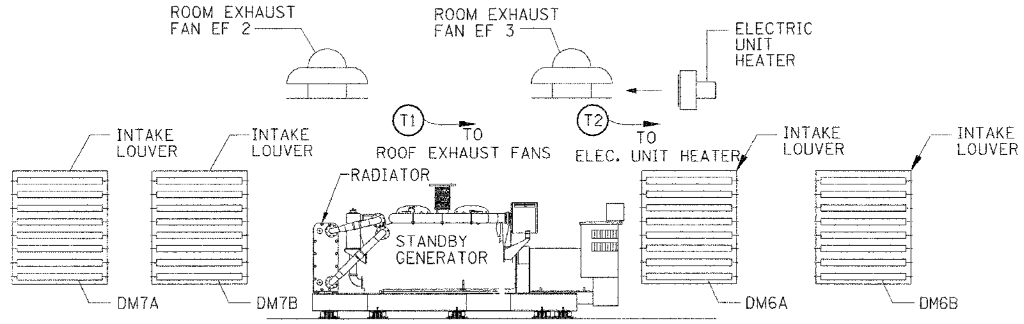
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	82-(1,2)T-17	ST. CLAIR	77	40
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



1. STANDBY GENERATOR SHALL BE INTERLOCKED WITH DM6A & DM6B. WHEN STANDBY GENERATOR IS ENERGIZED DM6A & DM6B SHALL OPEN. WHEN STANDBY GENERATOR IS DE-ENERGIZED DM6A & DM6B SHALL CLOSE.
2. ROOF EXHAUST FANS SHALL BE INTERLOCKED WITH DM7A AND DM7B AND ROOM THERMOSTAT T1. WHEN ROOM THERMOSTAT RISES ABOVE 85° F ROOF EXHAUST FANS SHALL RUN AND DM7A AND DM7B SHALL OPEN. WHEN ROOM THERMOSTAT DROPS BELOW 80° F ROOF EXHAUST FANS SHALL STOP AND DM7A AND DM7B SHALL CLOSE.
3. ROOF EXHAUST FANS SHALL BE INTERLOCKED WITH DM7A AND DM7B AND CARBON MONOXIDE DETECTOR CO. WHEN ROOM CARBON MONOXIDE CONCENTRATION RISES ABOVE THE CARBON MONOXIDE DETECTOR SETPOINT, ROOF EXHAUST FANS SHALL RUN AND DM7A AND DM7B SHALL OPEN. WHEN ROOM CARBON MONOXIDE CONCENTRATION DROPS BELOW THE DETECTOR SETPOINT, FANS SHALL STOP AND DM7A AND DM7B SHALL CLOSE.
4. ELECTRIC UNIT HEATER SHALL BE INTERLOCKED WITH ROOM THERMOSTAT T2 SET AT 45° F. ON A DROP IN ROOM TEMPERATURE BELOW 43° F ELECTRIC UNIT HEATER SHALL BE ENERGIZED AND ON A RISE IN ROOM TEMPERATURE ABOVE 47° F, ELECTRIC UNIT HEATER SHALL BE DE-ENERGIZED
5. PROVIDE EXHAUST FAN, EF 2 INTERLOCK WITH DAMPER DM7A
6. PROVIDE EXHAUST FAN, EF 3 INTERLOCK WITH DAMPER DM7B

GENERATOR ROOM CONTROLS

ELECTRICAL CONTROL ROOM HVAC

SEQUENCE OF OPERATIONS

AHU-1 ROOF TOP UNIT WILL PROVIDE HEATING, AIR CONDITIONING AND VENTILATION OF THE ELECTRICAL CONTROL ROOM.

THE AHU-1 SYSTEM HAS ON-OFF CYCLING FOR HEATING, COOLING AND VENTIALTION AS CONTROLLED BY BOTH OUTSIDE AIR TEMPERATURE SENSOR AND ROOM THERMOSTAT AS REQUIRED.

THE SYSTEM WILL HAVE AN ADJUSTABLE TEMPERATURE THERMOSTAT LOCATED IN THE ELECTRICAL CONTROL ROOM WHICH WILL MODULATE THE ROOF TOP HVAC UNIT ELECTRIC HEATER SECTION. THE ECONOMIZER MOTORS, AND CYCLE MULTIPLE STAGES OF DX COOLING IN SEQUENCE TO MAINTAIN THE DESIRED TEMPERATURE SETPOINT AS SHOWN IN THE HVAC SCHEDULE.

HVAC SCHEDULE

OUTDOOR AIR TEMPERATURE ° F	ROOM AIR TEMPERATURE ° F(ADJ.)
< 50° F	60° F WITH ELECTRIC HEATING
50° F TO 80° F	85° F WITH AHU-1 UNIT FAN
>85° F	80° F WITH DX COIL

THE SYSTEM IS TO HAVE A CONTRACTOR DESIGNED AND CUSTOM FABRICATED MAIN HVAC CONTROL PANEL WITH ALL REQUIRED FUNCTION CONTROLS FOR THE SYSTEM OPERATION PLUS VISUAL AND AUDIBLE ALARMS FOR ALL FUNCTIONS DEFINED IN THIS SEQUENCE OF OPERATION.

A MAIN HVAC CONTROL PANEL MOUNTED HAND-OFF-AUTO SWITCH WILL DETERMINE WHICH MODE THE SYSTEM WILL OPERATE IN. A SYSTEM ON/OFF SWITCH PLACES THE SYSTEM IN OPERATION.

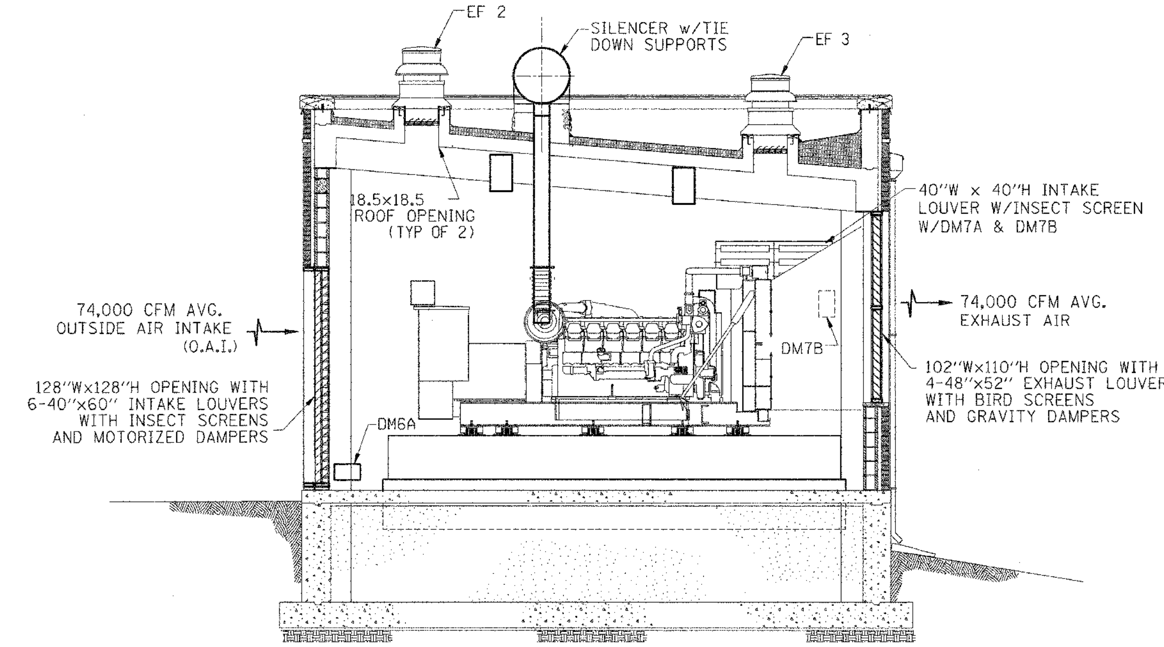
SYSTEM FUNCTIONS NOT PROVIDED BY ROOF TOP HVAC UNIT SUPPLIER MUST BE SUPPLEMENTED BY HVAC CONTROLS CONTRACTOR.

WHEN SYSTEM IS "OFF" OUTSIDE AIR MIXING, OUTSIDE AIR CLOSE-OFF, MINIMUM FRESH AIR AND RELIEF AIR DAMPERS CLOSE AND THE RETURN AIR DAMPERS OPEN.

WHEN AHU-1 THERMOSTAT IS SET"HAND", OUTSIDE AIR DAMPER OPENS TO 100%, RETURN AIR DAMPER OPENS TO 100%, AND ELECTRIC HEATING CYCLES ON TO MAINTAIN ROOM TEMPERATURE AT ° F(ADJ.).

WHEN AHU-1 THERMOSTAT IS SET"AUTO", OUTSIDE AIR DAMPER OPENS TO 20%, OUTSIDE AIR MIXING AND RELIEF AIR DAMPERS MODULATE. AND THERMOSTAT MAINTAINS ROOM TEMPERATURE BASED ON HVAC SCHEDULE.

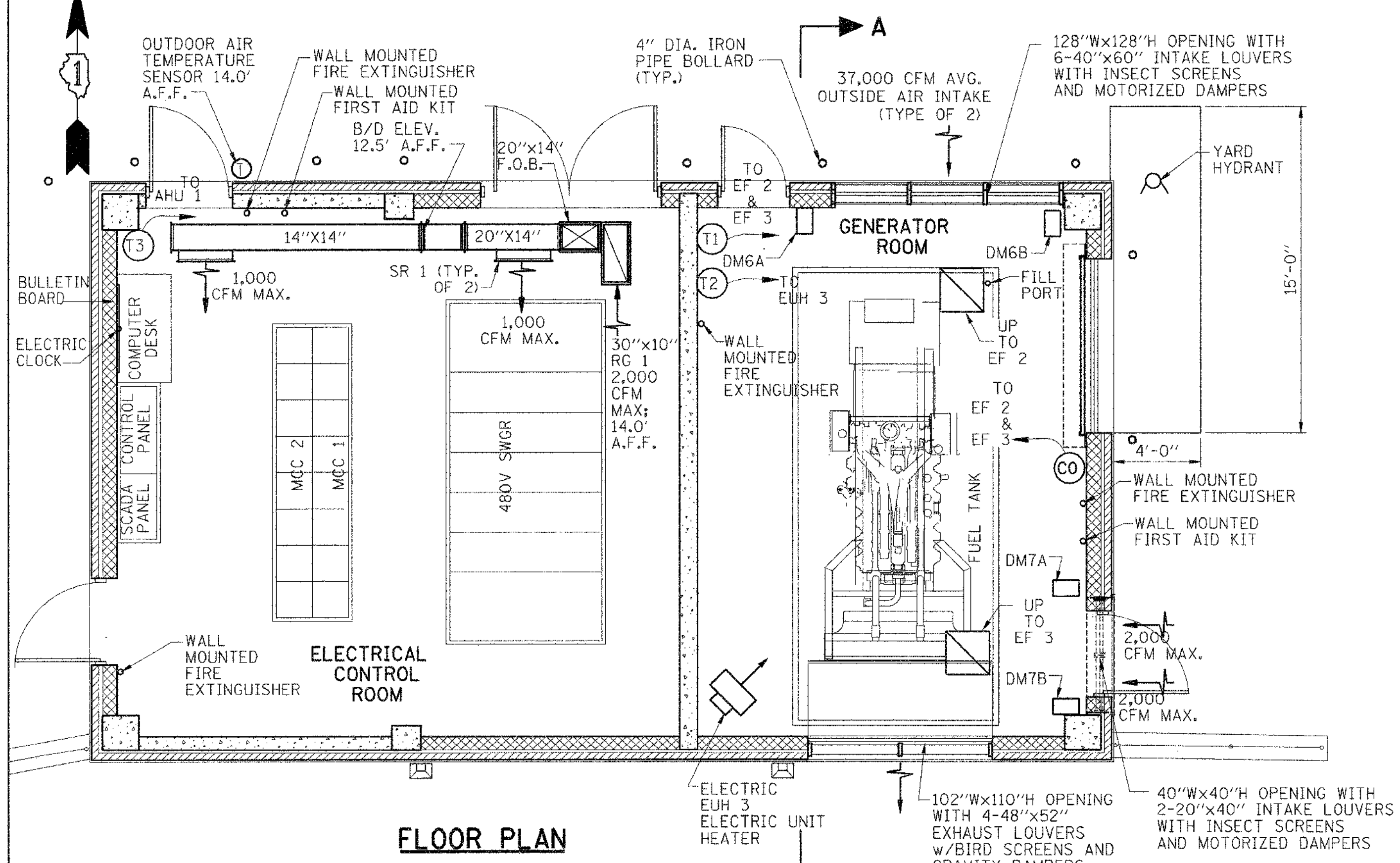
MANUAL VOLUME CONTROL DAMPERS VCD PROVIDED WITH ALL REGISTERS ARE TO BE USE FOR BALANCING THE INDIVIDUAL SUPPLY AIR REGISTERS.



SECTION A-A

NOTE:

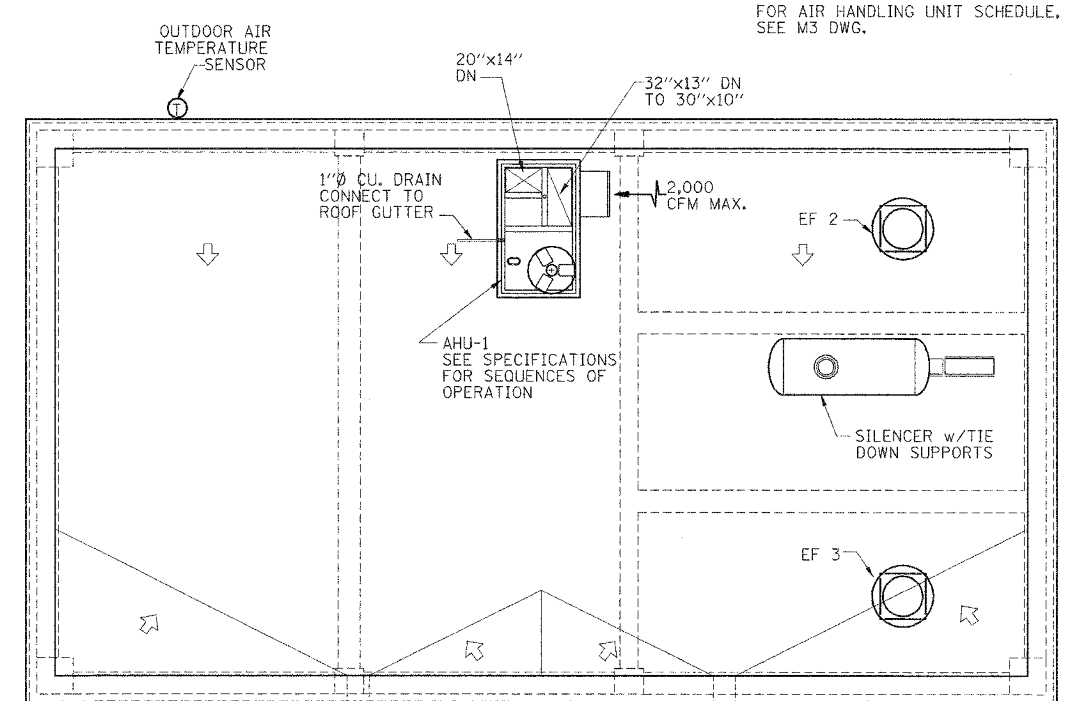
FOR AIR HANDLING UNIT SCHEDULE, SEE M3 DWG.



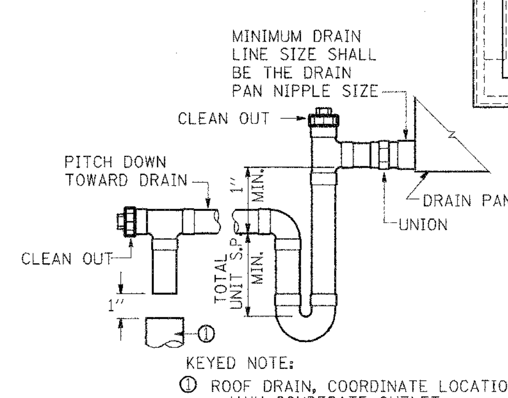
FLOOR PLAN

0' 2' 4' 8'

SCALE: 1"= 4'



ROOF PLAN



KEYED NOTE:

① ROOF DRAIN, COORDINATE LOCATION W/AHU CONDESATE OUTLET

TYPICAL CONDENSATE DRAIN DETAIL

NOT TO SCALE

M7

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

BOWMAN AVENUE PUMP STATION REHABILITATION

ELEC. CNTRL./GEN. BLDG. FLOOR & ROOF PLANS

SCALE: AS SHOWN
DRAWN BY: CM
DATE: 09-12-05
CHECKED BY: KC

PLOT DATE: *DATE-TIME*

ALVORD, BURDICK & HOWSON, L.L.C.
ENGINEERS CHICAGO

PLAN	BY	DATE
SURVEYED		
PLOTTED		
ALIGNMENT CHECKED		
R/L OF WAY CHECKED		
NOTE BOOK NO.		
CADD FILE NAME		