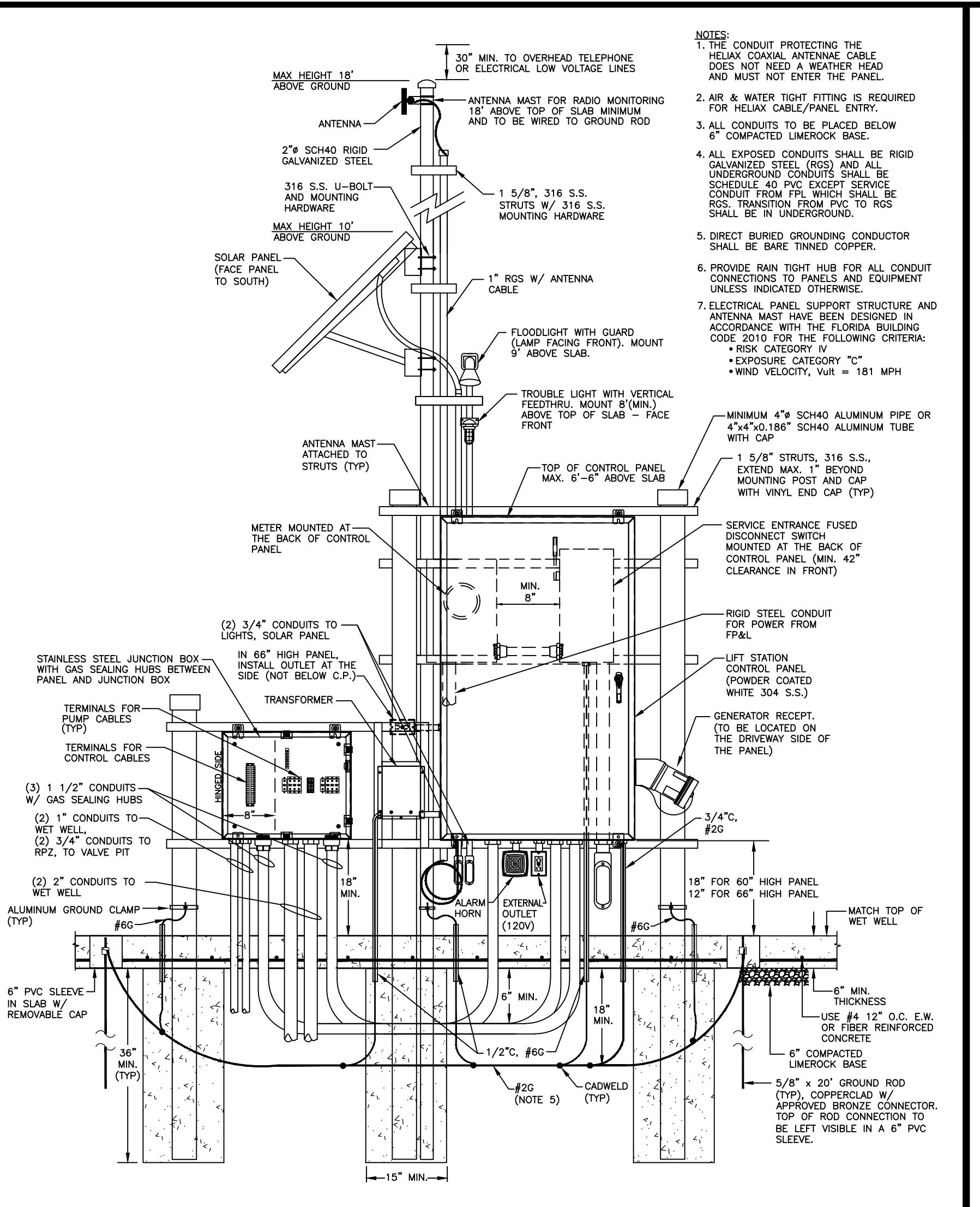


TYPICAL LIFT STATION ELECTRICAL RACK DETAIL FOR GENERATOR RECEPTACLE LOCATED ON LEFT SIDE

(NOTE: GEN. RECEPT. SHALL BE LOCATED ON DRIVEWAY SIDE)

* 56S



TYPICAL LIFT STATION ELECTRICAL RACK DETAIL FOR GENERATOR RECEPTACLE LOCATED ON RIGHT SIDE

(NOTE: GEN. RECEPT. SHALL BE LOCATED ON DRIVEWAY SIDE)

* 57S

INSTALLATION NOTES

- PANEL, METER, JUNCTION BOX AND 120 VOLT TRANSFORMER ARE TO BE MOUNTED ON STAINLESS STEEL STRUTS, WITH STAINLESS STEEL FASTENING DEVICES, AND SHALL BE SUPPORTED BY MINIMUM OF THREE POSTS, MIN. FOUR (4) INCH DIAMETER PIPE OR MIN. FOUR (4) INCH SQUARE TUBE (ALUMINUM OR STAINLESS STEEL) CAPPED AT THE TOP. PAINT BELOW GRADE SUPPORTS WITH ASPHALTUM PAINT TO FOUR (4) INCHES ABOVE GRADE.
- PANEL SHALL BE AT 42 INCHES FROM THE WET WELL OPENING MEASURED FROM THE FRONT OF THE PANEL UNLESS OTHERWISE SHOWN IN THE DRAWINGS. FRONT OF CONTROL PANEL SHALL FACE TO THE WET WELL.
- RADIO TO MATCH PALM BEACH COUNTY'S SYSTEM INCLUDING RUN TIME TRANSMITTAL. LIVE TEST OF THE TELEMETRY SYSTEM MUST BE DONE AND APPROVED AT THE PUMP STATION START-UP. ANTENNA AND CABLE SHALL BE PART OF THE RADIO SYSTEM. ANTENNA SHALL BE SEPARATELY GROUNDED TO THE GROUND ROD OF THE STATION.
- FABRICATE ANTENNA FROM 21 FEET LENGTH OF 2" DIAMETER SCHEDULE 40 GALVANIZED STEEL CONTINUOUS PIPE. PAINT LOWER 42 INCHES WITH ASPHALTUM PAINT, CAP THE TOP OF PIPE.
- RUN (1) INCH RIGID GALVANIZED CONDUIT UP THE MAST FOR THE ANTENNA CABLE TO WITHIN 16 INCHES OF THE TOP. RUN SECOND 3/4 INCH CONDUIT UP THE MAST FOR ALARM AND FLOOD LIGHTS AS SHOWN. RUN THIRD 3/4 INCH CONDUIT UP THE MAST FOR SOLAR PANEL. USE STAINLESS STEEL UNISTRUT AND CLAMPS TO HOLD CONDUITS TO THE MAST.
- MOUNT FLOOD LIGHT AND FLASHING RED LIGHT ON THE ANTENNA MAST AT NINE (9) FEET AND EIGHT (8) FEET ABOVE GRADE.
- CONDUIT TO THE POWER COMPANY SERVICE POINT SHALL BE RIGID GALVANIZE WITH ASPHALTUM PAINT ON ALL FITTINGS AND ON ALL RISERS TO 12 INCHES ABOVE GRADE. CONDUIT FROM SERVICE ENTRANCE FUSED DISCONNECT SWITCH TO THE PANEL SHALL BE RIGID GALVANIZED CONDUIT ENTERING THE BOTTOM OF THE PANEL. ALL WIRE SHALL BE COPPER. HIGH LEG ON 240 VOLT SHALL BE TAPED ORANGE AND PUT ON CENTRAL TERMINAL IN PANEL AND RIGHT TERMINAL IN METER.
- PROVIDE PVC SCHEDULE 80 CONDUITS WITH SWEEP BENDS FROM THE JUNCTION BOX TO THE WET WELL.
- SUPPORT PUMP CABLES WITH STAINLESS SPLIT BASKET KELLUM (OR EQUAL) GRIPS IN WET WELL. SUPPORT FLOAT CABLE ON S.S. THIMBLE FROM THE RACK. ALL HARDWARE IN THE WET WELL AND ALL FASTENERS SHALL BE STAINLESS STEEL. CABLES SHALL BE CONTINUOUS FROM THE JUNCTION BOX TO THE MOTORS OR SENSORS.
- WHEN CONNECTIONS ARE COMPLETE IN THE JUNCTION BOX, COAT THE TERMINAL BLOCKS AND WIRE ENDS WITH PROTECTIVE COMPOUND, NO-OXIDE OR EQUAL, TO PREVENT CORROSION.
- PROVIDE 3/4 INCH RIGID GALVANIZED CONDUIT FROM THE PANEL TO 120 VOLT TRANSFORMER. ALL CONDUITS ENTER BOTTOM OF THE PANEL UNLESS OTHERWISE SHOWN. SEAL ALL CONDUITS WITH DUCT SEAL TO KEEP OUT MOISTURE.
- PAINT PVC PIPES, CONDUITS AND ANY PARTS NOT STAINLESS OR ALUMINUM WITH TWO (2) COATS OF ALUMINUM PAINT.
- LIFT STATION START UP SHALL BE PERFORMED DURING THE ANTICIPATED PEAK FLOW CONDITIONS. TEST AS FOLLOWS (PUMP SUPPLIER'S FIELD REPRESENTATIVE MUST BE PRESENT AT THE START UP).
 - MEGGER MOTORS. MOTORS SHALL BE 20 MEGOHMS OR MORE TO GROUND, DO NOT MEGGER LOW VOLTAGE CONTROLS.
 - CHECK VOLTAGE, CHECK PUMP ROTATION, RECORD VOLTAGE AND AMPS UNDER LOAD.
 - DEMONSTRATE PROPER OPERATION OF ALL CONTROLS.
 - CONDUCT DRAWDOWN TESTS AS REQUIRED TO CONFIRM PROPER PUMP/IMPELLER INSTALLATION.
 - CHECK OPERATION WITH OWNER'S PORTABLE GENERATOR CHANGE WIRE CONNECTIONS IN THE PANEL TO GIVE CORRECT ROTATION.
- TEST AND DEMONSTRATE PROPER OPERATION OF THE RADIO TELEMETRY SYSTEM. SUPPLIER'S FIELD REPRESENTATIVE SHALL MOUNT AND CONNECT THE ANTENNA AND MAKE THE FINAL CONNECTIONS TO THE SYSTEM.
- PROVIDE LIQUID TIGHT NONMETALLIC FLEXIBLE CONDUIT (CARLON CARFLEX) WITH SEAL TYPE FITTINGS FOR LEVEL TRANSMITTER CABLE INSIDE THE WET WELL.
- PROVIDE GAS SEALOFF WITH CHICO COMPOUND FOR CONDUITS BETWEEN JUNCTION BOX AND CONTROL PANEL.
- ALL STAINLESS STEEL SHALL BE 316 UNLESS INDICATED OTHERWISE.
- PHASE SEQUENCE IN CONTROL PANEL SHALL BE SETUP FOR CLOCKWISE ROTATION TO MATCH THE ROTATION OF PBCWUD PORTABLE STANDBY GENERATORS.

CONTROL PANEL INSTALLATION NOTES

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NOTES ON 240V PANELS:

- This is the minimum size pump station panel for under 15 hp at 240 volts, 3p. For larger than 15 hp items 1, 2, 6, and 8 change. Minimum service size 100 AMP. Minimum service wires and conduit 3-#2, 1-#4, 2" C. Minimum wires and conduits for motors between control panel and junction box are 3-#8, 1-#10G, 1 1/2" C plus 4-#14 for motor temperature and moisture sensors.
- Short circuit amps rating of circuit breaker and panel shall equal or exceed system S.C. amps. Contractor shall confirm this value with the power company and order the panel accordingly. In addition, the minimum S.C. amp rating of the panel shall be as follows:

For 100 amps	25,000 amps
For 101 to 250 amps	42,000 amps
- For two (2) motors 15 h.p. and up, size components per the following table for 240 volt 3 phase services. Soft Starters shall be provided for motors 20 h.p. and up.

MOTOR H.P.	MOTOR AMPS	SERVICE MINIMUM MOTOR AMPS	MAIN BREAKER	MOTOR CIRCUIT BREAKER	MOTOR STARTER	SERVICE WIRES AND CONDUIT	MOTOR WIRES AND CONDUIT (BETWEEN C.P. AND J-BOX)
15	42	107	150	100	NEMA-2	3-#1/0, 1-#4, 2"	3-#6, 1-#8, 1 1/2"
20	54	134	175	100	ATS22D75S8U	3-#2/0, 1-#4, 2"	3-#4, 1-#8, 1 1/2"
25	68	165.5	200	100	ATS22D88S8U	3-#3/0, 1-#3, 2"	3-#3, 1-#6, 1 1/2"
30	80	192.5	250	125	ATS22C11S8U	3-250KCM, 1-#2, 3"	3-#2, 1-#6, 1 1/2"

NOTES ON 480 VOLT PANELS:

- The following components shall change:

ITEM	NAME	DESCRIPTION	MANUFACTURER	TYPE
3	Generator Receptacle	4 wire 200 amp	Russelstahl	JRS2034HR
4	TVSS/SPD	277/480v, 3 phase, 4 wire	ASCO	430277P10ACS1
9	Phase Monitor	Plug-in 8 pin 480 volt, 3p	MPE	001-480-118
19	Transformer Breaker	2p-15 Amps, 25k AIC (Min.)	Square D	HGL 26015
- The 480 volt short circuit rating of panel shall equal or exceed system S.C. amps. Contractor shall confirm this value with the power company and order the panel accordingly. In addition, the minimum S.C. amp rating of the panel shall be as follows:

For 100 amp service	18,000 amps
For 200 to 250 amp service	42,000 amps

MOTOR H.P.	MOTOR AMPS	SERVICE MINIMUM MOTOR AMPS	MAIN BREAKER	MOTOR CIRCUIT BREAKER	MOTOR STARTER	SERVICE WIRES AND CONDUIT	MOTOR WIRES AND CONDUIT (BETWEEN C.P. AND J-BOX)
15	21	53.5	100	50	NEMA-2	3-#2, 1-#4, 2"	3-#8, 1-#10, 1 1/2"
20	27	67.0	100	50	ATS22D47S8U	3-#2, 1-#4, 2"	3-#8, 1-#10, 1 1/2"
25	34	82.8	100	70	ATS22D47S8U	3-#2, 1-#4, 2"	3-#8, 1-#10, 1 1/2"
30	40	96.3	125	80	ATS22D62S8U	3-#1, 1-#4, 2"	3-#6, 1-#8, 1 1/2"
40	52	123.3	150	100	ATS22D75S8U	3-#1/0, 1-#4, 2"	3-#4, 1-#8, 1 1/2"
50	65	152.5	200	100	ATS22D88S8U	3-#3/0, 1-#3, 2"	3-#3, 1-#6, 1 1/2"
60	77	179.5	225	150	ATS22C11S8U	3-#4/0, 1-#2, 2"	3-#2, 1-#6, 1 1/2"
75	96	222.3	250	200	ATS22C14S8U	3-250KCM, 1-#2, 3"	3-#1/0, 1-#6, 1 1/2"

LIFT STATION CONTROL PANEL 240V & 480V PANEL NOTES

* 67S

IT'S THE LAW !
CALL 48 HOURS BEFORE YOU DIG
1-800-432-4770
SUNSHINE STATE ONE CALL OF FLORIDA, INC.
UTILITIES NOTIFICATION CENTER

LIFT STATION ELECTRICAL STANDARD DETAILS 2 OF 3

CONSULTANT:

DESIGNED BY: WUD

DRAWN BY: M. BUCKNER

CHECKED BY: J. LAMMERT

APPROVED BY: WUD

Palm Beach County
Water Utilities Department
P.O. Box 16097
West Palm Beach, FL 33416-6097

STD DETAILS

SHEET NUMBER
E-2
OF
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SEAL