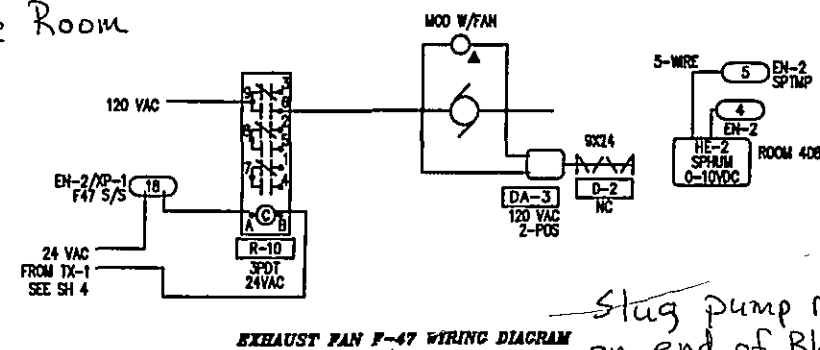
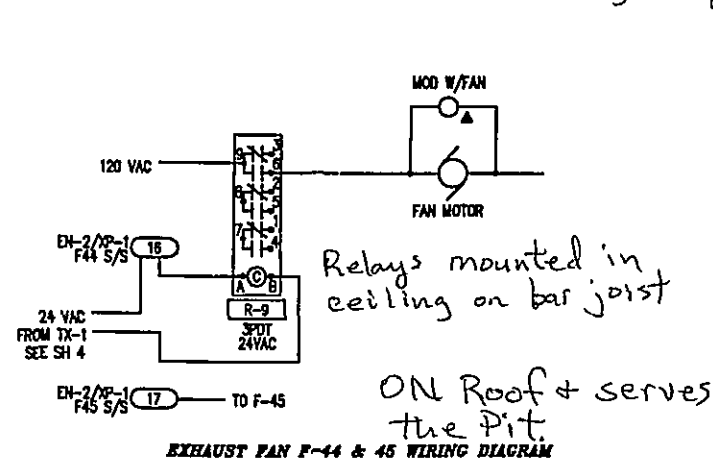
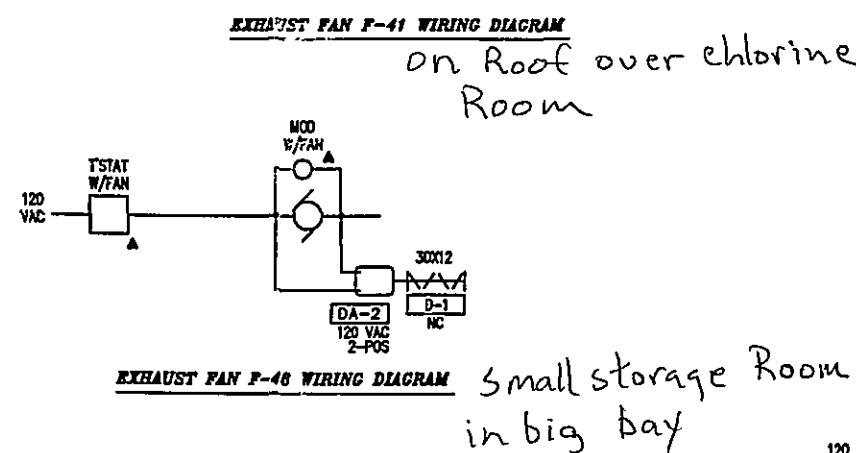
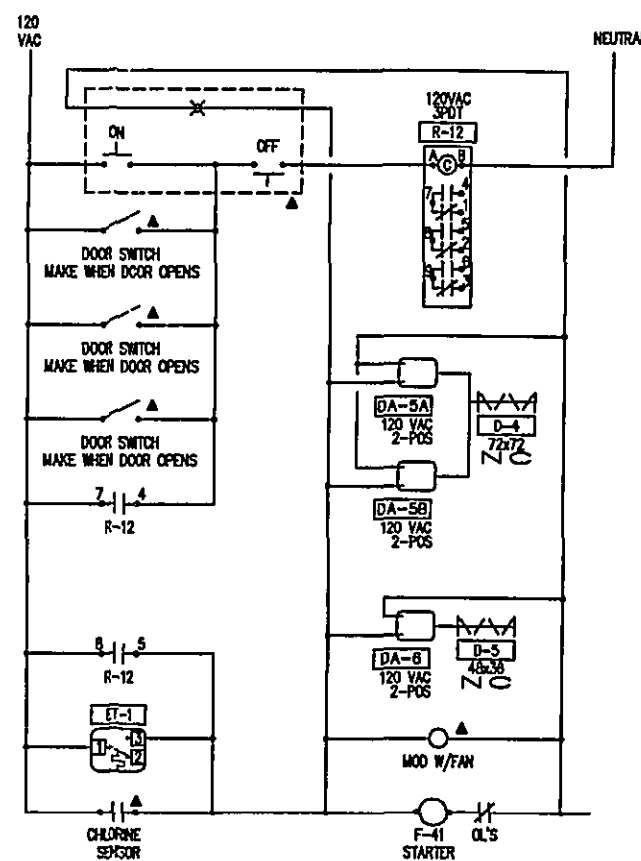
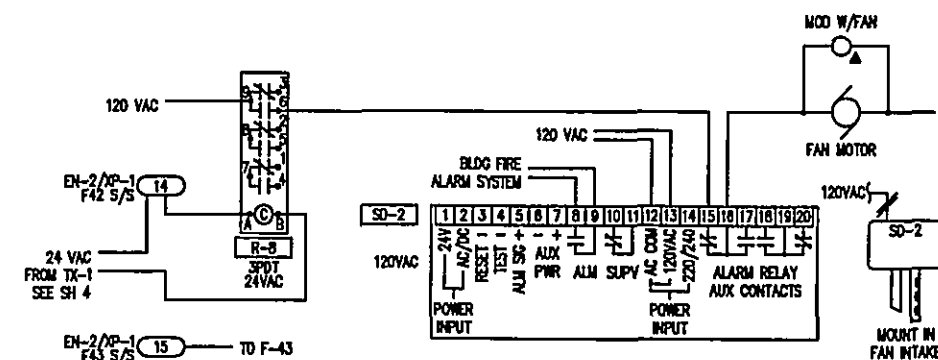
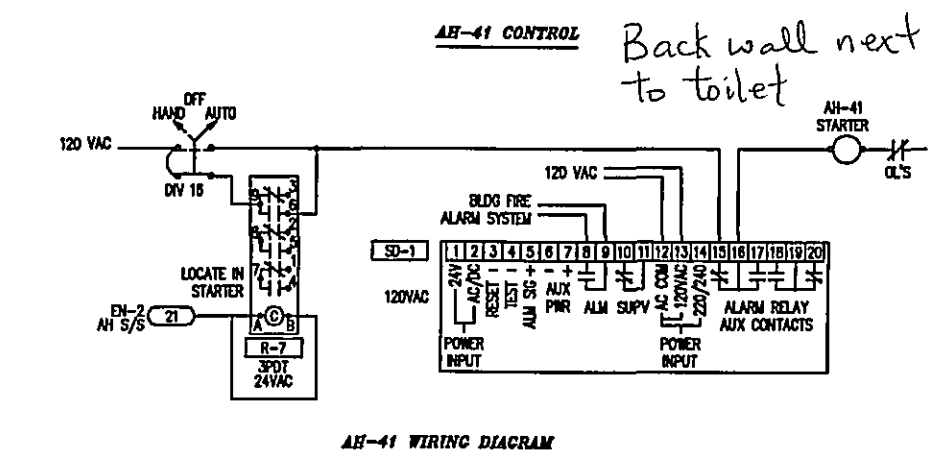
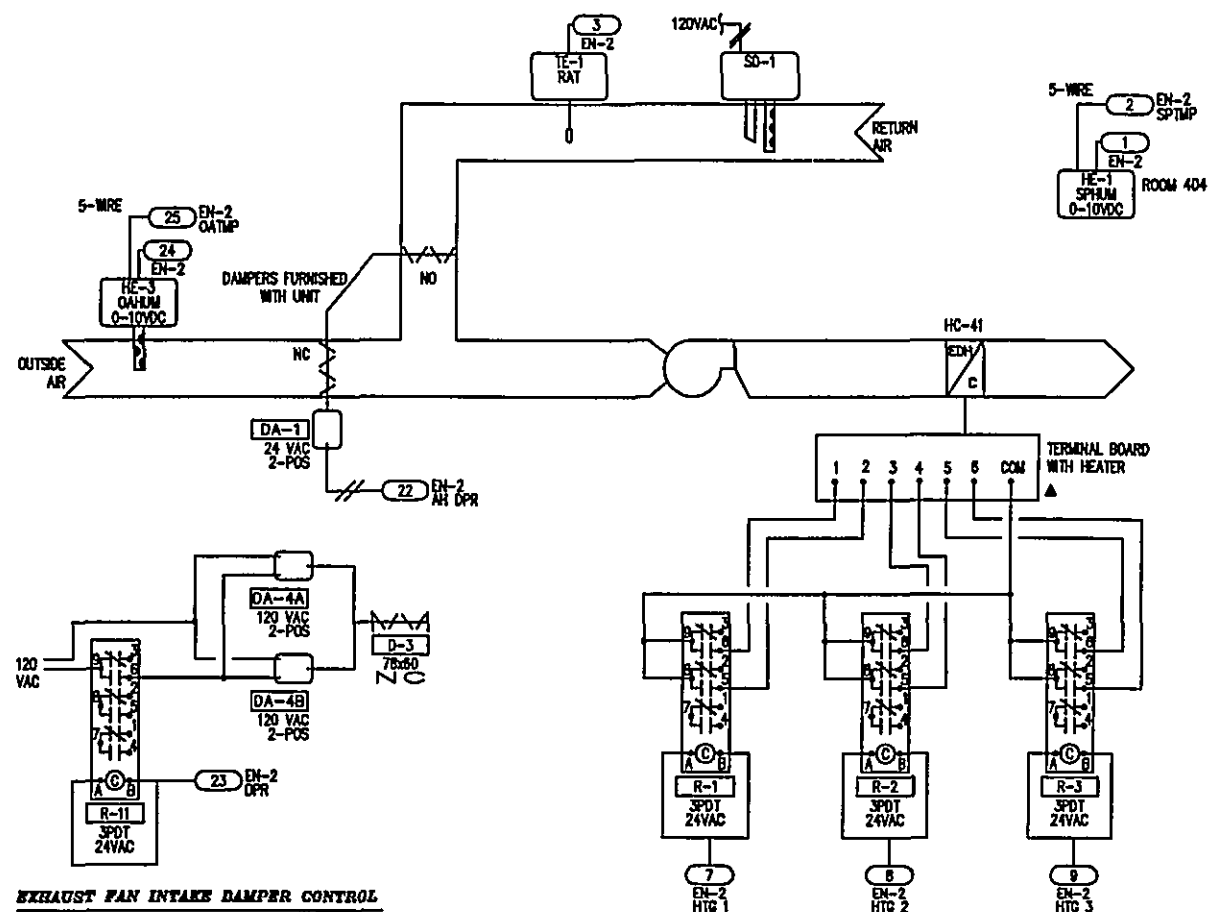




FIELD MATERIAL			
DEVICE TAG	QTY	CODE NUMBER	DESCRIPTION
D-1-D-5	5	—	SEE DAMPER SCHEDULE
DA-1	1	AF24	ELEC ACTUATOR-BELTND
DA-2-DA-3, DA-6, DA-4A, DA-4B-DA-5A, DA-5B	7	AF120	ELEC ACTUATOR-BELTND
ET-1	1	TE6S-18C	LINE VOLTAGE THERMOSTAT
HE-1-HE-2	2	HE-6300-2	TRANS RH/TEMP/WALL 0/100%
HE-3	1	HE-6310-2	TRANS RH/TEMP/WALL 0/100%
R-1	1	PD-109-21	RELAY, PLUG IN 3PDT
R-2-R-3, R-7	3	BZ-1000-11	UTILITY ENCLOSURE
R-8-R-11	3	PD-101-35	RELAY SOCKET, 11PIN BLADE
R-12	1	PD-109-21	RELAY, PLUG IN 3PDT
SD-1	1	PD-101-35	RELAY SOCKET, 11PIN BLADE
SD-2	1	PD-101-35	RELAY SOCKET, 11PIN BLADE
TE-1	1	TE-6311P-1	TEMP SENSOR, 1000 OHM, NI

SEQUENCE OF OPERATION

AH-41 CONTROL:

RETURN AIR THERMOSTAT TE-1 WILL CONTROL THRU THE DX-9100 TO START THE AH FAN AND ENERGIZE THE FIRST STAGE OF ELECTRIC HEAT (HC-41) WHEN TEMPERATURE FALLS BELOW SETPOINT. ON CONTINUED FALL IN TEMPERATURE BELOW SETPOINT HEATING STAGES 2 & 3 WILL BE ENERGIZED IN SEQUENCE. THE OUTSIDE AIR DAMPER WILL BE CLOSED. ON A RISE IN SPACE TEMPERATURE ABOVE HE-1 SETPOINT, AND IF THE OUTSIDE AIR TEMPERATURE AS SENSED THRU HE-3 IS LESS THAN THE SPACE TEMPERATURE HE-1, THEN AH FAN AND EXH FANS F-44 & 45 WILL BE ENERGIZED. THE AH UNIT OUTSIDE AIR DAMPER WILL OPEN. ON A CONTINUED RISE IN SPACE TEMPERATURE THE AH FAN AND EXH FANS F-44 & 45 WILL BE DEENERGIZED AND THE AH UNIT OUTSIDE AIR DAMPER WILL CLOSE. THEN EXH FAN F-42 WILL BE ENERGIZED AND EXH FAN INTAKE DAMPER THRU R-11 WILL OPEN. ON A FURTHER INCREASE IN SPACE TEMPERATURE EXH FAN F-43 WILL BE ENERGIZED.

IF SPACE HUMIDITY EXCEEDS SETPOINT (HE-1), AND IF THE ENTHALPY OF THE OUTSIDE AIR AS SENSED THRU HE-3 IS LESS THAN THE INDOOR ENTHALPY, THEN AH UNIT AND EXH FAN CONTROL IS THE SAME AS FOR THE TEMPERATURE CONTROL AS OUTLINED ABOVE.

F-46 CONTROL:

IF THE SPACE TEMPERATURE RISES ABOVE SETPOINT OF THE T-STAT (FURNISHED WITH FAN), THEN THE EXH FAN WILL BE ENERGIZED, ITS MOTOR OPERATED DAMPER WILL OPEN (FURNISHED WITH FAN), AND THE INTAKE DAMPER WILL OPEN THRU DA-2.

F-47 CONTROL:

IF THE SPACE TEMPERATURE RISES ABOVE HE-2 SETPOINT OR IF THE SPACE HUMIDITY RISES ABOVE SETPOINT AND THE INDOOR ENTHALPY (HE-3) IS LESS THAN THE OUTSIDE AIR ENTHALPY (HE-1), THEN THE EXH FAN WILL BE ENERGIZED, ITS MOTOR OPERATED DAMPER WILL OPEN (FURNISHED WITH FAN), AND THE INTAKE DAMPER WILL OPEN THRU DA-3.

F-41 CONTROL:

WHEN EITHER THE MANUAL START SWITCH IS INDEXED, OR THE DOOR SWITCHES ARE CLOSED WHEN THE DOORS ARE OPENED, OR WHEN T-STAT ET-1 EXCEEDS SETPOINT, OR WHEN THE CHLORINE SENSOR CONTACTS CLOSE, THE EXH FAN WILL START, ITS MOTOR OPERATED DAMPER WILL OPEN, AND THE TWO MOD'S AT THE INTAKE LOUVERS WILL OPEN.

SAFETIES:

DUCT SMOKE DETECTOR WILL DEENERGIZE ITS ASSOCIATED FAN AND CLOSE THEIR ASSOCIATED DAMPERS AND SIGNAL THE BUILDING FIRE ALARM SYSTEM IF PRODUCTS OF COMBUSTION ARE SENSED IN THE FAN'S INTAKE AIR.

DRAWING TITLE		AH-41 CONTROL		POST TREATMENT BUILDING	
PROJECT		ROANOKE COUNTY WATER TREATMENT FACILITY		JOHNSON CONTROLS	
REFERENCE DRAWING		NO.		REVISION-LOCATION	
SALES ENGINEER		RC		BY GA DATE 04/25/81	
ECE		RC		APPROVED	
DATE		04/25/81		DATE	
CONTRACT NUMBER		95066-0013		DRAWING NUMBER	
3 OF 14		FILE: 2		DATE BY	