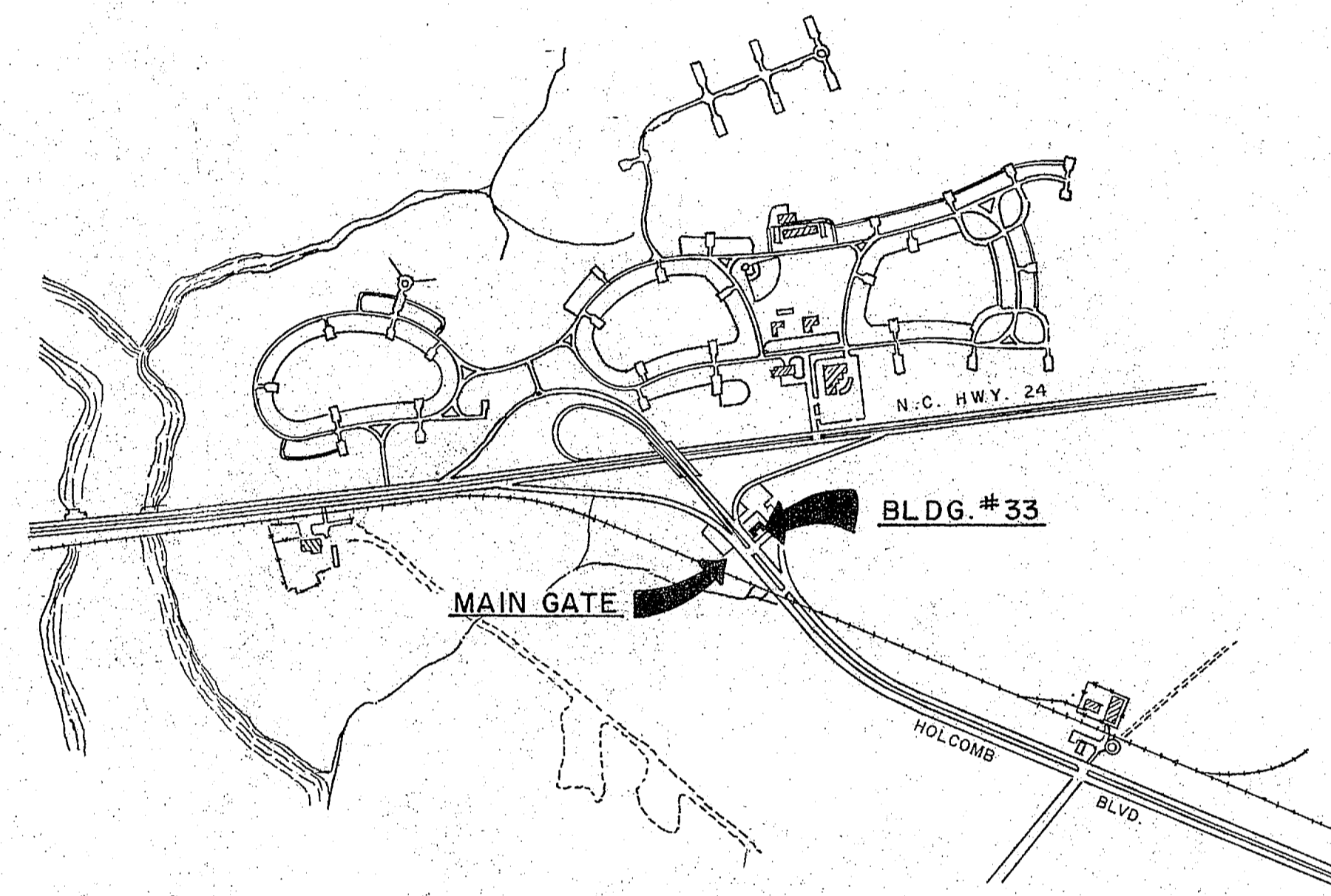


# PROVIDE AIR CONDITIONING FOR COMPUTERS BLDG.# 33

## PROVIDE COOLING TOWER FOR BLDG.#84

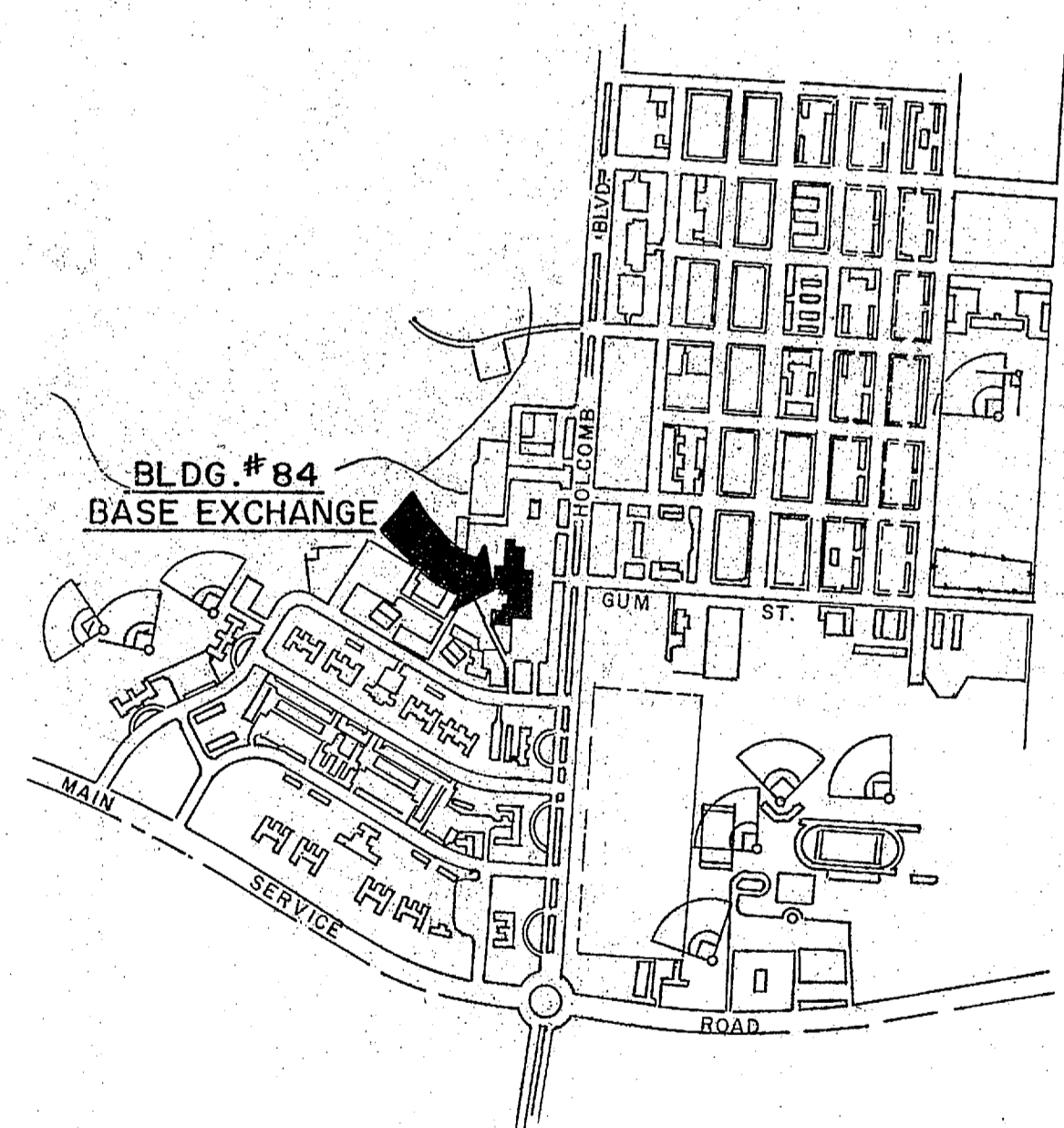
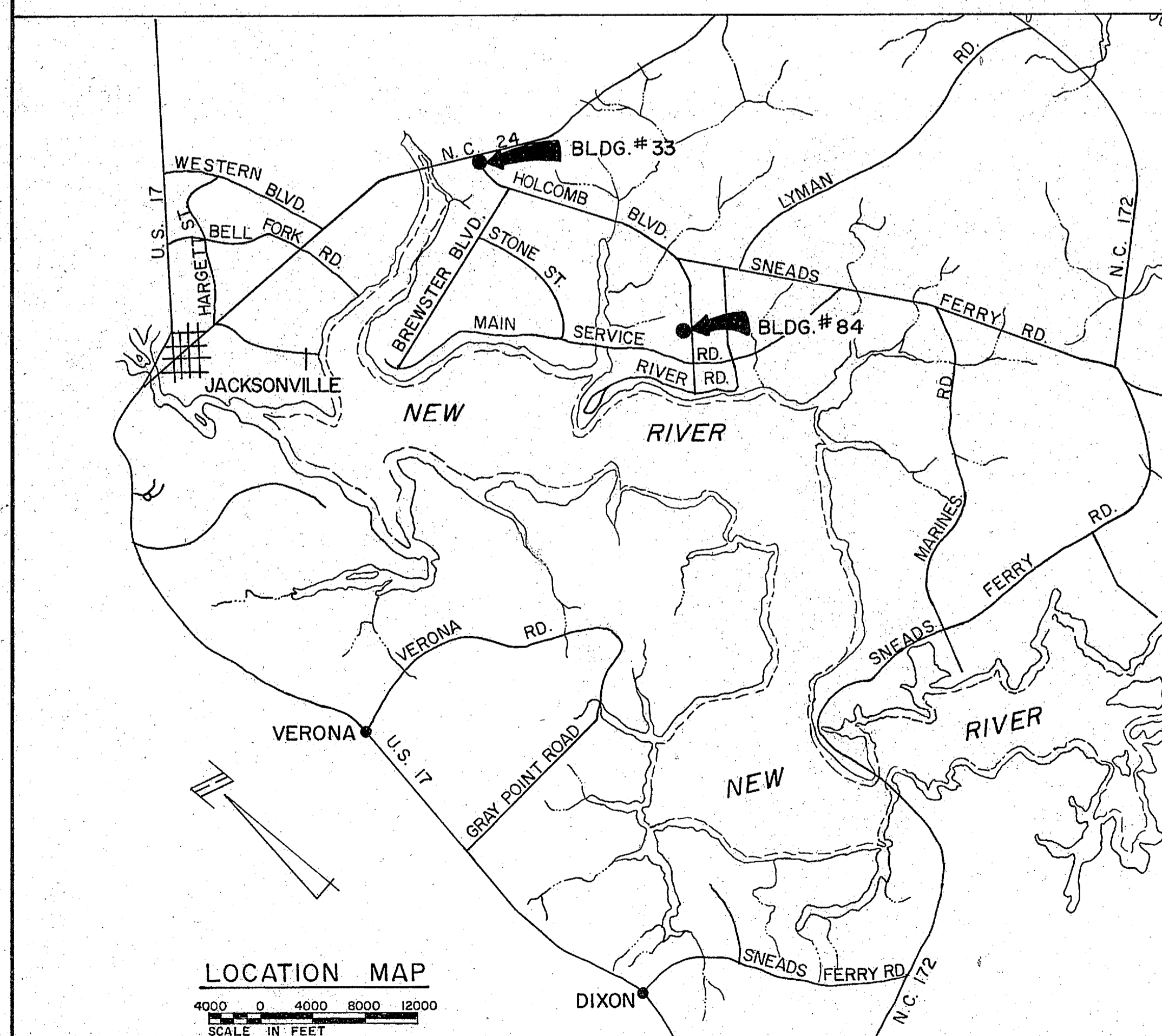
MARINE CORPS. BASE  
CAMP LEJEUNE, N.C.

REVISIONS		
SYM.	DESCRIPTION	DATE APPROVED

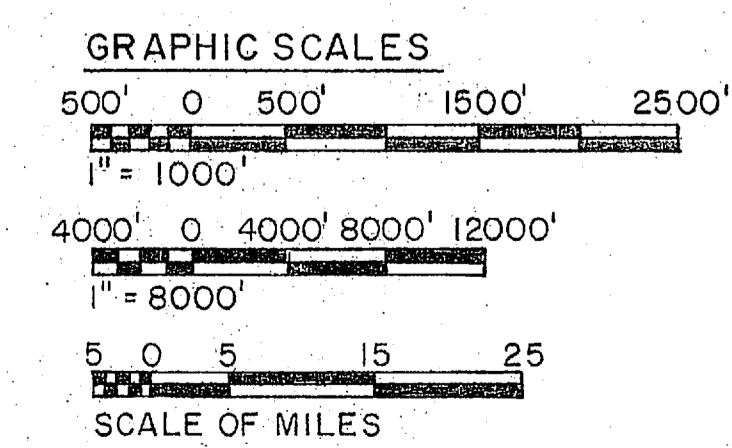


**PARTIAL SITE PLAN**  
**BLDG.# 33**  
SCALE 1" = 1000'

SCHEDULE OF DRAWINGS		
SHT. NO.	NAVFAC DWG. NO.	TITLE
CS-1	4100606	COVER SHEET
M-1	4100607	MECHANICAL DEMOLITION PLAN BLDG.#33
M-2	4100608	HEATING & A/C FLOOR PLANS, SCHEDULES, DETAILS & CONTROL DIAGRAMS BLDG.#33
M-3	4100609	HEATING & A/C BUILDING SECTIONS, LEGEND & SITE PLAN BLDG.#33
M-4	4100610	BLDG.#84 COOLING TOWER - EXISTING & DEMOLITION
ME-1	4100611	BLDG.#84 COOLING TOWER NEW WORK & ELECTRICAL WORK
P-1	4100612	PLUMBING FLOOR PLANS BLDG.#33 WATER RISER & DETAILS
E-1	4100613	ELECTRICAL WORK BLDG.#33



**PARTIAL SITE PLAN**  
**BLDG.# 84**  
SCALE 1" = 1000'



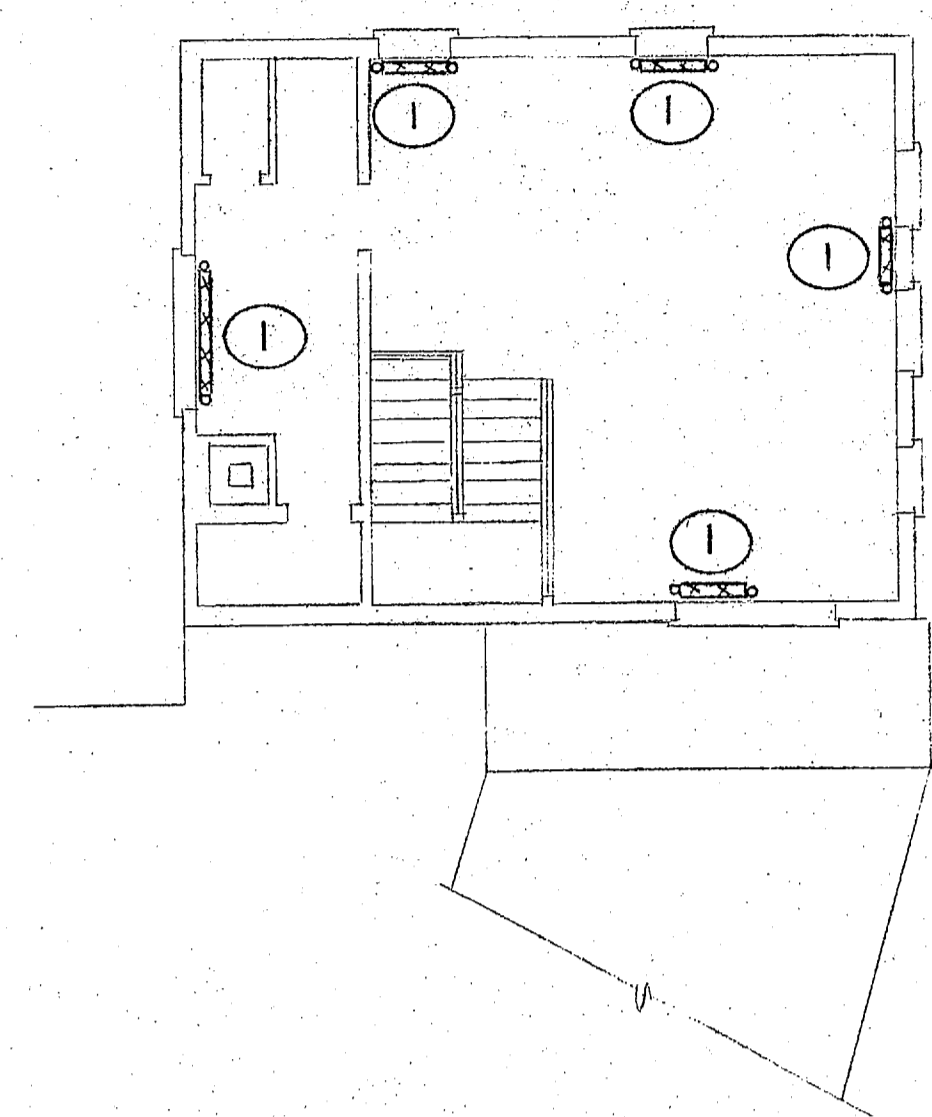
HENRY VON OESSEN & ASSOCIATES CONSULTING ENGINEERS & PLANNERS WILMINGTON, NORTH CAROLINA 28402		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA	
DES. D.E.R. DR. S.M.C. CHK. D.E.R. SUBMITTED BY: <i>[Signature]</i>	PROVIDE A/C FOR COMPUTERS BLDG.# 33 PROVIDE COOLING TOWER FOR BLDG.# 84		
DESIGN DIR.	COVER SHEET		
APPROVED: PWO OR OIC	DATE	SIZE <b>F</b>	CODE (DEPT. ID.) <b>80001</b>
SATISFACTORY TO:	DATE	NAVFAC DRAWING NO. 4100606	
SCALE: GRAPHIC		SPEC: 05-84-7849	SHEET 1 OF 8



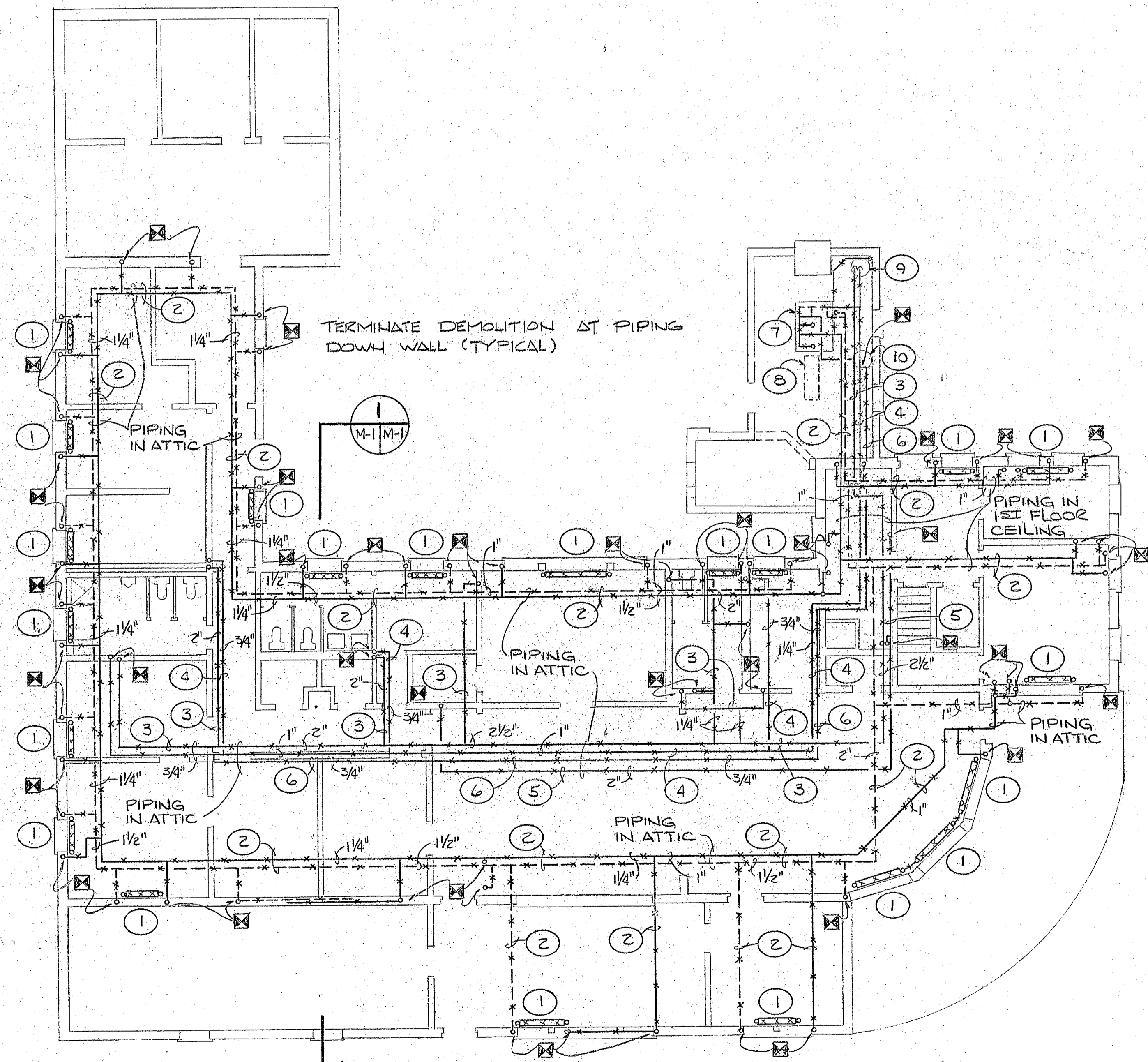
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

- DEMOLITION KEYED NOTES**
- ① REMOVE EXISTING C.T. HW RADIATOR AND PIPING TO WITHIN WALL AND PATCH AND PAINT EXISTING PLASTER WALL TO MATCH EXISTING. (OR ON SECOND FLOOR, PATCH FLOOR TO MATCH EXISTING LINOLEUM TILE). \*
  - ② REMOVE EXISTING ASBESTOS INSULATED HOT WATER SUPPLY AND RETURN PIPING.
  - ③ REMOVE EXISTING ASBESTOS INSULATED COLD WATER PIPING.
  - ④ REMOVE EXISTING ASBESTOS INSULATED DOMESTIC HOT WATER PIPING.
  - ⑤ REMOVE EXISTING ASBESTOS INSULATED FIRE PROTECTION PIPING.
  - ⑥ REMOVE EXISTING DOMESTIC HOT WATER RECIRCULATION PIPING.
  - ⑦ REMOVE EXISTING HW BOILER, CIRCULATING PUMP AND APPURTENANCES.
  - ⑧ REMOVE EXISTING HW EXPANSION TANK (IN ATTIC AND APPURTENANCES).
  - ⑨ REMOVE EXISTING HW STORAGE TANK, CIRCULATING PUMP AND APPURTENANCES.
  - ⑩ EXISTING ELECTRIC HOT WATER HEATER TO REMAIN AND BE REUSED.

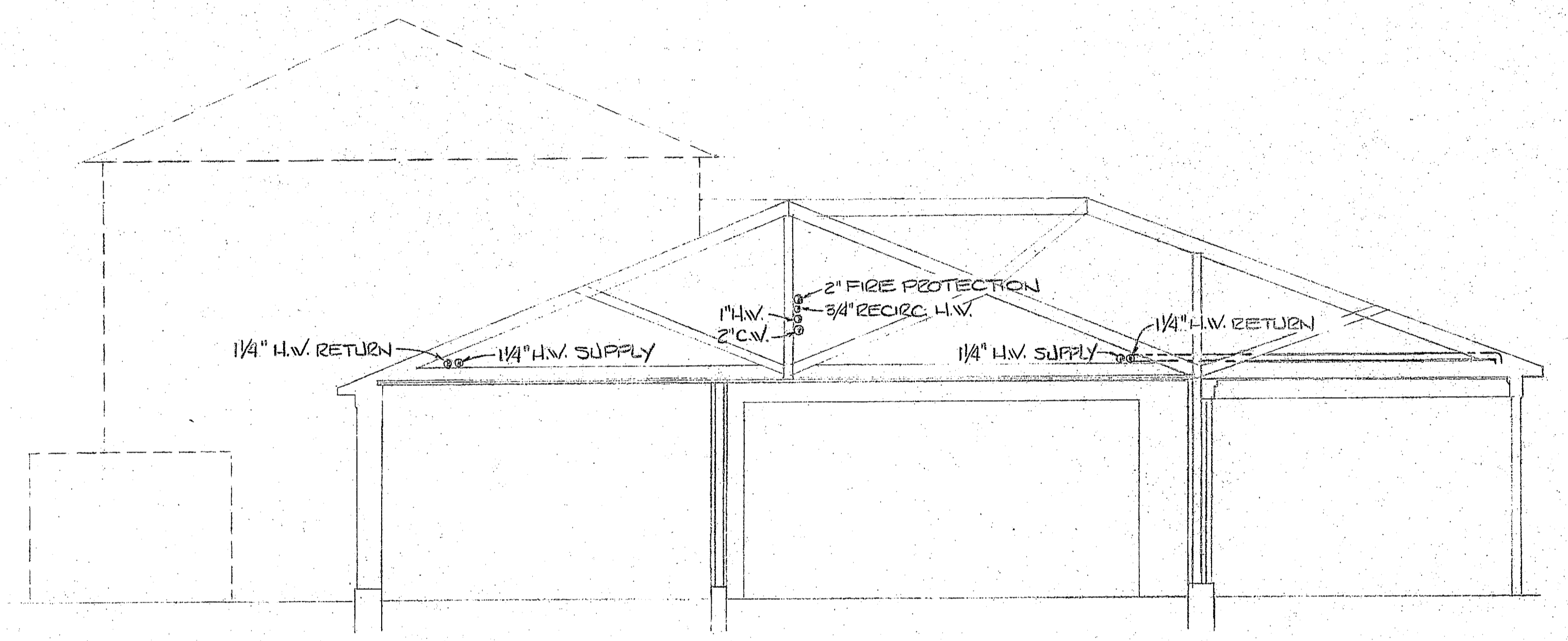
\* ENCAPSULATE LOOSE ENDS OF ANY ASBESTOS INSULATION WITHIN WALL.



**BLDG. 33 SECOND FLOOR DEMOLITION PLAN**  
SCALE 1/8"=1'-0"

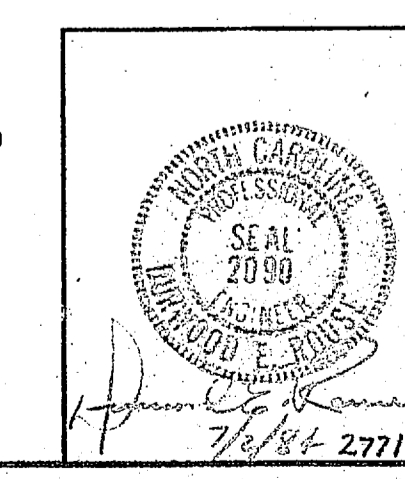
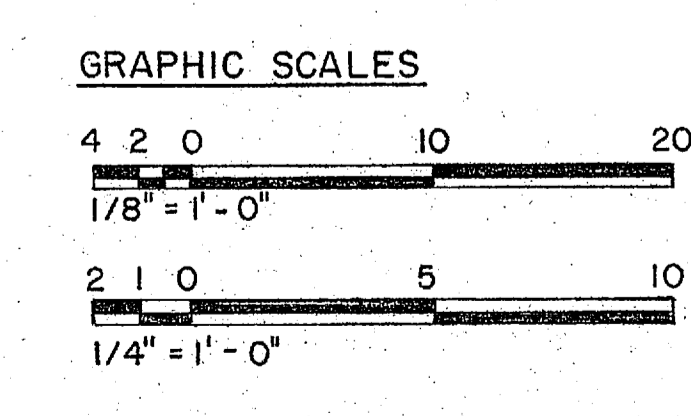


**BLDG. 33 FIRST FLOOR DEMOLITION PLAN**  
SCALE 1/8"=1'-0"



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

NOTE: SEE SHEET M-3 FOR LEGEND.



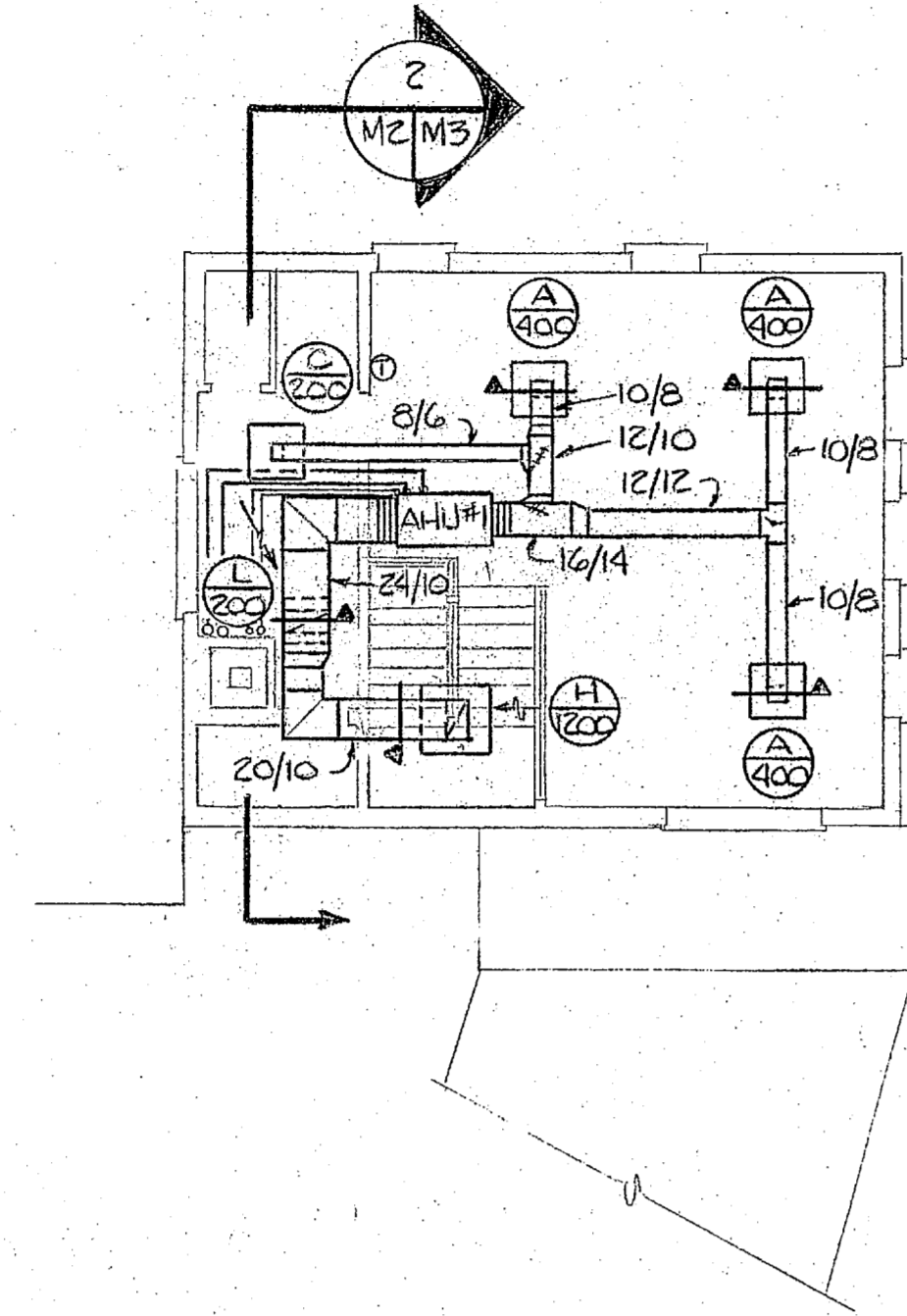
HENRY VON OESSEN & ASSOCIATES CONSULTING ENGINEERS & PLANNERS WILMINGTON, NORTH CAROLINA 28402		DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. T. M. H.	DR. S. M. C.	PROVIDE A/C FOR COMPUTERS BLDG. # 33 PROVIDE COOLING TOWER FOR BLDG. # 84	
CHK. D. E. R.	SUBMITTED BY: <i>[Signature]</i>	MECHANICAL DEMOLITION PLAN BLDG. # 33	
DESIGN DIR.	APPROVED: PWD OR DIC	DATE	SIZE
			CODE IDENT. NO.
			NAVAFAC DRAWING NO.
			4100607
SATISFACTORY TO:	DATE	CONSTR. CONTR. NO.	NAVAFAC DRAWING NO.
		062470-84-B-7849	4100607
SCALE: GRAPHIC	SPEC. 05-94-7849	SHEET 2 OF 8	



AHU	HEAT LOSS BTU/HR	INDOOR FAN SECTION				OUTDOOR SECTION				COOLING SYSTEM				COP	EER
		CFM TOTAL	ESP H <sub>2</sub> O	INDOOR FAN H.P. VOLT & PHASE	HEATING SECTION ELEC. CAP. STAGES	COMPRESSOR KW/NO.	COND. FAN NO./H.P. VOLTAGE	TOTAL TON	SENSIBLE CAPACITY BTU/HR	ENT. AIR TEMP °F	COND. EVAP °F	REFRIGERANT PIPING SUCT. LIQUIDS			
1	30924	1400	.14	1/2 240/1Ø	14.4 2	27.6 1 539	1 1/3 230/1Ø	43.0	28,700	78	67	7/8 1/2	2.80	8.15	
2	76391	3000	.26	1/2 240/3Ø	27.0 3	46 1 1127	2 1/2 230/3Ø	96.6	70,200	78	67	1 3/8 5/8	2.75	8	

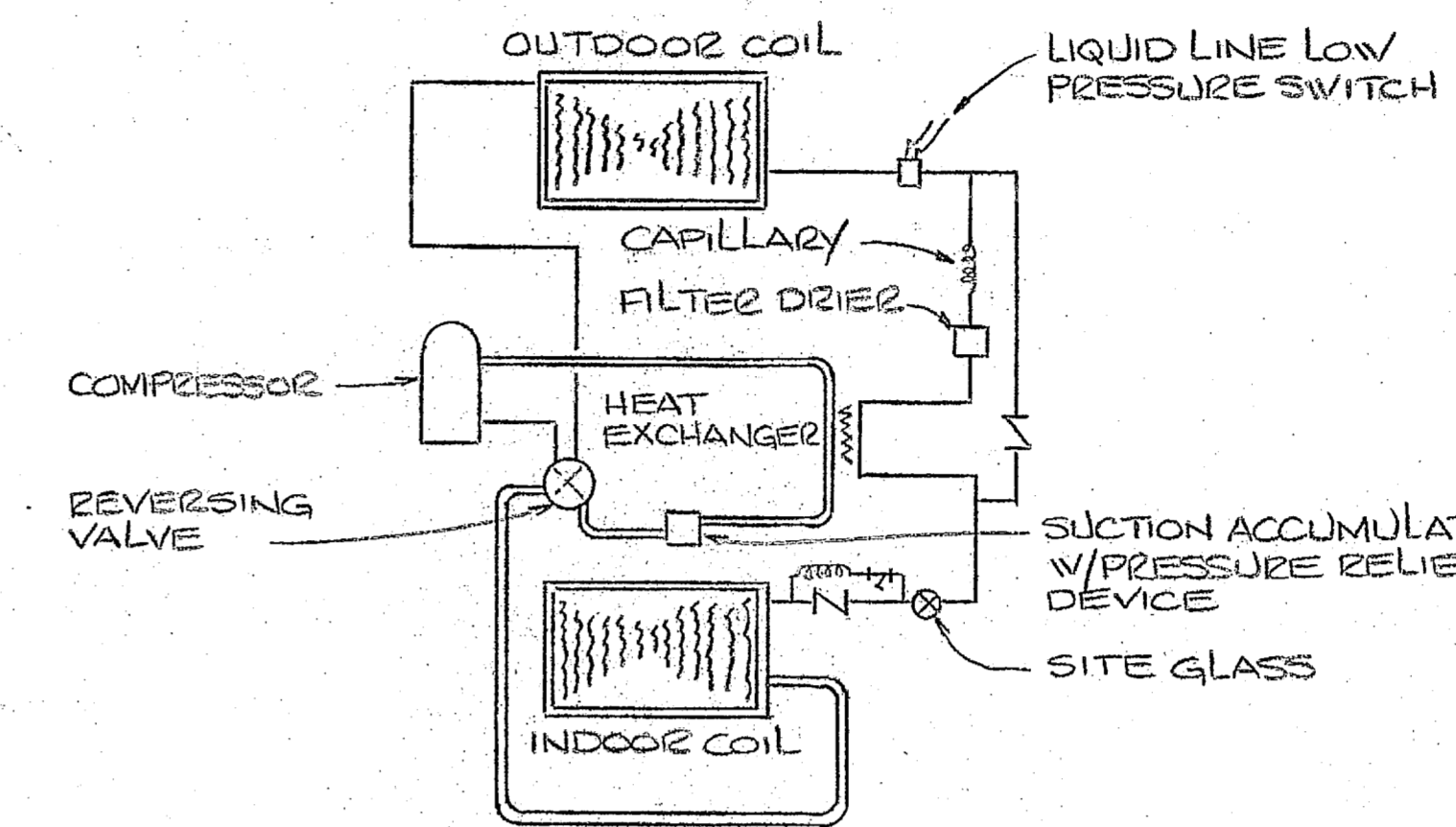
\* COMPRESSION CAPACITY AT 170°F DB OUTSIDE TEMPERATURE.

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED

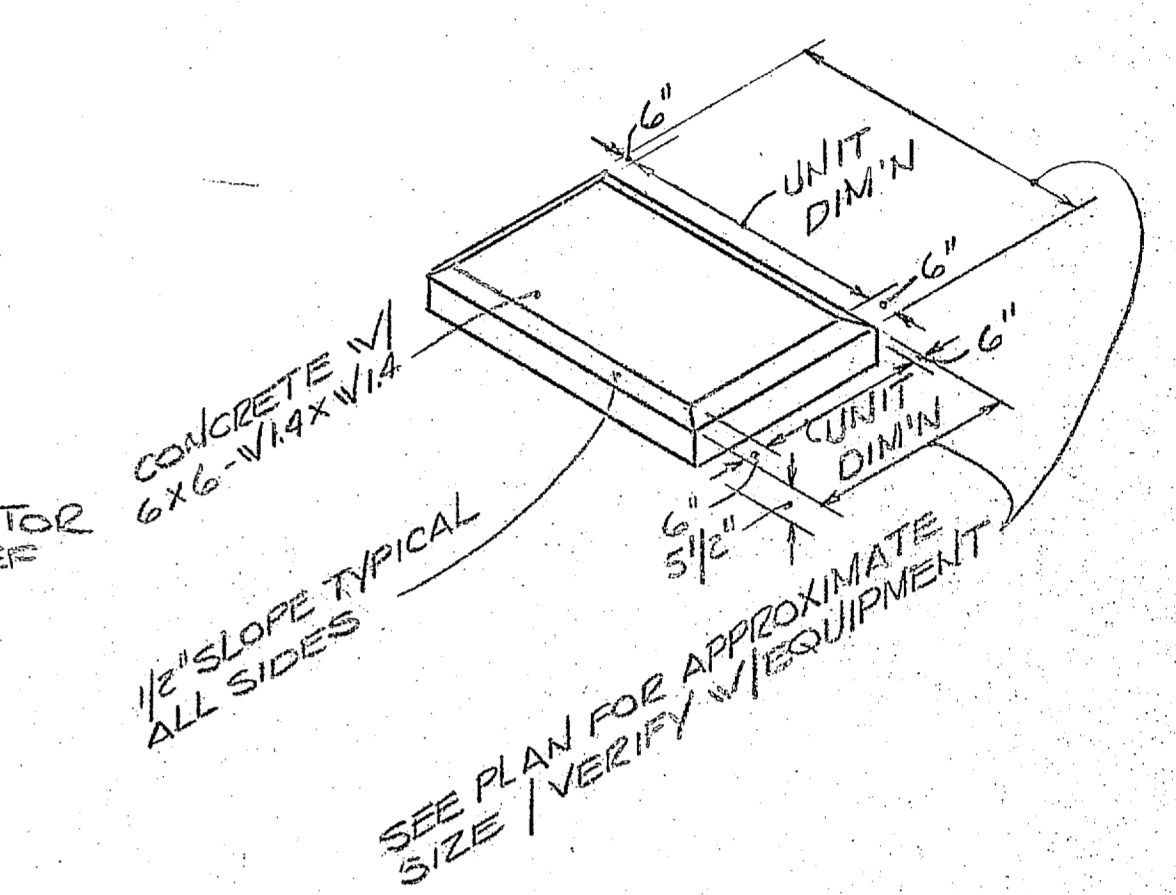


**BLDG. 33 SECOND FLOOR NEW WORK PLAN**  
SCALE 1/8"=1'-0"

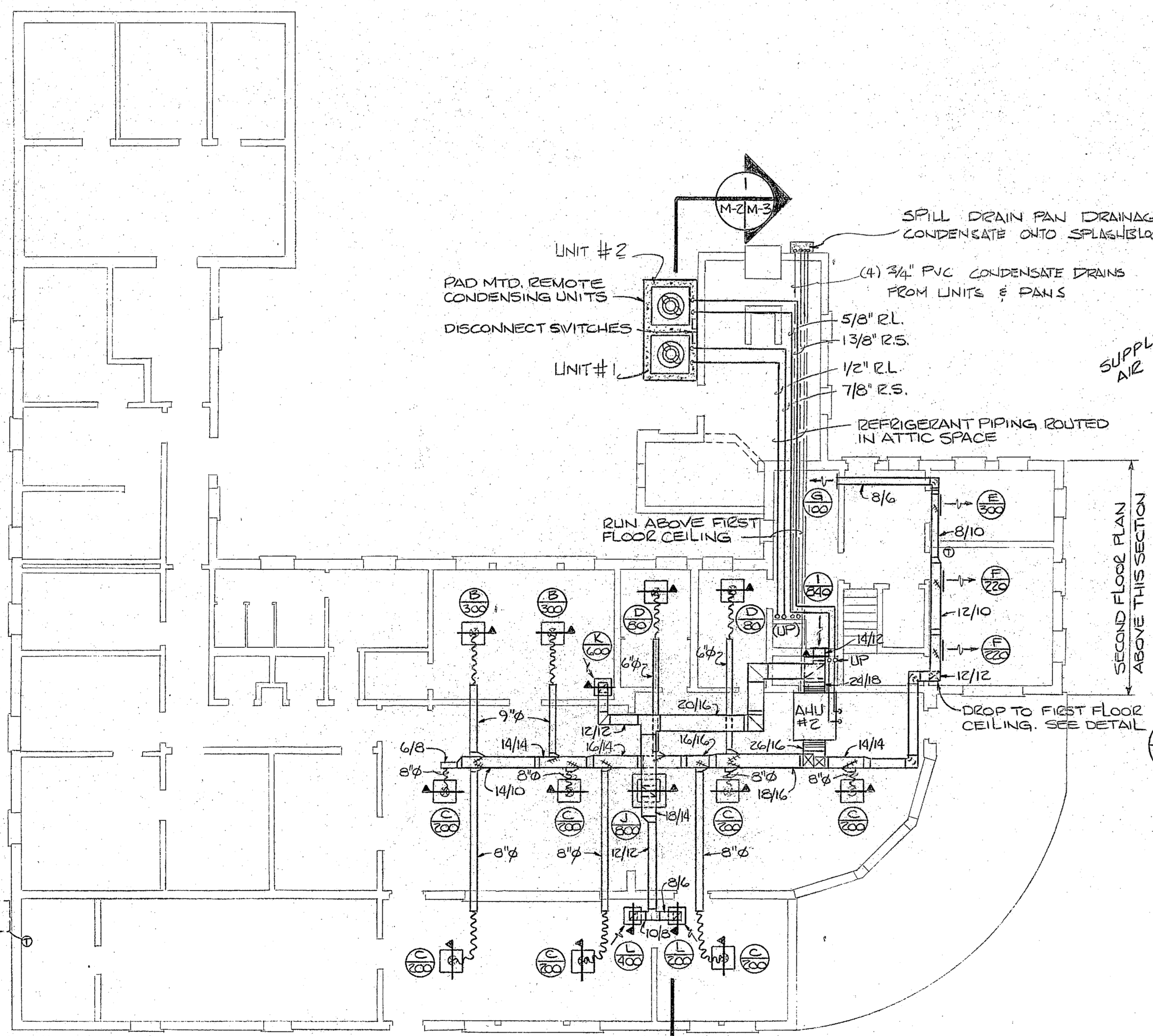
DIFFUSER, REGISTER & GRILLE SCHEDULE				
MARK ON PLAN	NECK SIZE CONNECTION	AIR PATTERN	TYPE OF MOUNTING	REMARKS
A	12x12	4-WAY	CEILING	PERFORATED CEILING SURFACE MOUNTED, EXTRUDED ALUMINUM W/O.S.D.
B	12"Ø	4-WAY	CEILING	
C	8"Ø	4-WAY	CEILING	
D	6"Ø	4-WAY	CEILING	
E	20x10	DOUBLE-DEFLECTION	SIDE DUCT	SIDEWALL REGISTER, EXTRUDED ALUMINUM, AIR FOIL HORIZONTAL & VERTICAL BLADES W/O.S.D.
F	14x10	DOUBLE-DEFLECTION	SIDE DUCT	
G	10x8	DOUBLE-DEFLECTION	DUCT END	
H	22x22	RETURN	CEILING	PERFORATED, EXTRUDED ALUMINUM, CEILING SURFACE MOUNTED
I	16x16	RETURN	SIDEWALL	EXTRUDED ALUMINUM FRAME, FIXED HORIZONTAL BLADES @ 45° ANGLE ON 3/4" CENTERS.
J	14x14	RETURN	CEILING	PERFORATED, EXTRUDED ALUMINUM, CEILING SURFACE MOUNTED
K	12x12	RETURN	CEILING	
L	10x10	RETURN	CEILING	



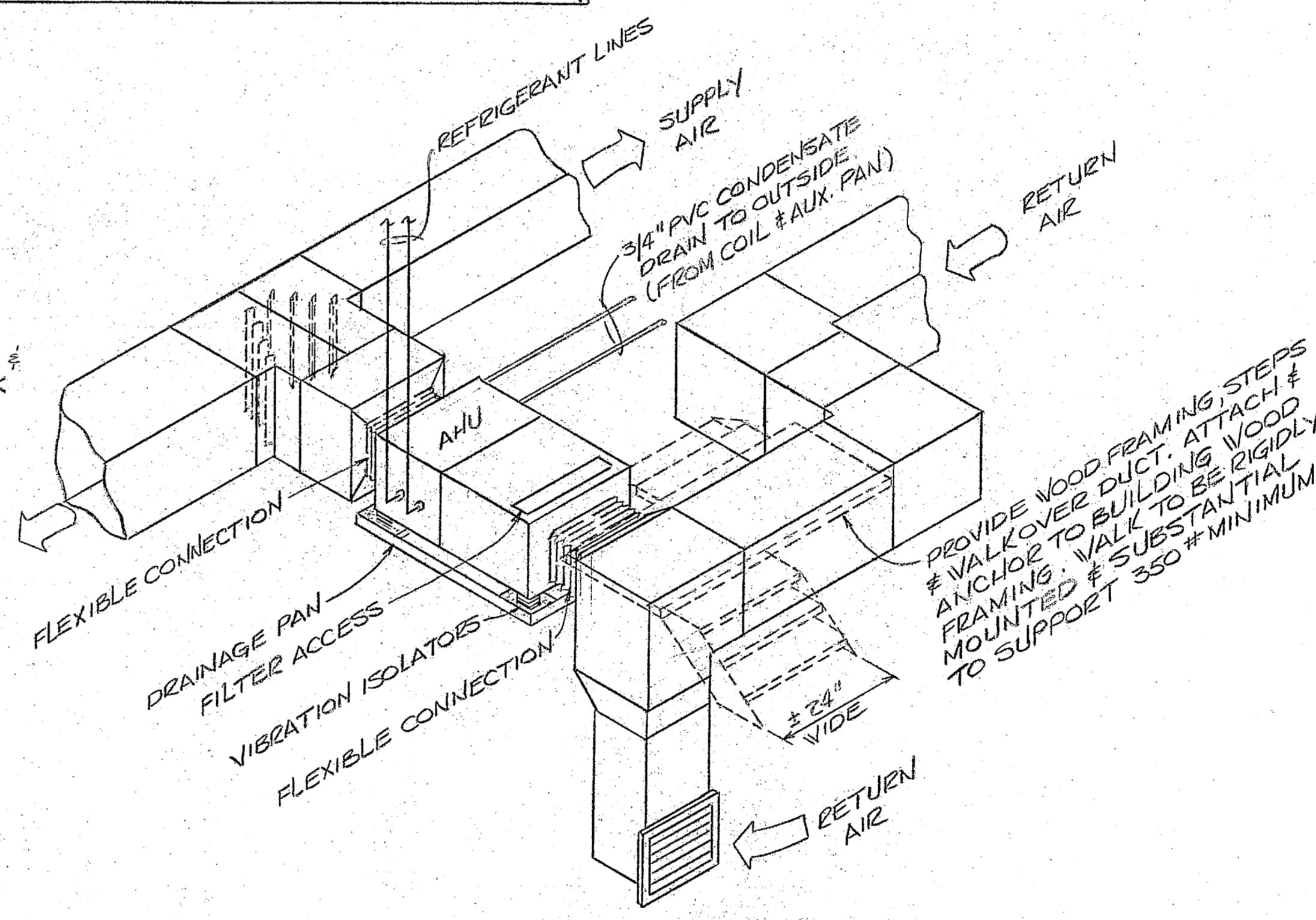
**REFRIGERANT PIPING SCHEMATIC**  
NO SCALE



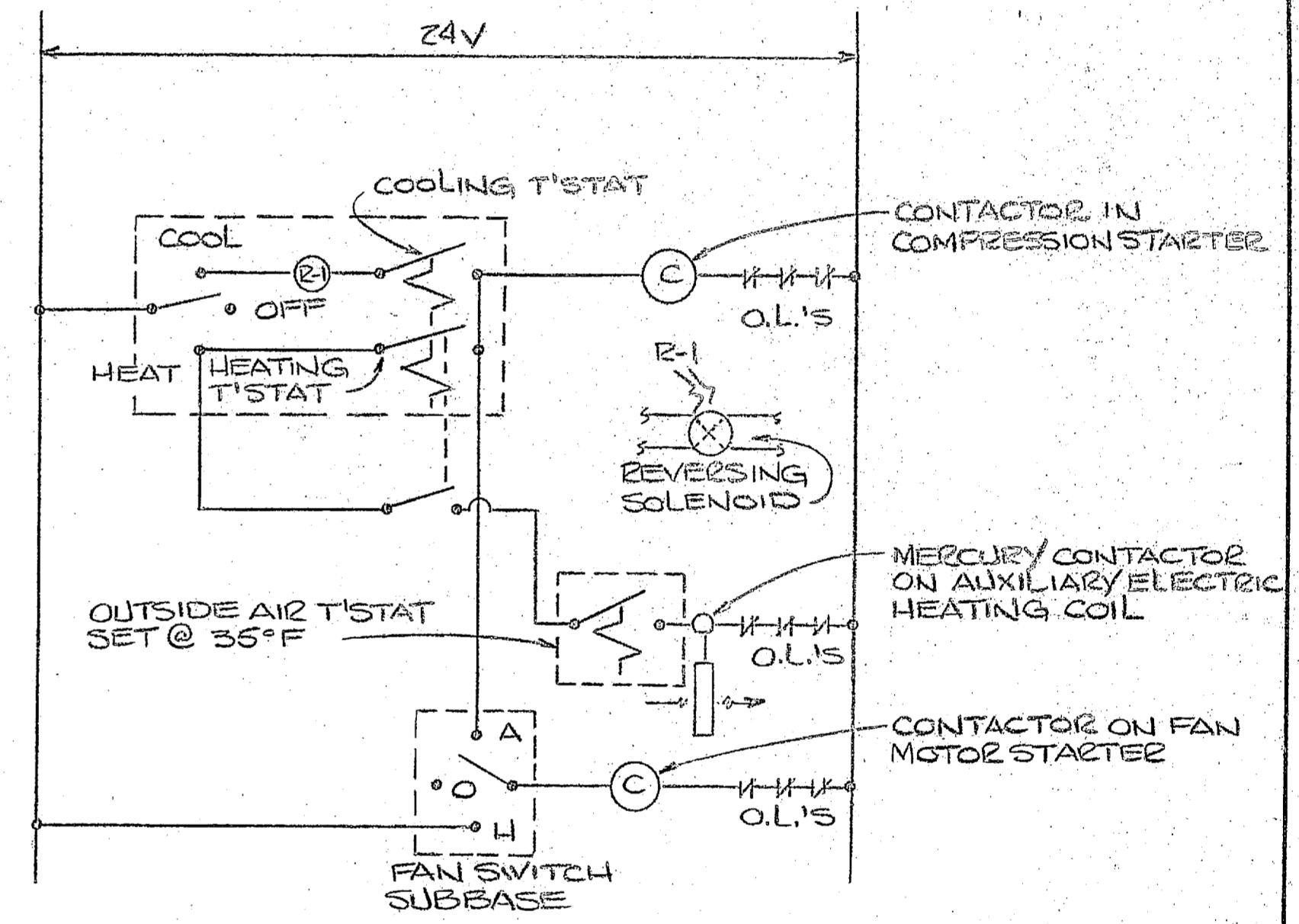
**TYPICAL OUTDOOR UNIT SUPPORT PAD**  
NO SCALE



**BLDG. 33 FIRST FLOOR NEW WORK PLAN**  
SCALE 1/8"=1'-0"



**DETAIL INDOOR AHU # 2 (UNIT #1 SIMILAR)**  
NO SCALE



**HEAT PUMP CONTROL DIAGRAM**  
NO SCALE

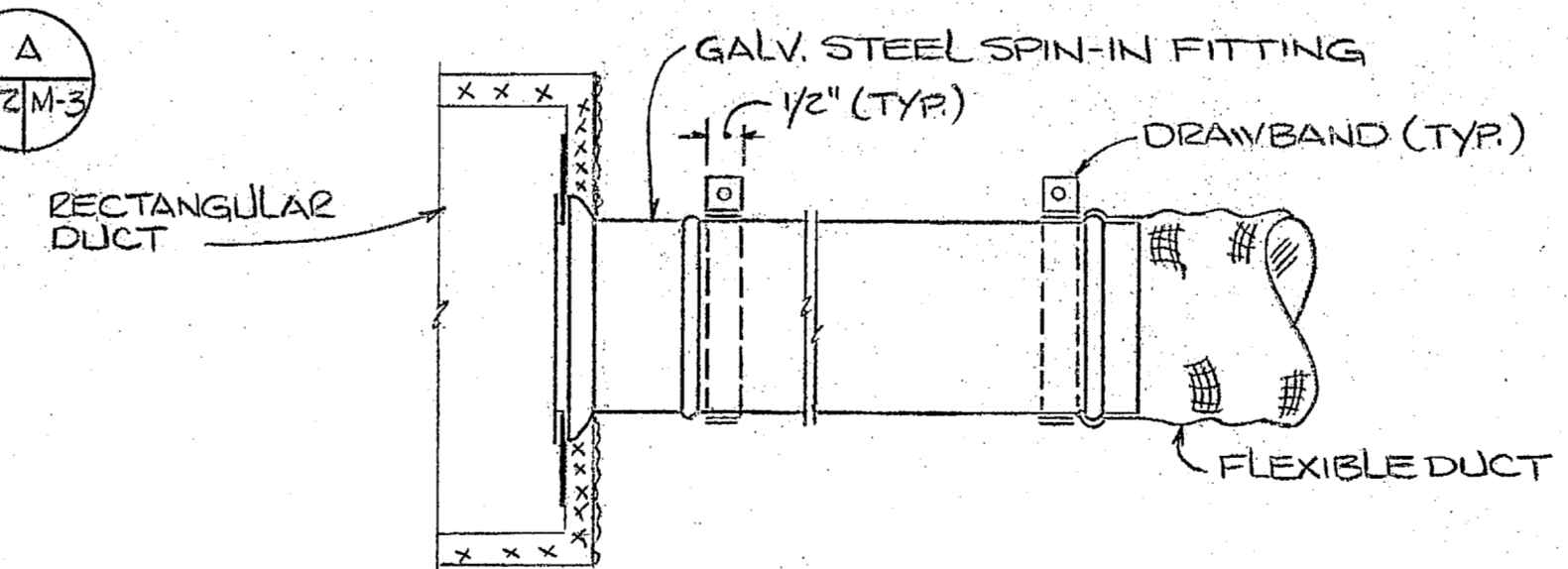
**SEQUENCE OF OPERATION: HEAT PUMPS**

MANUAL CHANGEOVER DUAL ELEMENT HEAT/COOL THERMOSTAT SHALL CYCLE COMPRESSOR IN HEATING OR COOLING MODE. "HEAT" OR "COOL" MODE SHALL BE ESTABLISHED BY A REVERSING SOLENOID DRIVEN BY A RELAY IN THERMOSTAT MODE SWITCH. INDOOR FAN SHALL CYCLE WITH COMPRESSOR WHEN FAN SWITCH SUBBASE IS IN "AUTO" POSITION. FAN SHALL RUN CONTINUOUSLY IN "ON" POSITION AND WILL SHUT DOWN IN "AUTO" POSITION WITH THERMOSTAT IN "OFF" SETTING. AUXILIARY ELECTRIC HEATING COIL SHALL BE BROUGHT ON BY OUTDOOR THERMOSTAT WHEN THERMOSTAT IS SET IN "HEAT" MODE (REFER TO SPECIFICATIONS FOR THERMOSTAT CHARACTERISTICS AND SETTINGS).

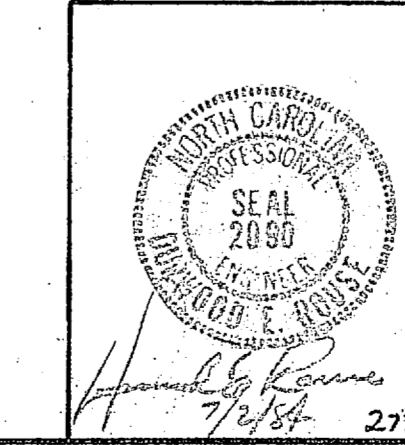
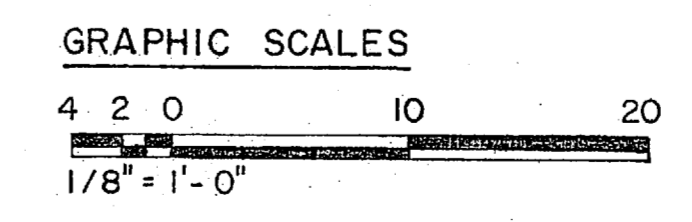
NOTE: SEE SHEET M-3 FOR LEGEND.

INSTALL (2) 6 KV STAGES OF ELECTRIC STRIP HEAT INTO EXISTING NOMINAL 2 TON HEAT PUMP. FIRST STAGE IS AVAILABLE FROM AMANA ON PRODUCTION CYCLE. SECOND STAGE IS AVAILABLE FROM STOCK AT LOCAL SUPPLIER IN WILMINGTON, N.C.

1ST STAGE 2ND STAGE  
AMANA SERIAL NO'S. P67-224-2C P67-225-1C  
INSTALL NEW 3 STAGE HEATING, ONE STAGE COOLING THERMOSTAT TO OPERATE ACCORDING TO SEQUENCE OF OPERATION DESCRIBED FOR NEW HEAT PUMPS (THIS SHEET).



**TYPICAL FLEXIBLE DUCT/RIGID DUCT CONNECTION**  
NO SCALE



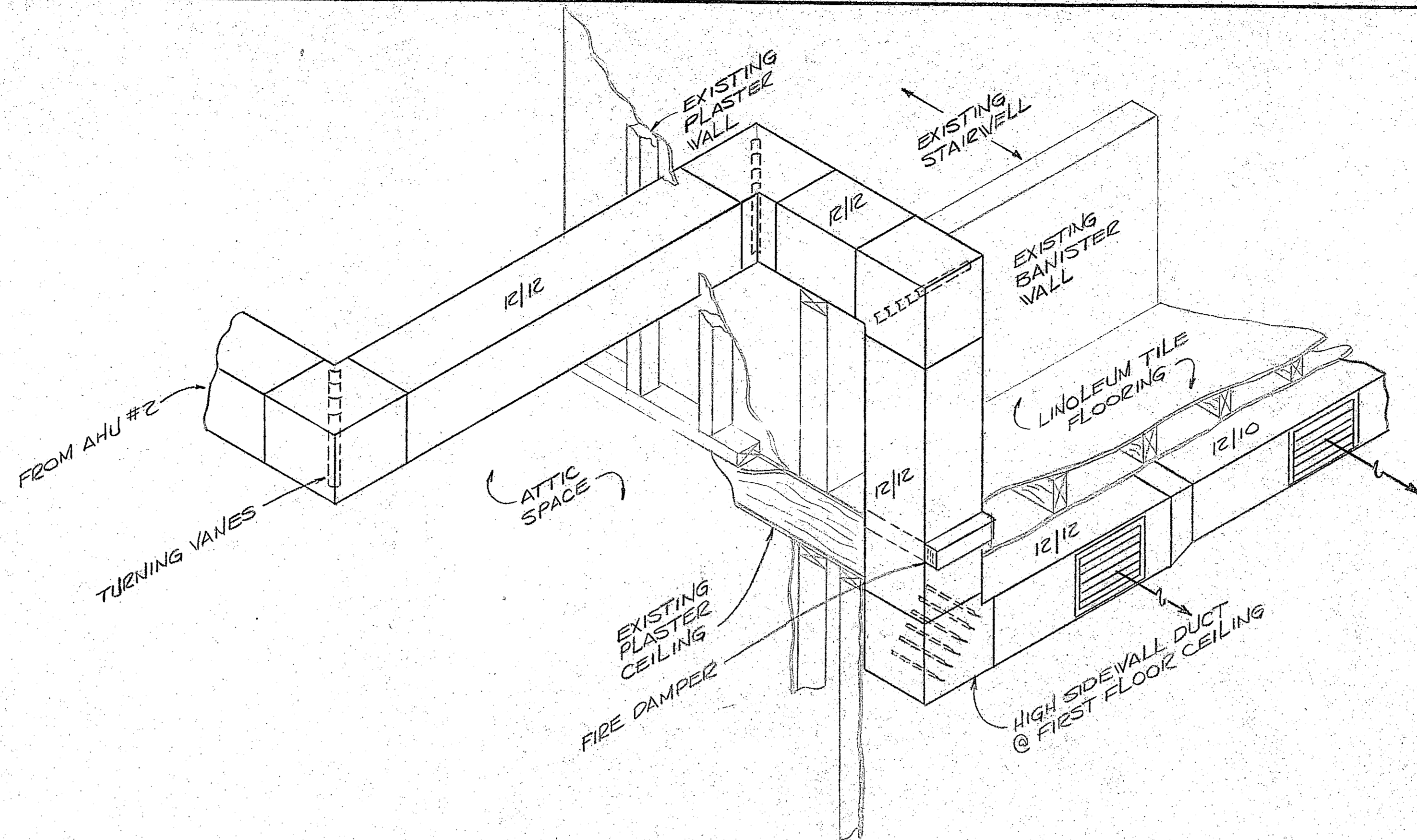
HENRY VON OESSEN & ASSOCIATES CONSULTING ENGINEERS & PLANNERS WILMINGTON, NORTH CAROLINA 28402		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. T.M.H.	DR. S.M.C.	CHK. D.E.R.	PROVIDE A/C FOR COMPUTERS BLDG. # 33 PROVIDE COOLING TOWER FOR BLDG. # 84
SUBMITTED BY: [Signature]	DESIGN DIR.	APPROVED: PWO OR DICG	HEATING & A/C FLOOR PLANS, SCHEDULES DETAILS & CONTROL DIAGRAMS BLDG. # 33
DATE	DATE	DATE	SIZE F
DATE	DATE	DATE	CODE IDENT. NO. 80091
SATISFACTORY TO:	DATE	DATE	NAVYAC DRAWING NO. 4100608
DATE	DATE	DATE	CONSTR. CONTR. NO. N62470-84-B-7849
DATE	DATE	DATE	SCALE: GRAPHIC SPEC. 05-84-7849 SHEET 3 OF 8

M-2



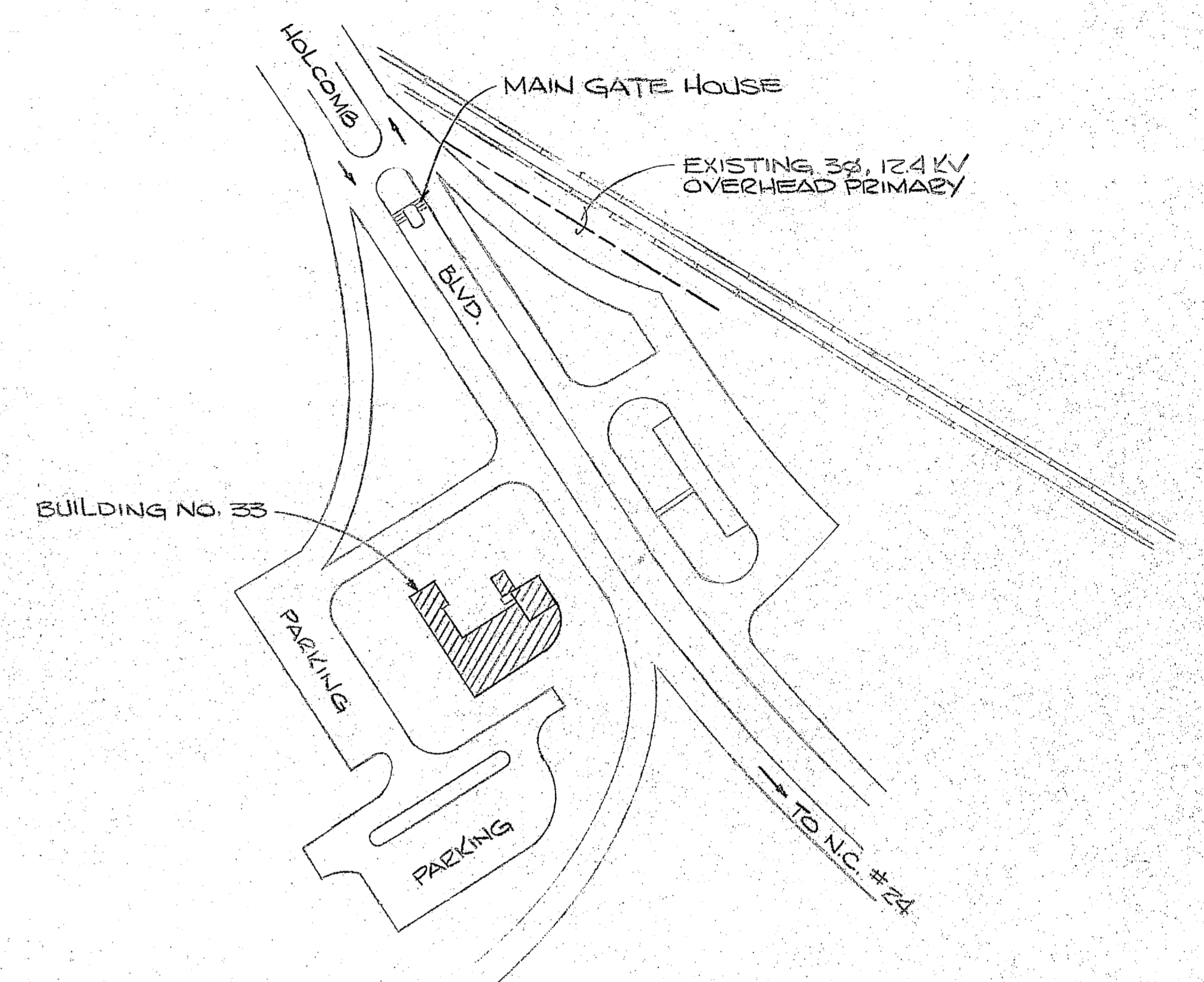
**LEGEND**

- PIPING TO BE REMOVED.
- CAST IRON RADIATORS TO BE REMOVED.
- PIPING UP & PIPING DOWN
- COLD WATER PIPING
- HOT WATER PIPING
- HOT WATER RECIRCULATING PIPING.
- SUPPLY AIR DIFFUSER
- RETURN AIR REGISTER
- EXTRACTOR
- FIRE DAMPER IN DUCT AT CEILING
- FLEXIBLE DUCT CONNECTION
- THERMOSTAT
- REFRIGERANT SUCTION
- REFRIGERANT LIQUID
- DIFFUSER (SEE SCHEDULE)  
CFM (SEE PLAN)
- CONNECT NEW TO EXISTING
- EXISTING WATER PIPING TO REMAIN
- GATE VALVE
- STRAINER
- TERMINATE DEMOLITION AT THIS POINT
- CHECK VALVE

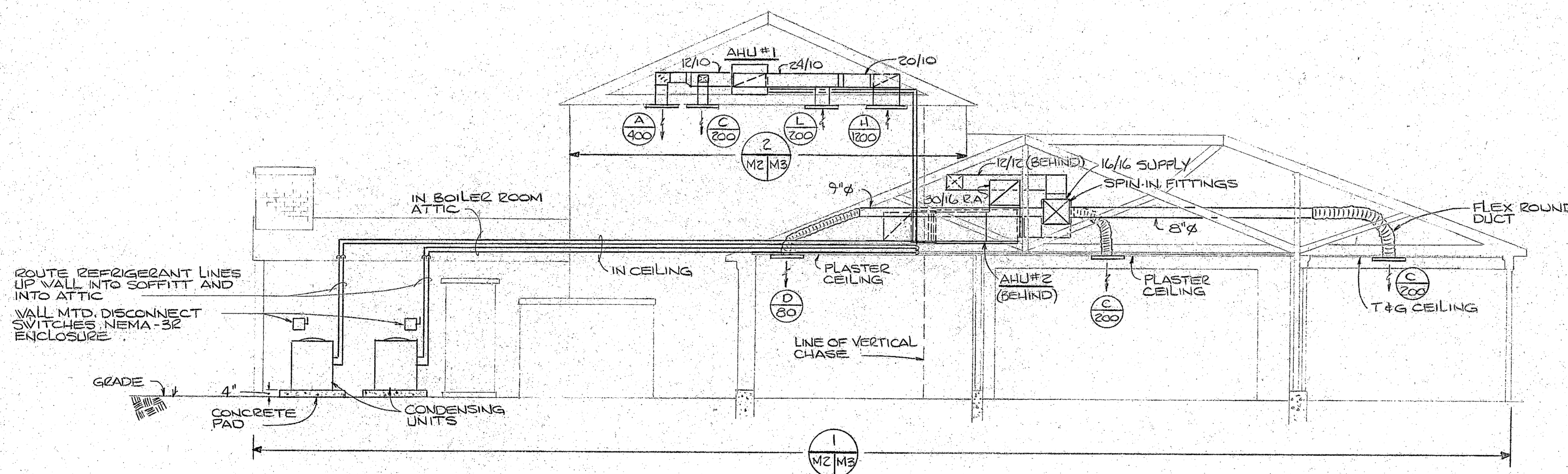


**DETAIL OF DUCT ROUTING TO FLOOR OFFICES**  
NO SCALE

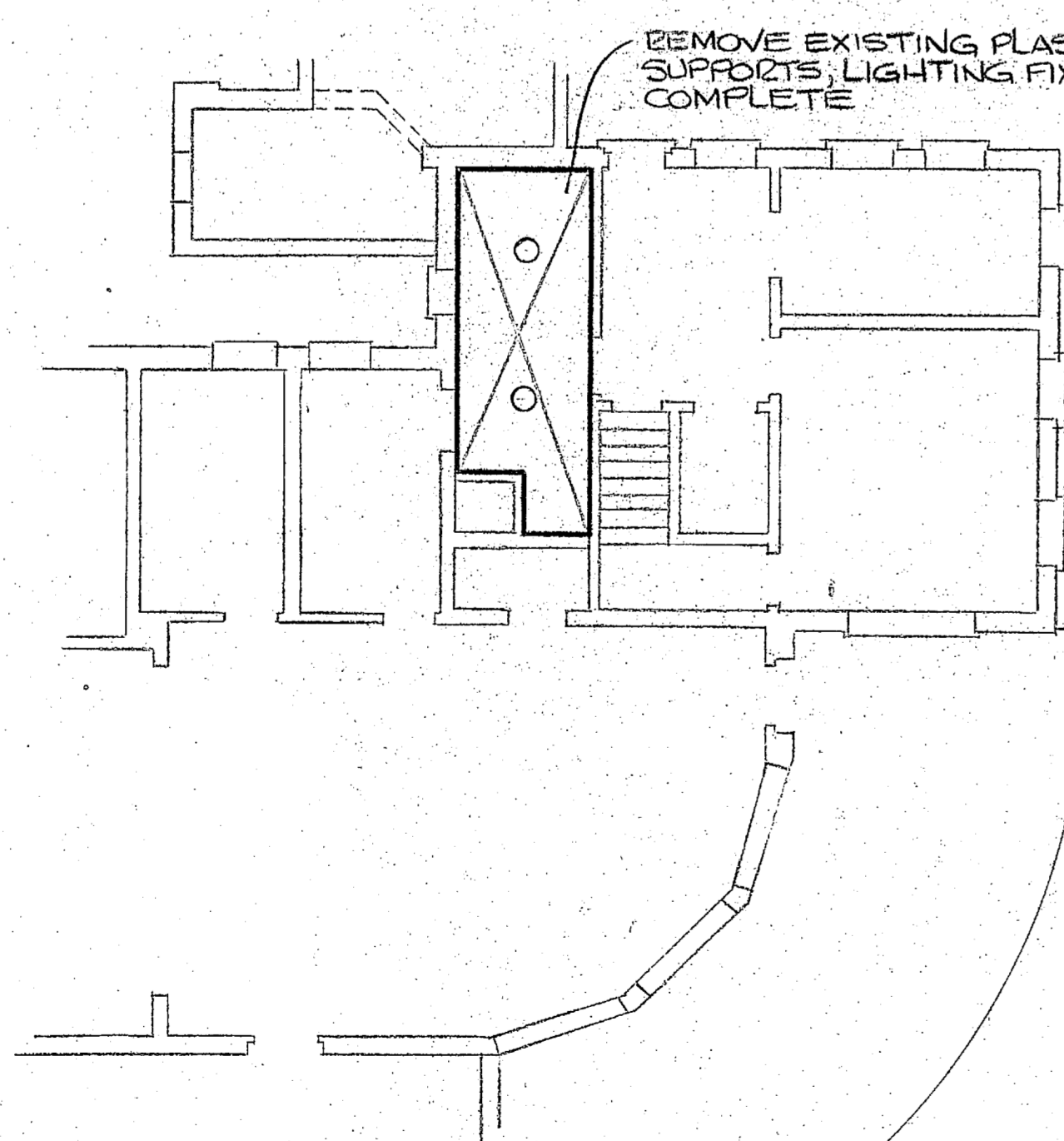
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



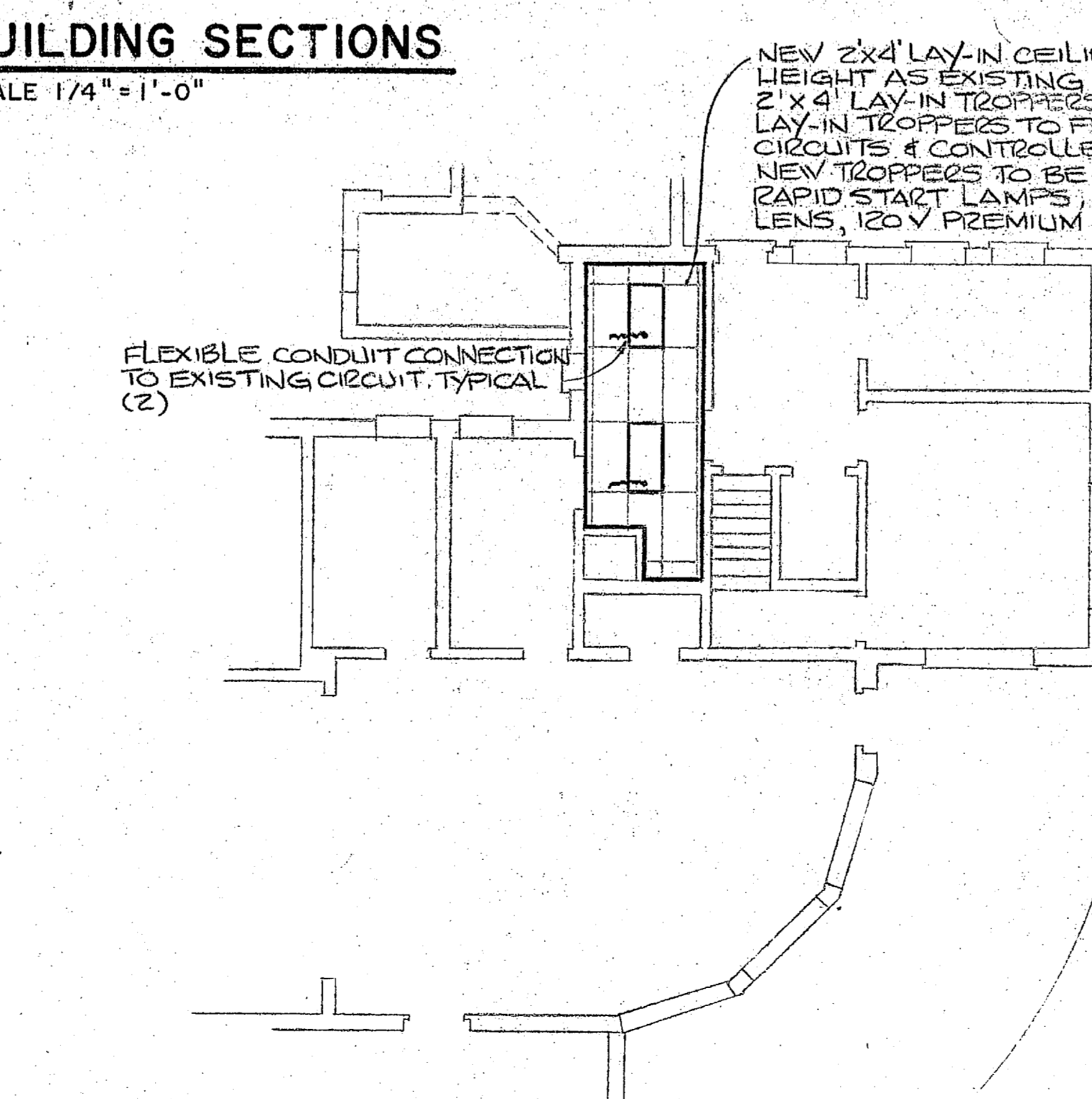
**SITE PLAN - BUILDING NO. 33**  
NO SCALE



**BUILDING SECTIONS**  
SCALE 1/4" = 1'-0"



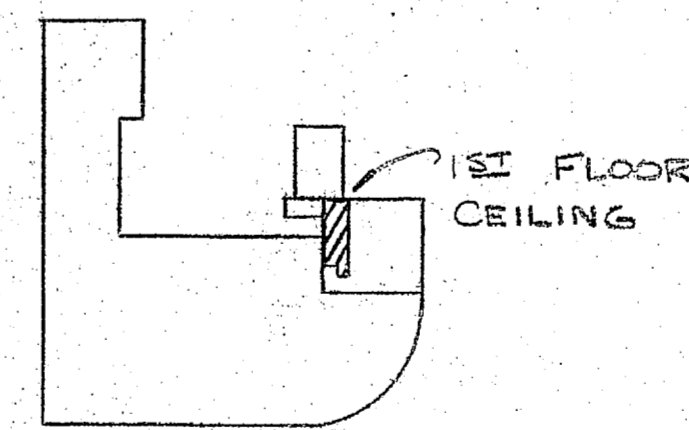
**1st FLOOR PLAN FOR CEILING DEMOLITION**  
SCALE 1/8" = 1'-0"



**1st FLOOR PLAN - NEW LAY-IN CEILING**  
SCALE 1/8" = 1'-0"

NEW 2'x4' LAY-IN CEILING @ APPROX. SAME HEIGHT AS EXISTING PLASTER CEILING w/ 2 NEW 2'x4' LAY-IN TROPPERS. RECONNECT NEW LAY-IN TROPPERS TO FEED FROM EXISTING CIRCUITS & CONTROLLED FROM EXIST. SWITCH. NEW TROPPERS TO BE NOMINAL 2'x4' w/ 2-40W. RAPID START LAMPS, 1/8" CLEAR ACRYLIC LENS, 100V PREMIUM HFF BALLAST.

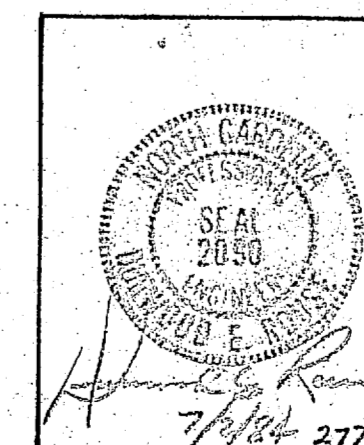
FLEXIBLE CONDUIT CONNECTION TO EXISTING CIRCUIT, TYPICAL (2)



**KEY PLAN FOR CEILING WORK**  
NO SCALE

GRAPHIC SCALES

4	2	0	10	20
1/8" = 1'-0"				
2	1	0	5	10
1/4" = 1'-0"				



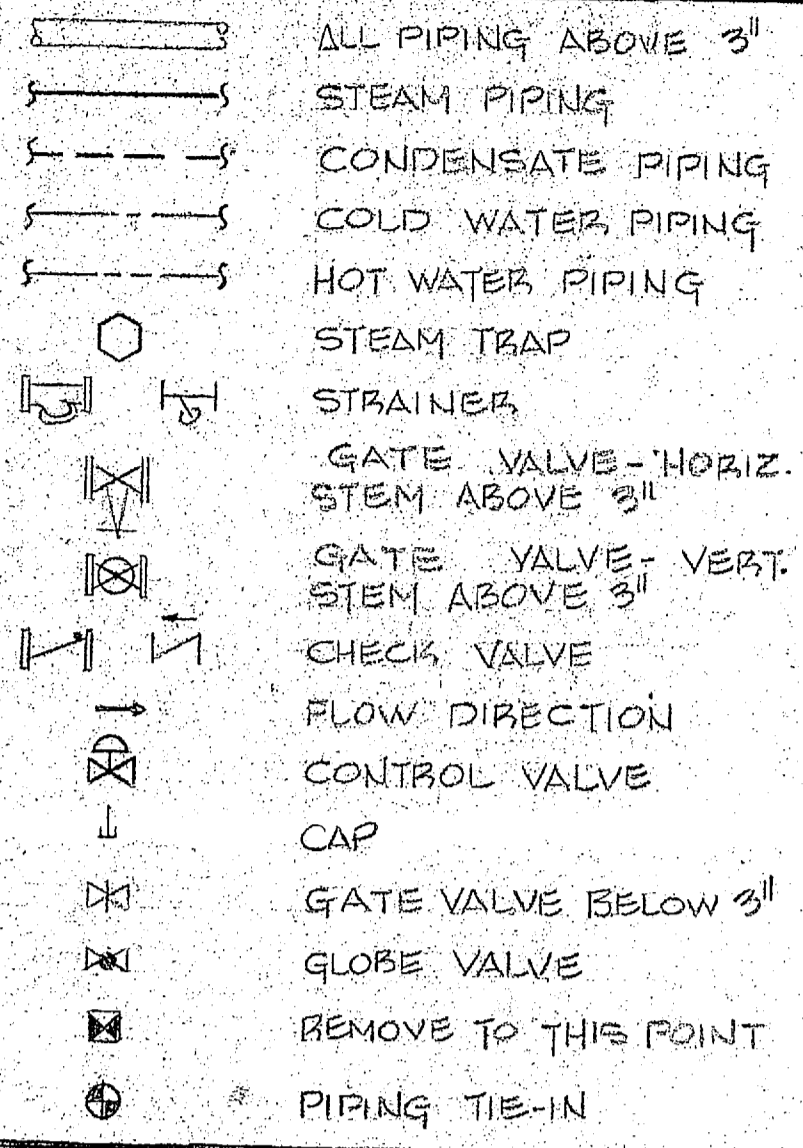
HENRY VON OESSEN & ASSOCIATES CONSULTING ENGINEERS & PLANNERS WILMINGTON, NORTH CAROLINA 28402		DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. T.M.H.	DR. S.M.C.	PROVIDE A/C FOR COMPUTERS BLDG.# 33 PROVIDE COOLING TOWER FOR BLDG.# 84	
CHK. D.E.R.	SUBMITTED BY: <i>[Signature]</i>	HEATING & A/C BUILDING SECTIONS, LEGEND & SITE PLAN BLDG.# 33	
DESIGN DIR.	APPROVED: PWO OR DIC	DATE	SIZE CODE IDENT. NO. 4100609
SATISFACTORY TO:	DATE	SIZE <b>F</b>	NAVAFAC DRAWING NO. 80091
SCALE: GRAPHIC		SPEC.	CONSTR. CONTR. NO. N62470-84-B-7849
			05-84-7849 SHEET 4 OF 8

**M-3**





**LEGEND-SHTS. M-4, ME-1**



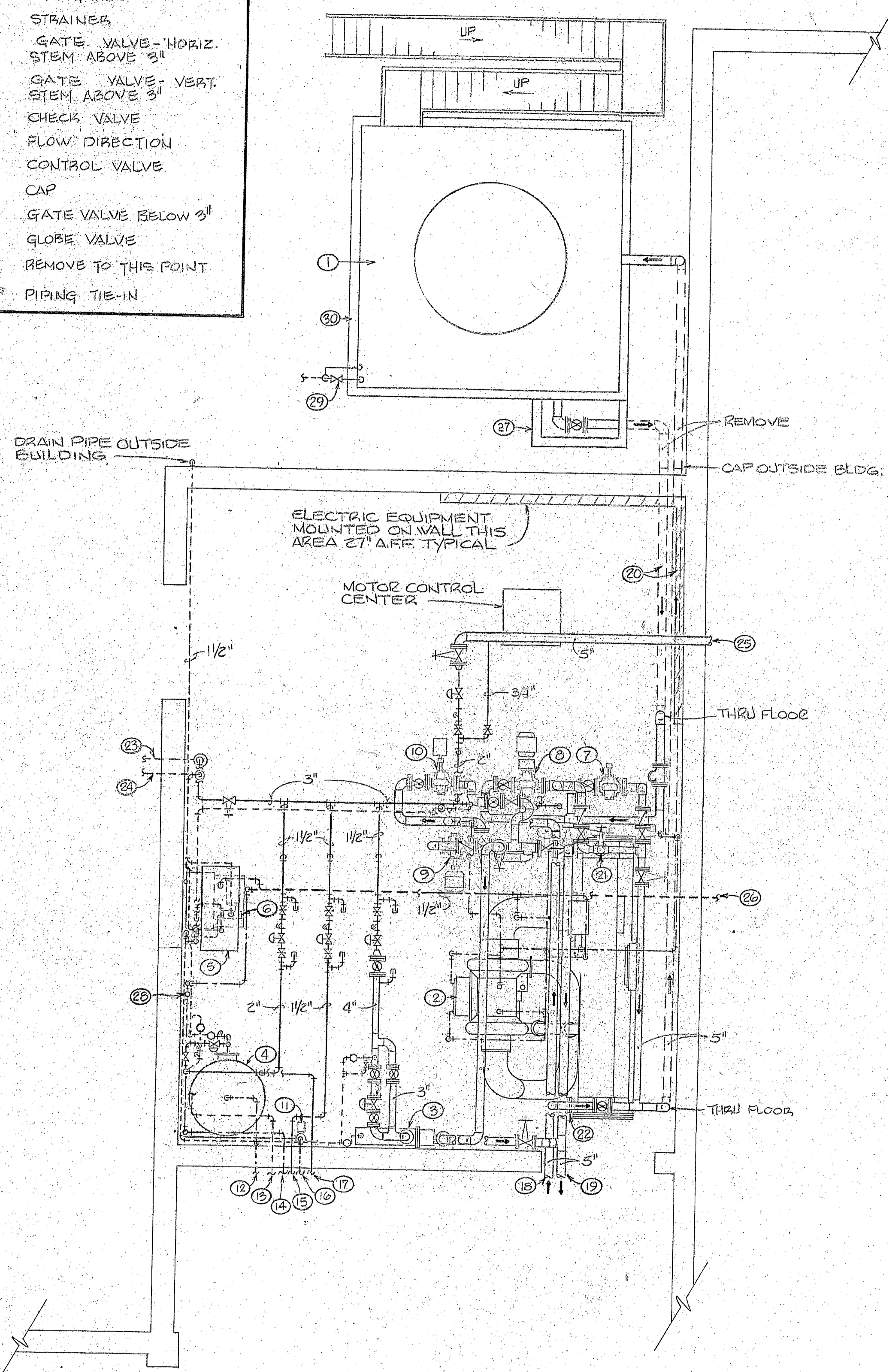
**KEYED NOTES THIS SHEET**

1. PRITCHARD COOLING TOWER TO BE COMPLETELY REMOVED INCLUDING STAIRS.
2. 114-TON TRANE CHILLER MODEL NO. 300 LB-HE-30 SERIAL NO. 932 TO REMAIN. COMPLETELY REMOVE ALL ASBESTOS INSULATION.
3. STEAM CONVERTOR FOR HEATING HOT WATER TO REMAIN. COMPLETELY REMOVE ALL ASBESTOS INSULATION. APPROXIMATE SIZE 15' 1 FT. DIAMETER X 4 FT. LONG.
4. STEAM HOT WATER GENERATOR TO REMAIN. COMPLETELY REMOVE ALL ASBESTOS INSULATION. APPROXIMATE SIZE 15' 4 FT. DIAMETER X 5 1/2 FT. HIGH.
5. FLASH TANK TO REMAIN. COMPLETELY REMOVE ALL ASBESTOS INSULATION. APPROXIMATE SIZE 15' 2 FT. X 4 1/2 FT.
6. CONDENSATE RECEIVER AND PUMP BELOW FLASH TANK ON FLOOR TO REMAIN.
7. CONDENSER PUMP #1 (4300 GPM). REMOVE.
8. CONDENSER PUMP #2 (4300 GPM) AND 15 HP MOTOR. REMOVE.
9. CHILLED WATER PUMP #1 TO REMAIN.
10. CHILLED WATER PUMP #2 TO REMAIN.
11. HOT WATER RECIRCULATION PUMP TO REMAIN.
12. HOT WATER (DOMESTIC) SUPPLY TO BUILDING.
13. CONDENSATE RETURN FROM BUILDING.
14. COLD WATER (DOMESTIC) SUPPLY TO BUILDING.
15. STEAM SUPPLY TO BUILDING.
16. HOT WATER (DOMESTIC) RECIRC. RETURN FROM BUILDING.
17. STEAM SUPPLY TO CAN WASH.
18. CHILLED WATER RETURN FROM BUILDING.
19. CHILLED WATER SUPPLY TO BUILDING.
20. CONDENSER WATER PIPING TO COOLING TOWER. ABANDON UNDER FLOOR. REMOVE ALL OTHER LOCATIONS.
21. CONDENSER INLET.
22. CONDENSER OUTLET.
23. INCOMING MAIN STEAM LINE.
24. LEAVING MAIN CONDENSATE LINE.
25. STEAM SUPPLY TO WAREHOUSE.
26. CONDENSATE RETURN FROM WAREHOUSE.
27. VALVE PIT. REMOVE.
28. COLD WATER SUPPLY UP THRU FLOOR.
29. 1 1/2" WATER FILL LINE FOR COOLING TOWER BASIN.
30. COOLING TOWER BASIN TO REMAIN.

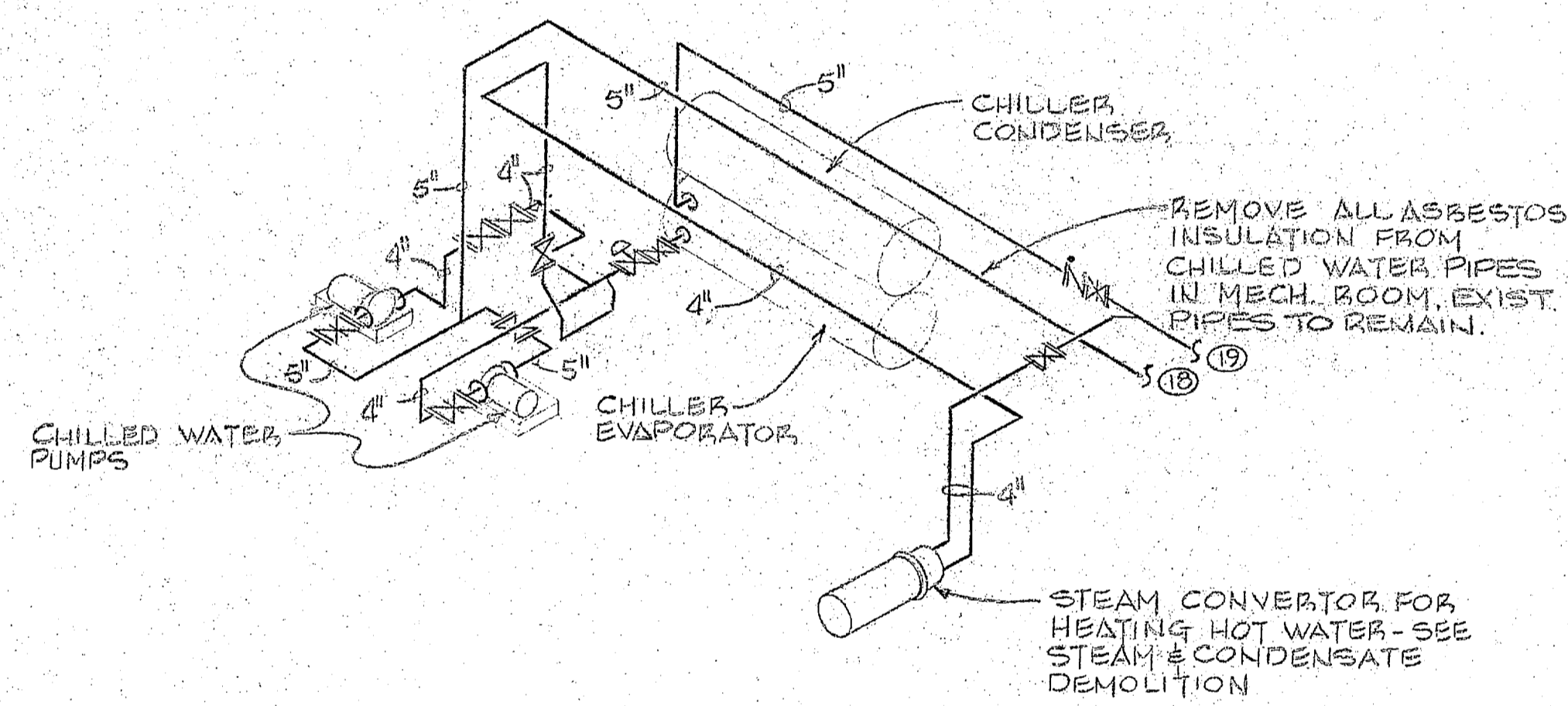
**GENERAL NOTES - BLDG. NO. 84**

1. REMOVE ALL INSULATION FROM ALL EXISTING STEAM, CONDENSATE, HOT WATER, CHILLED WATER, COLD WATER, ETC. PIPING INSIDE MECHANICAL EQUIPMENT ROOM. REPLACE WITH NEW INSULATION.
2. REMOVE ALL INSULATION FROM EXISTING CHILLER, STEAM TO HOT WATER CONVERTER, HOT WATER GENERATOR AND FLASH TANK, AND REPLACE WITH NEW INSULATION.
3. ALL INSULATION IS CONSIDERED ASBESTOS TYPE.
4. REMOVE EXISTING COOLING TOWER, INCLUDING STAIRS.
5. REMOVE ALL EXISTING CONDENSER WATER PIPING IN EQUIPMENT ROOM AND OUTSIDE EQUIPMENT ROOM TO COOLING TOWER. ABANDON CONDENSER WATER PIPING BELOW EQUIPMENT ROOM FLOOR. CAP ABANDONED PIPE ENDS.
6. INSTALL NEW CONDENSER WATER PIPING, CONDENSER WATER PUMPS, COOLING TOWER AND OTHER ASSOCIATED ITEMS NECESSARY TO INSTALL NEW COOLING TOWER AND CONDENSER WATER SYSTEM.
7. INSTALL NEW CONDENSER WATER TREATMENT SYSTEM.
8. CLEAN EXISTING CHILLER CONDENSER WATER TUBES WITH WIRE BRUSH AND/OR OTHER APPROVED METHOD. REMOVE ALL ACCUMULATED SCALE, CORROSION AND DEPOSITS FROM TUBES. DO NOT DAMAGE CONDENSER WATER TUBES.
9. CONNECT ALL CONTROLS FOR A COMPLETE OPERABLE SYSTEM.
10. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK.
11. CONTRACTOR SHALL HAVE THE OPTION TO REMOVE ANY PIPES WITH ASBESTOS INSULATION AND REPLACE WITH NEW PIPES AND INSULATION AS SPECIFIED, OR TO REMOVE ASBESTOS INSULATION ONLY, REUSE EXISTING PIPES AND REPLACE ASBESTOS INSULATION WITH NEW INSULATION.

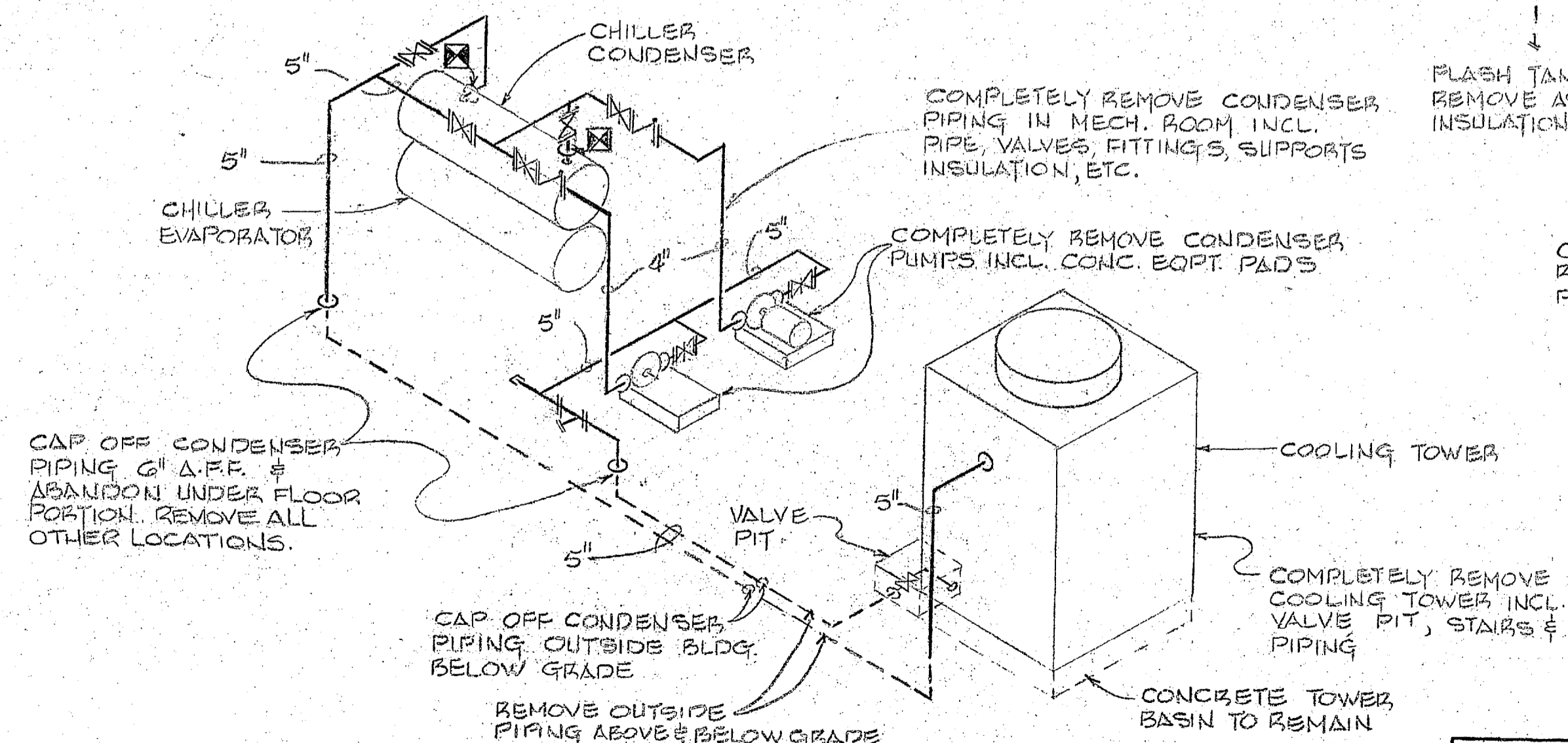
REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED



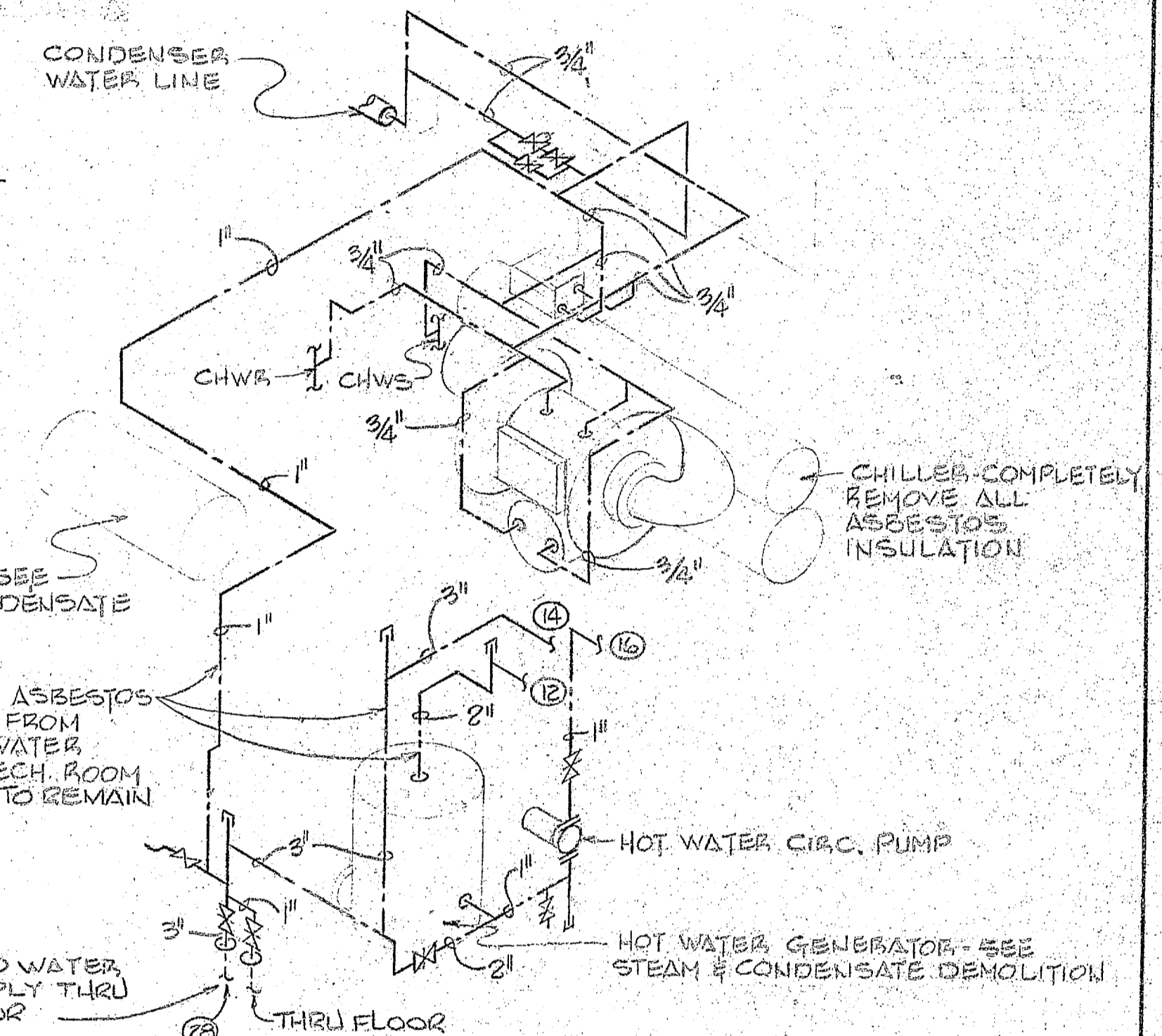
**MECHANICAL ROOM PLAN - EXISTING**  
SCALE: 1/4" = 1'-0"



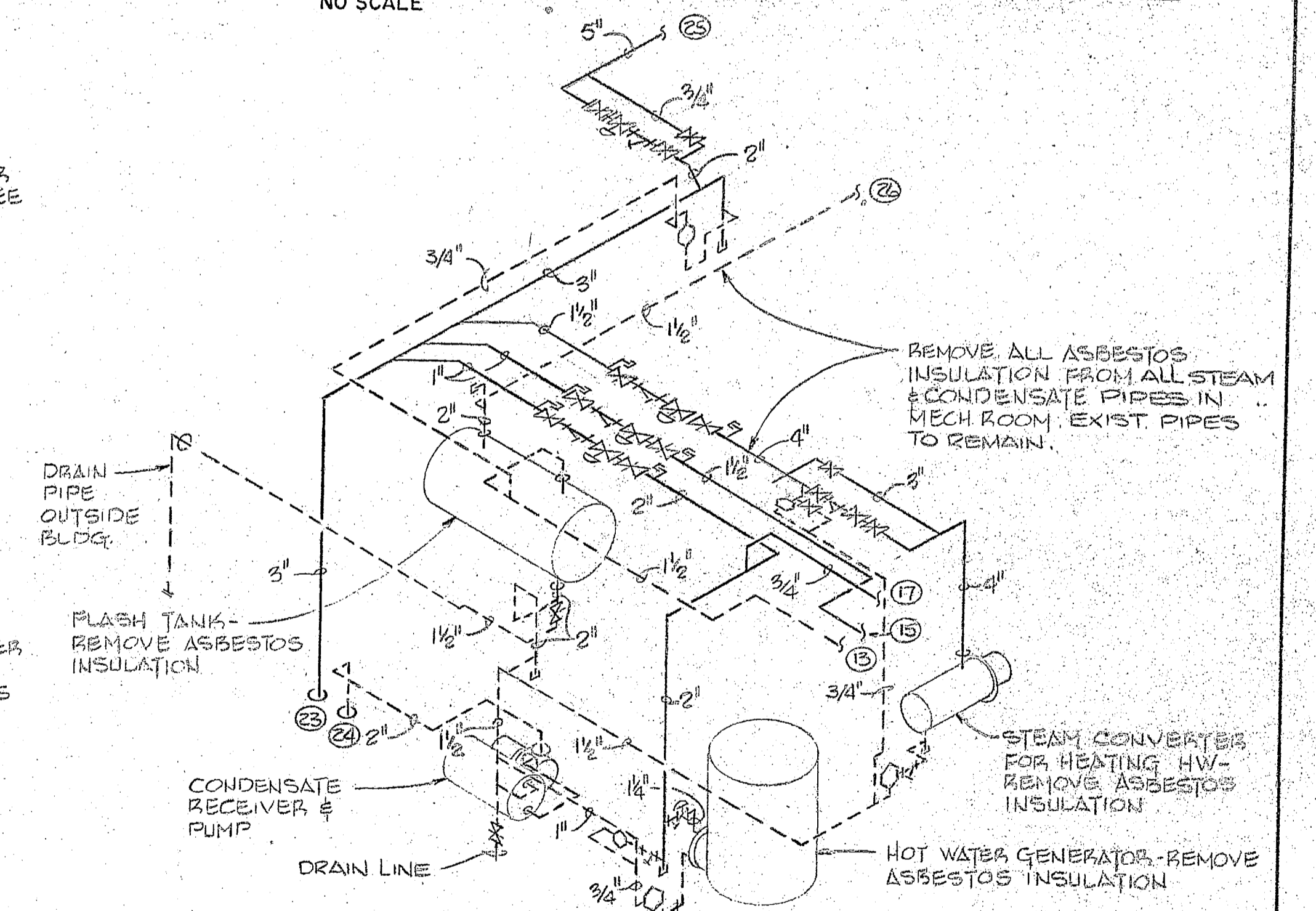
**CHILLED WATER PIPING - DEMOLITION**  
NO SCALE



**CONDENSER WATER PIPING - DEMOLITION**  
NO SCALE

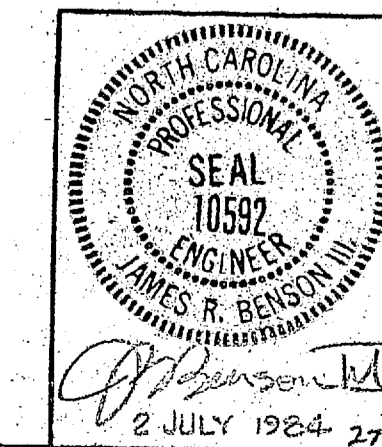
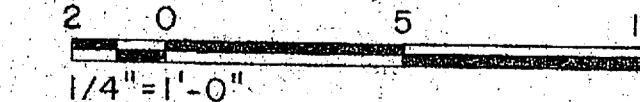


**COLD & HOT WATER PIPING - DEMOLITION**  
NO SCALE



**STEAM & CONDENSATE PIPING - DEMOLITION**  
NO SCALE

**GRAPHIC SCALES**



<b>M-4</b>	
HENRY VON OESSEN & ASSOCIATES CONSULTING ENGINEERS & PLANNERS WILMINGTON, NORTH CAROLINA 28402	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. J.R.B. DR. J.R.B. CHK. D.E.R. SUBMITTED BY: <i>James R. Benning</i> DESIGN DIR. APPROVED: PWD OR OIC SATISFACTORY TO:	PROVIDE A/C FOR COMPUTERS BLDG. # 33 PROVIDE COOLING TOWER FOR BLDG. # 84 BLDG. # 84 COOLING TOWER - EXISTING & DEMOLITION NAVFAC DRAWING NO. 4100610 CONSTR. CONTR. NO. N62470-84-B-7849 SCALE: GRAPHIC SPEC. 05-84-7849 SHEET 5 OF 8
DATE: 2 JULY 1984	DATE: 2 JULY 1984



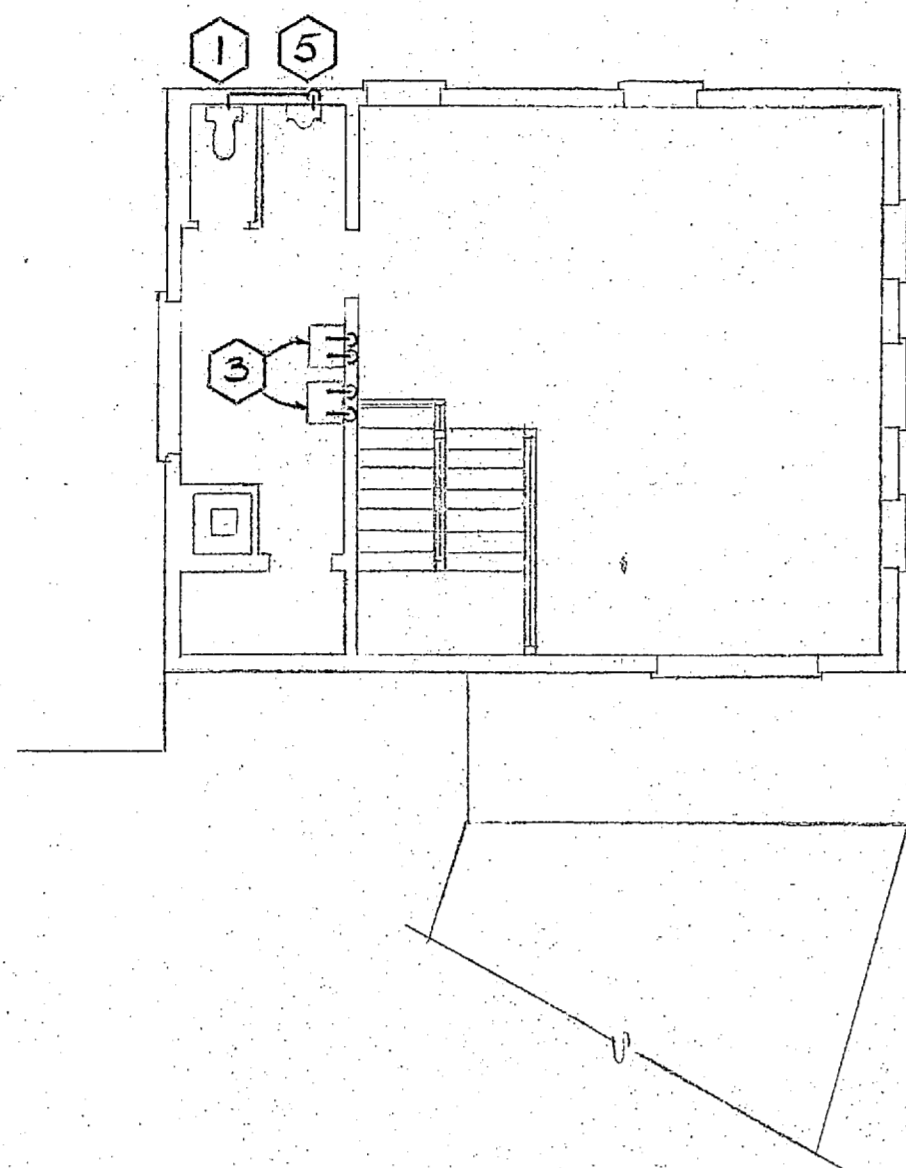




REVISIONS			
SYN.	DESCRIPTION	DATE	APPROVED

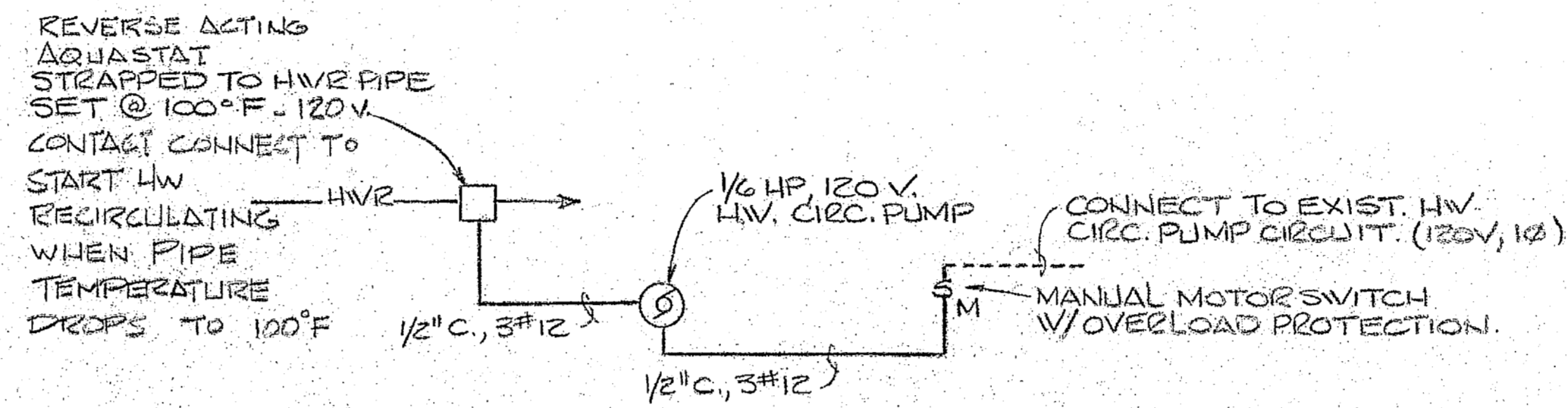
**NEW WORK KEYED NOTES**

- ① EXISTING FLUSH VALVE WATER CLOSET TO REMAIN.
- ② EXISTING TANK TYPE WATER CLOSET TO REMAIN.
- ③ EXISTING LAVATORY TO REMAIN.
- ④ EXISTING TABLE TOP SINK TO REMAIN.
- ⑤ EXISTING FLUSH VALVE URINAL TO REMAIN.
- ⑥ EXISTING STALL SHOWER TO REMAIN.
- ⑦ EXISTING ELECTRIC WATER COOLER TO REMAIN.
- ⑧ EXISTING HW HEATER TO REMAIN.

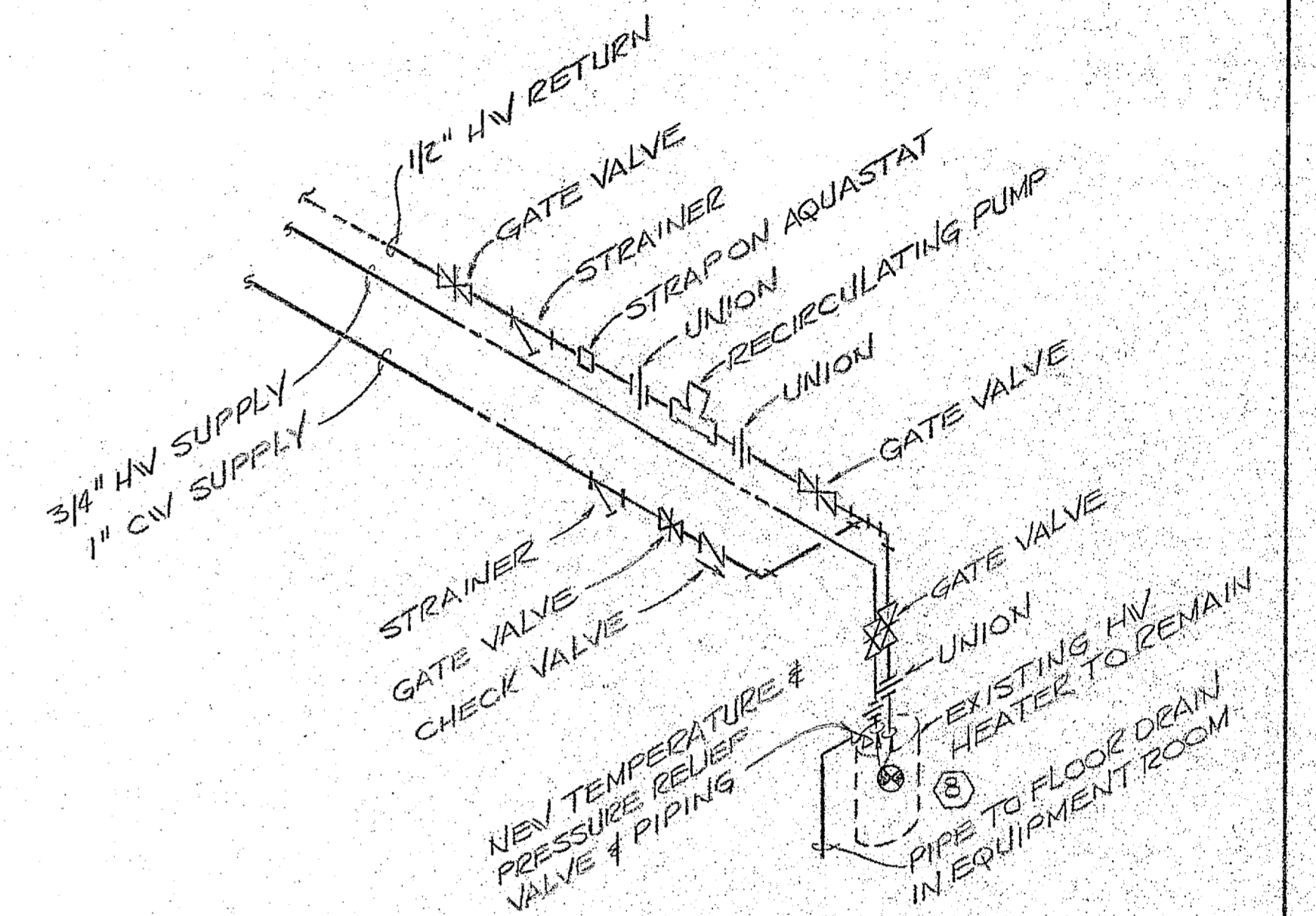


**BLDG. 33 SECOND FLOOR NEW WORK PLAN**

SCALE 1/8"=1'-0"

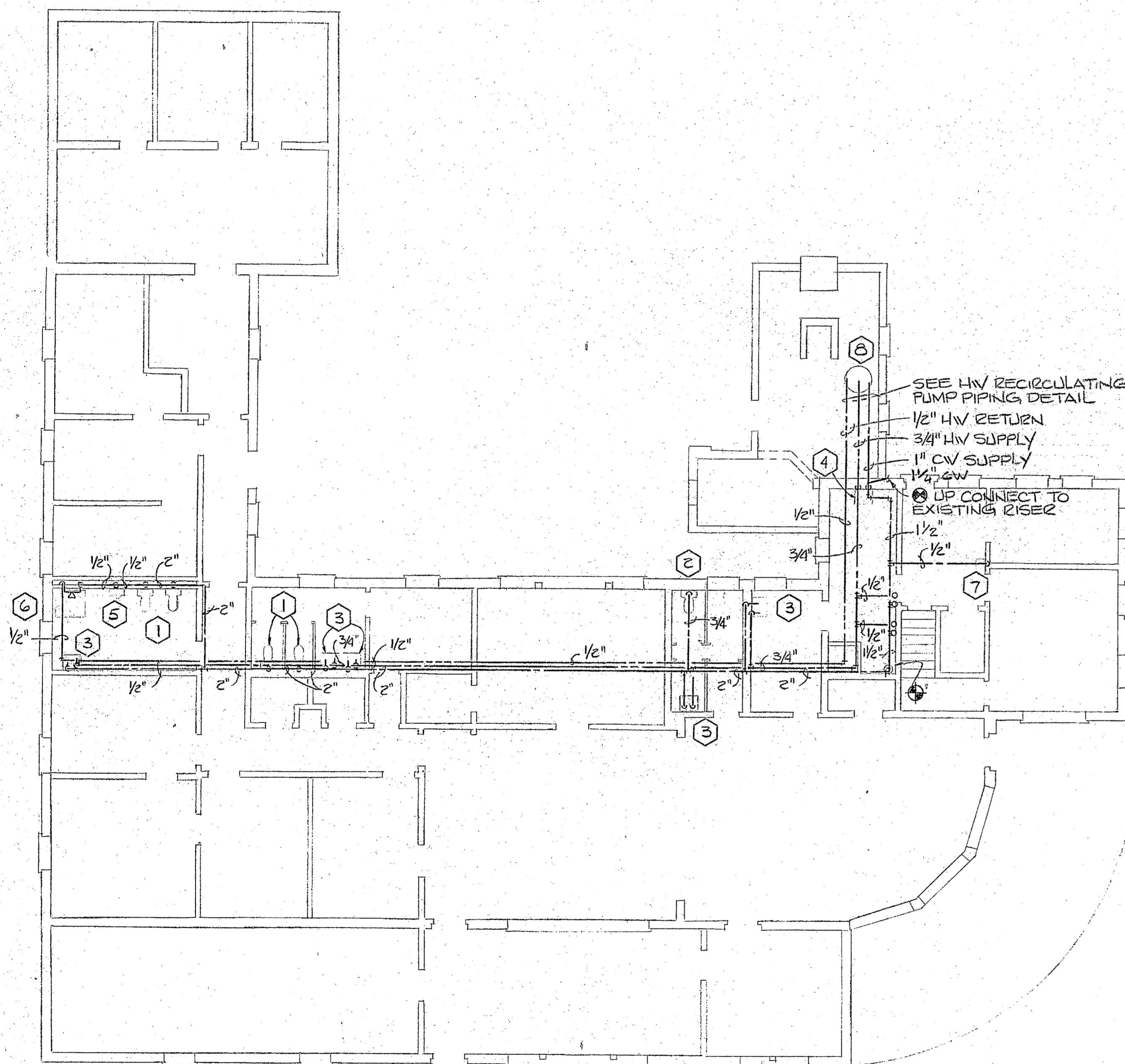


**RECIRCULATING HOT WATER CONTROL DIAGRAM**



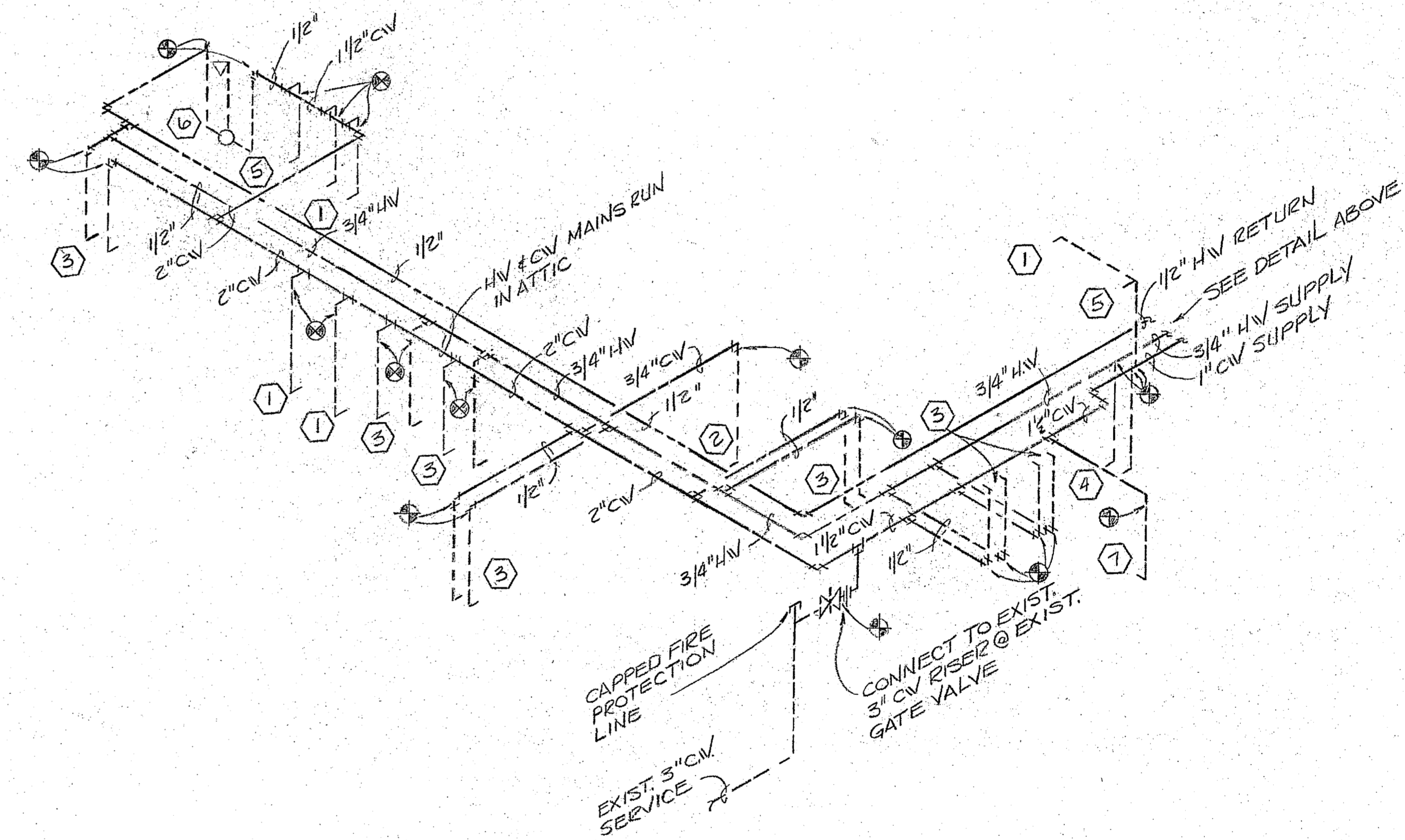
**HOT WATER RECIRCULATING PUMP PIPING DETAIL**

NO SCALE



**BLDG. 33 FIRST FLOOR NEW WORK PLAN**

SCALE 1/8"=1'-0"

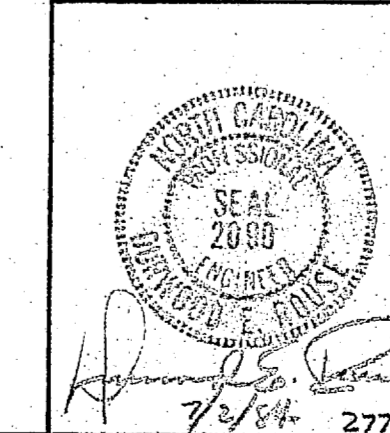
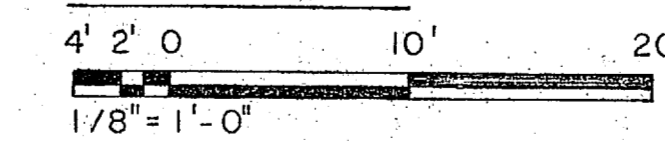


**NEW DOMESTIC WATER RISER**

NO SCALE

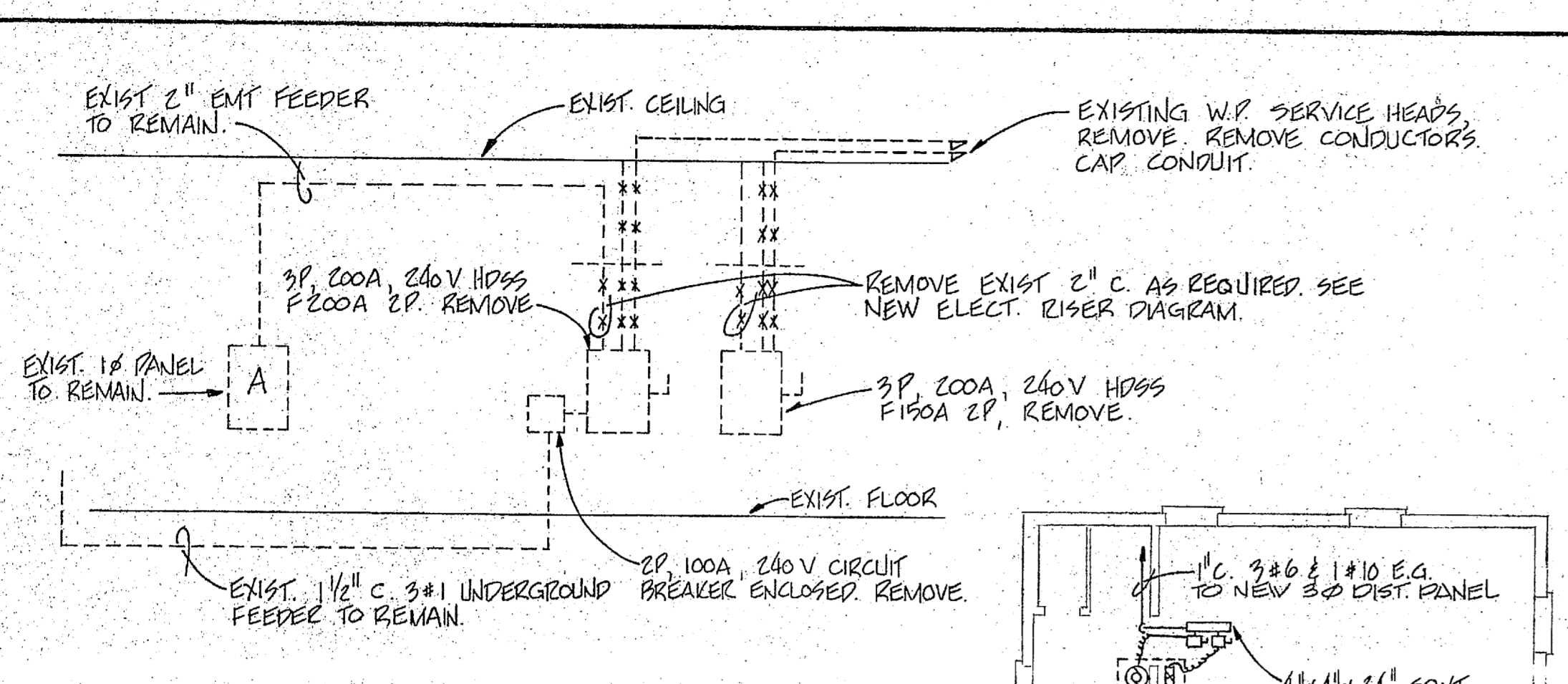
NOTE: SEE SHEET M-3 FOR LEGEND.

**GRAPHIC SCALES**

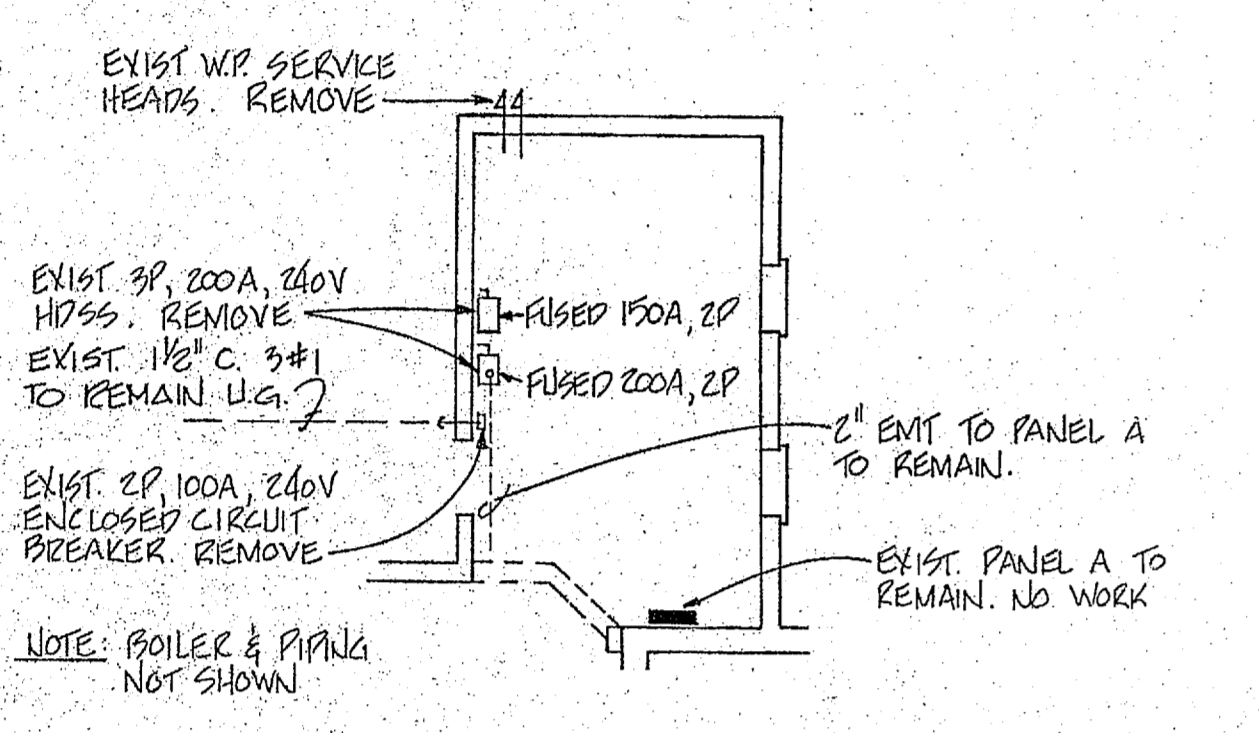


HENRY VON OESSEN & ASSOCIATES CONSULTING ENGINEERS & PLANNERS WILMINGTON, NORTH CAROLINA 28402		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA	
DES. T.M.H.	DR. S.M.C.	PROVIDE A/C FOR COMPUTERS BLDG # 33 PROVIDE COOLING TOWER FOR BLDG # 84	
CHK. D.E.R.	SUBMITTED BY: <i>[Signature]</i>		
DESIGN DIR.	PLUMBING FLOOR PLANS BLDG # 33 WATER RISER & DETAILS		
APPROVED: PWD OR DIC	DATE	SIZE	CODE IDENT. NO.
		<b>F</b>	<b>80091</b>
SATISFACTORY TO:	DATE	NAVFAC DRAWING NO. 4100612 CONSTR. CONTR. NO. N62470-84-B-7849	
		SCALE: GRAPHIC	SPEC. 05-84-7849 SHEET 7 OF 8

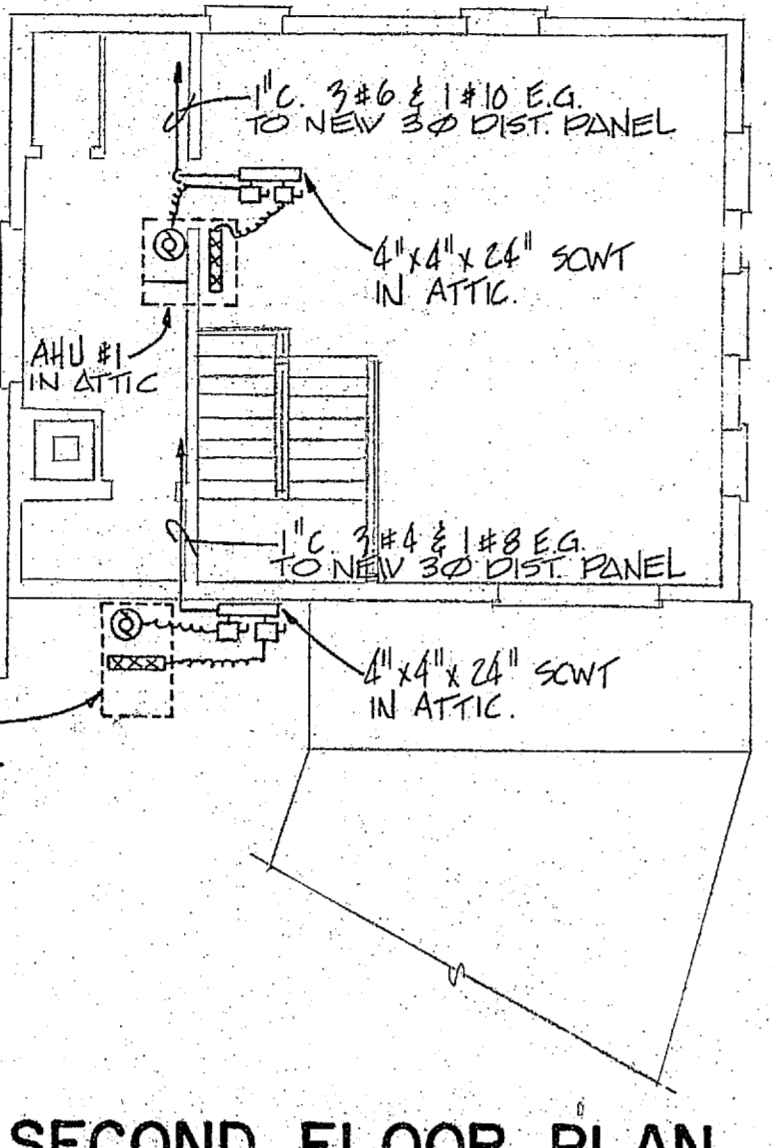




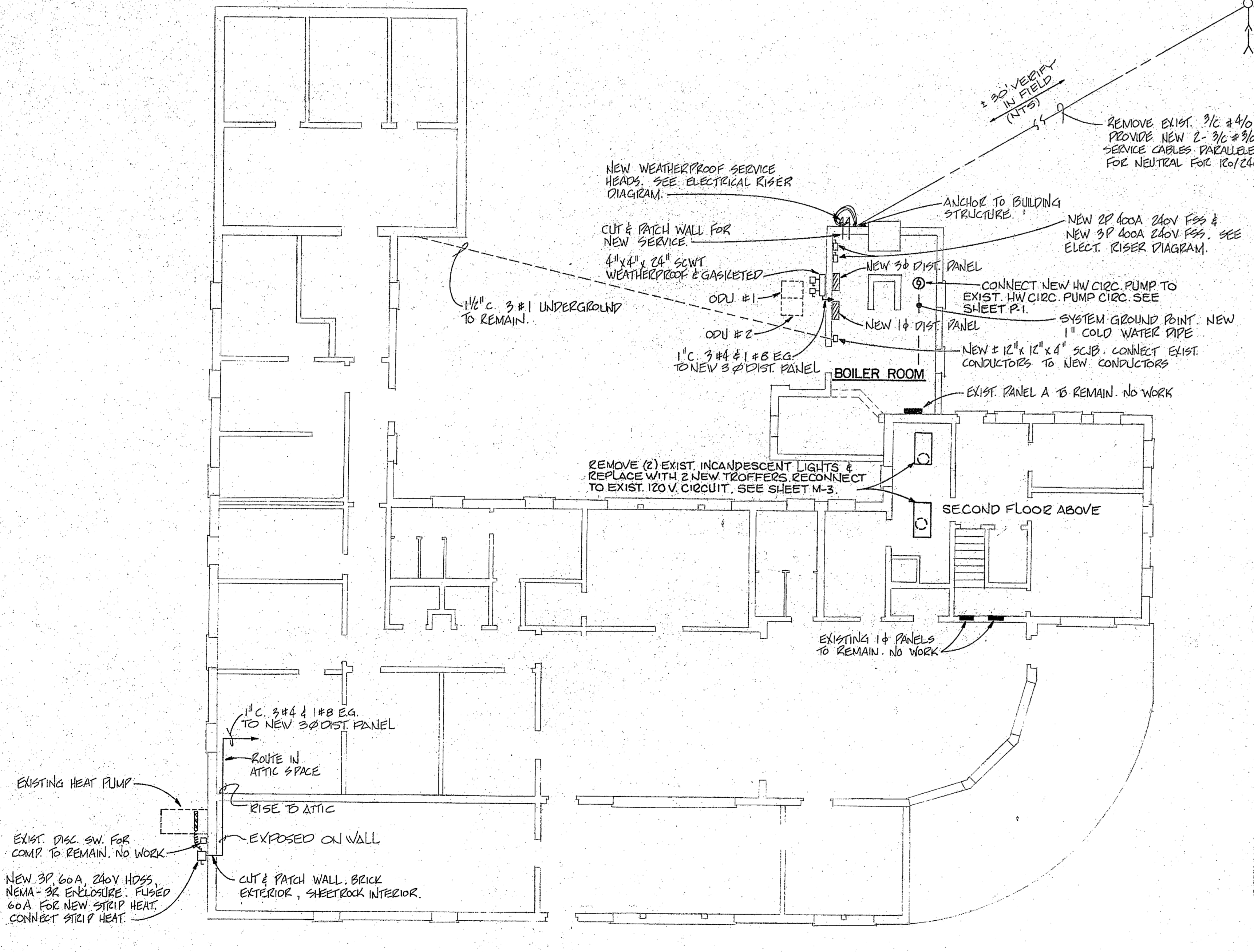
**ELECTRICAL RISER DIAGRAM-EXISTING**  
NOT TO SCALE



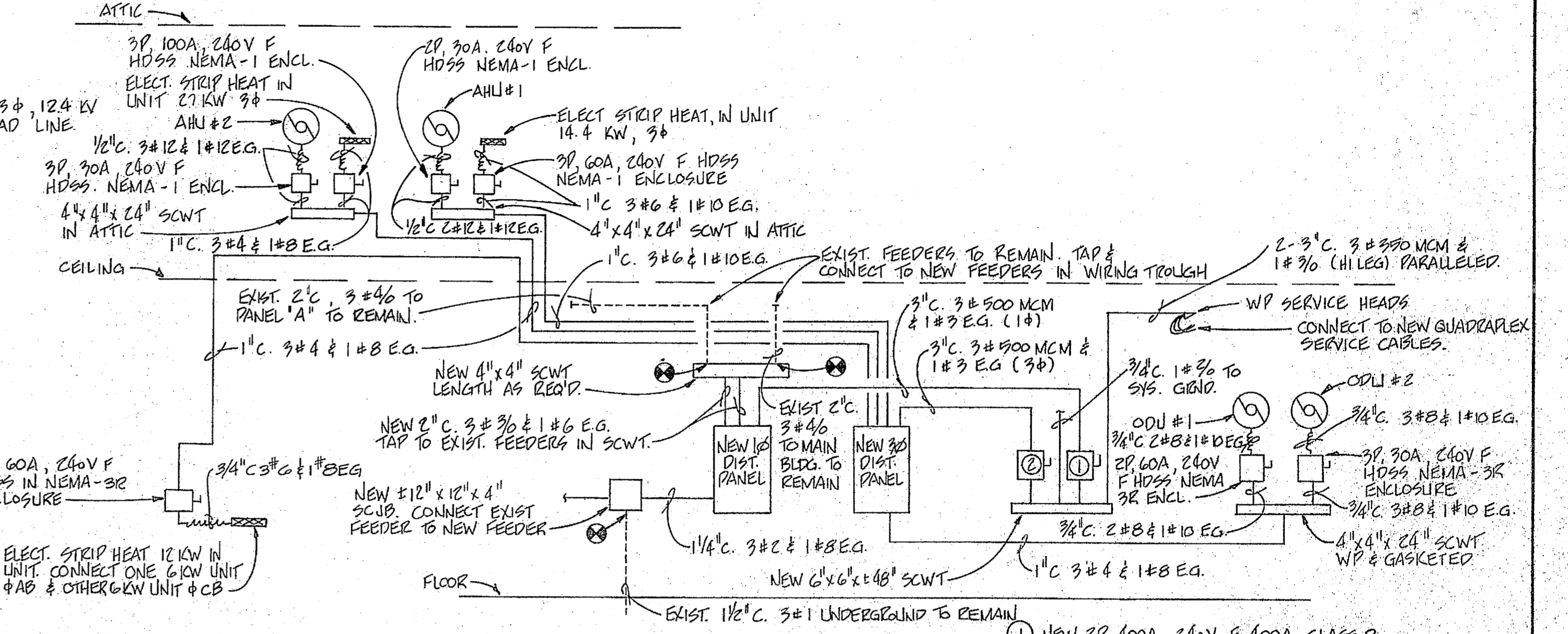
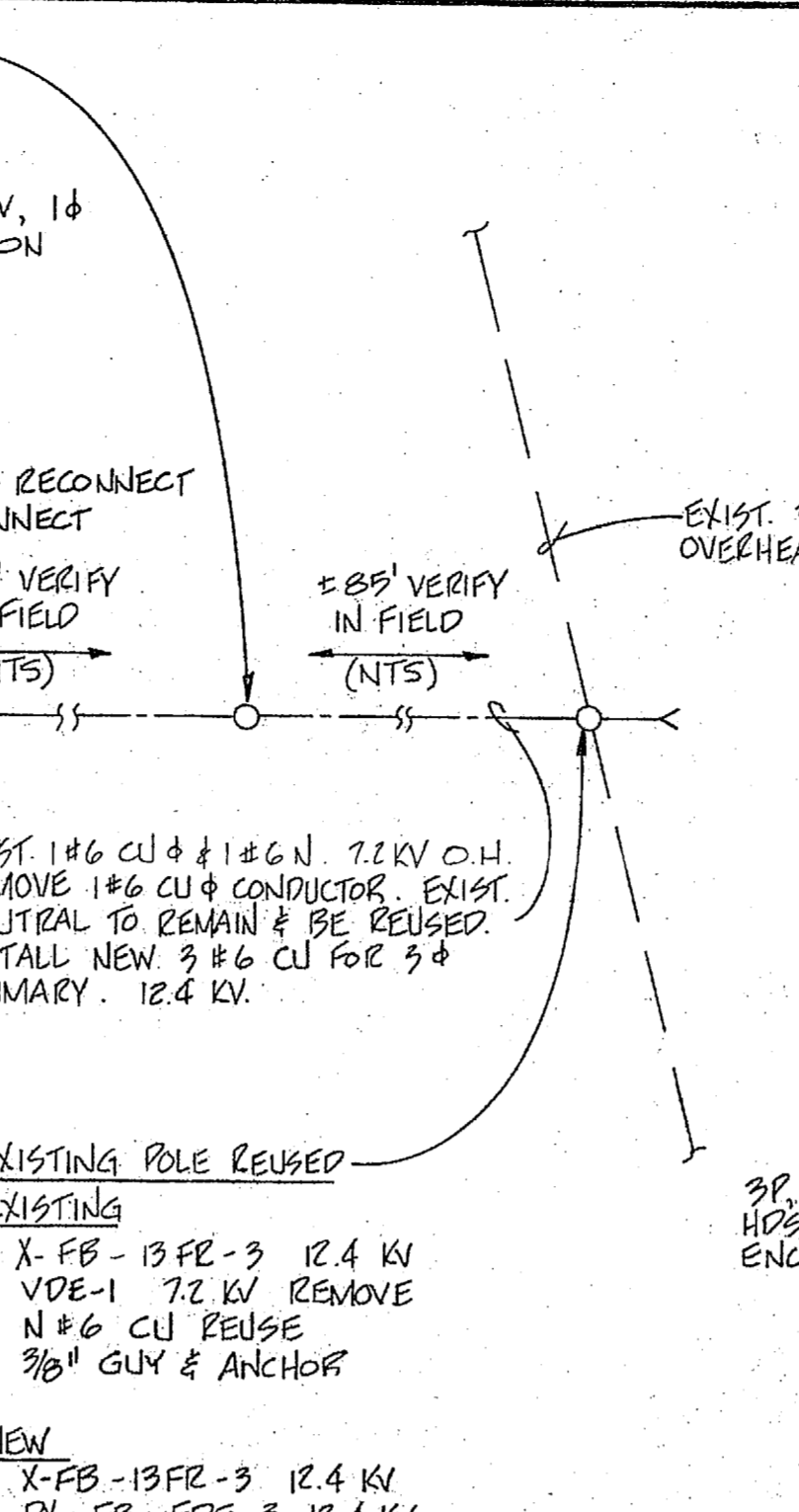
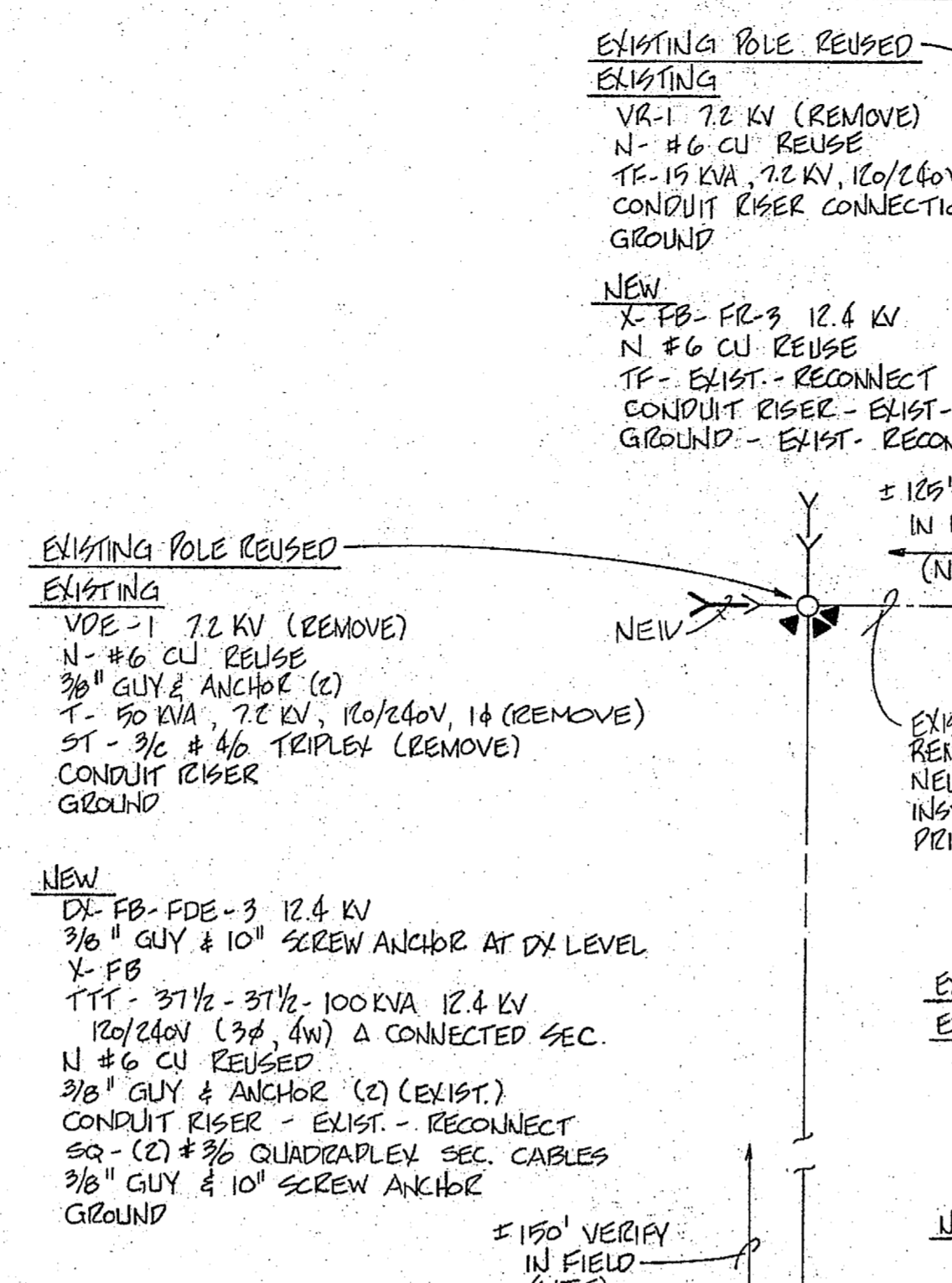
**FLOOR PLAN - EXISTING BOILER ROOM**  
SCALE: 1/8" = 1'-0"



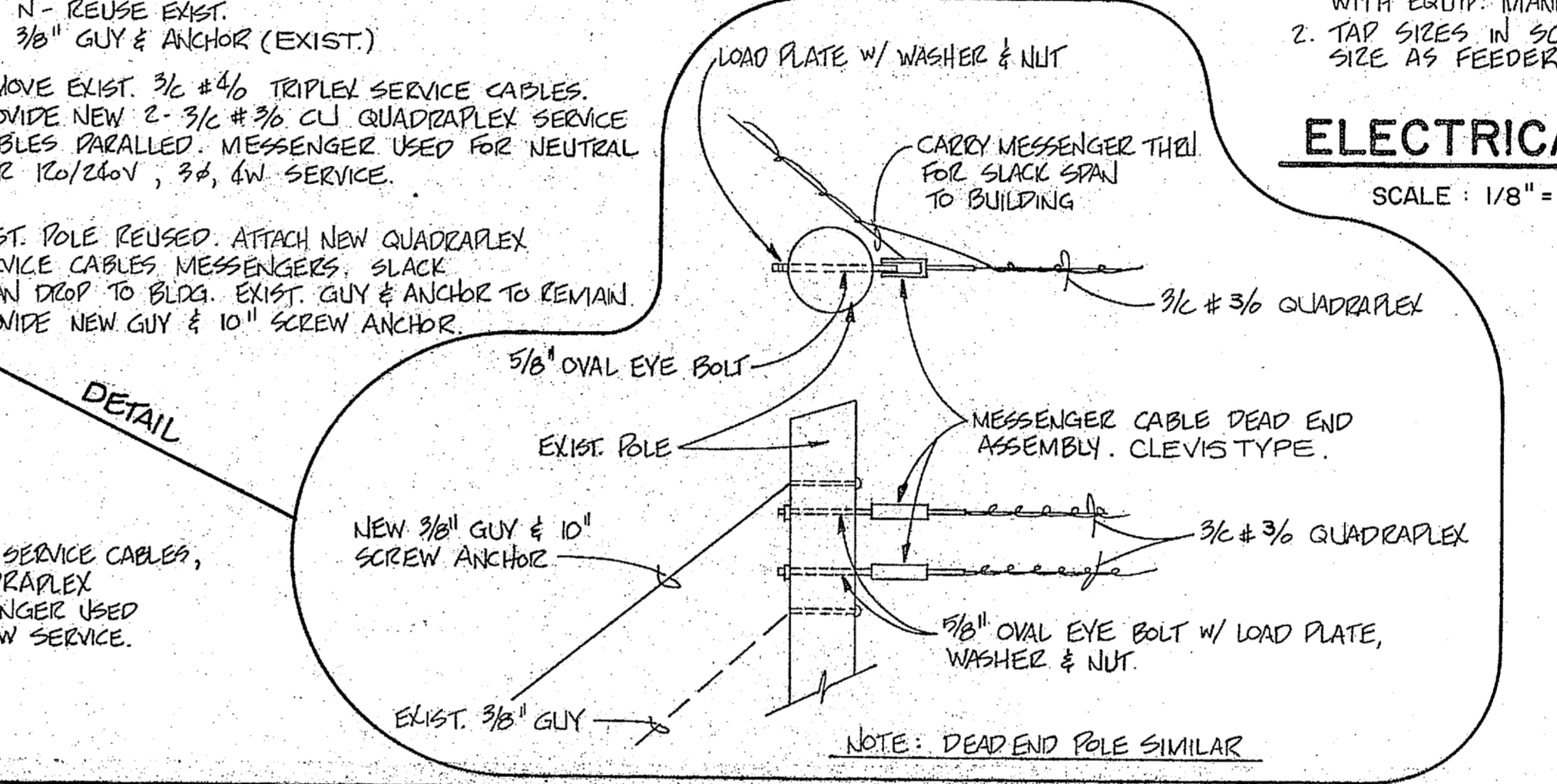
**SECOND FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



**FIRST FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



**ELECTRICAL RISER DIAGRAM**  
SCALE: 1/8" = 1'-0"



**PANEL**  
1 PHASE, 3 WIRE, 120/240 VOLTS, 400 AMPERE BUS, 400 AMPERE MAIN LUGS ONLY, 100% NEUTRAL, SURFACE MOUNTING, NEMA-1 ENCLOSURE, EQUIPMENT GROUND BUS, INTEGRATED EQUIPMENT RATING OF 10,000 RMS SYMMETRICAL AMPERES MINIMUM

DESIGNATION TO BE TYPED IN PANEL CIRCUIT DIRECTORY	PHASE LOADING			CKT. BKR. TRIP	CKT. NO.	A	C	CKT. NO.	PHASE LOADING	DESIGNATION TO BE TYPED IN PANEL CIRCUIT DIRECTORY
	A	B	C							
FEEDER FOR EXIST. ADDITION	8000		8000	3/100	1			2	3/100	SPACE ONLY
BOILER ROOM PANEL "A"	19000		19000	2/100	3			4	4/100	MAN. BLDG. X
SPACE ONLY			2/100		5			6	4/100	SPACE ONLY
NAMEPLATE ENGRAVING:	19000	29000								
	SUB-TOTAL "A"									
	SUB-TOTAL "B"					19000			19000	
	GRAND TOTAL					29000			29000	VOLT-AMPERES
	LINE CURRENT					316			316	AMPERES

**PANEL**  
3 PHASE, 3 WIRE, 240 VOLTS, 400 AMPERE BUS, 400 AMPERE MAIN LUGS ONLY, SURFACE MOUNTING, NEMA-1 ENCLOSURE, EQUIPMENT GROUND BUS, INTEGRATED EQUIPMENT RATING OF 10,000 RMS SYMMETRICAL AMPERES MINIMUM

DESIGNATION TO BE TYPED IN PANEL CIRCUIT DIRECTORY	PHASE LOADING			CKT. BKR. TRIP	CKT. NO.	ABC	CKT. NO.	PHASE LOADING	DESIGNATION TO BE TYPED IN PANEL CIRCUIT DIRECTORY
	A	B	C						
SPACE ONLY				3/100	1		2	3/100	SPACE ONLY
SPACE ONLY				2/100	3		4	3/100	SPACE ONLY
STRIP HEAT EXIST.			6000	3/100	5		6	3/100	IDU #1 + STRIP HEAT
ODU #1 & #2	5600		6000	3/100	7		8	3/100	IDU #2 + STRIP HEAT
NAMEPLATE ENGRAVING:	11600	5600	11600						
	SUB-TOTAL "A"								
	SUB-TOTAL "B"					14640		14640	
	GRAND TOTAL					11600		20200	11600
	LINE CURRENT					196		196	196

**ELECTRICAL LEGEND**

- SERVICE OR FEEDER CONDUIT RUN WITH CONDUCTORS AS SHOWN.
- INDICATES CONDUIT AND CONDUCTORS EXTENDED TO PANELBOARD SHOWN.
- OVERHEAD ELECTRICAL PRIMARY LINE. SEE PLAN FOR NOTES, SIZES, ETC.
- OVERHEAD ELECTRICAL SECONDARY LINE. 3/4" QUADRAPLEX WITH MSGR. USED FOR NEUTRAL FOR 120/240V 3P 4W SERVICE.
- EXISTING POLE TO BE REUSED.
- EXISTING GUY AND ANCHOR TO BE REUSED. (NEW GUY AND ANCHOR WHERE SHOWN).
- NEW POLE MOUNTED TRANSFORMER.
- WEATHERPROOF SERVICE HEADS.
- HEAVY DUTY SAFETY SWITCH.
- WIRING TROUGH, JUNCTION BOX, ETC. AS INDICATED THEREAT.
- NEW DISTRIBUTION PANELBOARD.
- EXISTING PANELBOARD TO REMAIN, NO WORK.
- LIQUID TIGHT FLEXIBLE METAL CONDUIT W/CONDUCTORS
- ELECTRICAL STRIP HEAT IN AHU
- ELECTRIC MOTOR

**ABBREVIATIONS**

- HCSS - HEAVY DUTY SAFETY SWITCH
- C - CONDUIT/CONDUCTOR
- φ - PHASE
- SCJB - SCREEN COVER JUNCTION BOX
- A - AMPERE
- F - FUSE
- WP - WEATHERPROOF
- AHU - AIR HANDLING UNIT
- ODU - OUTDOOR CONDENSING UNIT
- UG - UNDERGROUND
- P - POLE
- V - VOLT
- CU - COPPER
- EG - EQUIPMENT GROUND
- CH - OVERHEAD
- SCMT - SCREEN COVERED WIRING TROUGH

**HENRY VON OESSEN & ASSOCIATES**  
CONSULTING ENGINEERS & PLANNERS  
WILMINGTON, NORTH CAROLINA 28403

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**MARINE CORPS BASE**  
CAMP LEJEUNE, NORTH CAROLINA

DES. D.E.R.  
DR. W.P.J.  
CHK. D.E.R.  
SUBMITTED BY: [Signature]  
DESIGN DIR.  
APPROVED: PWD OR DIC  
DATE: [Blank]  
SATISFACTORY TO: [Blank]

PROVIDE A/C FOR COMPUTERS BLDG. # 33  
PROVIDE COOLING TOWER FOR BLDG. # 84

ELECTRICAL WORK BLDG. # 33

SIZE: F  
CODE IDENT. NO.: 80091  
NAVFAC DRAWING NO.: 4100613  
CONSTR. CONTR. NO.: N62470-84-B-7849  
SCALE: GRAPHIC SPEC. OS-84-7849 SHEET 8 OF 8

GRAPHIC SCALES  
4 2 0 10 20  
1/8" = 1'-0"

SEAL 2000  
[Signature]

