

# MASTERING THE VERTICAL

## The Cathedral Ceiling Installation Guide

A guide to safety, physics, and geometry for homes with no attic space.

### The Scenario:

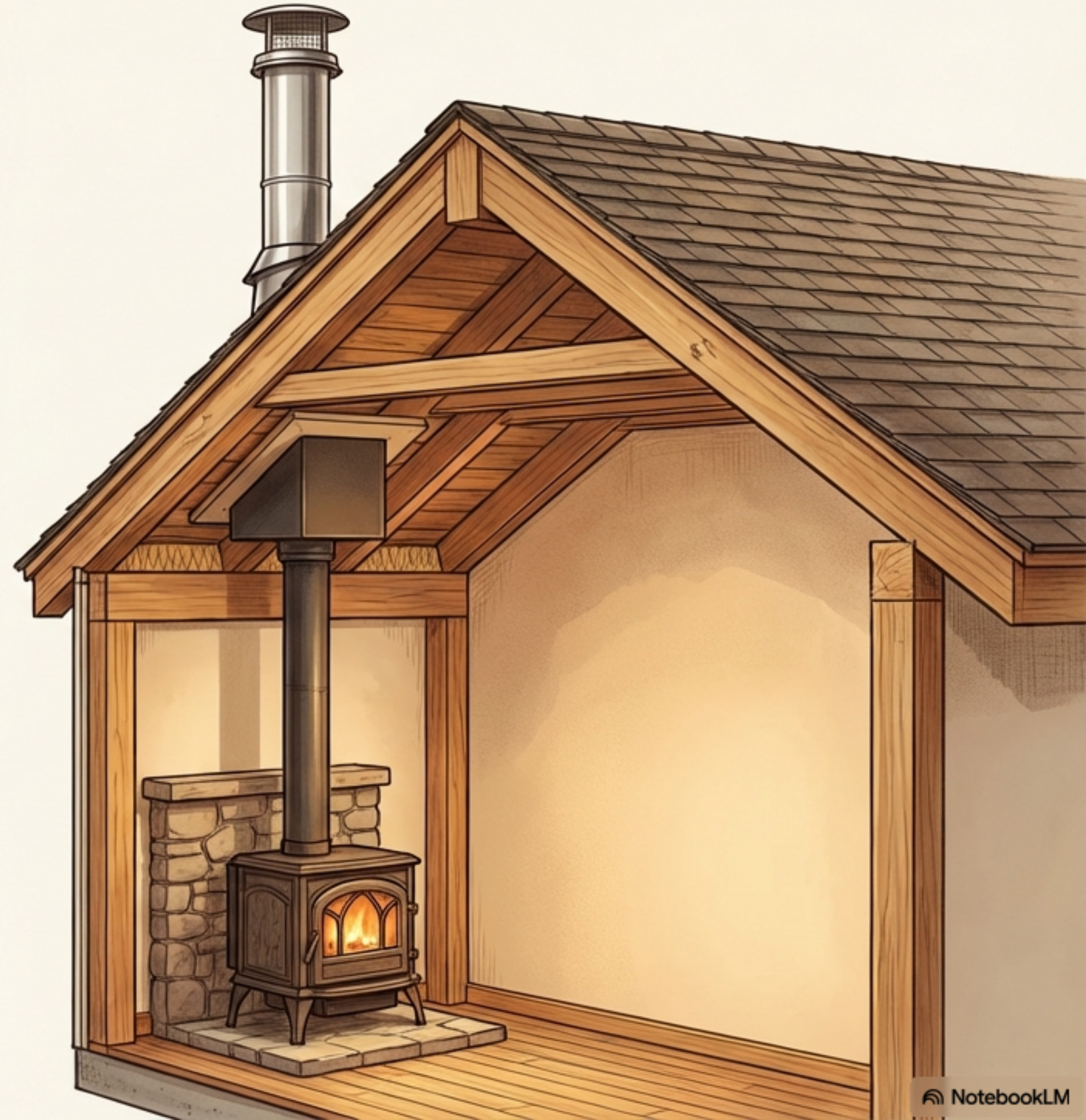
The ceiling follows the roof slope. There is no attic buffer zone.

### The Mission:

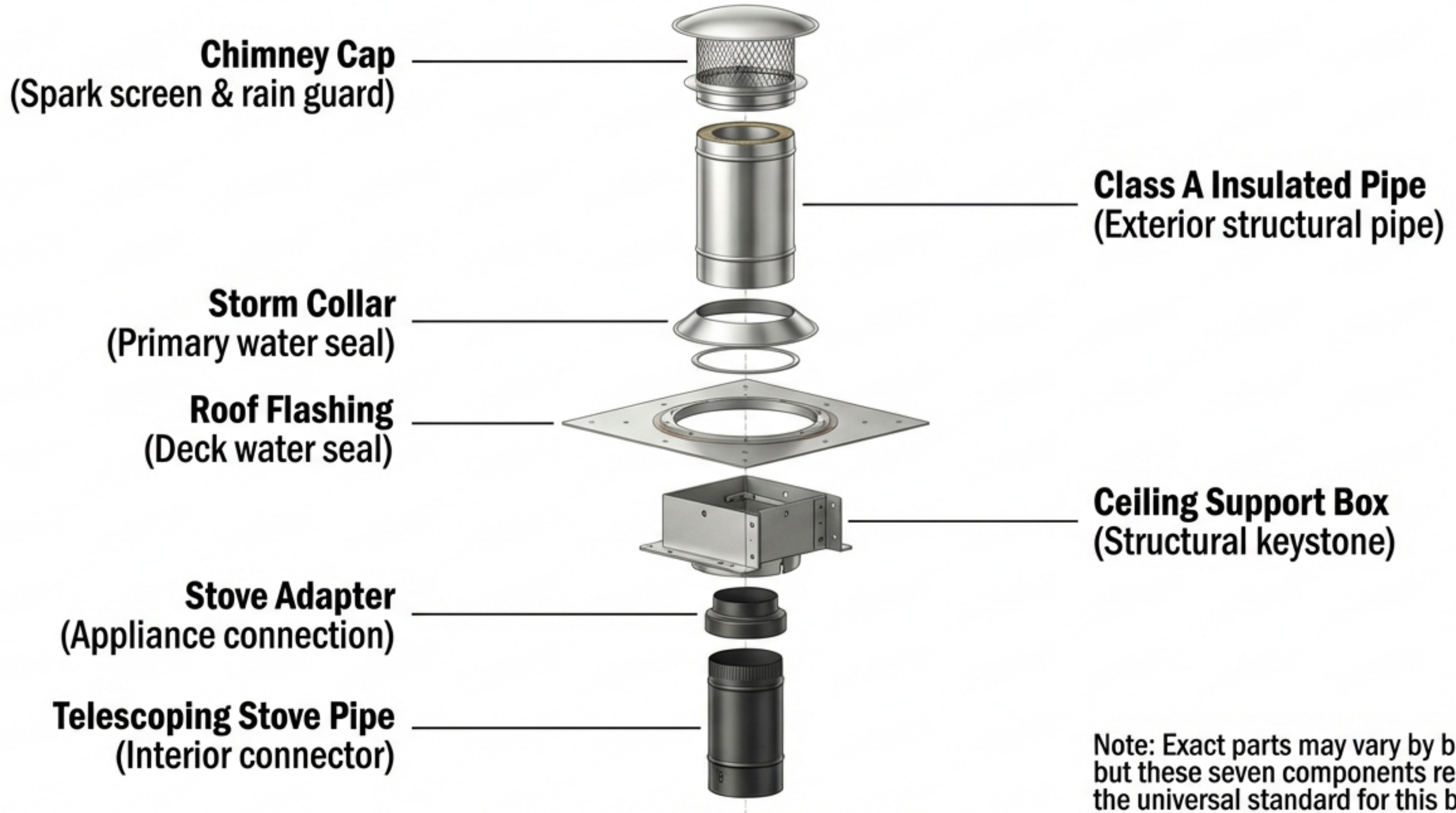
The chimney runs vertically from the appliance, breaches the ceiling/roof envelope in one single pass, and terminates above the roofline.

### The Challenge:

Unlike attic installs, the support system is visible and must handle the entire load at the ceiling level.



# Part Layout



Note: Exact parts may vary by brand, but these seven components represent the universal standard for this build.

# THE CRITICAL DISTINCTION: CONNECTOR VS. CLASS A

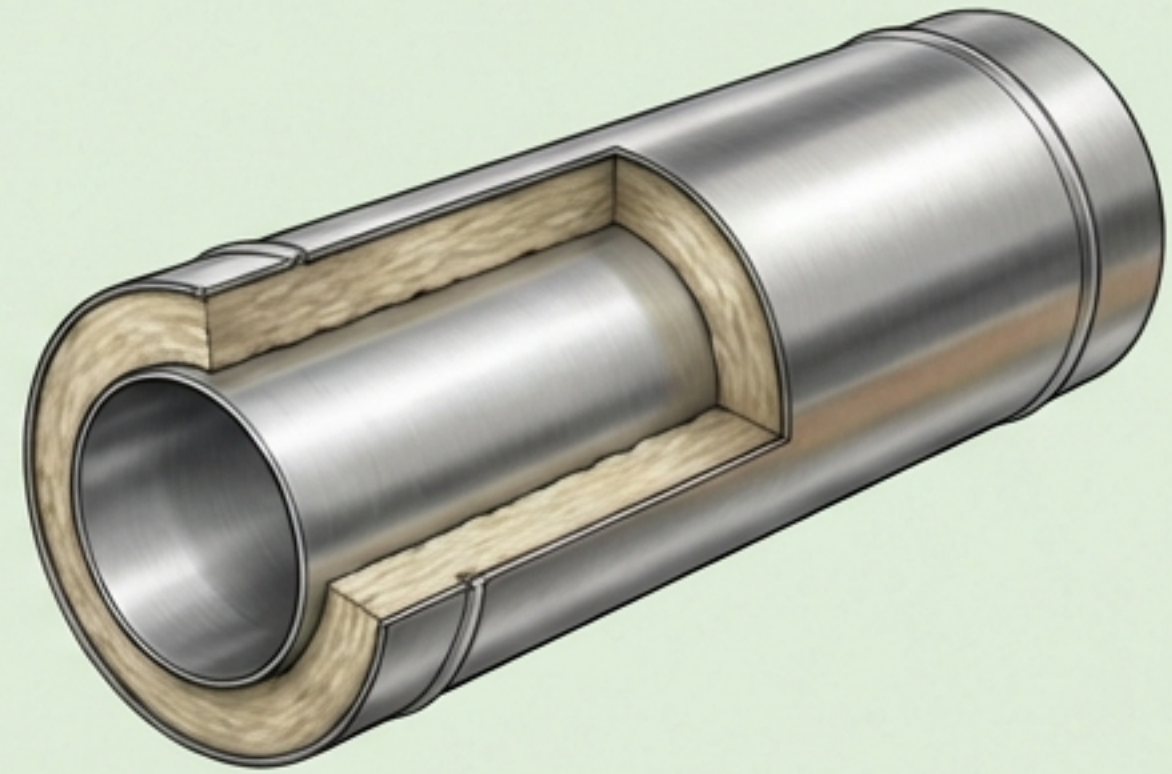
## STOVE PIPE



- **Function:** Interior Connector Only
- **Clearance:** 18 inches from combustibles
- **The Hard Rule:** NEVER use this to pass through walls, ceilings, or roofs.



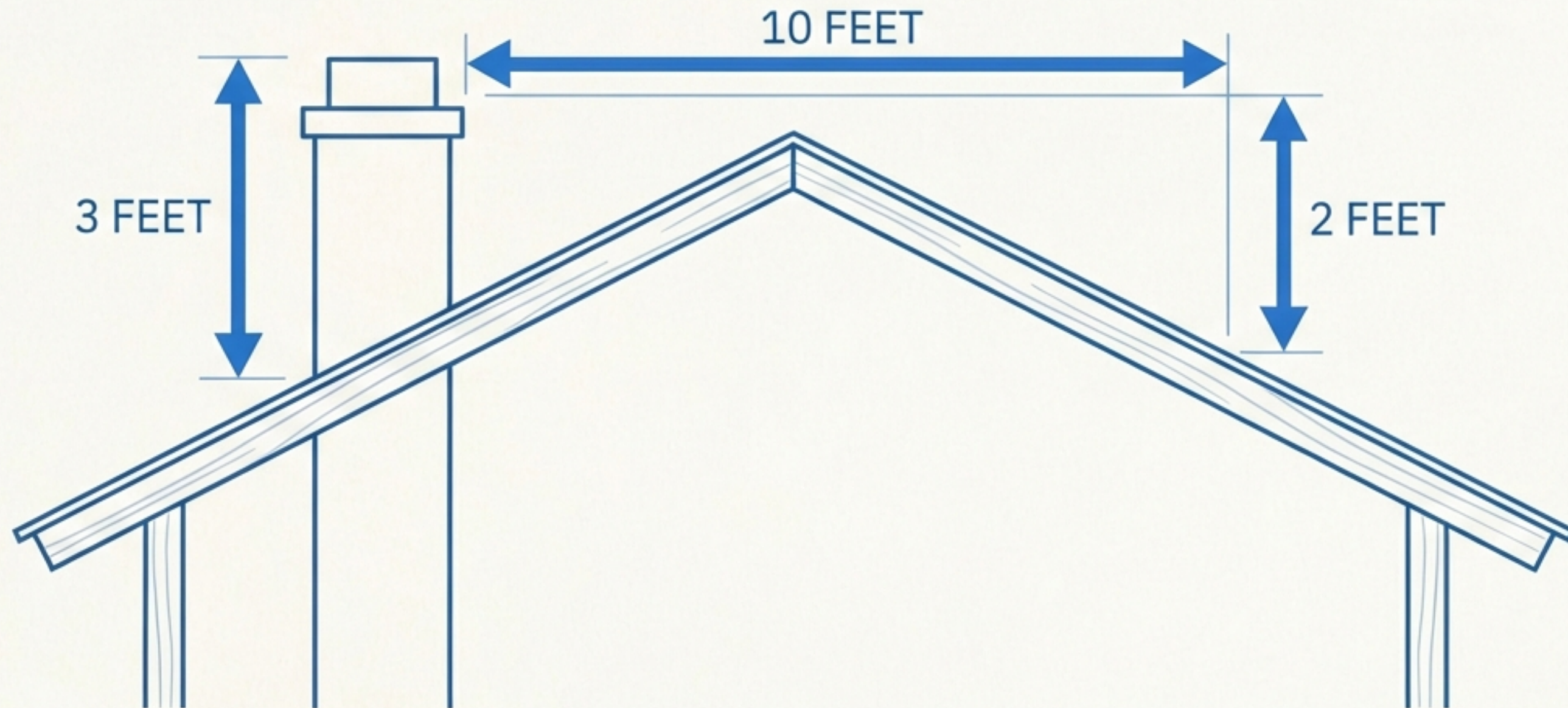
## CLASS A CHIMNEY PIPE



- **Function:** Structure Penetration & Exterior
- **Engineering:** Double-wall stainless with insulation
- **Clearance:** 2 inches from combustibles
- **The Hard Rule:** The ONLY pipe tested for penetrating the home envelope.



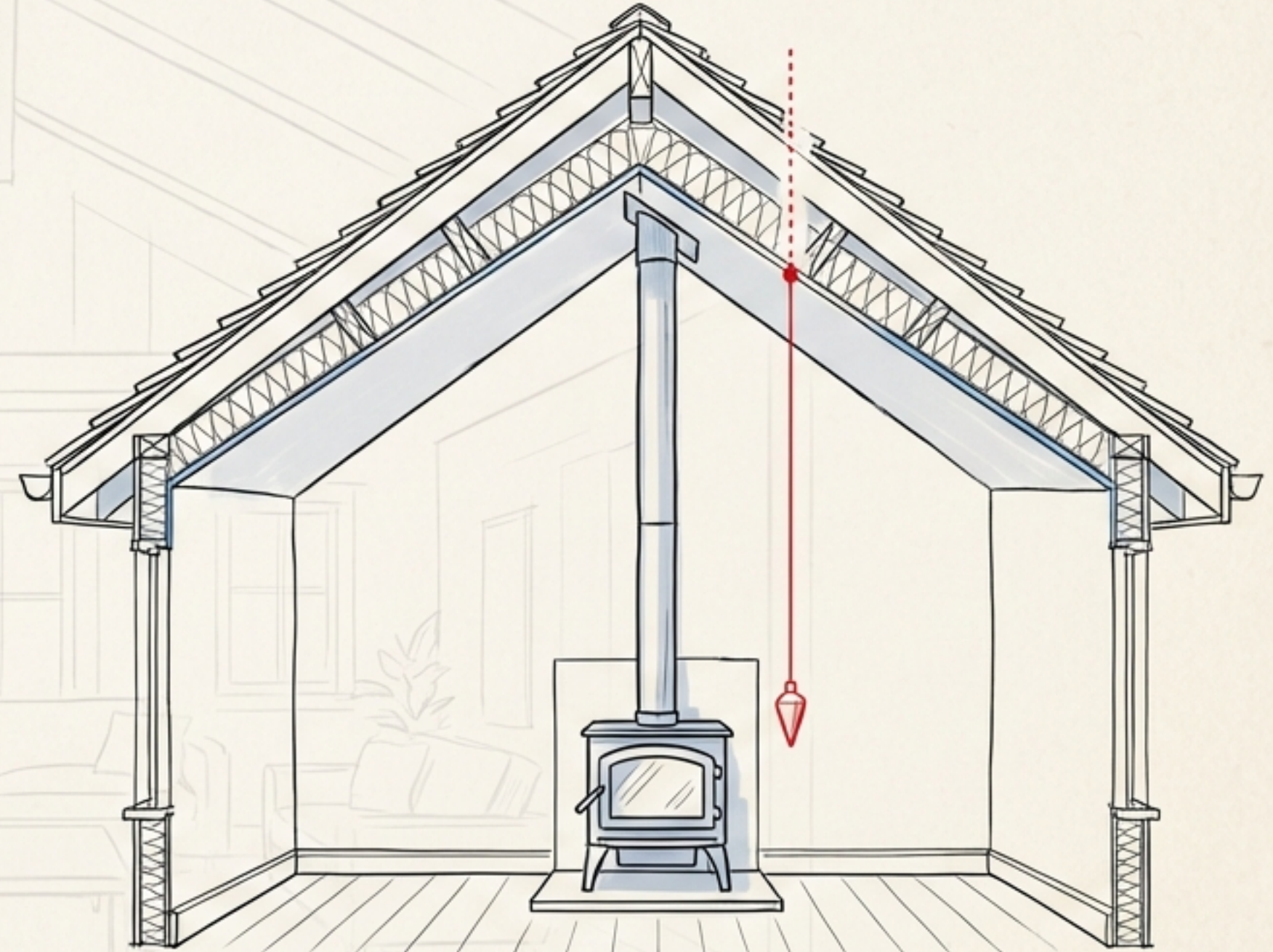
# THE MATHEMATICS OF DRAFT: THE 3-2-10 RULE



Why? Proper height prevents wind turbulence from pushing smoke back into the home (downdraft) and reduces fire risk.

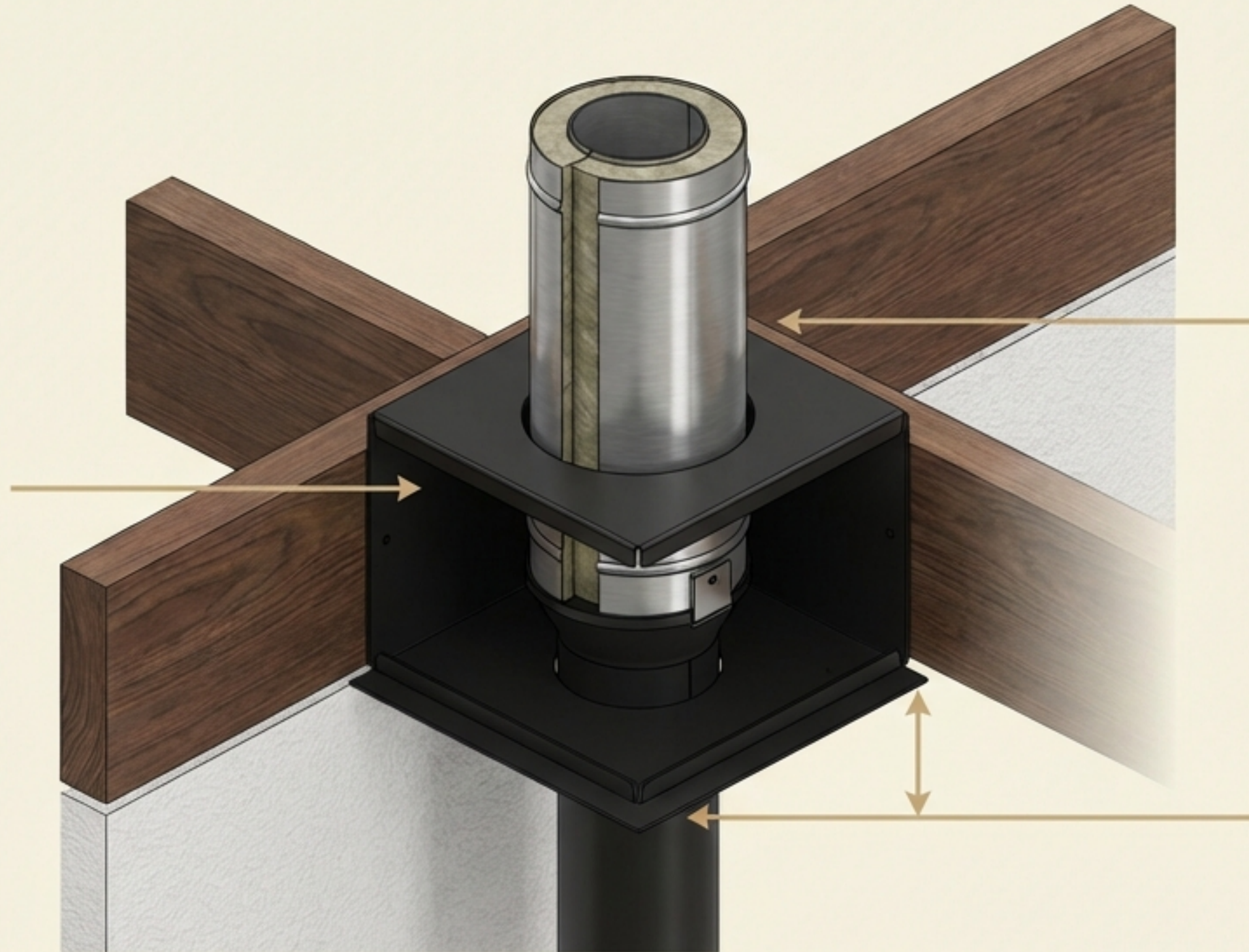
# PHASE I: ESTABLISHING THE VERTICAL AXIS

1. **Find Center:** Position the stove and use a laser level or plumb bob to mark the exact center of the flue on the sloped ceiling.
2. **Account for Slope:** The hole on the ceiling will be slightly elongated due to the pitch.
3. **Transfer the Mark:** Drill a long pilot bit through the ceiling and straight through the roof deck. This pilot hole is your “source of truth”.



# THE KEYSTONE: CATHEDRAL CEILING SUPPORT BOX

**Load Bearing:**  
Carries the weight  
of the entire stack.



**Safe Transition:**  
Buffers heat from  
the structure.

**2-Inch Protrusion:**  
Box must extend  
min. 2 inches below  
finished ceiling.

# MEASURING THE INTERIOR RUN



**The Challenge:** Getting a perfect fit between fixed-length pipes is difficult.

## **The Solution: Telescoping Stove Pipe**

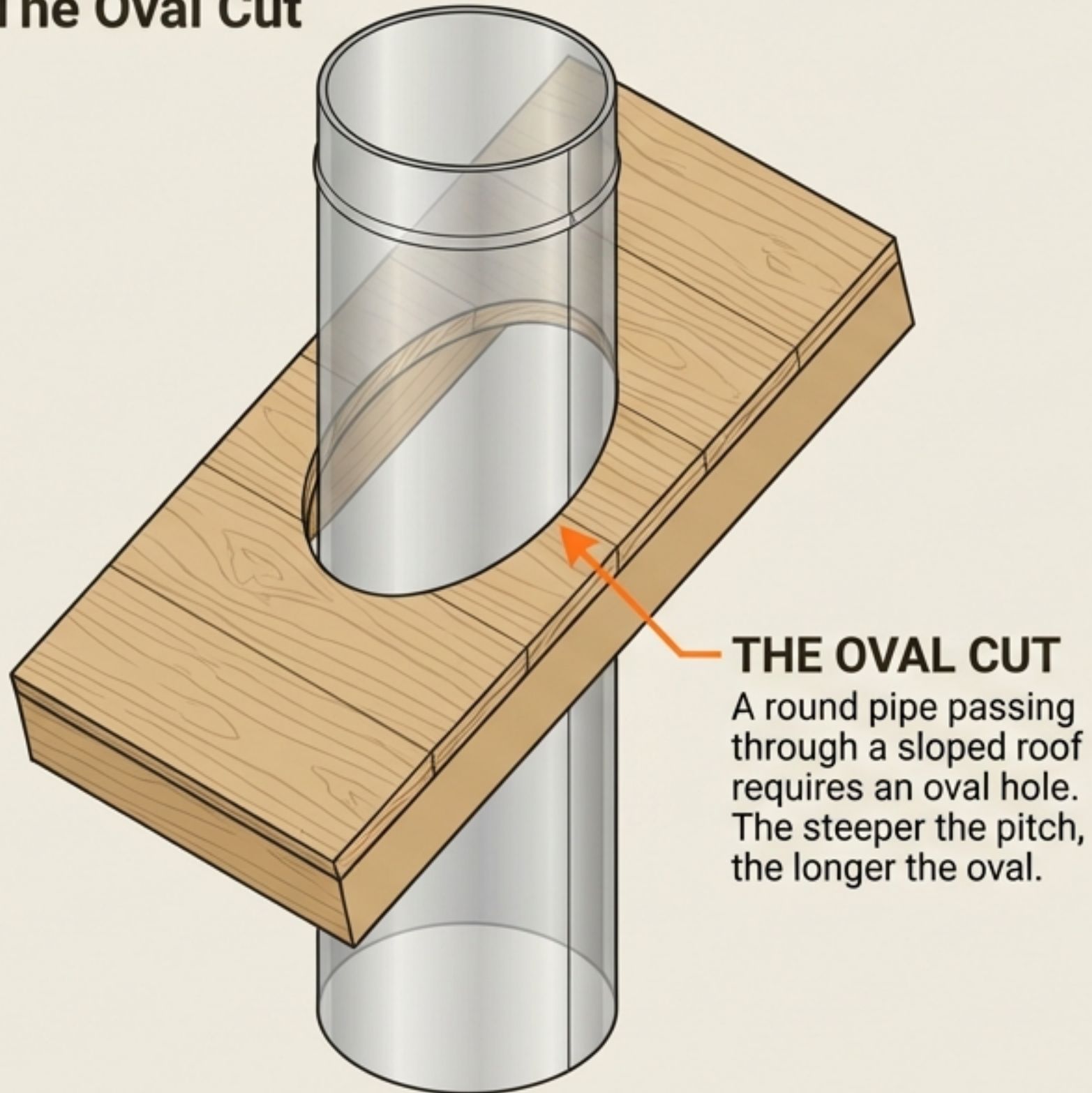
- Allows for vertical adjustment without cutting.
- Eliminates the need to crimp ends manually.
- Makes cleaning and removal easier.

$$\text{Required Stove Pipe Length} \approx \mathbf{A - B - C - D}$$

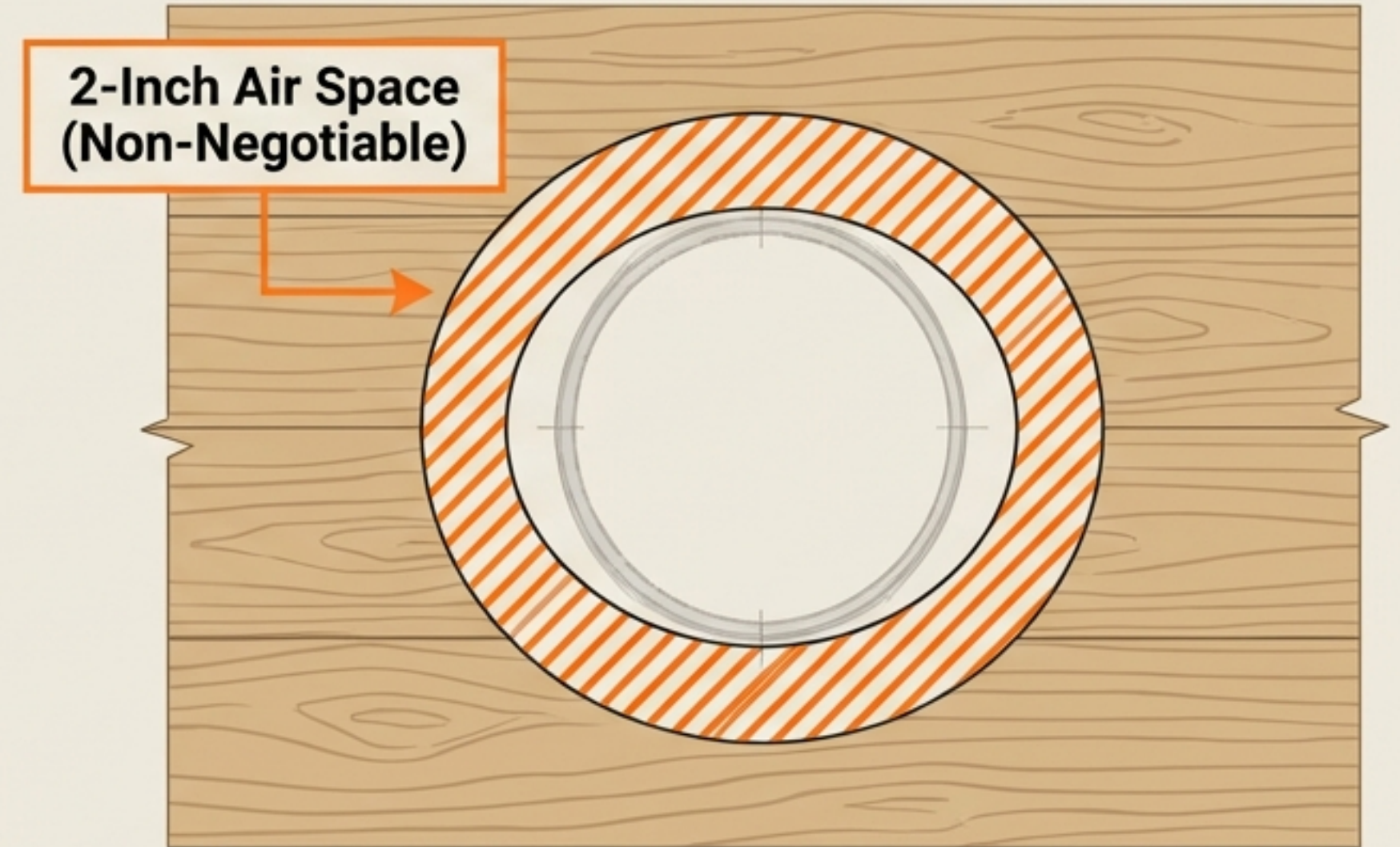
**Pro Tip:** Ensure the **18-inch clearance** from the wall is factored into the stove placement before finalizing this measurement.

# PHASE II: THE GEOMETRY OF THE CUT

## The Oval Cut



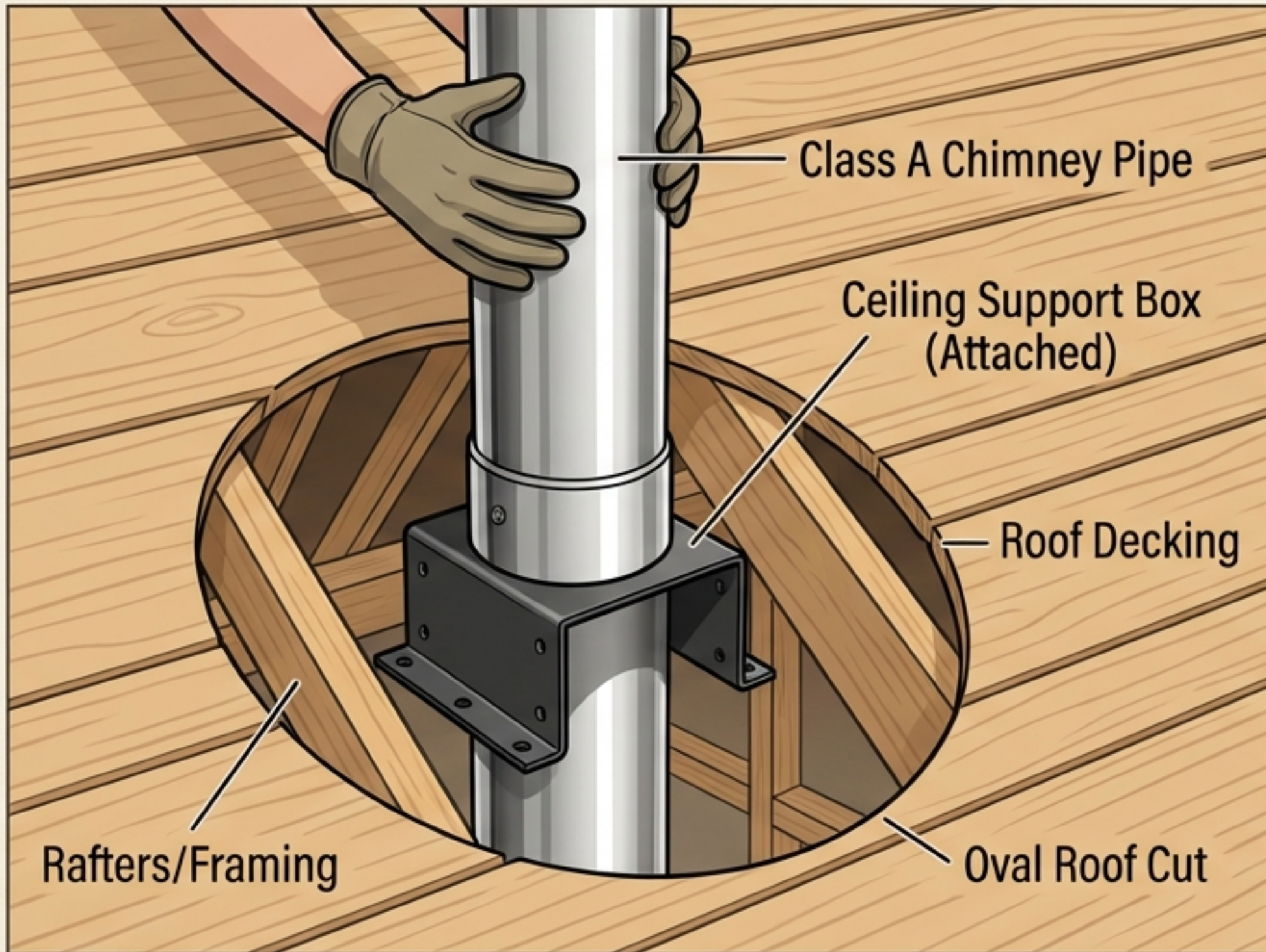
## The Clearance



**Field Note:** A round pipe passing through a sloped roof requires an oval hole. The steeper the pitch, the longer the oval.

**Respect the Deck:** Trim the wooden roof decking back fully. No wood can touch the Class A pipe.

# SETTING THE FOUNDATION FROM ABOVE



## Step-by-Step Instructions:

1. **Attach Support:** Bolt the support box/brackets to the first Class A pipe section.
2. **The Drop:** Lower the assembly through the roof hole.
3. **Check Plumb:** Use a level to ensure vertical alignment.
4. **Secure:** Fasten the support brackets tightly into the rafters/framing.

# WEATHERPROOFING: THE FLASHING SYSTEM



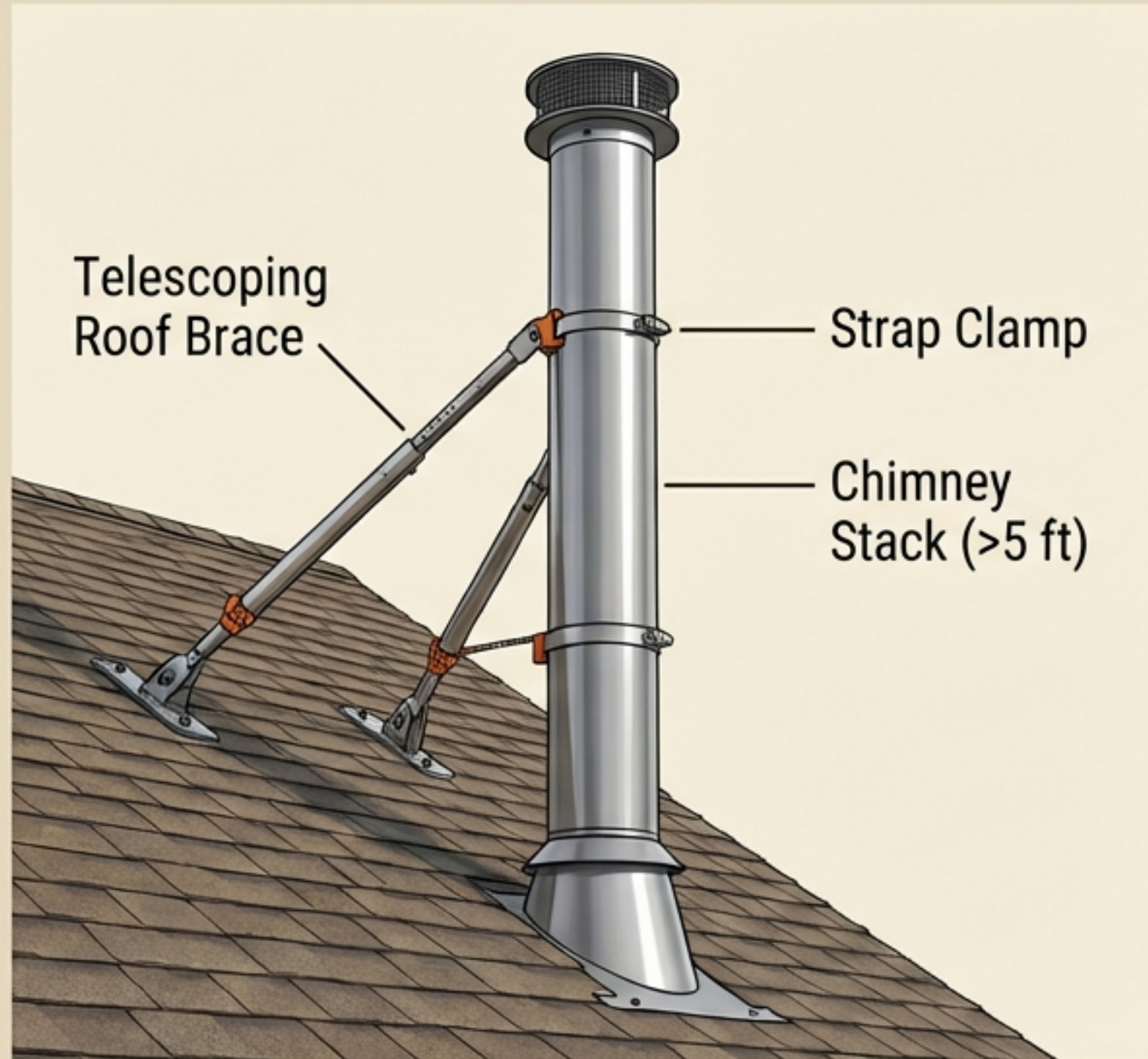
- **The Golden Rule:** Think like a raindrop.
  - **Top:** Flashing slides UNDER existing shingles.
  - **Sides/Bottom:** Flashing sits ON TOP of shingles.
  - **Keyways:** Ensure shingle seams do not channel water under the flashing edge.
  - **Sealant:** Apply silicone under flanges, but leave the bottom edge open for drainage.

# THE SEAL: STORM COLLAR INSTALLATION



1. Slide Storm Collar down until it rests on the flashing.
2. **The Bead:** Apply high-temp silicone around the **top edge** where collar meets pipe.
3. **Why:** Flashing seals the roof; the Storm Collar seals the pipe. Without this bead, water flows down the pipe and bypasses the flashing.

# PHASE III: THE ASCENT AND STABILIZATION



- **Building Up:** Add Class A sections to meet the 3-2-10 height rule.
- **Roof Support Straps:**
  - **When:** Required if stack extends > 5 feet above roof.
  - **How:** Telescoping legs anchored to roof deck.
  - **Critical:** Fasten feet into RAFTERS, not just plywood sheathing. Wind load is significant.

# THE FINAL CONNECTION: STOVE TO CEILING



- **Orientation Matters:** Install pipes with crimped ends pointing DOWN. This keeps liquid creosote inside the pipe.
- **Secure Joints:** Minimum of 3 sheet metal screws per connection.
- **Final Fit:** Adjust telescoping section to eliminate gaps.

# COMMISSIONING: THE PRE-FIRE CHECKLIST

- ☒ **Clearances Met?** (18-inch interior / 2-inch exterior)
- ☒ **Joints Secured?** (3 screws per joint)
- ☐ **Plumb?** (Stack is perfectly vertical)
- ☒ **Waterproof?** (Flashing woven, collar sealed)
- ☐ **Height?** (Meets 3-2-10 Rule)
- ☐ **Cap On?** (Spark screen installed)



A properly installed chimney is a lifetime investment in safety.

# WE ARE HERE TO HELP

## Expert Support

**Phone:** 888-8340-880 (9am - 9pm, 7 days/week)

**Email:** [contact@flue-pipes.com](mailto:contact@flue-pipes.com)



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