

**CITY OF SACRAMENTO**

**1231 I Street, Sacramento, CA 95814**

**Permit No: 9902766**

**Insp Area: 1**

**Site Address: 2501 J ST SAC**

Parcel No: 007-0034-027

Sub-Type: ACOM

Housing (Y/N): N

**CONTRACTOR**

CAL AIR  
4061 SEAPORT BL.  
WEST SACRAMENTO CA 95691

**OWNER**

ST FRANCIS MANOR INC  
2515 J ST  
SACRAMENTO CA 95816

**ARCHITECT**

**Nature of Work: COMMERCIAL BOILER CHANGE OUT**

**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 20 License Number 137195 Date 5/12/99 Contractor Signature Ken Dan

**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 5/12/99 Applicant/Agent Signature Ken Dan

**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.

→ KE 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 LIBERTY MUTUAL Policy Number WC7-161-025870-259 Exp Date 05/01/2000 AS

\_\_\_\_ (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 5/12/99 Applicant Signature Ken Dan

**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.**

CITY OF SACRAMENTO  
APPLICATION FOR XXXXXXXXXX BUILDING PERMIT

9902766

DEVELOPMENT SERVICES DIVISION  
PERMIT SERVICES SECTION

1231 I Street, Rm. 200  
Sacramento, CA 95814 (916) 264-7619 FAX 264-7046

PLAN CHECK # \_\_\_\_\_ Insp. Area \_\_\_\_\_

Applicant **MUST** complete ALL Unshaded areas this page only

ADDRESS 2501 J ST Suite \_\_\_\_\_  
PARCEL # \_\_\_\_\_

<p align="center"><b>CONTACT</b></p> <p>Name <u>Keith Dave</u> Address <u>4061 Sea port</u> <u>W Sac</u> Zip <u>95691</u> Phone <u>375-5326</u> FAX <u>371-4554</u></p>	<p align="center"><b>LICENSED CONTRACTOR</b> Lic No. # _____</p> <p>Name <u>Cal Adl INC</u> Address <u>4061 Sea port</u> <u>W Sac</u> Zip <u>95691</u> Phone <u>375-5326</u> FAX <u>371-4554</u></p>
<p align="center"><b>ARCHITECT/ENGINEER</b></p> <p>Name _____ Address _____ Zip _____ Phone _____ FAX _____</p>	<p align="center"><b>OWNER</b></p> <p>Name <u>ST FRANCIS</u> Address <u>2501 J ST</u> <u>Sac.</u> Zip <u>95816</u> Phone <u>447-1939</u> FAX _____</p>

→ Will the permittee have any employees on the jobsite?  Yes  No

→ If yes, WORKER'S COMPENSATION POLICY # \_\_\_\_\_ EXPIRATION DATE: \_\_\_\_\_

NAME OF INSURANCE COMPANY: \_\_\_\_\_

NATURE OF WORK IN DETAIL: Remove / replace Roof top Boulder

DBA: \_\_\_\_\_ VALUATION: 34.941

FLOOD STATUS:				S.C.A.T.						
JOB DESCRIPTION		<input checked="" type="checkbox"/>	SHEL	APT	TI( )	REM( )	SW	FIRE	ADD	<input checked="" type="checkbox"/> OTH
INSP. DISCIPLINES			<input checked="" type="checkbox"/> BLDG	<input checked="" type="checkbox"/> MECH	PLUMB	<input checked="" type="checkbox"/> ELEC	SITE	FIRE		
# Stories	1st flr Area	Total Area	Use Zone	Occp Group	Const type	Fire Req. Y/N		Fed Code	Vio. File	
				<u>R1</u>		Spr	Alarm	<u>04</u>		
<input checked="" type="checkbox"/> B	<input type="checkbox"/> L	<input checked="" type="checkbox"/> P	<input checked="" type="checkbox"/> M	<input checked="" type="checkbox"/> E	<input type="checkbox"/> F	<input type="checkbox"/> S		<input type="checkbox"/> D	<input type="checkbox"/> R	

COMMENTS: \_\_\_\_\_

REGIONAL SANITATION FEES?  Yes  No HEALTH DEPARTMENT?  Yes  No

CITY OF SACRAMENTO  
APPLICATION FOR ██████████ BUILDING PERMIT

9902766

DEVELOPMENT SERVICES DIVISION  
PERMIT SERVICES SECTION

1231 I Street, Rm. 200  
Sacramento, CA 95814 (916) 264-7619 FAX 264-7046

PLAN CHECK # \_\_\_\_\_ Insp. Area 1

Applicant **MUST** complete ALL Unshaded areas this page only

ADDRESS 2501 ST Suite \_\_\_\_\_  
PARCEL # \_\_\_\_\_

<p align="center"><b>CONTACT</b></p> <p>Name <u>Keith Dave</u> Address <u>4061 Sea port</u> <u>W Sac</u> Zip <u>95691</u> Phone <u>325-5326</u> FAX <u>321-4554</u></p>	<p align="center"><b>LICENSED CONTRACTOR</b> Lic No. # _____</p> <p>Name <u>Cal Adv Inc</u> Address <u>4061 Sea Port</u> <u>W Sac</u> Zip <u>95691</u> Phone <u>325-5326</u> FAX <u>321-4554</u></p>
<p align="center"><b>ARCHITECT/ENGINEER</b></p> <p>Name _____ Address _____ Zip _____ Phone _____ FAX _____</p>	<p align="center"><b>OWNER</b></p> <p>Name <u>ST FRANCIS</u> Address <u>2501 ST</u> <u>Sac.</u> Zip <u>95816</u> Phone <u>447-1939</u> FAX _____</p>

→ Will the permittee have any employees on the jobsite?  Yes  No

→ If yes, WORKER'S COMPENSATION POLICY # \_\_\_\_\_ EXPIRATION DATE: \_\_\_\_\_

NAME OF INSURANCE COMPANY: \_\_\_\_\_

NATURE OF WORK IN DETAIL: Remove / replace Roof top Boiler

DBA: \_\_\_\_\_ VALUATION: 34.941

FLOOD STATUS:				S.C.A.T.					
JOB DESCRIPTION		<input checked="" type="checkbox"/> SHEL	<input type="checkbox"/> APT	<input type="checkbox"/> TI( )	<input type="checkbox"/> REM( )	<input type="checkbox"/> SW	<input type="checkbox"/> FIRE	<input type="checkbox"/> ADD	<input checked="" type="checkbox"/> OTH
INSP. DISCIPLINES			<input checked="" type="checkbox"/> BLDG	<input checked="" type="checkbox"/> MECH	<input type="checkbox"/> PLUMB	<input checked="" type="checkbox"/> ELEC	<input type="checkbox"/> SITE	<input type="checkbox"/> FIRE	
# Stories	1st flr Area	Total Area	Use Zone	Occp Group	Const type	Fire Req. Y/N		Fed Code	Vio. File
				<u>R1</u>		Spr	Alarm	<u>04</u>	
<input checked="" type="checkbox"/> B	<input type="checkbox"/> L	<input checked="" type="checkbox"/> P	<input checked="" type="checkbox"/> M	<input checked="" type="checkbox"/> E	<input type="checkbox"/> F	<input type="checkbox"/> S	<input type="checkbox"/> D	<input type="checkbox"/> R	

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

REGIONAL SANITATION FEES?  Yes  No HEALTH DEPARTMENT?  Yes  No



WALLACE · KUHL  
& ASSOCIATES INC.

May 19, 1999

Cal Air  
4061 Seaport Boulevard  
West Sacramento, CA 95691

*Special Inspection Final Report*  
**ST. FRANCIS RETIREMENT HOME - HVAC EQUIPMENT**  
2515 J Street  
Sacramento, California  
Permit No. 99-02766C  
WKA No. 4130.35

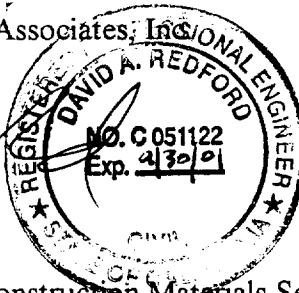
In accordance with the City of Sacramento special inspection requirements, our firm has performed the *Special Testing and Inspection* for the subject project. Our observation and test results indicate that the following items are in accordance with Sections 106 and 1701 of the Uniform Building Code and the project's plans and specifications:

Structural

Steel: Inspected field applied fillet welds assembling wide flange framing for new boiler support. 1/4" x 6" long welds attached W6 top members to W10 bottom members both sides of W6 flange at each crossing point - 16 locations total. Weld profiles meet AWS D1.1 code requirements.

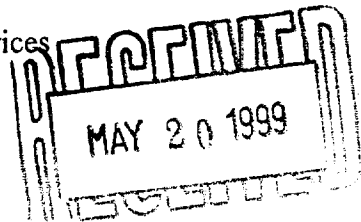
Last date at jobsite: May 19, 1999

Wallace - Kuhl & Associates, Inc.  
Regional Engineer  
David A. Redford  
Senior Engineer Construction Materials Services



DAR:mlo

cc: City of Sacramento



Regional Engineering  
Construction Services  
Regional Consulting  
Construction Services  
Construction Inspection  
Materials Testing  
Architectural  
West Sacramento  
916-372-2500  
916-372-2500  
Fax 916-372-2505



## DIAPHRAGM EXPANSION TANKS

### Sizing for Hydronic Heating/Cooling Systems

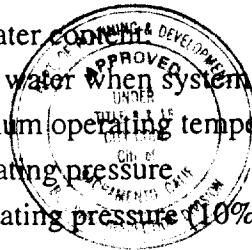
Job Name: ST FRANCIS MANOR Date: 5-10-99

Job Location 2515 J ST. Salesman: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Model #: \_\_\_\_\_

#### Information Required:

1. Total system water content
2. Temperature of water when system is filled
3. Average maximum operating temperature
4. Minimum operating pressure
5. Maximum operating pressure (10% below relief valve)



This set of plans and specifications must be kept on the job at all times and no one will make any changes or alterations from the same without written permission from the Building Inspection Division. The approval of this plan and specification SHALL NOT be held to permit or approve the violation of any City Ordinance or State Law.

950 gallons  
120 °F  
130 °F  
80 psig  
125 psig

#### Model Selection:

6. Enter total system water content. (from line 1. above) 950 gallons
  7. Using the expansion factor table, find and enter the expansion factor .00949
  8. Multiply line 6 by line 7. Enter expanded water volume. .49 gallons
  9. Using acceptance factor table, find and enter the acceptance factor. .49
  10. Divide line 8 by line 9, enter total tank volume required. 18.4 gallons
- Line 8. 9.02 gallons Expanded Water (acceptance volume)  
Line 10. 18.4 gallons total tank volume

Select diaphragm expansion tank model from chart on Page 8.

NTA Models must satisfy both lines 8 and 10 above.

NLA Models are selected by gallons only from line 10.

NVA Models are selected by gallons only from line 10.

For large systems, multiple tanks can be manifolded together.

**ISSUED**

**MAY 12 1999**

CITY OF SACRAMENTO

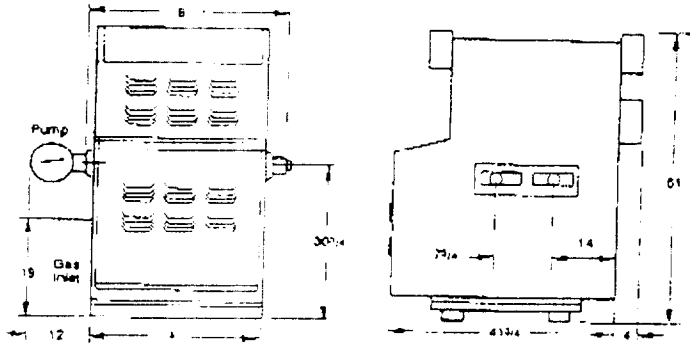
DEVELOPMENT SERVICES DIV

**CAUTION:** This chart is for water only. For expansion factors for glycol solutions contact the Wessels factory or your local Wessels dealer.

# TELEDYNE LAARS MIGHTY THERM

# Volume Water Heaters

Outdoor  
Sizes 500-1825



VW	Volume Water Heater (circulating storage tank type)
PW	Volume Water Heater with built-in pump
IW	Instantaneous Water Heater

### Submittal Data

This set of plans and specifications must be kept on the job at all times and it is understood that no changes or alterations from the same without written permission from the Building Inspection Division.

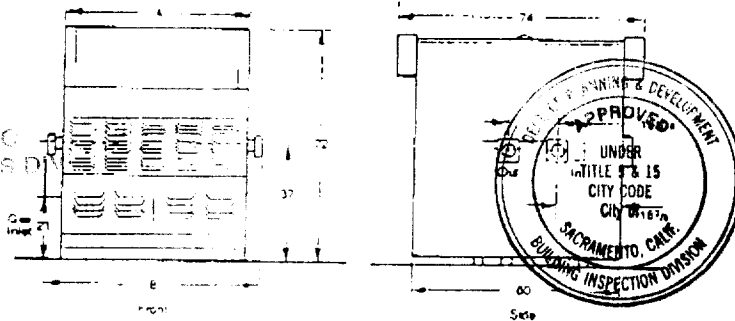
The approval of this plan and specification SHALL NOT be held to permit or approve a violation of any City Ordinance or State Law.

ISSUED

MAY 12 1999

CITY OF SACRAMENTO  
EQUIPMENT SERVICES DIVISION

Outdoor  
Sizes 2200-4500



### Standard Equipment

- ASME 160 lb. working pressure heat exchanger
- 24V control system
- Operating gas valve/pressure regulator
- Manual shut-off valve
- Water flow sensing device
- Removable burner tray (500-1825)
- Glasslined cast iron headers
- Stainless steel burners
- Covered control box
- Redundant safety gas valve
- Operating control
- Manual reset high limit
- Automatic reset high limit (2800-4500)
- Manual "A" gas valve
- Manual pilot valve
- External water side gaskets
- Flanged connection
- Built-in draft hood
- Non-combustible base (500-1825)
- High gas pressure switch (2800-4500)
- Constant flame modulation (models 2200-4500)
- Pressure relief valve (125 PSI)
- 115/230/24V transformer
- Terminal strip
- On/off toggle switch
- 5 amp fuse (2200-4500)
- 2 amp fuse (500-1825)
- Power on light

### Dimensional Data

Models VW/PW/IW*	Input BTU/H x 1000	Output BTU/H x 1000	Gas Connection Size (Inches)**		Water Conn. Size, (Inches)†	Dimensions (Inches)**				Shipping Weight (lbs)‡
			Natural	LP		A	B	C	V	
500	500	410	1		2	33 3/4	39 3/4	....	....	800
600	600	492	1	3/4	2	38 3/4	44 3/4	....	....	910
715	715	586	1	3/4	2	44 1/4	50 1/4	....	....	995
850	850	697	1	3/4	2	50 3/4	56 3/4	....	....	1030
1010	1010	828	1 1/4	1	2 1/2	58	64	....	....	1180
1200	1200	984	1 1/4	1	2 1/2	66 1/4	72 1/4	....	....	1330
1430	1430	1173	1 1/4	1 1/4	2 1/2	76	82	....	....	1490
1670	1670	1370	1 1/2	1 1/4	2 1/2	85 1/2	91 1/2	....	....	1600
1825	1825	1497	1 1/2	1 1/4	2 1/2	92 1/4	98 1/4	....	....	1660
2200	2200	1786	1 1/2 / 2	1 1/2	4	65 1/2	73	....	....	2320
2800	2745	2223	1 1/2 / 2	1 1/2	4	78	85 1/2	....	....	2600
3200	3150	2552	2	1 1/2	4	88	95 1/2	....	....	2750
3600	3645	2952	2 1/2 / 2	2	4	100 1/2	108	....	....	3175
4000	4050	3281	2 1/2	2	4	110 1/2	118	....	....	3380
4500	4500	3645	2 1/2	2	4	123	130 1/2	....	....	3790

NOTES: 1. Input and output must be derated 4% per 1000 feet above sea level when installed above 2000 feet altitude. 2. Dimensions are nominal. 3. Sizes 1010-1825 instantaneous water heaters have 2 inch water connections. 4. Consult factory for dimensions of pump mounted units sizes 2700-4500. 5. Add 55lbs for four stage or more gas valves. Consult factory for exact specifications. \*VW/PW Models 500-1825 only.

RECEIVED

MAR 25 1999

Building Inspection Division

**Recovery  
Tables**

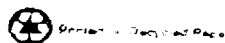
Gallons Per Hour  
Delivered

Size	Required Water Temperature Rise								
	40°F	50°F	60°F	70°F	80°F	90°F	100°F	120°F	140°F
500	1230	984	820	703	615	547	492	410	351
600	1476	1181	984	843	738	656	590	492	422
715	1758	1406	1172	1005	879	781	703	586	502
850	2091	1673	1394	1195	1046	929	838	697	597
1010	2484	1987	1656	1419	1242	1104	994	828	710
1200	2952	2362	1988	1687	1476	1312	1181	984	843
1430	3519	2815	2346	2011	1760	1564	1408	1173	1005
1670	4110	3288	2740	2349	2055	1827	1644	1370	1174
1825	4491	3593	2994	2566	2246	1996	1796	1497	1283
2200	5348	4279	3565	3056	2674	2377	2139	1783	1528
2800	6807	5445	4538	3890	3403	3025	2723	2269	1945
3200	7779	6223	5186	4445	3890	3457	3112	2593	2223
3600	8752	7001	5834	5001	4376	3890	3501	2917	2500
4000	9724	7779	6483	5557	4862	4322	3890	3241	2778
4500	10939	8752	7293	6251	5470	4862	4376	3646	3126

**Minimum  
Clearances  
from  
Adjacent  
Construction**

Recommended Minimum Clearance From	Sizes 500-1825	Sizes 2200-4500
	(Inches)	(Inches)
Top	----	----
Water Connection Side	24	24
Opposite Side	24	24
Front	Open	Open
Rear	24	24
Vent	----	----

NOTE: Base for combustible flooring is standard on sizes 500-1825. Sizes 2200-4500 require installation on non-combustible floors. At least 48" clearance should be provided in front of the heater for maintenance accessibility (removal of burners, etc.).



**TELEDYNE LAARS**

6000 Condor Drive, Moorpark, CA 93021 • (805) 529-2000 FAX (805) 529-5934  
 480 S. Service Road West, Oakville, Ontario, Canada L6K 2H4 • (905) 044-8233 FAX (905) 844-2635  
 20 Industrial Way, Rochester, N.H. 03867 • (603) 335-6300 FAX (603) 335-3355  
 Litho in U.S.A. • Teledyne Laars Document 2045E 0204

**Recovery  
Tables**  
Gallons Per Hour  
Delivered

Size	Required Water Temperature Rise									
	40° F	50° F	60° F	70° F	80° F	90° F	100° F	120° F	140° F	
500	1215	972	810	695	608	540	486	405	347	
600	1459	1167	972	833	729	648	583	486	417	
715	1738	1391	1159	993	869	773	695	579	497	
850	2066	1653	1378	1181	1033	918	827	689	590	
1010	2455	1964	1637	1403	1228	1091	982	818	702	
1200	2917	2334	1945	1667	1459	1297	1167	972	833	
1430	3476	2781	2318	1986	1739	1545	1391	1159	993	
1670	4060	3248	2706	2320	2030	1804	1624	1353	1160	
1825	4437	3549	2958	2535	2218	1972	1775	1479	1268	
2000	4920	3936	3280	2811	2460	2187	1968	1640	1406	
2450	6027	4822	4018	3444	3014	2679	2411	2009	1722	
3050	7503	6002	5002	4287	3752	3335	3001	2501	2144	
3500	8610	6888	5740	4920	4305	3827	3444	2870	2460	
4050	9963	7970	6642	5692	4982	4428	3985	3321	2847	
4500	11070	8856	7380	6326	5535	4920	4428	3690	3163	
5000	12300	9840	8200	7029	6150	5467	4920	4100	3514	

**Motor  
Electrical  
Data**

Sizes	Factory Provided Pumps - Models PW and IW Heaters					
	Water Category					
	Soft		Normal		Hard	
	Power (HP)	Current (Amps)	Power (HP)	Current (Amps)	Power (HP)	Current (Amps)
500-1010	1/4	5.8	1/3	7.2	3/4	13.9
1200-1430	1/3	7.2	1/2	7.2	3/4	13.9
1670-1825	3/4	13.9	3/4	13.9	3/4	13.9

**Minimum  
Clearances  
from  
Adjacent  
Construction**

Recommended Minimum Clearance From	Size 500-1825	Size 2000-5000
	(Inches)	(Inches)
Top	30	24
Water Connection Side	12	24
Opposite Side	6	24
Front	Alcove	48
Rear	8	24
Vent	6	6

NOTE: Sizes 500 to 1825 may be installed on combustible floors. Sizes 2000 to 5000 require installation on non-combustible floors. At least 48" clearance should be provided in front of the heater for maintenance access/bility (removal of burners, etc.).

PBYE



6000 Condor Drive, Moorpark, CA 93021 • 805.529.2000 FAX 805.529.5934  
 20 Industrial Way, Rochester, NH 03867 • 603.335.6300 FAX 603.335.3355  
 480 S. Service Road West, Oakville, Ontario, Canada L6K 2H4 • 905.844.8233 FAX 905.844.2635



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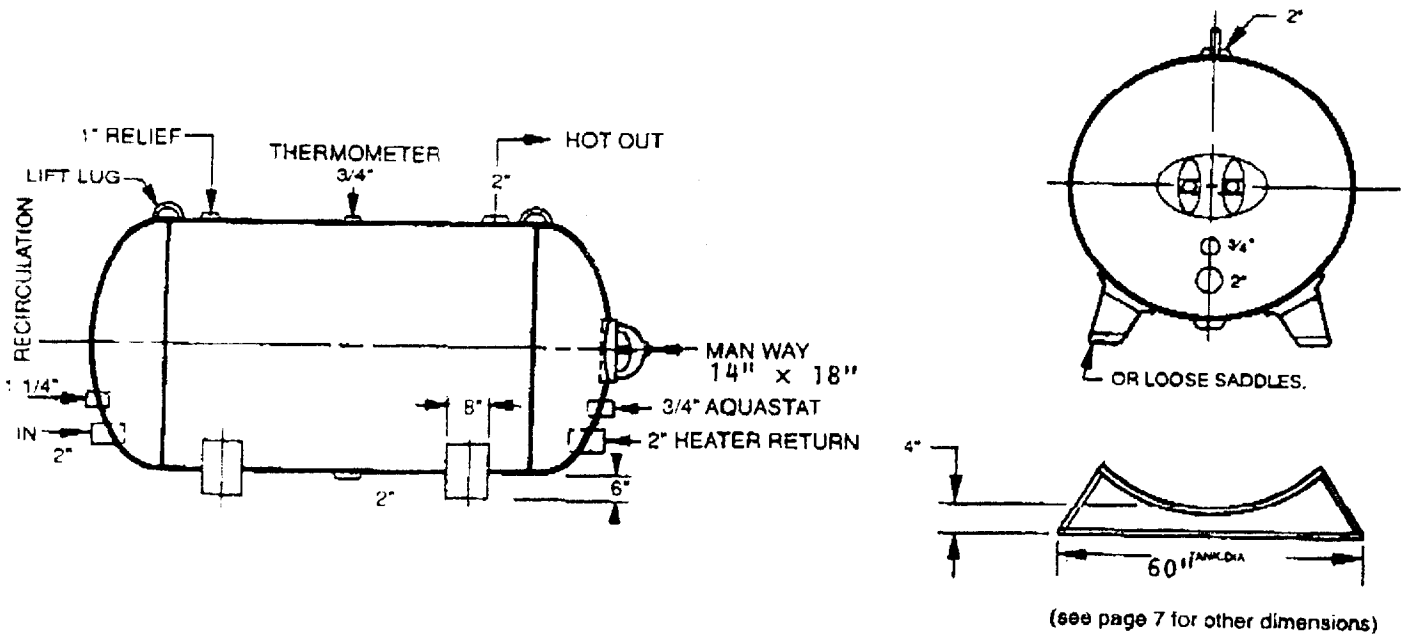




# STANDARD HOT WATER STORAGE TANKS HORIZONTAL

125# A.S.M.E. CODE

LINED WITH:  
EPOXY (Max. 200°F)  
GLASS (Max. 200°F)  
CEMENT (Max. 212°F)



### SPECIFICATIONS AND DELIVERED\* PRICES HORIZONTAL EPOXY LINED 125# A.S.M.E. WATER STORAGE TANKS

PART NUMBER	VOLUME IN GALS.	AREA SQ. FT.	WEIGHT	SIZE OVERALL DIA. X HEADS
ES-30-140-H	140	37	445	30 X 51
ES-30-235-H	235	54	598	30 X 84
ES-30-270-H	270	65	653	30 X 94
ES-36-305-H	305	66	666	36 X 77
ES-36-400-H	400	84	807	36 X 99
ES-42-520-H	520	95	1027	42 X 96
ES-42-590-H	590	106	1201	42 X 110
ES-42-850-H	650	117	1271	42 X 118
ES-48-700-H	700	112	1233	48 X 101
ES-48-800-H	800	125	1332	48 X 113
ES-48-870-H	870	134	1429	48 X 122
ES-48-1040-H	1040	157	1831	48 X 144
ES-56-1240-H	1240	166	1965	56 X 127
ES-60-1300-H	1300	167	2003	60 X 118
ES-60-1400-H	1400	180	2114	60 X 127
ES-64-1500-H	1500	181	2208	64 X 121
ES-64-1625-H	1625	194	2338	64 X 130
ES-64-1930-H	1930	225	2669	64 X 152
ES-64-2100-H	2100	242	2847	64 X 164
ES-64-2400-H	2400	272	3190	64 X 186

\*NOTE: "E" in Part Number denotes Epoxy lined tank. Use prefix "C" for Cement, "G" for Glass linings.

NOTE: When over 40 GPM circulation flow, order 2.5" or larger connections  
Tappings sizes and locations can be changed to your requirements, usually at no extra charge.

### IMPORTANT NOTICE

All water tank installations should be protected from galvanic action by use of dielectric insulators to prevent dissimilar metal contact and electrical current flows in the system. Since these insulators may deteriorate with time, electrical resistance between the tank and external connection should be monitored every 6 months. See page WT-11 for Hanson's dielectric insulators and instructions.

# Roy E. Hanson Jr. Mfg.



A.S.M.E. PRESSURE  
VESSELS

1924 Compton Avenue • Los Angeles, California 90011

(213) 747 7514 (213) 747 5363

FAX: (213) 747 7724

## Specification EL 0291

### Epoxy Lining Specification

Hansons Tanks's standard epoxy lining is an efficient corrosion resistant coating system for potable water storage tanks, providing excellent protection with limited maintenance and good resistance to shipping damage.

It is classified as a polymerized hi-resistant heavy build coating with an amine adduct-type curing agent. It is spray applied over a white-metal blasted surface to SSPC-SP5 in a two-coat application and heat cured in accordance with the manufacturers recommendations.

It is formulated as a tank lining for water, including deionized or distilled water at elevated temperatures as well as brines and petroleum processes. Designed and laboratory confirmed for immersion in demineralized water at 250 degrees F, it meets the requirements of EPA and USDA qualifying as an indirect additive for drinking water and food. The ingredients and finished products meet the requirements of the U.S. Food & Drug Regulations as listed under Title 21 chapter 175.300, and most State and Local ordinances.

<b>Color:</b>	Ivory, light gray
<b>Finish:</b>	Smooth, glossy, hydrophobic
<b>Film Thickness:</b>	> 5 mils
<b>Adhesion:</b>	850 psi
<b>Heat Resistance:</b>	Dry: - 400 degrees F Submerged: - water 250 degrees F, brine 212 degrees F
<b>Pigments:</b>	Titanium dioxide, inert & tinting colors
<b>Solids:</b>	74% ± 2% by weight; 53% ± 2% by volume
<b>Abrasive Resistance:</b>	75.3 milligram loss average, 1000 cycles, Taber CS-17 wheel 1000 gr. Wt. Ivory color
<b>Surface Hardness:</b>	Konig Pendulum Hardness of 113 seconds, (glass standard = 250 seconds) DIN standard 53157
<b>Thermal Shock:</b>	Unaffected in 5 cycles, -70 degrees F to 212 degrees F
<b>Flexibility:</b>	1/2 inch bend Zuhr Conical Mandrel - 10 mil film

### Chemical Resistance

The following list of laboratory tests is an indication of the range of chemical resistance. These tests consist of 1"x 5" mild steel test panels coated to a film thickness of 12 mils. The panels are one half immersed in the solution at noted temperature for a period of (6) months with no effect on the coating.

<b>Alkalies:</b>	50% Sodium Hydroxide @ 150 F	<b>Waters:</b>	Demineralized @ 250 F
	50% Magnesium Hydroxide @ 100 F		Sea Water @ 212 F
	25% Sodium Hydroxide @ 150 F	<b>Misc:</b>	50% Sodium Chlorate @ 150 F
	10% Calcium Hydroxide @ 150 F		Crude Oil @ 210 F

**Note:** The above data was furnished by the coating manufacturer. As with most tank linings, service life will be longer if operating temperatures do not exceed 200 F.

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## Specification # FI 1190

### Factory Insulation Specification

(Sprayed-on rigid Polyurethane Foam with Topcoat)

All Hanson water storage tanks are offered with optional spray-on polyurethane foam factory insulation with rigid topcoat. Nominal "R" value is R-16 @ 2" thick. This exceeds ASHRAE requirements.

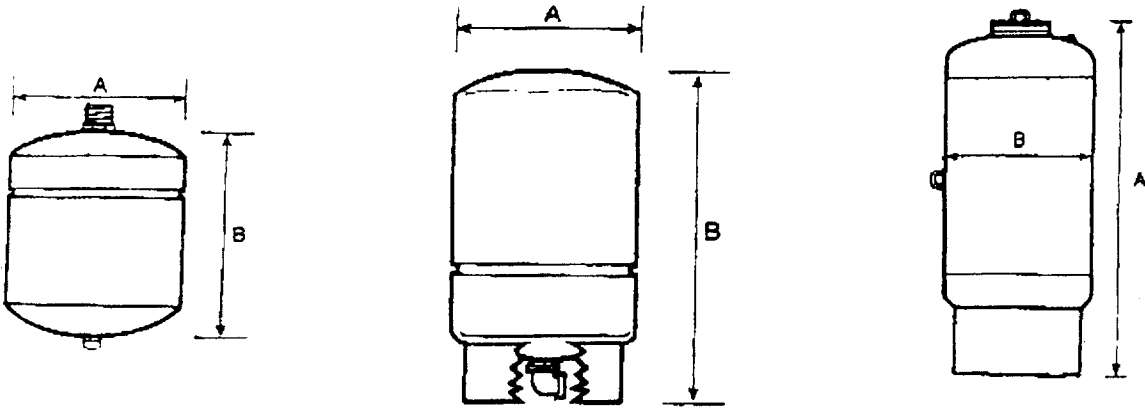
Hanson factory insulation is a 2 component fluorocarbon blown-spray rigid polyurethane insulation with excellent thermal insulation properties rated class II flame spread per ASTM E-84-77a (tunnel test), and U.L. #723 certification.

<b>Installed Density:</b>	2.1 - 2.3 PCF
<b>Compressive Strength:</b>	28 - 33 psi
<b>Tensile Strength:</b>	38 - 43 psi
<b>R. Value:</b>	7.11 per Inch (R-16 = 2 1/4")
<b>Closed Cell Content:</b>	Over 90%
<b>Weight:</b>	2 lbs/cu ft
<b>Max thickness:</b>	4" (R-28)
<b>Topcoat:</b>	2 coats (min. 23 mils D.F.T.) White acrylic coating
<b>UV Resistance:</b>	Excellent (ASTM D-1499)
<b>Reflective Index:</b>	90%
<b>Stability:</b>	Excellent to 200 degree F (ASTM - 794)
<b>Water Permeability:</b>	Zero after 21 days immersion
<b>Solids:</b>	58.7% by volume

**Note:** Hanson tank insulation is an effective alternative to metal jacketed tanks at about 70% saving for the same R. Value. Any minor shipping damage can easily be repaired in the field with no effect on performance or durability.

# DIAPHRAGM EXPANSION TANKS - PRE-PRESSURIZED

## DIMENSIONS AND WEIGHTS



Models PT-5 & PT-12

Models PT-25V through PT-210

Models PT-451 through PT-457

### DIMENSIONS IN INCHES (MM)

MODEL NO.	A DIAMETER	B HEIGHT	SYSTEM CONNECTION	CHARGING VALVE	APPROX. SHPG. WT. LBS. (KG)
PT-5	8 (203)	12 <sup>1</sup> / <sub>2</sub> (321)	1/2" NPTM	.302"-32 NC	5 (2.3)
PT-12	11 (279)	15 (381)			9 (4.1)
PT-25V	15 <sup>1</sup> / <sub>2</sub> (390)	19 <sup>1</sup> / <sub>2</sub> (489)	1" NPTF		23 (10.4)
PT-30V	15 <sup>1</sup> / <sub>2</sub> (390)	23 <sup>1</sup> / <sub>2</sub> (606)			25 (11.3)
PT-42V	15 <sup>1</sup> / <sub>2</sub> (390)	31 <sup>1</sup> / <sub>2</sub> (803)	1 1/2" NPTF		33 (15)
PT-60V	22 (559)	29 <sup>1</sup> / <sub>2</sub> (752)			69 (31.3)
PT-80V	22 (559)	36 (914)			69 (31.3)
PT-180V	22 (559)	46 <sup>1</sup> / <sub>2</sub> (1187)			92 (41.7)
PT-210V	26 (660)	47 <sup>1</sup> / <sub>2</sub> (1200)	2" NPTF		123 (55.8)
PT-451	30 (762)	71 (1803)			626 (284)
PT-452	30 (762)	89 (2261)	3" NPTF		760 (344.7)
PT-453	36 (914)	82 <sup>1</sup> / <sub>2</sub> (2086)			810 (367.4)
PT-454	36 (914)	94 <sup>1</sup> / <sub>2</sub> (2400)			914 (414.6)
PT-455	36 (914)	106 <sup>1</sup> / <sub>2</sub> (2715)			1018 (461.8)
PT-456	48 (1219)	78 <sup>1</sup> / <sub>2</sub> (2003)		1655 (750.7)	
PT-457	48 (1219)	92 <sup>1</sup> / <sub>2</sub> (2356)		1925 (873.1)	

### TYPICAL SPECIFICATIONS

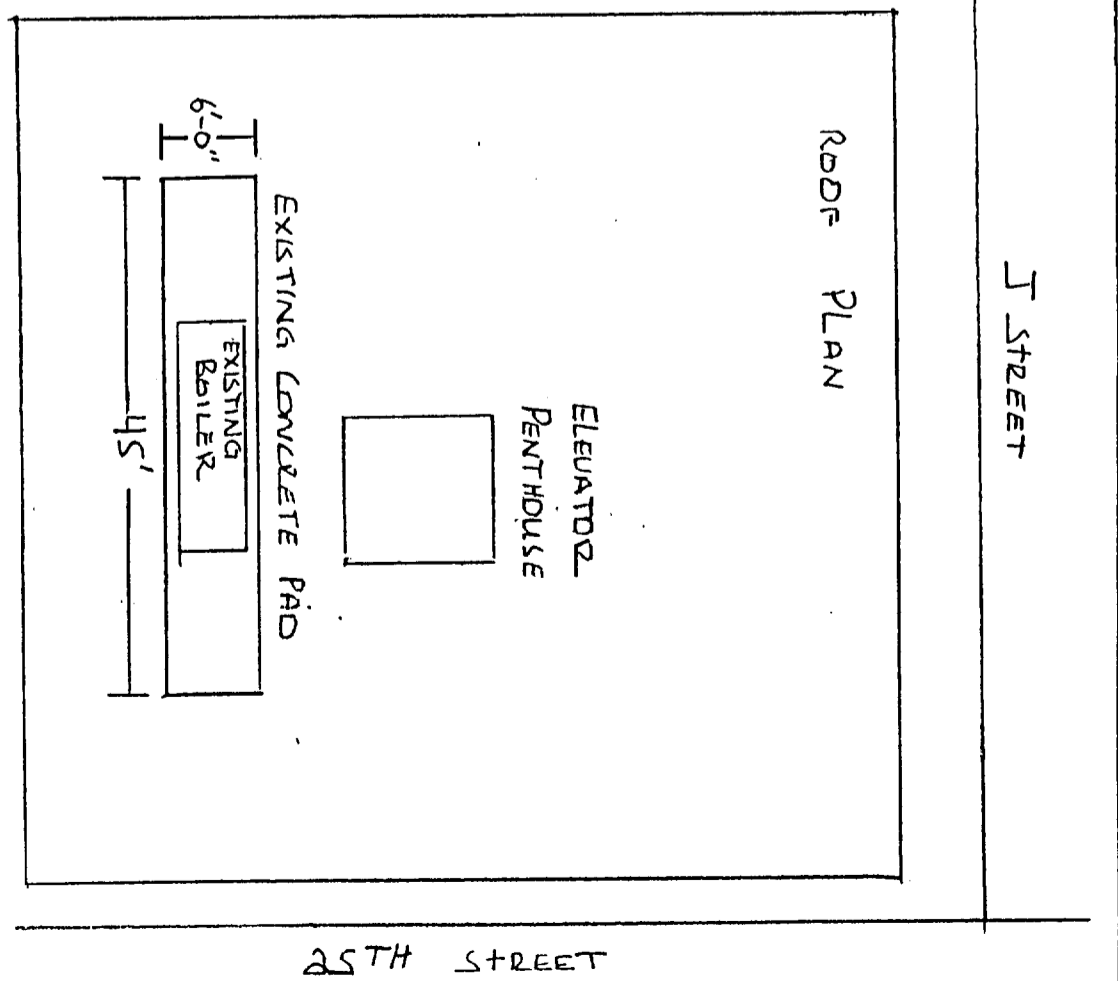
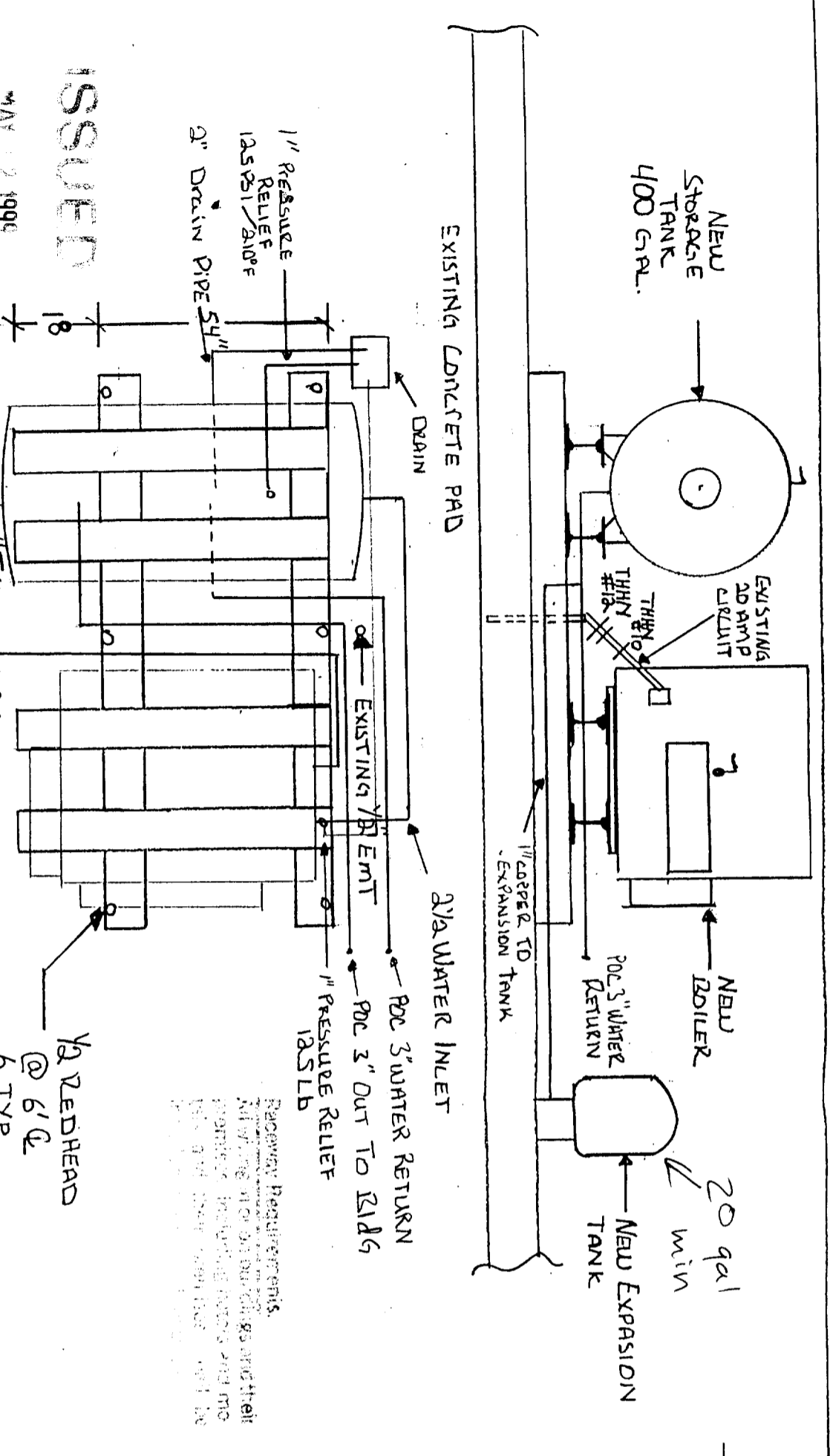
Furnish and install as shown on plans a \_\_\_\_\_ gallon (\_\_\_\_\_ liter), \_\_\_\_\_" (\_\_\_\_\_ mm) diameter x \_\_\_\_\_" (\_\_\_\_\_ mm) high pre-charged vertical steel expansion tank with integral heavy duty butyl blend diaphragm and \_\_\_\_\_ med dome, FDA approved for domestic potable water. The tank shall have a \_\_\_\_\_" NPT system connection, and a .302"-32 charging valve connection (standard tire valve) to

facilitate on-site charging of the tank to meet system requirements. The air and water connections are brazed (silver solder) to tank. The tank must be designed for a maximum working pressure of 150 PSI (1035 kPa) and maximum working temperature of \_\_\_\_\_°F (\_\_\_\_\_°C).

Each tank shall be ITT Bell & Gossett Model No. \_\_\_\_\_

For further information contact ITT Bell & Gossett, 8200 N. Austin Avenue, Morton Grove, IL 60053  
Phone (847) 966-3700 — Facsimile (847) 966-9052 — <http://ths.ittind.com>



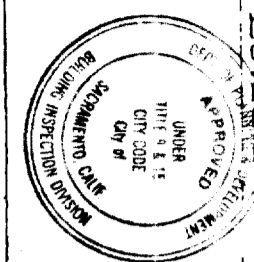


ISSUED

MAY 2 1990

	SHIPPING WEIGHT	IN SERVICE WEIGHT
400 GAL TANK	807 LBS	4007 LBS
BOILER	1490 "	1582 "
EXPANSION TANK	33 "	129 "
T BEAM FRAME	1350 "	1350 "
TOTALS	3610 LBS	1008 LBS

EXISTING BOILER IN SERVICE WEIGHT 9920 LBS



Kept on the job at all times and to make any changes or alterations to same without written permission of Building Inspection Division. The approval of this plan and specifications SHALL NOT be held to permit or approve the violation of any City Ordinance or State Law.

Permit Requirements:  
All work shall conform to the applicable codes and their amendments, including fire and mechanical codes. All work shall be done in accordance with the applicable codes and their amendments.

The approval of all operations work is subject to field inspection.  
3-26-90 AS for SWM  
MWS

CAL AIR INC.  
4061 SEABOARD BLVD.  
WEST SACRAMENTO CA. 95691

ST. FRANCIS MANOR  
2515 J. STREET  
SACRAMENTO, CA. 95816

PARKING LOT

J STREET

25TH STREET