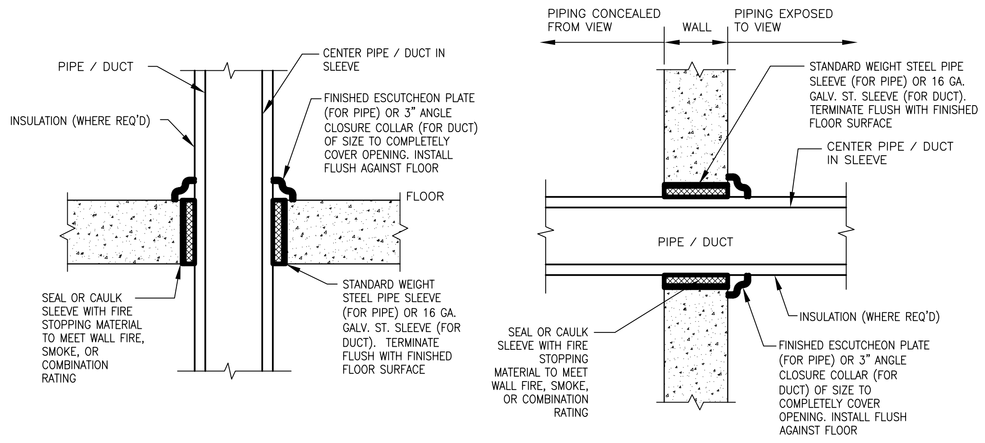
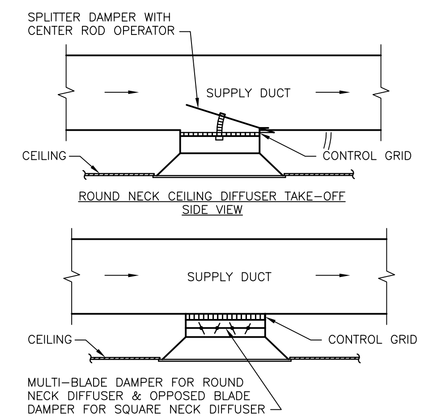


NOTES:
1. INSTALL ALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
2. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR FLOOR CONSTRUCTION MATERIALS.

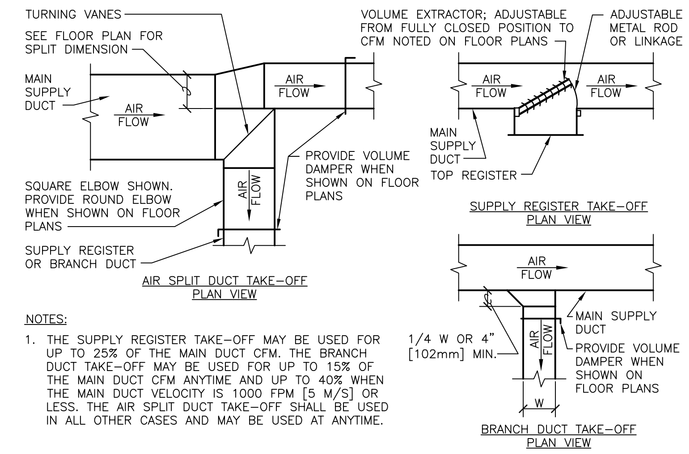
1 PIPE/DUCT PENETRATION OF FIRE/SMOKE BARRIERS DETAIL

NTS



2 CEILING DIFFUSER DUCTWORK TAKE-OFFS DETAIL

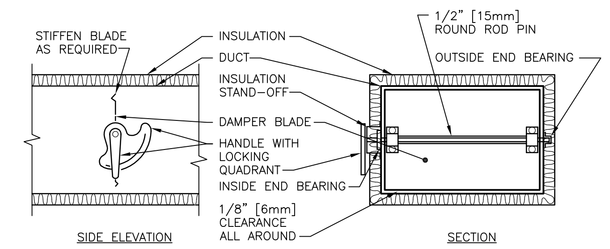
NTS



NOTES:
1. THE SUPPLY REGISTER TAKE-OFF MAY BE USED FOR 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.

3 SUPPLY DUCTWORK TAKE-OFFS DETAIL

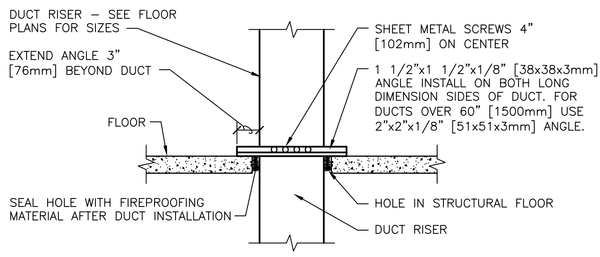
NTS



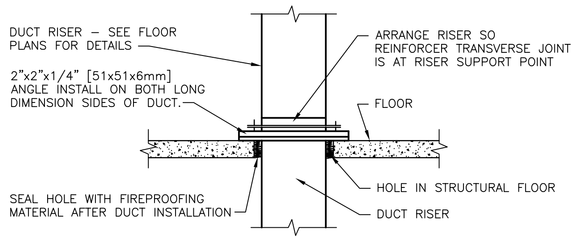
NOTE:
1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

4 VOLUME DAMPER DETAIL

NTS



LOW PRESSURE DUCT RISER SUPPORT

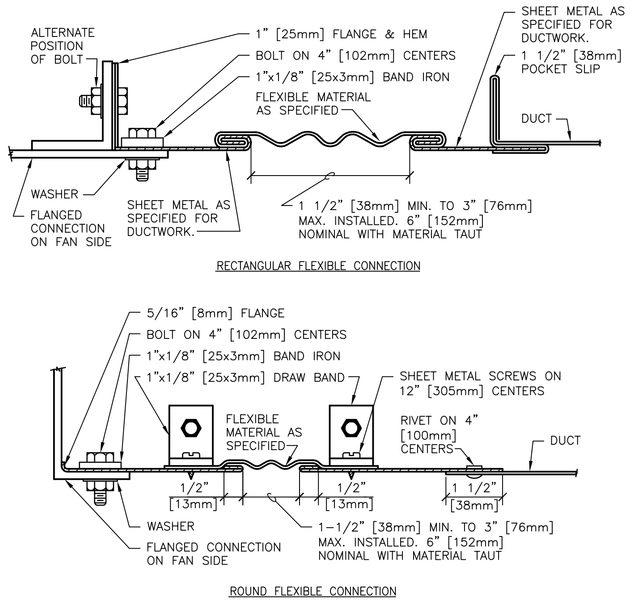


MEDIUM AND HIGH PRESSURE DUCT RISER SUPPORT

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.

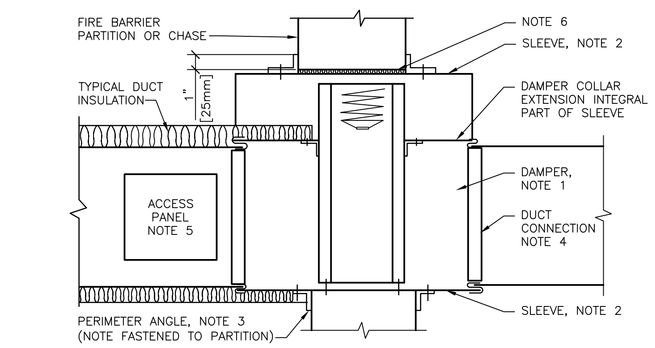
5 LOW, MEDIUM AND HIGH PRESSURE DUCT RISER SUPPORTS DETAIL

NTS



6 RECTANGULAR AND ROUND FLEXIBLE CONNECTION DETAIL

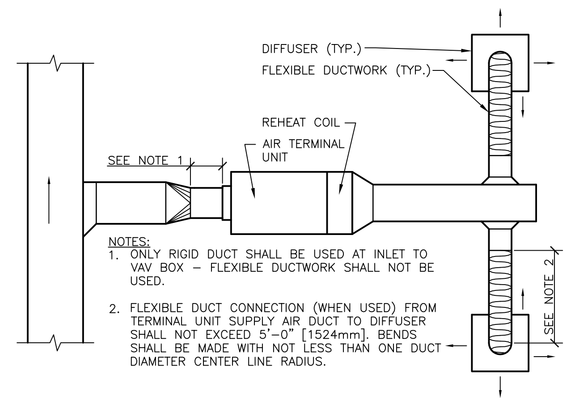
NTS



NOTES:
1. A VERTICAL DAMPER IS SHOWN. HORIZONTAL DAMPER INSTALLATION, IS 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.

7 FIRE DAMPER INSTALLATION DETAIL

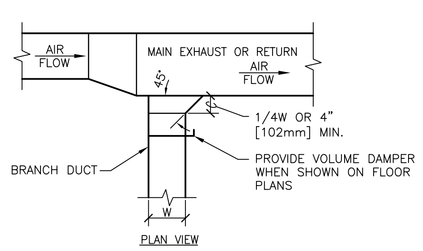
NTS



NOTES:
1. ONLY RIGID DUCT SHALL BE USED AT INLET TO VAV BOX – FLEXIBLE DUCTWORK SHALL NOT BE USED.
2. FLEXIBLE DUCT CONNECTION (WHEN USED) FROM TERMINAL UNIT SUPPLY AIR DUCT TO DIFFUSER SHALL NOT EXCEED 5'-0" [1524mm]. BENDS SHALL BE MADE WITH NOT LESS THAN ONE DUCT DIAMETER CENTER LINE RADIUS.

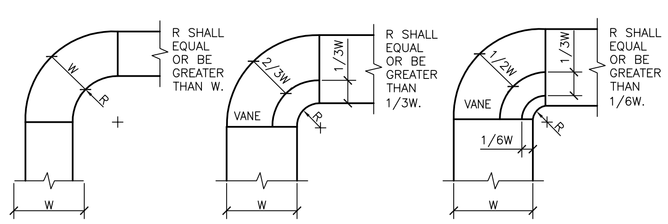
8 FLEXIBLE DUCT CONNECTION FOR AIR TERMINAL UNITS DETAIL

NTS



9 EXHAUST OR RETURN BRANCH DUCTWORK DETAIL

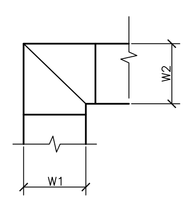
NTS



NOTES:
1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. ALL STANDARD RADIUS ELBOWS SHOWN ON FLOOR PLANS MAY BE MADE SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

10 DUCTWORK RADIUS ELBOWS DETAIL

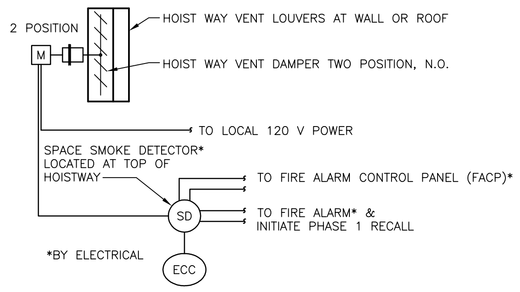
NTS



NOTES:
1. ALL VANED ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.
2. WHEN W1 DOES NOT EQUAL W2, VANE SHALL BE SINGLE VANE TYPE REGARDLESS OF W DIMENSION.
3. ALL SINGLE VANES SHALL HAVE A 2" [50mm] RADIUS, 1 1/2" [40mm] MAXIMUM SPACE BETWEEN VANES AND A 3/4" [20mm] TRAILING EDGE.
4. WHEN W EQUALS W2 AND W1 IS GREATER THAN 20" [500mm] VANES SHALL BE DOUBLE VANE TYPE.

11 DUCTWORK SQUARE VANED ELBOWS DETAIL

NTS



NOTES:
1. THE DAMPER SHALL REMAIN CLOSED DURING NORMAL OPERATION AND OPEN UPON LOSS OF POWER FROM A SIGNAL FROM THE SMOKE DETECTOR, LOCATED AT THE TOP OF THE HOISTWAY. PROVIDE ADEQUATE NUMBER OF CONTACTS FOR ELECTRICAL AND FIRE PROTECTION REQUIREMENTS.
2. SEE ARCHITECTURAL DRAWINGS FOR DAMPER LOCATIONS.
3. HOISTWAY VENT/DAMPER FOR ELEVATORS 1 AND 2 IS 72x12. LOCATION IS INDICATED ON DRAWING MH1-141.
4. HOISTWAY VENT/DAMPER FOR ELEVATORS 3 AND 4 IS 64x18. LOCATION IS INDICATED ON DRAWING MH1-141.
5. PROVIDE A BINARY DDC POINT TO SOUND AN ALARM AT ECC.
6. REMOTE ALARM SHALL BE ACTIVATED WHEN THE HOISTWAY SMOKE DETECTOR DETECTS SMOKE.

12 HOISTWAY VENT DAMPER (HVD) CONTROLS

NTS

FOR CONSTRUCTION
FULLY SPRINKLERED

Revisions:	Date

CONSULTANTS:

HDR Architecture, Inc.
1101 King Street | Suite 400 | Alexandria, Virginia 22314-2944 | 703.518.8500

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD
ASTORINO
227 Fort Pitt Boulevard Pittsburgh Pennsylvania 15222
TEL 412 765 1700 FAX 412 765 1711 www.astorino.com

Drawing Title	HVAC Sheetmetal Details
Approved: Project Director	
Project Title	VA CARES CONSOLIDATION VAMC, PITTSBURGH, PA RESEARCH OFFICE BLDG.
Project Number	646CA2500R
Building Number	30
Location	VAPHS UNIVERSITY DRIVE
Date	08-18-10
Checked	JS
Drawn	RAN
Drawing Number	MH7-101
Dwg. . of	

Office of Facilities Management
Department of Veterans Affairs

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