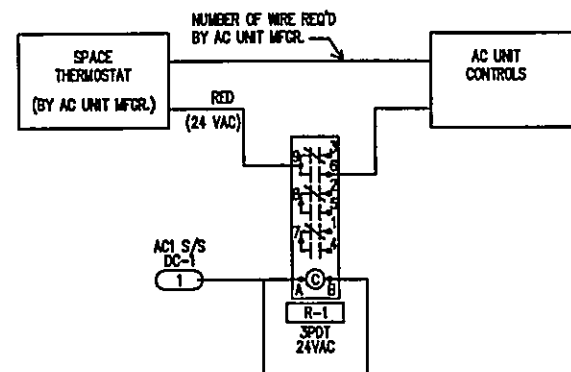
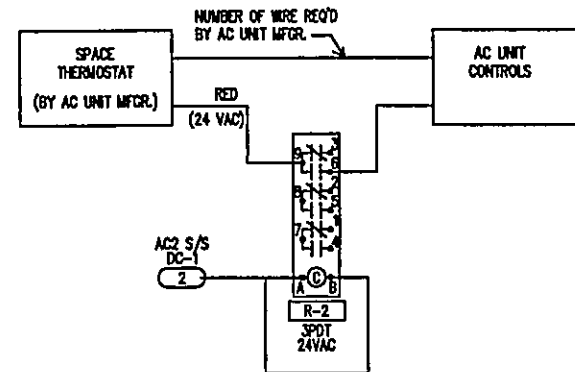
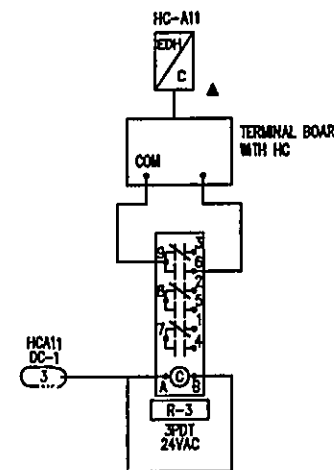




AC-1 START/STOP CONTROL Heat pump  
Toilets & Lobby



AC-2 START/STOP CONTROL Heat pump  
Training

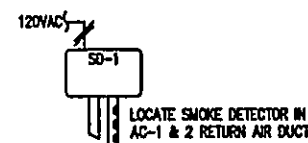


HEATING COIL HC-A11 CONTROL  
HC-A11 ASSOCIATED WITH AC-1  
Vestibule

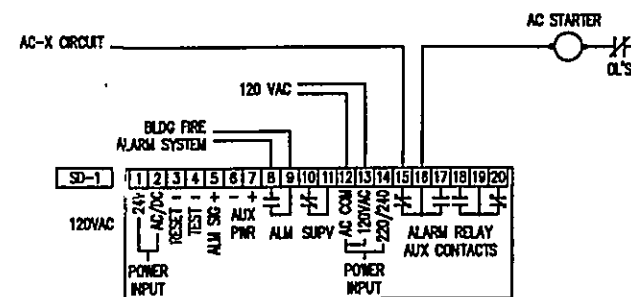
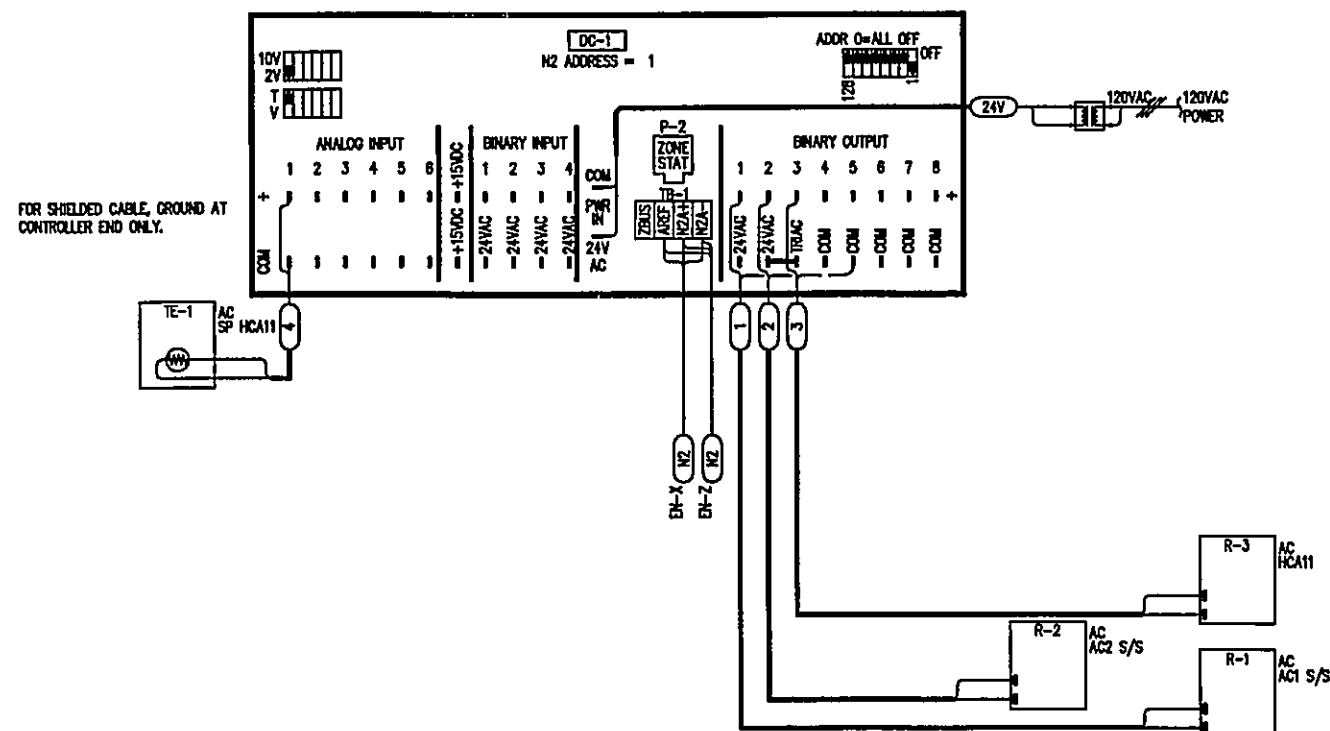
4  
DC-1  
TE-1  
SP HCA11  
Sensor in  
wrong location  
but operation is  
ok

| FIELD MATERIAL |     |             |                           |
|----------------|-----|-------------|---------------------------|
| DEVICE TAG     | QTY | CODE NUMBER | DESCRIPTION               |
| R-1-R-3        | 3   | PD-109-21   | RELAY, PLUG IN 3PDT       |
|                | 3   | BZ-1010-11  | UTILITY ENCLOSURE         |
| SD-1           | 1   | PD-101-35   | RELAY SOCKET, 11PIN BLADE |
|                | 1   | DM400ACDC1  | DUCT DETECTOR, 10M,       |
| TE-1           | 1   | ST-3        | SAMPLING TUBE FOR         |
|                |     | TE-6314P-1  | TEMP SENSOR, 1000 OHM, NI |

| PANEL MATERIAL |     |              |                         |
|----------------|-----|--------------|-------------------------|
| DEVICE TAG     | QTY | CODE NUMBER  | DESCRIPTION             |
| DC-1           | 1   | AS-UNT1110-0 | UNITARY C W/O ENC BROAD |
|                | 1   | EN-EVC15-0   |                         |



| BAY              | TERM | CONDUCTOR | DEVICE | SYSTEM | OBJECT   | EXPANDED ID         | REFERENCE DETAIL |
|------------------|------|-----------|--------|--------|----------|---------------------|------------------|
| CONTROLLER: DC-1 |      |           |        |        |          |                     |                  |
| A1               | A11  |           | TE-1   | AC     | SP HCA11 | SPACE SENSOR HC-A11 | ---              |
| B0               | B01  |           | R-1    | AC     | AC1 S/S  | AC-1 START/STOP     | ---              |
| B0               | B02  |           | R-2    | AC     | AC2 S/S  | AC-2 START/STOP     | ---              |
| B0               | B03  |           | R-3    | AC     | HCA11    | HC-A11 HEATING      | ---              |
| N2BUS            | IN   |           | EN-X   |        |          |                     | ---              |
| N2BUS            | OUT  |           | EN-Z   |        |          |                     | ---              |
| X-FMR            |      | 120VA     | 120VAC |        |          |                     | ---              |



AC WIRING DIAGRAM

#### SEQUENCE OF OPERATION

##### AC-1 & 2 CONTROL:

UNIT CONTROLLER WILL START/STOP THE AC UNIT ACCORDING TO PRE PROGRAMMED SCHEDULE. AC UNIT FACTORY FURNISHED SPACE T-STAT WILL CONTROL THE UNIT'S HEATING AND COOLING TO MAINTAIN SETPOINT. SPACE TEMPERATURE SENSOR TE-1 WILL CONTROL THRU THE UNIT TO ENERGIZE/DE-ENERGIZE AC-1 DUCT HEATER HC-A11 TO MAINTAIN SETPOINT.

##### SAFETIES:

DUCT SMOKE DETECTOR WILL DEENERGIZE ITS ASSOCIATED AC UNIT AND SIGNAL THE BUILDING FIRE ALARM SYSTEM IF PRODUCTS OF COMBUSTION ARE SENSED IN THE RETURN AIR.

|                                                         |  |                                                                                 |  |                                                            |  |
|---------------------------------------------------------|--|---------------------------------------------------------------------------------|--|------------------------------------------------------------|--|
| DRAWING TITLE<br>AC-1 & 2 CONTROL<br>TREATMENT BUILDING |  | GEN REV                                                                         |  | 09/12/94 CA                                                |  |
| PROJECT<br>ROANOKE COUNTY WATER<br>TREATMENT FACILITY   |  | REFERENCE DRAWING<br>NO. 100-100-100                                            |  | DATE 08/08/95                                              |  |
| JOHNSON CONTROLS<br>Systems & Services Division         |  | JOHNSON CONTROLS INC<br>2630 BROADWAY S.W.<br>ROANOKE, VA 24014<br>703-344-8291 |  | CONTRACT NUMBER<br>95066-0013<br>DRAWING NUMBER<br>8 OF 14 |  |