GENERAL

1. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE PRE-EXISTING CONDITIONS AND ALL WORK NECESSARY, PRIOR TO BIDDING. VERIFY ALL MEASUREMENTS AND EXISTING CONDITIONS IN THE FIELD. GENERAL SCHEMATIC LAYOUT IS INDICATED; ALL OFFSETS, OBSTRUCTIONS, AND EXISTING CONFIGURATIONS AND CONSTRAINTS MUST BE FIELD VERIFIED.
2. OBTAIN NECESSARY PERMITS AND PAY ASSOCIATED FEES.
3. COORDINATE ANY SERVICE DISRUPTIONS WITH THE OWNER.
4. INSTALL ALL COMPONENTS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS, ALL LOCAL CODES AND STANDARDS, AND UNUM PROVIDENT REQUIREMENTS.
5. DRAWINGS ARE DIAGRAMMATIC ONLY; FIELD-VERIFY ALL EXISTING CONDITIONS. COORDINATE INSTALLATIONS WITH OTHER TRADES. COORDINATE ELECTRICAL POWER REQUIREMENTS FOR ALL MOTORS.
6. THE INTENTION OF THESE CONTRACT DOCUMENTS IS TO CALL FOR FINISHED WORK, FULLY TESTED AND READY FOR OPERATION. ANY COMPONENTS OR LABOR NOT MENTIONED IN THE CONTRACT DOCUMENTS BUT REQUIRED FOR FUNCTIONING SYSTEMS SHALL BE PROVIDED. SHOULD THERE APPEAR TO BE ANY DISCREPANCIES OR QUESTIONS OF INTENT, THE CONTRACTOR SHALL REFER THE MATTER TO THE ARCHITECT FOR DECISION BEFORE START OF ANY RELATED WORK.
7. PERFORM WORK IN ACCORDANCE WITH LOCAL CODES.
8. SEAL ALL DUCT AND PIPE PENETRATIONS WITH FIRE SEALANT.
9. OBSERVE THE OWNER'S CLEANLINESS PROTOCOLS.

FIRE PROTECTION

1. REVISE THE EXISTING WET SPRINKLER SYSTEM TO SERVE THE NEW LAYOUT. DESIGN, FURNISH, INSTALL, AND TEST THE REQUIRED SPRINKLER SYSTEM. SPRINKLER TYPES SHALL BE QUICK RESPONSE TYPES, STYLE TO MATCH EXISTING. ALL WORK SHALL BE IN ACCORDANCE WITH NFPA-13. PREPARE WORKING PLANS FOR APPROVAL BY THE STATE FIRE MARSHALL'S OFFICE AND OWNER'S INSURANCE UNDERWRITER.
2. 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 INTERUPTION AND PROTECTION RESTORED AS PROMPTLY AS POSSIBLE. DURING THE IMPAIRMENT, PROVIDE EMERGENCY HOSE EXTINGUISHERS AND MAINTAIN EXTRA WATCH SERVICE IN THE AFFECTED AREAS.

PIPING

1. ALL PIPING SHALL BE PRESSURE TESTED.
2. SUPPORT WITH ADJUSTABLE CLEVIS HANGERS AND FLOOR SUPPORTS, WITH INSULATION SHIELDS. PROVIDE UNITSTRUT BETWEEN STRUCTURAL MEMBERS FOR PROPER HANGER SPACING IN ACCORDANCE WITH MSS SP-69. DO NOT EXCEED PIPING MANUFACTURER'S RECOMMENDED HANGER SPACING.
3. MAKE PROVISIONS TO ACCOMMODATE THERMAL EXPANSION. REFER TO MANUFACTURER'S RECOMMENDATIONS.
4. HYDRONIC PIPING: ASTM B 88, TYPE L, HARD DRAWN COPPER.
5. BALL VALVES SHALL BE APOLLO SERIES 70-200 OR APPROVED EQUAL.
6. PROVIDE DIELECTRIC CONNECTIONS BETWEEN FERROUS AND NON-FERROUS MATERIALS.

PIPING INSULATION AND LABELLING

1. PROVIDE FIBERGLASS INSULATION WITH ALL SERVICE JACKETS, 25 FLAME SPREAD, 50 SMOKE DEVELOPED. DOMESTICHWS, AND HWR: 1" THICKNESS.
2. PIPE-MARKING LABELS: FURNISH AND INSTALL IN ACCORDANCE WITH ANSI/OSHA REQUIREMENTS.

METAL DUCTWORK

1. GALVANIZED STEEL DUCTWORK: ASTM A653 GALVANIZED STEEL SHEET, LOCK-FORMING QUALITY, AND G90 ZINC COATING. ALL DUCTWORK SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS.
2. DUCTWORK PRESSURE/SEAL CLASS:
   A. SUPPLY DUCTWORK UPSTREAM OF VAV TERMINAL UNITS: 6 INCH/CLASS A.
   B. SUPPLY DUCTWORK DOWNSTREAM OF VAV TERMINAL UNITS: 2 INCH/CLASS C
3. PROVIDE VOLUME DAMPERS AT ALL BRANCH DUCTS.
4. INSULATE SUPPLY DUCTWORK WITH 1 ½" FIBERGLASS BLANKET WITH VAPOR BARRIER JACKET EQUAL TO SCHULLER MICROLITE TYPE 75, ASTM C533, WITH FSK FACING.

INSULATED FLEXIBLE DUCTS

1. ALUMINUM LAMINATE AND POLYESTER FILM WITH LATEX ADHESIVE SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE, FIBERGLASS INSULATION, POLYETHYLENE VAPOR BARRIER FILM. R-VALUE = 4.2, UL 181, CLASS 1.

FAN POWERED TERMINAL UNITS

1. DESIGN IS BASED ON TITUS, SERIES FLOW TYPE, PRESSURE INDEPENDENT, COMPLETE WITH MULTI-POINT INLET VELOCITY SENSOR, FAN AND MOTOR ASSEMBLY, HEAVY GAUGE PRIMARY AIR DAMPER ASSEMBLY, HOT WATER HEATING COIL. ALL ELECTRICAL COMPONENTS SHALL BE UL LISTED AND INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE. ELECTRICAL CONNECTION SHALL BE SINGLE POINT. ALL ELECTRICAL COMPONENTS SHALL BE MOUNTED IN SHEET METAL ENCLOSURES. THE TERMINAL CASING SHALL BE MINIMUM 20 GAUGE GALVANIZED STEEL, INTERNALLY LINED WITH NON-POROUS, FIBER FREE SEALED LINER WHICH COMPLIES WITH UL 181 AND NFPA 255.THE FAN SHALL BE CONSTRUCTED OF STEEL AND HAVE A FORWARD CURVED, DYNAMICALLY BALANCED WHEEL WITH DIRECT DRIVE MOTOR. THE UNIT SHALL UTILIZE A MANUAL SCR FAN SPEED CONTROL WHICH ALLOWS CONTINUOUSLY ADJUSTABLE FAN SPEED FROM MAXIMUM TO MINIMUM. THE INTEGRAL CONTROL PANEL SHALL BE HOUSED IN NEMA 1 ENCLOSURE WITH HINGED ACCESS DOOR.
2. THE WATER COILS SHALL BE SUPPLIED AND INSTALLED ON THE TERMINAL BY THE TERMINAL MANUFACTURER. COIL SHALL HAVE ALUMINUM FINS WITH COPPER TUBES, LEAK TESTED TO 300 PSI, AND SHALL BE ENCLOSED IN A MINIMUM 20 GAUGE GALVANIZED STEEL CASING.

VAV TERMINAL UNITS

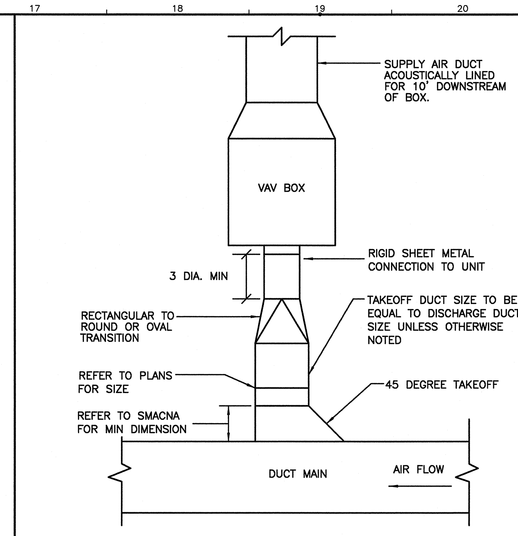
1. DESIGN IS BASED ON TITUS, PRESSURE INDEPENDENT, COMPLETE WITH MULTI-POINT AIRFLOW SENSOR. THE TERMINAL CASING SHALL BE MINIMUM 22 GAUGE GALVANIZED STEEL INTERNALLY LINED WITH NON-POROUS, FIBER FREE SEALED LINER WHICH COMPLIES WITH UL 181 AND NFPA 255. DAMPER OF HEAVY GAUGE STEEL.

AUTOMATIC TEMPERATURE CONTROLS

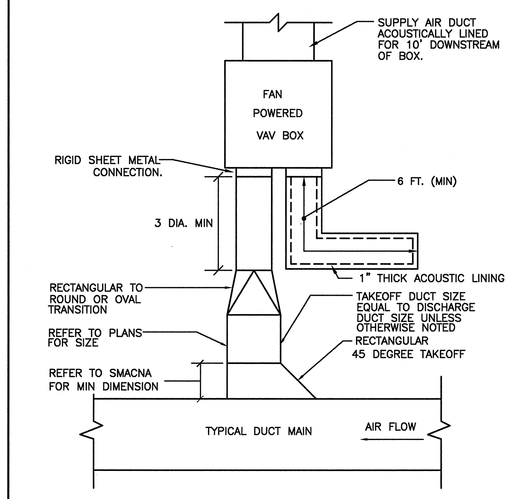
1. CONTROLS SHALL BE COMPATIBLE WITH THE EXISTING SYSTEM.
2. EXTEND EXITING DDC CONTROL SYSTEM TO SERVE NEW TERMINAL UNITS.
3. PROVIDE COMPLETE DDC CONTROLS FOR VAV AND FAN POWERED TERMINAL UNITS. CONTROLS FOR THE VARIABLE AIR VOLUME BOXES SHALL BE 24V AND SHALL BE WIRED BY DIVISION 15.

TESTING, ADJUSTING, AND BALANCING (T-A-B)

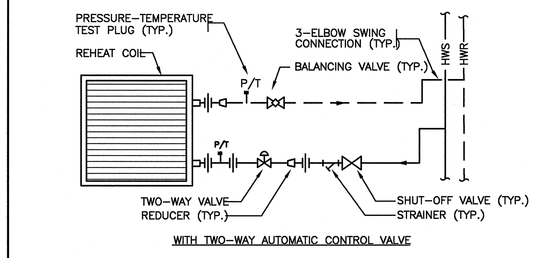
1. TEST, ADJUST, AND BALANCE EQUIPMENT AND DISTRIBUTION SYSTEMS IN ACCORDANCE WITH NEBB OR AABC PROCEDURAL STANDARDS. TESTS SHALL BE PERFORMED BY AND INDEPENDENT T-A-B AGENCY.
2. T-A-B ALL NEW AND REVISED AIR INLETS AND OUTLETS, INCLUDING DESIGN AND ACTUAL CFM. TEST AND ADJUST ADJACENT AFFECTED AREAS IF REQUIRED.
3. T-A-B NEW VAV BOXES AND FAN POWERED BOXES.
4. T-A-B AHU-4 AND AHU-8 SUPPLY, RETURN, AND MINIMUM OUTSIDE AIR FLOWS.



N17	VAV BOX DETAIL
NOT TO SCALE	



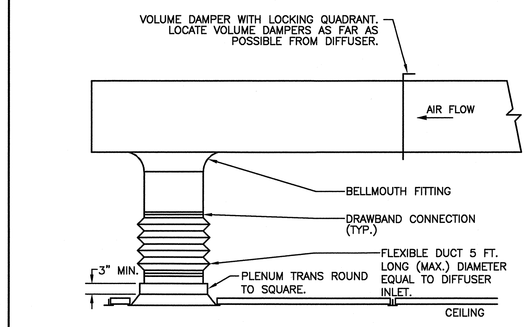
N17	FAN POWERED VAV BOX DETAIL
NOT TO SCALE	



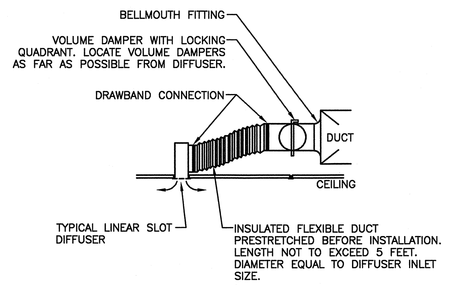
WITH TWO-WAY AUTOMATIC CONTROL VALVE

NOTES:
1. PROVIDE MANUAL AIR VENTS AS REQUIRED.
2. PROVIDE FULL LINE SIZE BALANCING VALVE, SHUT-OFF VALVE AND STRAINER.

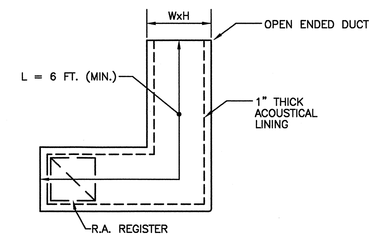
J17	HOT WATER REHEAT COIL PIPING
NOT TO SCALE	



E17	TYPICAL DIFFUSER DETAIL
NOT TO SCALE	



A13	TYPICAL LINEAR DIFFUSER TAKEOFF CEILING MOUNTED
NOT TO SCALE	



A17	ACOUSTICAL RETURN DUCT DETAIL
NOT TO SCALE	

NOTE:

1. SEE SHEET M-001 FOR LEGEND AND ABBREVIATIONS.

REV.	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	11-12-04

ISSUED FOR CONSTRUCTION 11-12-04

CURRENT ISSUE STATUS:

STATE OF MAINE — ROBERT J. ALBERI — 6439 — REGISTERED PROFESSIONAL ENGINEER

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PROJECT:

UNUMPROVIDENT
H03 4TH FLOOR RENOVATION
PORTLAND, MAINE

SHEET TITLE:

SPECIFICATIONS AND DETAILS

SCALE:	NTS	DATE:	11-12-04
PROJECT MANAGER:	JLH	GRAPHIC SCALE:	0" 1"
JOB CAP/DRAWN:	RJL/CAH		
A/E OF RECORD:	LPA	SHEET No.	
SMRT CAD FILE:	M-501-04168		M-501
PROJECT No.	04168		