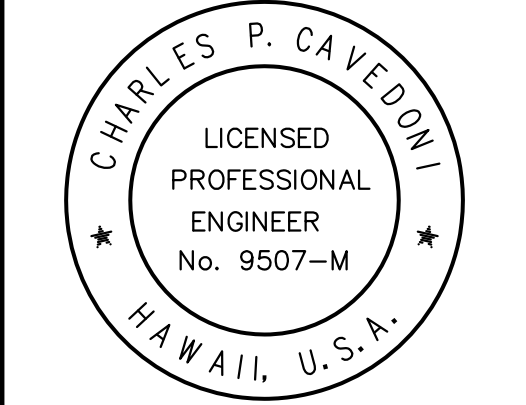


NOTE:

Owner requires the Contractor to implement practices and procedures to meet the Project's environmental goals, which include achieving a LEED Green Building Platinum rating and Living Building Challenge (LBC) Certification. Specific project goals which may impact this area of work are listed in the project Specifications, Division 15 as well as Division 1 General Notes. The Contractor shall ensure that the requirements related to these goals, as defined in the Project Specifications and in related sections of the contract documents, are implemented to the fullest extent. Substitutions or other changes to the work proposed by the Contractor or their subcontractors, shall not be allowed if such changes compromise the stated LEED and LBC criteria.

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, 9 & 10.

NAME: CHARLES P. CAVEDONI
 SIGNATURE: _____
 TITLE: MECHANICAL ENGINEER
 PE: 9507-M



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SIGNATURE: _____

JUNE 22, 2009 DRAWING RELEASE
 REVISIONS TO ACCOMMODATE SANYO AC

REVISIONS:
 NONE REQUIRED ON THIS SHEET.

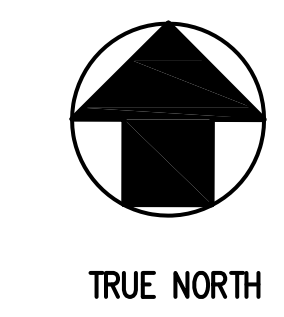
Bid 3 RELEASE
 06/25/09

NOMENCLATURE

- SD SUPPLY DAMPER
- RR RETURN REGISTER
- ER EXHAUST REGISTER
- DL TRANSFER DOOR LOUVER
- VD VOLUME DAMPER
- BD BACK DRAFT DAMPER
- SA SUPPLY AIR
- RA RETURN AIR
- OS OUTSIDE AIR
- SD SUPPLY DIFFUSER
- RR RETURN REGISTER
- CFM CUBIC FEET PER MINUTE
- AHU AIR HANDLER UNIT
- ACCU AIR COOLED CONDENSER
- EF EXHAUST FAN
- S SUPPLY DUCT
- R RETURN DUCT

MECHANICAL DRAWING SCHEDULE

- M1.0 MECHANICAL BASEMENT PLAN
- M1.1 MECHANICAL MAIN FLOOR PLAN
- M1.2 MECHANICAL CLERESTORY PLAN
- M1.3 MECHANICAL ROOF PLAN
- M1.4 MECHANICAL SECTION AND ELEVATIONS
- M1.5 MECHANICAL NOTES, SCHEDULE AND DETAILS



BASEMENT PLAN
 SCALE: 1/4" = 1 FT

HAKALAU ENGINEERING, LLC.
 PO BOX 252
 HAKALAU, HI 96710
 (808) 961-6202

PROPOSED NEW BUILDING:
ENERGY LAB
HAWAII PREPARATORY ACADEMY
 KAMUELA, HAWAII
 TMK: (3) 6-5-001:033

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DATE ISSUED: 10/17/08

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SHEET NO. **M1.0**
 1 OF 6 SHEET

IAQ MECHANICAL VENTILATION REQUIREMENTS:

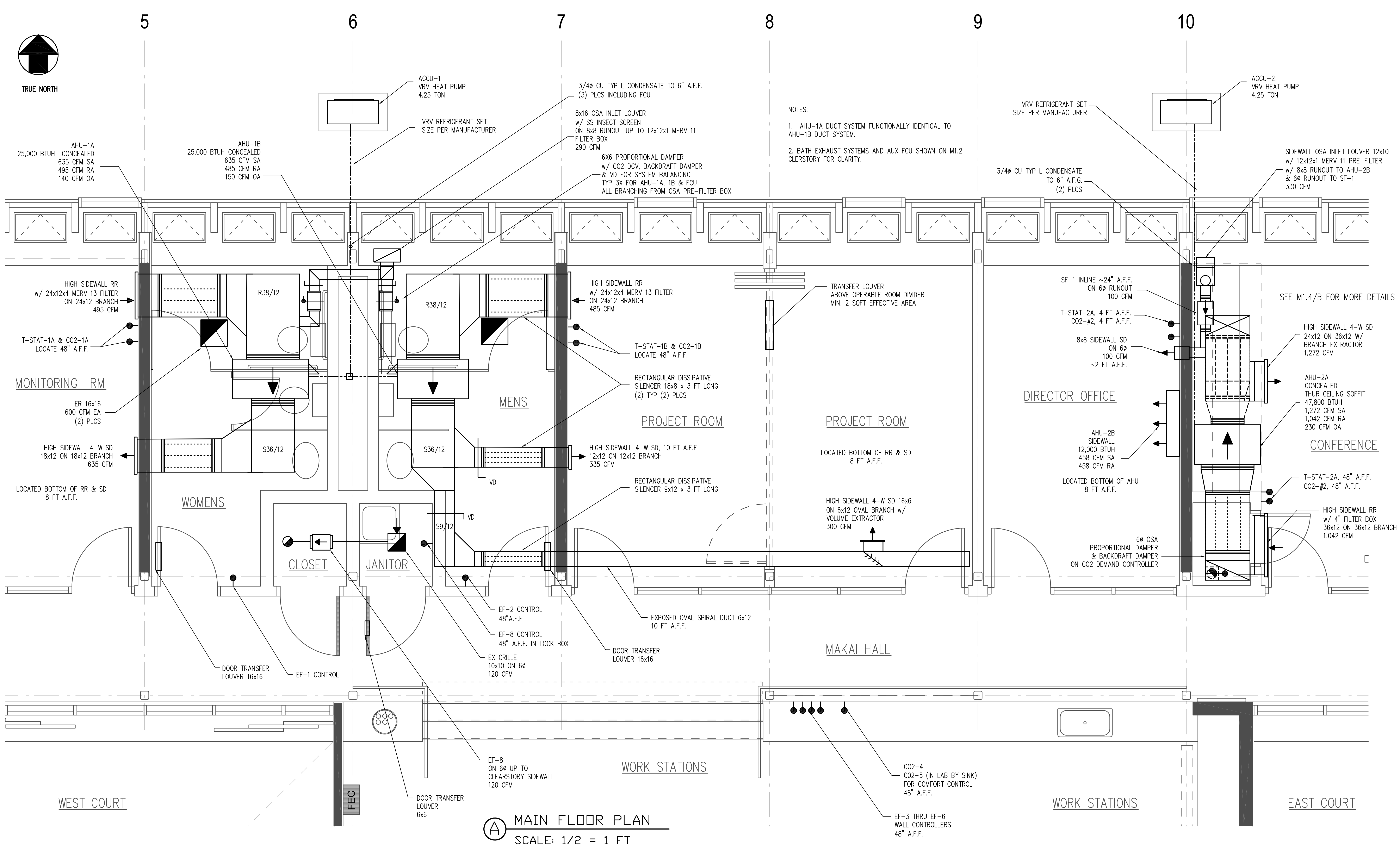
ZONE #	RM NAME	OCCUPANCY CATEGORY	ASHRAE 62.1-2004 REQUIREMENT	SQFT	P	MINIMUM REQUIREMENT	ENHANCED 30% REQUIREMENT	DESIGN VENTILATION
AHU-1A	MONITORING LAB	COMPUTER LAB	10 CFM/P 0.06 CFM/SQFT	350	8	101 CFM	131 CFM	140 CFM
AHU-1B FCU-1	PROJECT RM	MULTI-USE ASSEMBLY	7.5 CFM/P 0.06 CFM/SQFT	350	12	111 CFM	144 CFM	150 CFM
AHU-2A	DIRECTOR OFFICE	MULTI-USE ASSEMBLY	7.5 CFM/P 0.06 CFM/SQFT	200	8	72 CFM	94 CFM	100 CFM
AHU-2B	CONFERENCE RM	MULTI-USE ASSEMBLY	7.5 CFM/P 0.06 CFM/SQFT	350	20	171 CFM	222 CFM	230 CFM

JUNE 25, 2009 DRAWING RELEASE
REVISIONS TO ACCOMODATE SANYO AC & LEED

REVISIONS:

1. REVISED AC SYSTEMS TO UTILIZE SANYO ECO-I VRV R410 EQUIPMENT
2. ADDED SOUND ATTENUATORS ON SUPPLY & RETURN TRUNKS OF ALL CONCEALED AHUs AND FCU
3. ADDED MERV 13 FILTERS ON RETURN REGISTERS ON ALL AHUs AND FCU.
4. ADDED MERV 11 PRE-FILTER ON ALL OSA INLETS.
5. ADDED CO2 SENSORS TO LAB & WORKSTATION ROOMS.
6. ADDED CO2 SENSORS w/ CO2 DEMAND CONTROLLED VENTILATION (DCV) TO FCU-1.
7. ADDED SF-1 FOR DIRECTORS ROOM OSA w/ CO2 DCV.
8. ADDED EXPOSED OVAL DUCT TO WEST PROJECT ROOM
9. ADDED ACUSTICAL ATTENUATING INLET LOUVERS ON EF-3 THRU EF-6.
10. ADDED SOUND ATTENUATING WRAP ON EF-3 THRU EF-6.

Bid 3 RELEASE
06/25/09



NOTES:

1. AHU-1A DUCT SYSTEM FUNCTIONALLY IDENTICAL TO AHU-1B DUCT SYSTEM.
2. BATH EXHAUST SYSTEMS AND AUX FCU SHOWN ON M1.2 CLEARSTORY FOR CLARITY.



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SIGNATURE:

HAKALAU ENGINEERING, LLC.
PO BOX 252
HAKALAU, HI 96710
(808) 961-6202

PROPOSED NEW BUILDING:
ENERGY LAB
HAWAII PREPARATORY ACADEMY
KAMUELA, HAWAII
TMK: (3) 6-5-001:033

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DATE ISSUED: 10/17/08

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SHEET NO. M1.1

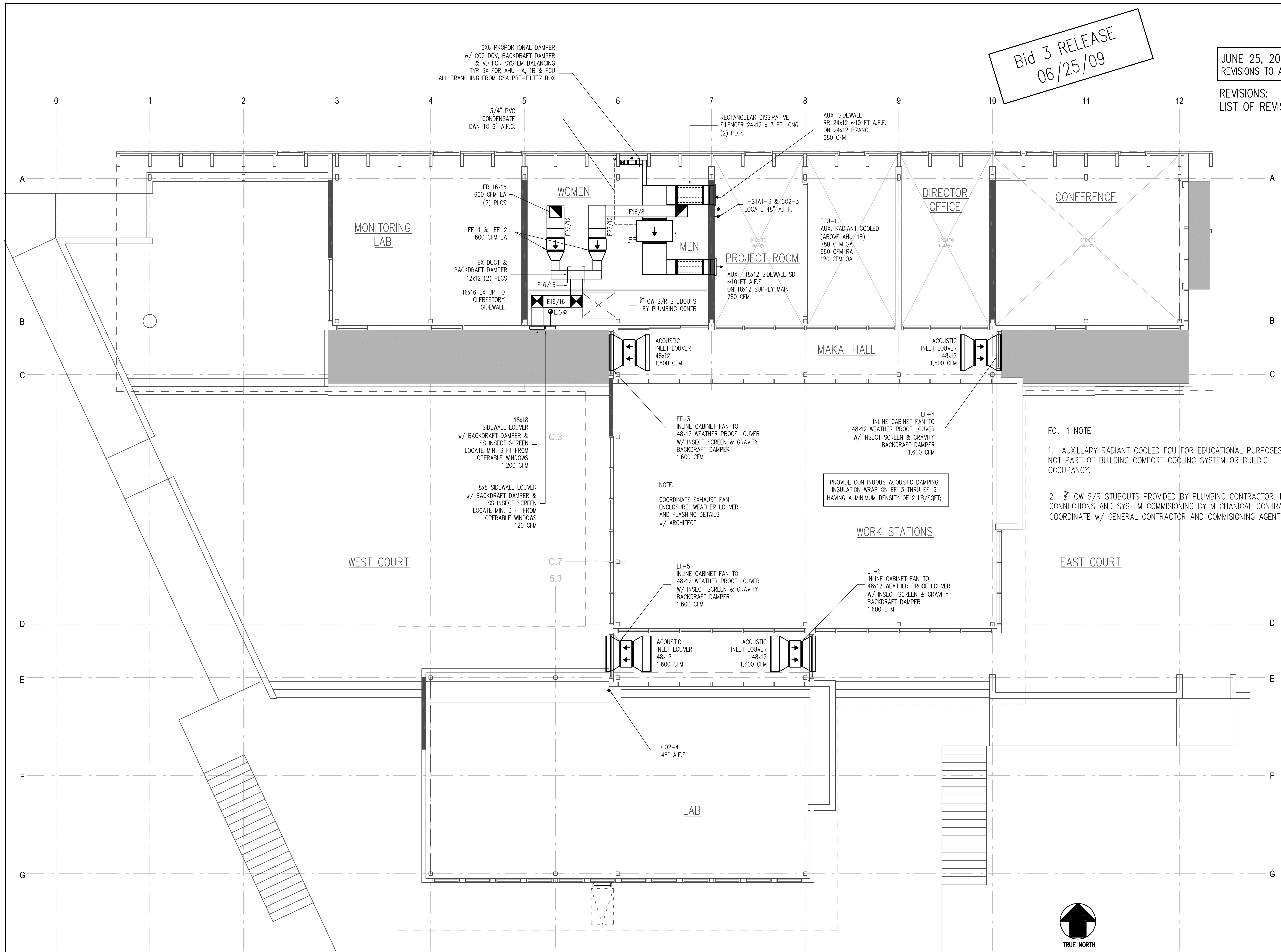
2 OF 6 SHEET

A MAIN FLOOR PLAN
SCALE: 1/2" = 1 FT

Bid 3 RELEASE
06/25/09

JUNE 25, 2009 DRAWING RELEASE
REVISIONS TO ACCOMODATE SANYO AC

REVISIONS: SEE SHEET M1.1 FOR
LIST OF REVISIONS



CHARLES P. CAVEDONI
LICENSED PROFESSIONAL ENGINEER
No. 9507-M
HAWAII, U.S.A.

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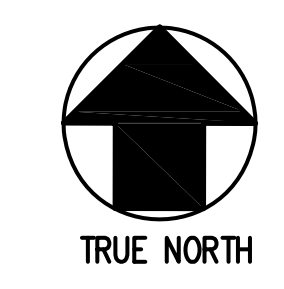
DATE ISSUED: 10/17/08

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SHEET NO. **M1.2**

3 OF 6 SHEET

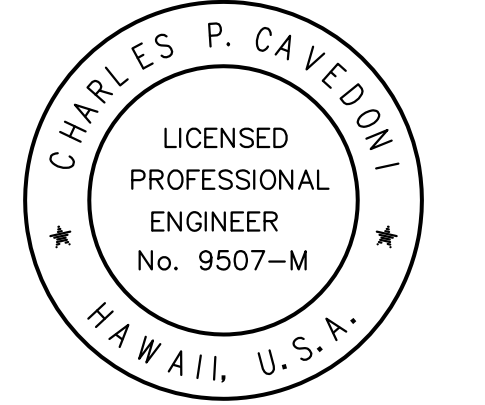
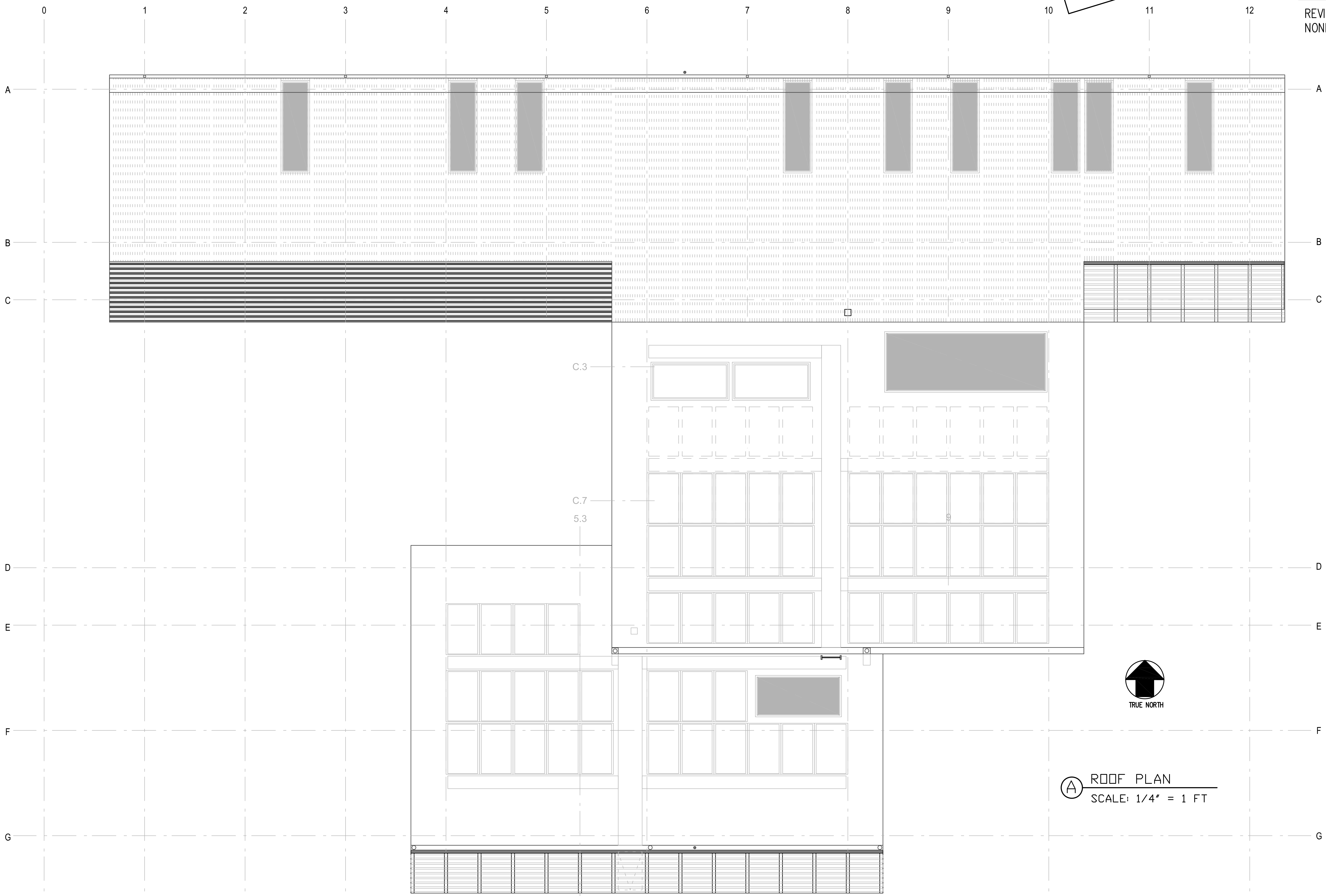
(A) CLERESTORY PLAN
SCALE: 1/4" = 1 FT



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06/25/09

JUNE 25, 2009 DRAWING RELEASE
REVISIONS TO ACCOMMODATE SANYO AC

REVISIONS:
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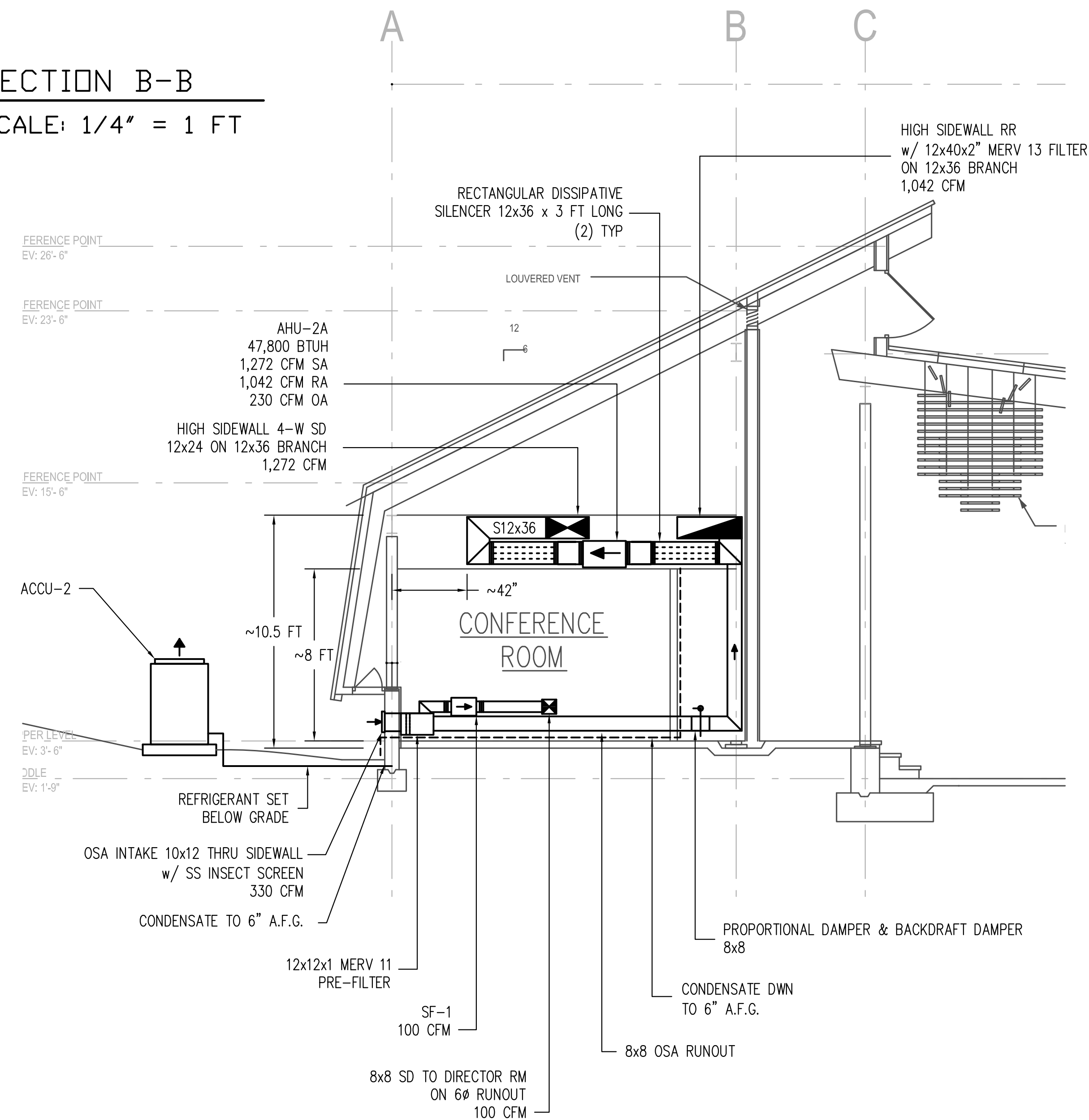
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SHEET NO. **M1.3**

4 OF 6 SHEET

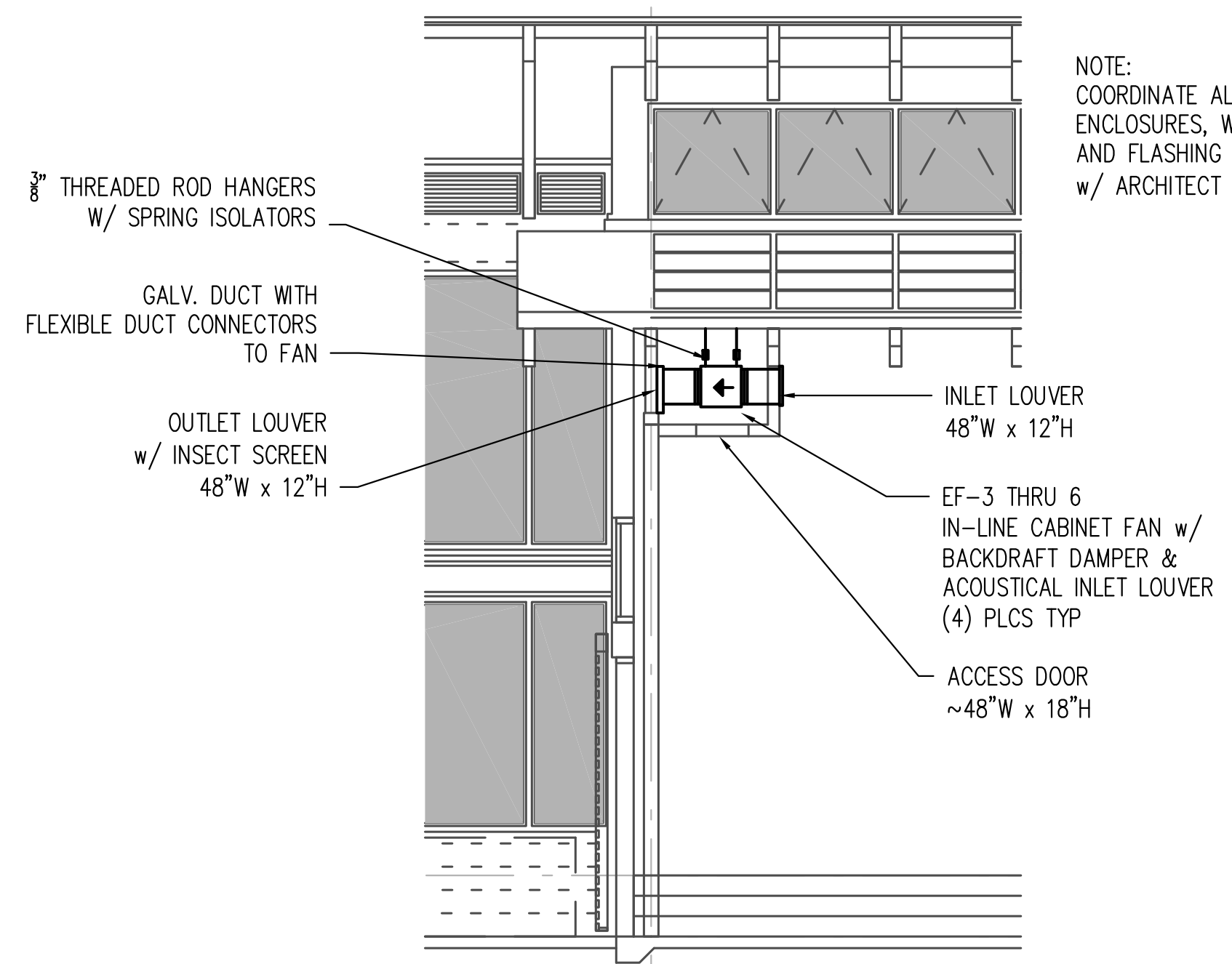
(A) ROOF PLAN
SCALE: 1/4" = 1 FT

B SECTION B-B
SCALE: 1/4" = 1 FT



6 PROVIDE CONTINUOUS ACOUSTIC DAMPING INSULATION WRAP ON EF-3 THRU EF-6 HAVING A MINIMUM DENSITY OF 2 LB/SQFT;

NOTE: COORDINATE ALL EXHAUST FAN ENCLOSURES, WALL PENETRATIONS AND FLASHING DETAILS w/ ARCHITECT

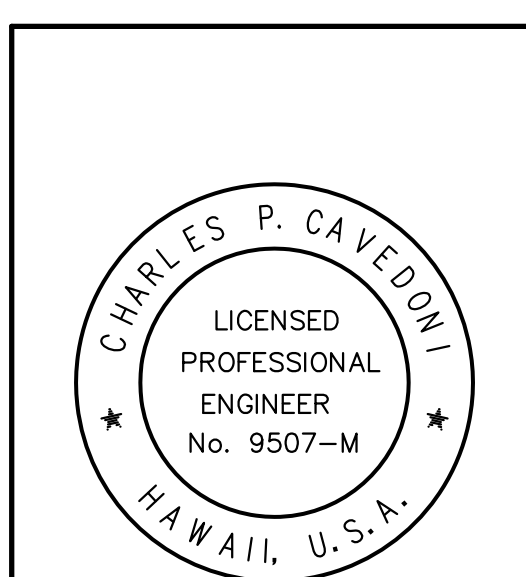


C SECTION C-C
SCALE: 1/4" = 1 FT

JUNE 25, 2009 DRAWING RELEASE
REVISIONS TO ACCOMMODATE SANYO AC

REVISIONS: SEE SHEET M1.1 FOR LIST OF REVISIONS

Bid 3 RELEASE
06/25/09



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SIGNATURE:

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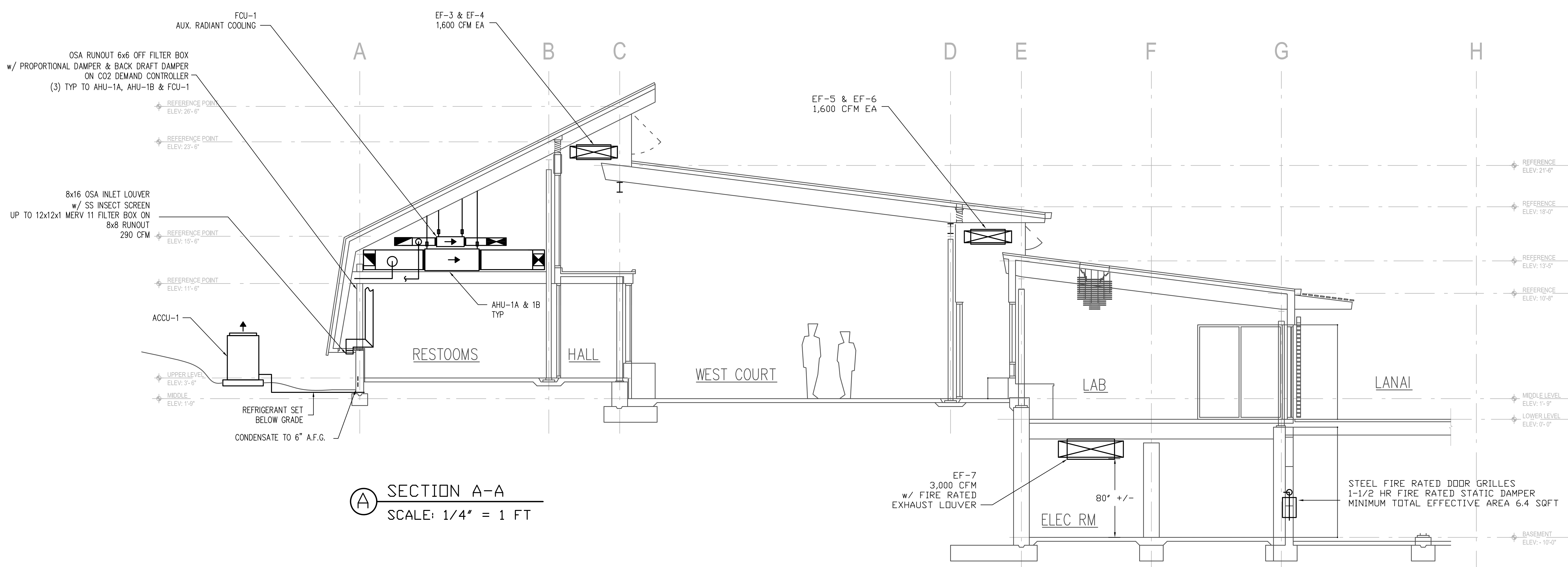
DATE ISSUED: 10/17/08

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SHEET NO. **M1.4**

5 OF 6 SHEET

A SECTION A-A
SCALE: 1/4" = 1 FT



GENERAL NOTES:

1. OWNER REQUIRES THE CONTRACTOR TO IMPLEMENT PRACTICES AND PROCEDURES TO MEET THE PROJECT'S ENVIRONMENTAL GOALS, WHICH INCLUDE ACHIEVING A LEED GREEN BUILDING PLATINUM RATING AND LIVING BUILDING CHALLENGE (LBC) CERTIFICATION. SPECIFIC PROJECT GOALS WHICH MAY IMPACT THIS AREA OF WORK ARE LISTED IN THE PROJECT SPECIFICATIONS, DIVISION 15 AS WELL AS DIVISION 1 GENERAL NOTES. THE CONTRACTOR SHALL ENSURE THAT THE REQUIREMENTS RELATED TO THESE GOALS, AS DEFINED IN THE PROJECT SPECIFICATIONS AND IN RELATED SECTIONS OF THE CONTRACT DOCUMENTS, ARE IMPLEMENTED TO THE FULLEST EXTENT. SUBSTITUTIONS OR OTHER CHANGES TO THE WORK PROPOSED BY THE CONTRACTOR OR THEIR SUBCONTRACTORS, SHALL NOT BE ALLOWED IF SUCH CHANGES COMPROMISE THE STATED LEED AND LBC CRITERIA.

MECHANICAL NOTES

- INSTALL AND COMMISSION ALL EQUIPMENT AND HARDWARE PER MANUFACTURERS RECOMMENDATIONS, CONSTRUCTION DOCUMENTS AND ALL APPLICABLE CODES.
- TEST, ADJUST AND BALANCE PER ASHRAE TEST PROCEDURES TO PROVIDE INDICATED FLOW RATES.
- ALL DUCT DIMENSIONS SHOW ARE INSIDE TO INSIDE DIMENSIONS.
- AHU & FCU SUPPLY & RETURN TRUNKS SHALL BE 1" THICK KNAUF INSULATION DUCT BOARD w/ ECOSE TECHNOLOGY, SIZED AS INDICATED OR EQUIVALENT WITH APPROVAL OF ENGINEER.
- ALL SUPPLY AND RETURN RUNOUTS SHALL BE 1" INSULATED CAL-FLEX FLEXIBLE AIR DUCT, CLASS 1 #2PMJ OR EQUIVALENT WITH APPROVAL OF ENGINEER. EXPOSED OVAL SPIRAL DUCT INTERIOR LINED SHALL BE ECO DUCT PRODUCT FABRICATED FROM GALVANIZED G60/G90 OR EQUIVALENT. PAINT TO MATCH PER ARCHITECTURAL REQUIREMENTS.
- PROVIDE EACH SUPPLY, RETURN AND OUTSIDE AIR RUNOUT WITH OPPOSED BLADE VOLUME DAMPERS AT TAKE-OFF; NAILOR INDUSTRIES TYPE OBDR, SIZED AS INDICATED OR EQUIVALENT WITH APPROVAL OF ENGINEER.
- ALL CEILING SUPPLY DIFFUSERS SHALL BE NAILOR INDUSTRIES TYPE RNS, SIZED AS INDICATED W/ INTEGRAL VOLUME DAMPER OR EQUIVALENT WITH APPROVAL OF ENGINEER, COORDINATE FINISH W/ ARCHITECT.
- RETURN REGISTERS SHALL BE NAILOR INDUSTRIES SERIES 51EC, SIZED AS INDICATED OR EQUIVALENT WITH APPROVAL OF ENGINEER, COORDINATE FINISH W/ ARCHITECT. PROVIDE ALL RETURN REGISTERS WITH 4" MERV 13 FILTER.
- ALL SIDEWALL SUPPLY DIFFUSERS SHALL BE NAILOR INDUSTRIES ALUM, DOUBLE DEFLECTION, SERIES 51-DH, SIZED AS INDICATED OR EQUIVALENT WITH APPROVAL OF ENGINEER, COORDINATE FINISH W/ ARCHITECT.
- LOCATE O.S.A. INTAKE NO LESS THAN 12 FT FROM EXHAUST VENTS.
- SUPPORT AHUs FROM RAFTERS W/ 3/8" THREADED ROD AND SEISMIC ISOLATION SPRINGS AND FLEXIBLE DUCT CONNECTORS. PROVIDED LATERAL SUPPORT BRACING IF SUSPENDED LENGTH IS GREATER THAN 24".
- LOCATE ACCUs ON CONCRETE PADS WITH SEISMIC AND LATERAL ISOLATION SYSTEMS IN ACCORDANCE W/ SEISMIC ZONE 4.
- PROVIDE A CO2 BASED DEMAND VENTILATION CONTROL SYSTEM ON EACH OSA AIR INTAKE. THE SYSTEM SHALL INCLUDE A WALL MOUNTED CO2 SENSOR W/ STAND-ALONE CONTROLLER (HONEYWELL #C7232A), AN OPPOSED BLADE VOLUME DAMPER (LLOYD INDUSTRIES #AC20) AND A PROPORTIONAL DAMPER ACTUATOR (HONEYWELL #MN7505A) OR EQUIVALENT SYSTEM WITH APPROVAL OF ENGINEER.
- PROVIDE A CO2 VENTILATION SENSOR IN WORKSTATION RM AND LAB RM FOR COMFORT CONTROL AND MONITORING. THE SYSTEM SHALL INCLUDE A WALL MOUNTED CO2 SENSOR (HONEYWELL #C7232A), OR EQUIVALENT SYSTEM WITH APPROVAL OF ENGINEER.
- PROVIDE ALL CONCEALED AHUs WITH COIL RETURN SIDE UV DISINFECTION FOR COIL IRRADIATION. SYSTEM SHALL BE ULTRAVATION MODEL # UMX1902T SYSTEM INSTALLED PER MANUFACTURTURE LISTED SPECIFICATIONS.
- PROVIDE ALL OSA INTAKES W/ MERV 11 FILTER, SIZED AS INDICATED.
- CONDENSATE DRAINS SHALL BE SCH 80 PVC PIPE AND DRAINAGE PATTERN FITTINGS W/ SOLVENT WELDED JOINTS. PROVIDE SEAL TRAP AT CONNECTION TO UNIT AND SIZE ACCORDING TO SYSTEM STATIC PRESSURE. PROVIDE CLEAN OUT AT EACH CHANGE IN DIRECTION. WRAP PIPE W/ 1/2" ARACELL AP ARMAFLEX PIPE INSULATION. DIRECT CONDENSATE TO 6" ABOVE FINISH GRADE.
- WRAP ALL REFRIGERATION LINES W/ ARMACELL AP ARMAFLEX PIPE INSULATION 3/4" THICK. APPLY TWO COATS OF WB ARMFLEX FINISH ON ALL EXTERIOR LINES OR APPROVED EQUAL.
- SIZE REFRIGERANT LINES IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS W/ MINIMUM PIPE RUNS, CRITICAL FOR MEETING LEED REQUIREMENTS.
- PROVIDE GRAVITY BACKDRAFT DAMPER, SS INSECT SCREEN AND WEATHER PROOF LOUVER ON ALL EXHAUST SYSTEM TERMINATIONS. SEE ARCHITECT FOR FLASHING AND HARDWARE DETAILS.
- PROVIDE CONTINUOUS ACOUSTIC DAMPING INSULATION WRAP ON EF-3 THRU EF-6 HAVING A MINIMUM DENSITY OF 2 LB/SQFT; SOUND SEAL # B-20 LAG OR EQUAL APPROVED BY ENGINEER/ARCHITECT.
- PROVIDE RECTANGULAR DISSIPATIVE DUCT SILENCER ON SUPPLY AND RETURN TRUNKS OF ALL CONCEALED AHUs AND FCU, SIZED AS INDICATED. SILENCER SHALL BE RUSKIN SOUND CONTROL A-36 MODEL A OR EQUAL APPROVED BY ENGINEER.
- PROVIDE SS INSECT SCREEN AND WEATHER PROOF LOUVER ON ALL OSA INLET LOUVERS, SEE ARCHITECT FOR FLASHING AND HARDWARE DETAILS.
- ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS, AND CONNECTIONS IN DUCTWORK MUST BE SECURELY SEALED USING MECHANICAL FASTENERS WITH SEALS, MASTICS, GASKETS OR TAPE SYSTEMS LISTED AND LABELED IN ACCORDANCE WITH UL 181A OR UL 181B.
- PROVIDE OWNER WITH COMPLETE OPERATION AND MAINTENANCE DOCUMENTATION IN ACCORDANCE WITH THE COMMISSIONING PLAN OF THE OWNER.
- OWNER/ARCHITECT MUST APPROVE ARCHITECTURAL FINISH OF ALL EXPOSED HARDWARE INCLUDING ALL SUPPLY DIFFUSERS, RETURN GRILLES, OSA INTAKES AND EXHAUST LOUVERS.
- AUX. RADIANT COOLED FCU FOR EDUCATIONAL PURPOSES ONLY; NOT PART OF BUILDING COMFORT COOLING SYSTEM.
- ALL EXHAUST DUCTS SHALL BE SINGLE WALL GALVANIZED FABRICATED AND INSTALLED IN ACCORDANCE WITH THE UMC.

COMMISSIONIN:

THE OWNER IS PLANNING TO ACHIEVE LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED) CERTIFICATION FOR THIS PROJECT AND COMMISSIONING IS A PREREQUISITE FOR THIS CERTIFICATION.

- COMMISSIONING IS A COMPREHENSIVE AND SYSTEMATIC PROCESS TO VERIFY THAT THE BUILDING'S ENERGY RELATED SYSTEMS ARE INSTALLED, CALIBRATED AND PERFORM ACCORDING TO THE OWNER'S PROJECT REQUIREMENTS, BASIS OF DESIGN, AND CONSTRUCTION DOCUMENTS.
- COMMISSIONING IS A PART OF THIS PROJECT AND ALL CONTRACTORS PERFORMING WORK GOVERNED BY THIS DIVISION OF THE SPECIFICATION SHALL REFER TO SPECIFICATION SECTION 01810 FOR COMPLETE COMMISSIONING REQUIREMENTS THAT APPLY TO ALL OF THE WORK WITHIN THIS DIVISION.

ENERGY CALCULATION PER ASHRAE 1989 HANDBOOK

Project: HPA Energy Lab October 2008
 Location: Kamuela, Hawaii
 Zones: Two Program: Elite Software CHVAC

Input Conditions:

Outdoor Conditions: 87 F db 72° F wb
 Indoor Conditions: 77 F db 55% RH
 Latitude: 19 deg
 Elevation: 2,000 ft

Zone #1 Summary Loads: Monitor and Project Rooms

Description:	Latent BTUH	Sensible BTUH	NET BTUH
Roof	840 sqft	0	1,580
Walls	985 sqft	0	2,040
Glass	335 sqft	0	10,716
Partition	1,008 sqft	0	907
Lighting	1 W/sqft	0	2,866
Equipment	0.5 W/sqft	0	1,433
People	18	3,600	4,500
Ventilation	360 cfm	10,463	5,146
DrawThru Fan	0	447	447
Reserve	0	3,497	3,497
Return Duct	0	400	400
Supply Duct	0	800	800

Total Load 14,063 34,332 48,396

Zone Summary Outputs:

Total Supply Air	1,455 cfm	Conditioned Space	840 sqft
Total Ventilation Air	360 cfm	Supply Air/Unit Area	1.73 cfm/sqft
Total Exhaust Air	0 cfm	Area/Cooling Capacity	208 sqft/Ton
Total Required Cooling	4.03 Tons	Cooling Capacity/Area	0.0048 Ton/sqft

Zone #2 Summary Loads: Conference and Director Room

Description:	Latent BTUH	Sensible BTUH	NET BTUH
Roof	640 sqft	0	1,340
Walls	369 sqft	0	649
Glass	651 sqft	0	13,821
Partition	666 sqft	0	599
Lighting	1 W/sqft	0	2,184
Equipment	0.5 W/sqft	0	1,092
People	16	3,200	4,000
Ventilation	320 cfm	9,656	4,222
DrawThru Fan	0	447	447
Reserve	0	3,855	3,855
Return Duct	0	400	400
Supply Duct	0	800	800

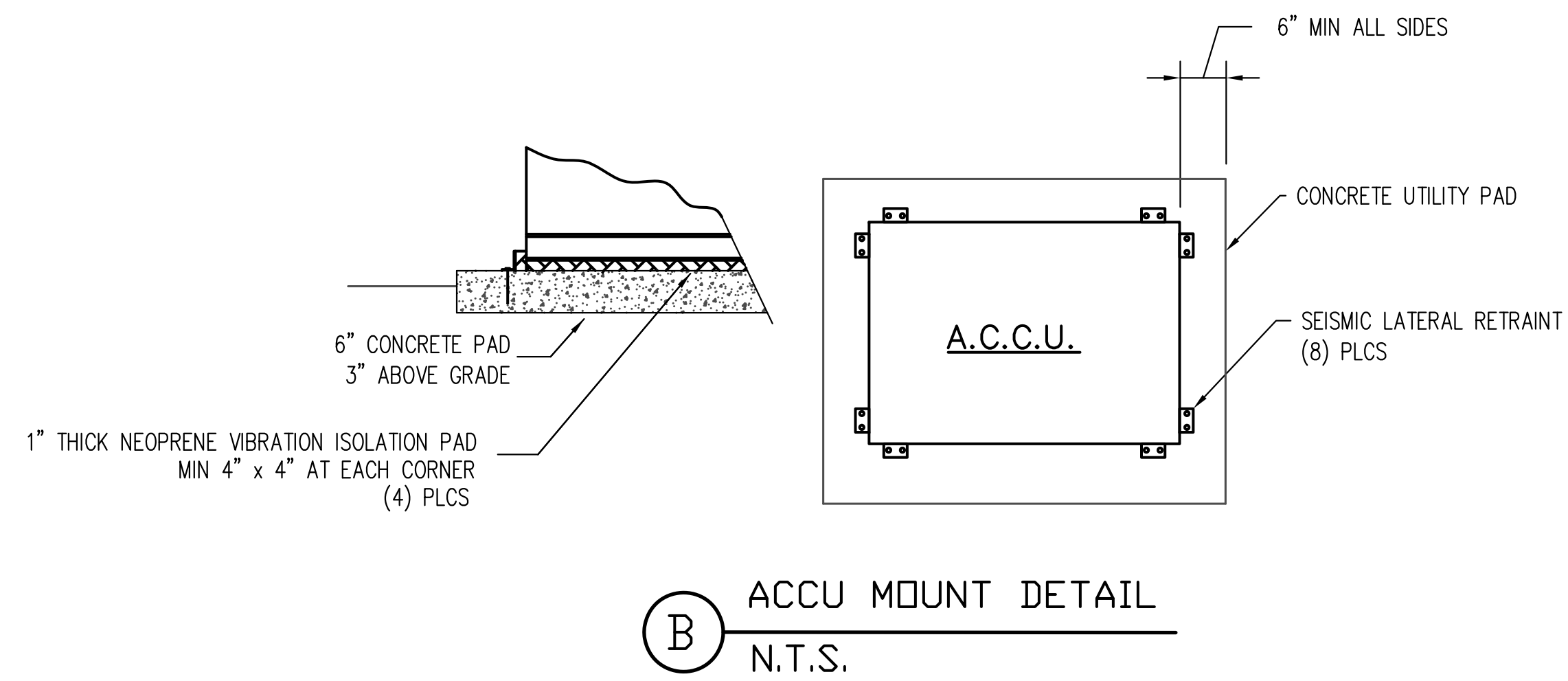
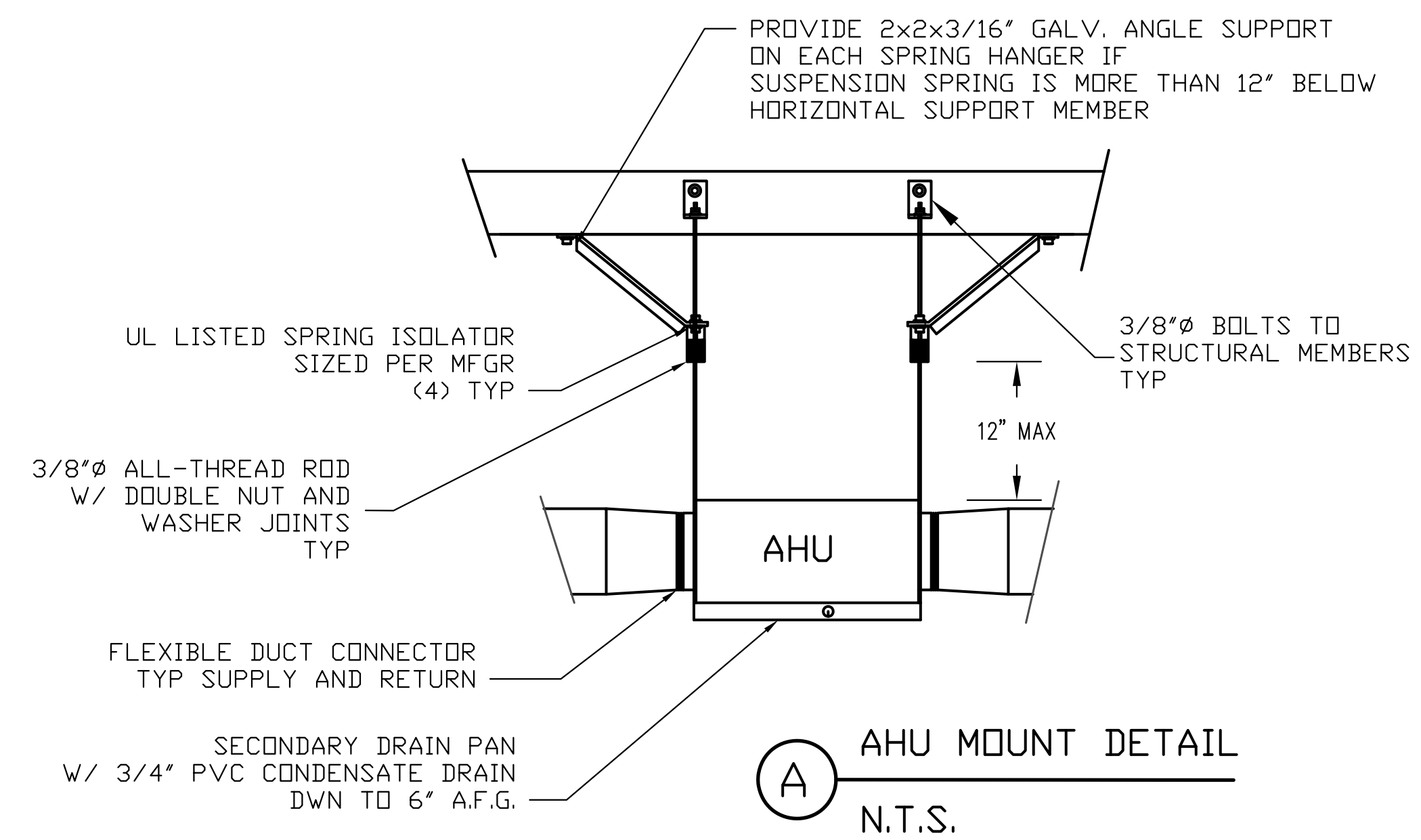
Total Load 12,856 33,408 46,264

Zone Summary Outputs:

Total Supply Air	1,455 cfm	Conditioned Space	640 sqft
Total Ventilation Air	320 cfm	Supply Air/Unit Area	2.27 cfm/sqft
Total Exhaust Air	0 cfm	Area/Cooling Capacity	166 sqft/Ton
Total Required Cooling	3.86 Tons	Cooling Capacity/Area	0.006 Ton/sqft

JUNE 25, 2009 DRAWING RELEASE
 REVISIONS TO ACCOMODATE SANYO AC

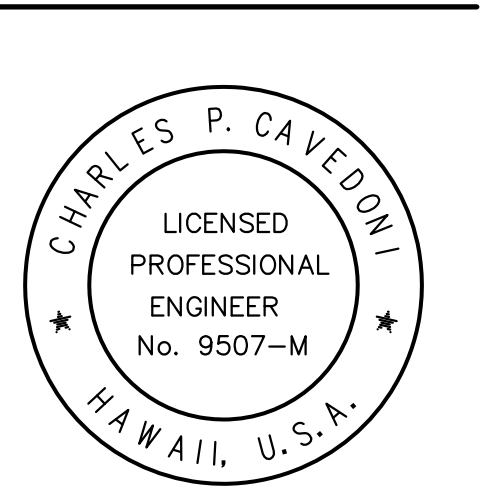
REVISIONS:
 1. UPDATED EQUIPMENT SCHEDULE & NOTES TO ACCOMODATE REVISIONS DESCRIBED ON SHEET M1.1.



EQUIPMENT SCHEDULE

TAG ID	AREA SERVED	EQUIPMENT NAME	CAPACITY	ELECTRICAL	COMMENTS	CONTROLS
ACCU-1 ACCU-2	MAUKA ZONES	AIR COOLED HEAT PUMP R-410A VRV SANYO ECO-i #CHX0522	52,000 BTUH COOLING 58,000 BTUH HEATING 10% TO 100% CAPACITY CONTROL	208/230-1-60 29 MCA 4.57 Kw INPUT	37"W x 14"D x 48" H 229 LB	SANYO BACNET INTERFACE
AHU-1A AHU-1B	MONITORING LAB & PROJECT RM	CONCEALED DUCTED UNIT SANYO ECO-i #UHX2452	25,000 BTUH COOLING 27,000 BTUH HEATING 535 CFM @ 0.38" ESP	208/230-1-60 15 MCA 157/186 W INPUT	43"W x 24"L x 13" H 71 LB	SANYO BACNET INTERFACE
AHU-2A	CONFERENCE RM	CONCEALED DUCTED UNIT SANYO ECO-i #DHX4852	47,800 BTUH COOLING 54,600 BTUH HEATING 1,272 CFM @ 0.67" ESP	208/230-1-60 15 MCA 644/695 W COOLING INPUT 627/756 W HEATING INPUT	40"W x 25"L x 18" H 119 LB	SANYO BACNET INTERFACE
AHU-2B	DIRECTOR RM	WALL MOUNTED UNIT SANYO ECO-i #KH1252	12,000 BTUH COOLING 14,000 BTUH HEATING 353 CFM	208/230-1-60 15 MCA 50/56 W COOLING/HEATING INPUT	40"W x 8"D x 12" H 31 LB	SANYO BACNET INTERFACE
EF-1 EF-2	MEN & WOMEN RESTROOMS	INLINE CABINET FAN GREENHECK #CSP-A900	600 CFM @ 0.5" 950 RPM	120-1-60 328 W	15" L x 15"H x 24"W 59 LBS 23"W x 14"H INLET, 19"W x 8"L OUTLET	INTERLOCK TO ROOM LIGHT w/ AUTO TIME DELAY OFF SWITCH IN TAMPER PROOF BOX
EF-3 EF-4 EF-5 EF-6	WORK SHOP & LAB	INLINE CABINET FAN GREENHECK #CSP-A1750	1,600 CFM @ 0.25" 1,130 RPM	120-1-60 550 W	15" L x 15"H x 35"W 68 LBS 33"W x 13"H INLET, 28"W x 6"H OUTLET	LOCAL AUTO/ON/OFF VARIBALE SPEED CONTROL PROVIDE POINTS FOR REMOTE MONITOR AND CONTROL WRAP UNIT WITH EXTERIOR SOUND DAMPING
EF-7	ELECTRICAL ROOM	INLINE CABINET FAN GREENHECK #CSP-A3600	3,000 CFM @ 0.5" 1,100 RPM	120-1-60 1,330 W	17" L x 15"H x 46"W 122 LBS 44"W x 15"H INLET, 40"W x 11"H OUTLET	LOCAL AUTO/ON/OFF TEMP SWITCH W/ MANUAL SPEED CONTROLLER IN TAMPER PROOF BOX 72" A.F.F.
EF-8	JANITOR CLOSET	INLINE CABINET FAN GREENHECK #CSP-A190	120 CFM @ 0.5" 1,400 RPM	120-1-60 100 W	11" L x 11"H x 13"W 16 LBS 23"W x 14"H INLET, 19"W x 8"L OUTLET	ON/OFF WALL SWITCH IN TAMPER PROOF BOX LOCATED 72" A.F.F.
FCU-1	PROJ ROOM AUX. COOLING	HORIZONTAL CONCEALED FAN COIL WATER COOLED 2-PIPE TRANE #UNITRANE C06 3CH	20,100 BTU TOTAL 780 CFM @ 0.5" 4.24 GPM @ 3.3 PSI PD	120-1-60 320 W	28" L x 10"H x 37"W 100 LBS 32"W x 6"H INLET, 34"W x 6"H OUTLET 5/8" OD SWEAT CONNENCTIONS	
SF-1	DIRECTOR RM	WALL MOUNTED FAN PANASONIC #FV-08WQ1	70 CFM	120-1-60 18 W	10x10 w/ 8ø DUCT	INTERLOCK TO AHU-2B CO2 DCV w/ ON/OFF CONTROL.

Bid 3 RELEASE
 06/25/09



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

SIGNATURE:

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PROPOSED NEW BUILDING:
ENERGY LAB
HAWAII PREPARATORY ACADEMY
 KAMUELA, HAWAII
 TMK: (3) 6-5-001:033

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DATE ISSUED: 10/17/08

DRAWN BY: CPC

SHEET NO. **M1.5**
 6 OF 6 SHEET