



**PULLMAN**  
**BUILDING DEPARTMENT**  
**NEWSLETTER**

MAY 2006

## CONCRETE REINFORCEMENT

The following information and additional information about reinforcing bars can be found in the International Residential Code, Concrete Reinforcing Steel Institute and American Concrete Institute. Reinforcing bars must be carefully and accurately placed to conform to the placing drawings and code requirements.

**Concrete protection for reinforcement.** The minimum concrete cover for reinforcement shall comply with the following table.

MINIMUM CONCRETE COVER

CONCRETE EXPOSURE	MINIMUM COVER (inches)
1. Concrete cast against and permanently exposed to earth.	3
2. Concrete exposed to earth or weather No. 6 through No. 18 bar No. 5 bar, W31 or D31 wire, and smaller	2 1½
3. Concrete not exposed to weather or in contact with ground Slabs, walls, joists: No. 14 and No. 18 bars No. 11 bar and smaller Beams, columns: Primary reinforcement, ties, stirrups, spirals Shells, folded plate members: No. 6 bar and larger No. 5 bar, W31 or D31 wire, and smaller	1½ ¾  1½  ¾ ½

For SI: 1 inch = 25.4 mm.

**Support.** Where approved by the building official, embedded items (such as dowels or inserts) that either protrude from concrete or

remain exposed for inspection are permitted to be embedded while the concrete is in a plastic state, provided the following conditions are met:

1. Embedded items are not required to be hooked or tied to reinforcement within the concrete.
2. Embedded items are maintained in the correct position while the concrete remains plastic.
3. The concrete is properly consolidated around the embedded item.

**Placing Reinforcement.** Reinforcement shall be adequately secured (tied) in the forms to prevent displacement by concrete placement or workers.

**Surface conditions of reinforcement.** At the time concrete is placed, reinforcement shall be free from mud, oil, or other nonmetallic coatings that decrease bond.

**Welded Reinforcement.** "Tack" welding (welding crossing bars) can seriously weaken a bar at the point welded by creating a metallurgical notch effect. This operation can be performed safely only when the material welded and welding operations are under continuous competent control. Welding of reinforcing bars shall conform to AWS D1.4.

**Walls.** Basement walls are reinforced in either one or both faces. The reinforcement usually consists of vertical and horizontal bars to form a mat or curtain. The larger, more closely-spaced bars may be either vertical or horizontal, depending on the design. They are usually placed nearer to the surface or face of the wall. The smaller and more widely-spaced

*(Continued on page 2)*

### APRIL PERMITS

Building permit and valuation totals for April 2006, April 2005, year-to-date 2006 and comparable 2005:

April 2006: 36 permits valued at \$8,337,740  
 YTD 2006: 158 permits valued at \$16,894,950

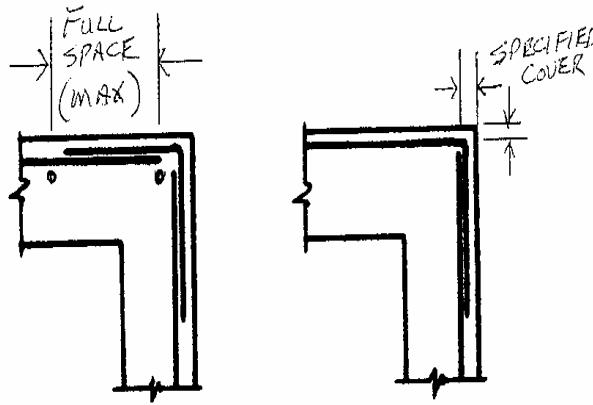
April 2005: 46 permits valued at \$2,315,882  
 YTD 2005: 171 permits valued at \$9,754,022

(Continued from page 1)

tie (or temperature and shrinkage) bars cross the main reinforcing bars at right angles and are farther from the face of the wall. In some thin walls, a single curtain of smaller size bars, widely-spaced temperature and shrinkage bars may be used both vertically and horizontally, and placed in the center of the wall.

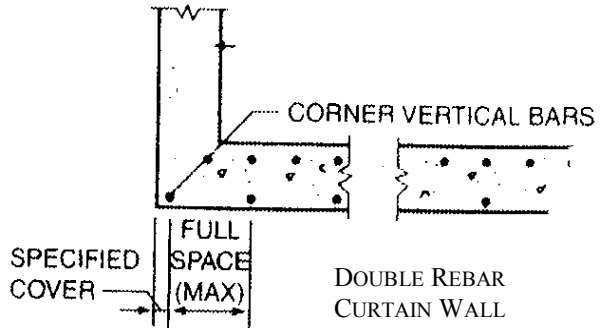
Wall curtains must not be left loose for the concrete workers to move for easy placement of the concrete. The entire curtain must be secured at the top to keep it in a vertical plane.

Horizontal reinforcing bars at the outside face of walls usually extend around the corners—either by providing a bend on the end of one of the two bars meeting at the corner, or

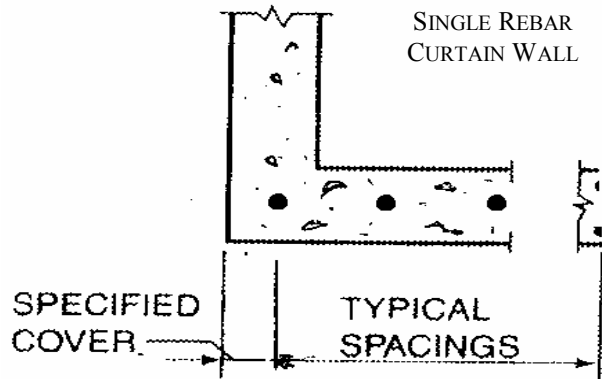


WALL REINFORCING PLACEMENT  
VERTICAL AND HORIZONTAL BARS AT A CORNER

by splicing straight bars with a short corner or elbow bar.



**Vertical bars in walls.** If neither the placement drawings nor engineering typical details show where the first and last reinforcing bars are to be placed, it is recommended that the spacing shown for single or double curtain may be followed.



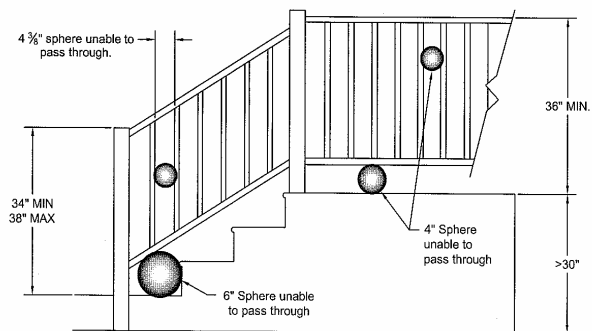
## HANDRAIL/GUARDRAIL REQUIREMENTS

The following are excerpts from IRC Section R312 and an illustration regarding guardrail requirements for single family homes and duplexes.

“Porches, balconies or raised floor surfaces located more than 30 inches above the grade below shall have guards not less than 36 inches in height. The open side of stairs with a total rise of more than 30 inches above the floor below shall have guards not less than 34 inches in height measured vertically from the nosing of the treads.”

Except on the open side of stairs, guards shall be solid or have intermediate rail or ornamental closers which do not allow passage of a sphere 4 inches or more in diameter.

Guards on the open sides of stair treads are permitted to be constructed to allow the passage of a 4 3/8" sphere. The triangular opening formed by the riser, tread and bottom rail are permitted to pass a 6 inch sphere.



CITY OFFICES WILL BE CLOSED MONDAY, MAY 29, 2006, FOR MEMORIAL DAY