

Lower Swatara Township

Deck Specifications

The following applies to all uncovered decks greater than 30" above grade. Provide the following information to assist with plan review. Additional information may be required after a plan review is performed.

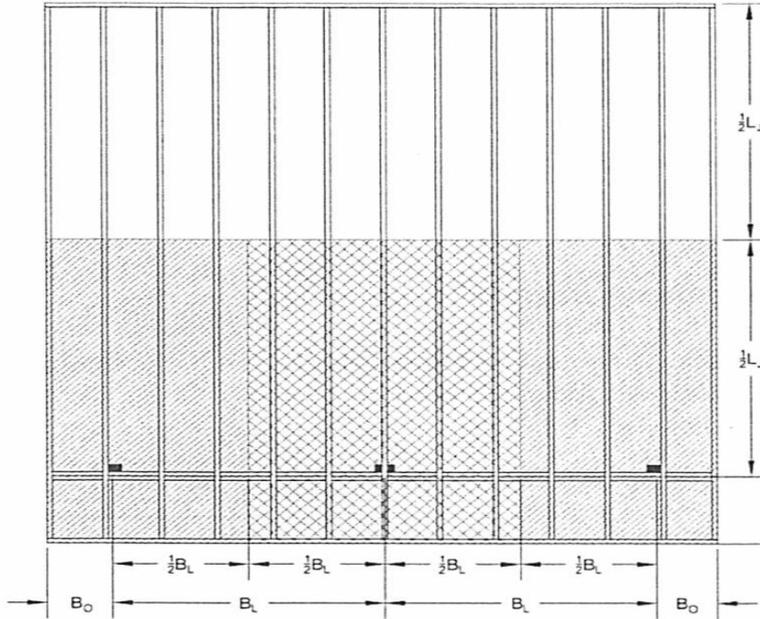
1. Plot Plan, see attached sample plot plan. Provide height from deck boards to grade
2. Footing detail:
 - o Depth of footing below grade-36" minimum required below grade.
 - o Dimensions of footing
 - o Footings can be sized by below perceptive method or by engineer design. Provide detail on sizing

Table B3. Footing Sizes¹ Based on Tributary Area for Various Soil Capacities.

Tributary Area ² (sq. ft.)	Soil Bearing Capacity											
	1500 psf			2000 psf			2500 psf			3000 psf		
	Round Footing Diameter (in.)	Square Footing (in.)	Footing Thickness (in.)	Round Footing Diameter (in.)	Square Footing (in.)	Footing Thickness (in.)	Round Footing Diameter (in.)	Square Footing (in.)	Footing Thickness (in.)	Round Footing Diameter (in.)	Square Footing (in.)	Footing Thickness (in.)
10	8	7	6	7	7	6	7	6	6	6	5	6
20	12	10	6	10	9	6	9	8	6	8	7	6
30	14	13	6	12	11	6	11	10	6	10	9	6
40	16	15	6	14	13	6	13	11	6	12	10	6
50	18	16	7	16	14	6	14	13	6	13	12	6
60	20	18	8	17	15	6	16	14	6	14	13	6
70	22	19	9	19	17	7	17	15	6	15	14	6
80	23	21	9	20	18	8	18	16	7	16	15	6
90	25	22	10	21	19	8	19	17	7	17	15	6
100	26	23	11	23	20	9	20	18	8	18	16	7
110	28	25	12	24	21	10	21	19	8	19	17	7
120	29	26	12	25	22	10	22	19	9	20	18	8
130	30	27	13	26	23	11	23	20	9	21	18	8
140	31	28	13	27	24	11	24	21	10	22	19	9
150	33	29	14	28	25	12	25	22	10	22	20	9
160	34	30	15	29	25	12	25	23	10	23	20	9
170	35	31	15	30	26	13	26	23	11	24	21	10
180	36	32	16	30	27	13	27	24	11	24	22	10
190	37	33	16	31	28	13	28	25	12	25	22	10
200	38	34	17	32	29	14	28	25	12	26	23	11
210	39	35	17	33	29	14	29	26	12	26	23	11
220	40	35	18	34	30	15	30	26	13	27	24	11
230	41	36	18	35	31	15	31	27	13	28	25	12
240	42	37	19	35	31	15	31	28	13	28	25	12
250	43	38	19	36	32	16	32	28	14	29	26	12

1. Assumes 40 psf live load, 10 psf dead load, 150 pcf concrete and 2,500 psi compressive strength of concrete. Coordinate footing thickness with post base and anchor requirements.
2. Tributary area shall be multiplied by 1.25 at center posts with beams not spliced (continuous).

Figure B1. Examples of Tributary Areas.



Tributary Area

Since uniform loading is prescriptively set for *DCA 6*, only the area the post or footing is supporting needs to be determined. This is called the tributary area and is shown in Figure B1. Tributary area of a center or corner post can be found from Figure B1 or by using the following formulas:

$$A_{\text{CenterPost}} = \left(\frac{1}{2}J_L + J_O\right)(B_L) \quad \text{Eq. B-1}$$

$$A_{\text{CornerPost}} = \left(\frac{1}{2}J_L + J_O\right)\left(\frac{1}{2}B_L + B_O\right) \quad \text{Eq. B-2}$$

- A is tributary area (ft²)
- J_L is length of joist (ft)
- J_O is length of joist overhang (ft)
- B_L is the length of the beam span (ft)
- B_O is the length of the beam overhang (ft)

Joist Length, J_L

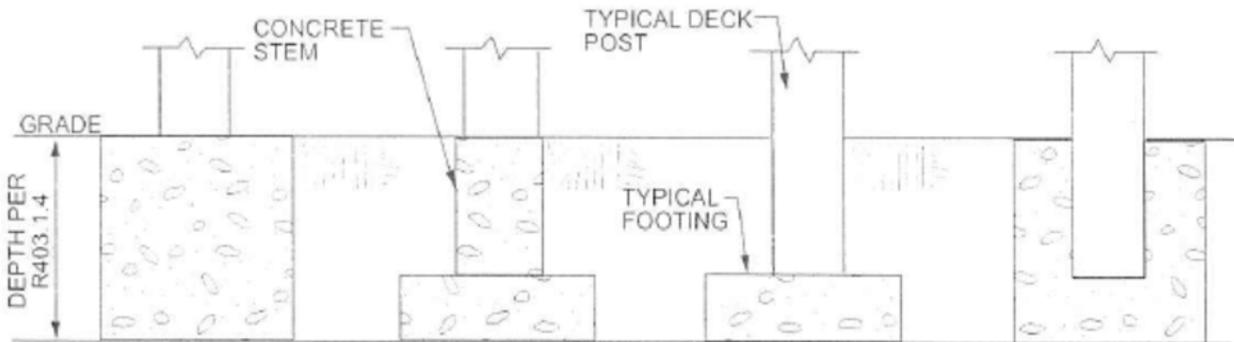
The joist length is defined differently for this appendix than the main provisions of *DCA 6*. The joist length is not the design span of the joist, but is from the ledger face to either the center point of the beam, if there is an overhang, or to the outside face of the rimboard if there is not an overhang. See Figure B2.

Joist Overhang Length, J_O

The length of the joist overhang is measure from the outside edge of the deck to the centerline of the beam. See Figure B2. If no overhang exists, zero is entered into equation B-1 or B-2 for J_O.

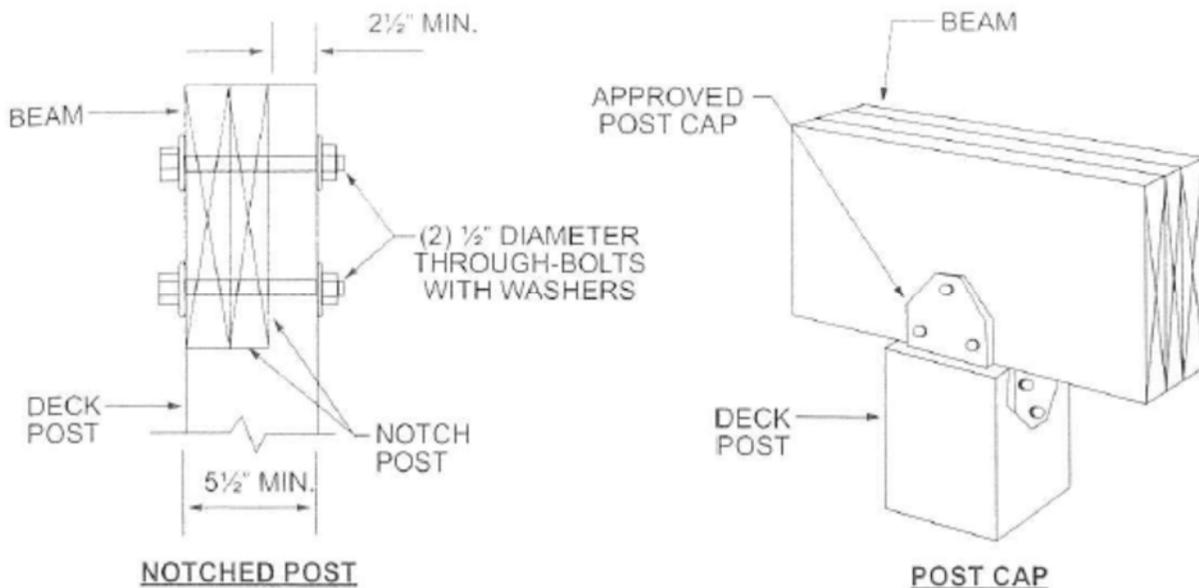
3. Post detail:

- Post Size
- Height of post to beam (max height 4x4=8', 4x6=8', 6x6 =14')
- All post buried in ground must be ground contact rated (separate from pressure treated)
- Method of attachment to footing-see illustration-connection to footing must be by mechanical fastener where not embedded by concrete or soil of at least 12"
- Spacing of post under beams-See table R507.6 on page 6



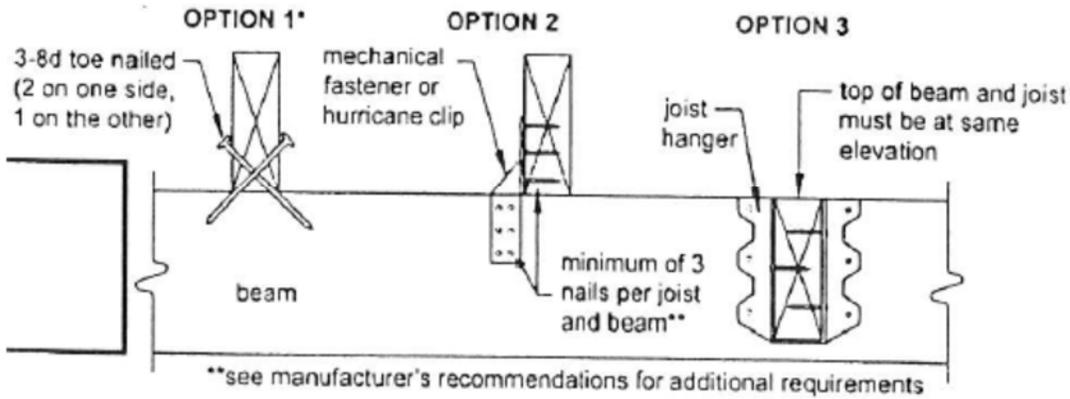
4. Beam detail:

- Size of beam See table R507.6 on page 6
- Attachment of beam to post? Required to be by mechanical fastener or notched post. If post is notched, it must be a 6x6 post-See details below
- Note: Table 507.6 on page 6 is for beams supporting joist is from one side, footnote b. Double joist span if beam is carrying 2 joist loads.



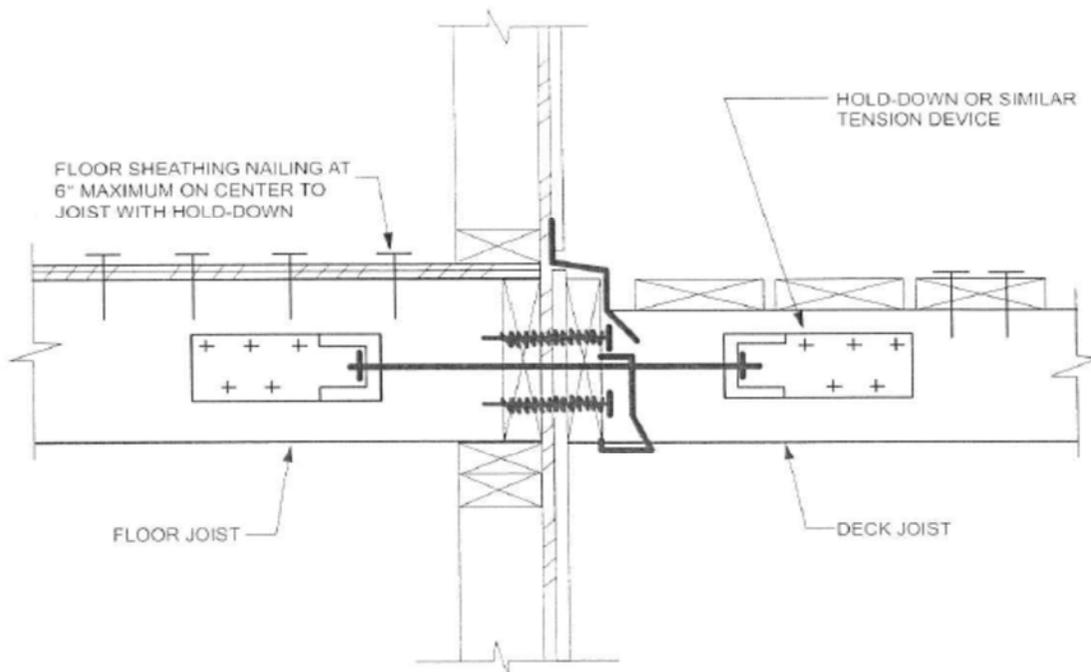
5. Joist detail:

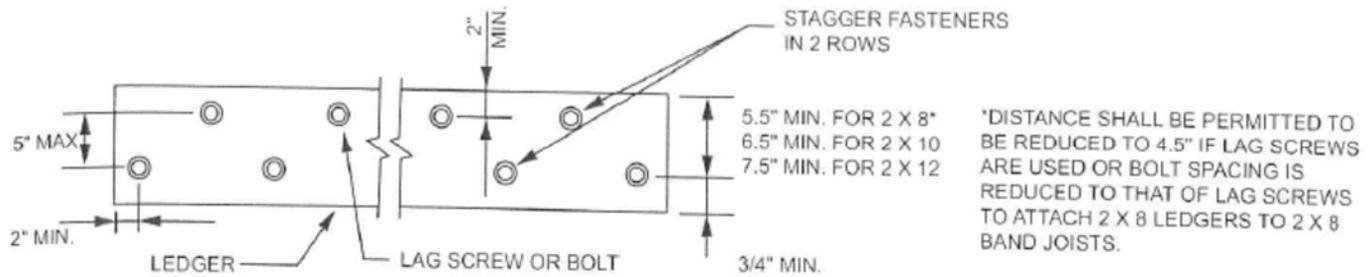
- Size and spacing of joist-See table R507.5 on page 6
- Clear span of joist- See table R507.5 on page6
- Attachment to band board
- Attachment to beam
- Cantilever detail



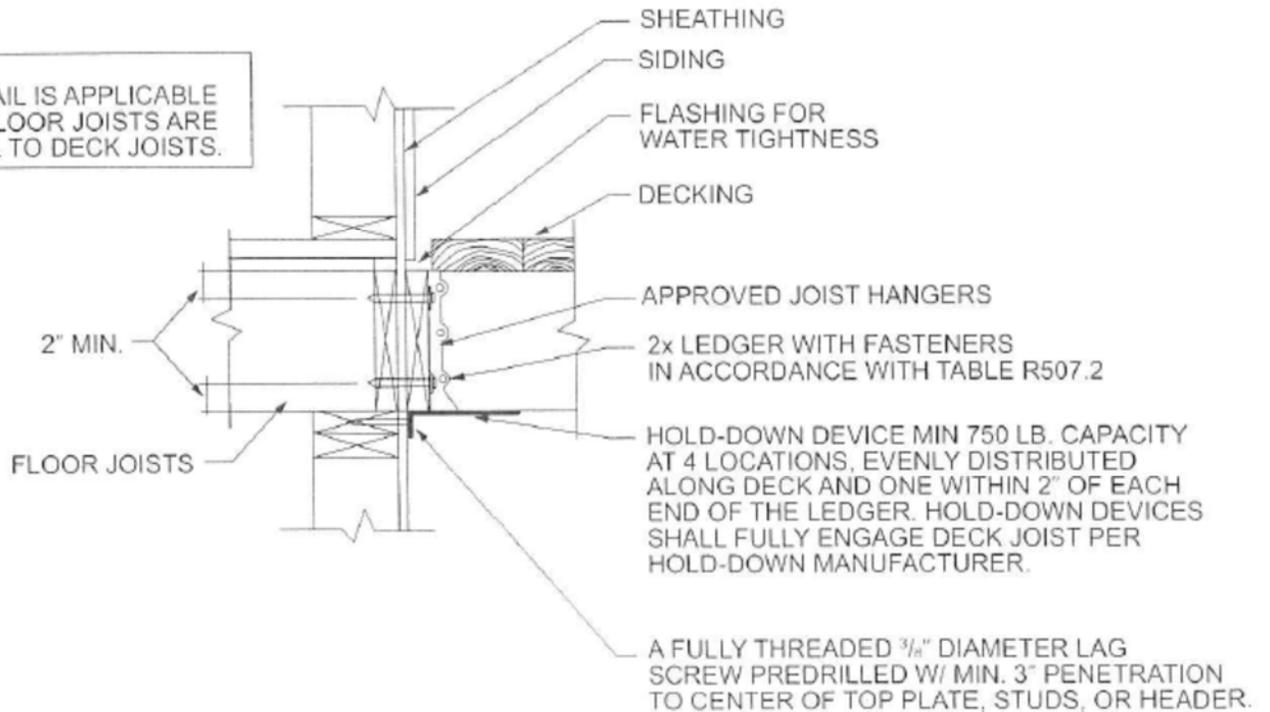
6. Band board detail:

- Size of lags and spacing for attachment to house. Tip of lags must extend thru inside face of band board
- Detail on lateral connections. Minimum 2 hold down tension devices with stress design of minimum 1,500 pounds within 24" of ends of deck or where house joist are parallel to deck joist, 4 tension devices are required having a stress design of minimum 750 pounds. Specs of devices required at inspection.
- Ledgers are required to be flashed

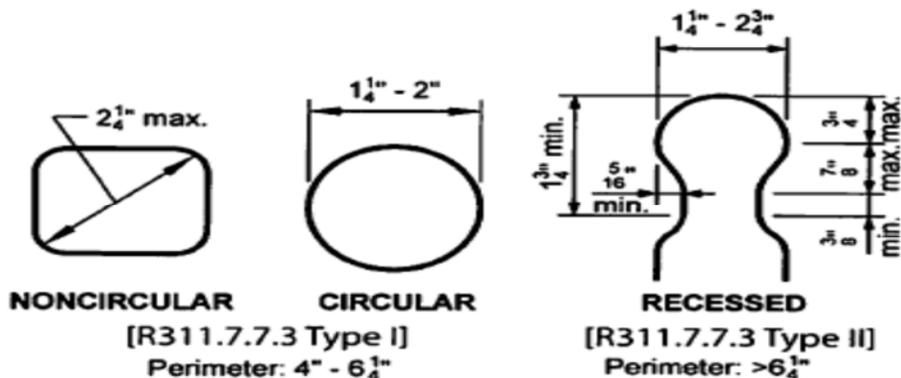




NOTE:
THIS DETAIL IS APPLICABLE WHERE FLOOR JOISTS ARE PARALLEL TO DECK JOISTS.



7. Guardrail detail: (If deck leads to an in ground pool, contact our office for gate/guardrail requirements)
 - o 36" minimum height, balusters max spaced 4" at deck, 4 3/8" at stairs
 - o Spacing and attachment method. Must withstand 200 pounds of pressure
8. Handrail detail:
 - o Size of handrail. See below for required dimensions.
 - o Handrail to be full length of stairs. 34"-38" in height
 - o If guardrail is used as handrail, it cannot be interrupted by a newel post at stairs, a continuous handrail is required. Must be able to withstand 200 pounds of applied side force



9. Stair detail: (If deck leads to an in ground pool, contact our office for gate/guardrail requirements)
- Width of stairs-3' minimum clear width (handrails can impede in clear width)
 - Rise and run of treads-maximum rise 8 1/4" , minimum tread 9"
 - Stairs to be mounted to post or footing minimum 36" below grade

**TABLE R507.5
DECK JOIST SPANS FOR COMMON LUMBER SPECIES^f (ft. - in.)**

SPECIES ^a	SIZE	SPACING OF DECK JOISTS WITH NO CANTILEVER ^b (inches)			SPACING OF DECK JOISTS WITH CANTILEVERS ^c (inches)		
		12	16	24	12	16	24
Southern pine	2 × 6	9-11	9-0	7-7	6-8	6-8	6-8
	2 × 8	13-1	11-10	9-8	10-1	10-1	9-8
	2 × 10	16-2	14-0	11-5	14-6	14-0	11-5
	2 × 12	18-0	16-6	13-6	18-0	16-6	13-6

**TABLE R507.6
DECK BEAM SPAN LENGTHS^{a, b} (ft. - in.)**

SPECIES ^a	SIZE ^d	DECK JOIST SPAN LESS THAN OR EQUAL TO: (feet)						
		6	8	10	12	14	16	18
Southern pine	2 – 2 × 6	6-11	5-11	5-4	4-10	4-6	4-3	4-0
	2 – 2 × 8	8-9	7-7	6-9	6-2	5-9	5-4	5-0
	2 – 2 × 10	10-4	9-0	8-0	7-4	6-9	6-4	6-0
	2 – 2 × 12	12-2	10-7	9-5	8-7	8-0	7-6	7-0
	3 – 2 × 6	8-2	7-5	6-8	6-1	5-8	5-3	5-0
	3 – 2 × 8	10-10	9-6	8-6	7-9	7-2	6-8	6-4
	3 – 2 × 10	13-0	11-3	10-0	9-2	8-6	7-11	7-6
	3 – 2 × 12	15-3	13-3	11-10	10-9	10-0	9-4	8-10

10: Notes:

- Lumber to be pressure treated
- Post buried in ground must be rated for ground contact
- Bolts/lags, screws and hangers required to be approved to be used with pressure treated wood and used at exterior
- Specs required for alternative attachments