



RESIDENTIAL DECKS

Form 4598

This Information Bulletin describes the minimum requirements for obtaining a building permit for an attached or detached deck accessory to a single-family dwelling or a duplex. The information bulletin cannot be used for decks closer than 5 feet from a property line or when heavy concentrated loads such as equipment or a hot tub are placed on the deck. The information and sample drawings provided herein are suitable as a guide and cannot be used for construction. Project specific construction plans must be drawn and provided for review.

I. WHEN IS A PERMIT REQUIRED?

A building permit is required for any residential deck that exceeds 200 square feet in area, when located more than 30 inches above grade at any point, when attached to a dwelling, or when it serves as the main exit door.

A. Plans

Plans must be drawn to scale and be of sufficient clarity to indicate the location, nature and extent of the proposed work. Existing and proposed construction should be clearly shown. Plans must show that all work conforms to the provisions of the current edition of the California Residential Code (CRC), Zoning Ordinances and all other relevant laws, ordinances and regulations applicable in the City of Chula Vista.

1. Site Plan and Vicinity Map (See Figure 1)

2. Types of Plans

Plans for decks shall be in accordance to one of the following:

- a. Project-specific construction plans and framing system determined in accordance with this information Bulletin. To facilitate plan review also mark on the bulletin the selected structural framing sizes such as decking, joists, beams, posts, foundation, etc.
- b. Engineered framed deck plans and design calculations. The plans should include deck framing plan, foundation plan, elevations, cross sections, connection details, etc.

3. Overall Plan

When the deck is proposed to be attached or located directly adjacent to an existing dwelling, include a floor plan of the deck and the existing dwelling and show the following information:

- a. The use and dimensions for all rooms in the building opening onto the deck.
- b. The location and size of all windows and doors opening onto the deck from those rooms.
- c. The location of main exit door to the dwelling.

4. Deck Framing (See Figure 3)

- a. Framing members:
 - i. Decking and nailing (See Table F)
 - ii. Size of joists and beams (See Table A, B, and C)
 - iii. Joist connection over beams (See Table F)
 - iv. Joist hung from ledgers (See Figure 8 Case 1)
 - v. Size of posts based on the maximum heights (See Table D)
 - vi. Post footing and connection (See Table E, Figure 6)
- b. Lateral Bracing:
 - i. Conventional diagonal bracing member and connection to beam and post, or decorative-diagonal bracings with an equal of the net area and (See Figure 4, and 10)
 - ii. Hold-downs at end of attached deck to existing dwelling (See Figure 11)
 - iii. Additional diagonal bracing for detached deck parallel to exterior wall of existing dwelling (See Figure 8 Case 2)
- c. Stair Handrails (See Figure 7)

Handrail is required at least on one side of stairs with four or more risers. The required handrail shall be one of the following types:

 - i. Handrails with a circular cross section shall have an outside diameter of at least 1.25 inches and not greater than 2 inches.
 - ii. If the handrail is not circular it shall have a perimeter dimension of at least 4 inches and not greater than 6.25 inches with a maximum cross section dimension of 2.25 inches. Edges shall have a minimum radius of 0.01 inch.
- c. Guards:

Guards shall be provided along the open side of a deck or stairs that are located more than 30 inches above grade below. Guards shall be not less than 42" high, and openings in guards shall not allow passage of a sphere 4 inches in diameter. (see Figure 5, 9 and 10).



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ADDITIONAL REGULATIONS

A. Smoke Alarms: Deck when attached to a house or when modifying the exterior wall of the house, smoke alarms within the house are required per sections R314 of the California Residential Code (CRC).

B. A balcony, deck, or porch that is greater in area than 20 square feet and is accessible from the interior of the dwelling will require a minimum of one receptacle outlet. This receptacle must be GFCI and weatherproof “WP”.

C. Provide light fixture at all exterior doors.

TABLE A - ALLOWABLE SPAN FOR DECK JOISTS (ft. - in.)^{1, 2, 3}

Species	Size	Spacing of Joist (inches)		
		12	16	24
Douglas Fir - Larch #2 or Redwood #1	2x6	6-9	6-2	5-1
	2x8	8-10	7-10	6-6
	2x10	11-2	9-7	7-10
	2x12	12-9	11-2	9-1

1. Live load = 60 psf, Dead load = 10 psf, L/∅ = 360.
2. If Joists within 8" inches of grade, use Pressure - Treated Douglas Fir - Larch or foundation – GradeRedwood.
3. Include incising factor (Ci= 0.8)

TABLE B - CANTILEVER LENGTH FOR DECK JOISTS (ft. - in.)^{1, 2, 3}

Size	Spacing (in) ^{1, 2, 5}		
	12	16	24
2x6	1-0	0-10	0-9
2x8	1-7	1-6	1-5
2x10	2-5	2-2	2-0
2x12	3-2	2-10	2-3

1. Live load = 60 psf, Dead load = 10 psf, L/∅ = 240
2. Beam cantilevers are limited to the adjacent beam’s span divided by 4.
3. Joist spacing for diagonal decking shall not exceed 16 inches.
4. Cantilever span includes 220 lbs. point load applied to end.
5. Solid blocking shall be provided between joists at the supp



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TABLE C - DECK BEAMS - Beam Span Length (ft. - in.) ^{1, 2, 3, 4, 6, 7}

Species	Size ⁽⁵⁾	Joist Span Less than or equal to ⁽⁸⁾						
		6 ft.	8 ft.	10 ft.	12 ft.	14 ft.	16 ft.	18 ft.
Douglas Fir - Larch #2 or Redwood #1	3 x 6 or 2 - 2 x 6	3-9	3-3	3-0	-	-	-	-
	3 x 8 or 2 - 2 x 8	4-9	4-3	3-9	3-5	3-2	-	-
	3 x 10 or 2 - 2 x 10	5-10	5-2	4-7	4-3	3-10	3-7	3-4
	3 x 12 or 2 - 2 x 12	6-10	5-11	5-3	4-10	4-6	4-3	4-0
	4 x 6	4-6	3-10	3-5	3-3	-	-	-
	4 x 8	5-11	5-2	4-7	4-3	3-10	3-9	3-5
	4 x 10	7-0	6-2	5-4	4-10	4-6	4-3	3-10
	4 x 12	8-2	7-1	6-4	5-8	5-3	4-10	4-7
	3 - 2 x 6	5-3	4-9	4-3	3-10	3-7	3-4	3-2
	3 - 2 x 8	6-9	6-0	5-3	5-0	4-7	4-3	4-0
	3 - 2 x 10	8-6	7-5	6-7	5-8	6-0	5-3	5-0
	3 - 2 x 12	9-10	8-6	7-8	7-0	6-5	6-0	5-8

1. Live load = 60 psf, Dead load = 10 psf, L/∅ = 360 at main span.
2. Beams supporting deck joists from one side only. See footnote (8) below for beams supporting cantilevered joists.
3. Beam depth shall be greater than or equal to depth of joists with a flush beam condition.
4. Beams within 8" of grade shall be Pressure-Treated Douglas Fir-Larch or Foundation – Grade Redwood.
5. Beams plies shall be fastened with two rows of 10d threaded nails or #10d nails at 16" on center along the edges.
6. Beams are permitted to cantilever not more than one-fourth of the span.
7. Include incising factor (Ci = 0.8)
8. Beams supporting cantilevered joists:
 To select a joist span from Table, use span length equal to joist span length + 125% of cantilevered length.
 (Example: Joist with 12 ft. span & 3 ft. cantilevered length, calculated joist span = 12' + 125% X (3') = 15.75' therefore, beam allowable span shall be based on 16' joist span).

TABLE D - DECK POST ^{1, 2}

Post Size	Maximum Height ⁽³⁾
4x4	4' -10"
4x6	7' -0"
6x6	10' -0"
8x8	14' -0"

1. Deck loads: Live load = 60 psf, Dead load = 10 psf
2. Species: Douglas Fir-Larch #1, or Redwood #1
3. Measured to the underside of the beam.
4. Maximum permitted height is 5'-8" when supporting one and two-ply beams.

TABLE E - SQUARE FOOTING AT POSTS (Inches) ¹

Footings Dimensions	Tributary Area (sq. ft.) ⁵							
	20	40	60	80	100	120	140	160
Width (in)	12	18	21	25	28	30	33	35
Depth (in)	8	8	10	10	12	12	14	16

1. Footings shall have #4 @ 12" each way at bottom.
2. Concrete strength minimum 2,500 PSI.
3. Footing sizes are based on 1,500 PSF allowable soil bearing pressure.
4. Footings shall be placed not less than 12 inches below the undisturbed ground surface.
5. Area of deck surface supported by a post and a footing.

TABLE F - NAILING SCHEDULE FOR DECKS ^{1,3}

Connection	Nails or Screws (Box or Common)
Joist to Girder	3-8d common nails
2 inches nominal thickness spaced decking boards approximately 1/8" apart (2)	2-8d threaded nails or 2 #8 screws)

1. Decking within 8 inches of grade shall be Pressure-Preservative treated lumber or foundation- Grade redwood.
2. Decking placement may range from an angle perpendicular to Joists to an angle of 45 degrees to the joists. Each segment of decking must bear on minimum of 3 Joists.
3. All fasteners and connectors shall be hot-dipped galvanized or stainless steel.

FIGURE 1 - SAMPLE DECK SITE PLAN

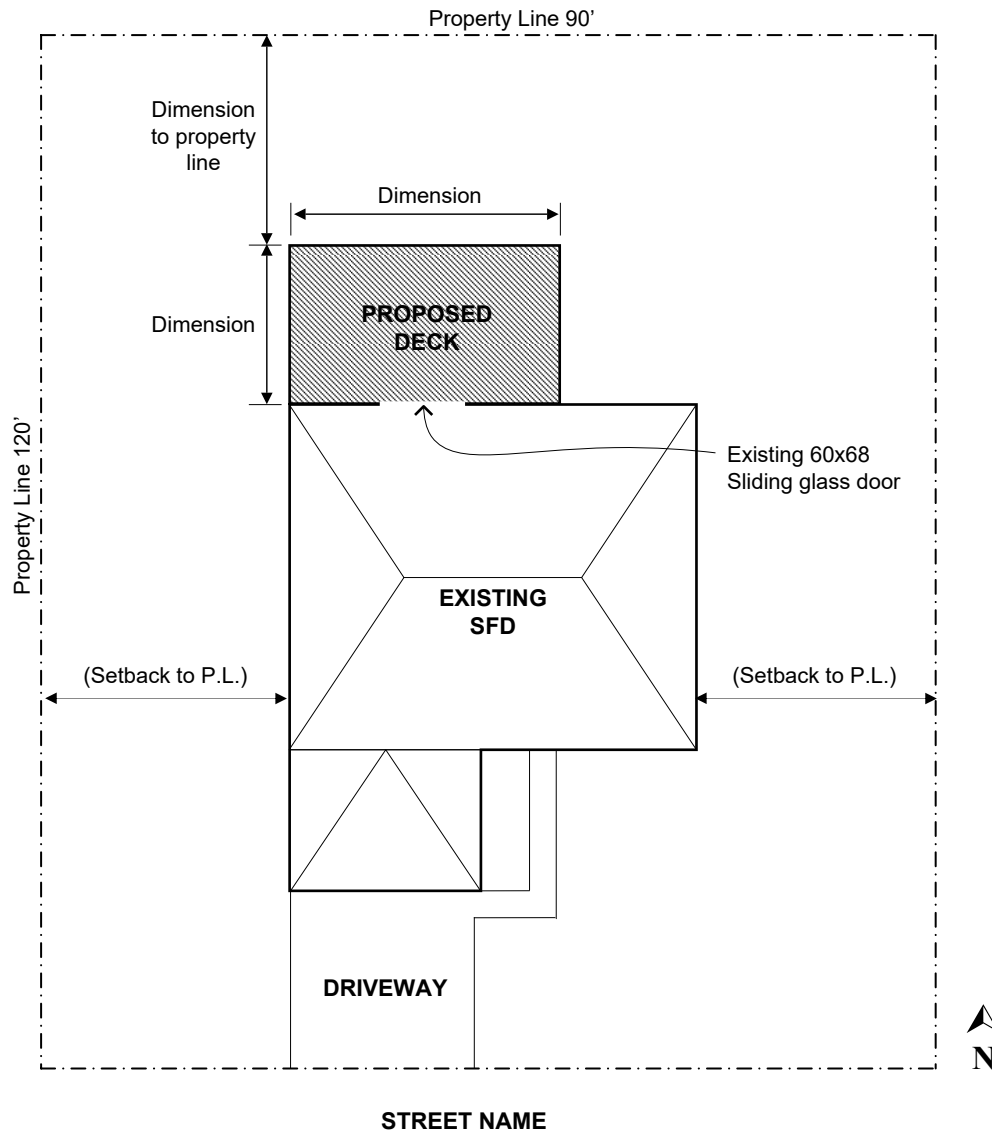


FIGURE 2 - STRUCTURES ON OR ADJACENT TO SLOPES/FOUNDATION CLEARANCE FROM SLOPES

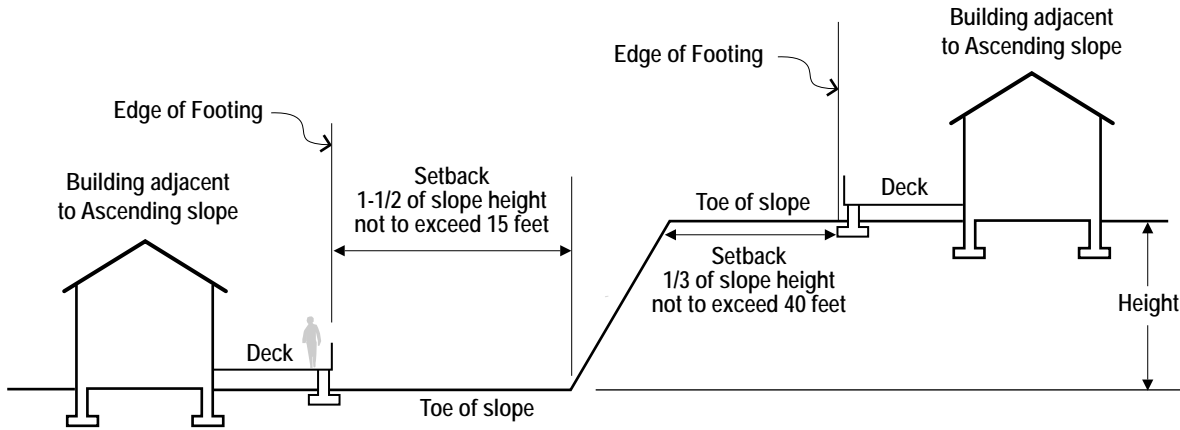


FIGURE 3 - TYPICAL DECK

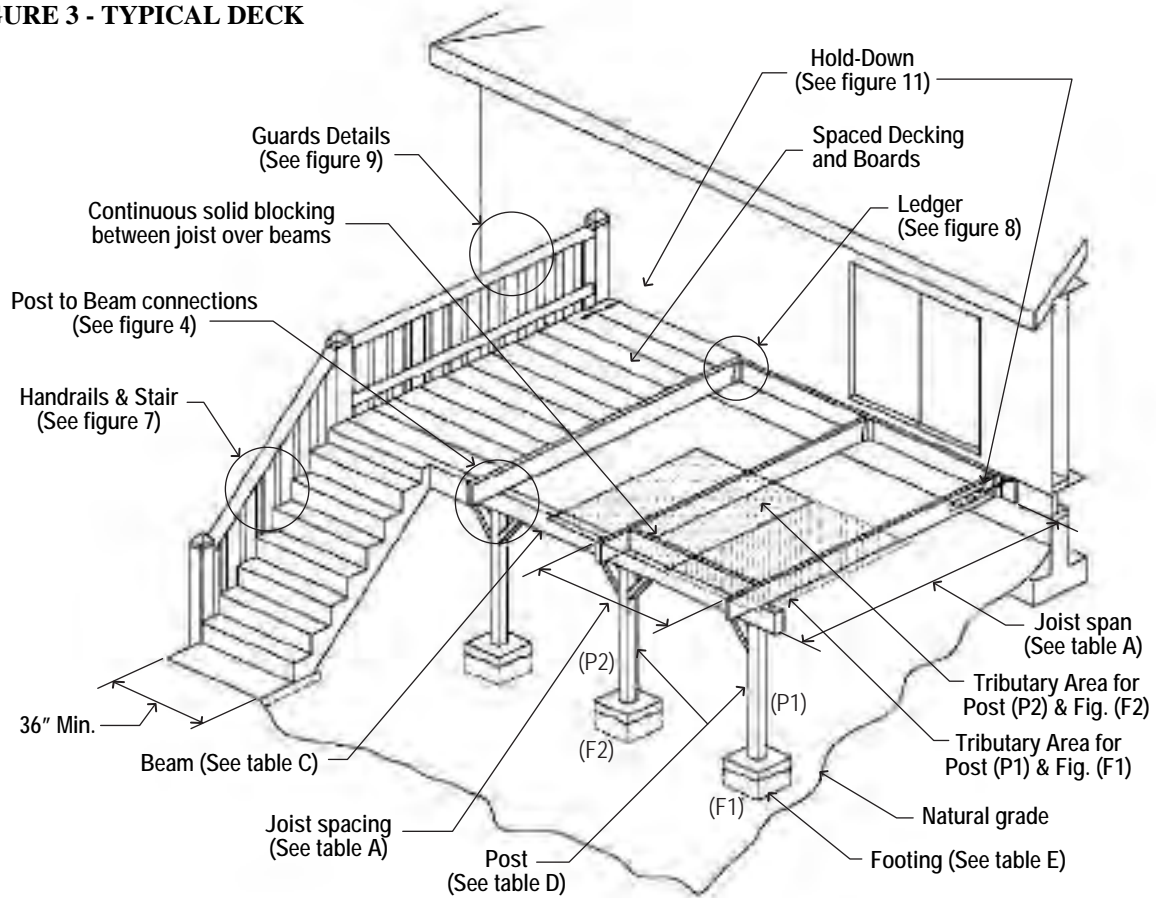


FIGURE 4 - POST TO GIRDER CONNECTION

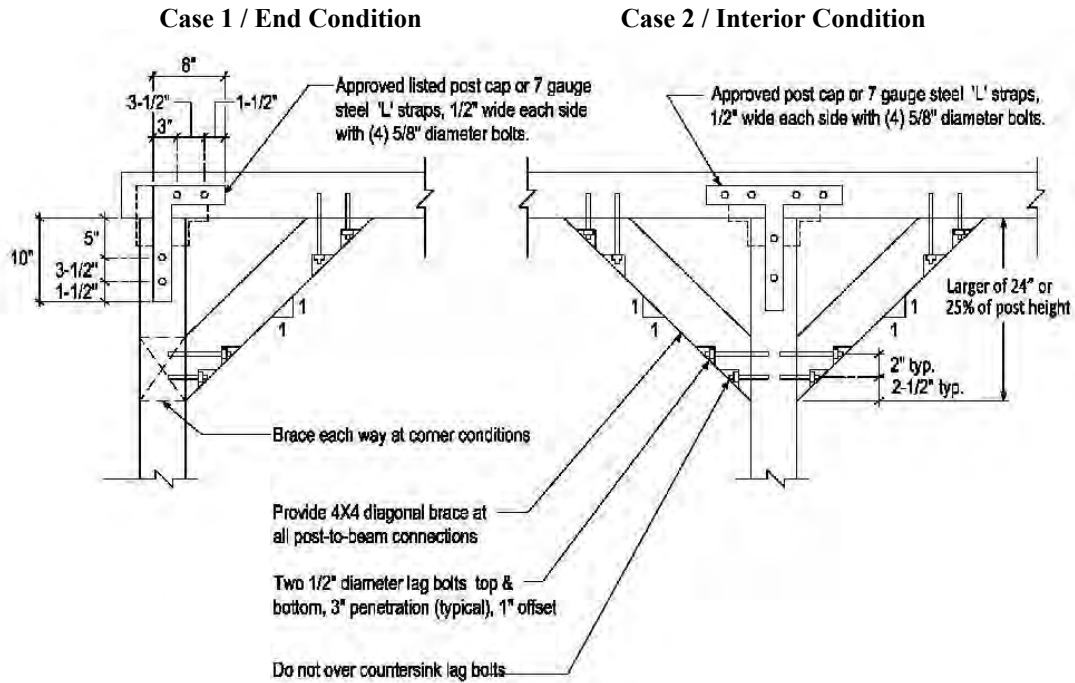


FIGURE 5 - TYPICAL DECK ELEVATION LOOKING PARALLEL TO REAR OF DWELLING

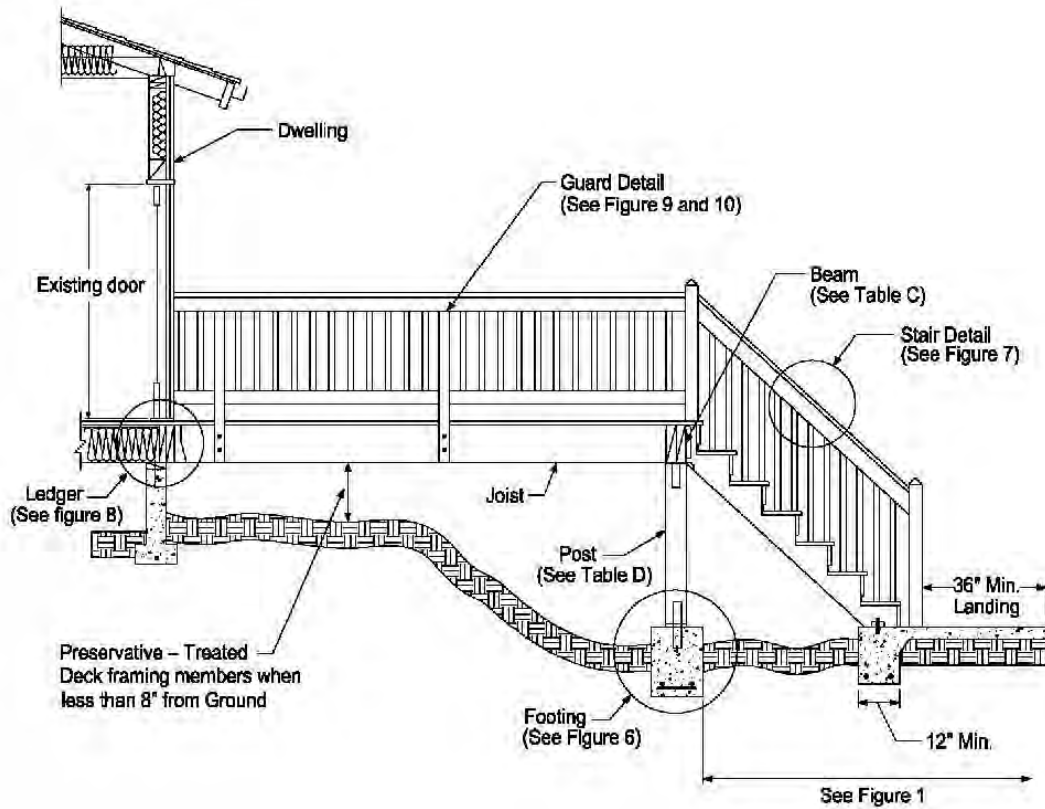


FIGURE 6 - TYPICAL FOOTING DETAIL

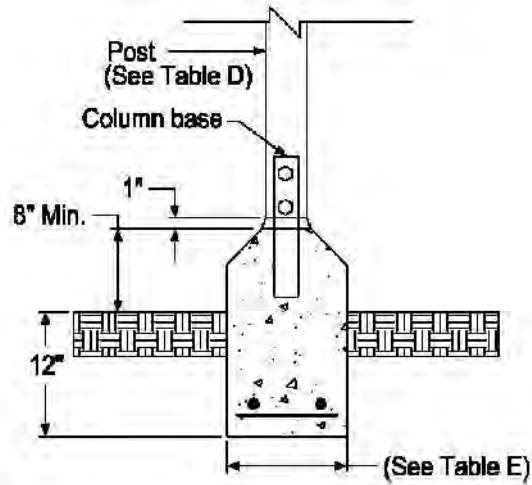


FIGURE 7 - TYPICAL STAIR DETAIL

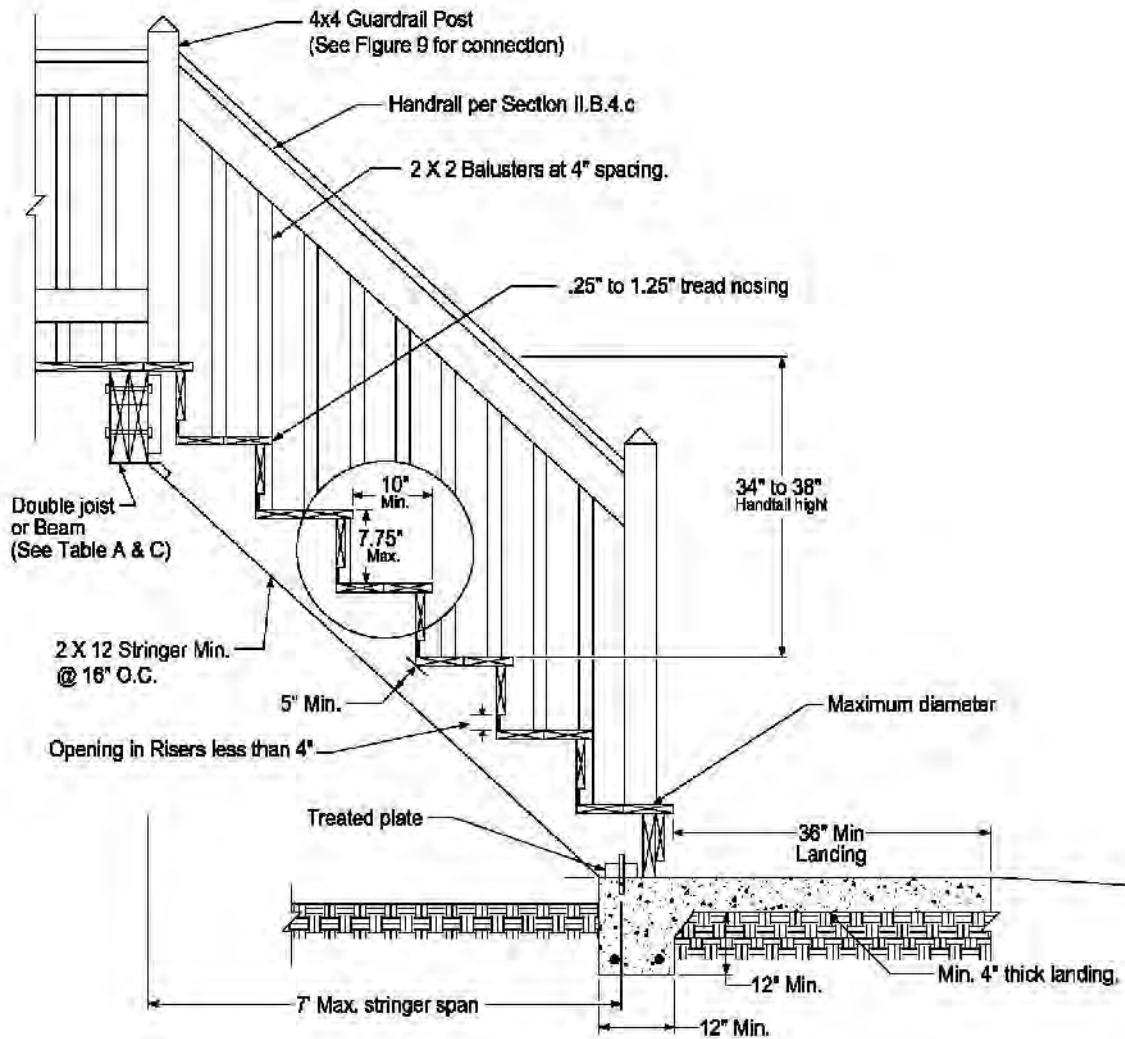


FIGURE 9 - TYPICAL GUARD DETAILS

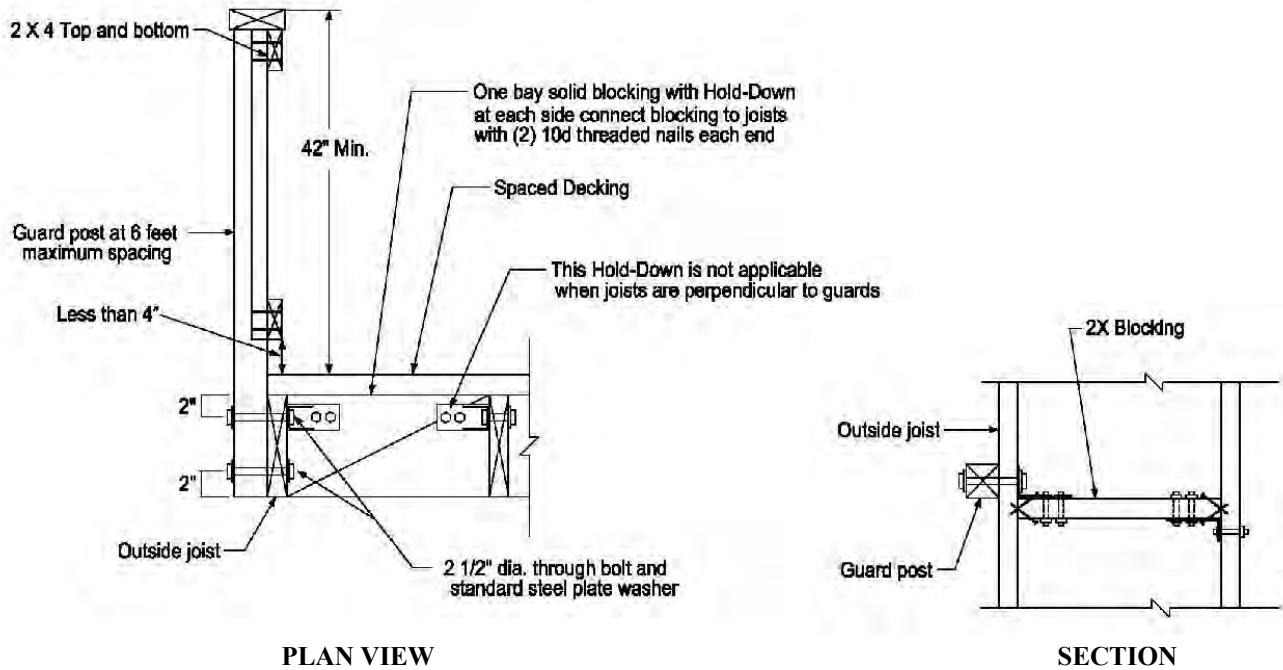


FIGURE 10 - TYPICAL DECK ELEVATION

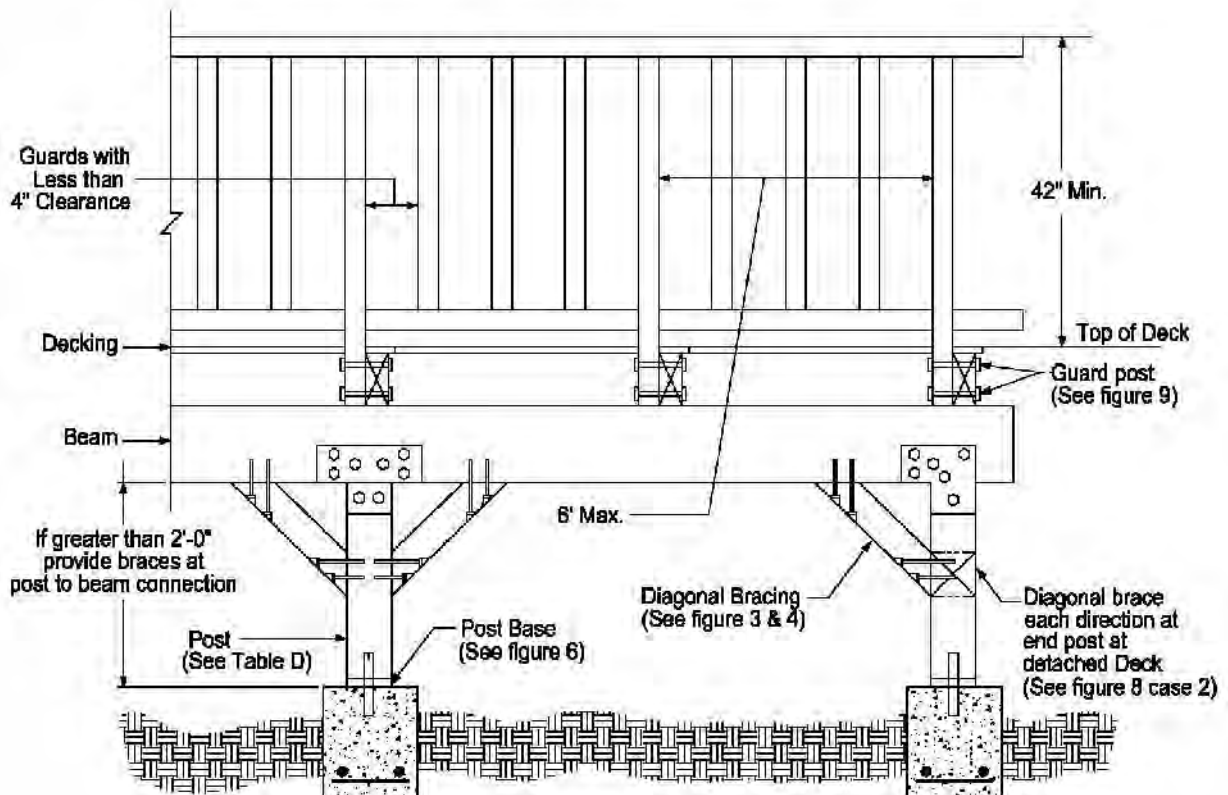
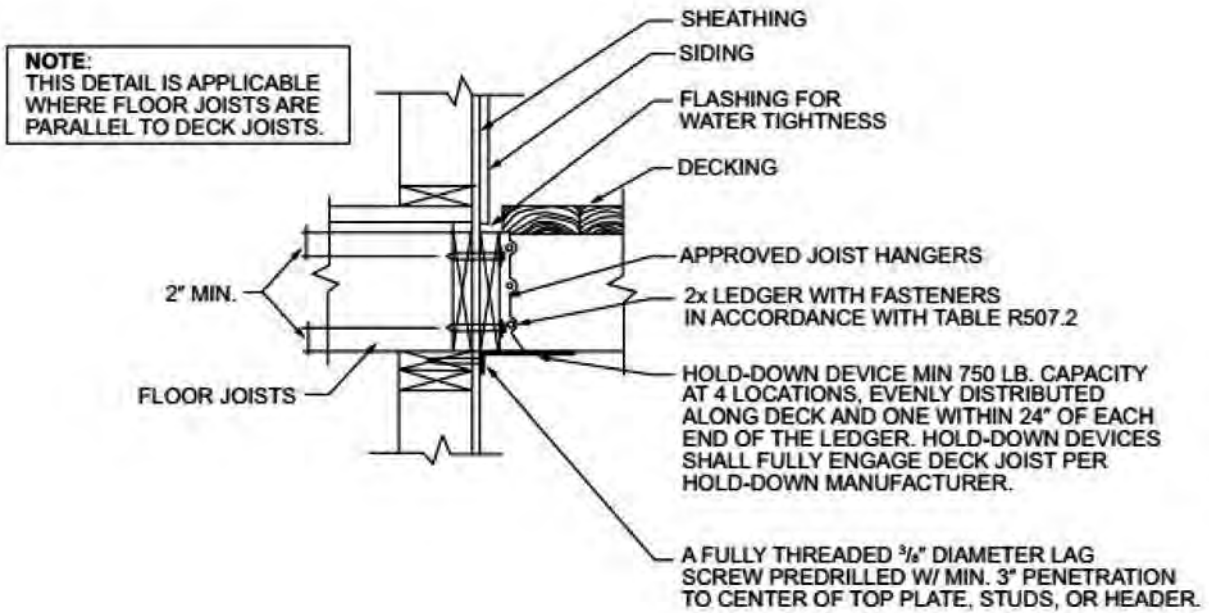
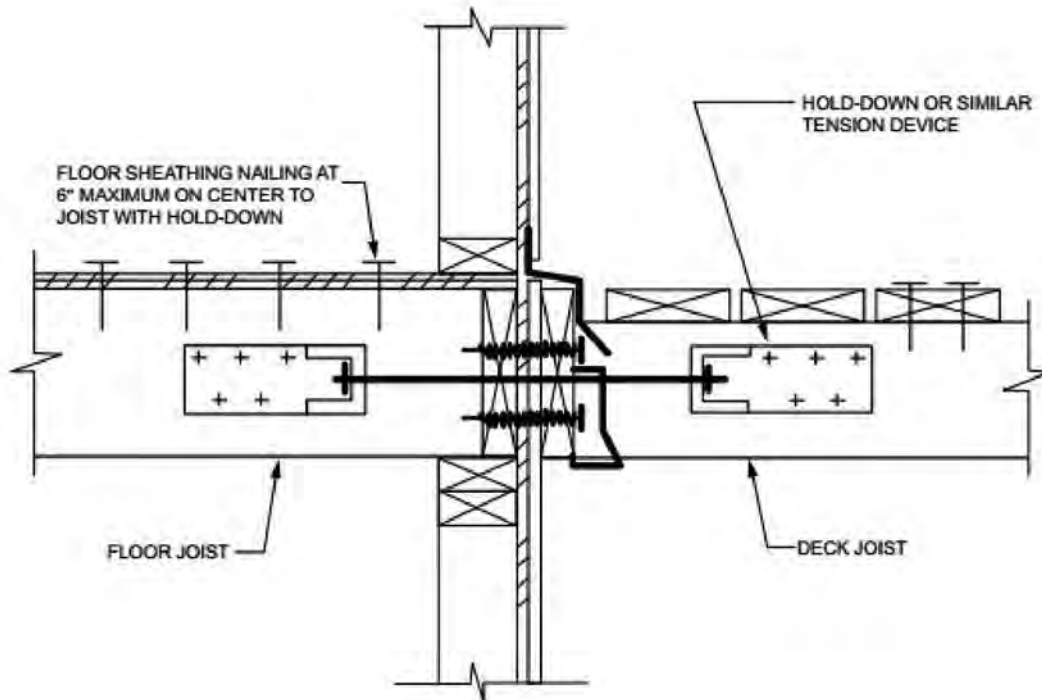


FIGURE 10 - DECK ATTACHMENTS FOR LATERAL LOADS



NOTE:
THIS DETAIL IS APPLICABLE
WHERE FLOOR JOISTS ARE
PARALLEL TO DECK JOISTS.