

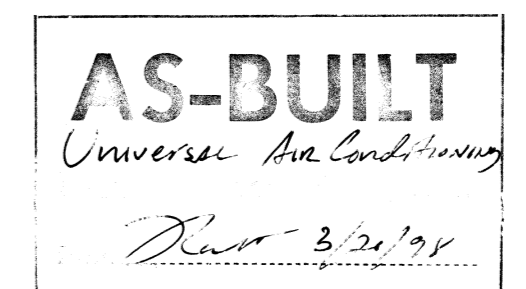
- NOTES:
1. MOUNT DUCTWORK AND PIPING AS HIGH AS POSSIBLE.
  2. DUCTWORK AND PIPING SHOWN ARE TO BE INSTALLED ABOVE EXISTING/NEW CEILINGS UNLESS NOTED OTHERWISE.
  3. COORDINATE DUCT AND PIPING ROUTES WITH EXISTING STRUCTURAL MEMBERS.
  4. COORDINATE FINAL UNIT CONTROLLER AND ROOM THERMOSTAT LOCATIONS WITH FURNITURE PANELS AND COMPONENT LAYOUTS.
  5. COORDINATE DUCTWORK AND PIPING ROUTED IN DROP CEILINGS AND FURRED SPACES. SEE ARCHITECTURAL DRAWINGS FOR CEILING DETAILS.

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

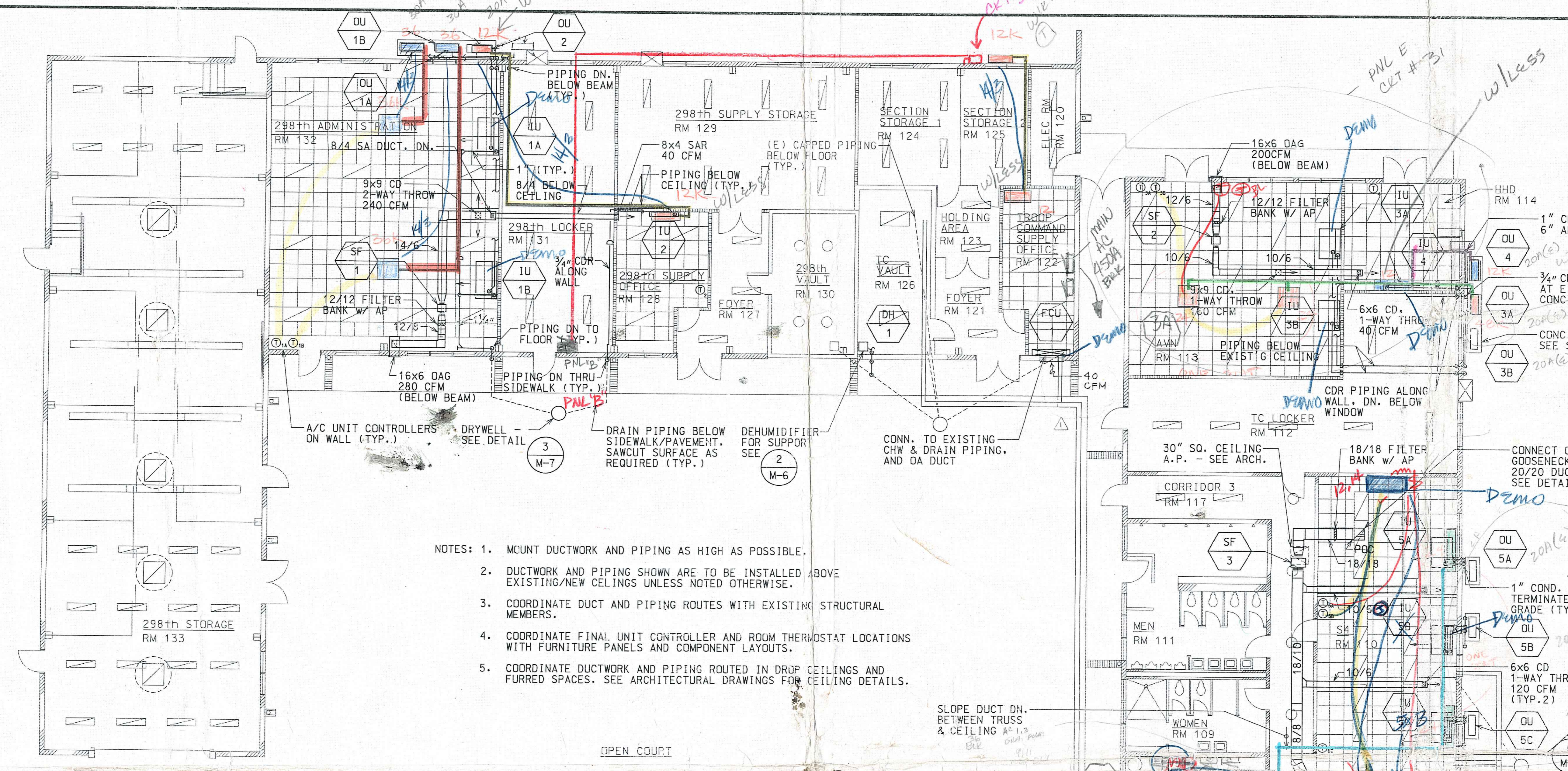
REVISION NO.	SYMBOL	DESCRIPTION	DATE	APPROVED STATE PUBLIC WORKS ENGINEER

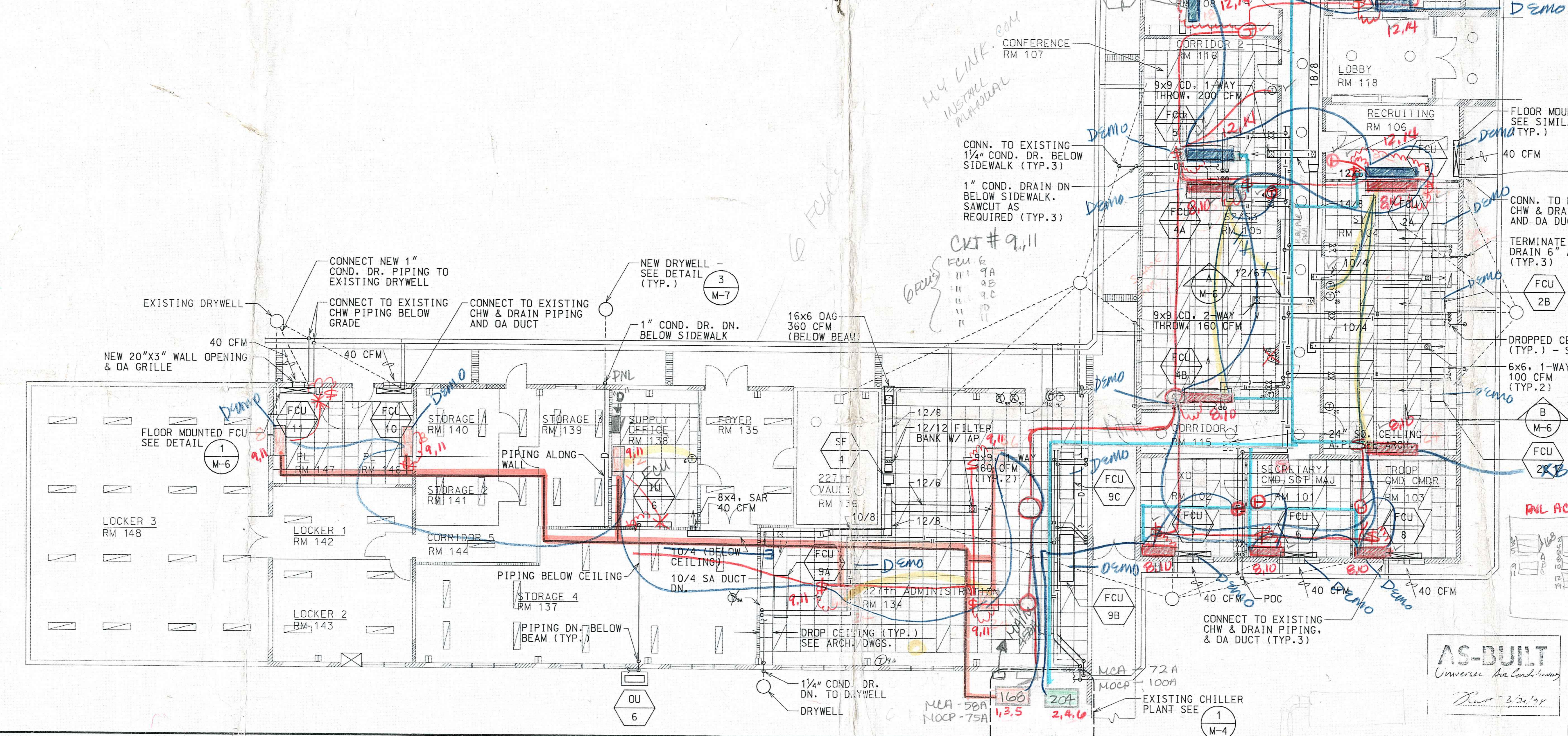
		DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS <b>WAIAWA ARMY NATIONAL GUARD ARMY ADDITIONS AND RENOVATIONS - PHASE 2</b> PEARL CITY, OAHU, HAWAII	
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION <b>ANGE MOTONAGA, INC.</b> MECHANICAL ENGINEERS		MECHANICAL FLOOR PLAN GERALD INDUYE AIA ARCHITECT DESIGNED BY: MS CHECKED BY: MS DRAWN BY: LC SCALE: AS NOTED	
SAOS JOB NO. 12-14-7004		DRAWING NO. <b>M-3</b> SHEET OF 1 SHEETS	
DATE JUNE 1996		DATE JUNE 1996	



120 192



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1. MOUNT DUCTWORK AND PIPING AS HIGH AS POSSIBLE.
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MCA 25A  
RECORDED 301  
BOOK 20A

P/NL C  
35.37  
39.41  
40.42  
CKT - 34  
ALL @?

FCU  
1  
2  
3  
4  
5A  
5B

1 CKT - 5 FCU's @ - 4  
CKT # 12, 14

1 CKT - 7 FCU's @ - 5  
CKT # 9, 10

FCU  
2A  
2B  
4A  
4B  
6  
7  
8

**MECHANICAL FLOOR PLAN**

SCALE: 1/8" = 1' - 0"

PEARL CITY - PHOT 321-855 (P)  
754-6795 (W)  
CKAP

REVISION NO.	DATE	DESCRIPTION	BY	DATE	APPROVED STATE PUBLIC WORKS ENGINEER

		DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS STATE OF HAWAII
<b>WAIANA NATIONAL GUARD ARMORY          ADDITIONS AND RENOVATIONS - PHASE 2</b>		
PEARL CITY, OAHU, HAWAII		
<b>MECHANICAL FLOOR PLAN</b>		
DESIGNED BY: MS	CHECKED BY: MS	DATE: 12-14-2004
DRAWN BY: LC	APPROVED BY: GM	DATE: JUNE 1996
SCALE: AS NOTED		DRAWING NO: M-3 SHEET: 1 OF 1

**AS-BUILT**  
Universal Air Conditioning  
3-2-109

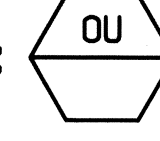
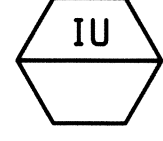
**EQUIPMENT SCHEDULES:**

**FAN COIL UNIT** 

UNIT NOS.	AREA SERVED	QTY. EA.	TOTAL CAP. BTUH. MIN.	SENSIBLE CAP. BTUH. MIN.	SUPPLY AIR CFM	MOTOR		FAN SPEED	ENT. AIR COND. *F DB *F WB		CHILLED WATER COND. * GPM PD. (FT)		COIL ROWS	VOLTS	PHASE	HERTZ	WEIGHT LB.	REMARKS
						HP	WATTS		*F DB	*F WB	GPM	PD. (FT)						
1	TROOP COMMAND 122	1	11,900	10,100	540	1/8	210	HIGH	75.9	64.4	1.8	2.9	4	115	1	60	140	FLOOR MOUNTED, CARRIER 42VB 08 OR APPROVED EQUAL
2A,2B,2C	S1 104	3	17,100	14,200	680	1/8	256	HIGH	76.1	64.7	3.0	6.8	4	115	1	60	175	CEILING MOUNTED, CARRIER 42CG 08 OR APPROVED EQUAL *
3	RECRUITING 106	1	11,700	9,900	540	1/8	210	HIGH	76.0	64.5	1.8	2.7	4	115	1	60	140	FLOOR MOUNTED, CARRIER 42VB 08 OR APPROVED EQUAL
4A,4B	S2/S3 105	2	22,500	18,900	1100	*1/8	435	HIGH	75.7	64.4	4.3	4.3	4	115	1	60	245	CEILING MOUNTED, CARRIER 42CG 12 OR APPROVED EQUAL
5	CONFERENCE 107	1	33,200	23,400	1075	*1/8	435	HIGH	76.9	66.0	7.2	12.3	4	115	1	60	245	CEILING MOUNTED, CARRIER 42CG 12 OR APPROVED EQUAL
6	SECRETARY 101	1	10,800	9,000	540	1/8	210	HIGH	75.9	64.5	3.1	6.2	4	115	1	60	140	FLOOR MOUNTED, CARRIER 42VB 08 OR APPROVED EQUAL
7	XO 102	1	11,900	10,200	540	1/8	210	HIGH	75.8	64.3	1.9	3.2	4	115	1	60	140	FLOOR MOUNTED, CARRIER 42VB 08 OR APPROVED EQUAL
8	TROOP COMMAND 103	1	12,400	10,700	540	1/8	210	HIGH	75.7	64.2	2.5	5.1	4	115	1	60	140	FLOOR MOUNTED, CARRIER 42VB 08 OR APPROVED EQUAL
9A	227TH ADMIN 134	1	20,100	16,500	880	*1/12	305	HIGH	76.1	64.8	4.0	3.0	4	115	1	60	215	CEILING MOUNTED, CARRIER 42CG 10 OR APPROVED EQUAL
9B,9C	227TH ADMIN 134	2	29,100	23,000	1075	*1/8	435	HIGH	76.1	64.8	6.9	11.4	4	115	1	60	245	CEILING MOUNTED, CARRIER 42CG 12 OR APPROVED EQUAL
10	PL 146	1	9,400	7,600	475	1/8	180	HIGH	76.2	64.9	2.0	1.7	4	115	1	60	135	FLOOR MOUNTED, CARRIER 42VB 06 OR APPROVED EQUAL
11	PL 147	1	8,900	7,100	475	1/8	180	HIGH	76.3	65.1	1.6	1.1	4	115	1	60	135	FLOOR MOUNTED, CARRIER 42VB 06 OR APPROVED EQUAL

\* TWO MOTORS EACH: TOTAL WATTS SHOWN \* 45°F ENTERING WATER TEMP. \* FCU-2A & 2B ARE "RIGHT HAND UNITS", FCU-2C IS A "LEFT HAND" UNIT, VERIFY.

**D/X SPLIT DUCTLESS AIR CONDITIONING SYSTEM:**

**OUTDOOR CONDENSING UNIT:**  **INDOOR FAN COIL UNIT:** 

UNIT NO.	TYPE	QTY. EA.	AREA SERVED	COOLING CAP. BTUH MIN. (ARI)	SENSIBLE CAP. BTUH MIN. (ARI)	WATTS	SEER	SUPPLY AIR CFM	FAN MOTOR F.L.A.	COMPRESSOR R.L.A.   L.R.A.	VOLTS	PHASE	HERTZ	WEIGHT LB.	REMARKS
OU-1A	-	1	298TH ADMIN. RM. 132	36,500	24,300	3,800	10.2	-	0.75/0.75	17.5   87	208	1	60	220	MITSUBISHI PC36EK OR APPROVED EQUAL *
IU-1A	CEILING MOUNTED							1100	2.1	-	-	115	1	60	
OU-1B	-	1	298TH ADMIN. RM. 132	36,500	24,300	3,800	10.2	-	0.75/0.75	17.5   87	208	1	60	220	MITSUBISHI PC36EK OR APPROVED EQUAL *
IU-1B	CEILING MOUNTED							1100	2.1	-	-	115	1	60	
OU-2	-	1	298TH SUPPLY RM. 128	12,600	8,900	1,200	10.6	-	0.65	8.0   29	208	1	60	105	MITSUBISHI MS12EN OR APPROVED EQUAL
IU-2	WALL MOUNTED							400	0.5	-	-	115	1	60	
OU-3A	-	1	AVN RM. 113	24,000	17,500	2,430	10.3	-	0.65/0.65	11.5   54	208	1	60	210	MITSUBISHI PC24EK OR APPROVED EQUAL *
IU-3A	CEILING MOUNTED							900	1.8	-	-	115	1	60	
OU-3B	-	1	AVN RM. 113	24,000	17,500	2,430	10.3	-	0.65/0.65	11.5   54	208	1	60	210	MITSUBISHI PC24EK OR APPROVED EQUAL *
IU-3B	CEILING MOUNTED							900	1.8	-	-	115	1	60	
OU-4	-	1	HHD RM. 114	18,000	12,200	1,700	11.0	-	0.65	12.0   37	208	1	60	160	MITSUBISHI PK18EK OR APPROVED EQUAL
IU-4	WALL MOUNTED							600	0.9	-	-	115	1	60	
OU-5A	-	1	S4 RM. 110	24,000	17,500	2,430	10.3	-	0.65/0.65	11.5   54	208	1	60	210	MITSUBISHI PC24EK OR APPROVED EQUAL **
IU-5A	CEILING MOUNTED							900	1.8	-	-	115	1	60	
OU-5B	-	1	S4 RM. 110	24,000	17,500	2,430	10.3	-	0.65/0.65	11.5   54	208	1	60	210	MITSUBISHI PC24EK OR APPROVED EQUAL *
IU-5B	CEILING MOUNTED							900	1.8	-	-	115	1	60	
OU-5C	-	1	S4 RM. 110	24,000	17,500	2,430	10.3	-	0.65/0.65	11.5   54	208	1	60	210	MITSUBISHI PC24EK OR APPROVED EQUAL *
IU-5C	CEILING MOUNTED							900	1.8	-	-	115	1	60	
OU-6	-	1	SUPPLY OFFICE RM. 138	18,000	12,200	1,700	11.0	-	0.65	12.0   37	208	1	60	160	MITSUBISHI PK18EK OR APPROVED EQUAL
IU-6	WALL MOUNTED							600	0.9	-	-	115	1	60	

\* PROVIDE CONDENSATE DRAIN PUMP & FUR-IN PANELS. \*\* PROVIDE FUR-IN PANELS ONLY.

**SUPPLY FANS** 

UNIT NO.	QTY. EA.	FAN TYPE	CFM	S.P. I.W.G.	MOTOR WATTS	MOTOR BHP	FAN RPM	MAX. SONES	DRIVE TYPE	VOLTS	PHASE	HERTZ	REMARKS
1	1	A	280	0.375	220	-	1340	4	DIRECT	115	1	60	GREENHECK CSP-127A OR APPROVED EQUAL
2	1	A	200	0.375	220	-	1160	3	DIRECT	115	1	60	GREENHECK CSP-127A OR APPROVED EQUAL
3	1	A	800	0.500	460	-	1070	6	DIRECT	115	1	60	GREENHECK CSP-162A OR APPROVED EQUAL
4	1	A	360	0.500	410	-	1090	4	DIRECT	115	1	60	GREENHECK CSP-158A OR APPROVED EQUAL

- NOTES:
- FAN TYPE: A IN-LINE CEILING CABINET FAN
  - PROVIDE FAN-MOUNTED SPEED CONTROLLER FOR ALL SUPPLY FANS.
  - SF-1: INTERLOCK WITH ROOM 128 & 132 LIGHT SWITCHES  
SF-2: INTERLOCK WITH ROOM 113 & 114 LIGHT SWITCHES  
SF-3: INTERLOCK WITH ROOM 104,105,107 & 110 LIGHT SWITCHES  
SF-4: INTERLOCK WITH ROOM 134 & 138 LIGHT SWITCHES  
SEE ELECTRICAL DRAWINGS FOR DETAILS

**DEHUMIDIFIER** 

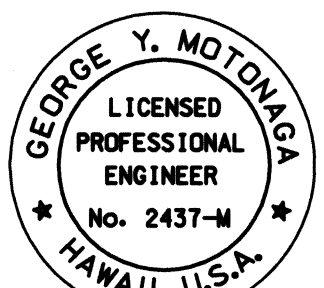
UNIT NO.	AREA SERVED	MIN. CAPACITY PINTS/24 HRS	FULL LOAD AMPS	WATTS	VOLTS	PHASE	HERTZ	WEIGHT LB.	REMARKS
1	TC VAULT RM. NO. 126	24 (AHAM STANDARDS)	4.7	430	115	1	60	55	OASIS OR APPROVED EQUAL

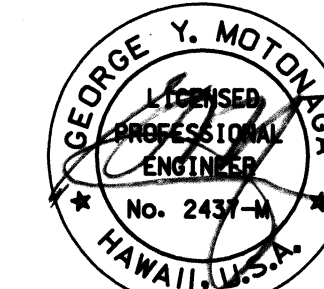
**AS-BUILT**  
Universal Air Condition  
*George Y. Motonaga*

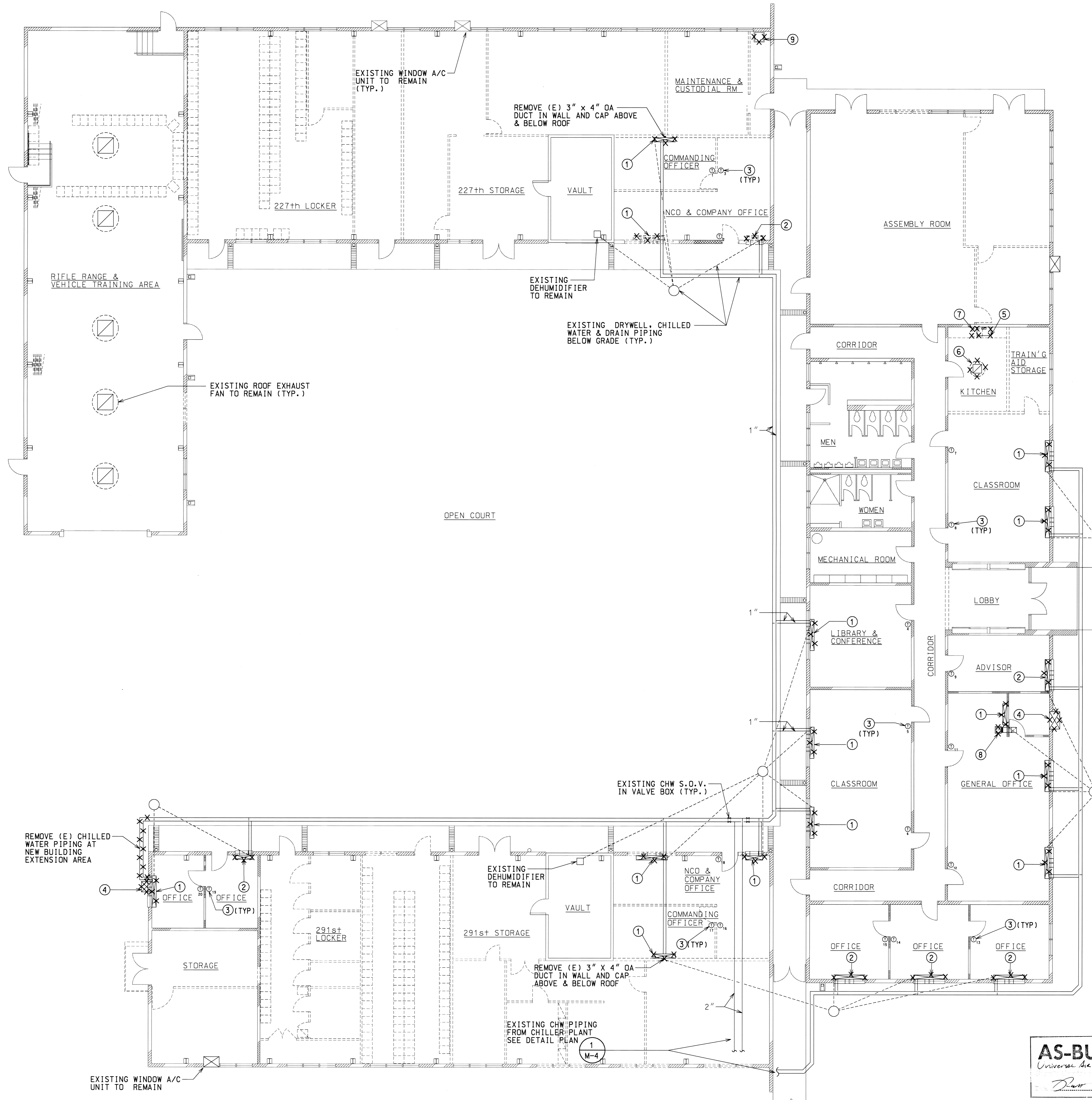
REVISED ORDINANCES OF HONOLULU CHAPTER 32 BUILDING ENERGY EFFICIENCY STANDARDS

THE BUILDING ENERGY EFFICIENCY STANDARDS HAVE BEEN REVIEWED AND TO THE BEST OF MY KNOWLEDGE THIS DESIGN SUBSTANTIALLY CONFORMS TO THE MECHANICAL REQUIREMENTS OF SECTIONS 9.3 AND 10.3.

*Signature*



PCD#	BLDG CODE REVISIONS	DATE	APPROVED STATE
NO.	SYMBOL	DESCRIPTION	PUBLIC WORKS ENGINEER
			
DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS STATE OF HAWAII <b>WAIAWA ARMY NATIONAL GUARD ARMORY</b> ADDITIONS AND RENOVATIONS - PHASE 2 PEARL CITY, OAHU, HAWAII			
EQUIPMENT SCHEDULES			
DESIGNED BY: MS	CHECKED BY: MS	DWG. JOB NO. 12-14-7004	DRAWING NO. M-1
DRAWN BY: LC	APPROVED BY: GM	DATE: JUNE 1996	SHEET 29 OF 47 SHEETS
SCALE: AS NOTED			



**REMOVAL LEGEND:**

- | Symbol | Description   |
|--------|---|
| ①      | Remove existing floor mounted fan coil unit. Cap chilled water and drain piping below floor. Remove outside air duct and grille through wall (except where noted), coordinate with General Contractor for patching of wall. |
| ②      | Remove existing floor mounted fan coil unit. Temporarily cap chilled water and drain piping above floor for future connection. Existing outside air duct and grille through wall to remain for future connection.           |
| ③      | Remove existing thermostat and control wiring.  |
| ④      | Remove existing window air conditioning unit. Coordinate with General Contractor for patching of wall. See note #1 below.   |
| ⑤      | Remove existing kitchen range hood. Cap exhaust duct above and below roof.  |
| ⑥      | Remove existing roof exhaust fan, grille, controls and accessories. Remove exhaust duct as required for new work. Temporarily cap duct above roof for future connection.  |
| ⑦      | Remove existing sink, piping and accessories. Cap water, waste and vent piping behind wall/below floor.   |
| ⑧      | Remove existing transfer fan, duct, register, controls and accessories.   |
| ⑨      | Remove existing service sink, piping and accessories. Cap water, waste and vent piping behind wall/below floor.   |

- NOTES:
- EXISTING WINDOW UNIT SHALL BE REMOVED UNDAMAGED BY THE CONTRACTOR AND RETURNED TO THE NATIONAL GUARD VIA THE OFFICER-IN-CHARGE.
  - SINK UNDERCOATING HAS TESTED POSITIVE FOR ASBESTOS. REFER TO SPECS SECTION 02080 OR COORDINATE WITH ABATEMENT CONTRACTOR FOR REMOVAL AND DISPOSAL OF SINK.

**MECHANICAL REMOVAL PLAN**  
SCALE: 1/8" = 1' - 0"

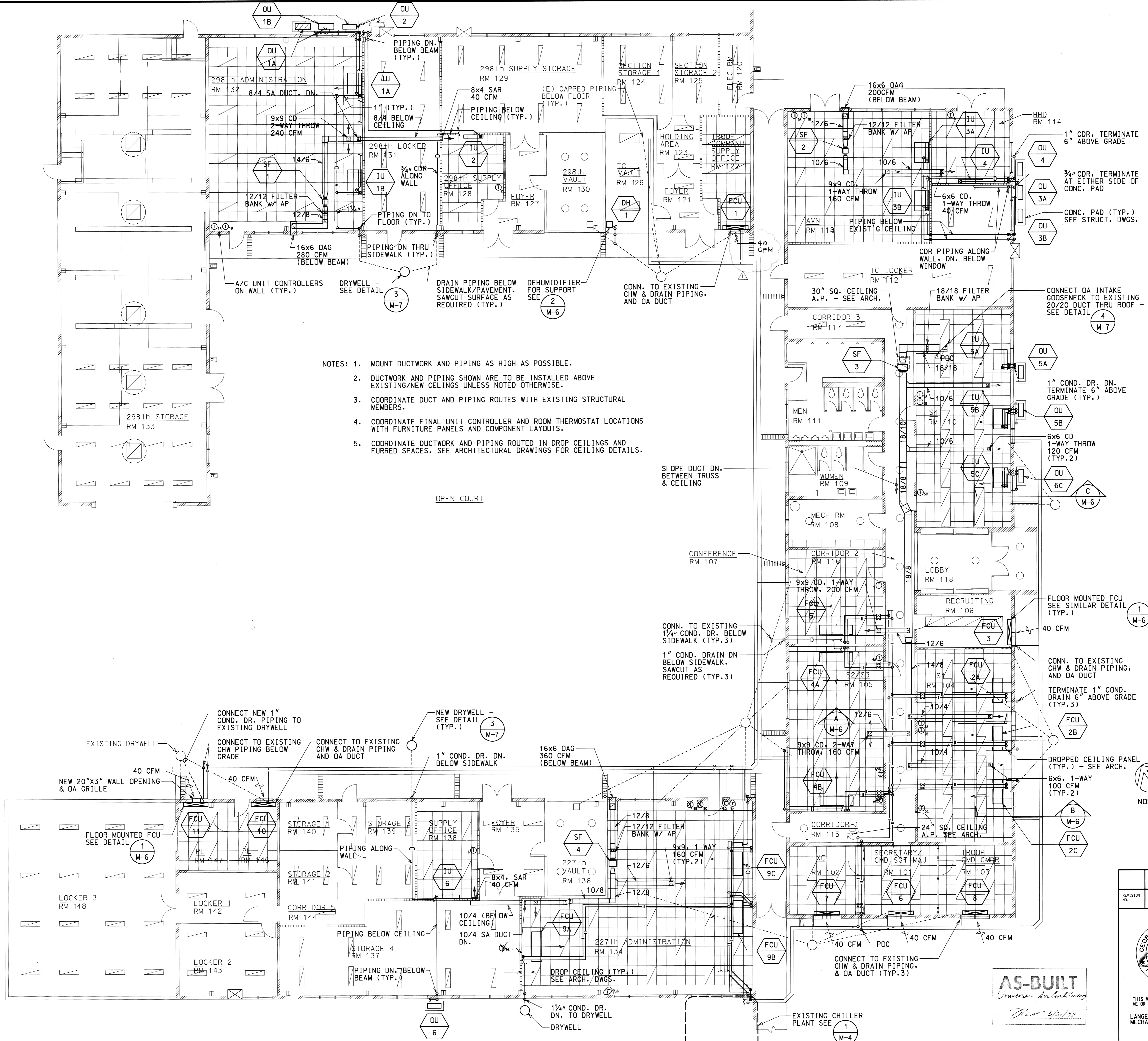
NORTH

**AS-BUILT**  
Universal Air Conditioning  
Draw 3.5.1994

REVISION NO.	SYM.	DESCRIPTION	DATE	APPROVED STATE PUBLIC WORKS ENGINEER

		DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS STATE OF HAWAII	
<b>WAIAWA ARMY NATIONAL GUARD ARMY ADDITIONS AND RENOVATIONS - PHASE 2</b>			
PEARL CITY, OAHU,		HAWAII	
<b>MECHANICAL REMOVAL PLAN</b>			
DESIGNED BY: MS DRAWN BY: LC	CHECKED BY: MS APPROVED BY: GM	OASG JOB NO.: 12-14-7004 DATE: JUNE 1996	DRAWING NO.: M-2 SHEET: 30 OF 47 SHEETS
SCALE: AS NOTED			



- NOTES:
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  4. COORDINATE FINAL UNIT CONTROLLER AND ROOM THERMOSTAT LOCATIONS WITH FURNITURE PANELS AND COMPONENT LAYOUTS.
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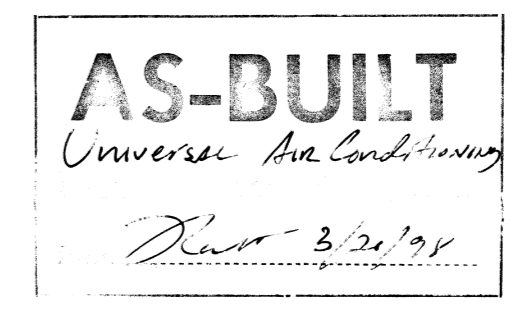
**MECHANICAL FLOOR PLAN**  
SCALE: 1/8" = 1' - 0"

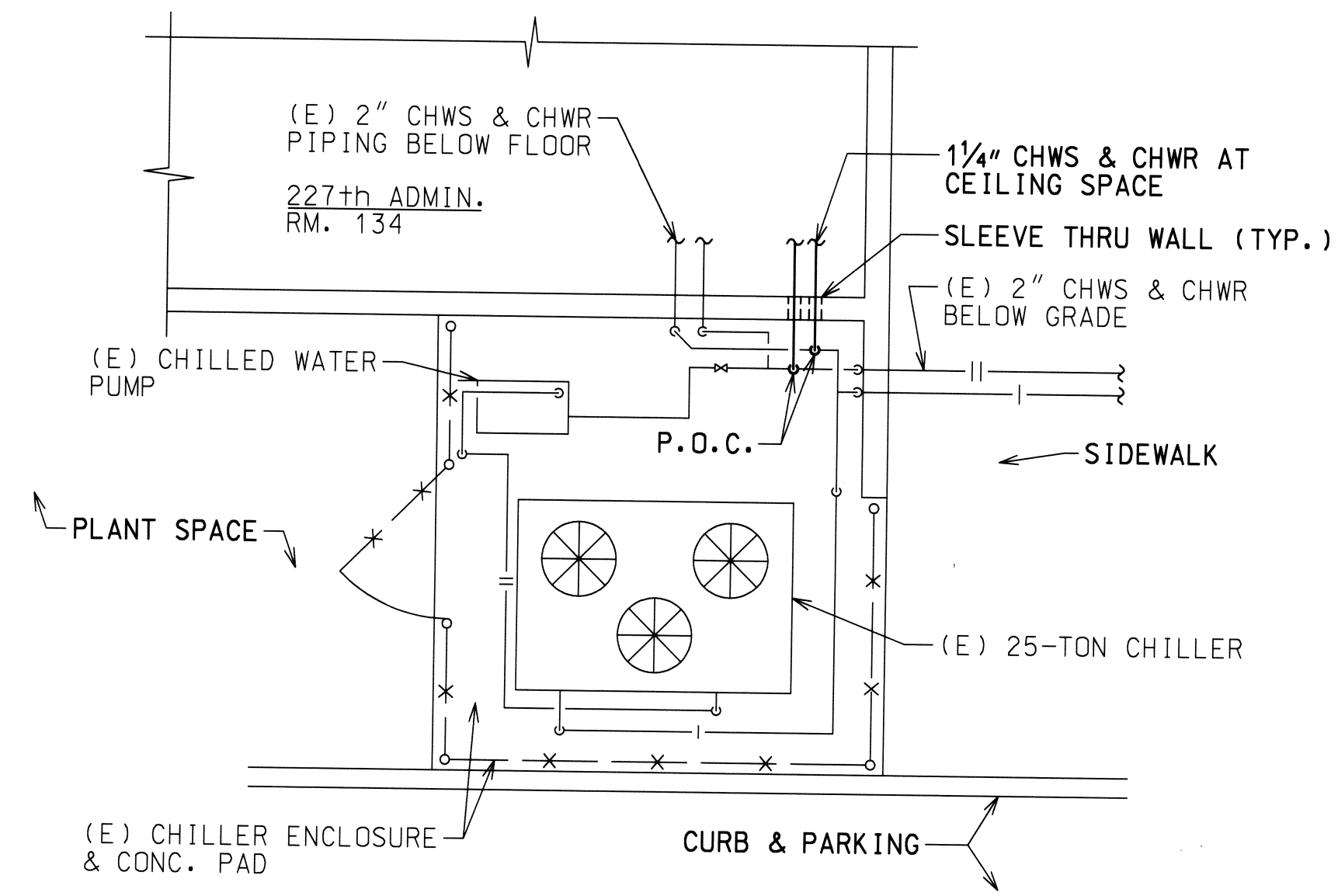
NORTH

REVISION NO.	SYMBOL	DESCRIPTION	DATE	APPROVED STATE PUBLIC WORKS ENGINEER

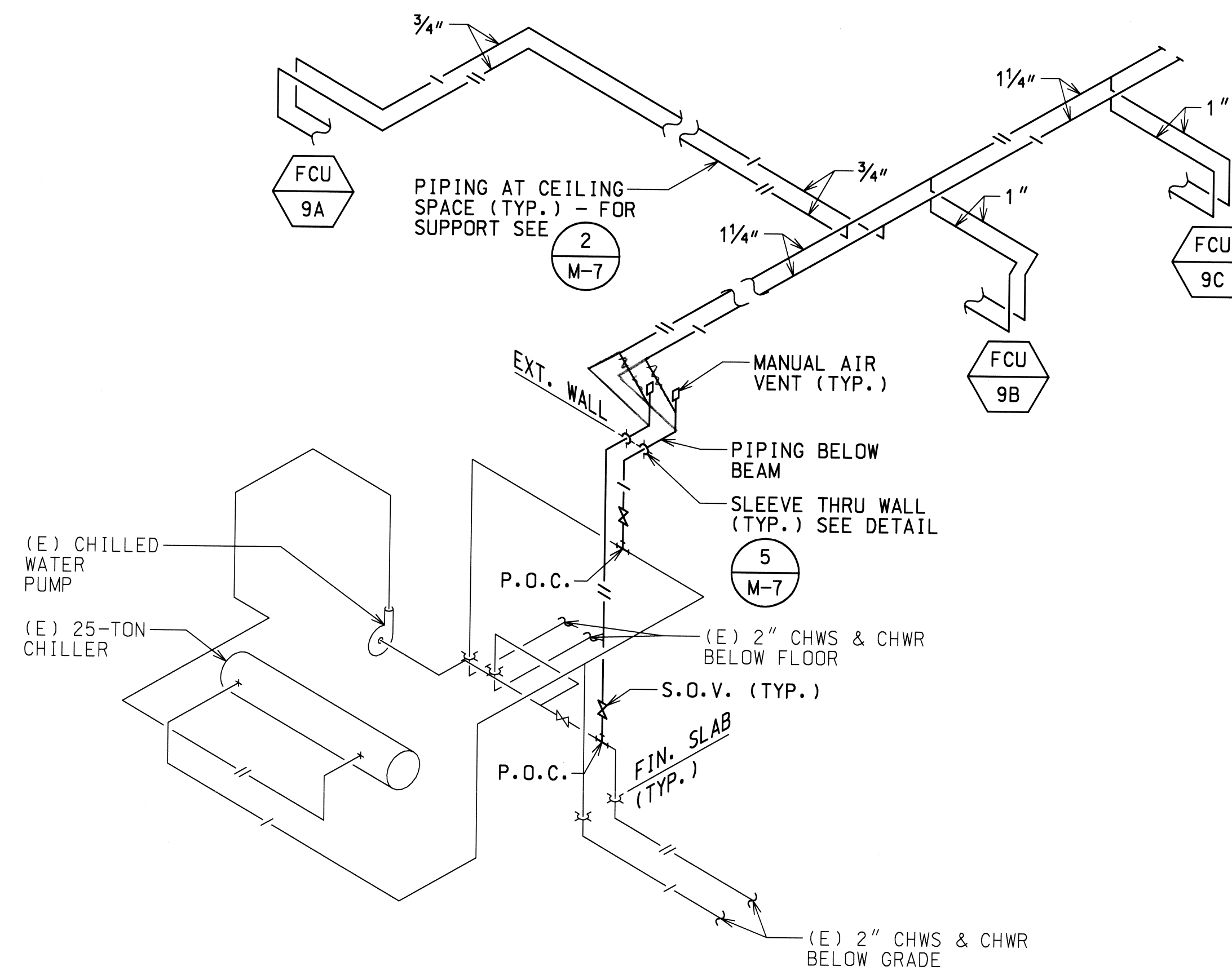
  

		DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS STATE OF HAWAII <b>WAIAWA ARMY NATIONAL GUARD ARMORY</b> <b>ADDITIONS AND RENOVATIONS - PHASE 2</b> PEARL CITY, OAHU, HAWAII	
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION <b>LANGE MOTONAGA, INC.</b> MECHANICAL ENGINEERS		MECHANICAL FLOOR PLAN GERALD INDUYE AIA - ARCHITECT DESIGNED BY: MS DRAWN BY: LC SCALE: AS NOTED	
SAWS JOB NO. 12-14-7004 DATE: JUNE 1996		DRAWING NO. M-3 SHEET 1 OF 1 SH15	

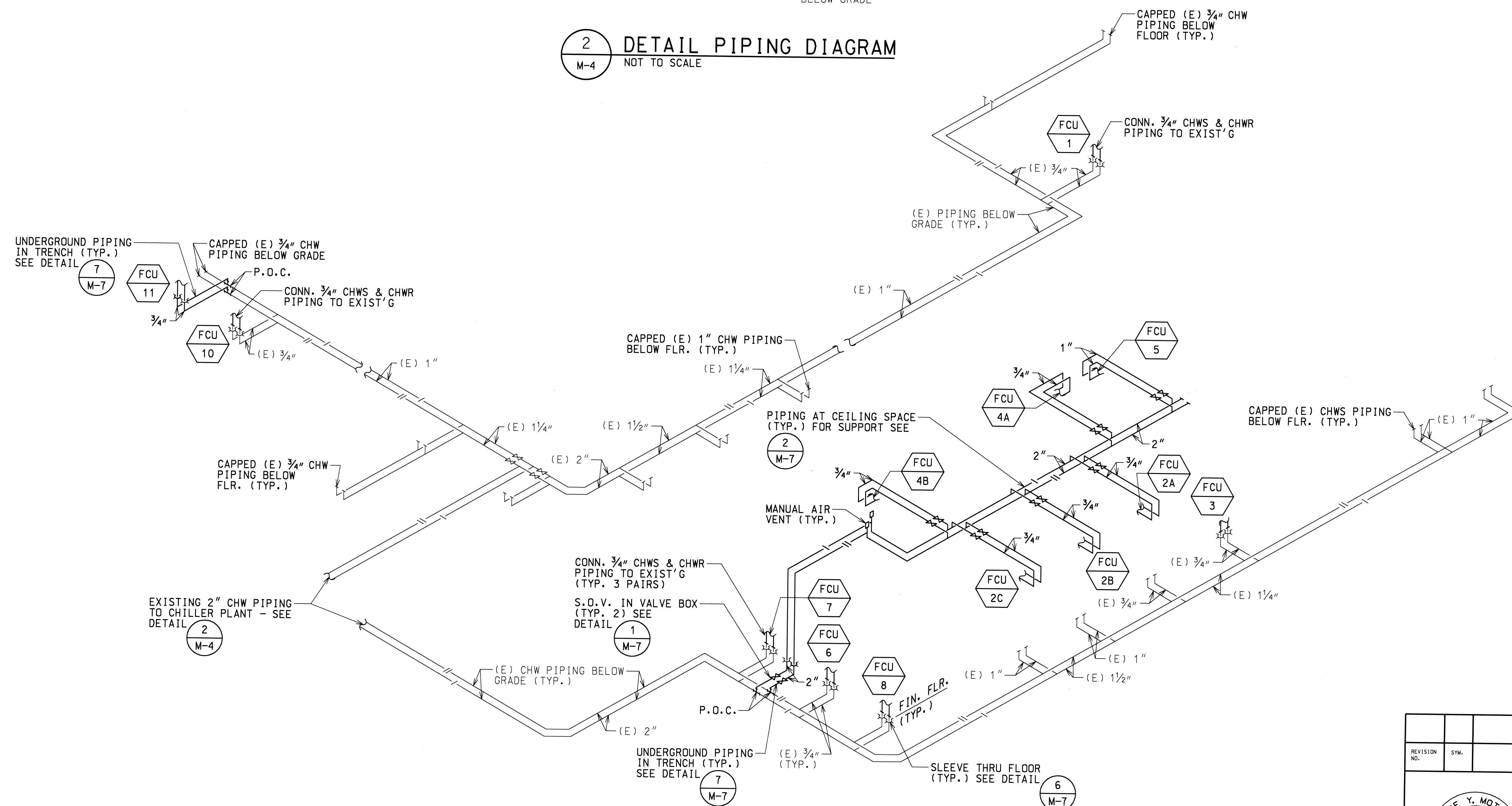




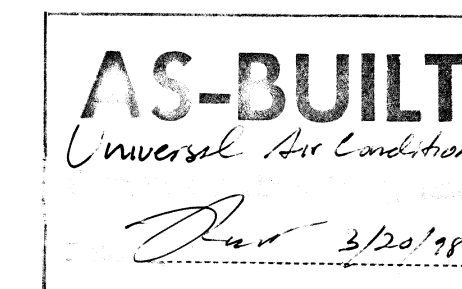
**1** **DETAIL FLOOR PLAN**  
M-4 NOT TO SCALE



**2** **DETAIL PIPING DIAGRAM**  
M-4 NOT TO SCALE



**CHILLED WATER PIPING DIAGRAM**  
NOT TO SCALE



REVISION NO.	SYM.	DESCRIPTION	DATE	APPROVED STATE PUBLIC WORKS ENGINEER

		<b>DEPT. OF ACCOUNTING &amp; GENERAL SERVICES</b> DIVISION OF PUBLIC WORKS STATE OF HAWAII	
<b>WAIAWA ARMY NATIONAL GUARD ARMORY</b> <b>ADDITIONS AND RENOVATIONS - PHASE 2</b> PEARL CITY, OAHU, HAWAII			
<b>DETAIL FLOOR PLAN, CHILLED WATER PIPING DIAGRAM &amp; DETAILS</b>			
DESIGNED BY: MS	CHECKED BY: MS	DACS JOB NO. 12-14-7004	DRAWING NO. M-4
DRAWN BY: LC	APPROVED BY: GM	DATE JUNE 1996	SHEET 30 OF 31 SHEETS
SCALE: AS NOTED			

**REMOVAL NOTES:**

1. Provide all labor, materials and equipment required to perform removal work as shown in the drawings, and as required to complete the work, and as herein specified.
2. Every precaution/provision shall be taken by the contractor to provide safety to the Army National Guard personnel, public and the workers.
3. Contractor shall coordinate construction schedule and phasing with the General contractor.
4. Complete all work in an orderly, neat and safe manner with consideration to the existing facilities. Contractor shall be totally responsible for the repair or replacement of any and all damages to the existing facilities.
5. Existing systems shown are based on existing drawings and field observations. Contractor shall verify all existing system in the space before removal. Contractor shall notify Architect/Engineer of any discrepancies found on the job site before commencement of work.

**GENERAL NOTES:**

1. Contractor shall be responsible to verify and coordinate all existing conditions and make necessary adjustments for a complete installation. Notify Engineer of any discrepancies. Contractor shall visit the job site and become familiarized with the existing systems before submitting bids.
2. Piping shown is diagrammatic; contractor is responsible for verifying actual site conditions and shall adjust accordingly.
3. Saw cut existing concrete floor slab as required for all underground utilities and patch floor upon completion. All patchwork shall match with the existing or new work where applicable. See structural drawings for details.
4. Seal all piping openings through existing walls and ceilings. See Architectural drawings and Specifications for details.
5. All work shown on drawings are new except as noted.
6. Contractor shall verify the required delivery time for all equipment in order to meet the construction schedule.

**CONTROL NOTES:**

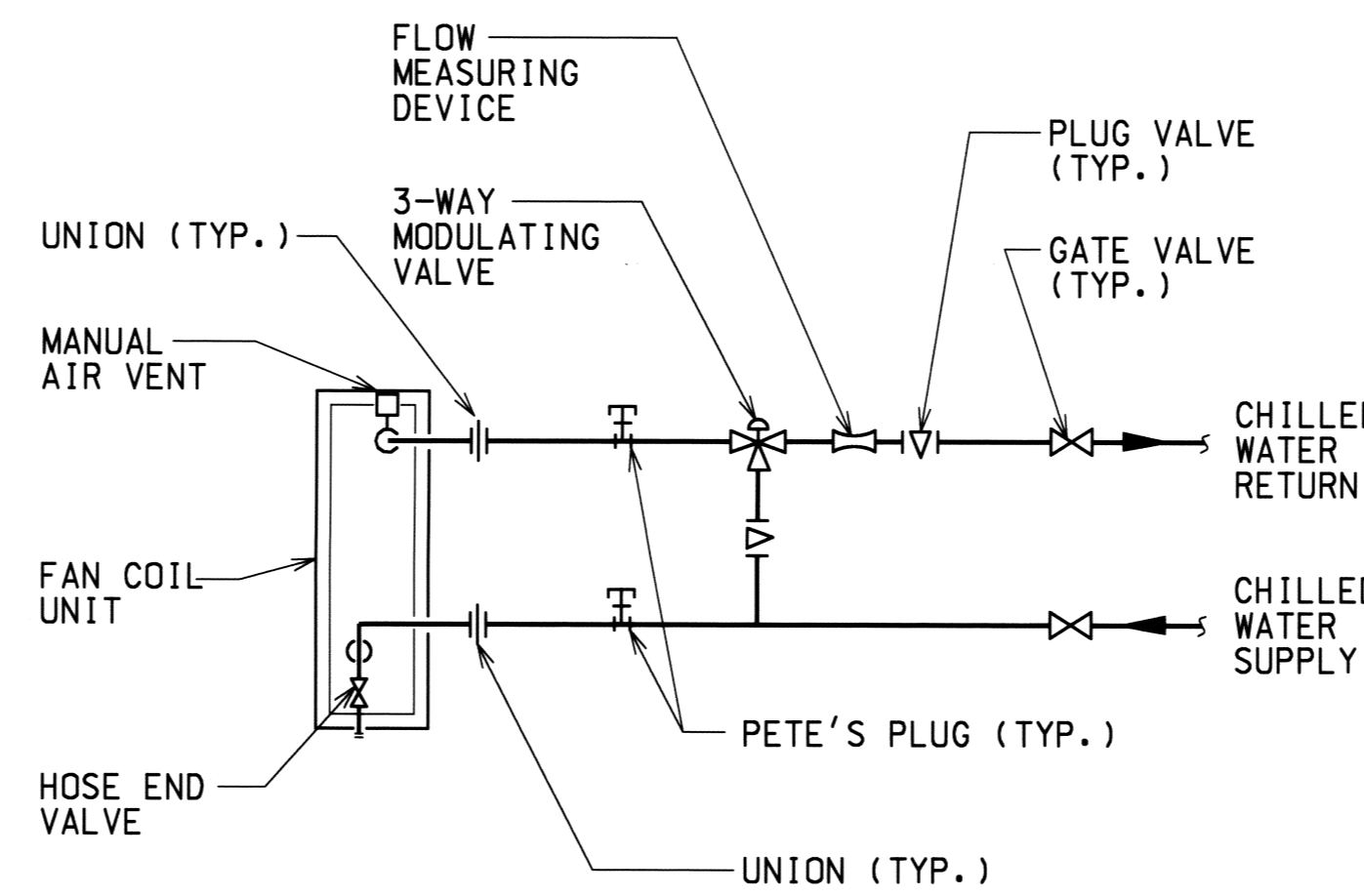
1. Contractor to provide control system for all mechanical systems to function as indicated.
2. All control components shall meet NEMA requirements and all other applicable codes.
3. Contractor shall provide conduits for control wiring per electrical specifications.
4. All interior control wiring and conduits shall be concealed inside wall and ceiling space except in areas where ducts and piping are also indicated to be below ceilings.
5. Label all control components.
6. Provide step down transformer for control circuit where required.
7. Contractor shall provide control shop drawings showing details.
8. Provide disconnect switches for any control circuits with separate voltages from the equipment.

**CONTROL SEQUENCES:**

1. D/X SPLIT AIR CONDITIONING SYSTEM  
D/X split Air conditioning system shall function as recommended by the manufacturer.
2. CHILLED WATER FAN COIL UNITS:
  - A. For floor mounted chilled water fan coil units, unit controls (switches, thermostat, etc.) shall be manufacturer pre-wired on the unit cabinet as provided and recommended by the manufacturer.
  - B. For ceiling mounted chilled water fan coil units, unit controls (switches, thermostat, etc.) shall be remote type location as indicated on the drawings. Installation of unit control system as recommended by the manufacturer.
  - C. All fan coil units shall have internal overload protection.
  - D. Contractor to verify the control system of the existing chilled water plant and notify engineer of any discrepancies found.
3. VENTILATION SYSTEM
  - A. Office's supply fans (SF-1, SF-2, SF-3 & SF-4) shall be interlocked with the light switches of the Rooms) it serves. See Electrical drawings for details.
  - B. All supply fans shall have internal overload protection.

**LEGEND:**

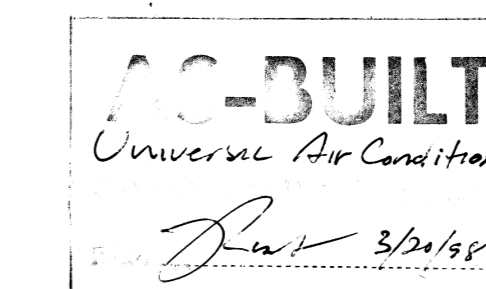
SYMBOL	ABBREVIATION	DESCRIPTION
	A.F.F.	ABOVE FINISHED FLOOR
	ARCH	ARCHITECT
	CD	CEILING DIFFUSER
	CFM	CUBIC FEET PER MINUTE
—  —	CHWR	CHILLED WATER RETURN
— —	CHWS	CHILLED WATER SUPPLY
—D—	COND DR., CDR	CONDENSATE DRAIN
Ⓢ	—	UNIT CONTROLLER OR ROOM THERMOSTAT
	CONT.	CONTINUATION
	COTG	CLEAN-OUT TO GRADE
	DET.	DETAIL
	DN.	DOWN
	(E), EXIST'G	EXISTING
	EAD	EXHAUST AIR DUCT
	EXH.	EXHAUST
	FIN. FLR.	FINISHED FLOOR
	FLEX CONN.	FLEXIBLE CONNECTION
	GALV.	GALVANIZED
	H.B.	HOSE BIBB
	HP	HORSEPOWER
	MIN.	MINIMUM
	OA	OUTSIDE AIR
	OAG	OUTSIDE AIR GRILLE
	P.O.C.	POINT OF CONNECTION
	SA	SUPPLY AIR
	SAR	SUPPLY AIR REGISTER
	SHT.	SHEET
	SLP. DN./UP	SLOPE DOWN/UP
	SOV	SHUT-OFF-VALVE
	TYP.	TYPICAL
	W/	WITH



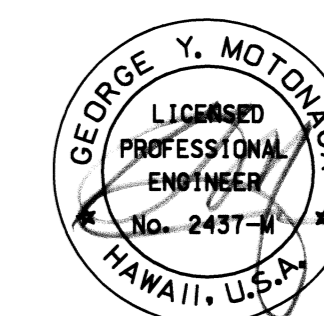
**1 FCU PIPING DIAGRAM**

NOT TO SCALE

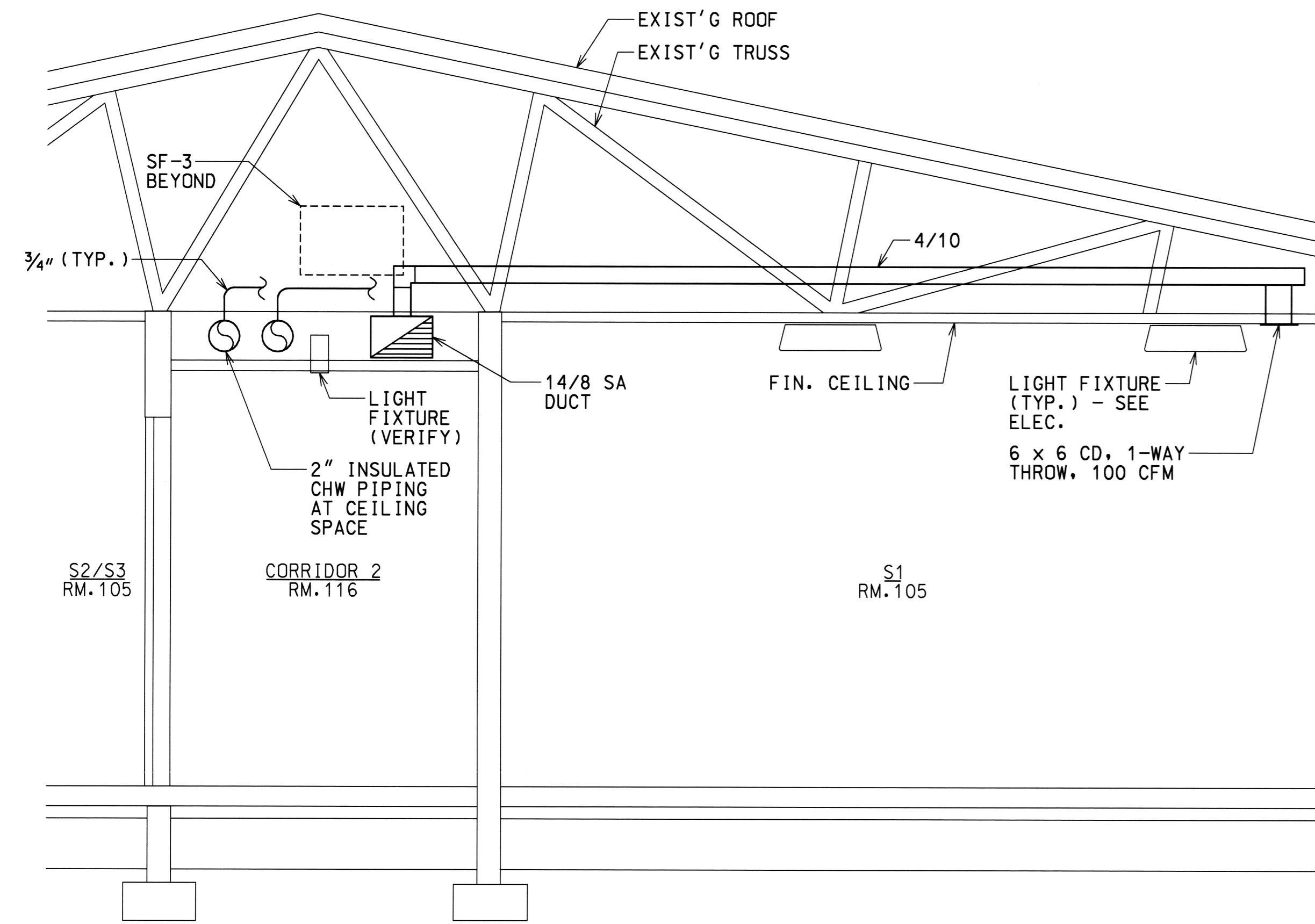
NOTES: 1. TYPICAL FOR CEILING AND FLOOR MOUNTED FAN COIL UNITS, WITH COMPONENTS INSIDE UNIT CABINET. COORDINATE WITH EQUIPMENT MANUFACTURER FOR COMPONENTS FURNISHED WITH THE UNIT. CONTRACTOR TO PROVIDE THE REMAINDER.



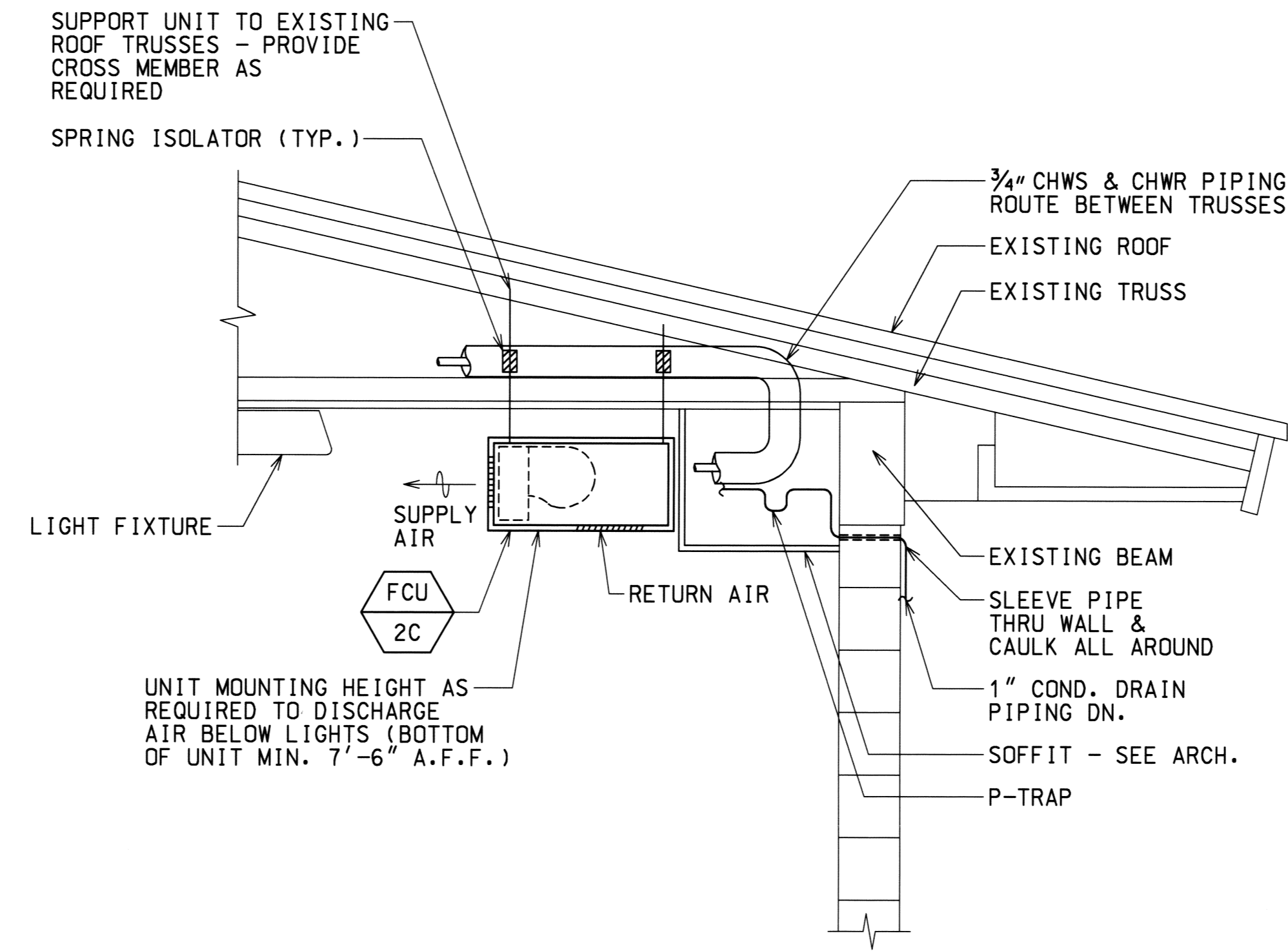
REVISION NO.	SYM.	DESCRIPTION	DATE	APPROVED STATE PUBLIC WORKS ENGINEER
DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS STATE OF HAWAII				
<b>WAIAWA ARMY NATIONAL GUARD ARMORY ADDITIONS AND RENOVATIONS - PHASE 2</b>				
PEARL CITY, OAHU, HAWAII				
<b>CONTROL DIAGRAM, NOTES &amp; LEGEND</b>				
DESIGNED BY: MS		CHECKED BY: MS		DWG. JOB NO. 12-14-7004
DRAWN BY: LC		APPROVED BY: GM		DRAWING NO. M-5
SCALE: AS NOTED		DATE: JUNE 1996		SHEET 25 OF 47 SHEETS



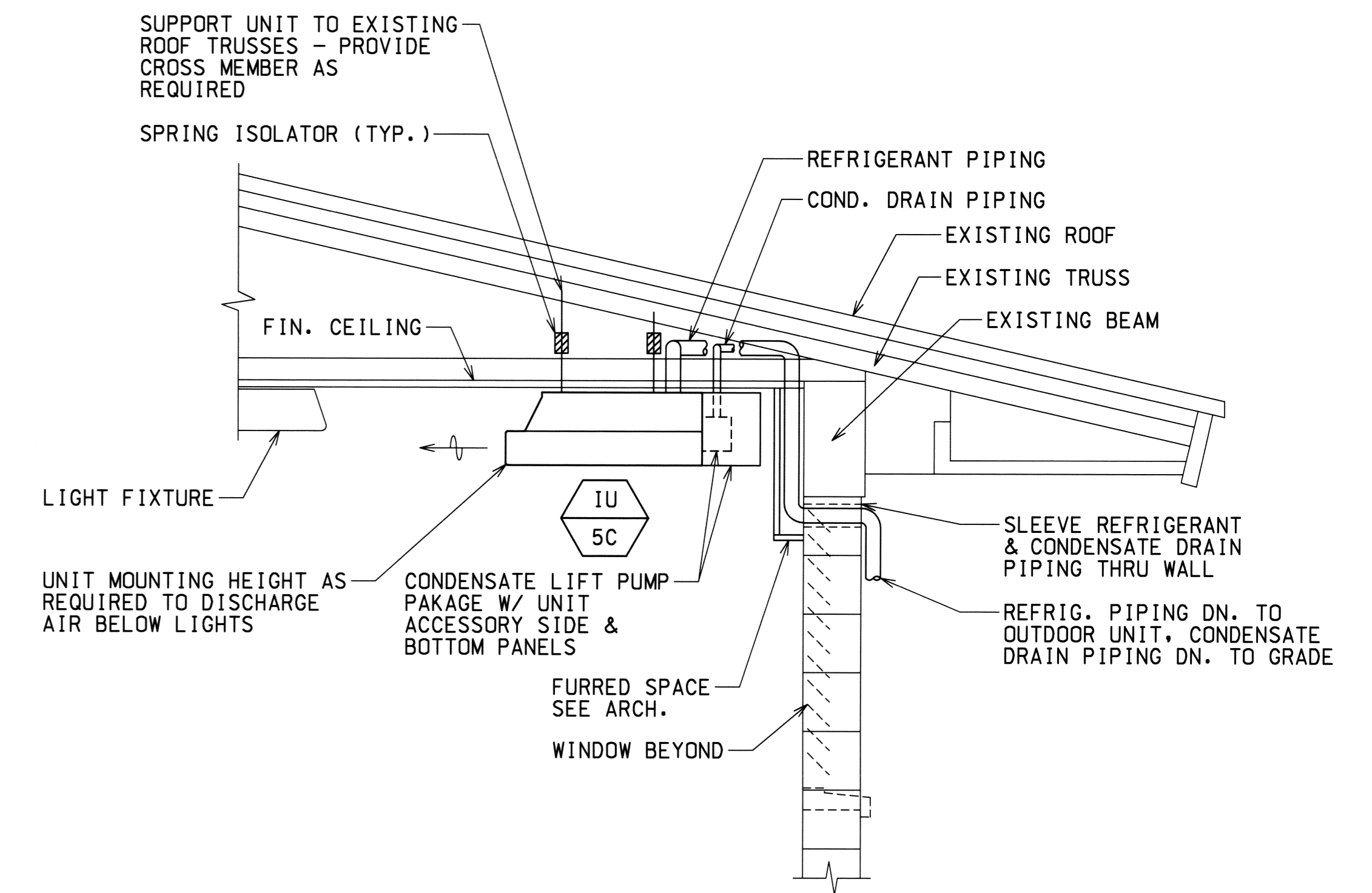
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
GEORGE Y. MOTONAGA, INC.  
MECHANICAL ENGINEERS



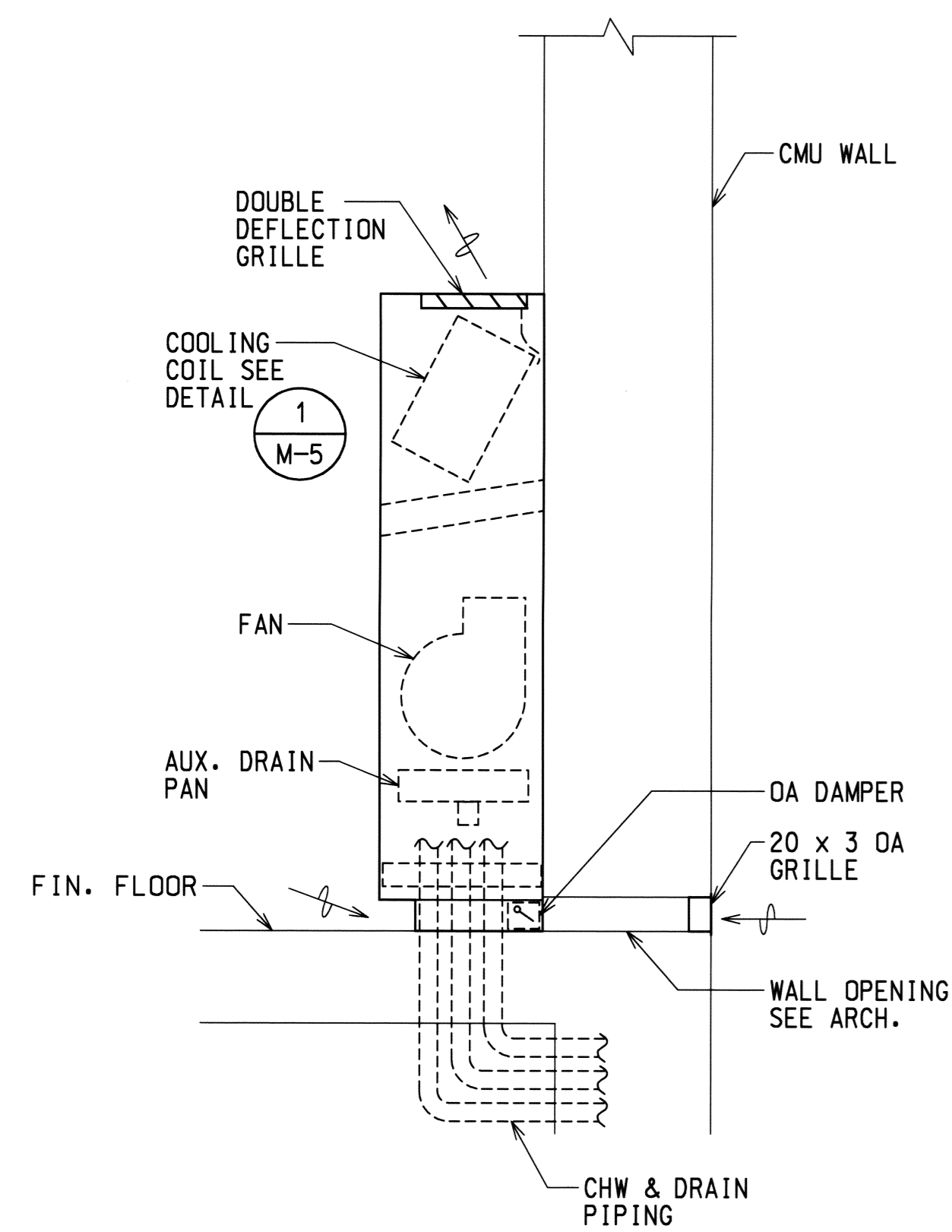
**A SECTION**  
M-6 SCALE: 1/2" = 1' - 0"



**B SECTION**  
M-6 SCALE: 3/4" = 1' - 0"  
TYPICAL FOR FCU-2A, 2B, 2C  
SIMILAR FOR FCU-4A, 4B, 4C AND FCU-9A, 9B, 9C

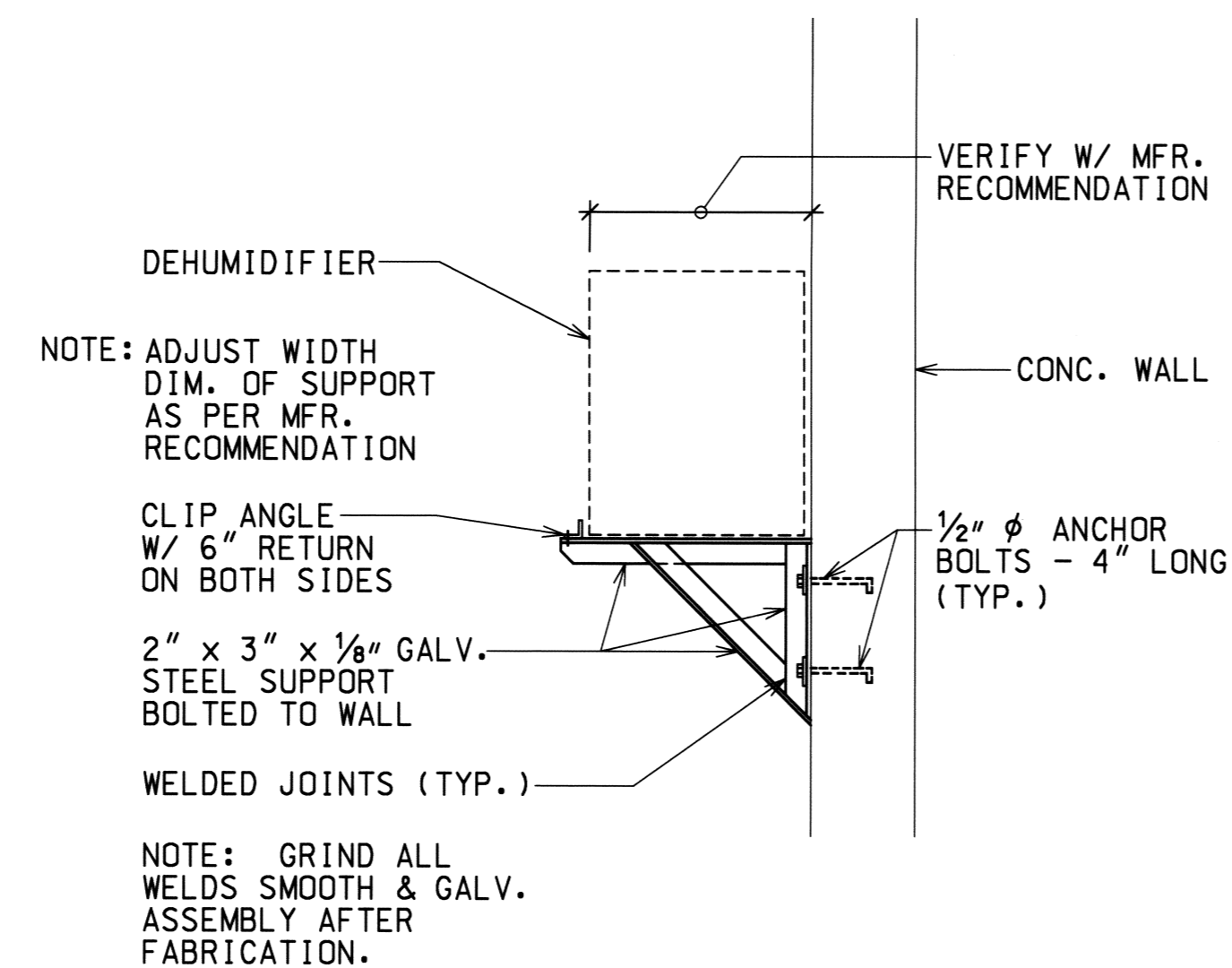


**C SECTION**  
M-6 SCALE: 3/4" = 1' - 0"  
TYPICAL FOR FCU-5A, 5B, 5C.



**1 FCU DETAIL**  
M-6 NOT TO SCALE

NOTE: TYPICAL FOR FCU-11 (NEW UNIT, PIPING & OUTSIDE AIR INTAKE), FOR OTHER FLOOR MOUNTED UNITS, CONNECT TO EXISTING OUTSIDE AIR INTAKE, CHILLED/WATER PIPING AND CONDENSATE DRAIN PIPING.



**2 DEHUMIDIFIER SUPPORT**  
M-6 NOT TO SCALE

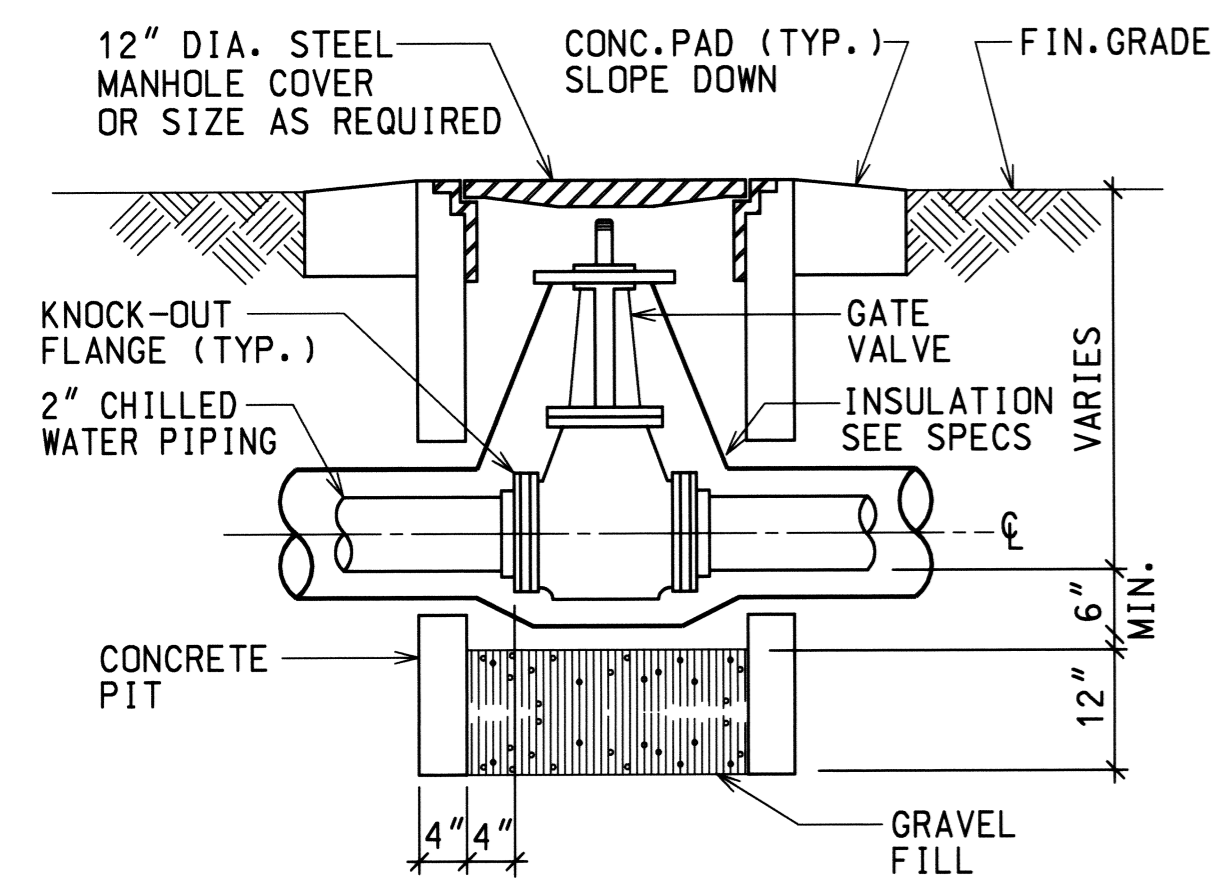
REVISION NO.	SYMBOL	DESCRIPTION	DATE	APPROVED STATE PUBLIC WORKS ENGINEER

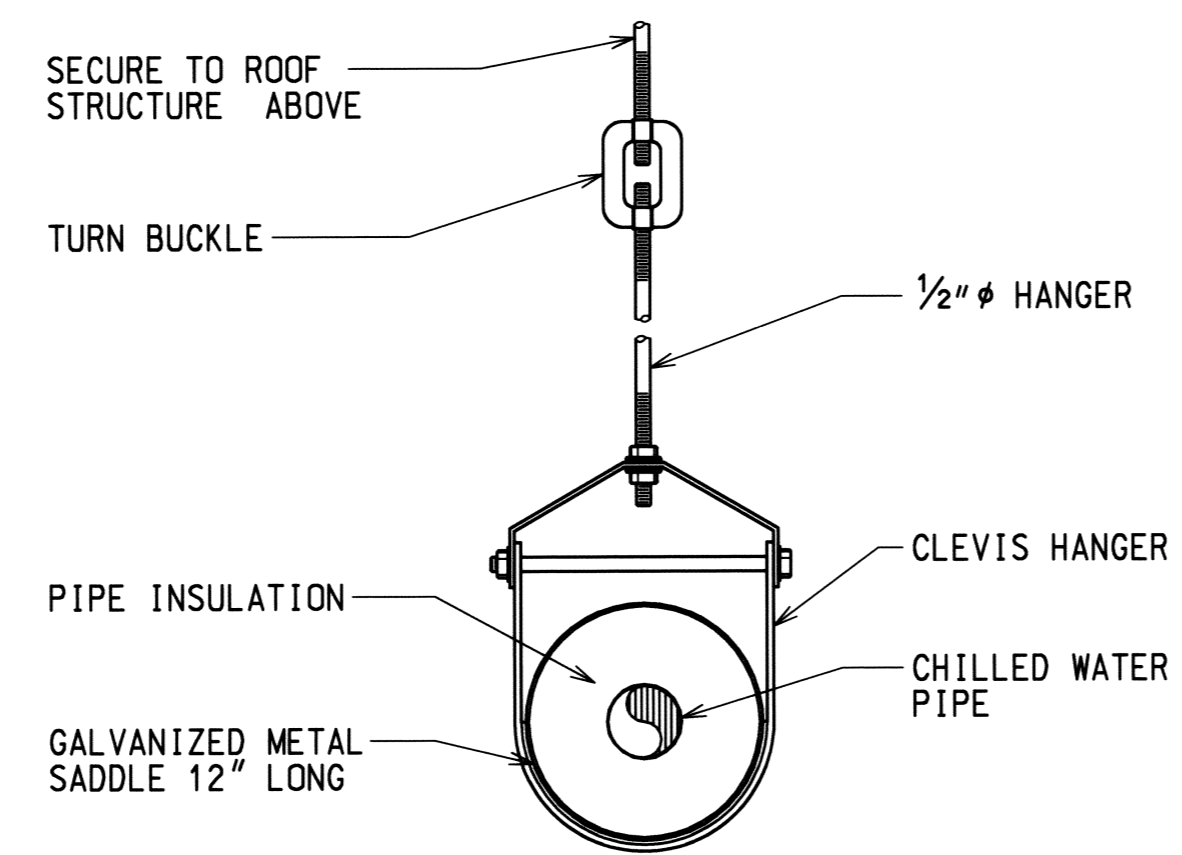
		DEPT. OF ACCOUNTING & GENERAL SERVICES	
		DIVISION OF PUBLIC WORKS	
<b>WAIAWA ARMY NATIONAL GUARD ARMORY</b> ADDITIONS AND RENOVATIONS - PHASE 2 PEARL CITY, OAHU, HAWAII		SECTIONS & DETAILS GERALD INOUE AIA ARCHITECT DESIGNED BY: MS CHECKED BY: MS DATE: 12-14-7004 DRAWING NO: M-6 DRAWN BY: LC APPROVED BY: GM DATE: JUNE 1996 SHEET: 33 OF 33 SHEETS SCALE: AS NOTED	

**AS-BUILT**  
Universal Air Conditioning  
*George Y. Motonaga*

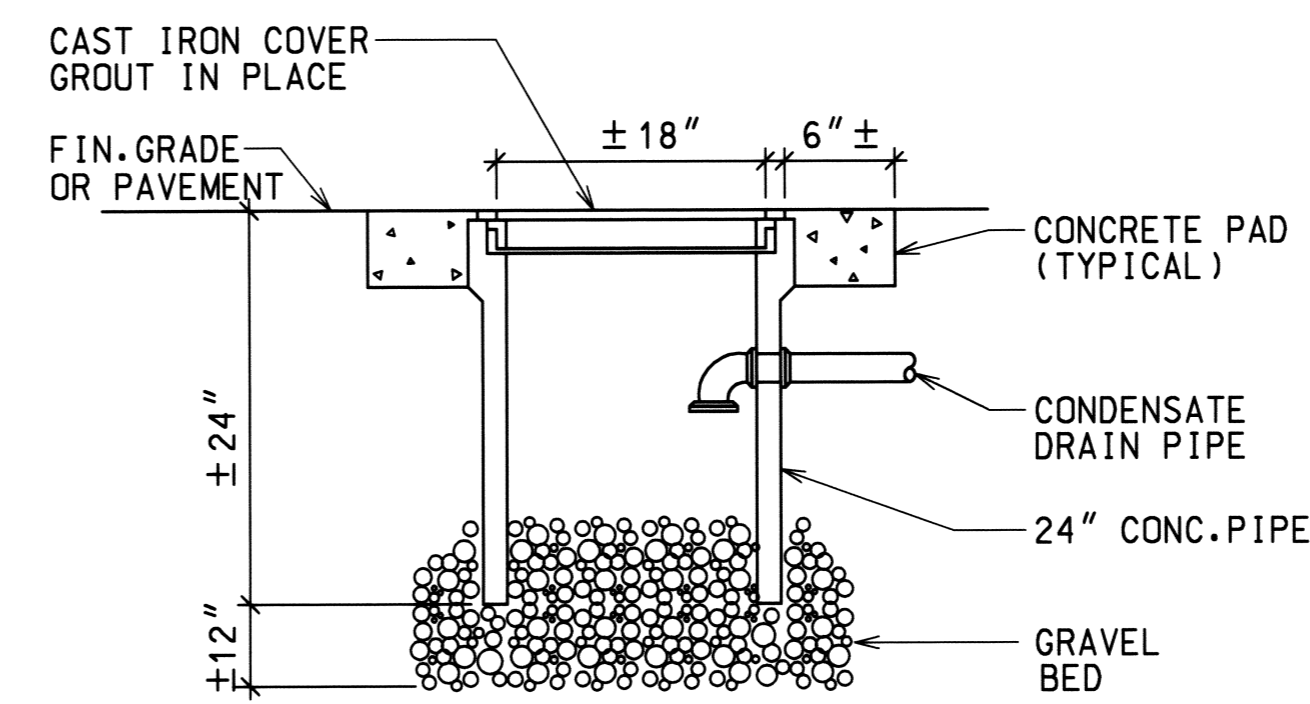




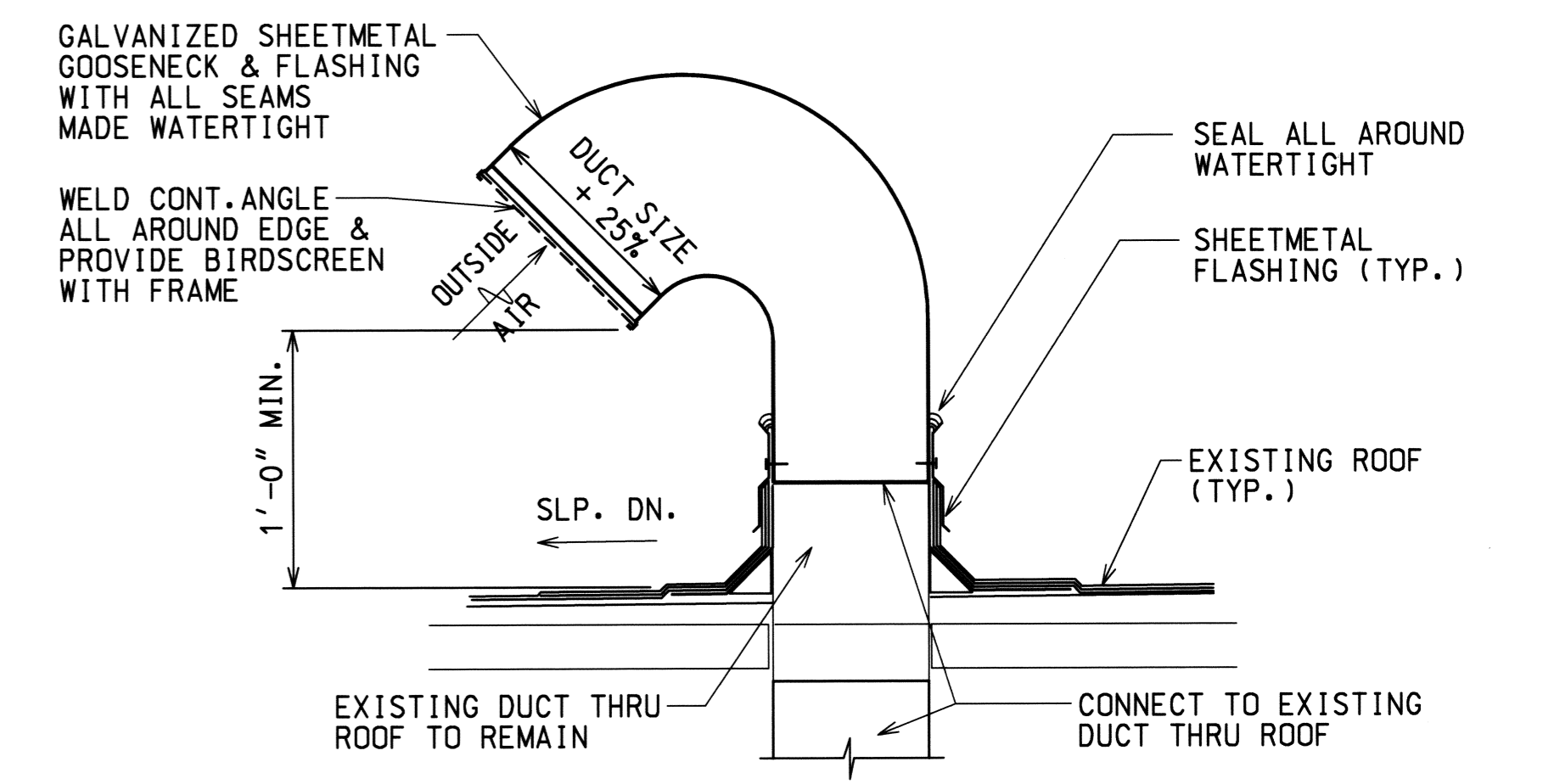
1 VALVE BOX DETAIL  
 M-7 NOT TO SCALE



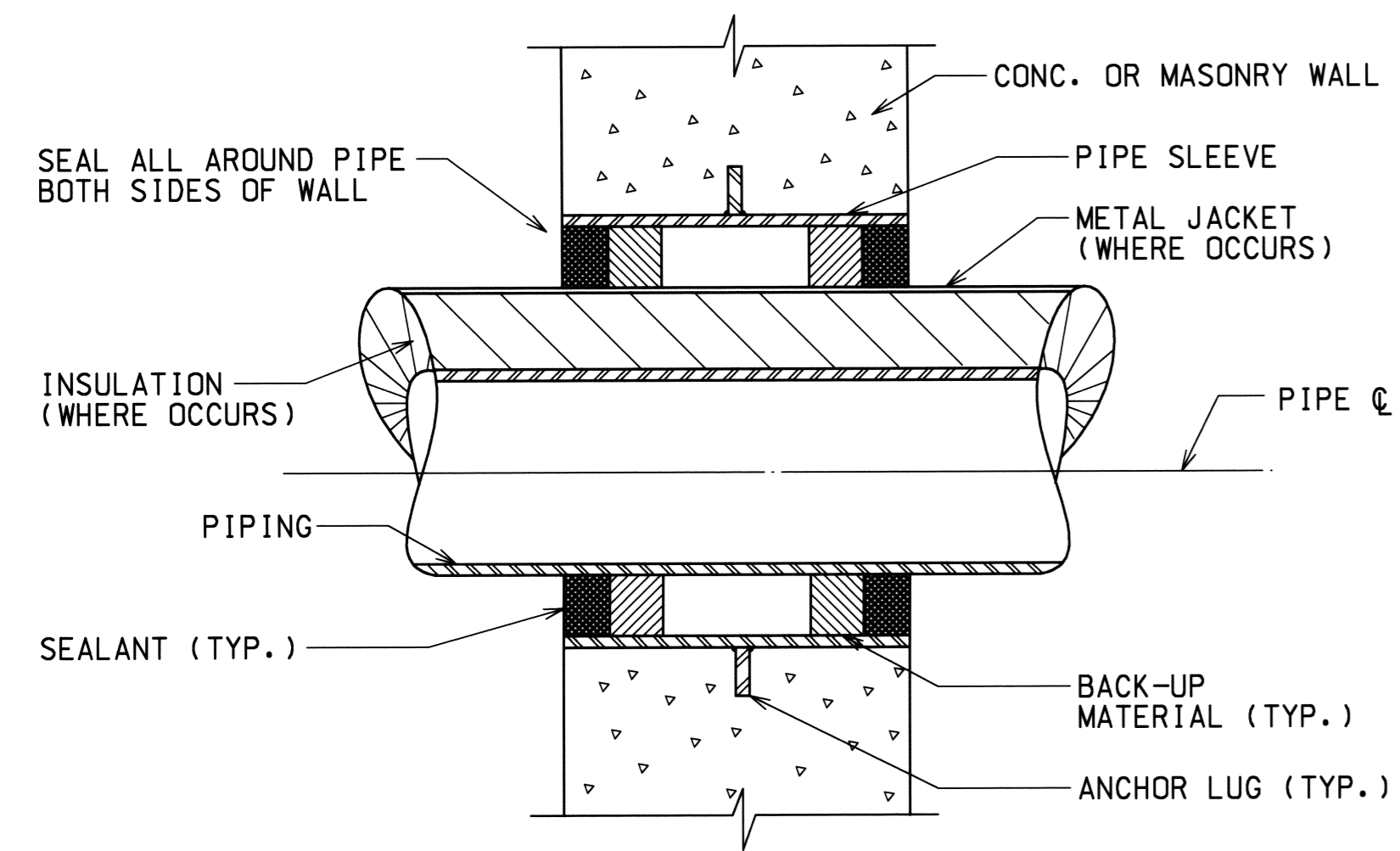
2 PIPE HANGER DETAIL  
 M-7 NOT TO SCALE  
 NOTE: SIMILAR FOR REFRIGERANT PIPING.



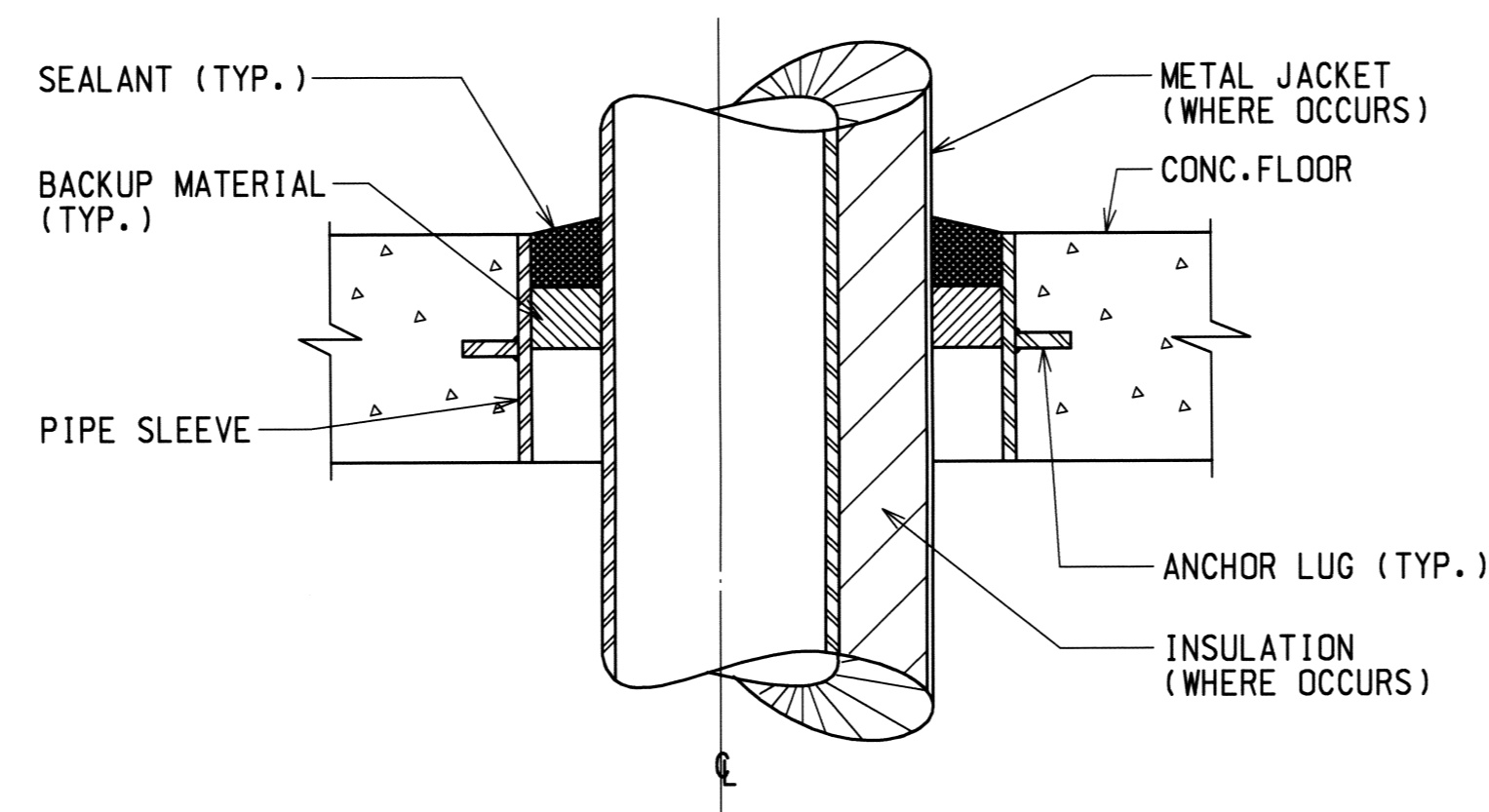
3 DRYWELL DETAIL  
 M-7 NOT TO SCALE



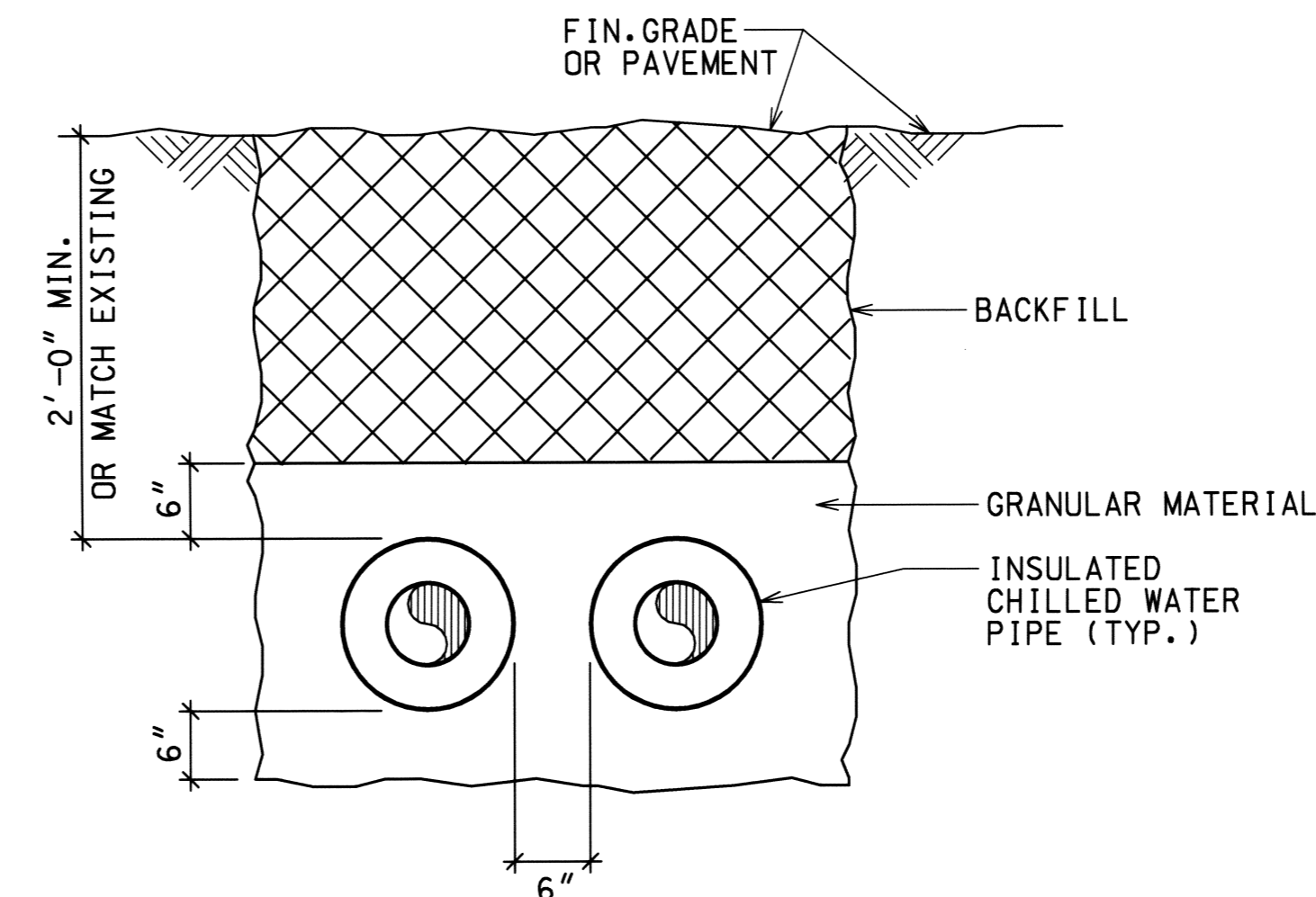
4 GOOSENECK DETAIL  
 M-7 NOT TO SCALE



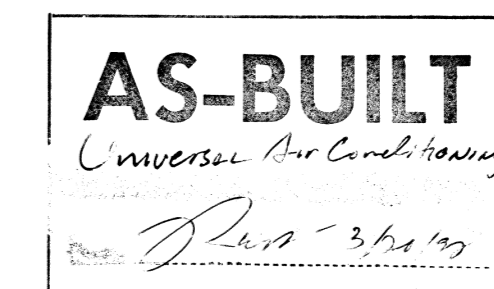
5 PIPE SLEEVE THROUGH WALL DETAIL  
 M-7 NOT TO SCALE  
 (TYPICAL FOR WALL ABOVE GRADE)



6 PIPE SLEEVE THROUGH FLOOR DETAIL  
 M-7 NOT TO SCALE  
 (TYPICAL)



7 PIPE TRENCH DETAIL  
 M-7 NOT TO SCALE



REVISION NO.	SYMBOL	DESCRIPTION	DATE	APPROVED STATE PUBLIC WORKS ENGINEER

DEPT. OF ACCOUNTING & GENERAL SERVICES  
 DIVISION OF PUBLIC WORKS  
 STATE OF HAWAII

**WAIAWA ARMY NATIONAL GUARD ARMORY  
 ADDITIONS AND RENOVATIONS - PHASE 2**  
 PEARL CITY, OAHU, HAWAII

DETAILS

DESIGNED BY: MS	CHECKED BY: MS	SACS JOB NO. 12-14-7004	DRAWING NO. M-7
DRAWN BY: LC	APPROVED BY: GM	DATE: JUNE 1996	SHEET 35 OF 35
SCALE: AS NOTED			

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
 LANGE MOTOMAGA, INC.  
 MECHANICAL ENGINEERS

GEORGE Y. MOTOMAGA  
 LICENSED PROFESSIONAL ENGINEER  
 No. 24374  
 HAWAII, U.S.A.