

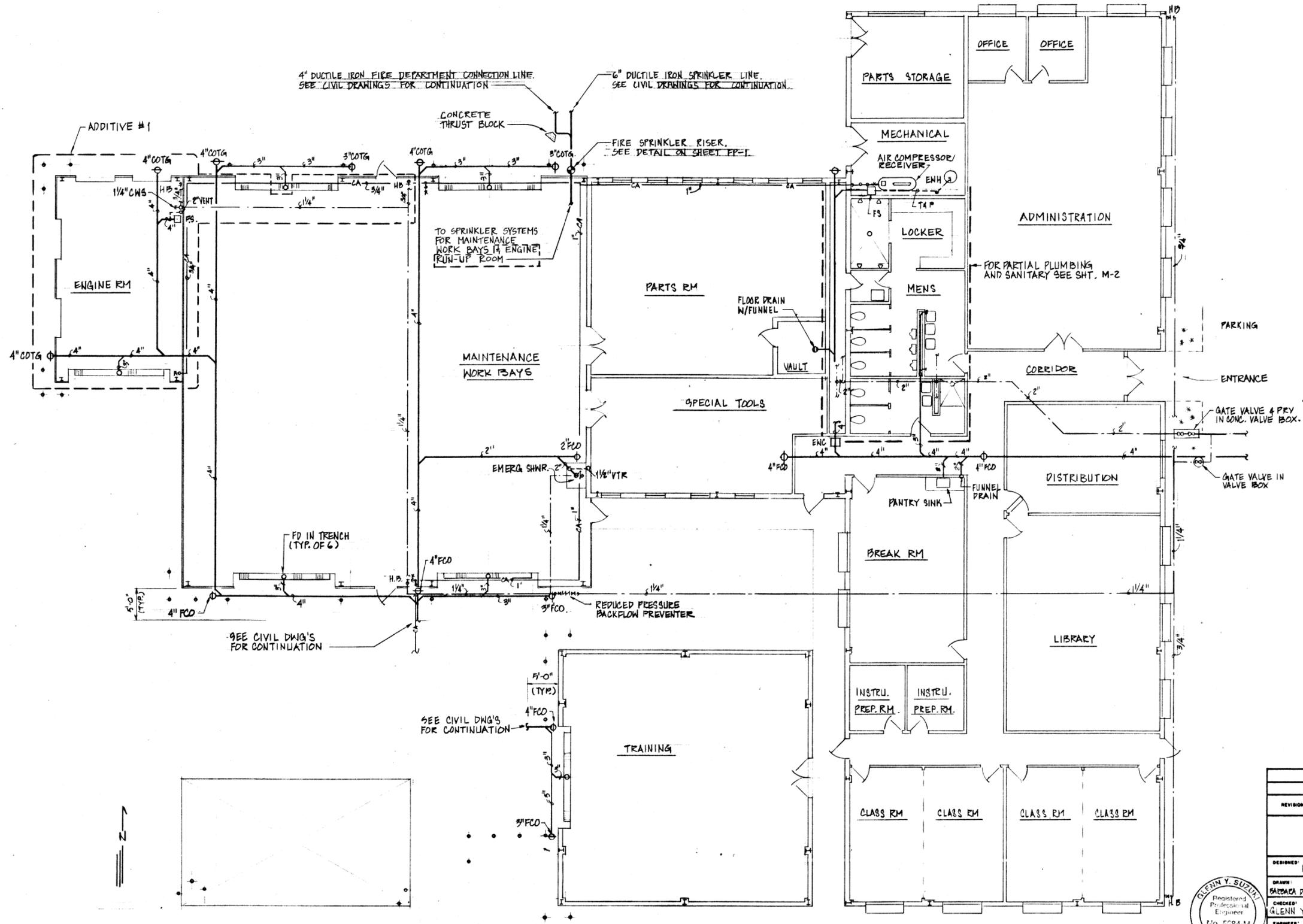
THE CURRENT BWS CHARGES APPLICABLE FOR THIS PROJECT ARE AS FOLLOWS:

2" DOMESTIC SERVICE		
1/2" METER		
CHARGE	\$170.00	\$170.00
WATER SYSTEM FACILITIES CHARGES	\$68,000.00	
* CREDIT		\$68,000.00
S/N		
S/N		
6" FIRE SERVICE	\$1,500.00	
G.D.C. METER	NA	
INSTALLATION CHARGE	\$2,400.00	\$3,900.00
ONTIME CHARGE		
TOTAL		\$72,070.00

THIS ESTIMATE IS SUBJECT TO CHANGE AND A FORMAL WRITTEN QUOTATION SHALL BE OBTAINED AFTER THE PLANS ARE APPROVED BY BWS.

\* CREDITS WILL BE DETERMINED WHEN THE BUILDING PERMIT APPLICATION IS SUBMITTED FOR BWS REVIEW AND APPROVAL.

NOTE:  
THE ABOVE ESTIMATE WILL BE EFFECTIVE FOR 30 DAYS AFTER THE PLAN IS APPROVED BY BWS. PAYMENTS RECEIVED AFTER 30 DAY PERIOD WILL BE SUBJECT TO THE PREVAILING RATES.



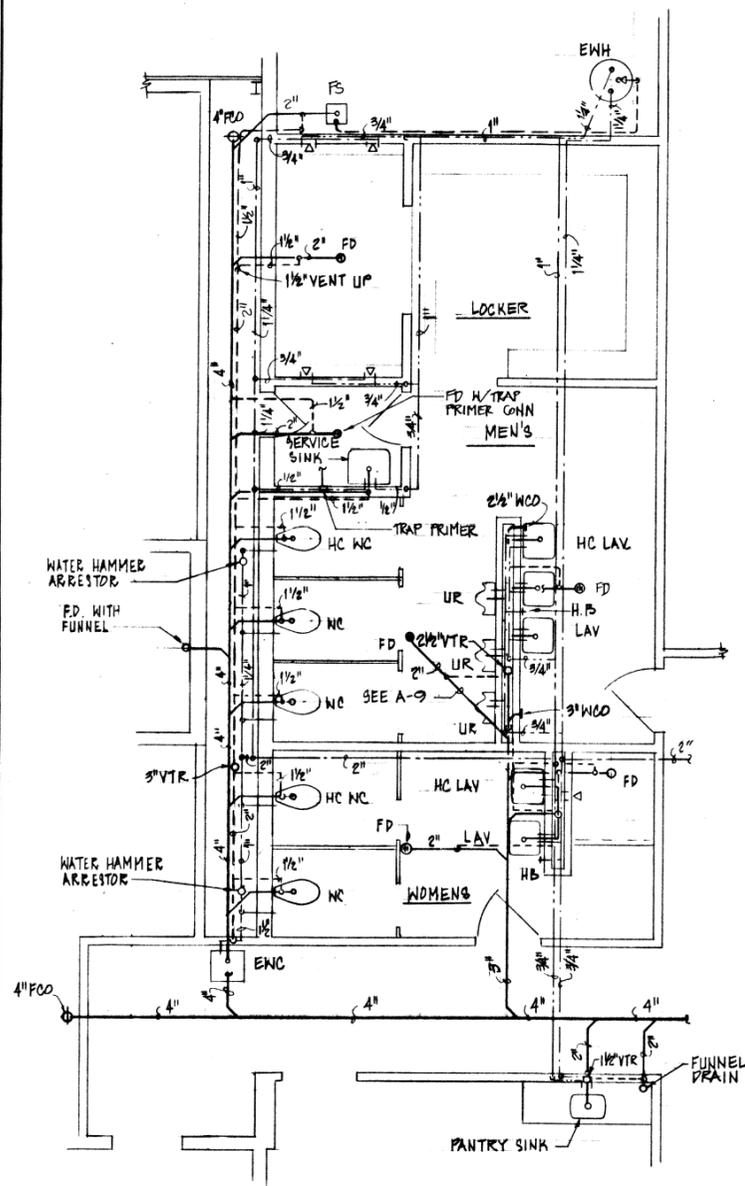
**PLUMBING AND SANITARY PIPING PLAN**  
SCALE: 1/8" = 1'-0"

REVISION NO.	DESCRIPTION	DATE	BY	CHK'D
DEPARTMENTS OF THE ARMY AND AIR FORCE NATIONAL GUARD OF HAWAII OFFICE OF THE ENGINEER, FT. RUGER, HAWAII				
DESIGNED:	RY/AYS	REGIONAL MAINTENANCE TRAINING FACILITY		
DRAWN:	BARBARA DONNEN-ALLEN	ARMY NATIONAL GUARD - WAIAWA OAHU, HAWAII		
CHECKED:	GLENN Y. SUZUKI	PLUMBING AND SANITARY PIPING PLAN		
ENGINEER:				
APPROVED:				
APPROVED:				
APPROVED:				
SCALE: AS NOTED		DRAWING NO. M-1		
SHEET:		SHEET:		



The work was prepared by me or under my observation and construction of this project will be under my observation.

58067



**PARTIAL PLUMBING AND SANITARY PLAN**  
 SCALE: 1/4" = 1'-0"

**PLUMBING NOTES:**

1. WORK SHALL CONFORM TO THE CITY AND COUNTY OF HONOLULU PLUMBING CODE AND STATE OF HAWAII DEPARTMENT OF HEALTH REGULATIONS.
2. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL APPLICABLE PERMITS, FEES AND CERTIFICATES.
3. MATERIALS SHALL BE ALL NEW, FREE FROM DEFECTS AND CONFORM TO CODE.
4. DRAWINGS ARE APPROXIMATE ONLY, INDICATING THE GENERAL LAYOUT AND LOCATION. THEY ARE NOT INTENDED TO BE DETAILED CONSTRUCTION DRAWINGS. REASONABLE ALTERATIONS MADE TO SUIT JOB CONDITIONS SHALL NOT CONSTITUTE BASIS TO REQUEST EXTRA PAYMENTS FROM OWNERS.
5. CONTRACTOR SHALL VERIFY LOCATIONS, SIZES AND INVERT ELEVATIONS OF ALL EXISTING WATER, SEWER AND SOIL LINES PRIOR TO COMMENCEMENT OF ANY NEW PLUMBING WORK UNDER THIS CONTRACT.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UTILITIES TO A POINT 5'-0" OUTSIDE OF THE BUILDING AND CONNECTION TO SERVICE AT THAT POINT.
7. COORDINATE WORK WITH OTHER TRADES. SPECIAL ATTENTION SHALL BE REQUIRED FOR PROPER LOCATION OF FLOOR DRAINS AND CONDENSATE DRAINS.
8. HOT WATER LINES, TEMPERATURE & PRESSURE RELIEF LINE, AND CONDENSATE RISERS AND TRAPS SHALL BE INSULATED.
9. PROVIDE ESCUTCHEONS AROUND ALL EXPOSED PIPE PASSING THRU A FINISHED FLOOR, WALL OR CEILING.
10. COPPER LINES SHALL BE PROTECTED AGAINST ELECTROLYTIC ACTION WITH DIELECTRIC UNIONS AT CONNECTIONS TO DISSIMILAR METAL OR WRAPPED WITH TWO LAYERS OF PLASTIC TAPE WHERE LINE CONTACTS FERROUS METALS.
11. FLASH AROUND ROOF PENETRATIONS FOR VENT PIPES WITH 4-POUND SHEET LEAD.
12. PIPING SHALL BE INSPECTED INSIDE AND OUT FOR INTERIOR OBSTRUCTIONS AND BURRS BEFORE INSTALLATION. PIPES SHALL BE SLOPED AS REQUIRED BY THE CODE.
13. CLEANOUTS SHALL BE PROVIDED WHERE REQUIRED BY SECTION 406 OF THE UNIFORM PLUMBING CODE.
14. EXPOSED PIPES SHALL BE RUN NEATLY AGAINST WALLS OR COLUMNS AND SHALL BE CAREFULLY HANDLED TO AVOID TOOL MARKS.
15. ANCHOR ALL PIPING IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE. PROVIDE ALL REQUIRED STRUCTURAL SUPPORTS FOR ANCHORING VENT PIPING IN ATTIC SPACE.
16. WATER, WASTE AND SOIL PIPING SHALL BE TESTED IN ACCORDANCE TO SECTION 318 OF THE UNIFORM PLUMBING CODE.
17. WATER LINES SHALL BE FLUSHED OUT AND DISINFECTED WITH 50 PPM AVAILABLE CHLORINE SOLUTION FOR 8 HOUR CONTACT TIME OR 100 PPM CHLORINE SOLUTION FOR TWO HOURS.
18. ALL HOSE BIBBS SHALL BE PROVIDED WITH APPROVED NON-REMOVABLE VACUUM BREAKERS.
19. CLEAN-UP, ADJUST AND PREPARE FOR OCCUPANCY.
20. GUARANTEE PLUMBING WORK AGAINST DEFECTS FOR ONE YEAR AFTER ACCEPTANCE.

**FIRE PROTECTION NOTES:**

1. CLASSIFICATION OF HAZARD (NFPA 10):-  
 ORDINARY HAZARD - ADMINISTRATION BLDG. (EXCEPT FOR FMS - FLAMMABLE MATERIALS STORAGE AND MECHANICAL ROOM), TRAINING DEVICE LAB, PARTS AND SPECIAL TOOLS AREA.  
 EXTRA HAZARD - FMS, MECHANICAL ROOM, MAINTENANCE WORK BAYS, ENGINE RUN UP ROOM.
2. PORTABLE FIRE EXTINGUISHERS AND CABINETS SHALL BE FURNISHED UNDER THIS SECTION OF THE CONTRACT AND INSTALLED UNDER SEPARATE SECTION OF THE CONTRACT
3. LOCATION AND INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 10. COORDINATE WITH OTHER TRADES. SEE ARCH. DRNGS FOR MIN. LOCATIONS REQUIRED.

MECHANICAL LEGEND		
SYMBOL	ABBRV.	DESCRIPTION
	S OR W	SOIL OR WASTE
	V	VENT
	CW	COLD WATER
	HW	HOT WATER
	VLV	VALVE
	WC	WATER CLOSET
	HB	HOSE BIBB
	LAV	LAVATORY
	COTG	CLEANOUT TO GRADE
	FCO	FLOOR CLEANOUT
	EWC	ELECTRIC WATER COOLER
	FD	FLOOR DRAIN
	UR	URINAL
	EWH	ELECTRIC WATER HEATER
	F.E.	DRY CHEM FIRE EXT.
	C.F.E.	DRY CHEM FIRE EXT. IN CABINET

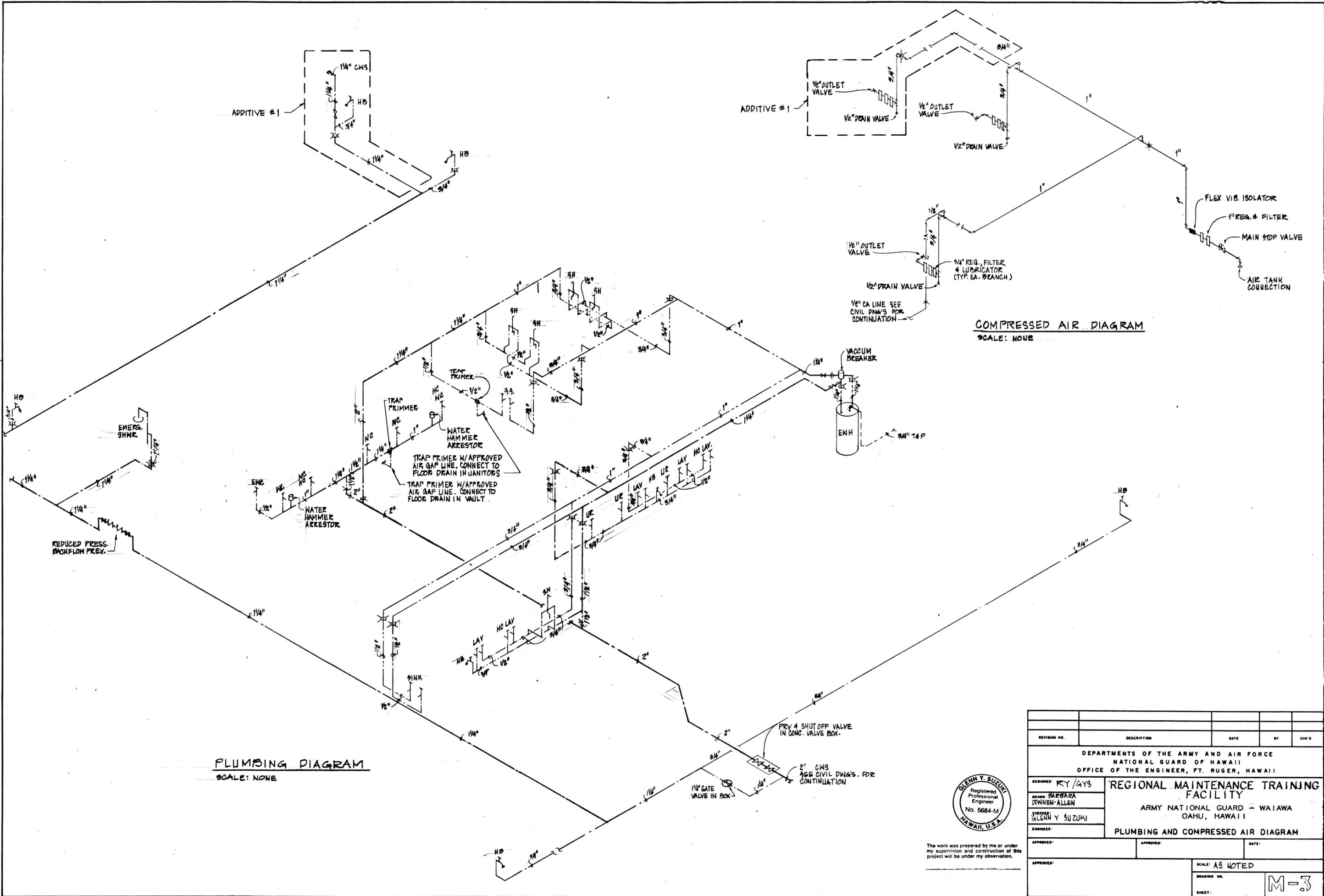
DOMESTIC SYSTEM	FLOW REQUIREMENTS		
	FIXTURE UNITS	GPM	GPD
EXISTING	0	0	0*
EXISTING TO BE REMOVED/DEMOLISHED	0	0	0*
NEW (ADDED)	160	83	750
<b>SYSTEM TOTAL</b>	<b>160</b>	<b>83</b>	<b>750</b>

\* EXISTING BUILDING TO BE DEMOLISHED IS CONNECTED TO NAVY WATER SUPPLY.  
 NO IRRIGATION TO BE DONE.

REVISION NO.	DESCRIPTION	DATE	BY	CHK'D
DEPARTMENTS OF THE ARMY AND AIR FORCE NATIONAL GUARD OF HAWAII OFFICE OF THE ENGINEER, FT. RUGER, HAWAII				
DESIGNED: KY/GYS	<b>REGIONAL MAINTENANCE TRAINING FACILITY</b>			
DRAWN: BARBARA POWEN-ALLEN	ARMY NATIONAL GUARD - WAIAWA OAHU, HAWAII			
CHECKED: GLENN Y. SUZUKI	PARTIAL PLUMB. AND SANITARY PLAN, NOTES			
ENGINEER:	APPROVED:	DATE:		
APPROVED:	APPROVED:	DATE:		
SCALE: AS NOTED				
DRAWING NO.		M-?		
SHEET.				



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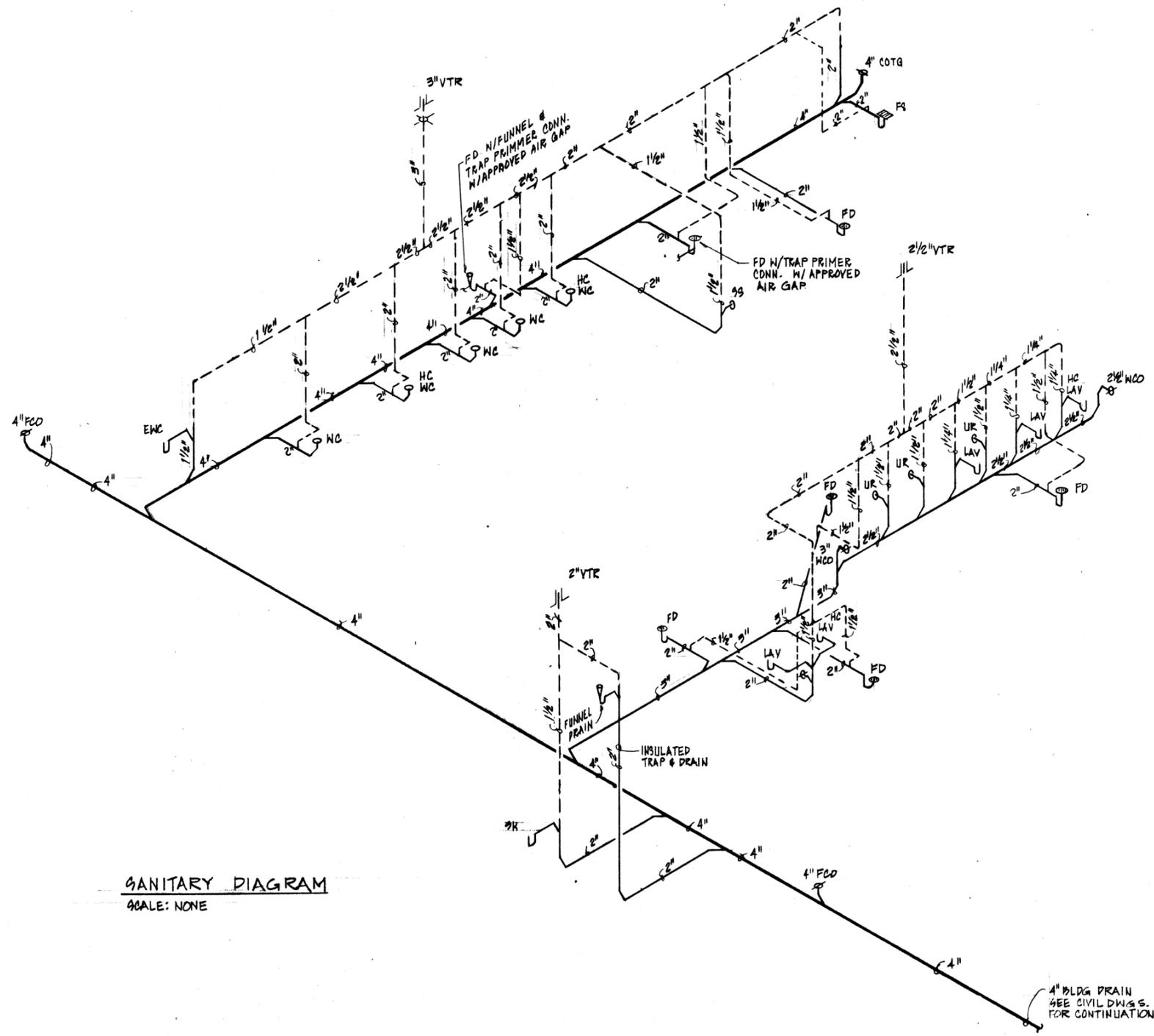
**PLUMBING DIAGRAM**  
SCALE: NONE

**COMPRESSED AIR DIAGRAM**  
SCALE: NONE

REVISION NO.	DESCRIPTION	DATE	BY	CHEK'D
DEPARTMENTS OF THE ARMY AND AIR FORCE NATIONAL GUARD OF HAWAII OFFICE OF THE ENGINEER, FT. RUGER, HAWAII				
DESIGNED: RY/GYS	<b>REGIONAL MAINTENANCE TRAINING FACILITY</b>			
DRAWN: BARBARA DOWNEN-ALLEN	ARMY NATIONAL GUARD - WAIAWA OAHU, HAWAII			
CHECKED: GLENN Y SUZUKI	<b>PLUMBING AND COMPRESSED AIR DIAGRAM</b>			
ENGINEER:	APPROVED:	DATE:		
APPROVED:		SCALE: AS NOTED		
		DRAWING NO.	<b>M-3</b>	
		SHEET:		



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**SANITARY DIAGRAM**  
SCALE: NONE

4" BLDG DRAIN  
SEE CIVIL DWG'S.  
FOR CONTINUATION



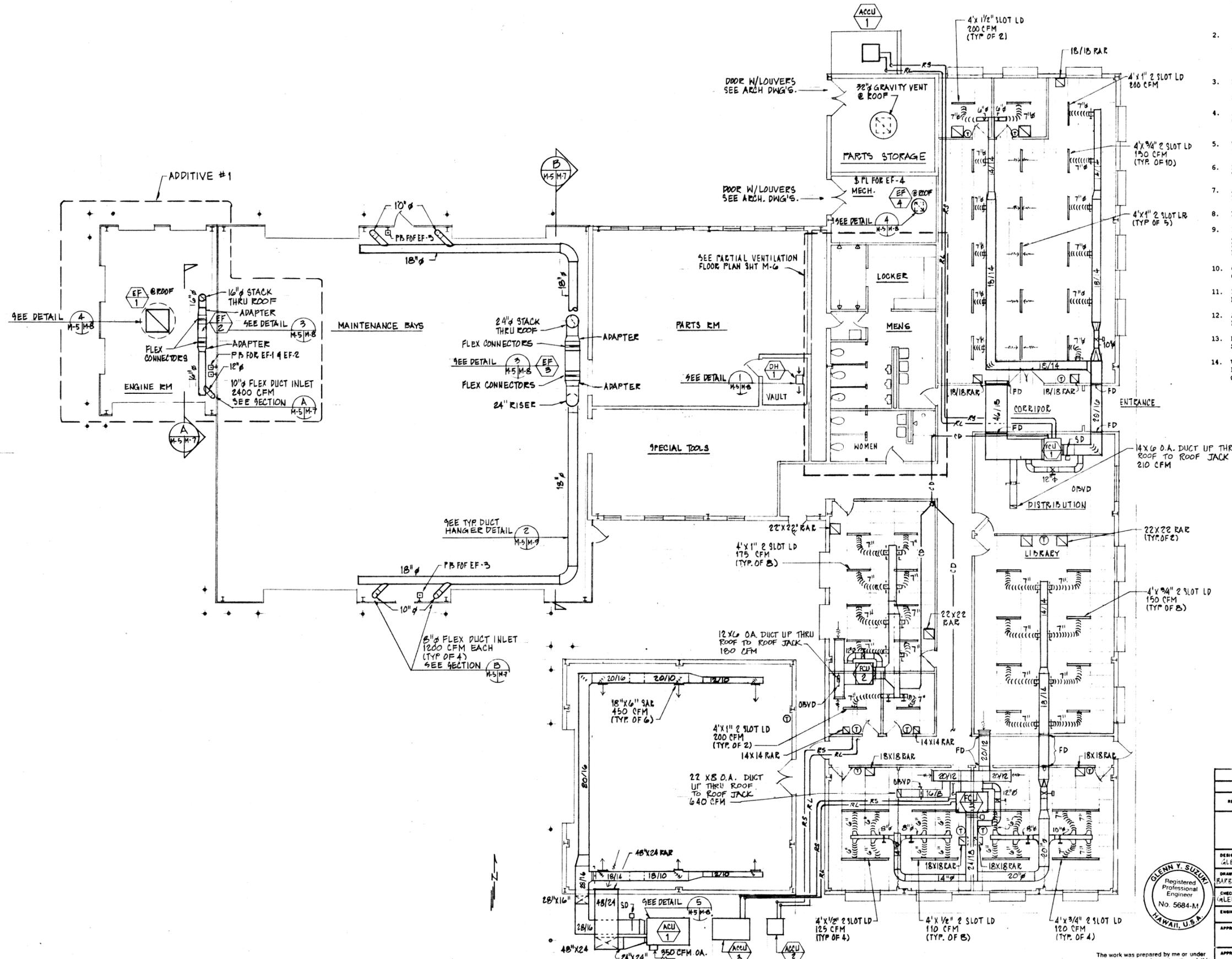
The work was prepared by me or under my supervision and construction of this project will be under my observation.

REVISION NO.	DESCRIPTION	DATE	BY	CHK'D
DEPARTMENTS OF THE ARMY AND AIR FORCE NATIONAL GUARD OF HAWAII OFFICE OF THE ENGINEER, FT. RUGER, HAWAII				
DESIGNED:	RY/GYS	<b>REGIONAL MAINTENANCE TRAINING FACILITY</b> ARMY NATIONAL GUARD - WAIAWA OAHU, HAWAII		
DRAWN:	BARBARA EDENH-ALLEN			
CHECKED:	GLENN Y. SUZUKI			
ENGINEER:	GLENN Y. SUZUKI	<b>SANITARY DIAGRAM</b>		
APPROVED:	APPROVED:	DATE:		
APPROVED:	SCALE: AS NOTED		DRAWING NO.	
SHEET:		<b>M-4</b>		

25037

AIR CONDITIONING & VENTILATION NOTES

- FURNISH AND INSTALL ALL EQUIPMENT, ACCESSORIES, CONNECTIONS, MATERIALS, AND INCIDENTAL ITEMS NECESSARY TO FULLY COMPLETE THE INSTALLATION OF THE AIR CONDITIONING SYSTEM SHOWN ON THESE DRAWINGS.
- DRAWINGS INDICATE THE GENERAL ARRANGEMENT AND SHALL BE FOLLOWED AS CLOSELY AS ACTUAL FIELD CONDITIONS PERMIT. REASONABLE MODIFICATIONS TO SUIT JOB CONDITIONS SHALL NOT CONSTITUTE A BASIS FOR ADDITIONAL COMPENSATION. ALL INDICATED DUCT DIMENSIONS ARE NET DIMENSIONS.
- MATERIALS AND WORKMANSHIP SHALL COMPLY WITH APPLICABLE CODES, SPECIFICATIONS, STATE REGULATIONS, COUNTY ORDINANCES, INDUSTRY STANDARDS AND UTILITY COMPANY STANDARDS.
- APPLICABLE CODES: CITY AND COUNTY OF HONOLULU BUILDING CODE; COUNTY PLUMBING CODE; NATIONAL ELECTRIC CODE; AND STATE OF HAWAII PUBLIC HEALTH REGULATIONS.
- WORK SHALL CONFORM TO NFPA 90-A, SAFETY CODE FOR MECHANICAL REFRIGERATION ANSI B9.1 AND APPLICABLE ARI EQUIPMENT STANDARDS.
- DUCT CONSTRUCTION, BRACING AND SUPPORTS SHALL BE IN ACCORDANCE WITH APPROPRIATE SMACNA DUCT CONSTRUCTION STANDARDS.
- ALL NEW DUCTWORK SHOWN SHALL BE INSULATED UNLESS OTHERWISE INDICATED.
- INSULATE ALL PIPING SUBJECT TO CONDENSATION.
- PROVIDE EQUIPMENT WITH STARTERS, DISCONNECT & CONTROL TRANSFORMERS AS REQUIRED FOR A COMPLETE INSTALLATION. PROVIDE APPROPRIATE EQUIPMENT VIBRATION ISOLATORS WITH 95% EFFICIENCY. ISOLATE ALL PIPING AND DUCTWORK CONNECTED TO EQUIPMENT.
- CONTROLS: PROVIDE THERMOSTATS, SMOKE DETECTORS AND ALL OTHER CONTROLS NECESSARY FOR A COMPLETE OPERATING SYSTEM.
- LOCATION OF OUTSIDE AIR INTAKE GRILLES SHALL BE IN ACCORDANCE WITH HEALTH DEPARTMENT REGULATIONS.
- ALL REQUIRED FEES, PERMITS AND INSPECTIONS SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR.
- MATERIALS SHALL BE ALL NEW AND CONFORMING TO RECOGNIZED COMMERCIAL STANDARDS.
- WORKMANSHIP SHALL BE COMPETENT AND TO SATISFACTION OF THE ENGINEER. UNACCEPTABLE WORK SHALL BE REPLACED WITHOUT ADDITIONAL COST TO THE OWNERS.

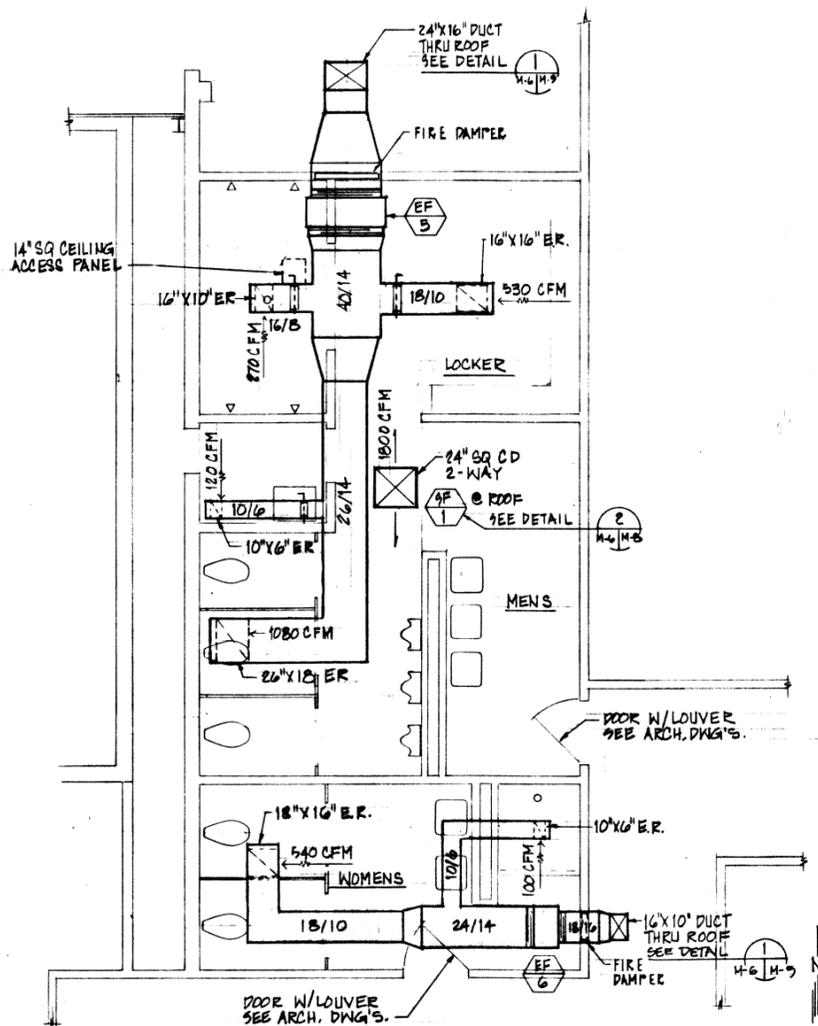


**AIR CONDITIONING AND VENTILATION PLAN**  
SCALE: 1/8" = 1'-0"

**GLENN Y. SUZUKI**  
Registered Professional Engineer  
No. 5684-M  
HAWAII, U.S.A.

The work was prepared by me or under my supervision and construction of this project will be under my observation.

REVISION NO.	DESCRIPTION	DATE	BY	CHK'D
DEPARTMENTS OF THE ARMY AND AIR FORCE NATIONAL GUARD OF HAWAII OFFICE OF THE ENGINEER, FT. RUGER, HAWAII				
DESIGNED: GLENN SUZUKI		<b>REGIONAL MAINTENANCE TRAINING FACILITY</b> ARMY NATIONAL GUARD - WAIAWA OAHU, HAWAII		
DRAWN: RAFF DOWNEN-ALLEN				
CHECKED: GLENN Y. SUZUKI		<b>A/C AND VENTILATION PLAN WITH NOTES</b>		
APPROVED:	APPROVED:	DATE:		
APPROVED:		SCALE: AS NOTED		
		DRAWING NO.		<b>M-5</b>
		SHEET:		



**PARTIAL VENTILATION FLOOR PLAN**  
SCALE: 1/4" = 1'-0"

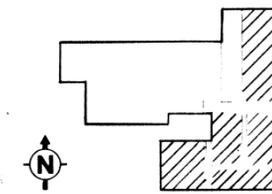
MECHANICAL LEGEND		
SYMBOL	ABBRV.	DESCRIPTION
	CD	CEILING DIFFUSER
	RAR	RETURN AIR REGISTER
	OBVD	OPPOSED BLADE VOL. DAMPER
		FLEXIBLE DUCT
		CONTROL DAMPER
	DH	DEHUMIDIFIER
	ACU	AIR CONDITIONING
		THERMOSTAT
	OA	OUTSIDE AIR
	CFM	CUBIC FEET PER MINUTE
	EF	EXHAUST FAN
	LD	LINEAR DIFFUSER
	ER	EXHAUST REGISTER
	FCU	FAN COIL UNIT
	F.D.	FIRE DAMPER
	SD	SMOKE DETECTOR
	PB	WALL-MOUNTED PUSH BUTTON STATION
	PL	WALL MOUNTED ON-OFF SWITCH WITH PILOT LIGHT

**GLASS WINDOW**

MATERIAL	'R' VALUE
OUTSIDE AIR FILM - 7.5 M.P.H.	0.25
1/4" GLASS	0.04
INSIDE AIR FILM	0.68
<b>TOTAL 'R'</b>	<b>0.97</b>
<b>U = 1/R =</b>	<b>1.03</b>

**METAL ROLL-UP DOOR**

MATERIAL	'R' VALUE
OUTSIDE AIR FILM - 7.5 M.P.H.	0.25
METAL	0.0
INSIDE AIR FILM	0.68
<b>TOTAL 'R'</b>	<b>0.93</b>
<b>U = 1/R =</b>	<b>1.1</b>



**KEY PLAN**

**ROOF**

MATERIAL	'R' VALUE
OUTSIDE AIR FILM - 7.5 M.P.H.	0.25
METAL ROOFING	0.0
INSULATION R-18	18
NON-VENTED AIR SPACE	1.9
ACOUSTICAL TILE	1.89
INSIDE AIR FILM	0.92
<b>TOTAL 'R'</b>	<b>22.96</b>
<b>U = 1/R =</b>	<b>0.04</b>
U-VALUE < MAX ALLOWABLE U-VALUE OF 0.05	

**STUD PARTITION**

MATERIAL	'R' VALUE
INSIDE AIR FILM	0.68
METAL SIDING	0.0
AIR SPACE	0.91
GYPSOBOARD 5/8"	0.56
GYPSOBOARD 5/8"	0.56
INSIDE AIR FILM	0.68
<b>TOTAL 'R'</b>	<b>3.39</b>
<b>U = 1/R =</b>	<b>0.29</b>

**STUD WALL**

MATERIAL	'R' VALUE
OUTSIDE AIR FILM - 7.5 M.P.H.	0.25
METAL SIDING	0.0
INSULATION	11.0
GYPSOBOARD 5/8"	0.56
INSIDE AIR FILM	0.68
<b>TOTAL 'R'</b>	<b>12.49</b>
<b>U = 1/R =</b>	<b>0.08</b>

LOCATION	ORIENTATION	DESCRIPTION	AREA	9F	SC	AXSF X SC
ADMIN	N	1/4" CLEAR	72	21	0.93	1406
ADMIN	E	1/4" CLEAR	96	20	0.93	1786
SCHOOL	E	1/4" CLEAR	93	20	0.93	1730
SCHOOL	S	1/4" CLEAR	96	36	0.93	3214
SCHOOL	W	1/4" CLEAR	48	227	0.93	10133
			405			18,269

LOCATION	ORIENTATION	DESCRIPTION	AREA	U-VALUE	TD (EQ)	AXU X TD (EQ)
ADMIN	N	STUD WALL	176	0.08	12	169
ADMIN	N	1/4" GLASS	72	1.03	12	890
ADMIN	E	STUD WALL	328	0.08	12	315
ADMIN	E	1/4" GLASS	96	1.03	12	1187
ADMIN	S	STUD PARTITION	248	0.29	12	863
ADMIN	W	STUD PARTITION	424	0.29	12	1476
SCHOOL	N	STUD PARTITION	432	0.29	12	1503
SCHOOL	E	STUD WALL	399	0.08	12	383
SCHOOL	E	1/4" GLASS	93	1.03	12	1149
SCHOOL	S	STUD WALL	304	0.08	44	1070
SCHOOL	S	1/4" GLASS	96	1.03	12	1187
SCHOOL	W	STUD WALL	160	0.08	44	563
SCHOOL	W	STUD PARTITION	320	0.29	12	1114
SCHOOL	W	1/4" GLASS	48	1.03	12	593
TRAINING	N	STUD WALL	560	0.08	12	538
TRAINING	E	STUD PARTITION	360	0.29	12	1949
TRAINING	S	STUD WALL	960	0.08	44	1971
TRAINING	W	STUD WALL	400	0.08	44	1408
TRAINING	W	ROLL-UP DOOR	160	1.1	44	7744
			5496			26,072

**OTTV CALCULATION**

REF: CITY AND COUNTY OF HONOLULU BUILDING CODE 26-145

$$OTTV = (U_{WALL} \times A_{WALL} \times T_{DEG}) + (A_G \times S_F \times S_C) + U_G \times A_G + A_T$$

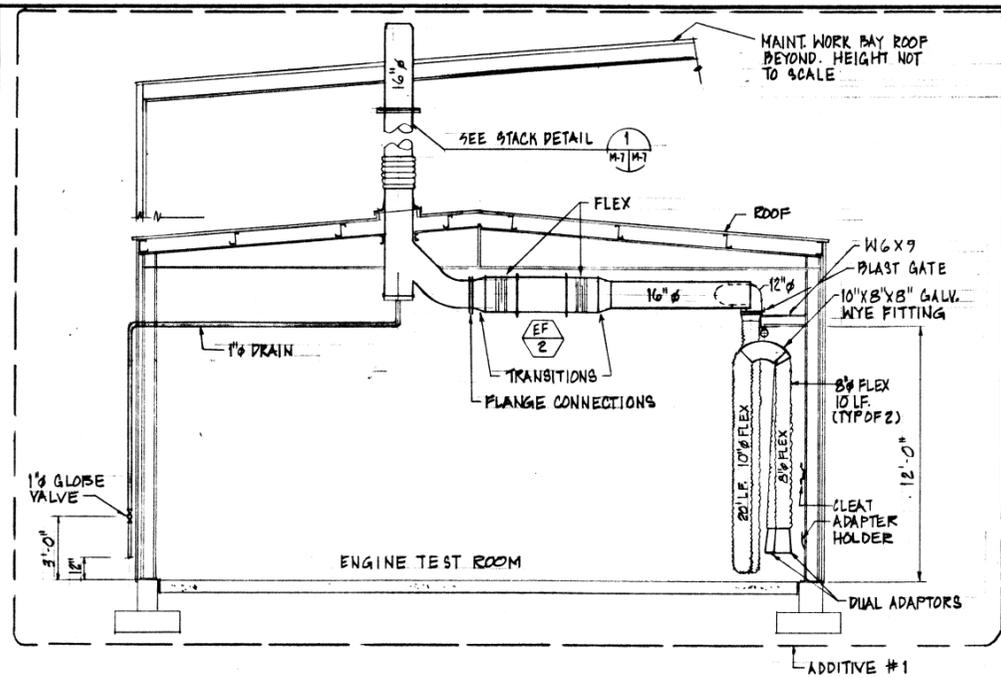
WHERE  $A_0 = A_{WALL} + A_G$

$$OTTV = \frac{18,269 + 26,072}{405 + 5496} = \frac{44,341}{5841} = 7.59 < 28.50$$

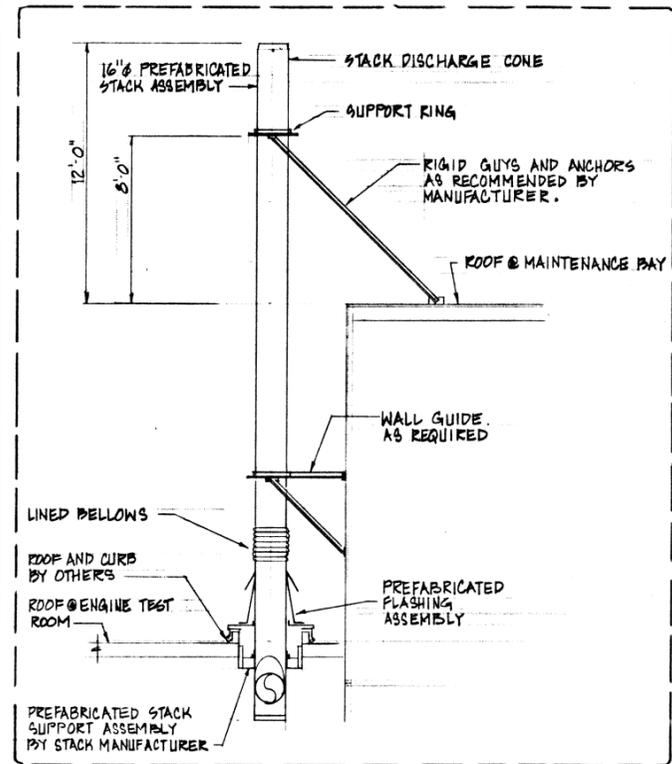


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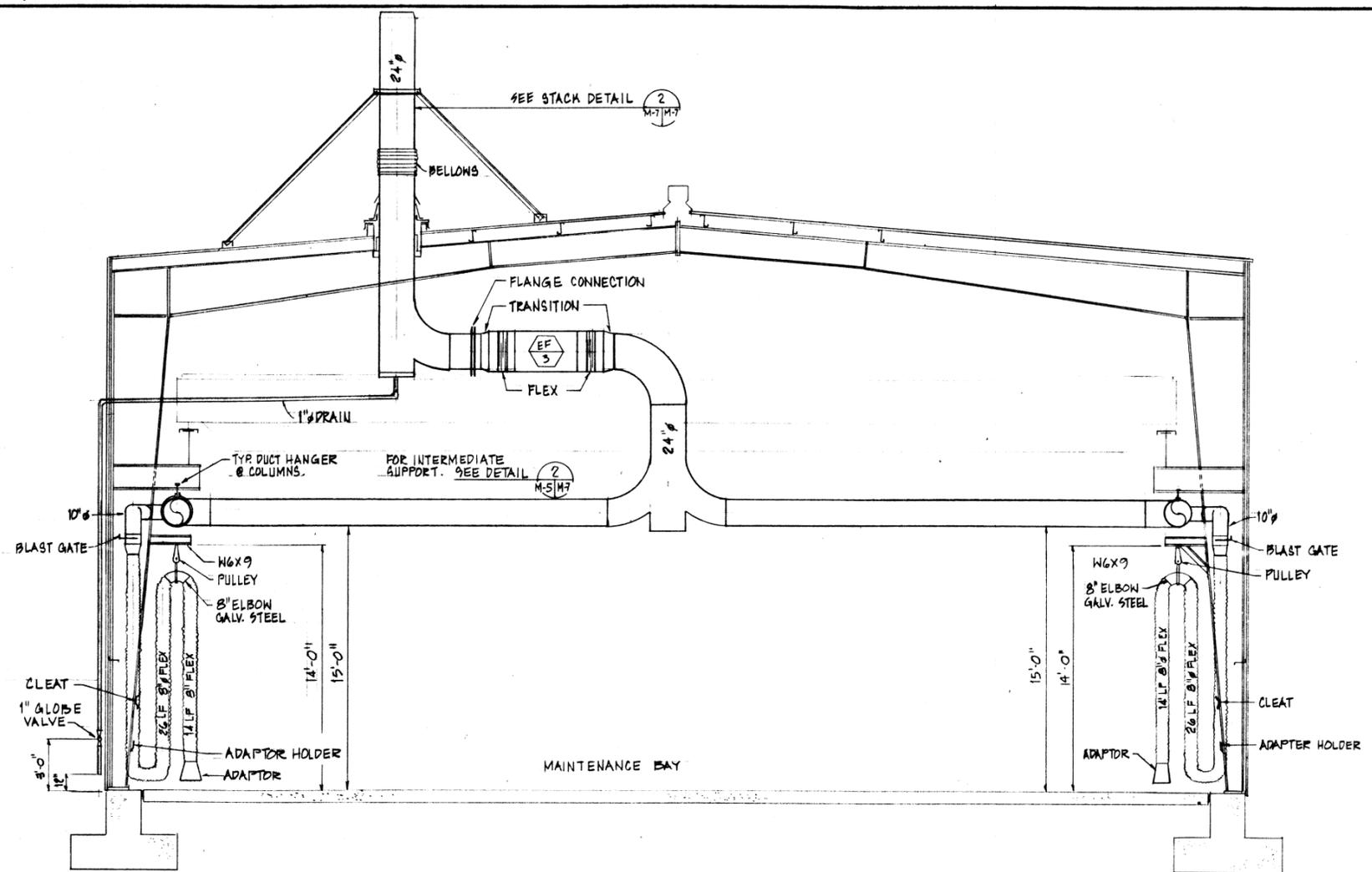
REVISION NO.	DESCRIPTION	DATE	BY	CHK'D
DEPARTMENTS OF THE ARMY AND AIR FORCE NATIONAL GUARD OF HAWAII OFFICE OF THE ENGINEER, FT. RUGER, HAWAII				
DESIGNED:	GLENN Y. SUZUKI	<b>REGIONAL MAINTENANCE TRAINING FACILITY</b> ARMY NATIONAL GUARD - WAIAWA OAHU, HAWAII		
DRAWN:	BARBARA DONNEN-ALLEN			
CHECKED:	GLENN Y. SUZUKI			
ENGINEER:				
APPROVED:		APPROVED:		DATE:
APPROVED:		SCALE: AS NOTED		DRAWING NO. M-6
				SHEET:



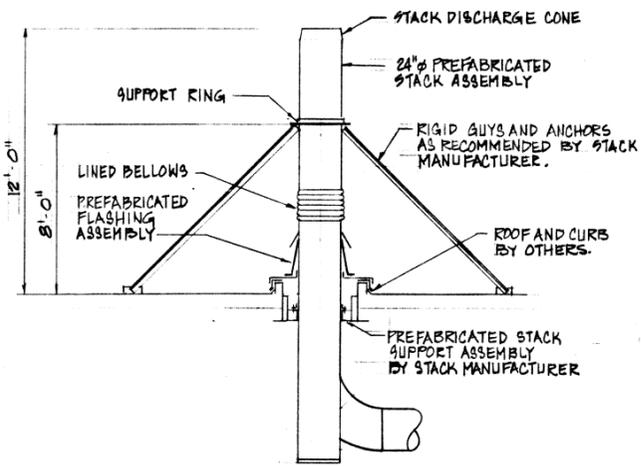
SECTION A  
SCALE: 1/4" = 1'-0" M-5 M-7



STACK DETAIL 1  
@ ENGINE TEST ROOM  
SCALE: 1/4" = 1'-0" M-1 M-7



SECTION B  
SCALE: 1/4" = 1'-0" M-5 M-7



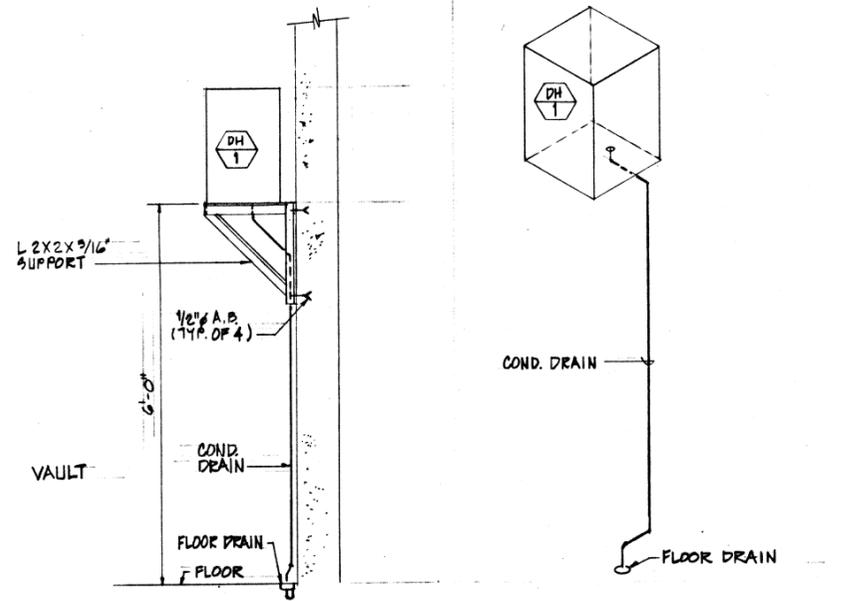
STACK DETAIL 2  
@ MAINTENANCE BAY  
SCALE: 1/4" = 1'-0" M-1 M-7



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REVISION NO.	DESCRIPTION	DATE	BY	CHK'D
DEPARTMENTS OF THE ARMY AND AIR FORCE NATIONAL GUARD OF HAWAII OFFICE OF THE ENGINEER, FT. RUGER, HAWAII				
DESIGNED:	GLENN Y. SUZUKI	<b>REGIONAL MAINTENANCE TRAINING FACILITY</b> ARMY NATIONAL GUARD - WAIAWA OAHU, HAWAII		
DRAWN:	BARBARA DOWNEN-ALLEN			
CHECKED:	GLENN Y. SUZUKI			
ENGINEER:		AIR AND EXHAUST SECTIONS AND DETAILS		
APPROVED:		DATE:		
APPROVED:		SCALE: AS NOTED		
		DRAWING NO.	<b>M-7</b>	
		SHEET:		

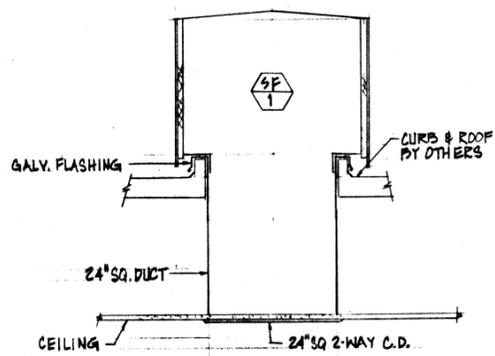
68067



DEHUMIDIFIER SUPPORT DETAIL AND CONDENSATE DIAGRAM

SCALE: 3/4" = 1'-0"

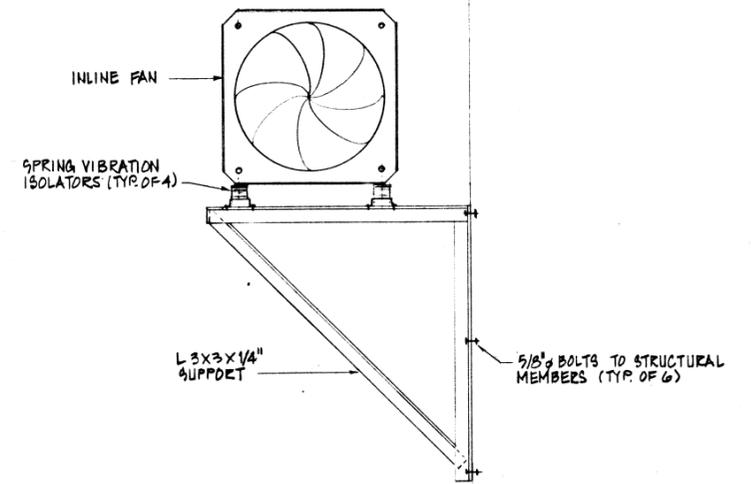
1  
M-5 M-B



SUPPLY AIR FAN DETAIL

SCALE: 3/4" = 1'-0"

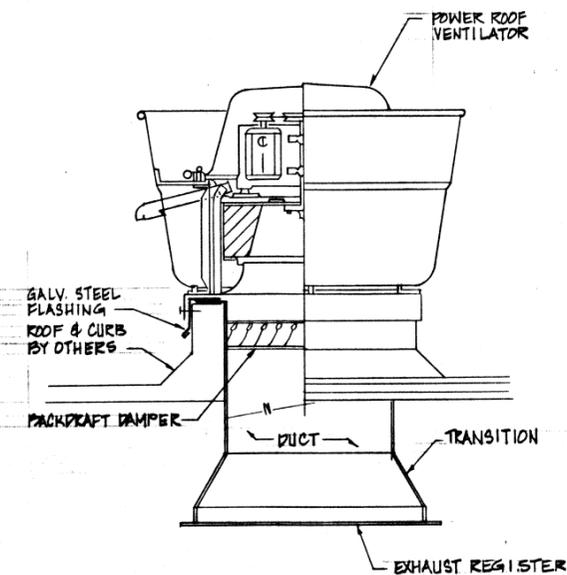
2  
M-6 M-B



INLINE FAN SUPPORT DETAIL

SCALE: 3/4" = 1'-0"

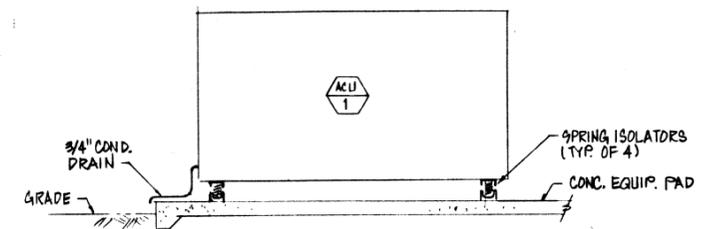
3  
M-5 M-B



POWER ROOF VENTILATOR DETAIL

NO SCALE

4  
M-5 M-B



ACU ISOLATOR & CONDENSATE DRAIN DETAIL

SCALE: 1/2" = 1'-0"

5  
M-5 M-B



The work was prepared by me or under my supervision and construction of this project will be under my observation.

REVISION NO.	DESCRIPTION	DATE	BY	CHK'D
DEPARTMENTS OF THE ARMY AND AIR FORCE NATIONAL GUARD OF HAWAII OFFICE OF THE ENGINEER, FT. RUGER, HAWAII				
DESIGNED: GLENN Y. SUZUKI DRAWN: BARBARA DOWNEY-ALLEN CHECKED: GLENN Y. SUZUKI ENGINEER:		<b>REGIONAL MAINTENANCE TRAINING FACILITY</b> ARMY NATIONAL GUARD - WAIAWA OAHU, HAWAII AIR CONDITIONING DIAGRAMS AND DETAILS		
APPROVED:	APPROVED:	DATE:		
APPROVED:		SCALE: AS NOTED		
DRAWING NO.		M-{}		
SHEET:				

EQUIPMENT SCHEDULE:

FAN COIL UNITS (FCU)												
UNIT NO.	CAPACITIES (BTUH)		CFM	SP (IN W.G.)	O.A. CFM	EVAP. ENTERING TEMPERATURE		EVAP. LEAVING TEMPERATURE		ELEC.	REFRIGER. TEMP. (F)	NOTES
	SENSIBLE	TOTAL				DB	WB	DB	WB			
1	57,800	66,200	2100	0.75	210	78.1	62.4	51.8	51.1	1 HP, 200V, 1 PHASE, 60 HZ	35	CARRIER 40BA007
2	52,200	68,900	1800	0.75	180	79.4	65.9	51.8	51.3	1 HP, 200V, 1 PHASE, 60 HZ	40	CARRIER 40BA007
3	85,600	114,400	3060	1	640	78.9	65.2	51.8	51.2	2 HP, 200V, 3 PHASE, 60 HZ	45	CARRIER 40RR012

AIR COOLED CONDENSING UNITS (ACCU)						
UNIT NO.	RLA	LRA	FAN FLA	ELEC	NOTES	SEER
1	26.7	137	2.9	200V/3PHASE/60HZ	CARRIER 38AF007	10.0
2	26.7	137	2.9	200V/3PHASE/60HZ	CARRIER 38AF007	10.0
3	43.6	170	4.3/ 3.7	200V/3PHASE/60HZ	CARRIER 38AE012	9.0

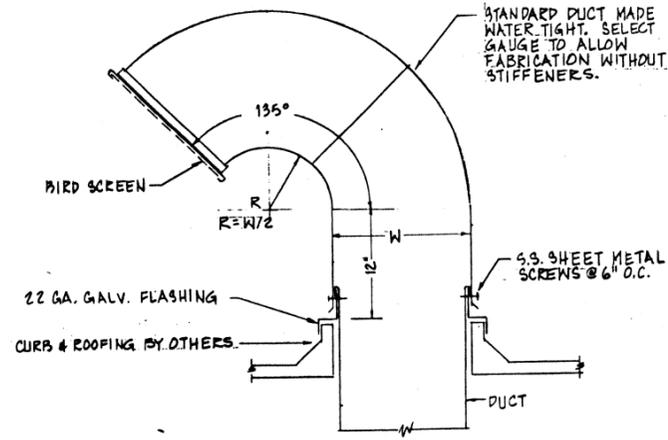
SELF-CONTAINED AIR CONDITIONING UNIT: (ACU-1)

TOTAL COOLING CAPACITY OF 86,890 BTUH. MINIMUM SENSIBLE CAPACITY OF 68,760 BTUH. 2700 CFM AT 1" W.G. EXTERNAL S.P., 270 CFM O.A., 95 DEGREES F CONDENSER ENTERING AIR DRY BULB. 79.0 DEGREES F DB/64.3 DEGREES F WB EVAPORATOR ENTERING AIR TEMPERATURES. 51.8 DEGREES F DB/51.2 DEGREES F WB EVAPORATOR LEAVING AIR TEMPERATURES. 450 FPM MAX COIL FACE VELOCITY. 3 ROW/15 FINS PER INCH. 1.5 HP INDOOR FAN MOTOR, 2 COMPRESSOR MOTORS 12.8 RLA/90.0 LRA (EA). 2 OUTDOOR FAN MOTORS 3.1 FLA (EA), 200V/3 PHASE/60 HZ. CARRIER MODEL 50DJ008, SEER - 9.10

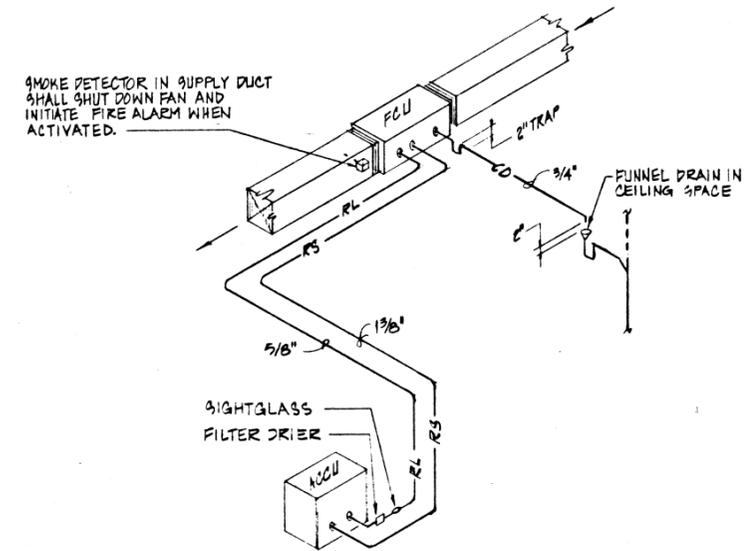
SUPPLY FAN: (SF)						
UNIT NO.	CFM	SP (INCHES)	HP	ELECTRICAL	DESCRIPTION	NOTES
1	1800	0.375	3/4	200V, 1 PHASE, 60 HZ	ROOF MOUNTED V-BELT DRIVE. WITH WASHABLE 1" FILTERS	PENN MU 4012 (INTERLOCK WITH EF-5)

EXHAUST FANS: (EF)						
UNIT NO.	CFM	SP (INCHES)	HP	ELECTRICAL	DESCRIPTION	NOTES
1	19,300	0.375	5	200V, 3 PHASE, 60 HZ	POWER ROOF VENTILATOR. V-BELT DRIVE	SEE SHEET M-10 FOR CONTROLS. PENN JB 48
2	2,400	3	3	200V, 3 PHASE, 60 HZ	IN-LINE. V-BELT DRIVE	3,600 RPM MOTOR SEE SHEET M-10 FOR CONTROLS. CARNON CM-145L
3	4,800	5	7.5	200V, 3 PHASE, 60 HZ	IN-LINE. V-BELT DRIVE	3,600 RPM MOTOR SEE SHEET M-10 FOR CONTROLS. CARNON CM-325L
4	1,200	0.25	1/6	115V, 1 PHASE, 60 HZ	POWER ROOF VENTILATOR. V-BELT DRIVE	SEE SHEET M-10 FOR CONTROLS. PENN AB 35
5	2,000	0.375	1	200V, 1 PHASE, 60 HZ	CEILING CABINET FAN	OPERATE WITH HP RATED LIGHT SWITCH * PENN 2-15
6	640	0.375	280 WATTS	115V, 1 PHASE, 60 HZ	CEILING CABINET FAN	OPERATE WITH HP RATED LIGHT SWITCH * PENN 2-12

\* IF DIRECT DRIVE FAN. PROVIDE VARIABLE SPEED CONTROL



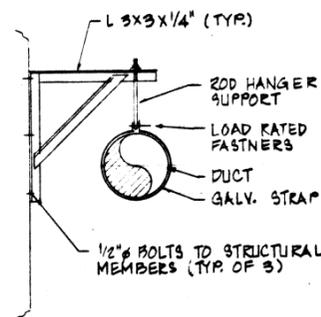
ROOF JACK DETAIL  
SCALE: NONE



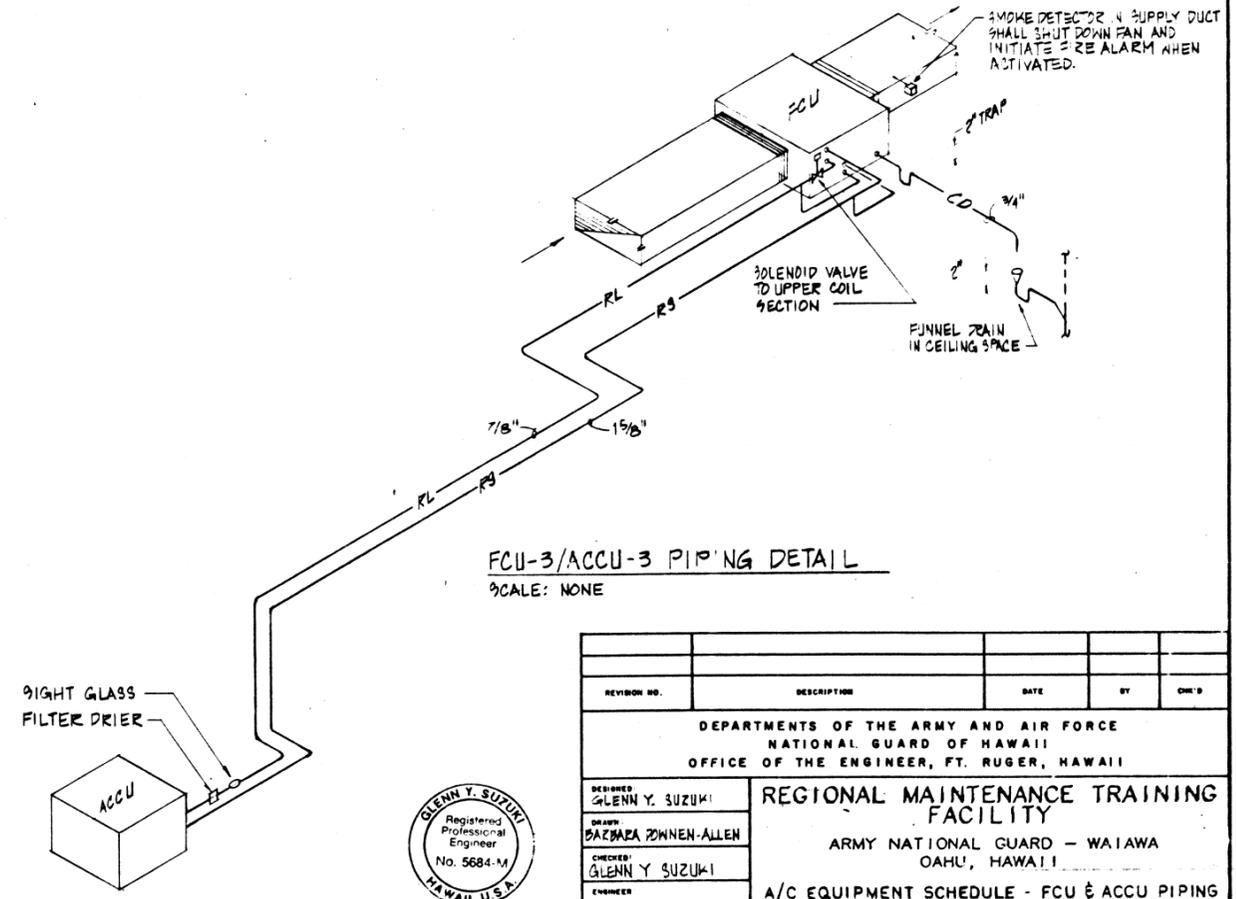
FCU-1/ACCU-1 & FCU-2/ACCU-2 PIPING DETAIL

DEHUMIDIFIER: (DH-1)

38 PINTS/24 HR WATER REMOVAL CAPACITY. 1/3 HP COMPRESSOR. 7.7 FLA. 705 WATTS. 115V/1 PHASE/60 HZ. OASIS MODEL OD-3800L.



TYP DUCT HANGER DETAIL  
SCALE: 1/2" = 1'-0"

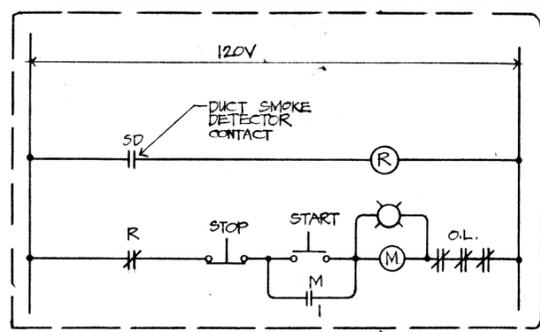


FCU-3/ACCU-3 PIPING DETAIL  
SCALE: NONE

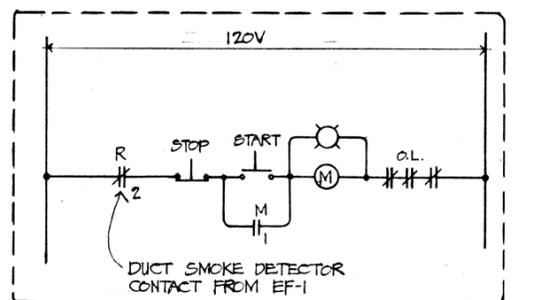
REVISION NO.	DESCRIPTION	DATE	BY	CHK'D
DEPARTMENTS OF THE ARMY AND AIR FORCE NATIONAL GUARD OF HAWAII OFFICE OF THE ENGINEER, FT. RUGER, HAWAII				
DESIGNED GLENN Y. SUZUKI	<b>REGIONAL MAINTENANCE TRAINING FACILITY</b> ARMY NATIONAL GUARD - WAIAWA OAHU, HAWAII			
DRAWN BARBARA ZIMMER-ALLEN				
CHECKED GLENN Y. SUZUKI				
ENGINEER	A/C EQUIPMENT SCHEDULE - FCU & ACCU PIPING			
APPROVED:	APPROVED:	DATE:		
APPROVED:	SCALE: AS NOTED			
DRAWING NO. M-9		SHEET.		



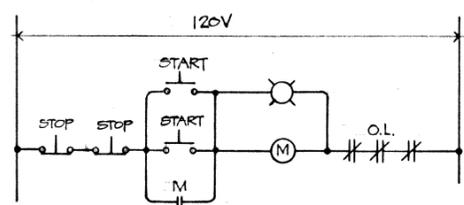
The work was prepared by me or under my supervision and construction of this project will be under my observation.



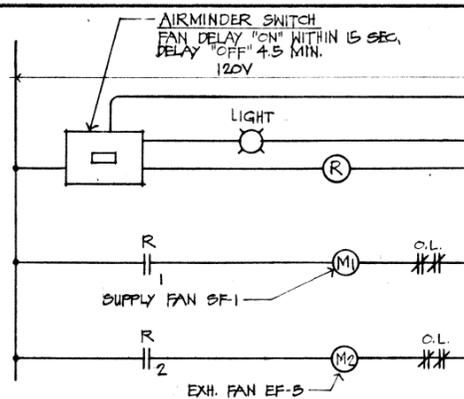
EXH. FAN EF-1 CONTROL SCHEMATIC DIAGRAM



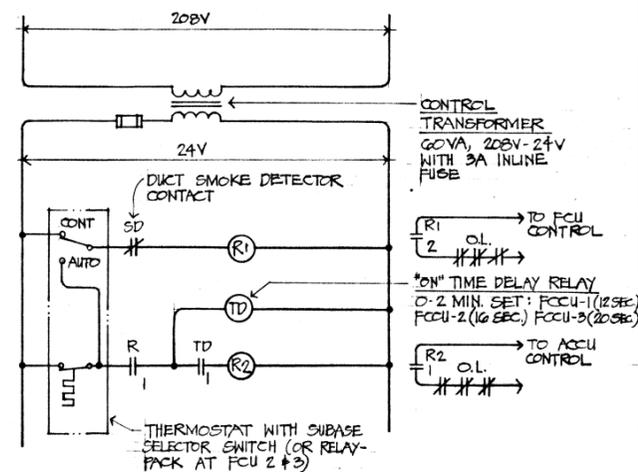
EXH. FAN EF-2 CONTROL SCHEMATIC DIAGRAM



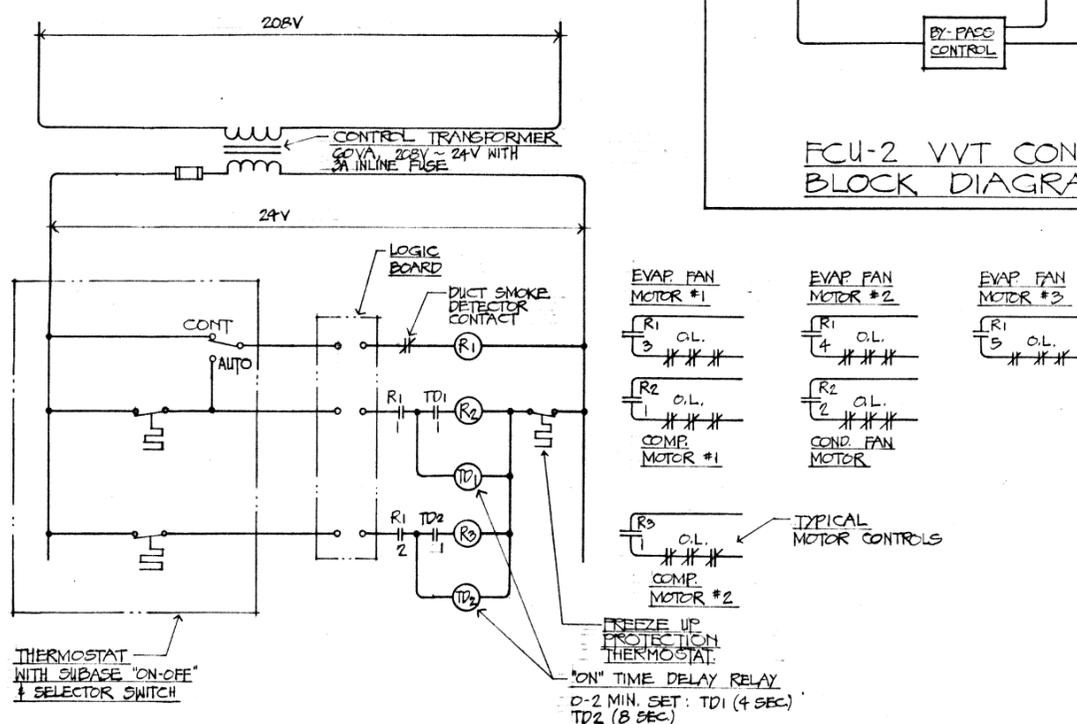
EXH. FAN EF-3 CONTROL SCHEMATIC DIAGRAM



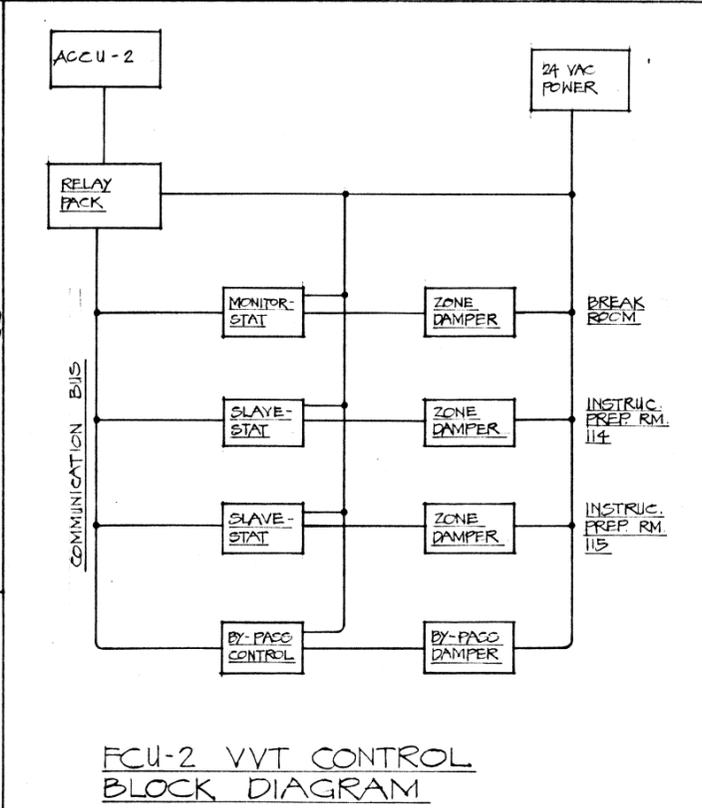
SUPPLY FAN SF-1 & EXH. FAN EF-5 CONTROL SCHEMATIC DIAGRAM



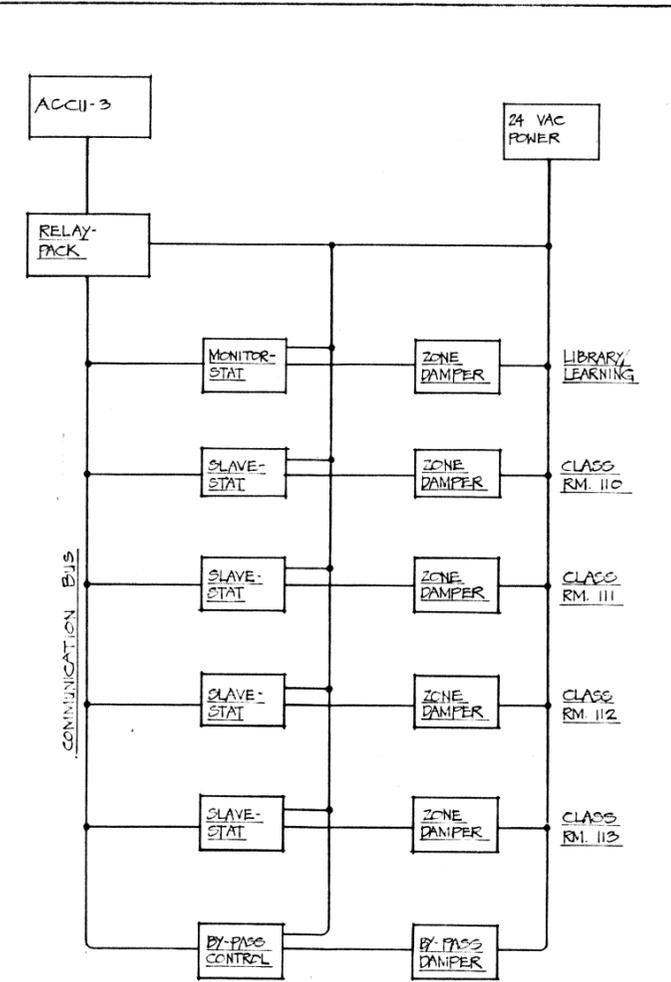
TYPICAL ACCU & FCU CONTROL SCHEMATIC DIAGRAM



ACU-1 CONTROL SCHEMATIC DIAGRAM



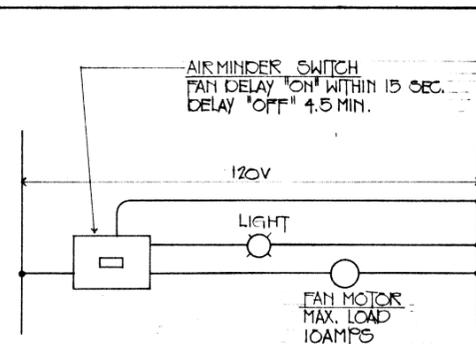
FCU-2 VVT CONTROL BLOCK DIAGRAM



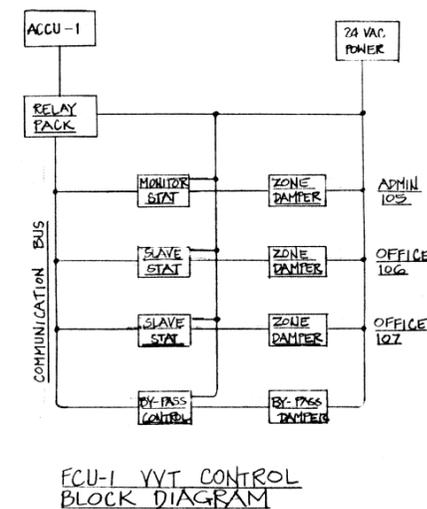
FCU-3 VVT CONTROL BLOCK DIAGRAM

GENERAL NOTES:

- CONTROL DIAGRAMS ARE FOR REFERENCE ONLY, CONTRACTOR SHALL SUBMIT MANUFACTURER SHOP DRAWINGS COMPLETE WITH DETAILED CONTROL SCHEMATIC AND CONNECTION DIAGRAMS FOR REVIEW AND APPROVAL.
- WIRING FOR ENTIRE CONTROL SYSTEM SHALL BE PROVIDED UNDER THIS SECTION OF CONTRACT. CONTRACTOR SHALL ROUGH-IN CONTROL WIRE RACEWAYS AND BACKBOX BEFORE WALLS & ROOFS ARE BUILT. ALL RACEWAYS SHALL BE CONCEALED. SEE EQUIPMENT & DEVICES LOCATION ON PLANS.
- ALL THERMOSTATS SHALL BE PRESET TO 78°F.
- ALL RELAYS: CONTACTS RATED 10A, 125V, COILS RATED 24V OR 120V AS INDICATED ON DIAGRAM.



EXH. FAN EF-6 CONTROL SCHEMATIC DIAGRAM



FCU-1 VVT CONTROL BLOCK DIAGRAM



The work was prepared by me or under my supervision and construction of this project will be under my observation.

REVISION NO.	DESCRIPTION	DATE	BY	CHK'D
DEPARTMENT OF THE ARMY AND AIR FORCE NATIONAL GUARD OF HAWAII OFFICE OF THE ENGINEER, FT. RUGER, HAWAII				
DESIGNED:	REGIONAL MAINTENANCE TRAINING FACILITY			
DRAWN:	ARMY NATIONAL GUARD - WAIAWA OAHU, HAWAII			
CHECKED:	CONTROL SCHEMATIC & BLOCK DIAGRAMS			
ENGINEER:	APPROVED:	DATE:		
APPROVED:	APPROVED:	DATE:		
SCALE:	NONE			
DRAWING NO.	M-10			
SHEET:	M-10			