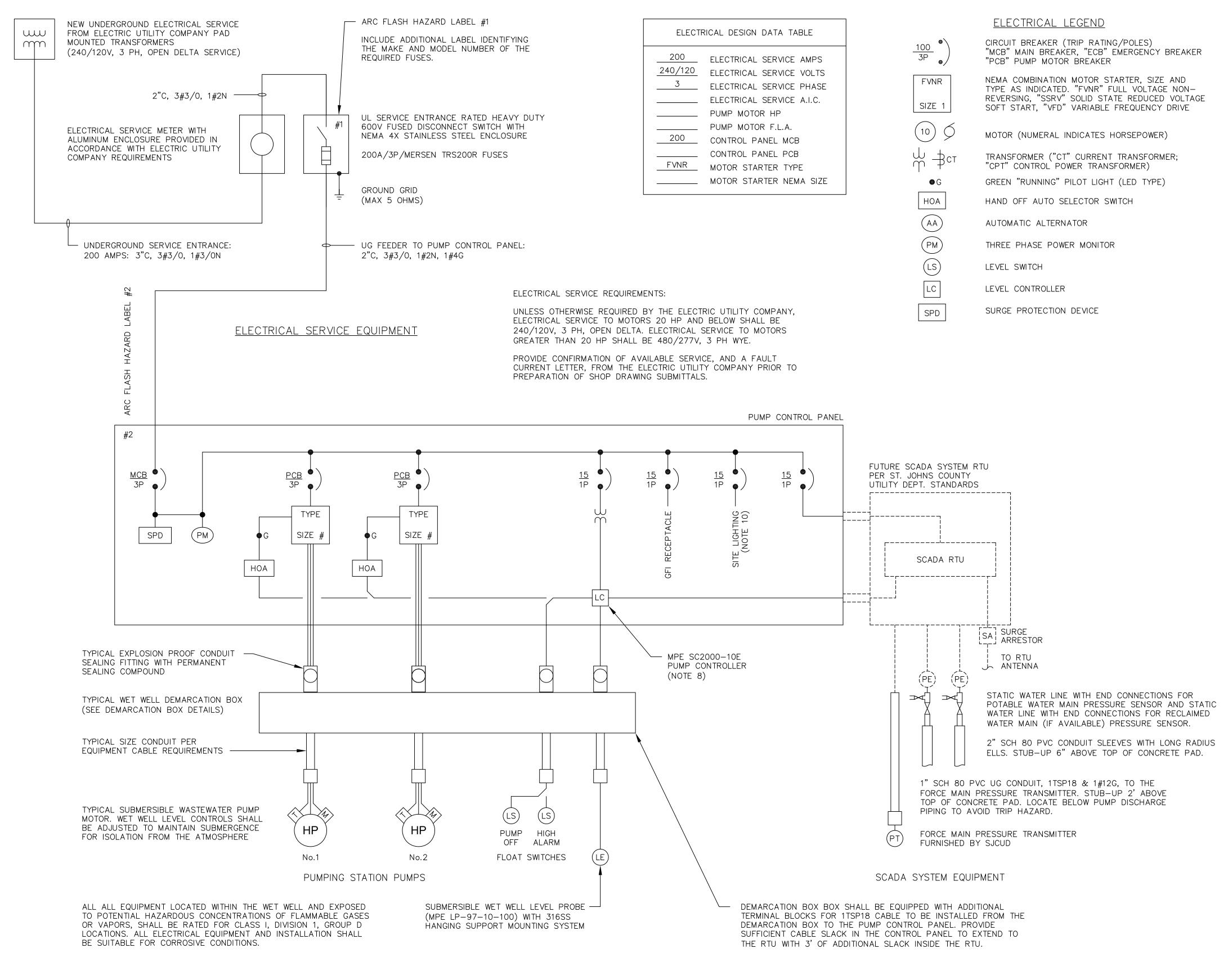
NOTES:

- 1. DESIGN DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW THE GENERAL REQUIREMENTS. ALL EQUIPMENT AND INSTALLATION SHALL BE IN ACCORDANCE WITH ST. JOHNS COUNTY DESIGN STANDARDS AND SPECIFICATIONS.
- 2. ALL MATERIAL SHALL BE NEW AND SHALL CONFORM WITH THE STANDARDS OF THE UNDERWRITERS' LABORATORIES, INC., AMERICAN NATIONAL STANDARDS INSTITUTE, NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION, INSULATED POWER CABLE ENGINEERS ASSOCIATION, AND INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS, IN EVERY CASE WHERE SUCH A STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIALS IN QUESTION.
- THE INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE REGULATIONS OF THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE, NATIONAL ELECTRICAL SAFETY CODE, APPLICABLE CITY, STATE, AND LOCAL CODES AND REGULATIONS AND OTHER APPLICABLE CODES, INCLUDING UTILITY COMPANY CODES.
- 4. ALL PERMITS REQUIRED BY STATE OR LOCAL ORDINANCES SHALL BE OBTAINED, AND AFTER COMPLETION OF THE WORK, A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE ELECTRICAL INSPECTOR SHALL BE FURNISHED TO THE OWNER. ALL PERMITS FOR INSTALLATION, INSPECTIONS, CONNECTIONS, ETC., SHALL BE TAKEN OUT AND PAID FOR BY THE CONTRACTOR AS PART OF THE WORK UNDER THIS SECTION.
- 5. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED TO BE FREE FROM DEFECTS. ANY PART OF THE SYSTEM CONSIDERED DEFECTIVE BY THE ENGINEER WITHIN THE GUARANTEE PERIOD SHALL BE IMMEDIATELY REPLACED OR CORRECTED TO THE ENGINEER'S SATISFACTION WITHOUT FURTHER EXPENSE TO THE OWNER.
- THE PROJECTS GROUNDING SYSTEM SHALL CONSIST OF A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC SPECIFICATIONS, BONDED TO A MAIN GROUND BUS INTERCONNECTING ALL POWER DISTRIBUTION EQUIPMENT. GROUND ROD SECTIONS SHALL BE COUPLED AND DRIVEN TO ESTABLISH A MAXIMUM RESISTANCE TO GROUND OF 5 OHMS THROUGHOUT THE GROUNDING SYSTEM.
- 7. UNLESS OTHERWISE INDICATED, ELECTRICAL EQUIPMENT ENCLOSURES SHALL BE NEMA 12/3R ALUMINUM OR 316 STAINLESS STEEL; CONDUCTORS SHALL BE STRANDED TYPE XHHW-2 COPPER; CONDUCTORS WITHIN THE WET WELL DEMARCATION BOXES SHALL BE STRANDED TYPE XHHW-2 TINNED COPPER. UNDERGROUND CONDUIT SHALL BE SCH 40 PVC; EXPOSED CONDUIT SHALL BE SCH 80 PVC; CONDUIT FROM THE WET WELL TO THE DEMARCATION BOXES SHALL BE SCH 80 PVC; SUPPORT CHANNEL AND MOUNTING STRUT SHALL BE MINIMUM 1.5" X 1.5" ALUMINUM. ALL MOUNTING HARDWARE SHALL BE 316 STAINLESS STEEL, INCLUDING BUT NOT LIMITED TO NUTS, BOLTS, WASHERS, BRACKETS, ETC. ANTI-SEIZE COMPOUND SHALL BE USED FOR ALL NUTS AND BOLTS. SCREWS ARE NOT ALLOWED. ALL MATERIALS AND INSTALLATION SHALL BE SUITABLE FOR "CORROSIVE ATMOSPHERES".
- 8. THE PUMP CONTROL PANEL WET WELL LEVEL CONTROL SYSTEM SHALL INCLUDE A MULTIPLEX PUMP CONTROLLER AND SUBMERSIBLE MULTI-POINT LEVEL PROBE FOR AUTOMATIC LEAD/LAG PUMP CONTROL AND ALTERNATION; AND 24V CONTROL POWER TRANSFORMER AND HIGH/OFF LEVEL FLOAT SWITCHES FOR HIGH LEVEL ALARM AND BACKUP PUMP CONTROL.
- 9. DUCT SEAL IS REQUIRED AT ALL CONDUIT CONNECTIONS IN AND OUT OF THE DEMARCATION BOX. ADDITIONALLY, DUCT SEAL IS REQUIRED AT ALL CONDUIT CONNECTIONS IN AND OUT OF THE PUMP CONTROL PANEL.
- 10. PROVIDE SITE LIGHT POLE WITH SERVICE FROM THE PUMP CONTROL PANEL (3/4"C, 3#12). PROVIDE WP DUPLEX GFI RECEPTACLE WITH CAST ALUMINUM BOX AND COVER, AND WP LIGHT SWITCH WITH CAST ALUMINUM BOX AND COVER, MOUNTED ADJACENT TO THE PUMP CONTROL PANEL. SITE LIGHT POLE SHALL BE FIBERGLASS DIRECT BURIED POLE. LUMINAIRE SHALL BE RAB MODEL A17-5T70SF WITH 24" LONG ALUMINUM SPOKE BRACKET ARM. LUMINAIRE SHALL NOT HAVE PHOTOCELL (NOT DUSK TO DAWN). POLE, LUMINAIRE AND ARM SHALL HAVE BRONZE FINISH. LUMINAIRE MOUNTING HEIGHT SHALL BE 12'. LOCATE LIGHT POLE ON RIGHT-HAND SIDE OF THE PUMP CONTROL PANEL.
- 11. IN ACCORDANCE WITH THE LATEST ST. JOHNS COUNTY UTILITIES DEPARTMENT STANDARDS, THE NEW PUMP CONTROL PANEL, EXPLOSION PROTECTED TYPE EX TERMINAL BOXES, WET WELL LEVEL CONTROLS, AND UL SERVICE ENTRANCE MAIN FUSED DISCONNECT SWITCH SHALL BE FURNISHED BY THE SJCUD APPROVED LIFT STATION ELECTRICAL EQUIPMENT SUPPLIER.
- 12. IN ACCORDANCE WITH THE LATEST ST. JOHNS COUNTY UTILITIES DEPARTMENT STANDARDS, THE SCADA SYSTEM RTU, ANTENNA MAST, AND ANTENNA, SHALL BE PROVIDED BY A SJCUD APPROVED SCADA SYSTEM INTEGRATOR. FOR STATIONS EQUIPPED WITH FORCE MAIN PRESSURE SENSORS AND/OR WATER MAIN PRESSURE SENSORS, THE PRESSURE SENSORS SHALL BE PROVIDED BY THE SCADA SYSTEM INTEGRATOR.

ELECTRICAL SYSTEMS ANALYSIS:

- 1. THE CONTRACTOR SHALL INCLUDE A BID ALLOWANCE AS SHOWN IN SECTION 1.4.1.5 OF THE SJCUD "MANUAL OF WATER, WASTEWATER AND REUSE DESIGN STANDARDS AND SPECIFICATIONS" TO OBTAIN THE SERVICES OF AN INDEPENDENT SPECIALTY ENGINEERING FIRM TO PROVIDE A PRELIMINARY AND A FINAL SHORT CIRCUIT, DEVICE EVALUATION, PROTECTIVE DEVICE COORDINATION, AND ARC FLASH STUDY OF THE COMPLETE ELECTRICAL DISTRIBUTION SYSTEM, IN ACCORDANCE WITH SJCUD STANDARDS
- 2. THE CONTRACTOR SHALL PROVIDE, WITH THE SHOP DRAWING SUBMITTALS, A LISTING OF THE FOLLOWING INFORMATION FOR EACH POWER DISTRIBUTION FEEDER: CONDUIT SIZE, CONDUIT TYPE, CONDUCTOR SIZE, CONDUCTOR TYPE, CONDUCTOR LENGTH.
- THE SERVICE ENTRANCE MAIN FUSED DISCONNECT SWITCH FUSE SELECTION SHALL BE IN ACCORDANCE WITH THE SJCUD STANDARDIZED FUSES: MERSEN TRS100R AND TRS200R. HOWEVER, SELECTION OF AN INTERMEDIATE TRS-R FUSE SHALL BE UTILIZED WHEN POSSIBLE TO REDUCE THE DOWNSTREAM HAZARD RISK CATEGORY.
- 4. THE CONTRACTOR SHALL PROVIDE THE SERVICE ENTRANCE FUSE SIZE DETERMINED BY THE FINAL APPROVED ELECTRICAL SYSTEMS ANALYSIS.



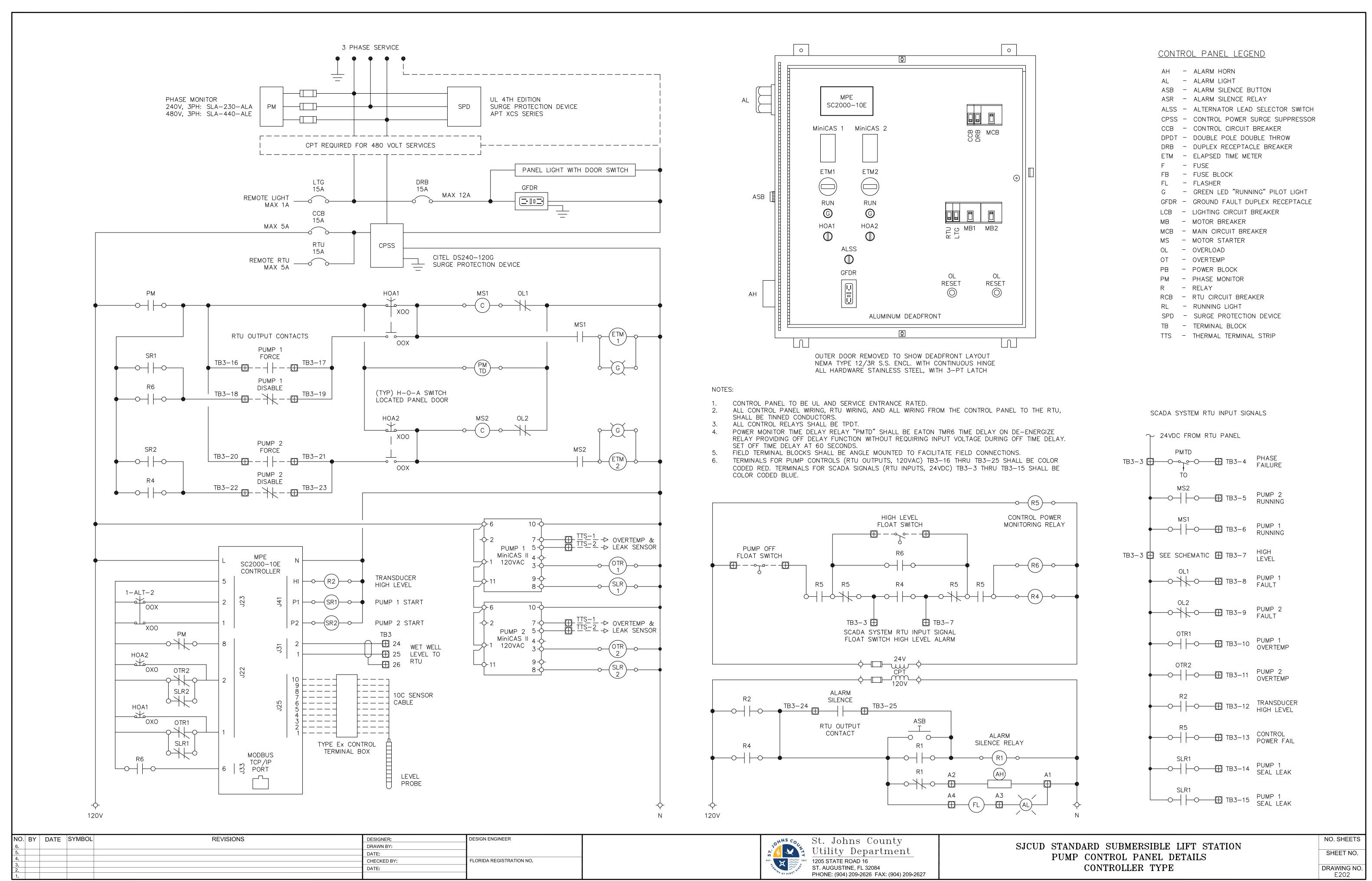
<u>TYPICAL SJCUD LIFT STATION — SINGLE LINE DIAGRAM</u>

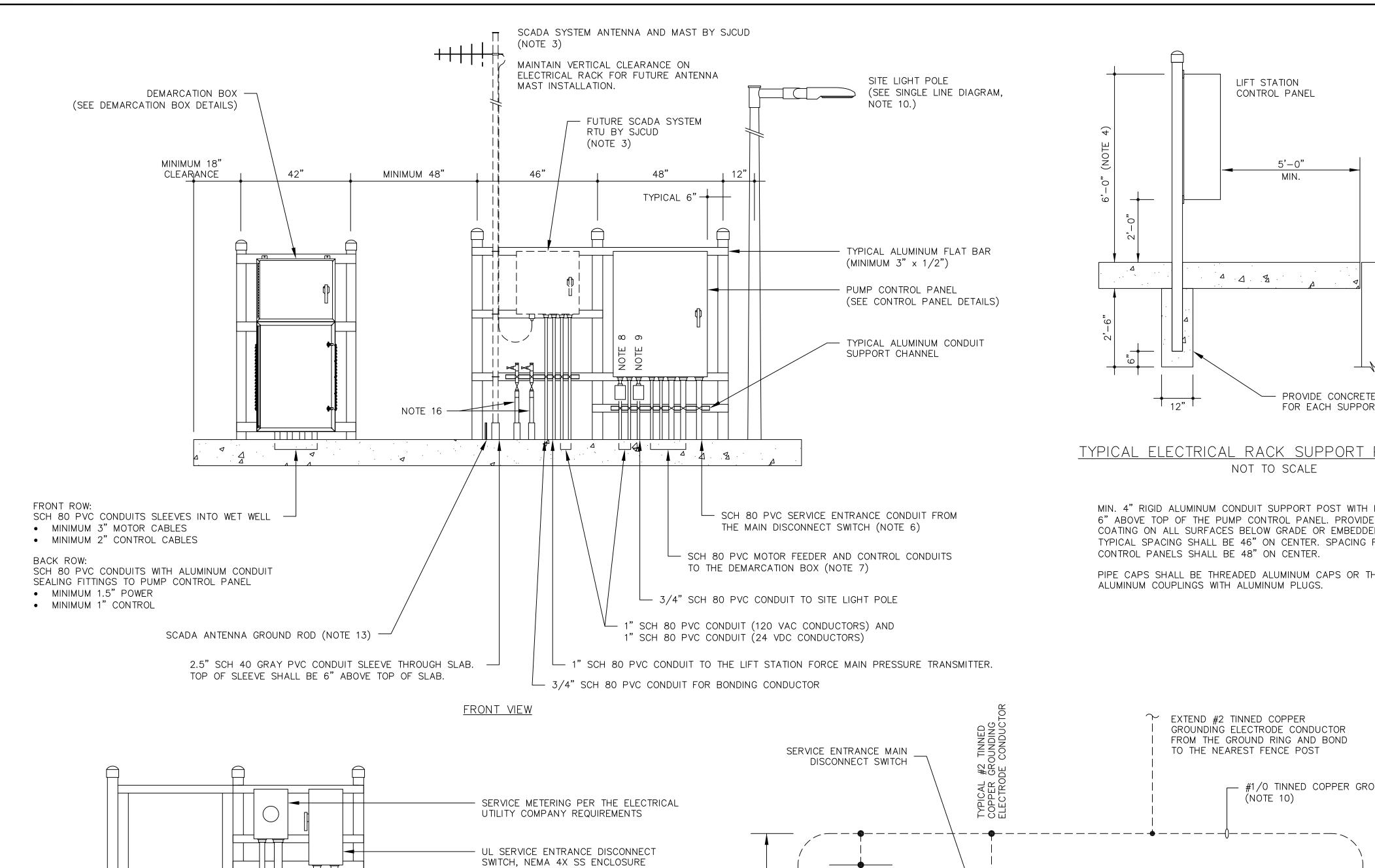


SJCUD STANDARD SUBMERSIBLE LIFT STATION
ELECTRICAL SINGLE LINE DIAGRAM
200A 240/120V 3 PHASE

DRAWING NO

E201





- TYPICAL SCH 80 PVC CONDUIT EXPOSED

TYPICAL ALUMINUM FLAT BAR

TYPICAL ALUMINUM CONDUIT

SCH 40 PVC ELECTRICAL SERVICE CONDUIT UNDERGROUND TO ELECTRICAL

SERVICE POINT OF CONNECTION

(MINIMUM 3" \times 1/2")

SUPPORT CHANNEL

TWO SIDED ELECTRICAL EQUIPMENT RACK DETAIL

NOT TO SCALE

WET WELL PROVIDE CONCRETE FOOTERS FOR EACH SUPPORT POST

NOTES:

EQUIPMENT INSTALLATION.

1. THE CONTRACTOR SHALL SCHEDULE AN ELECTRICAL PRE-CONSTRUCTION

2. THE CONTRACTOR SHALL SCHEDULE AN ELECTRICAL ROUGH-IN SITE

MAIN PRESSURE TRANSMITTER STATIC WATER LINE.

PROPOSED ADJUSTMENTS PRIOR TO CONSTRUCTION.

OF THE PUMP CONTROL PANEL.

TERMINAL BLOCKS.

WHILE IN-USE COVER.

ELECTRODE SYSTEM.

SLEEVE FOR MECHANICAL PROTECTION.

EQUIPMENT GROUND RING.

SYSTEM DETAILS.

COORDINATION SITE MEETING WITH SJCUD AND THE ELECTRICAL DESIGN

ENGINEER TO COORDINATE SITE SPECIFIC REQUIREMENTS OF THE ELECTRICAL

INSPECTION WITH SJCUD AND THE ELECTRICAL DESIGN ENGINEER TO INSPECT

THE ELECTRICAL EQUIPMENT INSTALLATION PRIOR TO POURING CONCRETE.

MAKE ALL PROVISIONS REQUIRED FOR THE FUTURE INSTALLATION OF THE

4. UNLESS OTHERWISE INDICATED SET THE TOP OF EACH EQUIPMENT ENCLOSURE

WELL CONDUIT SLEEVES AT 6" ABOVE THE TOP OF THE CONCRETE SLAB.

6. THE CONTROL PANEL SERVICE ENTRANCE CONDUIT FROM THE MAIN SERVICE DISCONNECT SWITCH SHALL BE POSITIONED ON THE FAR RIGHT-HAND SIDE

7. THE PUMP MOTOR CONDUITS FROM THE DEMARCATION BOX SHALL ENTER THE

CONDUITS SHALL ENTER THE PUMP CONTROL PANEL BELOW THE ASSOCIATED

PUMP CONTROL PANEL BELOW THE MOTOR STARTERS. THE CONTROL

8. SITE LIGHT POLE SWITCH: ALUMINUM FS BOX WITH LIGHT SWITCH AND WP

9. RECEPTACLE: ALUMINUM FS BOX WITH DUPLEX GFI RECEPTACLE AND WP

ENCIRCLING THE ELECTRICAL SERVICE EQUIPMENT, CONSISTING OF

10. GROUNDING ELECTRODE SYSTEM: PROVIDE A GROUND RING PER NEC 250.52,

CONTINUOUS #1/0 TINNED COPPER CONDUCTOR AT 30" BELOW GRADE.

11. PROVIDE GROUND RODS (MINIMUM 3/4" DIAMETER, 20' LONG COPPER CLAD

12. GROUNDING ELECTRODE CONDUCTOR: PROVIDE MINIMUM #2 TINNED COPPER

GROUNDING ELECTRODE CONDUCTOR FROM THE GROUND RING TO THE

13. THE TOP OF THE GROUND ROD FOR THE SCADA SYSTEM ANTENNA SHALL

14. THE COMPLETE GROUND RING SHALL BE INSIDE THE LIFT STATION FENCE.

SERVICE ENTRANCE DISCONNECT SWITCH, PUMP CONTROL PANEL, RTU, SCADA SYSTEM ANTENNA TOWER, ELECTRICAL EQUIPMENT RACK END POSTS,

STEEL) BONDED TO EACH END OF THE GROUND RING, AT LEAST 20' APART.

MAXIMUM RESISTANCE TO GROUND OF 5 OHMS THROUGHOUT THE GROUNDING

AND FENCE. USE GROUND CLAMPS RATED FOR CONNECTIONS TO END POSTS AND FENCE POSTS. GROUND CLAMPS SHALL BE RATED FOR DIRECT BURIAL.

INSTALL GROUNDING ELECTRODE CONDUCTORS IN 3/4" SCH 80 PVC CONDUIT

EXTEND NO MORE THAN 6" AND NO LESS THAN 4" ABOVE THE CONCRETE

THE GROUND RING MAY BE OFFSET FROM THE CENTER OF THE ELECTRICAL RACK WHEN NECESSARY TO STAY WITHIN THE FENCE. SET THE GROUND

AND THE PERIMETER FENCE. INCREASE THE DISTANCE FROM THE END POSTS

WHERE REQUIRED TO ACHIEVE MINIMUM 20' SPACING BETWEEN GROUND RODS.

PRESSURE MONITORING AND STATIC WATER LINE WITH END CONNECTIONS FOR

RECLAIMED WATER MAIN (IF AVAILABLE) PRESSURE MONITORING. SEE SCADA

RODS CENTERED BETWEEN THE ELECTRICAL EQUIPMENT RACK END POSTS

15. BOND THE NEAREST FENCE POST TO THE ELECTRICAL EQUIPMENT GROUND RING AND BOND THE DEMARCATION BOX AND RACK TO THE ELECTRICAL

16. STATIC WATER LINE WITH END CONNECTIONS FOR POTABLE WATER MAIN

GROUND ROD SECTIONS SHALL BE COUPLED AND DRIVEN TO ESTABLISH A

5. SET THE BOTTOM OF THE DEMARCATION BOX AND THE TOP OF THE WET

AT 6'-0" ABOVE THE TOP OF THE CONCRETE SLAB. ADJUST AS REQUIRED

TO MAINTAIN THE BOTTOM OF EACH ENCLOSURE A MINIMUM OF 2'-0" ABOVE

THE TOP OF THE CONCRETE SLAB. CONTACT SJCUD FOR APPROVAL OF ALL

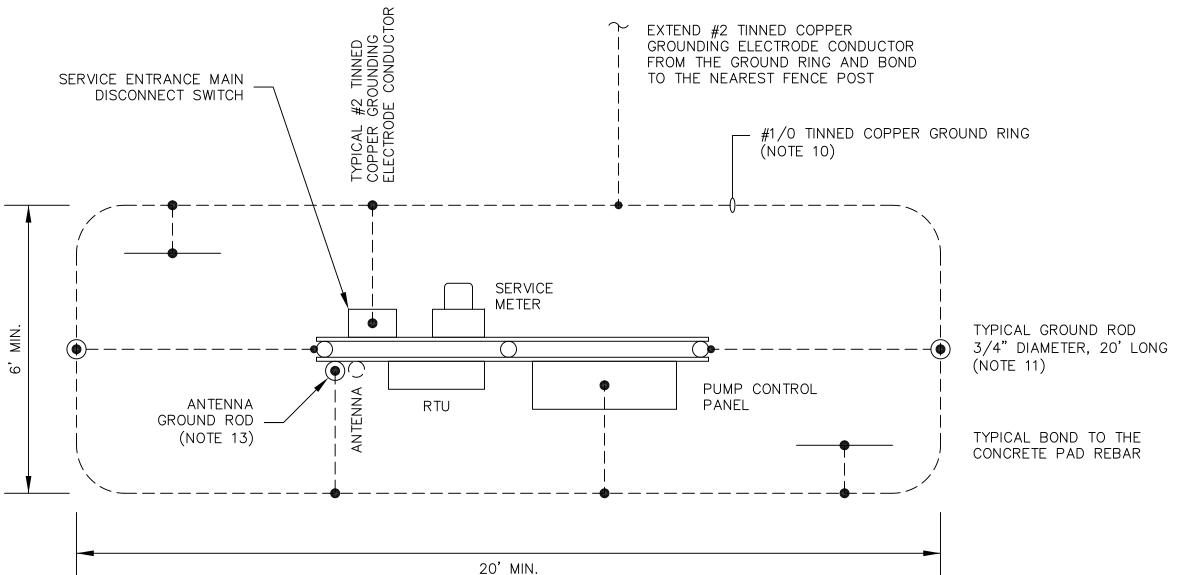
SCADA SYSTEM RTU AND ANTENNA INCLUDING: SLEEVE FOR THE ANTENNA MAST, GROUND ROD FOR THE ANTENNA MAST, RTU POWER AND CONTROL CONDUITS, FORCE MAIN PRESSURE TRANSMITTER CONDUIT, AND THE WATER

3. THE CONTRACTOR SHALL REVIEW THE SCADA SYSTEM DETAILS AND SHALL

TYPICAL ELECTRICAL RACK SUPPORT POST DETAIL

MIN. 4" RIGID ALUMINUM CONDUIT SUPPORT POST WITH PIPE CAPS AT 6" ABOVE TOP OF THE PUMP CONTROL PANEL. PROVIDE MASTIC SEAL COATING ON ALL SURFACES BELOW GRADE OR EMBEDDED IN CONCRETE TYPICAL SPACING SHALL BE 46" ON CENTER. SPACING FOR 36" WIDE

PIPE CAPS SHALL BE THREADED ALUMINUM CAPS OR THREADED



ELECTRICAL EQUIPMENT GROUNDING SYSTEM DETAIL NOT TO SCALE

NO. BY DATE SYMBOL REVISIONS DESIGN ENGINEER DESIGNER: DRAWN BY: DATE: CHECKED BY: LORIDA REGISTRATION NO. DATE:

REAR VIEW



SJCUD STANDARD SUBMERSIBLE LIFT STATION

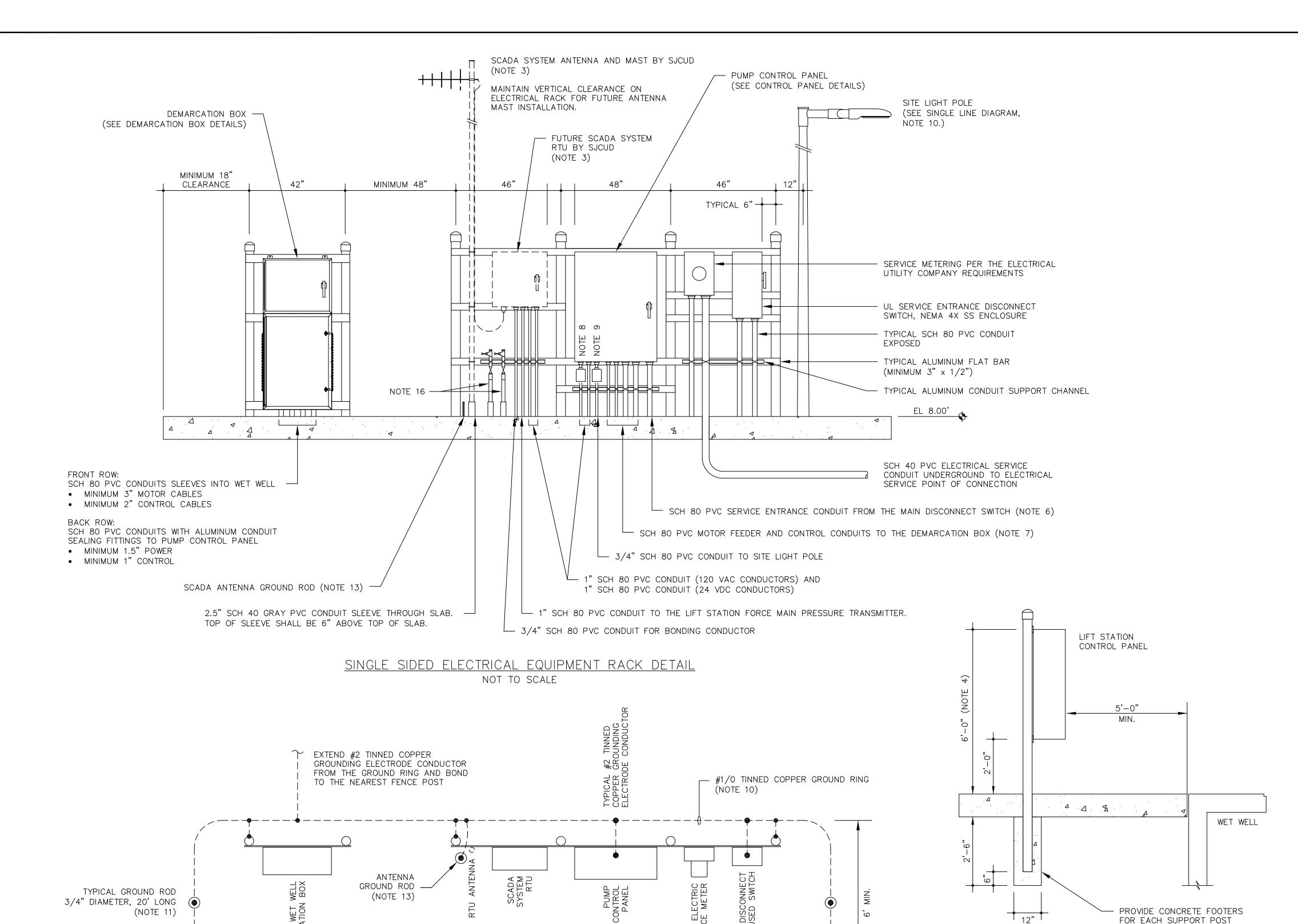
ELECTRICAL DETAILS TWO SIDED RACK

SHEET NO. **DRAWING NO**

E203

NO. SHEETS

SJCUD STANDARD DRAWING FOR REFERENCE 2025-12-01



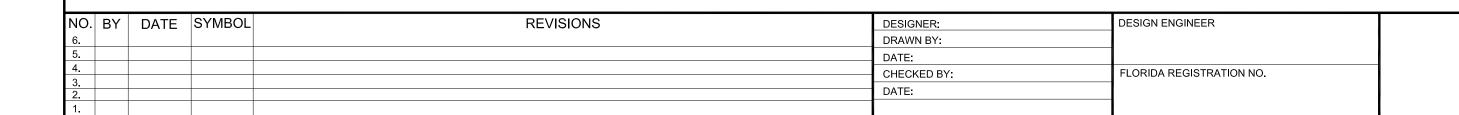
TYPICAL ELECTRICAL RACK SUPPORT POST DETAIL NOT TO SCALE

MIN. 4" RIGID ALUMINUM CONDUIT SUPPORT POST WITH PIPE CAPS AT 6" ABOVE TOP OF THE PUMP CONTROL PANEL. PROVIDE MASTIC SEAL COATING ON ALL SURFACES BELOW GRADE OR EMBEDDED IN CONCRETE. TYPICAL SPACING SHALL BE 46" ON CENTER. SPACING FOR 36" WIDE CONTROL PANELS SHALL BE 48" ON CENTER.

PIPE CAPS SHALL BE THREADED ALUMINUM CAPS OR THREADED ALUMINUM COUPLINGS WITH ALUMINUM PLUGS.

NOTES:

- 1. THE CONTRACTOR SHALL SCHEDULE AN ELECTRICAL PRE-CONSTRUCTION COORDINATION SITE MEETING WITH SJCUD AND THE ELECTRICAL DESIGN ENGINEER TO COORDINATE SITE SPECIFIC REQUIREMENTS OF THE ELECTRICAL EQUIPMENT INSTALLATION.
- 2. THE CONTRACTOR SHALL SCHEDULE AN ELECTRICAL ROUGH-IN SITE INSPECTION WITH SJCUD AND THE ELECTRICAL DESIGN ENGINEER TO INSPECT THE ELECTRICAL EQUIPMENT INSTALLATION PRIOR TO POURING CONCRETE.
- 3. THE CONTRACTOR SHALL REVIEW THE SCADA SYSTEM DETAILS AND SHALL MAKE ALL PROVISIONS REQUIRED FOR THE FUTURE INSTALLATION OF THE SCADA SYSTEM RTU AND ANTENNA INCLUDING: SLEEVE FOR THE ANTENNA MAST, GROUND ROD FOR THE ANTENNA MAST, RTU POWER AND CONTROL CONDUITS, FORCE MAIN PRESSURE TRANSMITTER CONDUIT, AND THE WATER MAIN PRESSURE TRANSMITTER STATIC WATER LINE.
- 4. UNLESS OTHERWISE INDICATED SET THE TOP OF EACH EQUIPMENT ENCLOSURE AT 6'-0" ABOVE THE TOP OF THE CONCRETE SLAB. ADJUST AS REQUIRED TO MAINTAIN THE BOTTOM OF EACH ENCLOSURE A MINIMUM OF 2'-0" ABOVE THE TOP OF THE CONCRETE SLAB. CONTACT SJCUD FOR APPROVAL OF ALL PROPOSED ADJUSTMENTS PRIOR TO CONSTRUCTION.
- 5. SET THE BOTTOM OF THE DEMARCATION BOX AND THE TOP OF THE WET WELL CONDUIT SLEEVES AT 6" ABOVE THE TOP OF THE CONCRETE SLAB.
- 6. THE CONTROL PANEL SERVICE ENTRANCE CONDUIT FROM THE MAIN SERVICE DISCONNECT SWITCH SHALL BE POSITIONED ON THE FAR RIGHT-HAND SIDE OF THE PUMP CONTROL PANEL.
- 7. THE PUMP MOTOR CONDUITS FROM THE DEMARCATION BOX SHALL ENTER THE PUMP CONTROL PANEL BELOW THE MOTOR STARTERS. THE CONTROL CONDUITS SHALL ENTER THE PUMP CONTROL PANEL BELOW THE ASSOCIATED TERMINAL BLOCKS.
- 8. SITE LIGHT POLE SWITCH: ALUMINUM FS BOX WITH LIGHT SWITCH AND WP
- 9. RECEPTACLE: ALUMINUM FS BOX WITH DUPLEX GFI RECEPTACLE AND WP WHILE IN-USE COVER.
- 10. GROUNDING ELECTRODE SYSTEM: PROVIDE A GROUND RING PER NEC 250.52, ENCIRCLING THE ELECTRICAL SERVICE EQUIPMENT, CONSISTING OF CONTINUOUS #1/0 TINNED COPPER CONDUCTOR AT 30" BELOW GRADE.
- 11. PROVIDE GROUND RODS (MINIMUM 3/4" DIAMETER, 20' LONG COPPER CLAD STEEL) BONDED TO EACH END OF THE GROUND RING, AT LEAST 20' APART. GROUND ROD SECTIONS SHALL BE COUPLED AND DRIVEN TO ESTABLISH A MAXIMUM RESISTANCE TO GROUND OF 5 OHMS THROUGHOUT THE GROUNDING ELECTRODE SYSTEM.
- 12. GROUNDING ELECTRODE CONDUCTOR: PROVIDE MINIMUM #2 TINNED COPPER GROUNDING ELECTRODE CONDUCTOR FROM THE GROUND RING TO THE SERVICE ENTRANCE DISCONNECT SWITCH, PUMP CONTROL PANEL, RTU, SCADA SYSTEM ANTENNA TOWER, ELECTRICAL EQUIPMENT RACK END POSTS, AND FENCE. USE GROUND CLAMPS RATED FOR CONNECTIONS TO END POSTS AND FENCE POSTS. GROUND CLAMPS SHALL BE RATED FOR DIRECT BURIAL. INSTALL GROUNDING ELECTRODE CONDUCTORS IN 3/4" SCH 80 PVC CONDUIT SLEEVE FOR MECHANICAL PROTECTION.
- 13. THE TOP OF THE GROUND ROD FOR THE SCADA SYSTEM ANTENNA SHALL EXTEND NO MORE THAN 6" AND NO LESS THAN 4" ABOVE THE CONCRETE
- 14. THE COMPLETE GROUND RING SHALL BE INSIDE THE LIFT STATION FENCE. THE GROUND RING MAY BE OFFSET FROM THE CENTER OF THE ELECTRICAL RACK WHEN NECESSARY TO STAY WITHIN THE FENCE. SET THE GROUND RODS CENTERED BETWEEN THE ELECTRICAL EQUIPMENT RACK END POSTS AND THE PERIMETER FENCE. INCREASE THE DISTANCE FROM THE END POSTS WHERE REQUIRED TO ACHIEVE MINIMUM 20' SPACING BETWEEN GROUND RODS.
- 15. BOND THE NEAREST FENCE POST TO THE ELECTRICAL EQUIPMENT GROUND RING AND BOND THE DEMARCATION BOX AND RACK TO THE ELECTRICAL EQUIPMENT GROUND RING.
- 16. STATIC WATER LINE WITH END CONNECTIONS FOR POTABLE WATER MAIN PRESSURE MONITORING AND STATIC WATER LINE WITH END CONNECTIONS FOR RECLAIMED WATER MAIN (IF AVAILABLE) PRESSURE MONITORING. SEE SCADA SYSTEM DETAILS.



TYPICAL BOND TO THE

CONCRETE PAD REBAR

20' MIN.

ELECTRICAL EQUIPMENT GROUNDING SYSTEM DETAIL

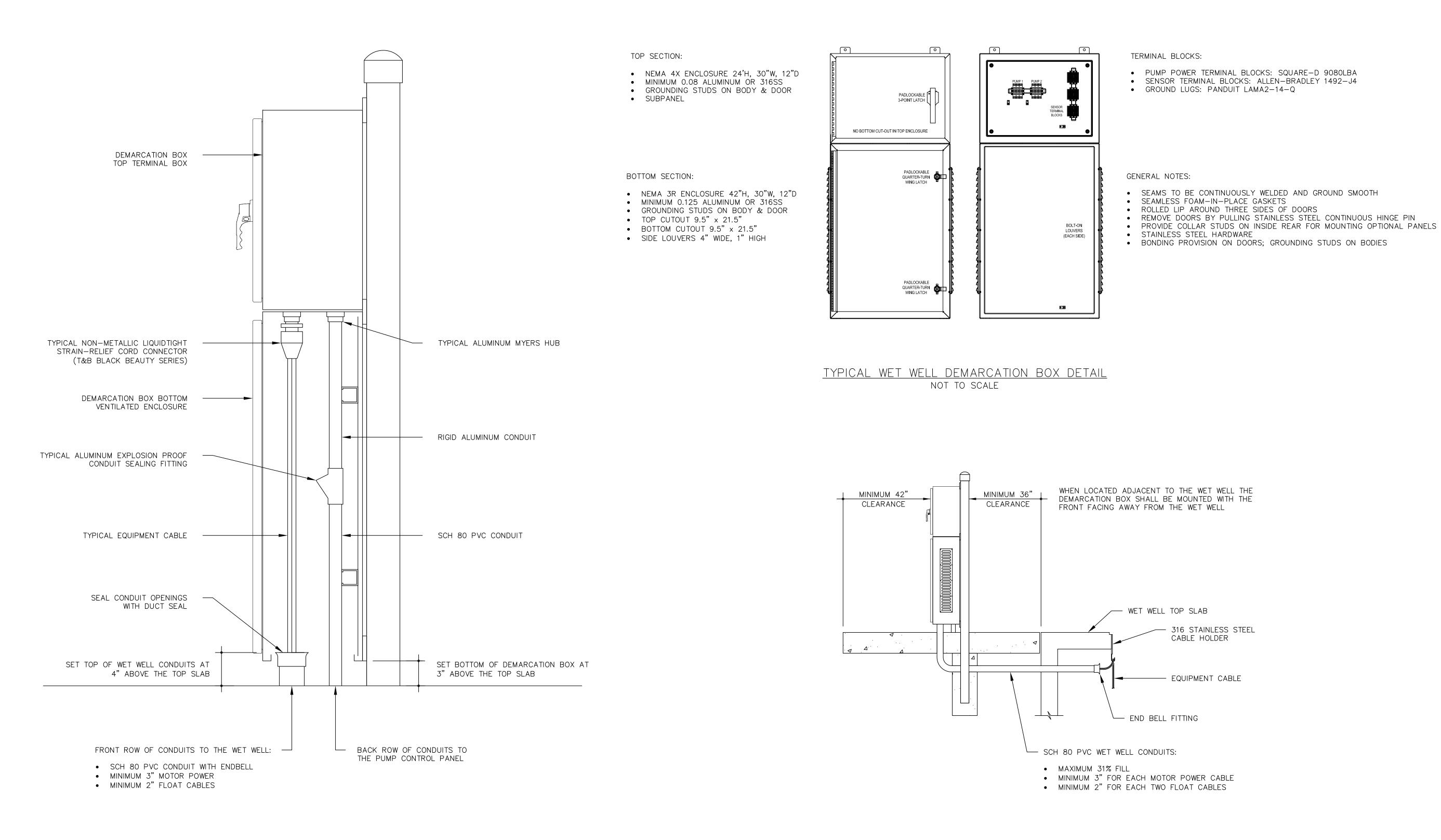
NOT TO SCALE



DRAWING NO

E203

SJCUD STANDARD DRAWING FOR REFERENCE 2025-12-01



TYPICAL WET WELL DEMARCATION BOX CONDUIT DETAIL NOT TO SCALE

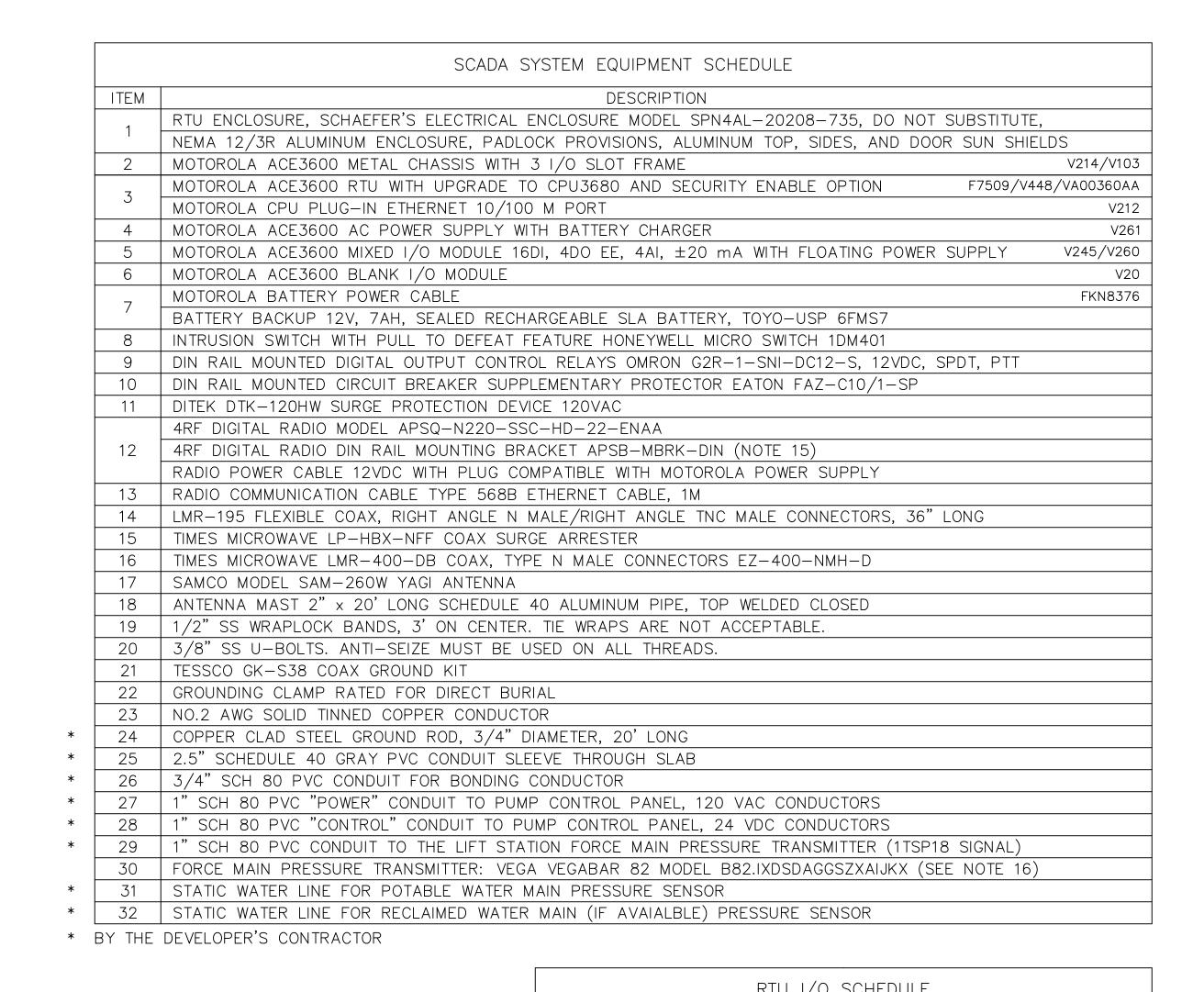
TYPICAL WET WELL CONDUIT DETAIL

NOT TO SCALE

NO.	BY	DATE	SYMBOL	REVISIONS	DESIGNER:	DESIGN ENGINEER	ĺ
6.					DRAWN BY:		l
5.					DATE:		l
4.					CHECKED BY:	FLORIDA REGISTRATION NO.	i
3.							1
2.					DATE:		1
1.							



NO. SHEETS



29 28 27	8) R	ADIO	(12	13)	1	
		(4) POWER SUPPLY	ndo 3	(2) MIXED 1/O	(2) MIXED 1/0	(9) BLANK MODULE	(2) CR CR CR CR CR CR (3) CB (10)		
	7	(11)	4)—	(15)					
- TYPICAL STATIC WATER LINE END CONNECTION (BY THE DEVELOPER'S CONTRACTOR). SEE SJ STANDARD DETAIL W-14 "STATIC POTABLE/RI WATER LINE CONNECTION".	CUD			(15)					

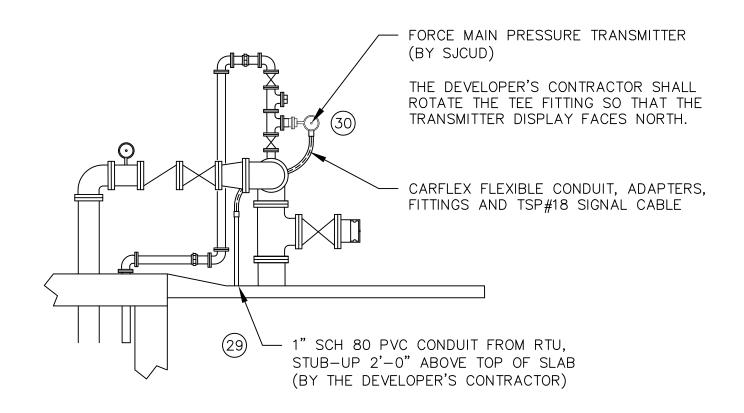
SCADA SYSTEM RTU DETAIL

NOT TO SCALE

MIXED I/O MODULE			MIXED I/O MODULE			
DI	SIGNAL DESCRIPTION	DI	SIGNAL DESCRIPTION			
01	RTU INTRUSION SWITCH	01	SPARE			
02	HIGH LEVEL	02	SPARE			
03	PHASE FAILURE	03	SPARE			
04	PUMP 1 RUNNING	04	SPARE			
05	PUMP 2 RUNNING	05	SPARE			
06	PUMP 1 FAIL	06	SPARE			
07	PUMP 2 FAIL	07	SPARE			
80	CONTROL POWER	08	SPARE			
09	PUMP 1 OVERTEMP	09	SPARE			
10	PUMP 2 OVERTEMP	10	SPARE			
11	TRANSDUCER HIGH LEVEL	11	SPARE			
12	PUMP 1 SEAL LEAK	12	SPARE			
13	PUMP 2 SEAL LEAK	13	SPARE			
14	SPARE	14	SPARE			
15	SPARE	15	SPARE			
16	SPARE	16	SPARE			
DO	SIGNAL DESCRIPTION	DO	SIGNAL DESCRIPTION			
01	PUMP 1 DISABLE	01	ALARM SILENCE			
02	PUMP 2 DISABLE	02	SPARE			
03	PUMP 1 REMOTE RUN	03	SPARE			
04	PUMP 2 REMOTE RUN	04	SPARE			
ΑI	SIGNAL DESCRIPTION	Al	SIGNAL DESCRIPTION			
01	WET WELL LEVEL	01	WATER MAIN PRESSURE			
02	FORCE MAIN PRESSURE	02	RECLAIM WATER PRESSUF			
03	SPARE	03	SPARE			
04	SPARE	04	SPARE			

SCADA SYSTEM NOTES:

- SJCUD SHALL EMPLOY THE SERVICES OF A SJCUD PRE-APPROVED SCADA SYSTEM INTEGRATOR TO PERFORM ALL SCADA SYSTEM ADDITIONS AND MODIFICATIONS INCLUDING: NEW RTU, ANTENNA, AND ANTENNA MAST.
- THE SCADA SYSTEM SUPPLIER SHALL MODIFY AND UPGRADE THE EXISTING SJCUD MASTER SCADA SYSTEM AS REQUIRED TO INCORPORATE THE NEW FACILITIES.
- THE CONTRACTOR AND THE SCADA SYSTEM SUPPLIER SHALL COORDINATE ALL SCADA SYSTEM INSTALLATION WITH THE SJCUD SCADA SYSTEM SUPERVISOR.
- THE SCADA SYSTEM RTU SHALL BE A SJCUD STANDARD LIFT STATION RTU WITH MOTOROLA ACE3600 RTU CONFIGURED WITH MIXED I/O MODULES AS INDICATED. PROVIDE POWER AND SIGNAL LINE SURGE PROTECTION.
- PRIOR TO SHOP DRAWING SUBMITTALS, THE SCADA SYSTEM SUPPLIER SHALL CONFIRM RADIO/ANTENNA SELECTION WITH THE SJCUD SCADA SYSTEM SUPERVISOR.
- IN ORDER TO MAINTAIN FCC PART 15 COMPLIANCE, ALL ANTENNA WORK MUST BE PERFORMED OR CERTIFIED BY AN FCC CERTIFIED TECHNICIAN. THE SJCUD SCADA SUPERVISOR WILL INSPECT AND CERTIFY (AT NO CHARGE) BUT WILL NOT PERFORM CORRECTIVE ACTIONS.
- ANTENNA MAST GROUND ROD SHALL BE BONDED (UNDERGROUND) TO THE STATION ELECTRICAL SYSTEM GROUNDING GRID.
- ALL GROUNDING CONDUCTORS SHALL HAVE AN EVEN SLOPE FROM POINT OF CONTACT TO THE GROUND ROD (NO 90° BENDS).
- ALL GROUND CONTACT POINTS SHALL BE PROTECTED BY AN ANTI-OXIDATION COMPOUND.
- 10. ALL RF CONNECTORS SHALL BE TIGHTENED TO MANUFACTURER SPECIFICATIONS, AND SHALL BE PROPERLY SEALED. COLD SHRINK IS NOT ACCEPTABLE.
- 11. DRAIN HOLES ON ANTENNAS MUST BE ORIENTED DOWN.
- 12. ALL THREADED CONNECTIONS, EXCEPT ANTENNA CONNECTIONS, SHALL BE PROTECTED WITH ANTI-SEIZE TREATMENT.
- 13. THE "POWER" CONDUIT FROM THE RTU TO THE PUMP CONTROL PANEL SHALL BE USED FOR ALL 120 VAC CONDUCTORS, INCLUDING THE RTU INPUT POWER AND THE DIGITAL OUTPUT CONDUCTORS.
- 14. THE "CONTROL" CONDUIT FROM THE RTU TO THE PUMP CONTROL PANEL SHALL BE USED FOR ONLY 24 VDC CONDUCTORS, INCLUDING THE DIGITAL INPUT SIGNAL CONDUCTORS AND THE ANALOG INPUT SIGNAL CABLES. PROVIDE 1TSP#18 CABLE FOR EACH ANALOG INPUT SIGNAL.
- PROVIDE DIN RAIL ON BACK PLANE AT THE RTU RADIO MOUNTING LOCATION FOR THE 4RF RADIO MOUNTING BRACKET. MOUNT THE DIN RAIL USING EXISTING TAPPED SCREW HOLES. DO NOT DRILL AND TAP NEW HOLES.
- 16. THE SCADA SYSTEM SUPPLIER SHALL PROVIDE THE FORCE MAIN PRESSURE TRANSMITTER: VEGABAR 82.



FORCE MAIN PRESSURE TRANSMITTER DETAIL NOT TO SCALE

NO.	BY DATE	SYMBOL	REVISIONS	DESIGNER:	DESIGN ENGINEER
6.				DRAWN BY:	
5.				DATE:	
4.				CHECKED BY:	FLORIDA REGISTRATION NO.
2.				DATE:	
1.					

SCADA SYSTEM ANTENNA DETAIL

NOT TO SCALE

(18)

(19)

 $(20) \neq$

24 25

TYPICAL 2" SCH 80 PVC CONDUIT SLEEVE

(BY THE DEVELOPER'S CONTRACTOR).

FOR STATIC WATER LINE, THROUGH CONCRETE PAD, AND EXTENDING 6" ABOVE TOP OF PAD

21)

TORQUE FOR ALL "N" MALE CONNECTORS SHALL

ELECTRICAL TAPE. DO NOT COVER DRAIN HOLE.

TYPICAL WRAPLOCK SHALL BE "SNUG" TO

COAX BUT NOT TOO TIGHT TO DEFORM.

(26) (29) (28) (27)

SECURE CABLE WITH 4 WRAPS OF 3/4"

BE 20 INCH POUNDS.

ORIENT DRAIN HOLE DOWN.

St. Johns County Utility Department 1205 STATE ROAD 16 ST. AUGUSTINE, FL 32084 PHONE: (904) 209-2626 FAX: (904) 209-2627

SJCUD STANDARD SUBMERSIBLE LIFT STATION SCADA SYSTEM DETAILS

NO. SHEETS SHEET NO.

DRAWING NO

E205

SJCUD STANDARD DRAWING FOR REFERENCE 2025-12-01