Section R202, Definitions. Change the definition of Dwelling to read: Dwelling. Any building that contains one or two dwelling units used, intended, or designed to be built, used, leased, let or hired out to be occupied, that is occupied for living purposes.

Section R202, Definitions. Add the following definitions:

Foundation wall height. The total distance from the top of the footing to the top of the foundation wall.

Sleeping Room. Any room in the house that is greater than 70 sq. ft., has built-in closet space and typically could be used as a bedroom. This does not include rooms used exclusively for cooking, eating, family living or gathering and excludes bathrooms, toilet rooms, halls, storage, utility and workshop space and all unconditioned space.

Section R202, Definitions. Change the definition of Townhouse to read:

Townhouse. A single-family dwelling unit constructed in a group of two or more attached units in which each unit extends from foundation to roof and with open space on at least two sides, and with separate egress directly to the exterior from each dwelling unit. Dwelling units within a building with a common egress shall be apartments and regulated by the International Building Code (IBC).

Add the following information to Table R 301.2(1)

<table>
<thead>
<tr>
<th>GROUND SNOW LOAD</th>
<th>WIND</th>
<th>SUBJECT TO DAMAGE FROM</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEED</td>
<td>Topography effects</td>
<td>Severe</td>
</tr>
<tr>
<td>Special wind regions</td>
<td>Weathering</td>
<td>Frost Line Depth</td>
</tr>
<tr>
<td>Windborne debris zone</td>
<td>Termite</td>
<td>WINTER design TEMP</td>
</tr>
<tr>
<td>SEISMIC DESIGN CATEGORY</td>
<td>ICE</td>
<td>BARRIER UPGRADE REQUIRED</td>
</tr>
<tr>
<td>A</td>
<td>42</td>
<td>M-H -3* Yes 1971 1680 51.2</td>
</tr>
</tbody>
</table>

MANUAL J DESIGN CRITERIA®

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Latitude</th>
<th>Winter Heating</th>
<th>Summer Cooling</th>
<th>Altitude correction</th>
<th>Indoor design temperature</th>
<th>Design temperature</th>
<th>Heating temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling temperature difference</td>
<td>Wind velocity heating</td>
<td>Wind velocity cooling</td>
<td>Coincident wet bulb</td>
<td>Daily range</td>
<td>Winter humidity</td>
<td>Summer humidity</td>
<td></td>
</tr>
</tbody>
</table>

The jurisdiction shall fill in this part of the table with the wind speed from the basic ultimate wind speed map (Figure R301.2(5)A). Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.14.

Table R301.5, Minimum Uniformly Distributed Live Loads. Change the table to read: Sleeping rooms - 30 40
Section R302.2.2, Common walls. Change the paragraph to read as follows: Common walls separating townhouses shall be assigned a fire-resistance rating in accordance with Item 1 or 2. The common wall shared by two townhouses shall be constructed without plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical, cable and telephone installations shall be in accordance with Chapter 44 of the Municipal Code and shall be installed in raceways and metallic outlet boxes. Penetrations of the membrane of common walls for electrical outlet boxes shall be in accordance with Section R302.4.

Section R302.3, Two-family dwellings. Delete exception 1 in its entirety.

Section R303.8, Exterior stairway illumination. Revise to read as follows: Exterior stairways shall be provided with an artificial light source located at the top of the stairway. Exterior stairways providing access to a basement from the outdoor grade level shall be provided with an artificial light source located at the bottom of the stairway.

Section R305.1, Minimum height. Add exception 4: The building official shall have the authority to waive the requirements of this section where pre-existing conditions will not allow the requirements to be met.

Section R307.1, Space Required. Change to read as follows: Fixtures shall be spaced as per Chapter 49 of the Omaha Plumbing Code.

Figure R307.1, Minimum Fixture Clearances. Delete Figure R307.1 Minimum Fixture Clearances, in its entirety.

Section 309.5, Fire Sprinklers. Delete section in its entirety.

Section R310.1, Emergency escape and rescue opening. Delete exception 2 in its entirety.

Section R310.6, Alterations or repairs of existing basements. Revise section to read as follows: An emergency escape and rescue opening is not required where existing basements undergo alterations or repairs.

Exception: New sleeping rooms created in an existing basement shall be provided with emergency escape and rescue openings in accordance with Section R310.1.

Section R 311.3.1, Floor elevations at the required egress doors. Revise the exception to read as follows:

Exception: The landing or floor on the exterior side shall be not more than 7-3/4" (196 mm) below the top of the interior finish floor provided that the door does not swing over the landing or floor.

Section R311.3.2, Floor elevations at other exterior doors. Revise section to read as follows: Doors other than the required egress door shall be provided with landings or floors not more than 7-3/4" (196 mm) below the top of the finish floor.

Exception: A top landing is not required where a stairway of not more than three risers is located on the exterior side of the door, provided that the door does not swing over the stairway.
Section R311.7.2, Headroom. Add exception 3: The building official shall have the authority to waive the requirements of this section where pre-existing conditions will not allow the requirements to be met.

Section R311.7.5.1, Risers. Change to read as follows: The riser height shall be not more than 7 3/4 inches (196mm). The riser shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5mm). Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees (0.51 rad) from vertical. At open risers, openings located more than 30 inches (762mm), as measured vertically, to the floor or grade below shall not permit the passage of a 4 inch (102 mm) 6 1/2 inch (165mm) diameter sphere.

Section R311.7.8.4, Continuity. Add exception 3 to read as follows:

Exceptions:

3. Handrails for stairways shall be permitted to have no more than a 4" break (102 mm) due to wall offsets and other ornamental features.

Section 312.2, Window fall protection. Delete this section in its entirety.

Section R313, Automatic Fire Sprinkler Systems. Delete this section and replace with: One- and two-family dwellings and townhouses may be protected by an automatic sprinkler system installed in accordance with P2904, NFPA 13, 13R or 13D. Such dwelling units shall have firewalls, openings and projections designed and protected in accordance with R302.

Section R317.1, Location required Change location #2 to read as follows: All wood framing members, sills or plates that rest on concrete or masonry exterior walls.

Section R317.1.1, Field treatment Delete this section in its entirety.

Section R317.1.4, Wood columns. Delete all exceptions and replace with:

Exception: Interior columns, either exposed or enclosed within the framing cavity, provided such columns are separated from any concrete or masonry by approved wood of natural decay resistance, or approved pressure-preservative treated wood.

Section R318.1.2, Field treatment. Delete this section in its entirely.

Section R326, Swimming pools, spas and hot tubs. Delete this section in its entirely.

Section R402.1, Wood foundations. Delete this section in its entirely.

Section R403.1, General. Revise section to read as follows: All exterior walls shall be supported on continuous concrete footings, or other approved structural systems which shall be of sufficient design to accommodate all loads according to Section R301 and to transmit the resulting loads to the soil within the limitations as determined from the character or the soil. Footings shall be supported on undisturbed natural soils or engineered fill. Concrete footing shall be designed and constructed in accordance with the provisions of Section R403 or in accordance with ACI 332.
Figure R403.1(1), MINIMUM FOOTING AND FOUNDATION REQUIREMENTS (amended). Delete Figure R403.1(1), R403.1(2) and R403.1(3) in their entirety, and replace with Figure R403.1(1) MINIMUM FOOTING AND FOUNDATION REQUIREMENTS (amended).

**TYPICAL TRENCH FOOTING**

12" min. wide, 42" min. deep. Extend foundation min. 8" above grade. Limited to supporting one floor, one roof and no masonry veneer. Vertical #4 bar @ 48" o.c., horizontal #4 bar @ 3 locations. Anchor bolts required as per chart.

**TYPICAL COLUMN FOOTING**

Min. 36"x36"x18" for support of 1 floor and 1 ceiling/roof. and min. 48"x48"x24" for support of 2 floors and 1 ceiling/roof. The above column pad is limited to the support of floors and ceiling/roofs with a joist/rafter span of <= 15 ft. and beam/girder span of <= 14 ft. Min. 6"x6"x1/4" steel base plate is required.

**TYPICAL SPREAD FOUNDATION**

2" nominal thickness treated sill plate. 5/8" bolts, min. 7" into concrete or 15" into masonry. Max. 12" from ends. 16"x8" min. footing size. 42" min. depth for exterior walls. 8" min. depth for interior walls. Extend the foundation walls min. 8" above grade.

* Foundation walls with more than 48" of unsupported clearance shall be designed in accordance with Table R404.1(1), and Figure R404.1(2).

**TYPICAL FLOATING FOUNDATION**

Floating foundation approved for detached structures no more than 750 sq. ft. Min. 12" deep in the ground, and 12" wide at the base. Extend min. 8" above grade. Anchor bolts required as per chart.

**EXCEPTIONS:**

1. Detached structures less than 150 sq. ft. do not require foundations.
2. Floating foundations may use max. one course of concrete block as a curb.

**FIGURE R403.1(1) MINIMUM FOOTING AND FOUNDATION WALL REQUIREMENTS (AMENDED)**

**GENERAL NOTES**

1. Footings shall comply with Table R403.1, but shall not be less than twice the foundation wall thickness.
2. Anchor bolt spacing 6" o.c. max. or the same as the rebar spacing, whichever is less, and 12" from each end of the sill.
3. Anchor bolts shall be 1/2" diameter, with 3/16"x2" diameter washers. Bolts shall be imbedded min. 7" into concrete and 15" into masonry.
4. Footings shall extend not less than 12" below the top of the floor slab.
5. Footing sizes are based on an assumed soil bearing pressure of 1,500 lbs./sq. ft. Footings on soil with a lower allowable soil pressure shall be designed in accordance with good engineering practice, and a soils engineer’s recommendations.
Section R403.1.1, Minimum size. Revise section to read as follows: The minimum width, W, and thickness, T, for concrete footings shall be in accordance with Tables R403.1(1) through R403.1(3) and Figure R403.1(1) or R403.1.3, as applicable. The footing width shall be based on the load-bearing value of the soil in accordance with Table R401.4.1. Spread footings shall be at least 8 inches (203 mm) thick. Footing projections, P, shall be not less than 2 inches (51 mm) and shall not exceed the thickness of the footing. Footing thickness and projection for fireplaces shall be in accordance with Section R1001.2. The size of footings supporting piers and columns shall be based on the tributary load and allowable soil pressure in accordance with Table R401.4.1. Footings for precast foundations shall be in accordance with the details set forth in Section R403.4, Table R403.4, and Figure R403.4(2).

Section R403.1.4.1, Frost protection. Change to read as follows: Except where otherwise protected from frost, foundation walls, piers and other permanent supports of buildings and structures shall be protected from frost by one or more of the following methods:

1. Extended below the frost line specified in Table R301.2(1);
2. Construct in accordance with Section R403.3.
3. Constructing in accordance with ASCE 32; or
4. Erected on solid rock.

Exceptions:

1. Protection of freestanding accessory structures with an area of 600 square feet (56 m²) or less of light-framed construction, with an eave height of 10 feet (3048 mm) or less shall not be required.

2. Protection of freestanding accessory structures with an area of 400 square feet (37 m²) or less, of other than light-framed construction, with an eave height of 10 feet (3048 mm) or less shall not be required.

3. Decks not supported by a dwelling need not be provided with footings that extend below the frost line.

Footings shall not bear on frozen soil unless the frozen condition is permanent.

Section R403.2, Footings for wood foundations. Delete this section in its entirety.

Section R403.3, Frost protected shallow foundations. Delete this section in its entirety.

Figure R403.3(1), INSULATION PLACEMENT FOR FROST-PROTECTED FOOTINGS IN HEATED BUILDINGS. Delete this section in its entirety.

Table R403.3(1), MINIMUM FOOTING DEPTH AND INSULATION REQUIREMENTS FOR FROST-PROTECTED FOOTINGS IN HEATED BUILDINGS. Delete in its entirety.

Figure R403.3(3), INSULATION PLACEMENT FOR FROST-PROTECTED FOOTINGS ADJACENT TO UNHEATED SLAB-ON-GROUND STRUCTURE. Delete this section in its entirety.

Figure R403.3(4), INSULATION PLACEMENT FOR FROST-PROTECTED FOOTINGS ADJACENT TO HEATED STRUCTURE. Delete this section in its entirety.

Table R403.4, MINIMUM DEPTH (D) AND WIDTH (W) OF CRUSHED STONE FOOTINGS. Delete this section in its entirety.
**Figure R403.4(1), BASEMENT OR CRAWL SPACE WITH PRECAST FOUNDATION WALL BEARING ON CRUSHED STONE.** Delete this section in its entirety.

**Figure R404.1(2), Foundation Wall to Floor System Attachment.** Insert at page 113.

**BLOCKING AT END WALL**

a. 2x solid blocking.
b. 9-8d nails thru subfloor into solid blocking.
c. 4-10d nails into each end of solid blocking.
d. 6-10d nails into sill plate.
e. rim joist w/ 16d nails 12” o.c. into sill plate.
f. anchor bolts per Table R404.1.1

**BLOCKING AT END WALL WITH DUCT**

a. 2x solid blocking.
b. 9-8d nails thru subfloor into solid blocking.
c. 4-10d nails into each end of solid blocking.
d. 10-10d nails thru solid blocking into sill plate.
e. flat 2”x 10”.
f. anchor bolts per Table R404.1.1.
g. rim joists w/ 16d nails 12” o.c. into sill plate.
h. 2-10d nails into each end of flat 2”x 10”.
i. duct.

**BLOCKING AT END WALL WITH "I" JOISTS**

a. 1 1/8” LSL or approved engineered rim and solid blocking material.
   * (DIMENSION LUMBER NOT ALLOWED) *
b. 9-8d nails thru subfloor into solid blocking.
c. 4-10d nails into each end of solid blocking.
d. 6-10d nails into sill plate.
e. 2-10d nails toenailed into joist.
f. anchor bolts per Table R404.1.1.
g. rim joist w/ 16d nails 12” o.c. into sill plate.

**FIGURE R404.1(2) FOUNDATION WALL TO FLOOR SYSTEM ATTACHMENT (AMENDED)**

1. Where floor joists are perpendicular to the foundation wall they shall be attached to the plate in the same manner shown in the sketch BLOCKING AT END WALL.
2. A steel angle clip may be substituted for the 6-10d nails connecting the joist to the sill plate. If an angle clip is used it must have a minimum load transfer capacity of 370 pounds.
3. Solid blocking must be utilized where floor joists are parallel to the foundation wall. The solid blocking shall be spaced no further apart than 1/2 the maximum anchor bolt spacing allowed in accordance with Table R404.1(1).
Delete Tables R404.1.1(1), R404.1.1(2), R404.1.1(3), R404.1.1(4), R404.1.2(2), R404.1.2(3), R404.1.2(4), R404.1.2(5), R404.1.2(6), R404.1.2(7), R404.1.2(8) and R404.1.2(9) in their entirety, and replace it with Table R404.1(1) Basement Foundation Wall Design as amended.

Table R404.1(1), Basement Foundation Wall Design as amended.

This table is based on a design, which would subject the foundation walls to a soil pressure that would be exerted by soil having an equivalent fluid weight of 35 pounds per cubic foot. In order to use this table the bottom of the foundation wall must be retained by a concrete slab with a minimum thickness of 3½" and the top of the wall must be restrained as defined in the footnotes of this table.

**TABLE R404.1(1) BASEMENT FOUNDATION WALL DESIGN (AMENDED)**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall Type</td>
<td>Distance of Wall to Ground Surface</td>
<td>Wall Thickness</td>
<td>Unsupported Vertical Wall Span</td>
<td>Required Vertical Reinforcing</td>
<td>Required Anchor Bolt Spacing</td>
</tr>
<tr>
<td>Masonry or Concrete</td>
<td>6&quot; or more</td>
<td>8&quot;</td>
<td>8' 8&quot; or less</td>
<td>#5 @ 40&quot;</td>
<td>5/8&quot; 1/2&quot; @ 40&quot;</td>
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<tr>
<td></td>
<td></td>
<td>8' 0&quot; or less</td>
<td>#5 @ 48&quot;</td>
<td>5/8&quot; 1/2&quot; @ 48&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10&quot;</td>
<td>8' 8&quot; or less</td>
<td>#5 @ 48&quot;</td>
<td>5/8&quot; 1/2&quot; @ 48&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8' 0&quot; or less</td>
<td>#5 @ 56&quot;</td>
<td>5/8&quot; 1/2&quot; @ 56&quot;</td>
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<tr>
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<td>12&quot;</td>
<td>8' 8&quot; or less</td>
<td>#5 @ 56&quot;</td>
<td>5/8&quot; 1/2&quot; @ 56&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8' 0&quot; or less</td>
<td>#5 @ 64&quot;</td>
<td>5/8&quot; 1/2&quot; @ 64&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>16&quot; or more</td>
<td>8&quot;</td>
<td>8' 8&quot; or less</td>
<td>#5 @ 48&quot;</td>
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<td></td>
<td>8' 0&quot; or less</td>
<td>#5 @ 56&quot;</td>
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<td></td>
<td></td>
<td>10&quot;</td>
<td>8' 8&quot; or less</td>
<td>#5 @ 64&quot;</td>
<td>5/8&quot; 1/2&quot; @ 64&quot;</td>
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<td></td>
<td></td>
<td>48&quot; or more</td>
<td>8&quot; or more</td>
<td>8' 8&quot; or less</td>
<td>None required</td>
</tr>
</tbody>
</table>

1. This table applies to hollow unit masonry or to solid concrete walls.
2. This table is only applicable where the exterior grade is above the basement slab on one or more sides of the basement. The distance in column (2) is to be measured from the top of the masonry or concrete wall down to the finish grade after final grading.
3. The thicknesses given are nominal. Actual masonry thickness may be 3/8 " less than nominal.
4. This table applies only to walls which span vertically between levels at which resistance to inward movement is provided by a minimum 3½" thick concrete floor slab at the bottom and an anchoring system as shown in Figure R404.1.1 at the top.
5. All reinforcing steel utilized based on this table shall be grade 60 and shall be placed not more than 1½" from the inside face of the wall.
6. Masonry walls must comply with Section R606.
7. Walls which do not fall within the limitations of this table, shall be designed by a registered engineer licensed in the State of Nebraska.
8. Anchor bolts shall be ½" diameter with a 3/16 " × 2" washer and nut. Bolts shall be imbedded minimum 7" into concrete and 15" into masonry.
9. Centerline of vertical reinforcing bar shall be located 2" from the inside face of concrete form.
Page 125

**R404.1.3.7.2, Location of reinforcement in wall:** Revise to read as follows: The center of vertical reinforcement in basement walls determined from Tables R404.1.2(2) to R404.1.2(7) shall be located at the centerline of the wall per Table R404.1.1(1). Vertical reinforcement in basement walls determined from Table R404.1.2(8) shall be located to provide a maximum cover of 1 1/4 inches (32 mm) from the inside face of the wall. Regardless of the table used to determine vertical wall reinforcement, the center of the steel shall not vary from the specified location by more than the greater of 10 percent of the wall thickness and 3/8 inch (10 mm). Horizontal and vertical reinforcement shall be located in foundation walls to provide the minimum cover required by Section R404.1.3.3.7.4.

Page 129

**Section R404.1.8, Rubble stone masonry.** Delete this section in its entirely.

**Section R404.2, Wood foundation walls.** Delete this section and its subsections R404.2.1, R404.2.2, R404.2.3, R404.2.4, R404.2.5 and R404.2.6 in their entirety.

Page 131

**Section 405.1, Concrete or masonry foundations.** Delete the exception.

**Section 405.1.1, Precast concrete foundations.** Amend the first sentence to read as follows: Precast concrete walls that retain earth and enclose habitable or useable space located below-grade that rest on crushed stone footings shall have a perforated drainage pipe installed blow the base of the wall on either the interior or exterior side of the wall, not less than 1 foot (305 mm) beyond the edge of the wall.

**Section R405.2, Wood foundations.** Delete this section in its entirely.

Page 132

**Section R406.3, Dampproofing for wood foundations.** Delete this section in its entirely.

Page 133

**Section R408.6, Finished grade.** Revise section to read as follows: The finished grade of under-floor surface shall be permitted to be located at the bottom top of the footings; however, where there is evidence that the ground-water table can rise to within 6 inches (152mm) of the finished floor at the building perimeter or where there is evidence that the surface water does not readily drain from the building site, the grade in the under-floor space shall be as high as the outside finished grade, unless an approved drainage system is provided.

Page 141

**Section R502.6.2, Joist framing.** Revise section to read as follows: Joists framing into the side of a wood girder shall be supported by approved framing anchors or on ledger strips not less than nominal 2 inches by 2 inches (51 mm by 51 mm).

Page 161

**Section R506.2.2, Base.** Delete this section in its entirely.

Page 162

**Section R507.2.1, Wood materials.** Wood materials shall be No. 2 grade or better lumber, preservative-treated in accordance with Section R317, or approved, naturally durable lumber, and termite protected where required in accordance with Section R318. Where design in accordance with Section R301 is provided, wood structural members shall be designed using the wet service factor defined in AWC NDS. All preservative-treated wood products in contact with the ground shall be labeled for such usage.
**Section R507.3.1, Minimum size.** The minimum size of concrete footings shall be in accordance with Table R507.3.1, and allowable soil-bearing pressure of 1500 pounds per square foot.

**TABLE R507.3.1 MINIMUM FOOTING SIZES FOR DECKS**

<table>
<thead>
<tr>
<th>FOOTING DEPTH</th>
<th>8” DIAM</th>
<th>10” DIAM</th>
<th>12” DIAM</th>
<th>14” DIAM</th>
<th>16” DIAM</th>
<th>18” DIAM</th>
<th>20” DIAM</th>
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<tbody>
<tr>
<td>42”</td>
<td>&lt;941 lbs</td>
<td>&lt;1340 lbs</td>
<td>&lt;1805 lbs</td>
<td>&lt;2334 lbs</td>
<td>&lt;2930 lbs</td>
<td>&lt;3591 lbs</td>
<td>&lt;4316 lbs</td>
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<tr>
<td>48”</td>
<td>&lt;1481 lbs</td>
<td>&lt;2071 lbs</td>
<td>&lt;2747 lbs</td>
<td>&lt;3509 lbs</td>
<td>&lt;4360 lbs</td>
<td>&lt;5298 lbs</td>
<td>&lt;6323 lbs</td>
</tr>
</tbody>
</table>

Page 165

**Section R507.5, Deck Beams.** Revise to read as follows: Maximum allowable spans for wood beams, as shown in Figure R507.5, shall be in accordance with Table R507.5. Beams shall be fastened with two rows of 10d (3-inch X 0.128-inch) nails minimum at 16 inches (406mm) on center along each edge. Beams shall be permitted to cantilever at each end up to one-fourth of the allowable beam span a maximum of 24-inches (610mm) unless designed by a professional engineer licensed in the State of Nebraska. Deck beams of other materials shall be permitted where designed in accordance with accepted engineering practices.

**Table R507.5, Deck Beam Span Lengths.** Revise footnote g to read as follows: Beam cantilevers are limited to the adjacent beam span divided by 4, 24-inches (610 mm) unless designed by a professional engineer licensed in the State of Nebraska.

Page 173

**Section R601.2, Requirements.** Add second paragraph as follows:

Wall construction shall be capable of accommodating all loads imposed in accordance with Section R301 and of transmitting the resulting loads to the supporting structural elements.

Braced wall lines, braced panels and bracing method must be clearly shown on plans at time of submittal.

Page 178

**Section R602.6, Drilling and notching-studs.** Revise section to read as follows: Drilling and notching of studs shall be in accordance with the following:

1. Notching. Any stud in an exterior wall or bearing partition may be cut or notched to a depth not exceeding 25 percent of its width. Studs in nonbearing partitions may be notched to a depth not to exceed 40 percent of a single stud width. **All studs in exterior walls or bearing partitions that are notched more than 10 percent shall be doubled.**

2. Drilling. Any stud may be bored or drilled, provided that the diameter of the resulting hole is no more than 60 percent of the stud width, the edge of the hole is no more than 5/8 inch (16 mm) to the edge of the stud, and the hole is not located in the same section as a cut or notch. Studs located in exterior walls or bearing partitions drilled over 40 percent and up to 60 percent shall also be doubled with no more than two successive doubled studs bored. See Figures R602.6(1) and R602.6(2).

   Exception: Use of approved stud shoes is permitted when they are installed in accordance with the manufacturer’s recommendations.

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**Figure R602.3(1), Typical Wall, Floor and Roof Framing.** Delete balloon framing at floor joist/wall and monolithic slab-on-grade foundation from figure.
Add footnote a to Figure R602.10.6.2, Figure R602.10.6.3 and Figure R602.10.6.4:

a. The use of steel headers must be designed by a professional engineer licensed in the State of Nebraska, and the structural engineer’s report shall be on site for the framing inspection.

Page 282

Table 608.5.4(2), MAXIMUM SPACING FOR ALTERNATIVE BAR SIZE AND ALTERNATIVE GRADE OF STEEL. Delete table in its entirely.

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Table R702.3.5, Minimum Thickness and Application of Gypsum Board. Change footnote d as follows

d. Three-eighths-inch-thick single-ply gypsum board shall not be used on a ceiling where a water-based textured finish is to be applied, or where it will be required to support insulation above a ceiling. On ceiling applications to receive a water-based texture material, either hand or spray applied, the gypsum board shall be applied perpendicular to framing. When applying a water-based texture material, the minimum gypsum board thickness shall be increased from 3/8 inch to 1/4 inch for 16-inch on center framing and from 1/4 inch to 5/8 inch for 24-inch on center framing. ½ inch sag-resistant gypsum ceiling board shall be used ½ inch.

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Section R802.3, Ridge. Change to read as follows: A ridge board used to connect opposing rafters shall be not less than 1 inch (25 mm) 2 inches (51 mm) nominal thickness and not less in depth than the cut end of the rafter. Where ceiling joists or rafter ties do not provide continuous ties across the structure, a ridge beam shall be provided and supported on each end by a wall or girder.

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Table R802.5.2, Rafter/Ceiling Joist Heel Joint Connections. For purposes of this table, use the column for a ground snow load of 30 psf.

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Table R802.11, Required Strength of Truss or Rafter Connections to Resist Wind Uplift Forces. Add footnote I to read as follows:

1 Wind uplift calculations, prepared by a structural engineer licensed in the State of Nebraska, shall be provided at the time of the framing inspection, for all structures built without uplift connections as prescribed by this table.

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Section R903.4, Roof Drainage. Add second paragraph and exception as follows:

When roofs are sloped to drain over the edge, scuppers or gutters and downspouts, adequately sized, pitched and supported, shall be installed to conduct rain water to ground level. Rainwater shall be discharged at least three feet away from the building foundation in a direction parallel to the adjoining property line when the discharge point is within 20 feet of the adjoining property line.

Exception: Structures with no sub-grade spaces.

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Section R905.2.5, Fasteners. Fasteners for asphalt shingles shall be galvanized steel, stainless steel, aluminum or copper roofing nails, minimum 12 gage [0.105 inch (3 mm)] shank with a minimum 3/8 inch (10 mm) diameter head, ASTM F 1667, or if approved by the manufacturer, corrosion-resistant staples, minimum 16 gage 15/16 -inch crown width, of a length to penetrate through the roofing materials and a minimum of ¾ inch (19 mm) into the roof sheathing. Where the roof sheathing is less than ¾ inch (19 mm) thick, the fasteners shall penetrate through the sheathing. Fasteners shall comply with ASTM F 1667.
Table R905.2.8.2, Valley Lining Material. In the Gage column, for Galvanized steel, delete the number 26, and replace it with 28.

Section R905.3.8, Flashing. Change the first sentence to read as follows: At the juncture of roof vertical surfaces, flashing and counterflashing shall be provided in accordance with this chapter and the manufacturer's installation instructions and, where of metal, shall not be less than 0.019 inches (0.5 mm) 0.018 inches (0.4 mm) (No. 26 28 galvanized sheet gage) corrosion-resistant metal.

Section R905.7.6, Valley flashing. Roof flashing shall be not less than No. 26 28 gage [0.019 inches (0.5 mm) 0.018 inches (0.4 mm)] corrosion-resistant sheet metal and shall extend 10 inches (254 mm) from the centerline each way for roofs having slopes less than 12 units vertical in 12 units horizontal (100-percent slope), and 7 inches (178 mm) from the centerline each way for slopes of 12 units vertical in 12 units horizontal and greater. Sections of flashing shall have an end lap of not less than 4 inches (102mm).

Section R905.8.8, Valley flashing. Change the first section to read as follows: Roof flashing shall not be less than No. 26 28 gage [0.019 inches (0.5 mm) 0.018 inches (0.4 mm)] corrosion-resistant sheet metal and shall extend at least 11 inches (279 mm) from the centerline each way. Sections of flashing shall have an end lap of not less than 4 inches (102mm).

Section R908.3.1, Roof recover. Delete this section in its entirety.

Section R908.3.1.1, Roof recover not allowed. A roof recover is not allowed.

Section R908.4, Roof recovering. Delete this section in its entirely.

Section N1101.5 (R103.2), Information on construction documents. Revise section to read as follows: Construction documents shall be provided as required in the Omaha Municipal Code. Where the ResCheck is submitted, it shall be considered part of the construction documents and is required to be signed and dated.

Section N1101.12 (R303.3), Maintenance information. Delete the second and third sentences from this section.

Section N1103.3.5 (R403.3.5), Building Cavities (Mandatory). Revise section to read as follows: Exterior building framing cavities shall not be used as ducts or plenums. Interior framing cavities only may be used for return air ducts or plenums.

Section N1103.5.1.1 ((R403.5.1.1) Circulation systems. Revise section to read as follows: Heated water circulation systems shall be provided with a circulation pump. The system return pipe shall be a dedicated return pipe or a cold water supply pipe. Gravity and thermosyphon Thermosyphon circulation systems shall be prohibited. Controls for circulating hot water system pumps shall start the pump based on the identification of a demand for hot water within the occupancy. The controls may automatically turn off the pump when the water in the circulation loop is at the desired temperature and when there is no demand for hot water.

Section N1103.8 (R403.8), Systems serving multiple dwelling units. Delete this section in its entirely.
Section M1201.2, Applications. Revise to read as follows: In addition to the general administration requirements of Chapter 1, the administrative provisions of this chapter shall also apply to the mechanical requirements of Chapters 13 through 24.

Section M1301.1, Scope. Revise section to read as follows: The provisions of this chapter shall govern the installation of mechanical systems not specifically covered in other chapters applicable to mechanical systems. Installations of mechanical appliances, equipment and systems not addressed by this code shall comply with the applicable provisions of the International Mechanical Code and the International National Fuel Gas Code (NFPA 54).

Section M1302.1, Listed and labeled. Revise section to read as follows: Appliances regulated by this code shall be listed and labeled for the application in which they are installed and used. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. Alternative material, design or method of construction shall be approved where the code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method, or work offered is for the purpose intended at least the equivalent of that prescribed in this code.

Section M1501.1, Outdoor discharge. Add exception 2 as follows:

Exceptions:

2 Bathroom exhaust fans may be ducted through an exterior soffit, provided that the exhaust duct discharges through a dedicated soffit vent to the exterior.

Section M1502.3, Duct termination. Revise section to read as follows: Exhaust ducts shall terminate on the outside of the building. Exhaust duct terminations shall be in accordance with the dryer manufacturer's installation instructions. If the manufacturer's instructions do not specify a termination location, the exhaust duct shall terminate not less than 3 feet (914 mm) in any direction from openings into buildings. Exhaust duct terminations shall be equipment with a backdraft damper. Screens shall not be installed at the duct termination.

Section M1801.1, Venting required. Revise section to read as follows: Fuel-burning appliances shall be vented to the outdoors in accordance with their listing and label and manufacturer's installation instructions except appliances listed and labeled for un-vented use. Venting systems shall consist of approved chimneys or vents, or venting assemblies that are integral parts of labeled appliances. Gas-fired appliances shall be vented in accordance with the National Fuel Gas Code (NFPA 54) nationally recognized fuel gas code for that appliance.

Section M1902.2, Installation. Revise section to read as follows: Sauna heaters shall be installed in accordance with the manufacturer's installation instructions, Nebraska Boiler Act, ASME Section 4, and the authority having jurisdiction.

Section M1904.1, Installation. Revise section to read as follows: Gaseous hydrogen systems shall be installed in accordance with the applicable requirements of Section M1307.4 and M1903.1 and the International National Fuel Gas Code (NFPA 54), NFPA 58, the International Fire Code and the International Building Code.

Section M2001.1, Installation. Revise section to read as follows: In addition to the requirements of this code, the installation of boilers shall conform to the Nebraska Boiler Act, ASME Section 4, the authority having jurisdiction and the manufacturer's installation instructions. The manufacturer's rating data, the nameplate and operating instructions of a permanent type shall be attached to the boilers. Boilers shall have all controls set, adjusted and tested by the installer. A complete control diagram together with complete boiler operation instructions shall be furnished by the installer. Solid- and liquid-fuel-burning boilers shall be provided with combustion air as required by Chapter 17.
**Section M2001.2, Clearance.** Revise section to read as follows: Boilers shall be installed in accordance with their listing and label, Nebraska Boiler Act, and the authority having jurisdiction.

**Section M2001.3, Valves.** Delete the exception in its entirety.

**Section M2002.1, Safety controls.** Revise section to read as follows: Electrical and mechanical operating and safety controls for boilers shall be listed and labeled for the purpose and condition of their use and operation.

**Section M2002.4, Pressure-relief valve.** Revise section to read as follows: Boilers shall be equipped with pressure relief valves with minimum rated capacities for the equipment served. Pressure-relief valves shall be set no greater than the maximum rating of the boiler. Discharge shall be piped to drains by gravity to within 3 inches (76 mm) of the floor or to an approved plumbing fixture.

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**Section M2004.1, General.** Delete section in its entirety.

**Section M2005.1, General.** Revise section to read as follows: Water heaters shall be installed in accordance with Chapter 28, the manufacturer's installation instructions, the Omaha Plumbing Code, and the requirements of this code. Water heaters with inputs of 200,000 BTU's and greater must comply with the Nebraska Boiler Act and the authority having jurisdiction. Water heaters installed in an attic shall conform to requirements in Chapter 24. Domestic electric water heaters shall conform to UL 174 or UL1453, and NFPA 70. Commercial electric water heaters shall conform to UL1453 and NFPA 70. Oil-fired water heaters shall conform to UL 732 and NFPA 31.

**Section M2005.3, Electric water heaters.** Revise section to read as follows: Electric water heaters shall also be installed in accordance with the applicable provisions of National Electrical Code (NFPA 70).

**Section M2006.1, General.** Revise section to read as follows: Pool and spa heaters shall be constructed and installed in accordance with the manufacturer's installation instructions, ASME Section 4, the Nebraska Boiler Act, and the authority having jurisdiction. Oil-fired pool heaters shall be tested in accordance with UL 726 and NFPA 31. Electric pool and spa heaters shall conform to UL 1261, and NFPA 70.

**Section M2006.2, Clearances.** Revise section to read as follows: In no case shall the clearances interfere with combustion air, draft hood or flue terminal relief, or accessibility for servicing, or as required by the Nebraska Boiler Act, and the authority having jurisdiction.

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**Section M2101.1, General.** Revise section to read as follows: Hydronic piping shall conform to Table M2101.1 as amended by this section. Approved piping, valves, fittings and connections shall be installed in accordance with the installations instructions. Pipe and fittings shall be rated for use at the operating temperature and pressure of the hydronic system. Chlorinated poly (vinyl chloride) (CPVC) pipe, tubing and fittings, Cross-linked polyethylene (PEX) pipe, tubing and fittings, Cross-linked polyethylene/aluminum/ cross-linked polyethylene (PEX-AL-PEX) pipe, tubing and fittings, Polybutylene (PB) pipe, tubing and fittings, Polyethylene (PE) pipe, tubing and fittings and Polypropylene (PP) pipe, tubing and fittings will not be permitted for above ground use in a hydronic heating or cooling system. Used pipe, fittings, valves or other materials shall be free of foreign materials.

**Section M2101.2, System drain down.** Revise section to read as follows: Hydronic piping systems shall be installed to permit draining of the system. When the system drains to the plumbing drainage system, the installation shall conform to the requirements of Chapters 25 through 32 of the Omaha Plumbing Code.

**Section M2101.3, Protection of potable water.** Revise section to read as follows: The potable water system shall be protected from backflow in accordance with the provisions listed in Section 2902 of the Omaha Plumbing Code and Metropolitan Utilities District (MUD).

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**Section M2101.10, Tests.** Revise section to read as follows: Hydronic piping shall be tested hydrostatically at a pressure of one and one-half times the maximum system design pressure, but not less than 100 pounds per square inch (psi) (690kPa) for a duration of not less than 30 minutes. The duration of the each test shall be not less than 15 minutes.
**New Section M2103.5 Termination.** Add section to read as follows: Final termination of all embedded piping systems is required to terminate to listed and labeled equipment or to a piping manifold. The maximum length from piping system entering the structure to equipment or manifold is 48 inches (1219 mm).

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**New Section M2104.5, Termination.** Final termination of all embedded piping systems is required to terminate to listed and labeled equipment or to a piping manifold. The maximum length from piping system entering the structure to equipment or manifold is 48 inches (1219 mm).

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**Section M2105.28 Testing.** Revise section to read as follows: Before connection header trenches are backfilled, the assembled loop system shall be pressure tested with water at 100 psi (689kPa) for 15-30 minutes without observed leaks. Flow and pressure loss testing shall be performed and the actual flow rates and pressure drops shall be compared to calculated design values. If actual flow rate or pressure drop values differ from calculated design values by more than 10 percent, the cause shall be identified and corrective action taken.

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**Chapter 22 Fuel Oil Piping and Storage Systems.** Delete Chapter 22 entirely and insert as follows: The design, installation, construction and repair of fuel oil piping and storage systems must comply with the requirements of NFPA 30, 30A, and 31, 37, Title 159 (State of Nebraska), Omaha Municipal Code, the International Fire Code and the International Building Code.

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**Section M2301.5, Backflow protection.** Revise to read as follows: Connections from the potable water supply to the solar systems shall comply with **Section P2902.5.5** the Omaha Plumbing Code and Metropolitan Utilities District (MUD).