

PLANS FOR PROPOSED  
IMPROVEMENTS TO  
**SUNSWEPT ISLES WATER CONTROL STRUCTURE**  
2445 NE 207 ST

MIAMI-DADE COUNTY PROJECT NO. 20200047

INDEX OF SHEETS

SHT. No. SHEET DESCRIPTION

- 1 - COVER SHEET
- 2 - TOPOGRAPHIC BOUNDARY SURVEY
- 3 C-101 - CIVIL PLAN
- 4 E-101 - GENERAL ELECTRICAL NOTES, LEGEND AND DETAILS
- 5 E-102 - ELECTRICAL PLAN
- 6 E-103 - RTU MONITORING FUNCTIONS DIAGRAM & NOTES
- 7 E-104 - GATE CONTROL SCHEMATIC DIARAM
- 8 E-105 - NEW SENSORS DIAGRAM
- 9 E-106 - ELECTRICAL RISERS DIAGRAM
- 10 E-107 - ELECTRICAL PANEL SCHEDULES AND DETAIL

SUMMARY OF QUANTITIES

Item No.	Description	Unit	Quantity
639-1-021	ELECTRICAL POWER SERVICE (FPL)	L.S.	1
685-118B	TELEMETRY SYSTEM	L.S.	1

Note: Item 685-118B will include but is not limited to the installation of Rosemount 5408A Radar Sensors; Senix Ultrasonic Sensors; Protex-Max Explosion Proof Process Meter Pump Local Controller; Four Port Serial Communication Module; Replacement of Auma Actuator; Upgrade power conversion from 120v 1 phase to 240v 3phase service; Item 639-1-021 will include New Electrical Panel; Demolition and Disposal of debris; Coordination of Electrical Service with Florida Power and Light and all appurtenant work.



**NOTE:**

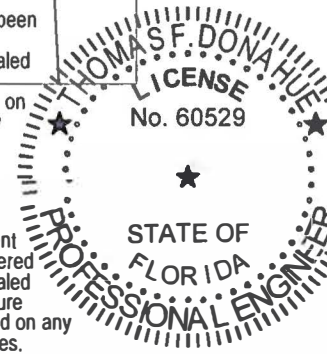
ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.



PROJECT LOCATION

This item has been digitally signed and sealed by Thomas F. Donahue, P.E. on the date below using a Digital Signature.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



2023.04.27 11:57:42-04:00  
ENGINEER OF RECORD:

301 East Atlantic Boulevard  
Pompano Beach, Florida 33060-6643  
(954) 788-3400

---

Florida Engineering Business License: CA7928  
Florida Surveyor and Mapper Business License: LB6860  
Florida Landscape Architecture Business License: LC26000457

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE MIAMI-DADE COUNTY PUBLIC WORKS DEPARTMENT STANDARDS AND SPECIFICATIONS PARTS 1, 2 AND 3. THE MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS. THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS, AND THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, AS AMENDED BY CONTRACT DOCUMENTS.



PREPARED BY



MIAMI-DADE COUNTY DEPARTMENT OF  
TRANSPORTATION AND PUBLIC WORKS  
ROADWAY ENGINEERING AND  
RIGHT OF WAY DIVISION  
STORMWATER DRAINAGE DESIGN SECTION

STEPHEN P. CLARK CENTER  
111 NW 1 ST, SUITE 1510  
MIAMI, FLORIDA 33128

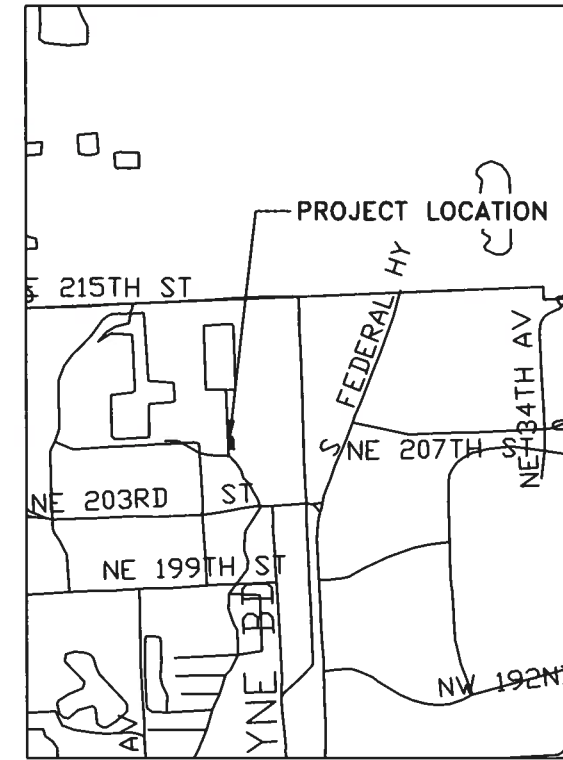
THOMAS F. DONAHUE, P.E.  
FLORIDA REGISTRATION P.E. No. 60529  
KEITH CIVIL ENGINEER

DESIGN <u>    </u> NM <u>    </u>	CHECK <u>    </u> TD <u>    </u>
	DRAWN <u>    </u> VC/MD/JN <u>    </u>
DATE <u>SEPTEMBER 2022</u>	SHEET <u>1</u> OF <u>10</u>



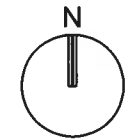


KEY MAP



NOT TO SCALE

NOTE: ELEVATIONS SHOWN HEREON ARE IN FEET AND BASED ON THE NORTH GEODETIC VERTICAL DATUM OF 1929 (NGVD 1929). BASED ON THE SURVEY PREPARED BY MIAMI-DADE COUNTY PUBLIC WORKS TO CONVERT NGVD 1929 ELEVATIONS TO NAVD 1988 FOR THE PROPERTY. 1.578 MUST BE SUBTRACTED TO THE NAVD 1988 ELEVATIONS.



GRAPHIC SCALE



SCALE: 1" = 40'

NOTE: PRINTED DRAWING SIZE MAY HAVE CHANGED FROM ORIGINAL. VERIFY SCALE USING BAR SCALE ABOVE.

GENERAL ADA SLOPE NOTES

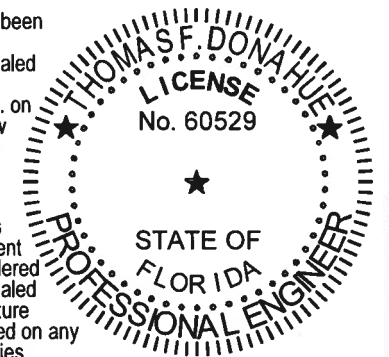
1. THE CONTRACTOR SHALL ENSURE THAT ALL ADA CRITERIA IS MET FOR THE CONSTRUCTION OF THE SITE IMPROVEMENTS INCLUDING BUT NOT LIMITED TO SIDEWALKS, RAMPS AND ADA PARKING STALLS).
2. ALL ADA PARKING STALLS SHALL NOT EXCEED 2% IN ANY DIRECTION.
3. SIDEWALKS SHALL NOT EXCEED 5% IN THE LONGITUDINAL DIRECTION AND CROSS-SECTIONAL SLOPES SHALL NEVER EXCEED 2% UNLESS CLEARLY IDENTIFIED ON PLANS.
4. FOR ANY REASON THE CONTRACTOR FINDS ANY GRADING DISCREPANCIES THAT WOULD RESULT IN NOT BEING ABLE TO MEET ADA CRITERIA, IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ADVISE THE ENGINEER AT ONCE AND PROVIDE ADEQUATE TIME TO DETERMINE PROPER COURSE OF ACTION. IF FOR ANY REASON IT IS DEEMED NECESSARY FOR AS-BUILT INFORMATION TO BE MADE AVAILABLE TO THE ENGINEER IN ORDER TO MAKE THE NECESSARY DECISIONS AND/OR PROVIDE DIRECTION, THIS INFORMATION SHALL BE PROVIDED BY THE CONTRACTOR.

301 East Atlantic Boulevard  
Pompano Beach, Florida 33060-6643  
(954) 788-3400

Florida Engineering Business License: CA7928  
Florida Surveyor and Mapper Business License: LB6860  
Florida Landscape Architecture Business License: LC26000457

ENGINEER OF RECORD:

This item has been digitally signed and sealed by Thomas F. Donahue, P.E. on the date below using a Digital Signature.



Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

2023.04.27 11:58:15-04'00'

THOMAS F. DONAHUE, P.E.  
FLORIDA REGISTRATION P.E. No. 60529  
KEITH CIVIL ENGINEER

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Sunswept Isles Water Control Structure SW 2445 NE 207 ST IMPROVEMENT PROJECT

DESIGNED BY	NAME	DATE	DRAWN BY	NAME	DATE
	NW			VC/AD/JN	SEPT. 2022
CHECKED BY			CHECKED BY		
SUPERVISED BY					



DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
SEMPER PAR QUAM QUI PROBAT  
111 NW 1 ST  
MIAMI, FLORIDA 33128

CIVIL PLAN

C-101

**GENERAL ELECTRICAL NOTES & SPECIFICATIONS**

- THE "GENERAL CONDITIONS OF THE CONTRACT", CURRENT EDITION, PUBLISHED IN STANDARD FORM BY THE AMERICAN INSTITUTE OF ARCHITECTS SHALL BE PART OF THIS CONTRACT.
- IT IS NOT THE INTENT OF THESE PLANS AND SPECIFICATIONS TO SHOW EVERY AND ALL DETAILS OF CONSTRUCTION. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS REQUIRED FOR A COMPLETE ELECTRICAL INSTALLATION IN PROPER WORKING ORDER.
- ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE FLORIDA BUILDING CODE (2020), NATIONAL ELECTRICAL CODE (NEC 2017) AND THE LATEST STATE AND OTHER LOCAL CODES THAT APPLY.
- THE CONTRACTOR SHALL TAKE OUT PERMITS, PROCURE CERTIFICATES AND PAY ALL FEES CONNECTED WITH HIS WORK. PERMIT FEES WILL BE REIMBURSED WITH A DEDICATED ALLOWANCE.
- BIDDERS SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH ALL CONDITIONS SURROUNDING THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE BIDDERS TO VISIT THE SITE OF WORK AND ACQUAINT THEMSELVES WITH ALL AVAILABLE INFORMATION REGARDING THE EXISTING FACILITIES. FAILURE OF THE BIDDERS TO SO INFORM THEMSELVES OF EXISTING CONDITIONS AND TO INCLUDE IN THEIR PROPOSALS A SUM SUFFICIENT TO COVER SAME WILL NOT ENTITLE THEM TO AN EXTRA.
- THE CONTRACTOR IS REFERRED TO THE ARCHITECTURAL PLANS AND SPECIFICATIONS. SUCH PLANS AND SPECIFICATIONS ARE CONTRACT DOCUMENTS.
- DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW APPROXIMATE LOCATIONS OF ALL ELECTRICAL ITEMS. EXACT CONDUIT ROUTING SHALL BE DETERMINED IN THE FIELD, UNLESS OTHERWISE NOTED (UON).
- CONTRACTOR SHALL SUBMIT REQUESTS FOR SUBSTITUTION IN WRITING TO THE ENGINEER, 10 WORKING DAYS PRIOR TO BIDDING DATE.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL FOR ALL EQUIPMENT AND MATERIALS. SUBMIT A MINIMUM OF FOUR SETS TO THE A/E.
- GROUNDING SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (ARTICLE 250) AND REQUIREMENTS OF THE INSPECTING AUTHORITY. ALL CONNECTIONS TO GROUND RODS SHALL BE MADE WITH UL APPROVED ACCESSIBLE GROUND CLAMPS, UNLESS OTHERWISE NOTED.
- UPON COMPLETION OF WORK, THIS CONTRACTOR SHALL REMOVE ALL RUBBISH CAUSED BY HIS WORK AND SHALL THOROUGHLY CLEAN ALL ELECTRICAL EQUIPMENT.
- ALL WORK SHALL BE GUARANTEED FREE FROM DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
- ALL ITEMS OF ELECTRICAL EQUIPMENT ASSOCIATED WITH THE CONTROL OF ELECTRICAL CIRCUITS AND APPARATUS SHALL BE IDENTIFIED.
- ALL POWER AND LIGHTING CIRCUIT WIRING SHALL BE COLOR CODED AS FOLLOWS:  
  
120/240V.  
PHASE "A" - BLACK  
PHASE "B" - RED  
PHASE "C" - BLUE  
NEUTRAL - WHITE  
GROUND - GREEN
- ALL CONDUCTORS SHALL BE COPPER, 600V. #10 AND SMALLER, SOLID TYPE THWN/THHN; #8 AND LARGER, STRANDED TYPE THWN/THHN.
- ALL CONDUCTORS FOR POWER LIMITED CABLES SHALL COMPLY WITH ARTICLES 725 & 760 OF N.E.C. LATEST EDITION.
- NOMINAL MOUNTING HEIGHT OF DEVICES IN EXPOSED CONCRETE BLOCK, TILE OR BRICK WALLS SHALL ALL OCCUR WITHIN A STRUCTURAL COURSE. A MIN. AMOUNT OF BLOCK, TILE OR BRICK WALLS SHALL BE CUT.
- ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL BE INDUSTRIAL GRADE, HEAVY-DUTY, AND U.I. LISTED UNLESS SPECIFIED OTHERWISE. ALL ELECTRICAL EQUIPMENT, DEVICES, WIRE, ETC., SHALL BE LISTED, FOR THE INTENDED USE, WITH UNDERWRITER'S LABORATORIES INC. (UL), WHERE STANDARDS HAVE BEEN ESTABLISHED BY UL. AS A MINIMUM, ALL EQUIPMENT SHALL MEET APPLICABLE STANDARDS, FOR THE TYPE OF EQUIPMENT AND THE INTENDED USE, OF THE FOLLOWING.  
A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)  
B. ILLUMINATING ENGINEERS SOCIETY (IES)  
C. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)  
D. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)  
NOTE: THESE STANDARDS ARE SUBORDINATE TO STANDARDS SET BY U.I. AND LOCAL CODES.
- WIRING DEVICES SHALL BE SPECIFICATION GRADE. MINIMUM SIZE OF OUTLET BOXES SHALL BE 4" SQ. TRADE. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET OR DAMP LOCATIONS AND SPECIAL ENCLOSURE FOR OTHER CLASSIFIED AREAS.
- ALL ELECTRICAL CONDUCTORS MUST BE IN CONDUIT. ALL CONDUITS SHALL BE INTERMEDIATE (IMC) OR RIGID GALVANIZED STEEL (RGS) EXCEPT THAT: (A) POLY VINYL CHLORIDE (PVC) CONDUITS MAY BE USED IN CONCRETE SLABS AND UNDERGROUND PROVIDED THAT ELBOWS AND RISERS ARE RGS; (B) ELECTRICAL METALLIC TUBING (EMT) MAY BE USED IN WALLS OR CEILINGS OF FINISHED AREAS WHERE NOT SUBJECT TO MECHANICAL DAMAGE, OR CORROSIVE CONDITIONS; (C) LIQUID TIGHT FLEXIBLE CONDUIT WHERE REQUIRED IN WET OR DAMP LOCATIONS; (D) FLEXIBLE METALLIC CONDUIT WHERE REQUIRED IN DRY LOCATIONS. ALL CONDUITS IN HAZARDOUS LOCATIONS SHALL MEET THE REQUIREMENTS OF NEC CHAPTER 5. THE USE OF ENT CONDUIT IS PROHIBITED.
- APPLY 2 COATS OF BITUMASTIC COATING TO ALL METALLIC CONDUITS INSTALLED UNDERGROUND.
- NO CONDUITS TO BE RUN IN DUCT WORK. A POLYESTER PULL CORD SHALL BE INSTALLED IN ALL EMPTY CONDUITS.
- SIZE ALL WIREWAYS ACCORDING TO N.E.C. ARTICLE 378-22.
- ALL RATED WALL/FLOOR PENETRATIONS ARE TO BE SEALED WITH A FIRE RATED SEALER, PER ASTM E814.
- ANY VARIATION FROM THE PLANS ARE TO BE PREVIOUSLY APPROVED BY THE ENGINEER IN WRITING.

**ELECTRICAL SYMBOL LEGEND**

	CEILING LIGHT FIXTURE-UPPER CASE LETTER DESIGNATES FIXTURE TYPE, LOWER CASE LETTER DESIGNATES SWITCHING.
	FLUORESCENT LIGHT FIXTURE SEE FIXTURE SCHEDULE EMERGENCY LIGHT FIXTURE CONNECTED TO EMERGENCY LIGHTING CIRCUIT.
	DUAL HEAD EMERGENCY STAND-BY LIGHT, WITH BATTERY PACK, WALL MOUNTED. MT. UP 9'0"- A.F.F. TO CL OF OUTLET BOX.
	SINGLE POLE TOGGLE SWITCH, 20 AMP, 120/277V, SPECIFICATION GRADE. LETTER DENOTES LIGHTS ON SWITCH "A". MOUNT AT 48" A.F.F. TO CL OF OUTLET BOX UNLESS NOTED.
	DUPLEX RECEPTACLE; 20 A.,120 V.,GROUNDING TYPE. MOUNTED 18" A.F.F. TO CL OF OUTLET BOX. (EXCEPT AS NOTED). HUBBELL 52621 U.O.N.
	DUPLEX GFI RECEPTACLE MOUNTED HORIZONTALLY; 20 A.,120 V.,GROUNDING TYPE. MOUNTED UP AS NOTED ON PLANS. EXCEPT IN RESTROOMS NEXT TO SINKS WHERE IT SHALL BE MOUNTED AT 42" A.F.F. TO CL OF OUTLET.
	TELEPHONE/DATA OUTLET 4-11/16" X 4-11/16" 2-1/8" WITH BUSHED HOLE COVER PLATE-MOUNTED 18" A.F.F. TO C OF OUTLET(EXCEPT AS NOTED) PROVIDED 3/4" E.C. FROM EACH OUTLET TO PHONE (LOCAL) PULL BOX IN CL'G SPACE (EXCEPT AS NOTED.) TELECOMMUNICATIONS ROOM.
	SAFETY SWITCH - HEAVY DUTY NEMA CLASS "A" IN NEMA 1 ENCLOSURE, OUTDOOR TYPE NEMA 3R.
	DESIGNATES SWITCH RATING, "3" DESIGNATES POLES; "20" TIME DELAY FUSE; "30" SWITCH AMPS.
	120/208V., 3Ø, 4W. PANEL BOARD.
	EQUIPMENT JUNCTION BOX, FURNISHED WITH EQUIPMENT.
	WALL CEILING MOUNTED JUNCTION BOX. MINIMUM 4" X 4" X 1 1/2" WITH BLANK PLATE. MT. WALL BOX UP AS SHOWN ON PLAN.
	WALL/CEILING MOUNTED J.BOX FOR DATA OR POWER RESPECTIVELY. MT. WALL BOX UP AS SHOWN ON PLAN.

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT.

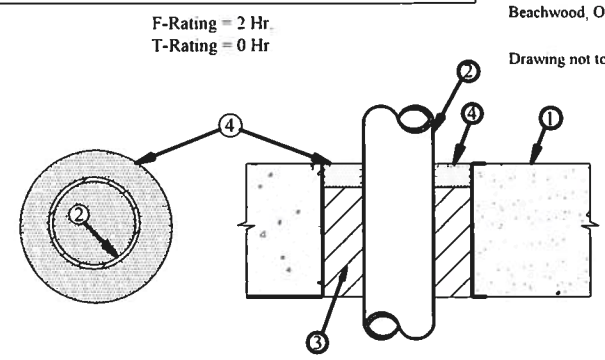
**ABBREVIATIONS**

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION
(TYP.)	TYPICAL	MIN.	MINIMUM	V.
PNL.	PANEL	(MFR) MANUF.	MANUFACTURER	AMP.
LT.	LIGHT	GFI.	GROUND FAULT INTERRUPTER	LTG.
Ø	PHASE	M.C.B.	MAIN CIRCUIT BREAKER	H.P.
PVC	POLYVINYL-CHLORIDE	F/N	FULL NEUTRAL	J.B.
RGS	RIGID GALVANIZED STEEL	SURF.	SURFACE	GRS.

**SCOPE OF WORK:**

- SCOPE UNDER THIS PROJECT INCLUDES THE FOLLOWING:
- INSTALLING TWO (2) NEW WATER LEVEL SENSORS (RADAR AND ULTRASONIC). NEW SENSORS TO BE CONNECTED TO EXISTING REMOTE TERMINAL UNIT (RTU) AS PER DIAGRAM ON E-105. NEW SENSORS WILL BE INTEGRATED INTO EXISTING CONTROL SEQUENCE.
  - NEW SINGLE PHASE ELECTRICAL PANEL WILL BE INSTALLED TO FEED RECENTLY INSTALLED 3 PHASE ACTUATOR VIA NEW PHASE CONVERTER TO BE INSTALLED UNDER THIS PROJECT AS DEPICTED ON DRAWINGS E-102 & E-107.

2 Hour Fire Rated Through Penetration Firestop for Single Metal Pipe through Concrete Floors and Walls using TREMstop IA



- ① Pre-Rated Concrete Floors or Block Walls Min 4-1 2" thickness
- ② Metallic Pipe: A) Steel Pipe - 12" diam (or smaller) Sch 10 (or heavier) steel pipe  
B) Iron Pipe - 12" diam (or smaller) cast or ductile iron pipe  
C) Conduit - 4" diam (or smaller) EMT or 6" diam steel conduit  
D) Copper Tubing - 6" diam (or smaller) Type L (or heavier) copper tubing  
E) Copper Pipe - 6" diam (or smaller) Regular (or heavier) copper pipe
- ③ Packing Material- Min 4-1 4" thickness of mineral wool insulation (min 4 0 pcf) firmly packed into opening as a permanent form
- ④ TREMstop IA- Min 1 4" thickness of sealant applied within annulus, flush with top surface of floor or both sides of wall assembly

UL cUL System No. CAJ 1302

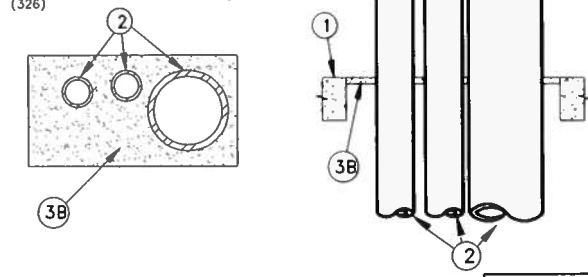


2 Hour Fire Rated Through Penetration Firestop for Multiple Metal Pipe through Concrete floors or walls using FYRE-SHIELD.



CAJ1047 (326)

F-rating = 2 Hr. T-rating = 0 Hr.



- ① Floor or Wall assembly = 4" thick concrete, Max. area of opening is 288 sq. in.
- ② • Nom. 8" diam. (or smaller) Sch. 40 (or heavier) steel pipe  
• Nom. 4" diam. (or smaller) copper pipe.  
• Max. number of pipes with opening is three (3).
- ③ A) Forming Material - (Not shown) - Nom. 1" thick poly-urethane bocker rod friction filled into opening.  
B) Nom. 1/2" FYRE-SHIELD thickness installed within opening.

NOTE: Similar products of other manufacturers may be used if accepted equal.

NOTE: For wall apply FYRE-SHIELD to both surfaces of wall.

**CONCRETE FLOORS OR WALLS PENETRATION DETAILS.**

Digitally signed by Zoila Morales  
DN: c=US, o=ME Engineering Consultants, ou=A01410D000 00171310794480 001940F, cn=Zoila Morales  
Date: 2023.01.10 10:47:37 -05'00'

Zoila Morales, Electrical P E #64981  
M.E. Engineering Consultants Inc.  
11401 SW 40TH Street Suite 301  
Ph:(786)275-4635  
CA 29121

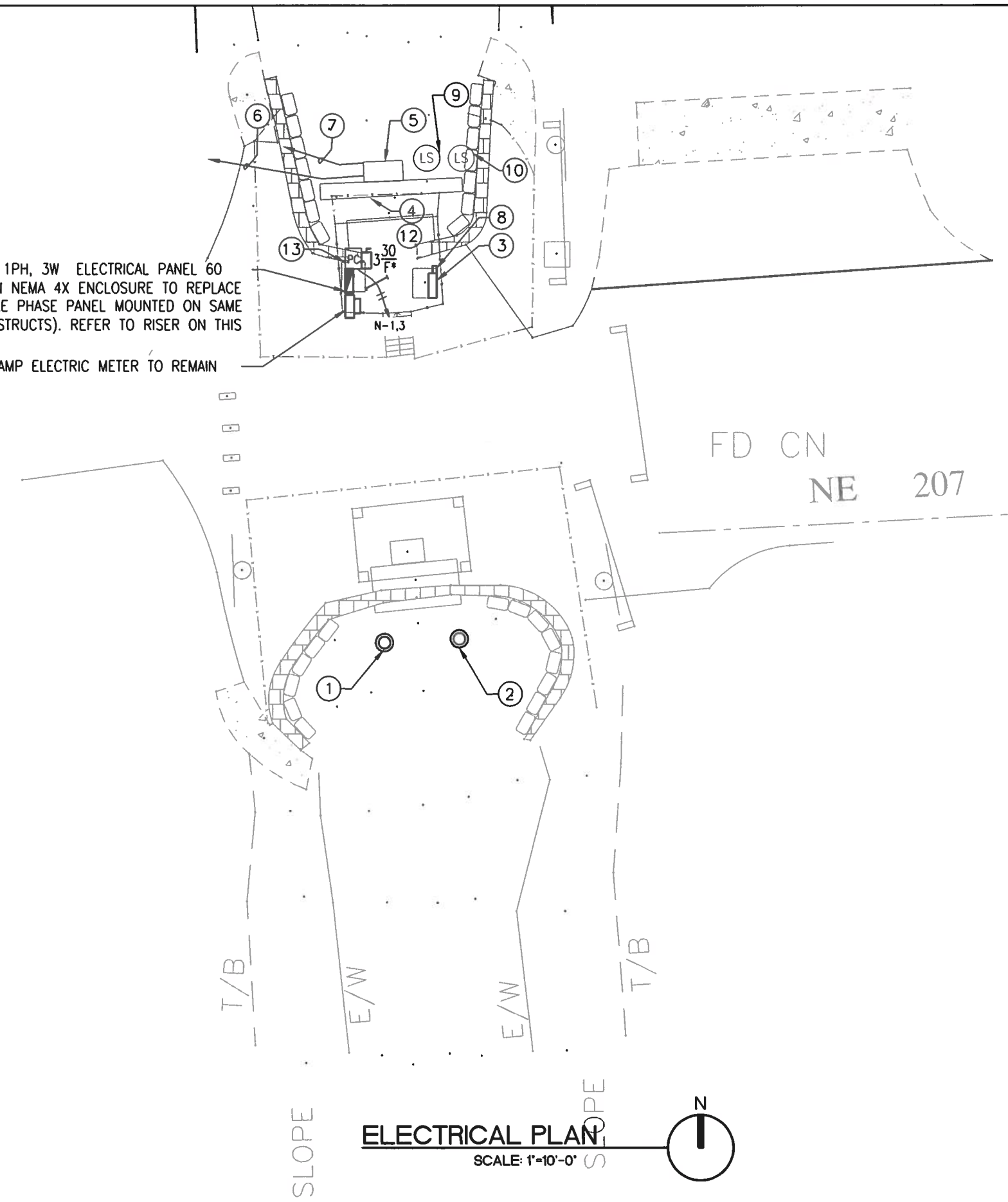
REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Sunswept Isles Water Control Structure SW 2445 NE 207 ST IMPROVEMENT PROJECT

NAME	DATE	NAME	DATE
DESIGNED BY: Z.M.		DRAWN BY: L.F. - M.T.	SEPT. 2022
CHECKED BY: Z.M.		CHECKED BY: Z.M.	
SUPERVISED BY: ZOILA MORALES			



NEW 120/240 1PH, 3W ELECTRICAL PANEL 60 AMP M.C.B. ON NEMA 4X ENCLOSURE TO REPLACE EXISTING SINGLE PHASE PANEL MOUNTED ON SAME LOCATION (UNISTRUCTS). REFER TO RISER ON THIS DRAWING.  
 EXISTING 200 AMP ELECTRIC METER TO REMAIN



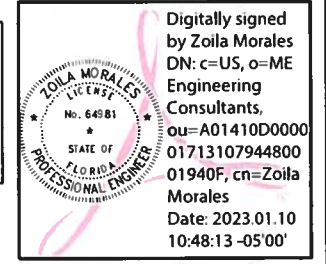
**CODED NOTES:**

- ① NEW ROSEMOUNT 5408 RADAR LEVEL TRANSMITTER LOAD CONTROL NON CONTACT WET WELL LEVEL MOUNTED AS PER MANUFACTURER SPECIFICATIONS. MINIMUM 1FT DISTANCE FROM TANK WALL INSTALLATION. CONNECT TO RTU VIA PROTEX-MAX EXPLOSION PROOF PROCESS METER PUMP LOCAL CONTROLLER PRECISION DIGITAL PD-6000-6R7. REFER TO DETAIL ON E-105. COORDINATE EXACT SENSOR LOCATION WITH OWNER AND CIVIL DRAWINGS.
- ② SENIX ULTRASONIC DISTANCE AND LEVEL SENSOR TF30 WITH SERIAL RS-485 INTERFACE FOR BACKUP LEVEL MEASUREMENT MOUNTED AS PER MANUFACTURER SPECIFICATIONS. USE A NEMA 4X (316SS) HOUSING FOR SENSOR AND TRANSMITTER, WITH POTTED CABLE CONNECTIONS. SIMPEL MODBUS RS485 FOR DIRECT CONNECTION TO SCADA; NO 4-20MA NEEDED. 2" NPT MOUNT INSTALLATION. COORDINATE EXACT SENSOR LOCATION WITH OWNER AND CIVIL DRAWINGS.
- ③ EXISTING RTU PANEL. INSTALL NEW FOUR-PORT COMMUNICATION MODULE WITH TWO RS-232 (EC 4/8 AND 4/9) AND TWO RS-485 PORTS (EC 6/10 AND 7/11). REFER TO DETAIL ON DRAWING E-106.
- ④ EXISTING SLUICE GATE.
- ⑤ EXISTING AUMA 3 PHASE 240 VOLT, 1.5 HP ELECTRIC ACTUATOR SA16.2/AM02.1 IN NEMA 4X/6P MOTOR ENCLOSURE PROVIDED WITH LIMIT AND TORQUE SWITCHES BY PASS FOR BOTH DIRECTIONS AS PER MANUFACTURER SPECS AND SCHEMATIC WIRING ON DRAWINGS E-104 & E-105. OPEN-CLOSE LOCAL-REMOTE SIGNAL OUTPUT, OPEN-STOP-CLOSE SIGNAL INPUT, REMOTE SIGNAL READOUT AND ALARM OUTPUT. ACTUATOR TO PROVIDE OPEN/CLOSE SERVICE. PROVIDE CONTACTS FOR MONITORING GATE OPENED AND CLOSED STATUS AS WELL AS POSITION TRANSMITTER WITH 4-20MA D.C. OUTPUT. VENDOR TO VISIT THE SITE AND MAKE SURE TO INCLUDE ALL REQUIRED ACCESSORIES, INCLUDING STEM IF NEEDED, IN PRICE.
- ⑥ 1.25" CONDUIT WITH 8 # 18 TSP CABLE TO RTU PANEL. VERIFY WITH MANUFACTURER DIAGRAM.
- ⑦ 3/4" CONDUIT 8 # 18, 1 # 18 GROUND TO RTU PANEL. VERIFY WITH MANUFACTURER DIAGRAM.
- ⑧ PROVIDE PUMP SOFT STARTER IN NEMA 4X ENCLOSURE FOR CONTROLLING GATE ACTUATOR MOTOR. ENCLOSURE TO HAVE "HAND-OFF-AUTO" SELECTOR SWITCH ON COVER. INSTALL ADDITIONAL CONTACT BLOCKS TO PROVIDE ISOLATED CONTACTS FOR "HAND" AND "AUTO" POSITIONS.
- ⑨ NEW WATERPROOF LIMIT SWITCH AT THE FULLY OPENED GATE POSITION.
- ⑩ NEW SUBMERSIBLE LIMIT SWITCH AT THE FULLY CLOSED GATE POSITION.
- ⑪ NEW HIGH AND LOW FLOW SWITCHES.
- ⑫ PROVIDE PROTEX-MAX EXPLOSION PROOF PROCESS METER PUMP LOCAL CONTROLLER PRECISION DIGITAL PD6000-6R7 AS PER DIAGRAM ON DRAWING E-105. INSTALL THEM IN NEMA 4X ENCLOSURE.
- ⑬ PHASE-A-MATIC CNC PACKAGE PHASE CONVERTER MODEL CNC PAC-7 WHICH INCLUDES A ROTARY CONVERTER R-2 AND A VOLTAGE STABILIZER VS-2. INSTALLED IN NEMA 4X VENTILATED ENCLOSURE MOUNTED ON EXISTING STRUCTURE. ADD UNISTRUCTS IF REQUIRED. CONTRACTOR TO SUBMIT SHOP DRAWING FOR THE ENCLOSURE. SEE DETAIL FOR PHASE CONVERTER ON DRAWING E-107.

**NEW MONITOR FUNCTIONS:**

- WATER LEVEL: THERE WILL BE AN ULTRASONIC AND RADAR LEVEL SENSOR/TRANSMITTER INSTALLED CONSTANTLY MEASURING THE LEVEL OF WATER. EACH LEVEL TRANSMITTER IS CONNECTED TO THE RTU PANEL.

**ELECTRICAL PLAN**  
 SCALE: 1"=10'-0"



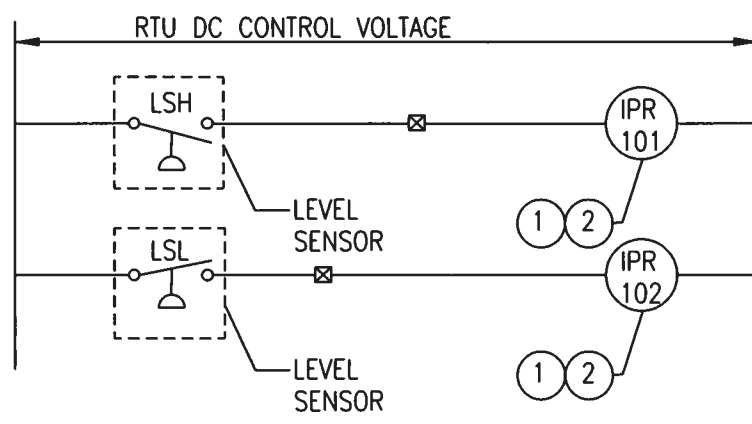
Zoila Morales, Electrical P.E. #64981  
 M.E. Engineering Consultants, Inc.  
 11401 SW 40TH Street Suite 301  
 Ph: (786) 275-4635  
 CA 29121

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Sunswept Isles Water Control Structure SW 2445 NE 207 ST IMPROVEMENT PROJECT

DESIGNED BY	NAME	DATE	DRAWN BY	NAME	DATE
Z.M.	Z.M.		L.F. - M.T.		SEPT, 2022
CHECKED BY	Z.M.		CHECKED BY	Z.M.	
SUPERVISED BY: ZOILA MORALES					





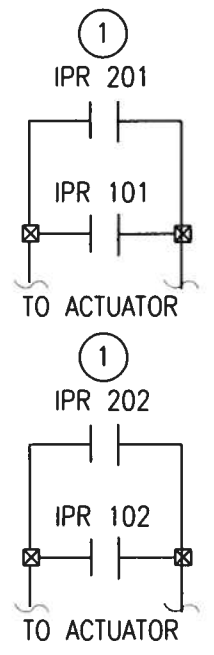
RTU LEVEL SWITCH WIRING  
 N.T.S.

RTU WIRING INSTALLATION NOTES:

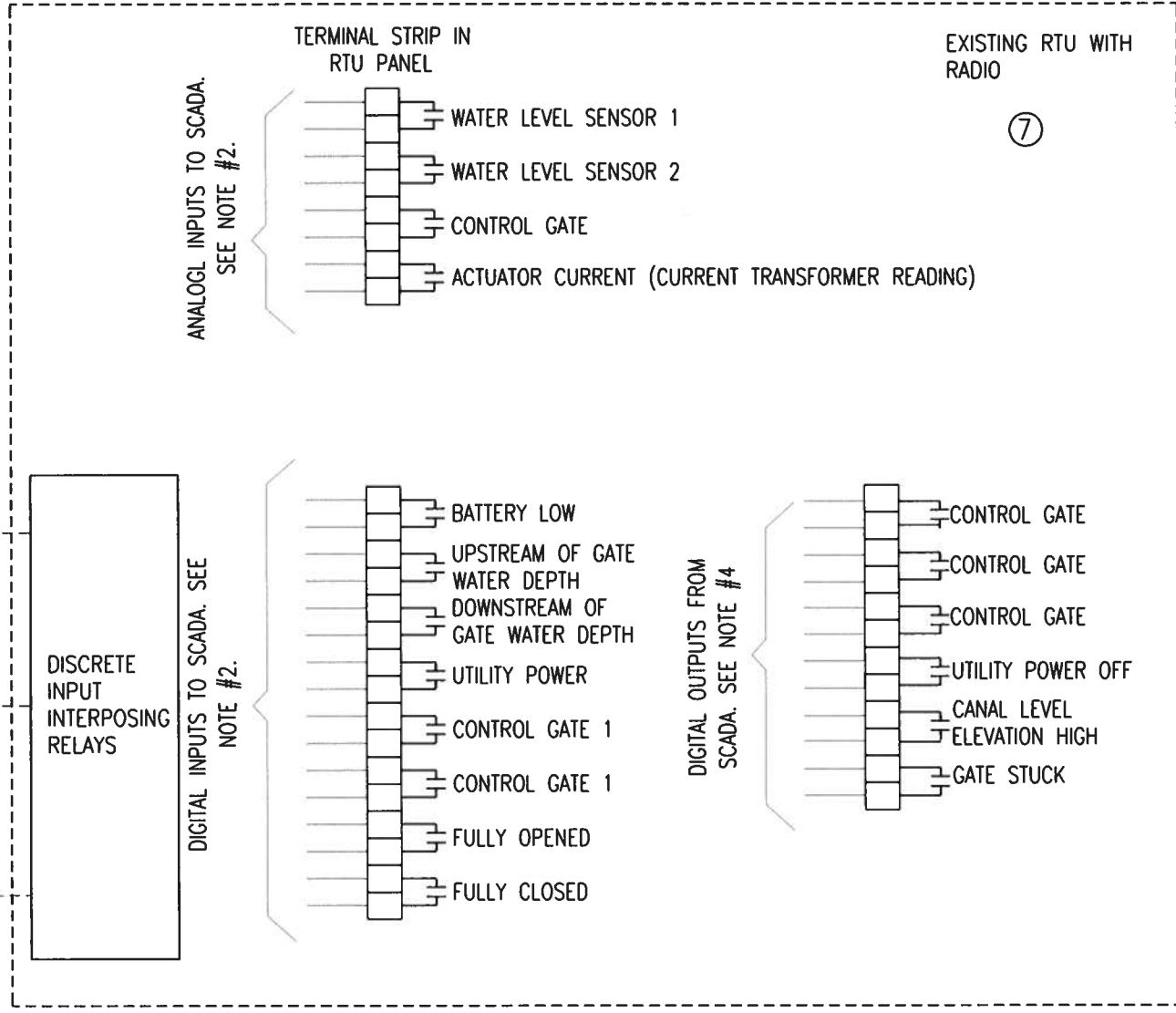
- 1-. WIRING TO SCADA RTU PANEL TO BE FURNISHED AND INSTALLED BY CONTRACTOR. TERMINATIONS TO BE PERFORMED BY CONTRACTOR'S ELECTRICIANS AS SPECIFIED BY MANUFACTURER AND REQUESTED BY OWNER.
- 2-. DIGITAL INPUTS TO SCADA SHALL BE WIRED WITH #18 TWISTED SHIELDED
- 3-. DIGITAL OUTPUTS FROM SCADA SHALL BE WIRED WITH #18 THHN STR. RED.
- 4-. 4-20 MILLIAMPERES DIRECT CURRENT SIGNAL CABLE SHALL BE BELDEN 9341 TWISTED PAIR OR EQUAL INSTALL IN A SEPARATE CONDUIT.

KEYED NOTES

- 1-INTERPOSING RELAYS FOR DISCRETE INPUTS AND OUTPUTS LOCATED IN RTU PANEL.
- 2-PROVIDE INTERPOSING RELAY WITH DPDT CONTACTS. CONNECT ONE SET RELAY CONTACTS TO RTU DISCRETE INPUT POINTS FOR CANAL LEVEL STATUS AND OTHER SET OF CONTACTS USED FOR GATE CONTROL.
- 3-INSERT INTERPOSING RELAY CONTACTS INTO CONTROL WIRING CIRCUITS AS INDICATED.
- 4-COORDINATE WITH GATE ACTUATOR MANUFACTURER FOR ALL DETAILS.
- 5-PROVIDE ADDITIONAL CONTACT BLOCKS AS REQUIRED FOR ALL INPUT/OUTPUTS.
- 6-EXISTING ANTENNA AND CABLE TO REMAIN.
- 7-EXISTING RTU TO REMAIN.



NEW MONITOR FUNCTIONS DIAGRAM



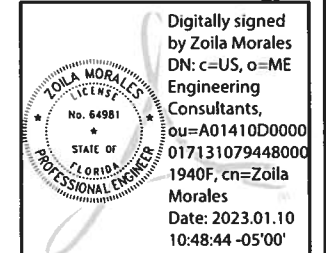
REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Sunswept Isles Water Control Structure SW 2445 NE 207 ST IMPROVEMENT PROJECT

DESIGNED BY	NAME	DATE	DRAWN BY	NAME	DATE
	Z.M.		L.F. - M.T.		
CHECKED BY	Z.M.		CHECKED BY	Z.M.	
SUPERVISED BY: ZOILA MORALES					

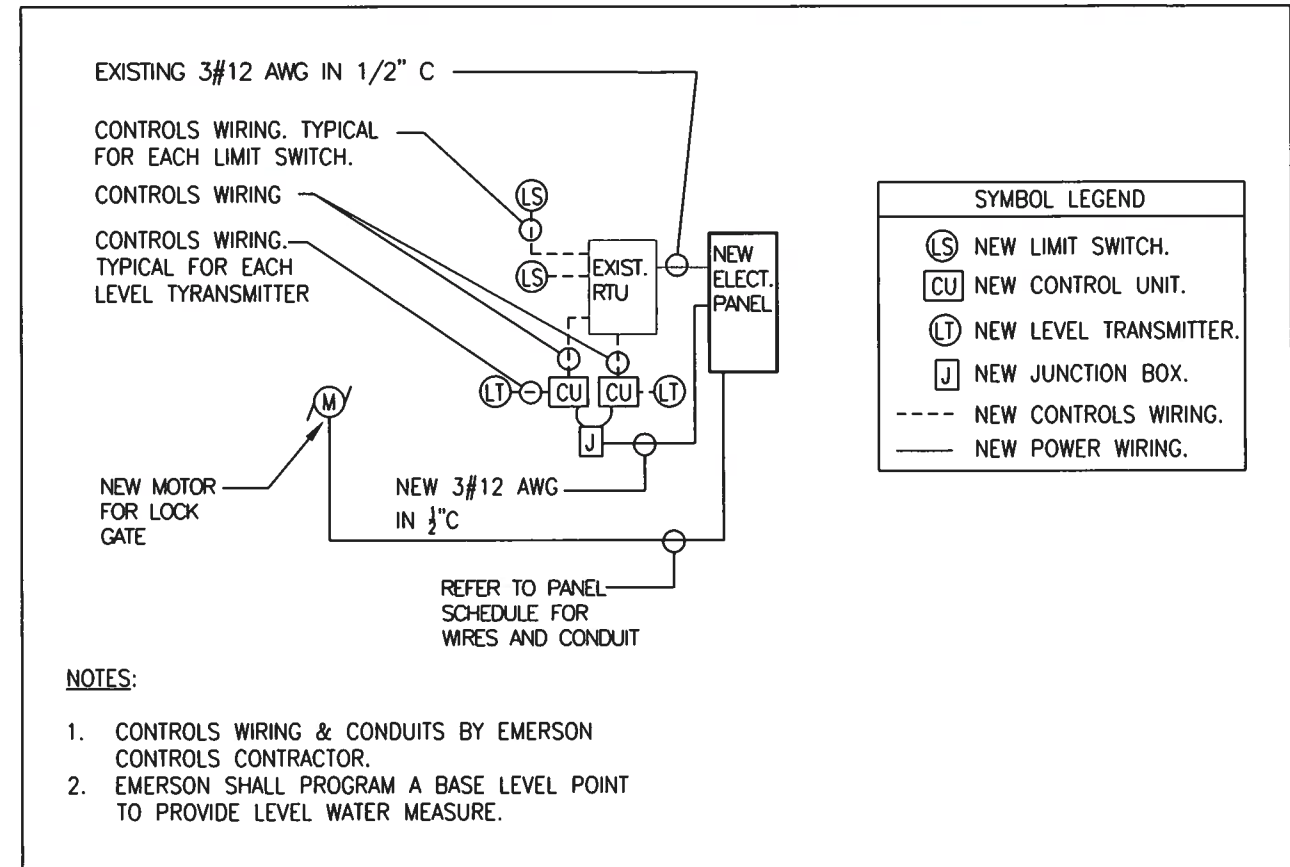


RTU MONITORING FUNCTIONS DIAGRAM & NOTES E-103



Digitally signed by Zoila Morales  
 DN: c=US, o=ME Engineering Consultants, ou=A01410D0000, ou=017131079448000, ou=1940F, cn=Zoila Morales  
 Date: 2023.01.10 10:48:44 -05'00'

Zoila Morales, Electrical P.E. #64981  
 M.E. Engineering Consultants, Inc.  
 11401 SW 40TH Street Suite 301  
 Ph: (786)275-4635  
 CA 29121



GATE CONTROL SCHEMATIC DIAGRAM  
 N.T.S.

**CONTROLS SEQUENCE OF OPERATION:**

- GATE OPENS WHEN HI LEVEL FLOAT SWITCH REACHES SET POINT DETERMINED BY CIVIL ENGINEER/OWNER.
- GATE CLOSING WHEN LOW LEVEL FLOAT SWITCH REACHES ITS SET POINT DETERMINED BY CIVIL ENGINEER/OWNER.
- THERE SHALL BE A MANUAL OVERRIDE SWITCH IN THE ELECTRIC ACTUATOR TO CONTROL GATE OPERATION MANUALLY.
- LOCAL RECORDERS TO CONSTANTLY RECORD THE WATER LEVEL.

**NEW MONITOR FUNCTIONS:**

- WATER LEVEL: THERE WILL BE AN ULTRASONIC AND RADAR LEVEL SENSOR/TRANSMITTER INSTALLED CONSTANTLY MEASURING THE LEVEL OF WATER. EACH LEVEL TRANSMITTER IS CONNECTED TO THE RTU PANEL.
- GATE OPENED AND CLOSED: THERE WILL BE TWO LIMIT SWITCHES, ONE LOCATED AT THE FULLY OPENED GATE POSITION AND THE OTHER LOCATED AT THE FULLY CLOSED GATE POSITION. EACH LIMIT SWITCH SHALL BE CONNECTED TO THE RTU PANEL. THESE LIMIT SWITCHES WILL PROVIDE INFORMATION TO OWNER VIA RTU PANEL AS TO WHETHER GATE IS IN FULLY OPENED OR FULLY CLOSED POSITION. (DIGITAL INPUT)
- AC FAILURE (DIGITAL INPUT).
- BATTERY LOW (DIGITAL INPUT).

Digitally signed by Zoila Morales  
 DN: c=US, o=ME Engineering Consultants, ou=A01410D0000, ou=01713107944800, ou=01940F, cn=Zoila Morales  
 Date: 2023.01.10 10:49:21 -05'00'

Zoila Morales, Electrical P.E. #64981  
 M.E. Engineering Consultants, Inc.  
 11401 SW 40TH Street Suite 301  
 Ph:(786)275-4635  
 CA 29121

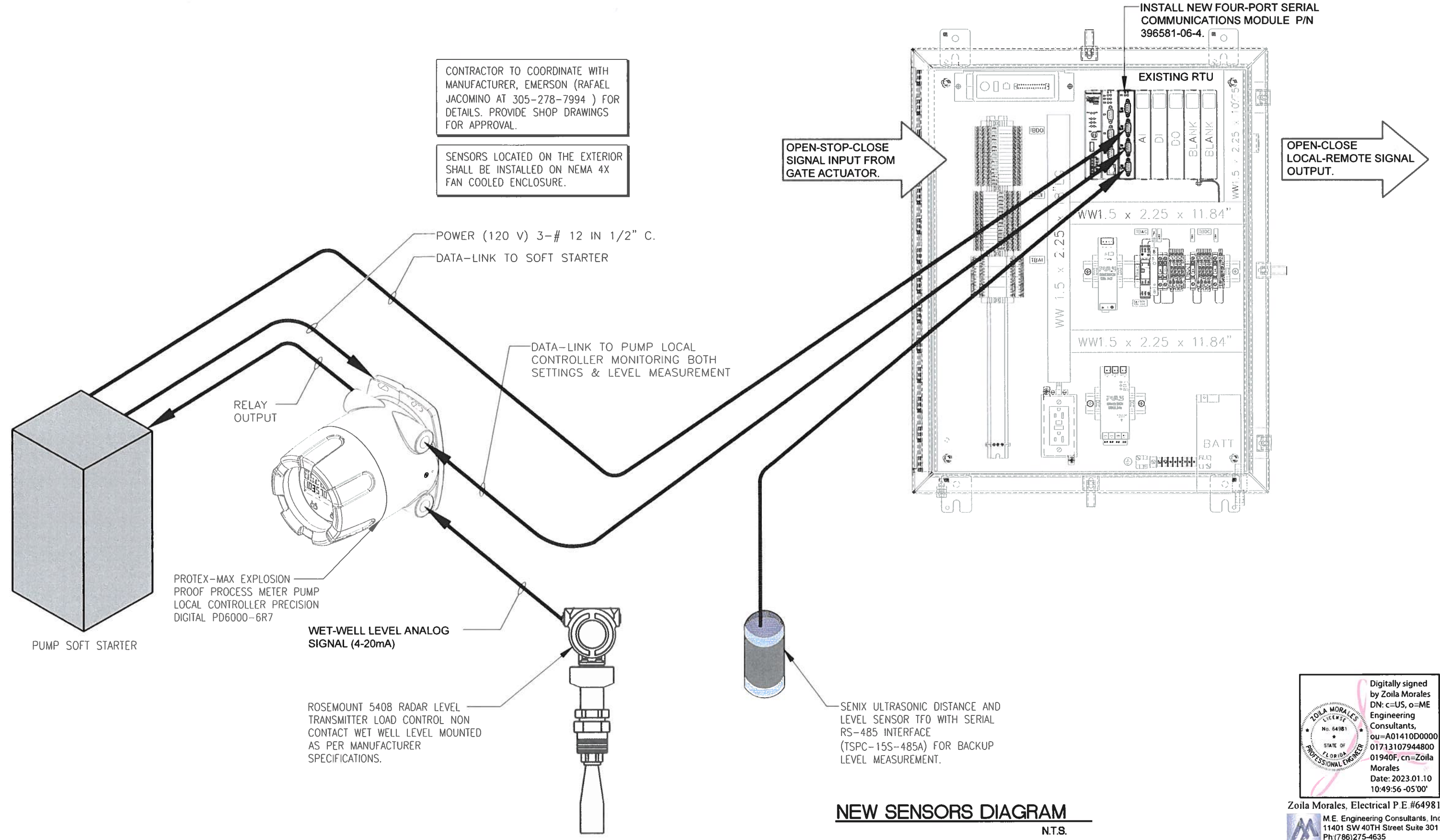
REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Sunswept Isles Water Control Structure SW 2445 NE 207 ST IMPROVEMENT PROJECT

DESIGNED BY	NAME	DATE	DRAWN BY	NAME	DATE
Z.M.	Z.M.		L.F. - M.T.		SEPT. 2022
CHECKED BY	Z.M.		CHECKED BY	Z.M.	
SUPERVISED BY: ZOILA MORALES					



GATE CONTROL SCHEMATIC DIAGRAM



**NEW SENSORS DIAGRAM**  
 N.T.S.

Digitally signed by Zoila Morales  
 DN: c=US, o=ME Engineering Consultants, ou=A01410D0000, ou=01713107944800, ou=01940F, cn=Zoila Morales  
 Date: 2023.01.10 10:49:56 -05'00'

Zoila Morales, Electrical P.E. #64981  
 M.E. Engineering Consultants, Inc.  
 11401 SW 40TH Street Suite 301  
 Ph (786)275-4635  
 CA 29121

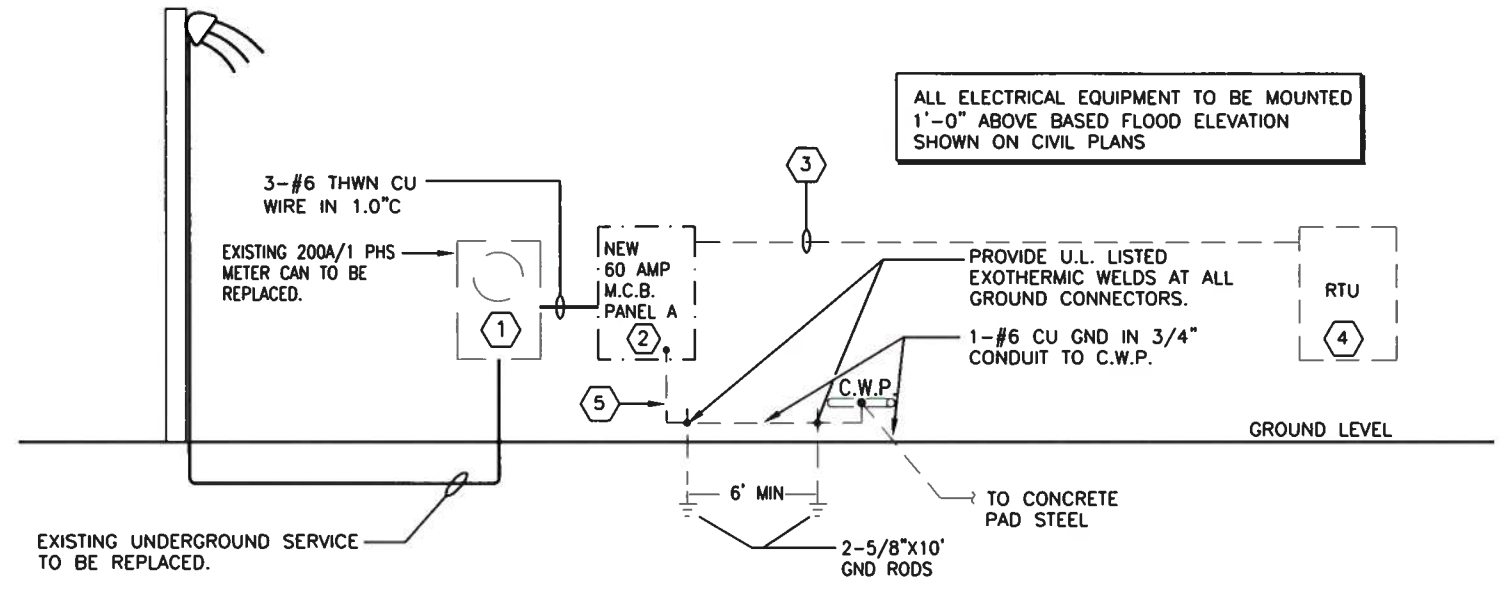
REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Sunswept Isles Water Control Structure SW 2445 NE 207 ST IMPROVEMENT PROJECT

DESIGNED BY	NAME	DATE	DRAWN BY	NAME	DATE
Z.M.	Z.M.		L.F. - M.T.		SEPT. 2022
CHECKED BY	Z.M.		CHECKED BY	Z.M.	
SUPERVISED BY: ZOILA MORALES					

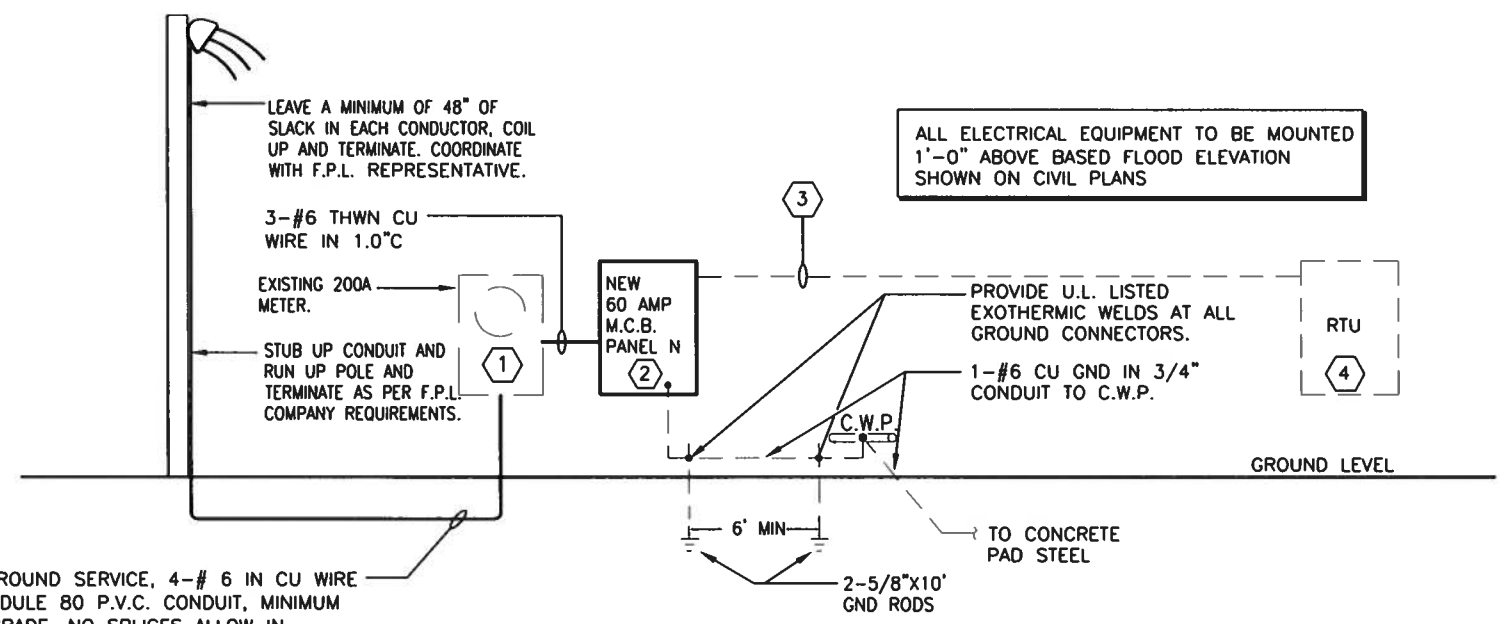






**EXISTING ELECTRICAL RISER DIAGRAM**  
 N.T.S.

- KEYED NOTES**
- ① EXISTING 200 AMP 1 PH ELECTRICAL METER TO BE REPLACED.
  - ② EXISTING 60 AMP PANEL 120/240, 1PH, 3W WITH 60 AMP SERVICE ENTRANCE RATED MAIN BREAKER TO BE REPLACED.
  - ③ 2#12, 1#12(G) IN 1/2" C FROM EXISTING 1P-20A C/B IN PANEL "A" FEEDING EXISTING "RTU" PANEL.
  - ④ EXISTING RTU PANEL TO REMAIN. CURRENTLY FED FROM EXISTING PANEL A. FEED FROM NEW PANEL N AS SHOWN ON PANEL SCHEDULE ON THIS DRAWING.
  - ⑤ EXISTING GROUNDING SYSTEM TO REMAIN. CONTRACTOR TO VERIFY THAT A # 6 CU GROUNDING ELECTRODE CONDUCTOR IS EXISTING AND CONNECTED TO GROUND RODS, COLD WATER METALLIC PIPE AND BUILDING FOUNDATION STEEL TO COMPLY WITH NEC REQUIREMENTS. TEST THE SYSTEM TO MAKE SURE THAT MAXIMUM RESISTANCE TO GROUND IS LIMITED TO 5 OHMS. ADDITIONAL GROUND RODS SHALL BE DRIVEN IF REQUIRED TO MAINTAIN THIS LEVEL.



NEW UNDERGROUND SERVICE, 4-# 6 IN CU WIRE IN 1.5" SCHEDULE 80 P.V.C. CONDUIT, MINIMUM 24" BELOW GRADE. NO SPLICES ALLOW IN SERVICE CONDUCTORS. CONTRACTOR SHALL COORDINATE WITH FPL PRIOR TO INSTALLATION AND SHALL COMPLY WITH FPL ELECTRIC SERVICE STANDARDS.


**NEW ELECTRICAL RISER DIAGRAM**  
 N.T.S.

- KEYED NOTES**
- ① EXISTING 200 AMP ELECTRICAL METER TO REMAIN.
  - ② NEW 60 AMP PANEL 120/240, 1PH, 3W WITH SERVICE ENTRANCE RATED MAIN BREAKER.
  - ③ 2#12, 1#12(G) IN 1/2" C FROM NEW 1P-20A C/B IN PANEL "N" TO FEED EXISTING "RTU" PANEL. REFER TO PANEL N SCHEDULE ON THIS DRAWING.
  - ④ EXISTING RTU PANEL TO REMAIN. CURRENTLY FED FROM EXISTING PANEL. FEED FROM NEW PANEL N AS SHOWN ON PANEL SCHEDULE ON THIS DRAWING.

Digitally signed by Zoila Morales  
 DN: c=US, o=ME Engineering Consultants, ou=A01410D0000, ou=01713107944800, ou=01940F, cn=Zoila Morales  
 Date: 2023.01.10 10:50:46 -05'00'

Zoila Morales, Electrical P.E #64981  
 M.E. Engineering Consultants, Inc.  
 11401 SW 40TH Street Suite 301  
 Ph (786)275-4635  
 CA 29121

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Sunswept Isles Water Control Structure SW 2445 NE 207 ST IMPROVEMENT PROJECT		DESIGNED BY: Z.M.	CHECKED BY: Z.M.	DATE: SEPT. 2022	NAME: L.F. - M.T.	DATE: SEPT. 2022		<b>ELECTRICAL RISERS DIAGRAMS</b>	E-106
SUPERVISED BY: ZOILA MORALES		NAME: Z.M.	CHECKED BY: Z.M.	DATE: SEPT. 2022	NAME: L.F. - M.T.	DATE: SEPT. 2022			

