

PLUMBING LEGEND

- P.O.C. POINT OF CONNECTION
- CLG. CEILING
- VTR VENT THRU ROOF
- FL. LN. FLOOR LINE
- CONN. CONNECT
- FIX. FIXTURE(S)
- WC WATER CLOSET
- LAV LAVATORY
- DW DISH WASHER
- SK SINK
- DN. DOWN
- SH/TUB SHOWER W/ TUB
- WSHR CLOTH WASHER
- EXIST. EXISTING
- DEMO. DEMOLITION
- COMPT. COMPARTMENT
- AFF ABOVE FINISH FLOOR
- AFG ABOVE FINISH GRADE

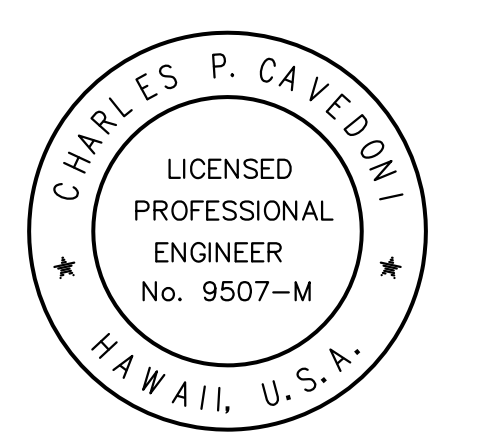
PLUMBING NOMENCLATURE

- S OR W SANITARY/WASTE PIPING ABOVE/UNDER SLAB
- V SANITARY VENT PIPING
- GAS LPG PIPING
- CW COLD WATER PIPING
- HW HOT WATER PIPING
- CV GATE VALVE
- HB HOSE BIBB
- PRV PRESSURE REGULATOR VALVE
- WATER HAMMER ARRESTER
- STRAINER
- VB VACUUM BREAKER
- T & P V TEMP & PRESSURE RELIEF VALVE
- WCO WALL CLEANOUT
- FCO FLOOR CLEANOUT
- COTG CLEANOUT TO GRADE
- FS FLOOR SINK
- FD FLOOR DRAIN

A FLOOR PLAN
SCALE: 1/4" = 1 FT

BUILDING ENERGY EFFICIENCY STANDARDS
THE BUILDING ENERGY EFFICIENCY STANDARDS HAVE BEEN REVIEWED AND TO THE BEST OF MY KNOWLEDGE THIS DESIGN SUBSTANTIALLY CONFORMS TO THE MECHANICAL REQUIREMENTS OF SECTIONS 11.

NAME: CHARLES P. CAVEDONI
SIGNATURE: _____
TITLE: MECHANICAL ENGINEER
PE: 9507-M



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**AUGUST 6, 2008
PRELIMINARY**

HAKALAU ENGINEERING, LLC.
PO BOX 252
HAKALAU, HI 96710
(808) 961-6202

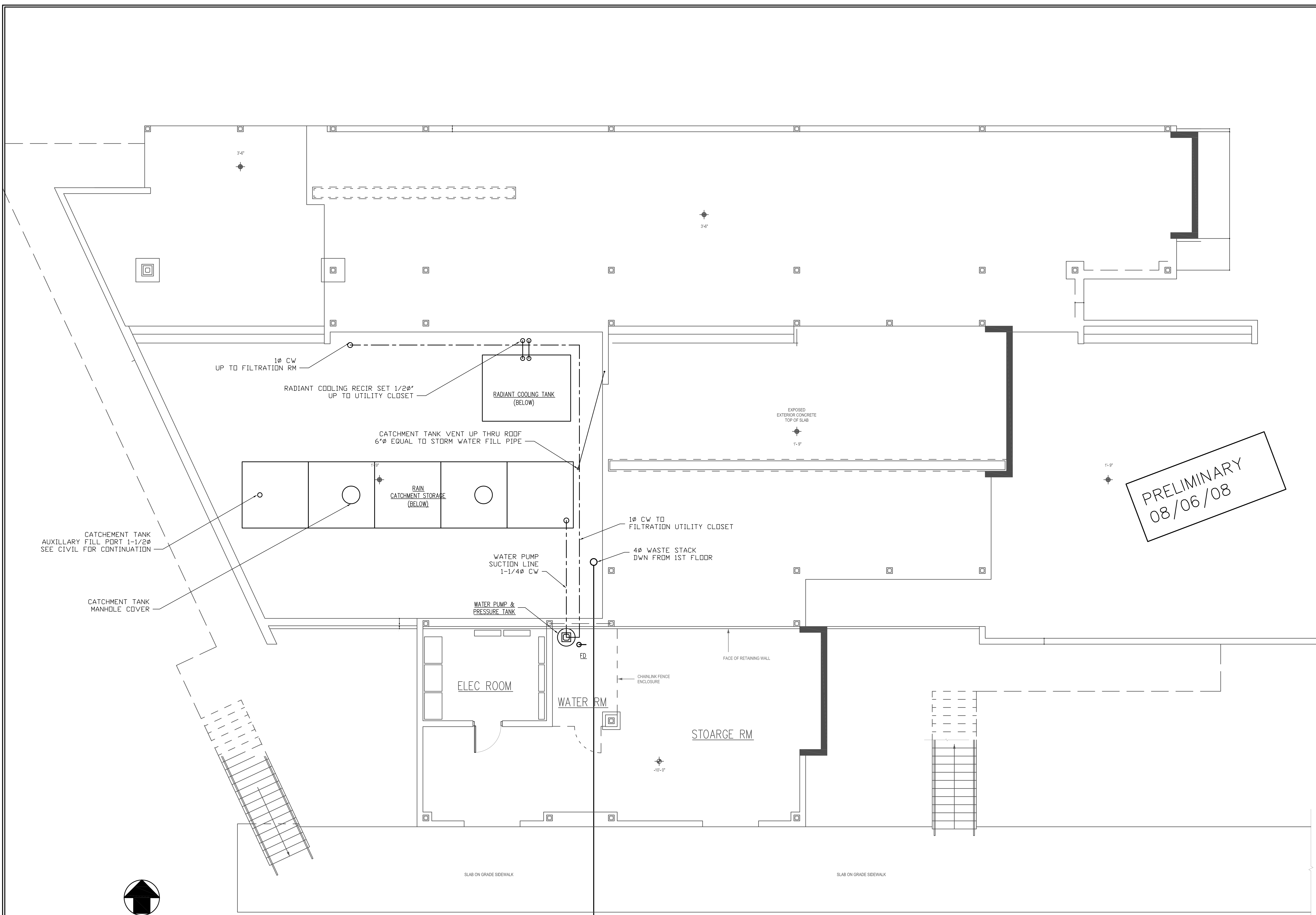
PROPOSED NEW BUILDING:
ENERGY LAB
HAWAII PREPARATORY ACADEMY
KAMUELA, HAWAII 96720

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DATE ISSUED: XX/XX/XX

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SHEET NO. **P1**
1 OF 6 SHEET



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08/06/08

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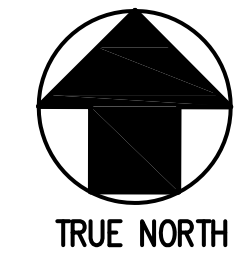
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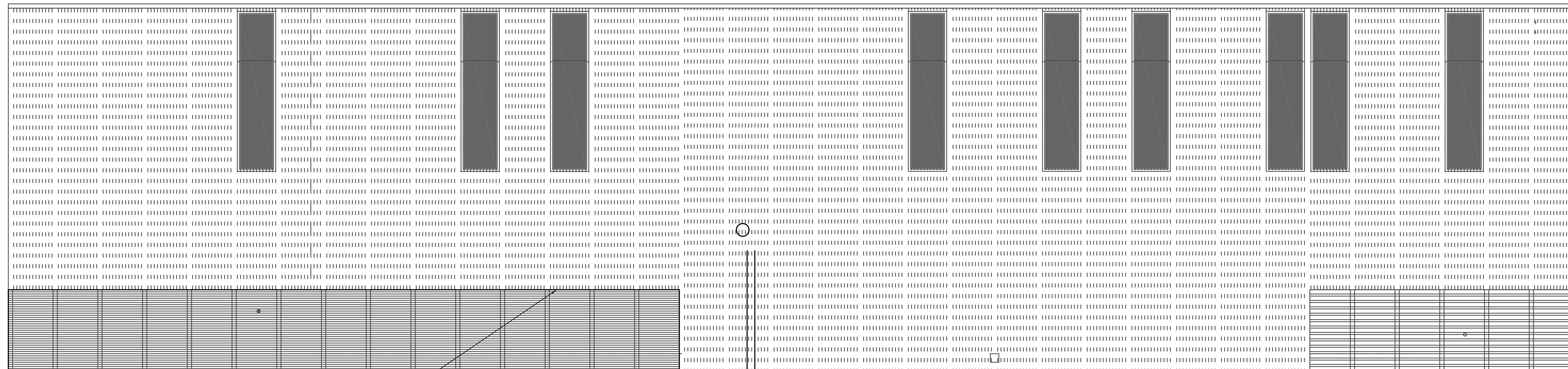
SHEET NO. **P2**

2 OF 6 SHEET



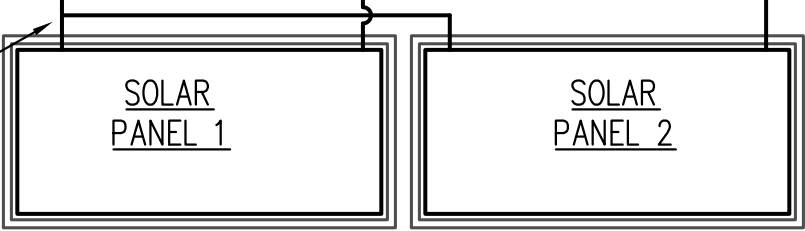
BASEMENT PLAN
SCALE: 1/4" = 1 FT

PDC
4" WASTE
TO BUILDING SEWER
SEE CIVIL FOR DETAILS



RADIATION COOLING PANELS
 RADIATION COOLING RECIR SET 1/2"Ø
 DWN TO UTILITY CLOSET

CATCHMENT TANK VENT
 SOLAR WATER HEATING
 RECIRCULATING LINES
 DWN



FUTURE
 PV PANELS

PV PANELS

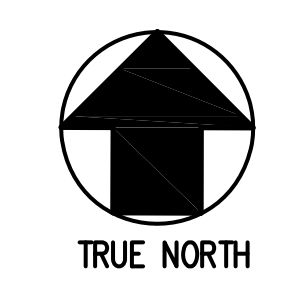
WALKWAY

FB

WALKWAY

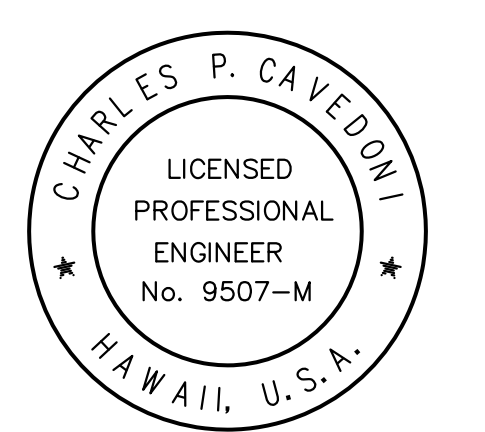
WALKWAY

WALKWAY



Ⓐ ROOF PLAN
 SCALE: 1/4" = 1 FT

PRELIMINARY
 08/06/08



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3 OF 6 SHEET



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KAMUELA, HAWAII 96720

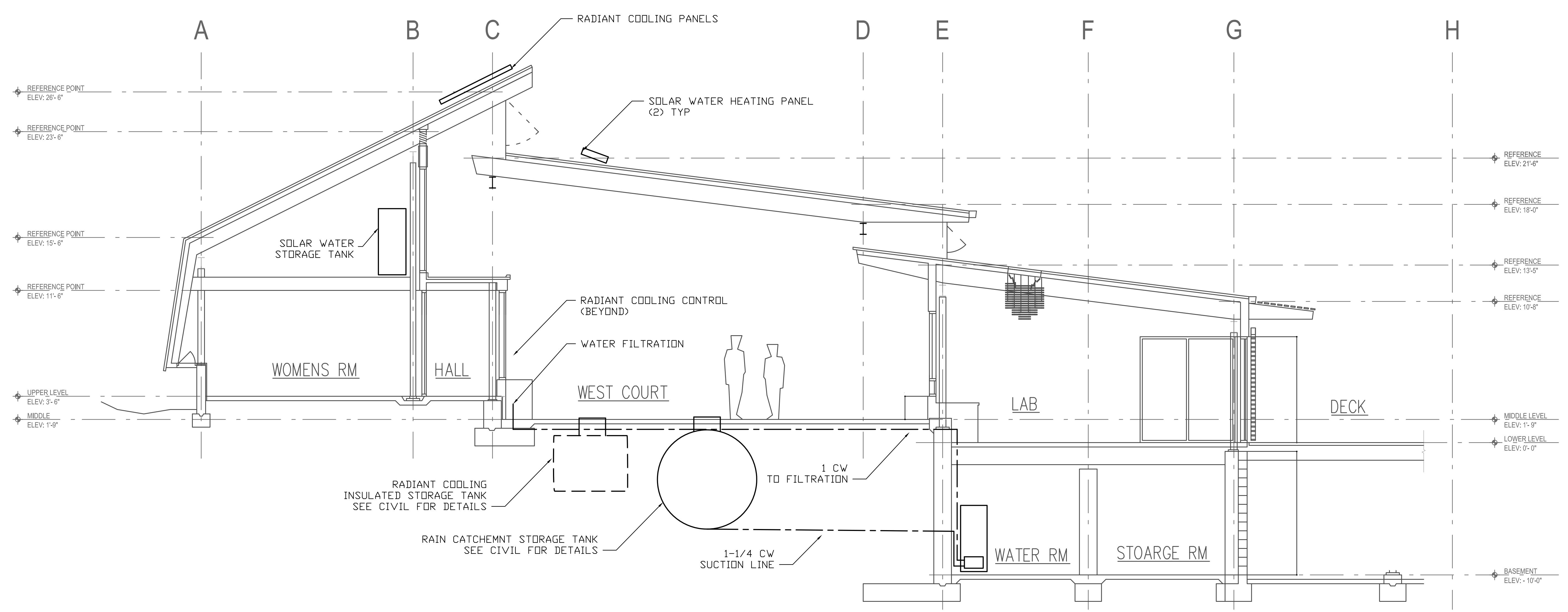
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DATE ISSUED: XX/XX/XX

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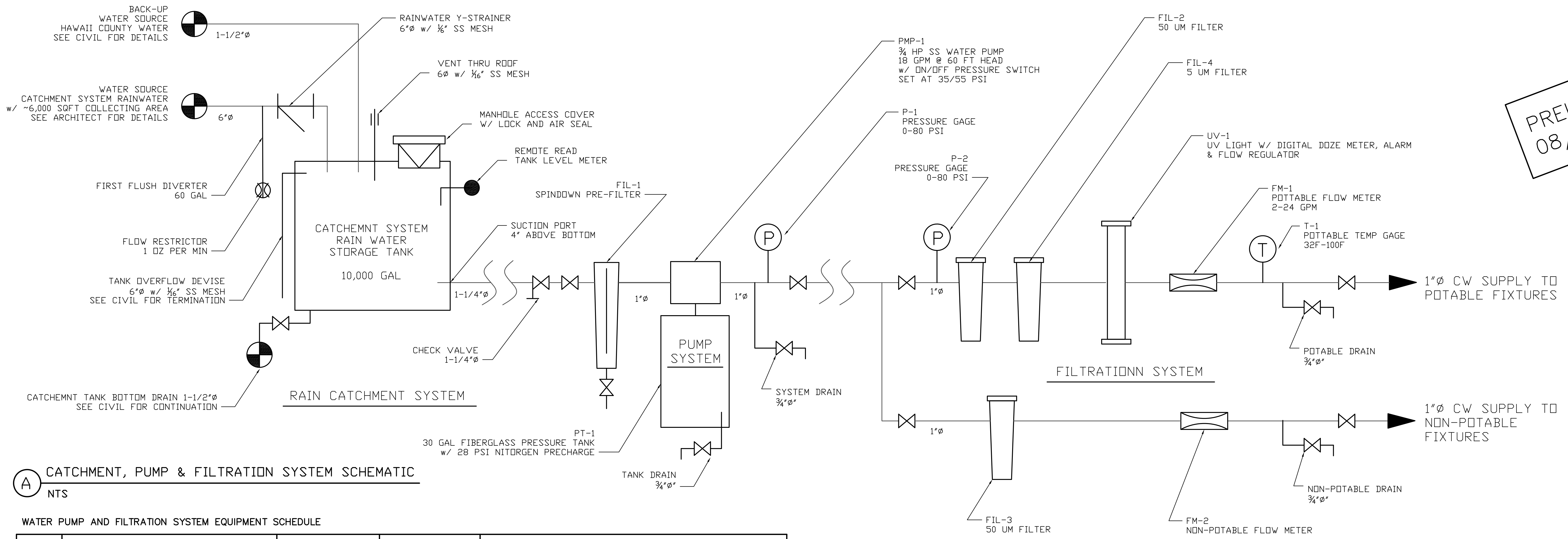
SHEET NO. **P4**

4 OF 5 SHEET



SECTION A-A
SCALE: 1/4" = 1 FT

PRELIMINARY
08/06/08



A CATCHMENT, PUMP & FILTRATION SYSTEM SCHEMATIC
NTS

WATER PUMP AND FILTRATION SYSTEM EQUIPMENT SCHEDULE

| TAG ID | DESCRIPTION | RATING | ELECT REQ | COMMENTS |
|----------------|--|--------------------------|----------------------|---|
| FIL-1 | SPIN-DOWN SEDIMENT PRE-FILTER CAMPBELL # FT4-250 | 250 MESH 20 GPM MAX | - - | 1" SLIP |
| FIL-2 FIL-3 | SEDIMENT FILTER 50 micron CAMPBELL # 2PP-B1H w/ 1SSHD | 50 micron 12 GPM MAX | - - | 1" FNPT, DOUBLE FILTER, OPAQUE w/ PRESSURE RELEASE |
| FIL-4 | SEDIMENT FILTER 5 micron CAMPBELL # 2PP-B1H w/ 1SS-24S | 5 micron 12 GPM MAX | - - | NSF CERTIFIED 1" FNPT, DOUBLE FILTER, OPAQUE w/ PRESSURE RELEASE |
| UV-1 | ULTRAVIOLET DISINFECTION SYSTEM CAMPBELL # DWSW-15 w/ ATS-254E | 15 GPM MAX | 120V/1P/2A | 3/4" MNPT, DOUBLE LIGHT, INTEGRAL WIPER & FLOW REGULATOR WITH UV DIGITAL DOSAGE METER AND ALARM |
| PT-1 | PRE-PRESSURIZED DIAPHRAGM STAND TANK AMTROL WELL-XTROL # WX-302 | 86 GAL 54% ACCEPTANCE | - - | NSF CERTIFIED, 48"H x 26" DIA, 1-1/4" FNPT, 123 LBS 38 PSI CHARGE |
| PMP-1 | SS CENTRIFUGAL WATER PUMP GRUNDFOS # UPS4 | 22 GPM @ 35 PSI | 115V/230V/1P 1 HP | 1" NPT SUCTION & DISCHARGE 30 LBS w/ INTEGRAL PRESSURE SWITCH 30/50 PSI |

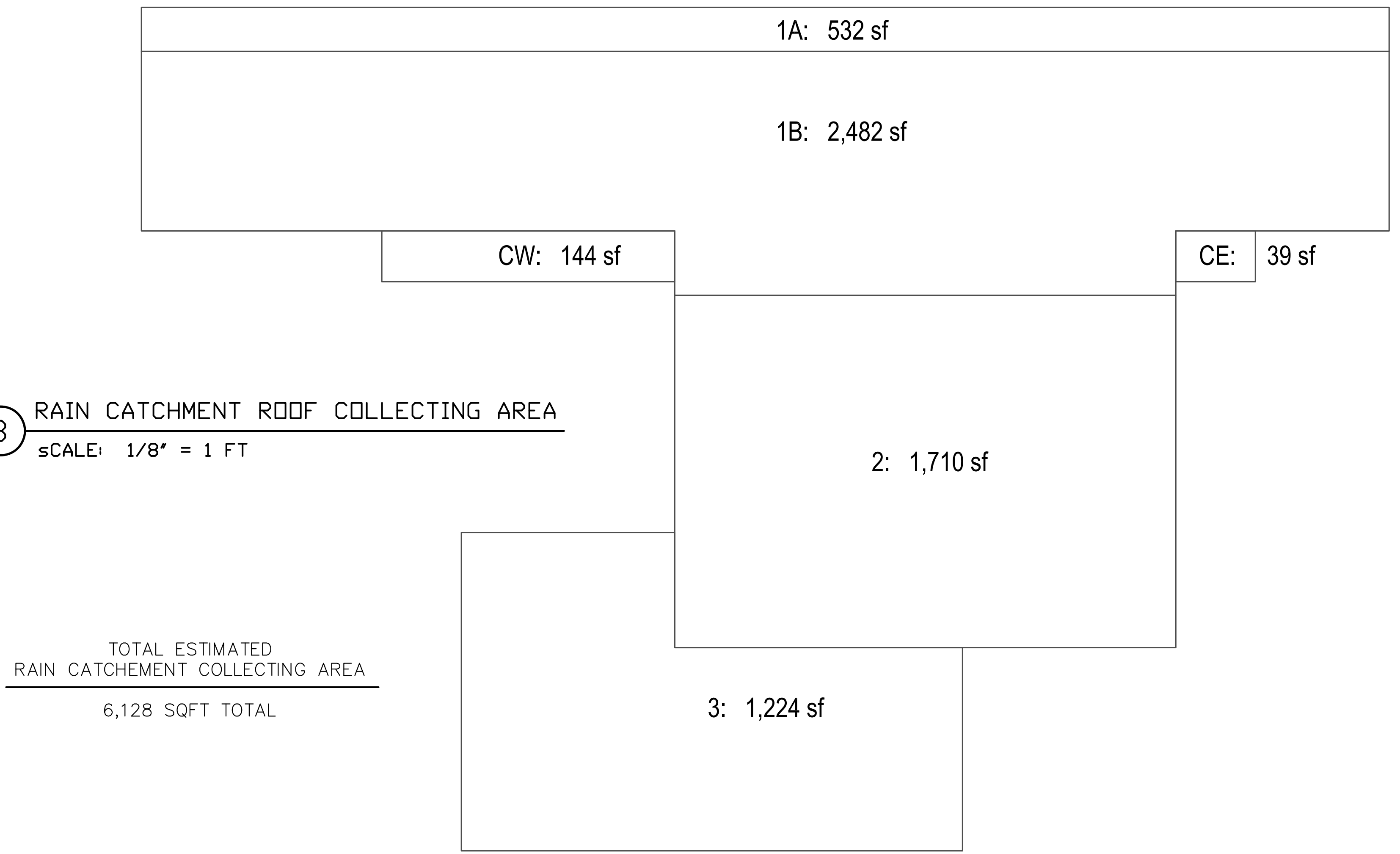
CHARLES P. CAVEDONI
LICENSED PROFESSIONAL ENGINEER
No. 9507-M
HAWAII, U.S.A.

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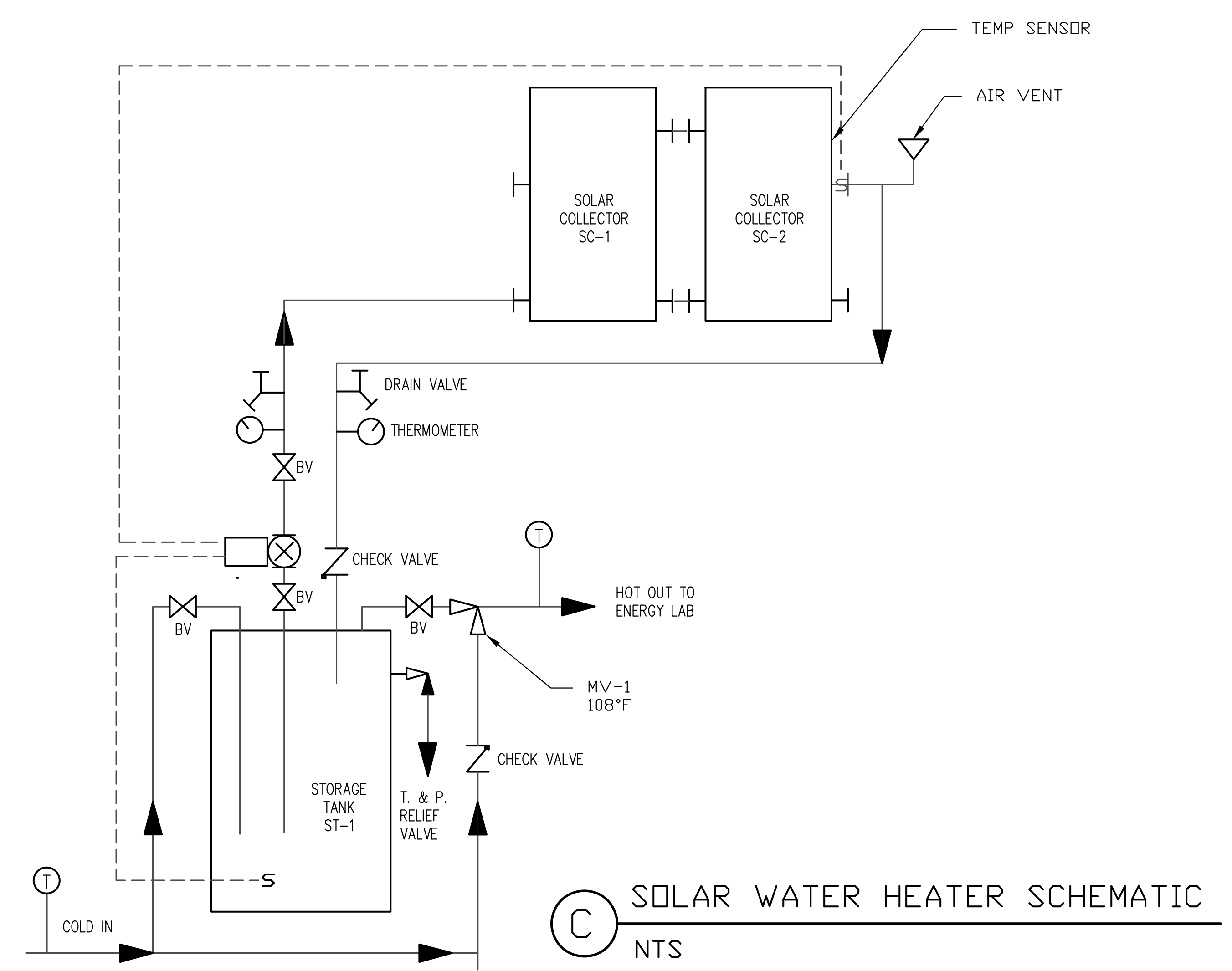
SIGNATURE: _____

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PO BOX 252
HAKALAU, HI 96710
(808) 961-6202

PROPOSED NEW BUILDING:
ENERGY LAB
HAWAII PREPARATORY ACADEMY
KAMUELA, HAWAII 96720



B RAIN CATCHMENT ROOF COLLECTING AREA
SCALE: 1/8" = 1 FT



C SOLAR WATER HEATER SCHEMATIC
NTS

SOLAR WATER HEATER EQUIPMENT SCHEDULE

| TAG ID | DESCRIPTION | CAPACITY | ELEC REQ | COMMENTS |
|--------------|--|----------------------------|-----------------|---|
| ST-1 | SOLAR ELECTRIC WATER STORAGE TANK RUDD SERVANT #RSPER80-1 | 80 GAL 4,500 W @ 240 V | 4,500 W @ 240 V | 59"H X 25"Ø, 192 LB, R-17.3 INSULATION UL LISTED |
| SC-1 SC-2 | SOLAR COLLECTOR GLAZED FLAT PLATE SUN EARTH EMPIRE SERIES #EC32 | 29.81 SQFT NET APERTURE | - - | 48"W X 98"L X 3.25" H, 106 LB DRY UL LISTED & SRCC CERTIFIED |
| CP-1 | CIRCULATING PUMP, SINGLE STAGE GRUNDFOS #UP15-18SU | | 115/60/1 85W | SS PUMP |
| TC-1 | DIFFERENTIAL TEMP CONTROLLER SUNEARTH #SETR 0301 U | | 115/60/1 1W | |
| MV-1 | TEMP ACTUATED MIXING VALVE CASH ACME # 110-D 3/4" NPT | | | |

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5 OF 6 SHEET