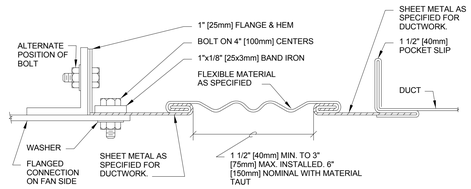
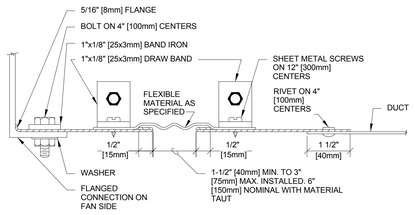
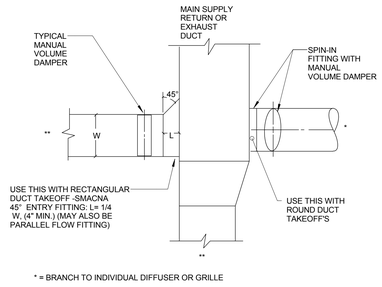


RECTANGULAR FLEXIBLE CONNECTION



ROUND FLEXIBLE CONNECTION

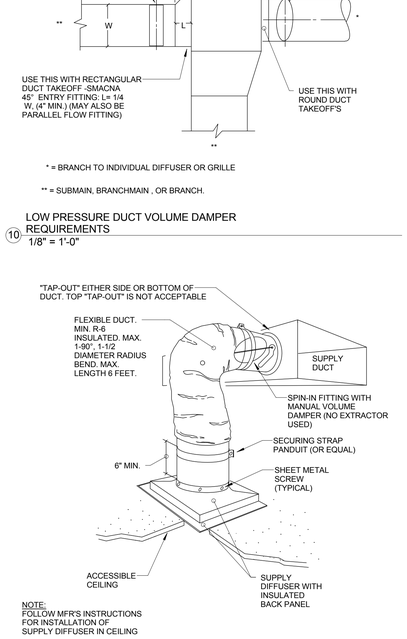
11 FLEXIBLE DUCT CONNECTIONS
1/8" = 1'-0"



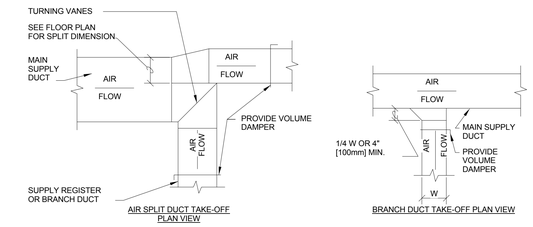
* = BRANCH TO INDIVIDUAL DIFFUSER OR GRILLE

** = SUBMAIN, BRANCHMAIN , OR BRANCH.

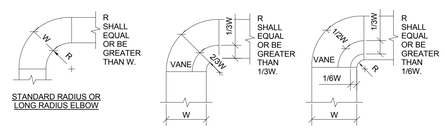
10 LOW PRESSURE DUCT VOLUME DAMPER REQUIREMENTS
1/8" = 1'-0"



9 DUCTWORK CONNECTION TO SUPPLY DIFFUSER (FLEX DUCT)
1/8" = 1'-0"



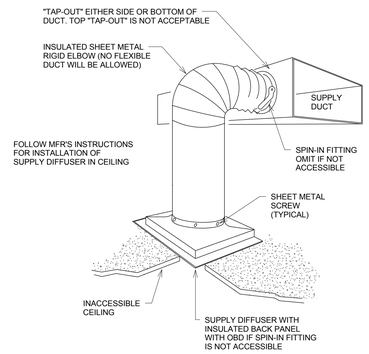
8 SUPPLY DUCTWORK TAKE-OFFS
1/8" = 1'-0"



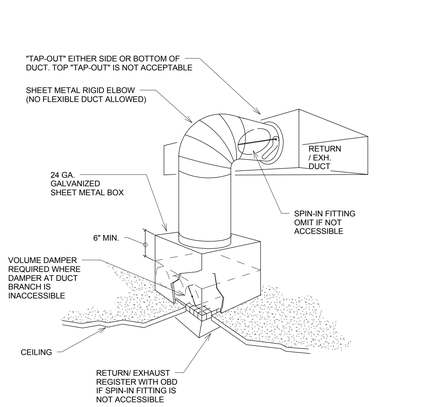
NOTE:

1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

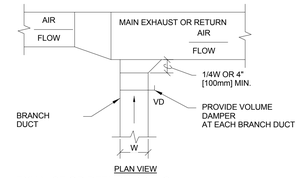
7 DUCTWORK RADIUS ELBOWS
1/8" = 1'-0"



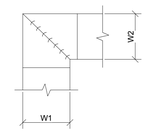
6 DUCTWORK CONNECTION TO SUPPLY DIFFUSER (ALL RIGID DUCT)
1/8" = 1'-0"



5 DUCTWORK CONNECTION TO RETURN/EXHAUST GRILLE (RIGID DUCT)
1/8" = 1'-0"



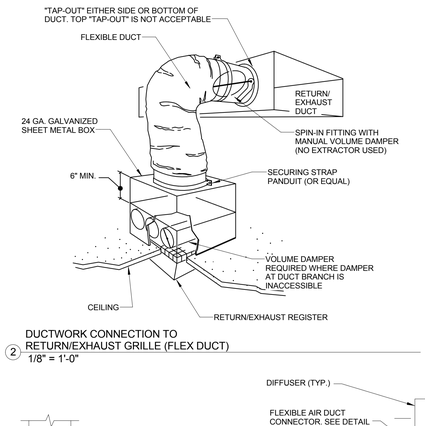
4 EXHAUST OR RETURN BRANCH DUCTWORK
1/8" = 1'-0"



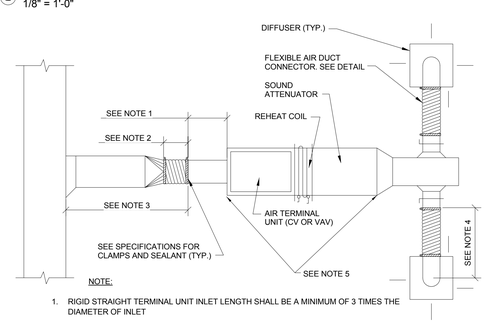
NOTE:

1. ALL VANE ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.
2. WHEN W1 DOES NOT EQUAL W2, VANE SHALL BE SINGLE THICKNESS VANE TYPE REGARDLESS OF W DIMENSION.
3. ALL SINGLE THICKNESS 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.

3 DUCTWORK SQUARE VANE ELBOWS
1/8" = 1'-0"



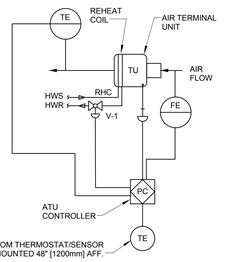
2 DUCTWORK CONNECTION TO RETURN/EXHAUST GRILLE (FLEX DUCT)
1/8" = 1'-0"



NOTE:

1. RIGID STRAIGHT TERMINAL UNIT INLET LENGTH SHALL BE A MINIMUM OF 3 TIMES THE DIAMETER OF INLET
2. A FLEXIBLE AIR DUCT CONNECTOR IS NOT MANDATORY FOR INLET TO THIS BOX, BUT ALLOWED TO ACCOMMODATE MINOR OFFSETS. MAXIMUM LENTH 3'-0" [900MM].
3. A BRANCH DUCT SERVING AN INDIVIDUAL BOX MAY BE THE SAME SIZE AS THE BOX INLET, PROVIDED THE EQUIVALENT LENGTH OF THE BRANCH DUCT, AS SHOWN, DOES NOT EXCEED 10 FEET (3 METERS). FOR LONGER LENGTHS, INCREASE THE DUCT SIZE AND PROVIDE A DUCT TRANSITION TO MAINTAIN THE DUCT STATIC PRESSURE DROP AT OR BELOW 0.2"/100' [1.64Pa/m].
4. FLEXIBLE AIR DUCT CONNECTORS, WHEN USED FROM TERMINAL UNIT SUPPLY AIR DUCT TO DIFFUSER, SHALL NOT EXCEED 5'-0" [1500MM]. USE RIGID ELBOWS FOR CHANGE OF DIRECTION GREATER THAN 45°.
5. COMPONENT ARRANGEMENT MAY VARY BY MANUFACTURER. PROVIDE INSULATION W/VAPOR BARRIER FOR CONNECTING DUCT SECTIONS.
6. USE OF THE FLEXIBLE AIR DUCT CONNECTORS ARE NOT PERMITTED FOR THE DEDICATED AHU SERVING THE SURGICAL SUITE.

1 DUCT CONNECTIONS - AIR TERMINAL UNITS
1/8" = 1'-0"



VAV BOX CONTROL SEQUENCE W/ DEADBAND

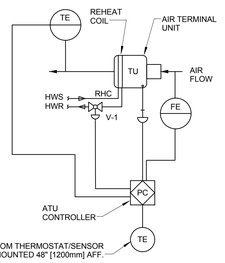
A. SET POINTS SHALL SET AS FOLLOWS:
COOLING 75° F (ADJ)
HEATING 70° F (ADJ)
DEADBAND OF 5° F BETWEEN HEATING AND COOLING SET POINT WILL BE MAINTAINED

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 RISE IN SPACE TEMPERATURE.

13 VARIABLE VOLUME AIR TERMINAL UNIT CONTROL DIAGRAM
1/8" = 1'-0"



CV BOX CONTROL SEQUENCE W/ DEADBAND

A. SET POINTS SHALL SET AS FOLLOWS:
COOLING 75° F (ADJ)
HEATING 70° F (ADJ)
DEADBAND OF 5° F BETWEEN HEATING AND COOLING SET POINT WILL BE MAINTAINED

B. UPON FALL IN SPACE TEMPERATURE BELOW SET POINT VALVE V-1 WILL MODULATE TO MAINTAIN SET POINT +/-.5°,THE ADJUSTABLE TOLERANCE OF +/-.5° HAS BEEN SELECTED TO PREVENT VALVE HUNTING

C. THE REVERSE SHALL OCCUR ON RISE IN SPACE TEMPERATURE.

12 CONSTANT VOLUME AIR TERMINAL UNIT CONTROL DIAGRAM
1/8" = 1'-0"

95% SUBMISSION - NOT FOR CONSTRUCTION

Revisions:	Date

Stamp / Seal

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.
2-14-2013
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Drawing Title: MECHANICAL DETAILS & CONTROLS

Location: CLEMENT J. ZABLOCKI VA MEDICAL CENTER MILWAUKEE, WI

Project Name: 111 RENOVATE X-RAY 5

Building Number: 111 | Checked: DLH | Drawn: EPS

Project Number: 695-12-195

Date: 02.14.13

Drawing Number: MH-501

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Office of Construction and Facilities Management

VA FORM 08-6231