SOUTHERN NEVADA
AMENDMENTS
TO THE
2009 INTERNATIONAL RESIDENTIAL CODE

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Clark County
Ronald L. Lynn
4701 W. Russell Road
Las Vegas, Nevada 89118
(702) 455-3000
Inspections (702) 455-8040

City of Las Vegas
Chris Knight
731 S. 4th Street
Las Vegas, Nevada 89101
(702) 229-6251
Inspections (702) 229-2071

City of North Las Vegas
Greg Blackburn
2240 Civic Center Drive
North Las Vegas, Nevada 89030
(702) 633-1577
Inspections (702) 633-1577

Boulder City
Ron Nybo
401 California Avenue
Boulder City, Nevada 89005
(702) 293-9282

City of Mesquite
Kurt Sawyer
10 E. Mesquite Boulevard
Mesquite, Nevada 89027
(702) 346-2835

City of Henderson
Mohammad Jadid
240 Water Street
Henderson, Nevada 89009
(702) 267-3650
Inspections (702) 267-3900

Pahrump Regional Planning District
Brent Steed
1210 E. Basin, Suite 1
Pahrump, Nevada 89060
(775) 751-3773

Clark County School District
Lisa Conner
4190 McLeod Drive, 1st Floor
Las Vegas, Nevada 89121
(702) 799-7605
PREFACE

This document was developed by the Southern Nevada Building Officials’ International Residential Code Committee and presents recommended amendments to the 2009 *International Residential Code* (IRC) as published by the International Code Council (ICC).

Participation in the 2009 International Residential Code Committee was open to all interested parties. However, voting on amendment proposals was limited to one vote each for the seven Southern Nevada municipalities (Clark County, Henderson, Las Vegas, North Las Vegas, Boulder City, Pahrump, and Mesquite), the Clark County School District, and three industry representatives. All International Residential Code Committee proceedings were conducted in accordance with Robert’s Rules of Order.

The recommended amendments contained herein are not code unless adopted and codified by governmental jurisdictions. These amendments are not intended to prevent the use of any material or method of construction not specifically prescribed herein, provided any alternates have been approved and their use authorized by the Building Official. This document may be copied and used in whole or in part without permission or approval from the organizations listed on the cover page.
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Section R101 General.

Revise Section R101.1 Title, as follows:

R101.1 Title These provisions shall be known as the *Residential Code for One- and Two-family Dwellings* of the City of Las Vegas, City of North Las Vegas, City of Henderson, City of Boulder City, City of Mesquite, Pahrump Regional Planning District and Clark County, and shall be cited as such and will be referred to herein as “this code”.

Revise Section R101.2 Scope, as follows:

R101.2 Scope The provisions of the *International Residential Code for One- and Two-family Dwellings*, shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height with a separate means of egress and their accessory structures. Where this code refers to codes not adopted by the jurisdiction, the applicable code adopted by the jurisdiction shall govern.

Exception: Live/work units complying with the requirements of Section 419 of the *International Building Code* shall be permitted to be built as one- and two-family dwellings or townhouses. The Fire suppression required by Section 419.5 of the *International Residential Code* when constructed under the *International Residential Code for One- and two-family Dwellings* shall conform to Section 903.3.1.3 of the *International Building Code*.

Delete Sections R102 through R114 in their entirety.

Section R202 Definitions.

Revise the definition of Townhouse, as follows:

TOWNHOUSE. A single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from foundation to roof and with open space on at least two sides, and as recorded on a final map or major subdivision map.

Section R301.1.2 Construction Systems.

Revise Section R301.1.2, as follows:

R301.1.2 Construction systems. The requirements of this code are based on platform and balloon-frame construction for light-frame buildings. The requirements for concrete and masonry buildings are based on a balloon framing system. Other framing systems must have equivalent detailing to ensure force transfer, continuity and compatible deformations. All structural plain (unreinforced) concrete shall be designed in accordance with the 2009 IBC. All plain (unreinforced) masonry, and rubble stone masonry construction is prohibited. All tables, figures and references for these unreinforced systems shall be deleted.
Table R301.2 Climatic and Geographic Design Criteria.

Revise Table R301.2, as follows:

<table>
<thead>
<tr>
<th>WIND DESIGN</th>
<th>SUBJECT TO DAMAGE FROM</th>
<th>ICE BARRIER UNDERLAYMENT REQUIRED</th>
<th>FLOOD HAZARDS</th>
<th>AIR FREEZING INDEX (°F-days)</th>
<th>MEAN ANNUAL TEMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEED (MPH)</td>
<td>TOPOGRAPHIC EFFECTS</td>
<td>WEATHER IND</td>
<td>FROST DEPTH</td>
<td>TERMITE</td>
<td>DESIGN DRY BULB TEMP</td>
</tr>
<tr>
<td>0 &lt; 2000'</td>
<td>90</td>
<td>NO</td>
<td>D1</td>
<td>Negligible</td>
<td>I1-5000</td>
</tr>
<tr>
<td>5 &lt; 3600'</td>
<td>90</td>
<td>NO</td>
<td>D2</td>
<td>Negligible</td>
<td>I1-5000</td>
</tr>
<tr>
<td>10 &lt; 4500'</td>
<td>90</td>
<td>NO</td>
<td>D3</td>
<td>Negligible</td>
<td>I1-5000</td>
</tr>
</tbody>
</table>

Spring Mountain Range

<table>
<thead>
<tr>
<th>SEE IBC FOR ELEVATIONS &gt;6000'</th>
<th>WIND DESIGN</th>
<th>SUBJECT TO DAMAGE FROM</th>
<th>ICE BARRIER UNDERLAYMENT REQUIRED</th>
<th>FLOOD HAZARDS</th>
<th>AIR FREEZING INDEX (°F-days)</th>
<th>MEAN ANNUAL TEMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>IB1 IB2 IB3</td>
<td>IB1 IB2 Ib3</td>
<td>IB1 IB2 IBC</td>
<td>IB1 IB2 Ib3</td>
<td>IB1 IB2 IBC</td>
<td>IB1 IB2 IBC</td>
<td>IB1 IB2 IBC</td>
</tr>
</tbody>
</table>

For SI: 1 pound per square foot = 0.0479 kN/m², 1 mile per hour = 0.447 m/s.

a. Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code. The weather column shall be filled in with the weathering index (i.e., “negligible,” “moderate” or “severe”) for concrete as determined from the Weathering Probability Map [Figure R301.2(3)]. The grade of masonry units shall be determined from ASTM C34, C55, C62, C73, C90, C128, C145, C216 or C652.

b. The frost line depth may require deeper footings than indicated in Figure R403.1(1). The jurisdiction shall fill in the frost line depth column with the minimum depth of footing below finish grade.

c. The jurisdiction shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.

d. The jurisdiction shall fill in this part of the table with the wind speed from the basic wind map [Figure R301.2(4)]. Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.

e. The jurisdiction shall fill in this part of the table with the mean annual temperature from the National Climatic Data Center data table “Air Freezing Index-USA Method (Base 32°F Fahrenheit)” at www.ncdc.noaa.gov/psf.html.

f. In accordance with Sections R905.2.7.1, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1, where there has been a history of local damage from the effects of ice damming, the jurisdiction shall fill in this part of the table with “YES.” Otherwise, the jurisdiction shall fill in this part of the table with “NO”.

For SI: 1 pound per square foot = 0.0479 kN/m², 1 mile per hour = 0.447 m/s.

a. Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code. The weather column shall be filled in with the weathering index (i.e., “negligible,” “moderate” or “severe”) for concrete as determined from the Weathering Probability Map [Figure R301.2(3)]. The grade of masonry units shall be determined from ASTM C34, C55, C62, C73, C90, C128, C145, C216 or C652.

b. The frost line depth may require deeper footings than indicated in Figure R403.1(1). The jurisdiction shall fill in the frost line depth column with the minimum depth of footing below finish grade.

c. The jurisdiction shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.

d. The jurisdiction shall fill in this part of the table with the wind speed from the basic wind map [Figure R301.2(4)]. Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.

e. The temperature shall be permitted to reflect local climate or local weather experience as determined by the building official.

f. The jurisdiction shall fill in this part of the table with the Seismic Design Category determined from Section R301.2.2.1.

g. September 27, 2002. “The Flood Insurance Study for Clark County, Nevada and Incorporated Areas”, as amended or revised with the accompanying Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) and related supporting data along with any revisions thereto.

h. In accordance with Sections R905.2.7.1, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1, where there has been a history of local damage from the effects of ice damming, the jurisdiction shall fill in this part of the table with “YES.” Otherwise, the jurisdiction shall fill in this part of the table with “NO”.

i. The jurisdiction shall fill in this part of the table with the 100-year return period air freezing index (BF-days) from Figure R403.3(2) or from the 100-year (99%) value on the National Climatic Data Center data table “Air Freezing Index-USA Method (Base 32°F Fahrenheit)” at www.ncdc.noaa.gov/psf.html.

j. The jurisdiction shall fill in this part of the table with the mean annual temperature from the National Climatic Data Center data table “Air Freezing Index-USA Method (Base 32°F Fahrenheit)” at www.ncdc.noaa.gov/psf.html.

k. In accordance with Section R301.2.1.5, where there is local historical data documenting structural damage to buildings due to topographic wind speed-up effects, the jurisdiction shall fill in this part of the table with “YES.” Otherwise, the jurisdiction shall indicate “NO” in this part of the table.

Section R301.2.2 Seismic Provisions.

Delete the Exception in Subsection R301.2.2, as follows:

R301.2.2 Seismic provisions. The seismic provisions of this code shall apply to buildings constructed in Seismic Design Categories C, D0, D1 and D2, as determined in accordance with this section.
Table R301.5 Minimum Uniformly Distributed Live Loads.

Revise Table R301.5 by increasing the live load requirement for sleeping rooms, as follows:

<table>
<thead>
<tr>
<th>USE</th>
<th>LIVE LOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attics without storage(^b)</td>
<td>10</td>
</tr>
<tr>
<td>Attics with limited storage(^b,g)</td>
<td>20</td>
</tr>
<tr>
<td>Habitable attics and attics served with fixed stairs</td>
<td>30</td>
</tr>
<tr>
<td>Balconies (exterior) and decks(^e)</td>
<td>40</td>
</tr>
<tr>
<td>Fire escapes</td>
<td>40</td>
</tr>
<tr>
<td>Guardrails and handrails(^d)</td>
<td>200(^h)</td>
</tr>
<tr>
<td>Guardrail in-fill Components(^f)</td>
<td>50(^h)</td>
</tr>
<tr>
<td>Passenger vehicle garages(^a)</td>
<td>50(^a)</td>
</tr>
<tr>
<td>Rooms other than sleeping room</td>
<td>40</td>
</tr>
<tr>
<td>Sleeping rooms</td>
<td>40</td>
</tr>
<tr>
<td>Stairs</td>
<td>40(^c)</td>
</tr>
</tbody>
</table>

For SI: 1 pound per square foot = 0.0479 kPa, 1 square inch = 645 mm\(^2\), 1 pound = 4.45 N.

- **a.** Elevated garage floors shall be capable of supporting a 2,000-pound load applied over a 20-square-inch area.
- **b.** Attics without storage are those where the maximum clear height between joist and rafter is less than 42 inches, or where there are not two or more adjacent trusses with the same web configuration capable of containing a rectangle 42 inches high by 2 feet wide, or greater, located within the plane of the truss. For attics without storage, this live load need not be assumed to act concurrently with any other live load requirements.
- **c.** Individual stair treads shall be designed for the uniformly distributed live load or a 300-pound concentrated load acting over an area of 4 square inches, whichever produces the greater stresses.
- **d.** A single concentrated load applied in any direction at any point along the top.
- **e.** See Section R502.2.2 for decks attached to exterior walls.
- **f.** Guard in-fill components (all those except the handrail), balusters and panel fillers shall be designed to withstand a horizontally applied normal load of 50 pounds on an area equal to 1 square foot. This load need not be assumed to act concurrently with any other live load requirement.
- **g.** For attics with limited storage and constructed with trusses, this live load need be applied only to those portions of the bottom chord where there are two or more adjacent trusses with the same web configuration capable of containing a rectangle 42 inches high or greater by 2 feet wide or greater, located within the plane of the truss. The rectangle shall fit between the top of the bottom chord and the bottom of any other truss member, provided that each of the following criteria is met.
  1. The attic area is accessible by a pull-down stairway or framed in accordance with Section R807.1.
  2. The truss has a bottom chord pitch less than 2:12.
  3. Required insulation depth is less than the bottom chord member depth.

  The bottom chords of trusses meeting the above criteria for limited storage shall be designed for the greater of the actual imposed dead load or 10 psf, uniformly distributed over the entire span.
- **h.** Glazing used in handrail assemblies and guards shall be designed with a safety factor of 4. The safety factor shall be applied to each of the concentrated loads applied to the top of the rail, and to the load on the in-fill components. These loads shall be determined independent of one another, and loads are assumed not to occur with any other live load.
Section R301.6 Roof Load.

Revise Section R301.6, as follows:

R301.6 Roof load. Roof shall be designed for the live load indicated in Table R301.6 or the snow load indicated in Table R301.2(1), whichever is greater. Roof live loads in accordance with Section 1607.11 of the 2009 International Building Code may be used in place of the loads in Table R301.6.

Section R302.1 Exterior Walls.

Revise Section R302.1 Exterior walls, and add Exceptions # 6 and #7, as follows:

R302.1 Exterior walls. Construction, projections, openings and penetrations of exterior walls of dwellings and accessory buildings shall comply with Table R302.1. To determine when protection is required by Table R302.1, the dimension shall be determined from property line to the finish face of the wall.

Exceptions:

1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the fire separation distance.
2. Walls between dwellings and accessory structures located on the same lot. Garages shall comply with Section R302.6.
3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the lot. Projections beyond the exterior wall shall not extend over the lot line.
4. Detached garages accessory to a dwelling located within 2 feet (610 mm) of a lot line are permitted to have roof eave projections not exceeding 4 inches (102 mm).
5. Foundation vents installed in compliance with this code are permitted.
6. Exterior decorative trim shall not project more than 4 inches (102 mm) into the minimum fire separation distance and shall not exceed ten percent (10%) of the aggregate wall area on which it is located.
7. When there are no eave, attic or gable-end vent openings, the unprotected eave is limited to a maximum of 12 inches (305 mm) beyond the wall construction into the minimum fire separation distance. The unprotected eave projection is further limited to a maximum depth of 24 inches (610 mm) from the roof sheathing to the bottom of the projection.
Revised Table R302.1 Exterior Walls, as follows:

### Table R302.1 Exterior Walls

<table>
<thead>
<tr>
<th>EXTERIOR WALL ELEMENT</th>
<th>MINIMUM FIRE-RESISTANCE RATING</th>
<th>MINIMUM FIRE SEPARATION DISTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walls</td>
<td>(Fire-resistance rated) 1 hour-tested in accordance with ASTM E119 or UL 263 with exposure from both sides</td>
<td>&lt; 5 feet</td>
</tr>
<tr>
<td></td>
<td>(Not fire-resistance rated) 0 hours</td>
<td>≥ 5 feet</td>
</tr>
<tr>
<td>Projections</td>
<td>Not allowed</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>(Fire-resistance rated) 1 hour on the underside</td>
<td>≥ 2 feet to &lt;5 feet</td>
</tr>
<tr>
<td></td>
<td>(Not fire-resistance rated) 0 hours</td>
<td>≥ 5 feet</td>
</tr>
<tr>
<td>Openings</td>
<td>Not Allowed</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>25% maximum of wall area</td>
<td>≥3 feet to &lt; 5 feet</td>
</tr>
<tr>
<td></td>
<td>Unlimited</td>
<td>≥5 feet</td>
</tr>
<tr>
<td>Penetrations</td>
<td>All</td>
<td>Comply with Section 317.3</td>
</tr>
<tr>
<td></td>
<td>None Required</td>
<td>None Required</td>
</tr>
</tbody>
</table>

### Section R311.7.5 Landings for stairways

Revised Subsection R311.7.5, as follows:

**R311.7.5 Landings for stairways.** There shall be a floor or landing at the top and bottom of each stairway.

**Exception:** A floor or landing is not required at the top of an interior flight of stairs, including stairs in an enclosed garage, provided a door does not swing over the stairs. A flight of stairs shall not have a vertical rise larger than 12 feet-6 inches (3810mm) between floor levels or landings. The width of each landing shall not be less than the width of the stairway served. Every landing shall have a minimum dimension of 36 inches (914 mm) measured in the direction of travel.

### Section R313.1 Townhouse automatic fire sprinkler systems

Revised Subsection R313.1.1, as follows:

**R313.1 Townhouse automatic fire sprinkler systems.** An automatic residential fire sprinkler system shall be installed in townhouses.

**Exception:** An automatic residential fire sprinkler system shall not be required when additions or alterations are made to existing townhouses that do not have an automatic residential fire sprinkler system installed.

**R313.1.1 Design and installation.** Automatic residential fire sprinkler systems for townhouses shall be designed and installed in accordance with the International Fire Code.
Section R313.2 One- and two-family dwellings automatic fire systems.

Revise Section R313.2, as follows:

R313.2 One- and two-family dwellings automatic fire systems. An automatic residential fire sprinkler system shall be installed in one- and two-family dwellings.

Exception: An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential sprinkler system.

Section R313.2.1 Design and installation.

Revise Section R313.2.1, as follows:

R313.2.1 Design and installation. Automatic residential fire sprinkler systems shall be designed and installed in accordance with the International Fire Code.

Section R314 Smoke Alarms and Carbon Monoxide detectors.

Revise Section R314, as follows:

R314 SMOKE ALARMS AND CARBON MONOXIDE DETECTORS

R314.1 Smoke detection and notification. All smoke alarms shall be listed in accordance with UL 217 and installed in accordance with the provisions of this code and the household fire warning equipment provisions of NFPA 72.

R314.2 Smoke detection systems. Household fire alarm systems installed in accordance with NFPA 72 that include smoke alarms, or a combination of smoke detector and audible notification device installed as required by this section for smoke alarms shall be permitted. The household fire alarm system shall provide the same level of smoke detection and alarm as required by this section for smoke alarms. Where a household fire warning system is installed using a combination of smoke detector and audible notification device(s), it shall become a permanent fixture of the occupancy and owned by the homeowner. The system shall be monitored by an approved supervising station and be maintained in accordance with NFPA 72.

Exception: Where smoke alarms are provided meeting the requirements of Section R314.4

R314.2.1 Carbon Monoxide Alarms. Carbon monoxide alarms shall be listed as complying with UL2034 and shall be installed in accordance with this code and the manufacturer’s installation instructions. A combination of smoke and carbon monoxide alarm shall be permitted.

Exception: Where carbon monoxide alarms are provided meeting the requirements of Section R314.4

R314.3 Location. Smoke and carbon monoxide alarms shall be installed in the following locations:

1. Smoke alarms in each sleeping room.
2. Smoke alarms outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. Smoke alarms on each additional story of the dwelling, including basements but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.
4. Carbon Monoxide alarms outside of sleeping area in the immediate vicinity of the bedrooms in dwellings units within which fuel-fired appliances are installed and in dwelling units that have attached garages.
5. Carbon Monoxide alarms within each bedroom which contains a fuel-fired appliance.

When more than either one (1) smoke alarm or more than one (1) carbon monoxide alarm is required to be installed within an individual dwelling unit all alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

**R314.3.1 Alterations, repairs and additions.** When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke and carbon monoxide alarms located as required for new dwellings.

**Exceptions:**
1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck, are exempt from the requirements of this section.
2. Replacement, alteration or repairs of existing electrical, plumbing or mechanical systems are exempt from the requirements of this section.

**R314.4 Power source.** Smoke and carbon monoxide alarms shall receive their primary power from the building wiring when such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Smoke and carbon monoxide alarms shall be interconnected.

**Exceptions:**
1. Smoke and carbon monoxide alarms shall be permitted to be battery operated when installed in buildings without commercial power.
2. Interconnection and hard-wiring of smoke and carbon monoxide alarms in existing areas shall not be required where the alteration, addition or remodel does not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for hard wiring and interconnection without the removal of interior finishes.

Deleted section R315 in its entirety

**Section R401.3 Drainage.**

*Delete Section R401.3 in its entirety and replace, as follows:*

**R401.3 Drainage.** The ground immediately adjacent to the foundation shall be sloped away from the building at a slope of not less than one unit vertical in 20 units horizontal (5-percent slope) for a minimum distance of 10 feet (3048 mm) measured perpendicular to the face of the wall. If physical obstructions or lot lines prohibit 10 feet (3048mm) of horizontal distance, a 5-percent slope shall be provided to an approved alternative method of diverting water away from the foundation. Swales used for this purpose shall be sloped a minimum of 1 percent along the flow line where located within 10 feet (3048mm) of the building foundation. Impervious surfaces within 10 feet (3048mm) of the building foundation shall be sloped a minimum of 2 percent away from the building.
Exception: Where low expansive, low collapsible, low soluble soil conditions occur or where an exterior asphalt or concrete surface abuts a building, the slope of the ground away from the building foundation is permitted to be reduced to not less than one unit vertical in 48 units (2-percent slope).

The procedure used to establish the final ground level adjacent to the foundation shall account for additional settlement of the backfill.

Section R 401.4 Soil Tests.

Delete Sections R401.4, R401.4.1, R401.4.2 and Table R401.4.1 in their entirety and replace with a new section R401.4, as follows:

401.4 Soil tests. All structures or additions shall have a soils geotechnical reports complying with the 2009 IBC Chapter 18.

Exceptions. At the option of the building official, the following projects may be exempted from having a geotechnical investigation:

1. Single story structures, additions, or remodels with a footprint less than 600 square feet.
2. Fences.
3. Site retaining walls less than 4 feet in retained height.
4. Mobile homes, trailers, modular buildings that do not have concrete or masonry foundations.
5. Pre-engineered carports.
6. Signs, light poles, and communication towers less than 40 feet in height.

Section R403.1.3 Seismic reinforcing.

Delete the exception in Subsection R403.1.3, as follows:

R403.1.3 Seismic reinforcing. Concrete footings located in Seismic Design Categories D0, D1 and D2, as established in Table R301.2(1), shall have minimum reinforcement. Bottom reinforcement shall be located a minimum of 3 inches (76 mm) clear from the bottom of the footing.

In Seismic Design Categories D0, D1 and D2 where a construction joint is created between a concrete footing and a stem wall, a minimum of one No. 4 bar shall be installed at not more than 4 feet (1219 mm) on center. The vertical bar shall extend to 3 inches (76 mm) clear of the bottom of the footing, have a standard hook and extend a minimum of 14 inches (357 mm) into the stem wall.

In Seismic Design Categories D0, D1 and D2 where a grouted masonry stem wall is supported on a concrete footing and stem wall, a minimum of one No. 4 bar shall be installed at not more than 4 feet (1219 mm) on center. The vertical bar shall extend to 3 inches (76 mm) clear of the bottom of the footing and have a standard hook.

In Seismic Design Categories D0, D1 and D2 masonry stem walls without solid grout and vertical reinforcing are not permitted.

Section R406.2 Concrete and masonry foundation waterproofing.

Revise Section R406.2, as follows:
R406.2 Concrete and masonry foundation waterproofing. When the approved geotechnical report indicates there is a high water table or other severe soil-water conditions are known to exist, exterior foundation walls that retain earth and enclose interior spaces and floors below grade shall be waterproofed from the top of the footing to the finished grade. Walls shall be waterproofed in accordance with one of the following:

1. Two-ply hot mopped felts.
2. Fifty five pound (25 kg) roll roofing.
3. 10-mil (.010 inch; 0.254 mm) polyvinyl chloride.
4. 10-mil (.010 inch; 0.254 mm) polyethylene.
5. Forty-mil (1 mm) polymer-modified asphalt.
6. Sixty-mil (1.5 mm) flexible polymer cement.
7. One-eighth inch (3 mm) cement-based, fiber-reinforced, waterproof coating.
8. Sixty-mil (0.22) solvent free liquid-applied synthetic rubber.

Exception: Organic-solvent-based products such as hydrocarbons, chlorinated hydrocarbons, ketones and esters shall not be used for ICF walls with expanded polystyrene form material. Use of plastic roofing cements, acrylic coatings, latex coatings, mortars and pargings to seal ICF walls is permitted. Cold-setting asphalt or hot asphalt shall conform to type C of ASTM D 449. Hot asphalt shall be applied at a temperature of 200°F (93°C).

All joints in membrane waterproofing shall be lapped and sealed with an adhesive compatible with the membrane.

Section R506.2.3 Vapor retarder.

Revise Subsection R506.2.3, as follows:

R506.2.3 Vapor retarder. A 10 mil (0.010 inches; 0.254 mm) polyethylene or approved vapor retarder with joints lapped not less than 6 inches (152 mm) shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists.

Exception: The vapor retarder may be omitted:

1. From detached garages, utility buildings and other unheated accessory structures.
2. For unheated storage rooms having an area of less than 70 square feet (6.5m²) and carports.
3. From driveways, walks, patios and other flatwork not likely to be enclosed and heated at a later date.
4. Where approved by the building official, based on local site conditions.
Revise Figure R606.11(1), as follows:

- SLOPED ROOF
  - Sheathing nailed in accordance with Table R602.3 (1)
  - Bolt embedded at 5 1/2"
  - Tension tie or holdowns with 1200# anchor size for mfr.
  - Min. capacity at 450# O.C.

- FLAT ROOF
  - Sheathing nailed in accordance with Table R602.3 (1) Typical
  - Bolt embedded at 5 1/2"

- JOIST PERPENDICULAR TO WALL
  - Approved metal connector
  - 3" nominal ledger
  - 16 gage strap 4 bays
  - 8" min. at 48" o.c.
  - With (6) re common nails per block

- JOIST PARALLEL TO WALL
  - Bolt embedded at 5 1/2"

**Table R502.3 (1)**

<table>
<thead>
<tr>
<th>Joist Span</th>
<th>BOLT SIZE AND SPACING</th>
<th>ROOF</th>
<th>FLOOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 FEET</td>
<td>1/2&quot;/8 at 24&quot; O.C.</td>
<td>3/4&quot;/8 at 24&quot; O.C.</td>
<td>1/2&quot;/8 at 24&quot; O.C.</td>
</tr>
<tr>
<td>10 to 100</td>
<td>(2) 1/2&quot;/8 at 24&quot; O.C.</td>
<td>3/4&quot;/8 at 24&quot; O.C.</td>
<td>1/2&quot;/8 at 15&quot; O.C.</td>
</tr>
<tr>
<td>15 TO 150</td>
<td>(2) 1/2&quot;/8 at 24&quot; O.C.</td>
<td>3/4&quot;/8 at 24&quot; O.C.</td>
<td>1/2&quot;/8 at 16&quot; O.C.</td>
</tr>
</tbody>
</table>

1. BOLTS SHALL BE INSTALLED WITH A METAL PLATE, METAL STRAP, OR WASHER NOT LESS THAN A STANDARD CUT WASHED BETWEEN THE WOOD AND THE BOLT HEAD AND BETWEEN THE WOOD AND THE NUT.

**Note:**

Where bolts are located in hollow masonry, the cells in the courses receiving the bolt shall be grouted solid. For SI: 1 inch = 25.4mm, 1 pound = 4.45KN, 1 pound per square foot = 0.0499KNm.
Section R613.1 General.

Revise Section R613.1, as follows:

613.1 General. Structural insulated panel (SIP) walls shall be designed in accordance with the provisions of this section. The design and installation shall be per the approved listing requirements.
Section R806.2 Minimum Area.

Revise Section R806.2, as follows:

**R806.2 Minimum area.** The total net free ventilating area shall not be less than 1/150 of the area of the space ventilated except that reduction of the total area to 1/300 is permitted provided that at least 50 percent and not more than 80 percent of the required ventilating area is provided by ventilators located in the upper 1/3 portion of the space with the balance of the required ventilation provided by ventilators located in the lower 1/3 portion of the space to be ventilated.

Section R807.1 Attic Access.

Revise Section R807.1, as follows:

**R807.1 Attic access.** Buildings with combustible ceiling or roof construction shall have at least one (1) attic access opening to attic areas that exceed 30 square feet and have a vertical height of 30 inches or greater. Additional access openings shall be provided to attic areas that have electrical, plumbing, or mechanical fixtures or equipment that require access for periodic maintenance.

**Exception:** Access openings are not required for non-contiguous enclosed attic spaces that do not have plumbing, mechanical, or electrical components that require access for periodic maintenance.

The rough-framed opening shall not be less than 22 inches by 30 inches (559 mm by 762 mm) and shall be located in a hallway or other readily accessible location. When located in a wall, the opening shall be a minimum of 22 inches wide by 30 inches high. When the access is located in a ceiling, minimum unobstructed headroom in the attic space shall be 30 inches (762 mm) at some point above the access measured vertically from the bottom of ceiling framing members. See the adopted Mechanical Code for access requirements where mechanical equipment is located in attics.

Section R905.7 Wood shingles.

Delete Section R905.7 in its entirety and replace, as follows:

**R905.7 Wood shingles. Not permitted.**

Section R905.8 Wood Shakes.

Delete Section R905.8 in its entirety and replace, as follows:

**R905.8 Wood shakes. Not permitted.**

Section R1006.1 Exterior air.

Revise Section R1006.1 and 1006.1.1, as follows:

**R1006.1 Exterior air.** Factory-built or masonry fireplaces and appliances covered in this chapter shall be equipped with an exterior air supply.

**Exception:** Factory built fireplaces and appliances in compliance with the mechanical code for combustion air.
R1006.1.1 Factory-built fireplaces and appliances. Exterior combustion air ducts for factory-built fireplaces and appliances shall be a listed component of the fireplace and shall be installed according to the fireplace manufacturer's instructions.

Section R1007.1 Types of fireplaces.

Add a new Section R1007.1, as follows:

R1007.1 Types of fireplaces. No solid fuel burning fireplace shall be constructed in any residential dwelling in Boulder City or the Las Vegas Valley Hydrographic Basin at an elevation of less than 4000 feet (1220 m) above sea level unless it is one of the following:

1. A dedicated solid fuel burning factory-built enclosed fireplace or factory-built heater that conforms to the “Phase II Environmental Protection Agency, Standards of Performance for New Stationary Sources, New Residential Heaters” as prescribed in 40 CFR Part 60, Subpart AAA, as verified by a nationally recognized listing agency.

2. A masonry fireplace or masonry heater constructed in accordance with Sections R1001, R1002 and R1003 or a factory-built fireplace which also has one of the following installed:
   (a) A listed and labeled wood-burning insert which meets the standards described within this subsection and installed in accordance with the manufacturer’s installation instructions.
   (b) A listed and labeled gas log which meets the standards described within this subsection and installed in accordance with the manufacturer’s installation instructions.

The fireplace opening shall be completely enclosed with a cover of solid glass, steel, or cast iron. The covering may be either solid or openable. A caution sign shall be permanently installed and maintained where it is readily visible at all times. The sign shall state: “Caution: approved for fuel gas use only. Damper shall remain permanently blocked open.” The letters on the sign shall be a minimum of 3/8 inches in height.

R1007.2 Types of Appliances. The following appliances must be tested, listed, labeled and installed per the manufacturer’s installation instructions:

1. Decorative electrical appliances
2. Decorative vented gas appliances
3. Decorative un-vented gas appliances or heaters

Chapters 11 through 43

Delete Chapters 11 through 43 in their entirety.

Appendices A, B, C, D, E, F, G, I, J, L, M, N, O, P and Q

Delete Appendices A, B, C, D, E, F, G, I, J, L, M, N, O, P and Q, in their entirety.

Appendix H

Adopt Appendix H – Patio Covers

Appendix K

Adopt Appendix K – Sound Transmission