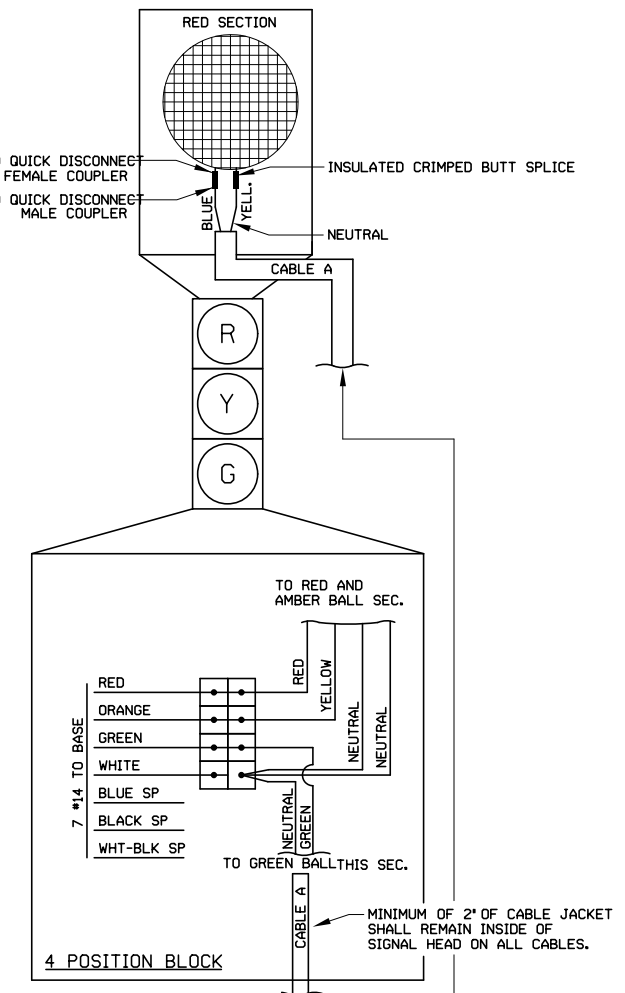
ALL CABLE MUST BE RUN THRU GUSSETED TUBE AND ENCLOSED SHOES. NO HOLES DRILLED IN SIGNAL HEAD FACTORY MOUNTING HOLES USED ONLY USE OPTICOM CABLE OR AN APPROVED EQUAL.

5-SECTION LEFT TURN CLUSTER



ALL CABLE MUST BE RUN THRU GUSSETED TUBE AND ENCLOSED SHOES. NO HOLES DRILLED IN SIGNAL HEAD FACTORY MOUNTING HOLES USED ONLY USE OPTICOM CABLE OR AN APPROVED EQUAL.

5-SECTION RIGHT TURN CLUSTER



NO HOLES DRILLED IN SIGNAL HEAD FACTORY MOUNTING HOLES USED ONLY USE OPTICOM CABLE OR AN APPROVED EQUAL.

3-SECTION SIGNAL HEAD

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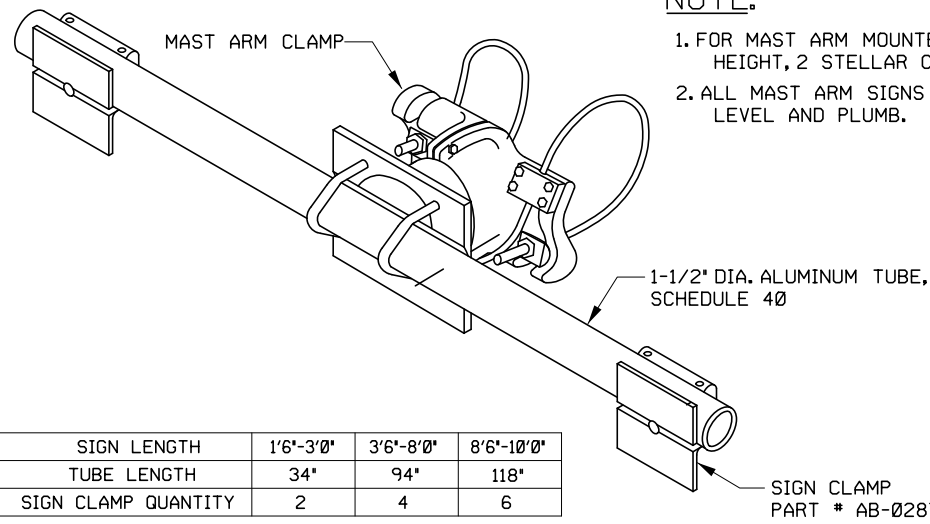
**JACOBS**

10816 EXECUTIVE CENTER DR. STE. 300  
LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION</b>
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	

SIGNAL HEAD WIRING      STD. 614B

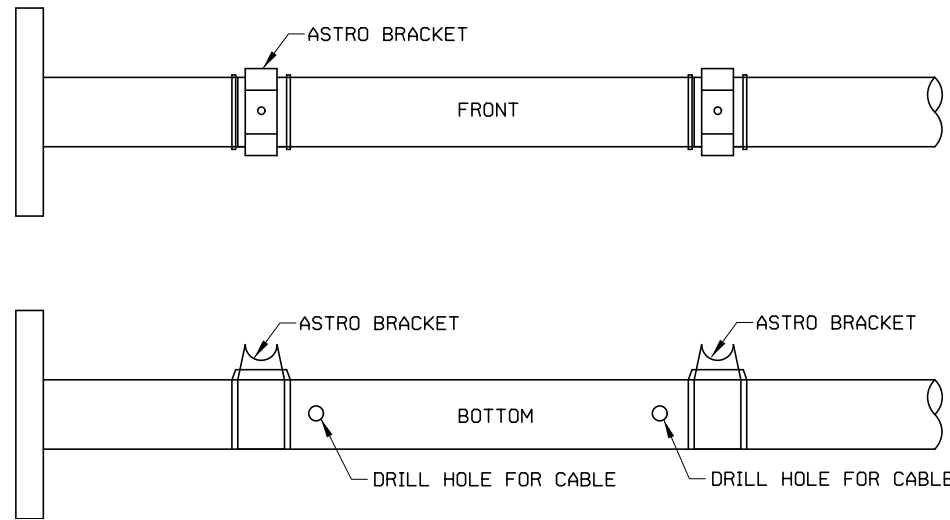
PROJECT NO. 23708(06)      SHEET NO. 54



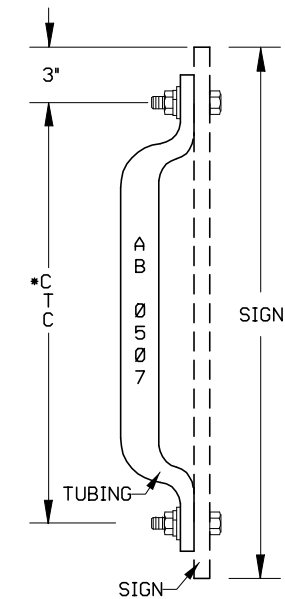
**NOTE:**  
 1. FOR MAST ARM MOUNTED SIGNS OVER 24' IN HEIGHT, 2 STELLAR CLAMPS SHALL BE USED.  
 2. ALL MAST ARM SIGNS SHALL BE INSTALLED LEVEL AND PLUMB.

SIGN LENGTH	1'6"-3'0"	3'6"-8'0"	8'6"-10'0"
TUBE LENGTH	34'	94'	118'
SIGN CLAMP QUANTITY	2	4	6

SIGN CLAMP  
 PART # AB-0287-04-SS



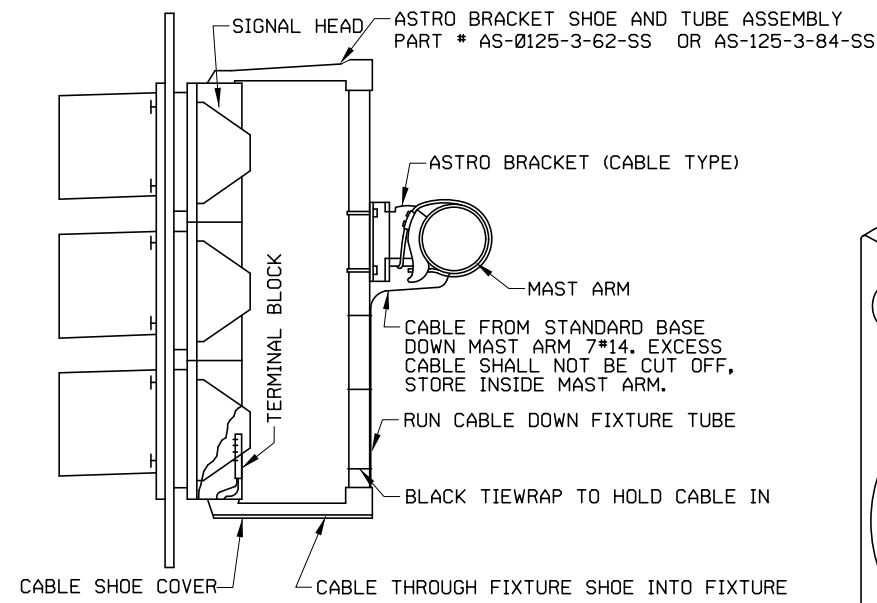
MUST BE 1-1/8" FILED SMOOTH AND PAINTED WITH ZINC OXIDE TO PREVENT RUST



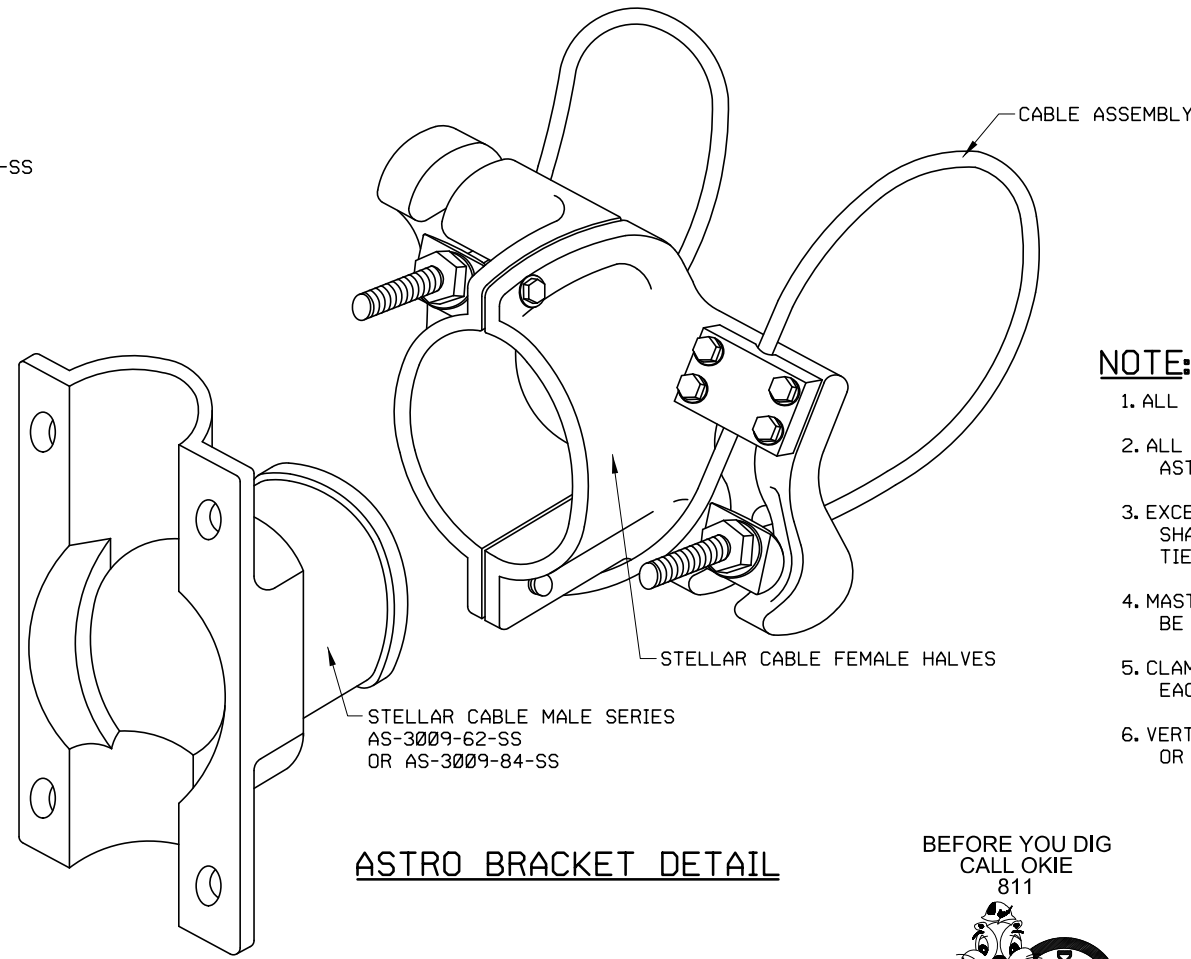
**HORIZONTAL TUBE MOUNTED SIGN BRACKET DETAILS**

SIGN MOUNT	
TUBE CTC*	SIGN
18'	24'
24'	30'
30'	36'

**VERTICAL TUBE MOUNTED SIGN BRACKET DETAIL**



**SIGNAL HEAD MOUNTING DETAIL**



**ASTRO BRACKET DETAIL**

**NOTE:**

1. ALL HARDWARE SHALL BE STAINLESS STEEL.
2. ALL MAST ARM BRACKETS SHALL BE ASTRO-BRAC STELLAR SERIES, OR AN APPROVED EQUAL.
3. EXCESS CABLE ASSEMBLY ON ALL MAST ARM BRACKETS SHALL BE COILED UP AND TIED DOWN WITH BLACK TIE WRAPS ON TOP OF MAST ARM.
4. MAST ARM CLAMPS WITH IMPACT DAMAGE WILL BE REPLACED AT CONTRACTORS EXPENSE.
5. CLAMP CABLES SHALL BE INSTALLED PARALLEL TO EACH OTHER AND PERPENDICULAR TO THE MAST ARM.
6. VERTICAL SIGN TUBE MOUNT SHALL BE PELCO #AB-0507 OR APPROVED EQUAL.

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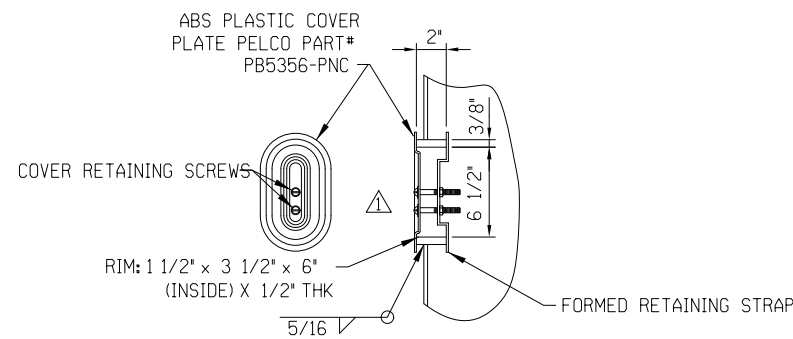
10816 EXECUTIVE CENTER DR. STE. 300  
 LITTLE ROCK, ARKANSAS 72211

DESIGN	BLV	OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION	
DRAWN	JAB	MAST ARM BRACKETS	STD. 616
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs	PROJECT NO. 23708(06)	SHEET NO. 55

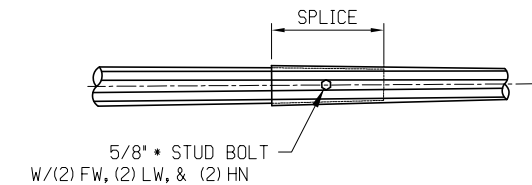
**POLE SCHEDULE**

POLE NUMBER	QTY.	SINGLE MAST ARM											ARM ATTACHMENT																											
		SHAFT				ANCHOR BOLTS			BASE PLATE				ARM SHAFT				FLANGE BOLTS																							
		BOT OD	TOP OD	THK.	LENGTH	QTY.	DIA.	LENGTH	THK.	PL SQ.	BC	ARM NUMBER	BOT OD	TOP OD	THK.	LENGTH	SPLICE	ANG. (DEG)	RISE	QTY.	DIA.	LENGTH	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"										
1R	-	12.000"	8.208"	.2500"	22'-9"	4	1 1/2"	54'+6"	1 1/2"	17"	16.5"	1R10																												
												1R18	7.500"	5.000"	.1875"	18'-0"	-	1.75	6 1/2"	4	1 1/4"	4 1/2"	17.000"	13.500"	12.000"	8.500"	1 1/4"	3/8"	1 1/4"	1 1/4"										
												1R24	8.250"	5.000"	.1875"	24'-0"			8 3/4"																					
2B	-	14.000"	9.640"	.2500"	22'-9"	4	1 1/2"	54'+6"	1 1/2"	19"	18.5"	2B30	10.000"	5.000"	.1875"	30'-0"	-	2.00	12 1/2"	4	1 1/4"	5"	18.000"	14.500"	15.000"	11.500"	1 1/4"	1/2"	1 1/2"	1 1/2"										
												2B36	11.500"	5.000"	.1875"	36'-0"			15"																					
												3G42	13.250"	5.000"	.1875"	42'-0"			20"																					
3G	-	15.500"	11.708"	.3125"	22'-9"	4	1 3/4"	84'+6"	1 3/4"	21"	20.5"	3G46	14.000"	5.000"	.1875"	46'-0"	-	2.25	21 3/4"	4	1 1/2"	5 1/4"	24.000"	20.000"	19.000"	15.000"	1 1/2"	3/4"	1 1/2"	1 1/2"										
												3G50	15.000"	5.000"	.1875"	50'-0"			23 1/2"																					
												4Y54	12.750"	8.154"	.3125"	30'-1"	1'-1"	2.50	28 1/4"	4	1 1/2"	5 3/4"	24.000"	20.000"	19.000"	15.000"	1 1/2"	7/8"	1 3/4"	1 3/4"										
4Y	-	17.250"	13.269"	.3125"	22'-9"	4	1 3/4"	84'+6"	1 3/4"	23"	22.5"	4Y58	13.500"	8.211"	.3125"	34'-1"	1'-1"	2.50	30 1/2"	4	1 1/2"	5 3/4"	24.000"	20.000"	19.000"	15.000"	1 1/2"	7/8"	1 3/4"	1 3/4"										
												5W62	10.504"	5.000"	.1875"	35'-0"	1'-4"	2.75	35 3/4"	4	1 1/2"	5 3/4"	25.000"	21.000"	20.000"	16.000"	1 1/2"	1"	1 3/4"	1 3/4"										
												5W66	15.000"	9.856"	.3125"	32'-4"	1'-4"	2.75	38"	4	1 1/2"	5 3/4"	25.000"	21.000"	20.000"	16.000"	1 1/2"	1"	1 3/4"	1 3/4"										
5W	-	19.750"	15.958"	.3125"	22'-9"	4	2"	90'+6"	2"	27"	26"	5W70	16.500"	10.271"	.3125"	36'-4"	1'-4"	2.75	40 1/2"	4	1 1/2"	5 3/4"	25.000"	21.000"	20.000"	16.000"	1 1/2"	1"	1 3/4"	1 3/4"										
												5W70	11.000"	5.000"	.1875"	35'-0"	1'-4"	2.75	40 1/2"	4	1 1/2"	5 3/4"	25.000"	21.000"	20.000"	16.000"	1 1/2"	1"	1 3/4"	1 3/4"										
												5W70	11.000"	5.000"	.1875"	35'-0"	1'-4"	2.75	40 1/2"	4	1 1/2"	5 3/4"	25.000"	21.000"	20.000"	16.000"	1 1/2"	1"	1 3/4"	1 3/4"										

LUMINAIRE EXTENSION						
EXT. NO.	POLE NO.	QTY.	SHAFT			
			BOT OD	TOP OD	THK.	LENGTH
1RE	1R	-	8.958"	7.500"	.1875"	8'-9"
2BE	2B	-	10.427"	8.750"	.1875"	8'-9"
3GE	3G	-	12.458"	11.000"	.1875"	8'-9"
4YE	4Y	-	14.031"	12.500"	.1875"	8'-9"
5WE	5W	-	16.708"	15.250"	.1875"	8'-9"



**4" x 6 1/2" HANDHOLE DETAIL**



**SPlice DETAIL**  
(FOR ARMS OVER 50'-0")

**GENERAL NOTES**

THE ASSEMBLIES SHALL BE MULTI-SIDED, TAPERED STEEL MONOTUBE TRAFFIC SIGNAL MAST ARMS AND POLES. MAST ARM POLES SHALL BE DESIGNED TO SUPPORT SIGNALS AND/OR SIGNS OF THE WEIGHT AND AREA AS INDICATED ON THE PLANS. MAST ARMS AND POLES SHALL BE DESIGNED FOR A MINIMUM OF 90 MPH WIND VELOCITY AND SHALL MEET ALL OTHER DESIGN REQUIREMENTS OF AASHTO 'STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS' 2009, FATIGUE CATEGORY II. GALLOPING NOT CONSIDERED. ALL MAST ARMS SHALL BE PERMANENTLY MARKED WITH THE LENGTH OF THE ARM ON THE FLANGE PLATE. POLES ARE TO BE PERMANENTLY MARKED WITH THE ARM LENGTH RANGE ON THE TOP SIDE OF THE BASE PLATE. ALL PARTS (TOP, END CAPS, HAND HOLE COVERS AND ATTACHMENT HARDWARE) WITH THE EXCEPTION OF THE ANCHOR BOLTS, ARE TO BE PACKED ON A PER POLE BASIS AND IDENTIFIED FOR THE MAST ARM ASSEMBLY THAT CORRESPONDS WITH THE PARTS. PRIOR TO INSTALLATION, ALL MATERIALS SHALL BE INSPECTED BY AN AUTHORIZED AGENT OF THE CITY TO INSURE COMPLIANCE WITH THE SPECIFICATIONS. ALL MATERIAL AND WORKMANSHIP FOR THESE PRODUCTS MUST BE UNITED STATES ORIGIN. ALL WELDING MUST BE PERFORMED AT THE MANUFACTURER'S PLACE OF BUSINESS BY AWS CERTIFIED WELDERS. ALL WELDS SHALL CONFORM TO THE LATEST AWS D1.1 REQUIREMENTS.

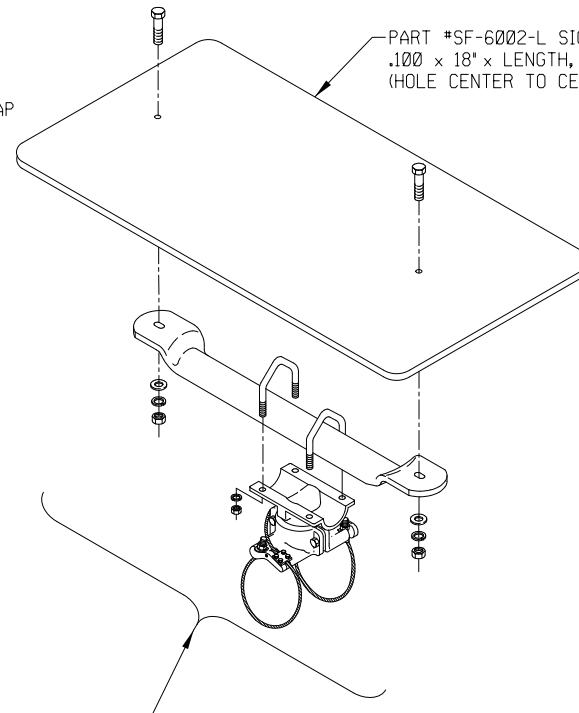
SEE CITY OF TULSA SPECIFICATION FOR GALVANIZED STEEL MAST ARM ASSEMBLIES FOR FURTHER DETAILS OF MATERIALS, DESIGN AND WORKMANSHIP.

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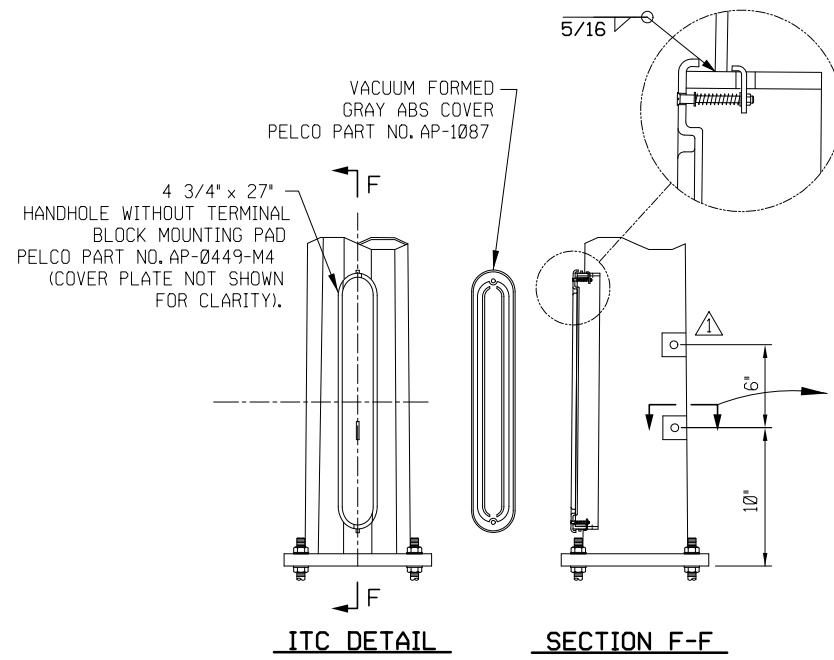
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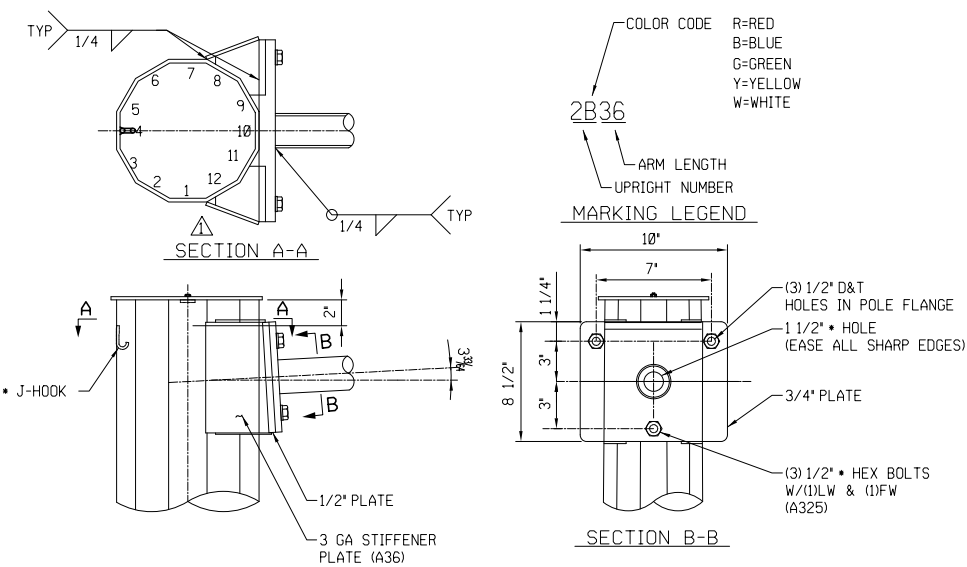
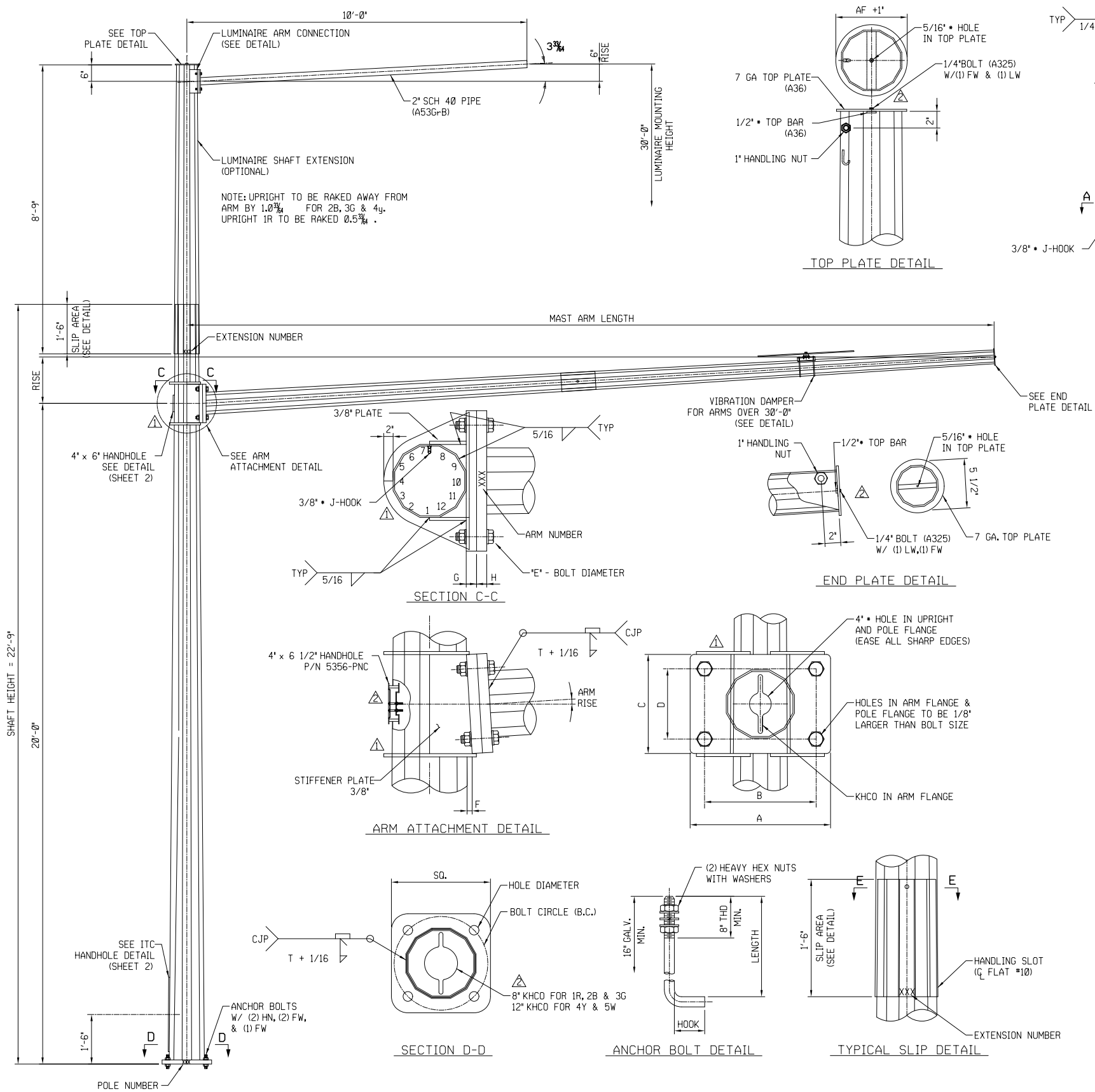
**VIBRATION DAMPER**

PART NO  
AS-0142-18-62-PNC  
CENTER TO CENTER  
CABLE LENGTH  
PROCESS NO COLOR



DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION</b>  SINGLE MAST ARM (MODULAR) W/LUMINAIRE STD. 617A  PROJECT NO. 23708(06) SHEET NO. 56
DRAWN	JAB	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	





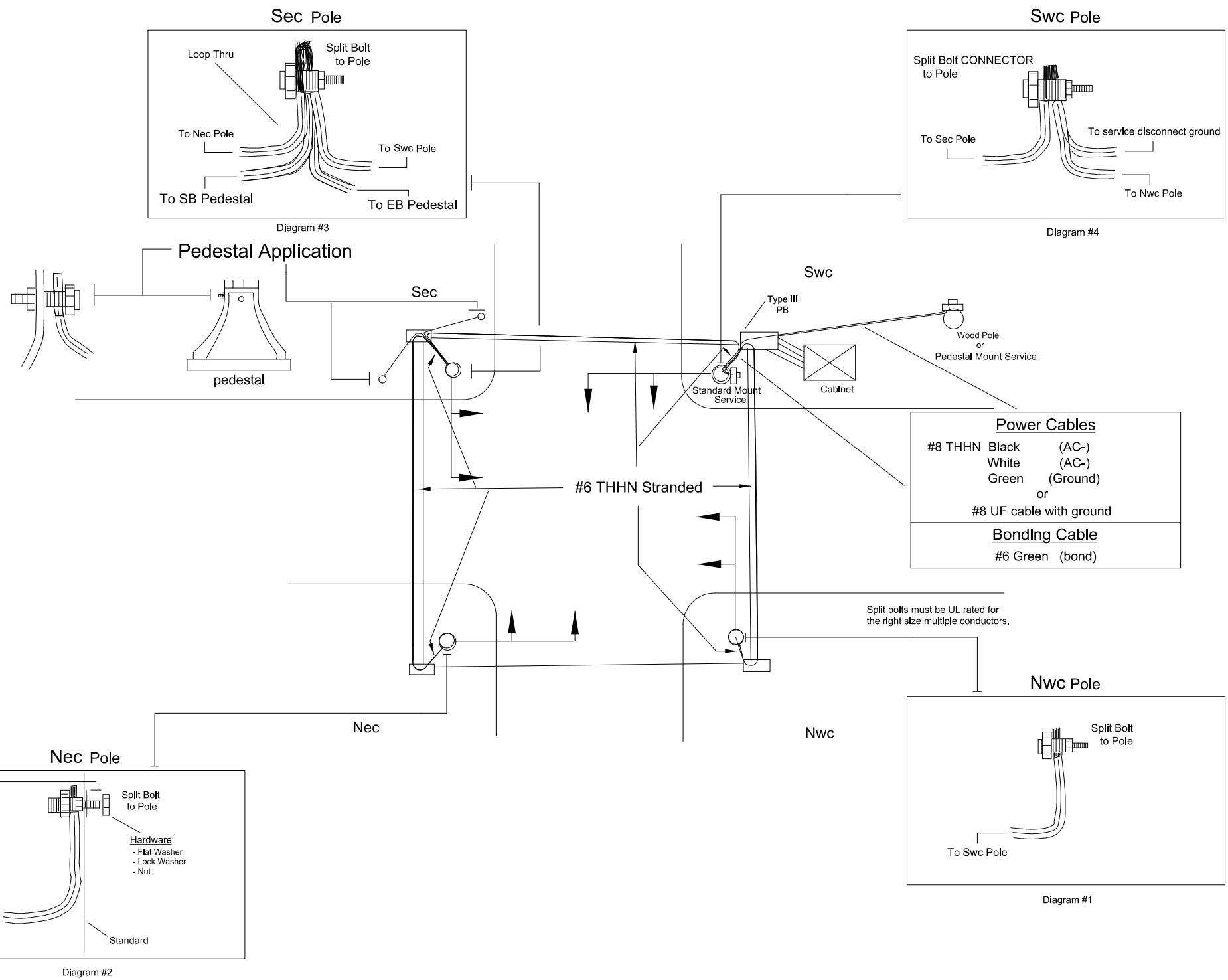
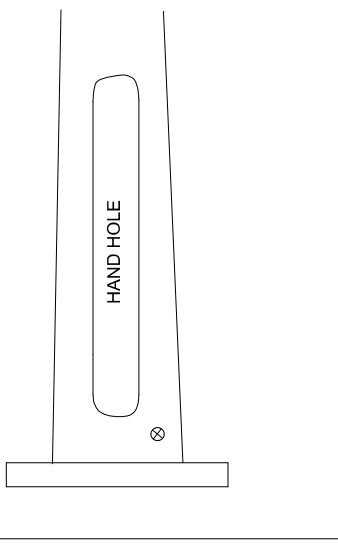
- GENERAL NOTES**
- MATERIAL:**
    - (A) SHAFT - ASTM A570-50
    - (B) BASE & FLANGE PLATES - ASTM A36
    - (C) ANCHOR BOLTS - ASTM F1554-55 (THREAD PER UNC SERIES)
    - (D) ALL OTHER BOLTS - ASTM A325 (THREAD PER UNC SERIES)
    - (E) POLE TOP PLATE - ASTM A36
  - FINISH:**
    - (A) EACH ASSEMBLY TO BE GALVANIZED TO ASTM A123.
    - (B) THE TOP PORTION OF THE ANCHOR BOLTS TO BE GALVANIZED TO ASTM A153.
    - (C) ALL THREADED FASTENERS TO BE GALVANIZED TO ASTM A153.
  - SIGNAL SUPPORT ARMS OVER 50'-0" TO BE 2 SECTION SLIPPED TOGETHER AFTER GALVANIZING AND HELD IN PLACE WITH ONE 5/8" DIA. PIN BOLT. ARM TO BE SHIPPED ASSEMBLED.**
  - ALL SECTIONS TO BE COLOR CODED PER MARKING LEGEND AND IN THE FOLLOWING LOCATIONS:**
    - (A) BOTTOM OF BASE PLATE
    - (B) BOTTOM OF ARM FLANGE PLATE
    - (C) BOTTOM OF LUMINAIRE FLANGE PLATE
    - (D) INSIDE OF LUMINAIRE EXTENSION
    - (E) INSIDE OF ARM EXTENSION



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DESIGN	BLV	<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION</b> <b>DESIGN DIVISION</b> <b>SINGLE MAST ARM (MODULAR) W/LUMINAIRE</b> <b>STD. 617B</b>
DRAWN	BLV	
CHECKED	BLV	
APPROVED	BLV	
SQUAD	Jacobs	PROJECT NO. 23708(06) SHEET NO. 57



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DESIGN	BLV		<b>OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN DIVISION</b>  TRAFFIC SIGNAL SERVICE POLE AND SERVICE TO SIGNAL STANDARD STD. 618  PROJECT NO. 23708(06) SHEET NO. 58
DRAWN	JAB		
CHECKED	BLV		
APPROVED	BLV		
SQUAD	Jacobs		