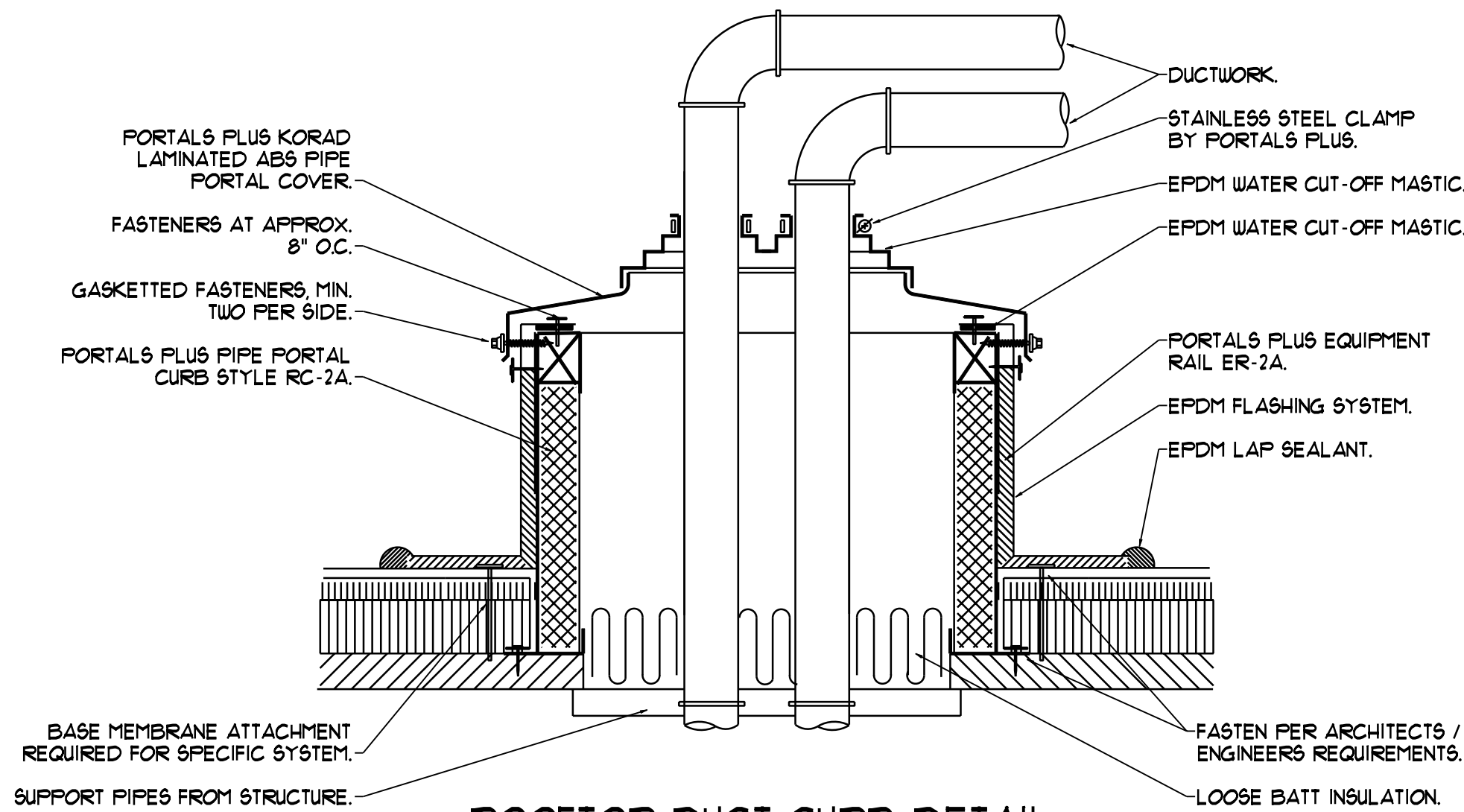


ROOFTOP DUCT SUPPORT DETAIL

NTS

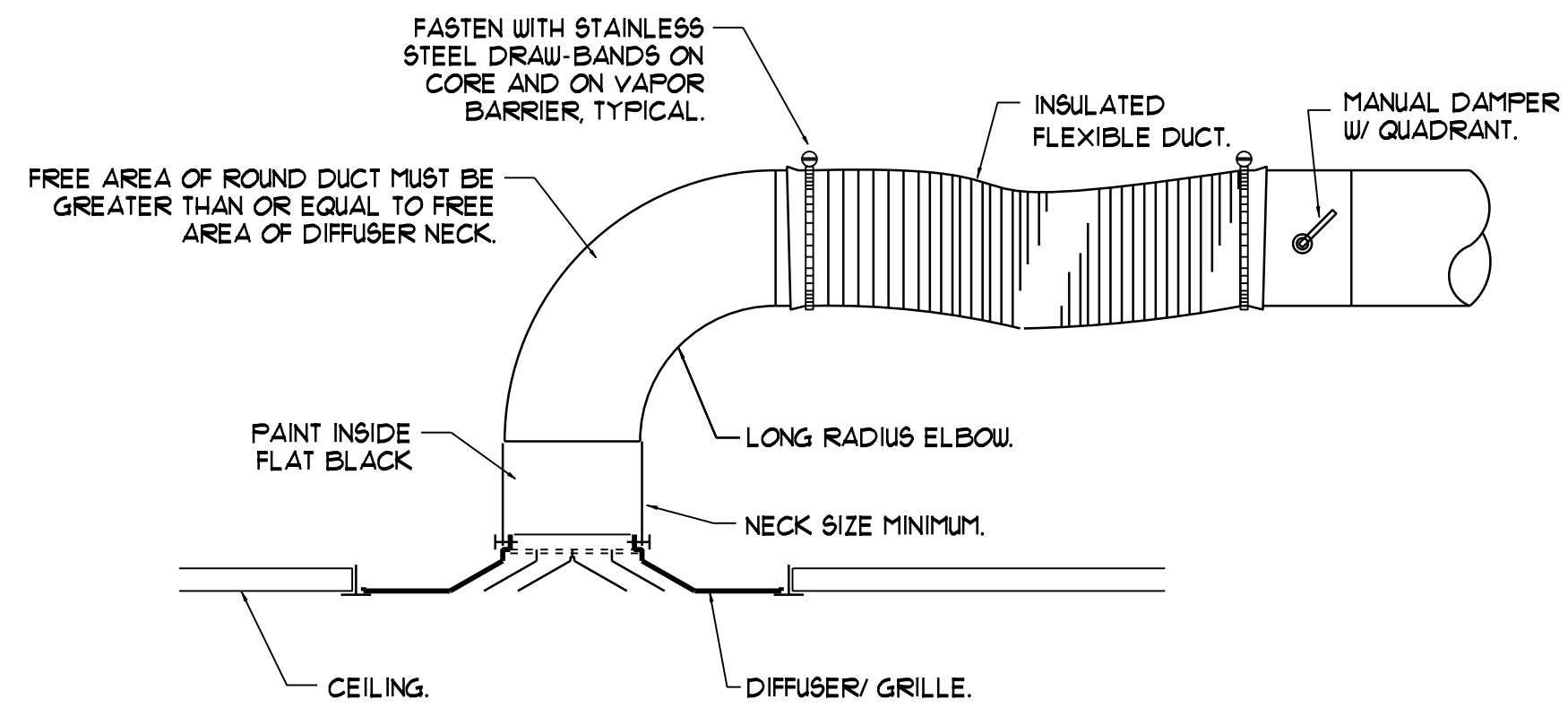
NOTE - DETAIL BASED ON PORTALS PLUS PRODUCTS, MAY NOT BE EXACT.



ROOFTOP DUCT CURB DETAIL

NTS

NOTE - DETAIL BASED ON PORTALS PLUS PRODUCTS, MAY NOT BE EXACT.



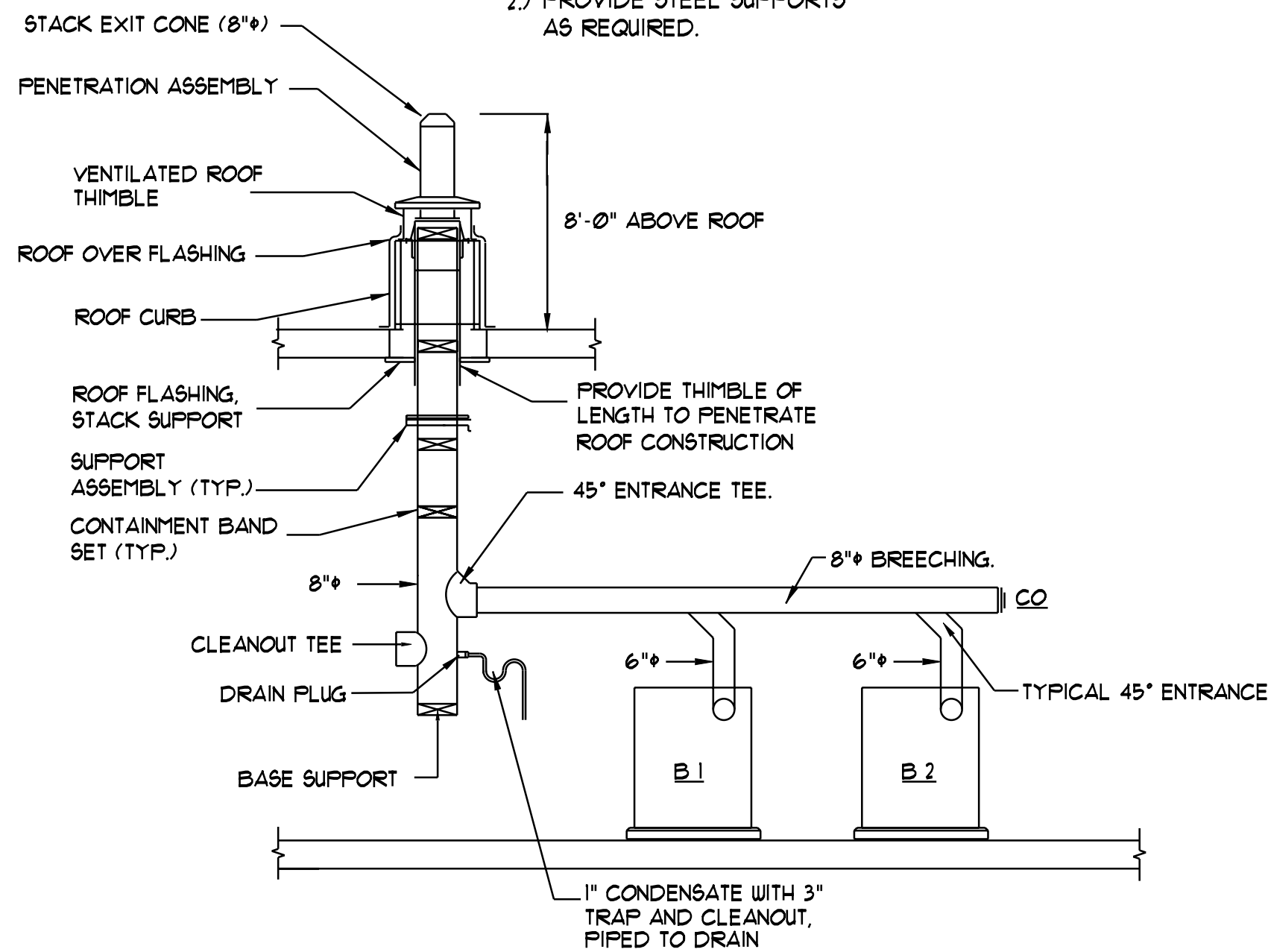
DIFFUSER/RETURN CONNECTION DETAIL

NTS

NOTE: DETAIL TYPICAL FOR CEILING GRILLES, REGISTERS AND LINEAR DIFFUSERS. FOR SURFACE-MOUNT DEVICES, SUPPORT PLENUM FROM CEILING GRID WITH STEEL ANGLES FASTENED TO PLENUM. FOR RETURN GRILLES, PROVIDE FLEXIBLE DUCT TO THE PLENUM WHERE INDICATED, 2 FEET LONG MINIMUM, 4 FEET MAXIMUM.

CHIMNEY NOTES

- 1.) FIELD-VERIFY LENGTHS.
- 2.) PROVIDE STEEL SUPPORTS AS REQUIRED.



TYPICAL CHIMNEY STACK DETAIL

NTS

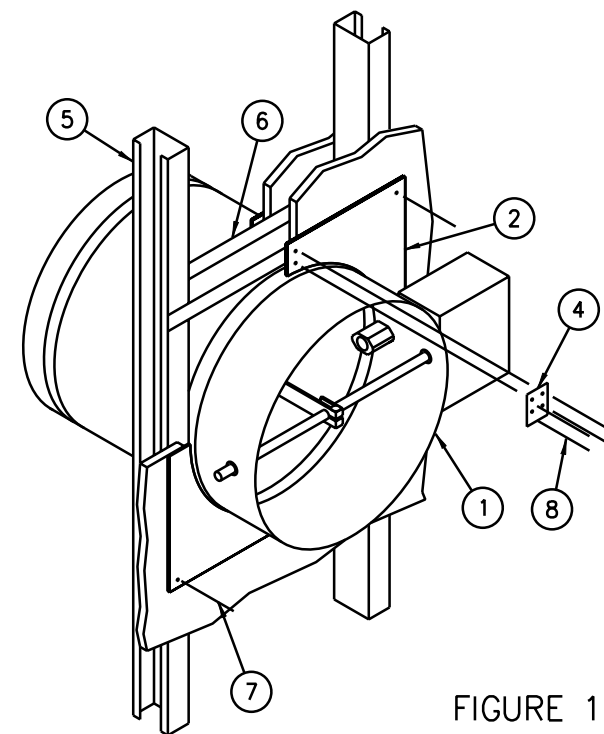


FIGURE 1

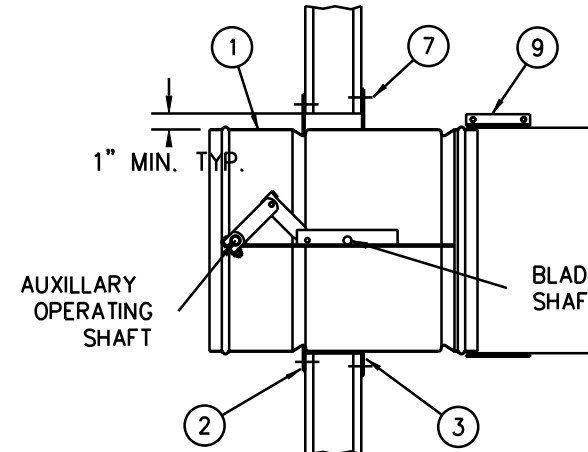


FIGURE 2

- | ITEM. | DESCRIPTION |
|-------|---|
| 1. | FSDR25 COMBINATION FIRE AND LEAKAGE RATED DAMPER WITH OPERATOR/ACTUATOR (LOCATION MAY VARY), END SWITCH AND SMOKE DETECTOR. |
| 2. | RETAINING PLATE, 20 GA STEEL |
| 3. | DAMPER PLATE, 20 GA PLATE |
| 4. | SPICE PLATE, 20 GA STEEL, TYP BOTH PLATES |
| 5. | STEEL STUD, 25 GA MIN, 2 1/2" WIDE MIN |
| 6. | STEEL RUNNER, 25 GA MIN, 2 1/2" WIDE MIN |
| 7. | #10 SHEET METAL SCREW |
| 8. | 1/8" DIA STEEL POP RIVET, OR #10 X 1/2" SHEET METAL SCREW, OR 1/2" LONG WELDS |
| 9. | 4" DRAW BAND |

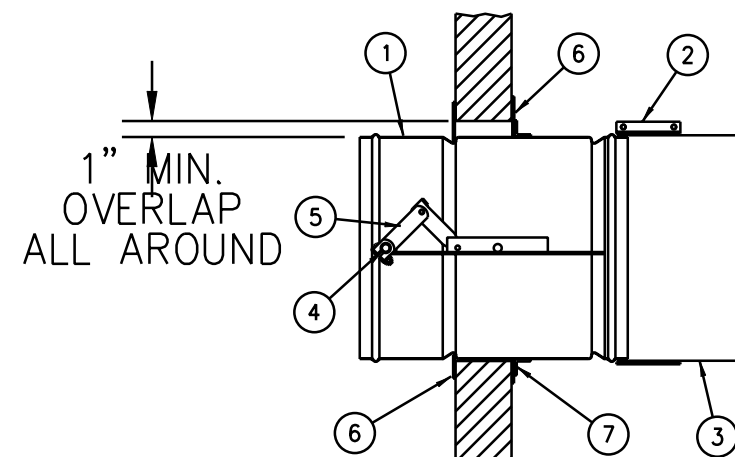
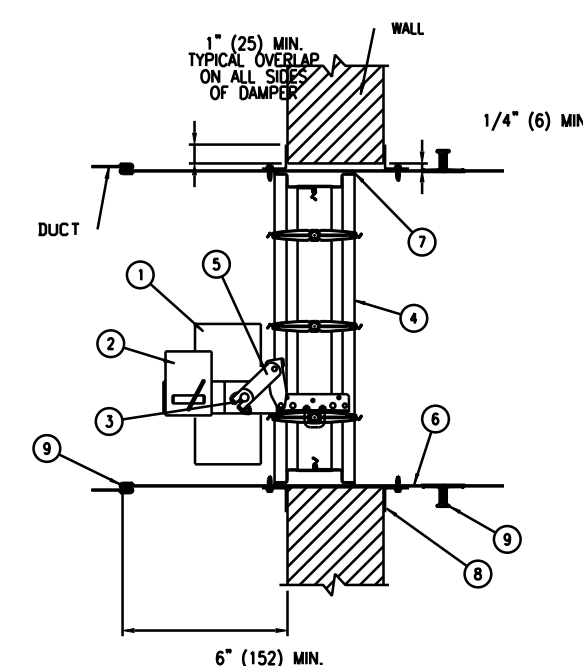


FIGURE 3

- | ITEM. | DESCRIPTION |
|-------|---|
| 1. | FSDR25 COMBINATION FIRE AND LEAKAGE RATED DAMPER WITH OPERATOR/ACTUATOR (LOCATION MAY VARY), END SWITCH AND SMOKE DETECTOR. |
| 2. | 4" DRAW BAND |
| 3. | DUCT |
| 4. | AUXILIARY OPERATING JACKSHAFT |
| 5. | OVER CENTER LOCK |
| 6. | DAMPER AND RETAINING PLATES (SEE NOTE 5) |
| 7. | RETAINING CLIP 1" X 1" X 1" 16 GA ANGLE (SEE NOTE 5) |



TYPICAL AIRFOIL INSTALLATION

VERTICAL INSTALLATION

- | ITEM. | DESCRIPTION |
|-------|--|
| 1. | ACTUATOR (LOCATION MAY VARY) WITH END SWITCH AND SMOKE DETECTOR. |
| 2. | END SWITCH ON DAMPER ACTUATOR. |
| 3. | AUXILIARY OPERATING JACK SHAFT |
| 4. | DAMPER |
| 5. | OVER CENTER LOCK |
| 6. | SLEEVE |
| 7. | CAULKING MATERIAL (MAY BE ON EITHER SIDE OF DAMPER FRAME) |
| 8. | PFMA OR CONVENTIONAL MOUNTING ANGLES |
| 9. | S-JOINT/DUCT MATE, SLEEVE TO DUCT |

COMBINATION FIRE & SMOKE DAMPER INSTALLATION DETAILS

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NOTE - TYPICAL AT SHAFT WALLS.
NOTE - PROVIDE EACH WITH SMOKE DETECTOR AND END SWITCH.

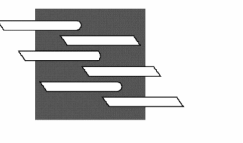
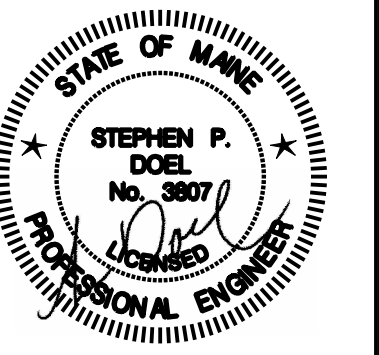
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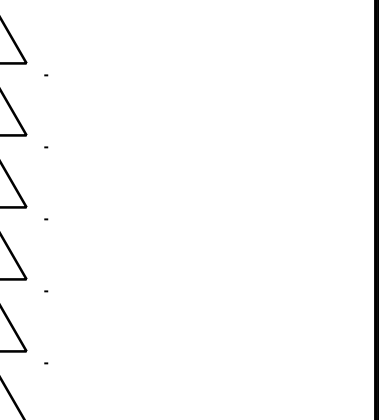
Drawing Title:

MECHANICAL
DETAILS

Scale: AS NOTED

Date: September 8, 2011

Revisions:



Drawing Number:

M4.5