

HVAC SPECIFICATIONS

PART 1 - GENERAL

- 1. 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.
3. SITE VISIT: VISIT AND CAREFULLY EXAMINE SITE TO IDENTIFY EXISTING CONDITIONS THAT MAY AFFECT WORK OF THIS SECTION BEFORE SUBMITTING BID.
4. RELATED WORK: THE FOLLOWING WORK IS NOT INCLUDED IN THIS SECTION AND WILL BE PROVIDED UNDER OTHER SECTIONS:
5. CODES, STANDARDS, AUTHORITIES AND PERMITS: CODES, LAWS AND ORDINANCES PROVIDE A BASIS FOR THE MINIMUM INSTALLATION CRITERIA.
6. INTERPRETATIONS OF DOCUMENTS: WHERE DRAWINGS OR SPECIFICATIONS DO NOT COINCIDE WITH MANUFACTURER'S RECOMMENDATIONS...
7. REQUESTS FOR INFORMATION: ANY RFI FOR RESOLVING AN APPARENT CONFLICT OR UNCLARITY...
8. SUBMITTALS: PROVIDE SPECIFIED ITEMS AND EQUIPMENT UNLESS "EQUAL" OR "APPROVED EQUAL" IS EXPLICITLY INDICATED ON THE DRAWINGS...
9. OPERATION AND MAINTENANCE DATA: SUBMIT (3) SETS OF OPERATING AND MAINTENANCE MANUALS PRIOR TO THE COMPLETION OF THE PROJECT.
10. RECORD DRAWINGS: CAD RECORD DRAWING FILES SHALL BE SUBMITTED AT THE COMPLETION OF THE PROJECT SHOWING THE "AS-BUILT" CONDITION...
11. WARRANTIES: WARRANTY INSTALLATION IN WRITING FOR ONE YEAR FROM DATE OF OWNER'S ACCEPTANCE OF CERTIFICATE OF SUBSTANTIAL COMPLETION.
12. COORDINATION: CONFER WITH ALL OTHER TRADES RELATIVE TO LOCATION OF ALL APPARATUS AND EQUIPMENT TO BE INSTALLED...
13. SUPPORTS: INCLUDE ALL STRUCTURAL STEEL SUPPORTS, HANGER BRACKETS, ETC., REQUIRED FOR THE EXECUTION OF THE WORK OF THIS SECTION.
14. CUTTING AND PATCHING: INCLUDE ALL CORING, CUTTING, PATCHING AND FIREPROOFING NECESSARY FOR THE EXECUTION OF THE WORK OF THIS SECTION.
15. HOISTING, SCAFFOLDING AND PLANKING: INCLUDE THE FURNISHING, SET-UP AND MAINTENANCE OF ALL HOISTING MACHINERY, CRANES, SCAFFOLDS, STAGING AND PLANKING AS REQUIRED FOR THE EXECUTION OF WORK FOR THIS SECTION.
16. SAFETY PRECAUTIONS: LIFE SAFETY AND ACCIDENT PREVENTION SHALL BE A PRIMARY CONSIDERATION.

- 17. ACCESSIBILITY: ALL WORK PROVIDED UNDER THIS SECTION OF THE SPECIFICATION SHALL BE INSTALLED SO THAT PARTS REQUIRING PERIODIC INSPECTION, MAINTENANCE AND REPAIR ARE READILY ACCESSIBLE.
18. PROTECTION OF WORK AND PROPERTY: THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE CARE AND PROTECTION OF ALL WORK INCLUDED UNDER THIS SECTION UNTIL THE COMPLETION OF THE PROJECT.
19. SEISMIC RESTRAINT REQUIREMENTS: PROVIDE SEISMIC RESTRAINTS AS REQUIRED IN ACCORDANCE WITH THE STATE BUILDING CODE.
20. COMMISSIONING: THE HVAC SYSTEMS SHALL BE PROVIDED WITH SYSTEM COMMISSIONING BY THE CONTRACTOR IN ACCORDANCE WITH SECTION C408 OF THE 2015 INTERNATIONAL ENERGY CONSERVATION CODE.

PART 2 - PRODUCTS

- 1. DUCTWORK: MATERIAL, CONSTRUCTION, AND INSTALLATION SHALL MEET REQUIREMENTS OF MOST RECENT EDITIONS OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
2. VOLUME DAMPERS: PROVIDE MANUAL ADJUSTABLE VOLUME DAMPERS, WITH EXTENDED MOUNT, INDICATING AND LOCKING QUADRANTS ON EACH TAKE-OFF TO REGISTER, GRILLE, OR DIFFUSER.
3. DIFFUSERS, REGISTERS, AND GRILLES: PROVIDE DIFFUSERS, REGISTERS AND GRILLES FOR SUPPLY, RETURN, AND EXHAUST OUTLETS.
4. ACOUSTICAL SOUND LINING: MATERIALS AND INSTALLATION SHALL MEET THE FOLLOWING STANDARDS, AS APPLICABLE: NFPA-90A, UL723, NFPA-265, SMACNA DUCT LINER APPLICATIONS STANDARD.
5. DUCT INSULATION (EXTERNAL): INSULATION SHALL BE CERTAIN-TEED, KNAUF, MANVILLE, OR OWENS CORNING.
6. WATER PIPING AND VALVES: PIPING 2" AND SMALLER SHALL BE SCREWED SCHEDULE 40 STEEL OR 95/5 SOLDERED TYPE L COPPER.
7. PIPE INSULATION: WATER PIPING INSULATION SHALL BE FIBROUS GLASS INSULATION WITH FACTORY-APPLIED FIRE RETARDANT VAPOR BARRIER JACKET WITH K FACTOR OF AT LEAST 0.23 AT 75 DEG F MEAN TEMPERATURE.
8. PIPE HANGERS AND SUPPORTS: PROVIDE PIPE SUPPORTS, HANGERS, AND OTHER SUPPORTING APPLIANCES AS NECESSARY TO SUPPORT WORK REQUIRED BY CONTRACT DOCUMENTS.
9. VARIABLE AIR VOLUME BOXES: PROVIDE BOXES BY PRICE, TITUS, ENVIROTEC, NAILOR, OR FRAME.
10. AUTOMATIC TEMPERATURE CONTROLS: PROVIDE COMPLETE SYSTEM OF AUTOMATIC TEMPERATURE CONTROLS BY SCHNEIDER TO MATCH EXISTING BASE BUILDING STANDARD.

11. AUTOMATIC TEMPERATURE CONTROL WIRING, CONDUITS AND CABLE

- A. ALL WIRING SHALL BE COPPER AND MEET THE REQUIREMENTS OF THE NEC
B. RACEWAYS AND CONDUIT: ELECTRICAL METALLIC TUBING (EMT) SHALL BE UTILIZED INDOORS WITH SET SCREW TYPE FITTINGS.
C. FLEXIBLE METALLIC CONDUIT (MAX. 3 FEET) SHALL BE USED FOR CONNECTIONS TO ACTUATOR MOTORS, CONTROLLERS, AND SENSORS MOUNTED ON VIBRATION PRODUCING EQUIPMENT.
D. JUNCTION BOXES SHALL BE PROVIDED AT ALL CABLE SPLICES, EQUIPMENT TERMINATION, AND TRANSITIONS FROM EMT TO FLEXIBLE CONDUIT.
E. WHERE THE SPACE ABOVE THE CEILING IS A SUPPLY OR RETURN AIR PLENUM, THE WIRING SHALL BE PLENUM RATED.
F. COAXIAL CABLE SHALL CONFORM TO RG62 OR RG59 RATING.
G. ETHERNET 10/100 BASE -T NETWORK WIRING SHALL BE EQUIVALENT TO OWNER'S PREMISE WIRING OR, AS A MINIMUM, CATEGORY 5E OR 6 CABLE UP TO 300' MAXIMUM RUN.
H. CABLES SHALL BE ATTACHED TO THE BUILDING PROPER AT REGULAR INTERVALS SUCH THAT THERE IS NO DROOP GREATER THAN 2 INCHES BETWEEN SUPPORTS.
I. WHERE SENSOR WIRES LEAVE THE CONDUIT SYSTEM, THEY ARE TO BE PROTECTED BY A NON-METALIC BUSHING.
J. WIRING SHALL NOT BE ALLOWED TO RUN THROUGH ELEVATOR, TELEPHONE EQUIPMENT, AND ELECTRIC ROOMS.

PART 3 - EXECUTION

- 1. DEMOLITION: THE EXISTING FACILITY WILL CONTINUE TO OPERATE DURING ALL PHASES OF THE DEMOLITION WORK AND SUBSEQUENT CONSTRUCTION.
2. INSTALLATION OF EQUIPMENT: INSTALL ALL ITEMS SPECIFIED UNDER PART 2 - PRODUCTS, ACCORDING TO THE MANUFACTURER'S REQUIREMENTS, SHOP DRAWINGS, AND DETAILS AS SHOWN ON THE DRAWINGS AND AS SPECIFIED.
3. IDENTIFICATION: ALL EQUIPMENT, PIPING, VALVES, AND DUCTWORK PROVIDED UNDER THIS SECTION OF THE SPECIFICATIONS SHALL BE MARKED FOR EASE OF IDENTIFICATION PER OWNER'S OR INDUSTRY STANDARDS.
4. CLEANING: DUCTS SHALL BE THOROUGHLY CLEANED SO THAT NO DIRT OR DUST SHALL BE DISCHARGED FROM DIFFUSERS, REGISTERS, OR GRILLES.
5. TESTING AND INSPECTION: PROVIDE QUALIFIED PERSONNEL, EQUIPMENT, APPARATUS, AND SERVICES FOR TESTING AND INSPECTION OF MECHANICAL SYSTEMS.
6. CONTROLS START UP AND TESTING: EACH POINT IN THE CONTROL SYSTEM SHALL BE TESTED FOR BOTH HARDWARE AND SOFTWARE FUNCTIONALITY.
7. 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.

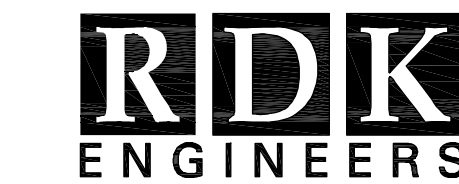
PART 4 - PROJECT CLOSEOUT

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ITEMS ASSOCIATED WITH PROJECT CLOSEOUT. ALLOW SUFFICIENT TIME IN THE CONSTRUCTION SCHEDULE TO ENSURE THAT THE INSTALLATION IS SUBSTANTIALLY COMPLETE AND ALL REQUIRED TESTING AND ACCURATELY COMPLETED DOCUMENTATION IS DELIVERED TO THE ENGINEER AT LEAST TWO WEEKS PRIOR TO ENGINEER'S SUBSTANTIAL COMPLETION SITE VISIT.
2. 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.
3. PROVIDE BACKUP DOCUMENTATION THAT ALL DUCT AND PIPING LEAKAGE AND PRESSURE TESTS HAVE BEEN CONDUCTED AND THAT ALL SYSTEMS HAVE PASSED.
4. THE CONTRACTOR SHALL SUBMIT COMMISSIONING AND COMMISSIONING PLANS INCLUDING PRELIMINARY COMMISSIONING REPORTS DEVELOPED BY A REGISTERED DESIGN PROFESSIONAL OR AN APPROVED AGENCY IN ACCORDANCE WITH SECTION C408.2 OF THE 2015 INTERNATIONAL ENERGY CONSERVATION CODE.
5. SUBSTANTIAL COMPLETION SITE VISIT BY THE ENGINEER SHALL BE CONDUCTED AFTER RECEIPT AND REVIEW OF THE CONTRACTOR'S CERTIFICATE OF COMPLETION AND ALL CODE MANDATED TEST REPORTS AND SUBMISSIONS LISTED ABOVE.
6. 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 VISITS.



Dyer Brown Architects One Winthrop Square Boston, MA 02110-1209

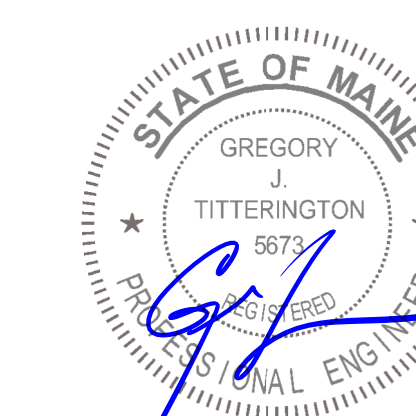
T 617 426 1680 F 617 426 2187



Andover, MA - Boston, MA - Amherst, MA Durham, NC - Charlotte, NC

RDK Engineers 70 Fargo Street Boston, MA 02210-1964

T.617.345.9885



REVISIONS

BANK OF AMERICA - HOME LOANS

BANK OF AMERICA 1 MONUMENT SQUARE, PORTLAND ME

TITLE HVAC SPECIFICATIONS

DATE 06/29/17 JOB NO. 20170237

DRAWING NO. M-1

ISSUED FOR CONSTRUCTION

Dyer Brown & Associates Inc. - ©2017 ALL RIGHTS RESERVED - PLOTTED: 03/01/17 07:03:27 - BDA Home Loan Collaboration 1 - Movement 50 - Portland ME 500 - Drawing 504 - HVAC20170237 - M-1 HVAC SPECIFICATIONS.rvt (Week) June 29, 2017 - 11:56am aodt1