

BUILDING PERMIT REQUIREMENTS FOR: **RESIDENTIAL DECKS**

**INFORMATION
GUIDELINE**

9

January 2017

CITY OF ESCONDIDO • BUILDING DIVISION • 201 N. BROADWAY, ESCONDIDO, CA 92025 • (760) 839-4647

This information bulletin describes the minimum requirements for obtaining residential deck permits using the City of Escondido standard plan; ICC-ES approved plans, or other conventionally framed plans. For clarification of the permit process, visit the Building Division, 201 N. Broadway, or call 760-839-4647.

High or Very High Fire Severity Zone: YES _____ NO _____ Decks located in High or Very High Fire Severity Zones shall be of ignition-resistant construction. Refer to Ignition Resistant Guidelines from the County of San Diego for alternative construction methods. Owner acknowledgement: _____

I. WHEN IS A PERMIT REQUIRED?

A building permit is required for any residential deck more than 30 inches above grade, measured vertically to the floor or grade below at any point within 36" horizontally to the edge of the open side, and not over any basement or story below. (See Page 3 Section A-A)

II. YOUR OPTIONS FOR SERVICE

Deck permits may be obtained "over-the-counter" when using the City of Escondido standard plan or ICC-ES approved plans. Plans not meeting the criteria for over-the-counter plan check must be submitted for plan review.

III. DRAWINGS TO PROVIDE/FORMS TO COMPLETE

Plans must be drawn to scale and must be of sufficient clarity to indicate the location, nature and extent of the work proposed. Be sure to clearly label all existing and proposed construction.

Plans must show, in detail that the proposed work will conform to the provisions of the California Building Code, Zoning Ordinances, and all other relevant laws, ordinances, rules and regulations. Zoning information is available at the Planning Division, 201 N. Broadway, 760-839-4671.

Three sets of plans are required and must include:

A. Plot Plan

See Figure 1 for requirements.

B. Foundation and Framing Plans

Provide one of the following:

1. One copy of the City of Escondido standard plan (specifications in this Information Guideline) with the proposed footing sizes, joist sizes and beam sizes highlighted, OR
2. One copy of an International Code Council (ICC-ES) approved plan available from your material supplier, OR
3. Three copies of any other plan. These plans should include a framing plan,

foundation plan, elevations, cross-sections, and connection details.

C. Floor Plan

For decks adjacent to a residential building, include a floor plan and show the following information:

1. Use and dimensions of all rooms opening onto the deck.
2. Location and size of all windows and doors from those rooms.
3. Location of smoke, and CO alarms.

D. Permit Application

All projects must be submitted with a Permit Application. If you intend to obtain your permit on the same day as plan review, the application must be fully completed. Note: there are no exceptions to the Workers' Compensation Insurance requirements. If the property owner is doing the construction work or is hiring a number of different contractors, a separate Owner-Builder Verification form must be signed by the owner at the Building Division before the permit can be issued.

IV. ADDITIONAL REGULATIONS

- A. If deck posts are to be located less than 5'-0" from the property line and zoning regulations are permitting, the deck must have a one-hour fire-resistive wall extending to the underside of the deck sheathing on the property line side to provide fire protection. No openings are permitted in this wall and a parapet may be required. See CRC R302.
- B. A deck which is cantilevered beyond an exterior wall can project no closer than 24 inches to the lot line where openings are prohibited if zoning regulations are permitting. Combustible projections must be of one-hour fire-resistive or heavy timber construction. See Table R302.1(1) of the CRC.

- C. No fire protection is required for the common wall between the dwelling unit and deck as they fall under the same occupancy classification.
- D. All electrical wiring and equipment must comply with regulations for exterior installation.

V. CONSTRUCTION SPECIFICATIONS

Following are the minimum construction specifications for decks.

- A. The concrete mix for footings must meet a compressive strength of $f'_c = 2,000$ psi minimum or the following proportions by volume:
 - 1 part Portland cement
 - 3 parts sand
 - 4 parts 3/4 inch maximum-size gravel
 - 7 1/2 gallons of water maximum per sack of cement
- B. Lumber must be Douglas fir-larch No. 2 or better. All lumber must be grade-marked. Joists, girders and posts may be required to be protected against decay and termites. See Chapters 4 and 5 of the California Residential Code for details. All posts must be a minimum of 4x4.
- C. The post anchorage and bracing details shown on the following sheets are acceptable for decks.
 - 1. Posts must be anchored at the lower end and must be braced at the upper end using either of the details shown in Figure 3. Decorative-type bracing may be substituted if the same resistance to lateral loading is provided.
 - 2. Post anchorage to footings may be accomplished with a standard approved post base installed per manufacturer's instructions. The footing must be adequate for the load applied. See Section VII and Table 4.
- D. When it is desired to connect and support one side of the deck structure by attaching it directly to the house, the joist spacing and girder sizes may be as shown in Tables 1 and 3. However, the main girder may be replaced on the side attached to the dwelling unit with a 2x8 minimum ledger the same size as the joists or larger and fastened to the studs with two 1/2-inch diameter by 5-inch long lag bolts spacing per CRC Table R507.2 and R507.2.1.

If a ledger is not used, deck joists should be notched and placed directly on the bottom plate of the dwelling unit. Proper flashing and weather protection must be provided.

- E. Where the deck is supported by a ledger attached to the exterior wall, decks shall be designed for vertical and lateral loads. The lateral load connection shall be per Figure 7 or 8, holdown tension devices shall be installed at not less than two locations per deck and each device shall have an allowable stress design capacity of not less than 1500 pounds.
- F. Specify deck covering when submitting plans. Note that the panel span rating for plywood subfloor must be appropriate for the joist spacing (i.e., the second number in the panel span rating must be equal to or greater than the deck joist spacing called out in Table 1). Adequate drainage must also be provided. Minimum 1/4":12"

VI. INSPECTIONS

An Inspection Record Card is issued at the time the permit is obtained. The inspector signs this card as the construction is inspected and approved. The approved plans, the Inspection Record Card and the permit are important records and should be retained.

A combination permit is active for 180 days. Each inspection scheduled and passed extends the permit 180 days. Permits approaching expiration can be extended under special circumstances. Inspections are required at the following times:

- A. When footings have been excavated, hardware in place, but before concrete is placed,
- B. When ledgers are attached to an existing structure, and
- C. When work is complete. Note that the project is not legally complete until there is an approved final inspection. Call 839-4646 to schedule inspections.

VII. TABLES

The tables provided are for simple-span residential decks and include span tables for deck joists and girders, minimum pad footing sizes and a nailing schedule.

The following assumptions have been made:

Deck live load is 40 psf, deck dead load is 10 psf.

All lumber is to be Douglas fir-larch No. 2 or better with minimum design stresses specified in the tables.

All posts are to be 4x4 minimum.

Soil bearing pressure is 1,000 psf minimum.

When the above assumptions do not apply to the proposed design, values in the tables must be adjusted.

Figure 1/Requirements for deck plot plan and partial floor plan

Contact the Planning Division at 839-4671 for yard setback and other requirements before drawing the plot plan.

Three copies of a Plot Plan are required for a permit. Information on each of the following items must be included on the plot plan:

1. Name of owner.
2. Address and Assessor's Parcel Number where deck is to be built.
3. Legal description of property.
4. North arrow and scale. Suggested scale: 1 inch equals 20 feet. Information on lot direction is available from the Planning and Building Division, 839-4671 or 839-4647.
5. Boundaries and dimensions of property.*
6. Names of bordering street(s).*
7. Width of alley(s), if any.*
8. Location, width and type of easements. Private easements should be shown on the property's deed.*
9. Location and dimensions of existing buildings, structures, retaining walls, septic tanks and leach field, paved parking and driveways. Include distance from property line.
10. Location and dimensions of proposed deck. Include distance to property line.
11. Location and spacing of all posts supporting deck.
12. Existing survey hubs, pipes and similar permanently installed property line identification.

*This information is available from the Engineering Department, 760-839-4651.

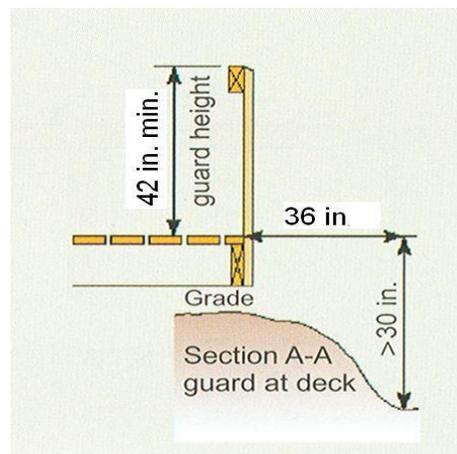
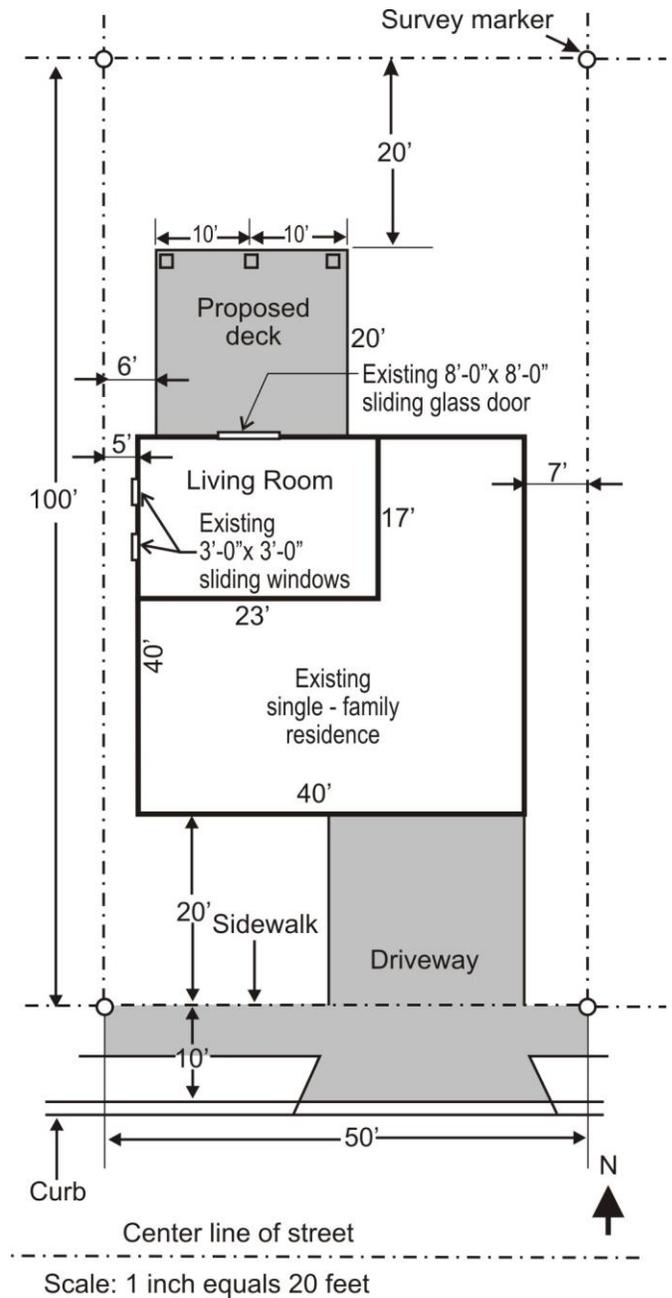


Figure 2/Typical deck

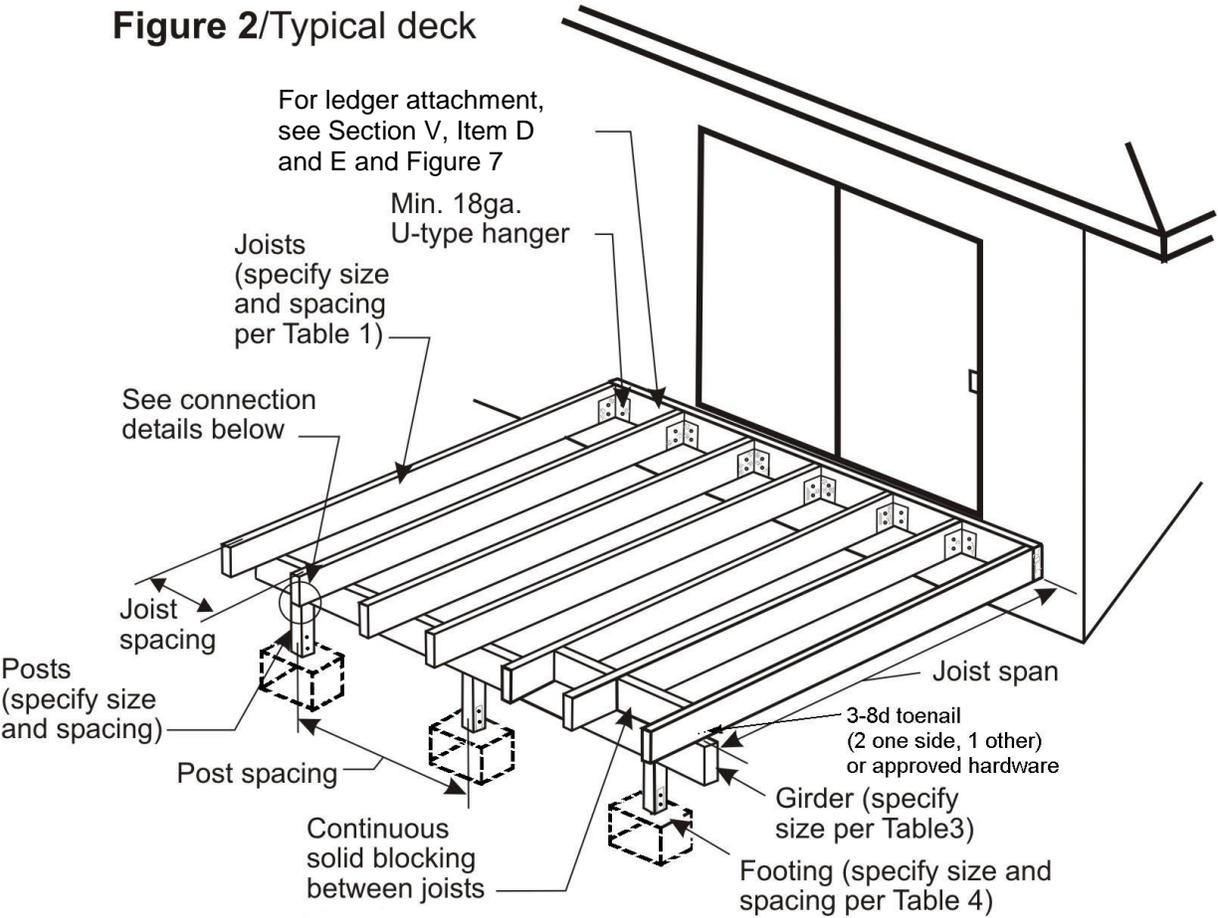


Figure 3/Post-to-girder connection

Case 1/End condition

Case 2 / Interior condition

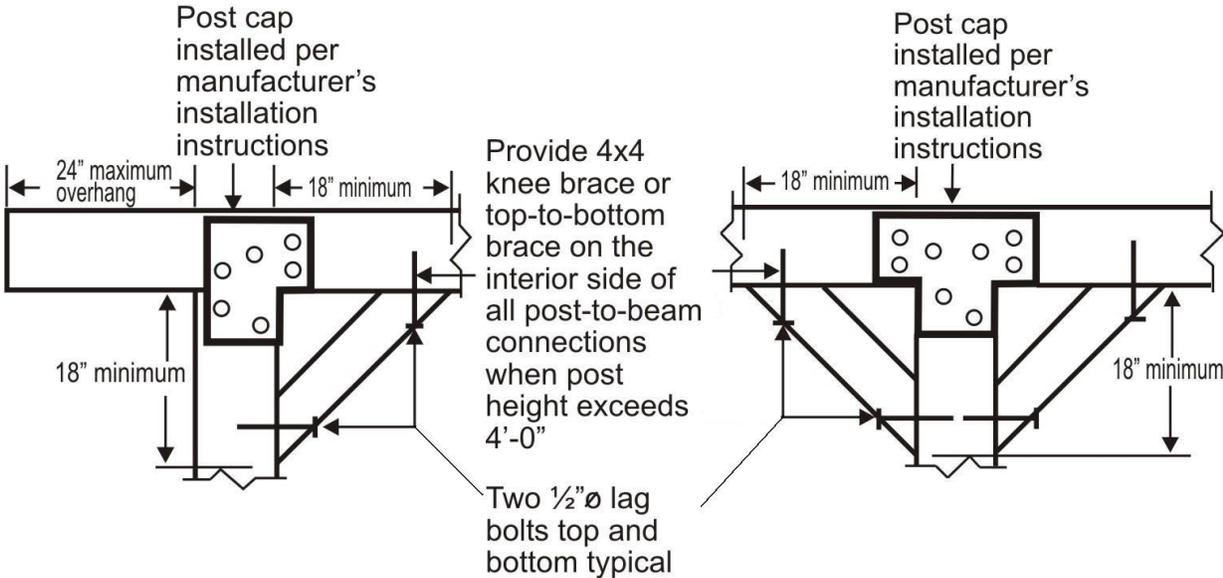


Figure 4/Typical deck elevation looking parallel to rear of dwelling

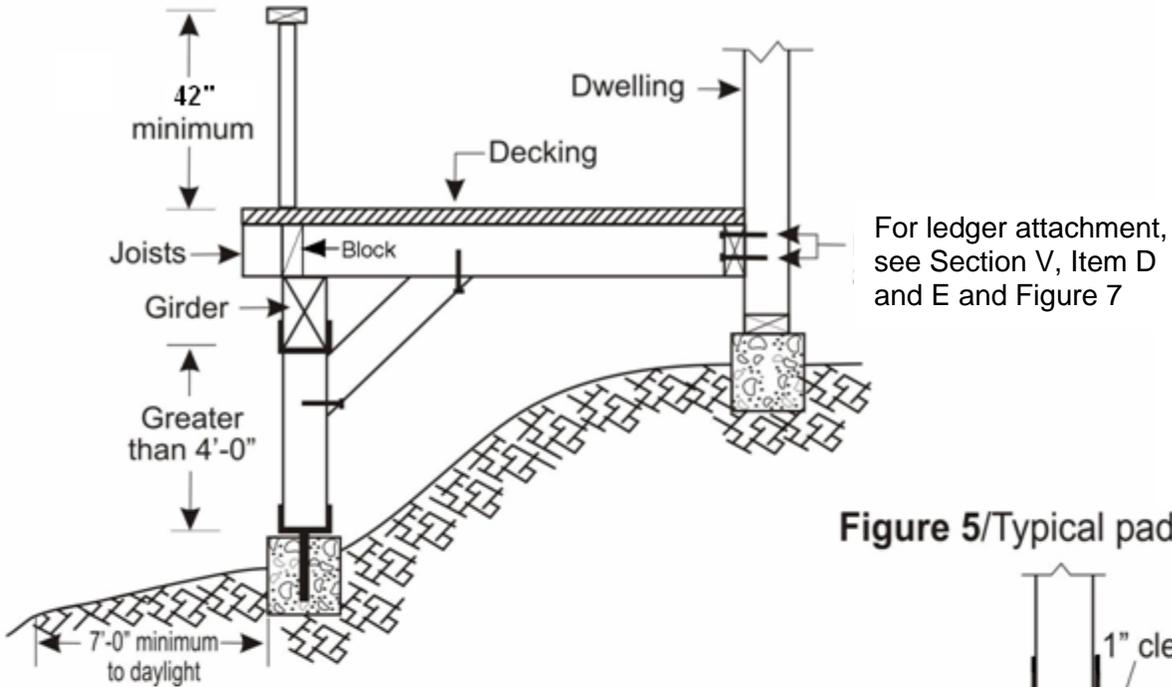


Figure 5/Typical pad footing

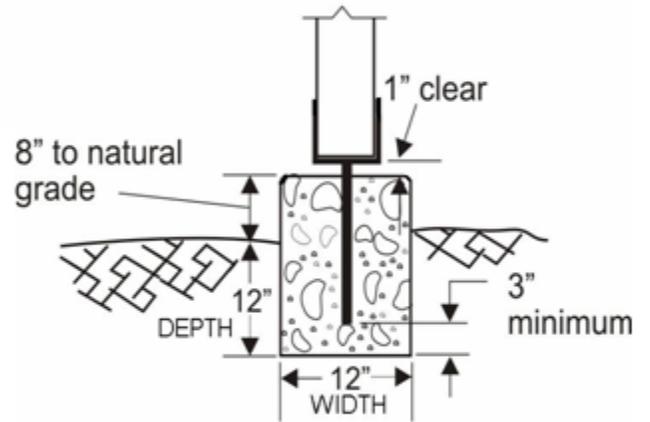


Figure 6/Typical deck elevation facing rear of dwelling

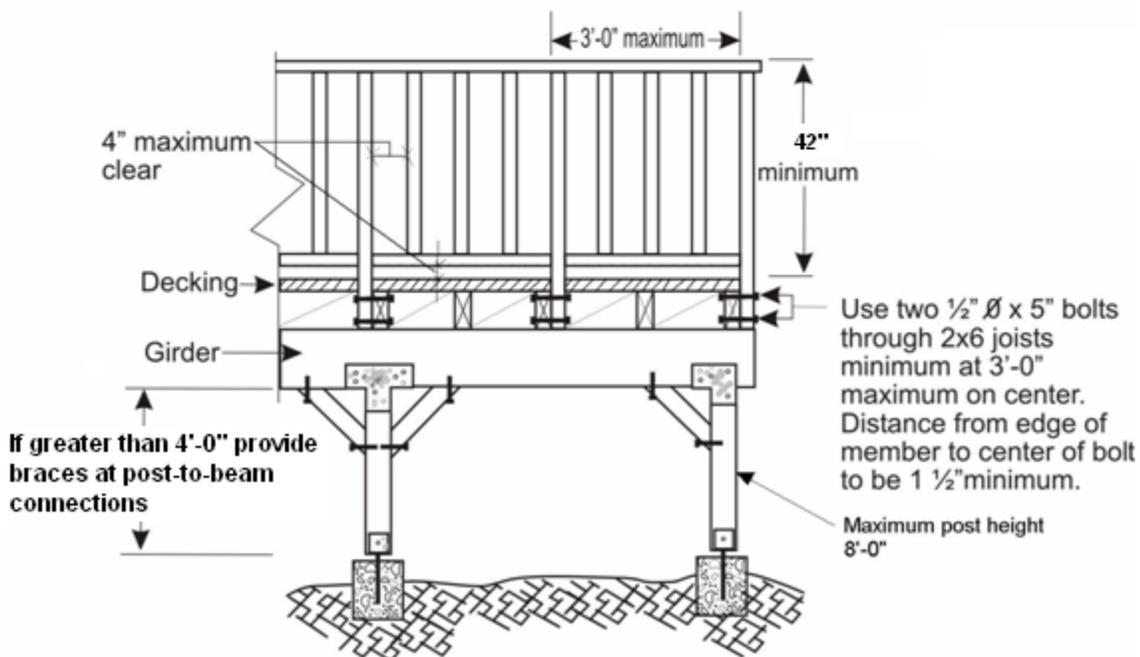
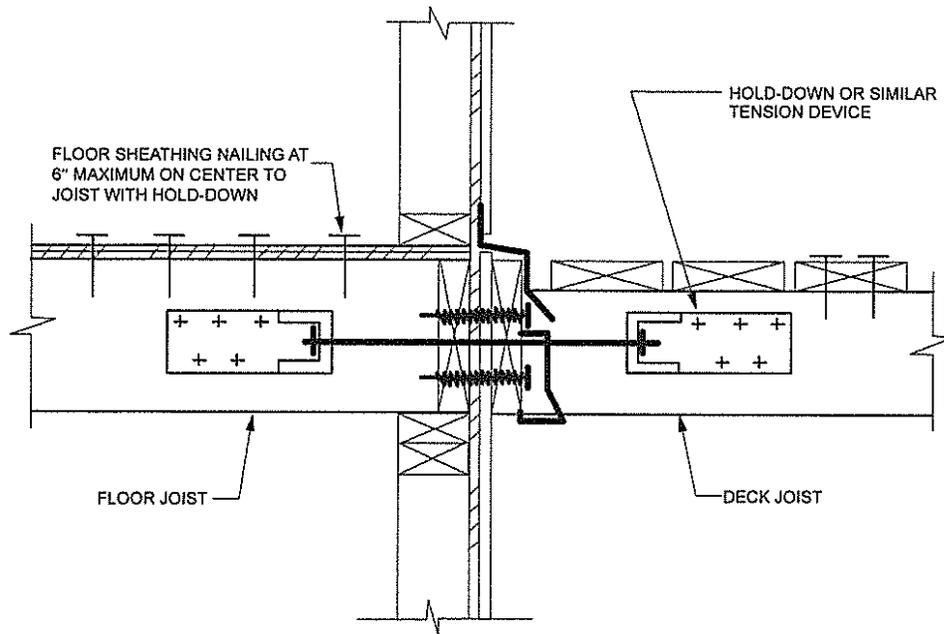


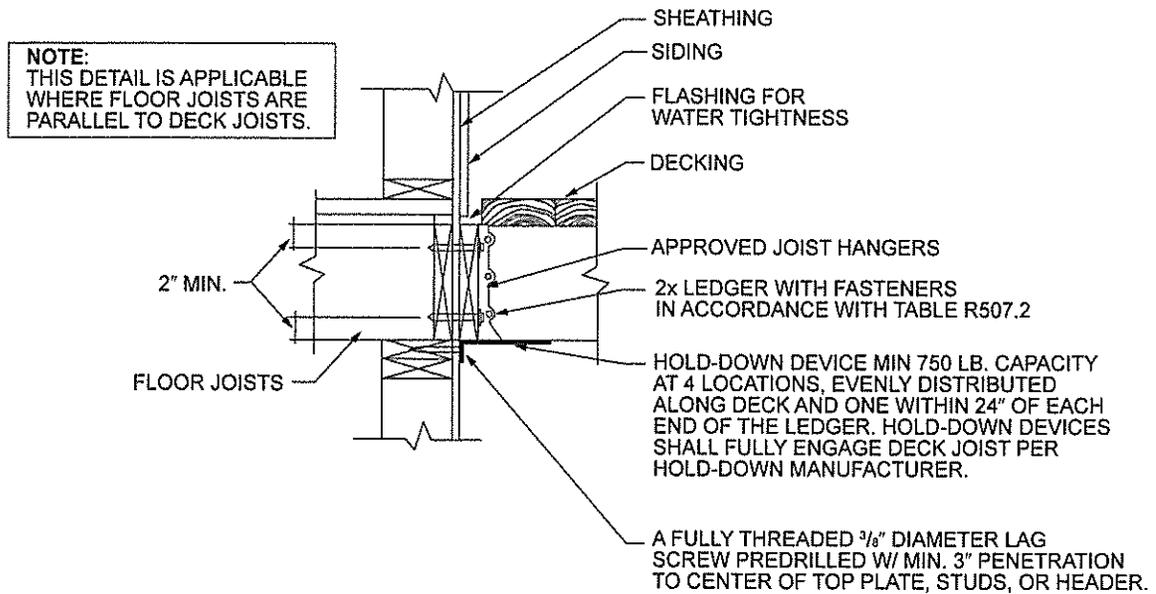
Figure 7/ Deck attachment for lateral loads



For SI: 1 inch = 25.4 mm.

FIGURE 507.2.3(1)
DECK ATTACHMENT FOR LATERAL LOADS

Figure 8/ Deck attachment for lateral loads



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

FIGURE R507.2.3(2)
DECK ATTACHMENT FOR LATERAL LOADS

Table 1/Allowable residential deck joist spans ^{1,2,3,4},

Table 2/Nailing schedule for decks ¹

Size (inches)	Spacing (inches)	Allowable spans (feet and inches)		Connection	Nails (Box or common)
		DF/L #2	Redwood		
2x4	12	6'-2"	5'-7"	Joist to girder, toenail	3-8d
	16	5'-7"	5'-2"		
	24	4'-10"	4'-5"	1x6 subfloor to joist – face nail (only for joists 16 inches on center)	2-8d
2x6	12	10'-9"	9'-1"		
	16	9'-9"	8'-2"		
	24	8'-1"	7'-1"		
2x8	12	14'-2"	12'-0"	2 inch subfloor to joist, blind and face nail	2-16d
	16	12'-7"	11'-0"		
	24	10'-3"	9'-0"		
2x10	12	17'-9"	15'-3"	3/4 inch exterior plywood to joist ²	8d common 6 inches o.c. edge 12 inches o.c. field ³
	16	15'-5"	13'-5"		
	24	12'-7"	11'-0"		
2x12	12	20'-7"	18'-1"	1 1/8 inch exterior tongue- and groove plywood to girders at 4 feet maximum on center	10d common 6 inches o.c. edge 12 inches o.c. field ³
	16	17'-10"	15'-7"		
	24	14'-7"	12'-7"		
2x14	12	22'-7"	20'-2"		
	16	19'-7"	17'-5"		
	24	16'-0"	14'-3"		

¹ If joists are within 18 inches of grade, use pressure-treated Douglas fir-larch or Foundation Grade redwood.

² Assume a live load of 40 psf and a dead load of 10 psf.

³ Assume F(b)=825 psi, F(v)=90 psi and E=1,200,000 psi for D.F. #2.

⁴ Assume F(b)=925 psi, F(v)=80 psi and E=1,200,000 psi for Redwood.

¹ Decking within 18 inches of grade should be Foundation-Grade redwood or pressure-treated material.

² Second number in panel span rating must be equal to or greater than the deck joist spacing called out in Table 1.

³ Nailing must be at 6 inches at all intermediate supports where spans are 48 inches or more.

Table 3/Minimum Girder Sizes (inches)

Post Spacing (Feet)	Joist Span (feet)						
	4	6	8	10	12	14	16
4	4x4	4x6	4x6	4x8	4x10	4x10	4x14
6	4x6	4x8	4x8	4x8 6x8	4x10 6x8	4x10 6x10	4x10 6x10
8	4x6 6x8	4x8 6x8	4x10 6x10	4x12 6x10	4x12 6x10	4x12 6x12	4x12 6x12
10	4x8 6x8	4x10 6x8	4x12 6x8	4x12 6x10	4x14 6x10	4x14 6x12	4x14 6x12

Table 4/Minimum Square Footing Sizes (inches) ^{1, 2}

Post Spacing (Feet)	Joist Span (feet)							
	4	6	8	10	12	14	16	18
4	12	14	16	18	20	20	22	24
6	14	16	20	22	24	24	28	30
8	16	20	22	24	26	28	30	32
10	18	22	24	28	30	32	34	36

¹ Assume 1,000 psf soil bearing capacity.

² The minimum depth for all footings is 12 inches into natural grade