

| HANGER STRAPS OR RODS   |                           |                        |                          |
|-------------------------|---------------------------|------------------------|--------------------------|
| MAX. DUCT Ø<br>IN. [mm] | QUANTITY/SIZE<br>IN. [mm] | MAX. LOAD<br>LBS. [kg] | MAX. SPACING<br>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.

## A1 ROUND DUCT HANGERS

SCALE: NONE

DUCT RISER - SEE FLOOR PLANS FOR SIZES  
EXTEND ANGLE 3" [75mm] BEYOND DUCT

SHEET METAL SCREWS 4" [100mm] ON CENTER

1 1/2"x1 1/2"x1/8" [40x40x3mm] ANGLE  
INSTALL ON BOTH LONG DIMENSION SIDES OF  
DUCT. FOR DUCTS OVER 60" [1500mm] USE  
2"x2"x1/8" [50x50x3mm] ANGLE.

FLOOR

SEAL HOLE WITH FIREPROOFING  
MATERIAL AFTER DUCT  
INSTALLATION

HOLE IN STRUCTURAL FLOOR

DUCT RISER

0.5 INCH WG [125Pa] TO 2 INCHES WG [500Pa] DUCT  
RISER SUPPORT

DUCT RISER - SEE FLOOR  
PLANS FOR DETAILS

2"x2"x1/4" [50x50x6mm]  
ANGLE INSTALL ON BOTH LONG  
DIMENSION SIDES OF DUCT.

ARRANGE RISER SO REINFORCER  
TRANSVERSE JOINT IS AT RISER  
SUPPORT POINT

FLOOR

SEAL HOLE WITH  
FIREPROOFING MATERIAL  
AFTER DUCT INSTALLATION

HOLE IN STRUCTURAL FLOOR

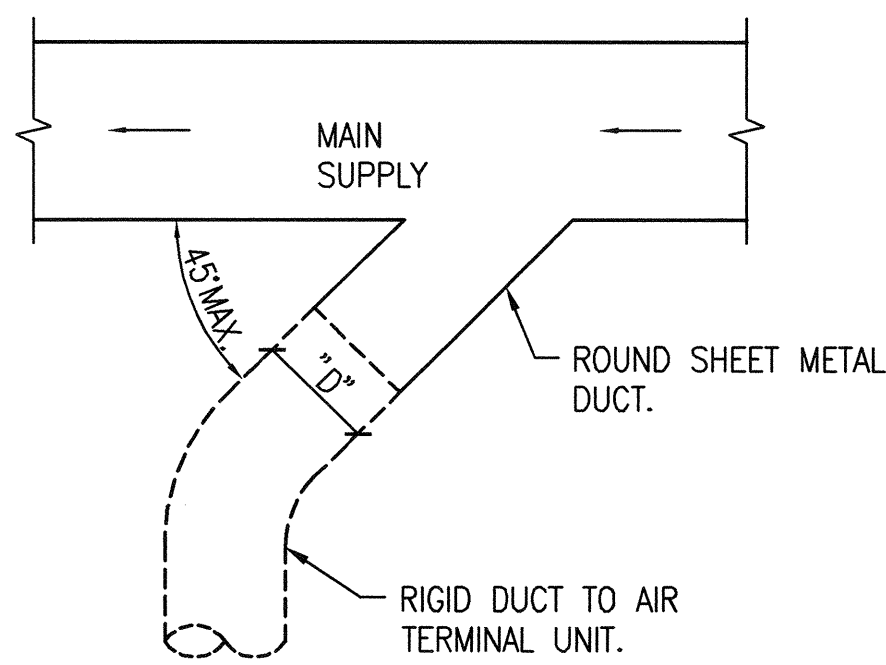
DUCT RISER

2 INCHES WG [500Pa] TO 4 INCHES WG [1000Pa] 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" [75mm]  
HIGH CONCRETE CURB AROUND OPENING FOR DUCT.

## C1 DUCT RISER SUPPORTS

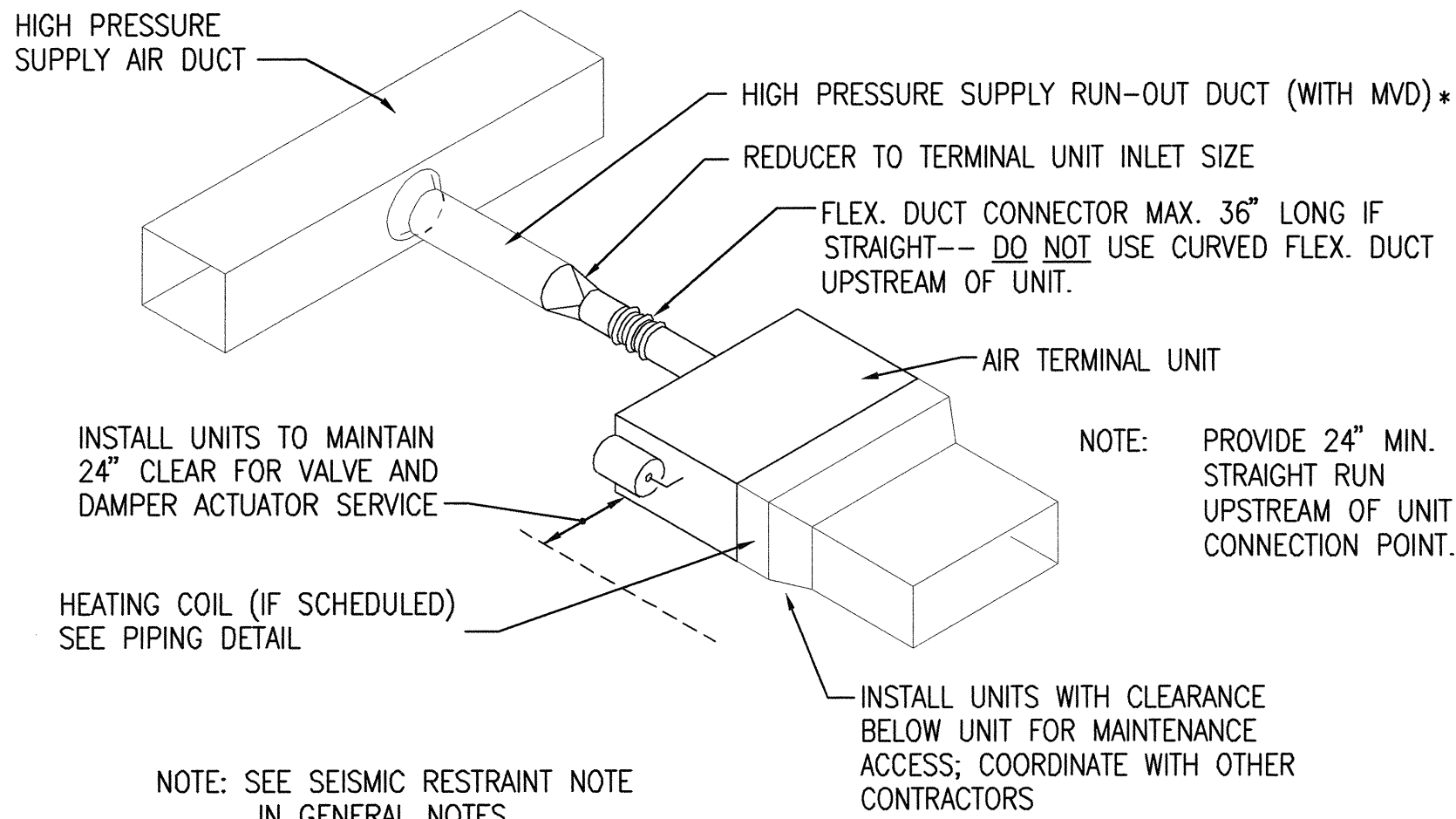
SCALE: NONE



PLAN VIEW

## E1 SUPPLY DUCT TAKEOFF - VAV/CAV

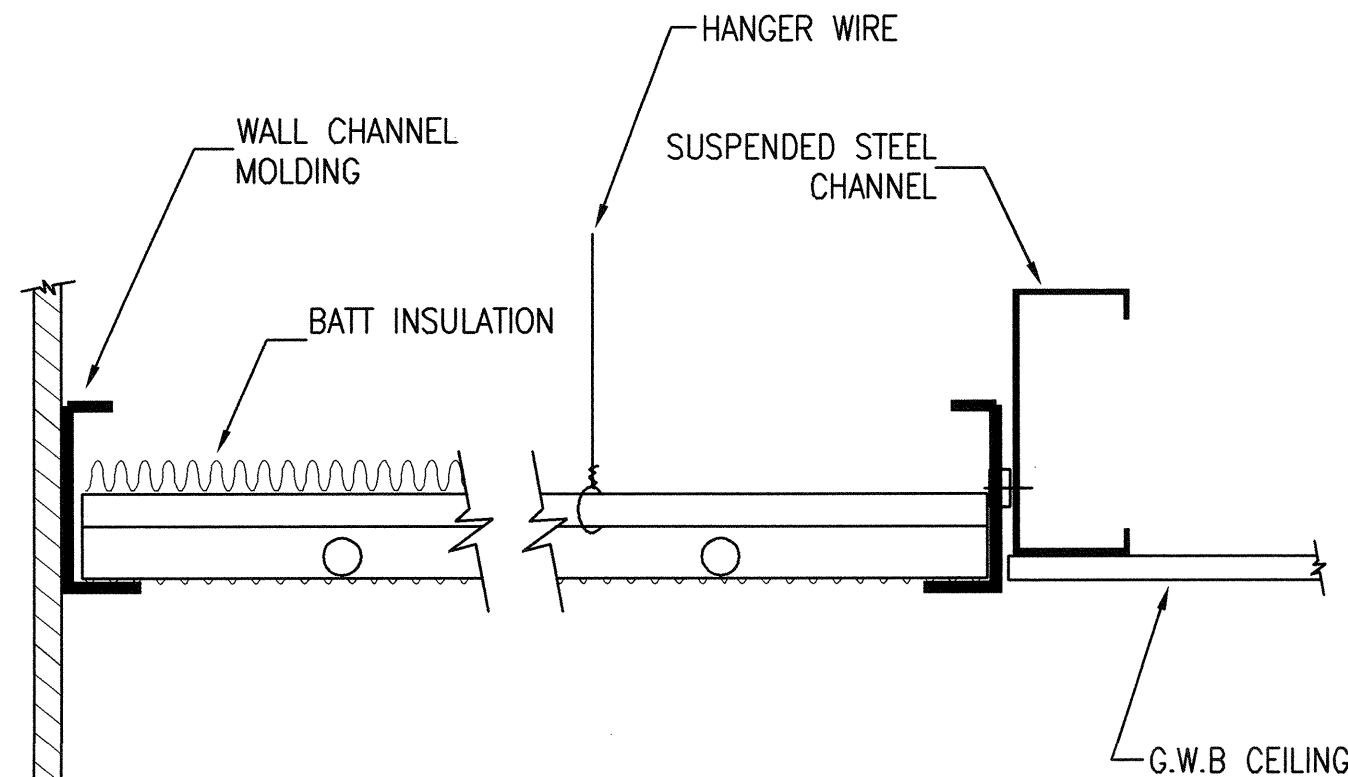
SCALE: NONE



NOTE: SEE SEISMIC RESTRAINT NOTE  
IN GENERAL NOTES.

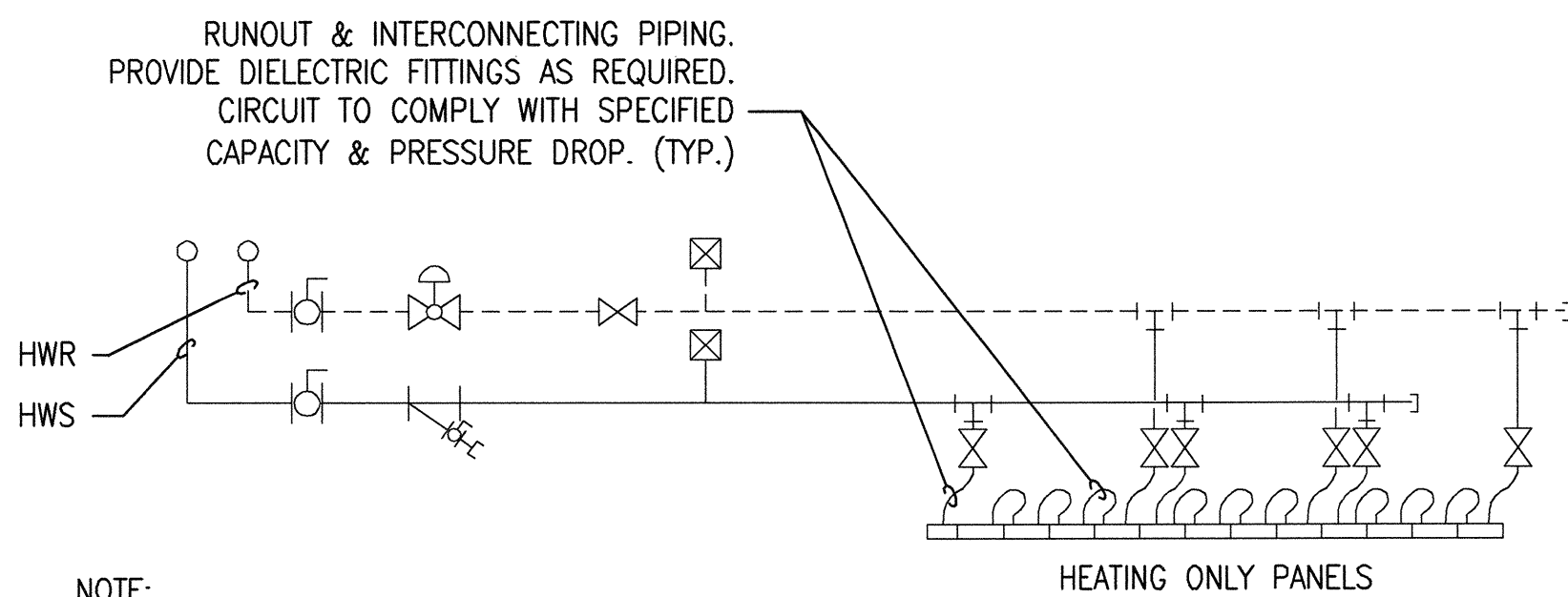
## A4 AIR TERMINAL UNIT INSTALLATION DETAIL

SCALE: NONE



## C4 RADIANT PANEL INSTALLATION

SCALE: NONE

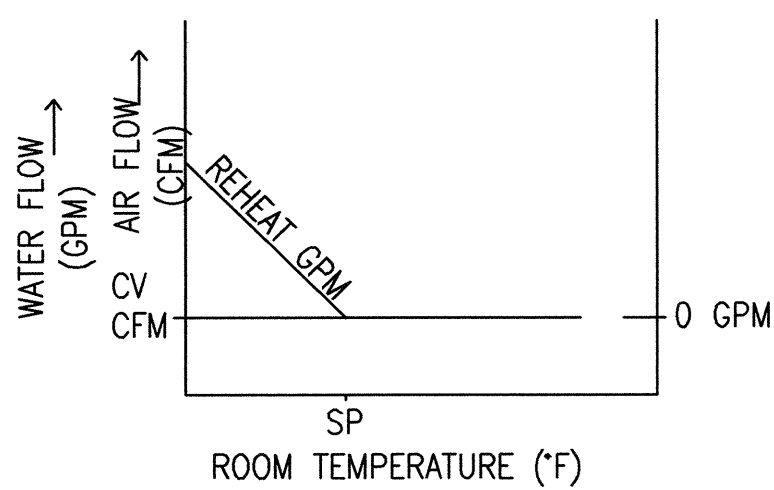
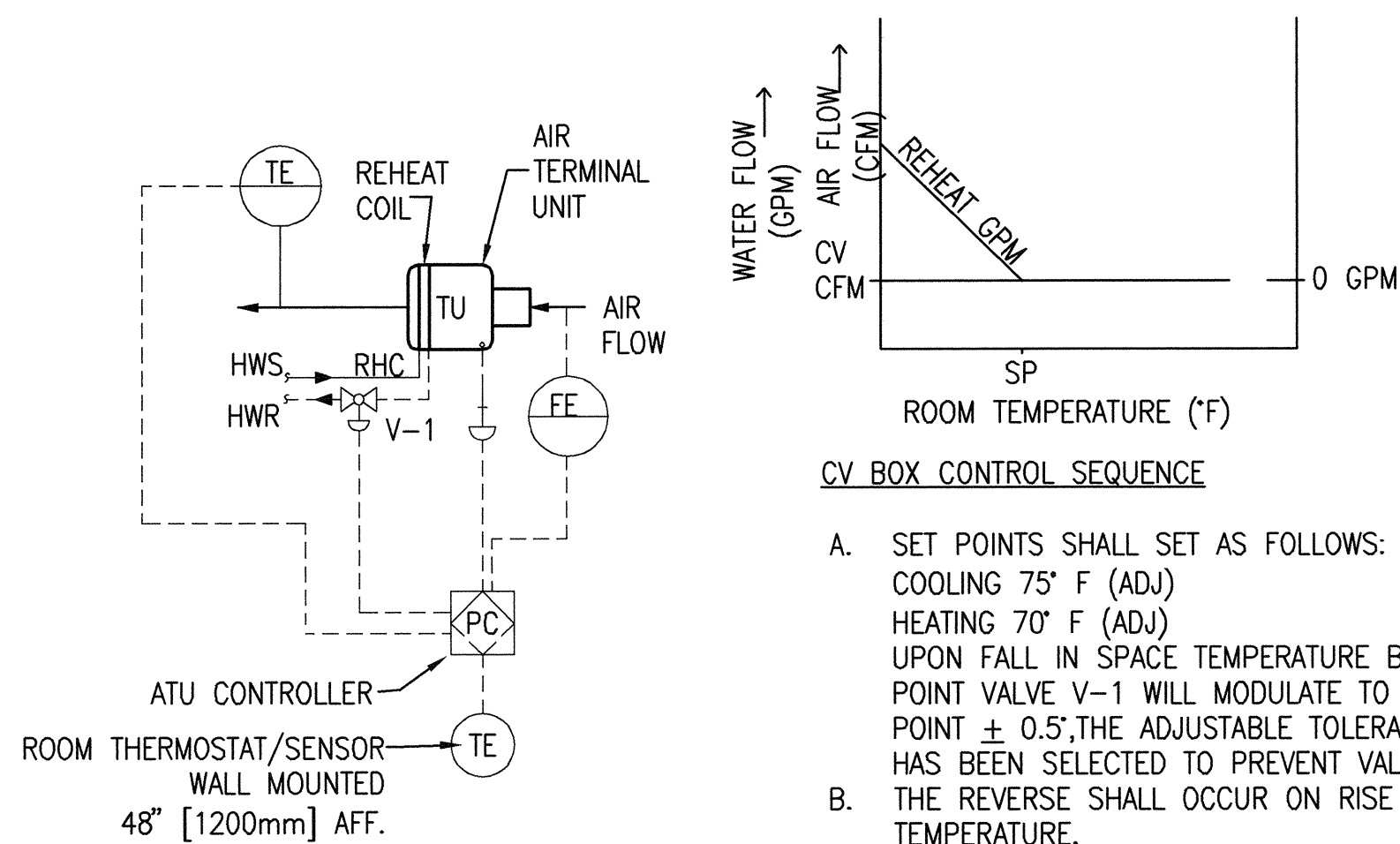


NOTE:

1. LOCATE MANUAL VENT PIPE AND DRAIN VALVE WHERE ACCESSIBLE FOR BUCKET. AIR VENT PIPING SHALL BE PROVIDED WITH BALL VALVE FOR SERVICING AND REPLACEMENT.
2. ALL VALVES, BALANCING DEVICES, ETC., SHALL BE LINE SIZE, MIN.
3. MINIMUM FLOW RATE SHALL BE NO LESS THAN 0.5 GPM.
4. VALVES SHALL NOT BE LOCATED ABOVE RESTROOM HARD CEILING - LOCATE VALVES IN ADJACENT PATIENT ROOM (PREFERRED) OR ABOVE CEILING IN ADJACENT CORRIDOR. PLACE ARROW STICKER ON RADIANT PANEL INDICATING DIRECTION OF SHUT-OFF VALVES.
5. PROVIDE 3-WAY VALVE AT THE END OF THE LONGEST RUN OF PIPING. ALL OTHER HOOK-UPS ARE TO USE 2-WAY VALVES.

## E4 HYDRONIC RADIANT CEILING PANELS - PIPING CONNECTIONS

SCALE: NONE

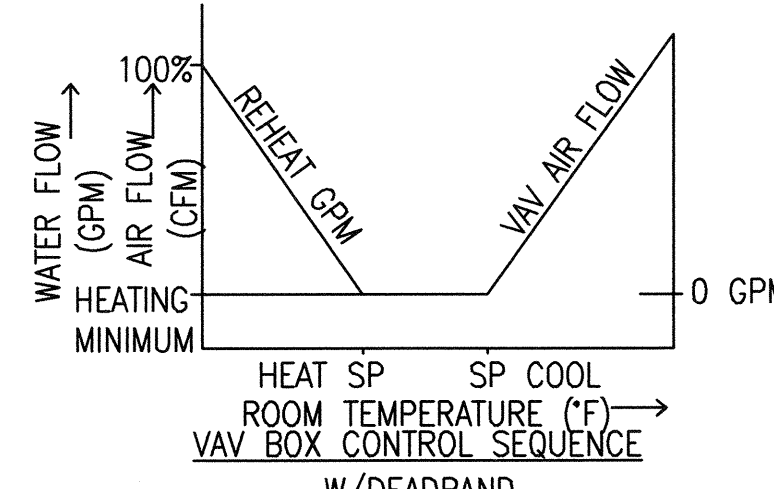
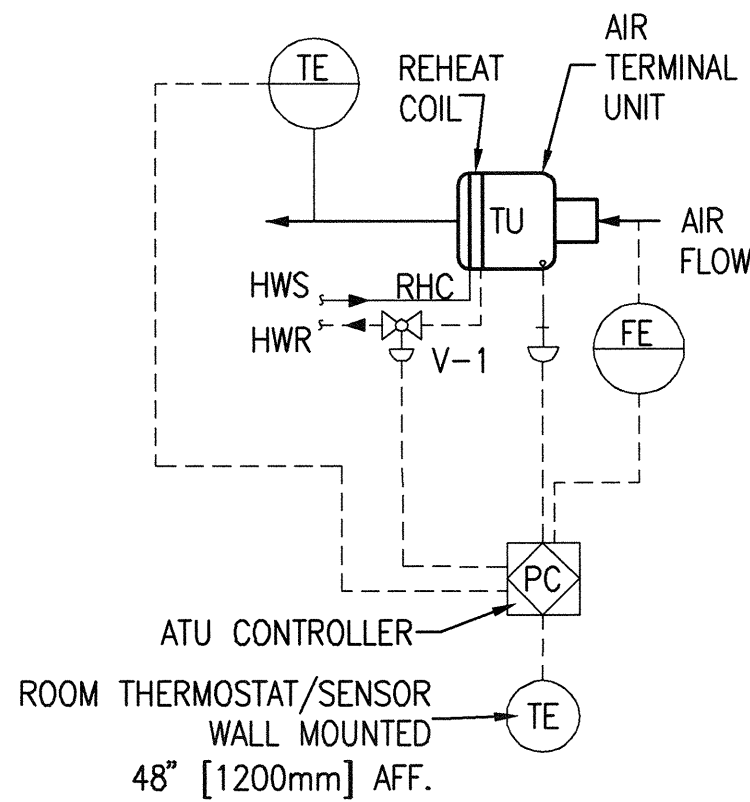


CV BOX CONTROL SEQUENCE

- A. SET POINTS SHALL SET AS FOLLOWS:  
COOLING 75° F (ADJ)  
HEATING 70° F (ADJ)  
UPON FALL IN SPACE TEMPERATURE BELOW SET  
POINT VALVE V-1 WILL MODULATE TO MAINTAIN SET  
POINT ± 0.5,THE ADJUSTABLE TOLERANCE OF ± 0.5°  
HAS BEEN SELECTED TO PREVENT VALVE HUNTING
- B. THE REVERSE SHALL OCCUR ON RISE IN SPACE  
TEMPERATURE.

## A6 CONSTANT VOLUME AIR TERMINAL CONTROLS

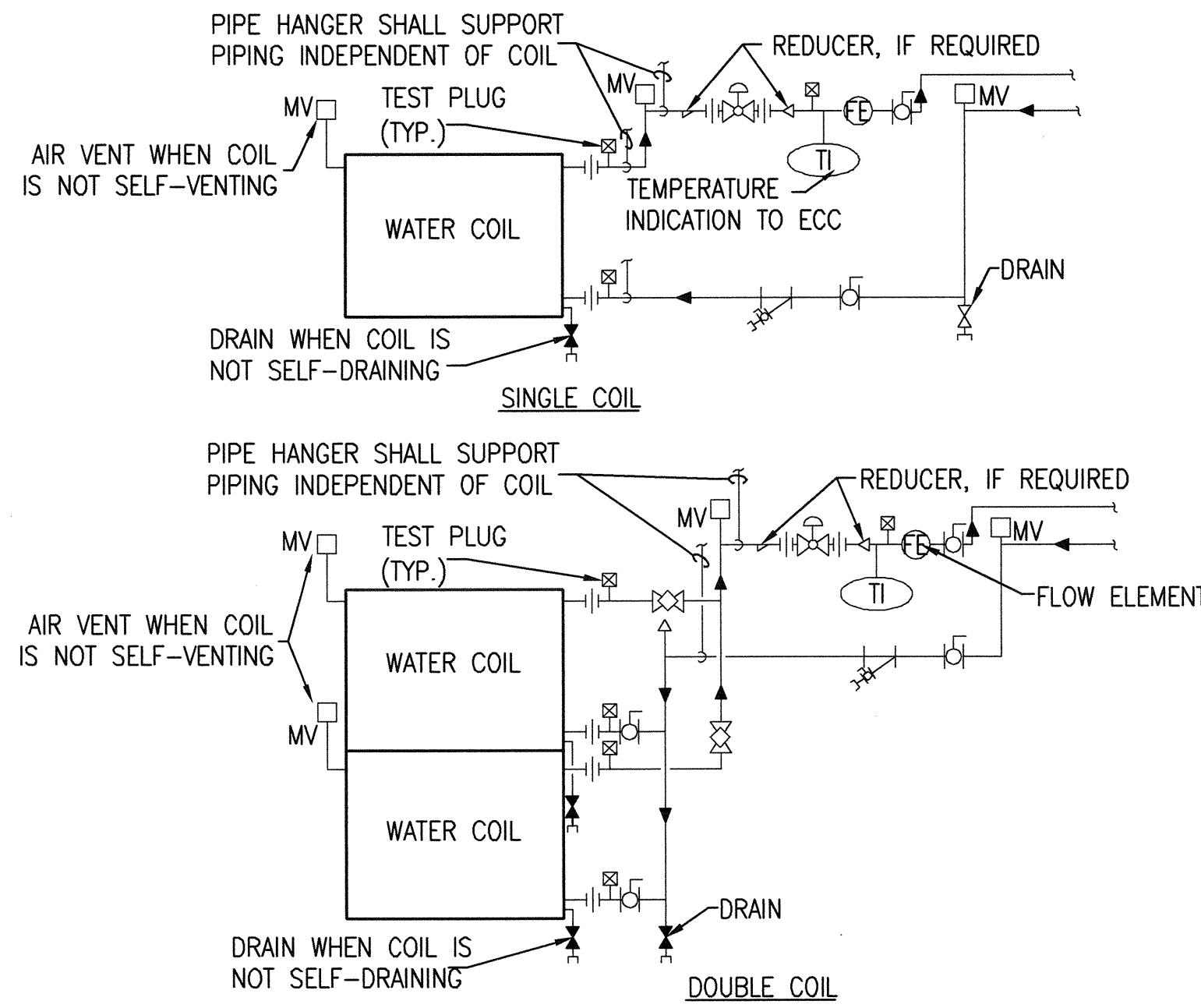
SCALE: NONE



- A. SET POINTS SHALL BE SET AS FOLLOWS:  
COOLING 75° F (ADJ)  
HEATING 70° F (ADJ)  
DEADBAND OF 5° F BETWEEN HEATING AND COOLING  
SET POINTS WILL BE MAINTAINED.
- B. UPON FALL IN SPACE TEMPERATURE THE VAV DAMPER  
WILL MODULATE TO MINIMUM POSITION.
- C. UPON FURTHER DROP IN SPACE TEMPERATURE VALVE  
V-1 WILL MODULATE TO MAINTAIN SET POINT ± .5° F.  
THE ADJUSTABLE TOLERANCE OF ± .5° F HAS BEEN  
SELECTED TO PREVENT VALVE HUNTING
- D. THE REVERSE SHALL OCCUR ON THE RISE IN SPACE  
TEMPERATURE.

## C6 VARIABLE VOLUME AIR TERMINAL CONTROLS

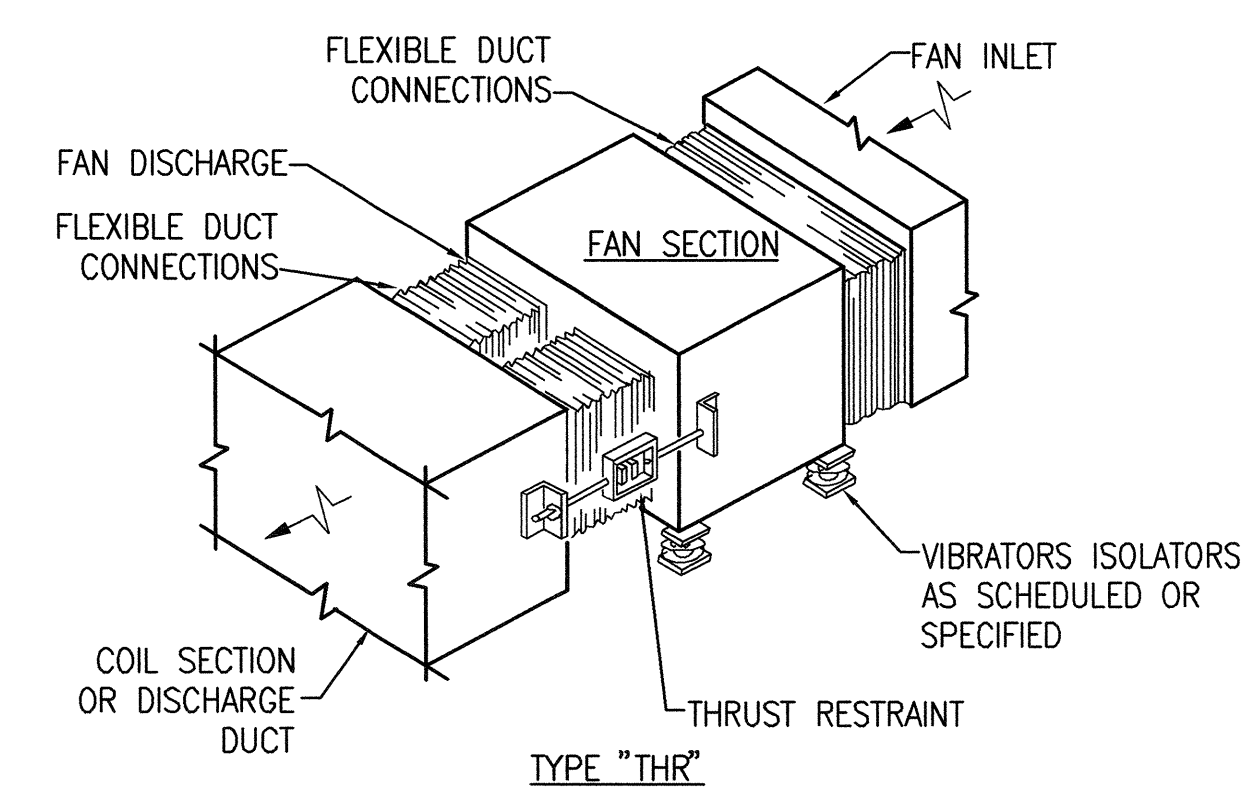
SCALE: NONE



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] PIPE & SMALLER. TYPE "H-P" FOR 5" [125mm] 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. THE FLOW ELEMENT MAY BE INSTALLED IN THE SUPPLY PIPING IF THE REQUIRED MINIMUM UPSTREAM AND DOWNSTREAM DIMENSIONS CANNOT BE OBTAINED IN THE RETURN PIPING.

## F6 WATER COILS - PIPING CONNECTIONS

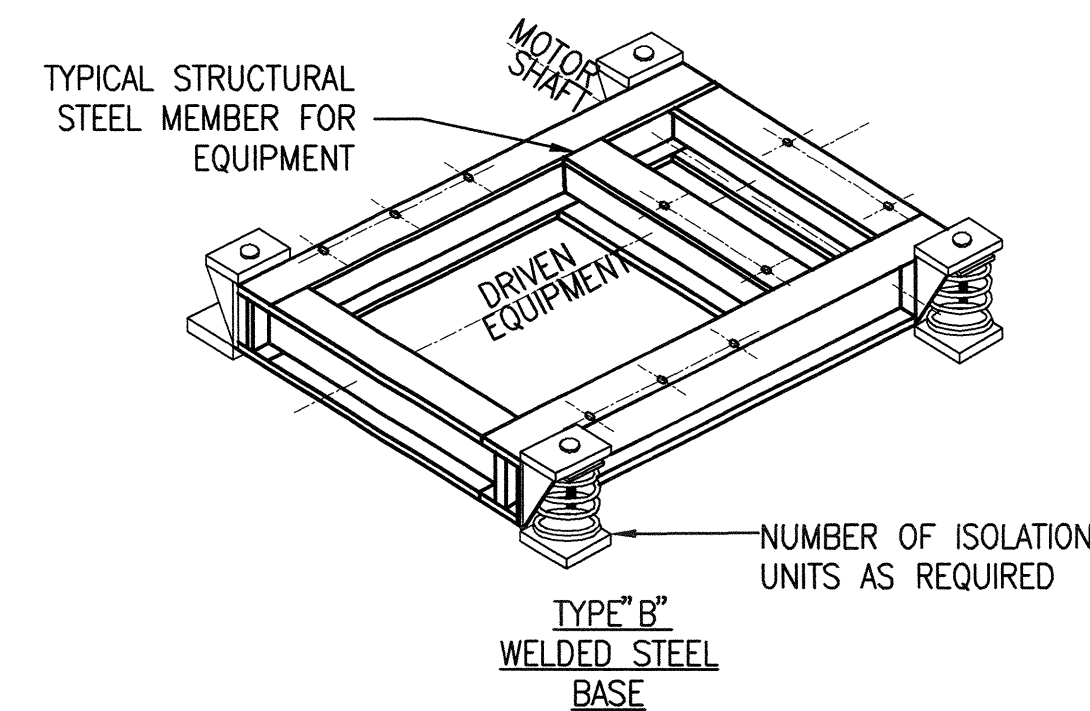
SCALE: NONE



1. ATTACH THRUST RESTRAINTS SYMMETRICALLY ON BOTH SIDES OF THE FAN DISCHARGE.
2. ADJUST RESTRAINT TO ALLOW 1/4" [6 mm] MOVEMENT OF FAN AT START AND STOP.

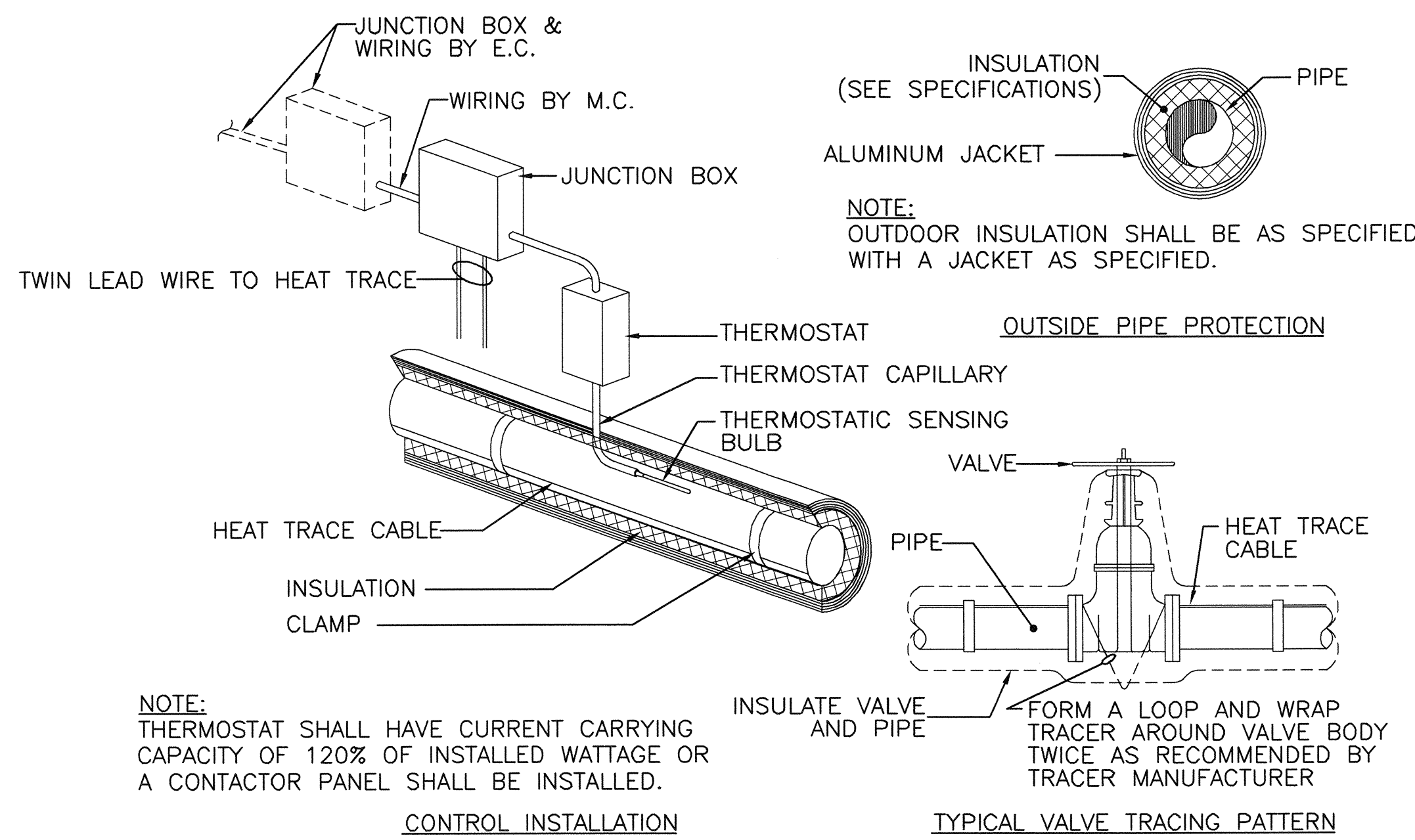
## A9 THRUST RESTRAINT FOR FANS

SCALE: NONE



## C9 VIBRATION ISOLATION BASES

SCALE: NONE



CONTROL INSTALLATION

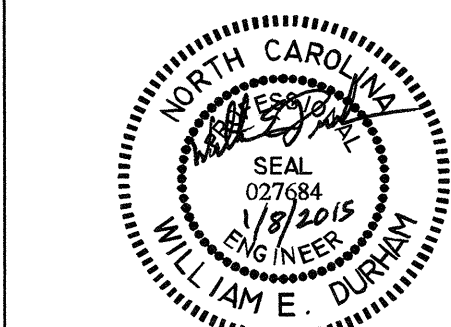
NOTE:  
INSTALLATION SHALL BE IN COMPLETE ACCORDANCE WITH  
MANUFACTURER'S REQUIREMENTS. SPIRAL HEAT TAPE AROUND  
PIPE IF REQUIRED FOR HEATING CAPACITY NOTED.

| REVISION NO. | REVISION DESCRIPTION |
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Revisions By Date



Department of Veterans Affairs  
Veterans Healthcare System of  
the Ozarks  
1100 North College Avenue  
Fayetteville, AR 72703



SEAL

Architect/Engineer Address



formerly HARRELL, SALTRICK & HOPPER, PC

8016 TOWER POINT DRIVE  
CHARLOTTE, NC 28227  
P 704.814.1320  
F 704.321.0833  
WWW.HARRELLDC.COM  
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| APPROVALS:           |  |
|----------------------|--|
| CHIEF OF ENGINEERING |  |
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|--|--|------------------------------|
| Drawing Title<br><b>MECHANICAL DETAILS</b> | Project Title<br><b>RENOVATE 3B CLINIC FOR<br/>STEP-DOWN, B1</b> | Date<br>1/8/2015             |
| FULLY SPRINKLERED                          | Drawn<br>DWS   | Project Number<br>564-14-102 |
| 100% FINAL CONSTRUCTION<br>DRAWINGS        | Building Number<br>1   | AutoCAD File Name            |
|  | Checked<br>DWS   | Reviewed<br>JEM              |
|  | Const. Contract No.  | DRAWING No.<br><b>M503</b>   |

