

GENERAL ELECTRICAL NOTES

- BRANCH CIRCUIT WIRING FOR 20A CIRCUITS SHALL BE SIZED PER WIRE SIZING CHART, WHERE CONDUCTOR AND RACEWAY SIZE ARE SHOWN AT HORIZONTAL. SIZES SHALL BE USED FOR THE ENTIRE CIRCUIT. EXCEPTION: FINAL CONNECTION TO DEVICES IN OUTLET BOXES IS NOT REQUIRED TO BE LARGER THAN #12.
- FROM TO ROUGH-IN, COORDINATE THE HEIGHT OF ALL WALL MOUNTED DEVICES WITH THE ARCHITECTURAL INTERIOR ELEVATIONS AND MILLWORK SHOP DRAWINGS. IN THE EVENT OF A CONFLICT, NOTIFY THE ARCHITECT. MINOR ADJUSTMENTS TO DEVICE LOCATION, SUCH AS 2" IN ANY DIRECTION, SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER. UNDER-CABINET LIGHT FIXTURES, RECEPTACLES AND OTHER DEVICES TO BE MOUNTED INSIDE CABINETS SHALL BE REVIEWED WITH THE ARCHITECT PRIOR TO ROUGH-IN TO CONFIRM THE EXACT LOCATION OF FIXTURES AND DEVICES.
- COORDINATE THE LOCATION OF ALL FLOOR BOXES WITH THE ARCHITECT PRIOR TO ROUGH-IN. ALL FLOOR BOXES SHALL BE INSTALLED TO MAINTAIN THE FINISHING OF THE FLOOR. COORDINATE CEILING HOLES IN FLOOR WITH STRUCTURAL ENGINEER.
- OUTLET BOXES FOR SWITCHES, RECEPTACLES, ETC. MOUNTED ON OPPOSITE SIDES OF PARTITIONS SHALL NOT BE MOUNTED IN THE SAME WALL CAVITY. SEPARATE WALL PENETRATIONS BY MOUNTING ON OPPOSITE SIDES OF WALL STUDS OR OTHER VERTICAL STRUCTURAL MEMBERS IN THE WALL, WHERE OUTLET BOXES ARE INSTALLED IN A FIRE-RATED PARTITION. INSTALLATION SHALL COMPLY WITH INTERNATIONAL BUILDING CODES 7.5.2.
- RACEWAYS SHALL BE INSTALLED CONCEALED IN NEW WALL CONSTRUCTION, ABOVE CEILING, BELOW FLOORS AND IN OTHER CAVITIES TO THE MAXIMUM EXTENT POSSIBLE. EXPOSED RACEWAYS MAY BE USED IN UNFINISHED AREAS, WHERE EXPLICITLY NOTED ON PLANS AND WHERE APPROVED BY THE ARCHITECT AND ENGINEER. LAY OUT EXPOSED RACEWAYS TO MINIMIZE THE NUMBER OF FITTINGS AND CONNECTIONS.
- BRANCH CIRCUITS, BRANCH CIRCUITS AND CABLE TRAY ROUTING SHALL COMPLY WITH DETAILS ON DRAWINGS AND SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES BEFORE AND DURING CONSTRUCTION. COORDINATE THE ROUTING OF UNDERGROUND CONDUCTORS AND CABLES WITH STRUCTURAL FOOTINGS OF BUILDING.
- WHERE LIGHT SWITCH AND ABOVE-COUNTER RECEPTACLES ARE INDICATED TO BE MOUNTED ADJACENT TO EACH OTHER, THE DEVICES SHALL BE MOUNTED IN THE SAME BOX UNDER A COMMON DEVICE PLATE. IN THE CASE WHERE THE DEVICE VOLTAGES ARE DIFFERENT, PROVIDE A PERMANENT VOLTAGE BARRIER IN THE BOX PER NEC 404.8 B.
- A FIRESTOP SYSTEM SHALL BE USED TO SEAL ALL PENETRATIONS OF ELECTRICAL CONDUITS AND CABLES THROUGH FIRE-RATED PARTITIONS. THE FIRESTOP SYSTEM SHALL CONSIST OF A FIRE-RATED CALK TYPE SUBSTANCE AND HIGH TEMPERATURE FIBER INSULATION BY 5/16" APPROX. EQUAL. ONLY METAL CONDUIT SHALL BE USED TO PENETRATE FIRE-RATED PARTITIONS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF EXPANSION JOINTS.
- WHEREVER THE WORD "PROVIDE" IS USED ON THE ELECTRICAL DRAWINGS, IT SHALL BE INFERRED TO MEAN "FURNISH AND INSTALL", UNLESS NOTED OTHERWISE.
- OUTLET BOXES FOR TELECOMMUNICATIONS, FIRE ALARM AND GFCI DEVICES SHALL BE DEEP BOXES (6-18" MINIMUM). ALL OTHER OUTLET BOXES SHALL BE STANDARD DEPTH (1-1/2" MINIMUM), UNLESS NOTED OTHERWISE.
- THE ARRANGEMENT, GROUPING, AND ROUTING OF BRANCH CIRCUITS SHALL BE PROVIDED AT THE CONTRACTOR'S DISCRETION IN ACCORDANCE WITH GENERAL ACCEPTED PRACTICES FOR ELECTRICAL WORK, THE NATIONAL ELECTRICAL CODE REQUIREMENTS, LOCAL ORDINANCES, AND THE FOLLOWING: A. ALL COMMERCIAL NEUTRAL MAY BE INSTALLED IN A HORIZONTAL FOR 20A BRANCH CIRCUITS ONLY. A MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT OF ORIGIN IS PROVIDED PER NEC 308.4 B. 2. A MULTIPLE-NEUTRAL SYSTEM IS NOT PERMITTED AND CIRCUITS BASED ON NEUTRALS MAY BE PULLED INTO A SINGLE RACEWAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING THE RACEWAYS AND DE-RATING CONDUCTORS PER NEC 310.3. 3. A GROUND CONDUCTOR SHALL BE PROVIDED THROUGH ALL RACEWAYS UNLESS NOTED OTHERWISE.
- ELECTRICAL CONTRACTOR SHALL COORDINATE INSTALLATION WITH OTHER TRADES, ELECTRICAL HANGERS, CONDUIT, EQUIPMENT, SISIMC SUPPORTS, AND ALL OTHER ELECTRICAL COMPONENTS SHALL NOT BE IN PHYSICAL CONTACT WITH ANY OTHER TRADES' ITEMS. THIS WILL BE ENFORCED DURING OFFICE OF SCHOOLS FACILITIES (OSF) INSPECTIONS.

GENERAL LIGHTING NOTES

- SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR THE EXACT LOCATION OF ALL CEILING MOUNTED LIGHTING FIXTURES. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING DETAILS OF LIGHT FIXTURE TO ACCELOUT CEILING SYSTEM AND STRUCTURE.
- EXACT LOCATIONS OF LIGHTING FIXTURES IN MECHANICAL SPACES SHALL BE DETERMINED IN THE FIELD. DO NOT SUPPORT FIXTURES FROM DUCT OR PIPING. PROVIDE CHAIN OR TRAP-UP TYPE HANGERS WHERE FIXTURES CANNOT BE MOUNTED DIRECTLY TO CEILING.
- LIGHTING FIXTURE CATALOG NUMBERS ARE INDICATIVE OF THE STYLE OF FIXTURE REQUIRED. CONTRACTOR SHALL PROVIDE FIXTURES WITH THE PROPER TAP, VOLTAGE, AND OPTIONS NECESSARY FOR INSTALLATION.
- DOUBLE-FACED EXIT FIXTURES SHALL BE OF THE SAME MANUFACTURER AND SERIES AS THE SINGLE-FACED EXIT FIXTURES.
- REQUIREMENTS OF HOW NOTED ON PLANS. ALL EMERGENCY LIGHTING FIXTURES INDICATED IN PRIVATE SPACES SHALL BE WIRED SO AS TO BE SWITCHED "ON/OFF" WITHOUT OPERATING THE EMERGENCY BATTERY BACKUP. ALL EMERGENCY LIGHTING FIXTURES INDICATED IN PUBLIC SPACES OR MEANS OF EGRESS CORRIDORS, LOBBIES, BATHROOMS, AUDITORIUMS, STAIRWELLS, ETC. SHALL BE WIRED AHEAD OF LOCAL SWITCH AND SHALL NOT BE SWITCHED. EMERGENCY BATTERY BACKUP SHALL NOT BE ACTIVATED UNLESS A LOSS OF NORMAL BUILDING POWER OCCURS.
- REQUIREMENTS OF CATALOG NUMBERS INDICATED IN SCHEDULE. ALL EXIT SIGNS AND EMERGENCY LIGHTING UNITS SHALL BE PROVIDED WITH BATTERY BACKUP AND SHALL BE WIRED AHEAD OF LOCAL SWITCH AND SHALL NOT BE SWITCHED.

**WIRE SIZING CHART
20 AMP BRANCH CIRCUITS**

DISTANCE, 120V	MINIMUM WIRE SIZE
0 - 90 FEET	#12 AWG
90 - 230 FEET	#10 AWG
230 - 446 FEET	#8 AWG
DISTANCE, 277V	MINIMUM WIRE SIZE
0 - 209 FEET	#12 AWG
209 - 533 FEET	#10 AWG
533 - 1033 FEET	#8 AWG

GENERAL POWER NOTES

- PROVIDE UTILITY TRANSFORMER PAD IN ACCORDANCE WITH ALL UTILITY REQUIREMENTS. EXTEND (1) 1/2" CONDUIT FROM TRANSFORMER PRIMARY WINDOW TO UTILITY SERVICE POINT. ALL ELEVATIONS SHALL BE RIGID GALVANIZED STEEL. SEE THE ELECTRICAL SITE PLAN FOR ASSUMED LOCATIONS OF THE TRANSFORMER PAD AND UTILITY SERVICE POINT. COORDINATE EXACT LOCATION WITH THE UTILITY COMPANY. COORDINATE WITH THE UTILITY COMPANY TO PROVIDE A METER ON SERVICE. METERS SHALL BE LOCATED PER UTILITY COMPANY REQUIREMENTS. ALL COSTS ASSOCIATED WITH THE UTILITY SERVICE (PAD, PRIMARY CONDUIT, METER, PERMITTING, ETC.) SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE GROUND ROD CLUSTER FOR THE SERVICE GROUND SHALL CONSIST OF THREE 3/4" X 1/2" COPPER CLAD STEEL GROUND RODS. THESE SHALL BE DRIVEN IN A TRIANGULAR CONFIGURATION APPROXIMATELY 5' APART AND INTERCONNECTED IN STEEL WITH A #4 BARE COPPER CONDUCTOR. TOPS OF THE RODS SHALL BE 12" BELOW FINISHED GRADE. CONNECTION TO THE RODS SHALL BE WITH EPOXY SETTING WELDS.
- 1/8" OUT AND CAP #1" SPARE CONDUITS FROM THE MAIN SERVICE PANEL TO A MINIMUM OF 1/2" BEYOND BUILDING SLAB TERMINATE CONDUITS IN GRASSY AREA AND CAP. PROVIDE LOCATING MEANS AT END OF CONDUIT. LOCATING MEANS SHALL NOT BE VISIBLE ABOVE GRADE.
- PROVIDE NEMA CONFIGURATION RECEPTACLES TO MATCH PLOGS ON EQUIPMENT FURNISHED.

GENERAL SIGNAL NOTES

- PROVIDE CONDUIT FOR HVAC CONTROL CIRCUITS AS REQUIRED TO INTERCONNECT HVAC UNIT TO CONTROL CIRCUITS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR AND CONTROL PROVIDER TO DETERMINE SCOPE OF CONDUITS REQUIRED FOR HVAC CONTROLS. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL REQUIRED CONDUIT. COORDINATE POINTS OF CONNECTION WITH DIVISION 23. PROVIDE FULL CORD IN ALL EMPTY CONDUITS. SEE MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL HVAC EQUIPMENT (AHU, FCU, RTU), DUCT, SMOKE DETECTORS, VAV, FCU, THERMOSTATS, ETC.)
- COMMUNICATION BACKBOARD (CBS) SHALL BE #4 X 1/4" 3/4" PLYWOOD WITH THE BOTTOM AT # ABOVE FINISHED FLOOR. PROVIDE CBS ON ALL WALLS 1/2" FROM EXTEND A BARE COPPER GROUNDING CONDUCTOR FROM THE ELECTRICAL SERVICE GROUND TO THE BACKBOARD AND LEAVE WITH SUFFICIENT SLACK TO REACH ANY PLACE THERE. COAT BACKBOARD WITH A MINIMUM OF 1/2" COATING OF FIRE RESISTANT MATERIAL (MINIMUM 1/4" THICK). PROVIDE CBS WITH A MINIMUM OF 1/2" EXTEND 1" CONDUIT WITH FILL FROM EACH TELECOMMUNICATIONS OUTLET TO ABOVE THE JAY-IN CEILING. TURN CONDUIT 1/2" INTO CEILING CAVITY A MINIMUM OF 8" ABOVE THE CEILING AND TERMINATE WITH AN INSULATED THROAT BUSHING, UNLESS NOTED OTHERWISE.
- A #4 INSULATED COPPER CONDUCTOR RUNNING FROM THE MTGB TO ALL OTHER TELECOMMUNICATIONS GROUNDING NEUBAS SHALL CONSTITUTE THE TELECOMMUNICATIONS BONDING BARRIER (TB).
- EACH TELECOMMUNICATIONS GROUNDING BUSBAR (GB) SHALL BE A PRE-DRILLED COPPER BUSBAR WITH STANDARD NEMA BOLT HOLE SPACING THAT IS NO SMALLER THAN 1/8" THICK BY 1/2" HIGH. CONNECTIONS SHALL BE LISTED TWO HOLES COMPRESSION TYPE.
- PROVIDE SIZES FOR 40% EXPANSION THROUGH CORRIDOR WALLS.
- PROVIDE ALL DUCT (SMOKE DETECTORS) AND ACCESSORIES NECESSARY FOR INTERLOCKING WITH MECHANICAL EQUIPMENT (AHU'S, SMOKE DAMPERS, ETC.). COORDINATE WITH MECHANICAL PLANS FOR LOCATION AND REQUIREMENTS.
- THESE DOCUMENTS MAY NOT INCLUDE ENTIRE ELECTRICAL INFRASTRUCTURE REQUIRED TO SUPPORT THE BUILDING AUTOMATION SYSTEM. COORDINATE WITH BAS PROVIDER ON ALL NECESSARY INFRASTRUCTURE FOR A COMPLETE AND WORKING SYSTEM.
- SUPPORT CABLES WITH J-HOOKS. J-HOOKS SHALL BE PROVIDED AT INTERVALS LESS THAN 5 FEET. PROVIDE METAL SLEEVES FOR ALL WALL PENETRATIONS. DO NOT SUPPORT CABLES FROM STRUCTURE. SEAL ALL FIRE RATED WALL PENETRATIONS. REFER TO ARCHITECTURAL SPECIFICATIONS AND DRAWINGS FOR LOCATIONS AND REQUIREMENTS.
- ALL COMMUNICATION CABLES SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE AND ITS STANDARDS.
- CABLE SHALL BE CONCEALED IN A FINISHED AREA AND ROUTED PARALLEL OR PERPENDICULAR TO THE BUILDING STRUCTURE.

LIGHTING SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	LIGHT FIXTURE (TYPICAL ALL DIMENSIONS)		LIGHT SWITCH (SINGLE POLE)
	LIGHT FIXTURE (SHADING INDICATES EMERGENCY, TYPICAL ALL LIGHTING SYMBOLS)		LIGHT SWITCH "X" INDICATES SWITCH TYPE
	STRIP LIGHT FIXTURE		LIGHT SWITCH LOWERCASE SUBSCRIPT
	LIGHT FIXTURE (TYPICAL ALL DIMENSIONS)		OCCUPANCY SENSOR (CEILING MOUNTED), "X" INDICATES SENSOR TYPE
	WALL-MOUNTED LIGHT FIXTURE		OCCUPANCY SENSOR (WALL MOUNTED), "X" INDICATES SENSOR TYPE
	TRACK LIGHTING		PHOTOCELL LIGHTING CONTROL (CEILING MOUNTED)
	LIGHT FIXTURE (POLE MOUNTED)		PHOTOCELL LIGHTING CONTROL (WALL MOUNTED)
	EMERGENCY LIGHTING UNIT		LIGHTING CONTROL SCHEME CALLOUT (SEE SCHEDULE)
	MULTI-PUSH BUTTON LIGHTING CONTROL STATION		EXIT SIGN, SINGLE SIDED (ARROWS INDICATE CHEVRON DIRECTION)
	LIGHTING CONTROL PANEL		EXIT SIGN, DOUBLE SIDED (ARROWS INDICATE CHEVRON DIRECTION)

POWER AND TELECOMMUNICATIONS SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SIMPLEX RECEPTACLE, "X" INDICATES RECEPTACLE TYPE		1-DROP COMMUNICATION OUTLET
	GFCI SIMPLEX RECEPTACLE, "X" INDICATES RECEPTACLE TYPE		2-DROP COMMUNICATION OUTLET
	DUPLEX RECEPTACLE, "X" INDICATES RECEPTACLE TYPE		4-DROP COMMUNICATION OUTLET
	GFCI DUPLEX RECEPTACLE, "X" INDICATES RECEPTACLE TYPE		1-DROP COMMUNICATION OUTLET (CEILING MOUNTED)
	DUPLEX RECEPTACLE (CEILING MOUNTED), "X" INDICATES RECEPTACLE TYPE		2-DROP COMMUNICATION OUTLET (CEILING MOUNTED)
	DUPLEX RECEPTACLE (FLOOR MOUNTED), "X" INDICATES RECEPTACLE TYPE		1-DROP COMMUNICATION OUTLET (FLOOR MOUNTED)
	GFCI DUPLEX RECEPTACLE (FLOOR MOUNTED), "X" INDICATES RECEPTACLE TYPE		2-DROP COMMUNICATION OUTLET (FLOOR MOUNTED)
	QUADRUPLUX RECEPTACLE (CEILING MOUNTED), "X" INDICATES RECEPTACLE TYPE		4-DROP COMMUNICATION OUTLET (FLOOR MOUNTED)
	QUADRUPLUX RECEPTACLE (FLOOR MOUNTED), "X" INDICATES RECEPTACLE TYPE		COMMUNICATION OUTLET (ROUGH-IN ONLY)
	SPECIAL PURPOSE RECEPTACLE (SEE PLANS FOR NEMA CONFIGURATION AND BRANCH CIRCUITING)		COMMUNICATION OUTLET (CEILING MOUNTED, ROUGH-IN ONLY)
	JUNCTION BOX (CEILING MOUNTED), "X" INDICATES JUNCTION BOX TYPE		CABLE TRAY
	JUNCTION BOX (WALL MOUNTED), "X" INDICATES JUNCTION BOX TYPE		TELECOMMUNICATION CONNECTION LOCATION
	JUNCTION BOX (MOUNTING TYPE NOTED ON PLANS), "X" INDICATES JUNCTION BOX TYPE		W/I ACCESS POINT (CEILING MOUNTED)
	LIGHTING SWITCH (SEE SCHEDULE)		W/I ACCESS POINT (WALL MOUNTED)
	OCCUPANCY SENSOR OVERRIDE (SWITCH W/ ON/OFF BUTTONS AND DIMMER CONTROL)		SPEAKER (CEILING MOUNTED)
	MICROPHONE & SPEAKER INPUT PLATE & BOX		SPEAKER (WALL MOUNTED)
	DISCONNECT SWITCH (FUSIBLE OR NON-FUSIBLE)		SECURITY CARD READER (WALL MOUNTED)
	DISCONNECT SWITCH (ENCLOSED CIRCUIT BREAKER)		CCTV CAMERA (WALL MOUNTED)
	KITCHEN EQUIPMENT CALLOUT (SEE SCHEDULE)		CCTV CAMERA (CEILING MOUNTED)
	FLOORBOX NUMBER INDICATES FLOORBOX TYPE (SEE SCHEDULE)		SECURITY KEYPAD (WALL MOUNTED)
	POKE-THRU NUMBER INDICATES POKE-THRU TYPE (SEE SCHEDULE)		HAND HOLE
	PANELBOARD - BRANCH, SURFACE MOUNTED		AUTOMATIC TRANSFER SWITCH
	PANELBOARD - BRANCH, FLUSH MOUNTED		ELECTRONIC DOOR STRIKE
	PANELBOARD - DISTRIBUTION, SURFACE MOUNTED		MAGNETIC DOOR LOCK
	PANELBOARD - DISTRIBUTION, FLUSH MOUNTED		DOOR POSITION SWITCH
	SWITCHBOARD		TRANSFORMER

EQUIPMENT AND SIGNAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	THERMOSTAT (WALL MOUNTED, ROUGH-IN ONLY)		FIRE ALARM TAMPER SWITCH
	HUMIDISTAT (WALL MOUNTED, ROUGH-IN ONLY)		FIRE ALARM FLOW SWITCH
	SMOKE DETECTOR (CEILING MOUNTED)		FIRE ALARM PRESSURE SWITCH
	SMOKE DETECTOR (DUCT MOUNTED)		FIRE ALARM PULL STATION
	HEAT DETECTOR (CEILING MOUNTED)		FIRE ALARM STROBE NOTIFICATION APPLIANCE (WALL MOUNTED)
	CONTROL PANEL, "X" INDICATES TYPE		FIRE ALARM SPEAKER/STROBE NOTIFICATION APPLIANCE (WALL MOUNTED)
	ADDRESSABLE INPUT MODULE		FIRE ALARM HORN/STROBE NOTIFICATION APPLIANCE (WALL MOUNTED)
	FIRE / SMOKE DAMPER		FIRE ALARM STROBE NOTIFICATION APPLIANCE (CEILING MOUNTED)
	SURGE PROTECTION DEVICE		FIRE ALARM SPEAKER/STROBE NOTIFICATION APPLIANCE (CEILING MOUNTED)
	REMOTE FIRE ALARM ANNUNCIATOR		FIRE ALARM HORN/STROBE NOTIFICATION APPLIANCE (CEILING MOUNTED)
	FIRE ALARM CONTROL PANEL		FIRE ALARM BELL NOTIFICATION APPLIANCE (WALL MOUNTED)
	FIRE ALARM CONNECTION, HOOD EXTINGUISHING TESTED. SEE MECHANICAL DRAWINGS FOR LOCATION. INTERLOCK WITH SHUNT TRIP BREAKERS FOR EQUIPMENT UNDER HOOD.		SECURITY CARD READER (ROUGH-IN ONLY)
	SECURITY CAMERA (CEILING MOUNTED)		SECURITY KEYPAD (ROUGH-IN ONLY)
	SECURITY CAMERA (WALL MOUNTED)		DOOR POSITION SWITCH (ROUGH-IN ONLY)
	SPEAKER FOR PUBLIC ADDRESS SYSTEM		GVR MICROPHONE & SPEAKER INPUT PLATE & BOX
	GVR MICROPHONE & SPEAKER INPUT PLATE & BOX		MAGNETIC DOOR HOLDER
	GVR MICROPHONE & SPEAKER INPUT PLATE & FLOORBOX		



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CLARENCE E. MORGAN RECREATION COMPLEX
1750 GA. 21, SPRINGFIELD, GEORGIA 31329

DRAWING NUMBER

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