

ELECTRICAL GENERAL NOTES

1. ALL ELECTRICAL CONSTRUCTION/INSTALLATION SHALL BE IN ACCORDANCE WITH ELECTRIC SERVICE RULES AND REGULATIONS, FLORIDA POWER AND LIGHT (FPL) AND THE CITY OF PORT ORANGE.
2. ALL ELECTRICAL INSTALLATION SHALL COMPLY WITH THE 2008 NATIONAL ELECTRIC CODE (NEC), NFPA 70.
3. GENERAL LOCATIONS OF ALL ELECTRICAL EQUIPMENT ARE APPROXIMATE AND MAY BE RELOCATED TO AN APPROVED LOCATION. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS AND SPACING IN THE FIELD. ALL ALTERATIONS SHALL COMPLY WITH NEC 2008 AND EQUIPMENT MANUFACTURER'S SPECIFICATIONS.
4. ELECTRIC DISTRIBUTION PANELS SHALL HAVE A MINIMUM OF 36 INCHES OF CLEARANCE IN FRONT OF THE PANEL.
5. ELECTRICAL DISTRIBUTION PANELS SHALL HAVE A WORKING SPACE OF 30 INCHES OR THE WIDTH OF THE PANEL, WHICH EVER IS GREATER.
6. EXTERIOR RUNS OF PVC CONDUIT INSTALLED LESS THAN 6 FEET ABOVE FINISHED GRADE SHALL BE SCHEDULE 80. ALL OTHER EXTERIOR CONDUIT RUNS SHALL BE PVC SCHEDULE 40. ALL PVC CONDUIT SHALL BE SECURELY BRACED WITHIN 3 FEET OF TERMINATION. BRACING DISTANCES FOR HORIZONTAL RUNS OF PVC CONDUIT SHALL BE AS FOLLOWS:

CONDUIT SIZE (IN.)	MAXIMUM BRACING DISTANCE (FT.)
½ - 1	3
1¼ - 2	5
2½ - 3	6
3½ - 5	7
6	8

7. ALL RECEPTACLE AND LIGHTING CIRCUITS RATED AT OR BELOW 20A SHALL BE ALUMINUM ARMORED CABLE WITH 2-12AWG AND GROUND COPPER CONDUCTORS BRACED EVERY FOUR AND A HALF FEET.
8. INTERIOR RUNS OF CONDUIT SHALL BE PVC SCHEDULE 80. HORIZONTAL BRACING SHALL BE IN ACCORDANCE WITH THE BRACING DISTANCES IN NOTE 6 ABOVE. ALL PVC CONDUIT SHALL BE SECURELY BRACED WITHIN 3 FEET OF TERMINATION.
9. GROUND BUSHINGS SHALL BE INSTALLED ON ALL PANELS WITH METALLIC CONDUIT. A LEAD SHALL BE INSTALLED BETWEEN THE GROUND BUSBAR AND THE BUSHING.
10. ALL CONDUCTORS SHALL BE THWN UNLESS OTHERWISE NOTED.
11. VAV AND DAMPER MOTORS SHALL BE POWERED BY THE AHU.

HVAC GENERAL NOTES

1. ALL PIPING AND DUCT WORK SHALL COMPLY WITH THE 2007 FLORIDA BUILDING CODE, MECHANICAL WITH 2009 AMENDMENTS.
2. REFRIGERANT AND DUCTING SHALL BE FIELD ROUTED FOR BEST IN-FIELD CONFIGURATION. SHOWN LOCATIONS ARE BASED ON BEST STRUCTURAL DRAWINGS AVAILABLE.
3. REFRIGERANT PIPING SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS WHICH SPECIFY REFRIGERANT PIPING MATERIAL AND BRAZING MATERIALS. DO NOT USE FLUX WHEN BRAZING REFRIGERANT PIPING.
4. ALL HVAC FIELD WIRING AND COMPONENTS SHALL BE INSTALLED BY A LICENSED ELECTRICIAN AND COMPLY WITH 2008 NEC.
5. EACH ZONE SHALL BE CONTROLLED AS SHOWN ON THE DRAWINGS BY A THERMOSTAT CONTROLLER APPROVED FOR USE BY EACH SYSTEM MANUFACTURER. CONTROLLERS SHALL BE FIELD LOCATED BASED ON OWNER'S PREFERENCE AND INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS AND NEC 2008.
6. EXHAUST FANS SHALL BE ROUTED DIRECTLY OUTSIDE THE ROOF USING RIGID GALVANIZED DUCTING. ANY ALTERATIONS SHALL COMPLY WITH THE 2009 FLORIDA BUILDING AND MECHANICAL CODES.
7. ALL RIGID AND FLEXIBLE DUCTING IS METALLIC TYPE WITH INSULATION. MINIMUM INSULATION SHALL BE R-8.
8. DUCT CONNECTIONS AND EXTERIOR PENETRATIONS SHALL BE SEALED WITH DUCT MASTIC THAT MEETS UNDERWRITERS LABORATORY (UL) 181A (RIGID DUCT) AND 181B (FLEXIBLE DUCT).
9. VOLUME DAMPERS SHALL BE INSTALLED BETWEEN THE DIFFUSER AND DUCTING FOR EACH DIFFUSER SHOWN. VOLUME DIFFUSER SHALL BE USED TO BALANCE AIR FLOW.
10. ALL CONDENSATE DRAIN PIPING REQUIRE P-TRAPS AND SHALL BE FIELD ROUTED TO BUILDING EXTERIOR.
11. OUTSIDE AIR RETURN LOUVERS SHALL BE LOCATED A MINIMUM OF 12 INCHES ABOVE GRADE AND PREVENT WATER INTRUSION INTO DUCT. INSTALL INSECT SCREENS IN ALL EXTERIOR LOUVERS.
12. AIR HANDLER FILTER SIZE AND TYPE SHALL BE PER MANUFACTURER RECOMMENDATIONS BASED ON UNIT SIZE.
13. COOLING LOAD CALCULATIONS WERE PERFORMED BASED ON MAXIMUM OCCUPANCY OF BUILDING. THE OUTSIDE AIR VENTILATION WAS CALCULATED USING A RATE OF 15 CFM PER PERSON AS SPECIFIED IN THE 2009 FLORIDA BUILDING CODE. THE TOTAL VENTILATION WAS MODIFIED PER ASHRAE STANDARD 62.1 SECTION 6.2.6, WHICH STATES THAT THE DESIGNED VENTILATION RATE MAY BE AVERAGED FOR FACILITIES WHERE PEAK OCCUPANCY WILL BE OF SHORT DURATION.
14. RESTROOM EXHAUST FANS SHALL BE CONTROLLED BY WALL SWITCHES WITH OCCUPANCY SENSORS.
15. CONTRACTOR SHALL TEST AND BALANCE HVAC SYSTEM PER THE 2007 FLORIDA BUILDING CODE WITH 2009 AMENDMENTS TO MEET SPECIFIED CFMS ON SHEET M1.
16. ALL AIR DISTRIBUTION COMPONENTS SHALL BE INSTALLED IN ACCORDANCE TO SECTION 13-410 OF THE 2007 FLORIDA BUILDING CODE, BUILDING.

PLUMBING GENERAL NOTES

1. ALL PIPING AND DUCT WORK SHALL COMPLY WITH THE 2007 FLORIDA BUILDING CODES, PLUMBING WITH 2009 AMENDMENTS.
2. PLUMBING ELEVATIONS MAY BE ALTERED FOR IN-FIELD CONDITIONS. SHOWN LOCATIONS ARE BASED ON BEST DRAWINGS AVAILABLE. ANY RECONFIGURATIONS SHALL MEET THE REQUIRED SLOPES SPECIFIED IN THE 2007 FLORIDA BUILDING CODE, PLUMBING WITH 2009 AMENDMENTS.
3. ALL POTABLE WATER LINES SHALL BE CPVC OR OTHER MATERIAL COMPLIANT WITH THE 2007 FLORIDA BUILDING CODE, PLUMBING WITH 2009 AMENDMENTS.
4. ALL SEWER LINES SHALL BE PVC OR OTHER BUILDING MATERIAL COMPLIANT WITH THE 2007 FLORIDA BUILDING CODE, PLUMBING WITH 2009 AMENDMENTS.
5. HOT WATER LINES SHALL BE INSULATED WITH A MINIMUM ½ INCH THICK WALL, SELF SEALING, CLOSED CELL, RUBBER INSULATION OR EQUIVALENT.
6. HOT WATER HEATER RELIEF VALVE SHALL DRAIN TO A DRAIN PAN PER FLORIDA BUILDING CODE, PLUMBING WITH 2009 AMENDMENTS. PAN DRAIN SHALL BE FIELD ROUTED TO DRAIN TO EXTERIOR.
7. ALL DRAINS TO SEWER (URINALS, SINKS, WATER FOUNTAIN) REQUIRE P-TRAPS. TOILETS WITH INTERNAL TRAPS DO NOT REQUIRE A P-TRAP.
8. ALL BENDS IN THE SANITARY SEWER SHALL BE 90 DEGREE SWEEPS.
9. CLEANOUTS SHALL BE INSTALLED BEFORE EACH FITTING GREATER THAN 45 DEGREES AND NO MORE THAN 100 FEET APART. CLEANOUTS SHALL BE EXTENDED TO AND FLUSH WITH FINISH FLOOR GRADE.

ABBREVIATIONS

- AFF ABOVE FINISHED FLOOR
- AHU AIR HANDLING UNIT
- AI ANALOG INPUT
- AO ANALOG OUTPUT
- AMB AMBIENT
- ASHRAE AMERICAN SOCIETY OF HEATING REFRIGERATING AND AIR-CONDITIONING ENGINEERS
- AWG AMERICAN WIRE GAUGE
- CFM CUBIC FEET PER MINUTE
- CKT CIRCUIT
- COP COEFFICIENT OF PERFORMANCE
- CPVC CHLORINATED POLYVINYL CHLORIDE
- CU CONDENSING UNIT
- DB DRY BULB TEMPERATURE (°F)
- EER ENERGY EFFICIENCY RATIO
- EMT ELECTRICAL METALLIC TUBING
- ENT ENTERING
- EXT SP EXTERNAL STATIC PRESSURE (IN. W.C.)
- GAL GALLON
- GND GROUND
- HP HORSE POWER
- HPC HEAT PUMP CONDENSER
- HVAC HEATING, VENTILATION, AND AIR CONDITIONING
- KVA KILOVOLT-AMPERE
- LED LIGHT-EMITTING DIODE
- LYG LEAVING
- MBH THOUSAND BRITISH THERMAL UNITS PER HOUR (BTU/H)
- MCA MAXIMUM CIRCUIT AMPS
- MCB MAIN CIRCUIT BREAKER
- MDP MAIN DISTRIBUTION PANEL
- NEC NATIONAL ELECTRICAL CODE
- NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
- NFPA NATIONAL FIRE PROTECTION ASSOCIATION
- OA OUTSIDE AIR
- PH PHASE
- PS PRESSURE SENSOR
- PVC POLYVINYL CHLORIDE
- RPM REVOLUTIONS PER MINUTE
- SCH SCHEDULE
- SEN SENSIBLE
- TBD TO BE DETERMINED
- THWN THERMOPLASTIC HIGH WATER-RESISTANT NYLON-COATED
- TS TEMPERATURE SENSOR
- VAC VOLTS ALTERNATING CURRENT
- VAV VARIABLE AIR VOLUME
- WCO WALL CLEAN OUT

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