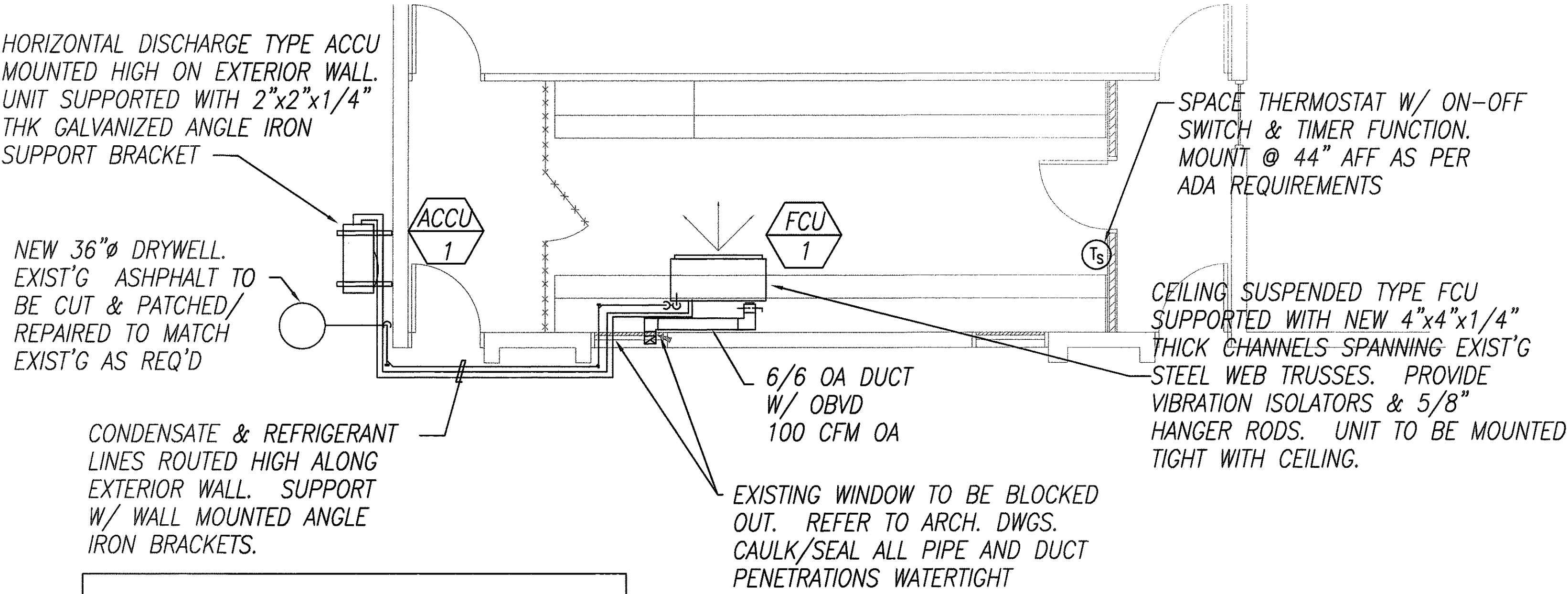


DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-02-98M	1998	12	14



NOTE:  
EXISTING EXTERIOR SOFFIT CONTAINS ASBESTOS AND IS TO REMAIN UNTOUCHED

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

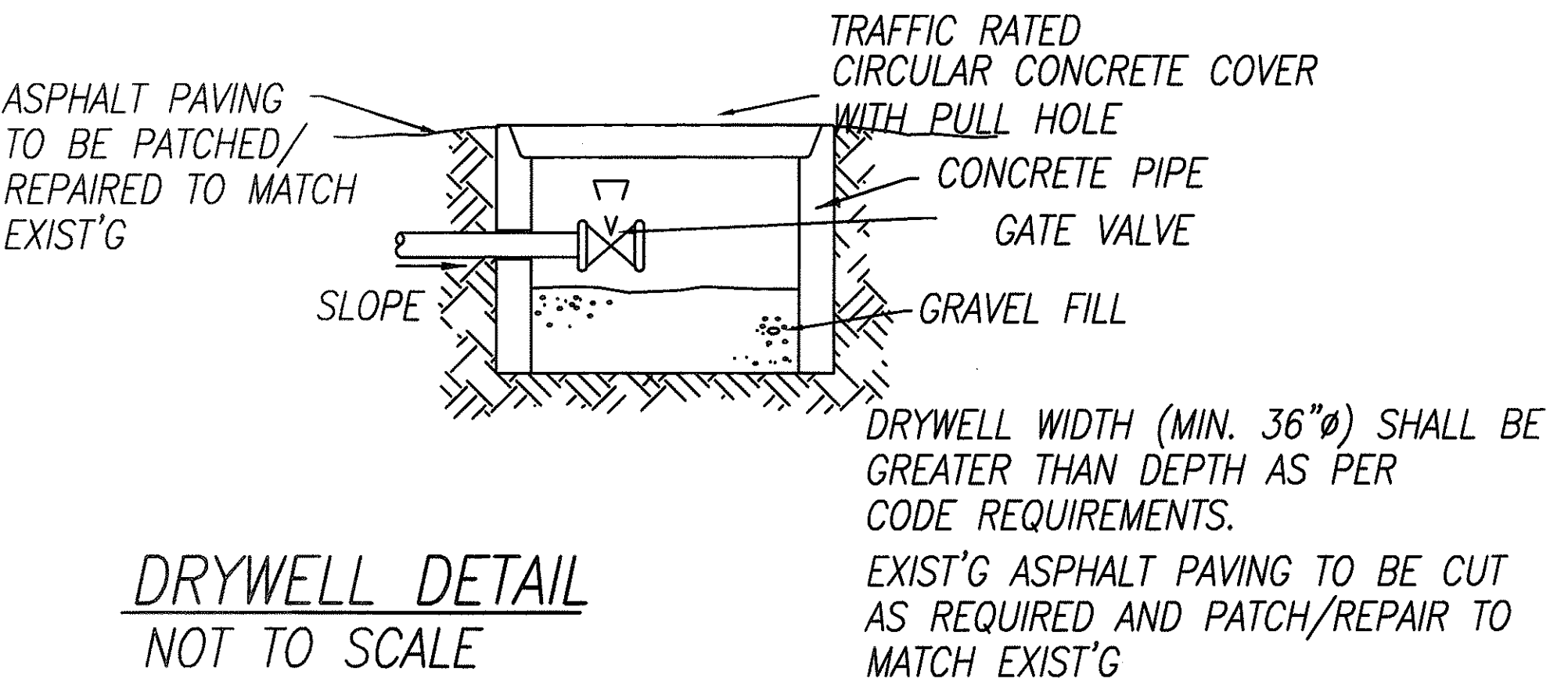
REVISED ORDINANCE OF HONOLULU  
CHAPTER 32  
BUILDING ENERGY EFFICIENCY STANDARDS

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 8.3, 9.3, 10.3, 11.3, 12.3 OR 13.3

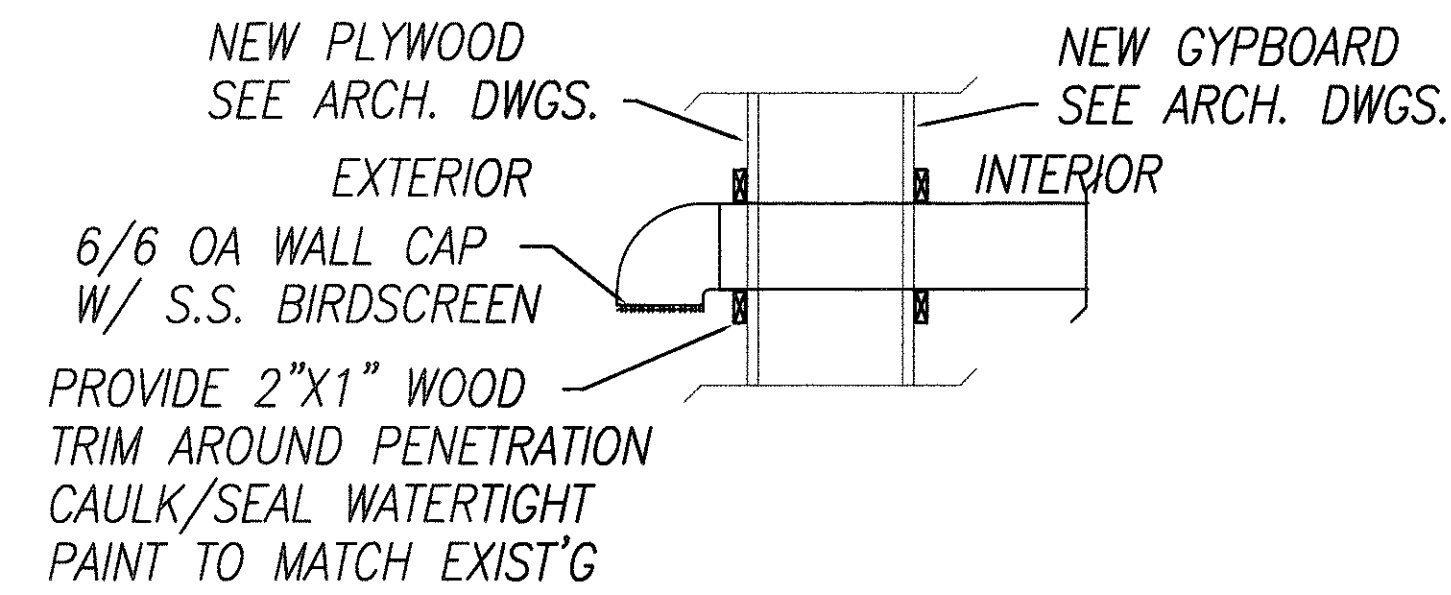
*Signature*  
Randolph H. Murayama  
Name (Print)  
President  
Title

LICENSED PROFESSIONAL ENGINEER  
No. 3404-M  
HAWAII, U.S.A.

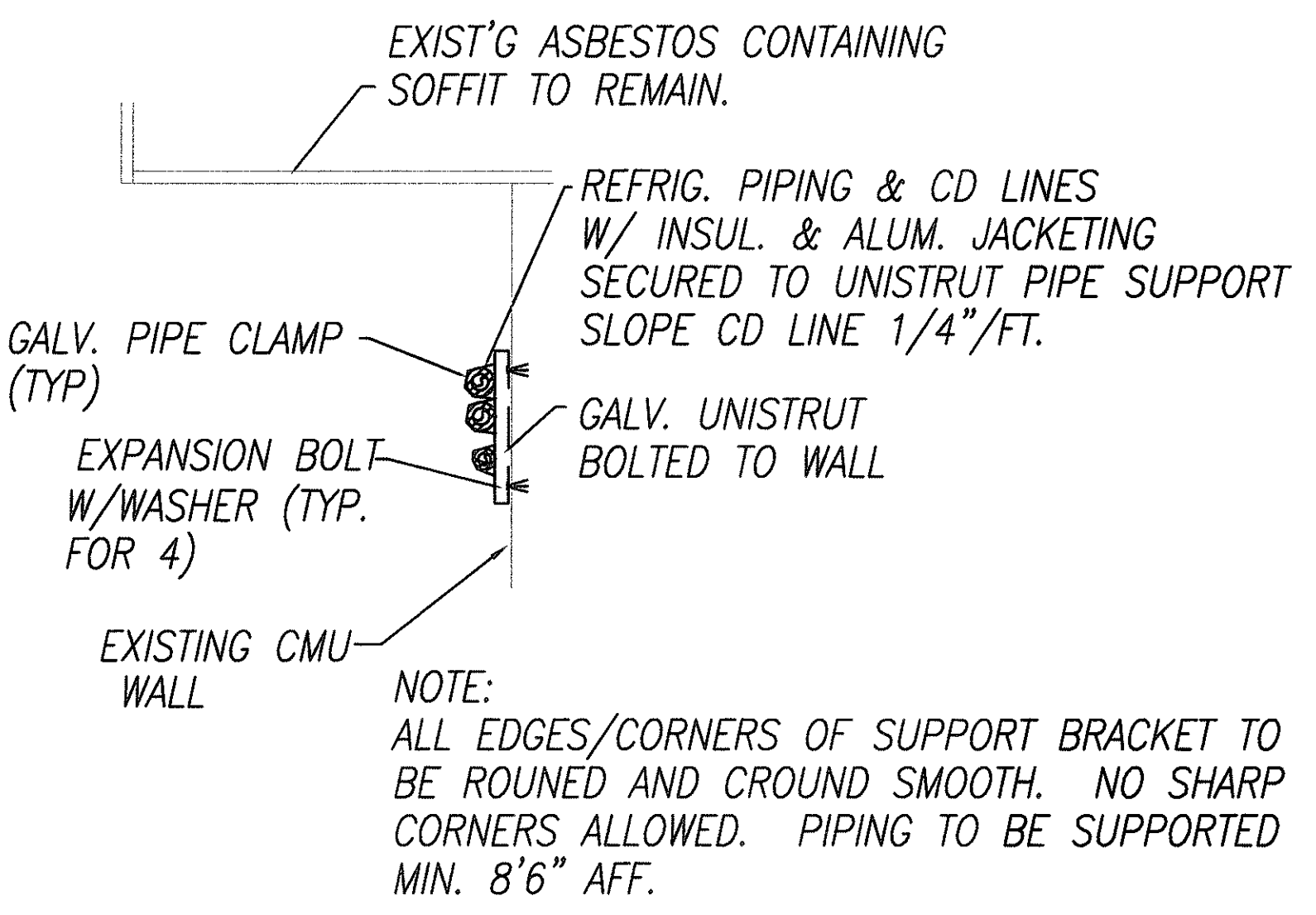
THE AIR CONDITIONING AND VENTILATION SYSTEM SHALL COMPLY WITH TITLE 11, ADMINISTRATIVE RULES, DEPARTMENT OF HEALTH, CHAPTER 39, AIR CONDITIONING AND VENTILATING REQUIREMENTS



DRYWELL DETAIL  
NOT TO SCALE

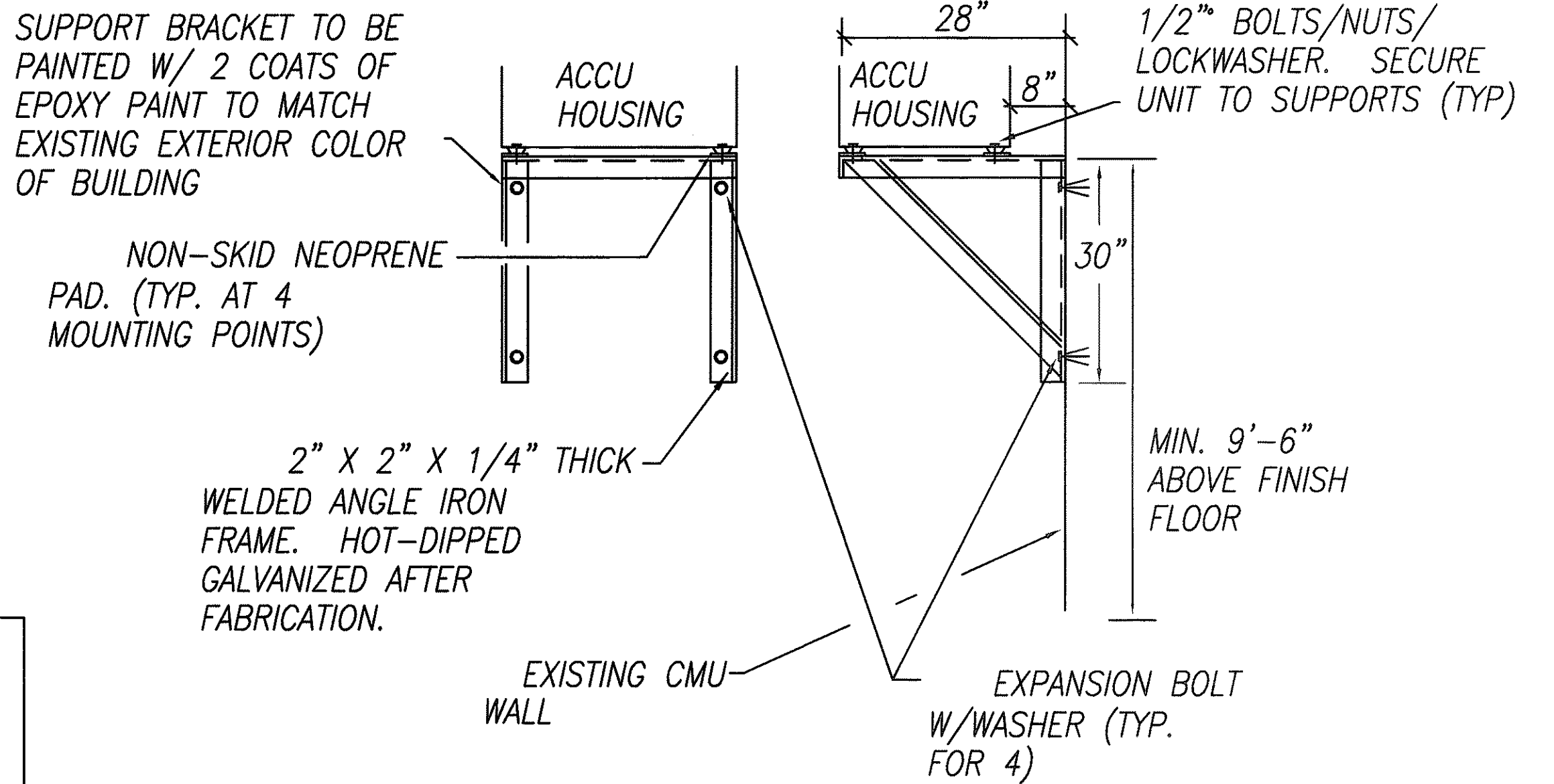


OUTSIDE AIR WALL CAP DETAIL  
NOT TO SCALE

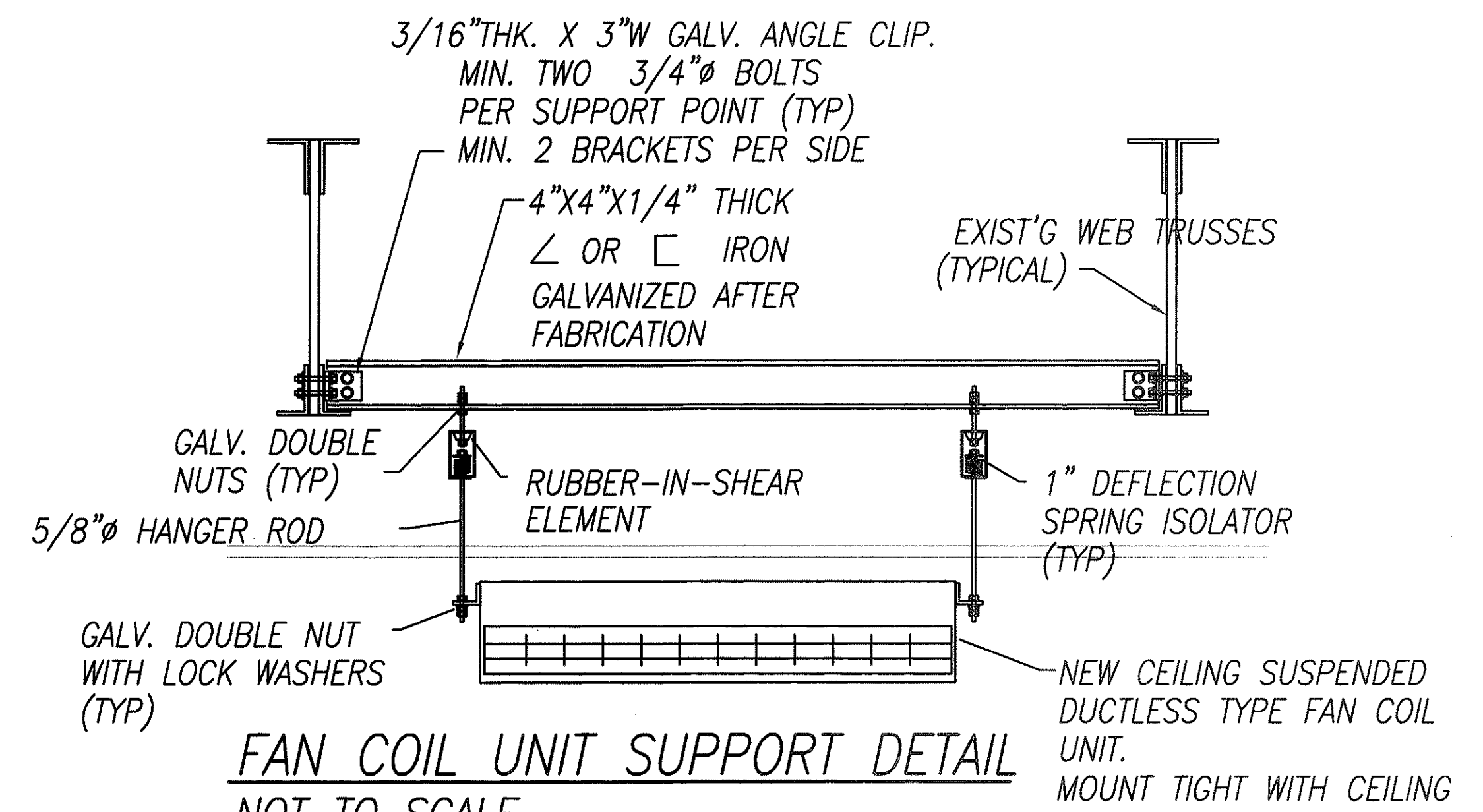


PIPE SUPPORT DETAIL  
NOT TO SCALE

NOTE:  
ALL EDGES/CORNERS OF SUPPORT BRACKET TO BE ROUNDED AND CROUND SMOOTH. NO SHARP CORNERS ALLOWED. LOWEST POINT OF SUPPORT BRACKET SHALL BE MIN. 7'-0" AFF.



WALL-MOUNTED ACCU MOUNTING DETAIL  
NOT TO SCALE



FAN COIL UNIT SUPPORT DETAIL  
NOT TO SCALE

LICENSED PROFESSIONAL ENGINEER  
No. 3404-M  
HAWAII, U.S.A.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

MECHANICAL FLOOR PLAN

MATERIALS TESTING LAB  
FACILITY IMPROVEMENTS  
Project No. HWY-0-02-98M

Scale: AS SHOWN Date: MAY, 1998

SHEET No. 12 OF 14 SHEETS

ORIGINAL SURVEY PLOTTED BY DATE  
PLAN 5/29/98  
DRAWN BY  
TRACED BY  
DESIGNED BY  
NOTE BOOK  
CHECKED BY  
No.

General Conditions

1. Conform to all requirements of the Building, Plumbing, and Electrical Codes of the City & County of Honolulu, State of Hawaii Health Regulations, Fire Marshall's Regulations, manufacture's recommendations and other applicable regulations.
2. Installation shall be guaranteed to be free from defects for one year from final date of acceptance of the project as a whole.
3. Contractor shall verify all field conditions prior to bid and construction.
4. Coordinate all work with other trades to avoid interferences and delays.
5. Pay for all permit fees and applications.
6. Provide additional materials and labor for a complete operable system at no additional cost to the State.
7. Provide access panels for all items under this section requiring servicing, inspection, maintenance, and adjustment.
8. Caulk all penetrations watertight. Provide all cutting, patching, and restoring existing surfaces to match existing surfaces. Spot paint to match existing surfaces/color.
9. Prepare six (6) sets of shop drawings, submitted to the engineer for approval prior to the start of work. No reproductions of any kind of the contract documents shall be acceptable as shop drawings. Provide one set of reproducible as-built drawings showing the actual installed conditions and submit to the Owners upon completion of work.
10. All HVAC ductwork shall be have either tuning vanes or radius elbows at each bend or elbow.
11. Provide opposed blade volume dampers and stainless steel birdscreens for all outside air ducts
12. Provide dielectric unions or separation at all dissimilar metals.
13. Coordinate all work which will affect occupied areas with building management. Schedule off-hour work when required to minimize disruptions. Coordinate switch/thermostat locations with school to avoid interferences with painting, bulletinboards, furniture, etc.
14. All steel shall be hot dipped galvanized. Galvanized steel exposed to weather shall have weather proof paint to match surfaces. Provide two extra coats of epoxy paint.
15. All electrical and control wiring shall be in conduit. Provide thick walled, galvanized steel pipe conduit for exposed to weather conduit. No ermt allowed outdoors.
16. Provide rebalancing during one year guarantee period to satisfy user's requirements.
17. All switches, timeclocks, thermostats, and control items shall be 44" a.f.f. as per ADA requirements and shall be ADA accessible.
18. Contractor shall verify all existing line sizes, inverts, and connection points prior to bid and construction.

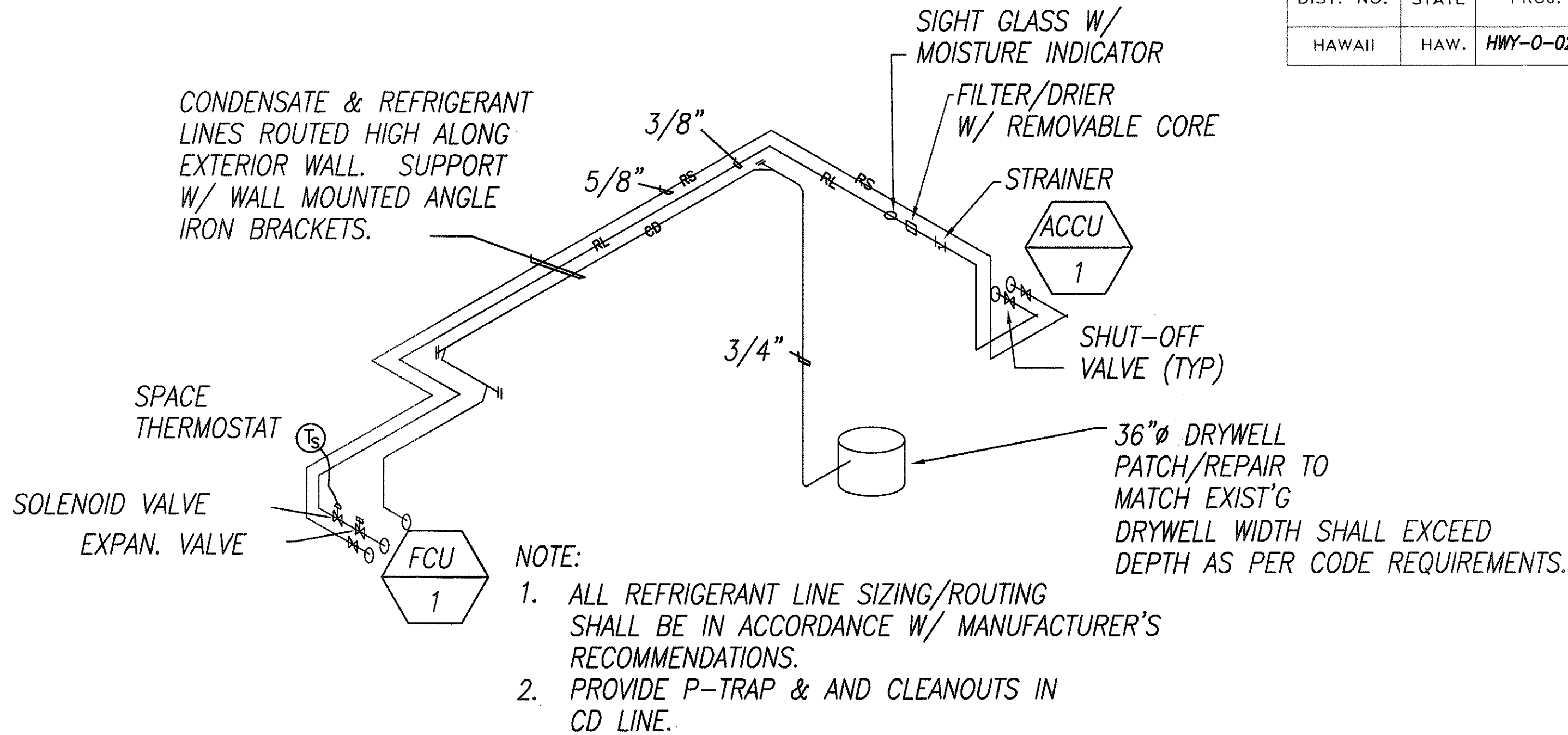
MECHANICAL EQUIPMENT SCHEDULE

PROVIDE MAGNETIC STARTER/DISCONNECTS WITH AUTOMATIC RESET FOR ALL UNITS. PROVIDE NEMA-4X STARTER ENCLOSURE FOR ALL OUTDOOR EQUIPMENT. ALL OUTDOOR EQUIPMENT SHALL HAVE POLYSILOXANE COATING PROTECTION ON INSIDE AND OUTSIDE OF HOUSING. COILS (CONDENSER/EVAPORATOR) SHALL HAVE PHENOLIC COATING. PROVIDE HORIZONTALLY AND VERTICALLY RESTRAINED SPRING ISOLATORS WITH NEOPRENE DIPPED SPRINGS AND GALV. HOUSINGS ON ALL EQUIPMENT. ALSO PROVIDE SEISMIC SNUBBERS ON ALL EQUIP. PROVIDE PLASTIC COATED CABLE SWAY BRACING ALL SUSPENDED EQUIPMENT. PROVIDE FLEXIBLE DUCT CONNECTIONS AT ALL EQUIPMENT. PROVIDE S.S. BIRDSCREEN AT ALL OA INTAKES.



FAN COIL UNIT - 1:

DIRECT EXPANSION, CEILING-SUSPENDED, DUCTLESS TYPE FAN COIL UNIT, CARRIER MODEL 40QAB-018 OR APPROVED EQUAL. 17,700 BTUH TOTAL, 11,800 BTUH SENSIBLE COOLING CAPACITY @ 80DB/67WB & 95F AMBIENT. 400 CFM SA, 208V/1PH/60HZ, 0.5 FLA, 1/16 HP. PROVIDE 3 SPEED FAN WITH AUTO MODE, AUTOMATIC AIR SWEEP, SOLID STATE, ELECTROMECHANICAL, HARD WIRED DIGITAL REMOTE CONTROL WITH DIAGNOSTICS, TIMER/TIMECLOCK. MAX. 55 dBA. UNIT SHALL BE FACTORY MATCHED TO ACCU-1. PROVIDE OUTSIDE AIR DUCT CONNECTION W/ OBVD. PROVIDE CONTROL VOLTAGE TRANSFORMER AS REQUIRED.



REFRIGERANT PIPING DIAGRAM

NOT TO SCALE (FCU-1 & ACCU-1)

MECHANICAL LEGEND:

SA	SUPPLY AIR	Ⓣ	THERMOSTAT (SPACE OR DUCT)
RA	RETURN AIR	Ⓢ	STARTER
OA	OUTSIDE AIR	FCU	FAN COIL UNIT
SD	SUPPLY DIFFUSER	ACCU	AIR COOLED CONDENSING UNIT
RR	RETURN REGISTER	— —	OPPOSED BLADE VOLUME DAMPER
ER	EXHAUST REGISGER	—	NEW FLEXIBLE DUCT
TG	TRANSFER GRILLE	☑	NEW EXHAUST, RETURN AIR OR TRANSFER GRILLE
OBVD	OPPOSED BLADE VOLUME DAMPER	☒	NEW SUPPLY AIR
FFE	FINISHED FLOOR ELEVATION	☒	NEW OUTSIDE AIR
FE	FIRE EXTINGUISHER		
—CD—	CONDENSATE DRAIN LINE		



AIR COOLED CONDENSING UNIT - 1:

AIR COOLED CONDENSING UNIT WITH HORIZONTAL INTAKE AND DISCHARGE. CARRIER MODEL 38HDC-018 OR APPROVED EQUAL. 17,700 BTUH TOTAL COOLING CAPACITY @ 40F SST AND 95F AMBIENT. 208V/1PH/60HZ COMP: 8.0 RLA, 49.0 LRA. COND. FAN: 0.7 FLA. MIN EER 11.0, MAX SOUND POWER LEVEL: 60 dBA. PROVIDE COPPER TUBE/ALUMINUM FIN CONDENSER COIL, PHENOLIC COATING ON CONDENSER COIL, POLYSILOXANE COATING ON INSIDE AND OUTSIDE OF HOUSING. PROVIDE INTERNALLY ISOLATED SEALED HERMETIC RECIPROCATING/SCROLL COMPRESSOR. PROVIDE COMPRESSOR TIME DELAY RELAY, CRANKCASE HEATER, AND MOTOR/COMPRESSOR INTERNAL OVERLOAD PROTECTION. UNIT SHALL BE FACTORY MATCHED TO FCU-1.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DESIGNED BY	RET	5/29/98
NOTED BY	RET	
QUANTITIES BY	RET	
CHECKED BY	RET	
No.		



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

MECHANICAL NOTES

MATERIALS TESTING LAB  
FACILITY IMPROVEMENTS

Project No. HWY-0-02-98M

Scale: AS SHOWN Date: MAY, 1998

SHEET No. 12 OF 14 SHEETS