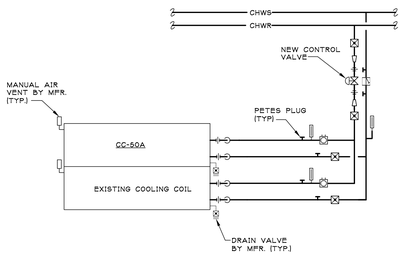


AHU COOLING COIL CONNECTION

NOT TO SCALE

GENERAL DDC NOTES:

1. DIRECT DIGITAL CONTROLS (DDC) SHALL BE PROVIDED BY JOHNSON CONTROLS OR PASCO.
2. THE CONTROLS TO BE AN EXTENSION OF THE EXISTING JOHNSON CONTROLS OR PASCO SYSTEMS.
3. IN ADDITION TO THE PRIMARY ECC PROVIDE REMOTE USER ACCESS VIA A STANDARD WEB BROWSER (WEB-ENABLED) CONTROL SYSTEM GRAPHICS, ALARMS, AND ADJUSTABLE SETPOINTS TO BE AVAILABLE REMOTELY. ACCESS TO SYSTEM TO BE PASSWORD PROTECTED.
4. PROVIDE ALL NECESSARY LABOR, MATERIALS, SPECIAL TOOLS, EQUIPMENT, ENCLOSURES, POWER SUPPLIES, SOFTWARE, SOFTWARE LICENSES, PROJECT SPECIFIC SOFTWARE CONFIGURATIONS AND DATABASE ENTRIES, INTERFACES, WIRING, TUBING, INSTALLATION, LABELING, ENGINEERING, CALIBRATION, DOCUMENTATION, SUBMITTALS, TESTING, VERIFICATION, TRAINING SERVICES, PERMITS AND LICENSES, TRANSPORTATION, SHIPPING, HANDLING, ADMINISTRATION, SUPERVISION, MANAGEMENT, INSURANCE, WARRANTY, SPECIFIED SERVICES AND ITEMS REQUIRED FOR COMPLETE AND FULLY FUNCTIONAL CONTROLS SYSTEMS ASSOCIATED WITH THE SYSTEMS BEING INSTALLED OR MODIFIED BY THIS PROJECT.
5. REFER TO SPECIFICATION SECTION 23 09 23 DIRECT DIGITAL CONTROL SYSTEM FOR HVAC FOR ADDITIONAL REQUIREMENTS.

LEGEND

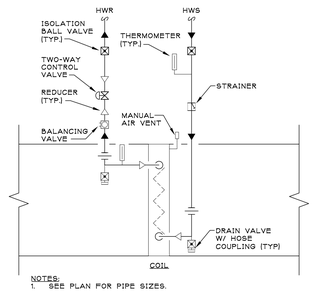
- PROPOSED
- EXISTING
- EXISTING TO BE REMOVED
- CONNECT TO EXISTING
- DEMO TO EXISTING
- REMOVE RADIANT CEILING PANEL
- RECONDITIONED RADIANT CEILING PANEL
- VALVE STATION
- DEMO TEMPERATURE SENSOR
- NEW TEMPERATURE SENSOR
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- BALANCING VALVE
- SWING CHECK VALVE
- BALL VALVE
- SUPPLY DIFFUSER
- RETURN/EXHAUST REGISTER
- LABEL / CFM / NECK — DIFFUSER/REGISTER LABEL
- VS — VALVE STATION

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AS	AIR SEPARATOR
B	BOILER
CB	CHILLED BEAM
CFM	CUBIC FEET OF AIR PER MINUTE
CH	CHILLER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CUH	CABINET UNIT HEATER
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
EA	EXHAUST AIR
EAT	EXHAUST AIR TEMPERATURE
ECV	EXHAUST AIR CONSTANT VOLUME BOX
ET	EXPANSION TANK
EWT	ENTERING WATER TEMPERATURE
FCU	FAN COIL UNIT
FTR	FIN TUBE RADIATION
GPM	GALLONS PER MINUTE
HP	HEAT PUMP
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LWT	LEAVING WATER TEMPERATURE
MAT	MIXED AIR TEMPERATURE
PC	PUMPED CONDENSATE
PD	PRESSURE DROP
PR	PERIMETER RADIATION
PTAC	PACKAGED TERMINAL AIR CONDITIONER
RA	RETURN AIR
(S)	SECONDARY
SAT	SUPPLY AIR TEMPERATURE
SCV	SUPPLY AIR CONSTANT VOLUME BOX
(T)	TERTIARY
VAV	VARIABLE AIR VOLUME BOX
VFD	VARIABLE FREQUENCY DRIVE
VS	VALVE STATION
WR	WALL MOUNTED RADIANT PANEL

GENERAL NOTES:

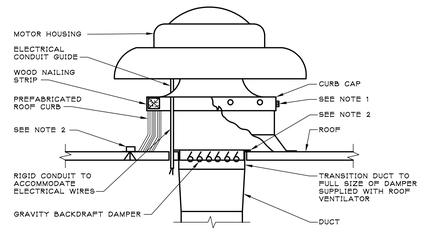
1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. IT IS NOT INTENDED TO SPECIFY OR SHOW EVERY OFFSET, FITTING OR COMPONENT; HOWEVER, CONTRACT DOCUMENTS REQUIRE COMPONENTS AND MATERIALS WHETHER OR NOT INDICATED OR SPECIFICALLY SPECIFIED TO MAKE THE SYSTEMS BEING INSTALLED COMPLETE, CODE COMPLIANT, TESTED AND OPERATIONAL.
2. CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS, DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION.
3. ALL MATERIALS, EQUIPMENT, METHODS OF INSTALLATION, REMOVALS AND DISPOSAL SHALL BE IN ACCORDANCE WITH THE STANDARDS, REGULATIONS, CODES, ORDINANCES, AND LAWS OF LOCAL, STATE, AND FEDERAL GOVERNMENTS, AND OTHER AUTHORITIES THAT HAVE LAWFUL JURISDICTION.
4. PERFORM WORK, PROVIDE MATERIALS AND EQUIPMENT FOR SYSTEMS SHOWN, SPECIFIED AND DESCRIBED ON DRAWINGS. COMPLETELY COORDINATE ALL TRADES OF THIS CONTRACT AND PROVIDE COMPLETE AND FULLY FUNCTIONAL INSTALLATION. ALL WORK IN THIS SET TO BE COMPLETED UNDER THIS CONTRACT, UNLESS OTHERWISE INDICATED.
5. PROTECT ALL EXISTING AND NEW BUILDING ELEMENTS FROM DAMAGE. CONTRACTOR SHALL RESTORE ALL DAMAGED ELEMENTS TO ORIGINAL OR BETTER CONDITION.
6. WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT NEAT, RECTILINEAR APPEARANCE WHEN COMPLETED. MAINTAIN MAXIMUM HEAD ROOM AT ALL TIMES. DO NOT RUN PIPES, DUCTS, AND CONDUIT EXPOSED UNLESS SHOWN AND NOTED TO BE EXPOSED ON DRAWINGS.
7. MATERIALS AND EQUIPMENT SHALL BE NEW AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. MAINTAIN MANUFACTURER'S EQUIPMENT CLEARANCES.
8. CONTRACTOR IS RESPONSIBLE FOR ALL WORK RELATED TO ISOLATING, SHUTTING DOWN, DRAINING, FILLING AND TESTING SYSTEMS TO ALLOW FOR COMPLETION OF WORK. INTERRUPTIONS TO EXISTING SERVICES AND SYSTEMS SHALL BE AS SHORT AS POSSIBLE AND AT A TIME AND DURATION APPROVED BY THE OWNER AND UTILITY AS APPLICABLE. INCLUDE ALL PREMIUM TIME ASSOCIATED WITH INTERRUPTIONS. ALL SYSTEM INTERRUPTIONS SHALL BE SCHEDULED WITH OWNER, UTILITY AND COORDINATED WITH OTHER TRADE WORK.
9. SEAL ALL PENETRATIONS THROUGH FIRE RATED WALLS, PARTITIONS AND FLOORS WITH UL RATED MATERIALS/METHODS EQUIVALENT TO FIRE RATING OF ASSEMBLY.
10. PROVIDE PROPER ACCESS TO EQUIPMENT THAT REQUIRES INSPECTION, REPLACEMENT OR REPAIR. ACCESS PANELS/DOORS SHALL BE A MINIMUM OF 12"x12", UNLESS OTHERWISE NOTED.
11. DO NOT SUPPORT EQUIPMENT FROM SUSPENDED CEILINGS. ALL SUPPORT SHALL BE FROM BUILDING STRUCTURE OR FROM CEILING SUSPENSION SYSTEM WHICH HAS BEEN REINFORCED. SUPPORTS SHALL BE SELECTED AND INSTALLED TO PROVIDE A VIBRATION FREE INSTALLATION.
12. PRIOR TO CONSTRUCTION, ENLIST A CERTIFIED TESTING & BALANCING AGENCY TO DETERMINE BASELINE AIR AND WATER FLOW VALUES FOR EXISTING AIR HANDLING UNIT 'AC-50'. PROVIDE A WRITTEN REPORT OF THE FINDINGS TO THE COR AND ENGINEER.
13. DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE LATEST ISSUE OF SMACNA STANDARDS.
14. THOROUGHLY CLEAN INSIDE OF ALL NEW AND EXISTING TO REMAIN DUCT SYSTEMS AND REPLACE FILTERS PRIOR TO TURNOVER/START-UP OF SYSTEM.
15. PATCH, REPAIR AND PAINT ALL SURFACES LEFT EXPOSED BY THE REMOVAL OF EQUIPMENT, PIPING, SUPPORTS AND APPURTENANCES TO MATCH ADJACENT CONSTRUCTION AND FINISHES.
16. THESE GENERAL NOTES APPLY TO ALL DRAWINGS WITHIN THIS TRADE.



NOTES:
1. SEE PLAN FOR PIPE SIZES.
2. SEE VAV SCHEDULE FOR BALANCING VALVE GPM

TYPICAL VAV PIPING DETAIL

NOT TO SCALE

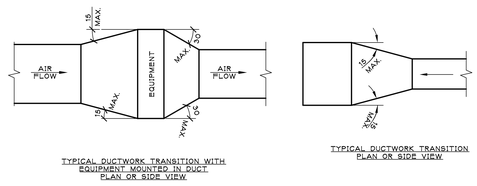


NOTE:

1. SECURE CURB CAP TO WOOD NAILING STRIP WITH 3/8" (10mm) CADMIUM PLATED LAG BOLTS NOT OVER 12" (300mm) ON CENTER.
2. SECURE ROOF CURB, DUCTWORK AND DAMPER TO ROOF WITH EXPANSION BOLTS (CONCRETE ROOF) OR RUST RESISTANT BOLTS (METAL DECK AND BAR JOIST ROOF).
3. RUN ELECTRICAL LINES THROUGH CLEARANCE HOLE PROVIDED IN GRAVITY DAMPER, THEN THROUGH VENTILATOR ELECTRICAL CONDUIT GUIDE.
4. COORDINATE INSTALLATION WITH OTHER TRADES.

POWER ROOF VENTILATOR DETAIL

NOT TO SCALE



TYPICAL DUCTWORK TRANSITION WITH EQUIPMENT MOUNTED IN DUCT PLAN OR SIDE VIEW

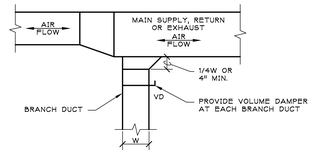
TYPICAL DUCTWORK TRANSITION PLAN OR SIDE VIEW

NOTE:

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

DUCTWORK TRANSITIONS (WITH EQUIPMENT MOUNTED IN DUCT)

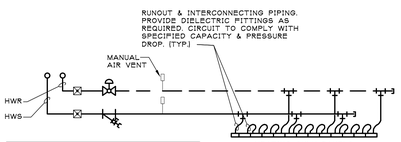
SCALE: NONE



PLAN VIEW

BRANCH DUCTWORK DETAIL

SCALE: NONE

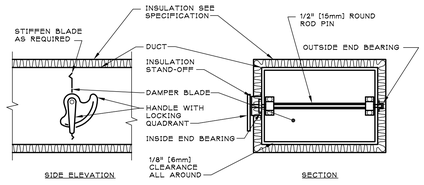


NOTE:

1. MINIMUM FLOW SHALL BE NO LESS THAN 0.5 GPM [1.9 LPM]

HYDRONIC RADIANT CEILING PANELS - PIPING CONNECTIONS

SCALE: NONE

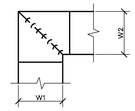


NOTES:

1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

VOLUME DAMPER DETAIL

SCALE: NONE

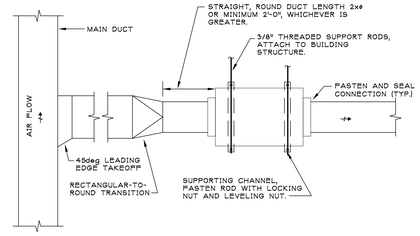


NOTE:

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.

DUCTWORK SQUARE VANE ELBOWS

SCALE: NONE

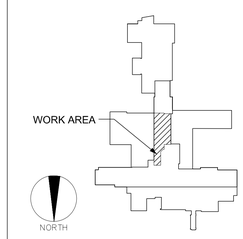


NOTES:

1. THE OPERATION OF VARIABLE AIR VOLUME TERMINAL BOX IS AFFECTED BY EXCESSIVE TURBULENCE ON THE ENTERING SIDE OF EACH TERMINAL BOX. THEREFORE, TERMINAL BOX MUST NOT BE INSTALLED TOO CLOSE TO MAIN DUCTS, ELBOWS AND FITTINGS.
2. WHEN MINIMUM UPSTREAM STRAIGHT DUCT CONNECTION TO TERMINALS AS INDICATED ABOVE CANNOT BE MAINTAINED, PROVIDE ORIFICE PLATE, STRAIGHTENING VANES OR OTHER DEVICE AS RECOMMENDED BY TERMINAL BOX MANUFACTURER AND SUBMIT TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.
3. DDC PANELS & MOTORS FOR NEW VAV TERMINAL BOXES SHALL BE PROVIDED BY CONTROLS MANUFACTURER AND SHALL BE DELIVERED TO VAV BOX MANUFACTURER. DDC PANEL SHALL CONTAIN STEP DOWN TRANSFORMER (120V AC TO 24V AC) TO POWER CONTROL & MOTOR. BOX MANUFACTURER SHALL FACTORY MOUNT DDC CONTROLLER & MOTOR ON LEFT OR RIGHT HAND SIDE OF VAV BOXES TO SUIT FIELD CONDITION. VAV BOX MANUFACTURER WILL PROVIDE ALL SENSORS & DAMPER WITH LINKAGES.
4. ARRANGE ACCESS TO PERMIT EASY FIELD BALANCE AND MAINTENANCE OF TERMINAL UNIT.

TYPICAL VAV BOX INSTALLATION DETAIL

NOT TO SCALE



KEY PLAN

Scale: As Noted

Revisions:	Date

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Drawing Title: MECHANICAL GENERAL INFORMATION

Approved: Project Director

Project Title: RENOVATE FOR WOMEN'S CLINIC

Location: 800 IRVING AVENUE, SYRACUSE NY 13210

Date	Checked	Drawn
12.18.2012	SBG	NCB

Project Number: VA# 528A7-13-701 IPD# 11-7230

Building Number: 1

Drawing Number: M-001

Dwg. 26 of 41

VA HEALTHCARE NETWORK UPSTATE NEW YORK

VA FORM 08-6231