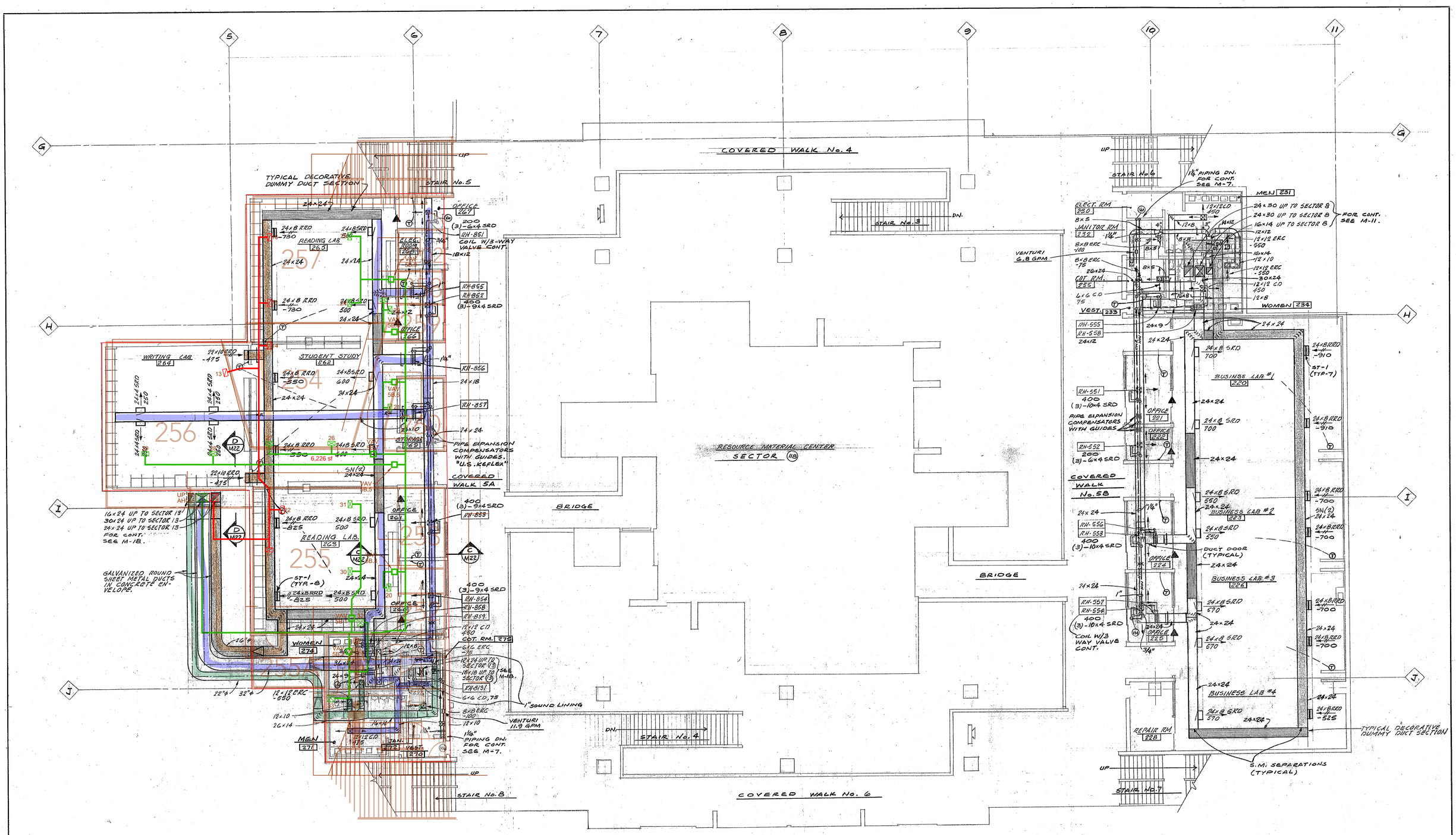
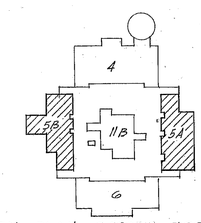


MECHANICAL SECTOR 5 SECOND FLOOR PLAN

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

SHEET NOTES

1. ▲ INDICATES AIR RELIEF THRU ARCH. SPECIAL DOOR FRAME, SEE ARCH. DWGS.
2. ALL DUCTWORK ON SYSTEMS S-5, R-5, S-8 & R-8 SHALL BE LINED WITH 1" SOUND LINING. DUCT SIZES SHOWN FOR EXPOSED AREAS ARE MAXIMUM OUTSIDE DIMENSIONS. DUCT SIZES SHOWN FOR CONCEALED AREAS ARE NET INSIDE DIMENSIONS. DUMMY DUCT NEED NOT BE LINED.



KEY PLAN - SECOND FLOOR

STATE FIRE MARSHAL APPROVAL
APPROVED
STATE FIRE MARSHAL
STATE OF CALIFORNIA
DATE
BY

OFFICE OF ARCH. & CONST. APPROVAL
STATE OF CALIFORNIA — DEPARTMENT OF GENERAL SERVICES
OFFICE OF ARCHITECTURE AND CONSTRUCTION
34242 APPROVED OCT 6 - 1971
APPLICATION NO.
CHIEF, ARCHITECTURAL DIVISION

CONSULTANTS
CHARLES / and / BRAUN
CONSULTING ENGINEERS
San Francisco, California
(415) 434 - 2720

COMETTA AND CIANFICHI
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E. A. COMETTA · F. L. R. CONFER, ARCHITECT · J. E. CROSSEN, ARCHITECT
P. D. CIANFICHI, ARCHITECT ASSOCIATED ARCHITECTURAL FIRMS P. W. CONFER

EAST CAMPUS
CONTRA COSTA JUNIOR COLLEGE DISTRICT
EAST LELAND ROAD PITTSBURG
CONTRA COSTA COUNTY CALIFORNIA

MECHANICAL SECTOR 5
SECOND FLOOR PLAN

JOB No. 348-68
DATE 10-4-71
REVISIONS

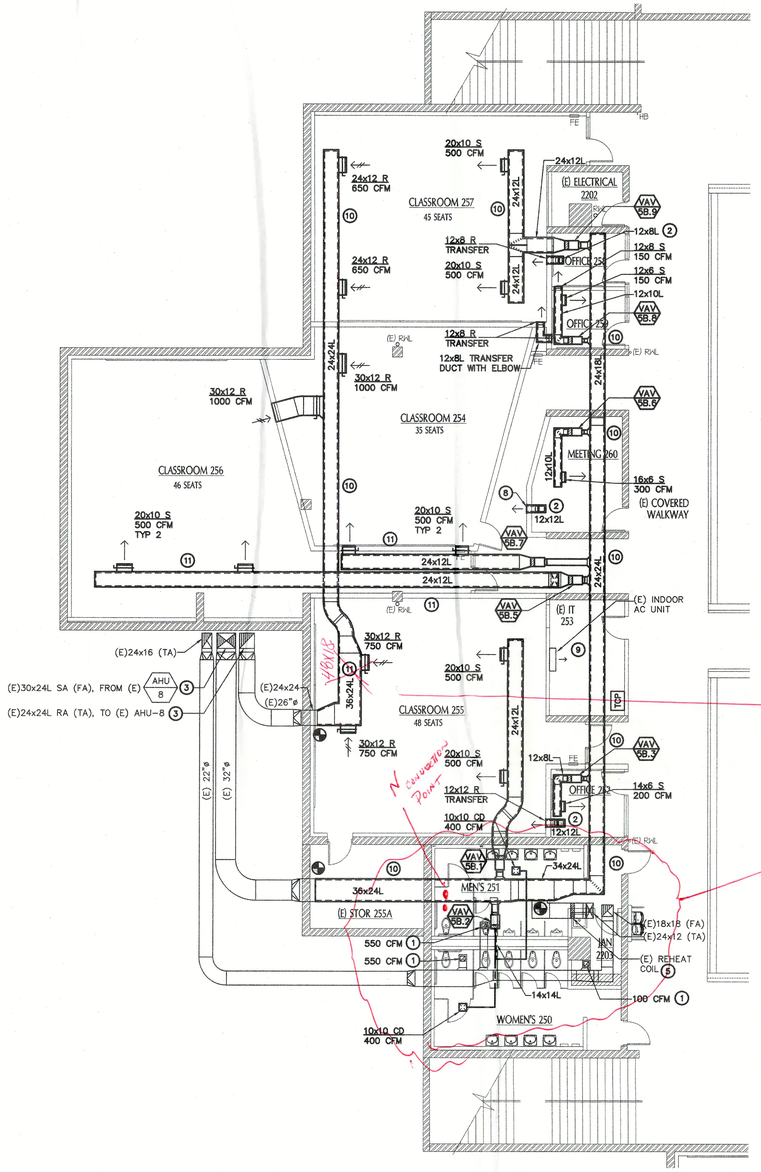
SHEET M-8
OF SHEETS

GENERAL NOTES:

1. SEE TABLE OF DUCT SIZES ON SHEET M0.1 FOR SIZE OF BRANCH DUCTS TO INDIVIDUAL DIFFUSERS, REGISTERS & GRILLES SHOWN ON PLAN UNLESS THE DUCT SIZE IS SHOWN ON THE FLOOR PLAN.
2. SEE TERMINAL UNIT SCHEDULE ON SHEET M0.2 FOR VAV BOX SIZES. SIZE OF DUCT SHOWN TO TERMINAL UNIT SHALL BE THE BOX INLET SIZE AS SCHEDULED UNLESS NOTED OTHERWISE ON FLOOR PLAN.
3. REFER TO M2.1 FOR THERMOSTAT LOCATIONS.
4. PAINT EXPOSED DUCT. REFER TO ARCHITECTURAL DRAWINGS.

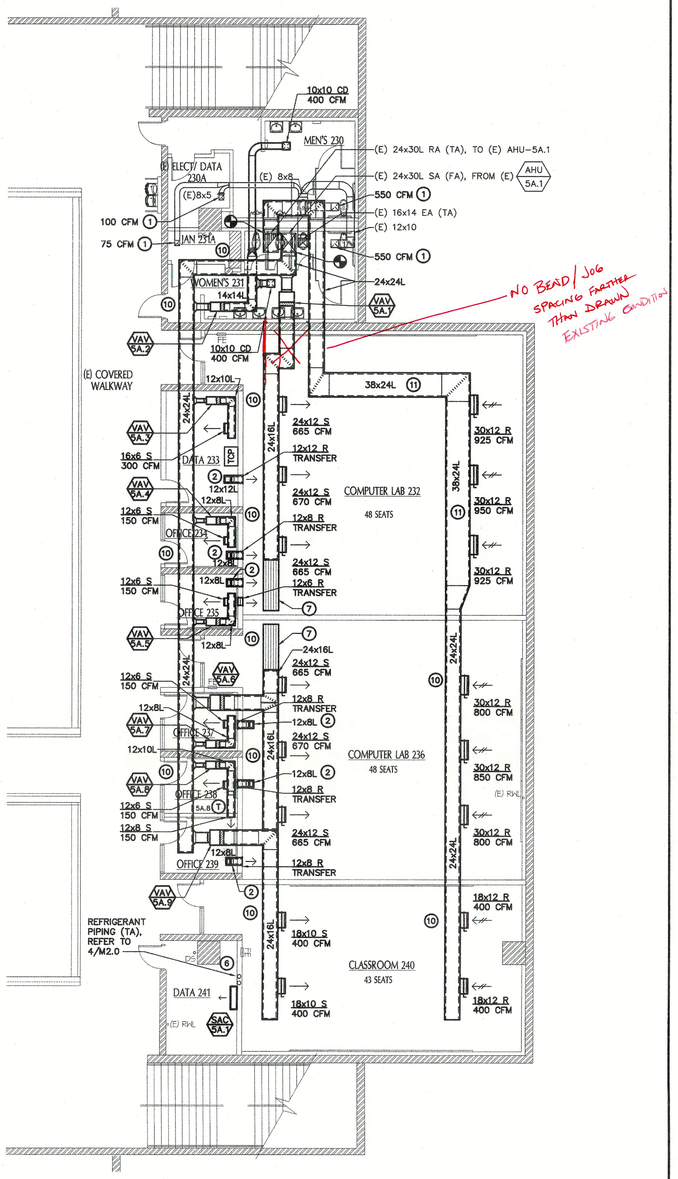
SHEET NOTES:

1. BALANCE (E) DIFFUSER OR GRILLE TO VALUE INDICATED.
2. TRANSFER BOOT, SEE DETAIL 10/M5.1.
3. (E) AHU-8 ALSO SERVES SECTOR 13 ON THE THIRD FLOOR ABOVE. SCHEDULE AC UNIT SHUTDOWN WITH THE OWNER PRIOR.
4. (E) AHU-6.1 ALSO SERVES SECTOR 3 ON THE FIRST FLOOR BELOW. SCHEDULE AC UNIT SHUTDOWN WITH THE OWNER PRIOR.
5. (E) REHEAT COIL THAT SERVES THIRD FLOOR BATHROOM CORE TO REMAIN. MAINTAIN THE SAME AIRFLOW TO THE SPACE THAT WAS PROVIDED PRIOR TO CONSTRUCTION.
6. REFRIGERANT PIPING, REFER TO SCHEDULE FOR SIZES. ROUTE TO OUTDOOR UNIT SCU-5A.1.
7. DECORATIVE DUMMY DUCT SECTION. SIZE SHALL BE THE SAME AS THE ADJACENT DUCT. SUPPORTS AND BRACING SHALL BE THE SAME AS OTHER DUCTS.
8. 12x12 RELIEF AIR LOUVER.
9. IT ROOM 253 MUST REMAIN FULLY OPERATIONAL THROUGHOUT CONSTRUCTION. CAREFULLY COORDINATE CONSTRUCTION WORK TIME WITHIN THE ROOM WITH DISTRICT. ENSURE THAT EQUIPMENT REMAINS UNDISTURBED DURING WORK.
10. DUCT MAIN (SAME SIZE OR SMALLER THAN THE (E) DUCT REMOVED) MOUNTED TO (E) SUPPORT, REFER TO DETAIL 8/M5.1.
11. DUCT MAIN MOUNTED TO NEW SUPPORT, REFER TO DETAIL 9/M5.1.



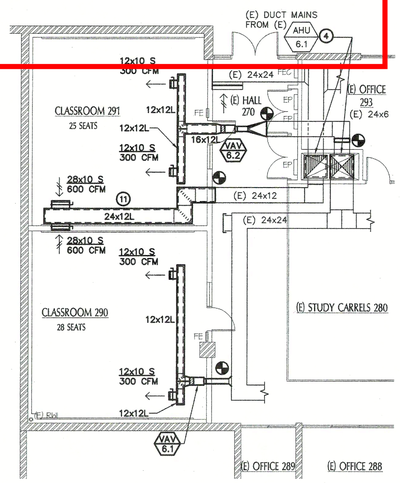
HVAC FLOOR PLAN - SECTOR 5B 1 M2.0

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



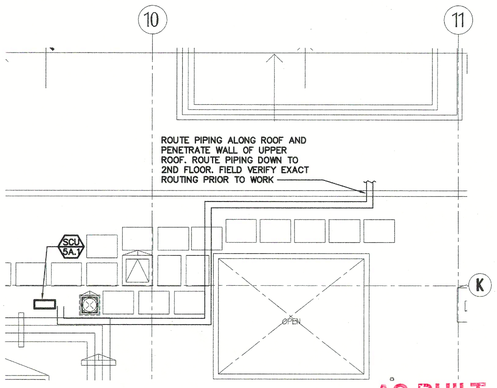
HVAC FLOOR PLAN - SECTOR 5A 2 M2.0

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



HVAC FLOOR PLAN - SECTOR 6 3 M2.0

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



AS-BUILT

HVAC ROOF PLAN SECTOR 5A 4 M2.0

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

tBP Architecture
1000 Burnett Avenue Suite 320
Concord, CA 94520
ph: 925.246.6419 fx: 925.246.6495
architect

DATE SIGNED: 07/15/2016

CAPITAL ENGINEERING CONSULTANTS, INC.
RANCHO CORDOVA, CALIFORNIA
TD - MN/MJR 150225.00
PM - DESIGN TEAM PROJECT NO.
consultant

IDENTIFICATION STAMP DIVISION OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES FILE # 7-C1 APPL # 01-115396 DATE JUL 7 2016

Division of the State Architect
1515 Clay Street, Suite 1201
Oakland, Ca. 94612
ph: (510) 622-3101
agency

LEVEL 2 REMODEL SECTORS 5A, 5B & 6 COLLEGE COMPLEX

LOS MEDANOS COLLEGE
2700 EAST LELAND DRIVE
PITTSBURG, CA 94565

owner

tBP project number : 20842.00

file name:

drawn by: checked by:

date: MAY 16, 2016

Rev:	date:	description:
	12/15/15	DSA SUBMITTAL
	5/16/16	DSA
	7/1/16	BID SET
	12/09/16	Revised Bid Set

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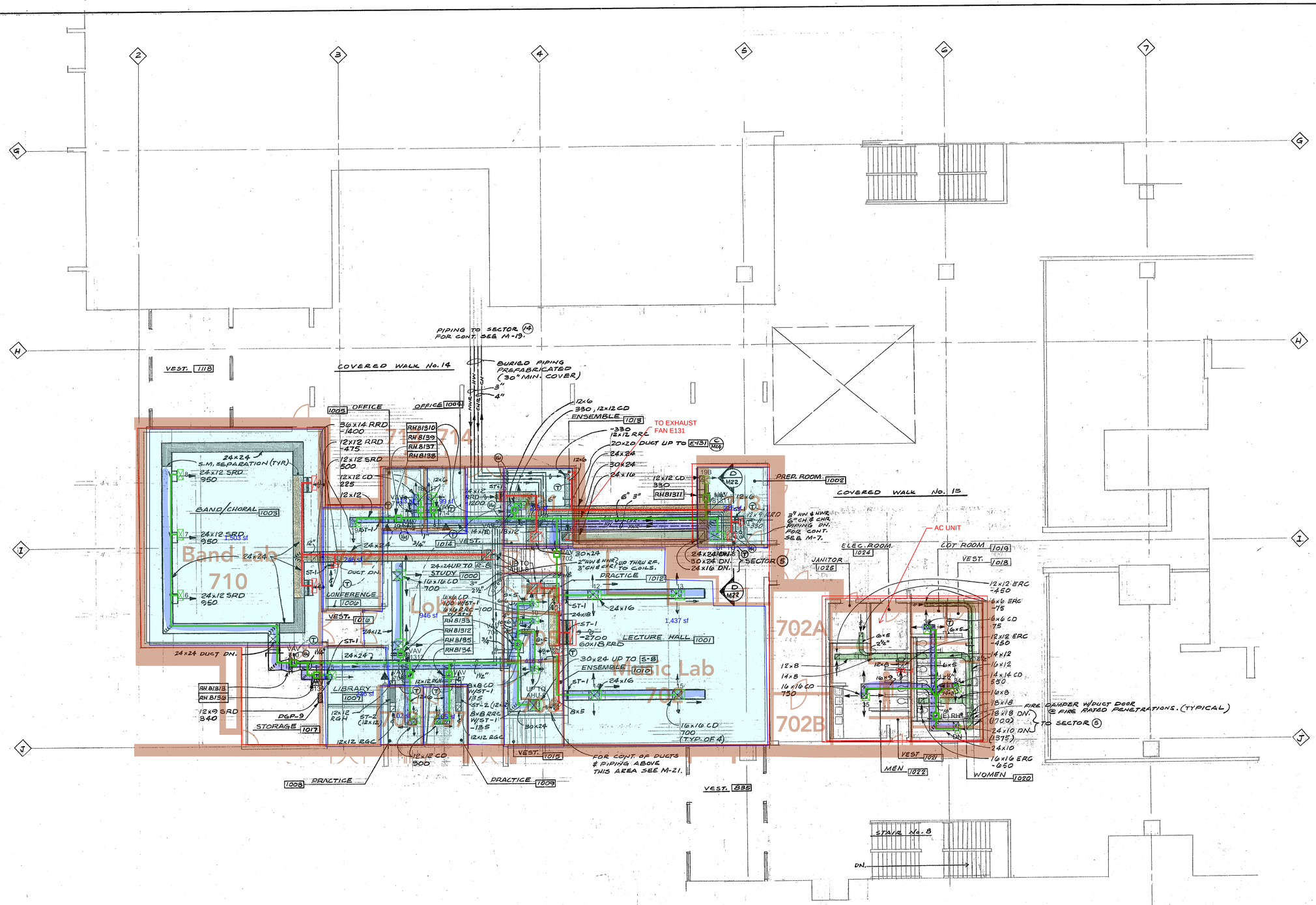
drawing title:

HVAC FLOOR PLAN

drawing no.:

M2.0

drawing of

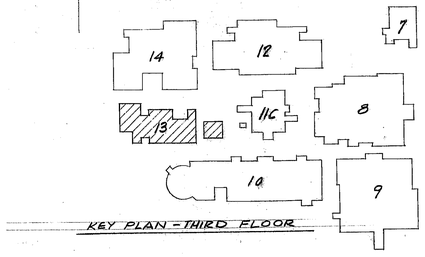


MECHANICAL SECTOR 13 THIRD FLOOR PLAN

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

SHEET NOTES

1. ▲ INDICATES AIR RELIEF THRU ARCH. SPECIAL DOOR FRAME, SEE ARCH. DWGS.
2. ALL DUCTWORK ON SYSTEMS S-8 & R-8 SHALL BE LINED WITH 1" SOUND LINING. DUCT SIZES SHOWN FOR EXPOSED AREAS ARE MAXIMUM OUTSIDE DIMENSIONS. DUCT SIZES SHOWN FOR CONCEALED AREAS ARE NET INSIDE DIMENSIONS. DUMMY DUCT NEED NOT BE LINED.



KEY PLAN - THIRD FLOOR

STATE FIRE MARSHAL APPROVAL
APPROVED
STATE FIRE MARSHAL
STATE OF CALIFORNIA
DATE OCT 1971
BY

OFFICE OF ARCH. & CONST. APPROVAL
STATE OF CALIFORNIA — DEPARTMENT OF GENERAL SERVICES
OFFICE OF ARCHITECTURE AND CONSTRUCTION
34242 APPROVED OCT 6, 1971
APPLICATION NO.
CHIEF ARCHITECTURAL ENGINEER

CONSULTANTS
#1052
CHARLES / and / BRAUN
CONSULTING ENGINEERS
San Francisco, California
(415) 434 - 2720

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P. D. CIANFICHI, ARCHITECT · ASSOCIATED ARCHITECTURAL FIRMS · P. W. CONFER

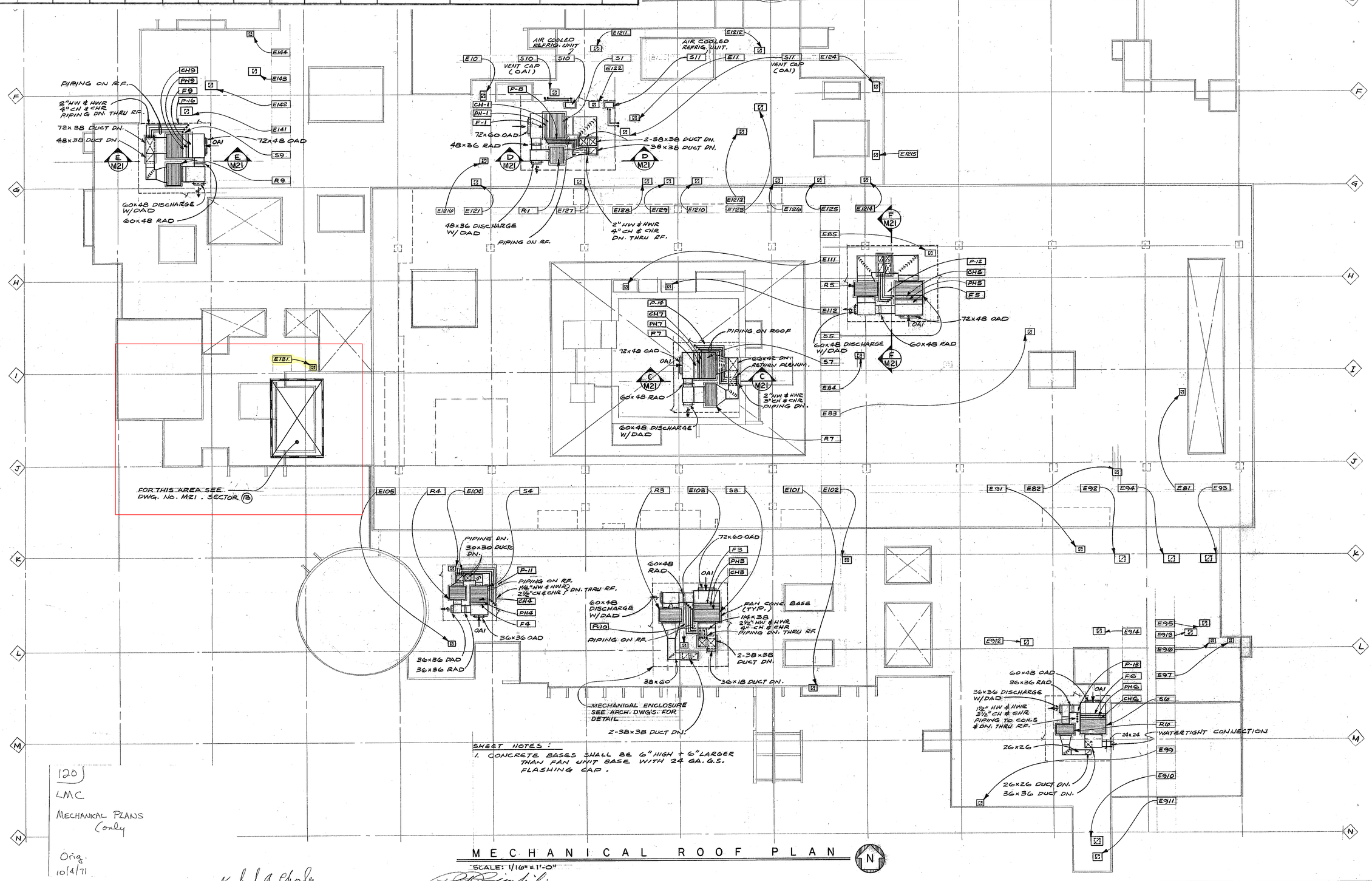
EAST CAMPUS
CONTRA COSTA JUNIOR COLLEGE DISTRICT
EAST LELAND ROAD · PITTSBURG
CONTRA COSTA COUNTY · CALIFORNIA

MECHANICAL SECTOR 13
THIRD FLOOR PLAN

JOB No. 348-68
DATE 10-4-71
REVISIONS
SHEET M-18
OF SHEETS

FAN SCHEDULE

STATIC DEFLECT. INCHES	MARK	MINIMUM FAN CHARACTERISTICS: WHEEL DIA. INCHES	CFM	ESTIMATED EXT. S.P.	ESTIMATED B.H.P.	WHEEL TYPE	R.P.M.	MOTOR CHARACTERISTICS: MIN. H.P.	START. TYPE	VOLTAGE AND PHASE	START. CONTROL	AREA SERVED	ACCEPTABLE MANUFACTURER'S DESIGNATION	REMARKS	APPROX. WT. IN LBS.
	E-131	24	2975	1/2	—	B.I.	570	1/2	MAN.	120-1φ	S-8	SECTOR (13)	BROIDERT LO-2407	ROOF EXH. FAN	300



SHEET NOTES:

1. CONCRETE BASES SHALL BE 6" HIGH + 6" LARGER THAN FAN UNIT BASE WITH 24 GA. G.S. FLASHING CAP.

120

LMC

MECHANICAL PLANS Conly

Orig. 10/4/71

MECHANICAL ROOF PLAN

SCALE: 1/16" = 1'-0"

Richard A Charles

P. D. Cianfichi

STATE FIRE MARSHAL APPROVAL: APPROVED STATE FIRE MARSHAL STATE OF CALIFORNIA DATE ____ BY ____

OFFICE OF ARCH. & CONST. APPROVAL: STATE OF CALIFORNIA — DEPARTMENT OF GENERAL SERVICES, OFFICE OF ARCHITECTURE AND CONSTRUCTION. 84242 APPROVED OCT 6 - 1971. APPLICATION NO. ____ OFFICE ENGINEER

CONSULTANTS: #1252 CHARLES / and / BRAUN CONSULTING ENGINEERS, San Francisco, California (415) 434-2720

COMETTA AND CIANFICHI, 3516 MACDONALD AVENUE RICHMOND, CALIF. 232-2637
FREDERICK L.R. CONFER + ASSOCIATES, 1200 CONTRA COSTA BLVD. CONCORD, CALIF. 686-2292
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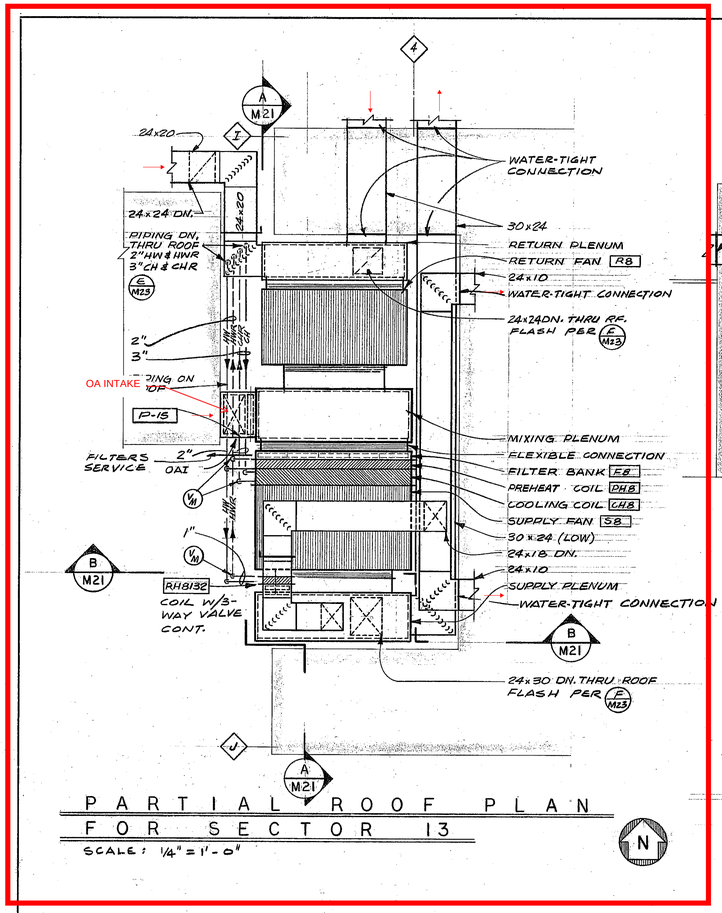
EAST CAMPUS
CONTRA COSTA JUNIOR COLLEGE DISTRICT

EAST LELAND ROAD — PITTSBURG
CONTRA COSTA COUNTY — CALIFORNIA

MECHANICAL ROOF PLAN

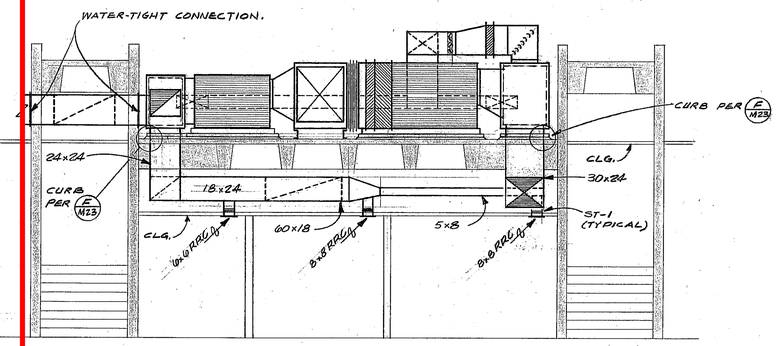
JOB No. 348-68
DATE 10-4-71
REVISIONS

SHEET M-20 OF SHEETS



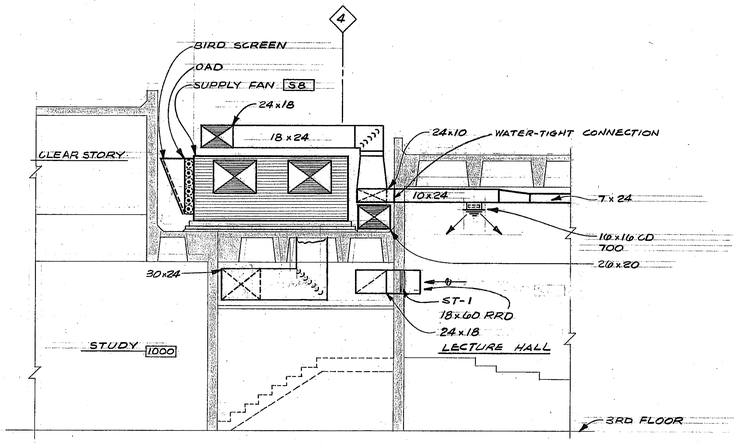
PARTIAL ROOF PLAN FOR SECTOR 13

SCALE: 1/4" = 1'-0"



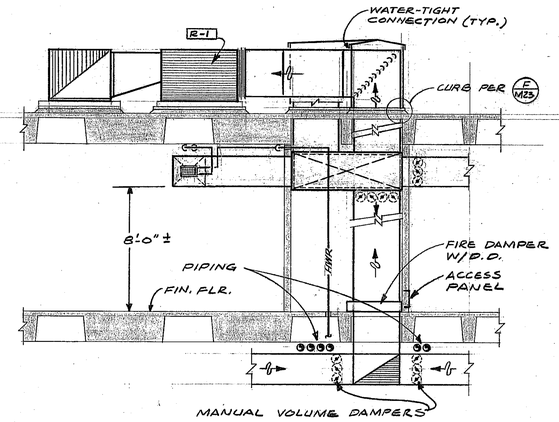
SECTION A M21

SCALE: 1/4" = 1'-0"



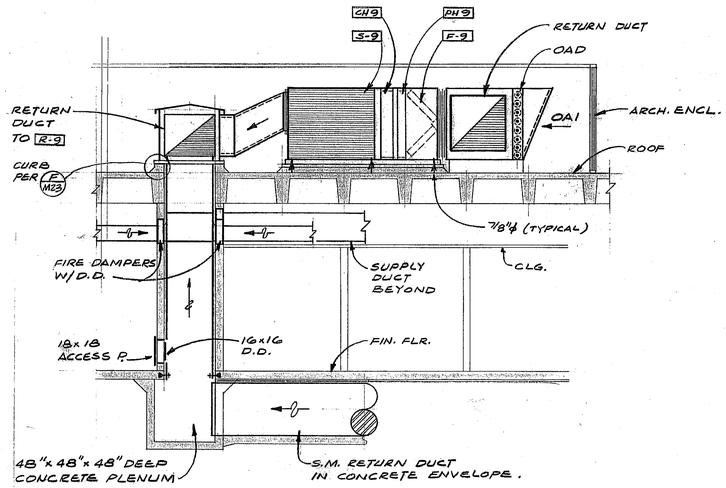
SECTION B M21

SCALE: 1/4" = 1'-0"



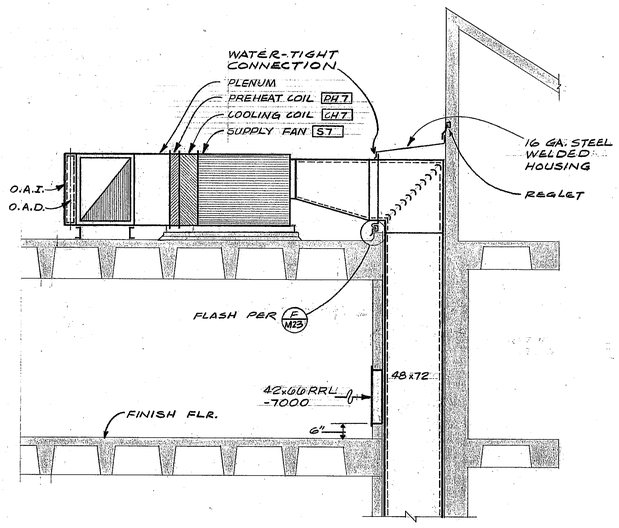
SECTION D M21

SCALE: 1/4" = 1'-0"



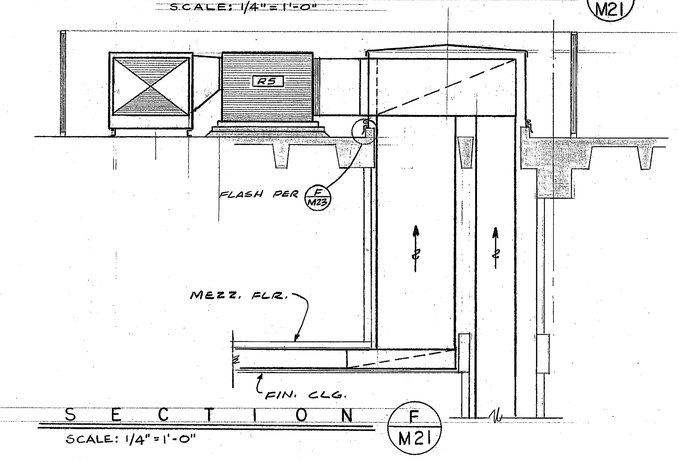
SECTION E M21

SCALE: 1/4" = 1'-0"



SECTION C M21

SCALE: 1/4" = 1'-0"



SECTION F M21

SCALE: 1/4" = 1'-0"

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OFFICE OF ARCH. & CONST. APPROVAL
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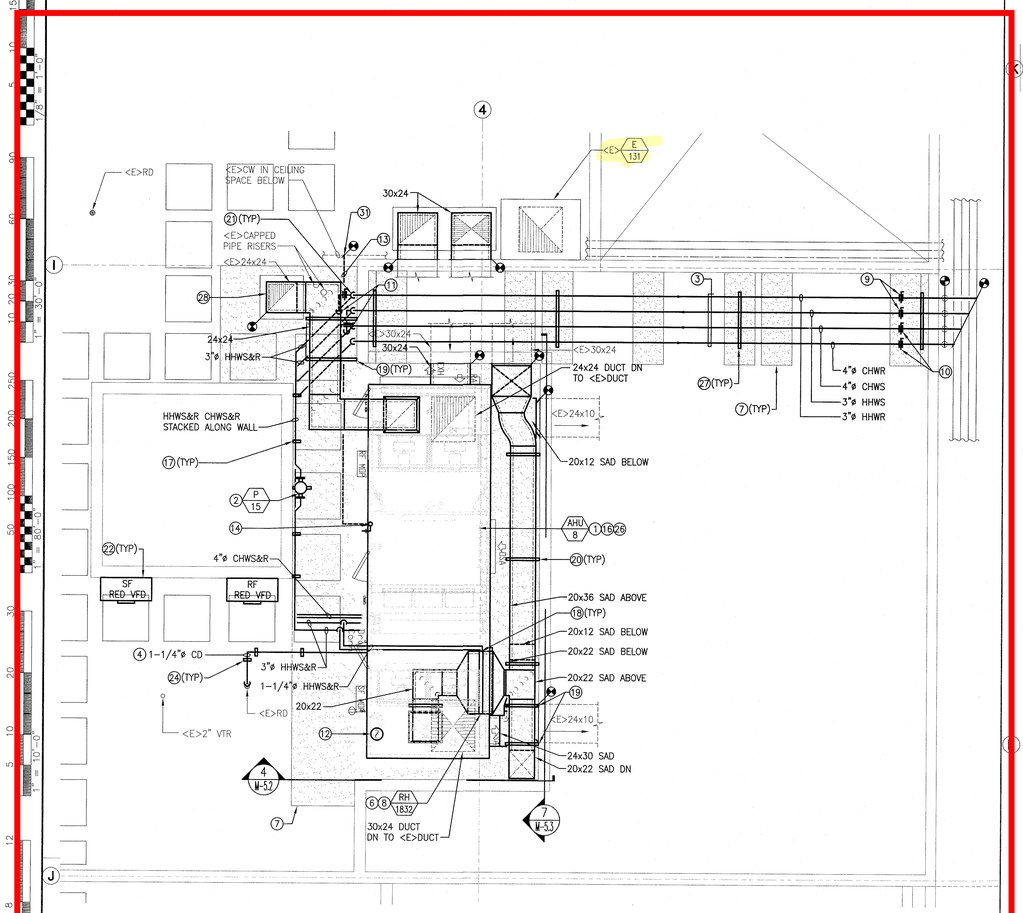
EAST CAMPUS
CONTRA COSTA JUNIOR COLLEGE DISTRICT

EAST LELAND ROAD — PITTSBURG
CONTRA COSTA COUNTY — CALIFORNIA

MECHANICAL SECTIONS & DETAILS

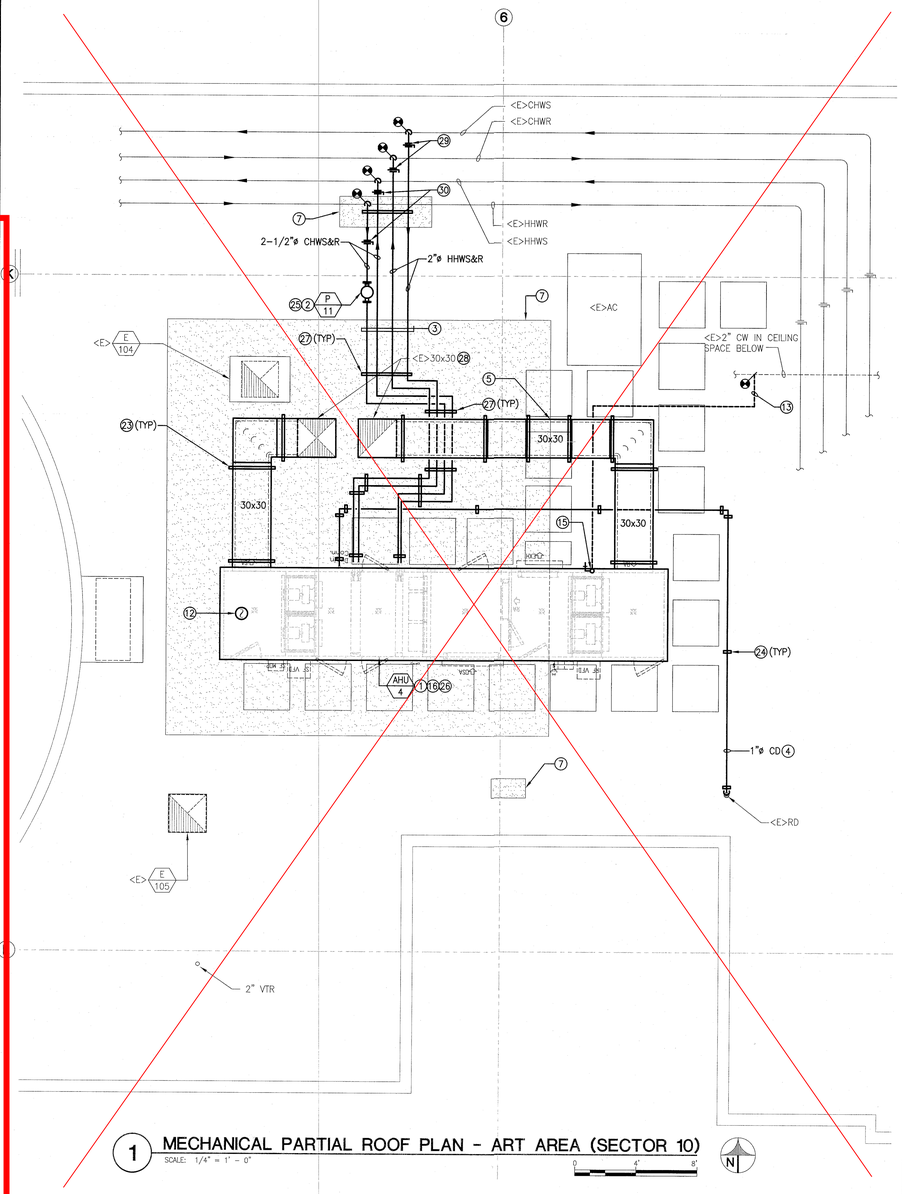
JOB No. 348-68
DATE 10-4-71
REVISIONS

SHEET M-21 OF SHEETS



2 MECHANICAL PARTIAL ROOF PLAN - COLLEGE COMPLEX (SECTOR 13)

SCALE: 1/4" = 1' - 0"



1 MECHANICAL PARTIAL ROOF PLAN - ART AREA (SECTOR 10)

SCALE: 1/4" = 1' - 0"

GENERAL SHEET NOTES

A. INSTALL NEW DUCTWORK. ALL OUTDOOR DUCTWORK SHALL BE SEALED/WEATHER TIGHT DOUBLE WALL DUCTWORK AND INSULATED WITH R-8 INSULATED PER T-24. CONSTRUCT PER SMACNA STANDARDS FOR 4" PRESSURE. FOR MORE INFORMATION SEE SPECIFICATIONS. ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL. SUPPORT NEW DUCTWORK PER THE DUCT SUPPORT DETAILS ON DETAIL SHEET.

B. CONDENSATE PIPING SHALL HAVE A SLOPE OF 1/4" PER FOOT.

C. PROVIDE AND INSTALL WALK PADS. SEE MS-1.1 FOR LOCATIONS.

D. VERIFY CHW AND HHW FLOWS PRIOR TO FINAL CONNECTIONS.

E. VERIFY ALL EXISTING CHW AND HHW PIPE SIZES. PROVIDE AND INSTALL ALL NECESSARY PIPE FITTINGS INCLUDING BUT NOT LIMITED TO TEE'S, 90° ELBOWS, 45° ELBOW'S, REDUCERS, ETC.

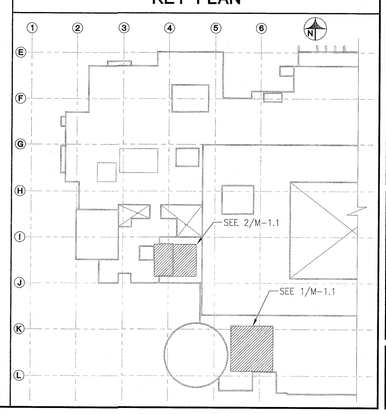
F. FOR ALL OTHER DETAILS NOT REFERENCED ON THIS SHEET, SEE DETAIL SHEETS.

G. ALL DUCTS TO GO THRU EXISTING PENETRATIONS. NOTIFY ARCHITECT IF NEW PENETRATIONS ARE REQUIRED.

REFERENCE SHEET NOTES

1. PROVIDE AND INSTALL AIR HANDLER PER SCHEDULE. SEE SHEET M-6.1.
2. PROVIDE AND INSTALL CHILLED WATER BOOSTER PUMP PER SCHEDULE, SEE SHEET M-6.1. FOR COLLEGE COMPLEX PUMP PIPE SUPPORT SEE DETAIL 3/M-5.2. FOR ART'S AREA PUMP SUPPORT SEE DETAIL 4/M5.1.
3. PROVIDE AND INSTALL CHILLED WATER AND HEATING HOT WATER PIPING.
4. PROVIDE AND INSTALL CONDENSATE PIPING.
5. PROVIDE AND INSTALL DUCT UNDERPASS. SEE DETAIL 1/M-5.2.
6. PROVIDE AND INSTALL REHEAT COIL PER SCHEDULE. SEE SHEET M-6.1.
7. PROVIDE AND INSTALL ROOFING SYSTEM. NOT IN CONTRACT.
8. PROVIDE AND INSTALL PNEUMATIC 3-WAY CONTROL VALVE. PROVIDE AND INSTALL PNEUMATIC LINES, EXTEND LINES TO NEW LOCATION.
9. PROVIDE AND INSTALL 3"ø ISOLATION BUTTERFLY VALVE.
10. PROVIDE AND INSTALL 4"ø ISOLATION BUTTERFLY VALVE.
11. 2-1/2"ø HHWS&R DN TO THIRD FLOOR.
12. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL PLENUM SMOKE DETECTOR. SEE ELECTRICAL DRAWINGS.
13. TAP INTO <E>CW MAIN BRANCH (MIN. 3/4" LINE) ABOVE CEILING SPACE BELOW ROOF. CONTRACTOR TO LOCATE PIPE BEFORE STARTING WORK. SEE DETAIL 10/M-5.2.
14. 3/4" CW UP THRU ROOF AT AHU-8 TO NEW HOSE BIBB. SEE DETAIL 11/M-5.2.
15. 3/4" CW UP THRU ROOF AT AHU-4 TO NEW HOSE BIBB. SEE DETAIL 11/M-5.2.
16. PROVIDE AND INSTALL CONTROLS PER THE CONTROLS POINTS LIST AND SEQUENCE OF OPERATION.
17. SEE PIPE SUPPORT DETAIL 3/M-5.2.
18. SEE DUCT SUPPORT DETAIL 1/M-5.3.
19. SEE DUCT SUPPORT DETAIL 6/M-5.2.
20. SEE DUCT SUPPORT DETAIL 5/M-5.2.
21. SEE PIPE SUPPORT DETAIL 8/M-5.2.
22. SEE VFD MOUNTING SUPPORT DETAIL 9/M-5.2.
23. SEE DUCT SUPPORT DETAIL 2/M-5.1.
24. SEE CONDENSATE DRAIN DETAIL 1/M-5.1.
25. SEE PUMP MOUNT DETAIL 4/M-5.1.
26. SEE AHU ROOF CURB DETAIL 6/M-5.1
27. SEE PIPE SUPPORT DETAIL 8/M5.1.
28. SEE DUCT PENETRATION WITH ROOF CURB DETAIL 9/M-5.1.
29. PROVIDE AND INSTALL 2"ø ISOLATION BUTTERFLY VALVE.
30. PROVIDE AND INSTALL 2-1/2"ø ISOLATION BUTTERFLY VALVE.
31. FOR BIDDING PURPOSES ASSUME TIE IN 50 FEET AWAY.

KEY PLAN



SALASO'BRIEN
| expect a difference |
305 South 11th Street
San Jose, California 95112-2218
408.282.1500 | 408.297.2995 (f)
salasobrien.com
Bozeman | Los Angeles | Monterey
Oakland | Orange County | Sacramento
San Diego | San Luis Obispo | Seattle

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATORY SERVICES
FILE 7-C1
APPL 01-114479
AC ___ FLS 02 SS 13 D
DATE FEB 2 6 2015

REGISTERED PROFESSIONAL ENGINEER
LEWIS N. NORRIS LOCKLIN
No. M34628
MECHANICAL
STATE OF CALIFORNIA

CONTRA COSTA COMMUNITY COLLEGE DISTRICT

LOS MEDANOS COLLEGE
LOS MEDANOS
2700 E. LELAND ROAD
PITTSBURG, CA 94565

AIR HANDING UNIT REPLACEMENT

ISSUE		
MARK	DATE	DESCRIPTION
	04/23/14	SCHEMATIC DESIGN
	10/23/14	DSA SUBMITTAL
	02/13/15	DSA RESUBMITTAL

SOBE PROJECT NO:	140094
DATE:	
XREF FILE(S):	X140094BORD-30x42
XREF	
CAD FILE:	140094M-1.1
DRAWN BY:	MG
CHECKED BY:	BN
APPROVED BY:	LL

SHEET TITLE
MECHANICAL
PARTIAL ROOF PLAN - NEW

SCALE:
THIS DRAWING IS 30" X 42" AT FULL SIZE

M-1.1
SHEET 7 OF 19

THIS DRAWING IS 30" X 42" AT FULL SIZE. 15" X 21" AT HALF SIZE. © 2008 BY SALAS O'BRIEN ENGINEERS, INC.

CONTROLS

DDC POINTS LIST

Point I.D.	Control Device	Control Description	Control Device Location	AI	AO	DI	DO	NOTES
DAMPERS/OA/HWR/CHW								
AHU EA DAMPER	DAMPER ACTUATOR	AHU EXHAUST AIR DAMPER CONTROL	ROOF		3			B
AHU RA DAMPER	DAMPER ACTUATOR	AHU RETURN AIR DAMPER CONTROL	ROOF		3			B
AHU OA DAMPER	DAMPER ACTUATOR	AHU OUTSIDE AIR DAMPER CONTROL	ROOF		3			B
AHU CHWR VALVE	VALVE ACTUATOR	AHU CHILLED WATER VALVE CONTROL	ROOF		3			B
AHU HWR VALVE	VALVE ACTUATOR	AHU HOT WATER VALVE CONTROL	ROOF		3			B
AHU RH VALVE	VALVE ACTUATOR	AHU REHEAT WATER VALVE CONTROL	ROOF		1			K
AHU OA AF	AIR FLOW SENSOR	AHU OUTSIDE AIR FLOW	ROOF	3				B
RETURN AIR								
AHU RF CT	CURRENT TRANSDUCER	AHU RETURN FAN MOTOR CURRENT TRANSDUCER	ROOF	12				D, F, H
AHU RF VFD FAULT	VFD	AHU RETURN FAN VFD FAULT	ROOF	3				B, J
AHU RF VFD S/S	RELAY	AHU RETURN FAN VFD START STOP	ROOF				3	B, J
AHU RF VFD SPD FB	VFD	AHU RETURN FAN VFD SPEED FEEDBACK	ROOF	3				B, J
AHU RF VFD SPD	VFD	AHU RETURN FAN VFD SPEED CONTROL	ROOF		3			B, J
AHU RA AF	AIR FLOW SENSOR	AHU RETURN AIR FLOW	ROOF	3				B
AHU RA TEMP	TEMP SENSOR	AHU RETURN AIR TEMPERATURE	ROOF	3				B
SUPPLY AIR								
AHU SF CT	CURRENT TRANSDUCER	AHU SUPPLY FAN MOTOR CURRENT TRANSDUCER	ROOF	12				C, E, G
AHU SF VFD FAULT	VFD	AHU SUPPLY FAN VFD FAULT	ROOF	3				B, J
AHU SF VFD S/S	RELAY	AHU SUPPLY FAN VFD START STOP	ROOF				3	B, J
AHU SF VFD SPD FB	VFD	AHU SUPPLY FAN VFD SPEED FEEDBACK	ROOF	3				B, J
AHU SF VFD SPD	VFD	AHU SUPPLY FAN VFD SPEED CONTROL	ROOF		3			B, J
AHU SA AF	AIR FLOW SENSOR	AHU SUPPLY AIR FLOW	ROOF	3				B
AHU SA TEMP	TEMP SENSOR	AHU SUPPLY AIR TEMPERATURE	ROOF	3				B
MISCELLANEOUS								
AHU MA TEMP	TEMP SENSOR	AHU MIXED AIR TEMPERATURE	ROOF	3				B
AHU-X SMOKE ALARM	SMOKE DETECTOR	AHU MOUNTED SMOKE DETECTOR	ROOF			3		B
AHU-X SA FIRE	SMOKE DETECTOR	AHU MOUNTED SMOKE DETECTOR AUX.	ROOF			3		B
AHU-X FILTER STATUS	DIFF PRESS TRANSDUCER	AHU FILTER STATUS	ROOF	3				B
AHU-X DUCT STATIC PRESSURE	DUCT PRESSURE TRANSDUCER	DUCT PRESSURE SENSOR	DUCT	3				I
AHU-X OA TEMP	TEMP SENSOR	BLDG OUTSIDE AIR TEMP SENSOR	ROOF	1				A
PUMPS								
CHWP STS	CURRENT TRANSDUCER	CHILLED WATER BOOSTER PUMP STATUS	ROOF	3				B
CHWP S/S	RELAY	CHILLED WATER BOOSTER PUMP START/STOP	ROOF				3	B
			TOTAL	64	22	6	9	
				101				

NOTES:

A) PROVIDE AND INSTALL ON EXTERIOR OF AHU-8 WITH WEATHER SHIELD OUT OF DIRECT SUNLIGHT.
B) TYPICAL 1 ON EACH AHU (AHU 4, 8 & 9).
C) TYPICAL 2 ON AHU-4 SUPPLY FAN.
D) TYPICAL 2 ON AHU-4 RETURN FAN.
E) TYPICAL 4 ON AHU-8 SUPPLY FAN.
F) TYPICAL 4 ON AHU-8 RETURN FAN.
G) TYPICAL 6 ON AHU-9 SUPPLY FAN.
H) TYPICAL 6 ON AHU-9 RETURN FAN.
I) PROVIDE AND INSTALL PRESSURE TRANSDUCER 2/3 DOWN THE MOST REMOTE DUCT.
J) HARDWIRE POINT
K) PROVIDE AND INSTALL OVLEY ON AHU 8 RH VALVE

CONTROL VALVE SCHEDULE

MARK	AHU	SERVICE	PIPE SIZE	TYPE	GPM	CV	POSITION	BODY SIZE	VALVE TYPE	MAKE/MODEL
CV-4C	AHU-4	CHW	2.5"	3-WAY	47.3	27.3	LAST	2"	BALL	BELIMO B340L-ARX24-MFT
CV-8C	AHU-8	CHW	4"	3-WAY	132.5	76.5	LAST	3"	GLOBE	BELIMO G780S+RVX24-MFT
CV-9C	AHU-9	CHW	5"	3-WAY	181.1	104.6	LAST	3"	GLOBE	BELIMO G780S+-250+RVX24-MFT
CV-4H	AHU-4	HHW	2"	3-WAY	25.2	14.5	LAST	2"	BALL	BELIMO B320L+LRX24-MFT
CV-8H	AHU-8	HHW	3"	3-WAY	65.8	38.0	LAST	2"	BALL	BELIMO B332L+NRX24-MFT
CV-9H	AHU-9	HHW	4"	3-WAY	126.4	73.0	LAST	3"	GLOBE	BELIMO G780S+RVX24-MFT
CV-RH1832	AHU-8	HHW	1-1/4"	3-WAY	9.2	5.3	LAST	1"	GLOBE	BELIMO G325+NFX24-MFT-X1

NOTES:
1) PROVIDE AND INSTALL ACTUATOR IN WEATHERPROOF BOX.

SEQUENCE OF OPERATIONS

AIR HANDLING UNIT AHU-4, 8 &9

BASED ON TIME OF DAY SCHEDULE (TODS), THE FAN SPEED SHALL BE CONTROLLED TO MAINTAIN THE STATIC PRESSURE SETPOINT. THE STATIC PRESSURE SHALL RESET BASED ON MAINTAINING MOST OPEN BOX AT 90%

SUPPLY AIR TEMPERATURE SHALL BE CONTROLLED THRU MODULATION OF ECONOMIZER DAMPERS AND COOLING COIL OR PREHEAT COIL CONTROL VALVE TO MAINTAIN A FLOATING SETPOINT (ENDPOINTS ADJUSTABLE FROM GRAPHIC) AS FOLLOWS:

OUTSIDE AIR TEMPERATURE	SUPPLY AIR TEMPERATURE
35	70
90	55

THE RESET SCHEDULE SHALL BE AUTOMATICALLY OVERRIDEN DURING MORNING WARM-UP, OR NIGHT PURGE COOL DOWN. A NIGHT PURGE CYCLE SHALL BE INITIATED AFTER MIDNIGHT WHEN THE FOLLOWING DAY IS OCCUPIED WHENEVER OAT IS 10F LESS THAN INDOOR AIR TEMPERATURE. WARM-UP PERIOD SHALL BE SELF-TUNING FOR START-TIME. DURING WARM-UP, PRIOR TO OCUPANCY SCHEDULE, THE OUTSIDE AIR DAMPERS SHALL BE 100% CLOSED.

ECONOMIZER MODE: OUTSIDE, RETURN AND EXHAUST AIR DAMPER CONTROLS BASED ON MIXED AIR TEMPERATURE. OUTSIDE AIR SHALL BE USED FOR COOLING WHENEVER IT IS MORE THAN 2 DEGREES COOLER THAN THE RETURN AIR TEMPERATURE. WHEN THIS CONDITION IS MET, THE OUTSIDE, RETURN AND EXHAUST AIR DAMPERS SHALL MODULATE TO MAINTAIN THE MIXED AIR TEMPERATURE TO THE SUPPLY AIR TEMPERATURE SETPOINT. WHEN THIS CONDITION IS NOT MET (OA WARMER THAN RA) THE OA DAMPERS SHALL BE AT MINIMUM POSITION AND COOLING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN SETPOINT.

THE MINIMUM OUTSIDE AIR FOR AHU-4 SHALL BE 1200 CFM, AHU-8 SHALL BE 4650 CFM AND AHU-9 SHALL BE 4020 CFM. THE OUTSIDE AIR DAMPER WILL HAVE AN AIR FLOW SENSOR AND SHALL MODULATE TO THE CFM SETPOINTS MENTIONED ABOVE.

FAN SYSTEM SHALL SHUT DOWN WHEN ASSOCIATED DUCT DETECTOR IS ACTIVATED. COORDINATE W/ FIRE ALARM CONTRACTOR FOR FIRE ALARM ANNUNCIATION.

CHILLED WATER BOOSTER PUMP:
WHEN ON CALL FOR COOLING AND CHILLED WATER VALVE MODULATE OPEN, TURN PUMP ON AT A USER ADJUSTABLE DELAY TIME INITIALLY SET FOR ONE MINUTE. WHEN COOLING IS NO LONGER NEEDED, TURN PUMP OFF AND CLOSE CHILLED WATER VALVE AT A USER ADJUSTABLE DELAY TIME INITIALLY SET AT ONE MINUTE. CHILLED WATER BOOSTER PUMPS SHALL BE INTERLOCKED WITH CHILLER PUMPS, WHEN CHILLER PUMPS ARE ON THEN CHILLED WATER BOOSTER PUMPS CAN BE ENABLED WHEN ON CALL FOR COOLING AND WHEN CHILLER PUMPS ARE OFF THEN CHILLED WATER BOOSTER PUMPS ARE DISABLED.

COOLING COIL LOCKOUT:
COOLING SHALL BE LOCKED OUT WHEN OUTSIDE AIR TEMPERATURES ARE BELOW 65 (USER ADJUSTABLE).

HEATING COIL LOCKOUT:
HEATING SHALL BE LOCKED OUT WHEN OUTSIDE AIR TEMPERATURES ARE ABOVE 60 (USER ADJUSTABLE).

REHEAT CONTROL VALVE:
THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN HEATING SETPOINT.

AHU FILTER STATUS:

WHEN PRESSURE ACROSS THE FILTER DIFFERENTIAL PRESSURE SENSOR GOES BEYOND THE SETPOINT, AN ALARM SHALL BE LOGGED AND GENERATED.

TRENDING:

SET UP TRENDS FOR EACH POINT AS DIRECTED BY THE ENGINEER/DISTRICT.

ALARMS:

ALARMS SHALL BE LOGGED WHENEVER THE ACTUAL STATE DOES NOT MATCH COMMANDED STATE AFTER AN ADJUSTABLE TIME-DELAY PERIOD. CRITICAL ALARMS SHALL INITIATE A DIAL OUT PAGING OF LOS MEDANOS COLLEGE DESIGNATED PERSONNEL. COORDINATE WITH PERSONNEL FOR CRITICAL ALARMS. PROVIDE SUPPLY TEMP ALARMS WHEN TEMPERATURE IS 5F (USER ADJUSTABLE) GREATER THAN SETPOINT. PROVIDE LOW TEMP ALARMS WHEN TEMPERATURE IS 5F (USER ADJUSTABLE) LOWER THAN SETPOINT.

START-UP PROGRAMMING AND COMMISSION:

THE CONTROLS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SEQUENCES, SHALL TEST, TUNE, ADJUST AS REQUIRED FOR A FULLY FUNCTIONAL AIR HANDLING UNIT. CONTROLS CONTRACTOR SHALL COORDINATE WITH BALANCING CONTRACTOR FOR APPLICABLE FIELD DETERMINED SETPOINTS AND REQUIRED ADJUSTMENTS (SUCH AS STATIC PRESSURE CONTROL, OUTSIDE AIR DAMPER CONTROL AT VARYING SUPPLY AIR FAN SPEEDS, ETC.)

CONTROLLER LOCATION

PROVIDE AND INSTALL DDC CONTROLLER INSIDE AHU VFD PANEL. THERE WILL BE A DEDICATED SPACE FOR CONTROLLER.

SCHEDULES

PUMP SCHEDULE

SERVICE	MARK	GPM	TDH (FT.)	HP	RPM	MIN. PUMP EFF.	SIZE	VOLTS/PH. & HZ	OPER. WT.	NOTES
AHU-4 CHW	P-11	48	20	0.75	1750	43.0%	2x2x7	460/3/60	160	B&G SERIES 80
AHU-8 CHW	P-15	133	27	2	1750	65.2%	3x3x7B	460/3/60	180	B&G SERIES 80
AHU-9 CHW	P-16	182	27	2	1750	68.3%	3x3x7B	460/3/60	180	B&G SERIES 80

REHEAT COIL SCHEDULE

SERVICE	MARK	CFM	ENT DB	ENT WB	LVG DB	LVG WB	APD (IN.WG)	GPM	EWT	LWT	WPD (FT)	ROWS	FINS PER INCH	WIDTH (IN)	HEIGHT (IN)	WEIGHT (LBS)	TOTAL CAPACITY (BTUH)	REMARKS
AHU-8	RH-1832	2,400	55	–	90.9	–	0.35	9.2	160	140	0.30	2	10	49	21	100	94,282	DAIKIN MODEL 5WB1002C

AHU-4 AIR HANDLER SCHEDULE

MARK	AHU-4
AREA SERVED	SECTOR 10
MANUFACTURER	TEMTROL
QUOTE NUMBER	042414-01ZK
DIMENSIONS	72"X351"X64.5" (W X L X H)
EXTERIOR CABINET MATERIAL	16GA WITH STANDARD PAINT
INTERIOR CABINET MATERIAL	20GA G90 GALV
FANS	SUPPLY FAN: 1X2 ARRAY, 2 FANS, 5 HP AT 4 BHP EACH RETURN FANS: 1X2 ARRAY, 2 FANS, 2 HP AT 1.2 BHP EACH
CFM	SUPPLY FAN: 6560 @ 5.50" TOTAL SP RETURN FAN: 6560 @ 1.5" TOTAL SP
FAN MOTORS	TEAO
ACCESS DOORS	SEE DRAWINGS
PIPING CONECTIONS	SEE DRAWINGS
VOLTAGE/PHASE	460V/3 PHASE
CHILLED WATER COIL	QTY.1, 4 ROWS, 11 FPI, COPPER 0.006" FINS, 0.020" COPPER TUBE, 0.625" TUBE O.D., 1.5" X 1.299" TUBE SPACING, 16 GA 304 SS CASING AND DRAIN PAN, EADB 83.5F/EAWB 65.5F, LADB 53.8F/LAWB 52.8F, 47.3 GPM. TOTAL CAP. 237.3 MBH, 432.53 FPM FACE VELOCITY, EWT 45F
HOT WATER COIL	QTY. 1, 1 ROW, 8 FPI, COPPER 0.006" FINS, 0.020" COPPER TUBE, 0.625" TUBE O.D., 1.5" X 1.299" TUBE SPACING, 16 GA 304 SS CASING, EADB 35F, LADB 67.6F, 25.2 GPM. TOTAL CAP. 247.8 MBH, 432.53 FPM FACE VELOCITY, EWT 160F/LWT 140F, WPD 4.38 FT
SHIPPING METHOD	ONE SECTION
VFD	VFD BY ABB, SUPPLY FAN WILL HAVE (1) VFD AND RETURN FAN WILL HAVE (1) VFD
PRE/FINAL FILTER	FILTER RACK MATERIAL IS 304 STAINLESS STEEL, 2" MERV 8 PREFILTER, 12" MERV 13 FINAL FILTER
WEIGHT	9072 LBS W/ROOF CURB
OPTIONS	STANDARD MELAMINE COPLANAR INSULATION
	BACKDRAFT DAMPERS
	(1) LIGHT SWITCH/120V OUTLET WITH GFCI
	FAN SAFETY GUARDS
	MOTOR OVERLOAD PROTECTION WITH FAULT OUTPUT
	(6) VAPOR PROOF 23 W COMPACT FLR LIGHTS
	PRESSURE GAUGE: MAGNETHELIC 2003, SIGNAL FLAG, HINGED COVER

AHU-8 AIR HANDLER SCHEDULE

MARK	AHU-8
AREA SERVED	SECTOR 5, SECTOR 13
MANUFACTURER	TEMTROL
QUOTE NUMBER	042414-01ZK
DIMENSIONS	96"X291"X121.50" (W X L X H)
EXTERIOR CABINET MATERIAL	16GA WITH STANDARD PAINT
INTERIOR CABINET MATERIAL	20GA G90 GALV
FANS	SUPPLY FAN: 2X2 ARRAY, 4 FANS, 6.5 HP AT 5.9 BHP EACH RETURN FANS: 2X2 ARRAY, 4 FANS, 5 HP AT 1.9 BHP EACH
CFM	SUPPLY FAN: 17520 @ 6.06" TOTAL SP RETURN FAN: 17520 @ 1.55" TOTAL SP
FAN MOTORS	TEAO
ACCESS DOORS	SEE DRAWINGS
PIPING CONECTIONS	SEE DRAWINGS
VOLTAGE/PHASE	460V/3 PHASE
CHILLED WATER COIL	QTY.2, 6 ROWS, 9 FPI, COPPER 0.006" FINS, 0.020" COPPER TUBE, 0.625" TUBE O.D., 1.5" X 1.299" TUBE SPACING, 16 GA 304 SS CASING AND DRAIN PAN, EADB 81F/EAWB 64.9F, LADB 51.9F/LAWB 51.4F, 132.5GPM. TOTAL CAP. 665.0 MBH, 438.00 FPM FACE VELOCITY, EWT 45F/LW
HOT WATER COIL	QTY.2, 1 ROW, 8 FPI, COPPER 0.006" FINS, 0.020" COPPER TUBE, 0.625" TUBE O.D., 1.5" X 1.299" TUBE SPACING, 16 GA 304 SS CASING, EADB 35F, LADB 66.7F, 65.8 GPM. TOTAL CAP. 645.4 MBH, 438.00 FPM FACE VELOCITY, EWT 160F/LWT 5140F, WPD 3.74 FT
SHIPPING METHOD	ONE SECTION
VFD	VFD BY ABB, SUPPLY FAN WILL HAVE (1) VFD AND RETURN FAN WILL HAVE (1) VFD
PRE/FINAL FILTER	FILTER RACK MATERIAL IS 304 STAINLESS STEEL, 2" MERV 8 PREFILTER, 12" MERV 13 FINAL FILTER
WEIGHT	16947 LBS W/ROOF CURB
OPTIONS	STANDARD MELAMINE COPLANAR INSULATION
	BACKDRAFT DAMPERS
	(1) LIGHT SWITCH/120V OUTLET WITH WEATHERPROOF COVER
	FAN SAFETY GUARDS
	MOTOR OVERLOAD PROTECTION WITH FAULT OUTPUT
	(3) VAPOR PROOF 23 W COMPACT FLR LIGHTS
	(3) VAPOR PROOF 100W INC BULB LIGHTS
	PRESSURE GAUGE: MAGNETHELIC 2003, SIGNAL FLAG, HINGED COVER
NOTE	ELECTRICAL PANEL RF: RED VFD AND SF RED VFD WILL BE FIELD MOUNTED & WIRED. SEE ELECTRICAL DRAWINGS.

AHU-9 AIR HANDLER SCHEDULE

MARK	AHU-9
AREA SERVED	SECTOR 14
MANUFACTURER	TEMTROL
QUOTE NUMBER	042414-01ZK
DIMENSIONS	104.00"X360"X109.50" (W X L X H)
EXTERIOR CABINET MATERIAL	16GA WITH STANDARD PAINT
INTERIOR CABINET MATERIAL	20GA G90 GALV
FANS	SUPPLY FAN: 2X3 ARRAY, 6 FANS, 6.5 HP AT 5.7 BHP EACH RETURN FANS: 3X2 ARRAY, 6 FANS, 2.5 HP AT 1.6 BHP EACH
CFM	SUPPLY FAN: 25070 @ 6.00" TOTAL SP RETURN FAN: 25070 @ 1.50" TOTAL SP
FAN MOTORS	TEAO
ACCESS DOORS	SEE DRAWINGS
PIPING CONECTIONS	SEE DRAWINGS
VOLTAGE/PHASE	460V/3 PHASE
CHILLED WATER COIL	QTY.2, 6 ROWS, 8 FPI, COPPER 0.006" FINS, 0.020" COPPER TUBE, 0.625" TUBE O.D., 1.5" X 1.299" TUBE SPACING, 16 GA 304 SS CASING AND DRAIN PAN, EADB 81F/EAWB 64.8F, LADB 52.8F/LAWB 52.0F, 181.1GPM. TOTAL CAP. 908.7 MBH, 455.82 FPM FACE VELOCITY, EWT 45F/LW
HOT WATER COIL	QTY. 2, 2 ROWS, 6 FPI, COPPER 0.006" FINS, 0.020" COPPER TUBE, 0.625" TUBE O.D., 1.5" X 1.299" TUBE SPACING, 16 GA 304 SS CASING, EADB 35F, LADB 77.7F, 126.4 GPM. TOTAL CAP. 1241.5 MBH, 488.38 FPM FACE VELOCITY, EWT 160F/LWT 140F, WPD 4.31 FT
SHIPPING METHOD	ONE SECTION
VFD	VFD BY ABB, SUPPLY FAN WILL HAVE (1) VFD AND RETURN FAN WILL HAVE (1) VFD
PRE/FINAL FILTER	FILTER RACK MATERIAL IS 304 STAINLESS STEEL, 2" MERV 8 PREFILTER, 12" MERV 13 FINAL FILTER
WEIGHT	20683 LBS W/ROOF CURB
OPTIONS	STANDARD MELAMINE COPLANAR INSULATION
	BACKDRAFT DAMPERS
	(1) LIGHT SWITCH/120V OUTLET WITH GFCI WITH WEATHERPROOF COVER
	FAN SAFETY GUARDS
	MOTOR OVERLOAD PROTECTION WITH FAULT OUTPUT
	(6) VAPOR PROOF 23 W COMPACT FLR LIGHTS
	PRESSURE GAUGE: MAGNETHELIC 2003, SIGNAL FLAG, HINGED COVER

NOTE:
ALL AHU TO BE FABRICATED FROM OSHPD CERTIFICATION #OSP-0079-10

SALASO'BRIEN
| expect a difference |
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Bozeman | Los Angeles | Monterey
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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATORY SERVICES
FILE 7-C1
APPL 01-114479
AC FLS
DATE FEB 26 2015

REGISTERED PROFESSIONAL ENGINEER
No. M34828
MECHANICAL
STATE OF CALIFORNIA

CONTRA COSTA COMMUNITY COLLEGE DISTRICT

LOS MEDANOS COLLEGE
LOS MEDANOS
2700 E. LELAND ROAD
PITTSBURG, CA 94565

AIR HANDING UNIT REPLACEMENT

ISSUE MARK	DATE	DESCRIPTION
	04/23/14	SCHEMATIC DESIGN
	10/23/14	DSA SUBMITTAL
	02/13/15	DSA RESUBMITTAL

SOBE PROJECT NO:	140094
DATE:	
XREF FILE(S):	X140094BORD-30x42
XREF	
CAD FILE:	140094M-6.1
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

SHEET TITLE
MECHANICAL CONTROLS AND SCHEDULES

SCALE:
THIS DRAWING IS 30" X 42" AT FULL SIZE

M-6.1
SHEET 13 OF 19

THIS DRAWING IS 30" X 42" AT FULL SIZE, 15" X 21" AT HALF SIZE, @ 2008 BY SALAS O'BRIEN ENGINEERS, INC.

QC	
NI	%

AIR HANDLER SCHEDULE

UNIT	SERVES	"TEMTROL" MODEL	LOCATED	SUPPLY FAN CFM	SUPPLY FAN TSP/ESP IN.WG.	SUPPLY FAN HP	RETURN CFM CFM	RETURN CFM TSP/ESP IN.WG.	RETURN CFM HP	CHILLED WATER COIL ROWS	FPI	EDB °F	EWB °F	LDB °F	SENS. LOAD (MBH)	TOTAL LOAD (MBH)	GPM	EWT °F	LWT °F	AIR ΔP IN.WG.	WATER ΔP FT.HEAD	TCV TYPE	TCV CV	HOT WATER COIL ROWS	FPI	EDB °F	LOAD (MBH)	GPM	EWT °F	LWT °F	AIR ΔP IN.WC.	WATER ΔP FT.HEAD	TCV TYPE	TCV CV	MIN. OA CFM	UNIT WT. LBS.	REMARKS
(E) AHU 5A.1	(E) SECTOR 5A	"TEMTROL" WF-RDHRE14	OUTDOOR	6,650	4.5 / 2.0	2@ 5 HP	5,850	1.75 / 1.45	3	4	12	85	64	51	227	236	49	45	55	0.29	4.97	3-WAY	–	1	7	54	208	20	160	140	0.03	2.92	3-WAY	–	2,660	6,850	1, 2,
(E) AHU 6.1	(E) SECTOR 6 (ALSO SECTOR 3 OUT OF SCOPE)	"TEMTROL" ITF-RDHRE22	OUTDOOR	–	– / –	15	–	– / –	7.5	6	10	84	66	52	366	457	91	45	55	0.77	12.4	2-WAY	–	1	6	56	202	10	160	120	0.06	3.95	2-WAY	–	2,500	9,720	3, 5
(E) AHU 5	(E) SECTOR 5B (ALSO SECTOR 13 OUT OF SCOPE)	"TEMTROL"	OUTDOOR	–	– / –	4@ 6.5 HP	–	– / –	4@ 5 HP	–	–	–	–	–	–	–	132	–	–	–	–	3-WAY	27.3	1	8	35	645	66	–	–	–	–	3-WAY	38	5,000	16,950	4, 5

NOTES:

1. BALANCE AIR HANDLING UNIT SUPPLY AIR TO VALUE INDICATED.
2. EXISTING OUTSIDE AIR FLOW SETPOINT OF 2660 CFM IS OK AS IS. VERIFY DURING AIR BALANCE.
3. MAINTAIN THE SAME SUPPLY & RETURN AIRFLOW TO SECTOR 3 (FIRST FLOOR) WHICH IS OUTSIDE THE SCOPE OF WORK. BALANCE SECTOR 6 SUPPLY & RETURN AIRFLOW TO WHAT IS SHOWN ON FLOOR PLAN.
4. MAINTAIN THE SAME SUPPLY & RETURN AIRFLOW TO SECTOR 13 (THIRD FLOOR) WHICH IS OUTSIDE THE SCOPE OF WORK. BALANCE SECTOR 5B SUPPLY & RETURN AIRFLOW TO WHAT IS SHOWN ON FLOOR PLAN.
5. BALANCE AIR HANDLING UNIT OUTSIDE AIR TO VALUE INDICATED. THE CALCULATED OA VALUE INDICATED INCORPORATES ALL AREAS SERVED BY THIS AHU INCLUDING THOSE SPACES OUTSIDE THE SCOPE OF WORK.

SPLIT SYSTEM AC UNIT SCHEDULE

UNIT	LOCATION	"MITSUBISHI" MODEL NO. (INDOOR UNIT)	CFM	MCA	FLA	VOLT/PH	OPER. WT. (LBS.)	MOUNTING DETAIL	UNIT	"MITSUBISHI" MODEL NO. (OUTDOOR UNIT)	TOTAL COOLING CAPACITY (MBH)	REFRIGERANT LINE SIZE	COMPRESSOR RLA	COMPRESSOR LRA	MCA	FAN FLA	VOLT/PH	SEER	OPER. WT. (LBS.)	MOUNTING DETAIL	CONTROL DIAGRAM	NOTES
SAC 5A.1	SECTOR 5A 241 DATA	MS-A12WA	425	1.2	0.95	120/1	30	6 / M5.1	SCU 5A.1	MU-A12WA	12	1/4" RL 1/2" RS	10.82	56	16	0.93	120/1	13.0	100	7 / M5.1	– / M6.1	1, 2, 3

NOTES:
1. PROVIDE WITH 1" FILTERS.
2. INSTALL REFRIGERANT PIPING PER MFR INSTALLATION INSTRUCTIONS.
3. PROVIDE FACTORY CONDENSATE PUMP.

DIFFUSER, REGISTER & GRILLE SCHEDULE

SYMBOL	DESCRIPTION	TITUS	PRICE	METALAIR	KRUEGER
CD	MODULAR CORE SURFACE MOUNT PERFORATED CEILING DIFFUSER FLAT FRAME	PMC – BORDER TYPE 1C	PDMC-FRAME1	7950-1	6400 FRAME 22
CR, CE	CEILING RETURN WITH 1/2"x1/2"x1" EGG CRATE CORE, SURFACE MOUNT	MODEL 50 F – BORDER TYPE 1	80	CC5D	EGC-5
CRL, CEL	CEILING RETURN WITH 1/2"x1/2"x1" EGG CRATE CORE, IN 24x24 PANEL FOR T-BAR CEILING	MODEL 50 F – BORDER TYPE 3	80 – TBP	CC5D-TBD	EGC-5TB
S S	DOUBLE DEFLECTION SUPPLY GRILLE WITH VERTICAL FRONT BARS, 3/4" SPACING	300 RS	520 S	V 4004 S	880 V
R & E *	RETURN OR EXHAUST GRILLE WITH 35° OR 45° HORIZONTAL BARS.	350 RL	530L	SRH	S 80 H

NOTES:
1. ALL SYMBOLS NOTED MAY NOT BE USED. REFER TO PLANS FOR SIZE AND QUANTITY.
2. ALL SUPPLY AIR DIFFUSERS ARE 4 WAY BLOW UNLESS SHOWN OTHERWISE.
3. FURNISH ALL PRODUCTS OF A SINGLE MANUFACTURER.
4. COORDINATE DIFFUSER TYPE WITH REFLECTED CEILING PLAN.
5. OPPOSED BLADE DAMPERS ARE NOT REQUIRED AT DIFFUSERS, REGISTERS OR GRILLES.
6. PROVIDE MANUAL AIR DAMPERS AT EACH BRANCH DUCT TO A SINGLE DIFFUSER, REGISTER OR GRILLE.
7. FOR MOUNTING SEE 5/M5.1.

TERMINAL UNIT SCHEDULE

UNIT	AREA SERVED	"TITUS" ESV SERIES	MAX CFM	MIN CFM	DISCHARGE CONN SIZE	TOTAL AIR PRESSURE DROP	NC DISCHARGE	NC RADIATED	2-ROW REHEAT COIL MBH	2-ROW REHEAT COIL GPM	2-ROW REHEAT COIL PD (FT H_2O)	VALVE
VAV 5A.1	SECTOR 5A	16	2000	750	24x18	0.35	< 20	22	32	2.0	0.3	2-WAY
VAV 5A.2	SECTOR 5A	10	800	800	14x13	0.35	21	27	35	2.0	0.3	2-WAY
VAV 5A.3	SECTOR 5A	6	300	150	12x8	0.34	20	23	6	0.5	0.1	2-WAY
VAV 5A.4	SECTOR 5A	4	150	75	12x8	0.26	25	27	3	0.5	0.1	2-WAY
VAV 5A.5	SECTOR 5A	4	150	75	12x8	0.26	25	27	3	0.5	0.1	2-WAY
VAV 5A.6	SECTOR 5A	16	2000	750	24x18	0.35	< 20	22	32	2.0	0.3	2-WAY
VAV 5A.7	SECTOR 5A	4	150	75	12x8	0.26	25	27	3	0.5	0.1	2-WAY
VAV 5A.8	SECTOR 5A	6	300	150	12x8	0.34	20	23	6	0.5	0.1	2-WAY
VAV 5A.9	SECTOR 5A	10	800	650	14x13	0.35	21	27	28	1.5	0.5	3-WAY
VAV 5B.1	SECTOR 5B	10	1000	720	14x13	0.55	23	28	31	2.0	0.3	2-WAY
VAV 5B.2	SECTOR 5B	10	800	800	14x13	0.35	21	27	35	2.0	0.3	2-WAY
VAV 5B.3	SECTOR 5B	5	200	100	12x8	0.55	< 20	< 20	4	0.5	0.1	2-WAY
VAV 5B.4	SECTOR 5B	6	300	150	12x8	0.34	20	23	6	0.5	0.1	2-WAY
VAV 5B.5	SECTOR 5B	10	1000	660	14x13	0.55	23	28	28	1.5	0.5	2-WAY
VAV 5B.6	SECTOR 5B	6	300	150	12x8	0.34	20	23	6	0.5	0.1	2-WAY
VAV 5B.7	SECTOR 5B	10	1000	675	14x13	0.55	23	28	29	1.5	0.5	2-WAY
VAV 5B.8	SECTOR 5B	6	300	150	12x8	0.34	20	23	6	0.5	0.1	2-WAY
VAV 5B.9	SECTOR 5B	10	1000	675	14x13	0.55	23	28	29	1.5	0.5	3-WAY
VAV 6.1	SECTOR 6	8	600	450	12x10	0.45	25	25	19	1.0	0.3	2-WAY
VAV 6.2	SECTOR 6	8	600	375	12x10	0.45	25	25	16	1.0	0.3	2-WAY

NOTES:

PROVIDE BOX W/DAMPER AND LINKAGE AND AVERAGING VELOCITY SENSOR. FOR CONTROLS SEE SHEET M6.1. HW ΔT = 40°F , 180°F EWT , 140°F LWT, FOR BOX MOUNTING SEE 4/M5.1. FOR HW COIL PIPING SEE 1/M5.1 & 2/M5.1. TERMINAL UNITS HAVE BEEN SELECTED WITH 1.0" INLET STATIC PRESSURE FOR NOISE CRITERIA DATA.

PROVIDE 3-WAY TEMPERATURE CONTROL VALVES AS NOTED ON SCHEDULE AT END OF RUNS AND DISTANT BOXES, 2-WAY VALVES ALL OTHER TERMINAL BOX COILS. VAV REHEAT COIL MBH's CALCULATED AT MINIMUM CFM. ALL CAV AND VAV COILS SHALL BE 2 ROWS, 8 FPI MINIMUM

WEIGHTS:

SIZE 6 = 70 LBS SIZE 8 = 75 LBS SIZE 12 = 105 LBS SIZE 16 = 145 LBS
SIZE 7 = 75 LBS SIZE 10 = 90 LBS SIZE 14 = 120 LBS

AS-BUILT

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planning
interiors
management

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1777 Oakland Avenue, Suite 320
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REGISTERED PROFESSIONAL ENGINEER THOMAS ALAN DEAL No. 22830 Exp. 9/30/2016 MECHANICAL STATE OF CALIFORNIA

DATE SIGNED: 07/15/2016

CAPITAL ENGINEERING CONSULTANTS, INC.
RANCHO CORDOVA, CALIFORNIA
TD – MN/MJR PM - DESIGN TEAM
150225.00 PROJECT NO.
consultant

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATORY SERVICES
FILE # 7-C1
APPL # 01-115396
AC DATE 3-7-2016

Division of the State Architect
1515 Clay Street, Suite 1201
Oakland, Ca. 94612
ph: (510) 622-3101
agency

LEVEL 2 REMODEL
SECTORS 5A, 5B & 6
COLLEGE COMPLEX

LOS MEDANOS COLLEGE
2700 EAST LELAND DRIVE
PITTSBURG, CA 94565

owner

tBP project number : 20842.00
file name:
drawn by: checked by:
date: MAY 16, 2016

Rev:	date:	description:
	12/15/15	DSA SUBMITTAL
	5/16/16	DSA
	7/1/16	BID SET
	12/09/16	Revised Bid Set

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M0.2
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