Residential Deck Requirements

This information bulletin describes the minimum requirements for obtaining residential deck permits using the City of Vista standard plan or ICC approved plans.

I. WHEN IS A PERMIT REQUIRED?

A building permit is required for any residential deck more than 30 inches above grade.

II. YOUR OPTIONS FOR SERVICE

Deck permits may be obtained "over-the counter" when using the City of Vista standard plan or ICC 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, Development Code, and all other relevant laws, ordinances, rules and regulations. Zoning information is available at the Development Services Center, call (760) 639-6100.

Three sets of plans are required and must include:

☐ **A. Plot Plan**

See Site Plan hand-out for requirements.

☐ **B. Foundation and Framing Plans**

Provide one of the following:

1. One copy of the City of Vista standard plan with the proposed footing sizes, rafter sizes, and beam sizes highlighted, OR
2. One copy of an International Conference of Building Officials (ICBO) approved plan available from your material supplier and approved by a third party testing agency approved by the City of Vista, OR
3. Three copies of any other plan. These plans should include a framing plan, foundation plan, elevations, cross-sections, and connection details. This option requires submittal for plan check.

☐ **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 detectors within the dwelling unit.

☐ **D. General Application**

All projects require a building permit. The application for a permit expires within 180 days but can be extended by the Building Official for a period not to exceed 180 days on request by the applicant. If you obtain your permit on the same day as plan review, the application must be fully completed. Note: there are *no* exceptions to the Worker's Compensation Insurance requirements. If the property owner is doing the construction work or is hiring a

200 Civic Center Drive * Vista, CA 92084 * 760-639-6100 * Fax 760-639-6101
(Updated 07/2014)

number of different contractors, a separate Owner-Builder Verification Form must be signed by the owner at the Development Services Center before the permit can be issued.

IV. ADDITIONAL REGULATIONS

A. Where decks are attached to the main building the deck shall meet the main building zoning setbacks. For detached decks use the accessory structure setbacks. For zoning setback requirements please contact the Development Services Center at (760) 639-6100.

B. No fire protection is required for the common wall between the dwelling unit and deck as they fall under the same occupancy classification.

C. 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 footings must meet a compressive strength of f'_c=2,500 psi minimum.

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. All posts must be minimum of 4x4.

C. The posts anchorage and bracing details shown on the following sheets have been approved by the City of Vista 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 2x6 pressure treated minimum ledger or matching the same size as the joists or larger and fastened to the studs with lag bolts per Table R507.2.

If a ledger is not used, deck joists should be notched (max 1") and placed directly on the bottom plate of the dwelling unit. Waterproofing details will be required.

A minimum of 2 tension anchors with a 1500 pound capacity must be provided. See page 7.

E. 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 (2% minimum) must be provided and waterproof membrane installed on solid decking.

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 Building permit is active for 180 days. Each inspection scheduled and passed extends the permit 180 days.

Inspections are required at the following times:

A. when footings have been excavated but before concrete is placed;

B. when ledgers are attached to an existing structure; and

C. when work is complete. Call (760) 639-6106 to schedule inspections.
Note that the project is not legally complete until there is an approved final inspection.

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 is 8 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.

Table 1/Allowable residential deck joist spans [1,2,3,4]

Size (inches)	Spacing (inches)	Allowable Spans (Feet and Inches)	
		D/F/L #2	Redwood
2x4	12	6'-3"	6'-3"
	16	5'-6"	5'-6"
	24	5'-0"	5'-0"
2x6	12	11'-10"	9'-9"
	16	10'-1"	8'-9"
	24	9'-1"	7'-9"
2x8	12	15'-7"	12'-9"
	16	14'-1"	11'-9"
	24	11'-6"	10'-3"
2x10	12	19'-10"	16'-6"
	16	17'-2"	15'-0"
	24	14'-1"	13'-0"
2x12	12	23'-0"	20'-0"
	16	19'-11"	18'-0"
	24	16'-3"	15'-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 8 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.

Table 2/Nailing schedule for decks [1]

Connection	Nails (Box or Common)
Joist to girder, toenail	3-8d
1x6 subfloor to joist—face nail (only for joists 16 inches on center)	2-8d
2-inch subfloor to joist, blind and face nail	
3/4-inch exterior plywood to joist [2]	2-16d
1 1/8-inch exterior tongue-and-groove plywood to girders at 4 feet maximum on center	8d common 6 inches o.c. edge 12 inches o.c. field [3] 10 d common 6 inches o.c. edge 12 inches o.c. field [3]

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	4x10 6x8	4x10 6x8	4x14 6x10	4x14 6x12
8	4x10 6x8	4x10 6x8	4x12 6x10	4x12 6x10	4x14 6x10	4x14 6x12	4x16 6x12
10	4x10 6x10	4x14 6x12	4x14 6x12	4x16 6x14	4x16 6x14	4x18 6x14	 6x16

Table 4/Minimum Square Footing Sizes (Inches) [1,2,3]

Post Spacing (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 1500 psf soil bearing capacity
2. The minimum depth for all footings is 12 inches into natural grade
3. Footings in a slope shall maintain a 7’ to daylight line as shown in Figure 6

Figure 1/Typical Deck

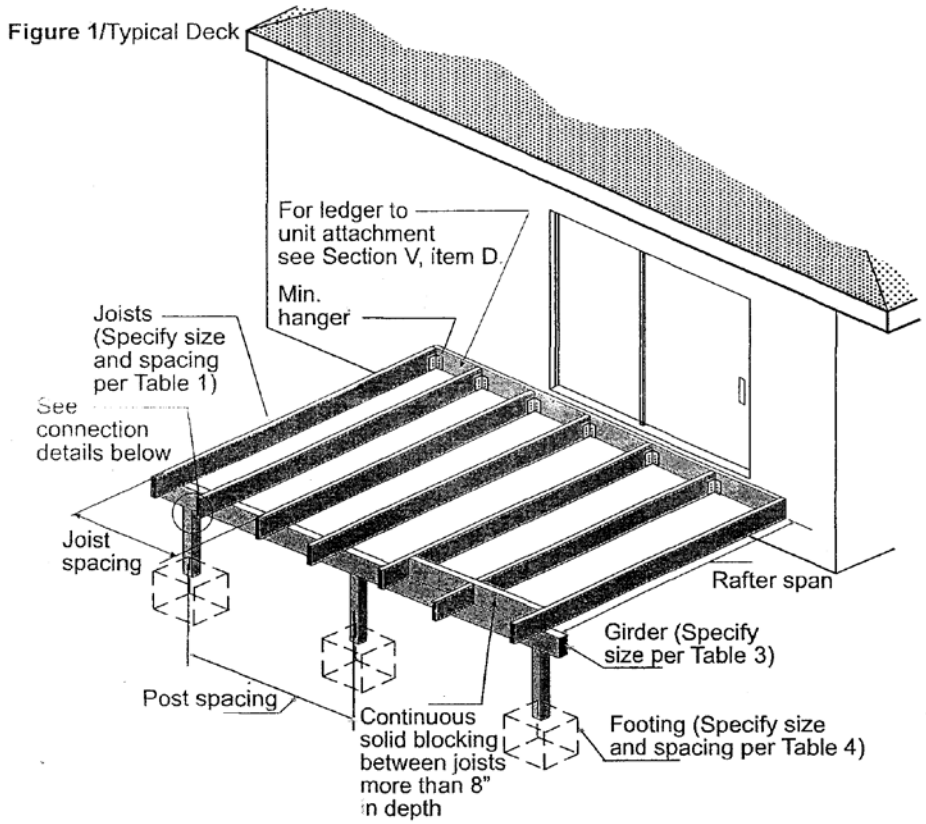
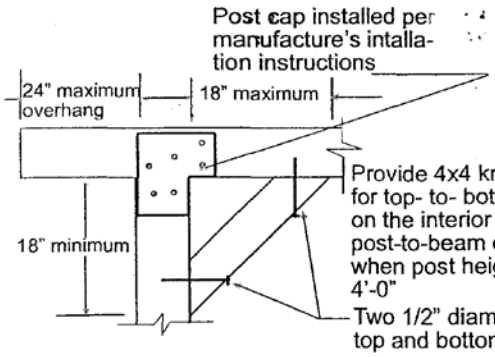


Figure 3/Post-to-girder Connection

Case 2/Connection, interior condition



Case 2/Interior condition

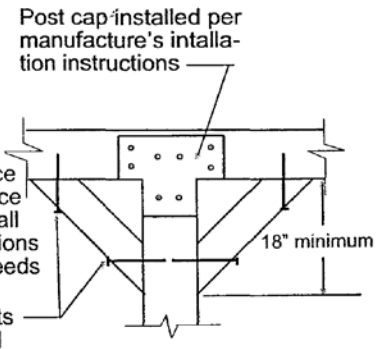


Figure 4/Typical Deck elevation looking parallel to rear of dwelling

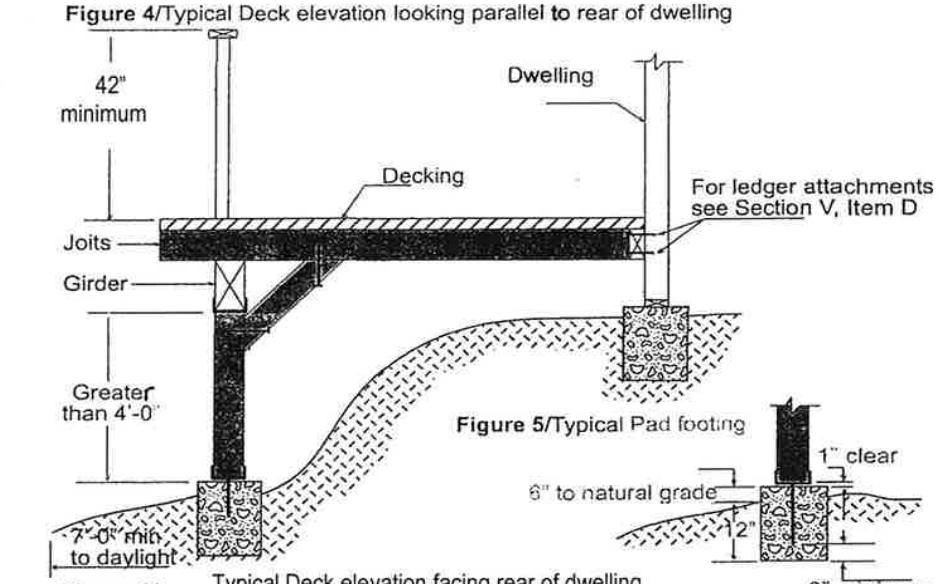


Figure 5/Typical Pad footing

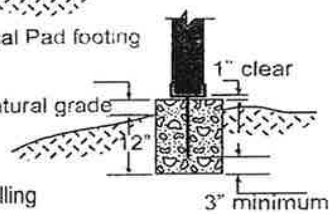
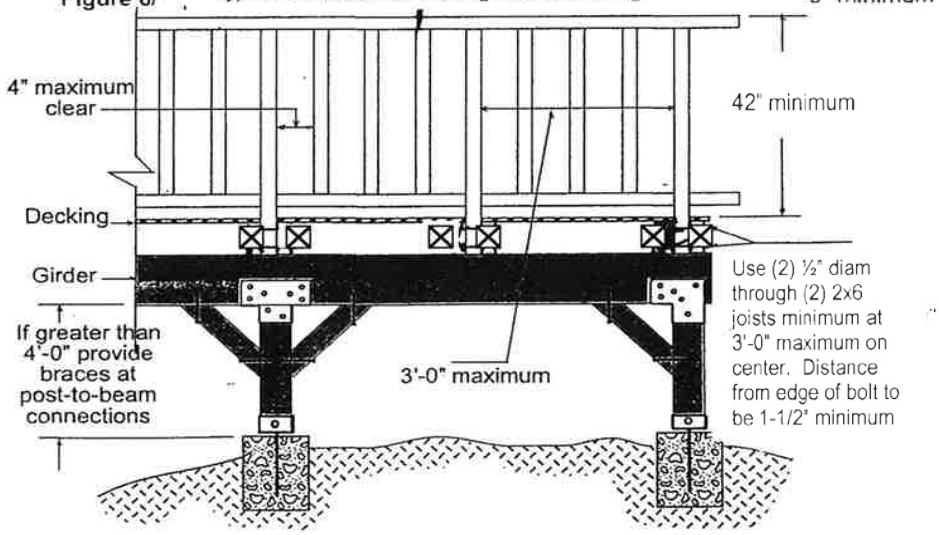


Figure 6/ Typical Deck elevation facing rear of dwelling



507.2.3, 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).

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

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[c, f, g]
(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	On-center spacing of fasteners[d, e]						
$^1/_2$ inch diameter lag screw with $^{15}/_{32}$ inch maximum sheathing[a]	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[b, h]	36	36	29	24	21	18	16

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

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.

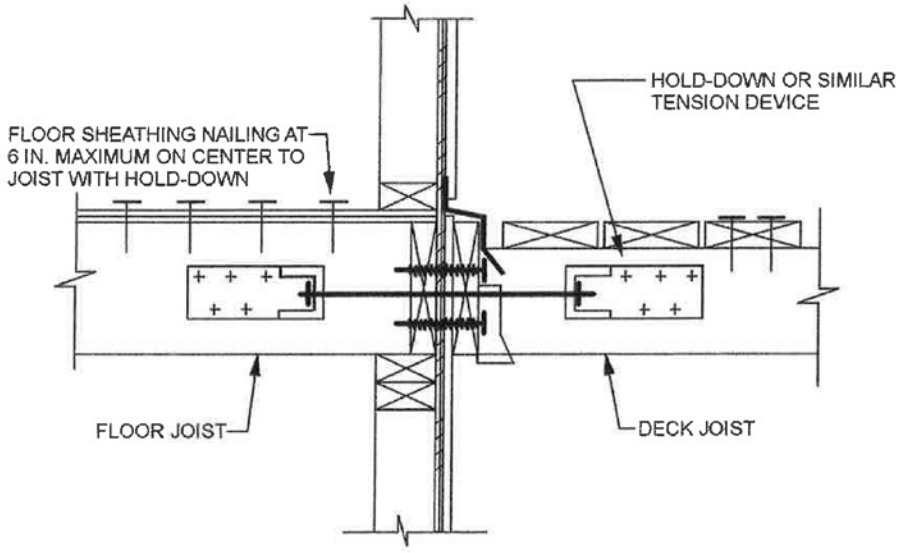
d. Lag screws and bolts shall be staggered in accordance with Section R507.2.1.

e. Deck ledger shall be minimum 2 × 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 × $9^1/_2$ 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 foam sheathing not exceeding 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.



For SI: 1 inch = 25.4 mm.

FIGURE 507.2.3
DECK ATTACHMENT FOR LATERAL LOADS