

SECTION 16010 - GENERAL PROVISIONS

- 1.01 RELATED DOCUMENTS**
- A. THE GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS AND GENERAL REQUIREMENTS APPLY TO THE WORK SPECIFIED IN THIS SECTION.
- 1.02 DESCRIPTION**
- A. THIS SECTION DEFINES THE GENERAL PROVISIONS WHICH ARE COMMON TO ALL SECTIONS OF DIVISION 16.
- B. THE INFORMATION IN THE SPECIFICATIONS AND THE PLAN DRAWINGS ARE BASIC FACTS TO FOLLOW IN DETERMINING A RESPONSIBLE AND COMPETITIVE PROPOSAL FROM THE DISCIPLINES INVOLVED. THE DRAWINGS, SPECIFICATIONS AND NOTES DO NOT NECESSARILY INDICATE OR DESCRIBE EACH ITEM OF THE PARTICULAR WORK REQUIRED FOR EACH TRADE. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH THE WORK SHALL BE PERFORMED AND TO DETERMINE THE SITE WILL NOT CONSIDERED FOR AN ADJUSTMENT IN CONTRACT PRICE OR FAILURE TO PERFORM THE WORK UNDER THIS CONTRACT.

- C. WORK INCLUDED
1. ALL ELECTRICAL WORK HEREIN SPECIFIED AND/OR SHOWN ON DRAWINGS UNLESS NOTED OTHERWISE.
 2. WORK BY THE UTILITY COMPANY FOR WHICH THERE IS A BACKLOG OF ELECTRICAL BACK CHARGES TO BE INCLUDED UNDER THIS DIVISION IS CONTRACTOR'S RESPONSIBILITY.
 3. INSTALLATION SHALL BE COMPLETED FROM THE LOCATION DESIGNATED BY THE ELECTRICAL UTILITY COMPANY AS THE POINT OF CONNECTION TO THE FINAL CONNECTION OF MOTORS, FIXTURES, DEVICES, APPARATUS OR PIECES OF EQUIPMENT UNLESS MODIFIED BY DRAWINGS OR THESE SPECIFICATIONS.
 4. THE ELECTRICAL WORK SHALL BE UNDERSTOOD TO COVER COMPLETE OPERATING SYSTEMS. THE DRAWINGS AND SPECIFICATIONS SHALL BE USED TO IDENTIFY THE WORK SPECIFIED AND NOT SHOWN OR WORK SHOWN AND NOT SPECIFIED SHALL BE PERFORMED OR DRAWING AS REQUIRED. ALL MATERIALS AND EQUIPMENT SHALL BE AS SPECIFIED OR APPROVED BY THE CONTRACTOR OR SUBCONTRACTOR FOR SUCH SYSTEMS.
- D. DESCRIPTION OF SYSTEM
1. COMPLETE POWER WIRING TO MAIN DISCONNECT SWITCH PANELS, MOTORIZED EQUIPMENT, MOTORS, EQUIPMENT CABINETS, AND MISCELLANEOUS OUTLETS.
 2. GENERAL WIRING FOR POWER, LIGHTING, AND MISCELLANEOUS SYSTEMS.
 3. MATERIALS AND EQUIPMENT FOR ELECTRICAL WORK, ELECTRIC SERVICE AND DISTRIBUTION.
 4. MOTOR AND EQUIPMENT WIRING, INCLUDING STARTERS IF REQUIRED.
 5. GENERAL AND EMERGENCY LIGHTING AND POWER SYSTEMS.
 6. CONTRACTORS FOR LIGHTING AND SIGN CONTROL SYSTEMS.
 7. TELEPHONE BACK BOXES AND EMPTY CONDUIT.
 8. ARRANGE FOR SOURCES OF TEMPORARY CONSTRUCTION SERVICES SUCH SERVICES SHALL BE NOMINALLY 200/100 VOLTS, 3 PHASE, 4 WIRE, FROM WHICH A COMPLETE SYSTEM OF TEMPORARY POWER AND LIGHTING SHALL BE INSTALLED FOR ALL CONSTRUCTION NEEDS AND AS REQUIRED BY THE OCCUPATIONAL SAFETY AND HEALTH DEPARTMENT'S (OSHA) TEMPORARY SERVICES SHALL BE REMOVED UPON COMPLETION OF WORK.
 9. COMPUTER SYSTEM EMPTY CONDUIT RACEWAY.
 10. WIRING OF POWER CONNECTIONS TO EQUIPMENT FURNISHED AND INSTALLED BY OTHER TRADES.
 11. CUTTING, PATCHING, EXCAVATION AND BACKFILL AND CONCRETE WORK REQUIRED TO COMPLETE THE WORK OF THIS SECTION. BACKFILL SHALL BE COMPACTED TO 95% OF STANDARD PROPERTIES. ADDITIONAL WORK SHALL BE PATCHED OR REPLACED TO THE EXISTING CONDITIONS.
 12. ALL OTHER EQUIPMENT, MATERIAL, DEVICES, ACCESSORIES REQUIRED AND/OR SHOWN ON THE DRAWINGS.

- E. RELATED WORK TO BE COMPLETED BY OTHERS
1. TELEPHONE SYSTEM WIRING.
 2. COMPUTER SYSTEM WIRING.
 3. TELEVISION SYSTEM WIRING.
 4. TEMPERATURE CONTROLS AND THERMOSTAT WIRING.
- F. DEFINITIONS - AS USED WITHIN THE CONTRACT DOCUMENT
1. THE TERM "CONTRACTOR" SHALL BE UNDERSTOOD TO MEAN THE ELECTRICAL CONTRACTOR OR ELECTRICAL SUBCONTRACTOR.
 2. "COURT" OR "WIRING" SHALL MEAN ANY ELECTRICAL WORK.
 3. "PACKAGE UNIT" SHALL MEAN AN ITEM OF EQUIPMENT HAVING ONE OR MORE MOTORS OR OTHER ELECTRIC ENERGY CONSUMING ELEMENTS INTEGRALLY FACTORY MOUNTED ON A SINGLE UNIT COMPLETE WITH ALL ASSOCIATED CONTROL DEVICES AND INTERCONNECTING WIRING.

- 1.03 QUALITY ASSURANCE**
- A. QUALIFICATIONS
1. MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL CONFORM TO NATIONAL UNDERWRITERS LABORATORIES (UL) STANDARDS. WHERE SUCH STANDARD HAS BEEN ESTABLISHED, ALL EQUIPMENT OF SIMILAR TYPE SHALL BE THE SAME MANUFACTURER.
 2. REQUIREMENTS OF REGULATORY AGENCIES
- B. PERMITS
1. OBTAIN ALL PERMITS AND PAY ALL FEES REQUIRED FOR THE COMPLETE ELECTRICAL SYSTEM.

- C. ALLOWABLE TOLERANCES
1. REVIEW ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS FOR ALL DIMENSIONS, LOCATIONS, PARTITIONS AND WALLS. STRUCTURAL DETAILS AND LOCATION OF MECHANICAL PIPES AND DUCTS SO THAT THE ELECTRICAL INSTALLATION SHALL BE IN COORDINATION WITH THAT OF THE OTHER TRADES.
 2. EXACT LOCATION AND ELECTRICAL REQUIREMENTS OF ALL FIXTURES, EQUIPMENT, AND MATERIALS SHALL BE OBTAINED FROM THE DRAWINGS OF THE OTHER TRADES.
- 1.04 SUBMITTALS**
- A. SHOP DRAWINGS FOR ALL FIXTURES, EQUIPMENT, MATERIALS, ETC., SHALL BE SUBMITTED AS SPECIFIED IN DIVISION 1.
- B. INSTALLATION MAINTENANCE AND OPERATING MANUALS AND INSTRUCTIONS FOR ALL EQUIPMENT SHALL BE PROVIDED AS SPECIFIED IN DIVISION 1.
- 1.05 APPROVAL DRAWINGS**
- A. PREPARE AND SUBMIT FOR APPROVAL SUCH ADDITIONAL ELECTRICAL DRAWINGS, DIAGRAMS, AND SPECIFICATIONS AS ARE REQUIRED BY:
1. LOCAL FIRE PREVENTION BUREAU
 2. LOCAL BUILDING DEPARTMENT - ELECTRICAL INSPECTION SECTION
 3. LOCAL UTILITY COMPANIES

- 1.06 COORDINATION AND COOPERATION**
- A. THE CONTRACTOR SHALL EXAMINE THE PREMISES AND SATISFY HIMSELF OF EXISTING CONDITIONS UNDER WHICH HE WILL BE OBLIGATED TO OPERATE IN PERFORMING HIS PART OF THE WORK OR THAT WILL IN ANY MANNER AFFECT THE WORK UNDER THIS CONTRACT. THE CONTRACTOR SHALL COORDINATE WORK WITH OTHERS SO THAT THE INSTALLATION OF ALL EQUIPMENT MAY BE PROPERLY COORDINATED.
- B. ALL EQUIPMENT FURNISHED SHALL FIT THE SPACE AVAILABLE, WITH CONNECTION ETC. IN THE REQUIRED LOCATIONS AND WITH ADEQUATE SPACE FOR OPERATING AND SERVICING THE DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL ADVISE THE METHOD OF INSTALLATION WHILE THE SPECIFICATIONS AND FIXTURE LIST DEFINE THE TYPE AND QUALITY OF MATERIAL AND WORKMANSHIP TO BE USED. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT WHOSE DECISION SHALL BE FINAL. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY IN THIS CONNECTION ON BEHALF OF THE CONTRACTOR IF HE FAILS TO ADVISE OF THIS CONNECTION.
- 1.06 GUARANTEE**
- A. PROVIDE ONE YEAR GUARANTEE FOR ALL FIXTURES, EQUIPMENT, MATERIALS AND WORKMANSHIP. UPON FINAL ACCEPTANCE BY OWNER ANY DEFECTIVE MATERIAL OR DEFECTIVE WORKMANSHIP SHALL BE REPLACED WITHOUT COST TO OWNER.

- 2.01 PROTECTION**
- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EQUIPMENT AND SYSTEMS AGAINST HARVEST, OR ACCUMULATION OF DUST AND DEBRIS. FLOODING, CORROSION OR OTHER FORMS OF DAMAGE. CLEAN AND RESTORE DAMAGED FINISHES AND EQUIPMENT TO PLACE INSTALLATION IN A LIKE NEW CONDITION.
- 2.02 INSTALLATION/APPLICATION/ PERFORMANCE/ECTION**
- A. APPLICATION, INSTALLATION
1. NO MEASUREMENTS OF A DRAWING BY SCALE SHALL BE USED AS A DIMENSION TO WORK BY. THE DRAWINGS ARE NOT INTENDED TO BE COMPLETED OR ACCURATE DETAILS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY INFORMATION FOR INTERPRETATION PRIOR TO ANY INSTALLATION.
 2. THE RIGHT IS RESERVED TO MAKE ANY REASONABLE CHANGE IN LOCATION OF OUTLETS AND EQUIPMENT PRIOR TO ROUGH-IN WITHOUT INVOLVING ADDITIONAL CHARGES. ANY CHANGE TO THE ELECTRICAL DRAWINGS AS IS NECESSARY TO MAKE THE WORK OF THIS CONTRACTOR CONFORM TO THE BUILDING AS CONSTRUCTED AND TO FIT THE WORK OF OTHER TRADES SHALL BE OBTAINED BY THE CONTRACTOR'S CONTRACT AND INSTALLED WITHOUT EXTRA COST.
 3. PERFORM ALL WORK IN COMPLIANCE WITH ALL APPLICABLE SAFETY REGULATIONS INCLUDING OSHA REGULATIONS.
 4. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO ANY INSTALLATION.
 5. PROVIDE CODE APPROVED CLEARANCES AROUND ELECTRICAL EQUIPMENT.
 6. COORDINATE STAGING MATERIAL WITH BUILDING MANAGEMENT REPRESENTATIVE AT TIME OF BIDDING.

- 2.03 FIELD QUALITY CONTROL**
- A. ALL METERS, INSTRUMENTS, CABLE CONNECTIONS, EQUIPMENT, AND APPARATUS NECESSARY FOR MAKING TESTS SHALL BE PROVIDED BY THIS CONTRACTOR AT HIS OWN EXPENSE.
- 2.04 ADJUST AND CLEAN**
- A. CLEANING EQUIPMENT, COMPLETED WORK, AND PREMISES AFTER THE COMPLETION OF ALL INSTALLATIONS. EACH TRADE SHALL BE THOROUGHLY CLEANED TO REMOVE ALL PAINT, OIL, AND OTHER FOREIGN MATERIAL. CONTRACTOR SHALL ALSO CLEAN ALL FOREIGN PAINT, GREASE, OIL, DIRT, AND STUCKERS. THE CONTRACTOR SHALL REMOVE ALL RUBBISH, DEBRIS, ETC., ACCUMULATED FROM HIS OPERATIONS FROM THE PREMISES.

- 2.05 APPROVALS**
- A. OBTAIN ALL PERMITS AND APPROVALS FROM THE GOVERNING BODIES WHICH HAVE JURISDICTION OVER THIS PROJECT.
- 2.06 IDENTIFICATION AND TAGGING**
- A. IDENTIFICATION OF DISTRIBUTION SWITCHES OR CIRCUIT BREAKERS INDIVIDUALLY MOUNTED ON RACKS SHALL BE BY MEANS OF ENGRAVED LAMACOD NAVIPLATES PERMANENTLY FASTENED ON THE FRONT FACE OF THE SWITCH. IDENTIFICATION OF PANEL BOARDS WITH BLACK BACKGROUND. PROVIDE ALL PANEL BOARDS WITH TYPEWRITTEN DIRECTORY.

- 2.07 SLEEVES**
- A. PROVIDE SLEEVES IN WALLS AND FLOOR SLABS FOR THE PASSAGE OF ALL CONDUITS, PIPES, AND DUCTS THROUGH THEM. SLEEVES SHALL BE SET IN PLACE SUFFICIENT TIME AHEAD OF CONCRETE WORK, SO AS NOT TO DELAY THAT WORK.
- 2.08 CUTTING AND PATCHING**
- A. PERFORM ALL CUTTING AND PATCHING REQUIRED TO COMPLETE THE WORK, EXCEPT WHERE SPECIFICALLY SHOWN ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS. PATCHING SHALL MATCH EXISTING AND SHALL BE COORDINATED WITH OWNERS REPRESENTATIVE.

- SECTION 16010 - BASIC MATERIALS AND METHODS
- 2.01 MATERIALS**
- A. CONDUIT
1. ELECTRICAL METALLIC TUBING (EMT) THINWALL CONDUIT SHALL IN GENERAL BE UTILIZED WHERE PERMITTED BY CODE EXCEPT WHERE DESCRIBED HEREIN. MINIMUM SIZE CONDUIT SHALL BE 3/4" UNLESS SPECIFICALLY NOTED OTHERWISE.
 2. HEAVY WALL STEEL CONDUIT AND IMC SHALL BE EITHER HOT DIPPED GALVANIZED OR SHERARDIZED.
 3. FLEXIBLE CONDUIT SHALL BE GREENFIELD TYPE EXCEPT WHERE EXPOSED TO OIL, GREASE, OR WATER. CONDUIT SHALL BE SEALTITE.
 4. PLASTIC CONDUIT SHALL BE PVC SCHEDULE 40.
 5. CONDUIT SHALL BE AS MANUFACTURED BY ALLED, TRIANGLE OR APPROVED EQUAL.
 6. PROVIDE EXPANSION FITTINGS FOR CONDUITS CROSSING EXPANSION JOINTS.
 7. CONDUIT FITTINGS
- B. WIRES AND CABLES
1. UNLESS SPECIFICALLY NOTED OTHERWISE, ALL WIRING SHALL BE INSTALLED IN CONDUIT.
 2. ALL WIRE SHALL BE TYPE THW OR THWN COPPER OR ALUMINUM CONDUCTORS WILL BE ALLOWED.
 3. WIRE SMALLER THAN #6 SHALL BE SOLID #8 AND LARGER, STRANDED.
 4. CABLE AND WIRE SHALL BE AS MANUFACTURED BY TRIANGLE, GENERAL CABLE, CANADA OR CAROL.
- C. COLOR CODING - COLOR CODING SHALL BE USED THROUGHOUT THE ENTIRE ELECTRICAL SYSTEM. PROVIDE INDUSTRY STANDARD COLOR CODING FOR THE VOLTAGES INVOLVED. CONTINUOUS CIRCUITS SHALL BE NUMBERED FOR EASY IDENTIFICATION OF TERMINAL POINTS. NUMBER TERMINAL BLOCKS ACCORDINGLY.
- D. DISCONNECT SWITCHES
1. SWITCHES SHALL MEET NEMA ENCLOSED SWITCH STANDARDS (SEE CURRENT EDITION SWITCHES SHALL BE TYPE I, CLASS I, NON-FUSIBLE, SO THAT OPERATION OF THE CONTACTS SHALL NOT BE CAPABLE DURING NORMAL OPERATION. THE SWITCH CONTACTS BEING OBTAINED FROM THE HANDLE AFTER THE OBTAINING OR CLOSING OF THE CONTACTS HAS STARTED.
 2. ALL SAFETY SWITCHES SHALL BE HEAVY DUTY OF VOLTAGE MATCHING EQUIPMENT. NEMA I FOR INDOR USE AND NEMA 2 FOR OUTDOR USE. WESTINGHOUSE, GENERAL ELECTRIC, TRIANGLE, OR SIEMENS.
- E. FUSES - FURNISH AND INSTALL FUSES. FUSES SHALL BE AS SPECIFIED ON THE DRAWINGS.
- F. OUTLETS, PULL AND JUNCTION BOXES, OUTLET, PULL AND JUNCTION BOXES SHALL BE 1/2 GAL. OR HEAVIER, STEEL WITH REMOVABLE KNOCKOUTS. BOXES SHALL BE OF THE SAME SIZE AS REQUIRED FOR THE INTENDED CIRCUIT. MINIMUM SIZE AS REQUIRED BY THE NATIONAL ELECTRICAL CODE.

- G. SWITCHES
1. SWITCHES SHALL BE LOCATED AS INDICATED ON THE DRAWINGS AND IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE.
 2. SWITCHES SHALL BE TYPE I, CLASS I, NON-FUSIBLE, SO THAT OPERATION OF THE CONTACTS SHALL NOT BE CAPABLE DURING NORMAL OPERATION. THE SWITCH CONTACTS BEING OBTAINED FROM THE HANDLE AFTER THE OBTAINING OR CLOSING OF THE CONTACTS HAS STARTED.
 3. ALL SAFETY SWITCHES SHALL BE HEAVY DUTY OF VOLTAGE MATCHING EQUIPMENT. NEMA I FOR INDOR USE AND NEMA 2 FOR OUTDOR USE. WESTINGHOUSE, GENERAL ELECTRIC, TRIANGLE, OR SIEMENS.
- H. RECEPTACLES
1. RECEPTACLE SHALL BE LOCATED AS SHOWN ON THE DRAWINGS AND AT THE HEIGHTS SPECIFIED OR INDICATED. RECEPTACLE AND POWER OUTLETS SHALL BE OF THE GROUNDS TYPE SPECIFICATION GRADE AND AS MANUFACTURED BY LABEL, GENERAL ELECTRIC, PASS E SEMOUR, EAGLE OR LEVITON. RECEPTACLE SHALL BE WHITE.
- I. SWITCH AND RECEPTACLE PLATES
1. PLATES IN FINISHED AREAS FOR SWITCHES AND RECEPTACLES SHALL HAVE A WHITE FINISH. PLATES FOR SWITCHES AND RECEPTACLES SHALL BE CONTINUOUS WITHOUT SPLICING FROM LAST OUTLET TO THEIR TERMINALS IN CABINET.

- J. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL ELBOWS, CONNECTORS, ETC., AND INSTALL OUTLETS COMPLETE.
- K. LIGHTING AND APPLIANCE PANEL BOARDS
1. PANELS SHALL BE TYPE I, CLASS I, NON-FUSIBLE, SO THAT OPERATION OF THE CONTACTS SHALL NOT BE CAPABLE DURING NORMAL OPERATION. THE SWITCH CONTACTS BEING OBTAINED FROM THE HANDLE AFTER THE OBTAINING OR CLOSING OF THE CONTACTS HAS STARTED.
 2. PANELS SHALL COMPLY WITH U.S. FEDERAL SPECIFICATION WP16A, TYPE I, CLASS I.
 3. ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE.
 4. THE ELECTRICAL CONTRACTOR SHALL BALANCE ALL CIRCUITS. ALL CIRCUITS SHALL BE CONTINUOUS WITHOUT SPLICING FROM LAST OUTLET TO THEIR TERMINALS IN CABINET.
 5. CONTRACTOR SHALL PROVIDE A DIRECTORY OF CIRCUITS FOR CABINET. DIRECTORY SHALL BE TYPEWRITTEN DESIGNATING ROOM OR EQUIPMENT AND CONTINUED FROM LAST OUTLET TO THEIR TERMINALS IN CABINET.

6. WHERE 2 OR 3 POLE BREAKER UNITS ARE CALLED FOR, THEY SHALL BE ON UNIT WITH COMMON TRIP AND NOT SINGLE POLE UNITS WITH HANDLE TIES. CAPACITY OF MAIN BUSSES SHALL BE AS SHOWN ON THE DRAWINGS.
 7. PANEL BOARDS SHALL BE MANUFACTURED BY WESTINGHOUSE, SQUARE D, SIEMENS OR GENERAL ELECTRIC.
- L. OUTSIDE DELIVERY DOOR BUZZER: A BUZZER SYSTEM SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR INCLUDING 24VAC TRANSFORMER AND WIRE. BUZZER SHALL BE EDWARDS CAT. #464 WITH STAINLESS STEEL PLATE.

- 3.01 PREPARATION/INSTALLATION/ APPLICATION**
- A. CONDUIT
1. INSTALLATION - ALL CONDUIT SHALL BE SIZED IN ACCORDANCE WITH THE NEC.
 2. TYPES OF CONDUIT
- A. CONDUIT WITHIN BUILDING CONFINES RUN IN WALLS, IN FLOOR SLABS, UNDER FLOOR SLABS, AND IN OTHER AREAS SHALL BE GALVANIZED STEEL HEAVY WALL OR IMC WITH WATER TIGHT FITTINGS AND BOXES.
- B. CONDUIT RUN IN EXTERIOR AREAS SHALL BE GALVANIZED STEEL HEAVY WALL OR IMC WITH WATER TIGHT FITTINGS AND BOXES.
- C. CONDUIT RUN IN EXTERIOR AREAS WITHIN BUILDING CONFINES SHALL BE EMT EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE. CONDUIT SHALL BE PROTECTED BY LOCATIONS SO THAT AREAS ARE INSIDE PARTITIONS, CEILING CAVITIES, ABOVE GRADE SLABS, AND AREAS NOT SUBJECT TO DAMAGE.
- D. CONDUIT WITH TRADE SIZES OVER 1/2" AND/OR EXPOSED IN WALLS OR FLOOR SHALL BE GALVANIZED STEEL HEAVY WALL OR IMC.
- E. CONDUITS RUN UNDER FLOOR SLABS AND IN CONCRETE SHALL BE PVC SCHEDULE 40 ENCASED IN CONCRETE.

- SECTION 16400 - SERVICE AND DISTRIBUTION
- 1.01 DESCRIPTION**
- A. WORK INCLUDED
1. CURRENT TRANSFORMERS CABINET.
 2. MAIN SWITCH-BOARD.
 3. A COMPLETE DISTRIBUTION SYSTEM.

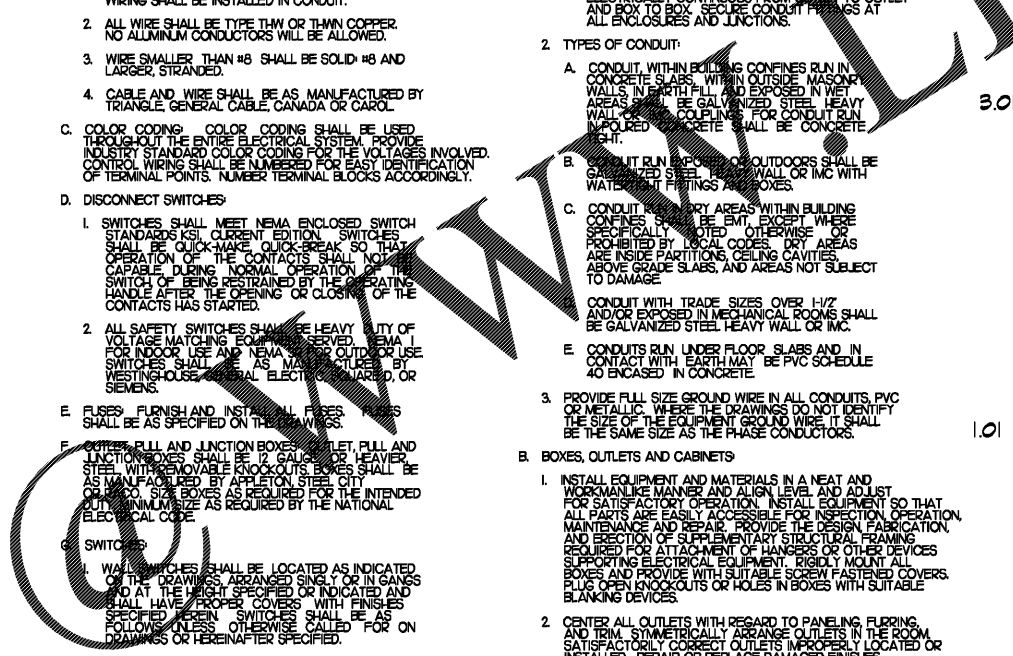
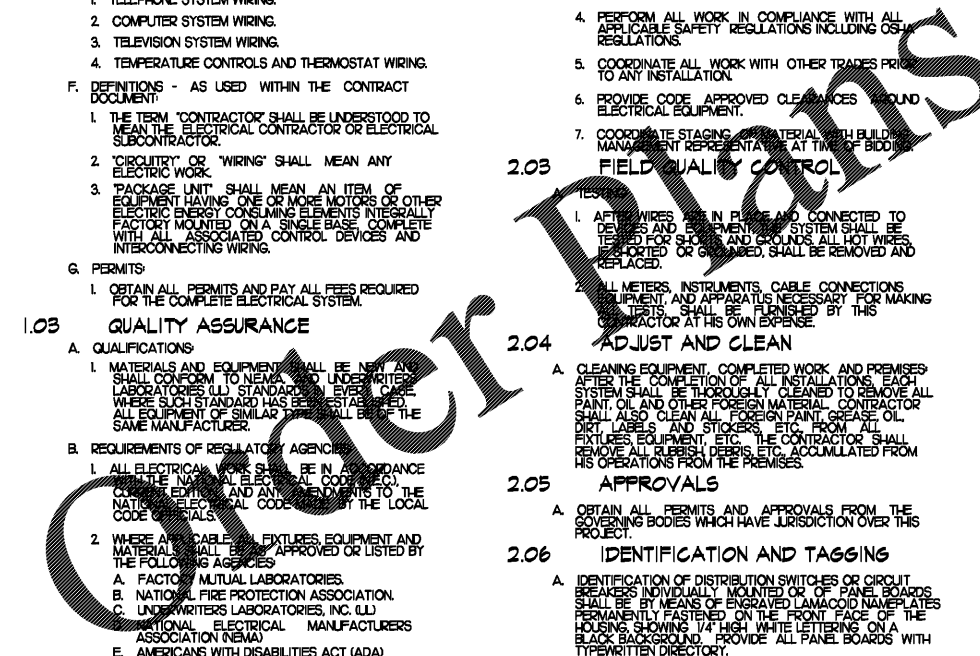
4. SYSTEM GROUNDING PER LOCAL CODES.
 5. ALL WORK AND CHARGES REQUIRED BY THE LOCAL UTILITY COMPANY.
- B. SERVICES
1. INCOMING ELECTRICAL SERVICE IS 120/208 VOLTS, 3 PHASE, 4 WIRE UNLESS NOTED OTHERWISE IN ELECTRICAL RISER.

- 1.02 SUBMITTALS**
- A. SHOP DRAWINGS FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED FOR APPROVAL:
1. DISTRIBUTION PANEL BOARDS, LIGHTING PANEL BOARDS, MISCELLANEOUS PANEL BOARDS AS SHOWN, AND INCLUDING ALL PROTECTIVE DEVICES.
 2. MAIN SWITCH-BOARD SHALL BE SERVICE ENTRANCE RATED AND FRONT ACCESSIBLE WITH REMOVABLE SCREW ON COVER PLATE. GROUNDING AND METERS SHALL COMPLY WITH THE LOCAL UTILITY COMPANY AND ALL LOCAL CODE REQUIREMENTS.
 3. DISTRIBUTION PANEL BOARDS SHALL BE ENCLOSED IN STEEL CABINET OF RIGIDITY AND GAUGE OF STEEL PER UL STANDARD FOR CABINETS. ALL PANEL BOARDS SHALL BE PROVIDED WITH DOOR LOCKS, ALL KEYS ALIKE.
 4. BUS STRUCTURE SHALL BE COPPER.
 5. SHORT CIRCUIT CURRENT RATING SHALL BE EQUAL TO OR GREATER THAN THE AVAILABLE SHORT CIRCUIT AVAILABLE SHORT CIRCUIT CURRENT RATING NOT LESS THAN 50,000 AMPERE SYMMETRICAL.
 6. PANEL BOARDS SHALL BE AS SHOWN ON THE DRAWINGS WITH SPARE SPACES PROVIDED FOR ADDITIONAL CIRCUIT BREAKERS AS REQUIRED. PANEL BOARDS SHALL BE MANUFACTURED BY GENERAL ELECTRIC, WESTINGHOUSE, SQUARE D, OR SIEMENS.
 7. PROVIDE A TYPEWRITTEN PANEL DIRECTORY FOR EACH PANEL AND RE-KEY EACH CIRCUIT INCLUDING ANY EXISTING CIRCUITS WHICH REMAIN.
- 1.03 CONNECTIONS**
- A. MAIN FEEDER CONNECTIONS SHALL BE MADE WITH SOLDBLESS CONNECTORS. BOLTED TYPE, SMALLER WIRE SPICES SHALL BE MADE WITH PRESSURE TIGHT CONNECTORS - MINNESOTA MINING "SKOTCH-LOCKS" OR IDEAL WINGNUTS.

- 3.01 INSTALLATION**
- A. SYSTEM GROUNDING
1. SHALL BE IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, LOCAL GOVERNING AUTHORITIES AND IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE UTILITY COMPANY. SEE DETAILS ON DRAWINGS FOR ADDITIONAL GROUNDING REQUIREMENTS.
- B. ELECTRICAL SERVICE
1. ELECTRICAL SERVICE SHALL BE UNDERGROUND FROM THE UTILITY COMPANY'S SERVICE UNLESS NOTED OTHERWISE IN ELECTRICAL RISER.
 2. THE UTILITY COMPANY WILL FURNISH, INSTALL AND CONNECT ALL PRIMARY SERVICE CONDUCTORS.
 3. THIS CONTRACTOR SHALL CONTACT THE UTILITY COMPANY AND OWNER/DEVELOPER TO OBTAIN ALL INFORMATION NECESSARY FOR THE WORK. INCORPORATE THEIR INSTRUCTIONS INTO THE WORK AND OBTAIN THEIR APPROVAL OF ALL WORK AND MATERIAL. INCLUDE ALL COSTS IN BASE BID.
- SECTION 16500 - LIGHTING SYSTEMS AND CONTROLS
- 1.01 DESCRIPTION**
- A. WORK INCLUDED
1. INSTALLING LIGHTING FIXTURES WITH LAMPS HANGERS, AND CONTROLS AS SHOWN ON DRAWINGS AND LIGHTING FIXTURE SCHEDULES.
- B. REQUIREMENTS
1. ALL FLUORESCENT LAMP INCLUDING PL SHALL BE 4K COLOR TEMPERATURE. GE OR APPROVED EQUAL. ALL LAMPS SHALL BE E-TYPE UNLESS SPECIFIED OTHERWISE. PROVIDE ALL LAMPS AS INDICATED ON THE LIGHTING FIXTURE SCHEDULE, OR AS RECOMMENDED BY THE FIXTURE MANUFACTURER.
 2. ALL FLUORESCENT LAMP BALLASTS SHALL BE ELECTRONIC TYPE WITH MAXIMUM 10% TOTAL HARMONIC DISTORTION (THD).
 3. PROVIDE ALL EXIT AND EMERGENCY LIGHTING AS REQUIRED BY APPLICABLE CODES.
- SECTION 16700 - COMMUNICATIONS
- 1.01 DESCRIPTION**
- A. WORK INCLUDED
1. EMPTY BACKBOXES AND CONDUIT SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- B. TELEPHONE SYSTEM/COMPUTER SYSTEM
1. TELEPHONE SYSTEM GROUNDING CONDUCTORS, FURNISH A #6 AWG COPPER GROUNDING CONDUCTOR FROM EACH TELEPHONE SERVICE EQUIPMENT TO RESPECTIVE ELECTRICAL SERVICE GROUNDING ELECTRODE SYSTEM.
 2. TELEPHONE/COMPUTER CONDUIT SYSTEM, FURNISH AS INDICATED ON THE DRAWINGS, INCLUDING THE FOLLOWING:
 1. TELEPHONE SERVICE CONDUITS FOR UNDERGROUND SERVICE.
 2. OTHER CONDUITS, AS INDICATED ON THE DRAWINGS, FURNISH #14 AWG SOFT IRON PULL WIRE OR HEAVY WIRE IN EACH CONDUIT. PROVIDE TELEPHONE CABLE TO EACH TERMINATION POINT.

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3. OUTLET BOXES WITH STAINLESS STEEL FINISH AND WIRE CABLED BY OTHERS. PROVIDE REPAIR DEDICATED CONDUITS FOR POWER LINES. DO NOT SHARE WITH OTHER TRADES (FOR DATA LINES).
- C. NO ELECTRICAL CONDUIT OR POWER WIRING SHALL PASS OVER THE TELECOMMUNICATIONS RACKS AND PANELS, EXCEPT FOR TELEPHONE COMMUNICATIONS RACKS AND PANELS.
- 3.01 INSTALLATION**
- A. FURNISH AND INSTALL CONDUIT SYSTEM AS SHOWN ON DRAWINGS. FINAL CONNECTION TO BE BY THE OWNER'S SUBCONTRACTOR. THE SYSTEM SHALL CONSIST OF BRANCHED OUTLETS IN ALL AREAS AS INDICATED, BRANCHED CONDUITS, AND ACCESSORIES REQUIRED BY THE TELEPHONE COMPANY FOR COMPLETE INSTALLATION.
- 3.01 DESCRIPTION**
- A. WORK INCLUDED
1. ALL WORK SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE (NEC) AND ALL LOCAL CODES. COORDINATE EXACT CODE REQUIREMENTS AND LOCAL AGREEMENTS WITH LOCAL INSPECTOR PRIOR TO ANY INSTALLATION.
 2. CONTRACTOR SHALL CONTACT THE UTILITY COMPANY AND INCORPORATE ALL REQUIREMENTS INTO THE NEW WORK.
 3. GROUND IN ACCORDANCE WITH THE NEC, AND ALL LOCAL CODES. REFER TO DETAILS ON SHEET E-4 FOR ADDITIONAL INFORMATION.
 4. ASSIGNED AVAILABLE FAULT CURRENT IS 50,000 AMPS. THE CONTRACTOR SHALL VERIFY WITH UTILITY COMPANY REPRESENTATIVE AND REPORT ANY DISCREPANCIES TO ARCHITECT/ENGINEER PRIOR TO ORDERING EQUIPMENT.
 5. PROVIDE FUSES AT ALL LOCATIONS SHOWN ON THE DRAWINGS OR REQUIRED FOR SUPPLEMENTARY PROTECTION. WHERE AMP RATING OF PROTECTIVE DEVICE IS 600 AMPS OR LESS, PROVIDE BUSMAN LOW-PEAK CURRENT LIMITING FUSES. CLASS BK ON PANELS. BK5 WITH DUAL ELEMENT FUSES ON UP TO 100A, ABOVE 100A DUAL ELEMENT LOW PEAK, HAVING AN INTERRUPTING RATING OF 200,000 AMPS RMS UNLESS NOTED 40I AMPS. PROVIDE BUSMAN LIMITING FUSES, CLASS 1, HAVING AN INTERRUPTING RATE OF 200,000 AMPS RMS UNLESS NOTED OTHERWISE. PROVIDE SIMILAR TYPE, 10-CAP FUSES WHERE SHOWN. SPARE FUSES, DELIVER TO THE OWNER AT THE TIME OF FINAL INSPECTION, ONE SPARE SET OF 3 FUSES FOR EACH TYPE, SIZE AND VOLTAGE INSTALLED.



	COLUMBUS, GA								
	ELECTRICAL SPECIFICATIONS								
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