

CHLORINE CYLINDER STORAGE ROOM

CHLORINATOR ROOM

EQUIPMENT VESTIBULE

SUMMER VENTILATION SEQUENCE

MANUAL OPERATION
ROOF EXHAUST FANS EF-15, 16 AND 17 CAN OPERATE INDEPENDENTLY WITH MANUAL START BUTTONS.

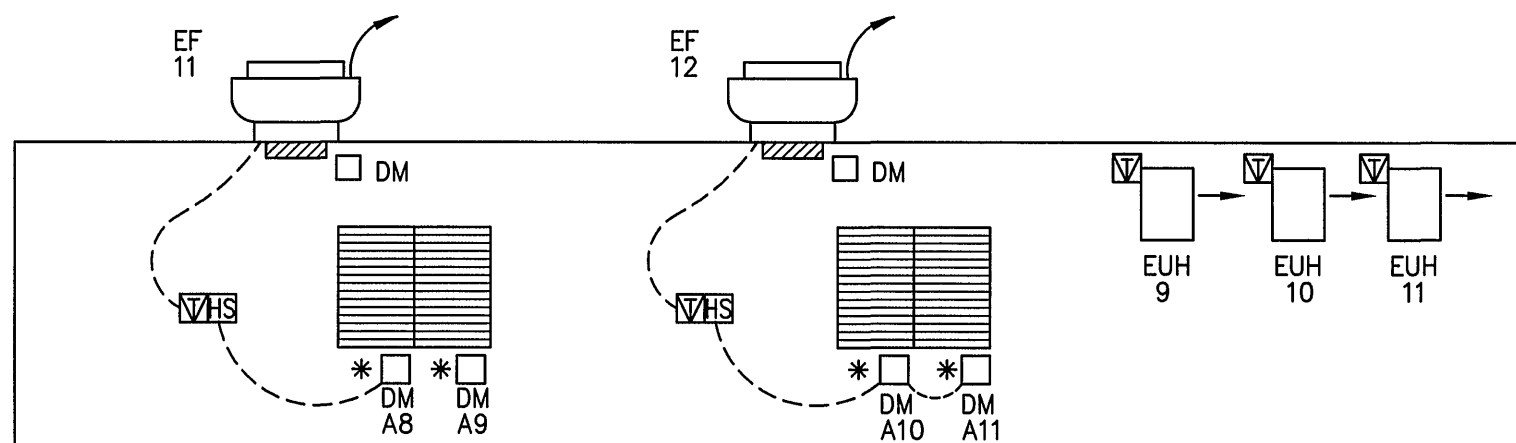
AUTOMATIC OPERATION
EACH ROOF EXHAUST FAN HAS A SEPARATE WALL THERMOSTAT. AN 85° F (ADJUSTABLE) SETTING ENERGIZES EACH EXHAUST FAN AND OPENS OUTDOOR AIR INTAKE DAMPER FOR MAKEUP AIR.
FAN EF-15 IS INTERLOCKED WITH DM-A2
FAN EF-16 IS INTERLOCKED WITH DM-A3
FAN EF-17 IS INTERLOCKED WITH DM-A4

EMERGENCY VENTILATION SEQUENCE

METHOD (A)
IF LEAK DETECTOR 1 OR 2 HAS LEAK INDICATION, EXHAUST FANS EF-15, 16 AND 17 ARE AUTOMATICALLY ENERGIZED AND THEIR RESPECTIVE OUTDOOR AIR DAMPERS OPEN FOR MAKEUP AIR. THE TOTAL EXHAUST VENTILATION IS BASED ON A MINIMUM OF 60 AIR CHANGES PER HOUR AND PLACES THE ROOM UNDER A NEGATIVE PRESSURE.

METHOD (B)
THE EMERGENCY VENTILATION SEQUENCE OF METHOD (A) IS ALSO INITIATED WITH THE MANUAL START SWITCH HS-2 LOCATED IN THE CHLORINATOR ROOM.

WINTER HEATING
ELECTRIC UNIT HEATERS EUH-1, 2 AND 3 EACH HAVE ADJUSTABLE INTEGRAL THERMOSTATS FOR AUTOMATIC INDEPENDENT OPERATION TO MAINTAIN A 60° F ROOM TEMPERATURE.



CHEMICAL STORAGE TANK ROOM

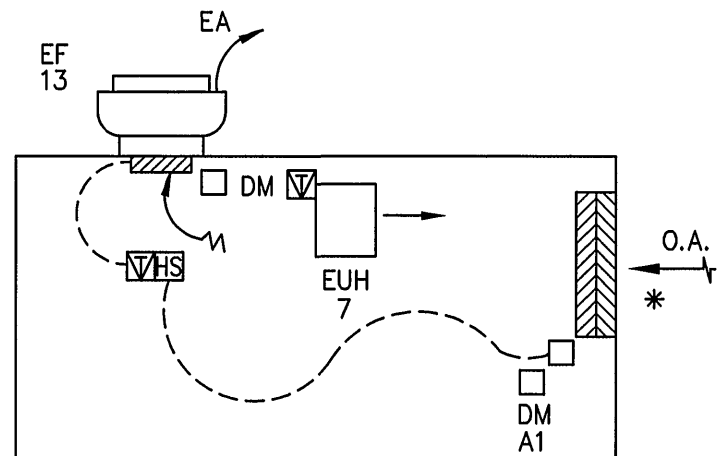
SUMMER VENTILATION SEQUENCE

AUTOMATIC OPERATION
ROOF EXHAUST FANS EF-11 & EF-12 HAVE SEPARATE WALL THERMOSTATS FOR INDEPENDENT OPERATION AUTOMATICALLY PLUS MANUAL START SWITCHES. AN 85° F (ADJUSTABLE) SETTING ENERGIZES EACH FAN AND OPENS THE OUTDOOR AIR INTAKE DAMPERS FOR MAKEUP AIR.
FAN EF-11 IS INTERLOCKED WITH DM-A10 & A11.
FAN EF-12 IS INTERLOCKED WITH DM-A8 & A9.

MANUAL OPERATION
EACH FAN CAN BE ENERGIZED BY A SEPARATE HAND SWITCH ON THE THERMOSTAT.

VENTILATION IS BASED ON 60 AIR CHANGES PER HOUR WITH BOTH FANS OPERATING.

WINTER HEATING
ELECTRIC UNIT HEATERS EUH-9, 10 AND 11 HAVE SEPARATE ADJUSTABLE INTEGRAL THERMOSTATS FOR INDEPENDENT OPERATION TO MAINTAIN 60° F ROOM TEMPERATURE.
A LEAK DETECTOR ACTIVATES AN ALARM.



ELECTRICAL ROOM

SUMMER VENTILATION SEQUENCE

AUTOMATIC OPERATION
ROOF EXHAUST FAN EF-13 IS ENERGIZED BY WALL THERMOSTAT ADJUSTABLE SETTING OF 85° F THAT ALSO OPENS OUTDOOR MAKEUP AIR DAMPER DM-A1 THROUGH INTERLOCKING.

MANUAL OPERATION
THE FAN CAN BE ENERGIZED BY A SEPARATE HAND SWITCH ON THE THERMOSTAT.

WINTER HEATING
ELECTRIC UNIT HEATER EUH-7 HAS AN ADJUSTABLE INTEGRAL THERMOSTAT TO AUTOMATICALLY MAINTAIN 60° F ROOM TEMPERATURE.

FUNCTIONAL DESCRIPTION OF OPERATION – BUILDING 1

SUMMER VENTILATION SEQUENCE

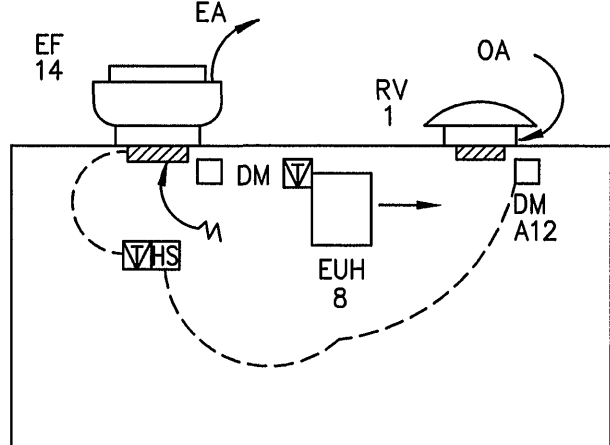
AUTOMATIC OPERATION
ROOF EXHAUST FAN EF-10 IS ENERGIZED BY WALL THERMOSTAT SETTING OF 85° F (ADJUSTABLE) THAT OPENS OUTDOOR MAKEUP AIR DAMPER DM-A13 & ENERGIZES SUPPLY FAN SF-25. *

THE ROOM WILL BE UNDER A NEGATIVE PRESSURE AND WILL HAVE A MINIMUM OF 60 AIR CHANGES PER HOUR.

MANUAL OPERATION
THE SEQUENCE OF AUTOMATIC OPERATION WILL ALSO BE INITIATED WITH A MANUAL START SWITCH HS-1 (FOR EF 10) LOCATED IN THE VESTIBULE.

EMERGENCY VENTILATION OPERATION
UPON LEAK DETECTOR 3 INDICATION OF LEAKAGE, THE VENTILATION SEQUENCE UNDER AUTOMATIC OPERATION IS INITIATED.

WINTER HEATING
ELECTRIC UNIT HEATER EUH-5 HAS AN ADJUSTABLE INTEGRAL THERMOSTAT TO MAINTAIN A 60° F ROOM TEMPERATURE.
* SUPPLY FAN SF-25 TO HAVE SHOP FABRICATED FILTER BOX AT FAN INLET EQUIPPED WITH CLEANABLE PERMANENT AIR FILTER ELEMENTS.



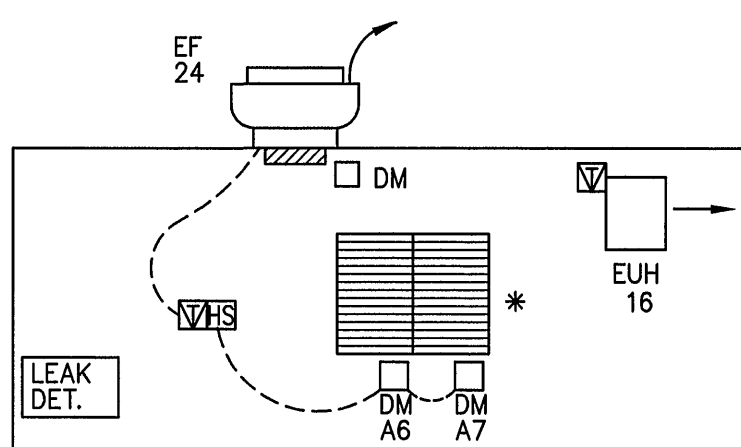
CARBON ROOM

SUMMER VENTILATION SEQUENCE

AUTOMATIC OPERATION
ROOF EXHAUST FAN EF-14 IS ENERGIZED BY WALL THERMOSTAT ADJUSTABLE SETTING OF 85° F THAT ALSO OPENS OUTDOOR MAKEUP AIR DAMPER DM-A12 THROUGH INTERLOCKING.

MANUAL OPERATION
THE FAN CAN BE ENERGIZED BY A SEPARATE HAND SWITCH ON THE THERMOSTAT.

WINTER HEATING
ELECTRIC UNIT HEATER EUH-8 HAS AN ADJUSTABLE INTEGRAL THERMOSTAT TO AUTOMATICALLY MAINTAIN 60° F ROOM TEMPERATURE.
CARBON ROOM WILL HAVE ELECTRICAL DEVICES SUITABLE FOR CLASS II GROUP F HAZARDOUS CLASSIFICATION WITH A NEMA 9 ENCLOSURE.



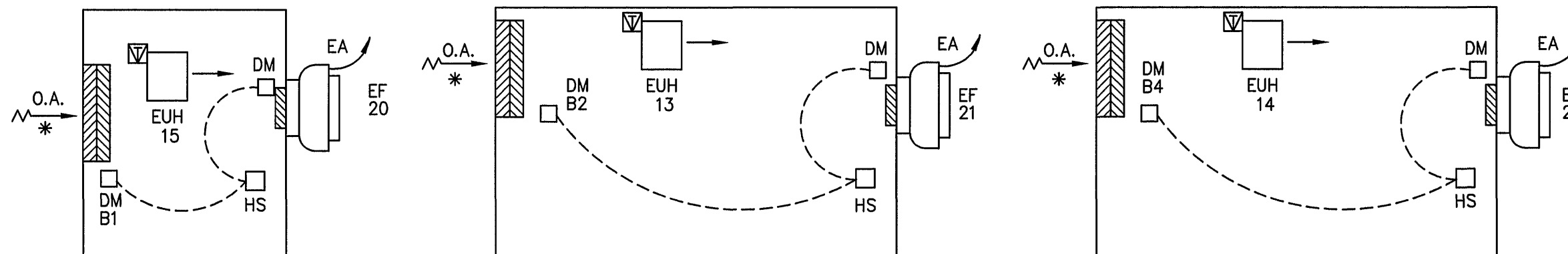
HYDROFLUOSILICIC ACID STORAGE ROOM

SUMMER VENTILATION SEQUENCE

AUTOMATIC OPERATION
ROOF EXHAUST FAN EF-24 HAS A REMOTE WALL THERMOSTAT FOR AUTOMATIC OPERATION PLUS A MANUAL START SWITCH. AN 85° F (ADJUSTABLE) SETTING OPENS THE OUTDOOR AIR INTAKE DAMPERS DM-A6 & DM-A7 FOR MAKEUP AIR THRU INTERLOCKING.

MANUAL OPERATION
FAN CAN BE ENERGIZED BY A SEPARATE HAND SWITCH ON THE THERMOSTAT.
VENTILATION IS BASED ON 60 AIR CHANGES PER HOUR.

WINTER HEATING
ELECTRIC UNIT HEATER EUH-16 HAS AN ADJUSTABLE INTEGRAL THERMOSTAT FOR AUTOMATIC OPERATION TO MAINTAIN 60° F ROOM TEMPERATURE.
A ROOM LEAK DETECTOR ACTIVATES AN ALARM.



WASHWATER RATE CONTROLLER VAULT A

FLASH MIX-BLDG.1

FLASH MIX-BLDG.2

ON SITE BUILDINGS-HVAC SCHEMATICS

WASH WATER RATE CONTROLLER VAULT "A" FLOOR PLAN

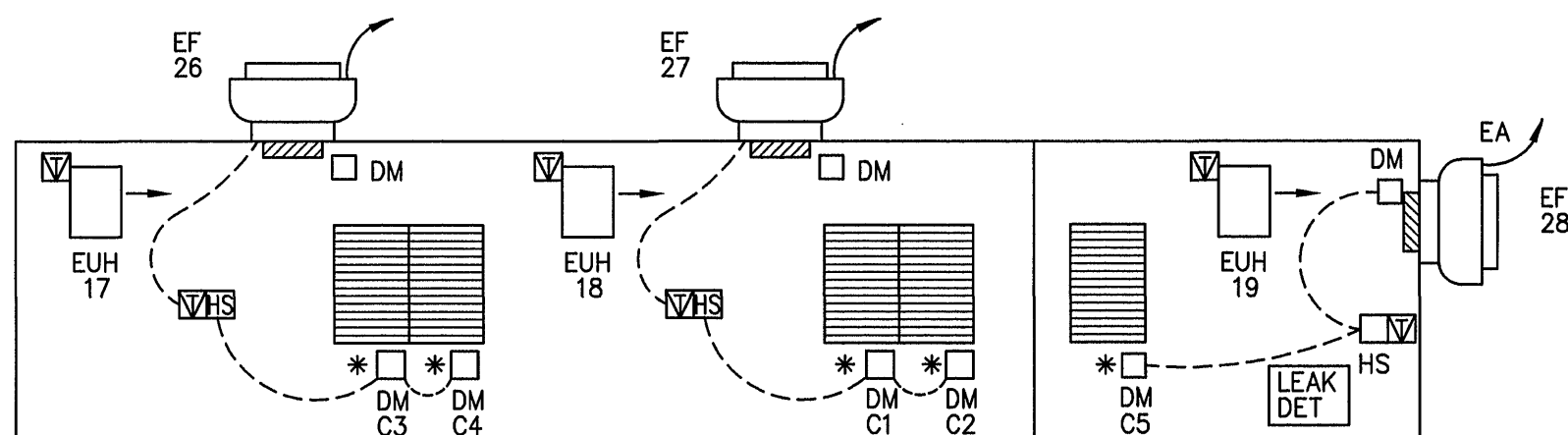
SCALE OF DRAWING 3/16" = 1'-0"
5' 4' 3' 2' 1' 0' 5' 10'

FLASH MIX BLD. 1 FLOOR PLAN

SCALE OF DRAWING 3/16" = 1'-0"
5' 4' 3' 2' 1' 0' 5' 10'

FLASH MIX BLD. 2 FLOOR PLAN

SCALE OF DRAWING 3/16" = 1'-0"
5' 4' 3' 2' 1' 0' 5' 10'



CHEMICAL STORAGE TANK ROOM

AMMONIA ROOM

CHEMICAL BUILDING 2

SUMMER VENTILATION SEQUENCE

AUTOMATIC OPERATION
EXHAUST FANS EF-26, EF-27 & EF-28 HAVE SEPARATE WALL THERMOSTATS FOR INDEPENDENT OPERATION AUTOMATICALLY PLUS MANUAL START SWITCHES. AN 85° F (ADJUSTABLE) SETTING ENERGIZES EACH FAN AND OPENS THE OUTDOOR AIR INTAKE DAMPERS FOR MAKEUP AIR.
FAN EF-26 IS INTERLOCKED WITH DM-C3 & DM-C4
FAN EF-27 IS INTERLOCKED WITH DM-C1 & DM-C2
FAN EF-28 IS INTERLOCKED WITH DM-C5

MANUAL OPERATION
EACH FAN CAN BE ENERGIZED BY A SEPARATE HAND SWITCH ON THE THERMOSTAT.
VENTILATION IS BASED ON 60 AIR CHANGES PER HOUR.

WINTER HEATING
ELECTRIC UNIT HEATERS HAVE SEPARATE ADJUSTABLE INTEGRAL THERMOSTATS FOR INDEPENDENT OPERATION TO MAINTAIN 60° F ROOM TEMPERATURE.
A LEAK DETECTOR ACTIVATES AN ALARM.

FUNCTIONAL DESCRIPTION OF OPERATION – BUILDING 2

DRAWING OF RECORD

DATE: SEP 30 1997

MATTERN & CRAIG
CONSULTING ENGINEERS • SURVEYORS
ROANOKE VIRGINIA

ALVORD, BURDICK & HOWSON
ENGINEERS CHICAGO

DESIGNED: S.C.

DRAWN: K.G.P.
H.F.F.
R.E.T.

CHECKED: S.C.



REV.	DATE	DESCRIPTION	BY	APP.

CARVINS COVE FILTER PLANT IMPROVEMENTS – PHASE I
ROANOKE, VIRGINIA

CHEMICAL BUILDINGS 1 AND 2 – HVAC SYSTEM
SCHEMATIC & DETAILS

DATE
APRIL 1992

COMM. NO.
9130

SHEET
M8