APPENDIX A
AIR SEALING KEY POINTS

1. Building envelope plate and wall plumbing and electrical penetrations
2. Tub/shower on outside or attic wall
3. Window and door rough openings
4. Airtight, IC-rated recessed lights and electrical fixtures exposed to attic
5. Exterior wall exhaust fan terminations
6. Ceiling mounted bath fans, speakers, etc.
7. Bottom plate and top plate
8. Seams between rigid exterior sheathing
9. Band area between floors, conditioned space and attic
10. Tub on exterior wall
11. Mechanical equipment and ductwork chases in attics, crawlspaces
12. Ceiling/crawlspace electrical boxes
13. Ceiling/crawlspace HVAC boots
14. Shower and tub drain line
15. Fireplace inserts
16. Attic kneewall doors
17. Joist cavities under attic kneewalls
18. Transition between ceiling heights (e.g., 10’ to 8’)
19. Attic scuttle hole
20. Attic pull-down stairs
21. Wall penetrations of mechanical combustion closets
22. Thresholds at mechanical combustion closet doors
23. Band joist exposed to exterior
24. Band area exposed to unconditioned space (such as basement or garage)
25. Exterior wall penetrations for refrigeration lines, condensate line, etc.

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Chases and common by-passes

1. Seal electrical penetrations
2. Seal plumbing penetrations
3. Seal HVAC penetrations
4. Cap top of chase with solid air barrier and insulate above dropped soffit
5. Install air barrier on interior of all insulated walls

Shower/tub drain rough opening

6. Install and seal air barrier behind tub. Recommended in climate zone 2 & 3; required in climate zone 4
7. Seal bottom plate
8. Seal bathtub drain penetration

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Window rough opening

Use backer rod or spray foam (appropriate for windows) to fill gaps between window/door and rough opening

Wall cross-section

1. Glue drywall to top and bottom plates (recommended)
2. Glue drywall to bottom plate (recommended). Caulk bottom plate to subfloor, foundation, or slab
3. Caulk band joist to subfloor and plates
4. Sill gasket or double-bead of caulk under bottom plate

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Air sealing key points continued

**Combustion chase penetrations**
- Seal around chimney flues with sheet metal cap
- Rigid foam option (recommend covering with ignition barrier for fire protection)
- Internal air barrier (recommended)
- Blocking above supporting wall for cantilevered floor
- Insulation above top plate of supporting wall

**Combustion closet**
- Combustion air inlets as per mechanical and/or fuel gas code
- Flue stack
- Seal gas and plumbing penetrations through walls
- Insulated walls (not required unless walls are part of building thermal envelope)
- Insulated water heater (not required)
- Door closes against solid threshold
- Bottom plate sealed
- Solid (non-louvered) door with weatherstripping

**Exterior penetrations**
- Caulk exterior wall penetrations for refrigeration lines, condensate line, etc.

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Air sealing key points continued

Install blocking and rafter baffle to prevent wind-washing if vented, insulated roofline (recommended)

Sealed attic-side air barrier (required)—OSB, insulated sheathing, etc.

Blocking - fit in joist cavity, caulked or foamed

R-18 insulation (required)
R-13 + R-5,
R-15 + R-3,
or R-19 in 2x6

Caulk and seal rough opening

Rigid insulation (recommended)
Minimum R-3 required

Weather-strip door opening and threshold

Unconditioned Space

Conditioned space

Attic knee-walls

Two-level attic

Conditioned space

Caulk

Glue

Blocking

Air barrier required, rigid board (required)

R-18 insulation

Air sealing

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Air sealing key points continued

Attic scuttle

- Insulation dams prevent loose-fill insulation from falling through access.
- Hatch lid pushes up and out of the way for access.
- Rigid insulation plus batt (recommended), minimum R-19 required.

Attic pull-down stairs

- Rigid insulation box forms lid for pull-down attic (recommended).
- Boxed enclosure for staircase has rigid hinged lid with insulation on top.
- Insulation batt minimum R-3 required.

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Air sealing key points continued

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