

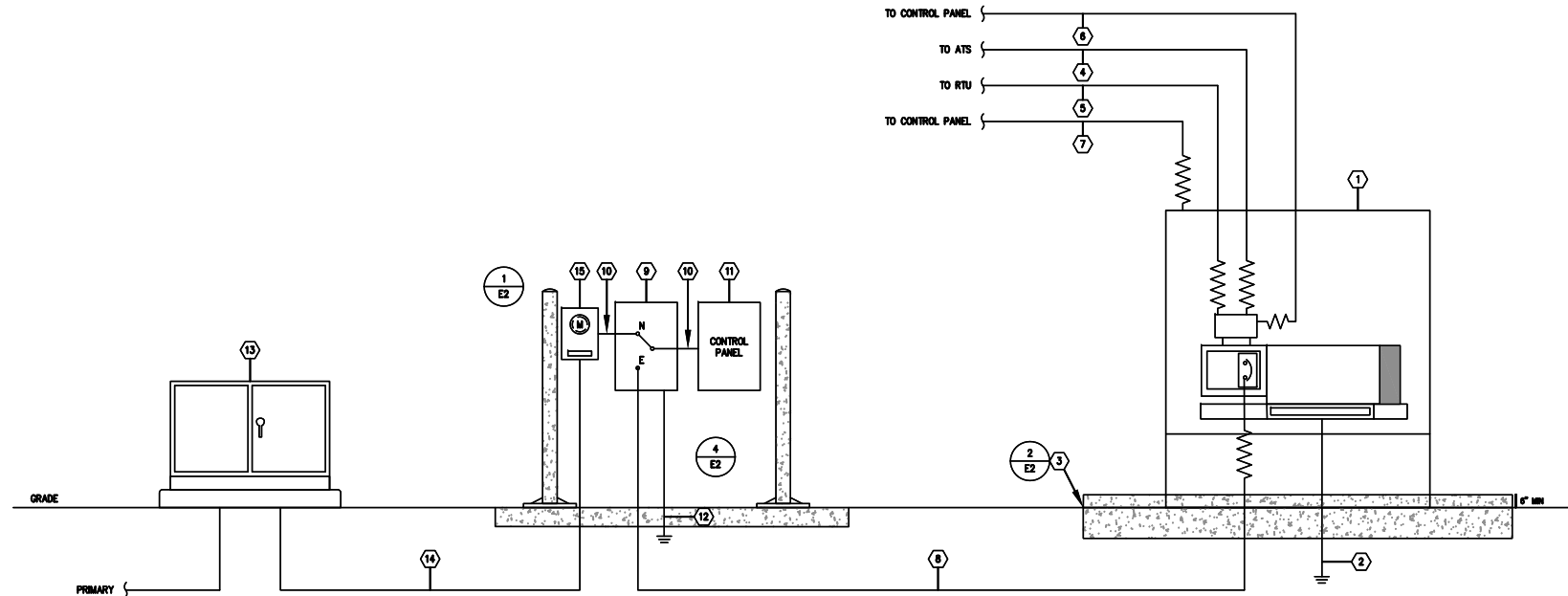
# CITY OF ST. AUGUSTINE LIFT STATION DETAILS

## EMERGENCY GENERATOR SPECIFICATIONS AND DETAILS

NOTE: THIS DRAWING IS ISSUED BY THE CITY OF ST. AUGUSTINE FOR GENERAL INFORMATION ONLY. THE USER OF THIS DRAWING SHALL ENGAGE THE SERVICES OF LICENSED PROFESSIONAL ENGINEERS TO DESIGN THE ELECTRICAL AND STRUCTURE FEATURES SHOWN ON THIS DRAWING.

LIGHTING FIXTURE SCHEDULE

MARK	MANUF.	CATALOG NO.	LAMPS NO.	LAMP TYPE	VOLT	MOUNTING	NOTES	DESCRIPTION / INSTALLATION
A	DAYBRITE	WHP 150 S XX-12L A	1	150W HPS	120	POLE		POLE MOUNTED AREA LIGHT, ALUMINUM, WET LOCATION, WITH BUILT-IN PHOTOCELL. PROVIDE POLE, TRIP ADAPTER TO ACCOMMODATE FIXTURE. MOUNT AT 10' ABOVE GRADE. PROVIDE TYPE 1, 1 1/4" TAPERED CONCRETE POLE WITH HANDHOLE, AND TENON. PROVIDE 1 1/4" ADAPTER AT TOP OF POLE TO MATCH FIXTURE.



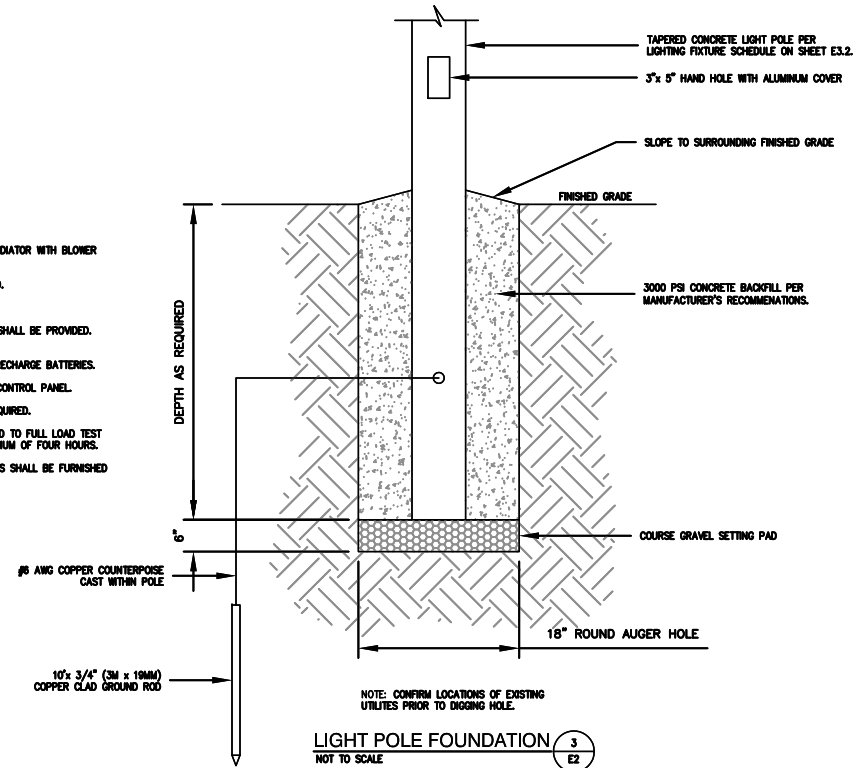
POWER RISER DIAGRAM  
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**GENERAL NOTES:**

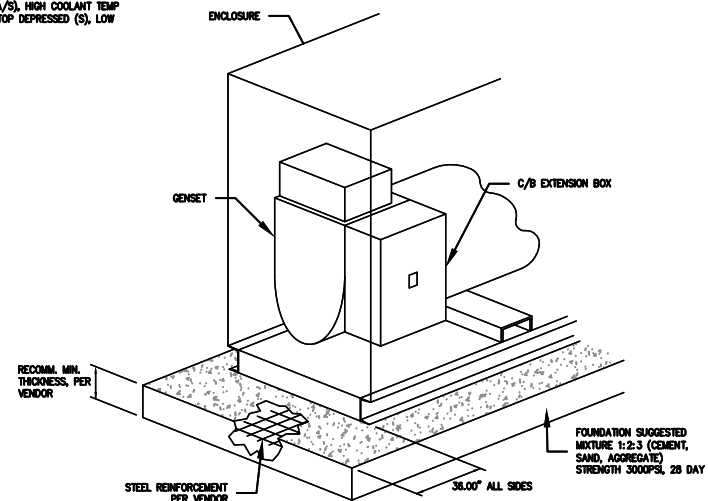
1. ROUTE ALL CONDUIT BETWEEN ELECTRICAL EQUIPMENT UNDERGROUND. UNDERGROUND CONDUIT MAY BE SCHEDULE 80 PVC (HEAVY DUTY), WITH THE EXCEPTION OF CONDUIT WHICH ENTERS THE MET WELL. TRANSITIONS TO ABOVEGROUND SHALL BE MADE WITH PVC COATED RIGID STEEL OR WITH RIGID STEEL CONDUIT COATED WITH 2 COATS OF ASPHALTIC Mastic CONDUIT WHICH ENTER THE MET WELL SHALL BE PVC COATED ALUMINUM AND SHALL CONTAIN EXPLOSION PROOF SEALS AND JOINT BOXES AS SHOWN IN DETAIL 1, THIS SHEET.
2. SHORT CIRCUIT RATING SHOWN FOR EQUIPMENT IS BASED ON PRELIMINARY DATA. RECONFIRM AVAILABLE FAULT CURRENT AT THE SECONDARY OF THE TRANSFORMER WITH THE UTILITY AND RATE ALL EQUIPMENT ACCORDINGLY. (ADD 600A FOR MOTOR CONTRIBUTION).
3. ALL ABOVE CONDUIT SHALL BE ALUMINUM.
4. GENERATOR SHALL BE SIZED TO PROVIDE POWER TO THE ENTIRE DUPLEX PUMPING STATION IN THE EVENT OF POWER FAILURE.
5. THE EMERGENCY POWER SUPPLY SYSTEM SHALL CONSIST OF A DIESEL GENERATOR SET, WHICH UPON INTERRUPTION OF NORMAL POWER FROM TRANSFORMER, WILL START AUTOMATICALLY AND, BY AN AUTOMATIC TRANSFER SWITCH, WILL DISCONNECT LOAD FROM NORMAL SUPPLY AND CONNECT LOAD TO THE GENERATOR. THE GENERATOR SET SHALL BE SUPPLIED WITH RELATED COMPONENTS ACCESSORIES.
6. THE GENERATOR SHALL BE PROVIDED WITH A DOUBLE WALL SUB-BASE TANK CONSTRUCTED TO MEET ALL LOCAL CODES AND REQUIREMENTS. A FUEL TANK BASE OF FIVE (5) DAY CAPACITY SHALL BE PROVIDED AS AN INTEGRAL PART OF THE ENCLOSURE. IT SHALL BE CONTAINED IN A RUPTURE BASIN WITH 110% CAPACITY.
7. THE GENERATOR SET SHALL BE PROVIDED WITH A FULL TANK OF DIESEL FUEL FOR THE COMPLETION OF ALL TESTING.
8. THE COMPLETE DIESEL ENGINE GENERATOR SET, INCLUDING GENERATOR CONTROL PANEL, ENGINE STARTING BATTERIES AND DIESEL FUEL TANK, SHALL BE ENCLOSED IN A FACTORY ASSEMBLED, SOUND ATTENUATED ENCLOSURE MOUNTED ON THE FUEL TANK BASE. THE ENCLOSURE SHALL BE MADE FROM 12 GAUGE STEEL WITH ELECTROSTATICALLY APPLIED POWDER COATED BAKED POLYESTER PAINT.
9. THE ENCLOSURE SHALL HAVE A RESULTING SOUND LEVEL THAT WILL MEET CITY CODE WITH THE GENERATOR SET RUNNING UNDER FULL LOAD.
10. ACOUSTICAL FOAM SHALL BE PROVIDED BETWEEN ALL SUPPORTS AND INSIDE DOORS AND SOUND Baffles ON AIR INTAKE AND AIR DISCHARGE.
11. A RESIDENTIAL GRADE SILENCER, COMPANION FLANGES, AND FLEXIBLE STAINLESS STEEL EXHAUST FITTING PROPERLY SIZED SHALL BE FURNISHED AND INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
12. THE GENERATOR SET SHALL BE INSTALLED ON A REINFORCED CONCRETE SLAB STRUCTURALLY DESIGN TO WITHSTAND THE LOAD OF THE GENERATOR AND THE FUEL TANK COMPLETELY FULL WITH DIESEL FUEL.
13. THE ENGINE SHALL BE DIESEL FUELED, FOUR (4) CYCLE, WATER COOLED. THE ENGINE SHALL UTILIZE IN-CYLINDER COMBUSTION TECHNOLOGY, TO MEET EPA EMISSION REGULATIONS. ADDITIONALLY, THE ENGINE SHALL COMPLY WITH THE STATE EMISSION REGULATIONS.
14. THE GENERATOR SHALL BE SUPPLIED WITH: AUTOMATIC VOLTAGE REGULATOR, LOCKED ROTOR MOTOR STATING, CIRCUIT BREAKER, FULLY SOLID-STATE, MICROPROCESSOR BASED, GENERATOR SET CONTROL, DIGITAL MONITORING CAPABILITY (ENGINE OIL PRESSURE, ENGINE COOLANT TEMP, ENGINE RPM, BATTERY VOLTS, GEN AC VOLTS, GEN AC CURRENT, GEN AC FREQUENCY), ALARMS AND SHUTDOWNS (LOW OIL PRESSURE (A/S), HIGH COOLANT TEMP (A/S), LOSS OF COOLANT (S), OVER SPEED (S), OVER CRANK (S), EMERGENCY STOP DEPRESSED (S), LOW COOLANT TEMP (A)).

**SPECIFIC NOTES:**

1. PROVIDE (9) BUS POWER FACTOR, 240/120V, THREE PHASE, 4 WIRE DIESEL GENERATOR WITH SOUND ATTENUATED ALUMINUM ENCLOSURE, MUFFLER AND 545 GALLON SUBBASE TANK, PER SPECIFICATIONS. GENERATOR SHALL BE MANUFACTURED BY CATERPILLAR/OLYMPIAN. PROVIDE 100% RATED, 175A, 240V, 3 POLE GENERATOR CIRCUIT BREAKER, RATED 10KAC. CIRCUIT BREAKER SHALL BE UL LISTED FOR USE WITH THE AUTOMATIC TRANSFER SWITCH (DESCRIBED BELOW).
2. GROUND GENERATOR FRAME PER MANUFACTURER'S RECOMMENDATIONS (DO NOT CONNECT GENERATOR GROUND TO NEUTRAL AT GENERATOR). TEST GROUND TO ENSURE A MAXIMUM RESISTANCE TO GROUND OF 10 OHMS. ALSO, GROUND TANK AT OPPOSITE CORNERS WITH 10' GROUND RODS PER NEC. PROVIDE BOLTED CONNECTIONS AT TANK AND EXOTHERMIC WELDS AT GROUND RODS.
3. PROVIDE CONCRETE PAD FOR GENERATOR WITH STEEL REBAR ON BOTH DIRECTIONS. CONFIRM THICKNESS AND REINFORCEMENT REQUIRED FOR CONCRETE WITH A STRUCTURAL ENGINEER. CONFIRM LOCATION FOR CONDUIT STUB-UPS IN PAD AND TANK WITH GENERATOR VENDOR. COORDINATE LOCATION WITH GENERAL CONTRACTOR. SEE DETAIL 2, THIS SHEET FOR MORE INFORMATION.
4. PROVIDE 2 STRANDED #14 AWG THHN CONTROL WIRES (FOR STARTING) AND 2 SPARES IN 1" CONDUIT FROM GENERATOR CONTROL PANEL TO AUTOMATIC TRANSFER SWITCH. ALSO, PROVIDE 1 SPARE 1 1/4" CONDUIT AND PULLING FROM GENERATOR TO TRANSFER SWITCH FOR FUTURE USE. CAP AT BOTH ENDS. CONFIRM REQUIREMENTS, NUMBER AND SIZE OF CONTROL WIRES WITH GENERATOR VENDOR.
5. PROVIDE 2 STRANDED #14 AWG THHN CONTROL WIRES IN 3/4" CONDUIT FROM THE GENERATOR COMMON ALARM DRY CONTACTS TO THE RTU TERMINAL STRIP TO ANNUNCIATE GENERATOR ALARMS (INCLUDING FUEL TANK) THROUGH THE RTU. COORDINATE REQUIREMENTS WITH RTU VENDOR.
6. PROVIDE 2 STRANDED #14 AWG THHN SIGNAL WIRES IN 3/4" CONDUIT FROM THE GENERATOR CONTROL PANEL TO THE LIFT STATION CONTROL PANEL, WHICH SHALL INDICATE "GENERATOR RUN" CONDITION AT THE LIFT STATION CONTROL PANEL. SECOND PUMP IS LOCKED OUT WHILE ON EMERGENCY POWER.
7. PROVIDE 2 STRANDED #12 AWG CONDUCTORS AND #12 GROUND IN 3/4" CONDUIT FOR GENERATOR ACCESSORIES (WATER JACKET AND BATTERY CHARGER) FROM GENERATOR TO THE LIFT STATION CONTROL PANEL. COORDINATE WITH LIFT STATION CONTROL PANEL PROVIDER TO PROVIDE 20A, 120V, SINGLE POLE BREAKER FOR THIS CIRCUIT.
8. PROVIDE 4-#2/0 AWG CONDUCTORS AND STRANDED #6 GROUND, IN 2" CONDUIT. BURY CONDUIT AT LEAST 24" BELOW GROUND.
9. PROVIDE SERVICE RATED, 250A, 240/120V, 3 PHASE, 3 POLE AUTOMATIC TRANSFER SWITCH (ASCO MODEL 300 OR ONAN EQUAL) IN NEMA 4X ENCLOSURE WITH A SHORT CIRCUIT WITHSTAND RATING OF 35K SYMMETRICAL AMPS, PER SPECIFICATIONS. PROVIDE 225A, 240V, 3 POLE MAIN CIRCUIT BREAKER, RATED 42KAC, IN TRANSFER SWITCH. PROVIDE TVSS PROTECTION FOR AUTOMATIC TRANSFER SWITCH.
10. PROVIDE 4-#4/0 AWG CONDUCTORS AND #4 GROUND, IN 2 1/2" CONDUIT (TYP.)
11. LIFT STATION CONTROL PANEL. PROVIDE ALL ELECTRICAL CONNECTIONS TO PANEL, PUMPS, AND ACCESSORIES. COORDINATE WITH LIFT STATION CONTROL PANEL PROVIDER TO ENSURE THAT PANEL COMES WITH 15A, 120V WEATHERPROOF GFI RECEPTANCE AND DEDICATED CIRCUITS FOR THE RTU AND SITE LIGHTING. SEE CIVIL DRAWINGS FOR MORE INFORMATION ON PANEL.
12. PROVIDE #1/0 AWG COPPER GROUND ELECTRODE CONDUCTOR. CONNECT TO GROUND ROD AND ANY OTHER AVAILABLE ELECTRODES PER ARTICLE 250 AND 250.50(C). SEE DETAIL 4, THIS SHEET, FOR MORE INFORMATION.
13. FPM TRANSFORMER, ON A CONCRETE PAD (COORDINATE WITH FPL)
14. PROVIDE 225A, 240/120V, THREE PHASE, FOUR WIRE SERVICE LATERAL FROM TRANSFORMER. CONTACT FPM FOR MORE INFORMATION.
15. PROVIDE FPM APPROVED 400A, 3 PHASE, 4 WIRE METER SOCKET IN NEMA 3R ENCLOSURE. PROPERLY GROUND METER SOCKET PER NEC SECTION 250 AND LOCAL STANDARDS.



LIGHT POLE FOUNDATION  
NOT TO SCALE



PAD REINFORCEMENT DETAIL  
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**CITY OF ST. AUGUSTINE**  
**LIFT STATION DETAILS**  
**EMERGENCY GENERATOR**

REVISION DATE:	FEB 2017
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