



Challenging Framing Details

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Framing provides the ...



Framing provides the ...

Enclosure for Mechanicals



Framing provides the ...



Framing provides the Foundation for...



So Every Home can be Safe . . .

UNIVERSITY OF MINNESOTA
EXTENSION

. . . Durable, Comfortable, and Energy Efficient



Dave Hepfler Photo

Was this Safe?



Was this Durable?



I:21

6:MAN MAP:64 12/17/05 14:43

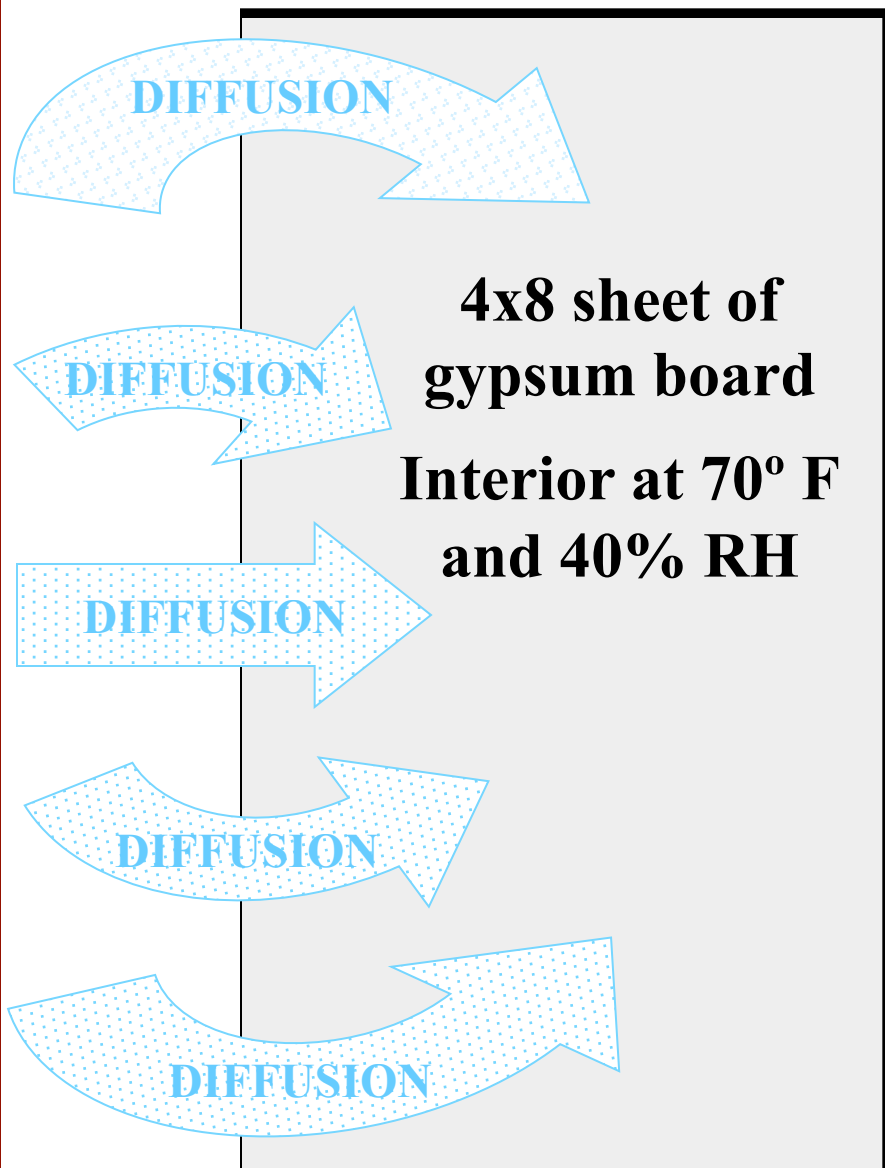
Was this Comfortable?





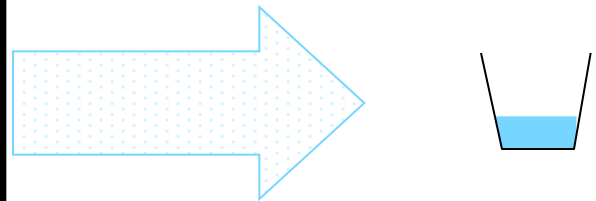
Marilou Cheple Photo



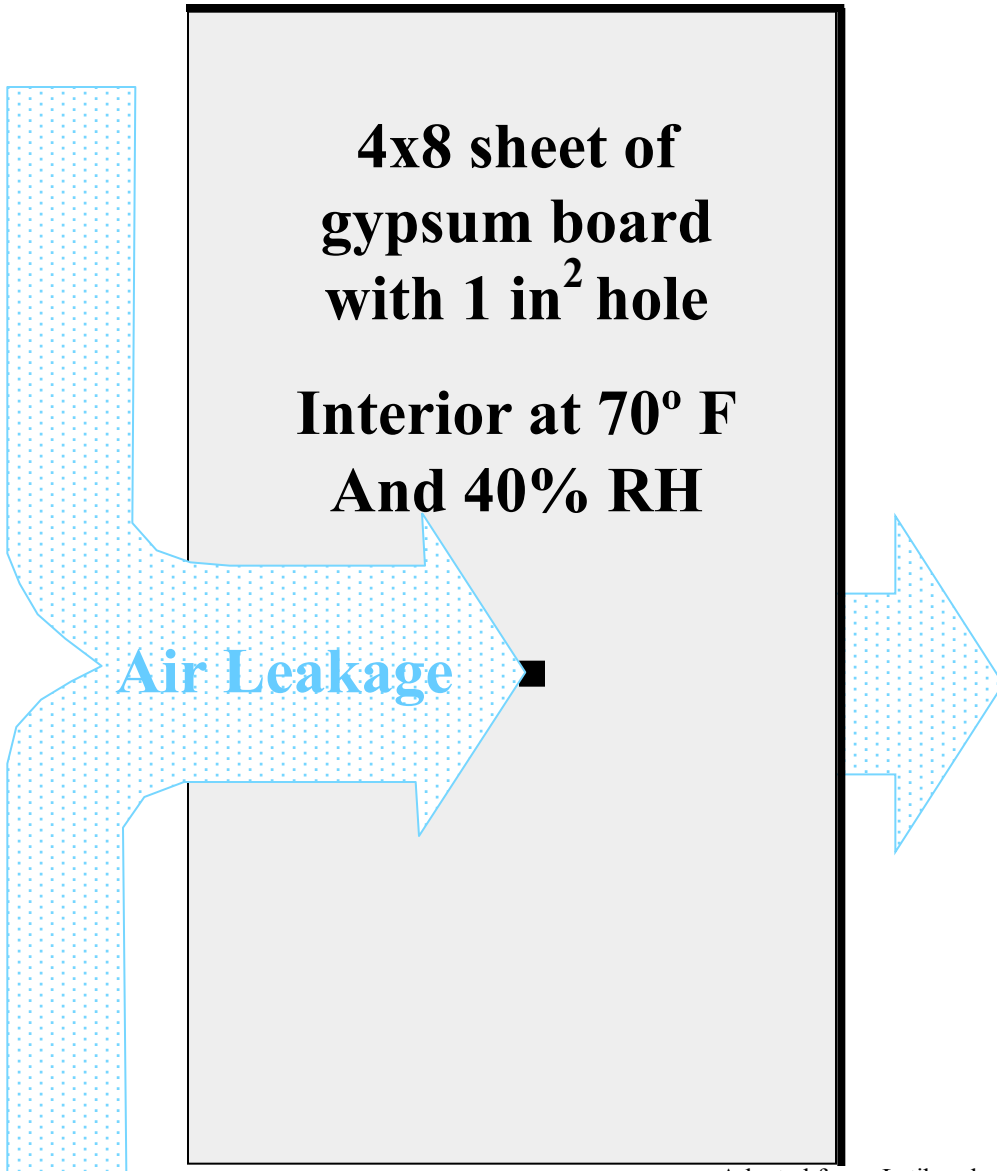


**4x8 sheet of
gypsum board**
**Interior at 70° F
and 40% RH**

**Test Period was
One Cold Climate
Heating Season
1/3 quart of water**



Adapted from: Lstiburek, J. 2004. *Builder's Guide to Cold Climates*. Building Science Corporation



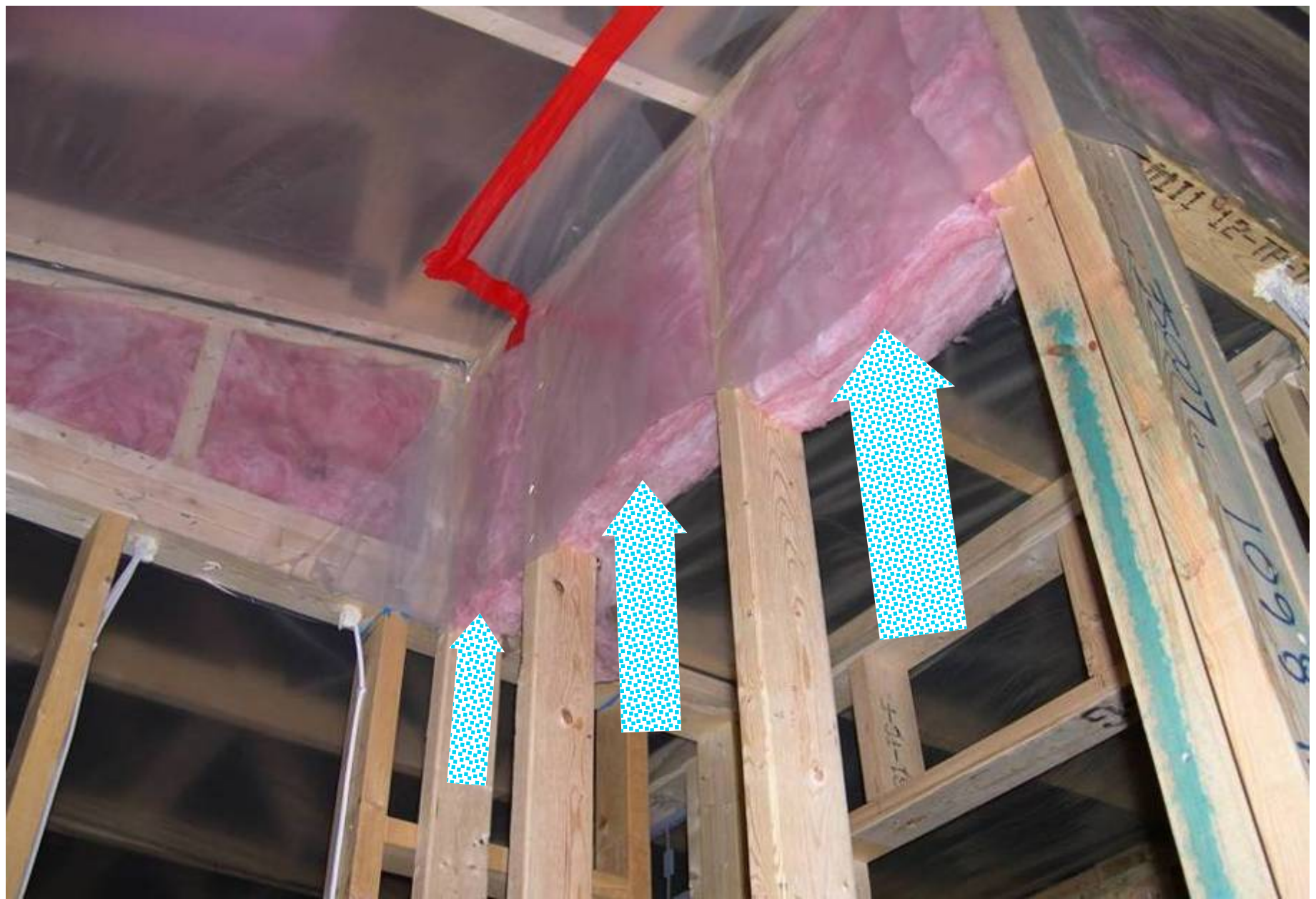
Adapted from: Lstiburek, J. 2004. *Builder's Guide to Cold Climates*. Building Science Corporation



Joe Nagan Photo



Joe Nagan Photo



















Where do the Top Plates go?













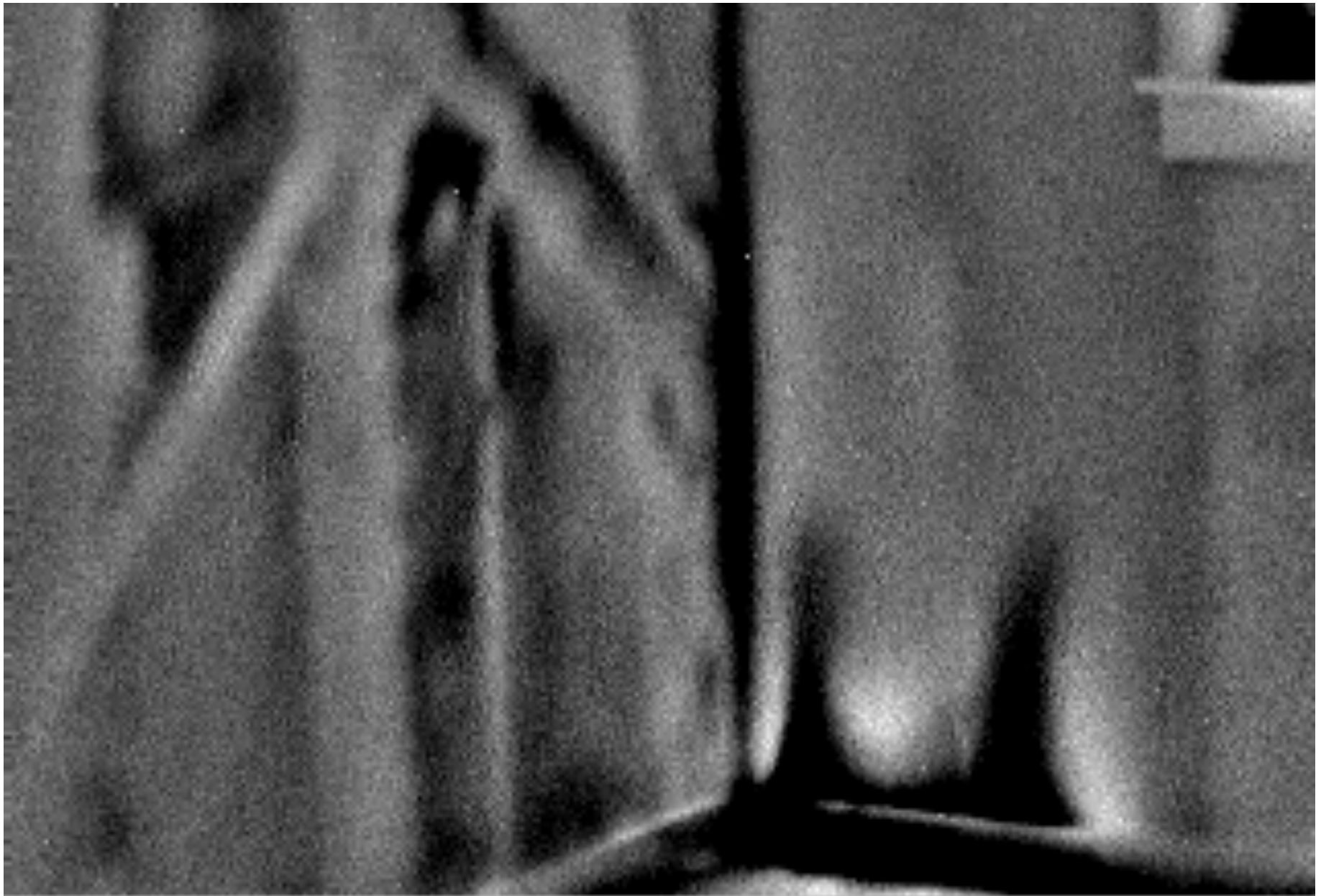
What is Floor and What is Attic?

























Terry Lenhart Photo



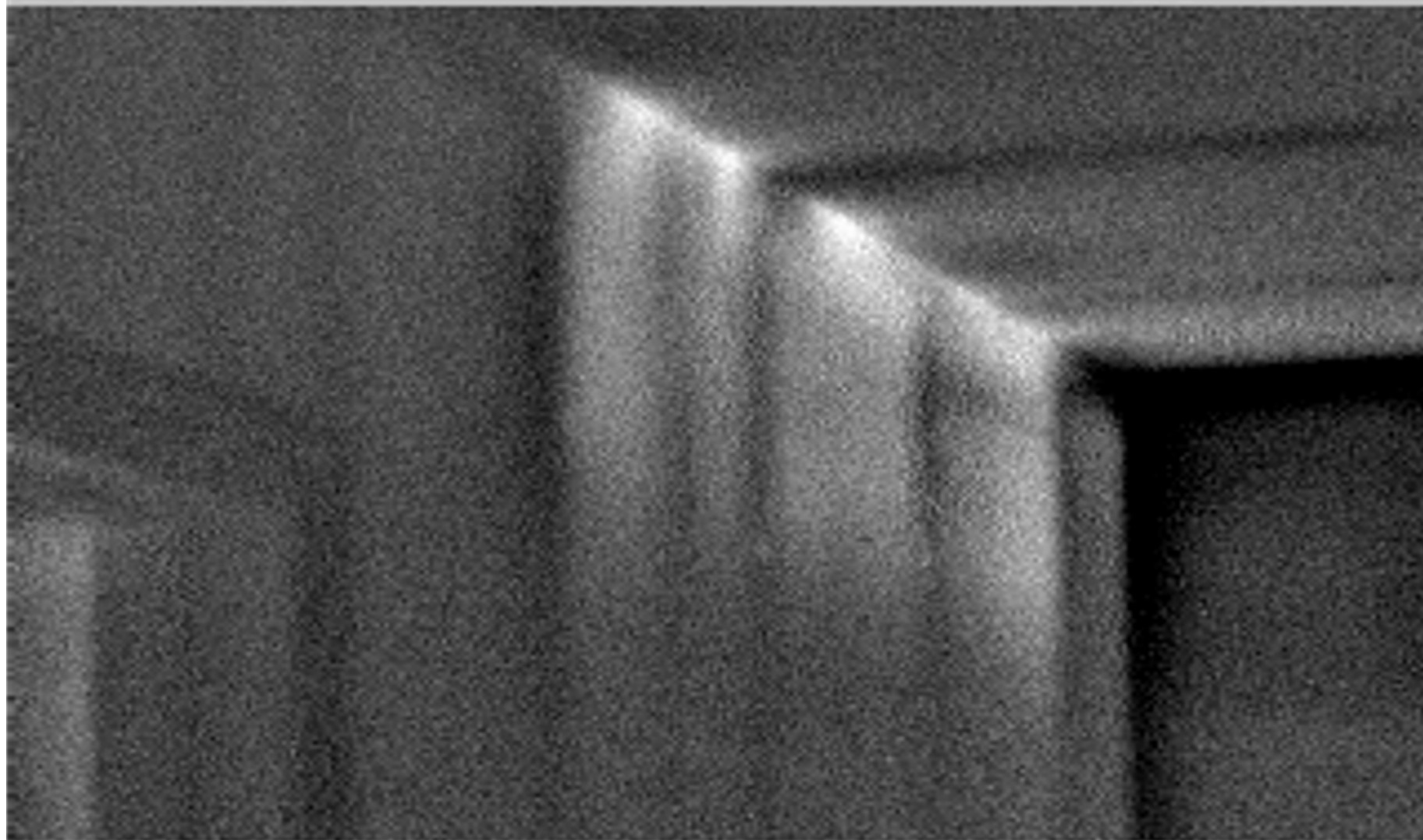






eUS CI:

I: 1



RNG:MAN

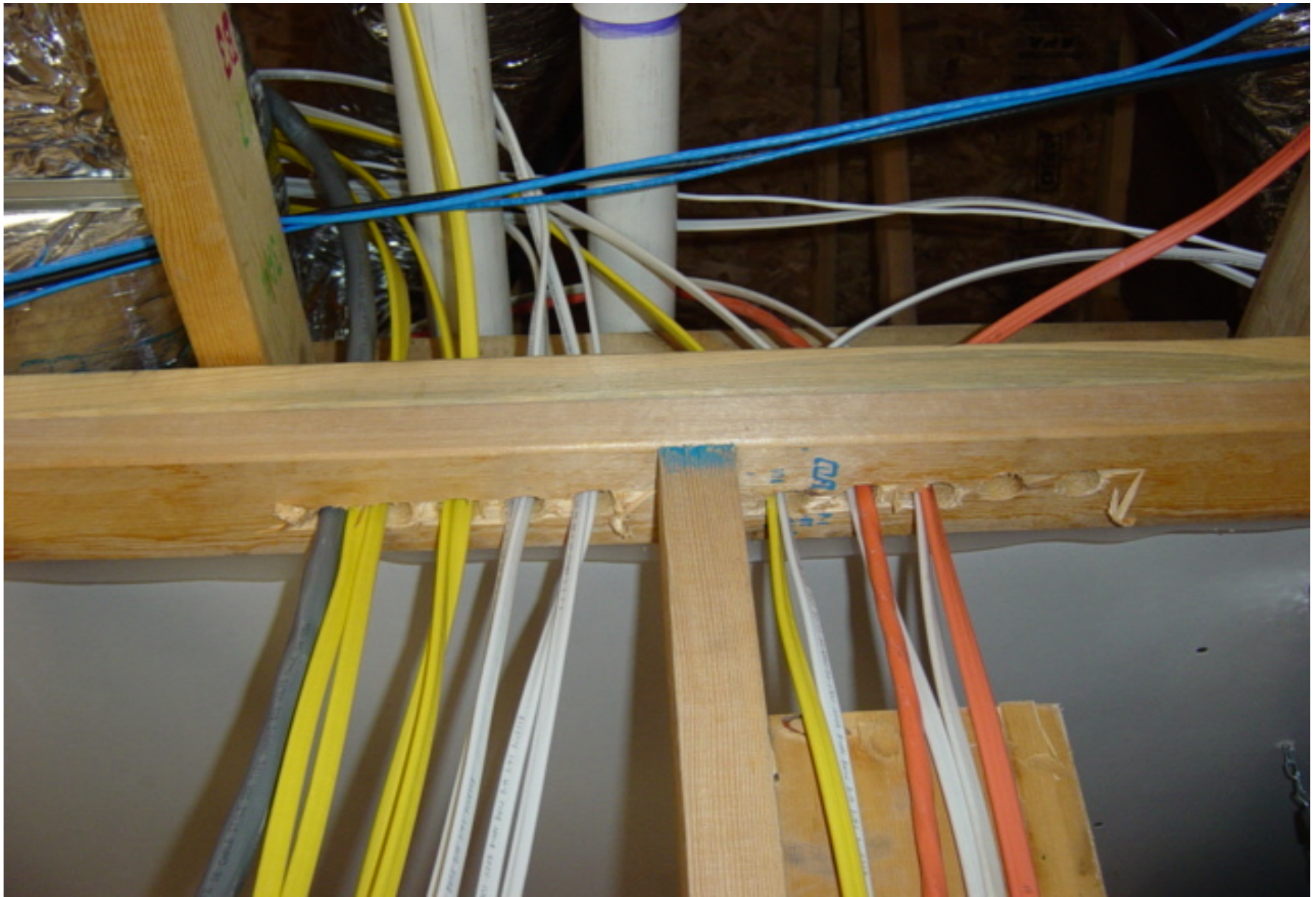
MAP:64 12/17/03 15:02

eUS CI:

I: 2



RNG:MAN MAP:64 12/17/03 15:48





What Size Drill Bit was Used Here?

































How many Leaks in this Panned Return?























































Thank You

References and Acknowledgements

Marilou Cheple photo: slide number 12

Dave Hepfler photo: slide number 8

Terry Lenhart photo: slide number 44

Joe Lstiburek diagrams: slides number 14 and 15

Joe Nagan photos: slides number 16 and 17

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Challenging Framing Details

Framing provides more than just the structure of a building and something to hang the exterior and interior finishes from. It also creates enclosures for insulation and provides the basis for effective air-sealing. Getting the framing details right makes all the difference when it comes to delivering a finished home that is safe, healthy, durable, comfortable, and energy efficient. This session addresses the little details that all builders should know, but are often missing from blueprints and detail pages.

- **Framing Overview**
- **Air transported moisture**
- **Incomplete framing assemblies**
- **Mechanical Framing penetrations**
- **Framing cavities used as ducts**
- **Thermal and pressure boundary misalignment**