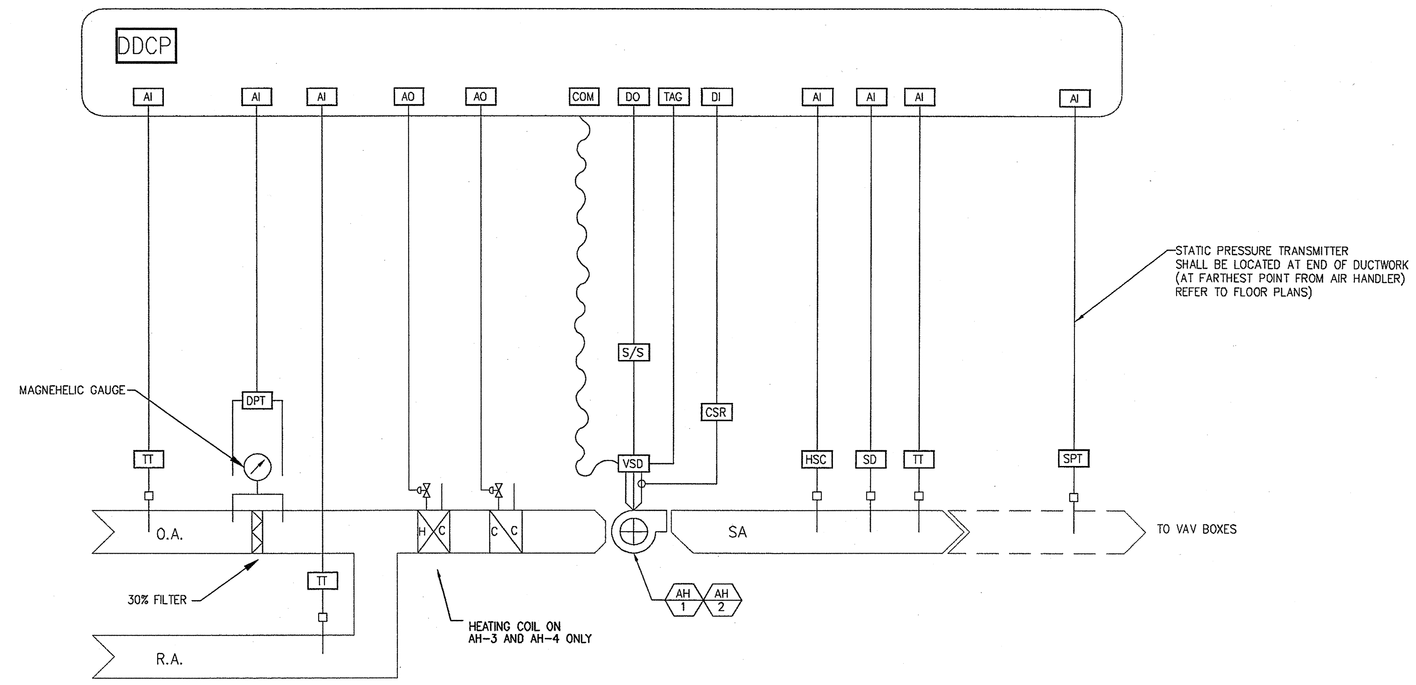
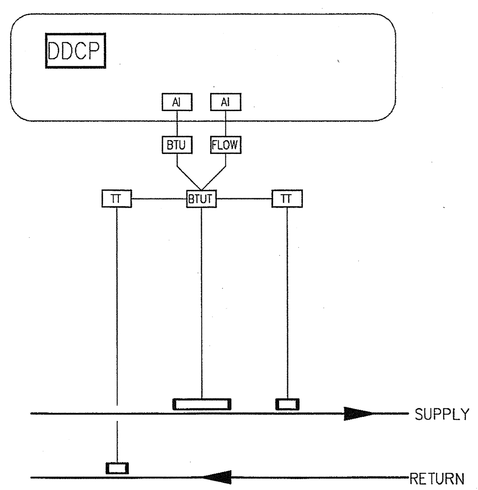


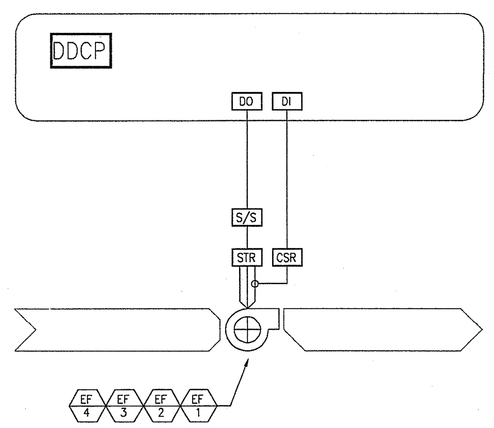
TYPICAL AIR HANDLER DDC DIAGRAM

SCALE NONE | 1



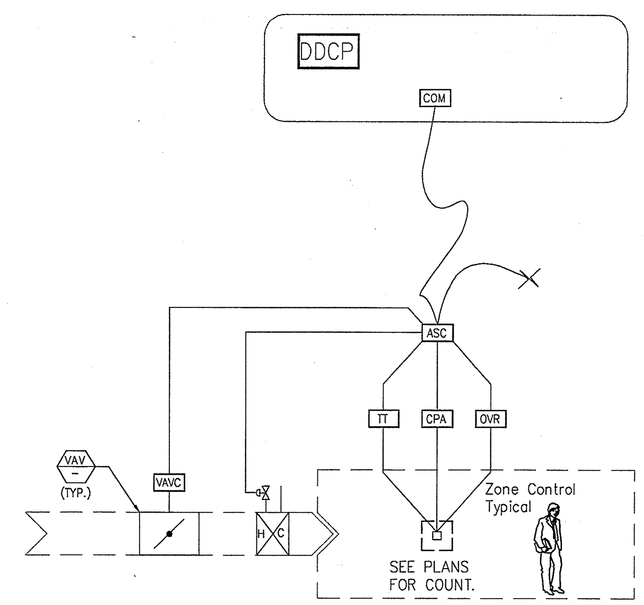
TYPICAL BTU MEASURING STATION CONTROLS

SCALE NONE | 4



TYPICAL EXHAUST FAN CONTROLS DIAGRAM

SCALE NONE | 3



TYPICAL VAV BOX CONTROLS DIAGRAM

SCALE NONE | 2

NOTES THIS SHEET

1. CONTROL POINTS SHOWN ON THIS SHEET ARE MINIMUM POINTS REQUIRED. ADDITIONAL POINTS MAY BE REQUIRED TO ACCOMPLISH SPECIFIED SEQUENCE OF OPERATIONS. ALL SUCH POINTS SHALL BE INCLUDED IN THIS CONTRACT AT NO ADDITIONAL COST TO THE PROJECT. (TYP.)
2. ALL AUTOMATIC BUILDING CONTROL SYSTEMS SHALL BE INTEGRATED TO CAMPUS WIDE AUTOMATION. THE DISTRICT STANDARD CONTROLS SYSTEM IS TELETROL CONTROLS. CONTACT DAN PORTILLO (909) 239-1492 (TYP.)
3. ALL CONTROL DIAGRAMS SHOWN IN THIS AND OTHER SHEETS SHALL BE TRANSFORMED INTO GRAPHICAL INTERFACE AT OPERATOR STATION IN THIS BUILDING AND AT THE CENTRAL UTILITIES PLANT CONSOLE.
4. DUCT STATIC PRESSURE TRANSMITTER SHALL BE LOCATED END OF MAIN SUPPLY AIR DUCT AT FURTHEST POINT FROM FAN AND JUST PRIOR TO LAST VAV BOX. REFER TO FLOOR PLANS FOR EXACT LOCATION.

SEQUENCE OF OPERATIONS AND SYSTEM NOTES

1. AIR-HANDLER FANS: AIR-HANDLER SUPPLY FANS SHALL ACCELERATE AND DECELERATE TO MAINTAIN END OF RUN STATIC PRESSURE. STATIC PRESSURE CONTROL SHALL BE VIA PROPORTIONAL, INTEGRAL, AND DERIVATIVE LOOP TUNED TO CRITICAL DAMPING.
2. ALL AIR-HANDLER FANS SHALL BE EQUIPPED WITH HIGH-STATIC LIMIT AUTOMATIC SHUT-OFF CONTROLS TO PREVENT DUCT OVER-PRESSURIZATION.
3. AIR HANDLER COOLING: AIR CHANDLER CHILLED WATER VALVES SHALL MODULATE BASED ON PROPORTIONAL AND INTEGRAL CONTROL LOOP TO MAINTAIN 55 DEGREE LEAVING AIR TEMPERATURE DURING NORMAL OPERATION. DURING WARM-UP CHILLED WATER VALVES SHALL REMAIN CLOSED.
4. VAV ZONES: VAV ZONES SHALL MODULATE BETWEEN MINIMUM AND DESIGN CFM RATES TO PROVIDE NECESSARY COOLING TO SPACES DURING COOLING OPERATION. HEATING OPERATION SHALL LIMIT AIRFLOW FROM MINIMUM TO 50% OF DESIGN CFM TO PROVIDE ZONE RE-HEAT TO SPACES IN SIMULTANEOUS MODULATION OF RE-HEAT VALVE. ZONE CONTROL SHALL BE VIA PROPORTIONAL AND INTEGRAL CONTROL LOOP.
5. INITIAL TRENDING OF POINTS AND SYSTEM CONDITIONS: DURING ACCEPTANCE AND SYSTEM COMMISSIONING, CONTRACTOR SHALL PROVIDE TRENDING OF ALL CONTROLLED AND INPUT POINTS FOR INTERVALS OF NO LESS THAN 5 MINUTES CONTINUOUSLY OVER A REPRESENTATIVE 48 HOUR PERIOD. THIS TABULATION SHALL BE PRESENTED IN PRINTED FORM WITH CLEAR ANNOTATION OF POINT DESCRIPTIONS AND VALUES. PID LOOP TUNING SHALL BE DEMONSTRATED BY TABULAR AND GRAPHIC REPRESENTATION OF SYSTEM RESPONSE. CHARTS INDICATING CONTROL VARIABLE RECOVERY UPON EXCITATION OF CONTROL POINT OF NO LESS THAN 25% OF MAXIMUM RANGE. TRENDING AND GRAPHS SHALL BE RE- SUBMITTED AS NECESSARY TO SUBSTANTIATE PROPER SYSTEM CALIBRATION, TUNING AND OPERATION, BEFORE CONCLUSION OF PROJECT ACCEPTANCE.

SADDLEBACK COLLEGE

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Consultant and Seal

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Agency Approval

VERIFICATION STAMP DIV OF THE STATE ARCHITECT OFFICE OF SCHOOL CONSTRUCTION SERVICES
04 105129
DATE MAY 07 2008

No.	Date	Revision/Issue

Project Name

JAMES B. UTT MEMORIAL LEARNING RESOURCE CENTER RENOVATION

28000 Marguerite Parkway
Mission Viejo, California 92692

Checked By | Drawn By

Sheet Title

MECHANICAL DDC DIAGRAMS

Sheet Number

M6.01

Project Number: 04-111 | Scale: 1/8"=1'-0"

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