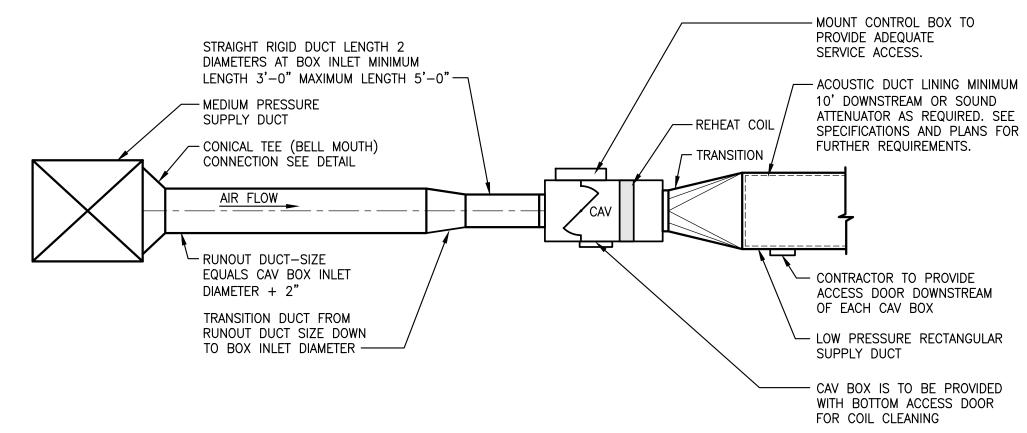
1. FOR 4-PIPE UNIT, DUPLICATE CHILLED WATER PIPING HOOK-UP FOR HOT WATER COIL.

- LEAK DETECTOR WIRED TO

SHUT DOWN AC UNIT

HORIZONTAL FAN COIL UNIT PIPING DETAIL

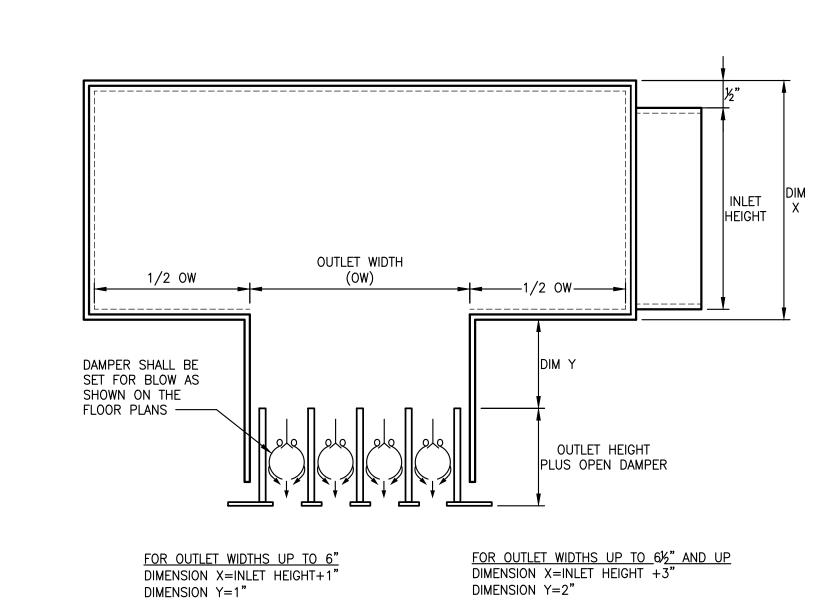


NOTES:

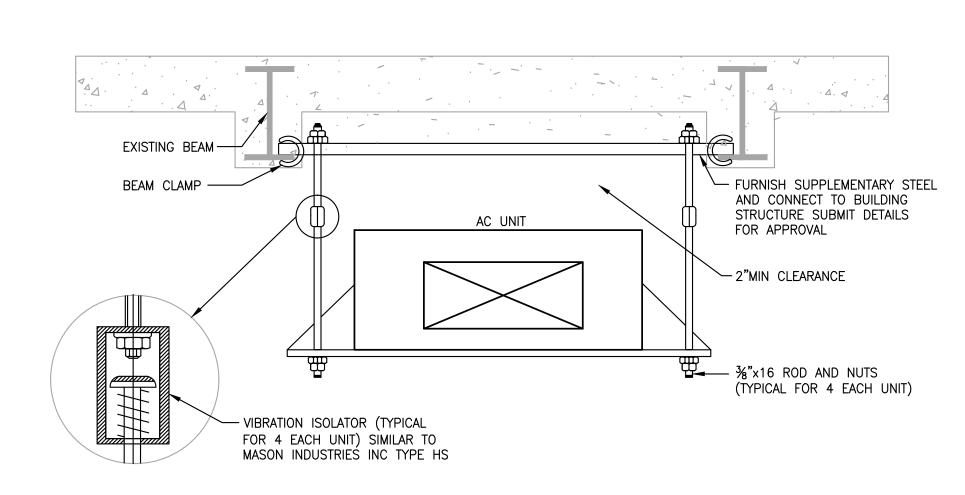
CONDENSATE PUMP -

- 1. THE OPERATION OF VARIABLE VOLUME TERMINAL UNITS ARE AFFECTED BY EXCESSIVE TURBULENCE ON THE ENTERING SIDE OF EACH TERMINAL UNIT THEREFORE, TERMINAL UNITS MUST NOT BE INSTALLED TOO CLOSE TO MAIN DUCTS, ELBOWS AND FITTINGS.
- 2. WHEN MINIMUM UPSTREAM STRAIGHT DUCT CONNECTION TO TERMINALS AS INDICATED ABOVE CANNOT BE MAINTAINED, PROVIDE ORIFICE PLATE, STRAIGHTENING VANES OR OTHER DEVICE AS RECOMMENDED BY TERMINAL UNIT MANUFACTURER AND SUBMIT TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.
- 3. MANUFACTURER OF TERMINAL UNIT SHALL PROVIDE CONTROLS ON LEFT OR RIGHT SIDE AS REQUIRED BY FIELD
- 4. ARRANGE ACCESS TO PERMIT EASY FIELD BALANCE AND MAINTENANCE OF TERMINAL UNIT.

TERMINAL REHEAT BOX CONNECTIONS (CAV OR VAV)



LINEAR DIFFUSER PLENUM DETAIL



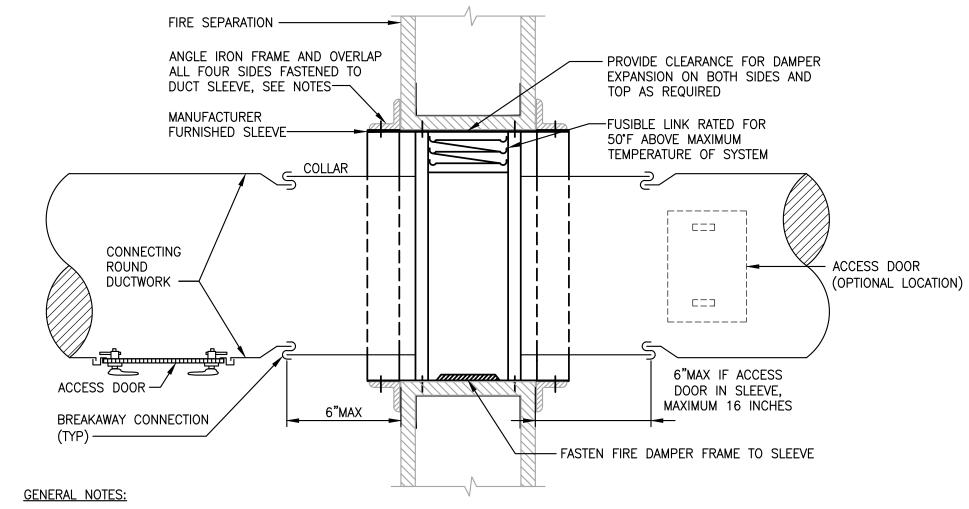
DETAIL FOR SUSPENDING A.C. UNIT

FIRE AND SMOKE RATED WALL OR PARTITION -EXPANSION SPACE INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS ——— MANUFACTURER FURNISHED MINIMUM 1" OVERLAP STEEL DAMPER SLEEVE ----- PROVIDE SMOKE DETECTOR AS PER CODE REQUIREMENTS AND AS INDICATED ON PLANS SMOKE DETECTOR WHERE REQUIRED SHALL BE FURNISHED BY ELECTRICAL CONTRACTOR, AND UL APPROVED BREAK INSTALLED BY HVAC CONTRACTOR, SEE FLOOR AWAY JOINT CONNECTION -PLANS AND SYMBOL LIST FOR REQUIREMENTS FASTEN (BOLT, WELD OR ' ACCESS DOOR, NO LESS THAN 18x18 OR AS RIVET) DAMPER FRAME TO PRACTICAL FOR DUCT SIZE - PROVIDE FIRESTAT IN DAMPER SEE NOTE #7 RETAINING ANGLE IRON FRAME, ALL - ALTERNATE ACCESS DOOR LOCATION FOUR SIDES (ENTIRE PERIMETER) FASTENED TO DUCT SLEEVE -DAMPER OPERATOR OUTSIDE THE DUCT AND 6" MAXIMUM, IF ACCESS 6" MAXIMUM AIRSTREAM (COORDINATE LOCATION FOR DOOR INSTALLED IN ACCESS AND SERVICING) ELECTRIC OR PNEUMATIC, SEE SPECIFICATION SLEEVE, MAXIMUM 16"

GENERAL NOTES:

- 1. DAMPER TO BE UL LABELED NFPA 90A, BSA AND MEA APPROVED.
- 2. NFPA APPROVED INSTALLATION DETAILS TO BE PART OF SUBMISSION OF COMBINATION FIRE & SMOKE DAMPER FOR APPROVAL, WHICH SHALL MEET NFPA STANDARD 90A AND SHALL BE BSA APPROVED.
- DETAILS SHOWN ARE FOR COMBINATION FIRE AND SMOKE DAMPERS IN HORIZONTAL DUCTWORK. FOR DAMPERS IN VERTICAL DUCTWORK, DETAIL IS SIMILAR. VERTICAL DUCTS WITH HORIZONTAL DAMPERS ARE TO BE SPRING LOADED TYPE.
- 4. ACCESS DOOR IS SHOWN IN SIDE OF DUCT.
- 5. DETAIL FOR SMOKE DAMPER SHALL BE SIMILAR TO COMBINATION DAMPER EXCEPT DELETE FIRESTAT IN DAMPER.
- 6. THIS DETAIL IS A GUIDE ONLY. INSTALL DAMPER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND UL LISTING.
- THE HVAC CONTRACTOR SHALL PROVIDE ALL DEVICES RELAYS END SWITCHES, E/P SWITCHES, CONTROL COMPONENTS, AIR PIPING, POWER WIRING, CONTROL WIRING AND INTERLOCK WIRING AS REQUIRED TO ACCOMPLISH THE SEQUENCE OF OPERATION FOR THESE DAMPERS.
- 8. RETAINING ANGLES MUST OVERLAP THE FIREWALL 1" MINIMUM AND COVER CORNERS OF OPENINGS.

COMBINATION FIRE AND SMOKE DAMPER WITH FIRESTAT



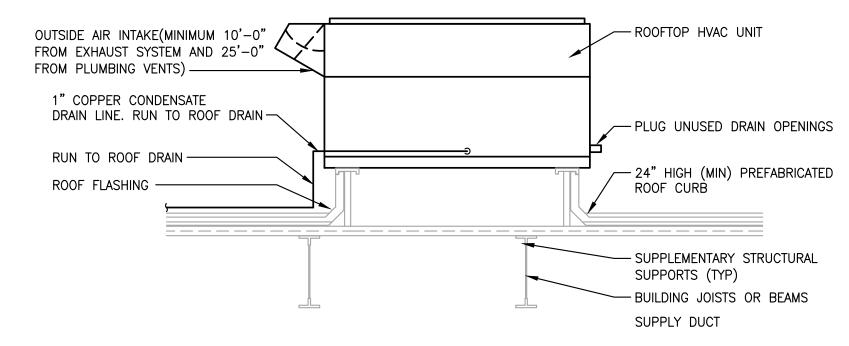
- 1. DAMPER TO BE UL LABELED NFPA 90A, BSA AND MEA APPROVED.
- 2. NFPA APPROVED INSTALLATION DETAILS TO BE PART OF SUBMISSION OF FIRE DAMPER FOR APPROVAL, WHICH SHALL MEET NFPA STANDARD 90A AND SHALL BE BSA APPROVED.
- 3. DETAILS SHOWN ARE FOR FIRE DAMPERS IN HORIZONTAL DUCTWORK. FOR DAMPERS IN VERTICAL DUCTWORK, DETAILS SIMILAR EXCEPT
- DAMPERS ARE TO BE SPRING LOADED.
- 5. UL APPROVED BREAKAWAY SLIP JOINT CONNECTION SHALL BE USED. 6. THIS DETAIL IS A GUIDE ONLY. INSTALL FIRE DAMPER IN

ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS

- 7. RETAINING ANGLES MUST OVERLAP THE FIRE WALL 1"MIN AND COVER CORNERS OF OPENINGS.
- 4. ACCESS DOOR IS SHOWN IN SIDE OF DUCT; IF FUSIBLE LINK IS MORE ACCESSIBLE FROM BOTTOM OF DUCT RELOCATE ACCESS DOOR.

BRANCH OR MAIN ROUND DUCT WITH TYPE "B" FIRE DAMPER - DETAIL

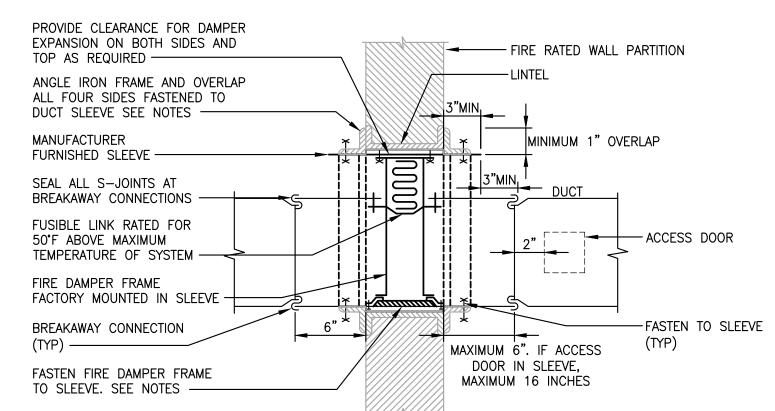
AND UL LISTING.



GENERAL NOTES:

- 1. CONTRACTOR SHALL FURNISH AND INSTALL ALL ROOF CURBS.
- 2. CONTRACTOR SHALL PAY FOR ALL ROOF OPENINGS. CONTRACTOR SHALL PERFORM ALL WORK REQUIRED TO PROVIDE ROOF OPENINGS.
- 3. CONTRACTOR SHALL FURNISH, INSTALL AND/OR PAY FOR ALL SUPPLEMENTARY STRUCTURAL SUPPORTS REQUIRED TO FURNISH AND INSTALLED ROOF MOUNTED EQUIPMENT.
- 4. CONTRACTOR TO RUN CONDENSATE DRAIN LINE TO NEAREST ROOF DRAIN WITH USE OF PROPER ROOF SUPPORTS, ADEQUATE DRAINAGE
- 5. ALL PREFABRICATED ROOF CURBS SHALL BE A MINIMUM OF 24" ABOVE FINISHED ROOF.
- 6. CONTRACTOR SHALL COORDINATE AND RETAIN THE BUILDING APPROVED ROOF CONTRACTOR TO MAINTAIN INTEGRITY OF ROOF AND WARRANTY.

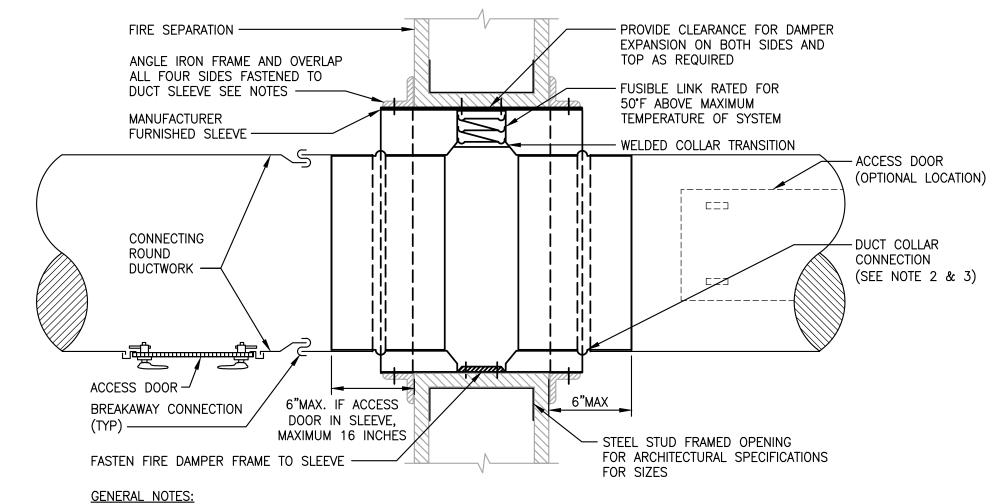
ROOFTOP A.C. UNIT INSTALLATION



GENERAL NOTES:

- 1. DAMPER TO BE UL LABELED NFPA 90A, BSA AND MEA APPROVED.
- 2. NFPA APPROVED INSTALLATION DETAILS TO BE PART OF SUBMISSION OF FIRE DAMPER FOR APPROVAL, WICH SHALL MEET NFPA STANDRAD 90A AND SHALL BE BSA APPROVED.
- 3. DETAILS SHOWN ARE FOR FIRE DAMPERS IN HORIZONTAL DUCTWORK, FOR DAMPERS IN VERTICAL DUCTWORK, DETAILS SIMILAR EXCEPT DAMPERS ARE TO BE SPRING LOADED.
- 4. ACCESS DOOR IS SHOWN IN SIDE OF DUCT; IF FUSIBLE LINK IS MORE ACCESSIBLE FROM BOTTOM OF DUCT RELOCATE ACCESS DOOR.
- 5. UL APPROVED BREAKWAY SLIP JOINT CONNECTION
- SHALL BE USED. THIS DETAIL IS A GUIDE ONLY. INSTALL FIRE DAMPER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND UL LISTING.
- 7. RETAINING ANGLES MUST OVERLAP THE FIRE WALL 1"MIN
- AND COVER CORNERS OF OPENINGS.

BRANCH OR MAIN DUCT WITH TYPE "B" FIRE DAMPER-DETAIL



- 1. DAMPER TO BE UL LABELED NFPA 90A, BSA AND MEA APPROVED.
- 2. NFPA APPROVED INSTALLATION DETAILS TO BE PART OF SUBMISSION OF FIRE DAMPER FOR APPROVAL, WHICH SHAL MEET NFPA STANDARD 90A AND SHALL BE BSA APPROVED.
- 3. DETAILS SHOWN ARE FOR FIRE DAMPERS IN HORIZONTAL DUCTWORK, FOR DAMPERS IN VERTICAL DUCTWORK, DETAILS SIMILAR EXCEPT
- DAMPERS ARE TO BE SPRING LOADED.
- 5. UL APPROVED BREAKAWAY SLIP JOINT CONNECTION SHALL BE USED.
- 6. THIS DETAIL IS A GUIDE ONLY. INSTALL FIRE DAMPER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND UL LISTING.
- 7. RETAINING ANGLES MUST OVERLAP THE FIRE WALL 1"MIN AND COVER CORNERS OF OPENINGS.
- 4. ACCESS DOOR IS SHOWN IN SIDE OF DUCT; IF FUSIBLE LINK IS MORE ACCESSIBLE FROM BOTTOM OF DUCT RELOCATE ACCESS DOOR.

ROUND SUPPLY DUCT WITH TYPE 'C' FIRE DAMPER (HIGH PRESSURE)-DETAIL 225 Franklin Street, Suite 1100 Boston, MA 02110 t 617.478.0300

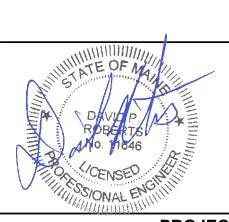
f 617.478.0321 www.perkinswill.com

CONSULTANTS

AKF GROUP LLC 99 Bedford St., 2nd Floor Boston, MA 02111 t 617.737.1111

> STRUCTURAL SGH INC. 41 Seyon St. Waltham, MA 02453 t 781.907.9000 f 781.907.9009

f 617.737.4311



PROJECT ACCU RELOCATION 22 Bramhall Street

Portland, Maine 04102



MAINE MEDICAL **CENTER** 22 Bramhall Street

Portland, Maine 04102

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