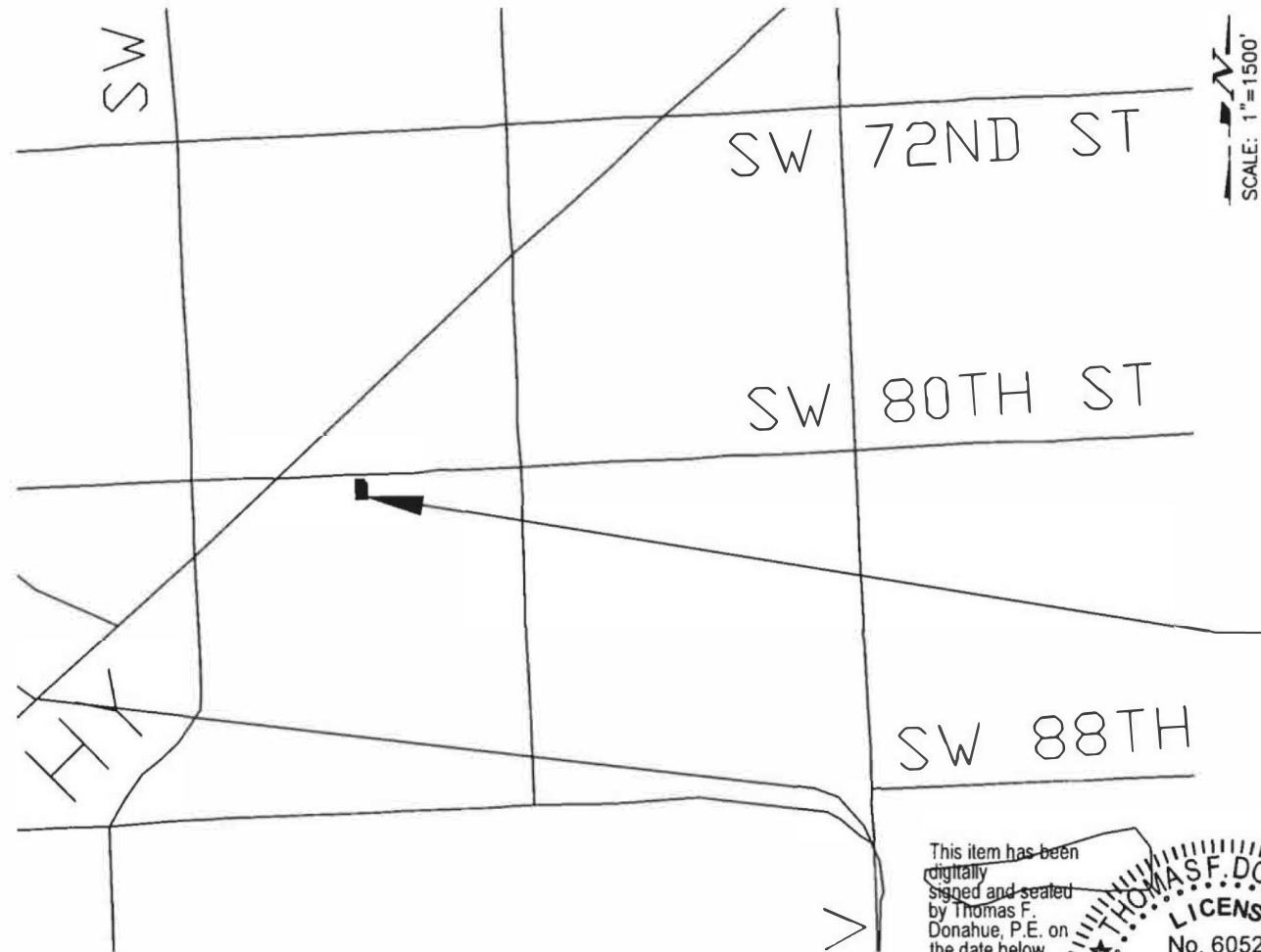


PLANS FOR PROPOSED  
IMPROVEMENTS TO  
Ludlam Glades Water Control Structure  
6398 SW 80 ST

MIAMI-DADE COUNTY PROJECT NO. 20200045

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 DIAGRAM
8	E-105 - NEW SENSORS DIAGRAM
9	E-106 - ELECTRICAL RISERS DIAGRAMS
10	E-107 - ELECTRICAL PANEL AND CALCULATIONS



**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.

**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 3 phase 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.



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.

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

2023.04.27 11:48:48-04'00'  
ENGINEER OF RECORD

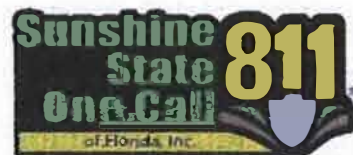
THOMAS F. DONAHUE, P.E.  
FLORIDA REGISTRATION P.E. No. 60529  
KEITH CIVIL ENGINEER



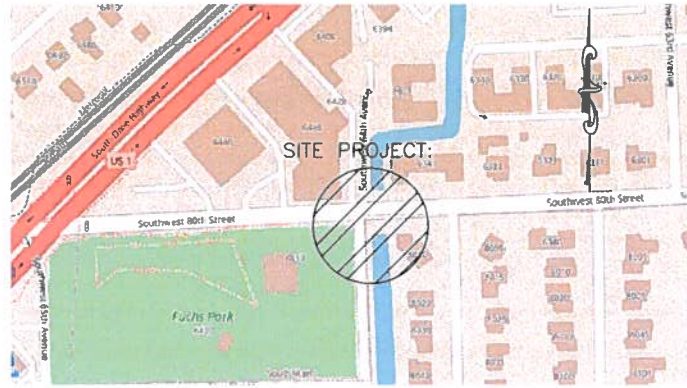
301 East Atlantic Boulevard  
Pompano Beach, Florida 33060-6643  
(954) 788-3400

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.



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



LOCATION MAP:  
SCALE: N.T.S.

TREE TABLE:

THE TOTAL FINAL JOB POINT LIST DO NOT SHOWN ANY EXISTING TREES AFFECTING THE PROPERTY.

ABBREVIATIONS AND MEANINGS:

- DTPW MIAMI-DADE COUNTY DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
- CL CENTERLINE
- D APPROXIMATE DIAMETER OF TREE TRUNK
- H APPROXIMATE HEIGHT OF TREE
- M CITY OF MIAMI MONUMENT LINE
- P PALM
- PSM PROFESSIONAL SURVEYOR AND MAPPER
- R/W RIGHT-OF-WAY
- S APPROXIMATE DIAMETER OF TREE CANOPY
- T TREE

LEGEND:

- △ CONTROL POINT
- METAL PEDESTRIAN POLE
- EXISTING ELEVATIONS
- ⊙ SANITARY SEWER MANHOLE
- ⊙ STORM SEWER MANHOLE
- ⊙ MANHOLE UNKNOWN
- ⊙ CONCRETE LIGHT POLE
- ⊙ GAS VALVE
- ⊙ WATER VALVE
- ⊙ SEWER VALVE
- ⊙ VALVE UNKNOWN
- ⊙ SIGN
- ⊙ CATCH BASIN
- ⊙ HAND-HOLE TRAFFIC SIGNAL
- ⊙ SPRINKLER HEAD
- TREE (VARIOUS)
- ✎ PALM TREE
- ⊙ HAND-HOLE FIBER OPTIC
- ⊙ MONITORING WELL
- ⊙ STANDPIPE
- ⊙ HANDHOLE UNKNOWN

# TOPOGRAPHIC BOUNDARY SURVEY.

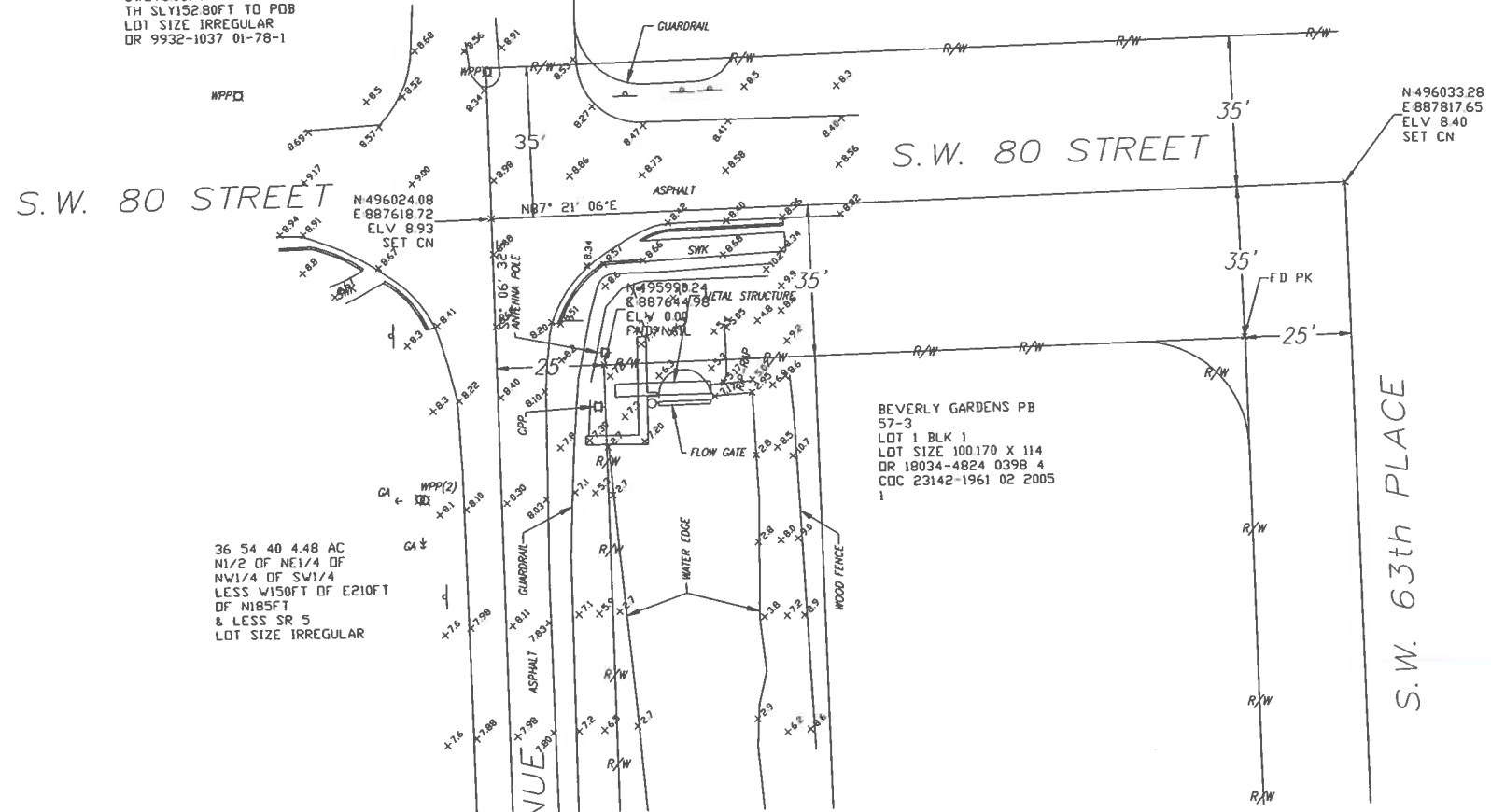
A PUMP STATION ON A PORTION OF LAND LYING IN SOUTHWEST QUARTER OF SECTION 36, TOWNSHIP 54 SOUTH, RANGE 40 EAST, MIAMI-DADE COUNTY, FLORIDA.

36 54 40 134 AC  
BEG 35FT N & 15FT W  
OF SE COR  
SE1/4 OF SW1/4 OF  
NW1/4  
W252FT N AT R/A  
2354FT NELY  
PARR TO US #1 113.38FT  
NWLY AT  
R/A 175FT NELY ALG  
S/L OF HWY  
150FT SELY195FT NELY  
AT R/A  
2065FT SELY41.75FT  
SWLY6.05FT  
TH SLY152.80FT TO POB  
LOT SIZE IRREGULAR  
DR 9932-1037 01-78-1

SCALE: 1" = 20'

36 54 40 PB 65-35  
REV PLAT TR A  
SOUTHGATE CENTER  
TRACT 1  
LOT SIZE 15600 SQUARE  
FEET  
DR 13685-42 0588 1  
CDC 22413-2609 03 2004  
5

SCALE: 1" = 20'



LEGAL NOTES TO ACCOMPANY SPECIFIC PURPOSE SURVEY:

- THIS SURVEY MAP REPRESENTS A TOPOGRAPHIC BOUNDARY SURVEY.
- THE PURPOSE OF THIS SURVEY IS TO DEPICT THE LOCATION OF TOPOGRAPHIC FEATURES AND THE BOUNDARY SURVEY OF THE PUMP STATION LOCATED AT S.W 80th STREET & S.W 64th AVENUE.
- THE SURVEY MAP AND REPORT OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL SEAL OF A FLORIDA LICENSED SURVEYOR & MAPPER.
- THIS SURVEY IS SUBJECT TO DEDICATIONS, LIMITATIONS, RESTRICTIONS, OR EASEMENTS OF RECORD; ALL EASEMENTS (IF ANY) WERE SUPPLIED BY THE CLIENT.
- SOURCES OF DATA: BASED ON A PROPERTY RECORDER LEGAL DESCRIPTION AND PLAT BOOK 57 PAGE 3 OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA.
- ALL DISTANCE MEASUREMENTS WERE MADE IN UNITED STATES SURVEY FEET, UNLESS SHOWN OTHERWISE.
- THE PROJECT SITE IS LOCATED IN SECTION 36 TOWNSHIP 54 SOUTH, RANGE 40 EAST, IN MIAMI-DADE COUNTY, FLORIDA.
- THE BEARING BASIS FOR THIS SURVEY IS NORTH 87°21'06" EAST (ASSUMED) ALONG THE CENTER LINE OF S.W 2th STREET.
- ELEVATIONS SHOWN HEREON ARE REFERRED TO A RECORDED MIAMI-DADE COUNTY BENCH-MARK S-269-R-1979, ELEVATION=9.10' N.G.V.D.-29.
- NO ATTEMPT WAS MADE TO LOCATE UNDERGROUND UTILITIES, FOOTINGS, BUILDINGS, EXCEPT AS SHOWN HEREON, IF ANY.
- AN OPINION OF TITLE FOR THE SUBJECT PARCEL WAS NOT PROVIDED; THE SOURCES OF DATA LISTED ABOVE WERE USED AS THE BASIS FOR THIS SURVEY.
- ARCHITECTS SHALL VERIFY ZONING REGULATIONS, RESTRICTIONS AND SETBACKS AND THEY WILL BE RESPONSIBLE FOR SUBMITTING PLOT PLANS WITH THE CORRECT INFORMATION FOR THE APPROVAL BY MIAMI-DADE COUNTY AUTHORITIES IN ALL CONSTRUCTION, UNLESS OTHERWISE NOTED.
- AERIAL BACKGROUND IMAGES ARE SHOWN FOR GRAPHICAL PURPOSES ONLY AND MAY NOT BE INDICATIVE OF EXISTING SITE CONDITIONS. AERIAL IMAGE ACQUISITION WAS COMPLETED ON JULY 30, 2020.
- THIS MAP IS INTENDED TO BE DISPLAYED AT A SCALE OF 1"= 20' OR SMALLER. AT THE MAXIMUM INTENDED DISPLAYED SCALE, THE MAP'S POSITIONAL VALUE OCCUPIES 1/20" ON THE DISPLAY (EXCLUDING THE LOCATION MAP).
- ADDITIONS OR DELETIONS TO THE SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.

THE SURVEY DEPICTED HERE IS NOT COVERED BY PROFESSIONAL LIABILITY INSURANCE.

I HEREBY CERTIFY :  
THAT THE ATTACHED "SPECIFIC PURPOSE SURVEY" OF THE PROPERTY SHOWN HEREON IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AS RECENTLY SURVEYED AND DRAWN UNDER MY SUPERVISION AND DIRECTION. THIS SURVEY COMPLIES WITH THE STANDARDS OF PRACTICE AS SET FORTH IN RULES 5J-17.051 AND 5J-17.052 AS ADOPTED BY THE FLORIDA STATE BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS PURSUANT TO CHAPTER 472.027 FLORIDA STATUTES.

RICARDO, P.S.M.  
FLORIDA LICENSE NO-6283.  
FOR THE DTPW-TRANSPORTATION.

SURVEY MAP AND REPORT OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL SEAL OF A FLORIDA LICENSED SURVEYOR & MAPPER

RICARDO, P.S.M.  
FLORIDA LICENSE NO-6283  
FOR THE DTPW-TRANSPORTATION.

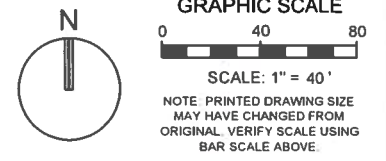
Project Manager:	A. F. C.
Drawn:	R.J.
Checked:	Revisions
Date:	DESCRIPTION

Miami Dade County  
Department of Transportation  
and Public Works  
Survey Section  
111 N.W. First Street, Suite 1100  
Miami, Florida 33128 305-375-8877

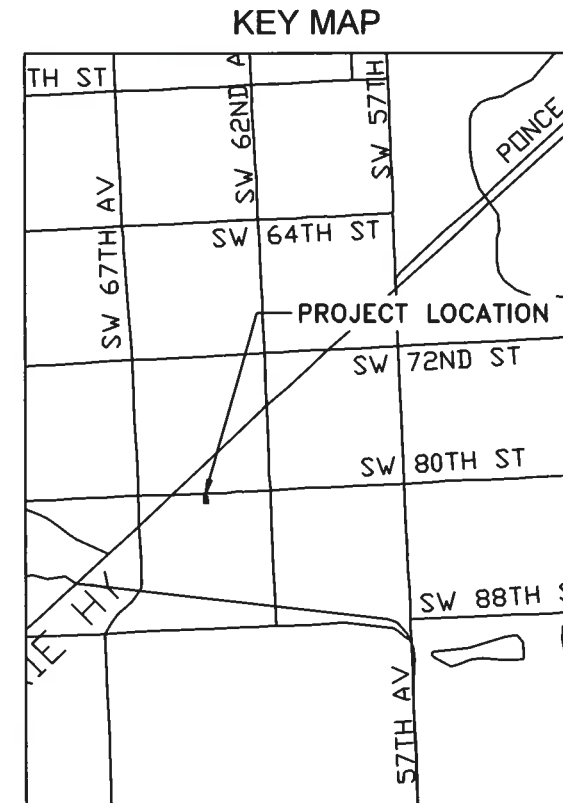


Project Title:  
**TOPOGRAPHIC BOUNDARY SURVEY:  
PUMP STATION AT S.W 80th STREET,  
AND S.W 64th AVENUE.**

Project #	20200045 (NOT BUILDING)
Date	06/17/2021
Scale	1"=20'
Drawing #	1 of 1
FIELD BOOK	N/A
PAGE	N/A



- 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.



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. 1,549 MUST BE SUBTRACTED TO THE NAVD 1988 ELEVATIONS.

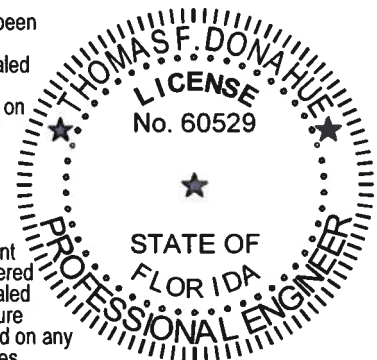


**301 East Atlantic Boulevard**  
Pompano Beach, Florida 33060-6643  
(954) 788-3400

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 11:49:13-04'00'

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Ludlum Glades Water Control Structure  
6398 SW 80 St  
IMPROVEMENT PROJECT

DESIGNED BY	NAME	DATE	DRAWN BY	NAME	DATE
	NW		VC/NO/JN		SEPT. 2022
CHECKED BY			CHECKED BY		
SUPERVISED BY					



DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
STEVENS P. CLARK CENTER  
111 SW 1 ST  
MIAMI, FLORIDA 33138

### 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.L. 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.L. 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 RECEPTACLE; 20 A, 120 V, GROUNDING TYPE. VERIFY MOUNTING HEIGHT. 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-104. NEW SENSORS WILL BE INTEGRATED INTO EXISTING CONTROL SEQUENCE.
- NEW 3 PHASE ACTUATOR TO BE INSTALLED AS SHOWN ON PANEL SCHEDULE.

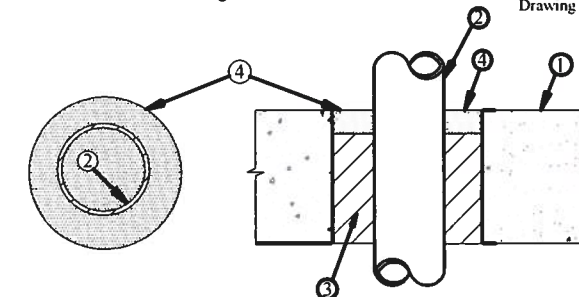
2 Hour Fire Rated Through Penetration Firestop for Single Metal Pipe through Concrete Floors and Walls using TREMstop IA.



3735 Green Rd  
Beachwood, OH, 44122

F-Rating = 2 Hr  
T-Rating = 0 Hr

Drawing not to scale



- Pre-Rated Concrete Floors or Block Walls = Min 4-1 2" thickness
- 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
- Packing Material- Min 4-1 4" thickness of mineral wool insulation (min 4 0 pcf) firmly packed into opening as a permanent form
- 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.

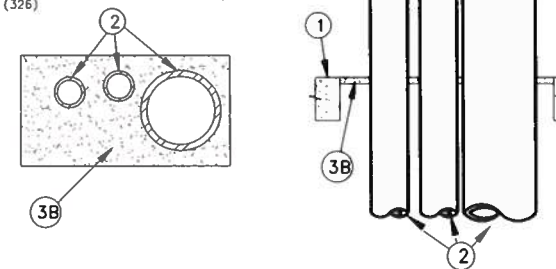


3735 Green Rd.  
Beachwood, OH, 44122

Drawing not to scale

CAJ1047  
(326)

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



- 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).
- A) Forming Material - (Not shown) - Nom. 1" thick poly-urethane backer rod friction fitted 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, ou=00171310794480, ou=001940F, cn=Zoila Morales  
Date: 2023.01.10 10:33:26 -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	DATE	BY	DESCRIPTION

Ludlum Glades Water Control Structure  
6398 SW 80 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			



GENERAL ELECTRICAL NOTES, LEGEND AND DETAILS

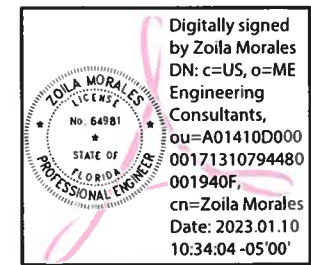
E-101

**CODED NOTES:**

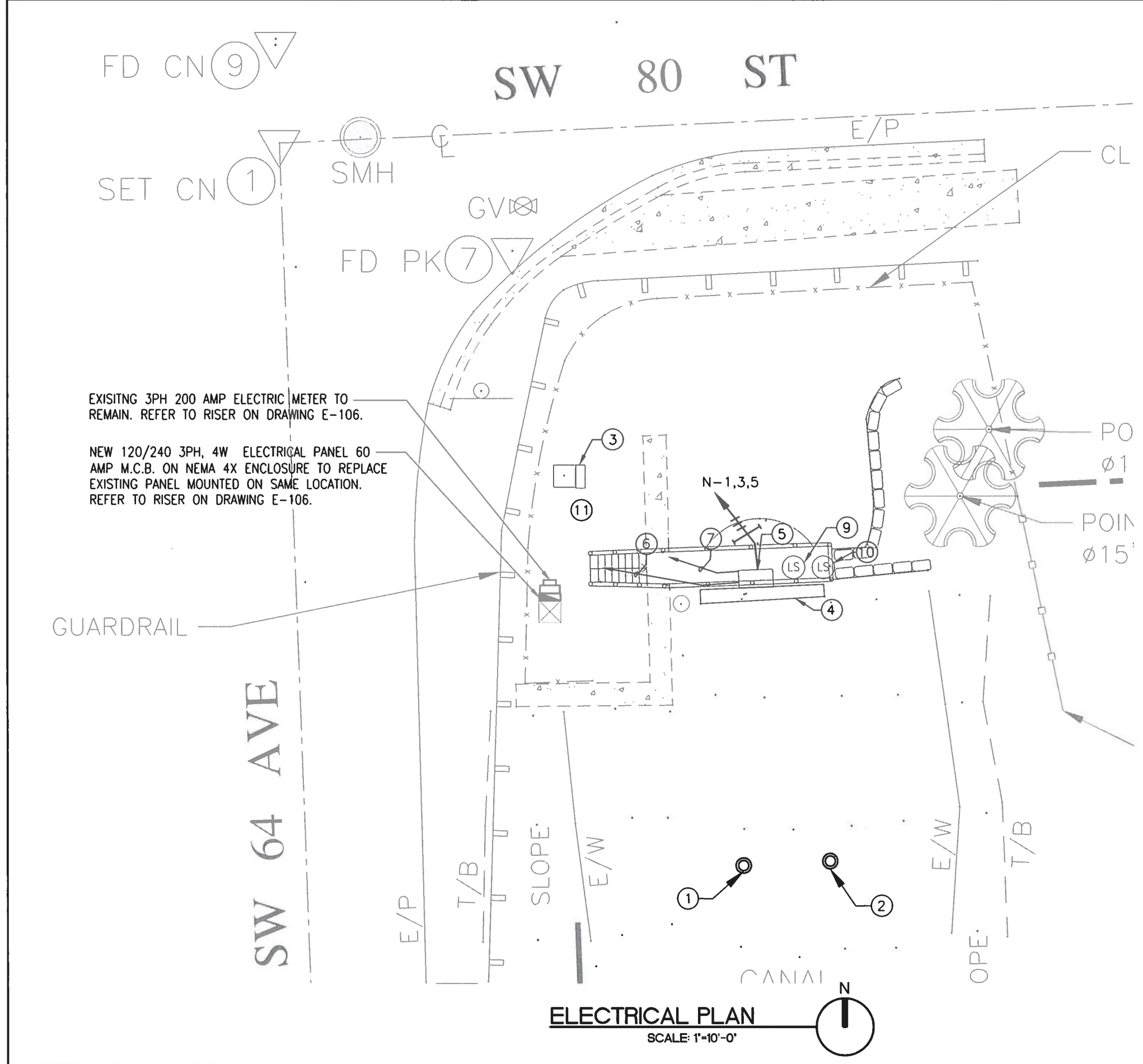
- ① NEW ROSEMOUNT 5408 RADAR LEVEL TRANSMITTER LOAD CONTROL NON CONTACT WET WELL LEVEL MOUNTED AS PER MANUFACTURER SPECIFICATIONS. MINIMUM 1FT DISTANCE FROM TANK WALL INSTALLATION. CONNECT TO RTU VIA PROTEX-MAX EXPLOSION PROOF PROCESS METER PUMP LOCAL CONTROLLER PRECISION DIGITAL PD-6000-6R7. REFER TO DETAIL ON E-104. 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-104.
- ④ EXISTING SLUICE GATE TO REMAIN TO BE OPERATED VIA NEW 3 PHASE 1.5 H.P. ELECTRIC ACTUATOR TO REPLACE EXISTING. NEW ACTUATOR TO BE MONITORED BY EXISTING RTU.
- ⑤ NEW 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 E- . 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 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.

**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.



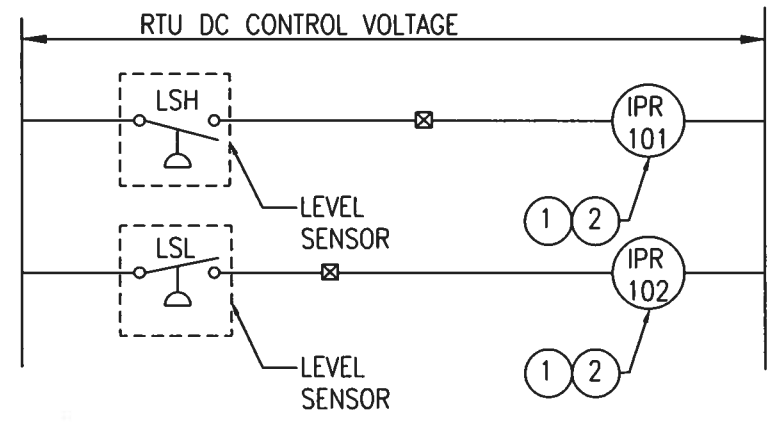
Zoila Morales, Electrical P.E #64981  
 M.E. Engineering Consultants, Inc.  
 11401 SW 40TH Street Suite 301  
 Ph (786)275-4635  
 CA 29121



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

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Ludlum Glades Water Control Structure 6398 SW 80 St IMPROVEMENT PROJECT		DESIGNED BY: Z.M. CHECKED BY: Z.M. SUPERVISED BY: ZOILA MORALES	DATE: SEPT. 2022	NAME: L.F. - M.T. DATE: SEPT. 2022		ELECTRICAL PLAN	E-102
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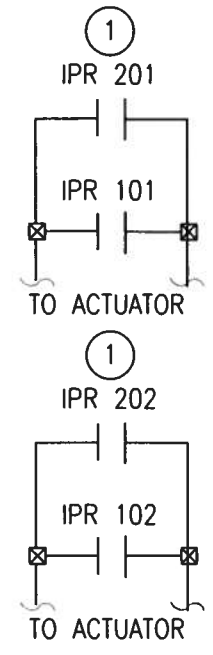
RTU LEVEL SWITCH WIRING  
 N.T.S.

RTU WIRING INSTALLATION NOTES:

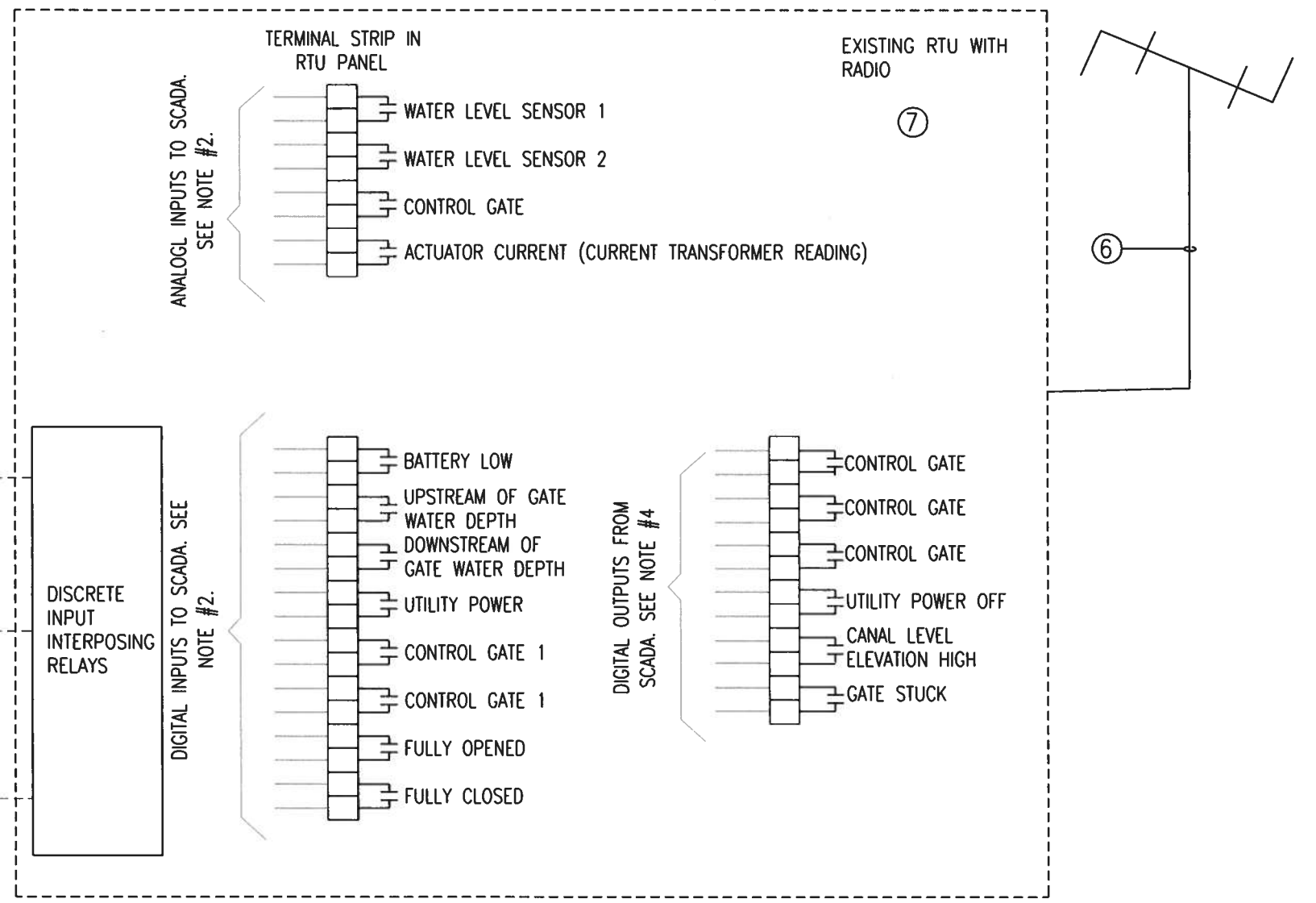
- 1-. WIRING TO SCADA RTU PANEL TO BE FURNISHED AND INSTALLED BY CONTRACTOR. TERMINATIONS TO BE PERFORMED BY CONTRACTOR'S ELECTRICIANS AS SPECIFIED BY MANUFACTURER AND REQUESTED BY OWNER.
- 2-. DIGITAL INPUTS TO SCADA SHALL BE WIRED WITH #18 TWISTED SHIELDED
- 3-. DIGITAL OUTPUTS FROM SCADA SHALL BE 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



CONTROL GATE

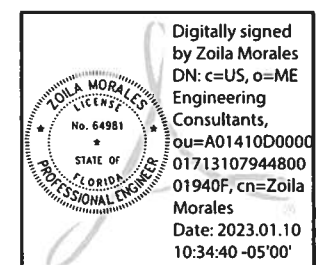
LEVEL SENSOR

ACTUATORS CURRENT TRANSFORMERS

DISCRETE INPUT INTERPOSING RELAYS

DIGITAL INPUTS TO SCADA. SEE NOTE #2.

DIGITAL OUTPUTS FROM SCADA. SEE NOTE #4



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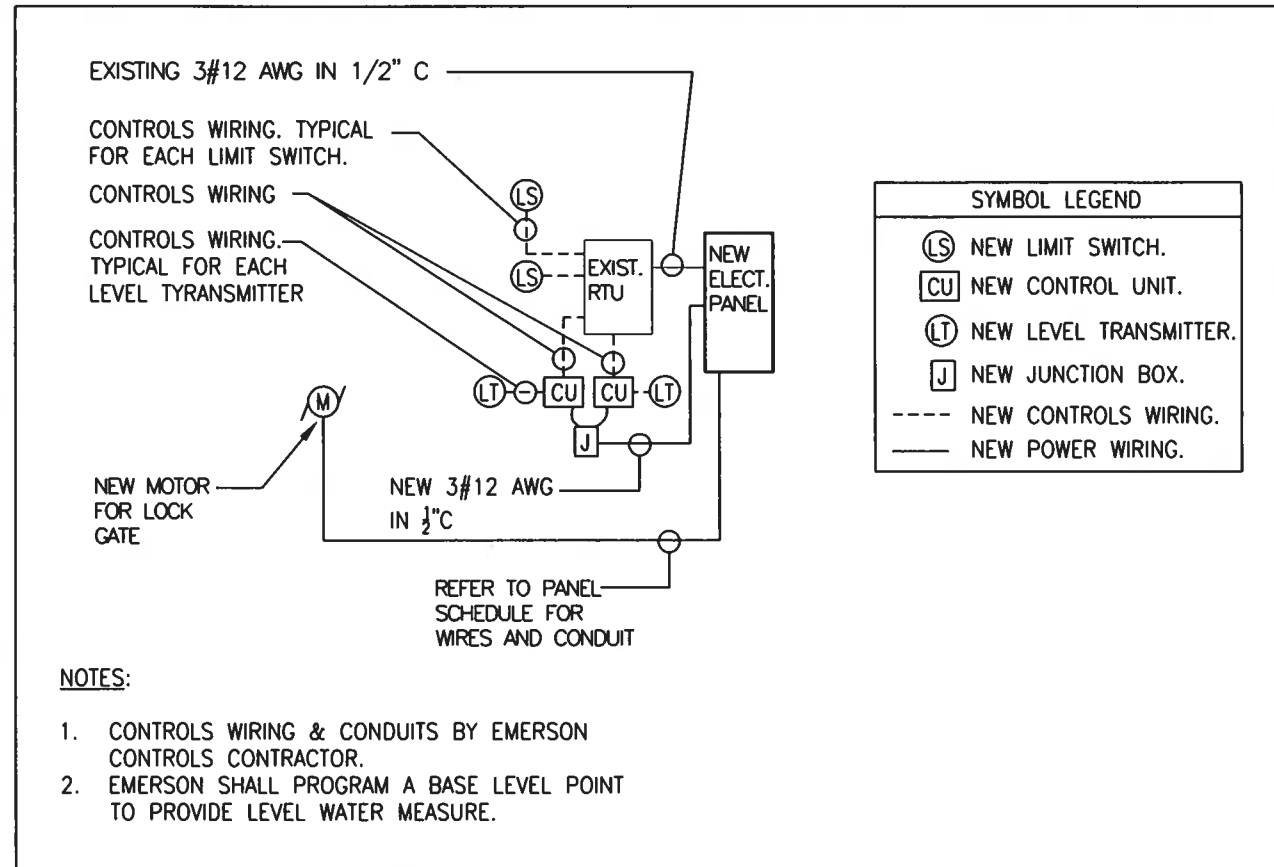
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SUPERVISED BY: ZOILA MORALES			



RTU MONITORING FUNCTIONS DIAGRAM & NOTES



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 CLOSES 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).

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 DN: c=US, o=ME Engineering Consultants, ou=A01410D0000, 017131079448000, 1940F, cn=Zoila Morales  
 Date: 2023.01.10 10:35:31 -05'00'

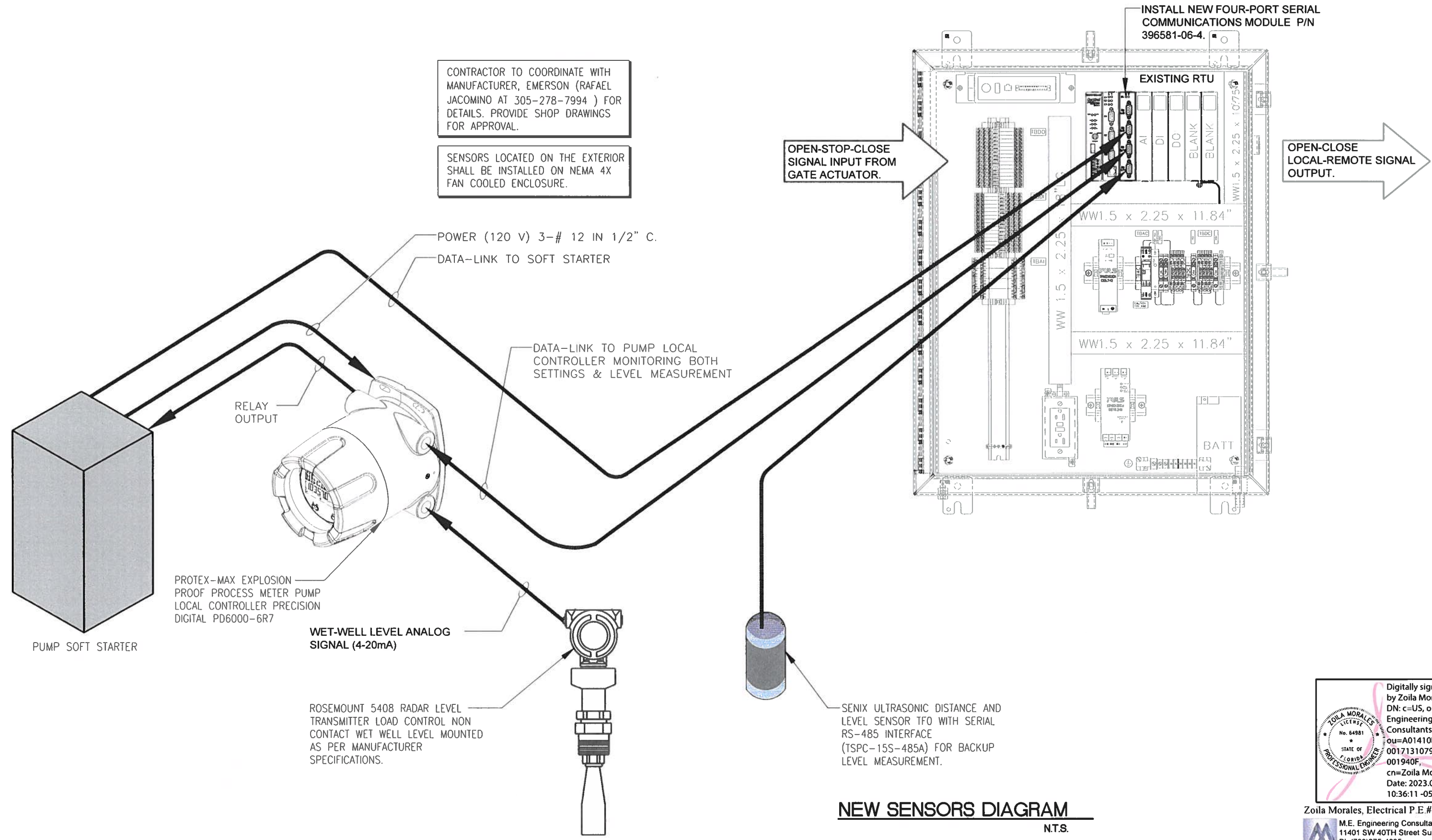
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MIAMI-DADE DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS  
 ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION  
 STEPHEN P. CLARK, CENTER  
 111 N.W. 1 ST.  
 MIAMI, FLORIDA 33128



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

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 Date: 2023.01.10 10:36:11 -05'00'

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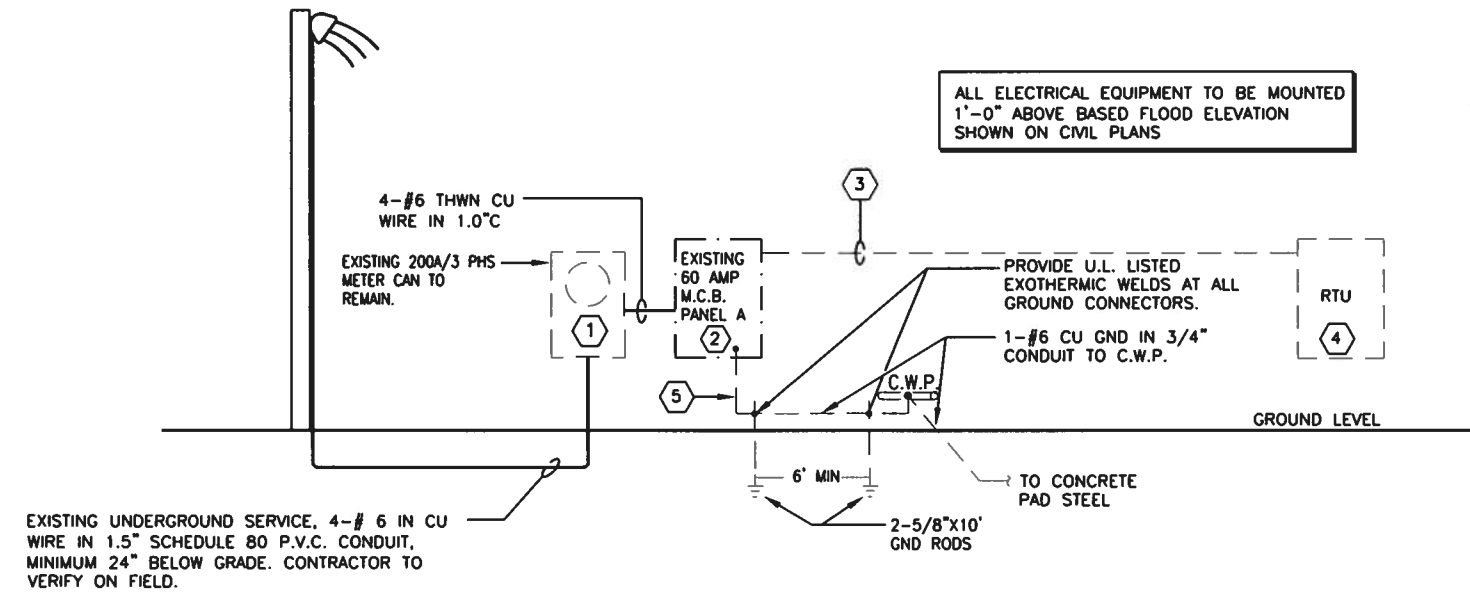
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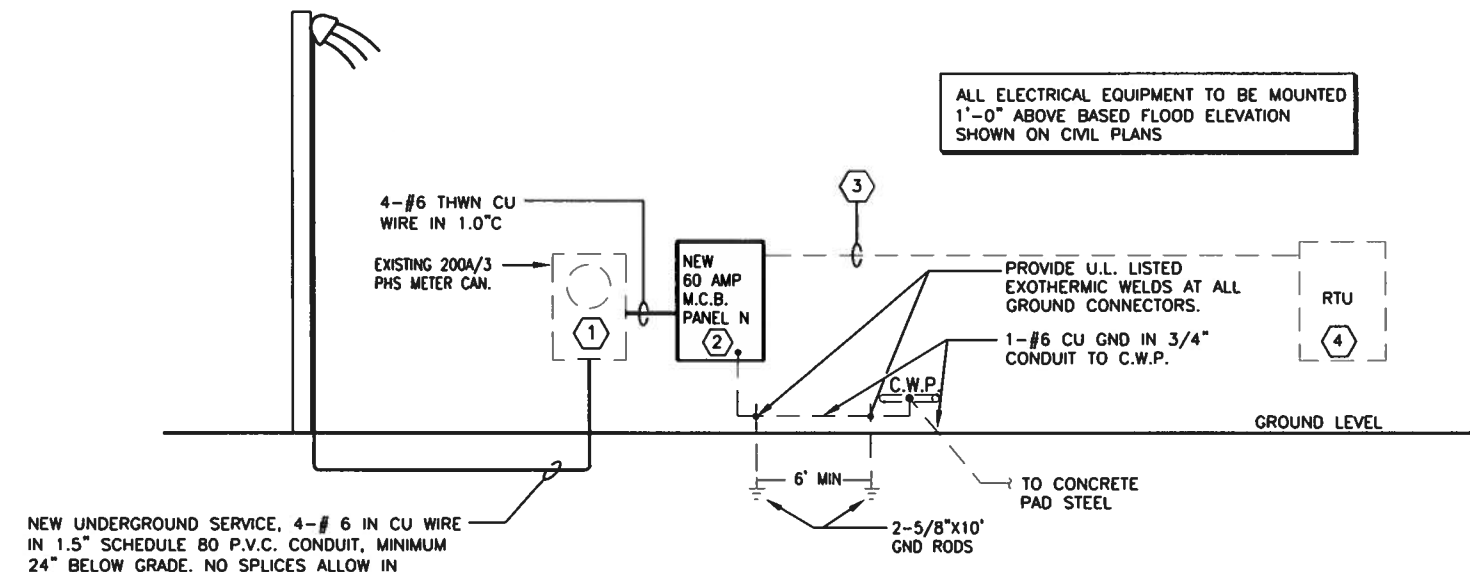




EXISTING UNDERGROUND SERVICE, 4-# 6 IN CU WIRE IN 1.5\" SCHEDULE 80 P.V.C. CONDUIT, MINIMUM 24\" BELOW GRADE. CONTRACTOR TO VERIFY ON FIELD.

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

- KEYED NOTES**
- ① EXISTING 200 AMP 3 PH ELECTRICAL METER TO BE REMAIN.
  - ② EXISTING 60 AMP PANEL 120/240, 3PH, 4W 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 3 PH ELECTRICAL METER TO REMAIN.
  - ② NEW 60 AMP PANEL 120/240, 3PH, 4W 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, 01713107944800, 01940F, cn=Zoila Morales  
Date: 2023.01.10 10:36:53 -05'00'

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June 14, 2022

MIAMI DADE CO WASD  
6398 SW 80TH ST PS0180  
MIAMI, FL 33143

Re: Available Fault Current for MIAMI DADE CO WASD

Dear MIAMI DADE CO WASD:

Thank you for contacting FPL about the available fault current at MIAMI DADE CO WASD. Based on the plans you have provided dated June 14 2022, the maximum available fault current at the transformer secondary terminals is estimated to be 35410 symmetrical amperes at 120/240 volts. The protective device on the line side of the transformer currently in place or to be installed and serving your property located at the subject location is a 10 amp type KS fuse. The primary service voltage is 13.2kV L-L. This calculated symmetrical fault current is not intended for use as the basis for motor starting calculations and does not include:

- Consideration for any motor contribution or
- Fault current asymmetry.

The FPL equipment currently serving or planned to serve your facility may change over time as a result of any number of factors, including but not limited to transformer replacements due to load growth, electrical grid changes or emergencies. As a result, although we are providing you with this information for the sole purpose of assisting you in the completion of your study, you and your client should not design, install or operate your system in reliance upon any expectation that the specific size and type of equipment currently in place will remain so. If and when the size and type of the equipment changes, our employees are not always in a position to immediately notify customers.

As the construction project progresses, any questions or information you may need can be communicated through me. I have enclosed my business card for easy reference and look forward to hearing from you in the near future.

Sincerely,

ZULEMA CHAVES  
Engineer I

EQUAL TO: SQUARE D															Panel N		VOLTS: 120/240V, 3Ø, 4W	
TYPE: EXISTING															EXISTING		BUS: 60 Amp	
MOUNTING SURFACE																	TYPE MAINS: 60A, MCB	
LOCATION: EXTERIOR																	AIC: 10K	
CKT #	DESCRIPTION	POLE	C.B. TRIP (AMPS)	WIRE	CON-DUIT	VA	"A" VA LOAD	"B" VA LOAD	"C" VA LOAD	VA	CON-DUIT	WIRE	C.B. TRIP (AMPS)	POLE	DESCRIPTION	CKT #		
1						830	1,330			500	E	E	20	1	EXISTING	2		
(B)- 3	NEW ACTUATOR	3	15	#12	1/2"	830		1,030		200			20	2	SPARE	4		
5						830			830						SPACE	6		
(A)- 7	R.T.U.	1	20	E	E	500	500								SPACE	8		
9	SPACE							0							SPACE	10		
11	SPACE								0						SPACE	12		
13	SPACE						0								SPACE	14		
15	SPACE							0							SPACE	16		
17	SPACE								0						SPACE	18		
19	SPACE						0								SPACE	20		
21	SPACE								0						SPACE	22		
23	SPACE									0					SPACE	24		
						TOTALS	1,830	1,030	830									
CONNECTED LOAD (KVA):						2.9	DEMAND LOAD (KVA):			2.9	AMPS/PHASE:			12				

- (A)- EXISTING LOAD TO REMAIN. REUSE BREAKER, WIRES AND CONDUIT
- (B)- NEW CIRCUIT BREAKER, BRANCH WIRE AND CONDUIT TO FEED NEW LOAD
- E- EXISTING WIRE AND CONDUIT TO REMAIN

FAULT CURRENT CALCULATION  
PANEL N MAIN

35,410 SYMM. S.C.A. ASSUMED AT F.P.&L. Co. TRANSFORMER SECONDARY

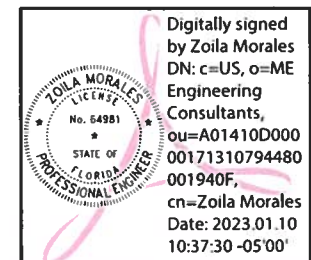
40 FEET #6 Cu. CONDUCTORS IN PVC CONDUIT

$$f = \frac{1.73 \times L \times I}{C \times E_{L-L}} = \frac{(1.73)(200)(35,410)}{(2,430)(240)} = 21.008$$

$$M = \frac{1}{1 + f} = \frac{1}{1 + 21.008} = 0.045$$

$$I_{SCA} = \text{AVAILABLE FROM UTILITY} \times M = (35,410)(0.045) = 1,593 \text{ Amps}$$

EXISTING 10k S.C.A. M.C.B. PANEL IS ADEQUATE TO REMAIN



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ELECTRICAL PANEL AND CALCULATIONS

E-107