

FIRE PROTECTION
PART 1 - GENERAL

- 1.1 SUMMARY
- PROVIDE A MODIFICATION OF THE INSTALLED FIRE PROTECTION SYSTEMS INCLUDING:
 - SPRINKLER.
 - RELOCATE HEAD LOCATIONS TO ACCOMMODATE THE PLAN CHANGES. INSTALL NEW HEADS MATCHING EXISTING.
 - MAINTAIN PROTECTION DURING CONSTRUCTION TO THE EXTENT REQUIRE BY AUTHORITIES HAVING JURISDICTION, (AHJ). SYSTEM IMPAIRMENTS SHALL BE LIMITED TO FOUR HOURS OR LESS. BEFORE SHUTTING OFF A SECTION OF THE SPRINKLER SYSTEM TO MAKE SPRINKLER TIE-INS, NOTIFY THE LOCAL FIRE DEPARTMENT, PLAN THE WORK CAREFULLY, AND ASSEMBLE ALL MATERIALS TO ENABLE COMPLETION IN THE SHORTEST TIME POSSIBLE. WORK STARTED ON CONNECTIONS SHOULD BE COMPLETED WITHOUT INTERRUPTION AND PROTECTION RESTORED AS PROMPTLY AS POSSIBLE. DURING THE IMPAIRMENT, PROVIDE EMERGENCY HOSE EXTINGUISHERS AND MAINTAIN EXTRA WATCH SERVICE IN THE AFFECTED AREAS.
 - COORDINATE LOCATION OF FIRE PROTECTION SYSTEMS TO AVOID INTERFERENCE WITH LOCATION OF DESIGNATED LIGHTING FIXTURE LOCATIONS. NOTIFY OWNER PRIOR TO CONSTRUCTION OF CONFLICTS WHICH CANNOT BE RESOLVED.
- 1.2 SUBMITTALS
- PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.
 - OPERATION AND MAINTENANCE DATA: SUBMIT MANUFACTURER'S OPERATION AND MAINTENANCE DATA, INCLUDING OPERATING INSTRUCTIONS, LIST OF SPARE PARTS AND MAINTENANCE SCHEDULE.
- 1.3 QUALITY ASSURANCE
- COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - PROVIDE COMPLETE ADJUSTED SPRINKLER COVERAGE PER NFPA 13 IN THE EFFECTED SPACES.
 - SYSTEM COMPONENTS TO BE UL LISTED OR FM APPROVED AND SHALL MEET THE REQUIREMENTS OF THE OWNER'S INSURANCE CARRIER.
 - WARRANTEE: PROVIDE AT MINIMUM A ONE YEAR WARRANTY FOR THE WORK, STARTING FROM TIME OF SUBSTANTIAL COMPLETION. COORDINATE ADDITIONAL WARRANTY REQUIREMENTS WITH THE OWNER.
 - PROVIDE RELEVANT CALCULATIONS & DRAWINGS AS REQUIRED, STAMPED AND SEALED BY A LICENSED FIRE PROTECTION ENGINEER.

PART 2 - PRODUCTS

- 2.1 PIPING MATERIALS
- WET-PIPE SPRINKLER PIPING:
 - PIPING 2-INCHES AND SMALLER: SCHEDULE 40 STEEL WITH IRON FITTINGS AND THREADED JOINTS.
 - PIPING 2-1/2-INCH AND LARGER: SCHEDULE 10 STEEL WITH GROOVED FITTINGS AND JOINTS.
 - WELDED JOINTS ALSO ALLOWED.
 - SHUT-OFF VALVES:
 - 2-INCH AND SMALLER: BRONZE BODY GATE OR BUTTERFLY TYPE, THREADED ENDS.
 - 2-1/2-INCH AND LARGER: CAST IRON BODY, GROOVED OR FLANGED ENDS.
 - MANUFACTURERS: GRINNELL, ELKHART, VIKING, OR APPROVED EQUAL.
 - HANGERS: PROVIDE SUPPORTS PER NFPA 13. SUPPORT MATERIALS AND SPACING SHALL BE COMPATIBLE WITH MATERIALS BEING SUPPORTED.
 - SLEEVES, ESCUTCHEONS AND FIRE STOP: PROVIDE STEEL PIPE SLEEVES WHERE SYSTEMS PASS THROUGH PARTITIONS AND WALLS. WHERE EXPOSED PIPES PASS THROUGH FINISHED AREAS, PROVIDE HEAVY CHROME ESCUTCHEONS. MAINTAIN THE INTEGRITY OF RATED WALL, FLOOR, CEILING, AND SIMILAR ASSEMBLIES. PROVIDE FIRE STOP AS REQUIRED AT PIPING PENETRATIONS.
 - SPRINKLER HEADS: PROVIDE QUICK RESPONSE SPRINKLER HEADS OF A TYPE AND FINISH TO MATCH EXISTING HEADS.
 - MANUFACTURERS: GRINNELL, STAR, CENTRAL, VIKING, OR APPROVED EQUAL.
- 2.2 FIRE PROTECTION EQUIPMENT AND SPECIALTIES
- GENERAL: PROVIDE SPRINKLER SYSTEMS COMPONENTS AS NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL NFPA 13 SYSTEM. COMPONENTS MAY INCLUDE, BUT NOT BE LIMITED TO: SPRINKLERS AND ALL REQUIRED ACCESSORIES.

PART 3 - EXECUTION

- 3.1 INSTALLATION
- INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE FOR EXPOSED WORK. COORDINATE WITH WORK OF OTHER SECTIONS. COMPLY WITH APPLICABLE REGULATIONS AND BUILDING CODE REQUIREMENTS.
 - CENTER CEILING-MOUNTED ELEMENTS IN CENTER OF CEILING TILES.
 - INSTALL PENDENT ORIENTED HEADS ON ARM-OVERS.
 - CLEARLY LABEL ALL VALVES AND COMPONENTS.
 - RESTORE DAMAGED FINISHES. TEST ALL SYSTEMS FOR PROPER OPERATION IN ACCORDANCE WITH NFPA 13. CLEAN AND PROTECT WORK FROM DAMAGE. INSTRUCT OWNER'S PERSONNEL IN PROPER OPERATION OF SYSTEMS.

PLUMBING
PART 1 - GENERAL

- 1.1 SUMMARY
- PROVIDE PLUMBING SYSTEMS INCLUDING:
 - PLUMBING FIXTURES AND SUPPORTS.
 - DOMESTIC HOT & COLD WATER SUPPLY PIPING.
 - SANITARY WASTE AND VENT PIPING SYSTEMS.
 - DRAINS AND PLUMBING SPECIALTIES.
 - ACCESS PANELS, PIPE LABELS, VALVE TAGS AND FIRE STOP.
 - COORDINATE LOCATION OF PLUMBING SYSTEMS TO AVOID INTERFERENCE WITH LOCATION OF STRUCTURE AND OTHER BUILDING SYSTEMS. NOTIFY OWNER PRIOR TO CONSTRUCTION OF CONFLICTS, WHICH CANNOT BE RESOLVED.
- 1.2 SUBMITTALS
- PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.
 - DRAWINGS: SUBMIT THE FOLLOWING:
 - SUBMIT DESIGN DRAWINGS FOR PROPOSED INSTALLATIONS PRIOR TO COMMENCING WITH THE WORK. SUBMIT AS-BUILT DRAWINGS UPON COMPLETION OF THE WORK. THESE DRAWINGS SHALL REFLECT ANY CHANGES MADE SINCE TIME OF ORIGINAL DESIGN.
 - OPERATION AND MAINTENANCE DATA: SUBMIT MANUFACTURER'S OPERATION AND MAINTENANCE DATA, INCLUDING OPERATING INSTRUCTIONS, LIST OF SPARE PARTS AND MAINTENANCE SCHEDULE.
- 1.3 QUALITY ASSURANCE
- COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - WARRANTEE: PROVIDE AT MINIMUM A ONE YEAR WARRANTY FOR THE WORK, STARTING FROM TIME OF SUBSTANTIAL COMPLETION. COORDINATE ADDITIONAL WARRANTY REQUIREMENTS WITH THE OWNER.
 - PIPING MATERIALS SHALL BEAR LABEL, STAMP, OR OTHER MARKINGS OF SPECIFIED TESTING AGENCY.

PART 2 - PRODUCTS

- 2.1 PIPING MATERIALS
- DWV PIPING ABOVE BUILDING SLAB: SERVICE WEIGHT CAST IRON WITH NO-HUB PIPE COUPLINGS.
 - OPTION: 2-INCH AND SMALLER WASTES: TYPE DWV COPPER PIPE, COPPER FITTINGS, AND LEAD FREE SOLDERED JOINTS.
 - VENT PIPING ABOVE AND BELOW SLAB: SCHEDULE 40 PVC PIPE; DRAINAGE PATTERN PVC SOCKET FITTINGS; SOLVENT CEMENT JOINTS.
 - DWV PIPING, BELOW BUILDING SLAB: SERVICE WEIGHT CAST IRON WITH GASKETED HUB-AND-SPIGOT JOINTS.
 - DOMESTIC HOT AND COLD WATER SUPPLY PIPING, ABOVE GRADE: TYPE L SEAMLESS HARD DRAWN COPPER TUBING, COPPER FITTINGS, AND LEAD FREE SOLDERED JOINTS.
 - HANGERS: PROVIDE SUPPORTS PER MSS STANDARDS. SUPPORT MATERIALS AND SPACING SHALL BE COMPATIBLE WITH MATERIALS BEING SUPPORTED. HANGERS FOR INSULATED SERVICES SHALL ALLOW FOR FULL THICKNESS OF INSULATION AND SHALL INCLUDE INSULATION SHIELDS.
 - SLEEVES, ESCUTCHEONS AND FIRE STOP: PROVIDE STEEL PIPE SLEEVES WHERE SYSTEMS PASS THROUGH PARTITIONS AND WALLS. WHERE EXPOSED PIPES PASS THROUGH FINISHED AREAS, PROVIDE HEAVY CHROME ESCUTCHEONS. MAINTAIN THE INTEGRITY OF RATED WALL, FLOOR, CEILING, AND SIMILAR ASSEMBLIES. PROVIDE FIRE STOP AS REQUIRED AT PIPING PENETRATIONS.
 - INSULATION: PROVIDE FIBERGLASS INSULATION, PVC FITTING COVERS AND AN ALL SERVICE JACKET ON WATER SUPPLY PIPING AND STORM DRAINAGE PIPING.
 - DOMESTIC HOT WATER: 1/2-INCH THICK INSULATION.
 - DOMESTIC COLD WATER: 1/2-INCH THICK INSULATION WITH VAPOR RETARDER.
 - EXPOSED PIPING UNDER ADA ACCESSIBLE SINKS AND LAVATORIES: PRE-MOLDED INSULATION KITS.
 - WATER SUPPLY VALVES: FULL SIZE BRONZE GATE VALVES OR FULL-PORT BRONZE BALL VALVES. PROVIDE LOW-POINT DRAIN VALVES AND HIGH POINT VENT VALVES ON SERVICES.
 - MANUFACTURERS: HAMMOND, JENKINS, NIBCO OR APPROVED EQUAL.
 - IDENTIFICATION: LABEL PIPING SYSTEMS AT REGULAR INTERVALS. INCLUDE SERVICE AND DIRECTION OF FLOW. TAG EACH VALVE. PROVIDE A VALVE TAG CHART TO THE OWNER UPON COMPLETION OF THE WORK.
- 2.2 PLUMBING FIXTURES
- SEE PLUMBING FIXTURE SCHEDULES ON DWGS.

PART 3 - EXECUTION

- 3.1 INSTALLATION
- INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE FOR EXPOSED WORK. COORDINATE WITH WORK OF OTHER SECTIONS. COMPLY WITH APPLICABLE REGULATIONS AND BUILDING CODE REQUIREMENTS.
 - SUPPORT PIPING PROPERLY. INSTALL DOMESTIC WATER PIPING WITH 0.25 PERCENT SLOPE DOWNWARD TOWARD DRAIN. INSTALL DWV PIPING AT A MINIMUM SLOPE OF 1/4-INCH PER FOOT DOWNWARD IN DIRECTION OF FLOW.
 - INSTALL SHUTOFF VALVES ON EACH PIECE OF EQUIPMENT ON BOTH HOT AND COLD WATER SUPPLY.
 - CLEARLY LABEL ALL VALVES AND COMPONENTS.
 - STERILIZE WATER DISTRIBUTION SYSTEM. FLUSH AND TEST ALL SYSTEMS FOR PROPER OPERATION.
 - ADJUST SYSTEM TO PREVENT WATER HAMMER.
 - RESTORE DAMAGED FINISHES. CLEAN AND PROTECT WORK FROM DAMAGE.
 - INSTRUCT OWNER'S PERSONNEL IN PROPER OPERATION OF SYSTEMS.

HEATING, VENTILATION AND AIR CONDITIONING

PART 1 - GENERAL

- 1.1 SUMMARY
- PROVIDE MECHANICAL SYSTEMS INCLUDING:
 - MODIFICATIONS TO THE EXISTING BC-1 SYSTEM, SHEET METAL WORK, REGISTERS, GRILLES AND DIFFUSERS.
 - EXHAUST SYSTEM MODIFICATIONS FOR THE TOILET ROOM.
 - RELOCATION OF STAND-ALONE TEMPERATURE CONTROLS FOR BC-1.
 - FIRE AND LIFE SAFETY CONTROLS.
 - TESTING, ADJUSTING AND BALANCING.
 - ACCESS PANELS, LABELS, VALVE TAGS AND SUPPORTS.
 - COORDINATE LOCATION OF MECHANICAL SYSTEMS TO AVOID INTERFERENCE WITH LOCATION OF STRUCTURE AND OTHER BUILDING SYSTEMS. NOTIFY OWNER PRIOR TO CONSTRUCTION OF CONFLICTS, WHICH CANNOT BE RESOLVED.
- 1.2 SUBMITTALS
- PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.
- 1.3 QUALITY ASSURANCE
- COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - WARRANTEE: PROVIDE AT MINIMUM A ONE YEAR WARRANTY FOR THE WORK, STARTING FROM TIME OF SUBSTANTIAL COMPLETION. COORDINATE ADDITIONAL WARRANTY REQUIREMENTS WITH THE OWNER.

PART 2 - PRODUCTS

- 2.1 MATERIALS
- SHEET METAL WORK AND ACCESSORIES: COMPLY WITH SMACNA DUCT MANUAL AND SHEET METAL CONSTRUCTION FOR VENTILATING AND AIR CONDITIONING SYSTEMS. DUCT SEALANTS ON NEW AND EXISTING DUCTWORK SHALL BE WATER BASED PRODUCTS, SUCH AS AIRSEAL 11 OR APPROVED EQUAL INSTALLED TO MEET SMACNA SEAL CLASS A STANDARDS.
 - HANGERS AND SUPPORTS: ANSI B31.1.
 - FIRE STOP AND FIRE DAMPERS: MAINTAIN THE INTEGRITY OF RATED WALL, FLOOR, CEILING, AND SIMILAR ASSEMBLIES. PROVIDE FIRE STOP AND DAMPERS AS REQUIRED AT PENETRATIONS.
 - FIBERGLASS BLANKET THERMAL DUCT INSULATION: CLASS FIBERS BONDED WITH A THERMOSETTING RESIN. COMPLY WITH ASTM C 553, TYPE II, WITHOUT FACING AND WITH ALL-SERVICE JACKET (FSK) MANUFACTURED FROM KRAFT PAPER, REINFORCING SCRM, ALUMINUM FOIL, AND VINYL FILM. 'K' VALUE: 0.29 BTU*IN/(HR*SQFT*DEGREE F) AT 75 DEGREE F.
- 2.2 HVAC EQUIPMENT AND SPECIALTIES
- REGISTERS, DIFFUSERS AND LOUVERS: SEE SCHEDULE ON PLANS.
 - AUTOMATIC TEMPERATURE CONTROLS
 - EXTEND THE EXISTING CONTROL SYSTEM TO SERVE THE RENOVATED AREA. ALL NEW CONTROLS SHALL BE ELECTRONIC/DDC.

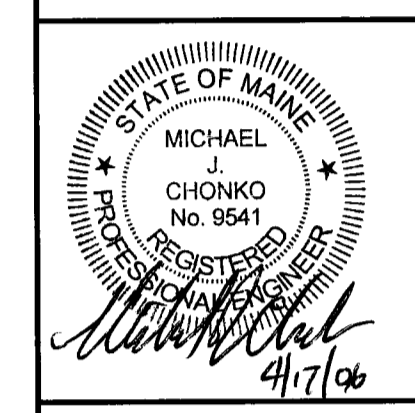
PART 3 - INSTALLATION

3.1 INSTALLATION

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 - INSTALL DUCTWORK IN ACCORDANCE WITH SMACNA RECOMMENDATIONS. SEAL DUCT SEAMS WITH SEALER. PROVIDE SPLITTERS AND BALANCING DAMPERS. PROVIDE FIRE DAMPERS AND AUTOMATIC SMOKE AND FIRE DAMPERS WHERE REQUIRED. PROVIDE FLEXIBLE CONNECTORS AND INLET AND DISCHARGE CONNECTIONS. CLEAN BEFORE TESTING AND BALANCING.
 - APPLY 1-1/2" THICKNESS DUCT INSULATION TO SUPPLY DUCTWORK CONNECTED TO BC-1. THE DUCTWORK SHALL BE INSULATED FROM THE UNIT TO THE DIFFUSERS/GRILLES IN THE SPACE SERVED.
 - APPLY 1" THICKNESS DUCT INSULATION TO ALL RETURN DUCTWORK.
 - TEST AND BALANCE ALL SYSTEMS FOR PROPER OPERATION. PROVIDE BALANCING REPORT TO THE OWNER. THE TAB WORK SHALL BE COMPLETED BY AN AABC OR NEBB CERTIFIED CONTRACTOR.
 - RESTORE DAMAGED FINISHES. CLEAN AND PROTECT WORK FROM DAMAGE.
- 3.2 TESTING, ADJUSTING AND BALANCING (T-A-B)
- TEST, ADJUST AND BALANCE EQUIPMENT AND DISTRIBUTION SYSTEMS IN ACCORDANCE WITH NEBB OR AABC PROCEDURAL STANDARDS. TESTS SHALL BE PERFORMED BY AN INDEPENDENT T-A-B AGENCY.
 - T-A-B ALL NEW AND REVISED AIR INLETS AND OUTLETS, INCLUDING DESIGN AND ACTUAL CFM. TEST AND ADJUST ADJACENT AFFECTED AREAS, IF REQUIRED.
 - THE T-A-B AGENCY SHALL ASSIST THE BUILDING CONTROL SYSTEMS CONTRACTOR IN VERIFYING THE OPERATION AND CALIBRATION OF ALL HVAC AND TEMPERATURE CONTROL SYSTEMS.
 - REVISE BLOWER COIL UNIT TO DELIVER REQUIRED AIR FLOW.



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**USM COMMUNITY EDUCATION CENTER
LOWER LEVEL FT-UP**
PORTLAND, MAINE

CURRENT ISSUE STATUS:
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