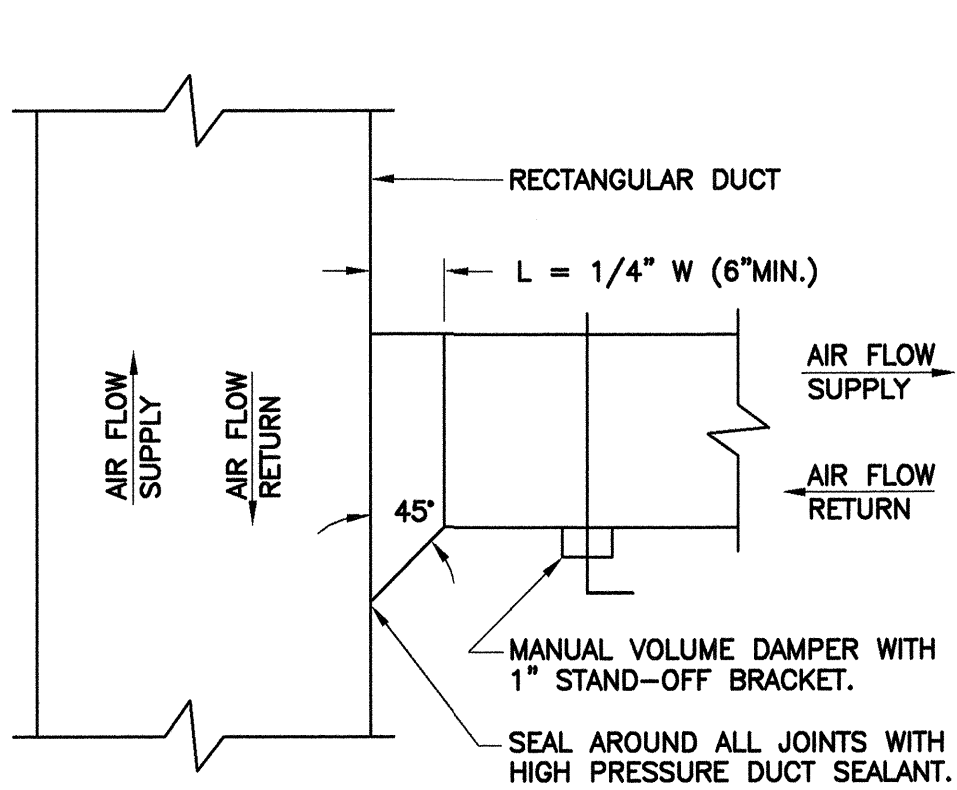
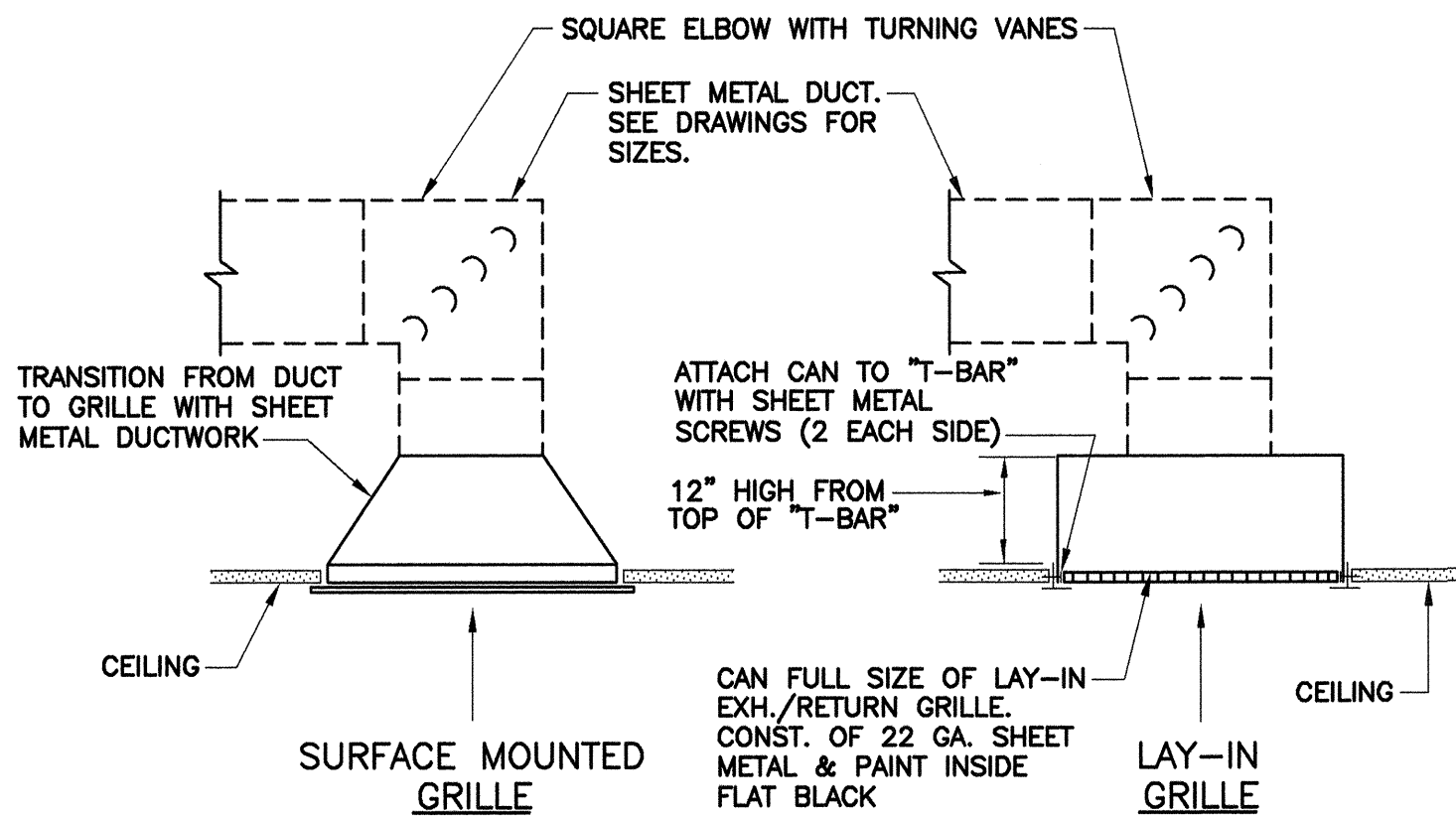


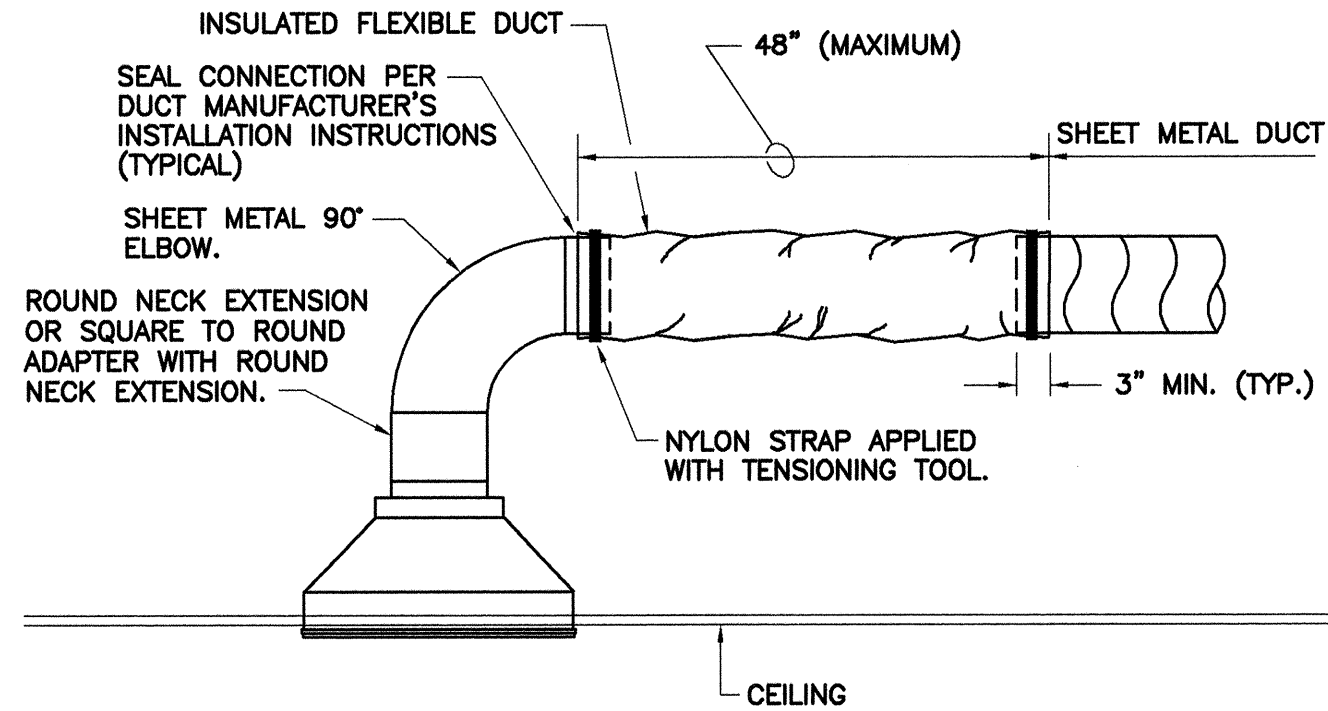
**1 SUPPLY DUCT TAKE-OFF FITTING DETAIL**  
M3.0 NOT TO SCALE



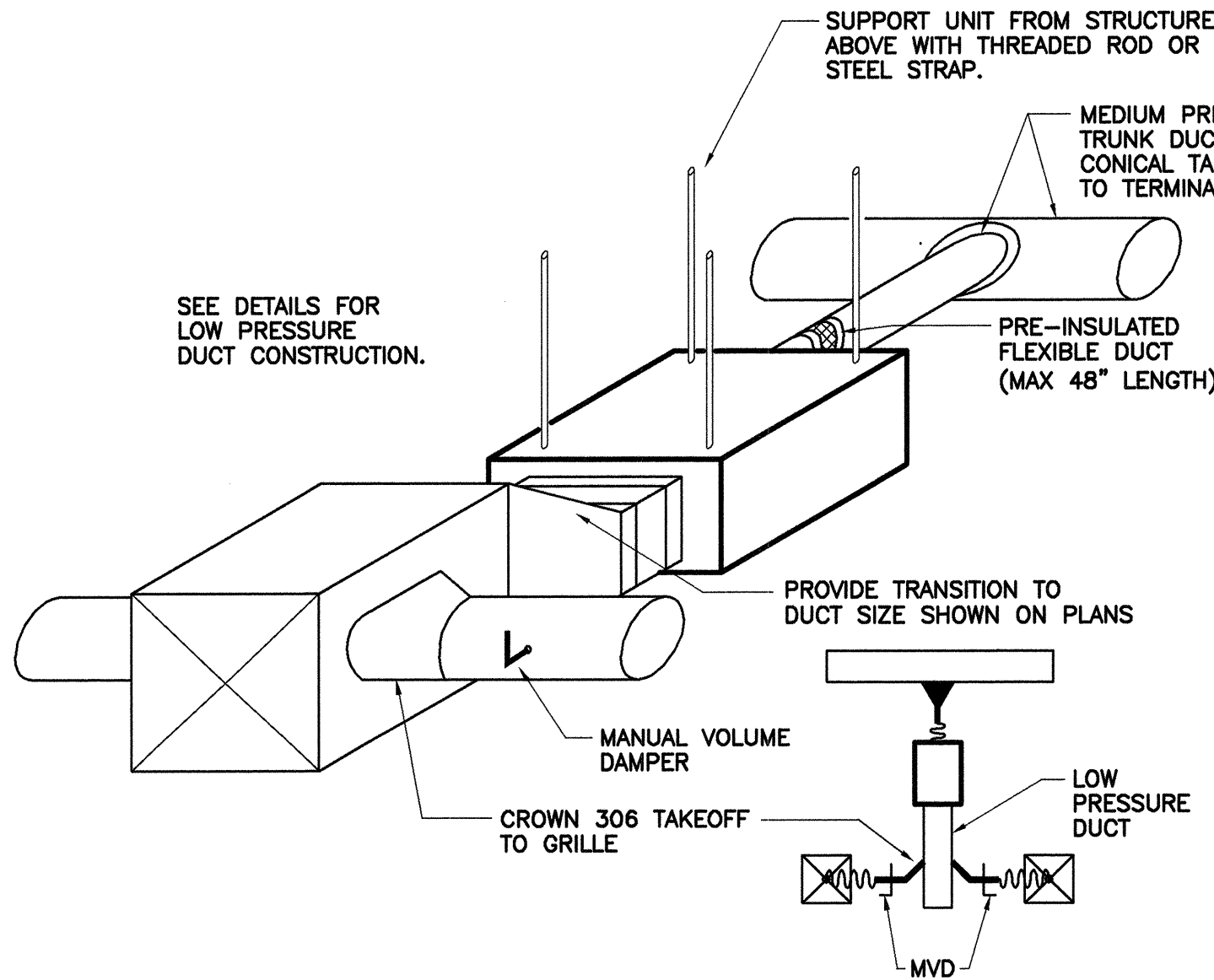
**2 RECTANGULAR SUPPLY AND RETURN DUCT TAKE-OFF DETAIL**  
M3.0 NOT TO SCALE



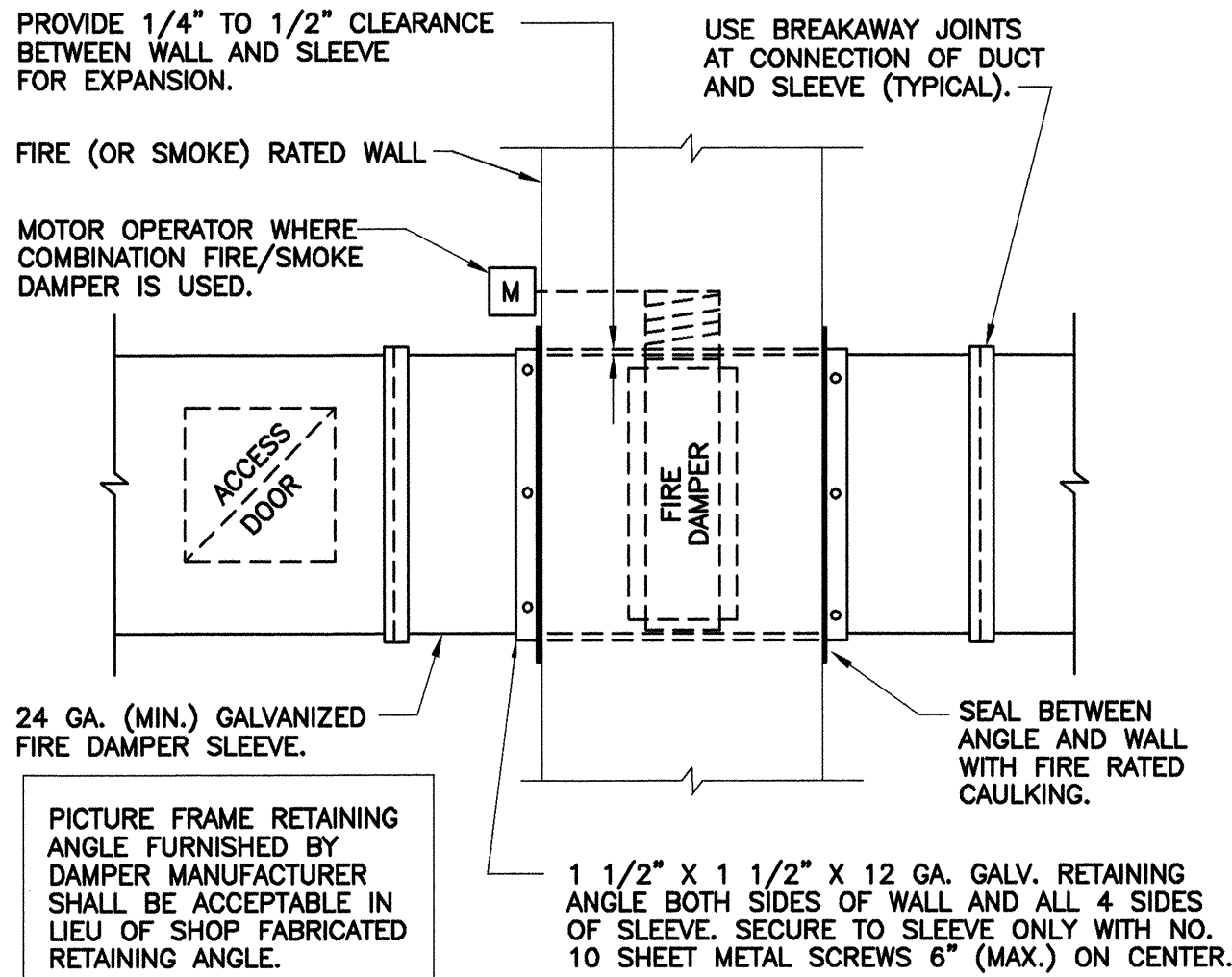
**3 EXHAUST/RETURN GRILLE CONNECTION DETAILS**  
M3.0 NOT TO SCALE



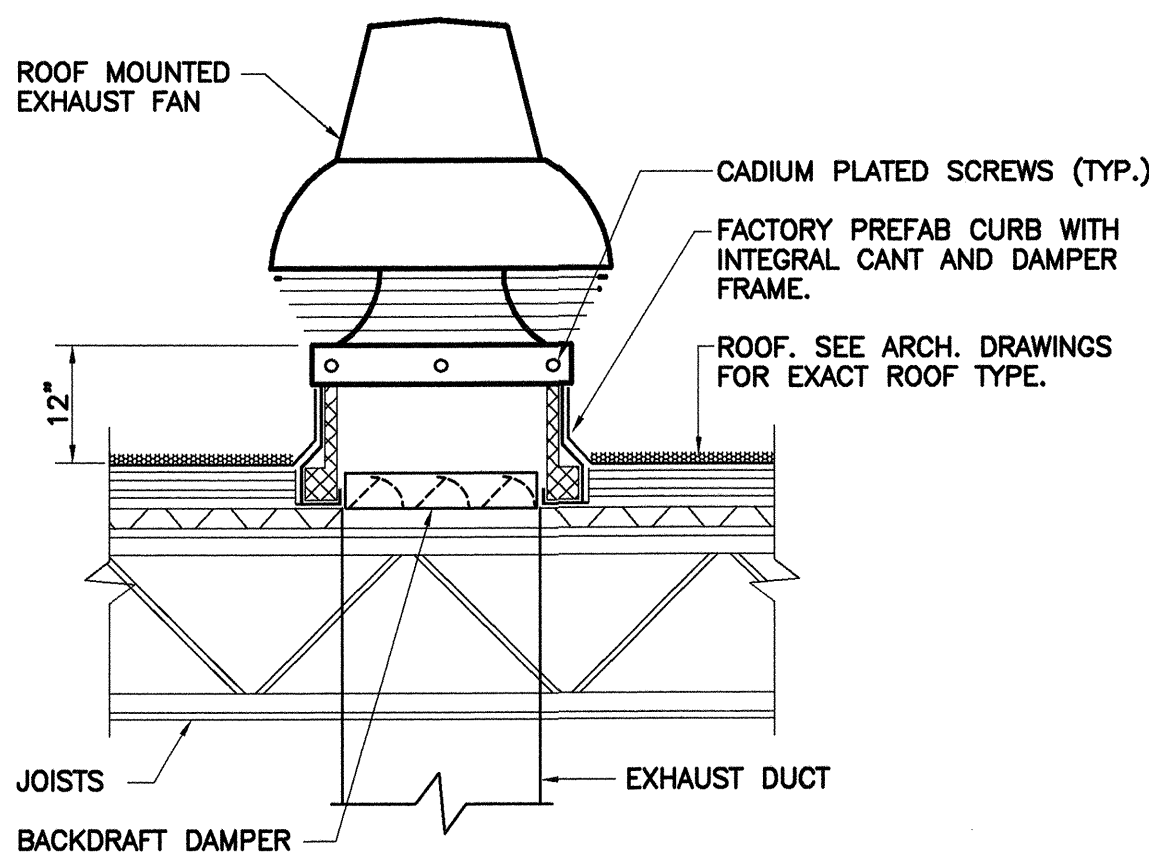
**4 FLEXIBLE ROUND DUCT CONNECTION DETAIL**  
M3.0 NOT TO SCALE



**5 VAV TERMINAL BOX DETAIL**  
M3.0 NOT TO SCALE



**6 FIRE DAMPER & SLEEVE DETAIL**  
M3.0 NOT TO SCALE (SIMILAR FOR SMOKE DAMPER)



**7 ROOF MOUNTED EXHAUST FAN DETAIL**  
M3.0 NOT TO SCALE

**HVAC NOTES:**

NOT ALL EXISTING WORK IS SHOWN, AND THAT SHOWN IS IN ITS APPROXIMATE LOCATION AND ARRANGEMENT. EXACT LOCATION, ARRANGEMENT AND SIZES SHALL BE VERIFIED ON THE JOB BEFORE STARTING ANY NEW WORK.

INSTALL PIPING AND DUCTWORK IN EQUIPMENT ROOMS ADJACENT TO WALLS AND CEILINGS, WHERE POSSIBLE, TO PROVIDE MAXIMUM ROOM CLEARANCE.

COORDINATE THE INSTALLATION OF THIS WORK WITH THAT OF OTHER TRADES TO PROVIDE THE BEST ARRANGEMENT OF PIPING, DUCTWORK, AND EQUIPMENT. REFER TO PLUMBING AND ELECTRICAL DRAWINGS.

PIPING, DUCTWORK, AND EQUIPMENT IS SHOWN IN ITS GENERAL LOCATION, UNLESS DIMENSIONED. EXACT LOCATION SHALL BE DETERMINED BY THE LOCATION OF OTHER EQUIPMENT, AND TO PROVIDE SERVICE CLEARANCE.

ARRANGE PIPING AND DUCTWORK TO CLEAR STRUCTURAL MEMBERS, PLUMBING, PIPING AND LIGHT FIXTURES.

EXACT LOCATION OF GRILLES AND CEILING OUTLETS SHALL BE DETERMINED ON THE JOB. COORDINATE WITH LIGHTS AND ARCHITECTURAL REQUIREMENTS TO PROVIDE A UNIFORM AND SYMMETRICAL APPEARANCE. REFER TO ARCHITECTURAL AND ELECTRICAL DRAWINGS AND DETAILS.

ALL PIPING SHALL BE CONCEALED, UNLESS NOTED OTHERWISE.

PROVIDE FLEXIBLE DUCT CONNECTIONS TO ALL AIR HANDLING EQUIPMENT.

PROVIDE UNION OR FLANGE CONNECTIONS IN PIPING AT ALL EQUIPMENT AND CONTROL VALVES, AND AS REQUIRED FOR SERVICE.

PROVIDE ACCESS DOORS IN DUCTWORK FOR ALL FIRE AND SMOKE DAMPERS, AND DUCT-MOUNTED COILS AND CONTROL DEVICES.

SLOPE DRAIN LINES TOWARD DRAIN WITH A MINIMUM SLOPE OF 1/4" PER FOOT.

#### Sequence of Operation

Terminal unit (Dual duct):

- On rise in space temperature, the cooling air valve shall modulate towards the maximum position while the heating air valve shall modulate towards the minimum position. The sum of the cooling air flow and the heating air flow shall equal no less than the minimum airflow as indicated on the schedule.
- On drop in space temperature, the heating air valve shall modulate towards the maximum position while the cooling air valve shall modulate towards the minimum position. The sum of the cooling air flow and the heating air flow shall equal no less than the minimum airflow as indicated on the schedule.

Fans:

- See fan schedule.

Facility Management System (FMS):

- All new digital controls shall be compatible with and integrated into the existing Johnson Controls Metasys system. Furnish all necessary software and provide basic icon graphics on all user terminals in the facility.

Smoke (or Combination) Damper/Smoke Detector: Upon sensing smoke at the detector, the damper shall close. When the damper is closed, the indicator light shall illuminate on the ceiling below the damper.

| FMS INPUT/OUTPUT SUMMARY | OUTPUTS                                    |                                | INPUTS  |   | SOFTWARE                         |   |              |  |
|--------------------------|--|--------------------------------|---|---|----------------------------------|---|--------------|--|
|                          | BINARY                                     | ANALOG                         | BINARY  | ANALOG  | ALARM                            | DDC   | ENERGY MGMT. |  |
| MISCELLANEOUS            | START/STOP<br>ENABLE/DISABLE<br>OPEN/CLOSE | SETPOINT ADJUST<br>DDC CONTROL | DIFF. PRESSURE SWITCH<br>AUX. CONTACT<br>ALARM CONTACT<br>CURRENT SENSING RELAY | TEMPERATURE<br>RELATIVE HUMIDITY<br>PRESSURE<br>VOLUME (CFM)<br>STATUS/INTERLOCK<br>H/LO LIMIT<br>RUN TIME TOTALIZATION | PROPORTIONAL<br>PROP. + INTEGRAL | TIME SCHEDULE S/S<br>OPTIMUM START/STOP<br>DAY/NIGHT SETBACK<br>DEMAND LIMIT/CYCLE<br>RESET OPTIMIZATION<br>ECONOMIZER<br>FAN SYNCHRONIZATION | NOTES        |  |
| RV-1                     | X  | X                              | X   | X   |                                  |   |              |  |

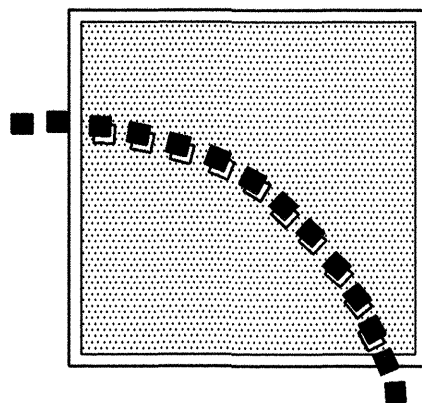
| FMS INPUT/OUTPUT SUMMARY               | OUTPUTS                                    |                                | INPUTS  |   | SOFTWARE                         |   |              |  |
|--|--|--------------------------------|---|---|----------------------------------|---|--------------|--|
|  | BINARY                                     | ANALOG                         | BINARY  | ANALOG  | ALARM                            | DDC   | ENERGY MGMT. |  |
| TERMINAL UNIT<br>TYPICAL FOR DUAL DUCT | START/STOP<br>ENABLE/DISABLE<br>OPEN/CLOSE | SETPOINT ADJUST<br>DDC CONTROL | DIFF. PRESSURE SWITCH<br>AUX. CONTACT<br>ALARM CONTACT<br>PULSE CONTACT | TEMPERATURE<br>RELATIVE HUMIDITY<br>PRESSURE<br>VOLUME (CFM)<br>STATUS/INTERLOCK<br>H/LO LIMIT<br>RUN TIME TOTALIZATION | PROPORTIONAL<br>PROP. + INTEGRAL | TIME SCHEDULE S/S<br>OPTIMUM START/STOP<br>DAY/NIGHT SETBACK<br>DEMAND LIMIT/CYCLE<br>RESET OPTIMIZATION<br>ECONOMIZER<br>FAN SYNCHRONIZATION | NOTES        |  |
| DAMPER (COOLING)                       |  | X                              |   |   |                                  | X   |              |  |
| DAMPER (HEATING)                       |  | X                              |   |   |                                  | X   |              |  |
| AIRFLOW (COOLING)                      |  |                                |   |   | X                                |   |              |  |
| AIRFLOW (HEATING)                      |  |                                |   |   | X                                |   |              |  |
| ROOM TEMPERATURE                       |  |                                |   | X   |                                  |   |              |  |
| ROOM OFFSET                            |  |                                |   | X   |                                  |   |              |  |



| REVISIONS: | DATE: | DRAWN BY:   |
|------------|-------|-------------|
|            |       | CAB         |
|            |       | CHECKED BY: |
|            |       | JMF         |



ARCHITECTS PROJECT NO.: 2812



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APPROVED BY:

MEDICAL CENTER DIRECTOR

APPROVED BY:

FACILITY MANAGEMENT SERV LINE EXEC

PROJECT TITLE:

RENOVATE "E" WING  
BUILDING 801, DOWNTOWN DIVISION  
AUGUSTA, GEORGIA

DRAWING TITLE:

HVAC DETAILS AND NOTES

DATE:

APRIL 29, 2011

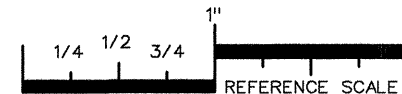
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509-318E

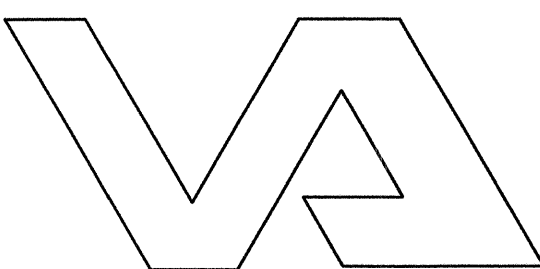
DRAWING NO.

801-M3.0

DWG. 36 of 44



PLOT DATE: 04/26/11  
FILENAME: 08101M3  
BASESHT: 08101BDR  
PLOT SCALE: 1 = 96  
CAB



Department of Veterans Affairs  
VAMC Augusta, Georgia  
Engineering Department (138)