



CONTRACT PLANS

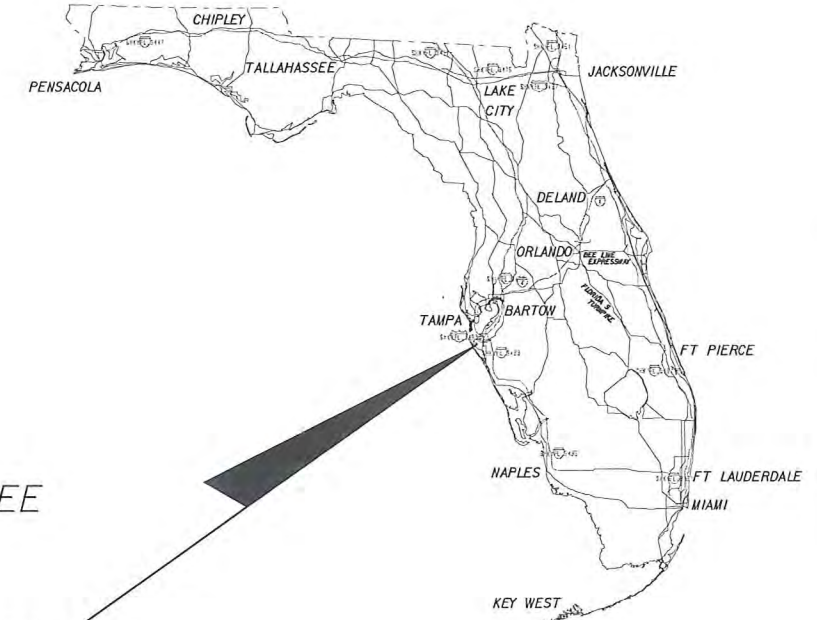
COUNTY PROJECT NUMBER 6035560

MANATEE COUNTY

FT. HAMER BRIDGE

BRIDGE DESIGN OVER MANATEE RIVER FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK

SIGNALIZATION PLANS ATMS PLANS



PROJECT LOCATION
MANATEE COUNTY

INDEX OF SIGNALIZATION PLANS

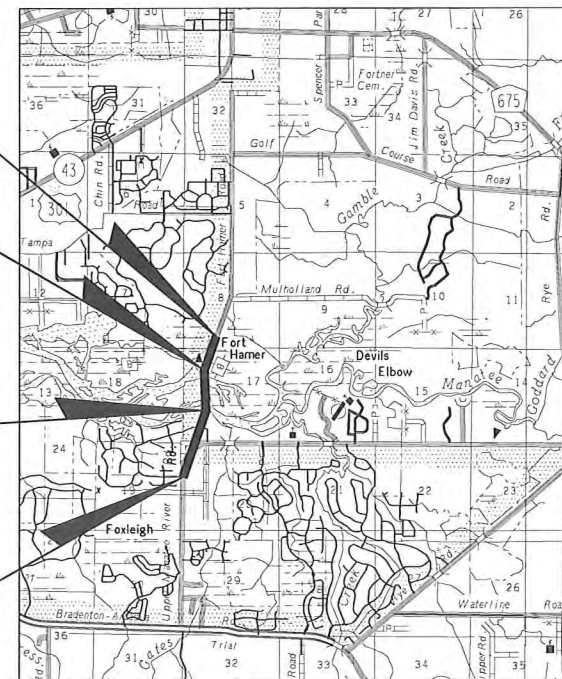
SHEET NO.	SHEET DESCRIPTION
T-1	KEY SHEET
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T-26	CCTV POLE DETAIL
T-27 TO T-29	REPORT OF CORE BORINGS

END PROJECT
STA. 366+00

END BRIDGE
STA. 150+45.55

BEGIN BRIDGE
STA. 127+27.55

BEGIN PROJECT
STA. 91+35.00



T-33-S
T-34-S

T-34-S
T-35-S

R-18-E
R-19-E

SIGNALIZATION SHOP DRAWINGS
TO BE SUBMITTED TO:

SUSAN C. JOEL, P.E. NO. 46018
CARDNO TBE
12481 TELECOM DRIVE
TAMPA, FLORIDA 33637
813-221-0048

PLANS PREPARED BY:



CERTIFICATE OF AUTHORIZATION NO. 3843

NOTE: THE SCALE OF THESE PLANS MAY
HAVE CHANGED BY REPRODUCTION.

SIGNALIZATION PLANS
ENGINEER OF RECORD:

P.E. NO.: 46018



GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION, 2014
DESIGN STANDARDS AND REVISED INDEX DRAWINGS AS APPENDED
HEREIN, AND 2014 STANDARD SPECIFICATIONS FOR ROAD AND
BRIDGE CONSTRUCTION, AS AMENDED BY CONTRACT DOCUMENTS.

FOR DESIGN STANDARDS CLICK ON THE "DESIGN STANDARDS" LINK
AT THE FOLLOWING WEB SITE:
[HTTP://WWW.DOT.STATE.FL.US/RDDISIGN/](http://www.dot.state.fl.us/rddesign/)

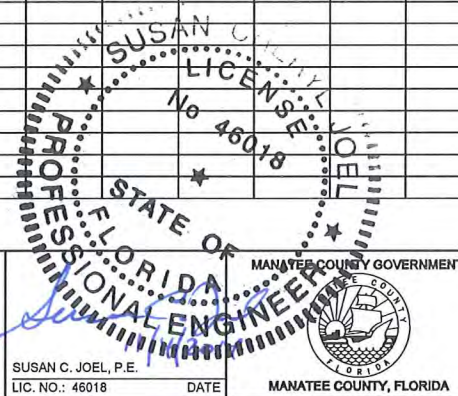
FOR THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE
CONSTRUCTION CLICK ON THE "SPECIFICATIONS" LINK AT THE
FOLLOWING WEB SITE:
[HTTP://WWW.DOT.STATE.FL.US/SPECIFICATIONSOFFICE/](http://www.dot.state.fl.us/specificationsoffice/)

MANATEE COUNTY PROJECT MANAGER: KENT D. BONTRAGER, P.E.

DATE: 11-4-2014
SHEET NO.: T-1

TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS																				TOTAL THIS SHEET		GRAND TOTAL		REF. SHEET
			T-6		T-7		T-8		T-9		T-10		T-11		T-12		T-13		T-14		T-15		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	450		155		60		700		700		725		710		630						4130				
630-2-12	CONDUIT (F&I) DIRECTIONAL BORE	LF	240		75								220										535				
632-7-1	SIGNAL CABLE (F&I) (NEW OR RECONSTRUCTED INT)	PI	1																			1					
633-1-122	ITS FIBER OPTIC CABLE (F&I) (UG) 48 FIBER	LF				160		800		800		1200		910		850		700		700		6120					
633-2-31	FO CONNECTION, INSTALL SPLICE	EA										4				4						8					
633-3-11	FO CONNECTION HARDWARE (F&I) SPLICE ENCLOSURE	EA				1						1				1						3					
633-3-12	FO CONNECTION HARDWARE (F&I) SPLICE TRAY	EA										1				1						2					
633-3-15	FO CONNECTION HARDWARE (F&I) PRETERM PATCH PANEL	EA	1													1						2					
633-8-1	MULTI-CONDUCTOR COMM CABLE (CAT6 ETHERNET)	LF										245										245					
635-2-11	PULL AND SPLICE BOX (F&I) (17" X 30")	EA	11		2							7		2		3						25					
635-2-12	PULL AND SPLICE BOX (F&I) (24" X 36")	EA						1		1		3		2		2						9					
635-2-13	PULL AND SPLICE BOX (F&I) (30" X 60" X 48")	EA					1					1				1						3					
639-1-122	ELECT POWER SERVICE (UG) (METER BASE PURCH BY CONT)	AS			1																	1					
639-2-1	ELECT SERVICE WIRE (F&I)	LF	125		230								815		710		580					2460					
639-3-11	ELECT SERVICE DISCONNECT (F&I) (POLE MOUNT)	EA	1										1				1					3					
641-2-12	PRESTRESSED CONC POLE (F&I) (TYPE P-II SERVICE, 12')	EA	1		1																	2					
641-3-263	CONCRETE CCTV POLE (F&I) (W/O LOWERING DEVICE) (56')	EA											1				1					2					
646-1-11	ALUMINUM SIGNALS POLE (F&I) (PEDESTAL)	EA	4																			4					
649-31-203	MAST ARM (F&I) (130 MPH) (SINGLE ARM W/O LUM - 60)	EA	1																			1					
649-31-218	MAST ARM (F&I) (130 MPH) (DBL ARM W/O LUM, 60-70.5)	EA	1																			1					
650-1-311	TRAFFIC SIGNAL, 12" (F&I) (3 SECT, 1 WAY) (ALUM) (LED)	AS	3																			3					
650-1-511	TRAFFIC SIGNAL, 12" (F&I) (5 SECT, 1 WAY) (ALUM) (LED)	AS	3																			3					
653-191	PED SIGNALS (F&I) (LED COUNTDOWN) (1 WAY)	AS	4																			4					
660-4-11	VEH DETECTION SYS (F&I)(VIDEO)(CABINET EQUIPMENT)	EA	1																			1					
660-4-12	VEH DETECTION SYS (F&I)(VIDEO)(ABOVE GROUND EQUIP)	EA	3																			3					
665-1-11	PEDESTRIAN DETECTOR (F&I) (STANDARD)	EA	4																			4					
670-5-110	TRAFFIC CONTROLLER ASSY (F&I) (NEMA)	AS	1																			1					
676-2-122	ITS CABINET (F&I) (POLE MT TYPE 336S W/SUNSHIELDS)	EA											1				1					2					
682-1-11	ITS CCTV CAMERA (F&I) (DOME ENCL - PRESSURIZED)	EA											1				1					2					
684-1-1	MANAGED FIELD ETHERNET SWITCH (F&I)	EA	1																			2					
684-3-11	DIGITAL VIDEO ENCODER (F&I) (HARDENED ENCODER)	EA											1				1					2					
685-106	SYSTEM AUXILIARIES (F&I) (UPS)	EA	1										1				1					3					
700-3-201	SIGN PANEL, (F&I), OVERHEAD MOUNT, (UP TO 12 SF)	EA	2																			2					
700-5-23	INTERNALLY ILLUMINATED SIGN (F&I) (>18 SF)	EA	3																			3					



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Cardno TBE
380 Park Place Blvd., Suite 300, Clearwater, Florida 33759
 www.cardnote.com - 727.531.3505
 Certificate of Authorization No. 3843

SUSAN C. JOEL, P.E.
 LIC. NO.: 46018 DATE: _____
 MANATEE COUNTY, FLORIDA

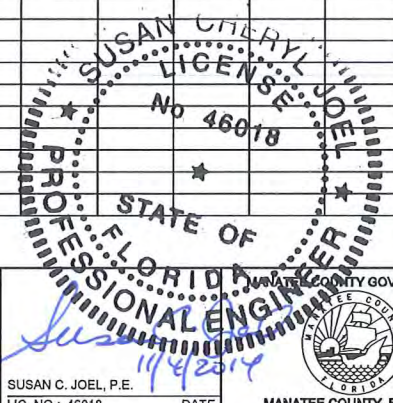
SHEET TITLE: **TABULATION OF QUANTITIES (1)**

PROJECT NAME: **FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK**

SHEET NO. **T-2**

TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS																				TOTAL THIS SHEET		GRAND TOTAL		REF. SHEET
			T-16		T-17		T-18		T-19		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			580		765		300															1645		5775	
630-2-12	CONDUIT (F&I) DIRECTIONAL BORE	LF																								535	
632-7-1	SIGNAL CABLE (F&I) (NEW OR RECONSTRUCTED INT)	PI																								1	
633-1-122	ITS FIBER OPTIC CABLE (F&I) (UG) 48 FIBER	LF	700		1260		1045		400															3405		9525	
633-2-31	FO CONNECTION, INSTALL SPLICE	EA			4																			4		12	
633-3-11	FO CONNECTION HARDWARE (F&I) SPLICE ENCLOSURE	EA			1				1															2		5	
633-3-12	FO CONNECTION HARDWARE (F&I) SPLICE TRAY	EA			1																			1		3	
633-3-15	FO CONNECTION HARDWARE (F&I) PRETERM PATCH PANEL	EA			1																			1		3	
633-8-1	MULTI-CONDUCTOR COMM CABLE (CAT6 ETHERNET)	LF																								245	
635-2-11	PULL AND SPLICE BOX (F&I) (17" X 30")	EA			1		2																	3		28	
635-2-12	PULL AND SPLICE BOX (F&I) (24" X 36")	EA			1		3																	4		13	
635-2-13	PULL AND SPLICE BOX (F&I) (30" X 60" X 48")	EA			2				1															3		6	
639-1-122	ELECT POWER SERVICE (UG) (METER BASE PURCH BY CONT)	AS					1																	1		2	
639-2-1	ELECT SERVICE WIRE (F&I)	LF			220		360																	580		3040	
639-3-11	ELECT SERVICE DISCONNECT (F&I) (POLE MOUNT)	EA			1																			1		4	
641-2-12	PRESTRESSED CONC POLE (F&I) (TYPE P-II SERVICE, 12')	EA					1																	1		3	
641-3-263	CONCRETE CCTV POLE (F&I) (W/O LOWERING DEVICE) (56')	EA			1																			1		3	
646-1-11	ALUMINUM SIGNALS POLE (F&I) (PEDESTAL)	EA																								4	
649-31-203	MAST ARM (F&I) (130 MPH) (SINGLE ARM W/O LUM - 60)	EA																								1	
649-31-218	MAST ARM (F&I) (130 MPH) (DBL ARM W/O LUM, 60-70.5)	EA																								1	
650-1-311	TRAFFIC SIGNAL, 12" (F&I) (3 SECT, 1 WAY) (ALUM) (LED)	AS																								3	
650-1-511	TRAFFIC SIGNAL, 12" (F&I) (5 SECT, 1 WAY) (ALUM) (LED)	AS																								3	
653-191	PED SIGNALS (F&I) (LED COUNTDOWN) (1 WAY)	AS																								4	
660-4-11	VEH DETECTION SYS (F&I)(VIDEO)(CABINET EQUIPMENT)	EA																								1	
660-4-12	VEH DETECTION SYS (F&I)(VIDEO)(ABOVE GROUND EQUIP)	EA																								3	
665-1-11	PEDESTRIAN DETECTOR (F&I) (STANDARD)	EA																								4	
670-5-110	TRAFFIC CONTROLLER ASSY (F&I) (NEMA)	AS																								1	
676-2-122	ITS CABINET (F&I) (POLE MT TYPE 336S W/SUNSHIELDS)	EA			1																			1		3	
682-1-11	ITS CCTV CAMERA (F&I) (DOME ENCL - PRESSURIZED)	EA			1																			1		3	
684-1-1	MANAGED FIELD ETHERNET SWITCH (F&I)	EA			1																			1		3	
684-3-11	DIGITAL VIDEO ENCODER (F&I) (HARDENED ENCODER)	EA			1																			1		3	
685-106	SYSTEM AUXILIARIES (F&I) (UPS)	EA			1																			1		4	
700-3-201	SIGN PANEL, (F&I), OVERHEAD MOUNT, (UP TO 12 SF)	EA																								2	
700-5-23	INTERNALLY ILLUMINATED SIGN (F&I) (>18 SF)	EA																								3	



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION



SUSAN C. JOEL, P.E.
LIC. NO.: 46018
DATE: 11/4/2014
MANATEE COUNTY, FLORIDA

SHEET TITLE: TABULATION OF QUANTITIES (2)	SHEET NO. T-3
PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK	

GENERAL NOTES

1. AT LEAST FIVE (5) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT MANATEE COUNTY TRAFFIC DESIGN DIVISION:

MR. PAUL VILLALUZ, P.E., PTOE
MANATEE COUNTY PUBLIC WORKS DEPARTMENT
TRAFFIC DESIGN DIVISION
2101 47TH TERRACE EAST
BRADENTON, FL 34203
2. 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. WHEN CONSTRUCTION IS COMPLETE, PROVIDE THREE (3) HARD-COPY SETS OF "AS BUILT" PLANS AND ONE COMPACT DISK OF RECORD DRAWINGS IN ADOBE ACROBAT (.PDF) AND AUTOCAD (DWG) FORMAT TO:

MANATEE COUNTY TRAFFIC ENGINEERING DIVISION:
ATTN: MR. VISHAL S. KAKKAD, P.E., PTOE
2101 47TH TERRACE EAST
BRADENTON, FL 34203

THE RECORD DRAWINGS MUST BE RECEIVED 48 HOURS PRIOR TO SCHEDULING THE FINAL INSPECTION.
3. MAINTAINING AGENCY:

MANATEE COUNTY
TRAFFIC OPERATIONS DIVISION
2904 12TH STREET COURT EAST
BRADENTON, FLORIDA 34208
4. WHEN FDOT AND MANATEE COUNTY SPECIFICATIONS DIFFER, THE MORE STRINGENT SPECIFICATION WILL TAKE PRECEDENCE. MANATEE COUNTY TRAFFIC SPECIFICATIONS SHALL BE OBTAINED BY THE CONTRACTOR FROM THE PROJECT MANAGEMENT DIVISION.
5. THE CONTRACTOR SHALL HAVE AN I.M.S.A. CERTIFIED LEVEL II (ELECTRONICS OR ELECTRICAL TECHNICIAN) ON THE JOB SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. ALL SIGNAL INSTALLATION TECHNICIANS SHALL HAVE A MINIMUM I.M.S.A. LEVEL I CERTIFICATION. CERTIFICATION OF ALL TECHNICIANS SHALL BE PROVIDED TO THE COUNTY PRIOR TO BEGINNING WORK.
6. THE CONTRACTOR SHALL SUBMIT CONCRETE COMPRESSIVE STRENGTH TEST RESULTS FOR MAST ARM POLE FOUNDATIONS TO THE TRAFFIC ENGINEERING DIVISION FOR REVIEW AND APPROVAL. THE TESTING LAB SHALL BE CURRENTLY APPROVED BY THE FDOT.
7. RESULTS OF FIELD TESTS SHALL BE MADE AVAILABLE TO THE COUNTY TRAFFIC ENGINEER AND PROJECT INSPECTOR 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.
8. THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY PERFORMING ALL NECESSARY WORK UNDER THEIR POWER LINES, SUCH AS THE INSTALLATION OF SPAN WIRE, SIGNAL CABLE, FIBERGLASS INSULATORS AND SIGNAL POLES. CONTRACTOR SHALL NOTIFY THE POWER COMPANY AT LEAST THREE (3) FULL BUSINESS DAYS PRIOR TO INSTALLATION OF THIS EQUIPMENT.
9. THE CONTRACTOR IS RESPONSIBLE TO CONTACT MANATEE COUNTY AT 941-749-3502, FOR THE ASSIGNMENT OF THE PHYSICAL ADDRESS ONCE THE SERVICE DROP LOCATION HAS BEEN ESTABLISHED.
10. EXTREME CARE SHALL BE TAKEN TO ENSURE THAT ALL SIGNAL EQUIPMENT IS INSTALLED AS SHOWN IN THE PLANS WITHIN EXISTING RIGHT-OF-WAY.
11. THE CONTRACTOR, IN CONJUNCTION WITH THE ENGINEER, TO COORDINATE UTILITY RELOCATION IF NECESSARY.
12. IN THE EVENT THAT R/W OR IRRESOLVABLE UTILITY CONFLICTS PROHIBIT POLE PLACEMENT ACCORDING TO THE PLANS, THE CONTRACTOR SHALL CONTACT THE TRAFFIC OPERATIONS ENGINEER AND THE ENGINEER OF RECORD (EOR) TO OBTAIN A DESIGN VARIATION.
13. 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.
14. EXISTING UTILITIES ARE TO REMAIN IN PLACE UNLESS OTHERWISE NOTED.
15. THE CONTRACTOR TO NOTIFY UTILITY OWNERS OF ANY EXCAVATION OR DEMOLITION ACTIVITY THROUGH SUNSHINE ONE CALL OF 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.

16. THE CONTRACTOR SHALL HAND DIG THE FIRST 48 INCHES (4 FEET) OF THE HOLE FOR THE POLE FOUNDATION OR CONDUIT RUN WHERE UTILITIES ARE IN CLOSE PROXIMITY.
17. IT SHOULD BE NOTED THAT NO TEST BORINGS WERE MADE WHERE CONDUIT RUNS ARE TO BE INSTALLED.
20. THE TYPE OF EQUIPMENT USED IN THE INSTALLATION OF MAST ARMS/FOUNDATIONS AND SIGNS/FOUNDATIONS, SHALL MEET THE FOLLOWING REQUIREMENTS:
1) OVERHEAD LINES SHALL STAY IN PLACE BOTH VERTICALLY AND HORIZONTALLY.
2) CONTRACTOR SHALL MEET ALL APPLICABLE OSHA REQUIREMENTS. ANY COST ASSOCIATED WITH THE TYPE OF EQUIPMENT REQUIRED FOR THIS INSTALLATION IS INCLUDED IN THE RELATED PAY ITEM.
21. THE CONTRACTOR SHALL FIELD VERIFY ALL CRITICAL ELEVATIONS PRIOR TO ORDERING MAST ARMS.
22. THIS SIGNAL TO FLASH FOR A MINIMUM OF TWO (2) FULL BUSINESS DAYS BEFORE BEING PLACED INTO FULL OPERATION. FLASHING OPERATION SHALL START ON A MONDAY, TUESDAY, OR WEDNESDAY. HOWEVER, THE FLASHING OPERATION SHALL NOT START ON THE PRECEDING HOLIDAY.
23. THE CONTRACTOR SHALL COORDINATE WITH MANATEE COUNTY FOR THE ACCEPTABLE VIDEO DETECTION SYSTEM TO INSTALL PRIOR TO SHOP DRAWING SUBMITTAL. 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 VIDEO DETECTION SYSTEM'S INSTALLATION MANUALS. THE CONTRACTOR SHALL ONLY USE MANUFACTURER APPROVED ABLING CONNECTORS AND COMPONENTS FOR THE VIDEO DETECTION SYSTEM. THE SIGNAL CONTRACTOR SHALL CONSULT WITH THE MANUFACTURER'S TECHNICAL REPRESENTATIVES PRIOR TO INSTALLATION. THE CONTRACTOR SHALL REQUEST A SYSTEM CRITIQUE FROM THE VIDEO DETECTION EQUIPMENT SUPPLY MANUFACTURER WHEN INSTALLATION IS COMPLETE. THE RESULTS OF THE SYSTEM CRITIQUE SHALL BE PROVIDED IN WRITING TO MANATEE COUNTY TRAFFIC ENGINEERING DIVISION PRIOR TO SCHEDULING THE FINAL INSPECTION.
24. UPON PROJECT COMMENCEMENT, THE SIGNAL CONTRACTOR SHALL BE AVAILABLE TO RESPOND TO ALL SIGNAL RELATED MALFUNCTIONS AND POWER OUTAGES. THE CONTRACTOR SHALL MAINTAIN AN ADEQUATE REPAIR INVENTORY OF EQUIPMENT TO CORRECT ALL TRAFFIC SIGNAL MALFUNCTIONS, NOT RELATED PHASING AND TIMING ISSUES FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL PROVIDE A QUALIFIED SIGNAL TECHNICIAN WHO CAN RESPOND WITHIN A MAXIMUM OF TWO HOURS, WITH AVAILABILITY 24 HOURS A DAY, 7 DAYS A WEEK. FAILURE TO MEET TIME REQUIREMENTS SHALL GIVE THE COUNTY, AT ITS DISCRETION, THE RIGHT TO REQUEST ASSISTANCE FROM THE MANATEE COUNTY SHERIFF'S DEPARTMENT TO CONTROL TRAFFIC FOR THE PERIOD OF TIME UNTIL THE CONTRACTOR RESPONDS AND MAKES THE NEEDED REPAIRS. THE COST FOR THE MANATEE COUNTY SHERIFF'S OFFICE SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
25. GROUNDING: ALL GROUND ROD EQUIPMENT SHALL BE BONDED TOGETHER FOR FORM AN INTEGRATED GROUNDING SYSTEM USING #6 AWG THHN COPPER WIRE. THE UPPER END OF ALL GROUND RODS SHALL BE 18 INCHES BELOW GRADE. 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 SHALL BE #6 OR LARGER INSULATED COPPER. EQUIPMENT SHALL NOT BE PLACED INTO SERVICE UNTIL THE ASSOCIATED GROUNDING SYSTEM HAS BEEN INSPECTED AND APPROVED BY A MEMBER OF THE MANATEE COUNTY TRAFFIC OPERATIONS STAFF.
26. SUBMIT STRUCTURAL AND SHOP DRAWINGS OF ALL EQUIPMENT TO MANATEE COUNTY FOR REVIEW AND APPROVAL PRIOR TO ORDERING EQUIPMENT:

MR. KENT D. BONTRAGER, P.E.
PROJECT MANAGER
MANATEE COUNTY PUBLIC WORKS
1022 26TH AVENUE EAST
BRADENTON, FL 34208-3916
PH. 941-708-7450 EXT. 7331
27. UPON PASSING THE FINAL INSPECTION, THE CONTRACTOR SHALL SEND A WRITTEN REQUEST TO MANATEE COUNTY 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.

MANATEE COUNTY TRAFFIC OPERATIONS DIVISION
ATTN: MR. AARON BURKETT
2904 12TH STREET COURT EAST
BRADENTON, FL 34208

SYMBOL	DESCRIPTION
---	PROPOSED CONDUIT UNDERGROUND
---	PROPOSED CONDUIT DIRECTIONAL BORE
☒	PROPOSED BASE MOUNT CABINET
☒	PROPOSED CCTV CABINET (POLE MOUNT)
☑	PROPOSED TRAFFIC PULL BOX
☑	PROPOSED FIBER OPTIC PULL BOX
○	PROPOSED FIBER OPTIC SPLICE BOX
☑	PROPOSED VIDEO DETECTOR
☑	PROPOSED CCTV CAMERA
WGU	WIRE GROUNDING UNIT
ERM	ELECTRONIC ROUTE MARKER

CONDUIT LEGEND

- LV = SIGNAL LOW VOLTAGE CONDUIT (INCLUDES VID CABLE)
- HV = SIGNAL HIGH VOLTAGE CONDUIT
- SP = SPARE CONDUIT
- FO = FIBER OPTIC CONDUIT
- PS = POWER SERVICE CONDUIT



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION



SUSAN C. JOEL
LIC. NO.: 46018
MANATEE COUNTY, FLORIDA

SHEET TITLE: GENERAL NOTES	
PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK	SHEET NO. T-4

PAY ITEM NOTES

1. 630-2-11:
USE 2" HDPE SDR 11 CONDUIT FOR FUTURE FIBER OPTIC INTERCONNECT CABLE. USE A MINIMUM 2" DIAMETER SCHEDULE 40 PVC CONDUIT FOR ALL SIGNAL, PEDESTRIAN, AND DETECTION FUNCTIONS. INSTALL CONDUIT UNDER PROPOSED ROADWAY AND/OR SIDEWALK PRIOR TO INSTALLATION OF ROADWAY BASE AND SURFACE OR CONCRETE. MEASUREMENT IS FOR STRAIGHT LINE HORIZONTAL DISTANCE BETWEEN CENTERS OF PULL BOXES, CABINETS, POLES, ETC IN LINEAR FEET REGARDLESS OF THE LENGTH OR NUMBER OF CONDUITS INSTALLED. NO ADDITIONAL PAYMENT WILL BE MADE FOR MULTIPLE RUNS OF CONDUIT WITHIN A TRENCH. MULTIPLE RUNS ARE LABELED ON THE PLANS.

#14 XHHW PULL WIRE SHALL BE INSTALLED IN ALL CONDUITS. AT LEAST 2 FEET OF PULL WIRE SHALL BE ACCESSIBLE.

ALL FIBER OPTIC CABLE CONDUIT INSTALLED BY TRENCHING METHOD SHALL HAVE WARNING TAPE INSTALLED IN THE TRENCHLINE ONE FOOT BELOW FINISH GRADE DIRECTLY OVER ANY INSTALLED CABLE AND CONDUIT RUN. THE WARNING TAPE SHALL COMPLY WITH SECTION 630-2 OF THE FDOT STANDARD SPECIFICATIONS, COLOR SHALL BE ORANGE AS REQUIRED BY AMERICAN PUBLIC WORKS ASSOCIATION (APWA) UNIFORM COLOR CODE, AND HAVE "CAUTION: FIBER OPTIC CABLE BURIED BELOW" PERMANENTLY PRINTED ON THE TAPE'S SURFACE.

THIS PAY ITEM INCLUDES A LOCATE WIRE SYSTEM. THE LOCATE WIRE SYSTEM INCLUDES LOCATE WIRE, WIRE GROUNDING UNITS (WGU), GROUND RODS, AND ALL MISCELLANEOUS ITEMS NEEDED FOR A COMPLETE AND ACCEPTED LOCATE SYSTEM.
2. 630-2-12:
SECTION 630-5 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DEFINES THE FOLLOWING, "PAYMENT FOR CONDUIT PLACED UNDER EXISTING PAVEMENT (ROADWAY, DRIVEWAYS, OR SIDEWALK) WILL BE MADE AS DIRECTIONAL BORE. IF CONDUIT IS BEING PLACED UNDER BOTH EXISTING TURF AND EXISTING PAVEMENT BETWEEN TWO PULL BOXES, PAYMENT FOR THE TOTAL PULL BOX-TO-PULL BOX LENGTH WILL BE MADE AS DIRECTIONAL BORE. THESE PLANS ARE DEVELOPED PER THIS LANGUAGE. THE CONTRACTOR MAY INSTALL CONDUIT USING THE OPEN TRENCH METHOD AT THEIR DISCRETION WITH THE EXCEPTION OF UNDER PAVEMENT AND/OR SIDEWALK INSTALLATIONS.

#14 XHHW PULL WIRE SHALL BE INSTALLED IN ALL CONDUITS. AT LEAST 2 FEET OF PULL WIRE SHALL BE ACCESSIBLE.

USE 2" HDPE SDR 11 CONDUIT FOR FUTURE FIBER OPTIC INTERCONNECT CABLE. USE A MINIMUM 2" DIAMETER HDPE SDR 11 CONDUIT FOR ALL SIGNAL, PEDESTRIAN, AND DETECTION FUNCTIONS. MEASUREMENT IS FOR STRAIGHT LINE HORIZONTAL DISTANCE BETWEEN CENTERS OF PULL BOXES, CABINETS, POLES, ETC. IN LINEAR FEET REGARDLESS OF THE LENGTH OR NUMBER OF CONDUITS INSTALLED. NO ADDITIONAL PAYMENT WILL BE MADE FOR MULTIPLE RUNS OF CONDUIT WITHIN A BORE. MULTIPLE RUNS ARE LABELED ON THE PLANS.

THIS PAY ITEM INCLUDES A LOCATE WIRE SYSTEM. THE LOCATE WIRE SYSTEM INCLUDES LOCATE WIRE, WIRE GROUNDING UNITS (WGU), GROUND RODS, AND ALL MISCELLANEOUS ITEMS NEEDED FOR A COMPLETE AND ACCEPTED LOCATE SYSTEM.
3. 632-7-1:
THE CONTRACTOR SHALL VERIFY THE SIGNAL CABLE COLOR CODE WITH MANATEE COUNTY PRIOR TO ORDERING. ALL WIRING SHALL ADHERE TO MANATEE COUNTY SPECIFICATIONS. USE A MINIMUM OF 7 CONDUCTOR SIGNAL CABLE FOR SIGNAL HEADS AND PEDESTRIAN HEADS.
4. 633-1-122:
THE PROPOSED FIBER OPTIC CABLE SHALL BE 48 COUNT SINGLE MODE.
5. 633-3-15:
IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LENGTHS OF PRETERMINATED PATCH PANELS PRIOR TO ORDERING. ALL PATCH PANELS SHALL COME WITH TWELVE (12) SINGLE MODE JUMPERS OF ADEQUATE LENGTH TO CONNECT ALL EQUIPMENT.
6. 633-8-1:
THE MULTI-CONDUCTOR COMMUNICATION CABLE SHALL BE FLOODED CORE CAT6 ETHERNET CABLE FOR VIDEO AND UPS DATA FROM CCTV 1 CABINET TO THE MANAGED ETHERNET SWITCH IN THE TRAFFIC CABINET. THE CONTRACTOR SHALL TERMINATE THE CABLE UTILIZING PUNCH DOWN BLOCKS. IN LINE SURGE SUPPRESSION SHALL BE INSTALLED ON THE ETHERNET CABLE IN BOTH CABINETS. THE CONTRACTOR SHALL COORDINATE WITH THE COUNTY FOR ALL MATERIALS AND CABINET EQUIPMENT LAYOUT PRIOR TO ORDERING.
7. 635-2-11, 635-2-12, 635-2-13:
USE POLYMER CONCRETE CONSTRUCTION PULL BOXES WITH POLYMER CONCRETE COVER. PULL BOXES ARE TO BE PLACED BEHIND CURB AND GUTTER. IF THERE IS NO CURB AND GUTTER, PULL BOXES SHALL BE PLACED A MINIMUM OF 7 FEET FROM EDGE OF PAVEMENT. IF IN OR ADJACENT TO SIDEWALK, PULL BOXES SHALL BE FLUSH WITH SIDEWALKS OR OTHER CONCRETE, OTHERWISE 1.5 INCHES ABOVE EXISTING GRADE. THE TOP OF THE LID SHALL HAVE THE FOLLOWING IDENTIFICATION PERMANENTLY CAST INTO THEIR TOP SURFACE IN STAMPED RAISED LETTERS, ACCORDING TO THE APPLICATION FOR WHICH IT IS TO BE USED:
"MANATEE COUNTY TRAFFIC SIGNAL" FOR SIGNALIZED INTERSECTION APPLICATIONS;
"MANATEE COUNTY FIBEROPTIC SYSTEM" FOR FIBER OPTIC CABLE ITS APPLICATIONS;
"ELECTRICAL" FOR OTHER ELECTRICAL APPLICATIONS; "LIGHTING" FOR LIGHTING APPLICATIONS;
"TRAFFIC MONITORING" FOR TRAFFIC MONITORING APPLICATIONS.

- APPROPRIATELY SIZE EACH PULL BOX SO THE FIBER COMMUNICATION AND/OR INTERCONNECT CABLE DOES NOT EXCEED MANUFACTURER'S RECOMMENDED BENDING RADIUS. STANDARD PULL BOX DIMENSION SHALL BE 17"x30"x12". FIBER OPTIC PULL BOX DIMENSION SHALL BE 24"x36"x36". FIBER OPTIC SPLICE BOX DIMENSIONS SHALL BE 30"x60"x48".
- ALL FIBER OPTIC PULL BOXES SHALL BE MARKED WITH A 3.5" X 72" STANDARD OR ELECTRONIC ROUTE MARKER WITH ORANGE POLYDOME LABELED "WARNING, BURIED FIBER OPTIC CABLE". THE INSTALLATION HEIGHT SHALL BE 4-6' ABOVE GRADE TO TOP OF POST. ROUTE MARKERS SHALL BE INSTALLED AT ALL PULL BOX LOCATIONS ENTERED BY PROPOSED CONDUIT AS PART OF THE LOCATE SYSTEM. PULL BOX LOCATIONS DESIGNATED AS "ERM" SHALL HAVE AN ELECTRONIC ROUTE MARKER INSTALLED. STANDARD ROUTE MARKERS SHALL BE INSTALLED AT ALL OTHER FIBER OPTIC PULL BOX LOCATIONS. PAYMENT FOR ROUTE MARKERS ARE INCIDENTAL TO PAY ITEM 635-2-12. PULL BOX LOCATIONS DESIGNATED AS "WGU" SHALL HAVE A WIRE GROUNDING UNIT INSTALLED.
8. 639-1-122, 639-3-11:
ALL SERVICE BREAKERS SHALL BE CLEARLY LABELED. THE TRAFFIC SIGNAL ELECTRICAL SERVICE DISCONNECT SHALL BE 100 AMP COMPRISED OF A SIX (6) CIRCUIT DISCONNECT BOX WITH FIVE CIRCUIT BREAKERS - ONE 40 AMP/120 VOLT FOR CONTROLLER CABINET, ONE 15 AMP/120 V FOR INTERNALLY ILLUMINATED STREET NAME SIGNS, ONE 20 AMP FOR CCTV 1, ONE 20 AMP FOR CCTV 2, AND ONE 15 AMP/120 VOLT FOR FUTURE USE. THE ELECTRICAL POWER SERVICE LOCATED NEAR THE POWER SOURCE SHALL CONTAIN ONE 50 AMP/120 V BREAKER.

THE CCTV POLE MOUNTED DISCONNECTS FOR THE CCTV CABINETS SHALL HAVE ONE SINGLE POLE 20 AMP BREAKER.

USE ALUMINUM RIGID ABOVE GROUND CONDUIT FOR ELECTRICAL POWER SERVICES AND DISCONNECT. THIS PAY ITEM INCLUDES PHOTO CELL FOR THE INTERNALLY ILLUMINATED SIGNS. INSTALL A PHOTOELECTRIC CELL FOR ILLUMINATED STREET NAME SIGNS ON THE TRAFFIC SIGNAL ELECTRIC SERVICE DISCONNECT. PROVIDE A SEPARATE CIRCUIT FROM THE MAIN DISCONNECT TO SUPPLY POWER TO THE ILLUMINATED SIGN LIGHTING CONTROL EQUIPMENT IN THE SIGNAL CABINET. SIGN POWER LOAD SHALL BE WIRED SEPARATELY FROM ANY EMERGENCY POWER BACK-UP SYSTEMS.
 9. 639-2-1:
PAYMENT SHALL BE BASED ON THE COMPLETE LENGTH OF CABLE RUN (ALL CONDUCTORS INCLUDED). USE A BONDING WIRE FROM ELECTRICAL SERVICE POINT TO CONTROLLER.
 10. 646-1-11:
USE LOCKING COLLARS WHEN MOUNTING PEDESTRIAN SIGNAL HEADS TO PEDESTRIAN PEDESTALS. USE LOCKING COLLARS WHEN MOUNTING ALUMINUM PEDESTRIAN POLES TO PEDESTRIAN PEDESTAL BASES. USE BREAKAWAY ALUMINUM SQUARE BASE ASSEMBLIES WITH ALUMINUM DOORS FOR PEDESTRIAN PEDESTALS. INSIDE DIAMETER OF PEDESTALS SHALL BE FOUR INCHES (4").
 11. 649-31-203 AND 649-31-218:
USE THREE 2" AND ONE 3/4" CONDUITS STUBBED OUT THROUGH THE MAST ARM POLE FOUNDATION AND TEMPORARILY SEAL.
 12. 650-1-311 & 650-1-511:
USE SIGNAL HEAD SUPPORTING TUBE THAT IS CAPABLE OF ADJUSTING VERTICALLY A MINIMUM OF 1.5 FEET. DO NOT USE PLASTIC GARBAGE BAGS AS A COVERING FOR CONCEALING SIGNAL HEADS. THIS PAY ITEM INCLUDES THE COST OF TUNNEL VISORS AND BACK PLATES. USE LOUVERED ALUMINUM SIGNAL HEAD BACK PLATES WITH A 2 INCH (2") YELLOW REFLECTORIZED (TYPE III REFLECTIVITY) OUTER EDGE BORDER.
 13. 653-191:
PEDESTRIAN SIGNAL HEADS SHALL BE 16" INTERNATIONAL SYMBOL, FDOT APPROVED LED COUNTDOWN TYPE.
 14. 660-4-11:
SHALL INCLUDE ALL CABINET EQUIPMENT INCLUDING, BUT NOT LIMITED TO VIDEO PROCESSORS, SUPPLEMENTAL INTERFACE HARDWARE, CABLING AND OTHER COMPONENTS TO THE VIDEO PROCESSORS FOR A COMPLETE ASSEMBLY FOR THE VIDEO DETECTION SYSTEM FOR THE INTERSECTION.
 15. 660-4-12:
INSTALL SYSTEM IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. USE A 72" LONG GUSSET TUBE FOR VIDEO DETECTION CAMERA ATTACHMENT BRACKET. VIDEO DETECTION SHALL BE COMPATIBLE WITH MAINTAINING AGENCY'S EXISTING VIDEO DETECTION SYSTEM. THE CAMERA SHALL BE ITERIS VANTAGE RZ4 ADVANCED WIDE DYNAMIC RANGE COLOR CAMERA OR 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 EDGE 2 TS2 I/O MODULE. THIS PAY ITEM SHALL INCLUDE THE LABOR AND MATERIALS TO INSTALL THE CAMERAS ON THE MAST ARMS. MOUNTING HARDWARE AND CABLING IS CONSIDERED INCIDENTAL TO THE VIDEO DETECTION SYSTEM.
- THE SYSTEM INSTALLER SHALL LEAVE A MINIMUM OF 30 FEET OF SLACK FROM EACH CAMERA BRACKET. THE SLACK SHALL BE NEATLY FORMED 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.

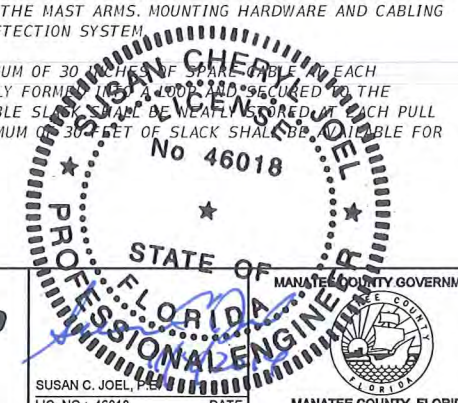
16. 665-11:
USE PEDESTRIAN BUTTON SIGN FTP-68B-06. STREET NAME SHALL BE IN ACCORDANCE WITH THE STREET NAMES SHOWN ON THE SIGNALIZATION PLAN SHEETS.
17. 670-5-110:
THE TOP OF CONTROLLER CABINET FOUNDATION SHALL BE THE SAME ELEVATION AS THE CROWN OF ROADWAY OR GREATER.

USE NEMA TS2 TYPE I CONTROLLER IN A TYPE 5 ENCLOSURE COMPATIBLE WITH THE EXISTING SIGNAL SYSTEM. THE SIGNAL CONTROLLER CABINET SHALL HAVE A FRONT AND BACK ACCESS DOOR. THE CONTROLLER ASSEMBLY SHALL COME FULLY EQUIPPED WITH ALL RELAYS, LOAD SWITCHES, WIRING ETC. FOR SOP 10 OPERATION. ALL CONTROLLER EQUIPMENT SHALL BE COMPATIBLE WITH MANATEE COUNTY'S EXISTING SYSTEM (NAZTEC'S ATMS.NOW). 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. THE CONTROLLER SHALL BE FULLY CONFIGURED WITH ALL THE NECESSARY SYSTEM COMPONENTS FOR INTEGRATION INTO MANATEE COUNTY'S ETHERNET-BASED FIBER OPTIC NETWORK. CONTACT MANATEE COUNTY PRIOR TO ORDERING CONTROLLER ASSEMBLY TO CONFIRM EQUIPMENT COMPATIBILITY.

THIS ITEM SHALL INCLUDE THE INSTALLATION OF CONCRETE BASES FOR THE CONTROLLER ASSEMBLY AND FOR MOUNTING OF AN EMERGENCY GENERATOR CABINET. THE CONTROLLER ASSEMBLY FOUNDATION SHALL HAVE A MINIMUM OF (4) - 2" CONDUIT SPARES. TWO OF THE SPARES SHALL BE TERMINATED IN THE NEAREST FIBER OPTIC PULL BOX AND FITTED WITH A WEATHERPROOF CAP. THE OTHER TWO SPARES SHALL BE TERMINATED IN THE SIGNAL CABLE AND LOW VOLTAGE PULL BOXES.

THE EMERGENCY GENERATOR CABINET (EGC) FOUNDATION SHALL HAVE DIMENSIONS OF 48" X 36" FOR CABINET MOUNTING WITH A FDOT STANDARD TECHNICIAN PAD OR STEPS. IT SHALL BE LOCATED ADJACENT TO THE CONTROLLER BASE WITH (2) - 2" CONDUITS AND (1) - 1/4" CONDUIT INSTALLED DIRECTLY TO THE CONTROLLER BASE. MANATEE COUNTY WILL FURNISH THE GENERATOR CABINET TO THE CONTRACTOR. 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 BASES 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.
18. 676-2-122:
THE CCTV CABINETS SHALL BE TYPE 336S WITH SUNSHIELDS. CONTACT MANATEE COUNTY PRIOR TO ORDERING CABINET ASSEMBLY TO CONFIRM EQUIPMENT LAYOUT AND COMPATIBILITY.
19. 682-1-11:
THE PROPOSED CCTV SHALL BE BOSCH VGS-836-ECEV OUTDOOR 20X AUTODOME 800 SERIES HD CAMERA WITH IVA, CLEAR BUBBLE, 50/60 HZ AND BE FULLY COMPATIBLE WITH MANATEE COUNTY'S CURRENT VIDEO MONITORING SYSTEM. THE CONTRACTOR SHALL COORDINATE WITH THE COUNTY TO ENSURE COMPATIBILITY PRIOR TO ORDERING.
20. 684-1-1:
THE FIELD MANAGED ETHERNET SWITCH SHALL BE A RUGGEDCOM MODEL NUMBER RS900-H1-D-C2-C2-00. THE SWITCH SHALL BE FURNISHED WITH ALL NECESSARY SYSTEM COMPONENTS FOR INTEGRATION INTO THE MANATEE COUNTY ETHERNET-BASED FIBER OPTIC NETWORK.
21. 684-3-11:
THE VIDEO ENCODER SHALL BE AN IMPATH 14110 OR EQUIVALENT AND BE FULLY COMPATIBLE WITH MANATEE COUNTY'S CURRENT VIDEO MONITORING SYSTEM. THE CONTRACTOR SHALL COORDINATE WITH THE COUNTY TO ENSURE COMPATIBILITY PRIOR TO ORDERING.
22. 685-106:
THE UNINTERRUPTED POWER SUPPLY (UPS) SHALL BE THE ALPHA FXM 1100. THE UPS SHALL SUPPORT SNMP (PROTOCOL) FOR REMOTE MONITORING AND MANAGEMENT WITH MANATEE COUNTY'S CURRENT ATMS NETWORK. PROVIDE AND CONNECT ALL WIRING, CABLING, INTERFACES, ETC. FOR INTEGRATION INTO THE NETWORK. THE UPS SHALL BE CAPABLE OF AN 8 HOUR RUN TIME AT 450 WATTS. THE UPS SHALL HAVE A NOMINAL OPERATING RANGE OF 850W TO 110W WITH A STANDARD RS232 ETHERNET PORT. ATTACH UPS UNIT TO THE OUTSIDE OF THE CONTROLLER CABINET AND INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. AT CCTV LOCATIONS THE UPS SHALL BE RACK MOUNTED WITHIN THE CCTV CABINET.
23. 700-5-23:
USE LED INTERNALLY ILLUMINATED STREET NAME SIGNS. ALL INTERNALLY ILLUMINATED STREET NAME SIGNS TO BE MOUNTED RIGIDLY ON MAST ARM UNLESS OTHERWISE SPECIFIED ON PLANS. (USE ONE SIGN PER APPROACH).

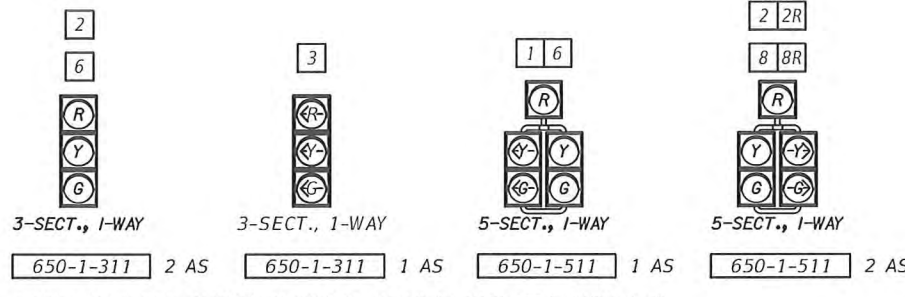


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SUSAN C. JOEL, P.E.
LIC. NO.: 46018
DATE
MANATEE COUNTY, FLORIDA

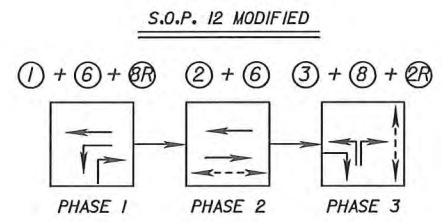
SHEET TITLE: PAY ITEM NOTES	
PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK	SHEET NO.: T-5



* USE LOUVERED ALUMINUM SIGNAL HEAD BACKPLATES WITH A 2" REFLECTORIZED (TYPE III RELECTIVITY) OUTER EDGE BORDER.

CONTROLLER NOTES:

1. MAJOR STREET IS FT HAMER RD/UPPER MANATEE RIVER RD (MOVEMENTS 1, 2 & 6). MINOR STREET IS UPPER MANATEE RIVER RD (MOVEMENTS 3 & 6).
2. THE CONTROLLER CABINET SHALL BE WIRED FOR SOP 10. THE CONTROLLER SHALL OPERATE AS SOP 12 MODIFIED AS INDICATED.
3. FLASHING OPERATION IS YELLOW FOR MOVEMENTS 2 & 6 AND RED FOR ALL OTHER MOVEMENTS.
4. CONCURRENT/ ACTUATED PEDESTRIAN TIMING FOR MOVEMENTS P2 & P8.
5. 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.



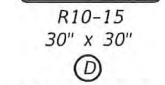
CONTROLLER TIMINGS									
TIMING FUNCTION		1	2	3	4	5	6	7	8
MOVEMENT NUMBER									
MINIMUM GREEN		10	20	10			20	10	
EXTENSION		3.0	3.0	3.0			3.0	3.0	
MAXIMUM GREEN 1		15	40	30			40	30	
MAXIMUM GREEN 2									
YELLOW CLEARANCE		5.0	5.0	5.0			5.0	5.0	
ALL RED		2.0	2.5	2.5			2.5	2.5	
PEDESTRIAN WALK			7					7	
PED. CLEARANCE			20						18
RECALL			MIN				MIN		

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

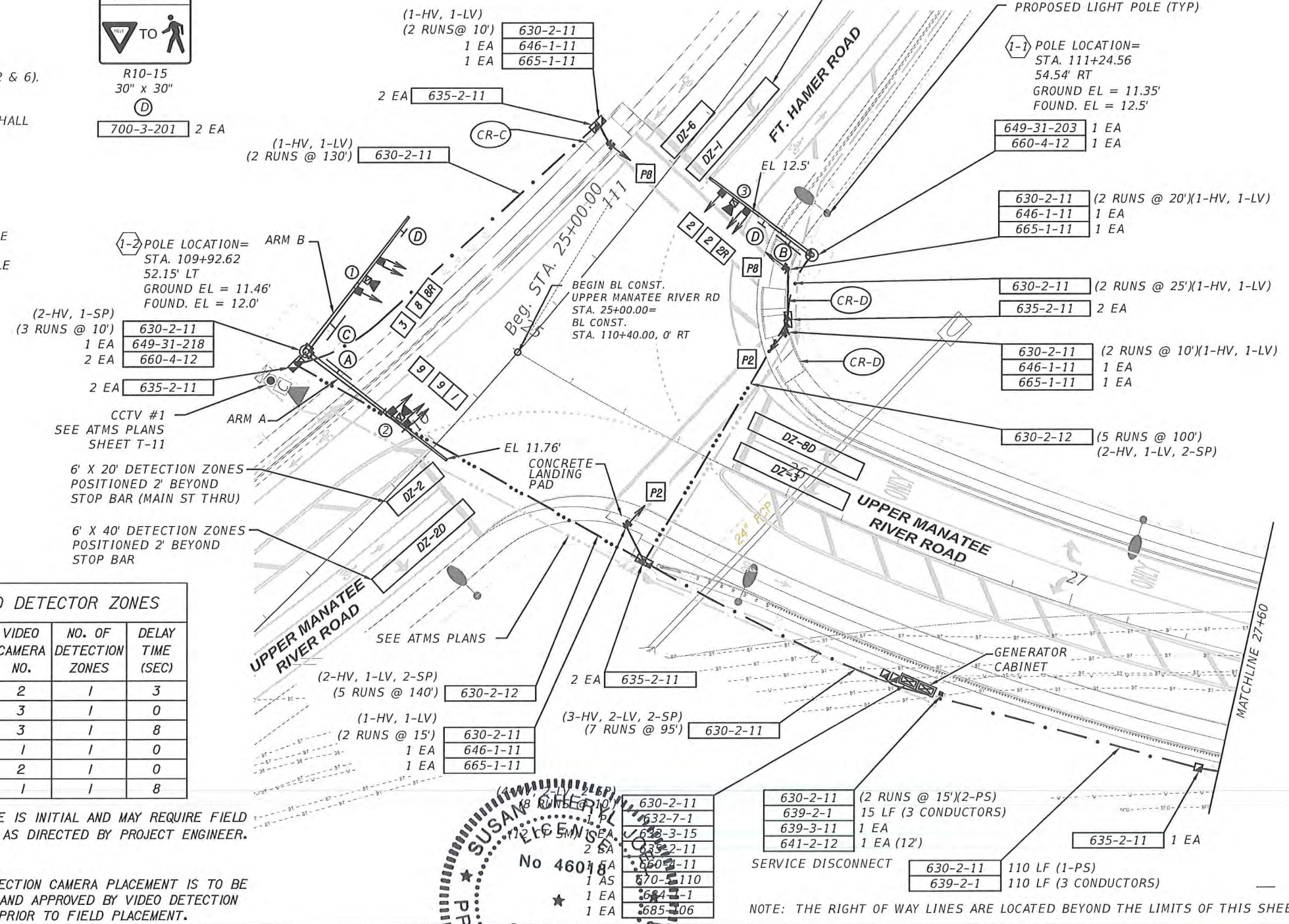
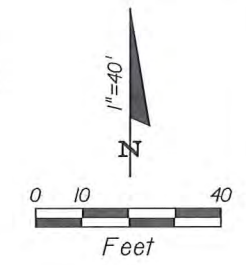
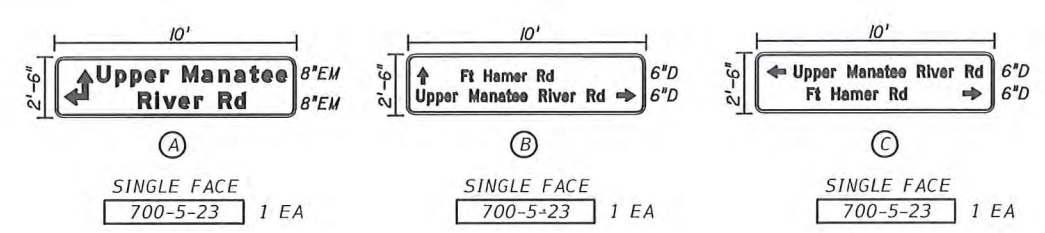
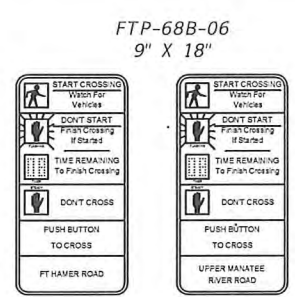
VIDEO DETECTOR ZONES			
ZONE LOCATION NO.	VIDEO CAMERA NO.	NO. OF DETECTION ZONES	DELAY TIME (SEC)
DZ-1	2	1	3
DZ-2	3	1	0
DZ-2D	3	1	8
DZ-3	1	1	0
DZ-6	2	1	0
DZ-8D	1	1	8

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

1. VIDEO DETECTION CAMERA PLACEMENT IS TO BE REVIEWED AND APPROVED BY VIDEO DETECTION ENGINEER PRIOR TO FIELD PLACEMENT.



700-3-201 2 EA

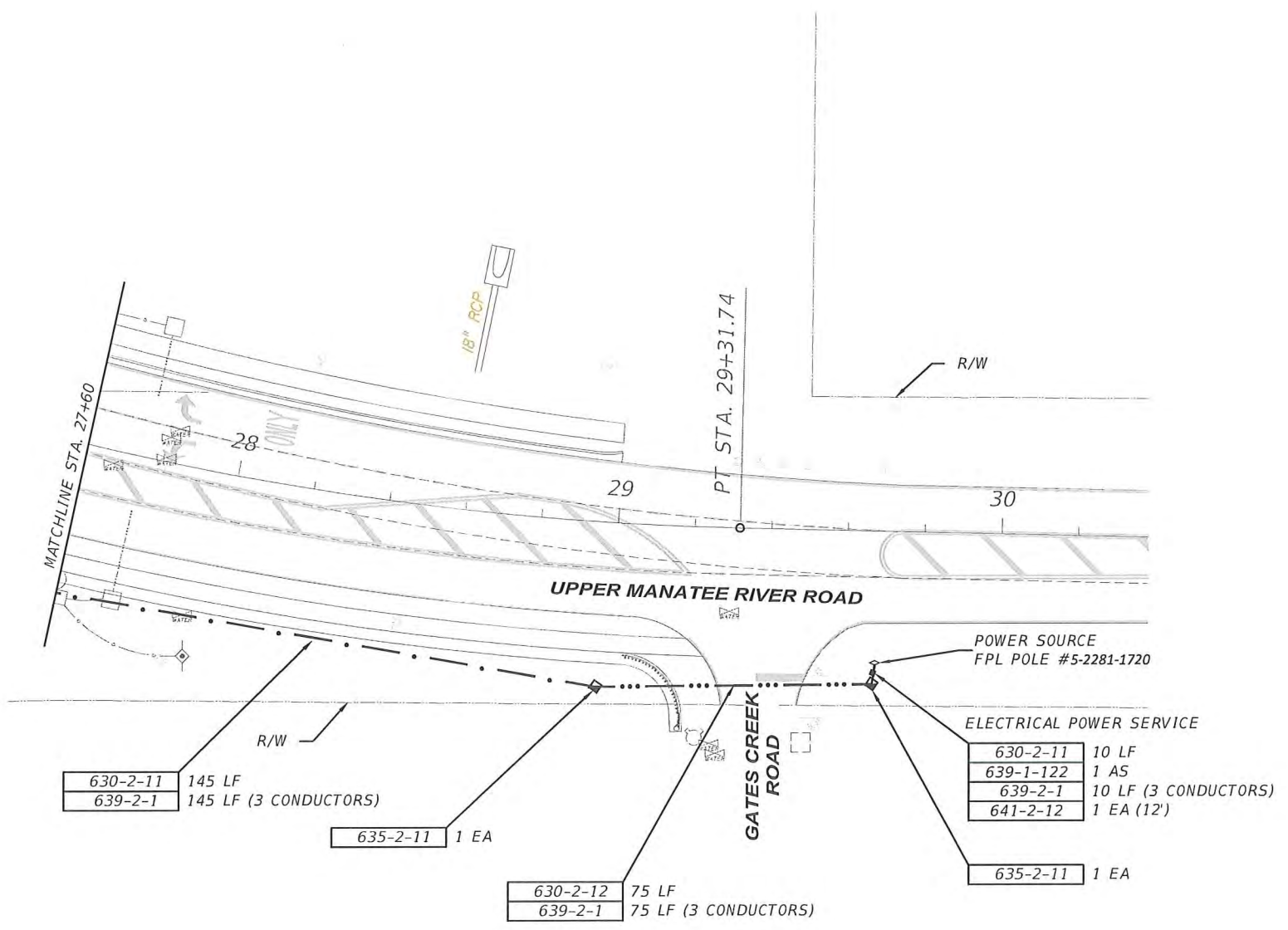
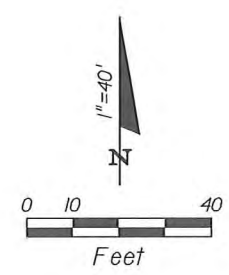


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STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 SUSAN C. JOEL
 No 46018
 MANATEE COUNTY, FLORIDA

SHEET TITLE: **SIGNALIZATION PLAN (1)**
 PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK
 SHEET NO.: T-6



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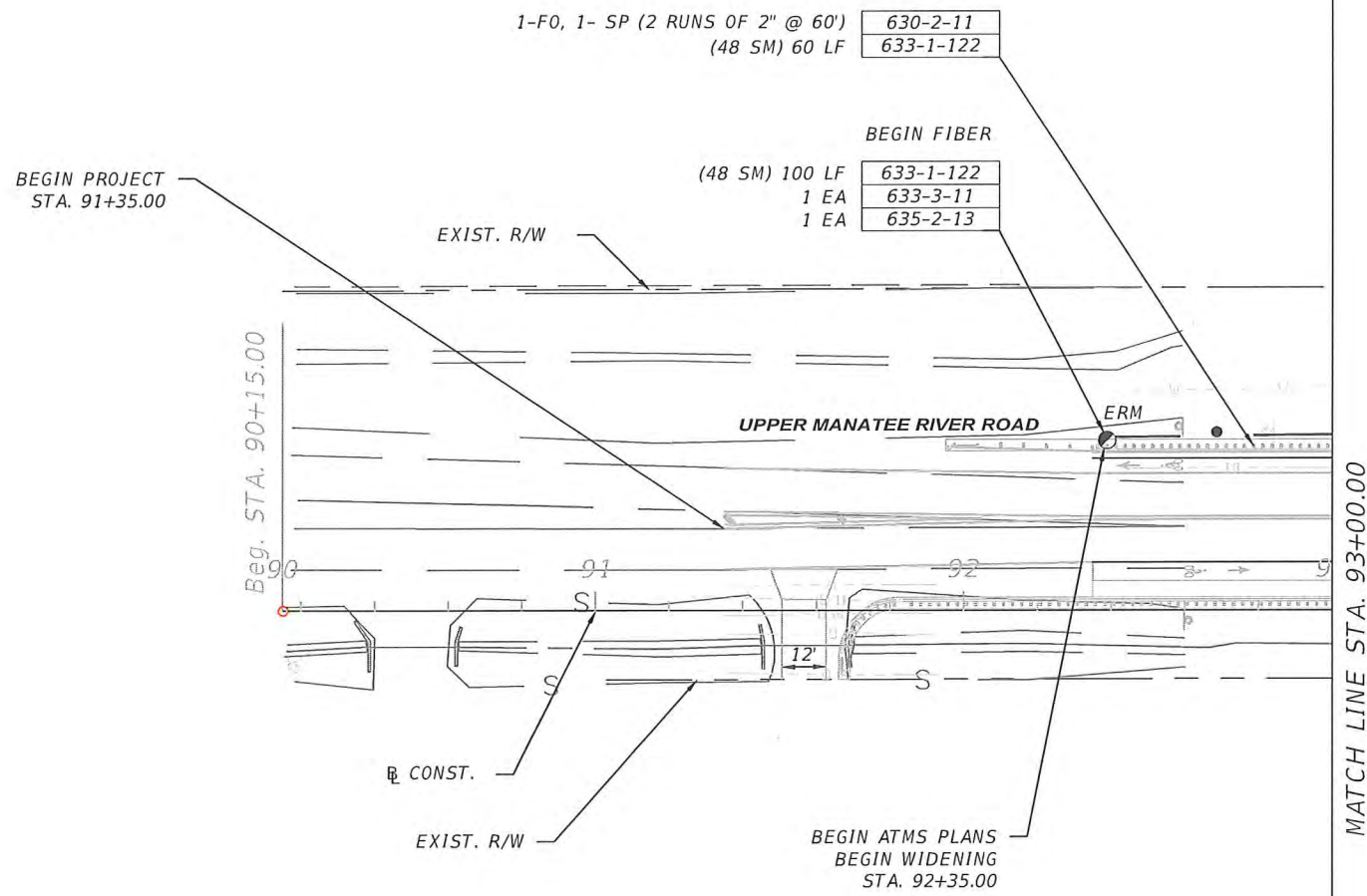
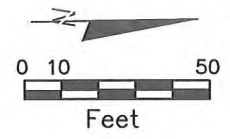
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SUSAN C. JOEL, P.E.
 LIC. NO.: 46018
 DATE: 11/4/2014 11:38:52 AM
 MANATEE COUNTY GOVERNMENT
 MANATEE COUNTY, FLORIDA

SHEET TITLE: **SIGNALIZATION PLAN (2)**

PROJECT NAME: **FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK**

SHEET NO.: **T-7**

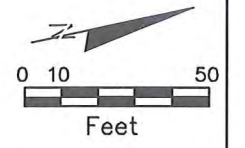


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STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 SUSAN C. JOEL, P.E.
 LIC. NO.: 46018
 MANATEE COUNTY, FLORIDA

SHEET TITLE: ATMS PLAN (1)	
PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK	SHEET NO. T-8



630-2-11 (2 RUNS OF 2" @ 700') 1-F0, 1-SP
 633-1-122 700 LF (48 SM)

633-1-122 100 LF (48 SM)
 635-2-12 1 EA

EXIST. R/W

PROP. R/W

UPPER MANATEE RIVER ROAD

MATCH LINE STA. 93+00.00

PC STA. 94+31.25

EXIST. R/W

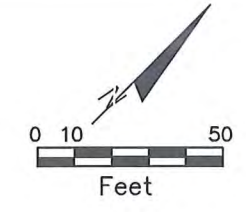
MATCH LINE STA. 100+00.00



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SHEET TITLE: ATMS PLAN (2)		SHEET NO. T-9
PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK		



633-1-122 100 LF (48 SM)
635-2-12 1 EA

630-2-11 (2 RUNS OF 2" @ 700') 1-F0, 1-SP
633-1-122 700 LF (48 SM)

MATCH LINE STA. 100+00.00

MATCH LINE STA. 107+00.00

PROP. R/W

EXIST. R/W

UPPER MANATEE RIVER ROAD

CONST.

EXIST. R/W

PT STA. 104+55.77

PROPOSED LIGHT POLE AND CONDUIT (TYP)

N 52° 42' 41" E



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SUSAN CHERYL JOELL
PROFESSIONAL ENGINEER
LIC. NO.: 46018



SHEET TITLE:

ATMS PLAN (3)

PROJECT NAME:

FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK

SHEET NO.

T-10

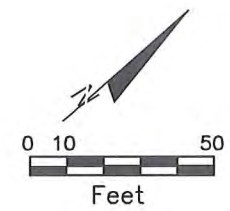
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Howard Holley

11/4/2014 11:39:49 AM

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CCTV #1
POLE LOCATION=
STA. 109+77
54.4' LT



633-1-122 100 LF (48 SM)
635-2-12 1 EA

1-F0, 1-SP
(2 RUNS OF 2" @ 280')
630-2-11 280 LF (48 SM)
633-1-122

630-2-11 (2 RUNS @ 25') 1-PS, 1-LV
633-8-1 25 LF
639-2-1 75 LF (3 - #4 AWG)
639-3-11 1 EA
641-3-263 1 EA (56')
676-2-122 1 EA
682-1-11 1 EA
684-3-11 1 EA
685-106 1 EA

(48 SM) 100 LF
2 EA 633-1-122
1 EA 635-2-11
1 EA 635-2-12

BEGIN @ CONST. UPPER MANATEE RIVER RD.
STA. 25+00.00 =
@ CONST.
STA. 110+40.00, 0' RT

EXIST. R/W

(3 RUNS OF 2" @ 320') 1-PS, 1-F0, 1-SP
320 LF (48 SM) 630-2-11
320 LF (3 - #4 AWG) (CCTV #2) 633-1-122
639-2-1 (FOR CCTV #2) 635-2-11 1 EA

MATCH LINE STA. 107+00.00

MATCH LINE STA. 114+00.00

UPPER MANATEE RIVER ROAD

FT. HAMER ROAD

EXIST. R/W

1-PS, 1-F0, 1-LV, 1-SP (4 RUNS OF 2" @ 120')
120 LF 630-2-12
(CCTV #1)(3 - #6 AWG) 120 LF 633-8-1
639-2-1

630-2-12
633-8-1
639-2-1

(FOR CCTV #1)
2 EA 635-2-11

(FOR CCTV #2)
1 EA 635-2-11

(FOR CCTV #2)
635-2-11 1 EA

633-1-122 100 LF (48 SM)
635-2-12 1 EA

1-PS, 1-F0, 1-SP
(3 RUNS OF 2" @ 100')
630-2-12 100 LF (48 SM)
633-1-122 100 LF (48 SM)
639-2-1 100 LF (3 - #4 AWG) (CCTV #2)

PROPOSED LIGHT POLE AND CONDUIT (TYP)

NOTES:

- POWER FOR THE CCTV CABINETS SHALL BE FROM SEPARATE 20 AMP BREAKERS WITHIN THE TRAFFIC SIGNAL SERVICE DISCONNECT.
- CONDUCTORS AND CABLING FOR CCTV SHALL BE INSTALLED IN SEPARATE CONDUIT AND PULL BOXES.
- SEE SHEET T-13 FOR CCTV #2 LOCATION.

(48 SM) 200 LF 633-1-122
4 EA 633-2-31
1 EA 633-3-11
1 EA 633-3-12
1 EA 635-2-13

100 LF 633-8-1

1-F0, 2-PS (3 RUNS OF 2" @ 100')
(CCTV #1)(3 - #6 AWG) 100 LF 630-2-11
(CCTV #2)(3 - #4 AWG) 100 LF 639-2-1
639-2-1

SIGNAL CONTROLLER CABINET

WGU ERM

UPPER MANATEE RIVER ROAD

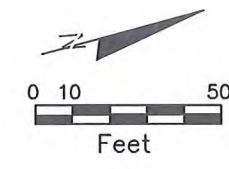


REVISIONS		DATE	BY	DESCRIPTION

PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK

SHEET TITLE: ATMS PLAN (4)

SHEET NO.: T-11



WINDING STREAM WAY
(WATERLIFE SUBDIVISION ENTRANCE)

MATCH LINE STA. 114+00.00

PRC STA. 120+97.85
MATCH LINE STA. 121+00.00

EXIST. R/W

WINDING STREAM WAY

FT. HAMER ROAD

CONST.

1-PS, 1-F0, 1-SP
(3 RUNS OF 2" @ 210')
210 LF (48 SM)
(3 - #4 AWG) (CCTV #2) 210 LF

630-2-11
633-1-122
639-2-1

PROPOSED
LIGHT POLE AND CONDUIT
(TYP)

(FOR CCTV #2)
635-2-11 1 EA

(FOR CCTV #2)
635-2-11 1 EA

1-PS, 1-F0, 1-SP (3 RUNS OF 2" @ 500')
500 LF (48 SM)
(3 - #4 AWG) (CCTV #2) 500 LF

630-2-11
633-1-122
639-2-1

EXIST. R/W

633-1-122 100 LF (48 SM)
635-2-12 1 EA

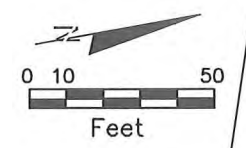
633-1-122 100 LF (48 SM)
635-2-12 1 EA



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SHEET TITLE: ATMS PLAN (5)		SHEET NO. T-12
PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK		



CCTV #2
POLE LOCATION=
STA. 126+00
1.5' LT

630-2-11	(2 RUNS @ 20') 1-PS, 1-F0
633-3-15	1 EA
639-2-1	20 LF (3-#4 AWG)
639-3-11	1 EA
641-3-263	1 EA (56')
676-2-122	1 EA
682-1-11	1 EA
684-1-1	1 EA
684-3-11	1 EA
685-106	1 EA

(CCTV #2 POWER) 1 EA 635-2-11
(FIBER DROP) 1 EA 635-2-12

1-PS, 1-F0, 1-SP
(3 RUNS OF 2" @ 50')
(3-#4 AWG) 50 LF

630-2-11
639-2-1

CONST.

MATCH LINE STA. 121+00.00

MATCH LINE STA. 128+00.00

(FOR CCTV #2)
1 EA 635-2-11

1-PS, 1-F0, 1-SP
(3 RUNS OF 2" @ 510')
510 LF (48 SM)
(3-#4 AWG) (CCTV 2) 510 LF

630-2-11
633-1-122
639-2-1

PROPOSED
LIGHT POLE AND CONDUIT
(TYP)

(CCTV #2 POWER) 1 EA 635-2-11
(FIBER DROP) 1 EA 635-2-12

2-F0, 1-SP
(3 RUNS OF 2" @ 50') 630-2-11

(48 SM) 200 LF	633-1-122
4 EA	633-2-31
1 EA	633-3-11
1 EA	633-3-12
1 EA	635-2-13

48 SM
INSTALL WITHIN 2" CONDUIT
IN BRIDGE
633-1-122 140 LF (48 SM)

BEGIN APPROACH SLAB
END CONC. BARRIER WALL
MATCH BRIDGE BARRIER
STA. 126+97.55

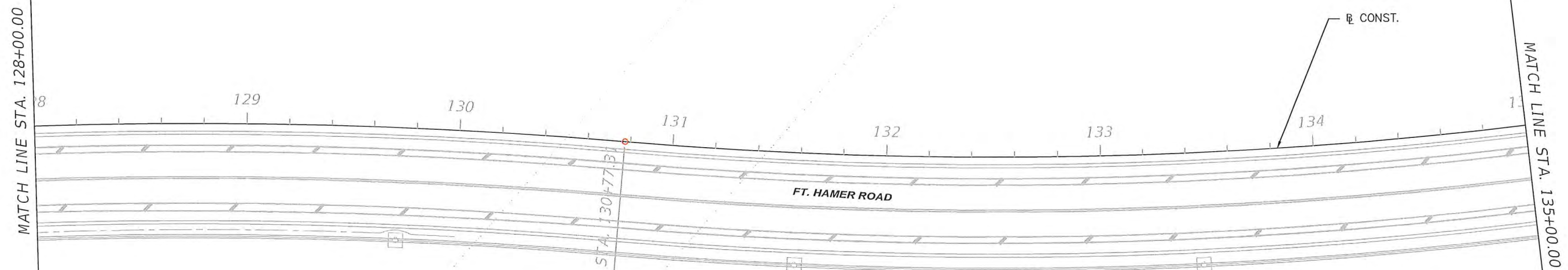
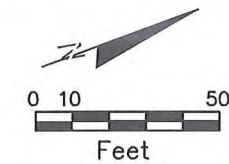
BEGIN APPROACH SLAB
STA. 126+97.54

BEGIN BRIDGE
STA. 127+27.55



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

SHEET TITLE: ATMS PLAN (6)		SHEET NO. T-13
PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK		



48 SM
 INSTALL WITHIN 2" CONDUIT
 IN BRIDGE
 633-1-122 700 LF (48 SM)

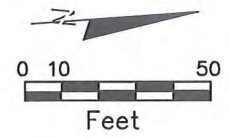


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SHEET TITLE: ATMS PLAN (7)		SHEET NO. T-14
PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK		

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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION



MATCH LINE STA. 135+00.00

PT STA. 141+97.29

MATCH LINE STA. 142+00.00

136

137

138

139

140

141

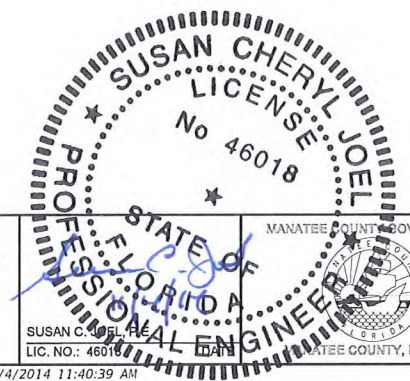
2083.00' R

CONST.

FT. HAMER ROAD

48 SM
INSTALL WITHIN 2" CONDUIT
IN BRIDGE

633-1-122 700 LF (48 SM)



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

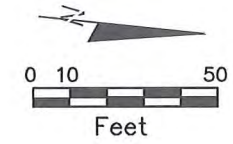
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 MANATEE COUNTY GOVERNMENT
 SUSAN C. JOELL, P.E.
 LIC. NO.: 46018
 MANATEE COUNTY, FLORIDA

SHEET TITLE: **ATMS PLAN (8)**

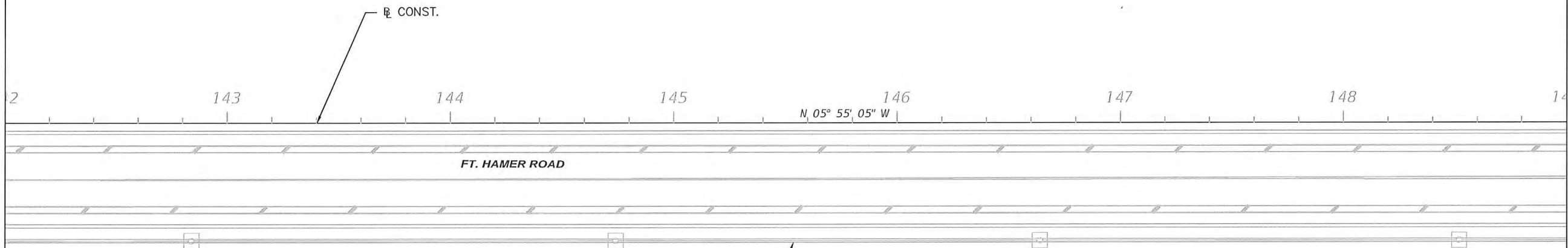
PROJECT NAME: **FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK**

SHEET NO.: **T-15**

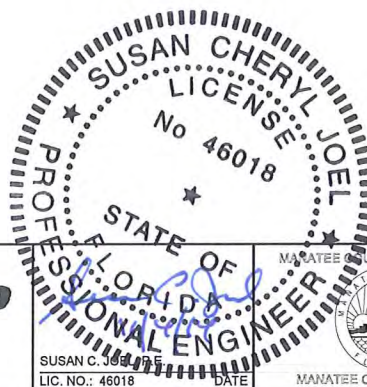


MATCH LINE STA. 142+00.00

MATCH LINE STA. 149+00.00



48 SM
INSTALL WITHIN 2" CONDUIT
IN BRIDGE
633-1-122 700 LF (48 SM)

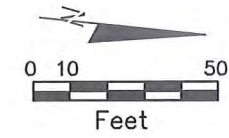


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SUSAN CHERYL JOELL
 LICENSE No. 46018
 PROFESSIONAL ENGINEER
 STATE OF FLORIDA
 MANATEE COUNTY GOVERNMENT
 MANATEE COUNTY, FLORIDA

SHEET TITLE: ATMS PLAN (9)		SHEET NO. T-16
PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK		



MATCH LINE STA. 149+00.00

MATCH LINE STA. 156+00.00

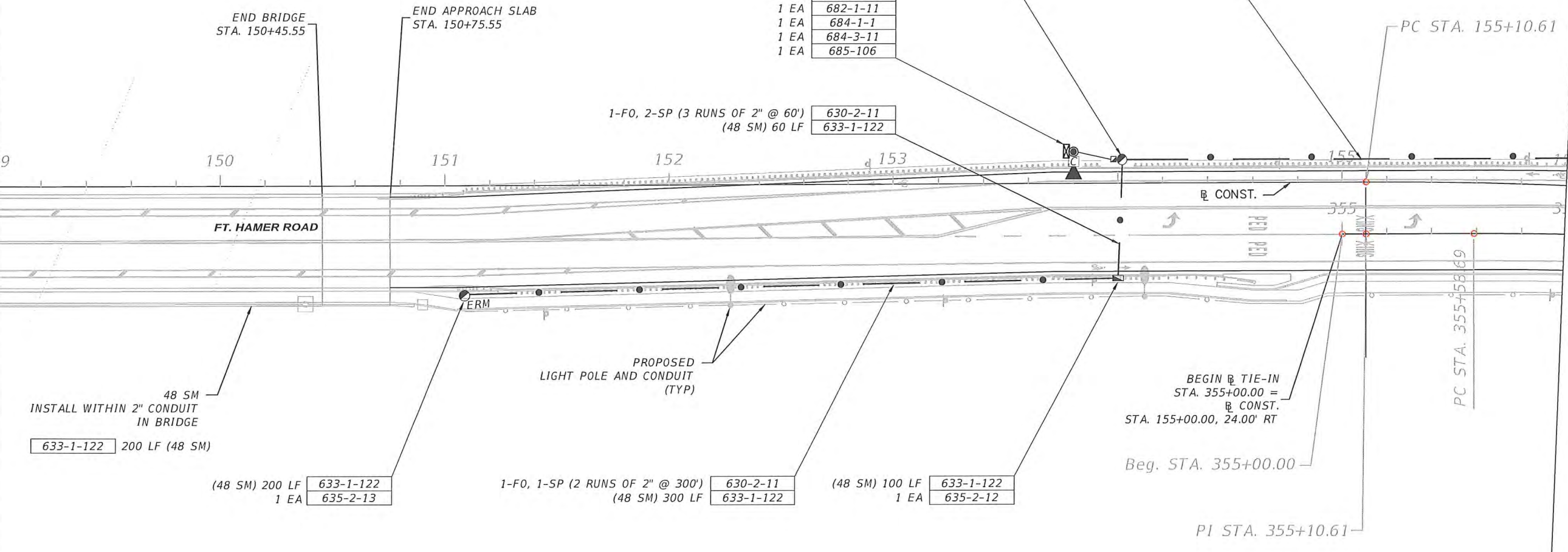
(48 SM) 200 LF	633-1-122
4 EA	633-2-31
1 EA	633-3-11
1 EA	633-3-12
1 EA	635-2-11
1 EA	635-2-13

CCTV #3
POLE LOCATION=
STA. 153+80
13.5' LT

1-PS, 1-FO (2 RUNS @ 20')	630-2-11
1 EA	633-3-15
(3-#6 AWG) 20 LF	639-2-1
1 EA	639-3-11
(56') 1 EA	641-3-263
1 EA	676-2-122
1 EA	682-1-11
1 EA	684-1-1
1 EA	684-3-11
1 EA	685-106

630-2-11	(3 RUNS OF 2" @ 200')	1-PS, 1-FO, 1-SP
633-1-122	200 LF (48 SM)	
639-2-1	200 LF (3-#6 AWG) (CCTV #3)	

1-FO, 2-SP (3 RUNS OF 2" @ 60')	630-2-11
(48 SM) 60 LF	633-1-122



48 SM
INSTALL WITHIN 2" CONDUIT
IN BRIDGE
633-1-122 200 LF (48 SM)

(48 SM) 200 LF	633-1-122
1 EA	635-2-13

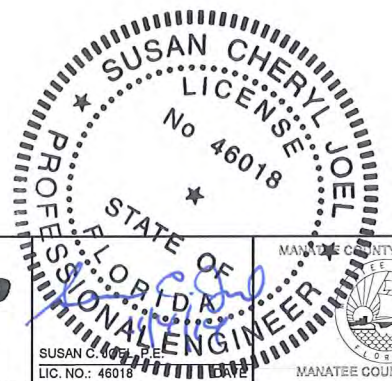
1-FO, 1-SP (2 RUNS OF 2" @ 300')	630-2-11
(48 SM) 300 LF	633-1-122

(48 SM) 100 LF	633-1-122
1 EA	635-2-12

BEGIN TIE-IN
STA. 355+00.00 =
CONST.
STA. 155+00.00, 24.00' RT

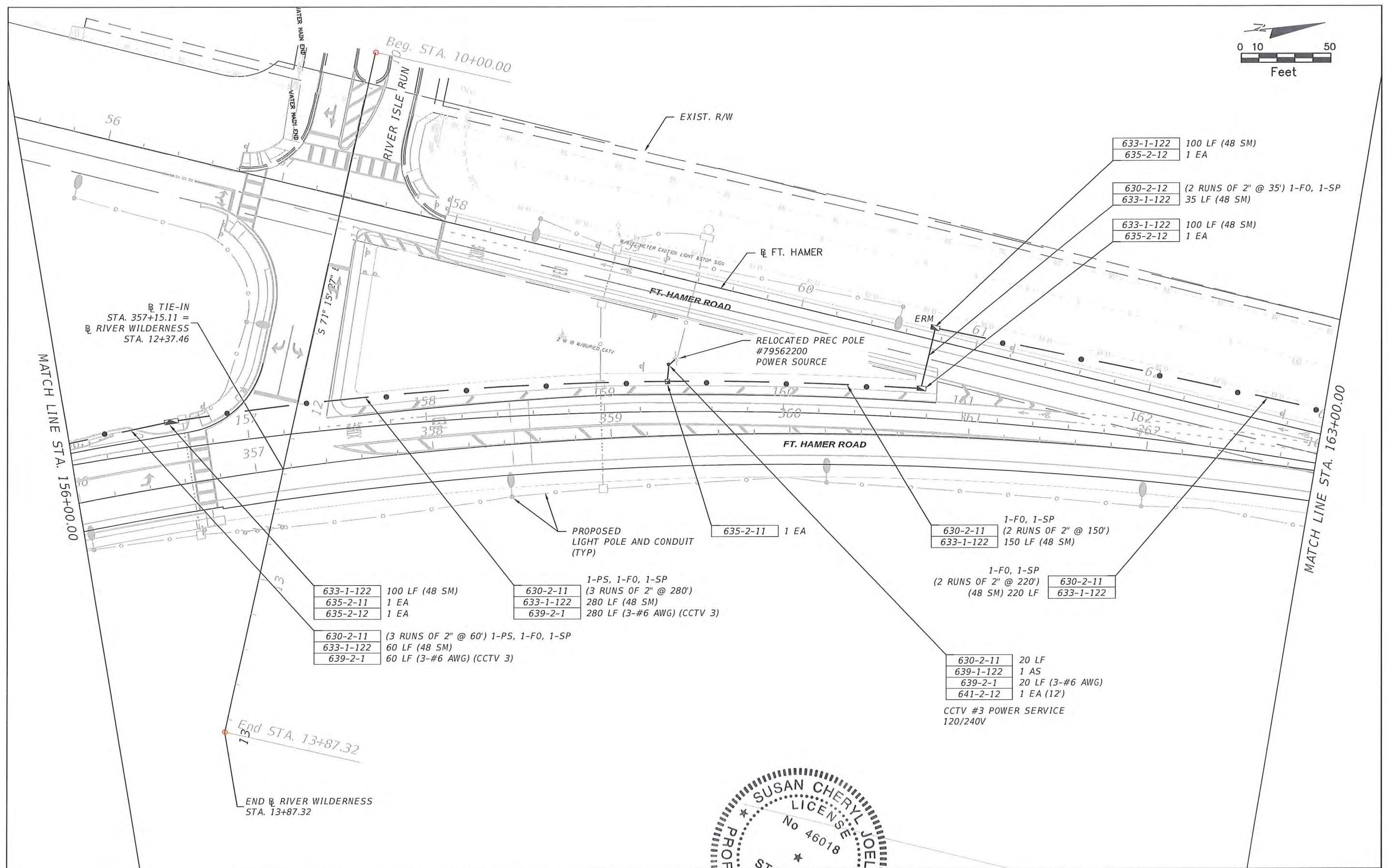
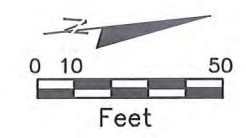
Beg. STA. 355+00.00

PI STA. 355+10.61



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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

SHEET TITLE: ATMS PLAN (10)		SHEET NO. T-17
PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK		



633-1-122 100 LF (48 SM)
635-2-12 1 EA

630-2-12 (2 RUNS OF 2" @ 35') 1-F0, 1-SP
633-1-122 35 LF (48 SM)

633-1-122 100 LF (48 SM)
635-2-12 1 EA

635-2-11 1 EA

630-2-11 1-F0, 1-SP
(2 RUNS OF 2" @ 150')
633-1-122 150 LF (48 SM)

630-2-11 1-F0, 1-SP
(2 RUNS OF 2" @ 220')
(48 SM) 220 LF
633-1-122

630-2-11 20 LF
639-1-122 1 AS
639-2-1 20 LF (3-#6 AWG)
641-2-12 1 EA (12')

CCTV #3 POWER SERVICE
120/240V

633-1-122 100 LF (48 SM)
635-2-11 1 EA
635-2-12 1 EA

630-2-11 1-PS, 1-F0, 1-SP
(3 RUNS OF 2" @ 280')
633-1-122 280 LF (48 SM)
639-2-1 280 LF (3-#6 AWG) (CCTV 3)

630-2-11 (3 RUNS OF 2" @ 60') 1-PS, 1-F0, 1-SP
633-1-122 60 LF (48 SM)
639-2-1 60 LF (3-#6 AWG) (CCTV 3)

TIE-IN
STA. 357+15.11 =
RIVER WILDERNESS
STA. 12+37.46

End STA. 13+87.32

END RIVER WILDERNESS
STA. 13+87.32

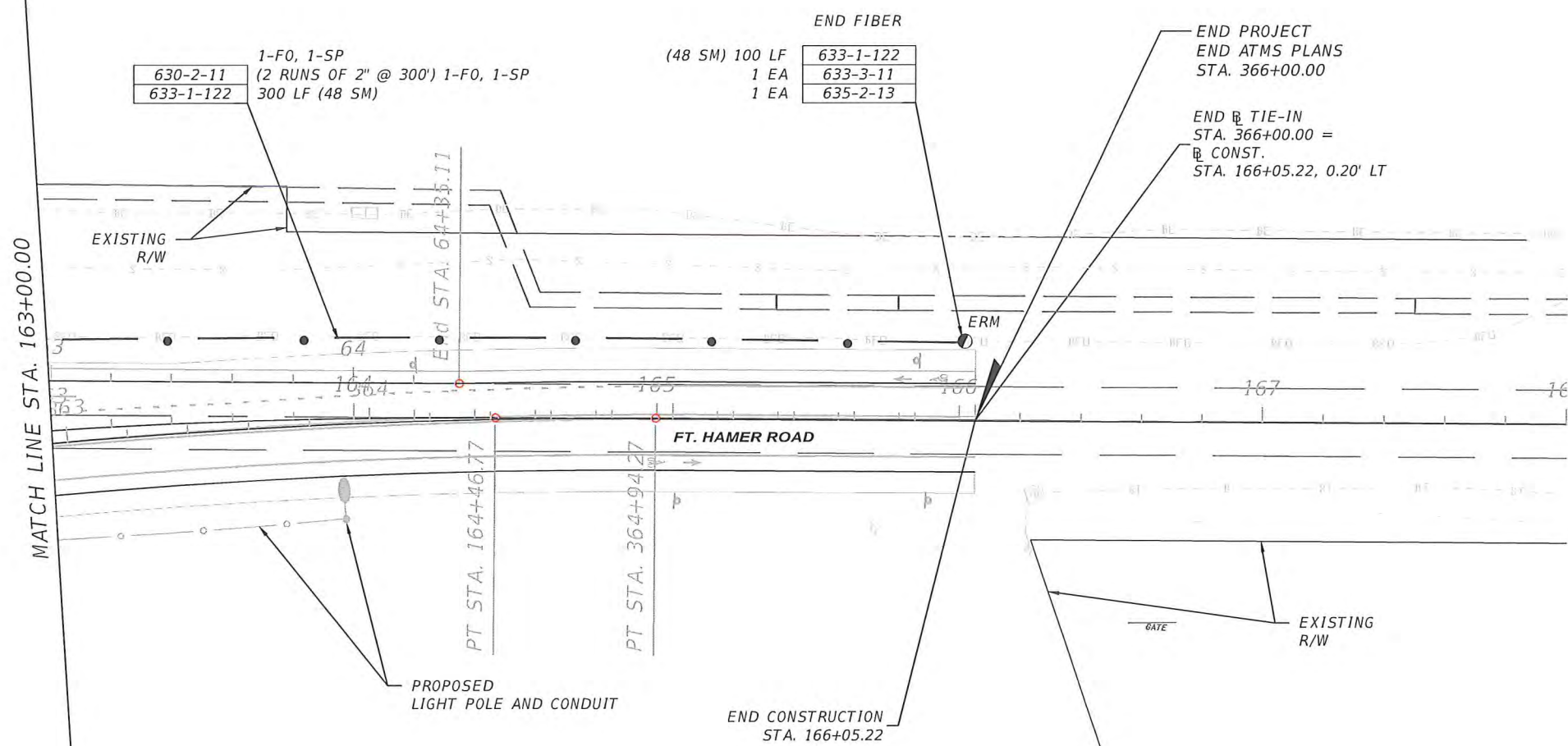
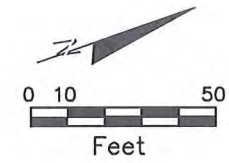
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PROFESSIONAL ENGINEER

MANATEE COUNTY GOVERNMENT
MANATEE COUNTY, FLORIDA

SHEET TITLE: ATMS PLAN (11)
PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK
SHEET NO.: T-18



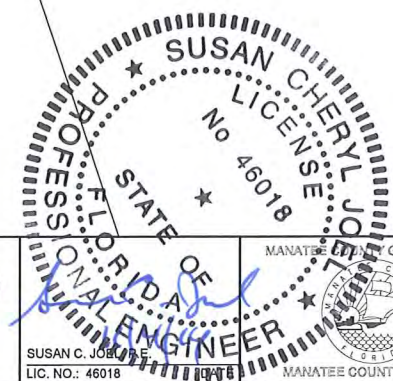
630-2-11
633-1-122
1-F0, 1-SP
(2 RUNS OF 2" @ 300') 1-F0, 1-SP
300 LF (48 SM)

END FIBER
(48 SM) 100 LF
1 EA
1 EA
633-1-122
633-3-11
635-2-13

END PROJECT
END ATMS PLANS
STA. 366+00.00

END TIE-IN
STA. 366+00.00 =
CONST.
STA. 166+05.22, 0.20' LT

END CONSTRUCTION
STA. 166+05.22



MANATEE COUNTY GOVERNMENT
SUSAN C. JOSEPH
LIC. NO.: 46018
MANATEE COUNTY, FLORIDA

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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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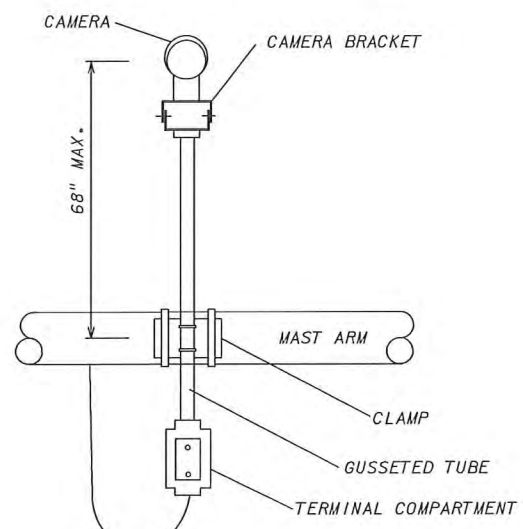
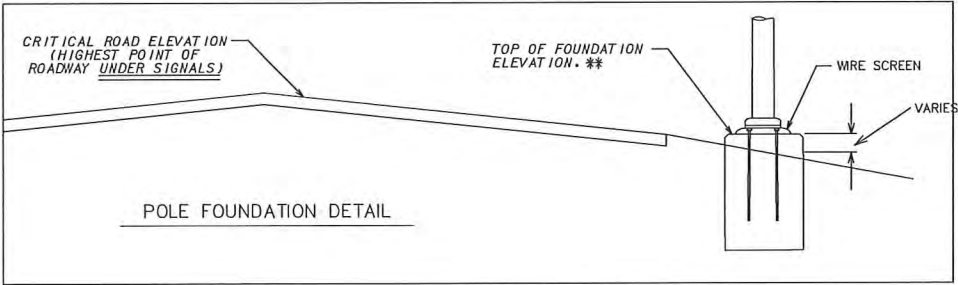
Howard Holley

11/4/2014 11:41:20 AM

SHEET TITLE: ATMS PLAN (12)	
PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK	SHEET NO. T-19

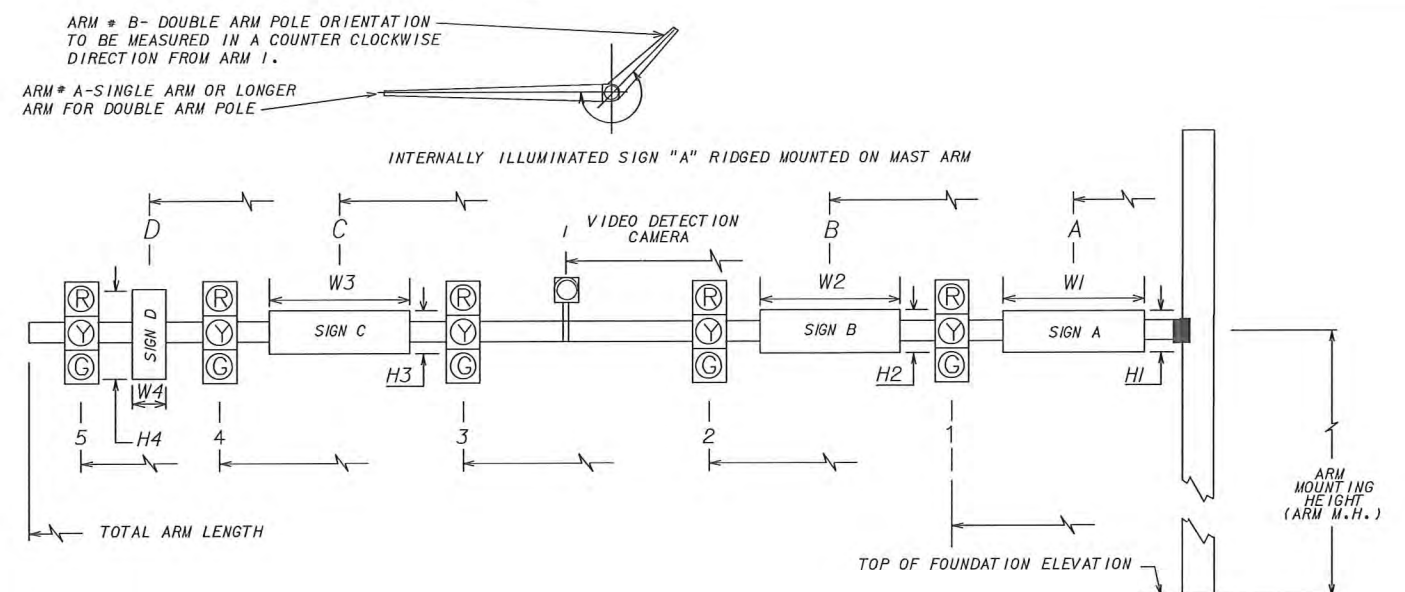
SPECIAL NOTES:

- A. EACH POLE AND MAST ARM SHALL BE IDENTIFIED WITH A PERMANENT ONE INCH (1") HIGH ENGRAVED OR IMPRESSED MARK WHICH BEARS THE POLE IDENTIFICATION NUMBER SHOWN ON THE PLANS.
- B. ANCHOR BOLT COVERS (ORNAMENTAL, NON-ORNAMENTAL, AND/OR PAINTED) SHALL BE GALVANIZED STEEL OR CAST ALUMINUM AND SHALL BE SECURED BY A MINIMUM OF TWO (2) THREADED FASTENERS. THE BOLT COVERS SHALL BE OF SUFFICIENT SIZE SO THAT THERE IS NO GAP BETWEEN ITSELF AND THE POLE SHAFT.
- C. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL ELEVATIONS LISTED HEREIN.
- D. INFORMATION BELOW IS FOR DESIGN PURPOSES ONLY. FIELD ADJUSTMENTS MAY BE REQUIRED.
- E. SEE APPROPRIATE PLAN SHEET FOR PROPOSED SIGNAL HEAD ALIGNMENTS AND SIGN CONFIGURATION/LOCATION.
- F. BACKPLATES REQUIRED FOR ALL SIGNAL HEADS.
- G. MAST ARMS ARE TO BE GALVANIZED, NON-PAINTED.



CAMERA MOUNTING DETAIL
(CONTACT MAINTAINING AGENCY FOR MOUNTING PREFERENCES.)

SPECIAL INSTRUCTIONS			
ID NO.	PED. BUTTON	PED. SIGNALS	HANDHOLE LOCATION



* DENOTES NUMBER OF SECTIONS IN SIGNAL HEAD ASSEMBLY

STRUCT. ID. NO.	POLE ID. NO.	SHEET NO.	LOCATION BY STA.	CRITICAL ROAD EL.	# FOUNDATION OUT OF GROUND	** TOP OF FOUNDATION ELEVATION	RDWY ARM NO.	SIGNAL V/H	BACK PLATES Y/N	PED. SIGNAL Y/N	SIGNAL DATA															TOTAL ARM LENGTH	ARM M.H.	∠ BETWEEN DUAL ARMS 90/270	SIGN DATA															VIDEO DISTANCE FROM POLE	
											DISTANCE FROM POLE																		DISTANCE FROM POLE / HEIGHT AND WIDTH OF SIGN																
											1	*	2	*	3	*	4	*	5	*	6	*	7	*	8				*	A	H1	W1	B	H2	W2	C	H3	W3	D	H4	W4	E	H5	W5	1
-	I-1	T-6	III + 24.56	12.5'	1.15'	12.5'	A	V	Y	N	25	5	35	3												42	-	-	8	2.5	10	19	2.5	2.5										29.5	
-	I-2	T-6	109 + 92.62	11.76'	0.54'	12.0'	A	V	Y	N	31	3	39	5												56	-	90	10	2.5	10													35	
				11.25'			B	V	Y	N	23	3	36	5												53	-	-	10	2.5	10	48.5	2.5	2.5										28	

*** THE TABLE BELOW IS FOR DESIGN PURPOSES ONLY! THE CONTRACTOR SHALL NOT USE INFORMATION BELOW IN PLACEMENT OF SIGNALS AND/OR SIGNS. SEE INFORMATION IN THE TABLE LOCATED ABOVE FOR ACTUAL SIGNAL INSTALLATION.

* DENOTES NUMBER OF SECTIONS IN SIGNAL HEAD ASSEMBLY

STRUCT. ID. NO.	POLE ID. NO.	SHEET NO.	LOCATION BY STA.	CRITICAL ROAD EL.	# FOUNDATION OUT OF GROUND	** TOP OF FOUNDATION ELEVATION	RDWY ARM NO.	SIGNAL V/H	BACK PLATES Y/N	PED. SIGNAL Y/N	SIGNAL DATA															TOTAL ARM LENGTH	ARM M.H.	∠ BETWEEN DUAL ARMS 90/270	SIGN DATA															VIDEO DISTANCE FROM POLE		
											DISTANCE FROM POLE																		DISTANCE FROM POLE / HEIGHT AND WIDTH OF SIGN																	
											1	*	2	*	3	*	4	*	5	*	6	*	7	*	8				*	A	H1	W1	B	H2	W2	C	H3	W3	D	H4	W4	E	H5	W5	1	2
-	I-1	T-6	III + 24.56	12.5'	1.15'	12.5'	A	V	Y	N	13	5	28	3	38	3											-	-	-	8	3	3	20.5	2.5	10										33	
-	I-2	T-6	109 + 92.62	11.76'	0.54'	12.0'	A	V	Y	N	21	3	34	3	45	4										53	-	90	10	2.5	10	51	3	3										39		
				11.25'			B	V	Y	N	20.5	3	30.5	3	42.5	3											53	-	-	10	2.5	10	48.5	3	3									25.5		

Professional Engineer Seal for Susan Cheryl L. Joel, License No. 46018, State of Florida. The seal is circular and contains the text: 'STATE OF FLORIDA', 'PROFESSIONAL ENGINEER', 'SUSAN CHERYL L. JOEL', 'LICENSE NO. 46018', and 'MANATEE COUNTY, FLORIDA'.

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MAST ARM TABULATION DESIGN AND CALCULATION CONFIGURATION

PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK
SHEET NO. T-20

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

STANDARD MAST ARM ASSEMBLIES DATA TABLE																	Table Date 01-01-11			
STRUCTURE ID NUMBERS	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	RC	RD (in.)	
1-1 (T-6)	E5-T3	E5	16.8	8.65	---	---	---	---	---	T3	23.0	20.0	15.78	13.5	4.5	11	16	9	12	
1-2 (T-6)	E6-E5-T4	E6	23.6	8.70	E5	27.8	7.11	90	---	T4	23.0	20.0	18.78	17.0	4.5	11	16	14	8	

TABLE NOTES:

1. Assembly Number Legend

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

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

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 mast arm 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 pole height 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 Report of Core Borings by URS Corporation Southern, dated November 2010. Engineer of Record is Michael R. Sharp, P.E. No. 41205.

The following soil parameters were used in design.

Classification = Cohesionless (Fine Sand)
 Friction Angle = 29 Degrees (26°)
 Unit Weight = 52.6 lbs. / cu. ft. (assumed submerged)

GENERAL NOTES:

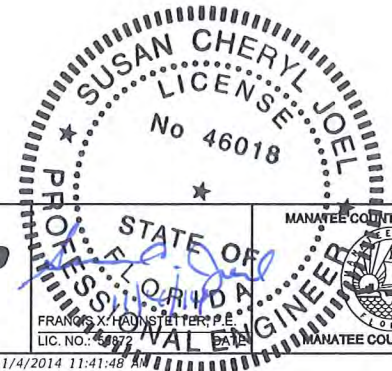
1. Work this sheet with the Signal Designer's "Mast Arm Tabulation". See "Mast Arm Tabulation" for special instructions that may include non-standard handhole location, paint color, terminal compartment requirement, and/or pedestrian features.

2. Work with Index Nos. 17743 and 17745.

3. Design wind speed is 130 mph.

4. Due to the arm loading, the stronger E5 arm is required instead of the E3 arm for mast arm 1-1, and the stronger E6 arm is required instead of the E5 arm for arm 1 of mast arm 1-2.

5. The contractor shall anticipate the need to adjust the signal heights as needed to maintain the 17'-6" minimum and 19'-0" maximum FDOT vertical clearances, and shall provide mounting hardware as required to accomplish this task.



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

SHEET TITLE: TABLE OF VARIABLES FOR STANDARD MAST ARM ASSEMBLIES		SHEET NO. T-21
PROJECT NAME: FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK		

SIGN NAME	A	QTY	/	SIGN NUMBER	STATION(S)
PANEL	BORDER				none
WIDTH	10'-0"	WIDTH	0.5"		
HEIGHT	2'-6"	RADII	3"		
LEGEND	White	COLOR	White		
COLOR	Green				
SYMBOL(S)	ANGLE	X	Y	WD	HT
AR_Type D	0	11	11.7	8	12
AR_Type D	90	4.5	6.3	8	12
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lens	COLUMN SIZE	AVERAGE LENGTH	



COPY SPACE	21.1	9.2	7.8	7	7.8	4	7	9.4	8.5	7.8	7.7	8	7	5.3	4.5	94.4
COPY SPACE	41.6	8.6	3.9	7.8	7.8	4	8	7.9	5.3	25.1	53.3					
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SIGN NAME	A	QTY	/	SIGN NUMBER	STATION(S)
PANEL	BORDER				
WIDTH	WIDTH				
HEIGHT	RADII				
LEGEND	COLOR				
COLOR					
SYMBOL(S)	ANGLE	X	Y	WD	HT
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lens	COLUMN SIZE	AVERAGE LENGTH	

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SIGN NAME	A	QTY	/	SIGN NUMBER	STATION(S)
PANEL	BORDER				
WIDTH	WIDTH				
HEIGHT	RADII				
LEGEND	COLOR				
COLOR					
SYMBOL(S)	ANGLE	X	Y	WD	HT
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lens	COLUMN SIZE	AVERAGE LENGTH	

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SIGN NAME	A	QTY	/	SIGN NUMBER	STATION(S)
PANEL	BORDER				
WIDTH	WIDTH				
HEIGHT	RADII				
LEGEND	COLOR				
COLOR					
SYMBOL(S)	ANGLE	X	Y	WD	HT
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lens	COLUMN SIZE	AVERAGE LENGTH	

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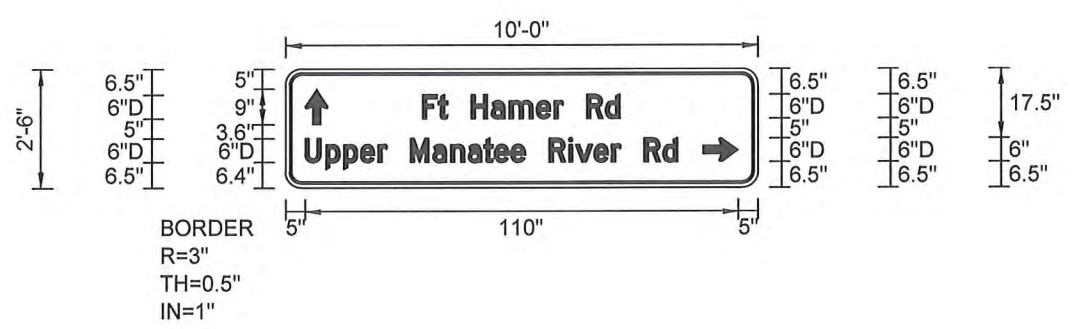
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REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

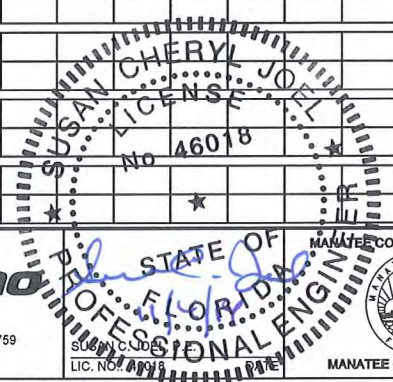


SHEET TITLE:	GUIDE SIGN WORK SHEET (1)	
PROJECT NAME:	FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK	
SHEET NO.:	T-22	

SIGN NAME	B	QTY	I	SIGN NUMBER	STATION(S)
PANEL	BORDER				none
WIDTH	10'-0"	WIDTH	0.5"		
HEIGHT	2'-6"	RADI	3"		
LEGEND	White	COLOR	White		
COLOR	Green				
SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	0	5	16	6	9
AR_Type D	270	106	6.5	6	9
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE	AVERAGE LENGTH	
NO. OF LIGHT FIXTURES	FIXTURE SPACING	WATT			
PHOTOMETRIC CURVE		VOLTAGE			



COPY	SPACE	F	t	H	a	m	e	r	R	d	L																										
	35.1	4	2.4	6	5.1	4.6	6.8	4.4	2.3	6	4.7	3.6	35.1	49.9																							
COPY	SPACE	U	p	P	e	r	M	a	n	a	t	e	e	R	l	v	e	r	R	d	L																
	5	5.4	4.8	4.3	4.4	2.3	6	5.7	4.8	4.4	4	2.8	4.1	3.5	6	5	1.7	4.7	4.4	2.3	6	4.7	3.6	20.5	94.5												
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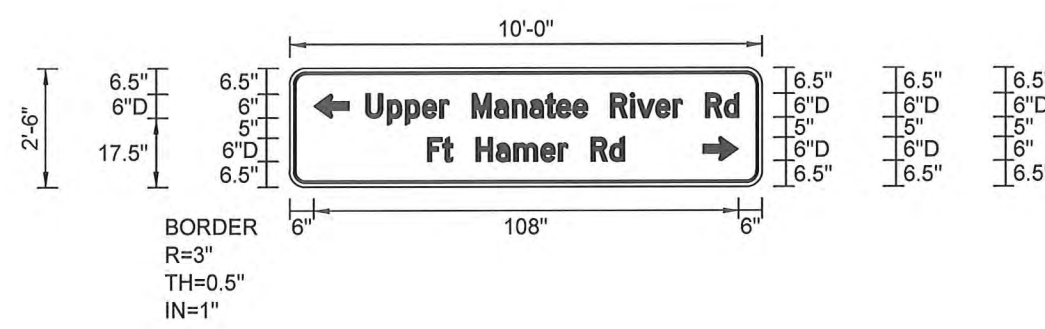
SHEET TITLE: **GUIDE SIGN WORK SHEET (2)**
 PROJECT NAME: **FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK**

SHEET NO. **T-23**

SIGN NAME	C	QTY	I	SNH NUMBER	STATION(S)
PANEL	BORDER				<i>none</i>
WIDTH	10'-0"	WIDTH	0.5"		
HEIGHT	2'-6"	RADIUS	3"		
LEGEND	White	COLOR	White		
COLOR	Green				
SYMBOL(S)	ANGLE	X	Y	WD	HT
AR_Type D	90	6	17.5	6	9
AR_Type D	270	105	6.5	6	9

SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLLAR SIZE		AVERAGE LENGTH

NO. OF LIGHT FIXTURES	FIXTURE SPACING		WATT
PHOTOMETRIC CURVE			



COPY	U	P	P	ø	r	M	a	n	a	t	ø	ø	R	i	v	ø	r	R	d	L					
SPACE	19.5	5.4	4.8	4.3	4.4	2.3	6	5.7	4.8	4.4	4	2.8	4.1	3.5	6	5	1.7	4.7	4.4	2.3	6	4.7	3.8	6	94.5
COPY	F	t	H	a	m	ø	r	R	d	L															
SPACE	35.1	4	2.4	6	5.1	4.6	6.8	4.4	2.3	6	4.7	3.8	35.1	49.9											

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

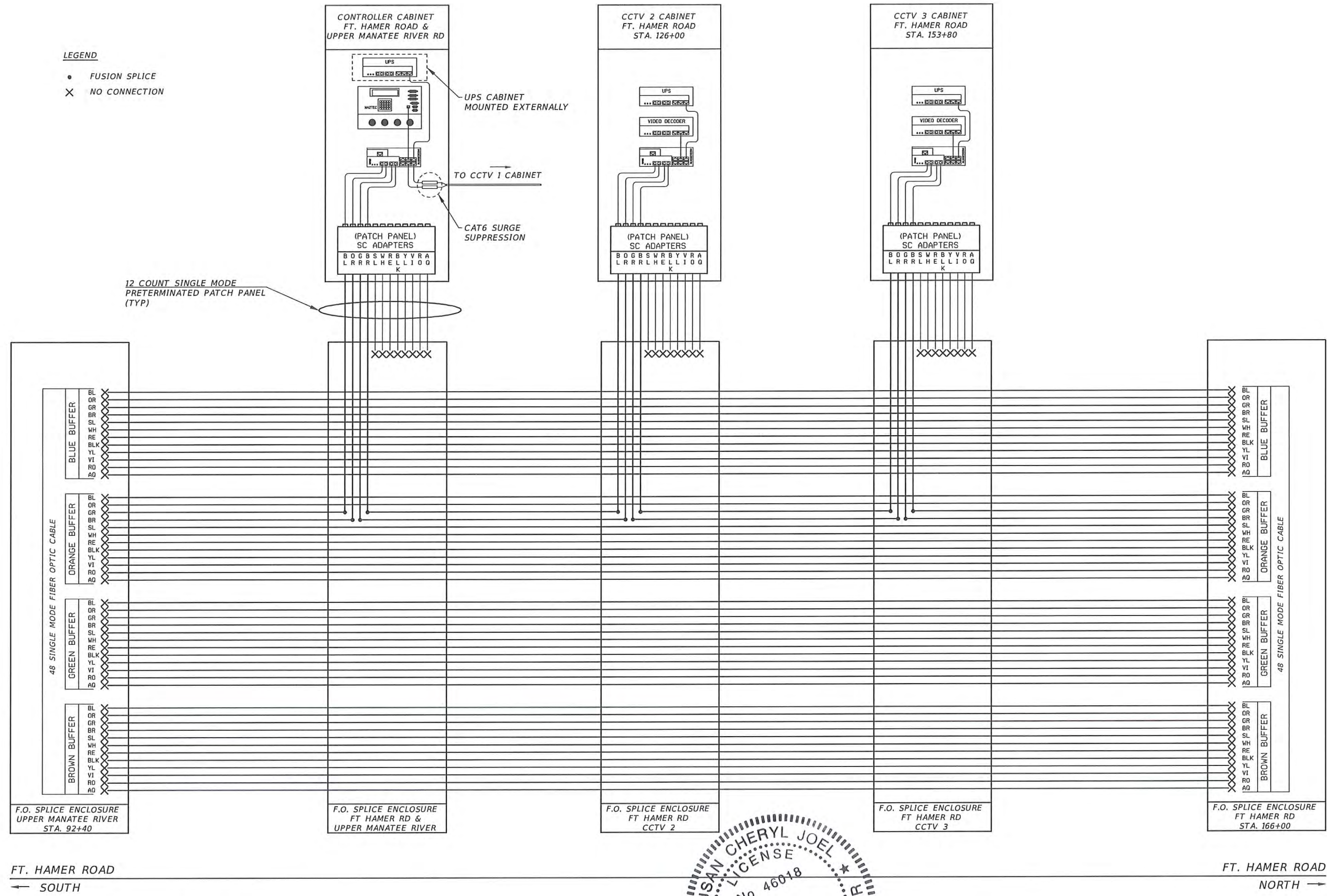
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Howard Holley

MANATEE COUNTY GOVERNMENT
STATE OF FLORIDA
SUSAN JOEL, P.E.
LIC. No. 46018
PROFESSIONAL ENGINEER
MANATEE COUNTY, FLORIDA

SHEET TITLE:		GUIDE SIGN WORK SHEET (3)
PROJECT NAME:		FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK
SHEET NO.:		T-24

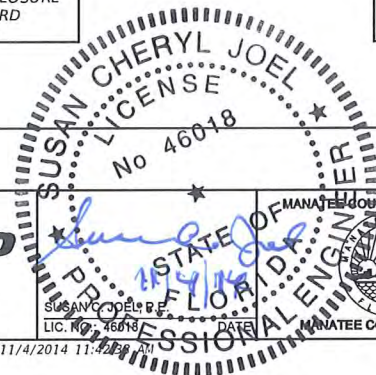
LEGEND

- FUSION SPlice
- ✕ NO CONNECTION



FT. HAMER ROAD
← SOUTH

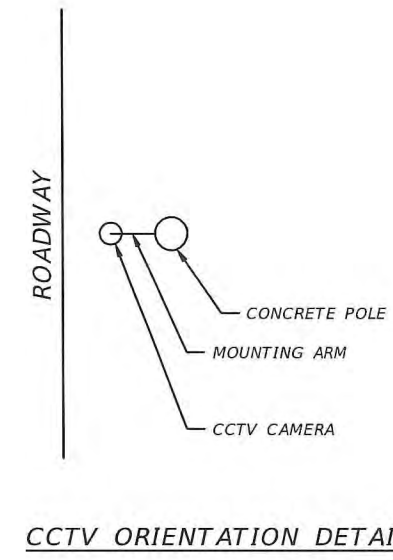
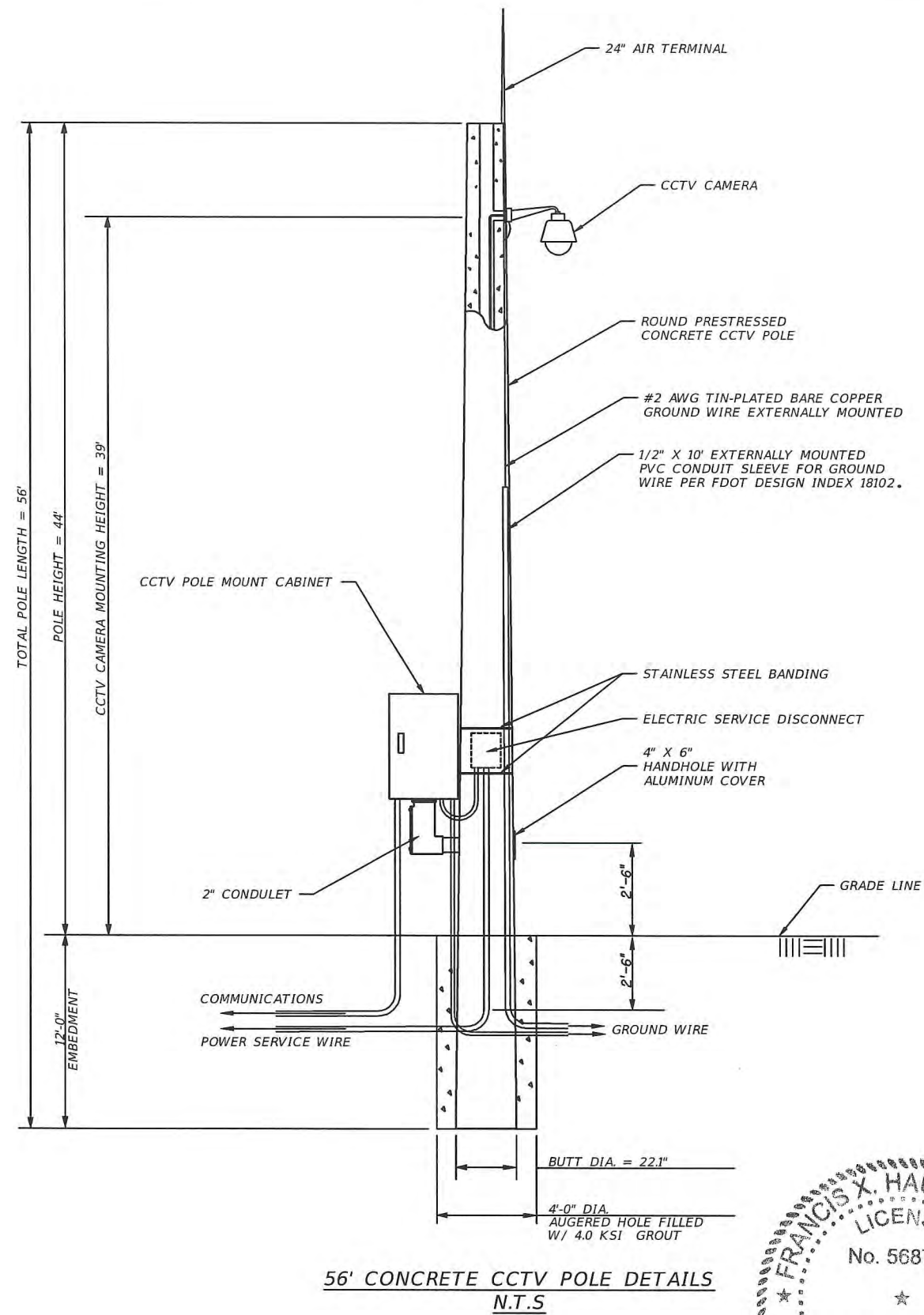
FT. HAMER ROAD
← NORTH →



SHEET TITLE: **FIBER OPTIC SPLICE DIAGRAM**

PROJECT NAME: **FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK**

SHEET NO. **T-25**



SPECIAL ROUND POLE DESIGN TABLE											
POLE LENGTH (ft)	POLE HEIGHT (ft)	BURIAL DEPTH (ft)	DESIGN OPTION	TOTAL TAPER* (in/ft)	VOID TAPER (in/ft)	MIN. WALL THICKNESS AT TIP (in)	MIN. WALL THICKNESS AT BUTT END (in)	TIP DIAMETER (in)	BUTT DIAMETER (in)	STRAND PATTERN	STRAND DIAMETER (in)
56	44	12	2	0.18	0.172	3	3.5	12	22.1	4	0.5

* TOTAL TAPER APPLIES TO POLE, STRANDS AND REINFORCING.

CCTV POLE DESIGN NOTES:

1. WORK THIS SHEET WITH FDOT 2014 DESIGN STANDARD INDEX NOS. 18100, 18101, 18102, 18104, 18105, 18108, 18110, AND 18113.

56' CONCRETE CCTV POLE DETAILS
N.T.S



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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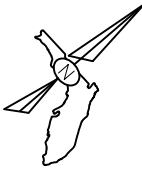
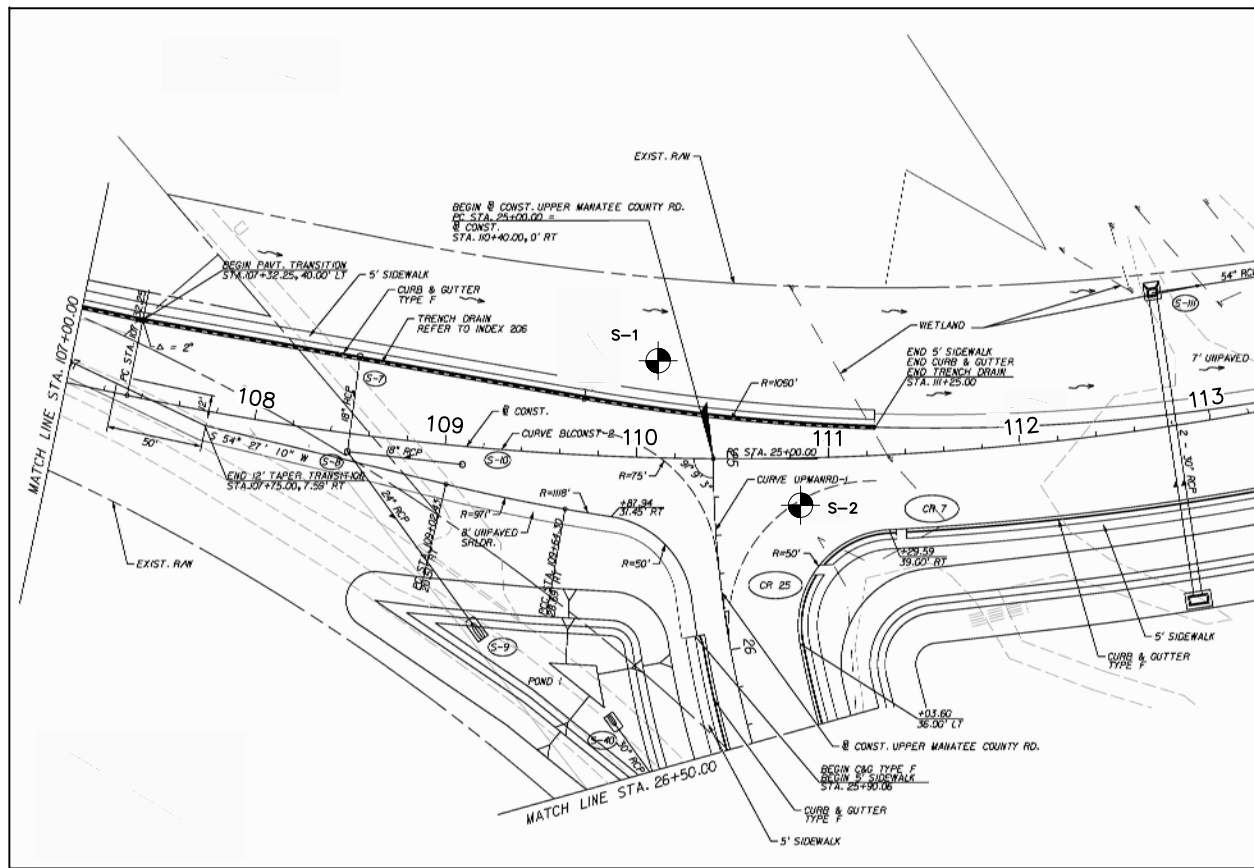
MANATEE COUNTY GOVERNMENT

MANATEE COUNTY, FLORIDA

SHEET TITLE: **CCTV POLE DETAIL**

PROJECT NAME: **FORT HAMER ROAD FROM UPPER MANATEE RIVER ROAD TO NORTH OF FORT HAMER PARK**

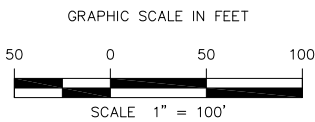
SHEET NO.: **T-26**



NOTES:

1. PLAN VIEW IS FOR SHOWING APPROXIMATE BORING LOCATIONS ONLY AND MAY NOT BE INDICATIVE OF FINAL PLANS.
2. LABORATORY TEST RESULTS HAVE BEEN ROUNDED TO THE NEAREST WHOLE NUMBER.
3. THE FOLLOWING APPLY TO ALL BORINGS:

DRILLER: UNIVERSAL
 HAMMER: SAFETY
 RIG: CME 45



LEGEND

	SAND		SAND WITH SOME CLAY
	SILT		SILTY SAND
	CLAY		SILTY CLAY
	SAND WITH SOME SILT		SANDY SILT
	CLAY WITH SOME SAND		SANDY CLAY
	CLAYEY SAND		HARD LIMESTONE

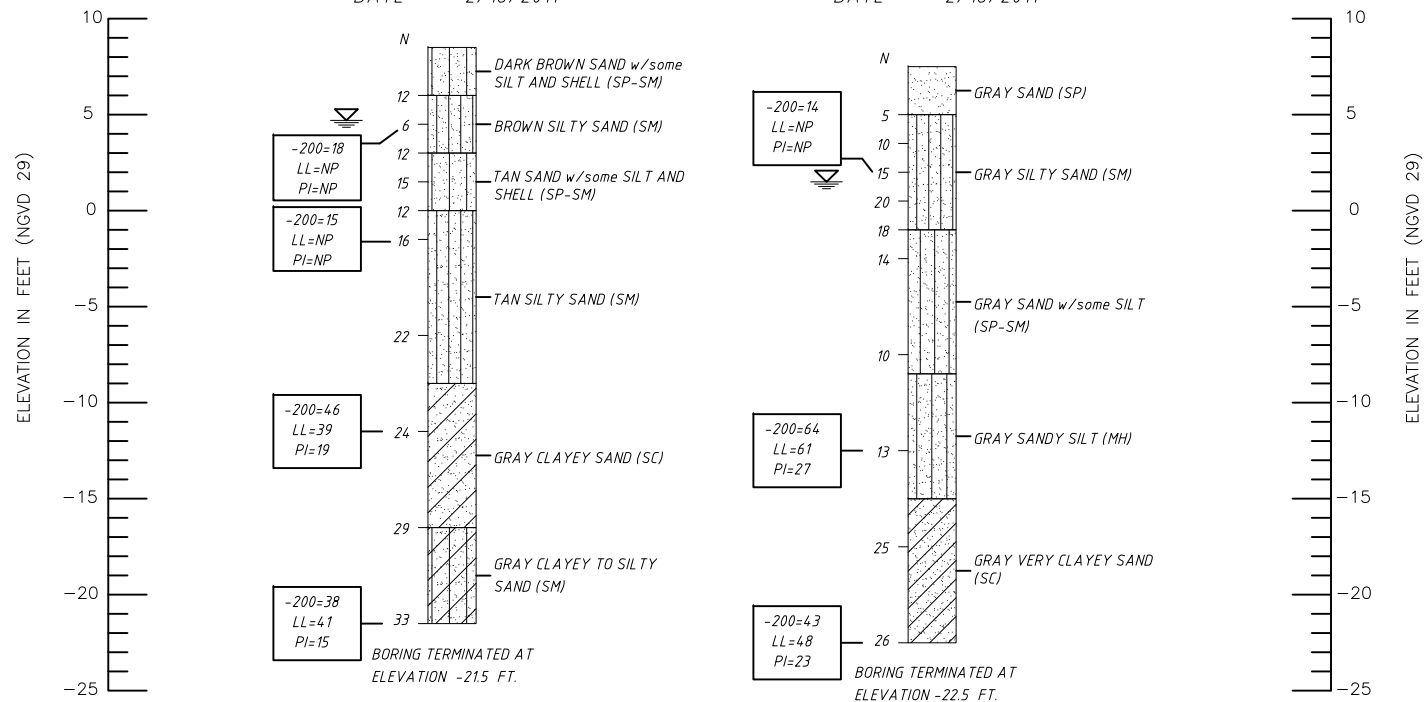
GRANULAR MATERIALS—RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT.)
VERY LOOSE	LESS THAN 4
LOOSE	4 to 10
MEDIUM DENSE	10 to 30
DENSE	30 to 50
VERY DENSE	GREATER THAN 50
SILTS AND CLAYS CONSISTENCY	SPT N-VALUE (BLOWS/FT.)
VERY SOFT	LESS THAN 2
SOFT	2 to 4
FIRM	4 to 8
STIFF	8 to 15
VERY STIFF	16 to 30
HARD	GREATER THAN 30

- SP UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487)
 GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND/OR LABORATORY TESTING.
- N NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED).
- 50/4 NUMBER OF BLOWS FOR 4 INCHES OF PENETRATION
- WH FELL UNDER WEIGHT OF ROD AND HAMMER
- WR FELL UNDER WEIGHT OF ROD
- 200 PERCENT PASSING #200 SIEVE
 LL LIQUID LIMIT (%)
 PI PLASTICITY INDEX (%)
 WC WATER CONTENT (%)
 OC ORGANIC CONTENT (%)
 NP NON-PLASTIC
- NGVD 29 NATIONAL GEODETIC VERTICAL DATUM OF 1929

- APPROXIMATE SPT BORING LOCATION
- GROUNDWATER TABLE
- NO RECOVERY
- CASING
- BASELINE

BOR # S-1
 STA. 110+10
 REF. B/L CONSTR.
 OFF. 50' Left
 ELEV. +8.5'
 DATE 2/18/2011

BOR # S-2
 STA. 110+85
 REF. B/L CONSTR.
 OFF. 25' RIGHT
 ELEV. +7.5'
 DATE 2/18/2011

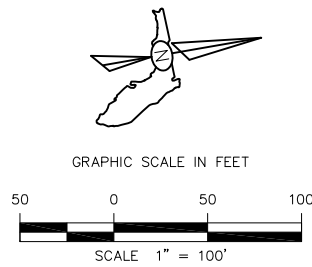
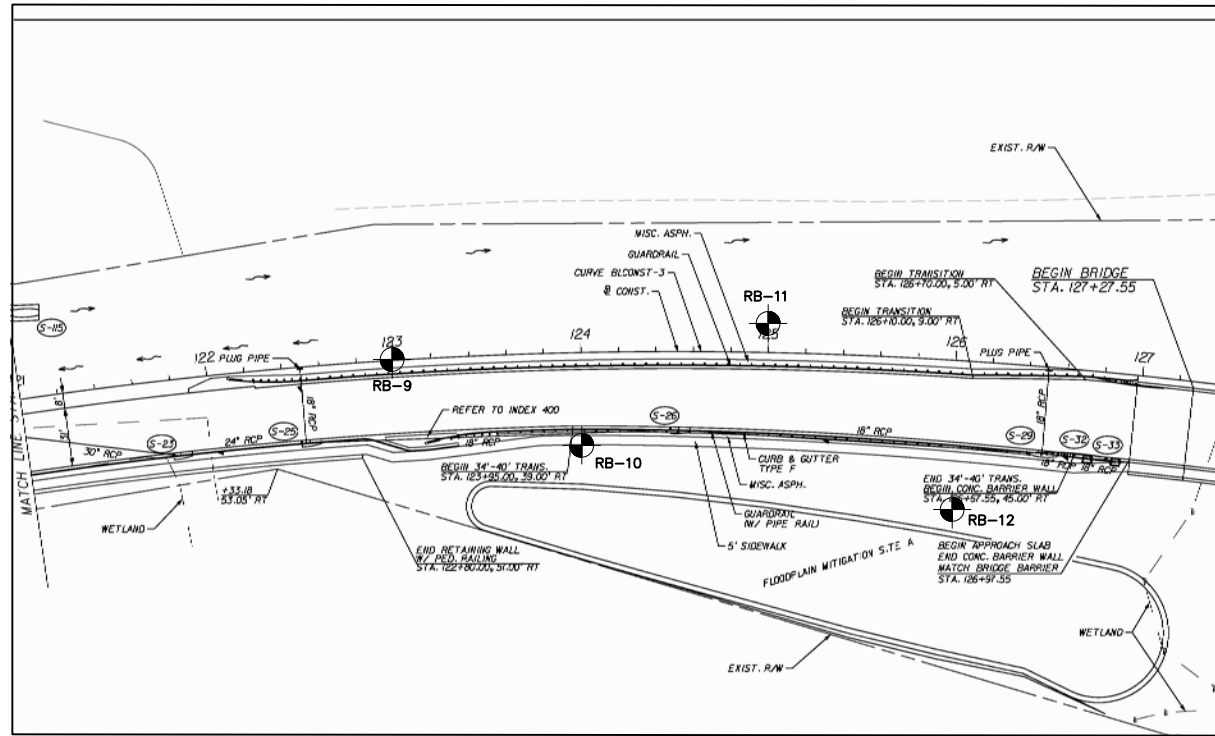


ESTIMATED DESIGN SOIL PARAMETERS

BORING NUMBER	DEPTH (feet)	SPT (N) RANGE	APPROX. SOIL UNIT WEIGHT (pcf)		ANGLE OF FRICTION (Degrees)	UNDRAINED SHEAR STRENGTH (psf)
			SATURATED	SUBMERGED		
S-1	0-18	6-22	115	52.6	29	0
	18-30	24-33	115	52.6	0	3500
S-2	0-17	5-20	115	52.6	29	0
	17-23	13	115	52.6	0	1500
	23-30	25-26	115	52.6	0	3000

MAST ARM SIGNAL BORINGS

<table border="1"> <thead> <tr> <th>Date</th> <th>By</th> <th>Description</th> <th>Date</th> <th>By</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>						Date	By	Description	Date	By	Description							Drawn By: CER 11-10 Checked By: CER 11-10 Designed By: CER 11-10 Checked By: CER 11-10	URS URS Corporation Southern 7650 West Courtney Campbell Causeway Tampa, Florida 33607-1462 C.A. No. 00000002	MANATEE COUNTY GOVERNMENT MANATEE COUNTY, FLORIDA	ENGINEER OF RECORD MICHAEL R. SHARP P.E. NO. 41205	SHEET TITLE: REPORT OF CORE BORINGS PROJECT NAME: FORT HAMER BRIDGE OVER MANATEE RIVER	REF. DWG. NO. SHEET NO. T-27
Date	By	Description	Date	By	Description																		



NOTES:

1. PLAN VIEW IS FOR SHOWING APPROXIMATE BORING LOCATIONS ONLY AND MAY NOT BE INDICATIVE OF FINAL PLANS.
2. LABORATORY TEST RESULTS HAVE BEEN ROUNDED TO THE NEAREST WHOLE NUMBER.
3. THE FOLLOWING APPLY TO ALL BORINGS:

DRILLER: UNIVERSAL
 HAMMER: SAFETY
 RIG: CME 45

LEGEND

	SAND		SILTY SAND
	SILTY CLAY		SANDY SILT
	SILTY CLAY		SANDY CLAY
	SAND WITH SOME SILT		SILTY CLAY
	CLAY WITH SOME SAND		HARD LIMESTONE
	CLAYEY SAND		
	SAND WITH SOME CLAY		

GRANULAR MATERIALS—RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT.)
VERY LOOSE	LESS THAN 4
LOOSE	4 to 10
MEDIUM DENSE	10 to 30
DENSE	30 to 50
VERY DENSE	GREATER THAN 50
SILTS AND CLAYS CONSISTENCY	SPT N-VALUE (BLOWS/FT.)
VERY SOFT	LESS THAN 2
SOFT	2 to 4
FIRM	4 to 8
STIFF	8 to 15
VERY STIFF	16 to 30
HARD	GREATER THAN 30

BOR # RB-09
 STA. 123+00
 REF. B/L CONSTR.
 OFF. B/L
 ELEV. +6.3'
 DATE 2/18/2011

BOR # RB-10
 STA. 124+00
 REF. B/L CONSTR.
 OFF. 50' RIGHT
 ELEV. +7.6'
 DATE 2/15/2011

BOR # RB-11
 STA. 125+00
 REF. B/L CONSTR.
 OFF. 15' LEFT
 ELEV. +8.3'
 DATE 2/15/2011

BOR # RB-12
 STA. 126+00
 REF. B/L CONSTR.
 OFF. 80' RIGHT
 ELEV. +7.8'
 DATE 2/15/2011

SP UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487) GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND/OR LABORATORY TESTING.

N NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED).

50/4 NUMBER OF BLOWS FOR 4 INCHES OF PENETRATION

WH FELL UNDER WEIGHT OF ROD AND HAMMER

WR FELL UNDER WEIGHT OF ROD

-200 PERCENT PASSING #200 SIEVE

LL LIQUID LIMIT (%)

PI PLASTICITY INDEX (%)

WC WATER CONTENT (%)

OC ORGANIC CONTENT (%)

NGVD 29 NATIONAL GEODETIC VERTICAL DATUM OF 1929

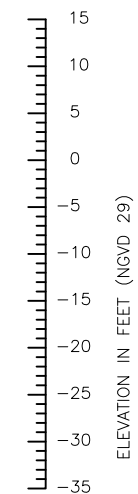
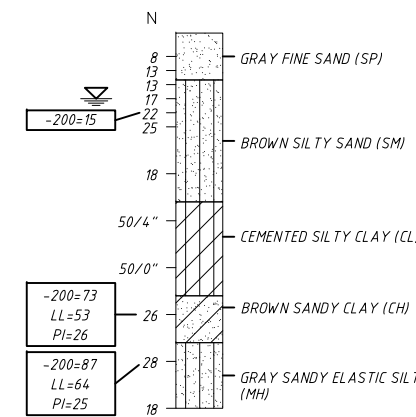
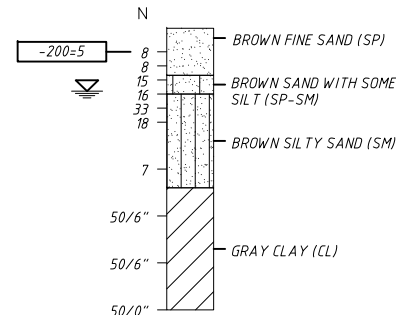
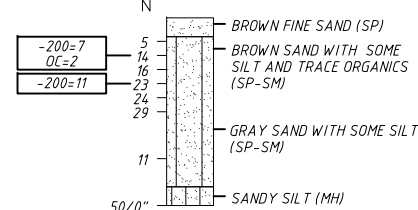
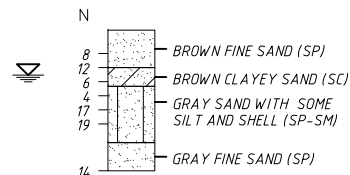
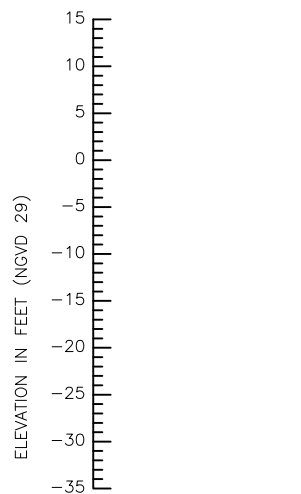
APPROXIMATE SPT BORING LOCATION

GROUNDWATER TABLE

NR NO RECOVERY

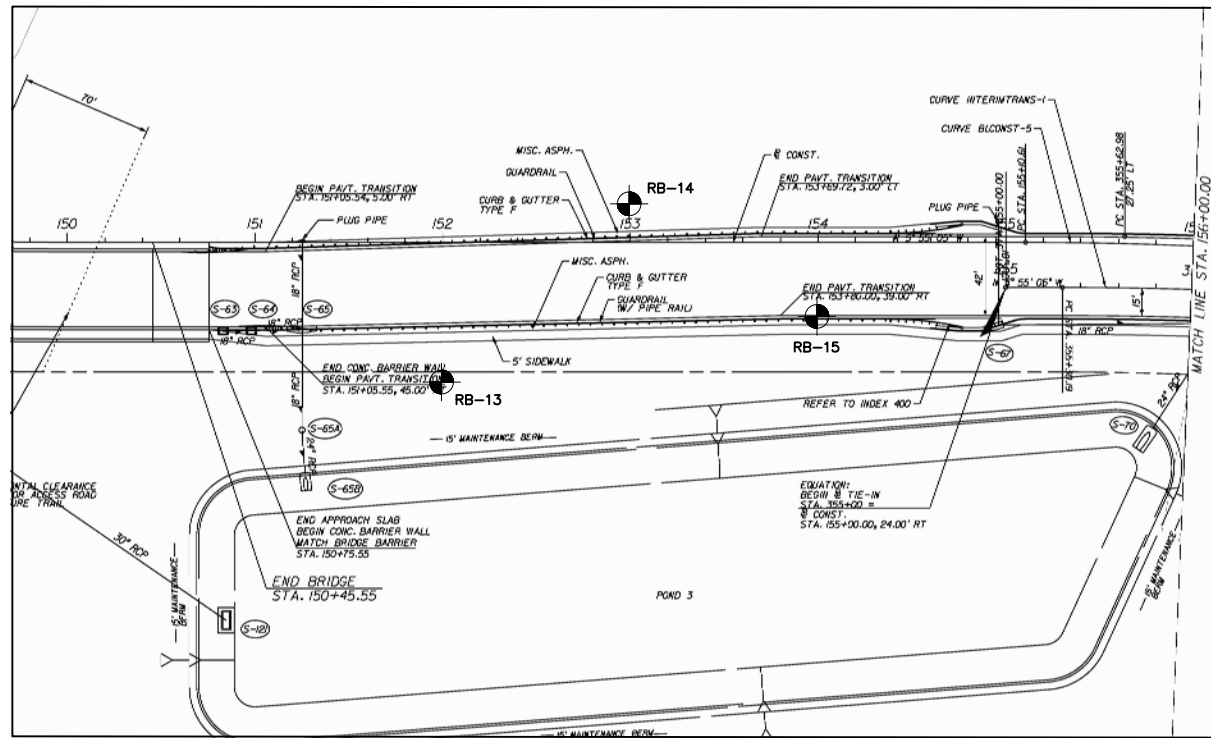
CASING

B/L BASELINE



ROADWAY/ HIGH FILL BORINGS

REVISIONS						Drawn By:	MANATEE COUNTY GOVERNMENT		ENGINEER OF RECORD	SHEET TITLE:	REF. DWG. NO.
Date	By	Description	Date	By	Description	CER 11-10	URS Corporation Southern 7650 West Courtney Campbell Causeway Tampa, Florida 33607-1462 C.A. No. 00000002		MANATEE COUNTY, FLORIDA	MICHAEL R. SHARP P.E. NO. 41205	REPORT OF CORE BORINGS
						PROJECT NAME:					FORT HAMER BRIDGE OVER MANATEE RIVER
											SHEET NO.
											T-28



NOTES:

1. PLAN VIEW IS FOR SHOWING APPROXIMATE BORING LOCATIONS ONLY AND MAY NOT BE INDICATIVE OF FINAL PLANS.
2. LABORATORY TEST RESULTS HAVE BEEN ROUNDED TO THE NEAREST WHOLE NUMBER.
3. THE FOLLOWING APPLY TO ALL BORINGS:

DRILLER: UNIVERSAL
 HAMMER: SAFETY
 RIG: CME 45

LEGEND

	SAND		SILTY SAND
	SILTY SILT		SILTY CLAY
	SAND WITH SOME SILT		SANDY SILT
	CLAY WITH SOME SAND		SANDY CLAY
	CLAYEY SAND		HARD LIMESTONE
	SAND WITH SOME CLAY		

GRANULAR MATERIALS—RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT.)
VERY LOOSE	LESS THAN 4
LOOSE	4 to 10
MEDIUM DENSE	10 to 30
DENSE	30 to 50
VERY DENSE	GREATER THAN 50
SILTS AND CLAYS CONSISTENCY	SPT N-VALUE (BLOWS/FT.)
VERY SOFT	LESS THAN 2
SOFT	2 to 4
FIRM	4 to 8
STIFF	8 to 15
VERY STIFF	16 to 30
HARD	GREATER THAN 30

BOR # RB-13
 STA. 152+00
 REF. B/L CONSTR.
 OFF. 75' RIGHT
 ELEV. +10.1'
 DATE 2/8/2011

BOR # RB-14
 STA. 153+00
 REF. B/L CONSTR.
 OFF. 20' LEFT
 ELEV. +10.5'
 DATE 2/8/2011

BOR # RB-15
 STA. 154+00
 REF. B/L CONSTR.
 OFF. 40' RIGHT
 ELEV. +11.5'
 DATE 2/7/2011

SP UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487) GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW AND/OR LABORATORY TESTING.

N NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED).

50/4 NUMBER OF BLOWS FOR 4 INCHES OF PENETRATION

WH FELL UNDER WEIGHT OF ROD AND HAMMER

WR FELL UNDER WEIGHT OF ROD

-200 PERCENT PASSING #200 SIEVE

LL LIQUID LIMIT (%)

PI PLASTICITY INDEX (%)

WC WATER CONTENT (%)

OC ORGANIC CONTENT (%)

NGVD 29 NATIONAL GEODETIC VERTICAL DATUM OF 1929

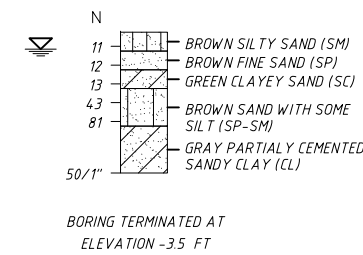
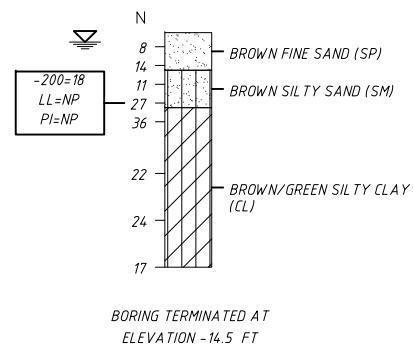
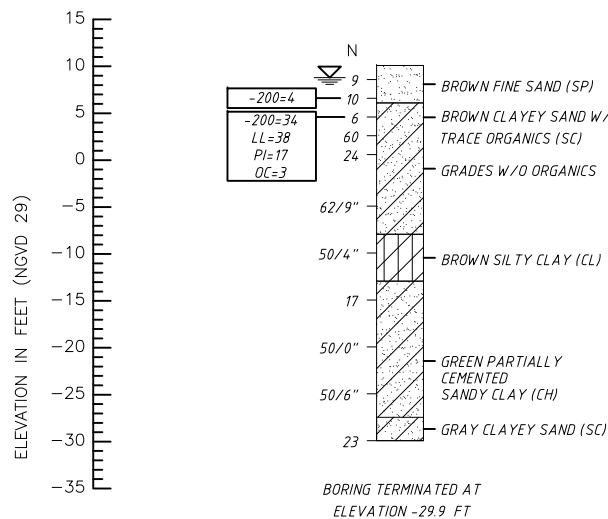
APPROXIMATE SPT BORING LOCATION

GROUNDWATER TABLE

NR NO RECOVERY

CASING

B/L BASELINE



ROADWAY/ HIGH FILL BORINGS

REVISIONS						Drawn By:	MANATEE COUNTY GOVERNMENT	ENGINEER OF RECORD	SHEET TITLE:	REF. DWG. NO.
Date	By	Description	Date	By	Description	CER 11-10	 MANATEE COUNTY, FLORIDA	MICHAEL R. SHARP P.E. NO. 41205	REPORT OF CORE BORINGS	
						Checked By: CER 11-10				
						Designed By: CER 11-10			FORT HAMER BRIDGE OVER MANATEE RIVER	T-29
						Checked By: CER 11-10				