The 5-Run Masonry Heater is a symmetric top-venting design that allows for many variations.

Operating at above 80% overall efficiency and emitting only 1-2 g/Kg of particulate, a masonry heater is the cleanest burning and most efficient way to heat a home with wood.

One 40 lb. load of firewood cleanly burned in a masonry heater is capable of providing 10,000 BTU/hr over 24 hours. The heater continues to radiate warmth to the living space long after the fire has gone out. For higher heat output, two fires a day with a half reload each can generate up to 30,000 BTU/hr.

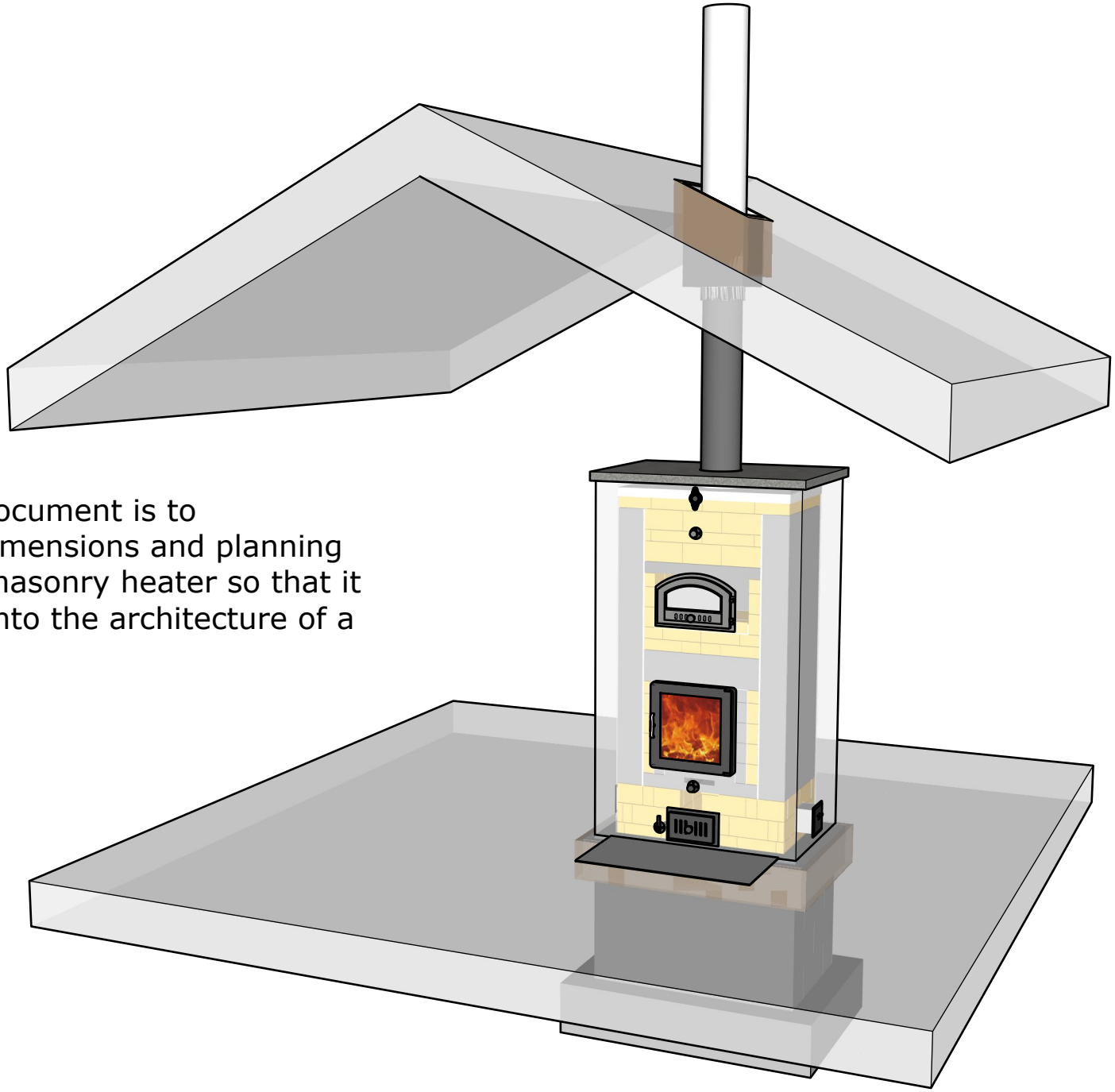


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5RO Masonry Heater Planning Guide

Introduction

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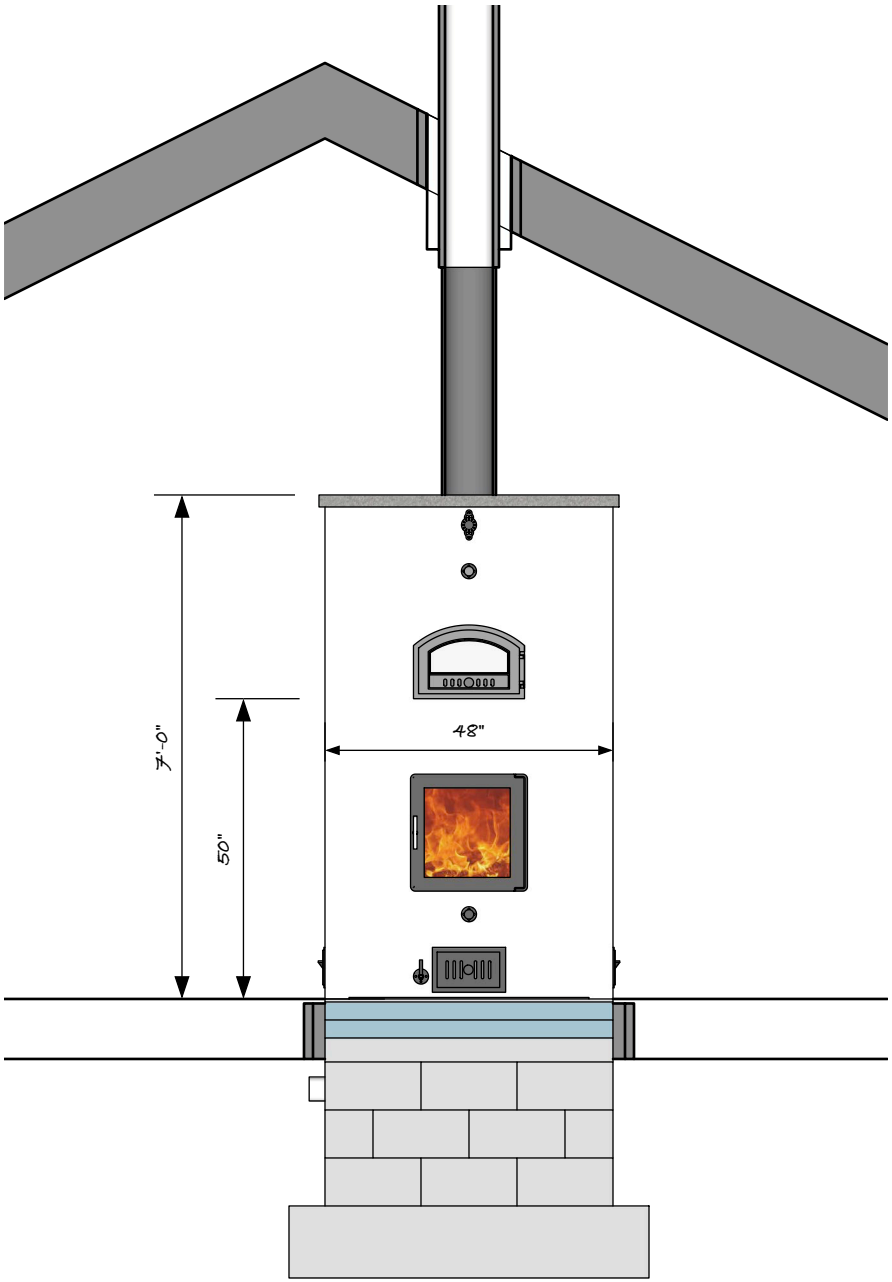
The purpose of this document is to communicate basic dimensions and planning considerations for a masonry heater so that it can be incorporated into the architecture of a home.

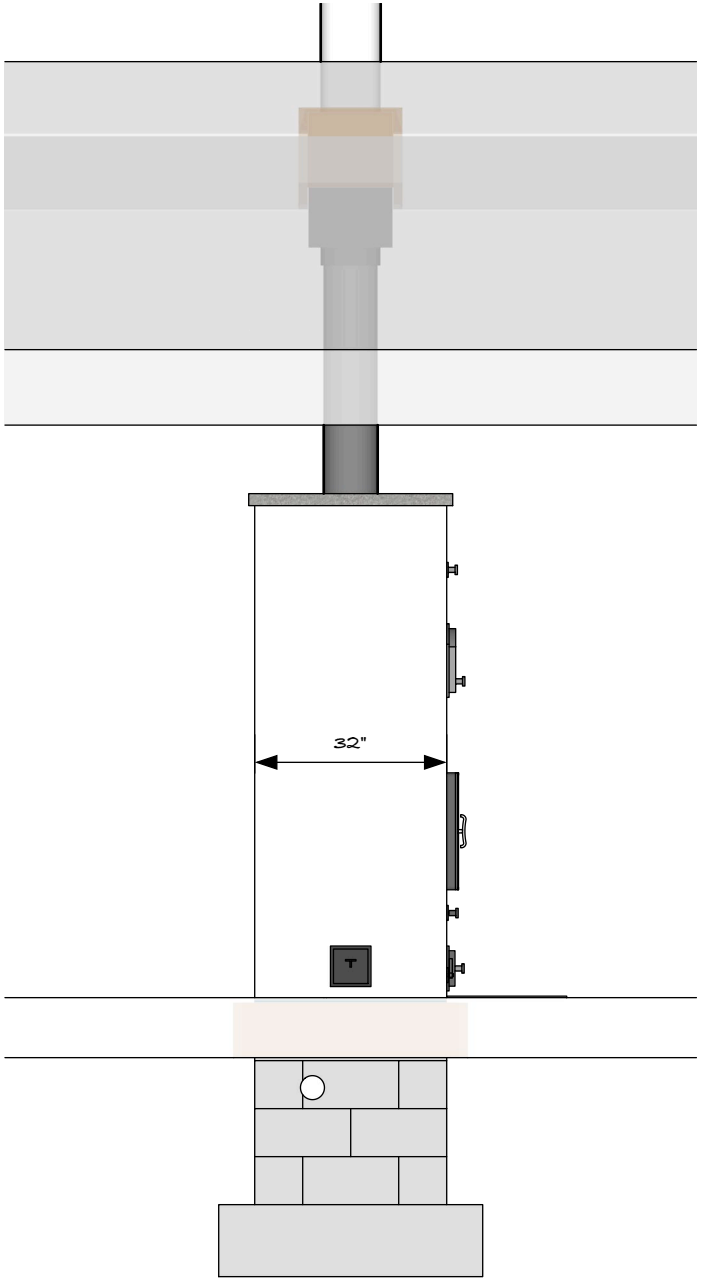
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Perspective

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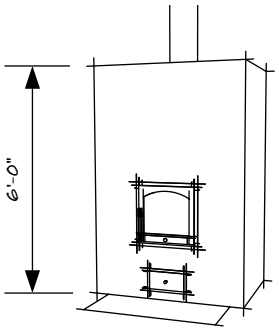
Note: Drawings for Slab-On-Grade Assembly Forthcoming.

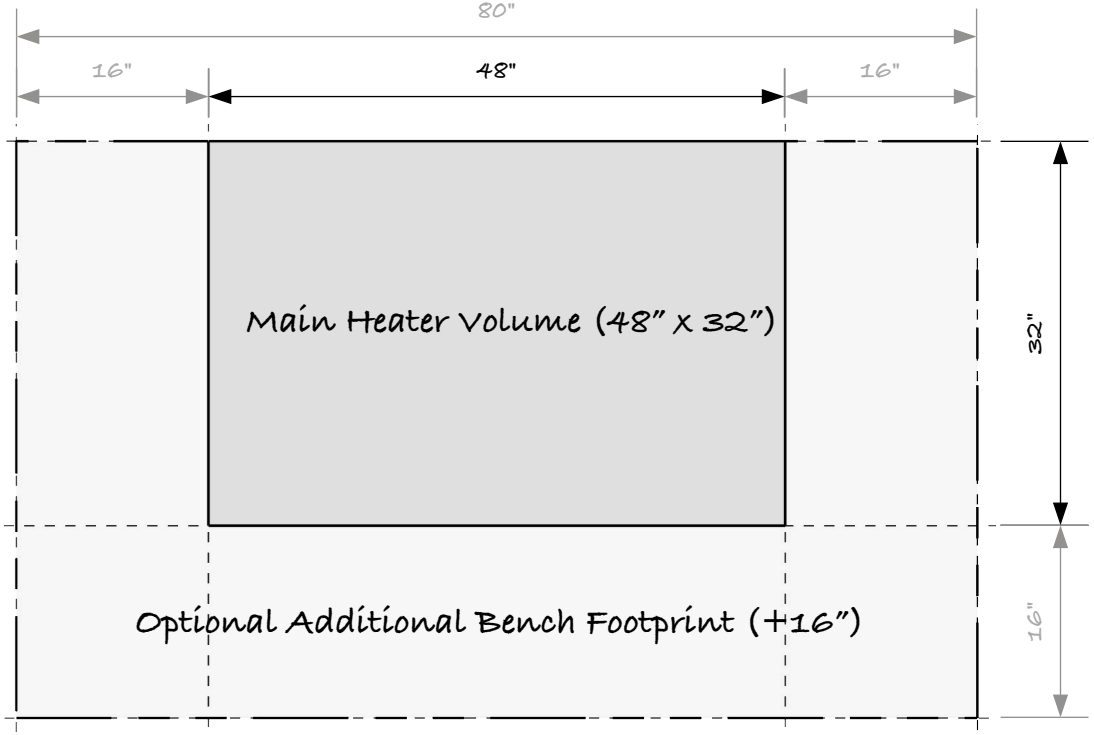
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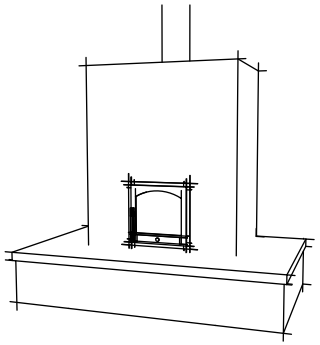
5RO Masonry Heater Planning Guide
Elevation

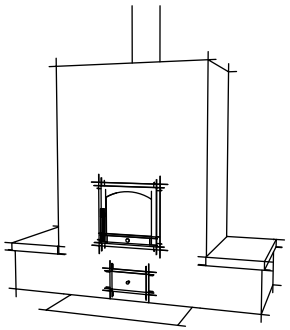
Last Modified: September 8, 2026 | *Drawn by: Max Edleson & Jeremiah Church* | *Scale: 1/4" = 1' (1:48)*

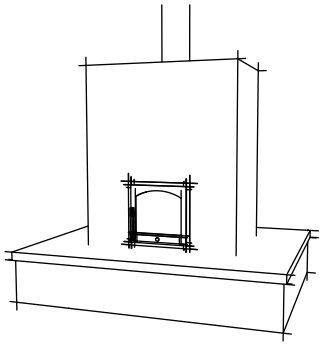
The design allows for many variations including options for heated and unheated benches, an oven facing the same way or opposite to the firebox, and the addition of domestic hot water heat exchanger.

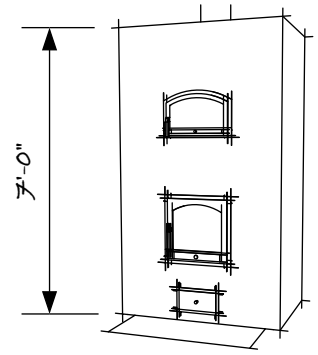


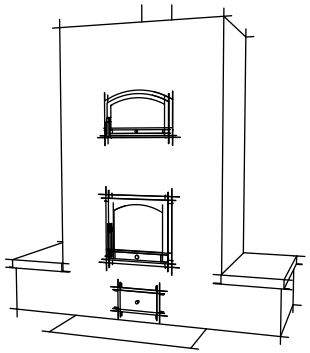


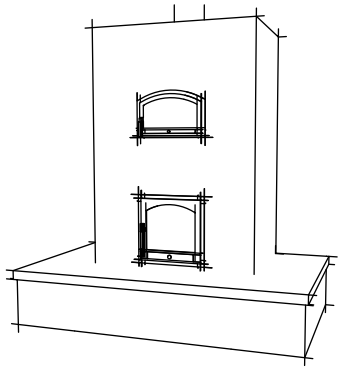


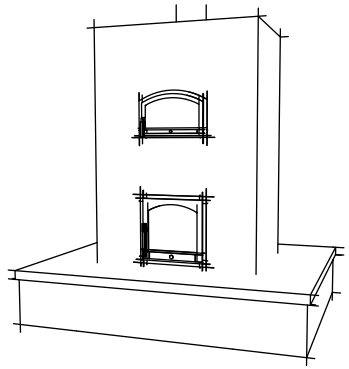












Support for variations beyond the basic design, including addressing the specific architecture of a home, is provided through our Custom Design Services.

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5RO Masonry Heater Planning Guide

Bench Variations

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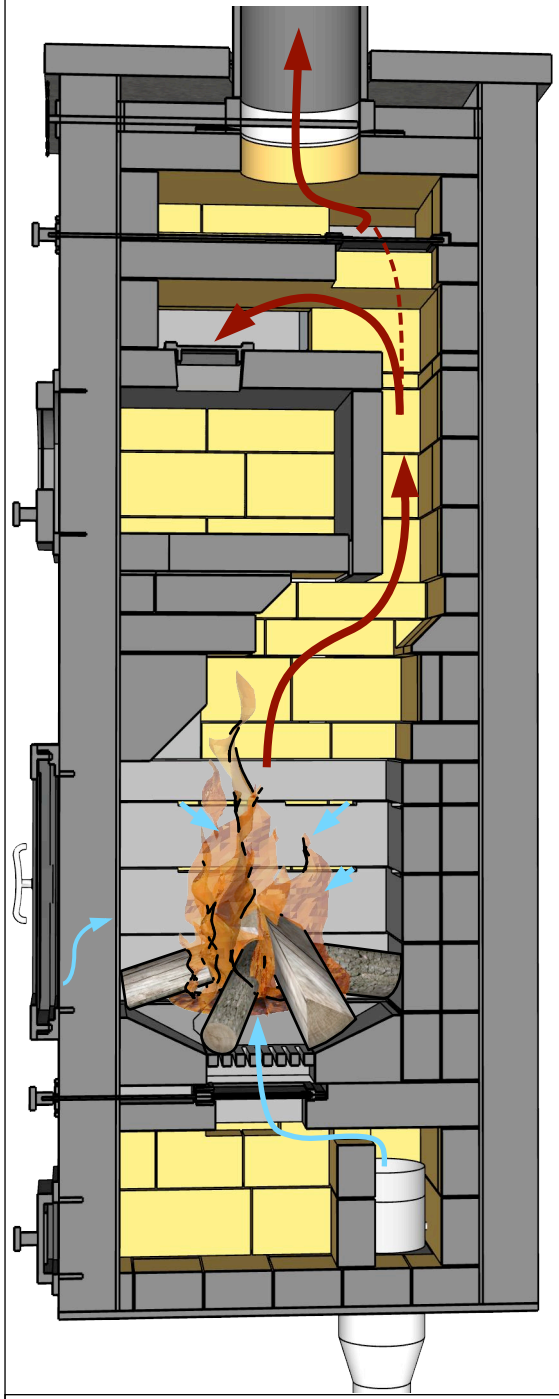






Custom Masonry Heaters allow for a wide range of material choices to adapt to the project's architecture and aesthetics.

Masonry Heaters are typically built in a double-skin construction. There is a refractory core that addresses many of the technical functions of the heater and a masonry facing which serves as an aesthetic wrap and also provides mass for the unit to act as a thermal battery.



Once draft is induced in the chimney, it's possible to pull combusted gases through a much longer heat exchange pathway.

Air enters through Outside Air Supply (shown) or Ash Door.

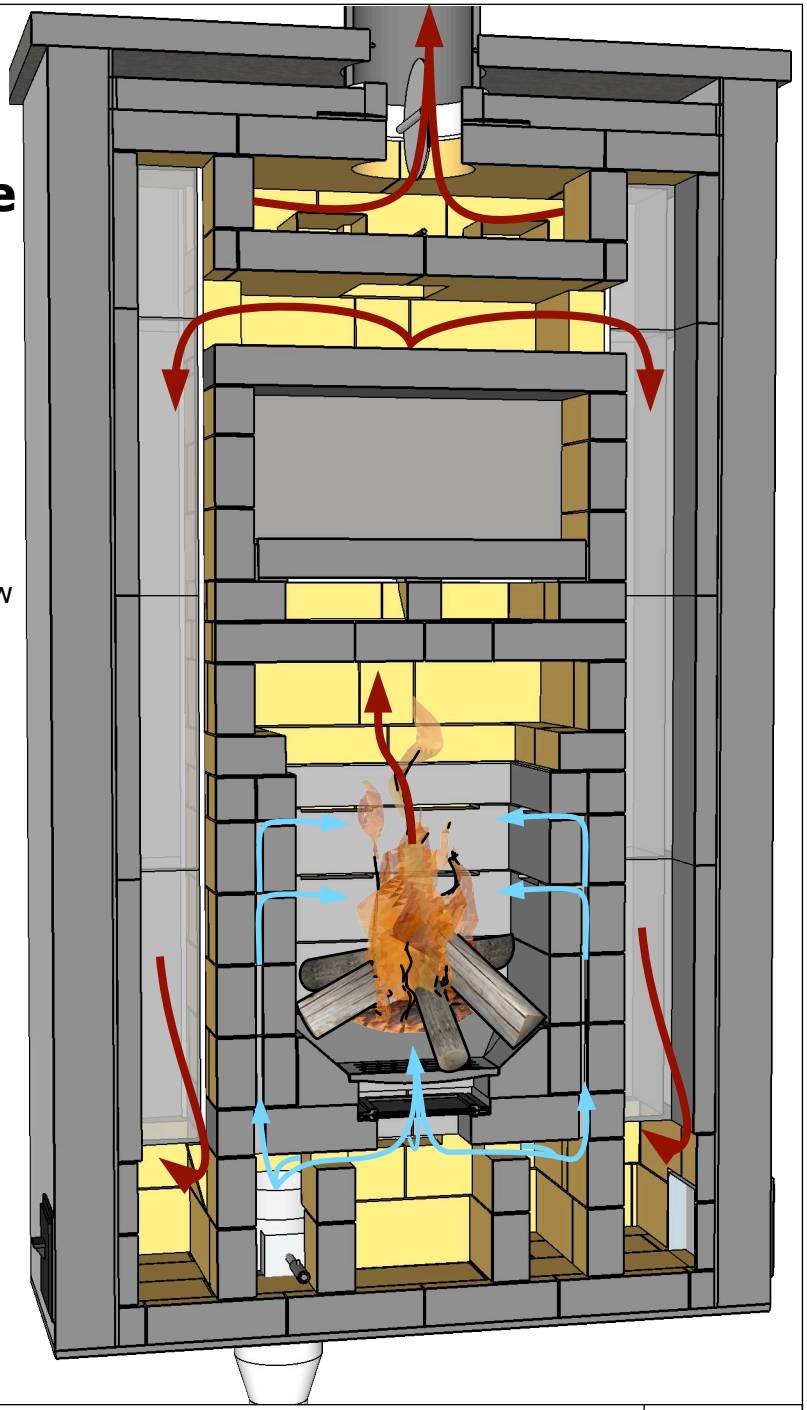
Air is split in the Manifold: Underfire Air enters through the Primary Air Damper below the Grate in the Firebox Floor and Overfire Air enters through the Firebox Walls.

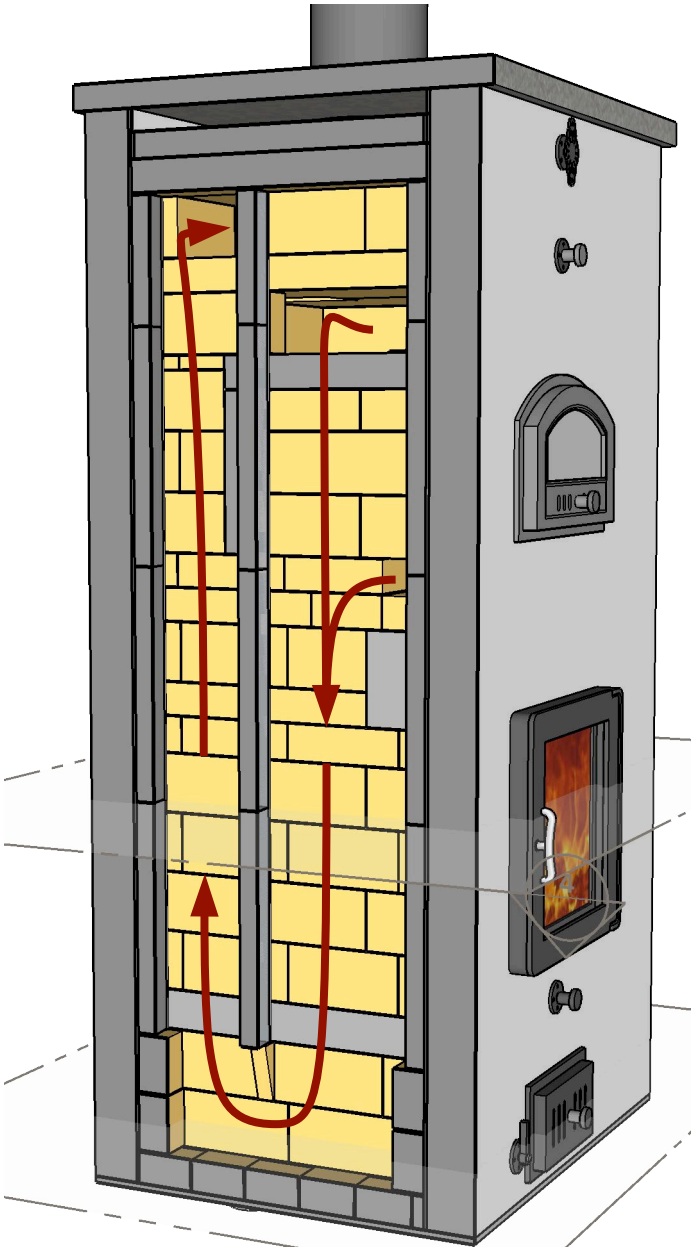
Optimized combustion is achieved through the design of the air flow into the Firespeaking EcoFirebox.

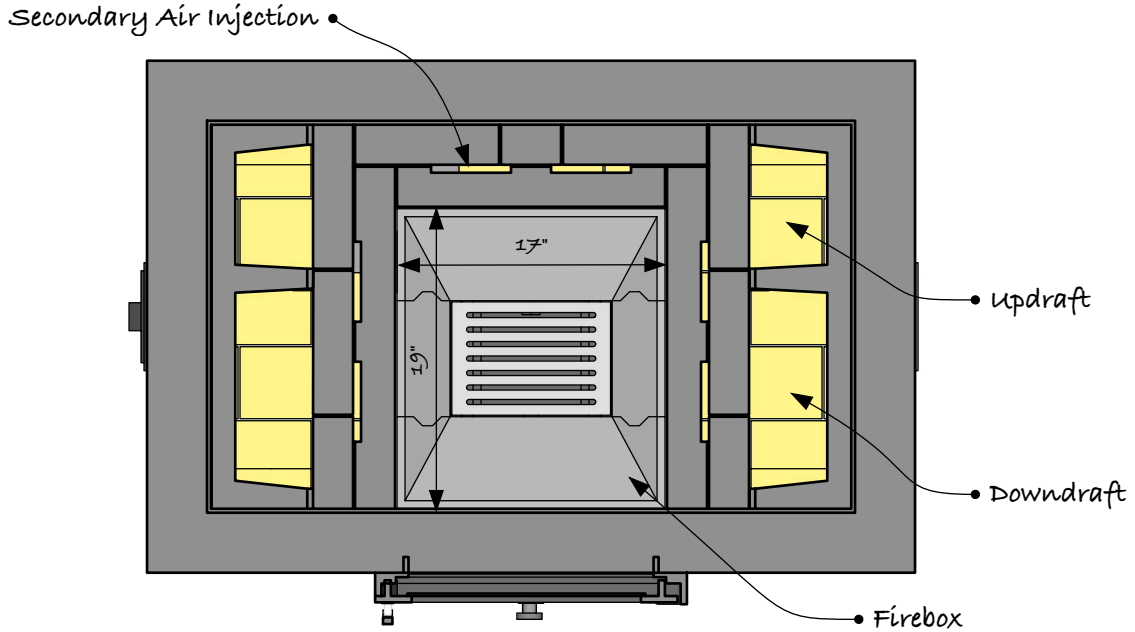
By tuning the Primary Air Damper, the user controls the balance of Underfire and Overfire air. The door also provides a stream of combustion air which helps to keep the glass clean.

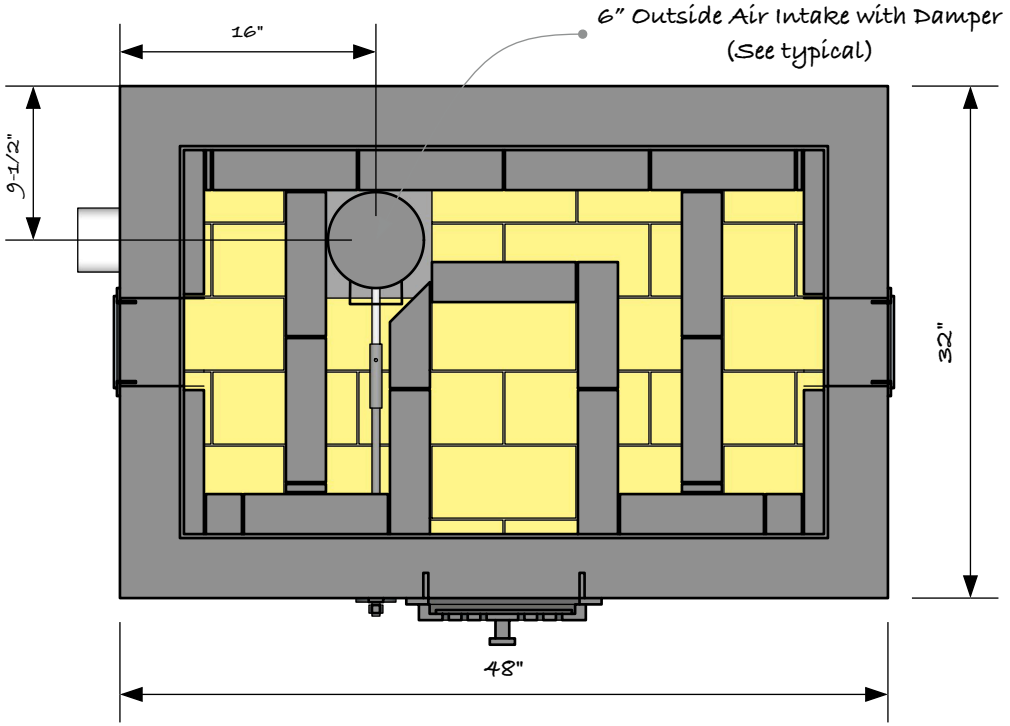
If the Bypass Damper is open (dotted line), hot gases flow directly up from the firebox and out the Chimney.

With the Bypass Damper closed, hot gases flow around the Oven, down the Downdraft Channels, up the Updraft Channels, and out the chimney.







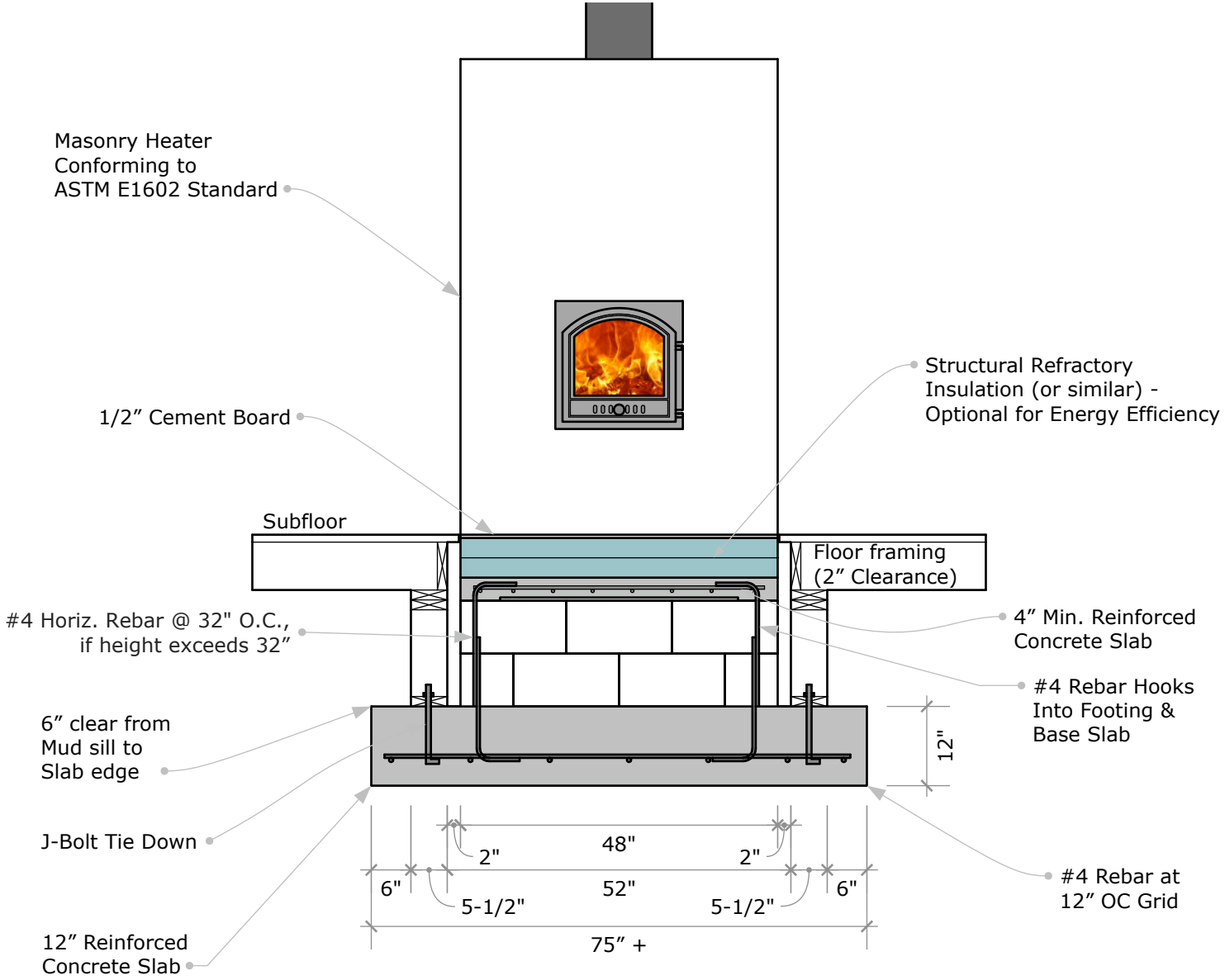


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5RO Masonry Heater Planning Guide
Flow & Plan Sections

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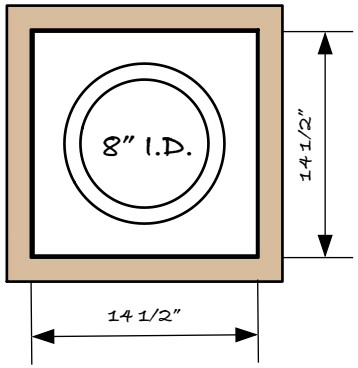
Foundation Slab for Masonry Heater shall be 12” Thick
and Extend 6” Beyond the Footprint of the Heater in all Directions.
#4 Rebar, 12” OC Placed in Lower Third of Slab.
Prescriptions per IRC R1001.2

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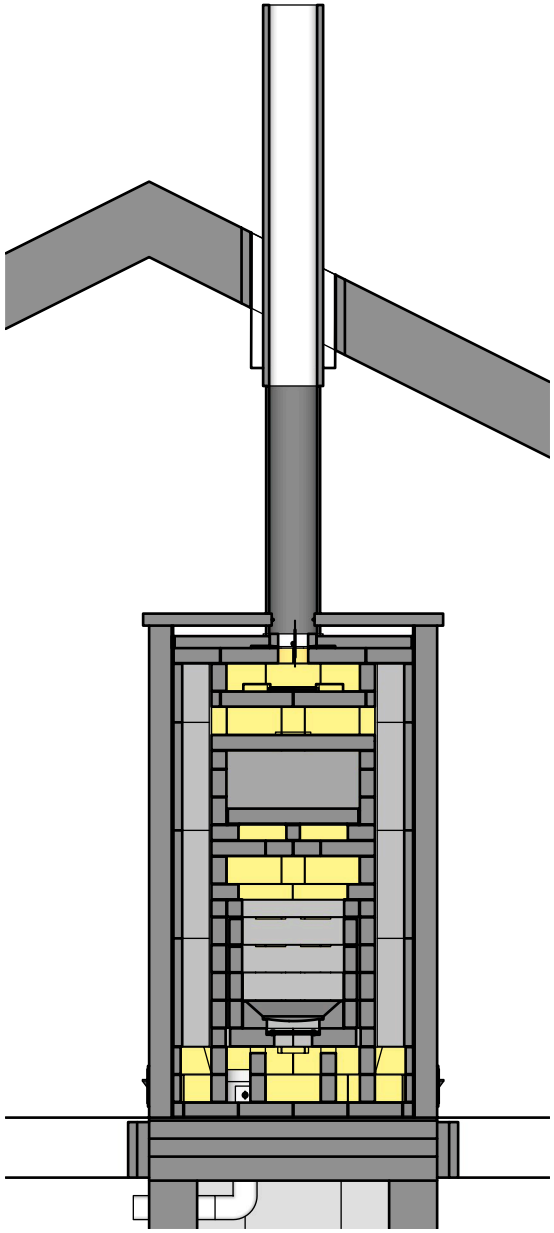
5RO Masonry Heater Planning Guide

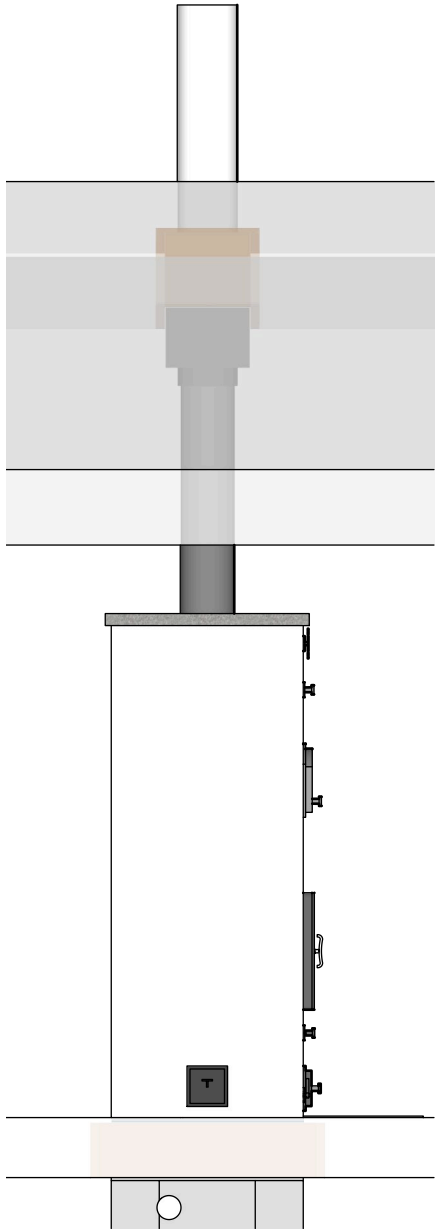
Typical Crawl Space Foundation

Last Modified: September 8, 2026 | *Drawn by: Max Edleson & Jeremiah Church* | *Scale: 1/2” = 1’ (1:24)*



The 5RO masonry heater is vented with a 8" I.D. solid-fuel manufactured chimney like the ones sold for wood stoves. This typical installation shows a ceiling support box with exterior class A chimney pipe penetrating and extending above the roofline. A double-wall telescoping connector is used to connect from the anchor plate on the unit to the chimney. For particularly tall chimneys (20'+), a 7" I.D. chimney may be used. Consult manufacturer's specifications for details of chimney assembly and requirements.



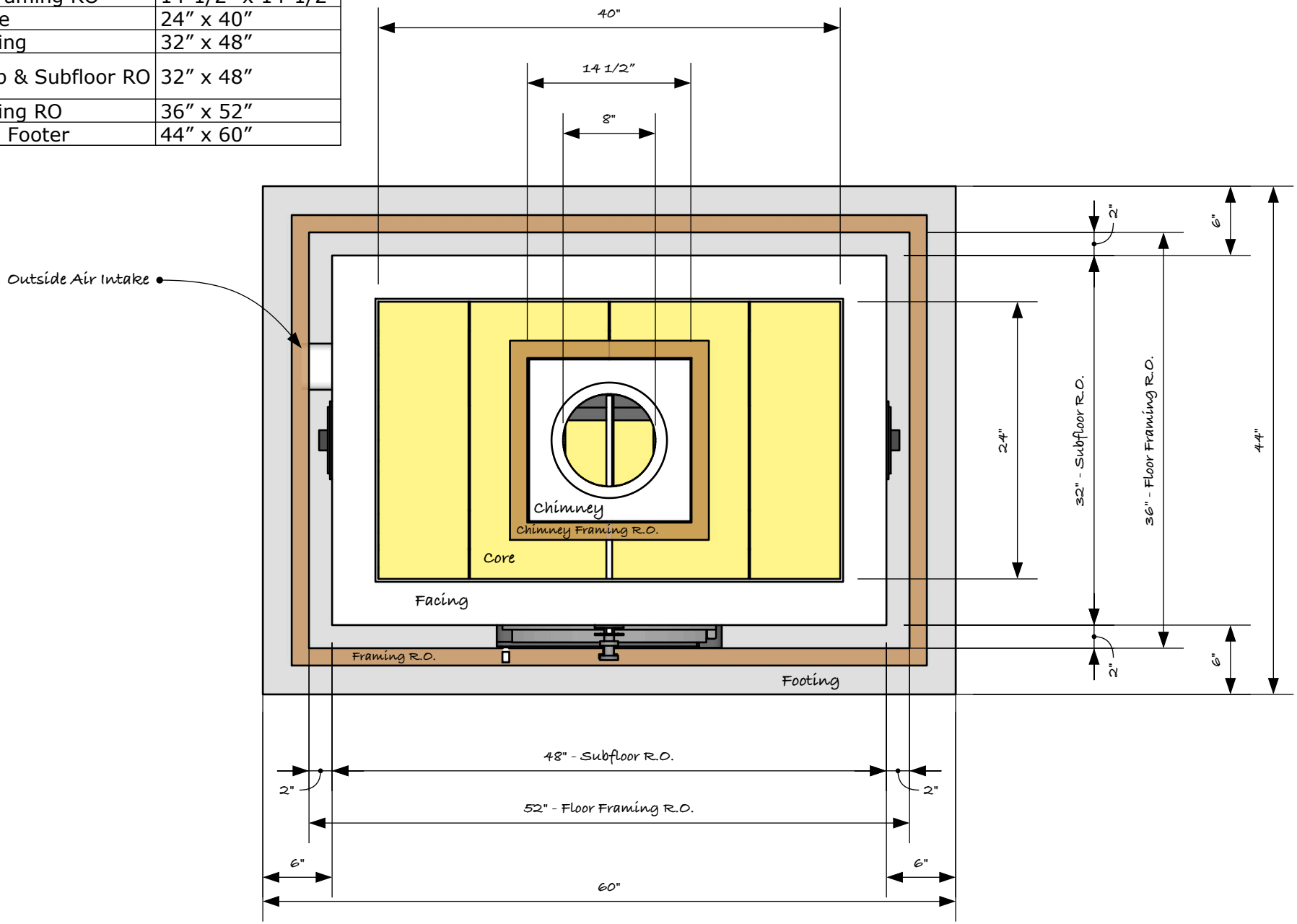


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5RO Masonry Heater Planning Guide

Chimney

Dimensions	
Chimney	7″ or 8″ ID
Chimney Framing RO	14-1/2″ x 14-1/2″
Heater Core	24″ x 40″
Heater Facing	32″ x 48″
Heater Slab & Subfloor RO	32″ x 48″
Floor Framing RO	36″ x 52″
Foundation Footer	44″ x 60″



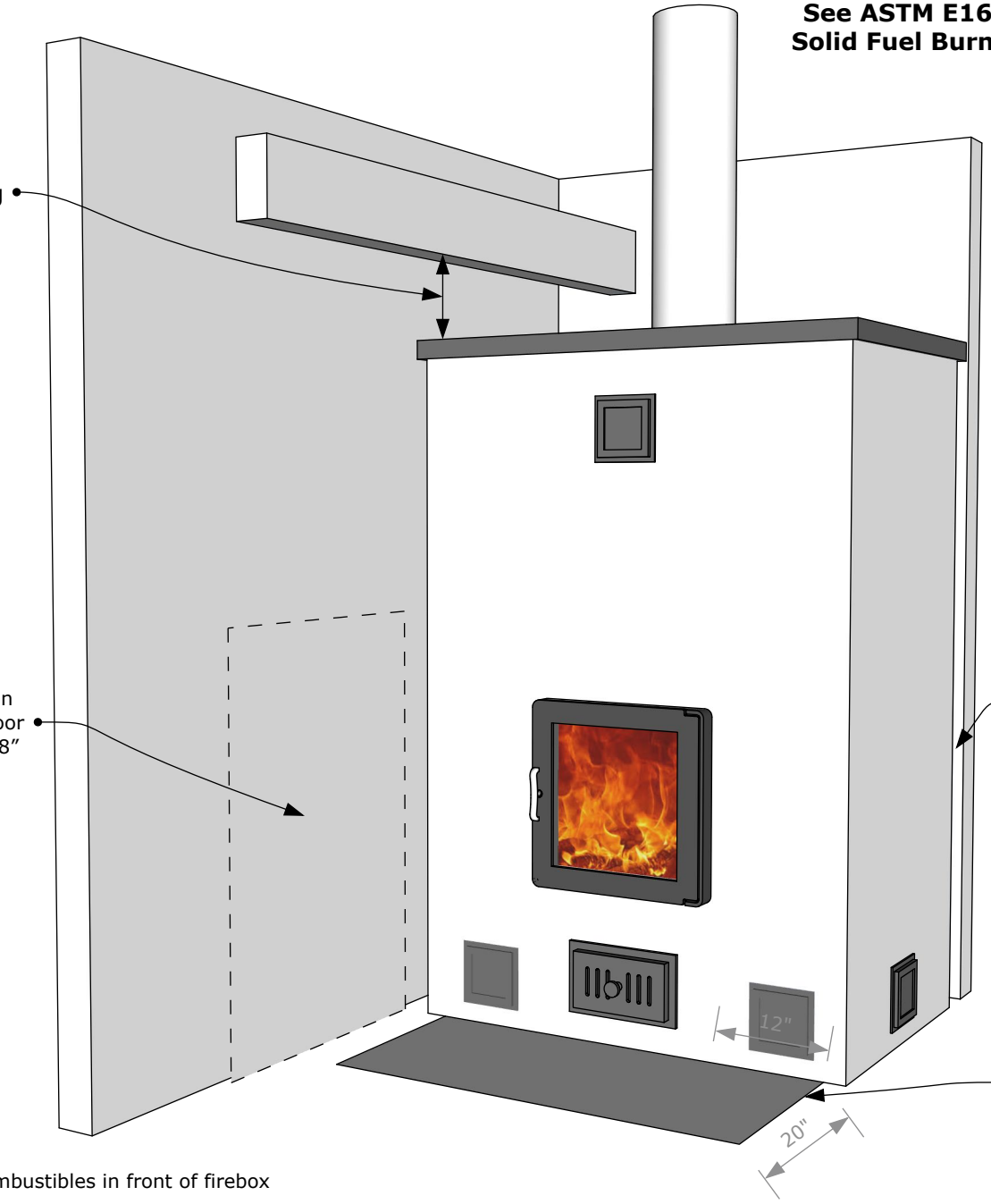
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5RO Masonry Heater Planning Guide
Heater, Framing, and Footing

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See ASTM E1602 Standard Guide for Construction of Solid Fuel Burning Masonry Heaters for full reference.



Min. 8” to Exposed Framing Or Ceiling

Heat shield necessary when distance between firebox door and side wall is less than 48”

4” Clearance to Combustibles
(back and sides)
when firebox walls are min. 8” thick and heat exchange walls are min. 5” thick

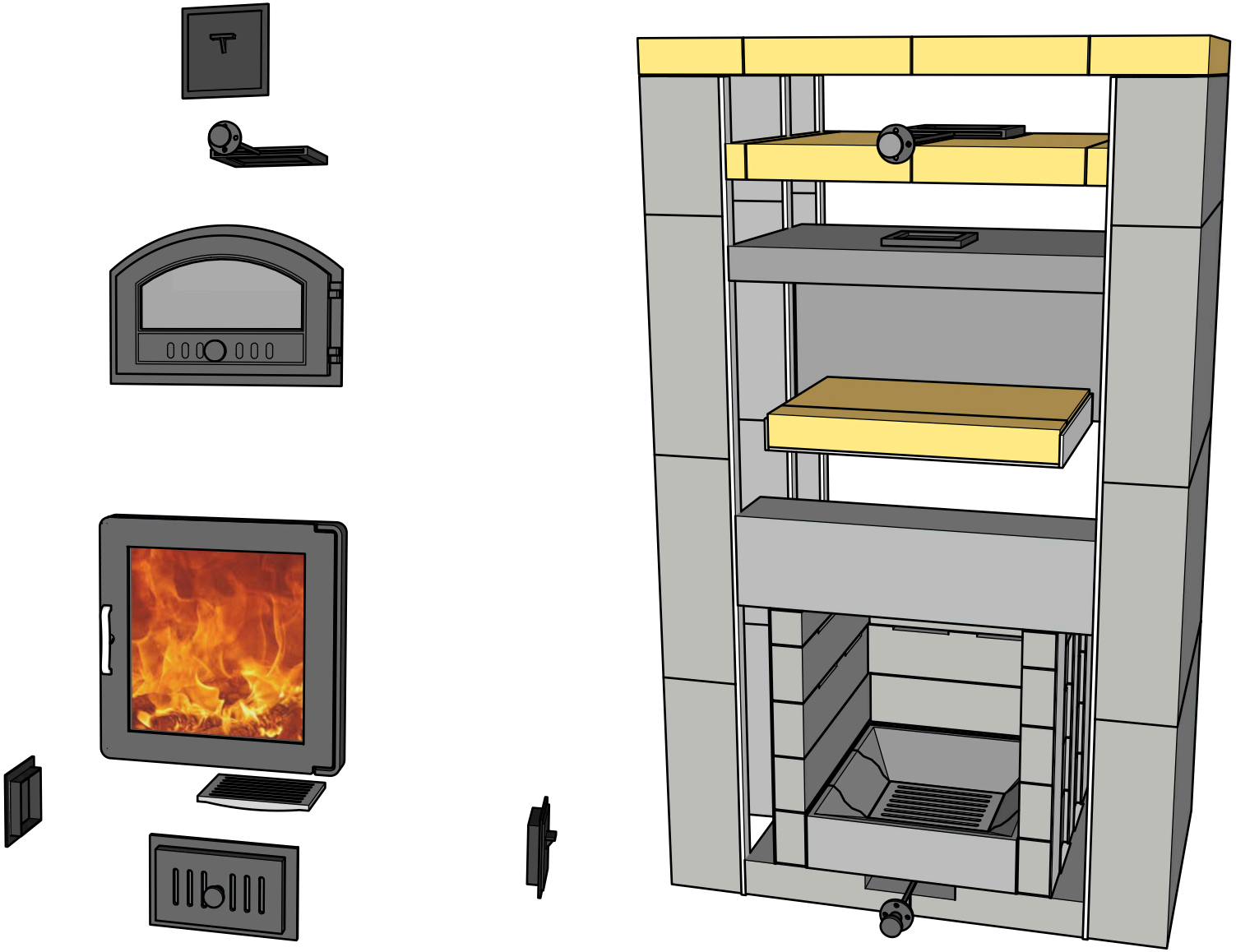
Hearth Extension
Non-Combustible Finished Floor
min. 12” either side of firebox opening and 20” into room

Minimum 48” to combustibles in front of firebox

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5RO Masonry Heater Planning Guide
Minimum Clearances Summary

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This is an illustration of the items that are included in our kits. We have two hardware lines to choose from and there are additional options such as an anchor plate, oven thermometer, and refractory mortar which are not shown here. Our goal is to provide you with all of the specialty items you need on one pallet to build a state-of-the-art masonry heater in combination with firebrick and facing masonry from a local masonry yard.

Visit our website to request a quote and establish an account to access additional installation information.

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What You Get in a Firespeaking Kit

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