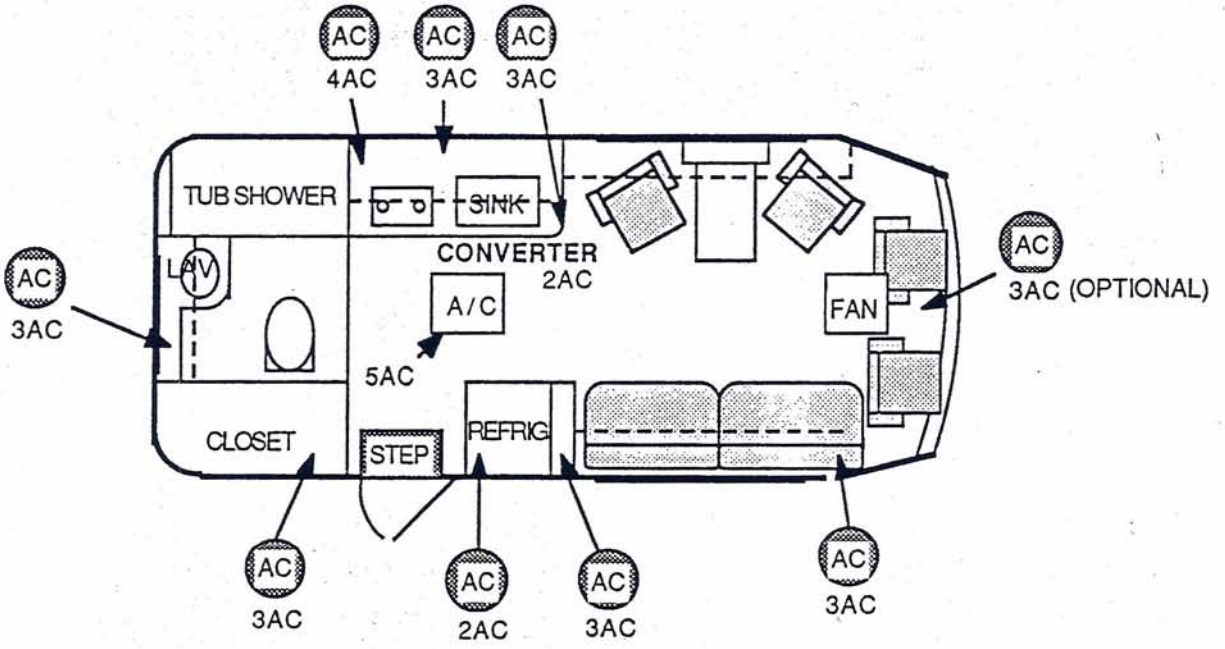
BORN FREE

24' REAR BATH

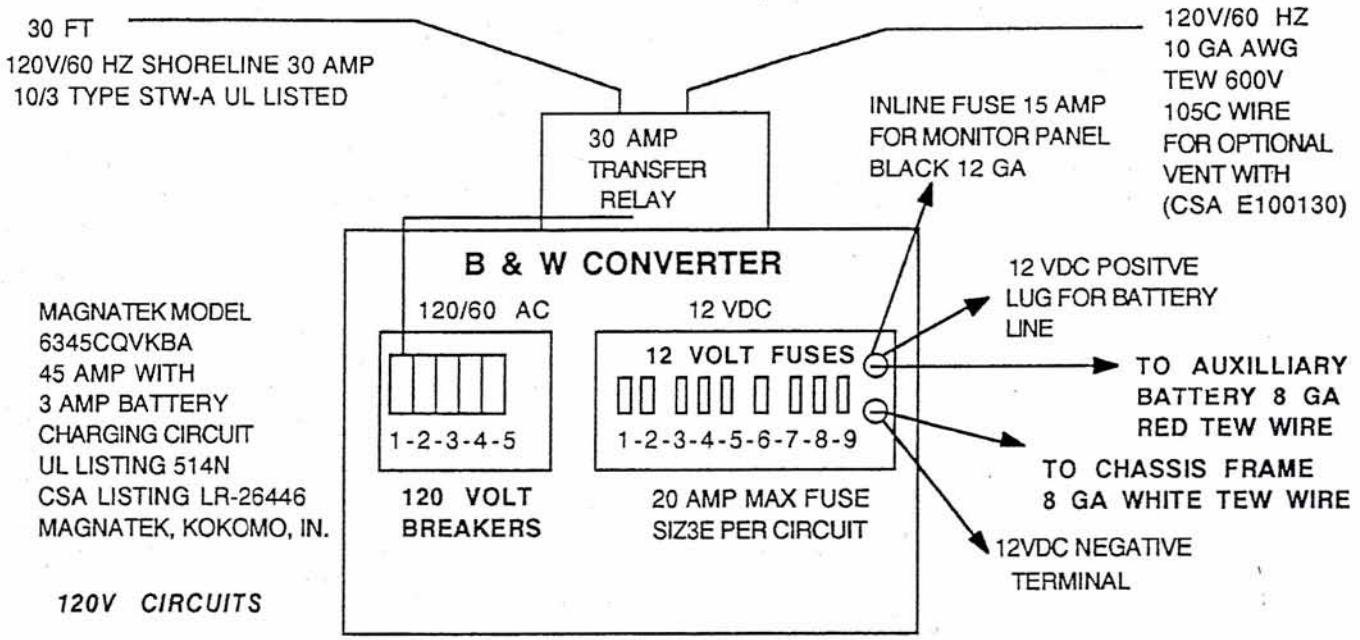


AC IS 120/60HZ OUTLETS

THE NUMBER AND THE TWO LETTERS BELOW EACH SYMBOL REPRESENT THE CIRCUIT IN THE CONVERTER THAT THE ITEM IS ON.

ELECTRICAL CIRCUITS
24' REAR BATH

DODGEN INDUSTRIES INC
HIWAY 169N HUMBOLDT, IA 50548



120V CIRCUITS

1. 30 AMP MAIN BREAKER
2. 20 AMP BREAKER: REFRIGERATOR OUTLET AND 12VDC CONVERTER
3. 20 AMP GFI BREAKER: BATH OUTLET, OUTSIDE OUTLET, TV OUTLET, KITCHEN OUTLETS (2), CABOVER OUTLET, (OPTIONAL OUTLET MAYBE ADDED TO THIS CIRCUIT WITH ENTERTAINMENT CENTER OPTION)
4. 20 AMP BREAKER: MICROWAVE OUTLET
5. 20 AMP BREAKER: ROOF AIR CONDITIONER

ALL WIRE IS 12-2 TYPE NM-B WITH GROUND 600 VOLT UL-E18679

12 VDC CIRCUITS

1.	15 AMP: REFRIGERATOR	WHITE/BLACK 12 GAUGE WIRE
2.	10 AMP: WATER PUMP CIRCUIT	RED 12 GAUGE WIRE
3.	15 AMP: PASSENGER SIDE LIGHTS (3 FLUORESCENTS, 3 READING, & 1 CLOSET LIGHT)	BROWN 12 GAUGE WIRE
4.	15 AMP: DRIVER'S SIDE LIGHTS (3 FLUORESCENTS AND 3 READING LIGHTS)	BLUE 12 GAUGE WIRE
5.	15 AMP: WATER HEATER/BATHROOM LIGHT/BATH FAN	ORANGE 12 GAUGE WIRE
6.	3 AMP: LPG ALARM	ORANGE/BLACK 12 GAUGE WIRE
7.	15 AMP: TV BOOSTER CIRCUIT (OPTIONAL 2 LIGHTS DC OUTLET WITH ENT.CENTER OPTION)	YELLOW 12 GAUGE WIRE
8.	15 AMP: FANTASTIK 3 SPEED ROOF FAN	PURPLE 12 GAUGE WIRE
9.	15 AMP: FURNACE	YELLOW/BLACK 12 GAUGE WIRE

ALL WIRE IS 12 AWG 600 VOLT 105 DEGREE C TEW CSA E100130

CONVERTER CALCULATIONS
BORN FREE 24' REAR BATH

TOTAL 12V ITEMS AVAILABLE ON CONVERTER CIRCUITS

2 PC OAK BED READING LIGHT	2.88
1PC THINLITE FLUORESCENT LIGHT 30 WATT	2.5
1PC THINLITE FLUORESCENT LIGHT 30 WATT	2.5
1PC THINLITE FLUORESCENT LIGHT 30 WATT	2.5
1PC THINLITE FLUORESCENT LIGHT 30 WATT	2.5
1PC THINLITE FLUORESCENT LIGHT 30 WATT	2.5
1PC THINLITE FLUORESCENT LIGHT 30 WATT	2.5
4 PC READING LIGHTS	5.76
1PC SINGLE BULB CLOSET LIGHT	1.44
1PC SHURFLO WATER PUMP	4.0
1PC B&W CONVERTER BATTERY CHARGE FUNCTION	3.0
1PC BATHROOM BATH FAN	1.8
1PC ATWOOD WATER HEATER G6A-7E	1.0
1PC SUBURBAN FURNACE SF-30F	6.5
1PC DOMETIC REFRIGERATOR & LIGHT MODEL RM2607	1.2
1PC TEN TEK LPG ALARM	0.2
1PC 12 VOLT JACK FOR TV/VCP	3.33 (TV/VCP OPTIONAL)
1PC ANTENNA BOOSTER	0.1 (ANTENNA OTIONAL)
1PC FLOOR ENTRY LIGHT	0.19
1PC JENSEN ENTRY LIGHT	1.04
1PC BORN FREE LIGHTED ENTRY HANDLE	0.58
1PC EXTERIOR LIGHT ON DRIVER'S SIDE	1.04
1PC FANTASTIK VENT MODEL 1000R3 3 SPEED	3.00
1PC DC OUTLET	3.33 (OPTIONAL)
2PC READING LIGHTS	2.88 (OPTIONAL)
	60.77 AMPS TOTAL

CALCULATION FORMULA:

FIRST 20 AMPS @ 100% = 20.0 AMPS

2nd 20 AMPS @ 50% = 10.0 AMPS

OVER 40 AMPS @ 25% = 5.19 AMPS

TOTAL =35.19 AMPS

CONVERTER IS A 45 AMP
MAGNATEK MODEL 6345CQVVKBA

BORN FREE

21' REAR DOOR WET BATH

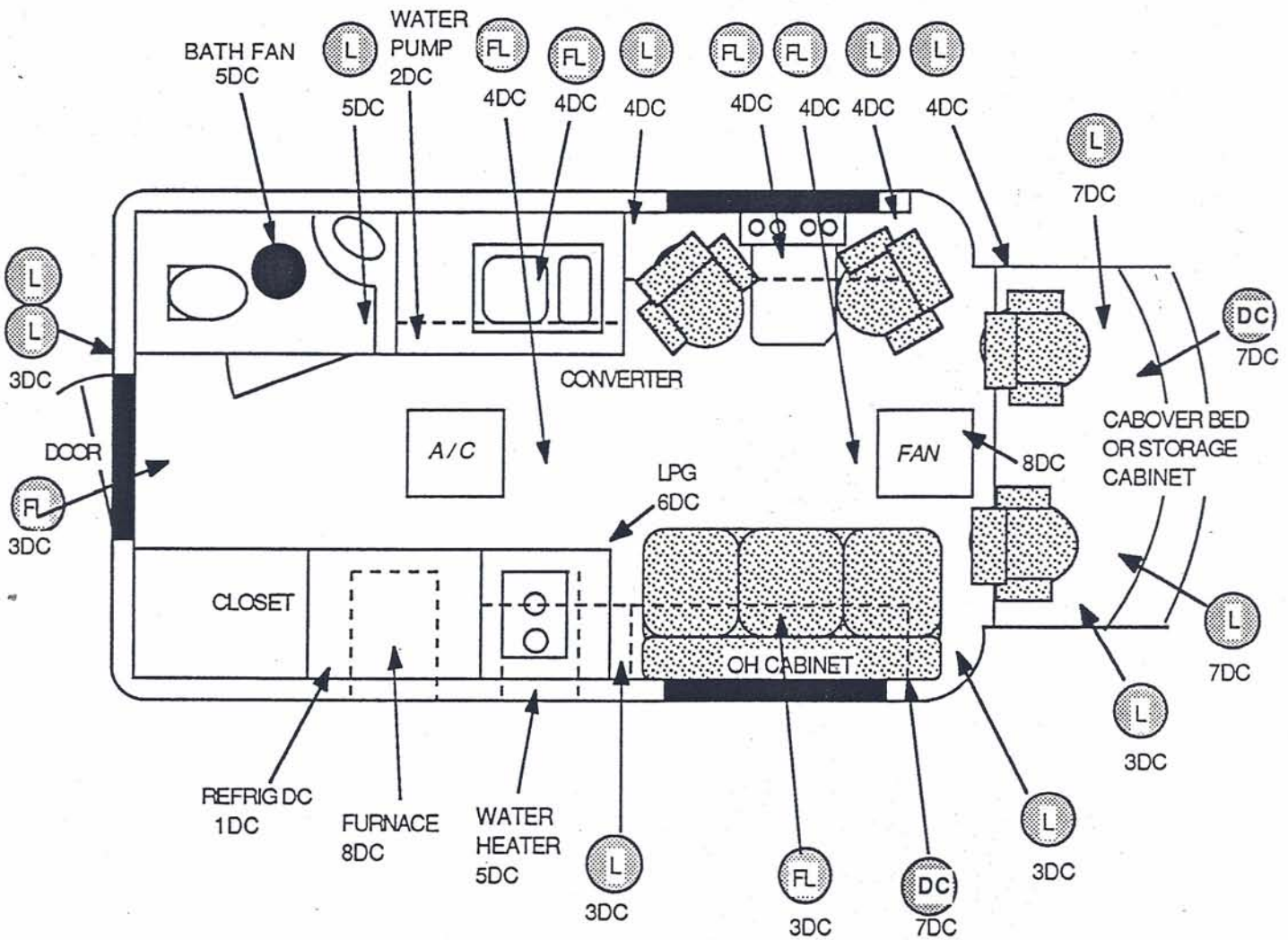
LIGHTING AND OUTLETS

FL IS 12VDC FLUORESCENT LIGHTING

L IS 12VDC INCANDESCENT LIGHTING.

DC IS 12VDC OUTLET.

LPG IS LPG LEAK DETECTOR



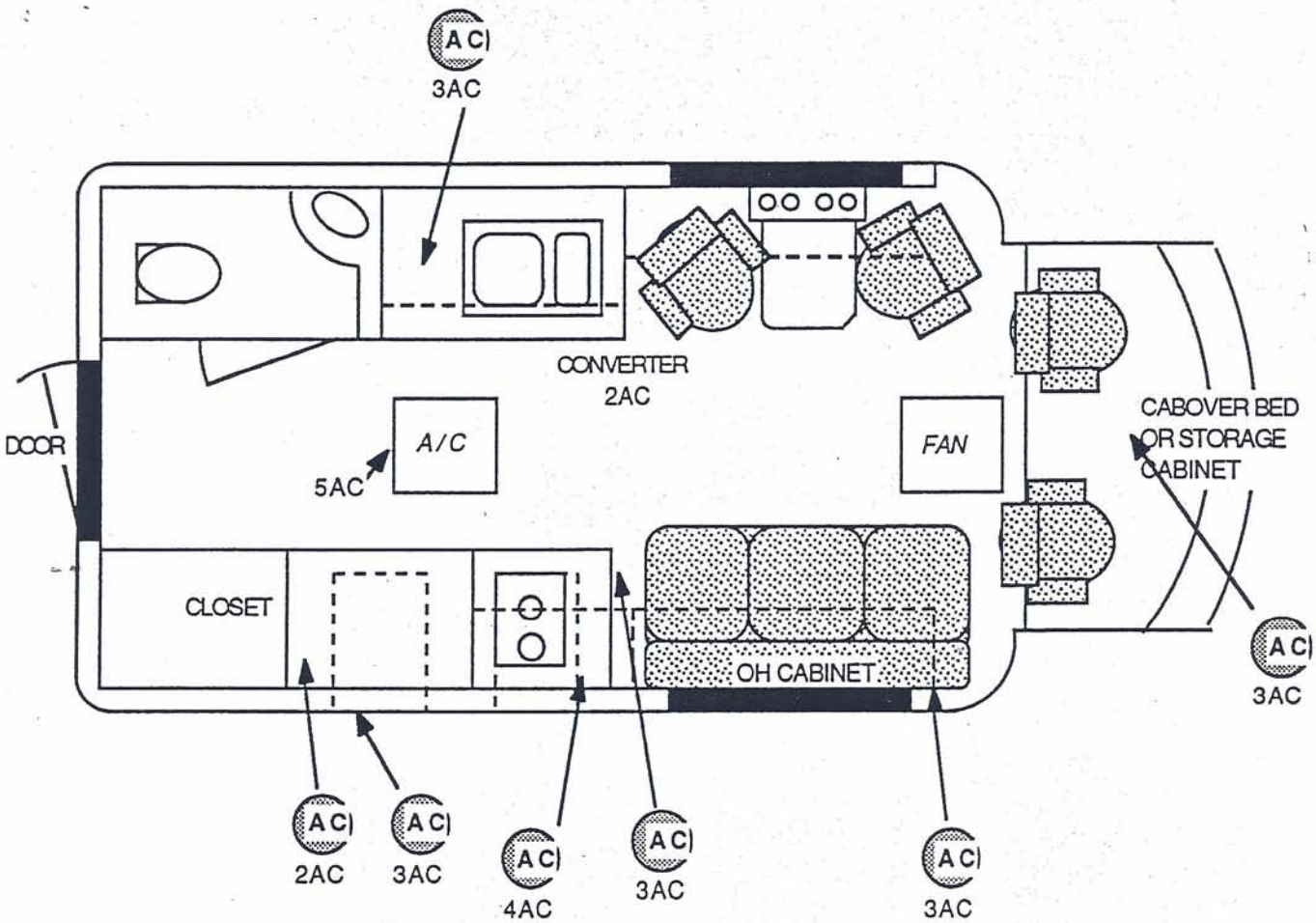
THE LETTER AND NUMBER BELOW EACH SYMBOL INDICATE WHICH CIRCUIT THE ITEM IS ON IN THE CONVERTER.

BORN FREE

21' REAR DOOR WET BATH

LIGHTING AND OUTLETS

AC IS 120V AC OUTLET/RECEPTACLE.



THE LETTER AND NUMBER BELOW EACH SYMBOL INDICATE WHICH CIRCUIT THE ITEM IS ON IN THE CONVERTER.

CONVERTER CALCULATIONS
BORN FREE 21' REAR DOOR WET BATH

TOTAL 12V ITEMS AVAILABLE ON CONVERTER CIRCUITS

2 PC OAK BED READING LIGHT	2.88
1PC THINLITE FLUORESCENT LIGHT 30 WATT	2.5
1PC THINLITE FLUORESCENT LIGHT 30 WATT	2.5
1PC THINLITE FLUORESCENT LIGHT 30 WATT	2.5
1PC THINLITE FLUORESCENT LIGHT 30 WATT	2.5
1PC THINLITE FLUORESCENT LIGHT 30 WATT	2.5
1PC THINLITE FLUORESCENT LIGHT 30 WATT	2.5
1PC SHURFLO WATER PUMP	4.0
1PC B&W CONVERTER BATTERY CHARGE FUNCTION	3.0
1PC BATHROOM BATH FAN	1.8
1PC BATHROOM LIGHT	1 .04
1PC ATWOOD WATER HEATER G6A-7E	1.0
1PC SUBURBAN FURNACE SF-30F	6.5
1PC DOMETIC REFRIGERATOR & LIGHT MODEL RM2607	1.2
1PC TEN TEK LPG ALARM	0.2
1PC 12 VOLT JACK FOR TV/VCP	3.33 (TV/VCP OPTIONAL)
1PC ANTENNA BOOSTER	0.1 (ANTENNA OTIONAL)
1PC JENSEN ENTRY LIGHT	1.04
1PC BORN FREE LIGHTED ENTRY HANDLE	0.58
1PC EXTERIOR LIGHT ON DRIVER'S SIDE	1.04
1PC FANTASTIK VENT MODEL 1000R3 SPEED	3.00
1PC DC OUTLET	3.33 (OPTIONAL)
2PC READING LIGHTS	2.88 (OPTIONAL)
4PC READING LIGHT	5.76
	57.68 AMPS TOTAL

CALCULATION FORMULA:

1ST 20 AMPS @ 100% = 20.0 AMPS

2nd 20 AMPS @ 50% = 10.0 AMPS

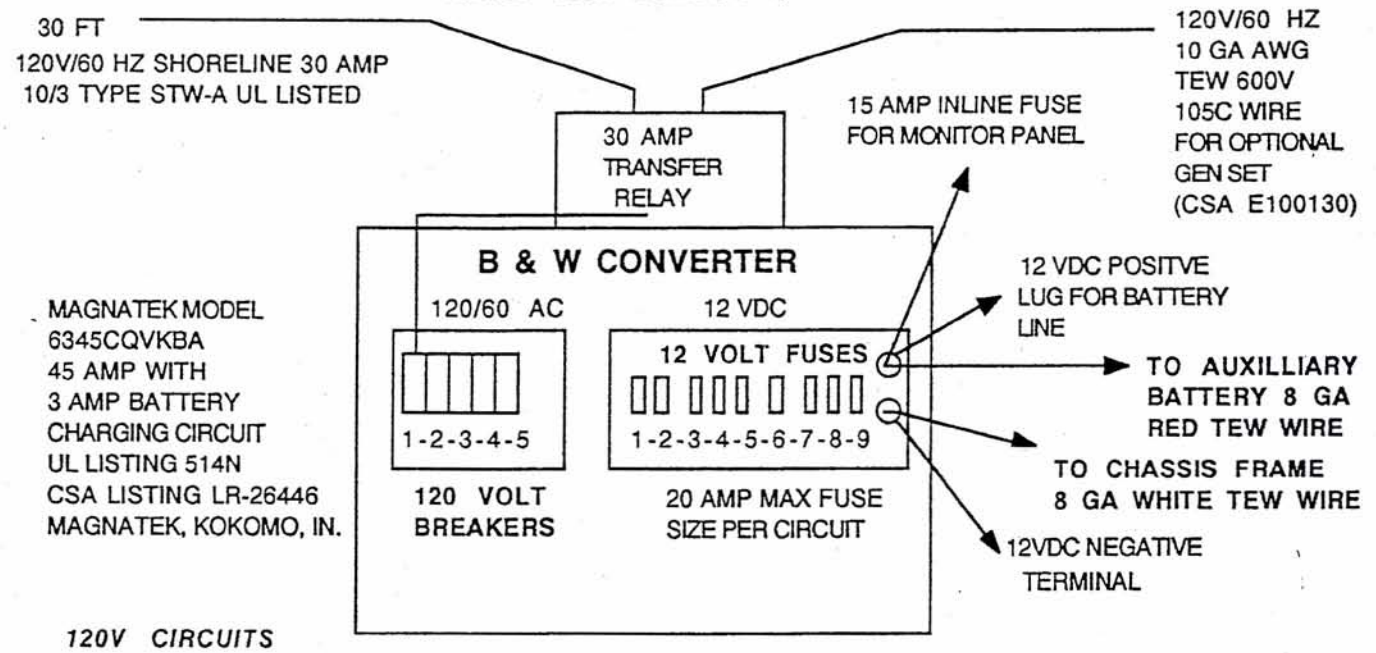
OVER 40 AMPS @ 25% = 4.42 AMPS

TOTAL =34.42 AMPS

CONVERTER IS A 45 AMP
MAGNATEK MODEL 6345CQVVKBA

ELECTRICAL CIRCUIT
21' REAR DOOR WET BATH

DODGEN INDUSTRIES INC
HIWAY 169N HUMBOLDT, IA 50548



120V CIRCUITS

1. 30 AMP MAIN BREAKER
2. 20 AMP BREAKER: 12VDC CONVERTER & REFRIGERATOR OUTLET
3. 20 AMP GFI BREAKER: OUTSIDE OUTLET, CABOVER OUTLET, SINK SIDE OUTLET, STOVE SIDE OUTLET (OPTIONAL ENTERTAINMENT CENTER OUTLET)
4. 20 AMP BREAKER: MICROWAVE OUTLET
5. 20 AMP BREAKER: ROOF AIR CONDITIONER

ALL WIRE IS 12-2 TYPE NM-B WITH GROUND 600 VOLT UL-E18679

12 VDC CIRCUITS

1.	15 AMP: REFRIGERATOR	WHITE/BLACK 12 GAUGE WIRE
2.	10 AMP: WATER PUMP CIRCUIT	RED 12 GAUGE WIRE
3.	15 AMP: PASSENGER SIDE LIGHTS (2 FLUORESCENTS AND OUTSIDE ENTRY LIGHT, HANDLE LIGHT, 3 READING LIGHTS)	BROWN 12 GAUGE WIRE
4.	15 AMP: DRIVER'S SIDE LIGHTS (4 FLUORESCENTS AND 3 READING LIGHTS)	BLUE 12 GAUGE WIRE
5.	15 AMP: WATER HEATER,BATH LIGHT, BATH FAN	ORANGE 12 GAUGE WIRE
6.	3 AMP: LPG ALARM	ORANGE/BLACK 12 GAUGE WIRE
7.	15 AMP: TV BOOSTER CIRCUIT(PLUS OPTIONAL DC OUTLET & 2 LIGHTS WITH ENTERTAINMENT CENTER PACKAGE)	YELLOW 12 GAUGE WIRE
8.	15 AMP: FANTASTIK 3 SPEED ROOF FAN	PURPLE 12 GAUGE WIRE
9.	15 AMP: FURNACE	YELLOW/BLACK 12 GAUGE WIRE

ALL WIRE IS 12 AWG 600 VOLT 105 DEGREE C TEW CSA E100130

V. LP GAS SYSTEMS

LP Gas Systems - Your coach uses liquid-petroleum (LP) gas as a fuel for all the appliances which require heat, such as the water heater, furnace, range, oven, and absorption-type refrigerator. LP gas is economical and effective for these purposes; when proper precautions are taken, it is a safe form of energy. There are two types of LP gas in common usage, propane and butane. If the temperature is below 32 degrees F., butane will not vaporize. It can be used only in warm climates. Propane, on the other hand, will vaporize at any temperature above 40 degrees F. Most LP gas used in motorhomes is propane.

A. LP Tank

LP gas is stored in a cylindrical-shaped welded steel tank mounted to the underside of the floor of your Born Free Coach and vented freely to the atmosphere so that in case of a leak the gas will not be discharged into the interior of the coach where it might be ignited by a pilot flare and cause an explosion.

All LP-gas systems have a pressure regulator mounted in the vicinity of the tank outlet.

When any appliance is not being used, the gas shut-off valve controlling that appliance should be placed in the "off" position. When the motorhome is to be stored for any period of time, the main shutoff valve at the tank should be closed.

LP GAS DETECTOR - A standard feature in all Born Free Motorcoaches is the LP-gas detector. It is designed to quickly detect leakage in any LP-gas piping and appliance system. The device does not prevent leaks. A beeper will sound if there is a leak. We encourage you to test the device before and after a trip is undertaken.

Checking for Leaks - The LP-gas system should be checked for leaks at frequent intervals. An oily substance having a pungent odor is mixed with LP-gas so that if there is a leak, you will be able to smell it.

The best method of finding a leak is to use a soap solution made from ordinary dishwashing detergent and water. This solution can be applied with a small paint brush to gas lines and connections. Bubbles will appear at any place where gas is leaking out of the system. Most leaks occur at fittings and can be corrected usually by tightening the fitting. Where tightening fails to stop the leak, the fitting must be replaced.

WARNING - No flammable material should ever be used to check for leaks in an LP-gas system.

Occasionally water may find its way into an LP-gas system and if this water freezes, the operation of the system may fail. The addition of anhydrous methanol to the LP-gas system, using approximately one ounce for each 20 lbs. of fuel, will usually eliminate this problem. The anhydrous methanol absorbs the water and it then passes out of the system as the gas is used.

Most of the gas appliances in your Born Free Motorcoach have electronic pilot lights which will engage to light the fuel upon demand. These appliances all have a device built-in that will shut the flow of gas off to the burner if the burner is not ignited.

B. Maintenance of LP-Gas Systems

LP-gas systems normally operate for periods of time with a minimum of maintenance. However, a few tips on maintenance will be useful. One of the worst enemies of LP-gas systems is the spider. Spiders are attracted to tunnels and holes. They frequently spin webs across and through the orifices of gas-fired appliances. These webs restrict the air flow and produce a weak yellow flame which typically deposits carbon. If a yellow flame is detected, all parts of the burner should be wiped clean and orifices should be blown clear with compressed air.

If spider webs are not present and the flame is still too yellow and filled with carbon, the air adjustment of the burner should be adjusted until a blue flame is maximized.

C. Furnace

The furnace in your Born Free is an LP-gas burning model which will distribute heat throughout the coach. It is controlled by a wall thermostat. The furnace is equipped with electronic ignition. To start the furnace simply position the thermostat to the desired temperature, making sure the LP-gas valve is open at the tank. When not in use remember to position the wall thermostat to the "off" position.

Furnace Main Burner Cleaning - We recommend that you inspect the main burner periodically to assure that the furnace burner is functioning at maximum efficiency. If the flame has become yellow, you should remove the burner and clean it with a wire brush and blow it clean with compressed air. Reinstall the burner and ensure that the burner is burning with a hard blue flame, with well defined burner ports. Refer to the furnace manual for proper removal of the burner assembly.

D. Water Heater

Before you can light the water heater, it must be filled with water. With the water pump switch on, open a hot water faucet to fill. The water pump will push water into the waterheater tank, and the air displaced will escape from the open hot water faucet. A steady flow of water from the open hot water faucet will indicate the tank is full and the faucet may be shut off. The best time to fill the water heater is when you are filling the fresh water tank. You will take six gallons of water from your supply tank and your supply tank will not be full.

On the back of the water heater we have installed

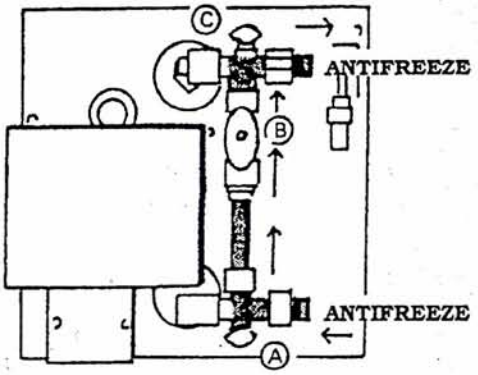
a bypass system. This system consists of three valves and is used to winterize the coach's water system for cold weather. Using the bypass system cuts down on the amount of antifreeze needed and also keeps antifreeze out of the water heater. This bypass system can also be used during cold weather when you want to use the toilet by placing biodegradable antifreeze in the fresh water tank for a toilet flushing water source.

Lighting the Water Heater -

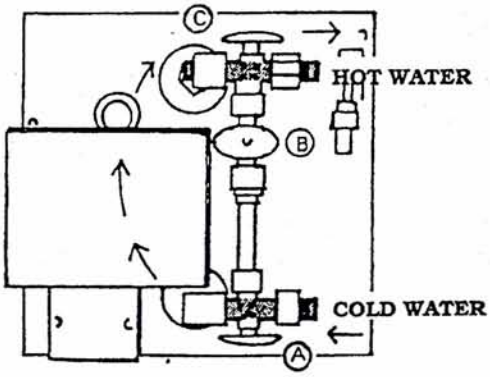
1. Turn on the gas supply at the LP-gas tank.
2. Push the water heater ignition switch in the coach to the "on" position. Listen for a clicking sound. This indicates that the heater is trying to light. You will hear the burner when it lights. If it fails to light, a light will come on at the switch. Shut the switch off and repeat the procedure until it lights. Water temperature is factory adjusted and cannot be changed. The water heater will cycle on and off to maintain the proper temperature.

Maintenance - Turn the LP-gas valve "off" before draining. Open the drain valve and open the lever on the pressure relief valve on the outside of the heater. The pilot height can be increased or decreased by removing the protective shield around the pilot light and adjusting the small screw controlling the gas to the pilot light. Air adjustment for the burner can be adjusted by moving the air sleeve to increase or decrease air. Yellowish, smoky flame will indicate that the burner needs more air. If adjustment does not reduce yellow flame, the problem is likely due to an obstruction in the pipe. This is a favorite place for spiders to spin a web, impeding air to the burner. Simply clear the obstruction from the tube and repeat the lighting procedure.

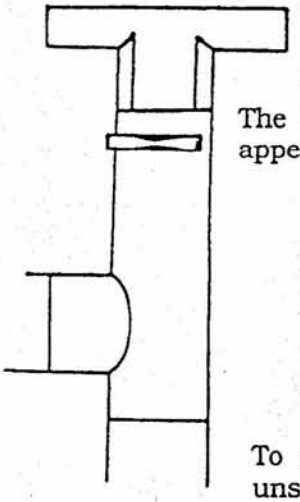
Water Heater Bypass and Draining Illustrations



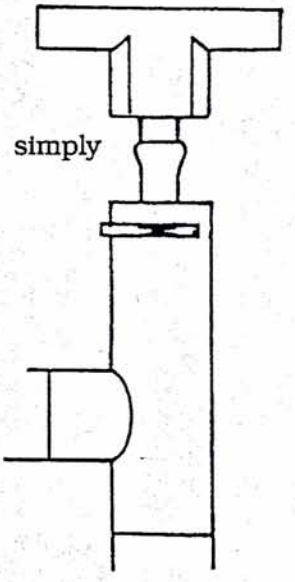
The positioning of the valves (A,B,C) when winterizing with antifreeze. This allows antifreeze to go through cold water pipe, through bypass and out through hot water pipe. (See shaded area.) Antifreeze will not go through heater if in this position. You should not run antifreeze through your heater as the tank will "trap" the taste of the antifreeze for summer use.



The positioning of valves (A,B,C)) for use of water heater. This allows cold water to go through heater and come out as hot water. (See shaded area.)



The three drain valves should appear like this when closed.



To open, simply unscrew.

E. Refrigerator

Your Born Free Motorcoach is equipped with an LP-gas and 110-volt AC refrigerator. The refrigerator should be started a few hours before leaving on any trip or outing. Pre-chill all food and beverages in your house refrigerator before placing in the coach refrigerator. This will hasten the time that it takes to get the refrigerator cool, and will not raise the temperature by placing too great a load on it suddenly. An inexpensive refrigerator thermometer can be purchased at most hardware stores and will prove very valuable in monitoring the temperature of the refrigerator.

The refrigerator must be level to operate efficiently as the gases and fluids within the cooling unit depend on gravity for circulation. While traveling down the highway, regular movement of the coach allows the gases and fluids to circulate properly. We advise you to carry a few short pieces of 2x4 or 2x6 lumber to elevate the coach to attain proper leveling.

A. **Electric operation**

1. Turn Gas/Electric Selector Switch to "off" position, then press the knob inward and turn clockwise to the "ELEC" position.
2. Set the electric thermostat, turn knob 1/4 turn.
3. After refrigerator has had time to cool, adjust electric thermostat to the desired setting to maintain the desired temperature.

B. **LP-Gas Operation**

1. Turn LP-gas on at supply tank.
2. Turn Gas/Electric Selector Switch counterclockwise to the "GAS" position.
3. Set gas thermostat by turning knob 1/4 turn.
4. Press starter button to stop and keep it depressed when flashing light goes out. Wait 15 seconds and release button.

Travel Latch - A travel latch has been built into the front of the refrigerator to prevent the doors from opening during travel. To operate the latch slide the latch towards you until the latch engages the door.

Defrosting - The freezer compartment may be defrosted in the following manner:

1. Turn the cooking unit "off."
2. Allow the frost to melt. Inserting the ice trays filled with hot water will hasten this process.
3. Do not attempt to chip the frost away from any part of the cooling unit. Damage to the cooling unit may result.
4. Clean the entire refrigerator with a mild detergent and water, dry with a soft towel, and allow the unit to air dry before re-starting the refrigerator.
5. We advise you to follow this cleaning procedure following any trip.

Refrigerator Troubleshooting

Pilot flame blow-out is not unusual when subjected to strong gusty winds from other vehicles. Do not obstruct the outside vent by covering it or placing any kind of material inside the vent door. For proper operation, air must be drawn in through the side vent, allowed to pass over the cooling unit, and then drawn upward through the roof vent. Any blockage of this "chimney action" will impair the operation of the refrigerator.

For maintenance and warranty work, refer to the manufacturer's manual.

F. Range and Oven

The range in your Born Free Motorcoach is either a two-burner or four-burner model. To operate simply turn on the LP-gas at the tank. Turn on the gas control to the desired burner and light the burner with a match or igniter.

The oven is equipped with a safety pilot which must be ignited before the oven burner will operate. Move the oven control knob by pushing inward, then turning to "OVEN OFF" position. Light the oven pilot with a match and allow it to warm a few minutes before advancing the oven control. The pilot is located inside the oven, under the burner shelf, approximately midway on the burner. Set the oven heat control to the desired temperature, and it will come on under the control of the pilot and thermostat. Restoring the oven control to "OVEN OFF" will turn off the oven burner, but allow the pilot to remain lit. It may be left in this position until next time the oven is used. When returning from a trip, restore the oven thermostat to "PILOT OFF" position. When in transit it is important that the control be in the "PILOT OFF" position.

WARNING - The oven and range are not a substitute for your furnace and should never be used to heat the coach.

Maintenance and Adjustments

If you are using an LP-gas range for the first time, you will notice flame height is appreciably lower than the natural gas range in your home. LP-gas contains more BTU per unit than natural gas and a lower flame will cook as quickly and contain as much heat as the larger natural gas flame.

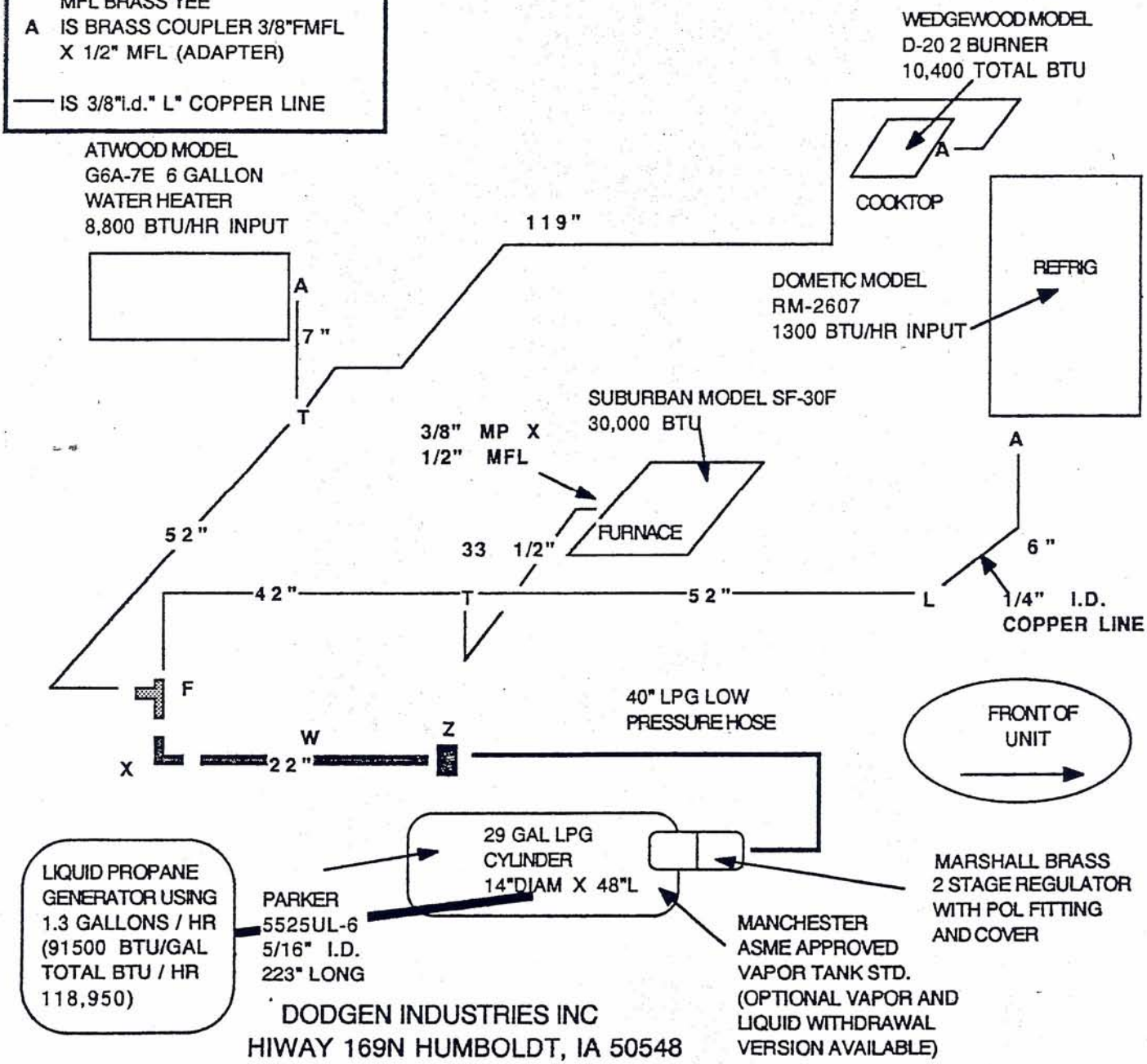
The flame should always be a blue color without any yellow tips. If yellow starts to form on the tips, it will smoke or soot the bottoms of your cookware. This condition can be remedied by adjusting the sleeve shutter to each individual burner to allow for the proper air mixture.

Refer to your range-oven manual for warranty service and any other adjustments required.

26' REAR SIDE BED

LP GAS SYSTEM

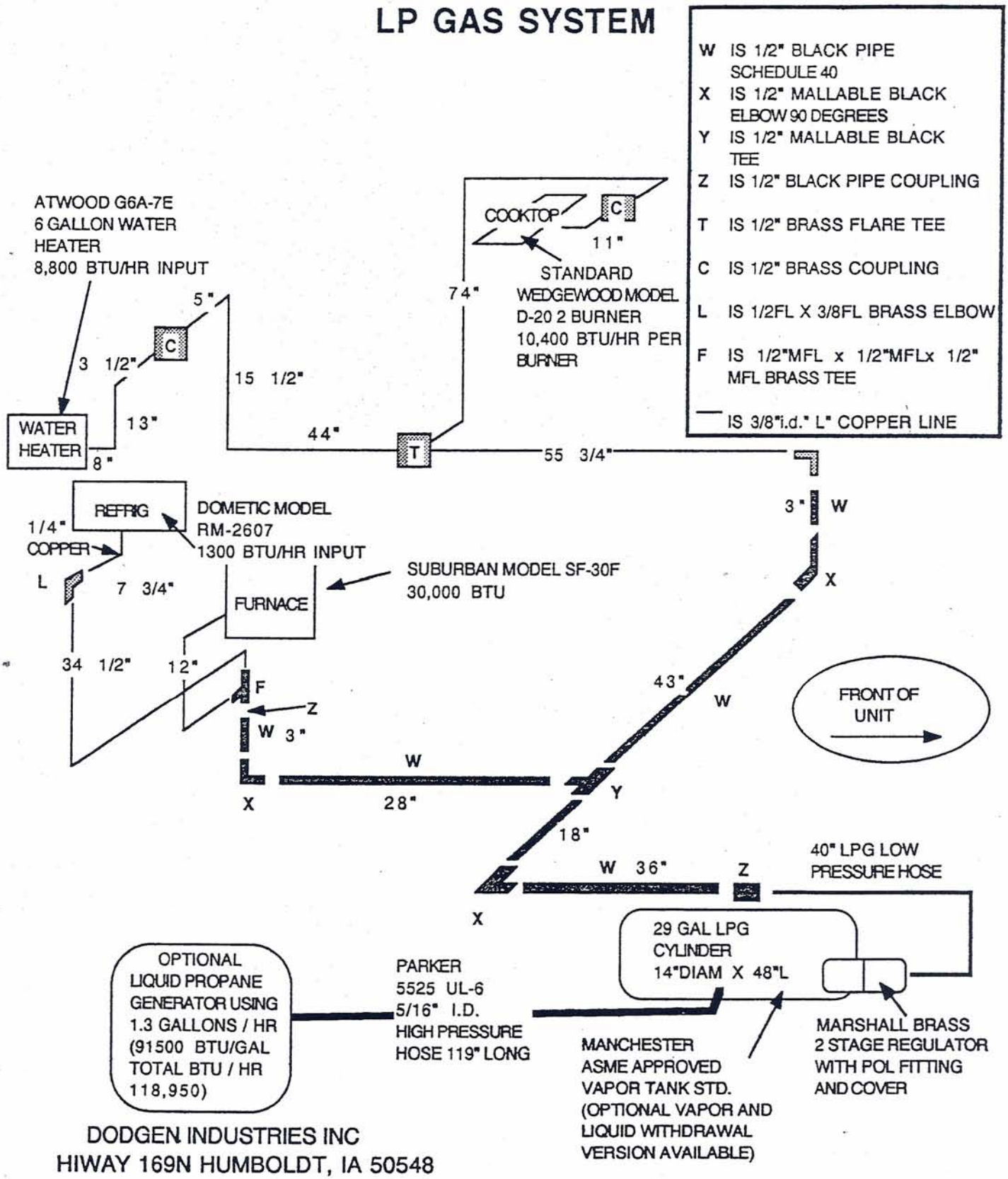
W IS 1/2" BLACK PIPE SCHEDULE 40
X IS 1/2" MALLABLE BLACK ELBOW 90 DEGREES
Z IS 1/2" BLACK PIPE COUPLING
T IS 1/2" BRASS FLARE TEE
L IS 1/2" BRASS ELBOW
F IS 1/2"MPT x 1/2"MFL x 1/2" MFL BRASS TEE
A IS BRASS COUPLER 3/8"FMFL X 1/2" MFL (ADAPTER)
—— IS 3/8"I.d." L" COPPER LINE



DODGEN INDUSTRIES INC
HIWAY 169N HUMBOLDT, IA 50548

24' REAR BATH

LP GAS SYSTEM

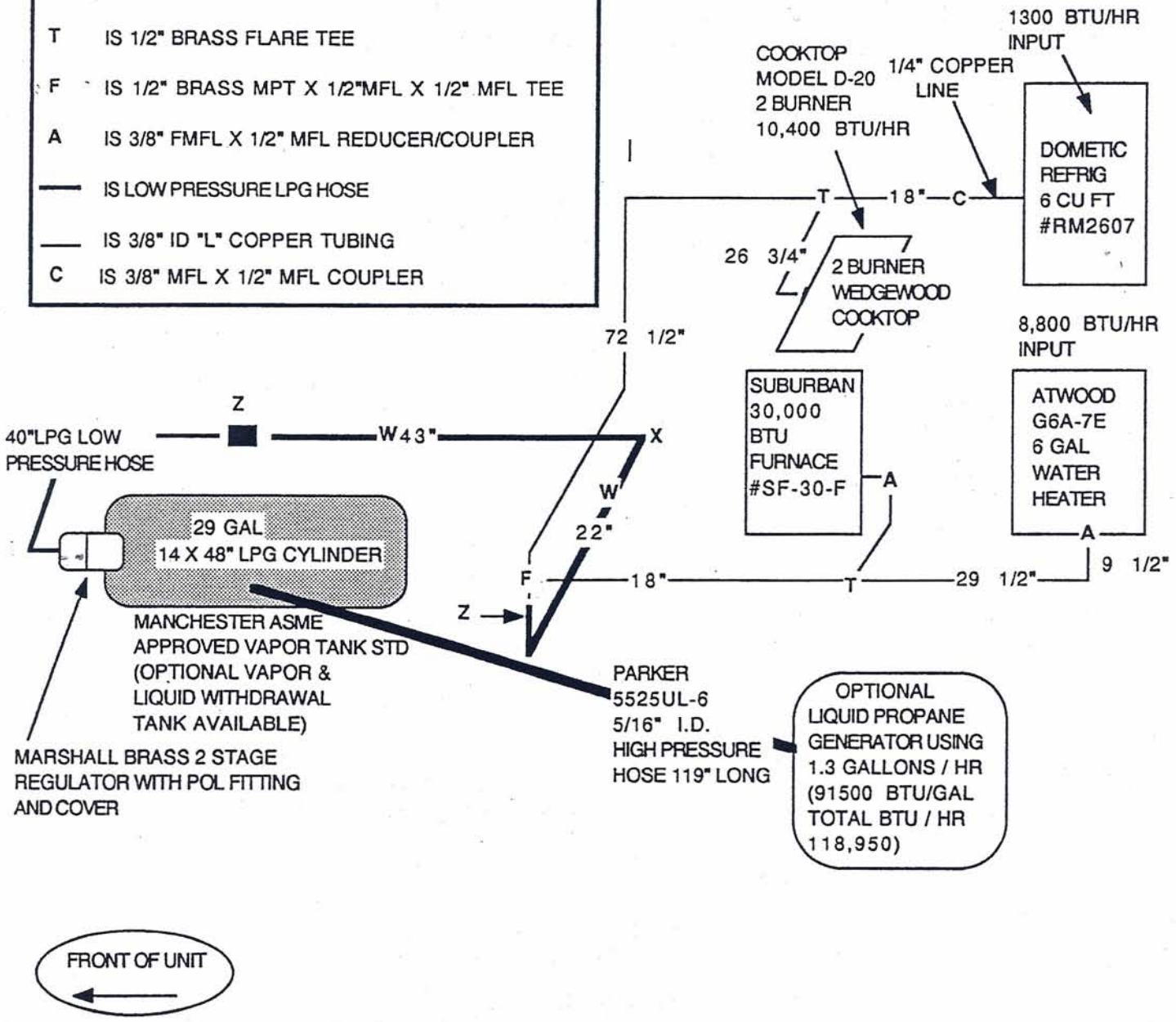


DODGEN INDUSTRIES INC
HIWAY 169N HUMBOLDT, IA 50548

21' REAR DOOR WET BATH

LPG SYSTEM

W	IS 1/2" SCHEDULE 40 BLACK PIPE.
X	IS 1/2" BLACK PIPE ELBOW
Z	IS 1/2" BLACK PIPE COUPLING
T	IS 1/2" BRASS FLARE TEE
F	IS 1/2" BRASS MPT X 1/2"MFL X 1/2" MFL TEE
A	IS 3/8" FMFL X 1/2" MFL REDUCER/COUPLER
———	IS LOW PRESSURE LPG HOSE
———	IS 3/8" ID "L" COPPER TUBING
C	IS 3/8" MFL X 1/2" MFL COUPLER



VI. PLUMBING

A. Fresh Water System

Fresh water can be supplied from two sources: a water tank located inside the motorcoach, or from a campground water source connected to the water intake through a garden hose.

The fresh water tank system is equipped with a demand pump that controls water pressure by use of a switch built into the pump. When a faucet is opened, pressure in the line drops, causing the pump to start. When the faucet is closed, pressure builds up quickly and the pressure switch shuts off the pump. The manual switch, located on the range vent, is used to cut off the electrical power to the demand pump. The pump operates on 12-volt power.

NOTE - It is good practice to turn off the pump switch when leaving the coach for a period of time and when retiring for the night. If the pump cycles on and off occasionally, shut the pump off and check the system for leaks.

B. Fresh Water Tank

The fresh water tank filler is located outside the coach on the driver's side. Using a garden hose, allow the water to run into the tank at a moderately slow speed. This will allow the air to escape and the tank will fill much easier. After the tank is full, allow the air to purge for about 3-4 minutes. You may be able to get several more gallons in the tank. Reminder - Remember to fill the water heater when filling the fresh water tank. See the instructions for doing so listed under "Water Heater."

C. City Water Connection

When parked in a campground which has hookup facilities for "city water," a connection has been provided on the outside of the coach. To use, connect a water hose to this fitting and turn off the demand pump. The city water pressure will provide adequate movement. The city water connection will by-pass the fresh water system and will not fill the fresh water tank.

NOTE - Some water systems have very high water pressure, so to guard against damage to pressure-limiting components, do not run faucets wide open.

D. Toilet

We currently use two kinds of toilets: Flush-type and recirculating-type.

1. Flush-type - To operate step on the small (right) pedal and hold until a desired amount of water, above the normal refill level, enters the bowl. Step on the large pedal to flush. Release both pedals slowly. On some models an optional hand sprayer is included. To use simply depress the thumb lever while stepping on the flush pedal.
2. Recirculating-type - A recirculating toilet uses a self-contained compartment to hold water, a pump (electric), and a drain valve. To fill storage compartment, pour 3 gallons of water directly into the bowl. Press the electric switch several times to prime the pump and to start recirculating cycle. Add liquid holding tank deodorant to the water.
3. Maintenance - To clean the toilet use a non-abrasive cleaner. Do not use highly concentrated or acid content cleaners, or abrasive powders. These may damage the seals or plastic parts of the toilet.
   NOTE - We highly recommend that you use an RV-type toilet paper. These types of paper breakdown and are easily discharged.

E. Drain Systems

To provide complete self-containment and to comply with requirements of good sanitation practices, your Born Free is equipped with a dual tank drain system. The sanitary holding tank (black water tank) receives waste from the toilet. The second tank (gray water tank) collects waste water from the sinks and shower.

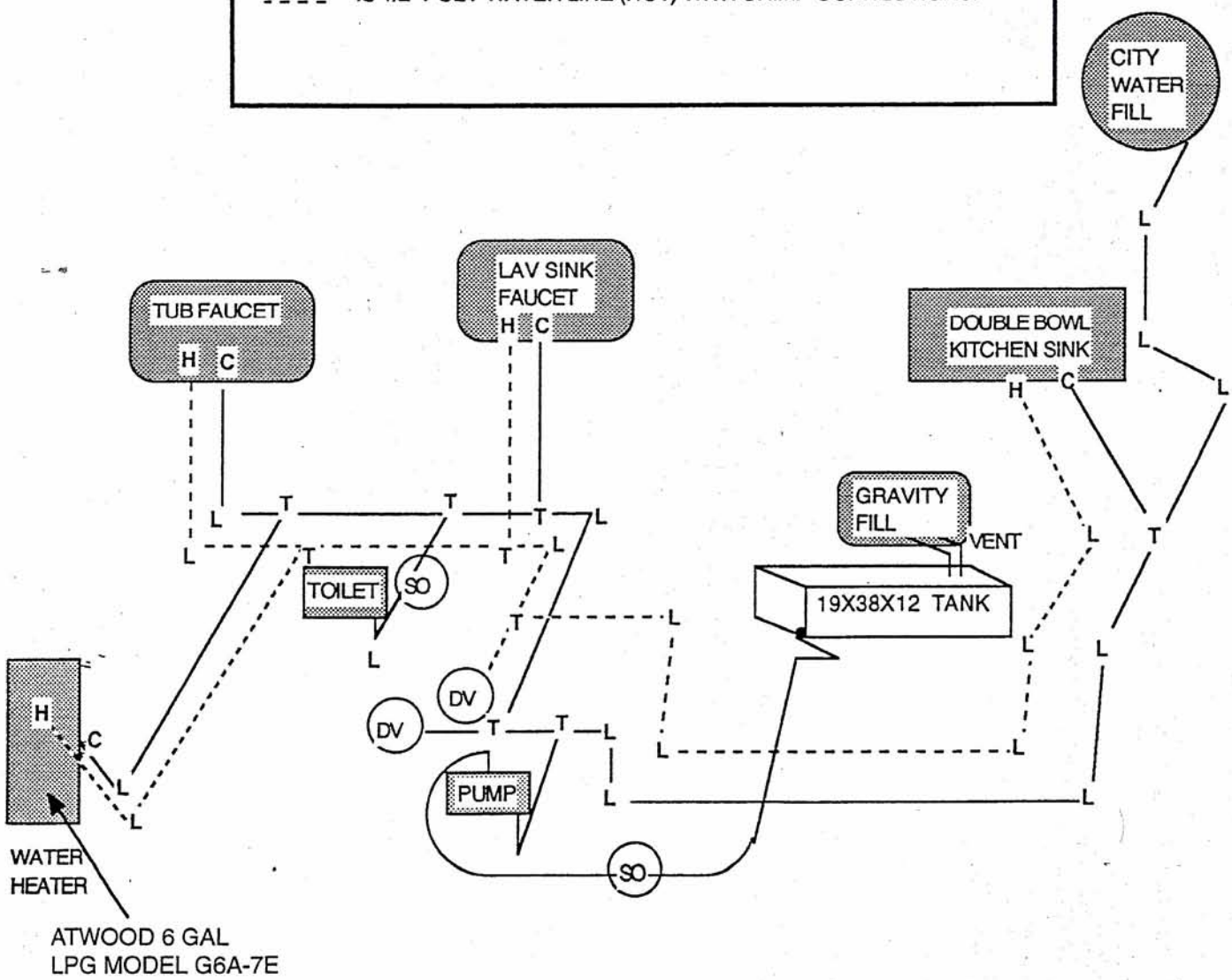
The two tanks share a common outlet for connecting the regular three-inch sewer hose for emptying, but each has its own slide valve so they can be evacuated separately. This connection, along with two slide valves, is located on the driver's side, near the center or at the rear of the coach.

F. Holding Tank Evacuation

The holding tank should be evacuated only at an authorized sanitary disposal station or sewer hookup at a campground. Position your Born Free at the sanitation station so the sewer connection is located near the drain opening. Remove the cap on the drain opening and install the sewer hose to the connection. Place the open end of the sewer hose in the disposal drain, and hold it in position during the entire evacuation process. Each tank should be drained separately, dumping the black water waste tank first. Avoid opening both valves at one time, avoiding the contents of either tank running into the other. Pull the slide valve handle all the way out so the contents will run out in a quick flushing manner. When the tank is empty, close the valve and run clear water through the toilet into the tank for rinsing. The best method of rinsing either tank is to close the slide valve and fill either tank through the toilet or one of the sinks with fresh water. Again, open the slide valve to allow the rinse water to evacuate. Close slide valve and re-engage retaining clips. Evacuate the gray water waste tank in the same manner. Disconnect the sewer hose, rinse, and replace the sewer hose in its carrier.

FRESH WATER SYSTEM
26' REAR SIDE BED

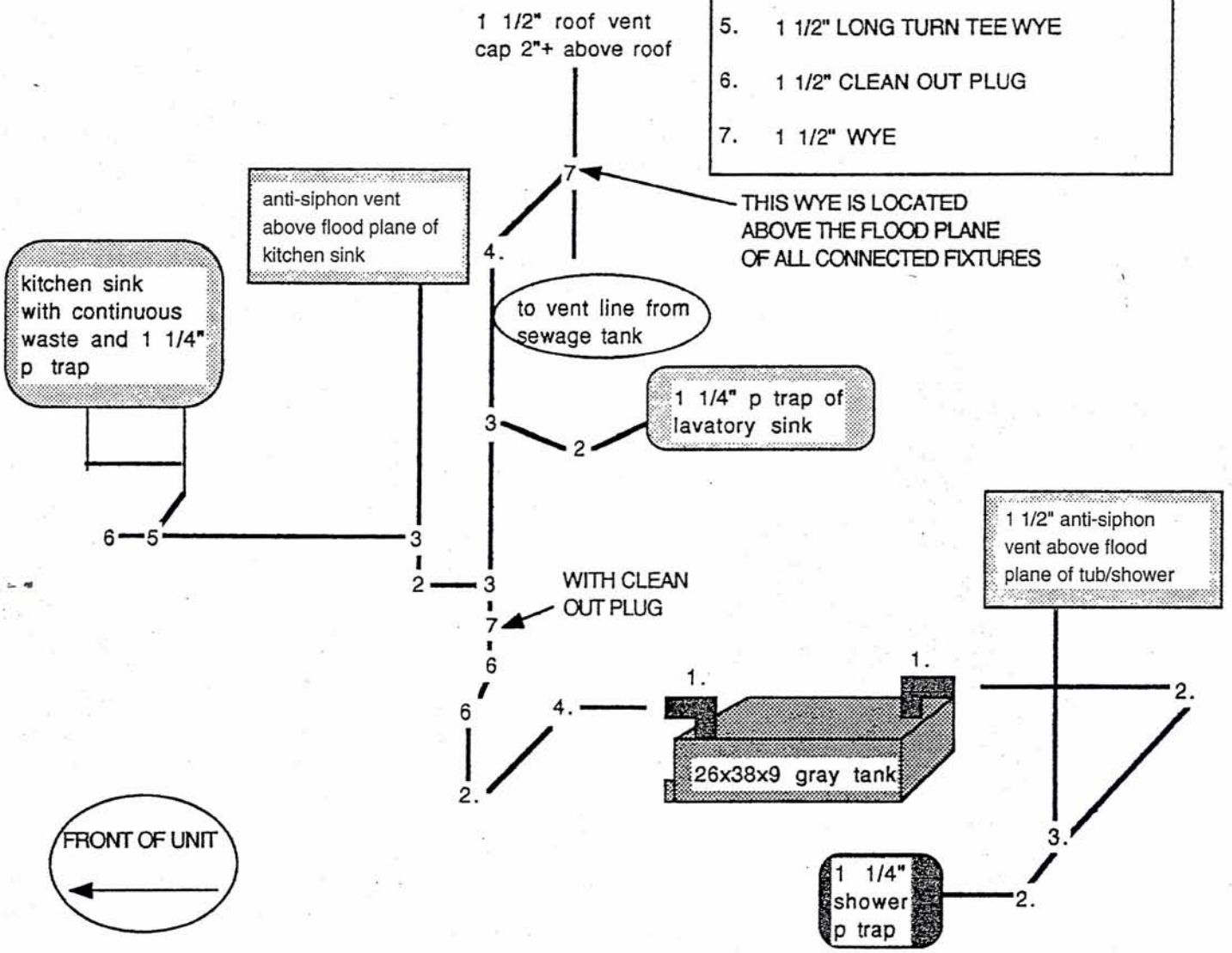
H	IS HOT PORT ON FAUCETS/ WATER HEATER.
C	IS COLD PORT ON FAUCETS/ WATER HEATER.
T	IS 1/2" COPPER TEE.
L	IS 1/2" COPPER 90 ELBOW.
DV	IS DRAIN VALVE.
SO	IS SHUTOFF VALVE.
——	IS 1/2" POLY WATER LINE (COLD) WITH CRIMP CONNECTIONS.
- - - -	IS 1/2" POLY WATER LINE (HOT) WITH CRIMP CONNECTIONS.



GRAY WATER SYSTEM

26' REAR SIDE BED

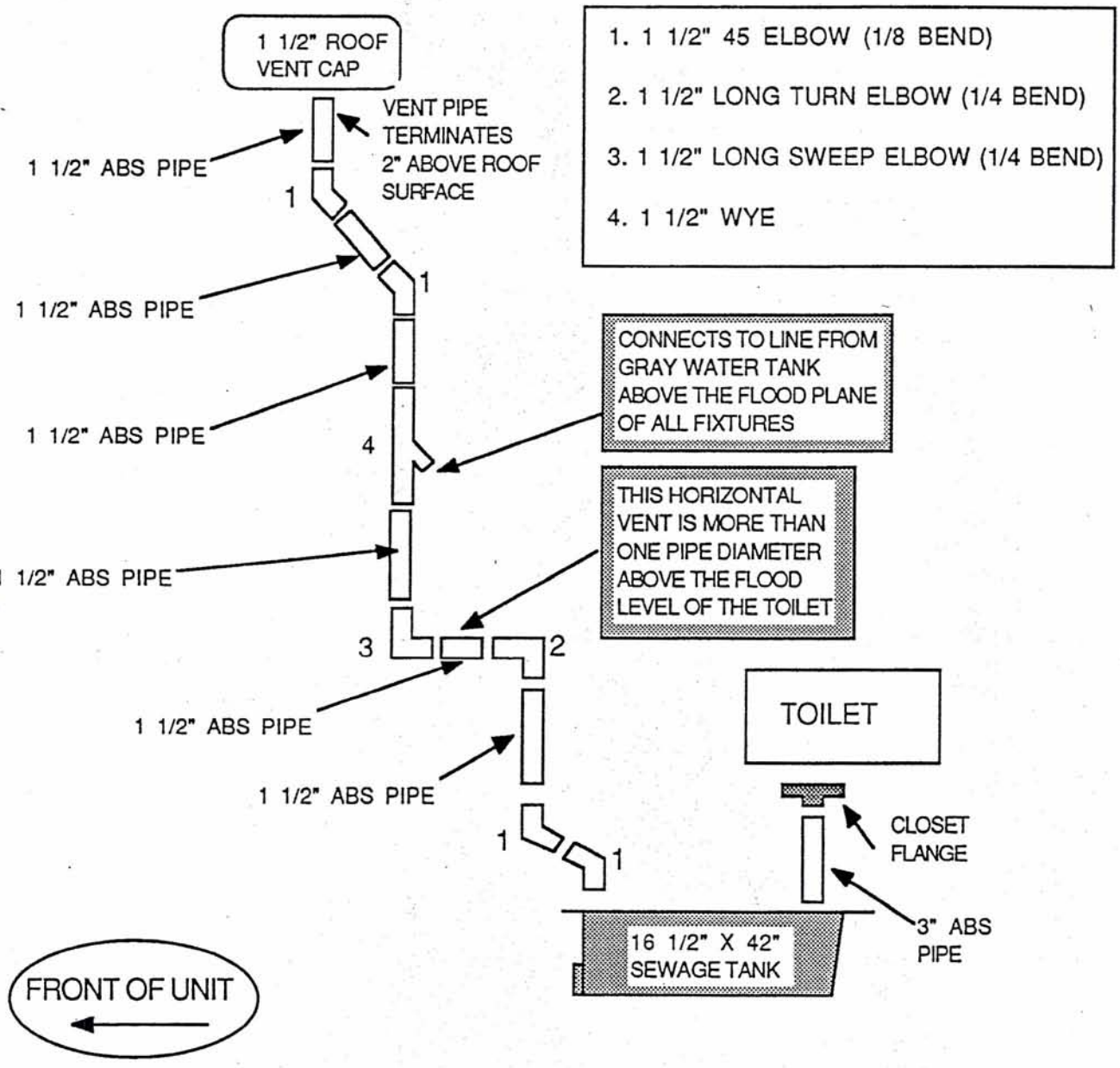
1. 1 1/2" STD LONG TURN 90 ELBOW
2. 1 1/2" LONG SWEEP 90 ELBOW
3. 1 1/2" x 1 1/2" x 1 1/2" TEE
4. 1 1/2" 45 ELBOW
5. 1 1/2" LONG TURN TEE WYE
6. 1 1/2" CLEAN OUT PLUG
7. 1 1/2" WYE



SEWAGE SYSTEM

(BLACK WATER)

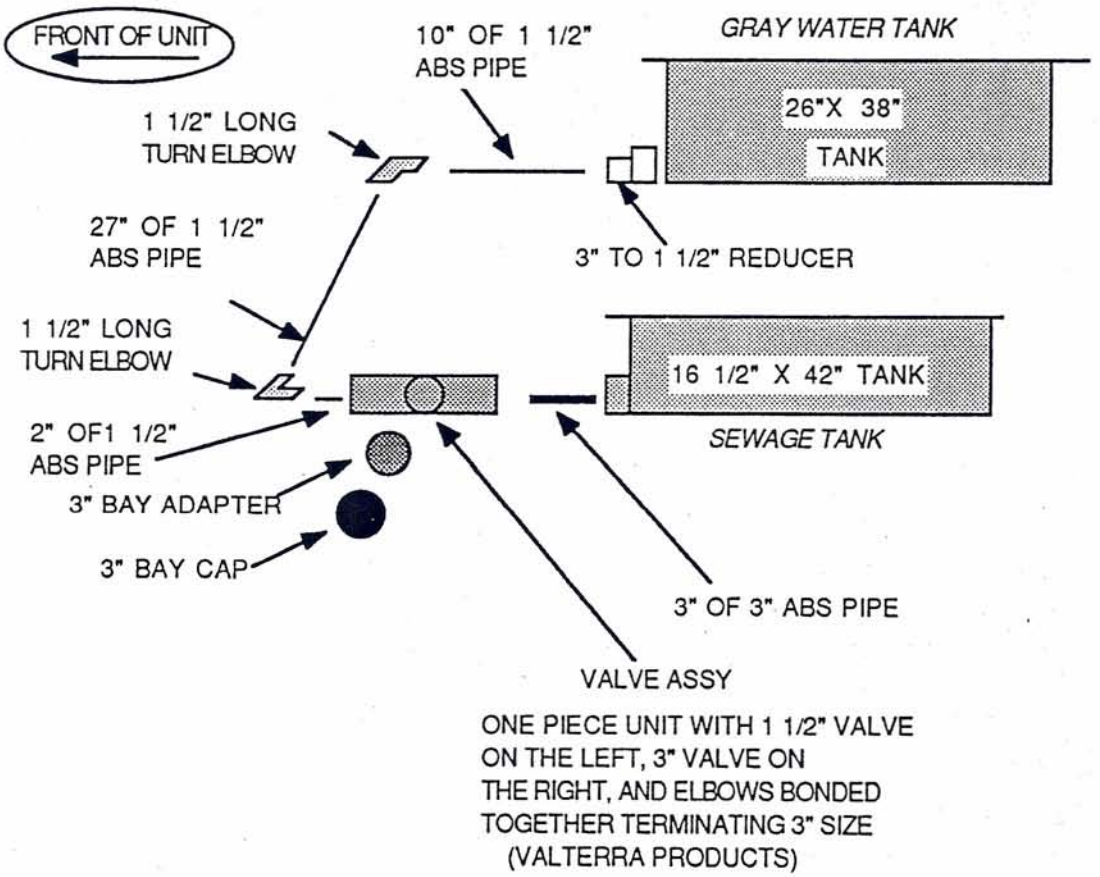
26' REAR SIDE BED



26' REAR SIDE BED

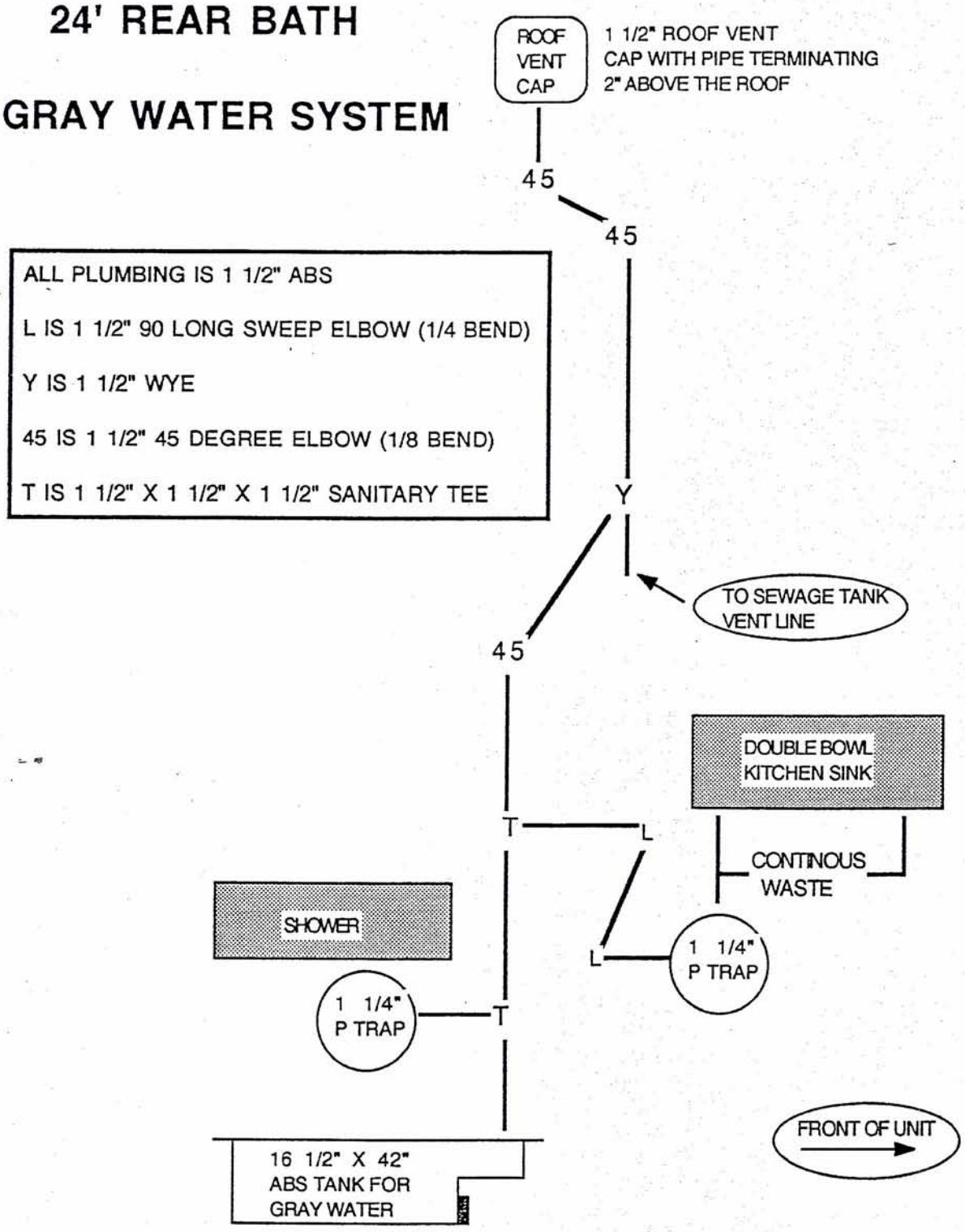
DUMP ASSEMBLY

(INTERCONNECTION BETWEEN THE GRAY AND SEWAGE TANKS AT OUTLETS OF TANKS)



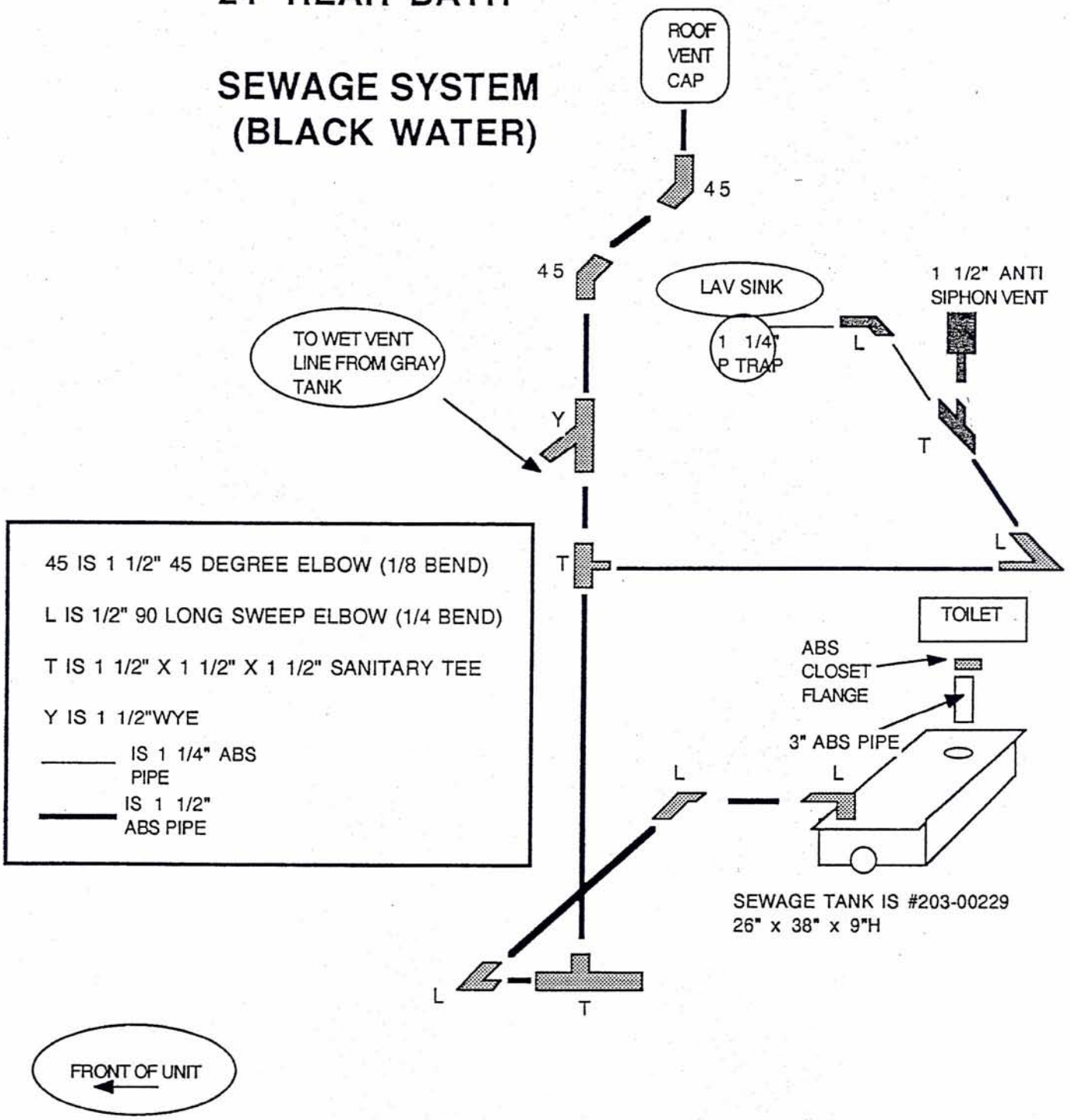
24' REAR BATH

GRAY WATER SYSTEM



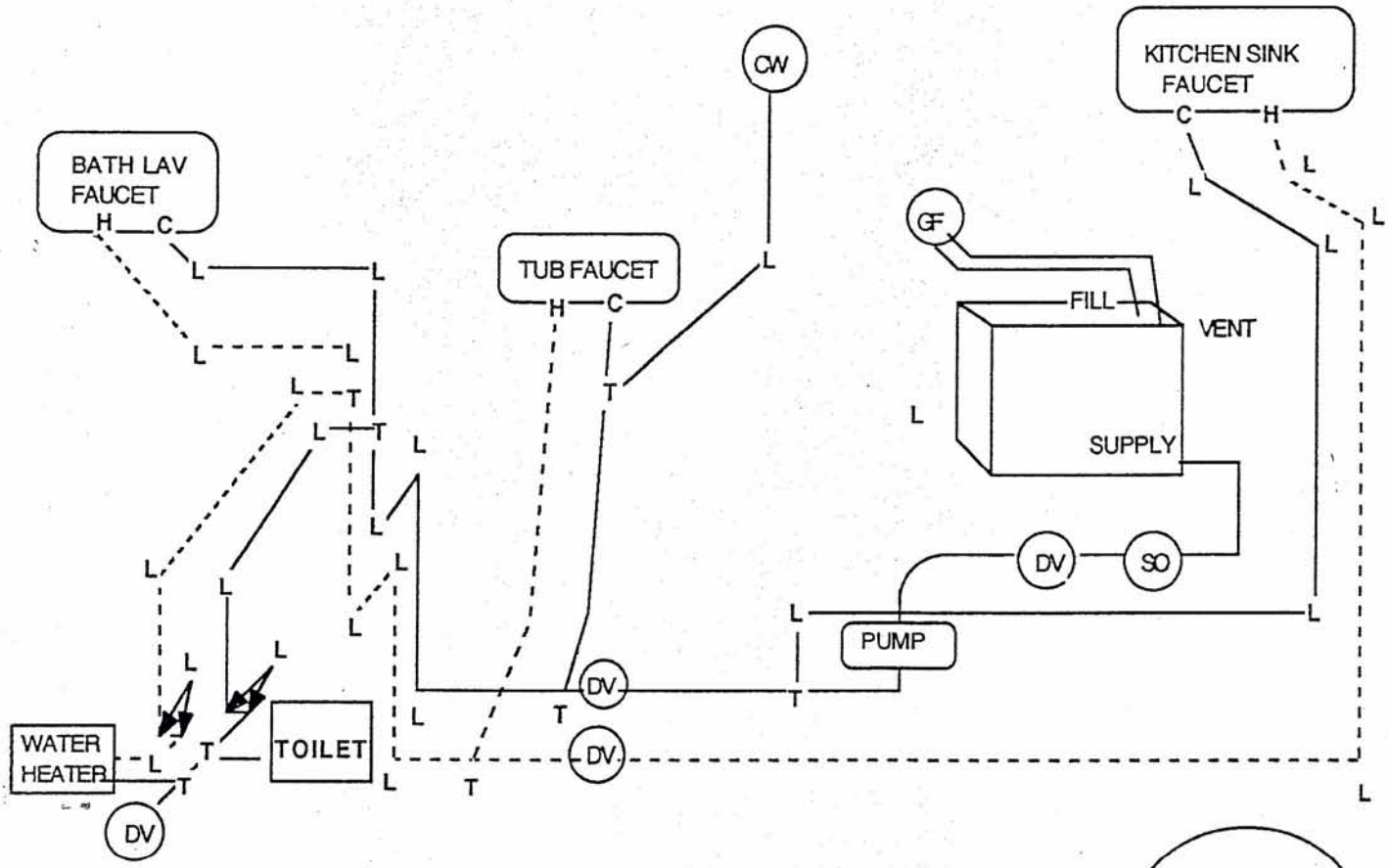
24' REAR BATH

SEWAGE SYSTEM (BLACK WATER)



24' REAR BATH

FRESH WATER SUPPLY SYSTEM



IS COLD WATER POLY LINE

IS HOT WATER POLY LINE

DV IS DRAIN VALVE

SO IS SHUTOFF VALVE

CW IS CITY WATER FILL

GF IS GRAVITY WATER FILL

H IS HOT PORT ON FAUCET

C IS COLD PORT ON FAUCET

L IS COPPER ELBOW/ 90 DEGREE TURN

T IS COPPER TEE

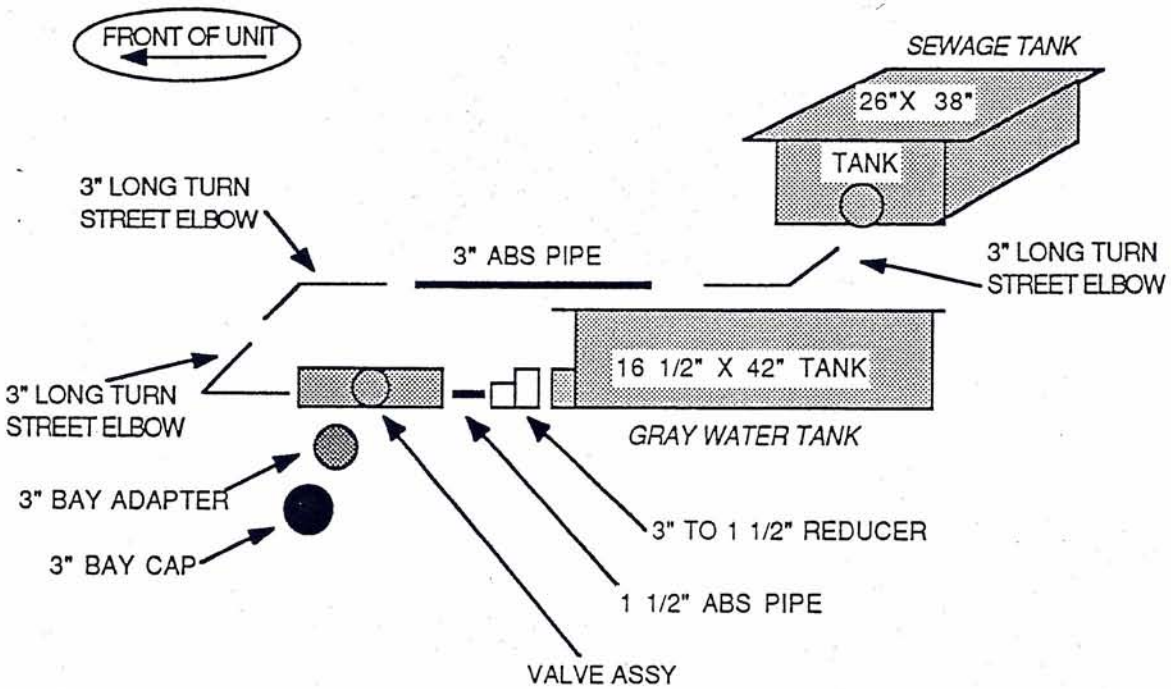
FRONT OF VEHICLE →

THE TANK IS A POLY 14"Wx26"Lx22"H TANK
#203-00242
THE PUMP IS A SHURFLO MODEL 2088-403-144
2.8 GPM 12VDC
THE WATER HEATER IS AN ATWOOD MODEL #G6A-7E
6 GALLON

24' REAR BATH

DUMP ASSEMBLY

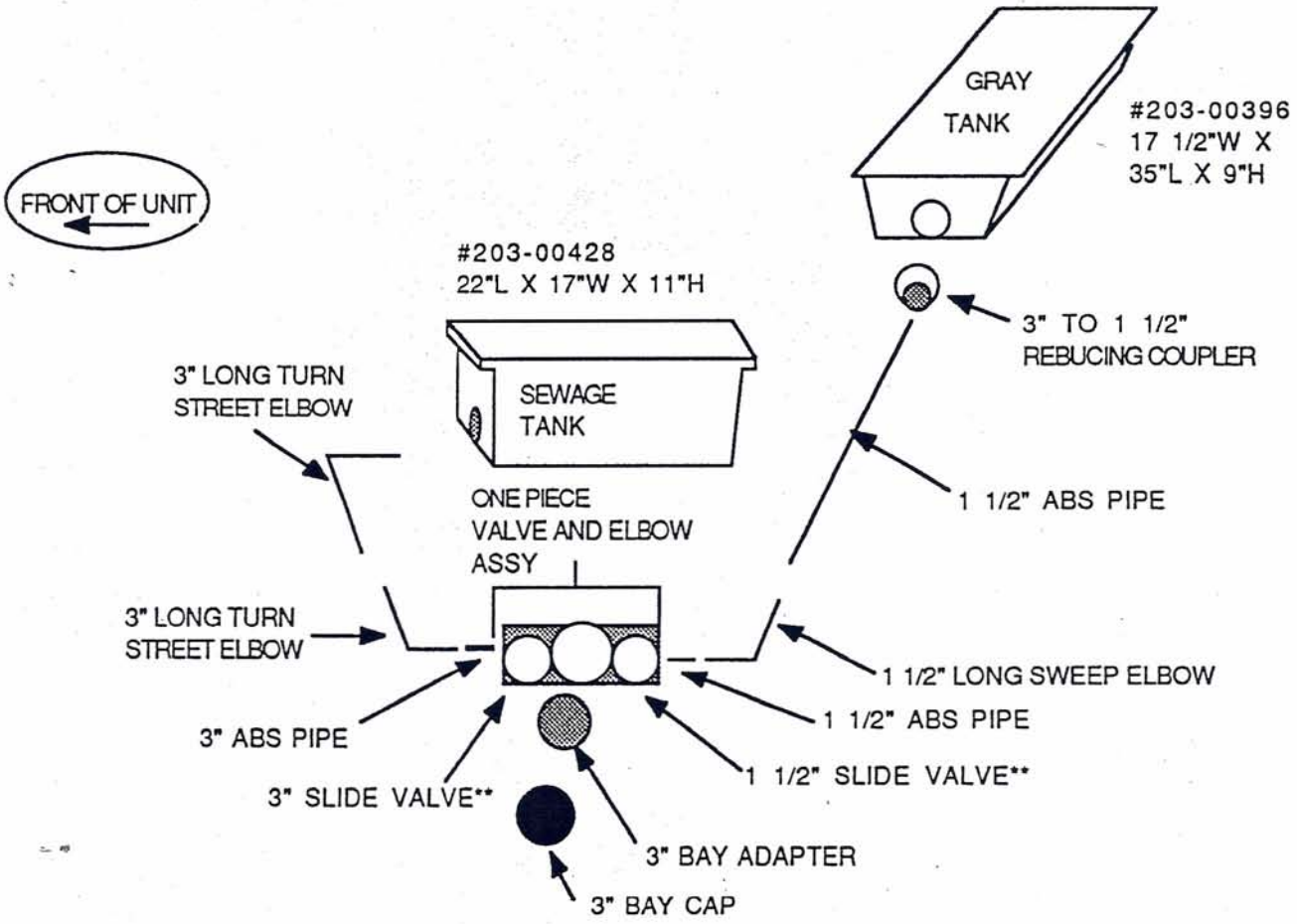
(INTERCONNECTION BETWEEN THE GRAY AND SEWAGE TANKS AT OUTLETS)



ONE PIECE UNIT WITH 3" VALVE ON THE LEFT, 1 1/2" VALVE ON THE RIGHT, AND ELBOWS BONDED TOGETHER TERMINATING 3" SIZE (VALTERRA PRODUCTS)

DUMP VALVE INTERCONNECTION BETWEEN GRAY AND SEWAGE TANKS

21' REAR DOOR WET BATH

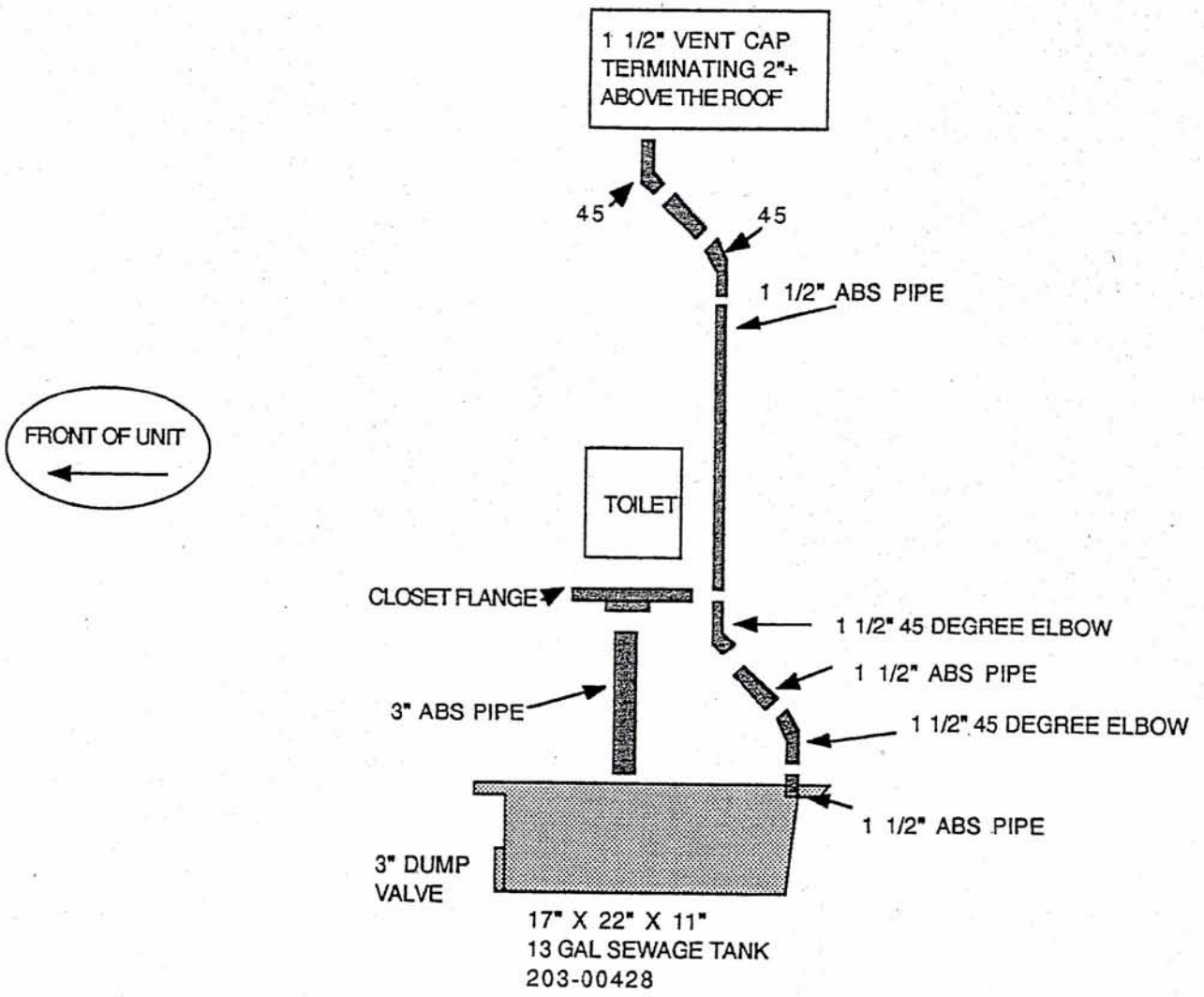


ALL OF THE ABOVE PIECES ARE ABS MATERIAL, AND JOINTS ARE BONDED WITH ABS CEMENT.
TANK # 203-00428 IS A POLY MATERIAL RATHER THAN ABS.

** The slide valves are a part of a one piece valve and elbow assy which incorporates a 3" long turn elbow with the 3" slide valve to the left of the elbow. The 1 1/2" slide valve is to the far right and comes into a 1 1/2" long turn elbow which is a side outlet of the 3" elbow. This is an approved part manufactured by Valterra Products.

SEWAGE SYSTEM
(BLACK WATER)

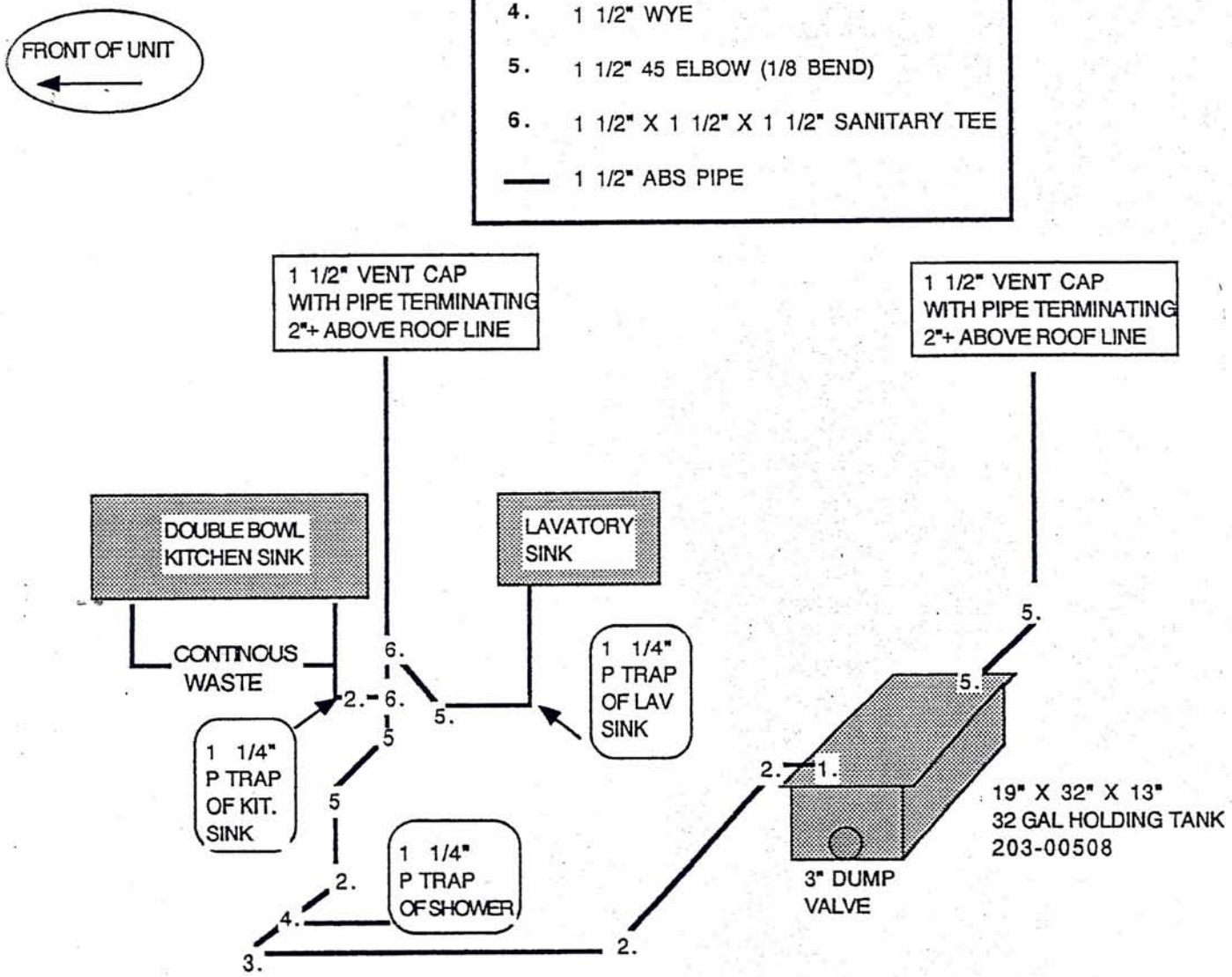
21' REAR DOOR WET BATH



GRAY WATER SYSTEM

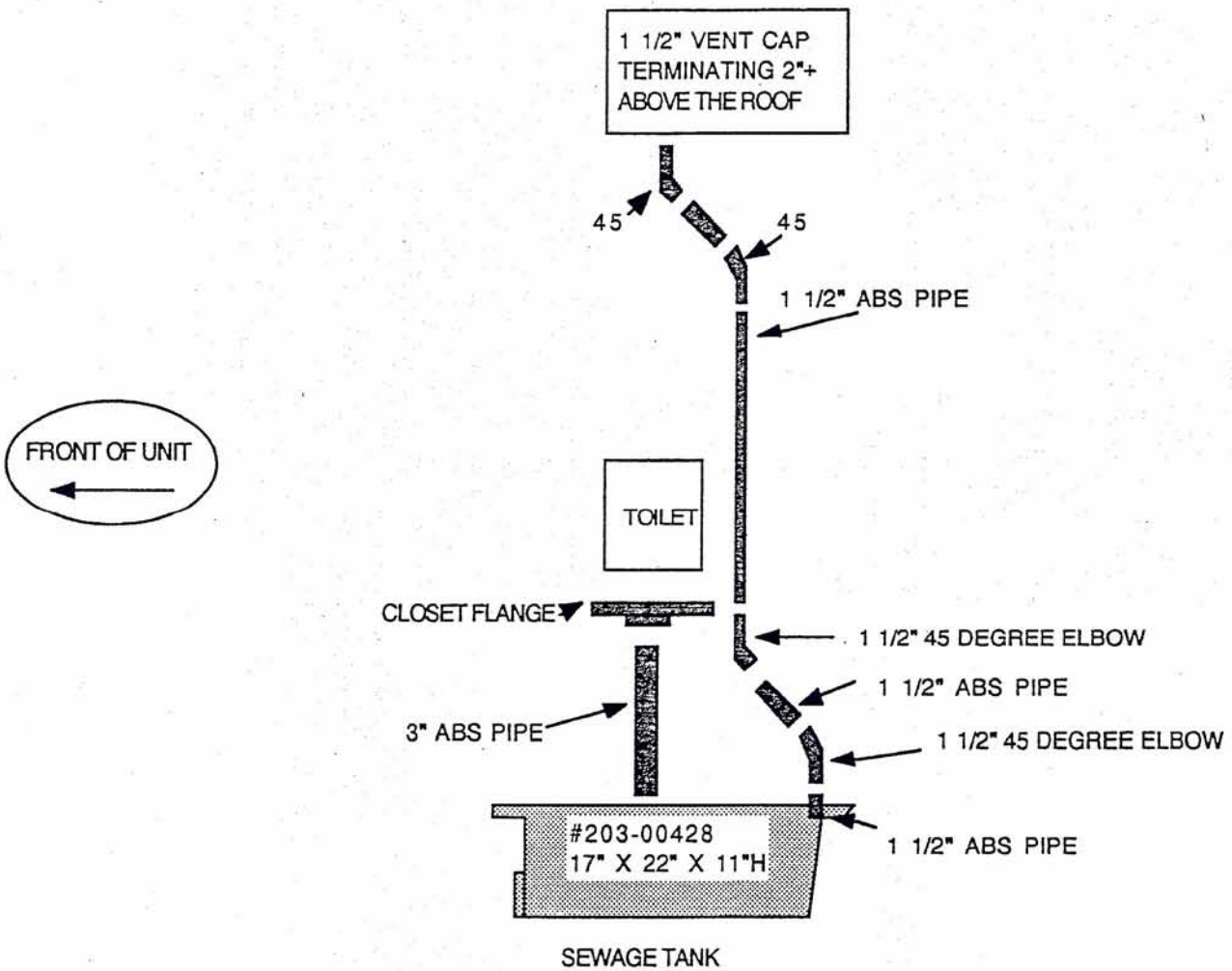
21' REAR DOOR WET BATH

1.	1 1/2" LONG TURN 90 ELBOW (1/4 BEND)
2.	1 1/2" LONG SWEEP 90 ELBOW (1/4 BEND)
3.	1 1/2" LTTY WITH ADAPTER & PLUG
4.	1 1/2" WYE
5.	1 1/2" 45 ELBOW (1/8 BEND)
6.	1 1/2" X 1 1/2" X 1 1/2" SANITARY TEE
—	1 1/2" ABS PIPE



SEWAGE SYSTEM
(BLACK WATER)

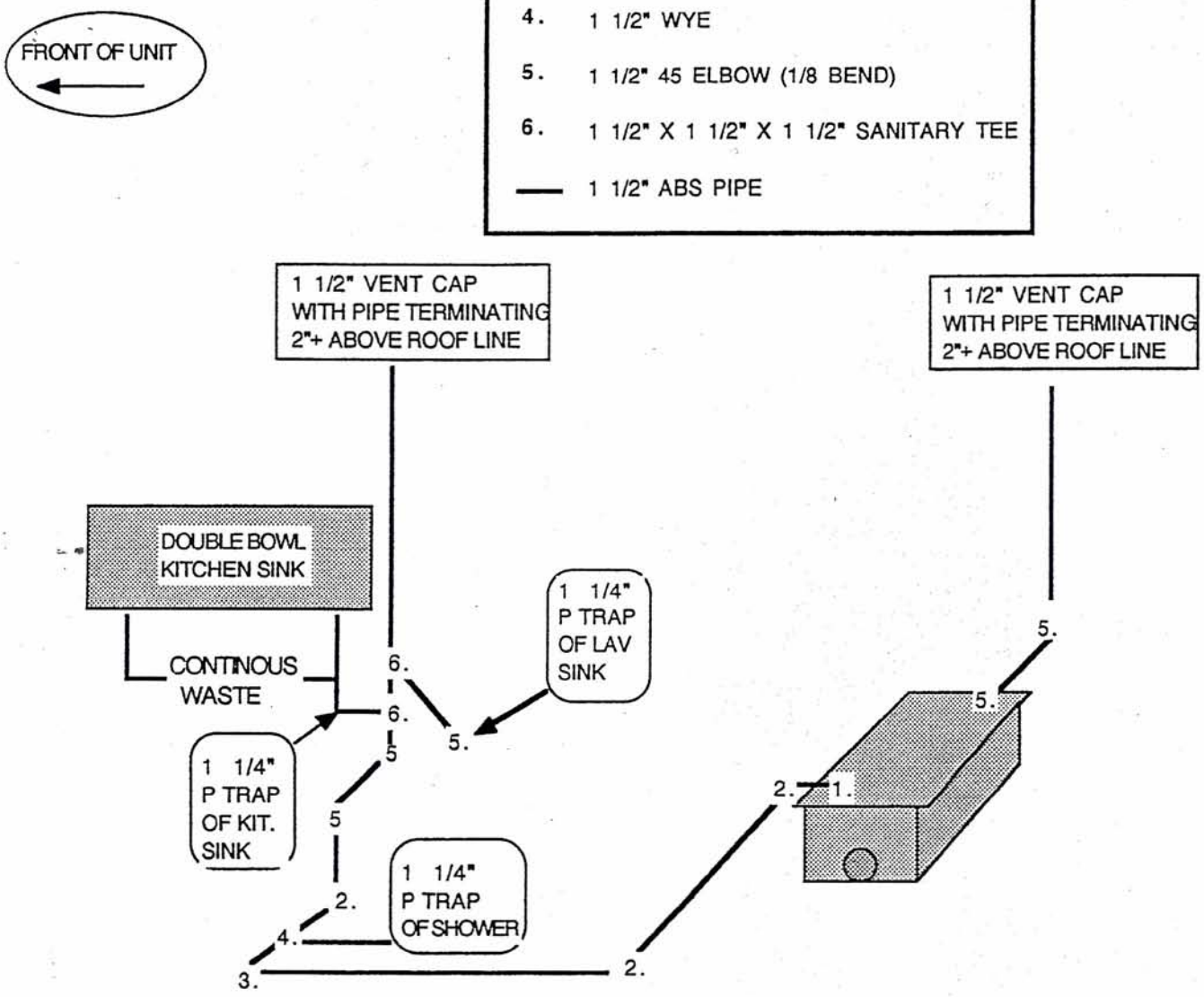
21' REAR DOOR WET BATH



GRAY WATER SYSTEM

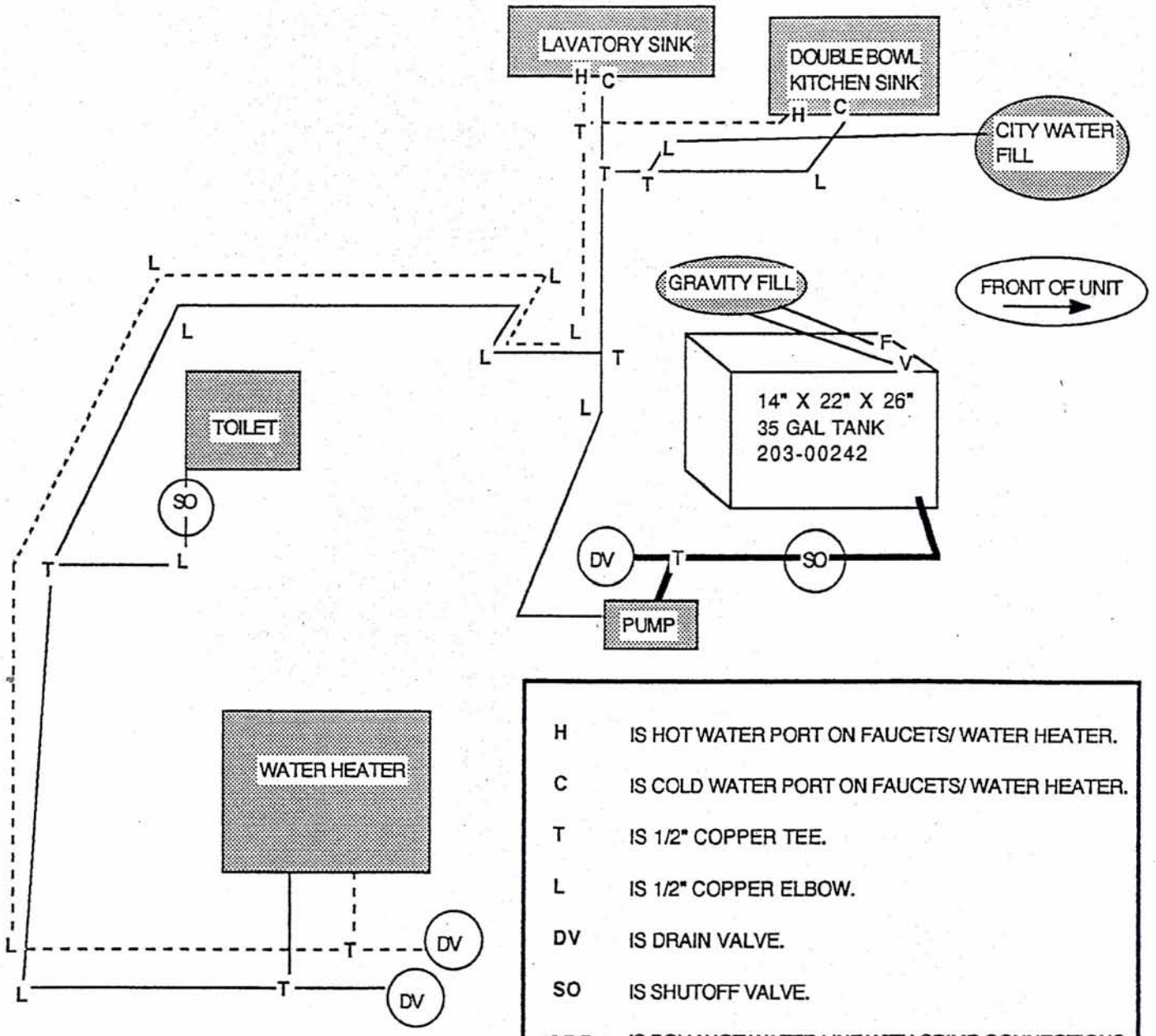
21' REAR DOOR WET BATH

1.	1 1/2" LONG TURN 90 ELBOW (1/4 BEND)
2.	1 1/2" LONG SWEEP 90 ELBOW (1/4 BEND)
3.	1 1/2" LTTY WITH ADAPTER & PLUG
4.	1 1/2" WYE
5.	1 1/2" 45 ELBOW (1/8 BEND)
6.	1 1/2" X 1 1/2" X 1 1/2" SANITARY TEE
—	1 1/2" ABS PIPE



FRESH WATER SYSTEM

21' REAR DOOR WET BATH



H	IS HOT WATER PORT ON FAUCETS/ WATER HEATER.
C	IS COLD WATER PORT ON FAUCETS/ WATER HEATER.
T	IS 1/2" COPPER TEE.
L	IS 1/2" COPPER ELBOW.
DV	IS DRAIN VALVE.
SO	IS SHUTOFF VALVE.
- - -	IS POLY HOT WATER LINE WITH CRIMP CONNECTIONS.
——	IS POLY COLD WATER LINE WITH CRIMP CONNECTIONS.
▬	IS 1/2" ID HOSE WITH HOSE CLAMPS.

G. Parking In a Campground With Hookups

When parked in a campsite with sewer hookup facilities, connect the drain hose and open the gray holding tank drain valve. This will allow complete water drainage during your stay and your holding tank will remain empty. The drain valve should remain closed during your stay. If you leave the valve open, liquids will run out and leave solids behind. The proper method is to leave the slide valve closed allowing wastes to accumulate. If this is done, the evacuation procedure will allow the quick-flush principle to carry all wastes out the drain at the same time.

VII. SEASONAL PROTECTION

Each year more travelers discover winter camping. With your new Born Free Motorcoach, you don't have to wait, you are ready now. The coach is built with adequate insulation, ventilation, and construction principles that can keep you warm all winter long. If the unit is being heated with the furnace, the only precautions necessary to prevent freezing are to add RV antifreeze to the holding tanks and sink drains.

NOTE - Do not use automotive-type antifreeze. This ethylene glycol-type antifreeze is poisonous and not approved for potable water systems.

A. Winterizing

If you choose to store your motorcoach during the winter months, protection has to be provided for the water and drain systems. The procedure is as follows:

1. Allow as much water to evacuate from the system through a faucet as possible.
2. Turn water pump switch "OFF."
3. Drain water tank and lines through three drain valves located inside the lower cupboards. Also drain holding tanks.
4. Open water heater drain and drain water from tank.
5. Turn valves "A" and "C" crossways to water lines on water heater (see illustration).
6. Turn valve "B" parallel to bypass water line.
7. When system is drained, shut drain valves and install 1-2 gallons of "non-toxic RV" antifreeze into the fresh water tank.
8. Turn the water pump switch "ON" and open faucets until antifreeze flows through each of them. Also flush toilet until antifreeze appears.
9. Shut water pump "OFF."
10. Pour 1/2 gallon of antifreeze down the shower drain, kitchen sink, and bath sink.
11. Your motorcoach is now "winterized."

Along with protecting the water and drain systems, we advise you to follow these simple suggestions for proper winter storage:

1. Remove all bedding and clothing to prevent mildewing.
2. Remove all food stuffs and clean cupboards.
3. Affix newspapers to inside windows with masking tape. This protects carpets, curtains, and cushions from ultraviolet damage.
4. Clean the refrigerator thoroughly and place an open package of baking soda inside, leaving the door open.
5. Clean all appliances and stove vents.
6. Shut LP tank valve "OFF."
7. Remove the auxiliary battery and store up off any concrete floor. It is advisable to charge the battery once or twice during storage.

B. Summer De-Winterizing Of Unit

Follow the following procedure to de-winterize your coach:

1. Fill fresh water tank with 5-10 gallons of clean water.
2. Turn water pump switch "ON."
3. Open faucets and allow water to run until coloration and foam is gone.
4. Allow water to flow in toilet until water is clear.
5. Drain remainder of fresh water tank.
6. Refill fresh water tank.
7. Turn valves "A" and "C" on water heater parallel with water lines. Turn valve "B" crossways to by-pass water line.
8. Drain holding tanks.
9. Your system is now ready for normal summer use. Antifreeze has been kept out of your water heater to prevent lingering tastes and smells.

See diagram on opposite page

RIGHT HAND SIDE
WATER HEATER BYPASS

CK 6/26/95