

ELECTRICAL

SECTION 262416 - PANELBOARDS

1.1 QUALITY ASSURANCE

A. MANUFACTURER QUALIFICATIONS: ISO 9001 OR 9002 CERTIFIED.

1.2 PRODUCTS

A. GENERAL REQUIREMENTS FOR PANELBOARDS:

1. CONSTRUCTED TO WITHSTAND SEISMIC FORCES.
2. ENCLOSURES: FLUSH MOUNTED.
3. FRONT: HINGED COVER WITH KEY LOCK.
4. OPTIONAL ENCLOSURE FEATURES: SKIRT FOR SURFACE-MOUNTED PANELBOARDS.
5. DIRECTORY CARD.
6. INCOMING MAINS: CONVERTIBLE BETWEEN TOP AND BOTTOM.
7. PHASE, NEUTRAL, AND GROUND BUSES: TIN-PLATED ALUMINUM.
8. CONDUCTOR CONNECTORS:
9. MATERIAL: TIN-PLATED ALUMINUM.
10. MAIN AND NEUTRAL LUGS: MECHANICAL TYPE.
11. FEED-THROUGH LUGS: MECHANICAL TYPE.
12. PERCENTAGE OF FUTURE SPACE CAPACITY: FIVE PERCENT.
13. SERVICE EQUIPMENT LABEL FOR PANELBOARDS INCORPORATING ONE OR MORE MAIN SERVICE DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES.
14. PANELBOARD OR LOAD CENTER SHORT-CIRCUIT CURRENT RATING: FULLY RATED TO INTERRUPT SYMMETRICAL SHORT-CIRCUIT CURRENT AVAILABLE AT TERMINALS. LISTED SERIES RATED SYSTEM MAY BE USED IF APPROVED BY EOR TO LIMIT FAULT TO BELOW 22K AIC FOR GFI BREAKERS.
15. MAINS: LUGS ONLY.
16. BRANCH OVERCURRENT PROTECTIVE DEVICES FOR CIRCUIT-BREAKER FRAME SIZES LARGER THAN 125 A: BOLT-ON CIRCUIT BREAKERS.
17. LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS:
18. MAINS: LUGS ONLY.
19. BRANCH OVERCURRENT PROTECTIVE DEVICES: PLUG-IN CIRCUIT-BREAKER TYPE.
20. DOORS: CONCEALED HINGE.
21. LOAD CENTERS:
22. MAINS: LUGS ONLY.
23. BRANCH CIRCUIT BREAKERS: PLUG-IN.
24. DOORS: CONCEALED HINGE.
25. CONDUCTOR CONNECTORS: MECHANICAL TYPE.
26. DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES:
27. CIRCUIT BREAKERS: THERMAL-MAGNETIC TYPES.
28. GFI CIRCUIT BREAKERS: RATED FOR PERSONNEL.
29. AFCI CIRCUIT BREAKERS: AS REQUIRED BY CODE.
30. OPTIONS AND TYPES AS NEEDED.
31. IDENTIFICATION:
32. PANELBOARD LABELS: MANUFACTURER'S NAME AND TRADEMARK, VOLTAGE, AMPERAGE, NUMBER OF PHASES, ARC FLASH HAZARD, AND NUMBER OF POLES SHALL BE LOCATED ON THE INTERIOR OF THE PANELBOARD DOOR.
33. BREAKER LABELS: FACEPLATE SHALL LIST CURRENT RATING, UL AND IEC CERTIFICATION STANDARDS, AND AIC RATING.
34. CIRCUIT DIRECTORY: DIRECTORY CARD INSIDE PANELBOARD DOOR, MOUNTED IN TRANSPARENT CARD HOLDER.
35. ACCESSORIES:
36. ACCESSORY SET INCLUDING TOOLS.
37. PORTABLE TEST SET: FOR TESTING FUNCTIONS OF SOLID-STATE TRIP DEVICES WITHOUT REMOVING FROM PANELBOARD.

1.3 FIELD QUALITY CONTROL

A. TESTING: BY CONTRACTOR.

END OF SECTION 262416

ELECTRICAL

SECTION 262713 - ELECTRICITY METERING

1.1 EQUIPMENT FOR ELECTRICITY METERING BY UTILITY COMPANY

A. UTILITY-COMPANY-COMPLIANT CURRENT-TRANSFORMER CABINETS: COMPLY WITH REQUIREMENTS OF ELECTRICAL-POWER UTILITY COMPANY.

B. METER SOCKETS: COMPLY WITH REQUIREMENTS OF ELECTRICAL-POWER UTILITY COMPANY.

END OF SECTION 262713

ELECTRICAL

SECTION 262726 - WIRING DEVICES

1.1 PRODUCTS

A. RECEPTACLES: DUPLEX, 125 V, 20 A.

1. STRAIGHT BLADE: CONVENIENCE AND ISOLATED GROUND.
2. GFCI: FEED THROUGH.
3. TWIST-LOCKING TYPE WITH ISOLATED-GROUND TERMINAL.

B. PENDANT CORD-CONNECTOR DEVICES WITH EXTERNAL CABLE GRIP.

C. CORD AND PLUG SETS: MATCH VOLTAGE AND CURRENT RATINGS AND NUMBER OF CONDUCTORS TO REQUIREMENTS OF EQUIPMENT BEING CONNECTED.

D. TOGGLE SWITCHES: 120/277 V, 20 A.

1. PILOT-LIGHT SWITCHES.
2. KEY-OPERATED SWITCHES.

E. WALL-BOX DIMMERS:

1. MODULAR, FULL-WAVE, SOLID-STATE UNITS WITH SLIDER CONTROL.
2. INCANDESCENT: SOFT TAP OR OTHER QUIET SWITCH; EMI/RFI FILTER TO ELIMINATE INTERFERENCE.
3. FLUORESCENT: TRIM POTENTIOMETER FOR LOW-END DIMMING.
4. LED: COMPATIBLE WITH LED DRIVER OR LAMP.

F. WALL PLATES:

1. MATERIAL FOR BAR: THERMOPLASTIC WITH COLOR PER STARBUCKS.
2. MATERIAL FOR CUSTOMER AREAS: THERMOPLASTIC WITH COLOR OPTION PER STARBUCKS.

G. FINISHES:

1. CONNECTED TO NORMAL POWER SYSTEM: CONFIRM COLOR WITH STARBUCKS REPRESENTATIVE.

END OF SECTION 262726

ELECTRICAL

SECTION 262816 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

1.1 PRODUCTS

A. FUSIBLE SWITCHES:

1. GENERAL DUTY, SINGLE THROW, 240-V AC, 800 A AND SMALLER: UL 98 AND NEMA KS 1, TYPE GD.

B. ACCESSORIES:

1. EQUIPMENT GROUND KIT.
2. NEUTRAL KIT.
3. ISOLATED GROUND KIT.
4. CLASS R FUSE KIT.
5. AUXILIARY CONTACT KIT.
6. HOOKSTICK HANDLE.
7. LUGS: MECHANICAL.
8. SERVICE-RATED SWITCHES.
9. ACCESSORY CONTROL POWER.

C. NONFUSIBLE SWITCHES:

1. GENERAL DUTY, SINGLE THROW, 240-V AC, 600 A AND SMALLER: UL 98 AND NEMA KS 1, TYPE GD.

D. ACCESSORIES:

1. EQUIPMENT GROUND KIT.
2. NEUTRAL KIT.
3. ISOLATED GROUND KIT.
4. AUXILIARY CONTACT KIT.
5. HOOKSTICK HANDLE.
6. LUGS: MECHANICAL.
7. ACCESSORY CONTROL POWER.

E. MOLDED-CASE CIRCUIT BREAKERS:

1. THERMAL-MAGNETIC TYPE.
2. ADJUSTABLE INSTANTANEOUS-TRIP TYPE.
3. ELECTRONIC-TRIP TYPE.
4. CURRENT-LIMITING TYPE.
5. INTEGRALLY FUSED TYPE.
6. GFCI TYPE.
7. GFEP TYPE.
8. FEATURES AND ACCESSORIES:
9. LUGS: MECHANICAL.
10. TYPE SWD FOR SWITCHING FLUORESCENT LIGHTING LOADS.
11. TYPE HID FOR FEEDING FLUORESCENT AND HIGH-INTENSITY DISCHARGE LIGHTING CIRCUITS.
12. GROUND-FAULT PROTECTION: INTEGRALLY MOUNTED, SELF-POWERED TYPE.
13. SHUNT TRIP.
14. UNDERVOLTAGE TRIP: 35 TO 75 PERCENT OF RATED VOLTAGE WITHOUT INTENTIONAL TIME DELAY.
15. AUXILIARY CONTACTS: TWO SPOT SWITCHES.
16. ALARM SWITCH: ONE NO CONTACT.
17. KEY INTERLOCK KIT.
18. ZONE-SELECTIVE INTERLOCKING: INTEGRAL WITH ELECTRONIC TRIP.
19. ELECTRICAL OPERATOR.
20. ACCESSORY CONTROL POWER.

F. MOLDED-CASE SWITCHES:

1. MCCB WITH FIXED, HIGH-SET INSTANTANEOUS TRIP ONLY, AND SHORT-CIRCUIT WITHSTAND RATING EQUAL TO EQUIVALENT BREAKER FRAME SIZE INTERRUPTING RATING.
2. FEATURES AND ACCESSORIES:
3. LUGS: MECHANICAL.
4. GROUND-FAULT PROTECTION: REMOTE-MOUNTED AND POWERED TYPE.
5. SHUNT TRIP.
6. UNDERVOLTAGE TRIP: 35 TO 75 PERCENT OF RATED VOLTAGE WITHOUT INTENTIONAL TIME DELAY.
7. AUXILIARY CONTACTS: TWO SPOT SWITCHES.
8. ALARM SWITCH: ONE NO CONTACT.
9. KEY INTERLOCK KIT.
10. ZONE-SELECTIVE INTERLOCKING: INTEGRAL WITH REMOTE GROUND-FAULT TRIP UNIT.
11. ELECTRICAL OPERATOR.
12. ACCESSORY CONTROL POWER.

G. ENCLOSURES:

1. INDOOR, DRY AND CLEAN LOCATIONS: NEMA 250, TYPE 1.
2. OUTDOOR LOCATIONS: NEMA 250, TYPE 3R.

1.2 FIELD QUALITY CONTROL

A. TESTING: BY CONTRACTOR.

1.3 ADJUSTING

A. SET FIELD-ADJUSTABLE CIRCUIT-BREAKER TRIP RANGES.

END OF SECTION 262816

FIRE ALARM

1.1 GENERAL

A. FURNISH AND INSTALL A COMPLETE FIRE ALARM SYSTEM AS DESCRIBED HEREIN AND AS SHOWN ON THE PLANS; TO BE WIRED, CONNECTED AND LEFT IN FIRST CLASS OPERATING CONDITION. THE SYSTEM SHALL USE ANALOG ADDRESSABLE INITIATING DEVICE CIRCUITS WITH INDIVIDUAL DEVICE SUPERVISION, INCOMING AND STANDBY POWER SUPERVISION. INCLUDE CONTROL PANELS, POWER SUPPLIES, REMOTE ANNUNCIATORS, MANUAL PULL STATIONS, ADDRESSABLE INTERFACES TO SPRINKLER SYSTEM DEVICES FURNISHED BY OTHERS (IF APPLICABLE), AND KITCHEN SUPPRESSION SYSTEM(S) FURNISHED BY OTHERS (IF APPLICABLE), HORNS, STROBES, REMOTE CONTROL DEVICES, WIRING, CONNECTIONS TO DEVICES, OUTLET BOXES, JUNCTION BOXES, AND ALL OTHER NECESSARY MATERIAL FOR A COMPLETE OPERATING SYSTEM.

B. THE FIRE ALARM CONTROL PANEL SHALL ALLOW FOR LOADING OR EDITING SPECIAL INSTRUCTIONS AND OPERATING SEQUENCES AS REQUIRED. THE SYSTEM IS TO BE CAPABLE OF ON-SITE PROGRAMMING TO ACCOMMODATE EXPANSION, BUILDING PARAMETER CHANGES OR CHANGES AS REQUIRED BY LOCAL CODES. ALL SOFTWARE OPERATIONS ARE TO BE STORED IN A NON-VOLATILE PROGRAMMABLE MEMORY WITHIN THE FIRE ALARM CONTROL PANEL. LOSS OF PRIMARY AND SECONDARY POWER SHALL NOT ERASE THE INSTRUCTIONS STORED IN MEMORY.

C. ALL PANELS AND PERIPHERAL DEVICES SHALL BE THE STANDARD PRODUCT OF A SINGLE MANUFACTURER AND SHALL DISPLAY THE MANUFACTURER'S NAME ON EACH COMPONENT. THE CATALOG NUMBERS SPECIFIED UNDER THIS SECTION ARE THOSE OF SIMPLEX TIME RECORDER CO. AND CONSTITUTE THE MATERIAL AND DESIRED OPERATING FEATURES THAT ARE TO BE FURNISHED.

1.2 POWER REQUIREMENTS

A. THE CONTROL PANEL SHALL RECEIVE 120 VAC POWER (AS NOTED ON THE PLANS) VIA A DEDICATED FUSED DISCONNECT CIRCUIT.

B. THE CONTROL PANEL SHALL CONTAIN FOUR (4) NOTIFICATION APPLIANCE CIRCUITS FOR ALARM HORNS AND STROBES AS A MINIMUM. NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL(S) SHALL BE FURNISHED AND INSTALLED AS REQUIRED TO OPERATE ALL NOTIFICATION APPLIANCES SHOWN ON THE PLANS WITH 20% SPARE CAPACITY PER CIRCUIT FOR FUTURE ADDITIONS.

C. THE SYSTEM SHALL BE PROVIDED WITH SUFFICIENT BATTERY CAPACITY TO OPERATE THE ENTIRE SYSTEM UPON LOSS OF NORMAL 120 VAC POWER IN A NORMAL SUPERVISORY MODE FOR A PERIOD OF TWENTY-FOUR (24) HOURS WITH FIVE (5) MINUTES OF ALARM OPERATION AT THE END OF THIS PERIOD. THE SYSTEM SHALL AUTOMATICALLY TRANSFER TO THE STANDBY BATTERIES UPON POWER FAILURE. ALL BATTERY CHARGING AND RECHARGING SHALL BE AUTOMATIC.

D. ALL CIRCUITS REQUIRING SYSTEM-OPERATING POWER SHALL BE 24VDC AND SHALL BE INDIVIDUALLY FUSED AT THE CONTROL PANEL.

2.1 FIRE ALARM CONTROL PANEL

A. WHERE SHOWN ON THE PLANS, PROVIDE AND INSTALL A SIMPLEX MODEL 4010-9101 FIRE ALARM CONTROL PANEL. CONSTRUCTION SHALL BE MODULAR WITH SOLID STATE MICROPROCESSOR BASED ELECTRONICS. IT SHALL DISPLAY ONLY THOSE PRIMARY CONTROLS AND DISPLAYS ESSENTIAL TO OPERATIONS DURING A FIRE ALARM CONDITION.

B. THE CONTROL PANEL SHALL HAVE AN 80-CHARACTER LCD DISPLAY AND PERFORM ALL FUNCTIONS LISTED IN THIS SPECIFICATION. THE DISPLAY SHALL BE BACKLIT FOR ENHANCED READABILITY. SO AS TO CONSERVE BATTERY STANDBY POWER, IT SHALL NOT BE LIT DURING AN AC POWER FAILURE UNLESS AN ALARM CONDITION OCCURS OR THERE SHOULD BE KEYPAD ACTIVITY.

C. THE CONTROL PANEL SHALL CONTAIN ALL NECESSARY HARDWARE AND SOFTWARE REQUIRED TO MONITOR A MINIMUM OF 250 ADDRESSABLE DEVICES AND MONITOR AND CONTROL FOUR (4) NOTIFICATION APPLIANCE CIRCUITS. IT SHALL CONTAIN A MINIMUM OF TWO (2) PROGRAMMABLE AUXILIARY RELAYS AND CONTAIN THE CIRCUITRY TO OPERATE A SERIAL CONTROLLED REMOTE ANNUNCIATOR PANEL.

D. THE CONTROL PANEL SHALL INCLUDE AN INTEGRAL DIGITAL ALARM COMMUNICATING TRANSMITTER (DACT) TO TRANSMIT FIRE ALARM ACTIVATION TO AN OWNER-SELECTED CENTRAL MONITORING LOCATION. THE COMMUNICATOR SHALL BE UL 864 LISTED AS CONFORMING TO THE REQUIREMENTS OF NFPA 71. IT SHALL BE LISTED AS AN INTEGRAL COMPONENT WITH THE FIRE ALARM CONTROL PANEL. THE COMMUNICATOR SHALL SUPERVISE (2) TWO TELEPHONE LINES AND BE CAPABLE OF SEIZING THE TELEPHONE LINE AND SENDING AN ALARM SIGNAL ON ONE OR BOTH LINES WITHOUT THE NEED OF ANY ADDITIONAL EQUIPMENT. THE COMMUNICATOR SHALL BE CAPABLE OF TRANSMITTING TO SILENT KNIGHT, RADIONICS OR ADEMCO RECEIVING STATIONS.

2.2 PERIPHERAL DEVICES

A. MANUAL STATIONS: FURNISH AND INSTALL WHERE SHOWN ON THE DRAWINGS SIMPLEX TYPE 4099-9001 SINGLE ACTION ADDRESSABLE MANUAL PULL STATIONS.

B. SMOKE SENSORS: FURNISH AND INSTALL SIMPLEX MODEL 4098-9710 TRUEALARM SMOKE SENSORS WHERE INDICATED ON DRAWINGS.

C. WATERFLOW AND OS&Y MONITOR SWITCHES: WATERFLOW AND OS&Y MONITOR SWITCHES SHALL BE FURNISHED AND INSTALLED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS BUT SHALL BE WIRED AND CONNECTED TO THE FIRE ALARM SYSTEM BY THE ELECTRICAL CONTRACTOR.

D. INDIVIDUAL ADDRESSABLE MODULE (IAM): FURNISH AND INSTALL SIMPLEX MODEL 4090-9001 INDIVIDUAL ADDRESSABLE MODULES AS REQUIRED. THE UNITS SHALL PROVIDE LOCATION SPECIFIC ADDRESSABILITY TO NON-ADDRESSABLE DEVICES SUCH AS WATERFLOW AND SPRINKLER TAMPER SWITCHES, FURNISHED BY OTHERS, BY MONITORING NORMALLY OPEN DRY CONTACTS.

E. AUDIBLE/VISIBLE UNITS: FURNISH AND INSTALL WHERE SHOWN ON THE PLANS, SIMPLEX TYPE 4903-9418 SYNCHRONIZED AUDIBLE/VISIBLE UNITS. THE VISIBLE PORTION OF THE APPLIANCES SHALL PROVIDE 75 CD ILLUMINATION AND HAVE A FLASH RATE OF 1 HZ OVER THE ENTIRE OPERATING VOLTAGE RANGE AS REQUIRED BY THE AMERICANS WITH DISABILITIES ACT (ADA). 1575 CANDELA DEVICES WILL NOT BE CONSIDERED AS EQUAL. THE OUTPUT OF THE AUDIBLE PORTION OF THE APPLIANCE SHALL BE RATED AT 91 DBA AT 10 FEET.

3.1 TRAINING AND WARRANTY

A. PROVIDE THE SERVICES OF A FACTORY-EMPLOYED SERVICE REPRESENTATIVE TO DEMONSTRATE THE SYSTEM AND TRAIN OWNER'S MAINTENANCE PERSONNEL AS SPECIFIED BELOW.

1. TRAIN OWNER'S MAINTENANCE PERSONNEL IN THE PROCEDURES AND SCHEDULES INVOLVED IN OPERATING, TROUBLESHOOTING, SERVICING, AND PREVENTATIVE MAINTAINING OF THE SYSTEM. PROVIDE A MINIMUM OF 4 HOURS TRAINING.
2. SCHEDULE TRAINING WITH OWNER AT LEAST SEVEN DAYS IN ADVANCE.

3.2 WARRANTY

A. THE CONTRACTOR SHALL WARRANT THE COMPLETED FIRE ALARM SYSTEM WIRING AND EQUIPMENT TO BE FREE FROM INHERENT MECHANICAL AND ELECTRICAL DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF COMPLETED AND CERTIFIED TEST.

B. THE EQUIPMENT MANUFACTURER SHALL MAKE AVAILABLE TO THE OWNER A MAINTENANCE CONTRACT PROPOSAL TO PROVIDE A MINIMUM OF TWO (2) INSPECTIONS AND TESTS PER YEAR IN COMPLIANCE WITH NFPA-72H GUIDELINES.



REV.	DATE	DESCRIPTION
1	08/27/2021	BUILDING DEPARTMENT REVISIONS



MARIETTA HWY & I-575
5068 MARIETTA HIGHWAY
CANTON, GA 30114

SPECIFICATIONS

ISSUED FOR CONSTRUCTION	DATE
BID	
PROJECT MANAGER	DESIGNER
AK	DB

JOB NO.
2020379.07

G0014