

**DIVISION 26 ELECTRICAL SPECIFICATIONS**

**GENERAL**

1. GENERAL CONDITIONS:
  - A. THE GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS AND SPECIAL CONDITIONS ARE PART OF THIS CONTRACT AND APPLY TO THIS SECTION AS FULLY AS IF REPEATED HEREIN.
2. SCOPE:
  - A. THIS SECTION OF SPECIFICATIONS INCLUDES BUT NOT LIMITED TO:
    - a. ALL LABOR, TOOLS, APPLIANCES, MATERIALS, AND EQUIPMENT REQUIRED TO FURNISH AND INSTALL THE COMPLETE INSTALLATION SHOWN ON THE DRAWINGS FOR THIS SECTION OF THE WORK AND/OR IN THE FOLLOWING SPECIFICATIONS, INCLUDING THAT WHICH IS REASONABLY INFERRED.
3. CODES AND REGULATIONS:
  - A. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH APPLICABLE OF PUBLIC AUTHORITIES HAVING JURISDICTION AND UTILITIES FURNISHING SERVICES.
  - B. CODES GOVERNING THIS WORK INCLUDE BUT ARE NOT LIMITED TO THE LATEST APPROVED EDITION OF THE FOLLOWING:
    - a. NATIONAL FIRE PROTECTION ASSOCIATION'S NATIONAL ELECTRIC CODE (NEC)
    - b. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
    - c. LOCAL ORDINANCES AND REGULATIONS.
4. STANDARDS:
  - A. ELECTRICAL MATERIAL AND EQUIPMENT SHALL HAVE BEEN TESTED AND LISTED OR LABELED AS CONFIRMING TO APPROVE PUBLISHED STANDARDS BY UNDERWRITERS LABORATORIES WHERE SUCH LISTINGS AND LABELING SERVICE IS AVAILABLE FOR THE CLASS OF MATERIALS TO EQUIPMENT, WHERE APPLICABLE, LISTINGS SHALL APPLY TO THE COMPLETE ASSEMBLED EQUIPMENT AND NO TO THE COMPONENTS ALONE.
5. SUBMITTALS:
  - A. ELECTRONIC PDF SUBMITTAL OF MATERIALS LIST, SHOP DRAWINGS, AND DATA SHEETS SHALL BE SUBMITTED TO OWNER'S CONSTRUCTION MANAGER FOR REVIEW. SUBMITTALS SHALL BE MADE AND FAVORABLE REVIEW SECURED BEFORE MATERIAL AND EQUIPMENT IS PURCHASED.
  - B. MATERIALS LIST SHALL INCLUDE FIXTURES, SWITCHGEAR, PANELS, DEVICE, WIREWAYS, DISCONNECT, LAMPS, AND ALL OTHER SPECIFIED OR UNSPECIFIED STANDARD CATALOGED MATERIALS TO BE USED. THE LIST SHALL INCLUDE MANUFACTURER TYPE, AND SUCH OTHER DESCRIPTIVE DATA AS MAY BE REQUIRED TO DETERMINE THE ACCEPTABILITY OF EACH ITEM.
  - C. SHOP DRAWINGS AND DATA SHEETS FOR EQUIPMENT AND SYSTEMS SHALL BE SUBMITTED WHERE REQUIRED IN THE SPECIFICATION FOR THOSE ITEMS. INCLUDE INFORMATION ON EACH COMPONENT, WITH THE SPECIFICATIONS AND ACCEPTABILITY OF THE EQUIPMENT OR SYSTEM.
6. PERMITS AND DRAWINGS:
  - A. PERMITS AND INSPECTIONS SHALL BE BY THE GENERAL CONTRACTOR.
7. AS-BUILT DRAWINGS:
  - A. ON A SET OF CONTRACT DRAWINGS, KEPT AT THE SITE DURING CONSTRUCTION, MARK ALL WORK THAT IS INSTALLED DIFFERENTLY FROM THAT SHOWN, INCLUDING ANY REVISED CIRCUITRY, MATERIAL OR EQUIPMENT. UPON CONCLUSION OR WORK, DELIVER TO OWNER'S CONSTRUCTION MANGER A ELECTRONIC PDF SET OF AND DATED "AS-BUILT" DRAWINGS.
8. GUARANTEE:
  - A. ALL WORK SHALL BE GUARANTEED FOR A MINIMUM PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. THE GUARANTEE PERIOD FOR CERTAIN ITEMS SHALL BE LONGER, AS INDICATED IN THE SPECIFICATIONS FOR THOSE ITEMS.
  - B. SHOULD ANY MALFUNCTION DEVELOP DURING THE GUARANTEE TIME PERIOD DUE TO DEFECTIVE DIRECTIONS OF THE OWNER, ARCHITECT, ENGINEER, OR INSPECTOR, THE CONTRACTOR SHALL FURNISH ALL NECESSARY LABOR AND MATERIALS TO CORRECT THE MALFUNCTION WITHOUT ADDITIONAL CHARGES.

**PRODUCTS**

1. METERING AND SERVICE EQUIPMENT:
  - A. METERING AND MAIN SERVICE EQUIPMENT SHALL BE SQUARE-D, CUTLER HAMMER, OR APPROVED EQUAL AND SHALL INCLUDE ALL REQUIRED METERING AND MAIN DISCONNECT EQUIPMENT SUCH AS POWER COMPANY METER SOCKET AND RING, CURRENT TRANSFORMER SPACE AND CONNECTION, TESTS BLOCK, GUTTERS, MAIN SWITCHES, AND ALL OTHER EQUIPMENT AND INSTALLATION WHETHER OR NOT SHOWN ON THE DRAWINGS OR DESCRIBED.
  - B. THE UNDERGROUND SERVICE PULL SECTION SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AS SHOWN ON DRAWINGS AND SHALL COMPLY WITH REQUIREMENTS OF THE SERVING UTILITY.
  - C. CONSTRUCTION AND INSTALLATION SHALL CONFORM TO THE SPECIFICATION FOR "DISTRIBUTION SWITCHBOARDS". LOCATION SHALL BE AS SHOWN ON THE DRAWINGS.
  - D. SPECIAL CONSTRUCTION OR FEATURES SHALL BE SHOWN ON THE PLANS, FOR SWITCHES AND OTHER ITEMS INCLUDED REFER TO THE PARAGRAPH WHERE THOSE ITEMS ARE SPECIFIED.
  - E. SUBMIT SHOP DRAWINGS ARE REQUIRED UNDER "SUBMITTALS".
  - F. ALL CONDUCTOR TERMINALS AND EQUIPMENT ENCLOSURES SHALL BE UL LISTED FOR USE WITH MINIMUM 75-DEGREE C RATED CONDUCTORS.
2. PANEL BOARDS:
  - A. PANELBOARDS SHALL BE FACTORY ASSEMBLED CIRCUIT BREAKER TYPE BY SQUARE-D, CUTLER HAMMER OR EQUAL. THE NUMBER OF POLES, TYPE, VOLTAGE, AND AMPERE RATINGS SHALL BE AS INDICATED ON THE DRAWINGS.
  - B. NEUTRAL WIRES SHALL BE CONNECTED TO A COMMON NEUTRAL BUS WITH BINDING SCREWS OR LUGS. THE NEUTRAL BUS SHALL BE INSTALLED FROM THE CABINET. GROUND WIRES SHALL BE CONNECTED TO A COMMON GROUND BUS WITH BINDING SCREWS OR LUGS. THE GROUND BUS SHALL BE BONDED TO THE CABINET.
  - C. CABINETS SHALL BE FLUSH MOUNTED. CABINETS SHALL BE CONSTRUCTED OF GALVANIZED STEEL CONFORMING TO UL AND NEC STANDARDS.
  - D. FRONTS OF CABINET SHALL NOT BE LESS THAN 12 GAUGE STEEL FASTENED WITH SCREWS IN COUNTERSUNK WASHERS, OR WITH APPROVED CONCEALED SPRING CLAMPS. CABINET FRONTS SHALL HAVE HINGED LOCKABLE DOORS WITH MILLED KEYS. ALL PANELS SHALL BE KEYS LIKE AND CIRCUIT SCHEDULE HOLDERS WITH CLEAR PLASTIC WINDOWS. PROVIDE TYPEWRITTEN SCHEDULE IN HOLDERS AND SUBMIT COPIES FOR RECORD PURPOSES.
  - E. SPECIAL PANELBOARD CONSTRUCTION OR FEATURES SHALL BE SHOWN ON DRAWINGS, FOR CIRCUIT BREAKERS, CONTRACTORS, AND OTHER EQUIPMENT TO BE INCLUDED AS AN ASSEMBLED PART OF THE PANELBOARD. REFER TO THE PARAGRAPH WHERE THOSE ITEMS ARE SPECIFIED.
  - F. ALL CONDUCTOR TERMINALS AND EQUIPMENT ENCLOSURES SHALL BE UL LISTED FOR USE WITH MINIMUM 75-DEGREE C RATED CONDUCTORS.
  - G. PANELBOARD DIRECTORY FOR EACH PANEL SHALL BE NEATLY TYPE INDICATING ACTUAL LOAD FOR EACH BRANCH CIRCUIT.
  - H. PROVIDE SIGNALS FOR ALL PANEL BOARD WARNING QUALIFIED PERSONS OF POTENTIAL FLASH HAZARD AS REQUIRED IN NEC 110.16.
3. CIRCUIT BREAKERS:
  - A. A CIRCUIT BREAKERS SHALL BE BY THE SAME MANUFACTURER THAT FURNISHES THE MAIN SERVICE EQUIPMENT AND PANELBOARDS.
  - B. BREAKERS SHALL BE MOLDED CASE BOLT-ON TYPE, PUSH-ON, OR PLUG-IN TYPES ARE NOT ACCEPTABLE. REMOVABLE HANDLE TIES AND DUAL, QUAD, OR TANDEM BREAKERS ARE NOT ACCEPTABLE.
  - C. SHORT CIRCUIT INTERRUPTING CAPACITY SHALL BE AS INDICATED IN THE PLANS AND SHALL IN NO CASE BE LESS THAN 10,000RMS SYMMETRICAL AMPS AT THE APPLIED VOLTAGE.
4. DISCONNECT SWITCHES:
  - A. SWITCHES SHALL BE BY SQUARE-D, CUTLER HAMMER, OR APPROVED EQUAL.
  - B. SWITCHES AND ENCLOSURES SHALL BE HEAVY DUTY, THEY SHALL BE EXTERNALLY OPERATED, QUICK-MAKE, BLADE TYPE, OR NUMBERS OF POLES AND RATING AS LISTED OR REQUIRES.
  - C. ENCLOSURES SHALL BE NEMA 1 FOR DRY, INTERIOR LOCATIONS AND NEMA 3R FOR DAMP, WET, OR EXTERIOR LOCATIONS. FINISH SHALL BE ANSI #1. COVERS SHALL BE LISTED FOR USE WITH MINIMUM 75-DEGREE C RATED CONDUCTORS.
5. MANUAL MOTOR STARTERS:
  - A. A WHERE SHOWN ON THE PLANS, FRACTIONAL HORSEPOWER MOTORS SHALL HAVE TOGGLE TYPE MANUAL STARTER WITH THERMAL OVERLOAD PROTECTION IN EACH PHASE. WHERE THE MOTOR IS OUT OF SIGHT OF THE SWITCH PROVIDE A PILOT LIGHT IN THE COVER TO INDICATE SWITCH IS CLOSED.
  - B. SUBMIT DATA ON STARTERS AS REQUIRED UNDER "SUBMITTALS".
6. SNAP SWITCHES:
  - A. A GENERAL USE SNAP SWITCHES SHALL BE TOGGLE HANDLE, QUIET OPERATING, PREMIUM OR HEAVY DUTY SPECIFICATION. SHALL BE UL LISTED AND VERIFIED TO MEET FEDERAL SPECIFICATION W-S-896-D AND NEMA HEAVY DUTY TEST. COLOR SHALL BE WHITE.
  - B. ALL SWITCHES SHALL BE RATED 120/277VOLTS. FOR THE 20 AMP SIZE, HP RATING SHALL BE 1 FOR 15A, AND 2 FOR 20A.
7. RECEPTACLE OUTLETS:
  - A. RECEPTACLE OUTLETS SHALL BE STANDARD NEMA CONFIGURATION, GROUNDING TYPE.
  - B. GENERAL CONVENIENCE OUTLETS SHALL BE 20 AMP, 125VOLT, 2 POLE, 3 WIRE, 15 AMP. OUTLETS SHALL BE UL LISTED AND VERIFIED TO MEET FEDERAL SPECIFICATION AND NEMA HEAVY DUTY PERFORMANCE TESTS.
  - C. CONVENIENCE OUTLET FRONTS SHALL BE WHITE, COLOR SHALL BE DOWN ON WOOD paneled WALLS.
  - D. OUTLETS SHALL BE AS LISTED BELOW (NUMBERS DO NOT INCLUDE COLOR DESIGNATIONS OR OPTIONS).
    - a. 20A CONVINCE-HUBBELL 5350 2-PRONG 15A
  - E. RECEPTACLE OUTLETS SHALL BE TYPE NEMA 5-15R UNLESS OTHERWISE SPECIFIED OR QUADRANT AS INDICATED ON PLANS.
  - F. SPECIAL OUTLETS, NOT LISTED ABOVE SHALL BE STANDARD NEMA CONFIGURATION FOR THE APPLICATION SHOWN AND SHALL BE EQUIVALENT GRADE AND QUALITY TO THOSE LISTED ABOVE. AN APPROVED CORD CAP AND LUG SHALL BE FURNISHED WITH EACH RECEPTACLE OUTLET EXCEPT GENERAL CONVENIENCE TYPE. PLUG SHALL BE THE SAME GRADE, QUALITY, AND MANUFACTURER AS THE OUTLET.
8. DEVICES AND BOX COVER PLATES:
  - A. PROVIDE A COVER PLATE FOR EACH RECEPTACLE, SWITCH, DEVICE, AND BOX.
  - B. COVER PLATES FOR FLUSH INTERIOR GENERAL USE SHALL BE WHITE PLASTIC; COLOR SHALL BE BROWN ON WOOD paneled WALLS.
  - C. ALL PLATES FOR EXTERIOR USE SHALL BE LISTED AND LABELED "SUITABLE FOR WET LOCATION WHILE IN USE".
  - D. GANGED DEVICES SHALL HAVE GANG PLATES EXACTLY MATCHING THE ARRANGEMENT AND QUANTITY OF DEVICES.
  - E. SPECIAL PLATES, ENGRAVING, OR APPLICATION SHALL BE AS INDICATED ON THE DRAWINGS OR OTHERWISE SPECIFIED.

9. OUTLET AND JUNCTION BOXES:
  - A. THE SIZE OF EACH OUTLET JUNCTION BOX SHALL BE DETERMINED BY THE NUMBER AND SIZES OF WIRES AND CONDUITS ENTERING THE BOX, PER NEC, BUT SHALL NOT BE LESS THAN 4-INCH SQUARE AND 1-1/2 INCHES DEEP UNLESS OTHERWISE NOTED.
  - B. OUTLETS AND JUNCTION BOXES FOR INTERIOR USE SHALL BE GALVANIZED, ONE-PIECE PRESSED OR WELDED STEEL, KNOCKOUT TYPE, EXCEPT WHERE OTHER TYPES OF BOXES ARE INDICATED OR SPECIFIED. IN MASONRY IN CONCRETE CONSTRUCTION, WATERPROOF BOXES MANUFACTURED FOR THAT PURPOSE SHALL BE USED. PLASTIC, FIBER, OR COMPOSITION BOXES WILL NOT BE PERMITTED.
  - C. OUTLET AND JUNCTION BOXES FOR SURFACE EXTERIOR USE SHALL BE CAST BOXES, CROUSE-HINDS FS TYPE, OR APPROVED EQUIVALENT.
10. CONDUITS AND FITTINGS:
  - A. STANDARD WEIGHT RIGID METAL CONDUIT SHALL BE HOT DIPPED GALVANIZED. ALL FITTINGS SHALL BE OF THE SCREW THREAD TYPE. COUPLINGS, LOCKNUTS, BUSHINGS, ETC., SHALL BE HOT DIPPED GALVANIZED.
  - B. ELECTRICAL METALLIC TUBING (EMT) SHALL BE GALVANIZED. COUPLINGS AND CONNECTORS SHALL BE GALVANIZED. FITTINGS SHALL BE COMPRESSION TYPE WITH GLAND SEALING RINGS OR SET SCREW TYPE.
  - C. FLEXIBLE CONDUIT SHALL BE GALVANIZED STEEL OR ALUMINUM, WHERE USED IN DAMP OR WET LOCATIONS, FLEXIBLE CONDUIT SHALL BE OF THE LIQUID-TIGHT TYPE WITH OUTER NEOPRENE JACKET AND SUITABLE LIQUID-TIGHT FITTINGS.
  - D. RIGID NONMETALLIC CONDUIT SHALL BE PVC SCHEDULE 40, UL APPROVED.
11. WIRE AND CABLE:
  - A. A WIRE AND CABLE FOR USE ON SYSTEMS OF 50 VOLTS TO 600 VOLT RATED TYPE THHN/THWN FOR BRANCH CIRCUITS AND FEEDERS.
  - B. WIRE AND CABLE FOR USE ON SYSTEMS OF 50 VOLTS SHALL BE 300 VOLT PVC INSULATED AND SUITABLE FOR THE CLASS OF WIRING EXCEPT AS OTHERWISE INDICATED OR SPECIFIED.
  - C. ALL CONDUCTORS SHALL BE COPPER.
12. LIGHTING FIXTURES AND LAMPS:
  - A. FIXTURES SHALL BE COMPLETE WITH ALL REQUIRED ACCESSORIES AND EQUIPMENT, INCLUDING LAMPS, NECESSARY FOR A COMPLETE INSTALLATION. CONTRACTOR SHALL RECEIVE, UNPACK, ASSEMBLE, AND INSTALL FIXTURES INDICATED AS BEING FURNISHED BY OTHERS. ALL FIXTURES, LAMPS, AND ACCESSORIES SHALL BE PROVIDED BY CONTRACTOR UNLESS NOTED OTHERWISE.
  - B. FLUORESCENT BALLASTS SHALL BE CDM, ETL APPROVED, HIGH POWER FACTOR "P" RATED WITH A SOUND RATING OF "A", BALLASTS FOR INTERIOR USE SHALL BE HIGH FREQUENCY ELECTRONIC TYPE WITH A THD OR LESS THAN 20%. FIXTURES SHALL COMPLY WITH LOCAL LIGHTING CODES.
  - C. 4' FLUORESCENT LAMPS SHALL BE F32T8 TYPE BY PHILLIPS, GE, OR SYLVANIA, COLOR AS INDICATED ON PLANS.
  - D. VERIFY THE CEILING OR WALL CONSTRUCTION, VOLTAGE, AND MOUNTING REQUIREMENTS OF EACH FIXTURE AND PROVIDE PLASTER FRAMES, SPECIAL FLANGES, CONCRETE POUR HOUSING, BOXES, BRACKETS, ADAPTERS, HANGERS, STEMS, CANOPIES, SPECIAL BALLASTS OR LENSES, AND OTHER MATERIAL NECESSARY TO PROPERLY PURCHASE AND MOUNT THE FIXTURE.
  - E. SUBMIT SHOP DRAWINGS ON ALL FIXTURES AS REQUIRES UNDER "SUBMITTALS". "SHOP DRAWINGS" MAY BE CATALOG DATA SHEETS OF COMPLETE INFORMATION INCLUDING MOUNTING HARDWARE IS SHOWN AND IDENTIFIED. SHOP DRAWINGS SHALL INCLUDE MOUNTING DETAILS AND SHOW COMPATIBILITY WITH THE CEILING OR OTHER EQUIPMENT.
13. NAMEPLATES AND LABELS:
  - A. NAMEPLATES SHALL BE PROVIDED FOR CIRCUIT BREAKERS IN THE MAIN SWITCHBOARD, SWITCHES, AND IDENTIFY EACH PANELBOARD AND SIMILAR ITEMS WHICH FURNISHED OR INSTALLED UNDER THE SECTION.
  - B. NAMEPLATES SHALL BE ENGRAVED LAMINATED PLASTIC WITH CHARACTERS CUT THROUGH THE BLACK TOP LAYER TO WHITE LAYER BELOW.
14. MAGNETIC MOTOR STARTERS:
  - A. MOTOR STARTERS SHALL BE HORSEPOWER RATED NON-REVERSING, FULL VOLTAGE OF TYPE REQUIRED BY MOTOR WITH OVERLOAD THERMAL PROTECTION.
  - B. SUBMIT SHOP DRAWINGS AS REQUIRED UNDER "SUBMITTALS".

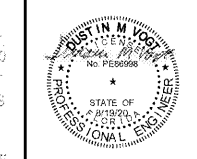
**EXECUTION**

1. INSTALLATION AND CONNECTION OF ELECTRICAL EQUIPMENT:
  - A. EQUIPMENT FURNISHED BY OTHERS SHALL BE COMPLETELY CONNECTED TO ELECTRICAL SYSTEM EXCEPT AS NOTED ON THE DRAWINGS. ALL FUSES, BREAKERS AND DISCONNECTS SHALL BE PROVIDED AS NECESSARY FOR PROPER PROTECTION. PROVIDE ALL FLEXIBLE CONDUIT, BOXES, FITTINGS, RECEPTACLES, COORDS, PLUGS AND OTHER MATERIAL REQUIRED FOR PROPER INSTALLATION. REFER TO MANUFACTURER'S INSTRUCTION WHERE APPLICABLE.
2. WORK ON HVAC AND PLUMBING SYSTEMS:
  - A. COMPLETE POWER CIRCUITS, INCLUDING BREAKERS, SWITCHES, DISCONNECTS, WIRE AND CONDUIT, OUTLETS, AND CONNECTIONS TO THE HVAC AND PLUMBING EQUIPMENT SHALL BE PROVIDED UNDER THIS SECTION.
  - B. STARTERS AND CONTROLLERS SHALL BE PROVIDED UNDER THIS SECTION EXCEPT WHERE PART OF A PACKAGE UNIT OR PANEL SPECIFIED IN SECTION 23.
  - C. HVAC AND PLUMBING CONTROL AND INTERLOCK WIRING REGARDLESS OF VOLTAGE, AND CONDUITS FOR SAME, WILL BE PROVIDED AND CONNECTED UNDER THIS SECTION.
3. INSTALLATION OF CONDUIT:
  - A. STANDARD WEIGHT RIGID METAL CONDUIT SHALL BE USED WHERE EXPOSED TO THE WEATHER, PLACED UNDERGROUND BELOW CONCRETE SLAB, OR IN CONCRETE OR MASONRY CONSTRUCTION IN CONTACT WITH EARTH, AND WHERE SHOWN ON THE PLANS.
  - B. GALVANIZED STEEL ELECTRICAL METALLIC TUBING SHALL BE USED IN ABOVE GROUND, INTERIOR DRY LOCATIONS PROTECTED FROM WEATHER AND PHYSICAL DAMAGE, AND MAY BE USED IN CONCRETE OR MASONRY CONSTRUCTION NOT IN CONTACT WITH EARTH.
  - C. FLEXIBLE METALLIC CONDUIT "MC" SHALL BE USED WHERE SHOWN ON THE PLANS AND TO CONNECT TO CONDUIT SYSTEMS FOR MOTORS, DIRECT WIRED AND VIBRATING EQUIPMENT AND AS A FINAL CONNECTION TO LIGHTING FIXTURES (B'MAX) IN ACCESSIBLE CEILINGS. IT SHALL BE USED AS FINISHING SYSTEM INSTEAD OF EMT IN INTERIOR WALLS ONLY (DRY FRAME OR STUD CONSTRUCTION).
  - D. LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE USED FOR FINAL ELECTRICAL CONNECTIONS TO ROOF EQUIPMENT OR OTHER EQUIPMENT EXPOSED TO THE ENVIRONMENT.
  - E. RIGID NONMETALLIC CONDUIT MAY BE USED FOR UNDERSLAB OR UNDERGROUND WORK IN PLACE OF STANDARD WEIGHT RIGID METAL AND WHERE SPECIFICALLY SPECIFIED. ALL RUNS OF RIGID NONMETALLIC CONDUIT SHALL CONTAIN AN INDEPENDENT GROUNDING CONDUCTOR AND WHERE ADEQUATELY SIZED FOR SERVICE INTENDED. WHERE REQUIRED TO CONTINUE ABOVE SLAB, STUDS NONMETALLIC CONDUIT ABOVE SLAB THEN MAKE PROPER TRANSITION TO METAL CONDUIT. ABOVE SLAB THEN MAKE PROPER TRANSITION TO METAL CONDUIT.
  - F. ALL RIGID STEEL CONDUIT INSTALLED IN THE GROUND SHALL BE WRAPPED WITH UNITS'S PROCESS NO.3 PVC COATED OR ENCASED IN 3" CONCRETE ON ALL SIDES. CONCRETE ON ALL SIDES.
  - G. THE MINIMUM SIZES OF CONDUIT SHALL BE THE SIZE FOR THE NUMBER AND SIZE OF CONDUCTORS, UNLESS A LARGER SIZE IS SHOWN, IN WHICH CASE SUCH LARGER SIZE SHALL BE USED.
  - H. ALL FINAL CONNECTIONS TO PANELS SHALL BE IN METAL CONDUIT AND AS SHOWN ON DRAWINGS.
  - I. WHERE PORTIONS OF RACEWAY SLEEVES ENTER THE RACEWAY SUCH AS COLD STORAGE OR WHERE PASSING FROM THE INTERIOR TO THE EXTERIOR OF A BUILDING, THE RACEWAY OR SLEEVE SHALL BE FILLED WITH AN APPROPRIATE MATERIAL TO PREVENT THE CIRCULATION OR WARM AIR TO A COOLER SECTION OF THE RACEWAY OR SLEEVE.
4. INSTALLATION AND CONNECTION OF WIRING:
  - A. NO TYPE OF CONDUCTOR/FLEX CONDUIT OR RACEWAY CABLE WILL BE PERMITTED. ALL WIRING SHALL BE INSTALLED IN CONDUIT, WIREWAYS, OR GUTTERS, EXCEPT WHERE OTHER RACEWAY SYSTEMS OR METHODS ARE SPECIFICALLY SHOWN.
  - B. CLEAN OUT AND DRY ALL CONDUIT AND WIREWAYS BEFORE PULLING AND WIRES. USE NO LUBRICATED EXCEPT AS RECOMMENDED BY THE WIRE OR CABLE MANUFACTURER. MAKE ALL CONNECTIONS AND SPLICES NECESSARY TO PROPERLY COMPLETE THE ELECTRICAL WIRING. CONNECTIONS AND SPLICES SHALL BE MADE ONLY IN PULL, JUNCTION, OR OUTLET BOXES, OR IN SWITCHBOARDS, WIREWAYS, OR PANELS HAVING SUFFICIENT CODE SIZED GUTTER SPACE. CONNECTIONS AND SPLICES IN WIRES SMALLER THAN NO. 8 AWG AND LARGER SHALL BE MADE WITH COMPRESSION, VISE TYPE, OR SPLIT BOLT SOLDERLESS CONNECTORS, INSULATED AND TAPED.
5. TELEPHONE SYSTEMS:
  - A. FURNISH AND INSTALL COMPLETE CONDUIT AND TERMINAL SYSTEM FOR TELEPHONE SERVICES AS INDICATED ON DRAWINGS.
  - B. INSTALL 1/2 INCH POLYETHYLENE FILL-IN WIRE IN EACH CONDUIT RUN.
  - C. OUTLET SHALL OUTLETS SHALL BE 4-1/2 INCH SQUARE 2-1/8 INCH DEEP METAL BOXES WITH PLASTER RING AND SINGLE BUSHED OUTLET FLUSH TELEPHONE PLATE.
  - D. FINISH AND INSTALL 1/2 INCH CONDUIT FROM THE TELEPHONE EQUIPMENT ROOM MAIN TELEPHONE BACKBOARD TO NEAREST ACCESSIBLE COLD-WATER GROUND. "RHIO CONDUIT" SHALL BE TERMINATED IN SUCH A MANNER THAT ACCESS TO GROUNDING DEVICE MAY BE HAD AT ANY TIME IN THE FUTURE. "PER NEC 250 & NEC 600.
6. GROUNDING:
  - A. MAKE GOOD MECHANICAL AND ELECTRICAL CONTACT AT ALL POLES, PANELBOARDS, SWITCHBOARDS, OUTLET BOXES, AND JUNCTION BOXES AND WHERE THE CONDUIT RUNS IS CONNECTED. PERMANENTLY AND EFFECTIVELY GROUND ALL CONDUIT, FIXTURES, MOTORS, AND OTHER EQUIPMENT AS REQUIRED BY ALL APPLICABLE CODES, REGULATIONS, AND STANDARDS.
7. CLEANING AND PROTECTION OF PRODUCTS AND PREMISES:
  - A. PANELS, DISCONNECTS, STARTERS, AND OTHER EQUIPMENT INSTALLED UNDER THIS SECTION SHALL BE INSPECTED FOR DEFECTS AND TESTED FOR PROPER OPERATION.
  - B. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ALL MATERIALS, EQUIPMENT, AND PROPERTY, WHETHER ELECTRICAL OR NOT, FROM DAMAGE AS A RESULT OF HIS WORK.
8. CHECKING AND TESTING OF EQUIPMENT AND SYSTEMS:
  - A. PANELS, DISCONNECTS, STARTERS, AND OTHER EQUIPMENT INSTALLED UNDER THIS SECTION SHALL BE INSPECTED FOR DEFECTS AND TESTED FOR PROPER OPERATION.
  - B. B SYSTEMS SHALL BE TESTED FOR SHORT CIRCUITS, OPEN CIRCUITS AND WRONG CONNECTIONS AND SHALL BE FREE FROM MECHANICAL AND ELECTRICAL DEFECTS. CIRCUITS SHALL BE TESTED FOR PROPER NEUTRAL AND GROUND CONNECTIONS.
9. TEMPORARY CONSTRUCTION POWER & TELEPHONE:
  - A. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, COST, AND MATERIALS REQUIRED FOR INSTALLATION AND MAINTENANCE OF TEMPORARY CONSTRUCTION POWER AND TELEPHONE.
10. SUBSTITUTIONS:
  - A. ALTERNATIVE MANUFACTURER'S WILL BE CONSIDERED FOR ELECTRICAL DEVICES, SWITCHES, OUTLETS, ETC.
  - B. CATALOGS, DATA SHEETS, OR SHOP DRAWINGS SHALL BE SUBMITTED TO THE CONSTRUCTION MANAGER FOR ALL ALTERNATIVE MANUFACTURED EQUIPMENT AS REQUIRED IN "SUBMITTALS".



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THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY DUSTIN M. VOGT, PE ON 08-19-2020 USING A DIGITAL SIGNATURE. PRINTED COPIES ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

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NO.	DATE	BY	DESCRIPTION

**ELECTRICAL SPECIFICATIONS**  
 CALIBER COLLISION  
 2300 GRIFIN RD  
 LAKELAND, FL  
 PROJECT NO. 202002

FILE NAME: 192006  
 DRAWN BY: SZK  
 DATE: 08/19/2020  
 REVIEWED BY: DMV

**E6.0**