



Village of Round Lake Beach
Residential Permit Application Review Guidelines
RESIDENTIAL DECK GUIDELINES

SPECIFICATIONS TO INCLUDE IN PLANS/DRAWINGS – 2 COPIES REQUIRED

1. Proposed deck location on the Plat of Survey, indicating overall size as well as distances from the lot lines, main building and setback distances.
2. Pier location & depth (minimum of 42 inches below grade required), diameter, and dimensions from pier to pier.
3. Size, spacing and spans of all posts, beams, joists and decking. Identify connection details.
4. Height of deck above the final grade.
5. Height of guardrails above the deck.

LOCATION

1. Decks located in a floodplain must comply with the storm water ordinance. (*Title 9, Chap. 5, Sections 9-4-5*)
2. Decks attached to principle structures must be setback at least 5 ft from the side and rear lot lines. (*Zoning 215.3, 1*)
3. Decks shall not be constructed on any easement. (*Zoning 8.5 {D 1}*)

GENERAL

1. Pressure treated or decay resistant lumber is required. (*IRC R317*)
2. Rust resistant hardware must be used. (*IRC R317.3.1*)
3. Weed barriers are required under decks that are less than 48 inches above the ground with not less than 2 inches of gravel placed on top of weed barrier for securing. (*Title 6, Section 6-4-1*)

STAIRS – SEE FIGURE 27

1. Exterior stairways shall be provided with an artificial light source located at the top landing of the stairway (*IRC R303.8*)
2. Minimum width is 36 inches. (*IRC R311.7.1*)
3. Minimum of 3 stair stringers are required for a 36 inches-wide stairway or a maximum of 18 inches O.C. (*AF&PA*)
4. Maximum riser height is 7¾ inches. (*IRC R311.7.5.1*)
5. Minimum tread depth is 10 inches plus a ¾ to 1¼ inches nosing. (*IRC R311.7.5.2*)
6. Tread riser height must not deviate from one another by more than 3/8 inches. (*IRC R311.7.5.1*)
7. Openings between risers must not allow the passage of a 4 inches diameter sphere. (*IRC R311.7.5.1*)
8. A nosing not less than ¾ but not more than 1¼ inches must be provided on stairways with solid risers. (*IRC R311.7.5.3*)
9. SEE FIGURES 27, 28, 30 & 31 for more stairways and stringer requirements.

HANDRAILS

1. Handrail is required on one side of steps where there are four or more risers. (*IRC R311.7.8*) SEE FIGURE 30
2. Handrail cross section is 1¼ to 2 inches. (*IRC R311.7.8.5*) SEE FIGURE B
3. Handrail shall not be less than 34" and not more than 38 inches above the nosing. (*IRC R311.7.8.1*)
4. SEE FIGURES A&B for specific handrail sizing and spacing.

GUARDRAILS

1. Required where the deck is more than 30 inches above grade. (IRC R312.1.1)
 2. Guardrail spindles must be spaced such that there is less than a 4 inches space between spindles. (IRC R312.1.3)
 3. The triangular openings formed by the tread and riser of the stairs and the lower chord of the guardrail must not allow the passage of a 6 inch sphere. (IRC R312.1.3) SEE FIGURE #30
 4. The height of the guardrails must be at least 36 inches. (IRC R312.1.2)
 5. Along the open sides of stairways that are 30 inches or more in height, guardrails must be at least 34 inches in height measured vertically from the nosing of the tread. (IRC R312.1.2)
- SEE FIGURES 24, 25, 26 for other guardrail requirements.

MINIMUM FOOTING SIZE FOR DECKS

(IRC Table R507.3.1)

LIVE OR GROUND SNOW LOAD (psf)	TRIBUTARY AREA (Sq. ft.)	LOAD BEARING VALUE OF SOILS (psf)											
		1500°			2000°			2500°			≥3000°		
		Side of a square footing (inches)	Diameter of a round footing (inches)	Thickness (inches)	Side of a square footing (inches)	Diameter of a round footing (inches)	Thickness (inches)	Side of a square footing (inches)	Diameter of a round footing (inches)	Thickness (inches)	Side of a square footing (inches)	Diameter of a round footing (inches)	Thickness (inches)
40	20	12	14	6	12	14	6	12	14	6	12	14	6
	40	14	16	6	12	14	6	12	14	6	12	14	6
	60	17	19	6	15	17	6	13	15	6	12	14	6
	80	20	22	7	17	19	6	15	17	6	14	16	6
	100	22	25	8	19	21	6	17	19	6	15	17	6
	120	24	27	9	21	23	7	19	21	6	17	19	6
	140	26	29	10	22	25	8	20	23	7	18	21	6
	160	28	31	11	24	27	9	21	24	8	20	22	7

DECK POST SIZE AND MAXIMUM HEIGHT

(IRC Table R507.4)

DECK POST SIZE	MAXIMUM HEIGHT ^{a,b} (feet-inches)
4 X 4	6-9 ^c
4 X 6	8
6 X 6	14
8 x 8	14

DECK POST SIZE, CONTINUED

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

- a. Measured to the underside of the beam.
- b. Based on 40 psf live load.
- c. The maximum permitted height is 8 feet for one-ply and two-ply beams.
- d. The maximum permitted height for 3-ply beams on post cap is 6 feet 9 inches.

JOIST SPAN CAPABILITIES (FEET-INCHES)

(IRC Table R507.6)

SPECIES	SIZE	ALLOWABLE JOIST SPAN			MAXIMUM CANTILEVER		
		SPACING OF DECK JOISTS (inches)			SPACING OF DECK JOISTS WITH CANTILEVERS (inches)		
		12	16	24	12	16	24
SOUTHERN PINE	2 X 6	9-11	9-0	7-7	1-3	1-4	1-6
	2 X 8	13-1	11-10	9-8	2-1	2-3	2-5
	2 X 10	16-2	14-0	11-5	3-4	3-6	2-10
	2 X 12	18-0	16-6	13-6	4-6	4-2	3-4

DECK BEAM SPAN LENGTHS (FEET-INCHES)

(IRC Table R507.5)

SPECIES	SIZE	DECK JOIST SPAN LESS THAN OR EQUAL TO: (FEET)						
		6	8	10	12	14	16	18
SOUTHERN PINE	1-2X6	4-11	4-0	3-7	3-3	3-0	2-10	2-8
	1-2X8	5-11	5-1	4-7	4-2	2-10	3-7	3-5
	1-2X10	7-0	6-0	5-5	4-11	4-7	4-3	4-0
	1-2X12	8-3	7-1	6-4	5-10	5-5	5-0	4-9
	2-2X6	6-11	5-11	5-4	4-10	4-6	4-3	4-0
	2-2X8	8-9	7-7	6-9	6-2	5-9	5-4	5-0
	2-2X10	10-4	9-0	8-0	7-4	6-9	6-4	6-0
	2-2X12	12-2	10-7	9-5	8-7	8-0	7-6	7-0
	3-2X6	8-2	7-5	6-8	6-1	5-8	5-3	5-0
	3-2X8	10-10	9-6	8-6	7-9	7-2	6-8	6-4
	3-2X10	13-0	11-3	10-0	9-2	8-6	7-11	7-6
3-2X12	15-3	13-3	11-10	10-9	10-0	9-4	8-10	

JOIST CONNECTIONS

1. Joists sitting on bearing points must have hurricane clips or rafter ties holding the joist down. *(IRC R507.8)*
2. Joists connected to the face of other joists/beams/ledgers are required to utilize joist hangers. *(IRC R507.9.1.3)*
3. Deck lateral connection and hold down tension devices must be installed on not less two locations per deck. *(IRC R507.9.2)* SEE FIGURE #26

LEDGER BOARD ATTACHMENT

1. Ledger board must be a minimum of 2x8 nominal lumber *(IRC R507.9.1.1)*
2. Ledger board must be flashed throughout its length (under-siding and house wrap, over top of ledger. *(IRC R703.4)* and *(IRC FIGURE R507.9.1.2[2])* SEE FIGURE C, NOTE 6
3. For joist spans up to 18'-0", ½" lag bolts into 2" Southern Pine Rim/Band Board shall be 16" O.C. staggered high/low, 2" from the edge of the ledger. *(IRC Figure R507.9.1.3 [1])* SEE FIGURE 19

FOR MORE INFORMATION: Contact 847/546-2351 or RESIDENTIALPERMITTING@roundlakebeachil.gov

Handrail Mounting Examples.

Handrail Grip Size.

Fasten handrails per manufacture recommendations

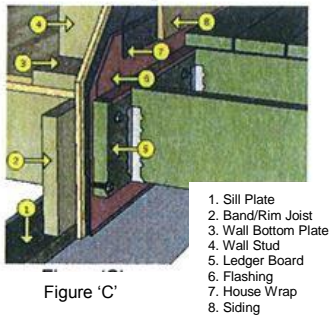
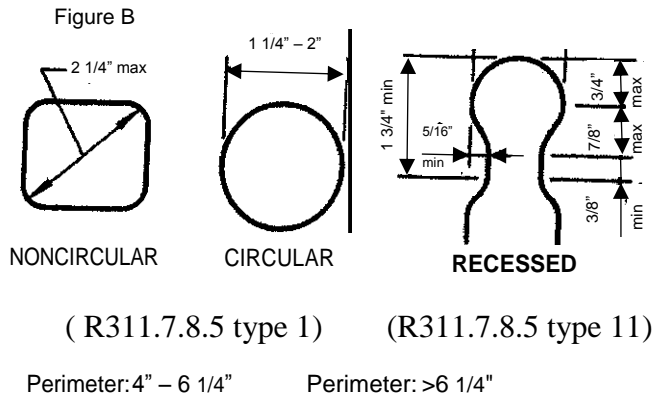
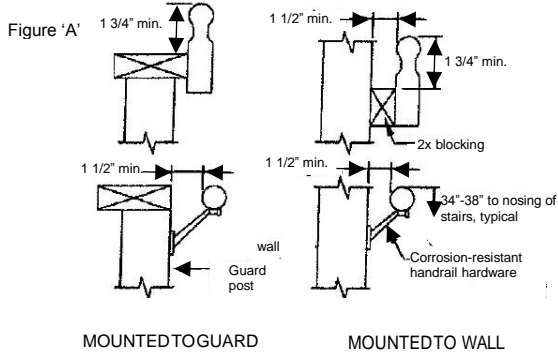


Figure 19. Ledger Board Fastener Spacing and Clearances

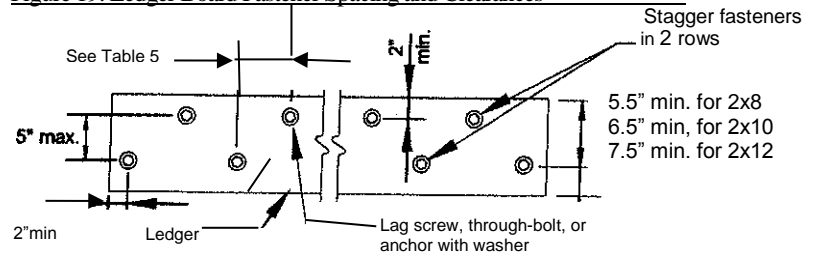
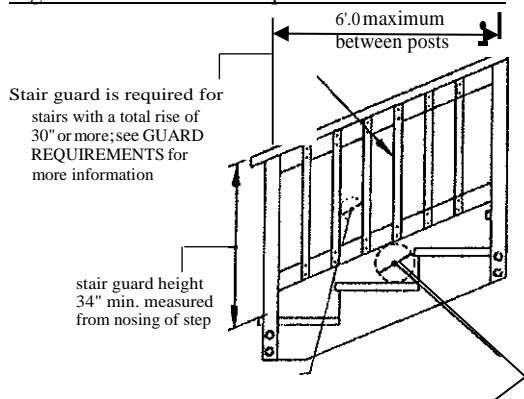


Figure 30. Stair Guard Requirements



Openings for required guards on the sides of stair treads shall not allow a sphere 4-3/8" to pass through.

Triangular opening shall not permit the passage of a 6" diameter, sphere.

Figure 31. Stair Stringer Attachment Detail

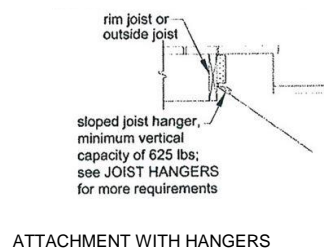


Figure 28. Stair Stringer Requirements.

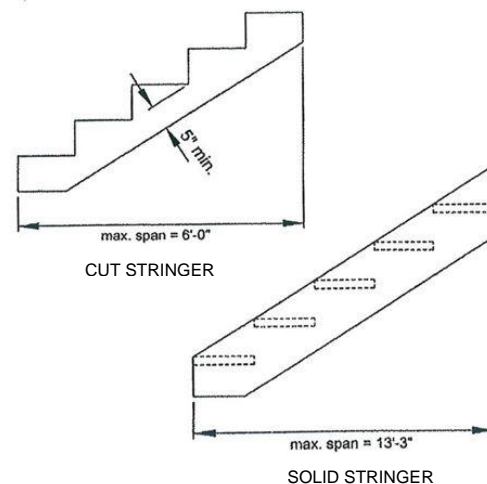


Figure 27. Tread and Riser Detail

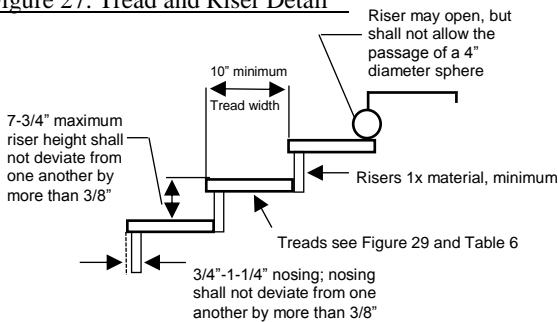


Figure 24. Example Guard Detail.

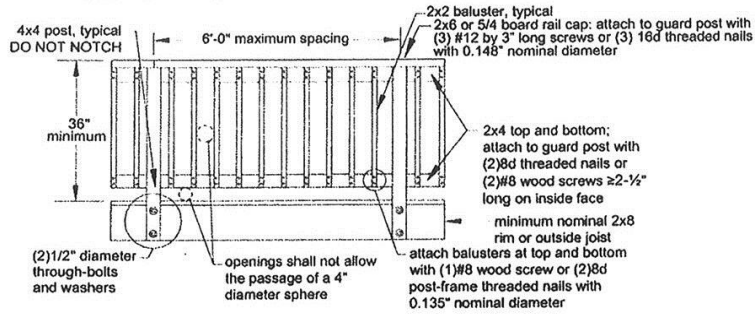


Figure 25. Guard Post to Outside-Joist Example.

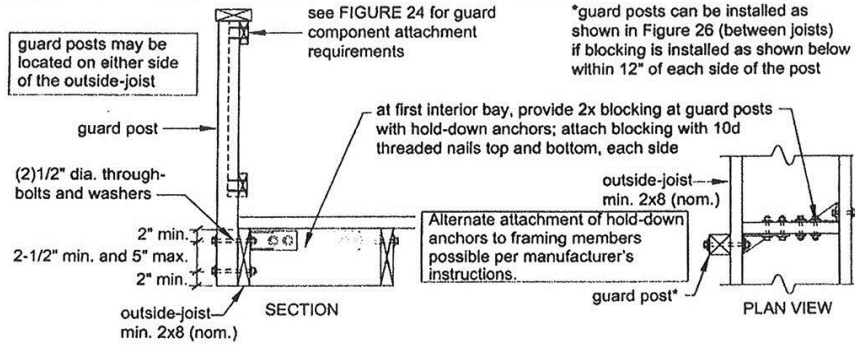
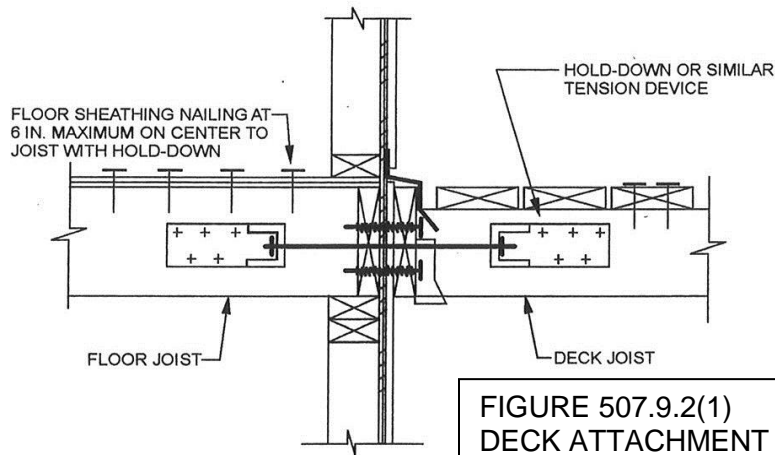
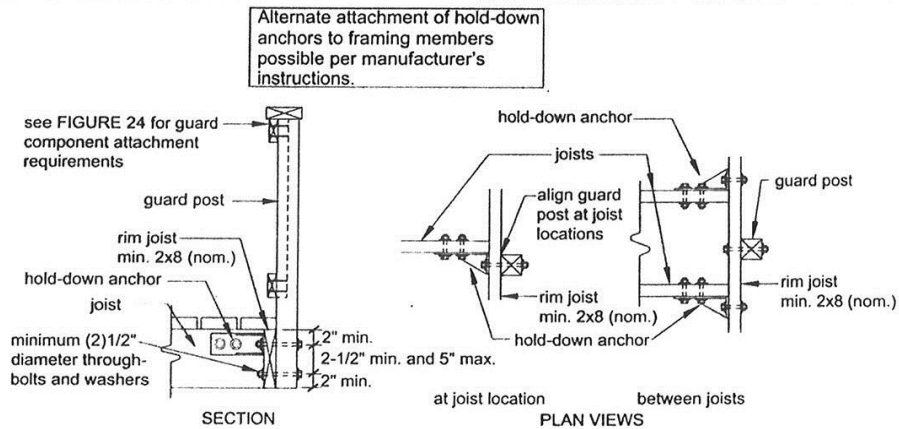


Figure 26. Guard Post to Rim Joist Example.



**FIGURE 507.9.2(1)
DECK ATTACHMENT FOR
LATERAL LOADS**