

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

RELATED STANDARDS AND SPECIFICATIONS

DESCRIPTION

- A. MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION, AND MAINTENANCE FOR STREETS AND HIGHWAYS, FLORIDA DEPARTMENT OF TRANSPORTATION, (FDOT GREEN BOOK), (2011),
- B. FDOT DESIGN STANDARDS FOR DESIGN, CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS ON THE STATE HIGHWAY SYSTEM, (2014),
- C. AASHTO, GUIDE FOR PLANNING, DESIGN, AND OPERATION OF PEDESTRIAN FACILITIES, (2004),
- D. FHWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (MUTCD), (2009),
- E. FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, (2014),
- F. FDOT PLANS PREPARATION MANUAL (2013),
- G. MANATEE COUNTY TRANSPORTATION DEPARTMENT HIGHWAY, TRAFFIC AND STORMWATER STANDARDS (2007),
- H. FDOT MINIMUM SPECIFICATIONS FOR TRAFFIC CONTROL SIGNAL DEVICES (2010)
- I. MANATEE COUNTY TRAFFIC SIGNAL DESIGN GUIDE (MAY 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.

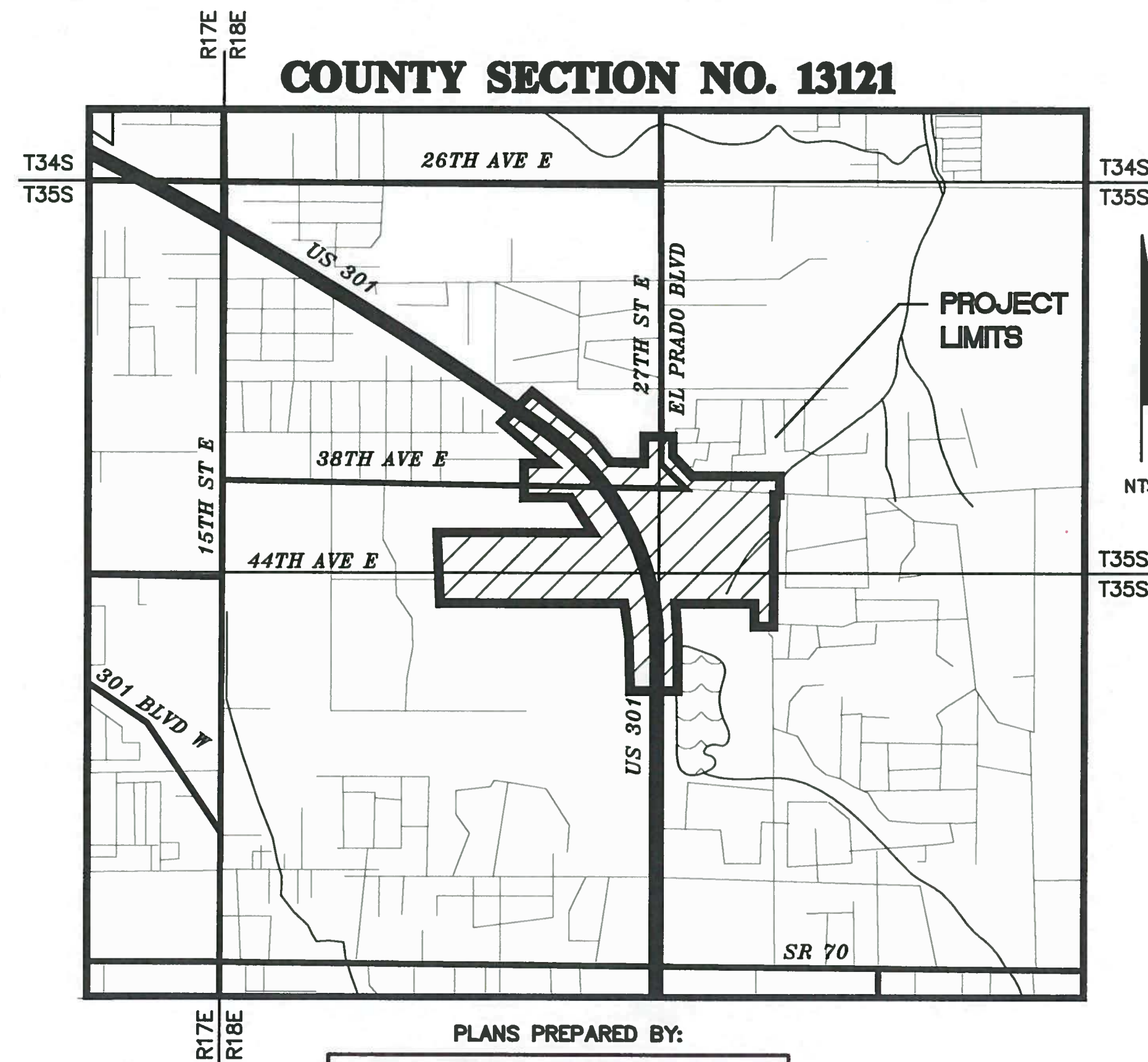
UTILITY WARNING NOTE

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

AT LEAST 72 HOURS IN ADVANCE OF BEGINNING CONSTRUCTION OF THE PROJECT, THE CONTRACTOR SHALL CONTACT THE LOCAL MAINTENANCE FDOT ENGINEER'S OFFICE TO SECURE GENERAL USE PERMITS AND/OR OTHER PERMITS AS REQUIRED FOR WORKING WITHIN THE DEPARTMENTS RIGHT-OF-WAY.

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/.



PLANS PREPARED BY:

58540
FL. LICENSE NO

COMPONENTS OF CONTRACT PLANS SET

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

INDEX OF SIGNALIZATION PLANS

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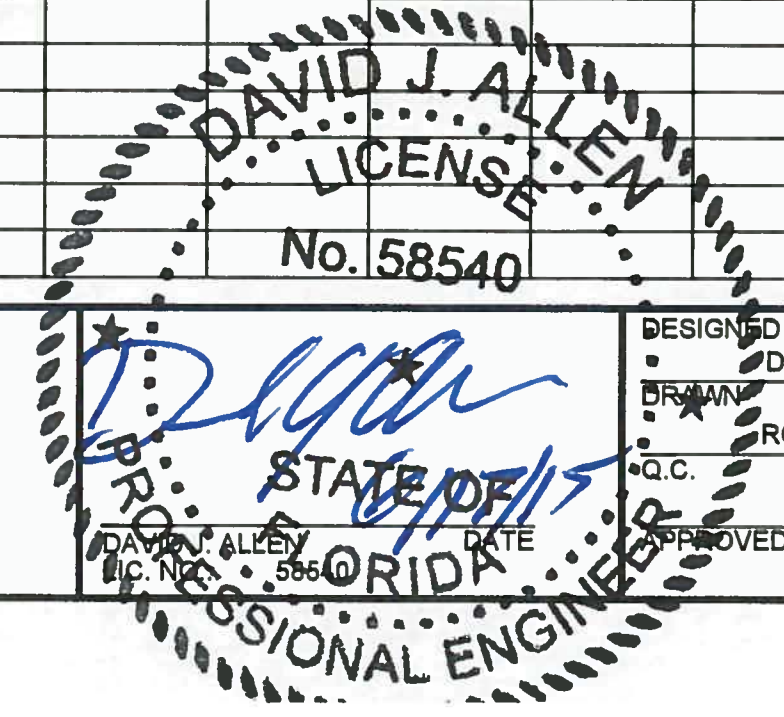


48 HOURS BEFORE DIGGING
 "CALL SUNSHINE"
 1-800-432-4770

DATE: 6-17-2015
 SCALE: HORIZ: N/A
 VERT: N/A
 SHEET: T-1

TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS														TOTAL THIS SHEET		GRAND TOTAL		REF. SHEET		
			T-5		T-6		T-7		T-8		T-9		T-10		T-11		T-12		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	335		320		235		30		1160		1211		1031		1048		5370		5370		
630-2-12	CONDUIT (F&I) (DIRECTIONAL BORE)	LF	290		450		310				210				203		115		1578		1578		
632-7-1	SIGNAL CABLE (NEW OR RECONSTRUCTED INTERSECTION-F&I)	PI	1		1		1												3		3		
633-1-121	FO CABLE (F&I)(UNDERGROUND)(2-12 FIBERS)	LF								280				125		100		505		505			
633-1-122	FO CABLE (F&I)(UNDERGROUND)(13-48 FIBERS)	LF								1605		1375		1618		1757		6355		6355			
633-2-31	FO CABLE CONN(INSTALL)(SPLICE)	EA								4				4		4		12		12			
633-2-32	FO CABLE COMM (INSTALL) (TERMINATION)	EA														48		48		48			
633-3-11	FO CABLE CONN HARDWARE(F&I)(SPLICE ENCLOSURE)	EA								2				1		2		5		5			
633-3-12	FO CABLE COMM HARDWARE (F&I) (SPLICE TRAY)	EA	1		1		1			1				1		1		6		6			
633-3-15	FO CABLE COMM HARDWARE (F&I) (PATCH PANEL) (PRETERM)	EA	1		1		1											3		3			
635-2-11	PULL AND SPLICE BOX (F&I) (STANDARD SIZE)	EA	11		9		9		1									30		30			
635-2-12	PULL AND SPLICE BOX (F&I) (24"x36")	EA								4			2	3		3		12		12			
635-2-13	PULL AND SPLICE BOX (F&I) (30"x60")	EA								1				1		2		4		4			
639-1-122	ELECTRICAL POWER SERVICE (F&I)(UNDERGROUND) METER PURCHASED BY CONTRACTOR	AS	1		1		1		1									4		4			
639-2-1	ELECTRICAL SERVICE WIRE (F&I)	LF	450		600		300		90									1440		1440			
641-2-12	PRESTRESSED CONCRETE POLE (F&I)(P-11 SERV)(12')	EA	1		1		1		1									4		4			
646-1-11	ALUMUNUM SIGNAL POLE (F&I)(PEDESTAL)	EA	8		8		8											24		24			
649-31-204	STEEL MAST ARM ASSEMBLE (F&I) (130 MPH) (70.5)	EA			1													1		1			
649-31-205	STEEL MAST ARM ASSEMBLE (F&I) (130 MPH) (78)	EA			1													1		1			
649-31-219	STEEL MAST ARM ASSEMBLY (F&I)(130 MPH)(70.5-70.5)	EA	1															1		1			
649-31-299	STEEL MAST ARM ASSEMBLY (F&I)(130 MPH)(CUSTOM)	EA	1		2		2											5		5			
650-1-311	TRAFFIC SIGNAL (F&I) (3-SECT.)(1-WAY)(ALUMINUM)	AS	6		19		9											34		34			
650-1-511	TRAFFIC SIGNAL (F&I) (5-SECT.)(1-WAY)(ALUMINUM)	AS	4				1											5		5			
653-191	PEDESTRIAN SIGNAL (F&I) (LED COUNTDOWN)(1 DIRECTIONAL)	AS	8		8		8											24		24			
660-4-11	VEHICLE DETECTION SYSTEM-VIDEO (F&I) (CABINET EQUIPMENT)	EA	4		4		4											12		12			
660-4-12	VEHICLE DETECTION SYSTEM-VIDEO (F&I) (ABOVE GROUND EQUIPMENT)	EA	4		4		4											12		12			
665-1-11	PEDESTRIAN DETECTOR (F&I)(STANDARD)	EA	8		8		8											24		24			
670-5-112	TRAFFIC CONTROLLER ASSEMBLY (F&I) (NEMA) (2 PREEMPTIONS)	AS	1		1		1											3		3			
685-106	SYSTEM AUXILIARIES (F&I) (UPS)	EA	1		1		1											3		3			
690-10	TRAFFIC SIGNAL HEAD ASSEMBLY, REMOVAL	EA							10									10		10			
690-20	SIGNAL PEDESTRIAN ASSEMBLY, REMOVAL	EA							4									4		4			
690-31	SIGNAL PEDESTAL REMOVE	EA							4									4		4			
690-34-1	POLE REMOVAL - DEEP - DIRECT BURIAL	EA							2									2		2			
690-60	VEHICLE DETECTOR ASSEMBLY REMOVE	EA							12									12		12			
690-70	PEDESTRIAN DETECTOR ASSEMBLY REMOVE	EA							4									4		4			
690-80	SPAN WIRE ASSEMBLY REMOVE	EA							1									1		1			
690-90	REMOVE CONDUIT & CABLING	PI							1									1		1			
690-100	MISCELLANEOUS SIGNAL EQUIPMENT REMOVE	PI							1									1		1			
700-3-602	SIGN PANEL (REMOVE) (12-20 SF)	EA							4									4		4			
700-5-22	INTERNALLY ILLUMINATED SIGN (F&I)(12-18 SF)	EA	4		4		4											12		12			
784-1-1	ITS MANAGED FIELD ETHERNET SWITCH (F&I)	EA	1		1		1											3		3			



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MANATEE COUNTY GENERAL NOTES

1. THE CONTRACTOR SHALL CONTACT MANATEE COUNTY PROJECT MANAGEMENT DIVISION AND THE TRAFFIC ENGINEERING DIVISION BEFORE STARTING WORK. COUNTY STANDARD UPDATES, TRAFFIC SIGNAL DESIGN GUIDE AND/OR OTHER INFORMATION SHALL BE OBTAINED.
2. ONE WEEK PRIOR TO THE BEGINNING OF THE TRAFFIC SIGNAL INSTALLATION, LOOP CUTTING, OR TURN ON OF A NEW SIGNAL, THE CONTRACTOR SHALL NOTIFY:

MANATEE COUNTY PUBLIC WORKS DEPARTMENT
MANATEE COUNTY PROJECT MANAGEMENT DIVISION
1026 26TH AVENUE EAST
BRADENTON, FLORIDA 34208
PHONE: 941-708-7510

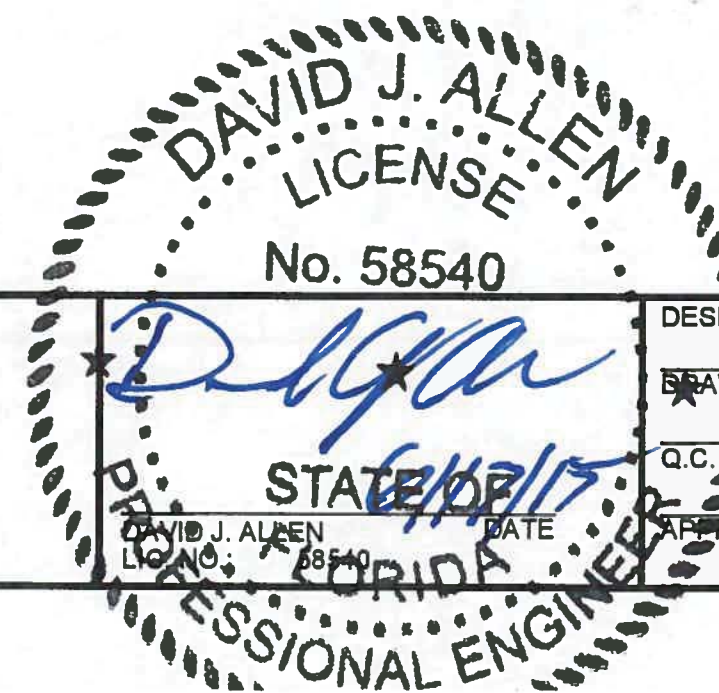
MANATEE COUNTY PUBLIC WORKS DEPARTMENT
MANATEE COUNTY TRAFFIC ENGINEERING DIVISION
2101 47TH TERRACE EAST
BRADENTON, FLORIDA 34203
PHONE: 941-749-3502
3. THE CONTRACTOR SHALL PERFORM ALL WORK AS PER LATEST FDOT SPECIFICATIONS AT TIME OF BID, INCLUDING THE 2014 DESIGN STANDARDS AND THE 2014 FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS WITH CURRENT SUPPLEMENTAL SPECIFICATIONS THERETO. FDOT SPECIFICATIONS SHALL BE FOLLOWED. WHEN FDOT AND MANATEE COUNTY SPECIFICATIONS DIFFER, THE MORE STRINGENT SPECIFICATIONS WILL TAKE PRECEDENCE. MANATEE COUNTY TRAFFIC SPECIFICATIONS AND THE TRAFFIC SIGNAL DESIGN GUIDE SHALL BE OBTAINED BY THE CONTRACTOR FROM THE PROJECT MANAGEMENT DEPARTMENT.
4. THE CONTRACTOR SHALL PROVIDE A QUALIFIED TECHNICIAN, TO PERFORM CONSTRUCTION ENGINEERING & INSPECTION SERVICES FOR THE INSTALLATION OF THE TRAFFIC SIGNAL, AND TO CERTIFY THAT ALL WORK HAS BEEN DONE IN ACCORDANCE WITH THE COUNTY'S STANDARDS, SPECIFICATIONS, PERMIT REQUIREMENTS, AND ALL APPLICABLE FEDERAL, STATE AND LOCAL STATUTES, RULES, AND REGULATIONS. IN ADDITION, THE ON-SITE INSPECTOR SHALL BE IMSA LEVEL II CERTIFIED.
5. RESULTS OF FIELD TESTS (I.E., SECTION 611-4) SHALL BE MADE AVAILABLE TO THE PROJECT ENGINEER IN WRITTEN FORM. A QUALIFIED CONTRACTOR'S REPRESENTATIVE SHALL BE PRESENT AT THE CONDITIONAL ACCEPTANCE INSPECTION OF THE CONTROLLER ASSEMBLY. THE QUALIFICATIONS OF THE REPRESENTATIVE SHALL INCLUDE:


A) COMPLETE FAMILIARITY WITH ALL SYSTEMS ELEMENTS INCLUDING CONTROLLERS, COORDINATING UNITS, SYSTEM CLOCKS AND SYSTEM COMMUNICATIONS ELEMENTS. THE REPRESENTATIVE SHALL BE QUALIFIED TO INPUT AND RECALL ALL CONTROLLER AND SYSTEM TIMING FUNCTIONS.
6. IN ORDER TO BE CONSISTENT WITH MANATEE COUNTY'S STANDARD VIDEO DETECTION, PROVIDE ITERIS VANTAGE RZ4 ADVANCED WIDE DYNAMIC RANGE COLOR CAMERA SYSTEM. THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL COMPONENTS NECESSARY FOR THE VIDEO DETECTION SYSTEM INTEGRATION. A SITE SURVEY SHOULD BE REQUESTED AS WELL AS A COMPLETE MATERIALS LIST FROM ITERIS, (STOKES WALLACE WITH ITERIS). EXTRA MOUNTING HARDWARE MAY BE NECESSARY TO COMPLETE AN ACCEPTABLE INSTALLATION.
7. THE CONTRACTOR SHALL COORDINATE WITH MANATEE COUNTY FOR THE ACCEPTABLE AND COMPATIBLE VIDEO DETECTION SYSTEM TO INSTALL. INSTALL THE ITERIS VANTAGE RZ4 ADVANCED WIDE DYNAMIC RANGE COLOR CAMERA MOUNTED ON PELCO MAST ARM CAMERA BRACKET. INSTALL THE DETECTION SYSTEM IN STRICT ACCORDANCE WITH THE GUIDANCE CONTAINED IN THE VIDEO DETECTION SYSTEM'S INSTALLATION MANUALS. THE CONTRACTOR SHALL ONLY USE MANUFACTURER APPROVED CABLING CONNECTORS AND COMPONENTS TO COMPLETE THE INSTALLATION OF THE VIDEO DETECTION SYSTEM. THE SIGNAL CONTRACTOR SHALL CONSULT WITH THE TECHNICAL REPRESENTATIVES PRIOR TO ORDERING THE SYSTEM COMPONENTS AND TO OBTAIN OPTIMUM CAMERA PLACEMENT AND MOUNTING HEIGHT FOR EACH CAMERA PRIOR TO INSTALLATION. (STOKES WALLACE WITH ITERIS). AFTER THE SYSTEM INSTALLATION IS COMPLETE THE CONTRACTOR SHALL REQUEST A SYSTEM CRITIQUE FROM THE VIDEO DETECTION EQUIPMENT SUPPLY MANUFACTURER. THE RESULTS OF THE SYSTEM CRITIQUE SHALL BE PROVIDED, IN WRITING, TO MANATEE COUNTY PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL SYSTEM.
8. THE CONTRACTOR MUST NOTIFY THE TRAFFIC ENGINEERING DIVISION (MR. VISHAL S. KAKKAD, 941-749-3502) AT LEAST TWO (2) BUSINESS DAYS IN ADVANCE TO SCHEDULE THE FINAL INSPECTION.
9. PRIOR TO ORDERING MATERIALS, THE SIGNAL CONTRACTOR SHALL CONTACT THE TRAFFIC OPERATIONS DIVISION THROUGH THE PROJECT MANAGEMENT DEPARTMENT AND VERIFY CURRENT COLOR CODES TO BE USED FOR SIGNAL CABLE.

10. MINIMUM FIBER OPTIC PULL BOX SIZE SHALL BE 2 FT WIDE BY 3 FT LONG BY 3 FT DEEP. THIS REQUIREMENT SHALL APPLY TO TWISTED PAIR COMMUNICATIONS CABLES AS WELL AS FIBER OPTIC CABLE.
11. SIGNAL TO BE PLACED IN FULL OPERATION ON A MONDAY, TUESDAY, OR WEDNESDAY, BUT SHALL NOT BE PLACED IN FULL OPERATION ON THE DAY PRECEDING A HOLIDAY.
12. THE CONTRACTOR TO PROVIDE A WARRANTY/MAINTENANCE BOND FOR SIGNAL INSTALLATIONS IN ACCORDANCE WITH F.D.O.T. SPECIFICATION SECTION 611-5.
13. THE CONTRACTOR IS RESPONSIBLE TO CONTACT MANATEE COUNTY AT 941-708-7510, FOR THE ASSIGNMENT OF THE PHYSICAL ADDRESS ONCE THE SERVICE DROP LOCATION HAS BEEN ESTABLISHED.
14. EXTREME CARE SHALL BE TAKEN TO INSURE THAT ALL SIGNAL EQUIPMENT IS INSTALLED AS SHOWN IN PLANS WITHIN EXISTING RIGHT-OF-WAY.
15. THE CONTRACTOR SHALL PROVIDE A DETAILED PROJECT WIRING DIAGRAM. THE WIRING DIAGRAM SHALL LIST THE CABLE TYPES, PAIR COUNTS, FIBER COUNTS, MANUFACTURER CABLE PRODUCT ID, PAIR USAGE, AND WIRE GAUGE OF EACH CABLE INSTALLED. THE DIAGRAM SHALL CLEARLY AND ACCURATELY SHOW THE POINT TO POINT ROUTING OF EACH CABLE OR CONDUCTOR INSTALLED WITHIN THE SCOPE OF THE PROJECT. THREE COPIES OF THE WIRING DIAGRAM SHALL BE DELIVERED TO MANATEE COUNTY PRIOR TO SCHEDULING THE FINAL INSPECTION.
16. UPON PROJECT COMMENCEMENT THE SIGNAL SUBCONTRACTOR SHALL BE AVAILABLE TO RESPOND TO ALL SIGNAL RELATED MALFUNCTIONS AND POWER OUTAGES. THE CONTRACTOR SHALL MAINTAIN AN ADEQUATE REPAIR INVENTORY, EQUIPMENT AND NEARBY PERSONNEL TO RESPOND AND CORRECT TRAFFIC SIGNAL MALFUNCTIONS AND MOT RELATED PHASING AND TIMING ISSUES FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL PROVIDE A QUALIFIED SIGNAL TECHNICIAN WHO CAN RESPOND WITHIN A MINIMUM OF TWO HOURS, 24 HOURS A DAY, 7 DAYS A WEEK.
17. UPON PASSING THE FINAL INSPECTION, THE CONTRACTOR SHALL SEND A WRITTEN REQUEST TO THE MANATEE COUNTY TRAFFIC OPERATIONS DIVISION, 2904 12TH STREET COURT EAST, BRADENTON FLORIDA 34208 (ATTN: MR. AARON BURKETT) REQUESTING TO TRANSFER MAINTENANCE FROM THE CONTRACTOR TO MANATEE COUNTY, MANATEE COUNTY WILL RESPOND WITHIN 5 WORKING DAYS TO ESTABLISH A TIME TABLE FOR THE TRANSFER OF MAINTENANCE RESPONSIBILITY.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE LOCAL POWER COMPANY PROVIDING ELECTRICAL POWER TO DETERMINE IF A SERVICE PROCESSING FEE IS REQUIRED. ANY FEE SHALL BE INCLUDED AS PART OF PAYMENT FOR THE ELECTRICAL POWER SERVICE ASSEMBLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS OF THE ELECTRICAL SERVICE. THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION, INSPECTION AND ENERGIZING OF THE NEW POWER SERVICE IN A TIMELY MANNER IN ORDER TO PROMOTE PROJECT COMPLETION WITHIN CONTRACT TIME.
19. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS IN ADVANCE OF POLE SETTING OPERATIONS WHERE CONFLICT WITH OVERHEAD ELECTRICAL CONDUCTORS IS EXPECTED AND IN ALL CASES WHERE JOINT USE POLES ARE CALLED FOR.
20. THE CONTRACTOR SHALL HAND DIG THE FIRST 48 INCHES OF THE HOLE FOR THE POLE FOUNDATION OR CONDUIT RUN WHERE UTILITIES ARE IN CLOSE PROXIMITY.
21. THE CONTRACTOR IS TO DE-WATER THE POLE FOUNDATION EXCAVATION IF THE ELEVATION OF WATER IS HIGHER THAN THE ELEVATION OF THE FOUNDATION BASE.
22. UNLESS OTHERWISE NOTED ALL REMOVED EQUIPMENT EXCEPT CONCRETE POLES SHALL BE TURNED OVER TO MANATEE COUNTY AND DELIVERED TO THE TRAFFIC OPERATIONS DIVISION, LOCATED AT 2404 12TH STREET COURT EAST, BRADENTON, FLORIDA 34208, AS DIRECTED BY THE ENGINEER. CONCRETE POLES SHALL BE DISPOSED OF BY THE SIGNAL CONTRACTOR IN AREAS PROVIDED BY THE CONTRACTOR.
23. THE CONTRACTOR SHALL CONTACT THE LOCAL POWER COMPANY FOR ITS ASSISTANCE IN PERFORMING ALL NECESSARY WORK UNDER POWER LINES AT SIGNAL POLES, SUCH AS THE INSTALLATION OF SIGNAL CABLE, FIBERGLASS INSULATORS AND SIGNAL POLES.
24. THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE BASED ON LIMITED INVESTIGATION TECHNIQUES AND SHOULD BE CONSIDERED APPROXIMATE ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF ALL UTILITIES.
25. EXISTING UTILITIES ARE TO REMAIN IN PLACE UNLESS OTHERWISE NOTED.

26. THE CONTRACTOR SHALL NOTIFY UTILITY OWNERS OF ANY EXCAVATION OR DEMOLITION ACTIVITY THROUGH SUNSHINE ONE CALL OR FLORIDA INC. (1-800-432-4770) AND SHALL ALSO NOTIFY THOSE UTILITY OWNERS/AGENCIES LISTED WITHIN OR IMPACTED BY THESE PLANS, NOT LESS THAN TWO (2) FULL BUSINESS DAYS IN ADVANCE OF BEGINNING CONSTRUCTION ON THE JOB SITE.
27. THE TYPE OF EQUIPMENT USED IN THE INSTALLATION OF MAST ARMS/FOUNDATIONS, OVERHEAD CANTILEVER SIGNS/FOUNDATIONS, AND THE MOVEMENT/INSTALLATION OF STRAIN POLES SHALL MEET THE FOLLOWING REQUIREMENTS: 1) OVERHEAD LINES SHALL STAY IN PLACE BOTH VERTICALLY AND HORIZONTALLY AND; 2) CONTRACTOR SHALL MEET ALL LATEST APPLICABLE OSHA REQUIREMENTS. ANY COST ASSOCIATED WITH THE TYPE OF EQUIPMENT REQUIRED FOR THIS INSTALLATION IS INCLUDED IN THE RELATED PAY ITEMS.
28. THE CONTRACTOR SHALL FIELD VERIFY ALL CRITICAL ELEVATIONS PRIOR TO ORDERING MAST ARMS.
29. DETECTION MUST BE MAINTAINED FOR VEHICLES AND PEDESTRIANS FOR THE LIFE OF THE PROJECT. ANY DAMAGE TO THE EXISTING DETECTION SYSTEM AT AN INTERSECTION MUST BE RESTORED WITHIN TWENTY-FOUR (24) HOURS AT NO ADDITIONAL COST TO THE COUNTY. THE COST FOR ANY TEMPORARY DETECTION SHALL BE INCLUDED IN PAY ITEM 102-1, MOT.
30. WHEN A CONTRACTOR IS WORKING ON A SIGNAL IN AN INTERSECTION (INSTALLING CONDUIT IN THE STREET, REMOVING EXISTING SIGNAL EQUIPMENT, LOOPS, HOMERUNS OR TURNING ON OF NEW SIGNAL) WHERE A LANE IS CLOSED, THE ENGINEER MAY REQUIRE AN OFF DUTY LAW ENFORCEMENT OFFICER TO DIRECT TRAFFIC. THE HOURLY RATE OF PAY FOR AN OFF DUTY LAW ENFORCEMENT OFFICER CAN BE OBTAINED FROM THE LOCAL LAW ENFORCEMENT OFFICE. THE COST OF THE OFFICER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND INCLUDED IN PAY ITEM 102-1, MOT.
31. EARTHING CONDUCTORS (FORMERLY GROUNDING ELECTRODE CONDUCTOR), TRANSIENT VOLTAGE AND SURGE PROTECTION DEVICES SHALL TAKE THE SHORTEST PATH TO ITS TERMINATION POINT WITHIN THE STRUCTURE THAT IS TO BE PROTECTED. SHARP BENDS AND ROUTING THAT CREATES UNNECESSARY CABLE LENGTH WILL NOT BE ACCEPTED.
32. GROUNDING: ALL GROUND ROD EQUIPMENT SHALL BE BONDED TOGETHER TO FORM AN INTEGRATED GROUNDING SYSTEM USING #6 AWG THHN COPPER WIRE. THE UPPER END OF ALL GROUND RODS SHALL BE 18 INCHES BELOW GROUND ELEVATION. MARK GROUND ROD LOCATIONS WITH PERMANENT MARKER SUCH AS AN EPOXY STICKER LOCATED ON THE NEAREST CURB AND PROVIDE AS-BUILT DRAWINGS WITH THE LOCATION OF GROUND RODS MARKED. GROUNDING CONDUCTOR MUST BE #6 OR LARGER INSULATED COPPER. EQUIPMENT SHALL NOT BE PLACED INTO OPERATIONAL SERVICE UNTIL THE ASSOCIATED GROUNDING SYSTEM HAS BEEN INSPECTED AND APPROVED BY A MEMBER OF THE MANATEE COUNTY TRAFFIC OPERATIONS STAFF.
33. GROUND RESISTANCE TESTER, OR OTHER APPROVED MEANS WILL BE USED TO ACQUIRE THE GROUND ROD RESISTANCE. A MEMBER OF THE TRAFFIC OPERATIONS DIVISION STAFF SHALL BE PRESENT DURING THE TEST.
34. ELEVATION OF THE TOP OF THE MAST ARM FOUNDATION SHALL BE SIX INCHES ABOVE FINAL GRADE. IF LOCATED DIRECTLY BACK OF SIDEWALK, THE FOUNDATION ELEVATION SHALL MATCH SIDEWALK GRADE.
35. IT SHOULD BE NOTED THAT NO TEST BORINGS WERE MADE WHERE CONDUIT RUNS ARE TO BE INSTALLED BY JACKING OR BORING.
36. CONTRACTOR SHALL SUPPLY ALL MATERIAL SUBMITTALS TO MANATEE COUNTY TRAFFIC OPERATIONS DIVISION PRIOR TO CONSTRUCTION FOR APPROVAL.
37. ALL FIBER OPTIC CABLE, FIBER OPTIC SPLICING HARDWARE AND SPLICE CASES SHALL BE THE SAME AS OR EQUAL TO THAT WHICH WAS INSTALLED AS PART OF THE ATMS PROJECT. THIS INCLUDES FIBER OPTIC SPLICES AND PULL BOXES.
38. THE CONTRACTOR SHALL CONTACT THE TRAFFIC ENGINEERING DIVISION FOR A LIST OF APPROVED ITS COMPONENTS FOR ALL ATMS MATERIAL PRIOR TO SUBMITTING SHOP DRAWINGS. THIS INCLUDES BUT NOT LIMITED TO ETHERNET SWITCH, FIBER PULL BOXES, SPLICE BOXES AND ROUTE MARKERS WITH CORRECT WORDING.
39. AT EXISTING SIGNALIZED INTERSECTIONS THAT ARE UPGRADED DETECTION MUST BE MAINTAINED FOR VEHICLE AND PEDESTRIAN MOVEMENTS FOR THE LIFE OF THE PROJECT.

CONDUIT LEGEND
 LV = SIGNAL LOW VOLTAGE CONDUIT
 HV = SIGNAL HIGH VOLTAGE CONDUIT
 VID = VIDEO DETECTION CONDUIT
 SP = SPARE CONDUIT
 PS = POWER SERVICE CONDUIT



		MANATEE COUNTY		44TH AVENUE EAST ROADWAY EXTENSION		 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		DESIGNED: DJA DRAWN: ROH C.C. DATE: 6/17/2015 APPROVED:		MANATEE COUNTY GENERAL NOTES		PROJECT NO: 00193-001-18	
										DATE: 6-17-2015		SHEET NO: T-3	
No.	DESCRIPTION	BY	DATE										

PAY ITEM FOOTNOTES:

1. 630-2-11: ALL CONDUIT RUNS SHOWN ON THE PLANS ARE SCHEMATIC AND FIELD ADJUSTMENTS MAY BE NECESSARY. WITH THE EXCEPTION OF ELECTRICAL POWER SERVICE DUCTS, JACK AND BORE SLEEVES, AND DIRECTIONAL BORE CONDUITS, ALL UNDERGROUND AND UNDER PAVEMENT CONDUITS SHALL BE SCHEDULE 40 PVC WITH A MINIMUM SIZE OF TWO INCHES UNLESS OTHERWISE SPECIFIED IN THE PLANS. COST FOR PULL WIRE IS INCLUDED UNDER THIS PAY ITEM.

INSTALL CONDUIT UNDER PROPOSED ROADWAY AND/OR SIDEWALK PRIOR TO INSTALLATION OF ROADWAY BASE AND SURFACE OR CONCRETE.

INTERCONNECT CONDUIT INSTALLED USING TRENCHING METHOD SHALL BE COMPOSED OF TWO 3-INCH HDPE CONDUITS.
2. 630-2-12 CONDUIT INSTALLED WITH THE DIRECTIONAL BORE METHOD SHALL BE HPDE WITH A MINIMUM SIZE OF TWO-INCHES UNLESS OTHERWISE NOTED IN THE PLANS. COST FOR PULL WIRE IS INCLUDED UNDER THIS PAY ITEM.

INTERCONNECT CONDUIT INSTALLED USING DIRECTIONAL BORE SHALL BE COMPOSED OF TWO 3-INCH HDPE CONDUITS.
3. 632-7-1: VERIFY THE COLOR CODE OF SIGNAL CABLE WITH THE MAINTAINING AGENCY PRIOR TO WIRING INTERSECTION. USE A MINIMUM OF 7 CONDUCTOR SIGNAL CABLE.
4. 635-2-11: FDOT APPROVED PULL BOXES SHALL BE TRAFFIC BEARING, ALL POLYMER CONSTRUCTION (NOT CONCRETE), PULL BOXES AND LIDS. THE PULL BOX AND LIDS SHALL BE QUAZITE OR ANOTHER EQUIVALENT FDOT APPROVED MANUFACTURER. PULL BOXES SHALL BE PLACED BEHIND CURB AND GUTTER. WHERE THERE IS NO CURB AND GUTTER PULL BOXES SHALL BE PLACED A MINIMUM OF 7 FEET FROM THE EDGE OF THE PAVEMENT. THE TOP OF THE LID SHALL READ "MANATEE COUNTY TRAFFIC SIGNAL" IN STAMPED RAISED LETTERS. PULL BOX DIMENSION IS 17"x30"x12".
5. 635-2-12: PULL BOX SHALL BE FDOT APPROVED POLYMER TYPE WITH DIMENSIONS OF 24"x36"x36" WITH "MANATEE COUNTY FIBER OPTIC SYSTEM" STAMPED ON THE COVER IN RAISED LETTERS.
6. 635-2-13: PULL BOX SHALL BE FDOT APPROVED POLYMER TYPE WITH DIMENSIONS OF 30"x60"x48" WITH "MANATEE COUNTY FIBER OPTIC SYSTEM" STAMPED ON THE COVER IN RAISED LETTERS.
7. 639-1-122: THE BREAKERS SHALL BE CLEARLY MARKED. THE ELECTRICAL SERVICE DISCONNECT IS 100 AMP, COMPRISING OF A SIX (6) CIRCUIT DISCONNECT BOX WITH FOUR CIRCUIT BREAKERS - ONE 40 AMP/120 VOLT FOR CONTROLLER, ONE 30 AMP FOR INTERNALLY ILLUMINATED STREET NAME SIGNS, ONE 15 AMP/120 VOLT FOR LIGHTING LUMINAIRE AND ONE 15 AMP/120 VOLT FOR FUTURE USE.

THIS PAY ITEM INCLUDES THE PHOTO CELL FOR THE INTERNALLY ILLUMINATED SIGNS. INSTALL A PHOTOELECTRIC CELL FOR ILLUMINATED STREET NAME SIGNS ON THE TRAFFIC SIGNAL ELECTRIC SERVICE DISCONNECT.

USE ALUMINUM RIGID ABOVE GROUND CONDUIT FOR ELECTRICAL POWER SERVICE.
8. 639-2-1: THE PAYMENT OF THIS ITEM SHALL BE BASED ON THE LINEAR FOOT OF A SINGLE CONDUCTOR.
9. 646-1-11: USE BREAKAWAY ALUMINUM SQUARE BASE ASSEMBLIES WITH ALUMINUM DOORS FOR PEDESTRIAN PEDESTALS. INSIDE DIAMETER OF PEDESTALS SHALL BE FOUR INCHES (4").

USE LOCKING COLLARS WHEN MOUNTING PEDESTRIAN SIGNAL HEADS TO PEDESTRIAN PEDESTALS. USE LOCKING COLLARS WHEN MOUNTING ALUMINUM PEDESTRIAN POLES TO PEDESTRIAN PEDESTAL BASES.
10. 649-31-204, 649-31-205, 649-31-219 AND 649-31-299: THE CONTRACTOR SHALL CONTACT THE LOCAL POWER COMPANY FOR THEIR ASSISTANCE IN PERFORMING ALL NECESSARY WORK UNDER POWER LINES AT SIGNAL POLE(S), SUCH AS THE INSTALLATION OF MAST ARM FOUNDATIONS OR POLES. A SPARE 2 INCH UNDERGROUND CONDUIT RUN SHALL BE PROVIDED FOR EACH MAST ARM POLE. THE CONDUIT SHALL BE CAPPED IN THE NEAREST PULL BOX. USE THREE 2-INCH AND ONE 3/4" CONDUITS STUBBED OUT THROUGH THE MAST ARM POLE FOUNDATION AND TEMPORARY POLE. THE ELEVATION OF THE TOP OF THE MAST ARM BASE(S) SHALL BE SIX INCHES ABOVE EXISTING GRADE. IF LOCATED DIRECTLY BEHIND SIDEWALK, AT SIDEWALK GRADE.
11. 650-1-311 & 650-1-511: USE SIGNAL HEAD SUPPORTING TUBE THAT IS CAPABLE OF ADJUSTING VERTICALLY A MINIMUM OF 1.5 FEET.

THE EXTERNAL COLOR OF SIGNAL HOUSING SHALL BE BLACK. ALL TRAFFIC SIGNAL HEAD INDICATIONS SHALL BE 12 INCH LED. ALL SIGNAL HEADS SHALL HAVE TUNNEL VISORS AND LOUVERED BACK PLATES WITH A 2" YELLOW REFLECTORIZED (TYPE III REFLECTIVITY) OUTER EDGE BORDER. THE COST FOR THE TUNNEL VISORS AND BACK PLATES SHALL BE INCLUDED UNDER THIS PAY ITEM. DO NOT USE PLASTIC GARBAGE BAGS AS A COVER FOR CONCEALING SIGNAL HEAD.
12. 653-191: PEDESTRIAN SIGNAL HEADS TO BE 16-INCH INTERNATIONAL SYMBOL, LED COUNTDOWN TYPE.
13. 660-4-11 AND 660-4-12: VIDEO DETECTION CAMERA SHALL BE ITERIS VANTAGE RZ4 ADVANCED WIDE DYNAMIC RANGE COLOR CAMERA MOUNTED ON PELCO MAST ARM CAMERA BRACKET. INSTALL SYSTEM IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. CONSULTATION WITH THE VIDEO DETECTION MANUFACTURER SHALL OCCUR DURING THE DESIGN PROCESS TO ASCERTAIN THE SUITABILITY AND PROPER PLACEMENT OF THE VIDEO DETECTION EQUIPMENT. IN ADDITION TO THE CAMERAS AND OTHER RELATED EQUIPMENT, THE VIDEO DETECTION SYSTEM MUST INCLUDE THE FOLLOWING: ITERIS VANTAGE EDGE 2 PROCESSOR, ITERIS EDGE CONNECT MODULE, ITERIS VANTAGE EDGE2 TS2 I/O MODULE.

USE A 72" LONG GUSSET TUBE FOR VIDEO DETECTION CAMERA ATTACHMENT BRACKET. VIDEO DETECTION TO BE COMPATIBLE WITH MAINTAINING AGENCY'S EXISTING VIDEO DETECTION SYSTEM.

THE VIDEO VEHICLE SYSTEM INSTALLER SHALL LEAVE A MINIMUM OF 30 INCHES OF SPARE CABLE AT EACH CAMERA BRACKET. THE SLACK SHALL BE NEATLY FORMED INTO A LOOP AND SECURED TO THE CAMERA. A MINIMUM OF 10 FEET OF VIDEO CABLE SLACK SHALL BE NEATLY STORED AT EACH PULL BOX LOCATION WITHIN A CONDUIT RUN. A MINIMUM OF 30 FEET OF SLACK SHALL BE AVAILABLE FOR EACH NEW VIDEO DETECTION CABLE RUN.
14. 665-1-11: USE PEDESTRIAN BUTTON SIGNAL SIGN FTP-68B-06. STREET NAME SHALL BE IN ACCORDANCE WITH THE STREET NAMES SHOWN ON THE SIGNALIZATION PLAN SHEETS.
15. 670-5-112: USE A NEMA TS2 TYPE I CONTROLLER IN A TYPE 5 ENCLOSURE - COMPATIBLE WITH EXISTING TRAFFIC SIGNAL SYSTEM. THE CONTROLLER SUPPLIED WITH THE CABINET SHALL BE A NAZTEC 980 TS2 TYPE I. THE NAZTEC 980 CONTROLLER SHALL COME EQUIPPED WITH 4 SERIAL PORTS AND ONE ETHERNET PORT. ALL CONTROLLER EQUIPMENT TO BE COMPATIBLE WITH MANATEE COUNTY'S EXISTING ATMS SYSTEM (NAZTEC'S ATMS.NOW). THE CABINET SHALL COME EQUIPPED WITH A ETHERNET SWITCH PAID UNDER A SEPARATE PAY ITEM NUMBER AND ALL THE NECESSARY SYSTEM COMPONENTS FOR INTEGRATION INTO AN ETHERNET-BASED FIBER OPTIC NETWORK. CONTACT MANATEE COUNTY PRIOR TO ORDERING CONTROLLER ASSEMBLY TO CONFIRM EQUIPMENT COMPATIBILITY.

THE CONTRACTOR SHALL COORDINATE WITH MANATEE COUNTY TO PICK UP AND INSTALL THE GENERATOR CABINET ON THE NEW FOUNDATION. ALL COSTS OF LABOR, CONCRETE AND OTHER MATERIALS FOR THE CONTROLLER ASSEMBLY AND EGC BASES, TECHNICIAN PADS, STEPS AS REQUIRED, AND INSTALLATION OF THE GENERATOR CABINET ARE INCLUDED IN THIS ITEM. THE CONTROLLER AND EGC BASE SHALL BE AT LEAST 2' HIGH OR THE SAME ELEVATION AS THE CROWN OF THE ROADWAY, WHICHEVER IS GREATER. THE MAXIMUM DISTANCE FROM THE TECHNICIAN PAD OR STEP TO THE FOUNDATION TOP IS 24". THE CABINET DOORS SHALL OPEN TOWARDS OR PARALLEL TO THE RIGHT-OF-WAY LINE AND AWAY FROM TRAFFIC.
16. 685-106: INCLUDE AN UNINTERRUPTED POWER SUPPLY UNIT (UPS) WITH NOMINAL OPERATING RANGE OF 850W TO 110W WITH A STANDARD RS232 ETHERNET PORT. UPS SHALL BE ALPHA FXM 1100 WITH ETHERNET CONNECTION AND SNMP (PROTOCOL). THE UPS SHALL BE SIZED TO ACCOMMODATE THE MAXIMUM CONNECTED LOAD. THE BATTERY BANK SHALL BE SIZED TO PROVIDE A MINIMUM 4 HOURS RUN TIME UNDER FULL LOAD. ATTACH UPS UNIT TO THE OUTSIDE OF THE CONTROLLER CABINET. INSTALL UPS UNIT IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
17. 700-5-22: ALL INTERNALLY ILLUMINATED STREET NAME SIGNS SHALL BE EDGE LIT LED TYPE AND SHALL BE LISTED IN THE FDOT APPROVED PRODUCT LIST. THE COST OF THIS ITEM SHALL INCLUDE PROPERLY DESIGNED AND SIZED ADJUSTABLE HANGERS, BRACKETS, CLAMPS, AND ALL MISCELLANEOUS HARDWARE NECESSARY TO RIGID MOUNT THE SIGNS AS SHOWN IN THE PLANS. THE SIGNS SHALL BE POWERED USING IMSA 50-2 CABLE. PAYMENT INCLUDES INSTALLATION OF THE PHOTOCELL OUTSIDE THE SERVICE DISCONNECT. THE STREET NAME SIGN SHALL BE RIGIDLY MOUNTED ON THE MAST ARM.
18. 784-1-1: THE ETHERNET SWITCH SHALL BE A RUGGEDCOM SWITCH MODEL NUMBER RS900 HI-D-C2-C2-00.

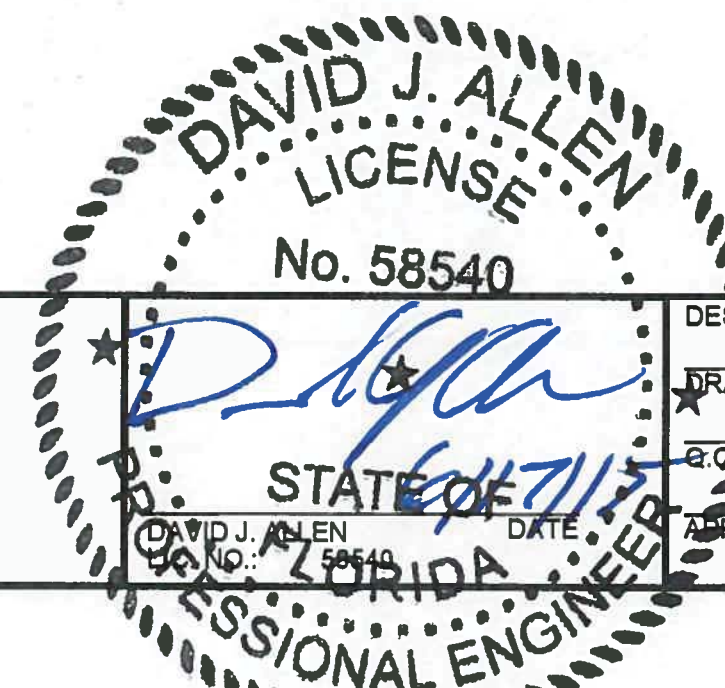
No.	DESCRIPTION	BY	DATE

MANATEE COUNTY

44TH AVENUE EAST
ROADWAY EXTENSION



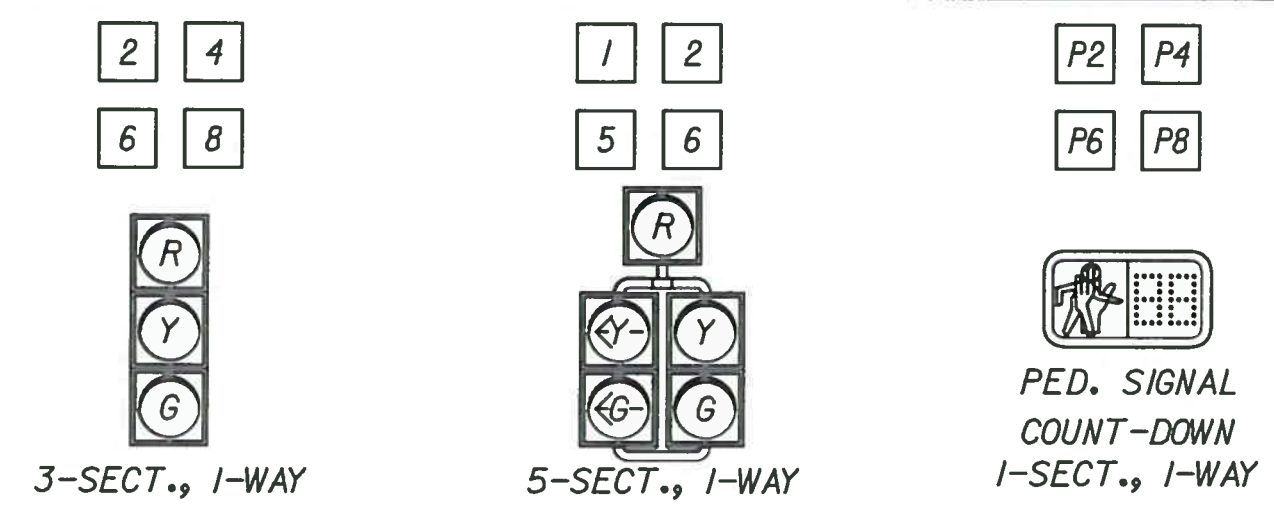
Cardno
Shaping the Future
12481 TELECOM DRIVE, TAMPA, FL 33637
TEL: (813) 221-0048 FAX: (813) 386-1953
www.cardno.com Certificate of Authorization No. 29915



DESIGNED	DJA
DRAWN	ROH
CHECKED	
APPROVED	

PAY ITEM NOTES

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

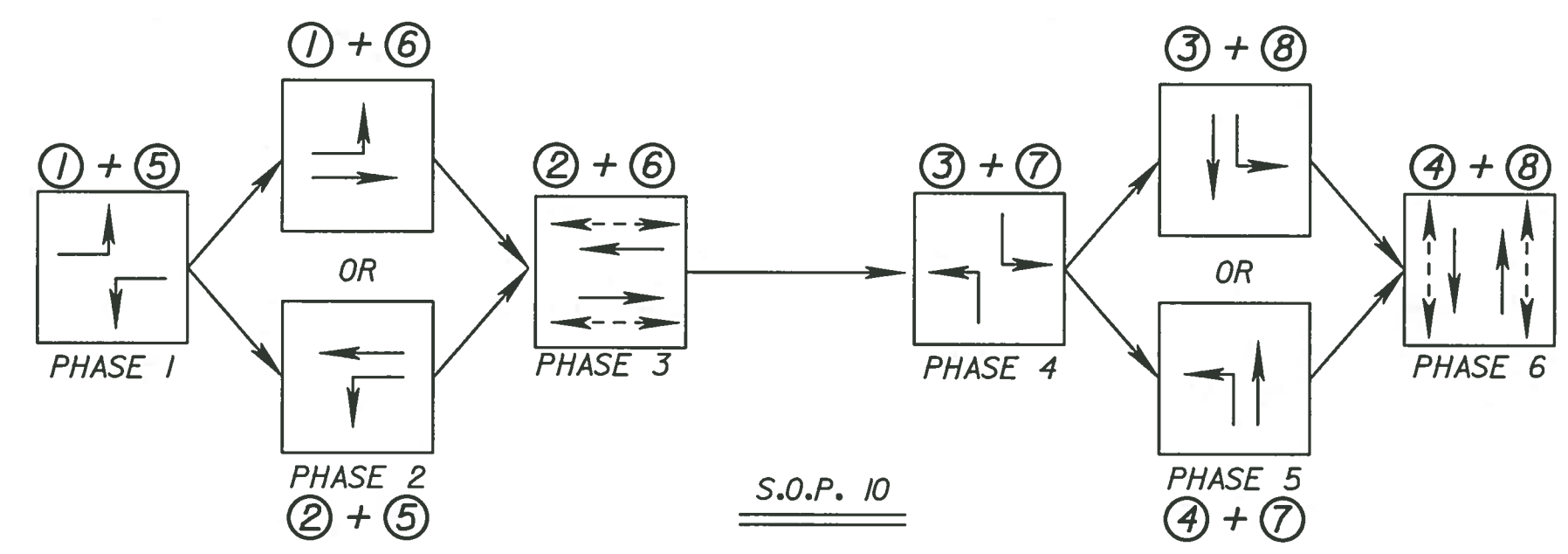


650-1-311 6 AS 650-1-511 4 AS 653-191 8 AS

* ALL SIGNALS SHALL USE LOUVERED ALUMINUM SIGNAL HEAD BACK PLATES WITH A 2" YELLOW REFLECTORIZED (TYPE III REFLECTIVITY) OUTER EDGE BORDER

- NOTES:**
- POWER SERVICE METER BASE AND DISCONNECT SHALL BE INSTALLED ON THE CONCRETE SERVICE POLE AS SHOWN ON THE PLANS AND FDOT INDEX 17504 AND 17736.
 - VIDEO DETECTION CAMERA PLACEMENT IS TO BE REVIEWED BY VIDEO DETECTION ENGINEER PRIOR TO FIELD PLACEMENT.
 - DESIGN SPEED FOR 44TH AVENUE EAST IS 45 MPH AND DESIGN SPEED FOR 19TH STREET COURT EAST IS 30 MPH.

- CONTROLLER NOTES:**
- MAJOR STREET IS 44TH AVE E
MINOR STREET IS 19TH ST CT EAST
 - CONTROLLER CABINET SHALL BE WIRED FOR S.O.P. 10. CONTROLLER SHALL OPERATE AS INDICATED.
 - FLASHING OPERATION IS YELLOW FOR MOVEMENTS 2 & 6 AND RED FOR ALL OTHER MOVEMENTS.
 - CONCURRENT/ ACTUATED PEDESTRIAN TIMING FOR MOVEMENTS P2, P4, P6 & P8.
 - EACH PHASE/ MOVEMENT SHALL BE WIRED FROM THE SIGNAL DISPLAY TO THE CONTROLLER AS A SEPARATE PHASE/ MOVEMENT. THIS INCLUDES LEFT TURN MOVEMENTS. EACH LEFT TURN MOVEMENT SHALL HAVE CONDUCTORS AVAILABLE FOR PROTECTED AND PERMISSIVE OPERATION.
 - THE CONTRACTOR SHALL COORDINATE WITH FLORIDA POWER AND LIGHT REPRESENTATIVE GREG COKER AT 941-723-4430 PRIOR TO CONSTRUCTION FOR POWER SERVICE FINAL LOCATION.

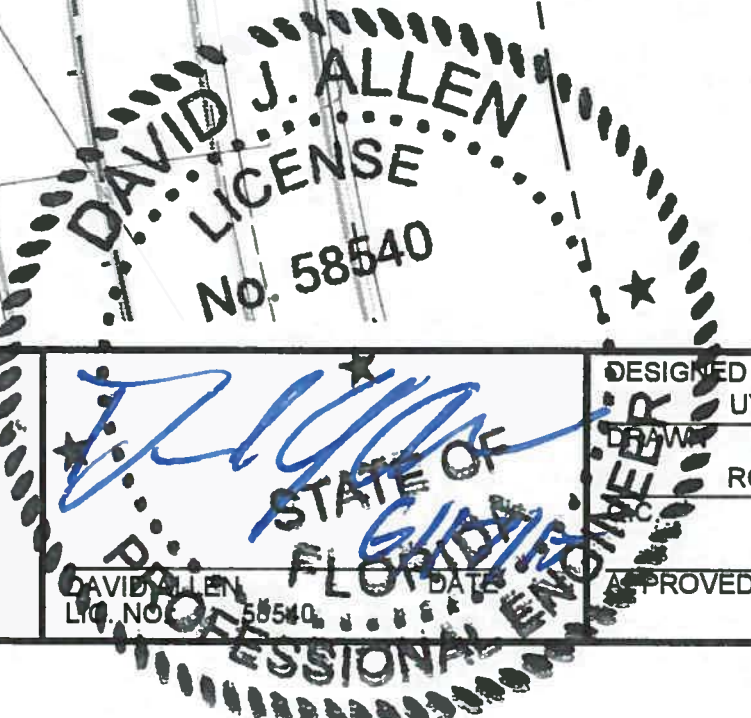
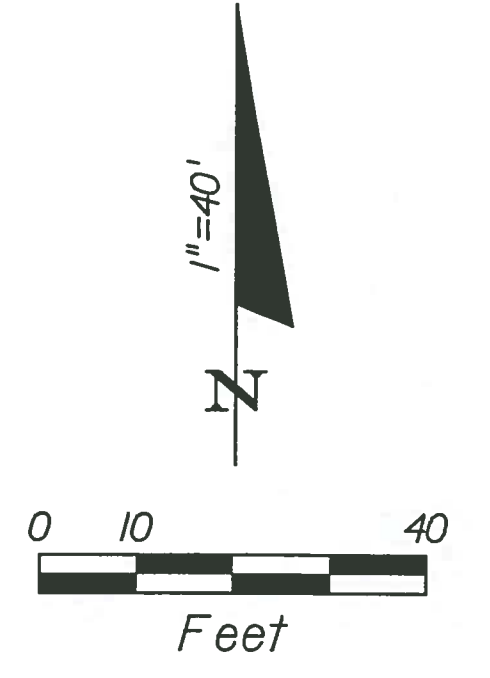
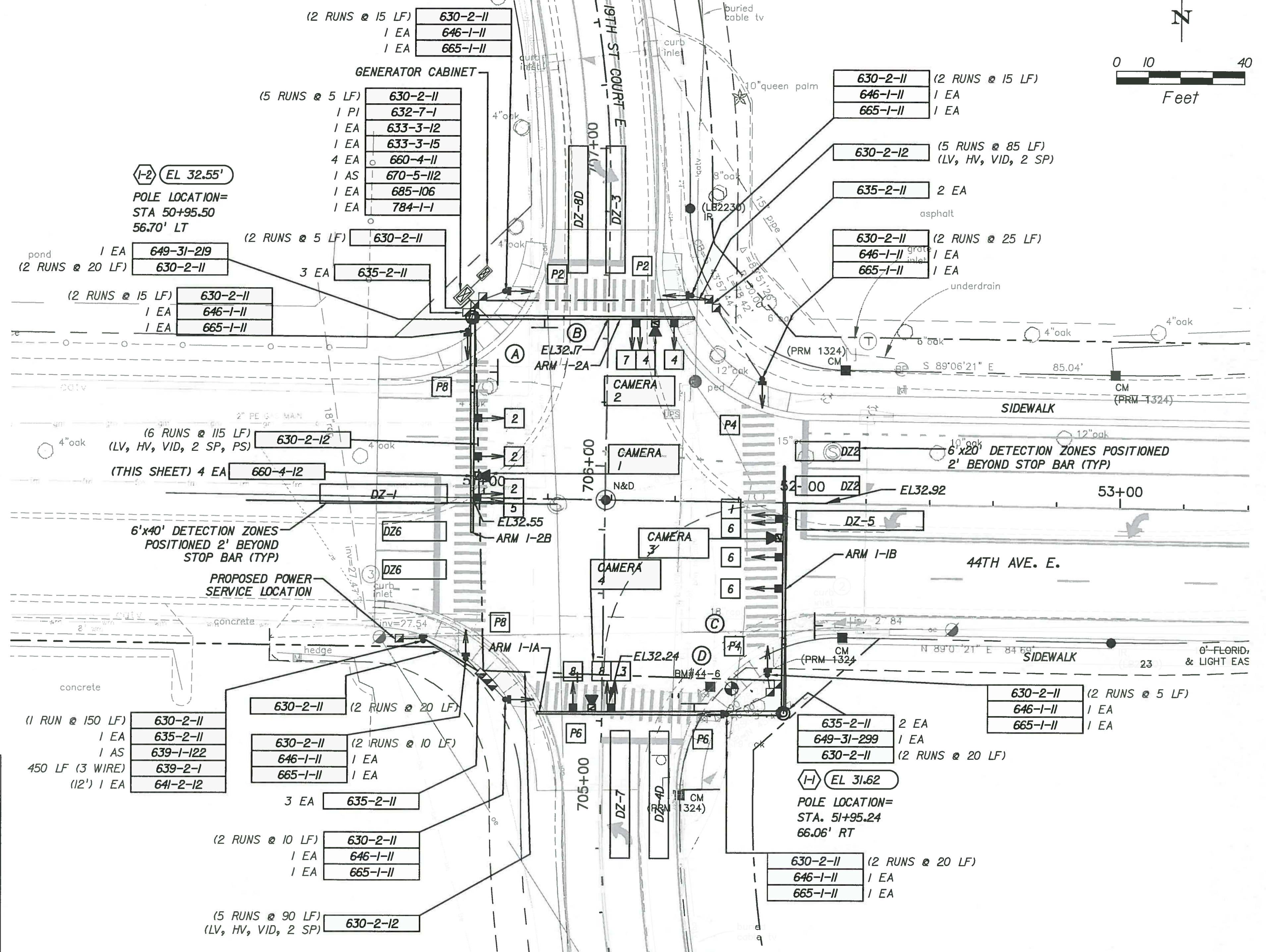
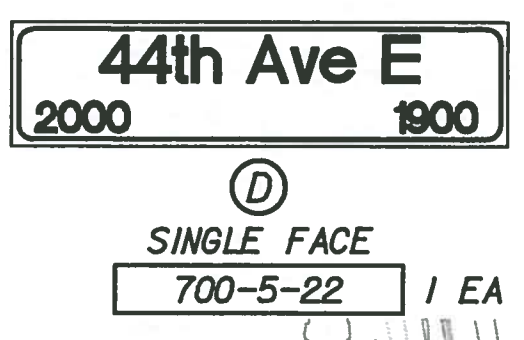
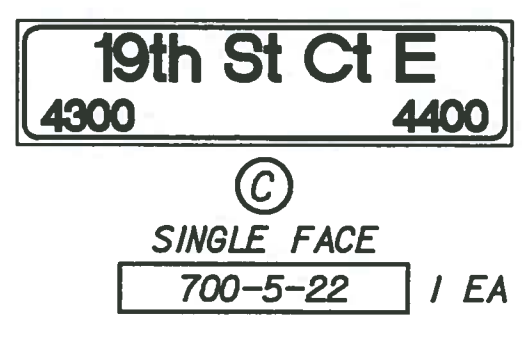
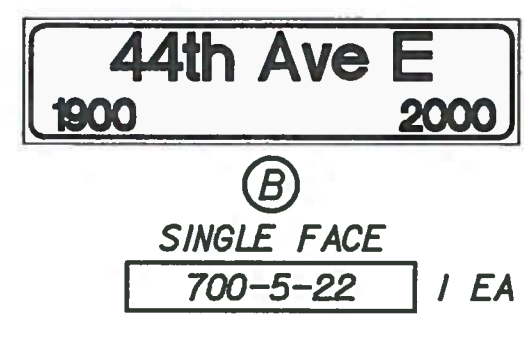
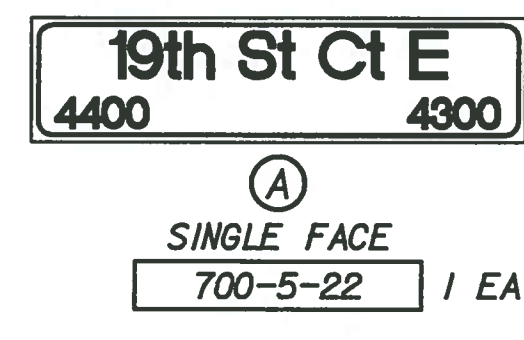


CONTROLLER TIMINGS								
TIMING FUNCTION								
MOVEMENT NUMBER	1	2	3	4	5	6	7	8
MINIMUM GREEN	10	20	10	15	10	20	10	15
EXTENSION	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
MAXIMUM GREEN 1	35	60	35	40	35	60	35	40
MAXIMUM GREEN 2								
YELLOW CLEARANCE	4.5	4.5	3.5	4.0	4.5	4.5	3.5	4.0
ALL RED	3.5	3.0	4.5	4.0	3.5	3.0	4.5	4.0
PEDESTRIAN WALK		7		7		7		7
PED. CLEARANCE		18		26		18		26
RECALL		MIN				MIN		

TIMINGS ARE INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY PROJECT ENGINEER.

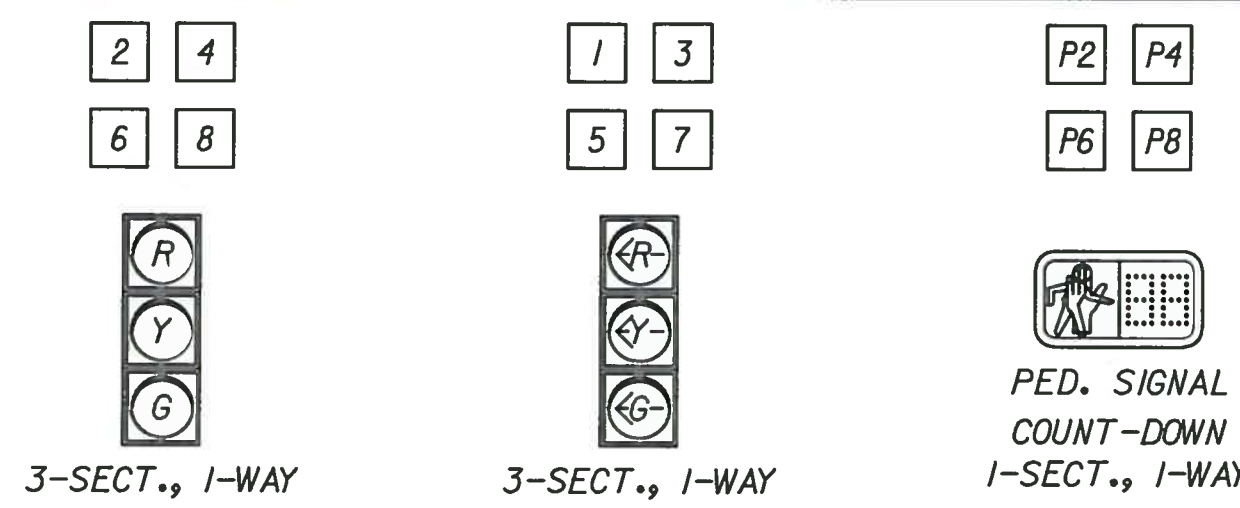
VIDEO DETECTOR ZONES			
ZONE LOCATION NO.	VIDEO CAMERA NO.	NO. OF DETECTION ZONES	DELAY TIME (SEC)
DZ-1	3	1	3
DZ-2	1	2	0
DZ-3	4	1	3
DZ-4D	2	1	8
DZ-5	1	1	3
DZ-6	3	2	0
DZ-7	2	1	3
DZ-8D	4	1	8

DELAY TIME IS INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY PROJECT ENGINEER.



INTERSECTION:
44TH AVENUE EAST AT
19TH STREET COURT EAST

NO.	DESCRIPTION	BY	DATE	MANATEE COUNTY	44TH AVENUE EAST ROADWAY EXTENSION	<p>Cardno Shaping the Future 12481 TELECOM DRIVE, TAMPA, FL 33637 TEL: (813) 221-0048 FAX: (813) 396-1953 www.cardno.com Certificate of Authorization No. 29915</p>	<p>DESIGNED LAYS DRAWN ROH APPROVED</p>	PROJECT NO: 00193-001-18
								DATE: 1-23-2015
SIGNALIZATION PLAN 44TH AVE EAST/19TH ST COURT EAST								SHEET NO: T-5



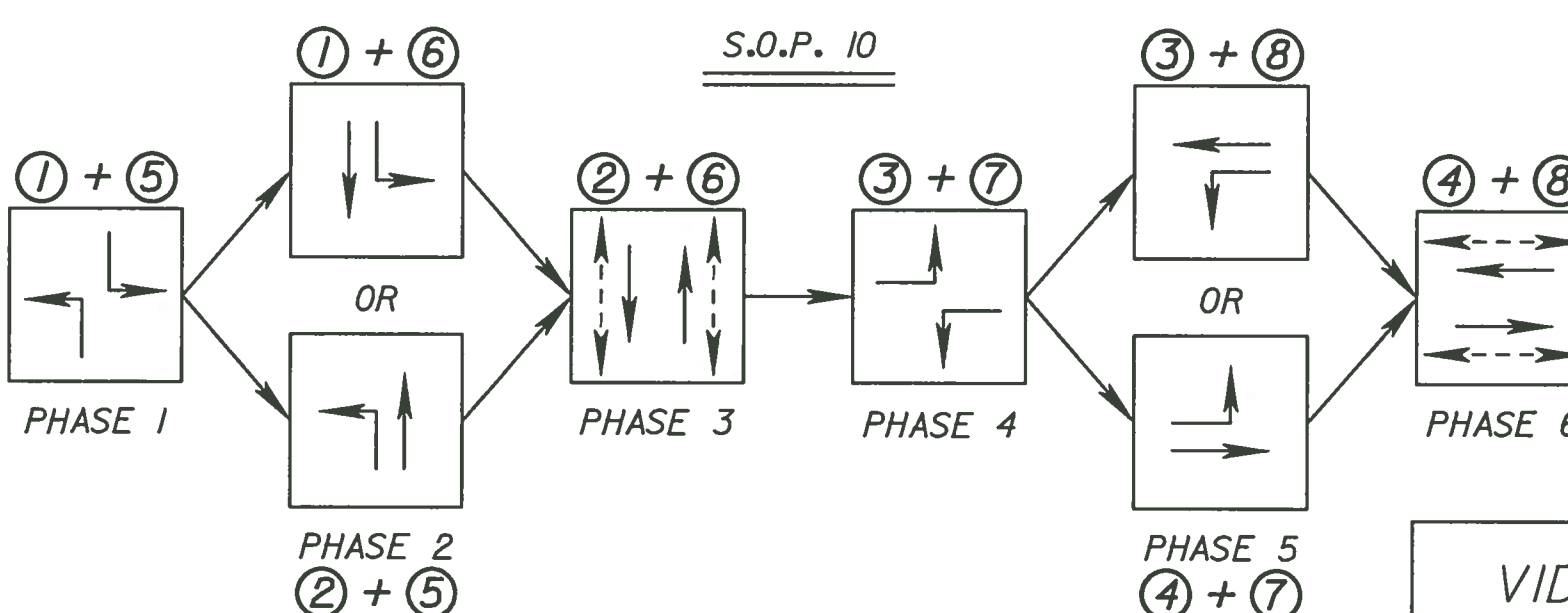
650-1-311 10 AS 650-1-311 9 AS 653-191 8 AS

* ALL SIGNALS SHALL USE LOVERED ALUMINUM SIGNAL HEAD BACK PLATES WITH A 2" YELLOW REFLECTORIZED (TYPE III REFLECTIVITY) OUTER EDGE BORDER

- NOTES:**
- POWER SERVICE METER BASE AND DISCONNECT SHALL BE INSTALLED ON THE CONCRETE SERVICE POLE AS SHOWN ON THE PLANS AND FDOT INDEX 17504 AND 17736.
 - VIDEO DETECTION CAMERA PLACEMENT IS TO BE REVIEWED BY VIDEO DETECTION ENGINEER PRIOR TO FIELD PLACEMENT.
 - THE MAST ARMS SHALL HAVE THE ASSIGNED MAST ARM NUMBER 13M128 PAINTED ON EACH UPRIGHT.
 - DESIGN SPEED FOR 44TH AVENUE EAST IS 45 MPH AND DESIGN SPEED FOR US 301 IS 55 MPH.

CONTROLLER NOTES:

- MAJOR STREET IS US 301
MINOR STREET IS 44TH AVE. EAST
- CONTROLLER CABINET SHALL BE WIRED FOR S.O.P. 10. CONTROLLER SHALL OPERATE AS INDICATED.
- FLASHING OPERATION IS YELLOW FOR MOVEMENTS 2 & 6 AND RED FOR ALL OTHER MOVEMENTS.
- CONCURRENT/ ACTUATED PEDESTRIAN TIMING FOR MOVEMENTS P2, P4, P6 & P8.
- EACH PHASE/ MOVEMENT SHALL BE WIRED FROM THE SIGNAL DISPLAY TO THE CONTROLLER AS A SEPARATE PHASE/ MOVEMENT. THIS INCLUDES LEFT TURN MOVEMENTS. EACH LEFT TURN MOVEMENT SHALL HAVE CONDUCTORS AVAILABLE FOR PROTECTED AND PERMISSIVE OPERATION.
- THE CONTRACTOR SHALL COORDINATE WITH FLORIDA POWER AND LIGHT REPRESENTATIVE GREG COKER AT 941-723-4430 PRIOR TO CONSTRUCTION FOR POWER SERVICE FINAL LOCATION.

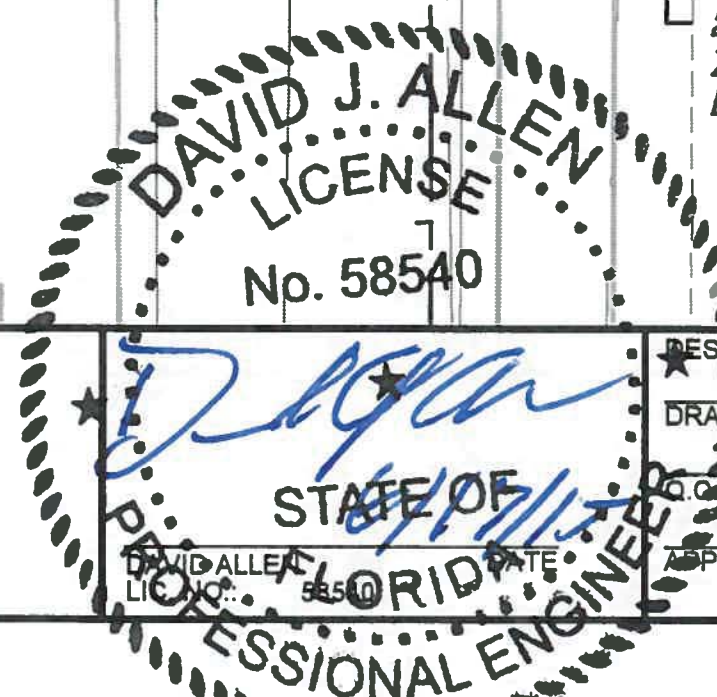
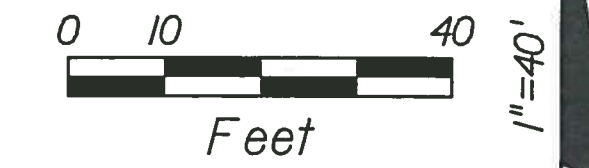
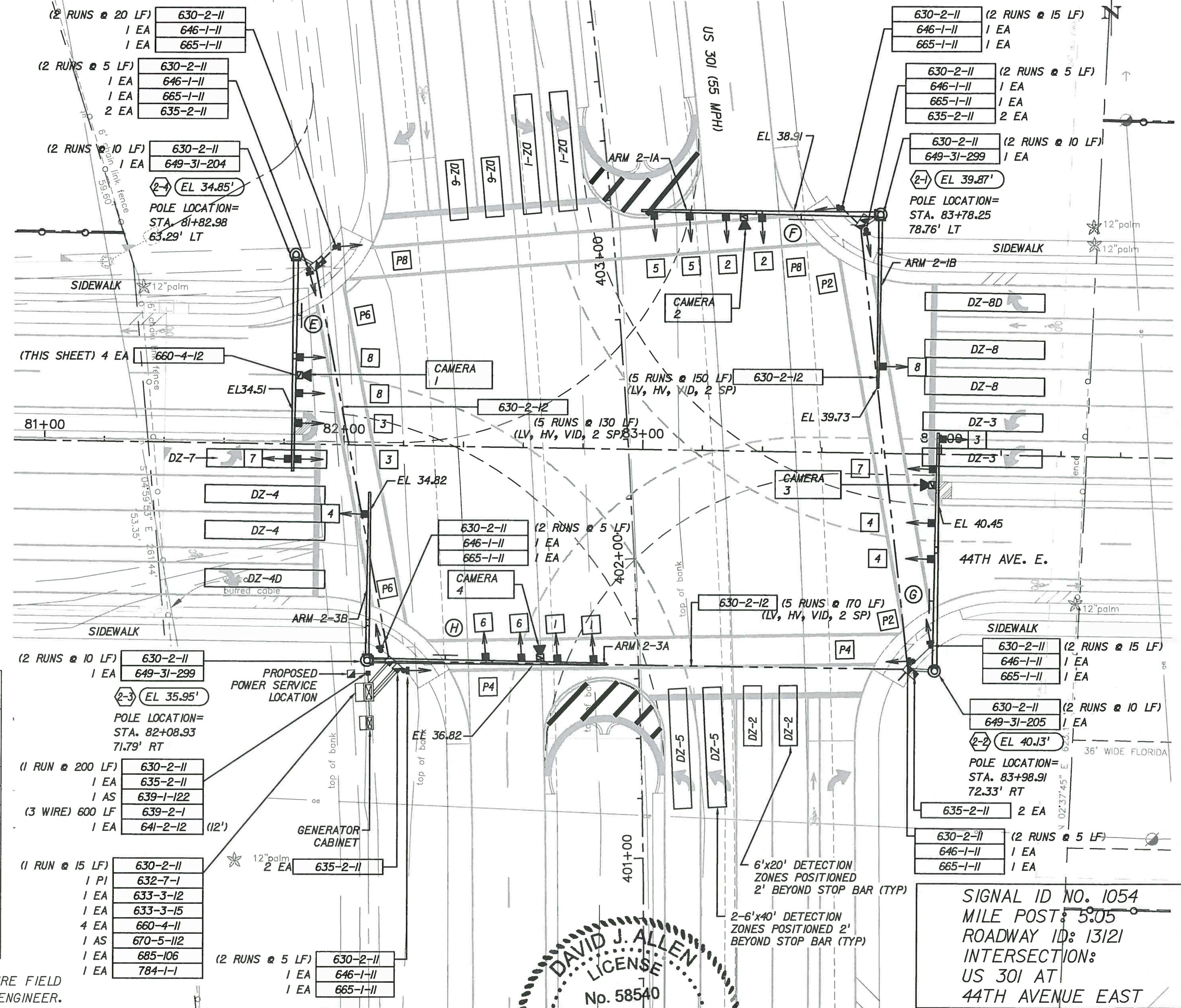
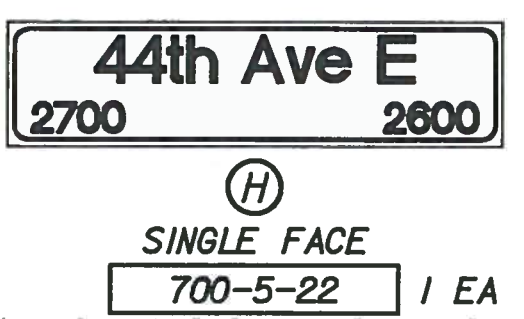
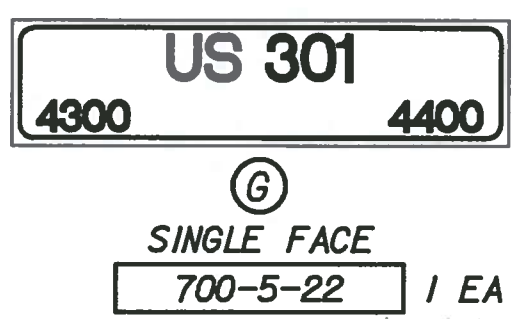
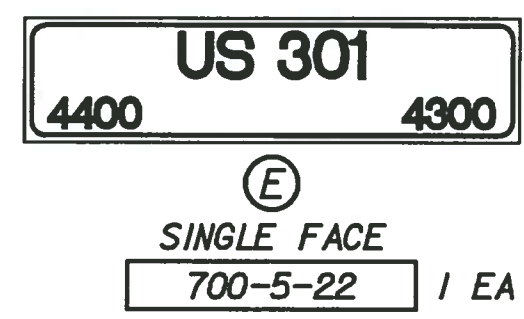


CONTROLLER TIMINGS								
TIMING FUNCTION								
MOVEMENT NUMBER	1	2	3	4	5	6	7	8
MINIMUM GREEN	10	20	10	15	10	20	10	15
EXTENSION	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
MAXIMUM GREEN 1	35	60	35	40	35	60	35	40
MAXIMUM GREEN 2								
YELLOW CLEARANCE	5.5	5.5	4.5	4.5	5.5	5.5	4.5	4.5
ALL RED	3.5	3.0	5.0	4.0	3.5	3.0	5.0	4.0
PEDESTRIAN WALK	7		7		7		7	
PED. CLEARANCE	38		46		38		46	
RECALL		MIN				MIN		

TIMINGS ARE INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY PROJECT ENGINEER.

VIDEO DETECTOR ZONES			
ZONE LOCATION NO.	VIDEO CAMERA NO.	NO. OF DETECTION ZONES	DELAY TIME (SEC)
DZ-1	4	2	0
DZ-2	2	2	0
DZ-3	1	2	0
DZ-4	3	2	0
DZ-4D	3	1	8
DZ-5	2	2	0
DZ-6	4	2	0
DZ-7	3	1	0
DZ-8	1	2	0
DZ-8D	1	1	8

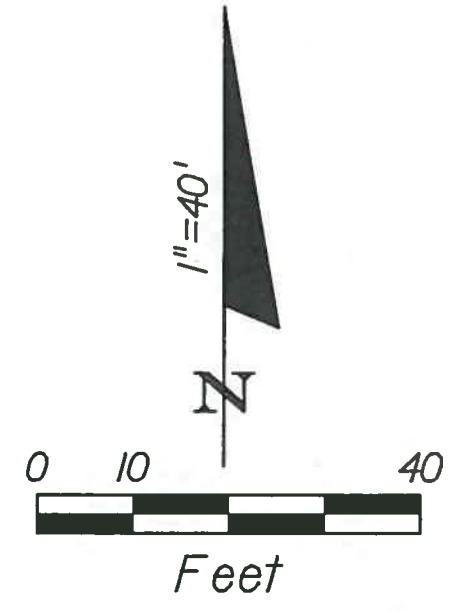
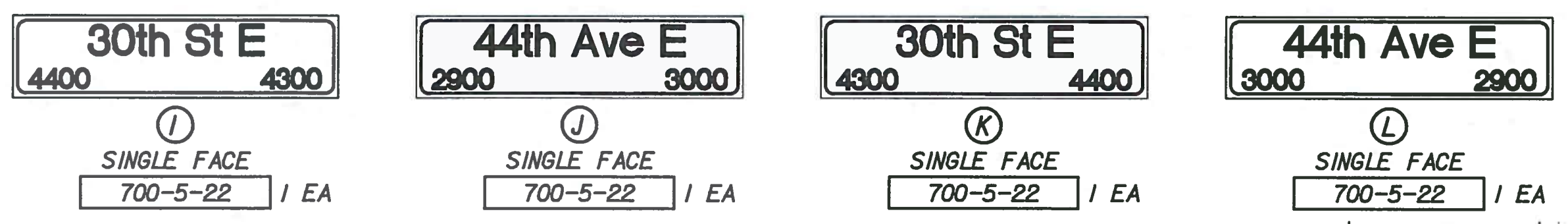
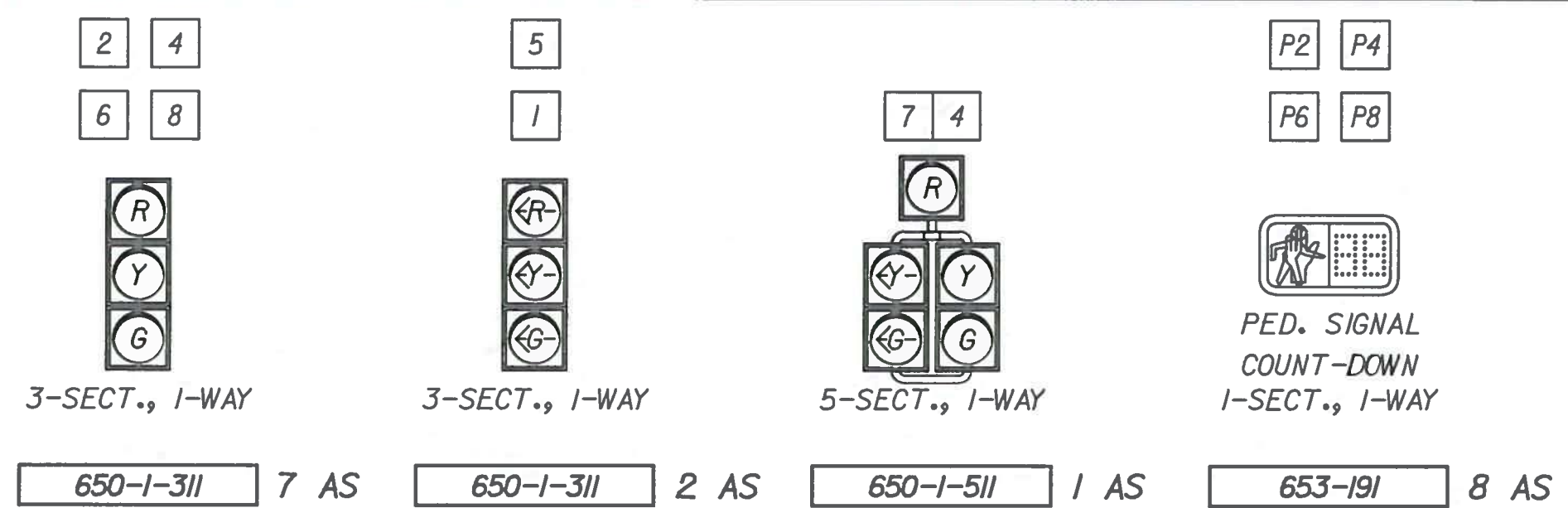
DELAY TIME IS INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY PROJECT ENGINEER.



SIGNAL ID NO. 1054
MILE POST: 5.05
ROADWAY ID: 13121
INTERSECTION:
US 301 AT
44TH AVENUE EAST

MANATEE COUNTY 44TH AVENUE EAST ROADWAY EXTENSION		DESIGNED: JTP DRAWN: JTP CHECKED: JTP APPROVED: JTP	PROJECT NO: 00193-001-18 DATE: 1-23-2015 SHEET NO: T-6
		SIGNALIZATION PLAN 44TH AVE EAST/US 301	

FILE: \\d:\projects\00193\001\33001.18\CADD\Signal\PLANS\G01.dwg LAST SAVED: Wed, 06/17/15 9:40a PLOTTED: Wed, 06/17/15 9:52a BY: David Allen



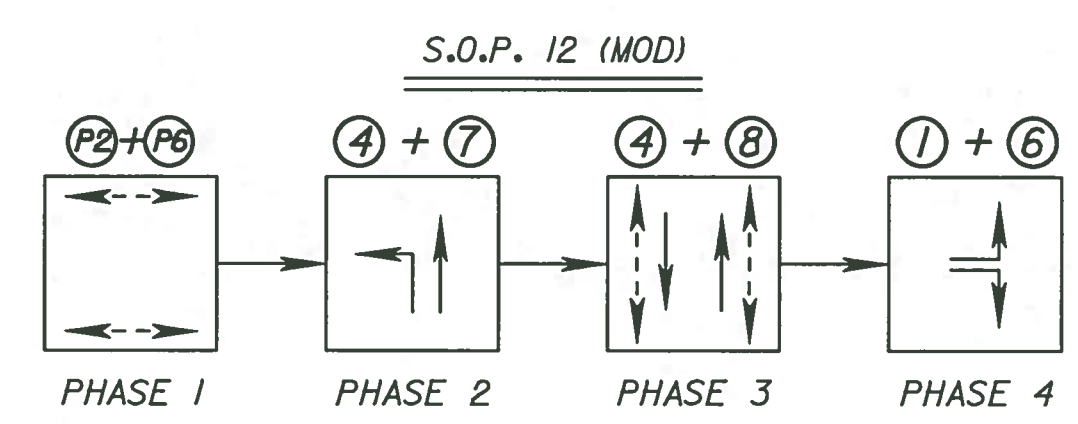
* ALL SIGNALS SHALL USE LOUVERED ALUMINUM SIGNAL HEAD BACK PLATES WITH A 2" YELLOW REFLECTORIZED (TYPE III REFLECTIVITY) OUTER EDGE BORDER

NOTES:

- POWER SERVICE METER BASE AND DISCONNECT SHALL BE INSTALLED ON THE CONCRETE SERVICE POLE AS SHOWN ON THE PLANS AND FDOT INDEX 17504 AND 17736.
- SIGNAL HEADS FOR MOVEMENT 2 AND 5 (FOR FUTURE USE) SHALL BE BAGGED
- VIDEO DETECTION CAMERA PLACEMENT IS TO BE REVIEWED BY VIDEO DETECTION ENGINEER PRIOR TO FIELD PLACEMENT.
- DESIGN SPEED FOR 44TH AVENUE EAST IS 45 MPH AND DESIGN SPEED FOR 30TH STREET EAST IS 30 MPH.

CONTROLLER NOTES:

- MAJOR STREET IS 44TH AVE. EAST
MINOR STREET IS 30TH ST. EAST
- CONTROLLER CABINET SHALL BE WIRED FOR SOP 10. CONTROLLER SHALL INITIALLY OPERATE AS INDICATED.
- FLASHING OPERATION IS YELLOW FOR MOVEMENTS 2 & 6 AND RED FOR ALL OTHER MOVEMENTS.
- CONCURRENT/ ACTUATED PEDESTRIAN TIMING FOR MOVEMENTS P4 & P8.
EXCLUSIVE/ ACTUATED PEDESTRIAN TIMING FOR MOVEMENTS P2 & P6.
- EACH PHASE/ MOVEMENT SHALL BE WIRED FROM THE SIGNAL DISPLAY TO THE CONTROLLER AS A SEPARATE PHASE/ MOVEMENT. THIS INCLUDES LEFT TURN MOVEMENTS. EACH LEFT TURN MOVEMENT SHALL HAVE CONDUCTORS AVAILABLE FOR PROTECTED AND PERMISSIVE OPERATION.
- THE CONTRACTOR SHALL COORDINATE WITH FLORIDA POWER AND LIGHT REPRESENTATIVE GREG COKER AT 941-723-4430 PRIOR TO CONSTRUCTION FOR POWER SERVICE FINAL LOCATION.

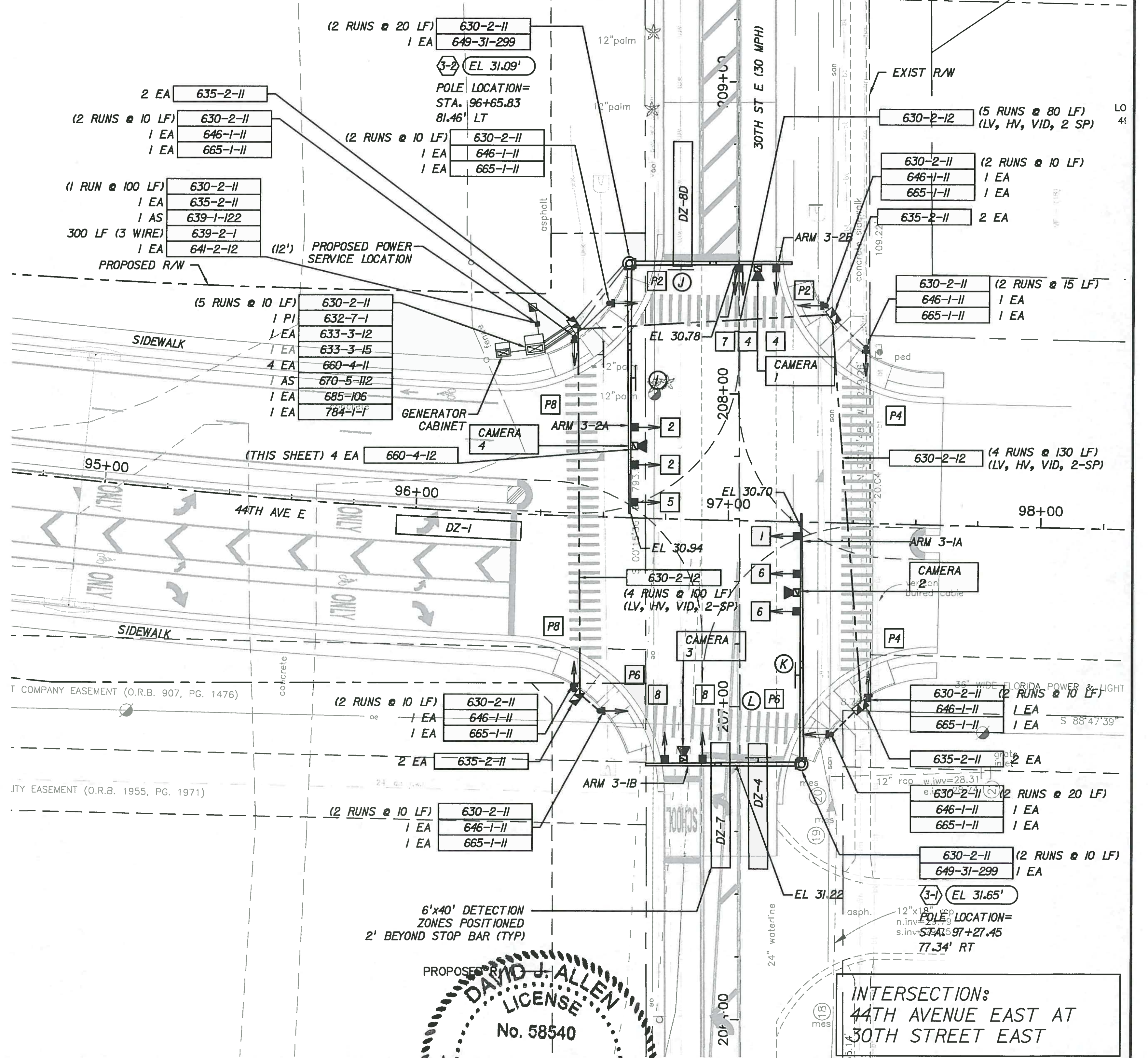


INITIAL CONTROLLER TIMINGS								
TIMING FUNCTION								
MOVEMENT NUMBER	1	2	3	4	5	6	7	8
MINIMUM GREEN	20			10	20	7	10	
EXTENSION	3.0			3.0	3.0	3.0	3.0	
MAXIMUM GREEN 1	40			35	40	20	35	
MAXIMUM GREEN 2								
YELLOW CLEARANCE	4.5			4.0	4.5	3.5	4.0	
ALL RED	5.0			4.0	3.0	5.0	4.0	
PEDESTRIAN WALK		7		7	7		7	
PED. CLEARANCE		18		29	18		29	
RECALL						MIN		

TIMINGS ARE INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY PROJECT ENGINEER.

VIDEO DETECTOR ZONES				
ZONE LOCATION NO.	VIDEO CAMERA NO.	NO. OF DETECTION ZONES	CONNECT TO MOVEMENT	DELAY TIME (SEC)
DZ-1	2	1	1	0
DZ-4	1	1	4	0
DZ-7	1	1	7	0
DZ-8D	3	1	8	8

DELAY TIME IS INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY PROJECT ENGINEER.



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	DESIGNED: JTP DRAWN: JTP CHECKED: JTP APPROVED: JTP	PROJECT NO: 00193-001-18 DATE: 1-23-2015 SHEET NO: T-7
		SIGNALIZATION PLAN 44TH AVE EAST/30TH ST EAST	

NOTES:

1. REMOVE ENTIRE EXISTING SIGNAL SYSTEM.

REMOVAL ITEMS:

690-10	10 EA
690-20	4 EA
690-31	4 EA
690-34-1	2 EA
690-60	12 EA
690-70	4 EA
690-80	1 EA
690-90	1 PI
690-100	1 PI
700-3-602	4 EA

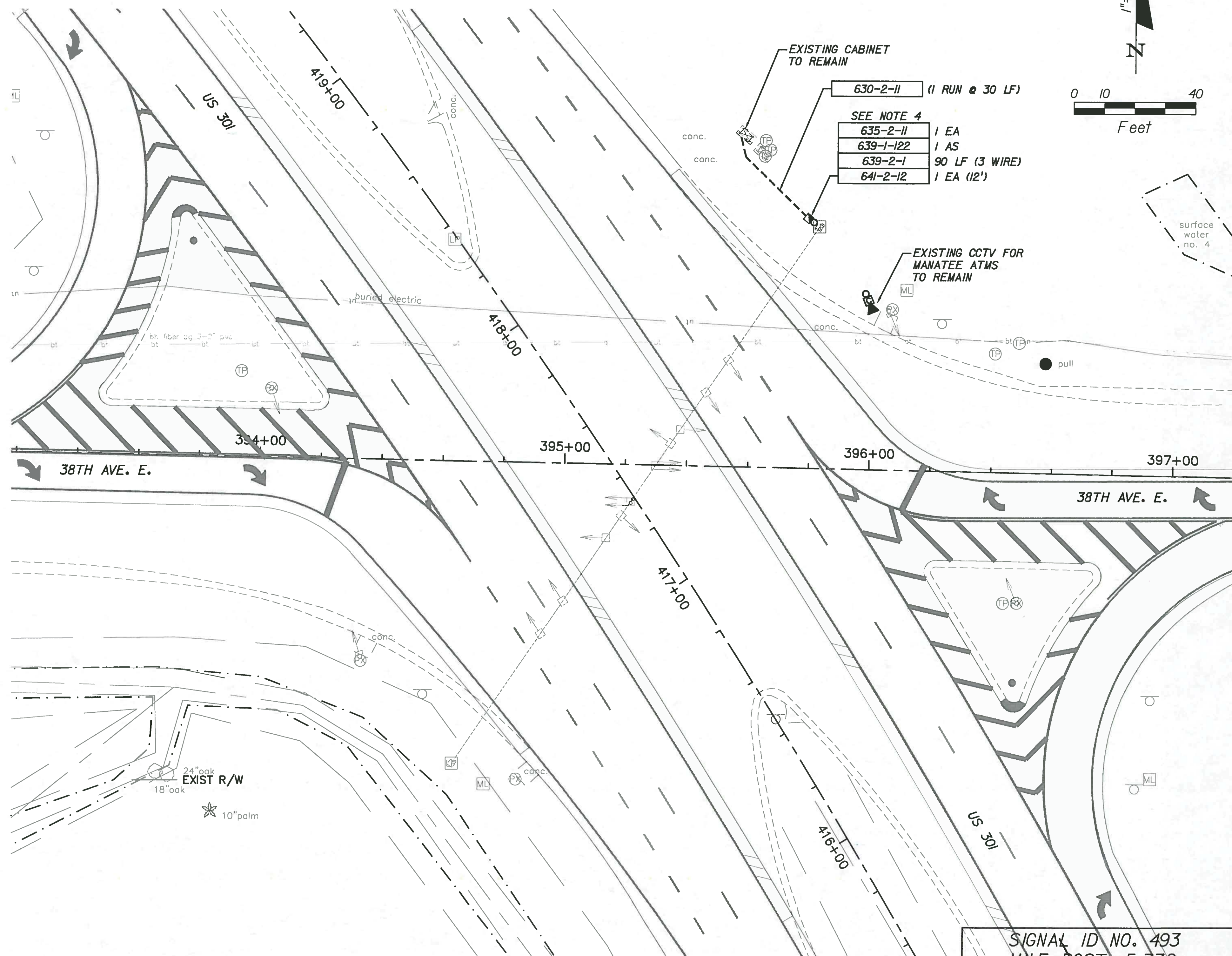
2. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING ROADWAY LIGHTING AND ROADWAY LIGHTING POWER SERVICE FOR THIS INTERSECTION.

3. THE CONTRACTOR SHALL PERFORM DUE DILIGENCE TO PREVENT DAMAGING ALL MANATEE ATMS COMPONENTS TO REMAIN INCLUDING BUT NOT LIMITED TO ATMS PULL BOXES, ATMS CONDUIT, ATMS CONDUIT, ATMS FIBER OPTIC CABLE AND CCTV.

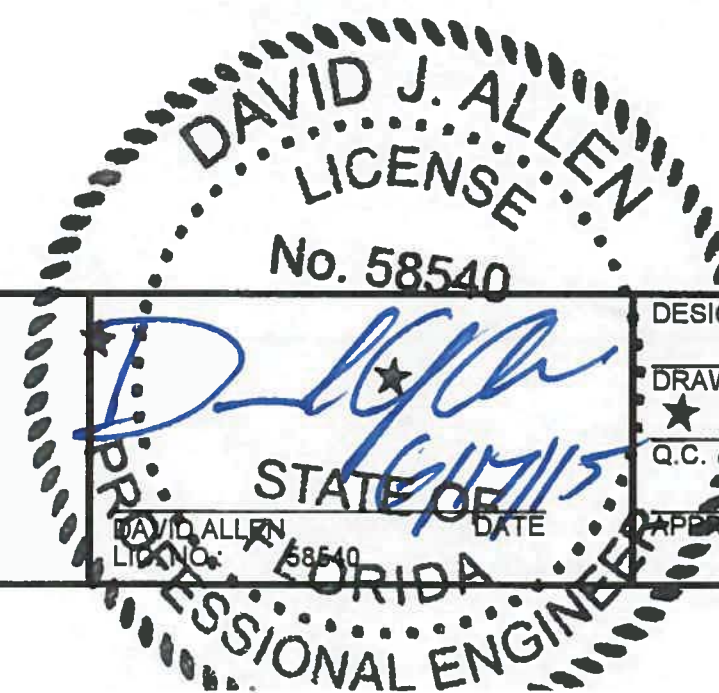
4. THE CONTRACTOR SHALL PLACE NEW POWER SERVICE PEDESTAL WHERE IT WILL INTERSECT THE EXISTING POWER SERVICE LOCATED ON THE STRAIN POLE. THE CONTRACTOR SHALL CONTACT THE POWER COMPANY PRIOR TO CONSTRUCTION FOR A FIELD REVIEW WITH A POWER COMPANY FIELD TECHNICIAN TO DETERMINE THE EXACT LOCATION.

5. ALL WORK DONE AT THIS INTERSECTION SHALL BE COORDINATED WITH MANATEE COUNTY TRAFFIC DIVISION TO MINIMIZE ISSUES WITH THE EXISTING ATMS EQUIPMENT. A REPRESENTATIVE FROM THE TRAFFIC ENGINEERING DIVISION SHALL BE PRESENT WHEN WORK IS COMMENCING AT THIS INTERSECTION FOR ALL TASKS.

6. ONLY SIGNAL COMPONENTS SHALL BE REMOVED FROM THE CABINET. ALL OTHER ITEMS SHALL REMAIN.



SIGNAL ID NO. 493
MILE POST: 5.332
ROADWAY ID: 13121
INTERSECTION:
US 301 AT
38TH AVENUE EAST



NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

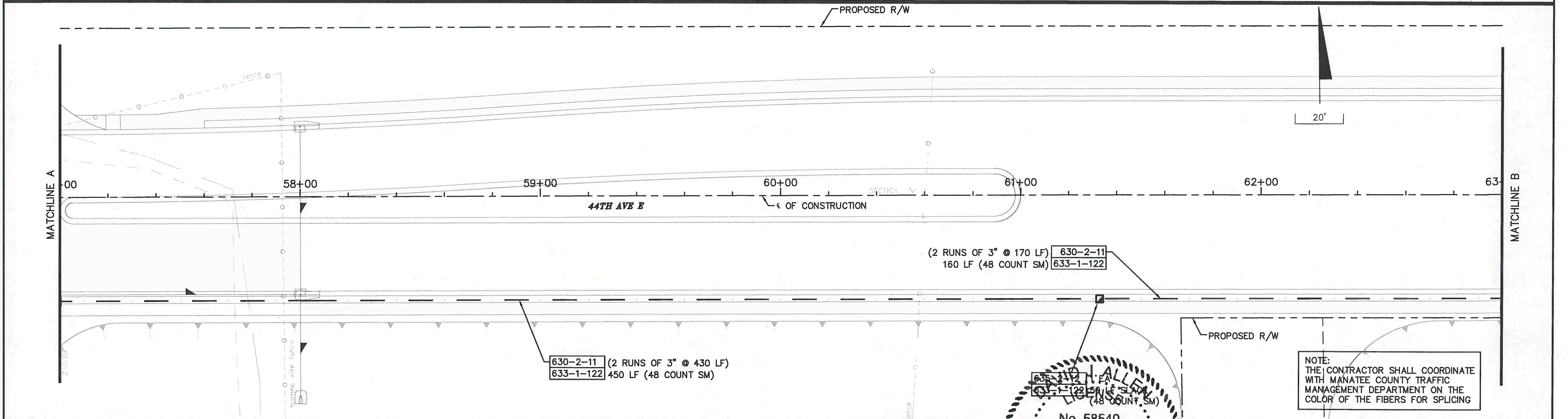
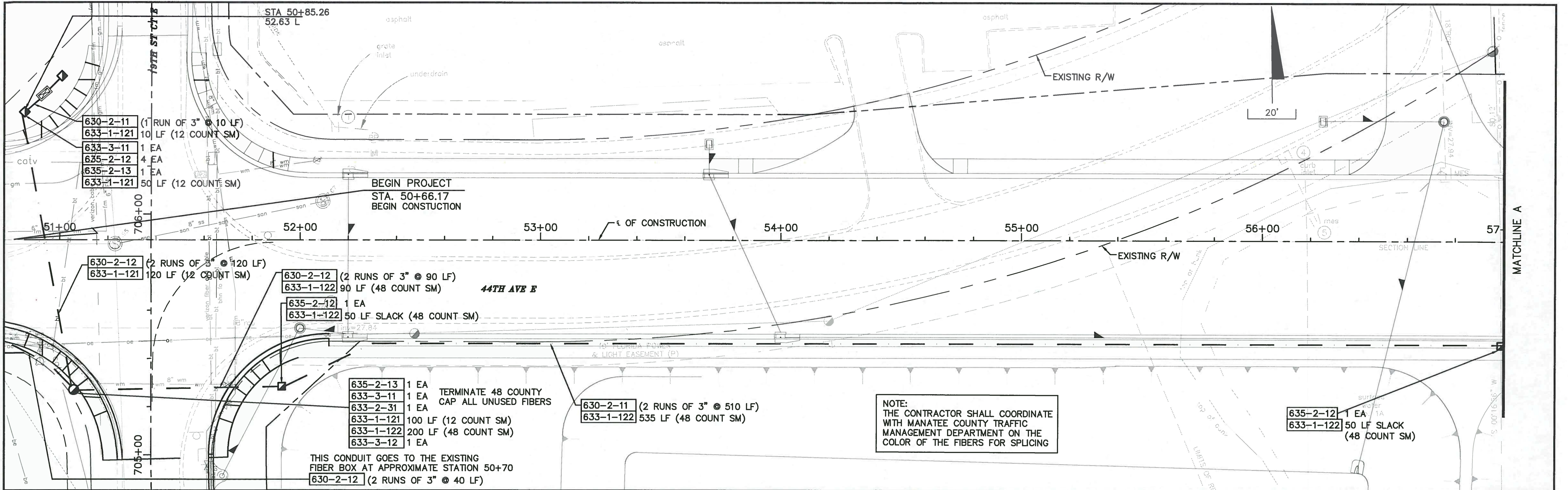
**44TH AVENUE EAST
ROADWAY EXTENSION**

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

DESIGNED	JTP
DRAWN	JTP
C.C.	
APPROVED	

**SIGNALIZATION PLAN
38TH AVE EAST/US301**

PROJECT NO:	00193-001-18
DATE:	1-23-2015
SHEET NO:	T-8



NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

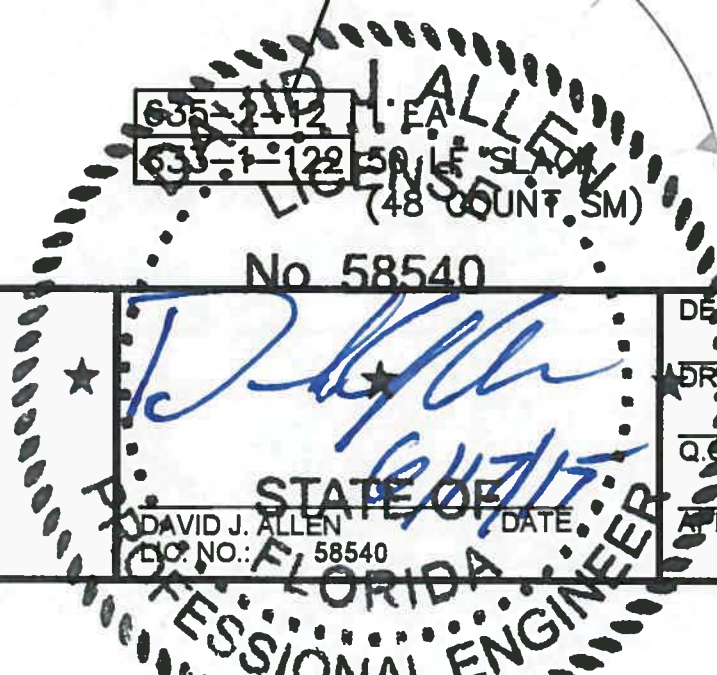
**44TH AVENUE EAST
ROADWAY EXTENSION**

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

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

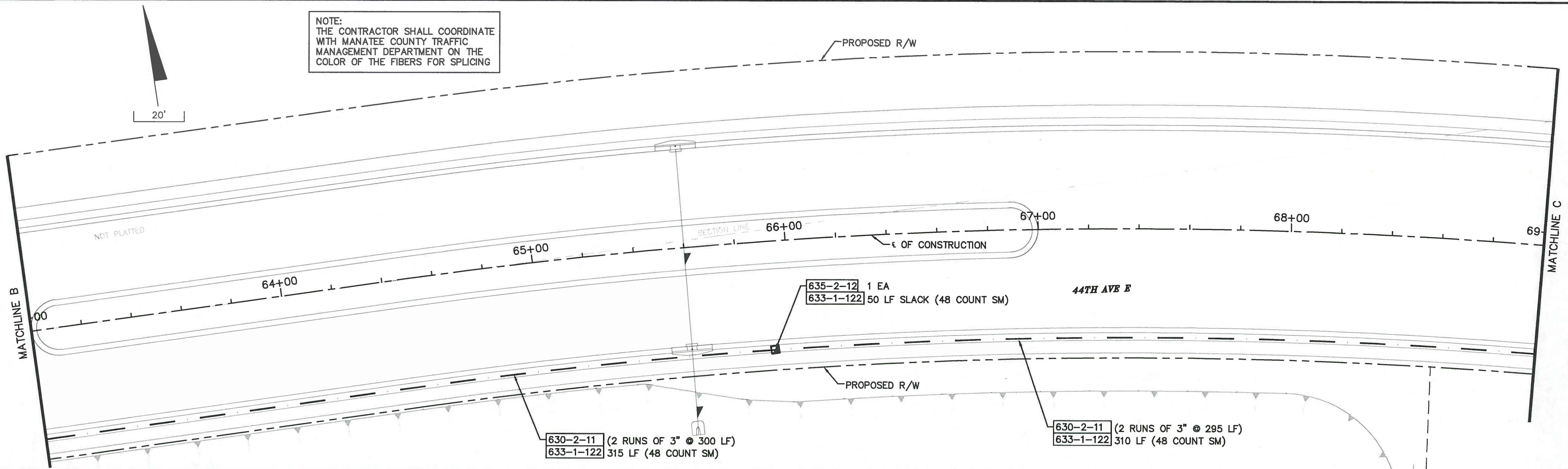
**INTERCONNECT PLAN
44TH AVENUE EAST**

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



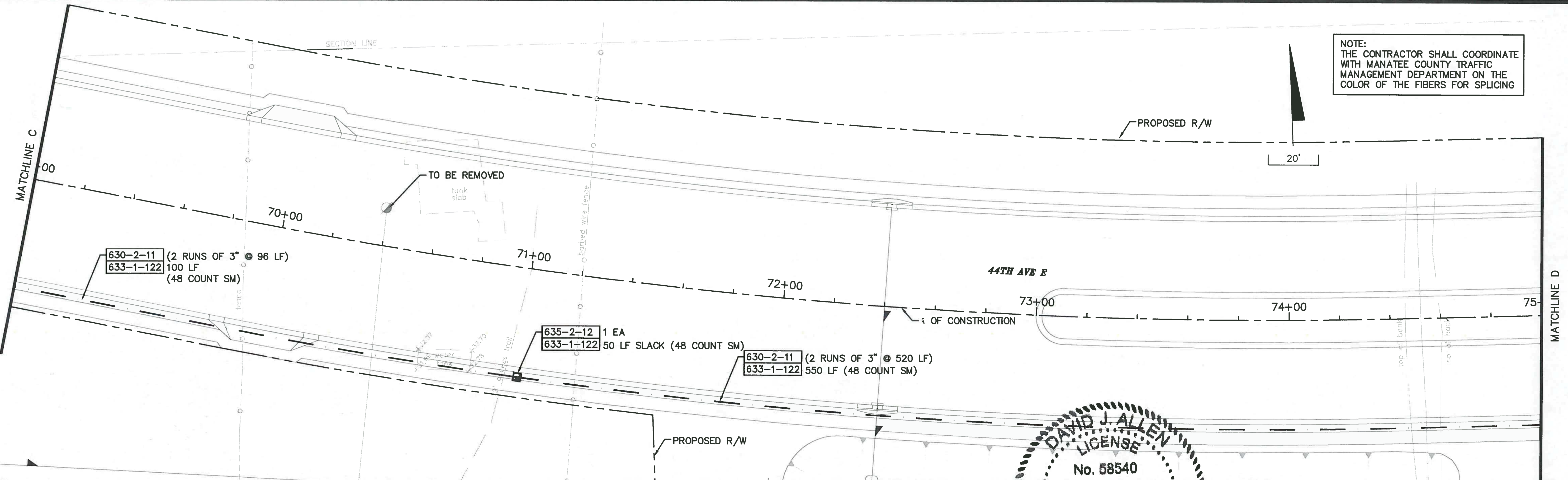
NOTE:
THE CONTRACTOR SHALL COORDINATE
WITH MANATEE COUNTY TRAFFIC
MANAGEMENT DEPARTMENT ON THE
COLOR OF THE FIBERS FOR SPLICING

20'



NOTE:
THE CONTRACTOR SHALL COORDINATE
WITH MANATEE COUNTY TRAFFIC
MANAGEMENT DEPARTMENT ON THE
COLOR OF THE FIBERS FOR SPLICING

20'



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

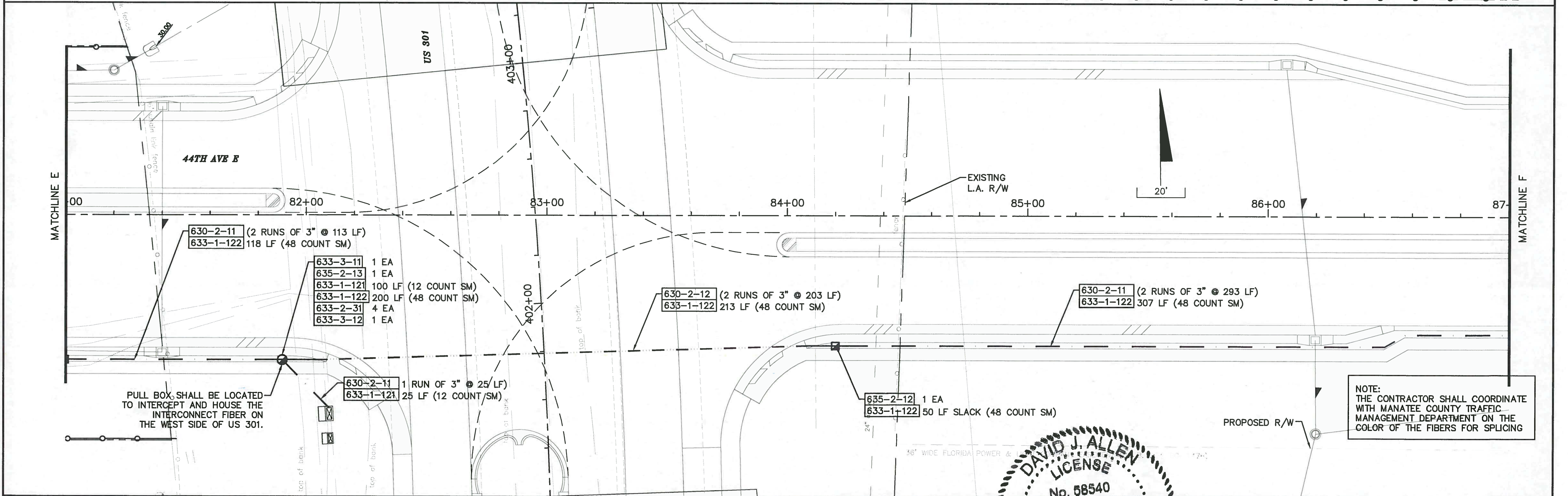
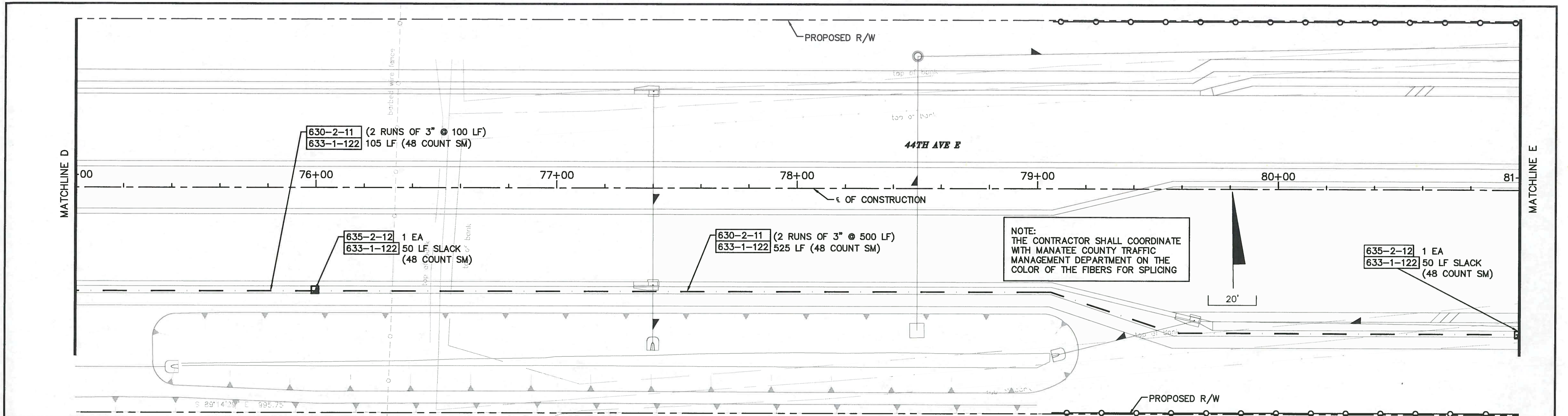
DAVID J. ALLEN
LICENSE
No. 58540
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DESIGNED	DJA
DRAWN	ROH
CHECKED	
APPROVED	

INTERCONNECT PLAN
44TH AVENUE EAST

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

FILE: J:\00193\00193001-18\ACAD\dwg\Signal\PLANS\G02.dwg LAST SAVED: Fri, 05/29/15 2:31p PLOTTED: Wed, 06/17/15 8:16a BY: John.Hutchison



NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

**44TH AVENUE EAST
ROADWAY EXTENSION**

Cardno
Shaping the Future
12491 TELECOM DRIVE, TAMPA, FL 33637
TEL: (813) 221-0048 FAX: (813) 386-1953
www.cardno.com Certificate of Authorization No. 29915

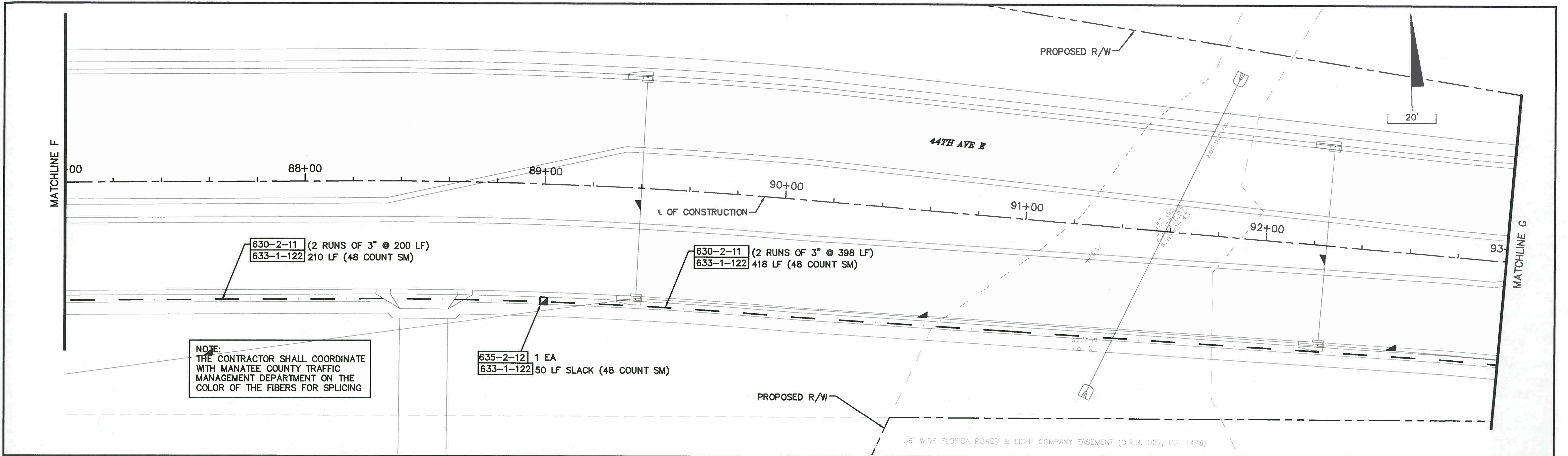
DAVID J. ALLEN
LICENSE
No. 58540
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DESIGNED	DJA
DRAWN	ROH
CHECKED	
APPROVED	

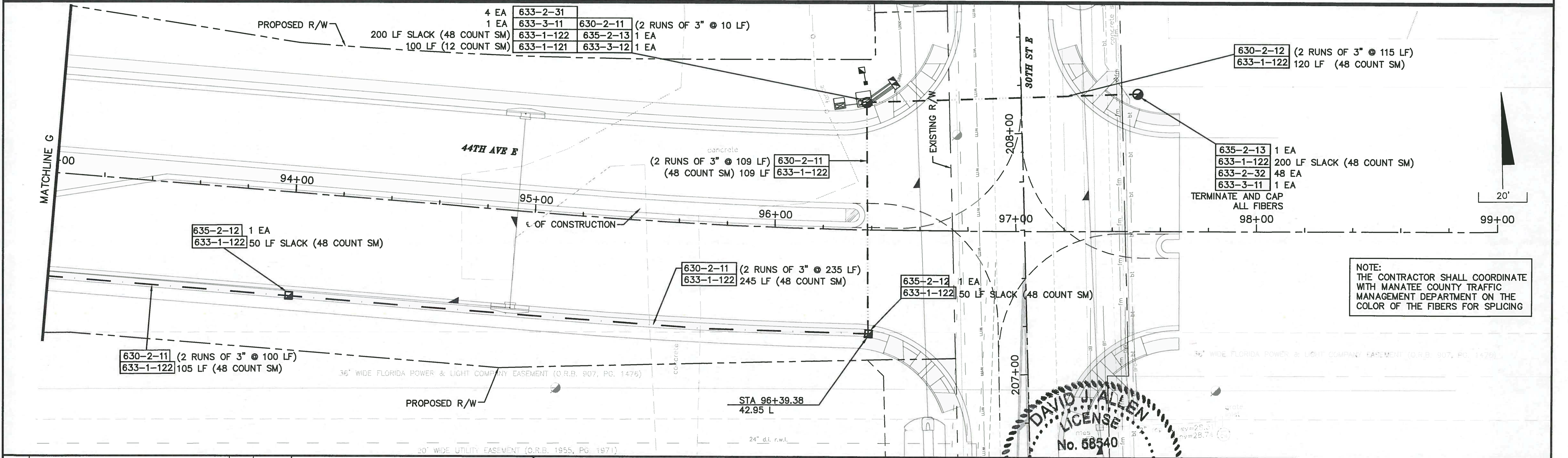
**INTERCONNECT PLAN
44TH AVENUE EAST**

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

FILE: J:\00193\00193001.18\ACAD\dwg\Signal\PLANS\G02.dwg LAST SAVED: Fri, 06/29/15 2:31p PLOTTED: Wed, 06/17/15 8:16a BY: John.Hutchison



NOTE:
THE CONTRACTOR SHALL COORDINATE WITH MANATEE COUNTY TRAFFIC MANAGEMENT DEPARTMENT ON THE COLOR OF THE FIBERS FOR SPLICING



NOTE:
THE CONTRACTOR SHALL COORDINATE WITH MANATEE COUNTY TRAFFIC MANAGEMENT DEPARTMENT ON THE COLOR OF THE FIBERS FOR SPLICING

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) 388-1953
www.cardno.com Certificate of Authorization No. 29915

DAVID J. ALLEN
LICENSED PROFESSIONAL ENGINEER
No. 58540

DESIGNED: DJA
DRAWN: ROH
APPROVED: [Signature]

**INTERCONNECT PLAN (4)
44TH AVENUE EAST**

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

FILE: J:\00193\00193001-18\ACAD\dwg\Signal\PLANS\G02.dwg LAST SAVED: Fri, 06/29/15 2:31p PLOTTED: Wed, 06/17/15 8:16a BY: John.Hutchison

STANDARD MAST ARM ASSEMBLIES DATA TABLE																		
FDOT MAST ARM NUMBER	STRUCTURE IDNUMBERS	ASSEMBLY NUMBERS ⁽¹⁾	FIRST ARM			SECOND ARM			UF (deg)	LL (deg)	POLE				SPECIAL DRILLED SHAFT ⁽⁴⁾			
			ARM TYPE	FAA ⁽²⁾ (ft.)	FBA ⁽²⁾ (in.)	ARM TYPE	FAA ⁽²⁾ (ft.)	FBA ⁽²⁾ (in.)			POLE TYPE	UAA ⁽³⁾ (ft.)	UB (ft.)	UCA ⁽³⁾ (in.)	DA (ft.)	DB (ft.)	RA	RB
	1-2 (T-5)	E6-E6-T5	E6	34.9	7.26	E6	34.9	7.26	270	-	T5	21.5	20	18.99	*	*	*	*
13M128	2-2 (T-6)	D7-S6	D7	*	*	-	-	-	-	-	S6	22	20.5	21.92	*	*	*	*
13M128	2-4 (T-6)	D6-S4	D6	*	*	-	-	-	-	-	S4	21	19.5	23.06	*	*	*	*

* STANDARD ARM AND SHAFT LENGTHS. REFER TO STANDARD MAST ARM ASSEMBLIES, INDEX NO. 17743.

TABLE NOTES:

1. Assembly Number Legend

Single Arm: Arm Type - Pole Type = D# - S#
= E# - T#
= F# - W#

Double Arm: First Arm Type - Second Arm Type - Pole Type = D# - D# - S#
= E# - E# - T#
= F# - F# - W#

2. If an entry appears in columns "FAA" and "FBA", a shorter arm is required. This is obtained by removing length from the arm tip. For these cases the mastarm length shall be shortened from "FA" to "FAA" and the tip diameter shall be increased from "FB" to "FBA".

3. If an entry appears in columns "UAA" and "UCA", a shorter pole is required. This is obtained by removing length from the pole tip. For these cases the poleheight shall be shortened from "UA" to "UAA" and the pole tip diameter shall be increased from "UC" to "UCA".

4. The foundations for Standard Mast Arm Assemblies are based on the reports of core borings from Professional Service Industries, Inc., dated January 8, 2010 and September 21, 2010. Engineer of record is Martin E. Millburg P.E. No. 36584.

The following soil parameters were used in design.

Mast Arm 1-2 (T-5)
Classification= Cohesive (Clay)
Cohesion= 875 lbs. / sq. ft.
Unit Weight= 47.6 lbs. / cu. ft.

Mast Arms 2-2 (T-6) and 2-4 (T-6)
Classification= Cohesionless (Fine Sand)
Friction Angle= 29 Degrees (29°)
Unit Weight= 42.6 lbs. / cu. ft.

GENERAL NOTES:

1. Work this sheet with the Signal Designer's "Mast Arm Tabulation" sheet. See "Mast Arm Tabulation" for special instructions that include non-standard Handhole location, paint color, terminal compartment requirement, and pedestrian features.

2. Work with Index Nos. 17743 and 17745.

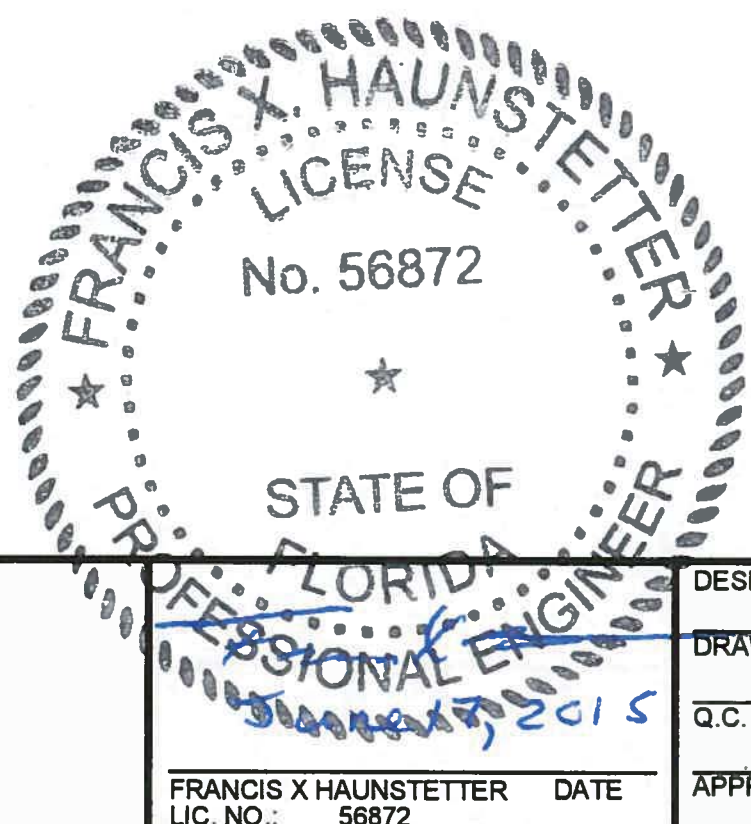
3. Design wind speed is 130 mph.

4. Due to the arm loading, the stronger D7-S6 and D6-S4 assemblies are required instead of the E7-T6 and E6-T4 assemblies for mast arms 2-2 (T-6) and 2-4 (T-6), respectively.

5. Refer to "Table of Variables for Non-Standard Mast Arm Assemblies" for information regarding mast arms 1-1 (T-5), 2-1 (T-6), 2-3 (T-6), 3-1 (T-7), and 3-2 (T-7).

6. All mast arm assemblies shall be galvanized, non painted structures.

7. The contractor shall anticipate the need for special mounting hardware for the signals and signs required to maintain minimum and maximum required vertical clearances.



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. 25915	FRANCIS X. HAUNSTETTER LIC. NO.: 56872	DESIGNED	FXH	TABLE OF VARIABLES FOR STANDARD MAST ARM ASSEMBLIES	PROJECT NO.	00193-001-18
										DRAWN	FXH		DATE:	6-17-2015
										APPROVED	MAV		SHEET NO:	T-15
											RAH			

SPECIAL MAST ARM ASSEMBLIES DATA TABLE																									
FDOT MAST ARM NUMBER	NUMBER OF LOCATIONS	STRUCTURE NUMBER	FIRST ARM				FIRST ARM EXTENSION				SECOND ARM				SECOND ARM EXTENSION				POLE						
			FA(ft)	FB(in)	FC(in)	FD(in)	FE(ft)	FF(in)	FG(in)	FH(in)	SA(ft)	SB(in)	SC(in)	SD(in)	SE(ft)	SF(in)	SG(in)	SH(in)	UA(ft)	UB(ft)	UC(in)	UD(in)	UE(in)	UF(deg)	UG(ft)
	1	1-1 (T-5)	38.0	8.75	14.0	0.1793	40.0	13.40	19	0.375	38.0	8.75	14.0	0.1793	40.0	13.40	19	0.375	24.0	21.00	23.64	27	0.375	270	-
13M128	1	2-1 (T-6)	40.0	8.47	14.0	0.1793	40.0	13.40	19	0.375	31.8	8.55	13.0	0.1793	26.0	12.36	16	0.375	22.5	19.50	23.85	27	0.375	90	-
13M128	1	2-3 (T-6)	40.0	8.47	14.0	0.1793	40.0	13.40	19	0.375	29.8	8.83	13.0	0.1793	26.0	12.36	16	0.375	23.5	20.50	23.71	27	0.375	90	-
	1	3-1 (T-7)	40.0	8.47	14.0	0.1793	40.0	13.40	19	0.375	23.8	9.67	13.0	0.1793	26.0	12.36	16	0.375	23.5	20.50	23.71	27	0.375	90	-
	1	3-2 (T-7)	40.0	8.47	14.0	0.1793	40.0	13.40	19	0.375	27.8	9.11	13.0	0.1793	26.0	12.36	16	0.375	23.0	20.00	23.78	27	0.375	90	-

SPECIAL MAST ARM ASSEMBLIES DATA TABLE (CONT.)																										
STRUCTURE NUMBER	FIRST ARM CONNECTION (in) First Arm Camber Angle = 2 Degrees													SECOND ARM CONNECTION (in) Second Arm Camber Angle = 2 Degrees												
	#Bolts	HT	FJ	FK	FL	FM	FN	FO	FP	FQ	FR	FS	FT	#Bolts	HT	SJ	SK	SL	SM	SN	SO	SP	SQ	SR	SS	ST
1-1 (T-5)	6	30	36	3	0.75	0.313	0.438	22	1.25	0.625	2	12.5	0.438	6	30	36	3	0.75	0.313	0.438	22	1.25	0.625	2	12.5	0.438
2-1 (T-6)	6	30	36	3	0.75	0.313	0.438	22	1.25	0.625	2	12.5	0.438	6	30	36	3	0.75	0.313	0.438	22	1.25	0.563	2	12.5	0.438
2-3 (T-6)	6	30	36	3	0.75	0.313	0.438	22	1.25	0.625	2	12.5	0.438	6	30	36	3	0.75	0.313	0.438	22	1.25	0.563	2	12.5	0.438
3-1 (T-7)	6	30	36	3	0.75	0.313	0.438	22	1.25	0.625	2	12.5	0.438	6	30	36	3	0.75	0.313	0.438	22	1.25	0.563	2	12.5	0.438
3-2 (T-7)	6	30	36	3	0.75	0.313	0.438	22	1.25	0.625	2	12.5	0.438	6	30	36	3	0.75	0.313	0.438	22	1.25	0.563	2	12.5	0.438

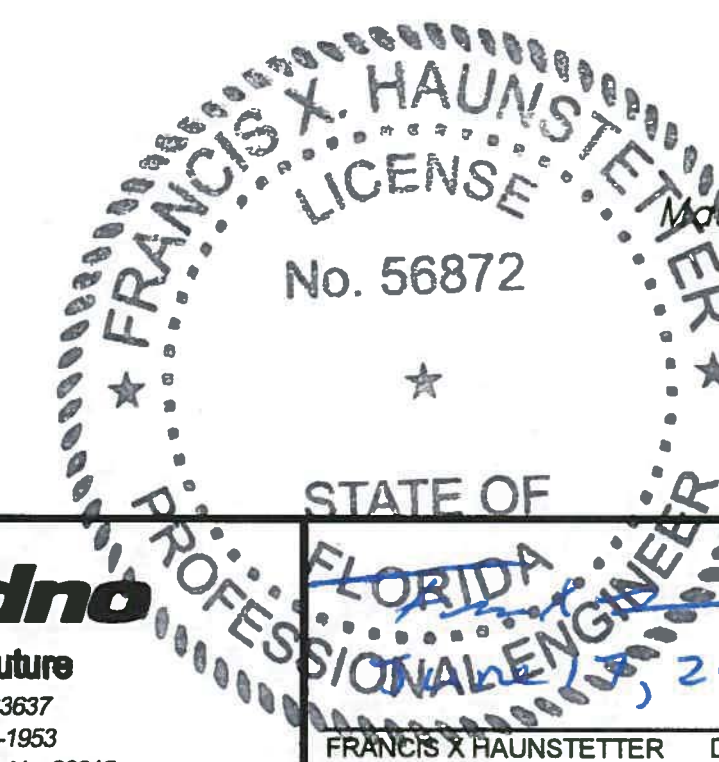
SPECIAL MAST ARM ASSEMBLIES DATA TABLE (CONT.)																						
STRUCTURE NUMBER	POLE BASE CONNECTION (in)							SHAFT AND REINF.				LUMINAIRE AND LUMINAIRE CONNECTION										
	#Bolts	BA	BB	BC	BD	BE	BF	DA(ft)	DB(ft)	RA	RB	LA(ft)	LB(ft)	LC(in)	LD(in)	LE	LF(ft)	LG(in)	LH(in)	LJ(in)	LK(in)	LL(deg)
1-1 (T-5)	6	45	1.75	2.25	0.375	0.313	45	19	4.5	11	16	-	-	-	-	-	-	-	-	-	-	-
2-1 (T-6)	6	45	1.75	2.25	0.375	0.313	45	19	4.5	11	16	-	-	-	-	-	-	-	-	-	-	-
2-3 (T-6)	6	45	1.75	2.25	0.375	0.313	45	19	4.5	11	16	-	-	-	-	-	-	-	-	-	-	-
3-1 (T-7)	6	45	1.75	2.25	0.375	0.313	45	19	4.5	11	16	-	-	-	-	-	-	-	-	-	-	-
3-2 (T-7)	6	45	1.75	2.25	0.375	0.313	45	19	4.5	11	16	-	-	-	-	-	-	-	-	-	-	-

NOTES:

- Work with Index 17745.
- Design Wind Speed = 130 mph
- Contractor shall coordinate anchor bolt requirements with fabricator.
- Contractor shall identify Structures Numbers and submit detailed shop drawings.
- Refer to "Table of Variables for Standard Mast Arm Assemblies" for information regarding mast arms 1-2 (T-5), 2-2 (T-6), and 2-4 (T-6).
- All mast arm assemblies shall be galvanized, non painted structures.
- The contractor shall anticipate the need for special mounting hardware for the signals and signs required to maintain minimum and maximum required vertical clearances.

FOUNDATION NOTES:

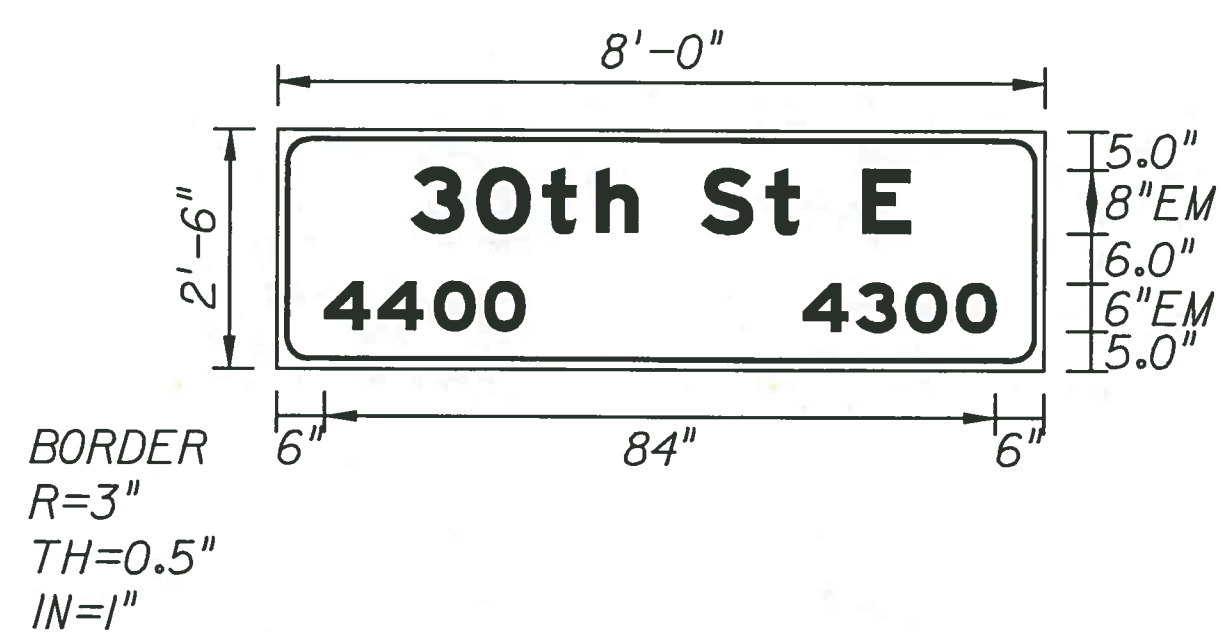
- Design is based on the reports of core borings from Professional Service Industries, Inc., dated 1/8/10 & 9/21/10. Engineer of Record is Martin E. Millburg P.E. No. 36584
- Assumptions and Values used in design:
Mast Arm 1-1 (T-5)
Soil Type = Cohesive (Clay)
Soil Layer Thickness = Shaft Height
Cohesion = 875 psf
Soil Weight = 47.6 pcf
Design Water Table is at the ground line
Mast Arms 2-1 (T-6), 2-3 (T-6), 3-1 (T-7), & 3-2 (T-7)
Soil Type = Cohesionless (Fine Sand)
Soil Layer Thickness = Shaft Height
Soil Friction Angle = 29 deg.
Soil Weight = 42.6 pcf
Design Water Table is at the ground line



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		DESIGNED: FXH DRAWN: FXH Q.C.: MAV APPROVED: RAH		PROJECT NO: 00193-001-18 DATE: 6-17-2015 SHEET NO: T-16	
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SIGN NAME	I	QTY	1	SIGN NUMBER		STATION(S)	
PANEL	BORDER					none	
WIDTH	8'-0"	WIDTH	0.5'			**	
HEIGHT	2'-6"	RADII	3"			**	
LEGEND	White	COLOR	White			**	
COLOR	Green					**	
SYMBOL(S)	ANGLE	X	Y	WID	HT		
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lot	COLUMN SIZE	AVERAGE LENGTH			

* SIGN ASSEMBLY SHALL BE SINGLE PANEL, ONE-WAY, EDGE LIT LED STREET NAME SIGN ASSEMBLY

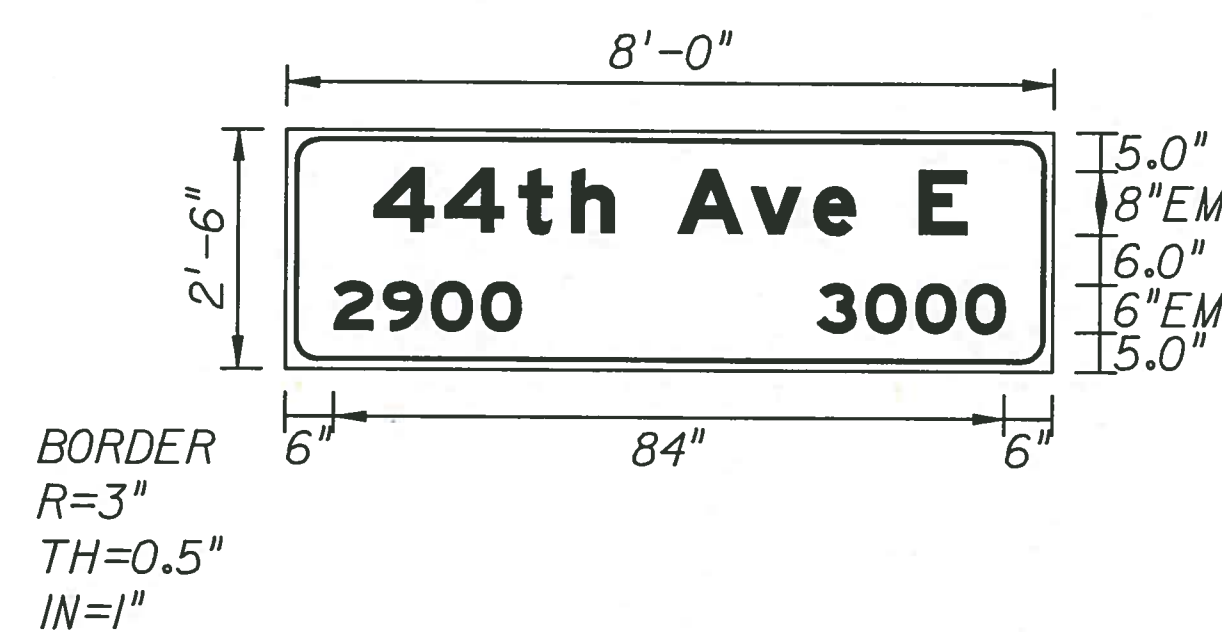


NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	3	0	t	h	S	t	E	L						
SPACE	16.7	8.1	8.3	6.7	5.3	8	8.2	4.2	8	5.9	16.7	62.6		
COPY	4	4	0	0	L									
SPACE	6	6.6	7	6.2	5	65.1	24.9							
COPY	4	3	0	0	L									
SPACE	66	6.7	6.1	6.2	5	6	24.1							
COPY														
SPACE														
COPY														
SPACE														
COPY														
SPACE														

SIGN NAME	J	QTY	1	SIGN NUMBER		STATION(S)	
PANEL	BORDER					none	
WIDTH	8'-0"	WIDTH	0.5'			**	
HEIGHT	2'-6"	RADII	3"			**	
LEGEND	White	COLOR	White			**	
COLOR	Green					**	
SYMBOL(S)	ANGLE	X	Y	WID	HT		
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lot	COLUMN SIZE	AVERAGE LENGTH			

* SIGN ASSEMBLY SHALL BE SINGLE PANEL, ONE-WAY, EDGE LIT LED STREET NAME SIGN ASSEMBLY

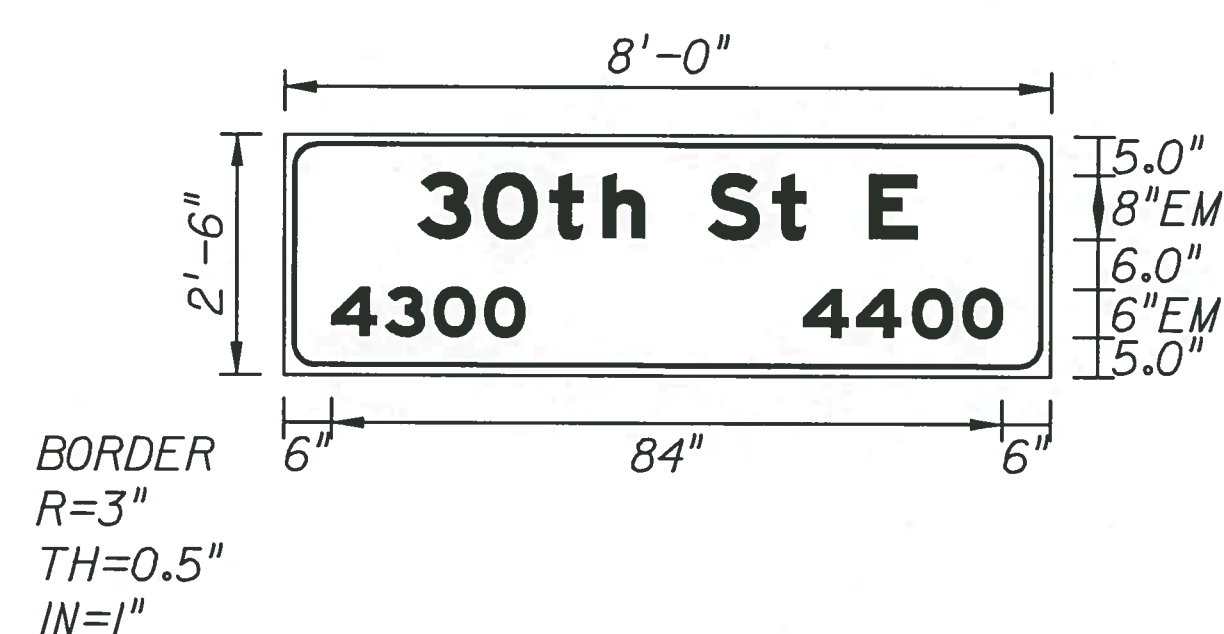


NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	4	4	t	h	A	v	e	E	L					
SPACE	10.9	8.8	9.4	6.7	5.3	8	9.1	7.8	5.3	8	5.9	10.9	74.2	
COPY	2	9	0	0	L									
SPACE	6	6.1	6.1	6.2	5	66.6	23.5							
COPY	3	0	0	0	L									
SPACE	66.5	6.1	6.2	6.2	5	6	23.6							
COPY														
SPACE														
COPY														
SPACE														
COPY														
SPACE														

SIGN NAME	K	QTY	1	SIGN NUMBER		STATION(S)	
PANEL	BORDER					none	
WIDTH	8'-0"	WIDTH	0.5'			**	
HEIGHT	2'-6"	RADII	3"			**	
LEGEND	White	COLOR	White			**	
COLOR	Green					**	
SYMBOL(S)	ANGLE	X	Y	WID	HT		
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lot	COLUMN SIZE	AVERAGE LENGTH			

* SIGN ASSEMBLY SHALL BE SINGLE PANEL, ONE-WAY, EDGE LIT LED STREET NAME SIGN ASSEMBLY

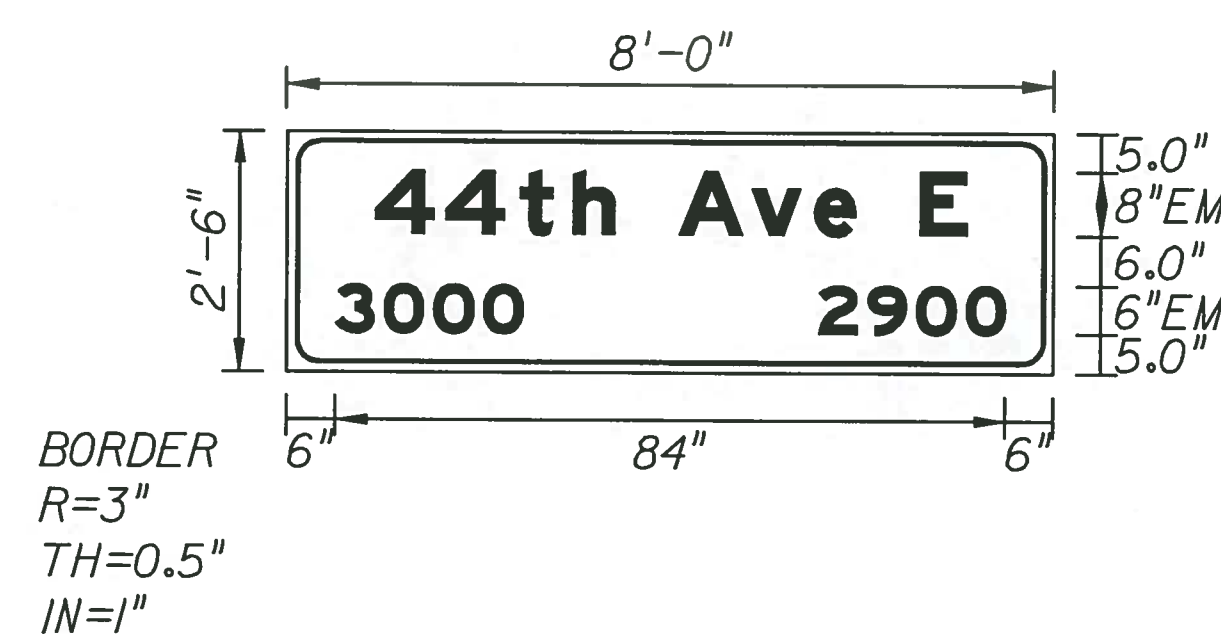


NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	3	0	t	h	S	t	E	L						
SPACE	16.7	8.1	8.3	6.7	5.3	8	8.2	4.2	8	5.9	16.7	62.6		
COPY	4	3	0	0	L									
SPACE	6	6.7	6.1	6.2	5	66	24.1							
COPY	4	4	0	0	L									
SPACE	65.1	6.6	7	6.2	5	6	24.9							
COPY														
SPACE														
COPY														
SPACE														
COPY														
SPACE														

SIGN NAME	L	QTY	1	SIGN NUMBER		STATION(S)	
PANEL	BORDER					none	
WIDTH	8'-0"	WIDTH	0.5'			**	
HEIGHT	2'-6"	RADII	3"			**	
LEGEND	White	COLOR	White			**	
COLOR	Green					**	
SYMBOL(S)	ANGLE	X	Y	WID	HT		
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lot	COLUMN SIZE	AVERAGE LENGTH			

* SIGN ASSEMBLY SHALL BE SINGLE PANEL, ONE-WAY, EDGE LIT LED STREET NAME SIGN ASSEMBLY



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	4	4	t	h	A	v	e	E	L					
SPACE	10.9	8.8	9.4	6.7	5.3	8	9.1	7.8	5.3	8	5.9	10.9	74.2	
COPY	3	0	0	0	L									
SPACE	6	6.1	6.2	6.2	5	66.5	23.6							
COPY	2	9	0	0	L									
SPACE	66.6	6.1	6.1	6.2	5	6	23.5							
COPY														
SPACE														
COPY														
SPACE														
COPY														
SPACE														

NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

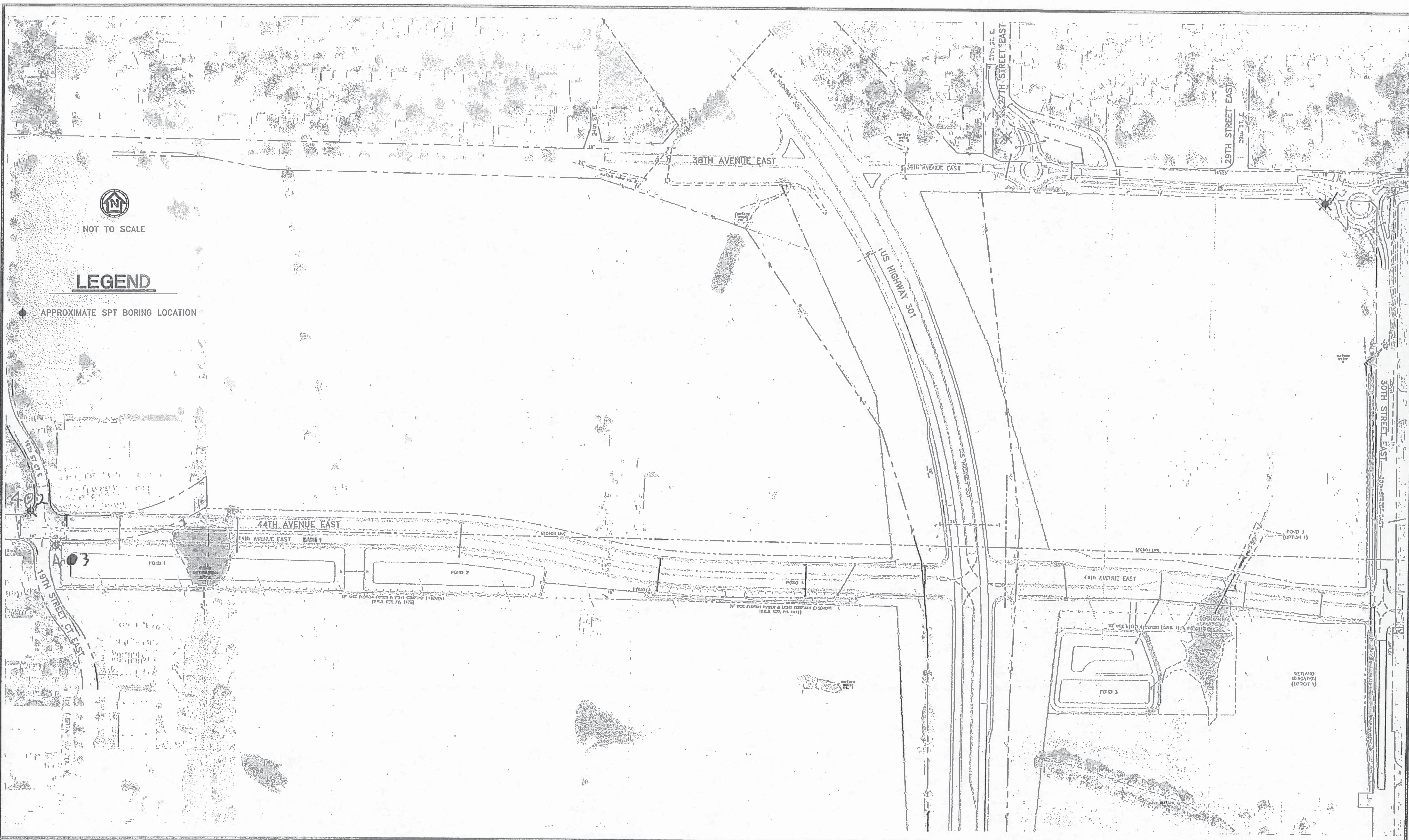
44TH AVENUE EAST ROADWAY EXTENSION

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

DESIGNED: DJA
DRAWN: ROH
DATE: 6-17-2015
APPROVED: [Signature]
DAVID J. WILLEN
PROFESSIONAL ENGINEER
No. 58540

GUIDESIGN WORKSHEET

PROJECT NO:	00193-001-18
DATE:	6-17-2015
SHEET NO:	T-19



NOT TO SCALE

LEGEND

◆ APPROXIMATE SPT BORING LOCATION

D:\175-Sub\0775623\44th Ave. & 19th St\0775623.dwg

REVISIONS

Date	By	Description	Date	By	Description



PROFESSIONAL SERVICE INDUSTRIES, INC.
 6801 BENJAMIN CENTER DR., SUITE 112
 TAMPA, FL. 33634
 (813)-886-1076

MARTIN E. MILLBURG, P.E.
 FLORIDA LICENSE No. 36584

FLORIDA ENGINEERING CERTIFICATE
 OF AUTHORIZATION No. 3684

MANATEE COUNTY

ROAD NO.	COUNTY PROJECT NO.







BORING LOCATION PLAN

PROPOSED 44TH AVENUE
 ROUNDABOUTS AND SIGNAL LIGHTS



SHEET NO.

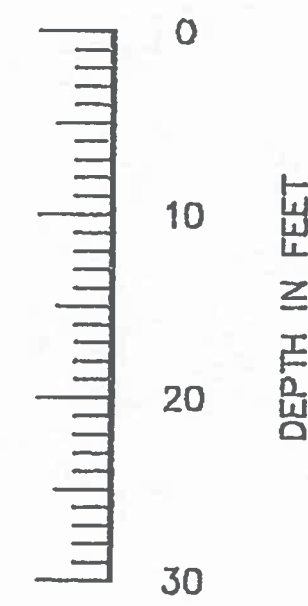
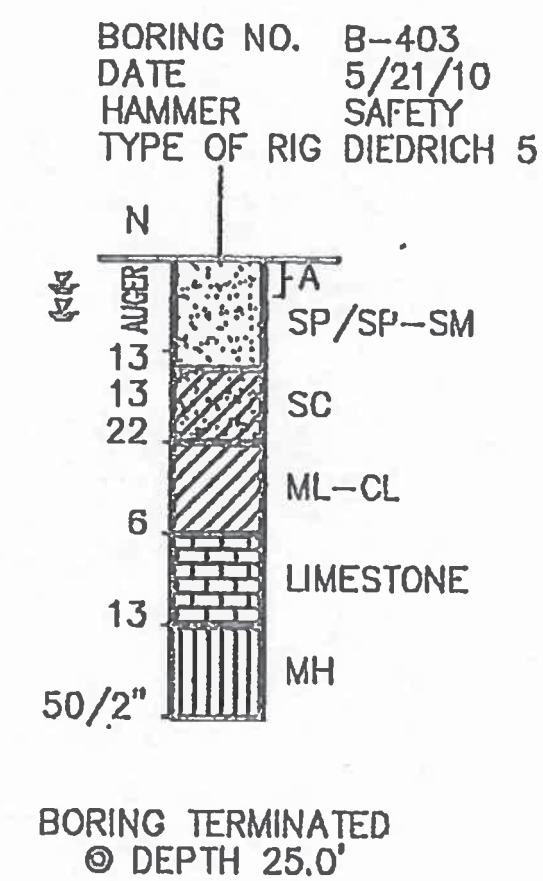
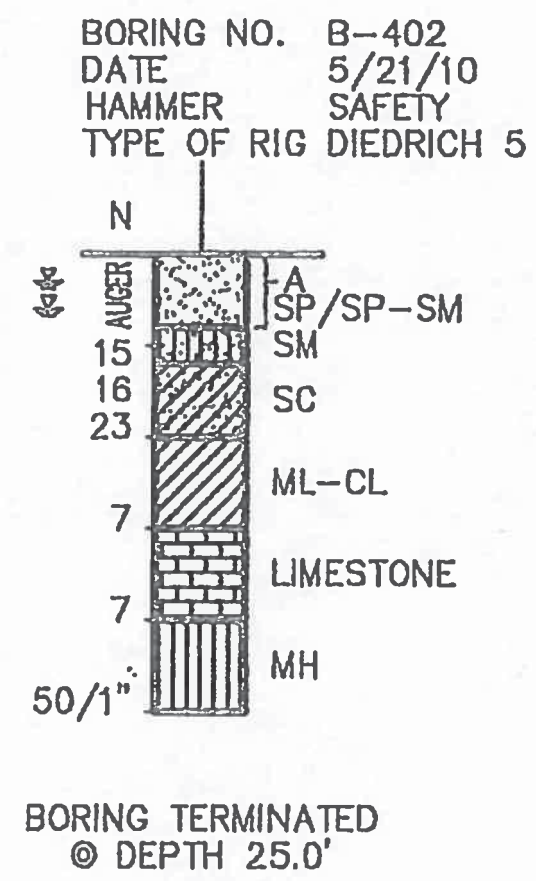
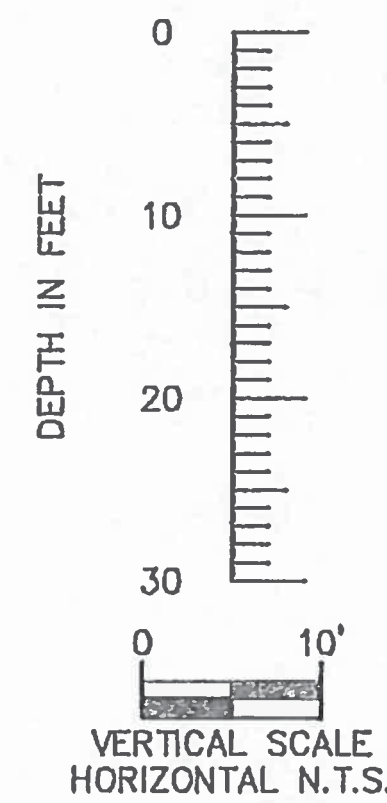
T-10

LEGEND

-  (SP/SP-SM), LIGHT BROWN TO DARK GRAY FINE SAND TO SLIGHTLY SILTY FINE SAND
-  (SC), GRAY TO BROWN CLAYEY SAND
-  (MH), TAN, GRAY TO GREENISH BROWN SLIGHTLY CALCAREOUS SANDY SILT WITH TRACE PHOSPHATES
-  GRAY INTERBEDDED LIMESTONE (DOLOSTONE) AND CLAY
-  (SM), LIGHT GRAY TO DARK BROWN SILTY SAND
-  (ML-CL), DARK GRAY SILT TO CLAY WITH TRACE PHOSPHATES
- A WITH TRACE ORGANICS

NOTES:


- SP UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487) GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW
-  WATER TABLE
-  ESTIMATED SEASONAL HIGH GROUNDWATER TABLE
- NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12" PENETRATION. (UNLESS OTHERWISE NOTED.)
- N FIFTY BLOWS FOR SIX INCHES



GRANULAR MATERIALS- RELATIVE DENSITY	SPT (BLOWS/FT.)
VERY LOOSE	LESS THAN 4
LOOSE	4-10
MEDIUM-DENSE	10-30
DENSE	30-50
VERY DENSE	GREATER THAN 50
SILTS AND CLAYS CONSISTENCY	SPT (BLOWS/FT.)
VERY SOFT	LESS THAN 2
SOFT	2-4
FIRM	4-8
STIFF	8-15
VERY STIFF	15-30
HARD	GREATER THAN 30

P:\775-Geo\0775623_44th Ave & 19th St\cad\0775623.dwg

REVISIONS					
Date	By	Description	Date	By	Description



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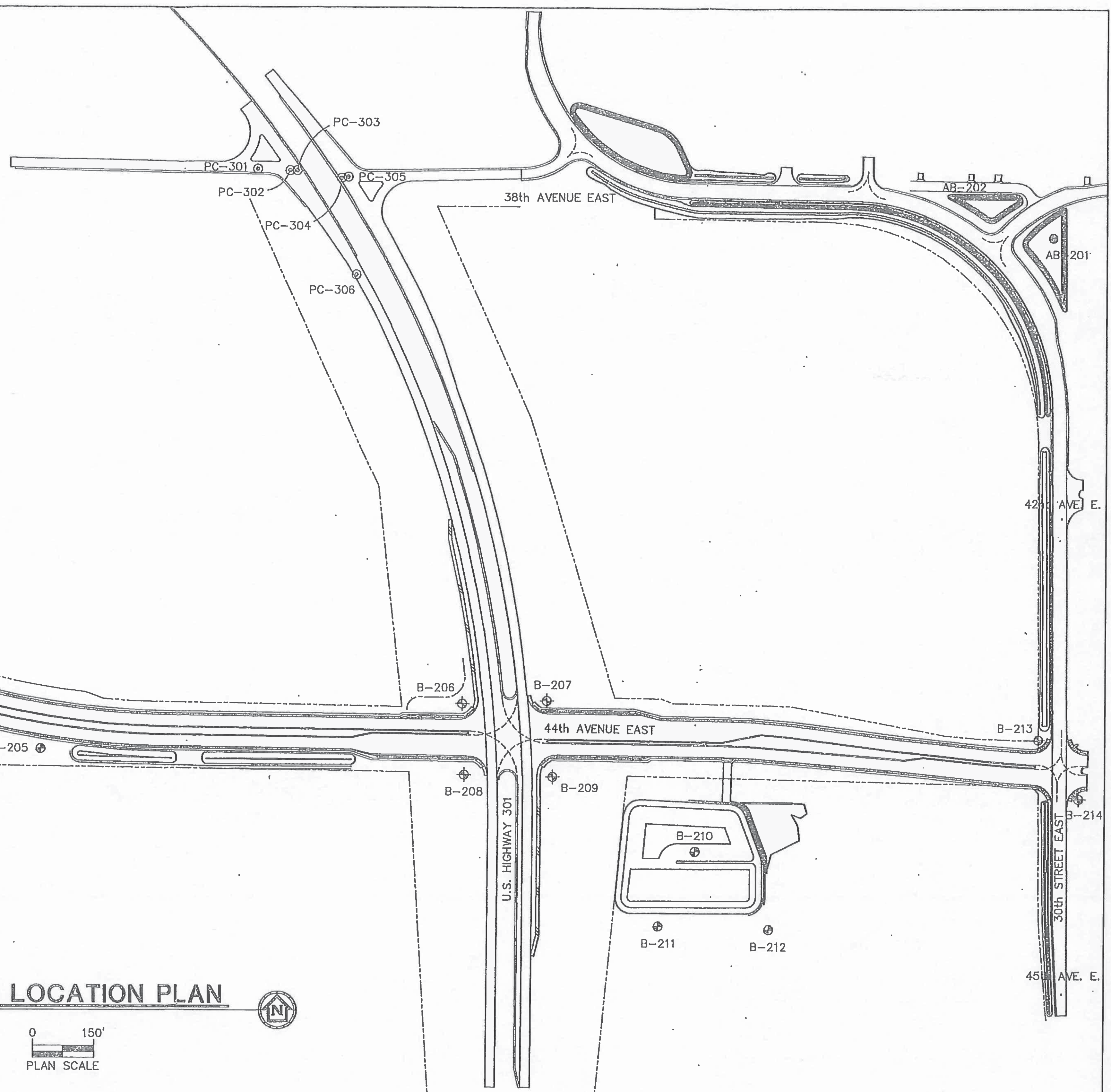
FLORIDA ENGINEERING CERTIFICATE OF AUTHORIZATION No. 3684

MANATEE COUNTY	
ROAD NO.	COUNTY PROJECT NO.

STRUCTURE BORING SOIL PROFILES FOR MAST ARMS	SHEET NO.
PROPOSED 44TH AVENUE ROUNDBABOUTS AND SIGNAL LIGHTS	T-21

19th STREET COURT EAST

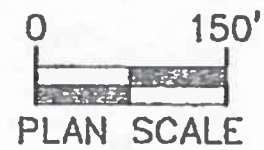
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LEGEND

- ⊕ APPROXIMATE SPT BORING LOCATION
- ⊗ APPROXIMATE POWER AUGER BORING LOCATION
- ⊙ APPROXIMATE HAND AUGER BORING LOCATION
- ⊘ APPROXIMATE PAVEMENT CORE LOCATION

BORING LOCATION PLAN



REVISIONS					
Date	By	Description	Date	By	Description



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OF AUTHORIZATION No. 3684

MANATEE COUNTY






ROAD NO.	PROJECT NO.

**POND, MAST ARM & PAVEMENT
CORE BORING LOCATION PLAN**

44TH AVENUE EXTENSION
BRADENTON, FLORIDA

SHEET NO.
T-22

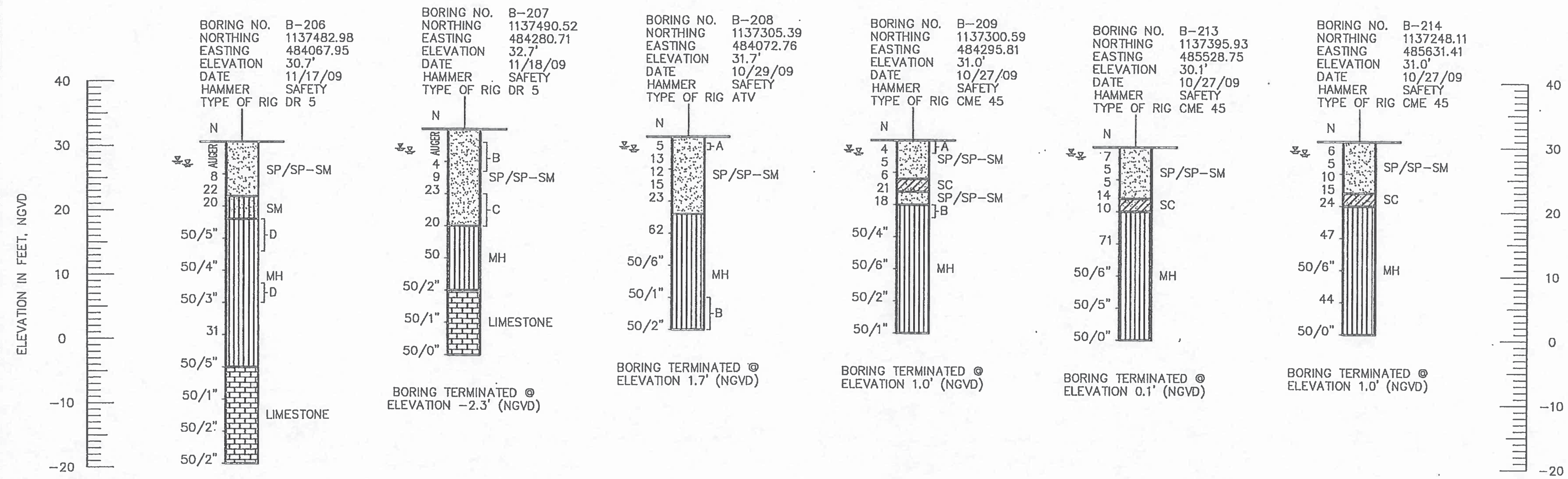
LEGEND

-  (SP/SP-SM), LIGHT BROWN TO DARK GRAY FINE SAND TO SLIGHTLY SILTY FINE SAND
-  (SC), GRAY TO BROWN CLAYEY SAND
-  (MH), TAN, GRAY TO GREENISH BROWN SLIGHTLY CALCAREOUS SANDY SILT WITH TRACE PHOSPHATES
-  GRAY INTERBEDDED LIMESTONE (DOLOSTONE) AND CLAY
-  (SM), LIGHT GRAY SILTY SAND

- A WITH TRACE ORGANICS
- B SLIGHTLY CEMENTED NODULES
- C SIGNIFICANT PHOSPHATES
- D ROCK FRAGMENTS

NOTES:
 SP UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487) GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW
 W WATER TABLE
 W ESTIMATED SEASONAL HIGH GROUNDWATER TABLE
 NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12" PENETRATION. (UNLESS OTHERWISE NOTED.)
 50/6" FIFTY BLOWS FOR SIX INCHES

GRANULAR MATERIALS- RELATIVE DENSITY	SPT (BLOWS/FT.)
VERY LOOSE	LESS THAN 4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	GREATER THAN 50
SILTS AND CLAYS CONSISTENCY	SPT (BLOWS/FT.)
VERY SOFT	LESS THAN 2
SOFT	2-4
FIRM	4-8
STIFF	8-15
VERY STIFF	15-30
HARD	GREATER THAN 30



VERTICAL SCALE
 HORIZONTAL N.T.S.

BORING TERMINATED @
 ELEVATION -19.3' (NGVD)

BORING TERMINATED @
 ELEVATION 1.7' (NGVD)

BORING TERMINATED @
 ELEVATION 1.0' (NGVD)

BORING TERMINATED @
 ELEVATION 0.1' (NGVD)

BORING TERMINATED @
 ELEVATION 1.0' (NGVD)

REVISIONS					
Date	By	Description	Date	By	Description



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MANATEE COUNTY

ROAD NO. PROJECT NO.

STRUCTURE BORING SOIL
 PROFILES FOR MAST ARMS

44TH AVENUE EXTENSION
 BRADENTON, FLORIDA

SHEET NO.
 T-23