

one and one half inches = one foot  
one inch = one foot  
three quarters inch = one foot  
one half inch = one foot  
one quarter inch = one foot  
one eighth inch = one foot

1  
DUCTWORK SQUARE VANE ELBOWS  
NTS

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 VANS 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.

2  
DUCTWORK RADIUS ELBOWS  
NTS

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.

3  
DUCTWORK TRANSITIONS  
NTS

NOTE:  
UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.

4  
SUPPLY DUCTWORK TAKE-OFFS  
NTS

DESIGNER'S NOTES:  
1. THE SUPPLY REGISTER TAKE-OFF MAY BE USED FOR UP TO 25% OF THE MAIN DUCT CFM. THE BRANCH DUCT TAKE-OFF MAY BE USED FOR UP TO 15% OF THE MAIN DUCT CFM ANYTIME AND UP TO 40% WHEN THE MAIN DUCT VELOCITY IS 1000 FPM [5.1 M/S] OR LESS. THE AIR SPLIT DUCT TAKE-OFF SHALL BE USED IN ALL OTHER CASES AND MAY BE USED AT ANYTIME.  
2. SHOW ALL VOLUME DAMPERS ON FLOOR PLANS.

5  
FLEXIBLE DUCT CONNECTIONS  
NTS

RECTANGULAR FLEXIBLE CONNECTION  
ROUND FLEXIBLE CONNECTION

6  
ALTERNATE SUPPLY DUCT TAKEOFF - AIR TERMINAL UNITS  
NTS

7  
EXHAUST OR RETURN BRANCH DUCTWORK  
NTS

8  
SECTION THRU FIRE DAMPER INSTALLATION  
NTS

NOTE:  
1. A VERTICAL DAMPER IS SHOWN. HORIZONTAL DAMPER INSTALLATION, IS SIMILAR. FOLLOW DAMPER MANUFACTURER'S INSTRUCTIONS, INCLUDING FASTENER OPTIONS AND GAGES FOR SLEEVE AND PERIMETER ANGLES. FIRE DAMPERS MUST BE INSTALLED IN THE PARTITION OR FLOOR AND NOT OUTSIDE THE PENETRATION.  
2. GALVANIZED SLEEVE: GAGE, NOT LESS THAN CONNECTING DUCT. FASTEN SLEEVE TO DAMPER FRAME AND TO PERIMETER ANGLES.  
3. PERIMETER ANGLES: GALVANIZED STEEL, NOT LESS THAN 1 1/2"x1 1/2" [40x40mm], 14 GAGE, TO PROVIDE 1" [25mm] MINIMUM OVERLAP OF OPENING ON ALL 4 SIDES.  
4. BREAKAWAY DUCT CONNECTION: CONTRACTOR'S OPTION OF TYPES SHOWN IN SMACNA. ACCESS PANELS: SIZE AND LOCATION TO PERMIT SERVICING THE FUSIBLE LINK OR LINKS.  
5. PROVIDE 1/4" TO 1/2" [6 TO 15mm] CLEARANCE ON HEIGHT AND WIDTH. FILL OPEN SPACE WITH ROCK WOOL FIRESTOP FIBER.  
6. ALL DUCT WORK RISERS WHICH ARE RUN EXPOSED, SUCH AS THRU ATTIC FLOORS AND MECHANICAL ROOM FLOORS, SHALL BE PROVIDED WITH 3" [75mm] HIGH CONCRETE CURB AROUND OPENING FOR DUCT.

9  
ACCESS SECTION FOR ROUND/OVAL DUCT  
NTS

10  
CONSTANT AIRFLOW REGULATOR  
NTS

CONSTANT AIRFLOW REGULATOR DETAIL

11  
ACCESS PANEL AND DOOR DETAIL  
NTS

ACCESS PANEL  
ACCESS DOOR

12  
ROUND DUCT HANGERS  
NTS

LOAD RATED FASTENERS  
HANGER RODS

13  
SUPPLY DUCT TAKEOFF - AIR TERMINAL UNIT  
NTS

14  
EMERGENCY GENERATOR ROOM CONTROLS  
NTS

NOTES:  
1. EMERGENCY GENERATOR SHALL BE INTERLOCKED WITH D3. WHEN EMERGENCY GENERATOR IS ENERGIZED D3 SHALL OPEN. WHEN EMERGENCY GENERATOR IS DE-ENERGIZED D3 SHALL CLOSE, PROVIDED ROOM EXHAUST FAN IS OFF.  
2. ROOM EXHAUST FAN SHALL BE INTERLOCKED WITH D3 & ROOM THERMOSTAT T1. WHEN ROOM THERMOSTAT RISES ABOVE 85°F [29°C] ROOM EXHAUST FAN SHALL RUN & D3 SHALL OPEN. WHEN ROOM THERMOSTAT DROPS BELOW 80°F [27°C] ROOM EXHAUST FAN SHALL STOP & D3 SHALL CLOSE, PROVIDED EMERGENCY GENERATOR IS DE-ENERGIZED.  
3. POWER OPERATED, OPPOSED BLADE, DAMPERS D1 & D2 SHALL BE INTERLOCKED WITH ROOM THERMOSTAT T2 SET AT 60°F [16°C]. ON A RISE IN ROOM TEMPERATURE ABOVE 60°F [16°C] D1 SHALL MODULATE OPEN & D2 SHALL MODULATE CLOSED. ON A DROP IN ROOM TEMPERATURE BELOW 60°F [16°C], D1 SHALL MODULATE CLOSED & D2 SHALL MODULATE OPEN.  
4. ELECTRIC UNIT HEATER SHALL BE INTERLOCKED WITH ROOM THERMOSTAT T3 SET AT 45°F [7.2°C]. ON A DROP IN ROOM TEMPERATURE BELOW 43°F [6.1°C] ELECTRIC UNIT HEATER SHALL BE ENERGIZED & ON A RISE IN ROOM TEMPERATURE ABOVE 47°F [8.3°C],

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Drawing Title

MECHANICAL DETAILS

Approved: Project Director

Project Title

RELOCATE DEMENTIA UNIT

Project Number

VA PN 613-207

Building Number

513

Location

VAMC MARTINSBURG

Date

08/06/2012

Checked

SCS

Drawn

CJW

Drawing Number

M-501

Dwg. of

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Office of  
Construction  
and Facilities  
Management

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