

WATER SOURCE HEAT PUMP CONTROL SYSTEM NOTES:

- PROVIDE UNITS COMPLETE WITH CONTROLS, FLEXIBLE COLLARS, VIBRATION ISOLATION SPRINGS, COMPRESSOR SOUND BLANKETS, BALANCING VALVES, PROGRAMMABLE THERMOSTATS/SENSORS WITH PROGRAMMABLE FAN CYCLE, 30% EFFICIENT FILTERS, AUTOMATIC BALANCE VALVE KIT, LOW PRESSURE REFRIGERANT SWITCH, LEVEL-SENSITIVE FLOAT SWITCH IN CONDENSATE PAN AND STANDARD EQUIPMENT AS PROVIDED BY TRANE OR APPROVED EQUAL. UNITS SHALL HAVE HIGH INTENSITY UV-C GERMICIDAL LAMP INSTALLED IN RETURN OR SUPPLY DUCTWORK PER MANUFACTURER.
- THE CONDENSER WATER LOOP TEMPERATURE, COOLING TOWER, 3-WAY VALVES, BOILER CONTROL & PUMP OPERATIONS SHALL BE MONITORED/ALARMED BY THE WATMASTER WHIP CONTROL SYSTEM OR EQUAL. THE SYSTEM SHALL BE MODULAR & PROVIDE SENSORS, ACTUATORS, DDC CONTROLLERS AND OPERATORS FOR A COMPLETE AND AUTOMATIC OPERATING WATER SOURCE HEAT PUMP SYSTEM. PROVIDE A REMOTE PANEL WITH AUDIBLE AND VISIBLE ALARMS IN OWNER DESIGNATED OFFICE TO NOTIFY OWNER OF MALFUNCTIONS. OBTAIN THE SERVICES OF AN APPROVED AND 5 YEARS EXPERIENCED CONTROLS ENGINEER OR CONTRACTOR, CONTRACTOR TO DESIGN AND INSTALL A CENTRAL CONTROL SYSTEM FOR THE HEAT PUMP UNITS, BOILER, CONDENSER WATER PUMPS, BOILER CIRCULATOR PUMPS, ALL CONTROL VALVES, ROOM THERMOSTAT/SENSORS AND COOLING TOWER SYSTEM. CENTRAL CONTROL/MONITORING SYSTEM SHALL PROVIDE AS A MINIMUM CRITICAL CONTROL STATUS AND ALARMS FOR THE HEATING AND AIR CONDITIONING EQUIPMENT. PROVIDE WATMASTER WATER SOURCE HEAT PUMP CONTROL SYSTEM OR APPROVED BY OWNER/ENGINEER EQUAL.
- CONTROLS CONTRACTOR SHALL PROVIDE A COMPLETE WATER SOURCE HEAT PUMP CONTROL SYSTEM WHICH CAN RESET AND CHANGE ALL OPERATIONS OF THE CRITICAL HVAC EQUIPMENT FROM A CENTRAL COMPUTER WITH PRINTER AND MONITOR. SYSTEM SHALL HAVE CAPABILITY TO SIGNAL THE SECURITY SYSTEM OR REMOTE DIALED NUMBER WHEN THERE IS A PROBLEM WITH ANY CRITICAL HVAC EQUIPMENT. AS A MINIMUM, THE SYSTEM SHALL MONITOR AND CONTROL WATER SOURCE HEAT PUMP UNITS, CONDENSER WATER PUMPS, BOILER HOT WATER PUMPS, BOILERS, WATER TEMPERATURE SETPOINT AND RESET ON CONDENSER WATER LOOP AND BOILER HOT WATER LOOP, COOLING TOWER OPERATION, ROOM TEMPERATURE SENSORS SET AND RESET POINTS, OUTSIDE AIR TEMPERATURE SET POINTS AND STATUS, MODULATING OUTSIDE AIR DAMPER SETPOINT.

TABLE 1 STEEL PIPE HANGER & ROD SCHEDULE

MINIMUM ROD SIZES & MAXIMUM SPACING FOR INSTALLING HANGERS FOR STEEL DISTRIBUTION PIPING, MSS SP-69 TABLE 3

NOM. PIPE SIZE (INCHES)	STEEL PIPE MAX. SPAN-FT (FEET)	MIN. ROD SIZES (INCHES)
1/2	7	3/8
3/4	7	3/8
1	7	3/8
1-1/4	7	3/8
1-1/2	9	3/8
2	10	3/8
2-1/2	11	1/2
3	12	1/2
4	14	5/8
5	16	5/8
6	17	3/4
8	19	7/8
10	22	7/8
12	23	7/8

TABLE COPPER TYPE "L" PIPE HANGER & ROD SCHEDULE

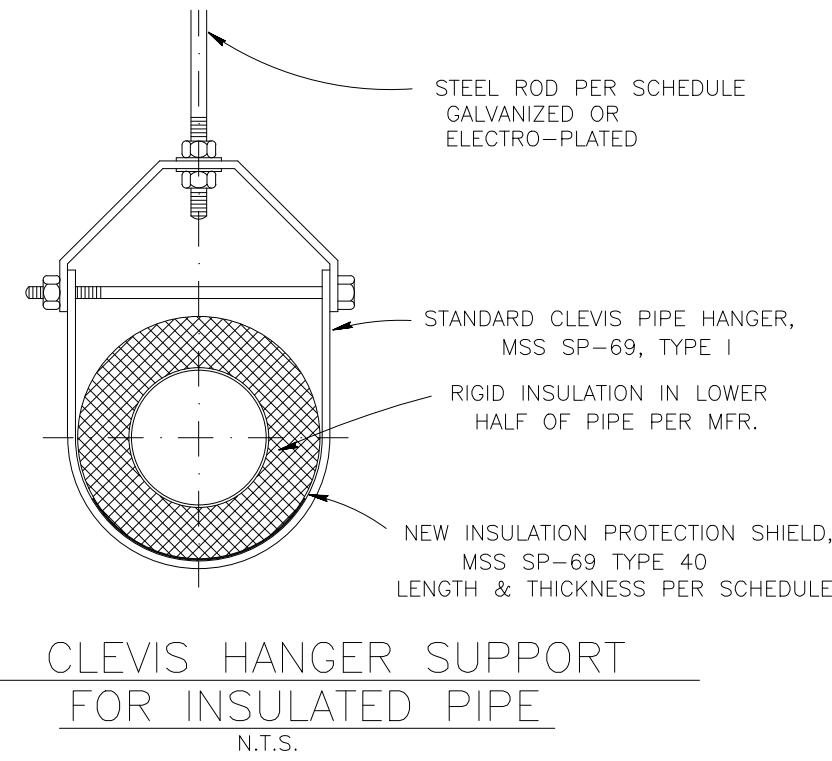
MINIMUM ROD SIZES & MAXIMUM SPACING FOR INSTALLING HANGERS FOR COPPER TYPE "L" DISTRIBUTION PIPING PER MSS SP-69

NOM. PIPE SIZE (INCHES)	COPPER PIPE MAX. SPAN-FT (FEET)	MIN. ROD SIZES (INCHES)
1/2	5	3/8
3/4	5	3/8
1	6	3/8
1-1/4	7	3/8
1-1/2	8	3/8
2	8	3/8

INSULATED PIPING SHIELD SCHEDULE

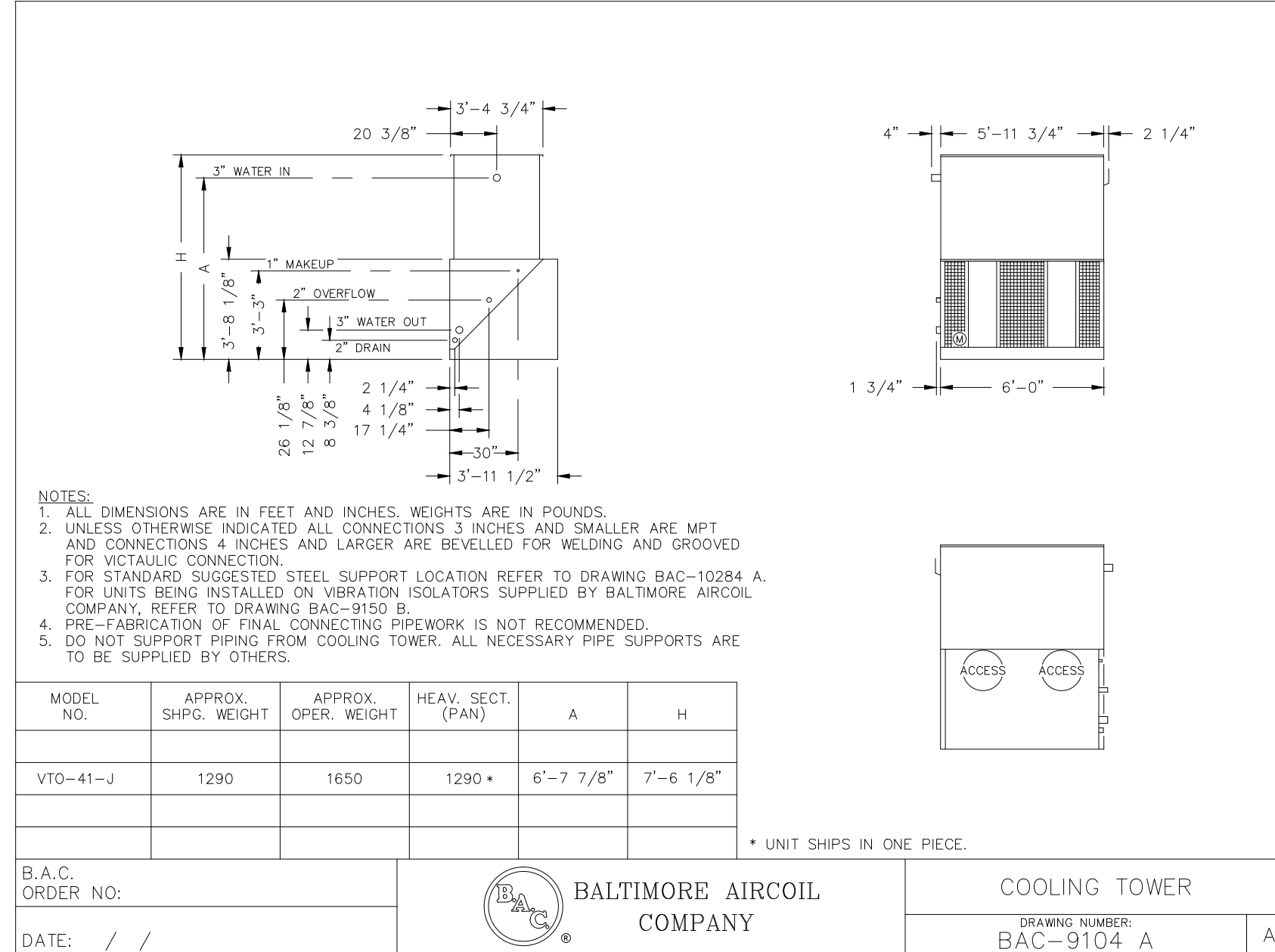
NPS (INCHES)	LENGTH (INCHES)	THICKNESS (INCHES)
1/4 TO 3-1/2	12	18 GA. (0.048)
4	12	16 GA. (0.060)
5 & 6	18	16 GA. (0.060)
8 TO 14	24	14 GA. (0.075)
16 TO 24	24	12 GA. (0.105)

OTHER PIPE MATERIALS FOLLOW MSS SP-69 TABLE 5



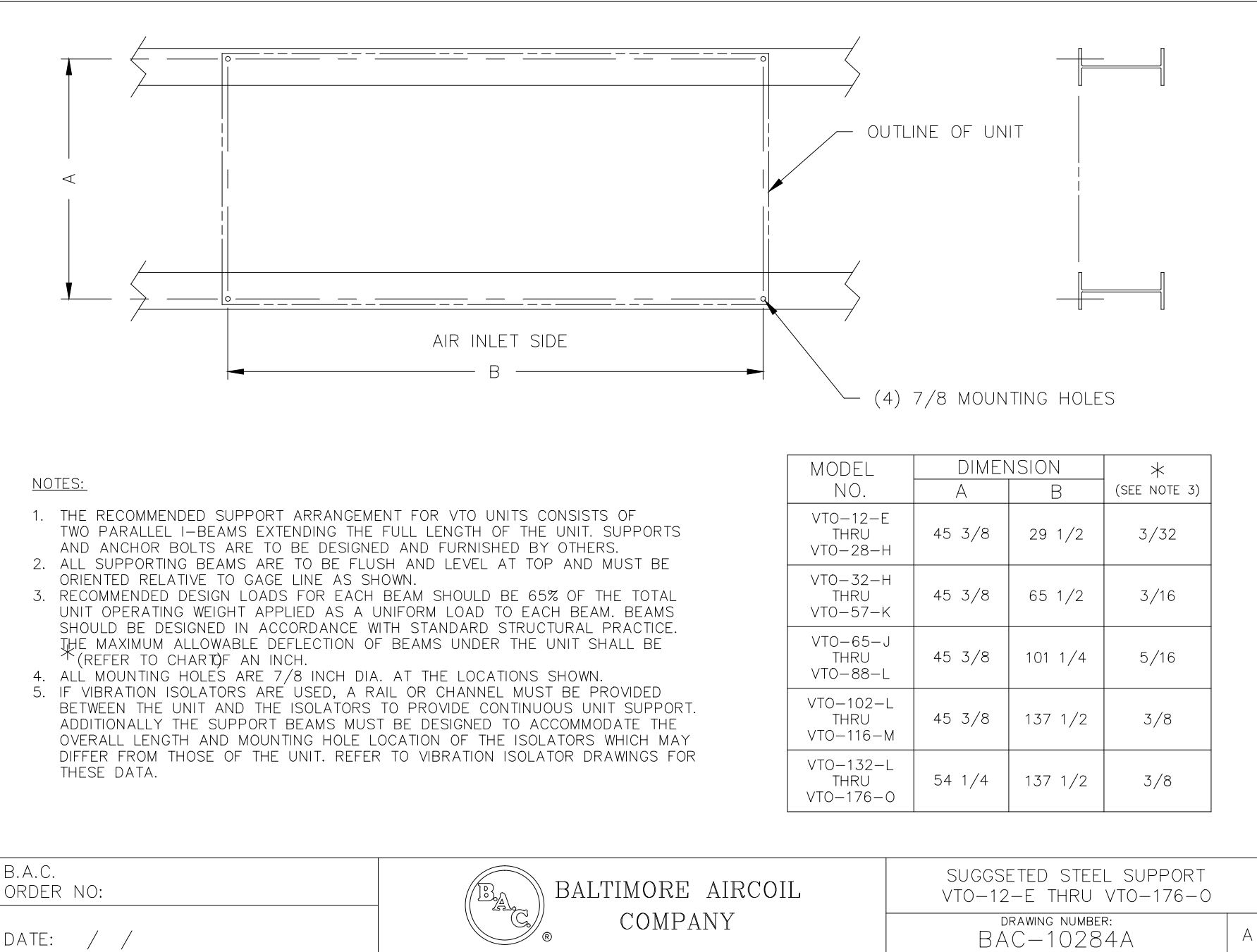
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PROVIDE & INSTALL COMPLETE THE S.S. EXHAUST HOOD AS FOLLOWS:

Item 2 - EXHAUST HOOD (1 REQ'D)

Captive-Aire

- 5424ND-2-PSP-F - 12ft 0" Long Exhaust-Only Wall Canopy Hood with Front Perforated Supply Plenum with Built-in 3" Back Standoff
- 430 SS Where Exposed
- Fire Cabinet on the Right Side (Additional charges may apply for cabinet if not sold with fire system)
- FILTER - 16" tall x 16" wide Kleen-Gard Stainless Steel Baffle Filter with Handles and Bottom Hanging Hook, UL Classified
- FILTER - 16" tall x 20" wide Kleen-Gard Stainless Steel Baffle Filter with Handles and Bottom Hanging Hook, UL Classified
- Incandescent Light Fixture-High Temp Assembly, Includes Clear Thermal and Shock Resistant Globe (L55 Fixture), Bulbs By Others
- EXHAUST RISER - Factory installed 10" X 25"
- SUPPLY RISER - 14" Square to 12" Round Supply Collar with 12" Round Volume Damper.

Nailor 1090 Series.

- 1/2 Pint Grease Cup New Style, Flanged Slotted
- INSULATION FOR BACK OF HOOD
- Electrical Package Installation in Utility Cabinet by Plant.

- 1 ea ANSUL-3.0/3.0 Ansul 6 gallon Fire System in Utility Cabinet (includes pre-piped hood(s) with detection, tank(s), release mechanism, microswitches and pull station).

- Includes piping for hood: 1. - GAS VALVE - 2" Mechanical Shutoff Valve (Ansul)(28-55610); SUPPLIED BY DISTRIBUTOR

- 1 ea NCA16FA Belt Drive Centrifugal Upblast Exhaust Fan with 18.75" wheel Exhaust Fan handles 2700 CFM @ -1.000" wc ESP, Fan runs at 1020 RPM. Exhaust Motor: 1.000 HP, 1 Phase 230 V, 60Hz, 6.8 FLA, ODP (Open Drip Proof)

- Grease Cup for kitchen-duty centrifugal exhaust fans, Box Dimensions 15-3/4 L X 5-1/16 W X 3-3/4 H (18 GA.) (Includes Down Spout) A1-G10 Untempered Supply Unit with 10" Blower in Size #1 Housing

- 1 ea Supply Fan handles 2160 CFM @ 0.375" wc ESP, Fan runs at 752 RPM. Supply Motor: 0.750 HP, 1 Phase 230 V, 60Hz, 5.4 FLA, ODP (Open Drip Proof) Down Discharge - Air Flow Right -> Left

- Sloped Filtered Intake for Size #1 Modular Untempered Supply Unit. 21.813" Wide x 44.375" Long x 23.375" High. Includes 2" MV EZ Kleen Metal Mesh Filters.

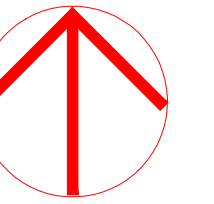
- 1 ea Curb CRB26.5x20E On Fan # 1 4.000:12.000 Pitch
- HINGE KIT - Standard Hinge kit for exhaust fan roof curbs. Includes Hardware to attach hinge to curb and hinge to base. Ships Loose. Used on Fans with wheels 20 inches or smaller. 12 GA Galvanized.

- Vented Base for Curb
- 1 ea Curb CRB21X20 On Fan # 2 4.000:12.000 Pitch

- 1 ea 211110KT 220V/1Ph, W/ 1 Exhaust Fan, 1 Supply Fan, Exhaust in Fire, Lights out in Fire, Fan On/Off Thermostatically Controlled. Includes 1 Duct Thermostat
- 1 ea - IN-LINE DUCT HEATER. BTU Model MR-1624-21-1@240V. 35 Degree Temp Rise at 2200 CFM

- 1 ea - FIELD WRAPPER 18.00" High Front, Left, Right
- BACKSPLASH 80.00" High X 156.00" Long 430 SS (Includes End Caps & Divider Bars)

NORTH (magnetic)



Charles Washington Hall RENOVATIONS
Corner of George & Washington Streets
Charles Town, W.Va.

For the City of Charles Town City of Ranson

Planning & Engineering (prime)

Hall Planning & Engineering, Inc
316 Williams Street
Tallahassee, FL 32303

Landscape Architecture

Stromberg/Garrigan & Assoc., Inc.
102 E. Main Street-The Penn Bldg
Somerset, PA 15501

Historic Preservation & Architecture

Landmarks SGA, LLC
102 E. Main Street-The Penn Bldg
Somerset, PA 15501

Structural Engineer

R.L. Silman Associates
1053 31st Street NW
Washington D.C. 20007

Mech/Elect Engineer

Comfort Design, Inc.
620 Pennsylvania Avenue
Winchester, VA 22601

Architect

GROVE & DALL'OLIO ARCHITECTS PLLC
220 WEST KING • MARTINSBURG, WEST VIRGINIA • 25401

Issue/Revision Seal

PROF. L. CAYLOR
7548
9/26/2014
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER

Drawing Title

Mechanical Schedules & Details

Date 9/26/14
Scale: As Shown Project Number 11105
Drawing Number

M1.2