# Chapter 23.85 LOCAL AMENDMENTS TO THE INTERNATIONAL RESIDENTIAL CODE ~~2018 EDITION~~

## 23.85.R100 Local amendments to the ~~2018~~ International Residential Code.

The amendments to the ~~2018~~ International Residential Code (IRC) are listed hereafter by section. The edition adopted is as listed in AMC 23.05.010. The structure of amendments is as explained in AMC 23.05.015. ~~The last digits of the number (after the title and chapter digits) are the section of the 2018 International Residential Code to which the amendments refer, i.e., 23.85.R310 refers to amendments to Section R310 of the 2018 International Residential Code.~~

## 23.85.R101.2 Scope.

~~Revise Section 101.2 to read as follows~~Replace in the first line of the exception "with an automatic sprinkler system complying with Section P2904" with the following: with a residential fire sprinkler system approved by the fire code official.

~~The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one , two and three family dwellings and townhouses not more than three stories above grade plane in height with a separate means of egress and their accessory structures not more than three stories above grade plane in height.~~

~~Exception: The following shall be permitted to be constructed in accordance with this code where provided with a residential fire sprinkler system approved by the fire code official:~~

~~1. Live/work units located in townhouses and complying with the requirements of Section 419 508.5 of the International Building Code.~~

~~2. Owner-occupied lodging houses with five or fewer guest rooms.~~

~~3. A care facility with five or fewer persons receiving custodial care within a dwelling unit.~~

~~4. A care facility with five or fewer persons receiving medical care within a dwelling unit.~~

~~5. A care facility with five or fewer persons receiving care that are within a single family dwelling.~~

Delete item 2.

## 23.85.R103—23.85.R114 Administration and Enforcement.

Delete Sections R103 through R114. See the Anchorage Administrative Code, Chapter 23.10 for Administrative Provisions, Fees, and Special Inspections.

## 23.85. Table R301.2~~(1)~~ Climatic and Geographic Design Criteria.

Add the following information to Table R301.2~~(1)~~:

| | |
|---|---|
| Ground snow load | 50 PSF (allowable) ~~Equates to 40 psf roof snow load~~<br>80 PSF (ultimate, for use with ASCE 7) |
| Wind Speed | See 23.85. Figure R301.2(5)A |
| Topographic effects | Per site |
| Special Wind Region | Per site |
| Windborne Debris Zone | No |
| Seismic Design Category | D 2 |
| Subject to damage from:<br>Weathering | Yes, severe |
| Frost Line Depth | ~~42" for warm foundation, 60" for cold foundation~~See AMC 23.85 Table R403.1. |
| Termite | No |
| Winter Design Temperature | -7 Degrees<br>Note this ASHRAE 99% design temperature may not be appropriate for all areas within the MOA. |
| Ice Barrier Underlayment Required | Yes |
| Flood Hazards | Yes, see flood hazard maps |
| Air Freezing Index | 3500 |
| Mean Annual Temperature | 35°F |

~~Manual J Design Criteria:~~

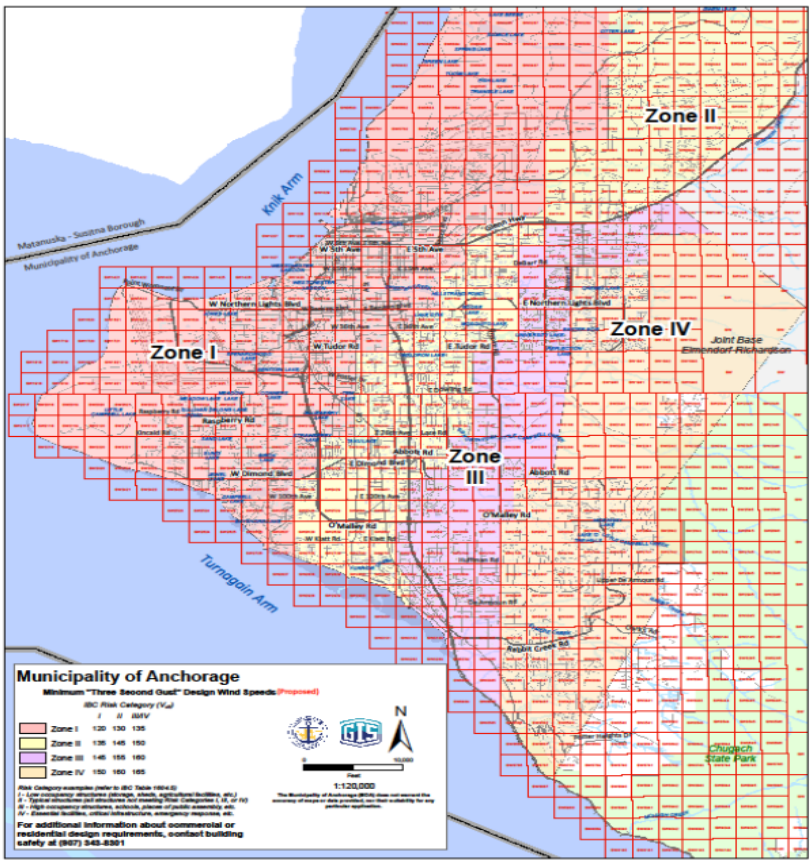
| | |
|---|---|
| ~~Elevation~~ | ~~Less than 1,000 ft.~~ |
| ~~Latitude~~ | ~~61 Degrees N~~ |
| ~~Winter Heating~~ | ~~-7 Degrees (ASHRAE 99%)~~ |
| ~~Summer Cooling~~ | ~~72 Degrees~~ |
| ~~Altitude correction factor~~ | ~~1.0~~ |

| | |
|---|---|
| ~~Indoor design temperature~~ | ~~70 Degrees~~ |
| ~~Heating temperature difference~~ | ~~84 Degrees~~ |
| ~~Wind Velocity heating~~ | ~~15~~ |
| ~~Wind velocity cooling~~ | ~~7.5~~ |
| ~~Coincident wet bulb~~ | ~~58 Degrees~~ |
| ~~Daily range~~ | ~~M~~ |

**23.85. Figure R301.2(2)~~5)A~~ ~~Basic wind speeds for 50-year mean recurrence interval~~Ultimate Design Wind Speeds.**

Amend by deleting Figure R301.2(2)~~s R301.2(5)A and R301.2(5)B,~~ and replace with the following:

Anchorage Bowl "Three Second Gust" Wind Zone Map:




## 23.85.R301.2.1.1 Wind limitations and wind design required.

~~Amend the first paragraph by deleting, "where wind design is required in accordance with Figure R301.2(5)B", and replace with, "where the ultimate wind speeds are equal to or exceed 145 mph per Figure 23.85. Figure R301.2(5)A2).~~ Delete from section in two places: “in a special wind region”

~~Under exceptions a~~Add exception 4:

4. Single story accessory structures 600 square feet or less in gross floor area.

~~Amend paragraph after exceptions by deleting: "In regions where wind design is required in accordance with Figure R301.2(5)B," and replace with "Where the ultimate wind speeds are equal to or exceeds 145 mph per figure 23.85. Figure R301.2(5)A2),".~~

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### 23.85. Table R302.1(1) Exterior walls.

Under the "Projections" row and "Minimum Fire Separation Distance" column, replace 5 feet with 3 feet (two occurrences).

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### 23.85.R302.2.3 Continuity (townhouse fire-resistant construction).

Add the following subsections:

**R302.2.3.1 Horizontal continuity.** The fire resistance rated dwelling unit separation wall or walls shall be continuous from exterior wall to exterior wall and shall terminate at the interior surface of the exterior sheathing or siding.

**R302.2.3.2 Exterior walls.** Where the fire resistance rated wall assembly separating townhouses intersects the exterior wall, an (assumed) imaginary lot line shall extend outward from the intersection. The location of the imaginary lot line in relation to the exterior walls shall be such that the exterior wall fire resistance rating and opening protection meet the requirements set forth in section R302.1. Where the exterior walls on each side of the townhouse's separation walls form an angle equal to or greater than 180 degrees, exterior wall and opening protection is not required.

**R302.2.3.3 Horizontal projecting elements.** The fire resistance rated dwelling unit separation wall or walls shall extend to the outer edge of horizontal projecting elements such as balconies, roof overhangs, canopies, marquees, and similar projections that are within 4 feet of the separation wall.

**Exceptions:**

1. Horizontal projecting elements without concealed spaces.
2. Noncombustible horizontal projecting elements.
3. For combustible horizontal projecting elements with concealed spaces, the fire rated wall need only to extend through the concealed space to the other edges of the projecting elements. The exterior wall behind and below the projecting element shall be of not less than 1-hour-fire-resistant-rated construction for a distance not less than the depth of the projecting element on both sides of the fire rated wall. Openings within such exterior walls shall be protected by opening protection having a fire protection rating of not less than ¾ hour.

### 23.85.R302.2.4 Parapets for townhouses.

Add the following sentence to the exception:

The 4-foot dimension shall be measured from the centerline of the townhouse separation.

### 23.85.R302.2.7 ~~Townhouses (fire-resistant construction)~~Common wall insulation.

Add the following section:

**R302.2.7 Common wall insulation.** The dwelling unit separation wall shall be fire blocked at ceiling line and insulated in the attic directly above the fire blocking to the minimum required attic R-value.

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## 23.85.R302.3 Two-family and three-unit dwellings.

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Amend the first sentence by replacing "in two-family dwellings" with "in two-family and three-unit dwellings".

Add to the end of the paragraph:

A detached single family or two-family dwelling unit with an ADU (Accessory Dwelling Unit) is considered to be a two-family or three-unit dwelling, as the case may be, unless the ADU communicates freely with the single-family or one of the two-family dwelling units.

## 23.85.R302.3.1 Dwelling unit separation.

Add the following exception:

Exception: fire-resistance rated vertical and horizontal assemblies separating two units shall not be required where all the following are met:

1. One unit is considered subordinate to the other and shall be within or attached to an existing single-family home or existing townhouse. Exception does not apply to new construction or structures with more than one dwelling unit.
2. Subordinate unit is maximum 1200 square feet and is smaller than the primary unit, but no smaller than 190 square feet.
3. Subordinate unit has maximum two bedrooms.
4. Neither unit is used for any of the uses listed in the exception of R101.2.
5. The path of egress travel from the subordinate unit shall be independent of, and not pass through, the primary dwelling unit. This may be through a common hallway located within the building meeting the requirements of R302.3.6 (shared accessory rooms).
6. All smoke alarms and carbon monoxide alarms shall be interconnected between both the primary and subordinate unit per Section R310.4 and R311.5, respectively.
7. All other aspects of two-family dwelling units shall comply with the International Residential Code.

**Commented [DK1]:** Instead of adopting the appendix, we've moved the exception into the code. The appendix would have been confusing since it calls them an ADU but would only apply to some ADU's (single family with ADU). Since the code intends for it to be considered a full dwelling unit, the only real exception provided by the appendix is the reduction in fire-rated assemblies.

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## 23.85.Table R302.3.6 Dwelling-Shared Accessory Room Separation.

Revise table by replacing all references to ½-gypsum board with 5/8-inch Type X gypsum board.

## 23.85.R302.3.7 Common wall insulation.

Add the following section:

**R302.3.7 Common wall insulation.** The dwelling unit separation wall shall be fire blocked at ceiling line and insulated in the attic directly above the fire blocking to the minimum required attic R-value.

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### 23.85.R302.5.1 Opening protection.

Add to the end of the paragraph:

Doors shall have smoke gaskets along the top and sides and an adjustable threshold or sweep. Access from a garage to the crawlspace shall be in a wall and not through the floor. Access from a garage to the crawlspace shall be protected in accordance with this section.

### 23.85. Table R302.6 Dwelling-Garage Separation.

Amend table by replacing all references to ½-inch gypsum board with ⅝-inch Type X gypsum board.

### 23.85.R302.13 Fire protection of floors.

Add the following sentence to the end of exception 2:

Direct vent, sealed-combustion fuel fired appliances shall be allowed without floor protection.

### 23.85.R317.1 Location required.

~~Amend first sentence by deleting the words "naturally durable wood or".~~

Add the following sentence to the end of item number 5:

Measures should be taken to mitigate frost heaving if wood siding or sheathing has less than six-inch clearance.

### ~~23.85.R304.1 Location required.~~

Add item 10 and exception:

10. Wood structural members for decks not constructed with continuous protection similar to roofs.

Exception: deck beams and joists~~,~~ where the entire member is painted or stained and the top is protected by 24-gauge galvanized sheet metal flashing with drip edge extending down the sides a minimum of ½" over ice and water shield.

### 23.85.R~~317~~304.1.1 Field treatment.

Add the following sentence to the end of the paragraph:

This requirement only applies to ~~exposed~~ glue-laminated timbers ~~in section R317.1.5~~ and AWW foundation walls.

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~~**23.85.R303.1 Habitable rooms.**~~

~~Add exception #4 as follows:~~

~~4. Theater rooms are exempt from the ventilation requirements of this section.~~

~~**23.85.R303.3 Bathrooms.**~~

~~Delete section R303.3. Reference the adopted plumbing code.~~

~~**23.85.R307 Toilet, bath and shower spaces.**~~

~~Delete section R307. Reference the adopted plumbing code.~~

~~**23.85.R308.6.9 Testing and labeling.**~~

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~~Add the following sentence to end of paragraph:~~

~~In lieu of labels adhered to skylights, literature provided on site is acceptable to demonstrate skylights meet the criteria of this section.~~

~~**23.85.R310.1 Emergency escape and rescue opening required.**~~

~~Add exception #3 as follows:~~

~~3. Where windows are provided as a means of escape or rescue in a basement, the sill height shall be measured from the finished floor to the bottom of the clear opening and shall be no more than 48 inches above the finished floor.~~

~~**23.85.R311.7.7 Stairway walking surface.**~~

~~Add the following sentence to the end paragraph:~~

~~Exterior landings at grade can slope up to 5% in either direction.~~

**23.85.R30913 Automatic fire sprinkler systems.**

Delete this section in its entirety.~~the text in section R313 and replace with the following:~~

~~The installation of a fire sprinkler system requires a fire systems permit in accordance with the International Fire Code.~~

## 23.85.R315.1 Sleeping lofts.

~~23.85.R315.1 Sleeping Lofts~~

Revise the first line of the exception to read:

Areas that meet any of the following conditions shall not be considered a sleeping loft: [...]

- ~~The area has a depth of less than 3 feet.~~
- ~~The area has a floor area of less than 35 square feet.~~
- ~~The area is not provided with a permanent means of egress.~~

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## 23.85.R~~317.1~~316.3 Story above grade plane.

Delete exception 4.

## ~~23.85.R317.1 Location required.~~

~~Amend first sentence by deleting the words "naturally durable wood or".~~

~~Add the following sentence to the end of item number 5:~~

~~Measures should be taken to mitigate frost heaving if wood siding or sheathing has less than six inch clearance.~~

## ~~23.85.R317.1.1 Field treatment.~~

~~Add the following sentence to the end of the paragraph:~~

~~This requirement only applies to exposed glue laminated timbers in section R317.1.5 and AWW foundation walls.~~

## 23.85.~~R310.1~~R319.2.3 ~~Emergency escape and rescue opening required~~Maximum height from floor.

Add exception ~~#3~~ as follows:

~~3.~~Exception: ~~Where windows are provided as a means of escape or rescue in a basement, the sill height shall be measured from the finished floor to the bottom of the clear opening and shall be no more than 48 inches above the finished floor~~Clear opening shall be not greater than 48 inches above the floor in basements.

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### 23.85.R319.7.1 Existing emergency escape and rescue openings.

~~Delete item 1.~~ Replace section with the following:

Where a change of occupancy would require an emergency escape and rescue opening, it shall be in accordance with Section R319.1.

### 23.85.R322.3 Care Facilities.

Delete this section ~~R322.3~~.

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~~**23.85.R324.6 Roof access and pathways.**~~

~~Add the following exception:~~

~~4. Roof access, pathways and setback requirements do not apply to photovoltaic systems installed on a single roof plane of a building having multiple roof planes where such roof plane is not located below or provides access to an emergency escape and rescue opening.~~

### 23.85.R~~308~~324.6.9 Testing and labeling.

Add the following ~~sentence to end of paragraph~~exception:

Exception: In lieu of labels adhered to skylights, literature provided on site is acceptable to demonstrate skylights meet the criteria of this section.

### 23.85.R~~303.1~~325.1.2 ~~Habitable rooms~~Natural ventilation.

Add exception ~~#~~4~~5~~ as follows:

4~~5~~. Theater rooms are exempt from the ventilation requirements of this section.

### 23.85.R~~303.3~~325.2 Bathrooms.

Delete this section ~~R303.3~~. Reference the adopted plumbing code.

### 23.85.R~~307~~327 Toilet, bath and shower spaces.

Delete this section ~~R307~~ in its entirety. Reference the adopted plumbing code.

### 23.85.R~~324~~329.6 Roof access and pathways.

Add ~~the following~~ exception #5 as follows:

45. Roof access, pathways and setback requirements do not apply to photovoltaic systems installed on a single roof plane of a building having multiple roof planes where such roof plane is not located below or provides access to an emergency escape and rescue opening.

## 23.85.R329 6.2 Setback at ridge.

Replace R329.6.2 with the following:

Provide the following minimum clear setback at horizontal ridges where photovoltaic panels occupy:

1. Not more than 33 percent of the plan view total roof area: either 18 inches on both sides of the ridge or 36 inches on one side of the ridge.
2. More than 33 percent of the plan view total roof area: either 36 inches on both sides of the ridge or 48 inches on one side of the ridge.

~~For photovoltaic arrays occupying not more than 33 percent of the plan view total roof area, provide one of the following: not less than 18-inch clear setback on both sides of the ridge or not less than 36-inch clear setback on one side of the ridge. For photovoltaic arrays occupying more than 33 percent of the plan view total roof area, provide one of the following: not less than 36-inch setback on both sides of the ridge or not less than 48-inch setback on one side of the ridge.~~

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## 23.85.~~R328~~ R333 Moisture control in insulated assemblies.

Amend Chapter 3 by adding the following section:

**SECTION R328 MOISTURE CONTROL IN INSULATED ASSEMBLIES**

**~~R328~~R333.1 Moisture control strategies.** The building design shall incorporate both interior and exterior moisture control strategies to prevent the accumulation of moisture within insulated assemblies. Exterior moisture control shall comply with Chapters 7 and 9. Interior moisture control shall comply with section ~~R328~~R333.1.1. Should insulated assemblies become wet or start out wet, the design strategy shall allow the assembly to dry to either the exterior or interior. Materials shall be allowed to dry prior to enclosure.

**~~R328~~R333.1.1 Interior moisture control in insulated assemblies.** Methods to control moisture accumulation within insulated assemblies from the building interior shall address both vapor diffusion and air leakage. Ventilated attics and enclosed rafter spaces shall be separated from the interior (conditioned portion) of the building by a Class I vapor retarder. Unvented attics and enclosed rafter assemblies shall comply with section R806.5. Vapor diffusion ~~shall be controlled by the installation of a class I or class II vapor retarder on the warm-in-winter side of the insulation~~through wall assemblies shall be controlled in accordance with section R702.7. The vapor retarder shall be continuous, and seams shall be lapped 6 inches minimum. Penetrations and seams shall be sealed with approved vapor retarder compatible tape or sealant to control air leakage. Where a vapor retarder is located in dropped ceilings adjacent to attics, the vapor retarder continuity shall be maintained above the dropped ceiling and shall be fully covered with a solid material such as gypsum wallboard, plywood, oriented strand board or other similar material.

**Exceptions:**

1. A vapor retarder is not required in construction where moisture or its freezing will not damage materials.
2. A vapor retarder is not required on crawlspace walls designed to dry to the interior.

3. A vapor retarder is not required on basement walls designed to dry to the interior. ~~Such~~ Above grade portions of such walls shall be insulated to a minimum of 24 inches below grade ~~with one of the following methods~~as follows:

   a. Two inches minimum of EPS or XPS foam plastic insulation applied directly against the exterior of the foundation wall, and one inch of EPS, XPS or polyisocyanurate (PIR) applied between the interior surface of the foundation wall and framing. The framing cavity may be insulated with any type of approved insulation.

   b. Three inches minimum of two-pound density closed cell foam plastic insulation applied to the interior side of the foundation wall with one inch minimum of insulation between any wall framing and the foundation wall.

   c. Four inches minimum of EPS or XPS foam plastic insulation applied directly against the exterior of the foundation wall.

   d. Equivalent moisture resistant system approved by the building official.

   Additionally, the basement wall shall comply with the provisions in the adopted energy code.

4. A vapor retarder is not required at cantilevered floor assemblies where the floor decking consists of nominal ¾ inch plywood, OSB or other approved material having a perm rating meeting the class II requirements. Joints shall be sealed in an approved manner. Joint sealing is not required where the deck is covered with concrete or a gypsum based topping.

5. The rim joist does not require a vapor retarder when insulated to a minimum value of R-21 with air-impermeable expanding spray foam..

6. Notwithstanding exception 3a, up to one-third of the total installed insulation R-value may be installed on the warm side of the vapor retarder. This exception applies only when the daily average indoor relative humidity is maintained below 35 percent during the heating months of November through March.

7. A class III vapor retarder may be used on walls and roof insulated to a minimum value of R-21 with spray foam having a minimum density of 2 pounds per cubic foot.

### 23.85.R401.1 Application.

Add ~~the following situation to the exception~~to the exception item 3 as follows:

3. Repair of wood foundations with a crawlspace shall be per 23.85. Figure R403-34.

### 23.85.R401.3 Drainage.

Add the following sentence to the end of the paragraph:

There shall not be a net increase in surface drainage across property lines. Approved discharge locations shall include street gutters, drainage easements, ditches, or other approved locations. Surface runoff may be retained on site or follow existing drainage patterns to prevent adverse impact to neighboring properties.

## 23.85.R401.4 Soil tests.

Add the following subsection:

**R401.4.3 Areas of high and very high Seismically induced ground failure susceptibility.** The construction of a dwelling or accessory structure in seismically induced ground failure zones 4 or 5 (as delineated on the Municipality of Anchorage, Geotechnical Hazard Assessment Map) requires a site-specific geotechnical investigation in accordance with section 1803 of the 2018 IBC. The site-specific geotechnical investigation shall be prepared by a professional civil engineer, qualified in the field of Geotechnical Engineering, registered in the State of Alaska. The structure shall be designed and sealed by a ~~structural engineer~~~~PE~~professional ~~C~~civil ~~E~~engineer with structural experience or ~~PE~~professional ~~S~~structural ~~E~~engineer registered in the State of Alaska.

**Exceptions:**

1. A geotechnical report is not required for an addition to a detached single-family residence or duplex where all the following conditions apply:
    a. The footprint of the addition does not exceed the footprint of the existing building;
    b. The addition does not increase or exceed the number of stories of the existing building; and
    c. Structural analysis demonstrates that new foundation elements can match existing.
2. A geotechnical report is not required for a detached accessory structure less than 400 square feet in area.
3. Unless required by a plat note, a registered engineer does not need to design either the structure or its foundation if the geotechnical report is based on site-specific soils information where all the following are true:
    a. Slope Stability: A submitted pseudo-static slope stability analysis has a minimum factor of safety of at least 1.10 for seismic loading conditions in accordance with ~~AMC 23.15.~~IBC 1803.5.11.
    b. Liquefaction: The potential for liquefaction and soil strength loss evaluated in terms of peak ground acceleration, earthquake magnitude, and duration is unlikely.
    c. Lateral Spreading and Pressure Ridges: The potential for earthquake induced lateral spreading and pressure ridges is unlikely.

## 23.85.R402.1 Wood foundations.

Add the following to the end of the section:

Wood foundations are not allowed on new construction. Repair of existing wood foundations shall be in accordance with this code.

## 23.85.R403.1 Footings - General.

Replace R403.1 through R403.1.3.6 and associated figures and Tables with the following:

1. Definitions:

a. WARM FOUNDATION: Any foundation where the temperature of the bearing soils is normally maintained above freezing;

b. COLD FOUNDATION: Any foundation where the temperature of the bearing soils is normally subjected to freezing.

2. Foundations shall be constructed as shown in Table 23.85.R403-16 and Figures 23.85.R403-25, 23.85.R403-29,
23.85.R403-31, 23.85.R403-34 ~~(repair only)~~, and 23.85.R403-37 or foundations shall be designed under the provisions of the IBC. Footings and foundations shall be constructed of masonry or concrete. Footings of concrete and masonry shall be of solid material. Foundations supporting wood shall extend at least 6 inches above the adjacent grade. Unless other recommendations are provided by a foundation investigation report, footings shall meet the following requirements:

   a. Minimum footing depths shall be indicated in 23.85. Table R403.1. Footings shall bear on undisturbed natural inorganic soil, or suitably compacted fill.

   b. Cast-in place concrete piers shall be founded at a depth suitable for structural support or as indicated in 23.85. Table R403.1, whichever is greater. Connecting grade beams between piers on perimeter walls of warm buildings shall extend at least 36 inches below ground surface and shall be protected from frost heave. The potential for frost heave below grade beams of cold structure shall be accounted for in the design of these elements.

   c. All reinforcement in foundation walls shall be grade 60.

   d. All masonry shall be solid grout, Type M or S Mortar and mechanically consolidated.

## 23.85. Table R403-16 Reinforced concrete.

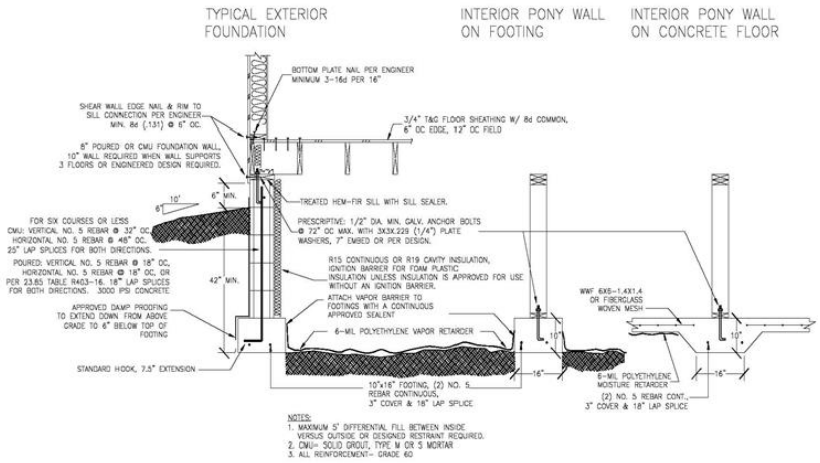
1. Reinforced concrete walls shall be anchored to all floors and roofs in accordance with section 1604.8.2 of the International Building Code.
2. All intersecting reinforced concrete walls shall be tied together. (ACI 318-14; 11.2.4.1)
3. All interior and exterior concrete walls shall be reinforced. Minimum yield strength - Grade 60. (ACI 318-14; 11.6)
4. All structural members framing into or supported on concrete walls or columns shall be anchored. (ASCE 7-16; 1211)
5. All deformed reinforcing bars shall meet or exceed one of the listed ASTM requirements. (ACI 318-14; 20.2.1.3)
6. Concrete in seismic zone D shall have a minimum compressive strength of 3000 psi for severe exposure. (See IBC 1808.8.6; ACI 318-14; table 19.3.2.1)
7. The following minimum reinforcement requirements shall apply to all below grade concrete walls (i.e. basement walls and crawlspace walls). This reinforcing does not apply to above grade walls, which must be designed in accordance with the requirements of IBC.

**MINIMUM REINFORCEMENT FOR CONCRETE WALLS**
**(Horizontal and Vertical Spacing)**

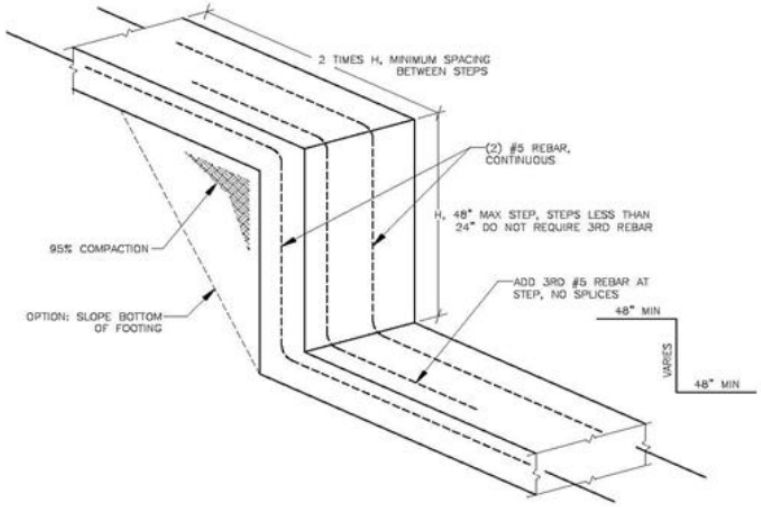
| Width of Wall | #5 Bar | #4 Bar |
|---|---|---|

| | | |
|---|---|---|
| 6" Walls | #5 @ 18" O.C. hor. | #4 @ 16" O.C. hor. |
| | #5 @ 18" O.C. vert. | #4 @ 18" O.C. vert. |
| 8" Walls | #5 @ 18" O.C. hor. | #4 @ 12" O.C. hor. |
| | #5 @ 18" O.C. vert. | #4 @ 18" O.C. vert. |
| 10" Walls | #5 @ 15" O.C. hor. | #4 @ 10" O.C. hor. |
| | #5 @ 18" O.C. vert. | #4 @ 16" O.C. vert. |

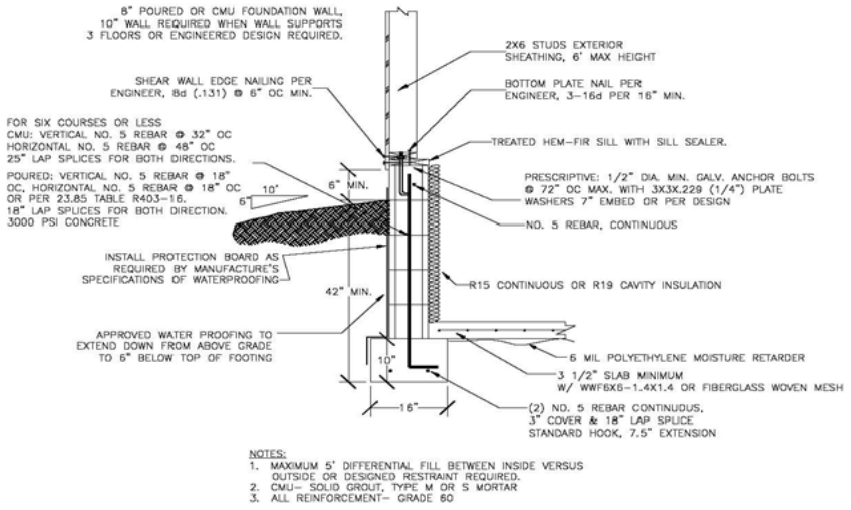
**23.85. Figure R403-25 Typical foundation and footing details.**



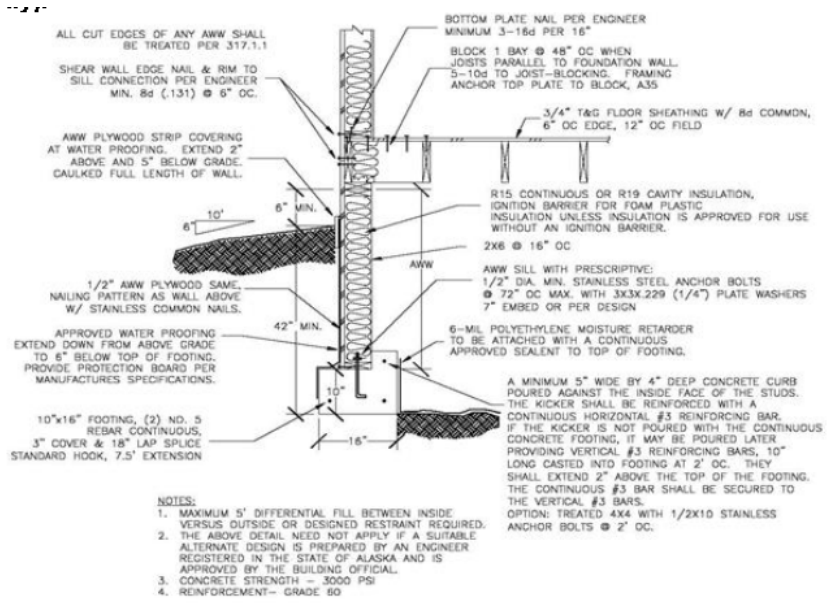
**23.85. Figure R403-29 Typical step footing.**



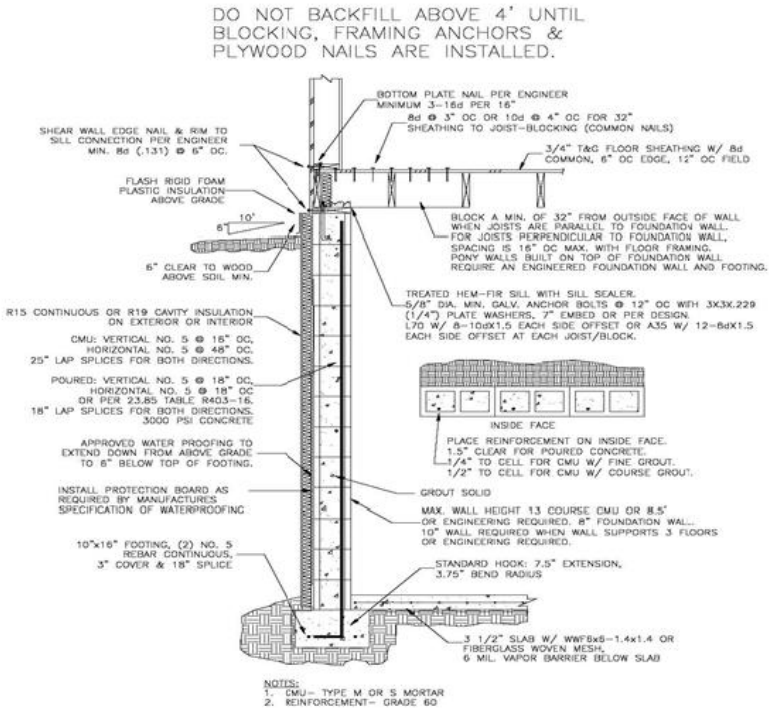

**23.85. Figure R403-31 Typical pony wall for split level.**



**23.85. Figure R403-34 All weather wood foundation (For use in repairs only).**



**23.85. Figure R403-37 Typical basement foundation wall.**




**23.85. Table R403.1 Footing depths.**

| ~~Foundation Type~~ | ~~Minimum Footing Depth (Inches)~~ | |
|---|---|---|
| | ~~Warm Foundation~~ | ~~Cold Foundation (3), (4)~~ |
| ~~Perimeter Footing (1)~~ | ~~42~~ | ~~60~~ |
| ~~Interior or Interior Isolated Spread Footings (2)~~ | | ~~60~~ |

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| | | |
|---|---|---|
| ~~Cast-in-Place Concrete Pier~~ | ~~42~~ | ~~120 (5)~~ |

| Foundation Type | Minimum Footing Depth (inches)[6, 7] | |
|---|---|---|
| | Warm Foundation | Cold Foundation[3, 4] |
| Perimeter footing[1] | 42 | 60 |
| Interior continuous or isolated spread footing[2] | 8 | 60 |
| Cast-in-place concrete pier | 42 | 120[5] |
| Exterior isolated foundation | N/A | 120[5] |

NOTES TO TABLE:

(1) Dimension indicated is from bottom of footing to adjacent exterior grade. Basements or crawlspace walls supporting more than five feet differential fill on opposite faces shall be restrained as necessary against lateral movement.

(2) Dimension indicated is from bottom of footing to nearest adjacent grade.

(3) Except where exterior doors swing outward, ~~E~~exterior decks, landings, and platforms ~~that are not the primary entrance, and not attached to the building, and not larger than 50 square feet~~attached to the building and not greater than 72 inches above grade may ~~be supported on near surface pier blocks founded on adequate soils~~bear directly on ground; if buried more than 12 inches, foundations shall meet minimum depth. Bearing materials shall meet the other provisions of this code. The potential for and the effects of frost heave shall be considered.

(4) The minimum footing depths may not be adequate for frost susceptible soils. Cold footings shall be founded below the frost line or be protected from freezing with insulation or other appropriate means. In addition, provisions shall be made to resist uplift forces due to frost jacking on the side of cold foundations.

(5) ~~Cast-in-place concrete piers~~The minimum footing depth for cold foundations installed in non-frost-susceptible material may be 60 inches.

(6) Non-load bearing site structures not attached to the building, such as fences, light poles, and signposts, shall have a footing depth based on analysis of the vertical and lateral loads on the structure, and shall consider the effects of seasonal freeze and thaw.

(7) Footings or piers for single-family dwellings and their accessory structures in mobile home parks may be placed at surface grade, provided all applicable requirements are met for construction and installation in a mobile home park; see Appendix BA and local policies.

**~~23.85.R403.1.4.1 Frost protection.~~**

~~Revise method #1 to reference 23.85. Table R403.1 in lieu of Table R301.2(1).~~

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### 23.85.R403.2 Footings for wood foundations.

Delete paragraph and replace with the following:

Wood foundations are not allowed on new construction. Repair of wood foundations shall be in accordance with 23.85. Figure R403-34.

### 23.85. Table R403.3(1) Minimum Footing Depth and Insulation Requirements for Frost-Protected Footings in Heated Buildings.

Amend footnote (c) as follows:

c. Insulation shall be expanded polystyrene (EPS) or extruded polystyrene (XPS) manufactured in accordance with ASTM C578. The following R-values shall be used to determine insulation thickness required for this application:

   i. Type II EPS: R-3.2 per inch vertical and R-2.6 per inch horizontal;

   ii. Type IX EPS: R-3.4 per inch vertical and R-2.8 per inch horizontal;

   iii. Type X, IV, VI, VII and V XPS: R-4.5 per inch vertical and R-4.0 per inch horizontal.

For EPS insulation Types not listed, the R-value used to determine insulation thickness shall be 80 percent of the manufacturer listed R-value @75F for vertical insulation and 67 percent of the manufacturer listed R-value @75F for horizontal insulation. Reference ASCE Standard 32-01, Appendix A.

Delete footnotes (d) and (e).

### 23.85. Table R403.3(2) Air-Freezing Index for U.S. Locations by County.

Add Anchorage to the "3500" column in the Alaska row.

### 23.85.R404.1 Concrete and masonry foundation walls.

Delete sections R404.1.1 through R404.1.8.

Delete Tables R404.1.1(1) through R404.1.1(4), and R404.1.2(1) through R404.1.2(9), and Figure R404.1.5(1).

See 23.85.R403.1.

### 23.85.R404.2 Wood foundation walls.

Delete section R404.2. Wood foundations are not allowed on new construction. Existing wood foundations shall be repaired in accordance with 23.85. Figure R403-34 All Weather Wood Foundation.

### 23.85.R404.3 Wood sill plates.

Delete paragraph and substitute with the following:

Wood sill plates shall be minimum 2-inch by 6-inch and shall be bolted to the foundation or foundation wall with not less than 10-inch by ½-inch nominal diameter galvanized steel bolts embedded at least 7 inches into the concrete or in fully grouted cells of reinforced masonry and spaced not more than 6-feet apart. There shall be a minimum of two bolts per piece with one bolt located within 12 inches of each end of each piece. Wood sill plates must be a treated material specified in Section R317.1.

### 23.85.R404.6 Insulating concrete form (ICF) foundation walls.

Amend section 404 by adding the following subsection:

**R404.6 Insulating concrete form (ICF) foundation walls.** Only flat insulating concrete form (ICF) wall systems shall be used with reinforcement per 23.85. Table R403-16.

### 23.85.R405.1.1 Precast concrete foundation.

Delete section R405.1.1.

### 23.85.R406.1 Concrete and masonry foundation dampproofing.

In the first sentence beginning with the word "enclose", replace the wording in the rest of the sentence with the following: "crawl space walls 40 inches or less in height shall be damp-proofed from above grade to 6 inches below the top of the footing."

Add exception #2 as follows:

2. Foundation walls backfilled on both sides, such as those used in conjunction with a "slab on grade", do not require damp-proofing.

### 23.85.R406.2 Concrete and masonry foundation waterproofing.

Replace the first sentence with the following:

Exterior foundation walls that retain earth and enclose habitable or usable interior spaces and floors below grade shall be waterproofed from above grade to 6 inches below the top of the footing.

Add exception #2 as follows:

2. Foundation walls backfilled on both sides, such as those used in conjunction with a "slab on grade" do not require waterproofing.

### 23.85.R406.3 Dampproofing for wood foundations.

Replace "dampproofing" in the heading and body of section with "waterproofing".

### 23.85.R406.3.2 Below grade moisture barrier.

Revise R406.3.2 to read as follows:

Approved waterproofing shall be applied over the below-grade portion of exterior basement and crawlspace walls prior to backfilling. A treated lumber or plywood strip shall be attached to the wall to cover the top edge of the approved waterproofing. The wood strip shall extend at least two inches above and five inches below finish grade level to protect the approved waterproofing from exposure to light and from mechanical damage at or near grade. The joint between the strip and the wall shall be caulked full length prior to fastening the strip to the wall. Alternatively, brick, stucco, or other covering appropriate to the architectural treatment may be used in place of the wood strip. The approved waterproofing shall extend down from above grade to six inches below the top of the footing.

### 23.85.R406.4 Precast concrete foundation system dampproofing.

Replace paragraph with the following:

See Sections 23.85.R406.1 and 23.85.R406.2 for requirements.

### 23.85.R407.2 Steel column protection.

Replace paragraph with the following:

Exterior surface of steel columns exposed to the elements shall be protected with a rust inhibitive paint, except for corrosive-resistant steel and steel treated with coatings to provide corrosion resistance.

### 23.85.R506.3~~2~~.3 Vapor retarder.

Delete item #1 under the exception.

### 23.85.R507.1 Decks.

Replace “indicated in Table R301.2” with “as determined by section R301.2.3.

### 23.85.R507.3.3 Frost Protection.

Add exception as follows:

Exception: Frost protection for deck stair footings shall not be required where not directly attached to or in contact with the frost protected structure.

### 23.85.R507.9.1.5 Ledger Flashing.

Replace 4 inches with 1 inch and add “exterior” before ledger face.

### 23.85.R507.10 Exterior Guards.

Delete section R507.10.

### 23.85.R602.3.2 Top plate.

Delete the exception.

### 23.85.R602.6 Drilling and notching of studs.

Amend section by adding item 3 as follows:

3. All studs in walls containing plumbing drains and vents shall be a minimum of 6-inch nominal width or structurally sheath one side when 4-inch nominal width studs are used.

### 23.85.R702.7.1 Class III vapor retarders.

Delete section R702.7.1. Reference 23.85.R328.

### 23.85.R703.2 Water-resistive barrier.

Amend the first sentence by starting the sentence with:

"Though not required by the Municipality of Anchorage, when installed or when required by the exterior wall covering manufacturer, apply…".

~~Amend the first sentence by adding the word "permeable" between the "of" and "No. 15". Item 1 by starting the sentence with:~~

~~“One layer of permeable…”~~

### 23.85.R703.4.1 Flashing installation at exterior window and door openings.

~~Renumber item 1.3 to 1.4 and add 1.3 as follows:~~ Add exception 4:

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41.3. Where flashing cannot be installed per one of the above referenced methods, the exterior opening shall be caulked and sealed with exterior grade, paintable caulk, a minimum of a ⅜-inch bead.

### 23.85.R703.5.2 Panel siding.

Add the following to the end of the paragraph:

Exterior type plywood siding with a grooved pattern shall not be installed horizontally and used as the weather resistant siding.

### 23.85.R802.2 Design and construction.

Add a sentence to end of paragraph as follows:

The minimum depth from the roof sheathing to the wall top plate at exterior side of the exterior wall shall be 11¼ inches.

### 23.85.R802.10.1 Truss design drawings.

Amend first sentence by deleting the words: "and approved prior to installation."

~~**23.85.R802.10.2 Design.**~~

~~Add the following sentence to end of paragraph:~~

~~Minimum depth of truss at exterior wall plate shall be 11¼ inches at exterior side plate.~~

### 23.85.R802.12 Wood frame roof attachment at eave - blocking.

Amend section R802 by adding the following section:

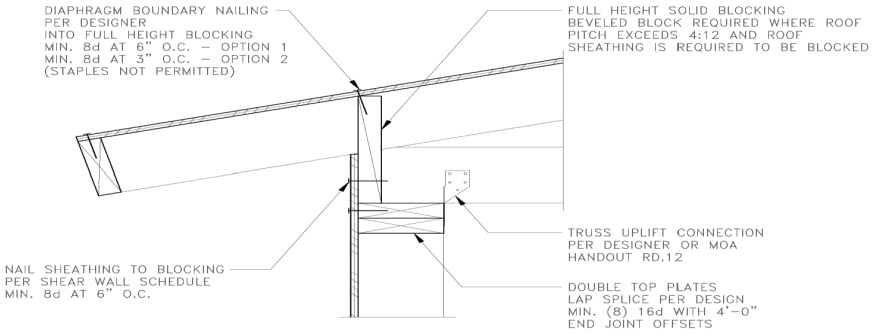
R802.12 Wood frame roof attachment at eave blocking. The following 5 options are an acceptable means for transferring roof diaphragm shear forces to exterior walls. Alternative designs based on calculations for shear transfer to the exterior walls may be used in lieu of these details. Regardless of the method selected, roof ventilation shall comply with section R806.

OPTION 1

Full-height blocking in every truss space with 3 or more 2-inch diameter or larger holes located near the top of block.

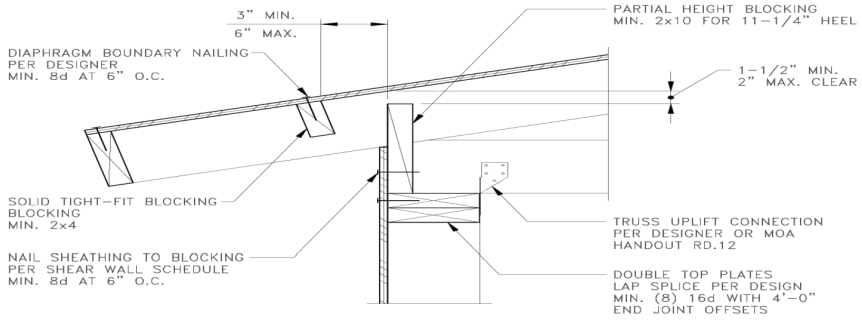
OPTION 2

Full-height blocking in every other truss space with 3 or more 2-inch diameter or larger holes located near the top of block, with partial height blocking in alternate spaces. Partial height blocking shall allow a clear air gap of between 1½ to 2 inches. Minimum size partial height block is 2×10 where truss heels are 11¼ inches high.



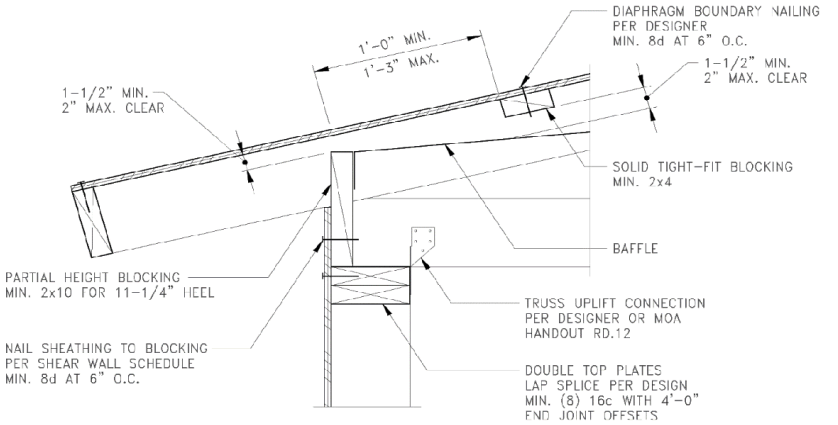

OPTION 3

This partial height blocking configuration may be used where trusses have of 11¼ inch heels at the wall line. Blocking is required in every truss space.




OPTION 4

This partial height blocking configuration may be used where diaphragm shear is less than 95 plf. Blocking is required in every truss space.




OPTION 5

For prescriptively braced wall panels and engineered shear wall designs for one- and two-family dwellings and townhomes, this configuration, as described in R602.10.8.2.2, may be used.

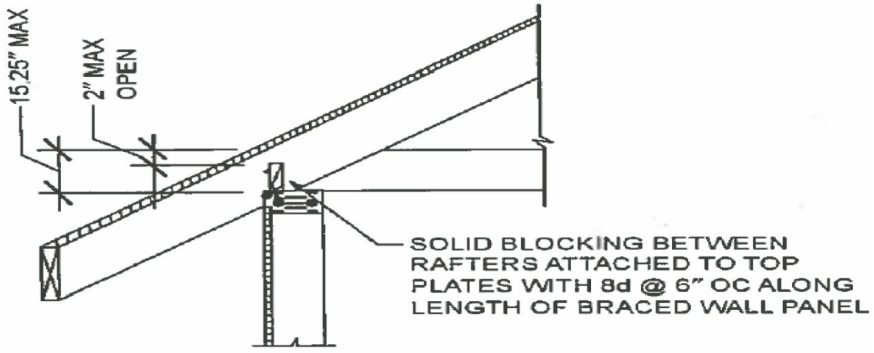



**FIGURE R602.10.8.2(1)**
**BRACED WALL PANEL CONNECTION TO PERPENDICULAR RAFTERS**

## 23.85.R806.2 Minimum vent area.

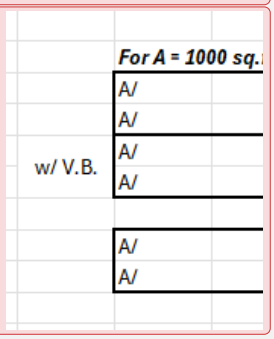
Add the following ~~to the end of the paragraph~~after the first sentence:

~~At least~~ Between 50 percent and 75 percent ~~and not more than 80 percent~~ of the required ventilating area shall be provided by ventilators located in the upper portion of the attic or rafter space, with the balance of the required ventilation provided at the eaves. Any additional ventilation provided over the required will not be restricted. Upper ventilators shall be located no more than 3 feet below the ridge or highest point of the space, measured vertically~~, with the balance of the required ventilation provided at the eaves~~. Where the location of wall or roof framing members conflicts with the installation of the upper ventilators, installation more than 3 feet below the ridge or highest point of the space ~~shall~~ may be permitted.

Delete the exception.

**Commented [DK2]:** Point out change to Building Board.

**Commented [DK3R2]:** There were issues with the interpretation of this code section, since they required 50 to 80% at 150, but allowed (w VB) to go to 300 if you used 40 to 50 (which isn't allowed due to the 50 to 80?). We often have ice damming problems that are not common in other places with shorter or sporadic snow seasons. The larger ventilation is better for our environment and aligns with our code from 2009 and back.




**Commented [DK4R2]:**

~~**23.85.R806.5 Unvented attic and unvented enclosed rafter assemblies.**~~

~~Delete section R806.5.~~

### 23.85.R807.1 Attic access.

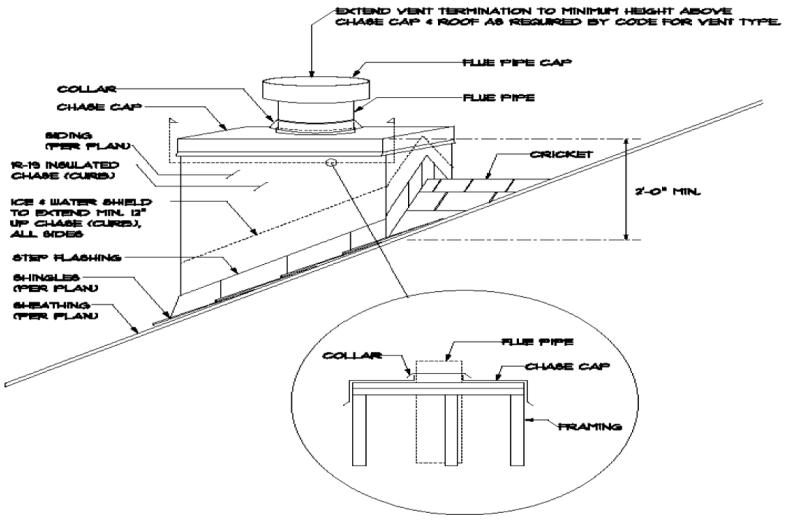
Add the following to Section:

Attic access shall not be located in a room containing bathing facilities. ~~Access may be located in closets with minimum depth of 23 inches and minimum width of 48 inches.~~

### 23.85.R903.1 General.

Add the following to the end of section:

1. All valleys shall have a modified bitumen ice barrier lapped eighteen inches minimum each side of valley centerline. ~~No penetrations shall be located in required valley ice barrier.~~
2. All roof penetrations shall be located a minimum of six feet from valley centerline and four feet from the exterior wall line at the eave measured on a horizontal plane, excluding attic ventilation.
3. ~~All roof penetrations shall extend above the roof surface a minimum of 24 inches, except attic ventilation.~~
4. ~~4~~3. Type B gas vents may penetrate the eave ice barrier area if installed within a ~~24 inches,~~ wood framed, R-~~19~~ 21 insulated curb, minimum 24 inches tall as measured on the ridge side of the roof. The ice barrier must extend up the curb a minimum of 12 inches on all sides. See detail below.




### 23.85.R903.4.2 Snow impact on neighboring lot.

Amend section R903.4 by adding the following subsection:

**R903.4.2 Snow impact on neighboring lot.** Snow from a structure shall not shed across property line.

### ~~23.85.R905.1.1 Underlayment.~~

~~Delete sections and tables and replace with the following:~~

~~Underlayment shall comply with ASTM D 226 Type I (No. 15 Asphalt Felt). For slopes 4V:12H and steeper underlayment shall be at least one layer installed with a 4-inch lap over the ice barrier. Each subsequent layer shall be lapped 4 inches vertically and two inches horizontally to shed water, continuing to the ridge, fastened sufficiently to hold in place.~~

### 23.85.R905.1.2 Ice barrier.

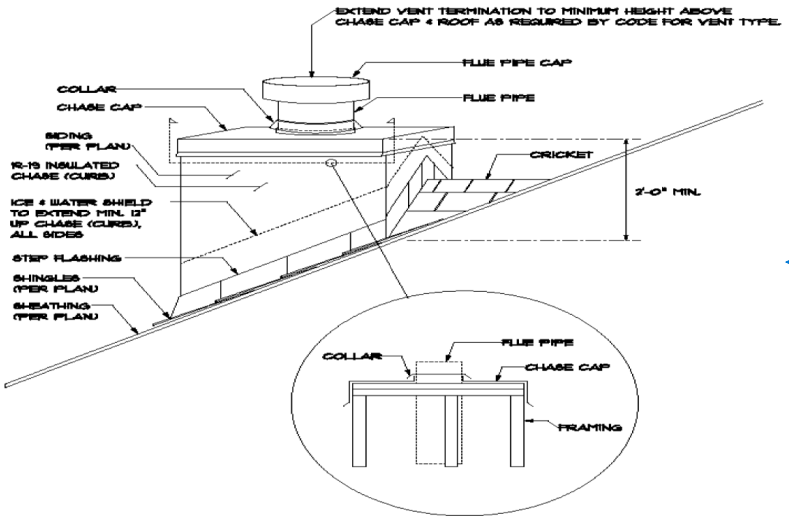
Replace section with the following:

An ice barrier shall be a self-adhering polymer modified bitumen sheet complying with ASTM D 1970. For slopes less steep than, but not including, 4V:12H, an ice barrier shall be used over the entire surface of the roof. No additional normal underlayment is required. For slopes 4V:12H and steeper an ice barrier shall extend from the

lowest edges of all roof surfaces to a point at least 36 inches inside the exterior wall line of the building. The remainder of the roof surfaces may be covered with underlayment per 23.85.R905.1.1.

### 23.85.R905.1.2.1 Penetrations in ice barrier

1. All valleys shall have a modified bitumen ice barrier lapped eighteen inches minimum each side of valley centerline. No penetrations shall be located in required valley ice barrier.
2. All roof penetrations shall be located a minimum of six feet from valley centerline and four feet from the exterior wall line at the drip edge eave measured on a horizontal plane, excluding attic ventilation.
3. All roof penetrations shall extend above the roof surface a minimum of 24 inches, except attic ventilation.
4. Type B gas vents may penetrate the eave ice barrier area if installed within 24 inches, wood framed, R-21 insulated curb, measured on the ridge side of the roof. The ice barrier must extend up the curb a minimum of 12 inches on all sides. See detail below.




~~**23.85.R905.2.2 Slope.**~~

~~Replace "two units vertical" with "three units vertical".~~

### 23.85.R905.2.8.2 Valleys (asphalt shingles).

Replace items 1, 2, and 3 with the following:

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1. For open valleys (valley lining exposed) lined with metal, the valley lining shall be not less than 24 inches wide and of any of the corrosion-resistant metals in table R905.2.8.2 installed over the required 36-inch wide self-adhering polymer modified bitumen underlayment complying with ASTM D 1970.
2. For open valleys (valley lining exposed) lined with one ply of mineral-surfaced roll roofing, complying with ASTM D 3909 or ASTM D 6380 Class M, 36" wide installed over the required 36" wide self-adhered polymer modified bitumen underlayment complying with ASTM D 1970.
3. For closed valleys (valley covered with shingles), valley lining of one layer of self-adhered polymer modified bitumen underlayment, minimum 36" wide, complying with ASTM D 1970 shall be permitted.

### 23.85.R905.2.8.3 Sidewall flashing.

Delete the words "continuous or" in the first sentence and the word "continuous" in the second sentence.

### 23.85.R905.2.8.5 Drip edge.

Add the following exception:

**Exception:** A 1x drip edge installed at the top of the fascia shall be permitted where the roof shingles overhang the 1x at least 1-inch.

### 23.85.R905.9.1 Slope (built-up roofs).

Delete the words:

"except for coal-tar built-up roofs, which shall have a design slope of a minimum one-eighth unit vertical in 12 units horizontal (1-percent slope)."

### ~~23.85.R905.14 Sprayed polyurethane foam roofing.~~

~~Delete section R905.14.~~

### ~~23.85.R905.16.2 Deck Slope (photovoltaic shingles).~~

~~Replace "two units vertical" with "three units vertical".~~

### 23.85.R1005.8 Insulation shield.

Add to the end of the paragraph:

If the manufacturers recommendations does not require a clearance from insulation, an insulation shield (thimble) is not required.

### 23.85.N1101.5 Information on construction documents.

Delete section. Refer to Anchorage Administrative Code.

### 23.85.N1101.6 Defined terms.

Add the following terms:

**AHFC.** Alaska Housing Finance Corporation.

**AK HERS Guidelines.** AHFC Alaska Home Energy Rating System Guidelines.

**AKWarm.** AHFC approved home energy rating system computer-simulation software.

**ASHRAE.** The American Society of Heating, Refrigerating and Air-Conditioning Engineers.

**BEES.** AHFC Building Energy Efficiency Standard, established by the State of Alaska. BEES is comprised of the 2018 International Energy Conservation Code, ASHRAE Standard 62.2 2016, and the Alaska Specific Amendments.

### 23.85.N1101.10.4 Insulation product rating.

Add the following exception:

**Exception:** A mean testing temperature of 40° F is acceptable for demonstrating compliance with this code.

### 23.85.N1101.13 ~~Compliance~~Application.

~~Delete compliance option 3.~~ Amend first sentence to read as follows:

Residential buildings shall comply with Section N1101.13.1 or N1101.13.2.

Delete subsections N1101.13.3, N1101.13.4, and N1101.13.5.

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### 23.85.N1101.14 Certificate ~~(Mandatory)~~.

Replace first sentence with the following:

A permanent certificate shall be completed by the Energy rater, builder or other approved party and made available to the owner by posting it on a wall in the space where the furnace is located, a utility room, electrical panel or an approved location inside the building.

Add the following exception:

**Exception:** A certificate is not required for an addition, alteration, or repair to an existing building.

### 23.85. N1102.1.2 Insulation and fenestration criteria.

Add the following to end of paragraph:

Where constructing an assembly with both continuous exterior insulation and stud cavity insulation, a dew-point calculation is required to demonstrate condensation within the assembly is adequately addressed.

Exception: A dew-point calculation is not required when utilizing a class I or II vapor retarder on the interior side of frame walls.

### 23.85.Table N1102.1.2 ~~Insulation and Fenestration Requirements by Component~~Maximum Assembly U-Factors and Fenestration Requirements.

Replace the Table N1102.1.2 and footnotes with the following:

| ~~Table N1102.1.2~~<br>~~Insulation and Fenestration Requirements by Components~~<br>~~Climate Zone 7~~ | |
|---|---|
| ~~Component~~ | ~~R-Value (Minimum)~~ |
| ~~Fenestration~~ | ~~3.1~~ |
| ~~Skylight~~ | ~~1.8~~ |
| ~~Ceiling~~ | ~~49~~ |
| ~~Wood Framed Wall~~ | ~~21~~ |
| ~~Mass Wall~~ | ~~21~~ |
| ~~Floor over Unheated Areas~~ | ~~38~~ |
| ~~Basement Wall~~ | ~~15 Continuous or 19 Cavity~~ |
| ~~Slab on Grade~~ | ~~10 for 36 inches vertically along perimeter~~ |
| ~~Slab - Heat in slab~~ | ~~10 Under entire slab and for 36 inches vertically along perimeter~~ |
| ~~Crawlspace wall~~ | ~~15 Continuous or 19 Cavity~~ |

| Table N1102.1.2<br>U-Factors and Fenestration Requirements<br>Climate Zone 7 | | |
|---|---|---|
| Component | Approvable Maximum U-Factor or F-Factor[1] | Enhanced Maximum U-Factor or F-Factor[1] |
| Fenestration | U-0.32 | U-0.27 |
| Skylight | U-0.55 | U-0.50 |
| Ceiling | U-0.026 | N/A |
| Insulation entirely above roof deck | U-0.033 | U-0.028 |
| Wood Framed Wall | U-0.047 | U-0.045 |
| Mass Wall | U-0.057 | N/A |
| Floor over Unheated Areas | U-0.028 | N/A |
| Basement Wall | U-0.05 | N/A |
| Unheated Slab on Grade (see N1102.2.10) | F-0.51 | F-0.48 |
| Heated Slab on Grade (see N1102.2.10) | F-0.66 | F-0.66 |
| Crawlspace wall | U-0.055 | N/A |

[1] Use of opaque assembly U-factors, C-factors, and F-factors from ANSI/ASHRAE/IESNA 90.1 Appendix A is permitted, provided the construction complies with the applicable construction details from ANSI/ASHRAE/IESNA 90.1 Appendix A

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**23.85. Table N1102.1.3 ~~4 Equivalent U-Factors~~Insulation Minimum R-Values and Fenestration Requirements by Component.**

Replace the Table N1102.1.~~4~~3 and footnotes with the following:

| ~~Table N1102.1.4~~<br>~~Equivalent U-Factors~~<br>~~Climate Zone 7~~ | |
|---|---|
| ~~Component~~ | ~~Equivalent Maximum U-Factor or F-Factor[1]~~ |
| ~~Fenestration~~ | ~~U-0.32~~ |
| ~~Skylight~~ | ~~U-0.55~~ |
| ~~Ceiling~~ | ~~U-0.020~~ |
| ~~Wood Framed Wall~~ | ~~U-0.047~~ |

| | |
|---|---|
| ~~Mass Wall~~ | ~~U-0.047~~ |
| ~~Floor over Unheated Areas~~ | ~~U-0.026~~ |
| ~~Basement Wall~~ | ~~U-0.067 Continuous or 0.052 Cavity~~ |
| ~~Slab on Grade~~ | ~~F-0.51~~ |
| ~~Slab - Heat in slab~~ | ~~F-0.55~~ |
| ~~Crawlspace wall~~ | ~~U-0.067 Continuous or 0.052 Cavity~~ |

~~[1]Use of opaque assembly U-factors, C-factors, and F-factors from ANSI/ASHRAE/IESNA 90.1 Appendix A is permitted, provided the construction complies with the applicable construction details from ANSI/ASHRAE/IESNA 90.1 Appendix A~~

**Table N1102.1.3**
**Insulation and Fenestration Requirements by Components**
**Climate Zone 7**

| Component | R-Value (Minimum) | R-Value (Enhanced) |
|---|---|---|
| Fenestration | 3.1 | 3.7 |
| Skylight | 1.8 | 2 |
| Ceiling | 49 | N/A |
| Insulation entirely above roof deck | 30ci | 35ci |
| Wood Framed Wall | 21 | 20+5ci or 13+10ci |
| Mass Wall | 21 | N/A |
| Floor over Unheated Areas | 38 or 19+10ci | N/A |
| Basement Wall | 15ci or 19 or 13+5ci | N/A |
| Unheated Slab on Grade (see N1102.2.10) | 10ci, 36 inches | 10ci, 48 inches |
| Heated Slab on Grade (see N1102.2.10) | 10ci, 36 inches, and 5 full slab | 10ci, 48 inches, and 5 full slab |
| Crawlspace wall | 15ci or 19 or 13+5ci | N/A |

Note: ci = Continuous Insulation.

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**23.85.N1102.2.1 Ceilings with attic~~s spaces~~.**

~~Replace section text with~~Add to the end of the section the following:

A minimum 11.25 inch truss heel height is ~~allowed~~ required~~to meet the R-49 insulation requirement~~. Insulation R-values may be lower at eaves to allow for proper ventilation.

**23.85.N1102.2.~~4~~ 5.1 Access hatch~~es~~ and ~~doors~~door insulation installation and retention.**

~~Replace~~ Add after "weatherstripped" in the first sentence ~~with~~ "and sealed to prohibit air movement".

**23.85.N1102.2.11 Crawlspace walls.**

Revise the section to read as follows:

Crawlspace walls shall be insulated, and a ground vapor retarder shall be installed in accordance with 23.85. Figure R403-25. Crawlspace wall insulation shall be securely fastened in place and shall extend downward from the floor to the top of the footing. Vapor retarder joints shall overlap 6 inches minimum and be sealed or taped. Vapor retarder edges shall extend not less than 6 inches up and be attached to the footing/stem walls.

~~**23.85.N1102.3 Fenestration (Prescriptive).**~~

~~Add the following subsection:~~

~~**N1102.3.6 Glazing limitation.** Glazing shall be limited to 18% of the gross floor area of the structure.~~

**23.85.N1102.~~4~~5.1.~~2~~ 3 ~~Testing (building thermal envelope)~~Maximum air leakage rate.**

Replace the first sentence and items 1 and 2 with the following:

~~The~~ Where tested in accordance with Section N1102.5.1.2, the building or dwelling unit~~s~~ or sleeping units in the building shall ~~be tested and verified as having~~have an air leakage rate not ~~exceeding~~ greater than 4 air changes per hour ~~at 50 pascals~~, or 0.22 cubic feet per minute per square foot of the building thermal envelope area or the dwelling testing enclosure area, as applicable.

Exception is to remain.

**23.85.N1103.3.~~5~~ 2 Building Cavities ~~(Mandatory)~~.**

~~Delete sentence and replace with~~Add the following exception:

Stud wall cavities and the spaces between solid floor joists ~~to~~ may be used as air plenums for other than supply air ~~shall comply with~~where all the following conditions apply:

~~1. Such cavities or spaces shall not be used as a plenum for supply air.~~

~~2~~1. Such cavities or spaces shall not be part of a required fire-resistance-rated assembly.

~~3~~2. Stud wall cavities shall not convey air from more than one floor level.

~~4~~3. Stud wall cavities and joist space plenums shall be isolated from adjacent concealed spaces by tight fitting fire blocking in accordance with R602.8.

~~5~~4. Stud wall cavities in the outside walls of building envelope assemblies shall not be utilized as air plenums.

**23.85.N1103.3.~~6~~ 3 ~~Ducts buried within ceiling insulation~~Ductwork located outside conditioned space.**

Delete section N1103.3.3. See AMC 23.85.N1103.3.4.

~~Replace section with the following:~~

~~Ducts are to be installed inside the continuous air barrier and building thermal envelope of the dwelling.~~

~~**Exception:** Ducting for ventilation systems.~~

**23.85.N1103.3.~~7~~ 4 ~~Ducts~~ Duct systems located in conditioned space.**

Replace section with the following:

Ducts are to be installed inside the continuous air barrier and building thermal envelope of the dwelling.

**Exception:** Ducting for ventilation systems.

~~Delete section N1103.3.7.~~

**23.85.N1103.3.5 Ductwork buried within ceiling insulation.**

Delete section N1103.3.5 and subsection N1103.3.5.1. See AMC 23.85.N1103.3.4.

**23.85.N1103.3.7 Duct system testing.**

Add item 4 to exceptions as follows:

4. A duct air-leakage test shall not be required where the ducts and air handlers are located entirely within the building thermal envelope.

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**23.85.N1103.4 Mechanical system piping insulation.**

Add the following exception:

**Exception:** Piping installed within the building thermal envelope.

### 23.85.N1103.6 Mechanical ventilation ~~(Mandatory)~~.

Amend section ~~N1103.6~~ to read as follows:

~~**N1103.6 Mechanical ventilation (Mandatory).**~~ Ventilation shall be provided in accordance with ANSI/ASHRAE Standard 62.2-201~~916~~ . Compliance with AHFC Alaska Specific Amendments is optional.

### 23.85.N1103.6.3 Testing.

Delete section, testing not required.

### 23.85.N1103.7 Equipment sizing and efficiency rating ~~(Mandatory)~~.

Add the following exceptions:

**Exceptions:**

1. AkWarm is an approved heating load calculation methodology.
2. Equipment shall be sized to meet the load and oversizing shall not exceed 125 percent. When this is not feasible given the discrete size options available, equipment delivering the smallest output while satisfying the calculated load shall be used.

### 23.85.N1103.13 Gas fireplaces.

Add to the end of the exception the following:

or gas-fired appliances manufactured prior to the adoption of this code.

### 23.85.N1105.1 Scope (~~Simulated Performance Alternative~~Total building performance).

Add an exception as follows:

~~2.~~Exception: ~~_____~~ Compliance with section N1105 may be demonstrated through an AHFC approved home energy rating program that meets the following:

a. A minimum five-star rating is required.

b. The maximum air infiltration rate shall not exceed four air changes per hour at 50 pascals pressure difference.

c. The compliance rating shall be performed by a person authorized by AHFC.

d. Compliance with section 1105.~~4~~ 3 is not required.

~~**23.85.N1106 Energy Rating Index Compliance Alternative.**~~

~~Delete section N1106.~~

**23.85.N1108.1 Scope (Additional energy efficiency requirements).**

Replace section with the following:

This section provides additional energy efficiency options and shall not be considered mandatory.

**23.85.N1109.1 Scope (Existing buildings – general).**

Add exception as follows:

Exception: Additional efficiency credit requirements for alteration, repair, and addition to existing building and structures are elective only and shall not be required by code. This does not include change of use that increases the energy use of the structure.

**23.85.N1110.2.5 Building thermal envelope (alterations).**

Rewrite the exception as follows:

Exception: The following alterations shall not be required to comply with the requirements for new construction provided that the energy use of the building is not increased:

1. Storm windows installed over existing fenestration.
2. Existing ceiling, wall or floor cavities exposed during construction provided that these cavities are filled with insulation.
3. Construction where the existing roof, wall or floor cavity is not exposed.
4. Roof recover.
5. Roof replacement where roof assembly insulation is integral to or located below the structural roof deck.
6. Roof replacement where roof assembly insulation is above the roof deck and the insulation cannot be increased without modifying the structure to support full snow load.
7. Surface-applied window film installed on existing single-pane fenestration assemblies to reduce solar heat gain provided that the code does not require the glazing or fenestration assembly to be replaced.

**23.85. Chapters 12 through 43.**

Amend by deleting in their entirety Chapters 12 through 43, except for the specific sections referenced by the adopted provisions of this code.

## 23.85. Appendices.

Adopt Appendices BA~~E~~, BB, ~~BCK,~~ and BG ~~and Q~~.

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### 23.85.~~AE101~~BA101.1 General.

Amend the first sentence to read:

These provisions shall apply to manufactured homes~~, mobile homes, campers, and travel trailers~~ serving as detached single-family dwelling units placed either on private (non-rental) lots or within mobile home parks licensed by the Municipality of Anchorage, and shall apply to the following~~:~~ :

### 23.85.~~AE102~~BA102.7 Mobile homes, campers, and travel trailers.

Add the following section:

**23.85.~~AE102~~BA102.7 Mobile homes~~, campers, and travel trailers~~.**

**23.85.~~AE102~~BA102.7.1 Mobile homes.** Every mobile home built prior to June 15, 1976, shall be labeled as required in Section AE201, and shall conform to all of the following:

1. **FIRE WARNING SYSTEM -** Smoke detectors shall be provided with in accordance with ~~R314~~Chapter 3.
2. **FIRE PROTECTION -** Each mobile home shall be equipped with at least one 2-A rated portable fire extinguisher installed in accordance with NFPA 10-2018.
3. **ELECTRICAL SYSTEM -** All electrical equipment, wiring, and appliances shall be installed per Building Safety Handout No. R.10 Mobile Home Set-Up and Permit Requirements, as maintained by the Building Official.
4. **MECHANICAL SYSTEM -** All heating equipment shall be maintained in a safe condition. Additions, alterations, repairs and replacements shall comply with manufacturer's instructions and the currently adopted editions of the International Mechanical Code and the International Fuel Gas Code.
5. **PLUMBING SYSTEM -** All plumbing facilities shall be maintained in a safe and sanitary condition. Additions, alterations, repairs and replacements shall comply with manufacturer's instructions and the currently adopted edition of the Uniform Plumbing Code.
6. **EXIT FACILITIES -** Mobile homes shall have a minimum of two external doors located remotely from each other and so arranged as to provide means of unobstructed travel to the outside of the mobile home.
7. **GROUND FAULT CIRCUIT INTERUPTER (GFCI) -** Outlets shall have GFCI protection in accordance with the currently adopted edition of the National Electrical Code (NEC).

~~**23.85.AE102.7.2 Campers and travel trailers.** Campers and travel trailers shall not be occupied as a permanent dwelling. Campers and travel trailers may be occupied as a temporary dwelling in accordance with the limitations specified in AMC Title 21. When occupied as a temporary dwelling, campers and travel trailers shall be certified by the manufacturer as complying with ANSI A119.5 or NFPA 1192.~~

## 23.85.~~AE201~~ BA201 Definitions.

Add the following:

~~**CAMPER PARK.** A tourist facility approved by the Municipality for use by dependent and independent recreational vehicles, including motor homes, pickup campers, travel trailers, tent campers and similar recreational vehicles as opposed to a mobile home park which is licensed to accommodate mobile homes.~~

**MOBILE HOME PARK.** Any parcel or adjacent parcels of land in the same ownership which is utilized for occupancy by more than two mobile homes. This term shall not be construed to mean tourist facilities for parking of travel trailers or campers.

**MANUFACTURED HOME:**

Add the following at the end of the first paragraph:

Each manufactured home shall bear a certification label in accordance with the Manufactured Home Standards.

**MANUFACTURED HOME STANDARDS:**

Add the following to the definition:

Every manufactured home installed in the Municipality of Anchorage must be certified for the "North Zone" ~~(40 pounds per square foot)~~ for snow load (40 pounds per square foot) and heat loss "Comfort Zone 3" in accordance with HUD standards.

## 23.85.~~AE301~~BA104.1 Initial installation.

Add the following after the word "be" in the first sentence of the first paragraph:

…constructed, located, moved, set-up or…

## 23.85.~~AE301~~BA104.5 Gas and plumbing service.

Add the following section:

~~AE301~~BA104**.5 Gas and plumbing service.** The owner of a manufactured home or a licensed mobile home contractor may install or retrofit gas piping, gas appliances, or plumbing only under the following conditions:

1. The owner performing such work shall be a current occupant of the manufactured home and shall personally perform all work.
2. A licensed mobile home contractor may perform work on gas and plumbing utility connections only by use of a licensed journeyman plumber or journeyman gas fitter who is an employee of the contractor. All such work shall bear a tag with the identification number of the journeyman plumber or journeyman gas fitter who performs the work.
3. Except as provided in items 1 and 2 of this section, all plumbing, gas piping, or gas appliance retrofit work shall be performed by a licensed plumbing or gas contractor.
4. No person may pipe natural gas to service gas fired equipment unless:

a. Such equipment has been certified by the manufacturer as being suitable to that use; and

b. Such equipment has first been converted for use of natural gas.

### 23.85.~~AE302~~BA105.4 Who may apply.

Add the following section:

~~AE302~~BA105.**4 Who may apply.** Only the owner of a manufactured home or a licensed mobile home contractor may apply for a permit under this Section.

### 23.85.~~AE307~~ BA110.1 General (Utility service).

Add the following sentence to ~~AE307.1~~the end of this section:

All sewer, electricity, gas, and water services shall be installed and maintained in a safe manner in accordance with the appropriate adopted codes.

### 23.85.~~AE502~~BA114.3 Footings and foundations.

Replace the last sentence of the first paragraph with the following:

Footings shall have a minimum depth of 42 inches below exterior grade ~~on privately owned (non-rental) lots,~~ unless a greater depth is required by the Building Official based on a foundation investigation or other information.

Add the following exception:

Exception: Footings or piers in mobile home parks may be placed at surface grade, provided all other requirements are met.

### 23.85.~~AE502~~BA114.6 Under-floor clearances-ventilation and access.

Add the following to the second paragraph:

Where combustion air is not taken from the crawl space, and where the floor area of the home does not exceed 800 square feet, the ventilation requirement may be met by operable vents of 8 inches by 16 inches installed in skirting not less than 18 inches above exterior grade at opposite ends of the manufactured home.

### 23.85.~~AE503.~~BA115.1 Skirting and permanent perimeter enclosures.

Replace the first sentence of the first paragraph with the following:

Every manufactured home shall be skirted around its perimeter from the floor line to exterior grade with a skirting material having an insulation value of R-19 as published by the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE). A minimum of 6 mil polyethylene film vapor retarder shall entirely cover the soil surface of the crawl space.

### 23.85.~~AE604~~BA124.1 Ground anchors.

Replace the first paragraph with the following:

Ground anchors shall be designed and installed to resist overturning and lateral movement of the manufactured home, and shall extend at least 60 inches below exterior grade, or deeper if required by the Building Official because of poor soils. Ground anchors shall be installed for every manufactured home, except where a permanent foundation bearing at least 42 inches below grade is demonstrated by calculation to resist the forces as determined by Chapter 16 of the International Building Code.

**Commented [WB5]:** Not reviewed. Daniel King is reviewing this Appendix

### ~~23.85.ABC101.1.1 Prohibited conditions.~~

~~Delete item 2.~~

~~**23.85.ABC101.2 Conditions.**~~

~~Revise item 1 to say: "An ADU shall be permitted within an existing single-family dwelling, detached accessory structure or existing two-family dwelling or within an existing townhouse unit that is withing the scope of the International Residential Code."~~

~~In item 2 add after the first sentence: "Only one ADU is permitted in a two-family dwelling."~~

~~Revise item 5.2 to say: "May be the greater of 40% of the primary dwelling unit or 900 square feet.~~

~~**23.85.ABC105.1 Heating, ventilation and air-conditioning systems.**~~

~~**Delete this section**~~

**23.85.~~AK101A~~ABG101.1 General.**

Add after first paragraph:

Exceptions:

1. Accessory dwelling units as defined by AMC Title 21.
2. Existing wall and floor-ceiling assemblies.

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