

CITY OF SACRAMENTO
1231 I Street, Sacramento, CA 95814

Permit No: 0100968
Insp Area: 2

Site Address: 1390 40TH AV SAC
Parcel No: 024-0216-003

Sub-Type: RES
Housing (Y/N): N

CONTRACTOR
SIERRA PACIFIC HOME&COMFORT
3790 OMEC CIRCLE
RANCHO CORDOVA, CA 95742

OWNER
MOONEY BRIAN
1390 40TH AV
SACRAMENTO CA 95822

ARCHITECT

Nature of Work: SOLAR PANEL FOR POOL INSTALLED ON ROOF

CONSTRUCTION LENDING AGENCY: I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.).

Lender's Name _____ Lender's Address _____

LICENSED CONTRACTORS DECLARATION: I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

X License Class C46 License Number _____ Date _____ Contractor Signature _____

OWNER-BUILDER DECLARATION: I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code: any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500.00):

_____, I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code. The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

_____, I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code. The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law).

_____, I am exempt under Sec. _____ B & PC for this reason: _____

Date _____ Owner Signature _____

IN ISSUING THIS BUILDING PERMIT, the applicant represents, and the city relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and hereby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

X Date 01/23/01 Applicant Agent Signature [Signature]

WORKER'S COMPENSATION DECLARATION: I hereby affirm under penalty of perjury one of the following declarations:

_____, I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

X MH I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier EXPLORER INSURANCE Policy Number 170204300 Exp Date 01/31/2001

_____, (This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

X Date 01/23/01 Applicant Signature [Signature]

WARNING: FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.

THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.

SIERRA PACIFIC

HOME & COMFORT INC.

SOLAR

CLN 453302 • (916) 638-0543

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INSTALLATION DIRECTIVE

CUSTOMER: BRIAN MOONEY (GARY IS PRINTER) MAP COORD _____
 ADDRESS: 1390 40th AVE DIRECTIONS TO JOB SITE: _____
 CITY: SACRAMENTO, CA 95822
 PHONE: work (his) 264-7091 (GARY) work (hers) _____ home 393-8399
 DATE OF ORDER 1/11/01 BUILDER _____ DESIGNER GLEE

EQUIPMENT LIST SPS INSTALL SELF INSTALL

5 12' Solar Panels _____ Fiberglass Substrate
 _____ 10' Solar Panels 1 System Assembly Package
 _____ 8' Solar Panels _____ Sweep Delay
SUNSAVER Type of Panel _____ Existing Control Type
3 FOOT Type of Control

FAFCO
SOLAR HEATING SYSTEMS

TYPE OF ROOF Comp PITCH 4/2 COMPASS DIRECTION 60 %
 POOL AREA SQ. FT. 400 # SHADE ON POOL? N/A ON ROOF? N/A
 PUMP H.P. 1.0 TYPE CLEANER WAYWARD JAC 1 STORY 2 STORY _____
 FILTER TYPE & SQ. FT. 175 # CART

OTHER CHARGES

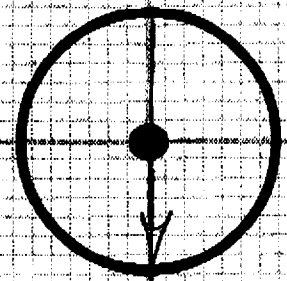
_____ RACKS SOLD? TYPE _____
 _____ BOOSTER PUMP 1/2 H.P. 3/4 H.P. 1.0 H.P.
 _____ NATURE II
 _____ TRELLIS/PATIO COVER
 SOLID OR LATTICE COLOR: _____ SIZE: _____ ATTACHED OR FREESTANDING
 _____ HEATER REMOVAL & HAUL AWAY
 _____ SYSTEM REMOVAL _____ PIPE _____ PANELS

COMMENTS TO CREW CALL GARY TO ARRANGE INSTALL
HAS SMALL FRIENDLY BLACK PUG DOG IN BACKYARD. (RALPH)

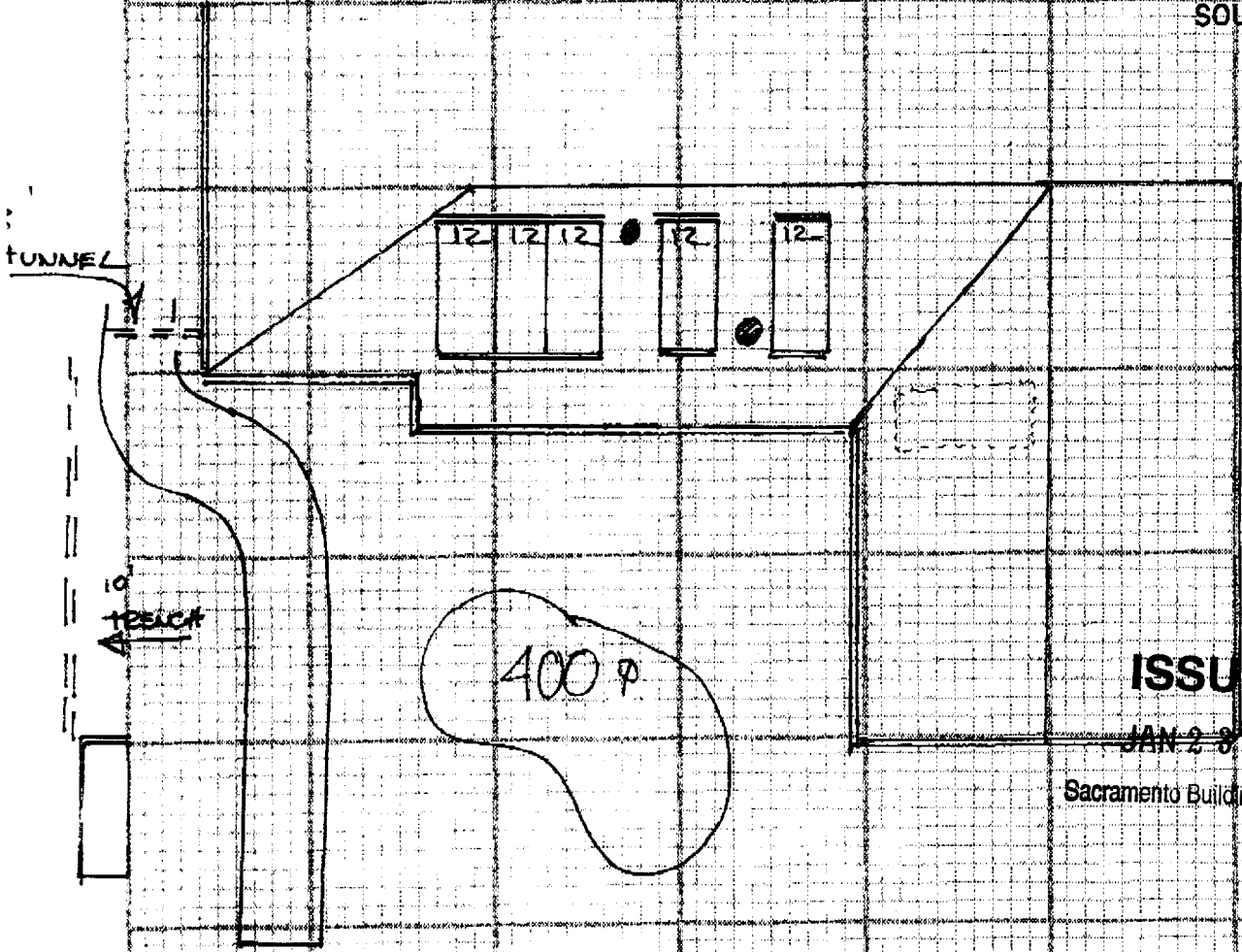
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**SIERRA PACIFIC COMFORT HOME
DIAGRAM INSTRUCTIONS**

Draw location of house as situated on property in relation to pool and pool equipment pad. Indicate roof measurements and placement of solar collector panels.



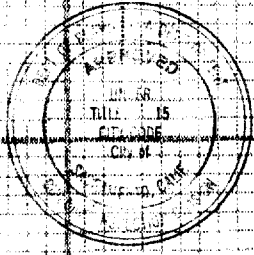
**INDICATE
SOUTH**



ISSUED

JAN 28 2001

Sacramento Building Division



This set of plans and specifications is to be kept on the job site. All notes and amendments shall be made on the plans and specifications. No changes shall be made without the approval of the Building Division. The approval of this plan shall not be held responsible for violation of any City Ordinance or State Code.

CUSTOMER _____ DATE _____

NEW POOL EQ SOLD

PUMP SIZE & TYPE _____ FILTER SIZE & TYPE _____

SWEEP TYPE _____ BOOSTER PUMP _____

SUNSAVER™ SOLAR HEAT EXCHANGER

DESCRIPTION: The SunSaver™ Solar Collector is manufactured in Redwood City, California. The collector is a specially developed, highly stabilized polyolefin and is of parallel, circular channel design. It is unglazed, uninsulated, and designed for low temperature applications such as swimming pool heating, heat pumps, aquaculture, and hydroponics.

DIMENSIONS: Header Length = 50.875 in. (1.29 m)
Width (Panel body) = 47.5 in. (1.21 m)

Overall Dimensions	Effective Area
4 ft X 8 ft (1.22 X 2.44 m)	31.6 ft ² (2.94 m ²)
4 ft X 10 ft (1.22 X 3.05 m)	39.5 ft ² (3.67 m ²)
4 ft X 12 ft (1.22 X 3.66 m)	47.8 ft ² (4.40 m ²)

ROOF MOUNTING SPACE: Width = [Number of panels X 50.875 in. (129 cm)] + 24 in. (61 cm)
Length = Panel length + 24 in. (61 cm)

RACK SPACE: Width = [Number of panels X 50.875 in. (129 cm)] + 2 in. (5 cm)
Length = Panel length + 6 in. (15 cm)

FLOW: Maximum recommended flow = 8 gpm per panel
3.47 psi head loss (1,817 l/hr, 0.244 kg/cm²)
Minimum recommended flow = 3 gpm per panel
0.48 psi head loss (681 l/hr, 0.034 kg/cm²)
Recommended flow = 4 gpm per panel
0.87 psi head loss (908 l/hr, 0.061 kg/cm²)

PANELS PER BANK: 12 panels single end feed
(maximum) 17 panels diagonal feed

PRESSURE:	NORMAL OPERATING PRESSURE	MAXIMUM INTERMITTENT PRESSURE
80°F (27°C)	0 to 30 psi (0 - 2.11 kg/cm ²)	45 psi (3.16 kg/cm ²)
212°F (100°C)	0 to 5 psi (0 - 0.35 kg/cm ²)	5 psi (0.35 kg/cm ²)
70°F (21°C)	Measured burst pressure of panel body = Over 300 psi (21.1 kg/cm ²)	

TEMPERATURE: Normal operating temperature = 60°F to 90°F (16°C to 32°C)
Maximum continuous operating temperature = 212°F (100°C)
Maximum intermittent temperature (unpressured) = 250°F (121°C)
Melt temperature = 338°F (170°C)

CHEMICAL RESISTANCE: Compatible with common collector fluids

CORROSION: Non-corrosive

FREEZING: The system should be drained before freezing conditions occur.

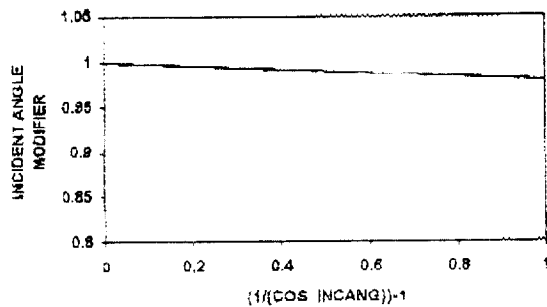
WEATHERABILITY: Weatherometer, accelerated outdoor exposure, and other extensive laboratory testing demonstrates long-term weatherability of SunSaver™ collectors (see warranty). Additionally, FAFCO's experience of nearly 30 years and over 1,000,000 collectors installed confirms that the proprietary stabilization and high mechanical strength results in negligible warranty over the TEN-YEAR warranty period.

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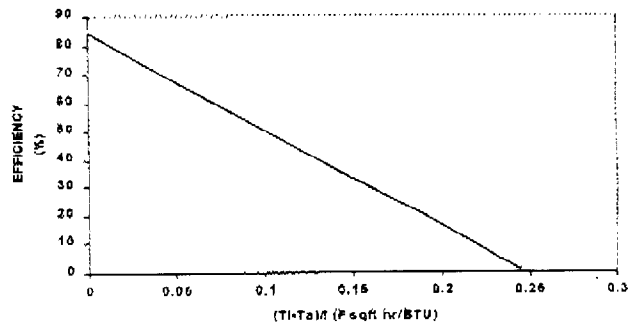
WEIGHT:	Without Water	
	4 ft. X 8 ft.	13.5 lbs (5.04 kg) or 0.42 lbs/ft ² (2.05 kg/m ²)
	4 ft. X 10 ft.	15.9 lbs (5.93 kg) or 0.40 lbs/ft ² (1.95 kg/m ²)
	4 ft. X 12 ft.	18.3 lbs (6.83 kg) or 0.38 lbs/ft ² (1.86 kg/m ²)
	With Water:	
	4 ft. X 8 ft.	51.1 lbs (19.1 kg) or 1.60 lbs/ft ² (7.81 kg/m ²)
	4 ft. X 10 ft.	59.8 lbs (22.3 kg) or 1.50 lbs/ft ² (7.32 kg/m ²)
	4 ft. X 12 ft.	68.5 lbs (25.6 kg) or 1.43 lbs/ft ² (6.98 kg/m ²)

- ABSORPTIVITY:** 0.96
- EMISSIVITY:** 0.90
- TIME CONSTANT:** 64 seconds
- TESTED OUTPUT:** 1.014 BTU/ft² (Florida Solar Energy Center)
- PERFORMANCE CURVES:**

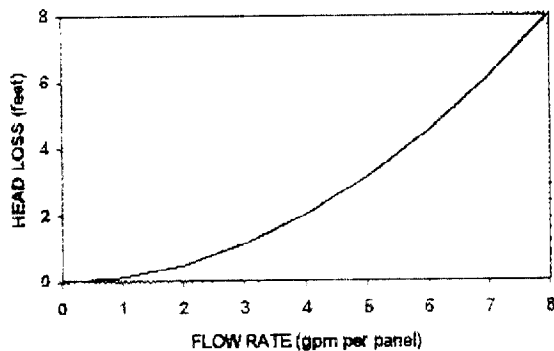
INCIDENT ANGLE CHARACTERISTICS



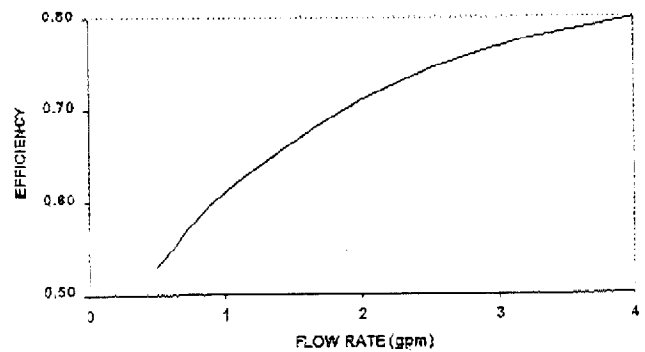
MEASURED EFFICIENCY
Average flow rate 4.9 gpm (1113 l/hr)
Average wind velocity 2.4 mph (3.9 km/hr)



PRESSURE vs. FLOW



EFFICIENCY vs. FLOW
(for typ. conditions)



Additional test data available on request

P/N 06359C
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