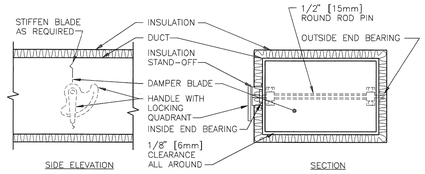
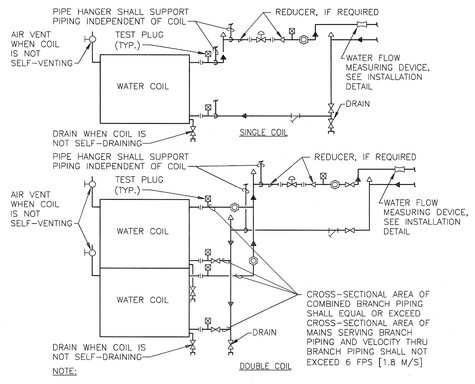


NOTE:

1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

B1 VOLUME DAMPER DETAIL

SCALE: NONE

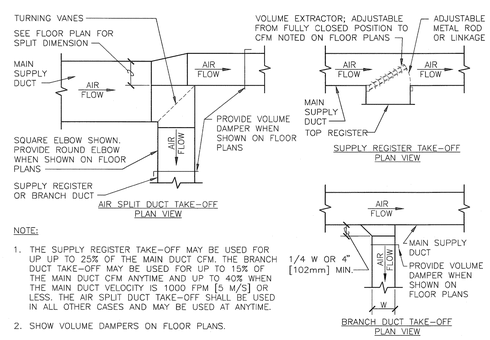


NOTE:

1. WHEN COIL IS INCLUDED IN CASING MOUNTED ON VIBRATION ISOLATORS THE FIRST 2 HANGERS FOR EACH PIPE SHALL BE SPRING & NEOPRENE TYPE. TYPE "H" FOR 4" [100mm]ø PIPE & SMALLER. TYPE "H-P" FOR 5" [125mm]ø PIPE & LARGER.
2. PIPING SHALL BE INSTALLED IN SUCH MANNER THAT IT WILL NOT BLOCK THE SWING OR USE OF ACCESS DOORS OR PANELS; NEITHER SHALL IT BLOCK THE SERVICING OF FILTERS, VALES, OR EQUIPMENT.
3. A STRAIGHT-THRU MODULATING CONTROL VALVE IS SHOWN BY SOLID PIPING. WHEN CONTROL DIAGRAMS INDICATE A THREE-WAY MODULATING CONTROL VALVE IS REQUIRED, PROVIDE DASHED PIPING ALSO.
4. THE WATER FLOW MEASURING DEVICE MAY BE INSTALLED IN THE SUPPLY PIPING IF THE REQUIRED MINIMUM UPSTREAM AND DOWNSTREAM DIMENSIONS CANNOT BE OBTAINED IN THE RETURN PIPING.

E1 TYPICAL CONNECTIONS TO CHILLED WATER COIL

SCALE: NONE

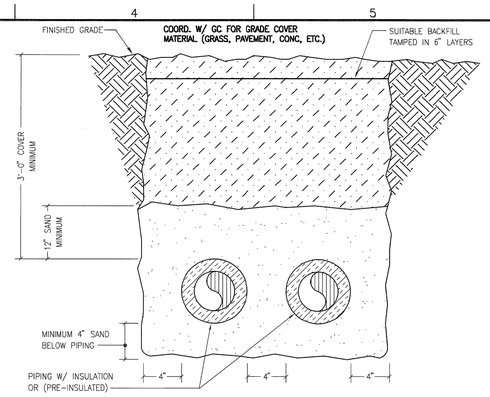


NOTE:

1. THE SUPPLY REGISTER TAKE-OFF MAY BE USED FOR UP UP TO 25% OF THE MAIN DUCT CFM. THE BRANCH DUCT TAKE-OFF MAY BE USED FOR UP TO 15% OF THE MAIN DUCT CFM ANYTIME AND UP TO 40% WHEN THE MAIN DUCT VELOCITY IS 1000 FPM [5 M/S] OR LESS. THE AIR SPLIT DUCT TAKE-OFF SHALL BE USED IN ALL OTHER CASES AND MAY BE USED AT ANYTIME.
2. SHOW VOLUME DAMPERS ON FLOOR PLANS.

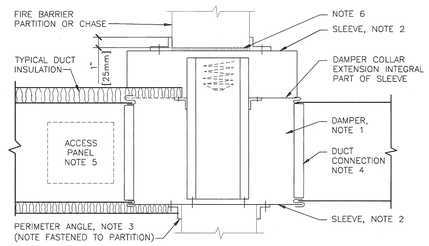
F1 SUPPLY DUCTWORK TAKE-OFFS

SCALE: NONE



B3 UNDERGROUND (DIRECT BURIED) PIPING

SCALE: NONE

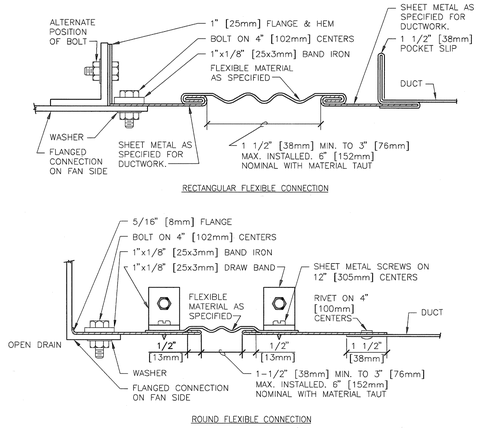


NOTES:

1. A VERTICAL DAMPER IS SHOWN. HORIZONTAL DAMPER INSTALLATION, 1S SIMILAR. FOLLOW DAMPER MANUFACTURER'S INSTRUCTIONS, INCLUDING FASTENER OPTIONS AND GAGES FOR SLEEVE AND PERIMETER ANGLES. FIRE DAMPERS MUST BE INSTALLED IN THE PARTITION OR FLOOR AND NOT OUTSIDE THE PENETRATION.
2. GALVANIZED SLEEVE: GAGE NOT LESS THAN CONNECTING DUCT. FASTEN SLEEVE TO DAMPER FRAME AND TO PERIMETER ANGLES.
3. PERIMETER ANGELS: GALVANIZED STEEL, NOT LESS THAN 1 1/2"x1 1/2" [38x38mm], 14 GAGE, TO PROVIDE 1" [25mm] MINIMUM OVERLAP OF OPENING ON ALL 4 SIDES.
4. BREAKAWAY DUCT CONNECTION: CONTRACTOR'S OPTION OF TYPES SHOWN IN SMACNA LPDS, FIG. 2-13, SEAL JOINTS.
5. ACCESS PANELS: SIZE AND LOCATION TO PERMIT SERVICING THE FUSIBLE LINK OR LINKS.
6. PROVIDE 1/4" TO 1/2" [6 TO 13mm] CLEARANCE ON HEIGHT AND WIDTH. FILL OPEN SPACE WITH ROCK WOOL FIRESTOP FIBER.
7. ALL DUCT WORK RISERS WHICH ARE RUN EXPOSED, SUCH AS THRU ATTIC FLOORS AND MECHANICAL ROOM FLOORS, SHALL BE PROVIDED WITH 3" [76mm] HIGH CONCRETE CURB AROUND OPENING FOR DUCT.
8. MECHANICAL CONTRACTOR SHALL PROVIDE A COPY OF INSTALLATION INSTRUCTIONS TO DESIGN ENGINEER AND COTR TO BE USED DURING ABOVE CEILING INSPECTION.

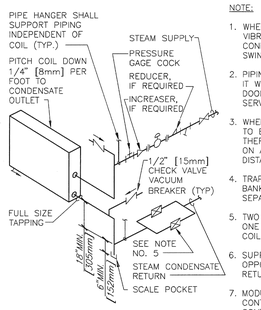
D3 SECTION THRU TYPICAL FIRE DAMPER INSTALLATION

SCALE: NONE



F3 RECTANGULAR AND ROUND FLEXIBLE CONNECTION DETAILS

SCALE: NONE

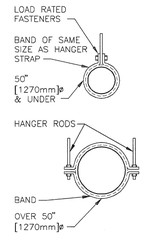


NOTE:

1. WHEN COIL IS INCLUDED IN CASING MOUNTED ON VIBRATION ISOLATOR UNITS, THE RUNOUT PIPING FOR CONNECTIONS TO COIL SHALL BE INSTALLED WITH SWING JOINTS TO ALLOW FOR THE VIBRATION.
2. PIPING SHALL BE INSTALLED IN SUCH MANNER THAT IT WILL NOT BLOCK THE SWING OR USE OF ACCESS DOORS OR PANELS; NEITHER SHALL IT BLOCK THE SERVICING OF FILTERS, VALVES, OR EQUIPMENT.
3. WHERE THE DISTANCE FROM THE INTAKE OF TRAP TO BOTTOM OF COIL IS RESTRICTED, FLOAT & THERMOSTATIC TRAP CAPACITES SHALL BE SELECTED ON A LOWER PRESSURE DROP SUITED TO THE DISTANCE BETWEEN BOTTOM OF COIL & TRAP INLET.
4. TRAP EACH COIL SEPARATELY WHEN INSTALLED IN A BANK OF TWO OR MORE HIGH. ALSO PROVIDE SEPARATE VACUUM BREAKER FOR EACH COIL.
5. TWO TRAP SETS IN PARALLEL ARE SHOWN. ONLY ONE TRAP SET IS REQUIRED FOR EACH REHEAT COIL.
6. SUPPLY & RETURN PIPES ARE SHOWN FROM OPPOSITE ENDS. REHEAT COIL MAY HAVE SUPPLY & RETURN PIPES FROM OPPOSITE ENDS.
7. MODULATING TYPE CONTROL VALVE IS SHOWN. IF CONTROL DIAGRAM INDICATES ON-OFF TYPE CONTROL VALVE IS REQUIRED, THEN THAT VALVE SHOULD BE SHOWN.

B6 TYPICAL CONNECTIONS TO STEAM COIL

SCALE: NONE

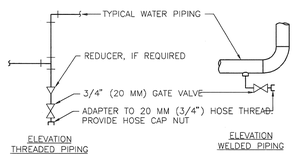


HANGER STRAPS OR RODS			
MAX. DUCT ø IN. [mm]	QUANTITY/SIZE IN. [mm]	MAX. LOAD LBS. [kg]	MAX. SPACING IN. [mm]
26 [650]	ONE 1 [25] x 22 GA STRAP	260 [119]	144 [3658]
36 [900]	ONE 1 [25] x 18 GA STRAP	420 [190]	144 [3658]
50 [1250]	ONE 1 [25] x 16 GA STRAP	700 [317]	144 [3658]
60 [1500]	TWO 3/8 [10]ø. RODS	1320 [598]	144 [3658]
84 [2100]	TWO 1/2 [13]ø RODS	2500 [1133]	144 [3658]

NOTE:
TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION, BUT NO EXTERNAL LOAD.

D6 ROUND DUCT HANGERS

SCALE: NONE

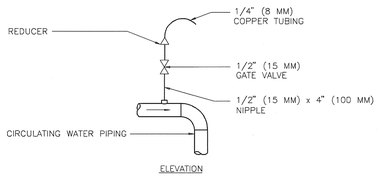


NOTES:

1. DRAIN ALL LOW POINTS AS INDICATED ABOVE.
2. WHERE SCALE POCKETS ARE SHOWN ON PIPE RISER DIAGRAMS AND/OR PLANS LOCATE DRAIN AT BOTTOM OF SCALE POCKET.

E6 TYPICAL CHILLED AND HOT WATER PIPING DRAIN VALVE CONNECTIONS

SCALE: NONE

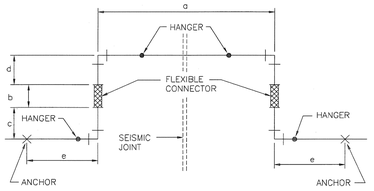


NOTES:

1. VENT ALL HIGH POINTS INDICATED ABOVE.
2. IF AUTOMATIC AIR VENTS ARE USED, PIPE DISCHARGE TO DRAIN

F6 TYPICAL AIR VENT

SCALE: NONE

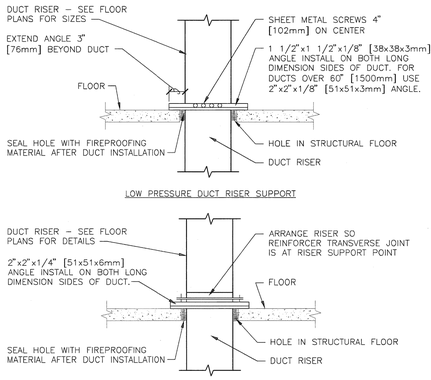


DETAIL "E"
(STEEL OR COPPER PIPE)

SCHEDULE FOR PIPING CROSSING A SEISMIC JOINT									
LOCATION	PIPE	DETAIL	DIMENSIONS INCHES (MM)						
			a	b	c	d	e	f	
–	–	–	–	–	–	–	–	–	
–	–	–	–	–	–	–	–	–	

B9 PIPING CROSSING A SEISMIC JOINT DETAIL "E"

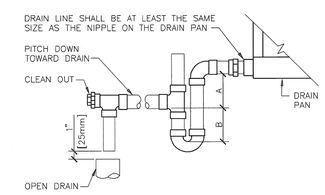
SCALE: NONE



NOTE:
ALL DUCT WORK RISERS WHICH ARE RUN EXPOSED, SUCH AS THRU ATTIC FLOORS AND FAN ROOM FLOORS SHALL BE PROVIDED WITH A 3" [76mm] HIGH CONCRETE CURB AROUND OPENING FOR DUCT.

D9 LOW, MEDIUM AND HIGH PRESSURE DUCT RISER SUPPORTS

SCALE: NONE



UNIT TYPE	A	B
DRAW THRU	2" [51mm] PLUS X	X
BLOW THRU	1" [25mm] MINIMUM	2X

WHERE X = STATIC PRESSURE IN PAN

F9 AIR HANDLING UNIT DRAIN TRAP DETAIL

SCALE: NONE

100% SUBMITTAL

REVISION NO.	REVISION DESCRIPTION	By	Date

Revisions

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Recommended Approvals:	
1. MEDICAL DIRECTOR	6. OPERATIONS SERVICE LINE MANAGER
2. ASSOCIATE DIRECTOR	7. INFECTION CONTROL SAFETY MANAGER
3. CHIEF OF STAFF	8. SAFETY MANAGER
4. ASSOC. DIRECTOR	9. GENERAL ENGINEER
5. SERVICE LINE MGRS.	10. COTR

Drawing Title: MECHANICAL DETAILS

FULLY SPRINKLERED

Project Title: RENOVATE 13A FOR ENDOSCOPY SUITE

Date: June 10, 2011

Project Number: 557-10-108

Drawn	Building Number	AutoCAD File Name	DRAWING No.
AGT			M-502
Checked	Reviewed	Const. Contract No.	
LEH/HLH			

Veterans Affairs