

1 AIR RISER DIAGRAM
NO SCALE



architecture planning interiors

Bunton Clifford Associates, Inc. 210 Hammond Ave. Fremont, California 94539 [T] 510.445.1000 [F] 510.445.1005 www.BCAincOnline.com

PROJECT 2007-0731 CONTACT Omar Hawit	
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717 Market Street Suite 500 San Francisco, CA 94103 TEL 415.489.7240 FAX 415.489.7289 www.interfaceengineering.co	m
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### BUILDINGS 5 & 6 RENOVATIONS

San Mateo County Community College District

**BID ADDENDA** 

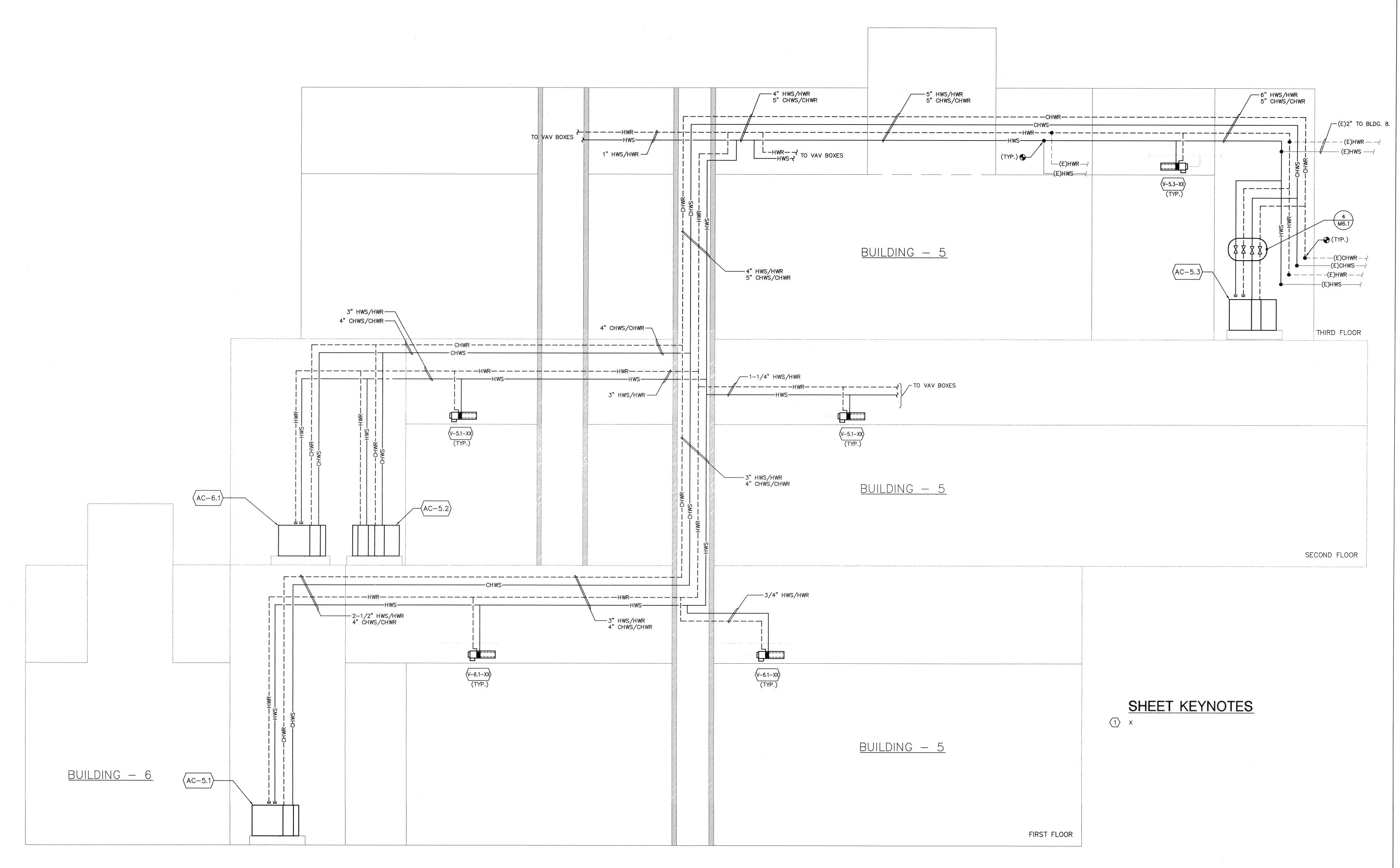
### CAÑADA COLLEGE

4200 Farm Hill Boulevard Redwood City, CA 94061

MECHANICAL DUCTWORK DIAGRAMS

Date Drawing Num
D8/29/08

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1 PIPING RISER DIAGRAM
NO SCALE



architecture planning interiors

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www.interfaceengineering.co	ENGINEER
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### BUILDINGS 5 & 6 RENOVATIONS

San Mateo County Community College District

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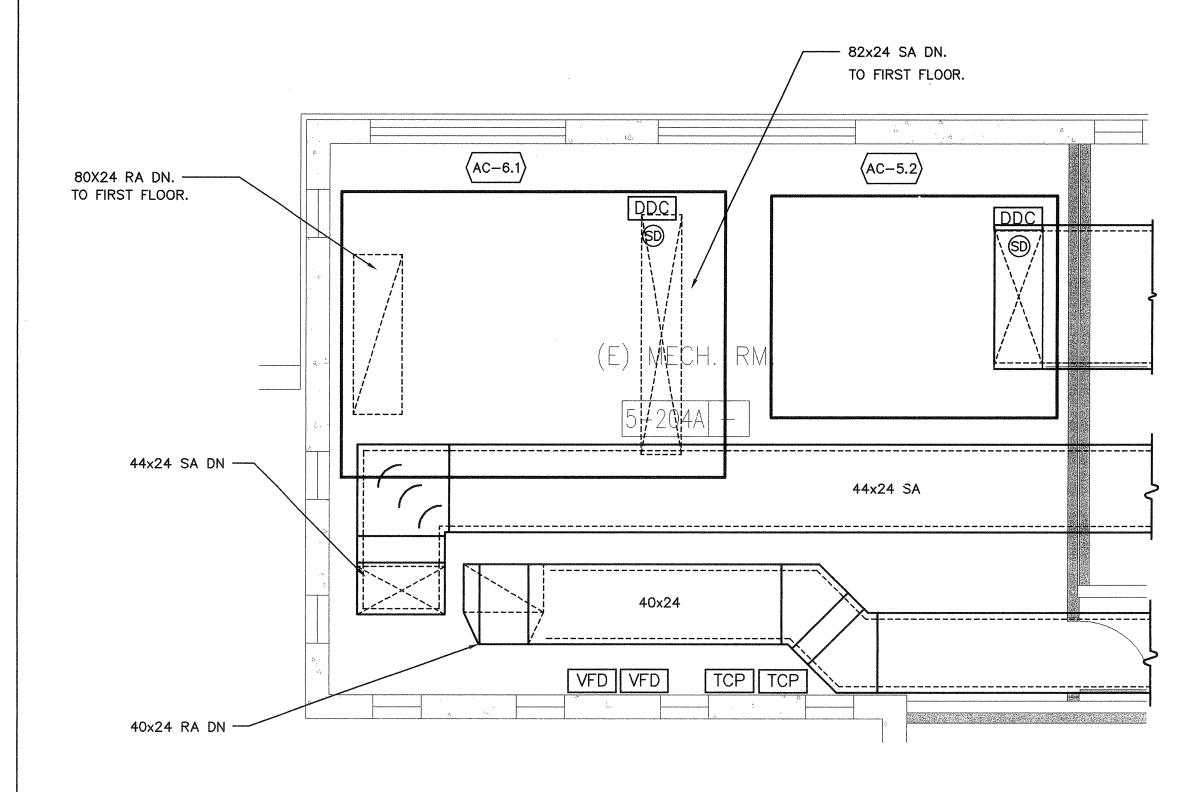
### CAÑADA COLLEGE 4200 Farm Hill Boulevard

4200 Farm Hill Boulevard Redwood City, CA 94061

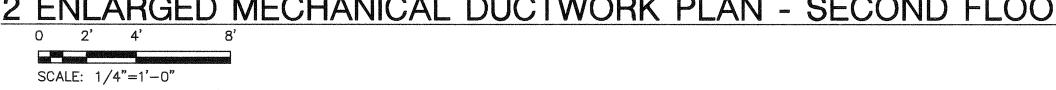
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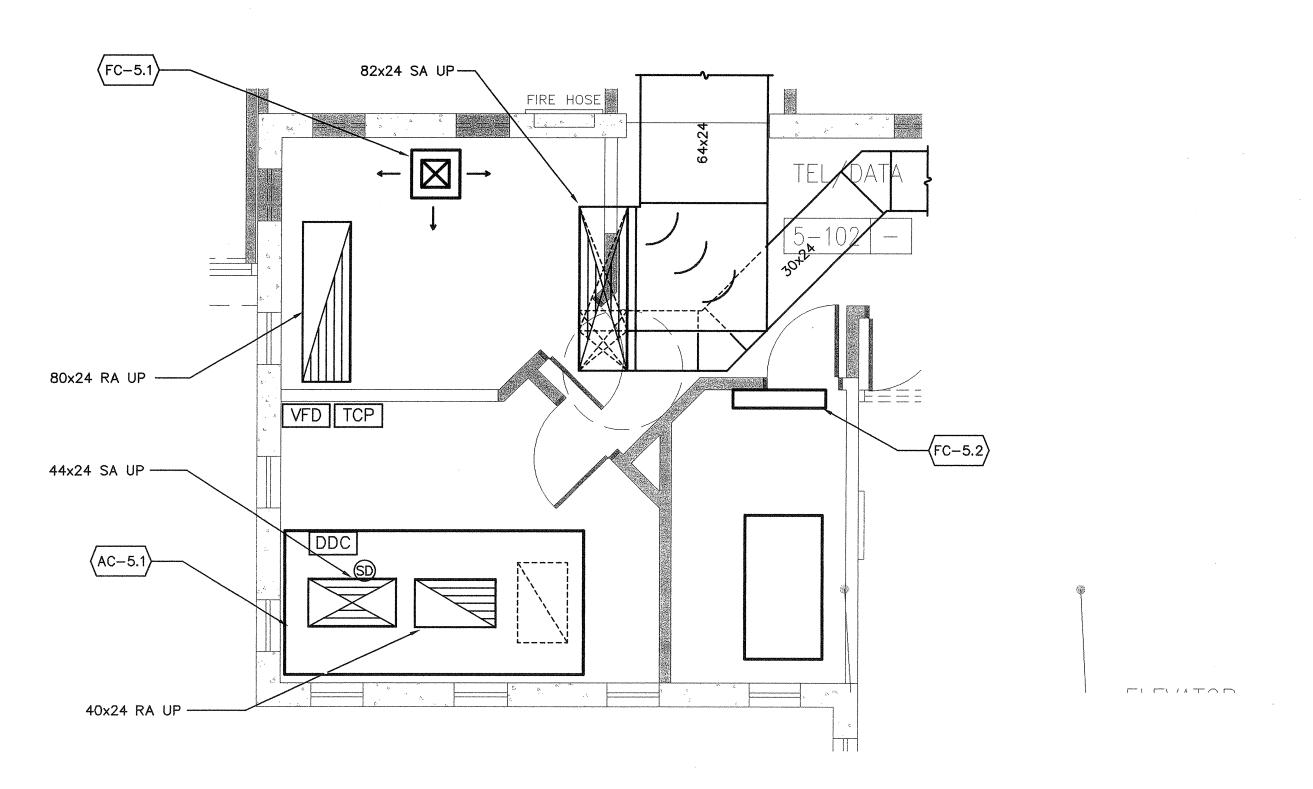
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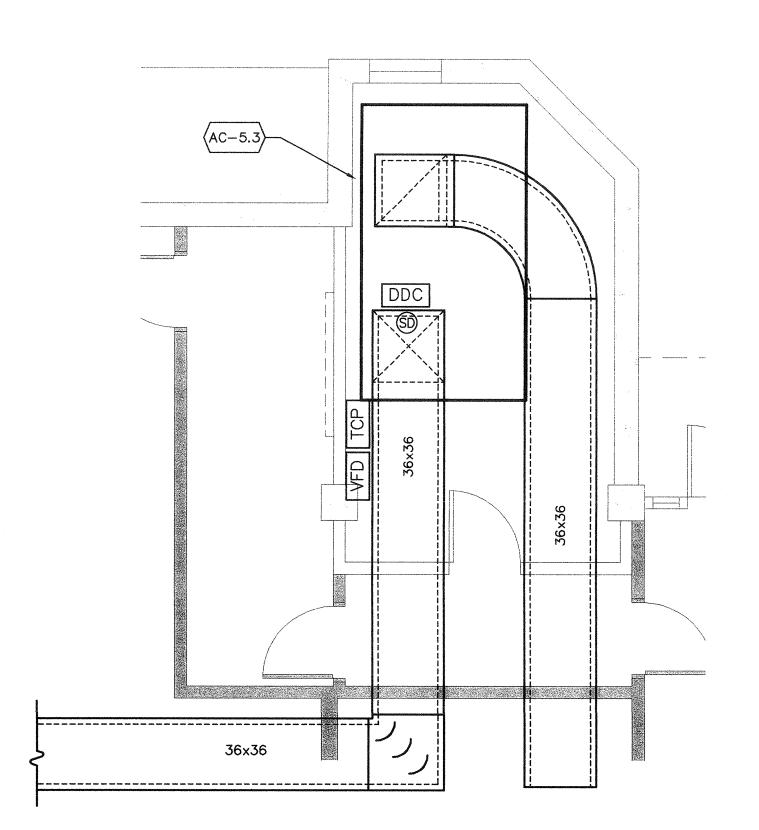


### 2 ENLARGED MECHANICAL DUCTWORK PLAN - SECOND FLOOR





### 1 ENLARGED MECHANICAL DUCTWORK PLAN - FIRST FLOOR SCALE: 1/4"=1'-0"



3 ENLARGED MECHANICAL DUCTWORK PLAN - THIRD FLOOR 0 2' 4' 8'
SCALE: 1/4"=1'-0"

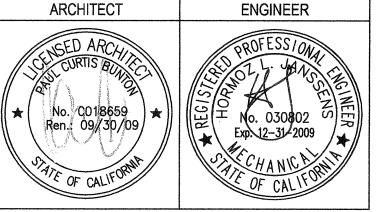


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# BUILDINGS 5 & 6 RENOVATIONS

San Mateo County Community College District

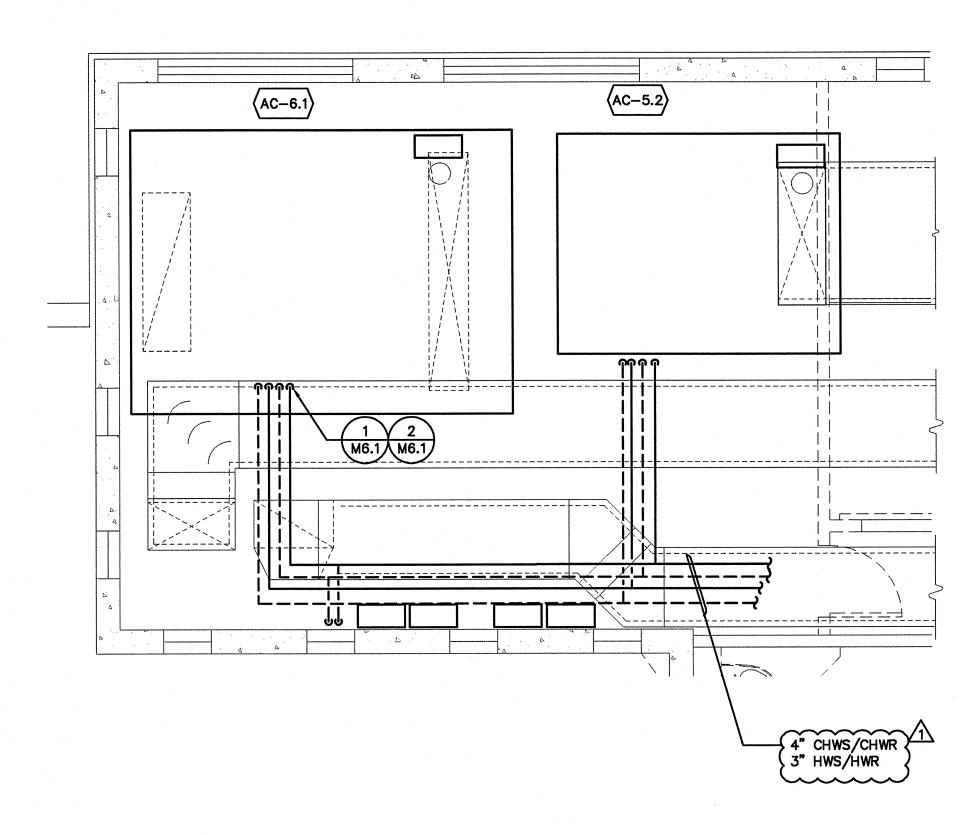
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## CAÑADA COLLEGE

4200 Farm Hill Boulevard Redwood City, CA 94061

ENLARGED MECHANICAL DUCTWORK PLAN

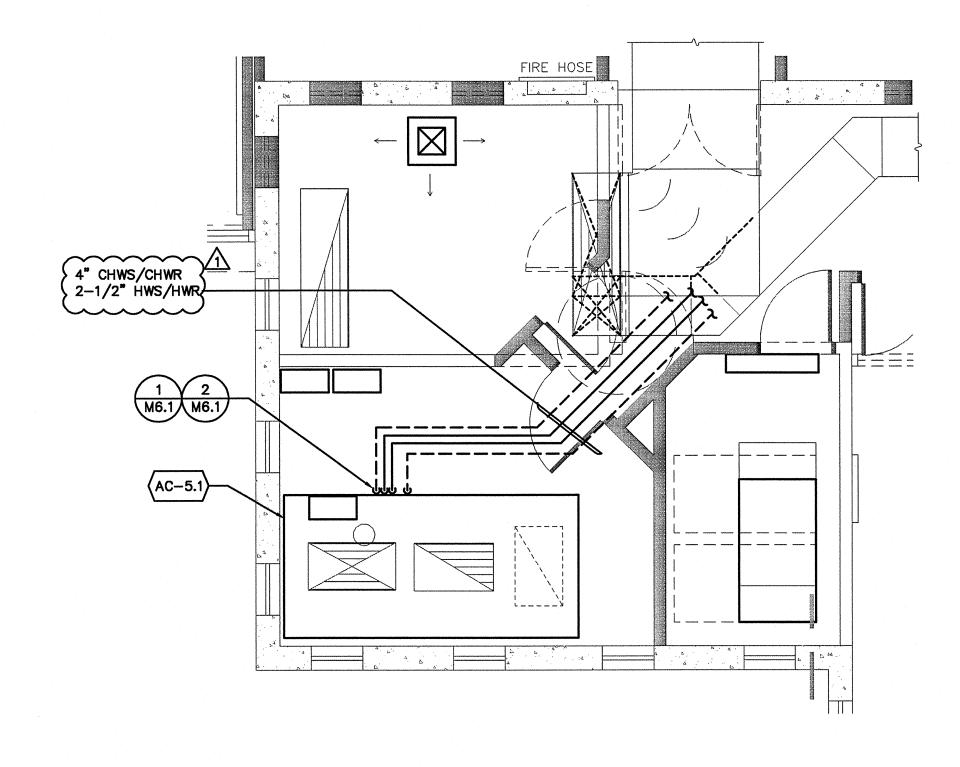
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2 ENLARGED MECHANICAL HYDRONIC PLAN - SECOND FLOOR

O 2' 4' 8'

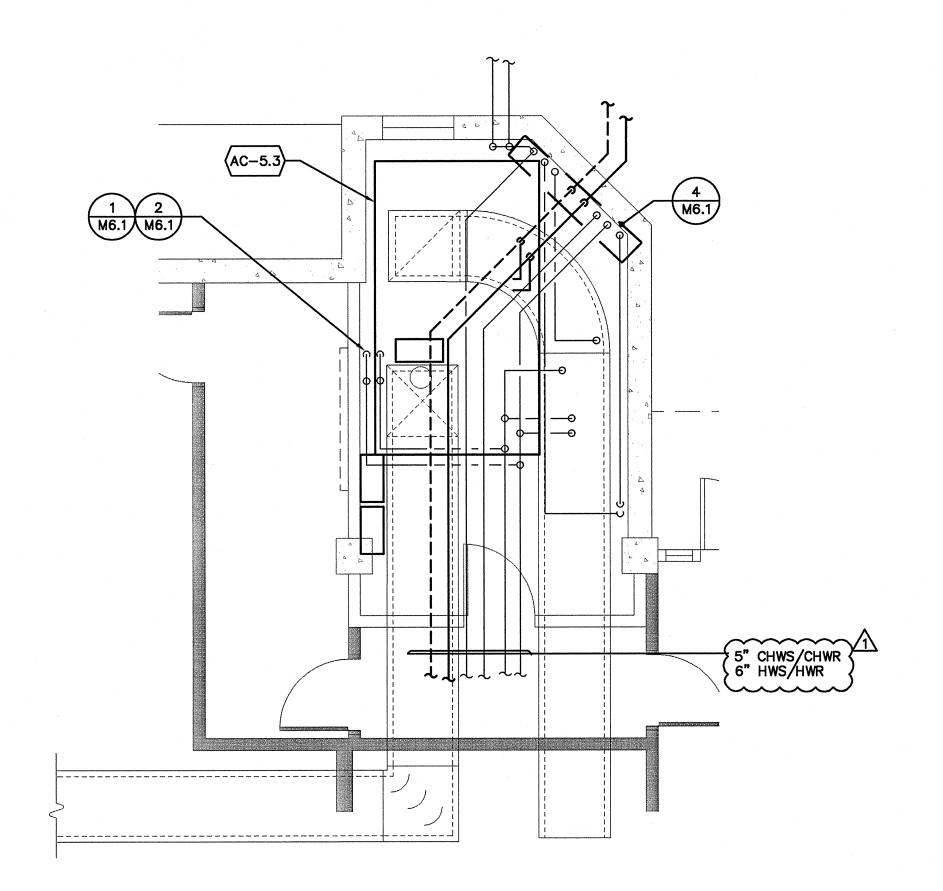
SCALE: 1/4"=1'-0"



1 ENLARGED MECHANICAL HYDRONIC PLAN - FIRST FLOOR

O 2' 4' 8'

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



3 ENLARGED MECHANICAL HYDRONIC PLAN - THIRD FLOOR

0 2' 4' 8'

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



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717 Market Street Suite 500 San Francisco, CA 94103 TEL 415.489.7240 FAX 415.489.7289 www.interfaceengineering.com  ARCHITECT  ENGINEER  PROFESSIONAL  PROFE	PROJECT 2007-0731 CONTACT Omar Hawit			
Suite 500 San Francisco, CA 94103 TEL 415.489.7240 FAX 415.489.7289 www.interfaceengineering.com  ARCHITECT  ENGINEER  Ren.: 09/30/11  Ren.: 09/30/11		INTERFACE ENGINEERING		
* Ren:: 09/30/11 * PROFESS/ONAL	717 Market Street Suite 500 San Francisco, CA 94103 TEL 415.489.7240 FAX 415.489.7289			
* (No. C9.16659) * (No. 030802 Fig. 12-31-2010 *	ARCHITECT	ENGINEER		

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### BUILDINGS 5 & 6 RENOVATIONS

San Mateo County Community College District

**BID ADDENDA** 

## CAÑADA COLLEGE

4200 Farm Hill Boulevard Redwood City, CA 94061

ENLARGED MECHANICAL HYDRONIC PLAN

ate Drawin

AS NOTED

Project Number

M3.4

#### AIR HANDLING UNIT SCHEDULE (CHILLED WATER COOLING COIL) RETURN FAN CHILLED WATER COOLING COIL MINIMUM FRE-FILTER FINAL-FILTER FINAL-FILTE LOCATION OUTDOOR AIR (CFM) TYPE/ CFM E.S.P. BHP HP FRPM CLASS (In.WG) V/ø/HZ MCOP MCA FLA MERV-13 500 0.5 1.25 460/3/60 50 33 21 5,100 MECH RM 2,250 PLENUM 12,000 0.75 9.2 15 1,057 AC-5.1 927 63.8 1 10 180 150 28 67 500 0.13 5.89 2 34 PLENUM/ CLASS II 20,000 1.00 1.06 11.32 25 1,165 933/739 | 186.1 | 8/9 | 45 | AC-5.2 TEMPTROL | MECH RM | 33 21 AC-5.3 $\sqrt[3]{1\sqrt{2}\sqrt{3}\sqrt{4}\sqrt{5}\sqrt{6}\sqrt{7}\sqrt{8}\sqrt{9}}$ MERV-13 500 0.5 1.25 3,300 | CLASS | | 28,100 | 0.75 | (2)11.0 | (2)15 | 1,169 | 883/722 176.02 6/10 45 55 76 63 53 52 500 0.87 9.43 2-1/2 | 500 | --- | ---AC-6.1 NOTES:

GALVANIZED DOUBLE WALL UNIT WITH R-13 INSULATION. ACCESS DOORS WITH HANDLES THROUGHOUT, VIEW WINDOWS ON FAN COMPONENT. LEVEL II THERMAL

														SPLIT-SYSTEM AIR	R CONDI	HONIN	NG UNI	I SCH	EDULE				
MARK		Τ				INDOOR	("A") FAN-CC	OIL UNIT					MARK		ΟU	TDOOR (*	B") CONDE	ENSING U	VIT		-		
AREA SERVED	SEER	CAPACITY CLG/HTG (MBH)	OUTSIDE AIR (CFM)	MANUFAC AND MO	CTURER DDEL #	CFM	SOUND (dB-A)	WEIGHT (LBS.)	FLA			PH HZ		MANUFACTURER AND MO	ODEL # AM	MBIENT TEMP. (°F)	WEIGHT (LBS.)	MCA	7		PH H	HZ	REMARKS
TEL./DATA ROOM	13.4	24.0/0.0	0	MITSUBISHI	PLA-A24AA	710	34	60	0.79	1.0	208	1 60	CU-5.1	MITSUBISHI PUY-A	A24NHA	95	100	18	30	208	1 6	60 S	SEE NOTES BELOW
ELEVATOR MACHINE ROOM	16.0	<del> </del>	0	MITSUBISHI	MSZ-A24NA	570	49	40	0.76	1.0	208	1 60	CU-5.2	MITSUBISHI MUZ-A	A24NA	95	100	17	20	208	1 6	60 S	SEE NOTES BELOW
ELEVATOR MACHINE ROOM	16.0	<del> </del>	0	MITSUBISHI	MSZ-A24NA	570	49	40	0.76	1.0	208	1 60	<u>CU-5.3</u>	MITSUBISHI MUZ-A	A24NA	95	100	17	20	208	1 6	60 S	SEE NOTES BELOW
	13.0	<del>                                     </del>	0	MITSUBISHI	MSY-A12WA	400	45	25	0.95	1.2	120	1 60	<u>CU-5.4</u>	MITSUBISHI MU-A1	12WA	95	100	16	20	120	1 6	60 S	SEE NOTES BELOW
ELEVATOR MACHINE ROOM	16.0	22.0/23.2	0	MITSUBISHI	MSZ-A24NA	570	49	40	0.76	1.0	208	1 60	<u>CU-5.5</u>	MITSUBISHI MUZ-A	A24NA	95	100	17	20	208	1 6	60 S	SEE NOTES BELOW
ELE	TEL/DATA ROOM  VATOR MACHINE ROOM  VATOR MACHINE ROOM  ELECTRICAL ROOM	TEL/DATA ROOM 13.4  VATOR MACHINE ROOM 16.0  VATOR MACHINE ROOM 16.0  ELECTRICAL ROOM 13.0	TEL/DATA ROOM         13.4         24.0/0.0           VATOR MACHINE ROOM         16.0         22.0/23.2           VATOR MACHINE ROOM         16.0         22.0/23.2           ELECTRICAL ROOM         13.0         11.6/0.0	TEL./DATA ROOM       13.4       24.0/0.0       0         VATOR MACHINE ROOM       16.0       22.0/23.2       0         VATOR MACHINE ROOM       16.0       22.0/23.2       0         ELECTRICAL ROOM       13.0       11.6/0.0       0	TEL./DATA ROOM         13.4         24.0/0.0         0         MITSUBISHI           VATOR MACHINE ROOM         16.0         22.0/23.2         0         MITSUBISHI           VATOR MACHINE ROOM         16.0         22.0/23.2         0         MITSUBISHI           ELECTRICAL ROOM         13.0         11.6/0.0         0         MITSUBISHI	TEL./DATA ROOM         13.4         24.0/0.0         0         MITSUBISHI         PLA-A24AA           VATOR MACHINE ROOM         16.0         22.0/23.2         0         MITSUBISHI         MSZ-A24NA           VATOR MACHINE ROOM         16.0         22.0/23.2         0         MITSUBISHI         MSZ-A24NA           ELECTRICAL ROOM         13.0         11.6/0.0         0         MITSUBISHI         MSY-A12WA	TEL./DATA ROOM         13.4         24.0/0.0         0         MITSUBISHI         PLA-A24AA         710           VATOR MACHINE ROOM         16.0         22.0/23.2         0         MITSUBISHI         MSZ-A24NA         570           VATOR MACHINE ROOM         16.0         22.0/23.2         0         MITSUBISHI         MSZ-A24NA         570           ELECTRICAL ROOM         13.0         11.6/0.0         0         MITSUBISHI         MSY-A12WA         400	TEL./DATA ROOM 13.4 24.0/0.0 0 MITSUBISHI PLA-A24AA 710 34  VATOR MACHINE ROOM 16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49  VATOR MACHINE ROOM 16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49  ELECTRICAL ROOM 13.0 11.6/0.0 0 MITSUBISHI MSY-A12WA 400 45	TEL./DATA ROOM 13.4 24.0/0.0 0 MITSUBISHI PLA-A24AA 710 34 60  VATOR MACHINE ROOM 16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49 40  VATOR MACHINE ROOM 16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49 40  ELECTRICAL ROOM 13.0 11.6/0.0 0 MITSUBISHI MSY-A12WA 400 45 25	TEL./DATA ROOM 13.4 24.0/0.0 0 MITSUBISHI PLA-A24AA 710 34 60 0.79  VATOR MACHINE ROOM 16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49 40 0.76  VATOR MACHINE ROOM 16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49 40 0.76  ELECTRICAL ROOM 13.0 11.6/0.0 0 MITSUBISHI MSY-A12WA 400 45 25 0.95	TEL./DATA ROOM 13.4 24.0/0.0 0 MITSUBISHI PLA-A24AA 710 34 60 0.79 1.0  VATOR MACHINE ROOM 16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49 40 0.76 1.0  VATOR MACHINE ROOM 16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49 40 0.76 1.0  ELECTRICAL ROOM 13.0 11.6/0.0 0 MITSUBISHI MSY-A12WA 400 45 25 0.95 1.2	TEL./DATA ROOM 13.4 24.0/0.0 0 MITSUBISHI PLA-A24AA 710 34 60 0.79 1.0 208  VATOR MACHINE ROOM 16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49 40 0.76 1.0 208  VATOR MACHINE ROOM 16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49 40 0.76 1.0 208  ELECTRICAL ROOM 13.0 11.6/0.0 0 MITSUBISHI MSY-A12WA 400 45 25 0.95 1.2 120	TEL./DATA ROOM 13.4 24.0/0.0 0 MITSUBISHI PLA-A24AA 710 34 60 0.79 1.0 208 1 60  VATOR MACHINE ROOM 16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49 40 0.76 1.0 208 1 60  VATOR MACHINE ROOM 16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49 40 0.76 1.0 208 1 60  ELECTRICAL ROOM 13.0 11.6/0.0 0 MITSUBISHI MSY-A12WA 400 45 25 0.95 1.2 120 1 60	AREA SERVED  SEER  CAPACHT CLG/HTG (MBH)  AIR (CFM)  MANUFACTURER AND MODEL #  MANUFACTURER AND MODEL #  TEL./DATA ROOM  13.4  24.0/0.0  0  MITSUBISHI  MSZ-A24NA  710  34  60  0.79  1.0  208  1 60  CU-5.1  VATOR MACHINE ROOM  16.0  22.0/23.2  0  MITSUBISHI  MSZ-A24NA  570  49  40  0.76  1.0  208  1 60  CU-5.2  VATOR MACHINE ROOM  16.0  13.0  11.6/0.0  0  MITSUBISHI  MSZ-A24NA  570  49  40  0.76  1.0  208  1 60  CU-5.3  ELECTRICAL  TELCTRICAL  TEL	AREA SERVED  SEER  CAPACITY CLG/HTC (MBH)  AIR  AND MODEL #  MANUFACTURER AND MODEL #  TEL./DATA ROOM  13.4  24.0/0.0  0 MITSUBISHI PLA-A24AA  710  34  60  0.79  1.0  208  1 60  CU-5.1  MITSUBISHI PUY-/  WATOR MACHINE ROOM  16.0  22.0/23.2  0 MITSUBISHI MSZ-A24NA  570  49  40  0.76  1.0  208  1 60  CU-5.2  MITSUBISHI MUZ-  WATOR MACHINE ROOM  16.0  22.0/23.2  0 MITSUBISHI MSZ-A24NA  570  49  40  0.76  1.0  208  1 60  CU-5.2  MITSUBISHI MUZ-  WATOR MACHINE ROOM  13.0  11.6/0.0  0 MITSUBISHI MSZ-A24NA  400  45  25  0.95  1.2  120  1 60  CU-5.4  MITSUBISHI MUZ-  WATOR MATSUBISHI MUZ-  ELECTRICAL ROOM  13.0  11.6/0.0  0 MITSUBISHI MSY-A12WA  400  45  25  0.95  1.2  120  1 60  CU-5.4  MITSUBISHI MUZ-  MITSUBISHI MUZ	AREA SERVED  SEER  CAPACHTY CLG/HTG (MBH)  MANUFACTURER AND MODEL #  MANUFACTURER AND MODEL #  TEL./DATA ROOM  13.4  24.0/0.0  0  MITSUBISHI PLA-A24AA  710  34  60  0.79  1.0  208  1 60  CU-5.1  MITSUBISHI PUY-A24NHA  VATOR MACHINE ROOM  16.0  22.0/23.2  0  MITSUBISHI MSZ-A24NA  570  49  40  0.76  1.0  208  1 60  CU-5.2  MITSUBISHI MUZ-A24NA  VATOR MACHINE ROOM  16.0  22.0/23.2  0  MITSUBISHI MSZ-A24NA  570  49  40  0.76  1.0  208  1 60  CU-5.2  MITSUBISHI MUZ-A24NA  ELECTRICAL  VATOR MACHINE ROOM  13.0  11.6/0.0  0  MITSUBISHI MSZ-A24NA  400  45  25  0.95  1.2  120  1 60  CU-5.4  MITSUBISHI MUZ-A24NA  MITSUBISHI MUZ-A24NA  MITSUBISHI MUZ-A24NA  MITSUBISHI MUZ-A24NA  MITSUBISHI MUZ-A24NA	AREA SERVED  SEER  CAPACITY CLG/HTG (MBH)  AREA SERVED  SEER  MANUFACTURER AND MODEL #  MANUFACTURER AND MODEL #  MANUFACTURER AND MODEL #  CFM SOUND (dB-A) (dB-A) (LBS.)  FLA MCA VOLT PH HZ  MANUFACTURER AND MODEL #  MANUFACTURER AND MODEL #  AMBIENT TEMP. (°F)  TEL/DATA ROOM  13.4  24.0/0.0  0  MITSUBISHI MSZ-A24NA 570 49 40 0.76 1.0 208 1 60  CU-5.1  MITSUBISHI MUZ-A24NA 95  MITSUBISHI MUZ-A24NA 95  ELECTRICAL  TEMP. (°F)  AMBIENT TEMP. (°F)  TEL/DATA ROOM  16.0  22.0/23.2  0  MITSUBISHI MSZ-A24NA 570 49 40 0.76 1.0 208 1 60  CU-5.2  MITSUBISHI MUZ-A24NA 95  ELECTRICAL  TEMP. (°F)  AMBIENT TEMP. (°F)  TEMP. (°F)  TEL/DATA ROOM  16.0  16.	AREA SERVED  SEER  CAPACITY CLG/HTG (MBH)  CFM  MANUFACTURER AND MODEL #  (CFM)  MANUFACTURER AND MODEL #  FLA  MCA  VOLT PH  HZ  MANUFACTURER AND MODEL #  MANUFACTURER AND MODEL #  MEIGHT TEMP. (CF)  WEIGHT (LBS.)  FLA  MCA  VOLT PH  HZ  MANUFACTURER AND MODEL #  MANUFACTURER AND MODEL #  MEIGHT TEMP. (CF)  WEIGHT TEMP. (CF)	AREA SERVED  SEER  CAPACHT CLG/HTG (MBH)  AIR (CFM)  MANUFACTURER AND MODEL #  FLA MCA VOLT PH HZ  FLA MCA VOLT PH HZ  MANUFACTURER AND MODEL #  FLA MCA VOLT PH HZ  MANUFACTURER AND MODEL #  MANUFACTURER AND MODEL #  MEIGHT TEMP. (LBS.)  MCA  MCA  MCA  MCA  MCA  MCA  MCA  MC	AREA SERVED  SEER  CLACHTIC (MBH)  ARC (CFM)  MANUFACTURER AND MODEL #  MANUFACTURER AND MODEL #  MANUFACTURER AND MODEL #  MEIGHT (LBS.)  MCA MOCP  MCA MOCP  TEL/DATA ROOM  13.4 24.0/0.0 0 MITSUBISHI PLA-A24AA 710 34 60 0.79 1.0 208 1 60 CU-5.1 MITSUBISHI PUY-A24NHA 95 100 18 30  VATOR MACHINE ROOM  16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49 40 0.76 1.0 208 1 60 CU-5.2 MITSUBISHI MUZ-A24NA 95 100 17 20  VATOR MACHINE ROOM  16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49 40 0.76 1.0 208 1 60 CU-5.3 MITSUBISHI MUZ-A24NA 95 100 17 20  VATOR MACHINE ROOM  13.0 11.6/0.0 0 MITSUBISHI MSZ-A24NA 400 45 25 0.95 1.2 120 1 60 CU-5.4 MITSUBISHI MUZ-A24NA 95 100 16 20  ELECTRICAL ROOM  13.0 11.6/0.0 0 MITSUBISHI MSY-A12WA 400 45 25 0.95 1.2 120 1 60 CU-5.4 MITSUBISHI MU-A12WA 95 100 16 20	AREA SERVED  SEER  CAPACITIC CLG/HTG (MBH)  AREA SERVED  SEER  CFM  MANUFACTURER AND MODEL #  MARIENT TELE/DATA ROOM  13.4 24.0/0.0 0 MITSUBISHI PLA—A24AA 710 34 60 0.79 1.0 208 1 60 CU_5.1 MITSUBISHI PUY—A24NHA 95 100 18 30 208  VATOR MACHINE ROOM  16.0 22.0/23.2 0 MITSUBISHI MSZ—A24NA 570 49 40 0.76 1.0 208 1 60 CU_5.2 MITSUBISHI MUZ—A24NA 95 100 17 20 208  VATOR MACHINE ROOM  16.0 22.0/23.2 0 MITSUBISHI MSZ—A24NA 570 49 40 0.76 1.0 208 1 60 CU_5.3 MITSUBISHI MUZ—A24NA 95 100 17 20 208  VATOR MACHINE ROOM  13.0 11.6/0.0 0 MITSUBISHI MSZ—A24NA 400 45 25 0.95 1.2 120 1 60 CU_5.4 MITSUBISHI MU—A12WA 95 100 16 20 120  MANUFACTURER AND MODEL #  MANUFACTURER AND MODEL #  MEIGHT (LBS.)  MCA MOCP VOLT  MCA MOCP VOLT  10.0 20.0 1.0 20.0 20	AREA SERVED  SEER  CAPACITY CLG/HTG (MBH)  CFM  AND MODEL #  MANUFACTURER AND MODEL #  MANUFACTURER AND MODEL #  MEIGHT (LBS.)  FLA  MCA  VOLT  PH  HZ  MANUFACTURER AND MODEL #  MANUFACTURER AND MODEL #  MEIGHT (LBS.)  MCA  MOCP  VOLT  PH  IEMP. (F)  MCA  MOCP  VOLT  PH  IEMP. (BS.)  MCA  MCA  MOCP  VOLT  PH  IEMP. (BS.)  MCA  MCA  MCA  MCA  MCA  MCA  MCA  MC	AREA SERVED  SEER  CLG/HTG (MBH)  CLG/HTG (MBH)  AND MODEL #  MANUFACTURER AND MODEL #  AND MODEL #  AND MODEL #  MANUFACTURER AND MODEL #  AND MODEL #  AND MODEL #  MANUFACTURER AND MODEL #  MEIGHT (LBS.)  FLA MCA VOLT PH HZ  TELL/DATA ROOM  13.4 24.0/0.0 0 MITSUBISHI PLA-A24AA 710 34 60 0.79 1.0 208 1 60 CU-5.1 MITSUBISHI PUY-A24NHA 95 100 18 30 208 1 60 S  VATOR MACHINE ROOM  16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49 40 0.76 1.0 208 1 60 CU-5.2 MITSUBISHI MUZ-A24NA 95 100 17 20 208 1 60 S  VATOR MACHINE ROOM  16.0 22.0/23.2 0 MITSUBISHI MSZ-A24NA 570 49 40 0.76 1.0 208 1 60 CU-5.3 MITSUBISHI MUZ-A24NA 95 100 17 20 208 1 60 S  VATOR MACHINE ROOM  13.0 11.6/0.0 0 MITSUBISHI MSY-A12WA 400 45 25 0.95 1.2 120 1 60 CU-5.4 MITSUBISHI MUZ-A24NA 95 100 16 20 120 1 60 S  ELECTRICAL  ***  ***  ***  ***  **  **  **  **

7 SEE 4/M6.2 FOR MOUNTING DETAILS.

						E	LEVATOR	VENTS	
MARK	MFR	MODEL	THROAT W x L	OUTER DIMENSIONS	Louver Hieght	SERVICE	OPERATING WEIGHT LBS	REMARKS	
EV-1	GREENHECK	WIH	22 x 22	36 x 36	12.25	ELEVATOR — NORTH	50	SEE NOTES BELOW	
EV-2	GREENHECK	WIH	22 x 22	36 x 36	12.25	ELEVATOR - SOUTH	50	SEE NOTES BELOW	
EV-3	GREENHECK	WIH	22 × 22	36 x 36	12.25	ELEVATOR — EAST	50	SEE NOTES BELOW	

4 LOW AMBIENT CONTROLS.

6 R410A REFRIGERANT.

(5) INSTALL ON 4" HIGH CONCRETE HOUSEKEEPING PAD

8 PROVIDE 0-100% MODULATING ECONOMIZER.

(7) INSTALL UNIT SMOKE DETECTOR FOR CODE REQUIRED SHUT-DOWN.

6 PROVIDE UNITS WITH VFDS AND INVERTER DUTY RATED MOTORS LABELED FOR USE WITH VFD.

L	THROAT W x L	OUTER DIMENSIONS	LOUVER HIEGHT	SERVICE	WEIGHT LBS	REMARKS			
	22 x 22	36 x 36	12.25	ELEVATOR - NORTH	50	SEE NOTES BELOW			
	22 x 22	36 x 36	12.25	ELEVATOR - SOUTH	50	SEE NOTES BELOW			
	22 × 22	36 x 36	12.25	ELEVATOR - EAST	50	SEE NOTES BELOW			
		(3) PROVID	e insulated ho	00D.					

(5) UNITS SHALL INTERFACE WITH BMS WITH HARD WIRED THERMOSTAT.

	-				FIRE/SMOKE DAMPER AND VOLUME DAMPER SCHEDULE
MARK	MFR	MODEL	SLEEVE	U.L. RATING	REMARKS
FSD	RUSKIN	FSD-60	17"	UL555/555S	(COMBINATION FIRE SMOKE DAMPER) (PROVIDE IN SUPPLY, RETURN, NON-HAZARDOUS EXHAUST DUCTS PENETRATING RATED PARTITIONS)
FSD	RUSKIN	FSD-36	17"	UL555/555S	(COMBINATION FIRE SMOKE DAMPER) (PROVIDE IN SUPPLY, RETURN, NON-HAZARDOUS EXHAUST DUCTS PENETRATING RATED PARTITIONS)
FSD	RUSKIN	DFSDR1	-	UL555/555S/555C	(COMBINATION FIRE SMOKE DAMPER) (PROVIDE IN SUPPLY, RETURN AND EXHAUST DIFFUSERS PENTETRATING RATED CEILINGS)
_ :	RUSKIN	MD-35	_		PROVIDE MINIMUM 2-INCH ELEVATED STAND-OFF PLATFORM FOR DAMPERS IN INSULATED SYSTEMS (MANUAL RECTANGULAR VOLUME DAMPER).
. –	RUSKIN	MDRS25	-		PROVIDE MINIMUM 2-INCH ELEVATED STAND-OFF PLATFORM FOR DAMPERS IN INSULATED SYSTEMS (MANUAL ROUND VOLUME DAMPER).
_	RUSKIN	CD60	-		CONTROL DAMPER WITH ELECTRIC ACTUATOR.
2	SMOKE LEAKA	GE CLASS ii,	1-1/2 H	TEM BY DIV. 28.  IR. DAMPER  I); PROVIDE END SWI	PROVIDE SMOKE DETECTORS WITHIN 5'-0" OF FSD. INSTALL QUANTITY AND IN LOCATION PER NFPA 72. PROVIDE SMOKE DETECTORS AS FURNISHED AND CONNECTED BY DIV 28 AND INSTALLED BY DIV 23  TCH  (5) PROVIDE IN MEDIUM PRESSURE DUCTWORK.  (6) PROVIDE IN LOW PRESSURE DUCTWORK.  (7) SMOKE LEAKAGE CLASS 1, 1 HR. DAMPER CONNECTED BY DIV 28 AND INSTALLED BY DIV 23

					-		FAN	SCHEDI	JLE				
MARK			BRAKE		ELECT	TRICAL		OPERATING					
	MFR	MODEL	CFM	RPM	13P	IIPE	HP	HP	VOLT-ø	EMERG. POWER (Y/N)	SERVICE	WEIGHT LBS	REMARKS
EF-5.1	GREENHECK	H-CUBE-300-75	11,200	905	1.50	UPBLAST CENTRIFUGAL	5.21	7-1/2	460/3	N	3RD FLR — KITCHEN HOOD	390	(1)(2)(3)(4)(5)(8)
EF-5.2	GREENHECK	GB-121-4	855	931	0.3	ROOF CENTRIFUGAL	0.08	1/4	120/1	N	1ST FLR - TOILETS	70	(1)(2)(3)(4)(5)(6)
EF-5.3	GREENHECK	GB-200-7	4,000	826	0.3	ROOF CENTRIFUGAL	0.68	3/4	460/3	. N	3RD FLR — SERVERY	140	(1)(2)(3)(4)(5)(6)
EF-5.4	GREENHECK	GB-220HP-10	4,310	831	0.55	ROOF CENTRIFUGAL	0.95	1	460/3	N	2ND FLR — TOILETS, EAST SIDE	160	(1)(2)(3)(4)(5)(6)
EF-5.5	GREENHECK	GB-141-4	1,080	806	0.3	ROOF CENTRIFUGAL	0.11	1/4	120/1	N	3RD FLR — TOILETS	90	(1)(2)(3)(4)(5)(6)
EF-6.1	GREENHECK	GB-540-75	27,000	345	0.3	ROOF CENTRIFUGAL	4.88	7-1/2	460/3	N <u>/1</u>	1ST TLR RELIEF	750	(1)(2)(3)(4)(5)(6)(7)
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	-	·	-										

1 PROVIDE THERMAL OVERLOAD PROTECTION AND PREMIUM EFFICIENCY MOTORS.

 $\langle 2 \rangle$  5% BELT LOSS IS INCLUDED. (3) AMCA CERTIFIED FOR AIRFLOW AND SOUND. 4 SEE DETAIL 3/M6.2 FOR EXHAUST FAN MOUNTING. (5) PROVIDE ROOF CURB AND TIE-DOWNS 6 PROVIDE BIRDSCREEN AND DAMPER.

 $\overline{7}$  provide VFD with manual bypass to modulate with associated ac to maintain space pressurization.  $\overline{\langle 8 \rangle}$  TYPE 1 GREASE HOOD EXHAUST FAN, UL 764 LISTED.

7 SMOKE LEAKAGE CLASS 1, 1 HR. DAMPER

8 SMOKE DETECTOR FOR ACTIVATION OF SMOKE DAMPER IS TO BE PROVIDED BY FIRE
ALARM CONTRACTOR AND INSTALLED AND WIRED TO THE DAMPER MOTOR BY THE
MECHANICAL CONTRACTOR. SMOKE DETECTOR IS TO BE EXTERNALLY MOUNTED OUTSIDE
DUCT AND FD/SD FOR EASY ACCESS WITH SAMPLING TUBES

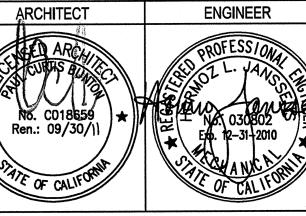
MARK	MFR	MODEL	SIZE	NECK	FINISH	SERVICE	BORDER	MATERIAL	REMARKS
CD-1	TITUS	PSS	24"X24"	SEE FLOOR PLANS	WHITE	SUPPLY	COORD. W/ RCP	STEEL	(1)(2)
CD-2	ACUTHERM	THERMA- FUSER	24"x24"	SEE FLOOR PLANS	WHITE	SUPPLY	COORD. W/ RCP	STEEL	(1)(2)
CD-3	TITUS	PSS	12'x12"	SEE FLOOR PLANS	WHITE	SUPPLY	COORD. W/ RCP	STEEL	(1)(2)
SD-1	TITUS	CT-581	SEE FLOOR PLANS	SEE FLOOR PLANS	WHITE	SUPPLY	COORD. W/ RCP	STEEL	(1)(2)
CR-1	TITUS	PAR	24"X24"	SEE FLOOR PLANS	WHITE	RETURN	COORD. W/ RCP	STEEL	1)2
SR-1	TITUS	CT-581	SEE FLOOR PLANS	SEE FLOOR PLANS	WHITE	RETURN	COORD. W/ RCP	STEEL	(1)(2)
CE-1	TITUS	PAR		SEE FLOOR PLANS	WHITE	EXHAUST	COORD. W/ RCP	STEEL	1)2
					,				

architecture planning interiors

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PROJECT 2007-0731 CONTACT Omar Hawit



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### BUILDINGS 5 & 6 RENOVATIONS

San Mateo County Community
College District

**BID ADDENDA** 

CAÑADA COLLEGE

4200 Farm Hill Boulevard Redwood City, CA 94061

MECHANICAL EQUIPMENT SCHEDULES

FILE: 0731M41.DWG - LAYOUT1 | EDIT: 9/16/2009 8:02 PM BY OMARH | PLOT: 9/17/2009 7:25 PM BY OMAR HAWIT

1 COPPER COILS/ALUMINUM FINS, STAINLESS STEEL CASING.

(3) INTERIOR LINER WITH CORROSION PROTECTION COATING.

4 STAINLESS STEEL DRAIN PANS.

1 PROVIDE 30% FILTERS.

3 DISCONNECT BY DIV. 26.

1 PROVIDE INSECT SCREEN.

2 PROVIDE ROOF CURB.

MIXING BOX WITH PREMIUM DAMPERS (OPPOSED BLADE FOR FRESH AIR; PARALLEL BLADE FOR RETURN AIR)

(2) COORDINATE REFRIGERANT PIPING AND CONDENSATE DRAIN WITH OTHER TRADES.

Drawing Number

2 USE BORDER TYPE 2 FOR SURFACE MOUNT IN HARD CEILINGS, BORDER TYPE 3 FOR LAY-IN.

			D	UCT	RE	HEA <sup>-</sup>	T CC	IL S	CHE	DUL			
	DUCT SIZE				HOT \	WATER HI	EATING C	:OIL				MINIMUM BRANCH	
SYMBOL		CFM	MBH	EAT	LAT	MAX Apd	QPM	EWT	LWT	MAX WPd	ROWS	PIPE SIZE (IN.)	REMARKS
RH-5.2-1	48X24	9000	340	60	95	0.1	22.7	180.0	150	0.3	1-RH	3/4	SEE NOTES BELOW
RH-5.2-2	48X24	9000	340	60	95	0.1	22.7	180.0	150	0.3	1-RH	3/4	SEE NOTES BELOW
RH-5.2-3	24X12	1000	38	60	95	0.1	2.53	180.0	150	0.3	1-RH	3/4	SEE NOTES BELOW
RH-5.2-4	12X12	200	7.5	60	95	0.1	0.50	180.0	150	0.3	1-RH	3/4	SEE NOTES BELOW
	***************************************												

NOTES: 1. CONTROL VALVES TO BE FIELD INSTALLED. (2-WAY) 2. ALL PERFORMANCE SHALL BE ARI CERTIFIED.

			SIZE	C	FM	STAT	TIC PRES	SURE	NC L	EVELS				HOT	WATER I	HEATING	COIL				MINIMUM BRANCH	
		UNIT	OUTLET	MAX	MIN	INLET	DOWN	MIN	RAD.	DISCH.	CFM	MBH	EAT	LAT	Apd	GPM	EWT	LWT	WPd	ROWS	PIPE SIZE	
<b>SYMBOL</b> V-5.1-1	<b>MODEL</b> DESV	6	12×8	425	130	1.00	0.30	0.28	23	20	130	5.6	55.0	95.0	0.13	0.4	180.0	151.8	0.1	1-RH	(IN.) 3/4	REMARKS SEE NOTES BELOV
V-5.1-2	DESV	6	12x8	260	80	1.00	0.30	0.11	16	15	80	4.4	55.0	106.0	0.15	0.3	180.0	150.5	0.1	1-RH	3/4	SEE NOTES BELOV
V-5.1-3	DESV	6	12x8	400	120	1.00	0.30	0.25	22	20	120	5.1	55.0	94.0	0.12	0.3	180.0	146.5	0.1	1-RH	3/4	SEE NOTES BELOW
V-5.1-4	DESV	12	16×15	1200	360	1.00	0.30	0.15	22	20	360	15.5	55.0	95.0	0.12	1.0	180.0	149.4	0.1	1-RH	3/4	SEE NOTES BELOW
V-5.1-5	DESV	12	16×15	1200	360	1.00	0.30	0.15	22	20	360	15.5	55.0	95.0	0.14	1.0	180.0	149.4	0.3	1-RH	3/4	SEE NOTES BELOV
V-5.1-6	DESV	12	16x15	1425	430	1.00	0.30	0.13	22		430	18.6	55.0	95.0	-			ļ			3/4	
V-5.1-0 V-5.1-7	DESV	4	10x13	175	55	1.00	0.30	0.09	24	20	55	3.8	55.0	119.0	0.20	0.3	180.0	160.1	0.8	1-RH	<del> </del>	SEE NOTES BELOW
V-5.1-8	DESV	10	14x12.5	1000	300	1.00	0.30	0.09	23	20	300	13.0	55.0	95.0	0.03			155.0	0.1	1-RH	3/4	SEE NOTES BELOW
V-5.1-9	DESV	6 6	<del>                                     </del>	300	90	<del></del>						-	<b>_</b>			1.4	180.0		0.4	-	<u> </u>	SEE NOTES BELOW
	-		12x8		ļ	1.00	0.30	0.14	18	16	90	4.6	55.0	103.0	0.07	0.3	180.0	149.6	0.1	1-RH	3/4	SEE NOTES BELOW
/-5.1-10  /-5.1-11	DESV	6 8	12x8 12x10	450 480	135 145	1.00	0.30	0.31	24	21	135	5.8	55.0	95.0	0.14	0.4	180.0	153.7	0.1	1-RH	3/4	SEE NOTES BELOW
/-5.1-11 /-5.1-12		***************************************			<u> </u>	1.00	0.30	0.11	19	18	145	6.3	55.0	95.0	0.10	0.3	180.0	138.5	0.1	1-RH	3/4	SEE NOTES BELOW
	-	14	20×17.5	1605	485	1.00	0.30	0.15	21	15	485	20.9	55.0	95.0	0.12	1.2	180.0	145.0	0.2	1-RH	3/4	SEE NOTES BELOW
/-5.1-13	+	4	12x8	225	70	1.00	0.30	0.14	29	27	70	4.2	55.0	111.0	0.04	0.3	180.0	152.3	0.1	1-RH	3/4	SEE NOTES BELOW
/-5.1-14		14	20×17.5	1680	505	1.00	0.30	0.16	21	15	505	21.8	55.0	95.0	0.13	1.3	180.0	147.3	0.2	1-RH	3/4	SEE NOTES BELOW
/-5.1-15	DESV	10	14x12.5	1020	310	1.00	0.30	0.20	23	20	310	13.4	55.0	95.0	0.19	1.6	180.0	162.8	0.5	1-RH	3/4	SEE NOTES BELOW
											w.v.											
.,		. =																				
V-5.3-1	DESV	10	14x12.5	820	250	1.00	0.30	0.14	22	18	250	10.8	55.0	95.0	0.13	8.0	180.0	151.6	0.1	1-RH	3/4	SEE NOTES BELOW
V-5.3-2	DESV	12	16x15	1335	405	1.00	0.30	0.18	22	20	405	17.5	55.0	95.0	0.17	1.5	180.0	156.4	0.5	1-RH	3/4	SEE NOTES BELOW
V-5.3-3	DESV	6	12x8	275	85	1.00	0.30	0.12	17	16	85	4.6	55.0	105.0	0.06	0.3	180.0	150.2	0.1	1-RH	3/4	SEE NOTES BELOW
V-5.3-4	DESV	14	20x17.5	1660	500	1.00	0.30	0.15	21	15	500	21.6	55.0	95.0	0.13	1.3	180.0	146.7	0.2	1-RH	3/4	SEE NOTES BELOW
V-5.3-5	DESV	8	12×10	540	165	1.00	0.30	0.13	20	18	165	7.1	55.0	95.0	0.12	0.4	180.0	144.5	0.1	1-RH	3/4	SEE NOTES BELOW
V−5.3−6	DESV	8	12x10	630	190	1.00	0.30	0.17	22	20	190	8.2	55.0	95.0	0.16	0.6	180.0	152.7	0.3	1-RH	3/4	SEE NOTES BELOW
V-5.3-7	DESV	10	14x12.5	990	300	1.00	0.30	0.19	23	20	300	13.0	55.0	95.0	0.18	1.4	180.0	161.0	0.4	1-RH	3/4	SEE NOTES BELOW
√−5.3−8	DESV	8	12x10	550	165	1.00	0.30	0.14	20	18	165	7.1	55.0	95.0	0.12	0.4	180.0	144.5	0.1	1-RH	3/4	SEE NOTES BELOW
V-5.3-9	DESV	6	12x8	380	115	1.00	0.30	0.22	22	18	115	5.0	55.0	96.0	0.11	0.3	180.0	147.0	0.1	1-RH	3/4	SEE NOTES BELOW
/-5.3-10	DESV	6	12x8	350	105	1.00	0.30	0.19	21	17	105	4.9	55.0	98.0	0.09	0.3	180.0	148.0	0.1	1-RH	3/4	SEE NOTES BELOW
/-5.3-11	DESV	8	12x10	540	165	1.00	0.30	0.13	20	18	165	7.1	55.0	95.0	0.12	0.4	180.0	144.5	0.1	1-RH	3/4	SEE NOTES BELOW
/-5.3-12	DESV	8	12×10	600	180	1.00	0.30	0.16	20	19	180	7.8	55.0	95.0	0.14	0.5	180.0	149.5	0.2	1-RH	3/4	SEE NOTES BELOW
/-5.3-13	DESV	4	12x8	225	70	1.00	0.30	0.14	29	27	70	4.2	55.0	111.0	0.04	0.3	180.0	152.3	0.1	1-RH	3/4	SEE NOTES BELOW
′-5.3-14	DESV	6	12x8	430	130	1.00	0.30	0.28	23	20	130	5.6	55.0	95.0	0.13	0.4	180.0	151.8	0.1	1-RH	3/4	SEE NOTES BELOW
′-5.3-15	DESV	16	24x18	1500	450	1.00	0.30	0.22	23	21	450	19.4	55.0	95.0	0.21	2.3	180.0	162.9	1.2	1-RH	3/4	SEE NOTES BELOW
V-6.1-1	DESV	16	24x18	2450	735	1.00	0.30	0.21	18	17	735	31.7	55.0	95.0	0.19	2.7	180.0	156.8	0.9	1-RH	3/4	SEE NOTES BELOW
V-6.1-2	DESV	16	24×18	2200	660	1.00	0.30	0.17	17	16	660	28.5	55.0	95.0	0.16	1.9	180.0	149.9	0.5	1-RH	3/4	SEE NOTES BELOW
√ <b>-</b> 6.1 <b>-</b> 3	DESV	16	24×18	2460	740	1.00	0.30	0.21	18	17	740	32.0	55.0	95.0	0.19	2.8	180.0	157.3	0.9	1-RH	3/4	SEE NOTES BELOW
V-6.1-4	DESV	16	24x18	2460	740	1.00	0.30	0.21	18	17	740	32.0	55.0	95.0	0.19	2.8	180.0	157.3	0.9	1-RH	3/4	SEE NOTES BELOW
V-6.1-5	DESV	16	24×18	2500	750	1.00	0.30	0.22	18	17	750	32.4	55.0	95.0	0.20	3.0	180.0	158.1	1.0	1-RH	3/4	SEE NOTES BELOW
/-6.1-6	DESV	14	20x17.5	1780	535	1.00	0.30	0.18	21	15	535	23.1	55.0	95.0	0.15	1.6	180.0	150.6	0.3	1-RH	3/4	SEE NOTES BELOW
/-6.1-7	DESV	14	20x17.5	1780	535	1.00	0.30	0.18	21	15	535	23.1	55.0	95.0	0.15	1.6	180.0	150.6	0.3	1-RH	3/4	SEE NOTES BELOW
V-6.1-8	DESV	16	24×18	2300	690	1.00	0.30	0.19	18	16	690	29.8	55.0	95.0	0.17	2.2	180.0	152.7	0.6	1-RH	3/4	SEE NOTES BELOW
											<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>											
-6.1-10	DESV	8	12×10	630	190	1.00	0.30	0.17	22	20	190	8.2	55.0	95.0	0.16	0.6	180.0	152.7	0.3	1-RH	3/4	SEE NOTES BELOW
·-6.1-11	DESV	10	14x12.5	1000	300	1.00	0.30	0.19	23	20	300	13.0	55.0	95.0	0.18	1.4	180.0	161.0	0.4	1-RH	3/4	SEE NOTES BELOW
·-6.1-12	DESV	12	16×15	1080	325	1.00	0.30	0.13	20	18	325	14.0	55.0	95.0	0.12	0.8	180.0	143.5	0.2	1-RH	3/4	SEE NOTES BELOW
·-6.1-13	DESV	12	16×15	1500	450	1.00	0.30	0.22	23	21	450	19.4	55.0	95.0	0.21	2.3	180.0	162.9	1.2	1-RH	3/4	SEE NOTES BELOW
-6.1-14	DESV	12	16x15	1345	405	1.00	0.30	0.19	22	20	405	17.5	55.0	95.0	0.18	1.5	180.0	156.4	0.5	1-RH	3/4	SEE NOTES BELOW
-6.1-15		14	20×17.5	1660	500	1.00	0.30	0.15	21	15	500	21.6	55.0	95.0	0.13	1.3	180.0	146.7	0.2	1-RH	3/4	SEE NOTES BELOW
-6.1-16	-	12	16x15	1425	430	1.00	0.30	0.21	22	20	430	18.6	55.0	95.0	0.20	1.9	180.0	160.1	0.8	1-RH	3/4	SEE NOTES BELOW
-6.1-17		12	16x15	1250	375	1.00	-0.30	0.16	22	20	375	16.2	55.0	95.0	0.15	1.1	180.0	151.8	0.3	1-RH	3/4	SEE NOTES BELOW
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SINGLE DUCT TERMINAL UNIT WITH HOT WATER HEAT SCHEDULE

NOTES: 1. ALL BOXES SHALL BE PROVIDED WITH HIGH CFM CONTROL.

2. ALL BOXES SHALL BE PRESSURE INDEPENDENT AND COMPLETE WITH CENTER AVERAGING AIRFLOW SENSOR.

3. SEISMIC BRACE UNIT PER SMACMA GUIDELINES.

4. COIL CONNECTION AND CONTROL BOX SHALL BE ON OPPOSITE SIDE.

5. CONTROL VALVES TO BE FIELD INSTALLED. (2-WAY)

6. ALL TERMINAL BOXES SHALL HAVE MINIMUM 1 INCH INSULATION CONFORMING TO UL181 AND NFPA90A.

7. ALL PERFORMANCE SHALL BE ARI CERTIFIED.

8. ROOM NC LEVEL SHOWN INCLUDES ATTENUATION TRANSFER FUNCTIONS OBTAINED FROM TABLES IN ARI STANDARD 885.

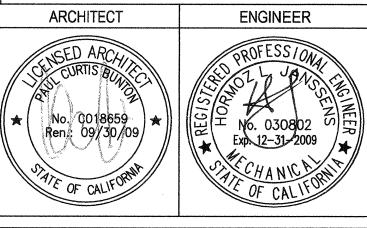
9. SOUND DATA SHALL BE OBTAINED FROM TESTS CONDUCTED IN ACCORDANCE WITH ARI STANDARD 880-98.

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CONTACT	Omar Hawit								
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717 Market	Street								

Suite 500 San Francisco, CA 94103 TEL 415.489.7240 FAX 415.489.7289 www.interfaceengineering.com ARCHITECT



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FILE NO. 41-C1 01- 110074

### BUILDINGS 5 & 6 RENOVATIONS

San Mateo County Community College District

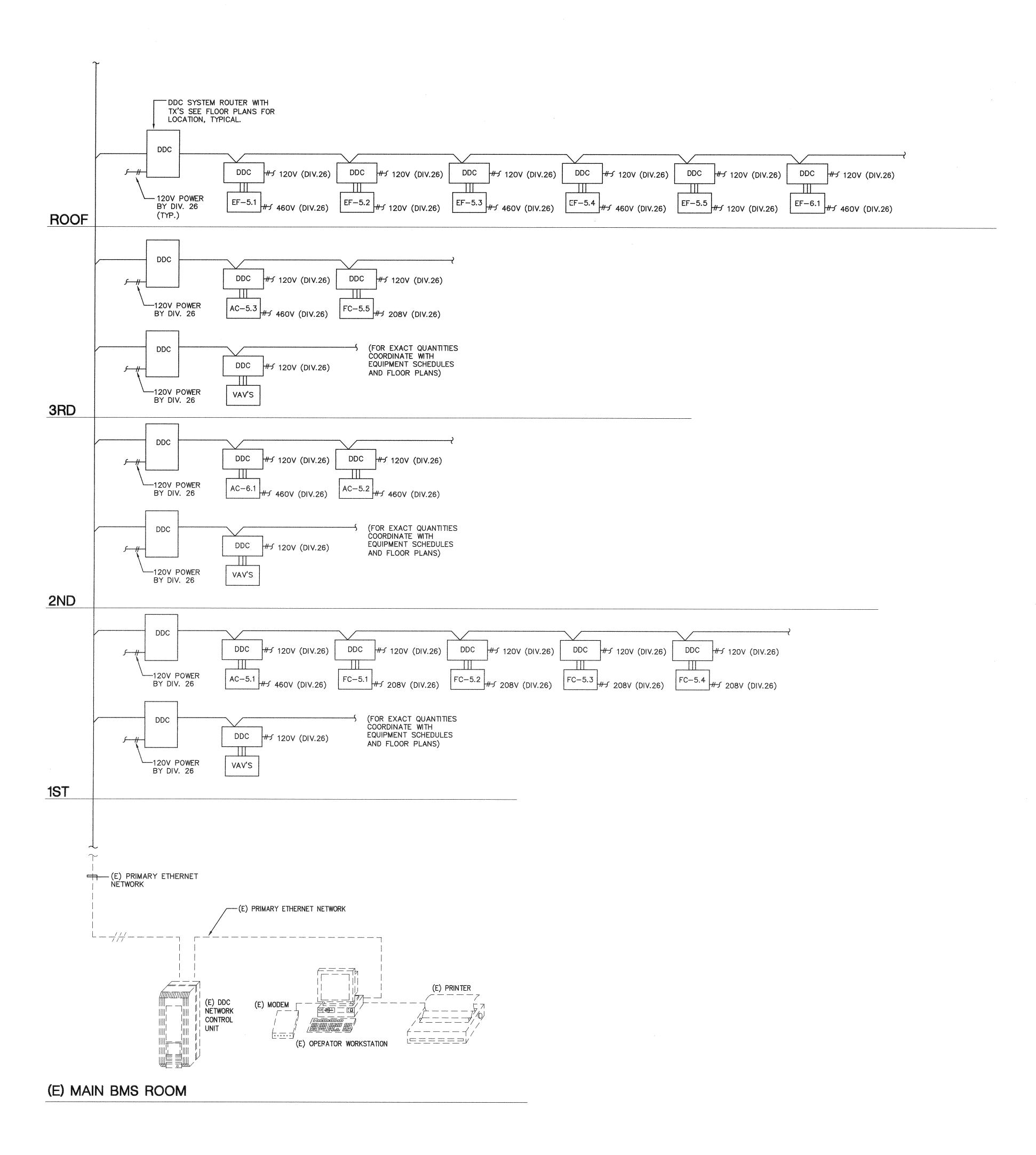
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CAÑADA COLLEGE 4200 Farm Hill Boulevard Redwood City, CA 94061

MECHANICAL EQUIPMENT SCHEDULES

Drawing Number Date 01/22/09 M4.2

AS NOTED Project Number 07013



1 CONTROL ARCHITECTURE DIAGRAM

### CONTROL DIAGRAM SYMBOLS LIST SHEET M5.1 AND M5.2

SHEET M5.1 AND

ABBREVIATIONS

AIR FLOW MEASURING STATION ANALOG SIGNAL IN ANALOG SIGNAL OUT BUILDING MANAGEMENT SYSTEM ELECTRIC CURRENT TRANSMITTER DIRECT DIGITAL CONTROL DIGITAL SIGNAL IN DIGITAL SIGNAL OUT DIFFERENTIAL PRESSURE SENSOR EXHAUST AIR EXHAUST FAN HIGH STATIC HEATING HOT WATER RETURN HEATING HOT WATER SUPPLY MOTORIZED MAKE UP AIR UNIT MOTORIZED STARTER MOTORIZED DAMPER OUTSIDE AIR PRESSURE SENSOR RETURN AIR RETURN FAN SUPPLY AIR SUPPLY FAN SMOKE DETECTOR TEMPERATURE SENSOR THIRD PARTY INTERFACE VARIABLE FREQUENCY DRIVE

#### SYMBOLS

ANALOG SIGNAL IN

ANALOG SIGNAL OUT

CT ELECTRIC CURRENT TRANSMITTER

DDC #5 DIRECT DIGITAL CONTROL

(DI) DIGITAL SIGNAL IN

DO DIGITAL SIGNAL OUT

DP DP DIFFERENTIAL PRESSURE SENSOR

HS HIGH STATIC

M/S MOTORIZED STA

M/S MOTORIZED STARTER
--- MD MOTORIZED DAMPER

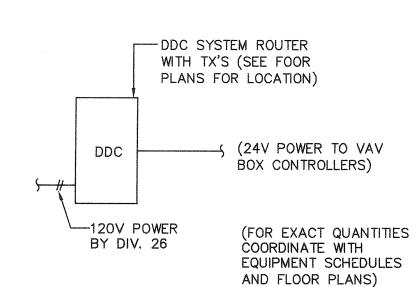
P) PRESSURE SENSOR

(SD) SMOKE DETECTOR

TEMPERATURE SENSOR

TPI THIRD PARTY INTERFACE

VFD VARIABLE FREQUENCY DRIVE



NOTES:

1.) ALL NEW CONTROLS SHALL TIE INTO THE EXISTING CAMPUS BUILDING MANAGEMENT SYSTEM (BMS). ANY THIRD PARTY INTERFACES REQUIRED TO TIE INTO THE EXISTING BMS SYSTEM SHALL BE FURNISHED AND INSTALLED AT NO ADDITIONAL COST.

- ALL CONTROL WIRING SHALL BE FURNISHED AND INSTALLED PER DIV. 23 SPECIFICATIONS. PLENUM RATED CABLE ABOVE REMOVABLE TILE CEILING, RACEWAY ABOVE HARD LID CEILINGS.
- 3.) PROVIDE 24V POWER TO ALL THEIR CONTROL DEVICES.4.) PROVIDE DEVICES/PROGRAMMING OF EXISTING BMS SYSTEM FOR OCCUPANT
- OVERIDE OF HVAC SYSTEM.

  5.) CAMPUS BUILDING CONTROLS IS YAMAS/TAC.
- 6.) PROVIDE ALL POWER REQUIREMENT FOR AIRFLOW MEASURING STATIONS AND BUILDING MANAGEMENT CONTROL SYSTEMS.
- 7.) MISCELLANEOUS POINTS: CONTROL POINTS FOR BUILDING LIGHTING CONTROLS, TEMPERATURE (CHILLED WATER SUPPLY AND RETURN MAIN, HEATING HOT WATER SUPPLY AND RETURN MAIN, SEE 4/M6.1), DIFFERENTIAL PRESSURE (CHILLED WATER MAIN AND HEATING HOT WATER MAIN, SEE 4/M6.1)
- 8.) SEE CONTROLS SPECIFICATIONS FOR BTU METER, THERMOWELLS, AND UTILITY VISION MONITORING SYSTEM DETAILS.

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### BUILDINGS 5 & 6 RENOVATIONS

San Mateo County Community College District

DSA BACK-CHECK

CAÑADA COLLEGE

4200 Farm Hill Boulevard Redwood City, CA 94061

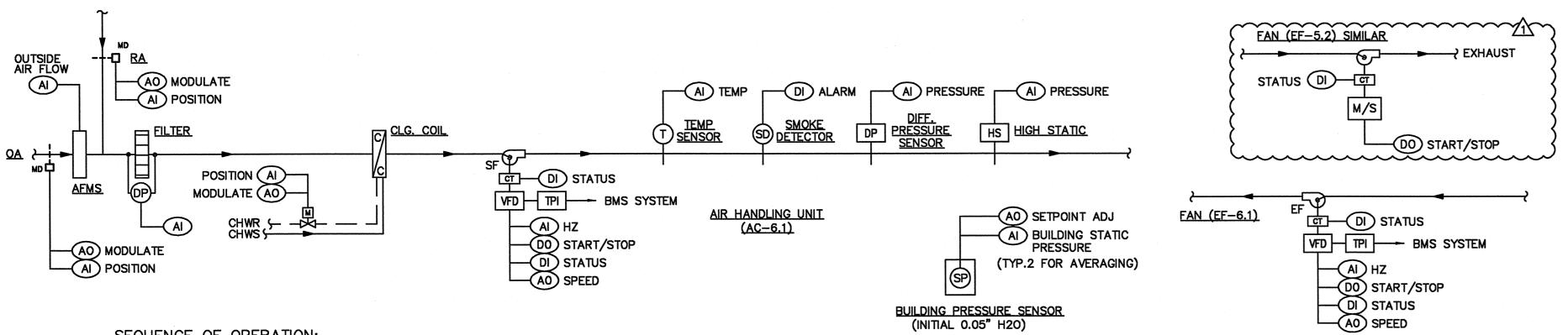
MECHANICAL
CONTROL DIAGRAMS

Date 01/22/09 Scale

07013

M5.1

Drawing Number



SEQUENCE OF OPERATION:

THE OPERATOR WORKSTATION / NETWORK CONTROLLER, THROUGH A USER PROGRAMMABLE SCHEDULE, SHALL ENABLE THE OPERATION OF AHU &

ASSOCIATED EXHAUST FAN. WHEN IN OPERATION THE SUPPLY AND EXHAUST FAN SHALL BE START/STOPPED BY THE AHU CONTROLLER. FAN STATUS ON THE SUPPLY AND EXHAUST FAN SHALL BE MONITORED. AN ALARM MESSAGE SHALL BE INDICATED WHEN THE FAN IS NOT CORRECTLY OPERATING AT THE OPERATOR WORKSTATION. A HIGH LIMIT DUCT PRESSURE SWITCH SHALL DISABLE THE VFD'S THROUGH THE AHU CONTROLLER WHEN THE HIGH LIMIT IN THE SUPPLY AIR DUCT IS REACHED. AN ALARM MESSAGE SHALL BE INDICATED AT THE

OPERATOR WORKSTATION WHEN THIS OCCURS. 1 THE VFD ON THE SUPPLY FAN SHALL BE USED TO MODULATE THE FAN TO MAINTAIN SPACE TEMPERATURE AND ON THE EXHAUST FAN (EF-6.1) TO MAINTAIN SPACE PRESSURE (0.05 IN H2O ADJUSTABLE). EF-5.2 RUNS CONTINOUSLY DURING AC-6.1 OPERATION.

FILTER STATUS SHALL BE MONITORED. AN ALARM MESSAGE SHALL BE INDICATED AT THE OPERATOR WORKSTATION WHEN THE ADJUSTABLE ACCEPTABLE PRESSURE DROP HAS BEEN SURPASSED. (0.75 IN H20) THE AIRFLOW MEASURING STATION SHALL ASSURE THAT THE MINIMUM CFM IS PROVIDED BY THE AIRFLOW MEASURING STATION OUTSIDE AIR DAMPER.

THE DISCHARGE TEMPERATURE SHALL BE MAINTAINED AT AN ADJUSTABLE SETPOINT THROUGH THE MODULATION OF THE RETURN AIR (RA), HOT WATER VALVE, OUTSIDE AIR (OA) DAMPERS, EXHAUST FAN AND CHILLED WATER VALVE IN SEQUENCE.

THE OUTSIDE, DISCHARGE, RETURN, AND MIXED AIR TEMPERATURES SHALL ALL BE MONITORED THROUGH THE AHU FOR USE IN THE FOLLOWING ENERGY MANAGEMENT SEQUENCES:

**ECONOMIZER** WHEN THE OUTSIDE AIR TEMPERATURE (OAT) < FREE COOLING ADJUSTABLE SETPOINT:

THE OUTSIDE(OA), RETURN(RA) DAMPERS, AND EXHAUST FAN SHALL MODULATE TO MAINTAIN THE DESIRED DISCHARGE TEMPERATURE. IF ADDITIONAL COOLING IS REQUIRED, THE COOLING COIL SHALL BE USED TO MAINTAIN THE DESIRED DISCHARGE TEMPERATURE. WHEN THE OAT > FREE COOLING ADJUSTABLE SETPOINT, OA, RA DAMPERS, EXHAUST FAN AND COOLING COIL SHALL MODULATE IN SEQUENCE TO MAINTAIN THE DESIRED DISCHARGE TEMPERATURE.

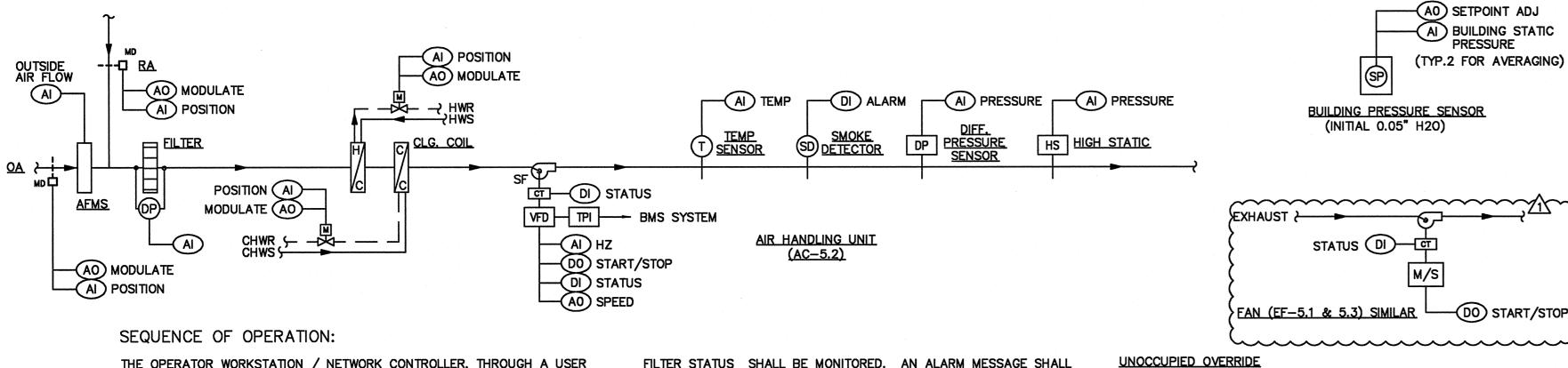
UNOCCUPIED OVERRIDE

AREA WARM-UP OR COOL-DOWN ONE HOUR PRIOR TO OCCUPANCY. DURING WARM-UP, THE EXHAUST FAN SHALL BE OFF. THE OA DAMPER SHALL BE DRIVEN CLOSED POSITION AND THE RA DAMPER SHALL BE DRIVEN OPENED. THIS WILL CONTINUE UNTIL THE SPACE TEMPERATURE IS AT THE ADJUSTABLE SETPOINT. THE SYSTEM AT THIS POINT SHALL RETURN TO

NORMAL OPERATION. DURING COOL-DOWN, IF OAT < RAT, THE OA DAMPER AND EA FAN SHALL BE FULLY OPENED AND THE RA DAMPER SHALL BE CLOSED. THE SUPPLY FAN AND EXHAUST FAN SHALL BE STARTED. WHEN THE SPACE TEMPERATURE < ADJUSTABLE SETPOINT, THE SYSTEM SHALL RETURN TO NORMAL OPERATION.

UPON SMOKE INDICATION IN THE SUPPLY AIR DUCT, THE SUPPLY AND EXHAUST FAN SHALL BE STOPPED THROUGH THE DDC CONTROLLERS. SYSTEM WILL OPERATE IN SHUT DOWN MODE.

### AC-6.1 WITH EF-6.1 AND EF-5.2 CONTROL



THE OPERATOR WORKSTATION / NETWORK CONTROLLER, THROUGH A USER PROGRAMMABLE SCHEDULE, SHALL ENABLE THE OPERATION OF AHU & ASSOCIATED EXHAUST FAN.

FAN STATUS ON THE SUPPLY AND EXHAUST FAN SHALL BE MONITORED. AN ALARM MESSAGE SHALL BE INDICATED WHEN THE FAN IS NOT CORRECTLY OPERATING AT THE OPERATOR WORKSTATION. A HIGH LIMIT DUCT PRESSURE SWITCH SHALL DISABLE THE VFD'S THROUGH THE AHU CONTROLLER WHEN THE HIGH LIMIT IN THE SUPPLY AIR DUCT IS REACHED. AN ALARM MESSAGE SHALI BE INDICATED AT THE OPERATOR WORKSTATION WHEN THIS OCCURS.

THE VFD ON THE SUPPLY FAN SHALL BE USED TO MODULATE THE FAN TO MAINTAIN SPACE TEMPERATURE AND PROVIDE THE REQUIRED MAKE-UP AIR 1 THE KITCHEN. IF EF-5.1 OR EF-5.3 IS COMMANDED ON, THEN AC-5.2 SUPPLY FAN MUST SUPPLY A MINIMUM VALUE OF EXHAUSTED AIR.

FILTER STATUS SHALL BE MONITORED. AN ALARM MESSAGE SHALL BE INDICATED AT THE OPERATOR WORKSTATION WHEN THE ADJUSTABLE ACCEPTABLE PRESSURE DROP HAS BEEN SURPASSED. (0.75 IN H20) THE AIRFLOW MEASURING STATION SHALL ASSURE THAT THE MINIMUM CFM IS PROVIDED BY THE AIRFLOW MEASURING STATION OUTSIDE AIR

THE DISCHARGE TEMPERATURE SHALL BE MAINTAINED AT AN ADJUSTABLE SETPOINT THROUGH THE MODULATION OF THE RETURN AIR (RA), HOT WATER VALVE, OUTSIDE AIR (OA) DAMPERS, EXHAUST FAN AND CHILLED WATER VALVE IN SEQUENCE.

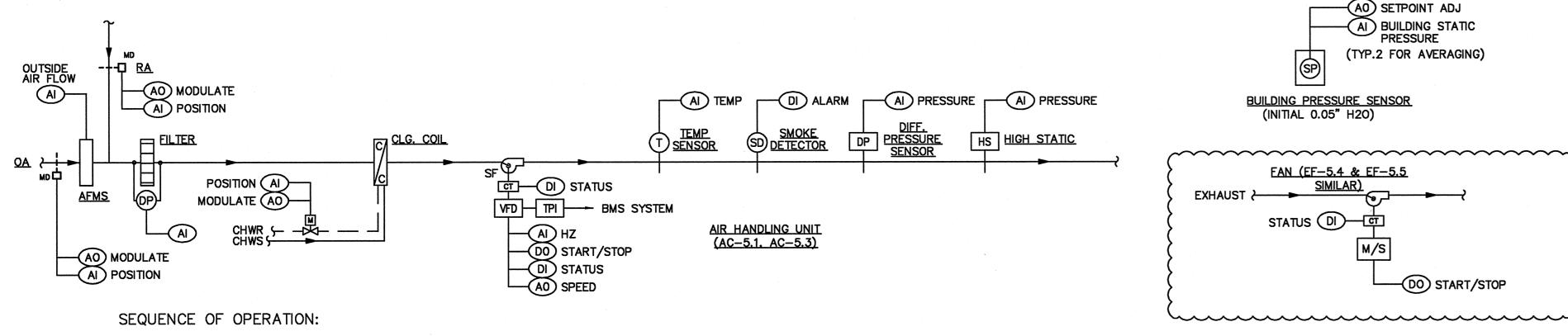
THE OUTSIDE, DISCHARGE, RETURN, AND MIXED AIR TEMPERATURES SHALL ALL BE MONITORED THROUGH THE AHU FOR USE IN THE ENERGY MANAGEMENT.

AREA WARM-UP OR COOL-DOWN ONE HOUR PRIOR TO OCCUPANCY.

DURING WARM-UP, THE EXHAUST FAN SHALL BE OFF. THE OA DAMPER SHALL BE DRIVEN CLOSED POSITION AND THE RA DAMPER SHALL BE DRIVEN OPENED. THIS WILL CONTINUE UNTIL THE SPACE TEMPERATURE IS AT THE ADJUSTABLE SETPOINT. THE SYSTEM AT THIS POINT SHALL RETURN TO

DURING COOL-DOWN, IF OAT < RAT, THE OA DAMPER AND EA FAN SHALL BE FULLY OPENED AND THE RA DAMPER SHALL BE CLOSED. THE SUPPLY FAN AND EXHAUST FAN SHALL BE STARTED. WHEN THE SPACE TEMPERATURE < ADJUSTABLE SETPOINT, THE SYSTEM SHALL RETURN TO NORMAL OPERATION. UPON SMOKE INDICATION IN THE SUPPLY AIR DUCT, THE SUPPLY AND EXHAUST FAN SHALL BE STOPPED THROUGH THE DDC CONTROLLERS. SYSTEM WILL OPERATE IN SHUT DOWN MODE.

# AC-5.2 WITH EF-5.1, AND EF-5.3 CONTROL



THE OPERATOR WORKSTATION / NETWORK CONTROLLER, THROUGH A USER PROGRAMMABLE SCHEDULE, SHALL ENABLE THE OPERATION OF AHU & ASSOCIATED EXHAUST FAN.

WHEN IN OPERATION THE SUPPLY FAN SHALL BE START/STOPPED BY THE AHU. FAN STATUS ON THE SUPPLY FAN SHALL BE MONITORED. AN ALARM MESSAGE SHALL BE INDICATED WHEN THE FAN IS NOT CORRECTLY OPERATING AT THE OPERATOR WORKSTATION. A HIGH LIMIT DUCT PRESSURE SWITCH SHALL DISABLE THE VFD'S THROUGH THE AHU CONTROLLER WHEN THE HIGH LIMIT IN THE SUPPLY AIR DUCT IS REACHED. AN ALARM MESSAGE SHALL BE INDICATED AT THE OPERATOR WORKSTATION WHEN THIS OCCURS. THE ASSOCIATED EXHAUST FAN SHALL BE COMMANDED ON UPON AHU OPERATION. THE VFD ON THE SUPPLY FAN SHALL BE USED TO MODULATE THE FAN TO MAINTAIN SPACE TEMPERATURE AND TO MAINTAIN SPACE PRESSURE (0.05 IN

FILTER STATUS SHALL BE MONITORED. AN ALARM MESSAGE SHALL BE INDICATED AT THE OPERATOR WORKSTATION WHEN THE ADJUSTABLE ACCEPTABLE PRESSURE DROP HAS BEEN SURPASSED. (0.75 IN H20) THE AIRFLOW MEASURING STATION SHALL ASSURE THAT THE MINIMUM CFM IS PROVIDED BY THE AIRFLOW MEASURING STATION OUTSIDE AIR DAMPER.

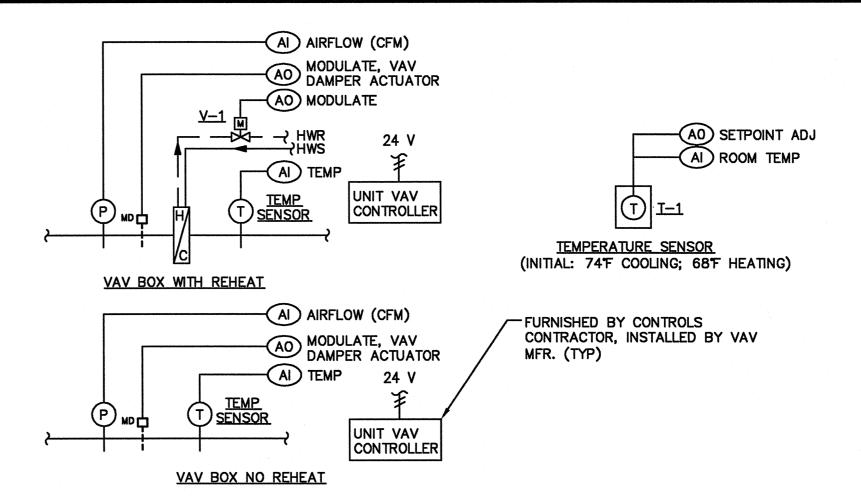
SETPOINT THROUGH THE MODULATION OF THE RETURN AIR (RA), HOT WATER VALVE, OUTSIDE AIR (OA) DAMPERS, EXHAUST FAN AND CHILLED WATER VALVE IN SEQUENCE. THE OUTSIDE, DISCHARGE, RETURN, AND MIXED AIR TEMPERATURES SHALL

ALL BE MONITORED THROUGH THE AHU FOR USE IN THE FOLLOWING ENERGY MANAGEMENT SEQUENCES:

THE DISCHARGE TEMPERATURE SHALL BE MAINTAINED AT AN ADJUSTABLE UNOCCUPIED OVERRIDE AREA WARM-UP OR COOL-DOWN ONE HOUR PRIOR TO OCCUPANCY. DURING WARM-UP, THE EXHAUST FAN SHALL BE OFF. THE OA DAMPER SHALL BE DRIVEN CLOSED POSITION AND THE RA DAMPER SHALL BE DRIVEN OPENED. THIS WILL CONTINUE UNTIL THE SPACE TEMPERATURE IS AT THE ADJUSTABLE SETPOINT. THE SYSTEM AT THIS POINT SHALL RETURN TO NORMAL OPERATION.

DURING COOL-DOWN, IF OAT < RAT, THE OA DAMPER AND EA FAN SHALL BE FULLY OPENED AND THE RA DAMPER SHALL BE CLOSED. THE SUPPLY FAN AND EXHAUST FAN SHALL BE STARTED. WHEN THE SPACE TEMPERATURE < ADJUSTABLE SETPOINT, THE SYSTEM SHALL RETURN TO NORMAL OPERATION. UPON SMOKE INDICATION IN THE SUPPLY AIR DUCT, THE SUPPLY AND EXHAUST FAN SHALL BE STOPPED THROUGH THE DDC CONTROLLERS. SYSTEM WILL OPERATE IN SHUT DOWN MODE.

6 AC-5.1 WITH EF-5.4 AND AC-5.3 WITH EF-5.5 CONTROL



SEQUENCE OF OPERATION:

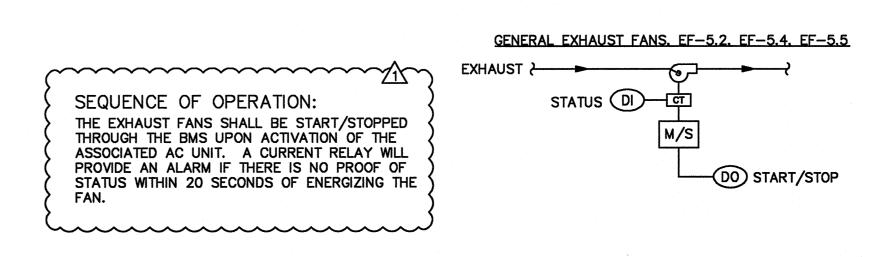
OCCUPIED COOLING:
THE TERMINAL UNIT CONTROLLER SHALL TAKE AN INPUT FROM THE ROOM TEMPERATURE SENSOR TO MODULATE THE VAV DAMPER ACTUATOR TO MAINTAIN THE SPACE ROOM TEMPERATURE.

OCCUPIED HEATING:
ONCE THE ZONE TEMPERATURE DROPS BELOW THE HEATING SETPOINT THE TERMINAL UNIT WILL GO INTO THE HEATING MODE, PRIMARY CFM SETPOINT WILL CHANGE TO THE HEATING FLOW INDICATED IN THE VAV TERMINAL UNIT SCHEDULE. THE HEATING HOT WATER VALVE (V-1) WILL MODULATE TO MAINTAIN SPACE SETPOINT TEMPERATURE (OPERATOR DEFINABLE), A TWO (2) DEGREE ABOVE SETPOINT DEADBAND WILL BE UTILIZED TO MINIMIZE CYCLING (OPERATOR DEFINABLE).

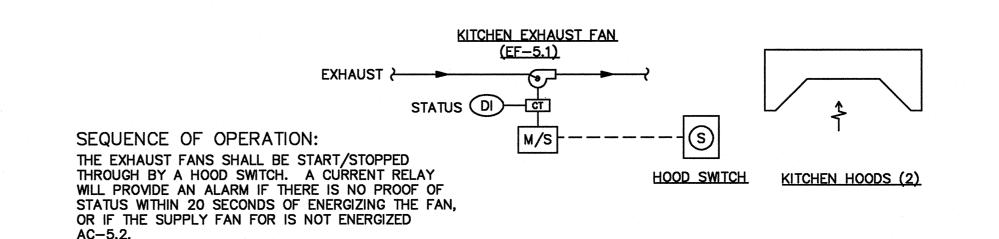
UNOCCUPIED MODE: T-1 SET TO TITLE 24 SET-BACK TEMPERATURE; V-1 CLOSED.

ALARMS; SEND AN ALARM IF VALVES ARE COMMANDED OPEN/CLOSE BUT DISCHARGE TEMPERATURE DOES NOT INDICATE CHANGE IN TEMPERATURE.

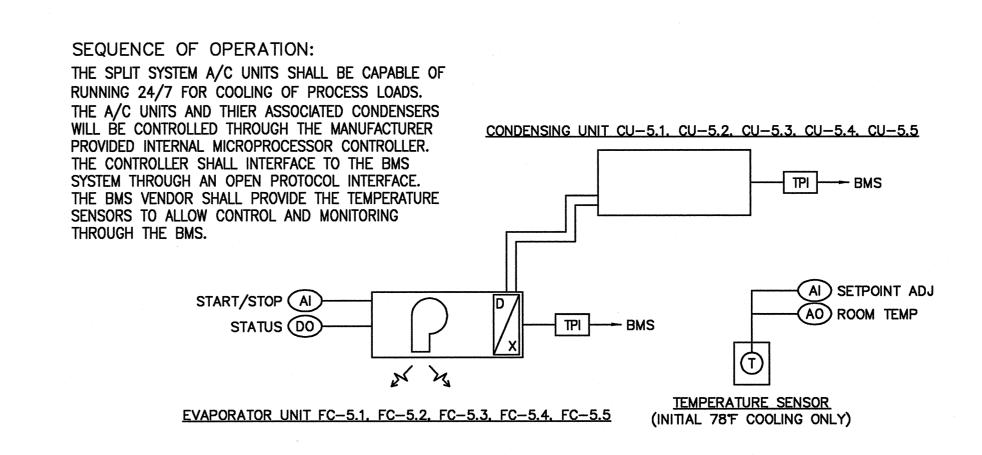
### 2 VAV CONTROL



### 4 EF-5.2, EF-5.3, EF-5.4, AND EF-5.5 CONTROL



### 5 EF-5.1 CONTROL



7 FC AND CU CONTROL



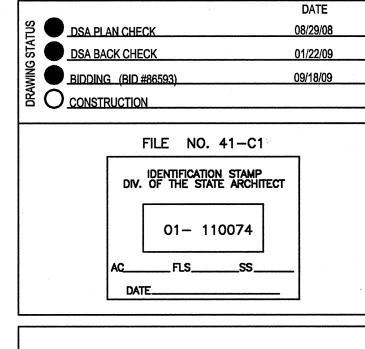
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### BUILDINGS 5 & 6 RENOVATIONS

San Mateo County Community
College District

**BID ADDENDA** 

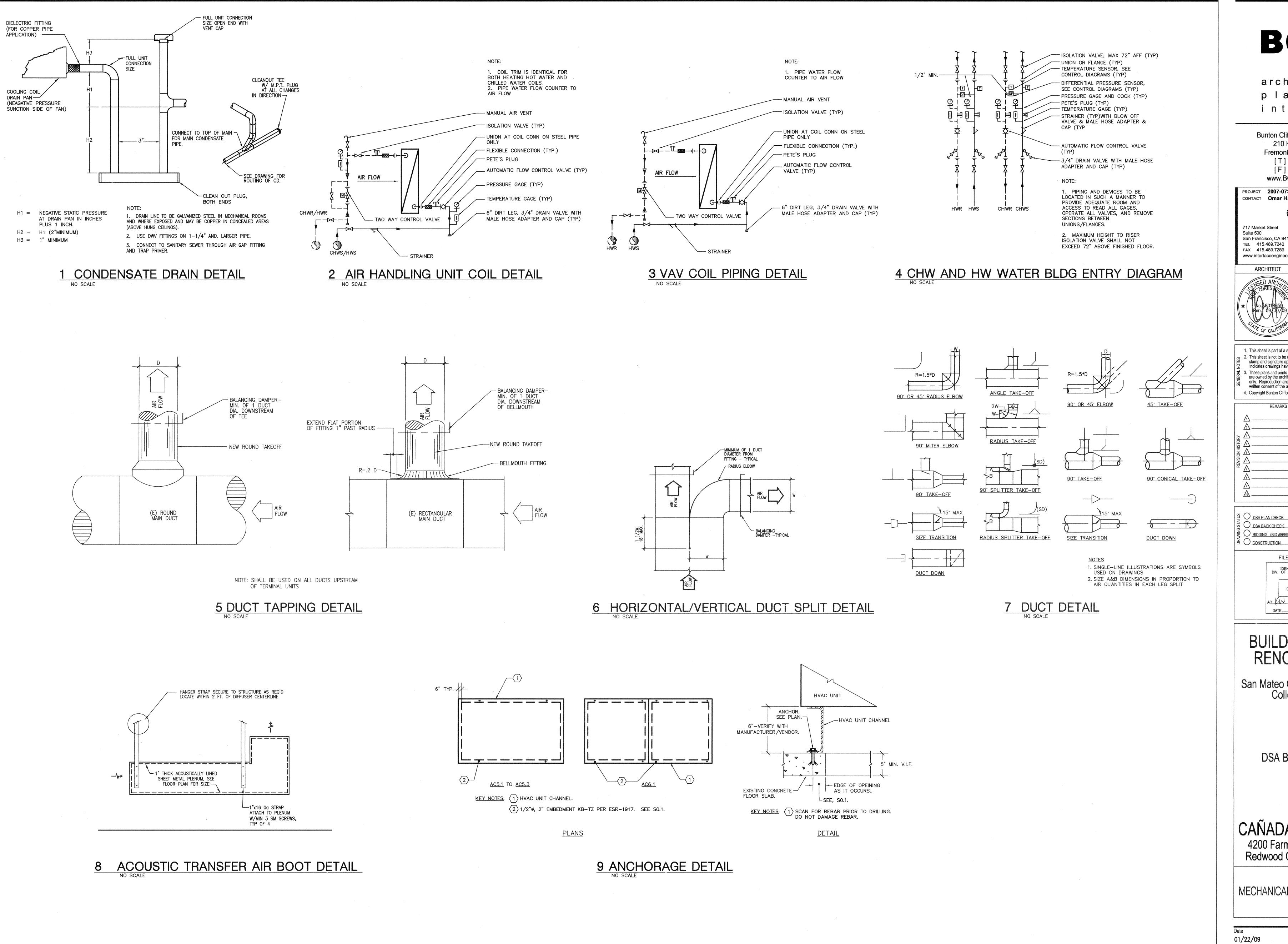
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**MECHANICAL** CONTROL DIAGRAMS

08/29/08 AS NOTED **Project Number** 

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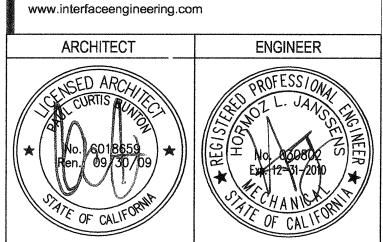
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TEL 41	5.489.7240					



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DRA	Oconstruction	
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	FILE NO. 41-C1	
	IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT	
	01- 110074	

### BUILDINGS 5 & 6 RENOVATIONS

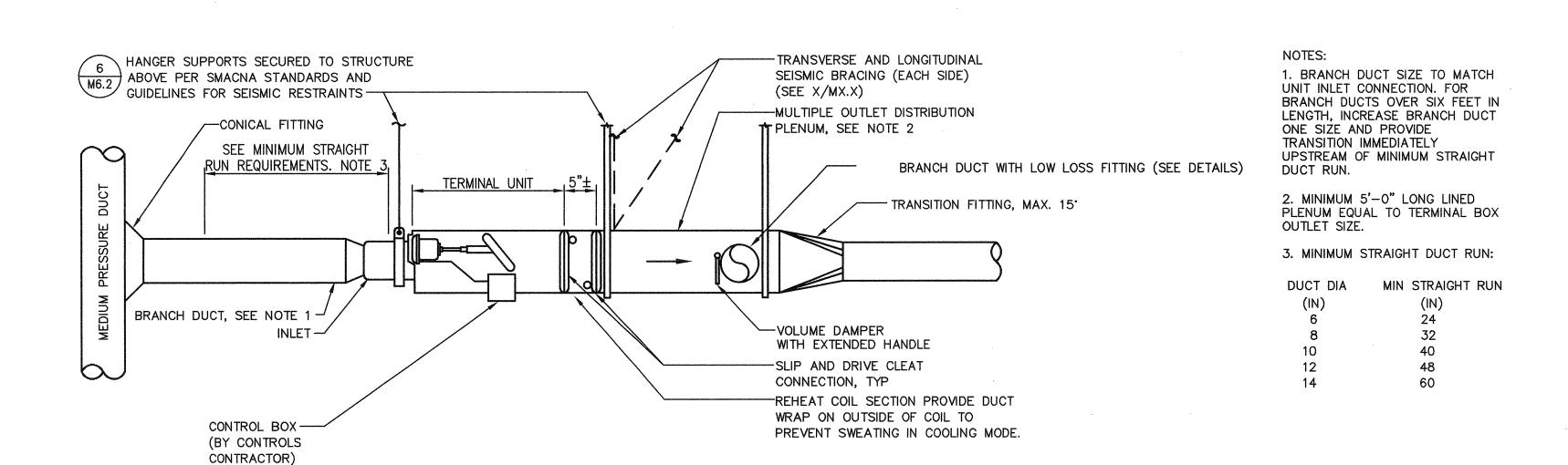
San Mateo County Community
College District

DSA BACK-CHECK

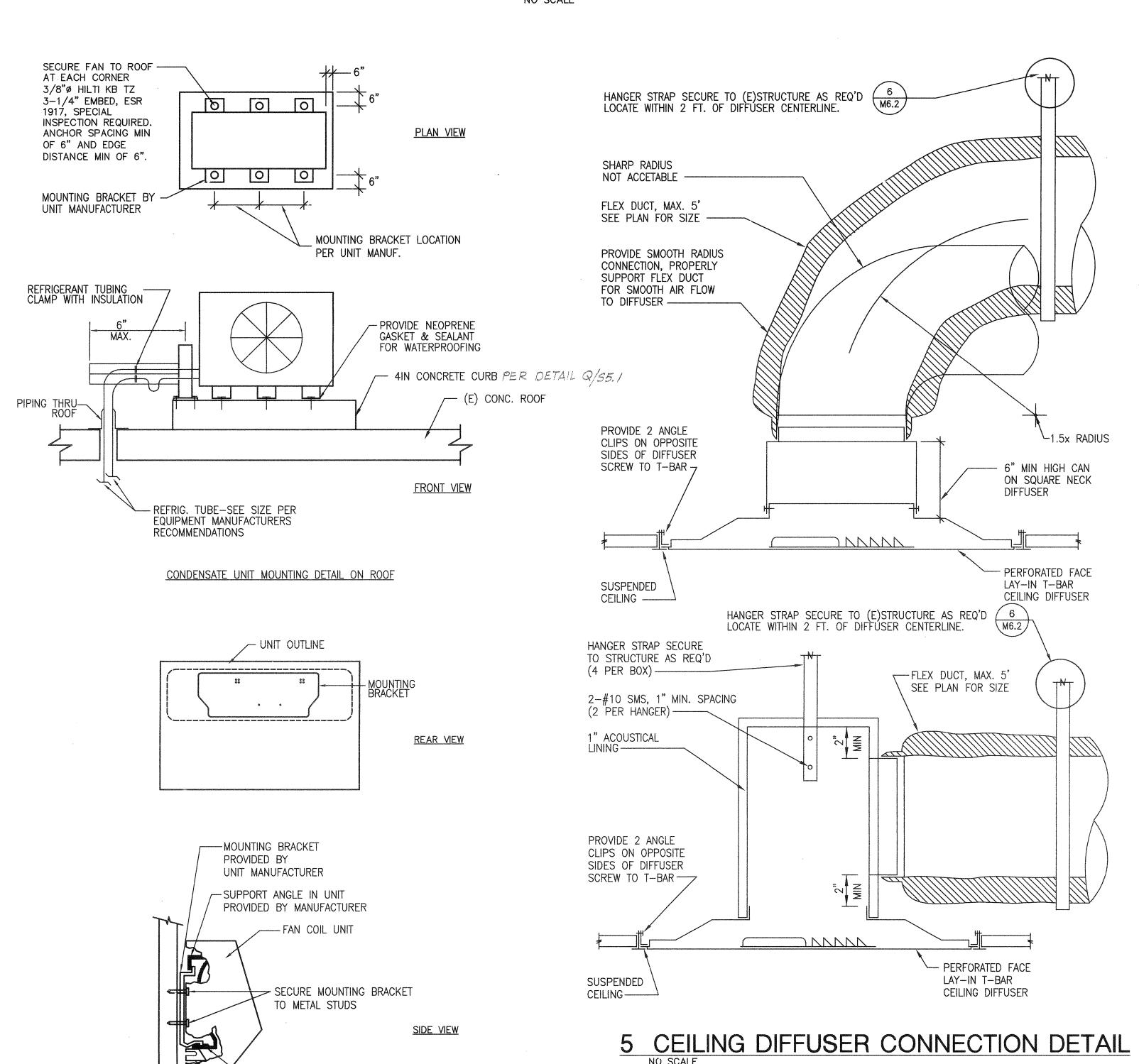
CAÑADA COLLEGE 4200 Farm Hill Boulevard Redwood City, CA 94061

MECHANICAL DETAILS

M6.1 AS NOTED Project Number

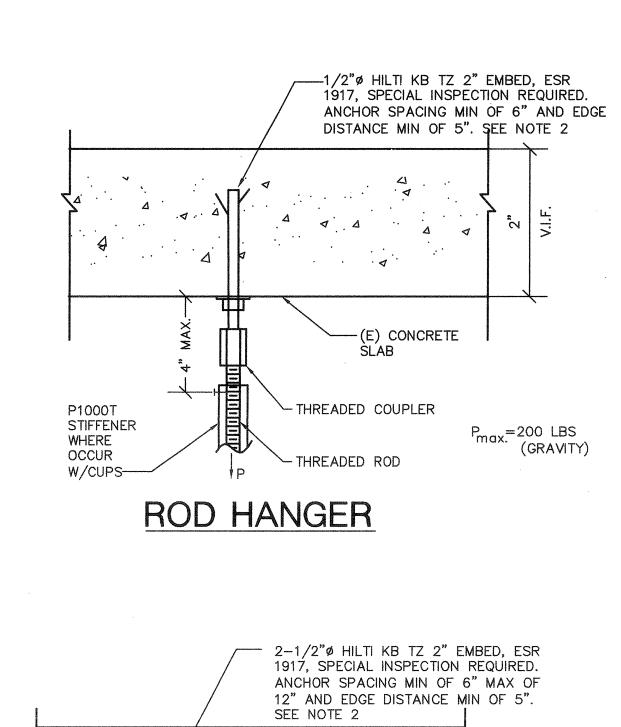


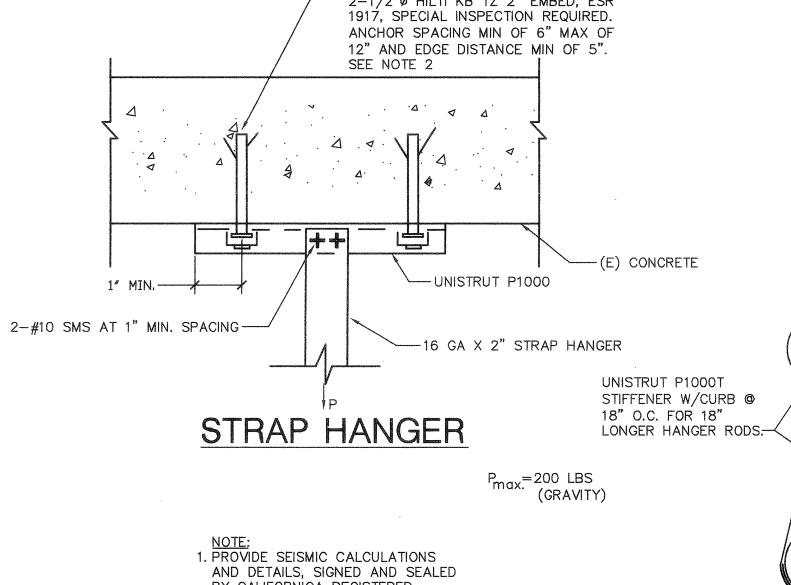
### 1 VAV TERMINAL UNIT DETAIL



-5" CONC. SLAB - ATTACH TO 6 EXISTING MASON TYPE 30 VIBRATION ISOLATORS IN MECHANCIAL ROOM (SEE SPECIFICATIONS) -EXISTING M6.2 HANGER ROD MIN 1/2" DIA. P1000 -- P1000T BRACE STIFFENER **©** 8' O.C. MAX E.W. -1/2" Ø HILTI W/CLIPS KB TZ 3-1/4" EMB, SEE SO.1 PIPE CLAMF 60 PLF NOTE: OMIT BRACING IF LENGTH OF HANGERS - THERMAL HANGER SHIELD OR LESS OR EQUAL TO 12" ISOLATOR WHERE REQUIRED ADJUSTABLE - SUPER-STRUT CHANNEL P1000 @ 4' O.C. ---- 36" MAX. ----

### 2 TRAPEZE PIPE HANGER DETAIL

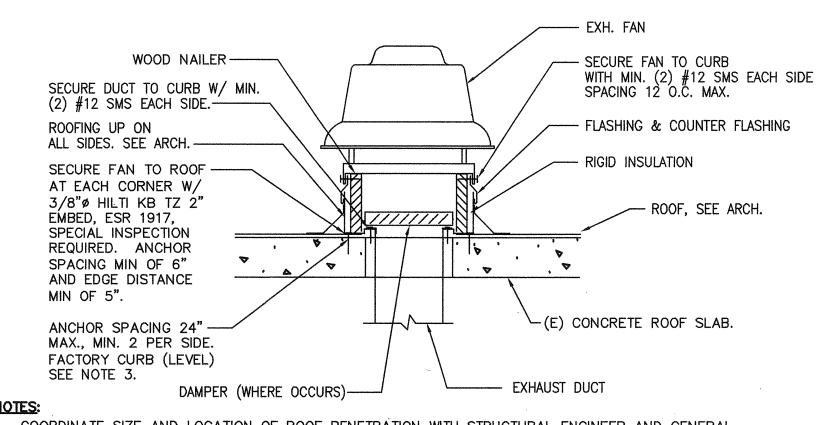




NOTE:

1. PROVIDE SEISMIC CALCULATIONS
AND DETAILS, SIGNED AND SEALED
BY CALIFORNICA REGISTERED STRUCTURAL ENGINEER. NO CUTTING OR DAMAGING OF REBAR 2. SCAN REBAR PRIOR TO DRILLING FOR ANCHOR INSTALLATION. DO NOT CUT OR DAMAGE (E) REBAR

### 6 CONNECTION TO EXISTING STRUCTURE



1. COORDINATE SIZE AND LOCATION OF ROOF PENETRATION WITH STRUCTURAL ENGINEER AND GENERAL CONTRACTOR.

2. SEE 16/A10.7 FOR DETAILS NOT SHOWN OR NOTED.

THIS HANGER IS FOR

M6.2

DUCTS 24" DIA. &

SMALLER

3/8" BOLT, NUT &

STAR WASHER -

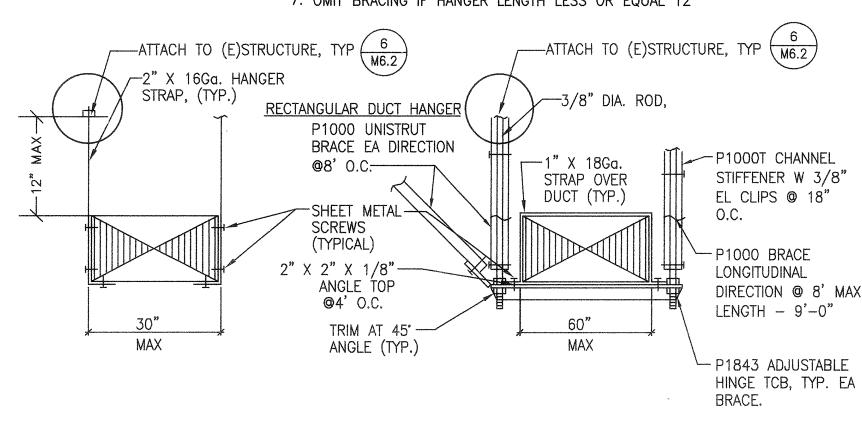
3. SCAN FOR REBAR PRIOR TO DRILLING HOLES FOR ANCHORS. DO NOT CUT OR DAMAGE REBAR. SEE GENERAL NOTES ON SHEET SO.1.

### 3 ROOF EXHAUST FAN

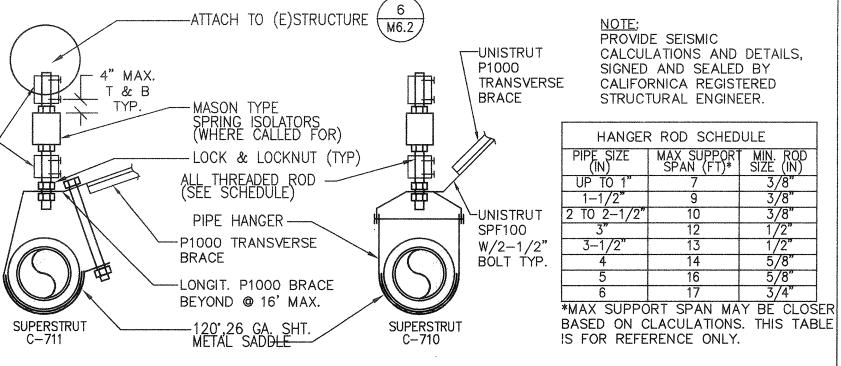
### NOTES:

1. REFER TO SPECIFICATIONS FOR HANGER SPACINGS.

- 2. ATTACHMENTS TO OVERHEAD STRUCTURE SHALL BE MADE IN ACCORDANCE WITH STRUCTURAL ENGINEERS REQUIREMENTS AND WEIGHT LIMITATIONS. ALL ATTACHMENT METHODS TO STRUCTURE SHALL BE SUBMITTED TO ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW.
- 3. PROVIDE SWAY & SEISMIC BRACING PER SMACNA SEISMIC GUIDELINES AND THE LATEST EDITION OF CALIFORNIA BUILDING CODE. CONTRACTOR SHALL INDICATE LOCATIONS OF SEISMIC BRACING ON THE SHOP DRAWING SUBMITTALS.
- 4. HANGER MATERIAL SUPPORTING FLEXIBLE DUCT SHALL IN NO CASE BE LESS THAN 1 1/2 INCHES WIDE. FLEXIBLE DUCT SHALL BE SUPPORTED PER MANUFACTURER'S RECOMMENDED MATERIALS, BUT AT NO GREATER DISTANCE THAN 4 FEET MAX. PERMISSIBLE SAG IS MAX. 1/2 INCHES PER FOOT OF SPACING BETWEEN SUPPORTS.
- 5. REFER TO STRUCTURAL DRAWINGS, SO.1.
- 6. SEE 2/-- FOR LOAD LIMITATIONS AND FOR BRACE TOP CONNECITON.
- 7. OMIT BRACING IF HANGER LENGTH LESS OR EQUAL 12"



### 7 DUCT HANGER DETAILS



- 1. ATTACHMENT TO OVERHEAD STRUCTURE SHALL BE MADE IN ACCORDANCE WITH STRUCTURAL ENGINEERS REQUIREMENTS AND WEIGHT LIMITATION PER
- 2. PROVIDE SWAY & SEISMIC BRACING PER MASON SEISMIC GUIDELINES, INCLUDING ALL ANGLE, LONGITUDINAL AND TRANVSVERSE
- 3. SEE 2/-- FOR BRACE TOP CONNECTION.
- 4. OMIT BRACING IF PIPE HANGER ROD LENGHT IS LESS OR EQUAL 12".

8 PIPE HANGER DETAILS

#### architecture planning interiors

Bunton Clifford Associates, Inc.

210 Hammond Ave. Fremont, California 94539 [T] 510.445.1000 [F] 510.445.1005 www.BCAincOnline.com

PROJECT **2007-0731** 

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ARCHITECT	ENGINEER
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O DSA PLAN CHECK DSA BACK CHECK BIDDING (BID #86593) <sup>№</sup> O construction

> FILE NO. 41-C1 IDENTIFICATION STAMP
> DIV. OF THE STATE ARCHITECT 01- 110074 AC M FLS N SS H DATE MAR 1 9 2009

### BUILDINGS 5 & 6 RENOVATIONS

San Mateo County Community
College District

DSA BACK-CHECK

CAÑADA COLLEGE 4200 Farm Hill Boulevard

Redwood City, CA 94061

MECHANICAL DETAILS

Drawing Number M6.2 AS NOTED

Project Number

07013

4 SPLIT SYSTEM MOUNTING DETAIL

-KNOCKOUT FOR LEFT SIDE REFRIGERANT, DRAIN, POWER

AND SIGNAL LINES.

1. FOR DRAIN CONNECTION, REFER TO PLUMBING DRAWINGS.

FAN COIL UNIT MOUNTING DETAIL ON WALL

FILE: 0731M62.DWG - M62 | EDIT: 3/18/2009 11:53 AM BY ALANB | PLOT: 3/18/2009 11:53 AM BY ALAN BLUM