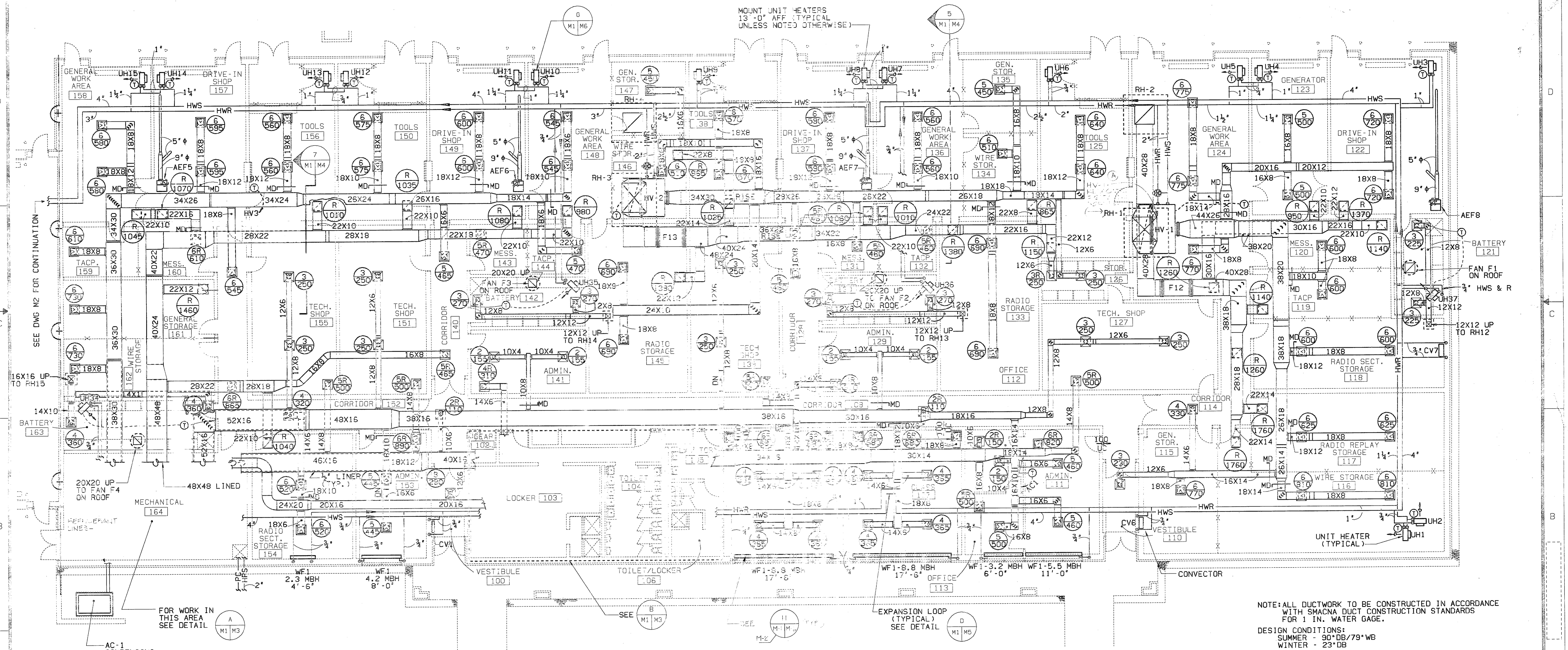


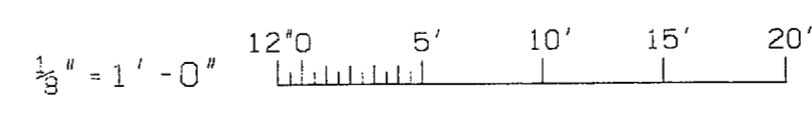
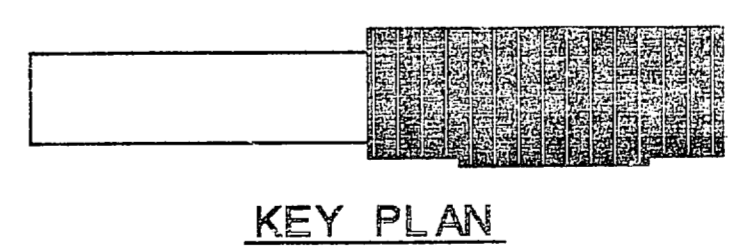
REVISIONS		PREP'D BY	DATE	APPROVED
SYM	DESCRIPTION			
(A)	REVISED - AS SHOWN	SAH	5/1/41	



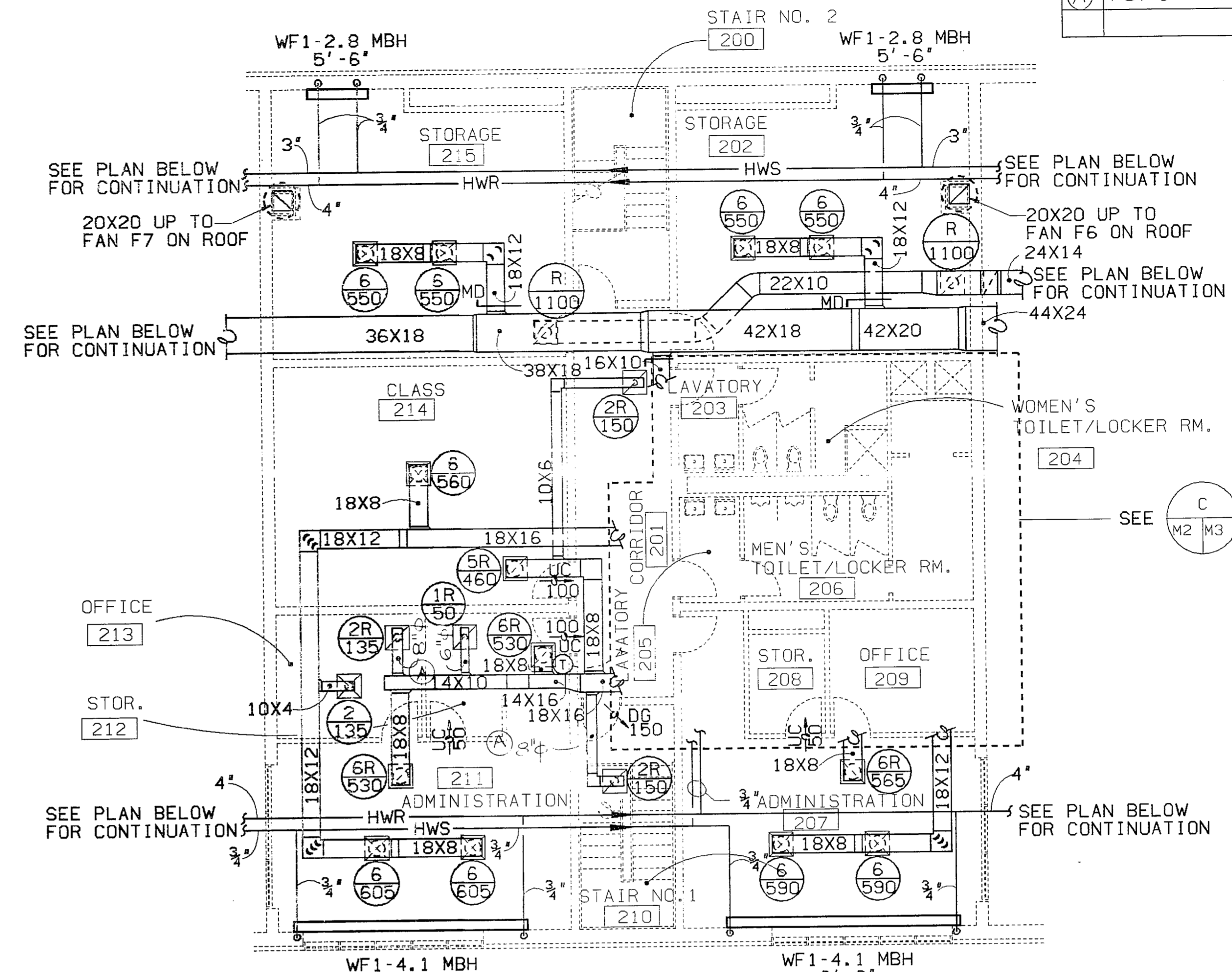
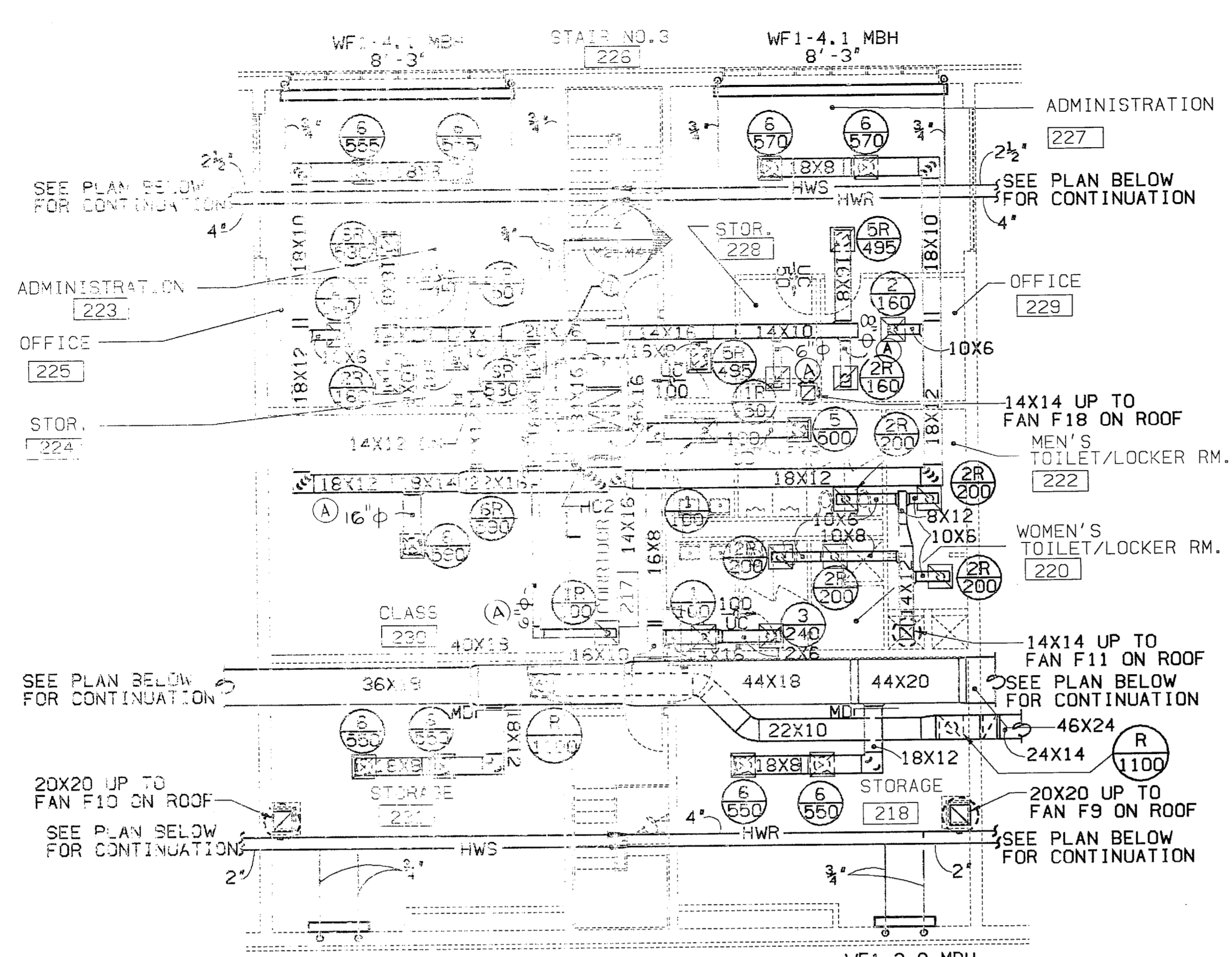
ELECTRONIC COMMUNICATIONS MECHANICAL PLAN
SCALE 1/8" = 1'-0"

NOTE: ALL DUCTWORK TO BE CONSTRUCTED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS FOR 1 IN. WATER GAGE.
DESIGN CONDITIONS:
SUMMER - 90°DB/79°WB
WINTER - 23°DB

RECORD DRAWING - HP250		M1
LETTER DATED 10/1/40		
Clark Tribble Harris & L.L. Architects Architects-Engineers	DEPT. OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORFOLK, VIRGINIA	
EFD DWG NO. 256889	MARINE CORPS BASE CAMP LEJEUNE, N.C.	
JOB ORDER NO. 555148	ELECTRONIC COMMUNICATIONS/ VEHICLE MAINTENANCE SHOPS (P-643)	
STA PROJ. NO. P-643	MECHANICAL PLANS-ELECTRONIC COMMUNICATIONS	
DESIGNER: SAH	DRWG BCT	SIZE: CODE IDENT
PROJ. MGR. RD	CH. ARCH./ENGR. RH	F
APPROVED: SAH	DES. DIR. KT	DATE
ACTIVITY - SATISFACTORY TO	DATE	NO.
APPROVED: SAH	DATE	CONSTR. CONTR. NO. NS2-10-85-B-5148
DIRECTOR NAVELEX REF. DWG. NO.	SCALE: NOTED	SPEC. DB-95-5148
		SHEET 45 OF 67

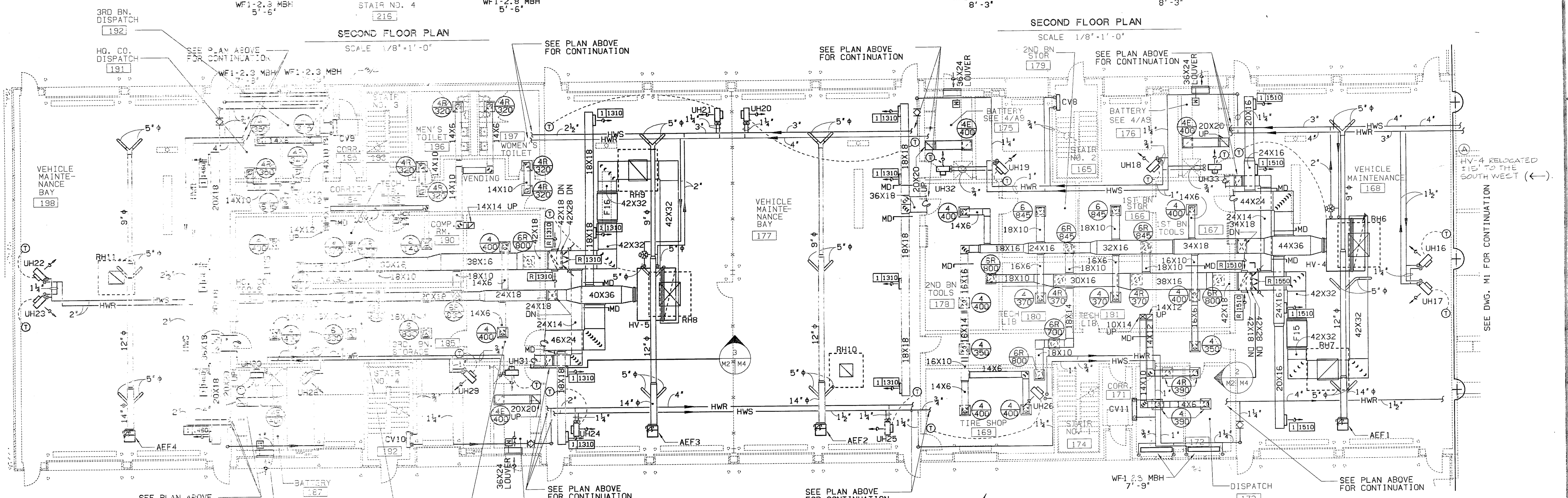


SYN	DESCRIPTION	PREP'D BY	DATE	APPROVED
(A)	REVISED: AS BUILT	SAH	5/1/91	



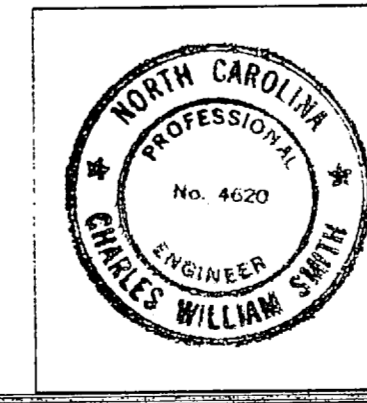
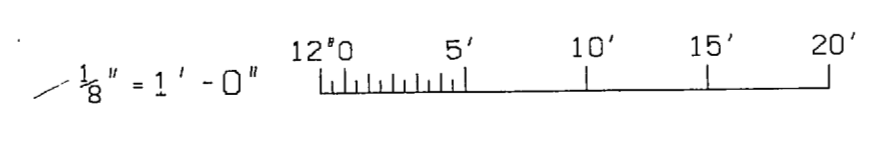
SECOND FLOOR PLAN
SCALE 1/8" = 1'-0"

SECOND FLOOR PLAN
SCALE 1/8" = 1'-0"



VEHICLE MAINTENANCE SHOPS
SCALE 1/8" = 1'-0"

KEY PLAN

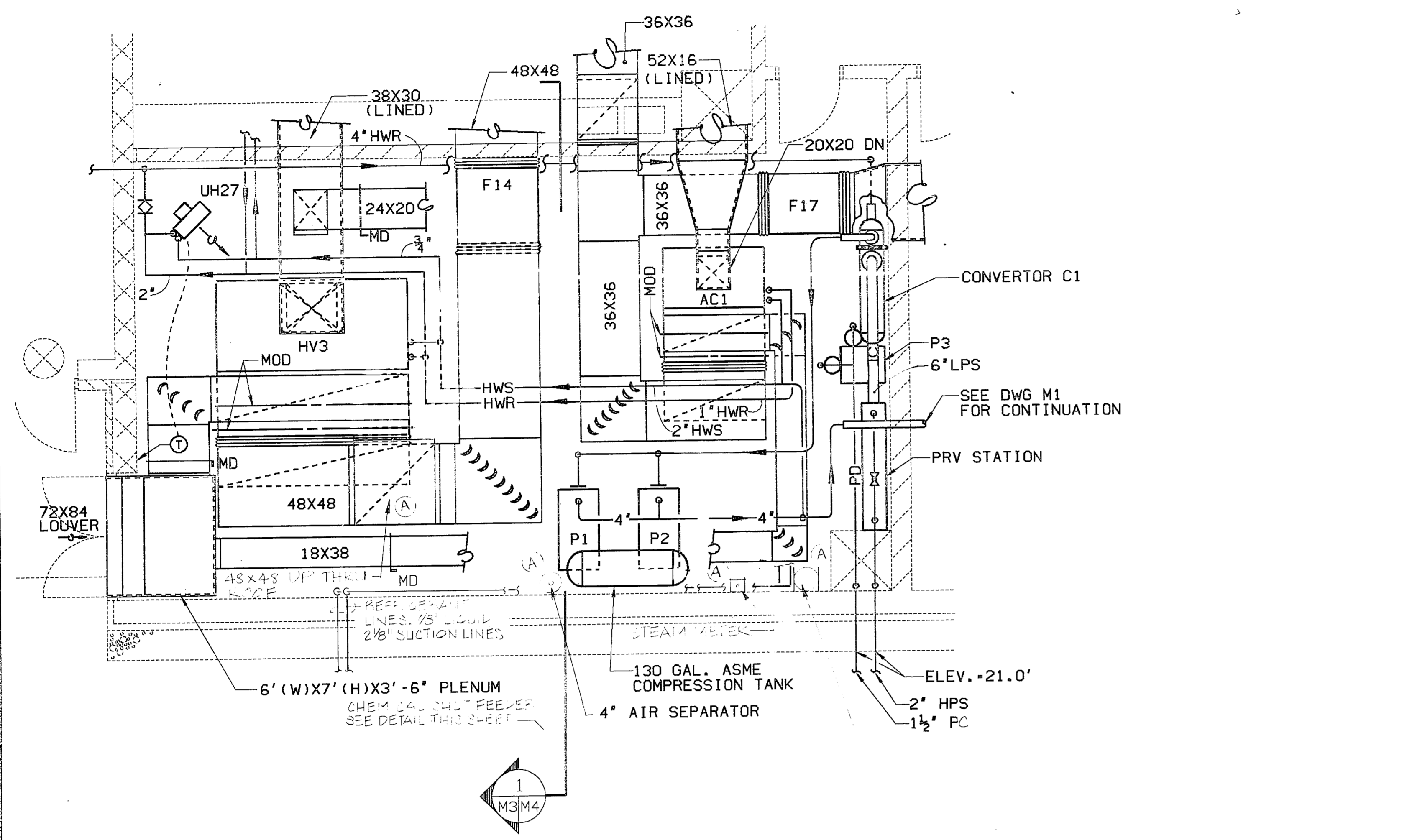


SATISFACTORY TO
NAVELEX SYSTEM COMMAND
SOUTHEAST DIV.

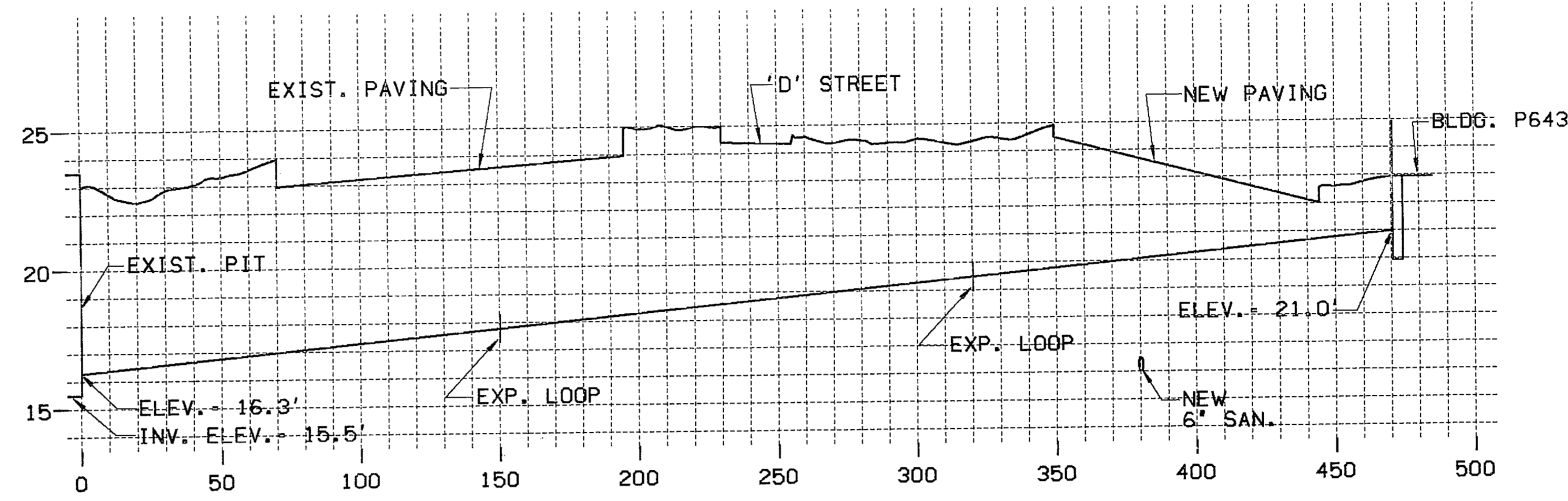
DIRECTOR
NAVELEX
REF DWG NO.

RECORD DRAWING		HP250		M2	
LETTER DATED 10 OCT 1990					
Clark Tribble Harris & Li ARCHITECTS Charlotte, North Carolina ARCHITECTS-ENGINEERS		NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORFOLK, VIRGINIA			
EFD DWG NO. 256970		MARINE CORPS BASE CAMP LEJEUNE, N.C.			
JOB ORDER NO. SP5148		ELECTRONIC COMMUNICATIONS/ VEHICLE MAINTENANCE SHOPS (P-643)			
STA PROJ NO. P-643		MECHANICAL PLAN-VEHICLE MAINTENANCE SHOP			
DES JCV		NAVFAC DRAWING NO. 4156970			
PROJ MGR RD CH ARCH/ENGR RN		CONSTR. CONTR. NO. NS2470-85-9-5148			
EFD RVD 2/92 F.P. JEL		SHEET 46 OF 67			
BR MGR 2/92 DES. DIR. K/D					
APPROVED DATE					
ACTIVITY - SATISFACTORY TO					
APPROVED DATE					
FOR EFD FOR COMMANDER, NAVFAC					

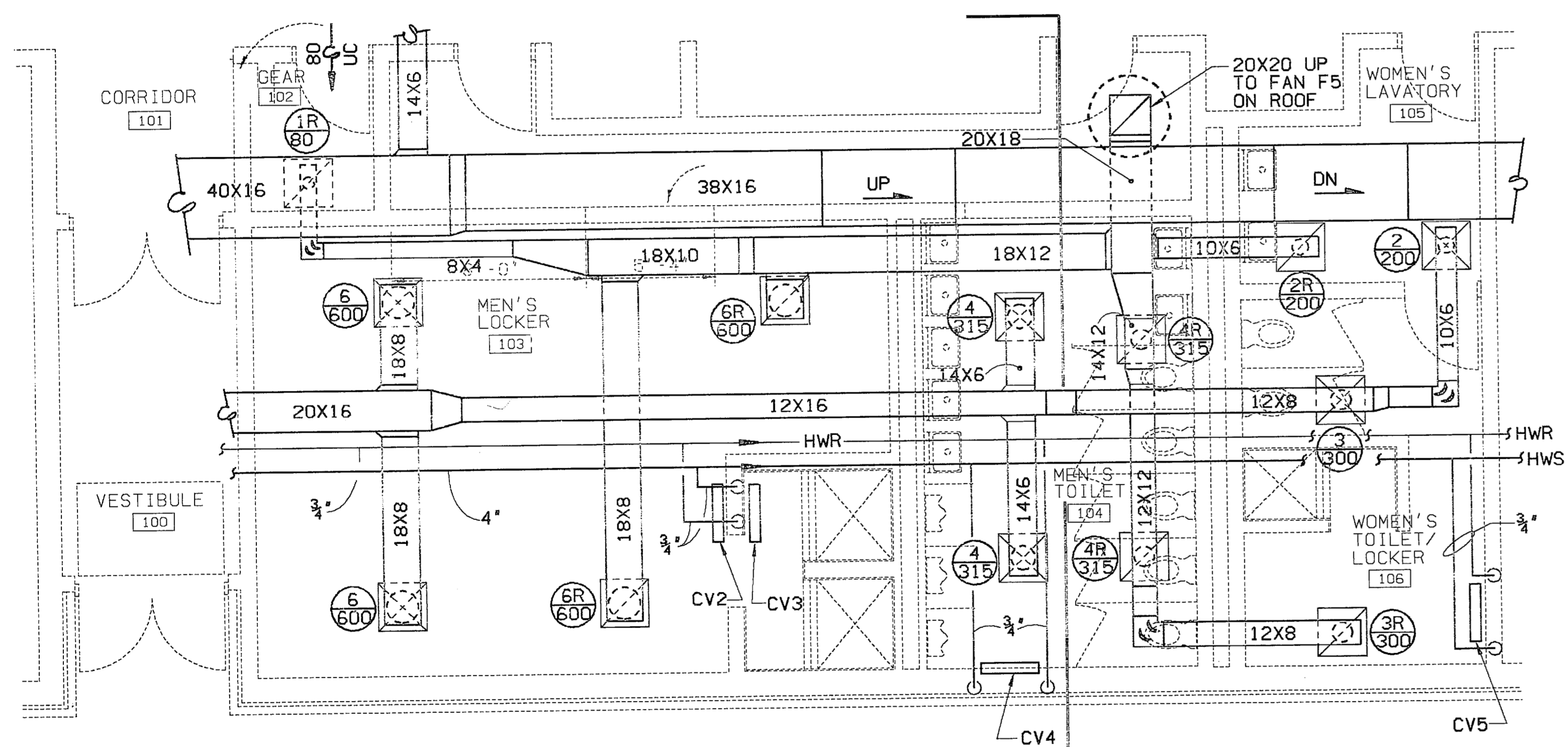
REVISIONS				
SYM	DESCRIPTION	PREP'D BY	DATE	APPROVED
(A)	REV. 10/19/90		5/1/91	



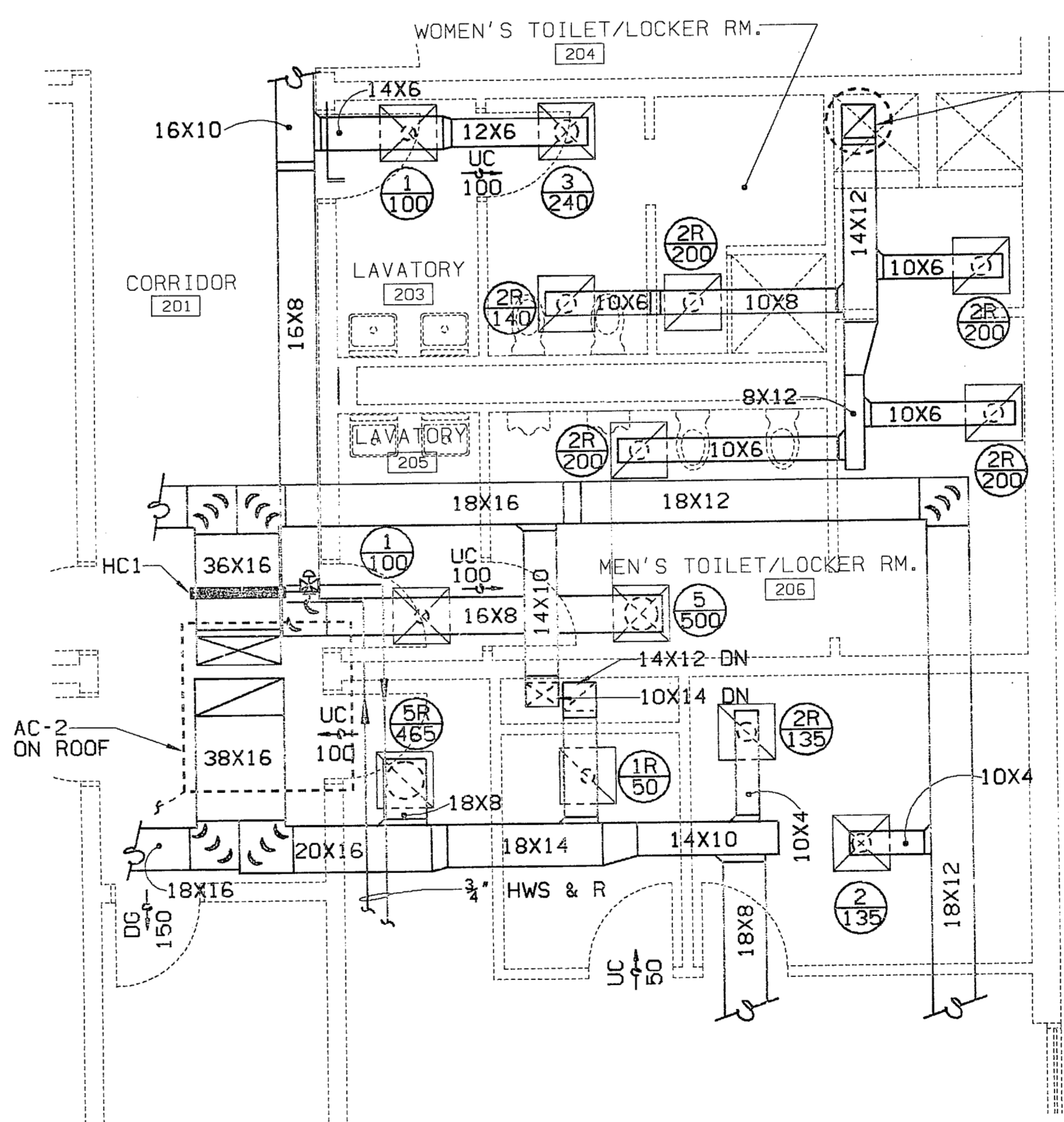
A ENLARGED MECHANICAL RM 164
SCALE 1/4" = 1'-0"



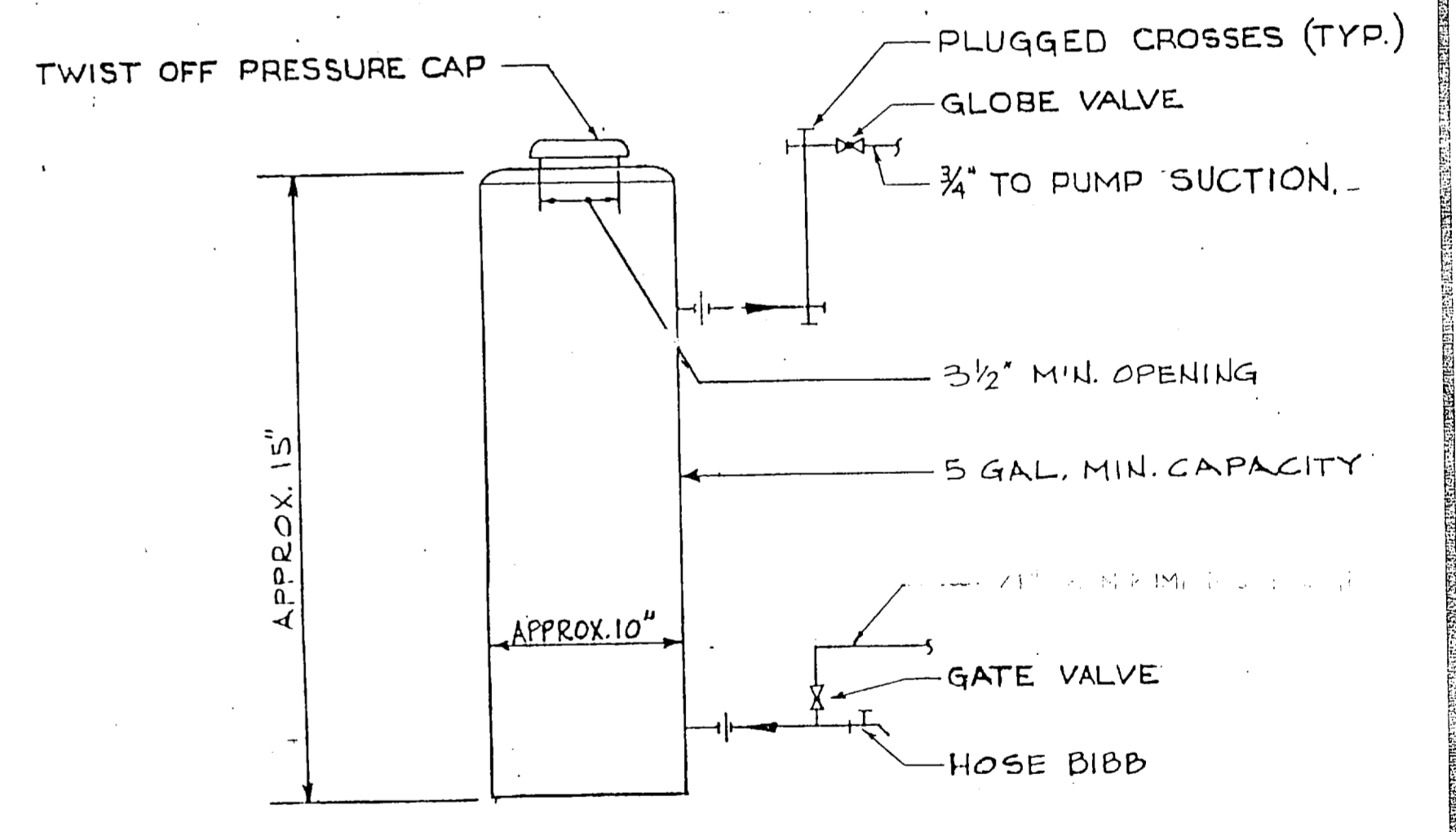
PROFILE - HPS
SCALE: VERT: 1" = 4'-0"
HORIZ: 1" = 40'-0"



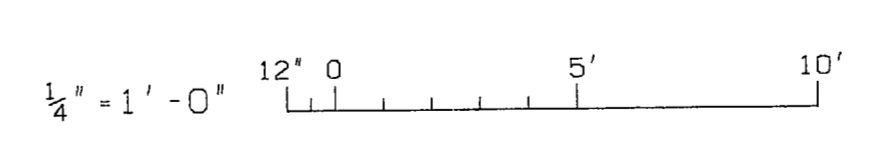
B ENLARGED TOILET & PLAN
SCALE 1/4" = 1'-0"



C ENLARGED TOILET
SCALE 1/4" = 1'-0"



CHEMICAL DUCT PRESSURE CAP
NO SCALE

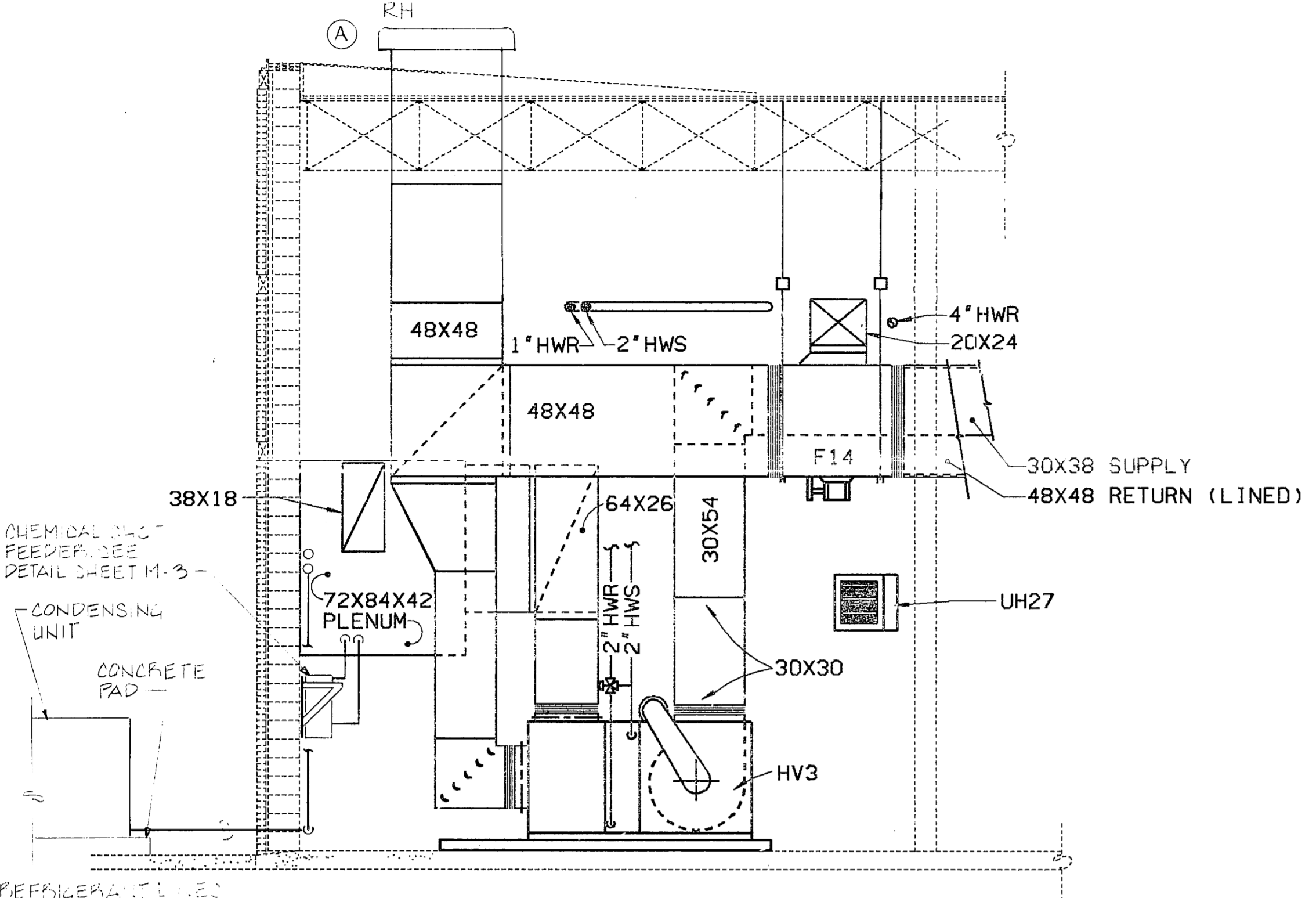


RECORD DRAWING		HP250		M3	
LETTER DATED 1 OCT 1990					
Clark Tribble Harris & Li ARCHITECTS Charlotte, North Carolina ARCHITECTS-ENGINEERS		DEPT. OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORFOLK, VIRGINIA			
EFD DWG NO. 2505971		MARINE CORPS BASE CAMP LEJEUNE, N.C.		NAVAL STATION	
JOB ORDER NO. 5P5146		ELECTRONIC COMMUNICATIONS/ VEHICLE MAINTENANCE SHOPS (P-643)			
STA. PROJ. NO. P-643		ENLARGED PLANS - MECHANICAL			
DES. JCY DRWG BCT		SIZE CODE IDENT		NAVFAC DRAWING NO.	
PROJ. MGR. RD CH ARCH/ENGR RH		F		4156971	
APPROVED DATE		DATE		CONSTR. CONTR. NO. NR2470-85-B-5148	
ACTIVITY - SATISFACTORY TO		DATE		SHEET 47 OF 67	
APPROVED DATE		DATE		SPEC. 05-85-5148	
FOR EFD FOR COMMANDER NAVFAC		SCALE-NOTED		SHEET 47 OF 67	

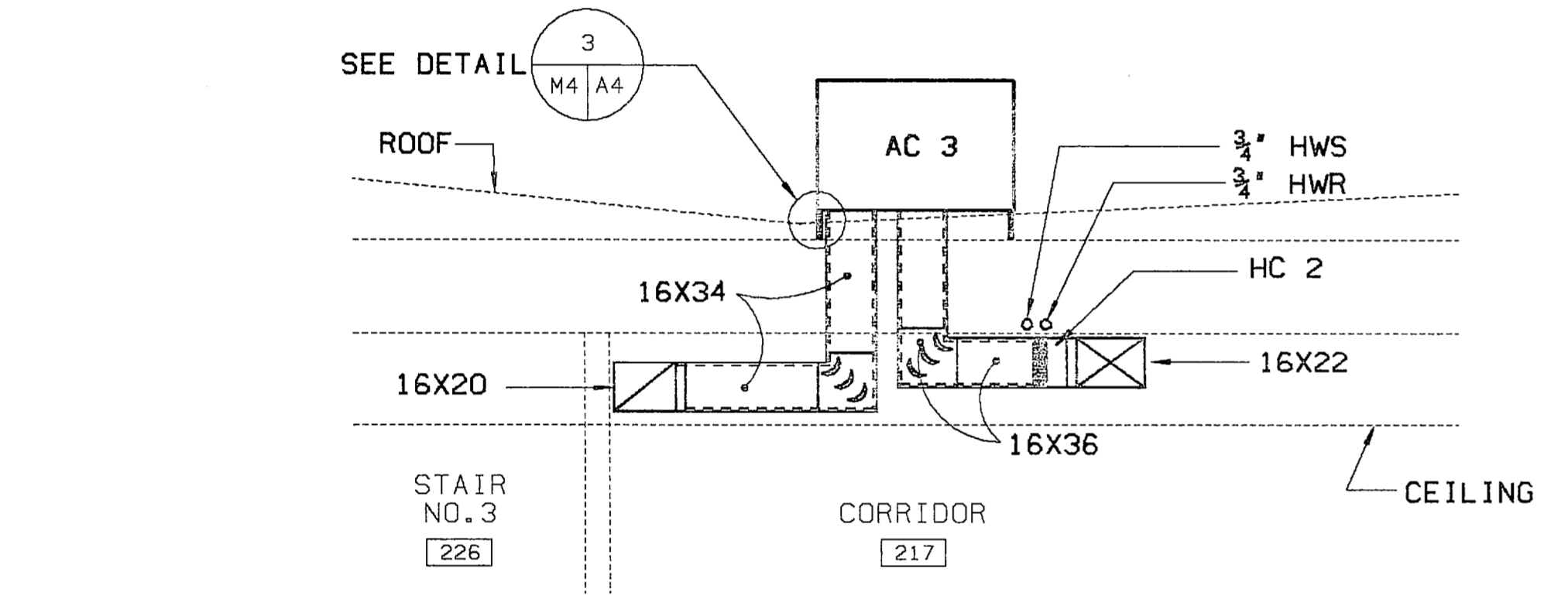
SATISFACTORY TO
NAVELEX SYSTEM COMMAND
SOEAST DIV

DIRECTOR
NAVELEX
REF. DWG. NO.

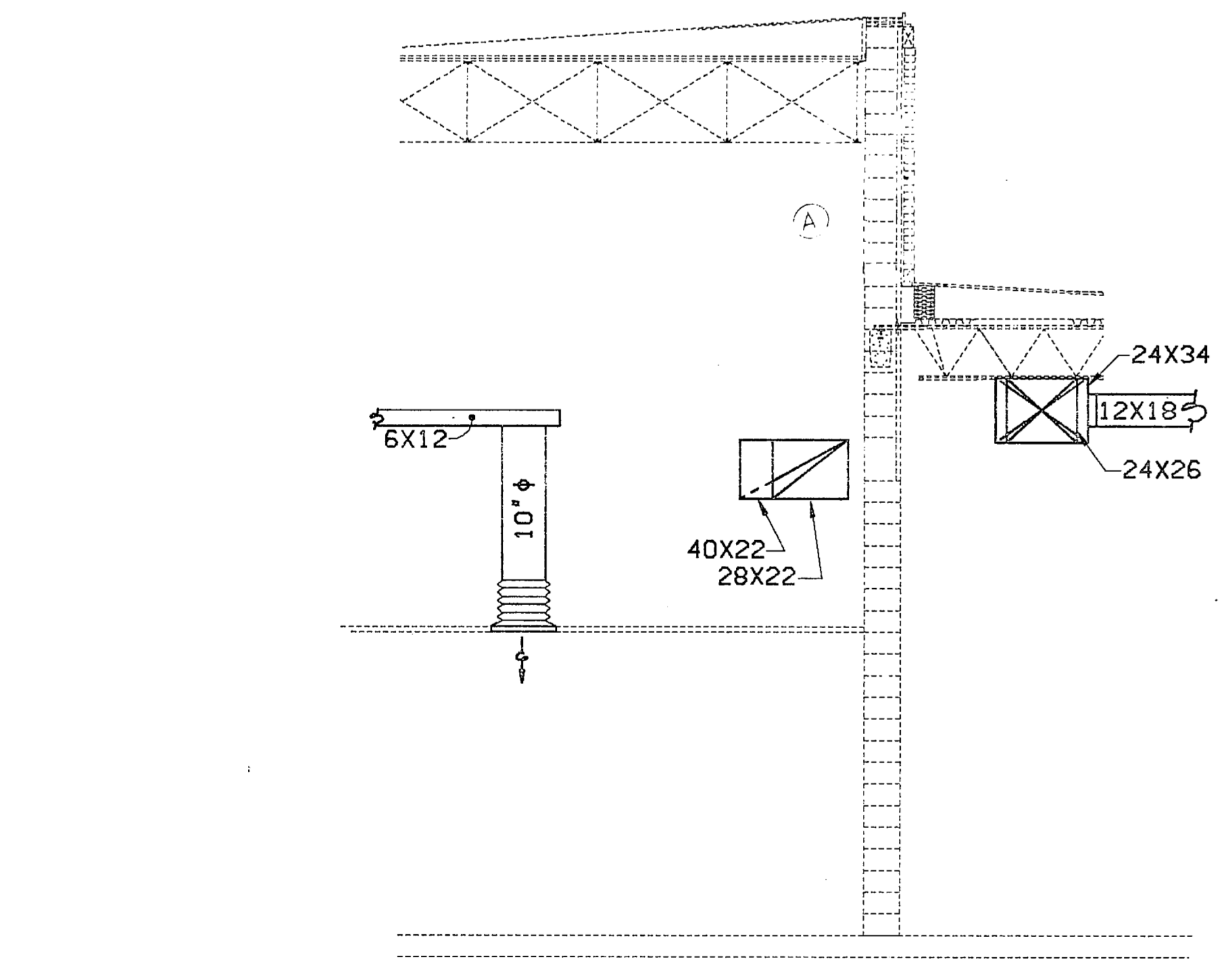
REVISIONS				
SYM	DESCRIPTION	PREP'D BY	DATE	APPROVED
(A)	REVISED - AS SHOWN	SAH	5/1/91	[Signature]



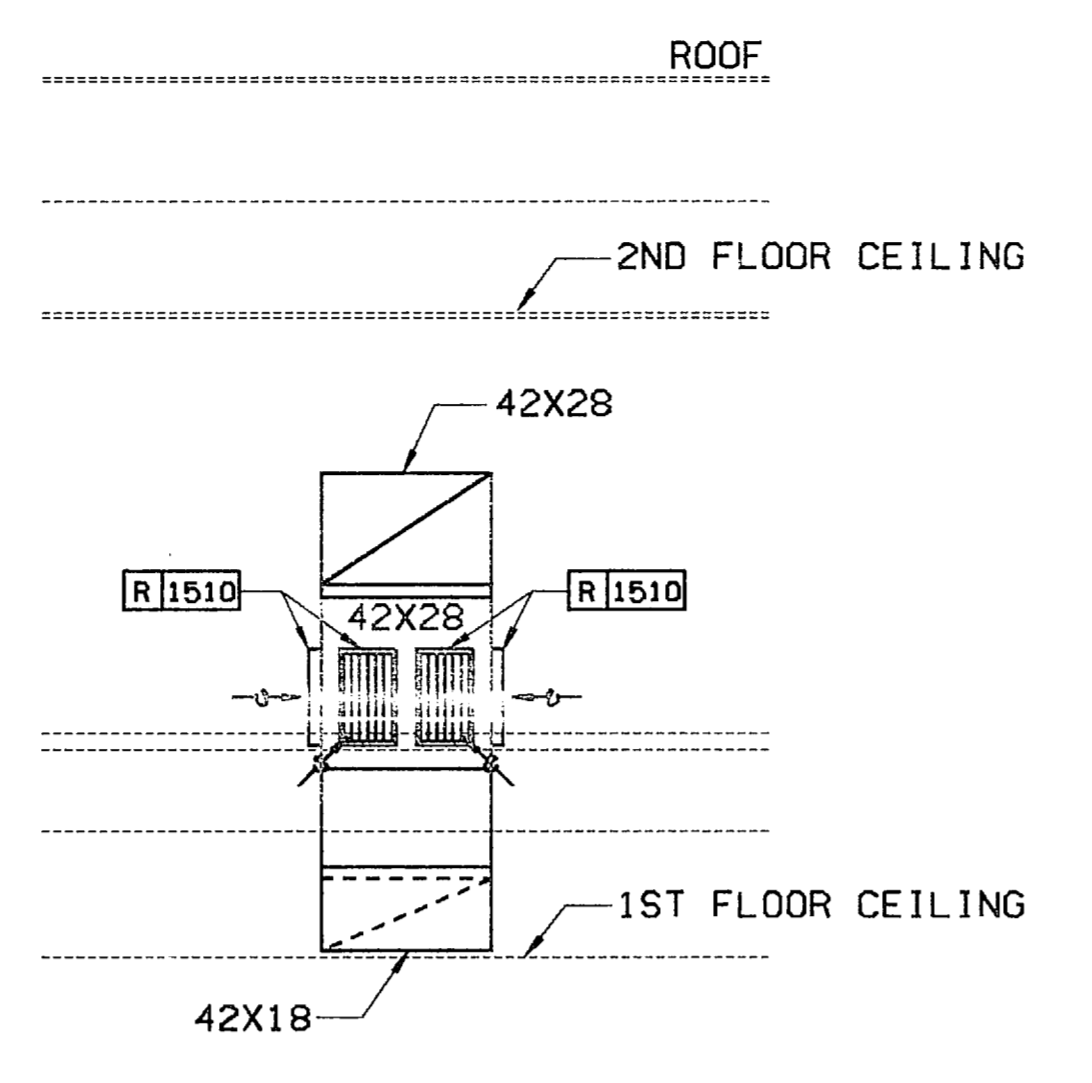
1 SECTION
SCALE 1/4" = 1'-0"



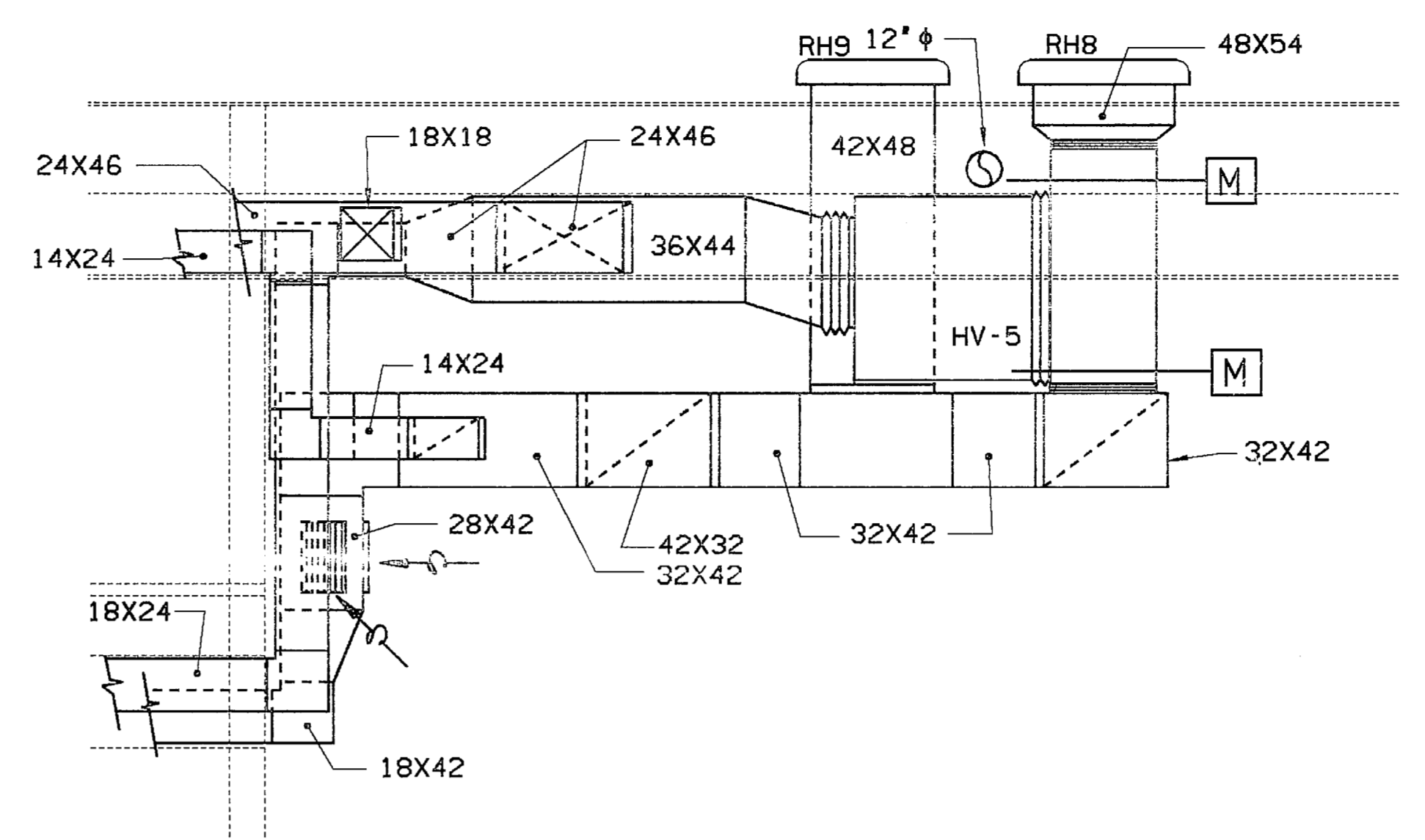
4 RTU SECTION
SCALE 1/4" = 1'-0"



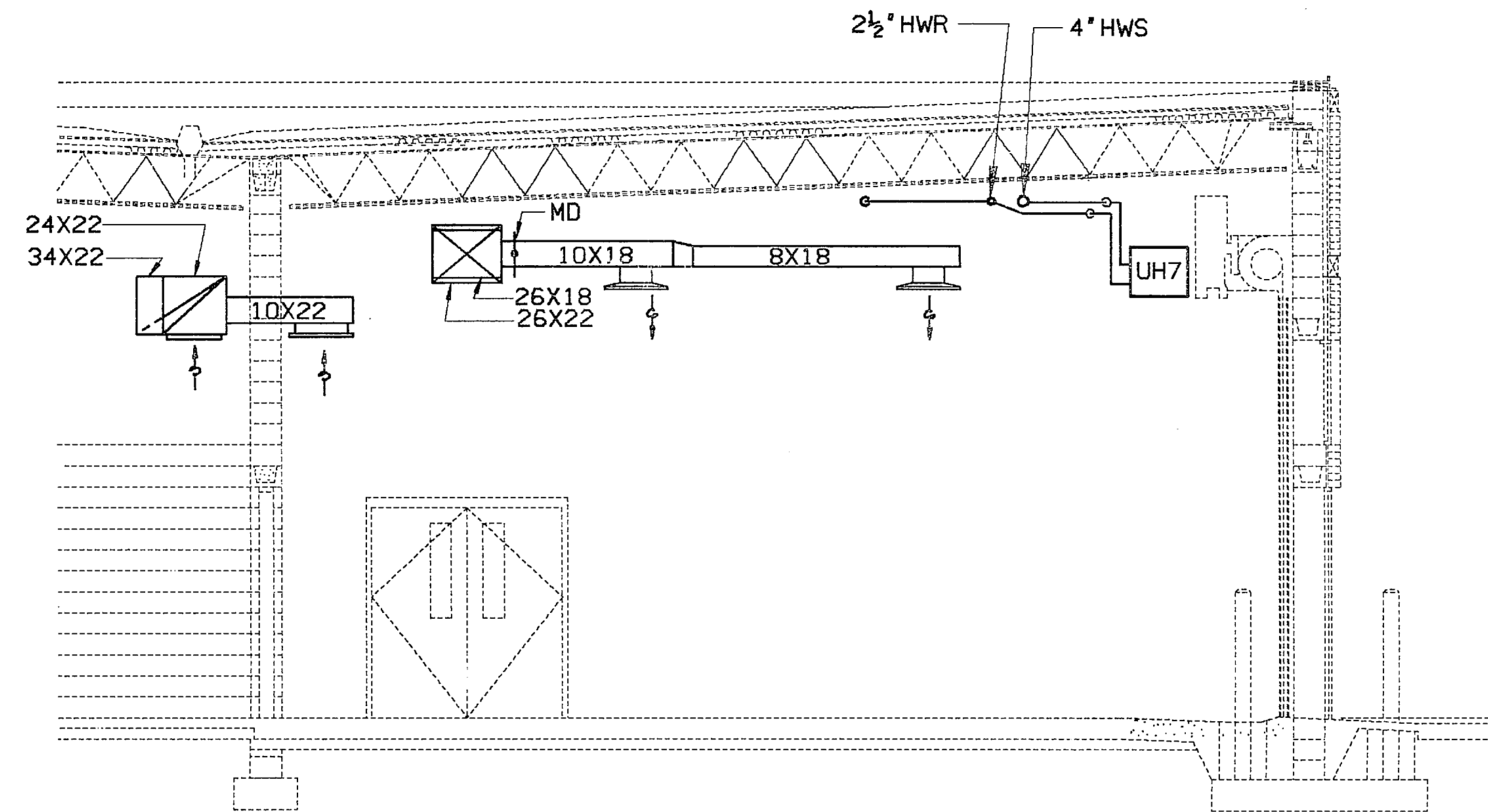
7 SECTION
SCALE 1/4" = 1'-0"



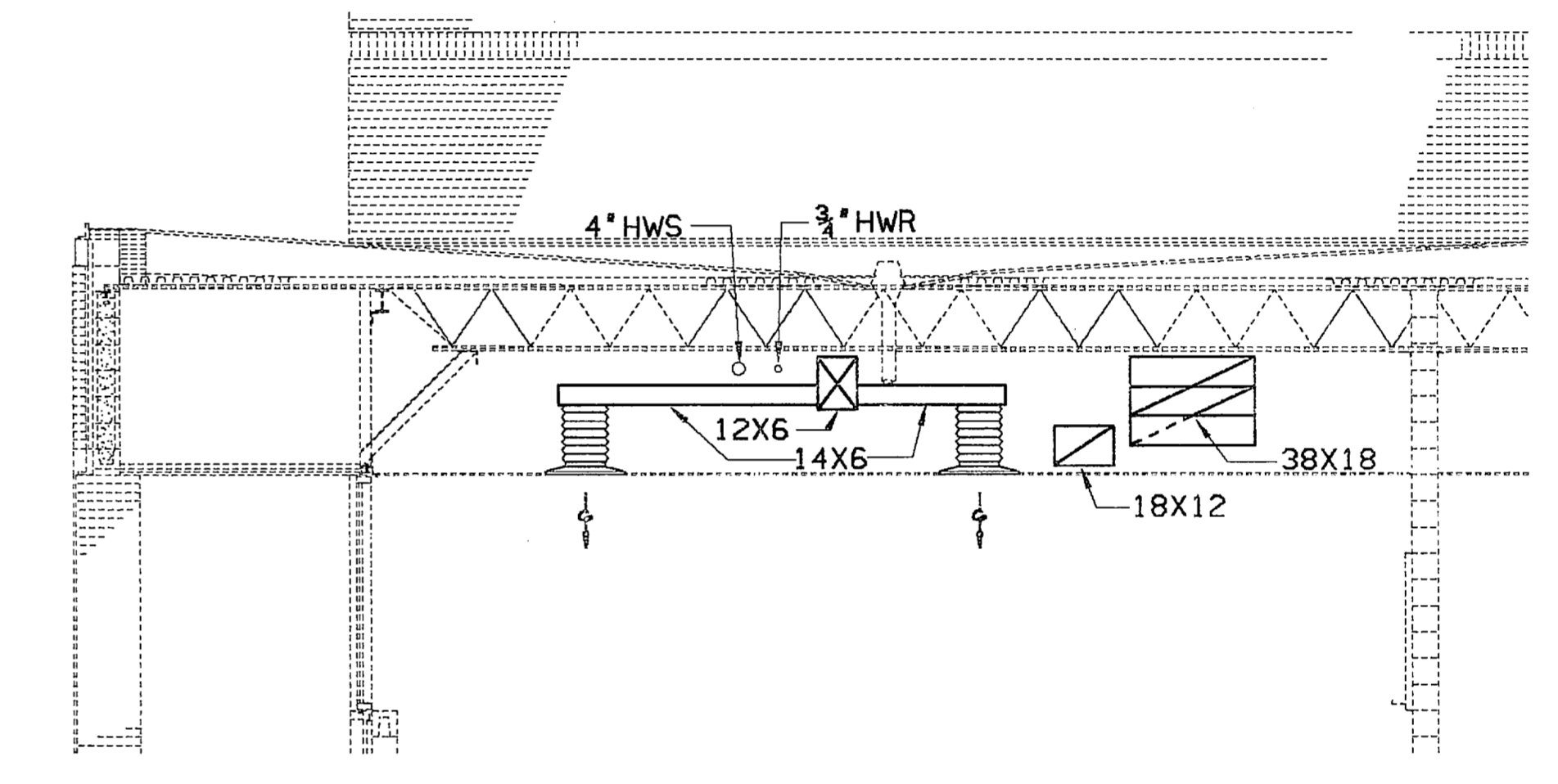
2 SECTION
SCALE 1/4" = 1'-0"



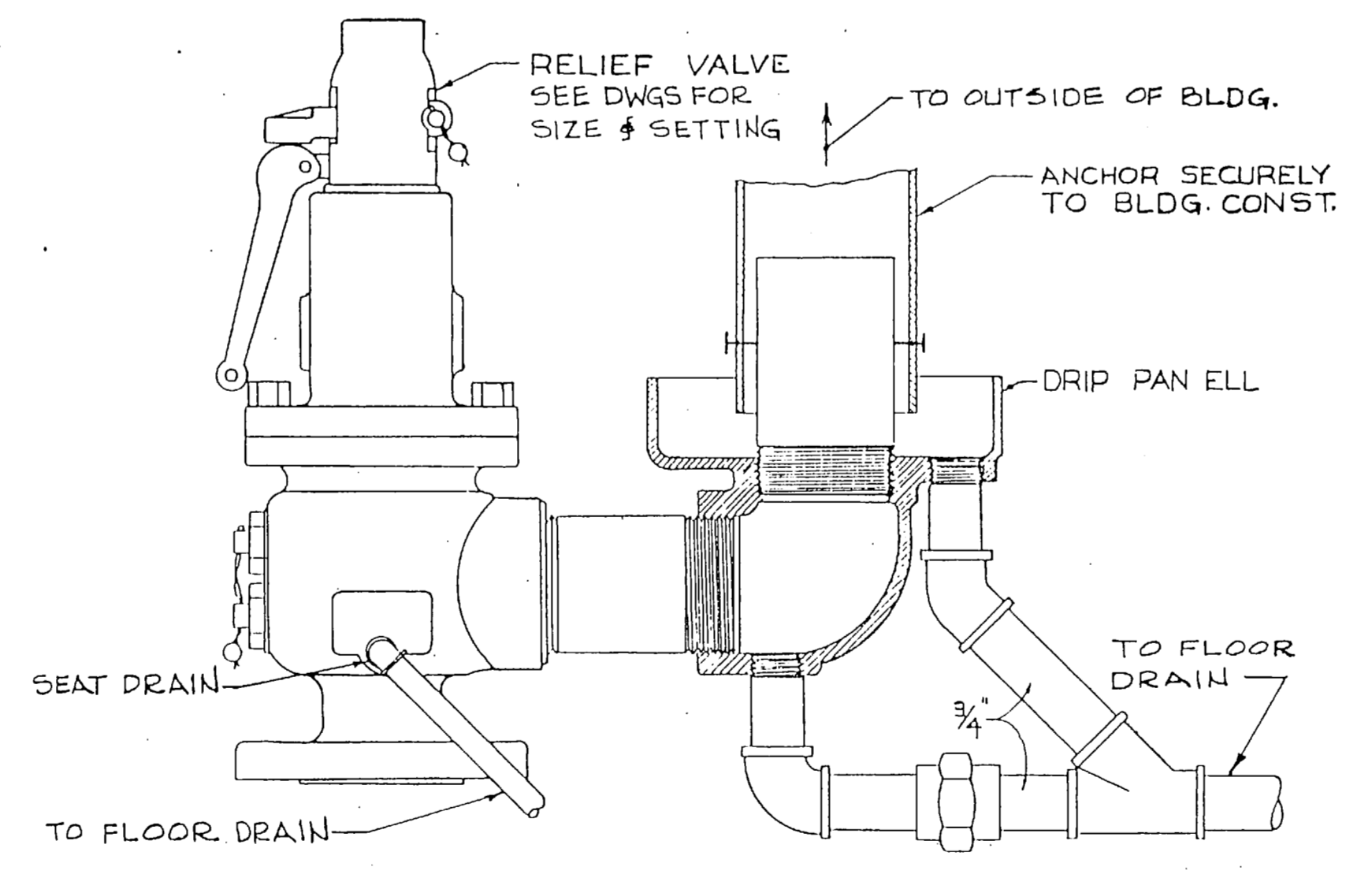
3 H&V UNIT SECTION
SCALE 1/4" = 1'-0"



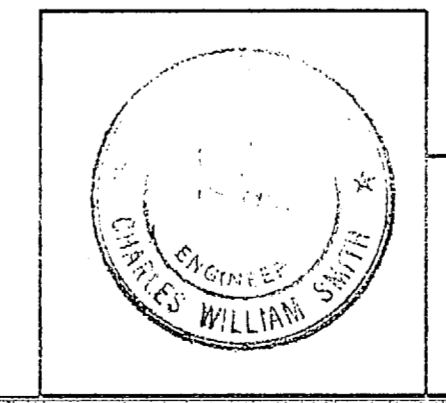
5 MAINT. BAY SECTION
SCALE 1/4" = 1'-0"



6 TOILET SECTION
SCALE 1/4" = 1'-0"



RELIEF VALVE DRIP PAN ELL DETAIL
NO SCALE



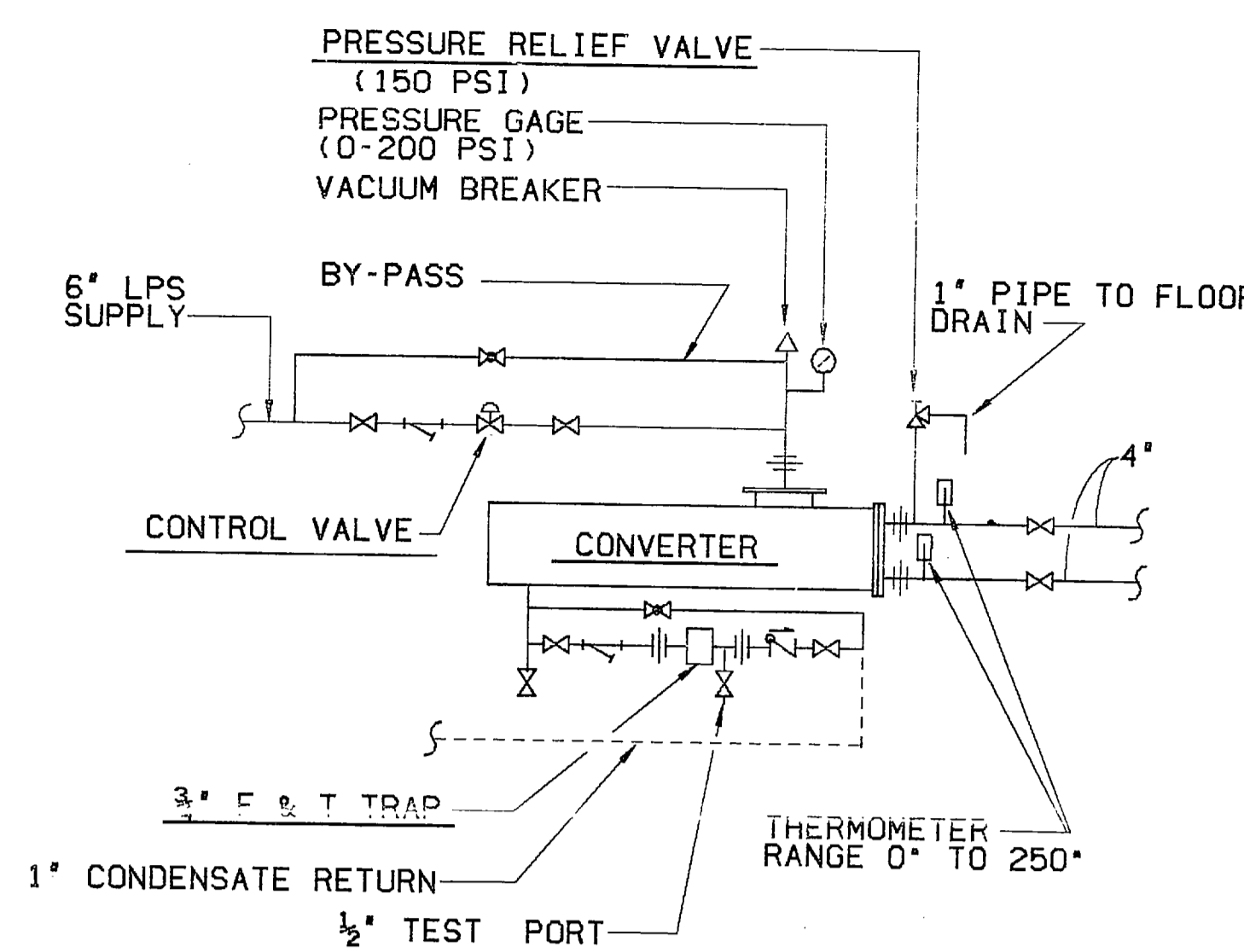
SATISFACTORY TO
NAVELEX SYSTEM COMMAND
SDEAST DIV

DIRECTOR
NAVELEX
REF. DWG. NO.

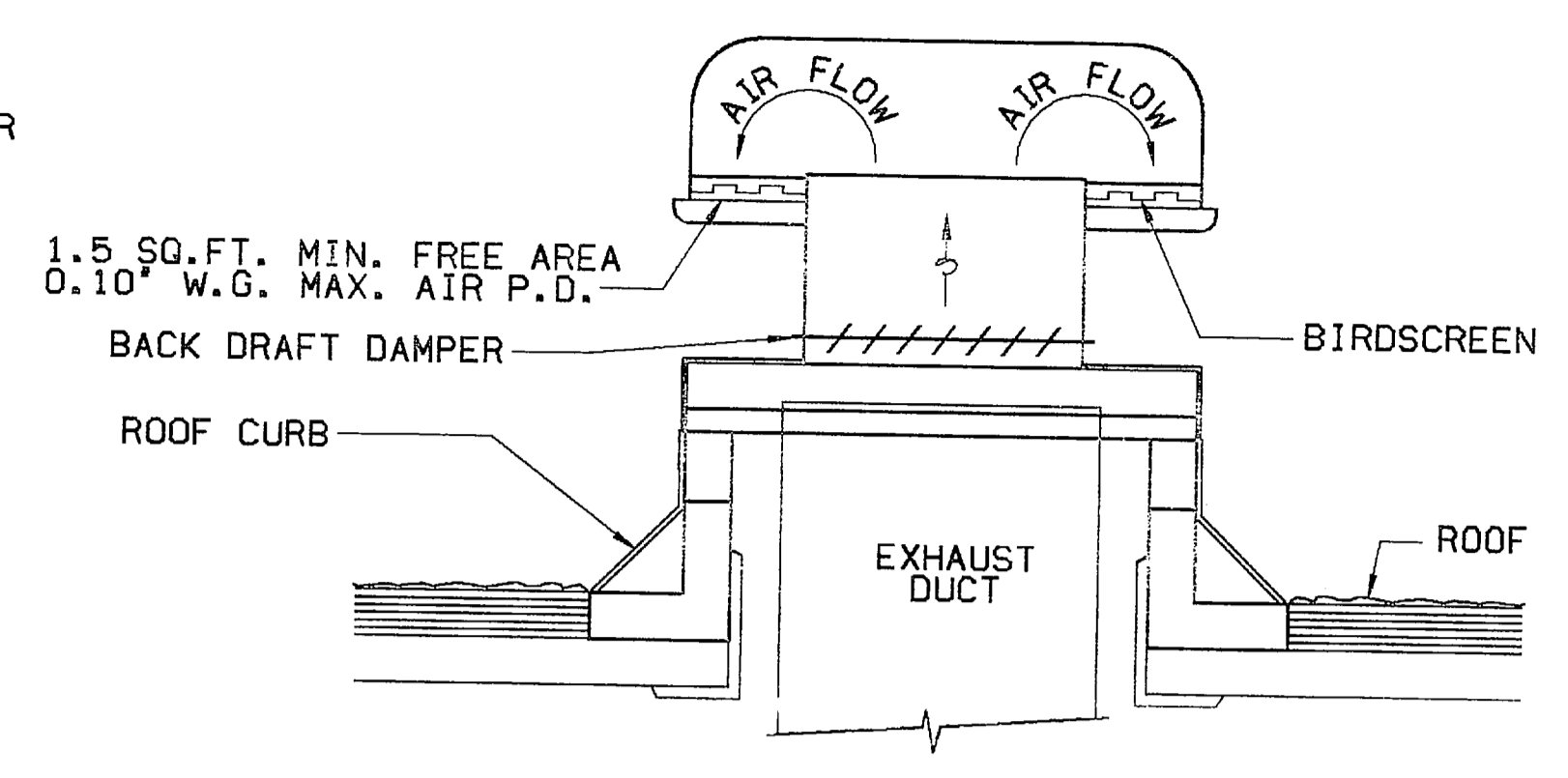
RECORD DRAWING
LETTER DATED 1 OCT 1990 **HP250 M4**

Clark Tribble Harris & Li ARCHITECTS Charlotte, North Carolina ARCHITECTS-ENGINEERS	DEPT. OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORFOLK, VIRGINIA
EFD DWG NO. 256872	MARINE CORPS BASE CAMP LEJEUNE, N.C.
JOB ORDER NO. 5F5148	ELECTRONIC COMMUNICATIONS/ VEHICLE MAINTENANCE SHOPS (P-643)
STA PROJ NO. P-643	MECHANICAL SECTIONS
DES. BY [Signature]	SIZE CODE IDENT NO.
PROJ MGR RD. CH ARCH/ENGR RH	NAVAFAC DRAWING NO. 4158972
EFD/RVD [Signature] F.P. JOK	CONSTR. CONTR. NO. N62470-85-B-5148
APPROVED DATE [Signature]	SCALE NOTED SPEC. 05-85-5148 SHEET 48 OF 67

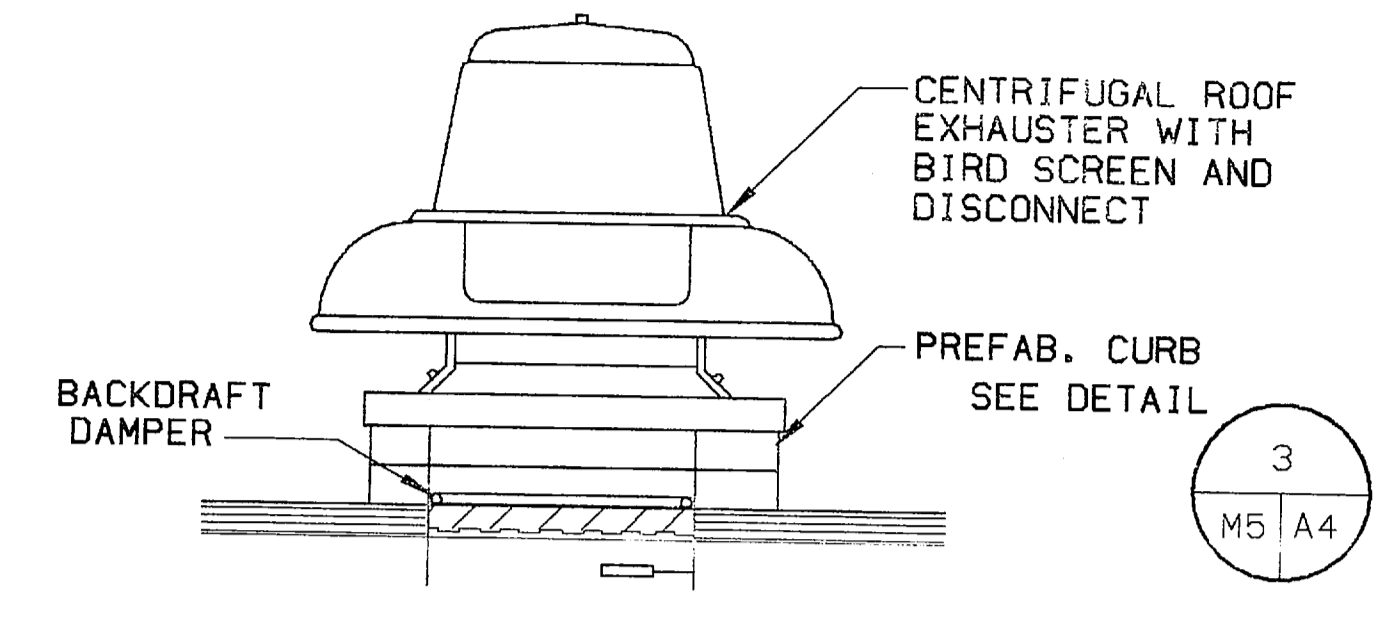
REVISIONS				
SYM	DESCRIPTION	PREP'D BY	DATE	APPROVED



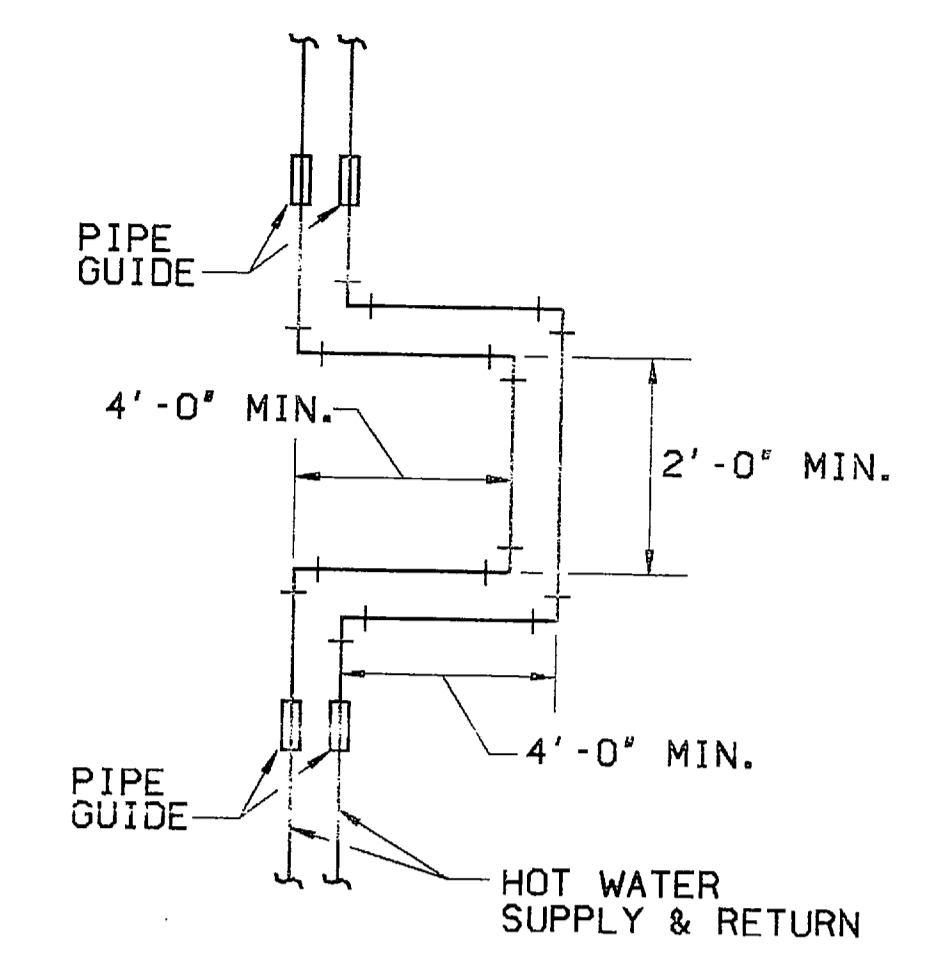
A CONVERTOR PIPING DETAIL
NO SCALE



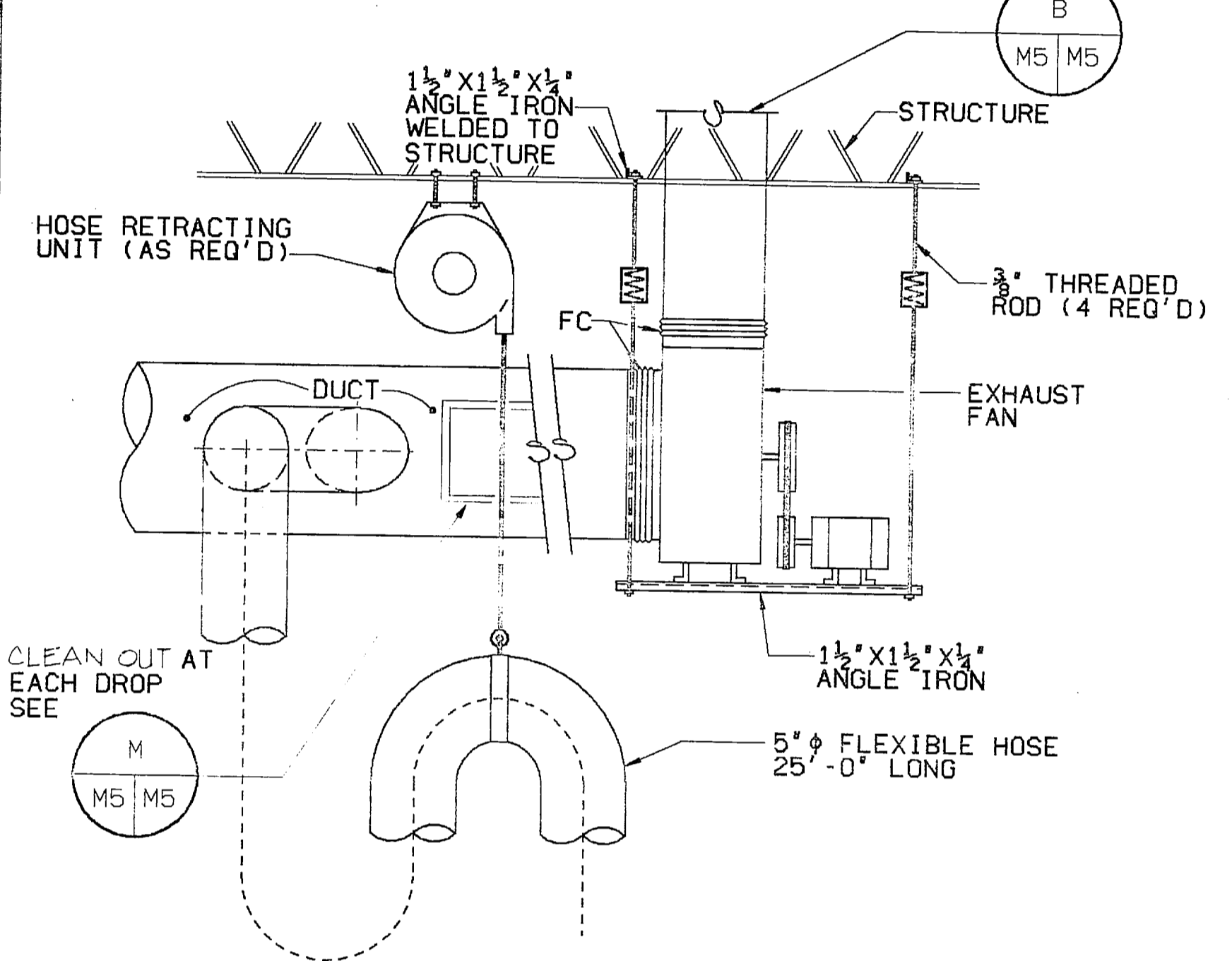
B ROOF AIR CAP DETAIL
NO SCALE



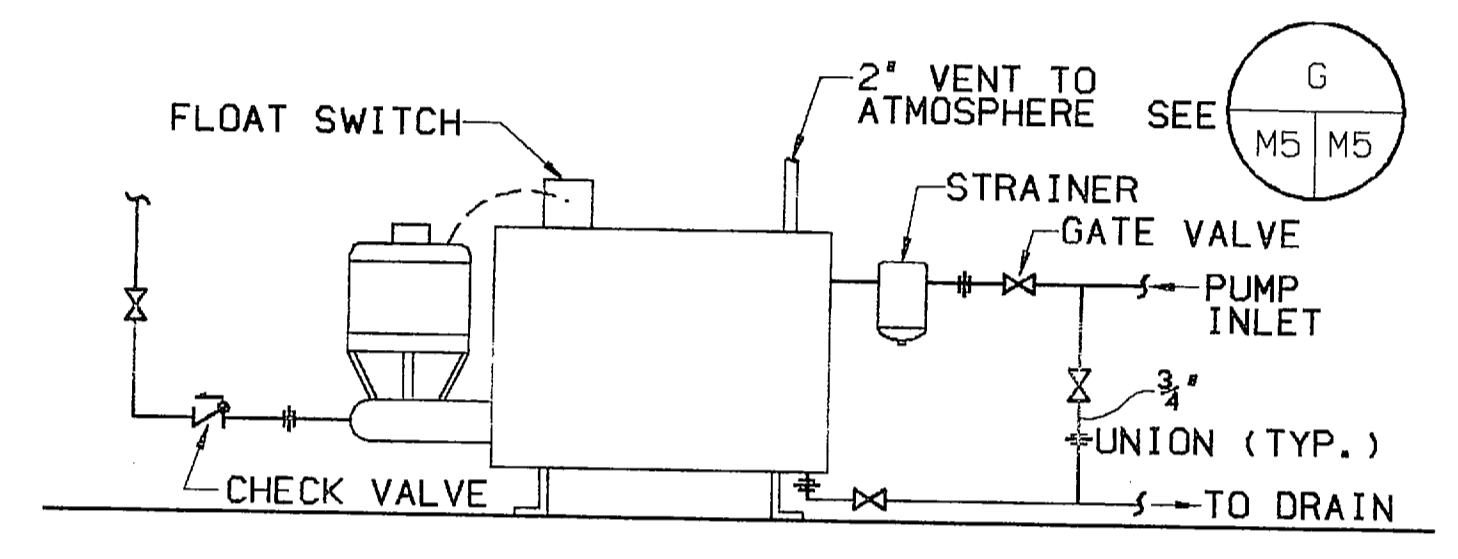
C CENTRIFUGAL ROOF EXHAUST
NO SCALE



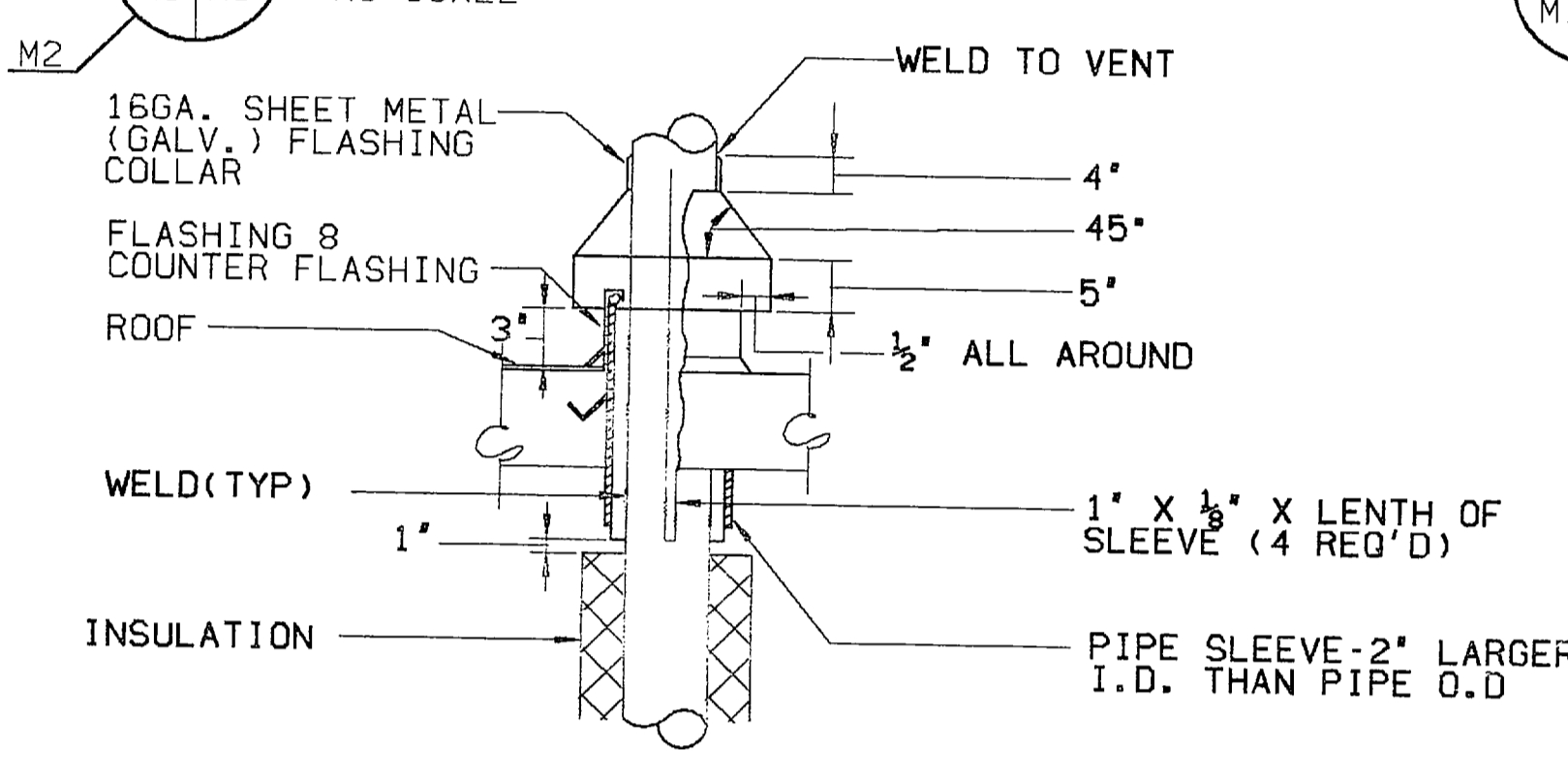
D EXPANSION LOOP DETAIL
NO SCALE



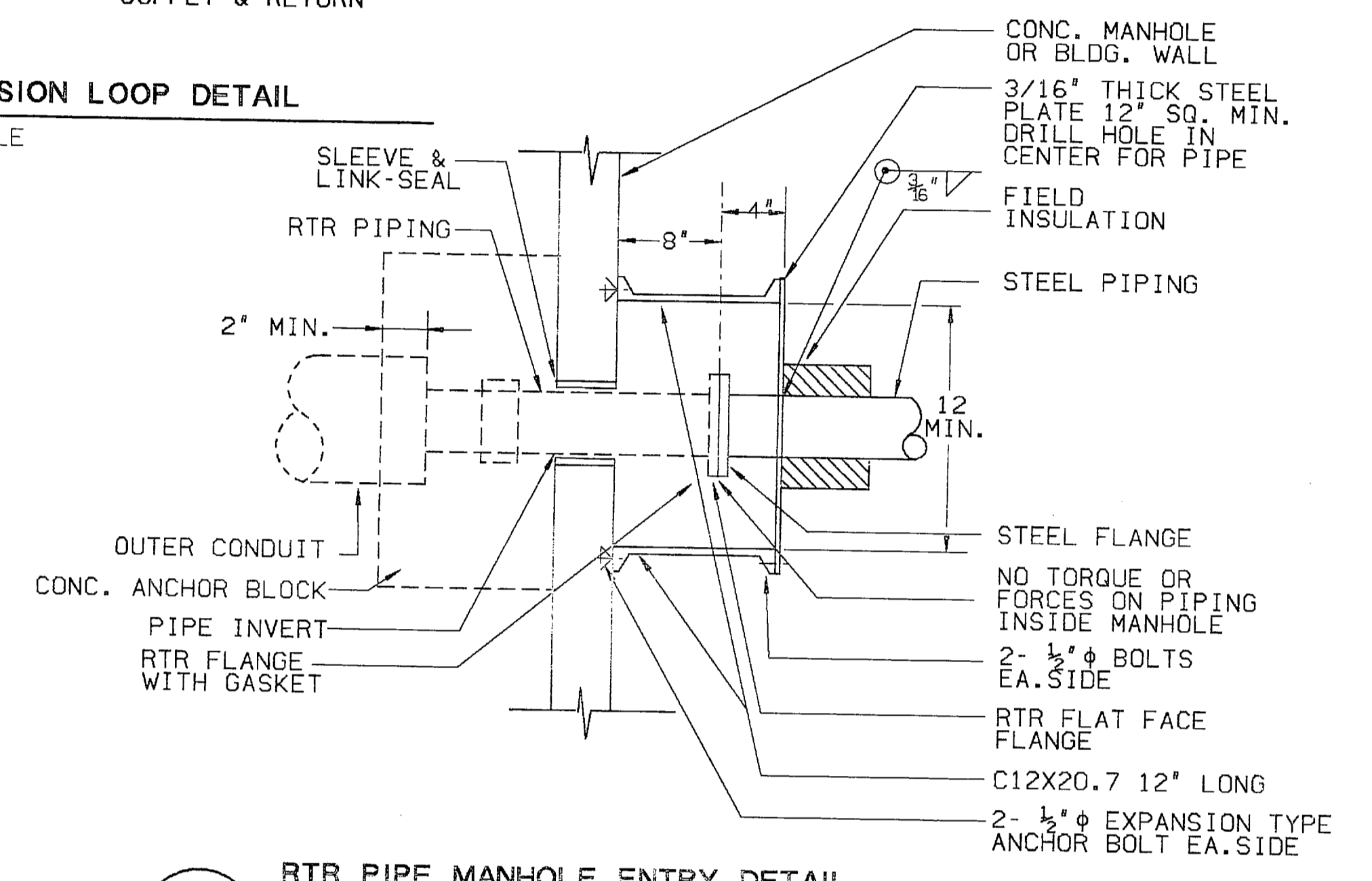
E CARBON MONOXIDE EXHAUST FAN MOUNTING DETAIL
NO SCALE



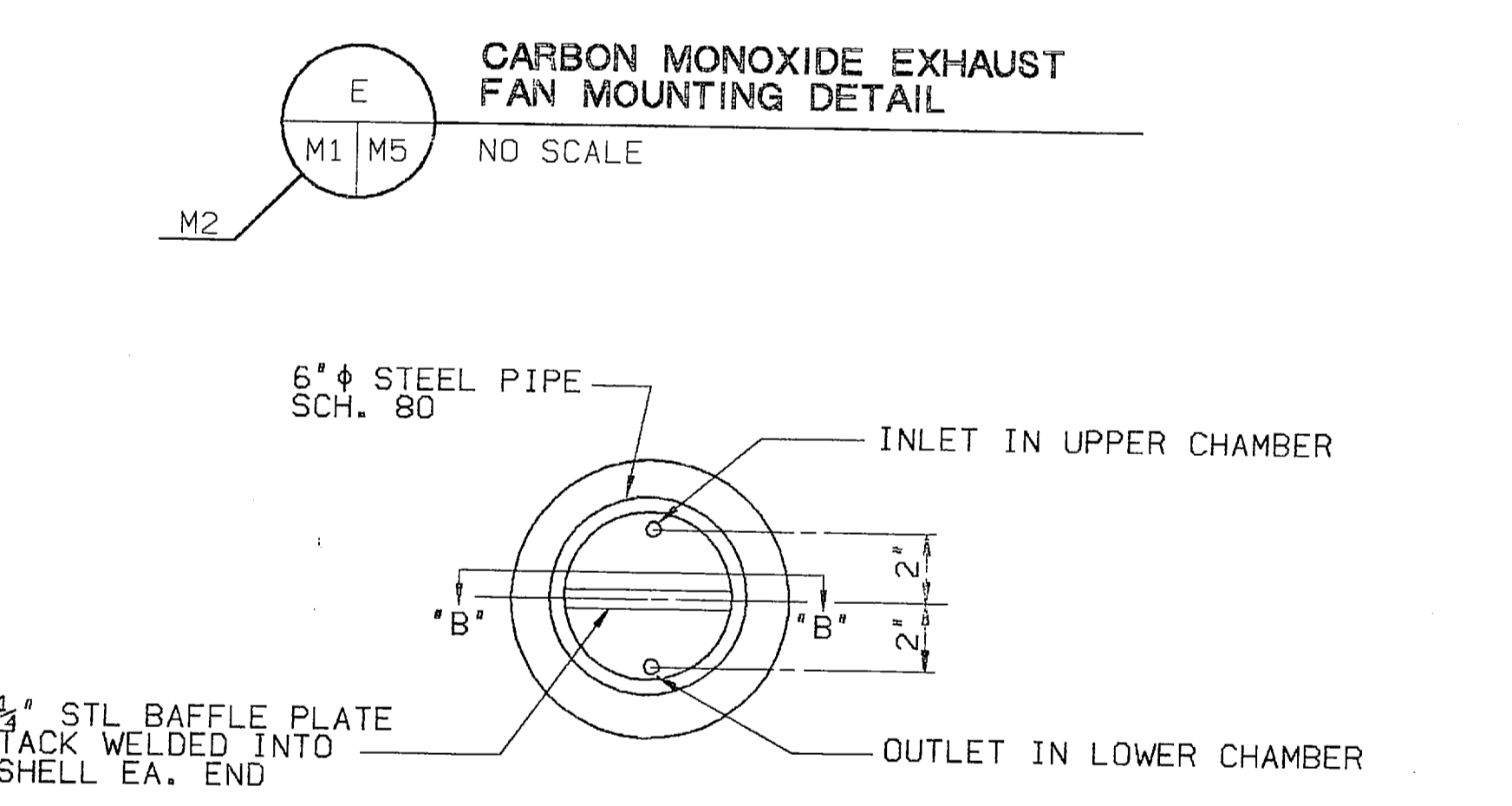
F CONDENSATE PUMP DETAIL
NO SCALE



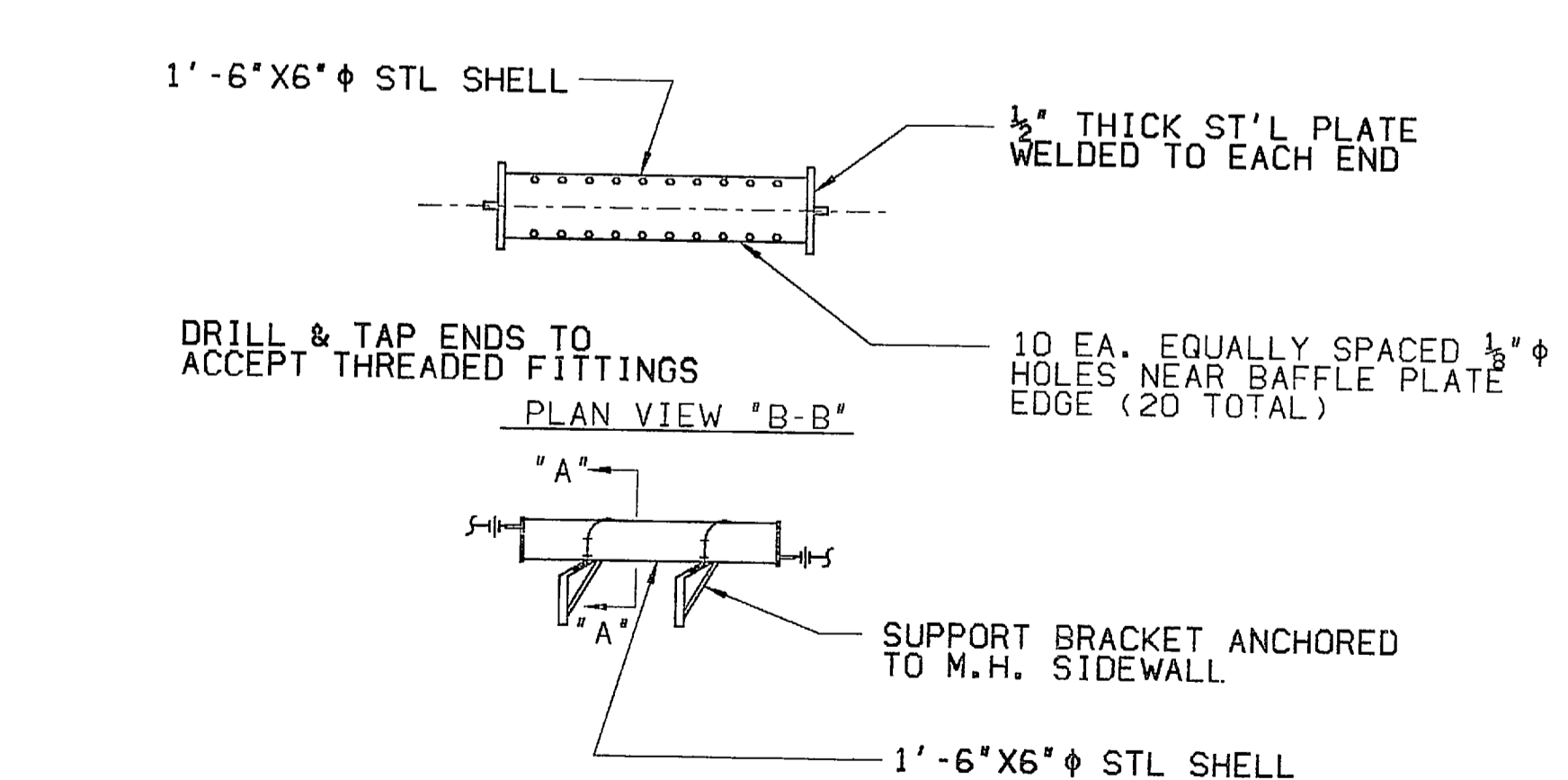
G HOT VENT DETAIL
NO SCALE



**H RTR PIPE MANHOLE ENTRY DETAIL
CONDENSATE OR HOT WATER**
NO SCALE

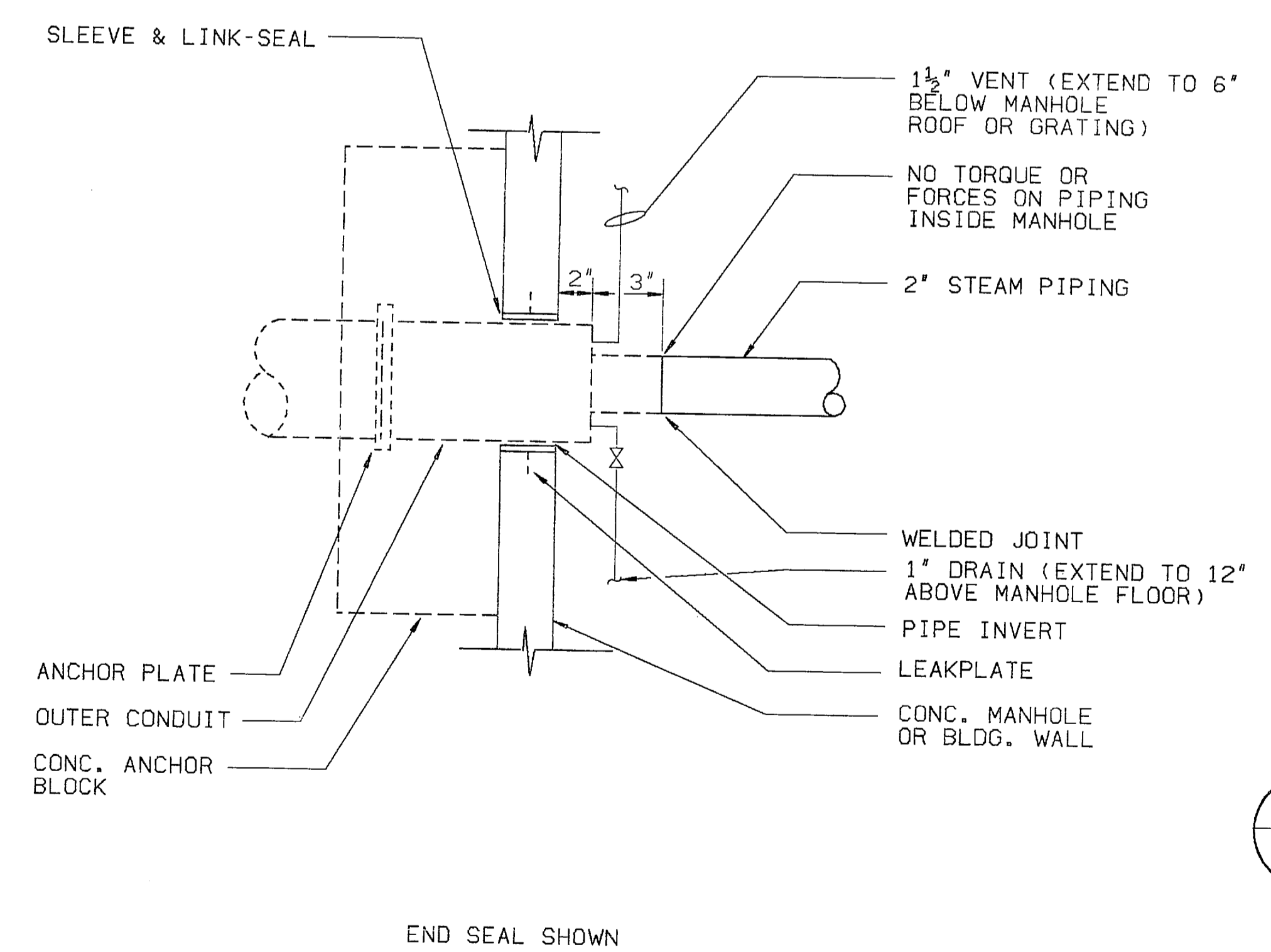


SECTION VIEW 'A-A'

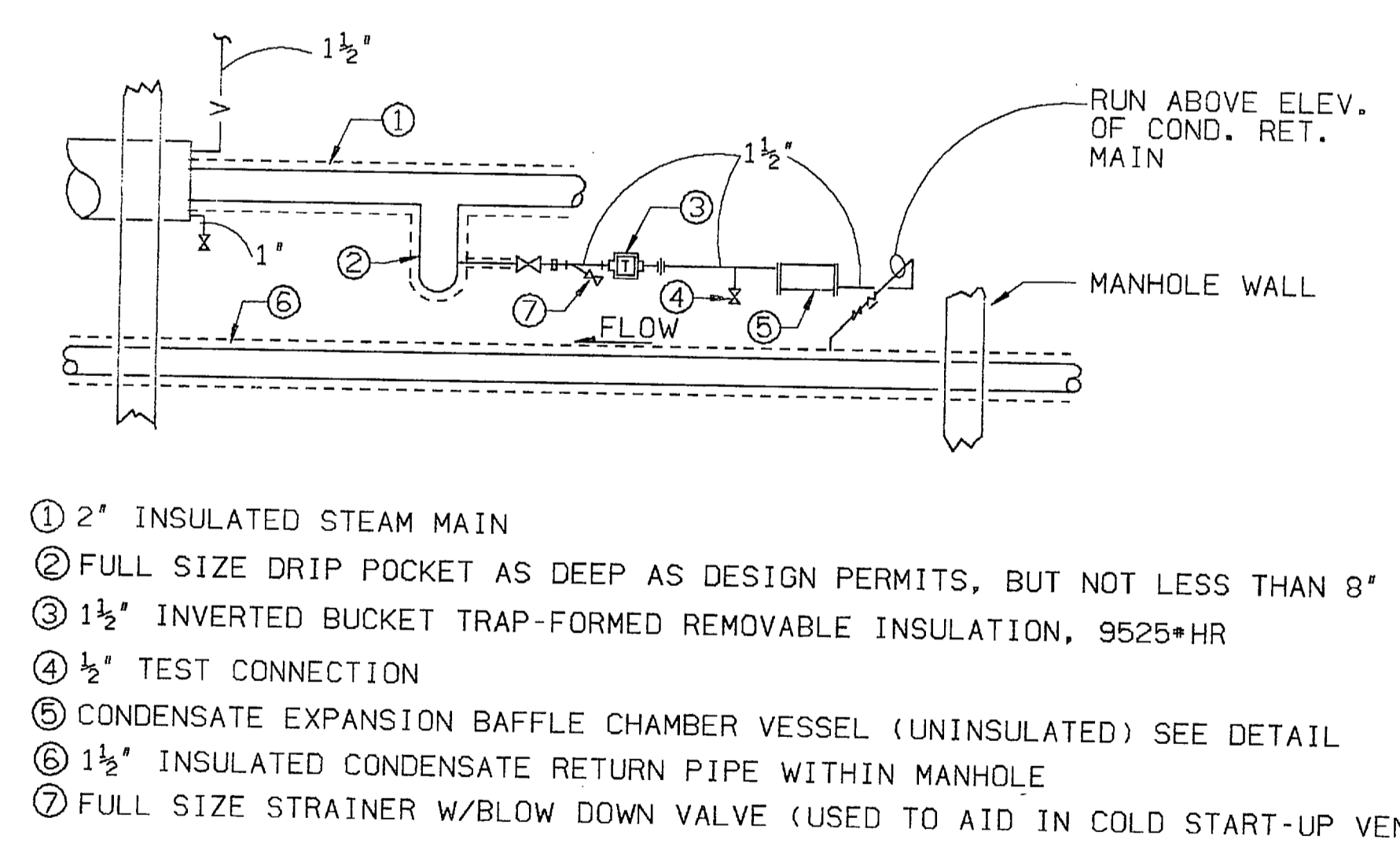


PLAN VIEW 'B-B'

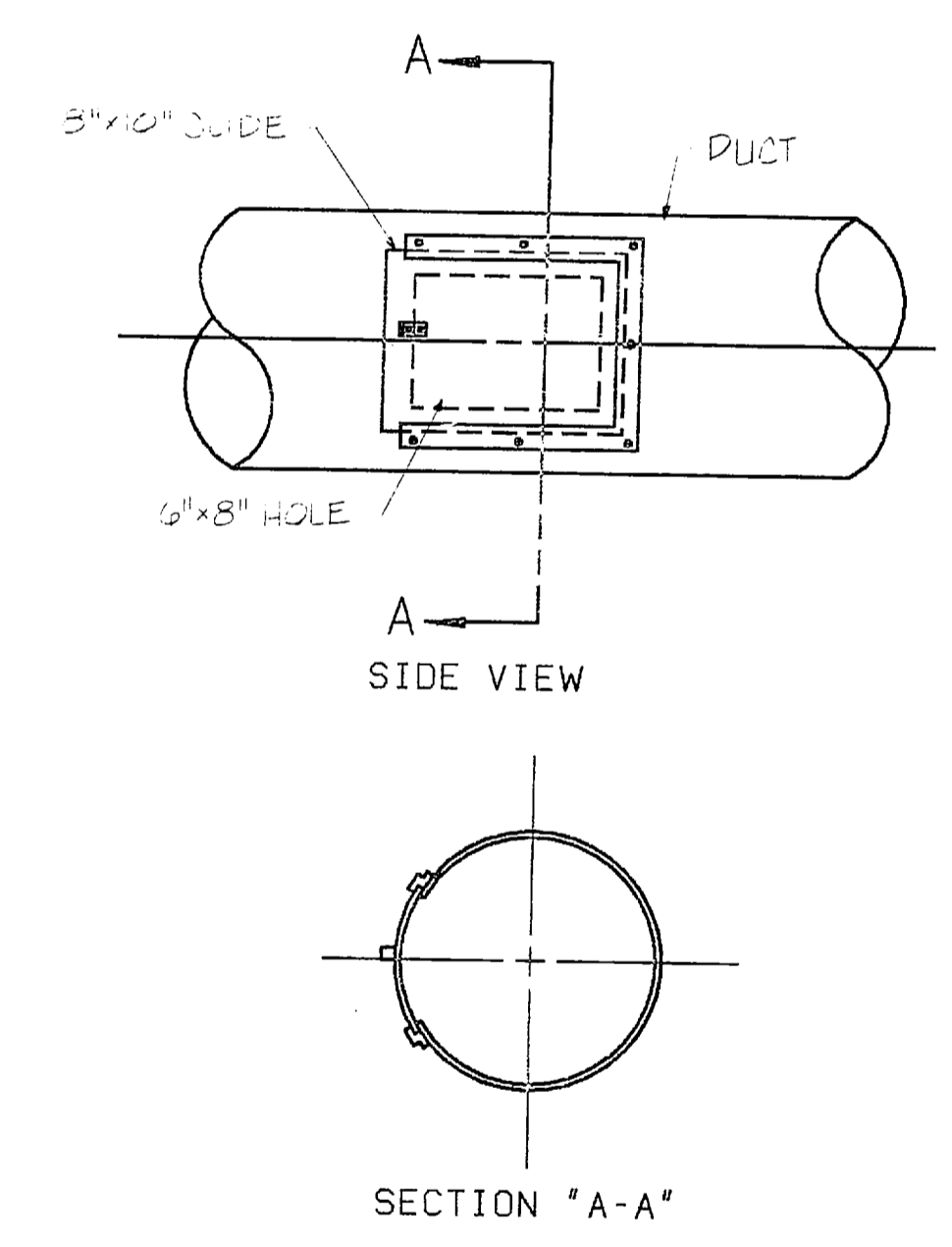
L BAFFLE CHAMBER CONSTRUCTION DETAIL
NO SCALE



J STEAM PIPE MANHOLE ENTRY DETAIL-CLASS 'A'
NO SCALE



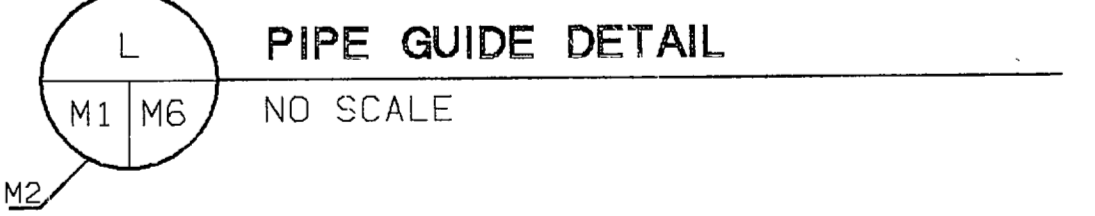
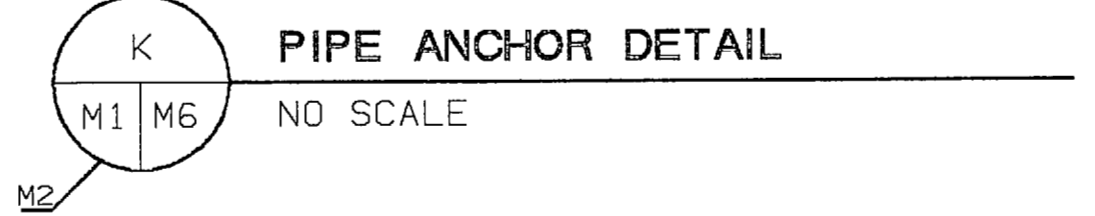
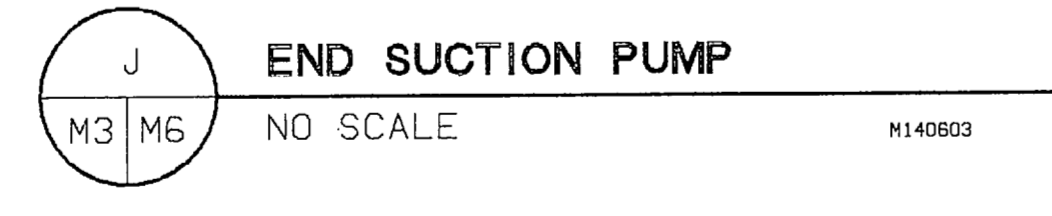
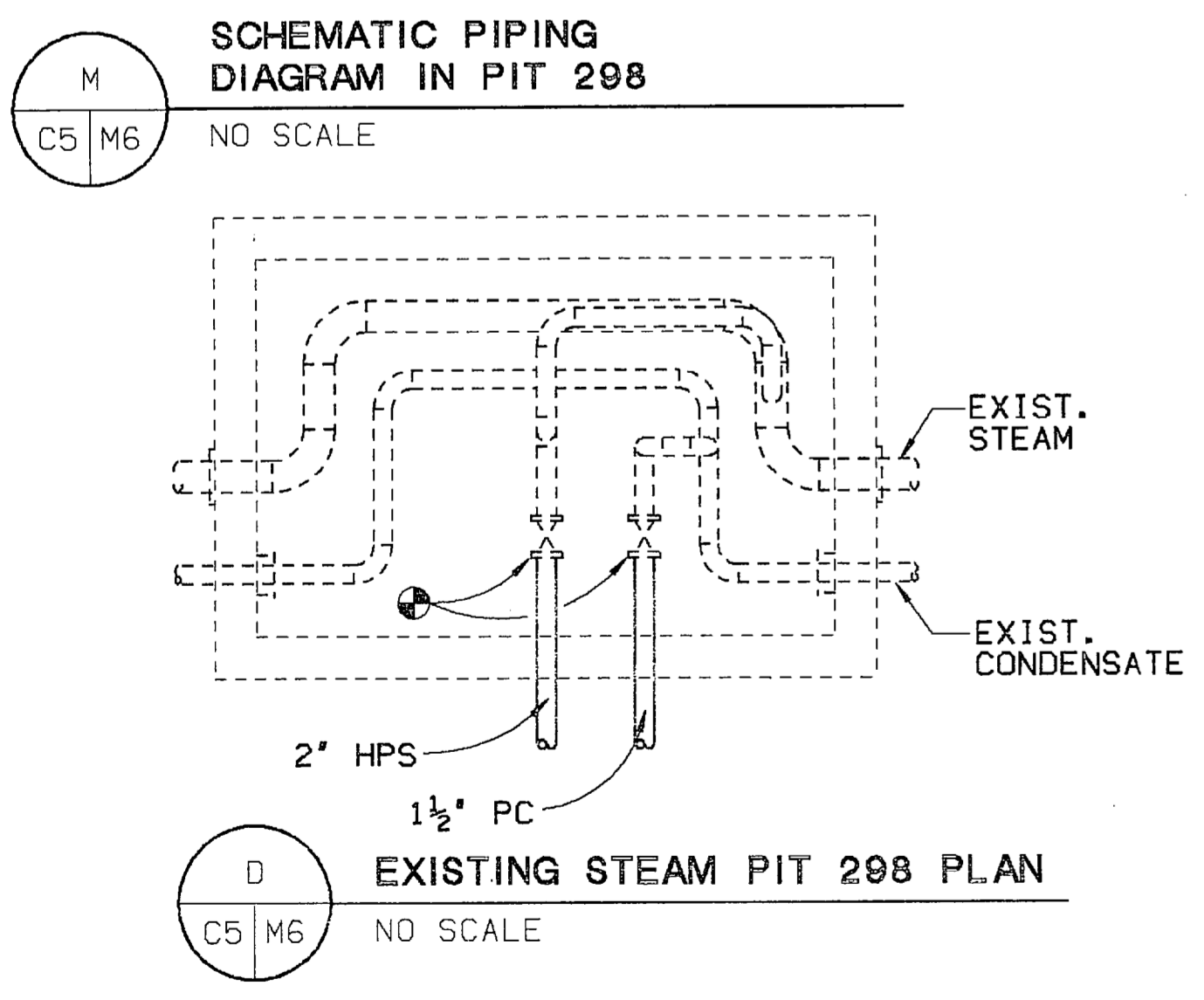
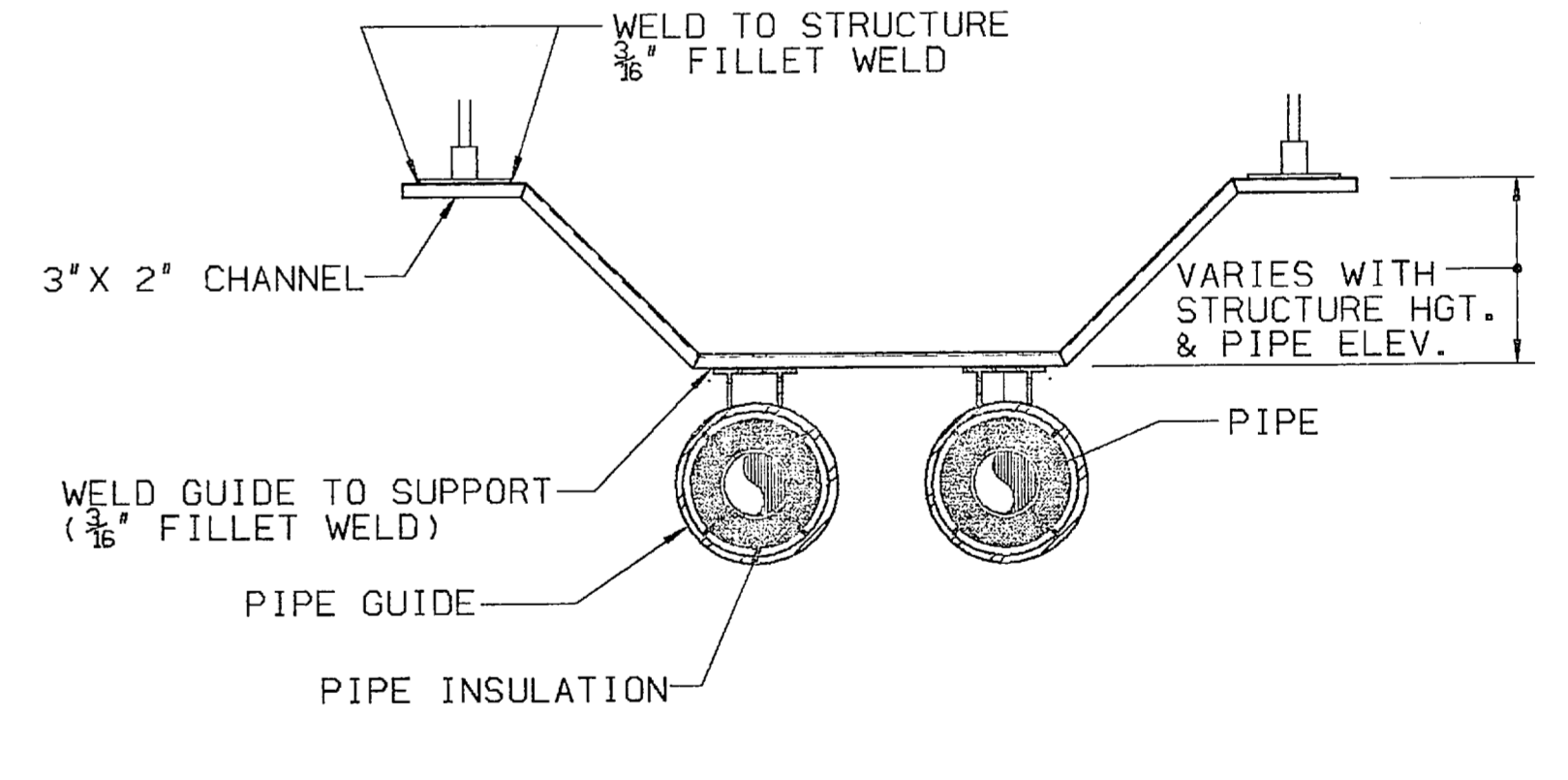
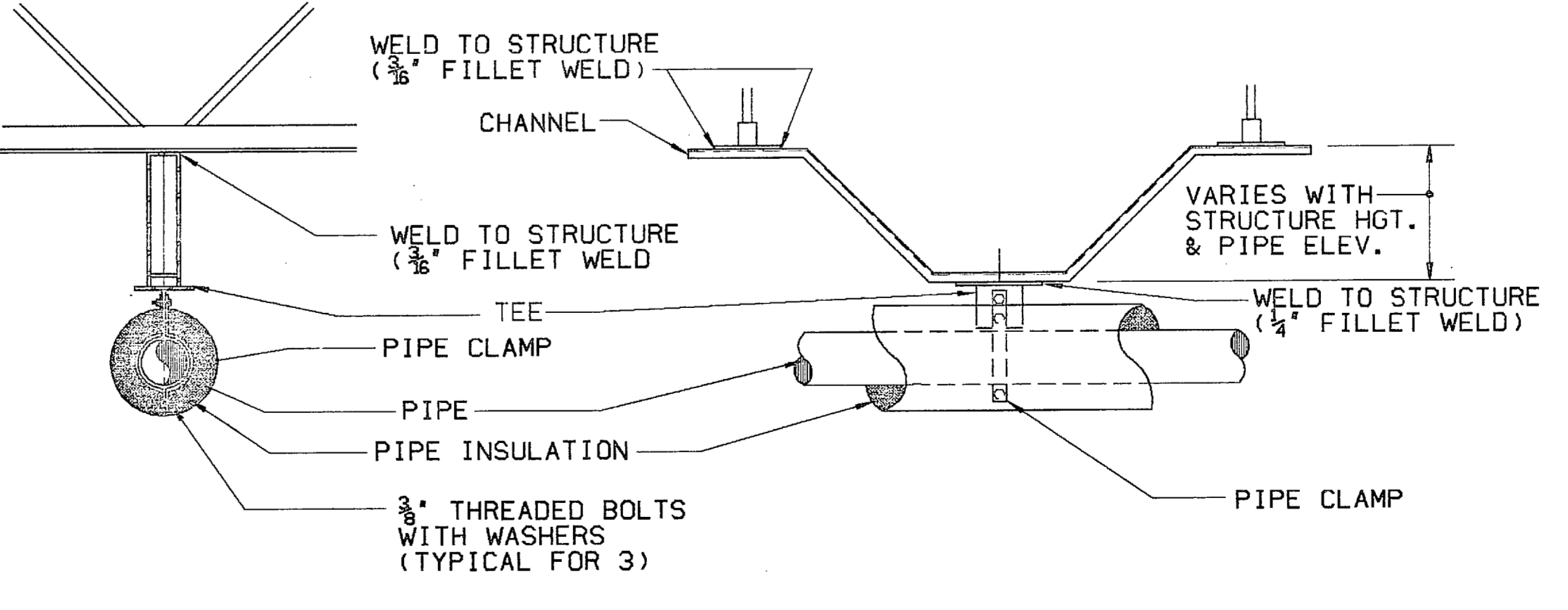
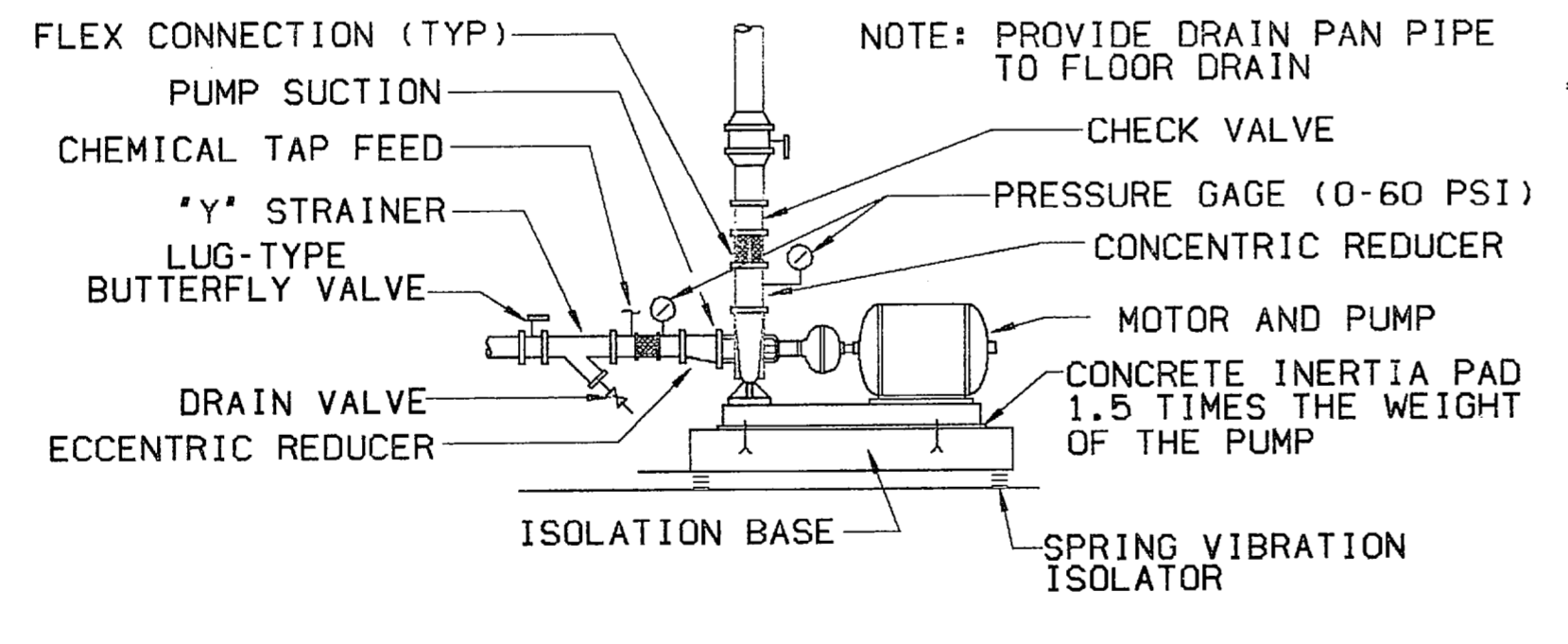
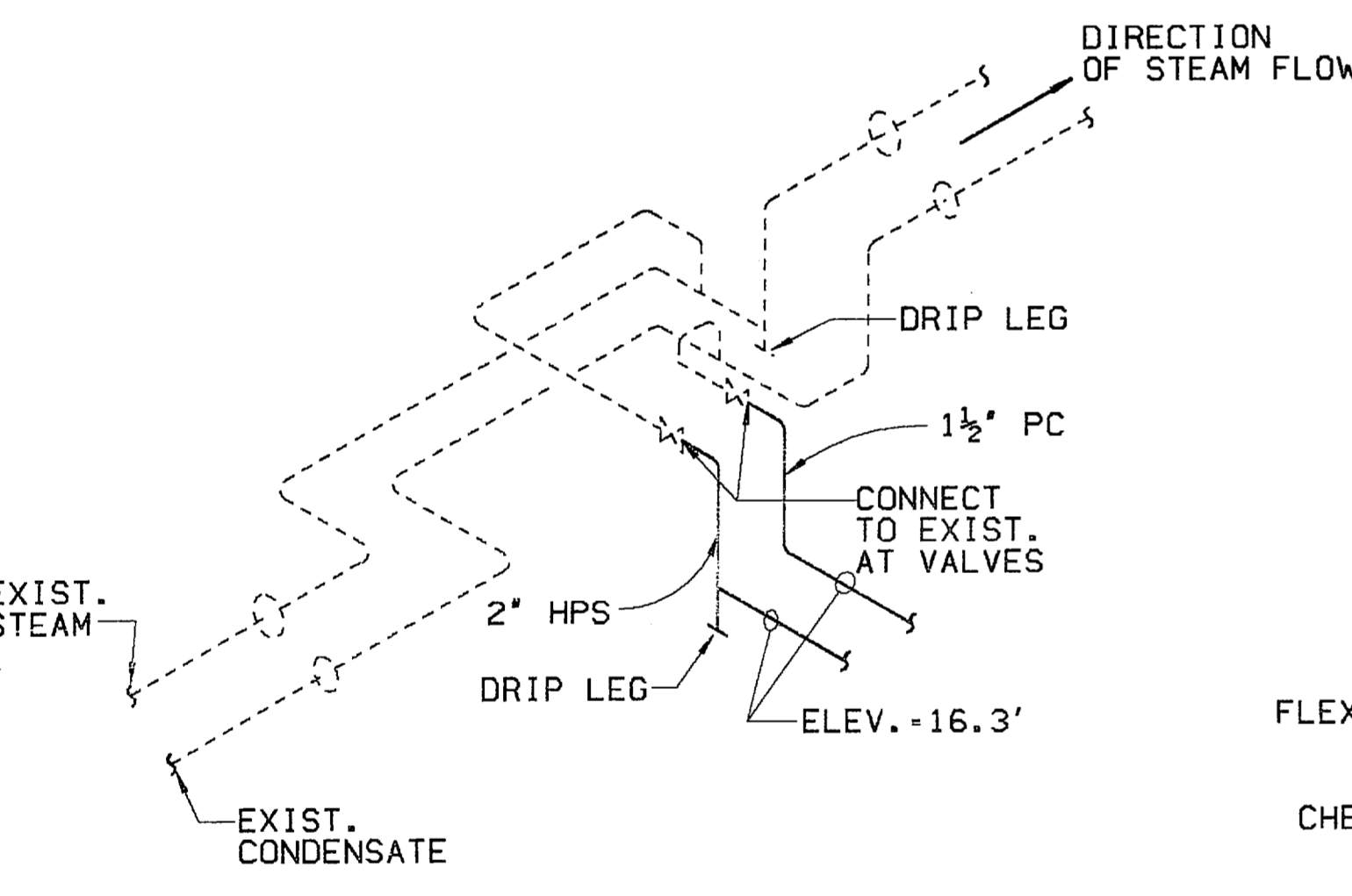
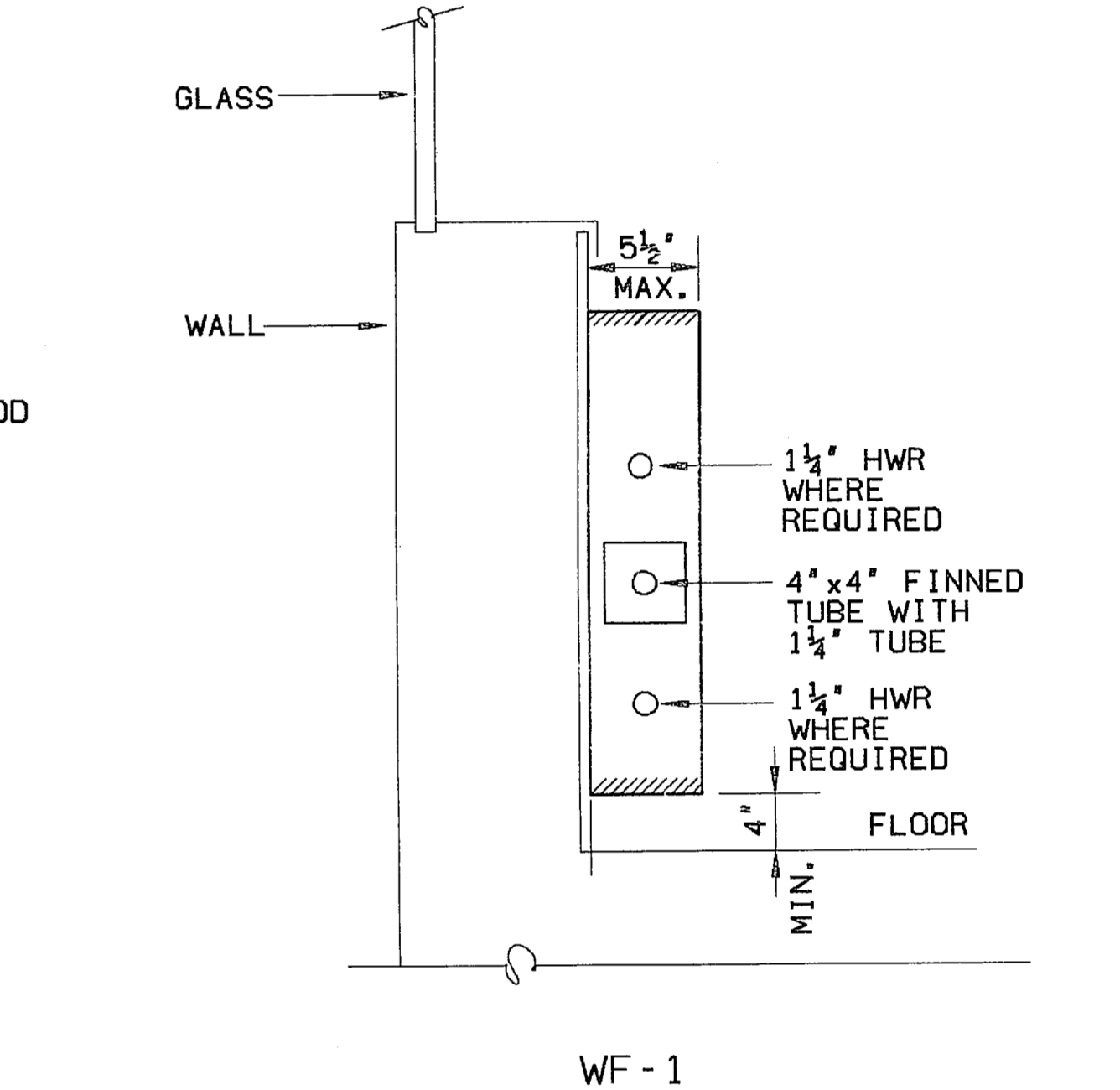
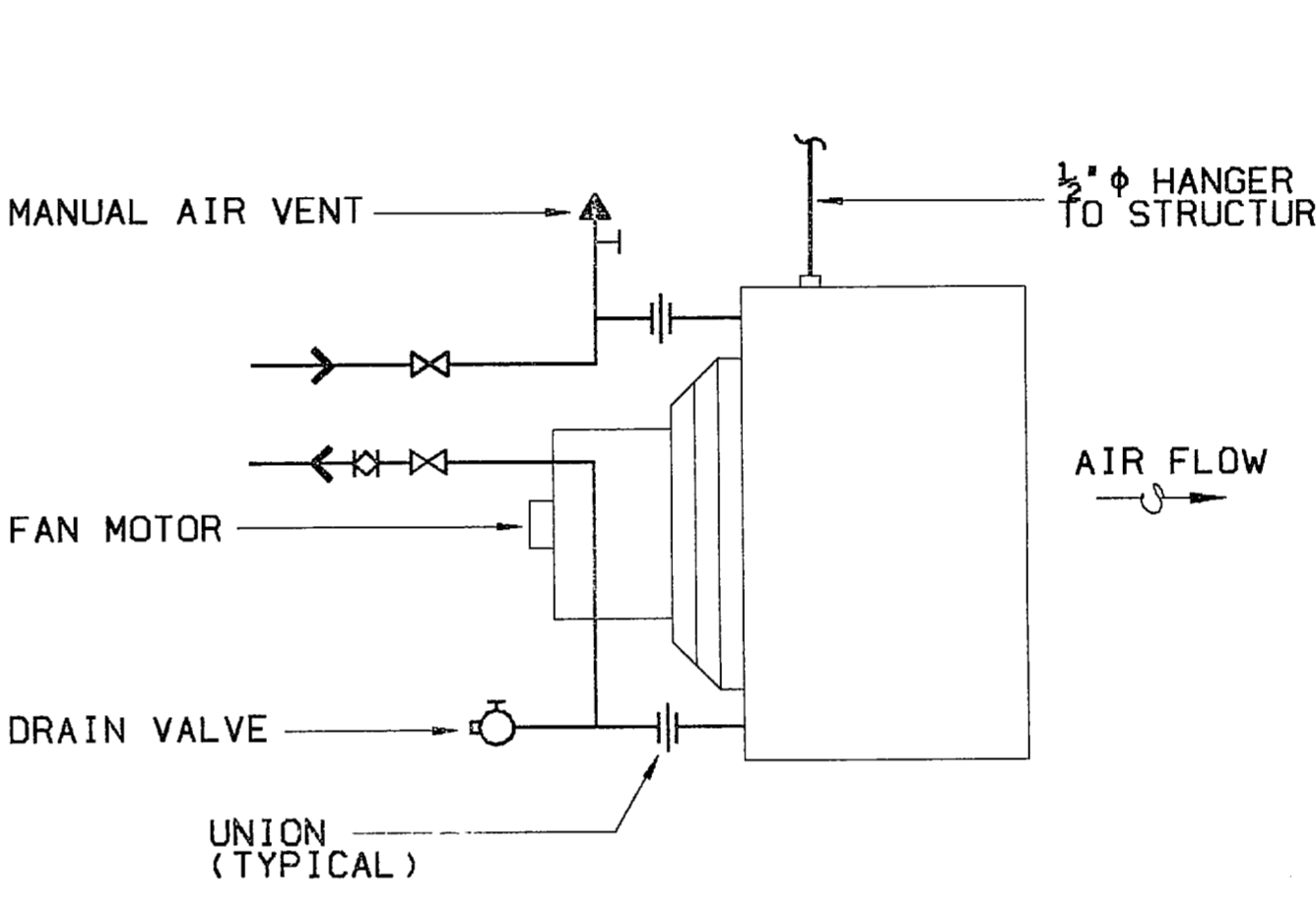
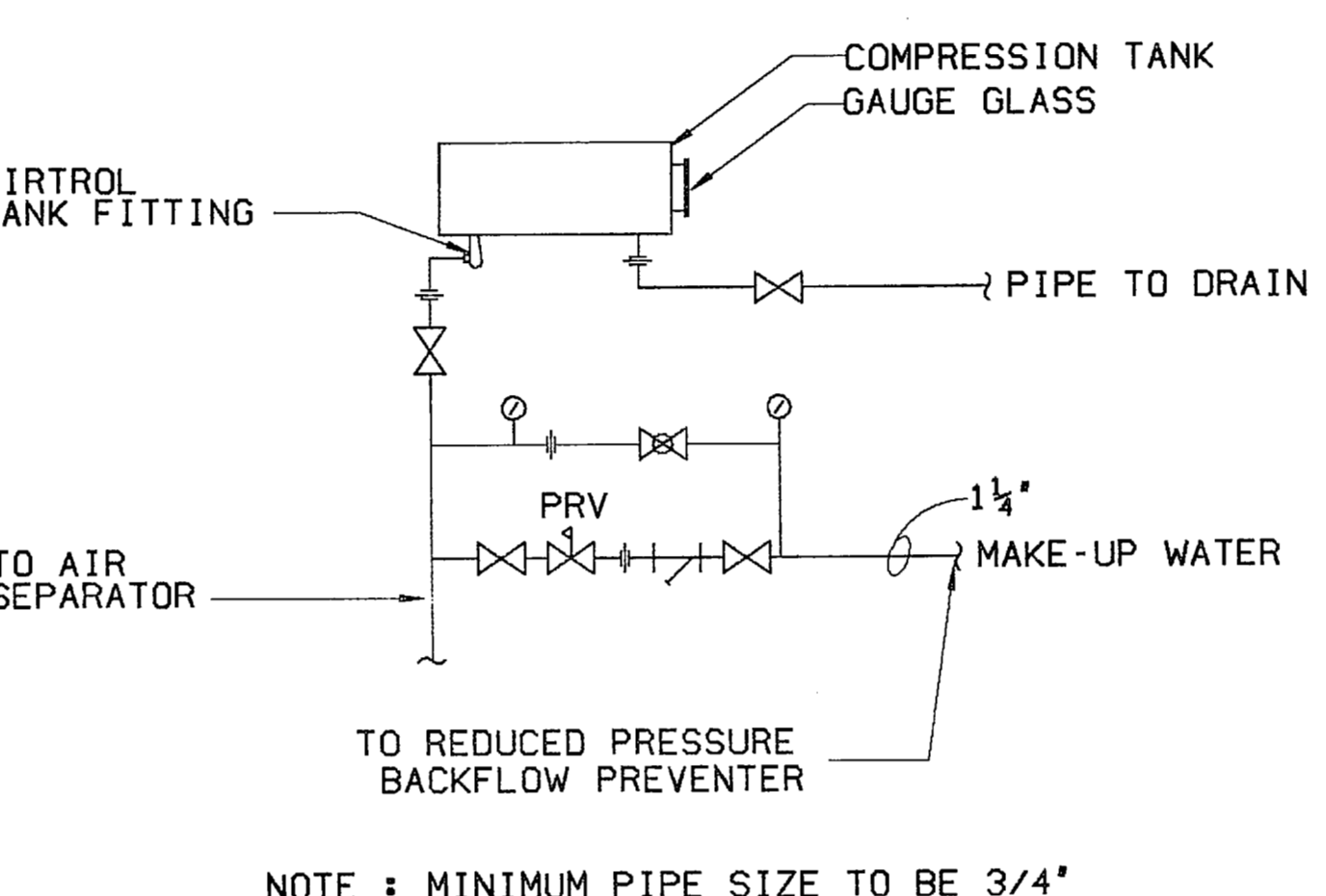
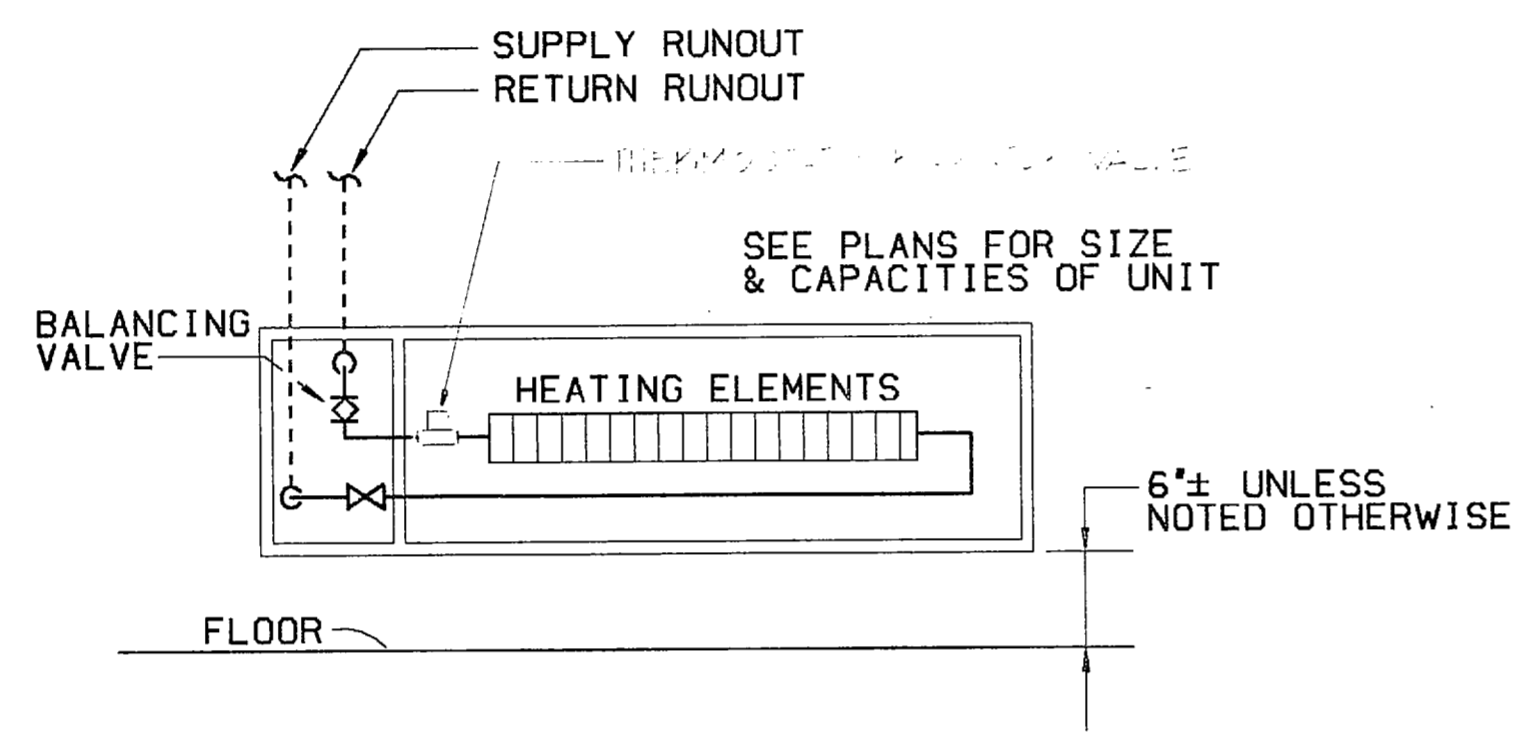
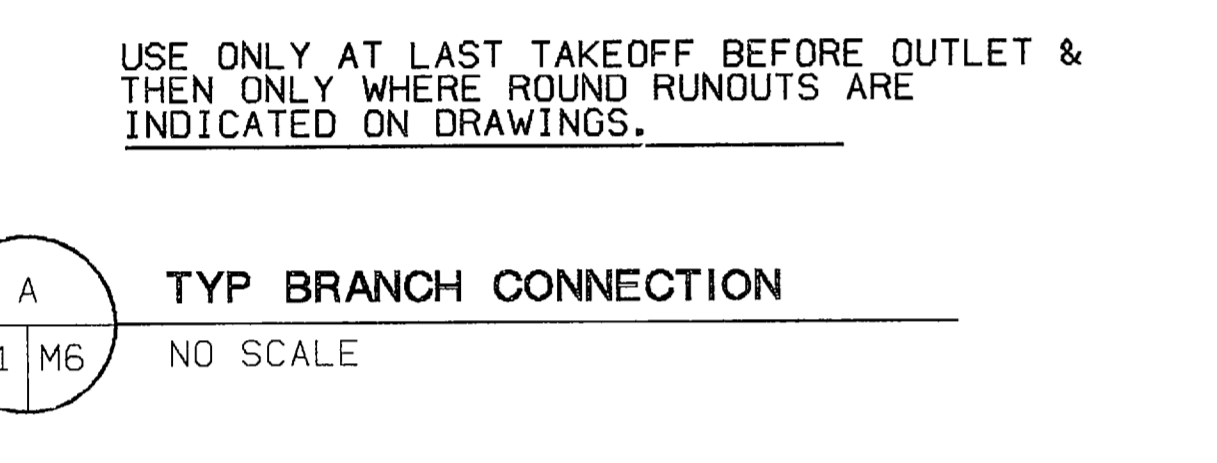
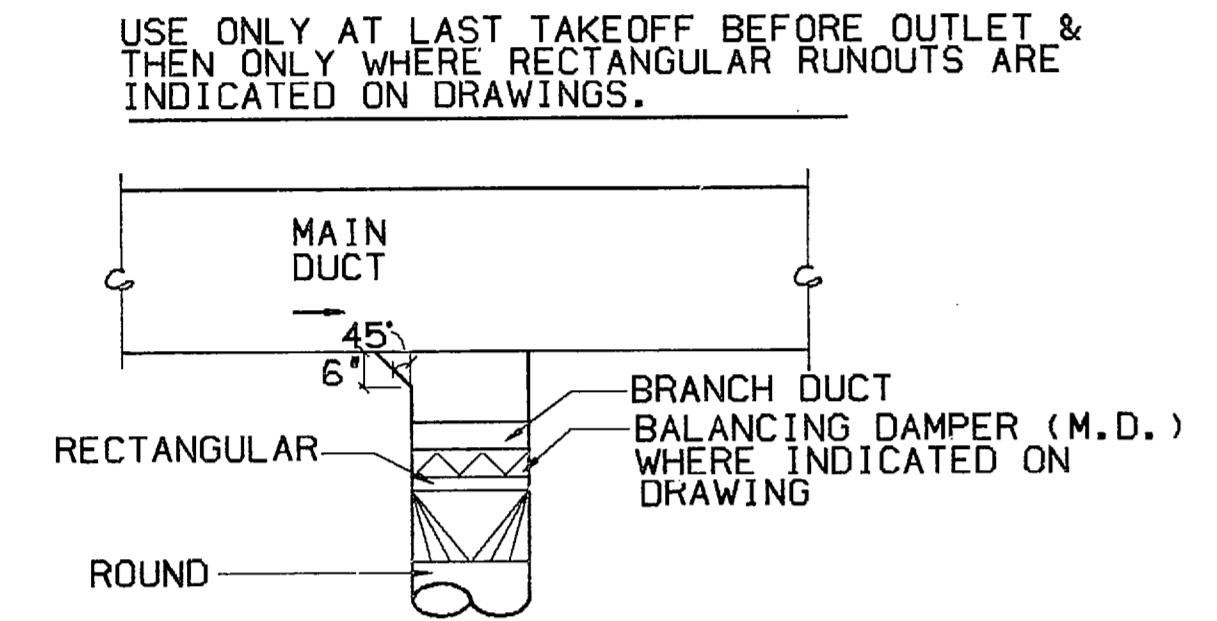
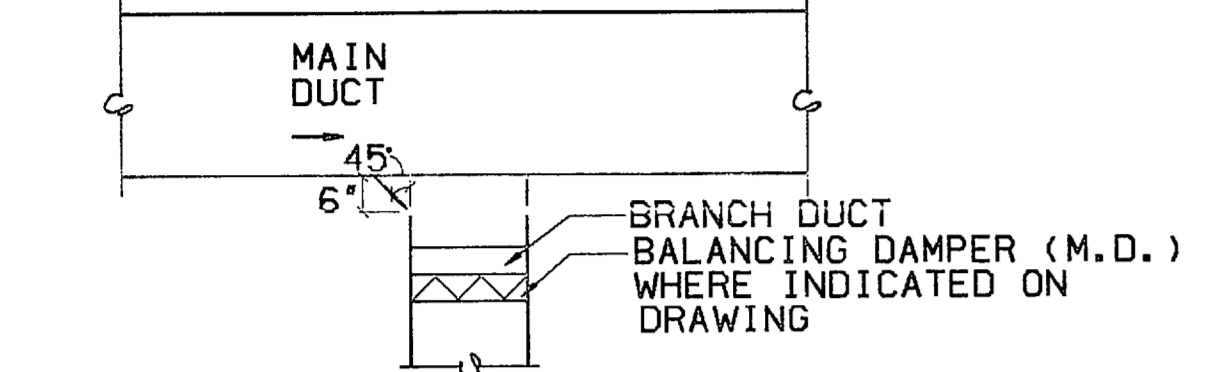
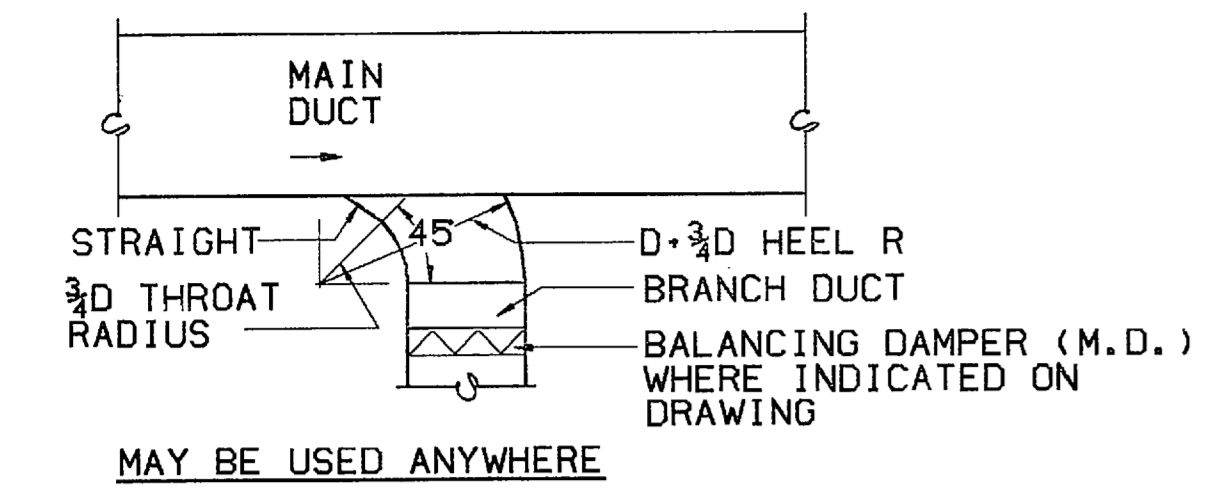
K UNDERGROUND HIGH PRESSURE STEAM CONDENSATION DRIP TO STEEL COND. SYSTEMS
(FULL INSULATED PIPING NO RADIATION)
NO SCALE



M CLEAN-OUT DETAIL
NO SCALE

NAVY Clark Tribble Harris & Li ARCHITECTS Charlotte, North Carolina ARCHITECTS-ENGINEERS		DEPT. OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND CHARLOTTE, NORTH CAROLINA ARCHITECTS-ENGINEERS	
HP250 M5		ATLANTIC DIVISION NORFOLK, VIRGINIA CAMP LEJEUNE, N.C.	
EPD DWG NO. 265973 JOB ORDER NO. SP-148 STA. PROJ. NO. P-643 DES. JCV PROJ. MGR. RD CH. ARCH/ENGR. RH	MARINE CORPS BASE ELECTRONIC COMMUNICATIONS/ VEHICLE MAINTENANCE SHOPS (P-643)	MECHANICAL DETAILS SIZE CODE IDENT NO. NAVFAC DRAWING NO. 4158973	CONSTR. CONTR. NO. NS2470-85-B-5148 SHEET 48 OF 67
SATISFACTORY TO NAVELEC SYSTEM COMMAND SDEAST DIV DIRECTOR NAVELEX REF DWG NO.		APPROVED DATE ACTIVITY - SATISFACTORY TO APPROVED DATE FOR EPL FOR COMMANDER NAVFAC	APPROVED DATE APPROVED DATE APPROVED DATE

REVISIONS			
SYM	DESCRIPTION	PREP'D BY	DATE



RECORD DRAWING HP 250 **M6**
LETTER DATED 1 Oct 1990

Clark Tribble Harris & L1 ARCHITECTS Charlotte, North Carolina ARCHITECTS-ENGINEERS	DEPT. OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORFOLK, VIRGINIA
EFD DWG NO. 295074 JOB ORDER NO. 975148 STA PROJ NO. P-643 DES JCV PROJ MGR RD CH ARCH/ENGR RH	MARINE CORPS BASE CAMP LEJEUNE, N.C. ELECTRONIC COMMUNICATIONS/ VEHICLE MAINTENANCE SHOPS (P-643)
EFD/RVD BR MGR DES DIR DATE	MECHANICAL DETAILS SIZE CODE IDENT NO.
DIRECTOR NAVELEX REF DWG NO.	NAVFAC DRAWING NO. 4156974 CONSTR. CONTR. NO. N62470-85-B-5148 SHEET 60 OF 67

SATISFACTORY TO NAVELEX SYSTEM COMMAND SOEAST DIV
 APPROVED DATE
 ACTIVITY - SATISFACTORY TO NAVELEX SYSTEM COMMAND SOEAST DIV
 APPROVED DATE
 FOR EFD FOR COMMANDER NAVFAC

PUMP SCHEDULE								
NO.	SERVICE	LOCATION	OPM	HEAD FEET	HP	RPM	REMARKS	VOLT/PHASE
P1	HOT WATER	MECH RM	150	65	5	1750		460/3
P2	HOT WATER	MECH RM	150	65	5	1750		460/3
P3	CONDENSATE	MECH RM	12.6	20	3/4	5500	DUPLX 14 GAL. REC.	120/1

FAN SCHEDULE								
NO.	SERVICE	LOCATION	TYPE	CFM	SP IN WG	WHEEL DIA.	HP	REMARKS
F1	EXHAUST	ROOF	CENTRIF.	500	.375	8"	1/4	1,2,4,9,10,11
F2	EXHAUST	ROOF	CENTRIF.	600	.375	9"	1/4	1,2,4,9,10,11
F3	EXHAUST	ROOF	CENTRIF.	600	.375	9"	1/4	1,2,4,9,10,11
F4	EXHAUST	ROOF	CENTRIF.	800	.375	9"	1/4	1,2,4,9,10,11
F5	TOILET EXHAUST	ROOF	CENTRIF.	2410	.375	21"	1/2	1,2,4,9,11
F6	EXHAUST	ROOF	CENTRIF.	400	.375	9"	1/4	1,2,4,9,10,11
F7	EXHAUST	ROOF	CENTRIF.	400	.375	9"	1/4	1,2,4,9,10,11
F8	TOILET EXHAUST	ROOF	CENTRIF.	940	0.25	14"	1/4	1,2,4,9,11
F9	EXHAUST	ROOF	CENTRIF.	400	.375	9"	1/4	1,2,4,9,10,11
F10	EXHAUST	ROOF	CENTRIF.	400	.375	9"	1/4	1,2,4,9,10,11
F11	TOILET EXHAUST	ROOF	CENTRIF.	1580	0.25	14"	1/4	1,2,4,9,11
F12	RETURN	GENERAL WORK AREA 124	IN-LINE CENTRIF.	10640	0.75	30"	5	3,9,12
F13	RETURN	RADIO STORAGE 145	IN-LINE CENTRIF.	10070	0.75	30"	5	3,9,12
F14	RETURN	MECHANICAL ROOM 164	IN-LINE CENTRIF.	11130	0.75	36"	5	3,9,12
F15	RETURN	VEHICLE MAINTEN BAY 177	IN-LINE CENTRIF.	13770	0.75	36"	5	3,9,12
F16	RETURN	VEHICLE MAINTEN BAY 177	IN-LINE CENTRIF.	11070	0.75	30"	5	3,9,12
F17	RETURN	MECHANICAL ROOM 164	IN-LINE CENTRIF.	7920	0.75	24"	3	3,9,12
F18	TOILET EXHAUST	ROOF	CENTRIF.	640	.375	10"	1/4	1,2,4,9,11

NOTES: 1) BIRDSCREENS, 2) BACKDRAFT DAMPER, 3) DISCONNECT, 4) PREFAB CURB, 5) INLET VANES, 6) INLET GRILLE, 7) THERMOSTAT CONTROLLED, 8) MOTORIZED DAMPER, 9) BELT DRIVE, 10) SPARK PROOF WHEEL, 11) 120V/1 ϕ , 12) 460V/3 ϕ

HVAC LEGEND		
SYMBOL	ABBREV.	SERVICE
— D —	D	DRAIN PIPING
— PC —	PC	PUMPED CONDENSATE PIPING
— HPS —	HPS	HIGH PRESSURE STEAM (150*)
— GV —	GV	GATE VALVE
— BV —	BV	BUTTERFLY VALVE
— GLV —	GLV	GLOBE VALVE
— DV —	DV	HOSE END DRAIN VALVE
— AV —	AV	ANGLE VALVE
— VB —	VB	VACUUM BREAKER
— CV —	CV	CHECK VALVE
— AAV —	AAV	AUTOMATIC AIR VALVE
— MAV —	MAV	MANUAL AIR VALVE
— BV —		BALANCING VALVE
— AV —		AUTOMATIC CONTROL VALVE, 2 WAY
— AV —		AUTOMATIC CONTROL VALVE, 3 WAY
— PRV —	PRV	PRESSURE RELIEF VALVE
— RV —	RV	RELIEF VALVE
— FS —		FLOW SWITCH
— RPB —		REDUCED PRESSURE BACKFLOW PREVENTOR
— S —		STRAINER
— U —		UNION
— PAS —		PIPE ANCHOR SUPPORT
— PG —		PRESSURE GAUGE
— PS —		PRESSURE SWITCH
— T —		THERMOMETER
— PTD —		PIPE TURNING DOWN
— PTU —		PIPE TURNING UP
— CR —		CONCENTRIC REDUCER
— ER —		ECCENTRIC REDUCER
— SADS —		SUPPLY AIR DUCT SECTION
— RADS —		RETURN AIR DUCT SECTION
— CFM —		CUBIC FEET PER MINUTE
— DLI —		DUCT WITH ACoustICAL LINER INSULATION
— FD —		FLEXIBLE DUCT
— CLD —		CeILING LINEAR DIFFUSER OR GRILLE
— SD —		SUPPLY DIFFUSER
— RG —		RETURN GRILLE
— AFD —		AIR FLOW DIRECTION
— UC —	UC	DOOR UNDER CUT (SEE DOOR SCHEDULE)
— DG —	DG	DOOR GRILLE (SEE DOOR SCHEDULE)
— MD —	MD	MANUAL DAMPER
— MOD —	MOD	MOTOR OPERATED DAMPER
— T —		THERMOSTAT
— FC —	FC	FLEXIBLE CONNECTION
— CE —		CONNECT TO EXISTING

PERFORATED CEILING DIFFUSER				
SYMBOL	MAX CFM	FACE SIZE	RUNOUT SIZE*	REMARKS
①	100	24x24	6" ϕ	
②	200	24x24	8" ϕ	
③	300	24x24	10" ϕ	
④	400	24x24	12" ϕ	
⑤	500	24x24	14" ϕ	
⑥	900	24x24	16" ϕ	
⑦	2000	24x24		22X22 NECK SIZE FOR RETURN ONLY

NOTES: PERFORATED RETURN AND EXHAUST DIFFUSERS INDICATED 'R' & 'E'

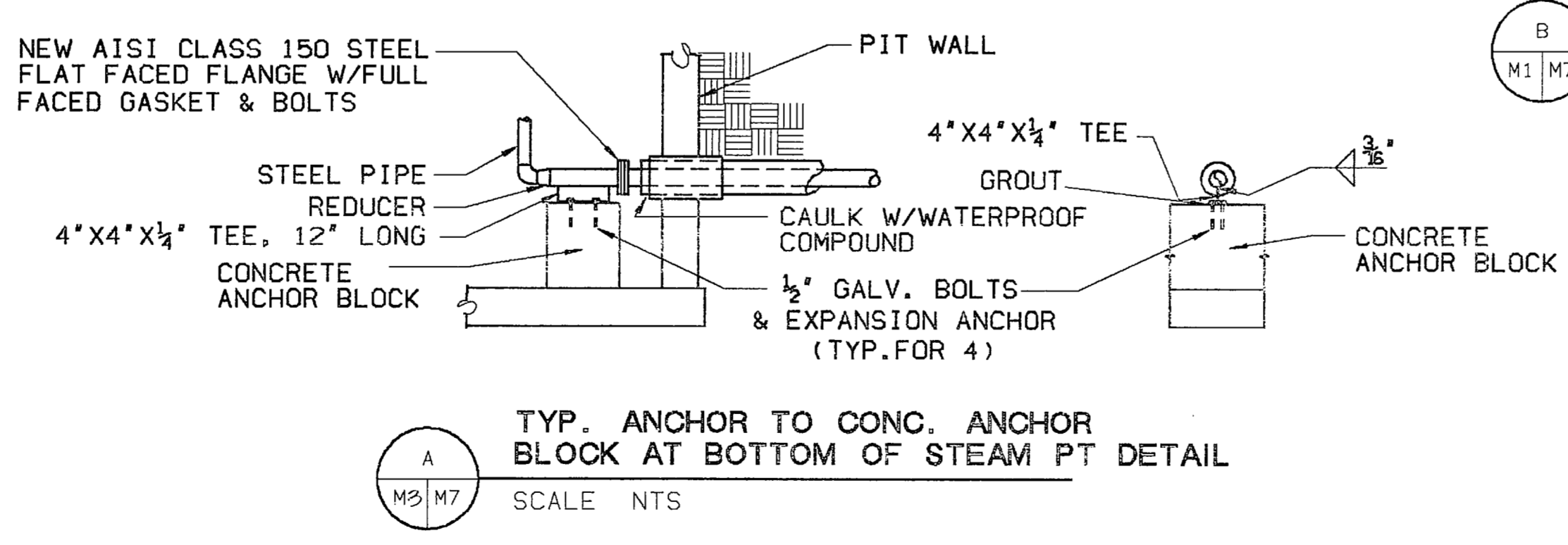
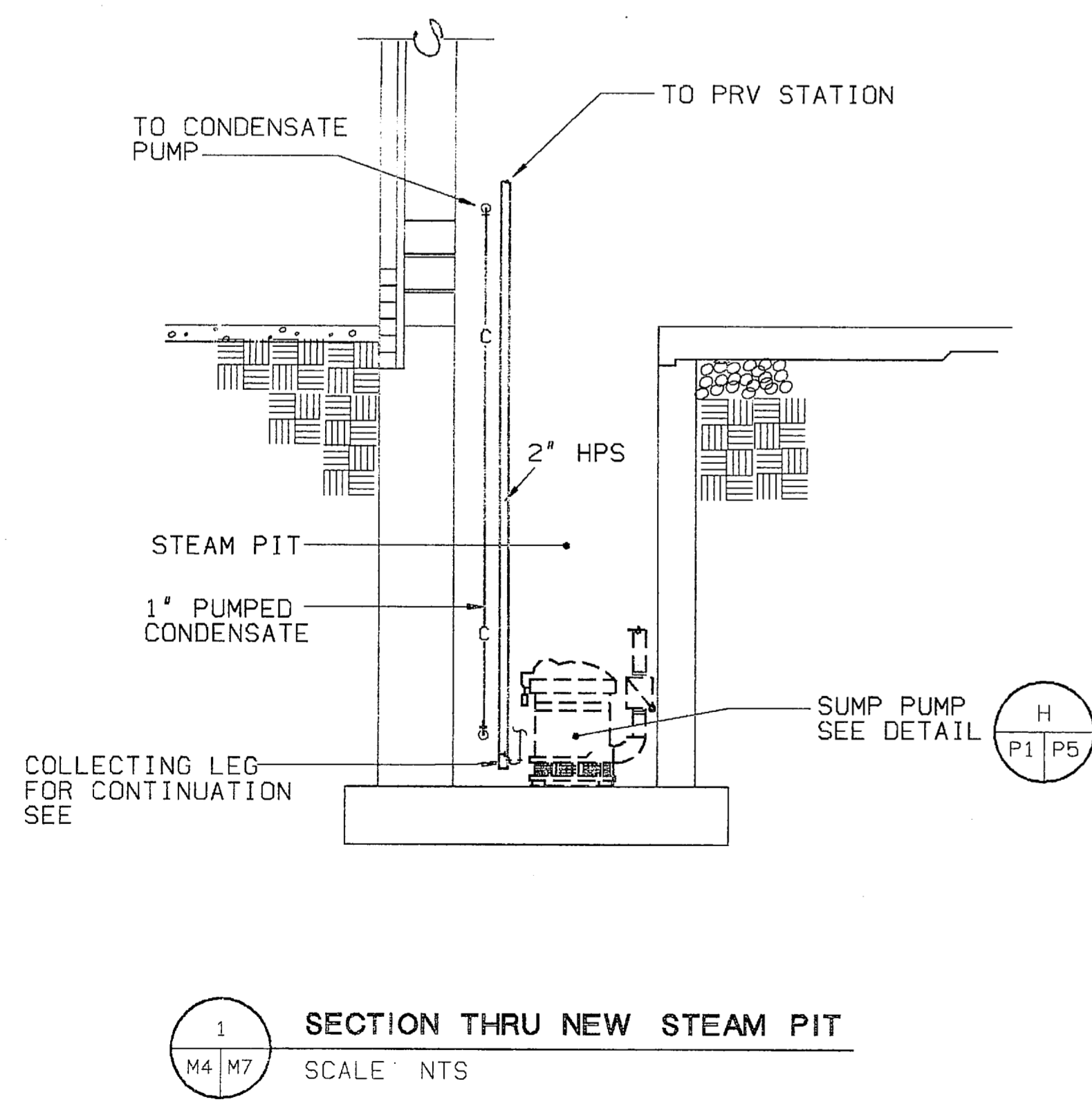
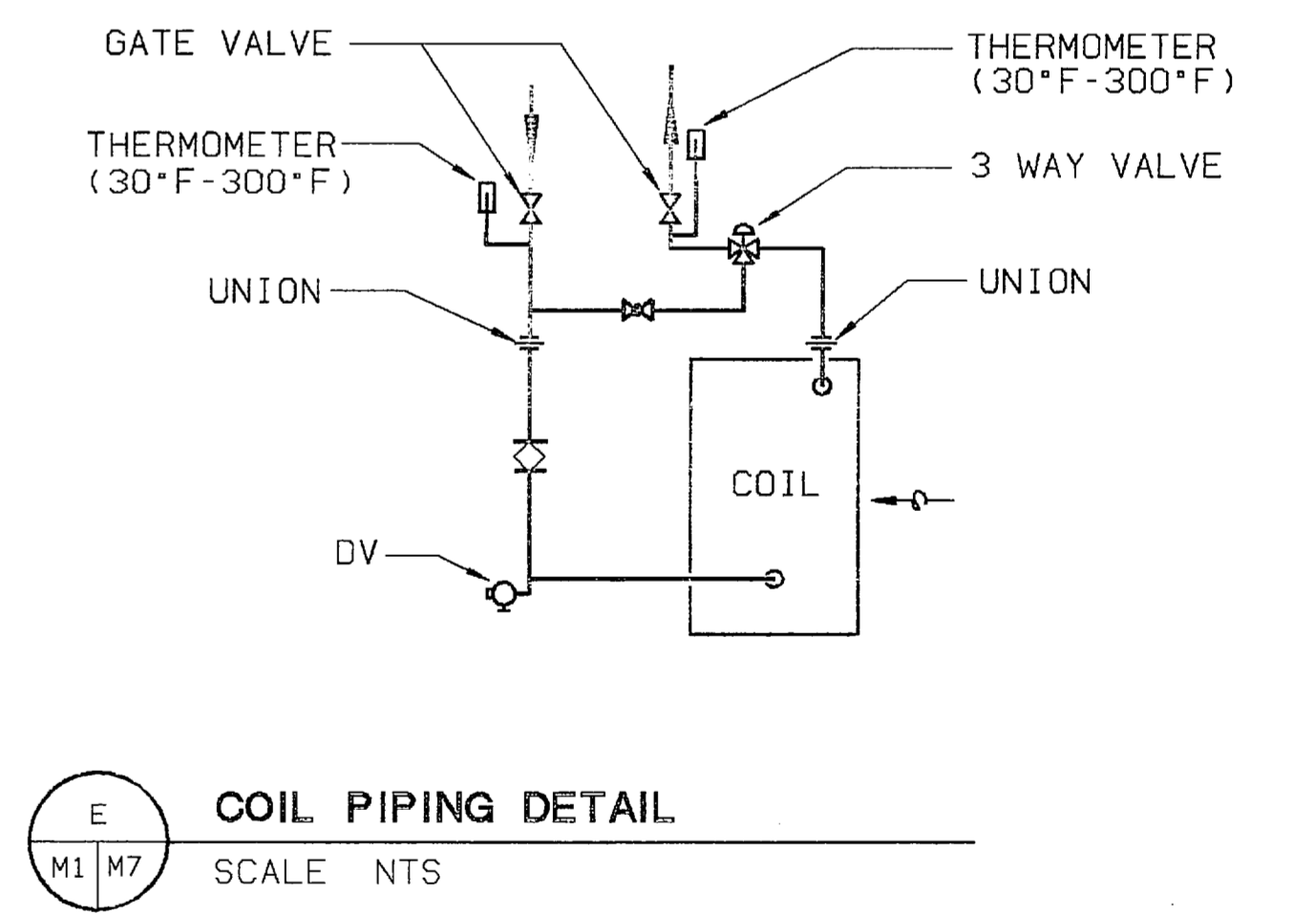
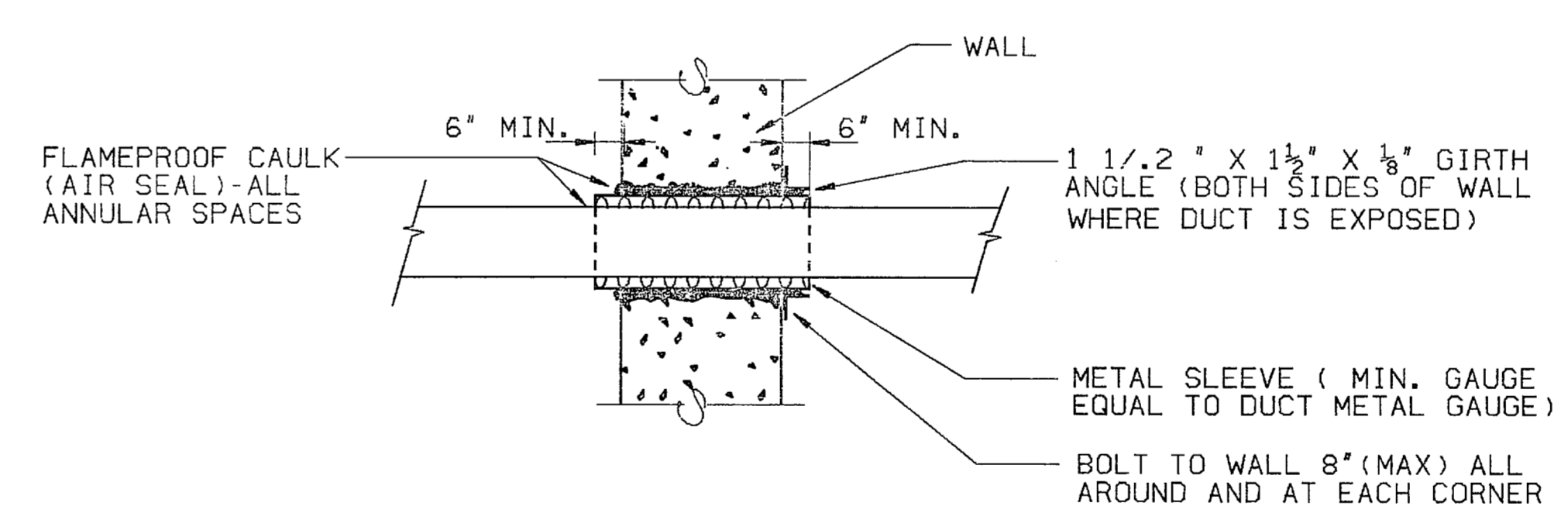
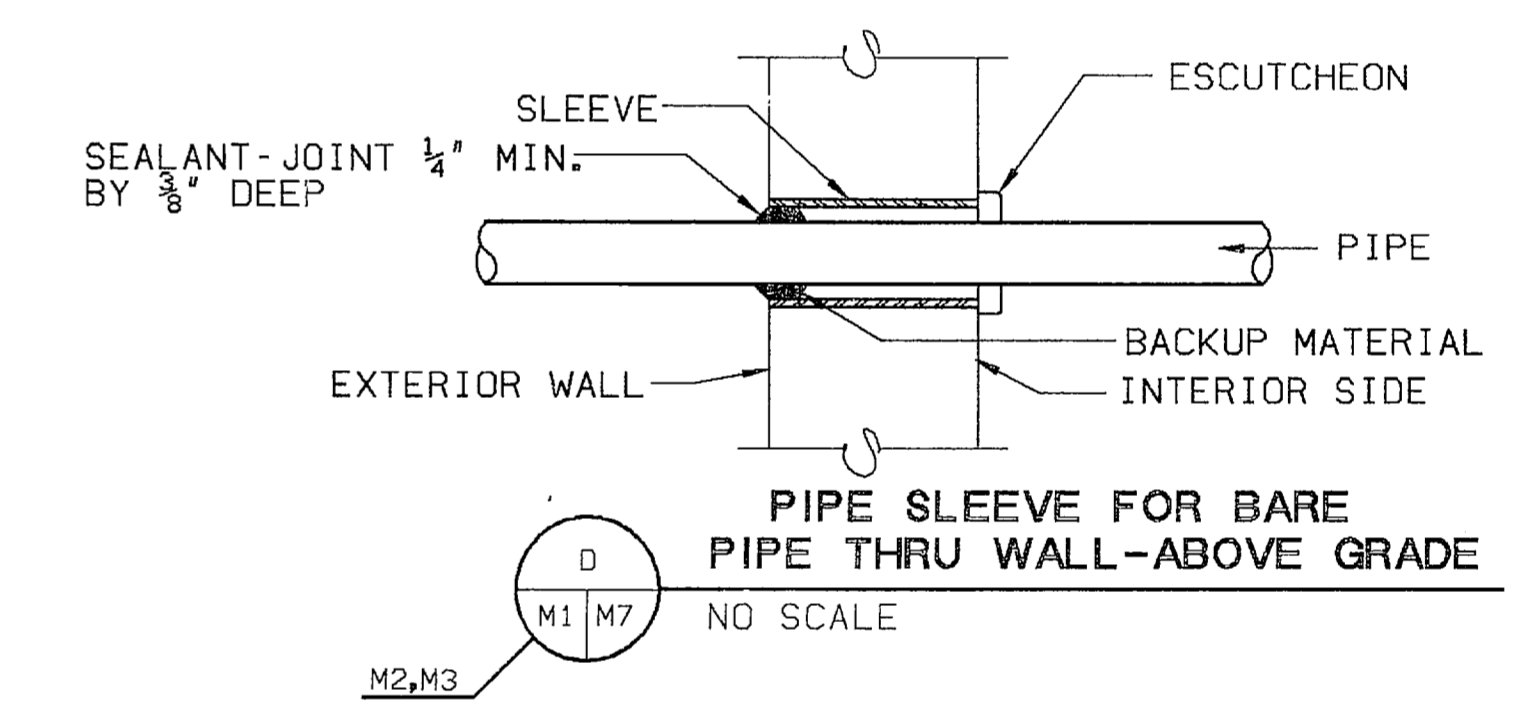
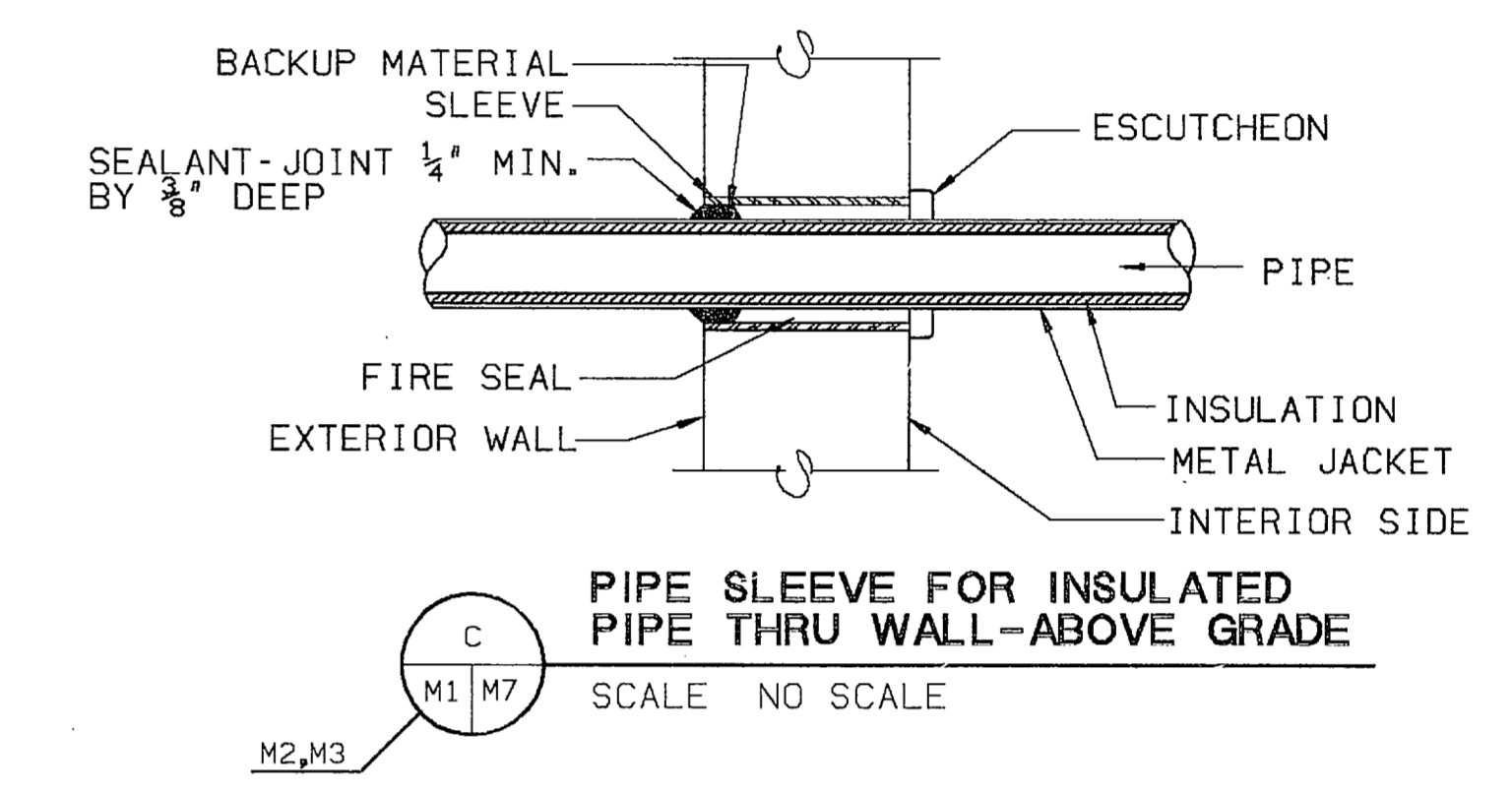
* NOT LINED

SIDEWALL LINEAR DIFFUSERS			
SYMBOL	MAX CFM	SIZE	REMARKS
①	1600	24X14	EXTRUDED ALUMINUM

RETURN OR EXHAUST DIFFUSER INDICATED BY 'R' AND 'E'

REVISIONS				
SYM	DESCRIPTION	PREP'D BY	DATE	APPROVED

NOTE: SEE ARCHITECTURE AND DETAILS OF FIELD DATA FOR POSITION AND DETAILS OF ALL SHEETS



RECORD DRAWING
DATE: 21 OCT 1990
HP250 M7

Clark Tribble Harris & Li ARCHITECTS
Charlotte, North Carolina
ARCHITECTS-ENGINEERS

DEPT. OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ATLANTIC DIVISION
NORFOLK, VIRGINIA

NAVAL STATION
MARINE CORPS BASE
CAMP LEJEUNE, N.C.

NAVY ORDER NO. 9F5148
STA PROJ NO. P-643
DES. DIV. DRWG BCT
PROJ MGR RD CH ARCH/ENGR RH

ELECTRONIC COMMUNICATIONS/
VEHICLE MAINTENANCE SHOPS
(P-643)

MECHANICAL SCHEDULES AND DETAILS

NAVFACTOR NO. 4158975

CONSTR. CONTR. NO. N62470-85-B-5148
SHEET 51 OF 67

SATISFACTORY TO
NAVELEC SYSTEM COMMAND
S0EAST DIV

APPROVED DATE

DIRECTOR
NAVELEX
REF. DRG NO.

ACTIVITY - SATISFACTORY TO
APPROVED DATE

FOR REF FOR COMMANDER NAVFA

REVISIONS				
SYM	DESCRIPTION	PREP'D BY	DATE	APPROVED

ROOF HOOD SCHEDULE

RH NO.	SERVICE	CFM	ROOF OPEN'G	MAX APD	REMARKS
1	INTAKE	15600	60X60	0.1	
2	RELIEF	12270	48X48	0.1	
3	INTAKE	18000	60X72	0.1	
4	RELIEF	11800	48X48	0.1	
5					NOT USED
6	INTAKE	13100	54X60	0.1	
7	RELIEF	13770	48X48	0.1	
8	INTAKE	12025	48X54	0.1	
9	RELIEF	11070	42X48	0.1	
10	RELIEF	5240	30X30	0.1	
11	RELIEF	5840	30X36	0.1	
12	INTAKE	450	12X12	0.1	
13	INTAKE	540	12X12	0.1	
14	INTAKE	540	12X12	0.1	
15	INTAKE	720	16X16	0.1	

UNIT HEATER SCHEDULE

UH NO.	TYPE	CFM	EAT/LAT	MBH	GPM	EWT	MAX WPD (FT)	RPM	HP	V/φ	REMARKS
1	HORIZONTAL	520	68°/82°	8.1	0.8	180°	0.02	1300	9WATTS	115/1φ	
2	HORIZONTAL	520	68°/82°	8.0	0.8	180°	0.02	1300	9WATTS	115/1φ	
3	HORIZONTAL	1350	68°/102°	50.9	5.1	180°	0.15	1050	1/20	115/1φ	
4	HORIZONTAL	850	68°/107°	37.0	3.7	180°	0.06	850	1/30	115/1φ	
5	HORIZONTAL	1350	68°/101°	48.9	4.9	180°	0.15	1050	1/20	115/1φ	
6	HORIZONTAL	600	68°/103°	23.1	2.3	180°	0.06	1550	9WATTS	115/1φ	
7	HORIZONTAL	1350	68°/101°	48.8	4.9	180°	0.15	1050	1/20	115/1φ	
8	HORIZONTAL	1350	68°/100°	46.9	4.7	180°	0.15	1050	1/20	115/1φ	
9	HORIZONTAL	600	68°/102°	22.3	2.2	180°	0.06	1550	9WATTS	115/1φ	
10	HORIZONTAL	1350	68°/101°	48.5	4.8	180°	0.15	1050	1/20	115/1φ	
11	HORIZONTAL	1350	68°/100°	47.1	4.7	180°	0.15	1050	1/20	115/1φ	
12	HORIZONTAL	570	68°/104°	22.3	2.2	180°	0.03	850	1/30	115/1φ	
13	HORIZONTAL	570	68°/104°	22.3	2.2	180°	0.03	850	1/30	115/1φ	
14	HORIZONTAL	1350	68°/100°	47.1	4.7	180°	0.15	1050	1/20	115/1φ	
15	HORIZONTAL	1350	68°/100°	47.1	4.7	180°	0.15	1050	1/20	115/1φ	
16	HORIZONTAL	2260	68°/110°	103.9	10.4	180°	0.20	860	1/4	115/1φ	
17	HORIZONTAL	2260	68°/110°	103.9	10.4	180°	0.20	860	1/4	115/1φ	
18	HORIZONTAL	800	68°/105°	32.3	3.2	180°	0.06	1050	1/30	115/1φ	
19	HORIZONTAL	800	68°/105°	32.3	3.2	180°	0.06	1050	1/30	115/1φ	
20	HORIZONTAL	2500	68°/103°	96.7	9.7	180°	0.20	1140	1/6	115/1φ	
21	HORIZONTAL	2500	68°/103°	96.7	9.7	180°	0.20	1140	1/6	115/1φ	
22	HORIZONTAL	3000	68°/102°	112.0	11.2	180°	0.20	1140	1/4	115/1φ	
23	HORIZONTAL	3000	68°/102°	112.0	11.2	180°	0.20	1140	1/4	115/1φ	
24	HORIZONTAL	2500	68°/103°	96.7	9.7	180°	0.20	1140	1/6	115/1φ	
25	HORIZONTAL	2500	68°/103°	96.7	9.7	180°	0.20	1140	1/6	115/1φ	
26	HORIZONTAL	700	68°/104°	28.0	2.8	180°	0.05	1050	1/30	115/1φ	
27	HORIZONTAL	600	68°/104°	23.9	2.4	180°	0.06	1550	9WATTS	115/1φ	
28	HORIZONTAL	800	68°/105°	32.3	3.2	180°	0.06	1050	1/30	115/1φ	
29	HORIZONTAL	800	68°/105°	32.3	3.2	180°	0.06	1050	1/30	115/1φ	
30	HORIZONTAL	570	68°/100°	13.8	2.0	180°	0.03	1550	1/30	115/1φ	
31	HORIZONTAL	570	68°/100°	19.8	2.0	180°	0.03	1550	1/30	115/1φ	
32	HORIZONTAL	570	68°/100°	19.8	2.0	180°	0.03	1550	1/30	115/1φ	
33	HORIZONTAL	570	68°/100°	19.8	2.0	180°	0.03	1550	1/30	115/1φ	
34	HORIZONTAL	850	68°/110°	39.6	4.0	180°	0.06	850	1/30	115/1φ	
35	HORIZONTAL	700	68°/107°	29.7	3.0	180°	0.06	1050	1/30	115/1φ	
36	HORIZONTAL	700	68°/107°	29.7	3.0	180°	0.06	1050	1/30	115/1φ	
37	HORIZONTAL	600	68°/106°	24.8	2.5	180°	0.06	1550	9WATTS	115/1φ	

STEAM PRESSURE REDUCING STATION SCHEDULE

PRS NO.	VALVE INLET PRESS.	VALVE OUTLET PRESS.	LBS/HR	REMARKS
1	150 MAX/100 MIN	5	3175	

AUTO EXHAUST FAN SCHEDULE

NO.	SERVICE	LOCATION	TYPE	CFM	SP IN WG	WHEEL DIA.	HP	REMARKS
AEF1	AUTO EXHAUST	VEH MAIN. BAY 168	CENTRIF.	2400	3.0'	15"	2	3.9, 10
AEF2	AUTO EXHAUST	VEH MAIN. BAY 177	CENTRIF.	2400	3.0'	15"	2	3.9, 10
AEF3	AUTO EXHAUST	VEH MAIN. BAY 177	CENTRIF.	2400	3.0'	15"	2	3.9, 10
AEF4	AUTO EXHAUST	VEH MAIN. BAY 180	CENTRIF.	2400	3.0'	15"	2	3.9, 10
AEF5	AUTO EXHAUST	RM. 157	CENTRIF.	800	3.0'	12"	3/4	3.9, 10
AEF6	AUTO EXHAUST	RM. 149	CENTRIF.	800	3.0'	12"	3/4	3.9, 10
AEF7	AUTO EXHAUST	RM. 137	CENTRIF.	800	3.0'	12"	3/4	3.9, 10
AEF8	AUTO EXHAUST	RM. 122	CENTRIF.	800	3.0'	12"	3/4	3.9, 10

NOTES: 1) BIRDSCREENS, 2) BACKDRAFT DAMPER, 3) DISCONNECT, 4) PREFAB CURB, 5) SOLID STATE VARIABLE SPEED SWITCH, 6) INLET GRILLE, 7) THERMOSTAT CONTROLLED, 8) MOTORIZED DAMPER, 9) BELT DRIVE, 10) 460V/3φ

CONVECTOR SCHEDULE

CV NO.	EAT °F	MBH	GPM	EWT °F	MAX. WPD (FT)	REMARKS
1	65°	21.7	1.50	180°	0.25	
2	65°	3.0	0.30	180°	0.25	
3	65°	0.4	0.10	180°	0.25	
4	65°	1.7	0.18	180°	0.25	
5	65°	1.2	0.12	180°	0.25	
6	65°	21.9	1.5	180°	0.25	
7	65°	2.8	0.28	180°	0.25	
8	65°	11.0	1.13	180°	0.25	
9	65°	14.8	1.52	180°	0.25	
10	65°	11.0	1.13	180°	0.25	
11	65°	14.8	1.52	180°	0.25	

HEATING & VENTILATING UNIT SCHEDULE

HV NO.	CFM	MIN O.A. CFM	EAT/LAT	MBH	GPM	EWT	ESP	HP	VOLTS/PHASE	REMARKS
1	11360	6250	45.5°/71.9°	363.6	18.2	180°	0.5	10	460/3φ	1
2	10570	5900	45.5°/70.5°	324.2	16.2	180°	0.5	10	460/3φ	1
3	14380	8400	45.5°/69.5°	443.2	22.2	180°	0.5	15	460/3φ	1
4	19950	9975	45.5°/70.25°	543.2	27.2	180°	0.75	15	460/3φ	1
5	17850	8925	45.5°/71.0°	500.0	25.0	180°	0.75	15	460/3φ	1

NOTE: 1. PROVIDE SPRING VIBRATION ISOLATION 2" MIN. DEFLECTION.

CONVERTOR SCHEDULE

NO.	GPM	EWT/LWT	MBH	STEAM PRESS.		#/HR	TRAP CAP.	DIFF. PRESS.	FOULING FACTOR
				ENT.	LVG.				
C1	300	160°/180°	3000	5 PSI	2	3175	6350	0.5 PSI	0.0001

AIR CONDITIONING UNIT SCHEDULE

AC NO.	CFM	O.A. CFM	HEATING COIL			COOLING COIL			FAN		COMP. TOT. KW	ELECT	REMARKS
			APD(°)/WPD(°)	MBH	GPM	EWT	EAT(DB/WB)	MBH(SENS/TOT)	ESP	HP			
1	8000	800	0.4/0.6	11	1.1	180°	80°/67°	172.1/191.2	0.5	3	23	460V/3φ	
2	4000	400	0.4/0.6	15	1.5	180°	80°/67°	101.0/105.5	1.0	5	12	460V/3φ	HC1 ROOF TOP
3	4000	640	0.4/0.6	15	1.5	180°	80°/67°	97.1/102.2	1.0	5	12	460V/3φ	HC2 ROOF TOP

1. PROVIDE SPLIT SYSTEM CONDENSING UNIT FOR AC1 TO MATCH EVAPORATOR SECTION AT 95° AMBIENT TEMPERATURE.

RECORD DRAWING HP250 M8

LETTER DATED 10CT14

Clark Tribble Harris & Li ARCHITECTS
Charlotte, North Carolina
ARCHITECTS-ENGINEERS

DEPT. OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ATLANTIC DIVISION
NORFOLK, VIRGINIA

NAVAL STATION
MARINE CORPS BASE
CAMP LEJEUNE, N.C.

ELECTRONIC COMMUNICATIONS/
VEHICLE MAINTENANCE SHOPS
(P-643)

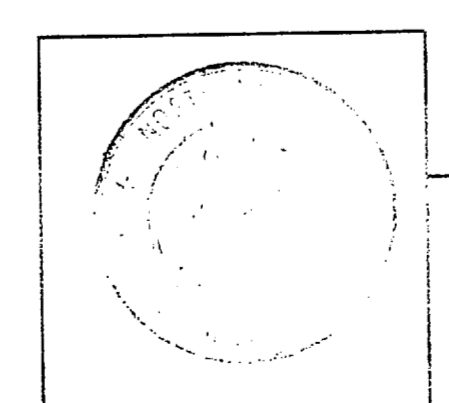
MECHANICAL SCHEDULES

NAVFAC DRAWING NO. 4156978

CONSTR. CONTR. NO. NS2470-95-0-5148

SHEET 52 OF 67

SCALE: NO SCALE (SPEC. 05-95-5148)

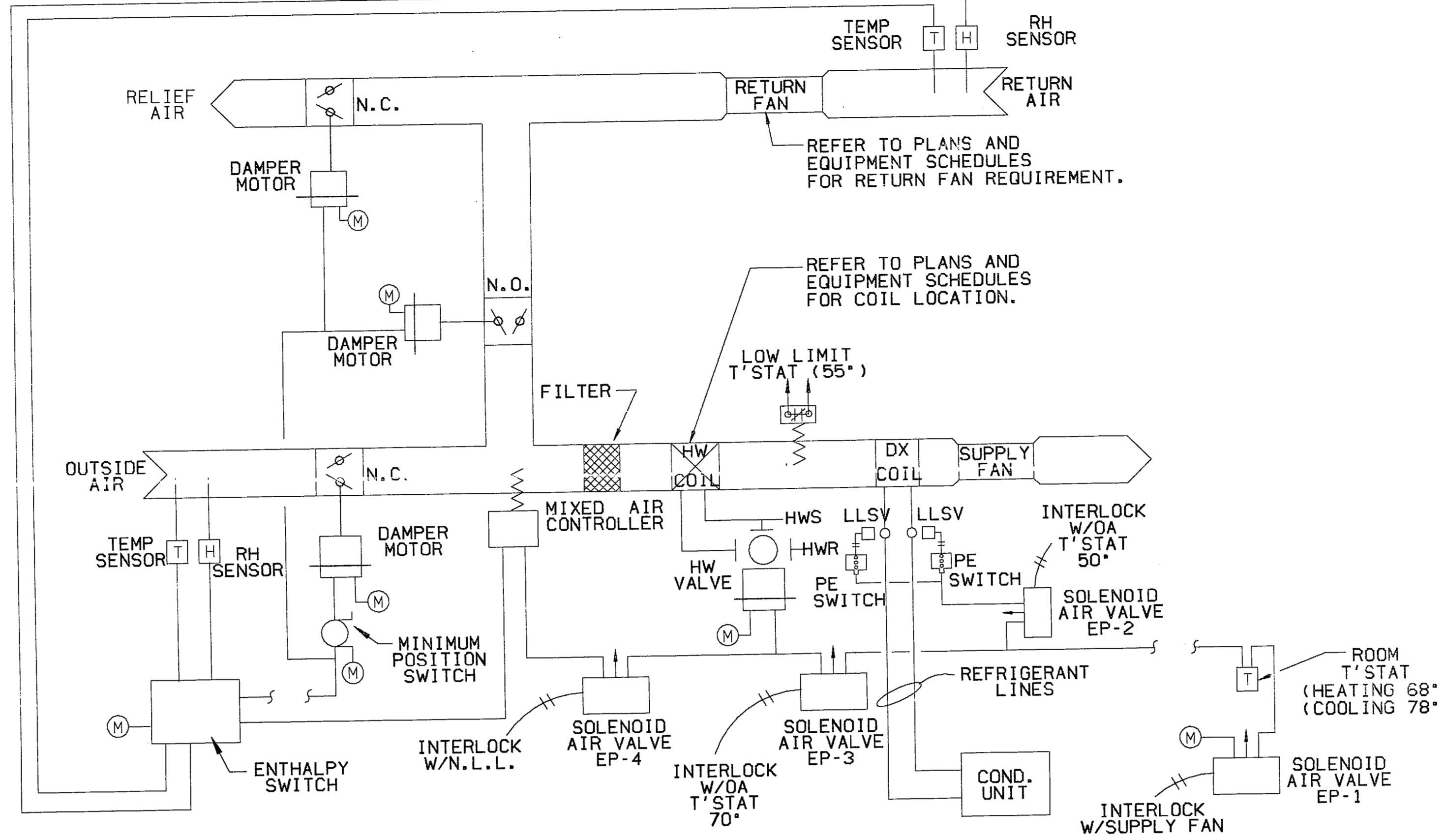
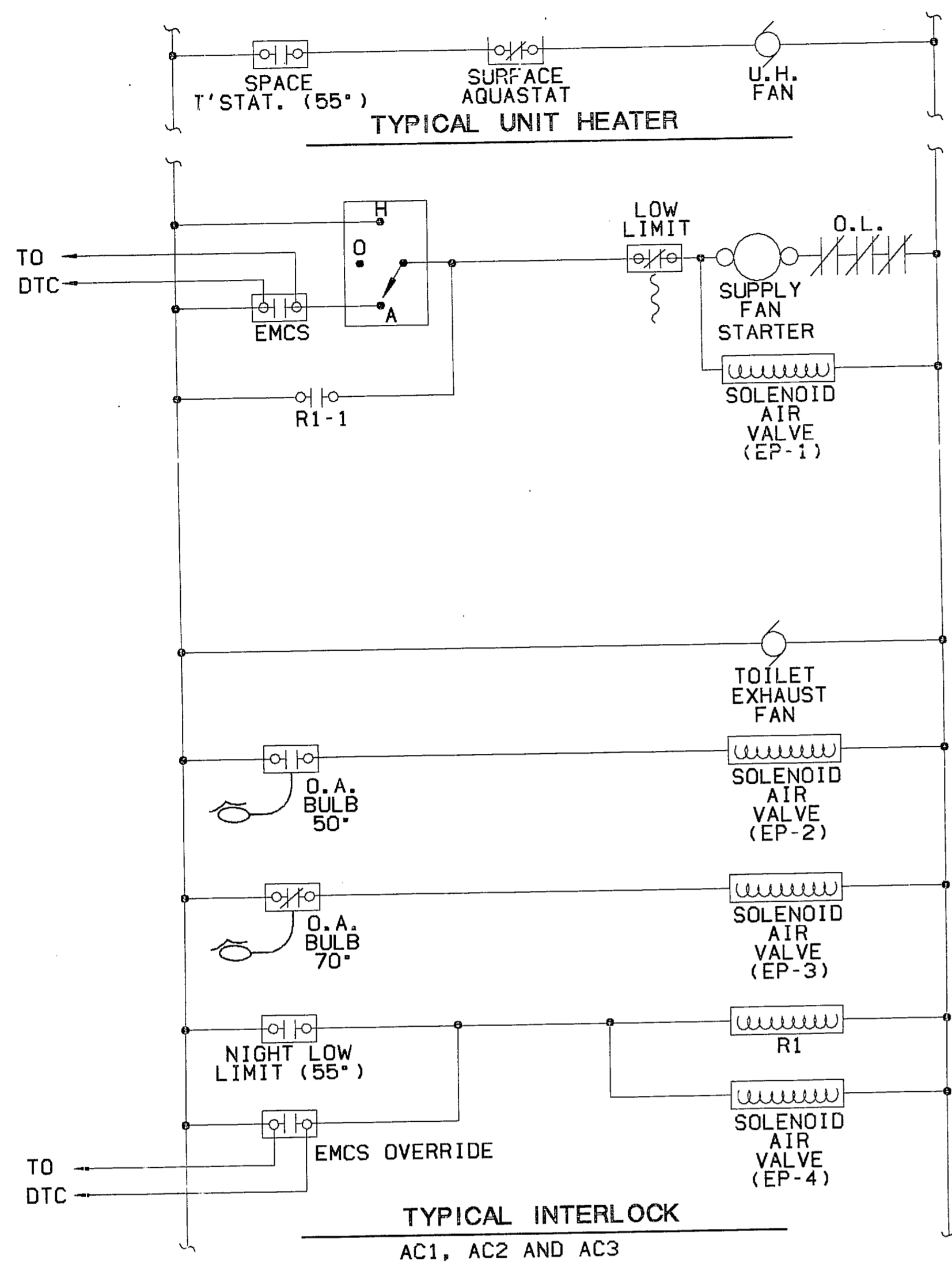


SATISFACTORY TO
NAVELEX SYSTEM COMMAND
SOEAST DIV

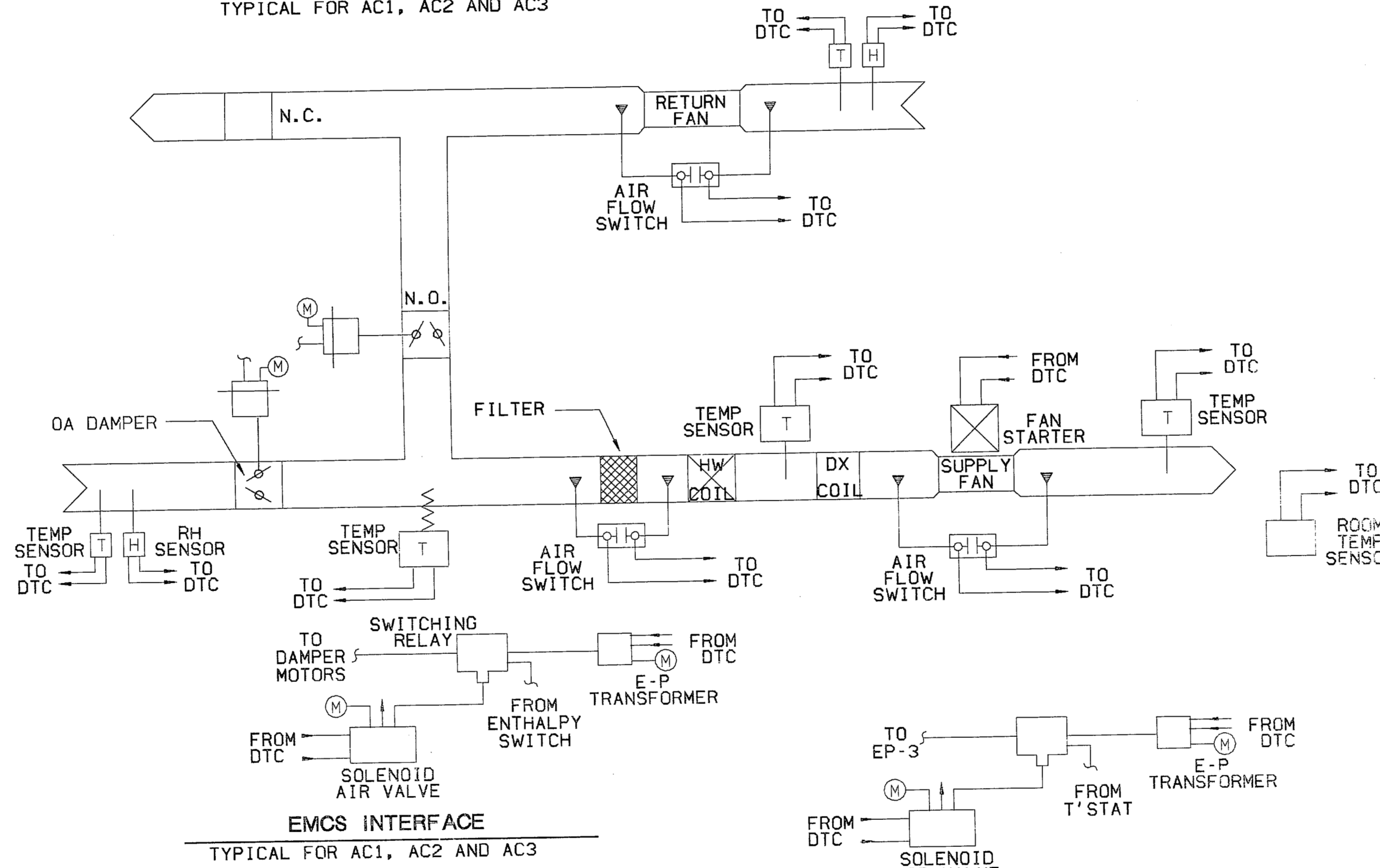
APPROVED DATE

DIRECTOR NAVELEX
REF DWG NO.

REVISIONS			
SYM	DESCRIPTION	PREP'D BY	DATE



TEMPERATURE CONTROLS
TYPICAL FOR AC1, AC2 AND AC3



EMCS INTERFACE
TYPICAL FOR AC1, AC2 AND AC3

CONTROLS LEGEND	
ABBREVIATION	DESCRIPTION
LLSV	LOW LIMIT SOLENOID VALVE
PE OR P-E	PNEUMATIC-ELECTRIC
EP OR E-P	ELECTRIC-PNEUMATIC
DTC	DATA TERMINAL CABINET
EMCS	ENERGY MONITOR CONTROL SYSTEM
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NLL	NIGHT LOW LIMIT
OA	OUTSIDE AIR
T' STAT	THERMOSTAT
W/	WITH
DX	DIRECT EXPANSION
OL	OVERLOAD

SEQUENCE OF OPERATION:

AIR HANDLING UNITS AC1, AC2 AND AC3 CONTROL

PROVIDE FOR EACH UNIT MANUAL AND EMCS STARTING CONTROLS FOR ITS RETURN FAN AND SUPPLY FAN.

THE RETURN AIR FAN WILL RUN WHEN THE SUPPLY FAN RUNS. THE RETURN AIR DAMPER SHALL BE IN FULL OPEN POSITION, THE OUTSIDE AIR DAMPER IN MINIMUM OPEN POSITION AND THE RELIEF AIR DAMPER SHALL BE IN FULL CLOSED POSITION BEFORE FANS CAN START.

PROVIDE MANUAL AND EMCS STARTING CONTROLLERS ARRANGED TO ENERGIZE THE AIR CONDITIONING.

PROVIDE A THREE-WAY VALVE IN THE HOT WATER RETURN PIPING FROM THE HEATING COIL, ARRANGED TO VARY THE VOLUME OF WATER FLOWING THROUGH THE COIL. THIS VALVE SHALL BE ARRANGED TO ALLOW FULL FLOW OF HOT WATER THROUGH THE HEATING COIL WHEN THE AIR HANDLING UNIT IS DE-ENERGIZED.

PROVIDE A ROOM THERMOSTAT WHICH SHALL MAINTAIN ITS SETTING BY MODULATING THE HEATING COIL VALVE AND THE COOLING IN SEQUENCE. ON A FALL IN ROOM TEMPERATURE, THE COOLING SHALL BE DE-ENERGIZED BEFORE THE HEATING VALVE ALLOWS HOT WATER TO ENTER THE COIL. ON A RISE IN ROOM TEMPERATURE, THE HEATING COIL VALVE SHALL BE CLOSED TO THE FLOW OF HOT WATER BEFORE THE COOLING IS ENERGIZED.

PROVIDE FOR EACH UNIT A MIXED AIR THERMOSTAT. THE MIXED AIR CONTROLLER SHALL MAINTAIN ITS SETTING BY MODULATING THE OUTDOOR AIR DAMPERS, RETURN AIR DAMPERS AND RELIEF AIR DAMPERS. PROVIDE MIXED AIR THERMOSTAT OVERRIDE FOR ENTHALPHY CONTROL AND EMCS CONTROLS.

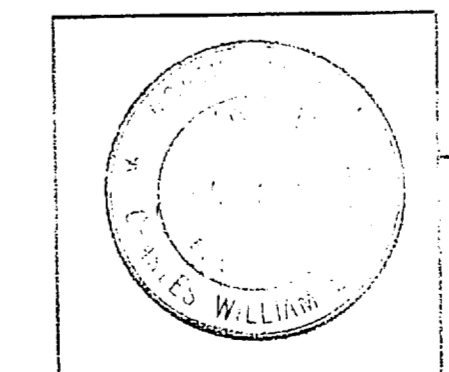
PROVIDE FOR EACH UNIT OUTDOOR AIR CONTROL WITH EMCS OVERRIDE WHICH SHALL CONTROL THE UNIT AS FOLLOWS:

- D. A. TEMPERATURE BELOW 50 DEGREES:**
COOLING DE-ENERGIZED.
HEATING COIL VALVE UNDER CONTROL OF ROOM THERMOSTAT.
- D. A. DAMPERS, R. A. DAMPERS AND RELIEF DAMPERS UNDER MIXED AIR THERMOSTAT ECONOMIZER CONTROL AND EMCS CONTROL.**
- D. A. TEMPERATURE ABOVE 50 DEGREES AND BELOW 70 DEGREES:**
COOLING UNDER CONTROL OF ROOM THERMOSTAT.
HEATING COIL VALVE UNDER CONTROL OF ROOM THERMOSTAT.
- D. A. DAMPERS, R. A. DAMPERS AND RELIEF DAMPERS UNDER MIXED AIR THERMOSTAT ECONOMIZER CONTROL AND EMCS CONTROLS.**
- D. A. TEMPERATURE ABOVE 70 DEGREES:**
COOLING UNDER CONTROL OF ROOM THERMOSTAT.
HEATING COIL VALVE IN FULL BY-PASS POSITION.
- D. A. DAMPER, R. A. DAMPER, AND RELIEF DAMPERS IN MINIMUM O. A. POSITION.**

CONTROL FOR OCCUPIED AND UNOCCUPIED TIMES:
OCCUPIED TIME; THE UNIT SHALL OPERATE AS INDICATED ABOVE.
UNOCCUPIED TIME; THE UNIT SHALL OPERATE WITH O. A. DAMPERS AND RELIEF AIR DAMPER IN FULL CLOSED POSITION.

PROVIDE FOR EACH UNIT A FREEZESTAT WITH ITS AVERAGING BULB LOCATED ON DISCHARGE SIDE OF HEATING COIL. FREEZESTAT SHALL BE WIRED TO STOP THE SUPPLY FAN IF ITS SETTING OF 35 DEGREES IS REACHED.

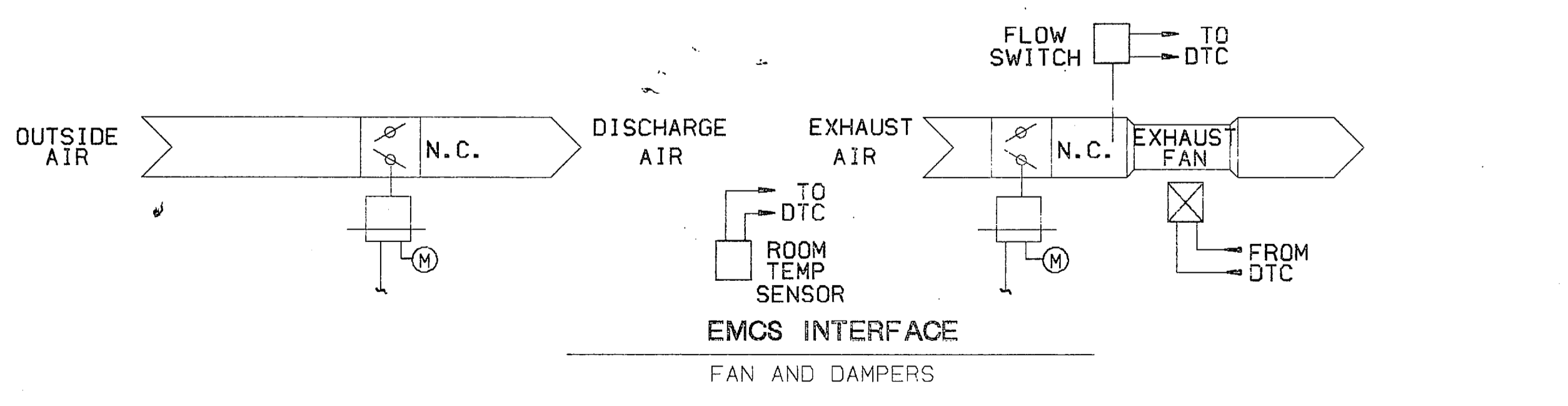
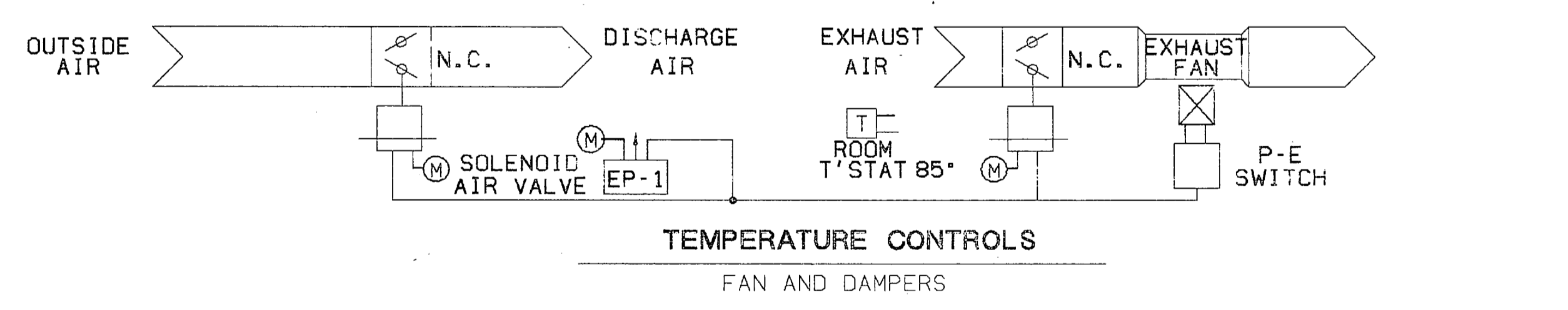
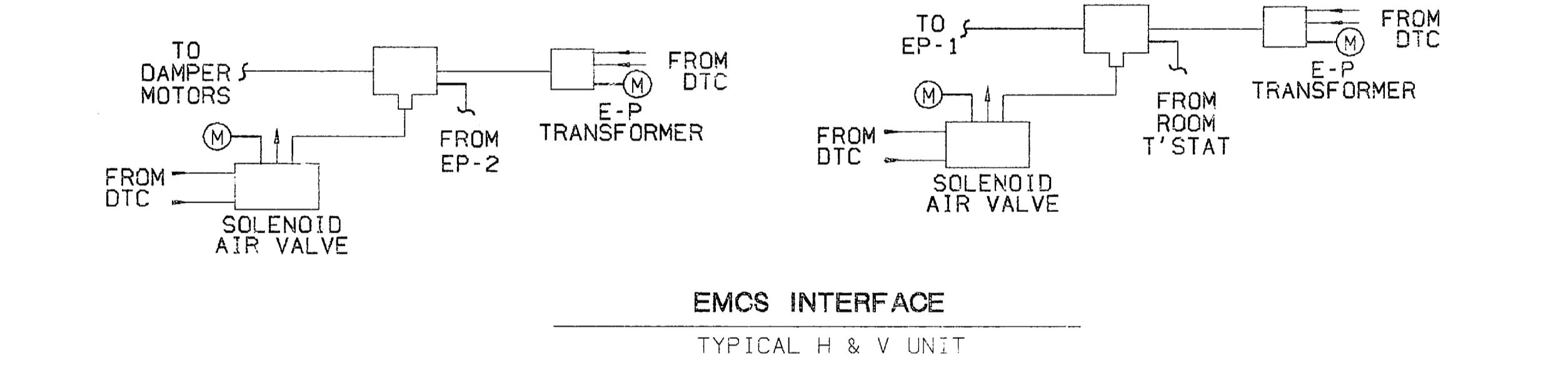
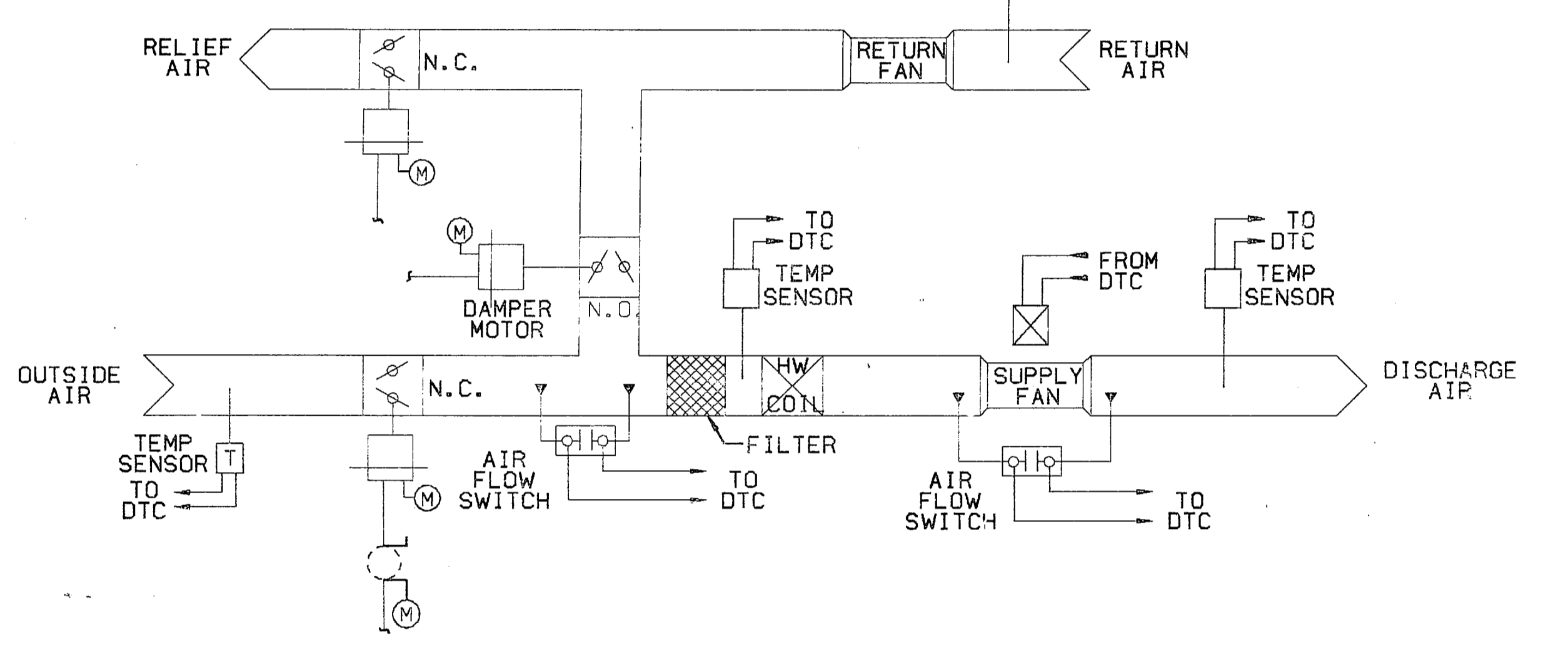
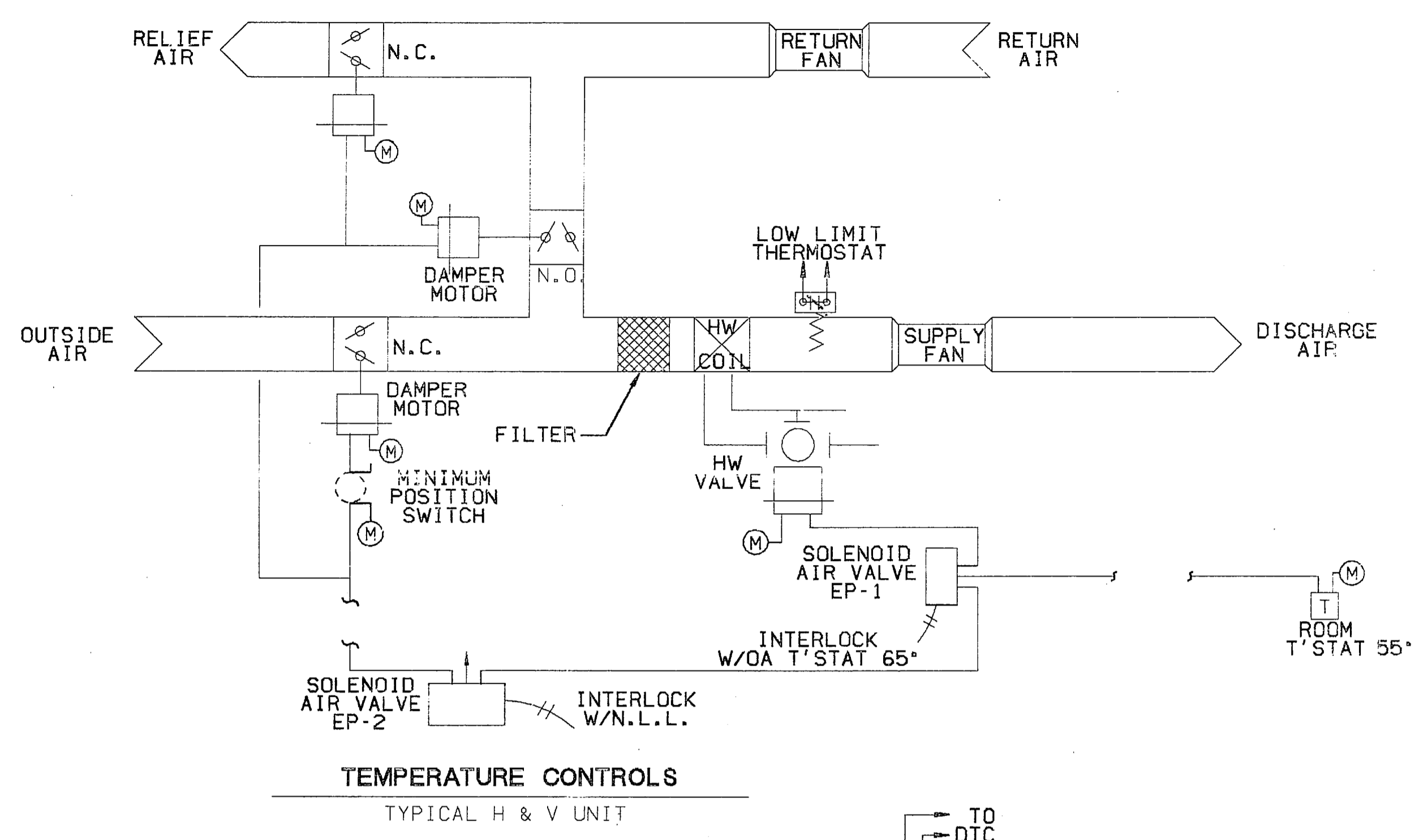
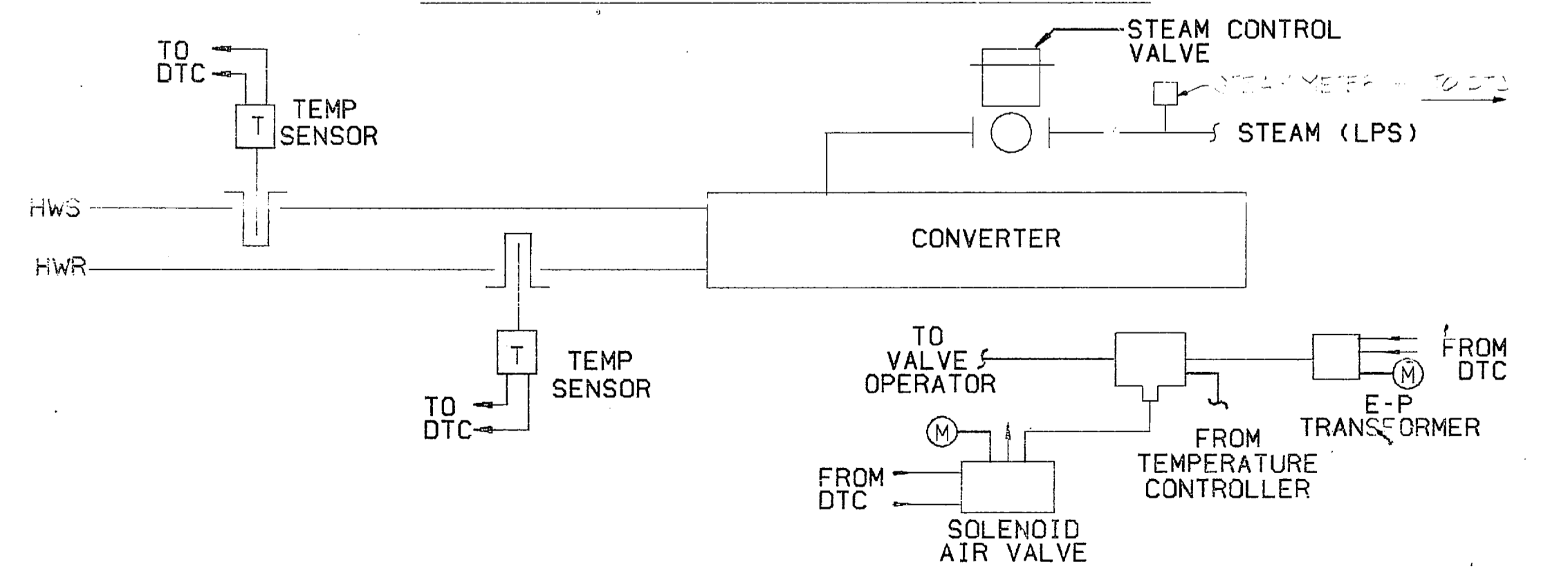
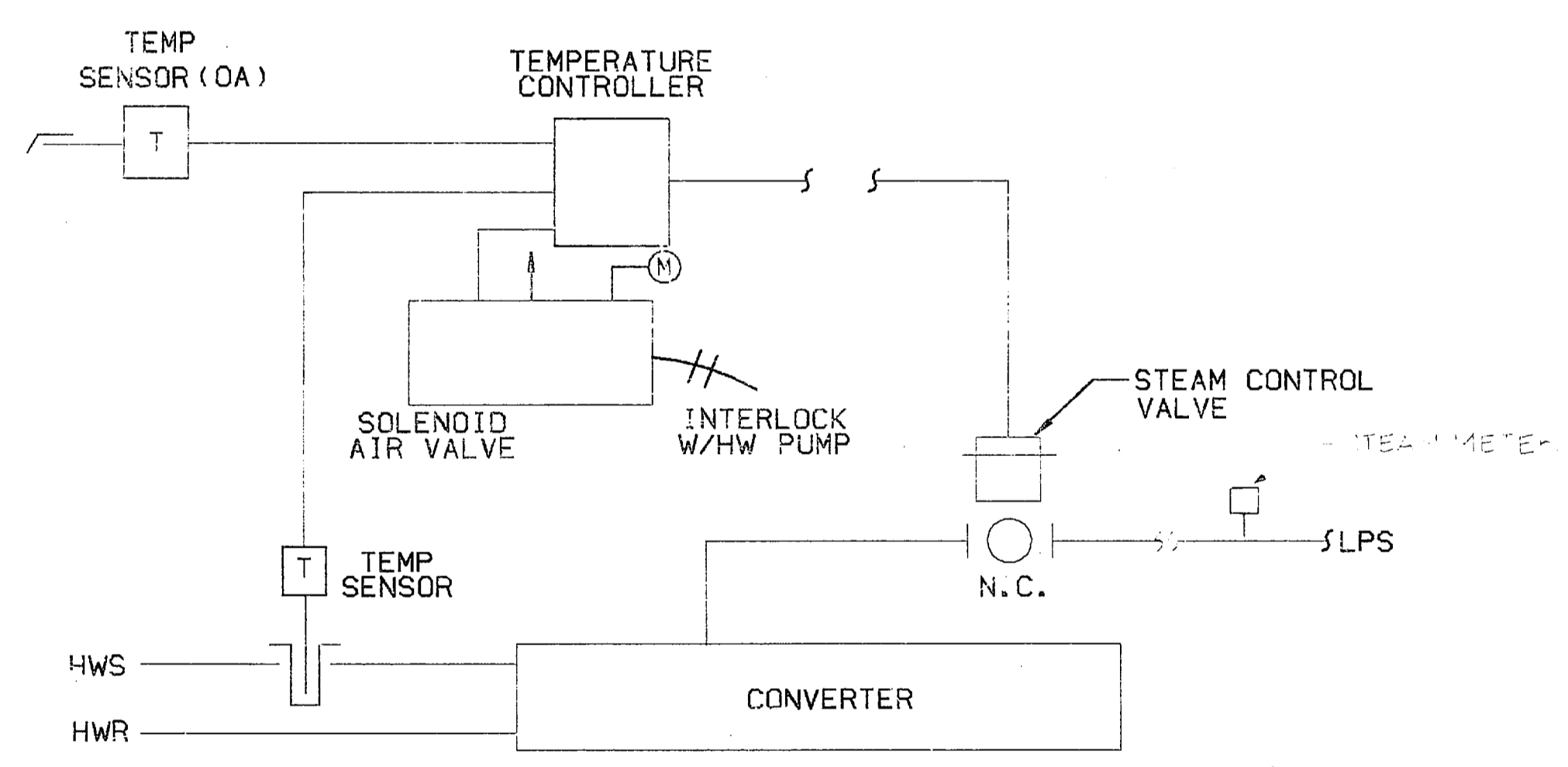
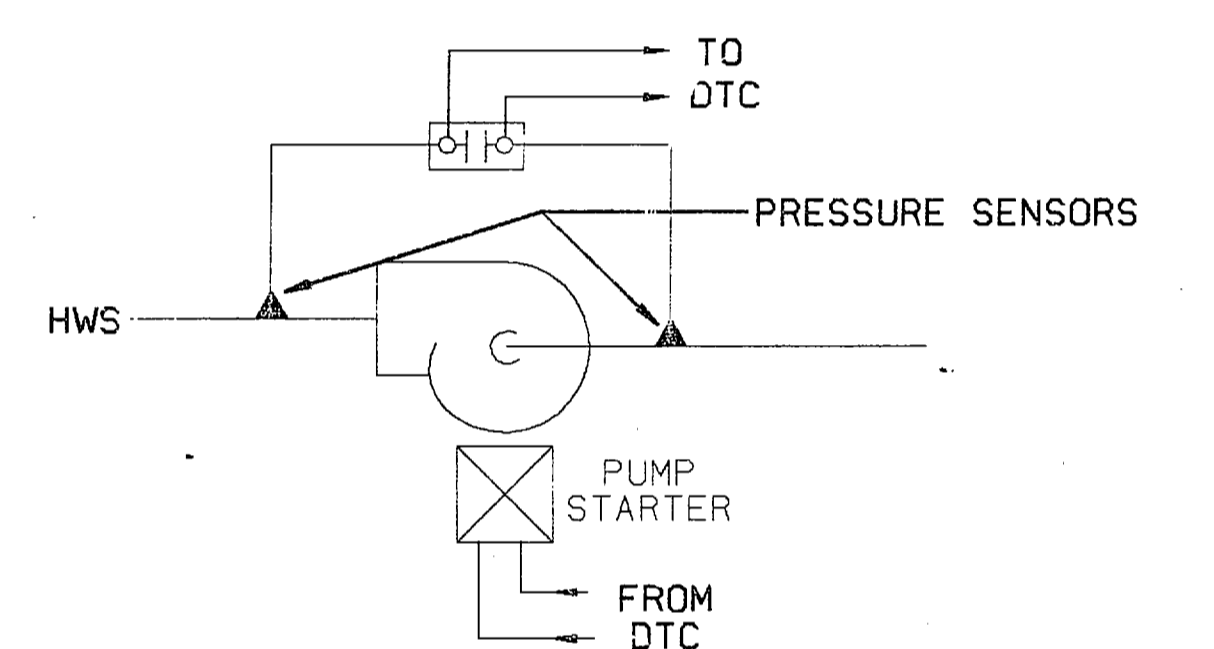
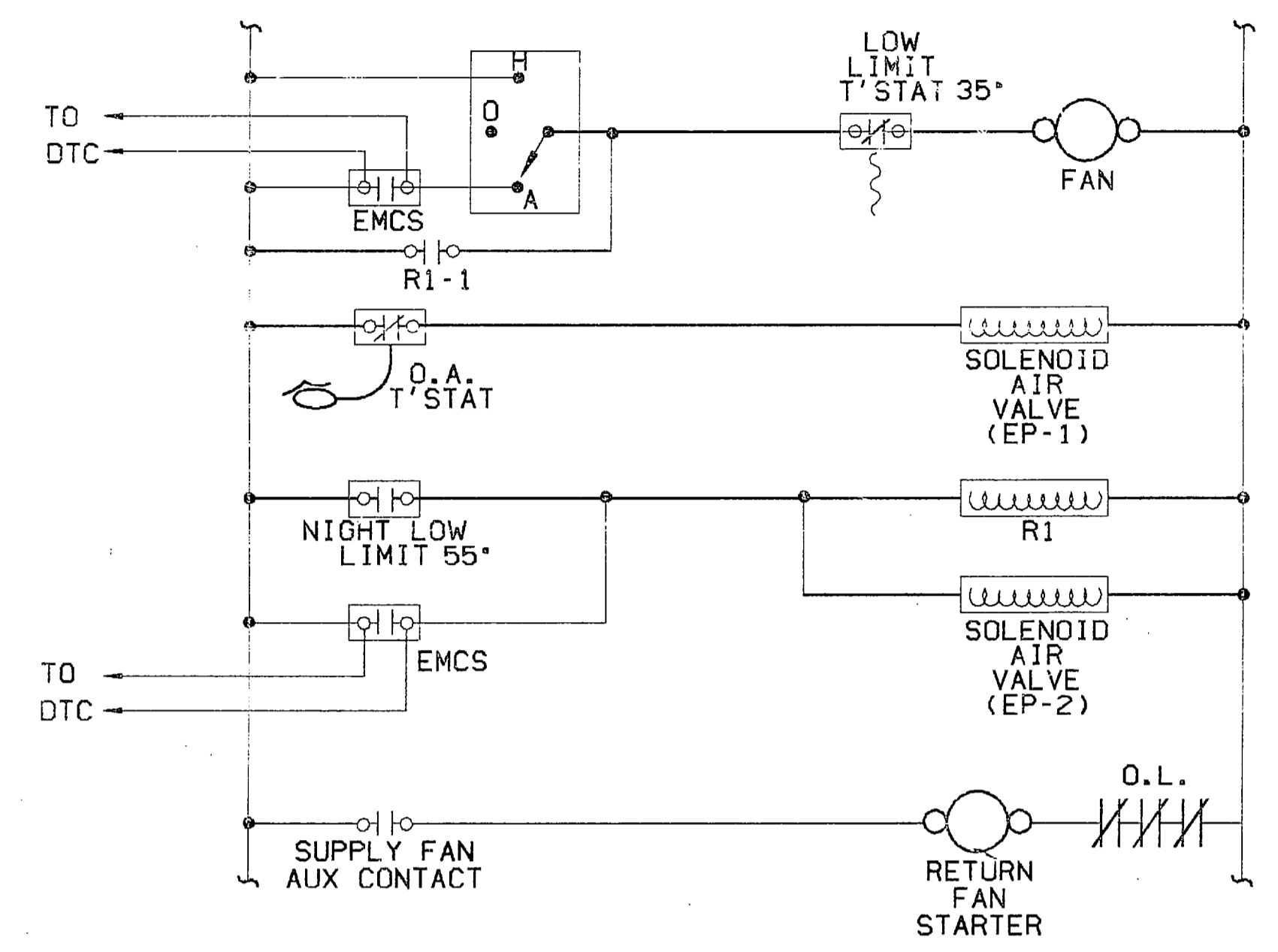
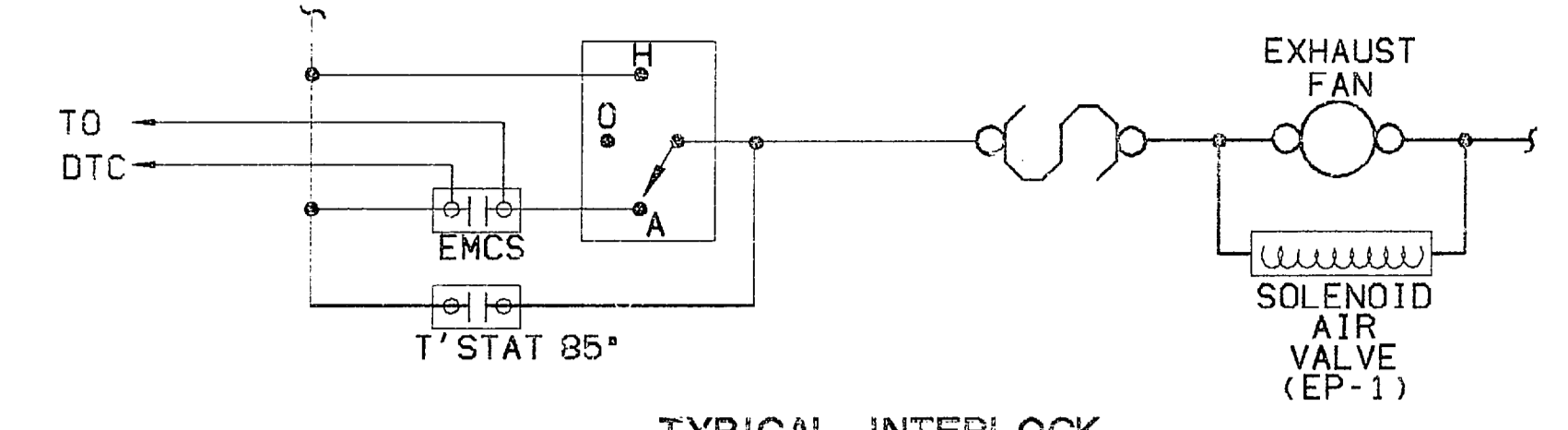
EMCS DIFFERENTIAL PRESSURE INDICATION:
PROVIDE DIFFERENTIAL PRESSURE INDICATORS FOR FILTERS, SUPPLY AND RETURN FANS.



SATISFACTORY TO
NAVELC SYSTEMS COMMAND
SHEET 614

HP250 M9 1 OCT 1990	
Clark Tribble Harris & Li ARCHITECTS Charlotte, North Carolina ARCHITECTS-ENGINEERS	DEPT. OF THE NAVY ATLANTIC DIVISION NAVAL STATION NORFOLK, VIRGINIA
LEAD DWG NO. 256977 JOB ORDER NO. 5F5148 STA PROJ NO. P-643 DES JCV PROJ MGR RD	MARINE CORPS BASE CAMP LEJEUNE, N.C. ELECTRONIC COMMUNICATIONS/ VEHICLE MAINTENANCE SHOPS (P-643)
EPD:SYD BR:WAL APPROVED DATE ACTIVITY - SATISFACTORY TO APPROVED DATE DIRECTOR NAVES-3 REF DWG NO.	MECHANICAL CONTROLS SIZE CODE IDENT NO. NAVFAC DRAWING NO. 4156977 CONSTR. CONTR. NO. NS247D-85-B-5148 SCALE: 1/8" = 1'-0" SPEC. 05-85-5148 SHEET 63 OF 87

REVISIONS				
SYM	DESCRIPTION	PREP'D BY	DATE	APPROVED



SEQUENCE OF CONTROL:

HEATING-VENTILATION UNITS CONTROL:

PROVIDE FOR EACH UNIT MANUAL AND EMCS STARTING CONTROLS FOR ITS SUPPLY FAN AND RETURN FAN.

THE RETURN FAN WILL RUN WHEN THE SUPPLY FAN RUNS. THE RETURN AIR DAMPER SHALL BE IN THE FULL OPEN POSITION, THE OUTSIDE AIR DAMPER IN MINIMUM OPEN POSITION AND THE RELIEF AIR DAMPER SHALL BE IN THE FULL CLOSED POSITION BEFORE THE FANS CAN START.

PROVIDE A THREE-WAY VALVE IN THE HOT WATER RETURN PIPING FROM THE HEATING COIL, ARRANGED TO VARY THE VOLUME OF WATER FLOWING THROUGH THE COIL. THIS VALVE SHALL BE ARRANGED TO ALLOW FULL FLOW OF HOT WATER THROUGH THE COIL WHEN THE UNIT IS DE-ENERGIZED.

PROVIDE A ROOM THERMOSTAT WHICH SHALL MAINTAIN ITS SETTING BY MODULATING THE HEATING COIL VALVE AND THE OUTSIDE AIR QUANTITY IN SEQUENCE. ON A FALL IN ROOM TEMPERATURE THE OUTSIDE AIR SHALL BE AT MINIMUM POSITION BEFORE THE HEATING VALVE ALLOWS HOT WATER TO ENTER THE COIL.

PROVIDE FOR EACH UNIT OUTDOOR AIR CONTROL WITH EMCS OVERRIDE WHICH SHALL CONTROL THE UNIT AS FOLLOWS:

- C.A. TEMPERATURE BELOW 55 DEGREES:
HEATING COIL VALVE UNDER CONTROL OF ROOM THERMOSTAT.
- C.A. DAMPERS, R.A. DAMPERS AND RELIEF DAMPERS AT MINIMUM OUTSIDE AIR CONDITIONS.
- C.A. TEMPERATURE ABOVE 55 DEGREES:
HEATING COIL VALVE IN FULL BY-PASS POSITION.
C.A. DAMPERS, R.A. DAMPERS, AND RELIEF DAMPERS UNDER CONTROL OF ROOM THERMOSTAT.

CONTROL FOR OCCUPIED AND UNOCCUPIED TIMES:

CONTROL OF THE UNITS SHALL OPERATE AS INDICATED ABOVE. UNOCCUPIED TIME THE UNITS SHALL OPERATE WITH O.A. DAMPERS AND RELIEF AIR DAMPERS IN FULL CLOSED POSITION.

PROVIDE FOR EACH UNIT A FREEZESTAT WITH ITS AVERAGING BULB LOCATED ON DISCHARGE SIDE OF HEATING COIL. FREEZESTAT SHALL BE WIRED TO STOP THE SUPPLY FAN IF ITS SETTING OF 35 DEGREES IS REACHED.

UNIT HEATER CONTROL:

FOR EACH UNIT HEATER PROVIDE THERMOSTAT TO START AND STOP FAN AND CONTROL SPACE TEMPERATURE. PROVIDE METAL GUARD TO PROTECT THERMOSTATS IN EQUIPMENT ROOM.

HOT WATER CONVERTER CONTROL:

FOR EACH CONVERTER PROVIDE THE FOLLOWING: MASTER OUTSIDE THERMOSTAT WHICH SHALL INVERSELY RESET THE CONTROL POINT OF DISCHARGE THERMOSTAT WITH CHANGES IN OUTSIDE AIR TEMPERATURE. DISCHARGE THERMOSTAT SHALL MODULATE STEAM VALVES, CLOSED ON A RISE TO MAINTAIN THE DESIRED HOT WATER SUPPLY TEMPERATURE AS RESET BY THE CHANGES IN OUTSIDE TEMPERATURE. STEAM VALVES SHALL NOT OPEN UNLESS H.W. PUMP IS OPERATING.

RESET SCHEDULE UNLESS OTHERWISE INDICATED SHALL BE SUCH THAT AT 25 DEGREE OUTSIDE TEMPERATURE, WATER TEMPERATURE SHALL BE 100 DEGREE AND AT 60 DEGREE OUTSIDE TEMPERATURE, WATER TEMPERATURE SHALL BE 100 DEGREE.

FOR EACH CONVERTER PROVIDE EMCS READING THERMOMETER ON TEMPERATURE CONTROL PANEL TO READ THE DISCHARGE AND RETURN WATER TEMPERATURE FROM CONVERTER.

FANS AND DAMPER MOTOR CONTROL:

PROVIDE THERMOSTAT TO START FANS IN EQUIPMENT ROOMS AND OTHER AREAS AND CLOSE AND OPEN DAMPERS TO MAINTAIN VENTILATION WHEN TEMPERATURE RISES ABOVE THE THERMOSTAT SETTING. THERMOSTAT SHALL ON A RISE IN SPACE TEMPERATURE OPEN DAMPERS AND START FANS. PROVIDE METAL GUARD TO PROTECT THERMOSTAT IN EQUIPMENT ROOMS.

HP250

M10

NAVAC DRAWING NO. 4156978

DEPT. OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND NAVAL STATION NORFOLK, VIRGINIA	MARINE CORPS BASE CAMP LEJEUNE, N.C.
ELECTRONIC COMMUNICATIONS/ VEHICLE MAINTENANCE SHOPS (P-843)	MECHANICAL CONTROLS
SIZE: F CODE IDENT NO.:	NAVAC DRAWING NO. 4156978
CONSTR. CONTR. NO. N62470-85-B-5148	SHEET 54 OF 67

