



CONSTRUCTION PERMIT APPLICATION

C-17-000769

Applicant Completes: Sections I, II, III (optional), IV, VI, and VII

I. IDENTIFICATION

1. Proposed Work Site at: **1635 W. Princeton Avenue, Brick, NJ 08724**

2. Name of Owner in Fee: **Michele McAllister**
 Tel. [REDACTED] e-mail [REDACTED]
 Address **1635 W. Princeton Avenue** **Brick, NJ** **08724**
street municipality zip code

3. Ownership in Fee: Public ☐ Private ☒ municipality

4. Principal Contractor: **Allied Construction LLC** Tel. **(856) 528-2822**
 Address **100 Dobbs Lane** e-mail **karen.h@alliedconstruct.**
Cherry Hill, NJ 08034

License No. OR, if new home, Builder Reg. No. Exp. Date **03/31/2017**
 Home Improvement Contractor Registration No. or Exemption Reason **13VH062202**
 Federal Emp. ID No. **274623527** FAX: **(856) 528-2823**

5. Architect or Engineer Contact
 Address e-mail
 Tel. FAX: ☒

6. Responsible Person in Charge once Work has Begun **Karen Heinze**
 Tel. **(856) 528-2822** FAX: **(856) 528-2823**

V. FEE SUMMARY (for office use only)

		Update	Update
1. Building	\$ 150	☒	
2. Electrical	\$ 150	☒	
3. Plumbing			
4. Fire Protection			
5. Elevator Devices	<i>green</i>	☒	
6. Subtotal	\$ 125		
7. Less 20% for State Plan Review	\$		
8. Subtotal	\$		
9. State Permit Surcharge Fee	\$ 19		
10. Subtotal	\$		
11. Cert. of Occupancy			
12. Other	\$ 444		
13. TOTAL	\$		

VI. BUILDING/SITE CHARACTERISTICS

	(office use only)
1. Number of Stories	
2. Height of Structure	ft.
3. Area — Largest Floor	sq. ft.
4. New Building Area	sq. ft.
5. Volume of New Structure	cu. ft.
6. Max. Live Load	
7. Max. Occupancy Load	
8. If Industrialized Building: State Approved	HUD
9. Total Land Area Disturbed	sq. ft.
10. Flood Hazard Zone	
11. Base Flood Elevation	ft.
12. Wetlands	yes no

IIa. PROPOSED WORK

- ☐ Minor Work ☐ New Building ☐ Addition ☐ Demolition
- ☐ Repair ☐ Alteration ☒ Renovation ☐ Reconstruction
- ☐ Asbestos Abat. -Subch. ☐ Lead Hazard Abatement ☐ Radon Remediation ☐ Annual Permit

IIb. SUBCODES

(Check all that apply)

- ☒ Building
- ☒ Electrical
- ☒ Plumbing
- ☒ Fire Protection
- ☒ Elevator

FOR OFFICE USE ONLY (Optional)

Est. Cost	Plans Rec'd by	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates Approval	Rejection	Re-viewer
1,500								
4,000								
4,000								
1,000								

TOTAL COST **\$10,500**

VII. DESCRIPTION OF BUILDING USE

A. RESIDENTIAL (primary use)

1. State Specific Use: [REDACTED]
2. Use Group, Proposed: **Select Group**
3. Change in Use Group, Indicate Present: **Select Group**
4. No. of dwelling units: **Total Units** **Income-restricted**
- Gained, Sale [REDACTED]
 Gained, Rental [REDACTED]
 Lost, Sale [REDACTED]
 Lost, Rental [REDACTED]

B. NON-RESIDENTIAL (primary use)

1. State Specific Use: [REDACTED]
2. Use Group, Proposed: **Select Group** **Select Group**
3. Change in Use Group, Indicate Present: **Select Group**

C. MIXED USE -List secondary use(s):

- D. Construct. Classification: Present **Proposed**

III. PLAN REVIEW (optional)

- DO YOU WANT:
1. ☐ Partial Releases
2. ☐ Prototype Processing

IV. DOES OR WILL YOUR BUILDING CONTAIN ANY OF THE FOLLOWING?

1. ☐ Elevators/Escalators/Lifts/ Dumbwaiters/Moving Walks
2. ☐ High Pressure Boilers
3. ☐ Pressure Vessels
4. ☐ Refrigeration Systems
5. ☐ Cross-Connections/Backflow Preventers
6. ☐ Hazardous Uses/Places of Assembly
7. ☐ Sprinklers/Standpipes
8. ☐ Smoke Control Systems in Open Wells
9. ☐ Underground Storage Tanks
10. ☐ Swimming Pools, Spas and Hot Tubs
11. ☐ LPGas Tanks
12. ☐ Fire Alarm



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723

Date Issued 6/16/2017
Control Number C-17-000769
Permit Number 17-0645
Permit Issue Date 3/3/2017
Certificate Number 17-0645

Certificate

Construction Code Division
(Certificate of Approval)

Identification

Work Site Location: 1635 W. PRINCETON AVE. Brick Township, NJ Block: 828 Lot: 10 Qual: _____
Owner in Fee: MCALLISTER, MICHELE
Owner Address: 1635 W PRINCETON AVE BRICK NJ 08724
Telephone: [REDACTED]
Contractor: ALLIED CONSTRUCTION GROUP
Address: 100 DOBBS LANE SUITE 102 CHERRY HILL NJ 08034
Telephone: (856) 258-6216 Fax: (856) 528-2823
License Number or Builders Registration Number: 34EB01653400 Federal Emp. Number: _____
13VH06220200
36BI01261500
36BI01323400

Home Warranty Number: _____

Type of Warranty Plan: ☐ State ☐ Private

Use Group: R-5 Construction Classification: _____

Maximum Live Load: 0 Maximum Occupancy Load: 0

Description of Work/Use: ALTERATION - RESIDENTIAL ...COMBO UNIT

Certificate Comments:

☐ **Certificate of Occupancy**

This serves notice that said building or structure has been constructed in accordance with the New Jersey Uniform Construction Code and is approved for occupancy.

☒ **Certificate of Approval**

This serves notice that the work completed has been constructed or installed in accordance with the New Jersey Uniform Construction Code and is approved. If the permit was issued for minor work, this certificate was based upon what was visible at the time of inspection.

☐ **Certificate of Clearance - Lead Abatement 5:17**

This serves notice that based on written certification, lead abatement was performed as per NJAC5:17 to the following extent.

- ☐ Total removal of lead-based paint hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Clearance - Asbestos Abatement**

This serves notice that based on written certification, asbestos abatement was performed to the following extent.

Construction Official

Date Printed: 6/16/2017

U.C.C. F260 (rev. 08/05)

Fee: \$0.00

Check Number: _____

Collected By: _____

Page 1



MECHANICAL INSPECTOR TECHNICAL SECTION



Update

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 828 Lot 10 Qualification Code _____
Work Site Location 1635 W. Princeton Avenue, Brick, NJ 08724

Owner in Fee: Michele McAllister

Tel. _____ e-mail _____

Address 1635 W. Princeton Avenue Brick, NJ 08724

Contractor: Michael Wilson T/A Allied Construction LLC Tel. (856) 528-2822

Address 100 Dobbs Lane, Suite 102 e-mail karen.h@alliedconstruct.co

Cherry Hill, NJ 08034

Contractor License No. or Builder Registration No. _____ Exp. Date 03/31/2018

Home Improvement Contractor Registration No. or Exemption Reason 13VH062202

Federal Emp. ID No. 274623527 FAX: (856) 528-2823

B. MECHANICAL CHARACTERISTICS

Use Group Present: _____ Proposed: _____
Heating System work: [] New OR [] Modification to Existing OR [] Conversion OR [x] Replacement

Type: [] Hydronic [] Hot Air

Fuel Type: [x] Gas [] Oil [] Electric [] Solar [] Other _____

Estimated Cost of Mechanical Work \$ 4,000

JOB SUMMARY (Office Use Only)

PLAN REVIEW

[x] No Plans Required

[] Mechanical Plans Approved

Date: _____ Approved by: _____

Joint Plan Review Required:

[] Bldg. [] Elec. [] Plumb. [] Fire.

[] Elev.

SUBCODE APPROVAL for PERMIT

Date: _____

Approved by: _____

SUBCODE APPROVAL for CERTIFICATE

[] CA [] CCO

Date: 6-12-17

Approved by: [Signature]

INSPECTIONS

Type: _____ Failure _____ Failure _____ Approval _____ Initial _____

Gas Piping _____

Appliance _____

Chimney/Vent _____

Oil Piping _____

Oil Tank _____

LPG Tank _____

Hydronic Piping _____

Fireplace _____

Chimney Cert. _____

Other FINAL 5-4-17 6-12-17 [Signature]

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent or) owner of record and am authorized to make this application.

Sign here: _____

Print name here: Michael Wilson

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK

Replacement of Combi-Boiler

NO.

1

X

1

FIXTURE/EQUIPMENT

Water Heater ←

Fuel Oil Piping Connections

Gas Piping Connections

Steam Boiler

Hot Water Boiler ← Indirect

Hot Air Furnace

Oil Tank

LPG Tank

Fireplace

Other Combi

FEE (Office Use Only)

\$ _____

Administrative Surcharge \$ _____

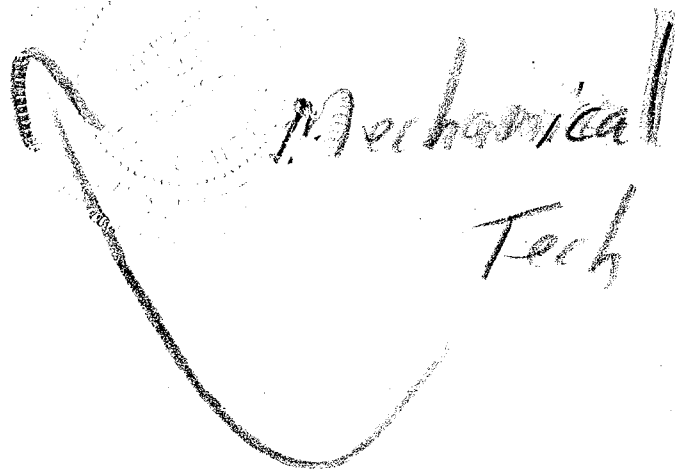
Minimum Fee \$ _____

State Permit Surcharge Fee \$ _____

TOTAL FEE \$ _____

5-4-17 / D

Feed Bypass Tie in After 9D





Condensing Gas
Combination Boiler

NCB Series Combination Boilers Specification Sheet

- Certified design according to **ANSI Z21.13b-2012/CSA 4.9b-2012** standards for indoor residential applications

- Gas Input Ranges (Space Heating / DHW)

NCB-180 - 80,000 (150,000 for DHW) to 14,000 BTU/h

NCB-210 - 100,000 (180,000 for DHW) to 18,000 BTU/h

NCB-240 - 120,000 (199,900 for DHW) to 18,000 BTU/h

- Domestic Hot Water Flow Rate Capacity (*based on 77°F temperature rise)

NCB-180 - 3.4 GPM

NCB-210 - 4.0 GPM

NCB-240 - 4.5 GPM

- **Dual Primary and Secondary Stainless Steel Heat Exchangers** for optimum efficiency and durability

- **Stainless Steel Flat Plate Heat Exchanger*** for DHW

(* certified to IAPMO PS 92-2010 standards)

- **Domestic Hot Water Priority**

- Compatible with **2" PVC vent up to 60 ft**** and **3" PVC vent up to 150 ft****
(** with no elbows)

- **Backlit Front Panel** - allows adjustment of hot water temperatures and boiler functions including Outdoor Reset Curve settings, heating setback, Integrated Low Water Safety Control, water fill pressure, and output capacity

- **Cascade Capability** with Navien water heater models - can be linked with up to 15 tankless water heaters for increased DHW output

- **Internal Circulation Pump** - comes included with a primary circulation pump and air vent for added value and convenience

- **Low Voltage Terminal Strip** - contacts for thermostat or zone controller, outdoor reset, 24 VAC device relay, air handler interrupt, and LWCO

- **Temperature Options** - two boiler setpoints: hydronic heating temperature settings range from **77°F up to 194°F** and from **86°F to 140°F** for DHW temperatures

- **Outdoor Reset Sensor** (optional) - when installed with an NCB Series model, the unit controls will sense outdoor ambient temperatures and adjust the boiler operation for maximum comfort and efficiency

- **AFUE Ratings**

NCB-180 - 95.0% (NG/LPG)

NCB-210 - 95.0% (NG/LPG)

NCB-240 - 95.0% (NG/LPG)

- Compatible with **Natural Gas (NG)** and **Propane (LPG)*****

(*** requires installation of included Field Conversion Kit by a qualified gas servicer)

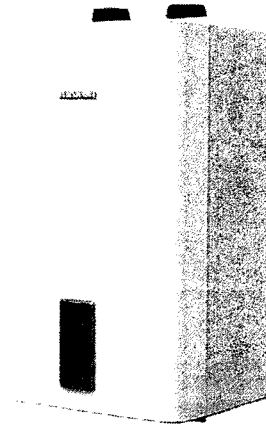
- Certified by **CSA, ASME, NSF/ANSI 372** for Low Lead (DHW only),

SCAQMD (Rule 1146.2 Type 1 - Complies with 14 ng/l or 20 ppm NOx @ 3% O2)

- **10-Year Heat Exchanger and 5-Year Parts Warranty******

(**** see Navien Limited Residential Warranty)

- **Optional accessories** are available (see below)



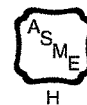
**Sleek Design - Compatible
with 2" PVC Vent**



**INCLUDED Illuminated Front Panel with
Advanced Hydronic and DHW Operation**



**Most Efficient
2014**
www.energystar.gov



Certified to
NSF/ANSI 372

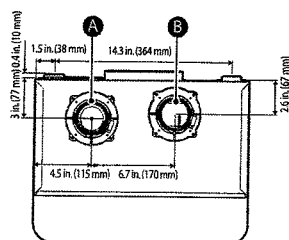
Quik-Install Manifold (GFFM-MCOZUS-001)	Plumb Easy Valve Set (BCSA0563 - 1" Standard) (UA09000002A - 3/4" Lead Free Only)	Condensate Neutralizer (GX0001322 - Single Unit) (GX0001324 - Up to 6 Units) (GX0001325 - Up to 16 Units)	Ready-Link Communication Cable (BCRA1129)	Outdoor Reset Sensor (NASS9EXOTS01)	Zone Pump Controller (FMZ-20 - For 2 Zones) (FMZ-30 - For 3 Zones) (FMZ-40 - For 4 Zones) (FMZ-60 - For 6 Zones)



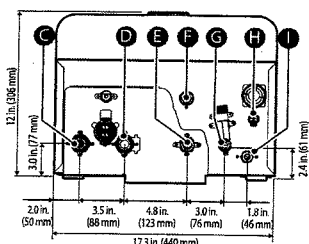
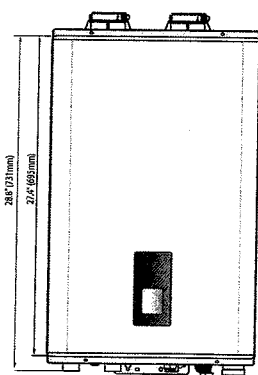
Condensing Gas Combination Boiler

NCB Series Combination Boilers Specification Sheet

Dimensions



- Connection Size
- A Air Intake $\phi 2"$
- B Exhaust Gas Vent $\phi 2"$



- Connection Size
- C Heating Supply Outlet $\phi 1"$
- D Heating Return Inlet $\phi 1"$
- E DHW Hot Water Outlet $\phi 3/4"$
- F Gas Supply Inlet $\phi 3/4"$
- G DHW Cold Water Inlet $\phi 3/4"$
- H Condensate Outlet $\phi 1/2"$
- I Auto Feeder Inlet $\phi 1/2"$

Navien Combination Boiler Space Heating Ratings



Model Number ¹	Heating Input, MBH		Heating Capacity ² , MBH	Net AHRI Rating, Water ³ , MBH	AFUE ² , %
	Min	Max			
NCB-180	14	80	75	65	95.0
NCB-210	18	100	94	82	95.0
NCB-240	18	120	112	97	95.0

¹ Ratings are the same for Natural Gas models converted to Propane use.

² Based on U.S. Department of Energy (DOE) test procedures.

³ The NET AHRI Water Ratings shown are based on a piping and pickup allowance of 1.15. Consult Navien before selecting a boiler for installations having unusual piping and pickup requirements, such as intermittent system operation, extensive piping systems, etc.

Specifications

Item		NCB-180	NCB-210	NCB-240
Gas Input	Space Heating	14,000-80,000 BTU/H	18,000-100,000 BTU/H	18,000-120,000 BTU/H
	Domestic Hot Water	14,000-150,000 BTU/H	18,000-180,000 BTU/H	18,000-199,900 BTU/H
Flow Rate (DHW)	77°F (43°C) Temp Rise	3.4 GPM (12.9 L/m)	4.0 GPM (15.1 L/m)	4.5 GPM (17.0 L/m)
Dimensions		17"(W) x 28"(H) x 12"(D)	17"(W) x 28"(H) x 12"(D)	17"(W) x 28"(H) x 12"(D)
Weight		74 lbs (34kg)	84 lbs (38kg)	84 lbs (38kg)
Installation Type		Indoor Wall-Hung		
Venting Type		Forced Draft Direct Vent		
Ignition		Electronic Ignition		
Water Pressure (Hydronic/DHW)		12-30 PSI / 15-150 PSI		
Natural Gas Supply Pressure (from source)		3.5"-10.5" WC		
Propane Gas Supply Pressure (from source)		8.0"-13.5" WC		
Natural Gas Manifold Pressure (min to max)		-0.07" WC to -0.66" WC	-0.05" WC to -0.36" WC	-0.06" WC to -1.2" WC
Propane Gas Manifold Pressure (min to max)		-0.06" WC to -0.62" WC	-0.1" WC to -0.66" WC	-0.03" WC to -0.98" WC
Minimum Flow Rate (DHW)		0.5 GPM (1.9 L/m)		
Connection Sizes	Heating Supply/Return	1" NPT		
	DHW Inlet/Outlet	3/4" NPT		
	Gas Inlet	3/4" NPT		
	Auto Feeder	1/2" NPT		
	Condensate Outlet	1/2" NPT		
Power Supply	Main Supply	120V AC, 60Hz		
	Maximum Power Consumption	200W (up to 2 amperes)		
Materials	Casing	Cold Rolled Carbon Steel		
	Heat Exchangers	Primary/Secondary Heat Exchanger: Stainless Steel DHW Heat Exchanger: Stainless Steel		
Venting	Exhaust	2" or 3" PVC, CPVC, Approved Polypropylene 2" or 3" Special Gas Vent Type BH (Class II, A/B/C)		
	Intake	2" or 3" PVC, CPVC, Polypropylene 2" or 3" Special Gas Vent Type BH (Class II, A/B/C)		
	Vent Clearances	0" to Combustibles		
Safety Devices		Flame Rod, APS, Gas Valve Operation Detector, Ignition Operation Detector, Water Temperature High Limit Switch, Exhaust Temperature High Limit Sensor		

*Navien reserves the right to change specifications at any time without prior notice

KNAUF

energy

CERTIFICATE OF INSULATION

The undersigned certifies that Knauf Insulation products have been installed in accordance with the manufacturer's recommended applications for these products.

Street Address 1635 W. Proctor Ave

City Frank

State MS Zip 08724

Installing Company Allied

State License 13Y06220200

Signed [Signature]

Date 11/9/17

R-Value

51

Thickness

add 12 inches

Knauf Insulation GmbH
One Knauf Drive
Shelbyville, IN 46176

Sales and Marketing (800) 825-4434, ext. 8300

Technical Support (800) 825-4434, ext. 8512

Fax (317) 398-3675

Information info.us@knaufinsulation.com

World Wide Web www.knaufinsulation.us

Equipment Required

It is recommended that a pneumatic blowing machine and a corrugated hose with a minimum 1/4" internal corrugation, a minimum length of 150'. Coils in the hose should not be less than 36" in diameter. Acceptable material feed rate is 5-35 lbs/minute. Recommended feed rate is 15-25 lbs/minute.

The stated thermal resistance (R-value) is provided by installing in accordance with the manufacturer's instructions. Failure to install the required number of bags per 1,000 square feet and exceeding the maximum square feet of coverage per bag as recommended by the label will result in lower installed R-values. Field blending of this product with other loose fill insulations is not recommended by the manufacturer.

Cavity Wall Application Bag Net Weight—Nominal 30 lbs. Minimum 29 lbs.

Spacing	Cavity Depth	R-Value to obtain a minimum resistance of	Weight	Bags per 1,000 SF The number of bags per 1,000 square feet of area should not be less than	Maximum Coverage per Bag Contents of this bag should not cover more than	The Minimum Weight per SF of material—Minimum weight per square foot of material—Minimum weight of bags used
2"x 4"	3.50"	R-13	2.2 lbs./cu. ft.	21.4 bags	46.8 sq. ft.	0.64 lbs.
2"x 6"	5.50"	R-23	2.2 lbs./cu. ft.	33.6 bags	29.8 sq. ft.	1.01 lbs.
2"x 8"	7.25"	R-31	2.2 lbs./cu. ft.	44.3 bags	22.6 sq. ft.	1.33 lbs.
2"x 10"	9.25"	R-39	2.2 lbs./cu. ft.	56.6 bags	17.7 sq. ft.	1.70 lbs.

* R means resistance to heat flow. The higher the R-value, the greater the insulating power. To get the marked R-value, it is essential that this insulation be installed properly.

Open Attic Application Bag Net Weight—Nominal 30 lbs. Minimum 29 lbs.

R-Value	Bags 1,000 SF	Maximum Coverage	Minimum Weight	Insulation Thickness	Minimum Sealing Thickness**
To obtain an insulation resistance (R-Value) of:	The number of bags/ 1,000 SF of net area should not be less than:	Contents of this bag should not cover more than:	The weight of installed insulation should not be less than:	Installed insulation should not be less than:	Contents of this bag should not cover more than:
R-60	33.2	30.1 SF	.995 lbs.	20.000"	20.000"
R-49	26.4	37.9 SF	.791 lbs.	16.625"	16.625"
R-44	23.3	43.0 SF	.698 lbs.	15.000"	15.000"
R-38	19.8	50.5 SF	.595 lbs.	13.125"	13.125"
R-30	15.3	65.5 SF	.458 lbs.	10.500"	10.500"
R-26	13.2	75.8 SF	.386 lbs.	9.250"	9.250"
R-22	11.0	91.0 SF	.330 lbs.	7.875"	7.875"
R-19	9.4	105.8 SF	.283 lbs.	6.875"	6.875"
R-13	6.3	158.5 SF	.189 lbs.	4.750"	4.750"
R-11	5.2	190.5 SF	.157 lbs.	4.000"	4.000"

Builder's Insulation Statement

EcoFill Wx has been installed in conformance with the included recommendations to provide a thermal resistance of . . .

	R-Value	at	Thickness
Attic Area	R-	at	inches
Sloped Ceilings	R-	at	inches
Walls	R-	at	inches
Floors (over an unheated crawl space)	R-	at	inches
Crawl Space Perimeter	R-	at	inches

Date Installed _____

ATTIC:

Blown insulation has been installed in conformance with the above recommendations to provide an R-value of:
R-_____ using _____ bags of this insulation to cover _____ square feet of area at a
minimum thickness of _____ inches.

WALLS:

Blown insulation has been installed in conformance with the above recommendations to provide an R-value of:
R-_____ using _____ bags of this insulation to cover _____ square feet of area at a
minimum thickness of _____ inches.

Insulation Contractor (Signature) _____

Company _____

Date _____

Home Builder (Signature) _____

Bag Net Weight—Nominal 30 lbs. Minimum 29 lbs.

Coverage and installation data were determined using a Volo-Matic® II blowing machine in third gear with 13" gate opening, 2.0 psi air pressure and 180' of 3" internally-corrugated hose.

This product conforms to the performance requirements of ASTM C 776, Type I, and cancelled Federal Specification HH-1-1030B, Type I, Class B. R-values are determined in accordance with C 687 and C 518.

* "R" means resistance to heat flow. The higher the R-value, the greater the insulating power. To get the marked R-value, it is essential that this insulation be installed properly. If you do it yourself, get instructions and follow them carefully. Instructions do not come with this package.

**Based on Third Party 2-year settling study, the predicted settlement over a 20-year period would be 1 percent or less. This amount of settling is thermally insignificant. Therefore, the installed and settled thicknesses are effectively the same.

Volo-Matic® II is a registered trademark of Unisul.

The coverage information on this
Attic/Sidewall card applies to the entire
United States (including Minnesota).



Knauf EcoFill™ Wx Insulation is certified for indoor air quality as a low emitting product by The GREENGUARD Environmental Institute™ to both the GREENGUARD Certification Program™ and the more stringent GREENGUARD for Children and Schools™ standard and is verified to be formaldehyde free.
www.greenguard.org

www.knaufinsulation.us

Knauf Insulation GmbH One Knauf Drive, Shelbyville, IN 46176 Tel: (800) 325-4434 ext. 3300 FAX: (317) 398-3675

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EW-AC-28 DS-11

CERTIFICATION IN LIEU OF OATH

I. OWNER SECTION (to be completed if the applicant is the owner in fee)

I hereby certify that I am the owner in fee of the property listed on Page 1.

Mark the following applicable boxes:

- A. ☐ I further certify that a new home (private residence) will be constructed on this property for my own use and occupancy. This dwelling is to be occupied by myself and is not to be used for any purpose other than single family residential use. I attest that all construction, plumbing, or electrical work will be done, in whole or in part, by me or by subcontractors under my supervision, in accordance with all applicable laws; and, I further acknowledge that said new home is not covered under the New Home Warranty and Builders Registration Act (N.J.S.A. 46:3B-1 et seq.) and that such fact shall be disclosed to any person purchasing this property within ten years of the date of issuance of a certificate of occupancy.

I UNDERSTAND THAT IN MARKING BOX A, I ACKNOWLEDGE THAT I AM ASSUMING RESPONSIBILITY FOR THE WORK DONE ON SAID PROPERTY, THE CONDITION OF THE PROPERTY PRIOR TO, DURING, AND AFTER ANY WORK PERFORMED, AND FOR THE PERFORMANCE OF THE SUBCONTRACTORS I HIRE, EMPLOY, OR OTHERWISE CONTRACT OR WITH WHOM I MAKE AGREEMENTS TO PERFORM WORK. I AM VOLUNTARILY AND KNOWINGLY ASSUMING THIS RESPONSIBILITY.

- B. ☐ I further certify the following as required by the New Jersey Uniform Construction Code, N.J.A.C. 5:23-2.15(f)1.ix:

I personally prepared the plans submitted for: 1) the new home referred to in A.; or, 2) an addition, alteration, renovation, or repair to an existing single family residence owned and occupied by myself and located on the property listed on Page 1; or, 3) a new structure that will be physically separate from, but that will be deemed part of, an existing single family residence that is owned and occupied by myself and located on the property listed on Page 1.

- C. ☐ I further certify that I will perform or supervise the following work:

C.1. ☐ Building C.2. ☐ Fire Protection

I further certify that I will perform the following work:

C.3. ☐ Electrical C.4. ☐ Plumbing

- D. ☐ I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals, including such certification as the construction official may require, have been given or will be given prior to permit issuance.

I understand that if any of the above statements are willfully false, I am subject to punishment.

Signature _____ Date _____

II. AGENT SECTION (to be completed if the applicant is not the owner in fee)

I hereby certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(d): the proposed work is authorized by the owner in fee; and I have been authorized by the owner in fee to make this application as his agent.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals, including such certification as the construction official may require, have been given or will be given prior to permit issuance.

I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I understand that if any of the above statements are willfully false, I am subject to punishment.

(X) Check if contractor.

Agent Name Allied Construction LLC

Address 100 Dobbs Lane

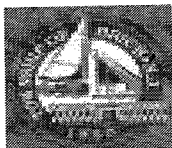
Cherry Hill, NJ 08034

Telephone (856) 528-2822

Signature _____

- III. ☐ LEAD HAZARD ABATEMENT: Include Homeowner or Building Owner Affidavit as per N.J.A.C. 5:23-2.15(b)4.

- IV. ☐ HOME ELEVATION: Include Home Elevation Contractor Certification as per N.J.S.A. 52:27D-123.16.



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723

Date Issued 6/16/2017
Control Number C-17-000769
Permit Number 17-0645
Permit Issue Date 3/3/2017
Certificate Number 17-0645

Certificate

Construction Code Division

(Certificate of Approval)

☐ **Certificate of Continued Occupancy**

This serves notice that based on a general inspection of the visible parts of the building there are no imminent hazards and the building is approved for continued occupancy.

☐ **Temporary Certificate of Compliance**

The following conditions must be met no later than or the owner will be subject to fine or order to vacate:
This certificate has an expiration date of:

Conditions to be met:

☐ Total removal of asbestos hazards in scope of work

☐ Partial or limited time period (years); see file

☐ **Certificate of Compliance**

This serves notice that said potentially hazardous equipment has been installed and/or maintained in accordance with the New Jersey Uniform Construction Code and is approved for use until

☐ **Temporary Certificate of Occupancy**

The following conditions must be met no later than:
or the owner will be subject to fine or order to vacate:
This certificate has an expiration date of:

Conditions to be met:

Construction Official

Date Printed: 6/16/2017

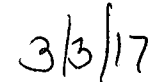
U.C.C. F260 (rev. 08/05)

Fee: \$0.00

Check Number: _____

Collected By: _____

Page 2



17-0645

Block 828 Lot 10 Qualification Code _____
Work Site Location 1635 W. Princeton Avenue, Brick, NJ 08724

Contractor License No. or Builder Registration No. _____ Exp. Date 03/31/2018
Home Improvement Contractor Registration No. or Exemption Reason 13VH062202
Federal Emp. ID No. 274623527 FAX: (856) 528-2823

D. TECHNICAL SITE DATA

Attic: Add 12 inches of blown fiberglass to 6 inches of fiberglass batt for R-Value 51

PLAN REVIEW		Date	Initial	INSPECTIONS		Dates (Month/Day)	
				Type:	Failure	Failure	Approval
☒	No Plans Required	_____	_____	Footing	_____	_____	_____
☐	All	_____	_____	Footing Bonding	_____	_____	_____
☐	Footings/Foundations	_____	_____	Foundation	_____	_____	_____
☐	Structural/Framework	_____	_____	Slab	_____	_____	_____
☐	Exterior	_____	_____	Frame	_____	_____	_____
☐	Interior	_____	_____	Truss Sys./Bracing	_____	_____	_____
Joint Plan Review Required:				Barrier-Free	_____	_____	_____
☐	Elec.	☐	Plumb.	☐	Fire	☐	Elevator
SUBCODE APPROVAL for PERMIT				Insulation	_____	_____	_____
Date: _____				Finishes -Base Layer	_____	_____	_____
Approved by: _____				Finishes -Final	_____	_____	_____
SUBCODE APPROVAL for CERTIFICATE				Energy	_____	_____	_____
☐	CO	☐	CCO	☒	CA	_____	_____
Date: <u>05/05/17</u>				Mechanical	_____	_____	_____
Approved by: <u>K2K</u>				TCO	_____	_____	_____
				Other	_____	_____	_____
				Final	_____	_____	_____
				Barrier-Free	_____	_____	_____

Use Group Present _____ Proposed _____

No. of Stories _____

Height of Structure _____ ft.

Area — Largest Floor _____ sq. ft.

New Bldg. Area/All Floors _____ sq. ft.

Volume of New Structure _____ cu. ft.

Max. Live Load _____

Max. Occupancy Load _____

Constr. Class Present _____ Proposed _____

If Industrialized Building:

State Approved _____ HUD _____

Est. Cost of Bldg. Work:

1. New Bldg. \$ _____

2. Rehabilitation \$ _____ **1,500**

3. Total (1+ 2) \$ _____ **1,500**

U.C.C. F110 (rev. 11/09)

Applicant: When submitting this form to your Local Construction Code Enforcement Office, please provide one original plus three photocopies.

☐ New Building
☐ Addition
☒ Rehabilitation
☐ Roofing
☐ Siding
☐ Fence _____ Height (exceeds 6')
☐ Sign _____ Sq. Ft.
☐ Pool
☐ Retaining Wall _____ Sq. Ft.
☐ Asbestos Abatement Subchapter 8
☐ Lead Haz. Abatement NJAC 5:17
☐ Radon Remediation
☐ Other _____
☐ Demolition

\$ _____

Administrative Surcharge	\$ _____
Minimum Fee	\$ _____
State Permit Surcharge Fee	\$ _____
TOTAL FEE	\$ _____



ELECTRICAL SUBCODE TECHNICAL SECTION



A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 828 Lot 10 Qualification Code _____
Work Site Location 1635 W. Princeton Ave, Buck NJ 08724

Owner in Fee: Michele McAllister

Tel. _____

Address 1635 W. Princeton Ave Buck NJ 08724
street municipality zip code

Contractor: J & Z Electrical Solutions, LLC Tel. (856) 528-2822

Address 100 Dobbs Lane, Suite 102 e-mail karen.h@alliedconstruct.co
Cherry Hill, NJ 08034

Contractor License No. 34EI01795800 Exp. Date 03/31/2018

Home Improvement Contractor Registration No. or Exemption Reason 13VH062202

Federal Emp. ID No. 274623527 FAX: (856) 528-2823

B. ELECTRICAL CHARACTERISTICS

Use Group Present _____ Proposed _____

[] Pole/Pad # _____ [] Temporary [] Other _____

Building Occupied as _____ Utility Co. _____

Est. Cost of Elec. Work \$ _____ 4,000

JOB SUMMARY (Office Use Only)		INSPECTIONS		Dates (Month/Day)	
PLAN REVIEW		Type:	Failure	Failure	Approval Initial
☒ No Plans Required		Rough			
☐ Partial -Underslab Utilities Approved		Barrier-Free			
Date: _____ Approved by: _____		Trench			
☐ Electric Plans Approved		Temp. Serv.			
Date: _____ Approved by: _____		Constr. Serv.			
Joint Plan Review Required:		TCO			
☐ Bldg. ☐ Plumb. ☐ Fire. ☐ Elev.		Other			
SUBCODE APPROVAL for PERMIT		Service			
Date: _____		Final			
Approved by: _____		Barrier-Free			
SUBCODE APPROVAL for CERTIFICATE		Temp. Cut-in-Card Date Issued			
☐ CO ☐ CCO ☒ CA		Final Cut-in-Card Date Issued			
Date: _____		Annual Pool Inspection			
Approved by: _____		Date of Grounding and Bonding Certification			

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application and perform the work listed on this application.

Applicant sign/Contractor sign and seal here: Stuart A Emmons

Print name here: Stuart A Emmons

☒ Licensed Elec. Contractor [] Certif'd Landscape Irrigation Contr'r [] Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK:

Replacement Boiler

QTY.	SIZE	ITEMS	FEE (Office Use Only)
1		Lighting Fixtures	
		Receptacles	
		Switches	
		Detectors	
		Light Poles	
		Motors—Fract. HP	
		Emergency & Exit Lights	
		Communications Points	
		Alarm Devices/F.A.C. Panel	
1		TOTAL NUMBERS	\$
		Pool Permit/with UW Lights	
		Storable Pool/Spa/Hot Tub	
		KW Elec. Range/Receptacle	
		KW Oven/Surface Unit	
		KW Elec. Water Heater	
		KW Elec. Dryer/Receptacle	
		KW Dishwasher	
		HP Garbage Disposal	
		KW Central A/C Unit	
		HP/KW Space Heater/Air Handler	
		KW Baseboard Heat	
		HP Motors 1/+ HP	
		KW Transformer/Generator	
		AMP Service	
		AMP Subpanels	
		AMP Motor Control Center	
		KW Elec. Sign/Outline Light	
		<u>Boiler Reconnect</u>	

Administrative Surcharge \$ _____
Minimum Fee \$ _____
State Permit Surcharge Fee \$ _____
TOTAL FEE \$ _____



CONSTRUCTION PERMIT

Date Issued 3/3/17
Control # C-17-000769
Permit # 17-0645

IDENTIFICATION Block: 828 Lot: 10 Qualifier
Work Site Location: 1635 W. PRINCETON AVE. Brick Township, NJ Contractor ALLIED CONSTRUCTION GROUP
Address 100 DOBBS LANE SUITE 102 CHERRY HILL NJ 08034
Owner in Fee MCALLISTER, MICHELE Telephone: (856) 258-6216
1635 W PRINCETON AVE BRICK NJ 08724 Lic. No. or Bldrs. Reg. No. 36B101261500 13VH06220200
Telephone: [REDACTED] Federal Employee No. 24EDN16E21000 26B1N1261500

Is hereby granted permission to perform the following work:

- ☒ BUILDING ☐ PLUMBING ☐ LEAD HAZARD ABATEMENT
☒ ELECTRICAL ☐ FIRE PROTECTION ☐ DEMOLITION
☐ ELEVATOR DEVICES ☐ ASBESTOS ABATEMENT (Subchapter 8 only) ☒ OTHER

DESCRIPTION OF WORK:

ALTERATION - RESIDENTIAL COMBO UNIT

Note: If construction does not commence within one (1) year of date of issuance, or if construction ceases for a period of six (6) months, this permit is void.

Estimated Cost of Work \$9,500

[Signature]
Construction Official

Date 2/28/17

U.C.C. F170
equiv (rev 1/04)

1 WHITE - INSPECTOR

2 CANARY - OFFICE

3 PINK - TAX ASSESSOR

03/03/17 12:14 PM 0015587755V
Credit [Signature]
Collected By [Signature]

PAYMENTS (Office Use Only)

Building \$150
Electrical \$150
Plumbing \$0
Fire Protection \$0
Elevator Devices \$0
Other \$125.00
DCA Training Fee \$19
CO Fee \$0
Other \$0
Total \$444
Check No. 2520

Cash \$0
Credit \$0
Collected By [Signature]

BUILDING \$150.00
ELECTRICAL \$150.00
MECH. \$125.00
DCA \$19.00
CHECK \$444.00

REQUIRED INSPECTIONS

Construction work must be inspected in accordance with the State Uniform Construction Code Regulations N.J.A.C. 5:23-2.18. This agency will carry out such periodic inspections during the progress of work as are necessary to insure that the work installed conforms with the requirements of the Uniform Construction Code.

The owner or other responsible person in charge of work must notify this agency when work is ready for any required inspections specified below. Requests for inspections must be made at least 24 hours prior to the time the inspection is desired. Inspections will be performed within three business days of the time for which they are requested. The work must not proceed in a manner which will preclude the inspection until it has been made and approval granted.

☒ Required inspections for all subcodes for one- and two-family dwellings are as follows:

1. The bottom of footing trenches before placement of footings, except that in cases of pile foundations, inspections shall be made in accordance with the requirements of the building subcode.
2. Foundations and all walls up to grade level prior to back filling.
3. All structural framing, connections, wall and roof sheathing and insulation; electrical rough wiring, panel and service installation; rough plumbing. The framing inspection shall take place after the rough electrical and plumbing inspections and after the installation of the heating, ventilation and /or air conditioning duct system. The insulation inspection shall be performed after all other subcode rough inspections and prior to the installation of any interior finish material.
4. Installation of all finished materials, sealings of exterior joints, plumbing piping, trim and fixtures; electrical wiring, devices and fixtures; mechanical systems equipment.

Additional required inspections for all subcodes of construction, for other than one- and two-family dwellings, are fire suppression systems, heat producing devices and Barrier Free subcode accessibility, if applicable.

☐ Required special inspections. The applicant by accepting the permit will be deemed to have consented to these requirements:

☒ A final inspection is required for each applicable subcode area before a final Certificate of Occupancy or Approval may be issued. The final inspections include the installation of all interior and exterior finish materials, sealing of exterior joints, mechanical system and other required equipment; electrical wiring, devices and fixtures; plumbing pipes, trim and fixtures; tests required by any provision of the adopted subcodes, Barrier Free accessibility, if applicable; and verification of compliance with NJAC 5:23-3.5, "Posting structures".

☐ A complete copy of released plans must be kept on the job site.

If you do not understand any of this information, please ask.

Project Report

General Project Information

Project Title: Residence Of McCalister
Designed By: Allied Energy Efficiency Experts
Project Date: Wednesday, January 4, 2017
Client Name: Michelle McCalister
Client Address: 1635 W Princeton Ave
Client City: Brick, NJ 08724
Client Phone: [REDACTED]
Company Name: Allied Energy Efficiency Experts
Company Representative: Mr. Will Doyle
Company Address: 100 Dobbs Ln
Company City: Cherry Hill, NJ 08034
Company Phone: 856-528-2822
Company Fax: 856-528-2823

Design Data

Reference City: Lakehurst, New Jersey
Building Orientation: Front door faces Southwest
Daily Temperature Range: Medium
Latitude: 40 Degrees
Elevation: 103 ft.
Altitude Factor: 0.996

	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel.Hum	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	14	12.83	80%	n/a	70	n/a
Summer:	88	74	52%	50%	75	39

Check Figures

Total Building Supply CFM:	532	CFM Per Square ft.:	0.459
Square ft. of Room Area:	1,160	Square ft. Per Ton:	1,045
Volume (ft³) of Cond. Space:	9,280		

Building Loads

Total Heating Required Including Ventilation Air:	25,578 Btuh	25.578 MBH
Total Sensible Gain:	11,666 Btuh	88 %
Total Latent Gain:	1,655 Btuh	12 %
Total Cooling Required Including Ventilation Air:	13,321 Btuh	1.11 Tons (Based On Sensible + Latent)

Notes

Rhvac is an ACCA approved Manual J and Manual D computer program.
Calculations are performed per ACCA Manual J 8th Edition, Version 2, and ACCA Manual D.
All computed results are estimates as building use and weather may vary.
Be sure to select a unit that meets both sensible and latent loads according to the manufacturer's performance data at your design conditions.

Miscellaneous Report

System 1 Main Input Data	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel. Hum	Indoor Rel. Hum	Indoor Dry Bulb	Grain Difference
Winter:	14	12.83	80%	n/a	70	n/a
Summer:	88	74	52%	50%	75	39.48

Duct Sizing Inputs

	Main Trunk	Runouts
Calculate:	Yes	Yes
Use Schedule:	Yes	Yes
Roughness Factor:	0.00300	0.01000
Pressure Drop:	0.1000 in.wg./100 ft.	0.1000 in.wg./100 ft.
Minimum Velocity:	650 ft./min	450 ft./min
Maximum Velocity:	900 ft./min	750 ft./min
Minimum Height:	0 in.	0 in.
Maximum Height:	0 in.	0 in.

Outside Air Data

	Winter	Summer
Infiltration Specified:	0.700 AC/hr 108 CFM	0.400 AC/hr 62 CFM
Infiltration Actual:	0.700 AC/hr	0.400 AC/hr
Above Grade Volume:	X 9,280 Cu.ft. 6,496 Cu.ft./hr X 0.0167	X 9,280 Cu.ft. 3,712 Cu.ft./hr X 0.0167
Total Building Infiltration:	108 CFM	62 CFM
Total Building Ventilation:	0 CFM	0 CFM

---System 1---

Infiltration & Ventilation Sensible Gain Multiplier:	14.25	= (1.10 X 0.996 X 13.00 Summer Temp. Difference)
Infiltration & Ventilation Latent Gain Multiplier:	26.74	= (0.68 X 0.996 X 39.48 Grains Difference)
Infiltration & Ventilation Sensible Loss Multiplier:	61.37	= (1.10 X 0.996 X 56.00 Winter Temp. Difference)
Winter Infiltration Specified:	0.700 AC/hr (108 CFM)	
Summer Infiltration Specified:	0.400 AC/hr (62 CFM)	

Total Building Summary Loads

Component Description	Area Quan	Sens Loss	Lat Gain	Sens Gain	Total Gain
1D-cv-o: Glazing-Double pane, operable window, clear, vinyl frame, outdoor insect screen with 50% coverage, medium color blinds at 45° with 50% coverage, u-value 0.57, SHGC 0.56	112	3,576	0	3,743	3,743
11D: Door-Wood - Solid Core	42	918	0	394	394
12B-0sw: Wall-Frame, R-11 insulation in 2 x 4 stud cavity, no board insulation, siding finish, wood studs	1094	5,942	0	2,345	2,345
16B-50: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Vented Attic, No Radiant Barrier, Dark Asphalt Shingles or Dark Metal, Tar and Gravel or Membrane, R-50 insulation	1160	1,299	0	1,114	1,114
19A-0cp: Floor-Over enclosed unconditioned crawl space, No insulation on exposed walls, sealed or vented space, passive, no floor insulation, carpet or hardwood	1160	7,199	0	1,671	1,671
Subtotals for structure:		18,934	0	9,267	9,267
People:	0		0	0	0
Equipment:			0	0	0
Lighting:	0			0	0
Ductwork:		0	0	0	0
Infiltration: Winter CFM: 108, Summer CFM: 62		6,644	1,655	881	2,536
Ventilation: Winter CFM: 0, Summer CFM: 0		0	0	0	0
AED Excursion:		0	0	1,518	1,518
Total Building Load Totals:		25,578	1,655	11,666	13,321

Check Figures

Total Building Supply CFM:	532	CFM Per Square ft.:	0.459
Square ft. of Room Area:	1,160	Square ft. Per Ton:	1,045
Volume (ft³) of Cond. Space:	9,280		

Building Loads

Total Heating Required Including Ventilation Air:	25,578 Btuh	25.578 MBH
Total Sensible Gain:	11,666 Btuh	88 %
Total Latent Gain:	1,655 Btuh	12 %
Total Cooling Required Including Ventilation Air:	13,321 Btuh	1.11 Tons (Based On Sensible + Latent)

Notes

Rhvac is an ACCA approved Manual J and Manual D computer program.
 Calculations are performed per ACCA Manual J 8th Edition, Version 2, and ACCA Manual D.
 All computed results are estimates as building use and weather may vary.
 Be sure to select a unit that meets both sensible and latent loads according to the manufacturer's performance data at your design conditions.

Detailed Room Loads - Room 1 - Whole House (Average Load Procedure)

General

Calculation Mode:	Htg. & clg.	Occurrences:	1
Room Length:	58.0 ft.	System Number:	1
Room Width:	20.0 ft.	Zone Number:	1
Area:	1,160.0 sq.ft.	Supply Air:	532 CFM
Ceiling Height:	8.0 ft.	Supply Air Changes:	3.4 AC/hr
Volume:	9,280.0 cu.ft.	Req. Vent. Clg:	0 CFM
Number of Registers:	5	Actual Winter Vent.:	0 CFM
Runout Air:	106 CFM	Percent of Supply.:	0 %
Runout Duct Size:	6 in.	Actual Summer Vent.:	0 CFM
Runout Air Velocity:	542 ft./min.	Percent of Supply:	0 %
Runout Air Velocity:	542 ft./min.	Actual Winter Infil.:	108 CFM
Actual Loss:	0.188 in.wg./100 ft.	Actual Summer Infil.:	62 CFM

Item Description	Area Quantity	U-Value	Htg HTM	Sen Loss	Clg HTM	Lat Gain	Sum
SW-Wall-12B-0sw 58 X 8	362	0.097	5.4	1,966	2.1	0	776
SE-Wall-12B-0sw 20 X 8	127	0.097	5.4	690	2.1	0	272
NE-Wall-12B-0sw 58 X 8	445	0.097	5.4	2,417	2.1	0	954
NW-Wall-12B-0sw 20 X 8	160	0.097	5.4	869	2.1	0	343
SW-Door-11D 3 X 7	21	0.390	21.8	459	9.4	0	197
SE-Door-11D 3 X 7	21	0.390	21.8	459	9.4	0	197
SW-Gls-1D-cv-o shgc-0.56 0%S (3)	45	0.570	31.9	1,437	34.5	0	1,554
SW-Gls-1D-cv-o shgc-0.56 0%S (3)	36	0.570	31.9	1,149	34.6	0	1,245
SE-Gls-1D-cv-o shgc-0.56 0%S	12	0.570	31.9	383	34.6	0	415
NE-Gls-1D-cv-o shgc-0.56 0%S	1	0.570	31.9	32	28.0	0	28
NE-Gls-1D-cv-o shgc-0.56 0%S	6	0.570	31.9	192	27.8	0	167
NE-Gls-1D-cv-o shgc-0.56 0%S	12	0.570	31.9	383	27.8	0	334
UP-Ceil-16B-50 58 X 20	1160	0.020	1.1	1,299	1.0	0	1,114
Floor-19A-0cp 20 X 58	1160	0.295	6.2	7,199	1.4	0	1,671
Subtotals for Structure:				18,934		0	9,267
Infil.: Win.: 108.3, Sum.: 61.9	1,248		5.324	6,644	0.706	1,655	881
AED Excursion:							1,518
Room Totals:				25,578		1,655	11,666



CHIMNEY VERIFICATION FOR REPLACEMENT OF FUEL-FIRED EQUIPMENT

BLOCK 828 LOT 10 QUALIFICATION CODE _____ PERMIT # _____

WORK SITE ADDRESS 1635 W. Princeton Avenue, Brick, NJ 08724

Owner in Fee Michele McAllister

Verifying Individual Karen Heinze

Company Allied Construction LLC

Address 100 Dobbs Lane, Suite 102

Cherry Hill

NJ

08034

Street

City

State

Zip Code

Tel: (856) 856

Fax: (856) 528-2822

Check the Appropriate Box(es):

Type of Replacement:

- ☐ Oil to Gas Conversion
☐ Gas to Oil Conversion
☒ Gas Appliance Replacement
☐ Oil to Oil Replacement
☐ Other _____

Existing Vent/Chimney:

- ☐ "B" Label Vent
☐ "L" Label Vent
☐ Flexible Liner
☒ Power Vent/Exhauster

Size No Longer in Use

- ☐ Chimney-Interior
☐ Chimney-Exterior
☐ Masonry Chimney-Tile Lined
☐ Masonry Chimney-Unlined
☐ Other _____

Type

Appliance 1: Boiler

Fuel Type

Oil / Gas / Other: _____

BTU Rating (input/output)
80,000

Appliance 2: _____ Oil / Gas / Other: _____

Appliance 3: _____ Oil / Gas / Other: _____

CHIMNEY LINER

If a chimney liner is being installed, all documentation on the liner must accompany the Permit application.

Manufacturer: _____ Model: _____ UL Listing: _____

Material of Liner: Stainless Steel _____ Aluminum _____

Size of Appliance Vent: _____ Size of Liner: _____ Height of Chimney: _____

Length of Connector: _____ Vent Connector Rise: _____

How does the appliance vent? ☐ Natural Draft ☐ Fan-assisted ☐ Other: _____

PLEASE SIGN ONE OF THE FOLLOWING VERIFICATION STATEMENTS

For Oil or Coal to Gas Conversions:

I have verified that the chimney/vent is in good repair and clear of obstruction and is substantially clean of residue from its previous use serving an oil or coal appliance. I have verified that the chimney/vent is appropriately lined and sized for the appliance(s) being installed.

Signature _____

Date _____

Oil to Oil or Gas to Gas Replacements or New/Additional Appliances:

I have verified that the existing chimney/vent is in good repair and clear of obstruction. I have verified that the existing chimney/vent is appropriately lined and sized for the appliance(s) being installed and/or remaining.

Signature _____

Date _____

Direct Vent Appliance:

I hereby verify that the appliance(s) being installed is a direct vent appliance. I further verify that the existing chimney/vent is appropriately lined and sized for any remaining appliances.

Signature _____

Date 1/19/17

Verification Not Submitted:

I choose not to submit verification. I understand that I will be required to be present for the inspection to remove and reinstall the chimney vent connector.

Signature _____

Date _____

FOR MINOR AND EMERGENCY WORK, THIS FORM MUST BE PROVIDED WITH YOUR PERMIT APPLICATION. FOR ALL OTHER WORK, THIS FORM MUST BE PRESENTED TO THE CODE OFFICIAL PRIOR TO FINAL INSPECTION.

All applicable information requested on this form must be supplied.

This form may not be submitted by a homeowner in lieu of the required inspection.

Allison Peltier

To: karen.h@alliedconstruct.com
Subject: 1635 W. PRINCETON AVENUE
Attachments: HVAC - RESIDENTIAL.docx; HVAC - DIRECT REPLACEMENT.docx; HVAC - COMMERCIAL.docx; WATER HEATER CHECKLIST -RESIDENTIAL.docx; mechanical sub-code form.pdf

Good Afternoon,

We are in receipt of a permit application that was mailed into the office for the above mentioned property. The type work to be done is replace boiler, indirect water heater and blown fiberglass in the attic.

As of the 1st of the year, we are now using the mechanical sub-code form. Also we revised our checklists for water heater, residential and commercial hvac. Attached, you will find all the updated forms just mentioned plus the mechanical sub-code form.

Please complete new forms and mail into the office. Once received, the permit process will begin at that time.

Thank you and
Good day.

Allison
Brick building dept.
01-25-2017



FIRE PROTECTION SUBCODE TECHNICAL SECTION



Date Received
Control #

Date Issued
Permit #

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 828 Lot 10 Qualification Code _____
Work Site Location 1635 W. Princeton Avenue, Brick, NJ 08724

Owner in Fee: Michele McAllister

Tel. _____ e-mail _____
Address 1635 W. Princeton Avenue Brick, NJ 08724

Contractor: Allied Construction LLC ^{street} Brick, NJ ^{zip code} 08724
Address 100 Dobbs Lane, Suite 102 ^{city} Cherry Hill, NJ ^{zip code} 08034
e-mail karen.h@alliedconstruct.co

Fire Protection Equipment, NJ Div of Fire Safety Permit No. _____
Fire Protection Equipment, NJ Div of Fire Safety Installer No. _____
Fire Alarm Contractor No. _____ Exp. Date 03/31/2016
Home Improvement Contractor Registration No. or Exemption Reason 13VH062202
Federal Emp. ID No. 274623527 FAX: (856) 528-2823

B. FIRE PROTECTION CHARACTERISTICS

Use Group: Present _____ Proposed _____

Constr. Class: Present _____ Proposed _____

Heating System: [] New OR [] Modification to Existing
OR [] Conversion OR [X] Replacement

Fuel Type: [X] Gas [] Oil [] Electric [] Solar
[] Other _____

Location: _____
Total Cost of Fire Protection Work \$ 1,000

Fuel Storage Tank:

Fuel Type: [] Flammable OR [] Combustible
Capacity _____

Fire Alarm System: [] New OR [] Existing

Location of Panel: _____
Fire Suppression/Standpipe System:

[] New OR [] Existing
Location of Main Control Valve: _____

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Applicant/Contractor
sign here: _____

Print name here: Karen Heinze

D. TECHNICAL SITE DATA

[X] Certified Contractor [] Exempt Applicant

DESCRIPTION OF WORK:

Water Supply Source Repl Boiler

Method of Alarm/Suppression System Supervision _____

	NUMBER	FEE (Office Use Only)
Flammable/Combustible Tanks	_____	\$ _____
Alarm Systems	_____	_____
[] System	_____	_____
[] 110v Interconnected	_____	_____
[] CO Detectors/110v	_____	_____
Alarm Devices (i.e., smoke, heat, pulls, water/flow)	_____	_____
Supervisory Devices (i.e., tampers, low/high air)	_____	_____
Signaling Devices (i.e., horn/strobes, bells)	_____	_____
Other Devices	_____	_____
TOTAL	<u>1</u>	_____
Suppression Systems	_____	_____
Fire Pump _____ GPM Type _____	_____	_____
Dry Pipe/Alarm Valves	_____	_____
Pre-action Valves	_____	_____
Sprinkler Heads (Dry and Wet)	_____	_____
Standpipes	_____	_____
Pre-engineered Systems	_____	_____
Wet Chemical	_____	_____
Dry Chemical	_____	_____
CO ₂ Suppression	_____	_____
Foam Suppression	_____	_____
FM200 Suppression	_____	_____
Other _____	_____	_____
Other Systems	_____	_____
Kitchen Hood Exhaust System	_____	_____
Smoke Control System	_____	_____
Fuel-Fired Appliances [X] Gas [] Oil [] Solid	_____	_____
Fireplace Venting/Metal Chimney	_____	_____
Other _____	_____	_____

JOB SUMMARY (Office Use Only)

PLAN REVIEW

[] No Plans Required
[] Partial - Underslab Utilities Approved

Date: _____ Approved by: _____

[] Fire Protection Plans Approved

Date: _____ Approved by: _____

Joint Plan Review Required:

[] Bldg. [] Elec. [] Plumb. [] Elev.

SUBCODE APPROVAL for PERMIT

Date: _____

Approved by: _____

SUBCODE APPROVAL for CERTIFICATE

[] CO [] CCO [] CA

Date: _____

Approved by: _____

INSPECTIONS

Type: _____ Failure _____ Approval _____ Initial _____

Alarm System _____

Suppression Sys. _____

Standpipe _____

Fire Pump _____

Pre-Eng. System _____

Mechanical _____

Smoke Control _____

TCO _____

Flam/Combust Tanks _____

Fireplace Venting _____

Final _____

Other _____

Administrative Surcharge \$ _____
Minimum Fee \$ _____
State Permit Surcharge Fee \$ _____
TOTAL FEE \$ _____



PLUMBING SUBCODE TECHNICAL SECTION



Date Received
Control #

Date Issued
Permit #

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 828 Lot 10 Qualification Code _____
Work Site Location 1635 W. Princeton Avenue, Brick, NJ 08724

Owner in Fee: Michele McAllister

Tel. _____ e-mail _____

Address 1635 W. Princeton Avenue Brick, NJ 08724

Contractor: Michael Wilson T/A Allied Construction LLC Tel. (856) 528-2822

Address 100 Dobbs Lane, Suite 102 e-mail karen.h@alliedconstruct.co
Cherry Hill, NJ 08034

Contractor License No. 36BI01261500 Exp. Date 03/31/2018

Home Improvement Contractor Registration No. or Exemption Reason 13VH062202

Federal Emp. ID No. 274623527 FAX: (856) 528-2823

B. PLUMBING CHARACTERISTICS

Use Group Present _____ Proposed _____

Building Sewer Size _____ Public Sewer _____ Private Septic _____

Water Service Size _____ Public Water _____ Private Well _____

Est. Cost of Plumbing Work \$ 4,000

JOB SUMMARY (Office Use Only)	
PLAN REVIEW	
☐ No Plans Required	
☐ Partial -Underslab Utilities Approved	
Date: _____ Approved by: _____	
☐ Plumbing Plans Approved	
Date: _____ Approved by: _____	
Joint Plan Review Required:	
☐ Bldg. ☐ Elec. ☐ Fire. ☐ Elev.	
SUBCODE APPROVAL for PERMIT	
Date: _____	
Approved by: _____	
SUBCODE APPROVAL for CERTIFICATE	
☐ CO ☐ CCO ☐ CA	
Date: _____	
Approved by: _____	
INSPECTIONS	
Type:	Dates (Month/Day)
Slab	Failure Failure Approval Initial
Rough	
Water	
Sewer	
Fixtures	
Gas Equipment	
Gas Piping	
LPGas Tank	
Fuel Oil Piping	
Solar	
TCO	
Final	

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application and perform the work listed on this application.

Applicant sign/Contractor
sign and seal here:

Print name here: Michael Wilson

☒ Licensed Plumbing Contractor ☐ Exempt Applicant

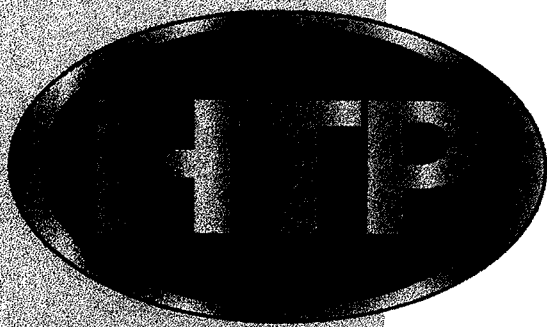
D. TECHNICAL SITE DATA

DESCRIPTION OF WORK

Replacement of Boiler and indirect HW

QTY.	FIXTURE/EQUIPMENT	FEE (Office Use Only)
	Water Closet	\$
	Urinal/Bidet	
	Bath Tub	
	Lavatory	
	Shower	
	Floor Drain	
	Sink	
	Dishwasher	
	Drinking Fountain	
	Washing Machine	
	Hose Bibb	
<u>1</u>	Water Heater	
	Fuel Oil Piping	
	Gas Piping	
	LPGas Tank	
<u>1</u>	Steam Boiler	
	Hot Water Boiler	
	Sewer Pump	
	Interceptor/Separator	
	Backflow Preventer	
	Greasetrap	
	Sewer Connection	
	Water Service Connection	
	Stacks	
	Other	

Administrative Surcharge \$ _____
Minimum Fee \$ _____
State Permit Surcharge Fee \$ _____
TOTAL FEE \$ _____



Superstor Ultra Indirect Fired Water Heaters

Installation

Start-Up

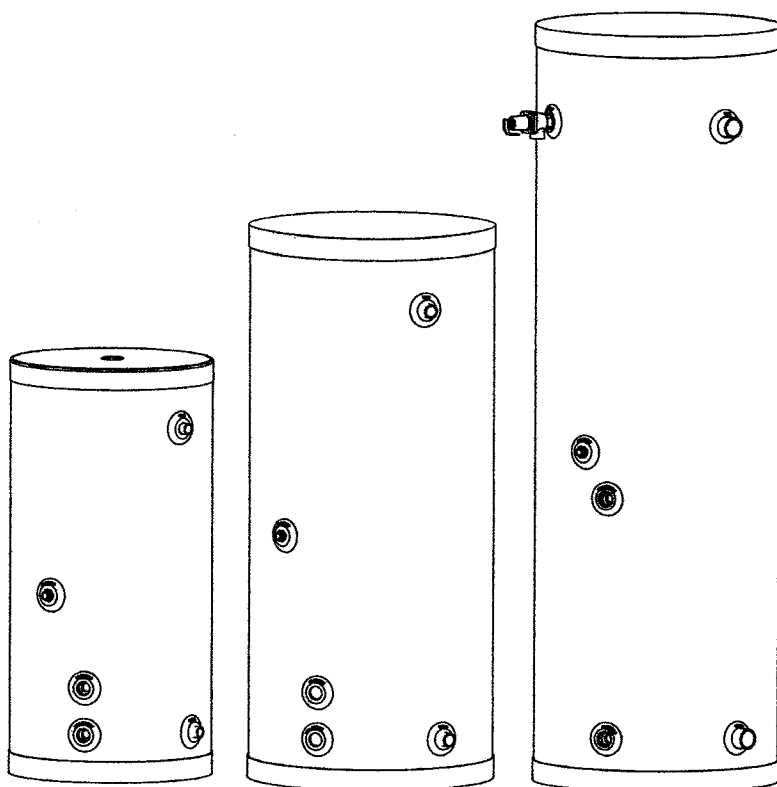
Maintenance

Parts

Warranty

*For Residential and
Commercial Use*

SSU Models



The surfaces of these products contacted by potable (consumable) water contain less than 0.25% lead by weight as required by the Safe Drinking Water Act, Section 1417.

This manual must only be used by a qualified installer / service technician. Read all instructions in this manual before installing. Perform steps in the given order. Failure to do so could result in substantial property damage, severe personal injury, or death.

NOTICE

HTP reserves the right to make product changes or updates without notice and will not be held liable for typographical errors in literature.

NOTE TO CONSUMER: PLEASE KEEP ALL INSTRUCTIONS FOR FUTURE REFERENCE.

SPECIAL ATTENTION BOXES

The following defined terms are used throughout this manual to bring attention to the presence of hazards of various risk levels or to important product information.



DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in serious personal injury or death.

WARNING indicates a potentially hazardous situation which, if not avoided, could result in personal injury or death.

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor personal injury.

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTICE

NOTICE is used to address practices not related to personal injury.

Foreword

This manual is intended to be used in conjunction with other literature provided with the SuperStor Indirect Fired Water Heater. This includes all related control information. It is important that this manual, all other documents included in this system, and additional publications including the *Code for the Installation of Heat Producing Appliances* (latest version), be reviewed in their entirety before beginning any work.

Installation should be made in accordance with the regulations of the Authority Having Jurisdiction, local code authorities, and utility companies which pertain to this type of water heating equipment.

Authority Having Jurisdiction (AHJ) – The Authority Having Jurisdiction may be a federal, state, local government, or individual such as a fire chief, fire marshal, chief of a fire prevention bureau, labor department or health department, building official or electrical inspector, or others having statutory authority. In some circumstances, the property owner or his/her agent assumes the role, and at government installations, the commanding officer or departmental official may be the AHJ.

NOTE: HTP, Inc. reserves the right to modify product technical specifications and components without prior notice.

For the Installer

This water heater must be installed by qualified and licensed personnel. The installer should be guided by the instructions furnished with the water heater, and by local codes and utility company requirements.

Installations Must Comply With:

Local, state, provincial, and national codes, laws, regulations, and ordinances.

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Part 1 - General Safety Information

This water heater is approved for indoor installation only and is not intended for use as a pool heater. Clearance to combustible materials: 0" top, bottom, sides, and back. Heater must have room for service: 24" front, 6" top, and 0" sides are recommended service clearances. (A combustible door or removable panel is acceptable front clearance.) This water heater has been approved for closet installation and installation on combustible flooring. Do not install directly on carpeting. Install the water heater in a location where temperature and pressure relief valve discharge or a leak will not result in damage to the surrounding area. If such a location is not available, install an auxiliary catch pan.

Installer - Read all instructions in this manual before installing. Perform steps in the given order.

User - This manual is for use only by a qualified heating installer / service technician. Have this water heater serviced / inspected annually by a qualified service technician.

FAILURE TO ADHERE TO THE GUIDELINES ON THIS PAGE CAN RESULT IN SUBSTANTIAL PROPERTY DAMAGE, SEVERE PERSONAL INJURY, OR DEATH.

NOTE: Obey all local codes. Obtain all applicable permits before installing the water heater.

NOTE: Install all system components and piping in such a manner that does not reduce the performance of any fire rated assembly.

NOTE: If the heater is exposed to the following, do not operate until all corrective steps have been made by a qualified serviceman:

1. Fire
2. Damage
3. Water

Failure to follow this information could result in property damage, severe personal injury, or death.

High heat sources (sources generating heat 100°F / 37°C or greater, such as stove pipes, space heaters, etc.) may damage plastic components of the water heater as well as plastic vent pipe materials. Such damages ARE NOT covered by warranty. It is recommended to keep a minimum clearance of 8" from high heat sources. Observe heat source manufacturer instructions, as well as local, state, provincial, and national codes, laws, regulations and ordinances when installing this water heater and related components near high heat sources.

Do not use this water heater for anything other than its intended purpose (as described in this manual). Doing so could result in property damage and WILL VOID product warranty.

UNCRATING THE WATER HEATER - Any claims for damage or shortage in shipment must be filed immediately against the transportation company by the consignee.

A. When Servicing the Water Heating System

To avoid electric shock, disconnect electrical supply before performing maintenance.

To avoid severe burns, allow water heater and associated equipment to cool before servicing.

B. Heater Water

Do not use petroleum-based cleaning or sealing compounds in a water heating system. Gaskets and seals in the system may be damaged. This can result in substantial property damage. Do not use "homemade cures" or "patent medicines". Damage to the water heater, substantial property damage, and/or serious personal injury may result.

NOTICE FOR SINGLE-WALL HEAT EXCHANGER MODELS Per the Uniform Plumbing Code:

Single-wall heat exchangers are permitted if they satisfy all of the following requirements:

The heat exchanger medium is potable water or contains only substances which are recognized as safe by the US Food and Drug Administration (FDA).

The pressure of the heat exchanger medium is maintained less than the normal minimum operating pressure of the potable water system (steam systems must comply with this statement).

The equipment is permanently labeled to indicate that only additives recognized as safe by the FDA shall be used as the heat transfer medium.

Other heat exchanger designs may be permitted where approved by the AHJ.

C. Freeze Protection

NOTE: Consider piping and installation when determining heater location. Place the water heater as close to the boiler as possible, in a location not prone to freezing.

Failure of the water heater due to freeze related damage IS NOT covered by product warranty.

In water heaters with single wall heat exchangers, the heat transfer fluid must be water or nontoxic food grade glycol, FDA rated "generally recognized as safe" (GRAS) and having a toxicity rating or class of 1, as listed in Clinical Toxicology of Commercial Products, 5th edition. Ensure the system is permanently labeled to indicate any additives used in the heat transfer fluid.

NEVER use any toxic chemical, including automotive, standard glycol antifreeze, or ethylene glycol made for hydronic (non-potable) systems. These chemicals can attack gaskets and seals in water systems, are poisonous if consumed, and can cause personal injury or death.

D. Water Temperature Adjustment

If the water heater is going to have a set temperature above 120°F, you must use an ASSE 1017 rated mixing valve to avoid severe burns or death from scalding temperatures.

Households with small children, disabled, or elderly persons may require a 120°F or lower temperature setting to prevent severe personal injury or death due to scalding.

Approximate Time / Temperature Relationships in Scalds

120°F	More than 5 minutes
125°F	1 1/2 to 2 minutes
130°F	About 30 seconds
135°F	About 10 seconds
140°F	Less than 5 seconds
145°F	Less than 3 seconds
150°F	About 1 1/2 seconds
155°F	About 1 second

Table 1 - Approximate Time / Temperature Relationships in Scalds

Part 2 - Prepare the Water Heater

Remove all sides of the shipping crate to allow the heater to be moved into its installation location.

COLD WEATHER HANDLING - If the water heater has been stored in a very cold location (BELOW 0°F) before installation, handle with care until the components come to room temperature. Failure to do so could result in damage to the water heater.

A. Locating the Water Heater

High heat sources (generating heat 100°F / 37°C or greater, such as stove pipes, space heaters, etc.) may damage plastic components of the water heater as well as plastic vent pipe materials. Such damages ARE NOT covered by warranty. It is recommended to keep a minimum clearance of 8" from high heat sources. Observe heat source manufacturer instructions, as well as local, state, provincial, and national codes, laws, regulations, and ordinances when installing this water heater and related components near high heat sources.

Locate the water heater where any leakage from the relief valve, related piping, tank, or connections will not result in damage to surrounding areas or lower floors of the building. The water heater should be located near a floor drain or installed in a drain pan. HTP WILL NOT be held liable for leakage damages.

This water heater must be installed upright in the vertical position as described in this manual. DO NOT attempt to install this water heater in any other orientation. Doing so will result in improper water heater operation and property damage, and could result in serious personal injury or death.

This water heater is certified for indoor use only. DO NOT INSTALL OUTDOORS. Outdoor installations ARE NOT covered by warranty.

Choose a location for the water heater as centralized to the piping system as possible. Also, locate the water heater and domestic water piping where it will not be exposed to freezing temperatures. All piping should be insulated. Additionally, place the water heater so that the drain, controls, and inlets/outlets are easily accessible.

NOTE: To save on heating costs and improve energy efficiency keep the distance between the boiler and water heater to a minimum to reduce heat loss from excess piping and keep friction loss at a minimum. Ensure all piping between the boiler and water heater is properly insulated to minimize heat loss.

The water heater may be located some distance from the boiler provided the circulator meets flow requirements through the coil. The greater the distance from the water heater to the boiler the longer the response will be to a call for hot water.

This water heater must be installed vertical on a level surface.

NOTE: In the State of California, the water heater must be braced, anchored, or strapped to avoid moving during an earthquake. Contact local utilities for code requirements in your area. Visit <http://www.dsa.dgs.ca.gov> or call 1-916-445-8100 and request instructions.

However, applicable local codes shall govern installation. For residential water heaters of a capacity greater than 52 gallons, consult the local building jurisdiction for acceptable bracing procedures.

NOTE: If you do not provide the minimum clearances shown in Figure 1, it might not be possible to service the water heater without removing it from the space.

NOTE: A combustible door or removable panel is acceptable front clearance.

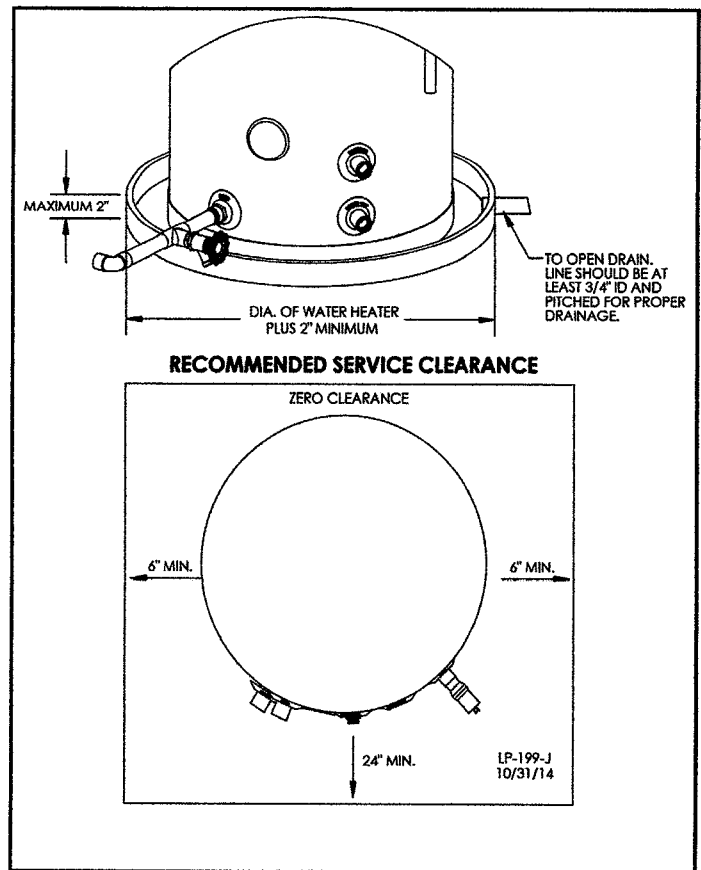
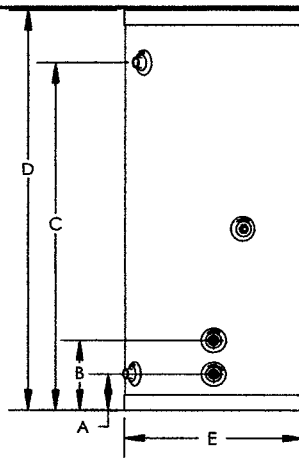


Figure 1 - Recommended Service Clearances

**DANGER**

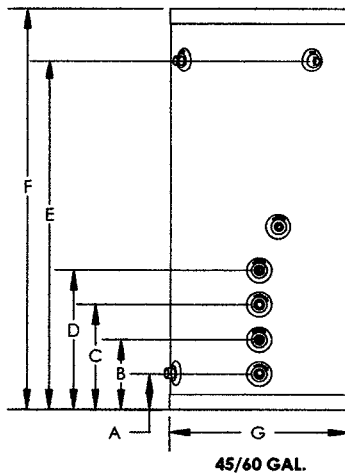
This water heater must not be located near flammable liquids such as gasoline, butane, liquefied propane, adhesives, solvents, paint thinners, etc., as the controls of this water heater could ignite these vapors and cause an explosion resulting in property damage, severe personal injury, or death.

Ensure the location can support the entire filled weight of the water heater. Failure to properly support the water heater could result in property damage, severe personal injury, or death.



SUPERSTOR ULTRA

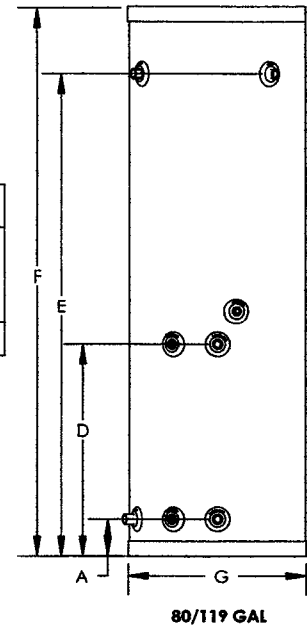
MODEL	A	B	C	D	E	CAPACITY U.S. GAL.	DOMESTIC CONNECTION	SHIPPING WEIGHT
SSU-20			22"	27"	19-1/4"	20 GAL.	3/4" NPTM	51 LBS
SSU-30			34"	39-1/2"				62 LBS
SSU-30LB	5-1/4"	9-3/4"	22"	28-1/2"	23-1/4"	30 GAL.		71 LBS
SSU-45			46"	52-1/2"	19-1/4"	45 GAL.	1" NPTM	72 LBS
SSU-60					23-1/4"	60 GAL.		109 LBS
SSU-80	6"	29"	64-3/4"	72"		80 GAL.		143 LBS
SSU-119	7-1/4"	30-1/4"	66"	74"	27"	119 GAL.	1-1/2" NPTM	212 LBS



SUPERSTOR ULTRA COMMERCIAL

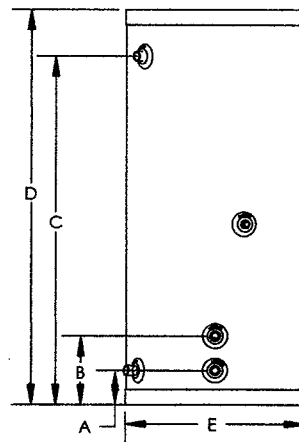
MODEL	A	B	C	D	E	F	G
SSU-45C	5-1/4"	9-3/4"	14"	18.75"	35"	42"	
SSU-60C					46"	52-1/2"	23-1/4"
SSU-80C	6"	N/A	N/A	29"	64-3/4"	72"	
SSU-119C	7-1/4"	N/A	N/A	30-1/4"	66"	74"	27"

MODEL	CAPACITY U.S. GAL.	DOMESTIC CONNECTION	SHIPPING WEIGHT
SSU-45C	45 GAL.	3/4" NPTM	106 LBS
SSU-60C	60 GAL.	1" NPTM	126 LBS
SSU-80C	80 GAL.	1-1/2" NPTM	175 LBS
SSU-119C	119 GAL.		242 LBS



45/60 GAL.

80/119 GAL



SUPERSTOR ULTRA DOUBLE WALL

MODEL	A	B	C	D	E	CAPACITY U.S. GAL.	DOMESTIC CONNECTION	SHIPPING WEIGHT
SSU-45DW	5-1/4"	9-3/4"	46"	52-1/2"	19-1/4"	45	3/4" NPTM	81 LBS.
SSU-60DW						60	1" NPTM	112 LBS.
SSU-80DW	6"	21"	64-3/4"	72"	23-1/4"	80	1-1/2" NPTM	139 LBS.
SSU-119DW	7-1/4"	22-1/2"	66"	74"	27"	119		210 LBS.

LP-83-88
04/17/12

Figure 2 - Dimensions

SUPERSTOR ULTRA											
MODEL	HEAT EXCHANGER SURFACE/VOLUME	PRESSURE DROP (FT.)	TEST PRESSURE	WORKING PRESSURE	180° BOILER WATER FIRST HOUR RATINGS (GAL) *		200° BOILER WATER FIRST HOUR RATINGS (GAL) *		180° F BOILER BTU/SIZE	200° F BOILER BTU/SIZE	RECOMMENDED FLOW RATE
					140° F	115° F	140° F	115° F			
SSU-20	15 SQ. FT./1.5 GAL.	6.0	300 PSI	150 PSI	121	168	136	185	84,000	87,000	8
SSU-30					154	212	172	234	102,000	117,000	
SSU-30LB					169	234	189	257	114,000	131,000	
SSU-45	20 SQ. FT./2.0 GAL.	7.9			212	292	237	322	141,000	161,000	10
SSU-60					266	370	298	405	174,000	198,000	
SSU-80	34 SQ. FT./3.0 GAL.	9.1			330	440	370	503	212,000	241,000	12
SSU-119		11.3			423	564	474	645	269,000	301,000	14
SUPERSTOR ULTRA COMMERCIAL											
MODEL	HEAT EXCHANGER SURFACE/VOLUME	PRESSURE DROP (FT.)	TEST PRESSURE	WORKING PRESSURE	180° BOILER WATER FIRST HOUR RATINGS (GAL) *		200° BOILER WATER FIRST HOUR RATINGS (GAL) *		180° F BOILER BTU/SIZE	200° F BOILER BTU/SIZE	RECOMMENDED FLOW RATE
					140° F	115° F	140° F	115° F			
SSU-45C	40 SQ. FT./4.0 GAL.	6.8	300 PSI	150 PSI	314	414	351	477	215,000	246,000	20
SSU-60C		9.2			354	467	396	539	245,000	270,000	22
SSU-80C	68 SQ. FT./6.0 GAL.	10.0			490	647	548	745	331,000	374,000	24
SSU-119C		12.7			637	841	713	970	425,000	490,000	28
SUPERSTOR ULTRA DOUBLEWALL											
MODEL	HEAT EXCHANGER SURFACE/VOLUME	RECOMMENDED FLOW RATE (GPM)	PRESSURE DROP (FT.)	TEST PRESSURE	180° BOILER WATER FIRST HOUR RATINGS (GAL) *		200° BOILER WATER FIRST HOUR RATINGS (GAL) *		180° F BOILER BTU/SIZE		
					140° F	115° F	140° F	115° F			
SSU-45DW	15 SQ.FT/1.5 GAL	6	8.2	300 PSI	40	63	70	108	107,000		
SSU-60DW		7	12.8		50	76	90	144	176,000		
SSU-80DW		10	13.6		72	113	138	215	208,000		
SSU-119DW		12	15.9		110	171	210	326	231,000		

*DOE TEST METHOD BASED ON 90° F TEMPERATURE RISE, 50° /140° W/BOILER WATER AT 180° F

NOTE: TANK RECOVERY FROM COLD START WILL BE BETWEEN 10-13 MINUTES WHEN SIZED WITH CORRECT FLOW RATE, BOILER SIZE AND PRESSURE DROP RATINGS FROM LIST IN ABOVE CHART.

LP-83-BB
04/17/12

Figure 3 - Specifications

Continuous Flow Performance Calculation

First Hour Rating - (.75 X Tank Capacity) = Continuous Flow

Example: SSU-45C = 314 - (.75 X 45) = 280.25

B. Performance and Sizing Guidelines

NOTE: The table below describes the minimum BTU/H required to achieve the listed first hour rating.

MODEL	GROSS BOILER OUTPUT	140°F 90°F ΔT	127°F 77°F ΔT	115°F 65°F ΔT
SSU-20	84,000	121	140	168
SSU-30	102,000	154	180	212
SSU-30LB	113,000	169	198	234
SSU-45	141,000	212	248	292
SSU-45C	215,000	314	367	414
SSU-60	174,000	266	311	370
SSU-60C	245,000	354	414	467
SSU-80	212,000	330	386	440
SSU-80C	331,000	490	573	647
SSU-119	269,999	423	495	564
SSU-119C	425,000	637	745	841

Table 2 - Water Heater Performance and Sizing Guidelines

C. Reduced Boiler Input Sizing Guide

NOTE: IT IS NOT RECOMMENDED TO REDUCE BOILER INPUT WHEN USING DOUBLE WALL TANKS.

MODEL		GROSS OUTPUT (x 1,000 BTU/HR)													
		40	60	84	100	120	140	160	180	200	220	240	260	280	300
SSU-20	A	73	112	168											
	B	53	81	121											
SSU-30	A	83	125	160	212										
	B	60	90	115	154										
SSU-30LB	A	84	128	166	234										
	B	60	92	120	169										
SSU-45	A	94	138	180	210	266	292								
	B	68	99	130	152	193	212								
SSU-60	A				221	244	251	309	370						
	B				160	176	181	206	266						
SSU-80	A				297	305	314	367	424	489	503				
	B				216	223	230	269	311	359	370				
SSU-119	A						333	384	444	457	470	543	627	645	
	B						216	251	290	335	345	399	460	474	

Table 3 - Describes Cold Start First Hour Ratings (A and B) and Boiler Size

PRODUCT LINE CONSISTS OF VARIOUS MODELS AVAILABLE IN DIFFERENT SIZES

CALL THE FACTORY FOR PRODUCT AND WARRANTY INFORMATION

"DW" (Double Wall Commercial Heat Exchanger) Models are available in 45, 60, 80, and 119 US Gallon Sizes.

"C" (Commercial) Models with Two Heat Exchangers for dual systems and commercial applications. Use one coil for a wood boiler, the other for a solar system, etc. Models available in 45, 60, 80, and 119 US Gallon Sizes.

DETERMINE THE AMOUNT OF DOMESTIC HOT WATER NEEDED. THEN USE THE TABLE BELOW TO OPTIMIZE WATER HEATER AND BOILER SIZING.

NOTE: FIRST DRAW AT 140°F AT 90°F Δ T. (FOR PERFORMANCE AT 115°F, MULTIPLY BY 1.56 FOR MINUTES OF WATER DRAW.)

LINE A GALLONS: LOW MASS BOILERS THAT TAKE LESS THAN 90 SECONDS TO HEAT TO TEMPERATURE.

LINE B GALLONS: HIGH MASS BOILERS THAT TAKE GREATER THAN 90 SECONDS TO HEAT TO TEMPERATURE.

MODEL		2 GPM	2.5 GPM	3 GPM	3.5 GPM	4 GPM	4.5 GPM	5 GPM
SSU-20	A	9.5	8	7	5.5	4.5	4	3.5
	B	8.5	7.5	6.5	5	4	3.5	3
SSU-30	A	16	13	10	7.5	6	5.5	5
	B	14	12	9	7	5.5	5	4.5
SSU-30LB	A	18	14	12	9	6.5	6	5.5
	B	17	12	10	8	6	5.5	5
SSU-45	A	23	18	14	11	8.5	7.5	7
	B	18	15	13	10	7.5	7.5	6.5
SSU-45C	A	∞	∞	∞	29	20	17	14
	B	45	24	26	18	16	13	10
SSU-60	A	∞	∞	∞	∞	36	30	22
	B					29	19	12
SSU-60C	A	∞	∞	∞	∞	∞	46	29
	B						30	21
SSU-80	A	B	∞	∞	∞	∞	∞	∞
SSU-80C	A	B	∞	∞	∞	∞	∞	∞
SSU-119	A	B	∞	∞	∞	∞	∞	∞
SSU-119C	A	B	∞	∞	∞	∞	∞	∞

Table 4 - NOTE: THIS INFORMATION IS BASED ON BOILER SIZE CONFORMING TO THE MINIMUM BTU/H REQUIRED TO ACHIEVE FIRST HOUR RATINGS, OBTAINABLE FROM FIRST HOUR RATING TABLE. ∞ - Indicates continuous duty.

D. Water Chemistry Requirements

Chemical imbalance of the water supply may affect efficiency and cause severe damage to the water heater and associated equipment. HTP recommends having water quality professionally analyzed to determine whether it is necessary to install a water softener. It is important that the water chemistry on both the domestic hot water and central heating sides are checked before installing the water heater, as water quality will affect the reliability of the system. In addition, operating temperatures above 135°F will further accelerate the build-up of lime scale and may shorten the service life of the water heater. Failure of a water heater due to lime scale build-up, low pH, or other chemical imbalance IS NOT covered by the warranty.

Outlined below are water quality parameters that need to be met in order for the system to operate efficiently for many years.

Water Hardness

Water hardness is mainly due to the presence of calcium and magnesium salts dissolved in water. The concentration of these salts is expressed in mg/L, ppm, or grains per gallon as a measure of relative water hardness. Grains per gallon is the common reference used in the US water heater industry. Hardness expressed as mg/L or ppm may be divided by 17.1 to convert to grains per gallon. Water may be classified as very soft, slightly hard, moderately hard, or hard based on its hardness number. The minerals in the water precipitate out as the water is heated and cause accelerated lime scale accumulation on a heat transfer surface. This lime scale build-up may result in premature failure of the water heater. Operating temperatures above 135°F will further accelerate the build-up of lime scale and may shorten the service life of the water heater.

Water that is classified as hard and very hard must be softened to avoid water heater failure.

CLASSIFICATION	MG/L OR PPM	GRAINS/GAL
Soft	0 - 17.1	0 - 1
Slightly Hard	17.1 - 60	1 - 3.5
Moderately Hard	60 - 120	3.5 - 7
Hard	120 - 180	7 - 10.5
Very Hard	180 and over	10.5 and over

If the hardness of the water exceeds the maximum level of 7 grains per gallon, the water should be softened to a hardness level no lower than 5 grains per gallon. Water softened as low as 0 to 1 grain per gallon may be under-saturated with respect to calcium carbonate, resulting in water that is aggressive and corrosive.

pH of Water

pH is a measure of relative acidity, neutrality, or alkalinity. Dissolved minerals and gases affect water pH. The pH scale ranges from 0 to 14. Water with a pH of 7 is considered neutral. Water with pH lower than 7 is considered acidic. Water with a pH higher than 7 is considered alkaline. A neutral pH (around 7) is desirable for most potable water applications. **Corrosion damage and tank failures resulting from water pH levels of lower than 6 or higher than 8 ARE NOT covered by warranty.** The ideal pH range for water used in a water heater is 7.2 to 7.8.

Total Dissolved Solids

Total Dissolved Solids (TDS) is a measurement of all minerals and solids dissolved in a water sample. The concentration of TDS is usually expressed in parts per million (ppm).

Water with a high TDS concentration will greatly accelerate lime and scale formation in the hot water system. Most high TDS concentration precipitate out of the water when heated. This can generate a scale accumulation that will greatly reduce the service life of the water heater.

The manufacturer of the water heater has no control over water quality, especially TDS levels in your system. TDS in excess of 2000 ppm will accelerate lime and scale formation on the element or the heat exchanger. Water heater failure due to TDS in excess of 2000 ppm IS NOT covered by warranty. **Failure of a water heater due to lime scale build-up IS NOT covered by warranty.**

Hardness: Less than 7 grains

Chloride levels: Less than 100 ppm

pH levels: 6 - 8

TDS: Less than 2000 ppm

Sodium: Less than 20 mG/L

Part 3 - Piping

A. Plumbing

It is mandatory that all plumbing be done in accordance with federal, local, and state plumbing codes and practices. Failure to properly install the water heater WILL VOID the warranty. It is also necessary to use both thread tape and pipe dope on all mechanical plumbing connections.

When filling the water heater, open a hot water tap to release air in the tank and piping. Failure to do so could lead to improper water heater operation and damage to components.

B. Boiler Connections

Use two wrenches when tightening water piping at the heater. Use one wrench to prevent the heater return or supply line from turning. Failure to prevent piping connections from turning could cause damage to water heater components.

Use a 1" nominal minimum pipe size when piping with zone valves or circulators.

On the water heater, the boiler supply connects to the outlet of the circulator. The circulator inlet is to be connected to the hot outlet side of the boiler. Be sure that the arrow on the circulator is facing the correct flow direction. (See pressure drop sizing for circulator, this manual.) On the tank, the boiler return connects to the return side of the boiler. The return(s) from heating loop(s) should have a flow check or swing check valve installed before the return pipe from the tank.

In a steam boiler, the tank supply must be connected to the boiler well below the minimum water level. A strainer and drain valve should be installed at the boiler for periodic draining of scale and sludge. Banging and steam bound traps will occur if the boiler water supplied to the heat exchanger has steam or is slightly above the low water cut-off.

NOTE: It is possible to use live steam in the heat exchanger of the SSU-80 and 119 residential and commercial models **ONLY**. Using any other SSU model in live steam applications will result in product failure and void the warranty.

C. Domestic Piping Inlet

Never use dielectric fittings or galvanized steel fittings on any domestic water connections. Use only copper or brass fittings. Failure to do so will result in premature water heater failure. Such failure IS NOT covered by warranty.

Use both thread tape and pipe dope to connect an NPT brass tee. On the run, install a brass drain valve. In the branch, install an NPT male X 3/4" (minimum) pipe adapter. A shut-off valve between the city water supply and tank inlet is recommended for ease of service.

It may be recommended to use a back flow preventer - check local codes. If a back flow preventer or a no return valve is used, a thermal expansion tank must be installed on the cold water supply between the tank and valve. If the tank is replacing a tankless coil in the boiler, disconnect coil plumbing and use the cold inlet pipe and hot water outlet pipes for the water heater.

D. Temperature and Pressure Relief Valve

On SSU-80 and SSU-119 residential models, as well as all commercial models, a 3/4" temperature and pressure (T&P) port and relief valve are provided. On all other models, an appropriate T&P valve must be supplied and installed as detailed in the piping diagrams in this installation manual.

Use both thread tape and pipe dope to install an NPT brass T&P relief valve for hot water storage tanks, as required by local codes but not less than valves certified as meeting the requirements for relief valves for hot water heaters (ANSI Z21.22 / CSA 4.4) by a nationally recognized lab that maintains periodic inspection of production listed equipment. Make sure the relief valve is sized to the BTU/Hour capacity of the water heater. The T&P valve must be plumbed down so discharge can exit at least 6" above the structural floor. The relief line cannot be in contact with any live electrical parts. If the relief valve constantly weeps install an expansion tank. See expansion tank manufacturer's instructions for suggestions.

To avoid water damage or scalding due to relief valve operation:

- Discharge line must be connected to relief valve outlet and run to a safe place of disposal. Terminate the discharge line in a manner that will prevent possibility of severe burns or property damage should the relief valve discharge.
- Discharge line must be as short as possible and the same size as the valve discharge connection throughout its entire length.
- Discharge line must pitch downward from the valve and terminate at least 6" above the floor drain, making discharge clearly visible.
- The discharge line shall terminate plain, not threaded,

with a material serviceable for temperatures of 375°F or greater.

- Do not pipe discharge to any location where freezing could occur.
- No valve may be installed between the relief valve and heater or in the discharge line. Do not plug or place any obstruction in the discharge line.
- Test the operation of the relief valve after filling and pressurizing the system by lifting the lever. Make sure the valve discharges freely. If the valve fails to operate correctly, immediately replace with a new properly rated relief valve.
- Test T&P valve at least once annually to ensure the waterway is clear. If valve does not operate, turn the heater "off" and call a plumber immediately.
- Take care whenever operating relief valve to avoid scalding injury or property damage.

FAILURE TO COMPLY WITH THE ABOVE GUIDELINES COULD RESULT IN FAILURE OF RELIEF VALVE OPERATION, RESULTING IN POSSIBILITY OF SUBSTANTIAL PROPERTY DAMAGE, SEVERE PERSONAL INJURY OR DEATH.

Do not thread a cap or plug into the relief valve or relief valve line under any circumstances! Explosion and property damage, serious injury, or death may result.

RE-INSPECTION OF T&P RELIEF VALVES: T&P valves should be inspected AT LEAST ONCE EVERY THREE YEARS, and replaced if necessary, by a licensed plumbing contractor or qualified service technician to ensure that the product has not been affected by corrosive water conditions and to ensure that the valve and discharged line have not been altered or tampered with illegally. Certain naturally occurring conditions may corrode the valve and its components over time, rendering the valve inoperative. Such conditions can only be detected if the valve and its components are physically removed and inspected. Do not attempt to conduct an inspection on your own. Contact your plumbing contractor for a re-inspection to assure continued safety.

FAILURE TO RE-INSPECT THE T&P VALVE AS DIRECTED COULD RESULT IN UNSAFE TEMPERATURE AND/OR PRESSURE BUILD-UP WHICH CAN RESULT IN PROPERTY DAMAGE, SERIOUS PERSONAL INJURY, OR DEATH.

E. Scalding

An ASSE 1017 or ASSE 1070 temperature limiting or mixing valve is recommended in installations servicing disabled or elderly persons, or children. Mixing valves do not eliminate the risk of scalding.

To avoid scalding:

- Set the water heater set point temperature as low as possible.
- Feel water before bathing or showering.
- If thermostatic valves are required, use devices specifically designed for such purpose. Install these devices in accordance with instructions provided by the manufacturer.

Failure to install a temperature limiting or mixing valve and follow these instructions could result in property damage, severe personal injury, or death due to scalds.

This water heater can deliver scalding water. Be careful whenever using hot water to avoid scalding injury. Certain appliances such as dishwashers and automatic clothes washers may require increased water temperatures. By setting the thermostat on this heater to obtain the increased water temperature required by these appliances you may create the potential for scald injury.

To protect against injury, install a mixing valve in the water system. This valve will reduce point of use discharge temperatures by mixing cold and hot water in branch supply lines. Such valves are available from your local plumbing supplier.

The following table details the relationship of water temperature and time with regard to scald injury and may be used as a guide in determining the safest water temperature for your applications.

Approximate Time / Temperature Relationships in Scalds	
120°F	More than 5 minutes
125°F	1 1/2 to 2 minutes
130°F	About 30 seconds
135°F	About 10 seconds
140°F	Less than 5 seconds
145°F	Less than 3 seconds
150°F	About 1 1/2 seconds
155°F	About 1 second

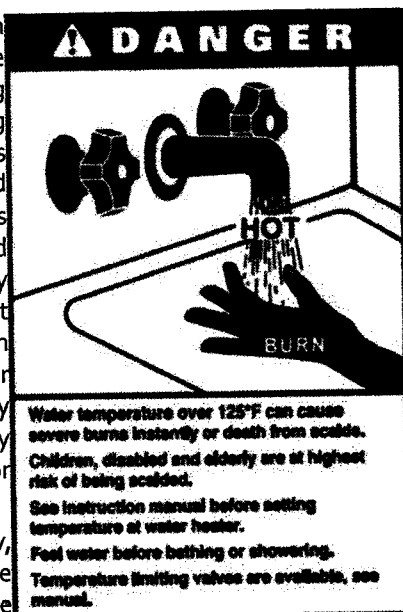
Table 5 - Approximate Time / Temperature Relationships in Scalds

F. Potable Expansion Tank

A potable hot water expansion tank may be required to offset heated water expansion. If there is a back flow preventer or any other type of no return or check valve in the system a thermal expansion tank IS MANDATORY. The expansion tank must be sized for the entire water volume of the hot water system. A weeping relief valve indicates the need for an expansion tank. See the Typical Expansion Tank example in the Piping section for details.

G. Pressure Drop Sizing For Circulator

The boiler circulator flow rate must meet the requirements found in the water heater specifications, Part 2, this manual, or the published ratings cannot be achieved. The following flow chart below represents the pipe run, water heater, and heat exchanger ONLY and does not include any flow checks, zone valves, or friction loss through the boiler. That resistance must be added to the value found in the following chart.



Pressure Drop for Pipe Length of 1" Copper, Six 90° Elbows, and One Tee					
Pipe Size	20'	30'	40'	50'	60'
6 GPM	8.63	8.93	9.23	9.53	9.8
7 GPM	11.3	11.77	12.24	12.7	13.1
10 GPM	10.25	11.1	11.95	12.8	13.66
12 GPM	11.3	13.2	14.1	15	16
14 GPM	15.3	16.4	17.5	18.6	19.8

Pressure Drop for Pipe Length of 1 1/4" Copper, Six 90° Elbows, and One Tee					
Pipe Size	20'	30'	40'	50'	60'
20 GPM	10.9	11.7	12.6	13.4	14.3
22 GPM	14	15	16	17	18
24 GPM	16.2	17.5	18.8	20.1	21.5
28 GPM	20.4	22	23.6	25.2	26.8

Table 6 - Pressure Drop through 1" and 1 1/4" Copper

H. Applications

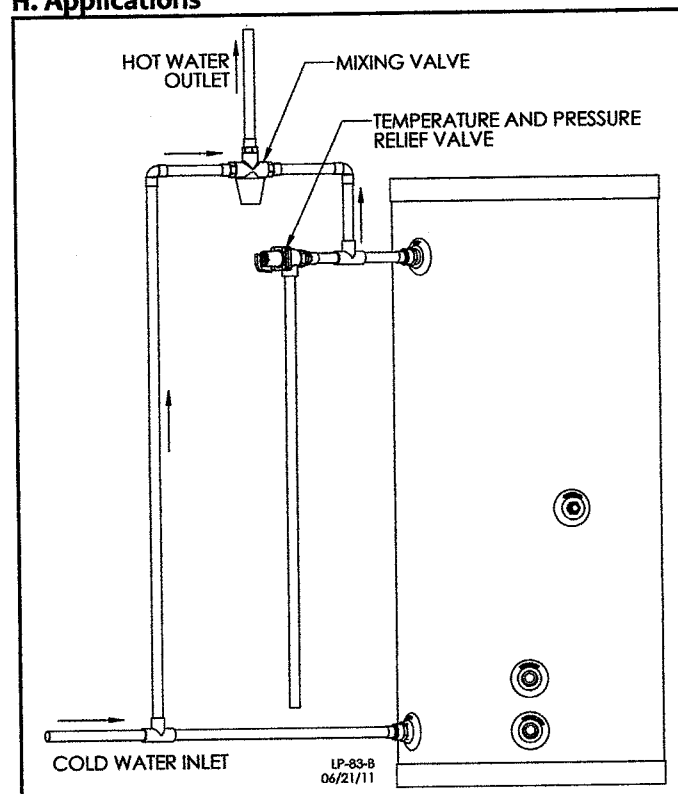


Figure 4 - Mixing Valve Installation

NOTES:

1. Minimum pipe size should match connection size. Upsize pipe accordingly if greater flow is required.
2. A thermal expansion tank suitable for potable water must be sized and installed within this piping system between the backflow preventer and the cold water inlet.
3. All circulators should have an integral flow check.
4. Drains and check valve between unit and storage tank will assist in purging air from system.
5. This drawing is meant to demonstrate system piping only. The installer is responsible for all equipment and detailing required by local codes. In Massachusetts, you must install a vacuum relief valve per 248 CMR.
6. Mixing valve application is optional, but recommended to help prevent scalding. See Part 3, Section E for more information.

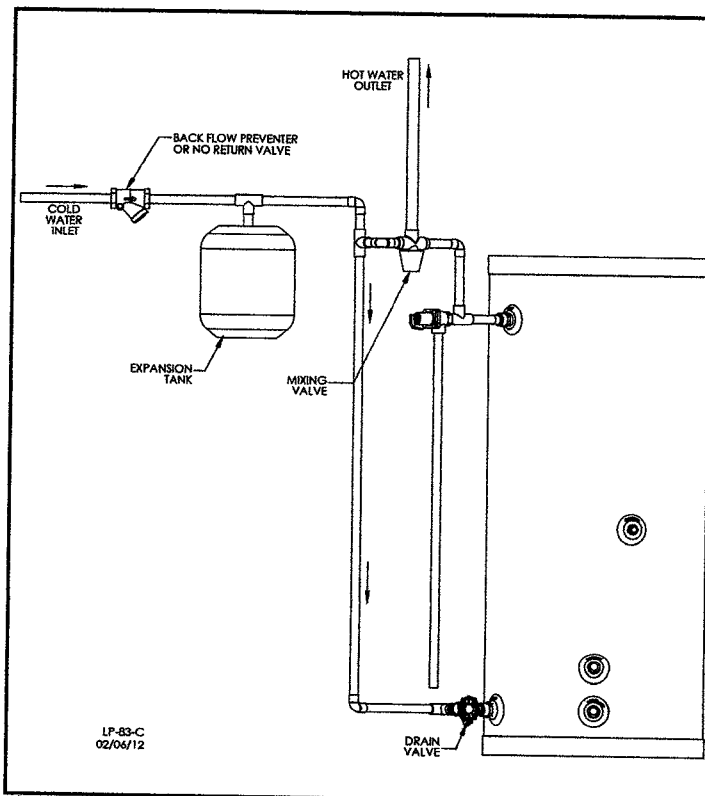


Figure 5 - Expansion Tank Application

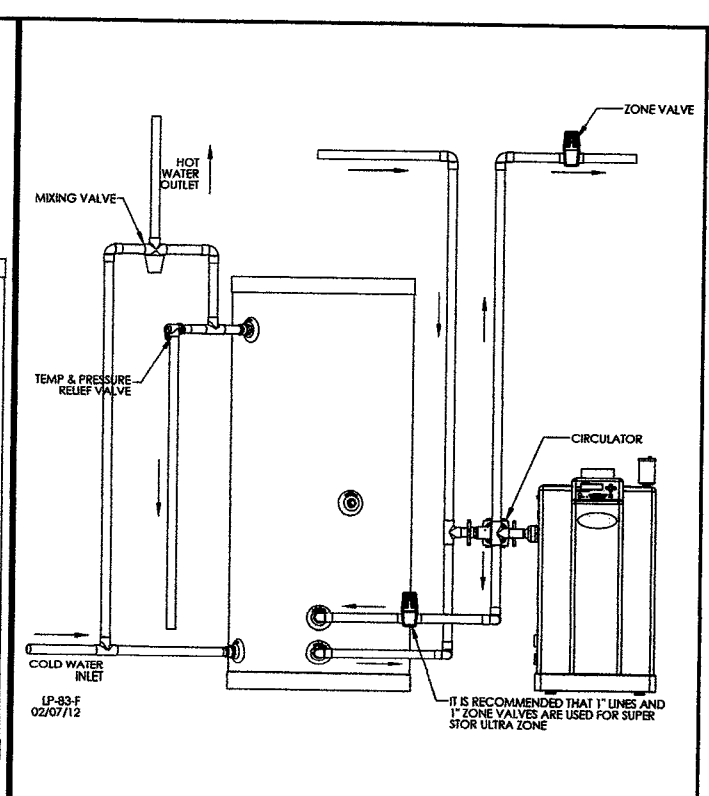


Figure 6 - Installation with High Efficiency Boiler

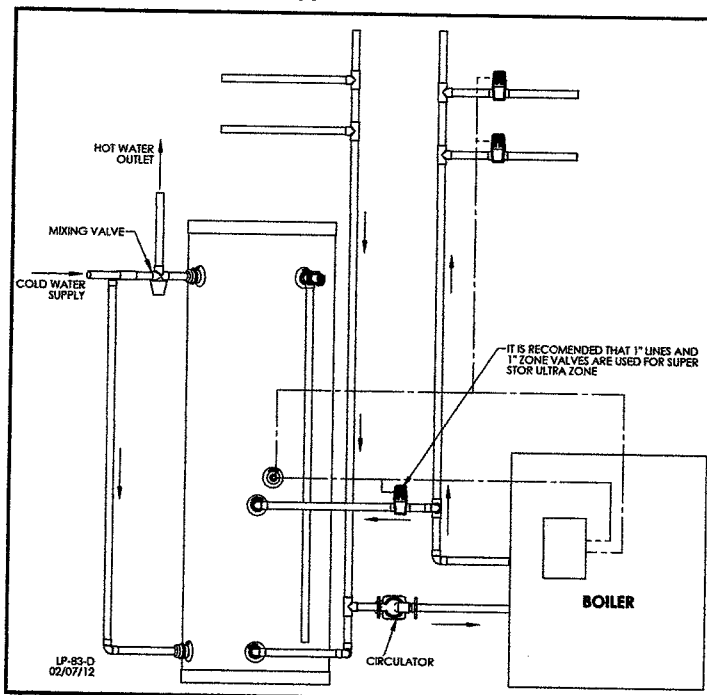


Figure 7 - Zoning with Zone Valves

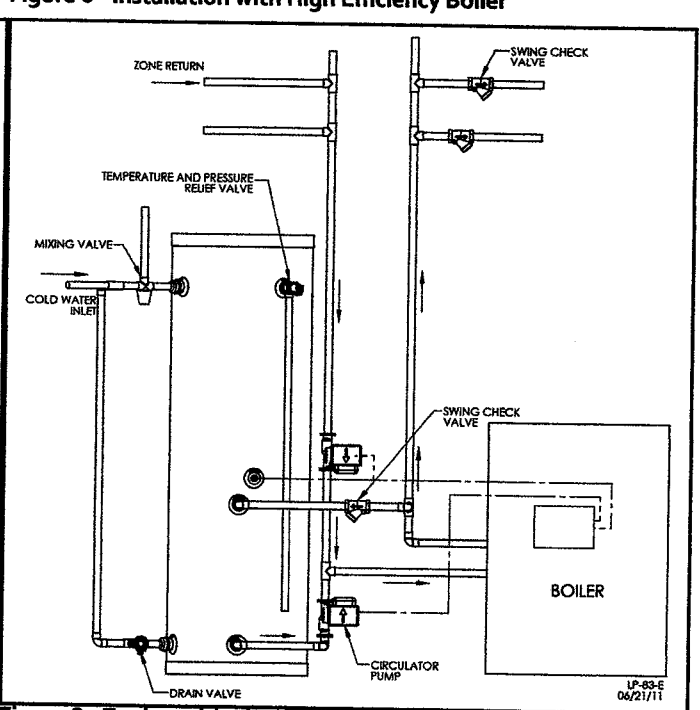


Figure 8 - Zoning with Circulators

NOTES:

1. Minimum pipe size should match connection size. Upsize pipe accordingly if greater flow is required.
2. A thermal expansion tank suitable for potable water must be sized and installed within this piping system between the backflow preventer and the cold water inlet.
3. All circulators should have an integral flow check.
4. Drains and check valve between unit and storage tank will assist in purging air from system.
5. This drawing is meant to demonstrate system piping only. The installer is responsible for all equipment and detailing required by local codes. In Massachusetts, you must install a vacuum relief valve per 248 CMR.
6. Mixing valve application is optional, but recommended to help prevent scalding. See Part 3, Section E for more information.

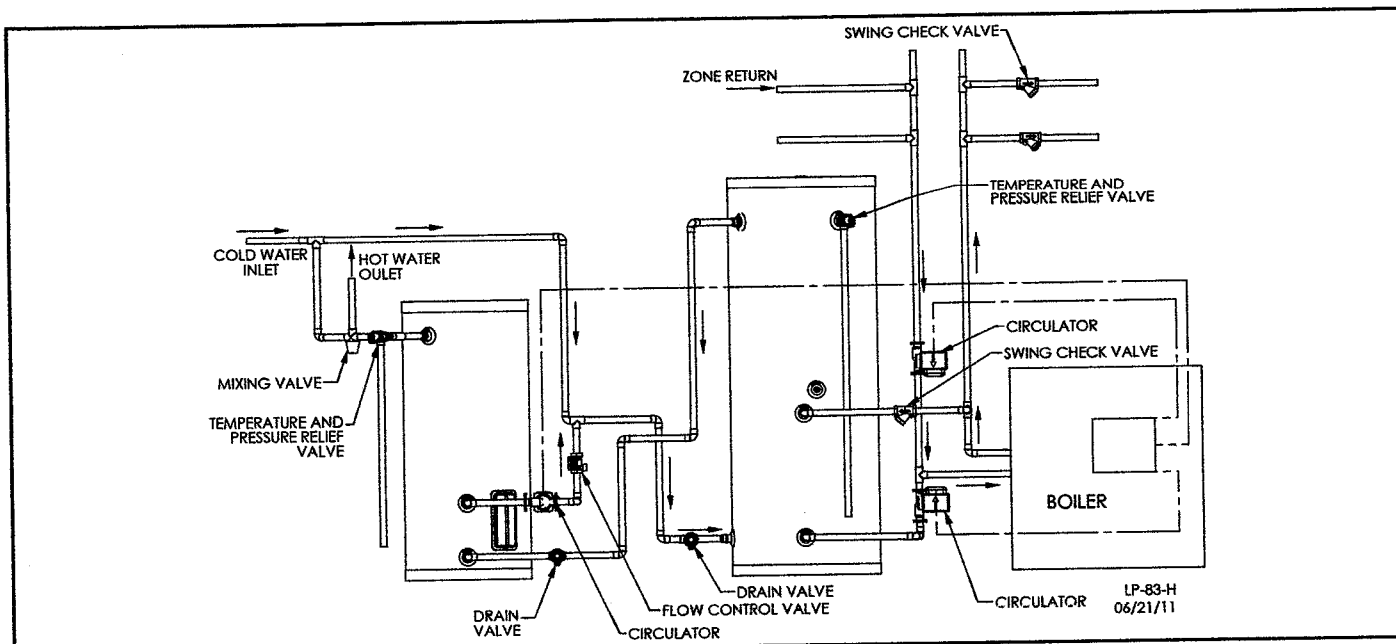


Figure 9 - Installation with Storage Tank

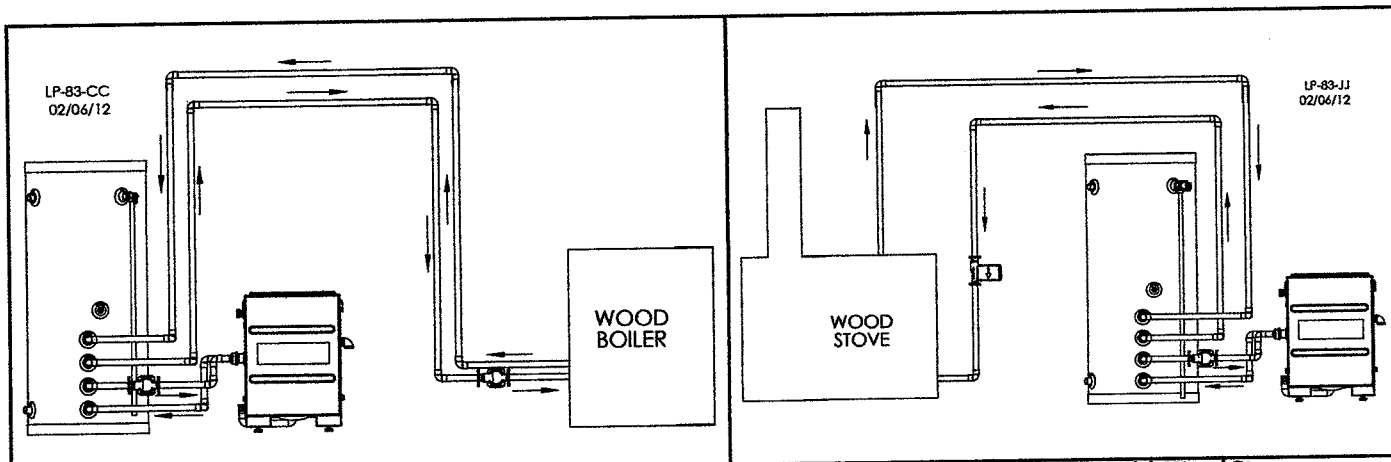


Figure 10 - Dual Purpose Application with Wood Boiler

Figure 11 - Dual Purpose Application with Wood Stove

NOTES:

1. Minimum pipe size should match connection size. Upsize pipe accordingly if greater flow is required.
2. A thermal expansion tank suitable for potable water must be sized and installed within this piping system between the backflow preventer and the cold water inlet.
3. All circulators should have an integral flow check.
4. Drains and check valve between unit and storage tank will assist in purging air from system.
5. This drawing is meant to demonstrate system piping only. The installer is responsible for all equipment and detailing required by local codes. In Massachusetts, you must install a vacuum relief valve per 248 CMR.
6. Mixing valve application is optional, but recommended to help prevent scalding. See Part 3, Section E for more information.

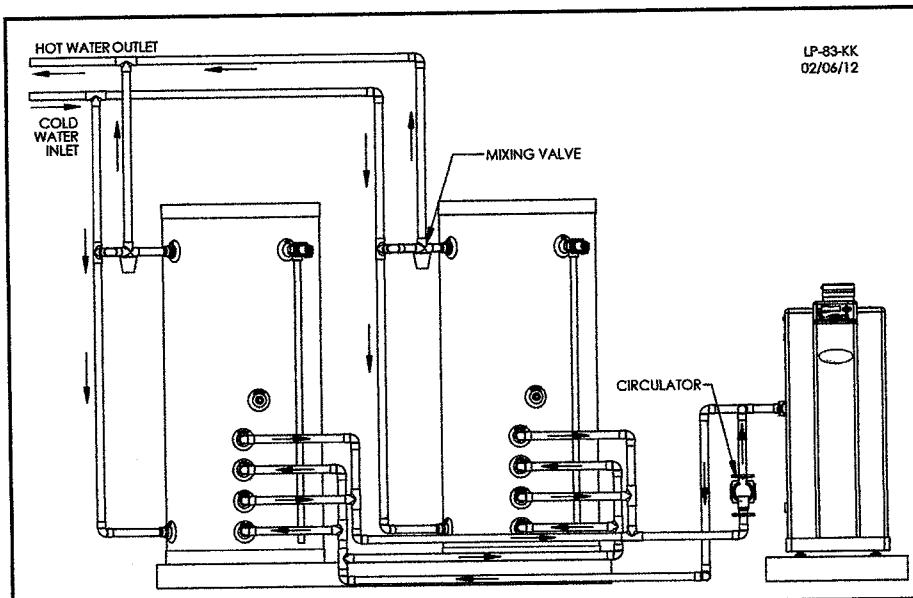
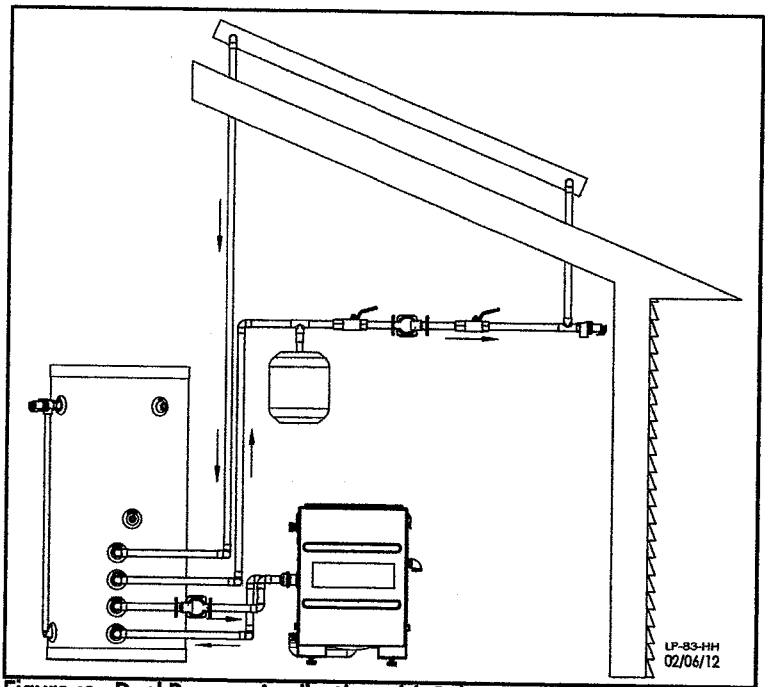
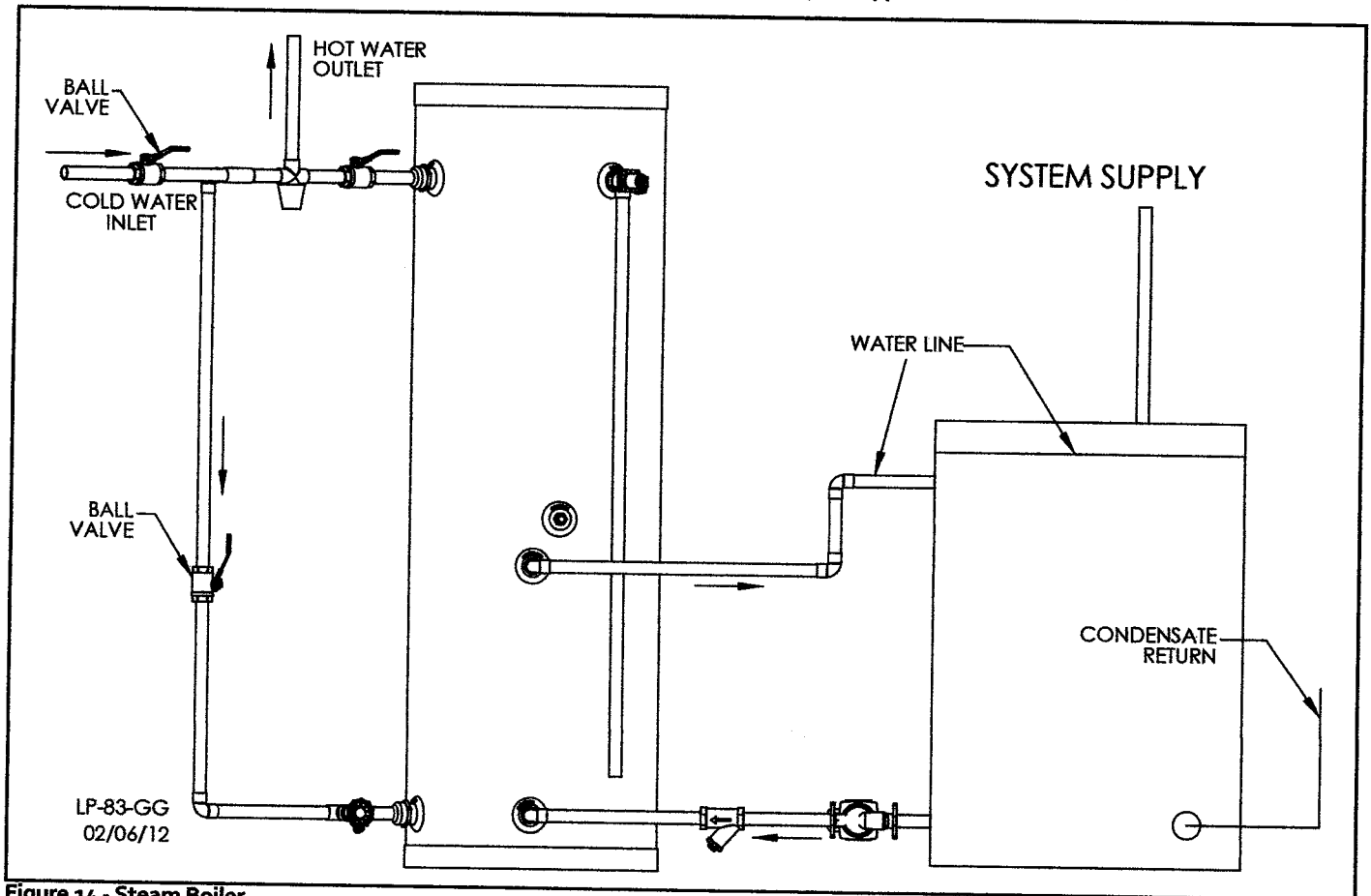


Figure 12 - Dual Purpose Application with Two Water Heaters

NOTES:

1. Minimum pipe size should match connection size. Upsize pipe accordingly if greater flow is required.
2. A thermal expansion tank suitable for potable water must be sized and installed within this piping system between the backflow preventer and the cold water inlet.
3. All circulators should have an integral flow check.
4. Drains and check valve between unit and storage tank will assist in purging air from system.
5. This drawing is meant to demonstrate system piping only. The installer is responsible for all equipment and detailing required by local codes. In Massachusetts, you must install a vacuum relief valve per 248 CMR.
6. Mixing valve application is optional, but recommended to help prevent scalding. See Part 3, Section E for more information.
7. On multiple source applications, use a Honeywell L4081-A-1148, which has two (2) limit settings. This allows the wood stove or solar panel to operate on the tank high setting and the tank low limit setting for conventional boiler back-up.

**Figure 13 - Dual Purpose Application with Solar Panel****Figure 14 - Steam Boiler**

NOTE: On Steam Boiler Applications, the indirect heat exchanger supply and return connections must be below the water line from the boiler connection. The internal flow check or spring check must be used to avoid thermal siphoning from the connected boiler. A basket strainer should also be used to avoid sludge and sediment getting into the pump or heat exchanger.

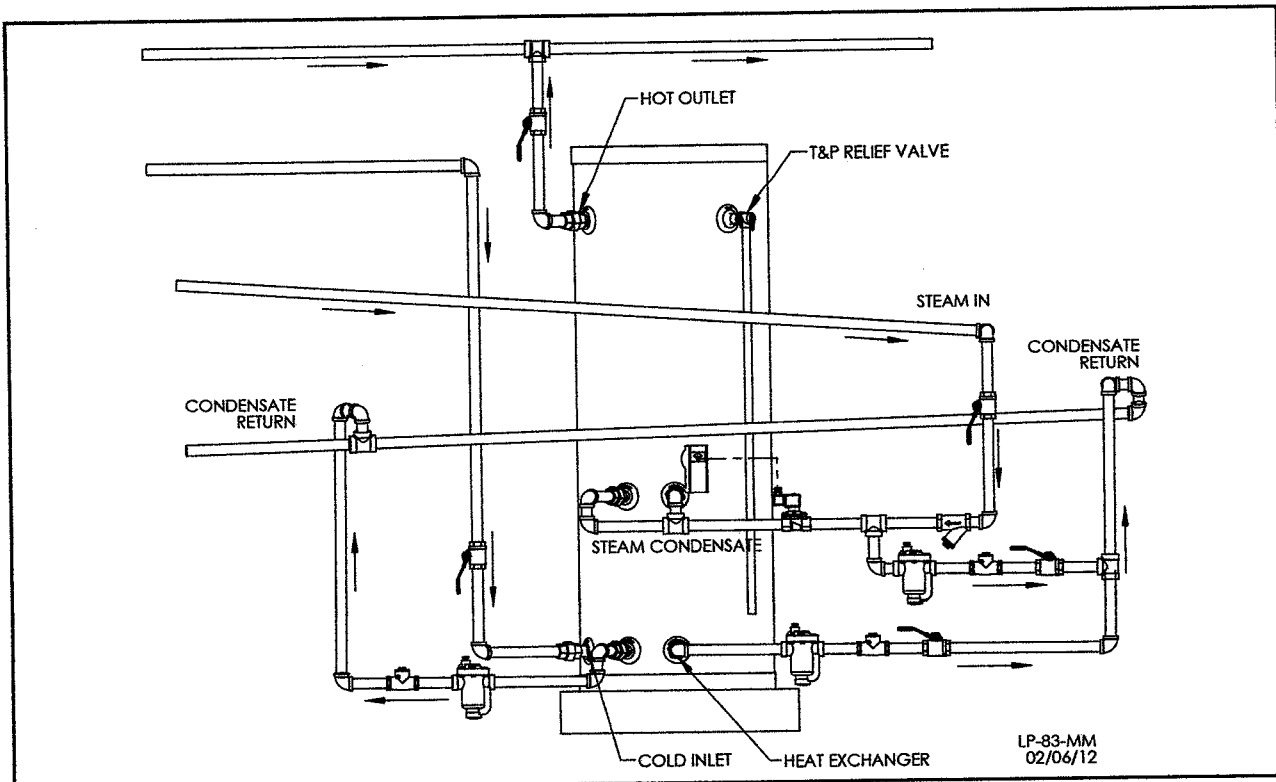


Figure 15 - Live Steam Installation

NOTE: Live Steam Applications are allowed on 80 and 119 gallon SSU / SSU-C models.

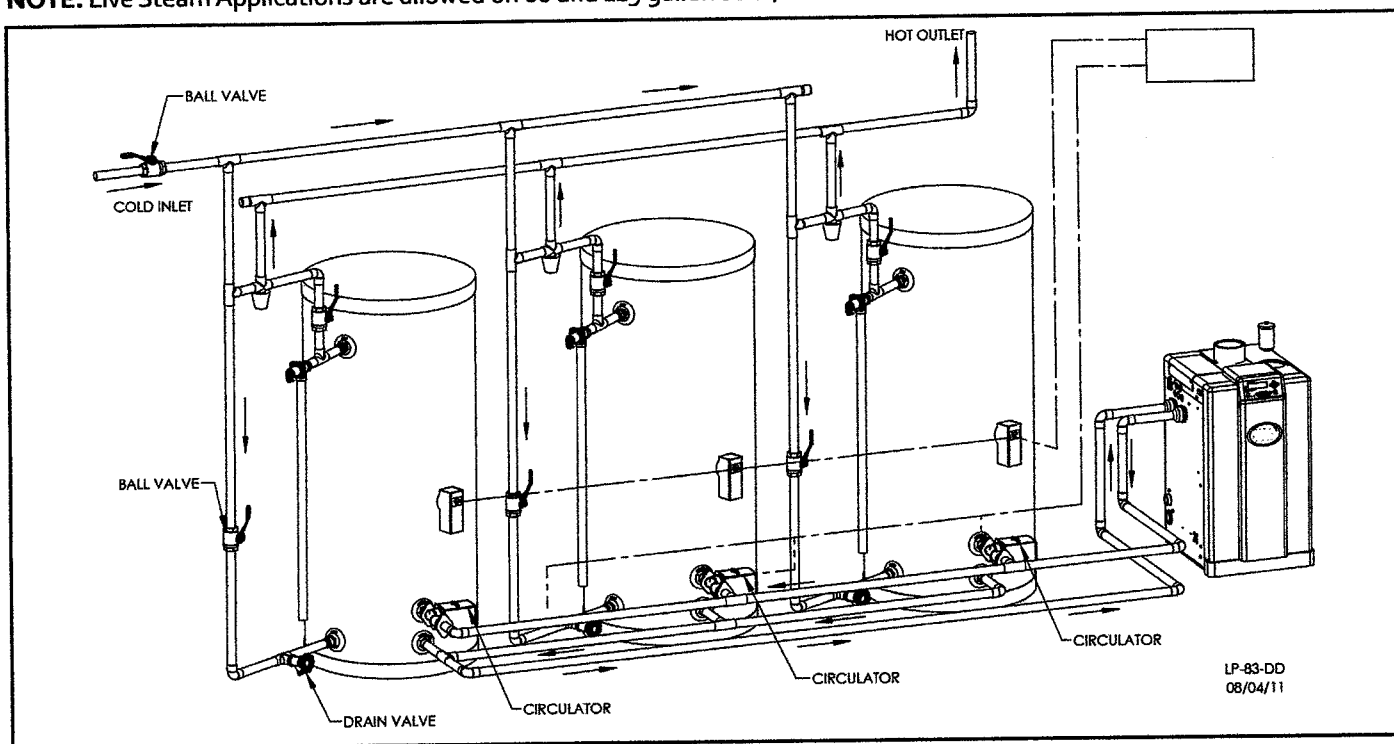


Figure 16 - Multiple Tank Installation

NOTES:

1. Minimum pipe size should match connection size. Upsize pipe accordingly if greater flow is required.
2. A thermal expansion tank suitable for potable water must be sized and installed within this piping system between the backflow preventer and the cold water inlet.
3. All circulators should have an integral flow check.
4. Drains and check valve between unit and storage tank will assist in purging air from system.
5. This drawing is meant to demonstrate system piping only. The installer is responsible for all equipment and detailing required by local codes. In Massachusetts, you must install a vacuum relief valve per 248 CMR.
6. Mixing valve application is optional, but recommended to help prevent scalding. See Part 3, Section E for more information.
7. All piping in parallel used for large dumps of hot water, high usage, and short duration.
8. Massachusetts requires a limit of four (4) tanks per mechanical room. Consult with your local inspector.

Part 4 - Heater Control and Wiring

A. Control

Install control element into the control well and tighten into place with screws on the control body. Thermal conductive paste is recommended. Once the control is operational, it is important to make sure the control is maintaining the desired operating temperature.

NOTE: DO NOT attempt to remove the control well! The control well is welded to the water heater. Attempting to remove the control well will result in product damage, leakage, and possible property damage. Such damages are not covered by product warranty.

B. Wiring

Wiring is to be done in accordance with all applicable local and state codes. Turn off all power related to the boiler before starting any wiring procedures. It is recommended that a disconnect switch be installed between the boiler control and the water heater.

When wiring the water heater and controls be sure to label all wires to ease future maintenance. Wiring errors can cause improper and dangerous operation.

C. Wiring Diagrams

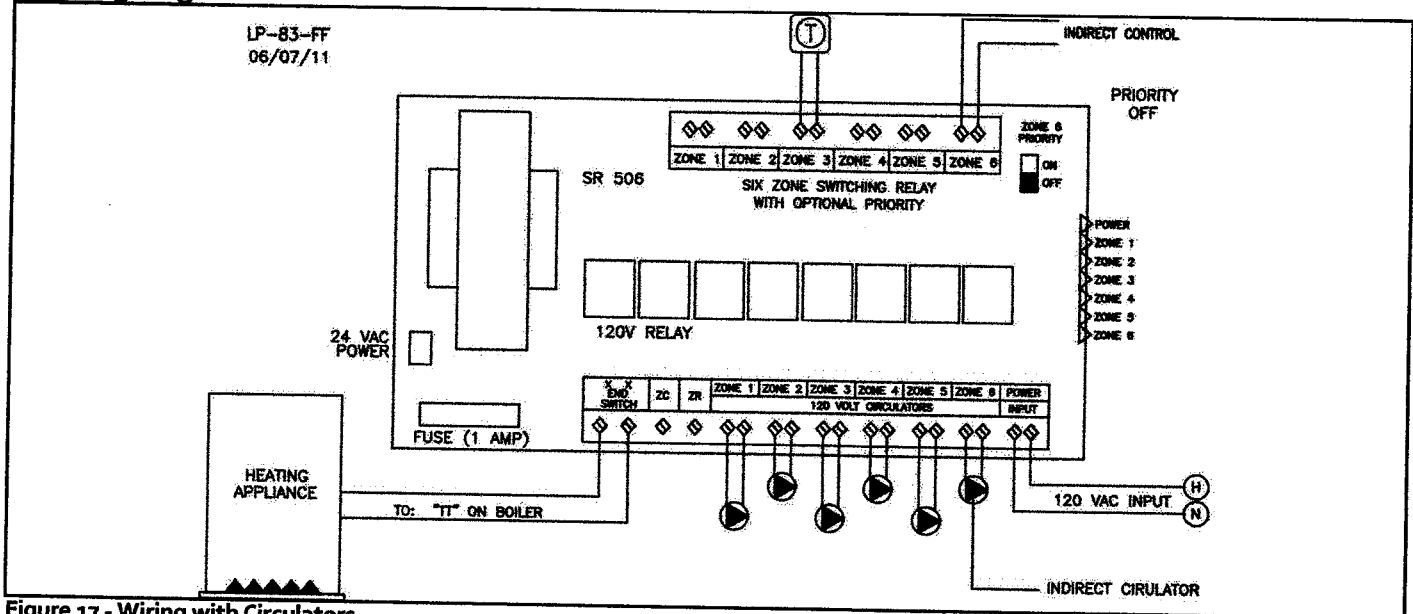


Figure 17 - Wiring with Circulators

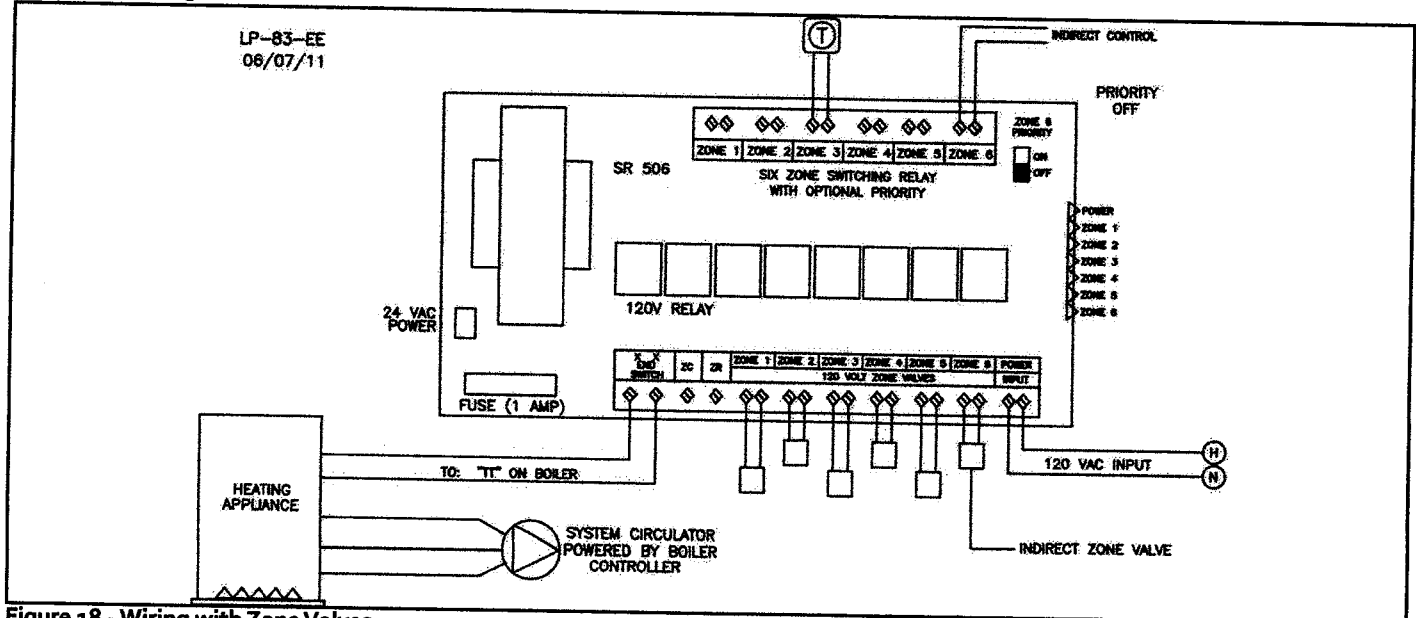
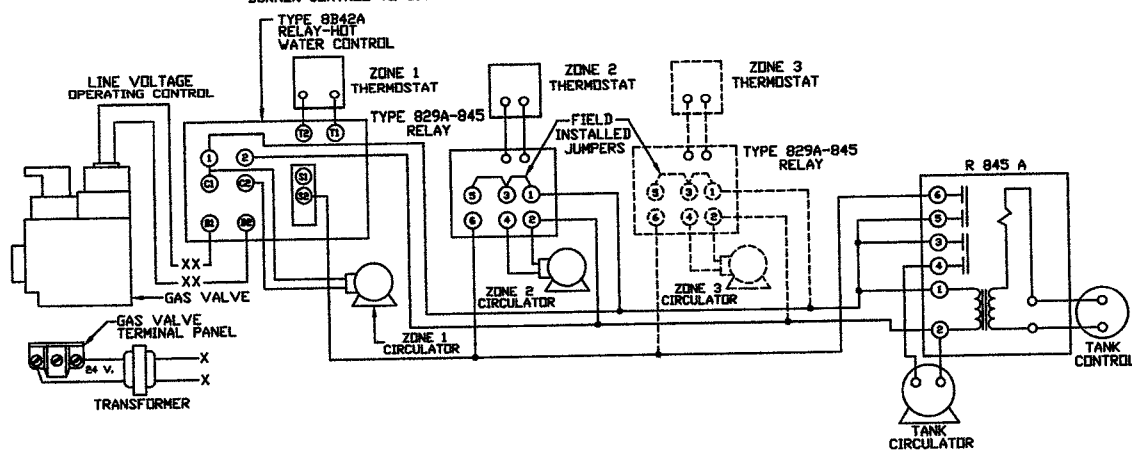


Figure 18 - Wiring with Zone Valves

THIS DIAGRAM SHOWS CONNECTIONS FOR EITHER A LINE VOLTAGE OR 24V MANIFOLD GAS VALVE.
(NOTE: THIS DIAGRAM IS NOT RECOMMENDED FOR NORMAL STACK-MOUNTED OIL BURNER CONTROLS
BECAUSE RAPID CYCLING OF THE LOW LIMIT-CIRCULATOR CONTROL MAY CAUSE THE OIL
BURNER CONTROL TO LOCK OUT ON SAFETY)



CAUTION: TERMINAL "6" FROM TYPE 829A-845 RELAYS MUST BE WIRED TO TERMINAL "S2" ON THE 8B42A TYPE RELAY HOT-WATER CONTROL AS SHOWN TO MAKE CERTAIN THAT THE HIGH LIMIT IS WIRED INTO THE CIRCUIT.

Figure 19 - Zoning with Circulators - R845A Relay

THIS DIAGRAM SHOWS CONNECTIONS FOR EITHER A LINE VOLTAGE OR 24V MANIFOLD GAS VALVE.
(NOTE: THIS DIAGRAM IS NOT RECOMMENDED FOR NORMAL STACK-MOUNTED OIL BURNER CONTROLS
BECAUSE RAPID CYCLING OF THE LOW LIMIT-CIRCULATOR CONTROL MAY CAUSE THE OIL
BURNER CONTROL TO LOCK OUT ON SAFETY)

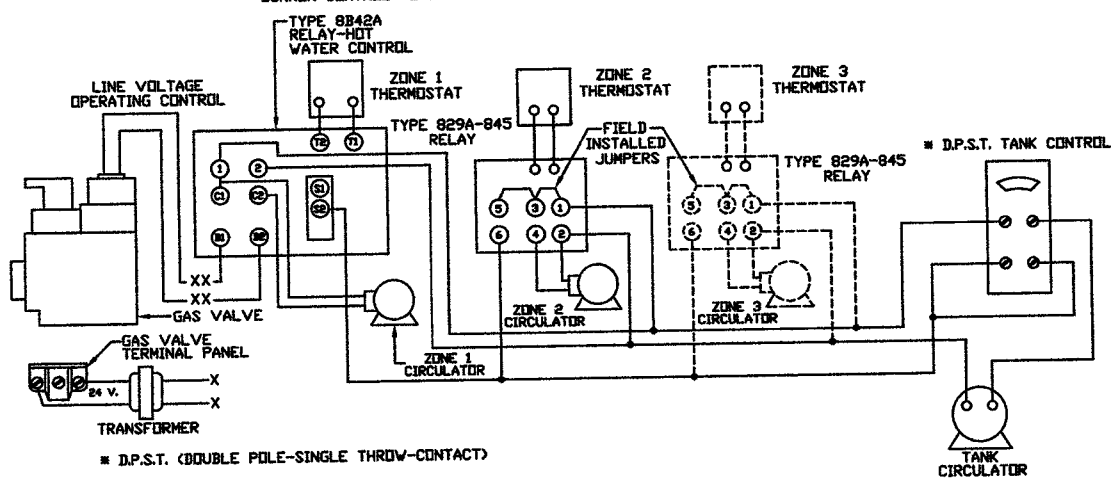


Figure 20 - Zoning with Circulators Using R8182D and DPST - No Relay Required

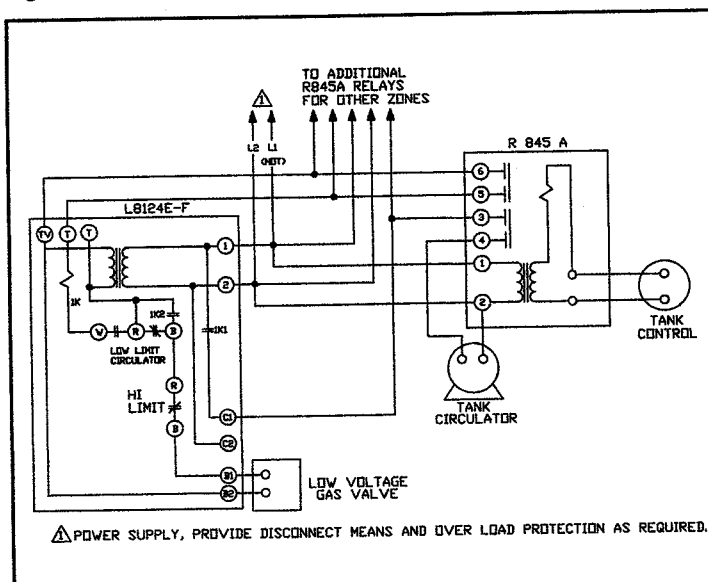


Figure 21 - Zoning with Circulators Using L8124 A, C, and R845A Relay

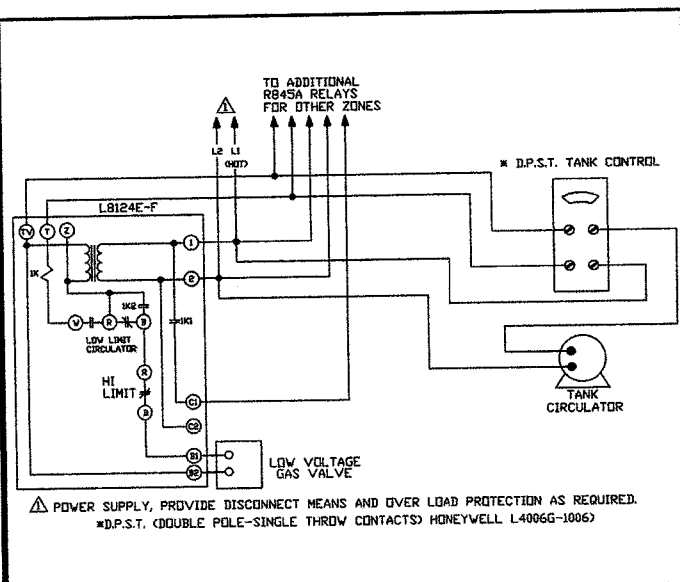


Figure 22 - Zoning with Circulators Using L8124 A, C, and DPST Control - No Relay Required

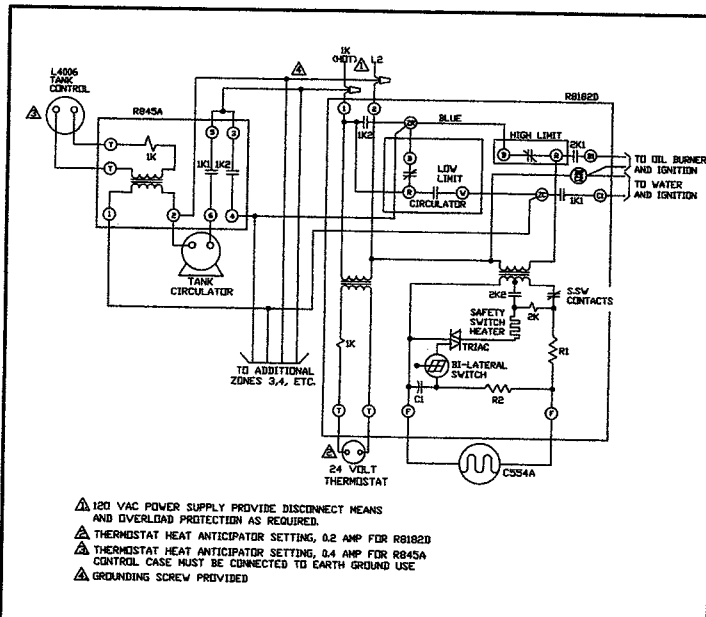


Figure 24 - Zoning with Circulators - R8182D and R845A Relay

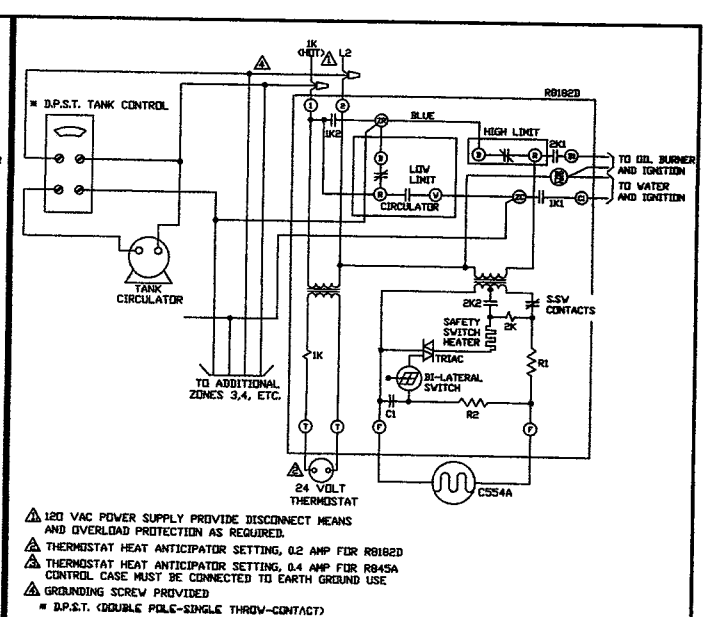


Figure 25 - Control with Built-in DPST Switch - No Relay Required

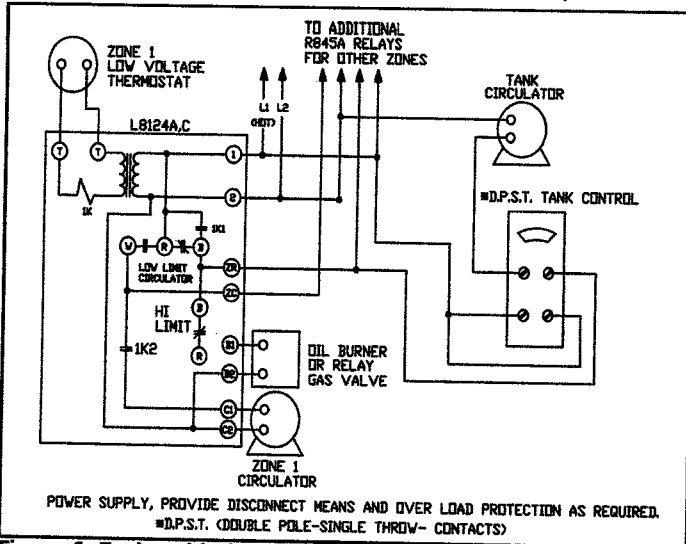


Figure 26 - Zoning with Circulators Using L8124 E-F, and R845A Relay

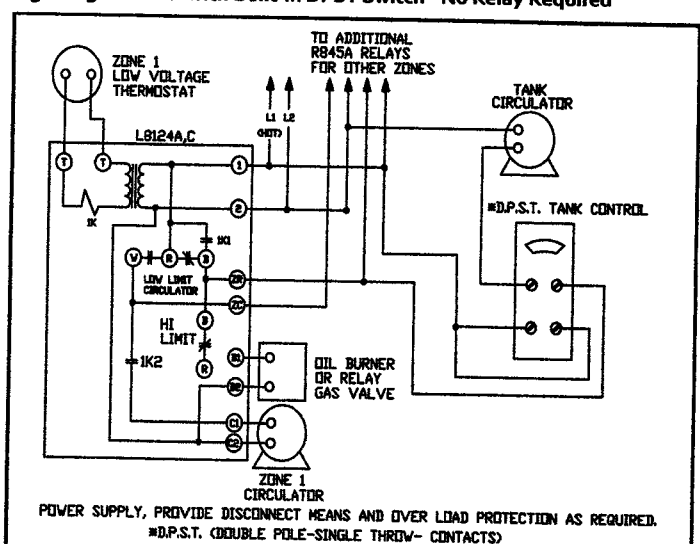


Figure 27 - Zoning with Circulators Using L8124 E-F, and DPST - No Relay Required

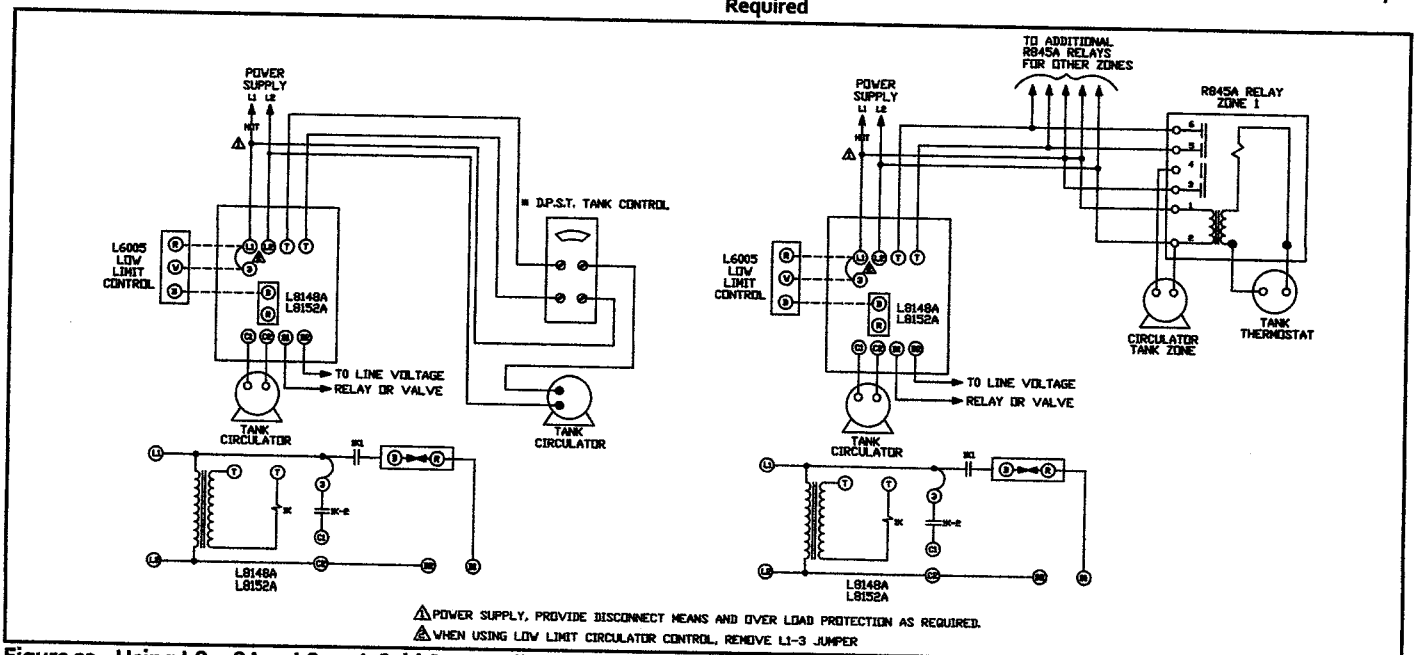


Figure 23 - Using L8148A or L8152A Cold Start Boiler Control with Circulators

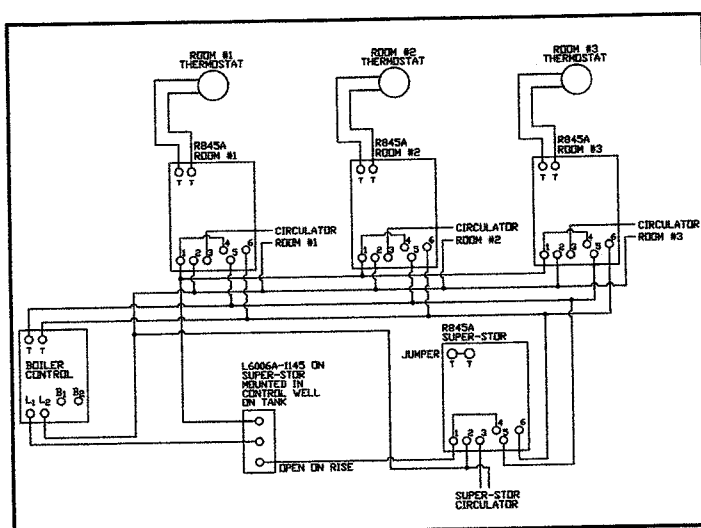


Figure 28 - Priority Zone with Circulators

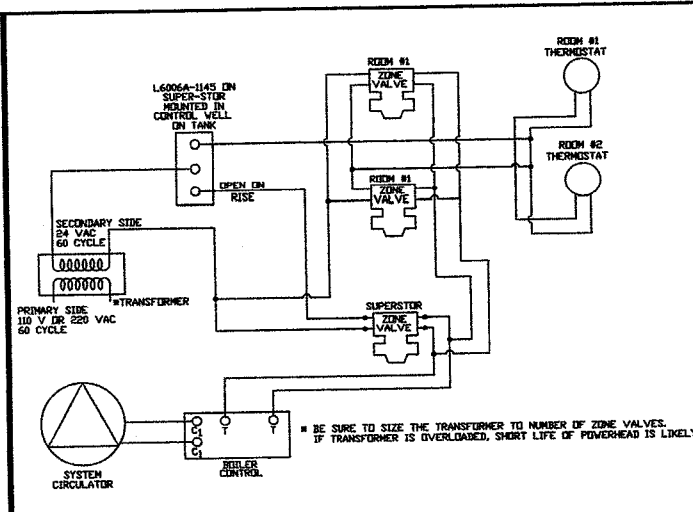


Figure 29 - Priority Zone with Zone Valves

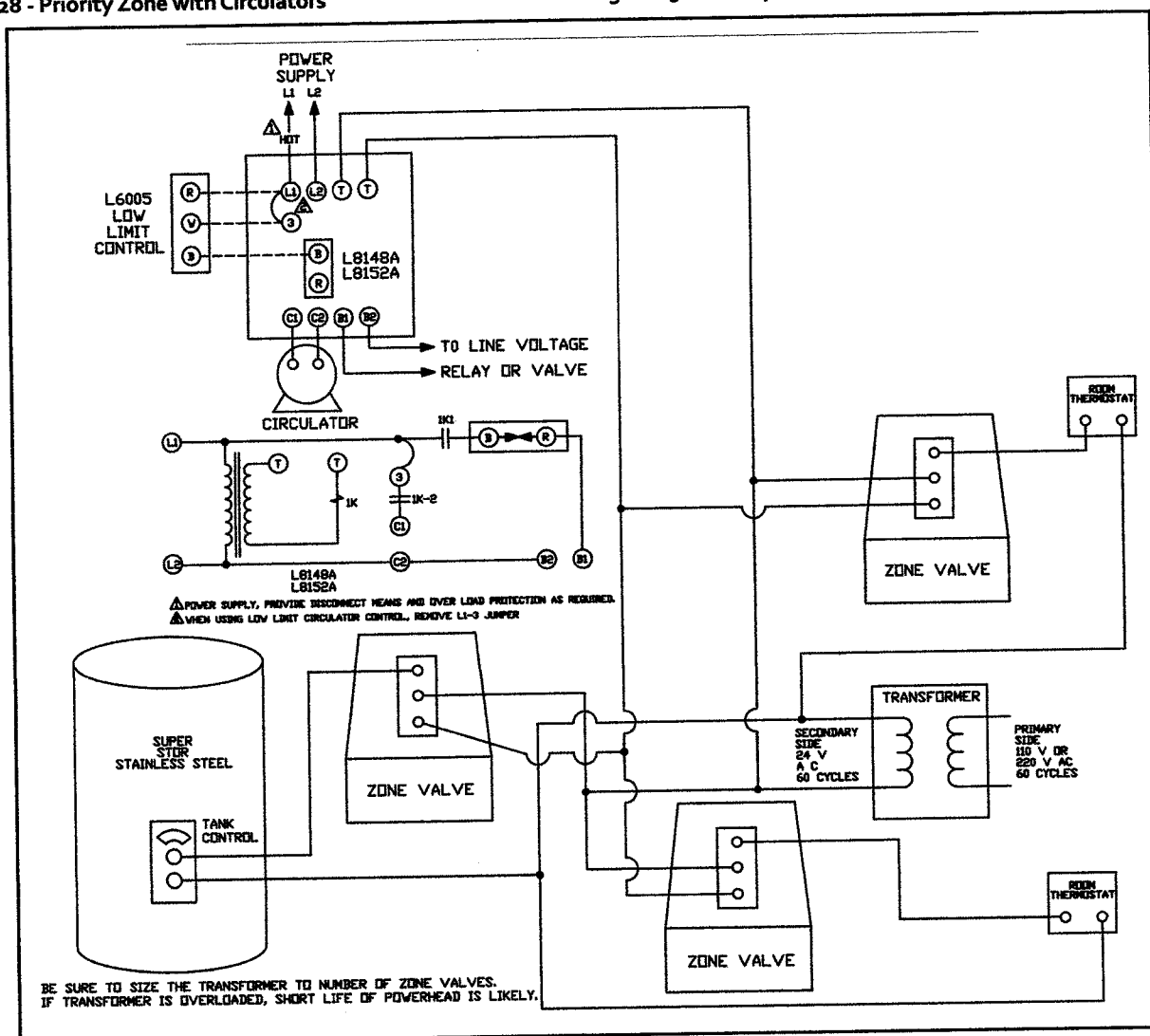


Figure 30 - Using L8148A or L8152A Cold Start Boiler Control with Zone Valves

Part 5 - Start-Up and Operation

1. Fill the water heater by opening the cold water shut-off valve. Purge air from the system by opening a hot water outlet at a fixture in a kitchen or bathroom. When water flows freely from the outlet, the system is purged.

When filling the water heater, open a hot water tap to release air in the tank and piping to ensure proper water heater operation. Failure to ensure the water heater is full before turning on the system will result in damage to the water heater, and could result in property damage. Such damages ARE NOT covered by warranty.

2. Check the system for leaks.

Fix any leaks before continuing the installation. Failure to do so could result in property damage or personal injury.

3. After ensuring there are no leaks within the system, flush the system to clear any soldering residue. Many soldering fluxes contain Zinc Chloride, which can corrode stainless steel.

Draw at least three times the volume of the water heater to properly flush the system.

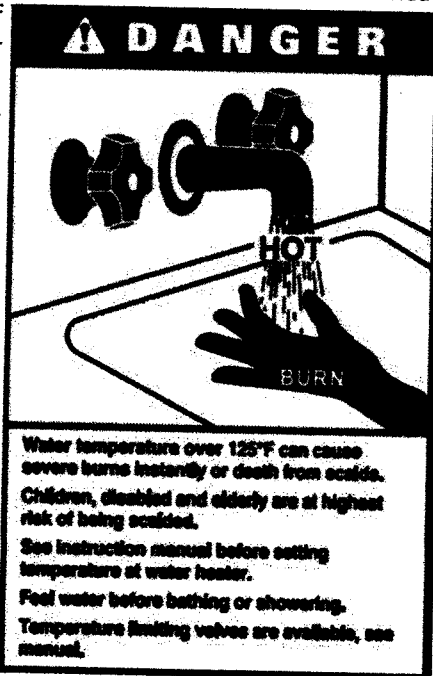
4. Initiate a call for hot water. Ensure each zone valve or circulator operates only when its thermostat calls for heat. Purge each zone of air to ensure proper operation.

5. Set the water heater to the desired temperature. Boiler high limit should be set at least 20°F higher than the heater temperature. Set the low limit of the boiler control at the minimum setting - this will call the burner on only to satisfy the tank control.

A water heater temperature setting of 120°F is recommended.

However, a lower temperature setting may be required to comply with local and state codes for normal operation. The differential should be set at 10 to 15°F. Installation conditions may require a higher or lower temperature setting. A mixing valve in conjunction with a high temperature setting may be used for high demand applications (spas, hot tubs, whirlpools).

6. When the system is completely flushed, purged of air, and the temperature is set, turn on the boiler. Observe operation. Ensure the boiler shuts down after the indirect water heater set point is satisfied.



Risk of scald injury increases as you increase water temperature.

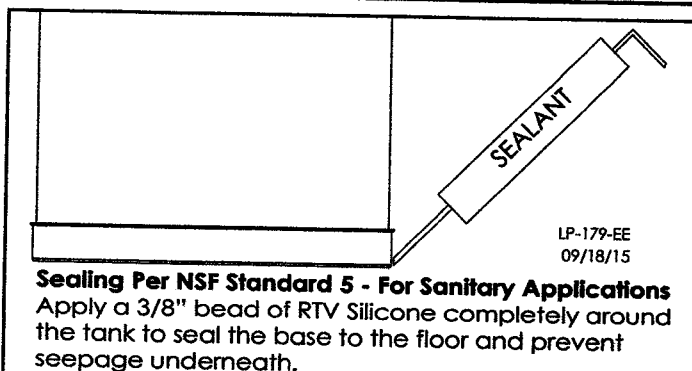


Figure 31 - Sealing the Water Heater for Sanitary Applications

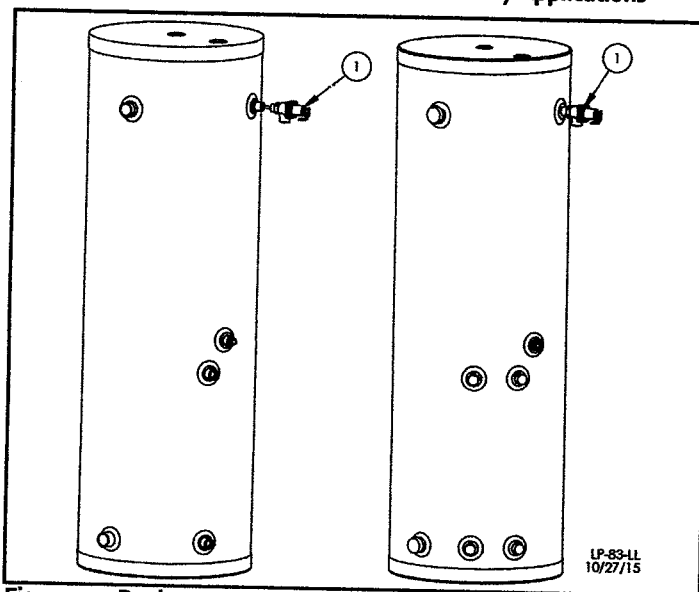


Figure 32 - Replacement Parts

Item #	Part #	Description
1	TP1500	T&P Relief Valve (SSU-20 - SSU-60 and All DW Models) (Not Included with Water Heater)
	TP1400	T&P Relief Valve (SSU-80, SSU-119, and All C Models) (Included with Water Heater)

Table 7 - Replacement Parts List

OFFICE USE ONLY

[illegible]

OFFICE DATE RECEIVED: _____

VIII. PRIOR APPROVALS CHECKLIST (office use only)	LOCAL APPROVAL		COUNTY APPROVAL		REGIONAL APPROVAL		STATE APPROVAL		COMMENTS
	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	
☐ Zoning Officer									
☐ Planning Board									
☐ Zoning Board									
☐ Sewer Authority									
☐ Water Authority									
☐ Police Department									
☐ Health Department									
☐ Soil Conservation									
☐ N.J. Department of Community Affairs									
☐ N.J. Department of Transportation									
☐ N.J. Department of Environmental Protection									
☐ Utility Dig No.									
☐									
☐									

IX. SUBCODES AND SPECIAL REGULATIONS APPLICABLE (office use only—optional)

Name of Code & Edition _____

Name of Code & Edition _____

Other _____

Building _____

Electrical _____

Plumbing _____

Fire Protection _____

Mechanical _____

Energy _____

Barrier Free _____

Flood Hazard _____

As Built Elevation Cert. _____

Other _____

X. CERTIFICATES ISSUED (office use only)

	DATE ISSUED	DATE EXPIRED	DATE REISSUED	DATE EXPIRED
☐ Temporary Certificate of Occupancy	No. _____	_____	_____	_____
☐ Temporary Certificate of Compliance	No. _____	_____	_____	_____
☐ Continued Certificate of Occupancy	No. _____	_____	_____	_____
☐ Certificate of Compliance	No. _____	_____	_____	_____
☐ Certificate of Occupancy	No. _____	_____	_____	_____
☐ Certificate of Approval	No. _____	_____	_____	_____
☐ Lead Abatement Clearance Certificate	No. _____	_____	_____	_____