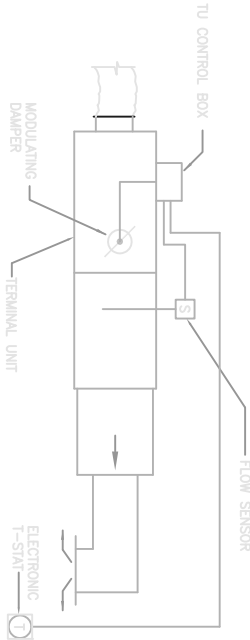
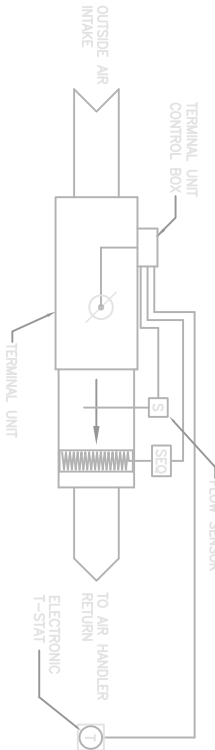


- TYPICAL OUTSIDE AIR TERMINAL UNIT SEQUENCE OF OPERATION:
1. THE TERMINAL UNIT SHALL BE INDIVIDUALLY CONTROLLED BY ITS OWN WAY CONTROLLER.
 2. THE OUTSIDE AIR TERMINAL UNIT SHALL MAINTAIN A CONSTANT SUPPLY OF OUTSIDE AIR TO THE AIR HANDLER INDEPENDENT OF PRESSURE FLUCTUATIONS IN THE RETURN AIR INTAKE.



- TYPICAL VAV ROOM TERMINAL UNIT WITHOUT REHEAT SEQUENCE OF OPERATION:
1. EACH TERMINAL UNIT SHALL BE INDIVIDUALLY CONTROLLED BY ITS OWN WAY CONTROLLER.
 2. ON A RISE IN SPACE TEMPERATURE, THE UNIT WILL MODULATE TO OPEN THE DAMPER TO MAINTAIN THE ROOM TEMPERATURE SETPOINT. AS SPACE TEMPERATURE RISES, THE DAMPER WILL MODULATE TO OPEN THE DAMPER TO MAINTAIN THE ROOM TEMPERATURE SETPOINT. THE DAMPER WILL MODULATE TO MAINTAIN THE ROOM TEMPERATURE SETPOINT THRU THE BOX WHICH CORRESPONDS TO THE ROOM TEMPERATURE REQUIREMENT REGARDLESS OF FLUCTUATIONS IN UPSTREAM SUPPLY DUCT PRESSURE.
 3. AT LOW LOAD CONDITIONS, THE DAMPER SHALL MODULATE DOWN TO AND REMAIN AT ITS MINIMUM POSITION.



- TYPICAL CONSTANT VOLUME ROOM TERMINAL UNIT WITH REHEAT SEQUENCE OF OPERATION:
1. THE TERMINAL UNIT SHALL BE INDIVIDUALLY CONTROLLED BY ITS OWN WAY CONTROLLER.
 2. THE CONSTANT VOLUME AIR TERMINAL UNIT SHALL MAINTAIN A CONSTANT SUPPLY OF CONDITIONED AIR TO THE SPACE INDEPENDENT OF PRESSURE FLUCTUATIONS IN THE SUPPLY. ON AN INCREASE IN STATIC PRESSURE, THE DAMPER SHALL MODULATE TO A LESS OPEN POSITION TO MAINTAIN THE AMOUNT OF AIR SUPPLIED THRU THE UNIT. ON A DECREASE IN STATIC PRESSURE, THE DAMPER SHALL MODULATE TO A MORE OPEN POSITION TO MAINTAIN THE AMOUNT OF AIR SUPPLIED THRU THE UNIT.
 3. AT LOW LOAD CONDITIONS, THE ROOM TEMPERATURE WILL FALL BELOW THE SETPOINT, THE REHEAT ADJUSTABLE COIL SHALL BE ACTIVATED WHEN THE TEMPERATURE FALLS 4°F BELOW SETPOINT AND SHALL BE STEP CONTROLLED (WHERE INDICATED ON THE TU SCHEDULE) TO MAINTAIN THE ROOM TEMPERATURE AT 2°F BELOW SETPOINT. IF THE SPACE LOAD INCREASES SO THAT THE SPACE TEMPERATURE RISES BACK TO THE SETPOINT, THE REHEAT COIL SHALL BE DEACTIVATED.
 4. THE REHEAT COIL SHALL BE INTERLOCKED TO PREVENT IT FROM OPERATING ON NO AIR FLOW VIA AN AIR FLOW SWITCH AND ON HIGH AIR TEMPERATURE VIA A HIGH TEMPERATURE T-STAT.



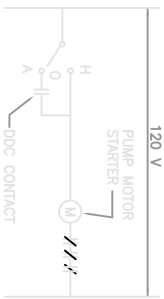
1. WATER DETECTORS SHALL BE LOCATED UNDER FLOOR BENEATH EACH CONDENSATE DRAIN PAN AT CONDENSATE PIPING RUNS AS SHOWN ON SHEET TI-H23.
2. THE LOCATION AND IDENTIFICATION REFERENCE NUMBER OF EACH WATER DETECTION/SENSOR AND ITS ALARM STATUS SHALL BE DISPLAYED GRAPHICALLY ON THE WATER DETECTION CONTROL PANEL.

7

LEAK DETECTION SYSTEM DIAGRAM

TI-H36

NOT TO SCALE



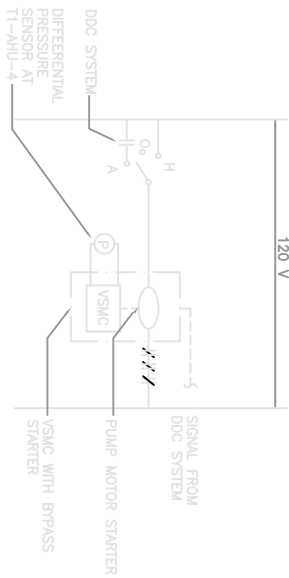
8

TYP. PUMP CONTROL DIAGRAM

TI-H36

NOT TO SCALE

(TI-P3 & TI-P4)



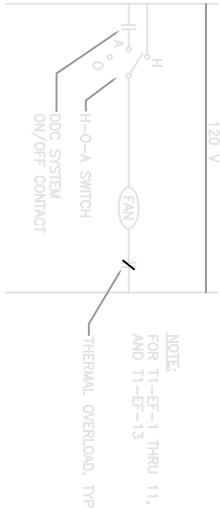
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TYP. PUMP CONTROL DIAGRAM

TI-H36

NOT TO SCALE

(TI-P1 & TI-P2)



4

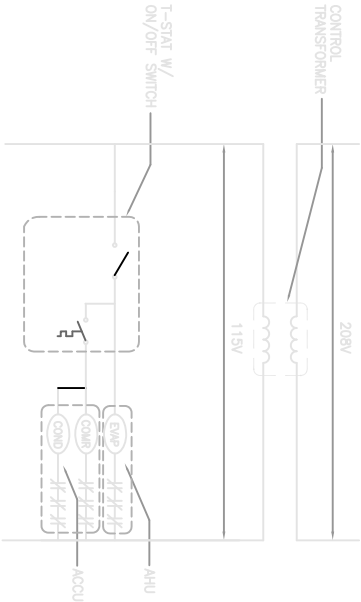
TYPICAL EXHAUST FAN

TI-H36

CONTROL DIAGRAM

NOT TO SCALE

- TYPICAL EXHAUST FAN SEQUENCE OF OPERATION
1. THE FAN SHALL BE MANUALLY OPERATED WHEN PLACED IN THE "HAND" MODE.
 2. WHEN IN THE "AUTO" MODE, THE FAN SHALL OPERATE AS SCHEDULED FROM THE THE DDC SYSTEM.
 3. SEE DDC SEQUENCE OF OPERATIONS ON SHEET TI-H38 FOR ADDITIONAL INFORMATION.



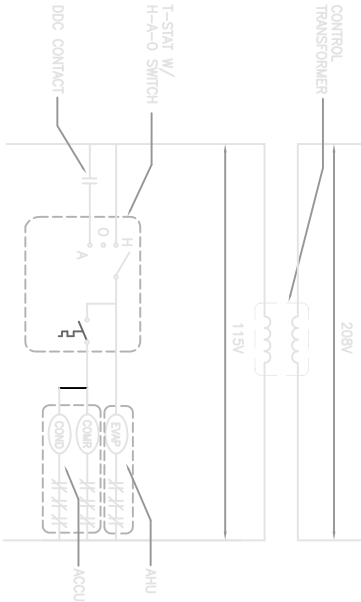
- A/C SEQUENCE OF OPERATION:
1. TI-AHU DX/ACCU 2, 3, & 4 SHALL OPERATE 24 HR/DAY.
 2. THE SPLIT SYSTEM AIR CONDITIONER EVAPORATOR FAN SHALL RUN CONTINUOUSLY. UPON A CALL FOR COOLING FROM THE THERMOSTAT, THE COMPRESSOR AND CONDENSER FANS SHALL BE ENERGIZED.

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TI-DX-AHU/ACCU-2, 3, & 4 CONTROL DIAGRAM

TI-H36

NTS



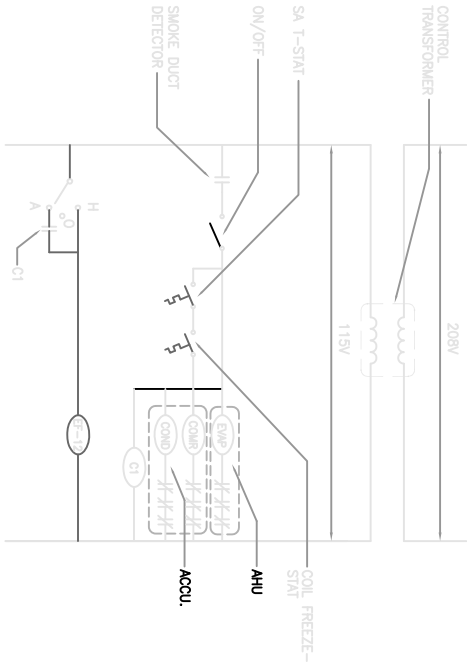
- A/C SEQUENCE OF OPERATION:
1. TI-AHU DX/ACCU 5 SHALL OPERATE WHENEVER TI-AHU-1 IS TURNED OFF.
 2. WHILE OPERATIONAL, THE SPLIT SYSTEM AIR CONDITIONER EVAPORATOR FAN SHALL RUN CONTINUOUSLY. UPON A CALL FOR COOLING FROM THE THERMOSTAT, THE COMPRESSOR AND CONDENSER FANS SHALL BE ENERGIZED.

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TI-DX-AHU/ACCU-5 CONTROL DIAGRAM

TI-H36

NTS



A/C SEQUENCE OF OPERATION:

1. TI-DXAHU-1 SHALL OPERATE 24 HR/DAY. TI-ET-19 SHALL BE INTERLOCKED WITH TI-DXAHU-1.
2. THE SPLIT SYSTEM AIR CONDITIONER EVAPORATOR FAN SHALL RUN CONTINUOUSLY. UPON A CALL FOR COOLING FROM THE SUPPLY AIR THERMOSTAT, THE COMPRESSOR AND CONDENSER FANS SHALL BE ENERGIZED.
3. THE CONSTANT VOLUME TERMINAL UNIT TERMINAL HEATER COILS SHALL OPERATE TO MAINTAIN EACH SPACE AT ITS TERMINAL UNIT T-STAT SETPOINT.
3. THE COIL FREEZE-STAT SHALL SHUT OFF THE COMPRESSOR IF THE COIL TEMPERATURE DROPS TO 32° OR LESS. THE COMPRESSOR SHALL REMAIN OFF UNTIL THE COIL TEMPERATURE WARMS UP TO 37°F OR MORE.

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TI-DXAHU-1 AND TI-ACCU-1 CONTROL DIAGRAM

TI-H36

NTS

Revisions	Date

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This work was prepared by me or under my supervision and I am a duly licensed professional engineer in the State of Hawaii. I am not providing any services outside the State of Hawaii.

Signature
NOTE: Contractor to check and verify all dimensions at job before proceeding with work.



Preparing Title
CONTROL DIAGRAMS AND SEQUENCE OF OPERATION

Approved: Area Project Manager

Working Number	Checked	Drawn
TI		

ABSLATORY ONE CLINC AND RENOVATE E-WING PHASE I E-WING RENOVATION

Project No.
459-0028

Drawing No.
TI-H36



Department of Veterans Affairs