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WATERFALL BOILER & RIVERSIDE RTU REPLACEMENT
ELKHART HOUSING AUTHORITY
WATERFALL AND RIVERSIDE HIGH RISE BUILDINGS
ELKHART INDIANA

ELECTRICAL
SPECIFICATIONS

ME105



SECTION 260000 ELECTRICAL

PART 1: GENERAL

1.1 GENERAL

- A. THE WORK INDICATED IN THIS DIVISION AND ON THE ELECTRICAL DRAWINGS IS SUBJECT TO THE REQUIREMENTS OF THE INSTRUCTIONS TO BIDDERS AND ANY PURCHASE ORDER OR GENERAL CONDITIONS. THESE ARE HEREBY INCLUDED BY REFERENCE. THE CONTRACTOR IS DIRECTED TO EXAMINE ALL PORTIONS OF THE BID DOCUMENTS AS THEY PERTAIN TO THE WORK COVERED BY THIS DIVISION OF THE SPECIFICATIONS AND TO INCLUDE ALL COSTS IN BID FOR ALL ELECTRICAL WORK AS CALLED FOR BY THE COMPLETE BID DOCUMENTS.
- B. PROVIDE ALL REQUIRED LABOR, MATERIALS, EQUIPMENT AND CONTRACTOR SERVICES NECESSARY FOR THE COMPLETE INSTALLATION OF EQUIPMENT INDICATED HEREIN AND ON THE DRAWINGS, COMPLETE WITH ALL RELATED SERVICES. REVIEW ALL EXISTING BUILDING CONDITIONS AS THEY RELATE TO ELECTRICAL WORK AND INCLUDE COSTS IN BID. COORDINATE REQUIREMENTS WITH OTHER TRADES AS REQUIRED.
- C. ALL WORK SHALL BE PERFORMED BY EXPERIENCED PERSONNEL QUALIFIED TO CARRY OUT THE WORK IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, LOCAL CODES AND AS SPECIFIED HEREIN. THE CONTRACTOR SHALL PROVIDE APPROPRIATE QUALIFICATIONS AND RECORDS OF PAST EXPERIENCE FOR PERSONNEL AND SUBCONTRACTORS WHEN REQUESTED BY THE ENGINEER/ARCHITECT FOR REVIEW AND APPROVAL.
- D. THE ELECTRICAL DRAWINGS LISTED IN THE DRAWING INDEX, TOGETHER WITH THESE SPECIFICATIONS, ARE AN INTEGRAL PART OF THE ELECTRICAL CONTRACT. WHAT IS CALLED FOR IN ONE IS AS BINDING AS IF CALLED FOR IN BOTH. IN CASE OF CONFLICT, THE GREATER QUANTITY OR BETTER QUALITY IS TO PREVAIL, SUBJECT TO THE APPROVAL OF THE OWNER

1.3 CODES, STANDARDS AND PERMITS

- A. ALL WORK SHALL BE IN ACCORDANCE WITH NATIONAL, STATE AND LOCAL CODES IN FORCE AT TIME OF BIDDING, INCLUDING BUT NOT LIMITED TO THE NATIONAL ELECTRICAL CODE. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND INSPECTION APPROVALS AS THE WORK PROGRESSES. ANY WORK WHICH IS COMPLETED WITHOUT THESE APPROVALS AND FOUND TO BE UNACCEPTABLE SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST.
- B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT OF ALL FEES ASSOCIATED WITH INSPECTIONS, PERMITS AND UTILITY CONNECTIONS UNLESS OTHERWISE INDICATED.
- 1.4 ELECTRICAL
- A. COORDINATE ALL WORK REQUIRING ELECTRICAL CONNECTION WITH THE CONTRACTOR PROVIDING THE EQUIPMENT. EXCEPT AS OTHERWISE INDICATED, ADDITIONAL INTERNAL WIRING, AUTOMATIC CONTROL WIRING, PROTECTIVE DEVICES, ETC. ASSOCIATED WITH WORK FURNISHED BY THE OTHER TRADES SHALL BE FURNISHED BY THE TRADE SUPPLYING THE EQUIPMENT.
- B. VERIFY VOLTAGE AND PHASE CHARACTERISTICS OF THE ELECTRICAL SERVICE AND COORDINATE WITH MECHANICAL EQUIPMENT AS REQUIRED.
- C. WHERE ELECTRICAL RATINGS OF EQUIPMENT INCREASE OVER THOSE INDICATED ON THE APPROVED CONSTRUCTION DOCUMENTS, THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL PAY ADDITIONAL COSTS OF WIRING AND ELECTRICAL EQUIPMENT FOR PROPER ELECTRICAL SERVICE TO THE EQUIPMENT.

1.5 DEMOLITION

- A. BEFORE STARTING DEMOLITION WORK, REVIEW ALL REQUIREMENTS FOR FINAL REMODELING WORK SO THAT USABLE EXISTING SYSTEM COMPONENTS, AS REQUIRED FOR COMPLETION OF THE NEW WORK, ARE NOT DESTROYED. COORDINATE ALL WORK WITH THE OTHER CONTRACTORS.
- B. ALL ELECTRICAL EQUIPMENT AND CIRCUITS THAT ARE DAMAGED OR DESTROYED DURING DEMOLITION, AND ARE NOT CALLED OUT TO BE REMOVED ON THE DRAWINGS, MUST BE RESTORED TO ORIGINAL CONDITION.
- C. THE CONDITION OF THE SITE, BUILDINGS AND SURROUNDINGS SHALL BE ACCEPTED AS FOUND. RESPONSIBILITY FOR CONDITIONS ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
- D. WORK PRACTICES AND JOB CONDITIONS SHALL MEET ALL STATE, FEDERAL AND LOCAL REQUIREMENTS TO PROTECT LIFE AND PROPERTY.
- E. VERIFY WORK TO BE PERFORMED BEFORE PROCEEDING. WORK TO REMAIN SHALL BE PROTECTED AND, IF DAMAGED, SHALL BE RESTORED TO LIKE NEW CONDITION. COORDINATE DEMOLITION WITH OTHER TRADES AS REQUIRED. ITEMS INDICATED FOR DEMOLITION SHALL BE COMPLETELY REMOVED, HAULED OFF-SITE AND DISPOSED OF PROPERLY AT NO ADDITIONAL COST TO THE OWNER.

1.6 RECORD DRAWING

- A. PROVIDE ELECTRICAL RECORD DRAWINGS AS CALLED FOR IN DIVISION 1 AND INCLUDE ALL PERTINENT INFORMATION NOT SHOWN AND ALL CHANGES FROM THE ORIGINAL PLANS: ROUTE OF ALL UNDERGROUND AND OVERHEAD FEED CONDUITS FROM THE MAIN SWITCHBOARD TO THE VARIOUS PANELS AND EQUIPMENT; INTERCONNECTING CONDUITS BETWEEN BRANCH CIRCUIT, JUNCTION BOXES, AND PANELS (ACTUAL ROUTE OF CONDUIT IS NOT REQUIRED, EXCEPT FOR CONCEALED PANEL AND MAJOR EQUIPMENT FEEDERS, ONLY HOW THE VARIOUS BRANCH ITEMS ARE INTERCONNECTED WITH CONDUIT AND NUMBER OF WIRES); CIRCUIT NUMBERS FOR ALL ITEMS WHERE THEY DO NOT AGREE WITH THE PLANS. CIRCUIT NUMBERS ON RECORD DRAWINGS AND PANELBOARD DIRECTORIES MUST AGREE.

1.7 GUARANTEES AND WARRANTIES

- A. ALL LABOR, MATERIALS AND EQUIPMENT SHALL BE GUARANTEED BY THE CONTRACTOR AND WARRANTED BY THE MANUFACTURER FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER, UNLESS LONGER PERIOD IS SPECIFIED FOR SPECIFIC EQUIPMENT. LAMP GUARANTEE IS LIMITED TO REPLACING ALL DEFECTIVE OR NON-OPERATING LAMPS INSTALLED UNDER THIS CONTRACT AT TIME OF SUBSTANTIAL COMPLETION.
- B. THE CONTRACTOR SHALL MAKE ALL NECESSARY REPAIRS AND ALTERATIONS DURING THE GUARANTEE PERIOD AS MAY BE REQUIRED BY THE OWNER OR ARCHITECT FOR CORRECT SYSTEM OPERATION AND TO COMPLY WITH THE DRAWINGS AND SPECIFICATIONS. THESE REPAIRS AND ALTERATIONS SHALL BE AT NO ADDITIONAL COST TO THE OWNER.
- C. THE OWNER RESERVES THE RIGHT TO MAKE EMERGENCY SYSTEM REPAIRS WITHOUT VOIDING THE CONTRACTOR'S GUARANTEE.

SECTION 260000 ELECTRICAL CONT.

PART 2: PRODUCTS

2.1 RACEWAYS

- A. PROVIDE AND INSTALL RACEWAYS AS REQUIRED FOR THE NEW WORK. ALL CONDUITS WILL BE CONCEALED BELOW GRADE OR WITHIN THE STRUCTURAL ELEMENTS OF THE BUILDING. RACEWAYS WILL BE RIGID METAL CONDUIT (RMC), INTERMEDIATE METALLIC CONDUIT (IMC), OR ELECTRICAL METALLIC TUBING (EMT) AS ALLOWED BY THE NEC. MINIMUM RACEWAY SIZE WILL BE THREE-QUARTER (3/4) INCH.

2.2 CONDUCTORS

- A. CONDUCTORS WILL BE THHN, THWN, OR XHHW, SIZED AS INDICATED AND INSTALLED IN ACCORDANCE WITH THE NEC. NO. 12 AWG WILL BE THE MINIMUM CONDUCTOR SIZE ALLOWED FOR BRANCH CIRCUIT WIRING. BRANCH CIRCUIT LENGTHS EXCEEDING ONE HUNDRED FEET (100') FOR 120-VOLT CIRCUITS WILL HAVE A MINIMUM WIRE SIZE OF NO. 10 AWG. COLOR CODE SHALL MATCH EXISTING BUILDING WIRING.
- B. CLASS 1 REMOTE-CONTROL AND SIGNAL CIRCUIT CONDUCTORS WILL NOT BE LESS THAN NO. 14 AWG. CLASS 2 LOW-ENERGY REMOTE-CONTROL AND SIGNAL CIRCUIT CONDUCTORS WILL NOT BE LESS THAN NO. 16 AWG.

2.3 GROUNDING:

- A. PROVIDE GROUNDING FOR ALL EQUIPMENT IN ACCORDANCE WITH THE NEC. PROVIDE GROUNDING CONDUCTORS IN ALL METALLIC AND NONMETALLIC RACEWAYS. NOTE THAT GROUNDING CONDUCTORS ARE NOT INDICATED ON THE DRAWINGS (WHERE WIRE COUNTS ARE SHOWN) BUT ARE REQUIRED TO BE PROVIDED IN ALL RACEWAYS.
- B. GROUNDING CONDUCTORS TO BE COPPER WIRE, OF THE SIZE REQUIRED BY THE NATIONAL ELECTRIC CODE OR AS SHOWN ON THE CONTRACT DRAWINGS. MAKE ALL CONNECTIONS AND SPLICES IN THE GROUNDING SYSTEM BY MEANS OF SOLDERLESS CONNECTORS.
- C. UNLESS OTHERWISE SHOWN ON THE CONTRACT DRAWINGS, ABOVE-GRADE GROUNDING CONNECTIONS SHALL BE MECHANICAL COMPRESSION TYPE.
- D. GROUNDING BUSHINGS SHALL BE INSULATED TYPE. INSTALL GROUND BUSHINGS ON ALL FEEDERS ENTERING EXISTING PANELS, WHERE PANELS DO NOT HAVE A SEPARATE GROUND BUS.
- E. PROVIDE GROUNDING EQUIPMENT BY ANDERSON, BURNDY, ERICO, HARGER OR APPROVED EQUAL.

PART 3: EXECUTION

3.1 COORDINATION

- A. TO AVOID CONFLICTS, COORDINATE EXACT PLACEMENT OF ELECTRICAL ITEMS AND ELEVATION OF CONDUIT ROUTES WITH OTHER TRADES PRIOR TO INSTALLATION. ANY CONFLICTS THAT CANNOT BE RESOLVED BETWEEN TRADES MUST BE BROUGHT TO THE ATTENTION OF THE OWNER IN WRITING AND RESOLVED BEFORE PROCEEDING.
- B. PROVIDE APPROPRIATE FIRESTOPPING MATERIAL AROUND ALL PENETRATIONS THROUGH FIRE-RATED WALLS.
- C. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, UL LISTING REQUIREMENTS AND ACCEPTED PRACTICES.

END OF SECTION