

SARASOTA COUNTY DEVELOPER PACKAGE - TRIPLEX

JUNE 2021

SUMMARY

The following package is designed to provide information suitable for developers to supply and install control panels into existing Sarasota County lift station network.

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SARASOTA COUNTY UTILITIES DEPARTMENT SARASOTA, FLORIDA

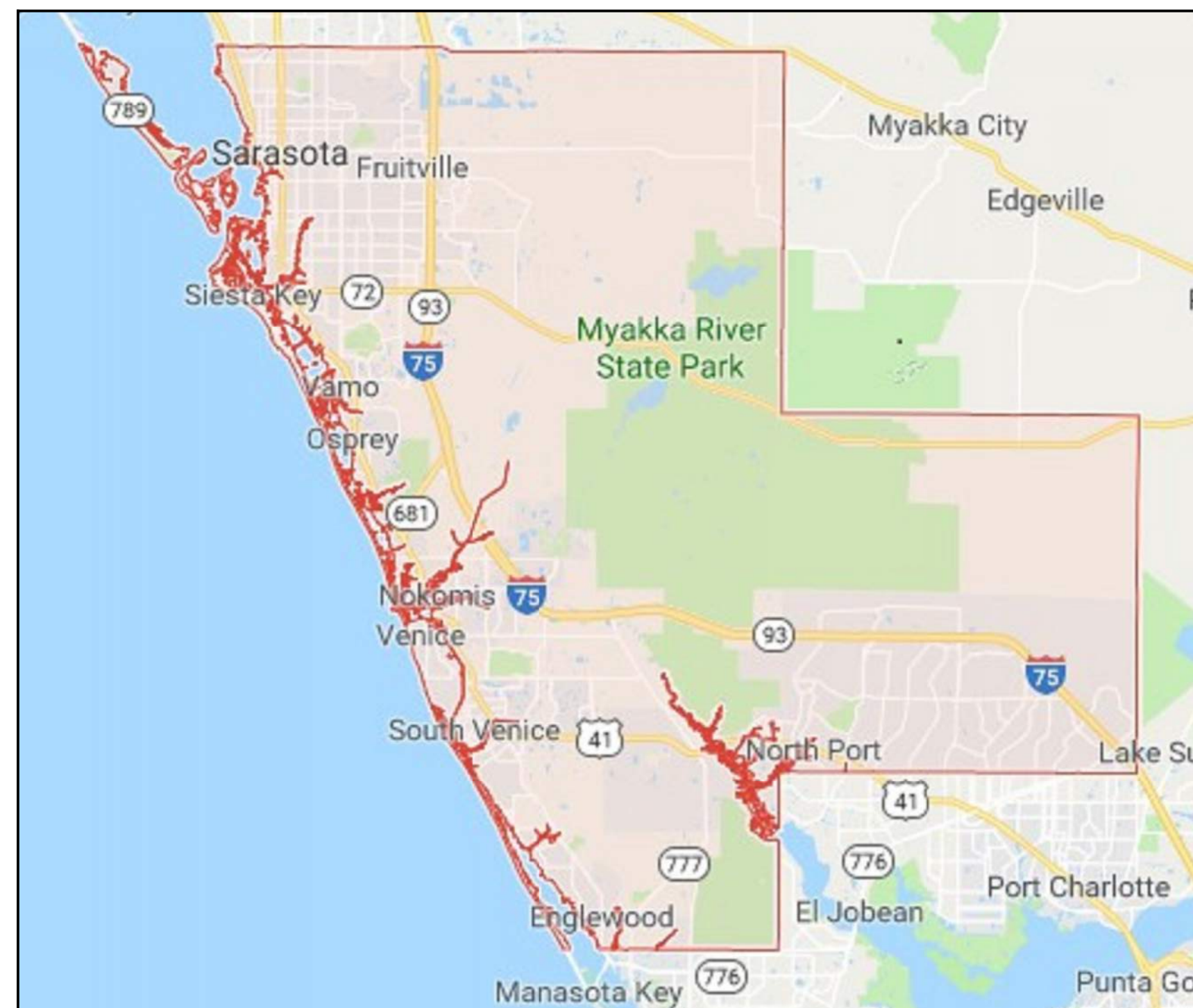
DEVELOPER LS PACKAGE - TRIPLEX

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DATE: JUNE, 2021

FINAL



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SHEET NUMBER	DRAWING NUMBER	DESCRIPTION
GENERAL		
1	19G01	COVER SHEET
ELECTRICAL		
2	19E01	DEVELOPER LS - LIFT STATION CONTROL PANEL RACK
3	19E02	DEVELOPER LS - LIFT STATION RISER DIAGRAM-TRIPLEX
4	19E03	DEVELOPER LS - LIFT STATION RISER DIAGRAM
INSTRUMENTATION		
5	19GN01	DEVELOPER LS - SYMBOLS AND ABBREVIATIONS - I
6	19GN02	DEVELOPER LS - SYMBOLS AND ABBREVIATIONS - II
7	19GN03	DEVELOPER LS - SYMBOLS AND ABBREVIATIONS - III
8	19GN04	DEVELOPER LS - SYMBOLS AND ABBREVIATIONS - IV
9	19GN05	DEVELOPER LS - SCHEMATIC SYMBOLS
10	19N01	DEVELOPER LS - TRIPLEX PUMP CONTROL PANEL EXTERNAL ELEVATION
11	19N02	DEVELOPER LS - TRIPLEX PUMP CONTROL PANEL DEADFRONT INTERNAL ELEVATION
12	19N03	DEVELOPER LS - TRIPLEX PUMP CONTROL PANEL FOR THREE PHASE AND 240V SYSTEMS INTERNAL ELEVATION
13	19N04	DEVELOPER LS - TRIPLEX PUMP CONTROL PANEL INTERNAL ELEVATION
14	19N05	DEVELOPER LS - CONTROL SCHEMATIC - 480V THREE PHASE TRIPLEX
15	19N06	DEVELOPER LS - THREE PHASE PUMP STATION

JOB NO. 11572A.10
DRAWING NO. 19G01
REVISION 1

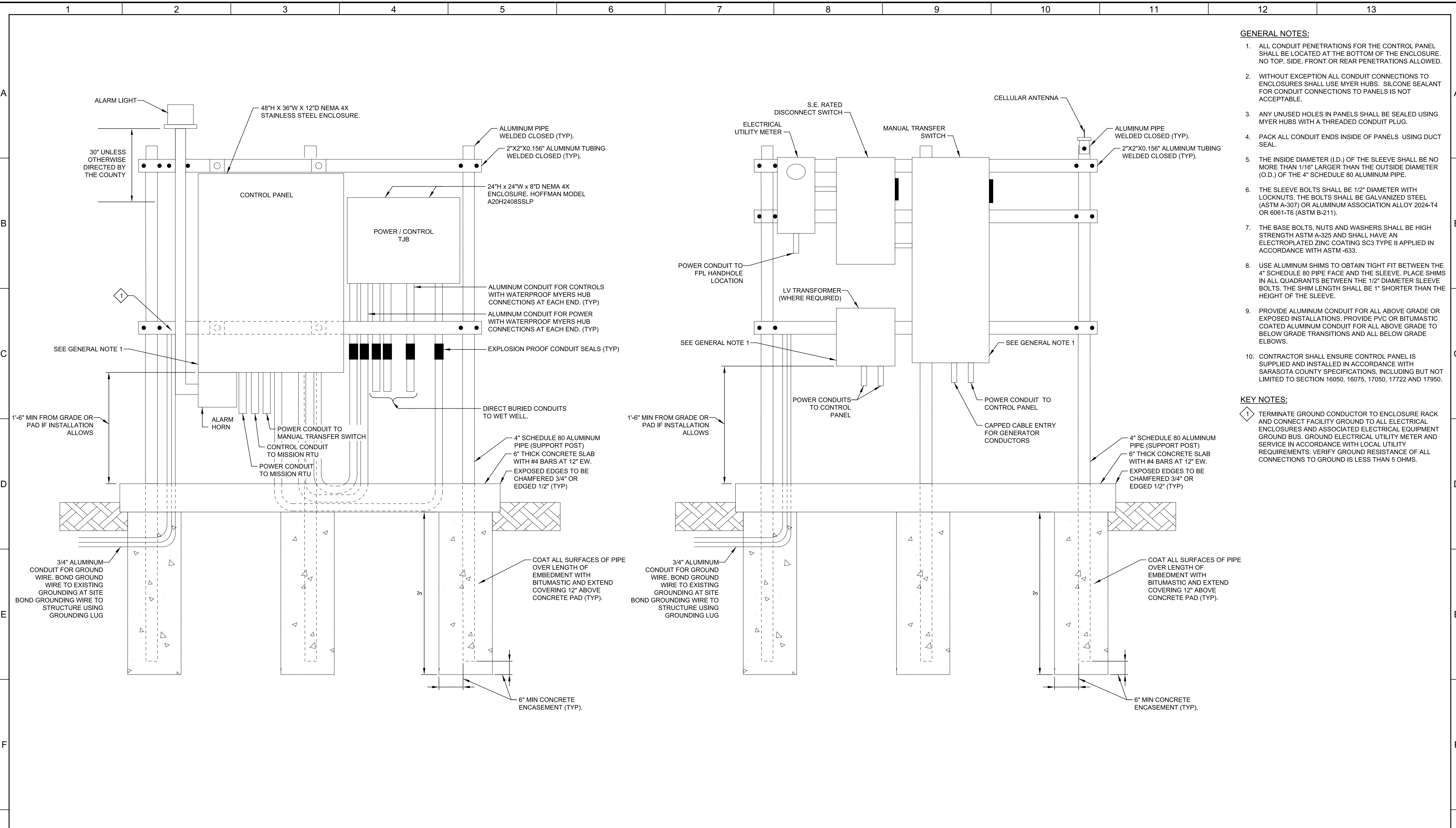
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- GENERAL NOTES:**
1. ALL CONDUIT PENETRATIONS FOR THE CONTROL PANEL SHALL BE LOCATED AT THE BOTTOM OF THE ENCLOSURE. NO TOP, SIDE, FRONT OR REAR PENETRATIONS ALLOWED.
 2. WITHOUT EXCEPTION ALL CONDUIT CONNECTIONS TO ENCLOSURES SHALL USE MYER HUBS. SILICONE SEALANT FOR CONDUIT CONNECTIONS TO PANELS IS NOT ACCEPTABLE.
 3. ANY UNUSED HOLES IN PANELS SHALL BE SEALED USING MYER HUBS WITH A THREADED CONDUIT PLUG.
 4. PACK ALL CONDUIT ENDS INSIDE OF PANELS USING DUCT SEAL.
 5. THE INSIDE DIAMETER (I.D.) OF THE SLEEVE SHALL BE NO MORE THAN 1/16" LARGER THAN THE OUTSIDE DIAMETER (O.D.) OF THE 4" SCHEDULE 80 ALUMINUM PIPE.
 6. THE SLEEVE BOLTS SHALL BE 1/2" DIAMETER WITH LOCKNUTS. THE BOLTS SHALL BE GALVANIZED STEEL (ASTM A-307) OR ALUMINUM ASSOCIATION ALLOY 2024-T4 OR 6061-T6 (ASTM B-211).
 7. THE BASE BOLTS, NUTS AND WASHERS SHALL BE HIGH STRENGTH ASTM A-325 AND SHALL HAVE AN ELECTROPLATED ZINC COATING SC3 TYPE II APPLIED IN ACCORDANCE WITH ASTM -633.
 8. USE ALUMINUM SHIMS TO OBTAIN TIGHT FIT BETWEEN THE 4" SCHEDULE 80 PIPE FACE AND THE SLEEVE. PLACE SHIMS IN ALL QUADRANTS BETWEEN THE 1/2" DIAMETER SLEEVE BOLTS. THE SHIM LENGTH SHALL BE 1" SHORTER THAN THE HEIGHT OF THE SLEEVE.
 9. PROVIDE ALUMINUM CONDUIT FOR ALL ABOVE GRADE OR EXPOSED INSTALLATIONS. PROVIDE PVC OR BITUMASTIC COATED ALUMINUM CONDUIT FOR ALL ABOVE GRADE TO BELOW GRADE TRANSITIONS AND ALL BELOW GRADE ELBOWS.
 10. CONTRACTOR SHALL ENSURE CONTROL PANEL IS SUPPLIED AND INSTALLED IN ACCORDANCE WITH SARASOTA COUNTY SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO SECTION 16050, 16075, 17050, 17722 AND 17950.
- KEY NOTES:**
1. TERMINATE GROUND CONDUCTOR TO ENCLOSURE RACK AND CONNECT FACILITY GROUND TO ALL ELECTRICAL ENCLOSURES AND ASSOCIATED ELECTRICAL EQUIPMENT GROUND BUS. GROUND ELECTRICAL UTILITY METER AND SERVICE IN ACCORDANCE WITH LOCAL UTILITY REQUIREMENTS. VERIFY GROUND RESISTANCE OF ALL CONNECTIONS TO GROUND IS LESS THAN 5 OHMS.

CONTROL PANEL RACK INSTALLATION LAYOUT - FRONT ELEVATION

CONTROL PANEL RACK INSTALLATION LAYOUT - BACK ELEVATION

ALL SARASOTA COUNTY UTILITY LIFT STATIONS SHALL HAVE 480VAC, 3PH POWER

REV	DATE	BY	DESCRIPTION
1			
2			
3			
4			

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SARASOTA COUNTY
SCADA STANDARDS
ELECTRICAL
DEVELOPER LS - LIFT STATION CONTROL
PANEL RACK MOUNTING DETAIL

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"	JOB NO. 11572A10
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWING NO. 19E01
	SHEET NO. 2 OF 15

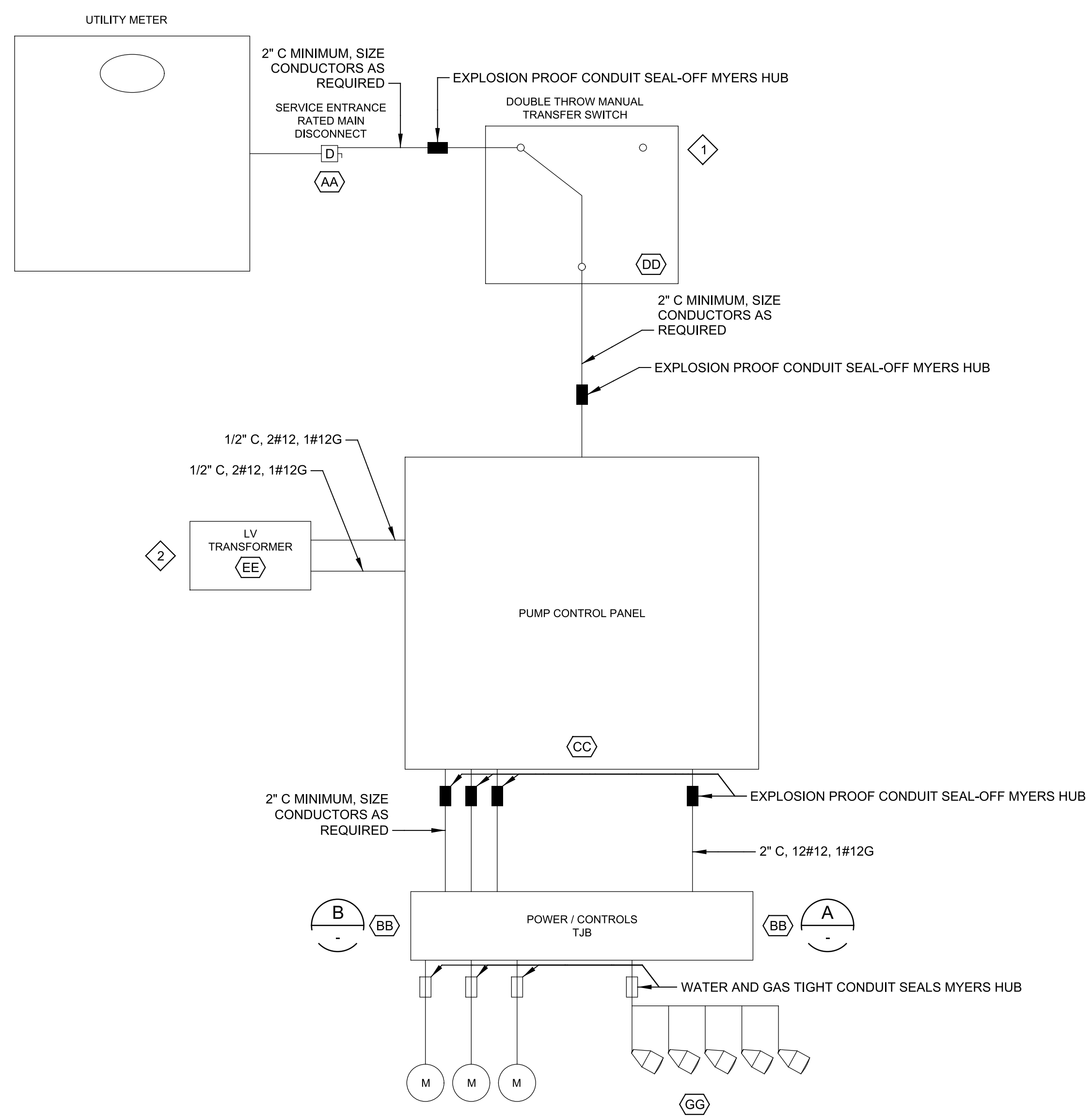
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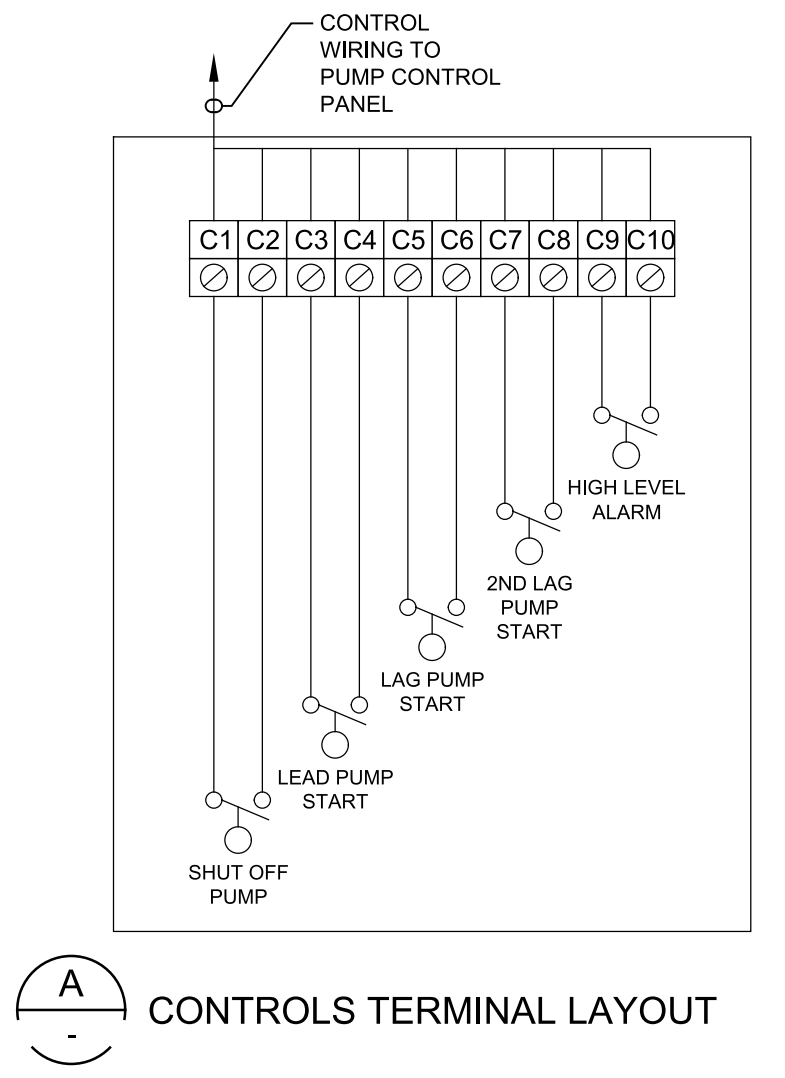
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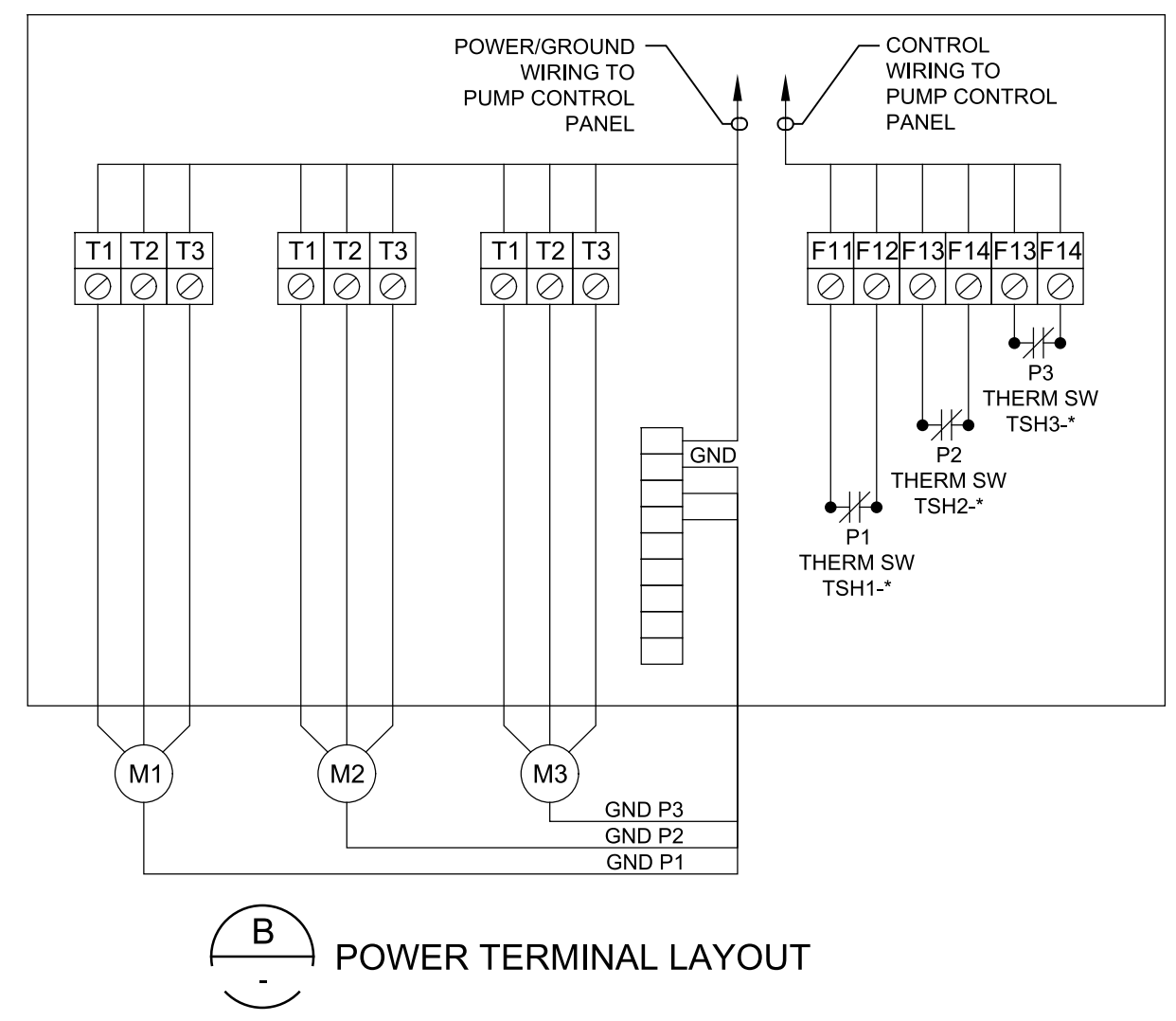
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LIFT STATION RISER DIAGRAM



CONTROLS TERMINAL LAYOUT



POWER TERMINAL LAYOUT

- GENERAL NOTES:**
1. SIZE ALL EQUIPMENT, WIRE, AND CONDUIT BASED ON ACTUAL LIFT STATION EQUIPMENT LOADS.
 2. COORDINATE ELECTRICAL UTILITY SERVICE WITH LOCAL ELECTRICAL SERVICE PROVIDER.
 3. PROVIDE EXPLOSION PROOF CONDUIT SEALS BETWEEN JUNCTION BOXES AND THE CONTROL PANEL AND WATER AND GAS TIGHT SEALS BETWEEN THE JUNCTION BOXES AND THE WETWELL.
- KEY NOTES:**
1. PROVIDE ENTRY FOR PORTABLE GENERATOR CONDUCTORS AND CAP ENTRY WITH THREADED WATER TIGHT SCREW CAP MATCHING THE MATERIAL OF THE DOUBLE THROW SWITCH.
 2. PROVIDE EXTERNALLY MOUNTED 480V/120V SINGLE PHASE TRANSFORMER FOR ALL 480VAC SYSTEMS. SIZE TRANSFORMER AS REQUIRED MINIMUM 750 VA. SIZE CONDUIT AND CONDUCTORS AS REQUIRED.

BILL OF MATERIALS

ITEM	QUANTITY	DESCRIPTION
AA	1	ELECTRICAL SERVICE - PROVIDE SERVICE METER WITH 100 AMPERE (MINIMUM) SLOW-BLOW FUSED MAIN DISCONNECT, PADLOCKABLE IN BOTH THE "ON" AND "OFF" POSITION. METER SHALL MEET LOCAL CODE AND POWER UTILITY REQUIREMENTS AND SHALL HAVE A MANUAL BY-PASS SWITCH. SURGE ARRESTORS APPROPRIATE TO THE SERVICE VOLTAGE AND PHASE CONFIGURATION SHALL ALSO BE PROVIDED ON THE MAIN DISCONNECT. MAIN DISCONNECT SWITCHES SHALL BE AS FOLLOWS WITHOUT EXCEPTION: 240 VOLTS, 3PH (100 AMPS OR LESS) SQUARE D MODEL H323NRB 240 VOLTS, 3PH (GREATER THAN 100 AMPS) SQUARE D MODEL H324NRB 208 VOLTS, 3PH (100 AMPS OR LESS) SQUARE D MODEL H323NRB 208 VOLTS, 3PH (GREATER THAN 100 AMPS) SQUARE D MODEL H324NRB
BB	2	STAINLESS STEEL JUNCTION BOX HINGED, PADLOCKABLE 20"H X 24"W X 8"D WITH BACK PLATE AND COMPRESSION TYPE TERMINAL STRIP FOR CONNECTION OF LEVEL, CONTROLS AND INSTRUMENTS TO THE RTU PANEL AND PUMP POWER CORDS FROM THE MOTOR CONTROL PANEL. HOFFMAN MODEL A20H24065SLP, WITH 4-PLK/JIC PADLOCK KIT, OR EQUAL. JUNCTION BOX SHALL HAVE A GROUND BUS BAR WITH 9 TERMINALS AT MINIMUM. BOX SHALL BE PROVIDED WITH METALLIC, GROUNDED VOLTAGE BARRIER, A LAMINATED WIRING DIAGRAM OF JUNCTION BOX TERMINAL CONNECTIONS SHALL BE PROVIDED IN A PERMANENT SLEEVE ATTACHED TO COVER. SEE DETAIL A AND B THIS SHEET.
CC	1	PUMP CONTROL PANEL 36"WIDE, 48"HIGH, AND 12"DEEP (EXCLUDING DOOR DEPTH). FREE STANDING CABINET SHALL BE CONSTRUCTED EXCLUSIVELY OF WHITE POWER COATED 304 STAINLESS STEEL, 14 GAUGE (MINIMUM) WITH CONTINUOUS WELDS THROUGHOUT. REFER PUMP CONTROL PANEL DRAWINGS FOR DETAILS.
DD	1	DOUBLE THROW SWITCH, NON-FUSIBLE FOR MOTER CONTROL PANEL NEMA 3R, 3 POLE, UL LISTED, PADLOCKABLE. 240V, 100AMPS: SQUARE D NO. DTU323RB WITH NEUTRAL / GROUNDING KIT
EE	1 (AS REQD.)	LOW VOLTAGE TRANSFORMER, 480V PRIMARY AND 240/120V SECONDARY SINGLE PHASE, SEALED, GENERAL PURPOSE, DRY TYPE. PROVIDE NEMA 3R AND UL 1561 LISTED TRANSFORMER WITH SQUARE D, CLASS 7400
GG	4	BALL FLOAT SWITCHES - ANCHOR SCIENTIFIC ROTO-FLOAT, ENCAPSULATED BODY WITH A SWITCH TO DETERMINE POSITION OF FLOAT. PROVIDE SWITCHES WITH HERMETICALLY SEALED CONTACTS SUITABLE FOR CLASSIFIED LOCATIONS. INSTALL ON WETWELL CABLE RACK.

ALL SARASOTA COUNTY UTILITY LIFT STATIONS SHALL HAVE 480VAC, 3PH POWER

REV	DATE	BY	DESCRIPTION
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3			

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SARASOTA COUNTY
SCADA STANDARDS
ELECTRICAL
DEVELOPER LS - LIFT STATION
RISER DIAGRAM-TRIPLEX

VERIFY SCALES
JOB NO. 11572A10
DRAWING NO. 19E02
SHEET NO. 3 OF 15

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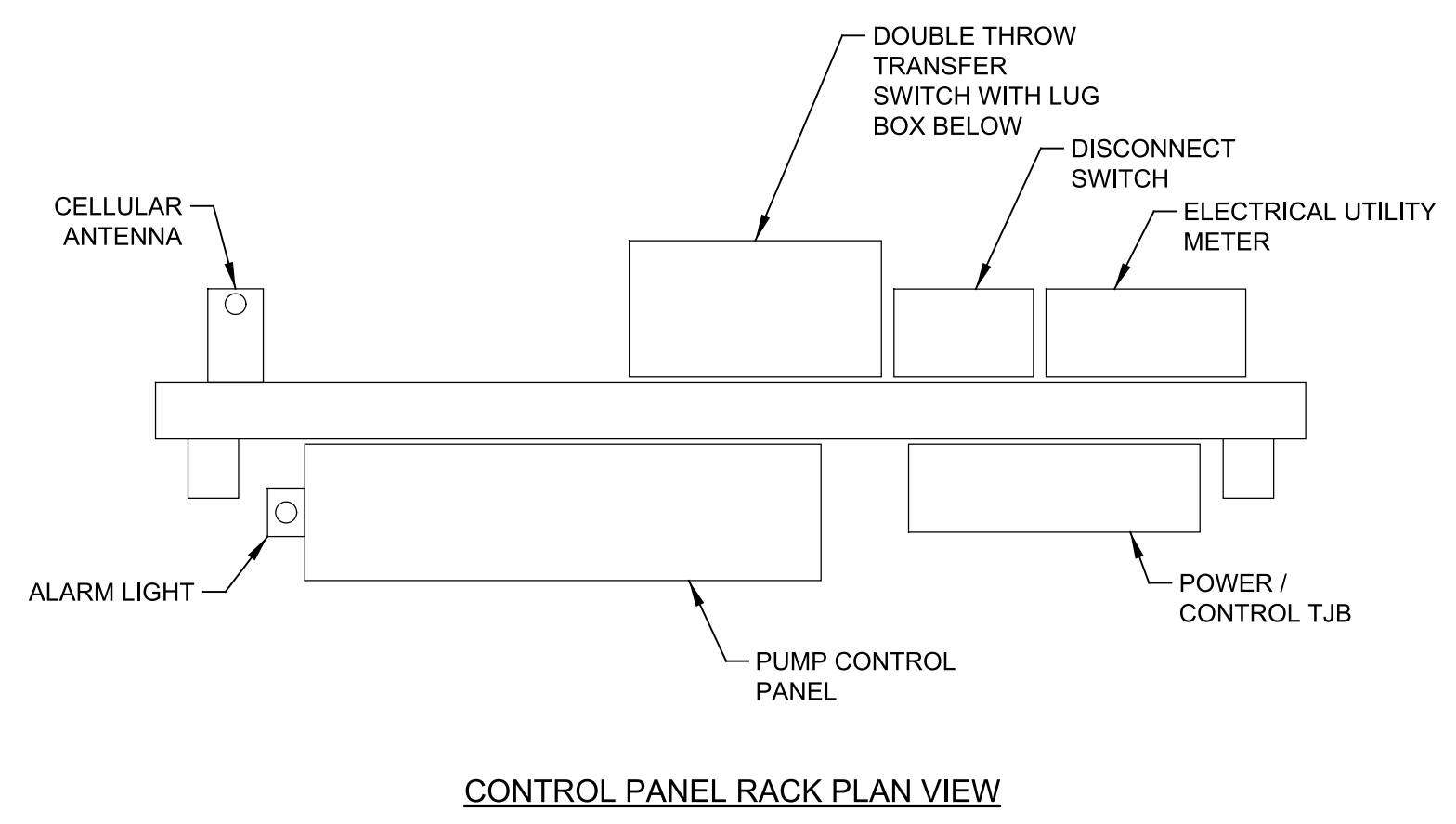
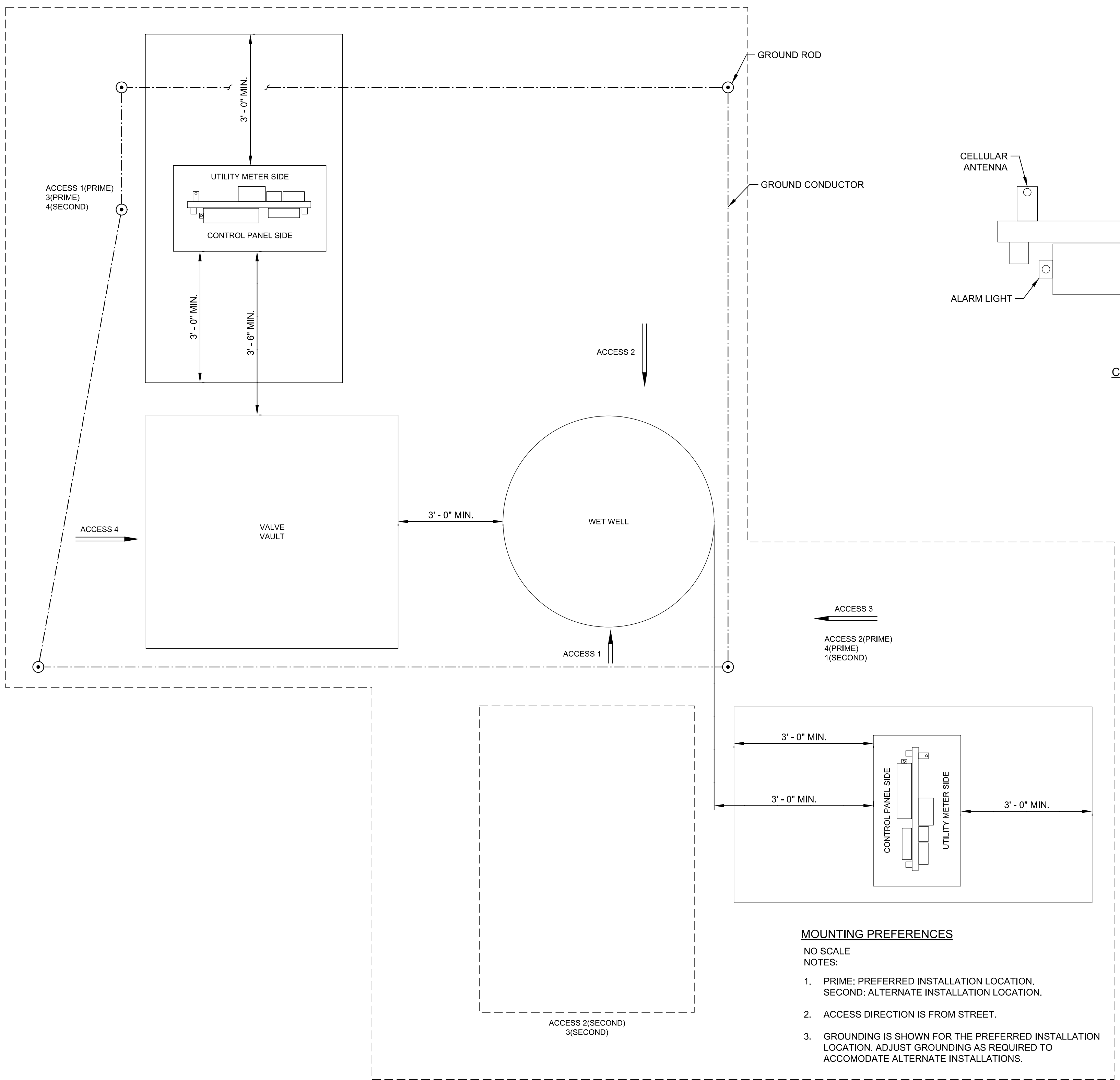
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GENERAL NOTES:

1. ANY MODIFICATION TO OR DEVIATION FROM THE DESIGN DOCUMENTS INCLUDING BUT NOT LIMITED TO THE PLANS AND SPECIFICATIONS IS STRICTLY PROHIBITED WITHOUT PRIOR APPROVAL BY COUNTY UTILITIES GENERAL MANAGER.
2. INSTALLATION DETAILS INTENDED FOR LIFT STATIONS WHERE EXISTING CONTROL PANEL AND MOUNTING STRUCTURE FOR CONTROL PANEL, METER, AND DISCONNECT SWITCH SHALL BE COMPLETELY REPLACED.
3. ALL CONNECTION HARDWARE SHALL BE SERIES 300 STAINLESS STEEL. BOLTS SHALL BE SLEEVED WITH 1/8" THICK NON-CONDUCTIVE, NON-POUROUS, ULTRAVIOLET RESISTANT INSULATING MATERIAL.
4. ALL EXPOSED CONDUITS SHALL BE ALUMINUM AND HAVE A WATERPROOF CONNECTION AT EACH PANEL OR ENCLOSURE UTILIZING MYERS HUBS, NO EXCEPTIONS. WATER LEAKAGE AT THE PANELS AND RUSTING CONDUIT CLOSURE PIECES ARE NOT ACCEPTABLE. THE USE OF SILICONE TO SEAL THESE JOINTS IS NOT AN ACCEPTABLE METHOD OF SEALING THE PANEL INTERFACES.
5. ELECTRICAL SERVICE CHARACTERISTICS SHALL BE VERIFIED BEFORE INSTALLATION OF THE CONTROL PANEL. VERIFY ALL NEW SERVICE AND METERING REQUIREMENTS WITH THE LOCAL ELECTRIC UTILITY.
6. ISOLATE ALL DISSIMILAR METALS WITH 1/8" NON-CONDUCTIVE, NON-POUROUS, ULTRAVIOLET RESISTANT INSULATING MATERIAL.
7. CONTRACTOR SHALL INSTALL A MINIMUM OF 5 GROUND RODS AND CONNECT ALL GROUND RODS TOGETHER USING A MINIMUM #2/0 BARE STRANDED COPPER GROUND CONDUCTOR TO CREATE A GROUND RING SYSTEM AROUND THE EQUIPMENT TO PROVIDE A GROUND RESISTANCE NOT GREATER THAN 3 OHMS. GROUND RODS SHALL BE 3/4" X 10' MINIMUM COPPER CLAD STEEL AND DRIVEN FLUSH WITH GRADE WITH A MINIMUM OF ONE ROD INSTALLED IN AN INSPECTION WELL WITH COVER FOR ACCESSIBILITY. CONTRACTOR SHALL PROPERLY MEASURE GROUNDING RESISTANCE IN THE PRESENCE OF THE OWNER OR THE OWNER'S REPRESENTATIVE - SEE GROUNDING DETAIL. THE GROUND RODS SHALL NOT BE DRIVEN INTO THE GROUND UNTIL ACCEPTED IN WRITING BY A COUNTY REPRESENTATIVE. THE GROUND WIRE SHALL BE ATTACHED TO THE GROUND RODS BY EXOTHERMIC WELD. THE GROUND RODS SHALL BE LOCATED 12" OFF THE CORNERS OF THE STRUCTURES AND THE FIFTH GROUND ROD SHALL BE LOCATED 12" FROM THE CONTROL PANEL SUPPORT POST. ALL APPROPRIATE FACILITIES SHALL BE GROUNDED INCLUDING BUT NOT LIMITED TO: CONTROL PANEL, ELECTRICAL SERVICE, ELECTRICAL METER CANS, TERMINAL JUNCTION BOXES, SAFETY SWITCHES, SUPPORT RACKS, WETWELL CABLE RACKS, WETWELL LIDS, BARE METAL FENCES, AND VALVE VAULT LIDS.
8. CONTRACTOR SHALL CONTACT THE APPROPRIATE AGENCY FOR THE EXACT LOCATION FOR ALL WATER SEWER, ELECTRIC, TELEPHONE, AND ANY OTHER UNDERGROUND OR OVERHEAD UTILITY BEFORE STARTING CONSTRUCTION. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE CONTRACT DRAWINGS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES.
9. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING EQUIPMENT, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF THE PREPARATION OF THESE DRAWINGS, BUT DO NOT ASSUME THEM TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS AND OTHER FEATURES AFFECTING THE WORK PRIOR TO CONSTRUCTION. SHOULD UTILITIES BE ENCOUNTERED WHICH ARE NOT INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE COUNTY IMMEDIATELY.
10. WHEN THE NEW CONCRETE PAD IS POURED NEXT TO AN EXISTING CONCRETE PAD STRUCTURE THE TWO SHALL BE SEPARATED WITH 1/2" THICK, FULL DEPTH EXPANSION BOARD (EXPANSION JOINT MATERIAL).
11. ALL BOXES AND PANELS SHALL BE LOCATED TO ALLOW ALL DOORS AND FRONTS TO FULLY OPEN.
12. LIGHTNING ARRESTERS SHALL BE ATTACHED TO THE SERVICE ENTRANCE DISCONNECT SWITCH, LOAD SIDE ONLY.
13. UNDERGROUND SPLICES (RAYCHEM MODEL LINE WCSM-S OR EQUAL) SHALL BE WATERTIGHT AND ACCEPTABLE TO THE COUNTY. ELECTRIC POWER SERVICE SPLICES SHALL BE ENCLOSED IN QUARZITE COMPOSITE SPLICE BOX WITH HEAVY DUTY LID OR EQUAL. SPLICING OF THE PUMP CABLE, FLOAT CABLES, OR OTHER WIRING TO THE WETWELL FROM THE JUNCTION BOX IS NOT ACCEPTABLE.
14. THE CONTROL WIRING SHALL BE IN A SEPARATE CONDUIT. THE WIRING FOR EACH PUMP SHALL ALSO BE IN SEPARATE CONDUITS. NOTE FOR WIRES BETWEEN JUNCTION BOX AND CONTROL PANEL 12 GAUGE STRANDED BLOCK FOR FLOATS. CORRECT GAUGE FOR PUMP BLACK THHN. FLOAT WIRES SHOULD BE CUT TO LENGTH. PUMP WIRES SHOULD BE CUT TO LENGTH AND RAN BEHIND THE RAILS. COILED OR ROLLED UP EXTRA WIRE IS NOT ACCEPTABLE.
15. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT EQUIPMENT AND MATERIALS FROM HYDROGEN SULFIDE GAS DAMAGE.
16. ALL CONDUIT PENETRATING A NEW OR EXISTING CONCRETE PAD OR SLAB SHALL BE LOCATED A MINIMUM OF 3 INCHES FROM THE EDGE OF THE CONCRETE PAD OR SLAB. CONSEQUENTLY ALL CONDUIT WILL HAVE A MINIMUM OF 3 INCHES OF CONCRETE COVER.
17. FIVE SPARE CONDUCTORS SHALL BE PULLED BETWEEN THE MISSION RTU AND THE CONTROL PANEL. THE WIRES SHALL BE STRANDED 14 GAUGE XHHW. THE INSULATION SHALL BE RED ON SIGNAL WIRES, WHITE ON NEUTRAL, AND GREEN ON GROUND. WIRE NUMBER LABELS SHALL BE INSTALLED ON BOTH THE CONTROL PANEL AND RTU SIDES. WIRES SHALL BE LANDED AT THE RTU IN ACCORDANCE WITH COUNTY GUIDELINES.
18. THE NEMA 4X STAINLESS STEEL JUNCTION BOX FOR A DUPLEX CONTROL PANEL SHALL BE 12" HIGH X 12" WIDE X 6" DEEP AND SHALL MEET NEC REQUIREMENTS. TWO INCH DIAMETER CONDUITS AND TWO INCH DIAMETER SEALOFFS, AS A MINIMUM SIZE, SHALL BE USED AT ALL DUPLEX CONTROL PANEL INSTALLATIONS.
19. SEALOFFS SHALL BE PROVIDED BETWEEN JUNCTION BOX AND CONTROL PANEL AS SHOWN. SEALOFFS SHALL BE SEALED WITH CROUSE-HINDS "CHICO" COMPOUND. ALL THREADS ON SEAL OFFS SHALL BE ZINC COATED OR COLD GALVANIZED TO PREVENT RUSTING. RUSTING FACILITIES ARE NOT ACCEPTABLE TO THE COUNTY AND THE CONTRACTOR WILL PROVIDE ACCEPTABLE REMEDIES TO RUSTING FACILITIES INCLUDING REPLACING ALL RUSTING FACILITIES AT NO COST TO THE COUNTY.
20. TRIM EXCESS THREAD FROM U-BOLTS FLUSH WITH NUTS.

ALL SARASOTA COUNTY UTILITY LIFT STATIONS SHALL HAVE 480VAC, 3PH POWER



MOUNTING PREFERENCES
 NO SCALE
 NOTES:
 1. PRIME: PREFERRED INSTALLATION LOCATION. SECOND: ALTERNATE INSTALLATION LOCATION.
 2. ACCESS DIRECTION IS FROM STREET.
 3. GROUNDING IS SHOWN FOR THE PREFERRED INSTALLATION LOCATION. ADJUST GROUNDING AS REQUIRED TO ACCOMMODATE ALTERNATE INSTALLATIONS.

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SARASOTA COUNTY
 SCADA STANDARDS
 ELECTRICAL
 DEVELOPER LS - LIFT STATION
 RISER DIAGRAM

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"	JOB NO. 11572A10
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWING NO. 19E03
	SHEET NO. 4 OF 15

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HMI/SCADA SYSTEM OPERATOR INTERFACE TERMINAL	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - DESCRIPTION 6 - EXISTING/FUTURE	REFER 1 2	REFER 3	ACTION ALARM NUM - NUMERIC SP - SET POINT STATUS TREND	DESCRIPTION	DESCRIPTION	E - EXISTING F - FUTURE	INSTRUMENT PRIMARY ELEMENT	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1	REFER 3	DESCRIPTION	DESCRIPTION	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE	
HARDWIRED I/O POINT	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 2 4	REFER 3	AI - ANALOG INPUT AO - ANALOG OUTPUT DI - DISCRETE INPUT DO - DISCRETE OUTPUT HSC - HIGH SPEED COUNTER INPUT RTD - RTD INPUT	DESCRIPTION	PAC - PROGRAMMABLE AUTOMATION CONTROLLER NO. PLC - PROGRAMMABLE LOGIC CONTROLLER NO. RIO - REMOTE I/O VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE	INSTRUMENT/CONTROL ELEMENT PRIMARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - DESCRIPTION 6 - EXISTING/FUTURE	REFER 1	REFER 3	DESCRIPTION	DESCRIPTION	DESCRIPTION	E - EXISTING F - FUTURE	
NETWORK / SOCKET/I/O	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE 7 - DIGITAL NETWORK TABLE	REFER 1 2	REFER 3	BUS ID CNET - CONTROLNET DNET - DEVICENET ENET - ETHERNET/IP FF - FOUNDATION FIELDBUS MB - MODBUS RTU MB+ - MODBUS PLUS MBTCP - MODBUS TCP DP - PROFIBUS DP PA - PROFIBUS PA PNET - PROFINET SERIAL - PROPRIETARY PROTOCOL	DESCRIPTION	PAC - PROGRAMMABLE AUTOMATION CONTROLLER NO. PLC - PROGRAMMABLE LOGIC CONTROLLER NO. RIO - REMOTE I/O VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE	INSTRUMENT/CONTROL ELEMENT PRIMARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 3 XR - PROTECTION RELAY CR - CONTROL RELAY IR - INTERPOSING RELAY	REFER 3	DESCRIPTION	DESCRIPTION	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE	
LOCAL OPERATOR INTERFACE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 2	REFER 3	ACTION ALARM NUM - NUMERIC SP - SET POINT STATUS	DESCRIPTION	LOI - LOCAL OPERATOR INTERFACE NO. LCP - LOCAL CONTROL PANEL NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE	INSTRUMENT/CONTROL ELEMENT AUXILIARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 3 XR - PROTECTION RELAY CR - CONTROL RELAY IR - INTERPOSING RELAY	REFER 3	DESCRIPTION	DESCRIPTION	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE	
PILOT DEVICE OPERATOR INTERFACE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 2	REFER 3	AM - AUTO/MANUAL BYPASS - BYPASS CL - CLOSE E-STOP - EMERGENCY STOP FRLR - FIXED RATE/LEVEL RATE HOA - HAND /OFF/AUTO JOHC - JOG OPEN/HOLD/CLOSE JOUC - JOG OPEN/JOG CLOSE LH - LOW/HIGH LOR - LOCAL/OFF/REMOTE LOS - LOCK OUT STOP LS - LEAD/STANDBY LSR - LOCAL/STOP/REMOTE NOOT - NO OFFLINE/OFFLINE TRANSITION OC - OPEN/CLOSE OLOL - ON LINE/OFF LINE OO - OFF/ON OP - OPEN OSC - OPEN/STOP/CLOSE RST - RESET SAAM - SEMI AUTO/AUTO/MANUAL SEL - SELECT SP - STOP SPD - SPEED SS - START/STOP ST - START	DESCRIPTION	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. RVSS - REDUCED VOLTAGE SOLID STARTER NO. VCP - VENDOR CONTROL PANEL NO. VFD - VARIABLE FREQUENCY DRIVE NO.	E - EXISTING F - FUTURE	FIELD EQUIPMENT NON-POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION/SIZE 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 3	REFER 3	DESCRIPTION	DESCRIPTION	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE	
POWER DEVICE PRIMARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - VOLTAGE-POLE 5 - LOCATION 6 - EXISTING/FUTURE	CB - CIRCUIT BREAKER DISC - DISCONNECT FU - FUSE	REFER 3	TM - THERMAL MAGNETIC CIRCUIT BREAKER	DESCRIPTION	24VDC - 1P 120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	DP - DISTRIBUTION PANEL NO. LCP - LOCAL CONTROL PANEL NO. LP - LIGHTING PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. PP - POWER PANEL NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE	FIELD EQUIPMENT PRIMARY FUNCTION POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 3	REFER 3	DESCRIPTION	DESCRIPTION	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE
POWER DEVICE AUXILIARY FUNCTION FOR OPERATOR ACCESSIBLE DEVICES	1 - TAG 2 - LOOP NUMBER 3 - DESCRIPTION 4 - DESCRIPTION 5 - DESCRIPTION 6 - EXISTING/FUTURE	DISC - DISCONNECT	REFER 3	DESCRIPTION	DESCRIPTION	DESCRIPTION	E - EXISTING F - FUTURE	FIELD EQUIPMENT AUXILIARY FUNCTION POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - DESCRIPTION 6 - EXISTING/FUTURE	MWH - MOTOR WINDING HEATER TSH - TEMPERATURE SWITCH XSH - TORQUE SWITCH	REFER 3	DESCRIPTION	DESCRIPTION	DESCRIPTION	E - EXISTING F - FUTURE	
POWER DEVICE PRIMARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - VOLTAGE-POLE 5 - LOCATION 6 - EXISTING/FUTURE	CB - CIRCUIT BREAKER FU - FUSE	REFER 3	MCP - MOTOR CIRCUIT PROTECTOR SS - SOLID STATE CIRCUIT BREAKER TM - THERMAL MAGNETIC CIRCUIT BREAKER	DESCRIPTION	24VDC - 1P 120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	DP - DISTRIBUTION PANEL NO. LCP - LOCAL CONTROL PANEL NO. LP - LIGHTING PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. PP - POWER PANEL NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE	FIELD EQUIPMENT STARTER/DRIVE CUBICLE/CABINET	1 - TAG 2 - LOOP NUMBER 3 - TYPE 4 - VOLTAGE-POLE 5 - POWER SOURCE 6 - EXISTING/FUTURE	MS - MOTOR STARTER RVAT - REDUCED VOLTAGE AUTO TRANSFORMER STARTER RVSS - REDUCED VOLTAGE SOLID STATE STARTER VFD - VARIABLE FREQUENCY DRIVE	REFER 3	FVNR - FULL VOLTAGE NON-REVERSING STARTER FVR - FULL VOLTAGE REVERSING STARTER PWS - PART-WINDING STARTER RVAT - REDUCED VOLTAGE AUTO TRANSFORMER STARTER RVSS - REDUCED VOLTAGE SOLID STATE STARTER TS1W - TWO SPEED SINGLE WINDING TS2W - TWO SPEED TWO WINDINGS VFD - VARIABLE FREQUENCY DRIVE	120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE

INSTRUMENT BUBBLE LOCATIONS

NOTES

- 1 INSTRUMENT TAG IDENTIFICATION LETTERS TABLE
- 2 OPERATOR PILOT DEVICE LEGEND
- 3 EQUIPMENT TAGGING TABLE
- 4 I/O TYPE DESIGNATIONS TABLE
- 5 INSTRUMENT TYPE DESIGNATIONS TABLE
- 6 FURNISHED BY: FBO FURNISHED BY OWNER
FBV FURNISHED BY VENDOR

ALL SARASOTA COUNTY UTILITY LIFT STATIONS SHALL HAVE 480VAC, 3PH POWER

REV	DATE	BY	DESCRIPTION

DESIGNED RD
DRAWN KMM
CHECKED RD
DATE JUNE 2021

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SARASOTA COUNTY
SCADA STANDARDS
INSTRUMENTATION
DEVELOPER LS
SYMBOLS AND ABBREVIATIONS - I

VERIFY SCALES
JOB NO. 11572A10
DRAWING NO. 19GN01
SHEET NO. 5 OF 15

Plot Date: 16-JUN-2021 1:02:24 PM
User: svcpw
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
LAST SAVED BY: kmiller

INSTRUMENT TAG IDENTIFICATION LETTERS

MEASURED VARIABLE	INSTRUMENT FUNCTION	INSTRUMENT TAG IDENTIFICATION LETTERS																							
		ELEMENT	TRANSMITTER	INDICATING TRANSMITTER	CONVERTER TRANSducer, RELAY SPECIAL DEVICES	INDICATOR	RECORDER	CONTROLLER	INDICATING CONTROLLER	RECORDING CONTROLLER	SWITCH	SWITCH LOW LOW	SWITCH LOW	SWITCH HIGH	SWITCH HIGH HIGH	SWITCH COMBINATION HIGH LOW	ACTION	ALARM LOW LOW	ALARM LOW	ALARM HIGH	ALARM HIGH HIGH	TOTALIZE INDICATOR TRANSMITTER	VALVE	GAUGE	LIGHT
A	ANALYSIS	AE	AT	AIT	AY	AI	AR	AC	AIC	ARC	AS	ASLL	ASL	ASH	ASHH	ASHL	AALL	AAL	AAH	AAHH					AL
B	BURNER FLAME	BE	BT	BIT	BY	BI	BR	BC	BIC	BRC	BS	BSLL	BSL	BSH	BSHH	BSHL	BALL	BAL	BAH	BAHH					BL
C	CONDUCTIVITY	CE	CT	CIT	CY	CI	CR	CC	CIC	CRC	CS	CSLL	CSL	CSH	CSHH	CSHL	CALL	CAL	CAH	CAHH					CL
D	DENSITY	DE	DT	DIT	DY	DI	DR	DC	DIC	DRC	DS	DSLL	DSL	DSH	DSHH	DSHL	DALL	DAL	DAH	DAHH					DL
E																									
F	FLOW	FE	FT	FIT	FY	FI	FR	FC	FIC	FRC	FS	FSL	FSL	FSH	FSHH	FSHL	FALL	FAL	FAH	FAHH	FQI	FCV	FG	FL	
FF	FLOW RATIO				FFY	FFI		FFC	FFIC		FFS													FFL	
G	GAUGING (DIMENSION)																								
H	HAND (MANUAL)*							HC			HS*											HV	HL	HSS	
I	CURRENT		IT	IIT	IY	II	IR	IC	IIC	IRC	IS	ISLL	ISL	ISH	ISHH		IALL	IAL	IAH	IAHH				IL	
J	POWER																								
K	TIME				KY	KI	KR	KC	KIC	KRC	KS	KSL	KSL	KSH	KSHH		KALL	KAL	KAH	KAHH		KV		KL	
L	LEVEL	LE	LT	LIT	LY	LI	LR	LC	LIC	LRC	LS	LSLL	LSL	LSH	LSHH	LSHL	LALL	LAL	LAH	LAHH		LCV	LG	LL	
M	MOISTURE OR HUMIDITY	ME	MT	MIT	MY	MI	MR	MC	MIC	MRC	MS	MSLL	MSL	MSH	MSHH		MALL	MAL	MAH	MAHH				ML	
N	EMERGENCY SHUTDOWN																								
O																									
P	PRESSURE OR VACUUM	PE	PT	PIT	PY	PI***	PR	PC	PIC	PRC	PS****	PSLL	PSL	PSH	PSHH	PSHL	PALL	PAL	PAH	PAHH		PCV		PL	
PD	DIFFERENTIAL PRESSURE		PDT	PDIT	PDY	PDI	PDR	PDC	PDIC	PDRC	PDS	PDSLL	PDSL	PDSH	PDSHH		PDALL	PDAL	PDAH	PDAHH		PDCV		PDL	
Q	QUANTITY	QE	QT	QIT	QY	QI	QR				QS	QSLL	QSL	QSH	QSHH		QALL	QAL	QAH	QAAH					
R	RADIOACTIVITY																								
S	SPEED	SE	ST	SIT	SY	SI	SR	SC	SIC	SRC	SS	SSL	SSL	SSH	SSH		SALL	SAL	SAH	SAHH					
T	TEMPERATURE	TE	TT	TIT	TY	TI	TR	TC	TIC	TRC	TS	TSLL	TSL	TSH	TSHH	TSHL	TALL	TAL	TAH	TAHH		TCV		TL	
TD	DIFFERENTIAL TEMPERATURE		TDT	TDIT	TDY	TDI	TDR	TDC	TDIC	TDRC	TDS	TDSLL	TDSL	TDSH	TDSHH		TDALL	TDAL	TDAH	TDAHH		TDCV		TDL	
U	MULTIVARIABLE				UI	UR	UC	UIC	URC	US														UL	
V	VISCOSITY	VE	VT	VIT	VY	VI	VR	VC	VIC	VRC	VS	VSL	VSL	VSH	VSHH		VALL	VAL	VAH	VAHH				VL	
W	WEIGHT	WE	WT	WIT	WY	WI	WR				WS	WSLL	WSL	WSH	WSHH		WALL	WAL	WAH	WAHH					
X	UNCLASSIFIED	XE	XT	XIT	XY	XI	XR	XC	XIC	XRC	XS	XSL	XSL	XSH	XSHH		XALL	XAL	XAH	XAAH		XCV	XG	XL	
XV	VIBRATION	XVE	XVT		XVY	XVI	XVR				XVS			XVSH	XVSHH				XVAH	XVAHH				XVL	
Y	STATUS***					YI***																		YL	
Z	POSITION	ZE	ZT	ZIT	ZY	ZI					ZS**											ZV		ZL**	

* REFER TO OPERATOR PILOT DEVICE LEGEND
** LETTER INDICATES POSITION (O=OPEN, C=CLOSED, R=RAISE, L=LOWER, ETC)
*** PI# # = 1,2,3 ETC. AND REPRESENTS A UNIQUE IDENTIFIER AND IS APPLICABLE TO ALL ITEMS IN THE TABLE ABOVE
**** COULD ALSO BE PIS - FOR PRESSURE INDICATING SWITCH

INSTRUMENT LINE SYMBOLS

INSTRUMENT OR CONNECTION TO PROCESS	— — — — —
PNEUMATIC SIGNAL	— # — # — # — # — # — # — # — # —
ELECTRIC SIGNAL	— — — — —
HYDRAULIC SIGNAL	— L — L — L — L — L —
CAPILLARY TUBE	— X — X — X — X — X —
ELECTROMAGNETIC OR SONIC SIGNAL (GUIDED)	— ~ — ~ — ~ — ~ — ~ —
ELECTROMAGNETIC OR SONIC SIGNAL (NOT GUIDED)	— ~ — ~ — ~ — ~ — ~ —
INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)	— o — o — o — o — o — o —
COPPER ETHERNET	— C — C — C — C — C —
FIBER OPTIC ETHERNET	— F — F — F — F — F —
WIRELESS ETHERNET	— W — W — W — W — W —
PROFIBUS DP	— PBD — PBD — PBD — PBD — PBD —
PROFIBUS PA	— PBA — PBA — PBA — PBA — PBA —
DEVICENET	— DN — DN — DN — DN — DN —
FOUNDATION FIELDBUS	— FF — FF — FF — FF — FF —

PROCESS LINE SYMBOLS

PRIMARY PROCESS FLOW IN PIPE	— — — — —
SECONDARY PROCESS FLOW IN PIPE	— — — — —
PRIMARY PROCESS FLOW IN CHANNEL	— — — — —
SECONDARY PROCESS FLOW IN CHANNEL	— — — — —

DESIGNATIONS

EQUIPMENT ENCLOSURE	— — — — —
EXISTING	— — — — —
FUTURE	— — — — — FUTURE

MISCELLANEOUS P&ID SYMBOLS

CONTINUATION TAG	
PIPE CALLOUT	
SIGNAL CONTINUATION	

OPERATOR PILOT DEVICE LEGEND

PILOT DEVICE FUNCTION	DEVICE TYPE	OPERATOR PILOT DEVICE LEGEND																									
		LOCAL-OFF-REMOTE (LOR) OR LOCAL-STOP-REMOTE (LSR)	STOP (SP)	START (ST)	HAND-OFF-AUTO (HOA)	OFF-ON (OO)	SELECT (SEL)	OPEN-STOP-CLOSE (OSC)	JOG OPEN-HOLD-CLOSE (JOHC)	SEMI-AUTO-MANUAL (SAAM)	LEAD-LAG-STANDBY (LGS)	JOG OPEN-JOG CLOSE (JOC)	ONLINE-OFFLINE (OLOF)	AUTO-MANUAL (AM)	FIXED RATE-LEVEL-RATE (FRLR)	OPEN-CLOSE (OC)	NO OFFLINE-OFFLINE TRANSITION (NOOT)	LOW-HIGH (LH)	RESET (RST)	SPEED (SPD)	START-STOP (STSP)	E-STOP (E-SP)	BYPASS (BYP)	SILENCE	POSITION (POS)		
PILOT DEVICE TAG (HAND SWITCHES)		HSA*	HSB	HSC	HSD*	HSE	HSF	HSG*	HSH*	HSI	HSJ*	HSK*	HSL*	HSM*	HSN	HSP	HSQ*	HSR	HSS	HST*	HSU	HSV	HSW	HSX	HSY	HSZ	
SCADA/HMI TAG (HAND ACTION)		HAA	HAB	HAC	HAD	HAE	HAF	HAG	HAH	HAI	HAJ	HAK	HAL	HAM	HAN	HAO	HAP	HAQ	HAR	HAS	HAT	HAU	HAV	HAW	HAX	HAY	HAZ

HSA* SELECTOR SWITCH POSITION EG: HSA(R) R = REMOTE, HSD(A) A = AUTO, ETC

I/O TYPE DESIGNATIONS

AUX1	RUNNING	MSL	MOTOR START LOW
AUX2	FAILED/FAULT	MSM	VALVE MODULATE
AUXF1	RUNNING FORWARD	MSP	MOTOR STOP
AUXH1	RUNNING HIGH	MSR	MOTOR START REVERSE
AUXL1	RUNNING LOW	MST	MOTOR START
AUXR1	RUNNING REVERSE	SS	SPEED SIGNAL
SVC	SOLENOID VALVE CLOSE	ZC	POSITION COMMAND
SVO	SOLENOID VALVE OPEN	ZCC	POSITION COMMAND CLOSE
MS	RUN	ZCO	POSITION COMMAND OPEN
MSF	MOTOR START FORWARD		
MSH	MOTOR START HIGH		

INSTRUMENT TYPE DESIGNATIONS

AM	AMMONIA	O3	OZONE	SH	SODIUM HYPOCHLORITE
CAP	CAPACITANCE	ORP	OXIDATION REDUCTION POTENTIAL	TDR	TIME DOMAIN REFLECTOMETRY
CGD	COMBUSTIBLE GAS DETECTOR	P	PRESSURE	TH	THERMAL
CL	CHLORINE	P-SUB	PRESSURE SUBMERSIBLE	TSS	TOTAL SUSPENDED SOLIDS
COND	CONDUCTIVITY	PC	PARTICLE COUNTER	TURB	TURBIDITY
DO	DISSOLVED OXYGEN	PO	PHOSPHOROUS	US	ULTRASONIC
FMCW	FREQ. MODULATED CONT. WAVE	PTOF	PULSE TIME OF FLIGHT	UVI	UV INTENSITY
HSF	FLUORIDE	R/I	RESISTANCE TO CURRENT	UVT	UV TRANSMITTANCE
IS	INTRINSIC SAFETY BARRIER	ROT	ROTAMETER	VAC	VACUUM
LEL	LOWER EXPLOSIVE LIMIT	RTD	RESISTANCE TEMP DETECTOR		
MAG	MAGNETIC	SC	STREAMING CURRENT		

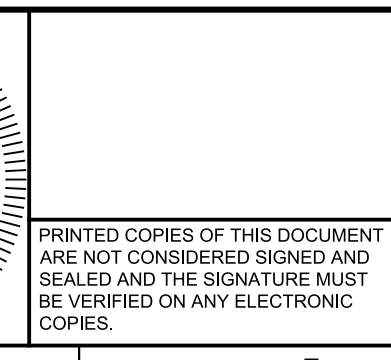
SPECIFIC ABBREVIATIONS

APH	A PHASE	MWH	MOTOR WINDING HEATER
BPH	B PHASE	SSG	SECONDARY SWITCHGEAR
BRB	BEARING BOTTOM	SV*	SOLENOID VALVE
BRT	BEARING TOP	SPD	SURGE PROTECTIVE DEVICE
BTFLY	BUTTERFLY	UPS	UNINTERRUPTIBLE POWER SUPPLY
CPH	C PHASE	YA	STATUS AUTO
CC*	CALIBRATION COLUMN	YR	STATUS REMOTE
HTR	HEATER	Y1	STATUS RUNNING
HTU	HEAT TRACE UNIT	Y2	ALARM FAILED/FAULT

* CC# AND SV# # = 1, 2, 3 ETC. AND REPRESENTS A UNIQUE IDENTIFIER

REV	DATE	BY	DESCRIPTION
1			
2			
3			
4			

DESIGNED RD
DRAWN KMM
CHECKED RD
DATE JUNE 2021



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SCADA STANDARDS
INSTRUMENTATION
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SYMBOLS AND ABBREVIATIONS - II

VERIFY SCALES
JOB NO. 11572A10
DRAWING NO. 19GN02
SHEET NO. 6 OF 15

Plot Date: 16-JUN-2021 1:02:27 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: kmiller

1		2		3		4		5		6		7		8		9		10		11		12		13																																																																							
ACTUATORS																								PIPING																								PUMPS																								BLOWERS/COMPRESSORS																							
DIAPHRAGM		ELECTRIC DISCRETE		ELECTRIC MODULATING		ELECTRIC HYDRAULIC		HAND		HYDRAULIC		PNEUMATIC		SOLENOID		HYDRAULIC MODULATING		PNEUMATIC SINGLE SOLENOID OPEN/CLOSE		PNEUMATIC DUAL SOLENOID OPEN/CLOSE		PNEUMATIC SINGLE SOLENOID w/ SPEED CONTROL		PNEUMATIC DUAL SOLENOID w/ SPEED CONTROL		PNEUMATIC MODULATING		PNEUMATIC MODULATING OPEN/CLOSE w/ SPEED CONTROL		AIR GAP		BLIND FLANGE		CAPPED OR PLUGGED		CONCENTRIC INCREASER		CONCENTRIC REDUCER		DRAIN		ECCENTRIC INCREASER		TEE		UNION		ECCENTRIC REDUCER		EXPANSION COUPLING		EXPANSION JOINT VIBRATION CENTER		FLEXIBLE CONNECTION		QUICK DISCONNECT		AIR DRIVEN		CENTRIFUGAL		CHEMICAL FEED DIAPHRAGM		DIAPHRAGM		GEAR		PERISTALTIC OR HOSE		PISTON		PROGRESSIVE CAVITY		SUBMERSIBLE		VERTICAL TURBINE		VERTICAL CHOPPER		WATER CHAMP		CENTRIFUGAL SINGLE STAGE BLOWER		CENTRIFUGAL MULTI STAGE BLOWER		RECIPROCATING COMPRESSOR		SCREW COMPRESSOR		FAN		LIQUID RING COMPRESSOR		ROTARY LOBE BLOWER	

CHECK VALVES		PRESSURE VALVES		VALVES		MISC																																																																																	
BACK FLOW PREVENTER	BALL	DIAPHRAGM CHECK	DOUBLE FLAP	FLAPPER	SPRING LOADED GENERAL	SPRING LOADED SWING	SWING	BACKPRESSURE REGULATING SELF CONTAINED	BACKPRESSURE REGULATING EXTERNAL TAP	PRESSURE REDUCING SELF CONTAINED	PRESSURE REDUCING EXTERNAL PRESSURE TAP	REGULATING	PRESSURE RELIEF	VACUUM RELIEF	3-WAY	3-WAY PLUG	4-WAY	AIR-RELIEF	ANGLE	BALL	BALL V-NOTCH	BUTTERFLY	BUTTERFLY-BURIED VALVE BOX	CONE	DIAPHRAGM	GATE	GATE-BURIED VALVE BOX	GLOBE	HOSE	MUD	NEEDLE	PINCH	PLUG ECCENTRIC	PLUG ECCENTRIC w-VALVE BOX	PLUG ECCENTRIC LUBRICATED	PLUG ECCENTRIC LUBRICATED BURIED VALVE BOX	PLUG CONCENTRIC	PLUG CONCENTRIC -BURIED VALVE BOX	PLUG CONCENTRIC LUBRICATED	PLUG CONCENTRIC LUBRICATED BURIED VALVE BOX	PUMP DISCHARGE	TELESCOPING	AIR DAMPER	AIR / CHEMICAL DIFFUSER	BASKET STRAINER	BLOW-OFF SILENCER	CALIBRATION COLUMN	COALESCKER	DESICCANT DRYER	EDUCTOR/EJECTOR	EQUIPMENT/INSTRUMENT LOCATOR	EXHAUST FAN	EYEWASH	FILTER	FILTER SEPARATOR	FINE FILTER	FIRE ALARM/SENSOR	FLAME ARRESTER	FLAME ARRESTER w/THERMALLY OPERATED VALVE	FLOW CONDITIONER	GAS CANNON	GRINDER	HEAT EXCHANGER	HOIST	HORIZONTAL MIXER	HOSE CONNECTION	INLET STRAINER	INLINE STATIC MIXER	MATERIAL CHANGE	MIXER	MOTOR	NOZZLE	ORIFICE RESTRICTION	PERISTALTIC COMPOSITE SAMPLER	PULSATION DAMPENOR	REFRIGERATED DRYER	RUPTURE DISK	SAMPLE PORT	SIGHT TUBE	SMOKE DETECTOR	STRAINER - MECHANICALLY CLEANED	STRAINER WITH BLOW OFF	STRAINER WYE TYPE	VAPOR HEATER	VAPORIZER	VENT	VENT TO ATMOSPHERE

NO	NORMALLY OPEN
NC	NORMALLY CLOSED
FO	FAIL OPEN
FC	FAIL CLOSE
FLP	FAIL LAST POSITION

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 SYMBOLS AND ABBREVIATIONS - III

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1" 1"
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 11572A10
 DRAWING NO. 19GN03
 SHEET NO. 7 OF 15

Plot Date: 16-JUN-2021 1:02:26 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: kmiller

FLOW		FLUMES		GATES		LEVEL	
	BATCH		V-CONE		LEOPOLD-LAGCO		SLIDE
	CORIOLIS		VENTURI TUBE OR FLOW NOZZLE		PALMER-BOWLUS		SLIDE
	MAGNETIC		VORTEX		PARSHALL		SLUICE
	ORIFICE				REGULAR CUTTHROAT		SLUICE
	PADDLE WHEEL				TRAPEZOIDAL		STOP
	PISTON						STOP
	ANNUBAR						WEIR
	PITOT TUBE						
	POSITIVE-DISPLACEMENT						
	PROPELLER-TURBINE						
	ROTAMETER						
	THERMAL						
	ULTRASONIC						
	ULTRASONIC BIOGAS						
							BUBBLER
							CAPACITANCE
							SUSPENDED/SUBMERSIBLE
							TUNING FORK
							ULTRASONIC
							DIFFERENTIAL PRESSURE
							ELECTRODE
							FLOAT
							INVERTED COLUMN
							PROBE
							RADAR PTOF
							RADAR (FREQUENCY MODULATED CONTINUOUS WAVE)
							RADAR TDR

PRESSURE/VACUUM			TEMPERATURE	WEIRS	
	GAUGE		TEMPERATURE w/THERMOWELL		RECTANGULAR w/o END CONTRACTIONS
	MANOMETER		TEMPERATURE GAUGE		RECTANGULAR w/ END CONTRACTIONS
	PRESSURE SWITCH		THERMOMETER		V-NOTCH (TRIANGULAR)
	PRESSURE TRANSMITTER		WEIGHT		TRAPEZOIDAL (CIPOLLETTI)

ALL SARASOTA COUNTY UTILITY LIFT STATIONS SHALL HAVE 480VAC, 3PH POWER

DESIGNED RD DRAWN KMM CHECKED RD DATE JUNE 2021			PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.		401 NORTH CATTLEMEN ROAD, SUITE 306 SARASOTA, FL. 34232 PHONE: (941) 371-9832 FAX: (941) 371-9873 CA 00008571		SARASOTA COUNTY SCADA STANDARDS INSTRUMENTATION DEVELOPER LS SYMBOLS AND ABBREVIATIONS - IV	VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 	JOB NO. 11572A10 DRAWING NO. 19GN04 SHEET NO. 8 OF 15
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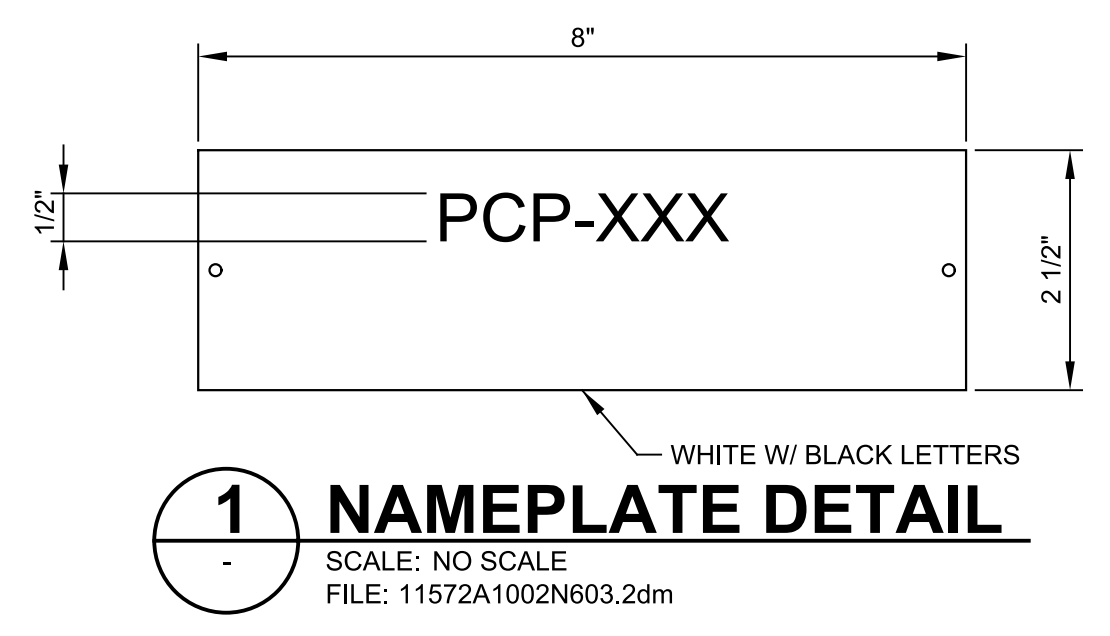
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PROCESS SWITCHES		HAND SWITCHES		RELAYS		TERMINAL BLOCKS		I/O		MISC		
<p> FLOAT SWITCH CLOSE ON RISING LEVEL</p> <p> FLOAT SWITCH OPEN ON RISING LEVEL</p> <p> PRESSURE SWITCH CLOSE ON RISING PRESSURE</p> <p> PRESSURE SWITCH OPEN ON RISING PRESSURE</p> <p> TEMPERATURE SWITCH CLOSE ON RISING TEMPERATURE</p> <p> TEMPERATURE SWITCH OPEN ON RISING TEMPERATURE</p> <p> FLOW SWITCH CLOSE ON INCREASE IN FLOW</p> <p> FLOW SWITCH OPEN ON INCREASE IN FLOW</p> <p> VIBRATION SWITCH OPEN ON RISING VIBRATION</p> <p> VIBRATION SWITCH CLOSE ON RISING VIBRATION</p> <p> TORQUE SWITCH OPEN ON HIGH TORQUE</p> <p> TORQUE SWITCH CLOSE ON HIGH TORQUE</p> <p> NORMALLY CLOSED LIMIT SWITCH</p> <p> NORMALLY CLOSED HELD OPEN LIMIT SWITCH</p> <p> NORMALLY OPEN LIMIT SWITCH</p> <p> NORMALLY OPEN HELD CLOSED LIMIT SWITCH</p>		<p> NORMALLY OPEN MOMENTARY PUSHBUTTON</p> <p> NORMALLY CLOSED MOMENTARY PUSHBUTTON</p> <p> THREE POSITION SELECTOR SWITCH x - DENOTES POSITION CONTACTS CLOSED IN</p> <p> TWO POSITION SELECTOR SWITCH x - DENOTES POSITION CONTACTS CLOSED IN</p> <p> MUSHROOM HEAD PUSHBUTTON</p> <p> PUSH-PULL PUSHBUTTON MAINTAINED CONTACT</p> <p> PADLOCK SWITCH x - DENOTES POSITION CONTACTS CLOSED IN</p> <p> PULL CORD SWITCH</p> <p> STOP-LOCKOUT PUSHBUTTON</p> <p> SPRING-RETURN x - DENOTES POSITION CONTACTS CLOSED IN</p>		<p> RELAY COIL a = TYPE CR - CONTROL RELAY TD - TIME DELAY RELAY M - MOTOR STARTER COIL L - MOTOR STARTER COIL - LOW SPEED H - MOTOR STARTER COIL - HIGH SPEED F - MOTOR STARTER COIL - FORWARD R - MOTOR STARTER COIL - REVERSE</p> <p>b = TDON - TIME DELAY ON ENERGIZATION TDOFF - TIME DELAY ON DEENERGIZATION</p> <p>c = TIMING RANGE/SETTING d = DESCRIPTION</p> <p> NORMALLY OPEN CONTROL CONTACT</p> <p> NORMALLY CLOSED CONTROL CONTACT</p> <p> TIME DELAY CONTACT NORMALLY OPEN TIMED CLOSING</p> <p> TIME DELAY CONTACT NORMALLY CLOSED TIMED OPENING</p> <p> TIME DELAY CONTACT NORMALLY OPEN TIMED OPENING</p> <p> TIME DELAY CONTACT NORMALLY CLOSED TIMED CLOSING</p>		<p> TERMINAL IN PLC/PCM PANEL</p> <p> TERMINAL IN MOTOR CONTROL CENTER</p> <p> TERMINAL IN LOCAL STARTER CONTROL PANEL</p> <p> TERMINAL AT FIELD DEVICE</p> <p> TERMINAL IN RTU</p> <p> TERMINAL IN FIELD PANEL</p> <p> TERMINAL IN (USER CHOICE)</p> <p> DIGITAL BUS CONNECTOR * = D - DEVICENET * = PA - PROFIBUS PA * = DP - PROFIBUS DP * = H1 - FOUNDATION FIELDBUS H1 * = H2 - FOUNDATION FIELDBUS H2 * = E - ETHERNET</p>		<p> PLC DISCRETE a = INPUT OR OUTPUT AS INDICATED</p> <p> PLC ANALOG a = INPUT OR OUTPUT AS INDICATED</p> <p> DIGITAL BUS</p>		<p> SOLENOID</p> <p> METER UNIT M = TYPE</p> <p> MOTOR</p> <p> CIRCUIT BREAKER</p> <p> DISCONNECT</p> <p> FUSE</p> <p> TRANSIENT SURGE PROTECTION</p> <p> MOTOR WINDING HEATER * - MOTOR TAG I.D.</p> <p> SPACE HEATER</p> <p> VARISTOR</p> <p> CAPACITOR</p> <p> RESISTOR</p> <p> BATTERY</p> <p> DIODE</p> <p> MOTOR OVERLOAD HEATERS</p> <p> OVERLOAD CONTACT</p> <p> DRAWOUT CONNECTION</p> <p> GROUND</p> <p> LIGHTNING ARRESTOR</p> <p> CONTROL POWER TRANSFORMER</p> <p> ELAPSED TIME METER</p>		
		INDICATORS										
		<p> PILOT LIGHT a = LENS COLOR R = RED G = GREEN W = WHITE A = AMBER B = BLUE Y = YELLOW C = CLEAR</p> <p> BEACON a = LENS COLOR R = RED G = GREEN W = WHITE A = AMBER B = BLUE M = MAGENTA C = CLEAR</p> <p> HORN</p>										

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PROJECT NO. 11572A10 FILE NAME: 11572A1019GN05.dgn														

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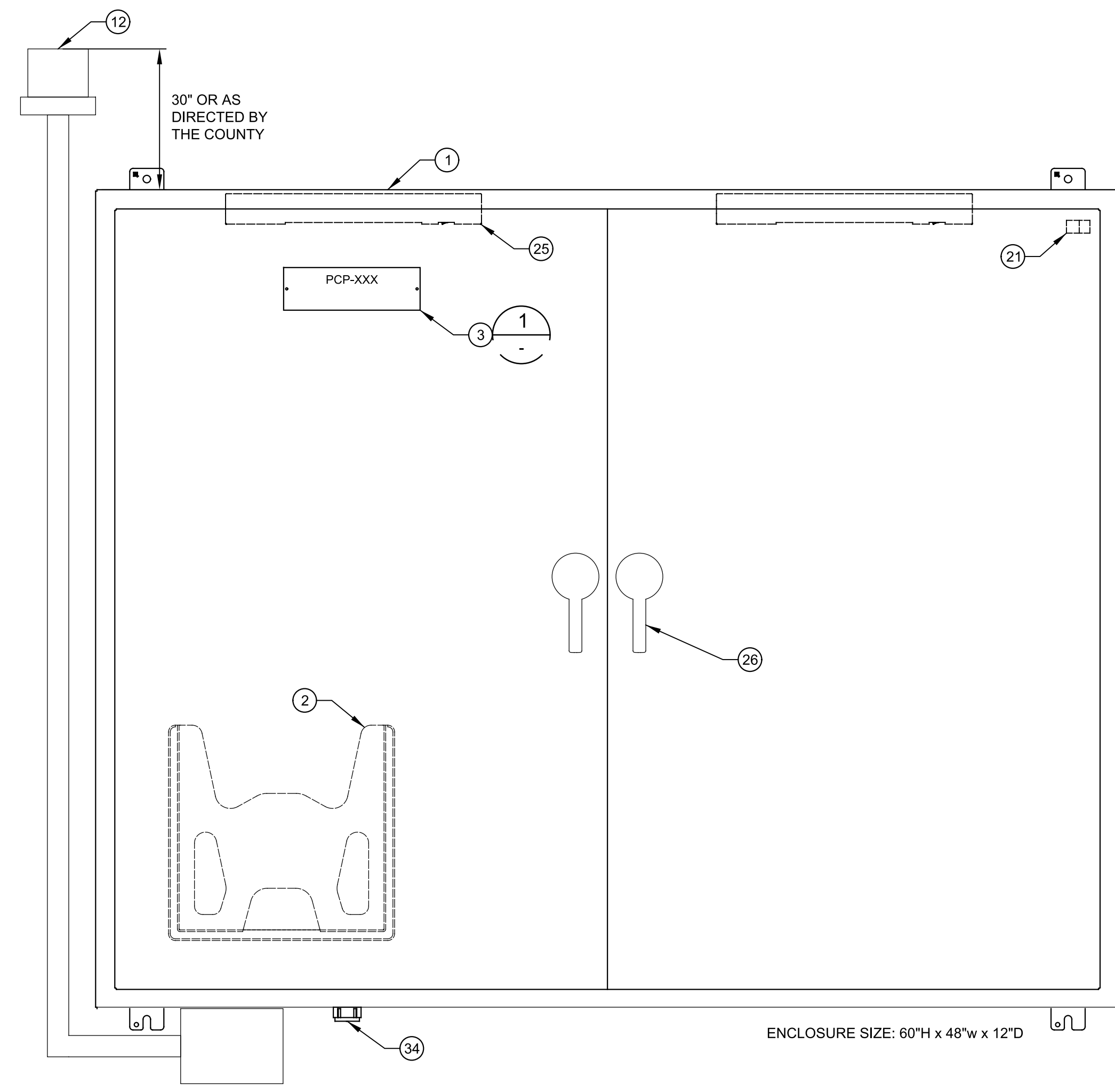
GENERAL NOTES:

- CONTRACTOR SHALL ENSURE CONTROL PANEL IS SUPPLIED AND INSTALLED IN ACCORDANCE WITH SARASOTA COUNTY SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO SECTION 16050, 16075, 17050, 17722 AND 17950.



MAJOR EQUIPMENT SCHEDULE		
ITEM	QTY	DESCRIPTION
1	1	NEMA 4X 304 WHITE PAINTED STAINLESS STEEL ENCLOSURE 60"H x 48"W NVENT HOFFMAN MODEL A62H4812SPLP3PT, CONTROL CABINET - 60" HIGH, 48" WIDE, AND 12" DEEP (EXCLUDING DOOR DEPTH), 2-DOOR CABINET. CABINET SHALL BE CONSTRUCTED EXCLUSIVELY OF 304 STAINLESS STEEL, 14 GAUGE (MINIMUM) WITH CONTINUOUS WELDS THROUGHOUT. WEEP HOLES OR OTHER OPENINGS IN ENCLOSURE WHICH ARE NOT SPECIFIED IN THESE DRAWINGS SHALL NOT BE ACCEPTABLE. PANEL SHALL HAVE AN OUTER DOOR GASKET SEAL WHICH SHALL BE CLOSE-CELL NEOPRENE OR OTHER MATERIAL AS APPROVED BY COUNTY. DOOR GASKET SHALL PROVIDE A CONTINUOUS SEAL AGAINST EXTERIOR DOOR SEALING FACE WHICH SHALL BE A CONTINUOUS ROLLED LIP. A DRIP SHIELD SHALL BE PROVIDED AND TACK WELDED IN PLACE AT NOT LESS THAN 5 LOCATIONS. A THREE POINT 90 DEGREE TURN LATCHING MECHANISM CONSTRUCTED OF 304 STAINLESS STEEL SHALL BE PROVIDED. LATCHING MECHANISM SHALL BE OPERATED BY A SINGLE EXTERIOR STAINLESS STEEL HANDLE WITH ROLLERS AND SHALL BE PAD-LOCKABLE TO PREVENT UNAUTHORIZED OPERATION. DOOR SHALL BE FULL HEIGHT WITH 304 STAINLESS STEEL CONTINUOUS PIANO HINGE, DOOR LOCK OPEN STAINLESS STEEL ROD, AND SHALL MINIMALLY HAVE 120 SWING. PANEL SHALL HAVE PROVISIONS FOR MOUNTING BACKPANEL AND DEADFRONT INSIDE AS A SINGLE UNITIZED ASSEMBLY. A LAMINATED WIRING DIAGRAM OF ALL WIRING CONNECTIONS SHALL BE PROVIDED IN A PERMANENT SLEEVE ATTACHED TO PANEL DOOR. PANEL SHALL BE INSTALLED PERPENDICULAR TO WETWELL AND VALVE VAULT AND DOOR HINGED TO OPEN AWAY FROM THE WETWELL AND VALVE VAULT.
2	1	DATA POCKET
3	1	NAMEPLATE BLACK LETTERING ON WHITE NAMEPLATE
4	1	BACK PANEL 56"H X 44"W NVENT HOFFMAN MODEL A60P48, BACK PLATE - 33" WIDE BY 45" HIGH, 10 GAUGE (MINIMUM), PRIMED AND FINISH PAINTED STEEL BACK PLATE WITH 3/4" ROLLED OR BROKEN EDGES FOR SUPPORT. FINISH PAINT COATS SHALL HAVE A DRY FILM THICKNESS OF AT LEAST 4 MILS. HOFFMAN OR APPROVED EQUAL. ALL EQUIPMENT MOUNTED TO BACK PLATE SHALL BE ATTACHED WITH MACHINE SCREWS THROUGH DRILLED AND TAPPED HOLES.
5	5	INTRINSICALLY SAFE RELAYS DIVERSIFIED ELECTRICAL MODEL ISO-120-AFA, SINGLE CHANNEL, 120 VAC POWER SUPPLY, 16 VOLT DC SENSING VOLTAGE, 200 MICROAMP SENSING AMPERAGE, 8-PIN PLUG-IN CONNECTION.
6	1	DEAD FRONT 32-1/2" WIDE BY 43" HIGH, 10 GAUGE (MINIMUM), BRUSHED ALUMINUM DEAD-FRONT PANEL WITH 304 STAINLESS STEEL OR ALUMINUM CONTINUOUS PIANO HINGE AND TWO QUARTER-TURN L-KNOB HANDLES FOR HOLDING THE PANEL CLOSED TO THE BACK OF THE PLATE AND INTERNAL FRAME OF THE CONTROL PANEL. ISOLATE CONTACT BETWEEN DISSIMILAR METALS W/ 1/8" NON-CONDUCTIVE INSULATING MATERIAL. PANEL SHALL BE PROVIDED WITH DOOR HOLD (OPEN) WITH STAINLESS STEEL ROD. DOOR SWING SHALL MINIMALLY BE 90-DEGREE OPEN. PANEL SHALL INCLUDE MOUNTED DEVICES AND CUT-OUTS AS INDICATED ON THE DRAWINGS. PANEL EDGES SHALL BE DEBURRED AND ROUNDED.
7	1	ALTERNATOR DUPLEX PANEL: MPE MODEL 008-120-12 OR DIVERSIFIED ELECTRIC MODEL ARA-120-ADA, 11-PIN PLUG-IN CONNECTION, DOUBLE POLE-DOUBLE THROW, 120 VAC CONTROL VOLTAGE. TRIPLEX PANEL: DIVERSIFIED MODEL ARA-120-AME, PANEL MOUNT, SINGLE POLE-SINGLE THROW, 120VAC CONTROL VOLTAGE
8	AS REQ'D	ANALOG TERMINAL BLOCKS SQUARE D TYPE GME 6, PROVIDE SQUARE D TYPE GH10 END CLAMPS AT EACH END OF THE TERMINAL STRIP. PROVIDE END BARRIER AT BOTTOM OF EACH TERMINAL STRIP, SQUARE D TYPE GME6B WITHOUT EXCEPTION.
9	AS REQ'D	24 VDC FUSED TERMINAL BLOCKS SQUARE D TYPE GME 6, PROVIDE SQUARE D TYPE GH10 END CLAMPS AT EACH END OF THE TERMINAL STRIP. PROVIDE END BARRIER AT BOTTOM OF EACH TERMINAL STRIP, SQUARE D TYPE GME6B WITHOUT EXCEPTION.
10	AS REQ'D	DISCRETE TERMINAL BLOCKS SQUARE D TYPE GME 6, 120 CONTROL TERMINAL BLOCKS FOR UP TO #10 AWG, 30 AMP, 600V. PROVIDE SQUARE D TYPE GH10 END CLAMPS AT EACH END OF THE TERMINAL STRIP. PROVIDE END BARRIER AT BOTTOM OF EACH TERMINAL STRIP, SQUARE D TYPE GME6B WITHOUT EXCEPTION.
11	AS REQ'D	DIN RAIL SQUARE D 9080MH339
12	1	STROBE/BEACON FEDERAL SIGNAL CORP., LP3P-120R, 120 VAC ALARM LIGHT INCLUDING RED LENS COVERING STROBE LAMP HOLDER WITH FLASHER. GASKET SHALL BE PROVIDED BETWEEN LENS AND ENCLOSURE FOR WEATHERTIGHT SEAL. ALARM LIGHT MOUNTING SHALL BE STAINLESS STEEL RIGID PIPE PREWIRED WITH LIGHT ATTACHED AND PACKAGED SEPARATELY FOR TRANSPORT READY FOR FIELD ASSEMBLY. 14" DISCONNECTS SHALL BE PROVIDED INSIDE ENCLOSURE TO FACILITATE FIELD ASSEMBLY.
13	AS REQ'D	GREY WIRE DUCT PANDUIT GREY WIRING DUCT, 1" WIDE BY 3" HIGH, SHALL BE ATTACHED TO BACKPLATE WITH SCREWS.
14	1	GROUND BAR SQUARE D PK12GTA, GROUND COMPRESSION TYPE TERMINAL BLOCK MOUNTED DIRECTLY TO PANEL. GROUND BAR SHALL CONSIST OF MIN. 12 GROUND TERMINALS FOR UP TO #4 AWG WIRE.
15	1	ISOLATED GROUND BAR SQUARE D PK12GTA W/ PKGTAB
16	10	CONTROL RELAYS W/ OCTAL BASE AND PILOT LIGHT OPTION SQUARE D CLASS 8501 KPR12P14V20
17	AS REQ'D	BREAKER CUTOUT
18	3	SELECTOR SWITCH - THREE POSITION SQUARE D CLASS 9001, MODEL KS43BH2, 30MM INDUSTRIAL, MAINTAINED, LEVER OPERATOR, OIL-TIGHT, SELECTOR SWITCH WITH CONTACTS AS INDICATED ON THE DRAWINGS AND AN "MANUAL-OFF-AUTO" LEGEND PLATE.

MAJOR EQUIPMENT SCHEDULE		
ITEM	QTY	DESCRIPTION
19	5	PILOT LIGHTS SQUARE D CLASS 9001 TYPE SKP-38 LIGHT, TYPE G31 LENS AND TYPE KN-224 LEGEND PLATE. 120 VAC, RESISTOR TYPE, OIL-TIGHT, WATERTIGHT, PILOT LIGHT WITH COLORED GREEN, AMBER, OR RED PLASTIC LENS AS SHOWN ON DRAWINGS.
20	3	ELAPSED TIME METERS REDINGTON MODEL 710-0002, 120 VAC, 6-1/2 DIGIT, NONRESETABLE, PANEL- MOUNTED.
21	1	INTRUSION SWITCH INTRUSION SWITCH: THE SWITCH CONTACT SHALL BE NORMALLY CLOSED (OPEN WHEN THE PANEL DOOR IS CLOSED). INTRUSION SWITCH SHALL BE SQUARE-D 9007MS01IS03000 WITHOUT EXCEPTION.
22	1	HORN FEDERAL SIGNAL, 350 SERIES WITH WEATHERPROOF BOX, 120VAC WEATHERPROOF.
23	3	120 VAC CIRCUIT BREAKERS SQUARE D TYPE QOU, CIRCUIT BREAKERS (CONTROL, GFI, RTU) - SINGLE POLE, 10 & 15 AMPERE, 120/240VAC, THERMAL MAGNETIC WITH MOUNTING FEET FOR BASE MOUNTING.
24	1	GFCI OUTLET 120 VAC, 20 AMPERE, DUPLEX, INDUSTRIAL-GRADE, IVORY, LEVITON MODEL 6598-I, OR EQUAL MOUNTED IN STANDARD OUTLET BOX.
25	1	LIGHT NVENT HOFFMAN LED24V15, LED PANEL LIGHT WITH INTEGRAL SWITCH
26	4	LATCHES QUARTER TURN L-KNOB
27	3	FVNR MAGNETIC STARTERS SQUARE D CLASS 8536 WITHOUT EXCEPTION MAGNETIC STARTERS - 3 POLE, 600 VAC MAXIMUM, OPEN CONSTRUCTION, CLOSE COUPLED, WITH OVERLOAD RELAY ASSEMBLIES. STARTER SHALL HAVE 120 VAC, 60 HZ MAGNETIC COIL AND SHALL MINIMALLY HAVE ONE AUXILIARY COIL STATUS CONTACT. STARTERS SHALL BE SIZED ACCORDING TO THE MOTOR HORSEPOWER AS FOLLOWS: NEMA SIZE 1: 230 VOLTS - 7-1/2 HP AND LESS 460 VOLTS - 10 HP AND LESS NEMA SIZE 2: 230 VOLTS - GREATER THAN 7-1/2 HP, LESS THAN OR EQUAL TO 15 HP 460 VOLTS - GREATER THAN 10 HP, LESS THAN OR EQUAL TO 25 HP NEMA SIZE 3: 230 VOLTS - GREATER THAN 15 HP 460 VOLTS - GREATER THAN 25 HP OVERLOAD ELEMENTS SHALL BE PROVIDED AND SHALL BE AS RECOMMENDED BY THE PUMP SUPPLIER. ELECTRONIC/ADJUSTABLE OVERLOADS ARE NOT ACCEPTABLE. PROVIDE WITH EXTERNAL RESET COVER OPERATOR ACCESSIBLE THROUGH THE DEAD FRONT.
28	1	MAIN CIRCUIT BREAKER CIRCUIT BREAKER (MAIN) - 3 POLE, 240 OR 480VAC, THERMAL MAGNETIC, "MAIN", WITH MOUNTING FEET FOR BASE MOUNTING. AMPERE RATING SHALL BE BASED ON THE SIZE OF THE PUMP STATION, BUT SHALL NOT BE RATED LESS THAN 100 AMPERES. SQUARE D TYPE QOU (230 VOLTS, 125 AMPS OR LESS), TYPE QZL (230 VOLTS, 150 TO 225 AMPS), TYPE FAL (480 VOLTS, 100 AMPS OR LESS), OR POWERPACT J FRAME (480 VOLTS, 150 TO 250 AMPS), WITHOUT EXCEPTION.
29	3	PUMP MOTOR CIRCUIT BREAKER CIRCUIT BREAKERS (PUMP MOTORS) - 3 POLE, THERMAL MAGNETIC, SUITABLE BASE MOUNTING. AMPERE RATING SHALL BE BASED ON THE STARTING CURRENT OF THE MOTOR PER NEC AND SHALL BE RATED NOT LESS THAN 125% NOR GREATER THAN 250% OF MOTOR FLA. SQUARE D TYPE QOU (230 VOLTS, 125 AMPS OR LESS), TYPE QZL (230 VOLTS, 150 TO 225 AMPS), TYPE FAL (480 VOLTS, 100 AMPS OR LESS), OR POWERPACT J FRAME (480 VOLTS, 110 TO 250 AMPS), WITHOUT EXCEPTION.
30	1	POWER DISTRIBUTION BLOCK SQUARE D TYPE LBA363206 FOR PANELS 3 POLE 600 VAC, WITH LINE LUGS FOR TWO #14 TO 2/0 AWG CABLE PER PHASE. SQUARE D TYPE LBA365208 FOR PANELS REQUIRING #2 AWG BRANCH CIRCUITS. PROVIDE WITH PLEXIGLASS COVERS.
31	1	NEUTRAL DISTRIBUTION BLOCK SQUARE D TYPE LBA163206, SINGLE POLE, 600VAC, WITH LINE LUGS FOR TWO (2) #14 TO 2/0 AWG CABLES AND LOAD LUGS FOR SIX (6) #14 TO #4 AWG CABLES PER PHASE. PROVIDE WITH PLEXIGLASS COVERS.
32	3	ELAPSED TIME METERS REDINGTON MODEL 710-0002
33		NOT USED
34	2	PUSH BUTTON PILOT DEVICE - SILENCE SQUARE D CLASS 9001 KR1R, FLUSH, MOMENTARY (SPRING-RETURN), OIL-TIGHT, NEMA 4 PUSH-BUTTON WITH 1-N.O. CONTACT WITH RED LEGEND PLATE ENGRAVED "ALARM SILENCE" AND "TEST ALARM" RESPECTIVELY.
35	3	VFD HITACHI WJ200 SERIES
36	1	PHASE MONITOR/RELAY 208-230 VAC THREE PHASE DIVERSIFIED MODEL SLA-230-ALA OR MPE MODEL 001-230-1211, 230 VAC SINGLE PHASE DIVERSIFIED MODEL UDA-240-AKA, AND 480 VAC SYSTEMS 12 PIN SOCKET MPE MODEL 001-500-121 W / SD12 SOCKET. AUTOMATIC RESET, FUSED, SURFACE-MOUNT, OCTAL SOCKET PLUG-IN CONNECTION, ADJUSTABLE RANGE VOLTAGE FOR 3 PHASE POWER SYSTEMS WITHOUT EXCEPTION. PROVIDE MATCHING SOCKET TO MAINTAIN UL LISTING
37	1	FUSE BLOCK SQUARE D MODEL FB2211 (250 VOLT SYSTEMS) OR MODEL 2611 (600 VOLT SYSTEMS)
38	1	TRANSFORMER SQUARE D MODEL 9070T2000D1 W/ LEXAN FINGERSAFE COVER
39	1	CELLULAR DIALER MISSION MYDRO 150, FLATPAK, W/ P/N OP653 (8DI MODULE)

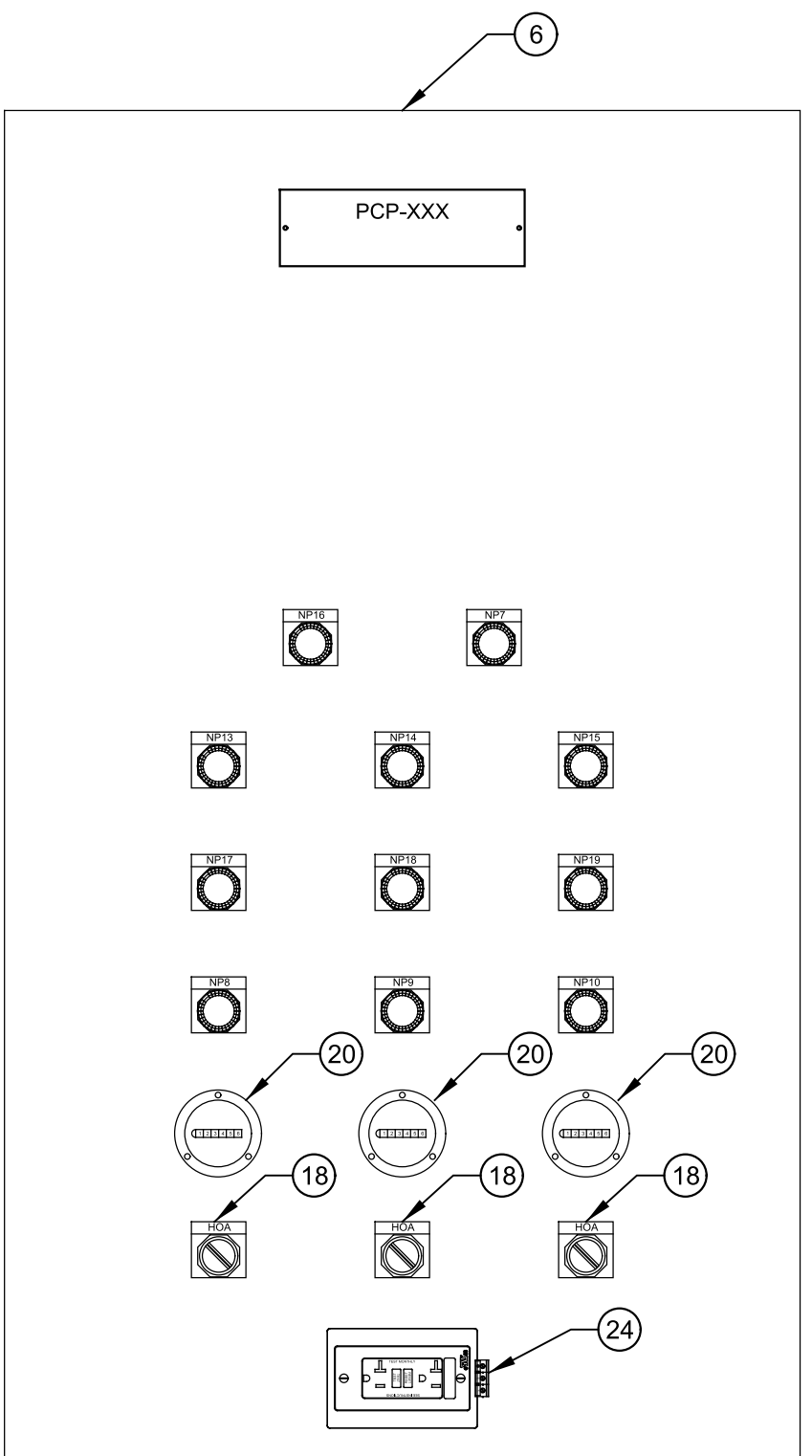


A EXTERNAL ELEVATION
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ALL SARASOTA COUNTY UTILITY LIFT STATIONS SHALL HAVE 480VAC, 3PH POWER

DESIGNED RD					SARASOTA COUNTY SCADA STANDARDS INSTRUMENTATION DEVELOPER LS - TRIPLEX PUMP CONTROL PANEL EXTERNAL ELEVATION	VERIFY SCALES	JOB NO.									
DRAWN KMM	BAR IS ONE INCH ON ORIGINAL DRAWING					11572A10										
CHECKED RD	0					19N01										
DATE JUNE 2021	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY					SHEET NO. 10 OF 15										
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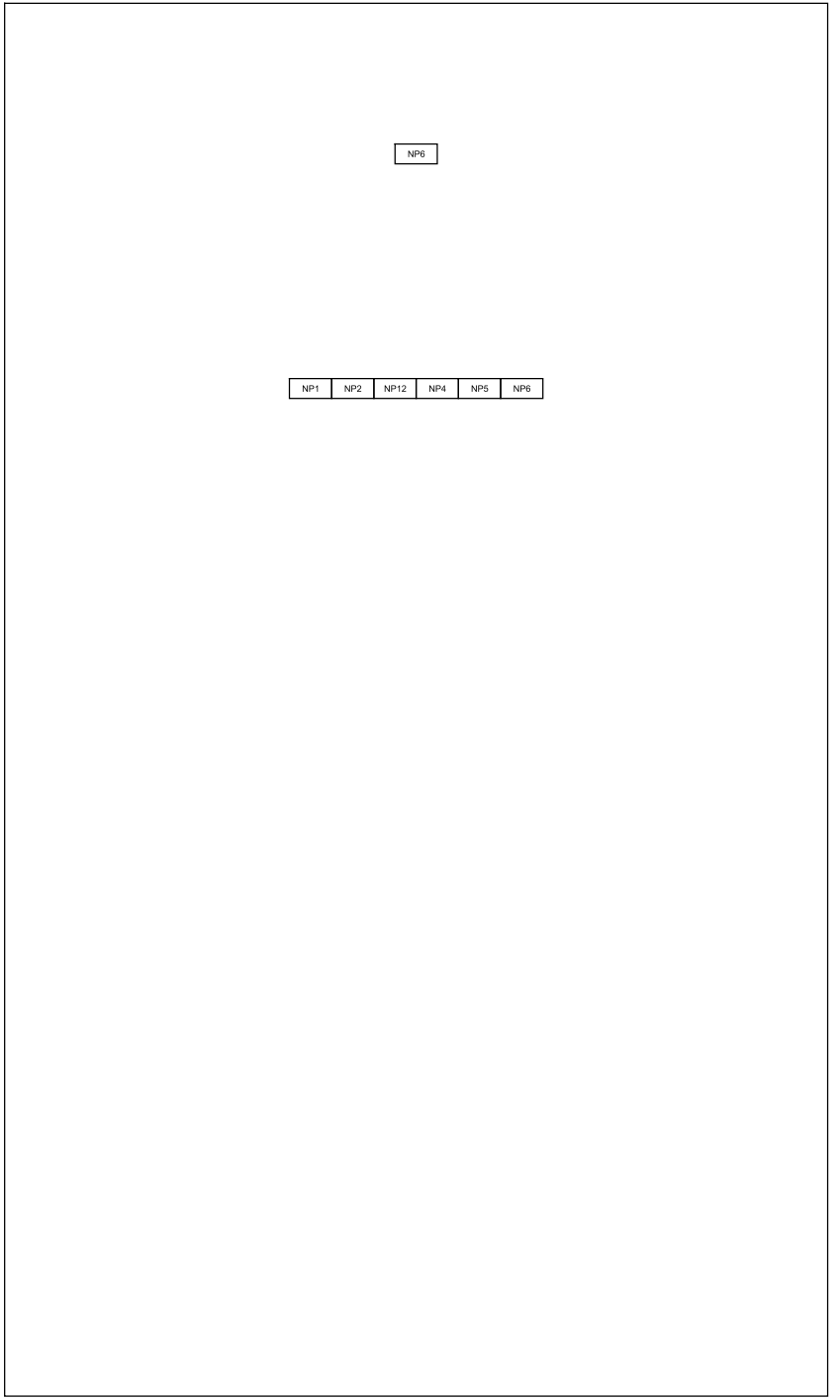
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 LAST SAVED BY: kmiller



NAMEPLATE SCHEDULE	
PCP	PCP-XXX
NP 1	CCB
NP 2	GFI
NP 3	PUMP NO.1
NP 4	PUMP NO.2
NP 5	PUMP NO.3
NP 6	MAIN
NP 7	ALARM TEST
NP 8	PUMP NO.1 RUN
NP 9	PUMP NO.2 RUN
NP 10	PUMP NO.3 RUN
NP 11	ALARM SILENCE
NP 12	MISSION RTU
NP 13	ONE PUMP REQUIRED
NP 14	TWO PUMPS REQUIRED
NP 15	THREE PUMPS REQUIRED
NP 16	HIGH LEVEL
NP 17	STARTER FAIL - PUMP 1
NP 18	STARTER FAIL - PUMP 2
NP 19	STARTER FAIL - PUMP 3

MAJOR EQUIPMENT SCHEDULE		
ITEM	QTY	DESCRIPTION
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2	1	DATA POCKET
3	1	NAMEPLATE BLACK LETTERING ON WHITE NAMEPLATE
4	1	BACK PANEL 56"H X 44"W NVENT HOFFMAN MODEL A60P48, BACK PLATE - 33" WIDE BY 45" HIGH, 10 GAUGE (MINIMUM), PRIME AND FINISH PAINTED STEEL BACK PLATE WITH 3/4" ROLLED OR BROKEN EDGES FOR SUPPORT. FINISH PAINT COATS SHALL HAVE A DRY FILM THICKNESS OF AT LEAST 4 MILS. HOFFMAN OR APPROVED EQUAL. ALL EQUIPMENT MOUNTED TO BACK PLATE SHALL BE ATTACHED WITH MACHINE SCREWS THROUGH DRILLED AND TAPPED HOLES.
5	5	INTRINSICALLY SAFE RELAYS DIVERSIFIED ELECTRICAL MODEL ISO-120-AFA, SINGLE CHANNEL, 120 VAC POWER SUPPLY, 16 VOLT DC SENSING VOLTAGE, 200 MICROAMP SENSING AMPERAGE, 8-PIN PLUG-IN CONNECTION.
6	1	DEAD FRONT 32-1/2" WIDE BY 43" HIGH, 10 GAUGE (MINIMUM), BRUSHED ALUMINUM DEAD-FRONT PANEL WITH 304 STAINLESS STEEL OR ALUMINUM CONTINUOUS PIANO HINGE AND TWO QUARTER-TURN L-KNOB HANDLES FOR HOLDING THE PANEL CLOSED TO THE BACK OF THE PLATE AND INTERNAL FRAME OF THE CONTROL PANEL. ISOLATE CONTACT BETWEEN DISSIMILAR METALS W/ 1/8" NON-CONDUCTIVE INSULATING MATERIAL. PANEL SHALL BE PROVIDED WITH DOOR HOLD (OPEN) WITH STAINLESS STEEL ROD. DOOR SWING SHALL MINIMALLY BE 90-DEGREE OPEN. PANEL SHALL INCLUDE MOUNTED DEVICES AND CUT-OUTS AS INDICATED ON THE DRAWINGS. PANEL EDGES SHALL BE DEBURRED AND ROUNDED.
7	1	ALTERNATOR DUPLX PANEL, MPE MODEL 008-120-12 OR DIVERSIFIED ELECTRIC MODEL ARA-120-ADA, 11-PIN PLUG-IN CONNECTION, DOUBLE POLE- DOUBLE THROW, 120 VAC CONTROL VOLTAGE, TRIPLEX PANEL; DIVERSIFIED MODEL ARA-120-AME, PANEL MOUNT, SINGLE POLE-SINGLE THROW, 120VAC CONTROL VOLTAGE
8	AS REQ'D	ANALOG TERMINAL BLOCKS SQUARE D TYPE GME 6, PROVIDE SQUARE D TYPE GH10 END CLAMPS AT EACH END OF THE TERMINAL STRIP. PROVIDE END BARRIER AT BOTTOM OF EACH TERMINAL STRIP, SQUARE D TYPE GME6B WITHOUT EXCEPTION.
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10	AS REQ'D	DISCRETE TERMINAL BLOCKS SQUARE D TYPE GME 6, 120 CONTROL TERMINAL BLOCKS FOR UP TO #10 AWG, 30 AMP, 600V. PROVIDE SQUARE D TYPE GH10 END CLAMPS AT EACH END OF THE TERMINAL STRIP. PROVIDE END BARRIER AT BOTTOM OF EACH TERMINAL STRIP, SQUARE D TYPE GME6B WITHOUT EXCEPTION.
11	AS REQ'D	DIN RAIL SQUARE D 9080MH339
12	1	STROBE/BEACON FEDERAL SIGNAL CORP., LP3P-120R. 120 VAC ALARM LIGHT INCLUDING RED LENS COVERING STROBE LAMP HOLDER WITH FLASHER. GASKET SHALL BE PROVIDED BETWEEN LENS AND ENCLOSURE FOR WEATHERTIGHT SEAL. ALARM LIGHT MOUNTING SHALL BE STAINLESS STEEL RIGID PIPE PREWIRED WITH LIGHT ATTACHED, AND PACKAGED SEPARATELY FOR TRANSPORT READY FOR FIELD ASSEMBLY. 1/4" DISCONNECTS SHALL BE PROVIDED INSIDE ENCLOSURE TO FACILITATE FIELD ASSEMBLY.
13	AS REQ'D	GREY WIRE DUCT PANDUIT GREY WIRING DUCT, 1" WIDE BY 3" HIGH, SHALL BE ATTACHED TO BACKPLATE WITH SCREWS.
14	1	GROUND BAR SQUARE D PK12GTA, GROUND COMPRESSION TYPE TERMINAL BLOCK MOUNTED DIRECTLY TO PANEL. GROUND BAR SHALL CONSIST OF MIN. 12 GROUND TERMINALS FOR UP TO #4 AWG WIRE.
15	1	ISOLATED GROUND BAR SQUARE D PK12GTA W/ PKGTAB
16	10	CONTROL RELAYS W/ OCTAL BASE AND PILOT LIGHT OPTION SQUARE D CLASS 8501 KPR12P14V20
17	AS REQ'D	BREAKER CUTOFF SQUARE D CLASS 9001, MODEL KS43BH2, 30MM INDUSTRIAL, MAINTAINED, LEVER OPERATOR, OIL-TIGHT, SELECTOR SWITCH WITH CONTACTS AS INDICATED ON THE DRAWINGS AND AN "MANUAL-OFF-AUTO" LEGEND PLATE.
18	3	SELECTOR SWITCH - THREE POSITION

MAJOR EQUIPMENT SCHEDULE		
ITEM	QTY	DESCRIPTION
19	5	PILOT LIGHTS SQUARE D CLASS 9001 TYPE SKP-38 LIGHT, TYPE G31 LENS AND TYPE KN-224 LEGEND PLATE, 120 VAC, RESISTOR TYPE, OIL-TIGHT, WATERTIGHT, PILOT LIGHT WITH COLORED GREEN, AMBER, OR RED PLASTIC LENS AS SHOWN ON DRAWINGS.
20	3	ELAPSED TIME METERS REDINGTON MODEL 710-0002, 120 VAC, 6-1/2 DIGIT, NONRESETABLE, PANEL- MOUNTED.
21	1	INTRUSION SWITCH INTRUSION SWITCH: THE SWITCH CONTACT SHALL BE NORMALLY CLOSED (OPEN WHEN THE PANEL DOOR IS CLOSED). INTRUSION SWITCH SHALL BE SQUARE-D 9007MS011S0300 WITHOUT EXCEPTION.
22	1	HORN FEDERAL SIGNAL, 350 SERIES WITH WEATHERPROOF BOX. 120VAC WEATHERPROOF.
23	3	120 VAC CIRCUIT BREAKERS SQUARE D TYPE QOU, CIRCUIT BREAKERS (CONTROL, GFI, RTU) - SINGLE POLE, 10 & 15 AMPERE, 120/240VAC, THERMAL MAGNETIC WITH MOUNTING FEET FOR BASE MOUNTING.
24	1	GFCI OUTLET 120 VAC, 20 AMPERE, DUPLEX, INDUSTRIAL-GRADE, IVORY. LEVITON MODEL 6598-I, OR EQUAL MOUNTED IN STANDARD OUTLET BOX.
25	1	LIGHT NVENT HOFFMAN LED24V15, LED PANEL LIGHT WITH INTEGRAL SWITCH
26	4	LATCHES QUARTER TURN L-KNOB
27	3	FVNR MAGNETIC STARTERS SQUARE D CLASS 8536 WITHOUT EXCEPTION MAGNETIC STARTERS - 3 POLE, 600 VAC MAXIMUM, OPEN CONSTRUCTION, CLOSE COUPLED, WITH OVERLOAD RELAY ASSEMBLIES. STARTER SHALL HAVE 120 VAC, 60 HZ MAGNETIC COIL AND SHALL MINIMALLY HAVE ONE AUXILIARY COIL STATUS CONTACT. STARTERS SHALL BE SIZED ACCORDING TO THE MOTOR HORSEPOWER AS FOLLOWS: NEMA SIZE 1: 230 VOLTS - 7-1/2 HP AND LESS 460 VOLTS - 10 HP AND LESS NEMA SIZE 2: 230 VOLTS - GREATER THAN 7-1/2 HP, LESS THAN OR EQUAL TO 15 HP 460 VOLTS - GREATER THAN 10 HP, LESS THAN OR EQUAL TO 25 HP NEMA SIZE 3: 230 VOLTS - GREATER THAN 15 HP 460 VOLTS - GREATER THAN 25 HP OVERLOAD ELEMENTS SHALL BE PROVIDED AND SHALL BE AS RECOMMENDED BY THE PUMP SUPPLIER. ELECTRONIC/ADJUSTABLE OVERLOADS ARE NOT ACCEPTABLE. PROVIDE WITH EXTERNAL RESET COVER OPERATOR ACCESSIBLE THROUGH THE DEAD FRONT.
28	1	MAIN CIRCUIT BREAKER CIRCUIT BREAKER (MAIN) - 3 POLE, 240 OR 480VAC, THERMAL MAGNETIC, "MAIN", WITH MOUNTING FEET FOR BASE MOUNTING. AMPERE RATING SHALL BE BASED ON THE SIZE OF THE PUMP STATION, BUT SHALL NOT BE RATED LESS THAN 100 AMPERES. SQUARE D TYPE QOU (230 VOLTS, 125 AMPS OR LESS), TYPE Q2L (230 VOLTS, 150 TO 225 AMPS), TYPE FAL (480 VOLTS, 100 AMPS OR LESS), OR POWERPACT J FRAME (480 VOLTS, 150 TO 250 AMPS), WITHOUT EXCEPTION.
29	3	PUMP MOTOR CIRCUIT BREAKER CIRCUIT BREAKERS (PUMP MOTORS) - 3 POLE, THERMAL MAGNETIC, SUITABLE BASE MOUNTING. AMPERE RATING SHALL BE BASED ON THE STARTING CURRENT OF THE MOTOR PER NEC AND SHALL BE RATED NOT LESS THAN 125% NOR GREATER THAN 250% OF MOTOR FLA. SQUARE D TYPE QOU (230 VOLTS, 125 AMPS OR LESS), TYPE Q2L (230 VOLTS, 150 TO 225 AMPS), TYPE FAL (480 VOLTS, 100 AMPS OR LESS), OR POWERPACT J FRAME (480 VOLTS, 110 TO 250 AMPS), WITHOUT EXCEPTION.
30	1	POWER DISTRIBUTION BLOCK SQUARE D TYPE LBA363206 FOR PANELS 3 POLE 600 VAC, WITH LINE LUGS FOR TWO #14 TO 2/0 AWG CABLE PER PHASE. SQUARE D TYPE LBA365208 FOR PANELS REQUIRING #2 AWG BRANCH CIRCUITS. PROVIDE WITH PLEXIGLASS COVERS.
31	1	NEUTRAL DISTRIBUTION BLOCK SQUARE D TYPE LBA163206, SINGLE POLE, 600VAC, WITH LINE LUGS FOR TWO (2) #14 TO 2/0 AWG CABLES AND LOAD LUGS FOR SIX (6) #14 TO #4 AWG CABLES PER PHASE. PROVIDE WITH PLEXIGLASS COVERS.
32	3	ELAPSED TIME METERS REDINGTON MODEL 710-0002
33		NOT USED
34	2	PUSH BUTTON PILOT DEVICE - SILENCE SQUARE D CLASS 9001 KR1R, FLUSH, MOMENTARY (SPRING-RETURN), OIL-TIGHT, NEMA 4 PUSH-BUTTON WITH 1-N.O. CONTACT WITH RED LEGEND PLATE ENGRAVED "ALARM SILENCE" AND "TEST ALARM" RESPECTIVELY.
35	3	VFD HITACHI WJ200 SERIES
36	1	PHASE MONITOR/RELAY 208-230 VAC THREE PHASE DIVERSIFIED MODEL SLA-230-ALA OR MPE MODEL 001-230-1211, 230 VAC SINGLE PHASE DIVERSIFIED MODEL UOA-240-AKA, AND 480 VAC SYSTEMS 12 PIN SOCKET MPE MODEL 001-500-121 W/ SD12 SOCKET. AUTOMATIC RESET, FUSED, SURFACE-MOUNT, OCTAL SOCKET PLUG-IN CONNECTION, ADJUSTABLE RANGE VOLTAGE FOR 3 PHASE POWER SYSTEMS WITHOUT EXCEPTION. PROVIDE MATCHING SOCKET TO MAINTAIN UL LISTING
37	1	FUSE BLOCK SQUARE D MODEL FB2211 (250 VOLT SYSTEMS) OR MODEL 2611 (600 VOLT SYSTEMS)
38	1	TRANSFORMER SQUARE D MODEL 9070T2000D1 W/ LEXAN FINGERSAFE COVER
39	1	CELLULAR DIALER MISSION MYDRO 150, FLATPAK, W/ P/N OP655 (8DI MODULE)



B DEADFRONT LAYOUT
SCALE: NO SCALE
FILE: 11572A1002N603.2dm

ALL SARASOTA COUNTY UTILITY LIFT STATIONS SHALL HAVE 480VAC, 3PH POWER

REV	DATE	BY	DESCRIPTION

DESIGNED RD	PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.
DRAWN KMM	
CHECKED RD	
DATE JUNE 2021	

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SARASOTA COUNTY
SCADA STANDARDS
INSTRUMENTATION
DEVELOPER LS - TRIPLEX PUMP
CONTROL PANEL DEADFRONT INTERNAL ELEVATION

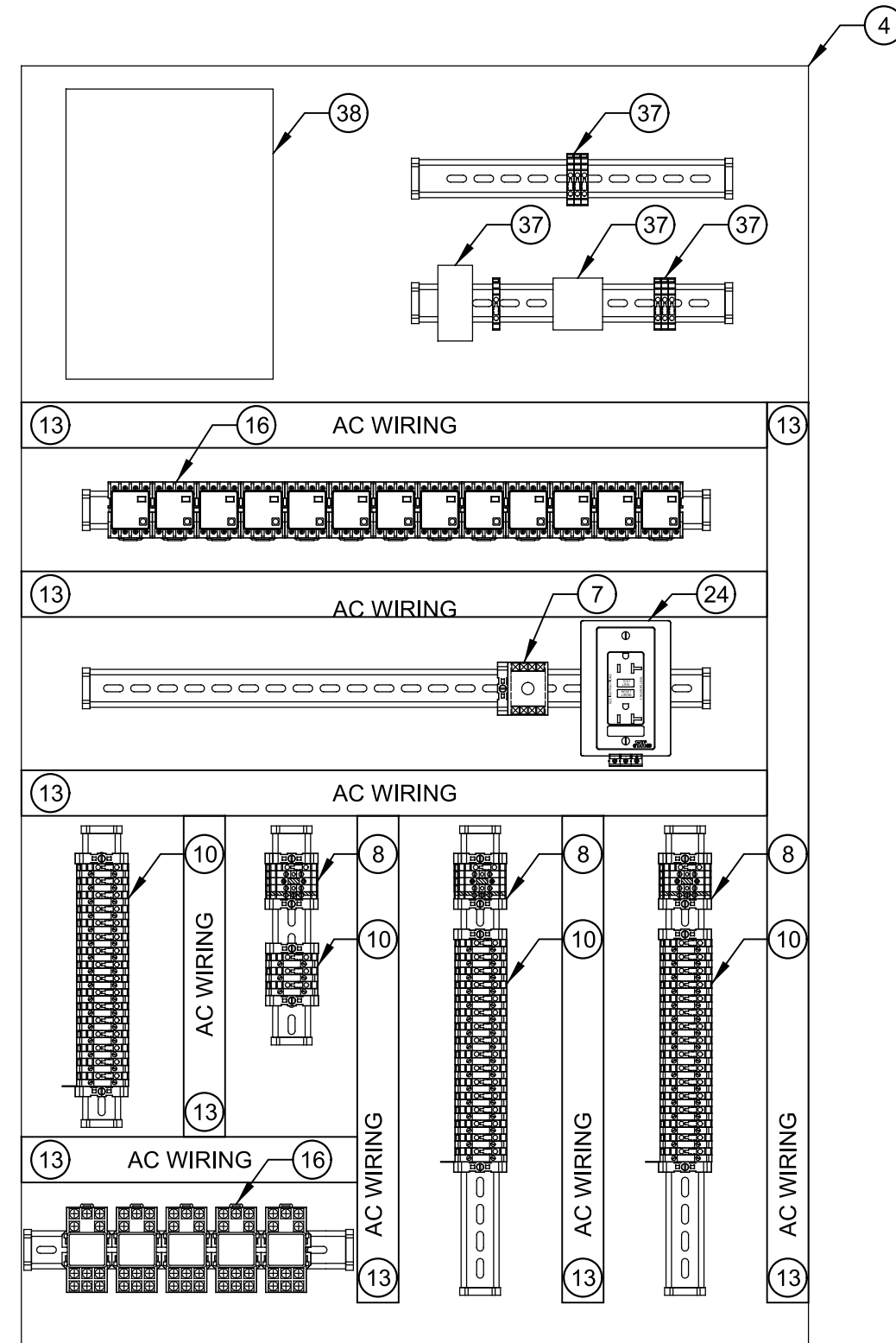
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWING NO. 19N02
	SHEET NO. 11 OF 15

Plot Date: 16-JUN-2021 1:02:33 PM

User: svcPW

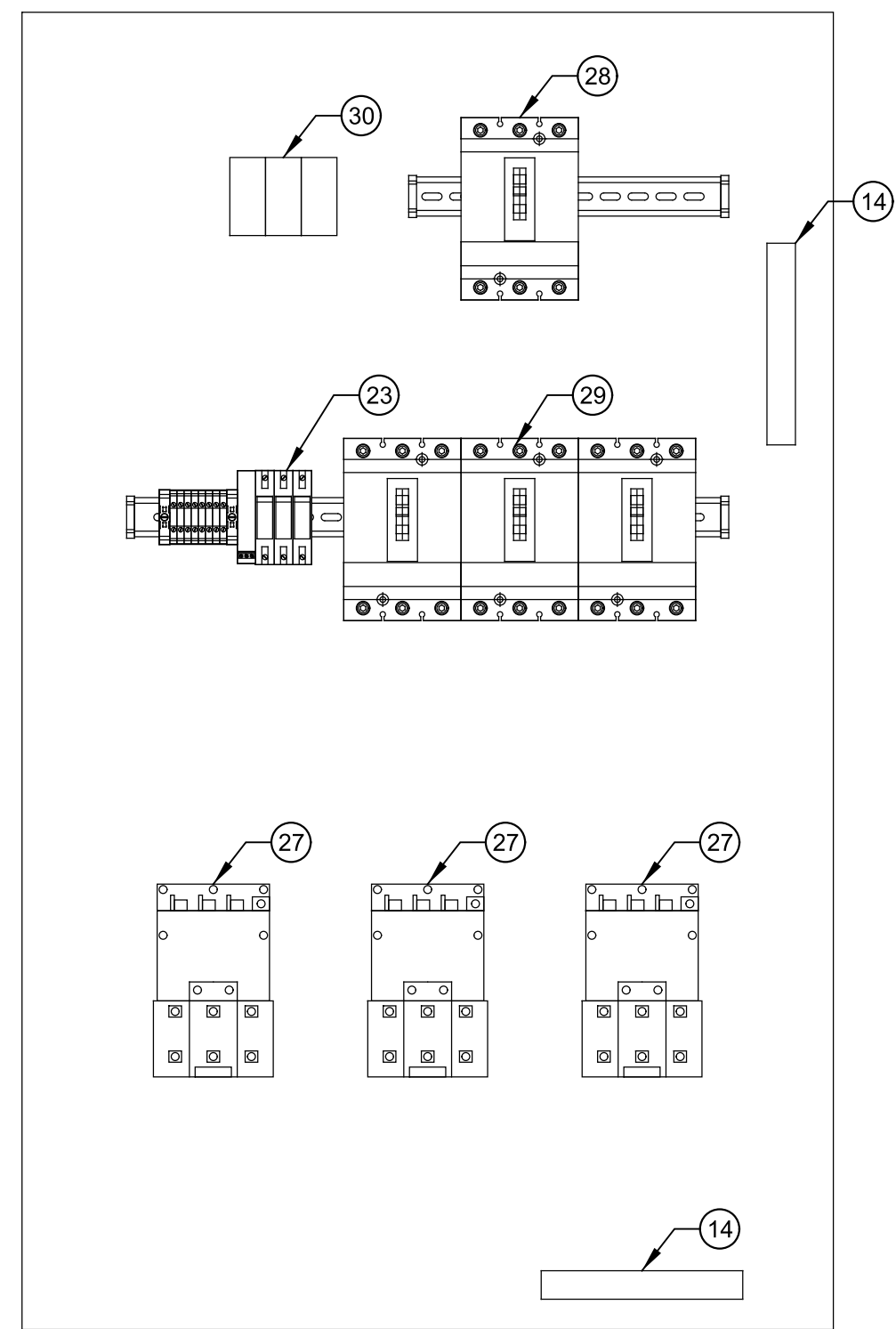
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LAST SAVED BY: tmliller



C LEFT INTERNAL ELEVATION

SCALE: NO SCALE
FILE: 11572A1002N603.2dm



D RIGHT INTERNAL ELEVATION

SCALE: NO SCALE
FILE: 11572A1002N603.2dm

NAMEPLATE SCHEDULE	
PCP	PCP-XXX
NP 1	CCB
NP 2	GFI
NP 3	PUMP NO.1
NP 4	PUMP NO.2
NP 5	PUMP NO.3
NP 6	MAIN
NP 7	ALARM TEST
NP 8	PUMP NO.1 RUN
NP 9	PUMP NO.2 RUN
NP 10	PUMP NO.3 RUN
NP 11	ALARM SILENCE
NP 12	MISSION RTU
NP 13	ONE PUMP REQUIRED
NP 14	TWO PUMPS REQUIRED
NP 15	THREE PUMPS REQUIRED
NP 16	HIGH LEVEL
NP 17	STARTER FAIL - PUMP 1
NP 18	STARTER FAIL - PUMP 2
NP 19	STARTER FAIL - PUMP 3

ITEM		QTY	DESCRIPTION
1	1	NEMA 4X 304 WHITE PAINTED STAINLESS STEEL ENCLOSURE 60"H x 48"W	NVENT HOFFMAN MODEL A62H4812SSLP3PT, CONTROL CABINET - 60" HIGH, 48" WIDE, AND 12" DEEP (EXCLUDING DOOR DEPTH), 2-DOOR CABINET. CABINET SHALL BE CONSTRUCTED EXCLUSIVELY OF 304 STAINLESS STEEL, 14 GAUGE (MINIMUM) WITH CONTINUOUS WELDS THROUGHOUT. WEEP HOLES OR OTHER OPENINGS IN ENCLOSURE WHICH ARE NOT SPECIFIED IN THESE DRAWINGS SHALL NOT BE ACCEPTABLE. PANEL SHALL HAVE AN OUTER DOOR GASKET SEAL WHICH SHALL BE CLOSE-CELL NEOPRENE OR OTHER MATERIAL AS APPROVED BY COUNTY. DOOR GASKET SHALL PROVIDE A CONTINUOUS SEAL AGAINST EXTERIOR DOOR SEALING FACE WHICH SHALL BE A CONTINUOUS ROLLED LIP. A DRIP SHIELD SHALL BE PROVIDED AND TACK WELDED IN PLACE AT NOT LESS THAN 5 LOCATIONS. A THREE POINT 90 DEGREE TURN LATCHING MECHANISM CONSTRUCTED OF 304 STAINLESS STEEL SHALL BE PROVIDED. LATCHING MECHANISM SHALL BE OPERATED BY A SINGLE EXTERIOR STAINLESS STEEL HANDLE WITH ROLLERS AND SHALL BE PAD-LOCKABLE TO PREVENT UNAUTHORIZED OPERATION. DOOR SHALL BE FULL HEIGHT WITH 304 STAINLESS STEEL CONTINUOUS PIANO HINGE. DOOR LOCK OPEN STAINLESS STEEL ROD, AND SHALL MINIMALLY HAVE 120 SWING. PANEL SHALL HAVE PROVISIONS FOR MOUNTING BACKPANEL AND DEADFRONT INSIDE AS A SINGLE UNITIZED ASSEMBLY. A LAMINATED WIRING DIAGRAM OF ALL WIRING CONNECTIONS SHALL BE PROVIDED IN A PERMANENT SLEEVE ATTACHED TO PANEL DOOR. PANEL SHALL BE INSTALLED PERPENDICULAR TO WETWELL AND VALVE VAULT AND DOOR HINGED TO OPEN AWAY FROM THE WETWELL AND VALVE VAULT.
2	1	DATA POCKET	
3	1	NAMEPLATE	BLACK LETTERING ON WHITE NAMEPLATE
4	1	BACK PANEL 56"H X 44"W	NVENT HOFFMAN MODEL A60P48, BACK PLATE - 33" WIDE BY 45" HIGH, 10 GAUGE (MINIMUM), PRIMED AND FINISH PAINTED STEEL BACK PLATE WITH 3/4" ROLLED OR BROKEN EDGES FOR SUPPORT. FINISH PAINT COATS SHALL HAVE A DRY FILM THICKNESS OF AT LEAST 4 MILS. HOFFMAN OR APPROVED EQUAL. ALL EQUIPMENT MOUNTED TO BACK PLATE SHALL BE ATTACHED WITH MACHINE SCREWS THROUGH DRILLED AND TAPPED HOLES.
5	5	INTRINSICALLY SAFE RELAYS	DIVERSIFIED ELECTRICAL MODEL ISO-120-AFA, SINGLE CHANNEL, 120 VAC POWER SUPPLY, 16 VOLT DC SENSING VOLTAGE, 200 MICROAMP SENSING AMPERAGE, 8-PIN PLUG-IN CONNECTION.
6	1	DEAD FRONT	32-1/2" WIDE BY 43" HIGH, 10 GAUGE (MINIMUM), BRUSHED ALUMINUM DEAD-FRONT PANEL WITH 304 STAINLESS STEEL OR ALUMINUM CONTINUOUS PIANO HINGE AND TWO QUARTER-TURN L-KNOB HANDLES FOR HOLDING THE PANEL CLOSED TO THE BACK OF THE PLATE AND INTERNAL FRAME OF THE CONTROL PANEL. ISOLATE CONTACT BETWEEN DISSIMILAR METALS W/ 1/8" NON-CONDUCTIVE INSULATING MATERIAL. PANEL SHALL BE PROVIDED WITH DOOR HOLD (OPEN) WITH STAINLESS STEEL ROD. DOOR SWING SHALL MINIMALLY BE 90-DEGREE OPEN. PANEL SHALL INCLUDE MOUNTED DEVICES AND CUT-OUTS AS INDICATED ON THE DRAWINGS. PANEL EDGES SHALL BE DEBURRED AND ROUNDED.
7	1	ALTERNATOR	DUPLEX PANEL: MPE MODEL 008-120-12 OR DIVERSIFIED ELECTRIC MODEL ARA-120-ADA, 11-PIN PLUG-IN CONNECTION, DOUBLE POLE- DOUBLE THROW, 120 VAC CONTROL VOLTAGE, TRIPLEX PANEL: DIVERSIFIED MODEL ARA-120-AME, PANEL MOUNT, SINGLE POLE-SINGLE THROW, 120VAC CONTROL VOLTAGE
8	AS REQ'D	ANALOG TERMINAL BLOCKS	SQUARE D TYPE GME 6, PROVIDE SQUARE D TYPE GH10 END CLAMPS AT EACH END OF THE TERMINAL STRIP, PROVIDE END BARRIER AT BOTTOM OF EACH TERMINAL STRIP, SQUARE D TYPE GME6B WITHOUT EXCEPTION.
9	AS REQ'D	24 VDC FUSED TERMINAL BLOCKS	SQUARE D TYPE GME 6, PROVIDE SQUARE D TYPE GH10 END CLAMPS AT EACH END OF THE TERMINAL STRIP, PROVIDE END BARRIER AT BOTTOM OF EACH TERMINAL STRIP, SQUARE D TYPE GME6B WITHOUT EXCEPTION.
10	AS REQ'D	DISCRETE TERMINAL BLOCKS	SQUARE D TYPE GME 6, 120 CONTROL TERMINAL BLOCKS FOR UP TO #10 AWG, 30 AMP, 600V. PROVIDE SQUARE D TYPE GH10 END CLAMPS AT EACH END OF THE TERMINAL STRIP PROVIDE END BARRIER AT BOTTOM OF EACH TERMINAL STRIP, SQUARE D TYPE GME6B WITHOUT EXCEPTION.
11	AS REQ'D	DIN RAIL	SQUARE D 9080MH339
12	1	STROBE/BEACON	FEDERAL SIGNAL CORP. LP3P-120R, 120 VAC ALARM LIGHT INCLUDING RED LENS COVERING STROBE LAMP HOLDER WITH FLASHER. GASKET SHALL BE PROVIDED BETWEEN LENS AND ENCLOSURE FOR WEATHERTIGHT SEAL. ALARM LIGHT MOUNTING SHALL BE STAINLESS STEEL RIGID PIPE PREWIRED WITH LIGHT ATTACHED, AND PACKAGED SEPARATELY FOR TRANSPORT READY FOR FIELD ASSEMBLY. 1/4" DISCONNECTS SHALL BE PROVIDED INSIDE ENCLOSURE TO FACILITATE FIELD ASSEMBLY.
13	AS REQ'D	GREY WIRE DUCT	PANDUIT GREY WIRING DUCT, 1" WIDE BY 3" HIGH, SHALL BE ATTACHED TO BACKPLATE WITH SCREWS.
14	1	GROUND BAR	SQUARE D PK12GTA, GROUND COMPRESSION TYPE TERMINAL BLOCK MOUNTED DIRECTLY TO PANEL. GROUND BAR SHALL CONSIST OF MIN. 12 GROUND TERMINALS FOR UP TO #4 AWG WIRE.
15	1	ISOLATED GROUND BAR	SQUARE D PK12GTA W/ PKGTAB
16	10	CONTROL RELAYS W/ OCTAL BASE AND PILOT LIGHT OPTION	SQUARE D CLASS 8501 KPR12P14V20
17	AS REQ'D	BREAKER CUTOOUT	
18	3	SELECTOR SWITCH - THREE POSITION	SQUARE D CLASS 9001, MODEL KS43BH2, 30MM INDUSTRIAL, MAINTAINED, LEVER OPERATOR, OIL-TIGHT, SELECTOR SWITCH WITH CONTACTS AS INDICATED ON THE DRAWINGS AND AN "MANUAL-OFF-AUTO" LEGEND PLATE.
19	5	PILOT LIGHTS	SQUARE D CLASS 9001 TYPE SKP-38 LIGHT, TYPE G31 LENS AND TYPE KN-224 LEGEND PLATE. 120 VAC, RESISTOR TYPE, OIL-TIGHT, WATERTIGHT, PILOT LIGHT WITH COLORED GREEN, AMBER, OR RED PLASTIC LENS AS SHOWN ON DRAWINGS.
20	3	ELAPSED TIME METERS	REDINGTON MODEL 710-0002, 120 VAC, 6-1/2 DIGIT, NONRESETABLE, PANEL- MOUNTED.
21	1	INTRUSION SWITCH	INTRUSION SWITCH: THE SWITCH CONTACT SHALL BE NORMALLY CLOSED (OPEN WHEN THE PANEL DOOR IS CLOSED). INTRUSION SWITCH SHALL BE SQUARE-D 9007MS01IS0300 WITHOUT EXCEPTION.
22	1	HORN	FEDERAL SIGNAL, 350 SERIES WITH WEATHERPROOF BOX. 120VAC WEATHERPROOF.

ITEM		QTY	DESCRIPTION
1	1	NEMA 4X 304 WHITE PAINTED STAINLESS STEEL ENCLOSURE 60"H x 48"W	NVENT HOFFMAN MODEL A62H4812SSLP3PT, CONTROL CABINET - 60" HIGH, 48" WIDE, AND 12" DEEP (EXCLUDING DOOR DEPTH), 2-DOOR CABINET. CABINET SHALL BE CONSTRUCTED EXCLUSIVELY OF 304 STAINLESS STEEL, 14 GAUGE (MINIMUM) WITH CONTINUOUS WELDS THROUGHOUT. WEEP HOLES OR OTHER OPENINGS IN ENCLOSURE WHICH ARE NOT SPECIFIED IN THESE DRAWINGS SHALL NOT BE ACCEPTABLE. PANEL SHALL HAVE AN OUTER DOOR GASKET SEAL WHICH SHALL BE CLOSE-CELL NEOPRENE OR OTHER MATERIAL AS APPROVED BY COUNTY. DOOR GASKET SHALL PROVIDE A CONTINUOUS SEAL AGAINST EXTERIOR DOOR SEALING FACE WHICH SHALL BE A CONTINUOUS ROLLED LIP. A DRIP SHIELD SHALL BE PROVIDED AND TACK WELDED IN PLACE AT NOT LESS THAN 5 LOCATIONS. A THREE POINT 90 DEGREE TURN LATCHING MECHANISM CONSTRUCTED OF 304 STAINLESS STEEL SHALL BE PROVIDED. LATCHING MECHANISM SHALL BE OPERATED BY A SINGLE EXTERIOR STAINLESS STEEL HANDLE WITH ROLLERS AND SHALL BE PAD-LOCKABLE TO PREVENT UNAUTHORIZED OPERATION. DOOR SHALL BE FULL HEIGHT WITH 304 STAINLESS STEEL CONTINUOUS PIANO HINGE. DOOR LOCK OPEN STAINLESS STEEL ROD, AND SHALL MINIMALLY HAVE 120 SWING. PANEL SHALL HAVE PROVISIONS FOR MOUNTING BACKPANEL AND DEADFRONT INSIDE AS A SINGLE UNITIZED ASSEMBLY. A LAMINATED WIRING DIAGRAM OF ALL WIRING CONNECTIONS SHALL BE PROVIDED IN A PERMANENT SLEEVE ATTACHED TO PANEL DOOR. PANEL SHALL BE INSTALLED PERPENDICULAR TO WETWELL AND VALVE VAULT AND DOOR HINGED TO OPEN AWAY FROM THE WETWELL AND VALVE VAULT.
23	3	120 VAC CIRCUIT BREAKERS	SQUARE D TYPE QOU, CIRCUIT BREAKERS (CONTROL, GFI, RTU) - SINGLE POLE, 10 & 15 AMPERE, 120/240VAC, THERMAL MAGNETIC WITH MOUNTING FEET FOR BASE MOUNTING.
24	1	GFCI OUTLET	120 VAC, 20 AMPERE, DUPLEX, INDUSTRIAL-GRADE, IVORY. LEVITON MODEL 6598-I, OR EQUAL MOUNTED IN STANDARD OUTLET BOX.
25	1	LIGHT	NVENT HOFFMAN LED24V15, LED PANEL LIGHT WITH INTEGRAL SWITCH
26	4	LATCHES	QUARTER TURN L-KNOB
27	3	FVNR MAGNETIC STARTERS	SQUARE D CLASS 8536 WITHOUT EXCEPTION MAGNETIC STARTERS - 3 POLE, 600 VAC MAXIMUM, OPEN CONSTRUCTION, CLOSE COUPLED, WITH OVERLOAD RELAY ASSEMBLIES. STARTER SHALL HAVE 120 VAC, 60 HZ MAGNETIC COIL AND SHALL MINIMALLY HAVE ONE AUXILIARY COIL STATUS CONTACT. STARTERS SHALL BE SIZED ACCORDING TO THE MOTOR HORSEPOWER AS FOLLOWS: NEMA SIZE 1: 230 VOLTS - 7-1/2 HP AND LESS 460 VOLTS - 10 HP AND LESS NEMA SIZE 2: 230 VOLTS - GREATER THAN 7-1/2 HP, LESS THAN OR EQUAL TO 15 HP 460 VOLTS - GREATER THAN 10 HP, LESS THAN OR EQUAL TO 25 HP NEMA SIZE 3: 230 VOLTS - GREATER THAN 15 HP 460 VOLTS - GREATER THAN 25 HP OVERLOAD ELEMENTS SHALL BE PROVIDED AND SHALL BE AS RECOMMENDED BY THE PUMP SUPPLIER. ELECTRONIC/ADJUSTABLE OVERLOADS ARE NOT ACCEPTABLE. PROVIDE WITH EXTERNAL RESET COVER OPERATOR ACCESSIBLE THROUGH THE DEAD FRONT.
28	1	MAIN CIRCUIT BREAKER	CIRCUIT BREAKER (MAIN) - 3 POLE, 240 OR 480VAC, THERMAL MAGNETIC, "MAIN", WITH MOUNTING FEET FOR BASE MOUNTING. AMPERE RATING SHALL BE BASED ON THE SIZE OF THE PUMP STATION, BUT SHALL NOT BE RATED LESS THAN 100 AMPERES. SQUARE D TYPE QOU (230 VOLTS, 125 AMPS OR LESS), TYPE Q2L (230 VOLTS, 150 TO 225 AMPS), TYPE FAL (480 VOLTS, 100 AMPS OR LESS), OR POWERPACT J FRAME (480 VOLTS, 150 TO 250 AMPS), WITHOUT EXCEPTION.
29	3	PUMP MOTOR CIRCUIT BREAKER	CIRCUIT BREAKERS (PUMP MOTORS) - 3 POLE, THERMAL MAGNETIC, SUITABLE BASE MOUNTING. AMPERE RATING SHALL BE BASED ON THE STARTING CURRENT OF THE MOTOR PER NEC AND SHALL BE RATED NOT LESS THAN 125% NOR GREATER THAN 250% OF MOTOR FLA. SQUARE D TYPE QOU (230 VOLTS, 125 AMPS OR LESS), TYPE Q2L (230 VOLTS, 150 TO 225 AMPS), TYPE FAL (480 VOLTS, 100 AMPS OR LESS), OR POWERPACT J FRAME (480 VOLTS, 110 TO 250 AMPS), WITHOUT EXCEPTION.
30	1	POWER DISTRIBUTION BLOCK	SQUARE D TYPE LBA363206 FOR PANELS 3 POLE 600 VAC, WITH LINE LUGS FOR TWO #14 TO 2/0 AWG CABLE PER PHASE. SQUARE D TYPE LBA365208 FOR PANELS REQUIRING #2 AWG BRANCH CIRCUITS. PROVIDE WITH PLEXIGLASS COVERS.
31	1	NEUTRAL DISTRIBUTION BLOCK	SQUARE D TYPE LBA163206, SINGLE POLE, 600VAC, WITH LINE LUGS FOR TWO (2) #14 TO 2/0 AWG CABLES AND LOAD LUGS FOR SIX (6) #14 TO #4 AWG CABLES PER PHASE. PROVIDE WITH PLEXIGLASS COVERS.
32	3	ELAPSED TIME METERS	REDINGTON MODEL 710-0002
33		NOT USED	
34	2	PUSH BUTTON PILOT DEVICE - SILENCE	SQUARE D CLASS 9001 KR1R, FLUSH, MOMENTARY (SPRING-RETURN), OIL-TIGHT, NEMA 4 PUSH-BUTTON WITH 1-N.O. CONTACT WITH RED LEGEND PLATE ENGRAVED "ALARM SILENCE" AND "TEST ALARM" RESPECTIVELY.
35	3	VFD	HITACHI WJ200 SERIES
36	1	PHASE MONITOR/RELAY	208-230 VAC THREE PHASE DIVERSIFIED MODEL SLA-230-ALA OR MPE MODEL 001-230-1211, 230 VAC SINGLE PHASE DIVERSIFIED MODEL UOA-240-AKA, AND 480 VAC SYSTEMS 12 PIN SOCKET MPE MOEDEL 001-500-121 W / SD12 SOCKET. AUTOMATIC RESET, FUSED, SURFACE-MOUNT, OCTAL SOCKET PLUG-IN CONNECTION. ADJUSTABLE RANGE VOLTAGE FOR 3 PHASE POWER SYSTEMS WITHOUT EXCEPTION. PROVIDE MATCHING SOCKET TO MAINTAIN UL LISTING
37	1	FUSE BLOCK	SQUARE D MODEL FB2211 (250 VOLT SYSTEMS) OR MODEL 2611 (600 VOLT SYSTEMS)
38	1	TRANSFORMER	SQUARE D MODEL 9070T2000D1 W/ LEXAN FINGERSAFE COVER
39	1	CELLULAR DIALER	MISSION MYDRO 150, FLATPAK, W/ PIN OP653 (8DI MODULE)

ALL SARASOTA COUNTY UTILITY LIFT STATIONS SHALL HAVE 480VAC, 3PH POWER

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED RD	
DRAWN KMM	
CHECKED RD	
DATE JUNE 2021	

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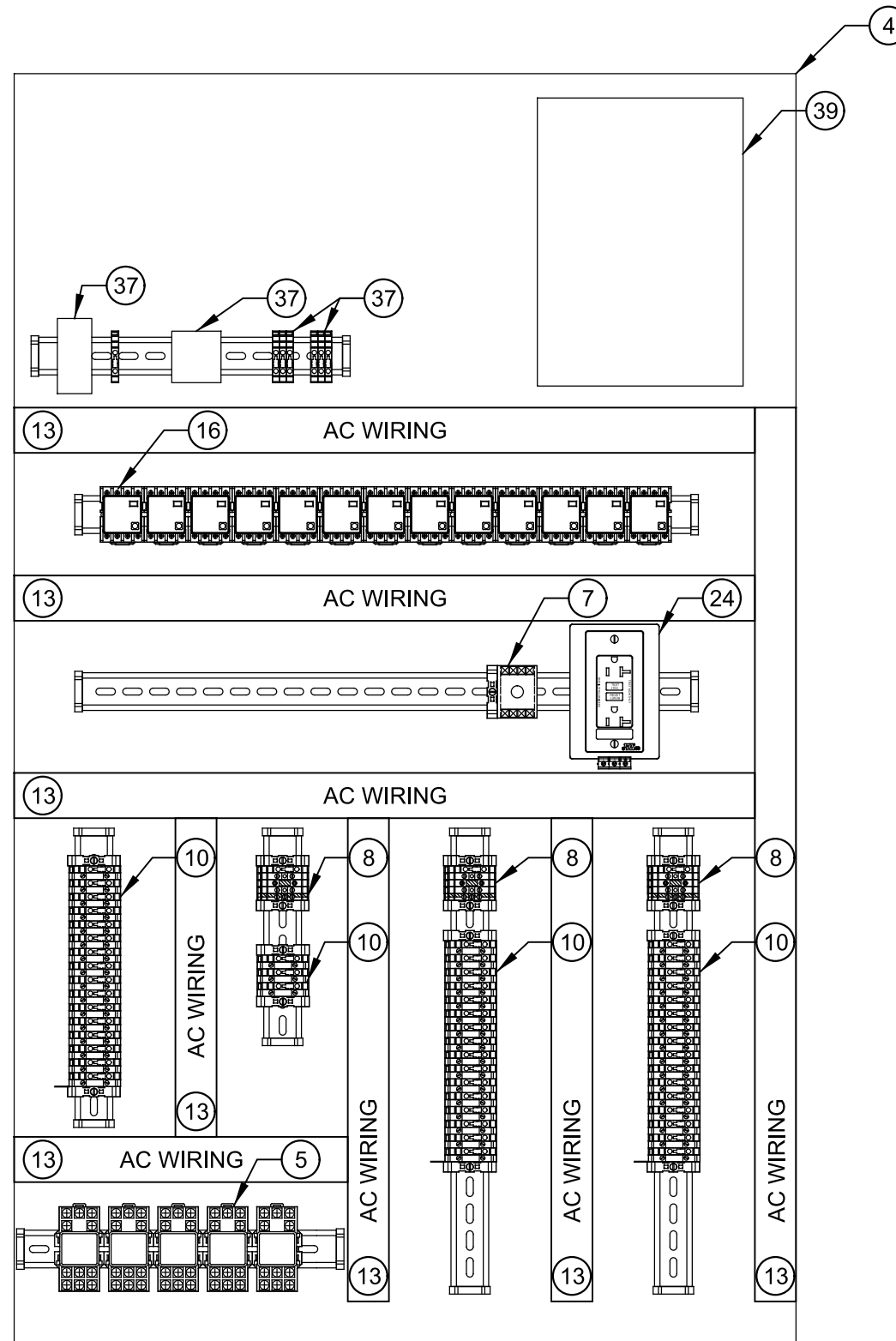
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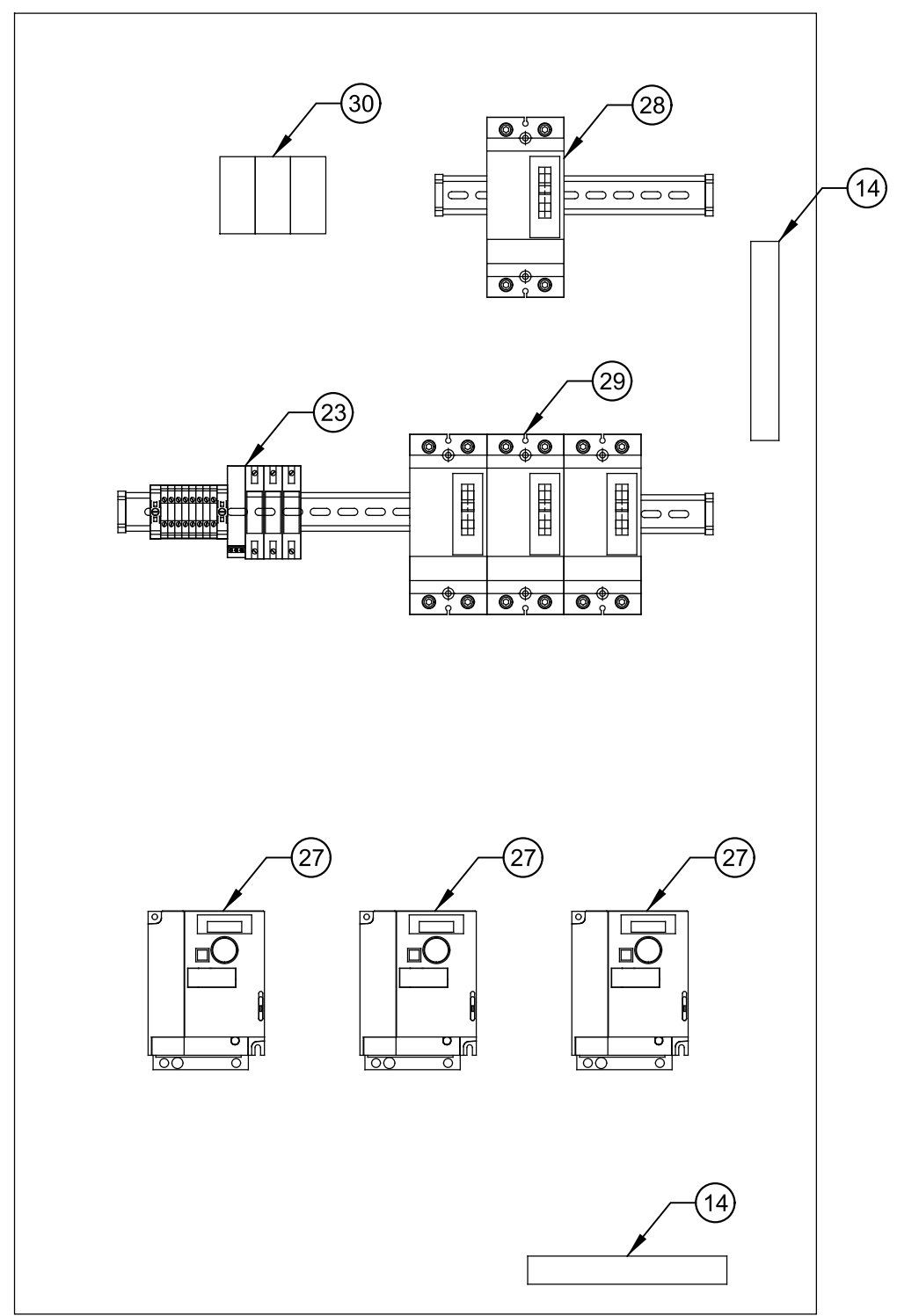
SARASOTA COUNTY
SCADA STANDARDS
INSTRUMENTATION
DEVELOPER LS - TRIPLEX PUMP CONTROL PANEL FOR THREE PHASE 240V SYSTEMS INTERNAL ELEV

VERIFY SCALES
JOB NO. 11572A10
DRAWING NO. 19N03
SHEET NO. 12 OF 15

Plot Date: 16-JUN-2021 1:02:38 PM
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 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: kmiller



C LEFT INTERNAL ELEVATION
 SCALE: NO SCALE
 FILE: 11572A1002N603.2dm



D RIGHT INTERNAL ELEVATION
 SCALE: NO SCALE
 FILE: 11572A1002N603.2dm

NAMEPLATE SCHEDULE	
PCP	PCP-XXX
NP 1	CCB
NP 2	GFI
NP 3	PUMP NO.1
NP 4	PUMP NO.2
NP 5	PUMP NO.3
NP 6	MAIN
NP 7	ALARM TEST
NP 8	PUMP NO.1 RUN
NP 9	PUMP NO.2 RUN
NP 10	PUMP NO.3 RUN
NP 11	ALARM SILENCE
NP 12	MISSION RTU
NP 13	ONE PUMP REQUIRED
NP 14	TWO PUMPS REQUIRED
NP 15	THREE PUMPS REQUIRED
NP 16	HIGH LEVEL
NP 17	STARTER FAIL - PUMP 1
NP 18	STARTER FAIL - PUMP 2
NP 19	STARTER FAIL - PUMP 3

MAJOR EQUIPMENT SCHEDULE		
ITEM	QTY	DESCRIPTION
1	1	NEMA 4X 304 WHITE PAINTED STAINLESS STEEL ENCLOSURE 60"H x 48"W NVENT HOFFMAN MODEL A62H4812SSLP3PT. CONTROL CABINET - 60" HIGH, 48" WIDE, AND 12" DEEP (EXCLUDING DOOR DEPTH). 2-DOOR CABINET. CABINET SHALL BE CONSTRUCTED EXCLUSIVELY OF 304 STAINLESS STEEL, 14 GAUGE (MINIMUM) WITH CONTINUOUS WELDS THROUGHOUT. WEEP HOLES OR OTHER OPENINGS IN ENCLOSURE WHICH ARE NOT SPECIFIED IN THESE DRAWINGS SHALL NOT BE ACCEPTABLE. PANEL SHALL HAVE AN OUTER DOOR GASKET SEAL WHICH SHALL BE CLOSE-CELL NEOPRENE OR OTHER MATERIAL AS APPROVED BY COUNTY. DOOR GASKET SHALL PROVIDE A CONTINUOUS SEAL AGAINST EXTERIOR DOOR SEALING FACE WHICH SHALL BE A CONTINUOUS ROLLED LIP. A DRIP SHIELD SHALL BE PROVIDED AND TACK WELDED IN PLACE AT NOT LESS THAN 5 LOCATIONS. A THREE POINT 90 DEGREE TURN LATCHING MECHANISM CONSTRUCTED OF 304 STAINLESS STEEL SHALL BE PROVIDED. LATCHING MECHANISM SHALL BE OPERATED BY A SINGLE EXTERIOR STAINLESS STEEL HANDLE WITH ROLLERS AND SHALL BE PAD-LOCKABLE TO PREVENT UNAUTHORIZED OPERATION. DOOR SHALL BE FULL HEIGHT WITH 304 STAINLESS STEEL CONTINUOUS PIANO HINGE. DOOR LOCK OPEN STAINLESS STEEL ROD, AND SHALL MINIMALLY HAVE 120 SWING. PANEL SHALL HAVE PROVISIONS FOR MOUNTING BACKPANEL AND DEADFRONT INSIDE AS A SINGLE UNITIZED ASSEMBLY. A LAMINATED WIRING DIAGRAM OF ALL WIRING CONNECTIONS SHALL BE PROVIDED IN A PERMANENT SLEEVE ATTACHED TO PANEL DOOR. PANEL SHALL BE INSTALLED PERPENDICULAR TO WETWELL AND VALVE VAULT AND DOOR HINGED TO OPEN AWAY FROM THE WETWELL AND VALVE VAULT.
2	1	DATA POCKET
3	1	NAMEPLATE BLACK LETTERING ON WHITE NAMEPLATE
4	1	BACK PANEL 56"H X 44"W NVENT HOFFMAN MODEL A60P48, BACK PLATE - 33" WIDE BY 45" HIGH, 10 GAUGE (MINIMUM), PRIMED AND FINISH PAINTED STEEL BACK PLATE WITH 3/4" ROLLED OR BROKEN EDGES FOR SUPPORT. FINISH PAINT COATS SHALL HAVE A DRY FILM THICKNESS OF AT LEAST 4 MILS. HOFFMAN OR APPROVED EQUAL. ALL EQUIPMENT MOUNTED TO BACK PLATE SHALL BE ATTACHED WITH MACHINE SCREWS THROUGH DRILLED AND TAPPED HOLES.
5	5	INTRINSICALLY SAFE RELAYS DIVERSIFIED ELECTRICAL MODEL ISO-120-AFA, SINGLE CHANNEL, 120 VAC POWER SUPPLY, 16 VOLT DC SENSING VOLTAGE, 200 MICROAMP SENSING AMPERAGE, 8-PIN PLUG-IN CONNECTION.
6	1	DEAD FRONT 32-1/2" WIDE BY 43" HIGH, 10 GAUGE (MINIMUM), BRUSHED ALUMINUM DEAD-FRONT PANEL WITH 304 STAINLESS STEEL OR ALUMINUM CONTINUOUS PIANO HINGE AND TWO QUARTER-TURN L-KNOB HANDLES FOR HOLDING THE PANEL CLOSED TO THE BACK OF THE PLATE AND INTERNAL FRAME OF THE CONTROL PANEL. ISOLATE CONTACT BETWEEN DISSIMILAR METALS W/ 1/8" NON-CONDUCTIVE INSULATING MATERIAL. PANEL SHALL BE PROVIDED WITH DOOR HOLD (OPEN) WITH STAINLESS STEEL ROD. DOOR SWING SHALL MINIMALLY BE 90-DEGREE OPEN. PANEL SHALL INCLUDE MOUNTED DEVICES AND CUT-OUTS AS INDICATED ON THE DRAWINGS. PANEL EDGES SHALL BE DEBURRED AND ROUNDED.
7	1	ALTERNATOR DUPLEX PANEL: MPE MODEL 008-120-12 OR DIVERSIFIED ELECTRIC MODEL ARA-120-ADA, 11-PIN PLUG-IN CONNECTION, DOUBLE POLE- DOUBLE THROW, 120 VAC CONTROL VOLTAGE, TRIPLEX PANEL: DIVERSIFIED MODEL ARA-120-AME, PANEL MOUNT, SINGLE POLE-SINGLE THROW, 120VAC CONTROL VOLTAGE
8	AS REQ'D	ANALOG TERMINAL BLOCKS SQUARE D TYPE GME 6, PROVIDE SQUARE D TYPE GH10 END CLAMPS AT EACH END OF THE TERMINAL STRIP, PROVIDE END BARRIER AT BOTTOM OF EACH TERMINAL STRIP, SQUARE D TYPE GME6B WITHOUT EXCEPTION.
9	AS REQ'D	24 VDC FUSED TERMINAL BLOCKS SQUARE D TYPE GME 6, PROVIDE SQUARE D TYPE GH10 END CLAMPS AT EACH END OF THE TERMINAL STRIP, PROVIDE END BARRIER AT BOTTOM OF EACH TERMINAL STRIP, SQUARE D TYPE GME6B WITHOUT EXCEPTION.
10	AS REQ'D	DISCRETE TERMINAL BLOCKS SQUARE D TYPE GME 6, 120 CONTROL TERMINAL BLOCKS FOR UP TO #10 AWG, 30 AMP, 600V. PROVIDE SQUARE D TYPE GH10 END CLAMPS AT EACH END OF THE TERMINAL STRIP, PROVIDE END BARRIER AT BOTTOM OF EACH TERMINAL STRIP, SQUARE D TYPE GME6B WITHOUT EXCEPTION.
11	AS REQ'D	DIN RAIL SQUARE D 9080MH339
12	1	STROBE/BEACON FEDERAL SIGNAL CORP. LP3P-120R. 120 VAC ALARM LIGHT INCLUDING RED LENS COVERING STROBE LAMP HOLDER WITH FLASHER. GASKET SHALL BE PROVIDED BETWEEN LENS AND ENCLOSURE FOR WEATHERTIGHT SEAL. ALARM LIGHT MOUNTING SHALL BE STAINLESS STEEL RIGID PIPE PREWIRED WITH LIGHT ATTACHED, AND PACKAGED SEPARATELY FOR TRANSPORT READY FOR FIELD ASSEMBLY. 1/4" DISCONNECTS SHALL BE PROVIDED INSIDE ENCLOSURE TO FACILITATE FIELD ASSEMBLY.
13	AS REQ'D	GREY WIRE DUCT PANDUIT GREY WIRING DUCT, 1" WIDE BY 3" HIGH, SHALL BE ATTACHED TO BACKPLATE WITH SCREWS.
14	1	GROUND BAR SQUARE D PK12GT4, GROUND COMPRESSION TYPE TERMINAL BLOCK MOUNTED DIRECTLY TO PANEL. GROUND BAR SHALL CONSIST OF MIN. 12 GROUND TERMINALS FOR UP TO #4 AWG WIRE.
15	1	ISOLATED GROUND BAR SQUARE D PK12GT4 W/ PKGTAB
16	10	CONTROL RELAYS W/ OCTAL BASE AND PILOT LIGHT OPTION SQUARE D CLASS 8501 KPR12P14V20
17	AS REQ'D	BREAKER CUTOUT
18	3	SELECTOR SWITCH - THREE POSITION SQUARE D CLASS 9001, MODEL KS43BH2, 30MM INDUSTRIAL, MAINTAINED, LEVER OPERATOR, OIL-TIGHT, SELECTOR SWITCH WITH CONTACTS AS INDICATED ON THE DRAWINGS AND AN "MANUAL-OFF-AUTO" LEGEND PLATE.

MAJOR EQUIPMENT SCHEDULE		
ITEM	QTY	DESCRIPTION
19	5	PILOT LIGHTS SQUARE D CLASS 9001 TYPE SKP-38 LIGHT, TYPE G31 LENS AND TYPE KN-224 LEGEND PLATE. 120 VAC, RESISTOR TYPE, OIL-TIGHT, WATERTIGHT, PILOT LIGHT WITH COLORED GREEN, AMBER, OR RED PLASTIC LENS AS SHOWN ON DRAWINGS.
20	3	ELAPSED TIME METERS REDINGTON MODEL 710-0002, 120 VAC, 6-1/2 DIGIT, NONRESETABLE, PANEL- MOUNTED.
21	1	INTRUSION SWITCH INTRUSION SWITCH: THE SWITCH CONTACT SHALL BE NORMALLY CLOSED (OPEN WHEN THE PANEL DOOR IS CLOSED). INTRUSION SWITCH SHALL BE SQUARE-D 9007MS01150300 WITHOUT EXCEPTION.
22	1	HORN FEDERAL SIGNAL, 350 SERIES WITH WEATHERPROOF BOX. 120VAC WEATHERPROOF.
23	3	120 VAC CIRCUIT BREAKERS SQUARE D TYPE QOU, CIRCUIT BREAKERS (CONTROL, GFI, RTU) - SINGLE POLE, 10 & 15 AMPERE, 120/240VAC, THERMAL MAGNETIC WITH MOUNTING FEET FOR BASE MOUNTING.
24	1	GFCI OUTLET 120 VAC, 20 AMPERE, DUPLEX, INDUSTRIAL-GRADE, IVORY. LEVITON MODEL 6598-I, OR EQUAL MOUNTED IN STANDARD OUTLET BOX.
25	1	LIGHT NVENT HOFFMAN LED24V15, LED PANEL LIGHT WITH INTEGRAL SWITCH
26	4	LATCHES QUARTER TURN L-KNOB
27	3	FVNR MAGNETIC STARTERS SQUARE D CLASS 8536 WITHOUT EXCEPTION MAGNETIC STARTERS - 3 POLE, 600 VAC MAXIMUM, OPEN CONSTRUCTION, CLOSE COUPLED, WITH OVERLOAD RELAY ASSEMBLIES. STARTER SHALL HAVE 120 VAC, 60 HZ MAGNETIC COIL AND SHALL MINIMALLY HAVE ONE AUXILIARY COIL STATUS CONTACT. STARTERS SHALL BE SIZED ACCORDING TO THE MOTOR HORSEPOWER AS FOLLOWS: NEMA SIZE 1: 230 VOLTS - 7-1/2 HP AND LESS 460 VOLTS - 10 HP AND LESS NEMA SIZE 2: 230 VOLTS - GREATER THAN 7-1/2 HP, LESS THAN OR EQUAL TO 15 HP 460 VOLTS - GREATER THAN 10 HP, LESS THAN OR EQUAL TO 25 HP NEMA SIZE 3: 230 VOLTS - GREATER THAN 15 HP 460 VOLTS - GREATER THAN 25 HP OVERLOAD ELEMENTS SHALL BE PROVIDED AND SHALL BE AS RECOMMENDED BY THE PUMP SUPPLIER. ELECTRONIC/ADJUSTABLE OVERLOADS ARE NOT ACCEPTABLE. PROVIDE WITH EXTERNAL RESET COVER OPERATOR ACCESSIBLE THROUGH THE DEAD FRONT.
28	1	MAIN CIRCUIT BREAKER CIRCUIT BREAKER (MAIN) - 3 POLE, 240 OR 480VAC, THERMAL MAGNETIC, "MAIN", WITH MOUNTING FEET FOR BASE MOUNTING. AMPERE RATING SHALL BE BASED ON THE SIZE OF THE PUMP STATION, BUT SHALL NOT BE RATED LESS THAN 100 AMPERES. SQUARE D TYPE QOU (230 VOLTS, 125 AMPS OR LESS), TYPE Q2L (230 VOLTS, 150 TO 225 AMPS), TYPE FAL (480 VOLTS, 100 AMPS OR LESS), OR POWERPACT J FRAME (480 VOLTS, 150 TO 250 AMPS), WITHOUT EXCEPTION.
29	3	PUMP MOTOR CIRCUIT BREAKER CIRCUIT BREAKERS (PUMP MOTORS) - 3 POLE, THERMAL MAGNETIC, SUITABLE BASE MOUNTING. AMPERE RATING SHALL BE BASED ON THE STARTING CURRENT OF THE MOTOR PER NEC AND SHALL BE RATED NOT LESS THAN 125% NOR GREATER THAN 250% OF MOTOR FLA. SQUARE D TYPE QOU (230 VOLTS, 125 AMPS OR LESS), TYPE Q2L (230 VOLTS, 150 TO 225 AMPS), TYPE FAL (480 VOLTS, 100 AMPS OR LESS), OR POWERPACT J FRAME (480 VOLTS, 110 TO 250 AMPS), WITHOUT EXCEPTION.
30	1	POWER DISTRIBUTION BLOCK SQUARE D TYPE LBA363206 FOR PANELS 3 POLE 600 VAC, WITH LINE LUGS FOR TWO #14 TO 2/0 AWG CABLE PER PHASE. SQUARE D TYPE LBA365208 FOR PANELS REQUIRING #2 AWG BRANCH CIRCUITS. PROVIDE WITH PLEXIGLASS COVERS.
31	1	NEUTRAL DISTRIBUTION BLOCK SQUARE D TYPE LBA163206, SINGLE POLE, 600VAC, WITH LINE LUGS FOR TWO (2) #14 TO 2/0 AWG CABLES AND LOAD LUGS FOR SIX (6) #14 TO #4 AWG CABLES PER PHASE. PROVIDE WITH PLEXIGLASS COVERS.
32	3	ELAPSED TIME METERS REDINGTON MODEL 710-0002
33		NOT USED
34	2	PUSH BUTTON PILOT DEVICE - SILENCE SQUARE D CLASS 9001 KR1R, . FLUSH, MOMENTARY (SPRING-RETURN), OIL-TIGHT, NEMA 4 PUSH-BUTTON WITH 1-N.O. CONTACT WITH RED LEGEND PLATE ENGRAVED "ALARM SILENCE" AND "TEST ALARM" RESPECTIVELY.
35	3	VFD HITACHI WJ200 SERIES
36	1	PHASE MONITOR/RELAY 208-230 VAC THREE PHASE DIVERSIFIED MODEL SLA-230-ALA OR MPE MODEL 001-230-1211, 230 VAC SINGLE PHASE DIVERSIFIED MODEL UOA-240-AKA, AND 480 VAC SYSTEMS 12 PIN SOCKET MPE MOEDEL 001-500-121 W / SD12 SOCKET. AUTOMATIC RESET, FUSED, SURFACE-MOUNT, OCTAL SOCKET PLUG-IN CONNECTION, ADJUSTABLE RANGE VOLTAGE FOR 3 PHASE POWER SYSTEMS WITHOUT EXCEPTION. PROVIDE MATCHING SOCKET TO MAINTAIN UL LISTING
37	1	FUSE BLOCK SQUARE D MODEL FB2211 (250 VOLT SYSTEMS) OR MODEL 2611 (600 VOLT SYSTEMS)
39	1	CELLULAR DIALER MISSION MYDRO 150, FLATPAK, W/ PIN OP653 (8DI MODULE)

ALL SARASOTA COUNTY UTILITY LIFT STATIONS SHALL HAVE 480VAC, 3PH POWER

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED RD	
DRAWN KMM	
CHECKED RD	
DATE JUNE 2021	

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SARASOTA COUNTY
 SCADA STANDARDS
 INSTRUMENTATION
 DEVELOPER LS - TRIPLEX PUMP
 CONTROL PANEL INTERNAL ELEVATION

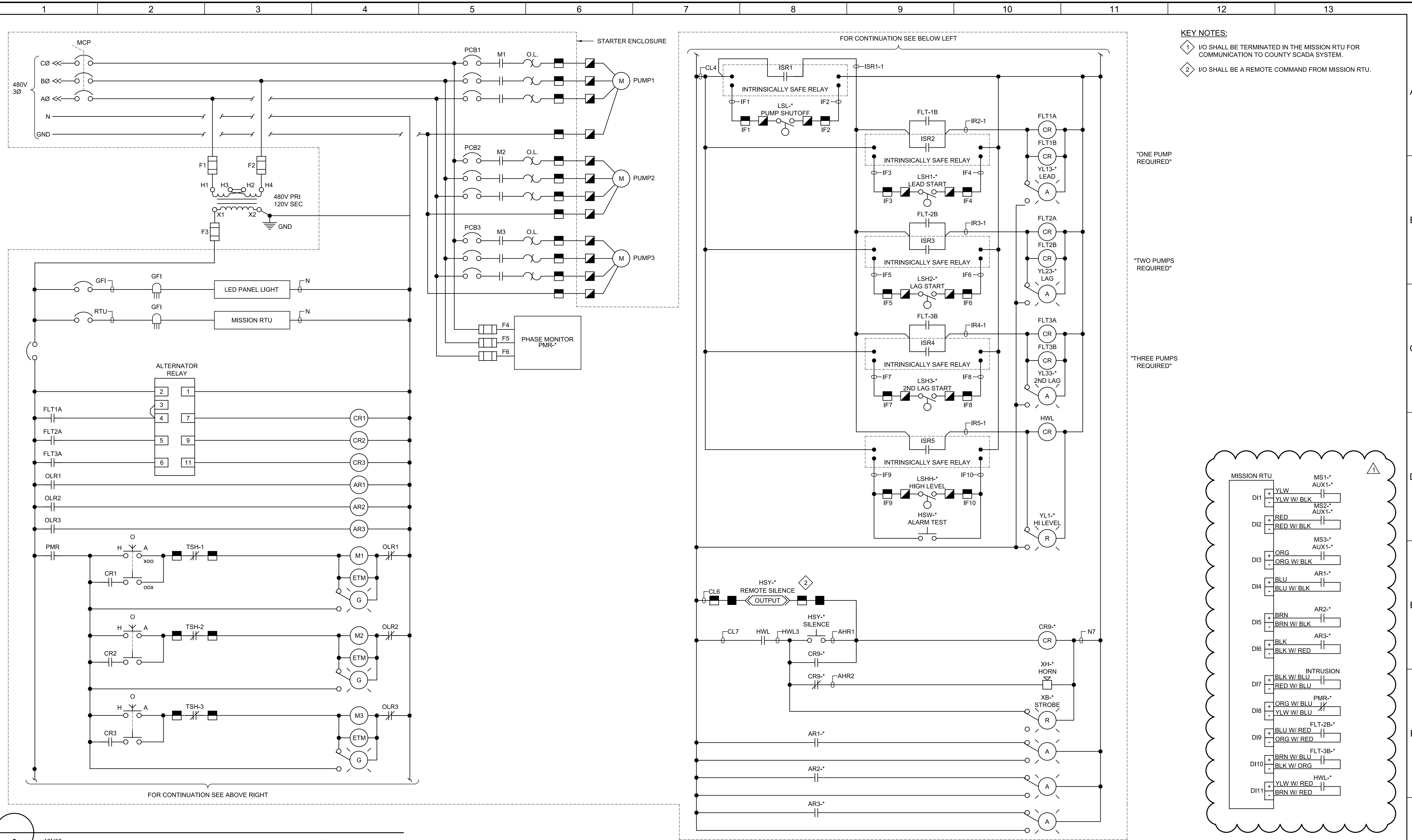
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWING NO. 19N04
	SHEET NO. 13 OF 15

Plot Date: 16-JUN-2021 1:02:34 PM

User: svcPW

PlotScale: 1:1

LAST SAVED BY: tmiller



KEY NOTES:

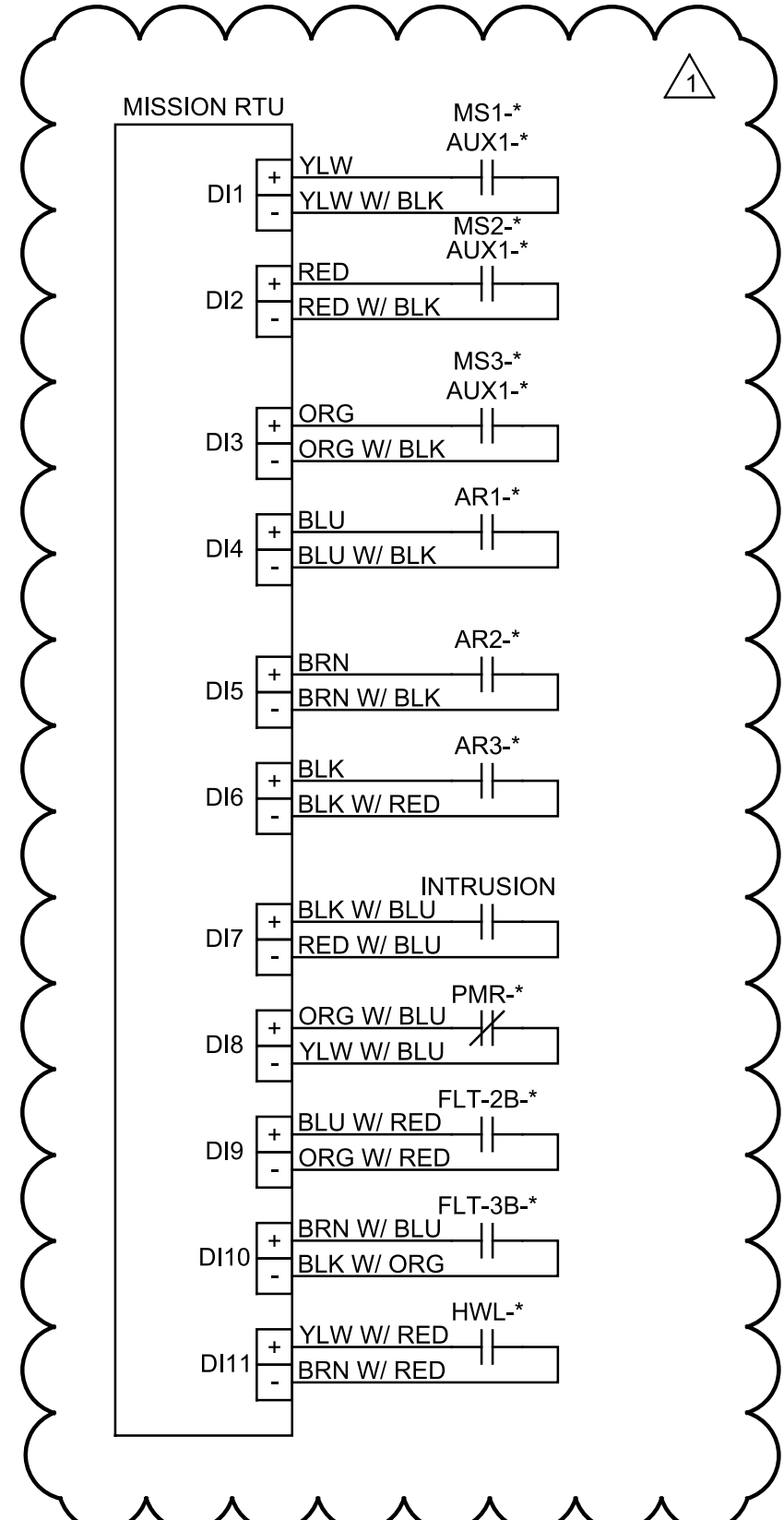
1 I/O SHALL BE TERMINATED IN THE MISSION RTU FOR COMMUNICATION TO COUNTY SCADA SYSTEM.

2 I/O SHALL BE A REMOTE COMMAND FROM MISSION RTU.

"ONE PUMP REQUIRED"

"TWO PUMPS REQUIRED"

"THREE PUMPS REQUIRED"



ALL SARASOTA COUNTY UTILITY LIFT STATIONS SHALL HAVE 480VAC, 3PH POWER

REV	DATE	BY	DESCRIPTION
1	05/18/21	KMM	REVISED MISSION RTU WIRING

DESIGNED RD
DRAWN KMM
CHECKED RD
DATE JUNE 2021

NORMAN E. ANDERSON
No 71642
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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SARASOTA COUNTY
SCADA STANDARDS
INSTRUMENTATION
DEVELOPER LS - CONTROL SCHEMATIC
480V THREE PHASE TRIPLEX

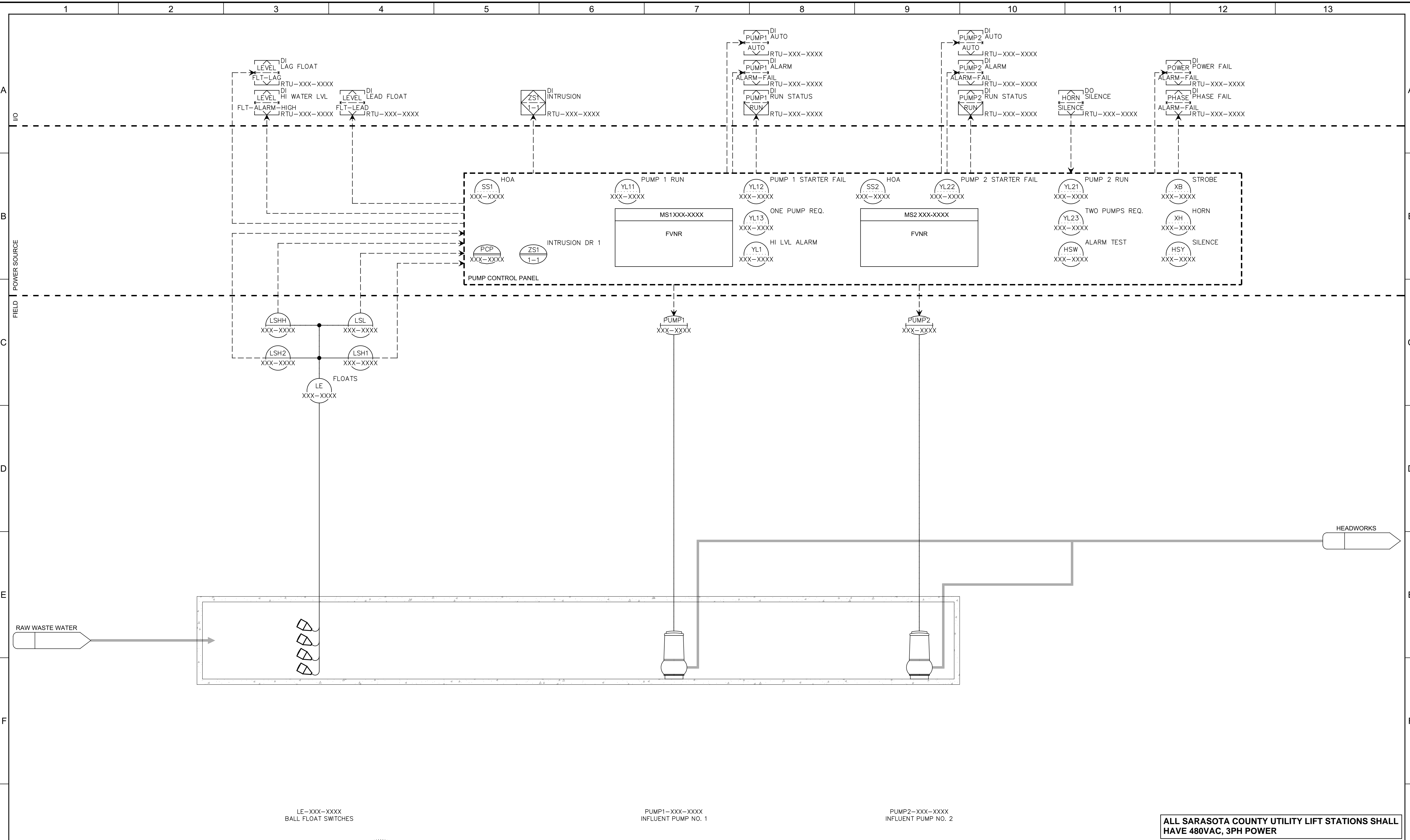
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JOB NO. 11572A10
DRAWING NO. 19N05
SHEET NO. 14 OF 15

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User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 12:1

LAST SAVED BY: tmiller



LE-XXX-XXXX
BALL FLOAT SWITCHES

PUMP1-XXX-XXXX
INFLUENT PUMP NO. 1

PUMP2-XXX-XXXX
INFLUENT PUMP NO. 2

ALL SARASOTA COUNTY UTILITY LIFT STATIONS SHALL
HAVE 480VAC, 3PH POWER

REV	DATE	BY	DESCRIPTION
1			
2			
3			
4			

DESIGNED RD
DRAWN KMM
CHECKED RD
DATE JUNE 2021

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SARASOTA COUNTY
SCADA STANDARDS
INSTRUMENTATION
DEVELOPER LS
THREE PHASE PUMP STATION

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 11572A10
DRAWING NO. 19N06
SHEET NO. 15 OF 15