CODE LINK
STATE OF OREGON • BUILDING CODES DIVISION
SEPTEMBER/OCTOBER 2000

Don't ignore archeological sites

Is your staff aware that, with limited exceptions, it is illegal to disturb archeological sites or remove or alter certain archeological objects on state public or private land unless this is done by an archeologist under a permit issued by the State Parks and Recreation Department?

Consider the possibility of the presence of archeological sites when you and your staff review construction permits.

Construction must be stopped immediately if an archeological site or burial is encountered during construction. An expedited permit process is possible in this situation.

If Native American human remains are found on lands within your jurisdiction, **call the nearest office of the Oregon State Police**. An initial determination must be made on whether or not the remains are part of a crime scene. ORS 146.505 requires the Oregon State Police to keep a file of unidentified human remains found within the state.

If the remains **are** Native American, **call the Legislative Commission on Indian Services, (503) 986-1067**. State law says the appropriate tribe(s) must be contacted. The Legislative Commission on Indian Services will tell you the appropriate tribe(s) to contact.

Please see "Don't ignore archeological sites," Page 2

Don't ignore archeological sites, *continued*

Then **call the State Historic Preservation Office, (503) 378-4168 (ext. 232),** for a list of archeological consultants, if needed. Only professional archeologists can apply for archeological permits. The State Historic Preservation Office (SHPO) maintains files on more than 20,000 archeological sites in Oregon and sites that are on the National Register of Historic Places or determined eligible for inclusion on that list. Indian tribes can also designate significant sites.

The appropriate Indian tribe(s) must be notified by the person doing any archeological investigation **and** if a sacred object or object of cultural patrimony is found.

Violation of the Indian Graves Protection Law is a Class C felony.

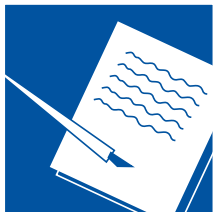
ORS 97.740-97.990 are the Indian Graves Protection Statutes and ORS 358.905-358.955 and ORS 390.235-390.240 deal with Protection of Archeological Sites.

Excavating, injuring, destroying, or altering an archeological site or removing archeological objects from Oregon public or private lands without a permit is a Class B misdemeanor.

Each tribe can give you information about its interests and the areas of the state where it has concerns or treaty rights.

The Legislative Commission on Indian Services can supply you with a copy of its Oregon Directory of American Indian Resources, give you a list of tribes recognized under state and federal law, and provide a list of tribal cultural contacts. ■

Phase 2 of SB 587 rules effective October 1



The second phase of rules to implement 1999 Senate Bill 587 have been filed with the Office of the Secretary of State and will be effective October 1. These rules establish the following:

- Definitions of employees employed by licensed plan reviewer or inspector and limited plan reviewer or inspector
- Registration for businesses performing specialty-code inspections and plan reviews
- Licensure of third-party plan reviewers and inspectors
- Insurance coverage for businesses and licensees
- Requirements for the quality control manual
- Enforcement guidelines for licensees

Required changes to local building department operating plans are due at the division by October 1. Implementation of the uniform residential plan-review checklist is also required by October 1*.

A series of statewide workshops was held in August. The workshops focused on the licensing requirements of SB 587.

Questions about operating-plan amendments should be directed to Allen Aschim, (503) 378-4379. For a copy of the licensing workshop materials and license application packet, contact Louann Rahmig, (503) 373-7438. ■

**The criteria for this checklist was distributed to building officials. It establishes the minimum plan requirements for a "complete" set of plans for a one- or two-family dwelling. Local land-use-development requirements may be added to the list.*

Dangerous products recalled

Smoke alarms recalled. Universal Security Instruments Inc. is recalling about 34,000 smoke alarms that can fail to work when smoke or fire is present. A capacitor in the alarm can burn out, releasing smoke and melting the cover.

Consumers can identify the recalled models by removing the alarm cover from its base and looking for the manufacture date code and model number. The smoke alarms are made of white plastic and have the manufacture date code and model number imprinted on the back of the alarm. The recalled models are:

- Safe T Alert SA-785, AC-only unit, with date code “BCSR”
- Universal SS-785, AC-only unit, with date code “BCSR”
- Universal SS-795, AC/DC unit with battery backup, date code “BESS”
- USI Electric USI-1203, AD/DC unit with battery backup, with date code “BESS”

Some alarms do not have the brand name printed on the unit. Consumers should look at the model number to determine if it is a recalled alarm.

Most of these smoke alarms were installed in homes during construction.

Consumers should call Universal Security Instruments Inc. toll-free at (800) 390-4321, to receive a free replacement alarm.

Toasters recalled. Proctor-Silex Inc. is recalling about 95,000 toasters. Heating elements in these toasters can remain on after the toast pops up, posing a fire hazard.

These are traditional upright toasters with four extra-wide slots to accommodate bread or bagels. Toasters with model number 24205 are white, and those with number 24208 are black and chrome. The model number, series code, UL logo and “Made in China” appear on the toaster bottom. The recall includes only toasters with series codes A0379-A3279 or A2589-A3289. The name “Proctor Silex” is written in gray lettering on the front of the toaster. A control dial labeled in units from “1” to “6” and a bread lifter handle are located on the front of the toaster.

Consumers should immediately unplug and stop using these toasters. To get a free replacement, call (800) 992-4616 or go to the company’s Web site: www.proctorsilex.com/recall/.

Children’s lamps recalled. Kmart Corp. is recalling 280,000 children’s decorative lamps. The lamps can short-circuit, posing a fire hazard.

The recalled “Little Ones” wooden accent lamps come in six styles: airplane, alphabet letters (ABC), numbers (123), baseball with bat, train, and sailboat. The lamps are 15 inches high with wood bases. A price label on the bottom base reads “Made in China for Kmart Corporation.” “Little Ones fun accent lamps for kids” appears on a paper insert packaged on the lampshade.

Consumers should unplug the lamps, stop using them, and return them to Kmart for a refund. For details, call Kmart at (800) 635-6278. ■

Please see “Dangerous products recalled,” Page 22

What building code inspectors look for

By Bob Futter

Building codes first originated about 4,000 years ago in the Babylonian empire with the "Code of Hammurabi." An example of that first code: "If a builder has built a house for a man and his work is not strong, and if the house he has built falls in and kills the householder, that builder shall be slain."

Codes have advanced significantly since that time. No one today is actually slain because of faulty workmanship. In fact, the goal now is for the builder and the inspector to work together as a team toward a singular goal: a cost-effective and safe structure. Toward that goal, code developers create permit and inspection processes to ensure compliance with minimum code standards, while giving the designer and contractor flexibility to design the structure to accommodate the desires of the owner.

One aspect of that process deals with the structural code requirements — inspection. The building code requires five different inspections on a typical residential structure: foundation, floor framing, structure framing, insulation, and final. A walboard inspection may also be required.

Most jurisdictions require the contractor to call the building department to request inspections, normally one day in advance. When the inspector arrives at the job site, regardless of the type of inspection, the first question is usually "Where are the approved plans?"

Most violations are a result of contractors being in a hurry; other violations result from contractors not knowing specific code requirements. And some violations are just outright mistakes. Following is a description of the inspections as they normally take place.

Foundation: The footing or foundation wall forms and any reinforcement must be in place as shown on the plans. Common violations:

- Footings are not below the frostline for the area (12, 18, or 24 inches in Oregon)
- Reinforcements do not have adequate ground clearance (two inches or more)
- Fill material beneath footings is not compacted and tested
- Rebar for the electrical system ground not installed in the footing and extended into the framed wall
- Inadequate crawlspace vents in foundation wall
- No hold-down anchors in place in addition to anchor bolts for lateral support

Floor framing: The floor framing must be inspected prior to installation of the decking in order to verify floor-joist sizes, spacing, anchor bolts in the foundation, and floor support beams and posts.

Framing: This is the biggest, most extensive inspection done on a structure. All of the structural components of the building — windows, doors, roof and wall sheathing, plumbing, electrical, and mechanical systems — will be in place. The structural inspector verifies that the plumbing and electrical systems have been approved by other inspectors. Some common violations may include:

- Truss bracing not in place
- Inadequate firestopping
- Framing members not appropriately sized
- Holes in top or bottom plates (must be sealed)
- Floor (i.e., under a tub or shower) not sealed
- Bedroom egress (exit) window openings too small

Please see "What building code inspectors loofk for," Page 6

Errata

2000 EDITION OREGON STATE PLUMBING SPECIALTY CODE (OSPSC) AND ONE- AND TWO-FAMILY DWELLING SPECIALTY CODE (DSC) PLUMBING SECTIONS

The following editorial corrections and errata should be made to your code books:

1) OSPSC, cover page back side heading “Amended by:” The code adoption rule 918-750-0110, changed the two dates from “February 19, 1999” to “December 17, 1999.”

2) OSPSC, page 8.13. The code adoption rule 918-750-0110, changed the two dates from “February 19, 1999” to “December 17, 1999.”

3) OSPSC, page 36, Section 509.0, Exception 1. Change the word “bent” to “vent.”

4) OSPSC, page 37, Section 511.0. Add the following code provisions to the end of the section: “Attic and underfloor water heater locations shall be provided with an electric outlet and electric lighting fixture at or near the water heater. The lighting fixture shall be controlled by a switch located adjacent to the opening or trap door.”

5) OSPSC, page 74, Sections 815.0 through 815.2.2. Delete these sections and associated tables.

6) OSPSC, page 76, Section 906.6. Change the weight of lead for flashings or vent terminals from three (3) pounds per square foot (14.7 kg/m^2) or 1.2 mm thick to two(2) pounds per square foot (6.1kg/m^2) or 1 mm thick.

7) OSPSC, page 129. At the top of the page, directions for replacing model code pages with amendments are listed. Where it states “Replace UPC Table 14-1, pages 129-164…” Change page “164” to “162.2”

8) OSPSC, page 130. After standard designation A112.36.2M-91, add standard designation “A118.10-93, Load Bearing, Bonded, Waterproof Membranes for Thin-set Ceramic Tile and Dimension Stone Installation, Shower and Tub Trowel Applied Liner.”

9) OSPSC, page 139, Standard Designation PS-51-92. Change “ABC” to “ABS” in both the Title and Application columns.

10) OSPSC, page 163. Note that Appendices C, D, G, K and L are deleted.

11) OSPSC, page 185 instruction sheet, page number should be 183 and the noted “<Appendix C (pages 185-188) is deleted” should read “(pages 183-186).”

12) OSPSC, Page 189 instruction sheet, page number should be 187 and the noted “<Appendix D (pages 189-196) is deleted” should read “(pages 187-194).”

12) OSPSC, pages 197, 198, 199, 200, 201 and 202 should be numbered “195, 196, 197, 198, 199 and 200.”

Please see “Errata,” Page 6

Errata, *continued*

14) OSPSC, page 205 instruction sheet, page number should be 203, and the noted "<Appendix G (pages 205-214) is deleted" should read "(pages 203-212)." Page 206 should be numbered 204.

15) OSPSC, page 219, page number should be 217 and next page should be 218. The Table of Contents page numbers are all incorrect and should be replaced from top to bottom as follows: "219, 224.1, 225, 231, 239, 243, 249, 251, 253, 263, 269, 273, 277, 279, 285, 291, 293, 303, 310.1."

16) OSPSC, pages 226.1 and 226.2 should be page numbers 224.1 and 224.2.

17) DSC, page 288, Table 3503.1, Maximum Units, Horizontal, $1^1/_2$, Change 1 to "2^2" in the $1^1/_2$" pipe column, horizontal row.

18) OSPSC, pages 312.1 and 312.2 should be page numbers 310.1 and 310.2.

19) OSPSC, page 317 instruction sheet, page number should be 315, and the noted "<Appendix K (pages 317-328) is deleted" should read "(pages 315-326)." Page 318 should be numbered 316.

20) OSPSC, page 329 instruction sheet, page number should be 327, and the noted "<Appendix L (pages 329-332) is deleted" should read "(pages 327-330)." Page 330 should be numbered 328.

What building code inspectors look for, *continued*

Insulation: Inspection performed after walls and ceilings are insulated. The R-value must be verified. Common problems include vapor barriers not in place or torn vapor barriers that need repairs. Quite often, lack of sufficient insulation in the stud spaces will leave a void at the top.

Final: Performed after the structure is completed. The inspector verifies the following:

- Plumbing, electrical, and mechanical installations have all been approved
- Smoke detectors work properly
- Required handrails, guardrails, exterior stairs, exterior finish grading, and street numbers are in place

Most code violations can be corrected while the inspector is on site. The structure may be approved if the contractor provides a statement ensuring that violations will be corrected. Often, additional time is required, not additional expense. A reinspection may be required, for major violations. Corrections can also be inspected during the next scheduled inspection.

After all inspections are completed and approved, some jurisdictions issue a certificate of occupancy. Others simply provide an approved final inspection report.

We've had no reports of contractors slain for code violations for years and years. ■

Bob Futter is a commercial plan reviewer in the Pendleton office of BCD.

Staff advisories issued

Note: These advisories refer to sketches that may be viewed on BCD's Web sit, www.oregonbcd.org/

The Policy and Technical Services Section has issued the following advisory interpretations:

Program: Structural

Subject: Foundation wall design

Source: 2000 edition of Oregon One and Two Family Dwelling Specialty Code (OTFDC), ORS Chapters 671 and 672, architect and engineer laws

Reference: Section 404 of OTFDC and ORS Chapters 671 and 672.

Date of issue: June 20, 2000

Prepared by: Ravindra K. Mahajan, P.E.
Facilities engineer
(503) 373-1354

Question 1: Is the seal of an architect or an engineer required for the drawings, details and specifications of foundation walls for single-family and two-family dwellings?

Question 2: When are the foundation walls required to be designed per OTFDC?

Determination 1: The drawings, details, specifications, etc. of the foundation walls for two-family dwellings of less than 4,000 square feet of ground area and/or less than 20 feet high and single-family dwellings are not required to be designed and prepared by an architect or engineer (ORS Chapters 671 and 672). If an engineer or an architect happens to be the designer of such structures, the seal of registration must be provided on the documents prepared.

Determination 2: The following foundation walls are required to be designed per OTFDC, when such walls are:

- more than nine feet high in any seismic zone
- subject to hydrostatic pressure from ground water (providing adequate drainage around walls is considered to relieve hydrostatic pressures)
- supporting unbalanced backfill of more than four feet high and no permanent lateral support at the top and bottom of the foundation wall

Analysis 1: Section 404.1 of the OTFDC leads to the belief that the foundation walls for single-family and two-family dwellings can be designed by an architect or an engineer without their registration seal on the documents prepared. This is contrary to Oregon architect's and engineer's law that clearly states that any work performed by an engineer or architect registered with the relevant agencies of the state of Oregon must bear the engineer or architect's registration seal.

The foundation walls can be constructed using the prescriptive requirements of the OTFDC, in which case no design is required. If the foundation walls cannot be constructed using the prescriptive requirements of the OTFDC, they must be designed. Oregon architect's and engineer's law exempts certain categories of structures from the design requirements. Two-family dwellings that are less than 4,000 square feet in area and less than 20 feet high and single-family dwellings fall under the category of exempt structures. Such exempt structures do not need to be designed by an architect or an engineer and can be designed by anyone. However, if the exempt structure (two-family dwelling that is less than 4,000 square feet and 20 feet high and single-family dwelling) happens to be designed by an architect or an engineer, then the more-restrictive requirement of the state law (ORS Chapters 671 and 672) will prevail, requiring that such design be provided with the seal of the architect or engineer responsible for the design.

Please see "Staff advisories issued," Page 8

Analysis 2: Tables 404.1.1(1) and 404.1.1(2) of the OTFDC provide prescriptive requirements for the foundation walls. The requirements in these tables are for plain concrete/masonry and reinforced concrete/masonry walls, respectively. Table 404.1.1(1) stipulates that:

- Plain concrete or masonry foundation walls up to 9 feet high can be constructed in Seismic Zones 1 and 2 using table provisions, if they are not required to be designed by other code provisions.
- In Seismic Zones 3 and 4, plain concrete or masonry foundation walls can be constructed, provided such walls do not support more than four feet of unbalanced backfill and are not more than eight feet high.

Reinforced concrete/masonry foundation wall prescriptive provisions are contained in Table 404.1.1(2). Foundation walls with any load, height, unbalanced backfill, or connections other than those addressed in OTFDC need to be designed.

Program: Structural

Subject: Fire blocks in combustible construction

Source: 1998 Oregon Structural Specialty Code (OSSC)

Reference: Sections 708.2.1 and 708.2.2

Date of issue: August 1, 2000

Prepared by: Ravindra K. Mahajan, P.E.
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Question 1: In combustible construction, is the installation of fireblocks (per Section 708.1 of the OSSC) required only at the intersection of **fire-rated** horizontal and vertical assemblies and not at the intersection of nonrated horizontal assemblies (such as dropped ceilings) and vertical walls?

Question 2: Is the method of extending gypsum wallboard vertically through the concealed space (created by nonrated drop ceiling) until it intersects the fire-rated horizontal assembly, considered an approved alternate for providing fireblocks at locations specified in Section 708.2.1(2) of the OSSC?

Determination 1: In **rated as well as nonrated** combustible construction, fireblocks and draft-stops are required at the concealed openings created by the intersection of horizontal and vertical wall assemblies.

Determination 2: $^{1}/_{2}$-inch- or $^{5}/_{8}$-inch-thick gypsum wallboard extending vertically through the concealed space of the dropped ceiling until it meets the fire-rated horizontal assembly (see illustration on our Web site) is an acceptable alternate to the fire-block locations specified in the building code.

Analysis 1: Section 708.1 of the OSSC requires that fireblocking and draft-stopping be provided in all combustible construction. The purpose of this code requirement is to cut off all the vertical and horizontal openings in the building to prevent the spread of fire through concealed draft passageways. Any concealed space within a building can provide a passage for the high temperature air and gases to spread. The intent of OSSC Section 708.1 is to limit the spread of gases and high temperature air from the area of fire to other portions of the building. To achieve this intent, OSSC endeavors to limit the unblocked area of concealed spaces to a reasonable possible size by defining the locations where blocks are required. The purpose is to cut off the unblocked passages in the building construction whether they are located in fire-rated or in nonrated assemblies. This is consistent with ICBO's position on this issue.

Analysis 2: OSSC Section 708.2.1(2) requires that all interconnections between vertical and horizontal spaces must be provided

Please see "Staff advisories issued," Page 9

with fireblocks. In general, dropped ceilings are provided to run the cables and ducts in the space created between the dropped ceiling and floor/roof/ceiling assembly above. When cables, ducts, etc., are provided in a manner that they need to cross the rooms and penetrate the wall assembly repeatedly (which is a common occurrence at projects), providing fireblocks at the intersection of dropped ceiling and wall assembly per the code requirement is a reasonable choice. In situations where there is no need to penetrate the wall assembly frequently to run the cables, wires, ducts, etc., the alternate of extending the gypsum wall board vertically through the concealed space of the dropped ceiling until it meets the horizontal rated assembly is an acceptable method. ICBO has allowed this as an acceptable alternate method of construction which is also allowed by several jurisdictions and building officials. (See drawing on our Web site.)

Program: Structural

Subject: Prescriptive wall bracing requirements for one- and two-family dwellings

Source: 2000 One- and Two-Family Dwelling Specialty Code (OTFDC)

Reference: Sections 602.9 and 602.10

Date of issue: July 21, 2000

Prepared by: Ravindra K. Mahajan, P.E.
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Background: The OTFDC contains several revisions in the wall bracing section, most of which are a result of clarifying the use of alternate braced panels on second and third stories of a structure. The Structural Engineering Committee, an advisory committee to the Building Codes Structures Board (BCSB), established a subcommittee to recommend clarification of the intent of those code provisions.

The Structural Engineering Committee's **recommendations**, based on the subcommittee's work, are provided, with the following guidelines:

"*An accurate set of construction plans, including a site plan depicting the true topography of the site and reflecting the true construction of the cripple wall construction, needs to be submitted for the plan review. The plans examiner must be able to determine from the plans what the cripple wall heights are, to help avoid any potential conflicts in the field.*"

Question 1: What is the definition of cripple wall?

Question 2: What are the different methods of providing bracing for conventional light-frame wood construction, and what is the height limitation for the braced wall panels?

Question 3: Can an alternate braced panel be provided on the upper stories of a structure?

Question 4: Can the bracing in exterior and interior braced wall lines start at a distance greater than eight feet from the corner of the wall?

Determination 1: Cripple walls are defined as stud walls with a minimum height of 14 inches and a maximum height of eight feet that rest on a pressure-treated foundation plate that rests directly on a continuous concrete footing (or stem wall) and supports the first immediate floor above. Cripple walls may be sheathed or unsheathed, depending on whether the cripple wall is transferring lateral loads.

Determination 2: Section 602.10.1 of the OTFDC provides seven prescriptive bracing methods in addition to the alternate braced panel (ABP) method provided in Section 602.10.1.4. Let-in brace and/or approved metal strap bracing are not permitted in

Please see "Staff advisories issued," Page 10

Seismic Zones 3 and 4. The maximum height of regular braced panels is 12 feet with its maximum height-to-width ratio limited to $2^1/_2$:1. (For a maximum of 12-foot-high braced panel, the minimum width required is four feet, nine inches.) Minimum braced panel width is required to be 48 inches with the exception of requiring 96 inches width for gypsum board braced panels when sheathed on one face. No increase in the height of braced wall panel is recommended when sheathed on both faces. Alternate braced panels are still maximum 10 feet high. See *Analysis 2* for more details.

Determination 3: Yes. OTFDC now allows the use of alternate braced panels on the second and third stories of a building. **ABPs are still not allowed on the first story of a three-story building.** The code provisions as written are an attempt to clarify the requirements for ABPs at each specific location. To clarify the intent for each condition, the subcommittee recommendations are provided in code text under *Analysis 3*. These recommendations are being submitted as a code change to the OTFDC. Until the time these recommendations get approved by the BCSB and they become code language, this advisory should provide a guideline to code users.

Determination 4: No, not according to the prescriptive method of bracing. The exterior braced wall lines must have braced panels start within eight feet of the exterior braced wall end for the use of the prescriptive provisions. The Structural Engineering Committee has provided the following interpretations regarding interior braced wall lines:

- Interior braced wall lines extend from exterior wall to exterior wall (similar to exterior braced wall lines).
- Interior braced wall lines shall consist of interior braced panels that meet the requirements for location, type, and amount specified in Table 602.10.1 (similar to exterior braced wall lines).
- Interior braced panels shall begin within eight feet from each end of an interior braced wall line. Alternatively, interior braced panels at one end of the braced wall line can exceed the 8-foot distance, provided the interior braced panel at the other end of the braced wall line extends fully to the exterior wall. (See sketch 5 on our Web site for detailed description.)
- For interior braced wall panels at "stick-framed" roofs, no special connection is required from interior braced panel to the roof sheathing. Interior braced panels need to extend to the roof/ceiling assembly (i.e., ceiling joists for stick-framed roofs) and attach per prescriptive requirements. (See sketch 8 on our Web site for detailed description.)
- For interior braced wall panels at "trussed" roofs, when manufactured roof trusses are used, the interior braced wall panels must extend to the underside of roof sheathing when the braced panels are parallel to the truss (Sketch 10 on our Web site). When the trusses are perpendicular with the braced wall panels, truss infill panels or struts shall be provided (Sketch 9 on our Web site).
- For interior braced wall lines located in areas with a vaulted or elevated ceiling, braced panels and ABPs must satisfy the height restrictions as previously described. All other requirements for braced panels and alternate braced panels still apply when used at an interior application.
- For interior braced wall lines located within the 70-foot interval, the following shall apply:
  - "post and beam" construction (Sketch 12 on our Web site)
  - In a joist-framed construction, the joists shall be doubled below an interior

Please see "Staff advisories," Page 11

braced wall line when framed parallel to each other. For joists framed perpendicular to interior braced wall lines, continuous blocking shall be provided for the length of the braced wall panels and the joists shall be doubled at the ends of each braced panel.

Analysis 1: There is confusion in the industry about the definition of "cripple wall" in the absence of a definition from OTFDC. In order to eliminate the confusion, Structural Engineering Committee's subcommittee conducted research and recommended that "cripple wall" should be defined as the wall in between the top of a foundation wall and the lowest floor framing of the structure. Cripple walls may be sheathed or unsheathed, depending on whether or not the wall is transferring the lateral load. The Structural Engineering Committee further decided to limit the height of cripple walls to a maximum of eight feet. With this new definition of cripple walls, a three-story high structure with eight-foot-high cripple walls could be constructed using the prescriptive provisions of the OTFDC. Note that the eight-foot height assumes that the studs are adequately braced to prevent buckling (maximum 1/d is 50 which requires bracing at 75 inches for 2x stud walls) whether carrying gravity loads or lateral loads. The following two examples will illustrate the intent of the recommended definition:

1. For a three-story residence on top of a cripple wall that does not exceed eight high along its length, the prescriptive wall bracing provisions of the OTFDC could be used. The cripple wall is required to be braced the same as the first story above, in this case, 40 percent of its length. If the cripple wall height exceeds eight feet along its length, then the prescriptive code provisions could not be used and the structure would need to be an engineered design.
2. A two-story residence on a cripple wall would be considered a two-story building for the purposes of lateral bracing. The cripple wall would be required to be braced 25 percent of the length, matching the first-story requirements. If the cripple wall height exceeds eight feet, it would be termed a "normal" stud wall and be subject to other provisions of the code (12-foot height limitation according to Section 602.10.1.1). In this case, this "normal" stud wall would be termed as the first story of a three-story category and be subject to the 40 percent sheathing requirement.

The exception in Section 602.9.1 of the OTFDC is meant to address interior cripple walls (other than those required at 70-foot intervals according to Section 602.10.2.1 of the OTFDC) that are 18 inches or less and are enclosed by the perimeter foundation walls. All the required hold-downs for ABPs shall be attached to the foundation and have a continuous load path through the cripple walls. (See sketches 1, 2 and 3 for detailed description of these provisions on our Web site.)

Analysis 2: Prescriptive wall bracing requirements in OTFDC and OSSC are almost identical now. The minimum width requirements for the prescriptive bracing panels is 48 inches in most cases, except for gypsum board, for which the minimum width is 96 inches when sheathed one side or 48 inches when sheathed both sides of the wall. An exception to Section 602.10.1.2 clarifies that blocking behind horizontal joints in braced panels is not required where permitted by the manufacturer's installation standards. The subcommittee has recommended that the prescriptive nailing may not be adequate for all situations and recommends the following two options:

Please see "Staff advisories," Page 12

1. Provide double the amount of prescriptive nailing; e.g., 16d nail @ 8 inches on center
2. Provide lap sheathing a minimum $1^1/_2$ inches over the rim joist and braced panel edge-nailing from braced panel to the rim joist. (See sketch 7A for detailed description on our Web site.)

Analysis 3: The recommendations made by the Structural Engineering Committee to change Section 602.10.1.4 of the OTFDC are provided in code text with the proposed new language underlined and language recommended for deletion struck through.

602.10.1.4 Alternate braced wall panels. Any braced wall panel required by Section 602.10.1 shall be permitted to be replaced by an alternate braced wall panel constructed in accordance with the following provisions:

1. In one-story buildings, each panel shall have a minimum width of 32 inches (813 mm) and a maximum height of 10 feet (3048 mm). Each panel shall be sheathed on one face with $^3/_8$-inch (9.5 mm) minimum thickness wood structural panel sheathing nailed with 8d common or galvanized box nails in accordance with Table 602.3(1) and blocked on all edges. Two anchor bolts installed in accordance with Section 403.1.4 or approved equivalent shear connectors shall be provided in each panel. Where each panel is supported directly on a foundation or on floor framing supported directly on a foundation, each panel end stud shall have a tie-down device fastened to the foundation, capable of providing an approved uplift capacity of not less than 1,800 pounds (816 kg). The tie-down device shall be installed in accordance with the manufacturer's recommendations. The foundation ~~shall be supported by a~~ **and** footing **shall be** reinforced with a minimum of two No. 4 **horizontal** bars, **one** located at the top of the wall and **one** located a minimum of 3 inches (76 mm) from the bottom of the footing extending not less than ~~10~~ **5** feet (~~3038~~ **1525** mm) ~~beyond~~ **each way from the center of** the panel **with No. 4 vertical bars spaced not more than 24 inches (610 mm) on center**.
2. In the first story of two-story buildings, each braced wall panel shall be in accordance with Item 1, except that the wood structural panel sheathing shall be applied to both faces, three anchor bolts or approved equivalent shear connectors shall be provided, and tie-down device uplift capacity shall not be less than 3,000 pounds (1361 kg).
3. ~~In the top story of a two story building,~~ **In** the second story of a three-story building ~~or the top story of a three story building,~~ each panel shall have a minimum width of 32 inches (813 mm) and a maximum height of 10 feet (3038 mm). Each panel shall be sheathed on ~~one face~~ **both faces** with $^3/_8$-inch (9.5 mm) minimum thickness wood structural panel sheathing nailed with 8d common or galvanized box nails in accordance with Table 602.3(1) and blocked at all edges. Each panel end stud shall be connected to ~~a~~ **an equivalent cross section of** stud in the wall below with a corrosion resistant steel tie strap or hold-down capable of providing an approved uplift capacity of ~~not less than 1,800 pounds (816 kg) for top story and~~ not less than 3,000 pounds (1361 kg) ~~for the second story of a three story building~~. The alternate braced panel shall not extend more than 12 inches (305 mm) over an opening in the wall below and the opening has a minimum 4 inch by 12 inch (102 mm by 305 mm) header. **Reinforcement of the foundation is not re-**

Please see "Staff advisories issued," Page 13

quired when alternate braced panels are supported by a braced panel.

4. **In the stop story of a two-story building or the top story of a three-story building, each panel shall have a minimum width of 32 inches (813 mm) and a maximum of 10 feet (3048 mm) in height. Each panel shall be sheathed on one face with $^{3}/_{8}$-inch (9.5 mm) minimum thickness wood structural panel sheathing nailed with 8d common or galvanized box nails in accordance with Table 602.3(1) and blocked at all edges. Each panel end stud shall be connected to an equivalent cross section of stud in the wall below with a corrosion-resistant steel tie strap or hold-down capable of providing an approved uplift capacity of not less than 1,800 pounds (816 kg). The alternate braced panel shall not extend more than 12 inches (305 mm) over an opening in the wall below and the opening has a minimum 4 inch by 12 inch (102 mm by 305 mm) header. Reinforcement of the foundation is not required when alternate braced panels are supported by a braced panel.**

Exception: When alternate braced panels are required to be sheathed on both faces, panels may be sheathed on one side of the wall only when the panel thickness is increased to a nominal $^{1}/_{2}$-inch (12.7 mm) structural sheathing thickness and the nail spacing at the edge of panel is reduced to 3 inches (76 mm).

Other Structural Engineering Committee recommendations related to ABPs are:

1. Unusually shaped building provisions of the OSSC apply to residential buildings when they do not meet the prescriptive wall bracing requirements of the OTFDC.
2. For ABPs setback at the garage (see sketch 11 on our Web site):
   - Allow a maximum distance of 4x nominal depth of the joist
   - Joists parallel to braced wall line — double the joist under ABP/tie-down devices/sole plate nailing
   - Joists perpendicular to braced wall line — provide blocking under ABP/doubled joists at ends of ABP/tie-down devices/sole plate nailing
3. For ABPs at the second-story cantilevers:
   - Allow a maximum distance of 4x nominal depth of the joists
   - Joists perpendicular to braced wall line — continuous rim joist/double joists at ends of ABP/tie-down devices/sole plate nailing/2:1 backspan

Analysis 4: See *Determination 4*. ■

Building Codes interim steering committee update

The committee is working on several proposals concerning certification. The following policy questions arose from the stakeholder meetings last fall:

1. What is the optimal balance of knowledge, skill, and ability required for inspector certification?
2. Is there benefit to maintaining Oregon's certification?
3 Should there be regional/national reciprocity for certification?
4. Where should the licensing function (both issuance and enforcement) reside?

Problem statements that surfaced at the stakeholder meetings:

1. There is strong disagreement about the effectiveness of the current certification process.
2. There is a concern that the certification criteria for inspectors have been "dumbed down."
3. Contradictorily, jurisdictions are having difficulty recruiting and retaining qualified inspectors, and some perceive that this is because certification criteria are rigid and exclusionary.
4. Some perceive certification tests as not measuring ability to do the job. Certification tests for building officials and inspectors rely too much on education and not enough on experience.
5. There is disagreement about the efficiency of cross-certification.
6. Training for inspectors is inconsistent statewide.
7. General contractors, mechanical contractors, architects, building designers, and engineers are perceived to be insufficiently trained in codes.
8. There is little accountability for inspectors and building officials.

9. There are too many types of certifications.

The committee has developed the following action plan:

1. Develop an apprenticeship program for inspectors.
2. Develop new qualifications for building officials.
3. Require general and mechanical contractors, architects, building designers, and engineers to take code-update classes.
4. Require accountability of building officials and inspectors.

In addition to the certification process, the committee discussed the program-assumption process. The group agreed that the process lessens stability because jurisdictions can opt out. Members of the group suggested establishing a minimum-population requirement, a regional strategy to assume programs, and the requirement for a jurisdiction to keep a program for four full years before giving it up on penalty of not being allowed to assume it again for a longer period. No consensus was reached, and discussions continue. ■

Manufactured structures and parks Q & A

By Patrick Lewis

Question

I moved into a new manufactured dwelling park last year and discovered that it floods in the winter. There is water everywhere: in the street, in the parking areas, under and around all the homes, including mine. I have talked to the park owner, who said the park had passed the city's inspections and is OK. I talked to city officials and they told me the park is private property and they have no jurisdiction. Who is responsible for taking care of this problem?

Answer

ORS 446.100(1)(a) states that no person shall construct a mobile home or manufactured dwelling park at a place that is unsuitable due to swampy terrain or lack of adequate drainage. ORS 446.062(1)(a) gives the division authority to promulgate rules for the construction of new manufactured dwelling parks. OAR 918-600-0040(1) requires the park owner to submit plans and specifications to the local building department to indicate the nature and extent of the work proposed and to show, in detail, how it will conform to all relevant laws, rules, and regulations. OAR 918-600-0070(8) requires the park to be designed to prevent standing water under or adjacent to any manufactured dwelling. OAR 918-600-0050(4)(c) requires park streets to have a cross-slope of not less than two percent and a minimum longitudinal grade of half a percent. Therefore, it is obvious that parks are to be constructed to provide reasonable drainage.

OAR 918-600-0070(1)(a) requires the park owner to maintain the park grounds in a safe and sanitary manner. ORS 90.730 requires the park owner to provide and maintain a drainage system reasonably capable of disposing storm water, ground water, and subsurface water and OAR 918-600-0090(1) states that existing parks may have their existing use continued provided they do not pose a threat to health, property, or the general welfare of the public and that the continued use is not in conflict with the statutes, rules, or regulations.

The park conditions you've described do not appear to meet the state rules and regulations for the design, construction, or maintenance of a manufactured dwelling park and may pose a threat to the property and general welfare of other park residents. According to the rules and statutes mentioned, it is obvious that the primary responsibility for correcting the park's drainage problem belongs to the park owner. However, according to ORS 446.430(1), the city is responsible for the enforcement of the rules and regulations inside the park, does have the authority to require corrections, and may even share some liability if it failed to ensure code compliance during the initial plan review and inspection processes.

Compliance Report

The Building Codes Division is responsible for the enforcement of Manufactured Dwellings and Structures, Plumbing, Structural/Mechanical, Electrical and Boiler/Pressure Vessel Specialty Codes to protect the health and safety of the people of Oregon.

The Electrical and Elevator Board found the following violations of the Oregon Electrical Safety Law in June and July 2000:

CITY	NAME	VIOLATION	CIVIL PENALTY ASSESSED
Albany	Marca Electric, Inc.	Allowed unlicensed individual to make electrical installation (ninth violation/three cases)	$3,000
Albany	Henry Ratzlaff dba RCI Electric	No electrical permit/failure to call for inspection	$750
Chiloquin	Ron Wysocki	No contractor license/ no supervising or journeyman license	$750
Clatskanie	Patricia Joy Baumgarte	Worked outside the scope of limited residential license	$250
Durkee	Carl I. Wirkkala	No general supervising electrician license	$500
Glendale	David Harris	No contractor license/ no permit	$750
Gold Beach	Stephen C. Donnelly	Failed to make corrections/ no permit	$750
Happy Valley	Quadrant Security, Inc.	Allowed unlicensed individual to make electrical installation	$500
Hillsboro	Lawrence B. Marson dba Marson Electric	No permit	$250
Klamath Falls	Douglas John Wayne	No supervising, journeyman or limited residential license	$500
LaGrande	Hobson-Schindler Elevator Company fka Hobson Elevator, Inc.	Altered an elevator without approved plans	$500
Medford	Bear Creek Lock, Safe & Alarm, Inc.	Allowed unlicensed individuals to make electrical installations/ no permit	$750
Medford	Thomas Travis Puderbaugh	No license	$500
North Bend	Mikel Plank dba Mikel Plank Construction	No supervising or journeyman license/ no permit	$750
North Bend	Gary M. Polacek dba Gary Polacek Construction	No supervising or journeyman license/ no electrical permit	$750
Ontario	Hell's Canyon Electric, Inc.	Allowed unlicensed individual to make electrical installation (second violation)	$1,000
Ontario	Robert Glen Tidmarsh	No supervising or journeyman license	$500

CITY	NAME	VIOLATION	CIVIL PENALTY ASSESSED
Oregon City	Jef Heath dba Double J Remodeling, Inc.	No supervising or journeyman license/ no permit	$750
Portland	Protemp Associates, Inc.	Allowed unlicensed individual to make electrical installation	$500
Portland	Scott Bunn	No supervising or journeyman license	$500
Portland	Jeffrey Alan Pitman	No supervising or journeyman license	$500
Portland	Advanced Electric, Inc.	No permit	$250
Portland	Matt Jones	No supervising or journeyman license	$500
Portland	John Spalla	No supervising or journeyman license	$500
Portland	Jeff Alexander	No supervising or journeyman license (two-day continuing violation)	$1,000
Prineville	2RB Construction Inc.	No contractor license/ no permit	$750
Prineville	Troy Wayne Slaughter and Fred Martin Burnett dba B & S Contractors	No contractor license/ no permits (two violations each)	$1,500
Prineville	Russell Brown	No supervising, journeyman or limited residential license (two violations)	$1,000
Rainier	William L. Feris	No supervising, journeyman or limited residential license/ no contractor license	$1,000
Redmond	Gary Dale	Unsafe installation	$500
Roseburg	Douglas County Farmers Co-op	No contractor license/ no permit	$750
Roseburg	George Trent	No supervising or journeyman license	$500
Roseburg	Russell Willeford aka Rusty Willeford	No supervising or journeyman license/ no permit	$750
Roseburg	Richard G. Muniz dba Air Conditioning Advisors	Worked outside the scope of license/ no permit (two violations each)	$1,500
Salem	Mastertech Security Services, Inc.	Allowed unlicensed individual to make electrical installation	$500
Umatilla	Ace Electric, Inc.	Allowed two unlicensed individuals to make electrical installations/ no permit	$1,250
White City	O'Neal Electric Service, Inc.	No contractor license/ no permit	$750
Yamhill	Apartment Maintenance Service, Inc.	No limited maintenance specialty contractor license/ no permit	$750

The Plumbing Board found the following violations of the Oregon Plumbing Specialty Code in April and June 2000:

CITY	NAME	VIOLATION	CIVIL PENALTY ASSESSED
Astoria	Anthony Hyman dba Hyman's Independent Contractor	Advertised to engage in business of making installations	$500
Clackamas	Travis Miller	No journeyman plumber certificate of competency	$500
Clackamas	Barrich, Inc. dba Metro Rooter & Plumbing	Allowed unlicensed individual to make plumbing installation/no permit	$1,000
Corvallis	Lance Craft dba Jiffy Fix, Inc.	No journeyman plumber certificate of competency	$500
Eugene	Chris Stults	No journeyman plumber certificate of competency, commercial	$500
Grants Pass	Gordon D. Huwa dba Anne's Sanctuary	No plumbing business registration	$500
Klamath Falls	Monty D. Shearer	No journeyman plumber certificate of competency	$500
Milwaukie	Ben Alex Snodgrass	No journeyman plumber certificate of competency	$500
Pendleton	Bruce Slocum	No journeyman plumber certificate of competency	$500
Philomath	Donald L. Truex dba Advanced Restoration Services, Inc.	No journeyman plumber certificate of competency	$500
Portland	Neal Alston dba Drain Master Plumbing	No journeyman plumber certificate of competency	$500
Portland	Spirit Enterprises of Oregon, Inc. dba Stan the Hot Waterman	Allowed unlicensed individual to make plumbing installation	$500
Portland	Kenneth Mitchel Giblin dba KMG Construction	No plumbing business registration/ no journeyman plumber certificate of competency	$1,000
St. Helens	Cal Baty dba Decal Construction and Plumbing	Allowed unlicensed individual to make plumbing installation (two violations)	$1,000
St. Paul	Sam McKillip dba McKillip Excavation	No plumbing business registration (two violations)	$1,000
The Dalles	Kevin Franklin	No journeyman plumber certificate of competency (three violations)	$1,500
Tigard	Asher Traditional Homes, Inc.	No plumbing business registration	$500
Tigard	Brian W. Asher	No journeyman plumber certificate of competency	$500
Tualatin	Gray Purcell, Inc.	No permit	$500
Vernonia	Victor William Mack	No plumbing business registration	$500

The Director of the Department of Consumer and Business Services found the following violations of the Oregon Specialty Codes in August 2000:

CITY	NAME	VIOLATION	CIVIL PENALTY ASSESSED
Boardman	Logan International Ltd.	No building permit	$250
Colton	Raymond Harris	No plumbing permit	$250
Columbia City	Bill Hall	No building permit	$250
Coos Bay	Gary M. Polacek dba Gary Polacek Construction	No plumbing permit	$250
Corvallis	Harter Plumbing, Inc.	No plumbing permit (second violation)	$500
Eagle Point	Daniel McNeill dba Apple Appliance	No mechanical permit	$250
Forest Grove	David Brien dba Home Heating & Cooling	No mechanical permit	$250
Gervais	CXT Incorporated	No insignia of compliance prefabricated structure	$250
Grants Pass	Gordon D. Huwa dba Anne's Sanctuary	No plumbing permit	$250
Hillsboro	Strauss Excavating, Inc.	No plumbing permit	$250
Irrigon	Robert M. Lovett dba Oregon Steel Design, Inc.	No building permit	$250
Jacksonville	Dennis C. Kottke dba Dennis C. Kottke Plumbing	No plumbing permit	$250
Keizer	C & S Fire Safe Services	No mechanical permit	$250
Keizer	Shafe Construction Corporation dba Northwest Professional Roofing	No building permit	$250
Keizer	Garry Whalen	No plumbing or building permits	$500
Klamath Falls	Allen Merck dba Merck Construction	No plumbing permit	$250
Lakeview	Michael A. Camilli	No plumbing permit	$250
Lebanon	BMC West Corporation dba BMC West	Prefabricated unit no insignia of compliance	$250
Medford	Southern Oregon Heating & Air Conditioning, Inc.	No mechanical permit	$250
Pendleton	Mark Durbin dba Mark Durbin Construction	Failed to request required inspections (three violations)	$750
Pendleton	Bruce Slocum	No plumbing permit	$250
Philomath	Donald L. Truex dba Advanced Restoration Services, Inc.	No plumbing permit	$250
Portland	Neal Alston dba Drain Master Plumbing	No plumbing permit	$250
Portland	HVAC Incorporated	No mechanical permit	$250
Portland	Lester Stoker	No plumbing permit	$250

CITY	NAME	VIOLATION	CIVIL PENALTY ASSESSED
Portland	Loren Deshazer dba Deshazer Restaurant Service	No mechanical permit	$250
Portland	Ermund R. Zochert dba Ermund R. Zochert Furnace Repair and Cleaning aka Zochert Furnace Cleaning Repair and Power Vac	No mechanical permit	$250
Prineville	Anchor Fireplace Products, Inc. dba Anchor Fireplace	No mechanical permit (three violations)	$750
Prineville	2RB Construction Inc. and Russell Brown	No plumbing permit/ no building permit	$500
Prineville	Steven Lynn Dix dba Grizzly Mountain Plumbing	No plumbing permit	$250
Prineville	Troy Wayne Slaughter and Fred Martin Burnett dba B & S Contractors	No building permits/ no plumbing permits (two violations each)	$1,000
Rainier	New Energy, Inc. dba Woodstove Warehouse dba Earth-N-Sun	No mechanical permit	$250
Salem	McIntyre Construction, Inc.	No building permit	$250
Salem	Martin D. Sommers dba Sommers Enterprises	No mechanical permit	$250
Salem and Stayton	Harris Roofing Company, Inc.	No structural permits (two violations)	$500
Silverton	Mike Overfield dba Overfield Property Management Co.	No final inspection	$250
Sutherlin	Bruce Connell dba Bruce Connell Construction	No plumbing permit	$250
The Dalles	Kevin Franklin	No plumbing permits (three violations)	$750

The Board of Boiler Rules found the following violations of the Oregon Specialty Codes in June 2000:

Bend	Cascade Heating & Specialties, Inc.	Employed unlicensed individual to make boiler repairs	$500
Bend	Brian Dennison	Made repairs to boiler without proper certification	$500
Eugene	Brian Robinson dba Robinson Plumbing	No installation permit (three violations)	$1,500
North Bend	Collier Mechanical Contractors, Inc.	No installation permit (three violations)	$1,500
Roseburg	North Umpqua Plumbing	No installation permit (two violations)	$1,000
Winchester	American Quality Heating & Cooling, Inc.	No installation permit/ no Boiler/Pressure Vessel Business License	$1,000

Board appointments

Brett Cook was appointed to the State Plumbing Board effective May 1 to complete the unexpired term vacated by Henry McDonald, which ends November 30, 2001. Cook served as a plumbing inspector in Washington County and the City of Tualatin from 1990-95 and has been the building official for the City of Boardman since 1995. He occupies the building official position on the board.

Bonnie Waybright was appointed effective Septembe 8 to the State Plumbing Board to occupy the Health Division postiion. She has been the regional engineer and cross-connection program coordinator in the Oregon Health Division Drinking Water Program since February 1992. Her term ends June 30, 2004. Waybright replaces Chris Hughes, whose term expired.

Lawrence Hite was appointed to the Building Codes Structures Board for a four-year term effective July 1. Hite is a licensed architect and is the Disabilities Commission representative on the board. He replaces George McCart, whose term expired June 30. The division expresses its thanks to George McCart, Chris Hughes, and Hank McDonald for their service. McCart will continue to serve on the Structural Code Committee, providing his valuable expertise on accessibility and residential design. ■

Board reappointments

Board of Boiler Rules

Steve Nelson, occupying the boilermaker position. Term ends September 15, 2004.

Tri-County Building Industry Service Board

John Lape, architect/engineer position. **Ronald Murray**, labor organization, construction trades position. **Forrest Soth**, elected city official position. **Rob Yorke**, general contractor position. All terms end June 30, 2004.

Editorial correction

Table 1306.1 published as part of the dwelling code errata in the June/July *CodeLink* contains a printing error (see page 16 of that issue). All the 3's shown in the table should be 36's. ■

Interpretive rulings signed

The following rulings have been approved by the division administrator and mailed to building officials. They can also be found on our Web site, www.cbs.state.or.us/bcd.

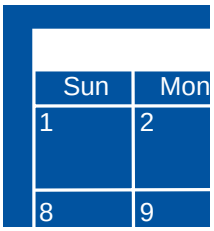
- **00-10** Rowhouse Construction(The Web version contains an editorial correction to Table 10.1 that was made since original distribution.
- **00-11** Stormwater Management Inc. Catch Basin StormFilter (plumbing product approval)
- **00-12** Thermaco Inc. Big Dipper AST Series Grease Interceptors (plumbing product approval)
- **00-14** Automatic Fire Sprinkler Systems in Group E Occupancies

In a related matter, Interpretive Ruling 93-88, Zero Lot Line-Residential Construction, was rescinded. Issuance of **00-10** on rowhouse construction replaced it. ■

Notice

A packet of Oregon amendments to the Oregon Structural Specialty Code has been printed and is now available through regular code sources. The packet contains replacement pages for amendments that were effective April 1 and October 1, 1999, as well as the amendments effective October 1, 2000. The April 1 and October 1, 1999, amendments were previously issued as “insert” pages and should be removed with the insertion of this packet. ■

Board meeting dates



Electrical & Elevator Board

Meets at 9:30 a.m. on the fourth Thursday of each month:

- September 28
- October 26

Building Codes Structures Board

Meets at 9:00 a.m. on the first Wednesday of each month:

- September 6
- October 4

Manufactured Structures & Parks Advisory Board

Meets at 9:30 a.m. on the second Thursday of each quarter:

- October 12

MEETINGS ARE HELD IN THE SALEM BCD CONFERENCE ROOM AT 1535 EDGEWATER ST. NW EXCEPT THE TRI-COUNTY BOARD

State Plumbing Board

Meets at 9:00 a.m. on the third Friday of every other month:

- October 20

Board of Boiler Rules

Meets at 9:30 a.m. on the first Tuesday of each quarter:

- September 12 (second Tuesday)

MEETINGS ARE HELD IN THE SALEM BCD CONFERENCE ROOM AT 1535 EDGEWATER ST. NW.

Tri-County Building Industry Service Board

Meets at 9:30 a.m. on the second Wednesday of each month:

- September 13
- October 11

THE TRI-COUNTY BOARD MEETS AT 123 NE 3RD AVE. PORTLAND.

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Questions may be referred to Mirjana Prather, (503) 373-7278. ■

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STATE OF OREGON • BUILDING CODES DIVISION

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