

GENERAL NOTES APPLY TO ALL DRAWINGS.

2. THIS PROJECT INVOLVES CONSTRUCTION INSIDE AN EXISTING STRUCTURE. CONTRACTORS, BY SUBMITTING A BID, ARE DEEMED TO BE COMPLETELY FAMILIAR WITH THE EXISTING CONDITION OF THE BUILDING AS IT INFLUENCES THE WORK DESCRIBED. ABSOLUTELY NO CLAIMS FOR EXTRA COMPENSATION WILL BE CONSIDERED FOR UNUSUAL CONDITIONS VISIBLE OR REASONABLY INFERRABLE FROM A CAREFUL EXAMINATION OF THE EXISTING BUILDING.

3. THIS CONTRACTOR SHALL INSPECT THE EXISTING FIELD CONDITIONS AT THE SITE AND THE "AS-BUILT" BASE BUILDING CONTRACT DOCUMENTS PRIOR TO THE START OF ANY WORK TO DETERMINE WHAT EFFECT THE EXISTING CONDITIONS WILL HAVE ON HIS WORK. ANY UNUSUAL CONDITIONS MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER IMMEDIATELY.

4. THIS CONTRACTOR SHALL CONNECT HIS WORK TO VARIOUS EXISTING PIPING, DUCTWORK, AND CONTROL SYSTEMS IN THE BASE BUILDING. THE NEW WORK SHALL BE COMPATIBLE WITH THE EXISTING SYSTEMS. LOCATION OF EQUIPMENT OR THE LOCATION OF THE EXISTING SYSTEMS AS WELL AS OPENINGS IN FLOOR SLABS OR WALLS SHALL BE GOVERNED BY THE EXISTING CONDITIONS AS THEY APPEAR IN THE FIELD OR ON THE "AS-BUILT" DRAWINGS.

5. CARE SHALL BE TAKEN DURING THE INSTALLATION TO NOT DAMAGE OR INTERRUPT BUILDING SYSTEMS AND SERVICES THAT ARE ALREADY INSTALLED. DAMAGE TO SUCH SYSTEMS OR EQUIPMENT DURING INSTALLATION SHALL BE REPAIRED AND/OR REPLACED AT THIS CONTRACTOR'S EXPENSE TO THE COMPLETE SATISFACTION OF THE BUILDING OWNER.

6. SHUTDOWN OF EXISTING SYSTEMS FOR CONNECTION TO EXISTING SERVICES SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER OR GENERAL CONTRACTOR AND SHALL BE DONE ONLY WHEN THIS CONTRACTOR SHALL SUBMIT REQUESTS, WHERE THEY AFFECT THE OPERATION OF THE BUILDING SYSTEMS, AT LEAST ONE WEEK IN ADVANCE OF ANY REQUIRED SHUTDOWN. THE ACTUAL SHUTDOWN PERIOD SHALL BE AS SHORT AS POSSIBLE AND AT A TIME MUTUALLY AGREEABLE TO THE BUILDING OWNER AND THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR.

7. DRAWINGS ARE DIAGRAMMATIC. THEREFORE DETERMINE EXACT LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD.

8. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

9. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT AND/OR PIPE TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.

10. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR TERMINAL DEVICES.

11. ALL MATERIALS AND EQUIPMENT UNLESS SPECIFICALLY INDICATED AS REUSED, SHALL BE NEW.

12. DUCTWORK SHALL NOT RUN ALONG FULL HEIGHT PARTITIONS.

13. ACCESS PANELS SHALL BE PROVIDED TO ALLOW FOR CLEANING OF COILS AND SERVICING OF DAMPERS, HEATERS, VALVES, AND ALL CONCEALED MECHANICAL EQUIPMENT.

14. THE INSIDE OF ALL DUCTWORK VISIBLE THROUGH A GRILLE OR DIFFUSER SHALL BE PAINTED FLAT BLACK.

15. EXISTING ROOM THERMOSTATS AND SENSORS SHALL BE PROTECTED DURING CONSTRUCTION AND RELOCATED AS INDICATED ON THE DRAWINGS. INSTALL NEW ROOM THERMOSTATS, OPERATING AND MAINTENANCE MANUALS, AND AS DIRECTED OTHERWISE BY ARCHITECT.

16. WHEN SECTION OF DUCTWORK IS NOT LABELED FOR SIZE, THE LARGER SIZE INDICATED ON THE CONNECTED DUCT SHALL PREVAIL. SIZE OF DUCT RUN-OUTS TO DIFFUSER SHALL EQUAL DIFFUSER NECK SIZE.

17. CONTRACTOR SHALL PROVIDE THE FOLLOWING SERVICES, AS APPLICABLE, ON ALL EXISTING HVAC EQUIPMENT INDICATED TO BE REUSED: 1) FILTER CHANGES, 2) BALANCING, 3) TESTING, OPERATING AND MAINTENANCE MANUALS. REPORT ANY EQUIPMENT DEFICIENCIES FOUND TO THE ARCHITECT AND/OR ENGINEER.

18. THE FIRE PROOFING OF THE BUILDING STRUCTURE IS NOT TO BE REMOVED FOR THE INSTALLATION OF HANGERS, SUPPORTS, DUCTWORK, ETC. IF FIRE PROOFING IS DAMAGED, IT SHALL BE REPAIRED AT THE EXPENSE OF THE TRADE.

19. CONTRACTOR SHALL TEST AND CALIBRATE ALL CONTROLS AND VERIFY ALL ARE FULLY FUNCTIONAL AND SUBMIT DOCUMENTATION. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

20. CONTRACTOR SHALL PROVIDE AND SUBMIT DOCUMENTATION FOR TESTING AND BALANCING OF ALL AIR AND WATER SYSTEMS, DUCT AND PIPING PRESSURE AND LEAK TESTS, OPERATING AND MAINTENANCE MANUALS, AND AS BUILT DRAWINGS. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

21. REFER TO THE PROJECT SPECIFICATIONS FOR FURTHER REQUIREMENTS. SPECIAL ATTENTION IS DIRECTED TO THE PART 1 PROJECT SCOPE IN REGARDS TO THE DIV. 23 CONTRACTOR PROVIDING A "MAXIMUM SPACE SOUND PRESSURE LEVEL REPORT" AND COORDINATING THE COOPERATION WITH ALL IMPACTED SUB-CONTRACTORS AND EQUIPMENT MANUFACTURERS PRIOR TO SUBMITTING SHOP DRAWINGS.

22. MANY EQUIPMENT SCHEDULES DO NOT LIST QUANTITIES. CONTRACTOR SHALL REFER TO ALL DRAWINGS AND PROVIDE THE REQUIRED QUANTITIES FOR ALL COMPONENTS.

GENERAL PROVISIONS: DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK IN CONTRACT.

2. SCOPE: PERFORM WORK AND PROVIDE NEW MATERIAL AND EQUIPMENT AS SHOWN ON DRAWINGS AND AS SPECIFIED IN THIS SECTION OF THE SPECIFICATIONS. PROVIDE ALL MATERIALS, SUPPLIES, AND EQUIPMENT RECOMMENDED OR INCLUDED AS NECESSARY TO MAKE THE SYSTEMS COMPLETE, AND FULLY OPERATIONAL. AS INTENDED IN THE CONSTRUCTION DOCUMENTS, WORK SHALL INCLUDE, BUT NOT BE LIMITED TO: (1) TO PROVIDE THE MECHANICAL WORK SPECIFIED, (2) ALL TESTING, COMMISSIONING, AND CERTIFICATIONS NECESSARY FOR COMPLIANCE INCLUDING ANY REQUIRED REMEDIAL ACTIONS AND RETESTING DUE TO FAILURE.

3. SITE VISIT: VISIT AND CAREFULLY EXAMINE SITE TO IDENTIFY EXISTING CONDITIONS THAT MAY AFFECT WORK OF THIS SECTION BEFORE SUBMITTING BID. NO EXTRA PAYMENT WILL BE ALLOWED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITUATIONS THAT ARE VISIBLE OR READILY DISCERNED BY AN EXPERIENCED OBSERVER.

4. RELATED WORK: THE FOLLOWING WORK IS NOT INCLUDED IN THIS SECTION AND WILL BE PROVIDED UNDER OTHER SECTIONS: 1) TEMPORARY HEAT FOR USE DURING CONSTRUCTION AND TESTING UNLESS SPECIFICALLY NOTED IN OTHER SPECIFICATION SECTIONS; 2) PATCHING AND FINISHING REQUIREMENTS; AND 3) ALL WORK SHALL BE ALL EQUIPMENT OTHER THAN AUTOMATIC TEMPERATURE CONTROL PANELS AND COMPONENTS.

5. CODES, STANDARDS, AUTHORITIES AND PERMITS: CODES, LAWS AND ORDINANCE PROVIDE A BASIS FOR THE MINIMUM INSTALLATION CRITERIA. THESE DRAWINGS AND SPECIFICATIONS SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS THAT MAY EXCEED MINIMUM CODE, LAW AND STANDARDS CRITERIA. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACKCHARGES AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES HAVING JURISDICTION AS REQUIRED FOR THE INSTALLATION OF THE WORK. THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITIONS OF: 1) THE STATE BUILDING ELECTRICAL, MECHANICAL, AND ENERGY CODES; 2) SMACNA, NFPA, ANSI/ASHRAE, AND OTHER APPLICABLE STANDARDS AND REQUIREMENTS; 3) ALL CITY, STATE, FEDERAL STANDARDS AND LAWS OF LOCAL, STATE AND FEDERAL GOVERNMENT AND OTHER AUTHORITIES HAVING JURISDICTION, AND 4) APPLICABLE BASE BUILDING STANDARDS AND SPECIFICATIONS.

6. INTERPRETATIONS OF DOCUMENTS: WHERE DRAWINGS OR SPECIFICATIONS DO NOT CONFLICT WITH EACH OTHER, THE FOLLOWING RECOMMENDATION SHALL PREVAIL: AS INTENT, OR REQUIRED MATERIAL QUALITY, ADVISE THE ENGINEER IN WRITING BEFORE PROCEEDING WITH THE WORK. ALL COST FOR REWORK NECESSARY TO RESOLVE DISCREPANCIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

7. REQUESTS FOR INFORMATION: ANY RFI FOR RESOLVING AN APPARENT CONFLICT OR UNCLEARITY, OR REQUEST FOR ADDITIONAL INFORMATION, SHALL INCLUDE A SKETCH OR UNQUALIFIED DESCRIPTION OF CONTRACTOR'S PROPOSED SOLUTION.

8. MAXIMUM SPACE SOUND POWER LEVEL REPORT:

A. RESULTANT MAXIMUM SOUND POWER LEVEL IN ALL SPACES (OTHER THAN MECHANICAL ROOMS, ELECTRICAL EQUIPMENT ROOMS, AND KITCHENS), AS INSTALLED, SHALL BE LOWER THAN THE RESULTANT MAXIMUM SOUND POWER LEVEL IN ANY OPEN GENERAL OFFICE TYPE SPACES, AND NC 30 IN ANY QUIET SPACES SUCH AS CONFERENCE ROOMS AND PRIVATE OFFICES. ANY SOUND REDUCTION CREDITS TAKEN SHALL BE LIMITED TO THE APPLICABLE MANUFACTURER'S RECOMMENDATIONS. THE REPORT SHALL INCLUDE NUMBER OF AIR OUTLETS AND INLETS INSTALLED AND THEIR NC LEVEL, ETC.

B. THE DIVISION 23 CONTRACTOR SHALL ENGAGE A PROFESSIONAL ENGINEER SPECIALIZING IN ACOUSTICS TO PROVIDE AND SUBMIT A STAMPED AND SIGNED REPORT OF WHAT SOUND POWER LEVELS ARE REQUIRED BY ALL SOUND PRODUCING EQUIPMENT HANGING FROM THE CEILING AND THE AIR HANDLING EQUIPMENT TO EACH ROOM'S AIR OUTLET AND INLETS.

C. PRIOR TO REQUESTING THEIR SHOP DRAWINGS, THE DIVISION 23 CONTRACTOR SHALL COORDINATE WITH ALL DIVISION 23 HVAC SUB-CONTRACTORS AND EQUIPMENT VENDORS TO SELECT AND SUBMIT ALL SOUND PRODUCING EQUIPMENT AND SOUND ATTENUATING DEVICES SO THAT THE INSTALLATION WILL MEET OR EXCEED THE MINIMUM DRAWINGS, COMPONENTS, AND DETAILS. THE REPORT REQUIREMENTS SHALL OVERRIDE ANY LESSOR REQUIREMENTS THAT MAY BE SHOWN ON THE DRAWINGS.

9. SUBMITTALS: PROVIDE SPECIFIED ITEMS AND EQUIPMENT UNLESS "EQUAL" OR "APPROVED EQUAL" IS EXPLICITLY INDICATED ON THE DRAWINGS. DEVIATIONS TO THE DRAWING ITEM SHALL BE IN WRITING TO THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASSOCIATED CHANGES TO THIS AND OTHER TRADES. REVIEW OF THE SHOP DRAWINGS BY THE ENGINEER SHALL NOT ABSOLVE THE CONTRACTOR OF THE RESPONSIBILITY OF PROVIDING THE CORRECT SHOP DRAWINGS. THE REPORT SUBMITTALS SHALL INDICATE PRIOR REVIEW AND APPROVAL BY THE RESPONSIBLE CONTRACTOR. SUBMIT FOR REVIEW (6) SETS OF MANUFACTURER'S PRODUCT DATA FOR THE FOLLOWING ITEMS: 1) AIR DISTRIBUTION LAYOUT DRAWINGS AND DETAILS, 2) SOUND PRODUCING EQUIPMENT DRAWINGS, COMPONENTS, AND DETAILS, 3) MAXIMUM SPACE SOUND PRESSURE LEVEL REPORT, 4) ALL EQUIPMENT, 5) CONTROL SCHEMATICS, COMPONENTS, AND SEQUENCES, INCLUDING TIE-IN TO THE EXISTING BUILDING MANAGEMENT SYSTEMS, 6) RECORD DRAWINGS, 7) RECORD DRAWINGS, 8) COORDINATION DRAWINGS, 9) RECORD DRAWINGS, AND 10) ALL CERTIFICATES. ALLOW ENGINEER A MINIMUM OF 10 WORKING DAYS FOR PROCESSING AND REVIEW OF EACH SUBMISSION.

10. OPERATION AND MAINTENANCE DATA: SUBMIT (3) SETS OF OPERATING AND MAINTENANCE DATA, INCLUDING BUT NOT LIMITED TO: EXISTING RECORDS, ON-SITE DEMONSTRATION OF ALL SYSTEMS TO OWNER AFTER SYSTEMS ARE FULLY OPERATIONAL, O&M MANUALS SHALL INCLUDE ALL COMPONENTS (DIFFUSERS, VALVES, ETC.) SHALL INCLUDE, BUT NOT BE LIMITED TO: 1) EXISTING RECORDS, 2) WIRING DIAGRAMS, WRITTEN WARRANTIES, RECOMMENDED SPARE PARTS AND ROUTINE MAINTENANCE REQUIREMENTS WITH RECOMMENDED INTERVALS FOR ALL MOVING EQUIPMENT AND CONTROLS.

11. RECORD DRAWINGS: CAD RECORD DRAWING FILES SHALL BE SUBMITTED AT THE COMPLETION OF THE PROJECT SHOWING THE "AS-BUILT" CONDITION INCLUDING WORK DONE BY ALL TRADES AND EQUIPMENT VENDORS TO ORIGINAL DESIGN. OBTAIN THE AUTOCAD FILES FOR PREPARATION OF AS-BUILT DRAWINGS FROM THE ARCHITECT. THE ARCHITECT AND ENGINEER ARE NOT GRANTING ANY OWNERSHIP OR PROPERTY RIGHTS IN THE FILES. THE FILES ARE TO BE USED FOR THE PROJECT ONLY. THE CAD FILES AND DRAWINGS ARE LIMITED FOR THE SOLE PURPOSE OF ASSISTING IN THE CONTRACTORS PERFORMANCE IN ITS CONTRACTUAL OBLIGATIONS WITH RESPECT TO THE PROJECT. THE FILES ARE NOT TO BE USED FOR ANY OTHER PROJECT. THE CONTRACTOR'S SOLE RISK AND WITHOUT LIABILITY TO THE ARCHITECT AND ENGINEER.

12. WARRANTIES: WARRANTY INSTALLATION IN WRITING FOR ONE YEAR FROM DATE OF OWNER'S ACCEPTANCE OF CERTIFICATE OF SUBSTANTIAL COMPLETION, WHERE INDIVIDUAL EQUIPMENT SECTIONS SPECIFY LONGER WARRANTY, PROVIDE THE LONGER WARRANTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE WORK FOR DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATION THAT DEVELOP WITHIN 24 HOURS OF NOTIFICATION. WARRANTY SHALL INCLUDE A CONTACT NAME, PHONE NUMBER, AND TELEPHONE NUMBER FOR SERVICE REQUESTS. CORRECT DAMAGE CAUSED WHILE MAKING NECESSARY REPAIRS AND REPLACEMENT UNDER WARRANTY PERIOD WITH NO ADDITIONAL COST.

13. COORDINATION: CONFER WITH ALL OTHER TRADES RELATIVE TO LOCATION OF ALL APPARATUS AND EQUIPMENT TO BE INSTALLED AND SELECT LOCATIONS SO AS NOT TO INTERFERE WITH THE LOCATION OF EXISTING EQUIPMENT. THE CONTRACTOR SHALL BE INSTALLED THAT CREATES INTERFERENCE OR RESTRICTS ACCESS REQUIRED BY CODE (INCLUDING CLEARANCES) TO ELECTRICAL COMPONENTS) OR TO CONDUCT REPAIRS AND/OR ADJUSTMENTS SHALL BE MODIFIED AT NO ADDITIONAL COST TO THE OWNER.

14. PROVIDE A SET OF COORDINATION DRAWINGS FOR USE IN VERIFYING REQUIRED CLEARANCES (AS WELL AS CLEARANCES FOR OPERATION, REPAIR, REMOVAL, AND TESTING) OF ALL EQUIPMENT AND FOR USE IN COORDINATING INSTALLATION OF EQUIPMENT WITH OTHER TRADES. THE INTENT OF FABRICATION AND INSTALLATION OF EQUIPMENT SHALL BE MAINTAINED. THE ELECTRICAL CONTRACTOR'S REFLECTED CEILING FLOOR PLAN COORDINATION, THE ELECTRICAL CONTRACTOR'S REFLECTED CEILING PLANS SHALL BE THE BASIS FOR REFLECTED CEILING PLAN COORDINATION.

15. SUPPORTS: INCLUDE ALL STRUCTURAL STEEL SUPPORTS, HANGER BRACKETS, ETC. REQUIRED FOR THE EXECUTION OF THE WORK OF THIS SECTION. THE WELDS AND BOLTS SHALL BE WELDED OR BOLTED TO THE STRUCTURE. THE CONTRACTOR SHALL HANGERS SHALL BE STEEL, ANGLE IRON, CHANNEL OR STEEL ROD USED WITH APPROVED CLAMPS, INSERTS, ETC. ALL HANGERS SHALL BE GALVANIZED OR PAINTED WITH AN APPROVED COATING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PAINT (ZINC GALVANIZING FOR GALVANIZED STEEL) AFTER INSTALLATION. SUPPORTS INSTALLED IN EXTERIOR LOCATIONS SHALL BE PVC COATED STEEL, GALVANIZED STEEL OR STAINLESS STEEL WITH STAINLESS STEEL HARDWARE.

16. CUTTING AND PATCHING: INCLUDE ALL CORING, CUTTING, PATCHING AND FIREPROOFING NECESSARY FOR THE EXECUTION OF THE WORK OF THIS SECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PATCHING AND FIREPROOFING. THE ARCHITECT. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING ALL PRECAUTIONS REQUIRED TO IDENTIFY HIDDEN PIPING, CONDUITS, ETC. BEFORE ANY CUTTING OR PATCHING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PATCHING OF AFFECTED SLABS. REPAIR AND PATCH AROUND THE WORK SPECIFIED HEREIN TO MATCH THE EXISTING ADJACENT SURFACES TO THE SATISFACTION OF THE ARCHITECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PATCHING AND FIREPROOFING. THE REMOVAL OF EXISTING EQUIPMENT THAT IS PART OF THIS SECTION OF THE

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CLEANING: DISCHARGE SHALL BE THOROUGHLY CLEANED SO THAT NO DIRT OR OIL SHALL BE DISCHARGED FROM DIFFUSERS, REGISTERS, OR GRILLES, WHEN SYSTEM IS OPERATED. AFTER COMPLETION OF PROJECT, CLEAN EXTERIOR SURFACES OF ALL EQUIPMENT. AFTER COMPLETION OF PROJECT, REMOVE ALL CONSTRUCTION DEBRIS, TEMPORARY FACILITIES AND EQUIPMENT FROM WORK AREA. CLEAN WORK AREA TO PERMIT OCCUPATION.

TESTING AND INSPECTION: PROVIDE QUALIFIED PERSONNEL, EQUIPMENT, APPARATUS, AND MATERIALS FOR TESTING AND INSPECTION OF MECHANICAL SYSTEMS. DO NOT COVER OR CONCEAL WORK BEFORE TESTING AND INSPECTION AND OBTAINING APPROVAL. AFTER ALL COMPONENTS OF THE REFRIGERANT SYSTEMS HAVE BEEN TESTED, PRESSURE SPECIFIED IN ASHRAE 15, FOR THE REFRIGERANT USED, REFRIGERANT LEAKAGE TEST THE REFRIGERANT LEAKAGE TEST SHALL BE DONE BEFORE ANY REFRIGERANT PIPE IS INSULATED OR COVERED. HIGH AND LOW SIDE OF THE REFRIGERANT SYSTEM SHALL BE TESTED FOR THE MINIMUM REFRIGERANT LEAKAGE RATE. REFRIGERANT LEAKAGE TEST SHALL BE CONDUCTED ON THE REFRIGERANT SYSTEM SHALL BE PROVED TIGHT AND FREE OF LEAKS BY ALLOWING THE REFRIGERANT LEAKAGE TEST PRESSURE TO REMAIN ON THE SYSTEM FOR 24 HOURS. IF THE REFRIGERANT LEAKAGE TEST PRESSURE DROPS, THE SYSTEM SHALL BE REPAIRED TO LIKE-NEW CONDITION WITH ACCEPTABLE MATERIALS. TESTS SHALL BE CONTINUED UNTIL SYSTEMS OPERATE WITHIN ACCEPTABLE LIMITS. SUBMIT SIX COPIES OF TESTING REPORTS FOR APPROVAL. CONTRACTOR SHALL FURNISH ALL TEST MEDIUMS AND DISPOSE OF TEST MEDIUMS AT AN APPROVED OFF SITE LOCATION AFTER TESTING IS COMPLETE.

CONTROLS START-UP AND TESTING: EACH POINT IN THE CONTROL SYSTEM SHALL BE TESTED FOR BOTH HARDWARE AND SOFTWARE FUNCTIONALITY (INCLUDING ALARMS, LOGS, AND GRAPHICS) AND SHALL BE TESTED AGAINST THE APPROPRIATE SEQUENCE OF OPERATION. THE CONTROL SYSTEM SHALL BE TESTED IN ACCORDANCE WITH THE FACT THAT THE INSTALLED SYSTEM FUNCTIONS IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

START UP AND BALANCING: PROVIDE NEBB, AABC, TABB, OR NBC CERTIFIED PERSONNEL, EQUIPMENT, APPARATUS, AND SERVICES FOR START-UP AND BALANCING OF MECHANICAL SYSTEMS TO PERFORMANCE DATA SHOWN IN SCHEDULES AND ON DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS AND AUTHORITIES HAVING JURISDICTION INCLUDING CITY INSPECTORS. AIR FLOWS SHALL BE BALANCED TO +/- 10% OF DESIGN. LEAKS, DAMAGE, AND DEFECTS SHALL BE REPAIRED TO LIKE-NEW CONDITION WITH ACCEPTABLE MATERIALS. TESTS SHALL BE CONTINUED UNTIL SYSTEM OPERATES WITHOUT ADJUSTMENTS OR REPAIRS. REPORT AND SUBMIT SIX COPIES OF START-UP AND BALANCING REPORTS TO ARCHITECT FOR APPROVAL.

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ITEMS ASSOCIATED WITH PROJECT CLOSEOUT. ALLOW SUFFICIENT TIME IN THE CONSTRUCTION SCHEDULE TO ENSURE THAT ALL MATERIALS, EQUIPMENT, AND SUBMISSIONS LISTED ABOVE, ARE COMPLETELY AND ACCURATELY COMPLETED. DOCUMENTATION IS DELIVERED TO THE ENGINEER AT LEAST TWO WEEKS PRIOR TO ENGINEER'S SUBSTANTIAL COMPLETION SITE VISIT. FAILURE TO ADEQUATELY PLAN OR SUBMISSION OF INCOMPLETE/INCORRECT DOCUMENTATION WILL RESULT IN BACK CHARGES OF ALL COSTS ASSOCIATED WITH ADDED WORK PERFORMED BY NVS.
2. PROVIDE CERTIFICATES OF INSPECTIONS FROM EQUIPMENT MANUFACTURERS FOR ALL COMPRESSORIZED AND GAS FIRED EQUIPMENT STATING THAT THE AUTHORIZED FACTORY REPRESENTATIVES HAVE INSPECTED AND TESTED THE OPERATION OF THEIR EQUIPMENT AND EQUIPMENT AND THE EQUIPMENT TO BE IN SATISFACTORY OPERATING CONDITION AND INSTALLED PER THE MANUFACTURERS INSTALLATION INSTRUCTIONS AND REQUIREMENTS.
3. PROVIDE BACKUP DOCUMENTATION TO VERIFY THAT ALL SEQUENCES OF OPERATIONS AND CONTROLS HAVE BEEN INCORPORATED AND ALL SYSTEMS AND EQUIPMENT ARE WORKING PER THE SPECIFIED SEQUENCES OF OPERATIONS.
4. PROVIDE BACKUP DOCUMENTATION THAT ALL PIPE LEAKAGE AND PRESSURE TESTS HAVE BEEN COMPLETED AND THAT ALL SYSTEMS HAVE ASSESSED, PROVIDE STARTUP AND BALANCING REPORTS FOR ALL AIR SYSTEMS. AIR BALANCING REPORT SHALL VERIFY THE DESIGN OUTDOOR AIR IS BEING SUPPLIED TO THE BUILDING.
5. THE CONTRACTOR SHALL SUBMIT COMMISSIONING AND COMMISSIONING PLANS INCLUDING PRELIMINARY COMMISSIONING REPORTS DEVELOPED BY A REGISTERED DESIGN PROFESSIONAL OR APPROVED AGENCY. THE REGISTERED DESIGN PROFESSIONAL OR APPROVED AGENCY SHALL PROVIDE EVIDENCE OF MECHANICAL AND ELECTRICAL COMMISSIONING. THE COMMISSIONING REPORT SHALL BE STAMPED THE HVAC DRAWINGS IN ACCORDANCE WITH THE PROVISIONS OF THE CODE SECTIONS.
6. SUBSTANTIAL COMPLETION SITE VISIT BY THE ENGINEER SHALL BE CONDUCTED AFTER RECEIPT AND REVIEW OF THE CONTRACTOR'S CERTIFICATE OF COMPLETION AND ALL MATERIALS, EQUIPMENT, AND SUBMISSIONS LISTED ABOVE. SUBSTANTIAL COMPLETION SITE VISITS SHALL NOT BE REQUESTED UNTIL THE PROJECT IS SUBSTANTIALLY COMPLETE.
7. PREMATURE REQUESTS THAT REQUIRE ADDITIONAL/FOLLOW UP SITE VISITS BY THE ENGINEER OF DEFICIENT ITEMS (AREAS INCOMPLETE, SYSTEMS NOT OPERATIONAL, ETC.) WILL RESULT IN BACK CHARGES OF THE COSTS ASSOCIATED WITH ANY ADDED WORK.

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