

1. NOTES AND SPECIFICATIONS

- ALL MECHANICAL WORK SHALL BE DONE IN ACCORDANCE WITH ALL STATE AND LOCAL LAWS AND ORDINANCES AND IN A MANNER SATISFACTORY TO THE AUTHORITY HAVING JURISDICTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS, INSPECTIONS AND PAY ALL APPLICABLE FEES.
- CARRIER OR YORK PACKAGED HVAC SYSTEMS ARE REQUIRED. SEE MANUFACTURER AND HEATING SOURCE REQUIREMENT BY REGION ON THIS SHEET.
- MECHANICAL ENGINEER SHALL PERFORM COMPLETE LOAD CALCULATIONS BASED ON CURRENT ADOPTED ENERGY CODE REQUIREMENTS FOR BUILDING COMPONENTS.
- HVAC UNIT QUANTITY AND SIZES SHALL BE DETERMINED BY ENGINEERED HEATING AND COOLING LOAD CALCULATIONS, USING ASHRAE DATA AND DESIGN CRITERIA ON THIS PAGE. A FIFTH UNIT IS REQUIRED IF THE AVERAGE DAILY TEMPERATURE OF ANY ONE MONTH EXCEEDS 95°F.
- ALL HVAC UNITS SHALL PROVIDE A MINIMUM DISCHARGE AIR TEMPERATURE OF 90°F DURING HEATING MODE. DEVELOPER IS TO COORDINATE ALL NECESSARY REQUIREMENTS WITH THE MANUFACTURER.
- ELECTRIC UNITS REQUIRE A NOMINAL 15KW HEAT STRIP. MINIMUM PROVIDE 15KW HEAT STRIP AS REQUIRED, TO MEET MINIMUM DISCHARGE TEMPERATURE OF 90°F.
- ALL UNITS REQUIRE ECONOMIZERS WITH BAROMETRIC RELIEF OR MOTORIZED DAMPER WITH DUCT MOUNTED BAROMETRIC RELIEF. PROVIDE AS REQUIRED PER ADOPTED STATE AND LOCAL ENERGY CODES.
- ALL UNITS GREATER THAN 2,000 CFM REQUIRE A DUCT MOUNTED SMOKE DETECTOR. VERIFY CURRENT ADOPTED STATE AND LOCAL CODE REQUIREMENTS FOR TESTING AND LOCATION OF SMOKE DETECTOR.
- ALL HVAC EQUIPMENT SHALL BE INSTALLED IN SUCH A MANNER AS TO REDUCE VIBRATION TRANSMISSION TO STRUCTURAL MEMBERS.
- TESTING OF HVAC UNITS THRU EMS PANEL IS ACCORDING TO WARMING UP OR COOLING DOWN A SPACE TEMPERATURE SENSOR AND WATCH THE FAN, HEAT AND COOL STAGES CYCLE ON AND OFF. THIS REQUIRES TWO PEOPLE AT ALL TIMES. ONE TO WATCH THE SCREEN AND THE OTHER TO WATCH OPERATION OF THE AHU. WHEN COMPLETE, THE HOME SHOULD RETURN TO THE MAIN SCREEN.
- COORDINATE HVAC SENSORS LOCATIONS WITH SHEET EMS1.
- POWER HVAC UNITS LISTED IN PREFERENCE ORDER.
- PROVIDE IN THE EXHAUST FAN FOR RESTROOMS, INTERLOCK WITH RESTROOM LIGHTS. VENT THRU SIDE WALL, NOT THRU THE ROOF.

MECHANICAL KEYED NOTES

- RTU 1-4. PROVIDE AND INSTALL NEW YORK PACKAGE ROOF TOP UNIT. SEE SCHEDULE FOR UNIT INFORMATION.
- SMOKE DETECTOR TO BE INSTALLED IN SUPPLY AIR DUCTWORK FOR ROOFTOP UNIT. FIELD COORDINATE WITH FIRE ALARM SYSTEM USED AND LOCAL CODES.
- INSTALL MICROMETL CONCENTRIC DIFFUSER KIT #CNKT-0550-18HD FOR YORK 4-6TON WITH FACTORY INSTALLED TRANSITION ADAPTER AT RTU. COORDINATE WITH LIGHT FIXTURES.
- SUPPLY REGISTER MOUNTED ON DUCTWORK, BALANCE AT 4000 CFM EACH.
- EXHAUST FAN TO BE MTD. ON CEILING W/DUCTWORK ROUTED TO SIDEWALL. PROVIDE STORM PROOF WALL CAP W/ BACKDRAFT DAMPER (TYPICAL).
- 8" EXHAUST DUCT TO WALL CAP
- WALL CAP W/BACKDRAFT DAMPER

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REQUIRED CARRIER ROOF TOP UNITS

| AREA | MFG | STANDARD | UPGRADE | TONNAGE | HEAT | MODEL NUMBER |
|-------|---------|----------|---------|----------|----------|--------------|
| SOUTH | CARRIER | 2 | | 12.5 Ton | Electric | ZCA150S4B1Y |

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NOTE: THE TABLE ABOVE IS TO SPECIFY THE MINIMUM REQUIREMENTS OF UNITS TO BE USED. ACTUAL TONNAGE AND INSTALLED ACCESSORIES IS TO BE DETERMINED BY THE DESIGN ENGINEER AND DOLLAR GENERAL. MECHANICAL ENGINEER SHALL PERFORM COMPLETE LOAD CALCULATIONS BASED ON CURRENT STATE AND LOCAL ADOPTED ENERGY CODE REQUIREMENTS AND INFORMATION PROVIDED ON BUILDING ENVELOPE.

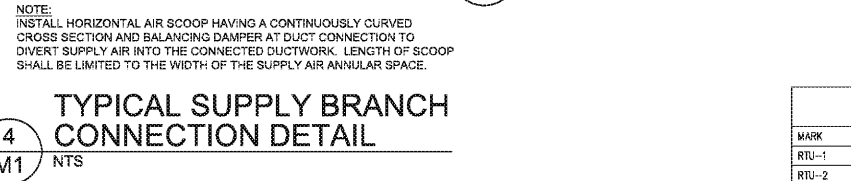
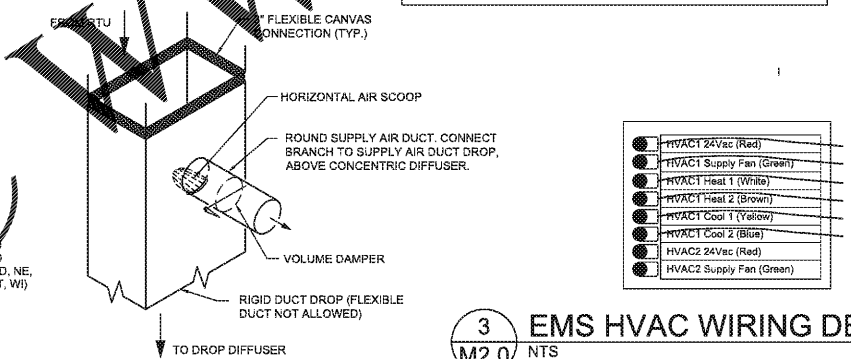
PROVIDE EACH HVAC UNIT WITH:

FACTORY INSTALLED:

- THRU THE BASE CONNECTIONS
- LOW / HIGH, HEAT AS REQUIRED (GAS FIRED UNITS).
- BELT DRIVE W/STANDARD STATIC OPTION.
- COATED COILS (WHEN LOCATED WITHIN 10 MILES FROM SHORELINE).

FIELD INSTALLED:

- DISCONNECT
- CONVENIENCE OUTLET
- DUCT SMOKE DETECTOR. (VERIFY LOCATION OF DUCT MOUNTED SMOKE DETECTOR).
- ELECTRIC HEAT WITH SINGLE POINT CONNECTION KIT, AS SPECIFIED IN SCHEDULE - (ELECTRIC UNITS)
- ECONOMIZER WITH BAROMETRIC RELIEF (WHERE REQUIRED); MOTORIZED O.A. DAMPER WITH DUCT MOUNTED BAROMETRIC RELIEF DAMPER AND HOOD KIT (WHEN ECONOMIZER IS NOT REQUIRED)
- DUAL AIR ENTHALPY SENSOR (FOR UNITS WITH ECONOMIZER)
- TWO (2) ADDITIONAL SETS OF FILTERS (POST CONSTRUCTION/PRE TEST AND BALANCE, AND ONE SET TO OWNER FOR FUTURE USE).



OUTDOOR AIR CALCULATION

| ROOM# | ROOM NAME | PEOPLE | OUTDOOR AIR RATE | AREA | OUTDOOR RATE | NET AREA | hcz | |
|-------|------------|--------|--------------------------------|------|--------------|----------|-------------------|-------|
| | | Rp | Pz(PPEOP./1000SQ.FT.) (Rp)(Pz) | Ra | Az | (Ra)(Az) | (Rp)(Pz)+(Ra)(Az) | |
| 100 | BREAKROOM | 5 | 1 | 5 | .06 | 88 | 5 | 10 |
| 101 | OFFICE | 5 | 1 | 5 | .06 | 88 | 5 | 10 |
| 102 | SALES AREA | 7.5 | 115 | 863 | .12 | 7430 | 892 | 1,750 |
| 103 | RECEIVING | - | - | - | .06 | 925 | 56 | 56 |
| TOTAL | | | | | | 8,531 | | 1,811 |

TABLE NOTES:

- BASED ON 2012 IBC TABLE 403.3.

AIR BALANCE ANALYSIS

| MARK | SUPPLY AIR | OSA INTAKE | RETURN AIR | EXHAUST AIR | BLG. PRESS. |
|-------|------------|------------|------------|-------------|-------------|
| RTU-1 | 2,400 | 453 | 1,947 | - | - |
| RTU-2 | 2,400 | 453 | 1,947 | - | - |
| RTU-3 | 2,400 | 453 | 1,947 | - | - |
| RTU-4 | 2,400 | 453 | 1,947 | - | - |
| EF-1 | - | - | - | 50 | -50 |
| EF-2 | - | - | - | 50 | -50 |
| TOTAL | 9,600 | 1,812 | 7,788 | 100 | +1,712 |

403.3.1.1.1 Breathing zone outdoor airflow.
The outdoor airflow rate required in the breathing zone (V_z) of the occupiable space or spaces in a zone shall be determined in accordance with Equation 4-1.

$$V_z = R_p \cdot P_z + R_a \cdot A_z$$

where:

- V_z = Zone floor area (the net occupiable floor area of the space or spaces) in the zone.
- R_p = Zone people outdoor air rate (people) in the zone or spaces in the zone.
- R_a = People outdoor air rate. The outdoor airflow rate required per person from Table 403.3.1.1.
- A_z = Area outdoor air rate. The outdoor airflow rate required per square foot from Table 403.3.1.1.

1 HVAC LAYOUT
M2.0 SCALE: 1/8" = 1'-0"

2 HEATING SOURCE BY REGION
M2.0 NTS

LENNOX
HIGH GAS ZONE
PROPANE ALLOWED
ELECTRIC ALLOWED
(CT, IA, IL, IN, MI, MN, ND, NE, NH, NJ, NY, PA, RI, SD, VT, WI)

YORK
LOW GAS ZONE
PROPANE ALLOWED
ELECTRIC ALLOWED
(AR, CO, IL, IN, KS, KY, MO, OH, OK, WV)

CARRIER
ELECTRIC PREFERRED
LOW GAS ALLOWED
PROPANE ALLOWED
(AL, AZ, CA, DE, FL, GA, LA, MD, MS, NC, NM, NV, OR, SC, TN, TX, VA)

NOTE: IF PROPANE IS USED, TANKS ARE REQUIRED TO BE BURIED.

EQUIPMENT LABEL SPECS

- ALL HVAC EQUIPMENT SHALL BE FURNISHED WITH BLACK LAMINATED PLASTIC LABEL W/WHITE ENGRAVED LETTERING & FASTENED MECHANICALLY TO EQUIPMENT.
- LABEL SHALL HAVE THE FOLLOWING INFORMATION W/1/2" LETTERING:
EQUIPMENT #
SUITE/SPACE #

SMOKE DETECTOR DRAWING NOTE

- THE DUCT SMOKE DETECTORS SHALL BE INSTALLED TO STOP THE FAN IN THE HVAC DUCT SYSTEM OVER 2000CFM PER NFPA 90A-6.4.2(1)
- THE ACTUATION OF A DUCT SMOKE DETECTOR SHALL ACTIVATE A VISIBLE AND AUDIBLE SUPERVISORY SIGNAL AT A CONSTANTLY ATTENDED LOCATION.
- SMOKE DETECTOR TRIGGLE CONDITION SHALL BE INDICATED VISUALLY OR AUDIBLY IN A NORMALLY OCCUPIED AREA AND SHALL BE IDENTIFIED AS AIR DUCT DETECTOR TRIGGLE.
- PROVIDE A REMOTE ALARM INDICATOR/ANNUNCIATOR IN ACCORDANCE WITH NFPA 72-6.10.2.

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CONSTRUCTION DOCUMENTS

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HVAC LAYOUT & SCHEDULES

M2.0