

SUCCESS WITH LOUISIANA ENERGY CODE

Recommended Practices for Optimized Energy Savings
for Builders/Trades & Code Officials



FRAMING

FRAMING CONSTRUCTION

FRAMING IMPROVEMENTS

FRAMING PROTECTION



TIGHT CONSTRUCTION



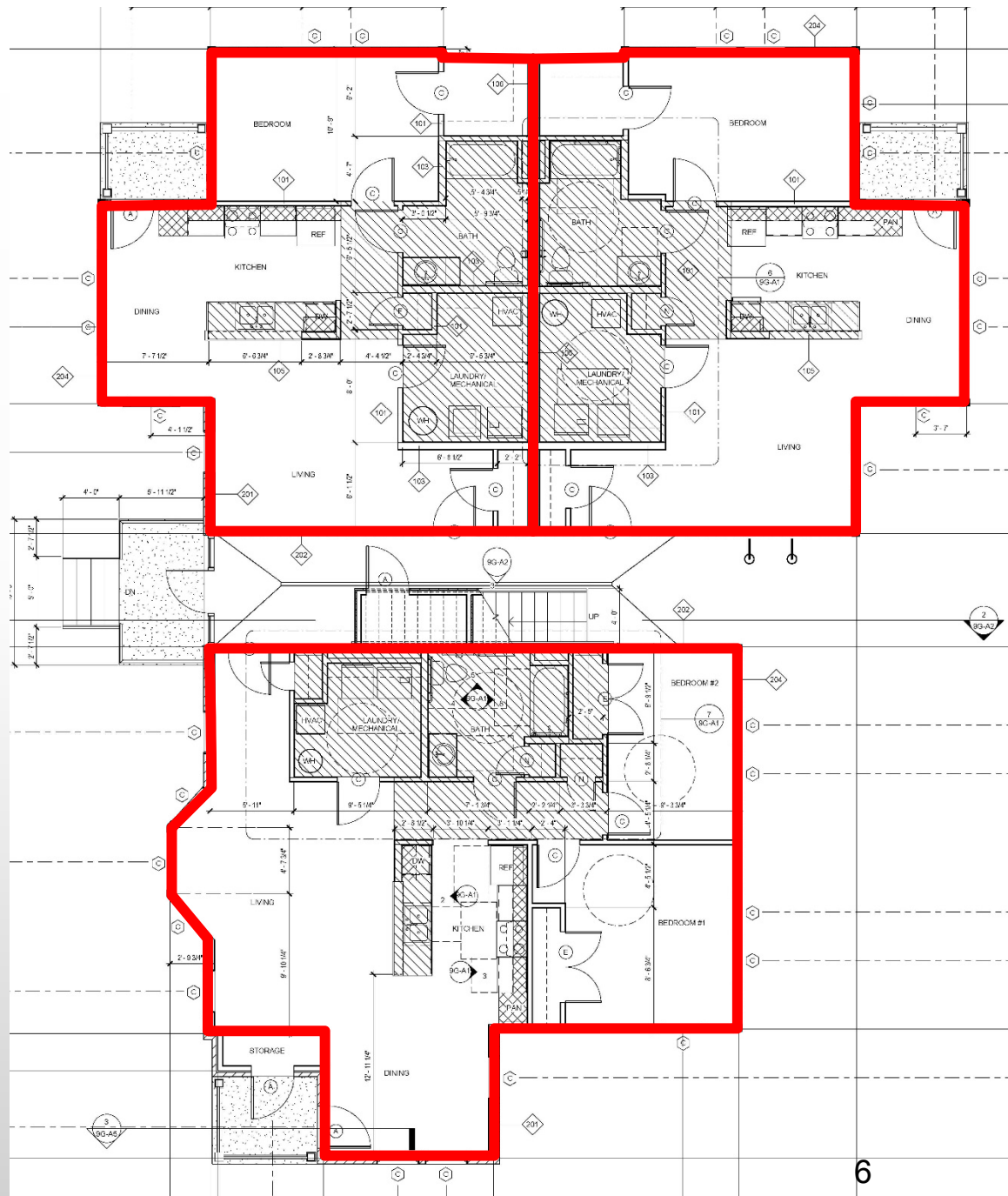
Establish the Air Barrier

The first and most important step to building a home is creating an air barrier that is:

- Clearly ***Defined*** and ***Continuous***
- ***Complete*** to Protect Insulation
- In ***Contact*** with the Thermal Barrier



Why plan?





FRAMING

Construction

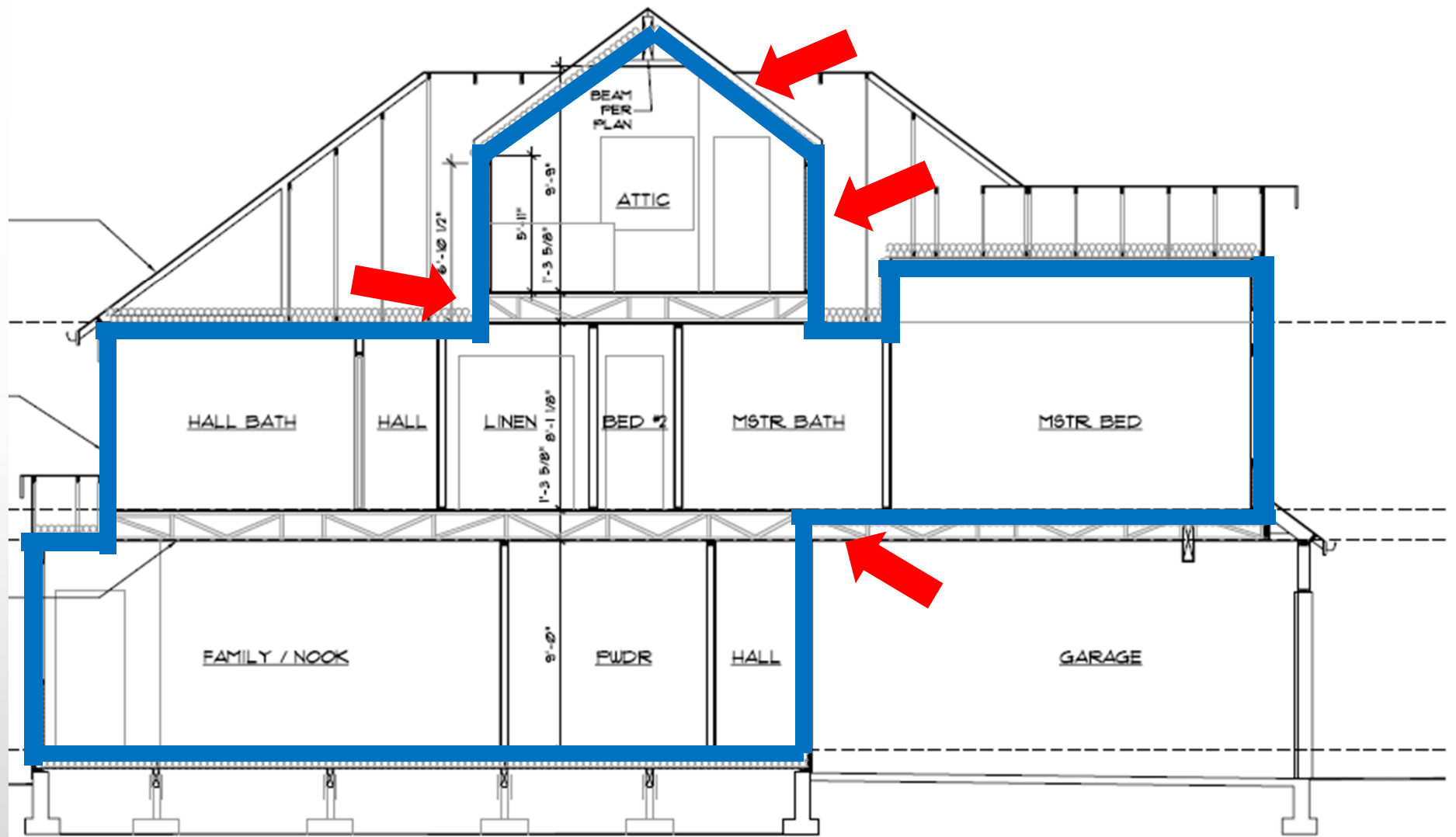
- JC 1: Damp proof all framed below-grade walls.
- [JC 2](#): Frame attic to allow the full amount of required insulation under attic platforms.
- [JC 3](#): Frame corners and headers to allow for insulation installation.
- [JC 4](#): For walls separating conditioned and unconditioned space, install framing that allows for the required R-value, has a top plate, bottom plate and an exterior air barrier. RECOMMENDED: rigid air barrier.
- [JC 5](#): For walls that will not have an interior finish and are separating conditioned and unconditioned spaces, insulate wall cavities and install an interior air barrier. RECOMMENDED: rigid air barrier.

Improvements

- [JC 6](#): Cap all dropped ceilings/soffits, shafts and chases with an air barrier and air seal. RECOMMENDED: rigid air barrier.
- [JC 7](#): For all floor systems within the conditioned envelope, install a band or blocking separating conditioned and unconditioned space. RECOMMENDED: rigid air barrier.

Protection

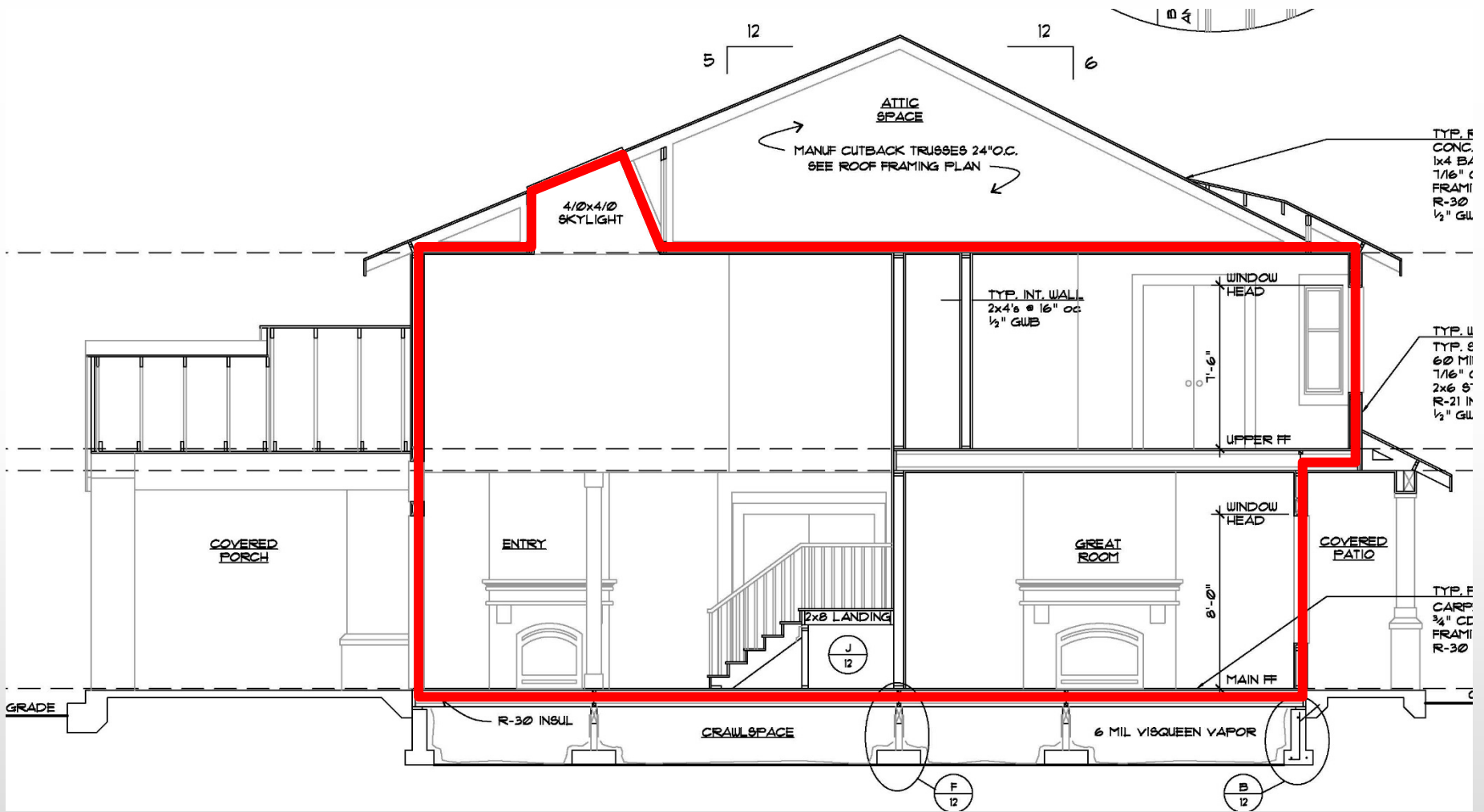
- [JC 8](#): For cantilever floors, frame to allow for full amount of required insulation and encapsulate with an exterior rigid air barrier and air sealing.
- [JC 9](#): Install flashing at the bottom of all exterior walls and at roof-wall connections.
- [JC 10](#): Install an overlapped drainage plane on all exterior walls (i.e. building wrap).
- [JC 11](#): Air seal all gaps and voids between conditioned and unconditioned spaces.

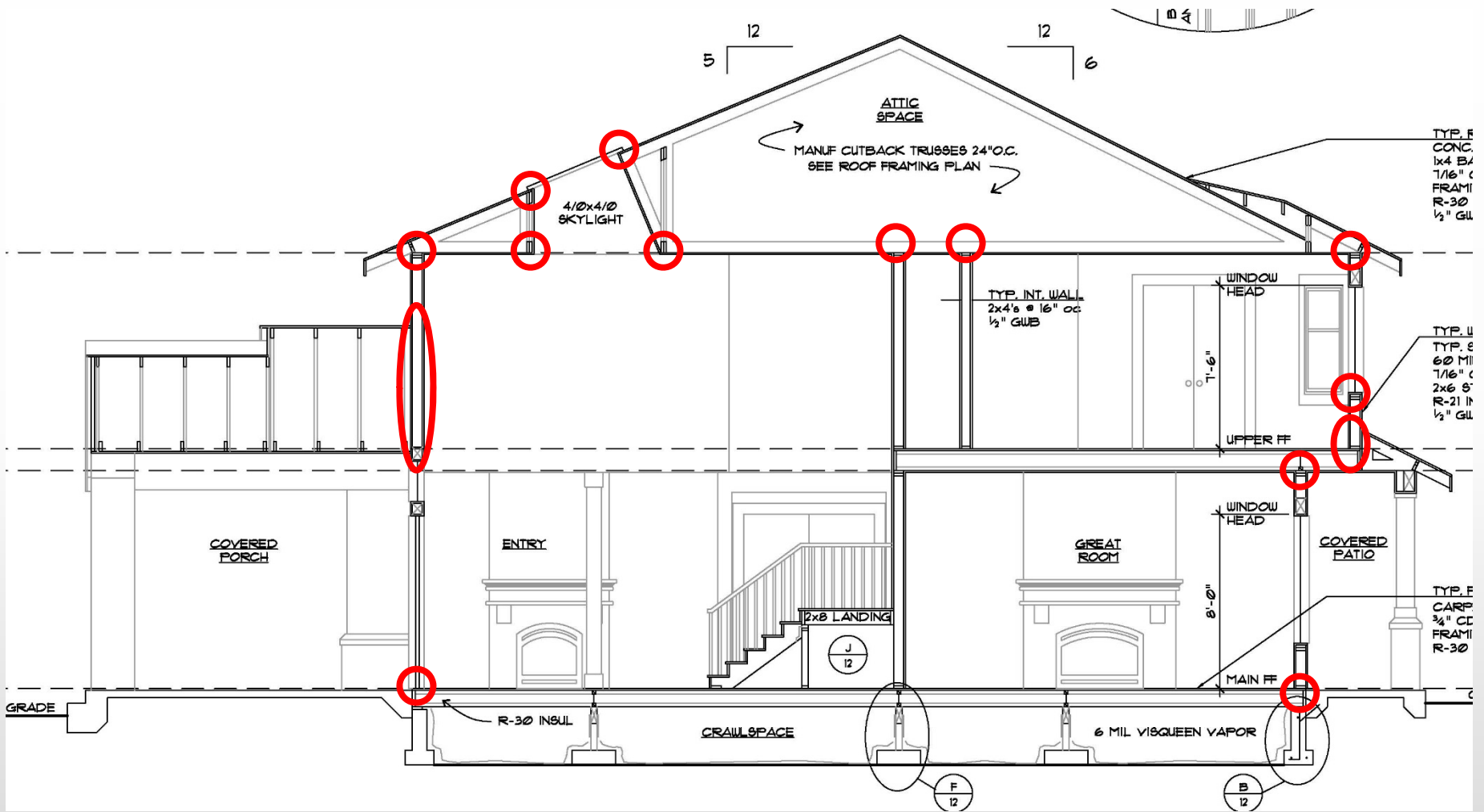


Backing, Blocking & Caulking

5 Critical Areas

- **Six-sided assemblies:**
 - Rigid backing behind tubs, showers and fireplaces
 - Backed knee walls and skylights
- **Completely separate conditioned and unconditioned space:**
 - Garage to house
 - Rim/band between 2 stories
 - Floors connected to attics
- **Full depth insulation:**
 - Attic platforms
 - Attic access
 - Knee walls and skylights
 - Common walls
- **Air seal all gaps in ceilings and floors:**
 - Attic and crawl hatches
 - Supply boots, return boxes & exhaust fans
 - Can lights, speakers, smoke alarms, sprinklers, etc.





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JC 2: Frame attic to allow the full amount of required insulation under attic platforms.

- How
- Why
- What to avoid

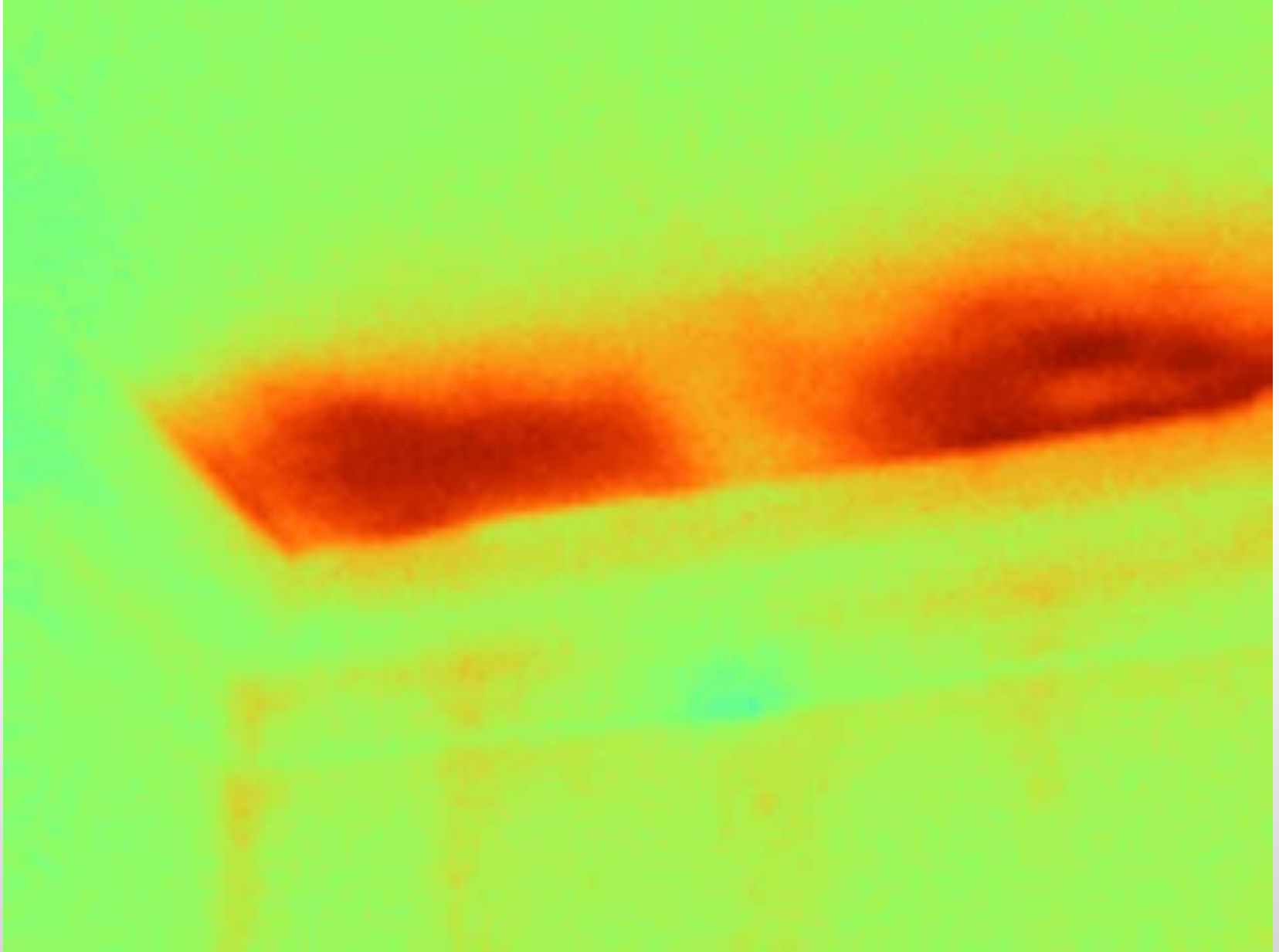


How? R-30 insulation depth



What could go wrong?





FRAMING

FRAMING CONSTRUCTION

JC 3: Frame corners and headers to allow for insulation installation.

- How
- Why
- What to avoid





How? California corners



How? Ladder blocking Nailers





How?
Rigid foam
Single header



Why?

+74.3°F



FRAMING JC 3



How do you fix framing?



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JC 4: For walls separating conditioned and unconditioned space, install framing that allows for the required R-value, has a top plate, bottom plate and an exterior air barrier.
RECOMMENDED: rigid air barrier.

- How
- Why
- What to avoid





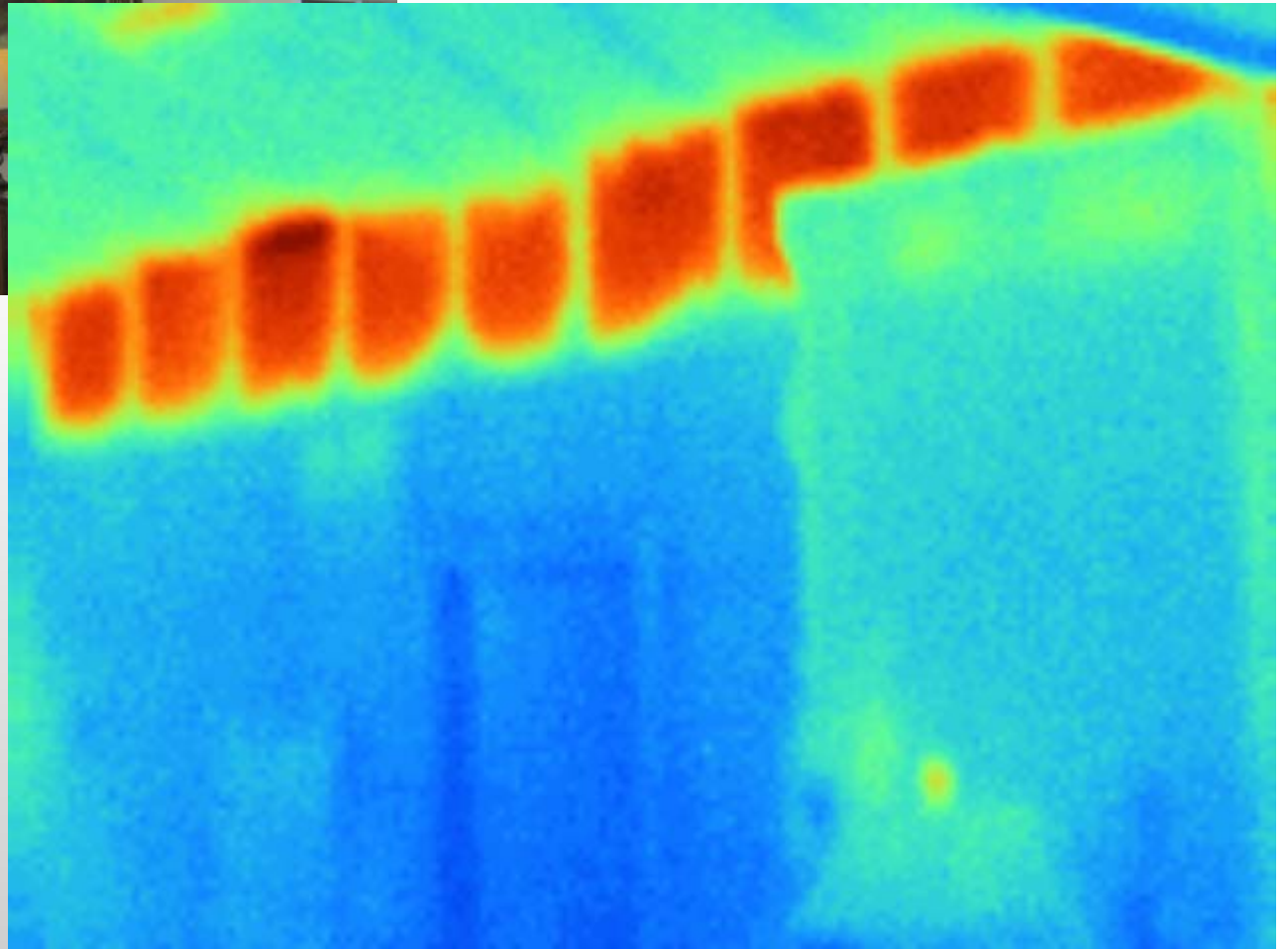
How?

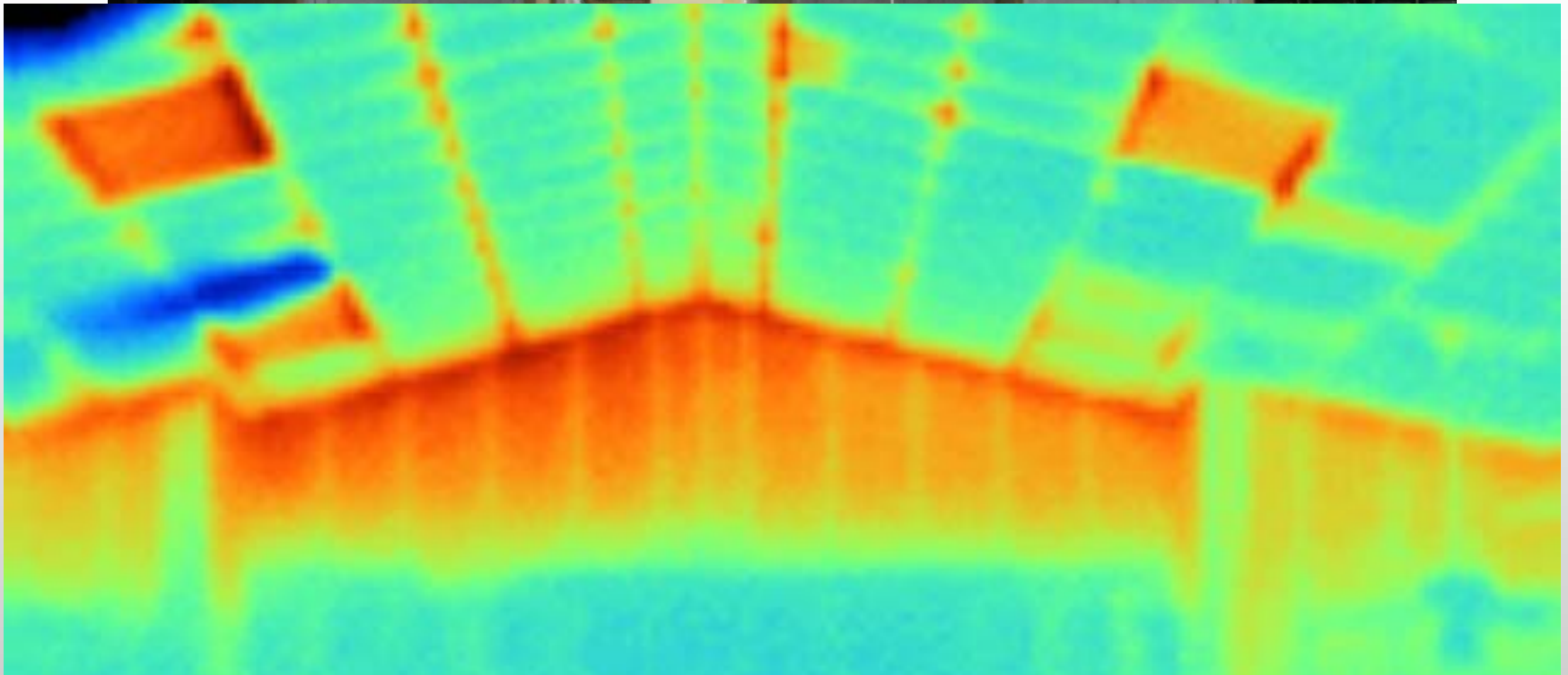
Locate walls

Install bottom/top plates

Install backing







The heat transmission through a building wall or similar construction can be expressed as:

$$Ht = U A dt \quad (1)$$

where

Ht = heat loss (Btu/hr, W)

U = "U-value" (Btu/hr ft²)

A = wall area (ft².)

dt = temperature difference

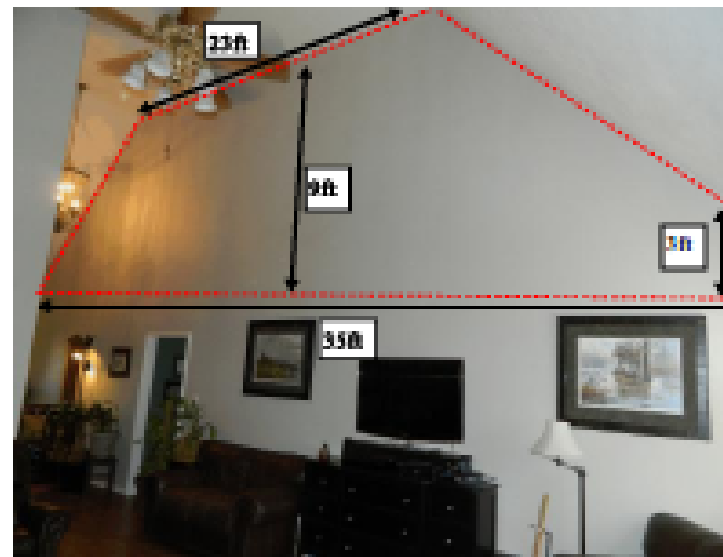


Figure 1

BTU added to living area

Estimated R3 with fallen insulation
 $1 / 3 = .33 U_o$

Approximate wall area
 260 ft sq

Average attic 105 degrees
 Thermostat setting 72 degrees
 33 dt

$.33 U_o \times 260 \text{ sq ft} \times 33 \text{ (td)} =$
 24hr average 2,838 btuh

(almost 7k btuh during peak)

Cooling

Component	Btuh/ft ²	Btuh	% of load
Walls	2.5	3218	6.5
Glazing	58.6	17264	34.7
Doors	11.0	461	0.9
Ceilings	1.8	3696	7.4
Floors	0.8	1635	3.3
Infiltration	0.7	1166	2.3
Ducts		18415	37.0
Ventilation		1341	2.7
Internal gains		2580	5.2
Blower		0	0
Adjustments		0	0
Total		49777	100.0

5.9 tons

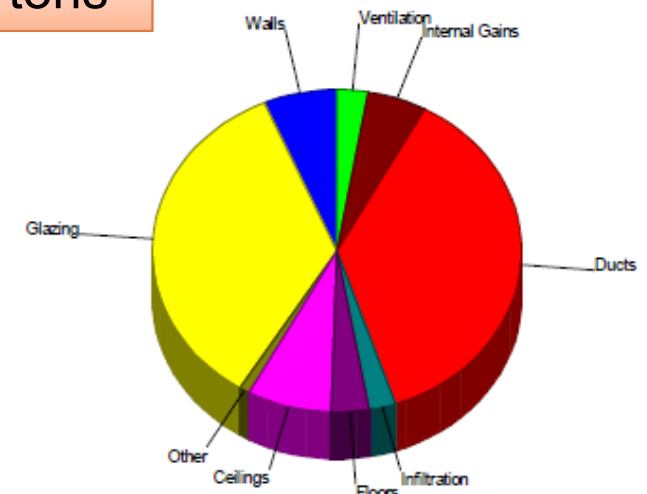




Figure 6



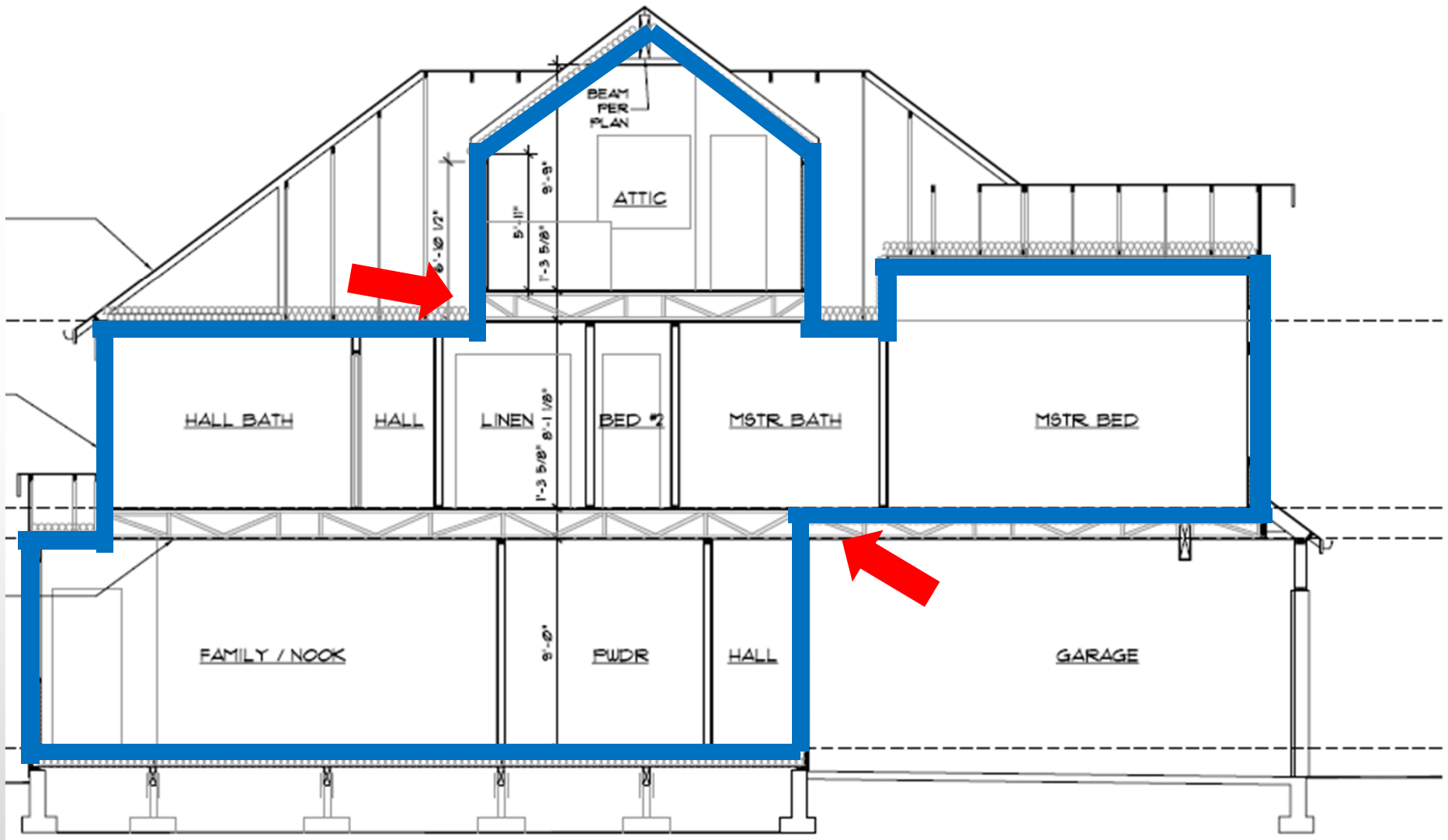
Figure 7



Figure 8



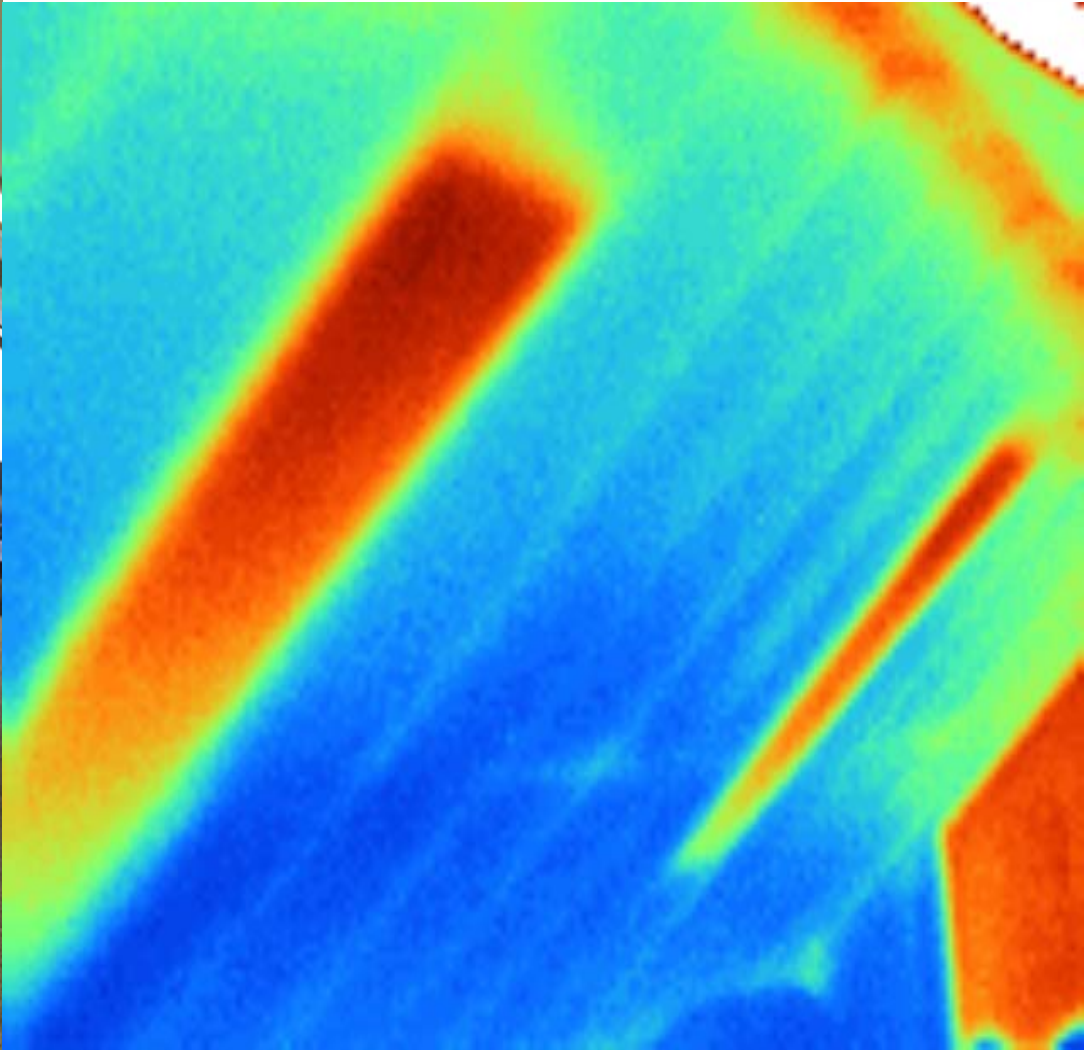
Figure 9





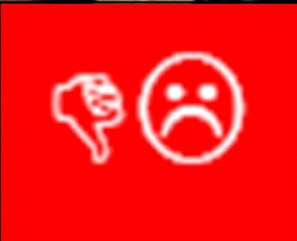








No top or bottom plate



Increasing air tightness / Knee walls



Step #2



Step #3

Step #1



Why?





Your house in 6 months?



FRAMING JC 4

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JC 5: For walls that will not have an interior finish and are separating conditioned and unconditioned spaces, insulate wall cavities and install an interior air barrier.

RECOMMENDED: rigid air barrier.

- How
- Why
- What to avoid



PROCESS



How?

Locate walls

Install insulation

Install backing



WHY
Why?



FRAMING JC 5



How do you fix this?



FRAMING 5

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JC 6: Cap all dropped ceilings/soffits, shafts and chases with an air barrier and air seal. **RECOMMENDED:** rigid air barrier.

- How
- Why
- What to avoid

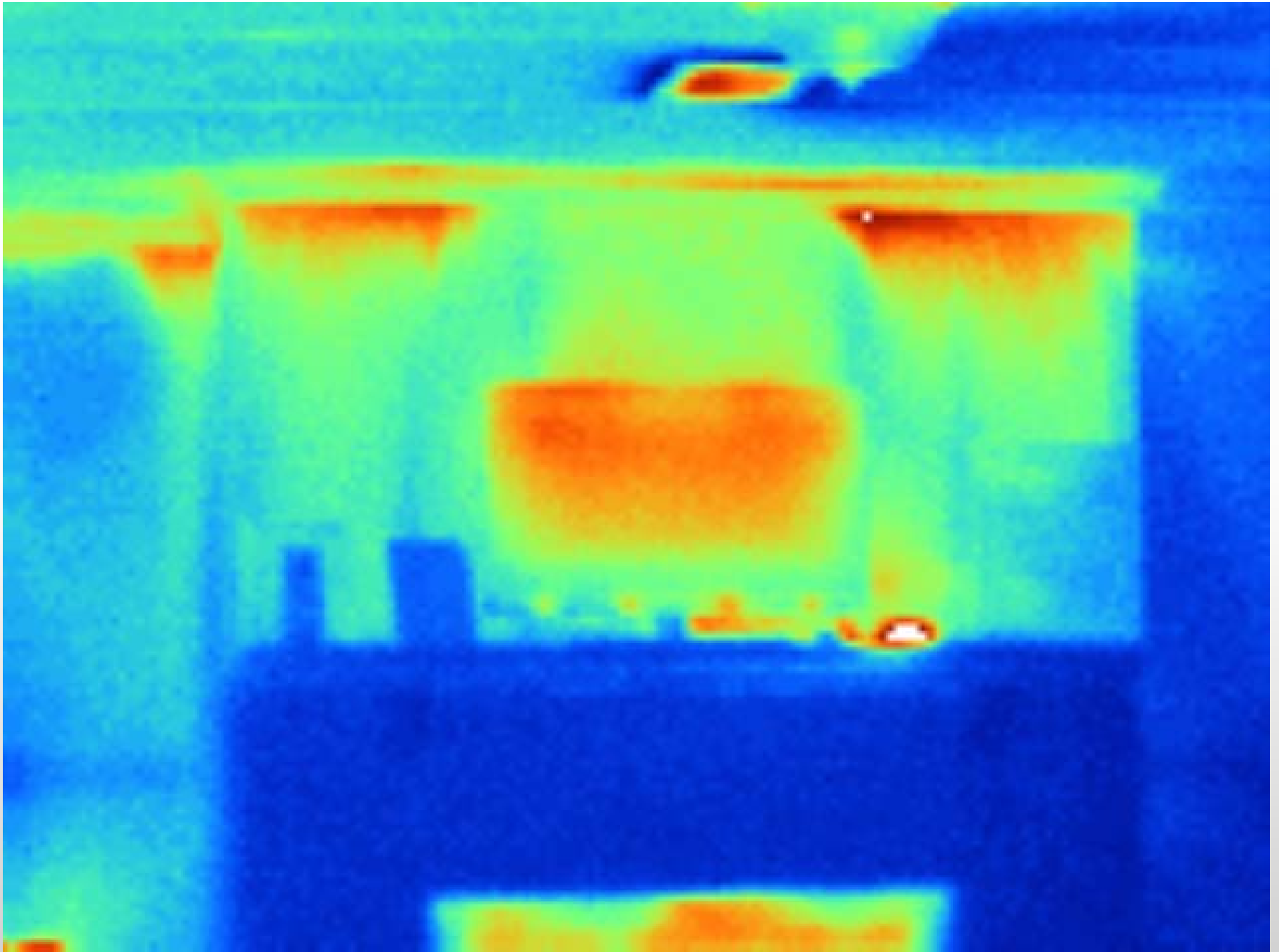


How?

Locate chases

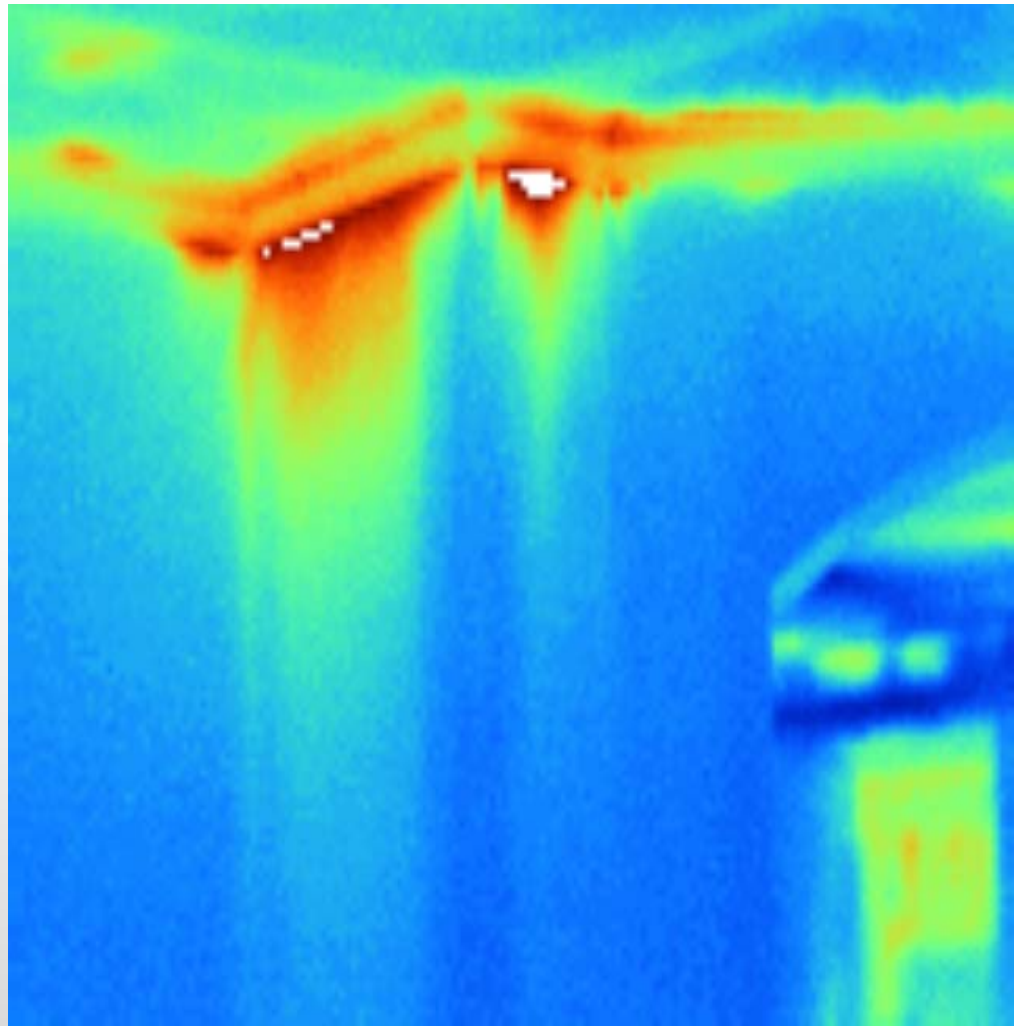
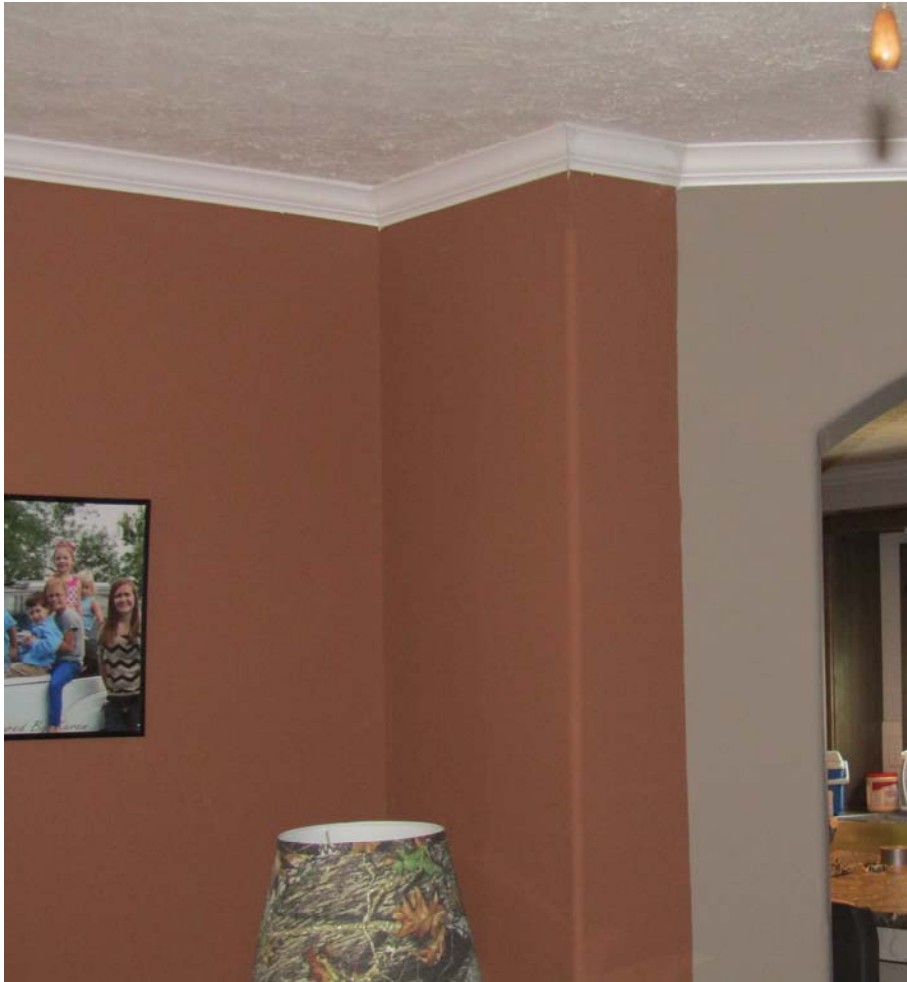
Install cover





Why?







Is it better to cover chases
after?



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JC 7: Separate all floor system cavities between conditioned and unconditioned space with an air barrier and air seal. **RECOMMENDED:** rigid air barrier.

- How
- Why
- What to avoid



PROCESS



How?

Locate separating floor systems

Install barrier





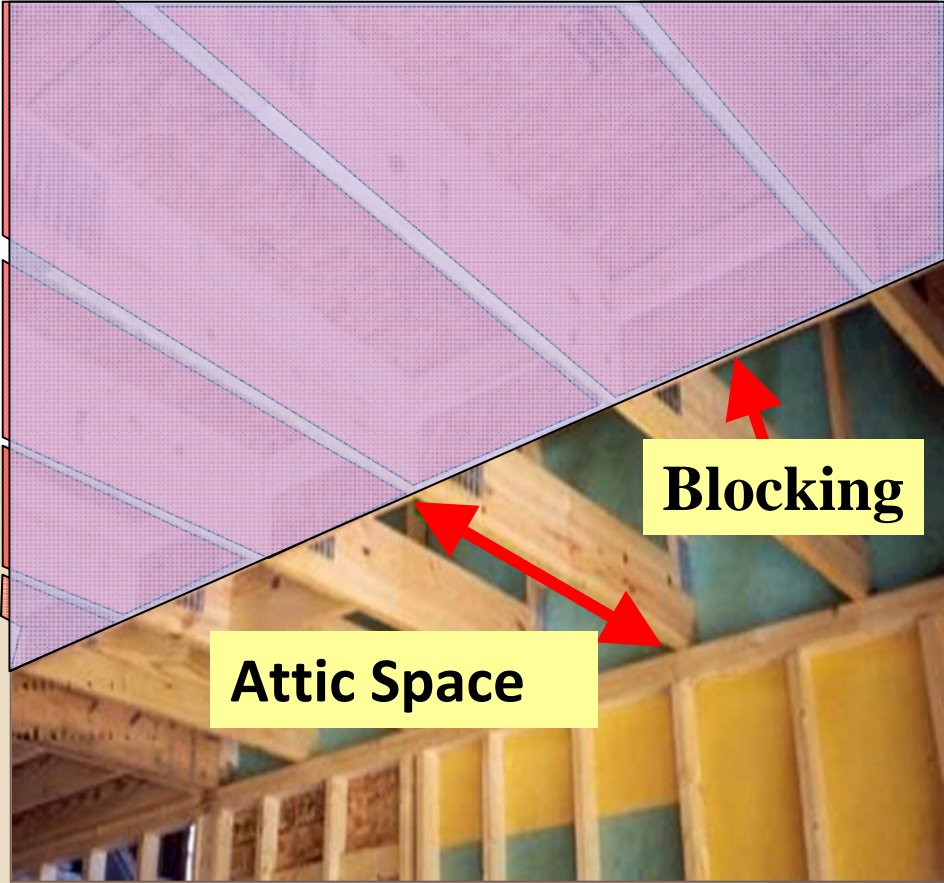
Step #2

Block attic air from getting into floor system

Step #1

Conventionally framed bottom plate added to truss

Bonus room floor blocking



Why?



FRAMING JC 7

How do you fix this?



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JC 8: For cantilever floors, frame to allow for full amount of required insulation and encapsulate with an exterior rigid air barrier and air sealing.



- How
- Why
- What to avoid

**How?
Locate
Install barriers
Seal**





Why?



FRAMING JC 8

How do you
make sure
it's sealed
before
moving on?



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JC 9: Install flashing at the bottom of all exterior walls and at roof-wall connections.

- How
- Why
- What to avoid



PRODUCT

A close-up photograph showing a metal flashing strip installed on a wall. The wall is covered in oriented strand board (OSB) sheathing. The flashing is a silver-colored metal strip with a flange on the top side and a lip on the bottom side. It is secured to the wall with several screws. The background shows the texture of the OSB and some wooden framing members.

How?

Select appropriate flashing

Install at all walls and

openings





Why?



FRAMING JC 9



What's the cost to fix it?



FRAMING JC 9

FRAMING

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JC 10: Install an overlapped drainage plane on all exterior walls (i.e., building wrap).

- How
- Why
- What to avoid



PRODUCT

How?

- Cover the entire house
- Cut proper holes for windows and doors
- Use correct fasteners

Cover

Cut properly

Fasten



**Do you specify
materials and
methods?**

03.14 06:28



FRAMING JC 10

FRAMING

FRAMING PROTECTION

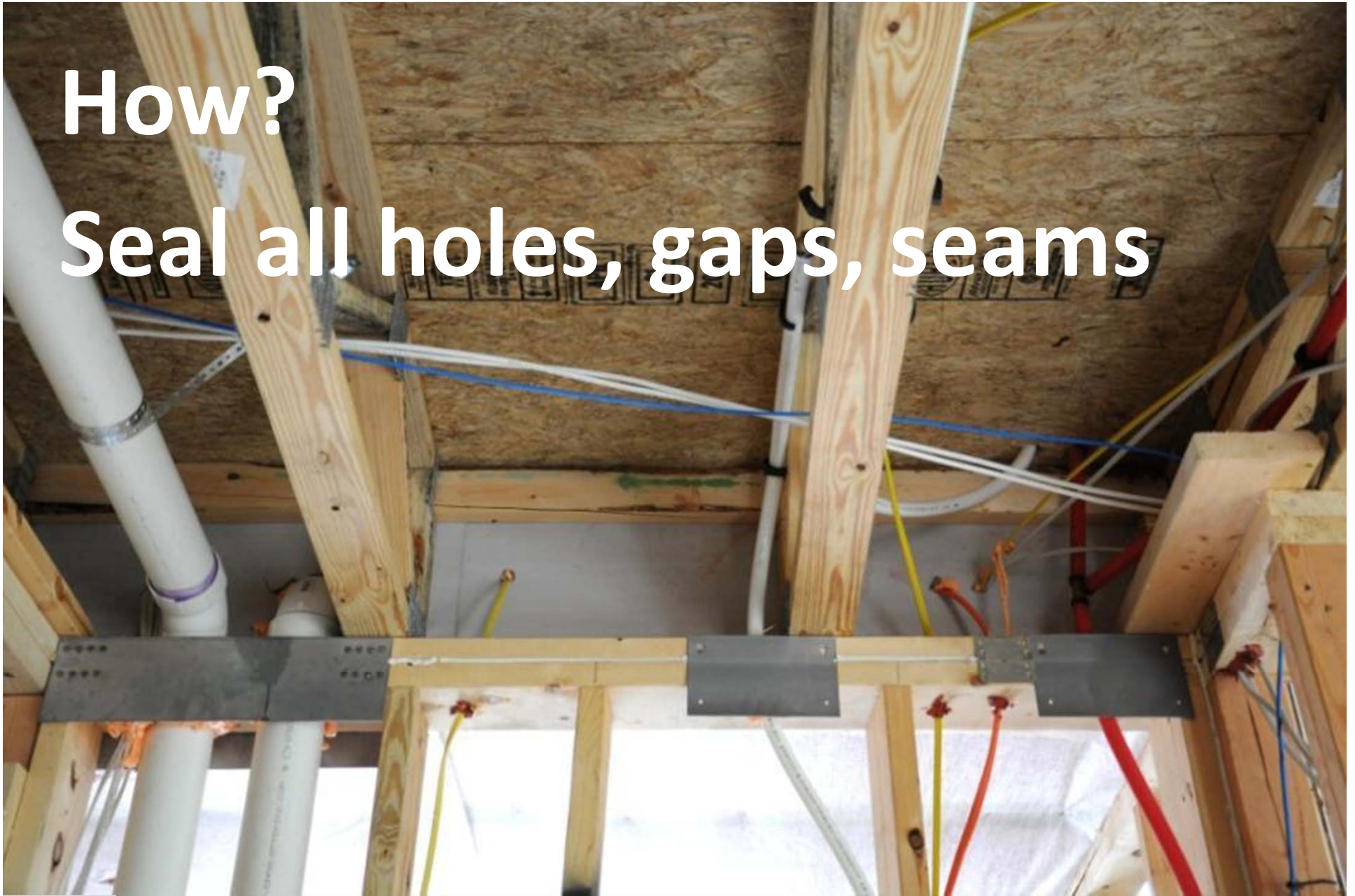
JC 11: Air seal all gaps and voids between conditioned and unconditioned spaces.

- How
- Why
- What to avoid



How?

Seal all holes, gaps, seams





NOT ... Always a good thing?

Daylight:





NO INSULATION



AIR SEALING JC 5



How?

Seal the gaps

Backer Rods or foam

