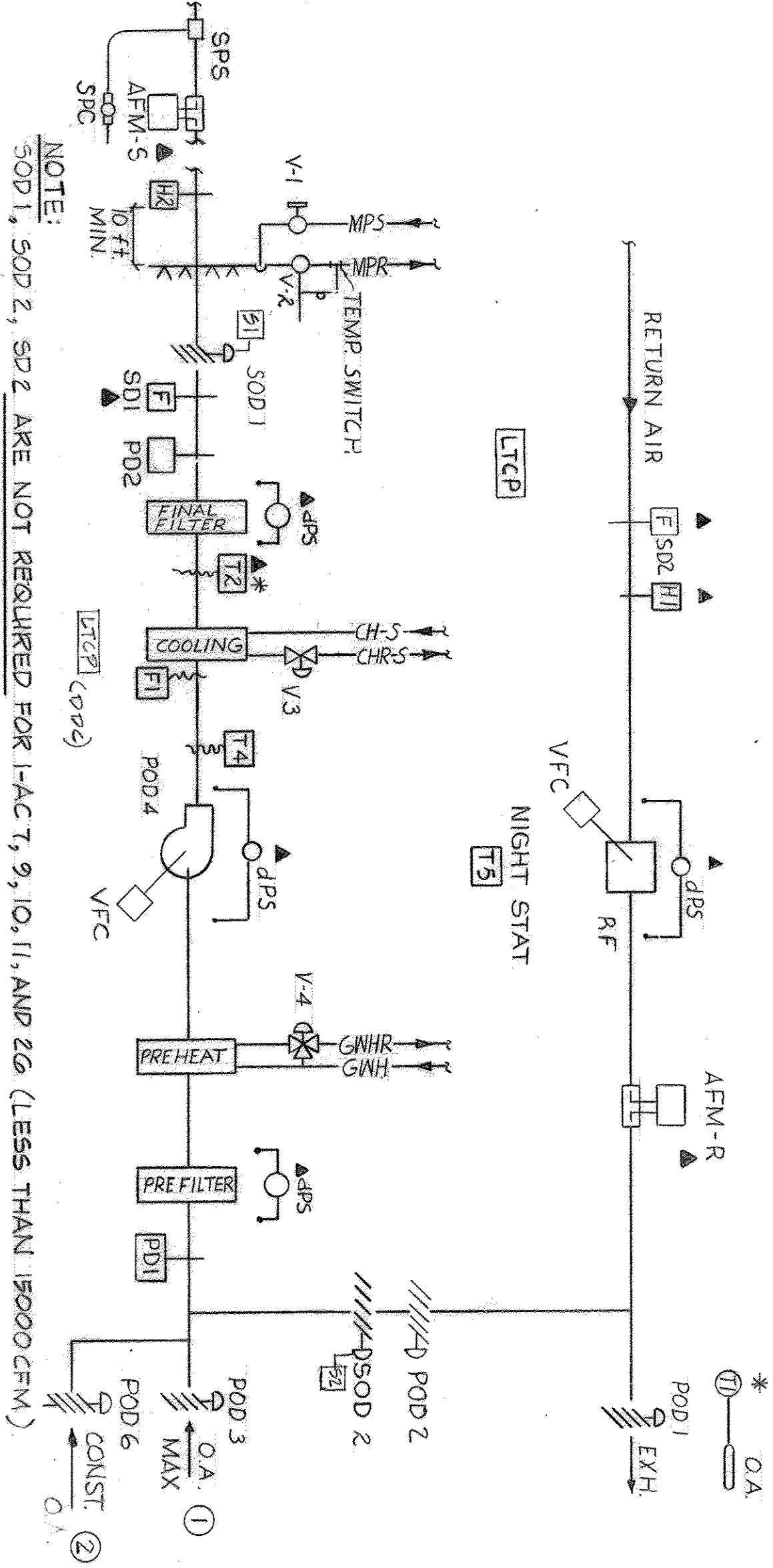


- NOTES:
- SEE AC UNIT SCHEDULE FOR WHICH UNITS HAVE 54°F. OR 57°F. SUPPLY AIR TEMPERATURE.
  - SEE FLOW DIAGRAM FOR UNITS THAT HAVE 3-WAY V-3 VALVES.



TYPICAL MEDIUM PRESSURE - RETURN AIR SYSTEM  
SERVING NON-PATIENT ROOM AREAS  
TYPICAL FOR 1-ACT, 7, 8, 9, 10, 11, 13, 14, 18, 26, 29, 30, 31

OPERATING SEQUENCE

- SYSTEM IS STARTED AND STOPPED FROM THE ECC. OCCUPIED & UNOCCUPIED CYCLES ARE DETERMINED FROM THE ECC.
- FOR 1-ACT, 8, 11, 13, 14, 18, 29, 30, 31: WHEN STARTED, S001, S002 AND P006 OPEN, P001 OPENS TO MINIMUM POSITION, P002 REMAINS OPEN. WHEN S001 AND S002 OPEN, S001 AND S002 ARE ENGAGED, SF AND RF START.
- FOR 1-ACT, 9, 10, 11, 26: WHEN STARTED, SF AND RF START, P006 OPENS, P001 OPENS TO MINIMUM POSITION, P002 REMAINS OPEN.
- WHEN OA AT T-1 IS BELOW 68°F., T-2 MODULATES V-4, THEN P001, P002 AND P003 AND T-2 MODULATES V-3, ALL IN SEQUENCE, DURING OPERATION RISE TO MAINTAIN 54°F./57°F. PREHEAT FREEZESTAT T-4 OVERRIDES T-2 TO LIMIT MIXED AIR TO 40°F. MINIMUM.
- WHEN OA AT T-1 IS ABOVE 68°F., P003 CLOSES, P006 OPENS, P001 OPENS, AND P002 CLOSES TO MINIMUM. T-2 MODULATES V-3 TO MAINTAIN 54°F./57°F. T-1 CLOSES V-4 TO COIL.
- ELECTRIC FREEZESTAT F1 STOPS SF WHENEVER TEMPERATURE IS BELOW 36°F.

UNOCCUPIED (0600 TO 0600 AND WEEKENDS)

- FOR 1-ACT, 11, 13, 14, 18, 29, 30, 31: WHEN SF AND RF ARE STOPPED, P001, P003 AND P006 CLOSE. AFTER 2-MINUTE DELAY (ADJUSTABLE 0-5 MINUTES), S001 AND S002 CLOSE, P002 REMAINS OPEN.
- FOR 1-ACT, 9, 10, 11, 26: WHEN STOPPED, SF AND RF ARE STOPPED, P001, P003 AND P006 CLOSE, P002 REMAINS OPEN.
- WHEN OA AT T-1 IS BELOW 50°F., NIGHT STAT T-5 CYCLES SF AND RF WITH P001 CLOSED AND P006 OPEN. S001 OPENS, P002 OPENS, S002 OPENS TO MAINTAIN 72°F.

STARTING AND STOPPING

- WHEN SYSTEM OPERATION IS STARTED FROM ECC, PRESSURE SWITCH P01 STOPS SUPPLY FAN SHOULD MIXING PLENUM PRESSURE FALL BELOW MINUS 2" W.G. PRESSURE SWITCH P02 STOPS SF SHOULD PRESSURE RISE ABOVE 4" W.G.

FAN CAPACITY CONTROL (SEE DRAWING 1-H93)

HUMIDITY CONTROL

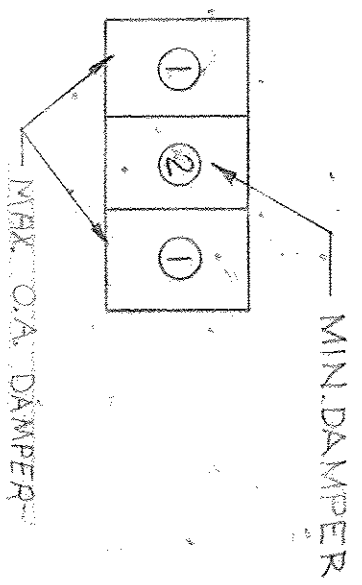
- O.A. THERMOSTAT T-1 SHALL CLOSE ON-OFF TWO-WAY CONTROL VALVE V-1 WHEN OUTSIDE AIR RISES ABOVE 70°F., AND OPEN VALVE V-1 WHEN OUTSIDE AIR DROPS BELOW 70°F.
- DUCT HUMIDITY SENSOR H-1 SHALL MODULATE VALVE V-2 TO MAINTAIN THE DESIRED RELATIVE HUMIDITY (30% RH) SUBJECT TO ITS SUPPLY FAN IS OFF. VALVE V-2 SHALL BE INTERLOCKED WITH TEMPERATURE SWITCH TO KEEP HUMIDIFIER OFF UNTIL CONDENSATE APPROACHES STEAM TEMPERATURE.
- V-1 AND V-2 ARE TYPICAL FOR TWO HUMIDIFIERS WHERE INDICATED FOR EACH UNIT. HUMIDIFIERS SHALL OPERATE IN UNISON.

SMOKE CONTROL

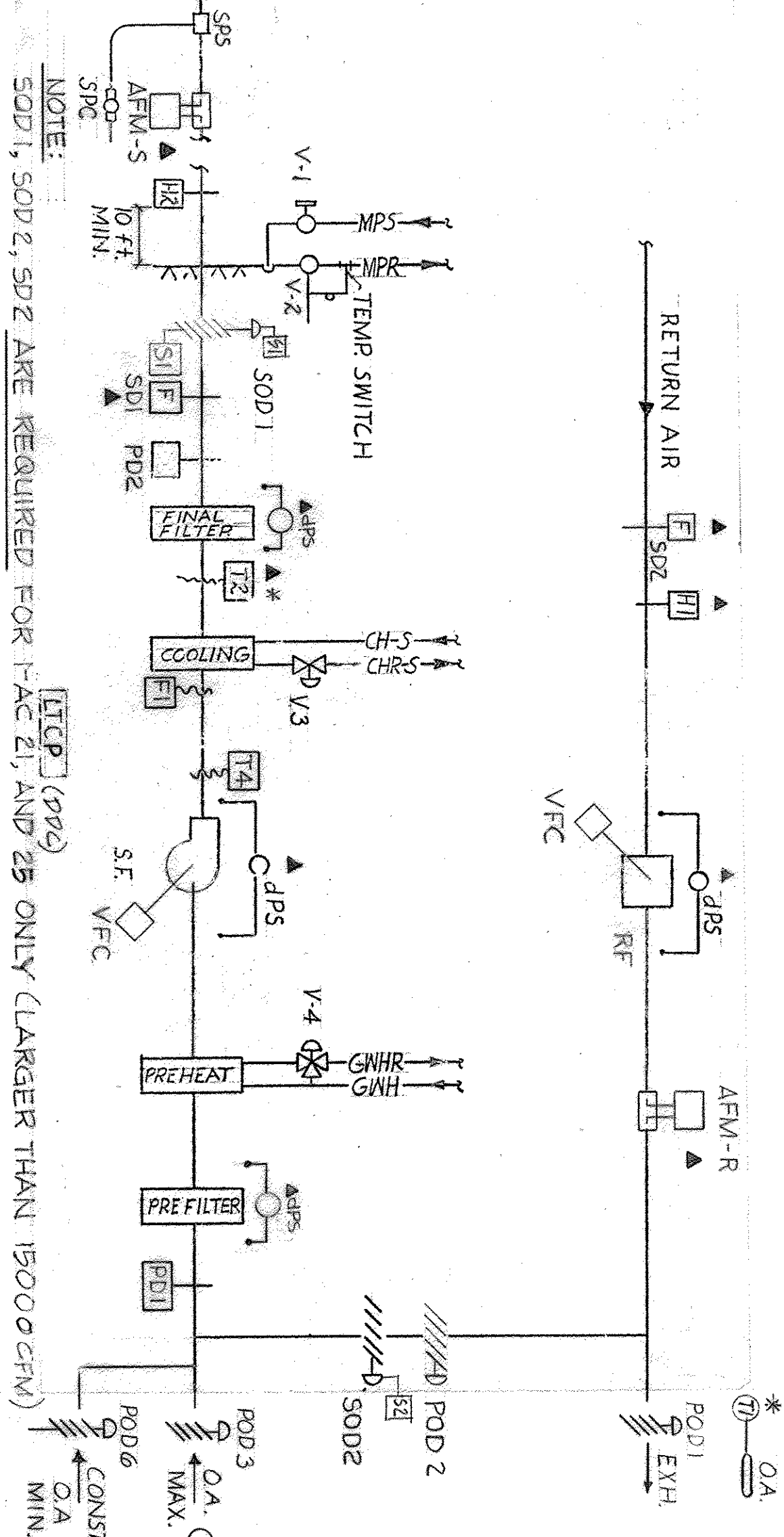
- WHEN SMOKE IS SENSED AT S01 OR S02, SF AND RF STOP. P001, P003, P006, S001 AND S002 ALL CLOSE. P002 IS OPEN.

OUTDOOR AIR DAWPER SIZES

AC#	①	②
1	(2) 12 X 30	12 X 30
7	(2) 26 X 24	14 X 24
8	(2) 28 X 36	16 X 36
9	(2) 12 X 30	6 X 30
10	(2) 22 X 24	10 X 24
11	(2) 24 X 24	12 X 24
13	(2) 18 X 18	12 X 18
14	(2) 18 X 18	36 X 18
18	(2) 24 X 30	24 X 30
26	(2) 16 X 18	10 X 18
29	(2) 28 X 36	10 X 36
30	(2) 30 X 30	12 X 30
31	(2) 34 X 36	28 X 36



- NOTES:
- SEE AC UNIT SCHEDULE FOR WHICH UNITS HAVE 54°F. OR 57°F. SUPPLY AIR TEMPERATURE.



TYPICAL MEDIUM PRESSURE - RETURN AIR SYSTEM  
SERVING NON-PATIENT ROOM AREAS  
TYPICAL FOR 1-ACT 15, 16, 19, 20, 21, 23, 24, 25, 27 AND 28

OPERATING SEQUENCE

- FOR 1-ACT, 15, 16, 19, 20, 21, 23, 24, 25, 27 AND 28: WHEN STARTED, S001 AND P006 OPEN, P001 OPENS TO MINIMUM POSITION, P002 REMAINS OPEN. WHEN S001 AND S002 OPEN, S001 AND S002 ARE ENGAGED, SF AND RF START. WHEN STOPPED, P001, P003 AND P006 CLOSE. AFTER 2-MINUTE DELAY (ADJUSTABLE 0-5 MINUTES), S001 AND S002 CLOSE, P002 REMAINS OPEN.
- FOR 1-ACT, 16, 19, 20, 23, 24, 27 AND 28: SYSTEM IS STARTED FROM THE ECC AND RUNS CONTINUOUSLY. SYSTEM CAN BE STOPPED FROM THE ECC. WHEN STARTED, SF AND RF START, P006 OPENS, P001 OPENS TO MINIMUM POSITION, P002 REMAINS OPEN. WHEN STOPPED, SF AND RF ARE STOPPED, P001, P003, P006 CLOSE, P002 REMAINS OPEN.
- DURING OPERATION WHEN OA AT T-1 IS BELOW 68°F., T-2 MODULATES V-4, THEN P001, P002 AND P003 AND T-2 MODULATE V-3, ALL IN SEQUENCE, ON TEMPERATURE RISE TO MAINTAIN 54°F./57°F. PREHEAT FREEZESTAT T-4 OVERRIDES T-2 TO LIMIT MIXED AIR TO 40°F. MINIMUM.
- DURING OPERATION WHEN OA AT T-1 IS ABOVE 68°F., P003 CLOSES, P006 OPENS, P001 OPENS, P002 CLOSES TO MINIMUM. T-2 MODULATES V-3 TO MAINTAIN 54°F./57°F. T-1 CLOSES V-4 TO COIL.
- ELECTRIC FREEZESTAT F1 STOPS SF WHENEVER TEMPERATURE IS BELOW 36°F.

STARTING AND STOPPING

- WHEN SYSTEM OPERATION IS STARTED FROM ECC, PRESSURE SWITCH P01 STOPS SUPPLY FAN SHOULD MIXING PLENUM PRESSURE FALL BELOW MINUS 2" W.G. PRESSURE SWITCH P02 STOPS SF SHOULD PRESSURE RISE ABOVE 4" W.G. PRESSURE SWITCH SHALL BE NON-REVERSIBLE TYPE.

FAN CAPACITY CONTROL: SEE DRAWING 1-H93.

HUMIDITY CONTROL

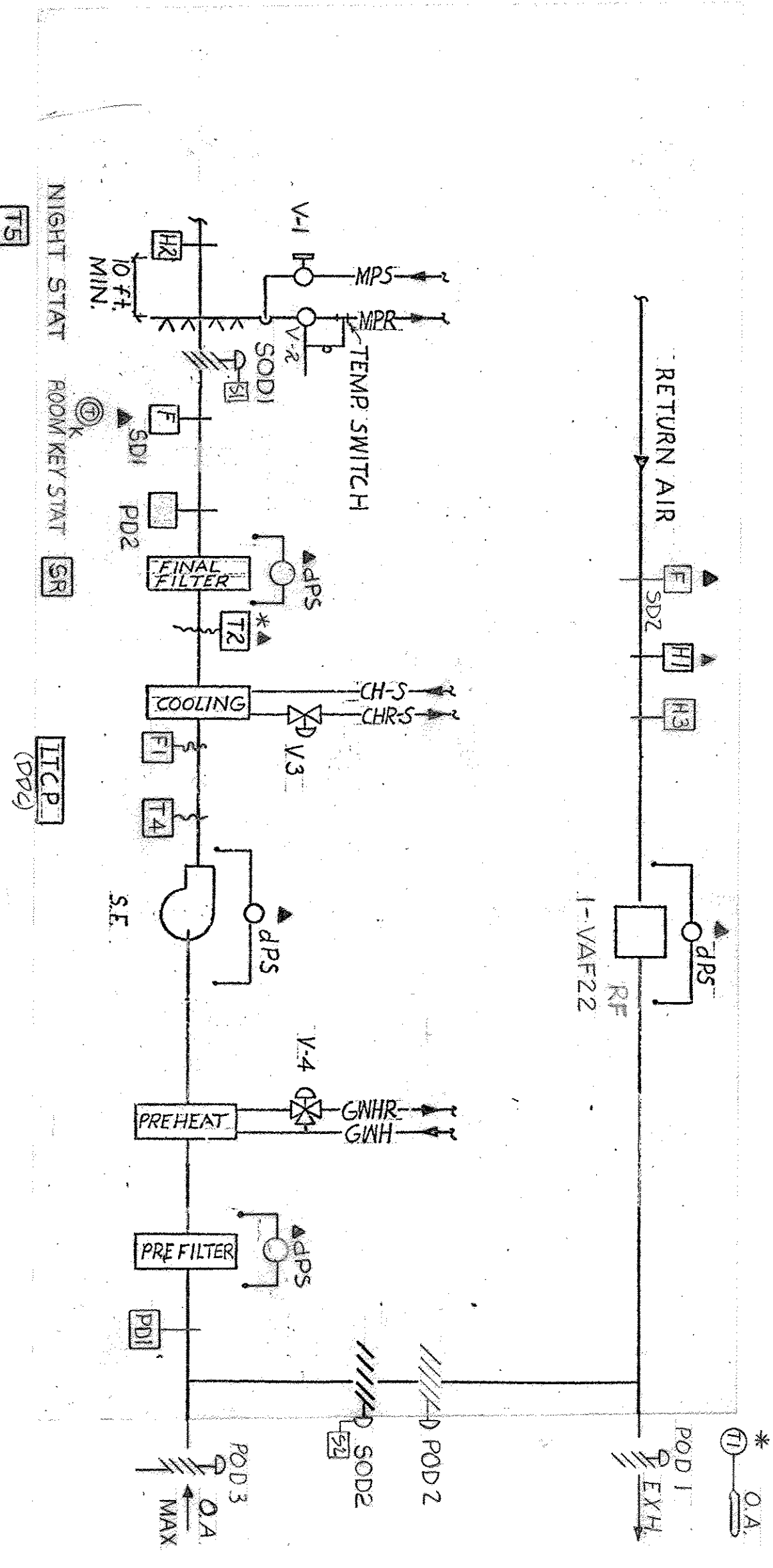
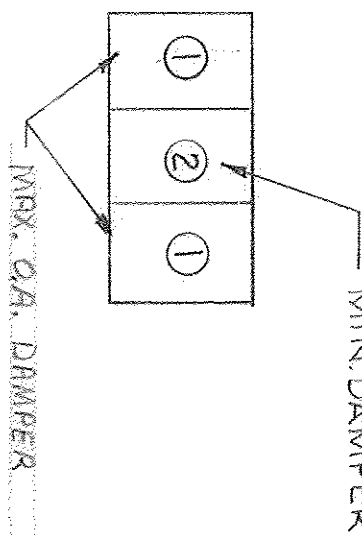
- O.A. THERMOSTAT T1 SHALL CLOSE ON-OFF TWO-WAY CONTROL VALVE V-1 WHEN OUTSIDE AIR RISES ABOVE 70°F., AND OPEN VALVE V-1 WHEN OUTSIDE AIR DROPS BELOW 70°F.
- DUCT HUMIDITY SENSOR H1 SHALL MODULATE VALVE V2 TO MAINTAIN THE DESIRED RELATIVE HUMIDITY (30% RH) SUBJECT TO ITS SUPPLY FAN IS OFF. VALVE V2 SHALL BE INTERLOCKED WITH TEMPERATURE SWITCH TO KEEP HUMIDIFIER OFF UNTIL CONDENSATE APPROACHES STEAM TEMPERATURE.
- V-1 AND V-2 ARE TYPICAL FOR 2 HUMIDIFIERS WHERE INDICATED FOR EACH UNIT. HUMIDIFIERS SHALL OPERATE IN UNISON.

SMOKE CONTROL

- WHEN SMOKE IS SENSED AT S01 OR S02, SF AND RF STOP. P003, P006, P001, S001, AND S002 CLOSE. P002 IS OPEN.
- TWO S02 ARE REQUIRED FOR 1-ACT 19, 23, 27, 28. WHEN SMOKE IS SENSED AT EITHER SMOKE DETECTOR, FANS STOP AND DAMPERS CLOSE (SEE FLOOR PLANS FOR LOCATION).

OUTDOOR AIR DAWPER SIZES

AC#	①	②
15	(2) 12 X 24	24 X 24
16	(2) 14 X 24	26 X 24
19	(2) 16 X 24	22 X 24
20	(2) 14 X 24	26 X 24
21	(2) 24 X 30	24 X 30
23	(2) 18 X 24	24 X 24
24	(2) 14 X 24	26 X 24
25	(2) 28 X 24	16 X 24
27	(2) 22 X 24	16 X 24
28	(2) 22 X 24	16 X 24



MEDIUM PRESSURE, CONSTANT VOLUME, RETURN AIR SYSTEM  
1-ACT2 (LAB).

OPERATING SEQUENCE

- SYSTEM OPERATION IS STARTED AND STOPPED FROM THE ECC. COMMANDS FROM ECC ARE ALL VIA DDC PANEL.
- DURING OPERATION WHEN OA AT T-1 IS BELOW 68°F., T-2 MODULATES V-4, THEN P001, P002 AND P003 AND T-2 MODULATES V-3, ALL IN SEQUENCE, ON TEMPERATURE RISE TO MAINTAIN 54°F. PREHEAT FREEZESTAT T-4 OVERRIDES T-2 TO LIMIT MIXED AIR TO 40°F. MINIMUM. (SEE SUPPLY AIR TEMPERATURE RESET BELOW.)
- DURING OPERATION WHEN OA AT T-1 IS BELOW 68°F., T-1 CLOSES P001 AND P003 TO MINIMUM POSITION AND T-2 MODULATES V-3 TO MAINTAIN 54°F. T-1 CLOSES V-4 TO COIL.

STARTING AND STOPPING

- WHEN STARTED, S001 AND S002 OPEN, P001 AND P003 OPEN TO MINIMUM POSITION, P002 REMAINS OPEN. WHEN S001 AND S002 OPEN, END SWITCHES S1 AND S2 ARE ENGAGED, SF AND RF START. WHEN STOPPED, SF AND RF STOP, P001 AND P003 CLOSE, AND AFTER 2-MINUTE DELAY (ADJUSTABLE 0-5 MINUTES), S001 AND S002 CLOSE, P002 REMAINS OPEN.
- WHEN SYSTEM OPERATION IS STARTED, PRESSURE SWITCH P01 STOPS SUPPLY FAN SHOULD MIXING PLENUM PRESSURE FALL BELOW MINUS 2" W.G. PRESSURE SWITCH P02 STOPS SF SHOULD PRESSURE RISE ABOVE 4" W.G.
- ELECTRIC FREEZESTAT F1 STOPS SF WHENEVER TEMPERATURE IS BELOW 36°F.

HUMIDITY CONTROL

- O.A. THERMOSTAT T1 SHALL CLOSE ON-OFF TWO-WAY CONTROL VALVE V-1 WHEN OUTSIDE AIR RISES ABOVE 70°F., AND OPEN VALVE V-1 WHEN OUTSIDE AIR DROPS BELOW 70°F.
- DUCT HUMIDITY SENSOR H1 SHALL MODULATE VALVE V2 TO MAINTAIN THE DESIRED RELATIVE HUMIDITY (30% RH) SUBJECT TO ITS SUPPLY FAN IS OFF. VALVE V2 SHALL BE INTERLOCKED WITH TEMPERATURE SWITCH TO KEEP HUMIDIFIER OFF UNTIL CONDENSATE APPROACHES STEAM TEMPERATURE.

SMOKE CONTROL

- WHEN SMOKE IS SENSED AT S01 OR S02, SF AND RF STOP. P001, P003, S001, AND S002 ALL CLOSE. P002 IS OPEN.

OCCUPIED-UNOCCUPIED MODES

- SYSTEM MODE IS CONTROLLED BY ECC PROGRAM TIMER AS FOLLOWS: ON OCCUPIED MODE, SYSTEM OPERATES AS INDICATED ABOVE. ON UNOCCUPIED MODE, SYSTEM IS STOPPED AND WHEN O.A. AT T-1 IS BELOW 50°F., NIGHT STAT T-5 CYCLES SF AND RF WITH P003 OPEN TO MINIMUM AND S001, S002 AND P002 OPEN TO MAINTAIN 72°F.
- OCCUPIED MODE IS TO BE DETERMINED.

SUPPLY AIR TEMPERATURE RESET (OCCUPIED CYCLE)

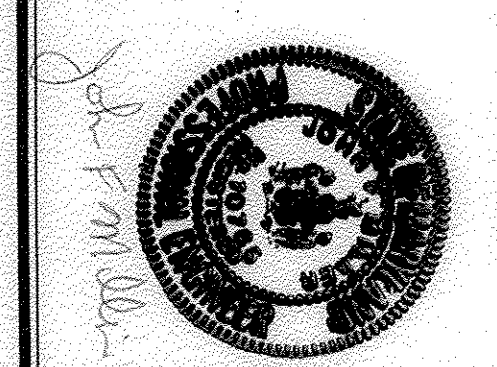
- KEY ROWSIST OR RETURN AIR HUMIDISTAT H-2, SET AT 60% RH WITH GREATEST COOLING DEGREE T-2 AND T-3 TO MINIMUM TEMPERATURE REQUIRED THROUGH SELECTOR RELAY SR. V-2 SHALL BE RESET INVERSELY AS T-3 IS RESET. V-2 SHALL BE 60% WHEN T-3 IS 65°F.
- KEY ZONES ARE INDICATED ON DRAWINGS.

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

Revisions

Revisions	Date
AS BUILT	6-7-94

RECORD DRAWING  
CORRECTED ON BASIS OF DATA  
FURNISHED BY THE RESIDENT ENGINEER



RTKL/CSD/HENRY ADAMS (L.V.)  
ARCHITECTS AND ENGINEERS  
400 E. PRATT STREET  
BALTIMORE, MD 21202

Approved Project Director: *[Signature]*

Scale: NONE

Location: VAMC - BALTIMORE, MD.

Drawing No: 1H92

Project Title: 324 - BED REPLACEMENT HOSPITAL - PHASE II

Date: 9/1/88

Project No: 511-001D

Dwg. No: 0123

Veterans Administration

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