SCOPE OF WORK: STARDARD DETAILS WHICH MAY BE PLACED ON FILE WITH AHJS
ALTERNATE SYSTEM TANK PLUMBING DETAILS.

SOLAR SYSTEM COLLECTOR:
MODEL: ALL

APPLICABLE CODE:
FLORIDA 2007 CODE W/09 SUPP

THIS IS THE ONLY ONE OF MY MANY PLANS WHICH I ALLOW TO BE PLACED AS 'PLAN ON FILE' WITH BUILDING DEPARTMENTS – I WILL PROVIDE A SEALED AUTHORIZATION LETTER – IF REQUESTED FOR A SPECIFIC BUILDING DEPARTMENT

EXPLANATORY INSTRUCTION:

THIS DRAWING IS INTENDED TO PROVIDE PLUMBING DETAILS FOR OEM SOLAR HOT WATER SYSTEMS NOT SHOWN ON OEM, PERMIT-READY, SOLAR DOMESTIC HOT WATER PLAN. THAT PLAN SHOWS THE PLUMBING DETAILS FOR OEM'S MOST COMMON SYSTEM **"DIRECT"** WHICH DETAILS ARE THEREFORE NOT REPEATED ON THIS **"ALTERNATE SYSTEM PLUMBING DETAILS"** DRAWING.

ENLARGED VIEWING & HYPERLINKS:

PRINT VERSION OF THIS PLAN PROVIDES MINIMUM INFORMATION NEEDED BY USERS.
ELECTRONIC VERSION (EV) PROVIDES MAGNIFIED VIEWING UP TO 6400%. EV ALSO PROVIDES HYPERLINK ACCESS TO OEM MANUALS AND ABUNDANT OTHER SUPPLEMENTARY INFORMATION.EV MAY BE ACCESSED AT: WWW.CADVICE.US/SW/P.1.1.PDF

TANK ALTERNATE PLUMBING SHEET:

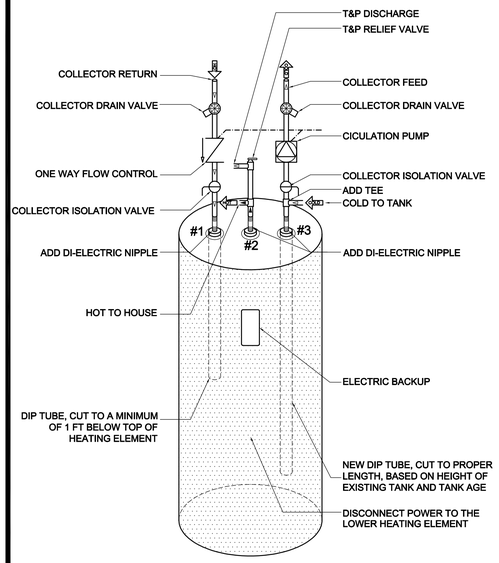
THIS PLAN SHEET SHOWS THE VARIOUS TANK ALTERNATE PLUMBING ARRANGEMENTS FOR SOLAR WORLD SOLAR DOMESTIC HOT WATER SYSTEMS - EXCLUDING THE **STANDARD DIRECT SYSTEM** WHICH IS SHOWN ON THE COLLECTOR/SYSTEM INSTALLATION SHEETS A.1.0 AND A1.1. AND THEREFORE NOT DUPLICATED ON THIS **TANK ALTERNATE PLUMBING SHEET.** CONTRACTORS, INSPECTORS, AHJS, AND OTHERS ARE CAUTIONED THAT LATITUDE IS ALLOWED, E.G. A PARTICULAR SYSTEM PLUMBING MAY APPEAR SLIGHTLY DIFFERENT FROM WHAT IS SHOWN HERE AND STILL BE ACCEPTABLE SO LONG AS THE HYDRAULICS WORK THE SAME AS ONE OR THE OTHER OF THE ARRANGEMENTS SHOWN N THIS SHEET.

GENERAL NOTES:

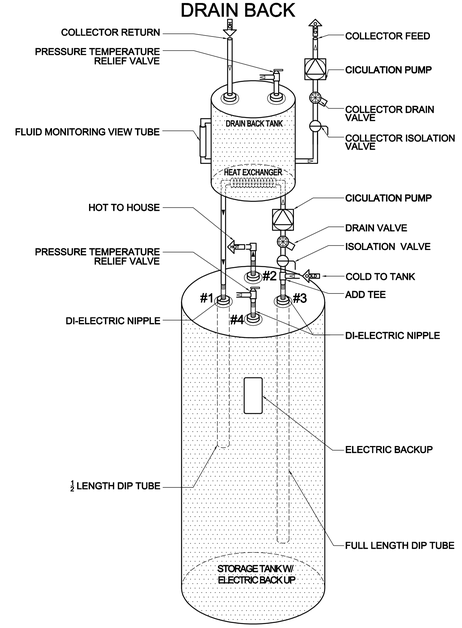
BRASS NIPPLES MAY BE USED IN PLACE OF DI-ELECTRIC NIPPLES.

VALVES SHOWN ARE THE MINIMUM. CONTRACTOR IS FREE TO ADD ADDITIONAL VALVES AT PLACES OF HIS CHOOSING SUCH AS ABOVE PUMP TO ENABLE SWAPPING WITHOUT HAVING TO DRAIN SOLAR.

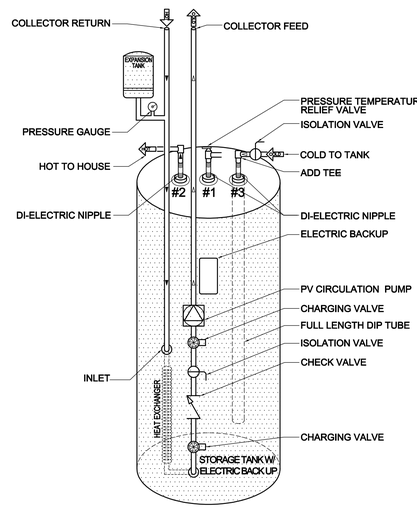
RETROFIT CONVERSION OF STANDARD WATER HEATER FOR SOLAR

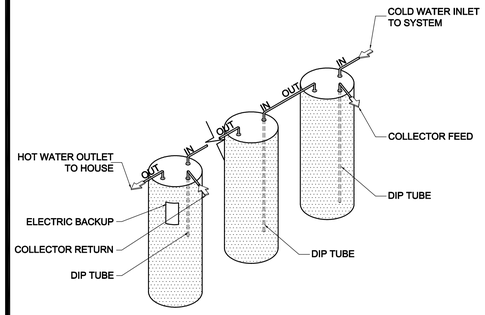


DRAIN BACK



CLOSED LOOP





INSTRUCTIONS | DIAGRAM

INSTALLATION INSTRUCTIONS:

1) REMOVE ALL PIPING FROM TOP OF THE EXISTING WATER HEATER
2) INSTALL ARRANGEMENT SHOWN AT THE MIDDLE TANK HOLE #2
   A. MATERIALS NEEDED:
   • DI-ELECTRIC NIPPLE • 4" LONG DIP TUBE • ¾" FFC TEE • ¾" T&P W/8" STEM • ¾" MALE ADAPTER • ¾" PIPE ABOUT 24" LONG.
   B. PRE SOLDER MALE ADAPTER TO ONE END OF THE ¾" PIPE AND THE TEE TO THE OTHER END OF THE TUBE, LET COOL. CUT 24" TUBE IN HALF.
   C. INSTALL DI-ELECTRIC NIPPLE ONTO THE TANK & INSERT THE 4" DIP TUBE INTO THE NIPPLE.
   D. INSTALL TEE ASSEMBLY FROM STEP 1 ONTO NIPPLE.
   E. INSTALL T&P INTO THE TEE AND T&P DRAIN PIPE
   F. NOTE: FFC = FEMALE THREAD X FEMAL THREAD X COPPER
3) INSTALL ARRANGEMENT SHOWN AT THE LEFT TANK HOLE#1
   A. MATERIALS NEEDED:
   • DI-ELECTRIC NIPPLE • A PLAIN NO HOLES DIP TUBE
   B. INSTALL THE ¾" DI-ELECTRIC NIPPLE.
   C. CUT THE DIP TUBE TO PROPER LENGTH, ABOUT 12" FROM TANK BOTTOM, BUT NEVER LESS THAN ONE FOOT BELOW TOP ELEMENT, INSTALL IN NIPPLE.
   D. CONNECT THE PREFABRICATED FROM COLLECTOR ASSEMBLY SUPPLIED IN THE "DREAM PACKAGE" BOX.
4) INSTALL ARRANGEMENT SHOWN AT THE RIGHT TANK HOLE#3
   A. MATERIALS NEEDED:
   • DI-ELECTRIC NIPPLE • ¾" MALE ADAPTER • ¾X¾X¾ FFC TEE •PLAIN NO HOLES DIP TUBE • ¾X3" PIECE OF COPPER TUBING
   B. PRE SOLDER THE ¾" MALE ADAPTER TO THE TO SOLAR (PUMP ASSEMBLY), AND PRE SOLDER THE ¾"X3" LG. COPPER PIPE TO TEE, LET COOL.
   C. INSTALL PLAIN DIP TUBE AFTER CUTTING TO PROPER LENGTH, ABOUT 6" OFF TANK BOTTOM.
   D. SCREW BOTH PIECES TO THE NIPPLE, AFTER INSTALLING NIPPLE TO TANK TOP. POINT TEE ASSEMBLY TO BACK OF TANK, PUMP ASSEMBLY TO TANK FRONT. FINISH THE COLD WATER HOOK UP BY WRAPPING A WET RAG AROUND THE 3" COPPER TUBE WHEN SOLDERING TO PREVENT OVERHEATING OF THE DIP TUBE.

NOTE: IF THE HOUSE IS PLUMBED IN CPVC THEN TRANSITION TO COPPER BEFORE THE CITY WATER SUPPLY SHUT OFF VALVE. MAKE SURE TO USE TEFLON TAPE ON ALL THREADED CONNECTIONS.
IF THE EXISTING TANK HAS A SIDE MOUNTED T&P, FOLLOW THE SAME INSTRUCTIONS AS LISTED IN THE FIRST SECTION ABOVE. MAKE SURE AN EXPANSION TANK AND PROPER SIZED COLLECTORS ARE USED TO REDUCE THE PROBABILITY OF OVERHEATING/BURSTING PLASTIC PIPING.
NOTE: PROPER SENSOR LOCATION AND INSTALLATION: REMOVE LOWER ELEMENTCOVER , WEDGE SENSOR TIGHTLY TO TANK WALL AT ELEMENT OPENING AFTER THOROUGHLY CLEANING AND HEAT SINKING THE SENSOR AND TANK WALL. INSULATE THOROUGHLY.

01 DHW RETROFIT STANDARD TANK INSTALLATION
SCALE: N.T.S.

INSTRUCTIONS | DIAGRAM

INSTALLATION NOTES: DRAIN BACK

DRAIN BACK TANK NEED NOT BE CO-LOCATED AT THE SOLAR TANK. DRAIN BACK TANK CAN BE LOCATED IN THE ATTIC WITHIN REASONABLE DISTANCE OF SOLAR TANK (30-FEET ONE-WAY SHOULD BE CONSIDERED A MAXIMUM)

A WIDE VARIETY OF HEAT TRANSFER FLUIDS MAY BE USED. WATER IS THE NORM. HOWEVER, FOOD GRADE ANTI-FREEZE IS AN ACCEPTABLE ALTERNATE (AMONG OTHERS) .

FILL THE DRAIN BACK TANK UNTIL THE HEAT TRANSFER FLUID SHOWS AT THE TOP END OF THE VIEW TUBE.

THE FREEZE RECIRCULATION MODE IS TURNED "OFF" IN THE ELECTRONIC PUMP CONTROLLER.

BOTH PUMPS RUN AT THE SAME TIME.

02 DRAIN BACK SYSTEM INSTALLATION
SCALE: N.T.S.

INSTRUCTIONS | DIAGRAM

CLOSED LOOP CHARGING INSTRUCTIONS

FOOD GRADE ANTI-FREEZE (AVAILABLE FROM COMMERCIAL REFRIGERATION PARTS HOUSES) IS THE ONLY HEAT TRANSFER FLUID ACCEPTABLE.

A SEPARATE PUMP AND "CHARGING BUCKET" ARE NEEDED.

THE CLOSED LOOP WILL HOLD 2-PLUS GALLONS.

THE CHARGING BUCKET SHOULD HAVE A NIPPLE AT THE BOTTOM WITH A VALVE AND THE CHARGING PUMP. THE CHARGING PUMP SHOULD CONNECT TO THE UPPER CHARGING VALVE ON THE CLOSED LOOP WITH A WASHER CONNECTION HOSE.

THE BALL VALVE ON THE CLOSED LOOP SHOULD BE CLOSED.

THE LOWER CHARGING VALVE SHOULD BE PARTIALLY CLOSED AND HAVE A WASHER HOSE CONNECTED TO IT WITH THE OTHER END OF THE WASHER SUPPLY HOSE DROPPED INTO THE CHARGING BUCKET .

USE THE SOLAR PUMP TO ASSIST IN FILLING THE CLOSED LOOP. OPEN THE VALVE AT THE BOTTOM OF THE CHARGING BUCKET AND TURN ON BOTH THE CHARGING PUMP AND THE SOLAR PUMP.

PUMP FLUID THRU THE CLOSED LOOP UNTIL AIR STOPS COMING OUT OF THE LOWER CHARGING VALVE. THEN CLOSE THE LOWER CHARGING VALVE AND TURN OFF BOTH PUMPS.

SWAP HOSES. THE HOSE FROM THE UPPER CHARGING VALVE SHOULD DROP INTO THE CHARGING BUCKET.

THE HOSE FROM THE CHARGING PUMP SHOULD NOW CONNECT TO THE LOWER CHARGING VALVE.

OPEN THE BALL VALVE.

START THE CHARGING PUMP, OPEN THE LOWER CHARGING VALVE AND "CRACK" THE UPPER CHARGING VALVE.

WHEN STEADY FLUID WITH NO AIR IS COMING OUT OF THE UPPER CHARGING VALVE, CLOSE THE CHARGING VALVES AND TURN OFF THE CHARGING PUMP.

THE FREEZE RECIRCULATION MODE IS TURNED "OFF" IN THE ELECTRONIC PUMP CONTROLLER.

03 CLOSED LOOP SYSTEM INSTALLTION
SCALE: N.T.S.

INSTRUCTIONS | DIAGRAM

NOTE:

NUMBER OF TANKS AND SIZE DETERMINED BY SQUARE FOOTAGE OF SOLAR COLLECTOR. SIZING SHOULD USE THE GENERAL RULE OF THUMB, "2-GALLONS OF STORAGE PER SQUARE FOOT OF COLLECTOR".

FULL LENGTH DIP TUBE ON INLETS.

NO DIP TUBE ON OUTLETS.

FULL LENGTH DIP TUBE ON COLLECTOR FEED. (MAY BE BY TEE OFF COLD INLET)

½-LENGTH DIP TUBE ON COLLECTOR RETURN.

ELECTRIC BACK UP HOOKED UP IN THE LAST TANK IN THE CHAIN WHICH FEEDS HOT WATER TO THE BUILDING ONLY.

04 GENERIC MULTIPLE TANK INSTALLATION
SCALE: N.T.S.

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SOLAR WATER HEATER
PLUMBING CONFIGURATIONS
ALTERNATE SYSTEMS

SYSTEM:

Solar Hydronics Corp.

1423 GUNN HIGHWAY
ODESSA, FL 33556

REV.083109-TM

DATE: 5/12/2011 6:10 PM
REVISION NO./DATE:

THIS SHEET IS A SUPPLAMETAL PUMBING DETAIL SHEET

SHEET NAME:
ALTERNATE SYSTEM
PLUMBING DETAILS

DRAWN: SB CHECKED: AG

SHEET NO:
P.1.1

P.1.1.dwg