

SYSTEM ACOUSTICS NOTES

- NOISE LEVELS IN THE HVAC SYSTEMS ARE TO BE KEPT TO AN ABSOLUTE MINIMUM. ALL SYSTEMS ARE TO BE ADJUSTED SO THAT LOW NOISE LEVELS ARE ACHIEVED.
- ALL POSSIBLE SOURCES OF NOISE ARE TO BE REVIEWED AND ADDRESSED SO THAT THE SYSTEMS ARE OPERATING QUIETLY INCLUDING THE FOLLOWING:
 - ALL FAN SYSTEMS INCLUDING FAN COIL UNITS, AIR HANDLING UNITS AND EXHAUST FANS ARE TO BE ADJUSTED SUCH THAT THE SYSTEMS DELIVER THE REQUIRED CFM AIRFLOW AS SHOWN ON THE FLOOR PLANS AT THE LOWEST POSSIBLE SPEED SETTINGS. THIS ADJUSTMENT IS TO INCLUDE SHEAVE CHANGES AS REQUIRED ON FAN SYSTEMS THAT ARE DETERMINED UNACCEPTABLE.
 - AIR BALANCE PROCEDURE IS TO BE AS FOLLOWS:
 - ADJUST ALL DAMPERS IN DUCT SYSTEM TO THEIR FULL OPEN POSITION.
 - MEASURE AND RECORD THE TOTAL DELIVERED AIRFLOW OF FAN SYSTEM.
 - REDUCE FAN SPEED TO DELIVER TOTAL REQUIRED CFM AIRFLOW AS SHOWN ON THE FLOOR PLANS.
 - ADJUST INDIVIDUAL BALANCING DAMPERS IN THE DUCTWORK TO PROPORTION CFM TO AIRFLOW VALUES SHOWN ON THE FLOOR PLANS.
- AIR BALANCING OF THE DUCT SYSTEMS IS TO BE MADE SO THAT AIR NOISE IS KEPT TO A MINIMUM. AIR BALANCING IS TO BE MADE STARTING WITH THE FARTHEST REGISTER FROM THE FAN, WORKING BACK TO THE EQUIPMENT. "PINCHING" AN IN-LINE DAMPER THAT IS CLOSE TO THE FAN IS NOT ACCEPTABLE.
- BALANCING DAMPERS ARE TO BE INSTALLED IN ALL BRANCH SUPPLY, RETURN AND EXHAUST DUCTS WHETHER OR NOT SHOWN ON THE DRAWINGS. ALL BALANCING DAMPERS ARE TO BE INSTALLED IN THE WYE BRANCHES, OR IN THE BRANCH DUCT AS FAR AWAY FROM THE REGISTER OR GRILLE AS POSSIBLE.

OFFICE AREAS = NC 30
CLASSROOM AREAS = NC 30
LAB AREAS = NC 30

CLEARANCE NOTES

- CLEARANCES IN ALL ATTIC AREAS ARE EXTREMELY LIMITED. ALL TRADES ARE TO WORK CLOSELY TOGETHER TO ENSURE THAT PROPER ROUTING OF THE DUCTWORK MAY OCCUR. DUCTWORK IS TO HAVE THE HIGHEST PRIORITY.
- ALL CONDITIONS HAVE BEEN SHOWN AS ACCURATELY AS POSSIBLE. ALL CONDITIONS ARE TO BE FIELD VERIFIED. MECHANICAL CONTRACTOR IS TO INCLUDE IN HIS BID ADJUSTMENTS TO THE WORK AS REQUIRED TO ACCOMMODATE THE ACTUAL FIELD CONDITIONS.
- THE FIRE SPRINKLER PIPING SYSTEMS ARE TO BE COORDINATED WITH THE MECHANICAL CONTRACTOR SO AS NOT TO BLOCK INSTALLATION OF THE MECHANICAL SYSTEMS, AND SUCH THAT THE DUCTWORK CAN BE INSTALLED IN THE LOCATIONS SHOWN ON THE MECHANICAL DRAWINGS. THE DUCTWORK IS TO HAVE THE HIGHEST PRIORITY.
- PORTIONS OF THE EXISTING MECHANICAL, ENERGY MANAGEMENT, PLUMBING, ELECTRICAL, FIRE PROTECTION AND/OR COMMUNICATIONS SYSTEMS MAY NEED TO BE RELOCATED IN ORDER TO ALLOW THE NEW MECHANICAL SYSTEMS TO BE INSTALLED. WALL FRAMING MAY NEED TO INCLUDE NON-STANDARD BRACING OR SPECIAL OPENINGS. ALL CONTRACTORS ARE TO INCLUDE IN THEIR BID ALLOWANCES FOR MODIFICATIONS TO THE NEW OR EXISTING WORK TO REMAIN AS REQUIRED TO ACCOMMODATE THE NEW MECHANICAL SYSTEMS.

CONTROLS NOTES

- THE CONTROLS WORK SHALL CONSIST OF FURNISHING ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED TO COMPLETE THE INSTALLATION OF THE DIRECT DIGITAL CONTROL (DDC) SYSTEM FOR THIS BUILDING, INCLUDING ALL INCIDENTAL WORK NECESSARY TO MAKE IT A COMPLETE, SATISFACTORY, AND FULLY FUNCTIONING DDC SYSTEM. ELECTRIC, ELECTRONIC, PNEUMATIC, OR OTHER NON-DDC CONTROL COMPONENTS OR SYSTEMS ARE NOT ALLOWED.
- THIS SYSTEM MUST BE TIED INTO THE EXISTING CAMPUS DDC SYSTEM. THIS SYSTEM MUST INTERFACE WITH AND BE COMPATIBLE WITH THE EXISTING CAMPUS DDC SYSTEM.
- THE CONTROLS CONTRACTOR FOR THIS PROJECT IS TO FURNISH, INSTALL, AND PROGRAM ALL COMPONENTS REQUIRED FOR A FULLY FUNCTIONING STAND-ALONE DDC SYSTEM. THIS SYSTEM IS TO THEN BE HARD-WIRED INTO THE EXISTING DDC LAN SYSTEM IN PLACE AT THE PROJECT SITE. VERIFY THE NEAREST CONNECTION POINT IN THE FIELD PRIOR TO BID. THIS SYSTEM IS TO BE INCORPORATED INTO THE DISTRICT WIDE CONTROLS SYSTEM AND MUST HAVE THE CAPABILITY OF BEING CONTROLLED AND MONITORED FROM REMOTE LOCATIONS.

GENERAL NOTES

- PORTIONS OF THE EXISTING HVAC SYSTEMS AND CENTRAL PLANT ARE TO REMAIN. THESE SYSTEMS INCLUDE (BUT ARE NOT LIMITED TO) PIPING, COOLING TOWERS, COILS, AIR HANDLERS, DUCTWORK, CHILLER AND PUMPS. THE EXISTING HVAC SYSTEMS ARE CURRENTLY IN OPERATION AND WILL REMAIN IN OPERATION DURING CONSTRUCTION. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CHECK, TEST, START AND ADJUSTMENT OF THE EXISTING SYSTEMS, INCLUDING (BUT NOT LIMITED TO) THE BOILERS, CHILLER, COOLING TOWERS AND PUMPS. THE CENTRAL PLANT SYSTEM INCLUDING NEW AND EXISTING EQUIPMENT MUST BE COMPLETE AND FULLY FUNCTIONING AND IN FULL OPERATION PRIOR TO COMPLETION OF PROJECT.
- MECHANICAL CONTRACTOR SHALL PROTECT ALL EXISTING HVAC SYSTEMS AND EQUIPMENT TO REMAIN. THIS CONTRACTOR SHALL REPAIR ANY DAMAGE WHICH OCCURS DURING THE COURSE OF CONSTRUCTION.
- THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR FLUSHING, AIR REMOVAL AND WATER TREATMENT OF THE CAMPUS PIPING SYSTEM. STRAINERS AND/OR SUCTION DIFFUSERS ARE TO BE CLEANED AND REPLACED AS REQUIRED, UNTIL ALL DEBRIS IN SYSTEM IS REMOVED.
- DURING SYSTEM START-UP, THE CAMPUS CHILLED WATER AND HEATING HOT WATER PUMPS ARE TO HAVE THEIR FLOWS RESET TO ACCOMMODATE ANY CHANGES IN FLOW REQUIREMENTS. CHECK AND CONFIRM WATER FLOW AT MOST REMOTE EQUIPMENT IN EACH OF THE BUILDINGS, WITH SYSTEMS IN FULL COOLING AND HEATING.
- A NEW ROOF IS BEING INSTALLED ON THE BUILDING. INSULATION WILL BE ADDED AT THE ROOF LEVEL. ALL EXISTING ROOF VENTS, DUCTS AND ANY OTHER EXISTING MECHANICAL OR SHEET METAL ITEMS LOCATED ON OR PENETRATING THE ROOF ARE TO BE RAISED AS REQUIRED TO ACCOMMODATE THE NEW ROOF.
- ALL CORING AND PENETRATIONS OF ROOFS, WALLS, AND/OR FLOORS FOR DUCTS OR PIPING ARE TO BE AS SMALL AS POSSIBLE AND APPROVED PER STRUCTURAL DRAWINGS. OVERSIZING OF OPENINGS IS TO BE AVOIDED.

SEISMIC BRACING NOTES

- ALL BRACING OF DUCTS AND PIPING SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA GUIDELINES AS APPROVED BY DSA.
- WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWINGS OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE MECHANICAL ENGINEER AND THE DISTRICT STRUCTURAL ENGINEER.
- A COPY OF THE GUIDELINES PUBLISHED BY THE SMACNA AND APPROVED BY DSA SHALL BE PROVIDED BY THE CONTRACTOR AND KEPT ON THE JOB AT ALL TIMES.

SEISMIC BRACING GUIDELINES

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 1632A.2 CALIFORNIA BUILDING CODE (CBC) 2001. FORCES SHALL BE APPLIED IN THE HORIZONTAL DIRECTIONS, WHICH RESULT IN THE MOST CRITICAL LOADINGS FOR DESIGN.

THE VALUE OF a_p (COMPONENT AMPLIFICATION FACTOR) AND R_p (COMPONENT RESPONSE MODIFICATION FACTOR) OF SECTION 1632A.2 SHALL BE SELECTED FROM TABLE 16A-0, CBC 2001. THE VALUE OF I_p (SEISMIC IMPORTANCE FACTOR) AND C_e (SEISMIC COEFFICIENT) SHALL BE SELECTED FROM TABLE 16A-K AND 16A-Q, CBC 2001, RESPECTIVELY.

WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE MECHANICAL/ELECTRICAL ENGINEER AND THE DISTRICT STRUCTURAL ENGINEER.

2001 CALIFORNIA CODES - TITLE 24, C.C.R.

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| 1. STATE OF CALIFORNIA TITLE 24 (2001 EDITION) - PART I BUILDING STANDARDS ADMINISTRATIVE CODE | 9. STATE OF CALIFORNIA TITLE 24 (2001 EDITION) - PART 9 CALIFORNIA FIRE CODE/AMENDMENT WITH 2000 UFC |
| 2. STATE OF CALIFORNIA TITLE 24 (2001 EDITION) - PART 2/VOLUME 1, CALIFORNIA BUILDING CODE/AMENDMENT WITH 1997 UBC, VOLUME 1 | 10. STATE OF CALIFORNIA TITLE 24 (2001) - PART 12 CALIFORNIA REFERENCED STANDARDS CODE |
| 3. STATE OF CALIFORNIA TITLE 24 (2001 EDITION) - PART 2/VOLUME 2, CALIFORNIA BUILDING CODE/AMENDMENT WITH 1997 UBC, VOLUME 2 | 11. TITLE 19, C.C.R., PUBLIC SAFETY, DIVISION 1: STATE FIRE MARSHAL REGULATIONS |
| 4. 1997 UNIFORM BUILDING CODE, VOLUME 3 | |
| 5. STATE OF CALIFORNIA TITLE 24 (2001 EDITION) - PART 3 CALIFORNIA ELECTRICAL CODE/AMENDMENT WITH 1996 NEC | NATIONAL REFERENCED STANDARDS |
| 6. STATE OF CALIFORNIA TITLE 24 (2001 EDITION) - PART 4 CALIFORNIA MECHANICAL CODE/AMENDMENT WITH 2000 UMC | 1. NFPA 13, AUTOMATIC SPRINKLER SYSTEM, 1996 EDITION |
| 7. STATE OF CALIFORNIA TITLE 24 (2001 EDITION) - PART 5 CALIFORNIA PLUMBING CODE/AMENDMENT WITH 2000 UPC | 2. NFPA 14, INSTALLATION OF STANDPIPE AND HOSE SYSTEM, 1996 EDITION |
| 8. STATE OF CALIFORNIA TITLE 24 (2005 EDITION) - PART 6 CALIFORNIA ENERGY CODE | 3. NFPA 17A, WET CHEMICAL EXTINGUISHING SYSTEMS, 1994 EDITION |
| | 4. NFPA 24, INSTALLATION OF PRIVATE FIRE SERVICE MAINS, 1995 EDITION |
| | 5. NFPA 72, NATIONAL FIRE ALARM CODE, 1996 EDITION (AS AMENDED BY SFM) |

EXISTING CONDITIONS NOTE

THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE JOB SITE. THE CONTRACTOR SHALL COMPARE MECHANICAL DRAWINGS WITH ARCHITECTURAL, STRUCTURAL, CIVIL, PLUMBING, AND ELECTRICAL DRAWINGS AND THE DRAWINGS OF OTHER TRADES BEFORE COMMENCING WITH THE WORK AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES REQUIRING CLARIFICATION OR REVISION. DO NOT SCALE DRAWINGS.

EXISTING BUILDING CONDITIONS SHOWN ARE FOR BACKGROUND INFORMATION ONLY. THEY ARE BASED ON ORIGINAL MECHANICAL, PLUMBING, ARCHITECTURAL AND STRUCTURAL DRAWINGS DATED 02/20/67 AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.

ALL EXISTING UTILITIES SHOWN ARE BASED ON ORIGINAL MECHANICAL AND PLUMBING DRAWINGS DATED 02/20/67. ACTUAL LOCATIONS OF UTILITIES MAY VARY FROM THOSE SHOWN ON THESE DRAWINGS.

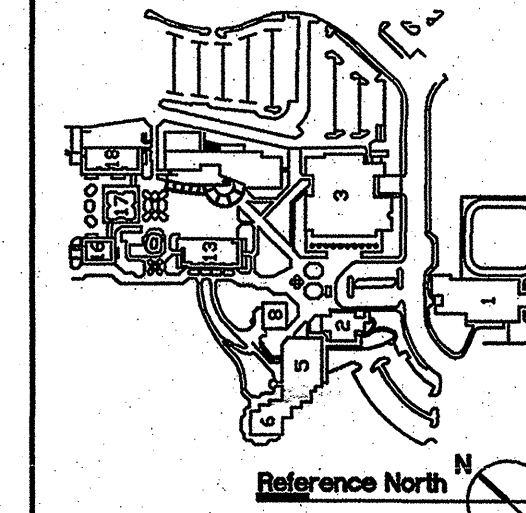
HEATING HOT WATER NOTES

- ALL HEATING HOT WATER PREHEAT, HEATING, AND REHEAT VALVES ARE TO BE 3-WAY TYPE.
- CAMPUS CENTRAL PLANT SYSTEM REQUIRES CUMULATIVE RETURN FLOW MIN. OF 110 GPM FROM BUILDINGS 16, 17 AND 18.

MECHANICAL LIST OF DRAWINGS

M0.01 MECHANICAL NOTES AND LIST OF DRAWINGS	M2.11 BLDG 16 MECHANICAL GROUND FLOOR PLAN	M4.31 BLDG 18 MECHANICAL FIRST FLOOR PIPING PLAN
M0.02 MECHANICAL LEGEND	M2.12 BLDG 16 MECHANICAL FIRST FLOOR PLAN	M4.32 BLDG 18 MECHANICAL SECOND FLOOR PIPING PLAN
M0.03 BLDG 16 MECHANICAL PHASING PLAN	M2.13 BLDG 16 MECHANICAL SECOND FLOOR PLAN	M4.33 BLDG 18 MECHANICAL THIRD FLOOR PIPING PLAN
M0.04 BLDG 17 MECHANICAL SEQUENCING PLAN	M2.14 BLDG 16 MECHANICAL ROOF PLAN	M4.34 BLDG 18 MECHANICAL ROOF PIPING PLAN
M0.05 BLDG 18 MECHANICAL PHASING PLAN		
M0.11 BLDG 16 MECHANICAL SCHEDULES	M2.21 BLDG 17 MECHANICAL FIRST FLOOR PLAN	M5.01 MECHANICAL DETAILS
M0.12 BLDG 16 MECHANICAL SCHEDULES	M2.22 BLDG 17 MECHANICAL SECOND FLOOR PLAN	M5.02 MECHANICAL DETAILS
M0.13 BLDG 16 MECHANICAL SCHEDULES	M2.23 BLDG 17 MECHANICAL ROOF PLAN	M5.03 MECHANICAL DETAILS
M0.21 BLDG 17 MECHANICAL SCHEDULES		M5.04 MECHANICAL DETAILS
		M5.05 MECHANICAL DETAILS
M0.31 BLDG 18 MECHANICAL SCHEDULES	M2.31 BLDG 18 MECHANICAL FIRST FLOOR PLAN	M5.06 MECHANICAL DETAILS
M0.32 BLDG 18 MECHANICAL SCHEDULES	M2.32 BLDG 18 MECHANICAL SECOND FLOOR PLAN	M5.07 MECHANICAL DETAILS
M0.33 BLDG 18 MECHANICAL SCHEDULES	M2.33 BLDG 18 MECHANICAL THIRD FLOOR PLAN	
M0.34 BLDG 18 MECHANICAL SCHEDULES	M2.33.1 BLDG 18 MECHANICAL PARTIAL THIRD FLOOR PLAN	
	M2.33.2 BLDG 18 MECHANICAL PARTIAL THIRD FLOOR PLAN	
	M2.34 BLDG 18 MECHANICAL ROOF PLAN	
M1.11 BLDG 16 MECHANICAL GROUND FLOOR DEMOLITION PLAN	M3.11 BLDG 16 MECHANICAL SECTIONS	M6.01 MECHANICAL CONTROL DIAGRAMS
M1.12 BLDG 16 MECHANICAL FIRST FLOOR DEMOLITION PLAN	M3.21 BLDG 17 MECHANICAL SECTIONS	M6.02 MECHANICAL CONTROL DIAGRAMS
M1.13 BLDG 16 MECHANICAL SECOND FLOOR DEMOLITION PLAN	M3.31 BLDG 18 MECHANICAL SECTIONS	M6.03 MECHANICAL CONTROL DIAGRAMS
M1.14 BLDG 16 MECHANICAL ROOF DEMOLITION PLAN	M3.32 BLDG 18 MECHANICAL SECTIONS	M6.04 MECHANICAL CONTROL DIAGRAMS
		M6.05 MECHANICAL CONTROL DIAGRAMS
M1.21 BLDG 17 MECHANICAL FIRST FLOOR DEMOLITION PLAN		M6.06 MECHANICAL CONTROL DIAGRAMS
M1.22 BLDG 17 MECHANICAL SECOND FLOOR DEMOLITION PLAN	M4.11 BLDG 16 MECHANICAL GROUND FLOOR PIPING PLAN	M6.07 MECHANICAL CONTROL DIAGRAMS
M1.23 BLDG 17 MECHANICAL ROOF DEMOLITION PLAN	M4.12 BLDG 16 MECHANICAL FIRST FLOOR PIPING PLAN	M6.08 MECHANICAL CONTROL DIAGRAMS
	M4.13 BLDG 16 MECHANICAL SECOND FLOOR PIPING PLAN	M6.09 MECHANICAL CONTROL DIAGRAMS
M1.31 BLDG 18 MECHANICAL FIRST FLOOR DEMOLITION PLAN	M4.14 BLDG 16 MECHANICAL ROOF PIPING PLAN	M6.10 MECHANICAL CONTROL DIAGRAMS
M1.32 BLDG 18 MECHANICAL SECOND FLOOR DEMOLITION PLAN		M6.11 MECHANICAL CONTROL DIAGRAMS - BUILDING 18
M1.33 BLDG 18 MECHANICAL THIRD FLOOR DEMOLITION PLAN	M4.21 BLDG 17 MECHANICAL FIRST FLOOR PIPING PLAN	M6.12 MECHANICAL CONTROL DIAGRAMS - BUILDING 18
M1.34 BLDG 18 MECHANICAL ROOF DEMOLITION PLAN	M4.22 BLDG 17 MECHANICAL SECOND FLOOR PIPING PLAN	

KEY PLAN



ARCHITECT OF RECORD

noll tam
architects and planners

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BRUCE T. CHILDS
No. M025925
Exp. 6/30/07
MECHANICAL
STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

FILE NUMBER: 41-1
APPLICATION NUMBER: 01-107611
AC _____ FS _____ SS _____
DATE _____

BID DOCUMENTS

CAÑADA COLLEGE
BUILDING 16, 17, 18
RENOVATION

SMCCCD
3401 CSM Drive
San Mateo, CA 94402
Cañada College
4200 Farm Hills Blvd.
Redwood City, CA 94061

SHEET TITLE

MECHANICAL NOTES AND LIST OF DRAWINGS

REVISIONS		
NO.	DATE	DESCRIPTION
1	08/11/06	ADDENDUM NO. 2 BLDG 17 MODERNIZATION
2	08/18/06	BLDG 16, 18 MODERNIZATION
3	02/01/07	RECORD SET

DATE	MARCH 1, 2006
DRAWN	JP
CHECKED	BC
SCALE	AS NOTED
N&T JOB NO.	2220.07
SHEET NUMBER	MO.01

accu engineered systems

1133 ALADDIN AVE
SAN LEANDRO, CALIFORNIA 94777
(510) 344-4300

825403 M0.01.DWG RC RISSE
Job Number Filename Drawn By Project Mgr
86519
RECORD DRAWING District Contract #
DATE: 02-01-07 Contractor's Signature

B17 MECHANICAL/PLUMBING/ELECTRICAL/VD AS BUILTS