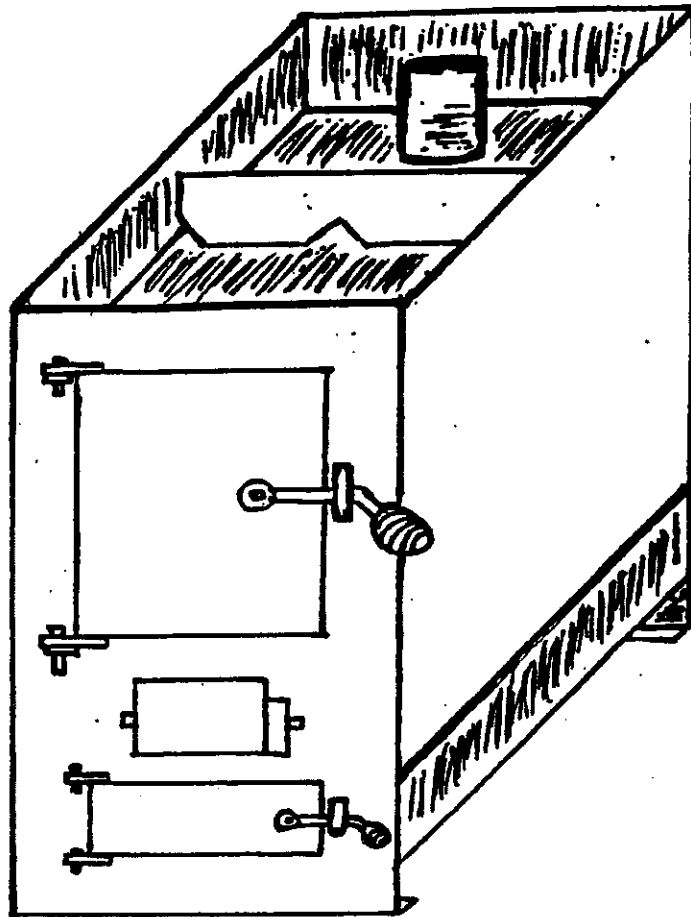


OWNER'S MANUAL



Kuumd

WOODBURNING SAUNA STOVE

Lamppa Mfg.

Box 422

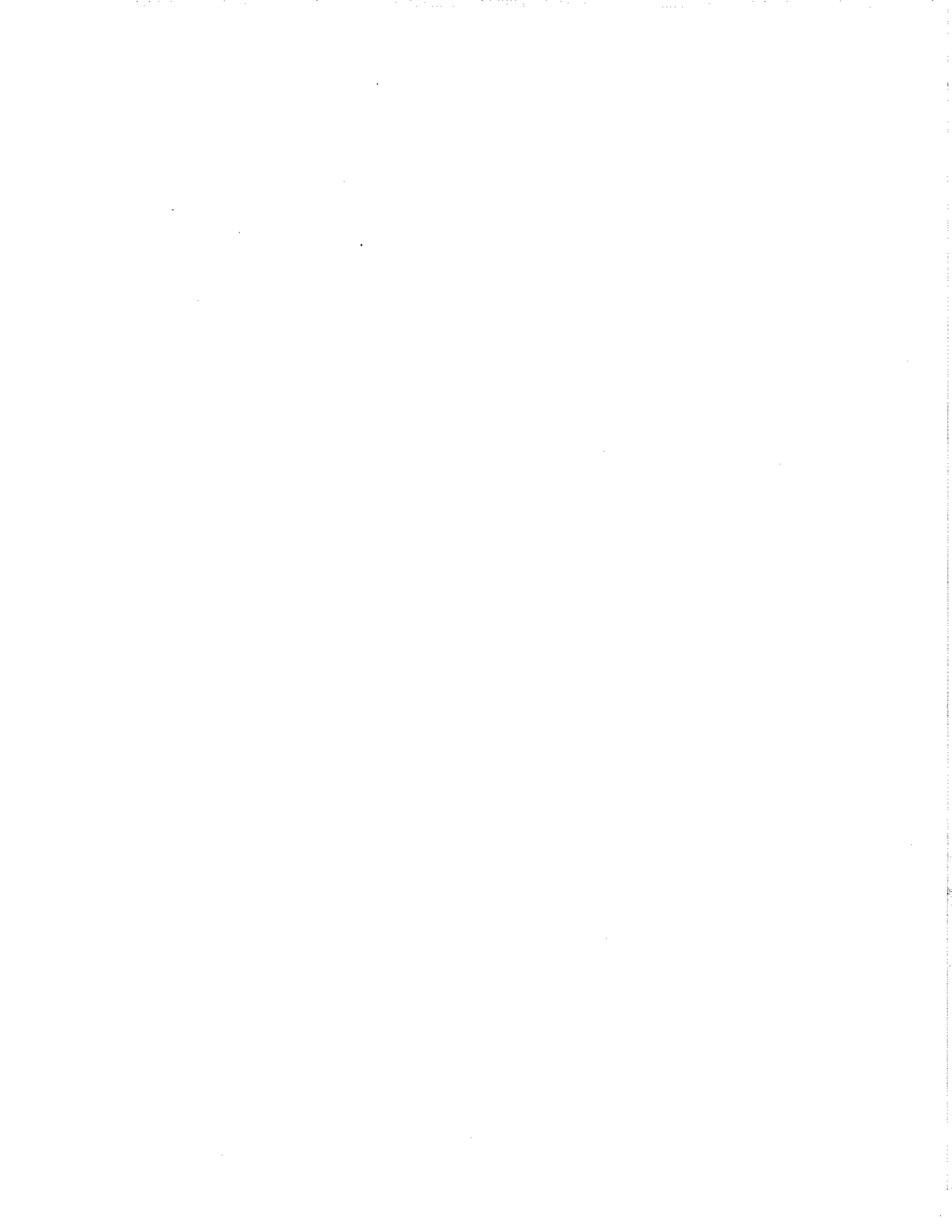
Tower, Mn. 55790

(218) 753-2330

WARNING

Do not operate the stove on the highest setting (which is when the draft control lever is all the way up to the upper stop on the draft control semi-ring) for a long period. This will result in excessive heating of the stove and could damage the unit. After 5-10 min. at the high burn position, then lower the draft control lever setting down, near to the bottom stop on the draft control semi-ring. At this setting you will have a controlled front to rear burn of the logs and is also at the most efficient burn rate.

This will prevent the over heating of the unit and reduce any damage to the stove.



Installation Instructions

- 1) The unit must be set on a non-combustible surface and be at least 16" larger than the dimensions of the base of the unit. The non-combustible floor protector must extend at least 16" in front of the unit.
- 2) Once located - install firebrick provided - (diagram). (Pg.'s 23 - 28)
- 3) Use 6" 24 ga. stove pipe to connect stove to an approved Class A chimney.
- 4) Each pipe section must be sheet metal screwed together with a minimum of 3 screws.
- 5) Install a chimney damper in the first section from stove to negate extremely windy conditions and to help arrest a chimney fire.
- 6) Periodically inspect pipes and smoke collar for any creosote accumulations. Clean if needed.
- 7) Any ashes discarded from fire chamber must be placed in a non-combustible container or location.
- 8) Install heat shields on stove to maintain proper clearances to combustibles - (diagram). (Pg.'s 8 - 17)
- 9) Periodically adjust fire-door and ash door to maintain air tightness. After you lose adjustment change the rope gasket, then readjust. (Pg.'s 20, 21)
- 10) Because the top of the stove is made to drain water out the back, we suggest having the stove tilted backwards a little. (Pg. 10)
- 11) Never locate stove in an area (room) that is too air-tight. Stove needs air to burn and occupants need air to breathe.
- 12) Stove pipe needs 18" clearances in all directions from anything combustible, unless double or triple walled pipe is used. Check their manufacturer's specifications for other clearances then. (Pg. 18)

Operating Instructions

- 1) Never burn garbage, gasoline, or other flammable liquids.
- 2) For use with solid wood fuel only.
- 3) This stove is hot while in operation. Do not touch. Keep children, clothing and wood (combustibles) away. Contact may cause skin burns.
- 4) First place a generous amount of paper and dry kindling into fire chamber and stack a reasonable amount of dry wood on top of kindling, keeping the front of the logs at least 1" away from the front of the stove. Never against front.
- 5) Light the fire and close door.
- 6) Adjust air lever arm to wide open position (A) - (diagram). (pg. 19)
- 7) After 5-10 minutes of Pre-heating, lower draft lever arm to Normal burn position D - slightly higher than closed notch C - (diagram). (pg. 19)
- 8) If for some reason you want to put the fire out, lower lever arm into notch C and against stop B - (diagram). (pg. 19)
- 9) Periodically remove ashes from fire chamber via ashpan and rake or small coal shovel. Discard ashes in non-combustible container and safe location.
- 10) Inspect pipes regularly for creosote and soot accumulations.
- 11) The pipes and stove should never become red or glow - this would indicate overfiring and possibly a pipe and/or chimney fire, which is very dangerous.
- 12) Use good judgment when burning wood! Never burn a stove wide open very long, just to preheat the firebox and wood are the only times it's needed. This will enable the stove to last a long time and result in safe burns. Be cautious!!
- 13) If you have the stainless steel water tank attached to the side of stove, maintain at least a half-full level at all times. Drain the tank empty when not in use to prevent freezing and possible cracking of the tank.

WARNING

Do not operate the stove on the highest setting (which is when the draft control lever is all the way up to the upper stop on the draft control semi-ring) for a long period. This will result in excessive heating of the stove and could damage the unit. After 5-10 min. at the high burn position, then lower the draft control lever setting down, near to the bottom stop on the draft control semi-ring. At this setting you will have a controlled front to rear burn of the logs and is also at the most efficient burn rate.

This will prevent the over heating of the unit and reduce any damage to the stove.

WOOD BURNING FACTS

BE AWARE OF CREOSOTE "BUILD-UP" WHEN BURNING WOOD!

Woodburning equipment will give you trouble with creosote deposits under certain conditions, unless you are aware of these conditions and avoid them.

Creosote is a tarry liquid or solid resulting from the distilling of wood during the combustion process.

It consists of a number of elements which condense and bake layer upon layer in the chimney flue.

WARNING:

SERIOUS FIRE MAY RESULT IF A SUFFICIENT CREOSOTE "BUILD-UP" IS PERMITTED OVER AN EXTENDED PERIOD OF TIME.

Highly combustible in its solid and semi-liquid state, creosote is present in the gases given off by burning wood. Creosote may build up a considerable thickness on the interior surface of the chimney and flue pipes, considerably reducing their cross-sectional area.

CHIMNEY INFORMATION

The chimney is one of the most important yet most neglected and misunderstood portion of any Solid Fuel Burning installation. THE FURNACE SHALL NOT BE CONNECTED TO THE CHIMNEY WITH OTHER HEATING DEVICES.

CAUTION:

THE CHIMNEY MUST BE A CLASS "A" CHIMNEY IN GOOD OPERATING CONDITION. DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVICING ANOTHER APPLIANCE.

There are two types of Class "A" chimneys:

1. Masonry with tile liner suitable for venting residential or building heating appliances. (See NFPA 211.)
2. Class "A" Chimney, listed or certified by a nationally recognized testing agency as suitable for venting residential or building heating appliances.

If your masonry chimney has not been used for some time, have it inspected by a qualified person (Building Inspector, Fire Department Personnel, etc.)

If a listed or certified manufactured chimney is to be used, make certain it is installed in accordance with the manufacturer's instructions and all local and state codes. See Figure 17, Manufactured Chimney Installation and Figure 18 of Masonry Chimney (note roof clearance) in accordance with NFPA 211.

CAUTION

NEVER CONNECT TO AN OUTSIDE CHIMNEY UNLESS IT IS SUFFICIENTLY INSULATED TO REDUCE THE AMOUNT OF CONDENSATION TO A LEVEL THAT WILL NOT INTERFERE WITH THE EXHAUST OF THE FLUE GASES.

DISPOSAL OF ASHES

Ashes should be placed in a metal container with a tight fitting lid. The closed container of ashes should be placed on a noncombustible floor or on the ground, well away from all combustible materials, pending final disposal. If the ashes are disposed of by burial in the soil or otherwise locally dispersed, they should be retained in a closed container until all cinders have thoroughly cooled.

CREOSOTE-FORMATION AND NEED FOR REMOVAL

When wood is burned slowly it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cool chimney flue of a slow burning fire. As a result, creosote residue accumulates on the flue lining. When ignited, this creosote makes an extremely hot fire.

The chimney connector and chimney should be inspected at least twice monthly during the heating season to determine if a creosote buildup has occurred.

If creosote has accumulated, it should be removed to reduce the risk of a chimney fire.

IMPORTANT

RUNAWAY FIRE AND CHIMNEY FIRE
CLOSE THE DRAFT IMMEDIATELY

FUEL LOADING AND ASH REMOVAL
DOORS ARE SHUT

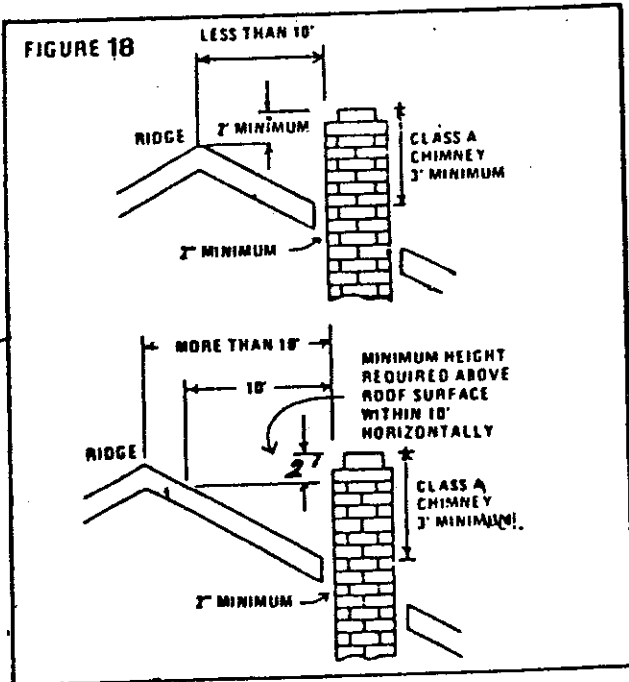
CALL FIRE DEPARTMENT

CAUTION:

YOU MUST CHECK YOUR CHIMNEY FLUE PIPE CONNECTOR FREQUENTLY WHEN FIRST STARTING TO BURN WOOD TO DETERMINE THE AMOUNT OF CHIMNEY MAINTENANCE (CLEANING) THAT WILL BE REQUIRED. THIS, OF COURSE, IS ALSO DEPENDENT ON WOOD TYPE, MOISTURE, AND, IN GENERAL, HOW THE FURNACE IS USED.

REASONS for insufficient draft readings:

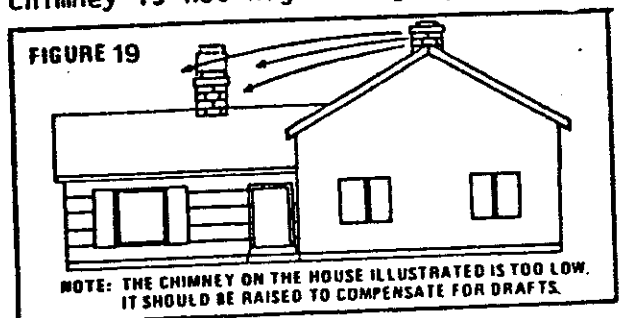
1. Leaky Chimney - Air leaking in around a loose fitting clean-out door, flue pipes not tight at the joints, improper plug openings, or defective masonry.



2. Chimney Improper Height - Chimney does not extend through the roof to a sufficient height to promote sufficient draft or causes a down drafting condition to take place. See NFPA 211.

3. Obstructions - Obstructions in the chimney. Check prior to using holding a mirror in chimney cleanout door. This will give a inside view of the chimney.

4. Trees or other topographical barriers - Impeding the chimneys operation or causing a down draft condition to exist. This can also be caused by adjacent building or the roof of the same structure where the chimney is not high enough (Figure 19)



5. Chimney Size - Chimney is not properly sized to adequately fit the appliance. It is either too small or too large. Minimum chimney height - 14 foot. Minimum Diameter - 6 inches.

6. Chimney Offsets - chimneys with offsets should not be used. They cause an obstruction to draft as well as a place for debris to collect.

7. Elbow Restrictions - The flue pipe is connected to the chimney with too many elbows reducing the draft the chimney can provide.

8. Multiple Venting - When more than one (1) device vents into the same chimney flue.

When smoke rises into the chimney, it will rise in a spiraling path.

The most important thing to remember about chimneys is there need for maintenance and cleaning. If chimneys are not cleaned on a regular basis, it effects the draft, as well as make an attributing cause to a chimney fire.

CAUTION:
YOU MUST CHECK YOUR CHIMNEY FLUE PIPE CONNECTOR FREQUENTLY WHEN FIRST STARTING TO BURN WOOD TO DETERMINE THE AMOUNT OF CHIMNEY MAINTENANCE (CLEANING) THAT WILL BE REQUIRED. THIS, OF COURSE, IS ALSO DEPENDENT ON WOOD TYPE, MOISTURE, AND, IN GENERAL, HOW THE FURNACE IS USED.

IMPORTANT
RUNAWAY FIRE AND CHIMNEY FIRE
CLOSE THE DRAFT IMMEDIATELY
FUEL LOADING AND ASH REMOVAL
DOORS ARE SHUT
CALL FIRE DEPARTMENT

OPERATION

Wood Firing the Unit

IMPORTANT

DURING NORMAL OPERATION, FIRING DOOR AND ASH DOOR MUST BE KEPT TIGHTLY CLOSED. AIR LEAKAGE WILL CAUSE LOSS OF EFFICIENCY, RESULTING IN HIGHER HEATING COSTS. IF DOOR GASKETS BECOME WORN, REPLACE WITH 1/2" CERAMIC ROPE AVAILABLE FROM LOCAL SOURCES

IMPORTANT

KEEP ASH DRAWER EMPTY.

IF ASHES ARE PERMITTED TO BUILD UP ABOVE THE GRATE, THE GRATES COULD WARP AND EVENTUALLY BURN OUT.

DANGER

NEVER BURN MATERIALS OTHER THAN WOOD LOGS, PREFERABLY SPLIT AND DRIED.

A CHIMNEY FIRE OR HEAT EXCHANGER FAILURE COULD RESULT. THIS INCLUDES LARGE AMOUNTS OF CORRUGATED BOXES, WOODSHAVINGS, PAPER SCRAPS, DRIED CHRISTMAS TREES, COAL, GARBAGE, TIRES OR OTHER BURNABLE PRODUCTS.

WARNING RISK OF FIRE

DO NOT OPERATE WITH FUEL LOADING OR ASH REMOVAL DOORS OPEN.

DO NOT STORE FUEL OR OTHER COMBUSTIBLE MATERIAL WITHIN MARKED INSTALLATION CLEARANCES.

INSPECT AND CLEAN FLUES AND CHIMNEY REGULARLY.

CAUTION

SURFACES ARE HOT

KEEP CHILDREN AWAY

DO NOT TOUCH DURING OPERATION

SAFETY CONSIDERATIONS

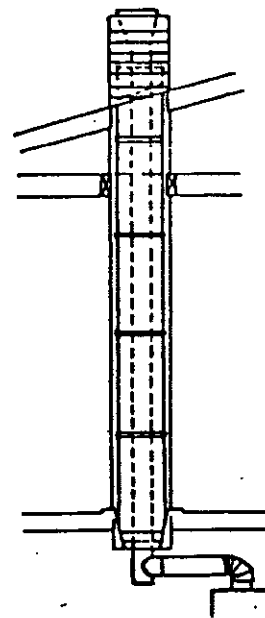
DANGER

RISK OF FIRE OR EXPLOSION

DO NOT BURN GARBAGE, GASOLINE, DRAIN OR ENGINE OIL, KEROSENE, FUEL OIL, OR OTHER FLAMMABLE LIQUIDS.

DO NOT USE CHEMICALS OR FLUID TO START FIRE.

FIGURE 47



If the chimney cannot supply this constant draft, the unit will not operate properly.

WOOD BURNING FACTS

BE AWARE OF CREOSOTE "BUILD-UP" WHEN BURNING WOOD!

Woodburning equipment will give you trouble with creosote deposits under certain conditions, unless you are aware of these conditions and avoid them.

Creosote is a tarry liquid or solid resulting from the distilling of wood during the combustion process.

It consists of a number of elements which condense and bake layer upon layer in the chimney flue.

WARNING:

SERIOUS FIRE MAY RESULT IF A SUFFICIENT CREOSOTE "BUILD-UP" IS PERMITTED OVER AN EXTENDED PERIOD OF TIME.

Highly combustible in its solid and semi-liquid state, creosote is present in the gases given off by burning wood. Creosote may build up a considerable thickness on the interior surface of the chimney and flue pipes, considerably reducing their cross-sectional area.

Creosote condenses from the flue gases when the stack temperature drops below 250°F. The amount of creosote deposited in the pipe and chimney is dependent on the amount of moisture in the flue gases, the temperature of the stack, and how completely the combustible elements in the flue gases have been burned in the combustion process. Most problems with creosote are due to poor chimneys with low draft and cold walls and to a low rate of burning when heat is needed during the spring and fall months.

Moisture in the flue gases may be controlled by using the driest wood possible, mixing small pieces with a very full load, and never using only large wood during mild weather when combustion is relatively slow.

BEST WOOD FOR BURNING

Generally wood should be cut at least a year in advance and properly split at that time.

This wood should also be stored out of the weather, if possible. If the wood is to remain outside, be sure to cover with plastic, etc. This wood should be brought inside and stored there for at least two (2) weeks before it is fired to obtain top performance.

Soft woods burn at a faster rate per cord than do hard woods.

Know what types of wood to burn. Wood is safe, clean and economical fuel. Freshly felled wood is not suitable fuel due to the moisture content of the wood. Well-seasoned wood is best for the proper production of heat. The following table will give you some relative values of the heating content of some of (the more readily available wood).

Type	Weight Cord	BTU's Per Cord Air Dried Wood	Equivalent Value #2 Fuel Oil Gals.
White Pine	1800#	17,000,000	120
Aspen	1900	17,500,000	125
Spruce	2100	18,000,000	130
Ash	2900	22,500,000	160
Tamarach	2500	24,000,000	170
Soft Maple	2500	24,000,000	170
Elm	2750	24,500,000	175
Yellow Birch	3000	26,000,000	185
Red Oak	3250	27,000,000	195
White Oak	3750	27,700,000	200
Hard Maple	3000	29,000,000	200
Hickory	3500	30,500,000	215

USEFUL FACTS

No. 2 Fuel Oil - 140,000 BTU/gallon
Natural Gas - 100,000 BTU/therm
Propane Gas - 93,300 BTU/gallon
Butane Gas - 100,671 BTU/gallon
Electricity - 3,413 BTU/kilowatt-hour

CLEARANCE TO COMBUSTIBLES

* All measurements are from the stove surface to combustible wall, such as wood. Heat shields are used to reduce the clearances and are listed on these charts & subsequent detailed diagrams. Be sure to follow them closely.*

The diagrams will also give measurements from shield to wall, from shield to shield, & from stove surface to shielded wall or ceiling.

Appliance Clearances Residential parallel installation	Unprotected Surfaces		
	Parallel		Corner
	Side	Rear	
No stove heat shields	38-in	28-in	27-in
Rear and side heat shields, no connector shield	18-in	12-in	13-in
Ceiling above stove top	64-in		

CLEARANCE TO COMBUSTIBLES continued

Appliance Clearances ¹ Through wall installation	² Protected Surfaces		
	Parallel		Corner
	Side	Rear	
No unit heat shields - Ceiling, front wall, side wall, and back wall protection - 1 inch air space	23-in	15-in	17-in
Rear and side unit heat shields - ceiling and front wall protection - 1 inch air space	16-in	12-in	12-in
Rear and side unit heat shields - ceiling, front wall, side wall, and back wall protection - 1 inch air space	11-in	11.5-in	9-in
Ceiling above stove top with ceiling protection - 2 inch air space	56-in		

¹ In a through-wall installation with a combustible wall above the stove opening, ceiling and front wall shields and a 3-in. deflector 1-in. below the front shield are required. The face wall shield should project 1-inch below the joint of the block and the wood.

² ½ inch cement board was used as wall protection.

FLUE COLLAR CLEARANCES

Single Wall Connector Residential Parallel	Unprotected Surfaces	Protected Surfaces
	No unit heat shields	30-in
Unit side & rear shields	14-in
Single Wall Connector Through Wall Installation	Protected Surfaces	Protected Surfaces - front, side, ceiling, and rear shields
	Ceiling and front wall shields	17-in
No unit heat shields	13.5-in
Unit side & rear shields	14-in	

FLOORING REQUIREMENTS

The unit is intended for use only on non-combustible floors.

wood - outside & cement bd. - inside wall

(B)

Front View →

Expansion Space on sides & top approx. $(\frac{1}{8} - \frac{3}{8})$

Wood

WOOD

WOOD

Wood

Front View

B L O C K S

Concrete Slab

ceiling shields (1" airspace) (2" airspace) Back Iron

In new 3" Deflector

16"

16"

16"

(C)

1"

Throat Outside dim. = $18\frac{1}{4}"$ W x $30\frac{1}{4}"$ H x 8" or 12" Deep

1"

1"

1"

1"

1"

1"

1"

1"

1"

1"

1"

1"

1"

1"

1"

1/2" min. 5 3/2"

3" Deflector

Throat

Baffle

Stove

Brick lined

Concrete Pad

Concrete Slab

Concrete Slab

Concrete Slab

Concrete Slab

Concrete Slab

Concrete Slab

Concrete Slab

Concrete Slab

2" ceiling

1/4" clearance around smoke collar at ceiling

With 1" air spacers behind on wall & 2" on ceiling

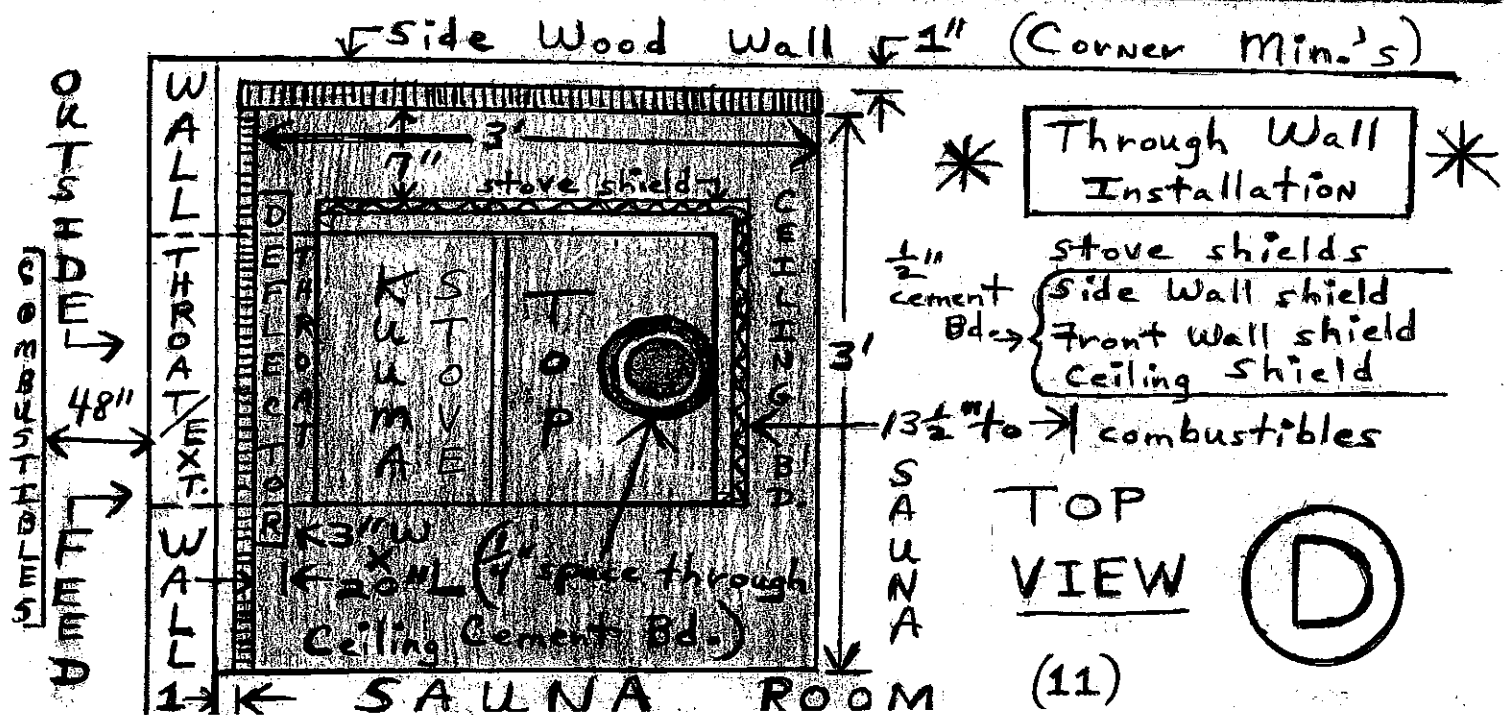
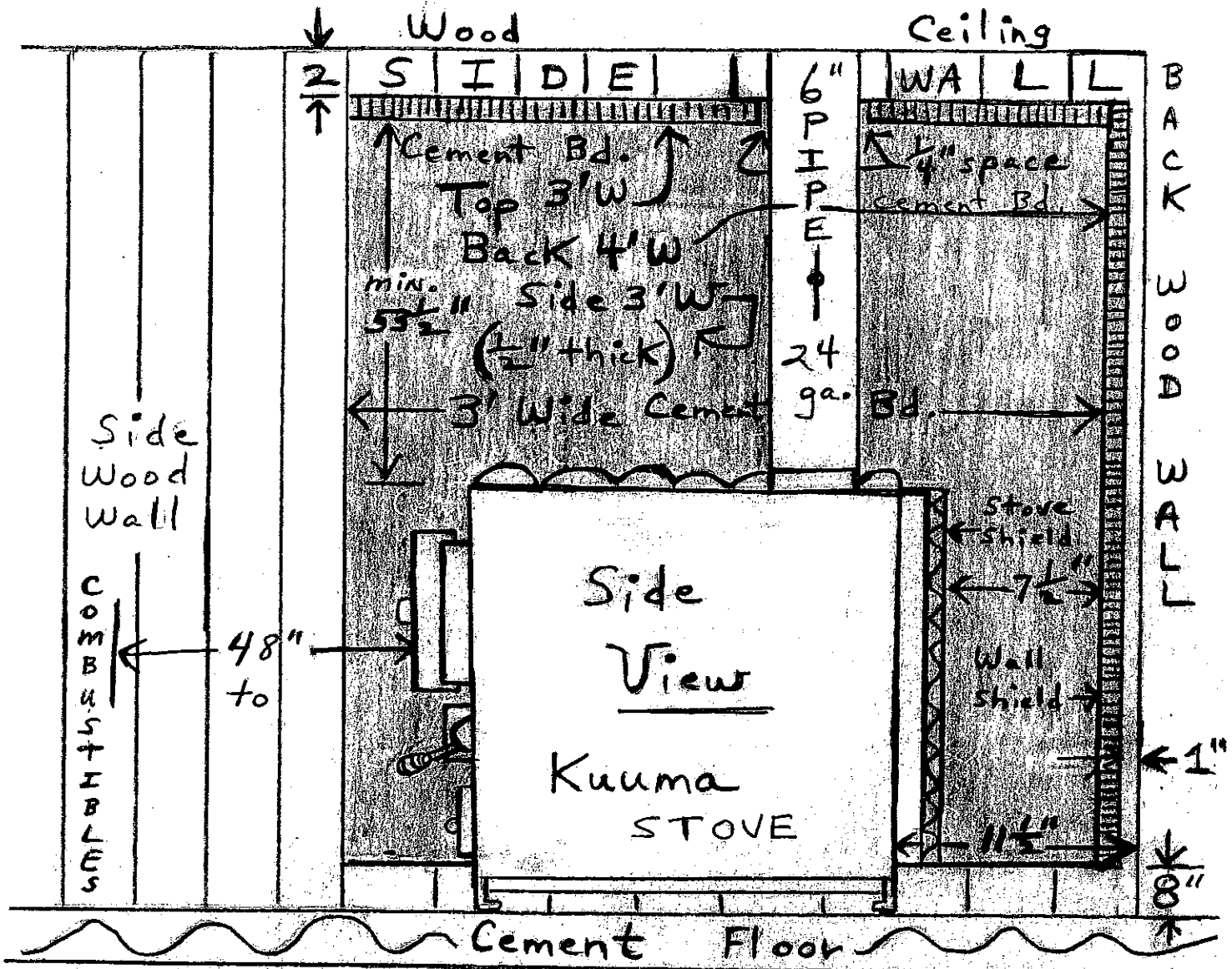
Stove tilted back slightly for draining here

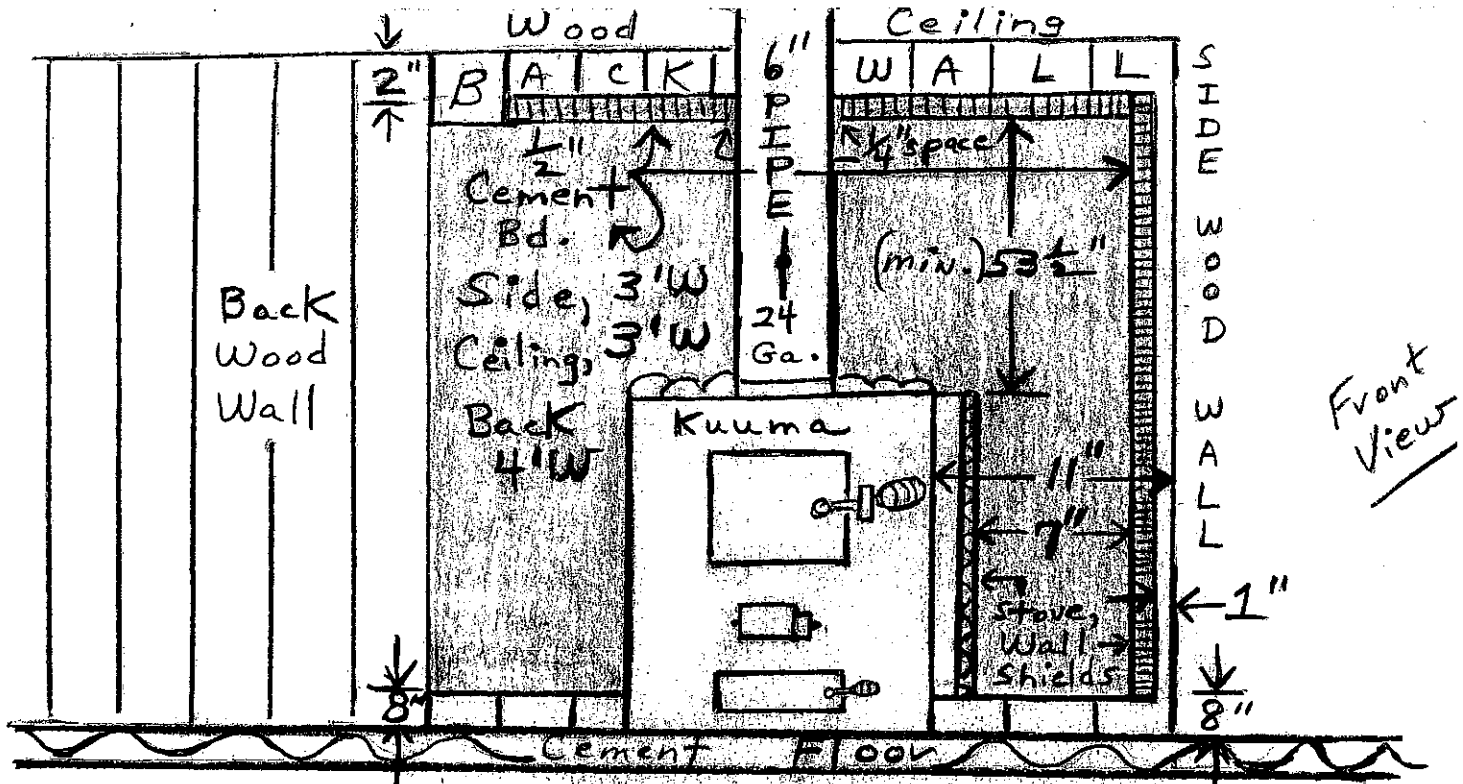
Side View

48" to combustibles

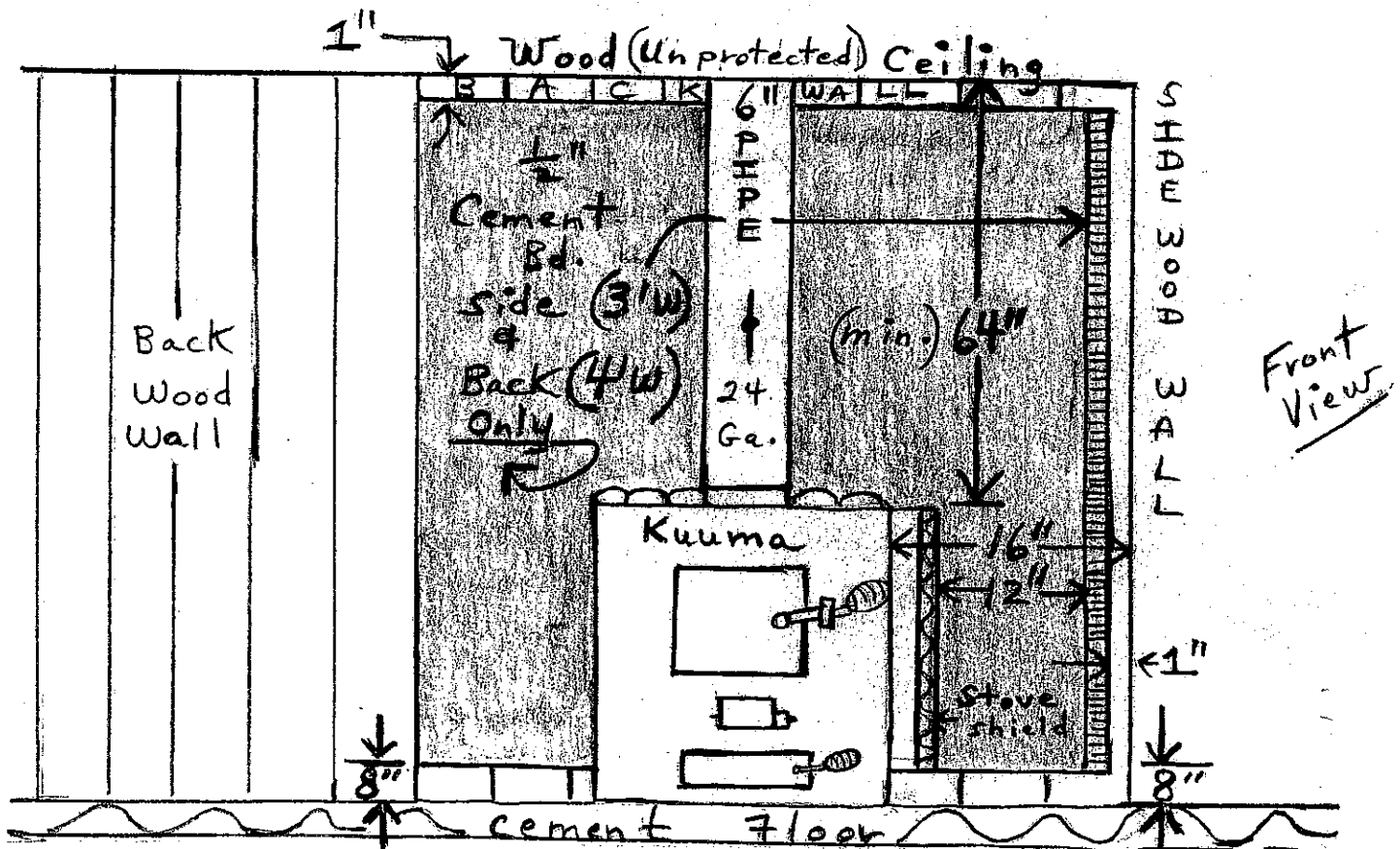
COMBUSTIBLE

Parallel Corner Installations - (Min.'s)

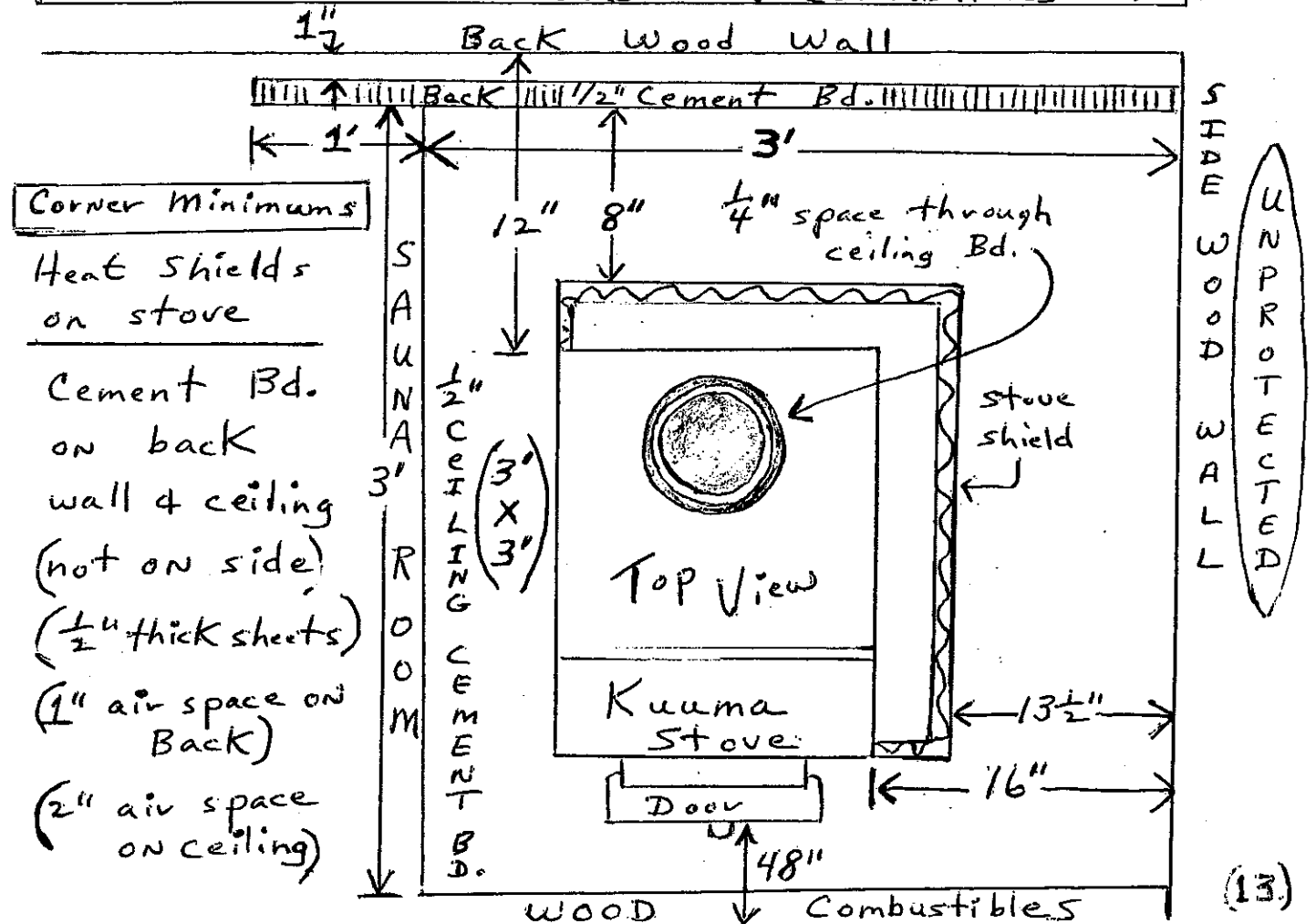
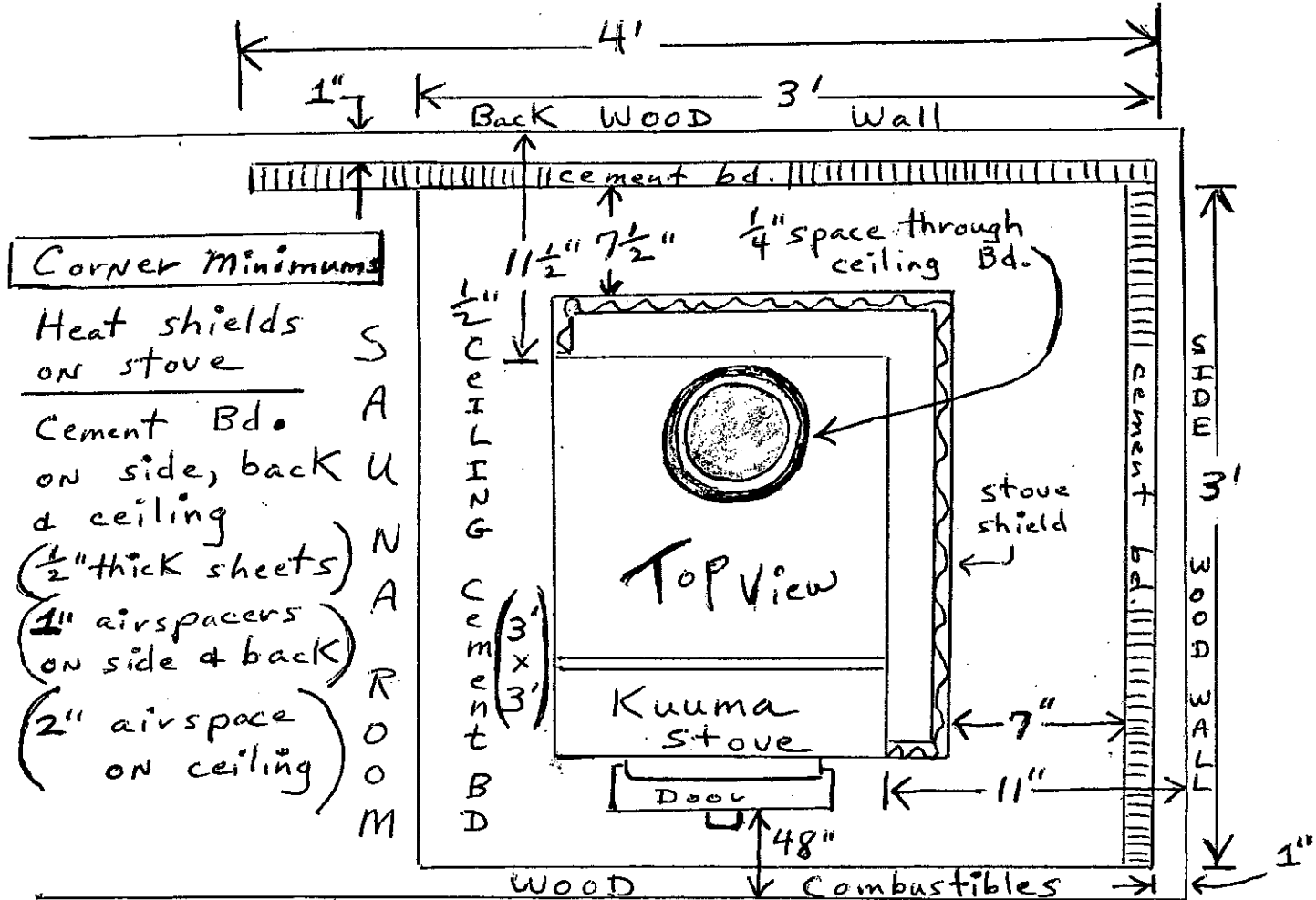




Corner Installation - Parallel
 (Minimum Clearances)

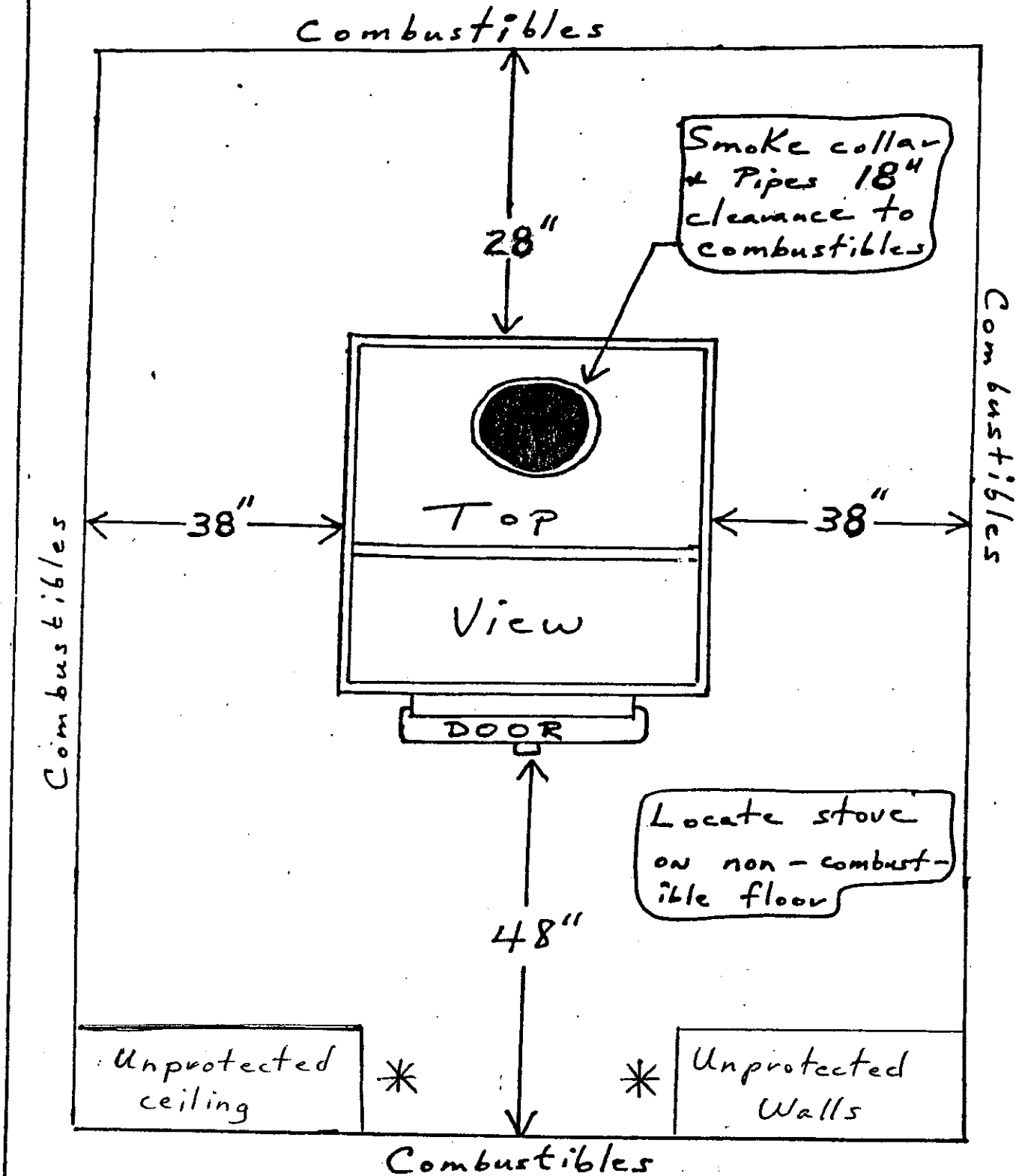


Corner Installation - Parallel
 (12) (Minimum Clearances)



CLEARANCES TO COMBUSTIBLES

"NO" HEATSHIELDS

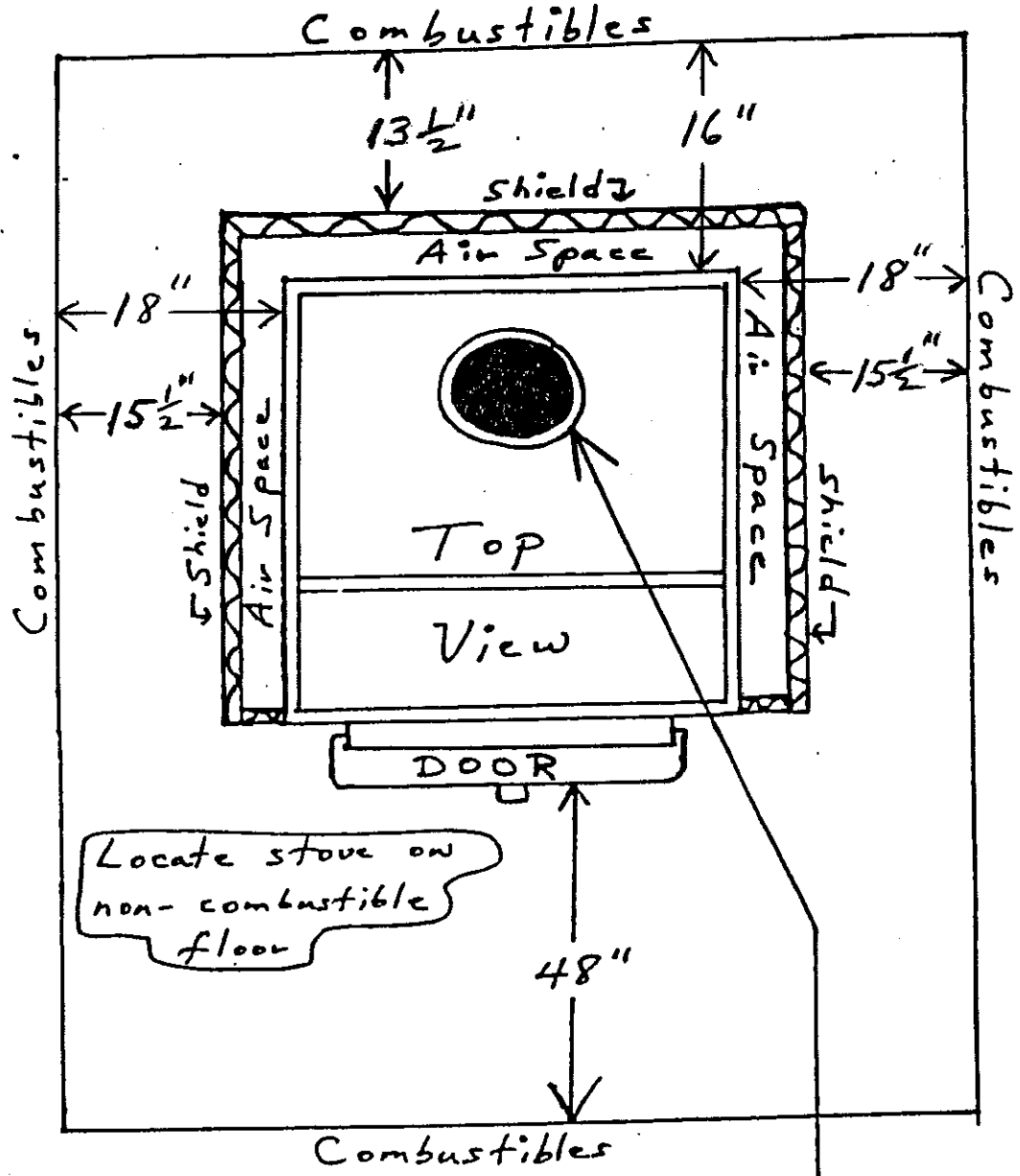


CLEARANCES TO COMBUSTIBLES

"NO" HEATSHIELDS (14)

CLEARANCES TO COMBUSTIBLES

"WITH" HEATSHIELDS (Stove)



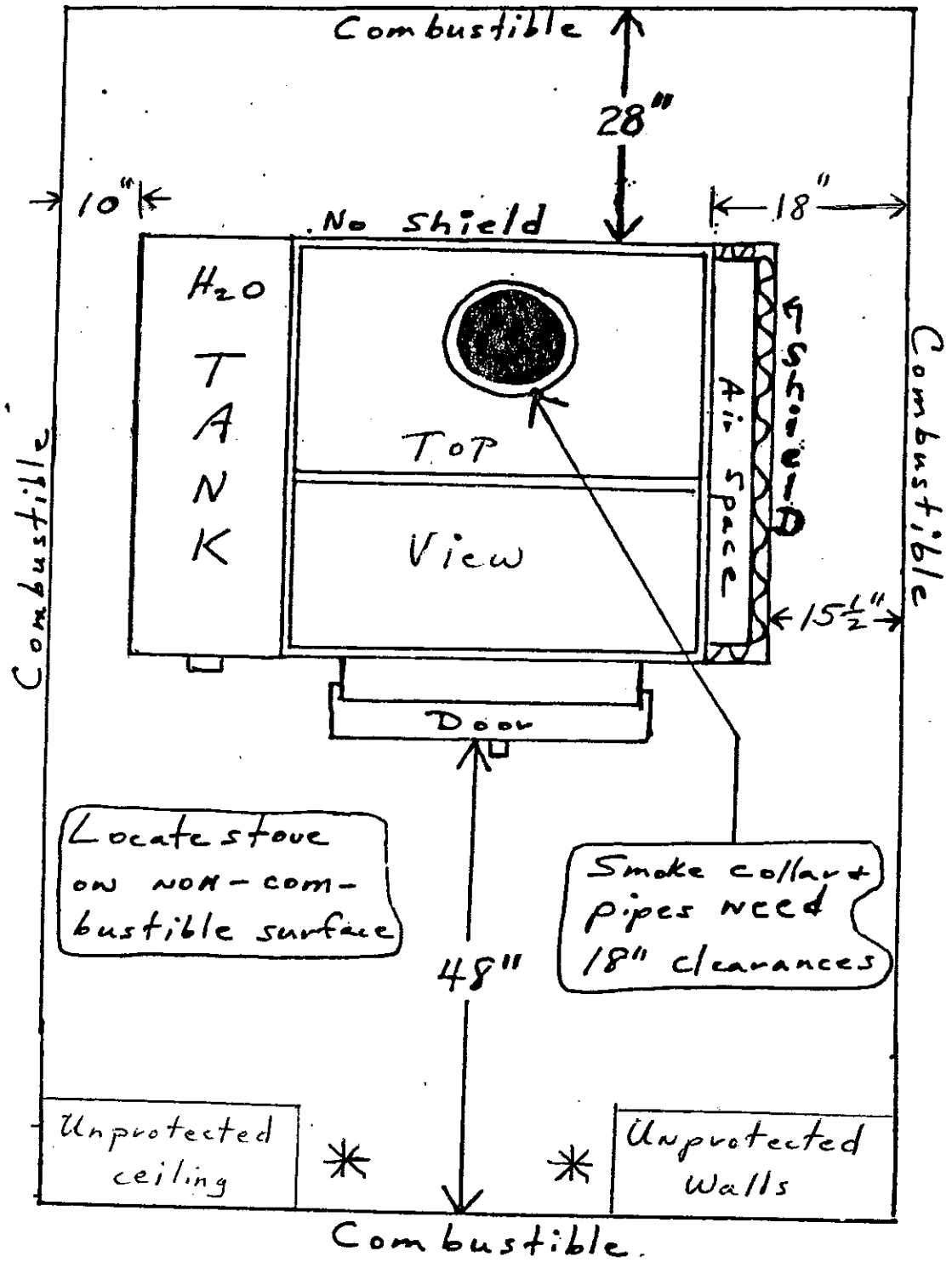
* Smoke Collar & Pipes
Need 18" clearance to
Combustibles *

Unprotected ceiling *

* Unprotected Walls

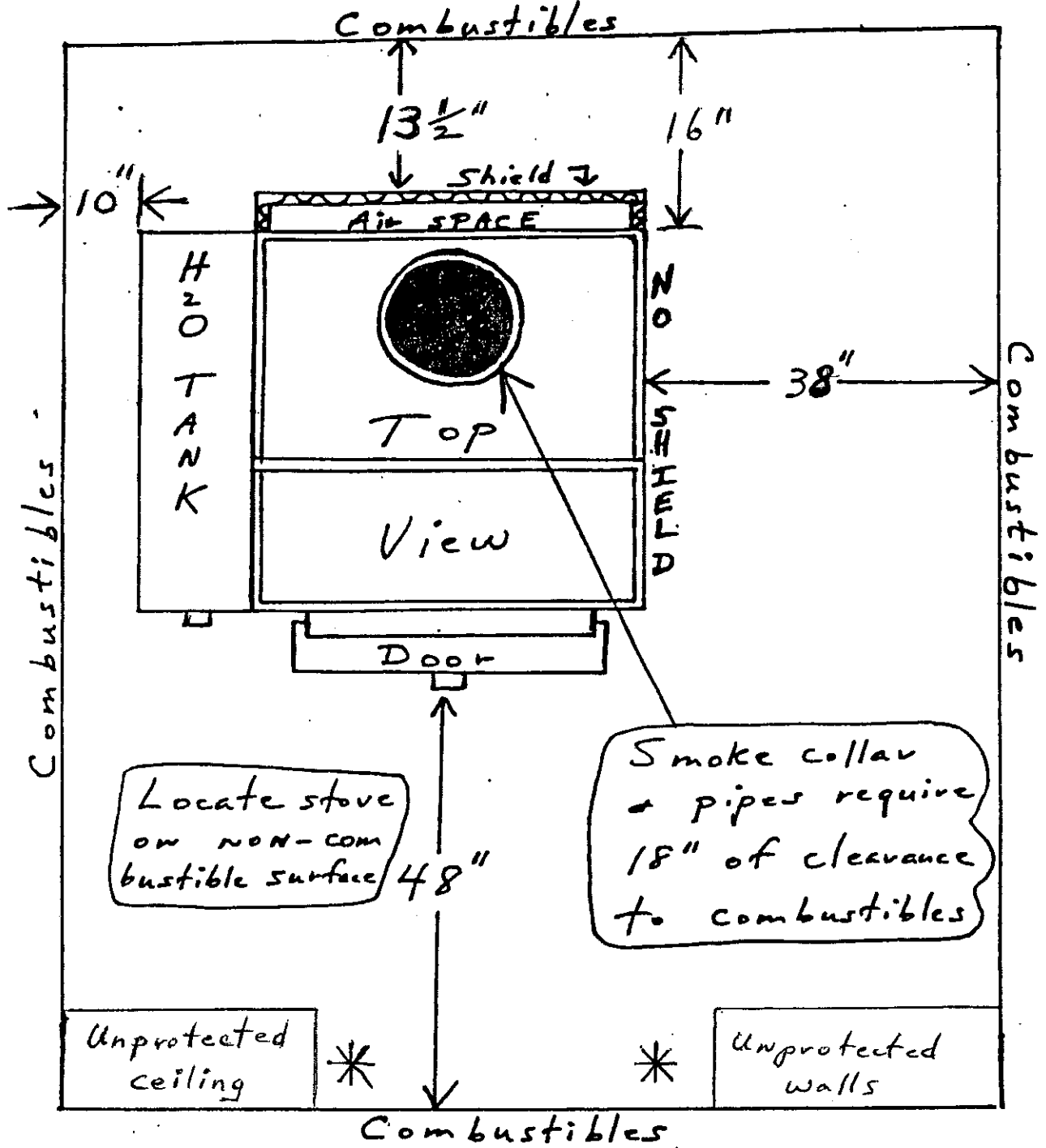
CLEARANCES TO COMBUSTIBLES

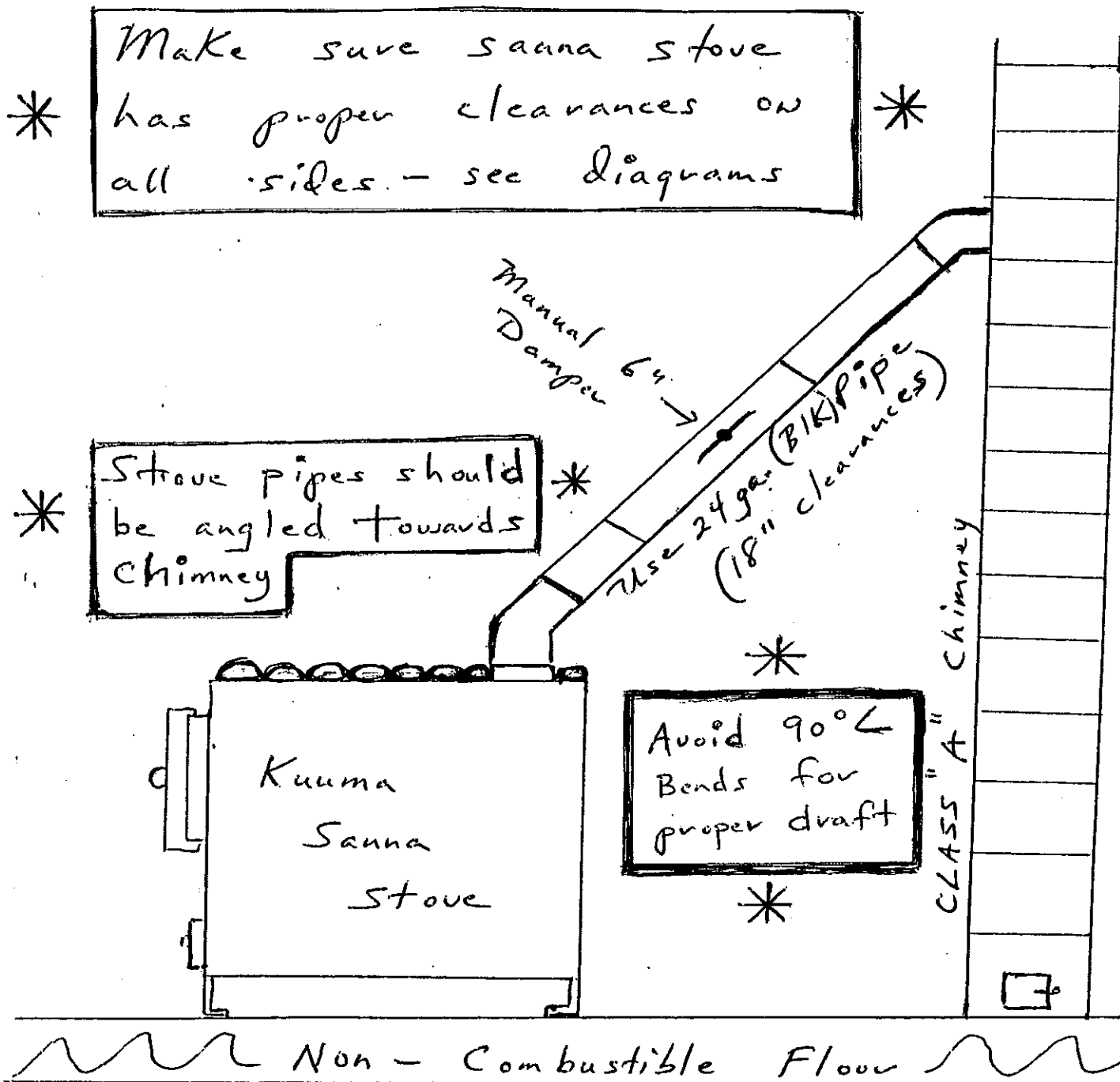
With H₂O Tank, 1 Shield, & No Shield
(stove)



CLEARANCES TO COMBUSTIBLES

With H₂O Tank, 1 Heatshield (stove)
& NO Heatshield



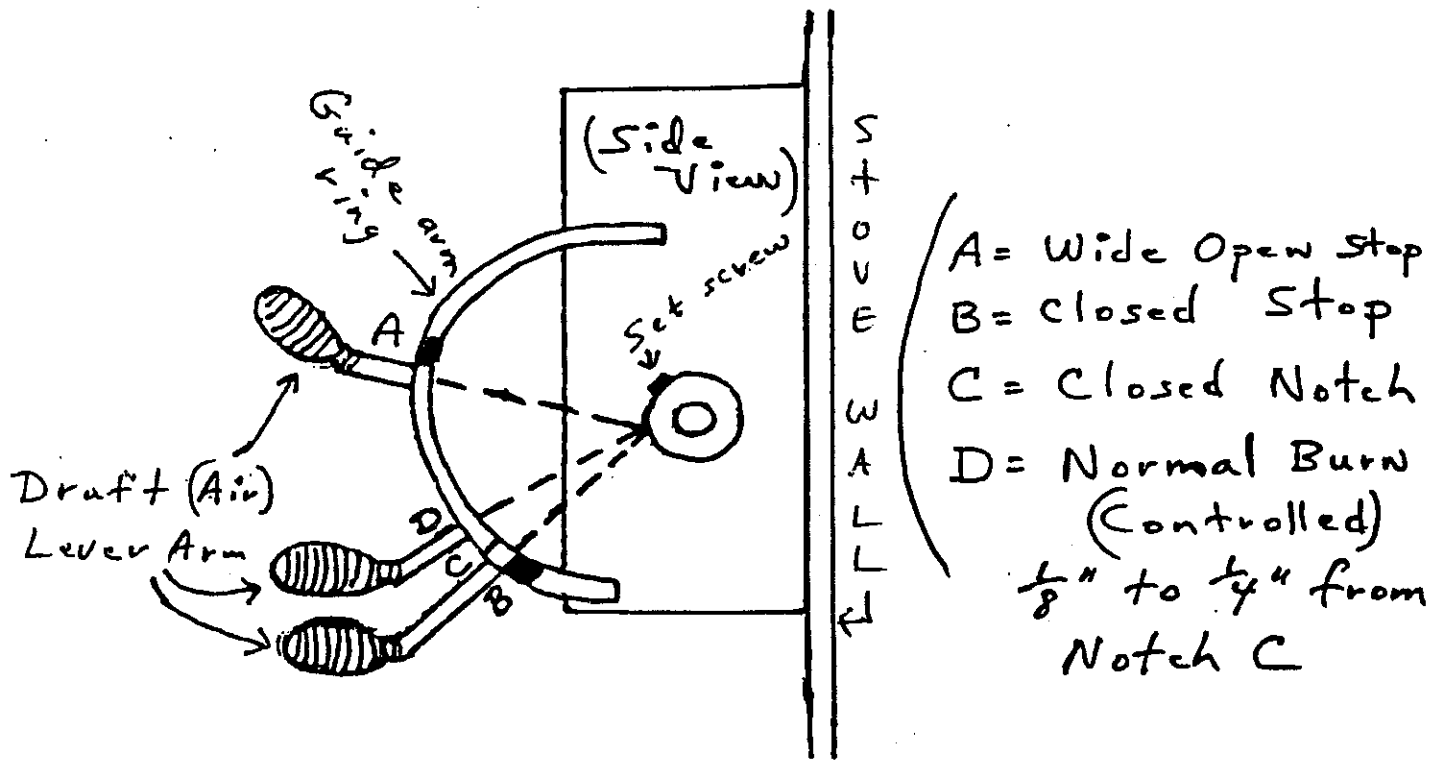
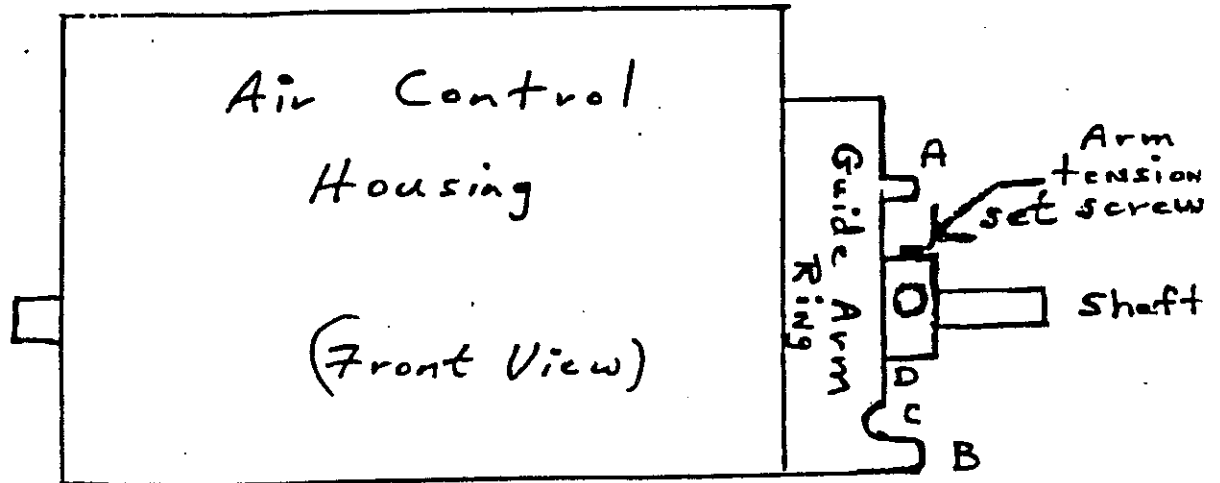


Always angle pipes towards chimney, or straight up. Install a 6" manual damper in all installations. Maintain proper clearances. Sheet metal screw all joints with three (3) screws. Check periodically.

(18)

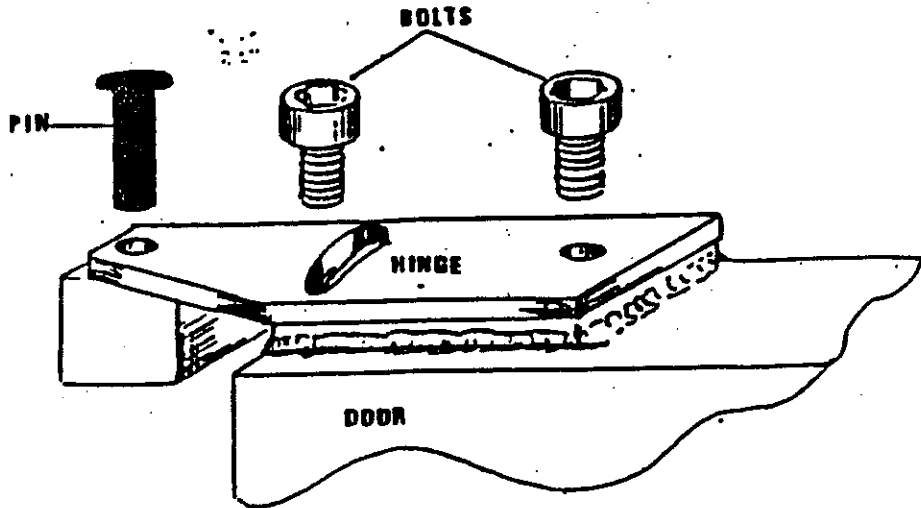
Front Air Controller

(Located Directly Below Fire-Door)



Arm Moves Along Ring To Adjust Different Air Settings

Main Door



To adjust doors, loosen the two screws and push door in, until there is a slight bind as you close the door making sure it is not too tight, tighten the screw.

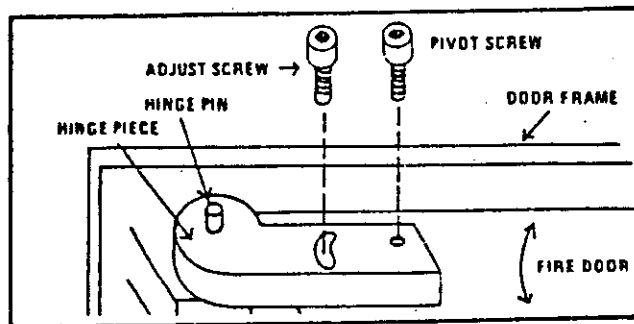
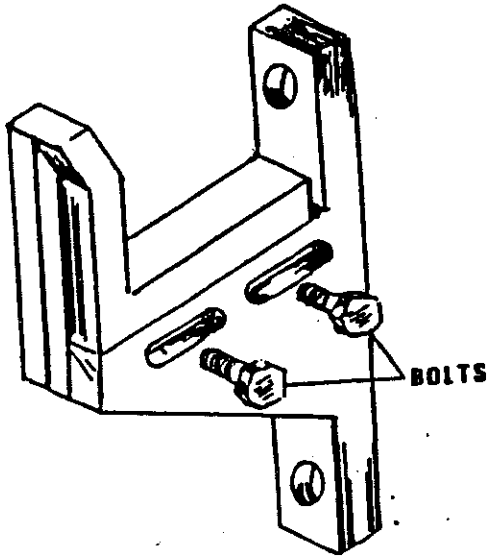


figure 14

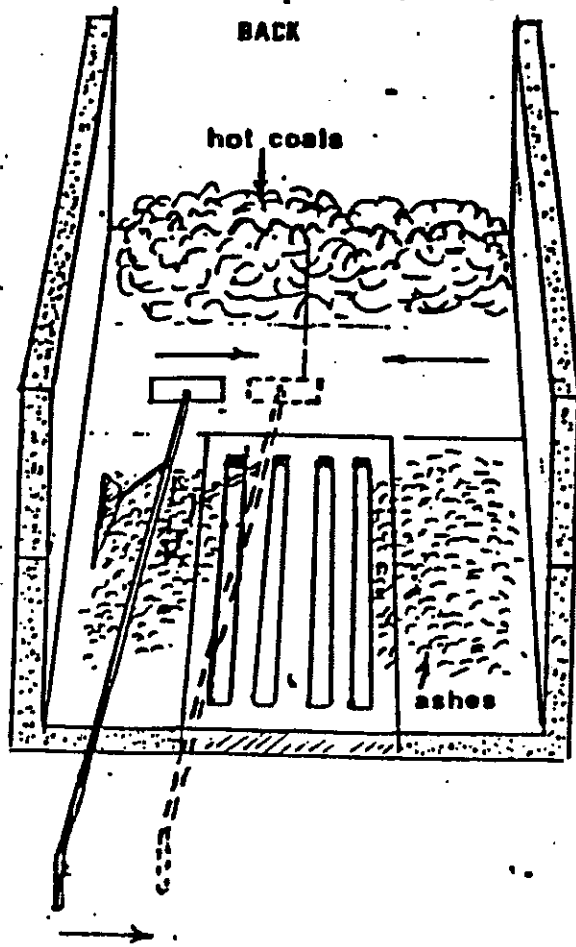
When adjusting doors, loosen the two screws (Figures 13 & 14) and push door in until there is a slight bind. As you close the door make sure that it is not too tight, tighten the two screws.

Ash Door

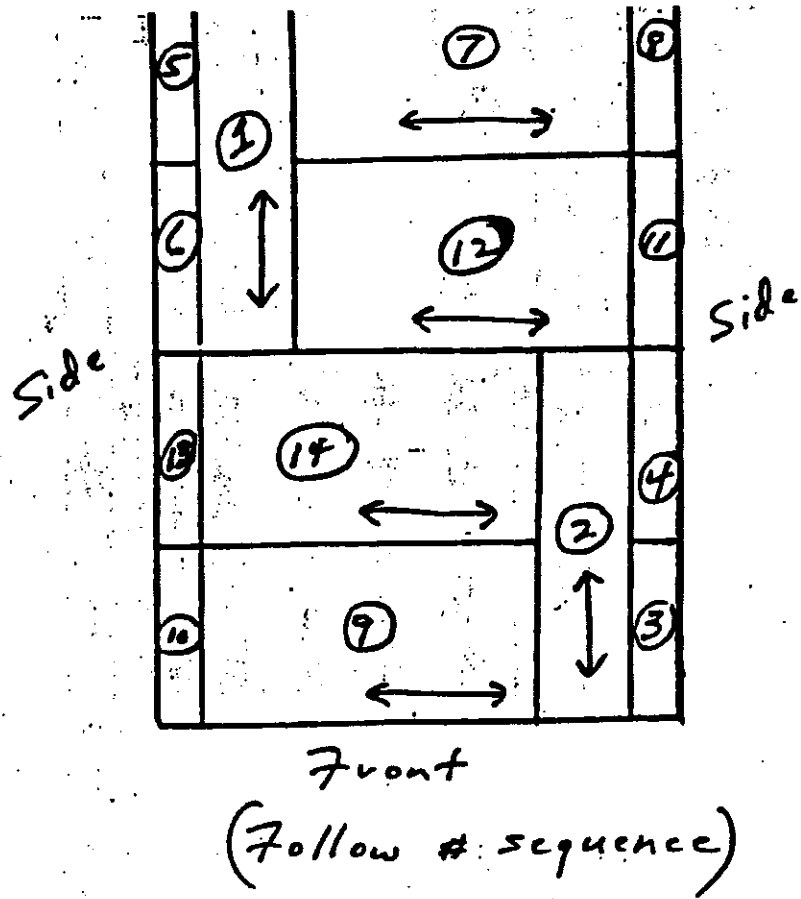
To tighten the door on the handle-side -
loosen the two set screws, lower handle
behind latch, push door in tightly and
tighten set screws.



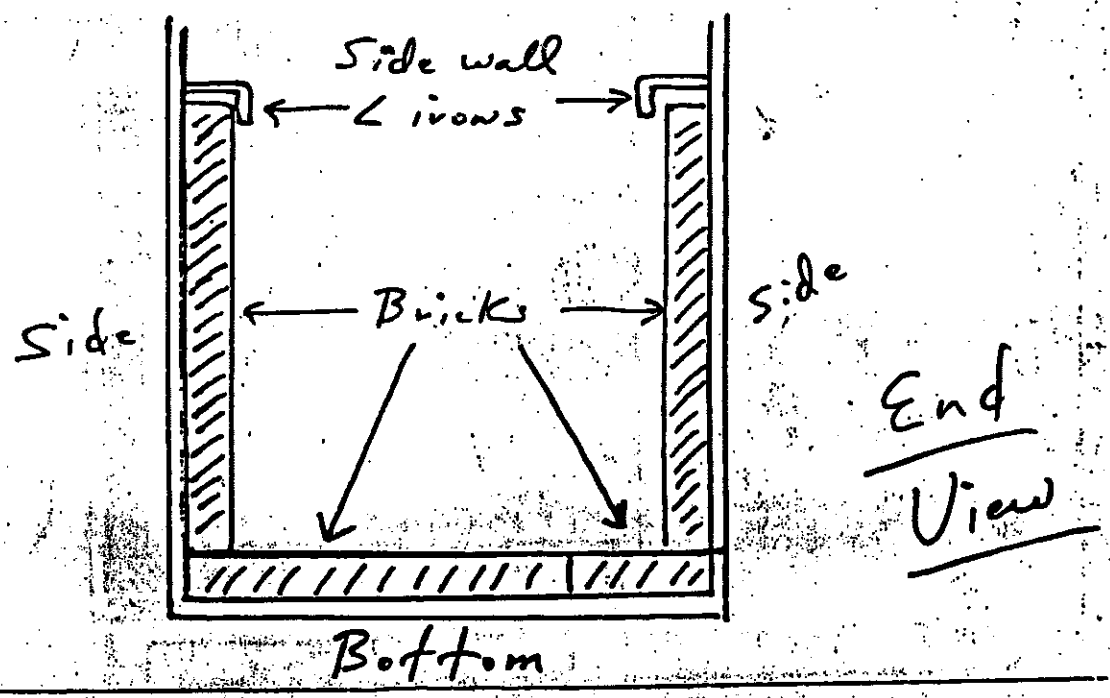
ADJUSTABLE DOOR LATCH



Scrape ashes through the grate as shown, keep the front air opening clean.

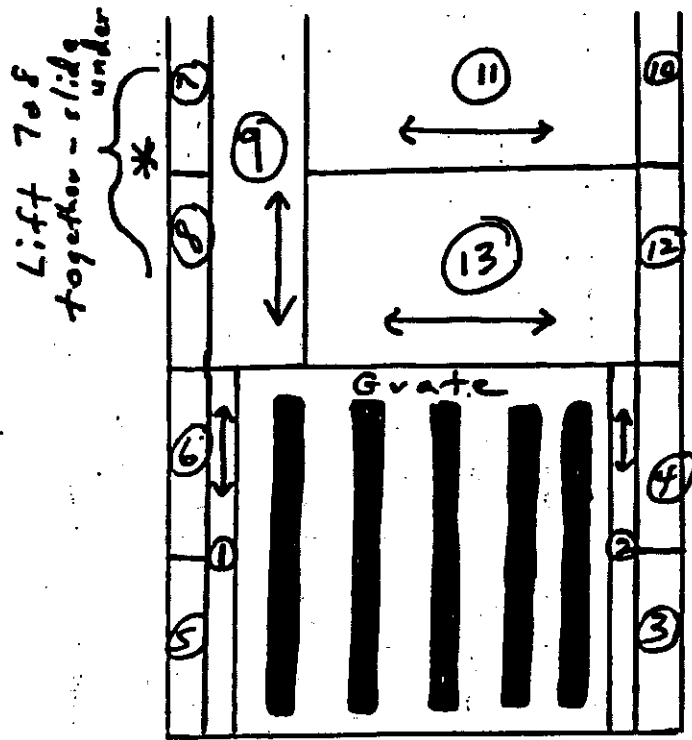


Top View



Small

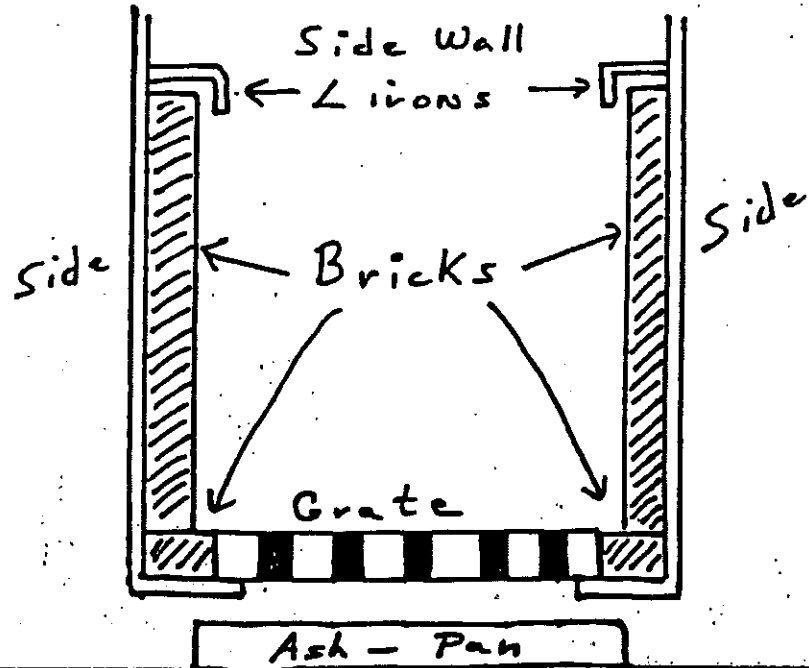
follow # sequence (23)



Top
View

Front
(Follow # Sequence)

1 & # 2 are $\frac{1}{2}$ bricks

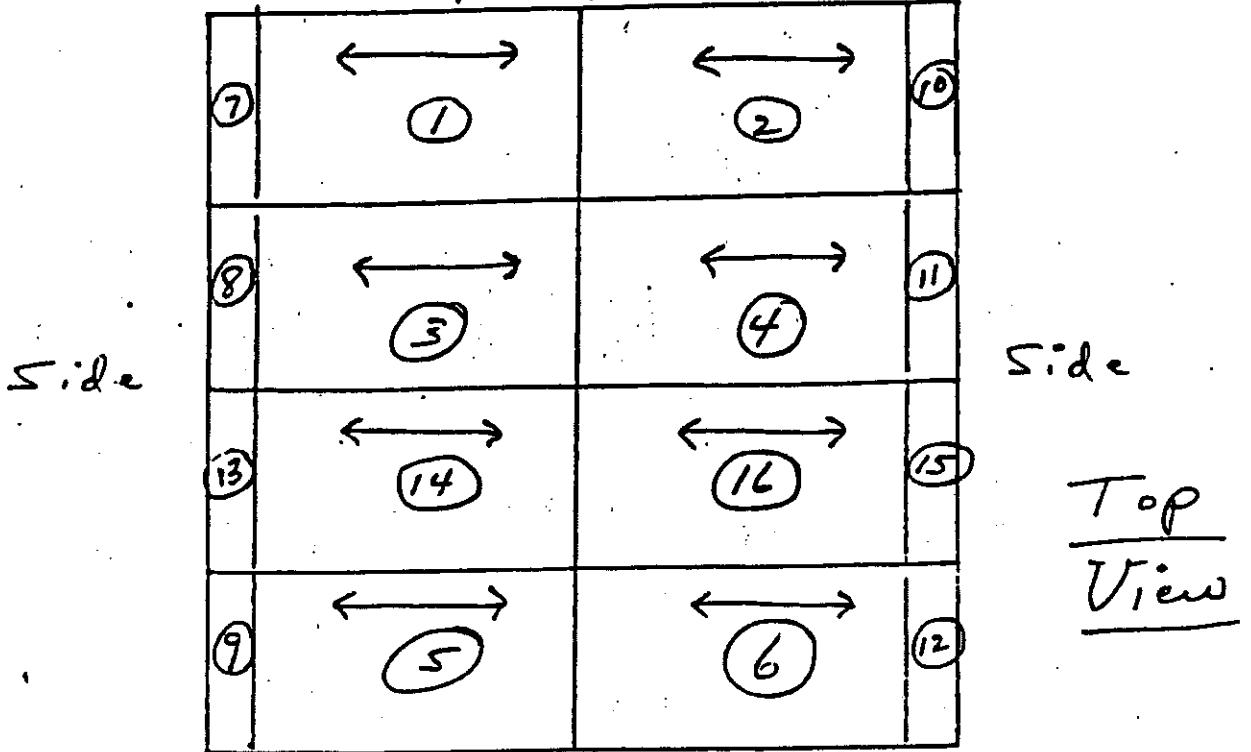


End
View

follow # sequence

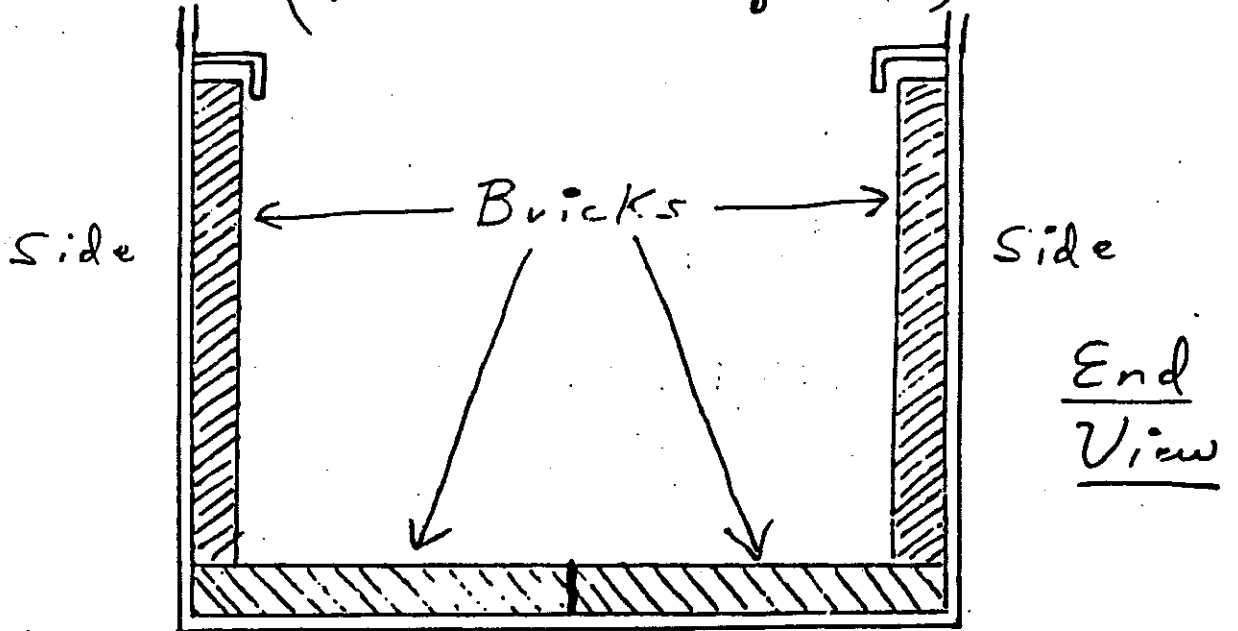
Small

Back



Front

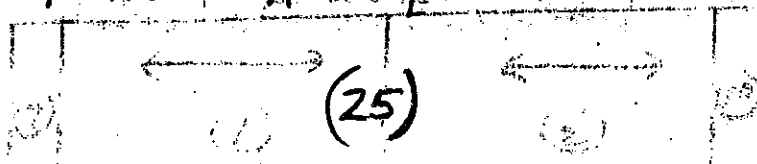
(Follow # sequence)

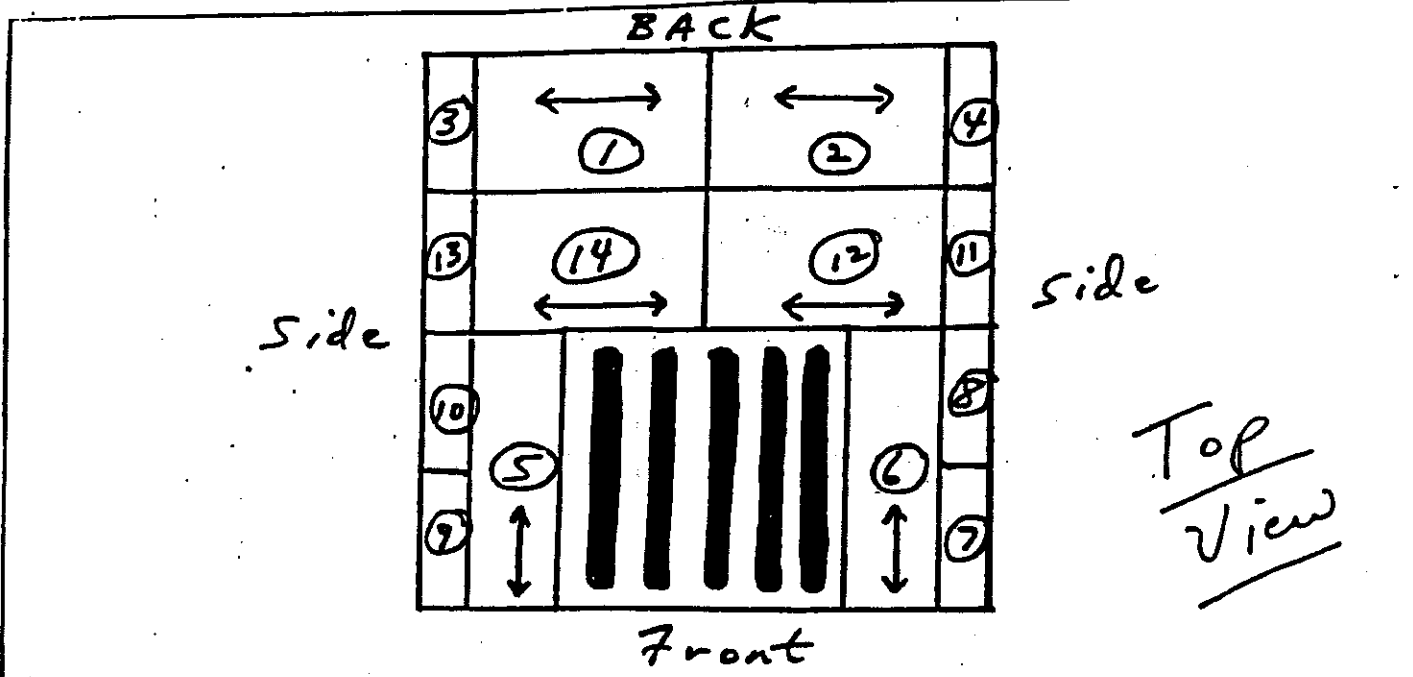


Bottom

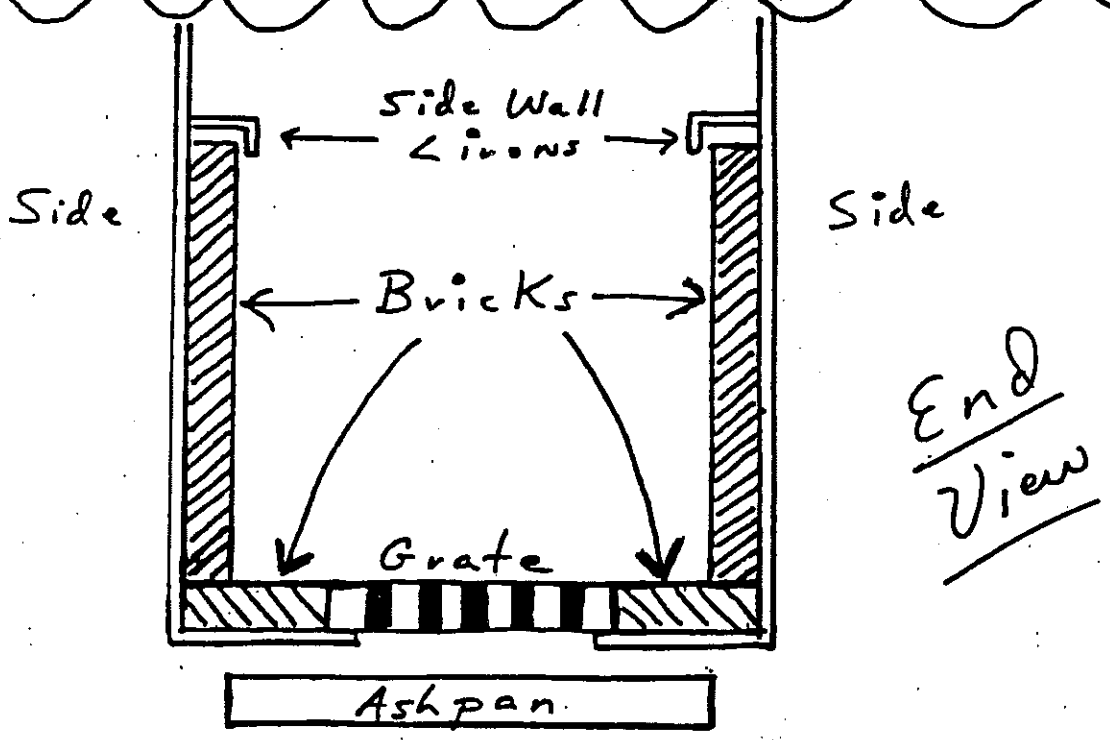
MEDIUM

Follow # sequence





(Follow # Sequence)



MEDIUM

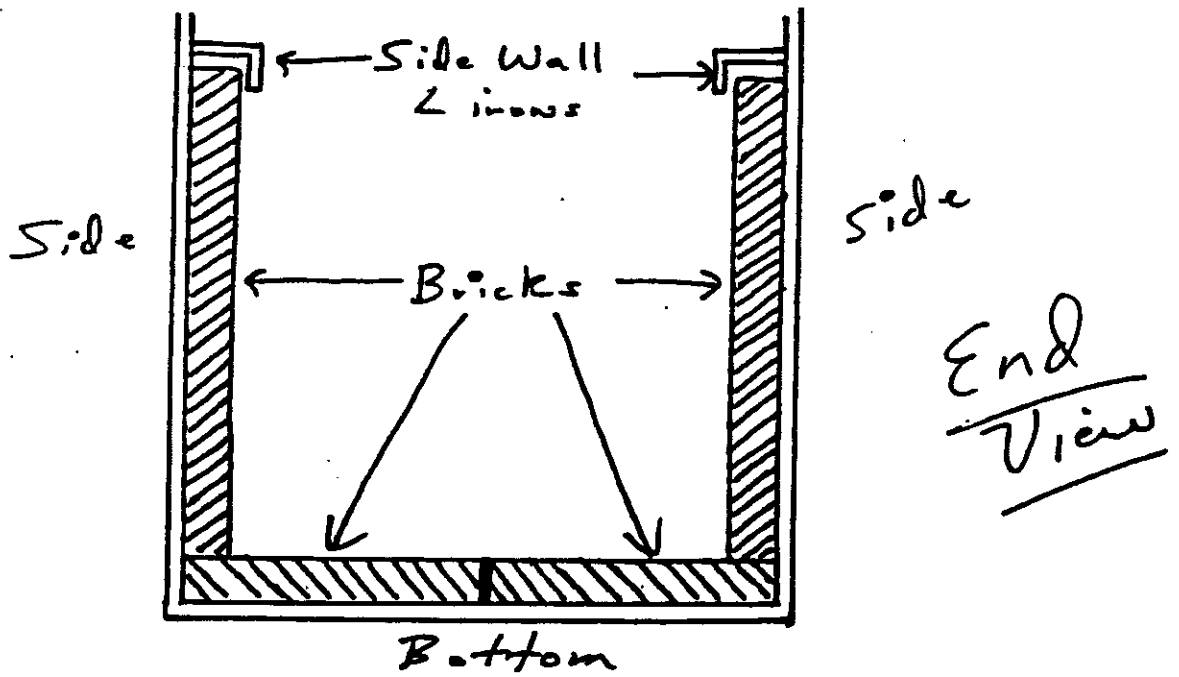
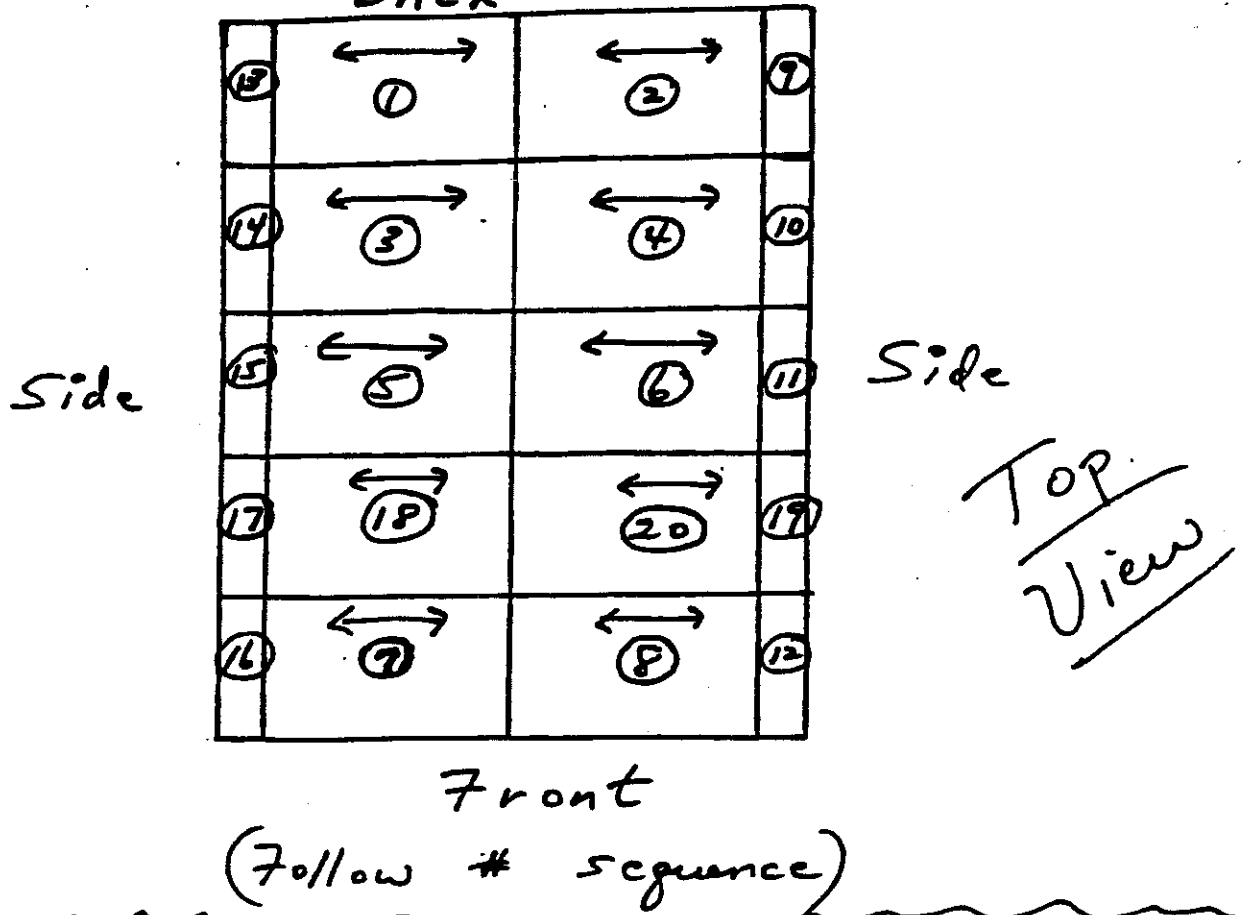
BACK

follow # sequence

(26)

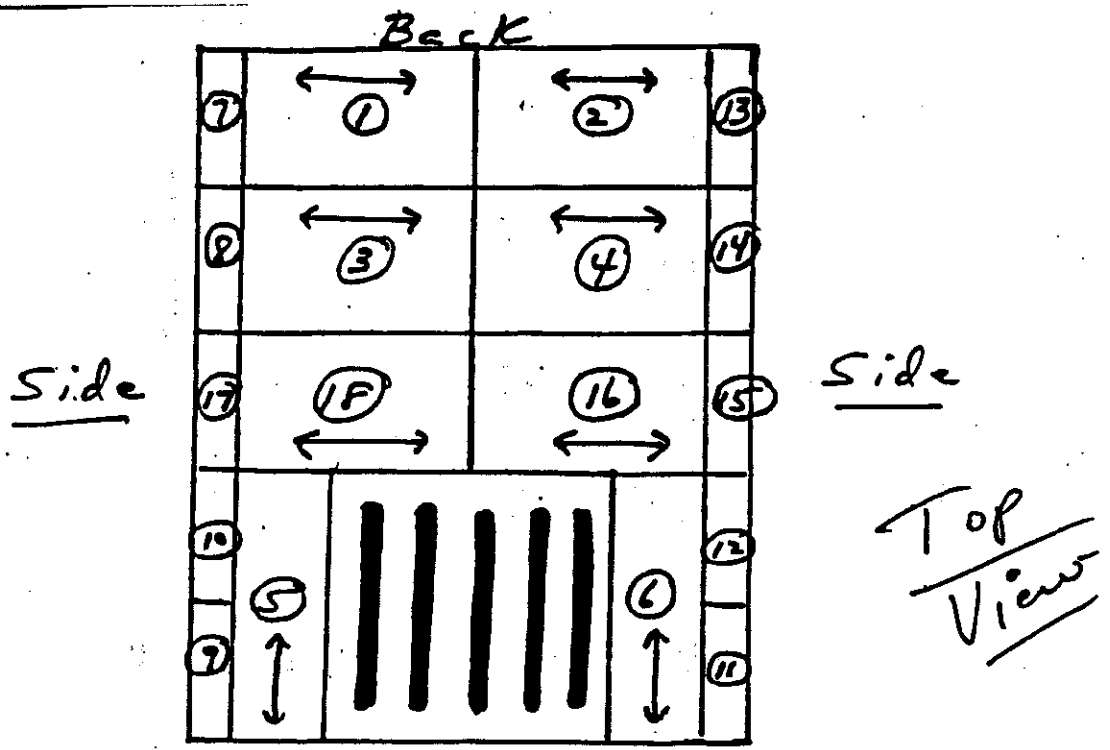
Detailed description: A small diagram at the bottom of the page. It has 'BACK' written above it. Below that, it says 'follow # sequence'. There are three circled numbers: 1, 26, and 3. The number 26 is significantly larger than the others.

BACK

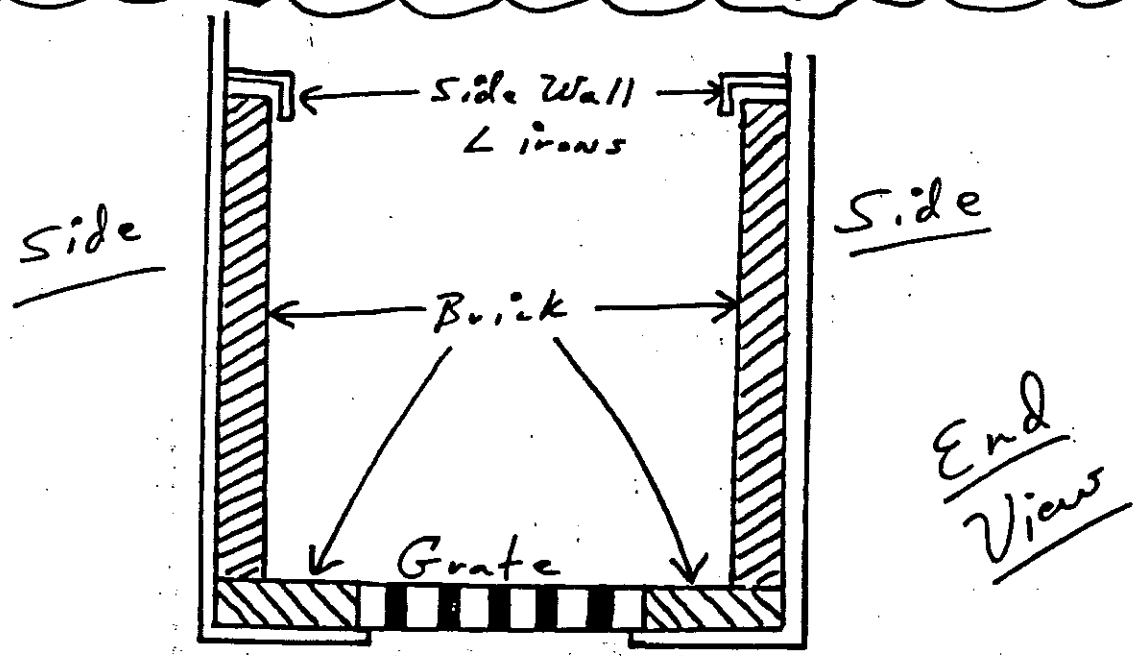


LARGE

follow # sequence



Front
(Follow # sequence)



Ash Pan

LARGE

follow sequence