

GENERAL FLORIDA BUILDING CODE NOTES:

ALL ELECTRICAL WORK SHALL COMPLY WITH FLORIDA BUILDING CODE, COMMERCIAL ENERGY EFFICIENCY.

505.7.3 VOLTAGE DROP.

505.7.3.1 FEEDERS AND CUSTOMER OWNED SERVICE CONDUCTORS. FEEDER AND CUSTOMER OWNED SERVICE CONDUCTORS SHALL BE SIZED FOR A MAXIMUM VOLTAGE DROP OF 2% AT DESIGN LOAD.

505.7.3.2 BRANCH CIRCUITS. BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED FOR A MAXIMUM VOLTAGE DROP OF 3% AT DESIGN LOAD.

505.7.4 COMPLETION REQUIREMENTS

505.7.4. DRAWINGS. CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT WITHIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, RECORD DRAWINGS OF THE ACTUAL INSTALLATION SHALL BE PROVIDED TO THE BUILDING OWNER, INCLUDING:

1. A SINGLE-LINE DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM AND
2. FLOOR PLANS INDICATING LOCATION AND AREA SERVED FOR ALL DISTRIBUTION.

505.7.4.2 MANUALS. CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT AN OPERATING MANUAL AND MAINTENANCE MANUAL BE PROVIDED TO THE BUILDING OWNER. THE MANUALS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:

1. SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
2. OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
3. NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY.

505.7.5 ELECTRICAL MOTORS. ELECTRICAL MOTORS SHALL COMPLY WITH THE REQUIREMENTS OF THE ENERGY POLICY ACT OF 2005.

GENERAL ELECTRICAL RISER NOTES:

1. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL WORK WITH ARCHITECT, OWNER AND GENERAL CONTRACTOR PRIOR TO BID AND START ANY WORK. NO EXCEPTION.
2. ELECTRICAL CONTRACTOR SHALL SUBMIT A PROPOSED CONSTRUCTION SCHEDULE WITH INFORMATION REGARDING ANY POSSIBLE ELECTRICAL OUTAGE TO BUILDING DURING CONSTRUCTION.

POWER DOWN TIME NOTES:

1. PROVIDE TEMPORARY BACK UP POWER AS REQUIRED OR/AND NEEDED DURING THE CONSTRUCTION.

UTILITY COMPANY COORDINATION NOTES:

1. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL WORK WITH TECO (POWER COMPANY). CONTACT Eng. Brock Blackmore (TECO) AT 813-228-1008 FOR ALL ELECTRICAL UTILITY SERVICE WORK AND REQUIREMENTS. CONTRACTOR SHALL INCLUDE ALL FEES TO PROVIDE POWER TO THE BUILDING IN HIS BID PROPOSAL. NO EXCEPTION.

FAULT CURRENT AND SELECTIVE COORDINATION STUDIES NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL SUBMIT TO ENGINEER A LETTER FROM UTILITY COMPANY FOR THE AVAILABLE FAULT CURRENT AT THE SECONDARY TERMINALS AT THE INSTALLED UTILITY TRANSFORMER WITH PANEL SUBMITTALS. IF A LETTER IS NOT PROVIDED WITH THE PANEL SUBMITTALS, THE SUBMITTALS WILL BE REJECTED WITHOUT REVIEW. NO EXCEPTION.
2. CONTRACTOR SHALL PROVIDE FAULT CURRENT AND SELECTIVE COORDINATION STUDY FOR ENTIRE ELECTRICAL SYSTEM PER NFPA 70 AND IEEE. REFER TO ELECTRICAL SPECIFICATION FOR REQUIREMENTS.

ELECTRICAL RISER NOTES:

MISCELLANEOUS NOTES:

UT1 UTILITY COMPANY PAD HANDHOLE AT THE POLE MOUNTED TRANSFORMER. SECONDARY VOLTAGE TO BE 120/208V 3 PHASE, 4 WIRE WYE. FIELD VERIFY EXACT LOCATION, CONTACT AND COORDINATE ALL ELECTRICAL WORK WITH UTILITY COMPANY AND OWNER PRIOR TO BID AND START ANY WORK. NO EXCEPTION. REFER TO POWER COMPANY GENERAL NOTE ON THIS SHEET FOR ADDITIONAL REQUIREMENTS.

M500 3 PHASE METER AND CT CABINET PER UTILITY COMPANY SPEC.

D500 3 PHASE DISCONNECT SAFETY SWITCH 600A 3P BETWEEN CT CABINET AND MAIN SERVICE PANEL (MDP).

SPD1 SURGE PROTECTIVE DEVICE TYPE 1, UL 1449, 3RD EDITION, NEMA 3R, 100KA, EXTEND 5 #4 IN 1-1/2" C AS STRAIGHT AS POSSIBLE (MAX 2'-0").

SPD2 SURGE PROTECTIVE DEVICE TYPE 2, UL 1449, 3RD EDITION, NEMA 3R, 100KA, BY LEA, EXTEND 5 #4 IN 1-1/2" C AS STRAIGHT AS POSSIBLE (MAX 2'-0").

DPV PROVIDE 60A, 4 POLE, NEMA 4X STAINLESS STEEL DISCONNECT SWITCH MOUNTED ADJACENT TO ELECTRIC METER FOR PHOTOVOLTAIC SYSTEM. REFER TO ELECTRICAL SHEET E2.5 FOR PHOTOVOLTAIC SYSTEM REQUIREMENTS. CONFIRM FINAL REQUIREMENTS WITH THE UTILITY COMPANY.

MDP MAIN DISTRIBUTION PANEL 3PH, 208/120V. REFER TO ELECTRICAL PANEL SCHEDULE FOR REQUIREMENTS.

P1 ELECTRICAL PANEL, 3PH, 208/120V. REFER TO ELECTRICAL PANEL SCHEDULE FOR REQUIREMENTS.

LT1 PROVIDE LABEL: WARNING - ELECTRICAL SHOCK HAZARD-PANEL HAS THREE INPUT POWER SUPPLIES (UTILITY, GENERATOR AND PHOTOVOLTAIC). DISCONNECT ALL CIRCUITS BREAKERS FROM ALL POWER SOURCES BEFORE ANY WORK.

B35 PROVIDE ENCLOSED CIRCUIT BREAKER 35 AMPS, 3P, 42KAIC RATED FOR PHOTOVOLTAIC SYSTEM WITH SHUNT TRIP MECHANISM. INTERLOCK SHUNT TRIP WITH ATS CONTACT. SHUNT TRIP TO BE ACTIVATED UPON TRANSFER TO GENERATOR POWER.

GROUNDING/BOUNDING NOTES:

G1 3/0 CU GROUND ELECTRODE CONDUCTOR IN 3/4" CONDUIT.

G2 3/4" X 20' LONG COPPER CLAD GROUND. ALL CLAMPS SUITABLE FOR DIRECT BURIAL OR EXOTHERMIC WELD PER NEC 250.53.

G3 EXTEND THE GROUND ELECTRODE SYSTEM TO A REBAR IN THE BUILDING FOUNDATION AND BUILDING STEEL REBAR SHALL BE CONTINUOUS 20' LENGTH, #4 MINIMUM AND ENCASED IN A MINIMUM 2" OF CONCRETE PER NEC 250.52 (3).

G4 BOND THE METALLIC COLD WATER PIPE TO THE GROUND ELECTRODE SYSTEM.

G5 EXTEND A #1 GROUND ELECTRODE CONDUCTOR TO THE BUILDING TELEPHONE TERMINAL CABINET OR BOARD. PROVIDE A GROUND BAR AT THE TELEPHONE CABINET OR BOARD.

G7 EXTEND A #3/0 IN 1" CONDUIT TO BUILDING LIGHTNING PROTECTION.

G8 BOND METER TO GROUND ELECTRODE SYSTEM WITH A #1 CU GEC IN 1" CONDUIT.

G9 3/0 CU GROUND CONDUCTOR IN 1" CONDUIT.

G10 PROVIDE COOPER GROUND BUSS 20" X 4" X 1/4" THICK ERICO MODEL #EG8A14420NN COMPLETE WITH INSULATOR MOUNTED BRACKET. NO HOLES. PROVIDE CONNECTORS AND BOLT HOLES AS REQUIRED. MOUNT ADJACENT TO MAIN SWITCHBOARD OR AS SHOWN ON THE ELECTRICAL DRAWINGS.

GENERATOR NOTES:

GS1 PROVIDE EMERGENCY GENERATOR LEVEL 1, GAS/LP (DUAL SOURCES) FUELED, 180KW, 3PH, 120/208V, (WYE) 60HZ, WITH OVERSIZE ALTERNATOR, 150 AMPS AND 500 AMPS UNIT MOUNTED LSI CIRCUIT BREAKERS WITH SHUNT TRIP COIL, CERTIFIED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA) WITH CRITICAL GRADE SOUND ALUMINUM ENCLOSURE, PF=0.8 BY KOHLER OR GENERAC CAT AND OWNER EQUAL. VERIFY WITH GENERATOR MANUFACTURER FOR EXACT LAYOUT AND CLEARANCE AND SITE CONDITIONS PRIOR TO ORDERING.

GS2E 150 A, 4 POLE, NEMA 1 AUTOMATIC TRANSFER SWITCH WITH BYPASS ISOLATION, SURFACE MOUNTED, 50KA. THE TRANSFER SWITCH AND GENERATOR SHALL BE SUPPLIED AND SERVICED BY A SINGLE COMPANY. THE TRANSFER SWITCH SHALL BE PROVIDED WITH INTEGRAL SURGE PROTECTIVE DEVICE.

GS2C 500 A, 4 POLE, NEMA 1 AUTOMATIC TRANSFER SWITCH WITH BYPASS ISOLATION, SURFACE MOUNTED, 50KA. THE TRANSFER SWITCH AND GENERATOR SHALL BE SUPPLIED AND SERVICED BY A SINGLE COMPANY. THE TRANSFER SWITCH SHALL BE PROVIDED WITH INTEGRAL SURGE PROTECTIVE DEVICE.

GS3 GENERATOR START RELAY. REFER TO SPECIFICATION AND GENERATOR MANUFACTURER RECOMMENDATION AND INSTRUCTIONS.

GS3E EMERGENCY LIGHTING CONTROL RELAY. COORDINATE WITH GENERATOR AND LIGHTING CONTROL MANUFACTURER. EXTEND 3" C TO EMERGENCY LIGHTING CONTROL PANEL.

GS4 3 MAIN 1/2" C TO GENERATOR CONTROL PANEL.

GS5 GENERATOR EMERGENCY STOP SWITCHES (ONE IN ELECTRICAL ROOM AND ONE ADJACENT TO FACP IN NEAREST RISER BOX. PROVIDE 1/4" WHITE ENGRAVED LETTER ON RED LAMINATED PLASTIC UNDER STOP SWITCH TO READ "GENERATOR EMERGENCY STOP". SURFACE MOUNT SWITCH 4"-6").

GS6 PROVIDE GENERATOR ALARM REMOTE ANNUNCIATOR (GARA) PANEL. COORDINATE FINAL LOCATION WITH OWNER AND AHJ AND EXTEND (1)-1" C WITH WIRING PER MANUFACTURER REQUIREMENTS.

GS7 BOND NEUTRAL TO GROUND AT THE GENERATOR (SEPARATE DERIVE SYSTEM). PROVIDE COMPLETE GROUND/BOND FOR A SEPARATE DERIVE SYSTEM PER NFPA 70 - NATIONAL ELECTRIC CODE.

GS8 PROVIDE CONCRETE PAD. DIMENSIONS TO BE 12" WIDER THAN GENERATOR FOOT PRINT.

GS9 THE GENERATOR ENCLOSURE SHALL BE SOUND ATTENUATED (SOUND ATTENUATION LEVEL: 80 dBA REDUCTION AT 12'-0") (FREE FIELD) ALUMINUM CONSTRUCTION OUTDOOR WEATHER PROTECTIVE ENCLOSURE PACKAGE FOR STANDBY GENERATOR SET, LISTED AND CERTIFIED TO 150 MPH WIND, CAPACITY, MEETS ASCE 7-05, WIND RESISTANCE.

GS10 EMERGENCY SHUNT TRIP FOR MAIN CIRCUIT BREAKER OF THE PHOTOVOLTAIC SYSTEM. COORDINATE WITH GENERATOR AND PV SYSTEM INSTALLER.

GS11 GENERATOR PRE-WIRED PANEL "G" 100 MCB, 120/208V, 1PH PROVIDED BY GENERATOR VENDOR.

FEEDER SCHEDULES:

800.S (SERVICE - 500 AMPS) (2) SETS OF 4 #350 KCMIL IN 2-1/2" C.

500 (FEEDER - 400 AMPS) (2) SETS OF 4 #250, 1 #2 E.G. IN 2-1/2" C.

400 (FEEDER - 400 AMPS) (2) SETS OF 4 #3/0 AND 1 #3 E.G. IN 2" C.

200 (FEEDER - 200 AMPS) 4 #3/0, AND 1 #6 E.G. IN 2" C.

150 (FEEDER - 150 AMPS, 110V) 4 #1/0 AND 1 #6 E.G. IN 2" C.

100 (FEEDER - 100 AMPS, 110V) 4 #1 AND 1 #6 E.G. IN 1-1/2" C.

100.G (FEEDER - 100 AMPS, 110V) 3 #1 AND #6 E.G. IN 1-1/2" C.

60 (FEEDER - 60 AMPS) 4 #1/0 AND #6 E.G. IN 1-1/2" C.

50 (FEEDER - 50 AMPS) #5 AND #8 E.G. IN 1" C.

35 (FEEDER - 35 AMPS) 3 #8 AND 1 #8 E.G. IN 3/4" C. THE FINAL WIRING DETERMINATION SHALL BE CONFIRMED WITH PHOTOVOLTAIC SHOP DRAWINGS.



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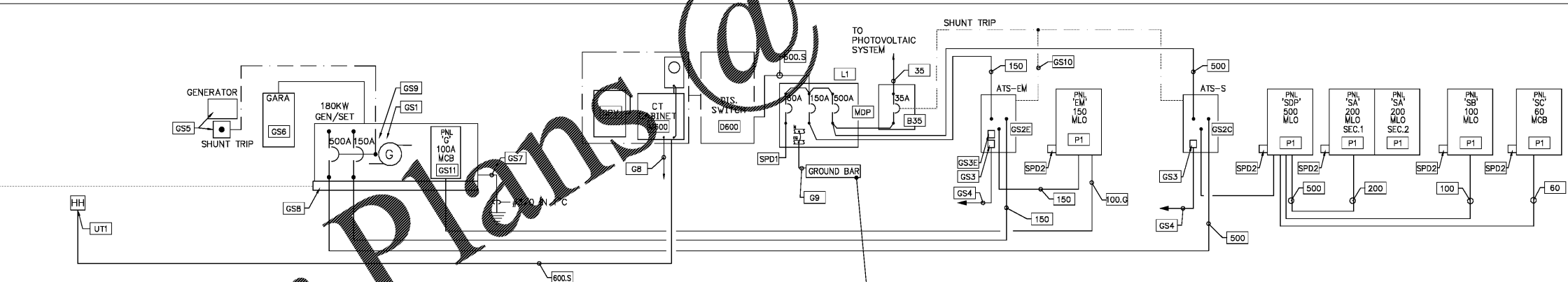
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ELECTRICAL RISER DIAGRAM

SHEET NUMBER

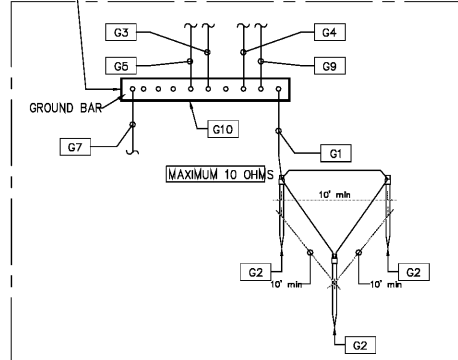
E3.1

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FAULT CURRENT

UTILITY TRANSFORMER VOLTAGE	208 V	
ASSUMED TRANSFORMER SIZE	150 KVA	
ASSUMED F.C. TRANSFORMER	28596 AMPS	
BRK	AVAILABLE FAULT CURRENT	MINIMUM PANEL AIC
MAIN 'MDP'	28596	42000
PANEL 'EM'	14875	22000
PANEL 'SDP'	14875	22000
PANEL 'SA'	14467	22000
PANEL 'SB'	14467	22000
PANEL 'SC'	13698	22000



ELECTRICAL RISER DIAGRAM
 SCALE: N.T.S.

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Order Plans

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