

PART 1 - GENERAL

1.01 INSTRUCTIONS

SCOPE OF WORK SHALL INCLUDE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY FOR A COMPLETE AND PROPERLY FUNCTIONING INSTALLATION IN ACCORDANCE WITH LOCAL AND STATE CODES, AND CONTRACT DRAWINGS AND SPECIFICATIONS.

1.02 LOCAL CONDITIONS

CONTRACTOR SHALL VISIT THE SITE AND OBSERVE ALL EXISTING LOCAL CONDITIONS WHICH WOULD AFFECT WORK UNDER THIS CONTRACT. CONTRACTOR SHALL EXAMINE ALL PLANS AND SPECIFICATIONS FOR THIS PROJECT AND CONSULT THEM FOR INSTRUCTIONS PERTAINING TO WORK OF THIS SECTION.

1.03 PERMITS AND FEES

CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS REQUIRED FOR PERTAINING TO WORK UNDER THIS CONTRACT AND PAY ALL CHARGES INCIDENTAL THERE TO. DELIVER TO ARCHITECT ALL CERTIFICATES OF INSPECTION ISSUED BY AUTHORITIES HAVING JURISDICTION.

1.04 CODES AND STANDARDS

FURNISH AND INSTALL MECHANICAL SYSTEMS TO MEET ALL CURRENT REQUIREMENTS OF NATIONAL, STATE AND MUNICIPAL CODES, RULES, REGULATIONS, LAWS, AND STANDARDS AS THEY ARE ADOPTED BY THE GOVERNING AGENCY AND AS THEY MAY APPLY. NORTH CAROLINA MECHANICAL CODE 2012, NORTH CAROLINA PLUMBING CODE 2012, NORTH CAROLINA GAS CODE 2012, NFPA 1 AND 70, AND UNDERWRITERS SYSTEMS, STANDARD FOR THE INSTALLATION OF A.C. GAS VENT SYSTEMS, NFPA 90A AND UNDERWRITERS LABORATORIES.

1.05 SUBMITTALS

A. MATERIAL LIST: WITHIN TWENTY (20) DAYS OF AWARD OF CONTRACT, CONTRACTOR SHALL SUBMIT TO ARCHITECT A COMPLETE LIST OF MATERIALS TO BE PROVIDED FOR THE HVAC WORK. THE LIST SHALL INCLUDE SUPPLIERS' NAMES AND MANUFACTURERS' NAMES AND NUMBER OR SERIES FOR EACH ITEM ONLY.

B. SHOP DRAWINGS SUBMIT TO THE ARCHITECT FOR APPROVAL BEFORE COMMENCING WORK. SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT TO BE PROVIDED UNDER THIS CONTRACT THE FOLLOWING APPLIES TO THE SHOP DRAWINGS:

1. CONTRACTOR SHALL SUBMIT WITHIN 30 DAYS AFTER AWARD OF CONTRACT, DRAWINGS AND/OR CUT SHEETS OF ALL MATERIALS AND EQUIPMENT, AND 1/4" SCALE EQUIPMENT ROOM DRAWINGS FOR APPROVAL BY ARCHITECT/ENGINEER. SUCH SUBMITTALS MUST CONTAIN METHODS, MATERIALS AND DIMENSIONS, OPERATING CLEARANCES, INSTALLATION, OPERATING AND MAINTENANCE INFORMATION AND SUFFICIENT ENGINEERING DATA TO INDICATE SUBSTANTIAL COMPLIANCE WITH MECHANICAL SYSTEMS. EACH SECTION OF WORK OR ONE MECHANICAL SYSTEM SHALL BE SUBMITTED AT ONE TIME IN LOOSE LEAF 3 RING BINDERS. NO APPROVAL WILL BE GIVEN IF SUBMITTED PIECE MEAL.
2. WHERE CONTRACTOR CONSIDERS ADDITIONAL DETAIL OR SHOP DRAWINGS ESSENTIAL TO PROPER FABRICATION OR INSTALLATION OF EQUIPMENT, DUCTWORK, AND PIPING HE SHALL PREPARE SUCH CONSISTENT WITH CURRENT INDUSTRY METHODS AND STANDARDS. ENGINEER RESERVES THE RIGHT TO DIRECT REMOVAL AND REPLACEMENT OF ANY ITEMS WHICH, IN HIS OPINION, DO NOT PRESENT AN ORDERLY AND REASONABLY NEAT AND WORKMANLIKE APPEARANCE, PROVIDED SUCH ITEMS ARE REPLACED WITH EQUIVALENTS. ALL SHOP DRAWINGS SHALL BE PREPARED AND SUBMITTED TO ARCHITECT FOR APPROVAL. REPLACEMENT SHALL BE DONE WHEN DIRECTED IN WRITING BY ENGINEER AT THE CONTRACTOR'S EXPENSE AND WITHOUT ADDITIONAL EXPENSE TO OWNER.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FEES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FEES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FEES.
4. CHANGES IN FOUNDATIONS, BASES, CONNECTIONS, PIPING, CONTROLS, STARTERS, ELECTRICAL EQUIPMENT, AND/OR CONDUIT, SPACE OPENINGS, WALLS AND CEILINGS, AND VIBRATION ISOLATION IN ORDER TO ACCOMMODATE SUBSTITUTE EQUIPMENT SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.
5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND RECEIVE ENGINEER'S APPROVAL BEFORE INSTALLING MATERIALS OR EQUIPMENT. ANY EQUIPMENT OR MATERIALS INSTALLED PRIOR TO RECEIPT OF APPROVED SHOP DRAWINGS FROM ENGINEER SHALL BE SUBJECT TO REMOVAL AND/ OR ALTERATION AT THE DISCRETION OF THE MECHANICAL ENGINEER AT NO ADDITIONAL COST.
6. APPROVAL OF ANY SUBMITTED DATA OR SHOP DRAWINGS FOR MATERIALS, EQUIPMENT, APPARATUS, DEVICES, ARRANGEMENTS AND/OR INSTALLATION SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY OF FURNISHING SAME OF PROPER DIMENSIONS, CAPACITIES, SIZES, QUANTITIES AND INSTALLATION DETAILS TO EFFICIENTLY PERFORM REQUIREMENTS AND INTENT OF CONTRACT. SUCH APPROVAL SHALL NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS OF ANY SORT.

C. ANY ELECTRICAL DEVIATIONS BETWEEN THE CONTRACT DOCUMENTS AND THE FURNISHED EQUIPMENT SHALL BE SEPARATELY ACKNOWLEDGED BY A SUBSTITUTION REQUEST AND ADDITIONALLY NOTED ON THE SUBMITTAL.

D. PROVIDE MECHANICAL SHOP DRAWINGS FOR: AIR HANDLING UNITS, CONDENSING UNITS, VENTILATORS, AIR INTAKES AND OUTLETS, DUCT ACCESSORIES, DUCT INSULATION, PIPE INSULATION, TEMPERATURE CONTROLS, DUCT MATERIALS, REFRIGERANT PIPING, CONDENSATE PIPING.

1.06 CONNECTING TO WORK OF OTHERS

A. BEFORE STARTING HIS WORK, AND FROM TIME TO TIME AS WORK PROGRESSES, MECHANICAL CONTRACTOR SHALL EXAMINE WORK OF OTHERS INSTALLED BY ARCHITECT AND ADDITIONALLY NOTED ON HIS WORK AND SHALL NOTIFY ENGINEER IMMEDIATELY IN WRITING IF CONDITIONS EXIST WHICH WILL PREVENT SATISFACTORY RESULTS IN INSTALLATION OF SYSTEM.

B. SHOULD CONTRACTOR START HIS WORK WITHOUT SUCH NOTIFICATION, IT SHALL BE CONSTRUED AS AN ACCEPTANCE BY HIM OF ALL CLAIMS OR QUESTIONS AS TO SUITABILITY OR WORK OF OTHERS TO RECEIVE HIS WORK. HE SHALL REMOVE AND REPLACE, AT HIS OWN EXPENSE, ALL WORK UNDER THIS CONTRACT WHICH MAY HAVE TO BE REMOVED ON ACCOUNT OF SUCH DEFECTS.

1.07 CONTRACT DRAWINGS

A. IT IS THE INTENT OF DRAWINGS AND SPECIFICATIONS TO OBTAIN A COMPLETE AND FULLY OPERATIONAL, AND SATISFACTORY INSTALLATION. AN ATTEMPT HAS BEEN MADE TO SEPARATE AND CLEARLY DEFINE WORK UNDER THIS CONTRACT INTO SEPARATE DIVISIONS. CONTRACTOR SHALL CONSULT DRAWINGS AND SPECIFICATIONS WHICH SHALL NOT RELIEVE CONTRACTOR FROM FULL RESPONSIBILITY OF COMPLIANCE WITH WORK OF HIS TRADE WHICH MAY BE INDICATED ON ANY DRAWING OR IN ANY SECTION OF THE SPECIFICATIONS.

B. CONTRACTOR SHALL CAREFULLY EXAMINE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS PRIOR TO SUBMITTING BID. CONTRACTOR WILL BE REQUIRED TO FURNISH, INSTALL AND CONNECT WITH APPROPRIATE SERVICES ALL ITEMS SHOWN ON ANY DRAWINGS WITHOUT ADDITIONAL EXPENSE TO OWNER. ARCHITECT SHALL BE NOTIFIED PRIOR TO BID DATE OF ANY DISCREPANCIES, OMISSIONS, CONFLICTS OR INTERFERENCES WHICH OCCUR BETWEEN DRAWINGS OR BETWEEN DRAWINGS AND SPECIFICATIONS. IF SUCH NOTIFICATION IS RECEIVED IN ADEQUATE TIME, ADDITIONAL DATA OR CHANGES WILL BE ISSUED BY ADDENDUM TO ALL BIDDERS. SUBMITTAL OF BID BY CONTRACTOR SHALL INDICATE THE CONTRACTOR'S ACKNOWLEDGMENT AND ACCEPTANCE TO PROVIDE ALL NECESSARY EQUIPMENT, MATERIALS AND LABOR TO MEET THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IN ACCORDANCE WITH ALL CODE REQUIREMENTS.

C. ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER MECHANICAL DRAWINGS WITH REFERENCE TO BUILDING CONSTRUCTION. MECHANICAL DRAWINGS ARE DIAGRAMMATIC BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION OF BUILDING AND WORK OF OTHER TRADES WILL PERMIT. WHERE LOCATIONS OF EQUIPMENT, DEVICES OR FIXTURES ARE CONTROLLED BY ARCHITECTURAL FEATURES, ESTABLISH SUCH LOCATIONS BY REFERRING TO DIMENSIONS ON ARCHITECTURAL DRAWINGS AND NOT BY SCALING DRAWINGS. CHANGES FROM DRAWINGS NECESSARY TO MAKE WORK OF CONTRACTOR CONFORM WITH BUILDING AS CONSTRUCTED AND TO FIT WORK OF OTHER TRADES OR RULES OF BODIES HAVING JURISDICTION SHALL BE MADE BY CONTRACTOR AT HIS OWN EXPENSE. SOME DRAWINGS MAY HAVE BEEN PREPARED FROM EXISTING DRAWINGS WITH INTENT OF PROVIDING THE CONTRACTOR WITH INFORMATION CONCERNING THE EXISTING CONDITIONS. DATA SHOWN HAS NOT BEEN COMPLETELY VERIFIED BY ARCHITECT/ENGINEER AND NO GUARANTEE OF ACCURACY OF THIS INFORMATION IS GIVEN OR INTENDED. IT SHALL BE THE RESPONSIBILITY OF CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS. DATA WHICH IS SHOWN BUT PROVED TO BE INCORRECT SHALL IN NO WAY RELIEVE THE CONTRACTOR FROM INSTALLING HIS WORK WITHIN THE INTENT OF PLANS AND SPECIFICATIONS NOR SHALL IT CONSTITUTE BASIS FOR A CHANGE ORDER UNLESS, IN THE OPINION OF THE ARCHITECT/ENGINEER IT IS DETERMINED TO BE AN EXTRA COST OVER AND ABOVE THE BASIC INTENT OF THESE PLANS AND SPECIFICATIONS.

1.08 DAMAGE TO OTHER WORK

CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER PROTECTIVE MEASURES WHEN WORKING OVERHEAD OR IN FINISHED AREAS. HE/SHE SHALL REPAIR, REPLACE OR TOUCH-UP ALL FINISHED SURFACES, WHICH MAY BE DAMAGED AS A RESULT OF HIS PROTECTION.

1.09 STORAGE AND WORK AREAS

ALL EQUIPMENT AND MATERIALS SHALL BE PROTECTED FROM THE WEATHER, DAMAGE, MOISTURE, DIRT, DEBRIS, ETC. USE OF CARDBOARD, VISQUEEN, OR OTHER SIMILAR MATERIALS WHILE STORED OUTSIDE IS NOT ACCEPTABLE. DO NOT INSTALL DAMAGED EQUIPMENT.

1.10 APPROVAL OF MATERIAL

A. EQUIPMENT OTHER THAN SPECIFIED IN THE CONTRACT DOCUMENTS REQUIRES APPROVAL FROM ENGINEER 10 DAYS PRIOR TO BID DATE.

B. WRITTEN REQUEST FOR PRIOR APPROVAL MUST BE RECEIVED IN ENGINEER'S OFFICE BY THE END OF BUSINESS NO LATER THAN 10 DAYS PRIOR TO SCHEDULED BID DATE. REQUEST SHALL CONTAIN DETAILED INFORMATION ON THE PROPOSED ITEM. THIS SHALL INCLUDE:

1. CATALOG CUTS SHEETS
2. DETAILED SPECIFICATIONS
3. DESCRIPTION OF DEVIATION FROM SPECIFIED ITEM

C. AN ADDENDUM SHALL BE ISSUED LISTING ALL PROSPECTIVE CONTRACTORS LISTING IN PRIOR APPROVED MANUFACTURERS AND PRODUCTS.

PART 2 - PRODUCTS

2.01 SPLIT SYSTEM AIR-CONDITIONING SYSTEM

A. GENERAL: FURNISH AND INSTALL SPLIT SYSTEM HEAT PUMPS OF THE CAPACITY, OPERATING CHARACTERISTICS, AND ELECTRICAL CHARACTERISTICS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.

B. MANUFACTURER: TRADE, DANKIN, OR YORK MAY BE SUBMITTED FOR APPROVAL PROVIDED THEY CONFORM TO ALL REQUIREMENTS OF THESE SPECIFICATIONS.

C. WARRANTY: CONTRACTOR SHALL INCLUDE IN HIS PRICE THE COST OF ONE YEAR'S WARRANTY ON ENTIRE SYSTEM. CONTRACTOR SHALL PROVIDE AN ADDITIONAL FOUR-YEAR WARRANTY ON EACH COMPRESSOR TO INCLUDE PARTS, REFRIGERANT AND OIL EXCLUSIVE OF LABOR AND INDOOR UNITS.

D. FAN SECTION: SHALL BE INSULATED AND CONSTRUCTED OF GALVANIZED STEEL, BONDERIZED AND FINISHED WITH BAKED ENAMEL. THE VARIABLE SPEED FAN MOTOR SHALL BE FACTORY LUBRICATED, HAVE INTERNAL OVERLOAD PROTECTION AND BE RESILENTLY MOUNTED. FAN MOTOR ASSEMBLY SHALL BE PROTECTED FROM SEVERE WEAR BY A REVERSIBLE FILTER RACK MOUNTED WITH PERMANENT TYPE FILTER THAT SIZES OUT FOR SERVICE.

2. COOLING COIL: SHALL BE CONSTRUCTED WITH ALUMINUM PLATE FINS MECHANICALLY BONDED TO COPPER TUBING FOR SEVERE WEAR. REVERSIBLE FILTER RACK SHALL BE EQUIPPED WITH PERMANENT TYPE FILTER THAT SIZES OUT FOR SERVICE.

3. HEAT EXCHANGER: SHALL BE CONSTRUCTED WITH ALUMINUM PLATE FINS MECHANICALLY BONDED TO COPPER TUBING FOR SEVERE WEAR. REVERSIBLE FILTER RACK SHALL BE EQUIPPED WITH PERMANENT TYPE FILTER THAT SIZES OUT FOR SERVICE.

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2.04 AIR DISTRIBUTION SYSTEMS (CONT)

D. AIR DISTRIBUTION DEVICES: SET POSITION ALL SLEEVES AND INSERTS REQUIRED IN WALLS, PARTITIONS, CEILINGS, OR FLOORS, AND SHALL HAVE A REPRESENTATIVE ON SITE DURING POURING OF CONCRETE TO MAINTAIN POSITION OF SLEEVES AND INSERTS UNTIL CONCRETE IS SET. CLOSE COORDINATION IS REQUIRED TO INSURE THAT ALL SLEEVES ARE PROPERLY SET. COORDINATES OF SIZE AND LOCATION OF OPENINGS SHALL BE VERIFIED BY CONTRACTOR AFTER FRAMING IS IN PLACE. CONTRACTOR SHALL DO ALL CUTTING AND NOTCHING OF EXISTING AND NEW BUILDING MATERIALS REQUIRED FOR INSTALLATION OF WORK HEREIN SPECIFIED. NO STRUCTURAL MEMBERS SHALL BE CUT WITHOUT APPROVAL OF STRUCTURAL ENGINEER AND ALL SUCH CUTTING SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER. MEETING WITH APPROVAL OF STRUCTURAL ENGINEER TO MATCH ADJOINING SURFACES AND FINISHES, BY MECHANICS OF PARTICULAR TRADE INVOLVED. SLEEVES AND OPENINGS NOT USED DURING CONSTRUCTION SHALL BE SEALED WITH GROUT BY CONTRACTOR. OPENINGS BETWEEN PIPES AND SLEEVES THROUGH FIRE AND SMOKE WALLS OR FLOORS SHALL BE SEALED TO PREVENT PASSAGE OF SMOKE OR HEAT USING AN UNDERWRITERS LABORATORIES APPROVED METHOD RATED AT LEAST EQUAL TO THE BARRIER BEING PENETRATED. METHOD OF SEALING SHALL BE SUBMITTED WITH PROOF OF U.L. APPROVAL WITH OTHER SUBMITTALS. ALL OPENINGS REQUIRED IN CONCRETE WHICH WERE OMITTED WHEN CONCRETE WAS POURED SHALL BE CAREFULLY MADE BY USE OF CORE DRILLING OPERATION WITH IN MINOR HOLE SIZE UNLESS LARGE SIZE IS PROVIDED BY STRUCTURAL ENGINEER. CUT NO OPENINGS IN PRESTRESSED OR PRECAST MEMBERS WITHOUT APPROVAL OF STRUCTURAL ENGINEER.

B. WALLS AND PARTITIONS:
a. PIPE SLEEVES 8 INCH DIAMETER AND SMALLER (ABOVE GRADE) SLEEVES SHALL BE MILD STEEL OR PLASTIC SLEEVES BUILT INTO WALL PARTITION OR BEAM, SIZED TO PASS PIPE AND COVERING. LEAVING A CLEAR SPACE OF 1/4 INCH MINIMUM BETWEEN COVERING AND SLEEVES. PARTITIONS OF FIRE RATED BARRIERS SHALL HAVE MILD STEEL SLEEVES.
b. PIPE SLEEVES STOPPED AT EXTERIOR WALLS BELOW GRADE, SCHEDULE 40 STEEL HOT DIP GALVANIZED AFTER FABRICATION OR CAST IRON SLEEVE WITH 1/4 INCH CENTER FLANGE. WATER STOPPED AROUND THE OUTSIDE.

2. PIPE SLEEVES IN FLOORS ABOVE GRADE: SLEEVES SHALL BE 14 GAUGE GALVANIZED SHEET STEEL OR PLASTIC, SET BEFORE FLOOR IS POURED, SIZED TO PASS PIPE AND COVERING, LEAVING A CLEAR SPACE OF 1/4 INCH BETWEEN COVERING AND SLEEVES. ALL EXCEEDING SHALL BE GALVANIZED AFTER FABRICATION OR CAST IRON SLEEVE WITH 1/4 INCH CENTER FLANGE. WATER STOPPED AROUND THE OUTSIDE.

3. DUCT SLEEVES: SLEEVES 8 INCH DIAMETER AND SMALLER (ABOVE GRADE) SLEEVES SHALL BE 14 GAUGE GALVANIZED SHEET STEEL OR PLASTIC, SET BEFORE FLOOR IS POURED, SIZED TO PASS PIPE AND COVERING, LEAVING A CLEAR SPACE OF 1/4 INCH BETWEEN COVERING AND SLEEVES. ALL EXCEEDING SHALL BE GALVANIZED AFTER FABRICATION OR CAST IRON SLEEVE WITH 1/4 INCH CENTER FLANGE. WATER STOPPED AROUND THE OUTSIDE.

C. SEALING OF SLEEVES:
1. SLEEVES BELOW GRADE: CAULK JOINTS BETWEEN SLEEVES AND SURROUNDING OAKUM AND SEALANT TO PREVENT LEAKAGE OF WATER THROUGH SLEEVES.
2. SLEEVES ABOVE GRADE: OPEN JOINTS AROUND DUCT, EYE BOLT SEALING THROUGH SLEEVES AND SEALANT TO PREVENT LEAKAGE OF WATER THROUGH SLEEVES.
3. JOINTS OF SLEEVES THROUGH FIRE RATED BARRIERS: OPENINGS AROUND PIPES, ETC. THROUGH FLOORS SHALL BE SEALED WITH APPROVED METHOD RATED AT LEAST EQUAL TO THE BARRIER BEING PENETRATED.

3.03 REMOVAL OF DEBRIS:
CONTRACTOR SHALL AT ALL TIMES KEEP PREMISES FREE FROM ACCUMULATIONS OF WASTE MATERIAL OR DEBRIS GENERALLY OCCURRING UNDER THIS CONTRACT.

3.04 CLEAN UP AND ADJUSTMENTS:
UPON COMPLETION OF INSTALLATION, THE CONTRACTOR SHALL FURNISH TO THE ARCHITECT A SET OF DRAWINGS, MARKED TO SCALE, INDICATING THE SIZE AND LOCATION OF PIPING AND DUCTS, AND NOTING ALL MAJOR CHANGES MADE DURING CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN THE DRAWINGS FROM THE ARCHITECT AND SHALL BEAR ALL COSTS IN OBTAINING THE DRAWINGS AND PROVIDING THE AS-BUILT DRAWINGS. THE CONTRACTOR SHALL DELIVER THE DRAWINGS PLUS TWO SETS OF AS-BUILT DRAWINGS TO THE ARCHITECT. EACH SHEET IN EACH SET SHALL BE SIGNED BY A PRINCIPAL REPRESENTATIVE OF THE CONTRACTOR, DATED AND HAVE "AS-BUILT" STAMPED NEAR THE SIGNATURE. DRAWINGS SHALL HAVE ACCURATE DIMENSIONS MEASURED FROM COLUMNS, WALLS, BEAMS AND OTHER FIXED PARTS OF THE BUILDING TO THE CONCEALED MATERIALS. THE CONTRACTOR SHALL MAINTAIN A SET OF DRAWINGS AT THE SITE AND EACH DAY SHALL RECORD INSTALLATION OF PIPE, DUCTS, ETC. TO INSURE ACCURATE AS-BUILT DRAWINGS. THE CONTRACTOR SHALL FURNISH A SET OF DRAWINGS AND TWO SETS OF CONTRACTOR SIGNED AND DATED AS-BUILT DRAWINGS OF THE CONTROLS.

3.07 GUARANTEE AND SERVICE:
A. IN ADDITION TO THE GUARANTEE OF EQUIPMENT BY THE MANUFACTURER OF EACH PIECE OF EQUIPMENT SPECIFIED HEREIN, THE MECHANICAL CONTRACTOR SHALL ALSO GUARANTEE SUCH EQUIPMENT AND SHALL BE HELD RESPONSIBLE FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE FOR NECESSARY ADJUSTMENTS AND/OR REPLACEMENTS OF ALL DEFECTIVE EQUIPMENT, MATERIALS AND WORKMANSHIP WITHOUT EXPENSE TO THE OWNER. PROVIDE LETTER TO THE OWNER STATING THE CONTRACTOR'S GUARANTEE AND DATES OF GUARANTEE COVERAGE.
B. CLEANING OF PERMANENT TYPE FILTERS, LUBRICATION, AND CLEANING OF STRAINERS SHALL BE 30-DAYS AFTER THE FINAL ACCEPTANCE.
C. THE CONTRACTOR SHALL PROVIDE FOR A REPRESENTATIVE OF HIS FIRM, THE CONTROL SYSTEM CONTRACTOR, AND THE OWNER'S REPRESENTATIVE TO RETURN TO THE JOB AT THE CHANGE OF SEASONS (SUMMER TO WINTER OR WINTER TO SUMMER) FOR THE FIRST YEAR ONLY, TO ADJUST THE AIR CONDITIONING SYSTEMS AND RECHECK OR RECALIBRATE CONTROLS AS MAY BE REQUIRED OF THE SEASON CHANGE FROM COOLING TO HEATING OR VICE VERSA.

3.08 ACCEPTANCE:
A. AS A PRELIMINARY TO REQUESTING FINAL INSPECTION, CONTRACTOR SHALL:
1. TEST AND BALANCE EACH SYSTEM TO ASSURE DESIGN PERFORMANCE AND PROVIDE ARCHITECT AND ENGINEER WITH PRELIMINARY TEST RESULTS.
2. FURNISH LETTER FROM AUTHORIZED REPRESENTATIVE OF CONTROL MANUFACTURER THAT ALL CONTROLS HAVE BEEN CHECKED FOR OPERATION AND CALIBRATION AND THAT ALL SYSTEMS ARE OPERATING AS INTENDED.
B. ACCEPTANCE WILL BE MADE BY THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE ON THE BASIS OF TESTS AND INSPECTION OF THE JOB. CONTRACTOR SHALL FURNISH THE NECESSARY MECHANICS TO OPERATE SYSTEMS, MAKE ANY NECESSARY ADJUSTMENTS AND ASSIST WITH THE FINAL INSPECTION.

3.09 ACCEPTANCE:
A. AS A PRELIMINARY TO REQUESTING FINAL INSPECTION, CONTRACTOR SHALL:
1. TEST AND BALANCE EACH SYSTEM TO ASSURE DESIGN PERFORMANCE AND PROVIDE ARCHITECT AND ENGINEER WITH PRELIMINARY TEST RESULTS.
2. FURNISH LETTER FROM AUTHORIZED REPRESENTATIVE OF CONTROL MANUFACTURER THAT ALL CONTROLS HAVE BEEN CHECKED FOR OPERATION AND CALIBRATION AND THAT ALL SYSTEMS ARE OPERATING AS INTENDED.
B. ACCEPTANCE WILL BE MADE BY THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE ON THE BASIS OF TESTS AND INSPECTION OF THE JOB. CONTRACTOR SHALL FURNISH THE NECESSARY MECHANICS TO OPERATE SYSTEMS, MAKE ANY NECESSARY ADJUSTMENTS AND ASSIST WITH THE FINAL INSPECTION.

3.10 ACCEPTANCE:
A. AS A PRELIMINARY TO REQUESTING FINAL INSPECTION, CONTRACTOR SHALL:
1. TEST AND BALANCE EACH SYSTEM TO ASSURE DESIGN PERFORMANCE AND PROVIDE ARCHITECT AND ENGINEER WITH PRELIMINARY TEST RESULTS.
2. FURNISH LETTER FROM AUTHORIZED REPRESENTATIVE OF CONTROL MANUFACTURER THAT ALL CONTROLS HAVE BEEN CHECKED FOR OPERATION AND CALIBRATION AND THAT ALL SYSTEMS ARE OPERATING AS INTENDED.
B. ACCEPTANCE WILL BE MADE BY THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE ON THE BASIS OF TESTS AND INSPECTION OF THE JOB. CONTRACTOR SHALL FURNISH THE NECESSARY MECHANICS TO OPERATE SYSTEMS, MAKE ANY NECESSARY ADJUSTMENTS AND ASSIST WITH THE FINAL INSPECTION.

3.11 ACCEPTANCE:
A. AS A PRELIMINARY TO REQUESTING FINAL INSPECTION, CONTRACTOR SHALL:
1. TEST AND BALANCE EACH SYSTEM TO ASSURE DESIGN PERFORMANCE AND PROVIDE ARCHITECT AND ENGINEER WITH PRELIMINARY TEST RESULTS.
2. FURNISH LETTER FROM AUTHORIZED REPRESENTATIVE OF CONTROL MANUFACTURER THAT ALL CONTROLS HAVE BEEN CHECKED FOR OPERATION AND CALIBRATION AND THAT ALL SYSTEMS ARE OPERATING AS INTENDED.
B. ACCEPTANCE WILL BE MADE BY THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE ON THE BASIS OF TESTS AND INSPECTION OF THE JOB. CONTRACTOR SHALL FURNISH THE NECESSARY MECHANICS TO OPERATE SYSTEMS, MAKE ANY NECESSARY ADJUSTMENTS AND ASSIST WITH THE FINAL INSPECTION.

3.12 ACCEPTANCE:
A. AS A PRELIMINARY TO REQUESTING FINAL INSPECTION, CONTRACTOR SHALL:
1. TEST AND BALANCE EACH SYSTEM TO ASSURE DESIGN PERFORMANCE AND PROVIDE ARCHITECT AND ENGINEER WITH PRELIMINARY TEST RESULTS.
2. FURNISH LETTER FROM AUTHORIZED REPRESENTATIVE OF CONTROL MANUFACTURER THAT ALL CONTROLS HAVE BEEN CHECKED FOR OPERATION AND CALIBRATION AND THAT ALL SYSTEMS ARE OPERATING AS INTENDED.
B. ACCEPTANCE WILL BE MADE BY THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE ON THE BASIS OF TESTS AND INSPECTION OF THE JOB. CONTRACTOR SHALL FURNISH THE NECESSARY MECHANICS TO OPERATE SYSTEMS, MAKE ANY NECESSARY ADJUSTMENTS AND ASSIST WITH THE FINAL INSPECTION.

3.13 ACCEPTANCE:
A. AS A PRELIMINARY TO REQUESTING FINAL INSPECTION, CONTRACTOR SHALL:
1. TEST AND BALANCE EACH SYSTEM TO ASSURE DESIGN PERFORMANCE AND PROVIDE ARCHITECT AND ENGINEER WITH PRELIMINARY TEST RESULTS.
2. FURNISH LETTER FROM AUTHORIZED REPRESENTATIVE OF CONTROL MANUFACTURER THAT ALL CONTROLS HAVE BEEN CHECKED FOR OPERATION AND CALIBRATION AND THAT ALL SYSTEMS ARE OPERATING AS INTENDED.
B. ACCEPTANCE WILL BE MADE BY THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE ON THE BASIS OF TESTS AND INSPECTION OF THE JOB. CONTRACTOR SHALL FURNISH THE NECESSARY MECHANICS TO OPERATE SYSTEMS, MAKE ANY NECESSARY ADJUSTMENTS AND ASSIST WITH THE FINAL INSPECTION.

3.14 ACCEPTANCE:
A. AS A PRELIMINARY TO REQUESTING FINAL INSPECTION, CONTRACTOR SHALL:
1. TEST AND BALANCE EACH SYSTEM TO ASSURE DESIGN PERFORMANCE AND PROVIDE ARCHITECT AND ENGINEER WITH PRELIMINARY TEST RESULTS.
2. FURNISH LETTER FROM AUTHORIZED REPRESENTATIVE OF CONTROL MANUFACTURER THAT ALL CONTROLS HAVE BEEN CHECKED FOR OPERATION AND CALIBRATION AND THAT ALL SYSTEMS ARE OPERATING AS INTENDED.
B. ACCEPTANCE WILL BE MADE BY THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE ON THE BASIS OF TESTS AND INSPECTION OF THE JOB. CONTRACTOR SHALL FURNISH THE NECESSARY MECHANICS TO OPERATE SYSTEMS, MAKE ANY NECESSARY ADJUSTMENTS AND ASSIST WITH THE FINAL INSPECTION.

3.15 ACCEPTANCE:
A. AS A PRELIMINARY TO REQUESTING FINAL INSPECTION, CONTRACTOR SHALL:
1. TEST AND BALANCE EACH SYSTEM TO ASSURE DESIGN PERFORMANCE AND PROVIDE ARCHITECT AND ENGINEER WITH PRELIMINARY TEST RESULTS.
2. FURNISH LETTER FROM AUTHORIZED REPRESENTATIVE OF CONTROL MANUFACTURER THAT ALL CONTROLS HAVE BEEN CHECKED FOR OPERATION AND CALIBRATION AND THAT ALL SYSTEMS ARE OPERATING AS INTENDED.
B. ACCEPTANCE WILL BE MADE BY THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE ON THE BASIS OF TESTS AND INSPECTION OF THE JOB. CONTRACTOR SHALL FURNISH THE NECESSARY MECHANICS TO OPERATE SYSTEMS, MAKE ANY NECESSARY ADJUSTMENTS AND ASSIST WITH THE FINAL INSPECTION.

3.16 ACCEPTANCE:
A. AS A PRELIMINARY TO REQUESTING FINAL INSPECTION, CONTRACTOR SHALL:
1. TEST AND BALANCE EACH SYSTEM TO ASSURE DESIGN PERFORMANCE AND PROVIDE ARCHITECT AND ENGINEER WITH PRELIMINARY TEST RESULTS.
2. FURNISH LETTER FROM AUTHORIZED REPRESENTATIVE OF CONTROL MANUFACTURER THAT ALL CONTROLS HAVE BEEN CHECKED FOR OPERATION AND CALIBRATION AND THAT ALL SYSTEMS ARE OPERATING AS INTENDED.
B. ACCEPTANCE WILL BE MADE BY THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE ON THE BASIS OF TESTS AND INSPECTION OF THE JOB. CONTRACTOR SHALL FURNISH THE NECESSARY MECHANICS TO OPERATE SYSTEMS, MAKE ANY NECESSARY ADJUSTMENTS AND ASSIST WITH THE FINAL INSPECTION.

3.17 ACCEPTANCE:
A. AS A PRELIMINARY TO REQUESTING FINAL INSPECTION, CONTRACTOR SHALL:
1. TEST AND BALANCE EACH SYSTEM TO ASSURE DESIGN PERFORMANCE AND PROVIDE ARCHITECT AND ENGINEER WITH PRELIMINARY TEST RESULTS.
2. FURNISH LETTER FROM AUTHORIZED REPRESENTATIVE OF CONTROL MANUFACTURER THAT ALL CONTROLS HAVE BEEN CHECKED FOR OPERATION AND CALIBRATION AND THAT ALL SYSTEMS ARE OPERATING AS INTENDED.
B. ACCEPTANCE WILL BE MADE BY THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE ON THE BASIS OF TESTS AND INSPECTION OF THE JOB. CONTRACTOR SHALL FURNISH THE NECESSARY MECHANICS TO OPERATE SYSTEMS, MAKE ANY NECESSARY ADJUSTMENTS AND ASSIST WITH THE FINAL INSPECTION.

3.18 ACCEPTANCE:
A. AS A PRELIMINARY TO REQUESTING FINAL INSPECTION, CONTRACTOR SHALL:
1. TEST AND BALANCE EACH SYSTEM TO ASSURE DESIGN PERFORMANCE AND PROVIDE ARCHITECT AND ENGINEER WITH PRELIMINARY TEST RESULTS.
2. FURNISH LETTER FROM AUTHORIZED REPRESENTATIVE OF CONTROL MANUFACTURER THAT ALL CONTROLS HAVE BEEN CHECKED FOR OPERATION AND CALIBRATION AND THAT ALL SYSTEMS ARE OPERATING AS INTENDED.
B. ACCEPTANCE WILL BE MADE BY THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE ON THE BASIS OF TESTS AND INSPECTION OF THE JOB. CONTRACTOR SHALL FURNISH THE NECESSARY MECHANICS TO OPERATE SYSTEMS, MAKE ANY NECESSARY ADJUSTMENTS AND ASSIST WITH THE FINAL INSPECTION.

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