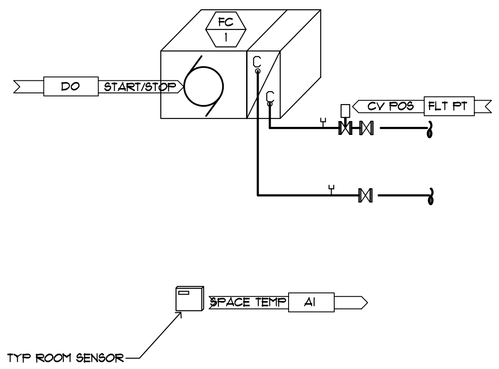
FAN COIL CONTROL SEQUENCE:

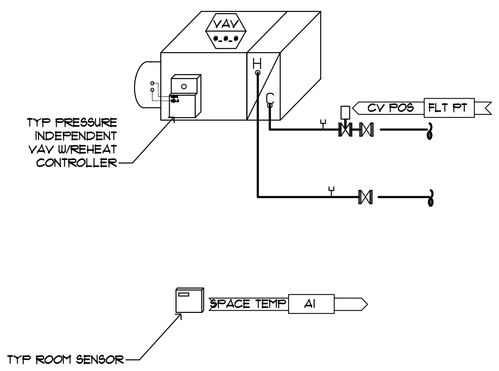
THE ZONE WILL HAVE ITS OWN CONTROLLER/ROOM THERMOSTAT TO MODULATE SUPPLY TEMPERATURE AND START/STOP THE FAN.



FAN COIL CONTROL SEQUENCE | 6

TYPICAL VAV CONTROL SEQUENCE:

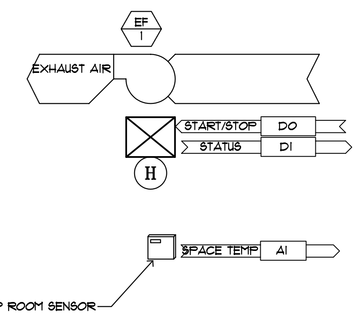
EACH VAV ZONE WILL HAVE ITS OWN CONTROLLER AND ROOM THERMOSTAT TO MODULATE AIR VOLUME AND SUPPLY TEMPERATURE. THE THERMOSTAT WILL HAVE SEPARATE HEATING AND COOLING SET POINTS FOR OCCUPIED AND UNOCCUPIED MODES OF OPERATION.



VAV CONTROL SEQUENCE | 7

EF-1 CONTROL SEQUENCE:

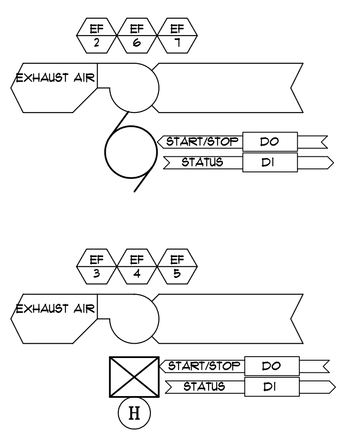
THE EXHAUST FAN EF-1 WILL OPERATE BASED ON A RISE IN ROOM TEMPERATURE (ROOM TEMPERATURE SETPOINT= 85°F) THE DDC SYSTEM SHALL INDICATE OPERATIONAL STATUS.



TRANSFORMER ROOM CONTROL | 8

EF-2 THROUGN EF-7 CONTROL SEQUENCE:

EACH EXHAUST FAN WILL OPERATE BASED ON TIME-OF-DAY SCHEDULE SET BY THE USER. THE DDC SYSTEM SHALL INDICATE OPERATIONAL STATUS.



EXHAUST FAN CONTOL DETAIL | 9

AHU-1 CONTROL SEQUENCE (AHU-2 SIMILAR):

AHU-1 & AHU-2 SYSTEM GENERAL DESCRIPTION

THE AIR HANDLING SYSTEMS ARE 100% OUTSIDE AIR, VARIABLE VOLUME, CHILLED WATER COOLING AND EXHAUST HEAT RECOVERY.

THE SYSTEM CONSISTS OF THE FOLLOWING PRIMARY EQUIPMENT:

ONE 45,000 CFM SUPPLY FAN WITH VARIABLE SPEED CONTROL, ONE 45,000 CFM EXHAUST FAN WITH VARIABLE SPEED CONTROL, A CHILLED WATER COIL AND RUN AROUND HEAT RECOVERY COIL.

AHU-1 SYSTEM (AHU-2 SIMILAR).

LOCAL HARD WIRED POINTS (BY OTHERS):

- ONE SMOKE DETECTOR INTERLOCK FOR EACH SUPPLY FAN

OTHER.
- ALL CONTROL SETPOINTS (TEMPERATURE, PRESSURE, SPEED, TIME) SHALL BE ADJUSTABLE

AHU SEQUENCE OF OPERATION
GENERAL:
THE BAS ENABLES THE AHU ACCORDING TO TIME OF DAY SCHEDULE SET BY THE USER (24/7/365).

AIR VOLUME:
THE AHU SUPPLY FAN IS CONTROLLED BY VFD IN ORDER TO MAINTAIN SUPPLY AIR STATIC PRESSURE (1.5" W.C.). THE EXHAUST AIR CONTROLLED BY VFD TO MAINTAIN BUILDING PRESSURE (.01" W.C.)

SUPPLY AIR TEMPERATURE:
THE CHILLED WATER VALVE SHALL BE MODULATED TO MAINTAIN SUPPLY AIR SETPOINT. THE SETPOINT SHALL BE RESET FROM 55°F TO 60°F BASED ON OSA TEMPERATURE PER THE RESET SCHEDULE SHOWN BELOW. IF THE OSA TEMPERATURE DROPS BELOW THE SA SETPOINT THE RUN AROUND PUMP SHALL BE ENERGIZED AND THE VFD SHALL MODULATE FLOW TO MAINTAIN S.A. SETPOINT.

SMOKE DETECTOR:
THE SMOKE DETECTOR STOPS BOTH SUPPLY AND EXHAUST FANS UPON SENSING SMOKE AND SENDS AN ALARM SIGNAL TO THE FACP.

TEMPERATURE ALARM:
AN ALARM IS GENERATED ANYTIME AHU-1 IS ENABLED AND THE S.A. TEMPERATURE STAYS BELOW 50F OR ABOVE 65°F FOR 30 MINUTES CONTINUOUSLY. SHUT DOWN THE AHU IF S.A. DROPS BELOW 40°F OR ABOVE 80°F.

AIR FLOW ALARM:
AN ALARM IS GENERATED ANYTIME AHU-1 IS ENABLED AND THE S.A. STATIC PRESSURE STAYS BELOW 1"W.C. OR ABOVE 3"W.C. FOR 15 MINUTES CONTINUOUSLY.

TREND LOGS:
TREND LOGS SHALL BE MAINTAINED ON ALL OA AND SA TEMPERATURES, SUPPLY PLENUM STATIC PRESSURE AND SUPPLY FAN VFD STATUS.

HEATING HWP-1 & 2:

THE BAS ENABLES THE HEATING PUMPS. THE LEAD PUMP SHALL OPERATE ON A TIME OF DAY SCHEDULE SET BY THE USER (24/7/365).

SECONDARY PUMP SPEED AND START/STOP CONTROL: THE LEAD SECONDARY PUMP SHALL MODULATE ITS PUMP SPEED TO MAINTAIN HOT WATER DIFFERENTIAL PRESSURE AT SETPOINT. THE MINIMUM ACCEPTABLE VALUE OF THE REMOTE HOT WATER DIFFERENTIAL PRESSURE SETPOINT SHALL BE DETERMINED IN THE FIELD DURING COMMISSIONING. THE INITIAL VALUE FOR THE SETPOINT SHALL BE 3 PSI. SEE FLOOR PLANS FOR LOCATION OF HOT WATER DIFFERENTIAL PRESSURE SENSOR. IF A FAILURE OF THE LEAD PUMP IS DETECTED, ACTIVATE THE LAG PUMP AND GENERATE AN ALARM.

SECONDARY PUMP LEAD LAG ROTATION: ON A MONTHLY BASIS.

COOLING PUMPS CHWP-1 & CHWP-2:

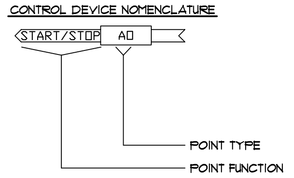
COOLING PUMPS ENABLE/DISABLE: THE COOLING PUMP SHALL BE ENABLED WHEN THE O.S.A. TEMPERATURE IS HIGHER THAN THE S.A. SETPOINT. DISABLE THE COOLING PUMP WHEN THE O.S.A. TEMPERATURE DROPS TO THE S.A. SETPOINT TEMPERATURE AND BELOW.

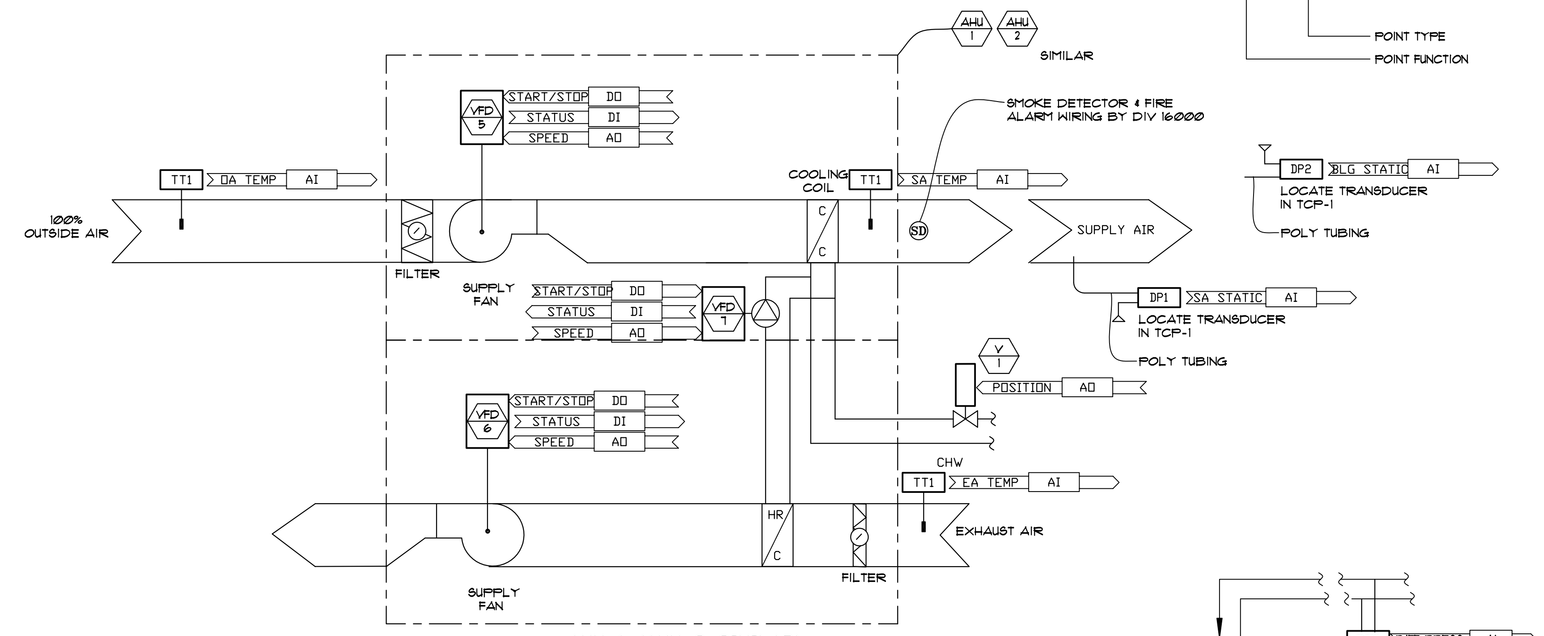
THE PUMP SPEED AND START/STOP CONTROL: THE LEAD PUMP SHALL MODULATE ITS PUMP SPEED TO MAINTAIN CHILLED WATER DIFFERENTIAL PRESSURE AT SETPOINT. THE MINIMUM ACCEPTABLE VALUE OF THE REMOTE CHILLED WATER DIFFERENTIAL PRESSURE SETPOINT SHALL BE DETERMINED IN THE FIELD DURING COMMISSIONING. THE INITIAL VALUE FOR THE SETPOINT SHALL BE 3 PSI. SEE FLOOR PLANS FOR LOCATION OF CHILLED WATER DIFFERENTIAL PRESSURE SENSOR. IF A FAILURE OF THE LEAD PUMP IS DETECTED, ACTIVATE THE LAG PUMP AND GENERATE AN ALARM.

PUMP LEAD LAG ROTATION: ON A MONTHLY BASIS.

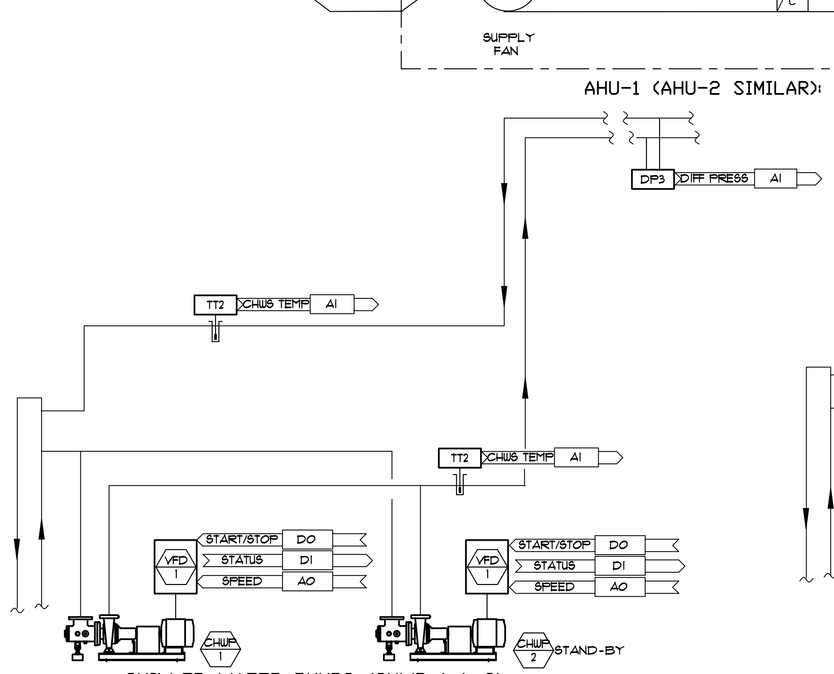
RESET SCHEDULE						
D.S.A.	60°F AND BELOW	62°F	64°F	66°F	68°F	70°F AND ABOVE
SA-SP	60°F	59°F	58°F	57°F	56°F	55°F

CONTROL DEVICE NOMENCLATURE

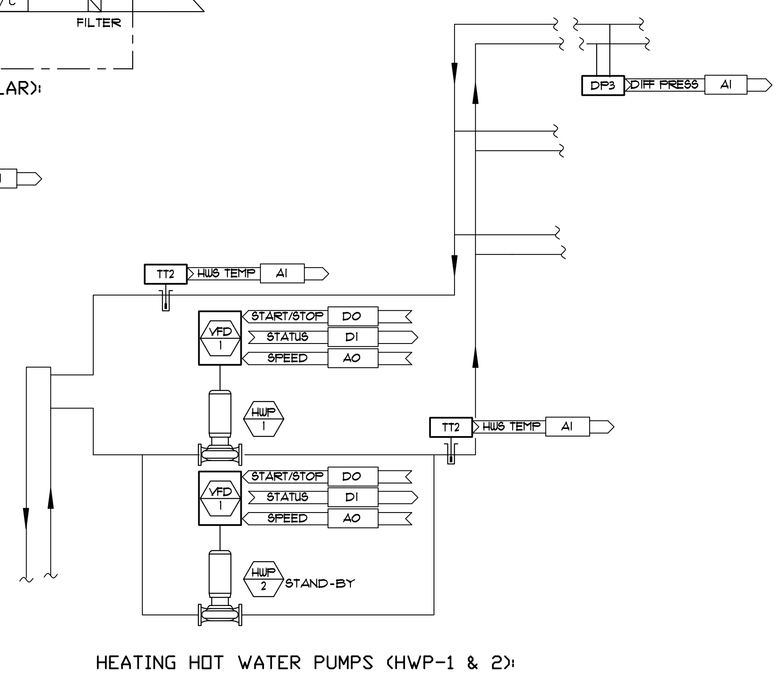




AHU-1 (AHU-2 SIMILAR):

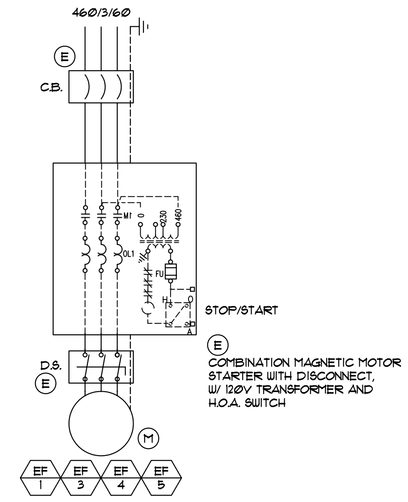


CHILLED WATER PUMPS (CHWP-1 & 2):

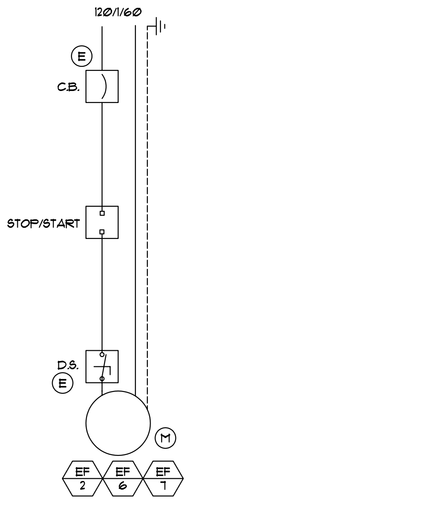


HEATING HOT WATER PUMPS (HWP-1 & 2):

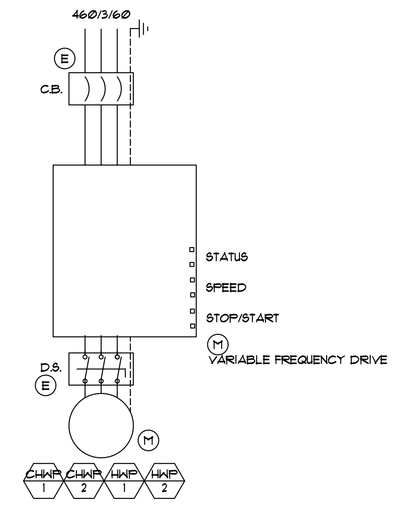
CONTROL SEQUENCE FOR AHU'S AND PUMPS | 5



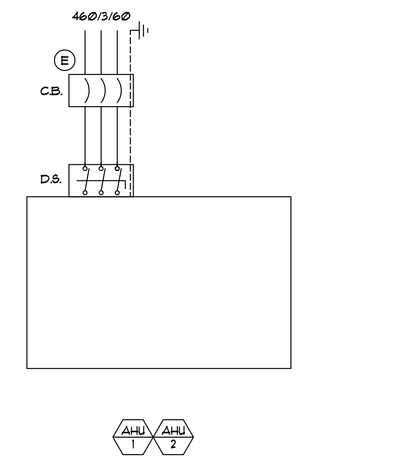
EXH. FAN POWER WIRING DETAIL | 1



EXH. FAN POWER WIRING DETAIL | 2



PUMP POWER WIRING DETAIL | 3



AIR HANDLER POWER WIRING DETAIL | 4

McCarthy Building Companies, Inc.
343 Sansome Street, 14th Floor
San Francisco, California 94104
P 415 |364-1339
F 415 |397-5999

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
APPL. 01—
ACC____ FLS____ SS____
DATE____

REGISTERED PROFESSIONAL ENGINEER
JAMES VANEVELD
NO. 27806
EXP. DATE: 06/30/09
MECHANICAL
STATE OF CALIFORNIA

WESTERN ALLIED MECHANICAL INC
MECHANICAL CONTRACTORS
1240 O'BRIEN DRIVE
MENLO PARK, CA 94025
(650) 324-9760
(650) 321-4546 FAX
STATE CONTRACTOR LICENSE NO. 826782

College of San Mateo
Building 5N
DSA Submittal
San Mateo, CA
Developed for College of San Mateo

Revision	Description	Date

Revision	Description	Date

Job. No.	118051
Date	June 13 2008
Drawn by	RJ
Checked by	LV
Scale	SEE DRAWING

MECHANICAL DETAILS

M6-03