

**CONTRACT DRAWINGS**  
**44TH AVENUE EAST**  
**FROM 19TH STREET COURT EAST TO 30TH STREET EAST**  
**FOR**  
**MANATEE COUNTY, FLORIDA**  
**COUNTY PROJECT NUMBER: 6045660**  
**LIGHTING PLANS**

**COMPONENTS OF CONTRACT PLANS SET**

- ROADWAY PLANS
- SIGNALIZATION PLANS
- LIGHTING PLANS
- POTABLE WATER MAIN PLANS

**INDEX OF LIGHTING PLANS**

SHEET NO	SHEET DESCRIPTION
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**RELATED STANDARDS AND SPECIFICATIONS**

**DESCRIPTION**

- A. FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2014)
- B. MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION, AND MAINTENANCE FOR STREETS AND HIGHWAYS, FLORIDA DEPARTMENT OF TRANSPORTATION, (FDOT GREEN BOOK), (2011),
- C. FDOT DESIGN STANDARDS FOR DESIGN, CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS ON THE STATE HIGHWAY SYSTEM, (2013),
- D. AASHTO, GUIDE FOR PLANNING, DESIGN, AND OPERATION OF PEDESTRIAN FACILITIES, (2004),
- E. FHWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (MUTCD), (2009),
- F. CHAPTER 14-96 AND 14-97, FLORIDA ADMINISTRATIVE CODE RULE FOR FDOT CONNECTION PERMIT.
- G. FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2014
- H. FDOT PLANS PREPARATION MANUAL, 2013

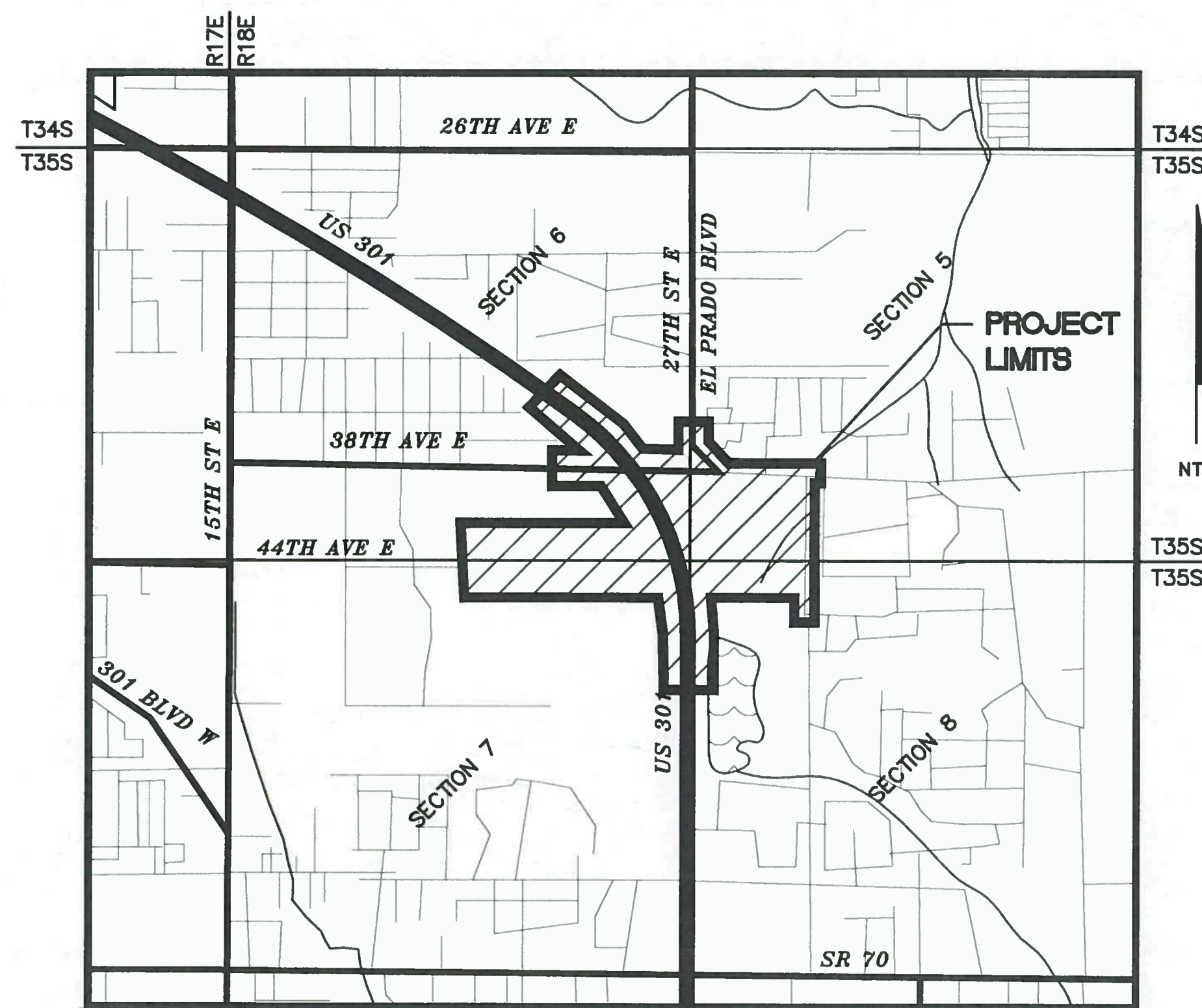
ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

**UTILITY WARNING NOTE**

ABOVE GROUND AND / OR UNDERGROUND UTILITIES MAY BE IN THE AREA OF THIS PROJECT - PROCEED WITH CAUTION - THE CONTRACTOR SHALL CALL SUNSHINE STATE "ONE CALL" AT 1-800-432-4770 AND THE UTILITY OWNERS IN ADVANCE OF BEGINNING WORK, IN ACCORDANCE WITH CHAPTER 556, FLORIDA STATUTES.

SUMMARY OF REVISIONS	
DATE	DESCRIPTION

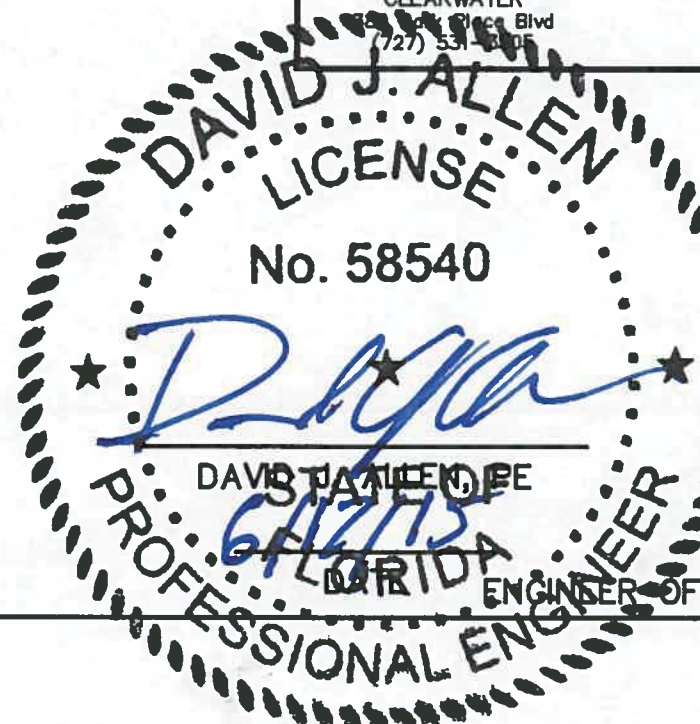
THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND GOVERNED BY THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (DATED 2014) AND DESIGN STANDARDS BOOKLET (DATE 2014). FOR STANDARDS REVISIONS, CLICK ON "DESIGN STANDARDS" AT THE FOLLOWING WEB SITE: //www.dot.state.fl.us/rddesign/.



COUNTY SECTION NO. 13121

PLANS PREPARED BY:

**Cardno**  
 Shaping the Future  
 www.cardno.com  
 Certificate of Authorization No. 29915  
 CLEARWATER  
 12481 Telecom Drive  
 (813) 221-0048  
 TAMPA  
 12481 Telecom Drive  
 (813) 221-0048



58540  
 FL. LICENSE NO

ENGINEER OF RECORD



48 HOURS BEFORE DIGGING  
 "CALL SUNSHINE"  
 1-800-432-4770

DATE: 6-17-2015  
 SHEET: L-1

# TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS																								TOTAL THIS SHEET		GRAND TOTAL		REF. SHEET	
			L-5		L-6		L-7		L-8		L-9		L-10		L-11		L-12		L-13		L-14		L-15		L-16		L-17					
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL		
630-2-11	CONDUIT (F&I) (OPEN TRENCH)	LF	2420		2400		2045		2145		971		380		835		600		895		356		1140		960		964		16071		16071	
630-2-12	CONDUIT (F&I) (DIRECTIONAL BORE)	LF									50		220		80													270		270		
635-2-11	PULL & SPICE BOXES (F&I) (13"x24")	EA	12		7		7		8		8		3		8		3		7		3		5		4		5		80		80	
715-1-12	LIGHTING - CONDUCTOR (F&I) (NO. 6)	LF					1935		6435		3063		1800		2905		1800		2685		705		1740		1440		1164		25672		25672	
715-1-13	LIGHTING - CONDUCTOR (F&I) (NO. 4)	LF	7260		7200		4200														363		1680		1440		1428		23571		23571	
715-4-123	LIGHT POLE COMPLETE (F&I) (130 MPH) (50')	EA	7		7		7		6		5		3		5		3		6		3		5		4		5		66		66	
715-7-11	LOAD CENTER (F&I) (SECONDARY VOLTAGE)	EA	1						1						1													3		3		
715-500-1	LIGHT POLE CABLE DISTRIBUTION SYSTEM	EA	7		7		7		6		5		3		5		3		6		3		5		4		5		66		66	

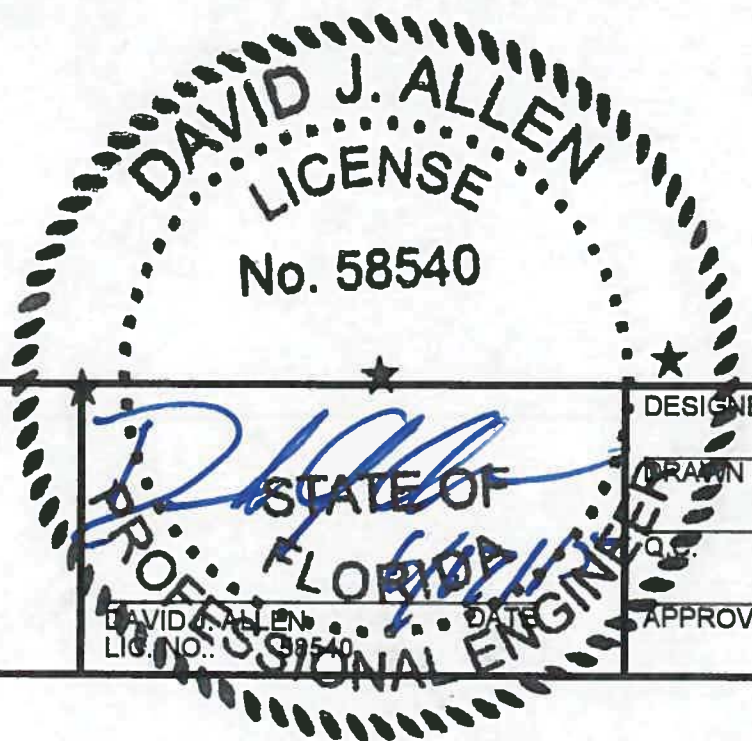
**PAY ITEM FOOTNOTES:**

1. PAY ITEMS 630-2-11:  
THIS PAY ITEM SHALL INCLUDE CONDUIT, ELBOWS, SWEEPS, CONNECTING HARDWARE, TRENCHING, AND BACKFILL AS INDICATED IN THE PLANS AND THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS. THE LINEAR FOOT PRICE FOR CONDUIT SHALL ALSO INCLUDE THE COST OF RESTORING CUT PAVEMENT, SIDEWALK, SOD, ETC., TO IT'S ORIGINAL CONDITION. SOD SHALL BE REPLACED IN LIKE KIND OF THE ADJACENT SURROUNDINGS. THE CONDUIT SHALL BE A MINIMUM OF 2 INCHES, UNLESS OTHERWISE NOTED IN THE PLANS.
2. PAY ITEM 630-2-12:  
CONDUITS INSTALLED WITH THE DIRECTIONAL BORE METHOD SHALL BE HDPE WITH A MINIMUM SIZE OF TWO INCHES, UNLESS OTHERWISE NOTED IN THE PLANS. HDPE CONDUIT AND THE TRANSITION COUPLING SHALL BE UL LISTED. ALL DIRECTIONAL BORE SHALL INCLUDE A SPARE CONDUIT WHERE BOTH ENDS SHALL SWEEP UP INTO A PULL BOX AND CAPPED WITH A WATER TIGHT CAP.
3. PAY ITEM 635-2-11:  
PAY ITEM SHALL INCLUDE THE COST OF 0.43 CUBIC YARDS OF CONCRETE PER SLAB AROUND STAND ALONE PULL BOXES. ALSO, THE COST FOR ALL REINFORCING STEEL AND TIES SHALL BE INCLUDED UNDER THIS PAY ITEM. FOR MORE INFORMATION, REFER TO FDOT DESIGN STANDARD INDEX 17500 FOR SLAB DETAILS. THE PULL BOXES SHALL HAVE STREET LIGHTING STAMPED IN RAISED LETTERING ON THE PULL BOX COVERS. PULL BOXES SHALL NOT BE INSTALLED IN THE PROPOSED SIDEWALK AT LOCATIONS WHERE THE SLAB ENCLOSES THE SIDEWALK, THE SLAB SHALL BE MODIFIED TO END ADJACENT TO THE SIDEWALK. PULL BOXES SHALL NOT BE PLACED IN SIDEWALKS.
4. PAY ITEM 715-1-12:  
THIS PAY ITEM SHALL INCLUDE CONDUCTORS AS INDICATED IN THE PLANS AND THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS. PAYMENT SHALL BE MADE BASED ON LINEAR FOOT OF SINGLE CONDUCTOR.
5. PAY ITEM 715-4-123:  
THIS PAY ITEM SHALL INCLUDE THE POLE, LUMINAIRE WITH LAMP, HOUSE SIDE AND STREET SIDE LIGHT SHIELDS WHERE NOTED, ANCHOR BOLTS WITH LOCK NUTS AND WASHERS, FRANGIBLE TRANSFORMER TYPE BASE, VIBRATION DAMPENING DEVICE AND FOUNDATION AS INDICATED IN THE DESIGN STANDARDS. THE COST OF BREAK-AWAY WATERTIGHT, IN-LINE FUSE HOLDERS, THE STRAIN RELIEF, AND THE SURGE ARRESTOR PER DESIGN STANDARDS INDEX 17500, 17500 SHALL BE PAID FOR UNDER PAY ITEM 715-500-1.  
  
THIS PAY ITEM INCLUDES THE COST OF 0.71 CUBIC YARDS PER SLAB AROUND POLE FOUNDATION AND PULL BOX. THE COST FOR ALL REINFORCING STEEL AND TIES SHALL BE INCLUDED UNDER THIS PAY ITEM. FOR MORE INFORMATION, REFER TO FDOT STANDARD INDEX 17500 FOR SLAB DETAILS. THE CONCRETE SLAB SHALL BE PLACED BACK OF SIDEWALK. THE CONTRACTOR SHALL NOT USE THIS SLAB AS PART OF THE PROPOSED SIDEWALK. THE SLAB SHALL BE ORIENTATED WHERE THE PULL BOX WOULD BE AT THE HIGHEST ELEVATION IF THE POLE IS ON A SLOPE. IF THE SLAB ENCLOSES THE PROPOSED SIDEWALK, SEE THE MODIFIED SLAB DETAIL IN THIS PLAN SET.
6. PAY ITEM 715-7-11:  
THIS PAY ITEM SHALL INCLUDE METER BASE, NEMA 3R ENCLOSED CIRCUIT BREAKER ON LOAD SIDE OF METER AT RISER POLE, WEATHERHEADS, FUSED CONTROL POWER TRANSFORMERS, ENCLOSURES, PANEL BOARDS, BREAKERS, FUSES, LIGHTNING PROTECTOR, PHOTO-ELECTRIC ASSEMBLY, CONDUIT AND FEEDER CONDUCTORS FROM POWER COMPANY POINT OF SERVICE TO LIGHTING CONTROL PANEL, PULL BOXES, AND ALL MISCELLANEOUS HARDWARE FOR A COMPLETE INSTALLATION AS PER PLANS AND STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS INDEX 17504. SHALL INCLUDE THE COST OF FURNISHING AND INSTALLING FDOT APPROVED TYPE P-II CONCRETE SERVICE POLES FOR BOTH THE POWER SERVICE AND LOAD CENTER ASSEMBLY. ALL WORK TO BE COORDINATED WITH FP & L.
7. PAY ITEM 715-500-1:  
THE COST OF BREAK-AWAY WATERTIGHT, IN-LINE FUSE HOLDERS, THE STRAIN RELIEF, AND THE SURGE ARRESTOR PER FDOT DESIGN STANDARDS INDEX 17500.

NO.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

**44TH AVENUE EAST  
ROADWAY EXTENSION**



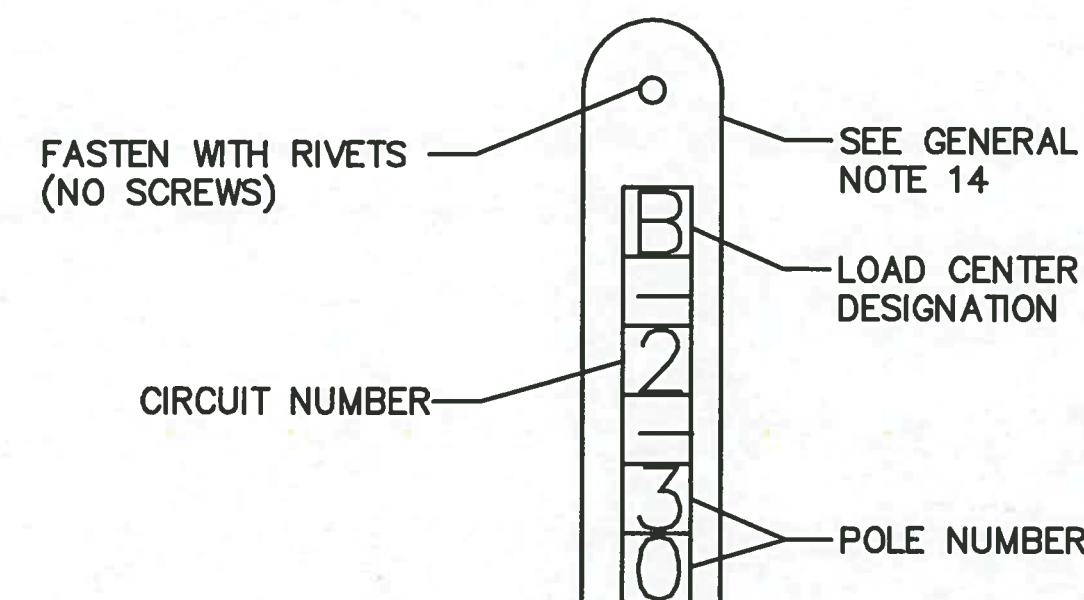
**TABULATION OF QUANTITIES**

PROJECT NO: 00193-001-18
DATE: 6-17-2015
SHEET NO: L-2

# ROADWAY LIGHTING GENERAL NOTES

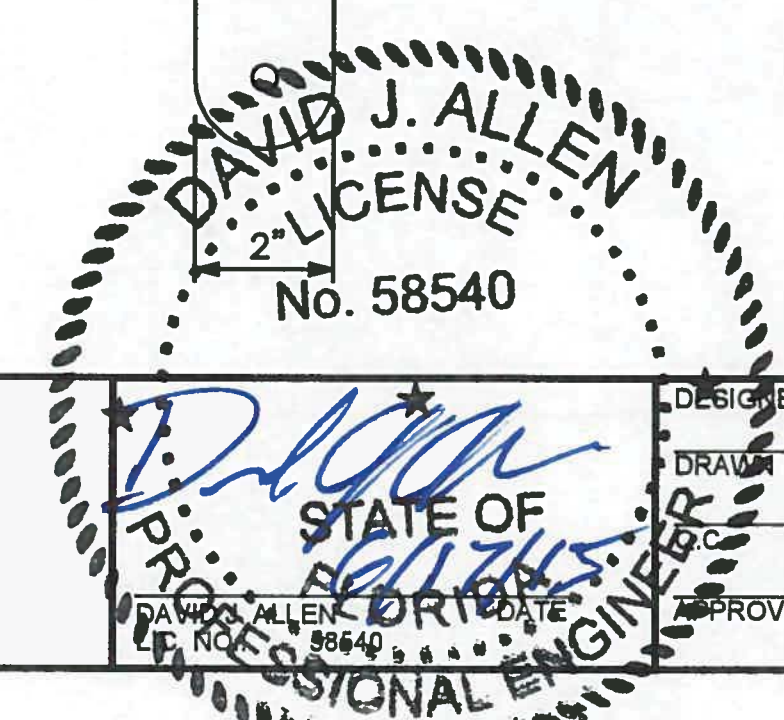
1. SPARE CONDUIT AT PAVEMENT CROSSINGS SHALL BE CAPPED AT BOTH ENDS.
2. PRIOR TO ANY EQUIPMENT ORDER, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL EQUIPMENT SPECIFICATION OR DESIGN DATA FOR ALL MATERIAL PROPOSED FOR THE PROJECT. THESE ITEMS INCLUDES BUT ARE NOT LIMITED TO THE FOLLOWING:
3. THE LOCATIONS OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, ARE APPROXIMATE AND BASED ON THE INFORMATION FURNISHED TO THE ENGINEER BY THE UTILITY OWNER(S) AND ARE SHOWN AS NOTICE TO THE CONTRACTOR THAT UNDERGROUND UTILITIES EXIST. THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANY OWNER(S) FOR LOCATION AND STAKING OF UNDERGROUND FACILITIES BEFORE EXCAVATING.
4. BEFORE EXCAVATING, NOTICE BE GIVEN TO THE SUNSHINE STATE ONE CALL OF FLORIDA, INC. (SSOCOF) A MINIMUM OF TWO (2) FULL BUSINESS DAYS AT 1-800-432-4770. NOT ALL UTILITY COMPANIES ARE MEMBERS OF SSOCOF.
5. THE LOCATION OF THE POLES, CONDUCTORS, CONDUITS, JUNCTION BOXES AND SERVICE POLES ARE DIAGRAMMATIC ONLY AND MAY BE SHIFTED BY THE ENGINEER TO ACCOMMODATE LOCAL CONDITIONS AND EXISTING UTILITY LOCATIONS.
6. ALUMINUM POLES, LUMINAIRES, AND BASES SHALL BE FABRICATED IN ACCORDANCE WITH AASHTO'S "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS", AND SHALL HAVE BEEN TESTED BY F.H.W.A. APPROVED METHODS (LATEST EDITION). CERTIFICATION FOR TESTS SHALL BE SUBMITTED WITH THE SHOP DRAWINGS.
7. SHOP DRAWING SUBMITTAL DATA SHALL INCLUDE A COMPUTER PRINTOUT SHOWING HORIZONTAL FOOT-CANDLE LEVELS TO BE OBTAINED USING THE SUBMITTED LUMINAIRES ON THIS PROJECT. AT FINAL INSPECTION THE CONTRACTOR SHALL VERIFY THE HORIZONTAL FOOT-CANDLE LEVELS ON THE ROADWAY WITH AN APPROVED CURRENTLY CALIBRATED LIGHT METER, AND SUBMIT REPORT FOR APPROVAL. PRINT OUT SHALL INCLUDE AN ANALYSIS OF EACH SEPARATE TYPICAL SECTION.
8. ALL ELECTRICAL WORK SHALL MEET ALL REQUIREMENTS OF THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE, THE NATIONAL ELECTRICAL SAFETY CODE AND THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. ALL COMPONENTS SHALL BE PROPERLY GROUNDED AND BONDED PER THE NATIONAL ELECTRICAL CODE REQUIREMENTS.
9. INSTALL LIGHTNING ARRESTORS, PROPERLY GROUNDED, IN POWER (SECONDARY) ENTRANCES, ON OUTSIDE OF ENCLOSURE.
10. IN ACCORDANCE WITH N.E.C., IDENTIFY ALL CIRCUITS AND EQUIPMENT WITH "LAMACOID TAGS". INSTALL SIMILAR TAGS OF STAINLESS STEEL IDENTIFYING CIRCUIT FOR EACH LUMINAIRE AT ACCESS HANDHOLE FOR EACH POLE.
11. THE CONTRACTOR SHALL NOTIFY FLORIDA POWER AND LIGHT COMPANY AT LEAST 48 HOURS PRIOR TO ANY INSTALLATION THAT IS WITHIN THE DISTANCE PER CURRENT OSHA REQUIREMENTS OF ENERGIZED ELECTRICAL CONDUCTORS. FLORIDA POWER AND LIGHT, AT ITS OPTION, SHALL ASSIST THE CONTRACTOR TO COVER UP ENERGIZED CONDUCTORS AT INSTALLATION SITES OR TAKE OTHER SAFETY PRECAUTIONS AS NECESSARY. EXTREME CAUTION SHALL BE EXERCISED AT ALL TIMES IN PERFORMANCE OF WORK AROUND THE PRIMARY HIGH VOLTAGE COMPONENTS.
12. PULLING INSTRUCTIONS: CONNECT PULLING DEVICES TO COPPER WIRE AND NOT TO JACKET AND MEET MANUFACTURER'S REQUIREMENTS. USE PULLING COMPOUND PER MANUFACTURER'S REQUIREMENTS. ALL BENDS SHALL NOT BE LESS THAN RECOMMENDED BY THE NATIONAL ELECTRICAL CODE OR NATIONAL ELECTRICAL SAFETY CODE FOR CABLE USED.
13. THE CONTRACTOR SHALL STAKE ALL POLE LOCATIONS AND REQUEST UTILITY COMPANIES TO LOCATE AND STAKE UNDERGROUND UTILITIES PRIOR TO EXCAVATING.
14. THE CONTRACTOR SHALL FURNISH AND INSTALL AN ALUMINUM IDENTIFICATION TAG ON EACH ROADWAY LIGHT POLE, LOCATED ONLY ON US 301. TAGS SHALL BE 2" x 8" IN SIZE WITH BLACK LETTERS ON YELLOW BACKGROUND, ATTACHED WITH RIVETS (NO SCREWS). NUMBERS SHALL BE AS SHOWN ON THE POLE DATA SHEET. SEE THE POLE IDENTIFICATION TAG DETAIL ON THIS SHEET FOR MORE INFORMATION. COST OF TAGS SHALL BE INCLUDED IN THE BID ITEMS FOR LIGHT POLE COMPLETE. BOTTOM OF THE TAG SHALL BE 60 INCHES ABOVE THE FINISHED GRADE.
15. THE CONTRACTOR SHALL USE THE CONCRETE FOUNDATION ON FDOT STANDARD INDEX 17515.
16. ALL CONDUITS UNDER ROADWAY (AND/OR SIDEWALK) SHALL BE INSTALLED PRIOR TO INSTALLATION OF ROADWAY BASE AND SURFACE (OR CONCRETE), EXCEPT WHERE OTHERWISE SPECIFIED IN THE PLANS.
17. DIRECTIONAL BORE OPERATIONS IF USED SHALL MEET THE REQUIREMENTS OF F.D.O.T.'S UTILITY ACCOMMODATION MANUAL, (LATEST EDITION).
18. AT LOCATIONS WHERE UNDERGROUND UTILITIES ARE WITHIN TWO FEET OF THE LIGHTING POLE FOUNDATIONS OR CONDUIT RUN, AS DETERMINED BY THE CONTRACTOR AND/OR ENGINEER. THE CONTRACTOR WILL HAND DIG THE FIRST 4 FEET OF THE HOLE FOR THE POLE FOUNDATION AND CONDUIT RUN.
19. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE PROVISIONS THAT REQUIRES THE PREPARATION AND APPROVAL OF AN EROSION CONTROL PLAN THAT ADDRESSES PREVENTION, CONTROL AND ABATEMENT OF WATER POLLUTION.
20. ALL CONDUIT TRENCHES SHALL BE BACKFILLED COMPLETELY TO PROVIDE SAFE CROSSING BY THE END OF EACH WORKING DAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE. THE CONTRACTOR SHALL NOT OPEN ANY AREA THAT CAN NOT BE BACKFILLED IN THE SAME WORK PERIOD.
21. ALL EXCESS DIRT AND DEBRIS EXCAVATED FROM POLE FOUNDATIONS SHALL BE REMOVED DAILY TO AREAS APPROVED BY THE ENGINEER AND PAID FOR UNDER PAY ITEM 715-4-123.
22. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL SIDE STREETS, PRIVATE AND COMMERCIAL DRIVEWAYS AT ALL TIMES DURING THE CONSTRUCTION OPERATION.
23. THE LIGHTING SYSTEM WILL BE MAINTAINED BY MANATEE COUNTY (ALONG 44TH AVE EAST AND 30TH ST EAST) AND FDOT AND AMERICAN LIGHTING (ALONG US 301) UPON FINAL ACCEPTANCE. THE CONTRACTOR SHALL SUBMIT THE AS-BUILT PLANS TO THE ENGINEER, PRIOR TO FINAL ACCEPTANCE.
24. THE CONTRACTOR SHALL NOTIFY MANATEE COUNTY BEFORE ANY TRENCHING OR DIGGING AT ALL SIGNALIZED INTERSECTIONS SO THAT ALL UNDERGROUND LOOP LEAD-INS AND ELECTRICAL CABLES CAN BE IDENTIFIED AND MARKED APPROPRIATELY.
25. HANDHOLE COVERS FOR POLES SHALL BE LOCATED OPPOSITE APPROACHING TRAFFIC.
26. ALL EXISTING UTILITIES ARE TO REMAIN IN PLACE UNLESS OTHERWISE NOTED.
27. THE WIRES AT THE POLE HANDHOLES AND PULL BOXES SHALL BE LOOPED IN THE POLE AND PULL BOXES WITH SUFFICIENT LENGTH TO COMPLETELY REMOVE CONNECTORS AND SPLICES ONE FOOT OUTSIDE OF THE HANDHOLE AND PULL BOXES TO MAKE CONNECTIONS AND SPLICES ACCESSIBLE FOR CHANGING FUSES AND TROUBLE SHOOTING THE SYSTEM.
28. CONDUIT LOCATION AS SHOWN ON THE PLANS IS DIAGRAMMATIC. CONDUIT SHALL BE PLACED WITHIN THE RIGHT-OF-WAY BUT CAN BE ADJUSTED TO FIT AROUND EXISTING AND PROPOSED UTILITIES. THE CONTRACTOR SHALL ALSO AVOID THE PROPOSED MAST ARM AND STRAIN POLE FOUNDATIONS.
29. ALL LIGHT POLES SHALL HAVE A PULL BOX INSTALLED BY ITS FOUNDATION AS PER STANDARD INDEX 17500, SHEET 3 OF 3 AND MODIFIED SLAB DETAIL.
30. THE CONTRACTOR SHALL COORDINATE WITH FLORIDA POWER AND LIGHT REPRESENTATIVE GREG COKER AT 941-723-4430 PRIOR TO CONSTRUCTION FOR THE FINAL POWER POINT OF SERVICE LOCATIONS.
31. THE LIGHT POLES SHALL NOT BE PLACED IN THE BOTTOM OF DITCHES. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR AN APPROVED OFFSET ADJUSTMENT.
32. THE CONTRACTOR SHALL CONTACT THE TRAFFIC ENGINEERING DIVISION PRIOR TO BIDDING TO VERIFY DESIRED LUMINAIRE LAMP TYPE. IF THE LAMP IS DIFFERENT TO THE LAMP USED IN THE DESIGN AS MENTIONED ON THE POLE DATA SHEET, THE NEW LAMP MUST MATCH THE LUMEN INTENSITY AND PHOTOMETRIC CURVE OF THE HPS LUMINAIRE. THIS WOULD ALLOW THE POLE SPACING TO REMAIN AS SHOWN IN THE PLANS.
33. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE LOCAL POWER COMPANY PROVIDING ELECTRICAL POWER TO DETERMINE IF A SERVICE PROCESSING OR OTHER FEES ARE REQUIRED. ANY FEE SHALL BE INCLUDED AS PART OF PAYMENT FOR THE LOAD CENTER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS OF THE POWER SERVICE AND LOAD CENTER. THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION, INSPECTION, AND ENERGIZING OF THE NEW LOAD CENTER IN A TIMELY MANNER IN ORDER TO PROMOTE PROJECT COMPLETION WITHIN CONTRACT TIME.
34. THE ROADWAY LIGHTING TO THE NORTH AND SOUTH OF 38TH AVENUE EAST ON US 301 SHALL REMAIN AND THE CONTRACTOR IS TO MAINTAIN THE LIGHTING THROUGHOUT THE CONSTRUCTION DURATION. THIS IS TO INSURE THAT THE LIGHTS WILL BE OPERATIONAL DURING ANY CONSTRUCTION PROCESS IN THIS AREA.

POLE IDENTIFICATION TAG DETAIL



LIGHTING CONDUIT LEGEND

LC = POPULATED LIGHTING CONDUIT  
 SP = EMPTY SPARE LIGHTING CONDUIT



NO.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

**44TH AVENUE EAST  
ROADWAY EXTENSION**



DESIGNED	DJA
DRAWN	ROH
APPROVED	

**LIGHTING GENERAL NOTES**

PROJECT NO:	00193-001-18
DATE:	6-17-2015
SHEET NO:	L-3

POLE DATA

44TH AVENUE SEGMENT

POLE NO.	CIRCUIT	STATION AND OFFSET	ARM LENGTH	LUMINAIRE WATTAGE	MOUNTING HEIGHT	PAY ITEM
1	A-2	52+53.50, 50.50' RT	12'	400	50'	715-4-123
2	A-1	54+72.00, 38.00' LT	12'	400	50'	715-4-123
3	A-2	56+03.50, 50.50' RT	12'	400	50'	715-4-123
4	A-1	57+85.84, 38.00' LT	12'	400	50'	715-4-123
5	A-2	59+61.09, 50.65' RT	12'	400	50'	715-4-123
6	A-1	61+35.82, 50.58' LT	12'	400	50'	715-4-123
7	A-2	63+11.60, 50.85' RT	12'	400	50'	715-4-123
8	A-1	64+84.76, 50.56' LT	12'	400	50'	715-4-123
9	A-2	66+32.00, 50.50' RT	12'	400	50'	715-4-123
10	A-1	67+93.67, 50.28' LT	12'	400	50'	715-4-123
11	A-2	69+59.31, 50.64' RT	12'	400	50'	715-4-123
12	A-1	71+14.25, 50.50' LT	12'	400	50'	715-4-123
13	A-2	72+86.57, 51.01' RT	12'	400	50'	715-4-123
14	A-1	74+64.05, 50.62' LT	12'	400	50'	715-4-123
15	A-2	76+41.55, 50.77' RT	12'	400	50'	715-4-123
16	A-1	78+14.57, 50.33' LT	12'	400	50'	715-4-123
17	A-2	79+76.73, 67.54' RT	12'	400	50'	715-4-123
18	A-1	81+35.20, 55.55' LT	12'	400	50'	715-4-123
8	B-1	84+48.53, 62.09' RT	12'	400	50'	715-4-123
7	B-2	85+88.22, 73.72' LT	12'	400	50'	715-4-123
6	B-1	87+28.53, 58.83' RT	12'	400	50'	715-4-123
5	B-2	88+86.76, 56.30' LT	12'	400	50'	715-4-123
4	B-1	90+49.85, 55.39' RT	12'	400	50'	715-4-123
3	B-2	92+28.00, 51.74' LT	12'	400	50'	715-4-123
2	B-1	93+99.74, 52.11' RT	12'	400	50'	715-4-123
1	B-2	95+74.10, 50.64' LT	12'	400	50'	715-4-123

US 301 SEGMENT

POLE NO.	CIRCUIT	STATION AND OFFSET	ARM LENGTH	LUMINAIRE WATTAGE	MOUNTING HEIGHT	PAY ITEM
9	B-1	393+65.50, 82.94' RT	12'	400	50'	715-4-123
19	A-2	394+79.27, 79.24' LT	12'	400	50'	715-4-123
10	B-1	395+93.83, 81.27' RT	12'	400	50'	715-4-123
20	A-2	397+04.26, 80.89' LT	12'	400	50'	715-4-123
11	B-1	398+17.29, 82.85' RT	12'	400	50'	715-4-123
21	A-2	399+29.26, 82.53' LT	12'	400	50'	715-4-123
12	B-1	400+42.73, 83.20' RT	12'	400	50'	715-4-123
22	A-2	401+57.78, 81.64' LT	12'	400	50'	715-4-123
13	B-2	403+12.24, 81.63' RT	12'	400	50'	715-4-123
23	A-1	404+23.64, 84.10' LT	12'	400	50'	715-4-123
14	B-2	405+32.54, 81.72' RT	12'	400	50'	715-4-123
24	A-1	406+41.47, 84.22' LT	12'	400	50'	715-4-123
15	B-2	407+51.54, 81.26' RT	12'	400	50'	715-4-123
25	A-1	408+61.47, 82.07' LT	12'	400	50'	715-4-123
16	B-2	409+70.36, 82.11' RT	12'	400	50'	715-4-123
26	A-1	410+83.35, 81.88' LT	12'	400	50'	715-4-123
17	B-2	411+88.53, 86.82' RT	12'	400	50'	715-4-123
27	A-1	412+96.38, 81.03' LT	12'	400	50'	715-4-123

CONVENTIONAL LIGHTING DESIGN CRITERIA

Average Initial Intensity	1.5 Foot Candles
Uniformity Ratio Avg./Min.	4:1 Or Less
Max./Min.	10:1 Or Less
Veiling Luminance Ratio	0.3:1 Or Less
Wind Speed	130 MPH

30TH STREET SEGMENT

POLE NO.	CIRCUIT	STATION AND OFFSET	ARM LENGTH	LUMINAIRE WATTAGE	MOUNTING HEIGHT	PAY ITEM
1 *	C-1	202+29.65, 30.76' RT	12'	400	50'	715-4-123
2 *	C-1	204+56.45, 32.86' RT	12'	400	50'	715-4-123
3 *	C-1	206+75.48, 31.81' RT	12'	400	50'	715-4-123
4 *	C-1	208+78.02, 32.21' RT	12'	400	50'	715-4-123
5 *	C-1	211+17.77, 33.39' RT	12'	400	50'	715-4-123
6 *	C-1	213+55.05, 32.14' RT	12'	400	50'	715-4-123
7 *	C-1	215+74.00, 37.00' RT	12'	400	50'	715-4-123
8 *	C-1	217+95.00, 39.00' RT	12'	400	50'	715-4-123
9 *	C-2	219+87.23, 35.50' RT	12'	400	50'	715-4-123
10 *	C-2	221+11.29, 108.54' RT	12'	400	50'	715-4-123
11 **	C-2	221+50.32, 85.15' LT	12'	400	50'	715-4-123

\* LUMINAIRE INCLUDES HOUSE SIDE LIGHT SHIELD  
 \*\* LUMINAIRE INCLUDES STREET SIDE LIGHT SHIELD

38TH AVENUE SEGMENT

POLE NO.	CIRCUIT	STATION AND OFFSET	ARM LENGTH	LUMINAIRE WATTAGE	MOUNTING HEIGHT	PAY ITEM
12 **	C-2	223+09.16, 86.70' LT	12'	400	50'	715-4-123
13 **	C-2	224+11.58, 58.30' LT	12'	400	50'	715-4-123
14 **	C-2	225+53.26, 66.80' LT	12'	400	50'	715-4-123
15 **	C-2	227+11.97, 65.00' LT	12'	400	50'	715-4-123
16 **	C-2	228+99.10, 56.00' LT	12'	400	50'	715-4-123
17 **	C-2	231+34.21, 54.80' LT	12'	400	50'	715-4-123
18	C-2	232+95.08, 75.20' LT	12'	400	50'	715-4-123
19 **	C-2	400+34.70, 46.80' RT	12'	400	50'	715-4-123
20	C-2	398+58.08, 60.70' RT	12'	400	50'	715-4-123
21 *	C-2	601+03.91, 33.50' RT	12'	400	50'	715-4-123
22 *	C-2	602+75.77, 33.20' RT	12'	400	50'	715-4-123

\* LUMINAIRE INCLUDES HOUSE SIDE LIGHT SHIELD  
 \*\* LUMINAIRE INCLUDES STREET SIDE LIGHT SHIELD

LEGEND DESCRIPTION

SYMBOLS



400 watt high pressure sodium clear flat glass cobra head luminaire. Designed for full cutoff Type III distribution. Integral regulator type ballast wired for 480 volt operation. Mounting height is 50 ft. Use GE photometric curve 451002 or equal. Light pole includes the maintenance slab. All poles shall have a pull box adjacent to the base.



Schedule 40 PVC conduit with RHW-2 or XHHW conductors inside (conduit and conductor size as shown on plan sheets). Run one (1) minimum 6 AWG sized copper bond conductor (RHW-2 green insulation) inside conduit with other conductors.



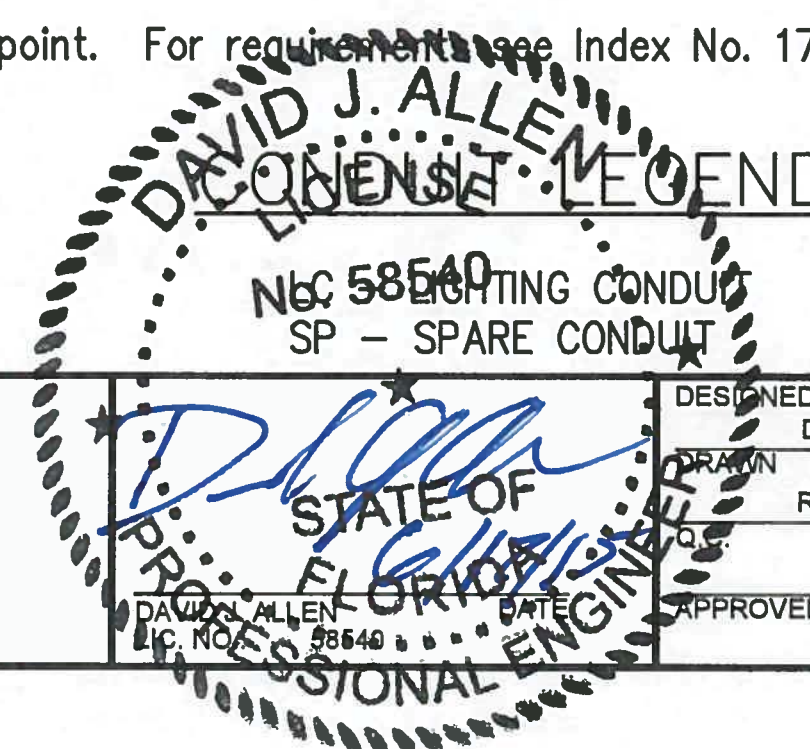
HDPE conduit, directional bored under pavement with RHW-2 or XHHW conductors inside (conduit and conductor size as shown on plan sheets). Extend conduit beyond edge of pavement to pull boxes. Run one (1) minimum 6 AWG sized copper bond conductor (RHW-2 green insulation) inside conduit with other conductors. All directional bore shall included an empty spare conduit as shown in the plans.



Pull box. For specifications see Section 635 of Standard Specifications For Road And Bridge Construction.



Distribution point. For requirements see Index No. 17504 of Design Standards.



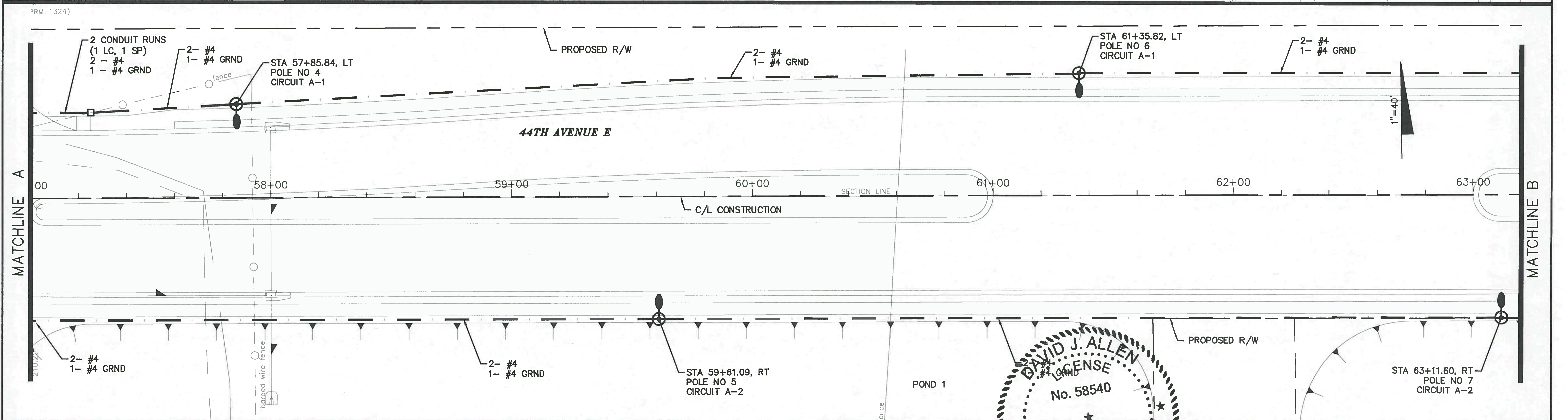
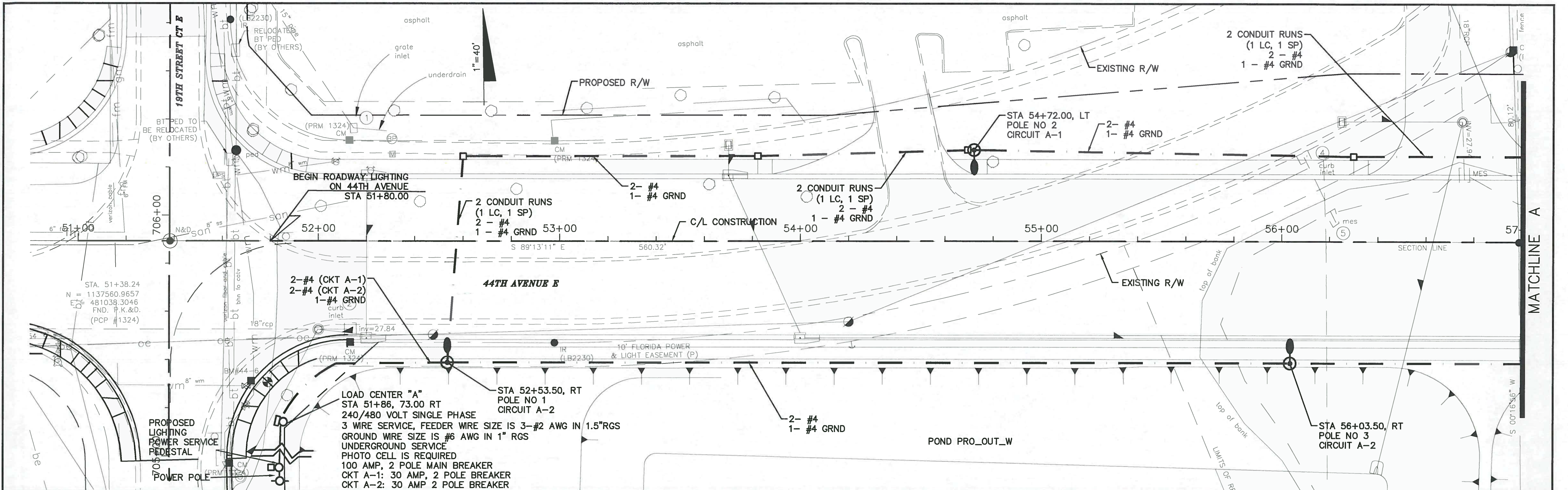
MANATEE COUNTY

44TH AVENUE EAST ROADWAY EXTENSION



POLE DATA AND LEGEND

PROJECT NO: 00193-001-18  
 DATE: 6-17-2015  
 SHEET NO: L-4



NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

44TH AVENUE EAST  
ROADWAY EXTENSION

**Cardno**  
Shaping the Future  
12481 TELECOM DRIVE, TAMPA, FL 33637  
TEL: (813) 221-0048 FAX: (813) 386-1953  
www.cardno.com Certificate of Authorization No. 29915

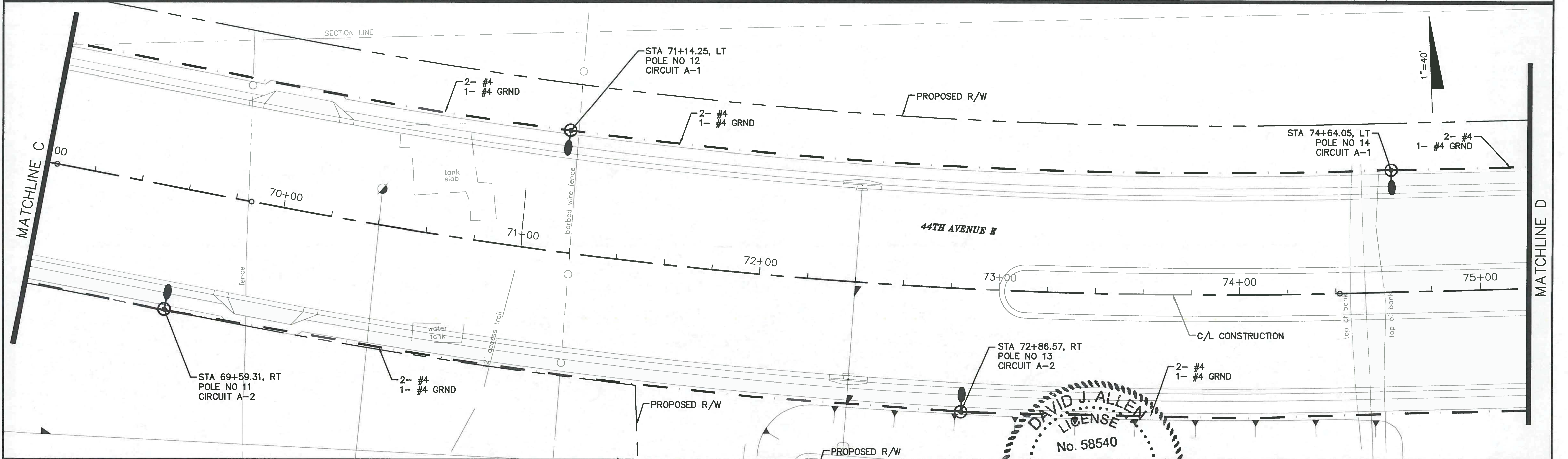
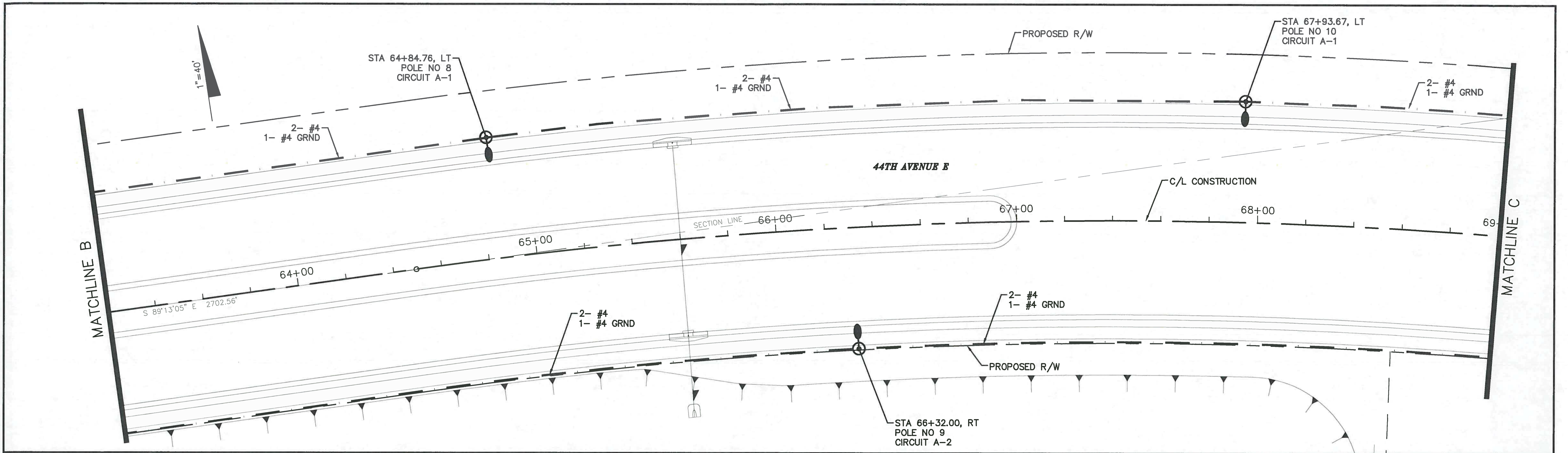
DAVID J. ALLEN  
Professional Engineer  
No. 58540  
STATE OF FLORIDA  
Professional Engineer  
No. 58540

DESIGNED	DJA
DRAWN	ROH
Q.C.	
APPROVED	

LIGHTING PLAN  
44TH AVENUE EAST

PROJECT NO:	00193-001-18
DATE:	6-17-2015
SHEET NO:	L-5

FILE: J:\00193\00193001.18\ACAD\dwg\LT19300118-1.dwg LAST SAVED: Mon, 06/08/15-11:39a PLOTTED: Wed, 06/17/15-8:19a BY: John Hutchison



NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

44TH AVENUE EAST  
ROADWAY EXTENSION

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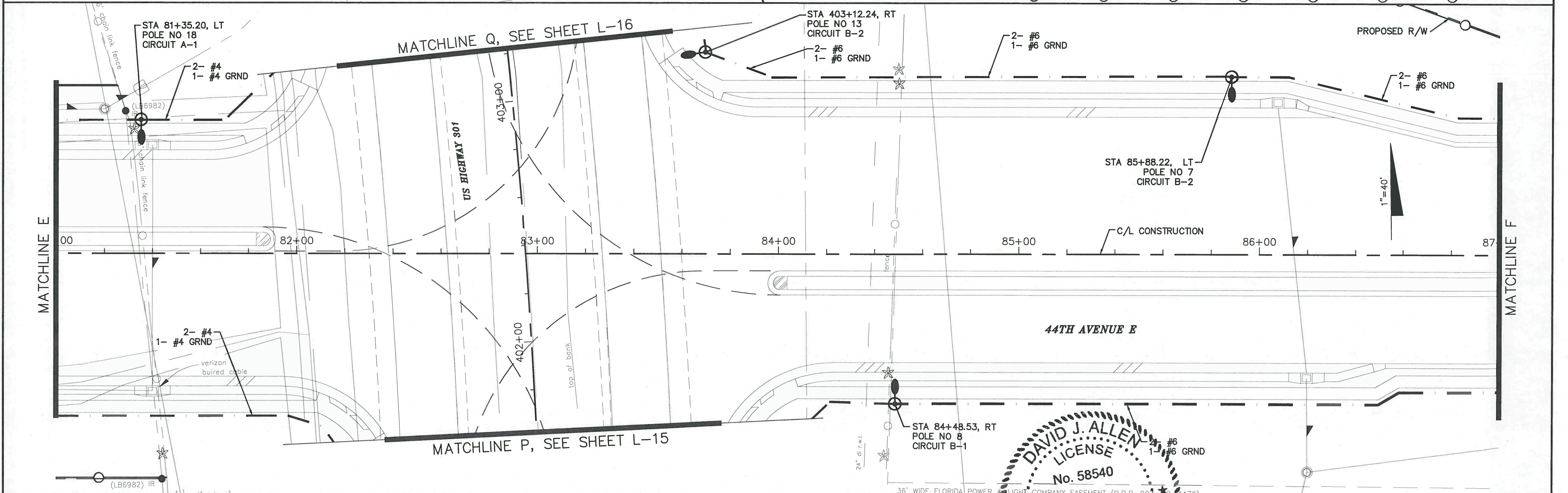
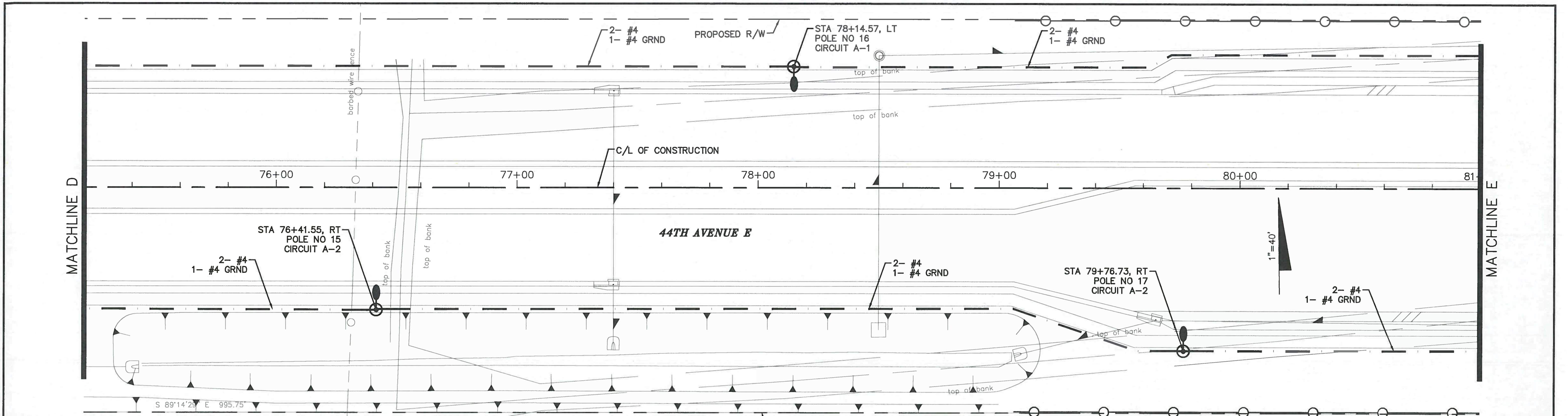
DAVID J. ALLEN  
LICENSE  
No. 58540  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

DESIGNED	DJA
DRAWN	ROH
CHECKED	
APPROVED	

LIGHTING PLAN  
44TH AVENUE EAST

PROJECT NO:	00193-001-18
DATE:	6-17-2015
SHEET NO:	L-6

FILE: J:\00193\00193001.18\ACAD\dwg\LT19300118-1.dwg LAST SAVED: Mon, 06/08/15-11:39a PLOTTED: Wed, 06/17/15-8:19a BY: John.Hutchison



NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

44TH AVENUE EAST  
ROADWAY EXTENSION

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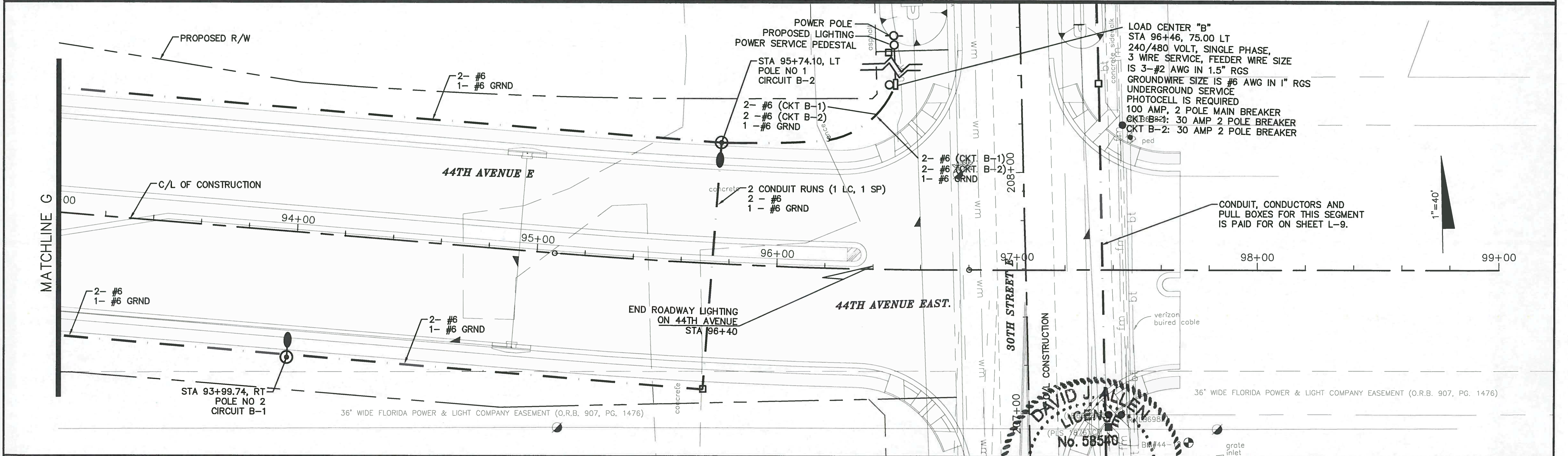
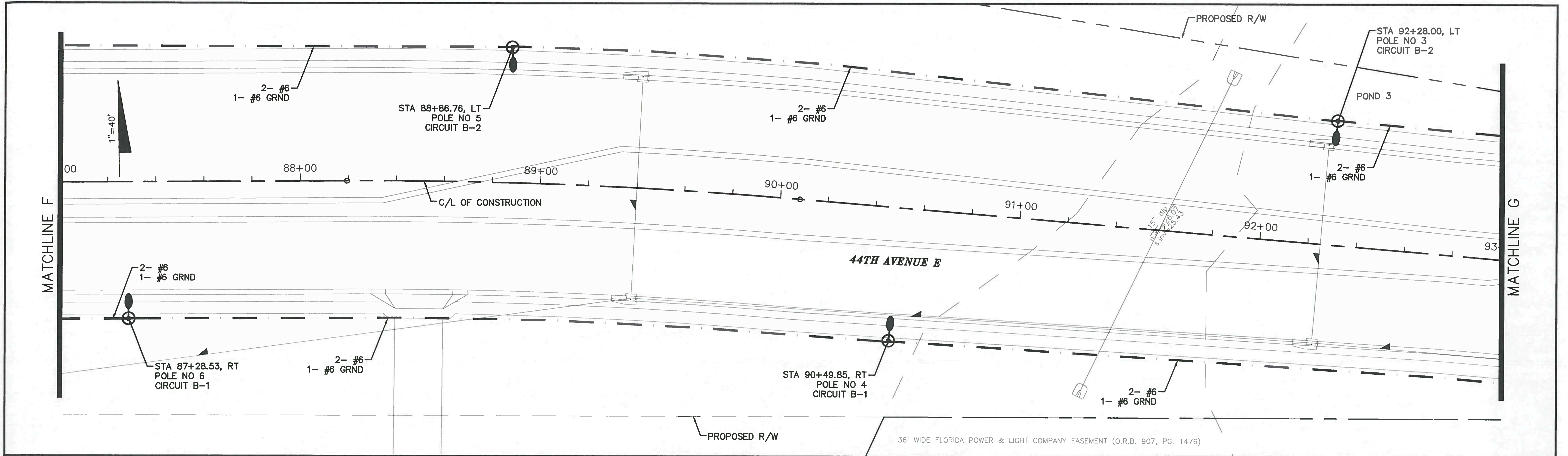
DAVID J. ALLEN  
LICENSE  
No. 58540  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

DESIGNED	DJA
DRAWN	ROH
CHECKED	
APPROVED	

LIGHTING PLAN  
44TH AVENUE EAST

PROJECT NO:	00193-001-18
DATE:	6-17-2015
SHEET NO:	L-7

FILE: J:\00193\00193001.18\ACAD\dwg\LT19300118-1.dwg LAST SAVED: Mon, 06/08/15-11:39a PLOTTED: Wed, 06/17/15-8:18a BY: John Hutchison



NO.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

**44TH AVENUE EAST  
ROADWAY EXTENSION**

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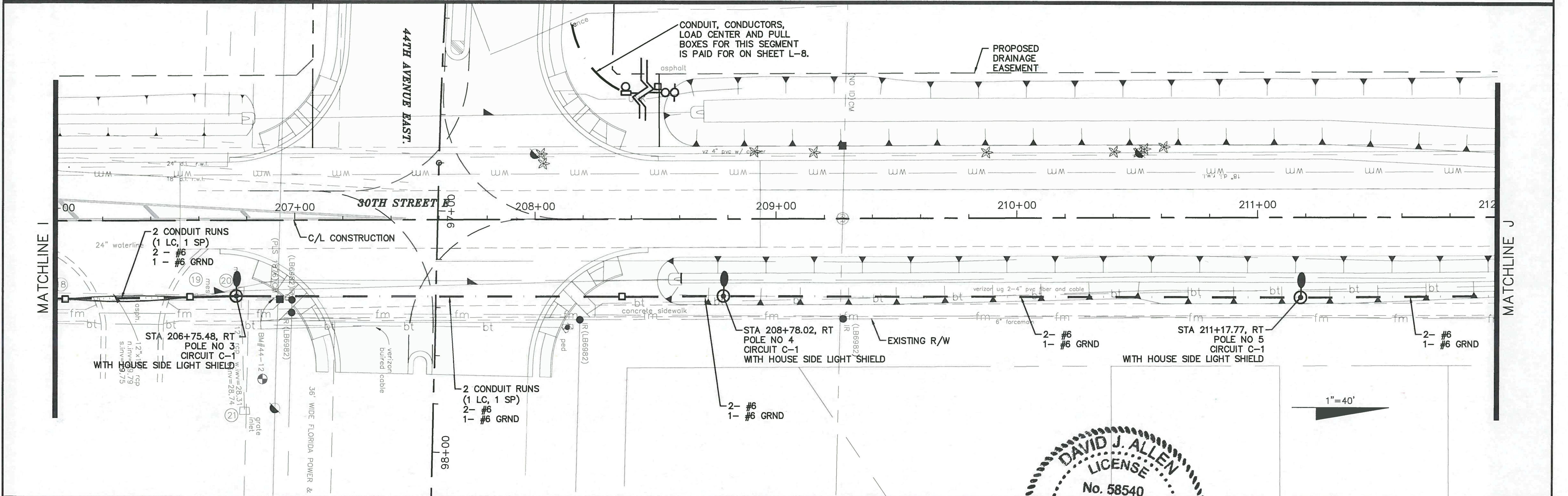
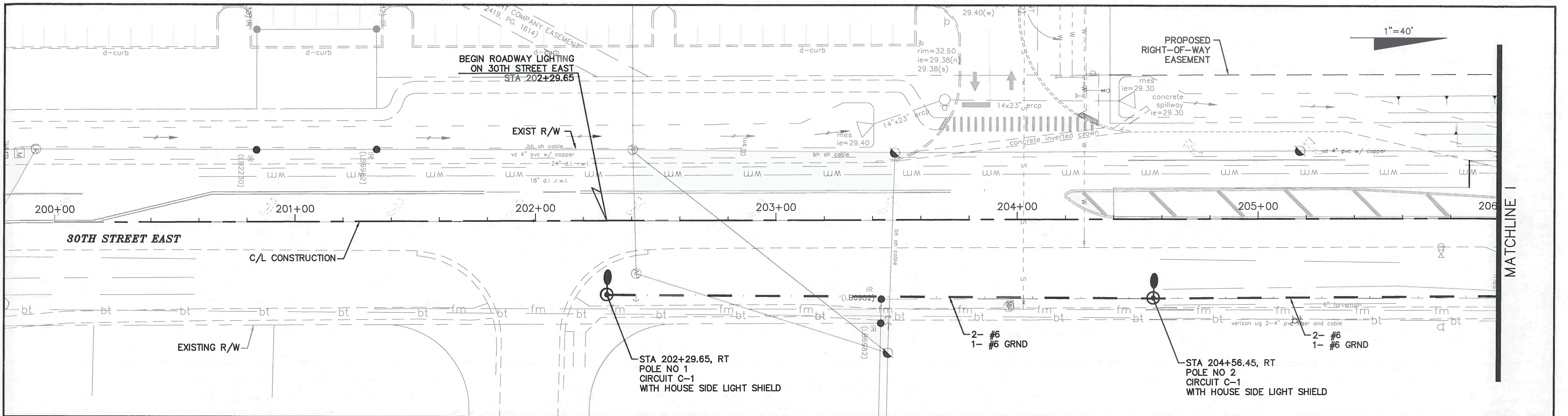
DESIGNED: DJA  
DRAWN: ROH  
APPROVED: [Signature]  
DAVID J. ALLEN  
LICENSED PROFESSIONAL ENGINEER  
No. 58540  
STATE OF FLORIDA

**LIGHTING PLAN  
44TH AVENUE EAST**

PROJECT NO:  
00193-001-18  
DATE:  
6-17-2015  
SHEET NO:  
L-8

FILE: J:\00193\00193001\18\ACAD\dwg\LT19300118-1.dwg LAST SAVED: Mon, 06/08/15-11:39a PLOTTED: Wed, 06/17/15-8:19a BY: John.Hutchison





NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

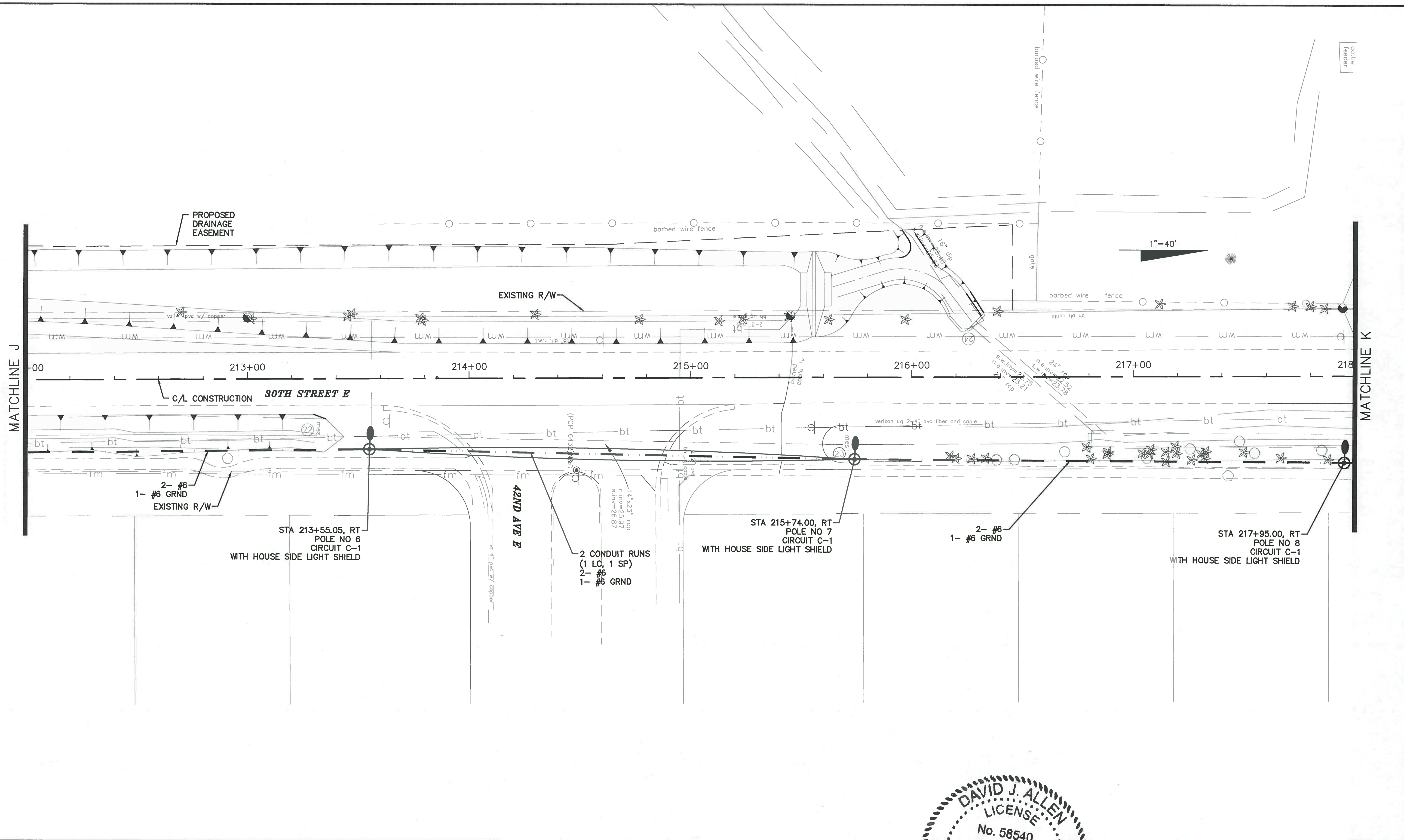
44TH AVENUE EAST  
ROADWAY EXTENSION

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DAVID J. ALLEN  
LICENSE  
No. 58540  
PROFESSIONAL ENGINEER  
STATE OF FLORIDA

LIGHTING PLAN  
30TH STREET EAST

PROJECT NO:  
00193-001-18  
DATE:  
6-17-2015  
SHEET NO:  
L-9

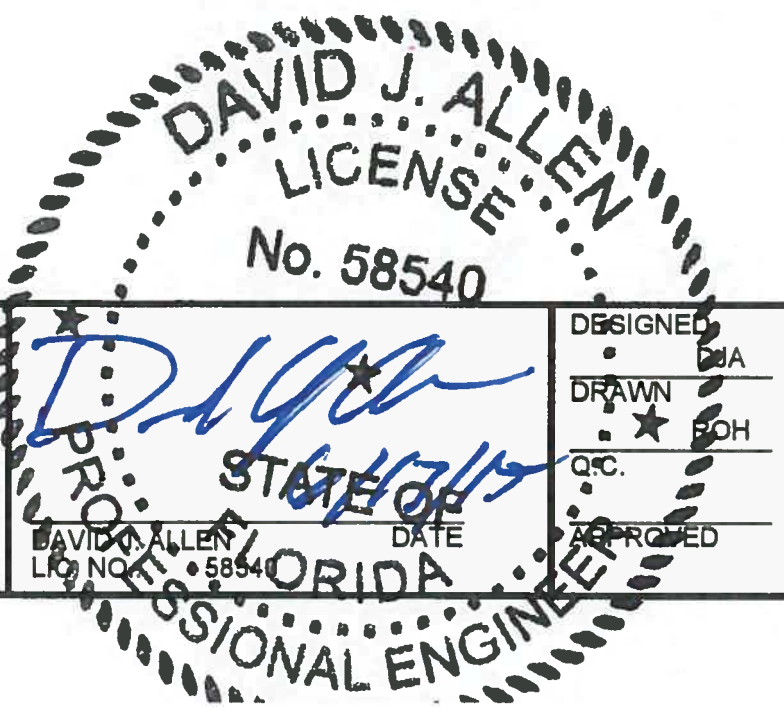


NO.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

**44TH AVENUE EAST  
ROADWAY EXTENSION**

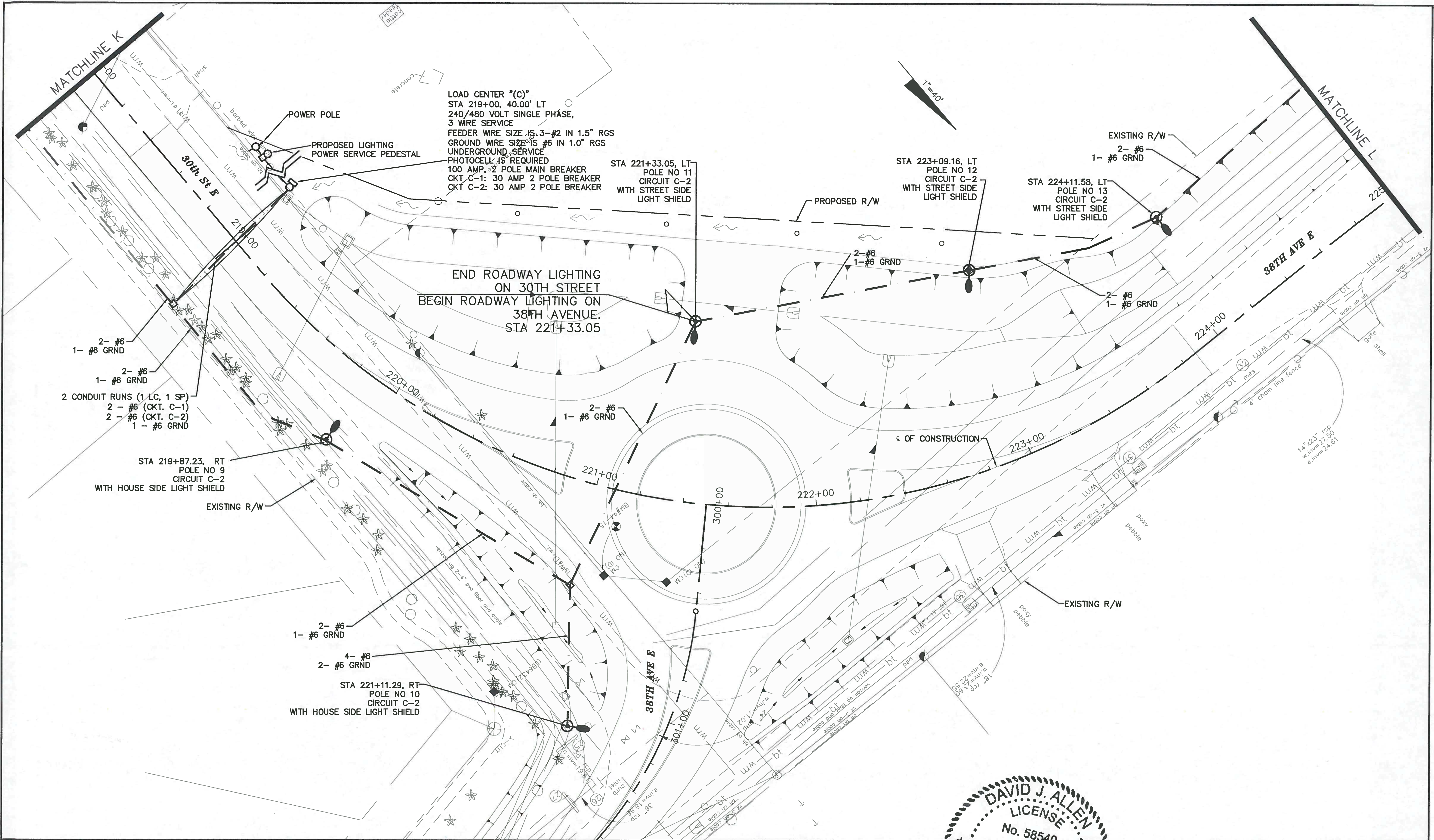
  
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DAVID J. ALLEN  
 LICENSE  
 No. 58540  
  
 PROFESSIONAL ENGINEER  
 STATE OF FLORIDA

**LIGHTING PLAN  
30TH STREET EAST**

PROJECT NO: 00193-001-18
DATE: 6-17-2015
SHEET NO: L-10

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NO.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

**44TH AVENUE EAST  
ROADWAY EXTENSION**

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DESIGNED: [Signature]  
DRAWN: [Signature]  
CHECKED: [Signature]  
APPROVED: [Signature]

**LIGHTING PLAN  
30TH STREET EAST AT  
38TH AVENUE EAST**

PROJECT NO:  
00193-001-18  
DATE:  
6-17-2015  
SHEET NO:  
L-11



FILE: J:\02193\001\93001.18\ACAD\dwg\L19300118-1.dwg LAST SAVED: Mon, 06/08/15 11:38a PLOTTED: Wed, 06/17/15 6:26a BY: John Hutchison

1"=40'

STA 227+11.97, LT  
POLE NO 15  
CIRCUIT C-2  
WITH STREET SIDE  
LIGHT SHIELD

STA 225+53.26, LT  
POLE NO 14  
CIRCUIT C-2  
WITH STREET SIDE  
LIGHT SHIELD

STA 228+99.10, LT  
POLE NO 16  
CIRCUIT C-2  
WITH STREET SIDE  
LIGHT SHIELD

MATCHLINE L

MATCHLINE M

38TH AVE E

C/L CONSTRUCTION

EXISTING R/W

NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

44TH AVENUE EAST  
ROADWAY EXTENSION

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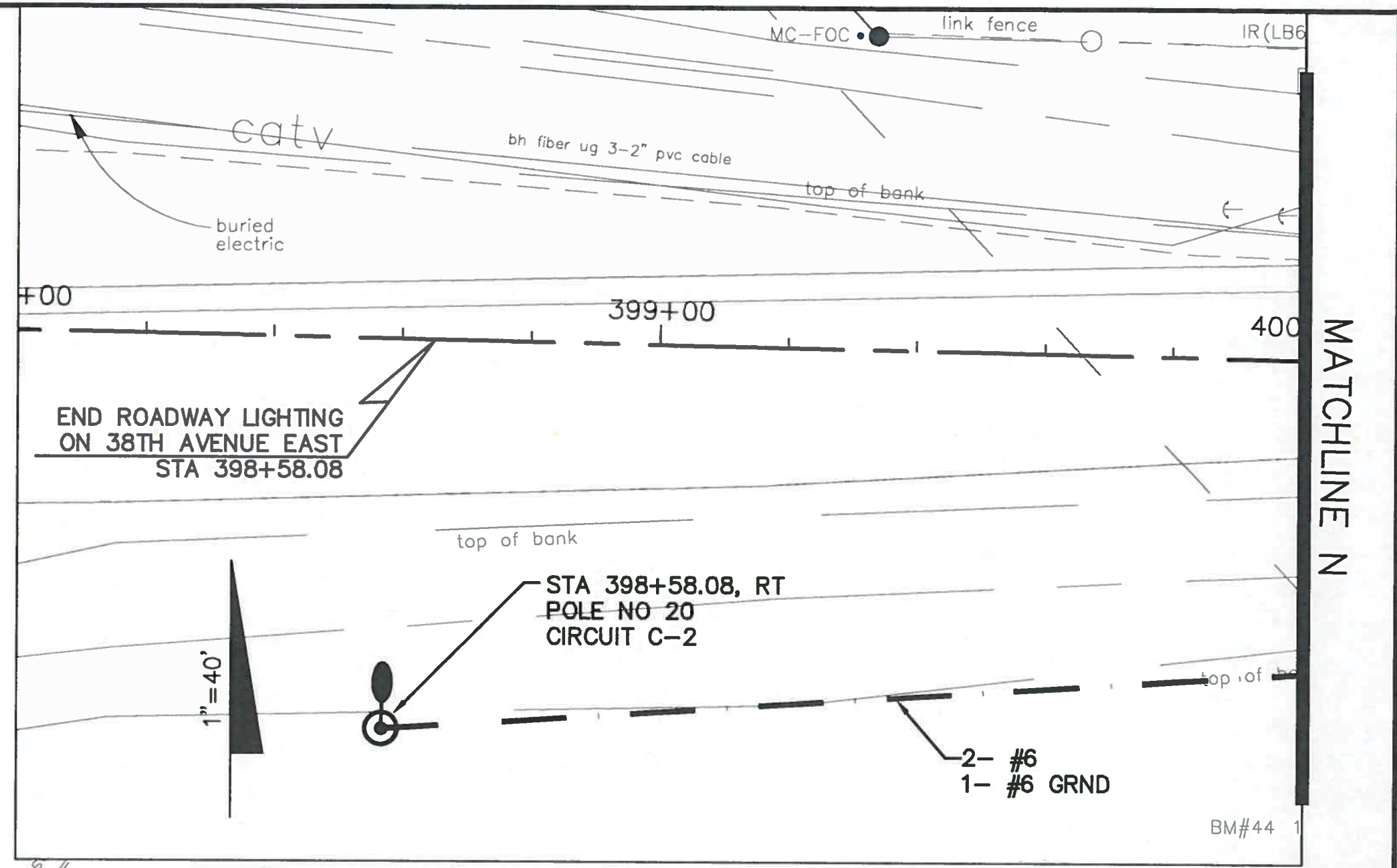
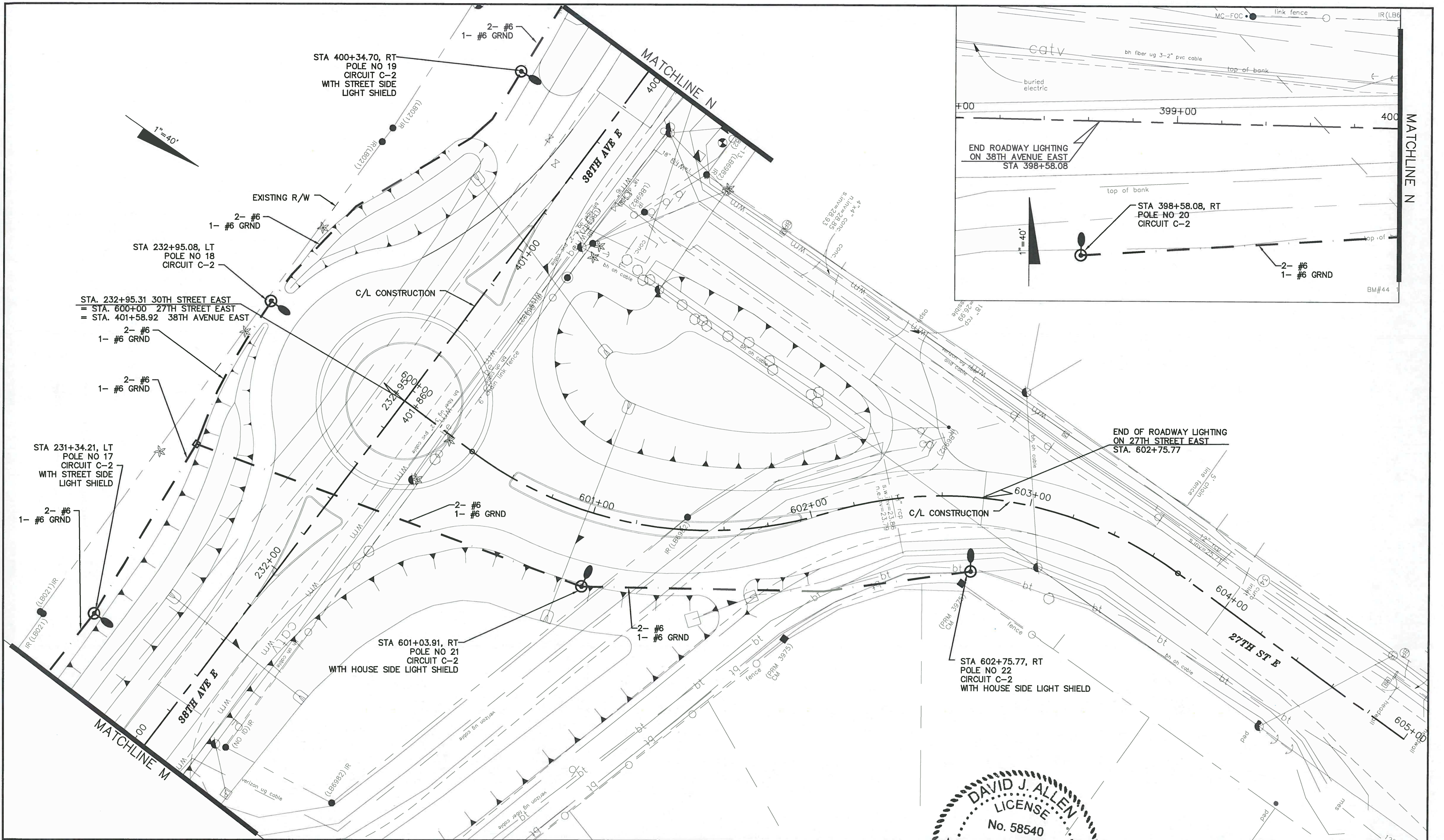
DAVID J. ALLEN  
LICENSE  
No. 58540  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

DESIGNED	DJA
DRAWN	ROH
DATE	
APPROVED	

LIGHTING PLAN  
38TH AVENUE EAST

PROJECT NO:	00193-001-18
DATE:	6-17-2015
SHEET NO:	L-12

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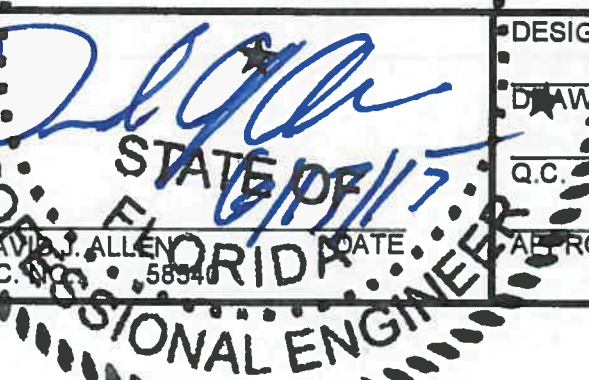


NO.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

**44TH AVENUE EAST  
ROADWAY EXTENSION**

  
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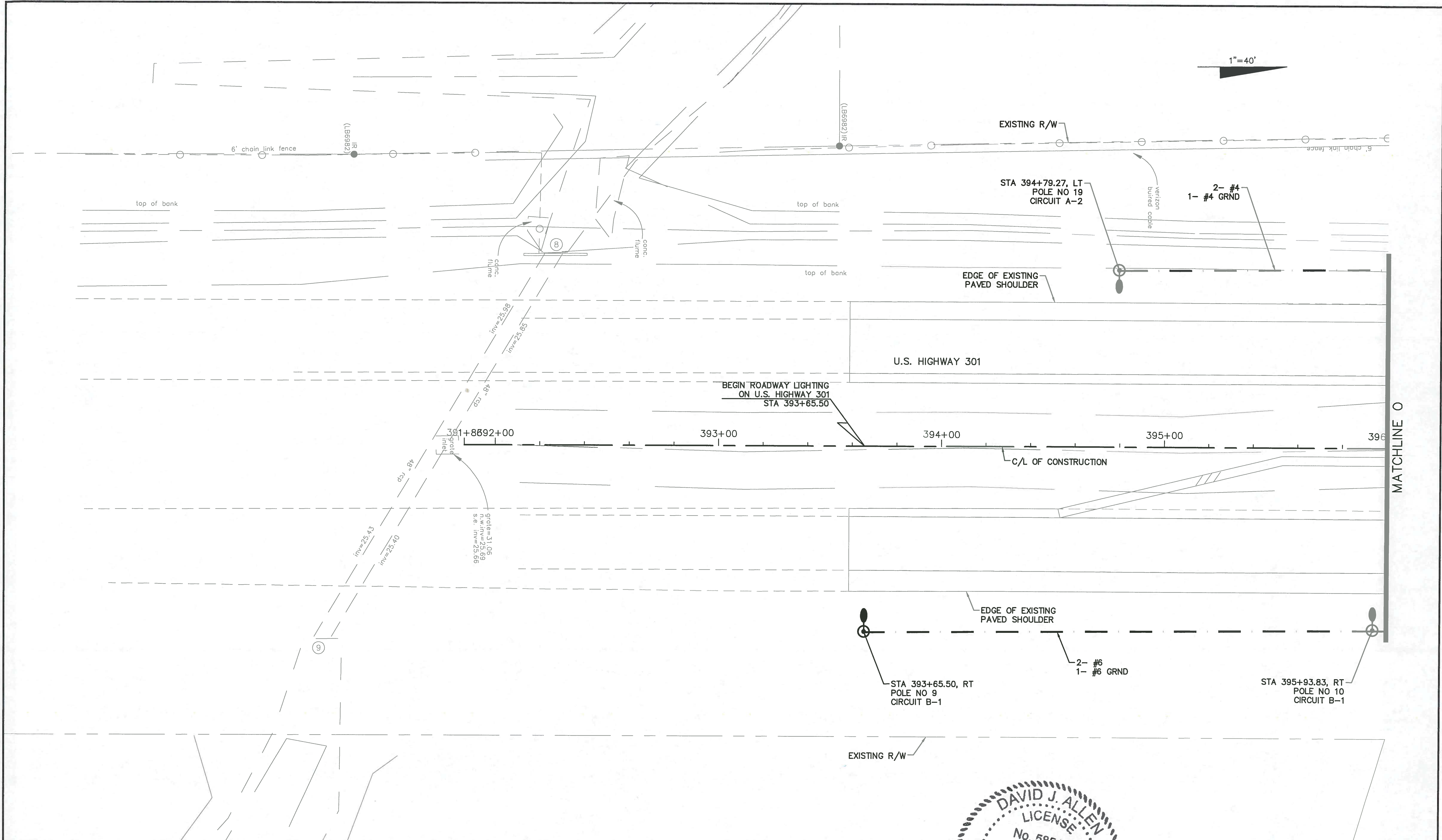
**DAVID J. ALLEN**  
 LICENSE  
 No. 58540  


**LIGHTING PLAN  
38TH AVENUE EAST AT  
27TH STREET EAST**

PROJECT NO:  
00193-001-18  
 DATE:  
6-17-2015  
 SHEET NO:  
L-13

FILE: J:\00193\00193001.18\ACAD\dwg\LT19300118-1.dwg LAST SAVED: Mon, 06/08/15 11:38a PLOTTED: Wed, 06/17/15 8:20a BY: John.Hutchison

1"=40'



NO.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

**44TH AVENUE EAST  
ROADWAY EXTENSION**

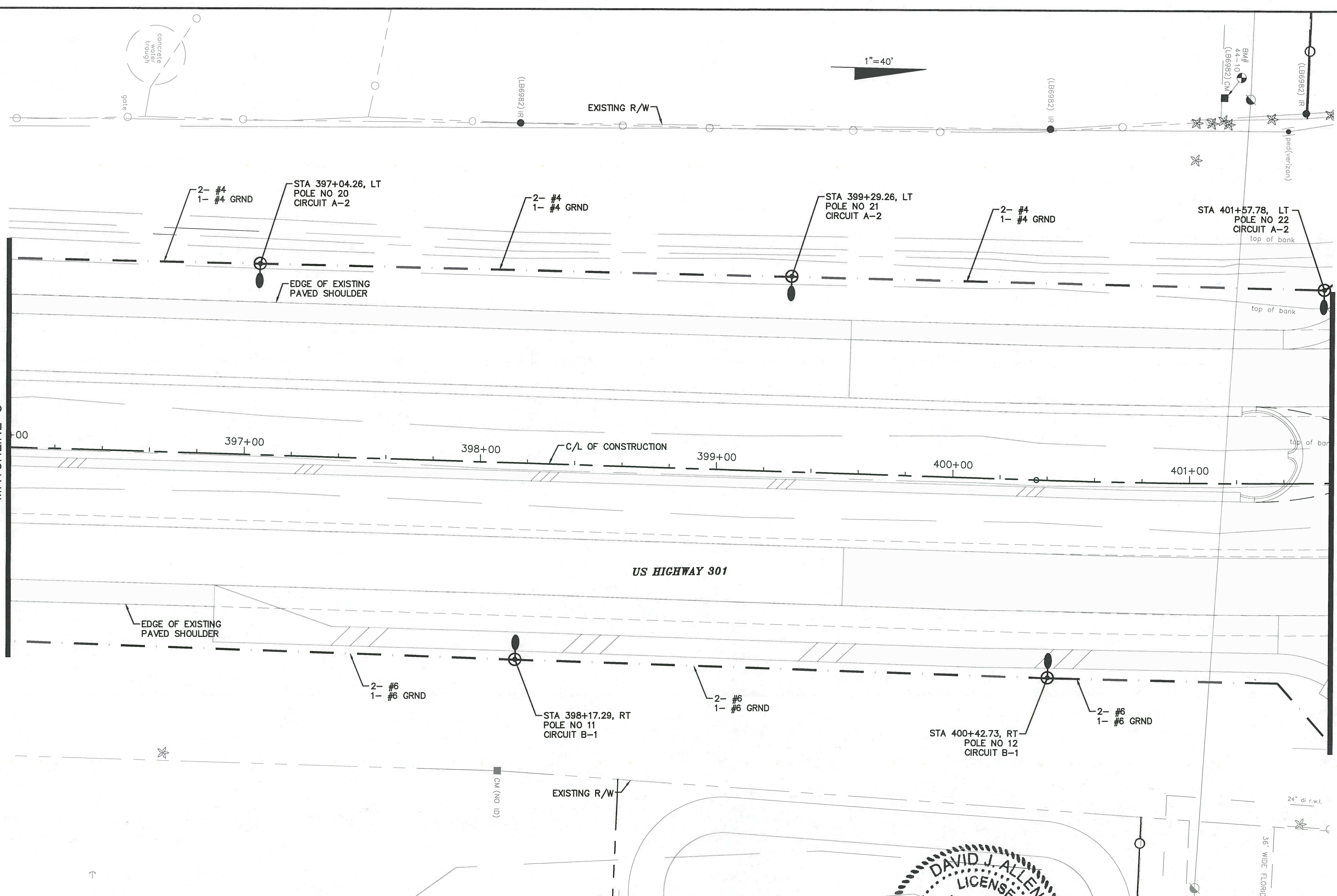
**Cardno**  
Shaping the Future  
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TEL: (813) 221-0048 FAX: (813) 386-1953  
www.cardno.com Certificate of Authorization No. 29915

DAVID J. ALLEN  
LICENSED PROFESSIONAL ENGINEER  
No. 58540  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

**LIGHTING PLAN  
US 301**

PROJECT NO:  
00193-001-18  
DATE:  
6-17-2015  
SHEET NO:  
L-14

FILE: J:\00193\00193001.18\ACAD\dwg\LT19300118-1.dwg LAST SAVED: Mon, 06/08/15-11:39a PLOTTED: Wed, 06/17/15-8:20a BY: John.Hutchison



MATCHLINE O

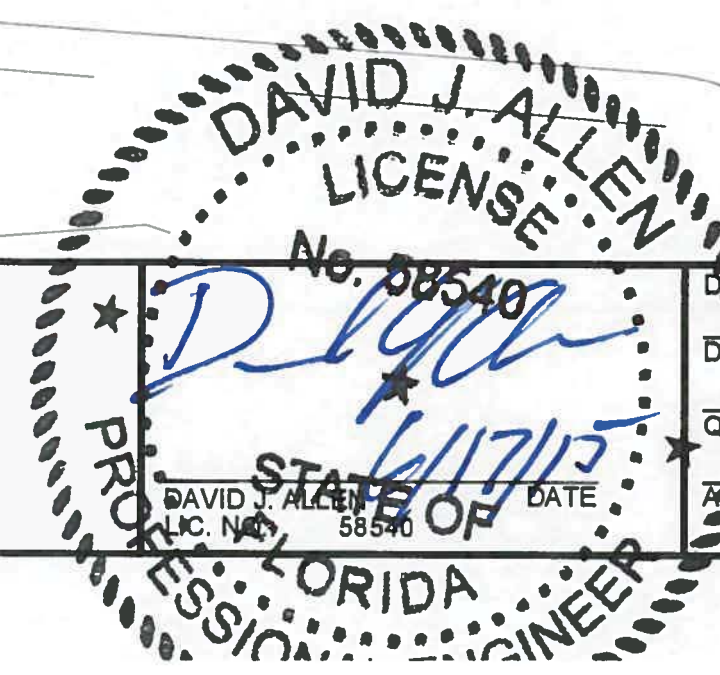
MATCHLINE P, SEE SHEET L-7

NO.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

**44TH AVENUE EAST  
ROADWAY EXTENSION**

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Shaping the Future  
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TEL: (813) 221-0048 FAX: (813) 386-1953  
www.cardno.com Certificate of Authorization No. 29915

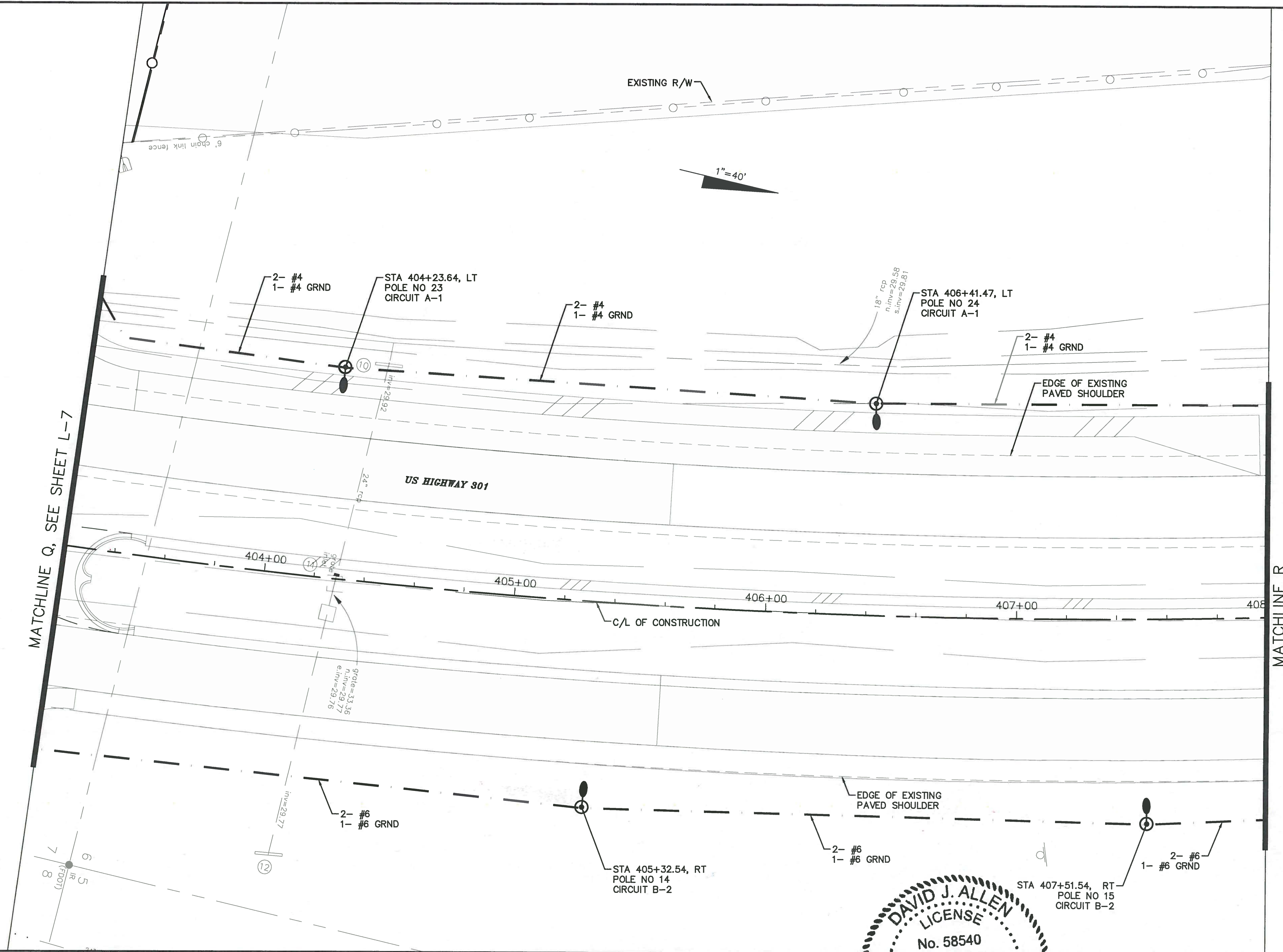


DESIGNED	DJA
DRAWN	ROH
Q.C.	
APPROVED	

**LIGHTING PLAN  
US 301**

PROJECT NO:	00193-001-18
DATE:	6-17-2015
SHEET NO:	L-15

FILE: J:\00193\00193001.18\ACAD\dwg\LT19300118-1.dwg LAST SAVED: Mon, 06/08/15 11:39a PLOTTED: Wed, 06/17/15 8:20a BY: John.Hutchison



NO.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

**44TH AVENUE EAST  
ROADWAY EXTENSION**

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Shaping the Future  
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TEL: (813) 221-0048 FAX: (813) 386-1953  
www.cardno.com Certificate of Authorization No. 29915

DAVID J. ALLEN  
LICENSE  
No. 58540  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

DESIGNED	DJA
DRAWN	ROH
CHECKED	
APPROVED	

**LIGHTING PLAN  
US 301**

PROJECT NO:	00193-001-18
DATE:	6-17-2015
SHEET NO:	L-16



EXISTING R/W

1"=40'

STA 408+61.47, LT  
POLE NO 25  
CIRCUIT A-1

2- #4  
1- #4 GRND

STA 410+83.35, LT  
POLE NO 26  
CIRCUIT A-1

2- #4  
1- #4 GRND

STA 412+96.38, LT  
POLE NO 27  
CIRCUIT A-1

2- #6  
1- #6 GRND

EDGE OF EXISTING  
PAVED SHOULDER

MATCHLINE R

US HIGHWAY 301

409+00

410+00

411+00

412+00

413+00

414+00

C/L CONSTRUCTION

2- #6  
1- #6 GRND

EDGE OF EXISTING  
PAVED SHOULDER

STA 409+70.36, RT  
POLE NO 16  
CIRCUIT B-2

2- #6  
1- #6 GRND

STA 411+88.53, RT  
POLE NO 17  
CIRCUIT B-2

END ROADWAY LIGHTING  
ON U.S. HIGHWAY 301  
STA 412+96.38

No.	Description	By	Date

MANATEE COUNTY

44TH AVENUE EAST  
ROADWAY EXTENSION

**Cardno**  
Shaping the Future  
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TEL: (813) 221-0048 FAX: (813) 386-1953  
www.cardno.com Certificate of Authorization No. 29915

DAVID J. ALLEN  
LICENSE  
No. 58540  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

DESIGNED	DJA
DRAWN	ROH
CHECKED	
APPROVED	

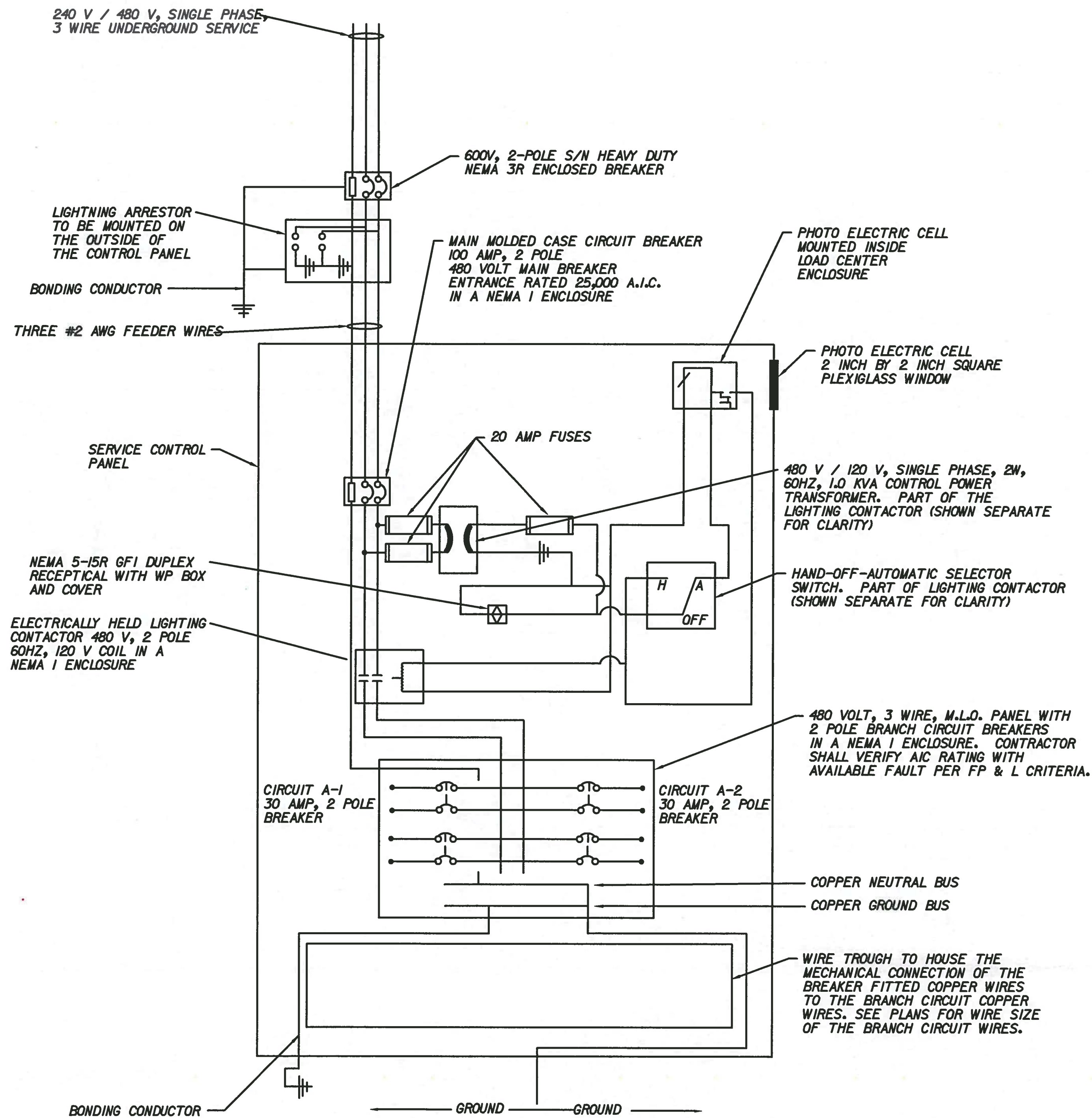
LIGHTING PLAN  
US 301

PROJECT NO:	00193-001-18
DATE:	6-17-2015
SHEET NO:	L-17

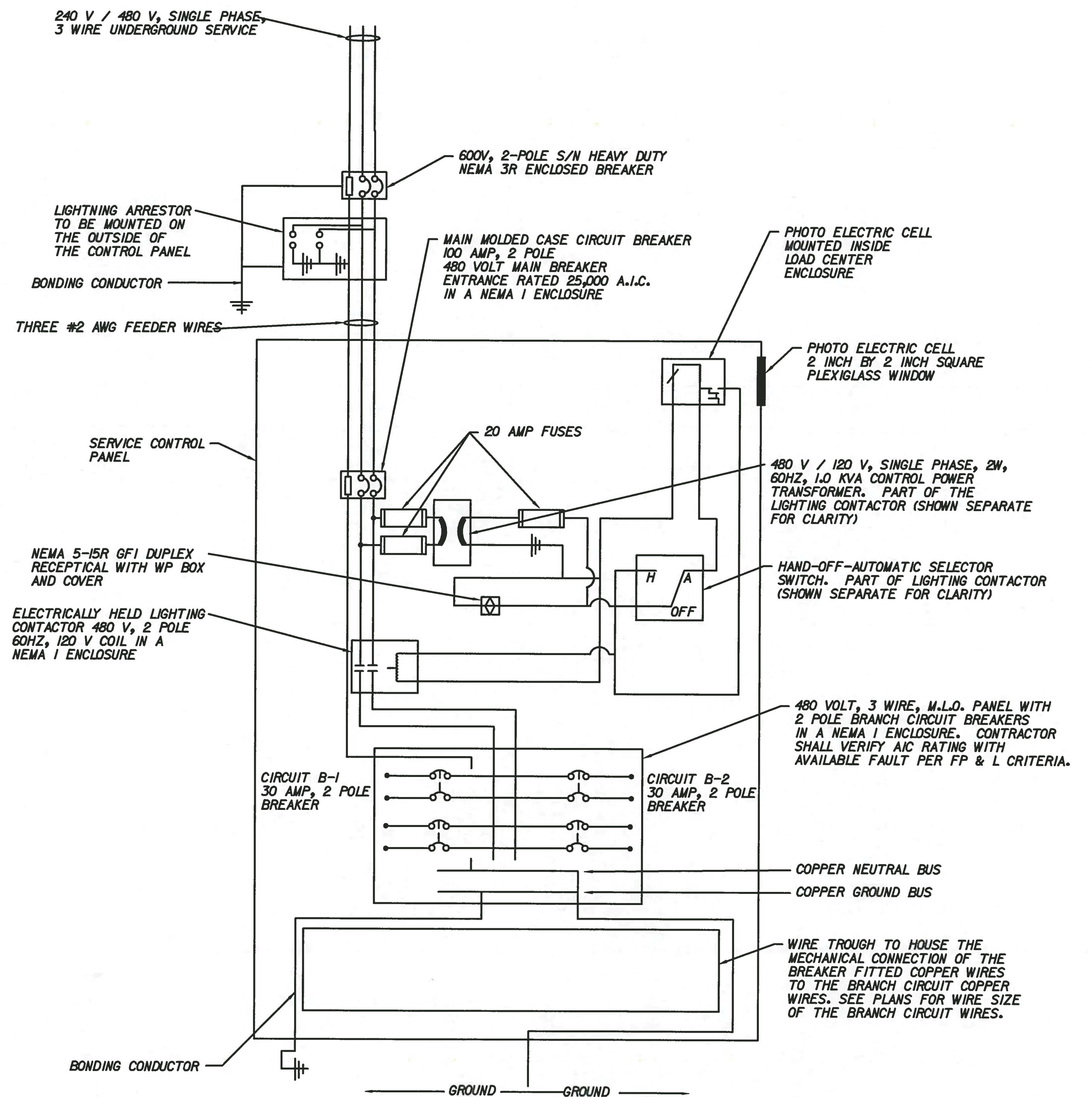
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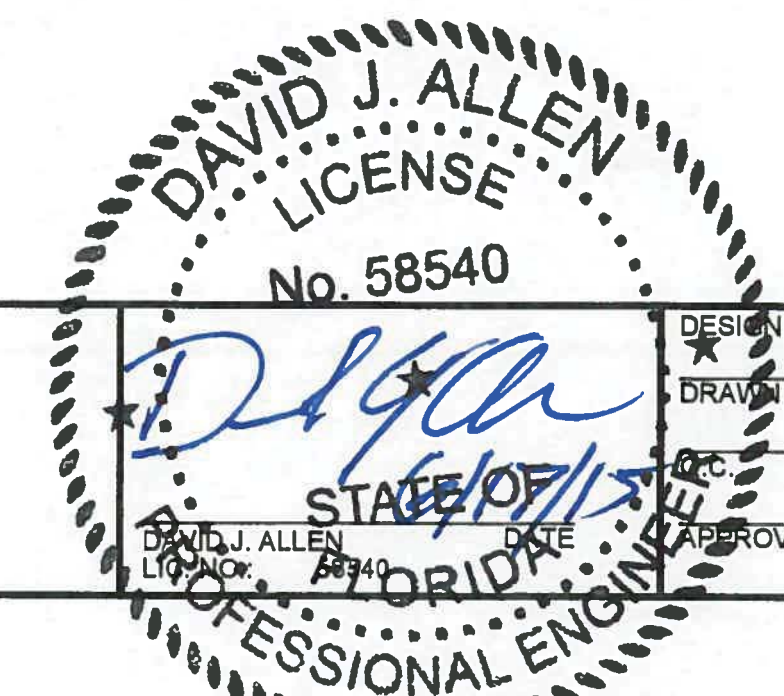
**ROADWAY LIGHTING WIRING DIAGRAM  
FOR LOAD CENTER "A"  
N. T. S.**



**ROADWAY LIGHTING WIRING DIAGRAM  
FOR LOAD CENTER "B"  
N. T. S.**

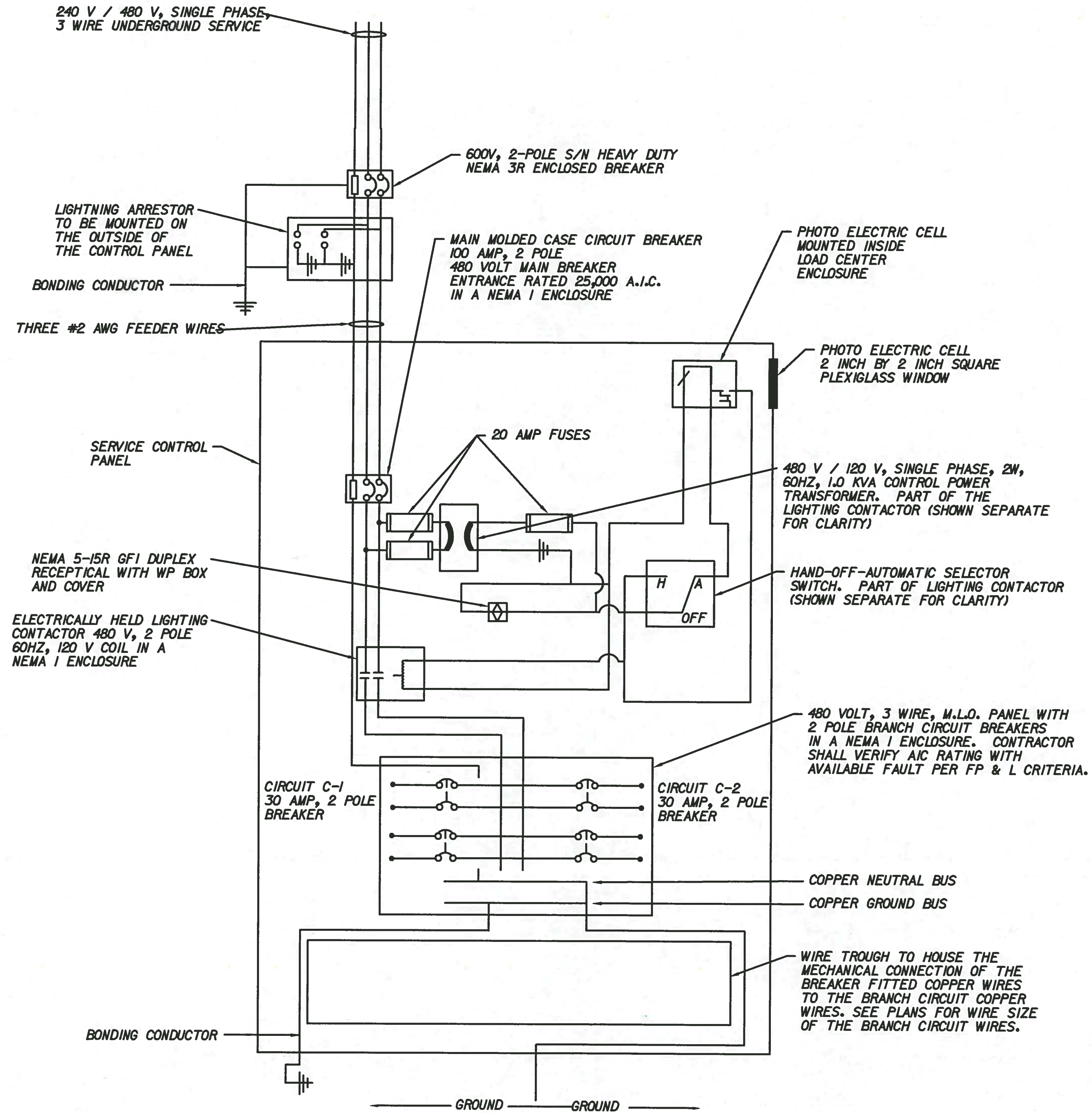


- NOTES:**
- REFER TO THE 2010 FDOT STANDARD DESIGN INDEX 17504 FOR ADDITIONAL SERVICE POINT DETAILS.
  - CONTRACTOR SHALL FURNISH A NEMA 3R ENCLOSURE SIZED FOR THE EQUIPMENT FURNISHED.
  - THE CIRCUIT PANEL SHALL HAVE AT LEAST 12 CIRCUIT BREAKER BAYS FOR FUTURE USE.



MANATEE COUNTY				44TH AVENUE EAST ROADWAY EXTENSION				<p>Cardno Shaping the Future 12481 TELECOM DRIVE, TAMPA, FL 33637 TEL: (813) 221-0048 FAX: (813) 386-1953 www.cardno.com Certificate of Authorization No. 29915</p>				<p>DESIGNED: DJA DRAWN: ROH CHECKED: [Signature] DATE: 6/17/15 APPROVED: [Signature]</p>				<p>PROJECT NO: 00193-001-18 DATE: 6-17-2015 SHEET NO: L-19</p>			
No.	DESCRIPTION	BY	DATE																

**ROADWAY LIGHTING WIRING DIAGRAM  
FOR LOAD CENTER "C"  
N. T. S.**



- NOTES:**
- REFER TO THE 2010 FDOT STANDARD DESIGN INDEX I7504 FOR ADDITIONAL SERVICE POINT DETAILS.
  - CONTRACTOR SHALL FURNISH A NEMA 3R ENCLOSURE SIZED FOR THE EQUIPMENT FURNISHED.
  - THE CIRCUIT PANEL SHALL HAVE AT LEAST 12 CIRCUIT BREAKER BAYS FOR FUTURE USE.

No.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

**44TH AVENUE EAST  
ROADWAY EXTENSION**


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 TEL: (813) 221-0048 FAX: (813) 386-1953  
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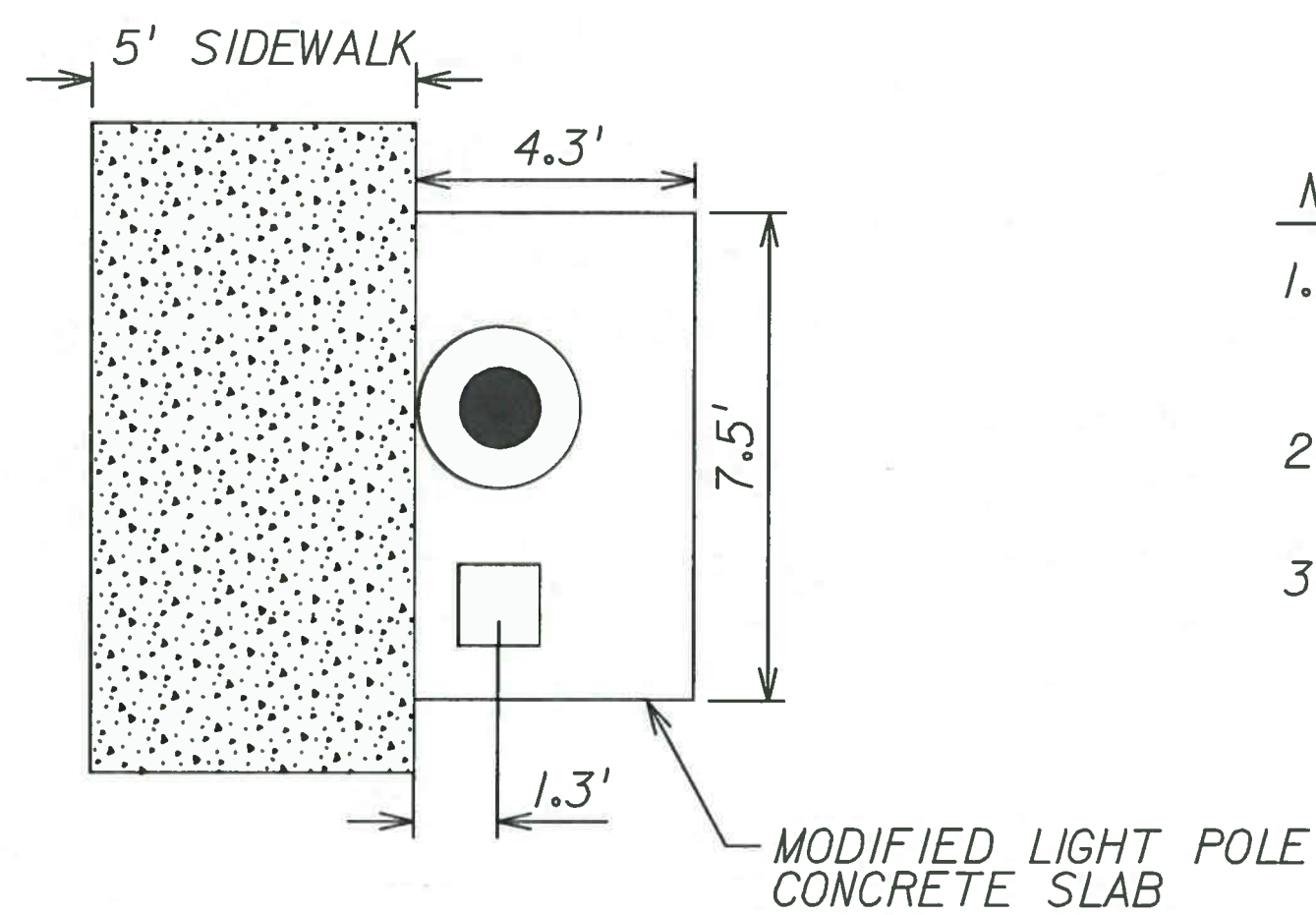
DAVID J. ALLEN  
 LICENSE  
 No. 58540  
  
 STATE OF FLORIDA  
 PROFESSIONAL ENGINEER

DESIGNED DJA
DRAWN ROH
APPROVED

**SERVICE POINT DETAIL (3)**

PROJECT NO: 00193-001-18
DATE: 6-17-2015
SHEET NO: L-20

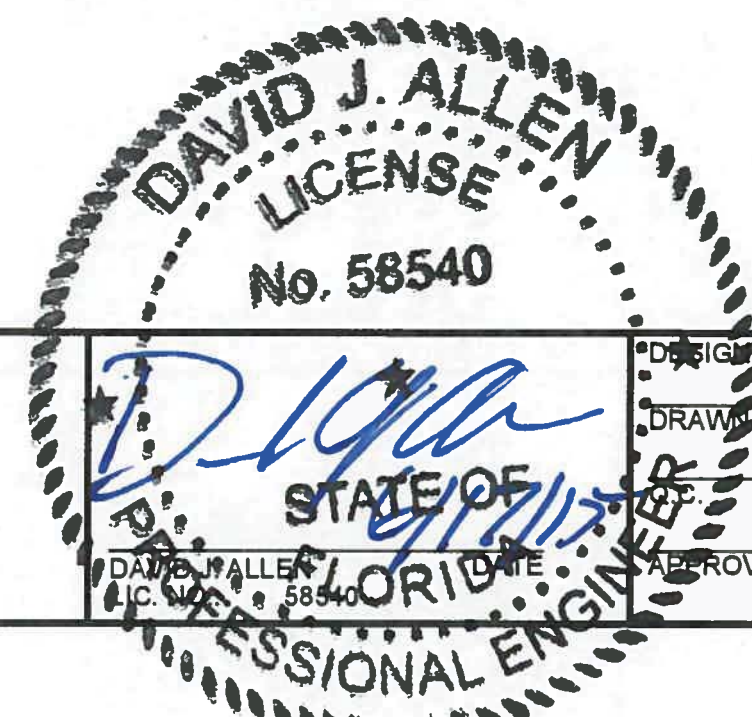
FILE: J:\00193\00193001.18\ACAD\dwg\DT19300118-1.dwg LAST SAVED: Wed, 06/10/15 8:54a PLOTTED: Wed, 06/17/15 8:21a BY: John.Hutchison



**NOTES:**

1. THIS MODIFICATION TO THE SLAB DETAIL FROM FDOT INDEX I7500 SHALL BE USED ONLY AT LOCATIONS WHERE THE LIGHT POLE IS PLACED BEHIND THE SIDEWALK. OTHERWISE THE CONTRACTOR SHALL USE THE STANDARD SLAB DETAIL.
2. THE REINFORCEMENT FOR THE MODIFIED SLAB SHALL FOLLOW THE CRITERIA IN THE STANDARD INDEX I7500.
3. THE MODIFIED SLAB SHALL BE AT THE FINAL GRADE AT EDGES ADJACENT TO THE GROUND AND SHALL BE SLOPED IF NECESSARY. THE SLAB SHALL MATCH THE SAME GRADE OF THE SIDEWALK ALONG THE EDGE OF THE SLAB ADJACENT TO THE SIDEWALK.

MODIFIED SLAB DETAIL  
NTS



NO.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

**44TH AVENUE EAST  
ROADWAY EXTENSION**

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DESIGNED	DJA
DRAWN	ROH
CHECKED	
APPROVED	

**MODIFIED SLAB DETAIL**

PROJECT NO:	00193-001-18
DATE:	6-17-2015
SHEET NO:	L-21