

City of Casper

# Building Guide

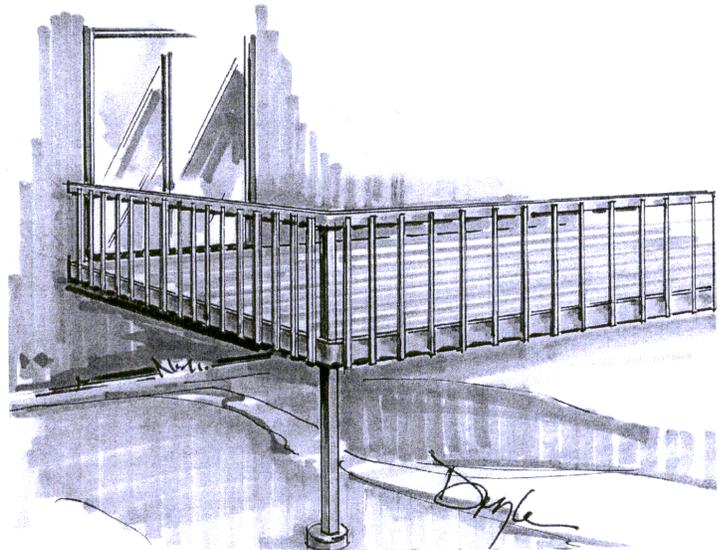
## Single Family Residential Uncovered Decks and Porches

### How to Use this Guide

Provide a set of plans, drawn to scale, and complete the following:

1. **Complete this Building Guide** by filling in the blanks on page two and indicating which construction details will be used.
2. **Provide a Plot Plan** (site plan) showing dimensions of your project or addition and its relationship to existing buildings or structures on the property and the distance to existing property lines, drawn to scale.
3. **Fill out a Building Permit Application.**

The majority of permit applications are processed with little delay. The submitted documents will help determine if the project is in compliance with building safety codes, zoning ordinances, and other applicable laws.



The City of Casper and the International Code Council is a professional organization seeking to promote the public health, safety and welfare to building construction. We appreciate your feedback and suggestions. Contact the City of Casper, Community Development Building Department at (307) 235-8264 with any questions, or visit the web at [www.casperwy.gov](http://www.casperwy.gov).

This handout was developed by the City of Casper and the International Code Council as a basic plan submittal under the 2015 International Residential Code. It is not intended to cover all circumstances. Check with the Community Development Building Department for additional requirements.

# Single Family Residential Uncovered Decks and Porches

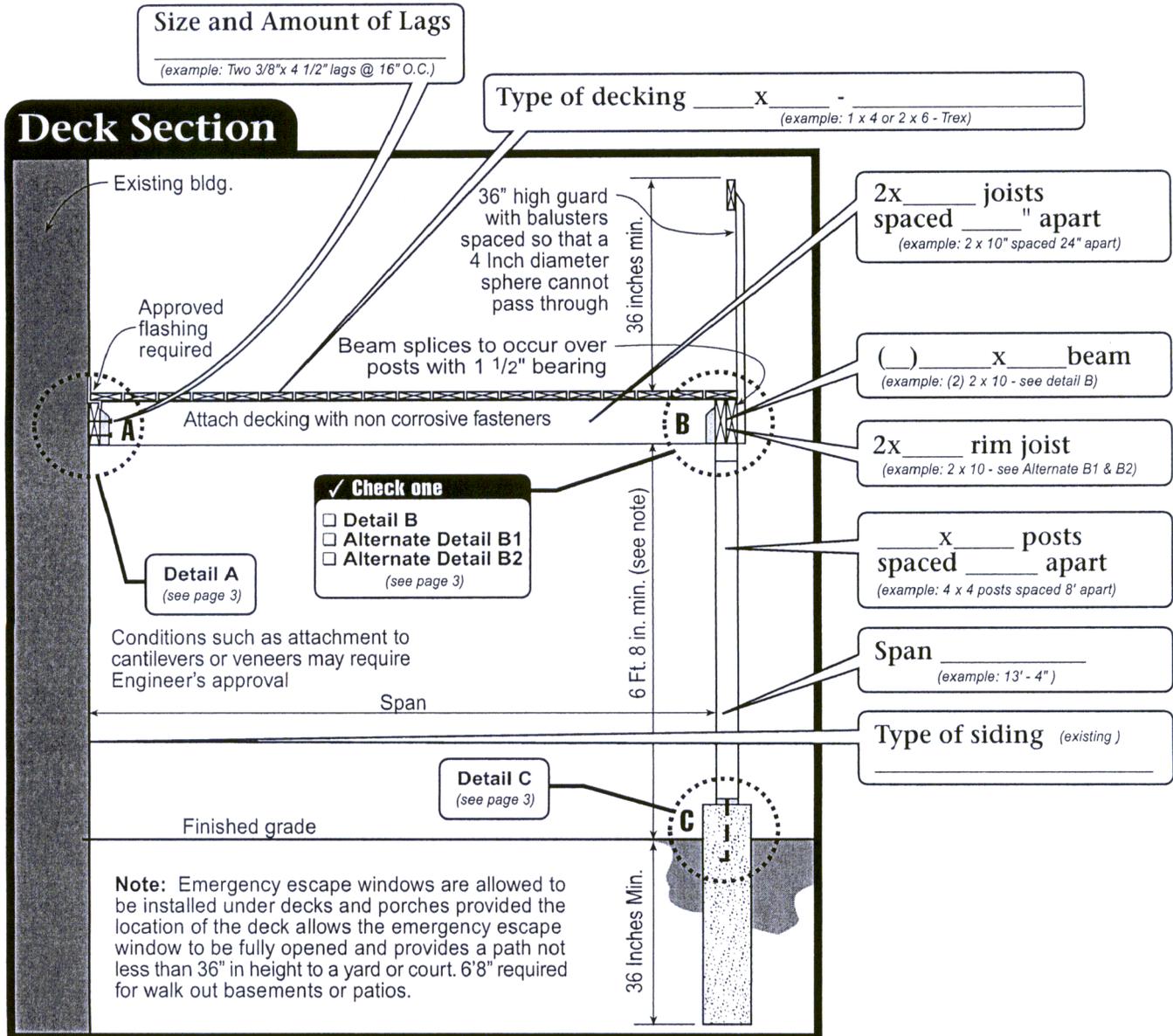
## Directions

1. Fill in the blanks. Please print legibly.
2. Indicate in the check box which detail from page 3 will be used.

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

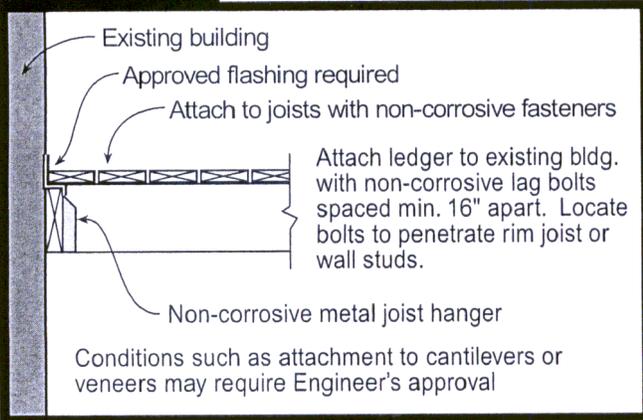


**Note:** A plot plan (plan view) showing the dimensions of your project or additions and its relationships to existing buildings or structures on the property must be included. In addition to project dimensions, your plot plan must also show other details such as post locations and spacing, joist and beam spans, and any other pertinent information not shown on the section drawing.

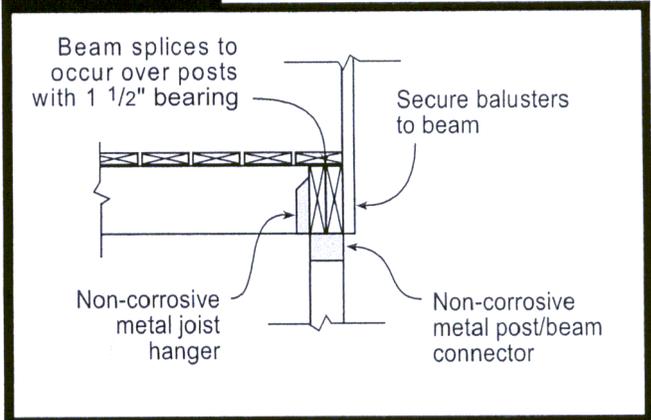
**All plan reviews are subject to field inspections.**

# Single Family Residential Uncovered Decks and Porches

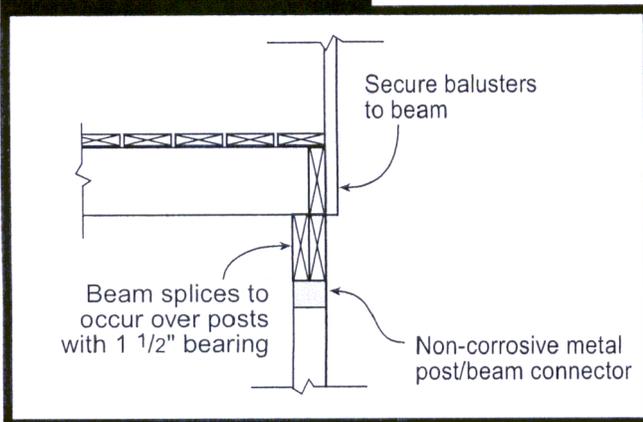
## Detail A



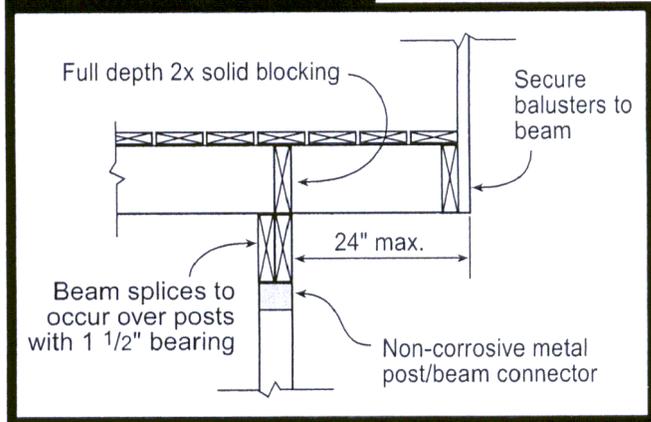
## Detail B



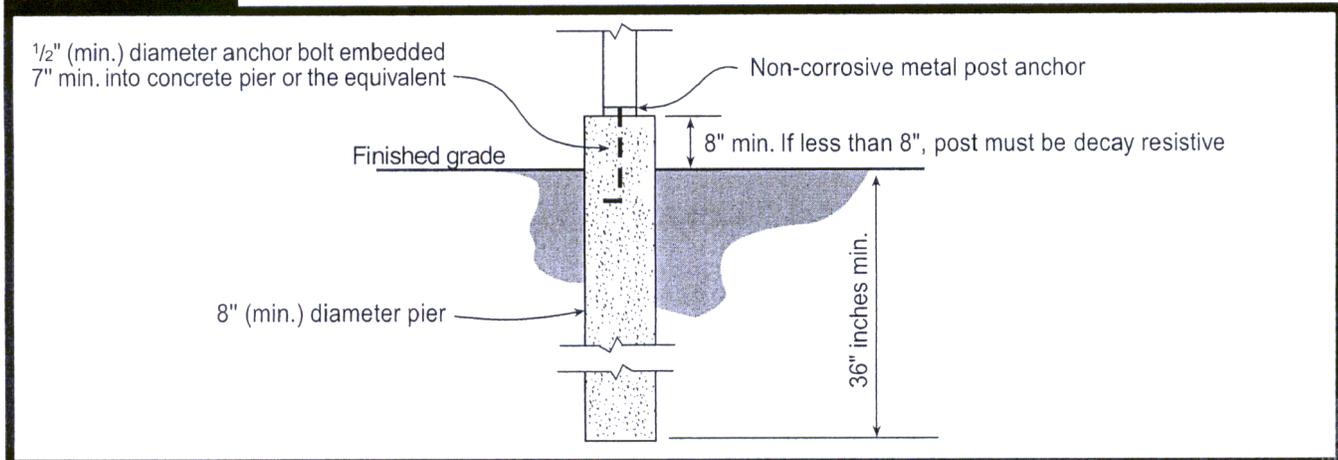
## Alternate Detail B1



## Alternate Detail B2



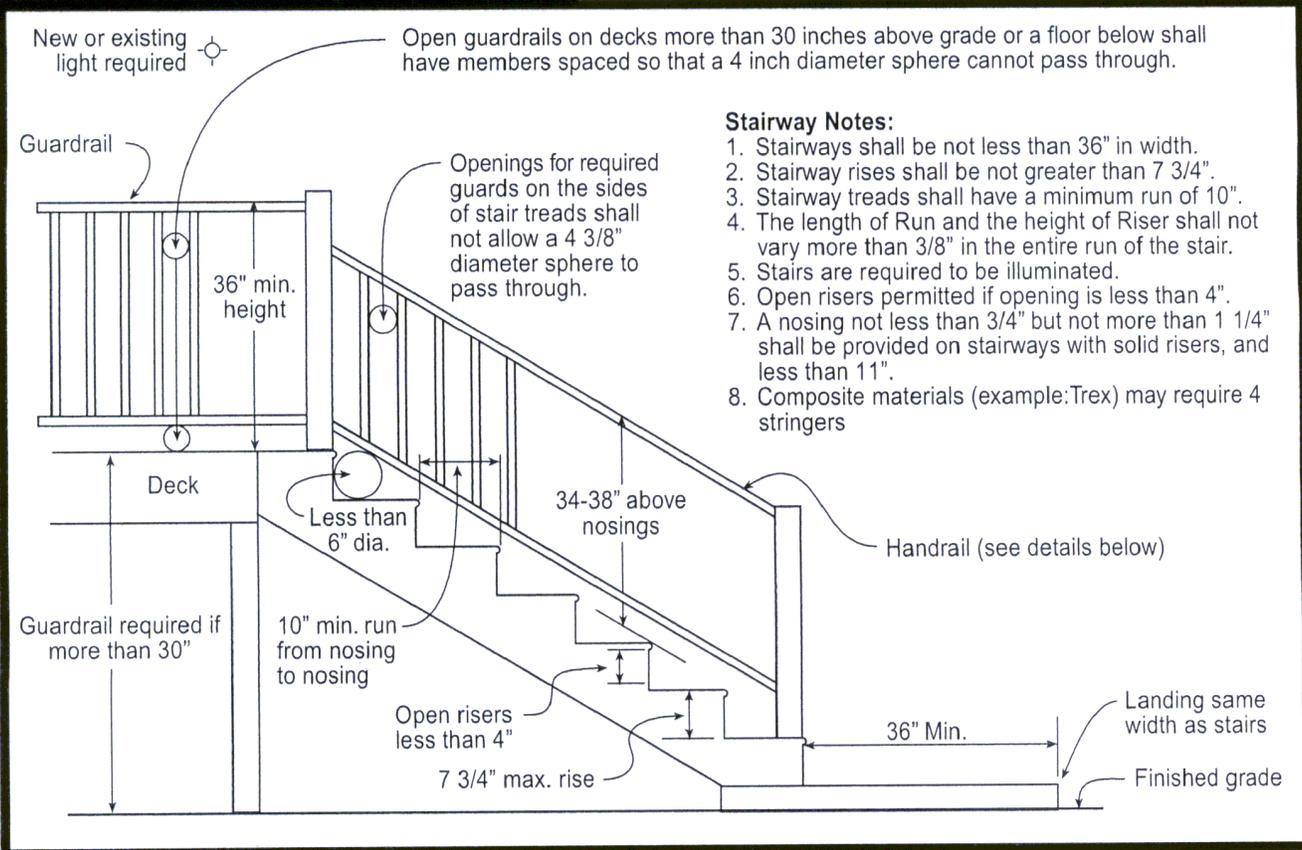
## Detail C



**All plan reviews are subject to field inspections.**

# Single Family Residential Uncovered Decks and Porches

## Stair & Handrail Specifications



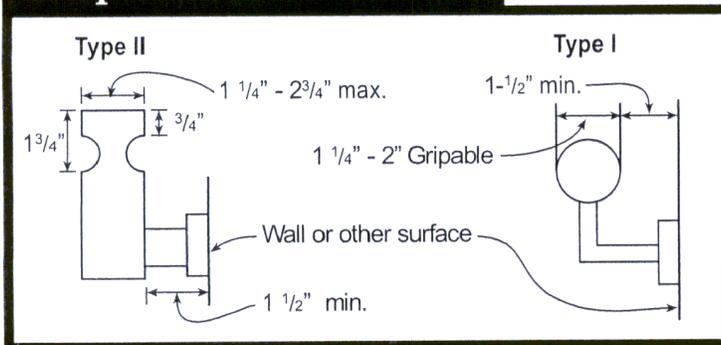
### Stairway Notes:

1. Stairways shall be not less than 36" in width.
2. Stairway rises shall be not greater than 7 3/4".
3. Stairway treads shall have a minimum run of 10".
4. The length of Run and the height of Riser shall not vary more than 3/8" in the entire run of the stair.
5. Stairs are required to be illuminated.
6. Open risers permitted if opening is less than 4".
7. A nosing not less than 3/4" but not more than 1 1/4" shall be provided on stairways with solid risers, and less than 11".
8. Composite materials (example: Trex) may require 4 stringers

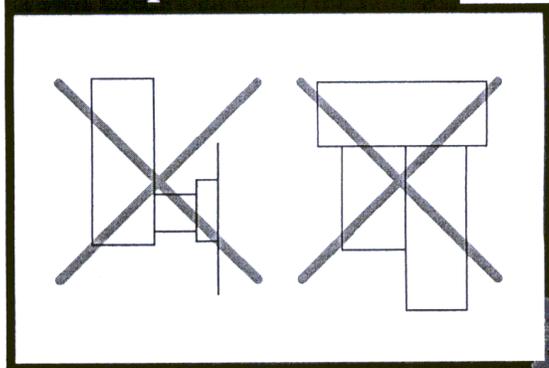
### Handrail Notes:

1. Handrails shall be continuous on at least one side of stairs with 4 or more risers.
2. Top of the handrails shall be placed not less than 34 inches nor more than 38 inches above stair nosings.
3. The handgrip portion of handrails shall be not less than 1-1/4 inches nor more than 2 1/4 inches in cross section for non circular handrails.
4. Handrails shall be placed not less than 1-1/2 inches from any wall or other surface.
5. Handrails to be returned to wall, post or safety terminal (per 311.5.6.2 IRC)

## Acceptable Handrail Details



## Unacceptable Handrails



**All plan reviews are subject to field inspections.**

# Single Family Residential Uncovered Decks and Porches

## Decks

**R507.1 Decks.** Where supported by attachment to an exterior wall, decks shall be positively anchored to the primary structure and designed for both vertical and lateral loads. Such attachment shall not be accomplished by the use of toenails or nails subject to withdrawal. Where positive connection to the primary building structure cannot be verified during inspection, decks shall be self-supporting. For decks with cantilevered framing members, connections to exterior walls or other framing members, shall be designed and constructed to resist uplift resulting from the full live load specified in Table R301.5 acting on the cantilevered portion of the deck.

**R507.2 Deck ledger connection to band joist.** For decks supporting a total design load of 50 pounds per square foot (2394 Pa) [40 pounds per square foot (1915 Pa) live load plus 10 pounds per square foot (479 Pa) dead load]), the connection between a deck ledger of pressure-preservative-treated Southern Pine, incised pressure-preservative-treated Hem-Fire or approved decay-resistant species, and a 2-inch (51 mm) nominal lumber band joist bearing on a sill plate or wall plate shall be constructed with 1/2 inch (12.7 mm) lag screws or bolts with washers in accordance with Table R507.2. Lag screws, bolts and washers shall be hot-dipped galvanized or stainless steel.

**R507.2.1 Placement of lag screws or bolts in deck ledgers and band joists.** The lag screws or bolts in deck ledgers and band joists shall be placed in accordance with Table R507.2.1 and Figures R507.2.1(1) and R507.2.1(2)

**R507.2.2 Alternate deck ledger connections.** Deck ledger connections not conforming to Table R507.2 shall be designed in accordance with accepted engineering practice. Girders supporting deck joists shall not be supported on deck ledgers or band joists. Deck ledgers shall not be supported on stone or masonry veneer.

**R507.2.3 Deck lateral load connection.** The lateral load connection required by Section R507.1 shall be permitted to be in accordance with Figure R507.2.3. Where the lateral load connection is provided in accordance with Figure R507.2.3, hold-down tension devices shall be installed in not less than two locations per deck, and each device shall have an allowable stress design capacity of not less than 1500 pounds (6672 N).

# Single Family Residential Uncovered Decks and Porches

TABLE R507.2

FASTENER SPACING FOR A SOUTHERN PINE OR HEM-FIR DECK LEDGER AND  
A 2-INCH NOMINAL SOLID-SAWN SPRUCE-PINE-FIR BAND JOIST

(Deck live load = 40 psf, deck dead load = 10 psf)

JOIST SPAN	6' and less	6'1" to 8'	8'1" to 10'	10'1" to 12'	12'1" to 14'	14'1" to 16'	16'1" to 18'
Connection Details							
1/2 inch diameter lag screw with 15/32 inch maximum sheathing	30	23	18	15	13	11	10
1/2 inch diameter bolt with 15/32 inch maximum sheathing	36	36	34	29	24	21	19
1/2 inch diameter bolt with 15/32 inch maximum sheathing and 1/2 inch stacked washers	36	36	29	24	21	18	16

For SI 1 inch = 25.4 mm, 1 foot = 304.8 mm. 1 pound per square foot = 0.0479kPa.

- A. The tip of the lag screw shall fully extend beyond the inside face of the band joist.
- B. The maximum gap between the face of the ledger board and face of the wall sheathing shall be 1/2 inch.
- C. Ledgers shall be flashed to prevent water from contacting the house band joist.
- D. Lag screws and bolts shall be staggered in accordance with Section R507.2.1.
- E. Deck ledger shall be minimum 2 x 8 pressure-preservative-treated No. 2 grade lumber, or other approved materials as established by standard engineering practice.
- F. When solid-sawn pressure-preservative-treated deck ledgers are attached to a minimum 1-inch-thick engineered wood product (structural composite lumber, laminated veneer lumber or wood structural panel band joist), the ledger attachment shall be designed in accordance with accepted engineering practice.
- G. A minimum 1 x 9/12 Douglas Fir laminated veneer lumber rimboard shall be permitted in lieu of the 2-inch nominal band joist.
- H. Wood structural panel sheathing, gypsum board sheathing or form sheathing not exceed 1 inch in thickness shall be permitted. The maximum distance between the face of the ledger board and the face of the band joist shall be 1 inch.

TABLE 507.2.1

PLACEMENT OF LAG SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS

MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS

	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING
Ledger	2 inches	1/4 inch	2 inches	1 5/8 inches
Band Joist	3/4 inch	2 inches	2 inches	1 5/8 inches

For SI: 1 inch = 25.4 mm.

- A. Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figure R507.2.1(1).
- B. Maximum 5 inches.
- C. For engineered rim joists, the manufacturer's recommendations shall govern.
- D. The minimum distance from bottom row of lag screws or bolts to the top edge of the ledger shall be in accordance with Fig. R507.2.1(1)

# Single Family Residential Uncovered Decks and Porches

**R507.3 Wood/plastic composites.** Wood/plastic composites used in exterior deck boards, stair treads, handrails and guardrail systems shall bear a label indicating the required performance levels and demonstrating compliance with the provisions of ASTM D 7032.

**R507.3.1 Installation of wood/plastic composites.** Wood/plastic composites shall be installed in accordance with the manufacturer's instructions.