

MECHANICAL NOTES:

1.

ALL WORK SHOWN ON THESE DRAWINGS ARE NEW UNLESS OTHERWISE NOTED.
2.

THIS CONTRACT REQUIRES THE PLUMBING, FIRE PROTECTION, AND MECHANICAL SUBCONTRACTORS TO CAREFULLY COORDINATE THEIR WORK WITH EACH OTHER, THE GENERAL CONTRACTOR AND OTHER TRADES. PRIORITY SHALL BE GIVEN IN THE FOLLOWING ORDER:

A.

GRAVITY FLOW: SEWER, STORM DRAIN, DOWNSPOUT AND CONDENSATE DRAIN PIPING.

B.

EQUIPMENT AND DUCTWORK.

C.

FORCED AND PRESSURE PIPING SUCH AS WATER AND FIRE SPRINKLER PIPING.
3.

FOR ALL FLOOR, WALL PARTITION, CEILING AND ROOF PENETRATIONS, SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
4.

ALL PENETRATIONS OF REQUIRED FIRE RATED WALLS, PARTITIONS AND FLOORS SHALL BE PROVIDED WITH FIRE STOPPING MATERIAL PER IBC.
5.

NO CUTTING OR DRILLING OF ANY STRUCTURAL MEMBERS WILL BE PERMITTED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.
6.

ALL FASTENERS, SUPPORTS, PIPE HANGERS, SPRING ISOLATORS, AND MISCELLANEOUS STEEL ITEMS INCLUDING BUT NOT LIMITED TO BOLTS, NUTS, SCREWS, RODS, PLATES, AND ANGLES, ETC. SHALL BE GALVANIZED UNLESS OTHERWISE NOTED OR SPECIFIED.
7.

PROVIDE ACCESS PANELS IN NON-ACCESSIBLE CEILINGS FOR ALL MECHANICAL ITEMS REQUIRING SERVICING AND MAINTENANCE. VOLUME DAMPERS, FIRE/ SMOKE DAMPERS, FIRE DAMPERS, CONDENSATE DRAINS, VALVES, ETC. PROVIDE FIRE RATED ACCESS PANELS AS REQUIRED. COORDINATE TYPE OF ACCESS PANEL WITH WALL OR CEILING CONTRACTOR. ACCESS PANELS SHALL BE AS NOTED ON DRAWINGS.
8.

DUCTWORK SHOWN INDICATES GENERAL LAYOUT REQUIREMENTS. SHOP DRAWINGS SHALL INDICATE ADDITIONAL DUCT OFFSETS, DROPS, RISES, ETC. REQUIRED TO FIT WITHIN THE AVAILABLE SPACE. MECHANICAL CONTRACTOR SHALL COORDINATE WITH FIRE SPRINKLER CONTRACTOR AND ELECTRICAL CONTRACTOR TO ENSURE ADEQUATE SPACE IS AVAILABLE FOR SPRINKLER PIPES AND LIGHTS.
9.

ALL DUCT DIMENSIONS ARE INSIDE DIMENSIONS: INCREASE DUCT DIMENSIONS TO COMPENSATE FOR DUCT INSULATION THICKNESS.
10.

ALL AIR CONDITIONING SUPPLY AND RETURN AIR DUCTS SHALL BE INSULATED WITH DUCT WRAP.

A.

THE FIRST 15 FEET OF SUPPLY AND RETURN AIR DUCTS FROM AIR HANDLING EQUIPMENT SHALL BE ADDITIONALLY LINED WITH DUCT LINER.

B.

ACCESSORIES SUCH AS FIRE DAMPERS SHALL BE PROVIDED WITH 1-1/2" THICK RIGID FIBERGLASS EXTERNAL INSULATION.

C.

ALL EDGES OF DUCT AND PLENUM LINERS SHALL BE COATED AND PROVIDED WITH METAL NOSING AT ALL SUPPLY AND RETURN DUCT CONNECTIONS TO ALL AIR HANDLING EQUIPMENT.
11.

FLEXIBLE CONNECTIONS SHALL BE PROVIDED BETWEEN DUCTWORK AND AIR HANDLER UNITS, FAN COIL UNITS, IN-LINE SUPPLY AND EXHAUST FANS.
12.

TURNING VANES OR EXTRACTORS SHALL BE INSTALLED IN ALL CHANGES IN DIRECTION OF AIR FLOW, WHICHEVER IS APPLICABLE.
13.

FIRE DAMPERS SHALL BE INSULATED WHEN LOCATED IN INSULATED SUPPLY AND RETURN AIR DUCTS. INSULATION SHALL BE IN ACCORDANCE WITH SMACNA.
14.

PROVIDE FIRE DAMPERS OR FIRE/SMOKE DAMPERS FOR ALL FLOOR PENETRATIONS OR PENETRATIONS THROUGH FIRE RATED WALLS PER UBC CHAPTER 7. FIRE DAMPERS SHALL BE 90% OUT OF AIR STREAM. PROVIDE DUCT ACCESS PANELS FOR FIRE DAMPERS AND FIRE/SMOKE DAMPERS WHERE REQUIRED.
15.

CONTRACTOR SHALL PROVIDE FIRE DAMPERS TO ALL DUCTWORK AT UPPER LEVEL FLOOR PENETRATIONS. FIRE DAMPER SHALL NOT BE INSTALLED IN GREASE DUCTS PER NFPA 96.
16.

ALL CONTROL WIRING SHALL BE PLACED IN CONDUIT AND SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE. NO EMT ALLOWED FOR CONDUIT EXPOSED TO WEATHER.
17.

DAIKIN REFINET JOINTS AND HEADERS SHALL BE UTILIZED. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. VERIFY REFRIGERANT PIPE SIZES WITH MANUFACTURER.
18.

ALL HORIZONTAL CONDENSATE DRAIN SHALL BE SLOPED AT 1/4" PER FOOT UNLESS OTHERWISE NOTED.
19.

ALL ROOM THERMOSTATS AND FCU CONTROLLERS SHALL BE MOUNTED AT 42" ABOVE FINISHED FLOOR AND SHALL HAVE LOCKING COVERS. ALL LOCKS SHALL HAVE MASTER KEY.

MECHANICAL LEGEND

AAV	AUTOMATIC AIR VENT
A/C	AIR CONDITIONING
ACCU	AIR COOLED CONDENSING UNIT
AD	AREA DRAIN
AFCV	AUTOMATIC FLOW CONTROL VALVE
AFG	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AP	ACCESS PANEL
ATC	AUTOMATIC TEMPERATURE CONTROL
AUX	AUXILIARY
BDD	BACKDRAFT DAMPER
BDD	BOTTOM OF DUCT (ABOVE FINISHED FLOOR)
BV	BALL VALVE
CD	CEILING DIFFUSER
CDR	CONDENSATE DRAIN
CONN	CONNECT OR CONNECTION
CONT	CONTINUATION
CV	CHECK VALVE
CVD	CONCEALED VOLUME DAMPER
DDC	DIRECT DIGITAL CONTROL
DE	DRYER EXHAUST
DL	DOOR LOUVER
DN	DOWN
EF	EXHAUST FAN
EG	EXHAUST GRILLE
ER	EXHAUST REGISTER
EXH	EXHAUST
EXST	EXISTING
FCU	FAN COIL UNIT
FFD	FUNNEL FLOOR DRAIN
FL SW	FLOW SWITCH
FLXC	FLEXIBLE CONNECTOR
F/SD	FIRE SMOKE DAMPER
GC	GENERAL CONTRACTOR
GLV	GLOBE VALVE
HOA	HAND-OFF-AUTOMATIC
MVD	MOTORIZED VOLUME DAMPER
OA	OUTSIDE AIR
OAG	OUTSIDE AIR GRILLE
OAR	OUTSIDE AIR REGISTER
OL	OVERLOAD
PC OR GC	PLUG COCK, OR GAS COCK
PD	PRESSURE DROP
PG	PRESSURE GAUGE
P REL V	PRESSURE RELIEF VALVE
R	RELAY
RA	RETURN AIR
REL D	RELIEF DRAIN
REL G	RELIEF GRILLE
RG	RETURN GRILLE
RL	REFRIGERANT LIQUID
RR	RETURN REGISTER
RS	REFRIGERANT SUCTION
SA	SUPPLY AIR
SF	SUPPLY FAN
SG	SUPPLY GRILLE
SMD	SMOKE DETECTOR
SPD	SPLITTER DAMPER
SR	SUPPLY REGISTER
S/S	STAINLESS STEEL
STR	STRAINER
SV	SOLENOID VALVE
SW	SWITCH
T & PRV	THERMOSTAT OR CONTROLLER (INSTALL AT 42" AFF)
TC	TIME CLOCK
TERM	TERMINATE
TG	TRANSFER GRILLE
TH	THERMOMETER
VD	VOLUME DAMPER



HAWAII COUNTY CODE – CHAPTER 5 – BUILDING

2006 IECC & ORDINANCE 09-48

BUILDING ENERGY EFFICIENCY STANDARDS

I CERTIFY THAT THE DESIGN IS IN CONFORMANCE WITH THE BUILDING ENERGY EFFICIENCY STANDARDS PERTAINING TO:

SECTION 502 – BUILDING ENVELOPE

SECTION 503 – BUILDING MECHANICAL SYSTEMS

Signature: _____

Date: 02/17/2012

Name: LOUIS T.L. CHENG

Title: PE

License No.: 3684-M

LOUIS T. L. CHENG

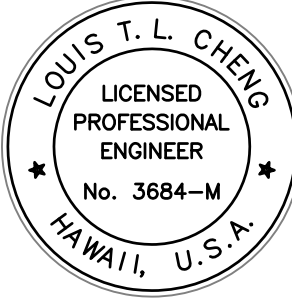
LICENSED PROFESSIONAL ENGINEER

No. 3684-M

HAWAII, U.S.A.



Airports Division



THE WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII.

Signature
LICENSE EXPIRATION DATE: 04/30/14

DSGN.	DRWN.	CHKD.	APPD.
FFU	RA/AC	BH	LC

KEY PLAN / NOTES:

9	6/25/12	BUILDING PERMIT RESUBMITAL
1	3/21/12	DCAB COMMENTS
NO.	DATE	REVISION

AS-BUILT
12 - 5 - 2014

PROJECT TITLE:

ARFF FACILITY IMPROVEMENTS
AT KONA INTERNATIONAL
AIRPORT AT KEAHOLE

PROJECT NO.:

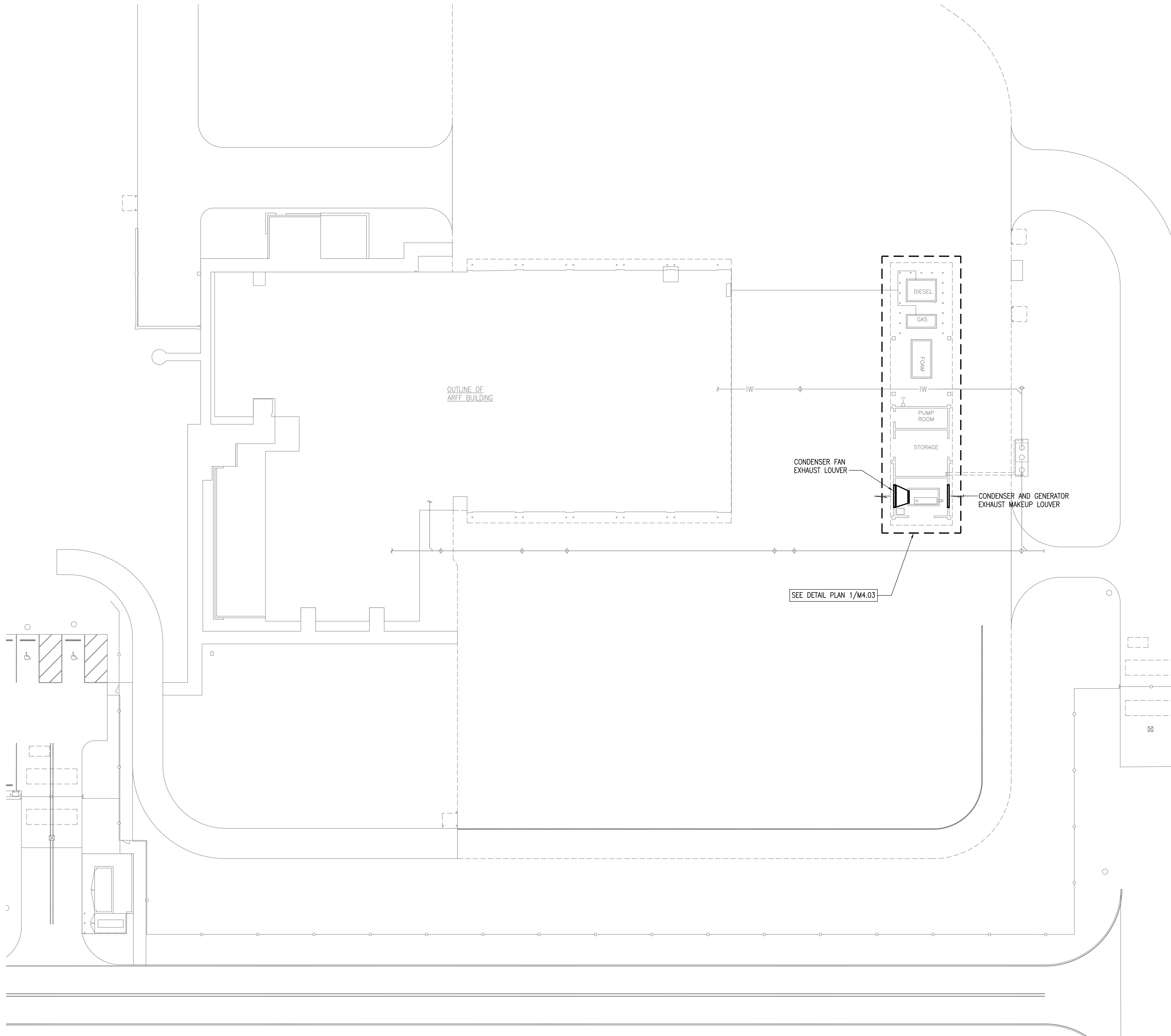
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AIP PROJECT NO. 3-15-0008-XX

SHEET TITLE:

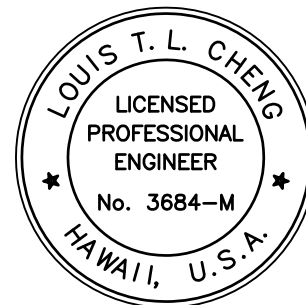
MECHANICAL LEGEND AND
NOTES

DATE:	02/17/2012
DWG. NO.:	
OF	

M0.01



Airports Division
Department of Transportation
State of Hawaii



THE WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII.

Louis T. L. Cheng
LICENSE EXPIRATION DATE: 04/30/14

DSGN.	DRWN.	CHKD.	APPD.
FFU	RA/AC	BH	LC

KEY PLAN / NOTES:

NO.	DATE	REVISION

AS-BUILT
12 - 5 - 2014

PROJECT TITLE:

ARFF FACILITY IMPROVEMENTS
AT KONA INTERNATIONAL
AIRPORT AT KEAHOLE

PROJECT NO.:

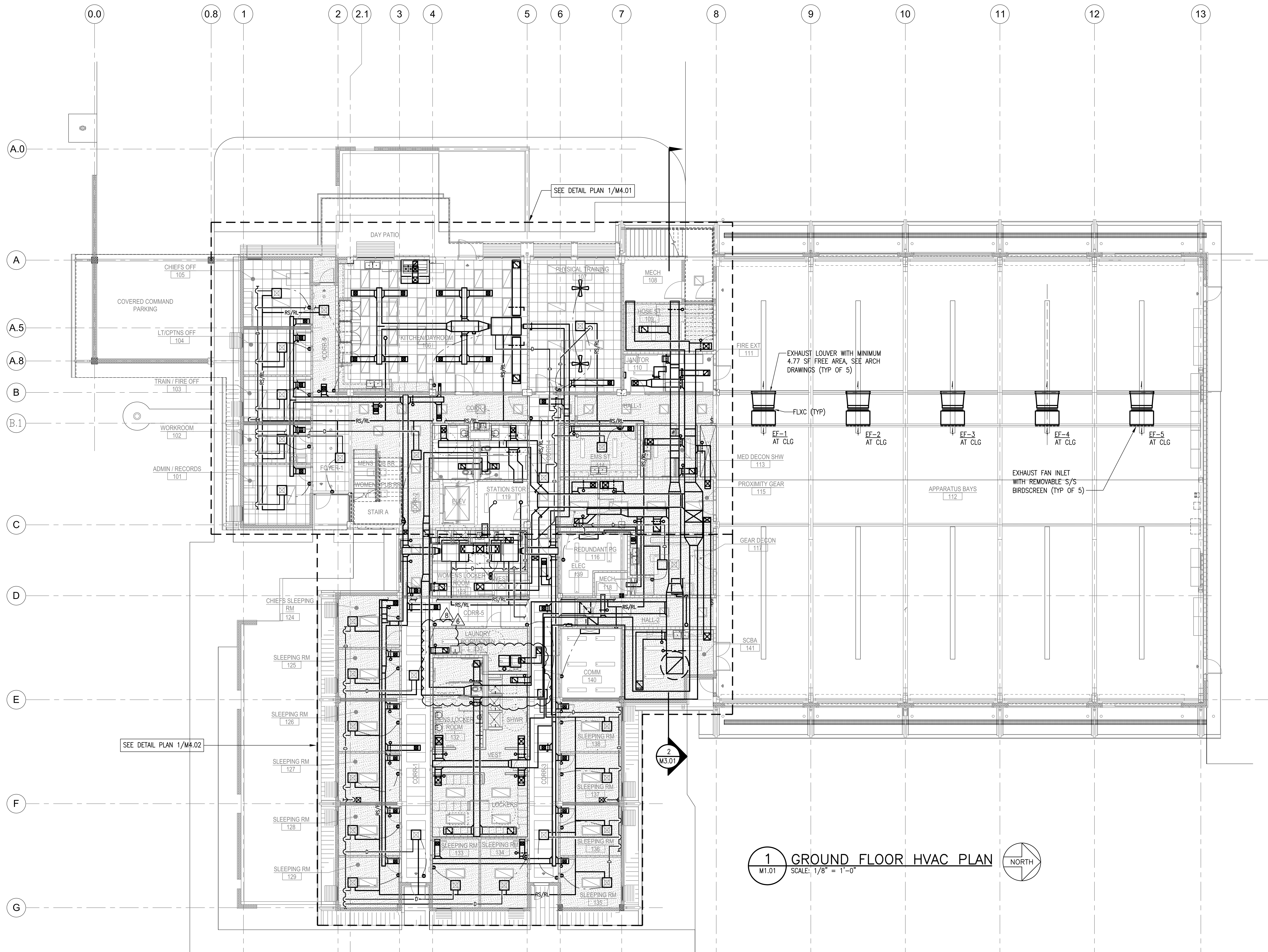
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AIP PROJECT NO. 3-15-0008-XX

SHEET TITLE:

MECHANICAL SITE PLAN

DATE:	02/17/2012
DWG. NO.:	
OF	

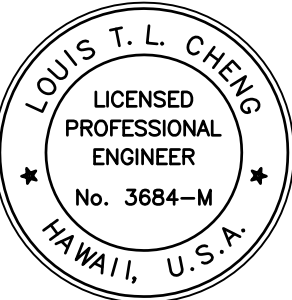
M0.02



1 GROUND FLOOR HVAC PLAN
M1.01 SCALE: 1/8" = 1'-0"



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Department of Transportation
State of Hawaii



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Louis T. L. Cheng
LICENSE EXPIRATION DATE: 04/30/14

DSGN.	DRWN.	CHKD.	APPD.
FFU	RAAC	BH	LC

KEY PLAN / NOTES:

8	12/03/12	PCD-2
6	9/26/12	DCAB COMMENTS 7/31/12
NO.	DATE	REVISION

AS-BUILT
12-5-2014

PROJECT TITLE:

ARFF FACILITY IMPROVEMENTS
AT KONA INTERNATIONAL
AIRPORT AT KEAHOLE

PROJECT NO.:

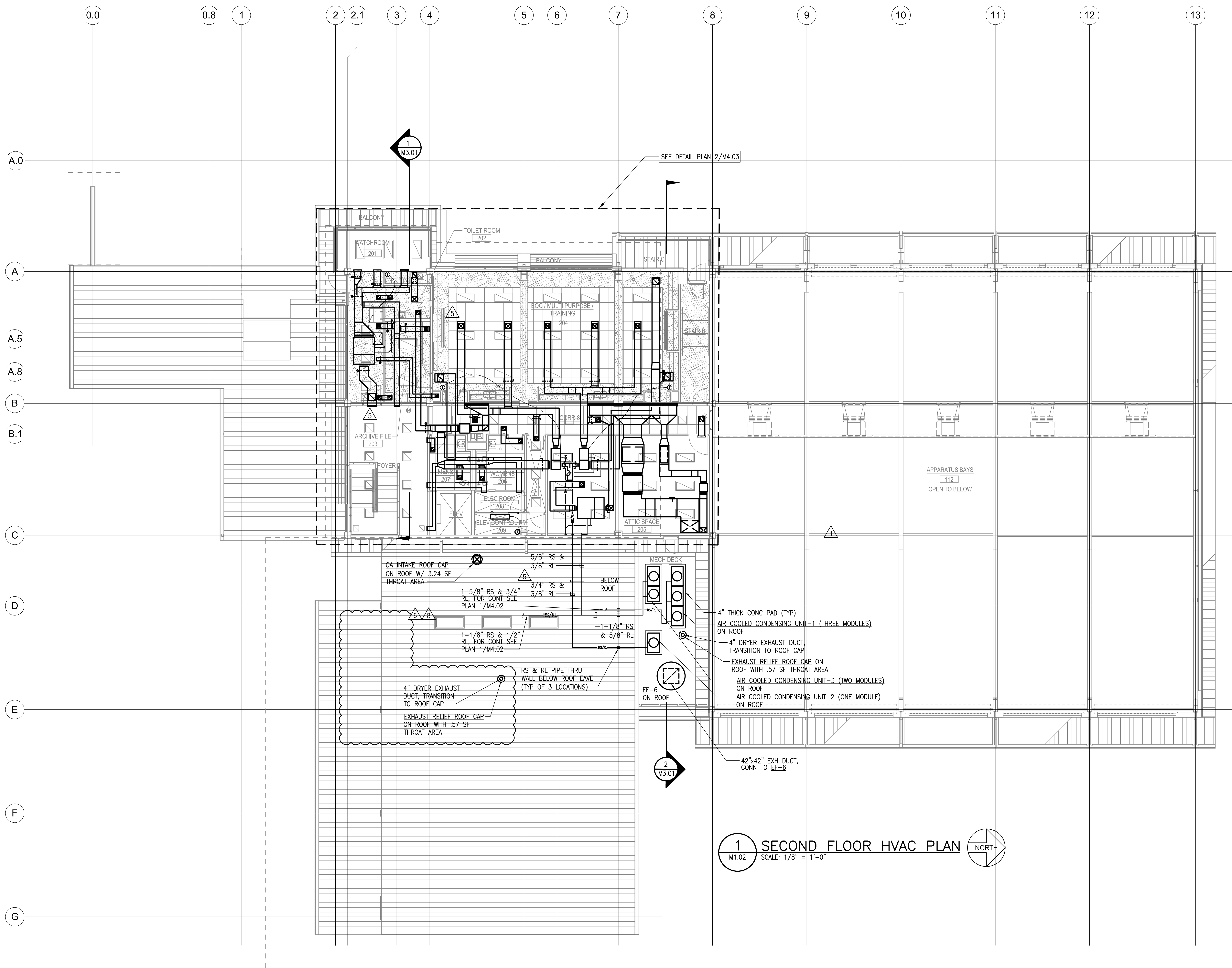
STATE PROJECT NO. AH2044-19
AIP PROJECT NO. 3-15-0008-XX

SHEET TITLE:

GROUND FLOOR HVAC PLAN

DATE:	02/17/2012
DWG. NO.:	
OF	

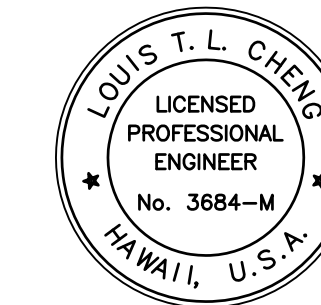
M1.01



1 SECOND FLOOR HVAC PLAN
M1.02 SCALE: 1/8" = 1'-0" NORTH



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Department of Transportation
State of Hawaii



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Louis T. L. Cheng
LICENSE EXPIRATION DATE: 04/30/14

DSGN.	DRWN.	CHKD.	APPD.
FFU	RA/AC	BH	LC

KEY PLAN / NOTES:

8	12/03/12	PCD-2
6	9/26/12	DCAB COMMENTS 7/31/12
5	6/25/12	BUILDING PERMIT RESUBMITTAL
NO.	DATE	REVISION

AS-BUILT
12 - 5 - 2014

PROJECT TITLE:

ARFF FACILITY IMPROVEMENTS
AT KONA INTERNATIONAL
AIRPORT AT KEAHOLE

PROJECT NO.:

STATE PROJECT NO. AH2044-19
AIP PROJECT NO. 3-15-0008-XX

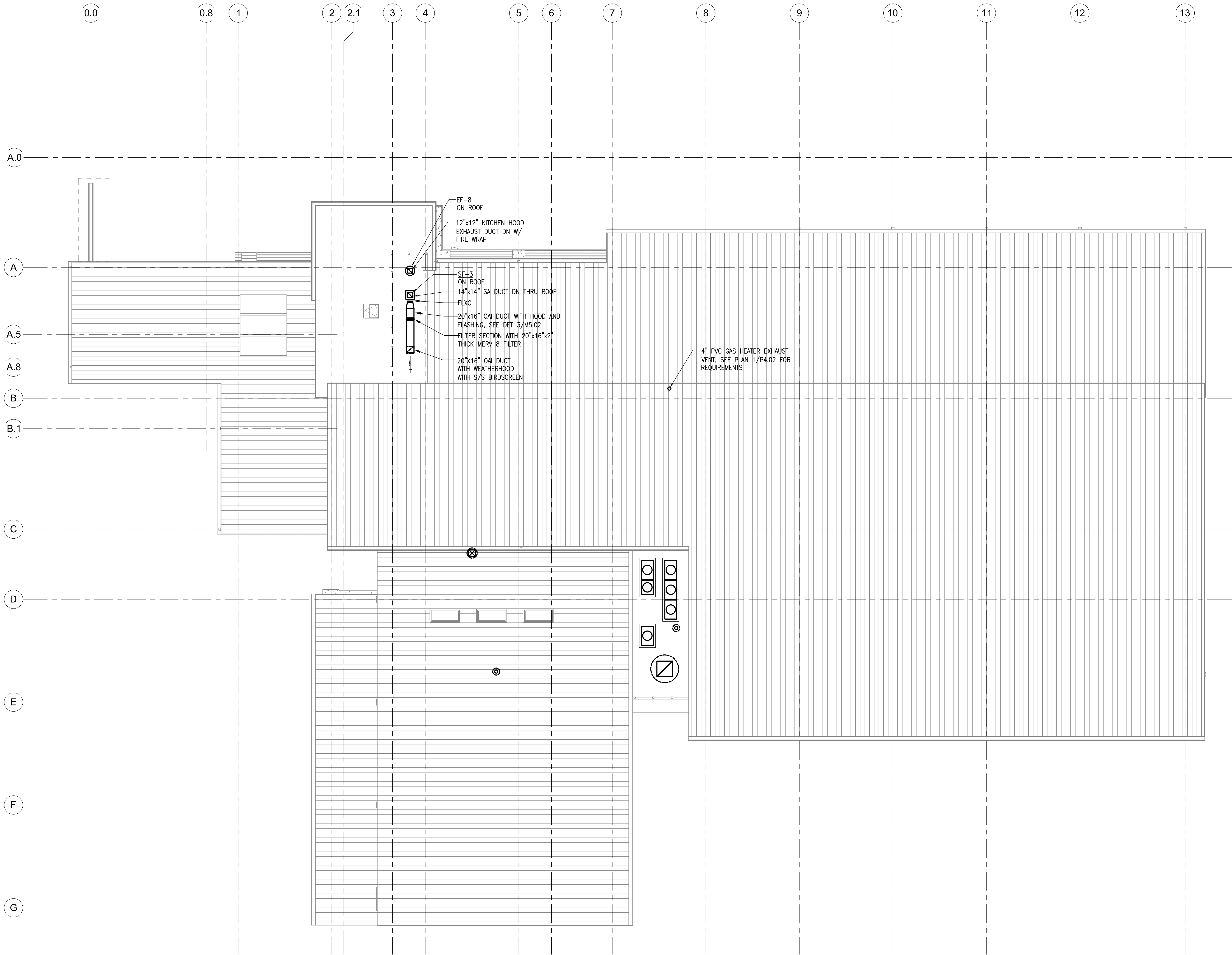
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SECOND FLOOR HVAC PLAN

DATE:
02/17/2012
DWG. NO.:

OF

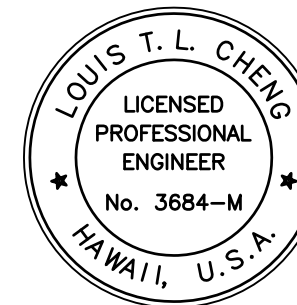
M1.02



1 HVAC ROOF PLAN
M1.03 SCALE: 1/8" = 1'-0" NORTH



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Department of Transportation
State of Hawaii



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LICENSE EXPIRATION DATE: 04/30/14

DSGN.	DRWN.	CHKD.	APPD.
FFU	RA/AC	BH	LC

KEY PLAN / NOTES:

NO.	DATE	REVISION

AS-BUILT
12 - 5 - 2014

PROJECT TITLE:

ARFF FACILITY IMPROVEMENTS
AT KONA INTERNATIONAL
AIRPORT AT KEAHOLE

PROJECT NO.:

STATE PROJECT NO. AH2044-19
AIP PROJECT NO. 3-15-0008-XX

SHEET TITLE:

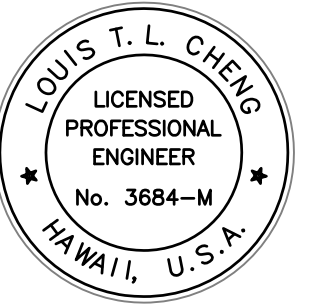
HVAC ROOF PLAN

DATE:	02/17/2012
DWG. NO.:	
OF	

M1.03



Airports Division
Department of Transportation
State of Hawaii



THE WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONTROL IN ACCORDANCE WITH THE REQUIREMENTS OF THE HAWAIIAN ENGINEERING ACT.

Louis T. L. Cheng
LICENSE EXPIRATION DATE: 04/30/14

DSGN.	DRWN.	CHKD.	APPD.
FFU	RAAC	BH	LC

KEY PLAN / NOTES:

NO.	DATE	REVISION
6	6/25/12	BUILDING PERMIT RESUBMITTAL

AS-BUILT
12 - 5 - 2014

PROJECT TITLE:

ARFF FACILITY IMPROVEMENTS
AT KONA INTERNATIONAL
AIRPORT AT KEAHOLE

PROJECT NO.:

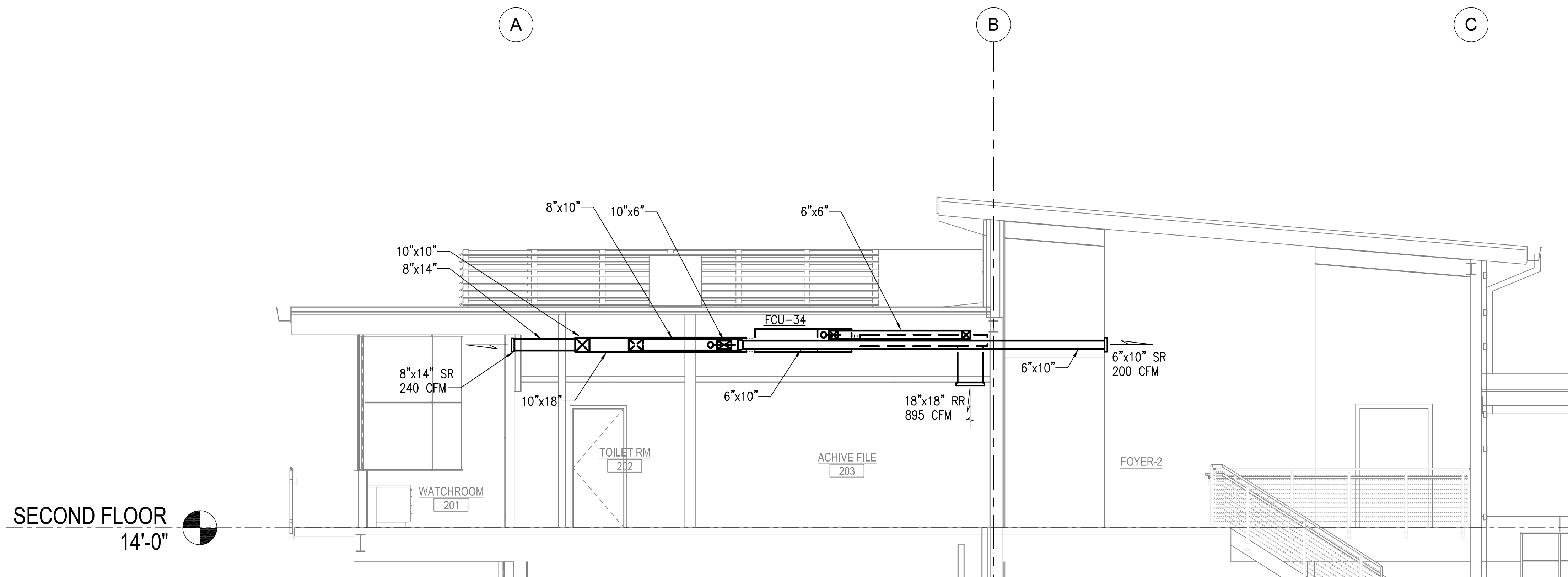
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AIP PROJECT NO. 3-15-0008-XX

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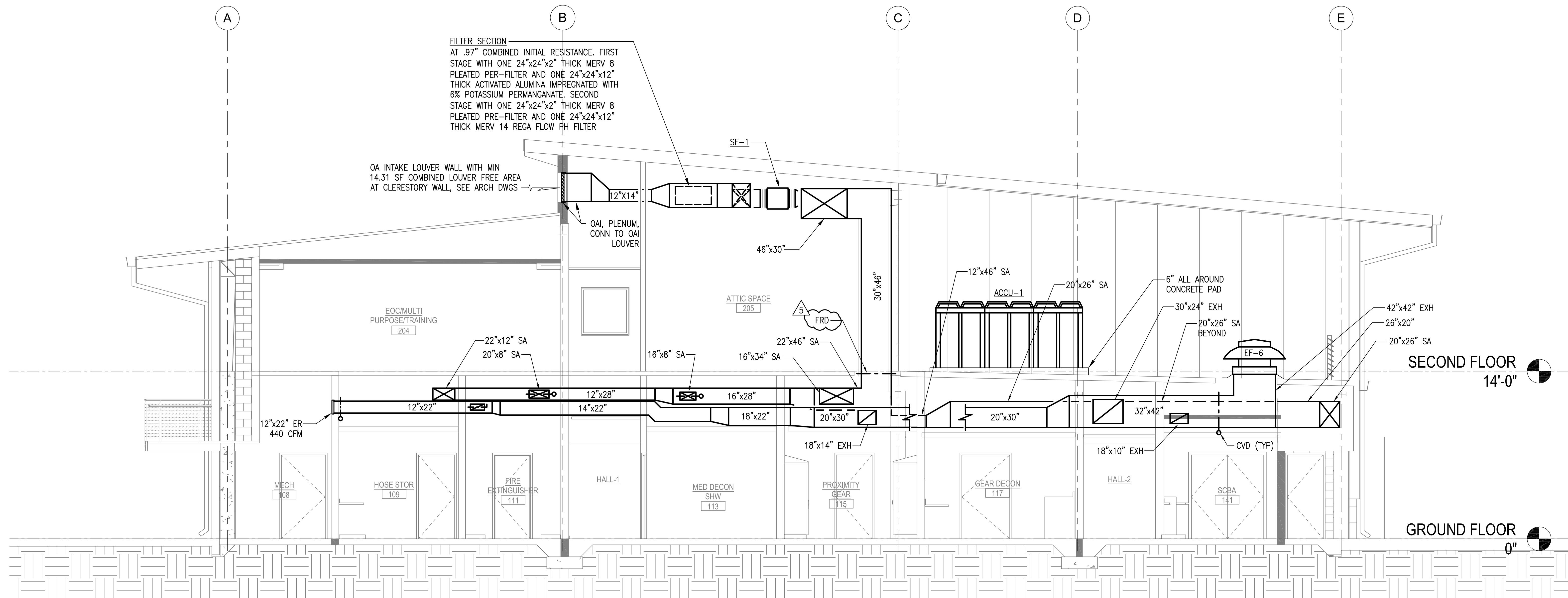
HVAC CROSS SECTIONS

DATE:	02/17/2012
DWG. NO.:	
OF	

M3.01



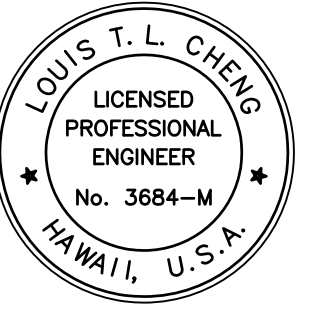
1 HVAC CROSS SECTION
M3.01 SCALE: 1/4" = 1'-0"



2 HVAC CROSS SECTION
M3.01 SCALE: 1/4" = 1'-0"



Airports Division
Department of Transportation
State of Hawaii



THE WORK AND PROJECTS OF MR. LOUIS T. L. CHENG
ARE HEREBY APPROVED FOR THE STATE OF HAWAII
PROJECT NO. 3-15-0008-XX

Louis T. L. Cheng
LICENSE EXPIRATION DATE: 04/30/14

DSGN.	DRWN.	CHKD.	APPD.
FFU	RAAC	BH	LC

KEY PLAN / NOTES:

NO.	DATE	REVISION
1	6/25/12	BUILDING PERMIT RESUBMITTAL

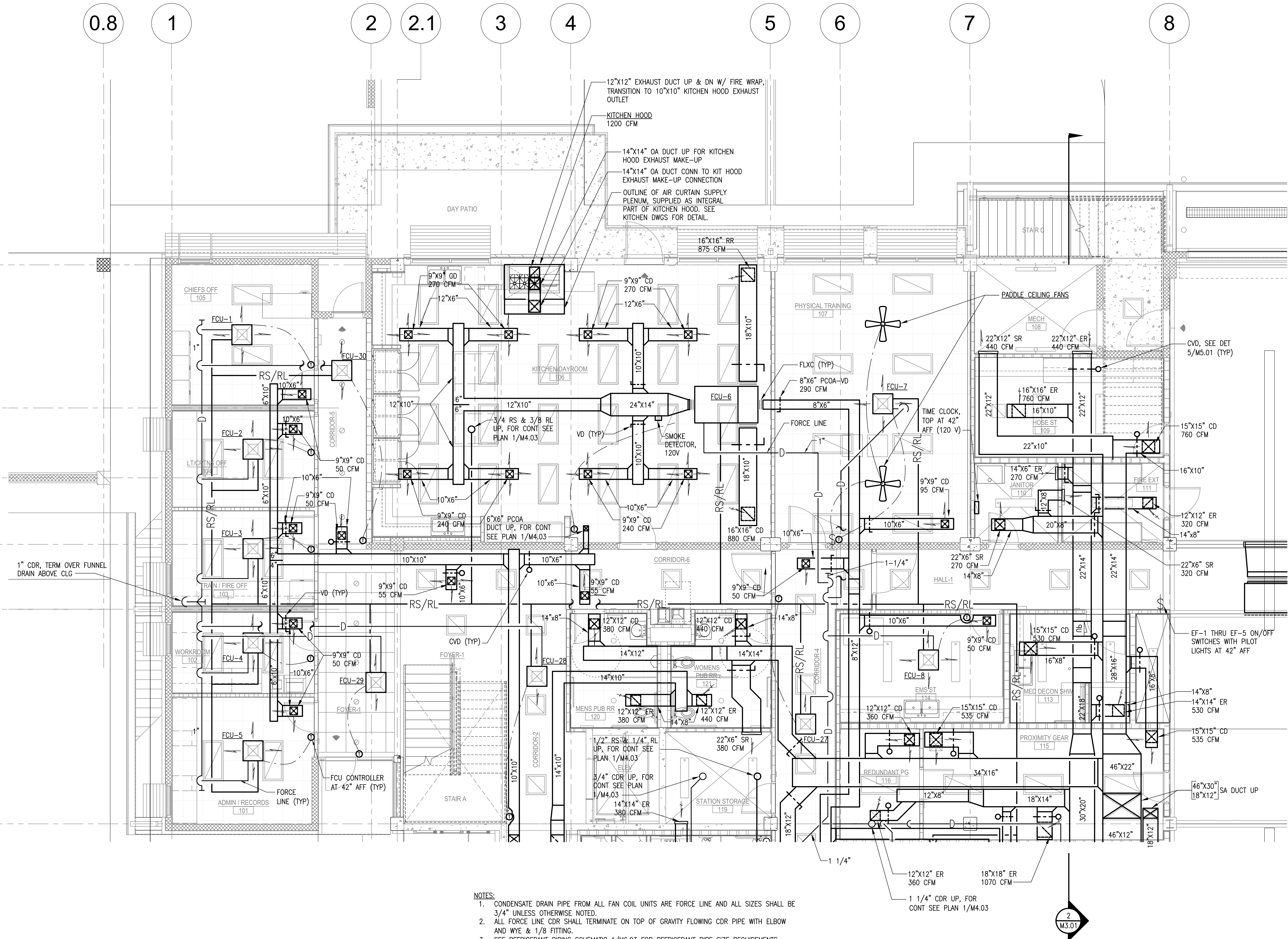
AS-BUILT
12-5-2014

PROJECT TITLE:
ARFF FACILITY IMPROVEMENTS
AT KONA INTERNATIONAL
AIRPORT AT KEAHOE

PROJECT NO.:
STATE PROJECT NO. AH2044-19
AIP PROJECT NO. 3-15-0008-XX

SHEET TITLE:
GROUND FLOOR HVAC
DETAIL PLAN

DATE:	02/17/2012
DWG. NO.:	M4.01
OF	

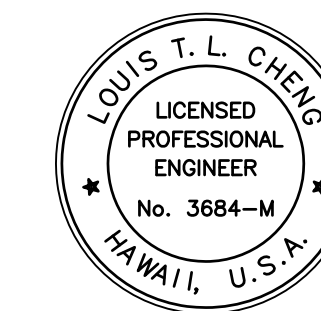


- NOTES:
- CONDENSATE DRAIN PIPE FROM ALL FAN COIL UNITS ARE FORCE LINE AND ALL SIZES SHALL BE 3/4" UNLESS OTHERWISE NOTED.
 - ALL FORCE LINE CDR SHALL TERMINATE ON TOP OF GRAVITY FLOWING CDR PIPE WITH ELBOW AND WYE & 1/8 FITTING.
 - SEE REFRIGERANT PIPING SCHEMATIC 1/M6.03 FOR REFRIGERANT PIPE SIZE REQUIREMENTS.

1 PARTIAL GROUND FLOOR HVAC DETAIL PLAN
M4.01 SCALE: 1/4" = 1'-0"



Airports Division
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State of Hawaii



ALL WORK AND PROVISIONS BY ALL CONTRACTORS SHALL BE IN ACCORDANCE WITH THE HAWAIIAN AIRPORT ACT AND THE HAWAIIAN AIRPORT RULES.

Louis T. L. Cheng
LICENSE EXPIRATION DATE: 04/30/14

DSGN.	DRWN.	CHKD.	APPD.
FFU	RAAC	BH	LC

KEY PLAN / NOTES:

NO.	DATE	REVISION
1	6/25/12	BUILDING PERMIT RESUBMITTAL

AS-BUILT
12-5-2014

PROJECT TITLE:

ARRF FACILITY IMPROVEMENTS
AT KONA INTERNATIONAL
AIRPORT AT KEAHOE

PROJECT NO.:

STATE PROJECT NO. AH2044-19
AIP PROJECT NO. 3-15-0008-XX

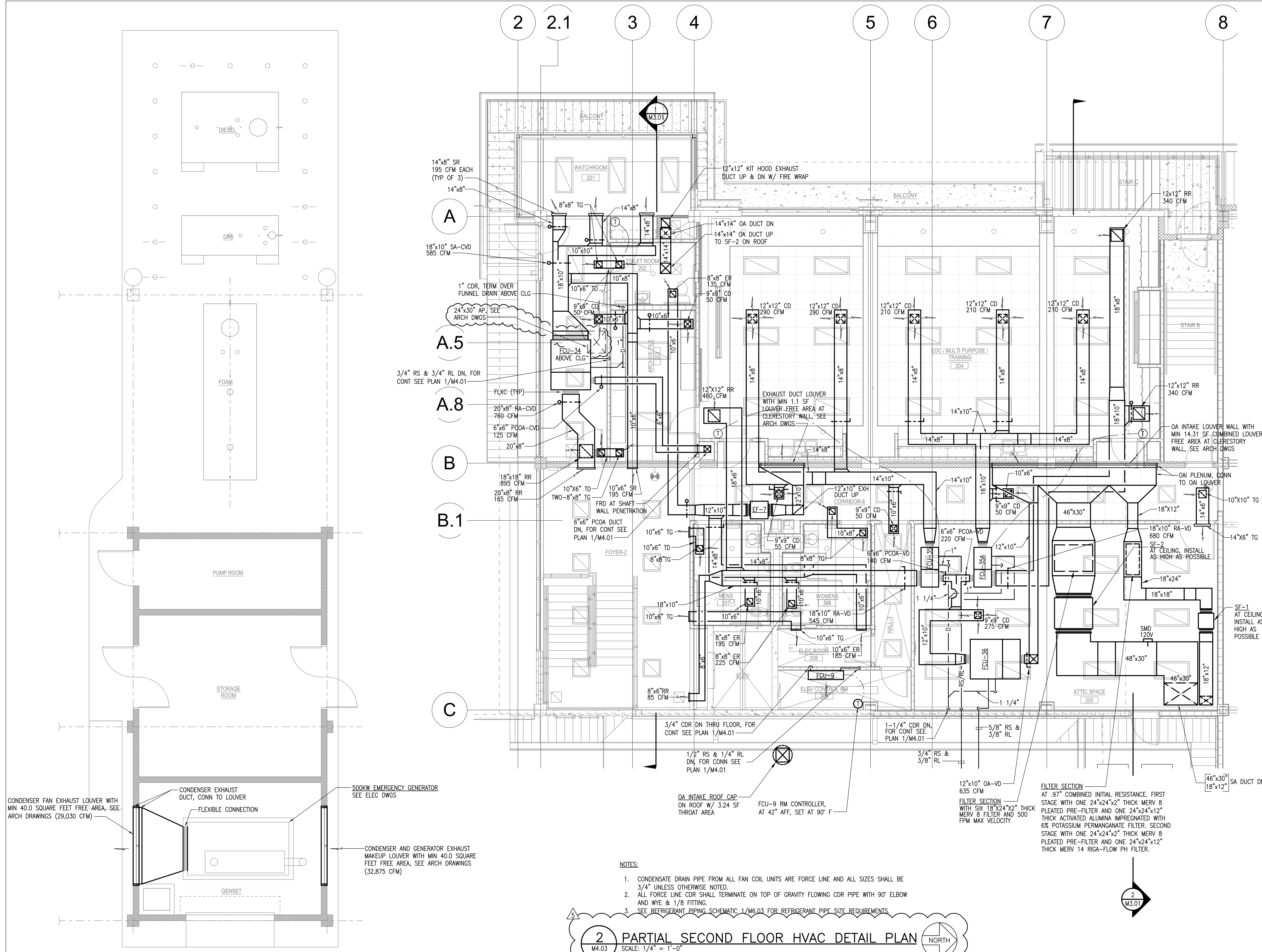
SHEET TITLE:

FUEL ISLAND & PARTIAL SECOND
FLOOR HVAC DETAIL PLAN

DATE:
02/17/2012
DWG. NO.:

M4.03

OF



NOTES:

- CONDENSATE DRAIN PIPE FROM ALL FAN COIL UNITS ARE FORCE LINE AND ALL SIZES SHALL BE 3/4" UNLESS OTHERWISE NOTED.
- ALL FORCE LINE CDR SHALL TERMINATE ON TOP OF GRAVITY FLOWING CDR PIPE WITH 90° ELBOW AND WYE & 1/8 FITTING.
- SEE REFRIGERANT PIPING SCHEMATIC 1/M6.03 FOR REFRIGERANT PIPE SIZE REQUIREMENTS.

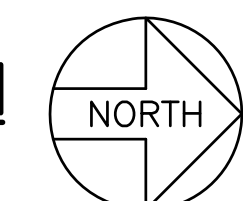
2 PARTIAL SECOND FLOOR HVAC DETAIL PLAN

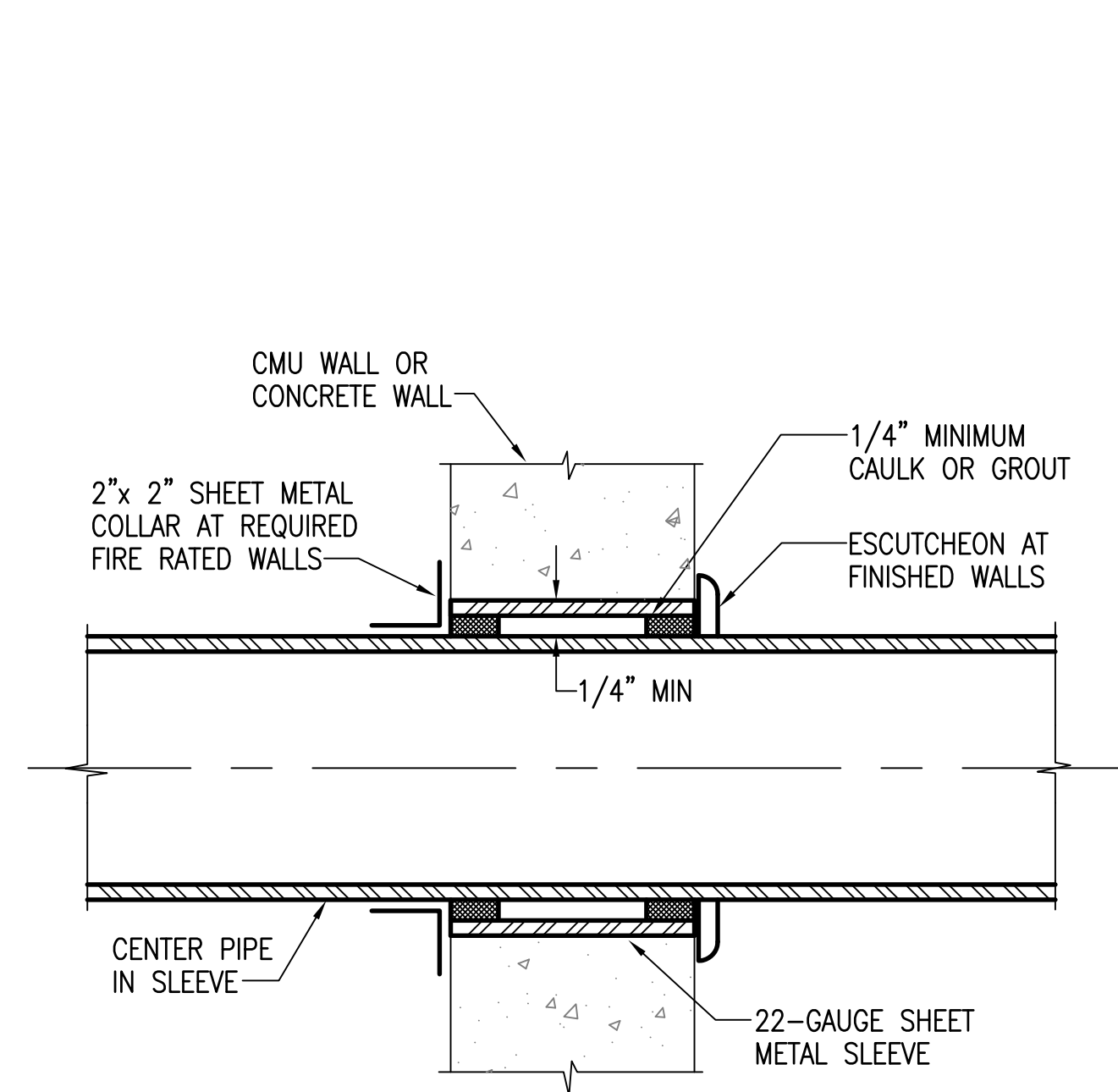
M4.03 SCALE: 1/4" = 1'-0"



1 FUEL ISLAND HVAC DETAIL PLAN

M4.03 SCALE: 1/4" = 1'-0"

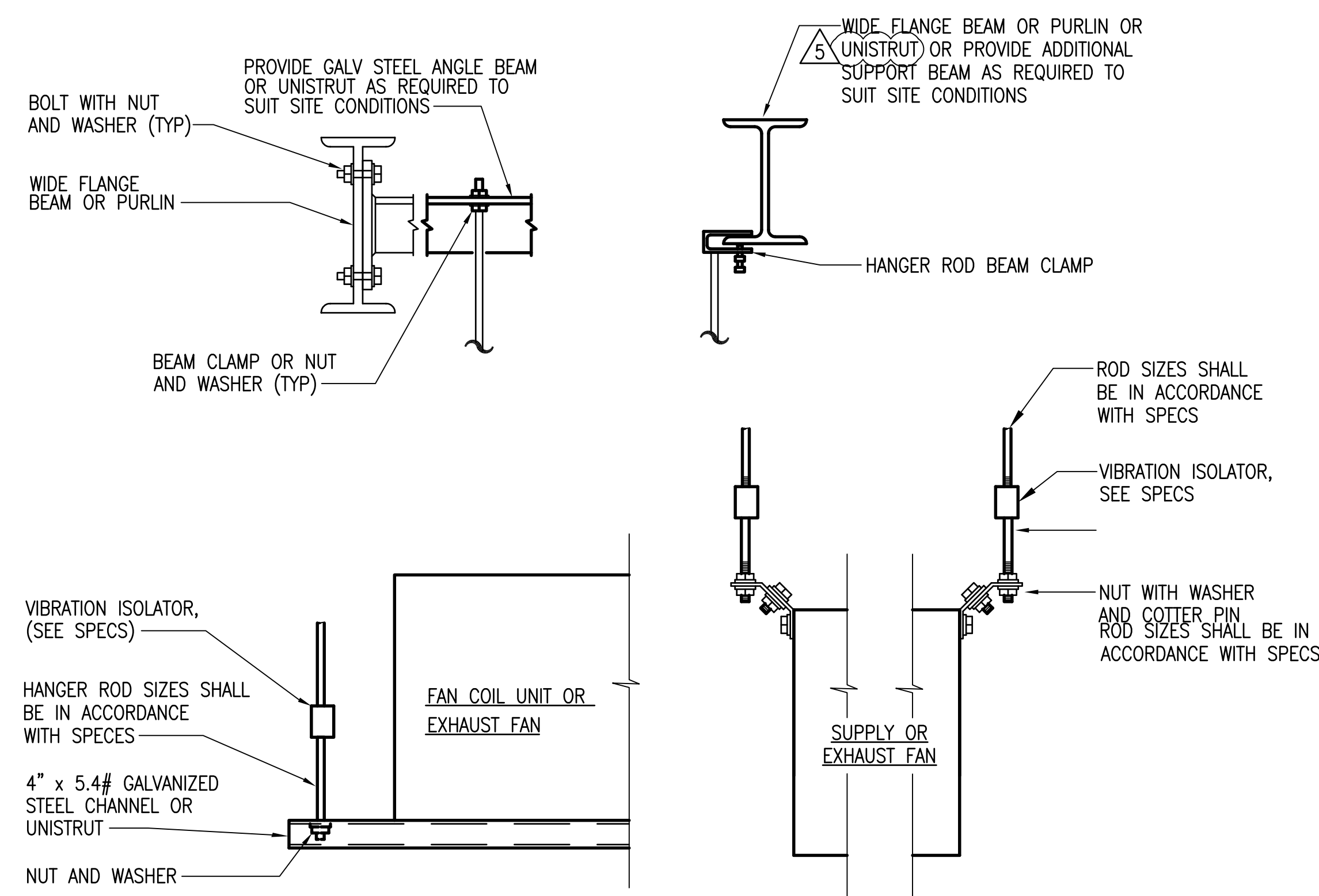




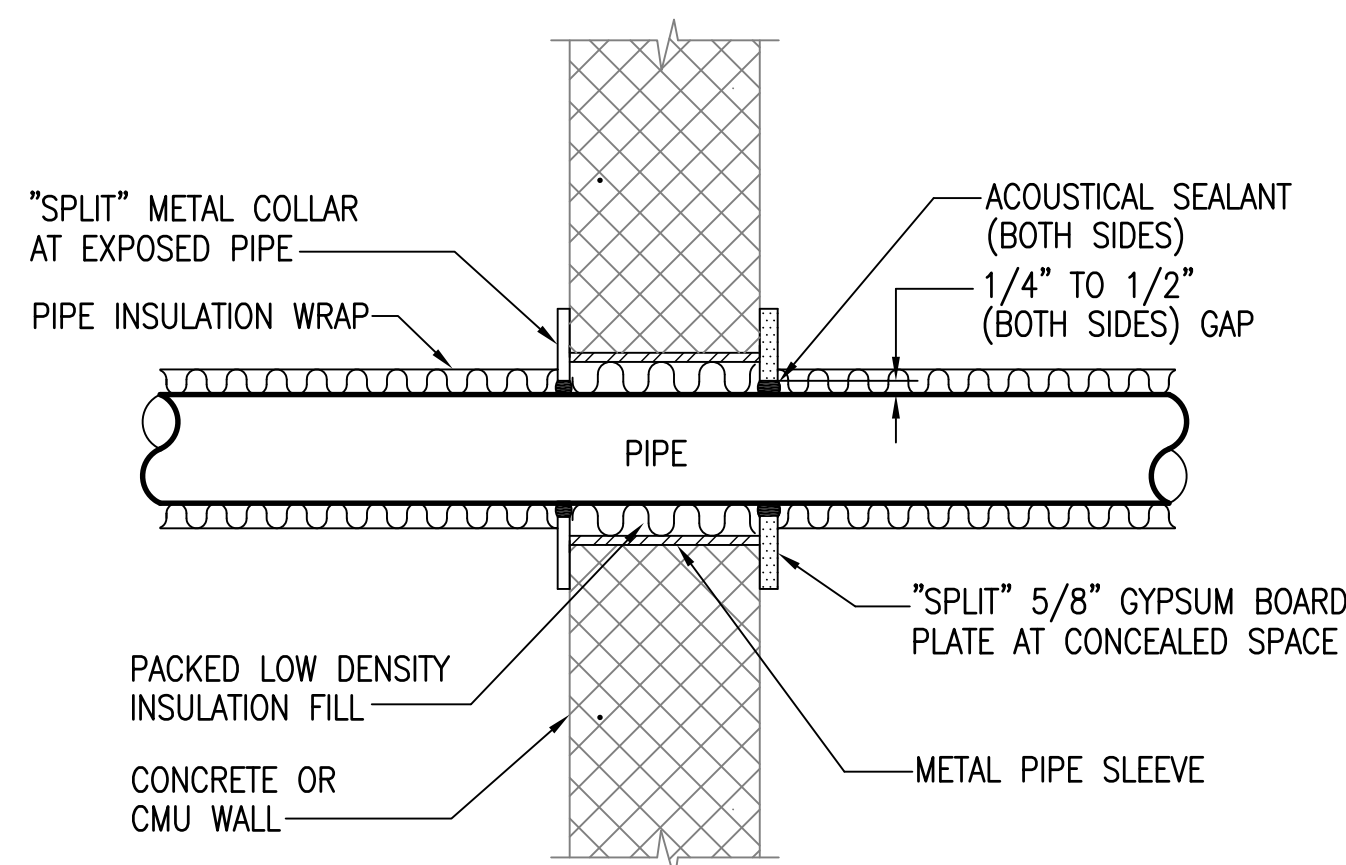
NOTES:

1. PROVIDE ACOUSTIC SEALANT FOR NON-FIRE RATED FULL HEIGHT PARTITIONS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF NON-FIRE RATED PARTITIONS THAT ARE FULL HEIGHT.
2. PROVIDE FIRE STOPPING FOR FIRE RATED PARTITIONS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FIRE RATED PARTITIONS AND SPECIFICATION SECTION 078400 FOR FIRE STOPPING SEALANT. ASSEMBLY SHALL BE UL RATED.

1 TYPICAL PIPE THRU INTERIOR CONCRETE WALL DETAIL
M5.01 NOT TO SCALE



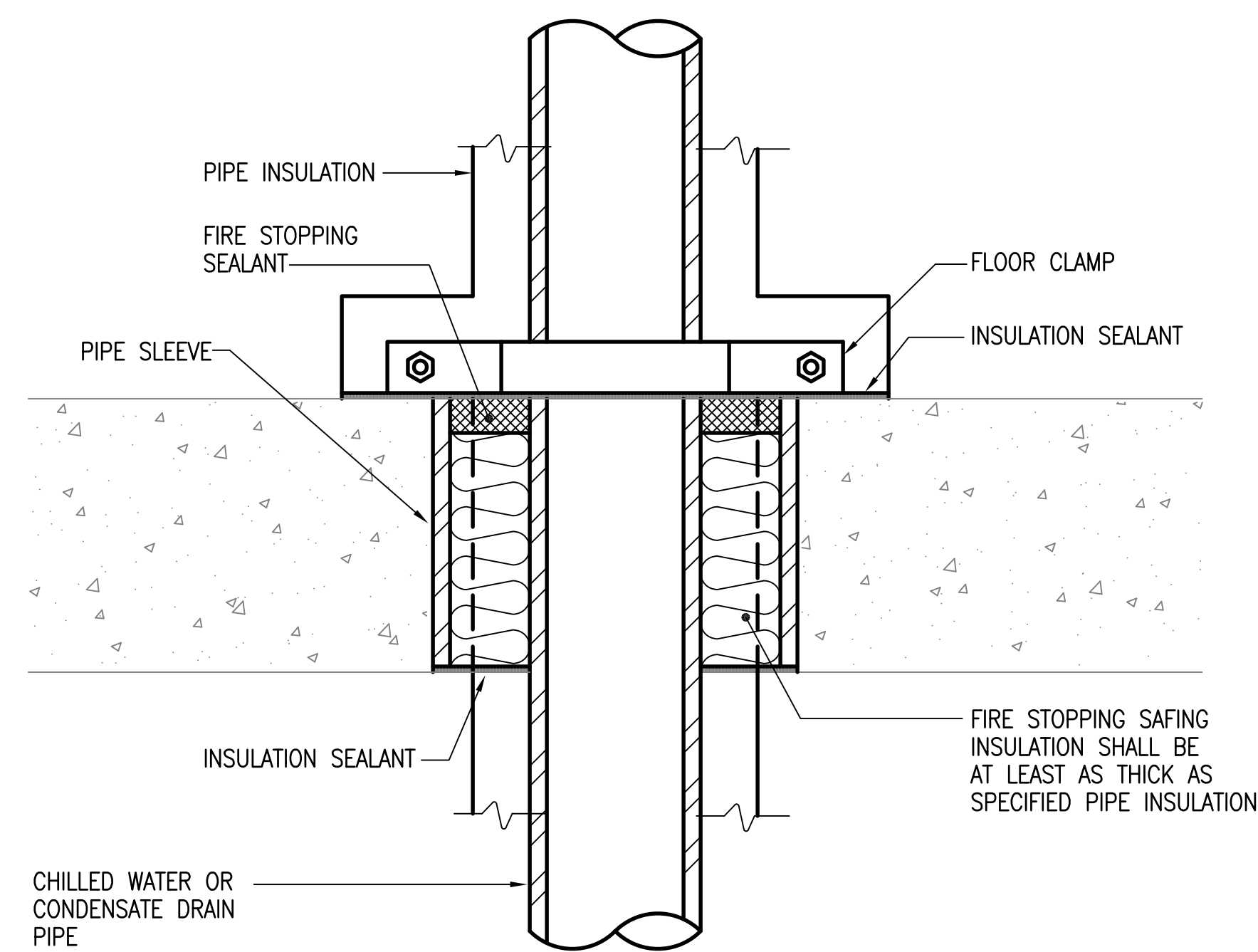
4 TYPICAL EQUIPMENT HANGER DETAIL
M5.01 NOT TO SCALE



NOTES:

1. PROVIDE ACOUSTIC SEALANT FOR NON-FIRE RATED FULL HEIGHT PARTITIONS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF NON-FIRE RATED PARTITIONS THAT ARE FULL HEIGHT.
2. PROVIDE FIRE STOPPING FOR FIRE RATED PARTITIONS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FIRE RATED PARTITIONS AND SPECIFICATION SECTION 078400 FOR FIRE STOPPING SEALANT. ASSEMBLY SHALL BE UL RATED.

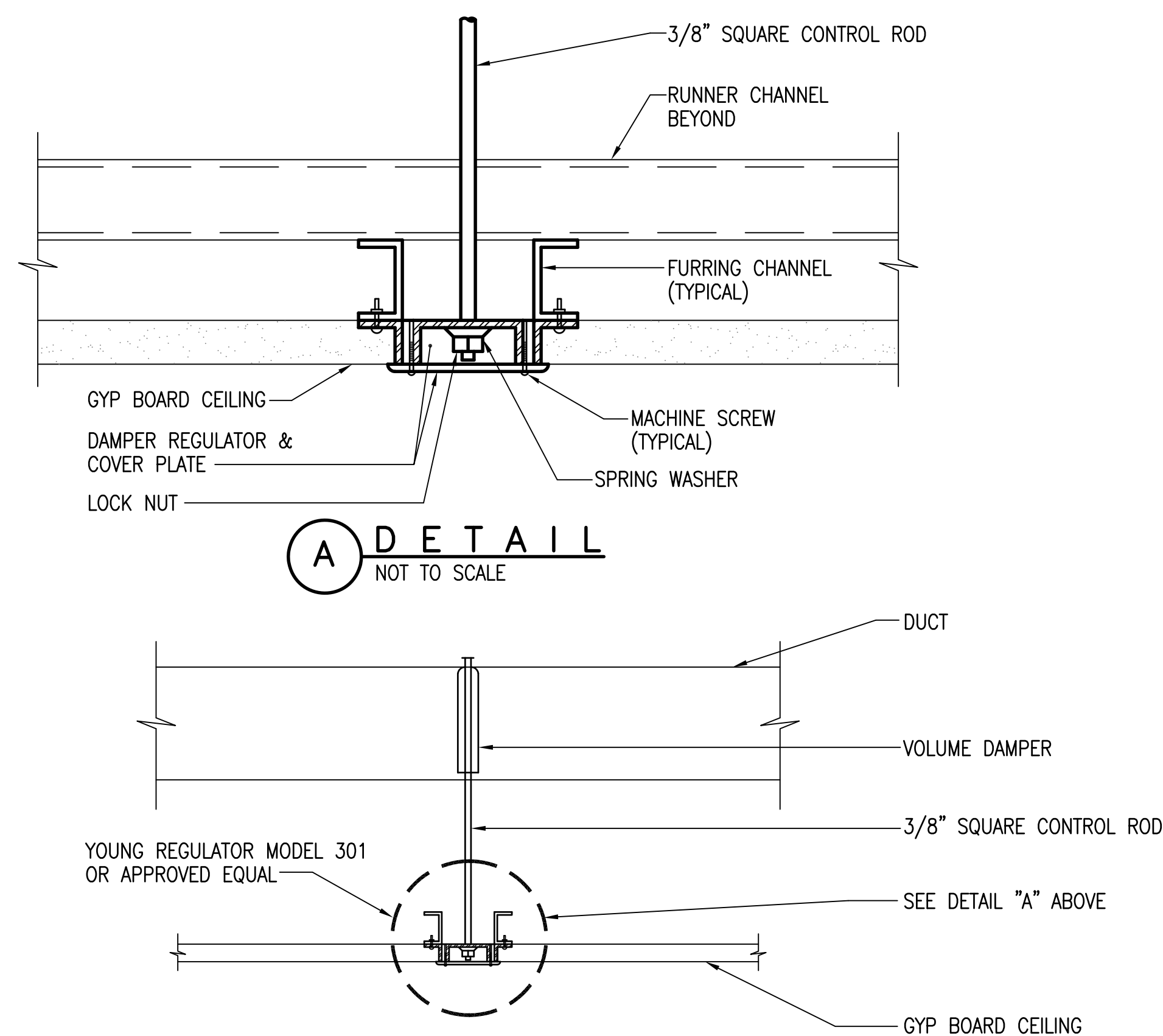
7 PIPE PENETRATION DETAIL
M5.01 NOT TO SCALE



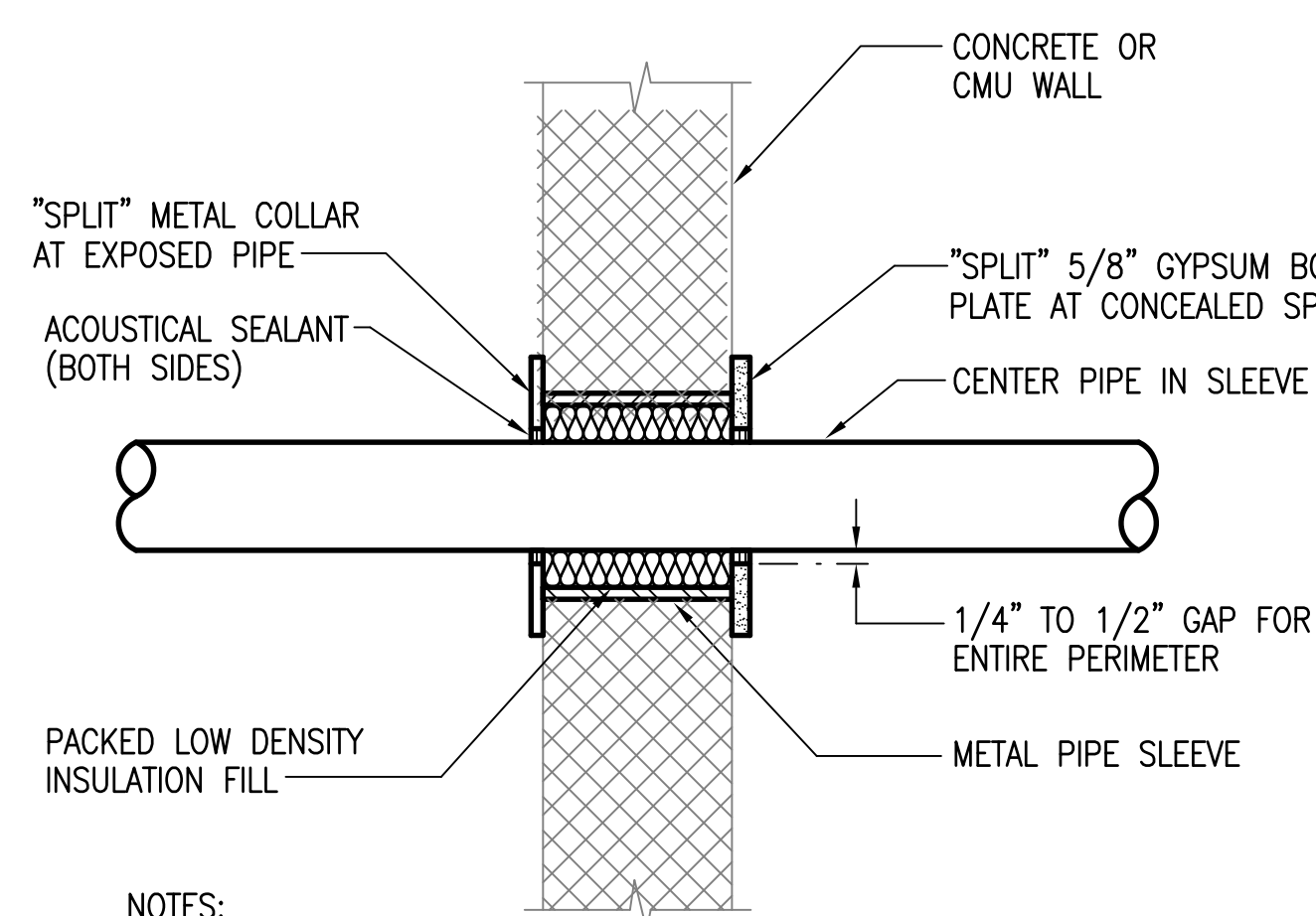
NOTE:

SEE SPECIFICATION SECTION 07841 FOR FIRE STOPPING SEALANT. ASSEMBLY SHALL BE UL LISTED.

2 TYPICAL PIPE THRU FLOOR DETAIL
M5.01 NOT TO SCALE



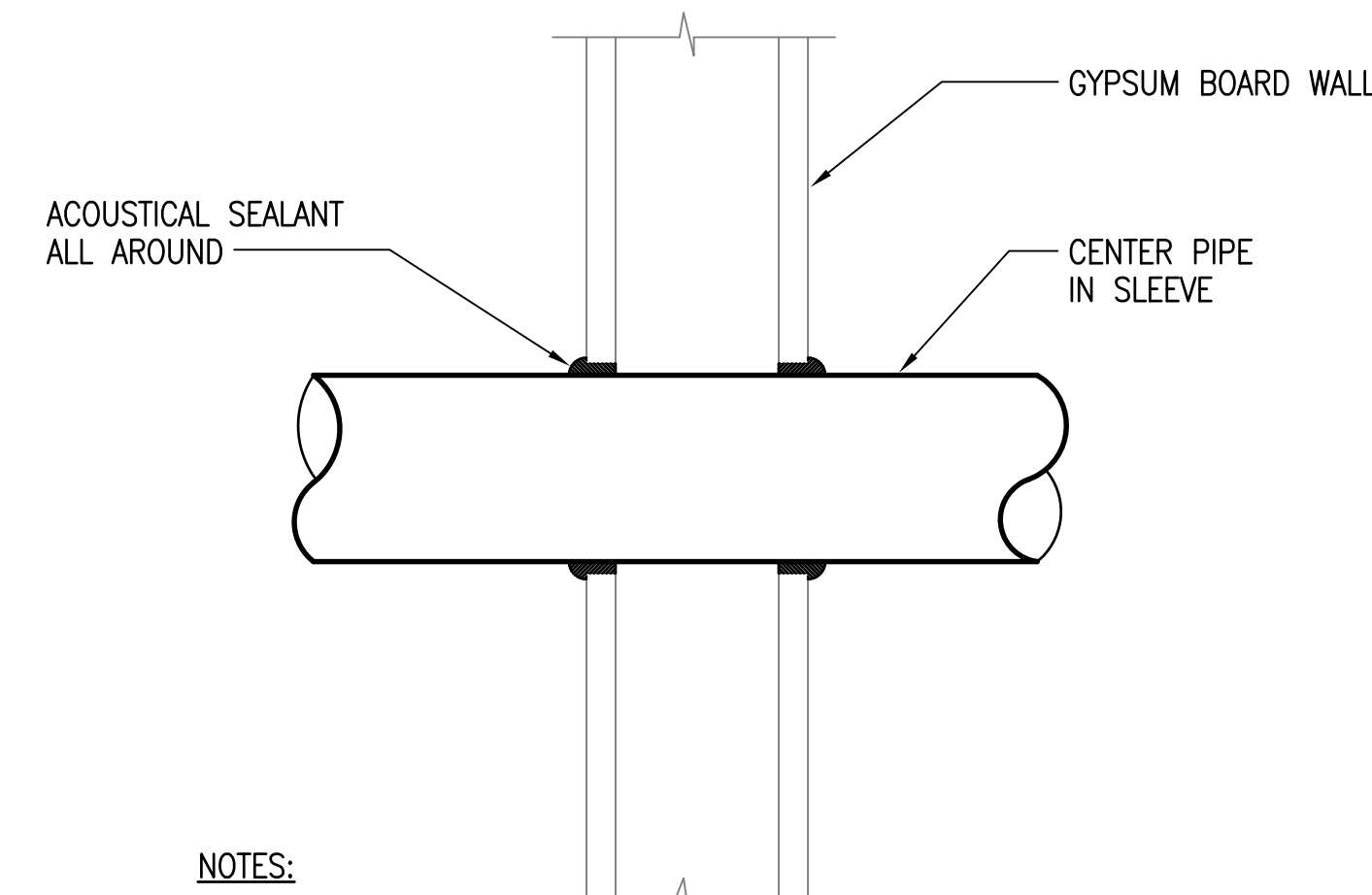
5 TYPICAL CONCEALED DAMPER REGULATOR DETAIL
M5.01 NOT TO SCALE



NOTES:

1. PROVIDE ACOUSTIC SEALANT FOR NON-FIRE RATED FULL HEIGHT PARTITIONS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF NON-FIRE RATED PARTITIONS THAT ARE FULL HEIGHT.
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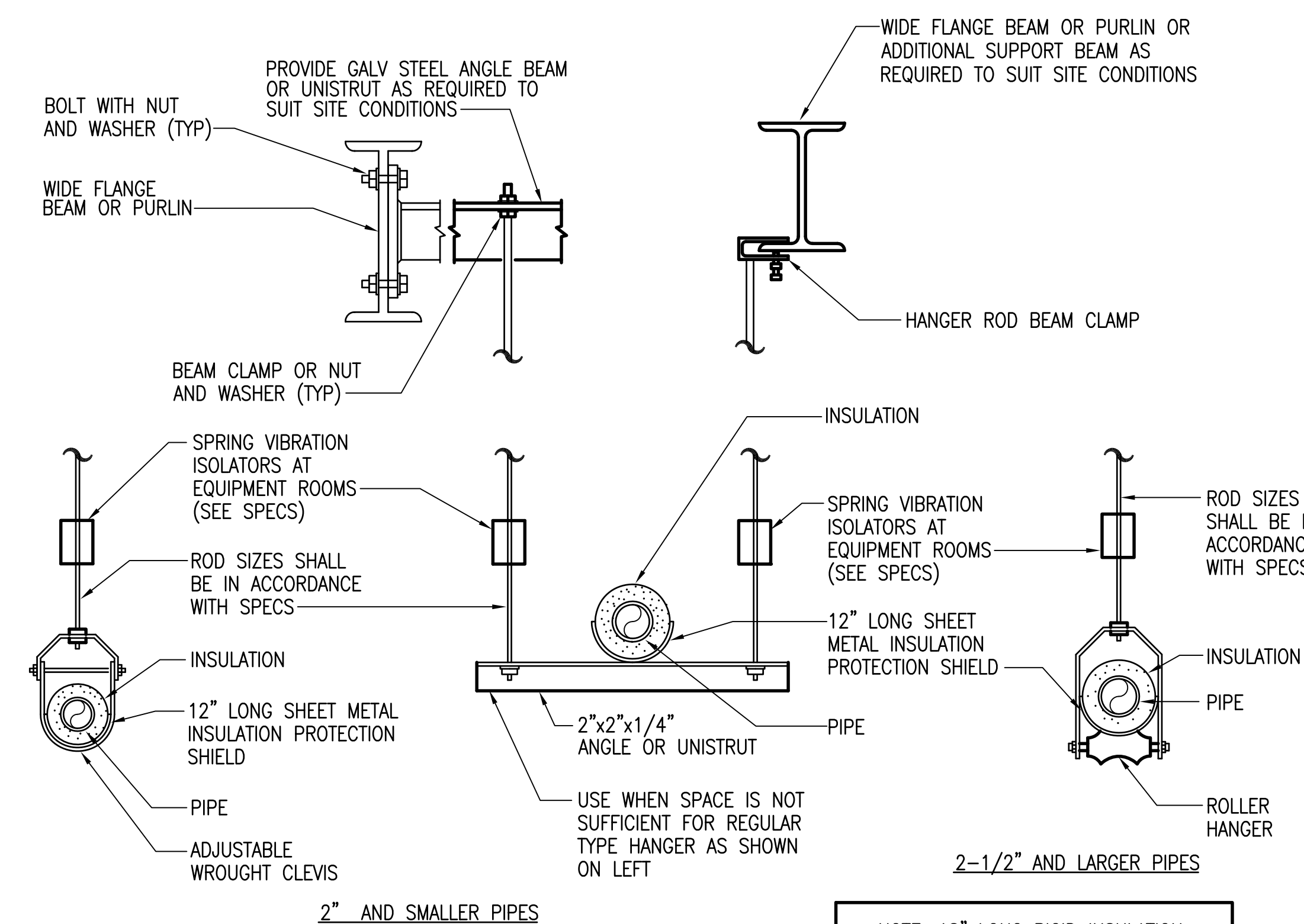
8 TYPICAL PIPE PENETRATION DETAIL
M5.01 NOT TO SCALE



NOTES:

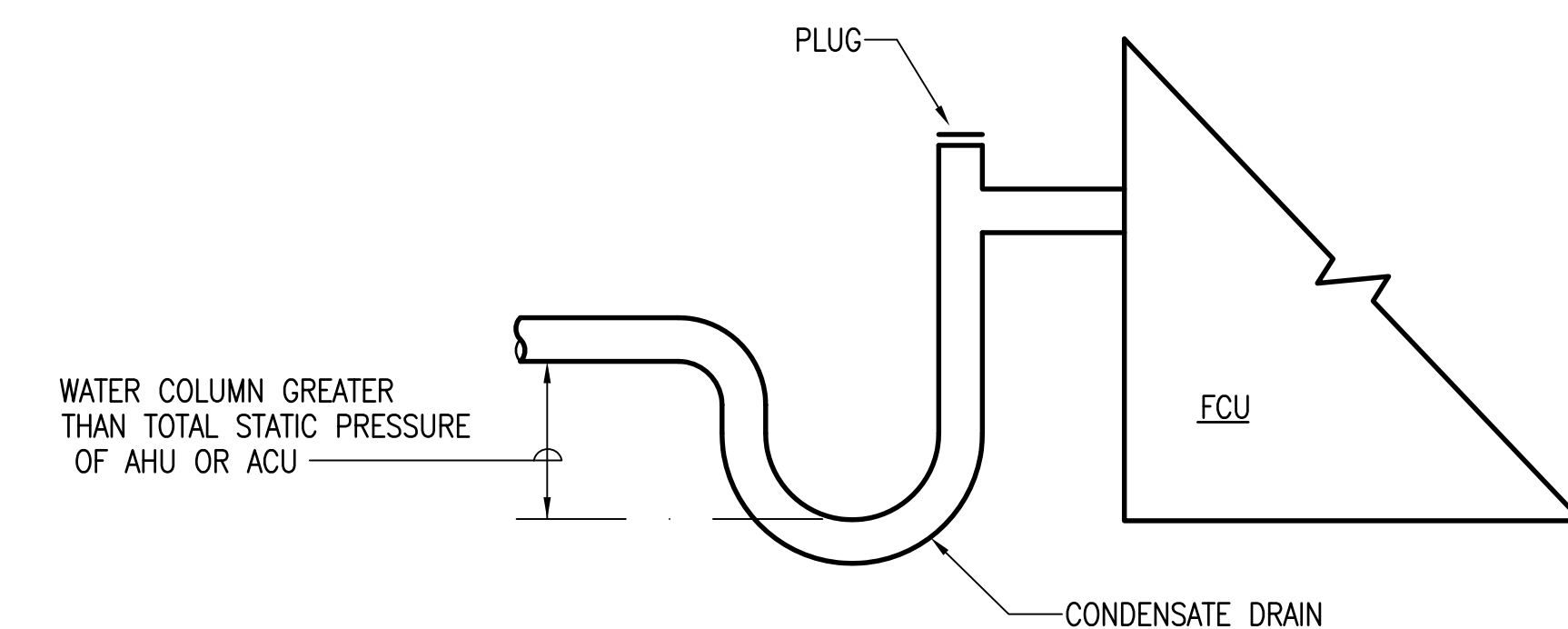
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2. PROVIDE FIRE STOPPING FOR FIRE RATED PARTITIONS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FIRE RATED PARTITIONS AND SPECIFICATION SECTION 078400 FOR FIRE STOPPING SEALANT. ASSEMBLY SHALL BE UL RATED.

9 TYPICAL PIPE THRU DRYWALL DETAIL
M5.01 NOT TO SCALE

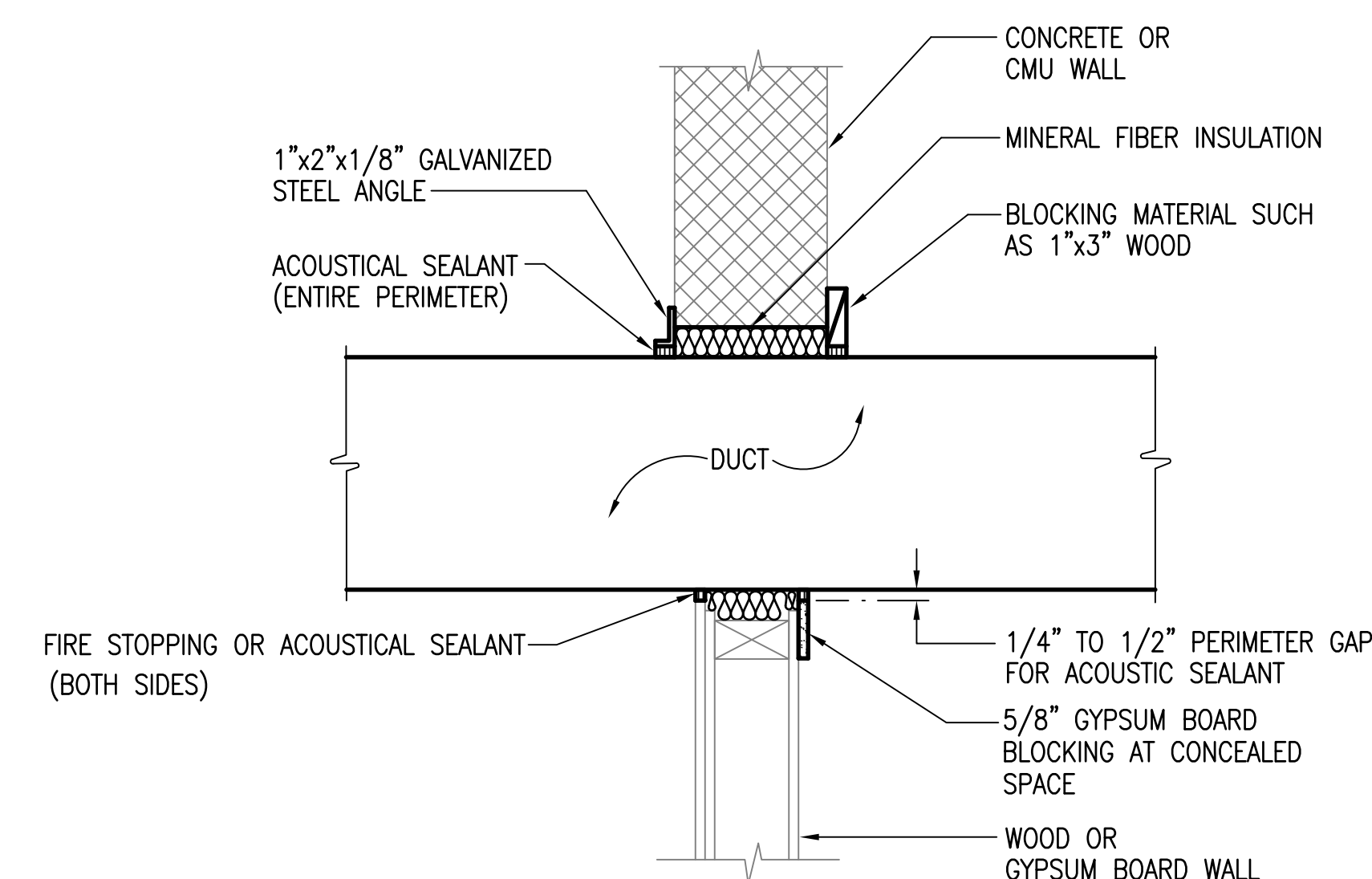


NOTE: 18" LONG RIGID INSULATION SHALL BE USED AT HANGERS

3 TYPICAL PIPE HANGER DETAIL
M5.01 NOT TO SCALE



6 TYPICAL CONDENSATE DRAIN CONNECTION DETAIL
M5.01 NOT TO SCALE



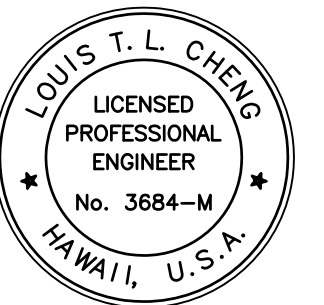
NOTES:

1. PROVIDE ACOUSTIC SEALANT FOR NON-FIRE RATED FULL HEIGHT PARTITIONS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF NON-FIRE RATED PARTITIONS THAT ARE FULL HEIGHT.
2. PROVIDE FIRE STOPPING FOR FIRE RATED PARTITIONS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FIRE RATED PARTITIONS AND SPECIFICATION SECTION 078400 FOR FIRE STOPPING SEALANT. ASSEMBLY SHALL BE UL RATED.
3. FIRE RATED WALL SHALL BE PROVIDED WITH FIRE DAMPERS. WALL OPENING CLOSURE ANGLE SHALL BE IN ACCORDANCE WITH FIRE DAMPER UL LISTING.

10 TYPICAL DUCT THRU WALL DETAIL
M5.01 NOT TO SCALE



Airports Division
Department of Transportation
State of Hawaii



THE SEAL AND SIGNATURE OF THE ENGINEER ARE REQUIRED FOR ALL PROJECTS THAT ARE SUBJECT TO THE HAWAIIAN ENGINEERING ACT.

LICENSE EXPIRATION DATE: 04/30/14

DSGN.	DRWN.	CHKD.	APPD.
FFU	RA/AC	BH	LC

KEY PLAN / NOTES:

NO.	DATE	REVISION
1	6/25/12	BUILDING PERMIT RESUBMITAL

AS-BUILT
12-5-2014

PROJECT TITLE:

ARRF FACILITY IMPROVEMENTS
AT KONA INTERNATIONAL
AIRPORT AT KEAHOE

PROJECT NO.:

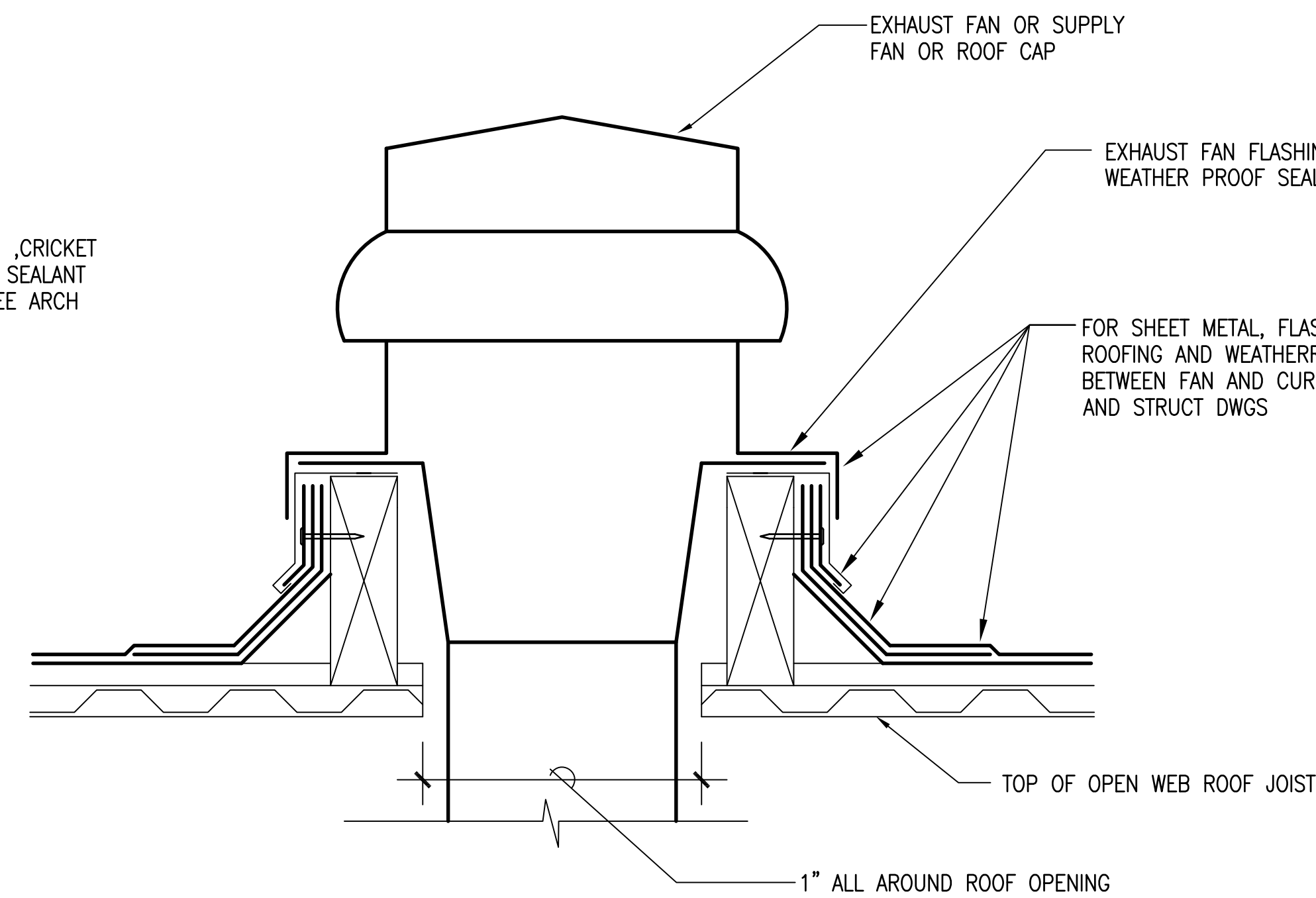
STATE PROJECT NO. AH2044-19
AIP PROJECT NO. 3-15-0008-XX

SHEET TITLE:

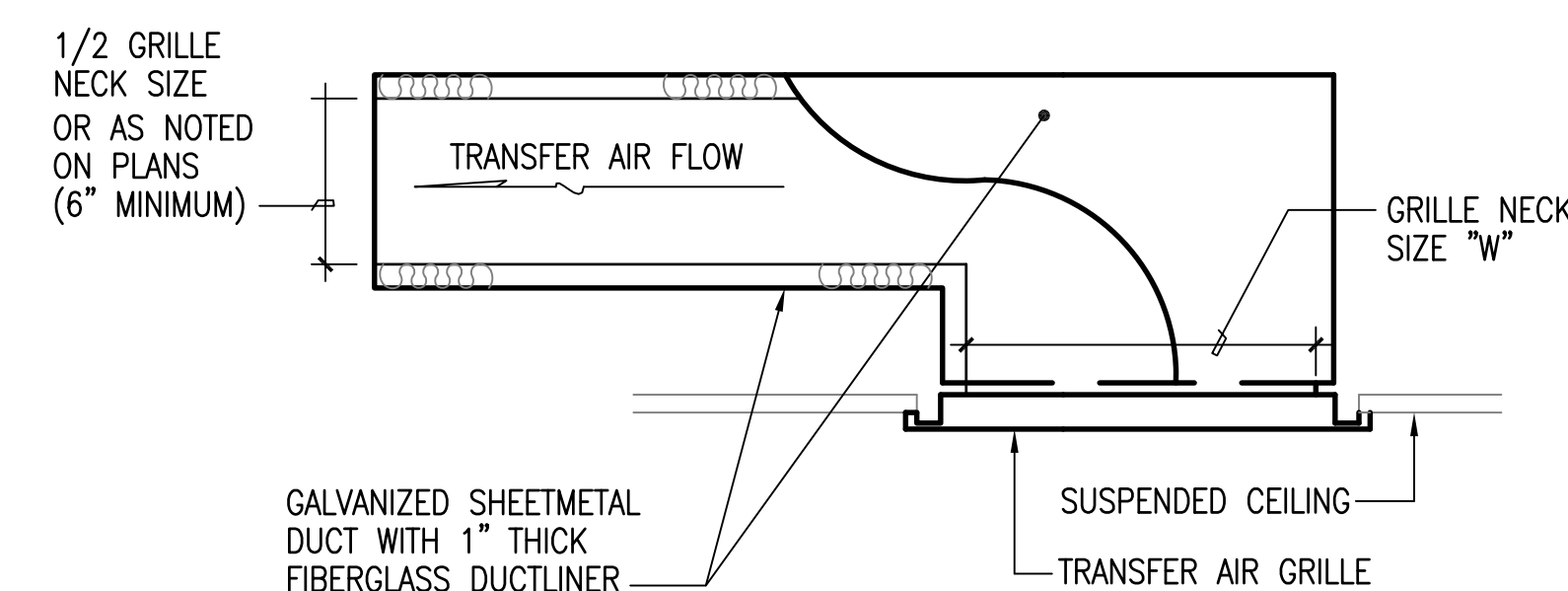
DETAILS

DATE:	02/17/2012
DWG. NO.:	
OF	

M5.01



2 TYPICAL AIR COOLED CONDENSING UNIT ON ROOF MOUNTING DETAIL
M5.02 NOT TO SCALE



4 TYPICAL TRANSFER AIR GRILLE AND SUB DUCT DETAIL
M5.02 NOT TO SCALE

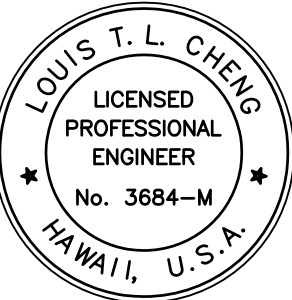
M5.02

FAN SCHEDULE																			
UNIT NO	MANUFACTURER AND MODEL	LOCATION	SERVICE	TYPE	CFM	SP INCHES	WHEEL DIAMETER INCHES	TIP SPEED FPM	OUTLET VELOCITY FPM	DRIVE	FAN RPM	HP	VOLTS	Φ	SONES	OPR WT POUNDS	ISOLATOR		REMARKS
																	TYPE	DEFL	
EF-1, 2, 3, 4, 5	GREENHECK BDF-150-5 OR APPROVED EQUAL	CEILING	APPARATUS BAYS EXHAUST	INLINE CENTRIFUGAL	3015	.25	—	1830	1471	BELT	486	1/2	115	1	9.2	225			EACH UNIT IS CONTROLLED BY ON/OFF SWITCH WITH PILOT LIGHT
EF-6	GREENHECK GB-480-15 OR APPROVED EQUAL	ROOF	GENERAL EXHAUST	ROOF CENTRIFUGAL	10150	.5	—	3663	821	BELT	290	1-1/2	208	3	9.7	625			CONTROLLED BY TIME CLOCK IN JAN 110.
EF-7	GREENHECK CSP-A700 OR APPROVED EQUAL	CEILING	GENERAL EXHAUST	INLINE CENTRIFUGAL	740	.375	—	2232	697	DIRECT	1100	350 W	115	1	2.0	35			WITH SPEED CONTROLLER, CONTROLLED BY TIME CLOCK IN JAN 110.
EF-8	GREENHECK USGF-160HP-3 OR APPROVED EQUAL	ROOF	KITCHEN HOOD EXHAUST	UPBLAST ROOF CENTRIFUGAL	1200	1	—	5043	610	BELT	1159	1/3	115	1	11.2	195			CONTROLLED BY ON/OFF SWITCH WITH PILOT LIGHT, INTERLOCK WITH SF-3
SF-1	GREENHECK BSQ-130HP-7 OR APPROVED EQUAL	CEILING	SCBA EXHAUST MAKE-UP	INLINE CENTRIFUGAL	1075	1.75	—	7298	491	BELT	2124	3/4	208	3	*	100			* 14.9 INLET SONES AND 12.5 RADIATED SONES. CONTROLLED BY TIME CLOCK IN JAN 110.
SF-2	GREENHECK BSQ-420-15 OR APPROVED EQUAL	CEILING	GENERAL EXH MAKE-UP	INLINE CENTRIFUGAL	8310	.5	—	3942	525	BELT	418	1 1/2	208	3	*	603			* 12.9 INLET SONES AND 10.6 RADIATED SONES. CONTROLLED BY TIME CLOCK IN JAN 110.
SF-3	GREENHECK SAF-110-4 OR APPROVED EQUAL	ROOF	KITCHEN HOOD EXH MAKE-UP	ROOF CENTRIFUGAL	1080	.375	—	1809	1041	BELT	691	1/4	115	1	11.6	180			INTERLOCK WITH EF-8, PROVIDE WITH 15 FOOT EXTENDED INTAKE DUCT, 2" THICK MERV 8 FILTER SECTION AT 500 FPM MAXIMUM VELOCITY; AND WEATHERHOOD WITH S/S BIRDSCREEN

AIR COOLED CONDENSING UNIT SCHEDULE																								
UNIT NO	MANUFACTURER AND MODEL	LOCATION	TYPE	REFRIG.	TOTAL CAPACITY (TONS)	AMB. AIR TEMP. (°F)	COMPRESSOR				CONDENSER FAN				EER	ELEC POWER SUPPLY					MAX. SOUND PRESSURE (dBA)	OPER. WT. (LBS)	REMARKS	
							QTY.	KW	RLA	MSC	QTY.	KW	FLA	CFM		VOLTS	Ø	MCA	MOP					
ACCU-1	DAIKIN MODEL RXYQ96PBTJ	ROOF	VRV HEAT PUMP	R-410A	28	95	2	2.2 4.5	7.8 16.3	131	2	.35 .35	1.0 1.0	8230	—	208	3	43	50		60	620	ACCU-1 SYSTEM MODEL RXYQ336PBTJ OR APPROVED EQUAL WITH THREE MODULES, CONNECTED INTO SERIES. PROVIDE INDIVIDUAL POWER, DISCONNECT SWITCH AND FUSE FOR EACH MODULE. SERVES FCU-1 THROUGH FCU-23 AND FCU-25 THROUGH FCU-34.	
	DAIKIN MODEL RXYQ120PBTJ			R-410A			2	3.5 4.5	10.8 16.8	131	2	.35 .35	1.0 1.0	8230	—	208	3	43	50		60	620		
	DAIKIN MODEL RXYQ120PBTJ			R-410A			2	3.5 4.5	10.8 16.8	131	2	.35 .35	1.0 1.0	8230	—	208	3	43	50		60	620		
ACCU-2	DAIKIN MODEL RXYQ72PBTJ OR APPROVED EQUAL	ROOF	VRV HEAT PUMP	R-410A	6.0	95	1	4.5 —	14.2 —	131	1	.75 —	1.2 —	6350	—	208	3	30	35		57	420	SERVES FCU-35 AND FCU-35A.	
ACCU-3	DAIKIN MODEL RXYQ72PBTJ	ROOF	VRV HEAT PUMP	R-410A	16.0	95	1	4.5 —	14.2 —	—	1	.75 —	1.2 —	6350	—	208	3	30	35		57	420	ACCU-3 SYSTEM MODEL RXYQ192PBTJ OR APPROVED EQUAL WITH TWO MODULES, CONNECTED IN SERIES. PROVIDE INDIVIDUAL POWER, DISCONNECT SWITCH AND FUSE FOR EACH MODULE. SERVES FCU-24, FCU-24A, AND FCU-36.	
	DAIKIN MODEL RXYQ120PBTJ			R-410A			2	3.5 4.5	10.6 16.8	131	2	.35 .35	1.0 1.0	8230	—	208	3	43	50		60	620		



Airports Division
Department of Transportation
State of Hawaii



LOUIS T. L. CHENG
LICENSED PROFESSIONAL ENGINEER
No. 3684-M
HAWAII, U.S.A.

THE ABOVE WAS PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND I AM A DULY LICENSED PROFESSIONAL ENGINEER.

Louis T. L. Cheng
LICENSE EXPIRATION DATE: 04/30/14

DSGN.	DRWN.	CHKD.	APPD.
FFU	RA/AC	BH	LC

KEY PLAN / NOTES:

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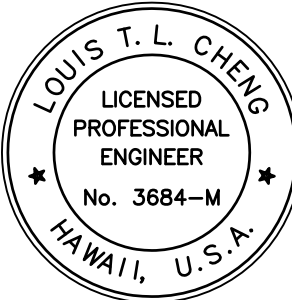
M6.01

FAN COIL UNIT SCHEDULE																						
UNIT NO	MANUFACTURER AND MODEL	LOCATION	TYPE	SENSIBLE COOL CAP BTU/HR	LATENT COOL CAP BTU/HR	TOTAL COOL CAP BTU/HR	SUPPLY AIR CFM	ENT AIR TEMP °F		FILTER		E.S.P. INCHES	ELECTRICAL POWER SUPPLY				MAX. SOUND PRESSURE (dBA)	OPER. WT. (LBS)	REMARKS	CORRESPONDING ACCU TAG		
								db	wb	TYPE	EFF		VOLTS	ø	W	MCA					MOP	
FCU-1	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	5000	300	5300	245	74.4	62.3	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP	ACCU-1	
FCU-2	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	3400	300	3700	245	74.1	61.5	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-3	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	4000	200	4200	245	74.5	62.2	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-4	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	5000	200	5200	245	74.6	61.7	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-5	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	4200	200	4400	245	74.2	62.0	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-6	DAIKIN MODEL FXMQ72MVJU OR APPROVED EQUAL	CEILING	CLG MOUNTED DUCTED UNIT	37,400	3800	41,200	2045	72.7	61.4	THROWAWAY	MERV 8	.95	208	1	TWO 380	9	15	48	305	SUPPLIED WITH INTEGRAL CONDENSATE PUMP. 290 CFM OA FLOW		
FCU-7	DAIKIN MODEL FXZQ12M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	7100	2500	9600	335	71.3	62.9	WASHABLE	—	—	208	1	55	.80	15	33	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-8	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	1400	200	1600	245	67.4	59.9	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-9	DAIKIN MODEL FXAQ07MVJU OR APPROVED EQUAL	WALL	WALL MOUNTED UNIT	2500	100	2600	260	74.2	61.9	WASHABLE	—	—	208	1	55	.30	15	35	25	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-10	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	3600	700	4300	245	72.1	62.2	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-11	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	2600	300	2900	245	73.9	62.5	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-12	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	2700	200	2900	245	73.9	62.1	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-13	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	2700	200	2900	245	73.9	62.1	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-14	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	3100	200	3300	245	74.1	62.2	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-15	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	3100	200	3300	245	74.1	62.2	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-16	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	3100	200	3300	245	74.2	62.3	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-17	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	2000	200	2200	245	73.4	62.3	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-18	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	2100	200	2300	245	73.3	62.0	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-19	DAIKIN MODEL FXAQ07MVJU OR APPROVED EQUAL	WALL	WALL MOUNTED UNIT	5200	—	5200	245	74.6	61.2	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-20	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	1900	200	2100	245	73.2	62.2	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-21	DAIKIN MODEL FXZQ09M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	1900	200	2100	245	73.2	62.3	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-22	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	1900	200	2100	245	73.2	62.3	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-23	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	2800	200	3000	245	73.9	62.3	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-25	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	1400	—	1400	245	71.1	60.7	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-26	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	2900	—	2900	245	74.0	61.8	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-27	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	2900	—	2900	245	73.6	61.7	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-28	DAIKIN MODEL FXZQ12M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	7700	—	7700	335	74.3	62.1	WASHABLE	—	—	208	1	55	.80	15	33	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-29	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	2100	—	2100	245	72.7	61.0	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-30	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	1100	—	1100	245	73.3	61.3	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-31	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	2900	—	2900	245	74.0	61.8	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-32	DAIKIN MODEL FXZQ07M7VJU OR APPROVED EQUAL	CEILING	2'x2' CASSETTE	1200	—	1200	245	70.8	60.6	WASHABLE	—	—	208	1	55	.80	15	31	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-33	DAIKIN MODEL FXAQ09MVJU OR APPROVED EQUAL	WALL	WALL MOUNTED UNIT	5900	—	5900	320	75.0	61.4	WASHABLE	—	—	208	1	55	.80	15	32	45	SUPPLIED WITH INTEGRAL CONDENSATE PUMP		
FCU-34	DAIKIN MODEL FXMQ36PVJU OR APPROVED EQUAL	CEILING	CLG MOUNTED DUCTED UNIT	23,900	200	24,100	1130	73.9	61.9	THROWAWAY	MERV 8	.80	208	1	375	2.9	15	43	105	SUPPLIED WITH INTEGRAL CONDENSATE PUMP. 125 CFM OA FLOW	ACCU-2	
FCU-35	DAIKIN MODEL FXMQ24PVJU OR APPROVED EQUAL	CEILING	CLG MOUNTED DUCTED UNIT	15,000	3700	18,700	685	72.3	62.3	THROWAWAY	MERV 8	.80	208	1	221	1.8	15	42	80	SUPPLIED WITH INTEGRAL CONDENSATE PUMP. 140 CFM OA FLOW		
FCU-35A	DAIKIN MODEL FXMQ30PVJU OR APPROVED EQUAL	CEILING	CLG MOUNTED DUCTED UNIT	21,000	6000	27,000	880	71.4	62.1	THROWAWAY	MERV 8	.80	208	1	297	4.4	15	43	80	SUPPLIED WITH INTEGRAL CONDENSATE PUMP. 220 CFM OA FLOW		
FCU-24	DAIKIN MODEL FXMQ72MFVJU OR APPROVED EQUAL	CEILING	CLG MOUNTED DUCTED UNIT	29,600	32,900	62,500	985	88.2	76.8	THROWAWAY	MERV 8	.95	208	1	380	3.6	15	48	275	SUPPLIED WITH INTEGRAL CONDENSATE PUMP, 100% OA UNIT.	ACCU-3	
FCU-24A	DAIKIN MODEL FXMQ72MFVJU OR APPROVED EQUAL	CEILING	CLG MOUNTED DUCTED UNIT	29,600	32,900	62,500	985	88.2	76.8	THROWAWAY	MERV 8	.95	208	1	380	3.6	15	48	275	SUPPLIED WITH INTEGRAL CONDENSATE PUMP, 100% OA UNIT		
FCU-36	DAIKIN MODEL FXMQ48MFVJU OR APPROVED EQUAL	CEILING	CLG MOUNTED DUCTED UNIT	23,900	26,600	50,500	635	88.2	76.8	THROWAWAY	MERV 8	.95	208	1	380	2.1	15	48	190	SUPPLIED WITH INTEGRAL CONDENSATE PUMP, 100% OA UNIT		

3



Airports Division
Department of Transportation
State of Hawaii



THE ABOVE WAS PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND I AM A DULY LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII.

Louis T. L. Cheng
LICENSE EXPIRATION DATE: 04/30/14

DSGN.	DRWN.	CHKD.	APPD.
FFU	RAAC	BH	LC

KEY PLAN / NOTES:

△	6/25/12	BUILDING PERMIT RESUBMITTAL
NO.	DATE	REVISION

AS-BUILT
12 - 5 - 2014

PROJECT TITLE:

ARFF FACILITY IMPROVEMENTS
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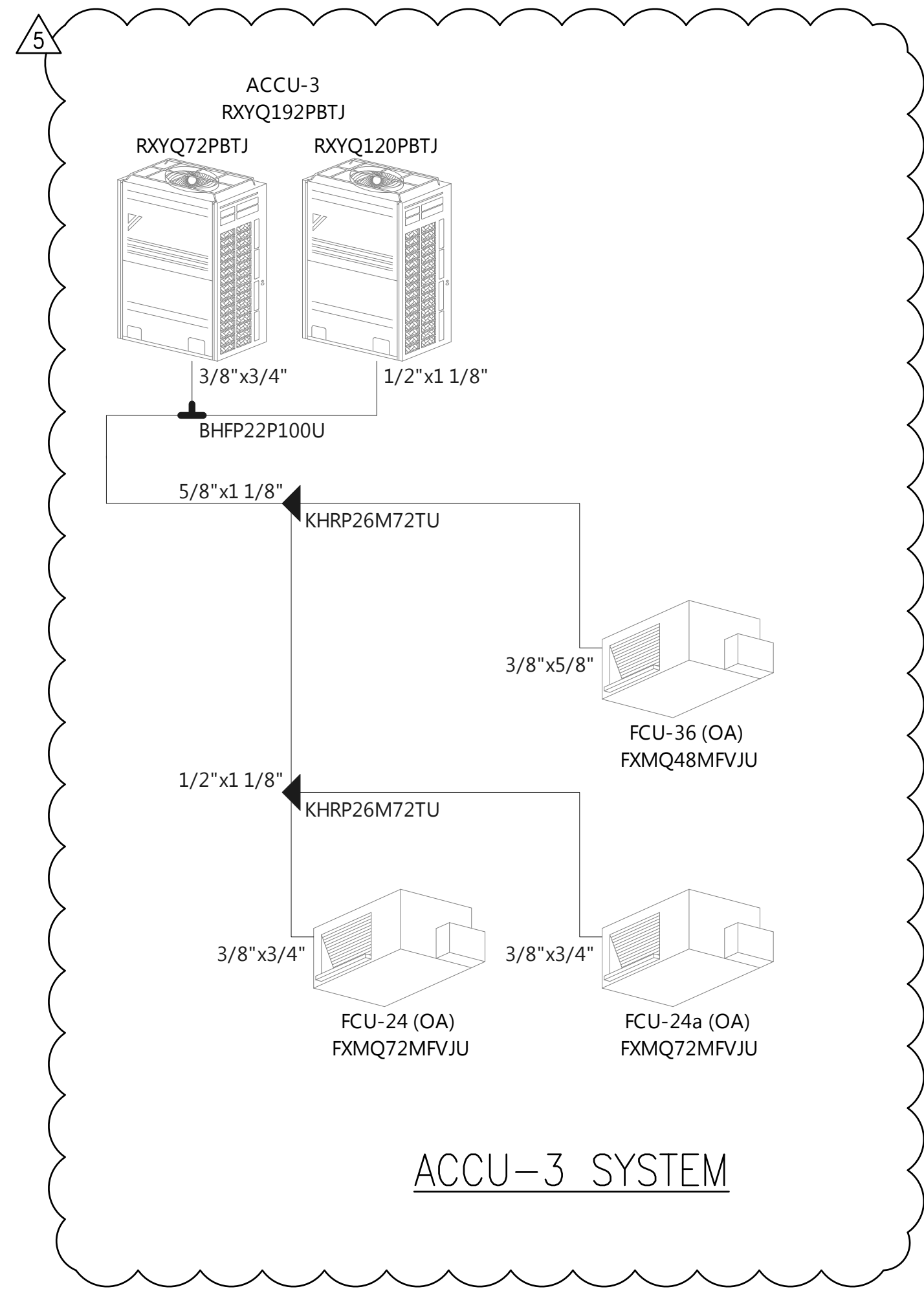
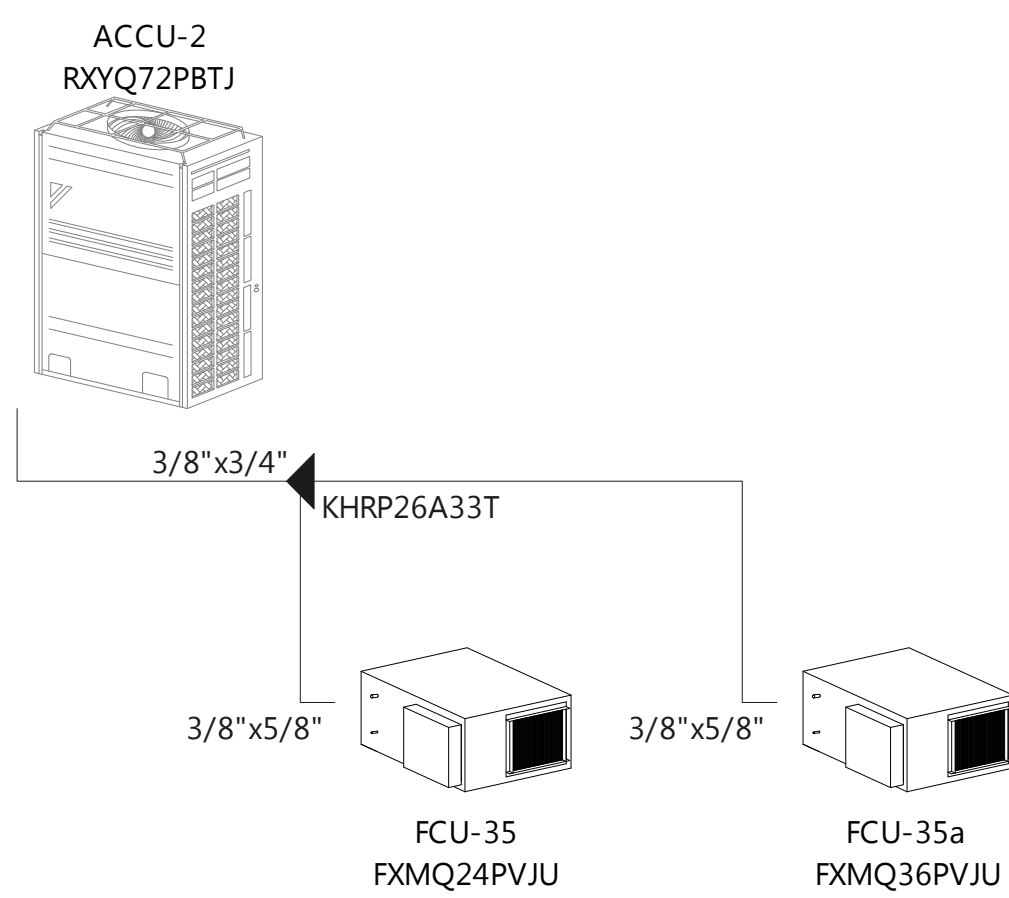
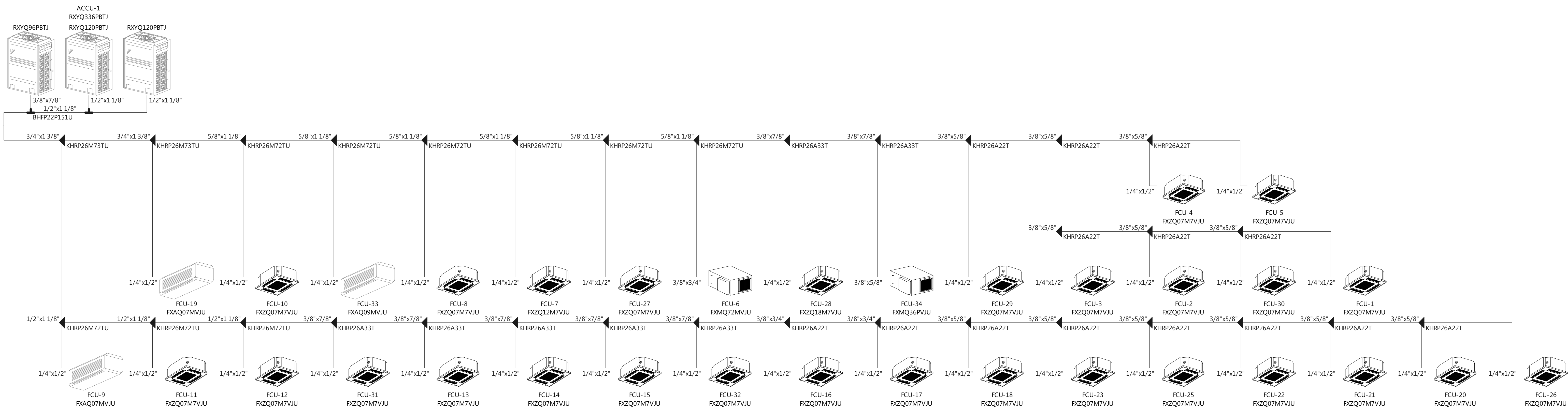
PROJECT NO.:

STATE PROJECT NO. AH2044-19
AIP PROJECT NO. 3-15-0008-XX

SHEET TITLE:

EQUIPMENT SCHEDULES

DATE:	02/17/2012	M6.02
DWG. NO.:		
OF		



ACCU-1 SYSTEM

ACCU-2 SYSTEM

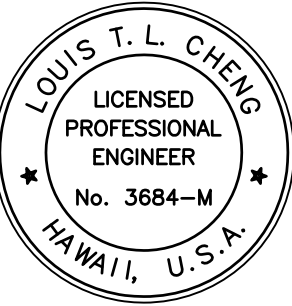
ACCU-3 SYSTEM

NOTE:
SEE PLAN 1/M4.02 FOR LOCATION OF INTELLIGENT
TOUCH CONTROLLER FOR THE VRV AC SYSTEM.

1 REFRIGERANT PIPING SCHEMATICS
M6.03 NOT TO SCALE



Airports Division
Department of Transportation
State of Hawaii



THE WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONTROL IN ACCORDANCE WITH THE REQUIREMENTS OF THE HAWAIIAN ENGINEERING ACT.

Louis T. L. Cheng
LICENSE EXPIRATION DATE: 04/30/14

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SHEET TITLE:

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SCHEMATICS

DATE:	02/17/2012
DWG. NO.:	M6.03
OF	