

MECHANICAL LEGEND

CHWS --- EXIST. CHILLED WATER SUPPLY LINE	---FS --- EXIST. FIRE SPRINKLER LINE
CHWR --- EXIST. CHILLED WATER RETURN LINE	---S/S --- SERVICE SINK
CD --- EXIST. CONDENSATE DRAIN LINE	PWC --- ACCESSIBLE WATER CLOSET
CHWS --- NEW CHILLED WATER SUPPLY LINE	WC --- WATER CLOSET
CHWR --- NEW CHILLED WATER RETURN LINE	PUR --- ACCESSIBLE URINAL
CD --- NEW CONDENSATE DRAIN LINE	PLAV --- ACCESSIBLE LAVATORY
CH --- CHILLER	PUR --- ACCESSIBLE URINAL
CHWP --- CHILLED WATER PUMP	FD --- FLOOR DRAIN
FCU --- FAN COIL UNIT	HB --- HOSE BIBB
AHU --- AIR HANDLING UNIT	COTG --- CLEANOUT TO GRADE
PAC --- PACKAGED AIR CONDITIONING UNIT	FCO --- FLOOR CLEANOUT
EF --- EXHAUST FAN	CO --- CLEANOUT
ER --- EXHAUST REGISTER	WCO --- WALL CLEANOUT
SA --- SUPPLY AIR	W --- WASTE
RA --- RETURN AIR	V --- VENT
OA --- OUTSIDE AIR	CW --- COLD WATER
SR --- SUPPLY REGISTER	SEP --- SEWAGE EJECTOR PUMP
SD --- SUPPLY DIFFUSER	GV --- GATE VALVE
RE --- RETURN REGISTER	POC --- POINT OF CONNECTION
CD --- CEILING DIFFUSER	DN --- DOWN
CFM --- CUBIC FEET PER MINUTE	WHA --- WATER HAMMER ARRESTER
CHWR --- CHILLED WATER RETURN	--- --- EXIST. WASTE LINE
CHWS --- CHILLED WATER SUPPLY	--- --- EXIST. VENT LINE
OST --- SPACE THERMOSTAT	--- --- EXIST. WATER LINE
CHW --- CHILLED WATER	--- --- NEW WASTE LINE
	--- --- NEW VENT LINE
	--- --- NEW WATER LINE
	OBVD --- OPPOSED BLADE VOLUME DAMPER

GENERAL NOTES:

- 1) CONFORM TO ALL REQUIREMENTS OF THE BUILDING, PLUMBING, ELECTRICAL CODES OF THE CITY AND COUNTY OF HONOLULU, STATE OF HAWAII HEALTH REGULATIONS, FIRE MARSHAL'S REGULATIONS, MANUFACTURER'S RECOMMENDATIONS AND ALL OTHER APPLICABLE REGULATIONS.
- 2) THE CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS PRIOR TO BID AND CONSTRUCTION.
- 3) COORDINATE ALL WORK WITH OTHER TRADES TO AVOID INTERFERENCES AND DELAYS.
- 4) CONTRACTOR TO PAY FOR ALL PERMIT FEES AND APPLICATIONS.
- 5) PROVIDE ADDITIONAL MATERIALS AND LABOR FOR A COMPLETE AND OPERABLE SYSTEM AT NO ADDITIONAL COST TO THE STATE.
- 6) COORDINATE ALL SWITCH LOCATIONS WITH USER/ENGINEER TO AVOID INTERFERENCES WITH FURNITURE, PICTURES, EQUIPMENT ETC.
- 7) ALL ITEMS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 8) ALL EXPOSED STEEL SHALL BE HOT DIPPED GALVANIZED. EXPOSED TO WEATHER STEEL SHALL HAVE TWO EXTRA COATS OF EPOXY PAINT. ALL EXPOSED NUTS, BOLTS, WASHERS, SCREWS, FASTENERS SHALL BE STAINLESS STEEL.
- 9) PROVIDE DIELECTRIC UNIONS OR SEPARATIONS AT ALL DISSIMILAR METALS.
- 10) CAULK ALL ROOF AND WALL PENETRATIONS TO THE OUTSIDE WATERTIGHT. PROVIDE WALL ESCUTCHEON PLATES (CHROME PLATED BRASS FOR EXPOSED PENETRATIONS).
- 11) PROVIDE REBALANCING WITHIN ONE YEAR QUARANTEE PERIOD TO SATISFY USING AGENCY'S REQUIREMENTS. REBALANCING SHALL INCLUDE CHANGING OF PULLEY AND SHEAVES.
- 12) ALL DUCT DIMENSIONS ARE NET DIMENSIONS.
- 13) PROVIDE ACCESS PANELS FOR ALL ITEMS UNDER THIS SECTION REQUIRING SERVICING, INSPECTION, MAINTENANCE AND ADJUSTMENT.
- 14) ALL SWITCHES SHALL BE MOUNTED AT 44" A.F.F. AS PER ADA REQUIREMENTS.
- 15) ALL EXISTING AIR DEVICES FOR NEW FAN COIL UNITS SHALL BE REBALANCED TO THE AIR QUANTITIES AS INDICATED ON THE DRAWINGS.
- 16) PROVIDE STAINLESS STEEL COVERS FOR ALL WALL CLEANOUT COVERS AND ACCESS PANELS.
- 17) ALL ACCESSIBLE PLUMBING FIXTURES SHALL BE MOUNTED PER ADA REQUIREMENTS.
- 18) EXISTING ROOF, CONCRETE FLOORS AND PIPE INSULATION WERE FOUND TO CONTAIN ASBESTOS. REFER TO ARCHITECTURAL DRAWING FOR ABATEMENT REQUIREMENTS AND PROCEDURES.

--- ADDITIVE/ALTERNATE #1

EXISTING FAN COIL UNIT REPLACEMENT SEQUENCE (SUR-PHASING):

1. PHASE I: REPLACE UNITS AHU-1, FCU 2-1, 2-2, 2-3, 2-4, 2-5, 2-6. INSTALL NEW GATE VALVES FOR FUTURE PHASE SHUTDOWNS.
2. PHASE II: REPLACE UNITS AHU-2, FCU 1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, 1-9, 1-10, 1-11, 2-7, 2-8, 2-9, 2-10.
3. PHASE III: REPLACE UNITS FCU 2-11 THRU 2-34

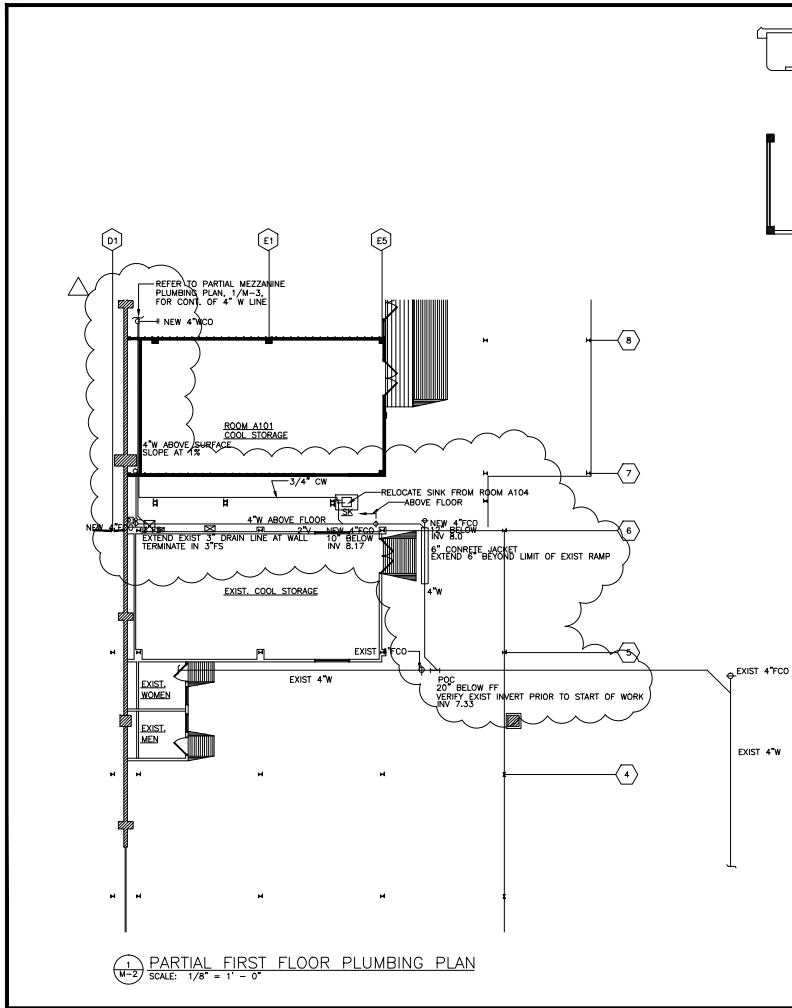
REVISED ORDINANCE OF HONOLULU
CHAPTER 39
BUILDING ENERGY EFFICIENCY STANDARDS

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

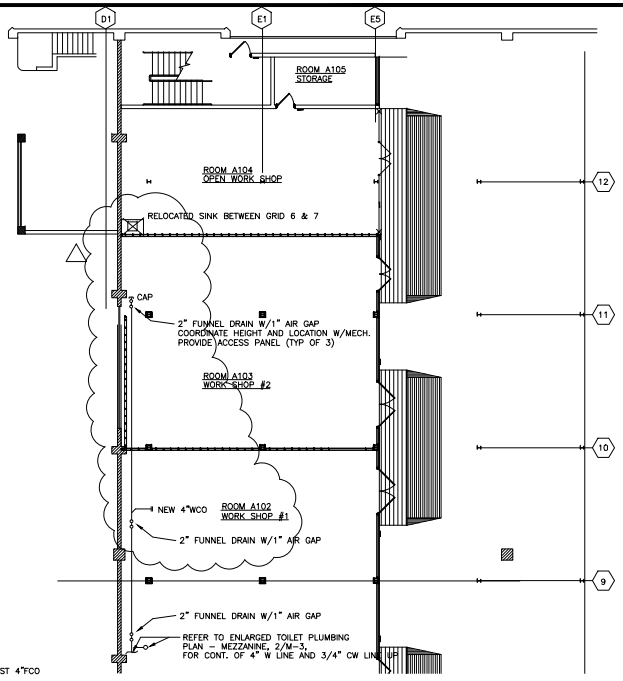
Signature
Randolph H. Murayama
Name (Print)
President
Title

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

REVISED BY	DATE	DESCRIPTION	SCALE	DATE
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM STATE OF HAWAII PIER 2 WAREHOUSE AND OFFICE IMPROVEMENTS AT FOREIGN TRADE ZONE NO.9 HONOLULU, OAHU, HAWAII				
NOTES, LEGEND				
THE STATE HAS REVIEWED BY ME OR UNDER MY SUPERVISION		RANDOLPH MURAYAMA AND ASSOC. INC.	PROJECT NO. FTZ 001	SHEET M-1
DESIGN BY	CHECK BY	DATE		
ESN	RHM	SEPT. 2003		
DESIGN BY	APPROVED BY			
ESN	RHM			
FILE DRAW FOLDER				

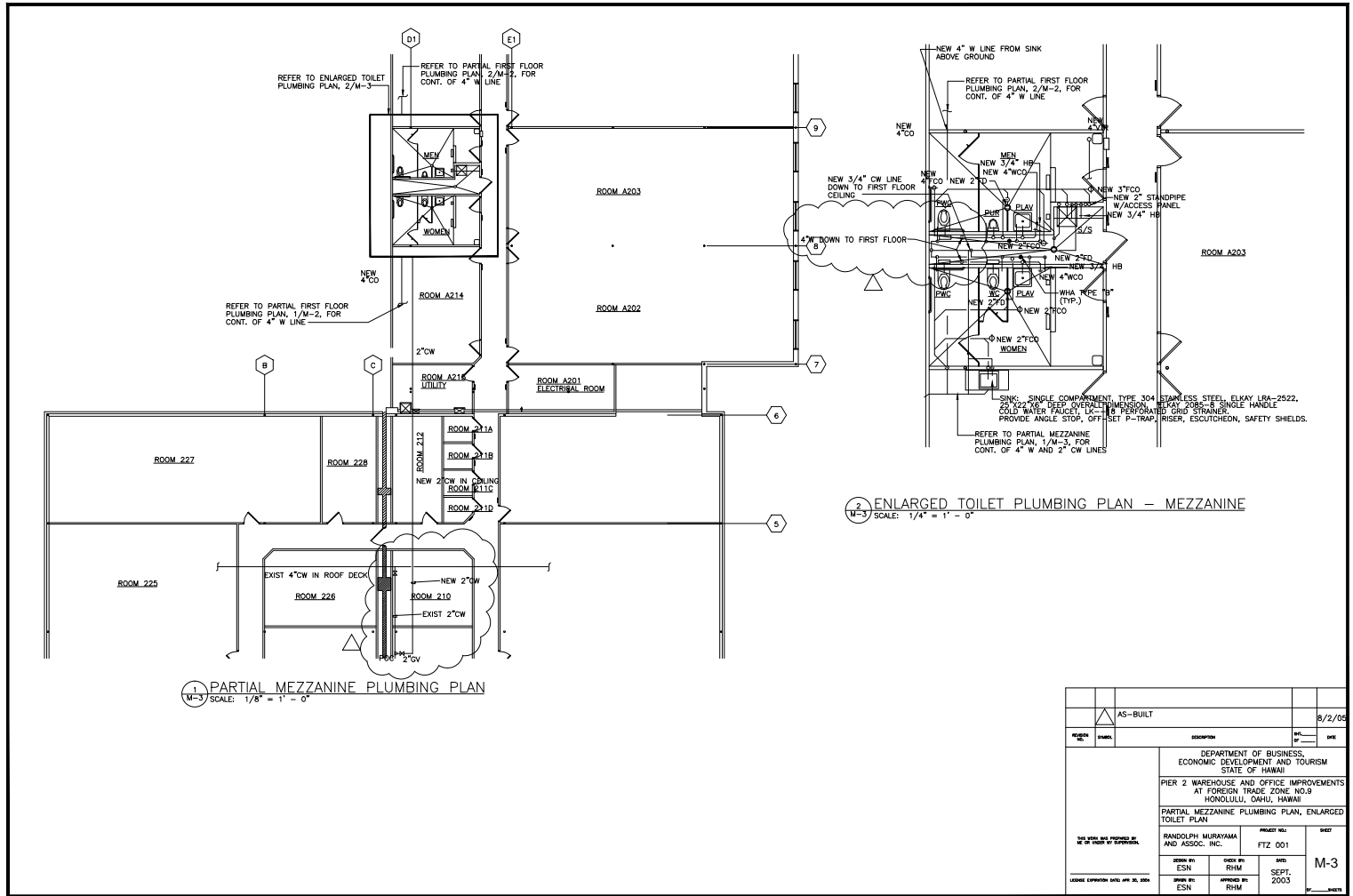


1 PARTIAL FIRST FLOOR PLUMBING PLAN
SCALE: 1/8" = 1' - 0"



2 PARTIAL FIRST FLOOR PLUMBING PLAN
SCALE: 1/8" = 1' - 0"

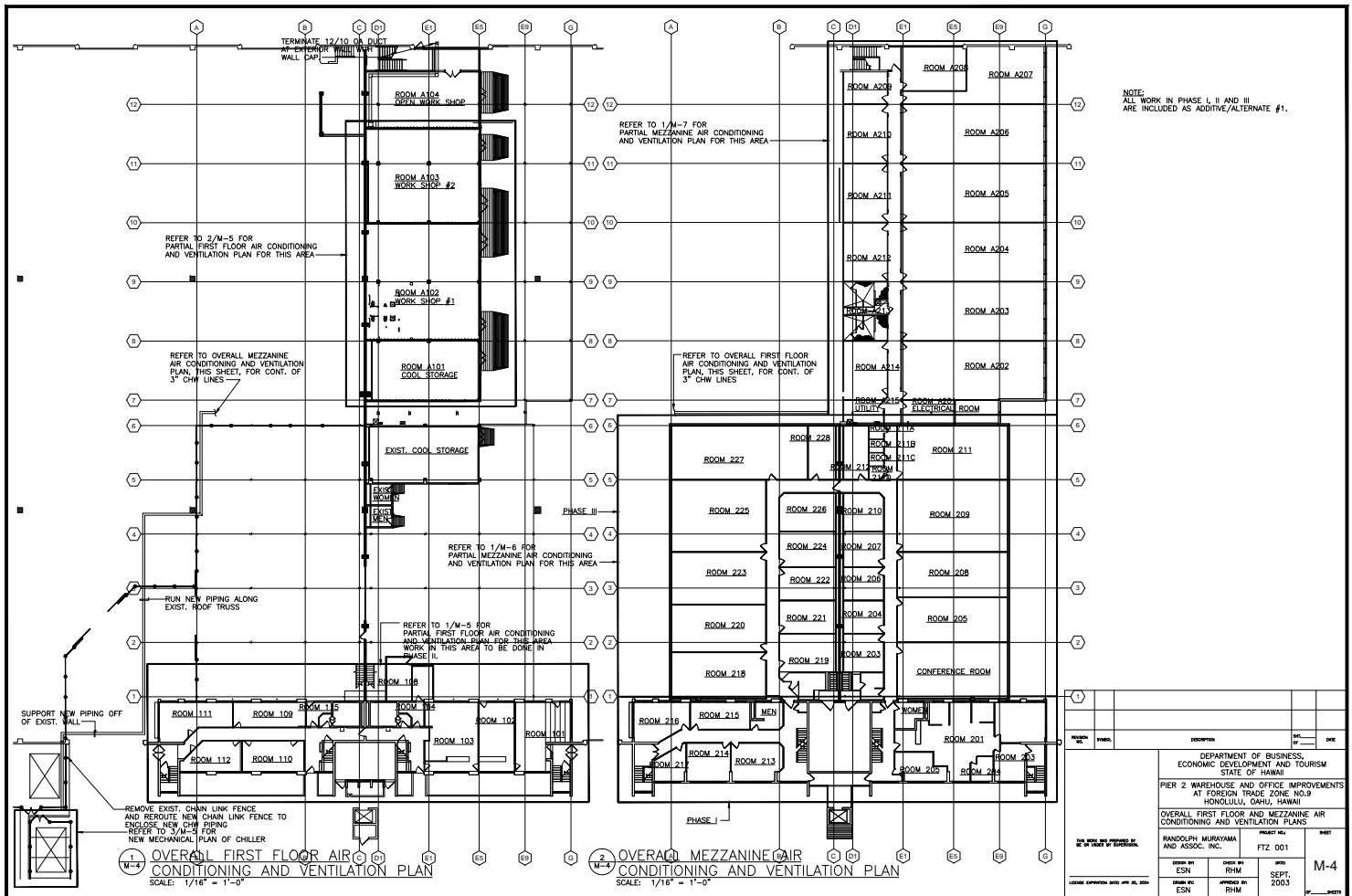
AS-BUILT	DATE	9/2/05
DESIGNED BY	DATE	
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM STATE OF HAWAII		
PIER 2 WAREHOUSE AND OFFICE IMPROVEMENTS AT FOREIGN TRADE ZONE NO.9 HONOLULU, OAHU, HAWAII		
PARTIAL FIRST FLOOR PLUMBING PLANS		
DESIGNED BY RANDOLPH MURAYAMA AND ASSOC. INC.	PROJECT NO. FTZ 001	SHEET M-2
DRAWN BY ESN	CHECK BY RHM	DATE SEPT. 2003
DATE ESN	APPROVED BY RHM	DATE SEPT. 2003
DATE ESN	APPROVED BY RHM	DATE SEPT. 2003
FILE	DRAW	FOLDER



1 PARTIAL MEZZANINE PLUMBING PLAN
M-3 SCALE: 1/8" = 1' - 0"

2 ENLARGED TOILET PLUMBING PLAN - MEZZANINE
M-3 SCALE: 1/4" = 1' - 0"

AS-BUILT	DATE	8/2/03
DESIGNED BY	DATE	
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM STATE OF HAWAII PIER 2 WAREHOUSE AND OFFICE IMPROVEMENTS AT FOREIGN TRADE ZONE NO.9 HONOLULU, OAHU, HAWAII PARTIAL MEZZANINE PLUMBING PLAN, ENLARGED TOILET PLAN		
PREPARED BY RANDOLPH MURAYAMA AND ASSOC. INC.	PROJECT NO. FTZ 001	SHEET M-3
DRAWN BY ESN	CHECK BY RHM	DATE SEPT. 2003
APPROVED BY ESN	APPROVED BY RHM	DATE SEPT. 2003
FILE DRAW FOLDER		



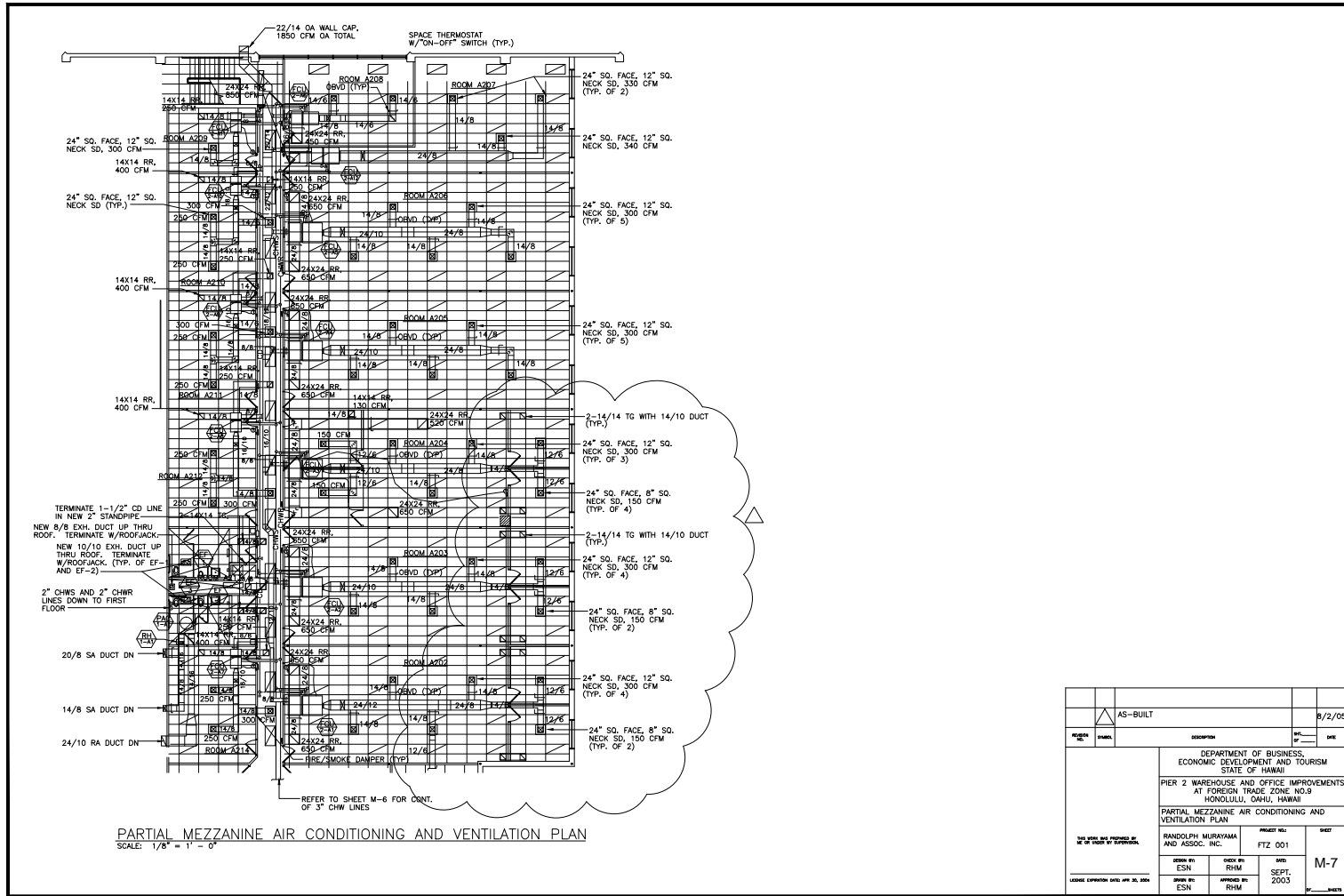
NOTE:
ALL WORK IN PHASE I, II AND III
ARE INCLUDED AS ADDITIVE/ALTERNATE #1.

1 OVERALL FIRST FLOOR AIR
CONDITIONING AND VENTILATION PLAN
SCALE: 1/16" = 1'-0"

2 OVERALL MEZZANINE AIR
CONDITIONING AND VENTILATION PLAN
SCALE: 1/16" = 1'-0"

NO.	DATE	DESCRIPTION	BY	CHKD.

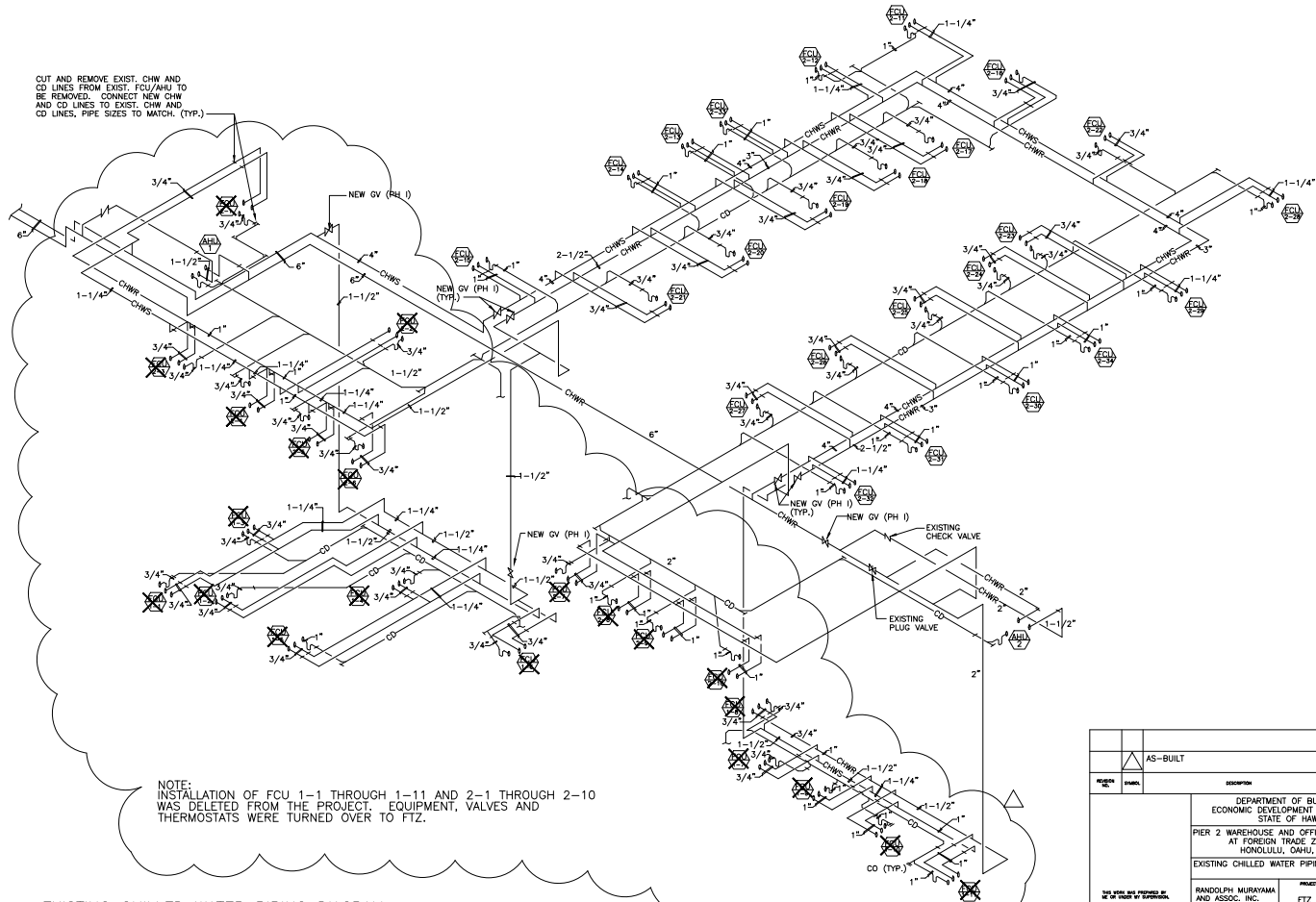
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM STATE OF HAWAII		PROJECT NO. FTZ 001	
PIER 2 WAREHOUSE AND OFFICE IMPROVEMENTS AT FOREIGN TRADE ZONE NO.9 HONOLULU, OAHU, HAWAII			
OVERALL FIRST FLOOR AND MEZZANINE AIR CONDITIONING AND VENTILATION PLANS		SHEET M-4	
RANDOLPH MURAYAMA AND ASSOC., INC.		DATE: SEPT. 2003	
DESIGN BY: ESN	CHECK BY: RHM	DATE: SEPT. 2003	M-4
DRAWN BY: ESN	APPROVED BY: RHM		
FILE DRAW FOLDER			



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

AS-BUILT		DATE	9/2/05
REVISION	NO.	DESCRIPTION	DATE
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM STATE OF HAWAII PIER 2 WAREHOUSE AND OFFICE IMPROVEMENTS AT FOREIGN TRADE ZONE NO.9 HONOLULU, OAHU, HAWAII PARTIAL MEZZANINE AIR CONDITIONING AND VENTILATION PLAN			
DESIGNED BY RANDOLPH MURAYAMA AND ASSOC. INC.		PROJECT NO. FTZ 001	SHEET M-7
DRAWN BY ESN	CHECK BY RHM	DATE SEPT. 2003	
ISSUED BY ESN	APPROVED BY RHM		
FILE		DRAW	FOLDER

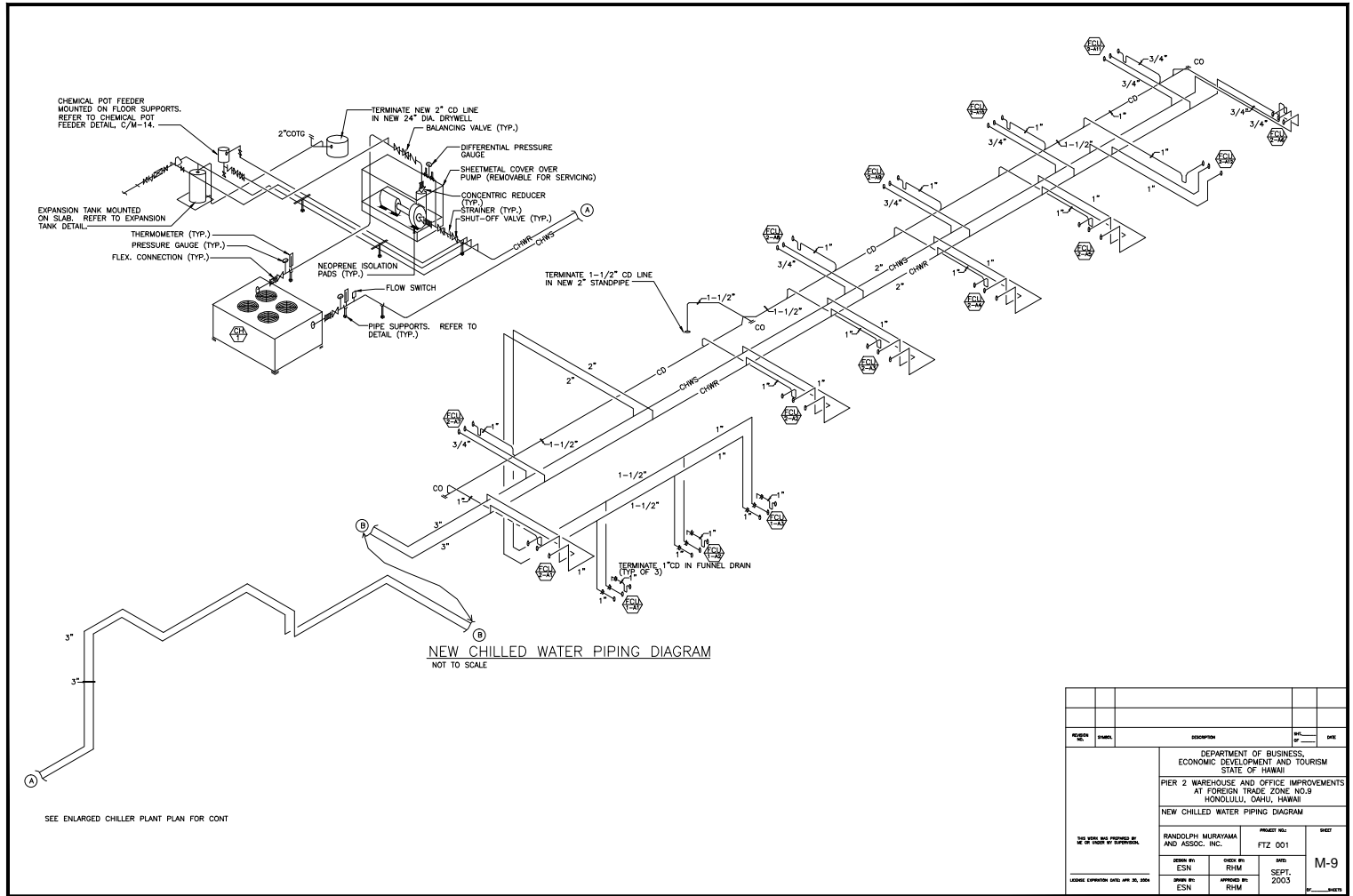
CUT AND REMOVE EXIST. CHW AND CD LINES FROM EXIST. FCU/AVHS TO BE REMOVED. CONNECT NEW CHW AND CD LINES TO EXIST. CHW AND CD LINES, PIPE SIZES TO MATCH. (TYP.)



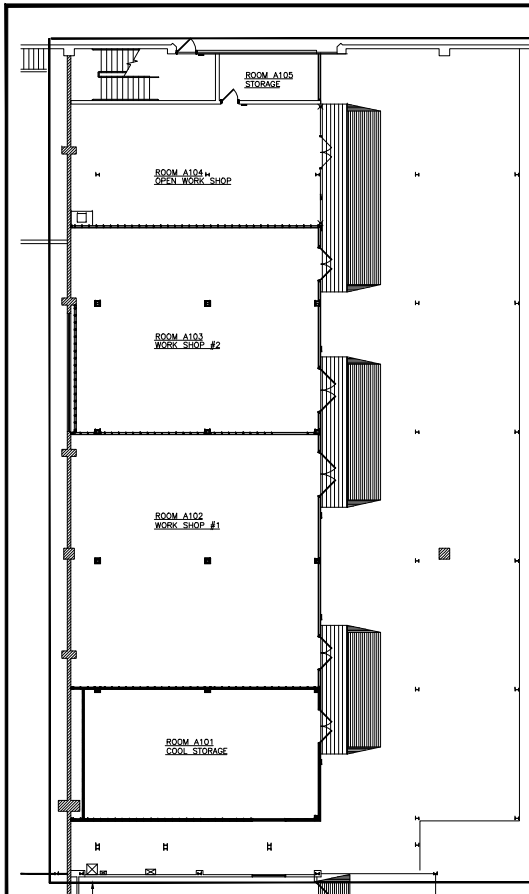
NOTE:
INSTALLATION OF FCU 1-1 THROUGH 1-11 AND 2-1 THROUGH 2-10
WAS DELETED FROM THE PROJECT. EQUIPMENT, VALVES AND
THERMOSTATS WERE TURNED OVER TO FTZ.

EXISTING CHILLED WATER PIPING DIAGRAM
NOT TO SCALE

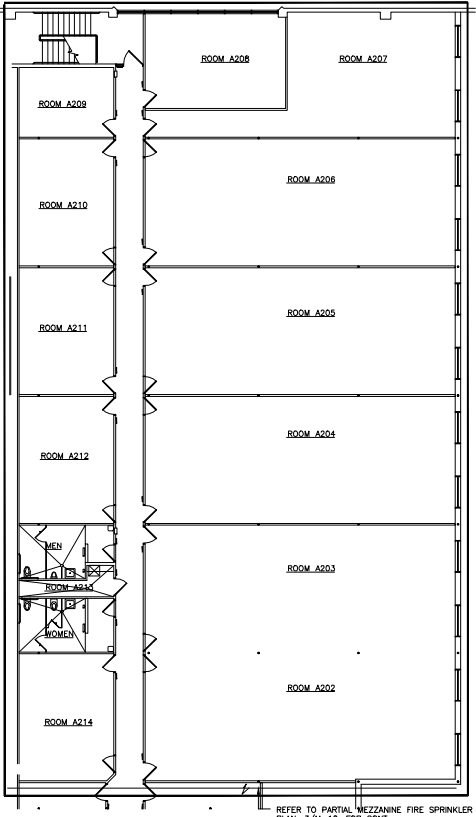
AS-BUILT	DATE	9/2/05
REVISION NO.	ISSUED	DATE
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM STATE OF HAWAII		
PIER 2 WAREHOUSE AND OFFICE IMPROVEMENTS AT FOREIGN TRADE ZONE NO.9 HONOLULU, OAHU, HAWAII		
EXISTING CHILLED WATER PIPING DIAGRAM		
DESIGNED BY RANDOLPH MURAYAMA AND ASSOC. INC.	PROJECT NO. FTZ 001	SHEET M-8
DRAWN BY ESN	CHECK BY RHM	DATE SEPT. 2003
DATE JUN 05	APPROVED BY RHM	DATE
FILE	DRAW	FOLDER



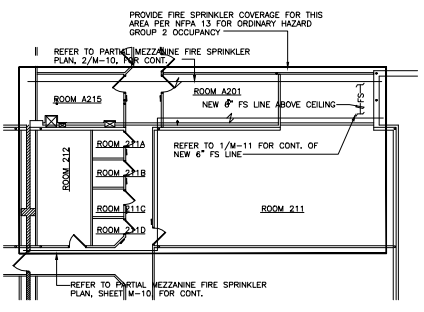
REVISION NO.	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM STATE OF HAWAII PIER 2 WAREHOUSE AND OFFICE IMPROVEMENTS AT FOREIGN TRADE ZONE NO.9 HONOLULU, OAHU, HAWAII NEW CHILLED WATER PIPING DIAGRAM				
RANDOLPH MURAYAMA AND ASSOC. INC.		PROJECT NO. FTZ 001	SHEET M-9	
DESIGNED BY ESN	CHECKED BY RHM	DATE SEPT. 2003	FILE DRAW FOLDER	
DRAWN BY ESN	APPROVED BY RHM	DATE SEPT. 2003	FILE DRAW FOLDER	



1 PARTIAL FIRST FLOOR FIRE SPRINKLER PLAN
SCALE: 1/8" = 1' - 0"



2 PARTIAL MEZZANINE FIRE SPRINKLER PLAN
SCALE: 1/8" = 1' - 0"

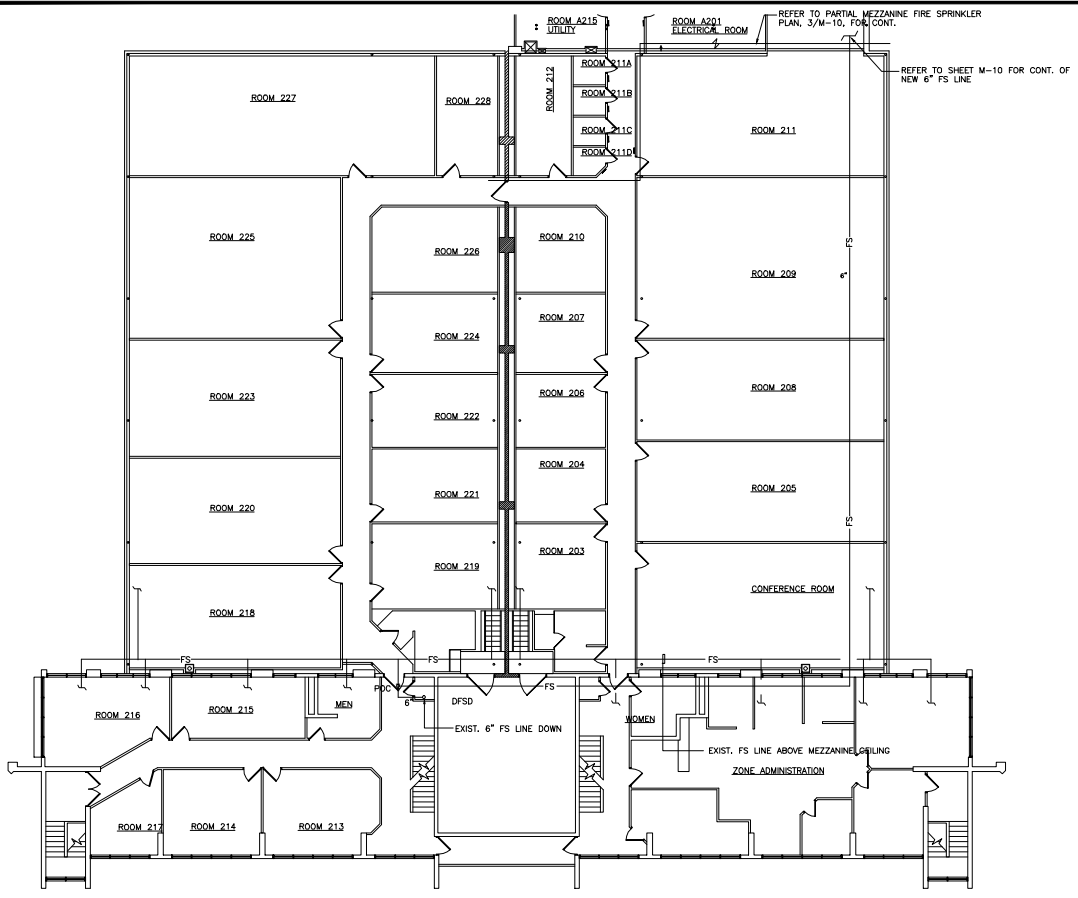


3 PARTIAL MEZZANINE FIRE SPRINKLER PLAN
SCALE: 1/8" = 1' - 0"

PROVIDE FIRE SPRINKLER COVERAGE FOR THIS AREA PER NFPA 13 FOR ORDINARY HAZARD GROUP 2 OCCUPANCY

PROJECT NO.	DATE	BY	CHECKED
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM STATE OF HAWAII			
PIER 2 WAREHOUSE AND OFFICE IMPROVEMENTS AT FOREIGN TRADE ZONE NO.9 HONOLULU, OAHU, HAWAII			
PARTIAL FIRST FLOOR AND MEZZANINE FIRE SPRINKLER PLANS			
PROJECT NO.	DATE	BY	CHECKED
RANDOLPH MURAYAMA AND ASSOC. INC.	FTZ 001		
DESIGN BY	DATE	BY	CHECKED
ESN	RHM	SEPT, 2003	
DESIGNED BY	DATE	BY	CHECKED
ESN	RHM		
FILE	DRAW	FOLDER	

M-10



1 PARTIAL MEZZANINE FIRE SPRINKLER PLAN
 SCALE: 1/8" = 1' - 0"

REFER TO PARTIAL MEZZANINE FIRE SPRINKLER PLAN, 3/M-10, FOR CONT.
 REFER TO SHEET M-10 FOR CONT. OF NEW 6" FS LINE

PROJECT NO.	DATE	DESCRIPTION	DATE	DATE
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM STATE OF HAWAII PIER 2 WAREHOUSE AND OFFICE IMPROVEMENTS AT FOREIGN TRADE ZONE NO.9 HONOLULU, OAHU, HAWAII PARTIAL MEZZANINE FIRE SPRINKLER PLAN				
RANDOLPH MURAYAMA AND ASSOC. INC. ARCHITECT		FTZ 001		SHEET M-11
DESIGNED BY ESN	CHECKED BY RHM	DATE SEPT. 2003		
DRAWN BY ESN	APPROVED BY RHM			
FILE		DRAW		FOLDER

MECHANICAL EQUIPMENT SCHEDULE

PROVIDE MAGNETIC STARTERS WITH CONTROL VOLTAGE TRANSFORMERS.

ALL FAN COOL UNITS IN EXISTING AREAS TO BE REMOVED AND REPLACED SHALL BE ADDITIVE/ALTERNATE #1.

NEW FAN COOL UNITS FOR EXISTING AREAS

UNIT NO.	LOCATION/ROOM SERVED	TOTAL COOLING (BTUH)	SENS. COOLING (BTUH)	ROWS	CFM	E.S.P. (IN WG)	OA CFM	FAN RPM	GPM	FAN HP	AMPS	FLA	WATTS	V/PH/HZ	OPERATING WEIGHT (LBS)	MODEL NO.	REMARKS
110	ROOM 110	22,980	16,980	3	768	0.15	58	3 SPEED	1.8	-	-	235	115 V/1 PH/60 HZ	98	CARRIER 42CE 08 OR APPROVED EQUAL	PROVIDE SPACE THERMOSTAT	
111	ROOM 111	15,400	11,300	3	500	0.15	100	3 SPEED	3	-	-	225	115 V/1 PH/60 HZ	82	CARRIER 42CE 08 OR APPROVED EQUAL	PROVIDE NEW STARTER/DISCONNECT	
109	ROOM 109	15,400	11,300	3	500	0.15	80	3 SPEED	3	-	-	225	115 V/1 PH/60 HZ	82	CARRIER 42CE 08 OR APPROVED EQUAL		
110	ROOM 110	31,000	23,000	4	1000	0.15	80	3 SPEED	6.2	-	-	300	115 V/1 PH/60 HZ	135	CARRIER 42CE 10 OR APPROVED EQUAL		
115, 104	ROOM 115, 104	20,800	16,400	3	650	0.15	100	3 SPEED	4.2	-	-	235	115 V/1 PH/60 HZ	95	CARRIER 42CE 08 OR APPROVED EQUAL		
108	ROOM 108	8,700	5,700	4	250	0.15	40	3 SPEED	1.8	-	-	85	115 V/1 PH/60 HZ	60	CARRIER 42CE 04 OR APPROVED EQUAL		
103, 102	ROOM 103, 102	31,000	23,000	4	1000	0.15	80	3 SPEED	6.2	-	-	300	115 V/1 PH/60 HZ	135	CARRIER 42CE 10 OR APPROVED EQUAL		
101	ROOM 101	31,000	23,000	4	1000	0.15	130	3 SPEED	6.2	-	-	300	115 V/1 PH/60 HZ	135	CARRIER 42CE 10 OR APPROVED EQUAL		
216, 215	ROOM 216, 215	13,800	9,800	4	400	0.15	80	3 SPEED	2.8	-	-	145	115 V/1 PH/60 HZ	70	CARRIER 42CE 04 OR APPROVED EQUAL		
217	ROOM 217	12,700	8,900	4	350	0.15	40	3 SPEED	2.6	-	-	145	115 V/1 PH/60 HZ	70	CARRIER 42CE 04 OR APPROVED EQUAL		
214, 213, HALL, HALL	ROOM 214, 213, HALL, HALL	17,300	13,000	3	600	0.15	80	3 SPEED	3.5	-	-	225	115 V/1 PH/60 HZ	82	CARRIER 42CE 08 OR APPROVED EQUAL		
205, 201	ROOMS 205, 201	25,500	18,800	4	800	0.15	150	3 SPEED	5.1	-	-	235	115 V/1 PH/60 HZ	95	CARRIER 42CE 08 OR APPROVED EQUAL		
200	ROOM 200	31,000	23,000	4	1000	0.15	300	3 SPEED	6.2	-	-	300	115 V/1 PH/60 HZ	135	CARRIER 42CE 10 OR APPROVED EQUAL		
227, 225, 209	ROOM 227, 225, 209	46,500	34,700	4	1400	0.8	300	-	9.3	3/4	-	-	115 V/1 PH/60 HZ	312	CARRIER 42BH 16 OR APPROVED EQUAL		
223, 208, 205	ROOM 223, 208, 205	34,400	24,400	6	900	0.8	200	-	6.9	3/4	-	-	115 V/1 PH/60 HZ	205	CARRIER 42BH 08 OR APPROVED EQUAL		
220, 218	ROOM 220, 218	34,400	24,400	6	900	0.8	200	-	6.9	3/4	-	-	115 V/1 PH/60 HZ	205	CARRIER 42BH 08 OR APPROVED EQUAL		
228, 212, 210, 207, 206, 204, 203	ROOM 228, 212, 210, 207, 206, 204, 203	9,800	6,500	4	300	0.15	50	3 SPEED	2.1	-	-	85	115 V/1 PH/60 HZ	60	CARRIER 42CE 03 OR APPROVED EQUAL		
226, 224, 222, 221, 219	ROOM 226, 224, 222, 221, 219	13,800	9,800	4	400	0.15	80	3 SPEED	2.8	-	-	145	115 V/1 PH/60 HZ	70	CARRIER 42CE 04 OR APPROVED EQUAL		
211	ROOM 211	48,000	36,000	4	1600	0.8	300	-	9.6	3/4	-	-	115 V/1 PH/60 HZ	312	CARRIER 42BH 16 OR APPROVED EQUAL		
	CONFERENCE RM	60,100	41,000	6	1400	0.8	600	-	12	3/4	-	-	115 V/1 PH/60 HZ	312	CARRIER 42BH 16 OR APPROVED EQUAL		
	CORRIDORS	24,200	17,600	4	750	0.15	200	3 SPEED	4.9	-	-	235	115 V/1 PH/60 HZ	95	CARRIER 42CE 08 OR APPROVED EQUAL		

PACKAGED AIR CONDITIONING UNIT

ALL MOTORS SHALL BE HIGH EFFICIENCY TYPE. PROVIDE MIN. 3 FILTER CHANGES: DURING CONSTRUCTION, PRIOR TO TEST AND BALANCING AND ONE MONTH AFTER FINAL ACCEPTANCE OF THE PROJECT. TOTAL COOLING AT 95° F AMBIENT TEMPERATURE. 87 F DB/67 F WB ENTERING AIR. PROVIDE STARTER W/CONTROL VOLTAGE TRANSFORMER, NEMA 4X ENCLOSURE FOR OUTDOOR LOCATION. FILTERS SHALL BE 2" T/A TYPE.

UNIT NO.	LOCATION	TOTAL COOLING (BTUH)	SENSIBLE COOLING (BTUH)	COMP RLA	COMP LRA	CFM	OA MOTOR	IF MOTOR	FAN RPM	E.S.P.	V/PH/HZ	SEER	OPERATING WEIGHT (LBS)	SOUND POWER LEVEL (DBA)	REMARKS
208	MEZZANINE DECK	47,800	33,700	12.4	88	1500	1.6 FLA	4.1 FLA	3-SPEED	0.7"	208 V/3 PH/60 HZ	12.0	325	80	HORIZONTAL, DRAN-THRU, FORWARD CURVED FAN. PROVIDE THERMOSTAT, STARTER/DISCONNECT.

EXHAUST FANS:

UNIT NO.	LOCATION	CFM	T.S.P.	FAN RPM	W	V/PH/HZ	OPERATING WEIGHT (LB)	SONES	MODEL NO.	REMARKS
17	MENS TOILET MEZZANINE	450	0.25"	707	420	115 V/1 PH/60 HZ	56	2.1	GREENHECK SP-A1050 OR APPROVED EQUIVALENT	INTERLOCK W/LIGHT SWITCH
2	WOMENS TOILET MEZZANINE	450	0.25"	707	420	115 V/1 PH/60 HZ	56	2.1	GREENHECK SP-A1050 OR APPROVED EQUIVALENT	INTERLOCK W/LIGHT SWITCH
3	JANITOR MEZZANINE	125	0.25"	690	81	115 V/1 PH/60 HZ	21	0.9	GREENHECK SP-A290 OR APPROVED EQUIVALENT	INTERLOCK W/LIGHT SWITCH
4	ELEC. ROOM AZ01	850	0.25"	997	420	115 V/1 PH/60 HZ	56	5.3	GREENHECK SP-A1050 OR APPROVED EQUIVALENT	PROVIDE SPACE THERMOSTAT W/"ON-OFF" SWITCH SET "ON" AT 90° F

CHILLER:

RECIPROCATING, SEMI-HERMETIC, AIR COOLED LIQUID CHILLER. 5-STEP CAPACITY (31%, 44%, 69%, 87%, 100%). 50 TONS COOLING CAPACITY. 45° F LEAVING CHILLED WATER TEMPERATURE. 10° F TEMPERATURE DIFFERENCE. 120 GPM AT 15 FT. MAX. PRESSURE DROP IN CHILLER. 95° F AMBIENT AIR TEMPERATURE. PROVIDE ACCESSORY UNLOADER. CHILLER EFFICIENCY: 3.5 KW/TON.

COMPRESSOR A1: 43.6 RLA, 223 LRA
 COMPRESSOR B1: 45.6 RLA, 233 LRA
 CONDENSER FAN (4 EA): 1 HP, 0.748 KW (3) 3.3 FLA (3) 2.8 FLA

460 V/3 PH/60 HZ. PROVIDE OVERVOLTAGE/UNDERVOLTAGE, PHASE FAILURE/PHASE REVERSAL PROTECTION, MOTOR TEMPERATURE/SYSTEM PRESSURE PROTECTION, ANTI-CYCLING PROTECTION WITH AUTOMATIC RESET. CHILLERS SHALL BE FURNISHED WITH MICROPROCESSOR BASED CONTROLS WITH EXPANDED READOUTS INCLUDING DIAGNOSTICS. REFRIGERANT R-22. APPROXIMATE OPERATING WEIGHT: 3855 LBS. REFER TO SPECIFICATIONS FOR FURTHER REQUIREMENTS. ALL MEASUREMENTS SHALL BE CERTIFIED IN ACCORDANCE WITH ARI 590-92. CARRIER 303T500 OR APPROVED EQUIVALENT WITH SOUND REDUCTION KIT. 96 DBA SOUND POWER (AT SOURCE) AND 63 DBA SOUND PRESSURE (AT 50 FEET). PROVIDE POLYSILOXANE COATING ON ENTIRE CHILLER INSIDE AND OUTSIDE. PROVIDE BLYSOLD COATING ON COILS, TUBES, FINS, FANS. PROVIDE PART WIND MOTOR STARTER. 9.8 EER.

CHILLED WATER PUMP:

END SUCTION, SINGLE STAGE CHILLED WATER PUMP. 120 GPM AT 55 FT. TDH. 1750 RPM. 5 HP. 460 V/3 PH/60 HZ. ALPORA MODEL 340/360-ENCL OR APPROVED EQUAL. 230 LBS. TOTALLY ENCLOSED FAN COOLED MOTOR.

AS-BUILT	DATE	9/2/05
DESIGNED BY	DATE	
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM, STATE OF HAWAII		
PER 2 WAREHOUSE AND OFFICE IMPROVEMENTS AT FOREIGN TRADE ZONE NO.9 HONOLULU, OAHU, HAWAII		
MECHANICAL EQUIPMENT SCHEDULE		
DESIGNED BY	PROJECT NO.	DATE
RANDOLPH MURAYAMA AND ASSOC. INC.	FTZ 001	
DESIGNED BY	DATE	
ESN	RHM	
DESIGNED BY	DATE	
ESN	RHM	
M-12		
FILE DRAW FOLDER		

MECHANICAL EQUIPMENT SCHEDULE

PROVIDE MAGNETIC STARTERS WITH CONTROL VOLTAGE TRANSFORMERS.

FAN COIL UNITS AND AIR HANDLERS

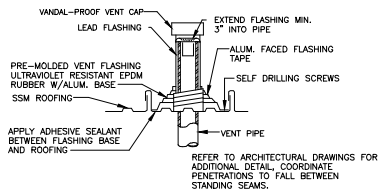
ALL MOTORS SHALL BE PREMIUM EFFICIENCY TYPE. PROVIDE MIN. 3 FILTER CHANGES DURING CONSTRUCTION, PRIOR TO TEST AND BALANCING AND ONE MONTH AFTER FINAL ACCEPTANCE OF THE PROJECT. TOTAL COOLING AT 95° F AMBIENT TEMPERATURE, 80° F DB/67° F WB ENTERING AIR. 45° F ENTERING CHILLED WATER TEMPERATURE. AIR HANDLERS: PROVIDE ANGLED FILTER SECTION WITH 2" X 4" THROWAWAY FILTERS FOR AIR HANDLERS, PROVIDE FLAT FILTER SECTION FOR FAN COIL UNITS. MAX. 10" PRESSURE DROP IN COIL. PROVIDE BLYTHOLD PAINT COATING ON COILS/TUBES AND POLYURETHANE COATING ON CABINET AND EXTERIOR SURFACES.

FAN COIL UNITS AND AIR HANDLERS FOR EXPANDED AREAS

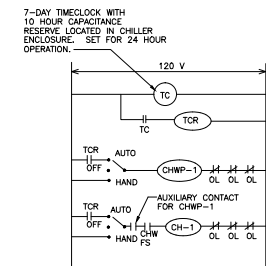
UNIT NO.	LOCATION/ROOM SERVED	TOTAL COOLING (BTUH)	SENS. COOLING (BTUH)	ROWS	CFM	E.S.P. (IN WG)	OA CFM	FAN RPM	QPM	FAN MOTOR (S)		V/PH/HZ	OPERATING WEIGHT (LBS)	MODEL NO.	REMARKS
										TIP	WATTS				
	ROOM A102	36,000	27,000	4	1200	0.8	180	-	7.2	7/8 (2)	540	115 V/1 PH/60 HZ	195	CARRIER 42DD 12 OR APPROVED EQUAL	PROVIDE SPACE THERMOSTAT PROVIDE NEW SWITCHER/DISCONNECT
	ROOM A103	54,000	40,500	4	1800	0.8	240	-	10.8	1/4 (2)	1000	115 V/1 PH/60 HZ	240	CARRIER 42DB 18 OR APPROVED EQUAL	
	ROOM A202, A203, A204, A205, A206	54,000	42,800	6	1500	0.8	200	-	12.6	3/4	-	115 V/1 PH/60 HZ	312	CARRIER 42BH 18 OR APPROVED EQUAL	
	ROOM A208	18,100	13,700	4	400	0.25	50	3 SPEED	3.7	1/8	-	115 V/1 PH/60 HZ	135	CARRIER 42DE 08 OR APPROVED EQUAL	
	ROOM A214, A212, A211, A210	25,500	18,800	4	800	0.15	150	3 SPEED	5.1	-	-	115 V/1 PH/60 HZ	95	CARRIER 42CE 08 OR APPROVED EQUAL	
	ROOM A209	9,800	6,500	4	300	0.15	50	3 SPEED	2.1	-	-	115 V/1 PH/60 HZ	60	CARRIER 42CE 03 OR APPROVED EQUAL	
	ROOM A207	33,300	24,000	4	1000	0.25	150	3 SPEED	6.9	1/4	-	115 V/1 PH/60 HZ	165	CARRIER 42DE 10 OR APPROVED EQUAL	
	ROOM 216	121,524	-	6/BFPI	2850	2"	2850	1200	35	2	-	460 V/3 PH/60 HZ	675	CARRIER 38LA 08 OR APPROVED EQUAL	54° F ENT. WATER, 87° F/74° F ENT. AIR TEMP.

REHEAT COIL

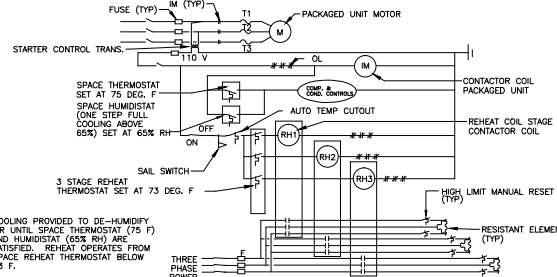
SLIP-IN DUCT, ELECTRICAL HEATER WITH OVERTEMPERATURE PROTECTION, OVERCURRENT PROTECTION, AIRFLOW SWITCH INTERLOCK. 14 WATTS AT 208 V/3 PH/60 HZ. 3 STAGE REHEAT CONTROL. ALL 3 PHASE POWER WITH OVERVOLTAGE/UNDERVOLTAGE/PHASE FAILURE/PHASE REVERSAL PROTECTION WITH AUTOMATIC RESTART FEATURE. PROVIDE ON SUPPLY AIR DUCT OF PAC 1-A1.



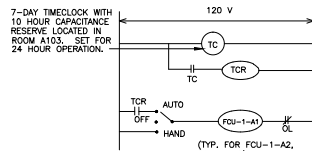
VENT THRU ROOF DETAIL
NOT TO SCALE



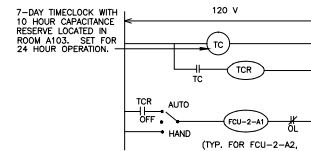
CONTROL DIAGRAM
(CHILLER AND CHILLED WATER PUMP)
NOT TO SCALE



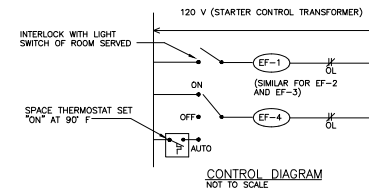
TYPICAL PACKAGED UNIT WITH REHEAT CONTROL DIAGRAM
NOT TO SCALE



CONTROL DIAGRAM
(TYP. FOR FCU-1-A2, FCU-1-A3)
NOT TO SCALE

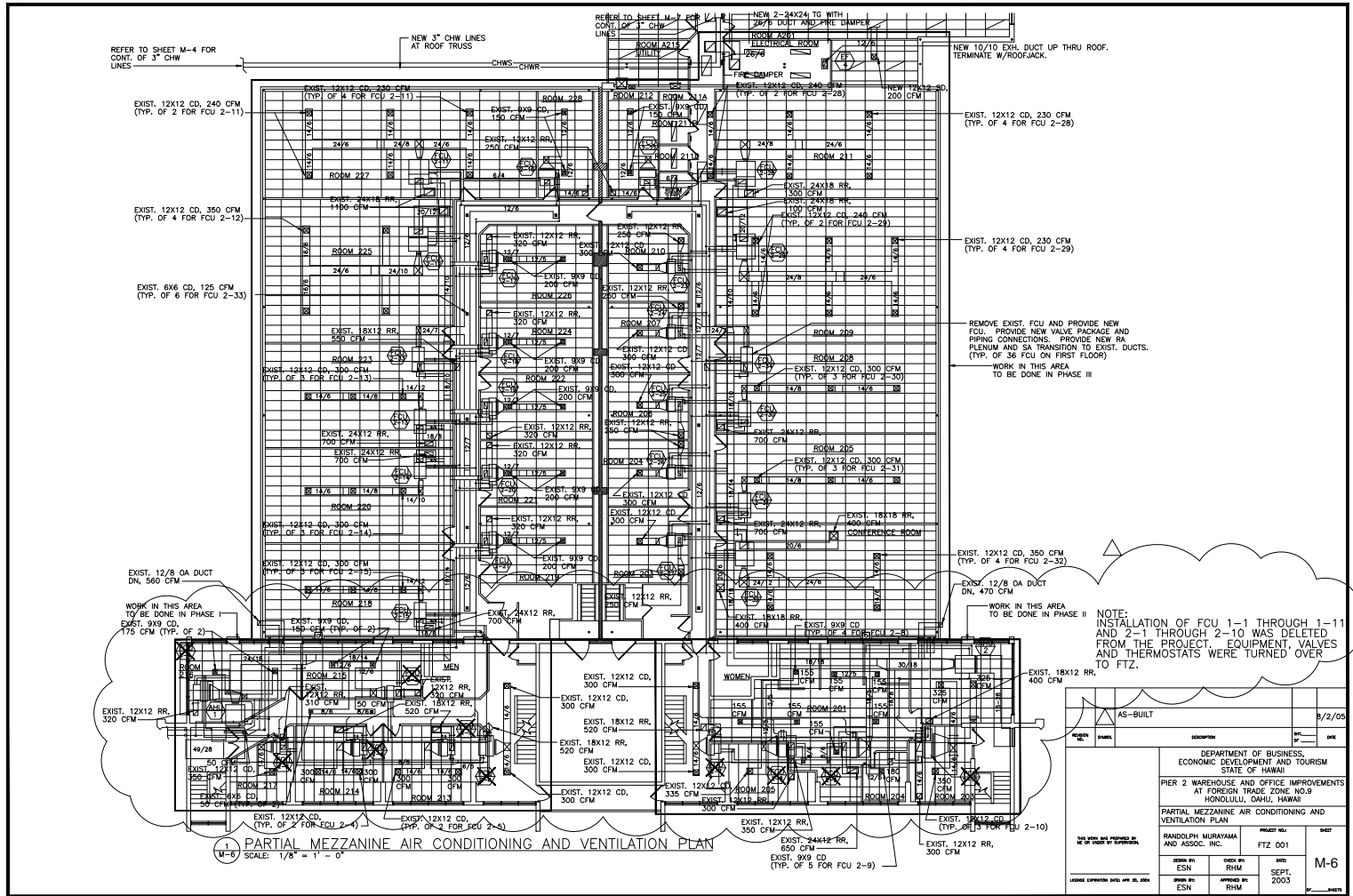


CONTROL DIAGRAM
(TYP. FOR FCU-2-A2, FCU-2-A12)
NOT TO SCALE



KEY
OL OVERLOAD
TC TIMECLOCK
TCR TIMECLOCK RELAY
AHU AIR HANDLING UNIT
FCU FAN COIL UNIT
CH CHILLER
CHWP CHILLED WATER PUMP

REVISED NO.	REVISION	DATE	BY	CHK
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM STATE OF HAWAII PIER 2 WAREHOUSE AND OFFICE IMPROVEMENTS AT FOREIGN TRADE ZONE NO.9 HONOLULU, OAHU, HAWAII MECHANICAL EQUIPMENT SCHEDULE, DETAILS				
RANDOLPH MURAYAMA AND ASSOC. INC.		PROJECT NO. FTZ 001	SHEET M-13	
DESIGNED BY ESN	CHECKED BY RHM	DATE SEPT. 2003	APPROVED BY RHM	
LICENSED ELECTRICAL ENGINEER NO. 10,100		FILE	DRAW	FOLDER



REFER TO SHEET M-4 FOR CONT. OF 3" CHW LINES

NEW 3" CHW LINES AT ROOF TRUSS

REFER TO SHEET M-4 FOR CONT. OF 3" CHW LINES

NEW 2-24X24 IN WITH 24" DUCT AND 4" HUNG LUMBER

NEW 10/10 EXH. DUCT UP THRU ROOF. TERMINATE W/ROOFJACK.

EXIST. 12X12 CD, 240 CFM (TYP. OF 2 FOR FCU 2-11)

EXIST. 12X12 CD, 350 CFM (TYP. OF 4 FOR FCU 2-12)

EXIST. 6X6 CD, 125 CFM (TYP. OF 6 FOR FCU 2-33)

EXIST. 12/8 OA DUCT DN, 560 CFM

WORK IN THIS AREA TO BE DONE IN PHASE I

EXIST. 12X12 RR, 320 CFM

EXIST. 12X12 CD, 300 CFM

PARTIAL MEZZANINE AIR CONDITIONING AND VENTILATION PLAN

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

EXIST. 12X12 CD, 230 CFM (TYP. OF 4 FOR FCU 2-28)

EXIST. 12X12 CD, 230 CFM (TYP. OF 4 FOR FCU 2-29)

REMOVE EXIST. FCU AND PROVIDE NEW FCU. PROVIDE NEW VALVE PACKAGE AND PIPING CONNECTIONS. PROVIDE NEW RA PLENUM AND SA TRANSITION TO EXIST. DUCTS. (TYP. OF 36 FCU ON FIRST FLOOR) TO BE DONE IN PHASE III

EXIST. 12X12 CD, 350 CFM (TYP. OF 4 FOR FCU 2-32)

EXIST. 12/8 OA DUCT DN, 470 CFM

WORK IN THIS AREA TO BE DONE IN PHASE II

EXIST. 18X12 RR, 400 CFM

EXIST. 12X12 CD, 300 CFM

NOTE: INSTALLATION OF FCU 1-1 THROUGH 1-11 AND 2-1 THROUGH 2-10 WAS DELETED FROM THE PROJECT. EQUIPMENT, VALVES AND THERMOSTATS WERE TURNED OVER TO FTZ.

AS-BUILT	DATE	9/2/05
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM STATE OF HAWAII	PROJECT NO.	FTZ 001
PIER 2 WAREHOUSE AND OFFICE IMPROVEMENTS AT FOREIGN TRADE ZONE NO.9 HONOLULU, OAHU, HAWAII	SHEET	M-6
PARTIAL MEZZANINE AIR CONDITIONING AND VENTILATION PLAN	DATE	SEPT. 2003
RANDOLPH MURAYAMA AND ASSOC. INC.	PROJECT NO.	FTZ 001
ESN	CHKD BY	RHM
ESN	APPROVED BY	RHM
FILE	DRAW	FOLDER