

**GENERAL NOTES SPECIAL SYSTEMS:  
(APPLIES TO ALL SPECIAL SYSTEMS SHEETS)**

- A. CONTRACTOR SHALL BE RESPONSIBLE FOR REFERRING TO ALL OTHER PLANS FOR ANY ADDITIONAL SPECIAL SYSTEM DEVICES.
- B. WHEN LOCATING SYSTEMS NEXT TO DOORS, LOCATE 8 INCHES OFF DOOR JAMB TO CENTER OF DEVICE. WHEN MULTIPLE DEVICES ARE TOGETHER, STACK BUT NO MORE THAN 72 INCHES AFF.
- C. ALL CABLING TO BE SUPPORTED BY J-HOOKS WHEN NOT IN CONDUIT OR CABLE TRAY. DO NOT STRAP TO STRUCTURE. SEPARATE CABLING. PROVIDE SEPARATE J-HOOKS FOR DATA, CONTROLS, SECURITY, AND FIRE ALARM IF NOT IN CONDUIT. THE WRAP CABLING TOGETHER EVERY 4 FEET. PROVIDE SERVICE LOOPS IN CABLING, THE WRAPPED TOGETHER. SERVICE LOOP SHALL BE 18 INCHES MINIMUM.
- D. PROVIDE CONDUIT SLEEVES THROUGH WALLS. ALL CONDUITS SHALL HAVE NYLON BUSHINGS ON THE ENDS. PROVIDE PULL STRINGS IN ALL EMPTY CONDUITS UNDER TWO (2) INCHES. PROVIDE MULE TAPE IN ALL EMPTY CONDUITS TWO (2) INCHES AND LARGER OR ANY CONDUIT RUNS LONGER THAN 100 FEET WITHOUT INTERMEDIATE PULL BOXES. SLEEVES LESS THAN 36 INCHES DO NOT REQUIRE PULL STRINGS.
- E. FIRESTOP ALL CONDUIT PENETRATIONS IN RATED WALLS. PROVIDE INTUMESCENT FILL IN WALL CONDUIT SLEEVES IN RATED WALLS. SEE ARCHITECTURAL PLANS FOR WALL RATINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO SHEET ROCK AND REPAIR.
- F. PROVIDE TUBE TYPE DUCT SMOKE DETECTORS FOR ALL SMOKE FIRE DAMPERS. PROVIDE TUBE TYPE DUCT SMOKE DETECTORS IN RETURN OF EACH AIR HANDLING UNIT OVER 2000 CFM AND IN THE SUPPLY AND RETURN OF EACH AIR HANDLING UNIT OVER 10,000 CFM. ALL DUCT SMOKE DETECTORS SHALL HAVE THE FOLLOWING CHARACTERISTICS; MOUNTED IN THE DIRECTION OF AIR FLOW, ADDRESSABLE WITH SELF SENSITIVITY, RATED FOR THE AIR SPEED, AND HAVE REMOTE INDICATOR LIGHT TEST STATIONS. FIRE ALARM CONTRACTOR SHALL PROVIDE INTERFACE OF DUCT SMOKE DETECTORS AND FIRE ALARM PANEL. PROVIDE 24V POWER FROM FIRE ALARM PANEL.
- G. PROVIDE LEXAN COVERS FOR ALL FIRE ALARM PULL STATIONS.
- H. SEE SPECIFICATIONS FOR ADDITIONAL FIRE ALARM DEVICES AND MOUNTING HEIGHTS. MOUNT DEVICES IN ACCORDANCE WITH NFPA 72.
- I. ALL CABLING SHALL BE PLENUM RATED. NO EXCEPTIONS.
- J. ALL SMOKE AND HEAT DETECTORS SHALL BE POWERED BY THE FIRE ALARM CONTROL PANEL.
- K. THE FIRE ALARM CONTROL PANEL SHALL SHUNT ALL AIR HANDLERS IN THE EVENT OF A FIRE ALARM. PROVIDE RELAYS FOR ALL AIR HANDLERS AND CONNECT TO FIRE ALARM SYSTEM.
- L. PROVIDE FIRE RATED SLEEVES WITH INTUMESCENT FILL IN ALL FLOOR PENETRATIONS.
- M. PROVIDE COMBINATION DATA AND POWER PLATES IN SPLIT BOXES.
- N. PROVIDE BLOCKING AND BRAING FOR CLOCKS. MOUNT SO TOP OF CLOCK IS WITHIN 6 INCHES OF CEILING.
- O. PROVIDE COMBINATION RECEPTACLE AND CATV PLATE AND JACK FOR ALL TVs. MOUNT AT TV WALL/CEILING PLATE.
- P. PROVIDE HEAVY DUTY WIRE GUARDS FOR ALL CLOCKS AND FIRE ALARM DEVICES IN GYMNASIUMS.

**GENERAL NOTES LIGHTING SHEETS:  
(APPLIES TO ALL LIGHTING SHEETS)**

- A. WHEN LOCATING SYSTEMS NEXT TO DOORS, LOCATE 8 INCHES OFF DOOR JAMB TO CENTER OF DEVICE. WHEN MULTIPLE DEVICES ARE TOGETHER, STACK BUT NO MORE THAN 72 INCHES AFF. COORDINATE SWITCH LOCATIONS IN ROOMS WITH ARCHITECT AND OTHER DEVICES (THERMOSTATS, FIRE ALARM, AND CALL BUTTONS).
- B. MINIMUM CIRCUIT SIZE IS 2 #12 AND 1 #12 GROUND IN 3/4" CONDUIT. MAXIMUM FIXTURE WHIP LENGTH FROM ANY J-BOX 6 FEET. LIGHTING CIRCUITS JOINTS SHALL BE MADE UP IN OVERHEAD J-BOXES SECURED TO STRUCTURE WITH LIGHTING WHIPS FROM THE J-BOXES. FIXTURES DESIGNED TO BE QUICK-CLIPPED TOGETHER SHALL BE CONNECTED AS PER MANUFACTURER.
- C. COORDINATE LIGHT LOCATIONS WITH OTHER CEILING ITEMS OR JOIST ITEMS PRIOR TO INSTALLATION. LIGHT LOCATIONS TAKE PRECEDENCE OVER AIR DEVICES.
- D. PROVIDE SECONDARY SUPPORT WIRES FROM ALL FOUR (4) CORNERS OF THE LAY-IN FIXTURES TO THE STRUCTURE ABOVE. DO NOT SUPPORT FIXTURES FROM CEILING GRID WIRE SUPPORTS, PIPING, CONDUIT, SIDE WALLS, OR MECHANICAL EQUIPMENT. CEILING SPECIFICATIONS DO NOT SUPERCEDE THIS REQUIREMENT.
- E. PROVIDE INTEGRAL BATTERY BACK-UP W/INTEGRAL BATTERY BACK-UP & TEST SWITCH FOR ALL FIXTURES WITH AN "E" SUFFIX.
- F. FIRESTOP ALL CONDUIT PENETRATIONS IN RATED WALLS. SEE ARCHITECTURAL FOR WALL RATINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO SHEET ROCK AND REPAIR. PROVIDE FIRE RATED SLEEVES IN ALL FLOOR PENETRATIONS.
- G. CONTRACTOR TO VERIFY FIXTURE VOLTAGE PRIOR TO INSTALLING ANY RELOCATED FIXTURE. COORDINATE WITH RCP FOR FIXTURE LOCATIONS.
- H. ALL ROOMS AND HALLWAYS SHALL HAVE SWITCHES WHETHER SHOWN ON PLAN OR NOT. ALL SPACES WITH MORE THAN ONE FIXTURE SHALL HAVE DUAL SWITCHING UNLESS OTHERWISE NOTED. ALL HALLWAYS SHALL HAVE AT LEAST (2) 3-WAY SWITCHES.
- I. PROVIDE AN EXTRA UNSWITCHED HOT LEG FOR EXITS LIGHTS, NIGHTLIGHTS AND EMERGENCY LIGHTS. PROVIDE THE EXTRA UNSWITCHED HOT LEG FROM THE LINE SIDE OF THE CONTACTOR TO EACH EXIT AND EMERGENCY LIGHT AS INDICATED ON DRAWINGS. DO NOT ROUTE A SWITCHED (EITHER BY SWITCH OR CONTACTOR) HOT LEG TO EMERGENCY LIGHTS AND BALLASTS AS THIS WILL NOT ALLOW FOR PROPER OPERATION OF THE EMERGENCY/EXIT FIXTURE.

**GENERAL NOTES POWER SHEETS:  
(APPLIES TO ALL POWER SHEETS)**

- A. SEE ALL OTHER PLANS FOR ADDITIONAL DEVICES. SOME POWER CIRCUITING MAY BE ON OTHER PLANS. COORDINATE THE LOCATIONS OF DATA/CATV JACKS WITH THE RECEPTACLES. MOUNT ADJACENT TO EACH OTHER.
- B. WHEN LOCATING SYSTEMS NEXT TO DOORS, LOCATE 8 INCHES OFF DOOR JAMB TO CENTER OF DEVICE. WHEN MULTIPLE DEVICES ARE TOGETHER, STACK BUT NO MORE THAN 72 INCHES AFF.
- C. MINIMUM CIRCUIT SIZE IS 2 #12 AND 1 #12 GROUND IN 3/4" CONDUIT FOR INDIVIDUAL CIRCUITS. 3/4" CONDUIT FOR MULTIPLE CIRCUITS. ALL CONDUCTORS SHALL BE 75 DEGREE (MINIMUM) COPPER THIN. COLOR CODED AS PER NEC AND LOCAL AMENDMENTS WITH SIZE, TEMPERATURE, AND VOLTAGE PERMANENTLY PRINTED ON THE JACKET. ALL JOINTS SHALL BE MADE UP USING SELF LOCKING, TWIST-ON, COLOR CODED, SQUARE WIRE SPRING GRAB, LONG SKIRT, WIRE CONNECTORS WITH SWEEP WINGS.
- D. PROVIDE #10 AWG MIN NEUTRAL FOR ALL MULTIWIRE BRANCH CIRCUITS AND PROVIDE HANDLE TIES FOR CIRCUIT BREAKERS AS REQUIRED BY NEC 210.4
- E. CONDUCTOR SIZES INDICATED ASSUME NO MORE THAN (3) SINGLE POLE BRANCH CIRCUITS IN EACH CONDUIT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DE-RATE CONDUCTORS PER NEC TABLE 310.15(B)(2)(c) FOR CONDUITS WITH MORE THAN (3) CURRENT "CARRYING CONDUCTORS". THE NEUTRAL CONDUCTOR SHALL BE CONSIDERED "CURRENT CARRYING" FOR ALL BRANCH CIRCUITS SERVING MORE THAN (4) COMPUTERS.
- F. REFER TO VOLTAGE DROP FEEDER SCHEDULE FOR BRANCH CIRCUITS EXCEEDING 100' IN LENGTH.
- G. COORDINATE RECEPTACLE LOCATIONS WITH MILLWORK AND COUNTERS. DO NOT LOCATE RECEPTACLES BEHIND DRAWERS OR HIDDEN IN MILLWORK UNLESS SPECIFICALLY DIRECTED BY OWNER ARCHITECT. REVIEW ARCHITECTURAL ELEVATIONS PRIOR TO RECEPTACLE ROUGH-INS. SEE ARCH. ELEVATIONS IN BREAKROOMS FOR APPLIANCES AND RECEPTACLE MOUNTING LOCATIONS.
- H. MOUNT RECEPTACLES 18" AFF. 6" ABOVE BACKSPASH AT COUNTERS, 48" IN TOILET ROOMS, AT EQUIPMENT ROUGH-IN LOCATIONS FOR APPLIANCES, AND 96" FOR TVs. PROVIDE RECEPTACLES AT/LOCATED ALL SINKS, ROOFTOP RECEPTACLES, KITCHEN RECEPTACLES, BATHROOM/TOILET ROOMS, EXTERIOR RECEPTACLES, AND UNDERCOUNTER EQUIPMENT. ALSO, ALL RECEPTACLES SERVING DRINKING FOUNTAINS SHALL HAVE GFI.
- M. ALL RECEPTACLES NOT DEDICATED TO EQUIPMENT WITHIN 6' OF SINK, MOP SINK, DRINKING FOUNTAIN OR OTHER USER WATER SOURCE SHALL BE GFI PROTECTED.
- N. ALL RECEPTACLES IN KITCHENS SHALL BE GFI PROTECTED.
- O. ALL EQUIPMENT SHALL HAVE A LOCAL DISCONNECTING MEANS, EITHER CORDED PLUG AND RECEPTACLE OR SWITCHED DISCONNECT. VERIFY FROM EQUIPMENT SUBMITTED OR RELOCATED IF DIRECT CONNECT OR RECEPTACLE. IF DIRECT CONNECT, PROVIDE SWITCH AS PER NEC OTHERWISE, PROVIDE RECEPTACLE, CORD PLUG AS REQUIRED BY EQUIPMENT SUBMITTAL.
- P. FIRESTOP ALL CONDUIT PENETRATIONS IN RATED WALLS. SEE ARCHITECTURAL FOR WALL RATINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO SHEET ROCK AND REPAIR.
- Q. PROVIDE FIRE RATED SLEEVES IN ALL FLOOR PENETRATIONS.
- R. PROVIDE A DUCT-MOUNTED SMOKE DETECTOR ON THE RETURN SIDE OF ALL RTU'S, AHU'S, AND FCU'S RATED 10,000 CFM SUPPLY AND OVER. PROVIDE A DUCT-MOUNTED SMOKE DETECTOR ON THE RETURN AND SUPPLY SIDE OF ALL MECHANICAL EQUIPMENT RATED AT 10,000 CFM AND OVER. CONNECT FOR AUTOMATIC SHUT-DOWN OF UNIT AND ALARM TO FACP (WHERE APPLICABLE). REFER TO MECHANICAL EQUIPMENT SCHEDULES FOR CFM RATINGS.
- S. PROVIDE A MINIMUM OF (10) SPARE 20A/1P BREAKERS AND (3) 20A/1P DEVICES IN EACH PANEL WHETHER SHOWN ON SCHEDULE OR NOT.

**GENERAL MECHANICAL CONNECTION NOTES:  
(APPLIES TO ALL MECHANICAL POWER SHEETS)**

- A. REFER TO MECHANICAL EQUIPMENT ELECTRICAL CONNECTION SCHEDULE FOR CIRCUITING, SIZE OF CONDUCTORS, DISCONNECTS AND ALL CONNECTION REQUIREMENTS.
- B. COORDINATE EQUIPMENT LOCATION WITH MECHANICAL PLAN.
- C. ALL EQUIPMENT SHALL HAVE A LOCAL DISCONNECTING MEANS, EITHER CORDED PLUG AND RECEPTACLE OR SWITCHED DISCONNECT. VERIFY FROM EQUIPMENT SUBMITTED OR RELOCATED IF DIRECT CONNECT OR RECEPTACLE. IF DIRECT CONNECT, PROVIDE SWITCH AS PER NEC OTHERWISE, PROVIDE RECEPTACLE, CORD PLUG AS REQUIRED BY EQUIPMENT SUBMITTAL.
- D. PROVIDE DISCONNECTS (FUSED AND NON-FUSED) FULL RATING OF EQUIPMENT PROTECTED. COORDINATE SIZES WITH EQUIPMENT SUBMITTED. PROVIDE FUSED DISCONNECTS FOR ALL MULTIPLE PIECES OF EQUIPMENT ON THE SAME CIRCUIT. DISCONNECTS AND FUSES SHALL BE EQUAL TO OR GREATER THAN THE FEEDER/BREAKER SIZE. SIZE LOAD SIDE OF DISCONNECTS FOR EQUIPMENT AS LISTED. MOUNT DISCONNECTS ON UNISTRUT SUPPORTS. PROVIDE UNISTRUT RACKS FOR DISCONNECTS ON ROOF AS DETAILED. DISCONNECTS LOCATED ABOVE CEILING SHALL BE SUPPORTED FROM STRUCTURE. PROVIDE A WEATHERPROOF, GFI RECEPTACLE ON UNISTRUT RACKS FOR ROOF MOUNTED EQUIPMENT SO THAT EACH UNIT IS NO MORE THAN 25' FROM MECHANICAL EQUIPMENT. CIRCUIT ROOF MOUNTED RECEPTACLES FROM A 20A/1P SPARE CIRCUIT BREAKER IN THE NEAREST 120/208V PANEL BELOW. CIRCUIT NO MORE THAN (3) RECEPTACLES PER 20A CIRCUIT. ON CIRCUITS GREATER THAN 20A, FEEDING MULTIPLE PIECES OF EQUIPMENT, PROVIDE FUSED DISCONNECTS (SIZED FOR EQUIPMENT PROTECTING). PROVIDE FULL SIZED FEEDERS FROM BRANCH CIRCUIT BREAKER TO EQUIPMENT DISCONNECT WITH CONDUCTORS QUANTITIES AS INDICATED ON MECHANICAL EQUIPMENT ELECTRICAL SCHEDULE.
- H. PROVIDE SEPARATE NEUTRAL FOR MOTORS FOR ALL FAN POWER BOXES.
- I. PROVIDE EMT UNDER ROOF. SECURE TO STRUCTURE WITH BEAM CLAMPS (SINGLE) OR UNISTRUT (MULTIPLE).
- J. PROVIDE IMC ON ROOF FROM ROOF HOODS TO DISCONNECTS.
- K. PROVIDE RIGID STEEL CONDUIT ON ROOF FROM ROOF HOODS TO DISCONNECTS.
- L. PENETRATE ROOFS AS PER ROOFING GUIDELINES AND GANG CONDUIT TOGETHER. SUPPORT ROOFTOP CONDUIT WITH NEOPRENE BLOCKS WITH INTEGRAL UNISTRUT. SECURE CONDUIT TO BLOCKS ON ROOF.
- M. PROVIDE SEALTITE WITH WP FITTINGS TO MECHANICAL EQUIPMENT, MAX DISTANCE 48". DO NOT USE CONDUITS.
- N. PROVIDE INDIVIDUAL DISCONNECTS FOR ALL SMOKE FIRE DAMPERS AND VAV'S. NO EXCEPTIONS.
- O. FIRESTOP ALL CONDUIT PENETRATIONS IN RATED WALLS. SEE ARCHITECTURAL FOR WALL RATINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO SHEET ROCK AND REPAIR.
- P. PROVIDE NEMA 3R DISCONNECTS FOR ALL EXTERIOR LOCATIONS AND NEMA 1 DISCONNECTS FOR ALL INTERIOR, DRY LOCATIONS.
- Q. POWER AND DATA REQUIREMENTS FOR HVAC CONTROLLERS ARE SHOWN ON POWER SHEETS.
- R. ALL EQUIPMENT CONNECTION POINTS ARE DIAGRAMATIC IN NATURE. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH EQUIPMENT INSTALLER FOR EXACT POINT OF CONNECTION. EXTEND FEEDERS IN CONDUIT AS REQUIRED.

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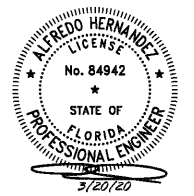
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**ELECTRICAL GENERAL NOTES**

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