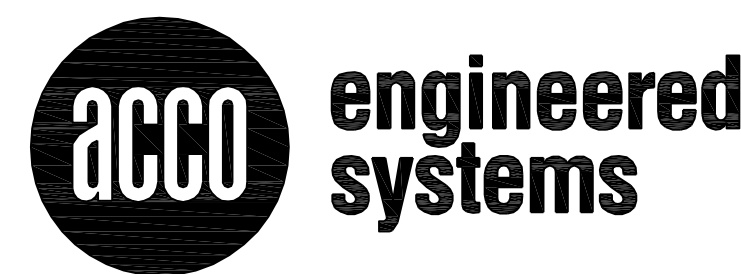


College of San Mateo

BUILDING 12 AND 17 MODERNIZATION
1700 W. HILLSDALE BLVD., SAN MATEO CALIFORNIA



1133 ALADDIN AVE., SAN LEANDRO, CALIFORNIA 94577
Office (510)346-4300 Fax (510)347-1313

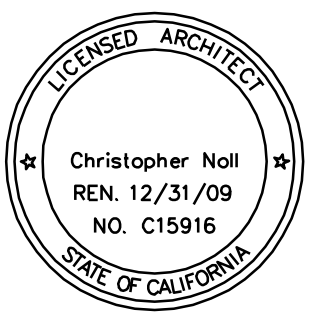


729 Heinz Avenue
Berkeley, CA 94710
510.649.8295
fax 510.649.3008



IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

APPLICATION NUMBER 04-110537
AC _____ FL _____ SS _____
DATE _____



COLLEGE OF SAN MATEO
BUILDING 12 AND 17 MODERNIZATION

SMCCCD
3401 GSN Drive
San Mateo, CA 94402
College of San Mateo
1700 W. Hillside Blvd.
San Mateo, CA 94402

SHEET TITLE

COVER SHT, HVAC LEGEND & DWG. INDEX

REVISIONS		
NO.	DATE	DESCRIPTION
△	09/21/09	118/155 EF ADD
△	10/30/09	ISOLATION VALVE ADDS
-	10/19/10	AS-BUILTS

DATE	OCTOBER 19, 2010
DRAWN	LA/RG
CHECKED	CR
SCALE	NONE
ACCO JOB NO.:	628985

SHEET NUMBER

AC0.00

HVAC LEGEND

DUCT SYMBOL LEGEND		DUCT SYMBOL LEGEND		PIPING SYMBOL LEGEND		ABBREVIATIONS							
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	ABBRV.	DESCRIPTION	ABBRV.	DESCRIPTION	ABBRV.	DESCRIPTION	ABBRV.	DESCRIPTION
(N) [Symbol] (E) [Symbol]	NEW(N) & EXISTING(E) RECTANGULAR SUPPLY AIR DUCT RISER	[Symbol]	MANUAL VOLUME DAMPER	[Symbol]	AUTOMATIC AIR VENT	ABV.	ABOVE	GA.	GAUGE	S.A.	SUPPLY AIR	UBC	UNIFORM BUILDING CODE
(N) [Symbol] (E) [Symbol]	NEW(N) & EXISTING(E) RECTANGULAR RETURN AIR DUCT RISER	[Symbol]	MECH. CONTR. TO PROVIDE EQUIPMENT & INSTALLATION (U.N.O.)	[Symbol]	BALL VALVE	A/C	AIR CONDITIONING	G.C.	GENERAL CONTRACTOR	SAG	SUPPLY AIR GRILLE	U.C.	UNDER CUT
(N) [Symbol] (E) [Symbol]	NEW(N) & EXISTING(E) RECTANGULAR EXHAUST AIR DUCT RISER	[Symbol]	MOTORIZED DAMPER (ELECTRIC)	[Symbol]	BUTTERFLY VALVE	A.D.	ACCESS DOOR	G.I.	GALVANIZED IRON	SAR	SUPPLY AIR REGISTER	U.G.	UNDER GROUND
(N) [Symbol] (E) [Symbol]	NEW(N) & EXISTING(E) ROUND AIR DUCT RISER	[Symbol]	MOTORIZED DAMPER (PNEUMATIC)	[Symbol]	BLIND FLANGE	A.F.F.	ABOVE FINISHED FLOOR	G.V.	GATE VALVE	S.D.	SMOKE DETECTOR	U.M.C.	UNIFORM MECHANICAL CODE
[Symbol]	NEW SINGLE & DOUBLE LINE RECTANGULAR OR ROUND DUCT	[Symbol]	POINT OF CONNECTION	[Symbol]	CHECK VALVE	A.P.	ACCESS PANEL	GEN.	GENERAL	SHT.	SHEET	U.N.O.	UNLESS NOTED OTHERWISE
[Symbol]	EXISTING SINGLE & DOUBLE LINE RECTANGULAR OR ROUND DUCT	[Symbol]	RETURN AIR GRILLE (NEW & EXISTING - 24x24 PANEL)	[Symbol]	CIRCUIT SETTER	APPROX. & @	APPROXIMATE AND AT	OPH	GALLONS PER HOUR	S.I.	SOUND INSULATION	U.T.R.	UP THROUGH ROOF
[Symbol]	EXISTING DUCTWORK TO BE DEMOLISHED	[Symbol]	RETURN AIR REGISTER (NEW & EXISTING - SURF. MTD.)	[Symbol]	DRAIN (ROOF, FLOOR)	BD.	BOARD	GPM	GALLONS PER MINUTE	S.M.	SHEET METAL	V.	VENT
[Symbol]	SINGLE & DOUBLE LINE DUCTWORK WITH TRANSITIONAL FITTING	[Symbol]	RETURN AIR GRILLE - 24x12 (NEW & EXISTING - T-BAR CEIL'G.)	[Symbol]	END CAP	B.D.D.	BACKDRAFT DAMPER	IN.	INCH	S.O.	SQUARE	V.V.	VARIABLE AIR VOLUME
[Symbol]	SQUARE TO ROUND TRANSITIONAL FITTING	[Symbol]	REVISION CLOUD	[Symbol]	FLOW SWITCH	B.F.	BUTTERFLY VALVE	I.D.	INSIDE DIMENSION	S.S.	STAINLESS STEEL	VLV.	VALVE
[Symbol]	SQUARE TO OVAL TRANSITIONAL FITTING	[Symbol]	REVISION DELTA	[Symbol]	GATE VALVE	B.O.D.	BOTTOM OF DUCT	B.O.P.	BOTTOM OF PIPE	STD.	STANDARD	VSD.	VARIABLE SPEED DRIVE
[Symbol]	90° RADIUS ELBOW (1) . 90° SQUARE ELBOW WITH TURNING VANES (2)	[Symbol]	ROUND CEILING DIFFUSER (NEW & EXISTING)	[Symbol]	FLEXIBLE CONNECTION	B.V.	BOTTOM OF PIPE	BTM.	BOTTOM	STRUC.T.	STRUCTURAL	VOL.	VOLUME
[Symbol]	ROUND DUCT TURNING DOWN (1) . RECT. DUCT TURNING DOWN (2)	[Symbol]	SECTION NUMBER SECTION CALL OUT SYMBOL SHEET NUMBER	[Symbol]	FLOW CONTROL	BLDG.	BUILDING	CLG	CUBIC FEET PER MINUTE	SW	SUSPENDED	WMS	WIRE MESH SCREEN
[Symbol]	AIR TIGHT (DOOR, SHAFT, ETC.) BY OTHERS.	[Symbol]	SUPPLY AIR GRILLE (NEW & EXISTING - 24x24 PANEL)	[Symbol]	PETE'S PLUG	BTM.	BOTTOM	CH.V.	CHECK VALVE	SWR	SIDE WALL REGISTER	WT.	WEIGHT
[Symbol]	BACK DRAFT DAMPER	[Symbol]	SUPPLY AIR REGISTER (NEW & EXISTING - SURF. MTD.)	[Symbol]	PIPE (NEW)	CLG	CEILING	CH.WR	CHILLED WATER RETURN	TAG	TRANSFER AIR GRILLE		
[Symbol]	CEILING OR DUCT ACCESS PANEL OR DOOR	[Symbol]	SMOKE DETECTOR (AREA TYPE)	[Symbol]	PIPE (EXISTING)	CFM	CUBIC FEET PER MINUTE	CHWS	CHILLED WATER SUPPLY	T.F.	TOP FLAT		
[Symbol]	CENTER LINE	[Symbol]	SMOKE DETECTOR (DUCT TYPE)	[Symbol]	PRESSURE GAUGE WITH COCK	CMU	CONCRETE MASONRY UNIT	CONC.	CONCRETE	T.O.D.	TOP OF DUCT		
[Symbol]	DETAIL NUMBER DETAIL CALL OUT SYMBOL SHEET NUMBER	[Symbol]	SIDE WALL REGISTER, GRILLE	[Symbol]	REDUCER	CONC.	CONCRETE	CONN.	CONNECTION	T.O.P.	TOP OF PIPE		
[Symbol]	EXHAUST AIR GRILLE (NEW & EXISTING - 24x24 PANEL)	[Symbol]	WALL SWITCH	[Symbol]	WATER SYSTEM TYPE PIPE RISER CALL OUT SYMBOL SHEET NUMBER	CONTR.	CONTRACTOR	CONV.	CONDENSER WATER RETURN	TRANS.	TRANSFER		
[Symbol]	EXHAUST AIR REGISTER (NEW & EXISTING - SURF. MTD.)	[Symbol]	THERMOSTAT WITH ZONE NUMBER	[Symbol]	SCHRAEDER VALVE	CND.	CONDENSATE	CONV.	CONDENSER WATER SUPPLY	T'STAT	THERMOSTAT		
[Symbol]	ELECT. CONN. LOCATION TO EQUIP. (APPROX.) BY ELECT. CONTR.	[Symbol]	TRANSFER AIR GRILLE (NEW & EXISTING - SURF. MTD.)	[Symbol]	STRAINER	CND.	CONDENSATE	CWR	CONDENSER WATER RETURN	TYP.	TYPICAL		
[Symbol]	EQUIPMENT TAG LABEL	[Symbol]	COOLING ONLY VAV BOX WITH SQUARE TO ROUND OUTLET	[Symbol]	STRAINER W/DRAIN VALVE AND HOSE ADAPTER	CWS	CONDENSER WATER SUPPLY	CWS	CONDENSER WATER SUPPLY				
[Symbol]	FIRE DAMPER (SINGLE LINE AND DOUBLE LINE)	[Symbol]	REHEAT VAV BOX WITH SQUARE TO ROUND OUTLET	[Symbol]	TEMPERATURE SENSOR WELL	COND.	CONDENSATE	DMP'R.	DAMPER				
[Symbol]	FIRE/SMOKE DAMPER (SINGLE LINE AND DOUBLE LINE)	[Symbol]	COOLING ONLY VAV BOX WITH RECTANGULAR LINED S.M. PLENUM	[Symbol]	THERMOMETER	DET.	DETAIL	DET.	DETAIL				
[Symbol]	FIRE DAMPER LABEL	[Symbol]	REHEAT VAV BOX WITH RECTANGULAR LINED S.M. PLENUM	[Symbol]	TRIPLE DUTY VALVE	D/L	DOOR LOUVER	D/L	DOOR LOUVER				
[Symbol]	FIRE/SMOKE DAMPER LABEL	[Symbol]	DIFFUSER NECK SIZE - AIR PATTERN - AIR VOLUME	[Symbol]	UNION	DN.	DOWN	DN.	DOWN				
[Symbol]	FLEXIBLE DUCT	[Symbol]	END CAP	[Symbol]	VENT	DWG	DRAWING	DWG	DRAWING				
[Symbol]	LINEAR DIFFUSER (SUPPLY OR RETURN)	[Symbol]	VICTAULIC COUPLING (3)	[Symbol]	WATER FLOW DIRECTION	(E)	EXISTING	(E)	EXISTING				

HVAC DRAWING INDEX	
SHEET NO.	DESCRIPTION
AC0.00	COVER SHEET, HVAC LEGEND AND DRAWING INDEX
AC0.01	TITLE 24, MADATORY MEASURES AND GENERAL NOTES
AC0.02	EQUIPMENT SCHEDULES
AC1.11	HVAC - GROUND FLOOR PLAN AND DEMO PLAN
AC1.12	HVAC - FIRST FLOOR, ROOF PLAN AND ROOF COORDINATION PLAN
AC1.21D	HVAC - FIRST FLOOR DEMO PLAN
AC1.21	HVAC - FIRST FLOOR PLAN
AC1.22	HVAC - ROOF PLAN AND ROOF COORDINATION PLAN
AC4.01	HVAC - DETAILS
AC6.01	HVAC - PIPING AND WIRING DIAGRAMS

NOTE: REFER TO ARCHITECTURAL DRAWING "COVER SHEET" FOR LIST OF GOVERNING CODES AND STANDARDS.

TITLE 24 COMPLIANCE

<p style="text-align: center;">CERTIFICATE OF COMPLIANCE (Part 1 of 3) MECH-1-C</p> <p>PROJECT NAME: COLLEGE OF SAN MATEO - BLDG. 12 & 17 PROJECT ADDRESS: 1700 W. HILLSDALE BLVD. SAN MATEO, CA PROJECT ARCHITECT: ACCO ENGINEERED SYSTEMS DOCUMENTATION AUTHOR: RICHARD SHIER DATE: 08/27/09</p> <p>GENERAL INFORMATION BUILDING TYPE: <input checked="" type="checkbox"/> NONRESIDENTIAL BUILDING CONDITIONED FLOOR AREA: 12,685 SF CLIMATE ZONE: 3 PHASE OF CONSTRUCTION: <input checked="" type="checkbox"/> ALTERATION</p> <p>STATEMENT OF COMPLIANCE This Certificate of Compliance lists the building features and performance specifications needed to comply with Title 24, Parts 1 and 6 of the California Code of Regulations. This certificate applies only to building mechanical requirements.</p> <p>DOCUMENTATION AUTHOR: RICHARD SHIER, DATE: 08/27/09</p> <p>PRINCIPLE MECHANICAL DESIGNER: CRAIG RISTOW, DATE: 08/27/09, LIC.#: M030828</p> <p>INSTRUCTIONS TO APPLICANT MECHANICAL COMPLIANCE & WORKSHEETS (check box if worksheet is included)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td><input checked="" type="checkbox"/> MECH-1-C</td> <td>Certificate of Compliance, Part 1 of 3, 2 of 3, 3 of 3 are required on plans for all submittals.</td> </tr> <tr> <td><input checked="" type="checkbox"/> MECH-2-C</td> <td>Air/Water/Service/Water Pools Requirements, Part 1 of 3, 2 of 3, 3 of 3 are required for all submittals, but may be on plans.</td> </tr> <tr> <td><input checked="" type="checkbox"/> MECH-3-C</td> <td>Mechanical Ventilation and Reheat is required for all submittals with mechanical ventilation, but may be on plans.</td> </tr> <tr> <td><input checked="" type="checkbox"/> MECH-4-C</td> <td>HVAC Misc. Prescriptive Requirements is required for all prescriptive submittals, but may be on plans.</td> </tr> </table> <p style="text-align: center;">2006 Nonresidential Compliance Forms January 2006</p>	<input checked="" type="checkbox"/> MECH-1-C	Certificate of Compliance, Part 1 of 3, 2 of 3, 3 of 3 are required on plans for all submittals.	<input checked="" type="checkbox"/> MECH-2-C	Air/Water/Service/Water Pools Requirements, Part 1 of 3, 2 of 3, 3 of 3 are required for all submittals, but may be on plans.	<input checked="" type="checkbox"/> MECH-3-C	Mechanical Ventilation and Reheat is required for all submittals with mechanical ventilation, but may be on plans.	<input checked="" type="checkbox"/> MECH-4-C	HVAC Misc. Prescriptive Requirements is required for all prescriptive submittals, but may be on plans.	<p style="text-align: center;">CERTIFICATE OF COMPLIANCE (Part 2 of 3) MECH-1-C</p> <p>PROJECT NAME: COLLEGE OF SAN MATEO - BLDG. 12 & 17 DATE: 08/27/09</p> <p>Designer: This form is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for mechanical systems. The designer is required to check the boxes for all acceptance tests that apply and list all equipment that requires an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems to be tested in parentheses. The NJ number designates the Section in the Appendix of the Nonresidential ACM Manual that describes the test. Also indicate the person responsible for performing the tests (i.e. the installing contractor, design professional or an agent selected by the owner). Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.</p> <p>Building Departments: Systems Acceptance. Before occupancy permit is granted for a newly constructed building or space, or a new space-conditioning system serving a building or space is operated for normal use, all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance.</p> <p>In addition a Certificate of Acceptance, MECH-1-A, Form shall be submitted to the building department that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of §10-103(b) and Title 24 Part 6.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Test Description</th> <th>Test Performed By:</th> </tr> <tr> <td><input checked="" type="checkbox"/> MECH-2-A: Ventilation System Acceptance Document <ul style="list-style-type: none"> Variable Air Volume Systems Outdoor Air Acceptance Constant Air Volume Systems Outdoor Air Acceptance <i>Test required on all New systems both New Construction and Retrofit.</i></td> <td>ACCO</td> </tr> <tr> <td>Equipment requiring acceptance testing: FAN COIL UNIT (2)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> MECH-3-A: Packaged HVAC Systems Acceptance Document <i>Test required on all New systems both New Construction and Retrofit.</i></td> <td>N/A</td> </tr> <tr> <td>Equipment requiring acceptance testing: N/A</td> <td></td> </tr> <tr> <td><input type="checkbox"/> MECH-4-A: Air-Side Economizer Acceptance Document <i>Test required on all new air-side economizers for both New Construction and Retrofit. Units with economizers that are installed at the factory and certified with the Commission do not require equipment testing but do require construction inspection.</i></td> <td>N/A</td> </tr> <tr> <td>Equipment requiring acceptance testing: N/A</td> <td></td> </tr> </table> <p style="text-align: center;">2006 Nonresidential Compliance Forms January 2006</p>	Test Description	Test Performed By:	<input checked="" type="checkbox"/> MECH-2-A: Ventilation System Acceptance Document <ul style="list-style-type: none"> Variable Air Volume Systems Outdoor Air Acceptance Constant Air Volume Systems Outdoor Air Acceptance <i>Test required on all New systems both New Construction and Retrofit.</i>	ACCO	Equipment requiring acceptance testing: FAN COIL UNIT (2)		<input type="checkbox"/> MECH-3-A: Packaged HVAC Systems Acceptance Document <i>Test required on all New systems both New Construction and Retrofit.</i>	N/A	Equipment requiring acceptance testing: N/A		<input type="checkbox"/> MECH-4-A: Air-Side Economizer Acceptance Document <i>Test required on all new air-side economizers for both New Construction and Retrofit. Units with economizers that are installed at the factory and certified with the Commission do not require equipment testing but do require construction inspection.</i>	N/A	Equipment requiring acceptance testing: N/A		<p style="text-align: center;">CERTIFICATE OF COMPLIANCE (Part 3 of 3) MECH-1-C</p> <p>PROJECT NAME: COLLEGE OF SAN MATEO - BLDG. 12 & 17 DATE: 08/27/09</p> <p>Test Description</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Test Description</th> <th>Test Performed By:</th> </tr> <tr> <td><input type="checkbox"/> MECH-5-A: Air Distribution Acceptance Document <i>This test required if the unit serves 5,000 ft² of space or less and 25% or more of the ducts are in nonconditioned or semiconditioned space like an attic. New systems that meet the above requirements. Retrofit systems that meet the above requirements and either extend ducts, replace ducts or replace the packaged unit.</i></td> <td>N/A</td> </tr> <tr> <td>Equipment requiring acceptance testing: N/A</td> <td></td> </tr> <tr> <td><input type="checkbox"/> MECH-6-A: Demand Control Ventilation Acceptance Document <i>All new DCV controls installed on new or existing packaged systems must be tested.</i></td> <td>N/A</td> </tr> <tr> <td>Equipment requiring acceptance testing: N/A</td> <td></td> </tr> <tr> <td><input type="checkbox"/> MECH-7-A: Supply Fan Variable Flow Control Acceptance Document <i>All new VAV fan volume controls installed on new or existing systems must be tested.</i></td> <td>N/A</td> </tr> <tr> <td>Equipment requiring acceptance testing: N/A</td> <td></td> </tr> <tr> <td><input type="checkbox"/> MECH-8-A: Hydronic System Control Acceptance Document <ul style="list-style-type: none"> Variable Flow Controls, Applies to chilled and hot water systems. Automatic Isolation Controls, Applies to new boilers and chillers and the primary pumps are connected to a common header. Supply Water Temperature Reset Controls, Applies to new constant flow chilled and hot water systems that have a design capacity greater than or equal to 500,000 Btu/hr. Water-Loop Heat Pump Controls, Applies to all new waterloop heat pump systems where the combined loop pumps are greater than 5 hp. Variable Frequency Control, Applies to all new distribution pumps on new variable flow chilled, hydronic heat pump or condenser water systems where the pumps motors are greater than 5 hp. </td> <td>N/A</td> </tr> <tr> <td>Equipment requiring acceptance testing: N/A</td> <td></td> </tr> </table> <p style="text-align: center;">2006 Nonresidential Compliance Forms January 2006</p>	Test Description	Test Performed By:	<input type="checkbox"/> MECH-5-A: Air Distribution Acceptance Document <i>This test required if the unit serves 5,000 ft² of space or less and 25% or more of the ducts are in nonconditioned or semiconditioned space like an attic. New systems that meet the above requirements. Retrofit systems that meet the above requirements and either extend ducts, replace ducts or replace the packaged unit.</i>	N/A	Equipment requiring acceptance testing: N/A		<input type="checkbox"/> MECH-6-A: Demand Control Ventilation Acceptance Document <i>All new DCV controls installed on new or existing packaged systems must be tested.</i>	N/A	Equipment requiring acceptance testing: N/A		<input type="checkbox"/> MECH-7-A: Supply Fan Variable Flow Control Acceptance Document <i>All new VAV fan volume controls installed on new or existing systems must be tested.</i>	N/A	Equipment requiring acceptance testing: N/A		<input type="checkbox"/> MECH-8-A: Hydronic System Control Acceptance Document <ul style="list-style-type: none"> Variable Flow Controls, Applies to chilled and hot water systems. Automatic Isolation Controls, Applies to new boilers and chillers and the primary pumps are connected to a common header. Supply Water Temperature Reset Controls, Applies to new constant flow chilled and hot water systems that have a design capacity greater than or equal to 500,000 Btu/hr. Water-Loop Heat Pump Controls, Applies to all new waterloop heat pump systems where the combined loop pumps are greater than 5 hp. Variable Frequency Control, Applies to all new distribution pumps on new variable flow chilled, hydronic heat pump or condenser water systems where the pumps motors are greater than 5 hp. 	N/A	Equipment requiring acceptance testing: N/A	
<input checked="" type="checkbox"/> MECH-1-C	Certificate of Compliance, Part 1 of 3, 2 of 3, 3 of 3 are required on plans for all submittals.																																									
<input checked="" type="checkbox"/> MECH-2-C	Air/Water/Service/Water Pools Requirements, Part 1 of 3, 2 of 3, 3 of 3 are required for all submittals, but may be on plans.																																									
<input checked="" type="checkbox"/> MECH-3-C	Mechanical Ventilation and Reheat is required for all submittals with mechanical ventilation, but may be on plans.																																									
<input checked="" type="checkbox"/> MECH-4-C	HVAC Misc. Prescriptive Requirements is required for all prescriptive submittals, but may be on plans.																																									
Test Description	Test Performed By:																																									
<input checked="" type="checkbox"/> MECH-2-A: Ventilation System Acceptance Document <ul style="list-style-type: none"> Variable Air Volume Systems Outdoor Air Acceptance Constant Air Volume Systems Outdoor Air Acceptance <i>Test required on all New systems both New Construction and Retrofit.</i>	ACCO																																									
Equipment requiring acceptance testing: FAN COIL UNIT (2)																																										
<input type="checkbox"/> MECH-3-A: Packaged HVAC Systems Acceptance Document <i>Test required on all New systems both New Construction and Retrofit.</i>	N/A																																									
Equipment requiring acceptance testing: N/A																																										
<input type="checkbox"/> MECH-4-A: Air-Side Economizer Acceptance Document <i>Test required on all new air-side economizers for both New Construction and Retrofit. Units with economizers that are installed at the factory and certified with the Commission do not require equipment testing but do require construction inspection.</i>	N/A																																									
Equipment requiring acceptance testing: N/A																																										
Test Description	Test Performed By:																																									
<input type="checkbox"/> MECH-5-A: Air Distribution Acceptance Document <i>This test required if the unit serves 5,000 ft² of space or less and 25% or more of the ducts are in nonconditioned or semiconditioned space like an attic. New systems that meet the above requirements. Retrofit systems that meet the above requirements and either extend ducts, replace ducts or replace the packaged unit.</i>	N/A																																									
Equipment requiring acceptance testing: N/A																																										
<input type="checkbox"/> MECH-6-A: Demand Control Ventilation Acceptance Document <i>All new DCV controls installed on new or existing packaged systems must be tested.</i>	N/A																																									
Equipment requiring acceptance testing: N/A																																										
<input type="checkbox"/> MECH-7-A: Supply Fan Variable Flow Control Acceptance Document <i>All new VAV fan volume controls installed on new or existing systems must be tested.</i>	N/A																																									
Equipment requiring acceptance testing: N/A																																										
<input type="checkbox"/> MECH-8-A: Hydronic System Control Acceptance Document <ul style="list-style-type: none"> Variable Flow Controls, Applies to chilled and hot water systems. Automatic Isolation Controls, Applies to new boilers and chillers and the primary pumps are connected to a common header. Supply Water Temperature Reset Controls, Applies to new constant flow chilled and hot water systems that have a design capacity greater than or equal to 500,000 Btu/hr. Water-Loop Heat Pump Controls, Applies to all new waterloop heat pump systems where the combined loop pumps are greater than 5 hp. Variable Frequency Control, Applies to all new distribution pumps on new variable flow chilled, hydronic heat pump or condenser water systems where the pumps motors are greater than 5 hp. 	N/A																																									
Equipment requiring acceptance testing: N/A																																										

GENERAL NOTES

1. REMOVABLE CEILING PANEL OR PANELS AT FACE OF ALL FIRE AND FIRE/SMOKE DAMPERS BY GENERAL CONTRACTOR (24" x 24" MIN.) UNLESS OTHERWISE NOTED.
2. INCOMBUSTIBLE PLENUM ABOVE CEILING FOR RETURN/RECIRCULATING AIR BY GENERAL CONTRACTOR. CONCEALED BUILDING SPACES USED AS RETURN AIR PLENUMS SHALL BE IN COMPLIANCE WITH SECTION 601 OF THE UNIFORM MECHANICAL CODE.
3. ACCESS DOORS AND/OR ACCESS PANELS THROUGH FIRE RATED WALLS, SHAFTS, CEILINGS, ETC., MUST EQUAL THE MATERIAL PENETRATED.
4. ALL AIR SHAFTS SHALL BE MADE AIR TIGHT BY GENERAL CONTRACTOR.
5. ALL UNDERCUT DOORS AND DOOR LOUVERS ARE BY GENERAL CONTRACTOR.
6. ALL APPLIANCES DESIGNED TO BE FIXED IN POSITION SHALL BE SECURELY FASTENED IN PLACE.
7. ALL SPACE CONDITIONING EQUIPMENT SHALL BE LABELED AS TO WHICH AREA IT SERVES.

PIPE INSULATION REQUIREMENTS (PER TABLE 123-A 2005 Building Energy Efficiency Standards)

FLUID TEMPERATURE RANGE (°F)	CONDUCTIVITY RANGE (in Btu-inch per hour per square foot per °F)	INSULATION MEAN RATING TEMPERATURE (°F)	NOMINAL PIPE DIAMETER (INCHES)					
			RUNOUTS UP TO 2	1 AND LESS	1.25-2	2.50-4	5-6	8 AND LARGER
SPACE HEATING SYSTEMS (STEAM, STEAM CONDENSATE AND HOT WATER)								
ABOVE 350	0.32-0.34	250	1.5	2.5	2.5	3.0	3.5	3.5
251-350	0.29-0.31	200	1.5	2.0	2.5	2.5	3.5	3.5
201-250	0.27-0.30	150	1.0	1.5	1.5	2.0	2.0	3.5
141-200	0.25-0.29	125	0.5	1.5	1.5	1.5	1.5	1.5
105-140	0.24-0.28	100	0.5	1.0	1.0	1.0	1.5	1.5
SERVICE WATER HEATING SYSTEMS (RECIRCULATING SECTIONS, ALL PIPING IN ELECTRIC TRACE TAPE SYSTEMS AND THE FIRST 8 FEET OF PIPING FROM THE STORAGE TANK FOR NON-RECIRCULATING SYSTEMS)								
ABOVE 105	0.24-0.28	100	0.5	1.0	1.0	1.5	1.5	1.5
SPACE COOLING SYSTEM (CHILLED WATER, REFRIGERANT AND BRINE)								
40-60	0.23-0.27	75	0.5	0.5	0.5	1.0	1.0	1.0
BELOW 40	0.23-0.27	75	1.0	1.0	1.5	1.5	1.5	1.5

MECHANICAL MANDATORY MEASURES


- Equipment and Systems Efficiencies**
- § 111 Any appliance for which there is a California standard established in the Appliance Efficiency Regulations will comply with the applicable standard.
 - § 115(a) Fan type central furnaces shall not have a pilot light.
 - § 123 Piping, except that conveying fluids at temperatures between 60 and 105 degrees Fahrenheit, or within HVAC equipment, shall be insulated in accordance with Standards Section 123.
 - § 124 Air handling duct systems shall be installed and insulated in compliance with Sections 601, 603 and 604 of the Uniform Mechanical Code.
- Controls**
- § 122(e) Each space conditioning system shall be installed with one of the following:
 - § 122(e)1A Each space conditioning system serving building types such as offices and manufacturing facilities (and all others not explicitly exempt from the requirements of Section 112 (c)) shall be installed with an automatic time switch with an accessible manual override that allows operation of the system during off-hours for up to 4 hours. The time switch shall be capable of programming different schedules for weekdays and weekends and have program backup capabilities that prevent the loss of the device's program and time setting for at least 10 hours if power is interrupted; or
 - § 122(e)1B An occupancy sensor to control the operating period of the systems; or
 - § 122(e)1C A 4-hour timer that can be manually operated to control the operating period of the systems.
 - § 122(e)2 Each space conditioning system shall be installed with controls that temporarily restart and temporarily operate the system as required to maintain a setback heating and/or a setup cooling thermostat setpoint.
 - § 122(g) Each space conditioning system serving multiple zones with a combined conditioned floor area more than 25,000 square feet shall be provided with isolation zones. Each zone: shall not exceed 25,000 square feet; shall be provided with isolation devices, such as valves or dampers, that allow the supply of heating or cooling to be setback or shut off independently of other isolation areas; and shall be controlled by a time control device as described above.
 - § 122(o&b) Each space conditioning system shall be controlled by an individual thermostat that responds to temperature within the zone. Where used to control heating, the control shall be adjustable down to 55 degrees F or lower. For cooling, the control shall be adjustable up to 85 degrees F or higher. Where used for both heating and cooling, the control shall be capable of providing a dead band of at least 5 degrees F within which the supply of heating and cooling is shut off or reduced to a minimum.
 - § 122(c) Thermostat shall have numeric set points in degrees Fahrenheit (F) and adjustable set point stops accessible only to authorized personnel.
 - § 122(b) Heat pumps shall be installed with controls to prevent electric resistance supplementary heater operation when the heating load can be met by the heat pump alone.
- Ventilation**
- § 121(e) Controls shall be provided to allow outside air dampers or devices to be operated at the ventilation rates as specified on these plans.
 - § 122(f) Gravity or automatic dampers interlocked and closed on fan shutdown shall be provided on the outside air intakes and discharge of air space conditioning and exhaust systems.
 - § 122(f) All gravity ventilating systems shall be provided with automatic or readily accessible manually operated dampers in all openings to the outside, except for combustion air openings.
 - § 121(f)1 Air Balancing: The system shall be balanced in accordance with the National Environmental Balancing Bureau (NEBB) Procedural Standards (1983), or Associated Air Balance Council (AABC) National Standards (1989); or
 - § 121(f)2 Outside Air Certification: The system shall provide the minimum outside air as shown on the mechanical drawings, and shall be measured and certified by the installing licensed C-20 mechanical contractor and certified by (1) the design mechanical engineer, (2) the installing licensed C-20 mechanical contractor, or (3) the person with overall responsibility for the design of the ventilation system; or
 - § 121(f)3 Outside Air Measurement: The system shall be equipped with a calibrated local or remote device capable of measuring the quantity of outside air on a continuous basis and displaying that quantity on a readily accessible display device; or
 - § 121(f)4 Another method approved by the Commission.

ARCHITECT OF RECORD

noll & tam

architects and planners

729 Heinz Avenue
 Berkeley, CA 94710
 510.649.8295
 fax 510.649.3008




IDENTIFICATION STAMP

DIVISION OF THE STATE ARCHITECT

APPLICATION NUMBER 04-110537

AC _____ FLS _____ SS _____

DATE _____



COLLEGE OF SAN MATEO

BUILDING 12 AND 17 MODERNIZATION

SMCCCD
 3401 CSM Drive
 San Mateo, CA 94402
 College of San Mateo
 1700 W. Hillside Blvd.
 San Mateo, CA 94402

SHEET TITLE

TITLE 24, GENERAL NOTES, & MANDATORY MEASURES

REVISIONS		
NO.	DATE	DESCRIPTION
△	09/21/09	118/155 EF ADD
△	10/30/09	ISOLATION VALVE ADDS
-	10/19/10	AS-BUILTS

DATE: OCTOBER 19, 2010

DRAWN: LA/RG

CHECKED: CR

SCALE: NONE

ACCO JOB NO.: 628985

SHEET NUMBER

AC0.01

AIR SYSTEM REQUIREMENTS (Part 1 of 3) MECH-2-C

PROJECT NAME: COLLEGE OF SAN MATEO - BLDG. 12 & 17 DATE: 08/27/09

ITEM or SYSTEM TAG(S) AIR SYSTEMS, Central or Single Zone

MANDATORY MEASURES	T-24 Section		Reference on Plans or Specification ¹
	FC 12-1	FC 17-1	
Heating Equipment Efficiency	112(a)	N/A	N/A
Cooling Equipment Efficiency	112(a)	AC0.03	AC0.03
Heat Pump Thermostat	112(b)	N/A	N/A
Furnace Controls	112(c), 115(a)	N/A	N/A
Natural Ventilation	121(b)	N/A	N/A
Minimum Ventilation	121(b)	SEE MECH 3	SEE MECH 3
VAV Minimum Position Control	121(c)	N/A	N/A
Demand Control Ventilation	121(c)	N/A	N/A
Time Control	121(c), 122(e)	AC6.01	AC6.01
Setback and Setup Control	122(e)	N/A	N/A
Outdoor Damper Control	122(f)	N/A	N/A
Isolation Zones	122(g)	1	1
Pipe Insulation	123	AC0.01	AC0.01
Duct Insulation	124	N/A	N/A

PRESCRIPTIVE MEASURES	T-24 Section		Reference on Plans or Specification ¹
	FC 12-1	FC 17-1	
Calculated Heating Capacity ²	144(a & b)	N/A	N/A
Proposed Heating Capacity ²	144(a & b)	N/A	N/A
Calculated Cooling Capacity ²	144(a & b)	10.9 MBHS	10.9 MBHS
Proposed Cooling Capacity ²	144(a & b)	10.3 MBHS	10.3 MBHS
Fan Control	144(c)	N/A	N/A
DP Sensor Location	144(c)	N/A	N/A
Supply Pressure Reset (DDC only)	144(c)	N/A	N/A
Simultaneous Heat/Cool	144(d)	N/A	N/A
Economizer	144(e)	N/A	N/A
Heat and Cool Air Supply Reset	144(f)	N/A	N/A
Duct Sealing	144(k)	N/A	N/A

1: For each central and single zone air systems (or group of similar units) fill in the reference to sheet number and/or specification section and paragraph number where the required features are documented. If a requirement is not applicable, put "N/A" in the column.
 2: Not required for hydronic heating or cooling. Either enter value here or put in reference to plans and specifications per footnote 1.

AIR SYSTEM REQUIREMENTS (Part 2 of 3) MECH-2-C

PROJECT NAME: COLLEGE OF SAN MATEO - BLDG. 12 & 17 DATE: 08/27/09

ITEM or SYSTEM TAG(S) WATER SIDE SYSTEMS: Chillers, Towers, Boilers, Hydronic Loops

MANDATORY MEASURES	T-24 Section		Reference on Plans or Specification ¹
	N/A		
Equipment Efficiency	112(a)	-	
Pipe Insulation	123	-	
Calculated Capacity	144(a & b)	-	
Proposed Capacity	144(a & b)	-	
Tower Fan Controls	144(h)	-	
Tower Flow Controls	144(h)	-	
Variable Flow System Design	144(i)	-	
Chiller and Boiler Isolation	144(j)	-	
CHW and HHW Reset Controls	144(j)	-	
WLHP Isolation Valves	144(j)	-	
VSD on CHW, CW & WLHP Pumps >5HP	144(j)	-	
DP Sensor Location	144(j)	-	

1: For each chiller, cooling tower, boiler, and hydronic loop (or groups of similar equipment) fill in the reference to sheet number and/or specification section and paragraph number where the required features are documented. If a requirement is not applicable, put "N/A" in the column.
 2: Water side systems include wet side systems using other fluids such as glycol or brine.

HVAC MISC. PRESCRIPTIVE REQUIREMENTS: MECH-4-C

PROJECT NAME: COLLEGE OF SAN MATEO - BLDG. 12 & 17 DATE: 08/27/09

FAN POWER CONSUMPTION §144(c)

NOTE: Provide one copy of this worksheet for each fan system with a total fan system horsepower greater than 25 hp for Constant Volume Fan Systems of Variable Air Volume (VAV) Systems when using the Prescriptive Approach.

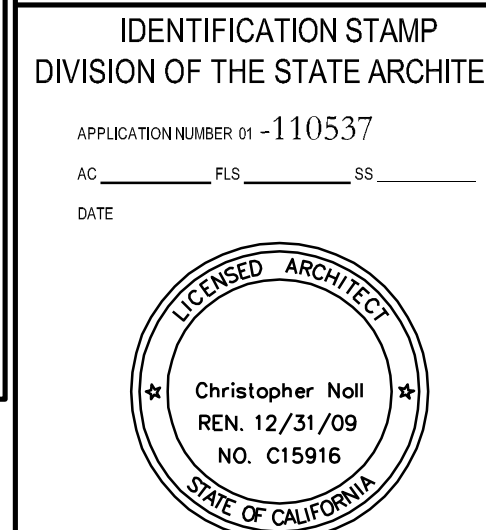
FAN DESCRIPTION	DESIGN BRAKE HP	EFFICIENCY MOTOR DRIVE	NUMBER OF FANS	PEAK WATTS B x E x T46 / (G x D)	
					A
FC 12-1	<25HP			N/A	
FC 17-1	<25HP			N/A	

FILTER PRESSURE ADJUSTMENT Equation: 144-A	Total Adjustments	
	1) TOTAL FAN SYSTEM POWER (WATTS, SUM COLUMN F)	N/A
A) If filter pressure drop is greater than 1 inch W.C. enter filter pressure drop, SP, on line 4 and Total Fan pressure SP, on Line 5.	2) SUPPLY DESIGN AIRFLOW (CFM)	N/A
B) Calculate Fan Adjustment and enter on Line 6.	3) TOTAL FAN SYSTEM POWER INDEX (Row 1 / Row 2) ¹	N/A W/CFM
C) Calculate Adjusted Fan Power Index and enter on Row 7.	4) SP	N/A
	5) SP	N/A
	6) Fan Adjustment = 1-(SP ₁ - 1)SP ₂	N/A
	7) ADJUSTED FAN POWER INDEX (Line 3 x Line 6) ¹	N/A W/CFM

1. TOTAL FAN SYSTEM POWER INDEX or ADJUSTED FAN POWER INDEX must not exceed 0.8 w/cfm, for Constant Volume systems or 1.25 w/cfm for VAV systems

ITEM or SYSTEM TAG(S)	T-24 Section	Capacity	Exception	Notes
Electric Resistance Heating ¹	§144 (g)	N/A	N/A	N/A
Heat Rejection System ²	§144 (h)	N/A	N/A	N/A
Air Cooled Chiller Limitation ³	§144 (i)	N/A	N/A	N/A

1. Total installed capacity (MBtu/hr) of all electric heat on this project exclusive of electric auxiliary heat for heat pumps. If electric heat is used explain which exception(s) to §144(h) apply.
 2. Are centrifugal fan cooling towers used on this project? (Enter "Yes" or "No") If centrifugal fan cooling towers are used explain which exception(s) to §144(h) apply.
 3. Total installed capacity (tons) of all chillers and air cooled chillers under this permit. If there are more than 100 tons of air-cooled chiller capacity being installed explain which exception(s) to §144(i) apply.



COLLEGE OF SAN MATEO
 BUILDING 12 AND 17
 MODERNIZATION
 SMCCCD
 3401 CSM Drive
 San Mateo, CA 94402
 College of San Mateo
 1700 W. Hillsdale Blvd.
 San Mateo, CA 94402

SHEET TITLE
TITLE 24

REVISIONS		
NO.	DATE	DESCRIPTION
△	09/21/09	118/155 EF ADD
△	10/30/09	ISOLATION VALVE ADDS
-	10/19/10	AS-BUILTS

DATE: OCTOBER 19, 2010
 DRAWN: LA/RG
 CHECKED: CR
 SCALE: NONE
 ACCO JOB NO.: 628985

SHEET NUMBER
AC0.02

MECHANICAL VENTILATION AND REHEAT MECH-3-C

PROJECT NAME: COLLEGE OF SAN MATEO - BLDG. 12 & 17 DATE: 08/27/09

MECHANICAL VENTILATION (§121(b)(2)) REHEAT LIMITATION (§144(d))

Zone/System	AREA BASIS					OCCUPANCY BASIS					REHEAT LIMITATION (§144(d))				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
Condition Area (ft²)	CFM per ft²	Min CFM by Area B x C	Num of People	CFM per Person	Min CFM by Occupant E x F	REQ'D V.A. Max of D or G	Design Ventilation Air cfm	30% of Design Zone Supply cfm	B x 0.4 cfm/ft²	Max of Columns H, J, K, or 300 cfm	Design minimum Air setpoint	Transfer Air			
17-113	218	0.15	33	8	15	120	120	120	OPERABLE WINDOW	-	-	-			
17-115	256	0.15	38	3	15	45	45	45	OPERABLE WINDOW	-	-	-			
17-117	174	0.15	26	2	15	30	30	30	OPERABLE WINDOW	-	-	-			
17-118	525	0.15	79	6	15	90	90	90	OPERABLE WINDOW	-	-	-			
17-116	70	0.15	11	1	15	15	15	15	-	-	-	-			
17-114	206	0.15	31	2	15	30	30	30	-	-	-	-			
17-112	2,394	0.15	346	23	15	345	346	350	OPERABLE WINDOW	-	-	-			
17-112F	107	0.15	16	1	15	15	16	20	OPERABLE WINDOW	-	-	-			
17-12E	107	0.15	16	1	15	15	16	20	OPERABLE WINDOW	-	-	-			
FC 17-1	73	0.15	11	1	15	15	15	15	-	-	-	-			
17-101	161	0.15	24	2	15	24	24	25	-	-	-	-			
17-103	162	0.15	24	2	15	24	24	25	-	-	-	-			
17-105	162	0.15	24	2	15	24	24	25	-	-	-	-			
17-107	162	0.15	24	2	15	24	24	25	-	-	-	-			
17-109	162	0.15	24	2	15	24	24	25	-	-	-	-			
17-110	162	0.15	24	2	15	24	24	25	-	-	-	-			
17-112D	164	0.15	25	2	15	24	24	25	-	-	-	-			
17-115	596	0.15	89	6	15	90	90	90	OPERABLE WINDOW	-	-	-			
17-150	162	0.15	24	2	15	24	24	25	-	-	-	-			
17-152A	162	0.15	24	2	15	24	24	25	-	-	-	-			
17-152	325	0.15	49	3	15	49	49	50	-	-	-	-			
17-152B	161	0.15	24	2	15	24	24	25	-	-	-	-			
17-153	79	0.15	12	1	15	15	15	15	-	-	-	-			
17-120 THRU 17-135	160	0.15	24	2	15	30	30	30	OPERABLE WINDOW	-	-	-			
17-140	160	0.15	24	2	15	30	30	30	OPERABLE WINDOW	-	-	-			
17-142	160	0.15	24	2	15	30	30	30	OPERABLE WINDOW	-	-	-			
17-144	160	0.15	24	2	15	30	30	30	OPERABLE WINDOW	-	-	-			
17-146	160	0.15	24	2	15	30	30	30	OPERABLE WINDOW	-	-	-			
17-148	160	0.15	24	2	15	30	30	30	OPERABLE WINDOW	-	-	-			
Totals						316		4,755	4,770	Column I Total Design Ventilation Air					

MECHANICAL VENTILATION AND REHEAT MECH-3-C

PROJECT NAME: COLLEGE OF SAN MATEO - BLDG. 12 & 17 DATE: 08/27/09

MECHANICAL VENTILATION (§121(b)(2)) REHEAT LIMITATION (§144(d))

Zone/System	AREA BASIS					OCCUPANCY BASIS					REHEAT LIMITATION (§144(d))				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
Condition Area (ft²)	CFM per ft²	Min CFM by Area B x C	Num of People	CFM per Person	Min CFM by Occupant E x F	REQ'D V.A. Max of D or G	Design Ventilation Air cfm	30% of Design Zone Supply cfm	B x 0.4 cfm/ft²	Max of Columns H, J, K, or 300 cfm	Design minimum Air setpoint	Transfer Air			
12-102	1,325	0.15	199	66	15	990	990	990	-	-	-	-			
12-106	247	0.15	37	3	15	45	45	45	-	-	-	-			
12-108	1,327	0.15	199	66	15	990	990	990	-	-	-	-			
12-201	1,136	0.15	170	11	15	165	170	170	-	-	-	-			
12-101	958	0.15	144	48	15	720	720	720	-	-	-	-			
12-105	362	0.15	54	4	15	60	60	60	-	-	-	-			
12-105A	127	0.15	19	1	15	15	18	20	-	-	-	-			
12-105B	124	0.15	19	1	15	15	19	20	-	-	-	-			
12-107	169	0.15	24	2	15	30	30	30	-	-	-	-			
12-117	162	0.15	24	2	15	30	30	30	-	-	-	-			
FC 12-1	78	0.15	12	1	15	30	15	15	-	-	-	-			
Totals						205		3,088	3,090	Column I Total Design Ventilation Air					

- C Minimum ventilation rate per Section §121, Table 121-A.
- E Based on fixed seat or the greater of the expected number of occupants and 50% of the CBC occupant load for egress purposes for spaces without fixed seating.
- H Required Ventilation Air (REQ'D V.A.) is the larger of the ventilation rates calculated on an AREA BASIS or OCCUPANCY BASIS (Column D or G).
- I Must be greater than or equal to H, or use Transfer Air (column N) to make up the difference.
- J Design fan supply cfm (Fan CFM) x 30% or
- K Condition area (ft²) x 0.4 cfm/ft² or
- L Maximum of Columns H, J, K, or 300 cfm
- M This must be less than or equal to Column L and greater than or equal to the sum of Columns H plus N.
- N Transfer Air must be provided where the Required Ventilation Air (Column I) is greater than the Design Minimum Air (Column M). Where required, transfer air must be greater than or equal to the difference between the Required Ventilation Air (Column H) and the Design Minimum Air (Column I), Column H minus M.

EQUIPMENT SCHEDULES

BASEBOARD RADIATOR SCHEDULE

SYMBOL	LOCATION	MANUFACTURER & MODEL No.	CABINET SIZE	CAPACITY (BTUH)	GPM	EWT LWT	REMARKS
BR 17-1	BUILDING 17 1ST FLOOR	MODINE SF084826	26"H x 48"L x 8"D	10,000	1.0	220 200	SLOPED TOP, FLOOR MOUNTED WITH OPERABLE DAMPER W/SECURITY ALLEN KEY, INLET AND OUTLET LOUVERS, ACCESS DOORS AND WALL MOUNTED THERMOSTAT.
BR 17-2	BUILDING 17 1ST FLOOR	MODINE SF086426	26"H x 64"L x 8"D	15,000	1.5	220 200	SLOPED TOP, FLOOR MOUNTED WITH OPERABLE DAMPER W/SECURITY ALLEN KEY, INLET AND OUTLET LOUVERS, ACCESS DOORS AND WALL MOUNTED THERMOSTAT.
BR 17-3	BUILDING 17 1ST FLOOR	MODINE SF084832	32"H x 48"L x 8"D	12,200	1.25	220 200	SLOPED TOP, FLOOR MOUNTED WITH OPERABLE DAMPER W/SECURITY ALLEN KEY, INLET AND OUTLET LOUVERS, ACCESS DOORS AND WALL MOUNTED THERMOSTAT.
BR 17-4	BUILDING 17 1ST FLOOR	MODINE SF064826	26"H x 48"L x 6"D	8,000	0.8	220 200	SLOPED TOP, FLOOR MOUNTED WITH OPERABLE DAMPER W/SECURITY ALLEN KEY, INLET AND OUTLET LOUVERS, ACCESS DOORS AND WALL MOUNTED THERMOSTAT.
BR 17-5	BUILDING 17 1ST FLOOR	MODINE SF084032	32"H x 40"L x 8"D	10,000	1.0	220 200	SLOPED TOP, FLOOR MOUNTED WITH OPERABLE DAMPER W/SECURITY ALLEN KEY, INLET AND OUTLET LOUVERS, ACCESS DOORS AND WALL MOUNTED THERMOSTAT.
BR 17-6	BUILDING 17 1ST FLOOR	MODINE SF086032	32"H x 60"L x 8"D	15,500	1.6	220 200	SLOPED TOP, FLOOR MOUNTED WITH OPERABLE DAMPER W/SECURITY ALLEN KEY, INLET AND OUTLET LOUVERS, ACCESS DOORS AND WALL MOUNTED THERMOSTAT.
BR 17-7	BUILDING 17 1ST FLOOR	MODINE SF064826	26"H x 48"L x 6"D	6,000	0.6	220 200	SLOPED TOP, FLOOR MOUNTED WITH OPERABLE DAMPER W/SECURITY ALLEN KEY, INLET AND OUTLET LOUVERS, ACCESS DOORS AND WALL MOUNTED THERMOSTAT.

EXHAUST FAN

SYMBOL	LOCATION	MANUF'R & MODEL No.	SERVING	CFM	S.P.	RPM	ROT	DIS	BHP	HP	VOLTAGE	WEIGHT (lbs)	REMARKS
EF 17-1	BUILDING 17 ROOF	GREENHECK G-090-G	WOMENS 17-115	340	.25	1103	-	-	-	1/25	115/60/1	30	ROOF EXHAUST FAN WITH SWITCH, SPEED CONTROLLER, BACKDRAFT DAMPER, WIRING BY ELECTRICAL CONTRACTOR.
EF 17-2	BUILDING 17 ROOF	GREENHECK G-095-G	MENS 17-114	365	.30	1102	-	-	-	1/12	115/60/1	30	ROOF EXHAUST FAN WITH SWITCH, SPEED CONTROLLER, BACKDRAFT DAMPER, WIRING BY ELECTRICAL CONTRACTOR.
EF 17-3	BUILDING 17 ROOF	GREENHECK G-090-G	RESTROOM 17-153	285	.30	1116	-	-	-	1/25	115/60/1	30	ROOF EXHAUST FAN WITH SWITCH, SPEED CONTROLLER, BACKDRAFT DAMPER, WIRING BY ELECTRICAL CONTRACTOR.
EF 17-4	BUILDING 17 ROOF	GREENHECK G-095-D	RESTROOM 17-118	370	0.25	1035	-	-	-	1/8	115/60/1	30	ROOF EXHAUST FAN WITH SWITCH, SPEED CONTROLLER, BACKDRAFT DAMPER, WIRING BY ELECTRICAL CONTRACTOR.
EF 17-5	BUILDING 17 ROOF	GREENHECK G-095-D	RESTROOM 17-155	370	0.25	1035	-	-	-	1/8	115/60/1	30	ROOF EXHAUST FAN WITH SWITCH, SPEED CONTROLLER, BACKDRAFT DAMPER, WIRING BY ELECTRICAL CONTRACTOR.

FAN SCHEDULE

SYMBOL	LOCATION	MANUFACTURER & MODEL No.	SERVING	CFM	S.P.	RPM	ROT	DIS	BHP	MIN. HP	VOLTAGE	WEIGHT (lbs)	REMARKS
(E) F 12-4	BLDG. 12 FIRST FLR.	-	TOILET EXHAUST	1,800	1/2"	-	-	BH	-	1/2	440/3ø/60	-	UTILITY SET
(E) F 12-6	BLDG. 12 ROOF	-	FUME RM. HOOD EXH.	1,800	3/4"	-	-	TH	-	3/4	440/3ø/60	-	ABANDONED

HEATING COIL

SYMBOL	LOCATION	MANUFACTURER & MODEL No.	FACE DIM.		ROW FPI	CFM	FACE VEL. FPM	Δp _r	PIPE SIZE	EWT		Δp _w	GPM	EDB		WEIGHT (lbs)	REMARKS
			LGTH.	HGT.						LWT	LDB						
(E) HC 12-1	BLDG. 12 GROUND FLR.	-	10"	5"	-	250	-	-	3/4"	220°	-	-	1.0	65°	75°	-	REPLACE CONTROL VALVE AND REBALANCE GRILLES
(E) HC 12-3	BLDG. 12 GROUND FLR.	-	15"	5"	-	300	-	-	3/4"	220°	-	-	1.0	65°	80°	-	REPLACE CONTROL VALVE AND REBALANCE GRILLES
(E) HC 12-4	BLDG. 12 GROUND FLR.	-	12 1/2"	7 1/2"	-	400	-	-	3/4"	220°	-	-	1.0	65°	80°	-	REPLACE CONTROL VALVE AND REBALANCE GRILLES
(E) HC 12-6	BLDG. 12 GROUND FLR.	-	15"	7 1/2"	-	500	-	-	3/4"	220°	-	-	1.0	65°	75°	-	REPLACE CONTROL VALVE AND REBALANCE GRILLES
(E) HC 12-16	BLDG. 12 GROUND FLR.	-	22 1/2"	10"	-	1000	-	-	3/4"	220°	-	-	1.0	65°	85°	-	REPLACE CONTROL VALVE AND REBALANCE GRILLES

SPLIT SYTEM FAN COIL

SYMBOL	LOCATION	MANUFACTURER & MODEL No.	CFM	S.P.	RPM	REF.	TOTAL MBH	SENS. MBH	SUC	EDB EWB	BHP	WATT	VOLTAGE	WEIGHT (lbs)	REMARKS
FC 12-1	BLDG. 12 MDF RM.	DAIKIN PKA-A12GA	390	-	-	R-410A	12.0	10.3	-	80 67	-	30	208-230/1ø/60	35	WALL MOUNTED FCU WITH REMOTE CONTROLLER.
FC 17-1	BLDG. 17 MDF RM. 17-112C	DAIKIN PKA-A12GA	390	-	-	R-410A	12.0	10.3	-	80 67	-	30	208-230/1ø/60	35	WALL MOUNTED FCU WITH REMOTE CONTROLLER.

SPLIT SYSTEM CONDENSING UNIT

SYMBOL	LOCATION	MANUFACTURER & MODEL No.	CAP TONS	SUC TEMP	AMB	REF.	VOLTAGE	COMP'R		COND.		MCA	MFA	MOCP	EER	WEIGHT (lbs)	REMARKS
								QTY	RLA	QTY	FLA						
CU 12-1	BLDG. 12 ROOF	MITSUBISHI PUY-A12NHA	1.0	-	95°F	R-410A	208-230/1ø/60	1	12	1	0.35	13.0	-	-	15.0	90	LEVEL PLATFORM BY G.C.
CU 17-1	BLDG. 17 ROOF	MITSUBISHI PUY-A12NHA	1.0	-	95°F	R-410A	208-230/1ø/60	1	12	1	0.35	13.0	-	-	15.0	90	REDWOOD SLEEPERS BY G.C.

PUMP

SYMBOL	LOCATION	MANUFACTURER & MODEL No.	GPM	HEAD (FT.)	RPM	BHP HP	MTR HP	VOLTAGE	WEIGHT (lbs)	REMARKS	
(E) P 12-2	LECTURE HALL BUILDING	-	-	56.0	46.0	1750	-	3	440/3ø/60	-	BASE MOUNTED, PUMP SERVING BLDG. 12

HEATING & VENTILLATING UNIT SCHEDULE

SYMBOL	LOCATION	MANUFACTURER & MODEL No.	CFM	EST. S.P. W.G.	MOTOR		EDB	EWT	GPM	PIPE SIZE	REMARKS
					QTY	FLA					
(E) HV 12-2	BLDG. 12 GROUND FLR.	-	22,425	1 1/4"	10	440/3ø/60	50°	220°	18	1 1/2"	HORIZONTAL

AIR OUTLETS SCHEDULE

TAG	MANUF.	MODEL No.	FINISH	FRAME	DESCRIPTION
CD-1	TITUS	PSS	#26 WHITE	LAY-IN	24x24 PERFORATED FACE CEILING DIFFUSER WITH AIRFLOW PATTERN CONTROLLERS. NECK SIZE SAME AS DUCT SIZE.
SG-1	TITUS	272RS	#26 WHITE	TYPE-1 SURFACE	DOUBLE DEFLECTION VERTICAL FRONT BLADE SUPPLY REGISTER WITH 3/4" SPACING AND ADJUSTABLE AIRFOIL BLADES. WITH O.B.D.
RG-1	TITUS	PAR	#26 WHITE	LAY-IN	24x24 PERFORATED FACE CEILING RETURN GRILLE. NECK SIZE SAME AS DUCT SIZE.
RG-2	TITUS	350RL	#26 WHITE	TYPE-1 SURFACE	HORIZONTAL FRONT BLADE RETURN REGISTER WITH 3/4" SPACING & 45° FIXED BLADES.
EG-1	TITUS	350RL	#26 WHITE	TYPE-1 SURFACE	HORIZONTAL FRONT BLADE EXHAUST REGISTER WITH 3/4" SPACING & 45° FIXED BLADES. WITH O.B.D.

AIR SEPARATOR

SYMBOL	LOCATION	MANUFACTURER & MODEL No.	TANK FLOW	Δp _w	WEIGHT (lbs)	REMARKS
AS 17-1	MECHANICAL ROOM	BELL & GOSSETT RL-2.5N	60	1.1'	120	HOT WATER SYSTEM

ARCHITECT OF RECORD

noll & tam

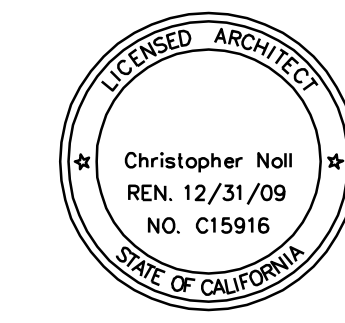
architects and planners

729 Heinz Avenue
Berkeley, CA 94710
510.649.8295
fax 510.649.3008



IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

APPLICATION NUMBER 04-110537
AC _____ FLS _____ SS _____
DATE _____



**COLLEGE OF
SAN MATEO**
BUILDING 12 AND 17
MODERNIZATION

SMCCCD
3401 CSM Drive
San Mateo, CA 94402
College of San Mateo
1700 W. Hillsdale Blvd.
San Mateo, CA 94402

SHEET TITLE

EQUIPMENT SCHEDULES

REVISIONS

NO.	DATE	DESCRIPTION
09/21/09	118/155 EF ADD	
10/30/09	ISOLATION VALVE ADDS	
10/19/10	AS-BUILTS	

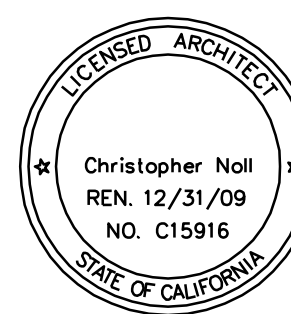
DATE OCTOBER 19, 2010
DRAWN LA/RG
CHECKED CR
SCALE AS NOTED
ACCO JOB NO.: 628985

SHEET NUMBER
AC0.03



IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

APPLICATION NUMBER 04-110537
AC _____ FL _____ SS _____
DATE _____



COLLEGE OF SAN MATEO
BUILDING 12 AND 17
MODERNIZATION

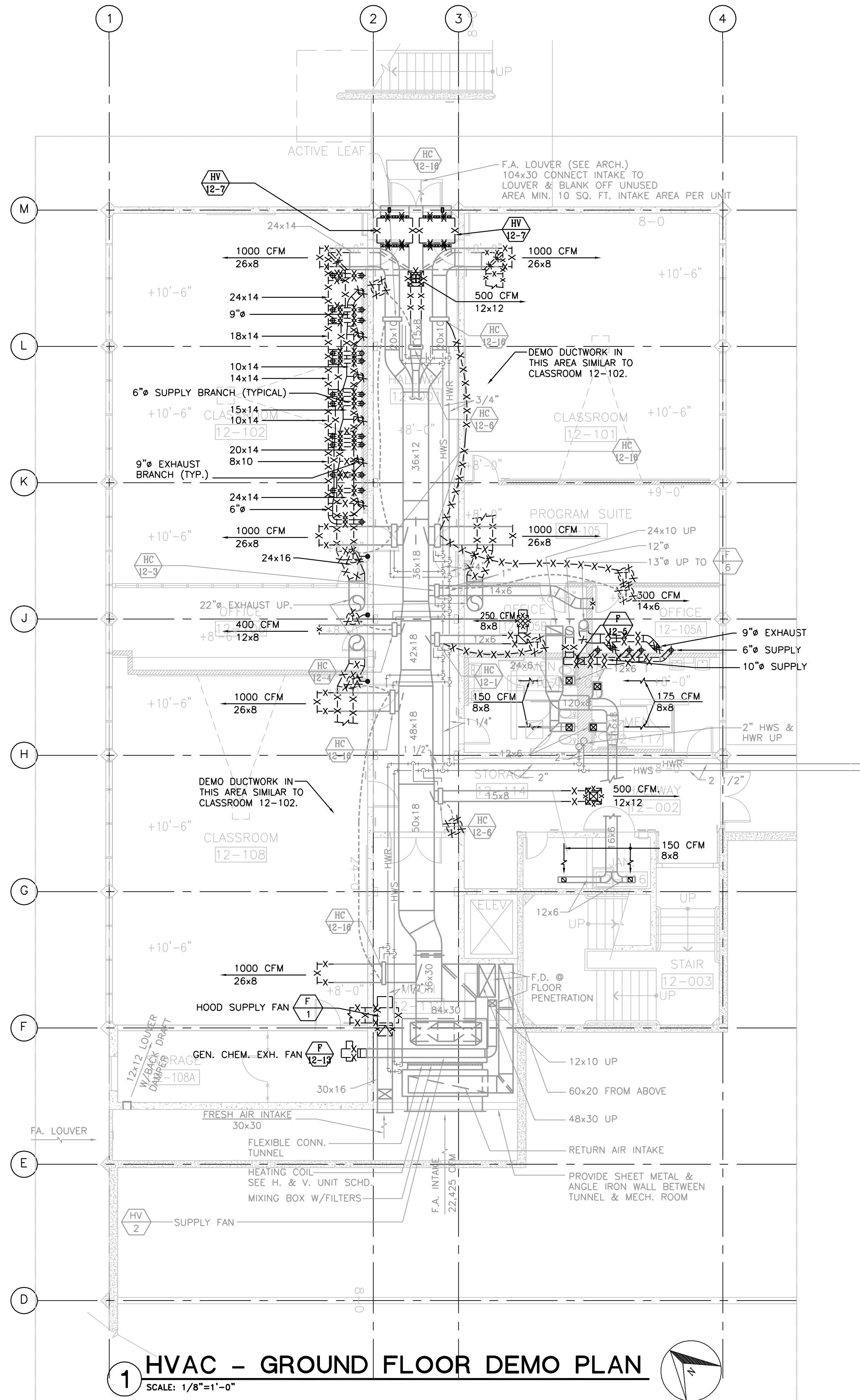
SMCCCD
3401 CSM Drive
San Mateo, CA 94402
College of San Mateo
1700 W. Hillside Blvd.
San Mateo, CA 94402

SHEET TITLE
**BUILDING 12
HVAC-GROUND FLOOR
PLAN AND DEMO PLAN**

REVISIONS		
NO.	DATE	DESCRIPTION
-	10/19/10	AS-BUILTS

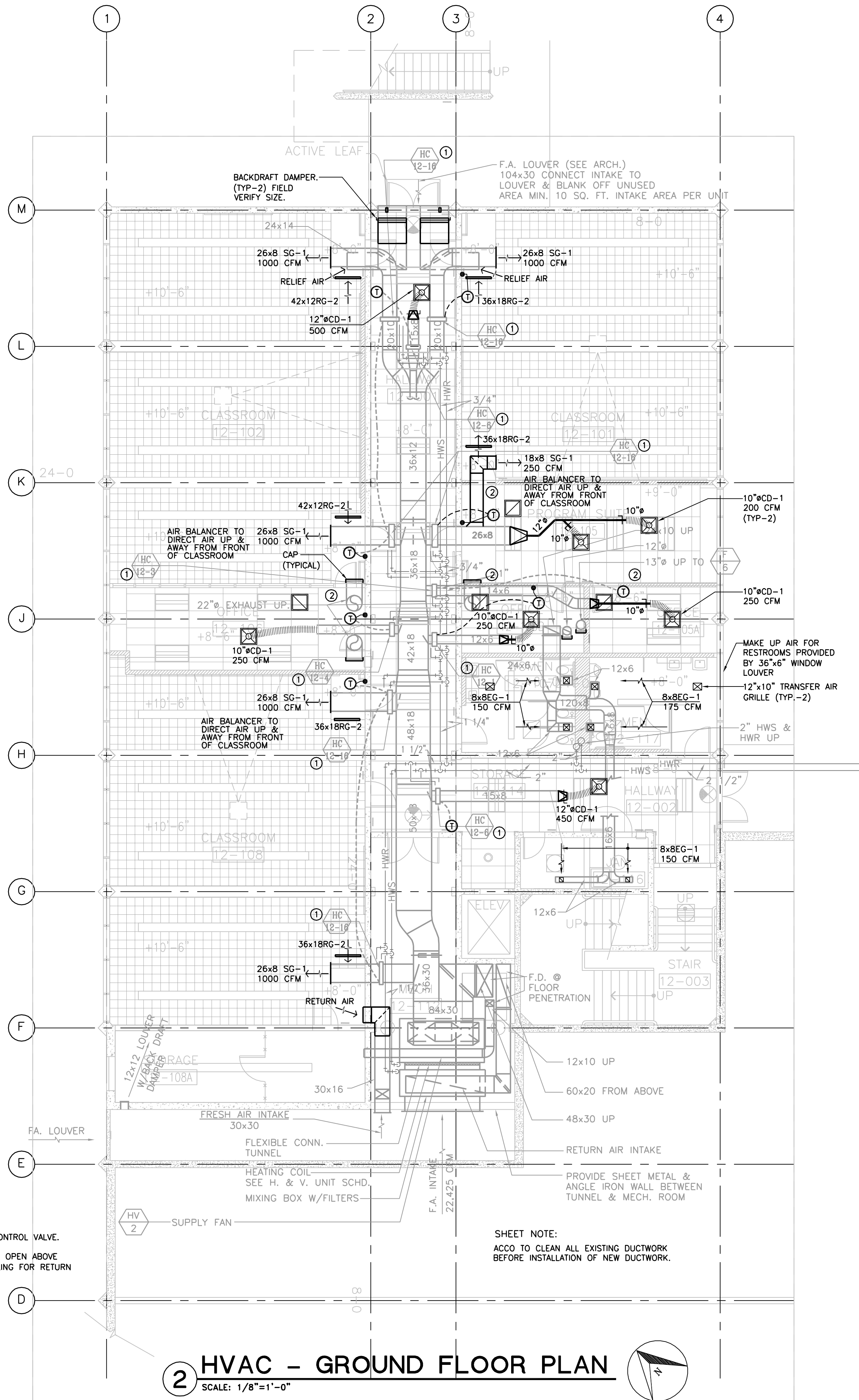
DATE	OCTOBER 19, 2010
DRAWN	LA/RG
CHECKED	CR
SCALE	AS NOTED
ACCO JOB NO.:	628985

SHEET NUMBER
AC1.11



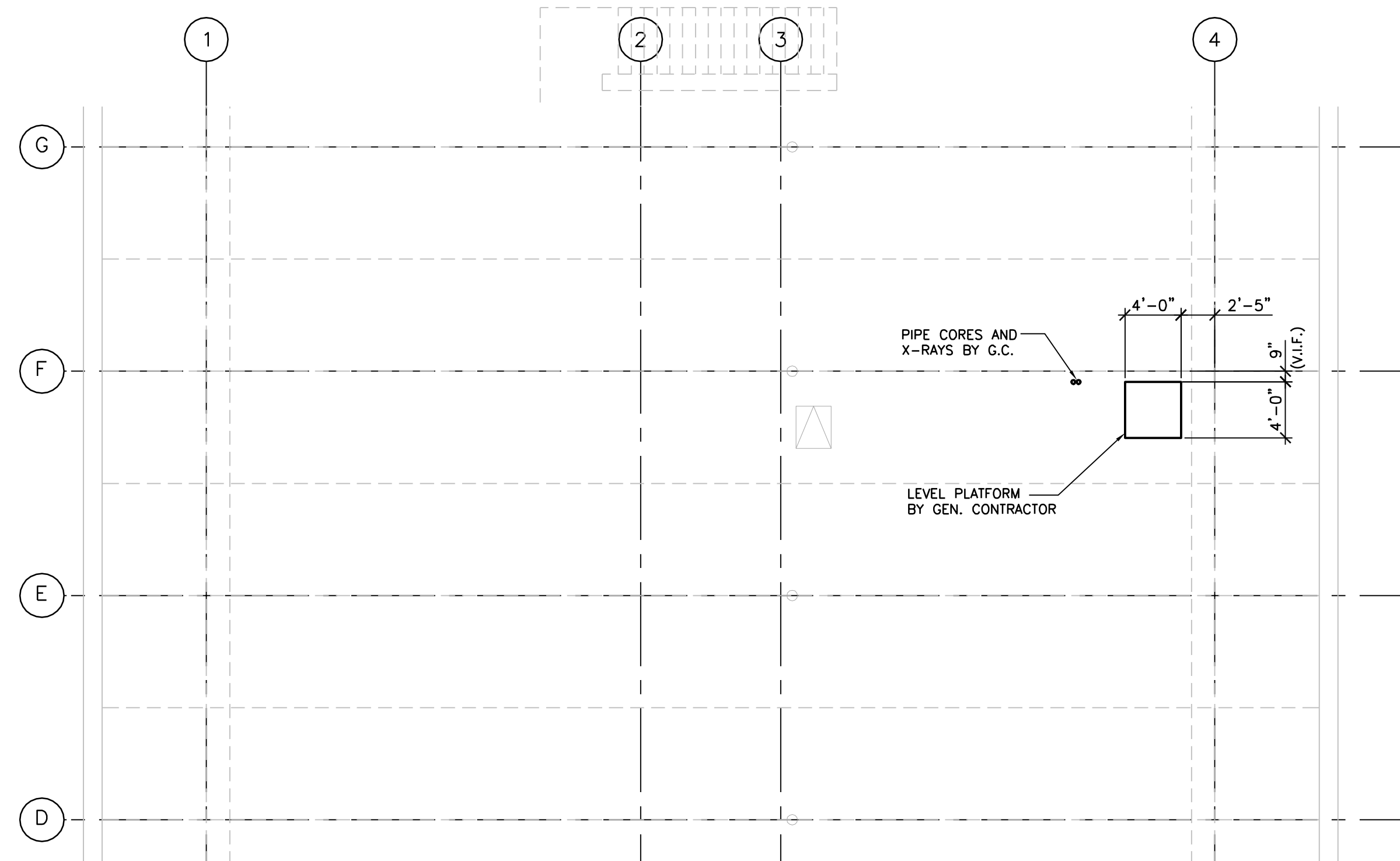
1 HVAC - GROUND FLOOR DEMO PLAN
SCALE: 1/8"=1'-0"

- NOTE:
- ① REPLACE CONTROL VALVE.
 - ② LEAVE WALL OPEN ABOVE SOFFIT/CEILING FOR RETURN AIR PATH.

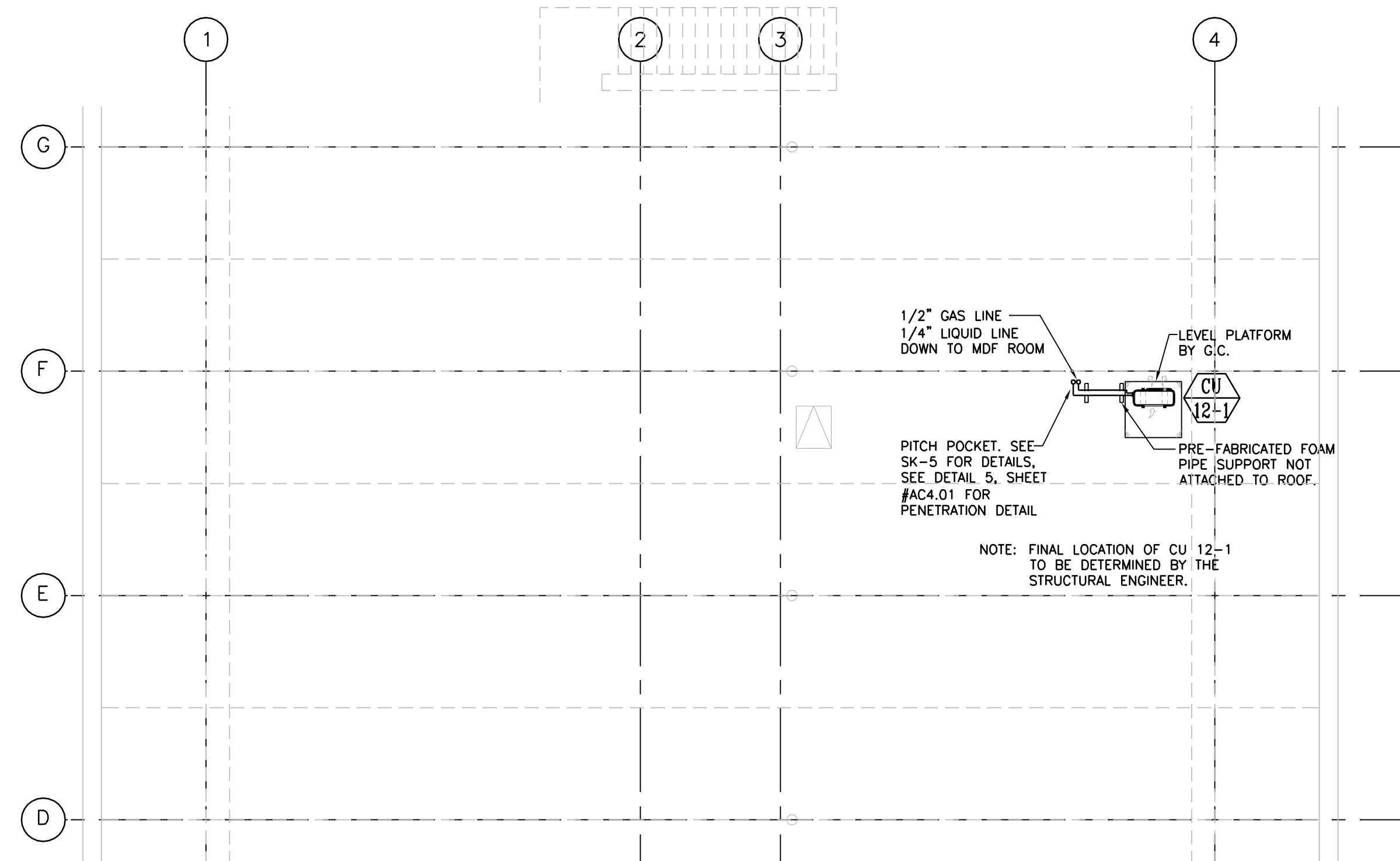


2 HVAC - GROUND FLOOR PLAN
SCALE: 1/8"=1'-0"

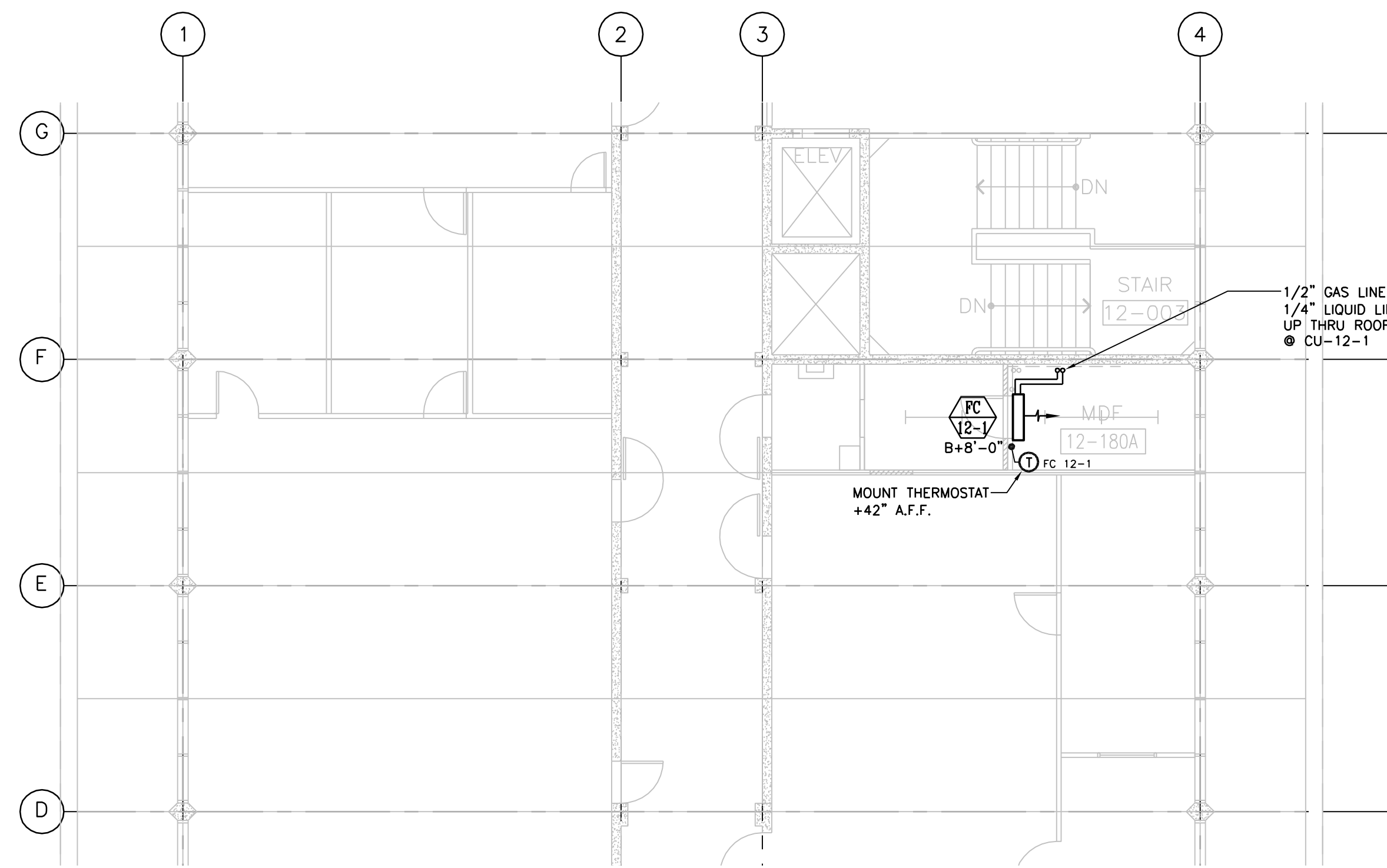
SHEET NOTE:
ACCO TO CLEAN ALL EXISTING DUCTWORK BEFORE INSTALLATION OF NEW DUCTWORK.



1 HVAC - ROOF COORDINATION PLAN
SCALE: 1/8"=1'-0"



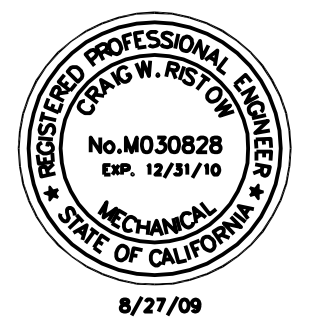
2 HVAC - ROOF PLAN
SCALE: 1/8"=1'-0"



3 HVAC - SECOND FLOOR PLAN
SCALE: 1/8"=1'-0"

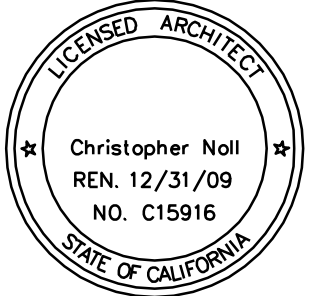
ARCHITECT OF RECORD
noll tam
architects and planners

729 Heinz Avenue
Berkeley, CA 94710
510.649.8295
fax 510.649.3008



IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

APPLICATION NUMBER 04-110537
AC _____ FLS _____ SS _____
DATE _____



COLLEGE OF SAN MATEO
BUILDING 12 AND 17
MODERNIZATION

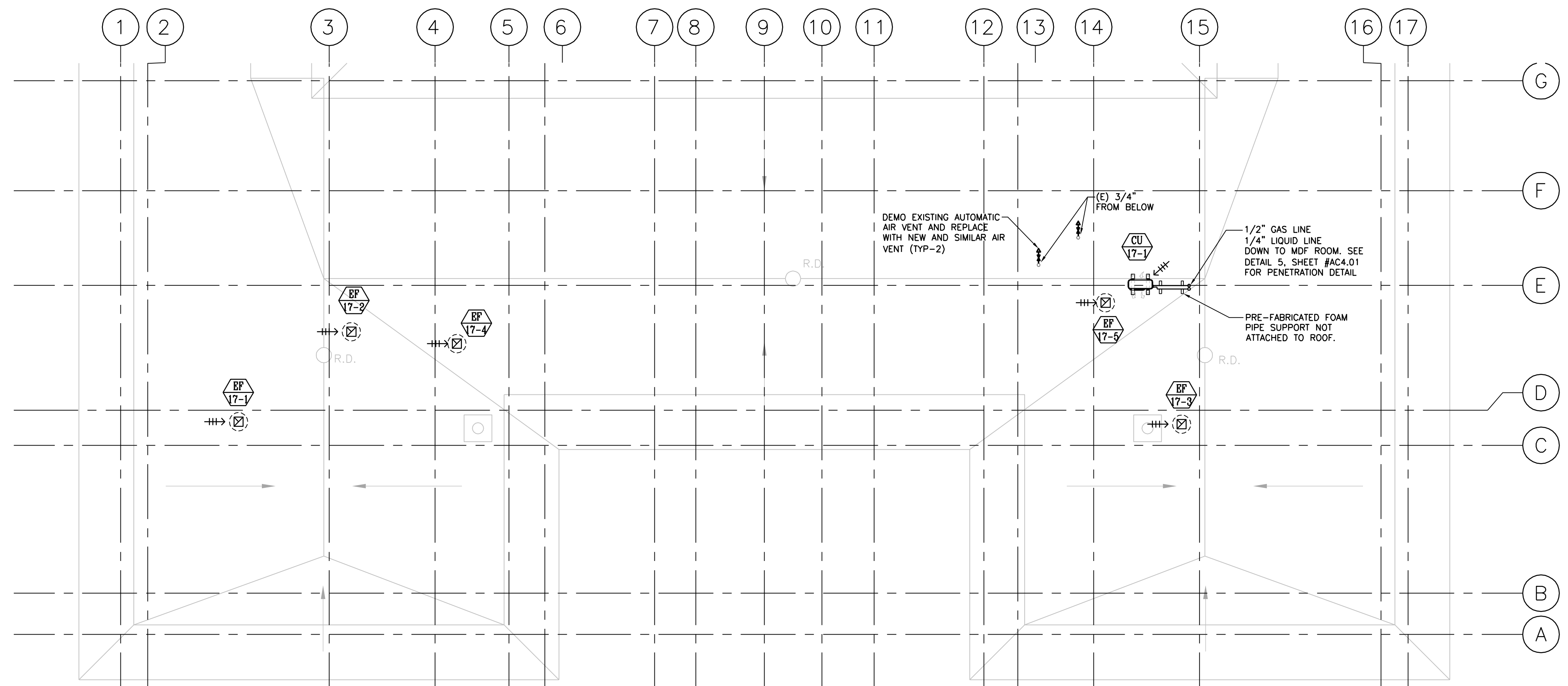
SMCCCD
3401 GSM Drive
San Mateo, CA 94402
College of San Mateo
1700 W. Hillsdale Blvd.
San Mateo, CA 94402

SHEET TITLE
**BUILDING 12
HVAC-FIRST FLOOR, ROOF
AND ROOF COORD. PLAN**

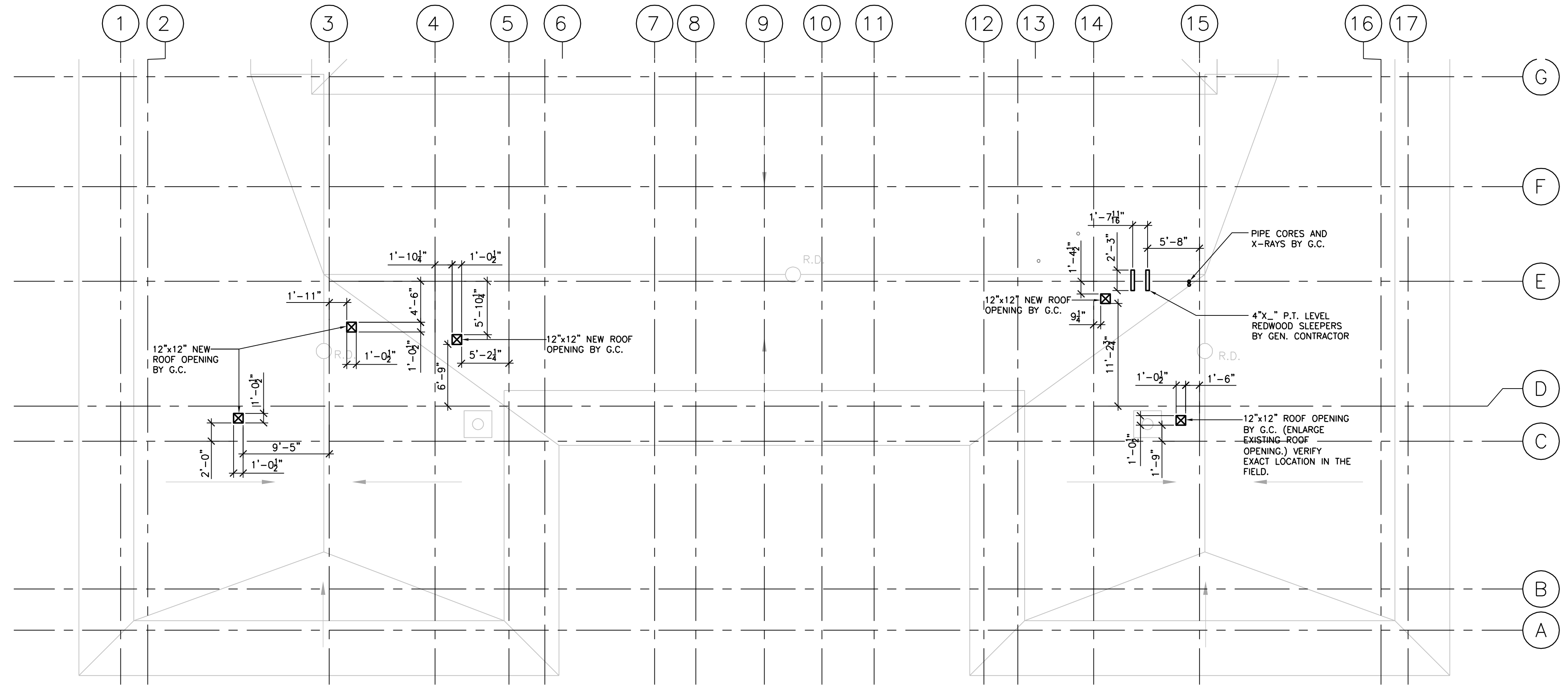
REVISIONS		
NO.	DATE	DESCRIPTION
-	10/19/10	AS-BUILTS

DATE OCTOBER 19, 2010
DRAWN LA/RG
CHECKED CR
SCALE AS NOTED
ACCO JOB NO.: 628985

SHEET NUMBER
AC1.12



1 HVAC - ROOF PLAN
SCALE: 1/8"=1'-0"



2 HVAC - ROOF COORDINATION PLAN
SCALE: 1/8"=1'-0"

ARCHITECT OF RECORD
noll & tam
architects and planners
729 Heinz Avenue
Berkeley, CA 94710
510.649.8295
fax 510.649.3008



IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

APPLICATION NUMBER 04-110537
AC _____ FLS _____ SS _____
DATE _____



COLLEGE OF SAN MATEO
BUILDING 12 AND 17
MODERNIZATION

SMCCCD
3401 CSM Drive
San Marco, CA 94402
College of San Mateo
1700 W. Hillsdale Blvd.
San Mateo, CA 94402

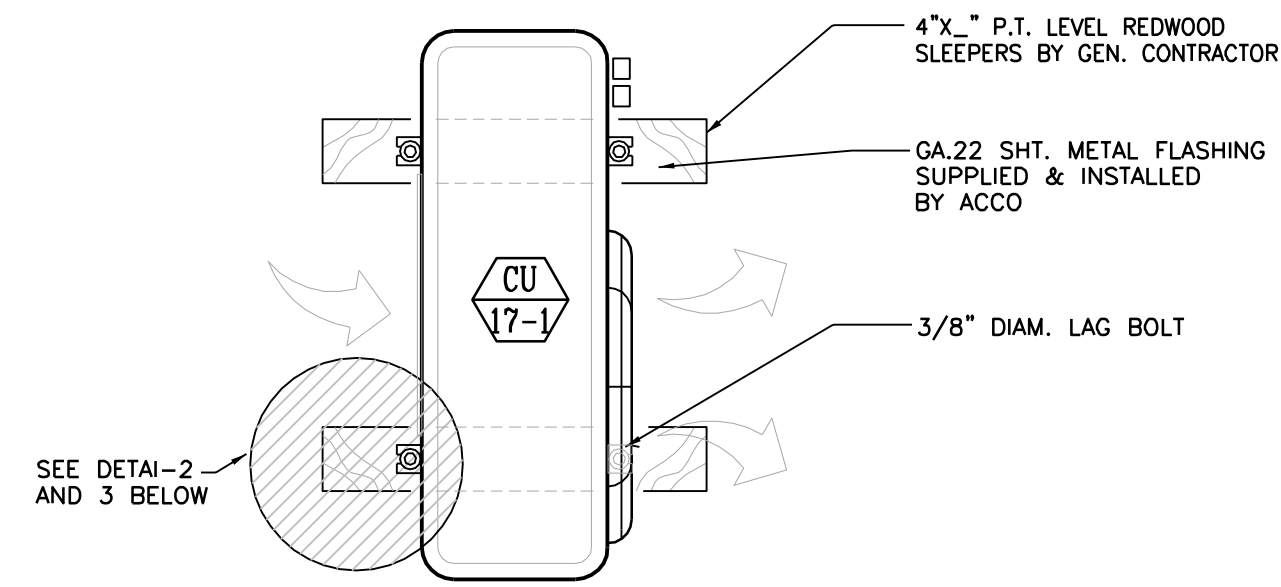
SHEET TITLE
**BUILDING 17
HVAC-ROOF PLAN AND
ROOF COORDINATION PLAN**

REVISIONS		
NO.	DATE	DESCRIPTION
1	09/21/09	118/155 EF ADD
2	10/30/09	ISOLATION VALVE ADDS
-	10/19/10	AS-BUILTS

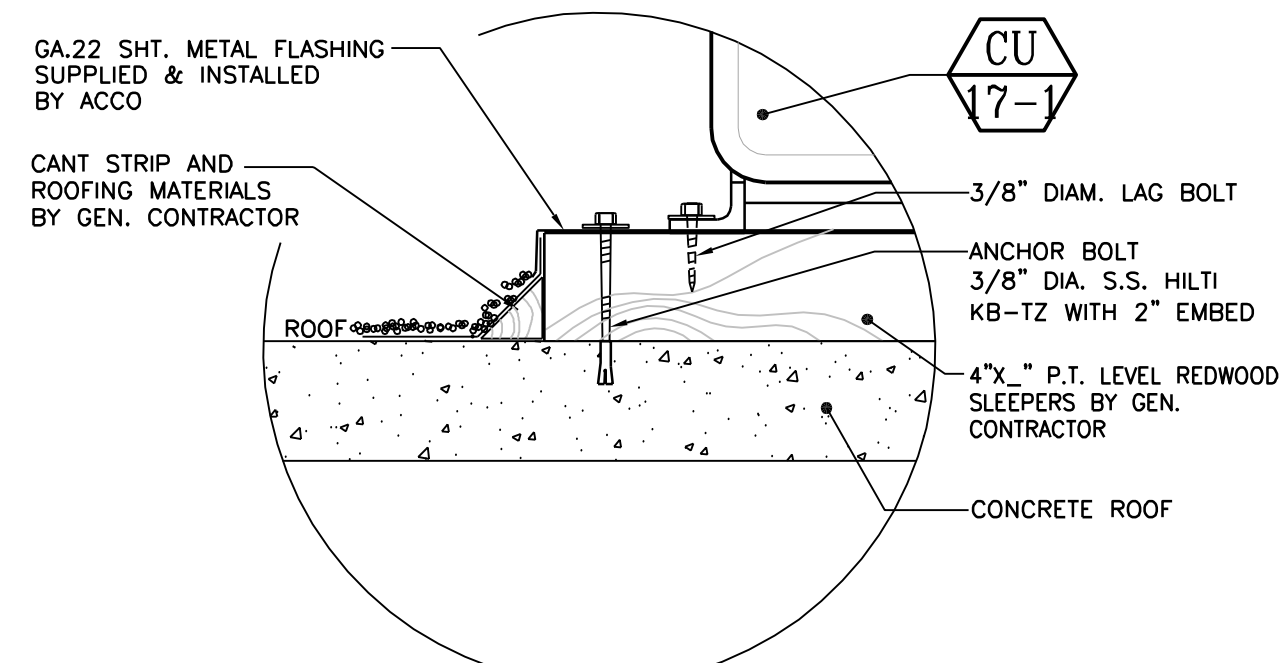
DATE OCTOBER 19, 2010
DRAWN LA/RG
CHECKED CR
SCALE 1/8"=1'-0"
ACCO JOB NO.: 628985

SHEET NUMBER
AC1.22

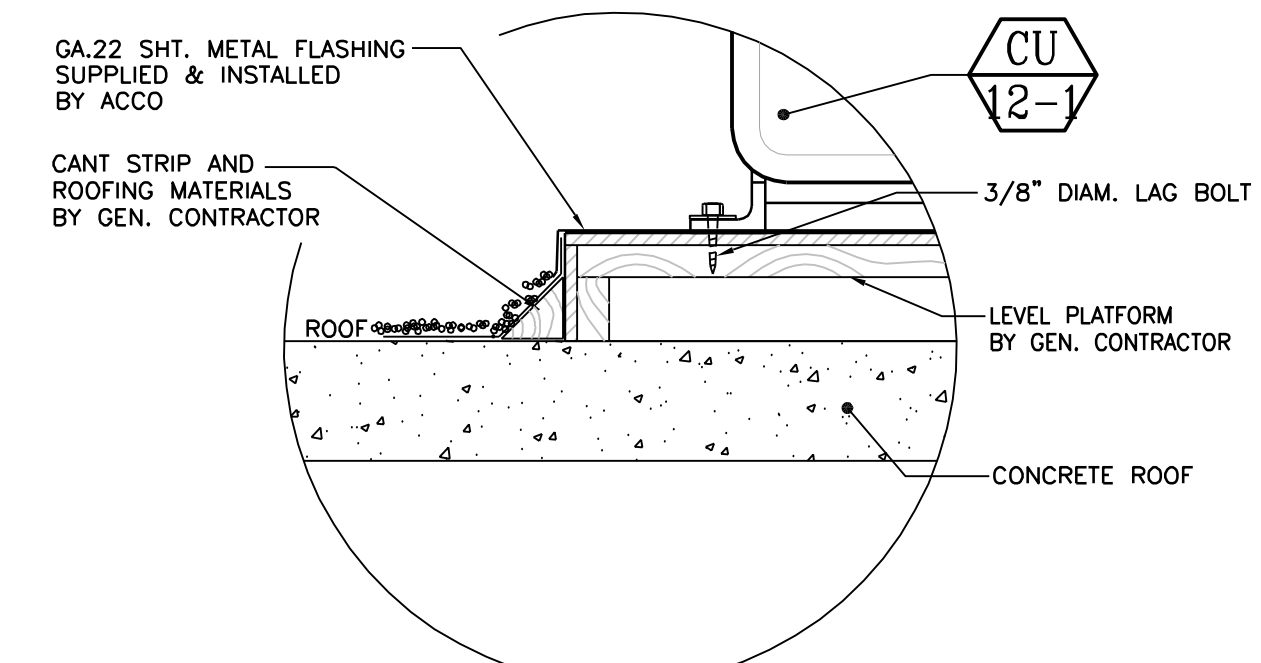
DETAILS



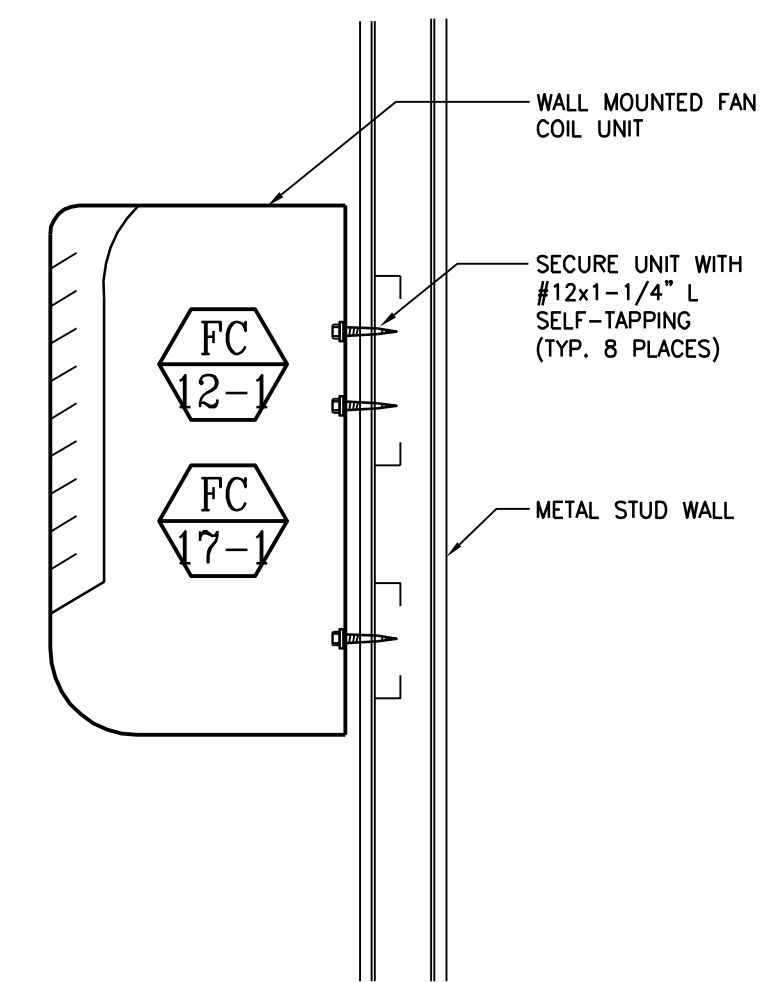
1 TYPICAL PLAN
SCALE: NONE



2 DETAIL SECTION
SCALE: NONE



3 DETAIL SECTION
NTS



4 F.C.U. HANGING DETAIL
NTS

EQUIPMENT ANCHORAGE:

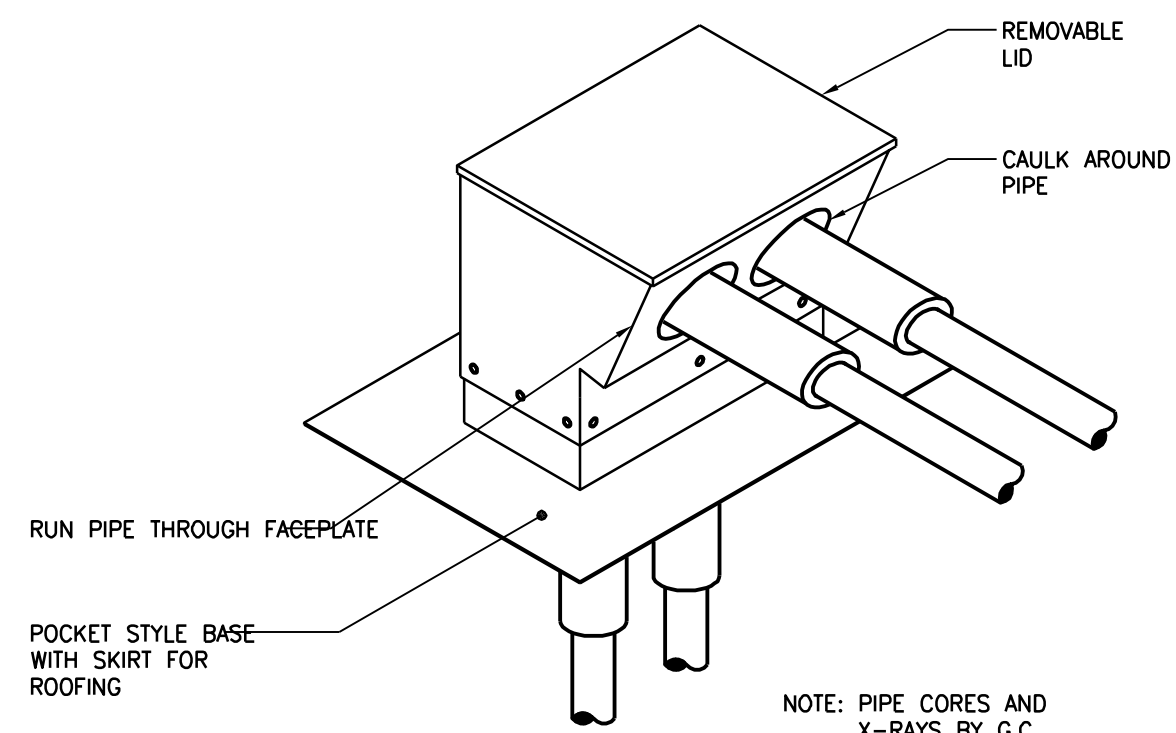
SEISMIC ANCHORAGE OF MECHANICAL EQUIPMENT SHALL CONFORM TO THE REGULATIONS OF CBC-2007 AND ASCE 7-05, SECTION 13.3, 13.4 AND 13.6.

ALL MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE BRACED OR ANCHORED TO RESIST A HORIZONTAL FORCE ACTING IN ANY DIRECTION USING THE FOLLOWING CRITERIA:

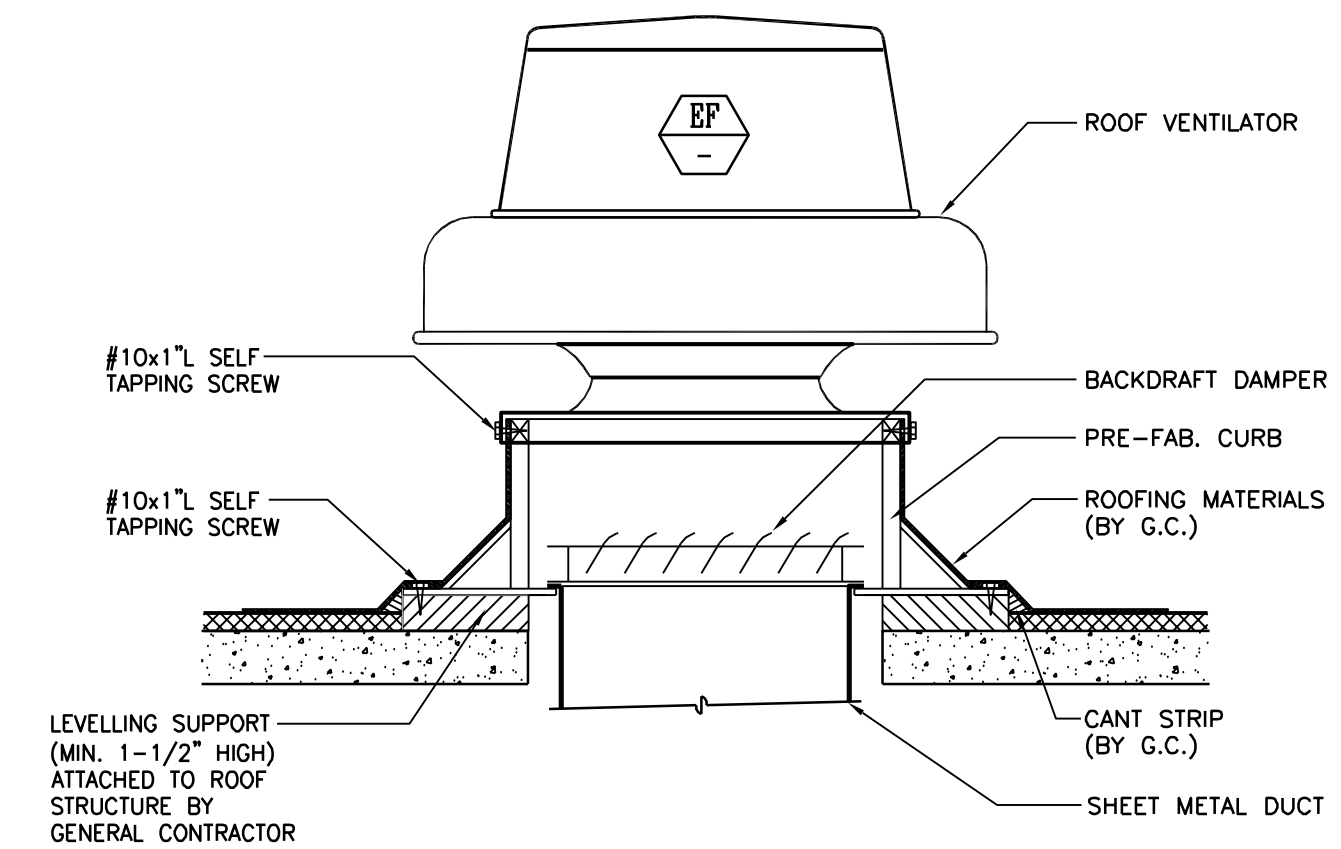
THE TOTAL DESIGN LATERAL SEISMIC FORCE SHALL BE DETERMINED FROM SECTION 1614A CALIFORNIA BUILDING CODE (CBC) 2007 AND 13.3 ASCE 7-05 FORCES SHALL BE APPLIED IN THE HORIZONTAL DIRECTIONS, WHICH RESULT IN THE MOST CRITICAL LOADING FOR DESIGN.

THE VALUE OF A_p (COMPONENT AMPLIFICATION FACTOR) AND R_p (COMPONENT RESPONSE MODIFICATION FACTOR) OF SECTION 13.3.1 ASCE 7-05 SHALL BE SELECTED FROM SECTION 13.6-1 ASCE 7-05. THE VALUE OF I_p SHALL BE SELECTED FROM SECTION 13.1.3 AND 13.6 OF ASCE 7-05.

WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE MECHANICAL ENGINEER, STRUCTURAL ENGINEER, AND THE FIELD REPRESENTATIVE OF THE DIVISION OF THE STATE ARCHITECT.



5 ROOF PIPING PENETRATION DETAIL
SCALE: NONE



6 E.F. MOUNTING DETAIL
SCALE: NONE

ARCHITECT OF RECORD

noll & tam
architects and planners

729 Heinz Avenue
Berkeley, CA 94710
510.649.8295
fax 510.649.3008



IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

APPLICATION NUMBER 04-110537
AC _____ FLS _____ SS _____
DATE _____



COLLEGE OF SAN MATEO
BUILDING 12 AND 17
MODERNIZATION

SMCCCD
3401 CSM Drive
San Mateo, CA 94402
College of San Mateo
1700 W. Hillsdale Blvd.
San Mateo, CA 94402

SHEET TITLE

HVAC-DETAILS

REVISIONS

NO.	DATE	DESCRIPTION
△	09/21/09	118/155 EF ADD
△	10/30/09	ISOLATION VALVE ADDS
-	10/19/10	AS-BUILTS

DATE OCTOBER 19, 2010

DRAWN LA/RG

CHECKED CR

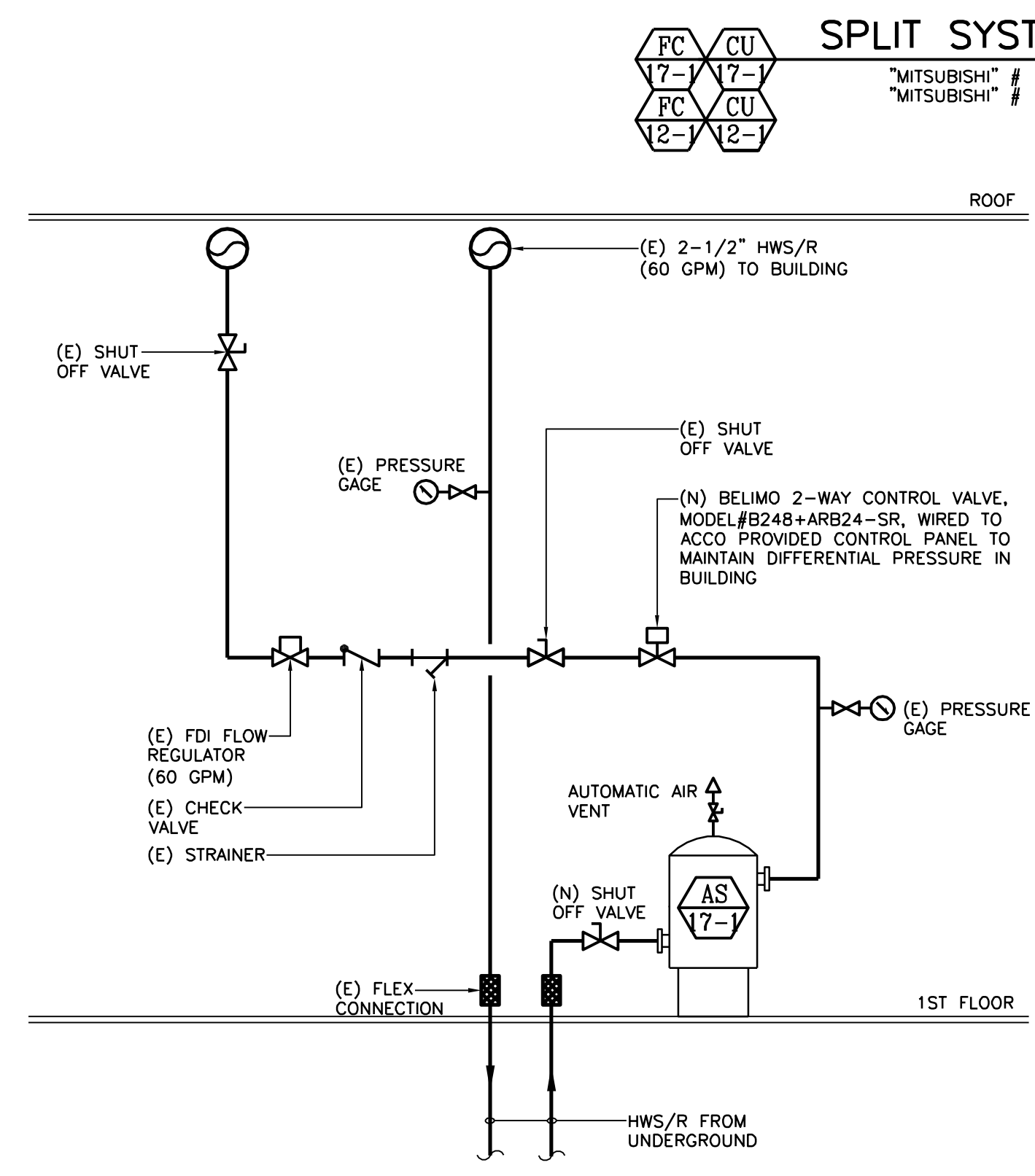
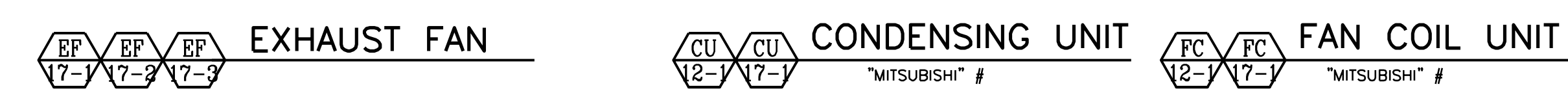
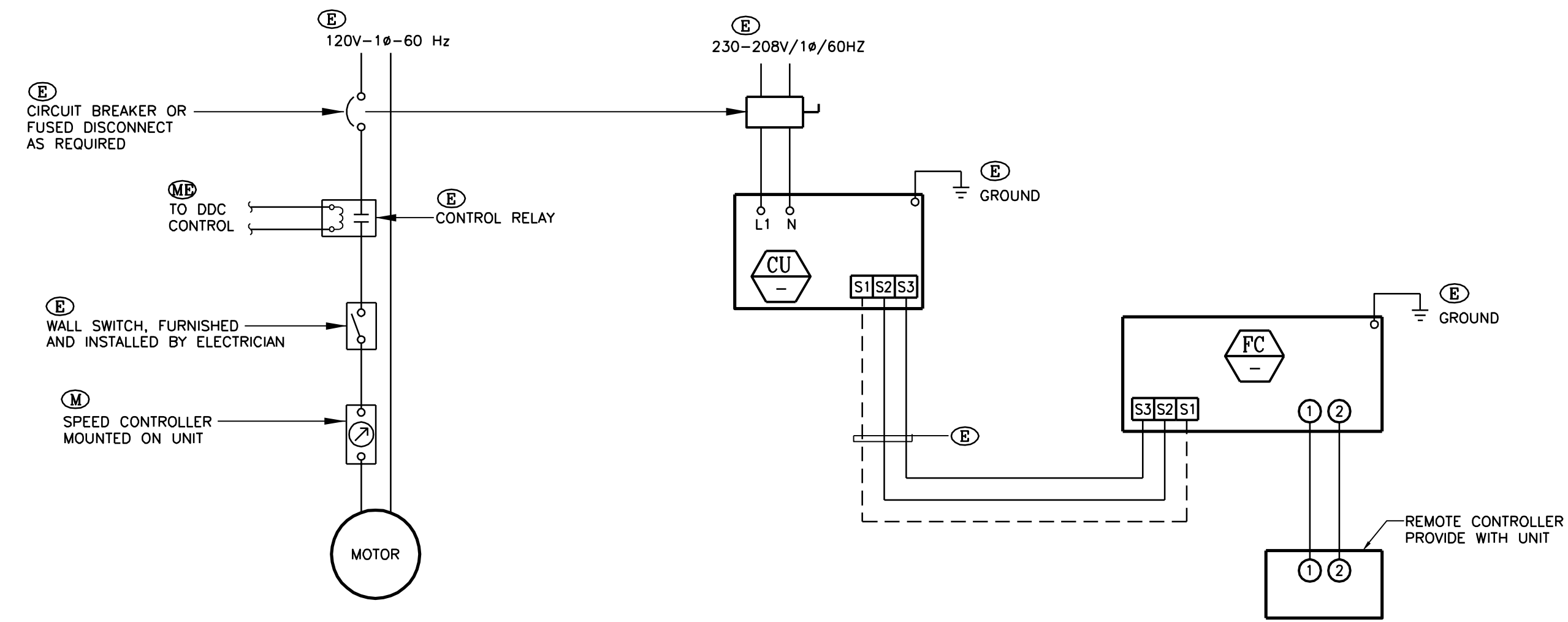
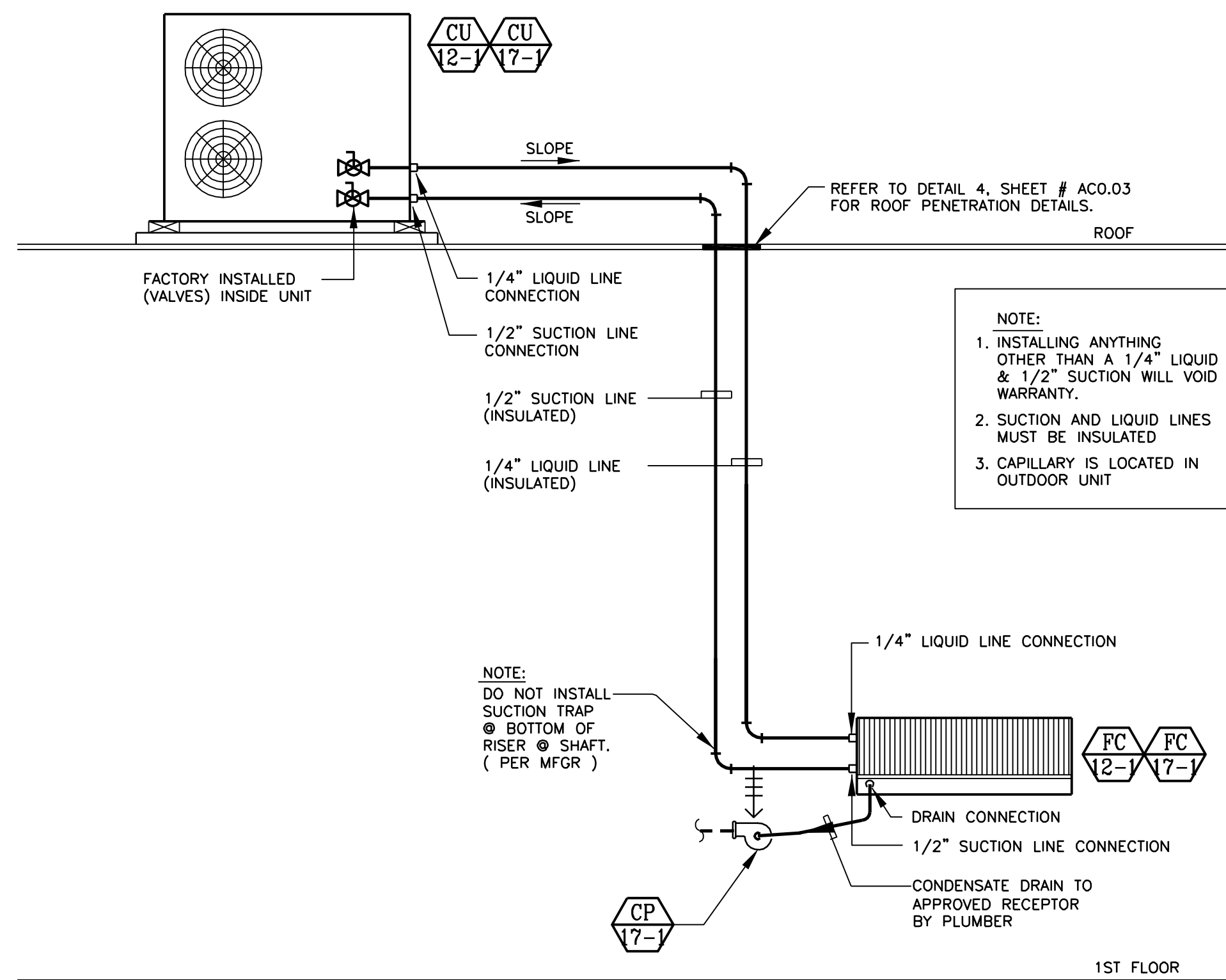
SCALE AS NOTED

ACCO JOB NO.: 628985

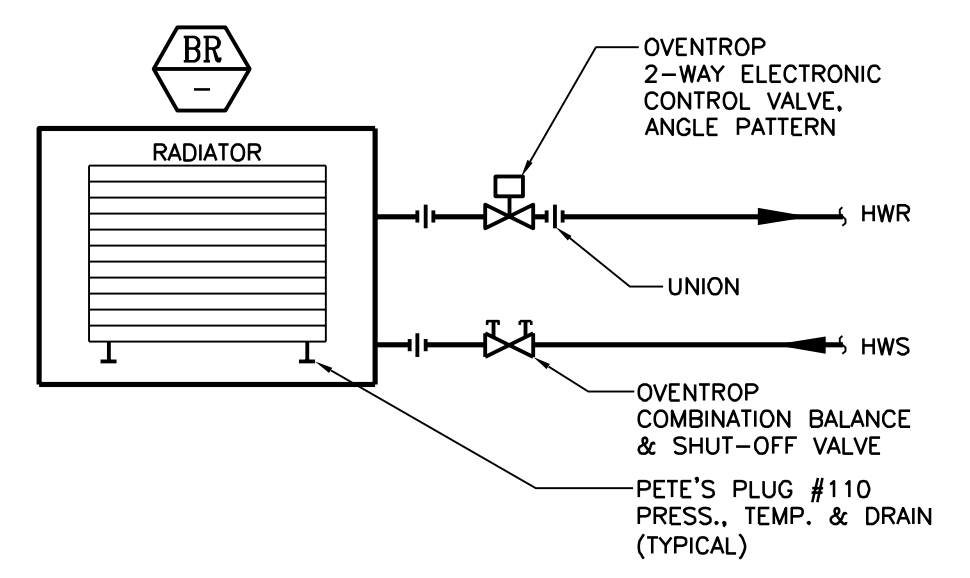
SHEET NUMBER

AC4.01

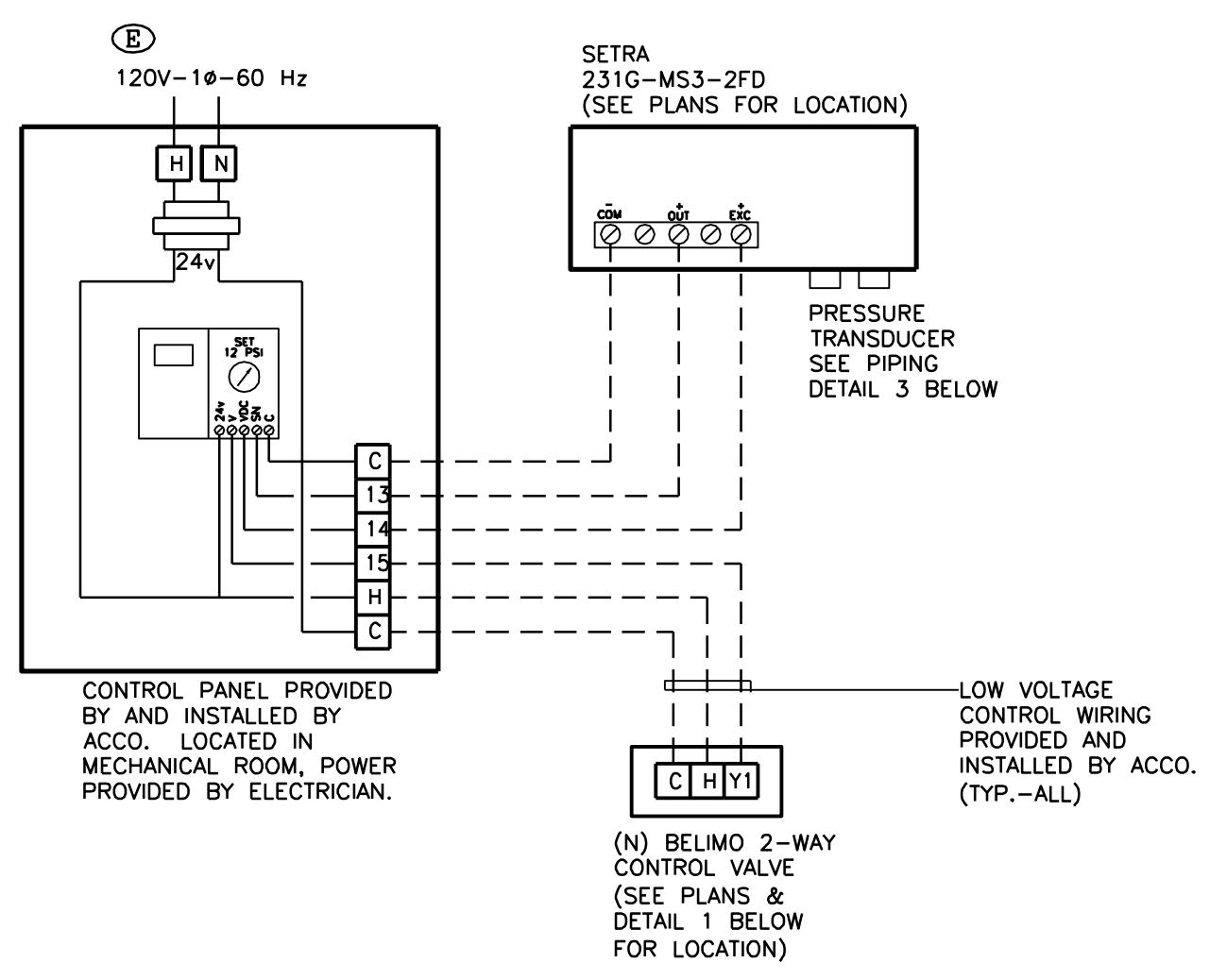
PIPING AND WIRING DIAGRAM



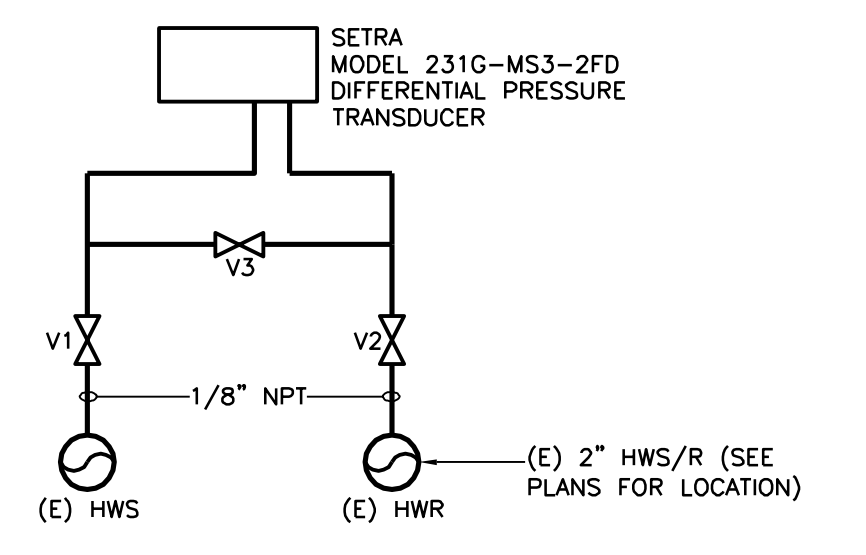
1 MECHANICAL ROOM PIPING DIAGRAM
SCALE: NONE



2 RADIATOR PIPING DIAGRAM
SCALE: NONE



3 DIFFERENTIAL PRESSURE CONTROL



3 DIFFERENTIAL PRESSURE TRANSDUCER

SEQUENCE OF OPERATIONS: DIFFERENTIAL PRESSURE CONTROL SYSTEM

THE FOLLOWING IS THE SEQUENCE OF OPERATION FOR THE DIFFERENTIAL PRESSURE CONTROL SYSTEM USED IN BUILDINGS 15 AND 17. THIS SYSTEM IS A CUSTOM BUILT ACCO ENGINEERED SYSTEMS PANEL WHICH WAS INSTALLED TO CONTROL EACH BUILDINGS DIFFERENTIAL PRESSURE DUE TO THE FLUCTUATING DIFFERENTIAL PRESSURE IN THE MAIN CENTRAL PLANT.

SEQUENCE OF OPERATION:

1. THE DIFFERENTIAL PRESSURE CONTROL PANEL PROVIDED AND INSTALL BY ACCO PER THE PLANS, CONTAINS A JOHNSON MANUAL CONTROLLER AND DIGITAL DISPLAY.
2. THE SETRA DIFFERENTIAL PRESSURE TRANSMITTER INSTALLED PER THE PLANS IS CONNECTED TO THE PIPING, ALLOWING THE UNIT READ WHAT THE DIFFERENTIAL PRESSURE IS IN THE SYSTEM.
3. A SIGNAL (VIA 24V WIRING) IS SENT FROM THE SETRA DP TO THE ACCO INSTALLED CONTROL PANEL.
4. FROM THE CONTROL PANEL, A SIGNAL IS SENT TO THE BELIMO 2-WAY CONTROL VALVE (SEE PLANS FOR LOCATION) TO COMMAND THE VALVE OPEN OR CLOSE.
5. THE JOHNSON CONTROLLER IS MANUALLY SET BASED ON FIELD TESTING TO A SET POINT. AS THE BASEBOARD RADIATOR CONTROL VALVES ARE OPENING/CLOSING, THE PRESSURE IN THE SYSTEM WILL INCREASE/DECREASE. THE CONTROL PANEL REACTS TO THE SET POINT, COMMANDS THE BELIMO CONTROL VALVE EITHER OPEN OR CLOSE TO MAINTAIN THE DIFFERENTIAL PRESSURE SET POINT.

SEQUENCE OF OPERATIONS:

SEQUENCE OF OPERATION DETERMINED BY THE CONTROLS CONTRACTOR (TAC)

EXHAUST FANS: FROM TAC SUBMITTALS, EXHAUST FANS SHALL BE ENABLED BY THE DDC SYSTEM BASED ON THE BUILDING OCCUPANCY SCHEDULE AND CONTROLLED LOCALLY BY A WALL SWITCH SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. THE DDC SYSTEM SHALL ALSO MONITOR THE FAN STATUS FOR RUNTIME MONITORING. THE FUNCTION OF THE SPEED CONTROLLER IS TO ALLOW ADJUSTMENT OF THE AIRFLOW DURING START UP TO GET THE DESIGNED VOLUME.

FAN COILS: EACH IS CONTROLLED BY A ROOM T'STAT. A HIGH TEMPERATURE ALARM SHALL BE ANNUNCIATED AT THE DDC PANEL WHEN IDF ROOM TEMPERATURE IS ABOVE 80 DEGREES.

BASEBOARD RADIATORS: EACH SHALL CONTROL TO THE ROOM T'STAT OCCUPIED SETPOINT. WHEN THE SPACE IS UNOCCUPIED, THE RADIATOR SHALL CONTROL TO OCCUPIED SETPOINTS. THE HOT WATER VALVE SHALL BE CONTROLLED TO MAINTAIN THE ROOM TEMPERATURE SETPOINT.

ELECTRICAL NOTES:

1. ALL WIRING AND DEVICES SHALL CONFORM WITH GOVERNING CODES.
2. ——— DENOTES LINE VOLTAGE WIRING SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR.
3. - - - DENOTES LOW VOLTAGE WIRING SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR.
4. (E) DENOTES ITEMS SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR.
5. (M) DENOTES ITEMS SUPPLIED BY ACCO AND INSTALLED BY ELECTRICAL CONTRACTOR.
6. (MB) DENOTES ITEMS SUPPLIED AND INSTALLED BY CONTROLS CONTRACTOR.
7. (MMD) DENOTES ITEMS SUPPLIED BY ACCO, INSTALLED BY ACCO, AND WIRED BY ELECTRICIAN.
8. ALL COPPER AND/OR ALUMINUM CONDUCTOR CONNECTIONS SHALL BE MADE AS PRESCRIBED BY ESTABLISHED ELECTRICAL INDUSTRY AND ENGINEERING STANDARDS. EXTREME CARE MUST BE TAKEN WHEN CONNECTIONS INVOLVE DISSIMILAR MATERIALS.
9. (EMP) DENOTES EMERGENCY POWER.

ARCHITECT OF RECORD

noll tam
architects and planners

729 Heinz Avenue
Berkeley, CA 94710
510.649.8295
fax 510.649.3008

PROFESSIONAL ENGINEER
STATE OF CALIFORNIA
No. M030828
Exp. 12/31/10
12/30/09

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APPLICATION NUMBER 04-1110537
AC _____ FLS _____ SS _____
DATE _____

REGISTERED ARCHITECT
Christopher Noll
REN. 12/31/09
NO. C15916
STATE OF CALIFORNIA

COLLEGE OF SAN MATEO
BUILDING 12 AND 17
MODERNIZATION

SMCCCD
3401 CSM Drive
San Mateo, CA 94402
College of San Mateo
1700 W. Hillsdale Blvd.
San Mateo, CA 94402

SHEET TITLE

PIPING AND WIRING DIAGRAMS

REVISIONS		
NO.	DATE	DESCRIPTION
1	09/21/09	118/155 EF ADD
2	10/30/09	ISOLATION VALVE ADDS
3	10/19/10	AS-BUILTS

DATE: OCTOBER 19, 2010
 DRAWN: LA/RG
 CHECKED: CR
 SCALE: NONE
 ACCO JOB NO.: 628985

SHEET NUMBER

AC6.01