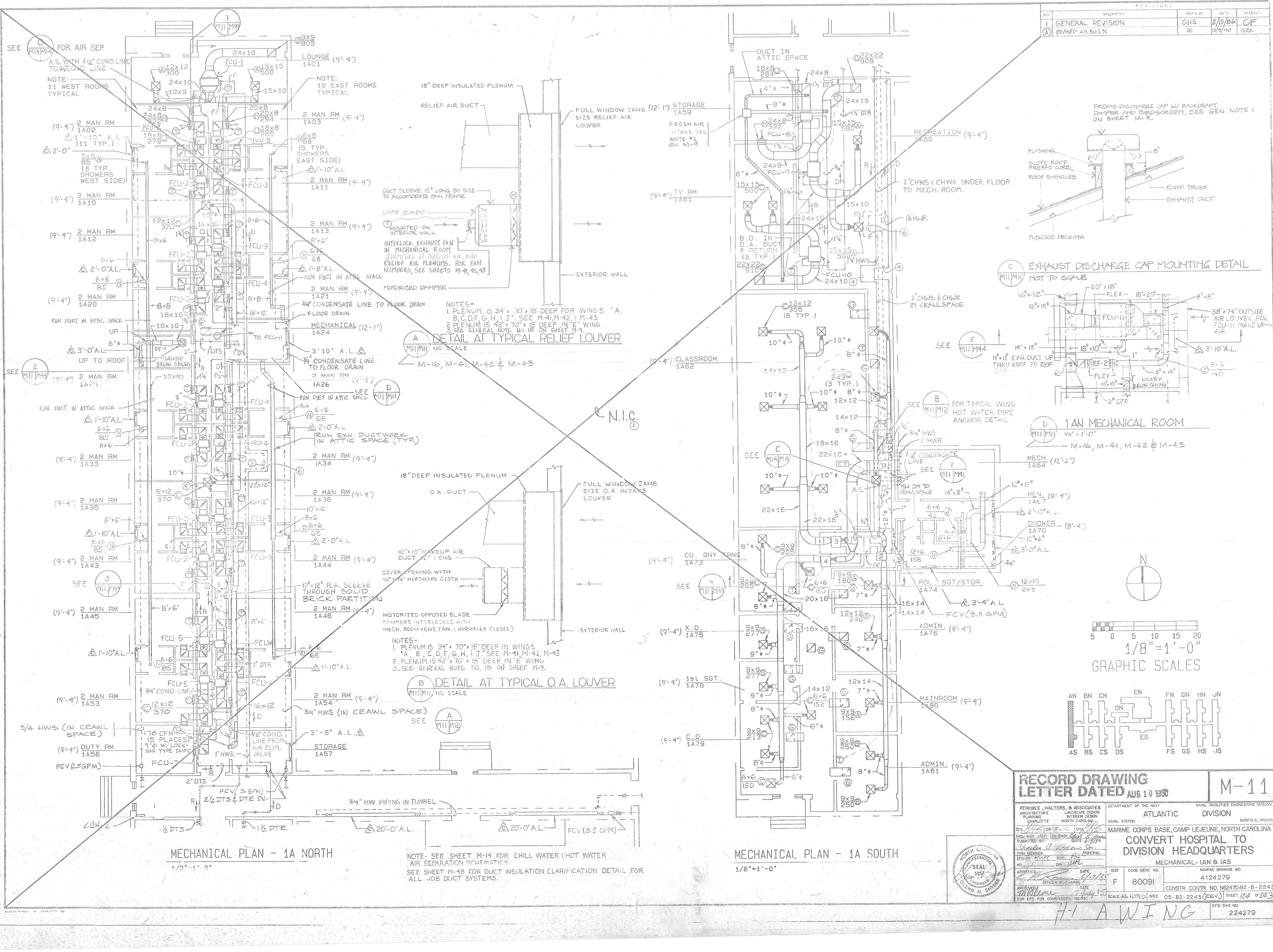
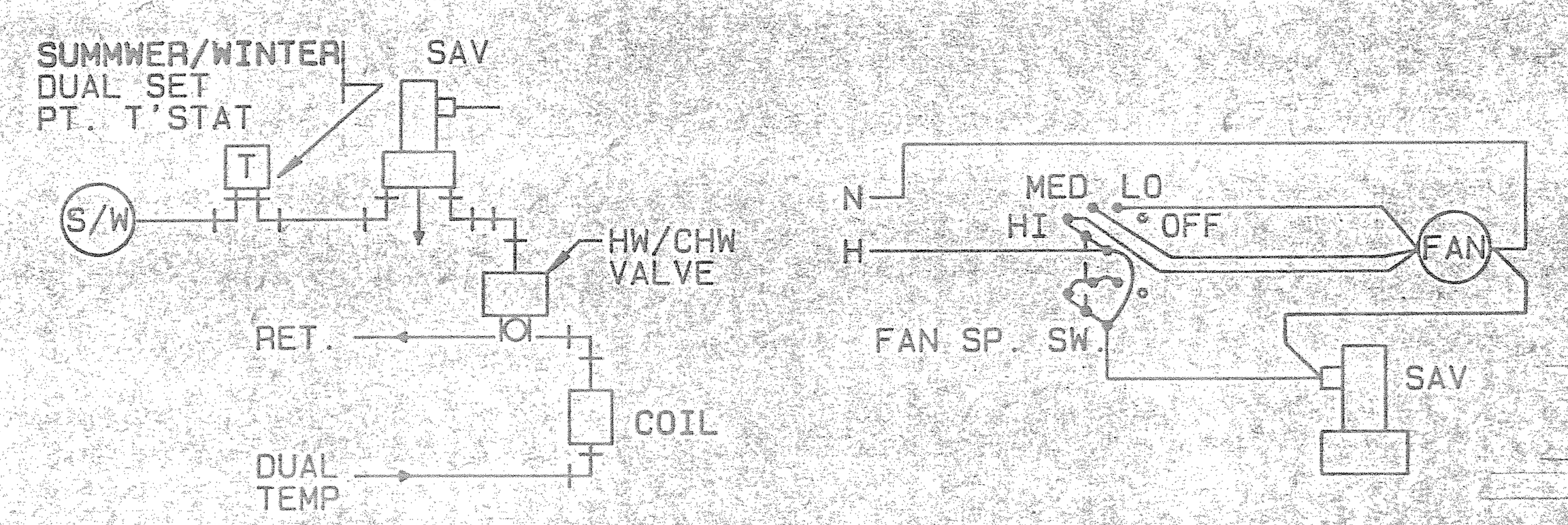
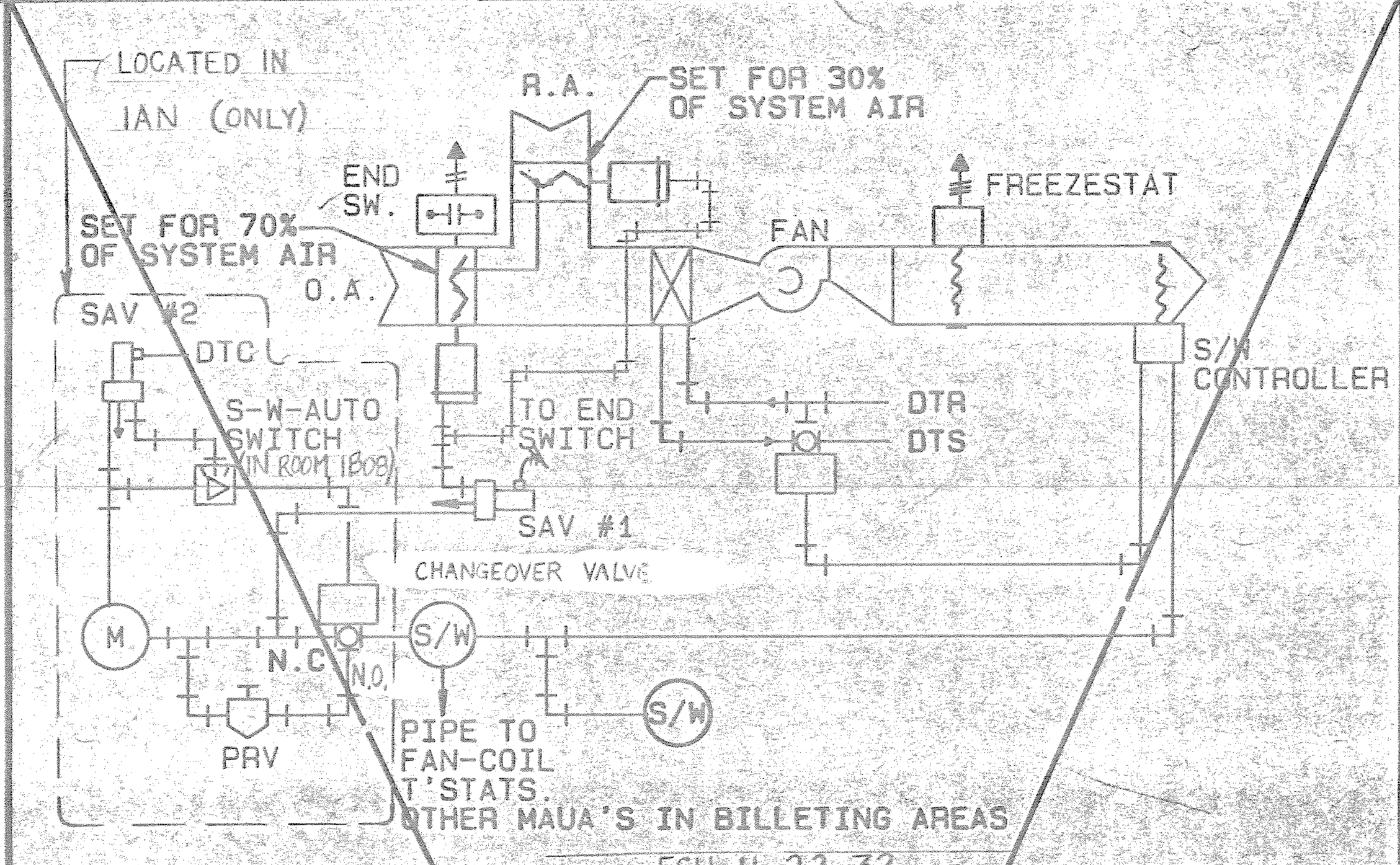


MECHANICAL PLAN - 1A NORTH
1/8" = 1'-0"
MECHANICAL PLAN - 1A SOUTH
1/8" = 1'-0"
DETAIL AT TYPICAL RELIEF LOUVER
NO SCALE
M-16, M-41, M-42 & M-43
18" DEEP INSULATED PLENUM
RELIEF AIR DUCT
FULL WINDOW JAMB SIZE RELIEF AIR LOUVER
EXTERIOR WALL
MOTORIZED DAMPER
NOTES-
1. PLENUM IS 34" x 70" x 18" DEEP FOR WINGS "A, B, C, D, F, G, H, I, J". SEE M-41, M-42, & M-43
2. PLENUM IS 42" x 70" x 18" DEEP IN "E" WING
3. SEE GENERAL NOTE NO. 18 ON SHEET M-9.
DETAIL AT TYPICAL O.A. LOUVER
NO SCALE
O.A. DUCT
FULL WINDOW JAMB SIZE O.A. INTAKE LOUVER
10"x10" MAKEUP AIR DUCT 12" LONG
COVER OPENING WITH 1/4" x 1/4" HARDWARE CLOTH
MOTORIZED OPPOSED BLADE DAMPERS INTERLOCKED WITH MECH. ROOM VENT. FAN (NORMALLY CLOSED)
NOTES-
1. PLENUM IS 34" x 70" x 18" DEEP IN WINGS "A, B, C, D, F, G, H, I, J." SEE M-41, M-42, M-43
2. PLENUM IS 42" x 70" x 18" DEEP IN "E" WING
3. SEE GENERAL NOTE NO. 18 ON SHEET M-9.
N.I.C.
EXHAUST DISCHARGE CAP MOUNTING DETAIL
NOT TO SCALE
PREFAB DISCHARGE CAP W/ BACKDRAFT DAMPER AND BIRDSCREEN. SEE GEN. NOTE 1 ON SHEET M-9.
FLASHING
SLOPE ROOF PREFAB CURB
ROOF SHINGLES
ROOF TRUSS
EXHAUST DUCT
PLYWOOD DECKING
1AN MECHANICAL ROOM
1/4" = 1'-0"
M-16, M-41, M-42 & M-43
38"x74" OUTSIDE AIR LOUVER FOR FCU-11 MAKE UP AIR.
FOR TYPICAL WING HOT WATER PIPE ANCHOR DETAIL.
2" CHWS & CHWR UNDER FLOOR TO MECH. ROOM.
2" CHWS & CHWR IN CRAWLSPACE
NOTE- SEE SHEET M-14 FOR CHILL WATER (HOT WATER AIR SEPARATION SCHEMATICS.
SEE SHEET M-48 FOR DUCT INSULATION CLARIFICATION DETAIL FOR ALL JOB DUCT SYSTEMS.
3/4" HW PIPING IN TUNNEL
GRAPHIC SCALES
1/8" = 1'-0"
REVISIONS
GENERAL REVISION GHS 2/15/86
REVISED AS BUILTS 10/8/90
RECORD DRAWING LETTER DATED AUG 10 1990
M-11
FERBEE, WALTERS, & ASSOCIATES
ARCHITECTURE PLANNING CHARLOTTE
LANDSCAPE DESIGN INTERIOR DESIGN NORTH CAROLINA
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING DIVISION
ATLANTIC DIVISION
NORFOLK, VIRGINIA
MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA
CONVERT HOSPITAL TO DIVISION HEADQUARTERS
MECHANICAL - 1AN & 1AS
CODE IDENT. NO. 80091
NAVFAC DRAWING NO. 4124279
CONSTR. CONTR. NO. N62470-82-B-2243
05-82-2243 (REV.)
SHEET 128 OF 243
EFD DWG. NO. 224279
H-1 A WING

ITEM	DESCRIPTION	PREP'D BY	DATE	APPROVED
1	GENERAL REVISION	GHS	2/15/85	GF
A	REVISED AS BUILTS	DC	10/8/90	GRA

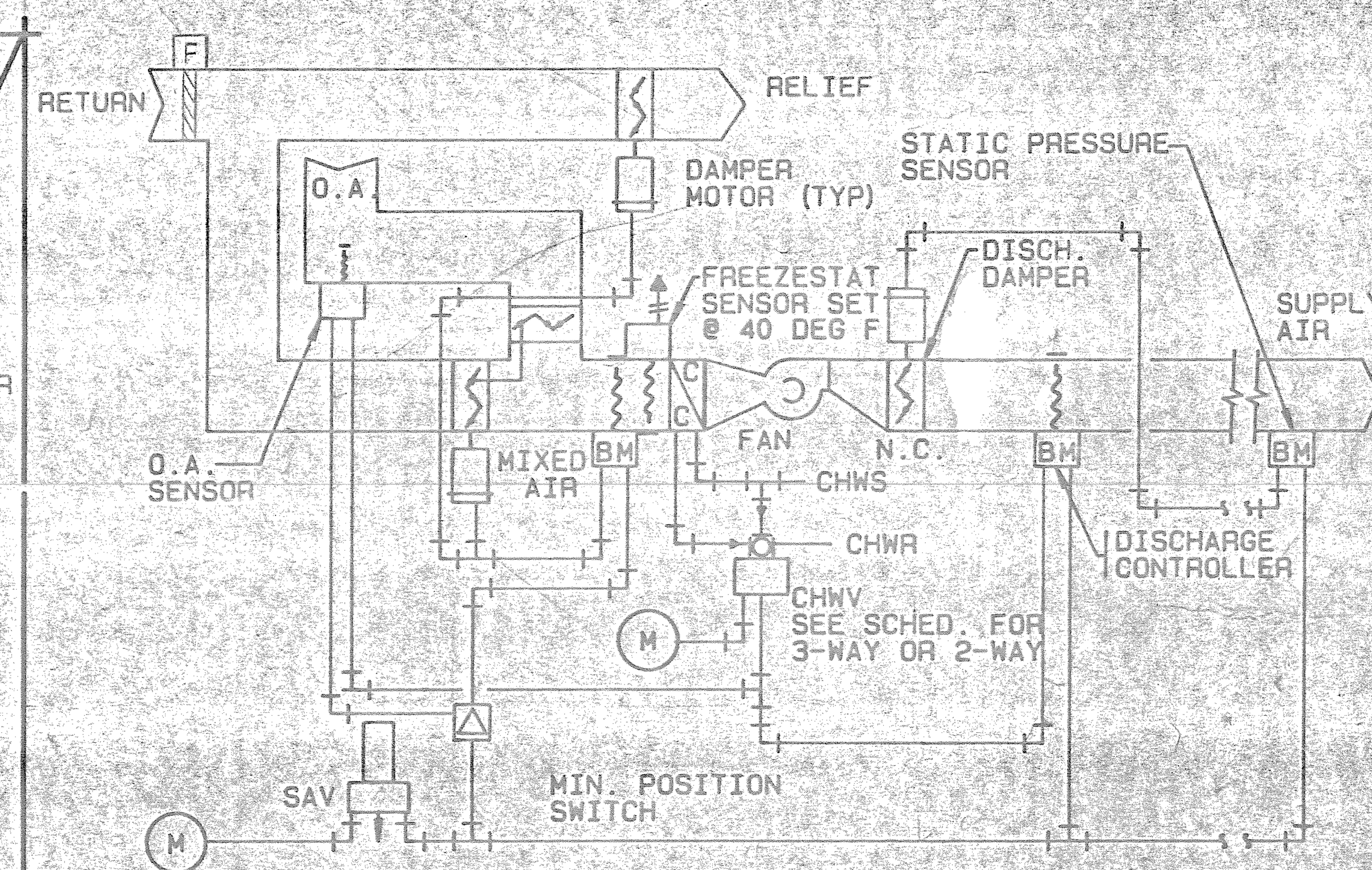


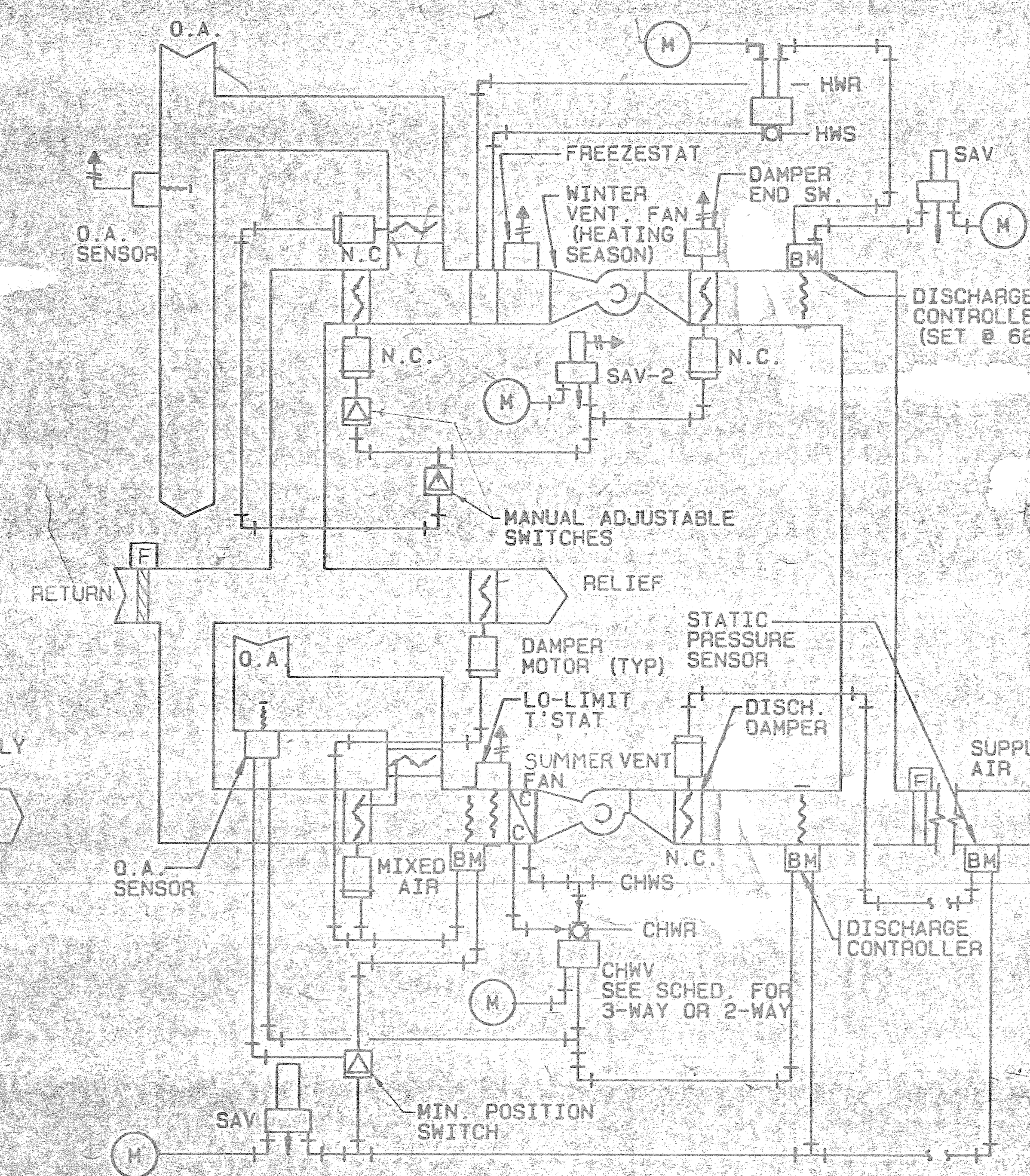
FAN COIL UNIT CONTROLS

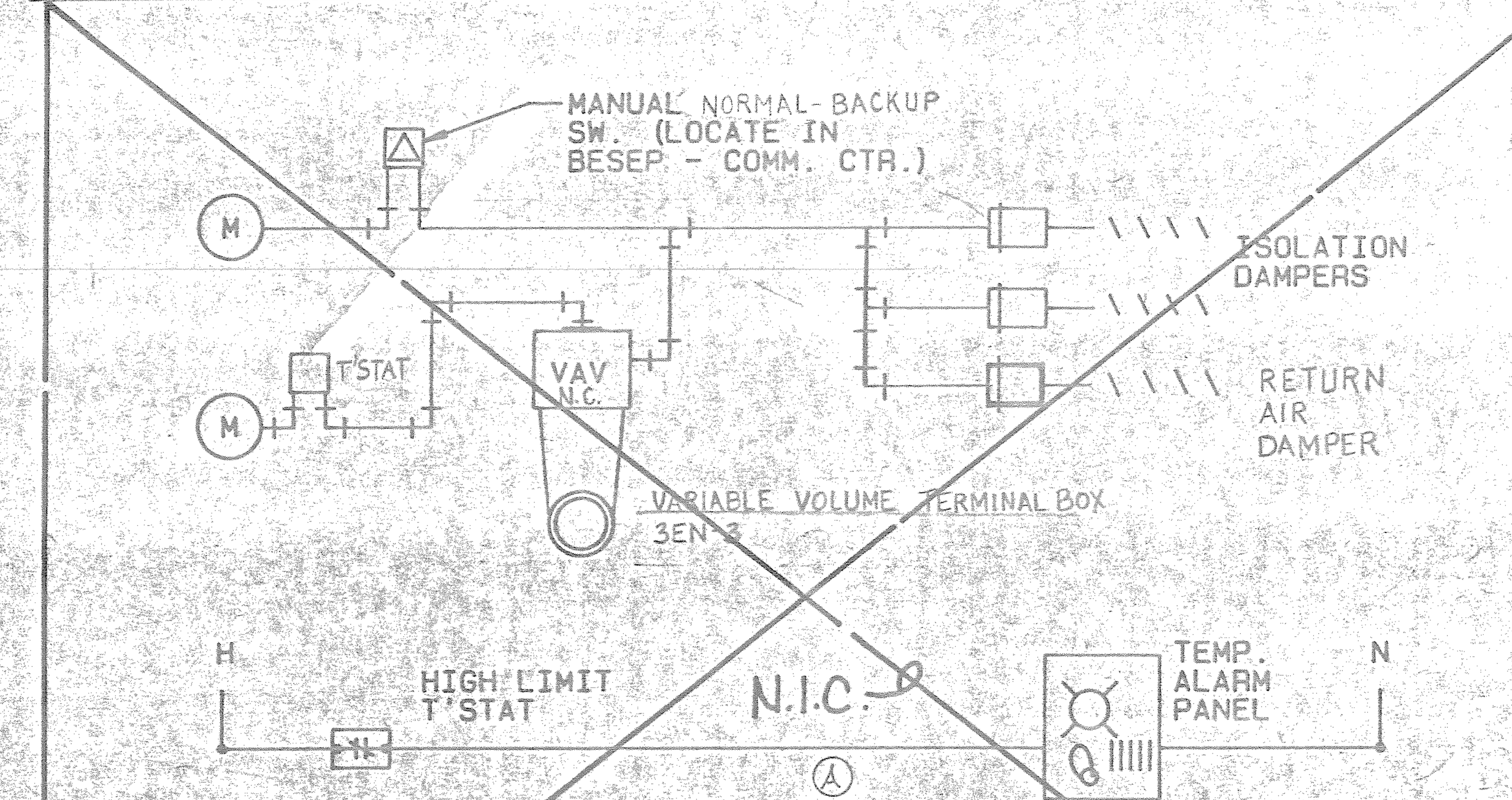


FCU-11, 22, 32

MAKEUP AIR UNIT (MUAU) BILLETING AREA

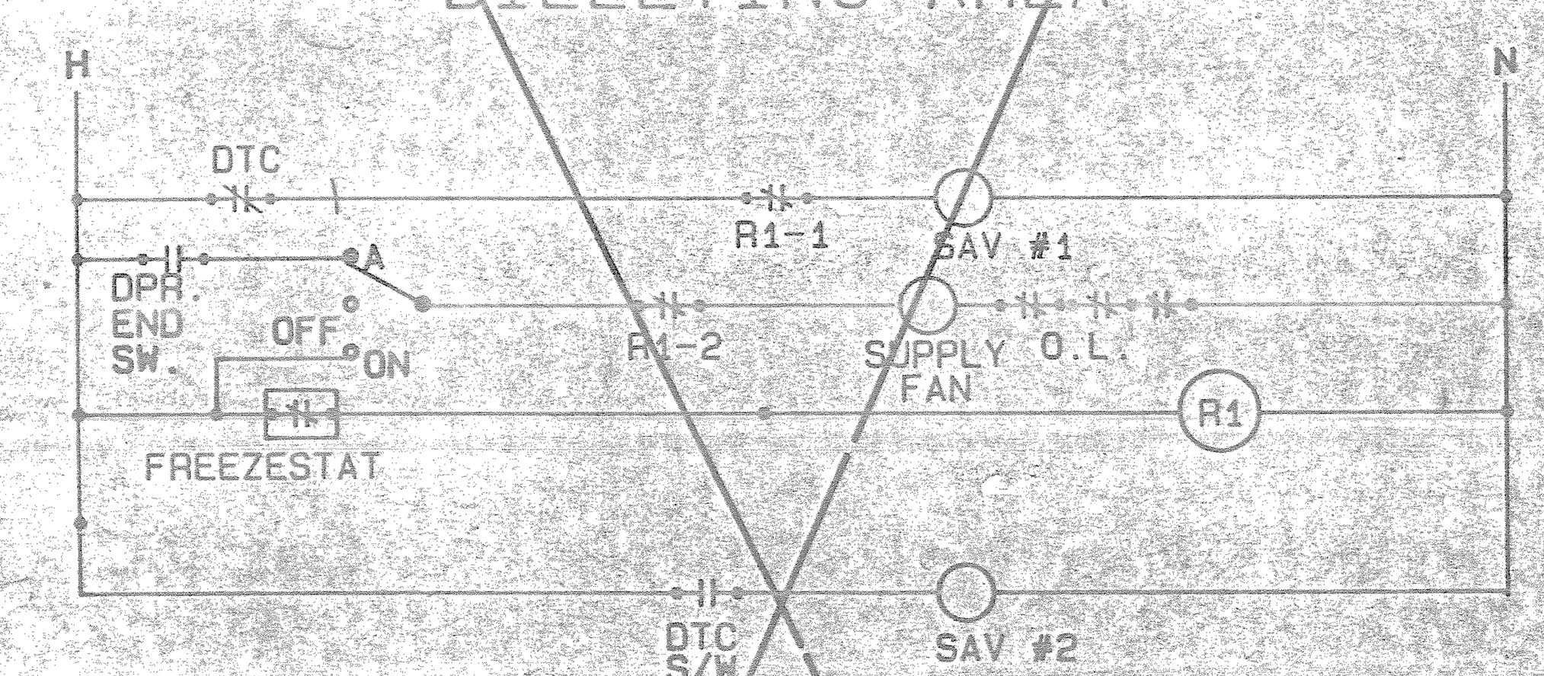






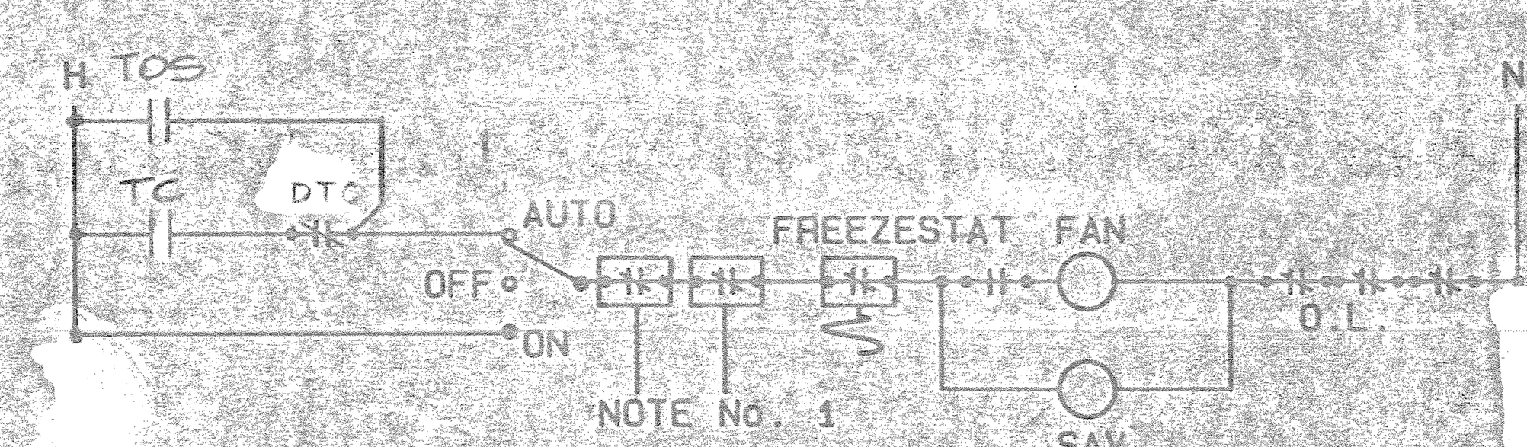
(AC-1)

AIR CONDITIONING BACK-UP FOR BESEP-COMM. CTR.

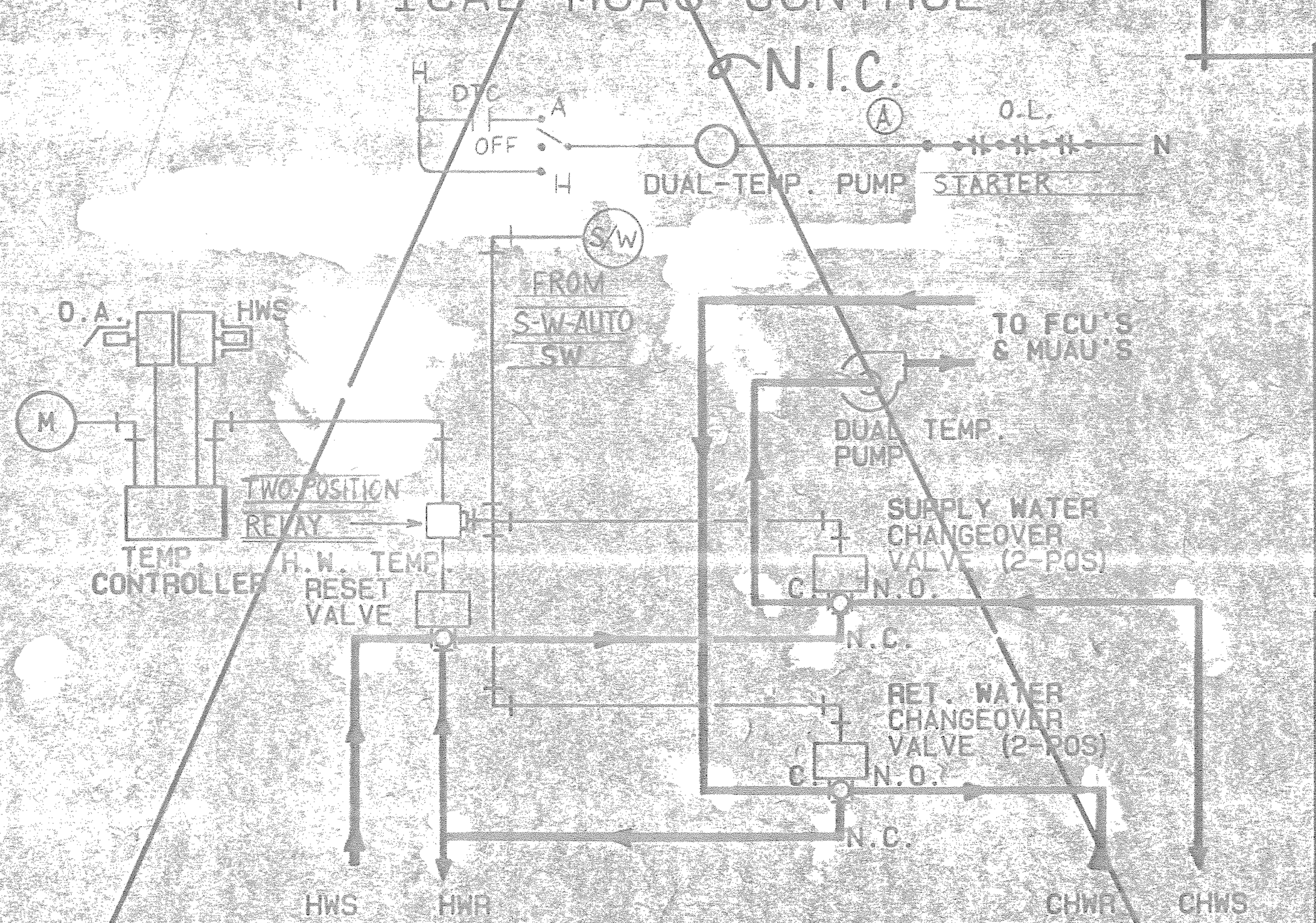


FCU-11, 22, 32

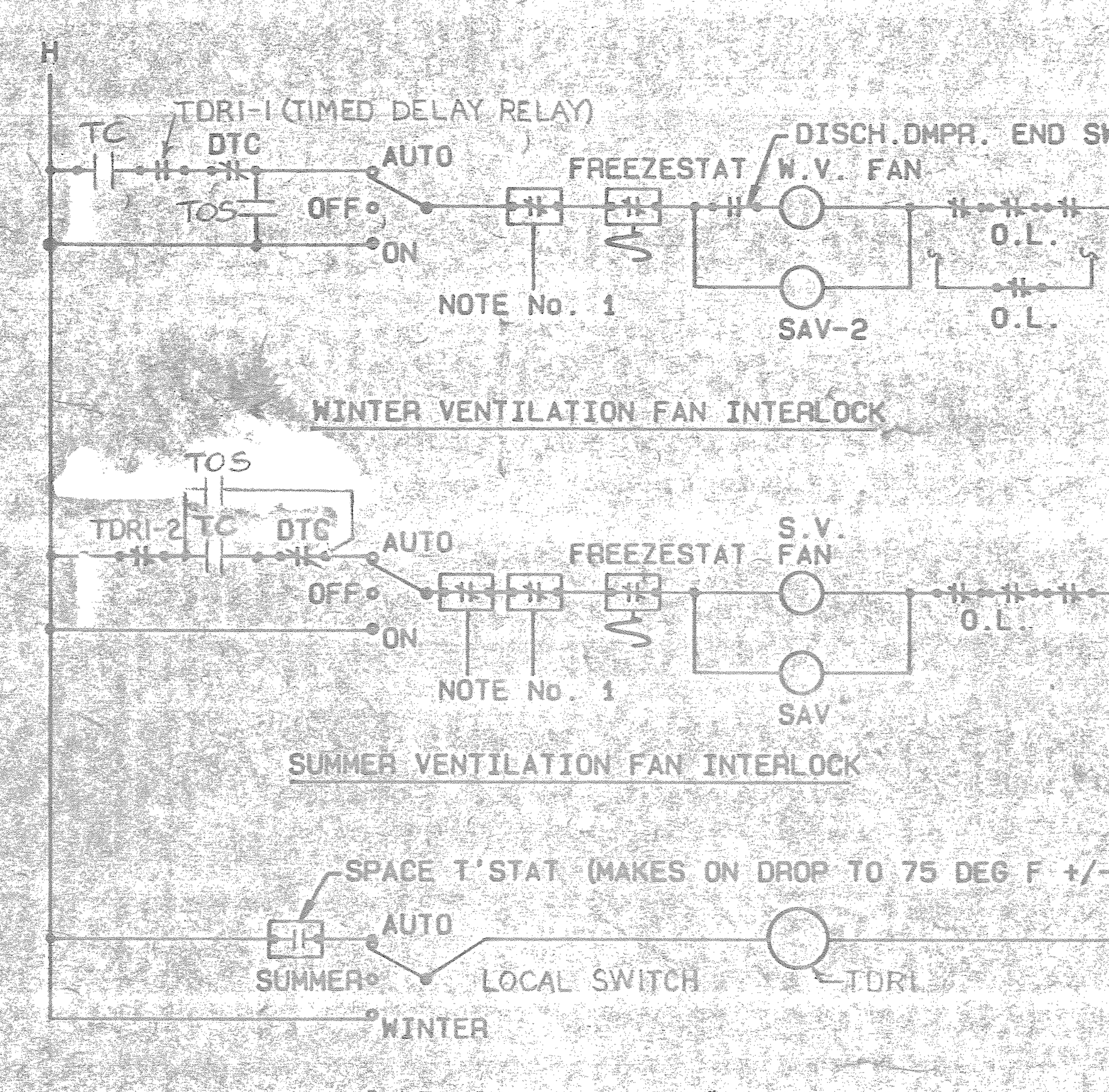
TYPICAL MUAU CONTROL



TYPICAL VARIABLE VOLUME AHU CONTROL
(WITHOUT WINTER VENTILATION FAN)
AHU-1ES, 2EN, 2ES, 3EN



H.W. RESET & CHANGEOVER BILLETING AREA



TYPICAL VARIABLE VOL. AHU CONTROL
(WITH WINTER VENTILATION FAN)

AHU-1AS, 1BN, 1BS, 1EN, 1CS, 2CN, 2CS, 1DN, 1DS, 2DS, 3ES, 1FN, 1FS
2FN, 2FS, 1GN, 1GS, 2GN, 2GS, 1HS, 2HN, 2HS, 1IN, 1IS

NOTES
1. FURNISH FIRESTATS AS SHOWN.
2. THERE SHALL BE ONLY FIRESTATS FURNISHED FOR MECHANICAL EQUIPMENT. (NO SMOKE DETECTORS)
3. THE CONTROL DIAGRAM AND SPECIFICATIONS REFER TO T/TC CONTACTS TO PROGRAM EQUIPMENT "ON" OR "OFF" AND TO INDEX CERTAIN EQUIPMENT BASED ON OUTSIDE OR OTHER AIR TEMPERATURES. SINCE THE BASE WIDE EMCS WILL NOT BE OPERATIONAL AT COMPLETION OF THIS PROJECT, TIME CLOCK CONTACTS SHALL BE INSTALLED IN SERIES WITH DTC RELAY CONTACTS TO PROGRAM THE EQUIPMENT.
4. SECONDARY CHILLED WATER PUMP (P-C-ES, P-C-EN, AND P-C-G) SHALL RUN IN THE SUMMER AND WINTER SEASON; WHEREAS, THE REMAINING CHILLED WATER SECONDARY PUMPS SHALL ONLY RUN IN THE SUMMER. THE SECONDARY CHILLED WATER PUMPS SHALL INTERLOCK WITH THEIR RESPECTIVE PRIMARY PUMP (SUMMER OR WINTER).
5. THE PRIMARY HOT WATER PUMP SHALL RUN FROM ITS OUTSIDE AIR CONTROLLER AT 60F AND BELOW AND DOES NOT REQUIRE ELECTRICAL INTERLOCK WITH SECONDARY PUMPS.

RECORD DRAWING
LETTER DATED AUG 1 0 1990

M-35

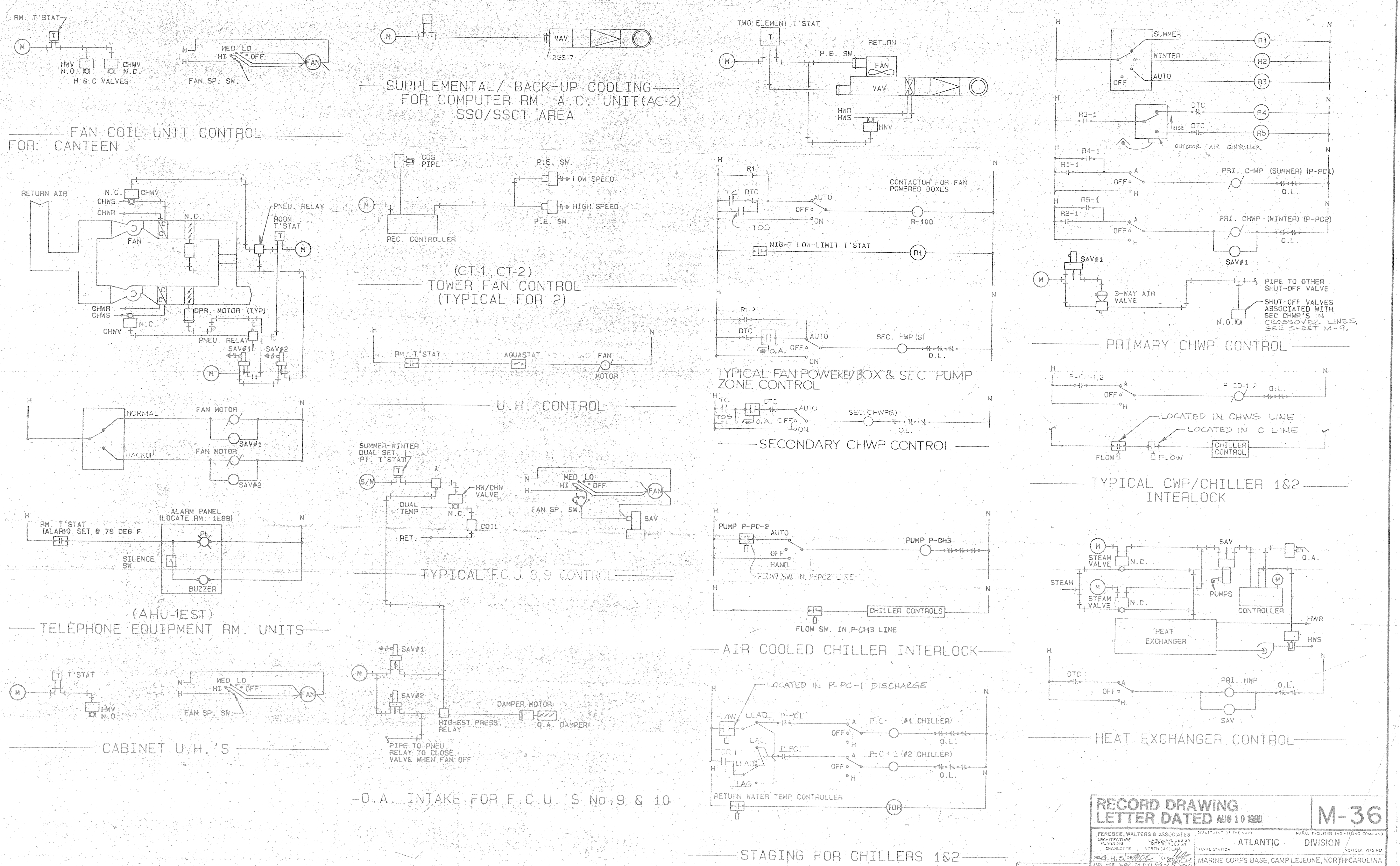
FEREBEE, WALTERS & ASSOCIATES
CHARLOTTE NORTH CAROLINA

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ATLANTIC DIVISION
NORFOLK, VIRGINIA
MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA
CONVERT HOSPITAL TO DIVISION HEADQUARTERS
MECHANICAL - TEMPERATURE CONTROLS

CODE IDENT. NO. 80091
SIZE F
NAVFAC DRAWING NO. 4124303
CONSTR. CONTR. NO. N62470-82-B-2243
SCALE AS NOTED
SPEC. 05-82-2243
SHEET 148 OF 213

224303

SYM	DESCRIPTION	DRAWN BY	DATE	APPROVED
1	GENERAL REVISION	GHS	2/15/86	CF
A	REVISED-AS BUILTS	DC	10/8/90	GRA



RECORD DRAWING
LETTER DATED AUG 10 1990

M-36

FEREBEE, WALTERS & ASSOCIATES
ARCHITECTURE PLANNING CHARLOTTE
LANDSCAPE DESIGN INTERIOR DESIGN NORTH CAROLINA

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

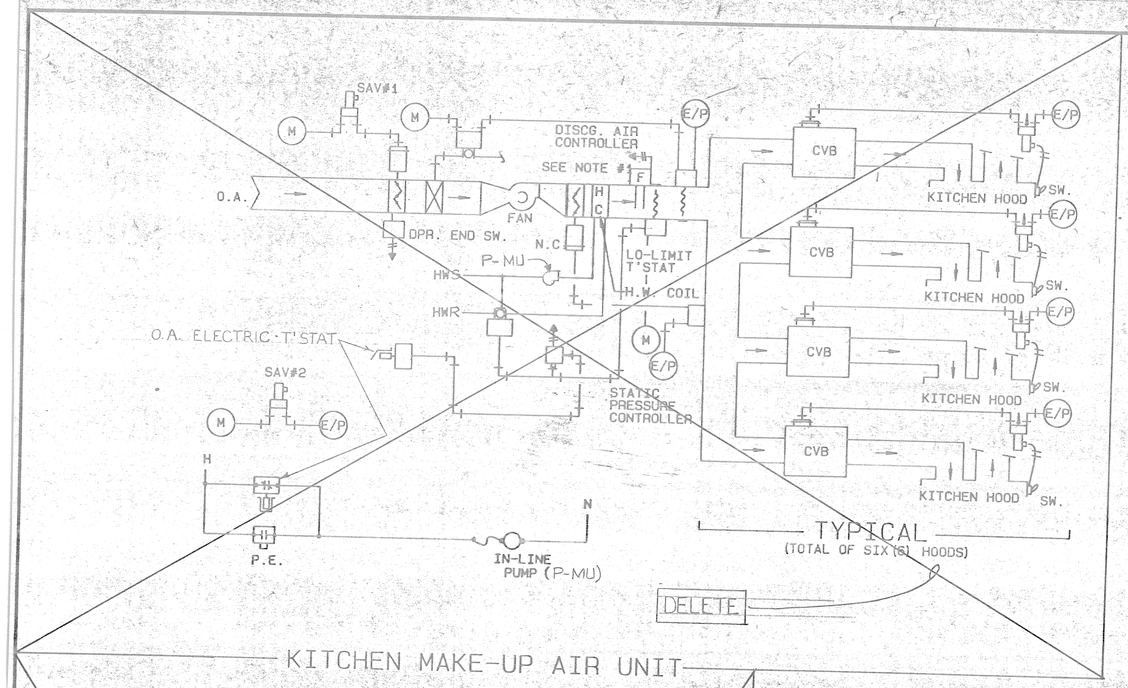
MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA
CONVERT HOSPITAL TO DIVISION HEADQUARTERS
MECHANICAL - TEMPERATURE CONTROLS

SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 4124304
CONSTR. CONTR. NO. N62470-82-B-2243
SCALE AS NOTED | SPEC. 05-82-2243 (REV.) | SHEET 149 OF 263
EFD DWG. NO. 224304

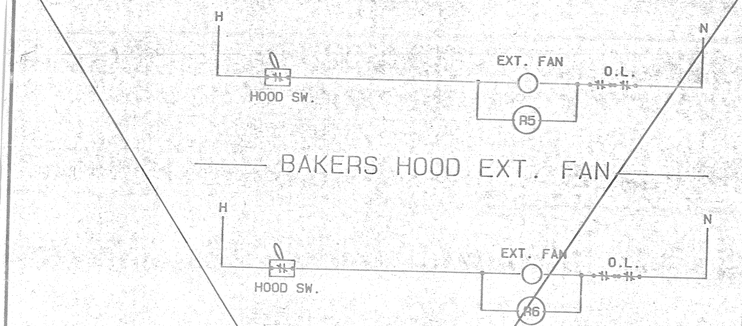
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL — GLENN H. SNYDER

H-1-A-Wing

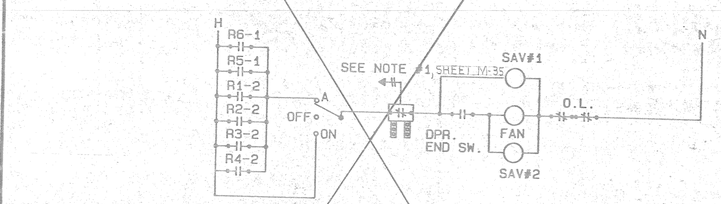
REVISIONS				
SYM	DESCRIPTION	PREPD BY	DATE	APPROVED
1	GENERAL REVISION	GHS	2/15/86	GF
A	REVISED AS BUILTS	DE	10/8/90	GRA



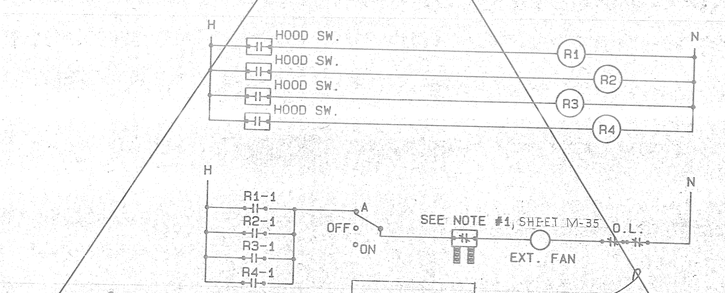
KITCHEN MAKE-UP AIR UNIT



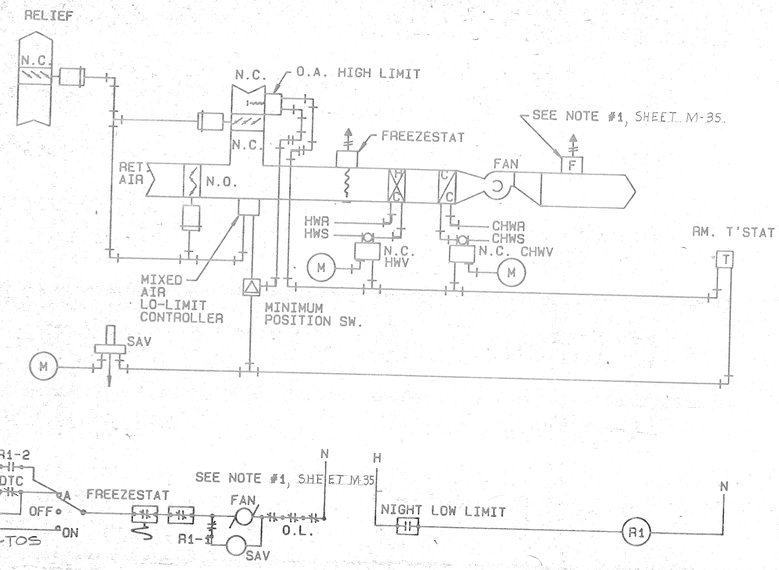
BAKERS HOOD EXT. FAN



KITCHEN MAKE-UP A.H.U.



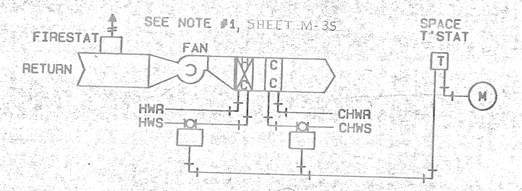
KITCHEN HOOD EXT. FAN CONTROL

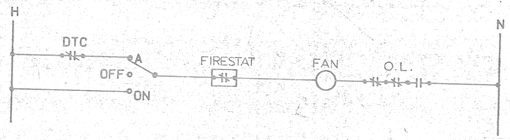


SNACK BAR[2EN(SB)] AIR HANDLING UNITS

SYMBOL LEGEND

MARK	DEFINITION
TC	TIMECLOCK
O.A.	OUTDOOR AIR
S.A.V	SOLENOID AIR VALVE
H.W.	HOT WATER
CHW	CHILLED WATER
S/W	SUMMER/WINTER
P.E.	PRESSURE-ELECTRIC SWITCH
PRV	PRESSURE REDUCING VALVE
R1	RELAY ONE (1)
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
DTC	DATA TERMINAL CABINET
O.L.	OVERLOAD
CWP	CONDENSER WATER PUMP
BM	BRANCH AIR/MAIN AIR
S-W-AUTO	SUMMER-WINTER-AUTOMATIC SWITCH
H-O-A	HAND-OFF-AUTO SWITCH (NORMALLY LOCATED IN STARTER COVER)
M	MAIN AIR - 25 PSIG
	TOGGLE SWITCH
TOS	TIMED OVERRIDE SWITCH





DUTY OFFICER UNIT
(24 HOUR OPERATION)

ENERGY MANAGEMENT CONTROL SYSTEM

1. PROVIDE 3 DATA TERMINAL CABINETS TO SERVE THE FOLLOWING AREAS:
   a. DATA TERMINAL CABINET NO. 1 SHALL SERVE ALL HVAC EQUIPMENT SERVING 1AN, 1AS, 1BN, 1BS, 2BN, 2BS, 1CN, 1CS, 2CN, 2CS, 1DN (EXCEPT EQUIPMENT SHOWN IN A/M-17, B/M-17 AND C/M-17), 1DS AND 2DS.
   b. DATA TERMINAL CABINET NO. 2 SHALL SERVE ALL HVAC EQUIPMENT LOCATED IN A/M-17, B/M-17 AND C/M-17 ALONG WITH EQUIPMENT SERVING 1ES, 2ES, 3ES, 1EN(MESS HALL), 1EN(GALLEY), 2EN, 3EN. THE STEAM VALVES SERVING THE HOT WATER HEAT EXCHANGER HE-3 LOCATED IN THE TUNNEL IN SERVICE BAY 19, AND THE HOT WATER PRIMARY LOOP P-PH.
   c. DATA TERMINAL CABINET NO. 3 SHALL SERVE ALL HVAC EQUIPMENT SERVING 1FN, 1FS, 2FN, 2FS, 1GN, 1GS, 2GN, 2GS, 1HN, 1HS, 2HN, 2HS, 1JN, AND 1JS.
2. THE FOLLOWING POINTS SHALL BE MONITORED:
   a. FOR EACH OF (32) AIR HANDLING UNITS (8) ROOFTOP AIR CONDITIONING UNITS, AND (2) COMPUTER ROOM UNITS:
      (1) SUPPLY AIR TEMPERATURE
      (2) RETURN AIR TEMPERATURE
      (3) SUPPLY AIR RELATIVE HUMIDITY
      (4) RETURN AIR RELATIVE HUMIDITY
      (5) SUPPLY FAN START/STOP
      (6) SUPPLY FAN STATUS
      (7) SPACE TEMPERATURE
      (8) FILTER DIFFERENTIAL PRESSURE SWITCH
   b. HYDRONIC SYSTEMS:
      (1) CHILLED WATER SUPPLY TEMPERATURE
      (2) CHILLED WATER RETURN TEMPERATURE
      (3) HOT WATER SUPPLY TEMPERATURE
      (4) HOT WATER RETURN TEMPERATURE
      (5) NINE SECONDARY HOT WATER PUMP STATUS'
      (6) ONE SECONDARY DUAL TEMPERATURE PUMP STATUS'
      (7) ONE PRIMARY HOT WATER PUMP STATUS
      (8) NINE SECONDARY CHILLED WATER PUMP STATUS'
      (9) TWO PRIMARY CHILLED WATER PUMP STATUS'
      (10) THREE TERTIARY CHILLED WATER PUMP STATUS'
      (11) TWO CONDENSER WATER PUMP STATUS'
      (12) THREE CHILLER START/STOP & STATUS
      (13) TWO COOLING TOWER START/STOP & STATUS
      (14) CONTROL POINT ADJUSTMENT FOR HEAT EXCHANGERS HE-1, HE-2, AND HE-3.
3. PROVIDE A NIGHT LOW LIMIT THERMOSTAT FOR EACH AREA SERVED BY A TIMECLOCK.
4. DATA TERMINAL CABINET NO 1 (LOCATED IN ROOM 1C28)
   AHU'S - 1CN, 1CS, 1DN 1DS, 2DS, 2CN, 2CS
   PUMPS - P-C-AB, P-C-C, P-H-AB, P-H-C, P-H-D, P-C-D
   CONTAINS TIME CLOCK #1
5. DATA TERMINAL CABINET NO 2 (LOCATED IN ROOM 1E54)
   AHU'S - 1ES, 1EST, 2EN, 2EN(SB) 2ES, 3EN, 3ES
   PUMPS - P-CH-1, P-CH-2, P-CH-3, P-CD-1, P-CD-2, P-PC-1, P-PC-2, P-C-EN, P-C-ES, P-H-EN, P-H-ES
   CHILLERS - 1,2,3
   COOLING TOWERS - 1,2
   CONTAINS TIME CLOCKS # 2 & 3
6. DATA TERMINAL CABINET NO. 3 (LOCATED IN ROOM 1G47)
   AHU'S - 1FN, 1FS, 2FN, 2FS, 1GN, 1GS, 2GN, 2GS, 1HS, 2HN, 2HS, 1JN, 1JS
   PUMPS - P-C-F, P-C-G, P-C-H, P-C-J, P-H-F, P-H-G, P-H-H, P-H-J
   CONTAINS TIME CLOCK # 4
7. PROVIDE 7-DAY TIMECLOCKS W/12-HOUR RESERVE AS FOLLOWS:
   TIME CLOCK #1
   AHU - 1CN, 1CS, 2CN, 2CS, 1DN, 1DS, 2DS
   WVF - 1CN, 1CS, 2CN, 2CS, 1DN, 1DS, 2DS
   PUMPS: P-C-AB, P-C-C, P-C-D, P-H-AB, P-H-C, P-H-D
   TIME CLOCK #2
   AHU - 2EN, 3EN, 1ES, 2ES, 3ES & WVF-3ES
   PUMPS: P-C-EN, P-C-ES, P-H-EN, P-H-ES
   TIME CLOCK #3
   AHU - 2EN(SB) PUMPS: P-C-EN, P-H-EN
   TIME CLOCK #4
   AHU - 1FN, 1FS, 2FN, 2FS, 1GN, 1GS, 2GN, 2GS, 1HS, 2HN, 2HS, 1JN, 1JS
   WVF - 1FN, 1FS, 2FN, 2FS, 1GN, 1GS, 2GN, 2GS, 1HS, 2HN, 2HS, 1JN, 1JS
   PUMPS: P-C-F, P-C-G, P-C-H, P-C-J, P-H-F, P-H-G, P-H-H, P-H-J
8. PROVIDE A 6-HOUR TIMED OVERRIDE SWITCH FOR EACH AHU OR WVF SERVED BY A TIME CLOCK.
9. CONTROL CIRCUITS FOR THE FOLLOWING UNITS SHALL ORIGINATE FROM EMERGENCY PANELS: AC-1, FCU-3E, AHU-1EST, AC-2, P-C-EN, P-C-ES, CHILLER NO. 3, P-PC-2 AND P-CH-3.

RECORD DRAWING
LETTER DATED AUG 10 1990

M-37

FEREBEE, WALTERS & ASSOCIATES ARCHITECTURE PLANNING LANDSCAPE DESIGN INTERIOR DESIGN CHARLOTTE NORTH CAROLINA

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
ATLANTIC DIVISION
NAVAL STATION NORFOLK, VIRGINIA

DES G.H.S DR MDE CHK
PROJ MGR CHK. ENGR
SUBMITTED BY: DATE: 6/6/86
FIRM MEMBER PRINCIPAL
EFD: FP EVD
HD DIR
APPROVED DATE
OFFICER IN CHARGE
APPROVED DATE 17 July 85
FOR EFD FOR COMMANDER, NAVFAC

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA
CONVERT HOSPITAL TO DIVISION HEADQUARTERS
MECHANICAL-TEMPERATURE CONTROLS

SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 4124305
CONSTR. CONTR. NO. N62470-82-B-2243
SCALE AS NOTED | SPEC. 05-82-2243(REV.) | SHEET 150 OF 243
EFD DWG. NO. 224305

NORTH CAROLINA PROFESSIONAL SEAL 5557 ENGINEER GLENN H. SNYDER

H-1-A-Wing

AIR HANDLING UNIT SCHEDULE

SYM	DESCRIPTION	PREP'D BY	DATE	APPROVED
1	GENERAL REVISION	GHS	2/15/86	OF
(A)	REVISED-AS BUILTS	DC	10/8/90	GRA

TAG (AHU.–)	1AS	1BN	1BS	1CN	1CS	2CN	2CS	1DN	1DS	2DS	1ES
FAN SECTION											
FAN ARRANGEMENT	DT										
TYPE/TSO DISCHARGE DMPR	FC/YES										
MAX. SUPPLY CFM	5070	6891	8110	5990	6770	7100	6160	4330	7620	6650	8080
MIN. O.A. CFM	754	1112	1210	709	1015	946	981	770	1132	918	1113
MOTOR HP	7.5	10.0	10.0	7.5	10.0	10.0	7.5	7.5	10.0	10.0	10.0
TSP (IN. W.C.)	3.8	4.2	4.0	4.2	4.1	4.0	4.0	3.9	4.2	4.0	4.2
COOLING COIL SECTION											
TOTAL LOAD (MBH)	232.4	325.0	346.5	258.6	292.2	316.0	287.8	192.7	329.0	301.8	345.2
SENSIBLE LOAD (MBH)	171.0	227.9	256.8	189.0	216.6	242.6	212.5	138.9	242.1	225.7	261.1
EAT (dB/WB)	83.1/66.9	81.5/66.3	81.3/66.0	81.1/66.0	81.5/66.0	83.2/66.1	83.7/67.0	81.6/66.5	81.2/66.0	83.2/66.6	81.9/66.0
LAT (dB/WB)	52.1/51.6	51.1/50.6	52.2/51.7	52.1/51.6	52.1/51.6	51.8/51.3	52.0/51.5	52.1/51.6	52.0/51.5	52.0/51.5	52.2/51.7
A.P.D. (IN. W.C.)	1.0	0.9	1.0	0.9	0.9	0.9	0.9	1.0	0.9	0.8	1.0
WATER FLOW (GPM)	32	43	46	35	40	42	38	26	44	41	46
COIL AREA (SQ.FT)	9.1	13.2	14.8	11.5	13.2	13.2	11.5	7.7	14.8	13.2	14.8
MAX. W.P.D. (FT. W.C.)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
EWT / LWT (°F)	42/57	42/57	42/57	42/57	42/57	42/57	42/57	42/57	42/57	42/57	42/57
FILTER SECTION											
TYPE / EFF. (% AADS)	BAG/45										
QTY./SIZE (12×24×18)	—	—	4	—	—	—	—	1	4.	—	4
QTY./SIZE (24×24×18)	3	3	3	3	3	3	3	2	3	3	3
PREFILTER / EFF. (%)	1" THK./30										
INITIAL A.P.D. (IN. W.C.)	.32										
FINAL A.P.D. (IN. W.C.)	1.0										
MIXING BOX SECTION											
MIXING BOX	TSO	TSO	TSO	TSO	TSO	TSO	TSO	TSO	TSO	TSO	TSO

TAG (AHU.–)	1EST *	2EN	2EN (SB)	2ES	3EN	3ENG	3ES	1FN	1FS	2FN	2FS
FAN SECTION											
FAN ARRANGEMENT											
TYPE/TSO DISCHARGE DMPR	FC/NO	FC/YES	FC/NO	FC/YES							
MAX. SUPPLY CFM	2323	3080	1436	7340	2304	4710	6990	6190	6450	5800	5900
MIN. O.A. CFM	116	329	1000	1578	618	738	1366	993	1007	973	961
MOTOR HP	2.0	5.0	1.0	10.0	3.0	5.0	10.0	7.5	7.5	7.5	7.5
TSP (IN. W.C.)	2.4	4.0	2.0	4.3	2.7	2.4	3.9	4.1	4.2	4.0	3.9
COOLING COIL SECTION											
TOTAL LOAD (MBH)	66.5	126.1	104.8	356.0	122.0	222.2	351.5	272.7	284.2	271.0	275.7
SENSIBLE LOAD (MBH)	65.2	96.5	52.5	248.4	84.5	147.1	253.3	199.3	207.7	201.3	203.5
EAT (dB/WB)	79.3/63.4	81.4/65.6	86.4/74.2	83.2/67.6	86.1/69.0	81.1/67.3	85.4/68.0	81.8/66.4	81.7/66.2	84.0/67.0	83.8/66.6
LAT (dB/WB)	53.5/52.7	52.6/51.9	52.8/52.0	52.1/51.6	52.4/51.8	52.4/51.8	52.1/51.6	52.2/51.7	52.1/51.6	52.1/51.6	52.1/51.6
A.P.D. (IN. W.C.)	0.5	0.7	1.0	1.0	0.8	0.9	0.9	0.9	1.0	0.8	0.9
WATER FLOW (GPM)	9	17	14	49	16	30	48	36	38	36	37
COIL AREA (SQ.FT)	5.3	6.7	3.1	13.2	5.3	9.1	13.2	11.5	11.5	11.5	11.5
MAX. W.P.D. (FT. W.C.)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
EWT / LWT (°F)	42/57	42/57	42/57	42/57	42/57	42/57	42/57	42/57	42/57	42/57	42/57
FILTER SECTION											
TYPE / EFF. (% AADS)	PLEATED/30	BAG/45	PLEATED/30	BAG/45	PLEATED/30	BAG/45					
QTY./SIZE (12×24×18)	2/20×25×2	1	2/16×20×2	—	2/20×25×2	—	—	—	—	—	—
QTY./SIZE (24×24×18)	3	—	2	3	—	3	3	3	3	3	3
PREFILTER / EFF. (%)											
INITIAL A.P.D. (IN. W.C.)	.10	.32	.10	.32	.10	.32					
FINAL A.P.D. (IN. W.C.)	.50	1.0	.50	1.0	.50	1.0					
MIXING BOX SECTION											
MIXING BOX	NONE	TSO	NONE	TSO	TSO	TSO	TSO	TSO	TSO	TSO	TSO

TAG (AHU.–)	1GN	1GS	2GN	2GS	2GSS	1HN	1HS	2HN	2HS	1JN	1JS	MUAU-1
FAN SECTION												
FAN ARRANGEMENT												
TYPE/TSO DISCHARGE DMPR												
MAX. SUPPLY CFM	6070	6350	6140	4680	NOT	6330	4070	5930	6700	6820	7010	23240
MIN. O.A. CFM	970	986	987	892	USED	807	858	777	821	800	811	23240
MOTOR HP	7.5	7.5	7.5	7.5		7.5	7.5	10.0	7.5	10.0	10.0	20.0
TSP (IN. W.C.)	3.9	4.0	4.1	4.0		4.2	4.0	4.1	4.1	3.9	4.1	3.0
COOLING COIL SECTION												
TOTAL LOAD (MBH)	262.0	274.1	289.6	268.7		264.8	202.8	261.2	277.3	291.4	299.5	SEE HOT
SENSIBLE LOAD (MBH)	195.5	204.5	210.4	176.2		203.2	139.0	203.8	227.4	227.0	231.9	WATER
EAT (dB/WB)	81.8/66.1	81.7/66.0	83.6/67.2	86.1/69.5		81.4/65.3	83.6/68.0	83.7/66.2	83.2/65.6	82.8/66.0	82.6/66.0	COIL SCHE-
LAT (dB/WB)	52.2/51.7	52.1/51.6	52.1/51.6	51.5/50.8		51.9/51.0	52.2/51.7	52.1/51.6	52.0/51.5	52.2/51.7	52.2/51.7	DULE SHT.
A.P.D. (IN. W.C.)	0.9	1.0	0.9	0.9		1.0	0.9	0.9	0.9	0.9	0.9	M-40 FOR
WATER FLOW (GPM)	35	37	39	36		35	27	36	37	39	40	DUCT
COIL AREA (SQ.FT)	11.5	11.5	11.5	9.2		11.5	7.7	11.5	13.2	13.2	13.2	MOUNTED
MAX. W.P.D. (FT. W.C.)	15.0	15.0	15.0	15.0		15.0	5.0	15.0	5.0	15.0	15.0	COIL
EWT / LWT (°F)	42/57	42/57	42/57	42/57		42/57	42/57	42/57	42/57	42/57	42/57	
FILTER SECTION												
TYPE / EFF. (% AADS)						BAG/45						
QTY./SIZE (12×24×18)	—	—	—	—			1	—	—	—	—	2
QTY./SIZE (24×24×18)	3	3	3	3	---	3	2	3	3	3	—	8
PREFILTER / EFF. (%)												
INITIAL A.P.D. (IN. W.C.)						.32						
FINAL A.P.D. (IN. W.C.)						1.0						
MIXING BOX SECTION												
MIXING BOX	TSO	TSO	TSO	TSO		TSO	TSO	TSO	TSO	TSO	TSO	NONE

DELETED (A) (1AS, 1BN, 1BS); DELETED (3ENG); DELETED (1HN); DELETED (MUAU-1)

LEGEND:

- AHU - 1AS — AIR HANDLING UNIT SERVING WING 1AS, ETC..
- DT — DRAW THRU
- FC — FORWARD CURVED BLADE
- APD — AIR PRESSURE DROP
- EWT — ENTERING WATER TEMPERATURE
- LWT — LEAVING WATER TEMPERATURE
- AADS — ASHRAE AVERAGE ATMOSPHERIC DUST SPOT TEST
- TSO — TIGHT SHUT OFF DAMPERS, OPPOSED BLADE IN SHORT DIMENSION (0.75% LEAKAGE @ 5" W.C.).
- * — TWO UNITS REQUIRED

NOTES:

1. PROVIDE INTERNAL SPRING VIBRATION ISOLATORS ON ALL AHU'S EXCEPT 1EST, 2EN(SB), 3EN, 2GS, & 2GSS. THE REMAINING AHU'S SHALL BE PROVIDED WITH 2" DEFLECTION SPRING VIBRATION ISOLATORS.
2. PROVIDE A FIRESTAT IN EACH AHU RETURN DUCT FOR ALL AIR HANDLING UNITS.
3. PROVIDE ELECTRICAL DISCONNECTS FOR AHU'S 2CN, 2CS, 2DS, 2FN, 2FS, 2GN, 2GS, 2HN, & 2HS
4. PROVIDE A CONDENSATE LINE FROM AHU COOLING COIL TO FLOOR DRAIN FOR ALL UNITS. SEE PLANS FOR LINE SIZES. PROVIDE PLUG WHERE COND. LINE CHANGES DIRECTION FOR CLEANING PURPOSES.
5. SEE PREHEAT COIL SCHEDULE ON SHEET M-40.

FAN COIL UNITS

No TAG No.	COOLING: T.L. MBH	T.S. MBH	NOM. CFM	W.C. CFM	ESP IN. W.C.	EAT DB/WB	EWT °F	WTD °F	FLOW GPM	COIL ROWS	MAX. WPD	HEATING: TH MBH	EWT °F	FLOW GPM	GENERAL: MOTOR POWER	ELEC. DATA	NOTES
FCU-1	23.9	19.1	1000	805	0.15	80/67	45	8	6.5	3	15.0	18.5	120	6.5	280 W	277/1	1—3
FCU-2	8.7	7.5	400	322				10	2.0	3		3.6		2.0	145 W		
FCU-3	7.0	5.8	400	270				12	1.5	3		3.6		1.5			
FCU-4	8.2	6.5	400	270				10	2.0	3		4.4		2.0			
FCU-5	9.0	7.7	400	267				10	2.0	4		3.9		2.0			
FCU-6	7.0	5.9	400	270				12	1.5	3		3.9		1.5			
FCU-7	11.0	9.4	600	396				10	2.5	3		4.0		2.5	260 W		
FCU-8	10.7	9.3	400	322				8	2.5	3		5.2		2.5	145 W		
FCU-9	41.5	26.5	1200	1000	0.95			8	10.5	4		22.7		1.5	1/2 HP		1, 5, 6
FCU-10	32.9	26.9	1200	1000	0.95	80/67		8	10.5	4		12.6		1.5	1/2 HP		1, 5, 6
FCU-11	71.0	30.0	2000	2000	1.10	83/71		16	9.0	4		50.2		9.0	3/4 HP	460/3	1, 5, 6
FCU-12	18.0	14.2	800	635	0.15	80/67		10	4.0	3		9.9		4.0	270 W	277/1	1-3
FCU-13	9.8	8.4	400	322				10	2.0	3		4.6		2.0	145 W		
FCU-14	6.9	5.6	400	270				12	1.5	3		3.6		1.5			
FCU-15	8.7	7.3	400	322				10	2.0	3		3.4		2.0			
FCU-16	7.3	5.7	400	270				12	1.5	3		4.2		1.5			
FCU-17	9.6	7.6	400	322				10	2.0	3		8.0		2.0			
FCU-18	7.6	6.3	400	270				12	1.5	3		3.6		1.5			
FCU-19	6.2	4.9	300	193				8	2.0	3		3.6		2.0	110 W		
FCU-20	10.2	8.7	400	267				10	2.0	4		4.6		2.0	145 W		
FCU-21	7.1	5.8	400	270	0.15	80/67		12	1.5	3		4.1		1.5	145 W		
FCU-22	80.7	33.6	2000	2000	1.10	84/72		15	11.0	4		67.1		11.0	3/4 HP	460/3	1, 5, 6
FCU-23	8.7	7.3	400	322	0.15	80/67		10	2.0	3		3.4		2.0	145 W	277/1	1-3
FCU-24	7.6	6.3	400	270				12	1.5	3		3.6		1.5			
FCU-25	6.9	5.6	400	270				12	1.5	3		3.6		1.5			
FCU-26	7.6	6.3	400	270				12	1.5	3		3.6		1.5			
FCU-27	11.8	9.8	600	396				8	3.5	3		8.0		3.5	260 W		
FCU-28	7.3	5.7	400	270				12	1.5	3		4.2		1.5	145 W		
FCU-29	9.2	7.4	400	322				10	2.0	3		5.6		2.0	145 W		
FCU-30	9.5	8.1	400	267				10	2.0	4		4.2		2.0	145 W		
FCU-31	23.4	19.6	1000	805	0.15	80/67		8	6.5	3		11.3		6.5	280 W	277/1	
FCU-32	83.0	36.0	2000	2000	1.10	84/72		15	11.0	4		68.3	120	11.0	3/4 HP	460/3	1, 5, 6
FCU-33	14.0	10.9	800	552	0.25	80/67		14	2.0	4		6.5	180	1.0	270 W	277/1	1-4
~~FCU-34~~	~~80.0~~	~~54.4~~	~~2000~~	~~2000~~	~~1.24~~	~~80/67~~		~~13~~	~~11.0~~	~~6~~ DELETED		~~24.9~~	~~180~~	~~2.0~~	~~3/4 HP~~	~~460/3~~	~~1, 5, 6~~
~~FCU-35~~	~~58.3~~	~~40.0~~	~~1600~~	~~1600~~	~~0.82~~	~~79/67~~	~~45~~	~~8~~ DELETED	~~14.5~~	~~4~~	~~15.0~~	~~43.5~~	~~180~~	~~3.0~~	~~1/2 HP~~	~~277/1~~	~~1, 5, 6~~
~~FCU-36~~	~~HEAT ONLY~~		~~1200~~									~~24.4~~	~~180~~	~~2.0~~			~~1-3~~
~~FCU-37~~	~~HEAT ONLY~~		~~800~~									~~16.3~~	~~180~~	~~2.0~~			~~1-3~~

LEGEND:

- T.L. TOTAL LOAD
- T.S. TOTAL SENSIBLE
- NOM. NOMINAL
- W.C. WET COIL
- ESP EXTERNAL STATIC PRESSURE
- EAT ENTERING AIR TEMPERATURE
- EWT ENTERING WATER TEMPERATURE
- WTD WATER TEMPERATURE DIFFERENCE
- WPD WATER PRESSURE DROP (FT. WG.)
- T.H. TOTAL HEATING
- W WATTS
- HP HORSEPOWER

NOTES:

1. PROVIDE INSULATED DRAIN PAN AUXILIARY DRAIN PAN AND DRIP LEG.
2. PROVIDE PERMANENT SPLIT CAPACITOR, 3-SPEED MOTOR.
3. PROVIDE AN INSULATED RETURN AIR PLENUM AND FILTER.
4. PROVIDE 4-ROW COIL (3-ROWS COOLING AND 1-ROW HEATING IN REHEAT POSITION).
5. PROVIDE ADJUSTABLE BELT DRIVE UNIT WITH THROWAWAY FILTER, VIBRATION ISOLATORS, FLEXIBLE CONNECTIONS, DRAIN PAN AND AUXILIARY DRAIN PAN.
6. AIR PRESSURE DROP IS TOTAL STATIC PRESSURE IN LIEU OF E.S.P. SHOWN.
7. SEE PLANS TO DETERMINE THE NUMBER OF EACH UNIT REQUIRED.
8. PROVIDE ELECTRICAL DISCONNECTS TO ALL FCU'S.

ROOFTOP AIR CONDITIONING UNITS

DELETED

TAG NO.	CFM	ESP IN WG	TL MBH	TS MBH	IFM HP	OFM QTY/FLA	COMPR. QTY/RLA	ELEC V/Φ	NOTES
RTAC-1•	1200	0.74	37.4	27.1	3/4	1/0.5	1/7.4	460/3	1,2,4,5
RTAC-2	2000*	0.82	61.4	46.1	1	1/1.5	1/10.4	460/3	1,2,4,5
RTAC-3•	1000	.59	29.0	21.0	1/5	1/1.5	1/13.5	200/3	1,2,4,5
RTAC-4	2250*	.61	62.4	48.1	1	1/1.5	1/10.4	460/3	1,2,4,5
RTAC-5	10,000*	1.00	360.0	258.0	10	3/3.3	2/27.5	460/3	1,2,4,5
RTAC-6•	10,000*	1.00	360.0	258.0	10	3/3.3	2/27.5	460/3	1,2,4,5
RTAC-7•	2250*	.61	62.4	48.1	1	1/1.5	1/10.4	460/3	1,2,4,5
RTAC-8•	1400	.65	48.4	33.7	3/4	1/1.5	1/8.8	460/3	1,2,4,5

LEGEND:

- ESP - EXTERNAL STATIC PRESSURE
- TL - TOTAL LOAD
- TS - TOTAL SENSIBLE
- * - PROVIDE FIRESTAT
- IFM - INDOOR FAN MOTOR
- OFM - OUTDOOR FAN MOTOR
- COMPR. - COMPRESSOR
- • PROVIDE ELEC. DISCONNECT

NOTES:

1- PROVIDE 14" HIGH ROOF CURB FOR FLAT ROOF
2- PROVIDE ECONOMIZER CYCLE WITH RELIEF DAMPER
3- PROVIDE ECONOMIZER CYCLE WITHOUT RELIEF DAMPER
4- PROVIDE 2" THICK, PLEATED FILTERS WITH 30% EFFICIENCY
5- CAPACITIES BASED ON 95°F AMBIENT & EAT = 80 dB/67 WB

AIR DISTRIBUTION SCHEDULE

TAG	SERVICE	TYPE	FRAME	DAMPER	REMARKS
A	SUPPLY	CEILING	T-BAR	NO	4-WAY THROW, LOUVER FACED, 24"×24" PANEL, EQUALIZER GRID
B	SUPPLY	CEILING	T-BAR	NO	3-WAY THROW, LOUVER FACED 24"×24 PANEL, EQUALIZER GRID
C	SUPPLY	CEILING	T-BAR	NO	2-WAY THROW, LOUVER FACED 24"×24" PANEL, EQUALIZER GRID
D	SUPPLY	CEILING	T-BAR	NO	1-WAY THROW, LOUVER FACED 24"×24" PANEL, EQUALIZER GRID
E	RETURN	SIDEWALL	PLASTER	NO	0° DEFLECTION, VERTICAL BARS 2/3" SPACING, STEEL CONSTRUCTION
F	SUPPLY	SIDEWALL	PLASTER	NO	DOUBLE DEFLECTION, FRONT BARS VERTICAL, STEEL CONSTRUCTION
G	RETURN	CEILING	T-BAR	NO	1/2"×1/2"×1/2" EXTRUDED ALUMINUM EGGCRATE, 22×22 NECK, NO SCREWHOLE
H	SUPPLY	SIDEWALL	NO	NO	SAME AS "F"
J	RTN./EXH.	SIDEWALL	NO	NO	SAME AS "E"
K	RETURN	CEILING	T-BAR	NO	PERFORATED GRILLE BAKED OFF-WHITE FINISH
L	SUPPLY	CEILING	NO	YES	SAME AS "A" EXCEPT SURFACE MOUNTED
M	RETURN	CEILING	NO	NO	SAME AS "K" EXCEPT SURFACE MOUNTED
N	RTN./EXH.	CEILING	NO	YES	PARALLEL BLADES, 45° DEFLECTION 2/3" OR 3/4" SPACING, SURFACE MOUNTED
P	SUPPLY	CEILING	NO	YES	ADJUSTABLE ROUND OFF-WHITE FINISH
R	SUPPLY	CEILING	T-BAR	NO	PERFORATED GRILLE BAKED OFF-WHITE FINISH
S	SUPPLY	CEILING	NO	YES	SLOT TYPE TO FIT IN LAY-IN CEILING

NOTES: 1. PROVIDE LOCKING TYPE DAMPERS 4'-0" FROM ALL SUPPLY OUTLETS.
2. NECK SIZES & CFM VALUES ARE SHOWN ON PLANS.

REFRIGERATION – WATER CHILLERS

LEGEND	NO. 1	NO. 2	NO. 3	REMARKS
QUANTITY	1	1	1	
TYPE	CENTRIFUGAL	CENTRIFUGAL	AIR COOLED	RECIPROCATING - NO. 3
NOM. SIZE, TONS	320	320	34	SEE NOTES 1 & 2
COOLER GPM	512	512	55	
COOLER EWT/LWT (DEG. F)	57/42	57/42	57/42	
MAX. COOLER PRESS. DROP, FT.	15.0	15.0	10.0	
CONDENSER EWT/LWT (DEG. F)	95/85	95/85	——	
MAX. CONDENSER PRESSURE DROP, FT.	15.0	15.0	——	
COMPRESSOR(S) QUAN.	1	1	3	
COMPRESSOR KW/V/PH	210/480/3	210/480/3	39.9/480/3	
STARTER TYPE	STAR DELTA	STAR DELTA	ACROSS-THE-LINE	
CONDENSER GPM	916	916	——	
FOULING FACT. COOLER/CONDENSER	0.0005	0.0005	0.0005	
OPERATING WEIGHT	19,000#	19,000#	3,780	

NOTES:

1. PROVIDE HOT GAS BYPASS
2. CAPACITY BASED ON 95°F AMBIENT
3. PROVIDE ELECTRICAL DISCONNECT.

COOLING TOWERS

QUANTITY	CT-1	CT-2
TYPE	INDUCED DRAFT	INDUCED DRAFT
GPM (EA)	916	916
ENT/LWT (°F)	95/85	95/85
INLET PRESS. (PSIG)	0.0	0.0
FANS QUANTITY	1	1
FANS TYPE	PROP	PROP
FANS MOTOR HP	15	15
FANS MOTOR V/PH/HZ	460/3/60	460/3/60
FANS CFM	82,000	82,000
FANS CONTROL	2-SPEED	2-SPEED

NOTES:

1. PROVIDE 100% SHUTOFF/BALANCING VALVES AT INLET.
2. CAPACITY BASED UPON 80°F WET BULB AMBIENT AIR.
3. PROVIDE ELEC. DISCONNECT.
4. PROVIDE AN ADJUSTABLE DRIVE.
5. WEATHER PROTECTED MOTOR OUTSIDE OF AIR STREAM.
6. PROVIDE AN 1800/900 RPM TWO-SPEED MOTOR CAPABLE OF STARTING ON LOW SPEED.

CONSTANT VOLUME BOXES

DELETED

TAG	CFM	REMARKS
CVB - 1	4840	100% SHUTOFF
CVB - 2	5600	
CVB - 3	5600	
CVB - 4	2300	
CVB - 5	800	
CVB - 6	4100	

NOTES: 1. AIR PRESSURE DROP SHALL NOT EXCEED 0.4" W.G.
2. PROVIDE A 48 INCH SOUND ATTENUATOR FOR EACH UNIT.

RECORD DRAWING
LETTER DATED AUG 10 1990

M-38

FEREBEE, WALTERS AND ASSOC.
ARCHITECTS · ENGINEERS · PLANNERS
CHARLOTTE NORTH CAROLINA

DES. MOE | DR. MOE | CHK. [signature]
PROJ. MGR. CCD | CH. ENGR. Edgar L. Jones
SUBMITTED BY: DATE: 6/15/85
Charles C. Dixon, Jr.
FIRM MEMBER PRINCIPAL
EFD: FP [initials] RVD [initials]
HD [initials] DIR [initials]
APPROVED [signature] DATE 6/17/85
OFFICER IN CHARGE
APPROVED [signature] DATE 17 July 85
FOR EFD FOR COMMANDER, NAVFAC

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 5557 GLENN H. SNYDER

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
ATLANTIC DIVISION
NAVAL STATION — NORFOLK, VIRGINIA

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA
CONVERT HOSPITAL TO DIVISION HEADQUARTERS
MECHANICAL-EQUIPMENT SCHEDULES

SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 4124306
CONSTR. CONTR. NO. N62470-82-B-2243
SCALE NONE | SPEC. 05-82-2243 (REV.) | SHEET 151 OF 243
EFD DWG. NO. 224306

H-1-A-WING

DUNCAN-PARNELL, INC., CHARLOTTE

TERMINAL UNIT SCHEDULE

AREA SERVED	UNIT No.	TAG No.	INLET SIZE	MAX. CFM / ESP	MIN. CFM	FAN CFM / TSP	HP-ELEC	HOT WATER COIL ROWS / APD	MBH	GPM	WPD	PIPE CONN.
1AS	1	1AS-1	8	729/.31	94	550/.21	1/4-277/1	1/.03	11.9	1.0	0.8	1/2"
	2	1AS-2	14	2130/.38	272	1600/.35	1/2-277/1	1/.12	27.5	1.0	1.0	1/2"
	3	1AS-3	12	1892/.37	242	1420/.31	1/2-277/1	1/.09	31.7	1.5	2.0	1/2"
	4	1AS-4	12	1133/.37	146	850/.29	1/2-277/1	1/.07	20.6	1.0	1.0	1/2"
1BN	1	1BN-1	12	1427/.31	156	1070/.25	1/2-277/1	1/.06	16.3	1.0	1.0	1/2"
	2	1BN-2	12	1421/.36	155	1070/.28	1/2-277/1	1/.06	17.2	1.0	1.0	1/2"
	3	1BN-3	12	1463/.36	160	1100/.28	1/2-277/1	1/.06	22.3	1.0	1.0	1/2"
	4	1BN-4	8	825/.32	90	620/.24	1/4-277/1	1/.05	12.6	1.0	0.8	1/2"
	5	1BN-5	14	2031/.30	223	1520/.28	1/2-277/1	1/.09	14.6	1.0	1.0	1/2"
	6	1BN-6	8	819/.33	89	610/.24	1/4-277/1	1/.04	11.2	1.0	0.8	1/2"
	7	1BN-7	10	964/.33	105	720/.25	1/4-277/1	1/.05	12.4	1.0	0.8	1/2"
	8	1BN-8	14	2030/.33	221	1520/.28	1/2-277/1	1/.09	14.6	1.0	1.0	1/2"
1BS	1	1BS-1	12	1091/.32	148	820/.23	1/2-277/1	1/.04	14.8	1.0	1.0	1/2"
	2	1BS-2	12	1500/.29	204	1120/.24	1/2-277/1	1/.06	13.0	1.0	1.0	1/2"
	3	1BS-3	8	825/.33	112	620/.25	1/4-277/1	1/.05	13.1	1.0	0.8	1/2"
	4	1BS-4	6	515/.32	70	390/.22	1/4-277/1	1/.03	7.7	1.0	0.8	1/2"
N.I.C. (A)	5	1BS-5	6	449/.32	61	340/.22	1/4-277/1	1/.03	5.7	1.0	0.8	1/2"
	6	1BS-6	12	1574/.35	215	1180/.27	1/2-277/1	1/.06	21.6	1.0	1.0	1/2"
	7	1BS-7	12	1484/.37	201	1110/.28	1/2-277/1	1/.06	21.1	1.0	1.0	1/2"
	8	1BS-8	12	1476/.39	199	1100/.29	1/2-277/1	1/.06	26.9	1.0	1.0	1/2"
1CN	1	1CN-1	12	1204/.34	117	900/.25	1/2-277/1	1/.04	20.7	1.0	1.0	1/2"
	2	1CN-2	12	1152/.25	112	870/.26	1/2-277/1	1/.05	14.4	1.0	1.0	1/2"
	3	1CN-3	12	1152/.31	112	870/.24	1/2-277/1	1/.05	14.4	1.0	1.0	1/2"
	4	1CN-4	8	845/.31	82	630/.24	1/4-277/1	1/.03	12.3	1.0	0.8	1/2"
	5	1CN-5	6	519/.33	50	390/.23	1/4-277/1	1/.03	9.1	1.0	0.8	1/2"
	6	1CN-6	12	1151/.33	112	870/.25	1/2-277/1	1/.05	14.4	1.0	1.0	1/2"
	7	1CN-7	8	628/.32	62	470/.24	1/4-277/1	1/.05	10.2	1.0	0.8	1/2"
1CS	1	1CS-1	10	1022/.36	133	760/.26	1/4-277/1	1/.05	14.8	1.0	0.8	1/2"
	2	1CS-2	12	1540/.37	175	1000/.27	1/2-277/1	1/.05	17.6	1.0	1.0	1/2"
	3	1CS-3	14	1881/.34	245	1400/.30	1/2-277/1	1/.09	27.5	1.0	1.0	1/2"
	4	1CS-4	12	1336/.32	174	1009/.24	1/2-277/1	1/.04	17.0	1.0	1.0	1/2"
	5	1CS-5	12	1357/.35	177	1000/.26	1/2-277/1	1/.05	21.6	1.0	1.0	1/2"
	6	1CS-6	10	852/.31	111	640/.23	1/4-277/1	1/.05	16.5	1.0	0.8	1/2"
2CN	1	2CN-1	8	805/.32	90	600/.23	1/4-277/1	1/.04	5.6	1.0	0.8	1/2"
	2	2CN-2	12	1516/.36	170	1140/.28	1/2-277/1	1/.06	22.9	1.0	1.0	1/2"
	3	2CN-3	12	1442/.32	162	1080/.25	1/2-277/1	1/.06	18.1	1.0	1.0	1/2"
	4	2CN-4	12	1599/.35	179	1200/.28	1/2-277/1	1/.07	19.1	1.0	1.0	1/2"
	5	2CN-5	6	349/.28	39	260/.20	1/4-277/1	1/.03	3.5	1.0	0.8	1/2"
	6	2CN-6	8	642/.30	72	480/.22	1/4-277/1	1/.04	8.1	1.0	0.8	1/2"
	7	2CN-7	12	1184/.32	132	890/.23	1/2-277/1	1/.04	13.4	1.0	1.0	1/2"
	8	2CN-8	10	905/.34	102	680/.26	1/4-277/1	1/.05	10.8	1.0	0.8	1/2"
2CS	1	2CS-1	12	1141/.35	146	800/.25	1/2-277/1	1/.04	13.4	1.0	1.0	1/2"
	2	2CS-2	12	1439/.37	185	1000/.27	1/2-277/1	1/.05	19.1	1.0	1.0	1/2"
	3	2CS-3	12	1499/.33	192	1050/.25	1/2-277/1	1/.05	19.7	1.0	1.0	1/2"
	4	2CS-4	8	729/.31	94	510/.23	1/4-277/1	1/.04	8.3	1.0	0.8	1/2"
	5	2CS-5	10	1215/.31	130	710/.24	1/4-277/1	1/.05	12.7	1.0	0.8	1/2"
	6	2CS-6	12	1244/.35	160	870/.25	1/2-277/1	1/.04	16.3	1.0	1.0	1/2"
	7	2CS-7	6	580/.33	74	410/.25	1/4-277/1	1/.05	11.0	1.0	0.8	1/2"
1DN	1	1DN-1	6	448/.32	78	310/.22	1/4-277/1	1/.03	8.3	1.0	0.8	1/2"
	2	1DN-2	12	1217/.36	211	850/.26	1/2-277/1	1/.04	33.0	2.0	2.7	1/2"
	3	1DN-3	8	579/.34	100	400/.23	1/4-277/1	1/.03	13.8	1.0	0.8	1/2"
	4	1DN-4	6	447/.32	78	310/.22	1/4-277/1	1/.03	7.2	1.0	0.8	1/2"
	5	1DN-5	10	1057/.35	183	740/.26	1/4-277/1	1/.05	19.8	1.0	0.8	1/2"
	6	1DN-6	8	692/.31	120	480/.22	1/4-277/1	1/.04	8.7	1.0	0.8	1/2"
1DS	1	1DS-1	6	396/.36	50	280/.25	1/4-277/1	1/.03	5.9	1.0	0.8	1/2"
	2	1DS-2	10	1081/.34	136	750/.25	1/4-277/1	1/.05	15.8	1.0	0.8	1/2"
	3	1DS-3	16	2439/.41	307	1700/.38	3/4-277/1	1/.14	30.0	1.0	1.0	1/2"
	4	1DS-4	12	1549/.32	195	1080/.25	1/2-277/1	1/.06	18.0	1.0	1.0	1/2"
	5	1DS-5	6	547/.30	69	380/.21	1/4-277/1	1/.03	10.0	1.0	0.8	1/2"
	6	1DS-6	10	1132/.31	143	800/.25	1/4-277/1	1/.06	14.6	1.0	0.8	1/2"
	7	1DS-7	10	1193/.34	125	700/.26	1/4-277/1	1/.05	14.4	1.0	0.8	1/2"
	8	1DS-8	8	853 .32	107	600/.23	1/4-277/1	1/.04	11.6	1.0	0.8	1/2"
2DS	1	2DS-1	8	644/.29	72	450/.20	1/4-277/1	1/.03	6.8	1.0	0.8	1/2"
	2	2DS-2	8	888/.32	100	620/.23	1/4-277/1	1/.04	10.5	1.0	0.8	1/2"
	3	2DS-3	10	1187/.32	133	830/.25	1/4-277/1	1/.06	13.5	1.0	0.8	1/2"
	4	2DS-4	10	1065/.36	120	750/.26	1/4-277/1	1/.05	12.6	1.0	0.8	1/2"
	5	2DS-5	10	1036/.31	116	720/.24	1/4-277/1	1/.05	13.0	1.0	0.8	1/2"
	6	2DS-6	10	1096/.30	123	770/.23	1/4-277/1	1/.05	12.7	1.0	0.8	1/2"
	7	2DS-7	8	878/.31	99	610/.23	1/4-277/1	1/.04	11.3	1.0	0.8	1/2"
	8	2DS-8	12	1378/.34	155	960/.26	1/2-277/1	1/.05	21.0	1.0	1.0	1/2"
1ES	1	1ES-1	8	771/.35	100	580/.25	1/4-120/1	1/.04	11.0	1.0	0.8	1/2"
	2	1ES-2	6	533/.34	69	400/.23	1/4-120/1	1/.03	11.4	1.0	0.8	1/2"
	3	1ES-3	10	884/.44	115	—	—	—	—	—	—	—
	4	1ES-4	10	907/.41	118	680/.29	1/4-120/1	1/.05	20.9	1.0	0.8	1/2"
	5	1ES-5	8	772/.36	101	580/.25	1/4-120/1	1/.04	11.1	1.0	0.8	1/2"
	6	1ES-6	8	679/.35	88	510/.25	1/4-120/1	1/.04	9.1	1.0	0.8	1/2"
	7	1ES-7	10	872/.35	114	654/.26	1/4-120/1	1/.05	13.0	1.0	0.8	1/2"
	8	1ES-8	6	452/.31	59	—	—	—	—	—	—	—
	9	1ES-9	12	1389/.38	181	1040/.29	1/2-120/1	1/.06	23.6	1.0	1.0	1/2"
	10	1ES-10	12	1447/.38	188	—	—	—	—	—	—	—
2EN	1	2EN-1	12	1521/.39	166	1140/.30	1/2-120/1	1/.06	16.9	1.0	1.0	1/2"
	2	2EN-2	6	514/.34	56	390/.23	1/4-120/1	1/.03	6.6	1.0	0.8	1/2"
	3	2EN-3	10	982/.36	107	740/.27	1/4-120/1	1/.05	13.5	1.0	0.8	1/2"
2ES	1	2ES 1	12	1125/.39	229	840/.28	1/2-120/1	1/.04	21.3	1.0	1.0	1/2"
	2	2ES 2	12	1107/.35	226	—	—	—	—	—	—	—
	3	2ES 3	8	577/.32	114	430/.22	1/4-120/1	1/.03	12.8	1.0	0.8	1/2"
	4	2ES 4	10	951/.39	194	710/.28	1/4-120/1	1/.05	15.8	1.0	0.8	1/2"
	5	2ES 5	10	719/.32	147	540/.23	1/4-120/1	1/.04	15.2	1.0	0.8	1/2"
	6	2ES 6	8	615/.35	126	460/.24	1/4-120/1	1/.03	10.5	1.0	0.8	1/2"
	7	2ES 7	6	340/.29	69	—	—	—	—	—	—	—
	8	2ES 8	10	930/.44	190	—	—	—	—	—	—	—
	9	2ES 9	10	854/.32	174	640/.25	1/4-120/1	1/.05	18.6	1.0	0.8	1/2"
	10	2ES 10	6	506/.33	103	380/.23	1/4-120/1	1/.03	11.2	1.0	0.8	1/2"
3EN	1	3EN-1	12	1336/.41	163	1000/.31	1/2-120/1	1/.06	17.7	1.0	1.0	1/2"
	2	3EN-2	12	1481/.38	181	1110/.29	1/2-120/1	1/.06	21.0	1.0	1.0	1/2"
	3	3EN-3	14	2379/.28	0	—	—	—	—	—	—	—
3ES	1	3ES-1	12	1155/.34	222	870/.26	1/2-120/1	1/.06	21.2	1.0	1.0	1/2"
	2	3ES-2	8	712/.31	137	530/.22	1/4-120/1	1/.04	14.7	1.0	0.8	1/2"
	3	3ES-3	10	903/.36	174	680/.27	1/4-120/1	1/.05	22.6	1.5	1.6	1/2"
	4	3ES-4	10	939/.35	181	700/.26	1/4-120/1	1/.05	17.5	1.0	0.8	1/2"
3ES	5	3ES-5	10	892/.38	172	670/.28	1/4-120/1	1/.05	16.2	1.0	0.8	1/2"
	6	3ES-6	10	1011/.36	195	760/.27	1/4-120/1	1/.05	20.0	1.0	0.8	1/2"
	7	3ES-7	8	831/.37	160	620/.26	1/4-120/1	1/.04	18.4	1.0	0.8	1/2"
	8	3ES-8	8	650/.36	125	490/.24	1/4-120/1	1/.03	14.2	1.0	0.8	1/2"
1FN	1	1FN-1	12	1600/.33	210	1200/.27	1/2-277/1	1/.07	23.4	1.0	1.0	1/2"
	2	1FN-2	6	448/.31	59	340/.21	1/4-277/1	1/.03	11.2	1.0	0.8	1/2"
	3	1FN-3	12	1216/.34	160	920/.25	1/2-277/1	1/.05	18.2	1.0	1.0	1/2"
	4	1FN-4	12	1546/.38	204	1160/.29	1/2-277/1	1/.06	22.1	1.0	1.0	1/2"
	5	1FN-5	10	997/.36	131	750/.26	1/4-277/1	1/.05	14.3	1.0	0.8	1/2"
	6	1FN-6	10	984/.35	130	740/.26	1/4-277/1	1/.05	13.9	1.0	0.8	1/2"
	7	1FN-7	8	751/.33	99	560/.24	1/4-277/1	1/.04	11.9	1.0	0.8	1/2"
1FS	1	1FS-1	8	769/.33	99	580/.24	1/4-277/1	1/.04	11.2	1.0	0.8	1/2"
	2	1FS-2	10	1028/.36	132	770/.26	1/4-277/1	1/.05	12.7	1.0	0.8	1/2"
	3	1FS-3	10	1033/.35	133	775/.26	1/4-277/1	1/.05	14.4	1.0	0.8	1/2"
	4	1FS-4	12	1563/.38	201	1170/.29	1/2-277/1	1/.06	21.9	1.0	1.0	1/2"
	5	1FS-5	12	1643/.33	211	1230/.27	1/2-277/1	1/.07	23.9	1.0	1.0	1/2"
	6	1FS-6	12	1202/.34	154	900/.25	1/2-277/1	1/.04	16.4	1.0	1.0	1/2"
	7	1FS-7	8	600/.30	77	450/.21	1/4-277/1	1/.03	12.5	1.0	0.8	1/2"
2FN	1	2FN-1	12	1571/.34	206	1180/.26	1/2-277/1	1/.06	21.0	1.0	1.0	1/2"
	2	2FN-2	6	404/.31	54	300/.22	1/4-277/1	1/.03	9.6	1.0	0.8	1/2"
	3	2FN-3	12	1183/.34	155	890/.25	1/2-277/1	1/.04	15.4	1.0	1.0	1/2"
	4	2FN-4	12	1521/.37	200	1140/.28	1/2-277/1	1/.06	19.8	1.0	1.0	1/2"
	5	2FN-5	10	944/.36	124	700/.25	1/4-277/1	1/.03	12.4	1.0	0.8	1/2"
	6	2FN-6	10	901/.36	118	680/.24	1/4-277/1	1/.03	12.6	1.0	0.8	1/2"
	7	2FN-7	8	733/.34	96	550/.24	1/4-277/1	1/.04	9.7	1.0	0.8	1/2"
2FS	1	2FS-1	10	947/.36	123	710/.26	1/4-277/1	1/.05	11.3	1.0	0.8	1/2"
	2	2FS-2	12	1506/.38	120	1130/.29	1/2-277/1	1/.06	20.0	1.0	1.0	1/2"
	3	2FS-3	10	925/.36	196	690/.27	1/4-277/1	1/.05	11.0	1.0	0.8	1/2"
	4	2FS-4	8	711/.34	93	530/.24	1/4-277/1	1/.04	9.8	1.0	0.8	1/2"
	5	2FS-5	12	1575/.33	205	1180/.26	1/2-277/1	1/.06	21.4	1.0	1.0	1/2"
	6	2FS-6	12	1175/.34	153	880/.25	1/2-277/1	1/.04	15.7	1.0	1.0	1/2"
	7	2FS-7	6	546/.31	71	410/.21	1/4-277/1	1/.03	10.7	1.0	0.8	1/2"
1GN	1	1GN-1	12	1594/.33	205	1200/.27	1/2-277/1	1/.07	23.3	1.0	1.0	1/2"
	2	1GN-2	6	441/.31	58	330/.21	1/4-277/1	1/.03	11.1	1.0	0.8	1/2"
	3	1GN-3	12	1217/.34	157	910/.25	1/2-277/1	1/.05	17.4	1.0	1.0	1/2"
	4	1GN-4	12	1539/.38	198	1154/.29	1/2-277/1	1/.06	22.0	1.0	1.0	1/2"
	5	1GN-5	10	987/.36	127	740/.26	1/4-277/1	1/.05	14.1	1.0	0.8	1/2"
	6	1GN-6	10	1013/.36	130	760/.27	1/4-277/1	1/.05	14.1	1.0	0.8	1/2"
	7	1GN-7	8	740/.34	95	560/.24	1/4-277/1	1/.04	11.1	1.0	0.8	1/2"
1GS	1	1GS-1	8	765/.34	97	570/.24	1/4-277/1	1/.04	11.1	1.0	0.8	1/2"
	2	1GS-2	12	1084/.36	138	810/.26	1/2-277/1	1/.04	14.2	1.0	1.0	1/2"
	3	1GS-3	10	981/.36	125	730/.24	1/4-277/1	1/.03	14.1	1.0	0.8	1/2"
	4	1GS-4	12	1509/.37	192	1130/.28	1/2-277/1	1/.06	21.1	1.0	1.0	1/2"
	5	1GS-5	12	1598/.33	204	1200/.27	1/2-277/1	1/.07	23.2	1.0	1.0	1/2"
	6	1GS-6	12	1201/.34	153	900/.26	1/2-277/1	1/.05	29.3	1.5	2.0	1/2"
	7	1GS-7	8	607/.31	77	460/.22	1/4-277/1	1/.03	12.2	1.0	0.8	1/2"
2GN	1	2GN-1	12	1564/.35	203	1170/.27	1/2-277/1	1/.06	19.9	1.0	1.0	1/2"
	2	2GN-2	12	1784/.35	231	1340/.29	1/2-277/1	1/.08	25.0	1.0	1.0	1/2"
	3	2GN-3	6	344/.37	45	260/.25	1/4-277/1	1/.03	4.6	1.0	0.8	1/2"
	4	2GN-4	12	1169/.31	151	880/.23	1/2-277/1	1/.04	15.0	1.0	1.0	1/2"
	5	2GN-5	10	976/.34	127	730/.25	1/4-277/1	1/.05	12.4	1.0	0.8	1/2"
	6	2GN-6	10	927/.36	120	700/.26	1/4-277/1	1/.05	13.0	1.0	0.8	1/2"
	7	2GN-7	10	851/.34	110	640/.26	1/4-277/1	1/.05	11.9	1.0	0.8	1/2"
2GS	1	2GS-1	8	772/.33	140	580/.24	1/4-277/1	1/.04	13.9	1.0	0.8	1/2"
	2	2GS-2	8	827/.33	151	620/.25	1/4-277/1	1/.05	12.6	1.0	0.8	1/2"
	3	2GS-3	8	666/.32	121	500/.23	1/4-277/1	1/.04	11.1	1.0	0.8	1/2"
	4	2GS-4	8	699/.35	127	520/.25	1/4-277/1	1/.04	12.8	1.0	0.8	1/2"
	5	2GS-5	6	527/.34	96	400/.23	1/4-277/1	1/.03	8.9	1.0	0.8	1/2"
	6	2GS-6	8	762/.37	139	570/.26	1/4-277/1	1/.04	11.5	1.0	0.8	1/2"
	7	2GS-7	8	507/.20	—	—	—	—	—	—	—	—
~~1HN~~	~~1~~	~~1HN-1~~	~~12~~	~~1203/.34~~	~~134~~	~~902/.24~~	~~1/2-277/1~~	~~1/.04~~	~~17.9~~	~~1.0~~	~~1.0~~	~~1/2"~~
	~~2~~	~~1HN-2~~	~~10~~	~~1050/.38~~	~~117~~	~~790/.29~~	~~1/4-277/1~~	~~1/.06~~	~~14.1~~	~~1.0~~	~~0.8~~	~~1/2"~~
	~~3~~	~~1HN-3~~	~~12~~	~~1689/.38~~	~~189~~	~~1200/.30~~	~~1/2-277/1~~	~~1/.07~~	~~24.0~~	~~1.0~~	~~1.0~~	~~1/2"~~
	~~4~~	~~1HN-4~~	~~10~~	~~978/.33~~	~~109~~	~~730/.25~~	~~1/4-277/1~~	~~1/.05~~	~~14.9~~	~~1.0~~	~~0.8~~	~~1/2"~~
	~~5~~	~~1HN-5~~	~~6~~	~~437/.34~~	~~49~~	~~330/.24~~	~~1/4-277/1~~	~~1/.03~~	~~10.7~~	~~1.0~~	~~0.8~~	~~1/2"~~
	~~6~~	~~1HN-6~~	~~12~~	~~1080/.37~~	~~121~~	~~810/.26~~	~~1/2-277/1~~	~~1/.04~~	~~14.4~~	~~1.0~~	~~1.0~~	~~1/2"~~
	~~7~~	~~1HN-7~~	~~8~~	~~792/.34~~	~~88~~	~~600/.25~~	~~1/4-277/1~~	~~1/.05~~	~~10.3~~	~~1.0~~	~~0.8~~	~~1/2"~~
1HS	1	1HS-1	12	1073/.36	204	800/.25	1/2-277/1	1/.04	22.2	1.0	1.0	1/2"
	2	1HS-2	6	301/.30	57	230/.21	1/4-277/1	1/.03	5.3	1.0	0.8	1/2"
	3	1HS-3	10	849/.31	161	640/.24	1/4-277/1	1/.05	19.0	1.0	0.8	1/2"
	4	1HS-4	6	372/.32	71	280/.22	1/4-277/1	1/.03	8.7	1.0	0.8	1/2"
	5	1HS-5	8	755/.36	143	570/.26	1/4-277/1	1/.04	14.0	1.0	0.8	1/2"
	6	1HS-6	8	533/.36	101	400/.25	1/4-277/1	1/.03	9.9	1.0	0.8	1/2"
	7	1HS-7	8	640/.37	121	480/.25	1/4-277/1	1/.03	11.8	1.0	0.8	1/2"
2HN	1	2HN-1	12	1386/.37	146	1040/.28	1/2-277/1	1/.06	17.4	1.0	1.0	1/2"
	2	2HN-2	12	1194/.36	126	900/.25	1/2-277/1	1/.04	14.2	1.0	1.0	1/2"
	3	2HN-3	8	822/.33	87	620/.25	1/4-277/1	1/.05	10.2	1.0	0.8	1/2"
	4	2HN-4	10	967/.34	102	730/.26	1/4-277/1	1/.05	11.1	1.0	0.8	1/2"
	5	2HN-5	12	1539/.35	164	1160/.27	1/2-277/1	1/.06	23.6	1.0	1.0	1/2"
	6	2HN-6	12	1452/.36	153	1090/.28	1/2-277/1	1/.06	18.3	1.0	1.0	1/2"
2HS	1	2HS-1	12	1358/.37	138	1020/.28	1/2-277/1	1/.06	16.0	1.0	1.0	1/2"
	2	2HS-2	12	1123/.36	114	840/.26	1/2-277/1	1/.04	14.7	1.0	1.0	1/2"
	3	2HS-3	12	1136/.34	115	850/.24	1/2-277/1	1/.04	13.5	1.0	1.0	1/2"
	4	2HS-4	8	729/.31	74	550/.23	1/4-277/1	1/.04	8.5	1.0	0.8	1/2"
	5	2HS-5	14	2170/.37	220	1630/.36	1/2-277/1	1/.14	26.9	1.0	1.0	1/2"
	6	2HS-6	12	1572/.34	160	1130/.27	1/2-277/1	1/.06	19.2	1.0	1.0	1/2"
1JN	1	1JN-1	10	865/.34	82	650/.25	1/4-277/1	1/.04	19.3	1.0	0.8	1/2"
	2	1JN-2	12	1142/.34	108	860/.24	1/2-277/1	1/.04	13.7	1.0	1.0	1/2"
	3	1JN-3	12	1788/.33	168	1340/.28	1/2-277/1	1/.08	21.6	1.0	1.0	1/2"
	4	1JN-4	6	496/.30	47	370/.21	1/4-277/1	1/.03	7.6	1.0	0.8	1/2"
	5	1JN-5	10	888/.30	84	670/.22	1/4-277/1	1/.04	11.4	1.0	0.8	1/2"
	6	1JN-6	12	1624/.38	154	1220/.30	1/2-277/1	1/.07	20.9	1.0	1.0	1/2"
	7	1JN-7	12	1660/.35	157	1250/.28	1/2-277/1	1/.07	22.5	1.0	1.0	1/2"
1JS	1	1JS-1	12	1524/.37	143	1150/.28	1/2-277/1	1/.06	21.0	1.0	1.0	1/2"
	2	1JS-2	12	1777/.39	167	1330/.31	1/2-277/1	1/.08	22.0	1.0	1.0	1/2"
	3	1JS-3	10	860/.32	81	650/.24	1/4-277/1	1/.05	10.7	1.0	0.8	1/2"
	4	1JS-4	6	519/.29	54	330/.21	1/4-277/1	1/.03	8.0	1.0	0.8	1/2"
	5	1JS-5	12	1706/.34	160	1280/.27	1/2-277/1	1/.07	21.1	1.0	1.0	1/2"
	6	1JS-6	12	1097/.34	103	820/.24	1/2-277/1	1/.03	13.1	1.0	1.0	1/2"
	7	1JS-7	12	1096/.35	103	820/.24	1/2-277/1	1/.03	19.7	1.0	1.0	1/2"

DELETED

REVISIONS

SYM	DESCRIPTION	PREP'D BY	DATE	APPROVED
1	GENERAL REVISION	GHS	2/15/86	OF
(A)	REVISED - AS BUILTS	DC	10/8/90	GRA

LEGEND:
ESP - EXTERNAL STATIC PRESSURE (INCHES WATER GAGE)
TSP - TOTAL STATIC PRESSURE (INCHES WATER GAGE)
APD - AIR PRESSURE DROP (INCHES WATER GAGE)
WPD - WATER PRESSURE DROP (FEET WATER GAGE)

NOTES:
1. ALL TERMINAL BOXES ARE VARIABLE VOLUME - FAN BOXES EXCEPT: 1ES-3, 1ES-8, 1ES-10, 2ES-2, 2ES-7, 2ES-8 AND 3EN-3.
2. ALL OTHER BOXES ARE VARIABLE VOLUME ONLY.
3. PROVIDE ELECTRICAL DISCONNECTS TO ALL VVF BOXES.

RECORD DRAWING
LETTER DATED AUG 10 1990

M-39

FEREBEE, WALTERS AND ASSOC.
ARCHITECTS · ENGINEERS · PLANNERS
CHARLOTTE NORTH CAROLINA

DES. MDE | DR. MDE | CHK.
PROJ. MGR. OCD | CH. ENGR.
SUBMITTED BY: Charles C. Dixon, Jr. DATE: 6/15/85
FIRM MEMBER PRINCIPAL
EFD: FP MRC RVD
HD DIR
APPROVED DATE 6/17/85
OFFICER IN CHARGE
APPROVED DATE 17 July 85
FOR EFD FOR COMMANDER, NAVFAC

NORTH CAROLINA PROFESSIONAL SEAL 5537 ENGINEER GLENN H. SNYDER

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
ATLANTIC DIVISION
NAVAL STATION NORFOLK, VIRGINIA

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

CONVERT HOSPITAL TO DIVISION HEADQUARTERS

MECHANICAL - EQUIPMENT SCHEDULES

SIZE	CODE IDENT. NO.	NAVFAC DRAWING NO.
F	80091	4124307
		CONSTR. CONTR. NO. N62470-82-B-2243

SCALE: NO SCALE | SPEC. 05-82-2243 (REV.) | SHEET 152 OF 243

EFD DWG. NO. 224307

H-1-A-Wing

EXHAUST FAN SCHEDULE

TAG NO.	CFM	S.P.	MOTOR	NOTES	LOCATION	SERVICE
EF-1	500	.25	1/20 - 120/1	5,6,8	1AN	T
2	460	.25	1/20 - 120/1	5,6,8		T
3	449	.25	1/20 - 120/1	5,6,8	1AS	T
4	400	.125	1/30 - 120/1	5,11	DELETED (A)	M
5	449	.25	1/20 - 120/1	6,8	1BN	T
6	400	.125	1/30 - 120/1	11	1BN	M
7	201	.25	1/15 - 120/1	6,8		T
8	449	.25	1/20 - 120/1	6,8	1BS	T
9	400	.25	1/30 - 120/1	11		M
10	306	.25	1/15 - 120/1	4,5,8	DELETED	LAUNDRY
11	465	.25	1/20 - 120/1	5,6,8	2BN	T
12	549	.25	1/20 - 120/1	5,6,8	(A)	T
13	465	.25	1/20 - 120/1	5,6,8	2BS	T
14	549	.25	1/20 - 120/1	5,6,8		T
15	370	.25	1/20 - 120/1	6,8	1CN	T
16	400	.125	1/30 - 120/1	11		M
17	449	.25	1/20 - 120/1	6,8	1CS	T
18	400	.125	1/30 - 120/1	11		M
19	449	.25	1/20 - 120/1	6,8	2CN	T
20	400	.125	1/30 - 120/1	11		M
21	93	.125	1/125 - 120/1	4,5,8		T
22	449	.25	1/20 - 120/1	6,8	2CS	T
23	400	.125	1/30 - 120/1	11		M
24	186	.125	1/40 - 120/1	5,6,8		T
25	186	.125	1/40 - 120/1	5,6,8		T
26	526	.25	1/20 - 120/1	5,6,8	1DN	T
27	1320	.125	1/6 - 120/1	5,11		M
28	550	.125	1/30 - 120/1	11		M
29	449	.25	1/20 - 120/1	6,8	1DS	T
30	400	.125	1/30 - 120/1	11		M
31	93	.125	1/125 - 120/1	4,5,8	1DS	T
32	449	.25	1/20 - 120/1	6,8	2DS	T
33	400	.125	1/30 - 120/1	11		M
~~34~~	~~433~~	~~.25~~	~~1/20 - 120/1~~	~~5,6,8~~	~~1EN (GALLEY)~~ DELETED	~~T~~
~~35~~	~~78~~	~~.125~~	~~1/30 - 120/1~~	~~4,5,8~~		~~J~~
~~36~~	~~39~~	~~.125~~	~~1/125 - 120/1~~	~~4,5,8~~		~~T~~
~~37~~	~~422~~	~~.25~~	~~1/20 - 120/1~~	~~5,6~~	~~2EN~~	~~T~~
38	158	.125	1/40 - 120/1	5,6,8		T
39	501	.25	1/20 - 120/1	5,6,8	3EN	T
40	3200	.25	1/3 - 120/1	5,12	3EN	M
41	677	.25	1/12 - 120/1	6,8	1ES	T
42	1165	.5	1/4 - 120/1	6,9	2ES	T
43	926	.125	1/8 - 120/1	6,9		M
44	973	.375	1/6 - 120/1	6,9	3ES	T
45	795	.125	1/12 - 120/1	6,8		M
46	400	.125	1/30 - 120/1	11	1FN	M
47	400	.125	1/30 - 120/1	11	1FS	M
48	443	.25	1/20 - 120/1	6,8	2FN	T
49	192	.25	1/15 - 120/1	5,6,8		T
50	195	.25	1/15 - 120/1	5,6,8		T
51	400	.125	1/30 - 120/1	11		M
52	183	.25	1/15 - 120/1	5,6,8	2FS	T
53	186	.25	1/15 - 120/1	5,6,8		T
54	443	.25	1/20 - 120/1	6,8		T
55	400	.125	1/30 - 120/1	11		M
56	400	.125	1/30 - 120/1	11	1GN	M
57	400	.125	1/30 - 120/1	11	1GS	M
58	443	.25	1/20 - 120/1	6,8	2GN	T
59	186	.25	1/15 - 120/1	5,6,8		T
60	186	.25	1/15 - 120/1	5,6,8		T
61	400	.125	1/30 - 120/1	11		M
62	186	.25	1/15 - 120/1	5,6,8	2GS	T
63	186	.25	1/15 - 120/1	5,6,8		T
64	411	.25	1/20 - 120/1	6,8		T
~~65~~	~~410~~	~~.25~~	~~1/20 - 120/1~~	~~5,6,7~~	~~1EN(G)~~	~~CAN WASH~~
66	400	.125	1/30 - 120/1	11	2GS	M
~~67~~	~~400~~	~~.125~~	~~1/30 - 120/1~~	~~11~~	~~1HN~~	DELETED
68	186	.25	1/15 - 120/1	5,6,8	1HS	T
69	400	.125	1/30 - 120/1	11		M
70	445	.25	1/20 - 120/1	6,8	2HN	J
71	400	.125	1/30 - 120/1	11		M
72	443	.25	1/20 - 120/1	6,8	2HS	T
73	400	.125	1/30 - 120/1	11		M
74	416	.25	1/20 - 120/1	6,8	1JN	T
75	400	.125	1/30 - 120/1	11		M
76	416	.25	1/20 - 120/1	6,8	1JS	T
77	400	.125	1/30 - 120/1	11		M
~~78~~	~~960~~	~~.125~~	~~1/12 - 120/1~~	~~1,5~~	~~1A-B~~	~~CORRIDOR~~
~~79~~	~~1334~~	~~.125~~	~~1/4 - 120/1~~	~~1,5~~	~~1B-C & 2B-C~~	~~CORRIDOR~~
~~80~~	~~1334~~	~~.125~~	~~1/4 - 120/1~~	~~1,5~~	~~1C-D & 2C-D~~	~~CORRIDOR~~
~~81~~	~~1334~~	~~.125~~	~~1/4 - 120/1~~	~~1,5~~	~~1D-E~~	~~CORRIDOR~~
~~82~~	~~600~~	~~.125~~	~~1/12 - 120/1~~	~~1,5~~	~~1ES(W) & 1ES(E)~~	~~CORRIDOR~~
~~83~~	~~600~~	~~.125~~	~~1/12 - 120/1~~	~~1,5~~	~~2ES(W) & 2ES(E)~~	~~CORRIDOR~~
~~84~~	~~1276~~	~~.125~~	~~1/4 - 120/1~~	~~1,5~~	~~1F-G & 2F-G~~	~~CORRIDOR~~
~~85~~	~~1276~~	~~.125~~	~~1/4 - 120/1~~	~~1,5~~	~~1G-H & 2G-H~~	~~CORRIDOR~~
~~86~~	~~2250~~	~~1.5~~	~~2 - 460/3~~	~~2,5~~	~~1EN (GALLEY)~~	~~SALAD~~
~~87~~	~~5125~~	~~1.5~~	~~2 - 460/3~~	~~3,5~~	DELETED	~~BAKERY~~
~~88~~	~~1200~~	~~.375~~	~~1/8 - 120/1~~	~~1,5~~		~~POT WASHING~~
~~89~~	~~15475~~	~~2.5~~	~~7.5 - 460/3~~	~~3,5~~	~~3EN~~	~~GALLEY HOODS~~
~~90~~	~~4500~~	~~1.0~~	~~2 - 460/3~~	~~3,5~~		~~SERVICE AREA~~
~~91~~	~~1500~~	~~.375~~	~~1/2 - 460/3~~	~~2,5~~	~~1EN (MH)~~	~~DISH WASH~~
~~92~~	~~700~~	~~.375~~	~~1/2 - 460/3~~	~~2,5~~		~~DISH WASH~~
93	950	.25	1/6 - 120/1	5,6,7	1EN	TUNNEL
~~94~~	~~1334~~	~~.125~~	~~1/4 - 120/1~~	~~1,5~~	~~1E-F & 2E-F~~	DELETED (A)
~~95~~	~~260~~	~~.125~~	~~1/50 - 120/1~~	~~1~~	~~2BN~~	~~LAUNDRY~~
~~96~~	~~260~~	~~.125~~	~~1/50 - 120/1~~	~~1~~	~~2BS~~	~~LAUNDRY~~
~~97~~	~~443~~	~~.25~~	~~1/20 - 120/1~~	~~5,6,8~~	~~1FN~~	~~T~~
~~98~~	~~443~~	~~.25~~	~~1/20 - 120/1~~	~~5,6,8~~	~~1FS~~	~~T~~
~~99~~	~~443~~	~~.25~~	~~1/20 - 120/1~~	~~5,6,8~~	~~1GN~~	~~T~~
~~100~~	~~400~~	~~.25~~	~~1/20 - 120/1~~	~~5,6,8~~	~~1GS~~	~~T~~

WINTER VENTILATION FAN SCHEDULE

TAG NO.	CFM	S.P.	H.W. COIL MAX VEL.	FILTER (QTY)SIZE	HTG.LOAD (MBH)	EWT (°F) (MAX)	WATER FLOW(GPM)	ELEC. DATA HP-V/Φ/HZ
~~WVF-1AS~~	~~1080~~	0.75	800 FPM	~~(1) 20x25x2~~	~~32.3~~	180	~~2.5~~	~~1/2-120/1/60~~
~~1BN~~	~~1590~~			~~(2) 16x25x2~~	~~52.0~~		~~4.0~~	DELETED (A)
~~1BS~~	~~1730~~			~~(2) 16x25x2~~	~~56.6~~		~~4.0~~	
1CN	1010			(1) 20x25x2	33.2		2.5	
1CS	1450			(2) 16x25x2	47.5		3.0	
2CN	1351			(2) 16x20x2	44.3		3.0	
2CS	1400			(2) 16x20x2	45.9		3.0	
1DN	1100			(1) 20x25x2	36.0		2.5	
1DS	1610			(2) 16x25x2	53.0		3.5	
2DS	1310			(2) 16x20x2	43.0		3.0	
3ES	2250			(2) 20x25x2	73.8		4.0	3/4-120/1/60
1FN	1420			(2) 16x20x2	46.5		3.0	1/2-120/1/60
1FS	1440			(2) 16x20x2	46.5		3.0	
2FN	1390			(2) 16x20x2	47.1		3.0	
2FS	1370			(2) 16x20x2	45.0		3.0	
1GN	1390			(2) 16x20x2	45.4		3.0	
1GS	1410			(2) 16x20x2	46.1		3.0	
2GN	1410			(2) 16x20x2	46.1		3.0	
~~1HN~~	~~1150~~		DELETED	~~(1) 20x25x2~~	~~37.8~~		~~2.5~~	
1HS	1230			(1) 24x24x2	40.1		3.0	
2HN	1110			(1) 20x25x2	36.4		2.5	
2HS	1170			(1) 20x25x2	38.4		2.5	
1JN	1150			(1) 20x25x2	37.4		2.5	
1JS	1160			(1) 20x25x2	38.0		2.5	
2GS	1270			(1) 24x24x2	41.5		3.0	1/2 - 120/1/60

NOTE — ALL WVF COILS HAVE A MAXIMUM WATER P.D. OF 15 FEET AND MAX. A.P.D. = 0.15 IN. W.C.
NO ELECTRICAL DISCONNECT REQUIRED ON WVF FANS.

HEAT EXCHANGER NOTES:

1. HE-1 AND HE-2 SHALL BE PROVIDED UNDER THE PLUMBING WORK.
2. HE-3 SHALL BE PROVIDED WITH THE FOLLOWING FEATURES:
   a. A MOUNTING SADDLE.
   b. ALL CONNECTIONS 4" AND LARGER SHALL BE FLANGED; SMALLER CONNECTIONS MAY BE THREADED.
   c. INSULATION STOP PLATES AT EACH REMOVABLE HEAD TO ALLOW SERVICES WITHOUT REINSULATING.

HEAT EXCHANGER SCHEDULE

NO.	HE-1	HE-2	HE-3
SERVICE	DOM.H.W.	DOM. H.W.	SPACE HEAT
TUNNEL LOCATION	BDG-E	BDG-E	BET. "F" & "G"
TUBE WATER GPM/FT. HD.	38/4.8	20/1.3	647/1.8
STEAM (#/HR - PSIG)	1388-10	625-10	8960-10
CAPACITY, OUTPUT (MBH)	1333	600	8602
WATER TEMP. (IN/OUT)	50°F/120°F	120°F/180°F	153°F/180°F
NO. PASSES/TUBE VEL.	4/6.0 FPS	4/3.3 FPS	2/5.0 FPS
FOULING FACTOR (TUBE/SHELL)	.0005/.0005	.0005/.0005	.0005/.0005
SHELL SIZE (DIA x LENGTH)	6" x 48"	6" x 48"	18" x 60"
MAT'LS TUBES/SHELL	CU/STEEL	CU/STEEL	CU/STEEL

PRESSURE REDUCING STATION SCHEDULE

SYMBOL	PRV#1	PRV#2	PRV#3
SERVICE	STEAM	STEAM	STEAM
ARRANGEMENT	SINGLE	SERIES	SINGLE
TOTAL CAP. LB./HR. (4)	1388	8960	625
INLET PRESS. (PSIG)	100 PSIG	100 PSIG	100 PSIG
INTERMEDIATE PRESS (PSIG)	—	65 PSIG	—
OUTLET PRESS. (PSIG)	10 PSIG	15 PSIG	10 PSIG
RELIEF VALVE LB./HR, NO.1	1388	8960	625
" " " NO.2	—	8960	—
NOTES	1,2,4	1,3,4	1,2,4

NOTES
1. PROVIDE STRAINERS & RELIEF V'S AS PARTS OF PRV STATIONS
2. THE PRESSURE REGULATOR VALVE SHALL SENSE DOWNSTREAM PRESSURE & TEMPERATURE.
3. PROVIDE 2 VALVES PIPED IN PARALLEL, WITH APPROX. 1/3 & 2/3 CAPACITIES.
4. TOTAL CAPACITIES LISTED ARE AT FINAL (LOW) PRESSURE RATING.

EXHAUST FAN NOTES
1. SIDEWALL CENTR., BDD, BS, IG (MAX. TIP SPEED = 3720 FPM).
2. UPBLAST, ROOF MOUNTED ON PREFAB CURB, DISCONNECT, BIRDSCREEN, BACKDRAFT DAMPER.
3. UPBLAST, BASE MOUNTED BELT DRIVE.
4. CEILING MOUNTED FAN WITH BACKDRAFT DAMPER.
5. PROVIDE DISCONNECT SWITCH.
6. INLINE CENTRIFUGAL EXHAUSTER WITH BACKDRAFT DAMPER, VIBRATION ISOLATORS
7. INLET GUARD
8. PROVIDE ROOF CAP WITH MAX 900 CFM @ 600 FPM.
9. PROVIDE ROOF CAP WITH MAX 1250 CFM @ 600 FPM.
10. PROVIDE ROOF CAP WITH MAX 1800 CFM @ 600 FPM.
11. DIRECT DRIVE PROPELLER FAN.
12. BELT DRIVE, WALL COLLAR, BDD, IG (MAX. TIP SPEED = 5200 FPM)
M = MECHANICAL, T = TOILET, BDD = BACKDRAFT DMPR., BS = BIRDSCREEN, IG = INLET GUARD

EXHAUST FAN SCHEDULE (CONT.)

EF-101	445	.25	1/20 - 120/1	5,6,8	1HN	T
102	443	.25	1/20 - 120/1	5,6,8	1HS	T
103	186	.25	1/50 - 120/1	6,8	2DS	T
~~104~~	~~1334~~	~~.125~~	~~1/4 - 120/1~~	~~1~~	~~2D-E~~	~~CORRIDOR~~
105	1900	.25	1/3 - 120/1	5,6,7	1EN	TUNNEL
106	2000	.25	1/4 - 120/1	5,12	1DN	M

(A)

PUMP SCHEDULE

TAG NO.	SERVICE	TYPE	GPM(EA)	HEAD	HP	RPM	NOTES
P-CH-1 & 2	CH. W.	DSBM	580	34'	7.5	1750	1
P-CH-3	CH. W.	IN-LINE	55	18'	0.5	1750	
P-CD-1 & 2	COND. W.	DSBM	916	50'/52'	20	1150	1
P-PC-1	CH. W.	"	1365	30'	15	1150	1, 3
P-PC-2		END SUCTION	410	10'	2	1150	3
~~P-C-AB~~		~~IN-LINE~~	~~121~~	~~54'~~	~~5~~	~~1750~~	~~7~~
P-C-C			155	57'	5		7
P-C-D			111	66'	5		7
P-C-EN			111	57'	3		7
P-C-ES			154	43'	3		7
P-C-F			147	57'	5		7
P-C-G			145	62'	5		7
P-C-H			135	60'	5		7
P-C-J			83	49'	3		7
~~P-DT-AB~~	~~DUAL T~~		~~181~~	~~93'~~	~~10~~		~~7~~
P-PH	H.W. PRI.	DSBM	647	58'	15		1,7
~~P-H-AB~~	~~H.W. SEC.~~	~~IN-LINE~~	~~76~~	~~63'~~	~~3~~		~~7~~
P-H-C			68	62'	3		7
P-H-D			57	54'	2		7
P-H-EN			22	61'	1.5		7
P-H-ES			64	59'	2		7
P-H-F			70	59'	3		7
P-H-G			72	60'	3		7
P-H-H			68	59'	3		7
P-H-J			30	46'	1		7
P-CP-1	STEAM COND	TURBINE	12	100 PSI	3		5,7
P-CP-2	" "	" "	44	100 PSI	10		6,7
P-CP-3	" "	CENTRIF.	1.5	10 PSI	1/3	1750	7,8
P-CP-4	" "	"	6	10 PSI	1/3	1750	7,8

DELETED (A)

NOTES
1. "DSBM" = DOUBLE SUCTION, BASE MOUNTED.
2. ALL PUMPS SHALL BE 1750 RPM UNLESS NOTED.
3. PUMP PPC-2 OPERATES IN "WINTER" ONLY; PUMP PPC-1 OPERATES IN "SUMMER" ONLY.
4. ALL MOTORS TO BE WOUND FOR 460 V, 3 PH, 60 HZ SERVICE WITH "ODP" CONSTRUCTION UNLESS NOTED OTHERWISE.
5. PROVIDE 117 GAL. RECEIVER TANK.
6. PROVIDE 209 GAL. RECEIVER TANK.
7. PROVIDE ELECTRICAL DISCONNECT SWITCH.
8. PROVIDE 2 GAL. RECEIVER TANK.

HOT WATER COIL SCHEDULE

TAG NO.	CFM	MAX. VEL.	EAT	LAT	MBTH	EWT	LWT	GPM	MAX. P.D.	# ROWS
~~HW-RTAC-1~~	~~1200~~	~~800FPM~~	~~68°F~~	~~88.4°F~~	~~26.7~~	~~180°F~~	~~150°F~~	~~2~~	~~0.15~~	~~1~~
~~HW-RTAC-2~~	~~2000~~			~~82.3~~	~~31.1~~			~~2~~		
~~HW-RTAC-3~~	~~1000~~			~~77.5~~	~~10.3~~			~~1~~	DELETED	
~~HW-RTAC-4~~	~~2250~~			~~78.7~~	~~26.3~~			~~2~~		
~~HW-RTAC-5~~	~~10,000~~			~~79.0~~	~~119.4~~			~~8~~		
~~HW-RTAC-6~~	~~10,000~~			~~79.0~~	~~119.4~~			~~8~~		
~~HW-RTAC-7~~	~~2250~~			~~81.2~~	~~32.4~~			~~2.5~~		
~~HW-RTAC-8~~	~~1400~~			~~88.8~~	~~31.8~~			~~2.5~~		
HW-2EN(SB)	1436	800FPM	68°F	102	53.2	180°F	150°F	3.5	0.30	1
HW-FCU-34	2000			79.5	25.0			2.0		
~~HW-MUAU-1~~	~~23240~~	~~1200~~	~~25°F~~	~~600~~	~~855.0~~			~~50.0~~	~~0.70~~	~~3~~

NOTE - ALL HW COILS HAVE A MAX. W.P.D. OF 15 FEET

PREHEAT COIL SCHEDULE

TAG NO.	CFM*	MBH	GPM	A.P.D.	MAX. VEL.
PH-2EN	3080	15.4	1.5	0.15	550 FPM
PH-3EN	2304	28.9	2.0	0.15	
~~PH-3ENG~~	~~4710~~	~~127.6~~	~~8.0~~	~~0.15~~	

*SIZED FOR INSTALLATION IN THE AHU COIL SECTION
EWT = 180°F, ΔT = 30°F.

AIR CONDITIONER UNIT SCHEDULE

TAG NO.	CFM	COOLING TL (MBH)	COOLING TS (MBH)	HEATING MBH	FAN ELEC DATA HP-V/Φ/HZ	E.S.P. IN WG.	NOTES
AC-1	4400	110.6	91.5	36.2	2-208/3/60	0.5	2,3,5,7
AC-2	700	28.9	24.8	11.5	1/4-120/1/60	0.0	4,6,8

NOTES
1. DATA BASED ON 72°F DB/59°F WB TEMP.
2. PROVIDE 12" HIGH ADJUSTABLE STAND, PNUEMATIC CONTROL, AND TEMP. & HUMIDITY RECORDER, & MICROPROCESSOR CONTROLS.
3. UTILIZES STEAM REHEAT (86,600 BTUH)
4. UTILIZES ELECTRIC REHEAT (15,740 BTUH)
5. PROVIDE A STEAM HUMIDIFIER (14 #/HR), INLET PRESS. = 5PSIG
6. PROVIDE AN EVAPORATIVE PAD HUMIDIFIER
7. LOCATED IN ROOM 3E12 (SHEET M-21).
8. LOCATED IN ROOM 2G80 (SHEET M-28).

REVISIONS

SYM	DESCRIPTION	PREP'D BY	DATE	APPROVED
1	GENERAL REVISION	GHS	2/15/86	CF
(A)	REVISED AS BUILTS	DC	10/8/90	GRA

KEY TO PUMP TAG NO.'S

P - CH - 1

P = PUMP

- C = SECONDARY CHILLED WATER
- CD = CONDENSER WATER
- CH = CHILLED WATER
- CP = CONDENSATE PUMP
- DT = DUAL TEMPERATURE
- H = SECONDARY HOT WATER
- PC = PRIMARY CHILLED WATER
- PH = PRIMARY HOT WATER
- MU = MAKE-UP AIR FOR KITCHEN EXHAUST HOODS

- 1 = ONE
- 2 = TWO
- 3 = THREE
- A = "A" WING
- AB = "A & B" WING
- B = "B" WING
- C = "C" WING
- D = "D" WING
- EN = "E-NORTH" WING
- ES = "E-SOUTH" WING
- F = "F" WING
- G = "G" WING
- H = "H" WING
- J = "J" WING

EXHAUST CAP SCHEDULE

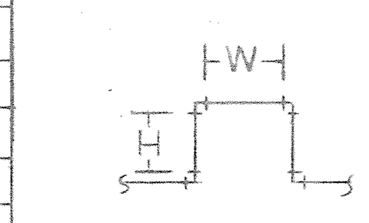
TAG NO.	MAX. AIR VEL.	MAX. CFM
A	600 FPM	900
B		1250
C		1800

SPACE CONDITIONS

SPACE	SUMMER	WINTER
OUTSIDE	90 DB/78 WB	25 DB/10 WB
OFFICE	78 DB/65 WB	68 DB/ —
BILLETING	78 DB/65 WB	72 DB/ —
COMPUTER	72 DB/60 WB	72 DB/60 WB

PIPE EXP. LOOP SCHED.

SYMBOL	PIPE SZ.	TRAVEL	H	W
1	1/2"	2"	3 FT	5 FT
2	3/4"			
3	1"			
4	1 1/4"			
5	1 1/2"			6 FT.
6	2"			



NOTE —
EXPANSION TRAVEL BASED ON ΔT = 120°F WITH EXPANSION COEFFICIENT = 0.92 IN./100 FT.

UNIT HEATER SCHEDULE

TAG	TYPE	CAPACITY	GPM	HP	RPM	V/PH/HZ	REMARKS
CUH-1	FMTD	16.6 MBH	2.0	1/12	1285	120/1/60	2, 3, 4
UH-1	HORZ.	29.0 MBH	3.0	1/30	1050	120/1/60	1, 2, 4
CUH-2	FMTD	30.8 MBH	3.0	1/7	1315	120/1/60	2, 3, 4

FMTD — FLOOR MOUNTED TOP DISCHARGE.
REMARKS:
1 - HORIZONTAL DOUBLE DEFLECTION DISCHARGE.
2 - UNITS RATED @ 60°F EAT AND 180°F EWT.
3 - PERMANENT SPLIT CAPACITOR MOTOR.
4 - PROVIDE ELECTRICAL DISCONNECT

RECORD DRAWING LETTER DATED AUG 10 1990

M-40

FEREBEE, WALTERS & ASSOCIATES
ARCHITECTURE PLANNING — LANDSCAPE DESIGN INTERIOR DESIGN
CHARLOTTE, NORTH CAROLINA

DES. MDE | DR. MDE | CHK. [illegible]
PROJ. MGR. CCO | CH. ENGR. [illegible]
SUBMITTED BY: Charles C. Dixon Jr. DATE: 6/18/85
FIRM MEMBER — PRINCIPAL
EFD:FP MPC RDV [illegible]
HD [illegible] DIR [illegible]
APPROVED [signature] DATE 6/7/85 OFFICER IN CHARGE
APPROVED [signature] DATE 17 July 85 FOR EFD FOR COMMANDER, NAVFAC

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 5552 GLENN H. SNYDER

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
ATLANTIC DIVISION
NAVAL STATION — NORFOLK, VIRGINIA
MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA
CONVERT HOSPITAL TO DIVISION HEADQUARTERS
MECHANICAL - EQUIPMENT SCHEDULES

SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 4124308
CONSTR. CONTR. NO. N62470-82-B-2243
SCALE NONE | SPEC. 05-82-2243 (REV.) | SHEET 153 OF 243
EFD DWG. NO. 224308

H-1-A-WING

Deleted

REVISIONS				
SYM	DESCRIPTION	PREP'D BY	DATE	APPROVED
1	GENERAL REVISION	GHS	2/15/86	CF

CONTROL VALVE SCHEDULE (CONT.)

G	SERVICE	FLOW #/HR.	FLOW GPM	PRESSURE DROP PSI	PRESSURE DROP CV	LINE SIZE	FLUID	REMARKS
151	TU-1DS-2	—	1.0	5.0	—	1/2"	HW	2-WAY
152	3							2-
153	4							2-
154	5							3-
155	6							2-
156	7							2-
157	8							2-
158	2DS-1							2-
159	2							2-
160	3							2-
161	4							2-
162	5							2-
163	6							2-
164	7							3-
165	8							3-
166	1ES-1							2-
167	2							3-
168	4							2-
169	5							2-
170	6							2-
171	7							2-
172	9							3-
173	2EN-1							3-
174	2							2-
175	3							2-
176	2ES-1							2-
177	3		1.0					3-
178	4		1.0					2-
179	5							2-
180	6							2-
181	9							2-
182	10							3-
183	3EN-1							2-
184	2							2-
185	3ES-1							2-
186	2							3-
187	3		1.5					2-
188	4		1.0					2-
189	5							2-
190	6							3-
191	7							2-
192	8							2-
193	1FN-1							2-
194	2							3-
195	3							2-
196	4							2-
197	5							2-
198	6							2-
199	7							2-
200	1FS-1							2-
201	2							2-
202	3							2-
203	4							2-
204	5							3-
205	6							2-
206	7							2-
207	2FN-1							2-
208	2							3-
209	3							2-
210	4							2-
211	5							2-
212	6							2-
213	7							2-
214	2FS-1							2-
215	2							2-
216	3							2-
217	4							2-
218	5							2-
219	6							2-
220	7							3-

TAG	SERVICE	FLOW #/HR	FLOW GPM	PRESSURE DROP PSI	PRESSURE DROP CV	LINE SIZE	FLUID	REMARKS
V-221	TU-1GN-1	—	1.0	5.0	—	1/2"	HW	2-WAY
222	2							3-
223	3							2-
224	4							2-
225	5							2-
226	6							2-
227	7							2-
228	1GS-1							2-
229	2							2-
230	3							2-
231	4							2-
232	5							2-
233	6		1.5					2-
234	7		1.0					3-
235	2GN-1							2-
236	2							2-
237	3							2-
238	4							3-
239	5							2-
240	6							2-
241	7							2-
242	2GS-1							2-
243	2							2-
244	3							2-
245	4							2-
246	5							2-
247	6							2-
248	7							3-
249	1HN-1							2-
250	2							2-
251	3							2-
252	4							2-
253	5							3-
254	6							2-
255	7							2-
256	1HS-1							2-
257	2							2-
258	3							2-
259	4							3-
260	5							2-
261	6							2-
262	7							2-
263	2HN-1							2-
264	2							2-
265	3							2-
266	4							2-
267	5							3-
268	6							2-
269	2HS-1							2-
270	2							2-
271	3							2-
272	4							2-
273	5							2-
274	6							3-
275	1JN-1							2-
276	2							2-
277	3							3-
278	4							2-
279	5							2-
280	6							2-
281	7							2-
282	1JS 1							2-
283	2							2-
284	3							3-
285	4							2-
286	5							2-
287	6							2-
288	7							2-

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER GLENN H. SNYDER

FEREBEE, WALTERS & ASSOCIATES
ARCHITECTURE PLANNING — LANDSCAPE DESIGN INTERIOR DESIGN
CHARLOTTE NORTH CAROLINA

DES. MDE | DR. MDE | CHK. GHS
PROJ. MGR. CCD | CH. ENGR. | DATE: 6/05/85
SUBMITTED BY: Charles C. Dixon, Jr.
FIRM MEMBER — PRINCIPAL
EFD: FP MVC RVD
HD — DIR
APPROVED — DATE 6/17/85
OFFICER IN CHARGE
APPROVED — DATE 17 July 85
FOR EFD FOR COMMANDER, NAVFAC

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
ATLANTIC DIVISION
NAVAL STATION — NORFOLK, VIRGINIA

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

CONVERT HOSPITAL TO DIVISION HEADQUARTERS

MECHANICAL VALVE SCHEDULE

SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 4124317
CONSTR. CONTR. NO. N62470-82-B-2243
SCALE: NO SCALE | SPEC. 05-82-2243 (REV.) | SHEET 162 OF 243

M-49

EFD DWG. NO. 224317

SYM	DESCRIPTION	PREP'D BY	DATE	APPROVED
1	GENERAL REVISION	GHS	2/15/86	JHW

ADDITIVE NO. 1 INCLUDES ALL HVAC WORK SHOWN ON THE PLANS ASSOCIATED WITH AIR CONDITIONING AND HEATING WINGS IAN AND IAS. IF ADDITIVE NO.1 IS ACCEPTED ALL WORK SHOWN ON THIS SHEET SHALL BE DELETED. OTHERWISE, ALL SHOWN HEREON SHALL BE REQUIRED TO ENABLE EXISTING SYSTEMS IN IAN & IAS TO OPERATE.

SHEET M-2

1. THE HPS AND PUMPED CONDENSATE LINES FROM WING "A" TO TUNNEL RACK NO. 61 SHALL REMAIN IN USE. THE EXISTING CONDENSATE PUMPS AT "A" WING AND THE FAN ROOM IN THE BASEMENT OF WING "D" SHALL REMAIN IN PLACE FOR FUTURE USE. REPAIR ALL TRAPS IN THE DRIP ASSEMBLIES SERVING THE HPS MAIN. REPLACE ALL CONDENSATE PIPING FROM THESE TRAPS AND RUN TO THE NEAREST CONDENSATE PUMP. THESE TRAPS OCCUR APPROXIMATELY AT TUNNEL RACKS 20 AND 33. CAP ALL RUNOUTS FROM THE HPS MAIN BETWEEN "A" WING AND RACK NO. 61, EXCEPT TO THE PRV LOCATED AT RACK NO. 3 WHICH SHALL REMAIN IN SERVICE.
2. ALL STEAM AND CONDENSATE LINES SERVING "A" WING SHALL REMAIN IN SERVICE. NO DEMOLITION WORK IS REQUIRED IN IAN AND IAS.
3. THE STEAM RADIATORS AND ASSOCIATED PIPING SERVING THE CORRIDOR BETWEEN "A" WING AND "B" WING SHALL BE DEMOLISHED. CAP LINES ADJACENT TO WHERE THEY CONNECT TO EXISTING ACTIVE STEAM AND CONDENSATE LINES.
4. REPLACE ALL EXPANSION JOINTS IN THE HPS MAIN AND THE PUMPED CONDENSATE RETURN AS FOLLOWS:

LOCATION	HPS		PC	
RACK NO.	SIZE	TRAVERSE	SIZE	TRAVERSE
32	4"	4"	2"	4"
33	5"	8"	2½"	4"

SHEET M-3

THERE SHALL BE NO DEMOLITION WORK DONE TO WINGS IAN & IAS. DO REMOVE THE STEAM RADIATORS AND ASSOCIATED PIPING IN THE CORRIDOR BETWEEN "A" AND "B" WINGS.

SHEET M-9

THE PIPING TO PUMP "P-DT-AB" CHANGES AS SHOWN IN DETAIL #1 AT THE RIGHT. THE WATER QUANTITY OF PUMP "P-C-AB" BECOMES 89 GPM AND FLOWS TO ONLY 2BN AND 2BS.

SHEET M-10

THE TUNNEL PIPING TO WING "A" CHANGES AS SHOWN IN DETAIL #2 AT THE RIGHT.

SHEET M-11

IN LIEU OF THE HW PIPING SHOWN IN THE CORRIDOR BETWEEN "A" WING AND "B" WING, CHANGE IT AS SHOWN IN DETAIL #3 AT THE RIGHT.

SHEET M-38

DELETE AIR HANDLING UNIT "AHU-IAS" AND FAN COIL UNIT TYPES "FCU-1, FCU-2, FCU-3, FCU-4, FCU-5, FCU-6, FCU-7, FCU-8, FCU-9, AND FCU-10" FROM THEIR RESPECTIVE SCHEDULES.

SHEET M-39

DELETE TERMINAL UNITS "IAS-1 THROUGH IAS-4" FROM SCHEDULE.

SHEET M-40

1. DELETE EXHAUST FANS "EF-1, EF-2, EF-3, AND EF-4" FROM SCHEDULE.
2. DELETE WINTER VENTILATION FAN "WVF-IAS" FROM SCHEDULE.
3. REVISE PUMP SCHEDULE ENTRIES AS FOLLOWS:

TAG NO.	SERVICE	TYPE	GPM (EA.)	HEAD	HP	RPM	NOTES
P-C-AB	CHW	INLINE	89	50 FT.	3-460	1750	7
P-DT-AB	DUAL-T	"	103	75 FT.	5-460	"	7
P-H-AB	H.W. SEC.	"	60	55 FT.	3-460	"	7
P-CP-5	STEAM COND.	CENTRIFUGAL	1.5	10 PSI	1/3-120	"	7,8
P-CP-6	"	"	1.5	10 PSI	1/3-120	"	7,8

SHEET M-41 - DELETE MECH. ROOM IAS.

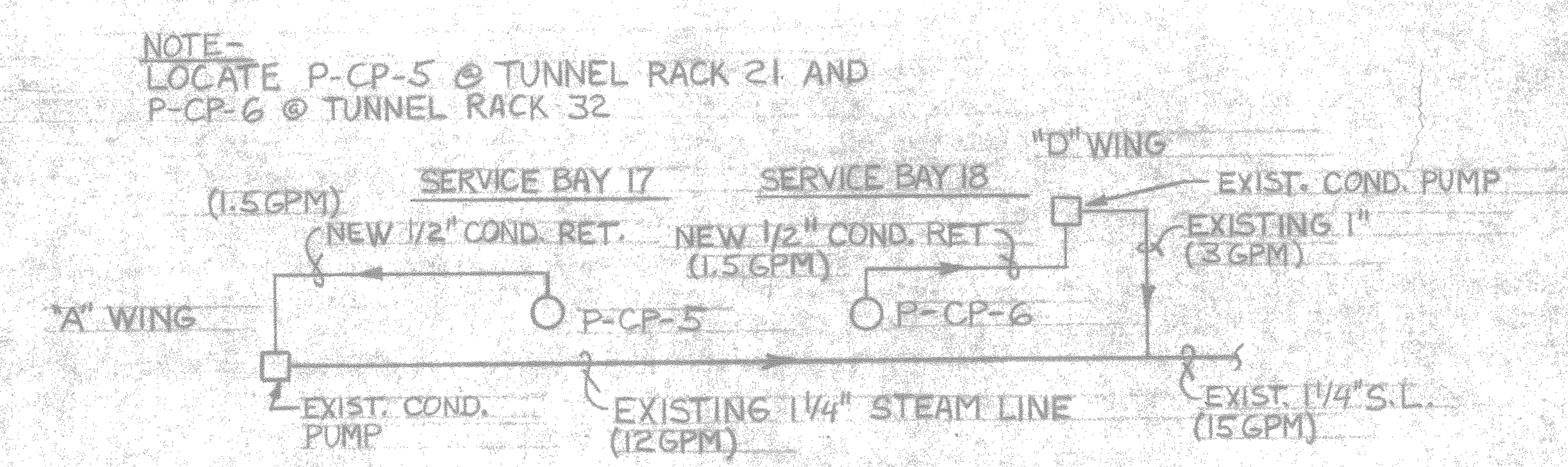
SHEET M-48

DELETE VALVES "V-1, V-33, V-58, V-59, V-60, V-61, V-62, V-63, V-64, V-65, V-66, AND V-67" FROM SCHEDULE.

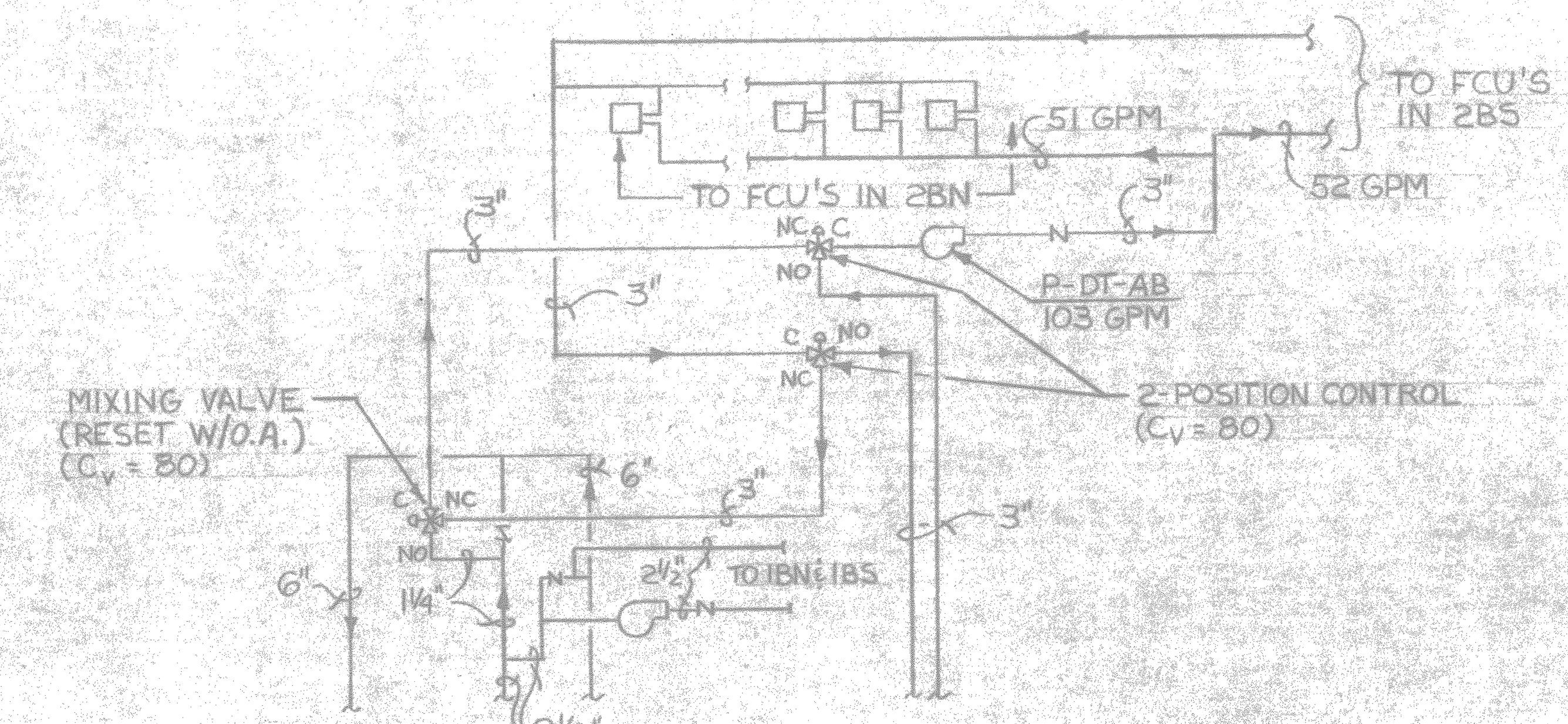
SHEET M-45

LINE SIZES SHOWN IN THE PIPE RACK SCHEDULE FOR RACK NOS. 1-11 SHALL BE REVISED AS FOLLOWS:

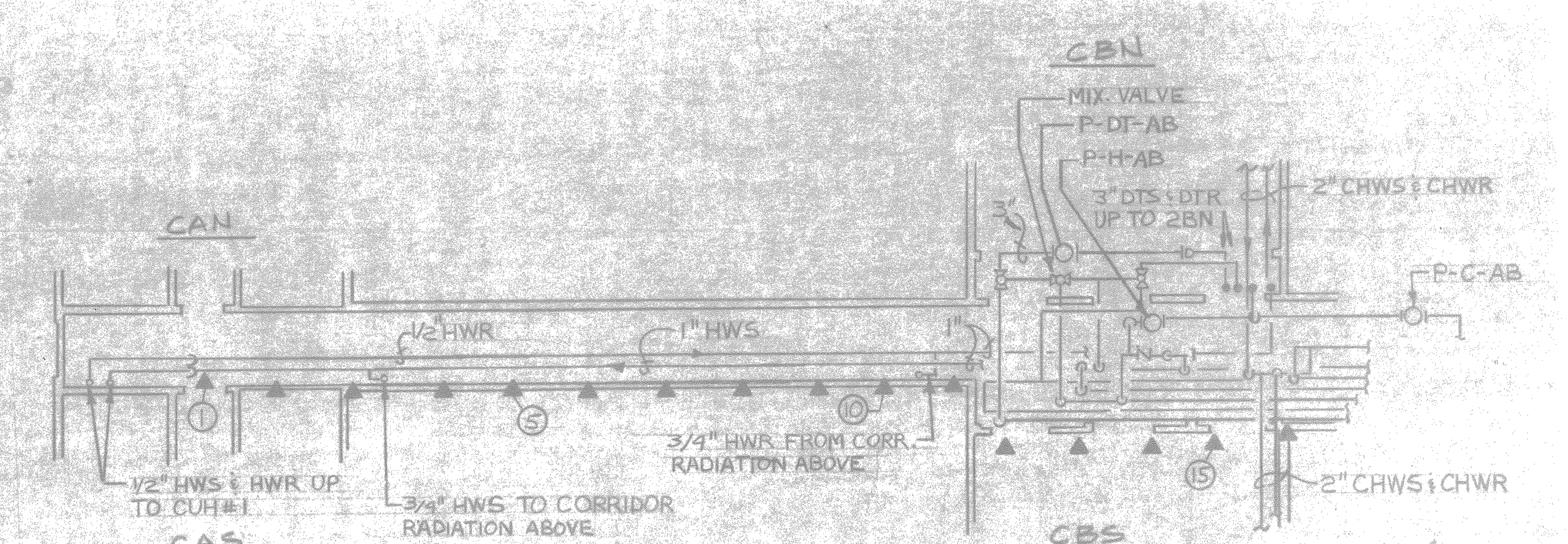
RACK NO. WING A	PIPE NUMBER					
	1	2	3	4	5	6
	DTS	HWR	HWS	DTS	CHWR	CHWS
1	—	1/2	1/2	—	—	—
2	—	↓	1/2	—	—	—
3	—		1	—	—	—
4	—		↓	—	—	—
5	—			—	—	—
6	—			—	—	—
7	—			—	—	—
8	—			—	—	—
9	—	↓		—	—	—
10	—	1/2	↓	—	—	—
11	—	1	1	—	—	—



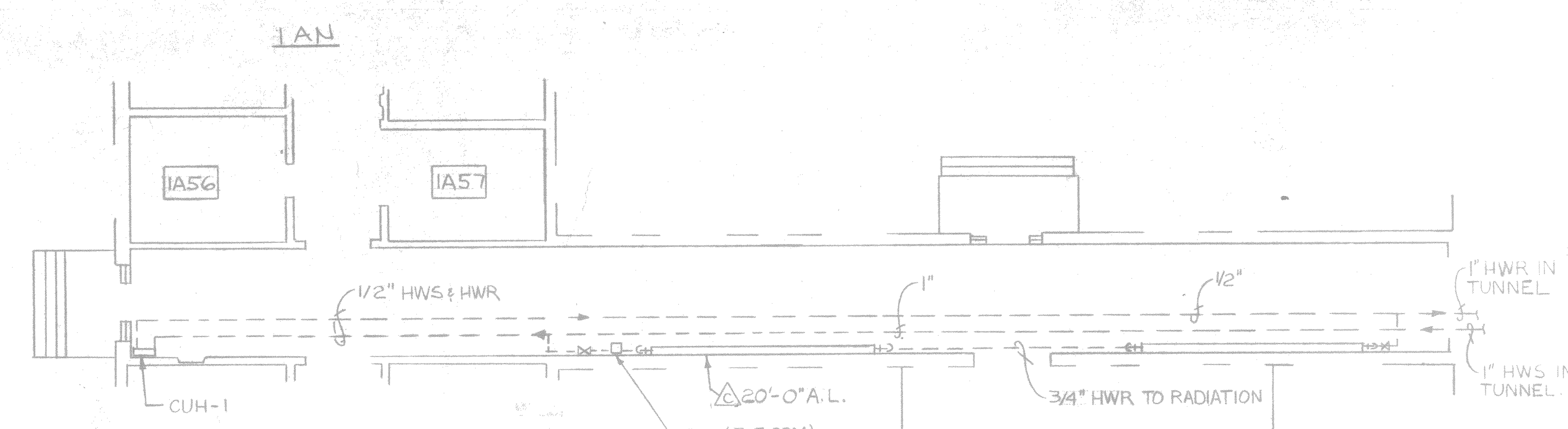
D EXISTING H. P. CONDENSATE RETURN
M50 M50 NO SCALE



A DETAIL #1 "P-DT-AB" PIPING CHANGES
M9 M50 NO SCALE



B DETAIL #2 TUNNEL PIPING CHANGES
M10 M50 NO SCALE



C DETAIL #3 CORRIDOR PIPING CHANGES
M11 M50 NO SCALE

NOTE: ALL WORK SHOWN ON THIS SHEET SHALL BE DELETED IF ADDITIVE #1 IS ACCEPTED.

M-50

FEREBEE, WALTERS & ASSOCIATES
ARCHITECTURE PLANNING — LANDSCAPE DESIGN INTERIOR DESIGN
CHARLOTTE NORTH CAROLINA

DES. GHS | DR. MDE | CHK. GHS
PROJ. MGR. OCD | CH. ENGR. [signature]
SUBMITTED BY: [signature] DATE:
FIRM MEMBER PRINCIPAL
EFD: FP MPC RVD
HD JHW DIR
APPROVED DATE
OFFICER IN CHARGE
APPROVED [signature] DATE 17 July 85
FOR EFD FOR COMMANDER, NAVFAC

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
ATLANTIC DIVISION
NAVAL STATION NORFOLK, VIRGINIA

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

CONVERT HOSPITAL TO DIVISION HEADQUARTERS

MODIFICATIONS FOR BASE BID

SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 4124318
CONSTR. CONTR. NO. N62470-82-B-2243
SCALE 1/8"=1'-0 | SPEC. 05-82-2243 (REV.) | SHEET 163 OF 243
EFD DWG. NO.

ADDITIVE NO. 2 INCLUDES ALL HVAC WORK SHOWN ON THE PLANS ASSOCIATED WITH AIR CONDITIONING AND HEATING 2BN AND 2BS. ADDITIVE NO. 2 CAN ONLY BE ACCEPTED IF ADDITIVE NO. 1 IS ACCEPTED. IF ADDITIVE NO. 2 IS ACCEPTED ALL WORK SHOWN ON THIS SHEET SHALL BE DELETED. OTHERWISE, ALL WORK SHOWN HEREON SHALL BE REQUIRED TO ENABLE EXISTING SYSTEMS IN 2BN & 2BS TO OPERATE.

REVISIONS				
SYM	DESCRIPTION	PREP'D BY	DATE	APPROV
1	GENERAL REVISIONS	GHS		

SHEET M-2

1. THE 3" LPS AND 1 1/2" LPR SHOWN TO SUPPLY RADIATORS ON EACH SIDE OF CBN AND CBS WILL REMAIN IN PLACE OUTSIDE THE TUNNEL WALLS. ALL ASSOCIATED PIPING INSIDE THE TUNNEL WILL BE DEMOLISHED.
2. THE CONDENSATE PUMPS LOCATED IN THE PITS AND THE MPS AND MPR LINES WILL BE DEMOLISHED.

SHEET M-3

1. THE NOTE REFERRING TO THE DEMOLITION OF THE LPS AND LPR LINES LOCATED IN THE CRAWL SPACE OF 1BN AND 1BS WILL NOT APPLY. HOWEVER, RADIATORS SERVING THE FIRST FLOOR (1BN AND 1BS) WILL BE DEMOLISHED. ALL PIPING ASSOCIATED WITH THESE RADIATORS WILL BE REMOVED AND CAPPED AT THE MAINS IN THE CRAWLSPACE. THE EXISTING ASBESTOS INSULATION WILL BE REMOVED FROM THE PIPING IN THE CRAWL SPACE.
2. THE LPS AND LPR LINES SERVING THE SECOND FLOOR (2BN AND 2BS) RADIATORS WILL REMAIN IN SERVICE.

SHEET M-4

NO DEMOLITION WORK WILL BE DONE IN 2BN AND 2BS, EXCEPT THE REMOVAL OF THE STERILIZERS.

SHEET M-9

THE PIPING TO THE DUAL TEMPERATURE SYSTEM WILL BE DELETED AS SHOWN IN DETAIL # 1

SHEET M-10

THE PIPING IN THE TUNNEL WILL BE REVISED FROM DETAIL # 2 FOR ADDITIVE # 1 (SHOWN ON SHEET M-50) TO DETAIL # 2 ON THIS SHEET.

SHEET M-12

1. DELETE TWO FCV (2GPM) AND ONE FCV (3GPM) AND RELATED PIPING ABOVE THE 1BN CEILING THAT SERVE H.W. RADIATION IN 2BN.
2. DELETE ONE FCV (2GPM) AND ONE FCV (3GPM) ABOVE THE 1BS CEILING THAT SERVE H.W. RADIATION IN 2BS.

SHEET M-13

1. DELETE ALL WORK SHOWN ON THIS SHEET IN 2BN AND 2BS, EXCEPT THE 12x12 EXHAUST DUCTS THAT ARE RUN FROM EF-5 AND EF-8 ON THE 1ST FLOOR TO THE RESPECTIVE ROOF CAPS.
2. THE HOT WATER RADIATION SHOWN IN THE CORRIDOR BETWEEN "A" AND "B" WINGS WILL REMAIN IN USE.

SHEET M-35

DELETE THE FOLLOWING TEMPERATURE CONTROL DIAGRAMS:

A - FAN COIL UNIT CONTROLS
B - MAKEUP AIR UNIT (MUAU) BILLETING AREA.
C - TYPICAL MUAU CONTROL
D - H.W. RESET & CHANGEOVER BILLETING AREA.

SHEET M-36

DELETE THE FOLLOWING TEMPERATURE CONTROL DIAGRAMS:

A - TYPICAL FCU 8,9 CONTROL
B - O.A. INTAKE FOR FCU'S NO. 9 & 10.

SHEET M-38

DELETE FCU-12 THRU FCU-32 FROM THE FAN COIL UNIT SCHEDULE.

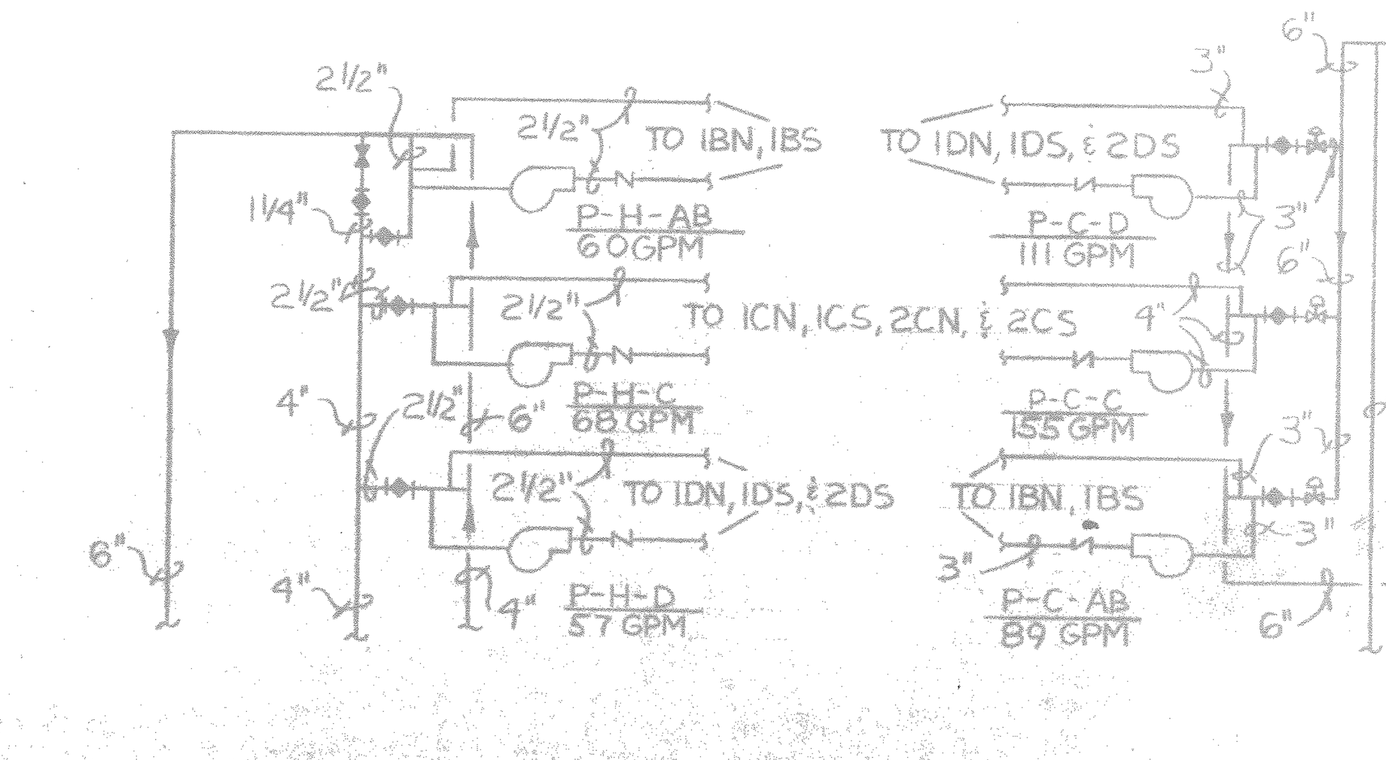
SHEET M-40

1. DELETE EXHAUST FANS EF-11, 12, 13, 14, 95, AND 96 FROM THE SCHEDULE.
2. REVISE PUMP SCHEDULE ENTRIES AS FOLLOWS:

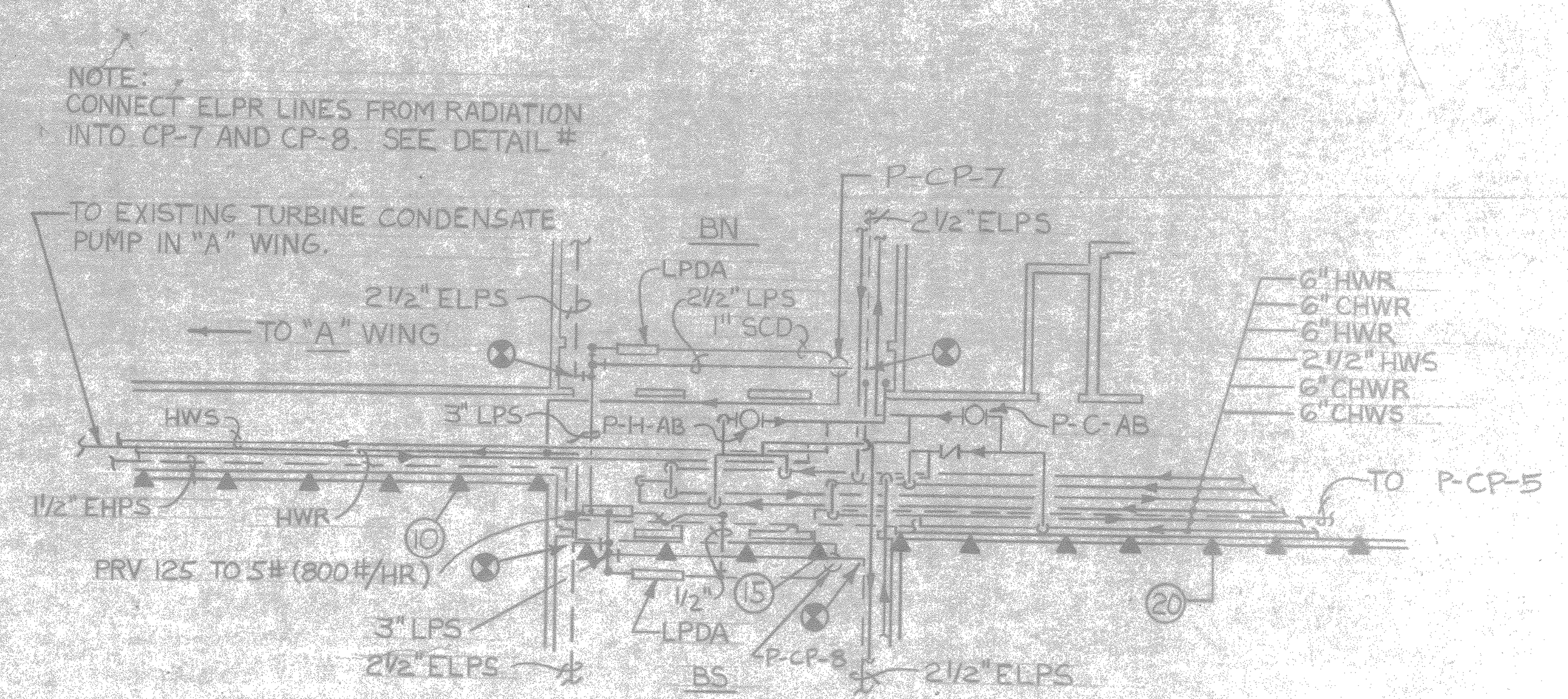
TAG NO.	SERVICE	TYPE	GPM	HEAD	HP	RPM	NOTES
P-DT-AB	DELETED						
P-CP-7	STEAM COND.	END SUCT.	3	10 PSI	1/3	1750	7, 8
P-CP-8	" "	" "	3	10 PSI	1/3	1750	7, 8

SHEET M-48

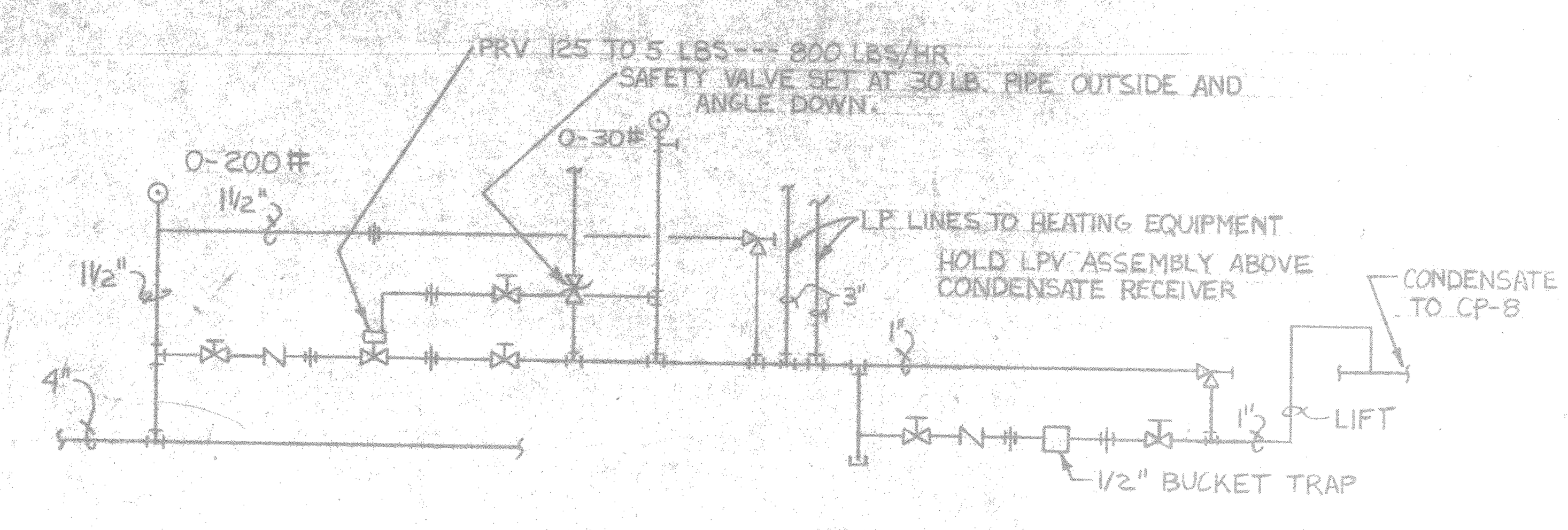
DELETE CONTROL VALVES V-69 THRU V-89 FROM SCHEDULE.



1 M9 M51 DETAIL # 1 DT PIPING CHANGES
NO SCALE



2 M10 M51 DETAIL # 2 TUNNEL PIPING CHANGES
NO SCALE



3 M51 M51 PRESSURE REDUCING VALVE ASSEMBLY SCHEMATIC
NO SCALE

NOTE: ALL WORK SHOWN ON THIS SHEET SHALL BE DELETED IF ADDITIVE #2 IS ACCEPTED.

M-51

FEREBEE, WALTERS & ASSOCIATES
ARCHITECTURE PLANNING
LANDSCAPE DESIGN INTERIOR DESIGN
CHARLOTTE NORTH CAROLINA

DES. GHS | DR. MDE | CHK. GHS
PROJ. MGR. OCD | CH. ENGR.
SUBMITTED BY: DATE:
FIRM MEMBER PRINCIPAL
EFD: FP MBC RVD
HD DIR
APPROVED DATE
OFFICER IN CHARGE
APPROVED DATE 17 July 85
FOR EFD FOR COMMANDER, NAVFAC

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL GLENN H. SNYDER

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ATLANTIC DIVISION
NAVAL STATION
NORFOLK, VIRGINIA

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

CONVERT HOSPITAL TO DIVISION HEADQUARTERS

MODIFICATIONS FOR BASE BID

SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 4124319
CONSTR. CONTR. NO. N62470-82-B-2243
SCALE 1/8" = 1'-0" | SPEC. 05-82-2243 (REV.) | SHEET 164 OF 243

EFD DWG. NO. 224319