

ELECTRICAL GENERAL NOTES:

GENERAL
THESE GENERAL NOTES PRESENT AND/OR SUMMARIZE KEY PRODUCT INFORMATION FOR THE PLAN READER'S CONVENIENCE. SEE PLANS AND SPECIFICATIONS FOR FURTHER REQUIREMENTS.

WORK COVERED BY THIS DOCUMENT SHALL INCLUDE ALL LABOR, MATERIAL, PRODUCTS, AND SERVICES FOR, AND INCIDENTAL TO, INSTALLATION OF COMPLETE AND OPERATING ELECTRICAL SYSTEMS DRAWN OR SPECIFIED.

ALL WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES INCLUDING, BUT NOT LIMITED TO, THE NATIONAL ELECTRICAL CODE (NFPA 70-2017). ALL MATERIALS SHALL BE NEW AND UL LISTED/LABELED AS APPROPRIATE. FINAL LOCATIONS FOR ROUGH-INS SHALL BE VERIFIED WITH ACTUAL EQUIPMENT BEING CONNECTED. SUPPORT AND ATTACH ELECTRICAL EQUIPMENT IN ACCORDANCE WITH SEISMIC CONDITIONS AS DETERMINED BY THE STRUCTURAL ENGINEER/BUILDING DESIGNER AND THE INTERNATIONAL BUILDING CODE. AFTER COMPLETING INSTALLATION, REMOVE BURRS, DIRT, AND CONSTRUCTION DEBRIS FROM ALL ELECTRICAL WORK.

COORDINATE OUTLET LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS AND DETAILS.

COORDINATE HVAC AND PLUMBING EQUIPMENT LOCATIONS WITH MECHANICAL PLANS, DETAILS AND DETAILS.

COORDINATE SITE LIGHTING AND SITE UTILITIES WITH LANDSCAPING/CIVIL PLANS AND DETAILS.

CONTRACTOR TO COORDINATE SERVICE AND METERING INSTALLATION REQUIREMENTS, AIC RATING, AND PANEL SCCR WITH UTILITY COMPANY PRIOR TO BID AND INSTALLATION.

COORDINATE SIGNAL SERVICE REQUIREMENTS WITH SERVING UTILITY.

ELECTRICAL INSTALLATION SHALL BE SEISMIC BRACED PER APPLICABLE SECTIONS OF THE STANDARD BUILDING CODE.

CONSULT MANUFACTURERS' SHOP DRAWINGS FOR REQUIREMENTS AND EXACT LOCATION OF ELECTRICAL CONNECTIONS FOR EQUIPMENT FURNISHED BY OTHERS. BRANCH-CIRCUIT WIRING SHALL MEET ALL REQUIREMENTS OF THE EQUIPMENT MANUFACTURER.

SIZE DISCONNECT SWITCHES AND OVERCURRENT PROTECTION IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURERS' RECOMMENDATIONS AND THE N.E.C.

SIZE FUSES IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURERS' RECOMMENDATIONS AND THE N.E.C.

INSTALL JUNCTION BOXES, CONDUIT BODIES, AND HANDHOLE ENCLOSURES SUCH THAT WIRING WITHIN IS ACCESSIBLE IN ACCORDANCE WITH NEC 314.29.

MOUNTING HEIGHT DIMENSIONS FOR WIRING DEVICES ARE FROM THE FINISHED FLOOR UP TO THE CENTER OF THE OUTLET BOX.

CENTER OUTLETS HORIZONTALLY IN ARCHITECTURAL FEATURES.

DO NOT SCALE DRAWINGS. DEVICE LOCATIONS ARE APPROXIMATE UNLESS DIMENSIONED. ACTUAL DEVICE LOCATIONS SHALL BE FIELD COORDINATED WITH ALL OTHER TRADES AND APPLICABLE CODES.

INSTALL PHOTO CELL(S) ABOVE ROOF. ORIENT TO NORTHERN EXPOSURE AND SHIELD FROM EXTRANEOUS LIGHT. PROVIDE FLASHING AND SEAL ROOF PENETRATION(S).

INSTALL ADDITIONAL BRANCH-CIRCUIT CONDUCTORS TO PROVIDE UN-SWITCHED CONNECTION TO EACH EMERGENCY FIXTURE BATTERY.

DO NOT USE COMMON NEUTRALS FOR MULTI-WIRE CIRCUITS. INSTALL A NEUTRAL FOR EACH PHASE.

ALL CONDUCTORS SHALL BE NO SMALLER THAN #12.

ALL RACEWAYS SHALL BE 3/4" DIA. MIN. UNLESS OTHERWISE NOTED.

GENERAL CONTRACTOR TO PROVIDE ACCESS PANELS FOR ALL INACCESSIBLE, ABOVE-CEILING ELECTRICAL EQUIPMENT AND JUNCTION BOXES PER 2017 NEC SECTION 314.29. COORDINATE LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

CONDUCTORS
INSULATION SHALL COMPLY WITH NEMA WC 5. CONDUCTORS #8 AWG AND LARGER SHALL BE CONCENTRIC STRANDED. CONDUCTORS #10 AND SMALLER SHALL BE SOLID.

TYPE AND INSULATION (SERVICE): COPPER, TYPE THWN
TYPE AND INSULATION (FEEDER): COPPER, TYPE THHN/THWN
TYPE AND INSULATION (BRANCH): COPPER, TYPE THHN/THWN
COPPER, TYPE MC

COLOR CODING (208/120 V. 3Ø): A-BLACK, B-BRED, C-BLUE, N-WHITE, G-GREEN

RACEWAYS
CONDUIT BODIES AND FITTINGS FOR RIGID METAL CONDUIT SHALL BE CAST THREADED TYPE. CONDUIT FITTINGS FOR ELECTRICAL METALLIC TUBING SHALL BE COMPRESSION TYPE. INSTALL 200 lb NYLON PULL CORD IN ALL EMPTY RACEWAYS FOR FUTURE USE. APPLY FIRESTOPPING TO ELECTRICAL PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES TO RESTORE ORIGINAL FIRE-RESISTANCE RATING OF ASSEMBLY.

OUTDOORS EXPOSED: RIGID GALVANIZED STEEL CONFORMING TO ANSI C80.5
OUTDOORS UNDERGROUND: RIGID NONMETALLIC CONDUIT (SCHEDULE 40 PVC) CONFORMING TO NEMA TC 2

OUTDOORS CONNECTED TO VIBRATING OR MOTORIZED EQUIPMENT: LIQUIDTIGHT FLEXIBLE METAL CONDUIT CONFORMING TO UL 360
INDOORS CONCEALED: ELECTRICAL METALLIC TUBING CONFORMING TO ANSI C80.3
INDOORS EXPOSED: ELECTRICAL METALLIC TUBING CONFORMING TO ANSI C80.3
INDOORS CONNECTED TO VIBRATING OR MOTORIZED EQUIPMENT: FLEXIBLE METALLIC CONDUIT CONFORMING TO UL 1

OUTLET BOXES
BOXES SHALL COMPLY WITH NEMA OS 1 AND SHALL BE SHEET METAL TYPE WITH PASTER RING IN DRY LOCATIONS. BOXES SHALL COMPLY WITH NEMA FB 1 AND SHALL BE CAST METAL TYPE FD WITH GASKETED COVER IN DAMP OR WET LOCATIONS.

PULL AND JUNCTION BOXES
BOXES SHALL BE HOT-DIPPED GALVANIZED STEEL. BOX COVERS SHALL BE GASKETED TYPE WITH SCREWED OR BOLTED FASTENERS.

WIRING DEVICES
DEVICES SHALL COMPLY WITH NEMA WD 1 AND WD 6. DEVICES SHALL BE COMMERCIAL SPECIFICATION GRADE OR BETTER. ALL DEVICES SHALL BE OF THE GROUNDING TYPE. DEVICES SHALL BE MOUNTED FLUSH WITH THE LONG DIMENSION VERTICAL AND GROUNDING TERMINAL OF RECEPTACLES ON TOP. SWITCHES SHALL BE QUIET TYPE, RATED 20 AMPERES AT 120/277 VOLTS. GROUND FAULT CIRCUIT INTERRUPTERS SHALL BE FEED-THROUGH TYPE. WEATHERPROOF COVERS SHALL BE PROVIDED IN DAMP OR WET LOCATIONS. PROGRAM OCCUPANCY SENSORS FOR FIFTEEN MINUTES WITH MEDIUM SENSITIVITY. TRAIN OWNER TO ADJUST TIME AND SENSITIVITY.

DEVICE COLOR: SELECTED BY ARCHITECT.
DEVICE COVER: SMOOTH PLASTIC WITH COLOR TO MATCH DEVICE COLOR

ELECTRICAL IDENTIFICATION
IN ADDITION TO CODE-REQUIRED LABELING, ALL PANELBOARDS, ELECTRICAL ENCLOSURES, TRANSFORMERS, AND DISCONNECT SWITCHES SHALL BE IDENTIFIED WITH AN ENGRAVED PLASTIC LAMINATED NAMEPLATE. LETTERING SHALL BE 1/2" INCHES HIGH AND SHALL BE WHITE ON A BLACK BACKGROUND. NAMEPLATES SHALL BE ATTACHED TO EQUIPMENT WITH STAINLESS STEEL SELF-TAPPING SCREWS. CONTRACTOR TO COORDINATE WITH THE UTILITY COMPANY TO DETERMINE THE AVAILABLE FAULT CURRENT AT THE PANEL LOCATION SHOWN ON THE DRAWINGS. CONTRACTOR TO PROVIDE ELECTRICAL EQUIPMENT WITH AIC RATING OVER THE CALCULATED FAULT CURRENT. CALCULATED FAULT CURRENT SHALL BE LISTED ON EACH PIECE OF ELECTRICAL EQUIPMENT. CONTRACTOR TO PROVIDE AND AFFIX ARC FLASH WARNING LABELS ON ALL ELECTRICAL SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS, LOAD CENTERS, DISCONNECTS AND ENCLOSED CIRCUIT BREAKERS PER 2017 NEC ARTICLE 110.16.

GROUNDING
GROUNDING AND BONDING COMPONENTS SHALL COMPLY WITH UL 467. AN INSULATED EQUIPMENT-GROUNDING CONDUCTOR SHALL BE INSTALLED WITH CIRCUIT CONDUCTORS FOR ALL FEEDER AND BRANCH CIRCUITS. EXOTHERMIC-WELDED CONNECTIONS SHALL BE USED FOR ATTACHMENT TO STRUCTURAL STEEL AND UNDERGROUND CONNECTIONS. GROUNDING ELECTRODES SHALL BE 3/4" x 10' COPPERWELD TYPE.

PANELBOARDS
PANELBOARDS SHALL COMPLY WITH NEMA PB 1. SHOP DRAWINGS FOR EACH PANELBOARD SHALL BE SUBMITTED AND SHALL INCLUDE BUS CONFIGURATION AND CURRENT RATINGS. OVERCURRENT DEVICE ARRANGEMENT AND SETTINGS, AND PANELBOARD SHORT CIRCUIT RATING. PHASE AND NEUTRAL BUSES SHALL BE COPPER. AN EQUIPMENT GROUND BUS SHALL BE PROVIDED AND SHALL BE BONDED TO THE PANEL BOX. PANELBOARDS WITH A MAIN SERVICE DISCONNECT SHALL BE LISTED FOR USE AS SERVICE EQUIPMENT. PANELBOARD TRIM SHALL BE BOLT-ON TYPE. CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE. CIRCUIT BREAKERS SHALL BE LISTED FOR SWD, HID OR HACR USE AS APPROPRIATE. MULTI-POLE CIRCUIT BREAKERS SHALL HAVE A COMMON TRIP. TANDEM CIRCUIT BREAKERS SHALL NOT BE USED. FILLER PLATES SHALL BE INSTALLED IN UNUSED SPACES. A TYPED CIRCUIT DIRECTORY SHALL BE INSTALLED ON THE INSIDE OF THE PANELBOARD DOOR.

FUSES
FUSES SHALL BE NEMA FU 1 CARTRIDGE TYPE. VOLTAGE RATING SHALL BE CONSISTENT WITH CIRCUIT VOLTAGE. ARRANGE FUSES IN FUSIBLE DEVICES SO FUSE RATINGS ARE READABLE WITHOUT REMOVING FUSE. INSTALL TYPEWRITTEN LABELS ON INSIDE DOOR OF EACH FUSIBLE DEVICE TO INDICATE FUSE REPLACEMENT INFORMATION.

MOTOR FEEDER AND BRANCH CIRCUITS: UL CLASS RK5, TIME DELAY
OTHER FEEDER AND BRANCH CIRCUITS: UL CLASS RK1, NON-TIME DELAY

DISCONNECT SWITCHES
SWITCHES SHALL BE FUSED OR NONFUSED NEMA KS 1 TYPE HD. SWITCHES SHALL BE HANDLE LOCKABLE AND INTERLOCKED WITH COVER IN CLOSED POSITION. ENCLOSURES SHALL BE NEMA TYPE 1 IN INDOOR LOCATIONS AND NEMA TYPE 3R IN OUTDOOR LOCATIONS. HVAC EQUIPMENT DISCONNECTS ARE TO BE CONSIDERED ELECTRICAL EQUIPMENT AND SHALL BE INSTALLED TO MAINTAIN WORKING SPACE PER 2017 NEC ARTICLE 110.26.

INTERIOR LIGHTING
FIXTURE MOUNTING HARDWARE AND TRIM SHALL BE COORDINATED WITH THE CEILING SYSTEM. RECESSED FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURAL SYSTEM.

FIRE ALARM SYSTEM
SYSTEM COMPONENTS AND INSTALLATION SHALL CONFORM TO THE NATIONAL FIRE ALARM CODE (NFPA 72-2019). ALL EXPOSED WIRING SHALL BE INSTALLED IN METALLIC RACEWAY. ALL CONCEALED WIRING SHALL BE INSTALLED IN METALLIC RACEWAY STUBBED ABOVE ACCESSIBLE CEILING.

VOICE AND DATA SYSTEMS
PROVIDE EMPTY INFRASTRUCTURE ONLY. INSTALL BLANK FACEPLATES FOR OUTLETS. USE A CONDUIT BUSHING OR INSULATED FITTING TO TERMINATE STUB-UPS. PROVIDE PULL STRING IN EACH CONDUIT.

TRANSFER SWITCH
SWITCH SHALL COMPLY WITH U.L. 1008-89. SWITCH SHALL BE SIZED TO MATCH THE GENERATOR. SWITCH SHALL HAVE A SOLID NEUTRAL, EXERCISER TIME CLOCK AND BATTERY CHARGER.

ENGINE GENERATOR
THE EMERGENCY POWER SUPPLY SYSTEM SHALL BE LEVEL 2 IN ACCORDANCE WITH NFPA 110. ENGINE GENERATOR SHALL BE COMPLETE WITH WEATHERPROOF HOUSING, FUEL TANK, STARTING BATTERIES AND OUTPUT CIRCUIT BREAKER.

LIGHTNING PROTECTION SYSTEM
PROVIDE AND INSTALL COMPLETE LIGHTNING PROTECTION SYSTEM. SYSTEM COMPONENTS AND INSTALLATION SHALL CONFORM TO NFPA 703-2020.

ELECTRICAL SYMBOLS

- EXIT SIGN - SHADING INDICATES FACE(S)
- DOWNLIGHT
- DOWNLIGHT W/ EMERGENCY BATTERY PACK
- 2X4' FIXTURE
- ▤ 2X4' FIXTURE W/ EMERGENCY BATTERY PACK
- ⊕ WALL-MOUNTED LIGHT FIXTURE
- ⊕⊕ WALL-MOUNTED LIGHT FIXTURE W/ EMERGENCY BATTERY PACK
- ▬ UNDER CABINET LIGHT
- GROUND MOUNTED LIGHT FIXTURE
- ⊕ POLE MOUNTED LIGHT FIXTURE
- S SPST TOGGLE SWITCH 48" AFF TOP OF BOX
- S₃ THREE WAY TOGGLE SWITCH 48" AFF TOP OF BOX
- S₄ FOUR WAY TOGGLE SWITCH 48" AFF TOP OF BOX
- S_{3D3} THREE WAY WALL MOUNTED DIMMER SWITCH 48" AFF TOP OF BOX. PROVIDE (1) XSW-ORLO-WH AT EACH SWITCH LOCATION AND (1) XRC2-1RD (0-10V ROOM CONTROLLER/POWER PACK) PER ROOM
- ⊕ DUPLX CONVENIENCE OUTLET 18" AFF
- ⊕^C DUPLX CONVENIENCE OUTLET 6" ABOVE COUNTER/BACKSPLASH. 48" AFF MAX TO TOP OF BOX. COORDINATE MOUNTING HEIGHTS WITH MILLWORK
- ⊕^G DUPLX CONVENIENCE OUTLET 18" AFF GROUND FAULT INTERRUPTER TYPE
- ⊕^{CG} DUPLX CONVENIENCE OUTLET 6" ABOVE COUNTER/BACKSPLASH. 48" AFF MAX TO TOP OF BOX. COORDINATE MOUNTING HEIGHTS WITH MILLWORK. GROUND FAULT INTERRUPTER TYPE
- ⊕^{WP} DUPLX CONVENIENCE OUTLET 18" AFF WEATHERPROOF GROUND FAULT INTERRUPTER TYPE
- ⊕^{EWC} GROUND FAULT INTERRUPTER TYPE DUPLX RECEPTACLE - CONCEAL BEHIND OR WITHIN ENCLOSURE OF ELECTRIC WATER COOLER.
- ⊕ QUADRUPLEX CONVENIENCE OUTLET 18" AFF
- ▬^{TB} TELEPHONE BOARD 48" x 96" x 3/4" SHEETS OF FIRE TREATED PLYWOOD. DO NOT PAINT. PROVIDE BACKBOARD 8FT TALL ON THREE SIDES OF IT ROOM AS INDICATED.
- ▲ COMBINATION DATA/VOICE OUTLET 18" AFF
- ⊕ MOTOR - SEE SCHEDULE
- SPECIAL OUTLET - SEE SCHEDULE
- ⊕ CEILING-MOUNTED OCCUPANCY SENSOR - HUBBELL OMNI DT2000 OR APPROVED EQUAL
- ⊕ WALL-SWITCH OCCUPANCY SENSOR 48" AFF. HUBBELL LIGHTHAWK DT OR APPROVED EQUAL
- FS FLOW SWITCH
- TS TAMPER SWITCH
- GAAA GENERATOR REMOTE ANNUNCIATOR
- ⊕ CEILING MOUNTED SMOKE DETECTOR, INTERCONNECTED, HARD WIRED WITH BATTERY BACKUP.
- ⊕ CEILING MOUNTED COMBINATION CARBON MONOXIDE AND SMOKE DETECTOR, INTERCONNECTED, HARD WIRED WITH BATTERY BACKUP.
- ⊕ CEILING MOUNTED HEAT DETECTOR, HARD WIRED WITH BATTERY BACKUP.
- ⊕ CEILING FAN
- ⊕ FIRE ALARM MANUAL PULL STATION 48" AFF TOP OF BOX
- ⊕ FIRE ALARM AUDIO/VISUAL DEVICE 80" AFF
- ⊕ FIRE ALARM WALL MOUNTED VISUAL DEVICE 80" AFF
- FACP FIRE ALARM CONTROL PANEL
- FAA FIRE ALARM REMOTE ANNUNCIATOR

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CLIENT: CITY OF NORTH AUGUSTA, SC
100 GEORGIA AVENUE, NORTH AUGUSTA, SC 29841

PROJECT NAME: NORTH AUGUSTA FIRE STATION 1 RELOCATION

PROJECT LOCATION: 311 W. MARTINTOWN ROAD, NORTH AUGUSTA, SC 29841



REV	DATE	BY	DESCRIPTION
0	10/08/20	HJW	ISSUED FOR PERMIT

PROJECT NO. 3057.2003
DRAWN BY: JAP
CHECKED BY: HJW
DATE: 10/08/2020

ELECTRICAL GENERAL NOTES AND LEGEND

SCALE: AS NOTED
DRAWING NO. **E-001** REV. 0



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