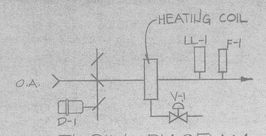
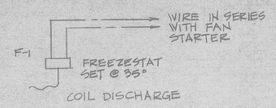
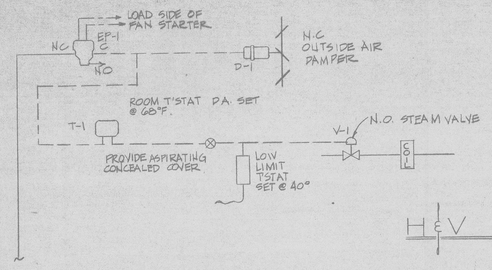


FLOW DIAGRAM





H&V UNIT CONTROL DIAGRAM

SEQUENCE OF OPERATION

WHEN THE UNIT FAN IS STARTED, EP-1 SHALL BE ENERGIZED, OUTSIDE AIR DAMPER D-1 SHALL OPEN FULLY, AND THE SYSTEM CONTROLS SHALL BE PLACED IN OPERATION. ROOM THERMOSTAT T-1 SHALL MODULATE PREHEAT COIL STEAM VALVE V-1 TO MAINTAIN THE SETTING OF T-1. LOW LIMIT THERMOSTAT LL-1, LOCATED IN THE COIL DISCHARGE, SHALL OPEN V-1 FULLY IF THE COIL DISCHARGE FALLS BELOW THE SETTING OF LL-1. FREEZESTAT F-1 SHALL STOP THE UNIT IF ITS SETTING IS REACHED AND THE O.A. DAMPER D-1 WILL CLOSE FULLY AND COIL STEAM VALVE V-1 WILL OPEN FULLY.

INTERLOCK EXHAUST FANS SUCH THAT:

EF-1 & 2 RUNS WHEN HV-1 OR 2 IS ENERGIZED
EF-4 & 5 RUNS WHEN HV-3 OR 4 IS ENERGIZED
EF-7 & 8 RUNS WHEN HV-5 OR 6 IS ENERGIZED

EXHAUST FANS #3, 6 & 9 ARE FOR SUMMER VENTILATION AND SHALL BE MANUALLY STARTED.

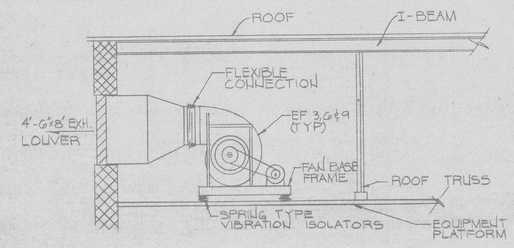
EQUIPMENT SCHEDULE

HEATING AND VENTILATING UNITS (HV-1, 2, 3, 4, 5 AND HV-6)
EACH UNIT SHALL HAVE A CAPACITY TO HEAT 2000 CFM FROM 0°F TO 80°F, 259 MBH WITH 274 LBS/HR OF STEAM AT 15 PSIG. FAN SHALL HAVE A CAPACITY TO CIRCULATE 3000 CFM AT 1" S.P.; MOTOR = 1½ HP, 208V./3Φ/60 HZ.; MAX O.V. = 1650 FPM

EXHAUST FANS (EF-1, EF-4 AND EF-7)
SHALL HAVE A CAPACITY OF 3000 CFM EACH AT 3/4" S.P.; MAX. O.V. = 1700 FPM; MOTOR = 1½ HP 208V./3Φ/60HZ. FAN SHALL BE SINGLE WIDTH SINGLE INLET, FORWARD CURVED CENTRIFUGAL EXHAUSTER.

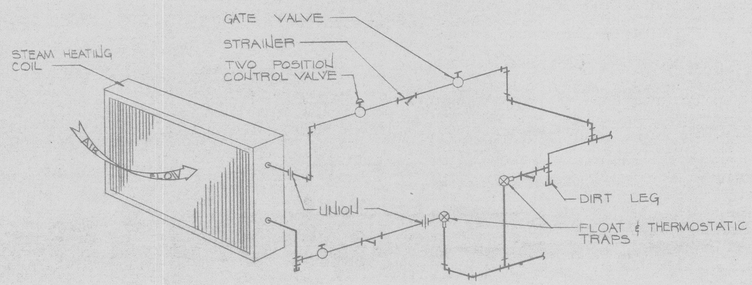
EXHAUST FANS (EF-2, EF-5 AND EF-8)
EACH FAN SHALL HAVE A CAPACITY OF 300 CFM AT 1/4" S.P.; MAX. O.V. = 1000 FPM; MOTOR = 1/6 HP; 120V./1Φ/60 HZ. FAN SHALL BE SINGLE WIDTH SINGLE INLET, FORWARD CURVED CENTRIFUGAL EXHAUSTER

EXHAUST FANS (EF-3, EF-6 AND EF-9)
EACH FAN SHALL HAVE A CAPACITY OF 14,000 CFM AT 1/2" S.P.; MAX. O.V. = 1600 FPM; MOTOR 3 HP, 208V./3Φ/60HZ. FAN SHALL BE DOUBLE WIDTH, DOUBLE INLET, FORWARD CURVED CENTRIFUGAL EXHAUSTER



EXHAUST FAN DETAIL

SCALE: 1/4" = 1'-0"



H&V UNIT STEAM COIL PIPING DIAGRAM

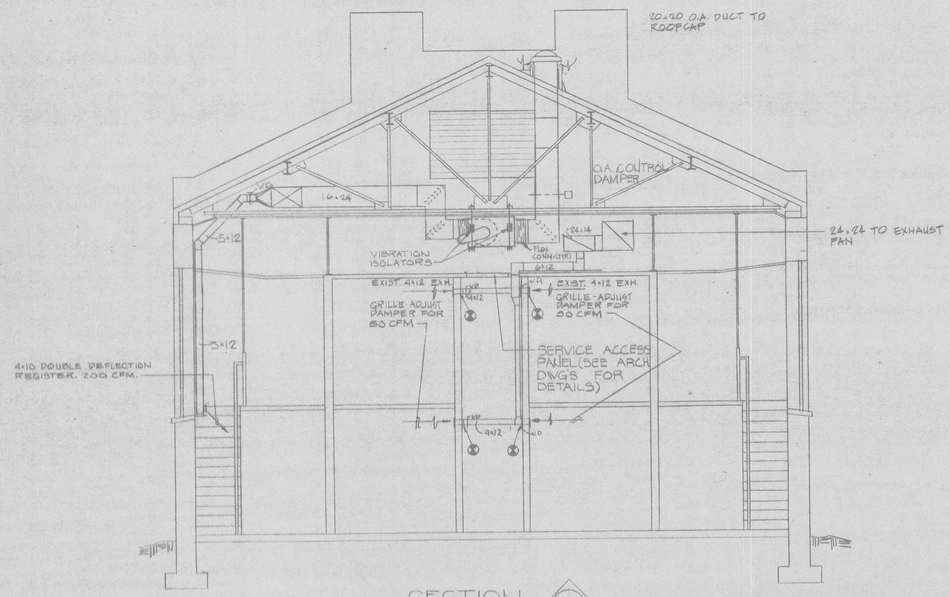
SCALE: NONE

SYMBOLS

—S—	LOW PRESSURE STEAM SUPPLY	HR.	HIGH REGISTER
--R--	LOW PRESS. CONDENSATE RETURN	EXH.	EXHAUST
	STRAINER	REG.	REGISTER
	FLOAT AND THERMOSTATIC TRAP	H.V.	HEATING AND VENTILATING
	AUTOMATIC CONTROL VALVE	S.P.	STATIC PRESSURE
	PIPE TURNING UP	O.V.	OUTLET VELOCITY
	PIPE TURNING DOWN	F.P.M.	FEET PER MINUTE
	GATE VALVE	CFM	CUBIC FEET PER MINUTE
	EXIST. CAST IRON	E.F.	EXHAUST FAN
	POINT OF CONNECTION - NEW TO EXIST.	O.A.	OUTSIDE AIR
T	THERMOSTAT		PIPE ANCHOR
	LOW PRESSURE DUCTWORK		END OF MAIN DRIP
	FLEXIBLE CONNECTION		NEW DUCTWORK
	VOLUME DAMPER		
FD / VD	FIRE DAMPER		
	SUPPLY AIR DUCT (S.A.)		
	RETURN AIR DUCT (R.A.)		
	EXHAUST AIR DUCT (EXH.)		
N	NEW EXHAUST		

GENERAL NOTES

1. PROVIDE TURN VANES WHERE DUCTWORK DROPS, RISES OR WHERE 90° TURNS ARE SHOWN
2. EXHAUST FANS 3, 6 & 9 ARE FOR SUMMER VENTILATION AND SHALL BE MANUALLY STARTED AND STOPPED.



SECTION A

SCALE: 1/4" = 1'-0"

	DESIGNED				
	DRAWN				
	CHECKED				
	CERTIFICATION	REVISION	DATE	DESCRIPTION	BY	APP
		PROJECT DRAWINGS				
		SCHEDULES, SYMBOLS & DETAILS - MECH.			DRAWING NO	
		RENOVATION OF BUILDINGS P-2, P-4, P-6 MAXIMUM SECURITY AREA DEPT. OF CORRECTIONS - LORTON, VA.			M-4	
ASSISTANT DIRECTOR FOR BUREAU OF DESIGN AND ENGINEERING	REGISTRATION NO _____ DATE _____	LBC&W VIRGINIA ARCHITECTS ENGINEERS PLANNERS				
DATE _____	ARCHITECT DATE _____	GOVERNMENT OF THE DISTRICT OF COLUMBIA DEPARTMENT OF GENERAL SERVICES			PROJECT NO. FL-255H-77 DATE _____ SHEET 18 OF 21	