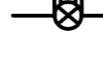
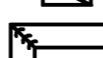
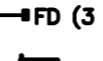
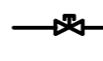

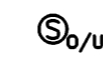
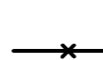

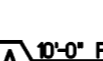



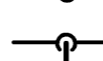








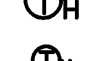

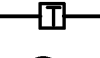



## LEGEND

<p>AC AIR CONDITIONING UNIT</p> <p>ACC AIR COOLED CONDENSER</p> <p>ACCU AIR COOLED CONDENSING UNIT</p> <p>ACV AUTOMATIC CONTROL VALVE</p> <p>AD ACCESS DOOR</p> <p>AE AIR EXTRACTOR</p> <p>AFF ABOVE FINISHED FLOOR</p> <p>AFG ABOVE FINISHED GRADE</p> <p>AHU AIR HANDLING UNIT</p> <p>ALD ACOUSTICALLY LINED DUCT</p> <p>ATC AUTOMATIC TEMPERATURE CONTROL</p> <p>BBU BOILER BURNER UNIT</p> <p>BD BAROMETRIC DAMPER</p> <p>BDD BACKDRAFT DAMPER</p> <p>CEB COUNTERBALANCED BACKDRAFT DAMPER</p> <p>CC COOLING COIL</p> <p>CD CEILING DIFFUSER</p> <p>CDR CONDENSATE DRAIN ( AHU, FC, ETC.)</p> <p>CDRP CONDENSATE DRAIN PUMP ( AHU, FC, ETC.)</p> <p>CG CEILING GRILLE</p> <p>CFM CUBIC FEET PER MINUTE</p> <p>CH CHILLER UNIT</p> <p>CHWP CHILLED WATER PUMP</p> <p>CHWR CHILLED WATER RETURN</p> <p>CHWS CHILLED WATER SUPPLY</p> <p>CO CLEANOUT</p> <p>C CONVECTOR</p> <p>CPD CONDENSATE PUMP DISCHARGE</p> <p>CR CONDENSATE RETURN</p> <p>CT COOLING TOWER</p> <p>CUH CABINET UNIT HEATER</p> <p>CW COLD WATER</p> <p>CWP CONDENSER WATER PUMP</p> <p>CWR CONDENSER WATER RETURN</p> <p>CWS CONDENSER WATER SUPPLY</p> <p>D CONDENSATE DRAIN</p> <p>D&amp;D DROP AND DRIP</p> <p>DDR DOUBLE DEFLECTION REGISTER</p> <p>DEF DEFLECTION</p> <p>DHW DOMESTIC HOT WATER</p> <p>EF EXHAUST FAN</p> <p>EG EXHAUST GRILLE</p> <p>ER EXHAUST REGISTER</p> <p>EXH EXHAUST</p> <p>FC FLEXIBLE CONNECTOR</p> <p>FCU FAN COIL UNIT</p>	<p>FD FIRE DAMPER</p> <p>FL FINNED LENGTH OF RADIATION</p> <p>FM FLOW METER</p> <p>FOR FUEL OIL RETURN</p> <p>FOS FUEL OIL SUPPLY</p> <p>FPT FREEZE PROTECTION THERMOSTAT</p> <p>FR FLOOR REGISTER</p> <p>FS FLOOR SWITCH</p> <p>F&amp;T FLOAT &amp; THERMOSTATIC TRAP</p> <p>GCR GRID CORE REGISTER</p> <p>GPM GALLONS PER MINUTE</p> <p>HC HEATING COIL</p> <p>HE HEAT EXCHANGER</p> <p>HEDV HOSE END DRAIN VALVE</p> <p>HEF HIGH EFFICIENCY FILTER BANK</p> <p>HPCR HIGH PRESSURE CONDENSATE RETURN ( OVER 30 PSIG)</p> <p>HPS HIGH PRESSURE STEAM ( OVER 30 PSIG)</p> <p>HRC HEAT RECOVERY COIL</p> <p>HRP HEAT RECOVERY PUMP</p> <p>HRR HEAT RECOVERY RETURN</p> <p>HRS HEAT RECOVERY SUPPLY</p> <p>HUM HUMIDIFIER</p> <p>HWP HEATING WATER PUMP</p> <p>HWR HEATING WATER RETURN</p> <p>HWS HEATING WATER SUPPLY</p> <p>HV HEATING &amp; VENTILATING UNIT</p> <p>LD LINEAR DIFFUSER</p> <p>LG LINEAR GRILLE</p> <p>LPCR LOW PRESSURE CONDENSATE RETURN ( 0-15 PSIG)</p> <p>LPS LOW PRESSURE STEAM ( 0-15 PSIG)</p> <p>LSGV LOCK SHIELD GATE VALVE</p> <p>LSGV LOCK SHIELD GATE VALVE</p> <p>MANVLS MANUAL CONTROL FROM LIGHT SWITCH</p> <p>MANVSS MANUAL CONTROL WITH VARIABLE SPEED SWITCH</p> <p>MEH 1000 BRITISH THERMAL UNITS PER HOUR</p> <p>MCC MOTOR CONTROL CENTER</p> <p>MD MOTORIZED DAMPER</p> <p>MPCR MEDIUM PRESSURE CONDENSATE RETURN ( 16 - 30 PSIG)</p> <p>MPS MEDIUM PRESSURE STEAM ( 16 - 30 PSIG)</p> <p>MS MAGNETIC STARTER</p> <p>OA OUTSIDE AIR</p> <p>OED OPEN ENDED DUCT</p> <p>OS&amp;Y OUTSIDE SCREW &amp; YOKE GATE VALVE</p> <p>PD PRESSURE DROP</p> <p>PH PREHEAT COIL</p> <p>PRD PRESSURE RELIEF DAMPER</p> <p>PRV PRESSURE REDUCING VALVE</p>	<p>R/D RADIATION WITH DAMPER</p> <p>RCHWP RESET CHILLED WATER PUMP</p> <p>RCHWR RESET CHILLED WATER RETURN</p> <p>RCHWS RESET CHILLED WATER SUPPLY</p> <p>REF RETURN/EXHAUST FAN</p> <p>RET RETURN</p> <p>RF RETURN AIR FAN</p> <p>RH REHEAT COIL</p> <p>RHWP RESET HOT WATER PUMP</p> <p>RHWR RESET HOT WATER RETURN</p> <p>RHWS RESET HOT WATER SUPPLY</p> <p>RPM REVOLUTIONS PER MINUTE</p> <p>RR RETURN REGISTER</p> <p>S SWITCH</p> <p>SA SOUND ATTENUATOR</p> <p>SCV SELF - CONTAINED CONTROL VALVE</p> <p>SD SMOKE DAMPER</p> <p>SDR SINGLE DEFLECTION REGISTER</p> <p>SF SUPPLY FAN</p> <p>SG SUPPLY GRILLE</p> <p>SP STATIC PRESSURE</p> <p>SS STAINLESS STEEL</p> <p>SUP SUPPLY</p> <p>SV SOLENOID VALVE</p> <p>TC TIME CLOCK</p> <p>TD THERMALLY INSULATED DUCT</p> <p>TD TRANSFER DUCT</p> <p>TF TRANSFER FAN</p> <p>TG TRANSFER GRILLE</p> <p>TR TEMPERATURE RISE</p> <p>TT THERMOSTATIC TRAP</p> <p>UH UNIT HEATER</p> <p>VAV VARIABLE AIR VOLUME BOX</p> <p>VB VACUUM BREAKER</p> <p>VD VOLUME DAMPER</p> <p>VF VENTILATION FAN</p> <p>WC WATER COLUMN</p> <p>WG WALL GRILLE</p> <p>WR WALL REGISTER</p> <p>ACV 2 - WAY</p> <p>ACV 3 - WAY</p> <p>BALANCE VALVE</p> <p>BACKDRAFT DAMPER</p> <p>CAP - PIPE</p> <p>CHECK VALVE</p>	<p> COMBINATION BALANCING, FLOW MEASURING &amp; TIGHT SHUT-OFF VALVE</p> <p> DUCT SECTION - SUPPLY</p> <p> DUCT SECTION - RETURN/EXHAUST</p> <p> DUCT TURNING VANES</p> <p> FIRE DAMPER (1 1/2 HOUR RATED)</p> <p> FIRE DAMPER (3 HOUR RATED)</p> <p> FLEXIBLE DUCT</p> <p> FLOAT &amp; THERMOSTATIC TRAP</p> <p> ISOLATION VALVE</p> <p> GLOBE VALVE</p> <p> HUMIDISTAT</p> <p> HUMIDITY SENSOR</p> <p> LOCKSHIELD GATE VALVE</p> <p> LOUVER</p> <p> MANUAL AIR VENT</p> <p> MOTORIZED DAMPER</p> <p> OCCUPIED/UNOCCUPIED SWITCH</p> <p> OS&amp;Y GATE VALVE</p> <p> PETCOCK FOR GAUGE CONNECTION</p> <p> PIPE ANCHOR</p> <p> PIPE GUIDE</p> <p> PITCH DOWN</p> <p> PLUG VALVE</p> <p> PRESSURE GAUGE</p> <p> PRESSURE REDUCING VALVE</p> <p> PRESSURE RELIEF VALVE</p> <p> PRESSURE RELIEF DAMPER</p> <p> RADIATION I.D. ( TYPE A, 10'-0" FINNED LENGTH, 10,000 BTU/HR) WITH DAMPER</p> <p> RADIATION I.D. ( TYPE A, 10'-0" FINNED LENGTH, 10,000 BTU/HR) WITHOUT DAMPER</p> <p> REDUCER - CONCENTRIC</p> <p> REDUCER - ECCENTRIC</p> <p> RETURN AIR</p> <p> RETURN AIR DUCT</p> <p> RETURN PIPING (HEATING WATER, CHILLED WATER, HEAT RECOVERY, CONDENSATE RETURN)</p> <p> SECTION I.D. ( SECTION A SHOWN ON DWG. MH101)</p> <p> SMOKE DAMPER</p> <p> STRAINER</p> <p> SUPPLY AIR</p> <p> SUPPLY AIR DUCT</p> <p> SUPPLY PIPING (HEATING WATER, CHILLED WATER, HEAT RECOVERY, STEAM)</p> <p> SWITCH WITH PILOT LIGHT</p> <p> TAKE - OFF FROM BOTTOM OF PIPE</p> <p> TAKE - OFF FROM TOP OF PIPE</p> <p> TEMPERATURE SENSOR</p>	<p> THERMOMETER</p> <p> THERMOMETER WELL</p> <p> DUCT MOUNTED SMOKE DETECTOR (BY DIVISION 16)</p> <p> THERMOSTAT</p> <p> THERMOSTAT COOLING</p> <p> THERMOSTAT HEATING</p> <p> THERMOSTAT - NIGHT</p> <p> THERMOSTAT - HEATING/COOLING</p> <p> THERMOSTATIC TRAP</p> <p> TIMER SWITCH</p> <p> UNION</p> <p> VARIABLE SPEED SWITCH W/OFF "POSITION"</p> <p> VOLUME DAMPER</p> <p> S ( SUPPLY ) R ( RETURN ) E ( EXHAUST ) T ( TRANSFER ) SUPPLY DIFFUSER ( TYPE 2 ) DIFFUSER DESCRIPTION ( SEE REG., GRILLES &amp; DIFF SCHEDULE ) QUANTITY 400 CFM EA</p>
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## GENERAL NOTES

1. MECHANICAL CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE WORK OF ALL OTHER TRADES.
2. ALL DUCTWORK AND MECHANICAL EQUIPMENT SHOWN DIAGRAMMATICALLY. DETERMINE EXACT LOCATIONS IN FIELD.
3. COORDINATE LOCATION OF ALL NEW ROOFTOP EQUIPMENT, LOCATED ON EXISTING ROOF, WITH EXISTING ROOF JOIST.
4. THE MECHANICAL CONTRACTOR SHALL NOT FABRICATE ANY DUCTWORK UNTIL HE HAS COORDINATED WITH ALL OTHER TRADES TO INSURE THAT THE DUCTWORK CAN BE INSTALLED WITH THE SIZES INDICATED ON THE DRAWINGS AND IN THE LOCATIONS SHOWN ON THE DRAWINGS.
5. REFER TO REFLECTED CEILING PLAN ON ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF CEILING DIFFUSERS AND REGISTERS.
6. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF LOUVERS AND ROOF OPENINGS. COORDINATE ALL DIMENSIONS WITH GENERAL CONTRACTOR.
7. ALL LOUVER DIMENSIONS SHALL BE CLOSELY COORDINATED WITH THE WORK OF ALL OTHER TRADES.
8. PROVIDE VOLUME DAMPERS SO THAT EVERY REGISTER, GRILLE, AND DIFFUSER ( SUPPLY, RETURN, AND EXHAUST ) CAN BE INDIVIDUALLY BALANCED. VOLUME DAMPERS SHALL BE LOCATED AS FAR AWAY FROM REGISTERS, GRILLES, AND DIFFUSERS AS POSSIBLE TO MINIMIZE NOISE. VOLUME DAMPERS SHALL BE LOCATED ABOVE SUSPENDED CEILING WHEREVER POSSIBLE AND SHALL BE UNOBSTRUCTED AND EASILY ACCESSIBLE FOR THE BALANCING CONTRACTOR. CONTRACTOR SHALL VERIFY INSTALLATION OF EXISTING VOLUME DAMPERS AT ALL BRANCHES IN EXISTING SUPPLY DUCT. CONTRACTOR SHALL INSTALL NEW VOLUME DAMPERS WHERE REQUIRED. IN LOCATIONS WHERE VOLUME DAMPERS CANNOT BE LOCATED ABOVE SUSPENDED CEILING AND MUST BE LOCATED ABOVE GYPBOARD CEILING, PROVIDE ACCESS PANELS AS SPECIFIED AND NOTIFY THE ARCHITECT VERBALLY AND IN WRITING OF ALL SUCH LOCATIONS. ACCESS PANELS SHALL NOT BE INSTALLED WITHOUT PERMISSION FROM THE ARCHITECT.
9. PROVIDE 16 GA. SINGLE THICKNESS TURNING VANES AT ALL 90 DEGREE ELBOWS IN ALL SUPPLY DUCTWORK. VANE EDGES ( LEADING & TRAILING ) SHALL BE TANGENTIAL TO AIRFLOW.
10. FLEXIBLE DUCT WORK IS NOT ALLOWED IN NEGATIVE PRESSURE SYSTEMS. DO NOT USE FLEXIBLE DUCTWORK IN RETURN AND EXHAUST SYSTEMS. WHERE FLEXIBLE DUCT IS USED, LENGTHS SHALL NOT EXCEED 5'-0".
11. ALL DUCTWORK VISIBLE THROUGH CEILING OPENINGS, DUCT OPENINGS, REGISTERS, GRILLES, AND DIFFUSERS SHALL BE PAINTED BLACK.
12. ALL FRESH AIR AND EXHAUST AIR PLENUMS SHALL HAVE FLOOR PITCHED TO DRAIN THROUGH LOUVER.
13. VERIFY EXISTING DUCT SIZES PRIOR TO FABRICATION OF NEW DUCTWORK. IF DISCREPANCIES EXIST, NOTIFY THE ENGINEER.
14. FOR ALL NEW HVAC UNITS, SUPPLY AND RETURN DUCT MAINS OUT OF UNITS SHALL DROP DOWN AS CLOSE TO CEILING AS POSSIBLE ( COORDINATE WITH LIGHTING, SPRINKLER, & OTHER TRADES ) BEFORE FIRST RADIUS ELBOW FITTING IS INSTALLED. THE INTENT IS TO PROVIDE THE LONGEST RUN OF DUCT POSSIBLE OUT OF THE HVAC UNITS SO THAT STATIC PRESSURE LOSS IS MINIMIZED.
15. THE CONTRACTOR SHALL VISIT THE BUILDING SITE PRIOR TO BIDDING TO FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS AND TO TAKE MEASUREMENTS AS NECESSARY SO THAT HE MAY PROPERLY COMPLETE ALL WORK ASSOCIATED WITH THE DESIGN INTENT OF THESE DOCUMENTS.
16. ALL PIPING SHOWN IN OUTSIDE WALLS SHALL BE RUN ON WARM SIDE OF BUILDING INSULATION. BUILDING INSULATION SHALL BE CONTINUOUS, WITHOUT JOINTS, BEHIND PIPING.
17. ALL PIPING SHALL BE CONCEALED EXCEPT IN MECHANICAL ROOMS AND AS NOTED. WHERE PIPES DROP IN BLOCK WALLS, PROVIDE INSULATION 1/2" THICK MINIMUM.
18. ALL DUCTWORK AND PIPING PENETRATIONS THROUGH MECHANICAL ROOM WALLS AND FLOORS SHALL BE SEALED WITH FIRESTOPPING MATERIAL AS SPECIFIED.
19. ALL EXISTING DUCTWORK TO REMAIN IS SHOWN DASHED ON THIS SHEET. ALL NEW DUCTWORK IS SHOWN SOLID ON THIS SHEET.
20. MOUNT ALL THERMOSTATS AND TEMPERATURE SENSORS AT 48" AFF TO CENTERLINE OF THERMOSTAT/TEMPERATURE SENSOR.
21. WHERE THERMOSTATS/TEMPERATURE SENSORS ARE LOCATED NEAR LIGHT SWITCHES, INSTALL THERMOSTAT/TEMPERATURE SENSORS SO THAT LIGHT SWITCHES ARE CLOSER TO DOOR JAMBS THAN THERMOSTAT/TEMPERATURE SENSORS. THE INTENT IS TO LOCATE THE THERMOSTATS/TEMPERATURE SENSORS SO THAT THEY WILL NOT INTERFERE WITH THE ACCESSIBILITY TO LIGHT SWITCHES.

Project Title  
**MEMIC  
COMPUTER ROOM  
RELOCATION**  
PORTLAND, MAINE

HA Project No. **04150**

Key Plan 

-	11-03-04	ISSUED FOR CONSTRUCTION
-	10-19-04	90% REVIEW
-	10-01-04	DD REVIEW
Mark	Date	Description

Issue Dates

Drawing Status

Drawing Title  
**LEGEND & NOTES**

PA / PE: **RDM**      Drawn By: **RDM**

Drawing Number

# M00.1