

Nelson County, Virginia

Typical Deck Details

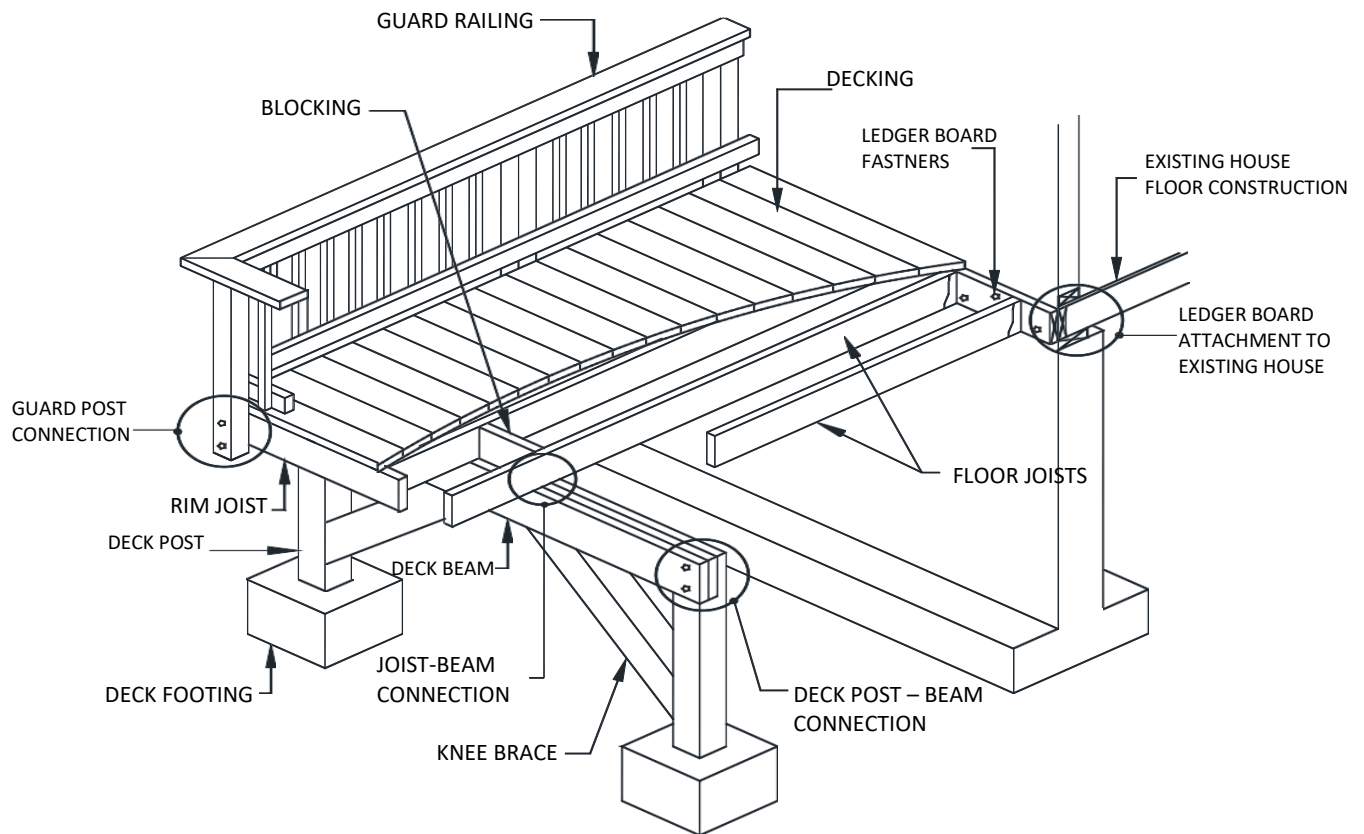
Based on the 2018 Virginia Residential Code



The design details in this document apply to residential decks only. To use this packet, the framing is limited to single span, single level decks, and construction must not deviate from the details. The deck details shown here in this packet are the only pre-approved County details. A copy of your **Red Stamped** county approved plans must be on the job site and available during each required inspection. Failure to post the permit placard so that it is visible from the road and have plans on site **WILL** result in an automatic failed inspection.



Typical Deck Details



All residential decks constructed in Nelson County must comply with the 2018 Virginia Residential Code (VRC) Section R507. This “deck packet” is a guide intended for general assistance showing the minimum code requirements. Any specific questions, concerns, or deviations from this packet must be shown on **your submitted construction drawings**. Submitted construction drawings will be reviewed for code compliance and must be approved **prior to the start of any work**.

Once approved, the applicant will be issued a laminated permit placard with a copy of the approved plans. The laminated placard must be clearly posted and seen from the road. Also, one copy of the **red stamped** approved plans **must** remain on the work site at all times for all inspections.

To apply for a deck-building permit, you will need to submit the following:

- A Building Permit Application – completely filled out. This can be done as a physical copy or on-line.
- Two copies of your recorded plat or a copy of the GIS plat, with the deck drawn in, detailing the distance from property lines and other features to verify zoning setbacks. Wintergreen WPOA if applicable will take care of this.
- Two sets of construction drawings **with full details**. For some simple decks, the last page of this packet may be used to assist with showing which details are to be used for construction.
- **Full details** implies, but is not limited to, all lumber sizes, dimensions, connections, spacing, spans, footings, piers, posts, beams, joists, decking, guards, stairs, railings, etc.
- List the licensed building contractor on the application or sign the affidavit if you are building it yourself.

The following information is assistance in preparing your construction deck drawings for plan review, permit approval, and construction. This “deck packet” does not cover every scenario and all plans are subject to review prior to approval. Any questions may be addressed by calling our office at 434-263-7080.

FOOTINGS

Footings shall be constructed in accordance with the requirements below:

- Footings shall bear on original solid ground – not backfill, unless it is engineered fill, approved by the building department.
- Grade for frost protection is a **minimum** footing depth of 18" on the East side of Route 151 (Livingston side) and a **minimum** footing depth of 24" on the West side of Route 151 (Stoney Creek Side).
- All footings shall be inspected by the Inspection Department for ground bearing conditions, (solid soil, proper dimensions per plans, all steel **in place on chairs** per plans) with no debris (leaves, roots, loose rocks), **prior to placement of concrete**.
- The size of each footing supporting a pier, column or post shall be based on the tributary area supported by each specific footing. 1500 PSF load bearing pressure is assumed for all footings unless there is a stamped geotechnical engineer report or field verifiable information using Table **R401.4.1**, which can be found in the 2018 VRC.
- The minimum footing size chart below paired with the tributary area description and illustration will help size the necessary footings for your specific deck. Each individual footing size can vary depending on the tributary area of that portion of the deck. If the tributary area is higher than the given number in the column, move to the next higher row for the footing size. **See example in the tributary area description below.**

Tributary area description: Using the picture below, imagine you were building a 10' x 10' deck attached to a house with a footing on each corner. You could calculate the tributary areas to determine footing size in the following way. First, draw a line dividing the deck in to two halves between the house and the footings, 5' by 10' each. That load nearest the house 5' by 10' **(green)** is supported by the ledger board with the deck weight carried down through the foundation to the house footings. The remaining half of the deck is divided into half and is supported by the two outside corner footings, 5' x 5' **(red)** and 5' x 5' **(blue)**. Once the deck is divided into tributary areas using this method, you can now calculate the size of these tributary areas. The back half of the deck would be 10' x 5' or 50 sq. ft. with that load carried by the house foundation. The front two halves are 5' x 5' each or 25 sq. ft. per tributary area. Therefore, in this example, since the tributary area is 25 sq. ft., which is more than 20, you would use the 40 sq. ft. row in the chart. The footing would be 14"x14" square x 8" thick or 16" round x 8" thick.



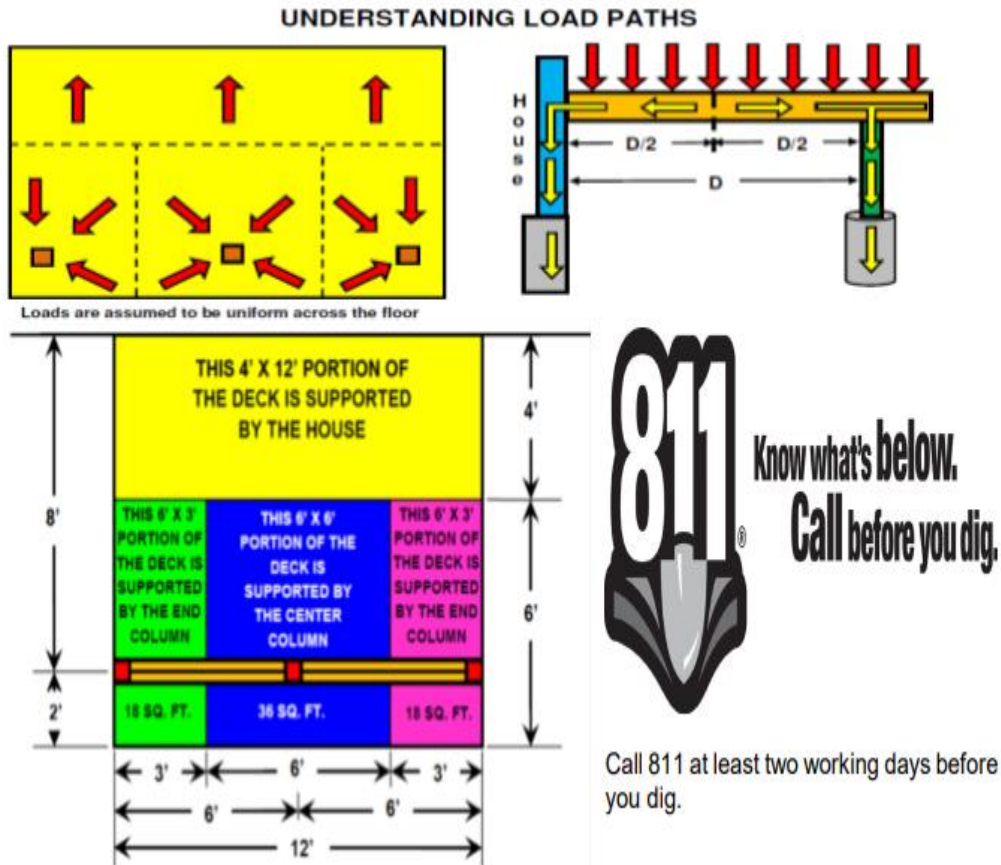
| LIVE OR GROUND SNOW LOAD (psf) | TRIBUTARY AREA (sq. ft.) | load bearing value 1500 | | |
|--------------------------------|--------------------------|-----------------------------------|--------------------------------------|--------------------|
| | | Side of a square footing (Inches) | Diameter of a round footing (Inches) | Thickness (Inches) |
| 40 | 20 | 12 | 14 | 8 |
| | 40 | 14 | 16 | 8 |
| | 60 | 17 | 19 | 8 |
| | 80 | 20 | 22 | 8 |
| | 100 | 22 | 25 | 8 |
| | 120 | 24 | 27 | 9 |
| | 140 | 26 | 29 | 10 |
| | 160 | 28 | 31 | 11 |

PLEASE NOTE THAT THE MINIMUM FOOTING THICKNESS IN NELSON COUNTY IS 8 INCHES

TRIBUTARY AREAS CONTINUED, MISS UTILITY AND PIER FOOTINGS

Tributary Areas Continued:

- Below is another example of tributary areas and the load points / load paths associated with the tributary area.
- In this example, the deck is cantilevered and shows how the areas would be separated and calculated when cantilevered as well as when the area is supported only by a center bearing column / post.



- Always call Miss Utility Prior to digging. Dial 811 and someone will discuss coming to your location for free within two business days to make sure your dig site is safe.
- The footing details below are an illustration of four types of pier footings that are pre-approved. Please be sure to list which type of footing will be used for your project. Both C and D will require diagonal deck bracing.

Without 12" Minimum embedment, Diagonal Bracing is required

Engineered post connection

12" Minimum embedment

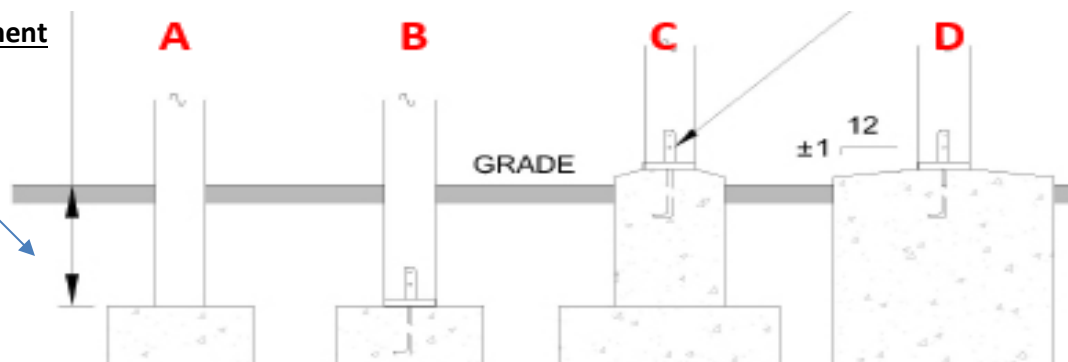


Figure R507.3

POSTS AND POST TO BEAM CONNECTIONS

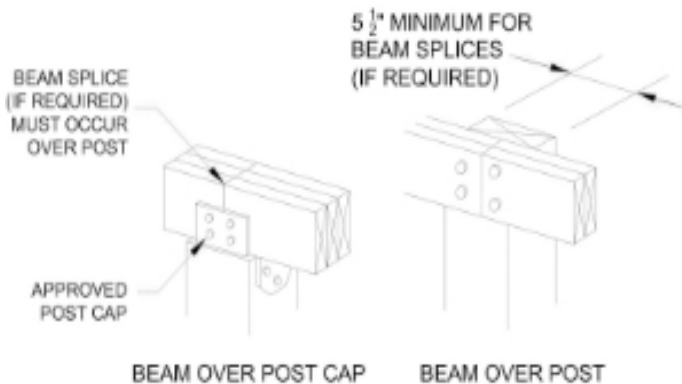
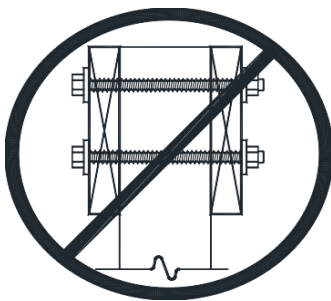
Posts and post to beam connections shall meet the requirements listed below:

- Where posts bear on concrete footings in accordance with **Figure R507.3** on the previous page, lateral restraint shall be provided by **engineered post connections** or a minimum **post embedment of 12 inches**.
- Refer to **Table R507.4** below for post sizing based on the maximum height of the post from the grade to the underside of deck beam. **Posts that are over the listed heights will require an engineered design.**

| TABLE R507.4 DECK POST HEIGHT ^a | |
|--|--|
| DECK POST SIZE | MAXIMUM HEIGHT ^{a, b} (feet-inches) |
| 4 × 4 | 6 -9 ^c |
| 4 × 6 | 8 |
| 6 × 6 | 14 |
| 8 × 8 | 14 |

- **Deck beam bearing on posts prior to connections:**
The ends of the beams shall have not less than 1-1/2 inches of bearing on wood or metal and not less than 3 inches of bearing on concrete or masonry **for the entire width of the beam**. Where multiple span beams bear on intermediate posts, each ply must have full bearing on the post in accordance with **Figure 507.5.1(1)** below.
- **Deck beam to deck post:** shall be connected together either by a post cap or by a notched post to accommodate **ALL PLYS** of the deck beam and be bolted together in accordance with **Figure R507.5.1(2)** below.

PROHIBITED CONNECTION



DO NOT OVERNOTCH 4X4 POSTS FOR ONE PLY BEAMS

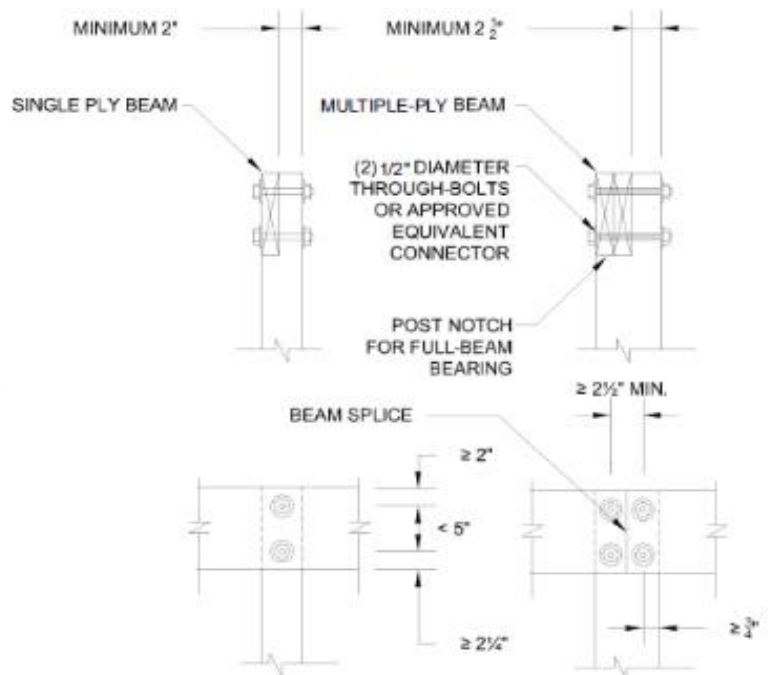


FIGURE R507.5.1(1) DECK BEAM TO DECK POST **FIGURE R507.5.1(2) NOTCHED POST-TO-BEAM CONNECTION**

LEDGER BOARD CONNECTIONS TO HOUSE AND/OR BAND JOISTS

Ledger Boards:

Below are the general requirements for ledger boards that are positively connected to the house. Code compliance is critical to ensure the safety and structural stability of the deck. Ledger connections are the leading cause of deck failure.

- Ledger boards **shall not** be bolted through, lagged to or supported by or on stone or masonry veneer.
- The ledger board shall be attached in accordance with Table **R507.9.1.3(1)**, Table **R507.9.1.3(2)**, and Figure **R507.9.1.3(1)** below.
- Deck ledgers shall be a minimum of 2x8 pressure-preservative treated No.2 grade lumber.
- The ends of each joist and beam shall have not less than 1½ inches of bearing on wood or metal and not less than 3 inches on concrete or masonry for the entire width of the beam. 2x2 ledger strips are **not** permissible. Also, **deck beams shall not** be hung or bear weight on a ledger board that is connected directly to the house.
- It is imperative that the building department can determine what the ledger will be fastened to during plan review. If this cannot be verified, the deck shall be considered and reviewed as a self-supporting structure.
- **LEDGER BOARDS SHALL NOT BE FASTENED TO OR SUPPORTED BY MANUFACTURED HOMES.**

| CONNECTION DETAILS | 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' |
| | On-center spacing of fasteners | | | | | | |
| ½-inch diameter lag screw with ½-inch maximum sheathing ^{c, d} | 30 | 23 | 18 | 15 | 13 | 11 | 10 |
| ½-inch diameter bolt with ½-inch maximum sheathing ^d | 36 | 36 | 34 | 29 | 24 | 21 | 19 |
| ½-inch diameter bolt with 1-inch maximum sheathing ^d | 36 | 36 | 29 | 24 | 21 | 18 | 16 |

Table 507.9.1.3(1) Deck Ledger Connection to Band Joist

| MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS | | | | |
|---|-----------------------|-------------|-----------------------|------------------------|
| | TOP EDGE | BOTTOM EDGE | ENDS | ROW SPACING |
| Ledger ^a | 2 inches ^d | ¾ inch | 2 inches ^b | 1⅝ inches ^b |
| Band Joist ^c | ¾ inch | 2 inches | 2 inches ^b | 1⅝ inches ^b |

Table 507.9.1.3(2) Placement of Lag Screws and Bolts in Deck Ledgers and Band Joists

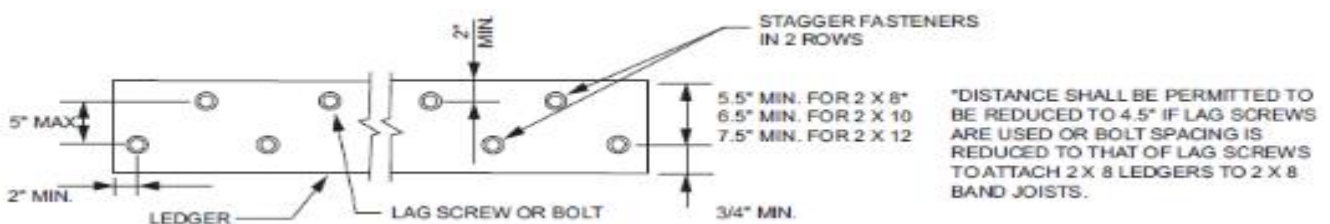


Figure 507.9.1.3(1) Placement of Lag Screws and Bolts in Ledgers

DECK LATERAL LOAD CONNECTION

Deck lateral load connection.

The lateral load connection required by **Section R507.9.2** shall be permitted to be in accordance with **Figure R507.9.2(1)** or **R507.9.2(2)** below. Where the lateral load connection is provided in accordance with **Figure R507.9.2(1)**, hold-down tension devices shall be installed per the manufacturers installation instructions in not less than two locations per deck, within 24 inches of each end of the deck. Each device shall have an allowable stress design capacity of not less than 1,500 pounds (6672 N). Where the lateral load connections are provided in accordance with **Figure R507.2.3(2)**, the hold-down tension devices shall be installed per the manufacturers installation instructions in not less than four locations per deck. Each device shall have an allowable stress design capacity of not less than 750 pounds (3336 N). The four locations shall be: two within 24" of the ends of the deck and two more staggered across the width of the deck to create equal sections of the ledger board.

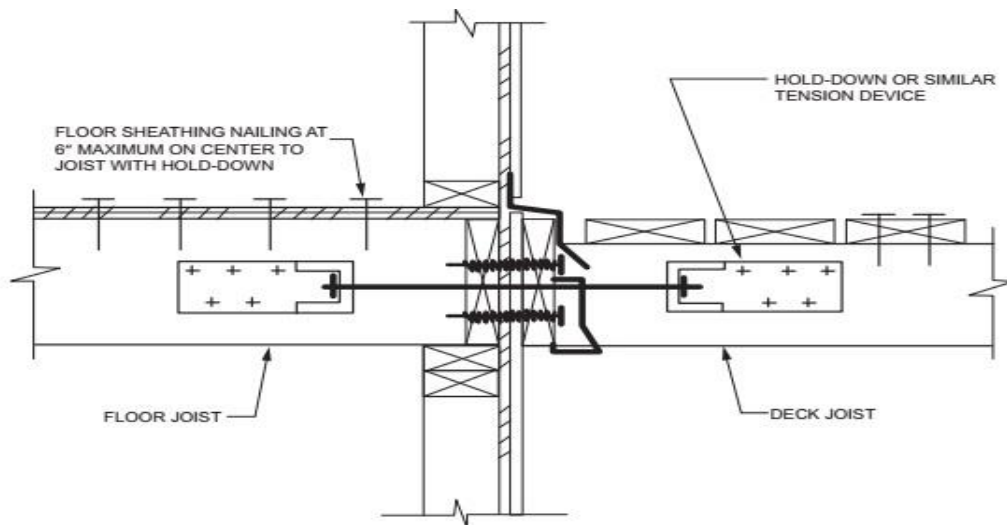


FIGURE 507.9.2(1) DECK ATTACHMENT FOR LATERAL LOADS

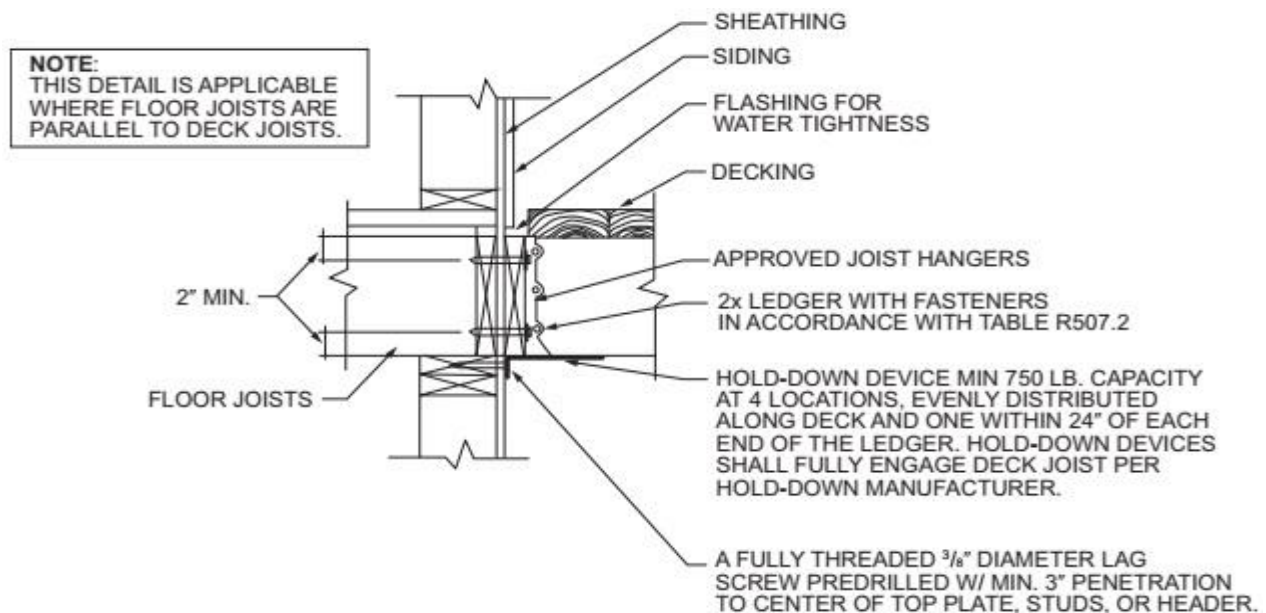


FIGURE R507.9.2(2) DECK ATTACHMENT FOR LATERAL LOADS

DECK BEAMS

Beams shall be designed and assembled in accordance with the requirements below:

- As shown in **Figure R507.5** below, beam span is measured **between the centerlines** of the two adjacent posts and does not include the overhangs. Beams may overhang past the center of the post **up to one-fourth** of the actual beam span.
- Beam size is determined using **Table R507.5** below. Flush beams shall be greater or equal to the joist depth.
- Beam plies shall be fastened with two rows of 10d nails minimum of 16 inches on center along each edge. This is for up to 3 plies. If beam exceeds 3 plies, an engineered design is required for attachment of all plies.
- Each beam member must be supported by minimum of 2 posts not exceeding maximum beam span.
- ALL SPLICES:** Deck beams with **splices shall be** located at an interior post location and **centered over posts**.

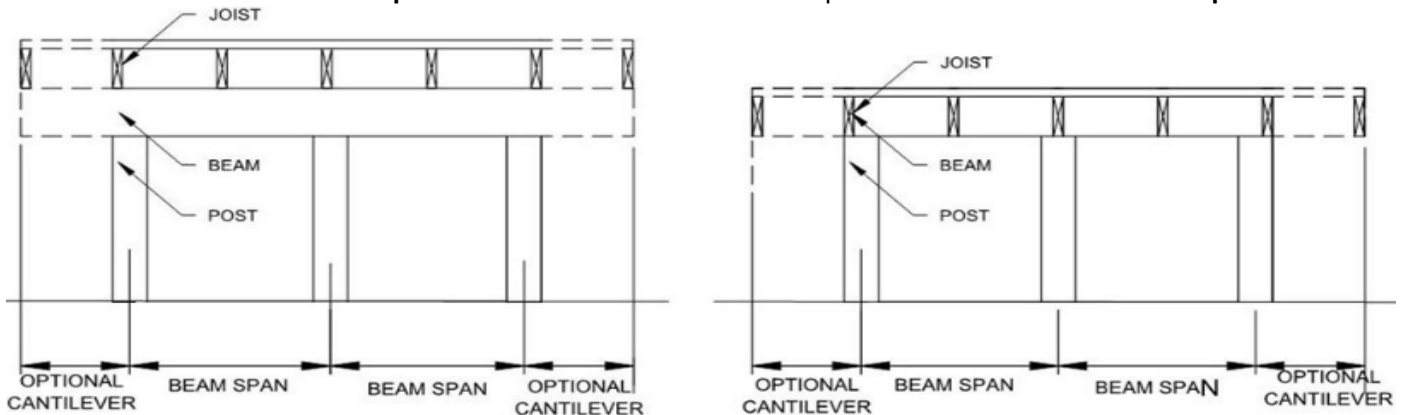


FIGURE 507.5 TYPICAL DECK BEAM SPANS

| SPECIES ^a | SIZE ^d | DECK JOIST SPAN LESS THAN OR EQUAL TO: (feet) | | | | | | |
|---|----------------------|--|-------|------|------|------|------|------|
| | | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
| Southern pine | 1 - 2 × 6 | 4-11 | 4-0 | 3-7 | 3-3 | 3-0 | 2-10 | 2-8 |
| | 1 - 2 × 8 | 5-11 | 5-1 | 4-7 | 4-2 | 2-10 | 3-7 | 3-5 |
| | 1 - 2 × 10 | 7-0 | 6-0 | 5-5 | 4-11 | 4-7 | 4-3 | 4-0 |
| | 1 - 2 × 12 | 8-3 | 7-1 | 6-4 | 5-10 | 5-5 | 5-0 | 4-9 |
| | 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 | |
| Douglas fir-larch ^a , hem-fir ^a , spruce-pine-fir ^a , redwood, western cedars, ponderosa pine ^f , red pine ^f | 3 × 6 or 2 - 2 × 6 | 5-5 | 4-8 | 4-2 | 3-10 | 3-6 | 3-1 | 2-9 |
| | 3 × 8 or 2 - 2 × 8 | 6-10 | 5-11 | 5-4 | 4-10 | 4-6 | 4-1 | 3-8 |
| | 3 × 10 or 2 - 2 × 10 | 8-4 | 7-3 | 6-6 | 5-11 | 5-6 | 5-1 | 4-8 |
| | 3 × 12 or 2 - 2 × 12 | 9-8 | 8-5 | 7-6 | 6-10 | 6-4 | 5-11 | 5-7 |
| | 4 × 6 | 6-5 | 5-6 | 4-11 | 4-6 | 4-2 | 3-11 | 3-8 |
| | 4 × 8 | 8-5 | 7-3 | 6-6 | 5-11 | 5-6 | 5-2 | 4-10 |
| | 4 × 10 | 9-11 | 8-7 | 7-8 | 7-0 | 6-6 | 6-1 | 5-8 |
| | 4 × 12 | 11-5 | 9-11 | 8-10 | 8-1 | 7-6 | 7-0 | 6-7 |
| | 3 - 2x6 | 7-4 | 6-8 | 6-0 | 5-6 | 5-1 | 4-9 | 4-6 |
| | 3 - 2 × 8 | 9-8 | 8-6 | 7-7 | 6-11 | 6-5 | 6-0 | 5-8 |
| | 3 - 2 × 10 | 12-0 | 10-5 | 9-4 | 8-6 | 7-10 | 7-4 | 6-11 |
| | 3 - 2 × 12 | 13-11 | 12-1 | 10-9 | 9-10 | 9-1 | 8-6 | 8-1 |

TABLE R507.5 DECK BEAM SPAN LENGTHS (feet – inches)

DECK JOISTS AND DECKING

Deck joists shall be designed in accordance with the requirements below:

- Joist span is measured from the centerlines of the bearing points at each joist end and does not include the overhangs.
- The ends of the joists shall have not less than 1 and 1/2 inches of bearing on wood or metal and not less than 3 inches of bearing on concrete or masonry over its entire width. Joist framing into the side of a beam or ledger board shall be supported by approved joist hangers.
- Joist ends and bearing locations shall be provided with lateral resistance to prevent rotation. Where lateral restraint is provided by joist hangers or blocking between joists, their depth shall not be less than 60 percent of the joist depth. Where lateral restraint is provided by rim joists, they shall be secured to the end of each joist with no fewer than three 10d (3-inch by 0.128-inch) nails or three No. 10x 3-inch-long wood screws.
- The maximum allowable spans for wood deck joists, as shown in **Figure R507.6** below, shall be in accordance with **Table R507.6** on the next page.
- The maximum joist cantilever shall be **limited to one-fourth** of the joist span or the maximum cantilever length specified in **Table R507.6** on the next page, **whichever is less**.
- The maximum joist spacing shall be limited by the decking materials in accordance with **Table R507.7** on the next page.

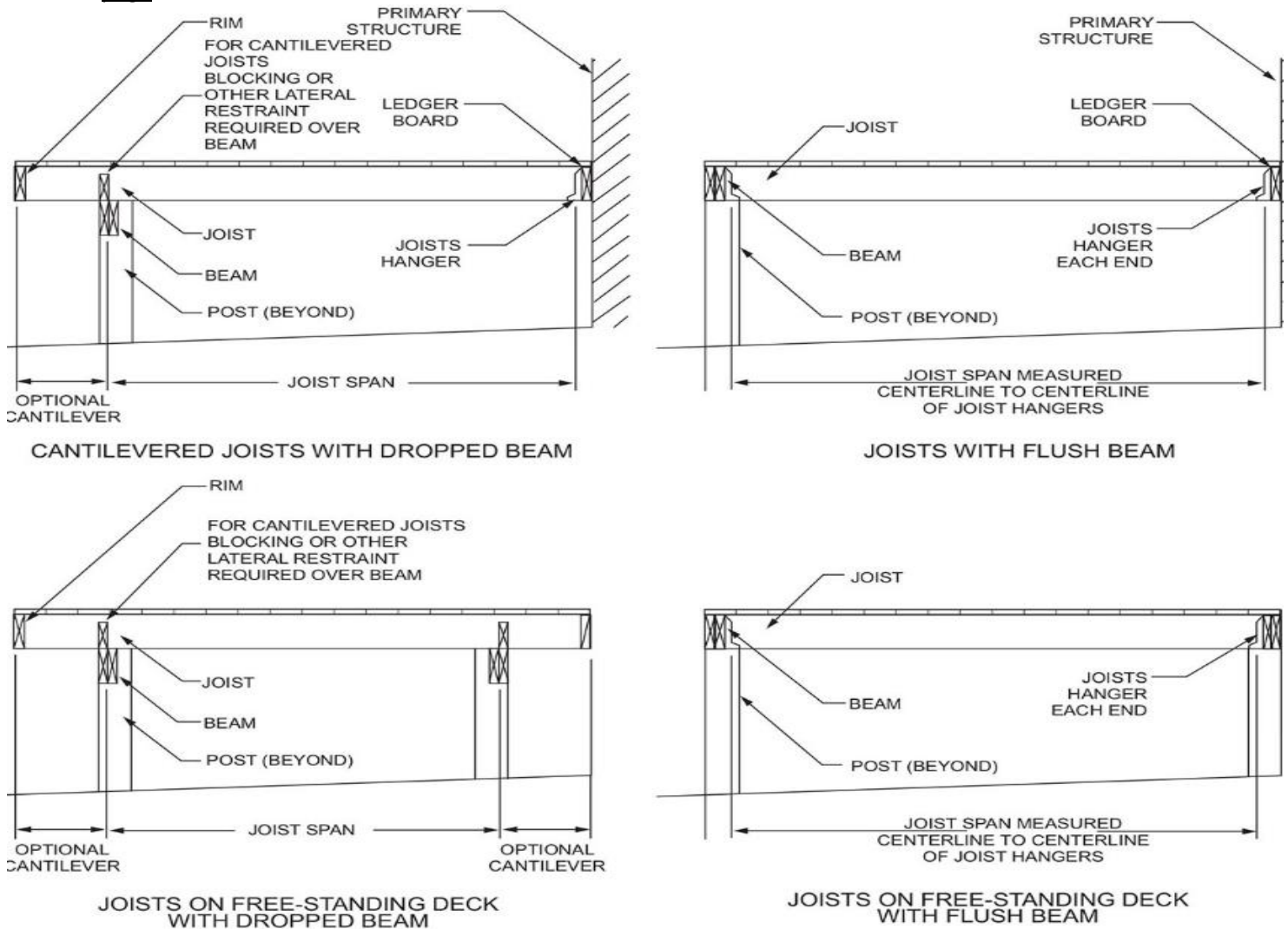


FIGURE R507.6 TYPICAL DECK JOIST SPANS

DECK JOISTS AND DECKING

* Continued *

Deck Joists and Decking Continued:

TABLE R507.6 DECK JOIST SPANS FOR COMMON LUMBER SPECIES (ft. - in.)

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| SPECIES ^a | SIZE | ALLOWABLE JOIST SPAN ^b | | | MAXIMUM CANTILEVER ^{c, f} | | |
|--|--------|-----------------------------------|-------|-------|---|------|------|
| | | SPACING OF DECK JOISTS (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 | 1-3 | 1-4 | 1-6 |
| | 2 × 8 | 13-1 | 11-10 | 9-8 | 2-1 | 2-3 | 2-5 |
| | 2 × 10 | 16-2 | 14-0 | 11-5 | 3-4 | 3-6 | 2-10 |
| | 2 × 12 | 18-0 | 16-6 | 13-6 | 4-6 | 4-2 | 3-4 |
| Douglas fir-larch ^d , hem-fir ^d , spruce-pine-fir ^d | 2 × 6 | 9-6 | 8-8 | 7-2 | 1-2 | 1-3 | 1-5 |
| | 2 × 8 | 12-6 | 11-1 | 9-1 | 1-11 | 2-1 | 2-3 |
| | 2 × 10 | 15-8 | 13-7 | 11-1 | 3-1 | 3-5 | 2-9 |
| | 2 × 12 | 18-0 | 15-9 | 12-10 | 4-6 | 3-11 | 3-3 |
| Redwood, western cedars, ponderosa pine ^e , red pine ^e | 2 × 6 | 8-10 | 8-0 | 7-0 | 1-0 | 1-1 | 1-2 |
| | 2 × 8 | 11-8 | 10-7 | 8-8 | 1-8 | 1-10 | 2-0 |
| | 2 × 10 | 14-11 | 13-0 | 10-7 | 2-8 | 2-10 | 2-8 |
| | 2 × 12 | 17-5 | 15-1 | 12-4 | 3-10 | 3-9 | 3-1 |

- Maximum allowable spacing for joists supporting decking shall be in accordance with **Table R507.7** below. Wood decking shall be attached to each supporting member with not less than two 8d threaded nails or two No. 8 wood screws. Other approved decking or fastener systems shall be installed in accordance with the manufacturer's installation requirements

TABLE R507.7 MAXIMUM JOIST SPACING FOR DECKING

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| DECKING MATERIAL TYPE AND NOMINAL SIZE | MAXIMUM ON-CENTER JOIST SPACING | |
|--|---|---|
| | Decking perpendicular to joist | Decking diagonal to joist ^a |
| 1 ¹ / ₄ -inch-thick wood | 16 inches | 12 inches |
| 2-inch-thick wood | 24 inches | 16 inches |
| Plastic composite | In accordance with Section R507.2 | In accordance with Section R507.2 |

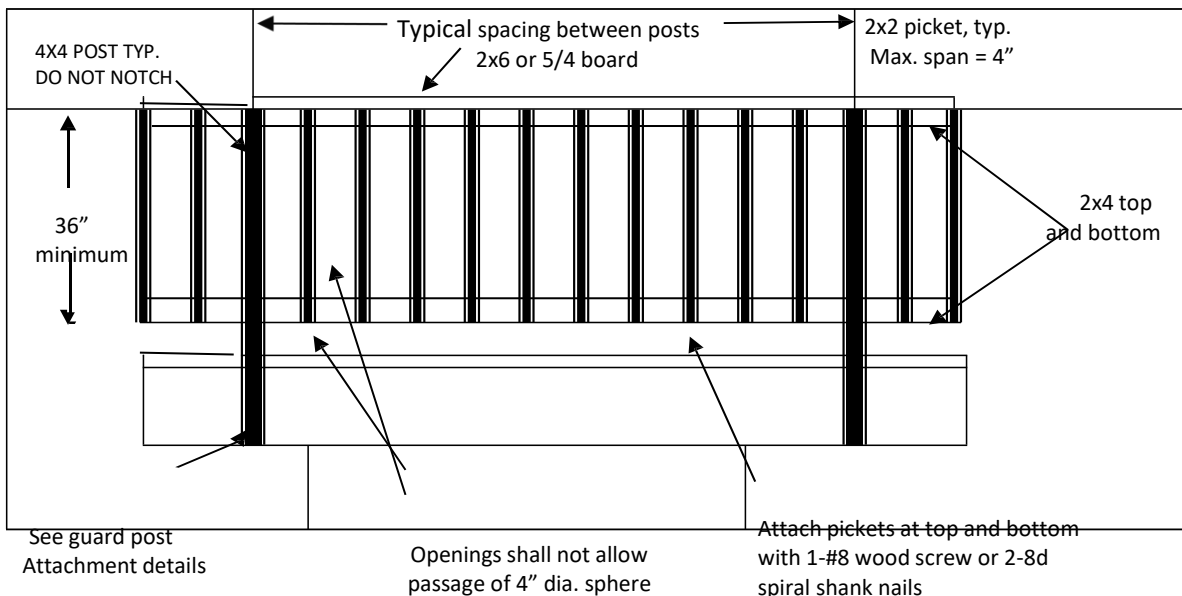
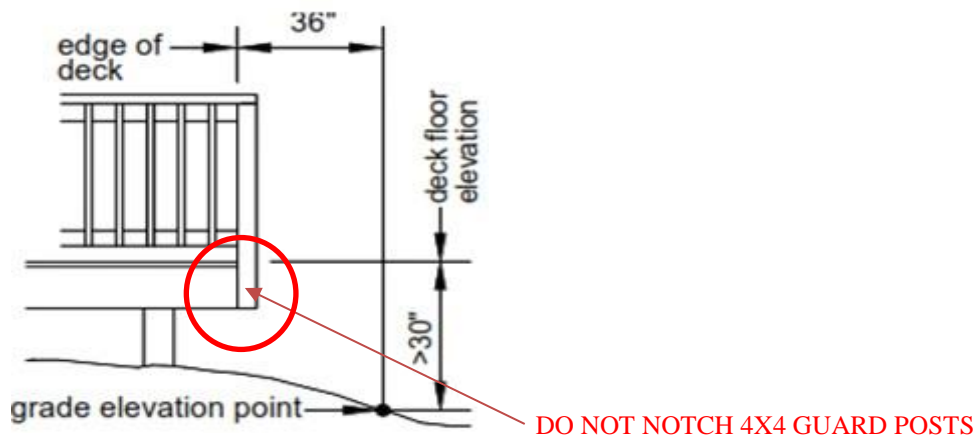
Wood or wood plastic composite decking shall be installed in accordance with the requirements below:

- Decking shall be nominal 2-inch-thick wood, 5/4-inch-thick wood, or wood/plastic composite material.
- Wood decking may be placed at a maximum angle of 45 degrees to the joists when permitted by size of decking material and spacing of joists.
- Wood/plastic composite decking may be placed at an angle but in accordance with manufacturer's installations instructions.
- Refer to **Table R507.7** above for maximum joist spacing based off the decking material that will be installed.

GUARDS

Guarding shall be installed in accordance with the requirements below:

- Guarding is required on decks that are constructed at a height of 30" or greater, measured from top of the walking surface to grade. **See illustration below.**
- If less than 30" and using no guard rail, that 30" from grade shall continue beyond the walking surface for a minimum of 36" beyond the outer band of the deck. **See illustration below**
- Required guardrails at open-sided walking surfaces, including stairs, porches, balconies or landings, shall be not less than 36" tall measured vertically from the top of the walking surface to top of the railing.
- There shall be **no openings** that will allow the passage of a 4" sphere between them; with an exception of the triangular openings at the open side of stair, formed by the riser, tread and bottom rail of a *guard*, which shall not allow the passage of a sphere 6 inches.
- Guardrails must withstand 200 lbs. point load in any direction and infill must withstand 50 lbs. loading over a one square foot area.
- Guard systems with a valid evaluation report from an accredited listing agency are permitted.
- Engineered guardrail systems must be installed per the manufacturers installation instructions.

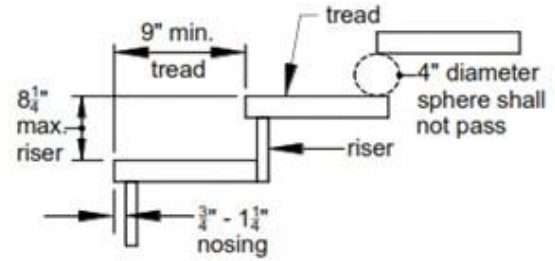


STAIRS

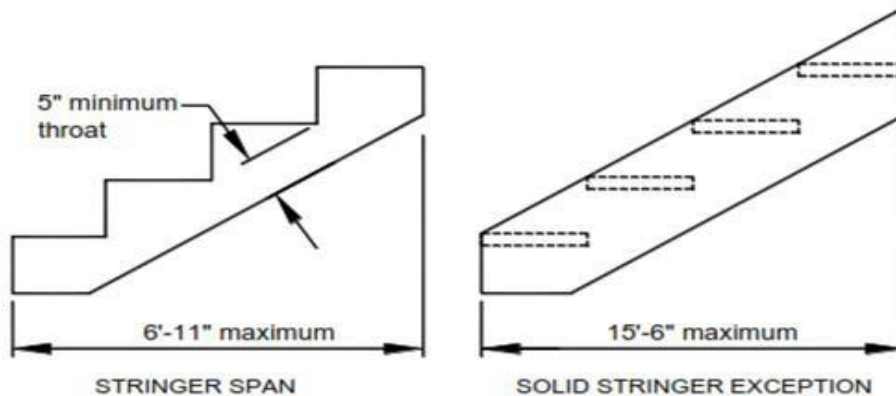
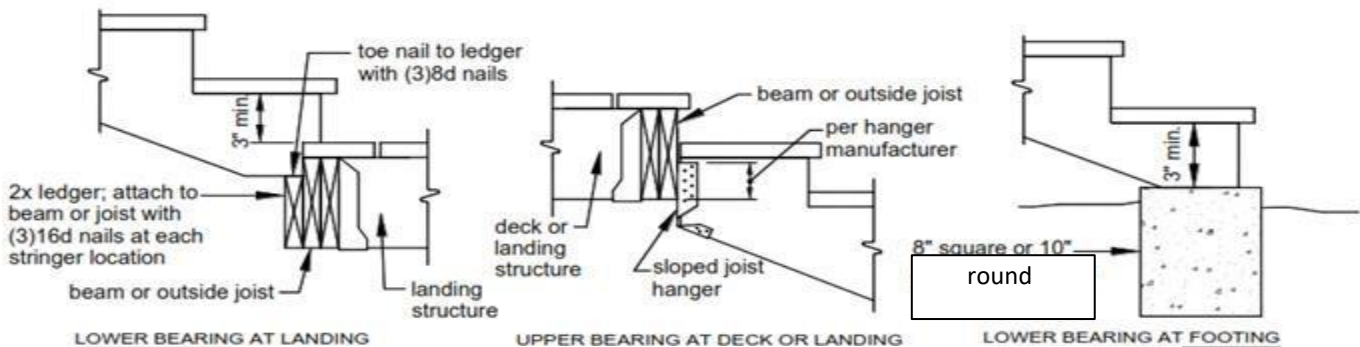
Stairs shall be constructed using the requirements below:

Stair stringers shall be in accordance with the following requirements:

- Stairs and similar facilities shall be positively anchored to the primary structure to resist both vertical and lateral forces. Attachment shall not be accomplished by use of toenails or nails subject to withdrawal.
- The clear width of stairways at and below the handrail height, including treads and landings, shall be not less than 31½ inches where a handrail is installed on one side and 27 inches where handrails are installed on both sides
- A flight of stairs shall not have a vertical rise larger than 151 inches between floor levels or landings.
- The riser height shall be not more than 8¼ inches. The riser shall be measured vertically between the leading edges of the adjacent treads as shown in the **stair tread and riser** illustration above. The greatest riser height within any flight of stairs shall not exceed the smallest by more than ¾ inch. Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees from the vertical. Open risers are permitted, provided that the openings located more than 30 inches, as measured vertically, to the floor or grade below do not permit the passage of a 4-inch-diameter sphere.
- The tread depth shall be not less than 9 inches. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than ¾ inch
- There shall be a floor or landing at the top and bottom of each stairway. The width perpendicular to the direction of travel shall be not less than the width of the flight served. For landings of shapes other than square or rectangular, the depth at the walk line and the total area shall be not less than that of a quarter circle with a radius equal to the required landing width. Where the stairway has a straight run, the depth in the direction of travel shall be not less than 36 inches
- The walking surface of treads and landings of stairways shall be level or sloped no steeper than one-unit vertical in 48 units horizontal (2.0-percent slope).



Stair tread and riser illustration



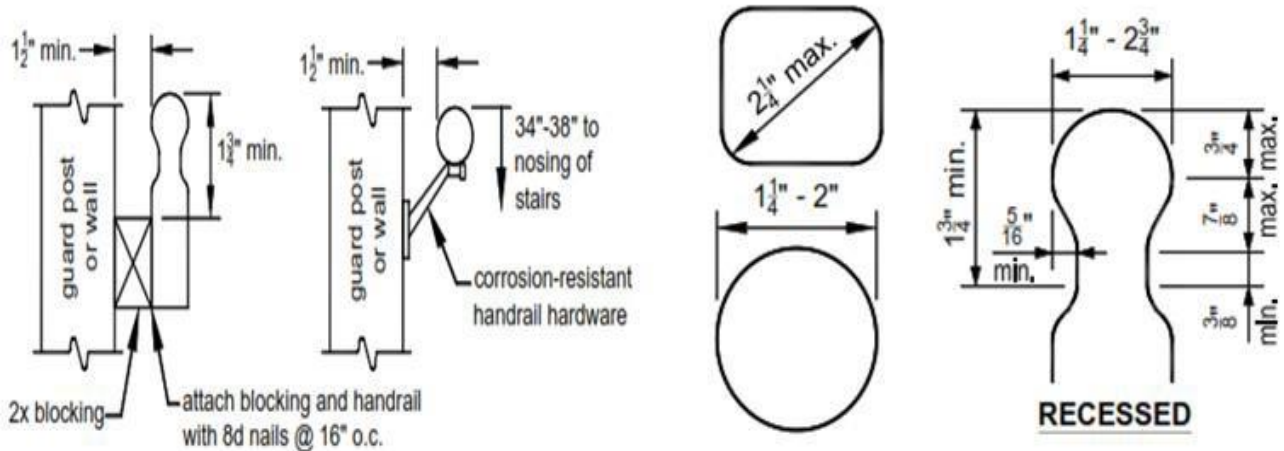
HANDRAILS

Handrails shall meet the requirements below:

- Handrails shall be provided on not less than one side of each flight of stairs with four or more risers.
- Handrail height shall be no less than 34 inches and no more than 38 inches, measured vertically from the top of the tread nosing.
- Handrails adjacent to a wall shall have a space of not less than 1 and 1/2 inches between the wall and the handrails.
- Handrails shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall return or shall terminate in newel posts.

Required handrails shall be of one of the following types or provide equivalent graspability:

- **1.Type I.** Handrails with a circular cross section shall have an outside diameter of not less than 1¹/₄ inches and not greater than 2 inches. If the handrail is not circular, it shall have a perimeter of not less than 4 inches and not greater than 6¹/₄ inches and a cross section of not more than 2¹/₄ inches. Edges shall have a radius of not less than 0.01 inch.
- **2.Type II.** Handrails with a perimeter greater than 6¹/₄ inches shall have a graspable finger recess area on both sides of the profile. The finger recess shall begin within ³/₄ inch measured vertically from the tallest portion of the profile and have a depth of not less than ⁵/₁₆ inch within ⁷/₈ inch below the widest portion of the profile. This required depth shall continue for not less than ³/₈ to a level that is not less than 1³/₄ inches below the tallest portion of the profile. The width of the handrail above the recess shall be not less than 1¹/₄ inches and not more than 2³/₄ inches. Edges shall have a radius of not less than 0.01 inches.



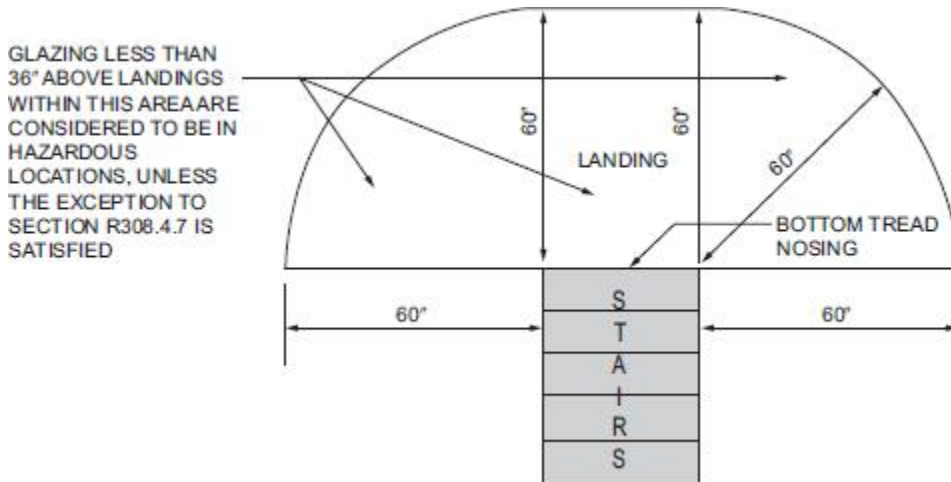
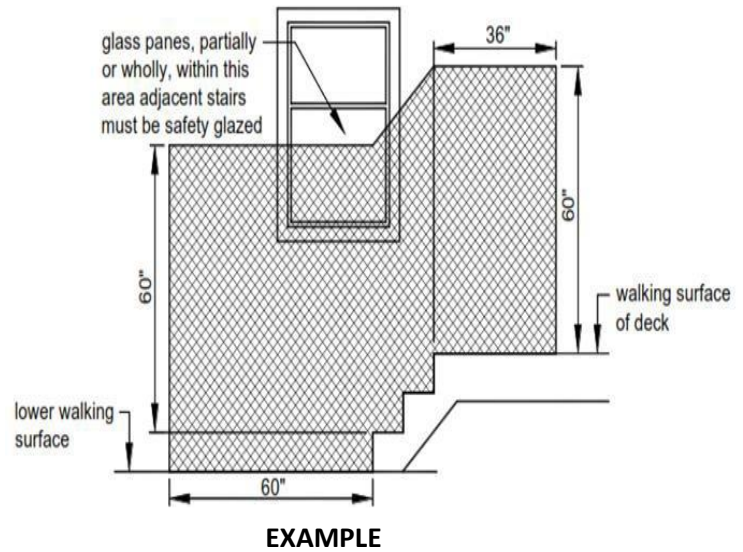
TYPE II AND I HANDRAILS MOUNTING EXAMPLE

TYPE I AND II HANDRAILS SIZING

SAFETY GLAZING

Glazing adjacent to stairs and ramps.

- Glazing where the bottom exposed edge of the glazing is less than 36 inches above the plane of the adjacent walking surface of stairways, landings between flights of stairs and ramps shall be considered to be a hazardous location.
- Glazing adjacent to the landing at the bottom of a stairway where the glazing is less than 36 inches above the landing and within a 60-inch horizontal arc less than 180 degrees from the bottom tread nosing shall be considered to be a hazardous location.
- To reduce injury due to an accidental impact, safety glazing in window and door glass is required when the existing house wall encloses any portion of the deck or acts as a barrier to stairs, landings, and areas at the top and bottom of the stairs.
- Individual panes, partially or wholly located in the hatched area shown in the example, must be safety-glazed. In the absence of safety glazing in a window adjacent a stairway, a stair guard must be constructed to separate the window from the stairway. In the absence of safety glazing in a window adjacent the 36-inch horizontal areas at the top or bottom of the stairs, a guard or horizontal rail must be installed at a height between 34 and 38 inches. The rail must meet the requirements of a stair handrail.



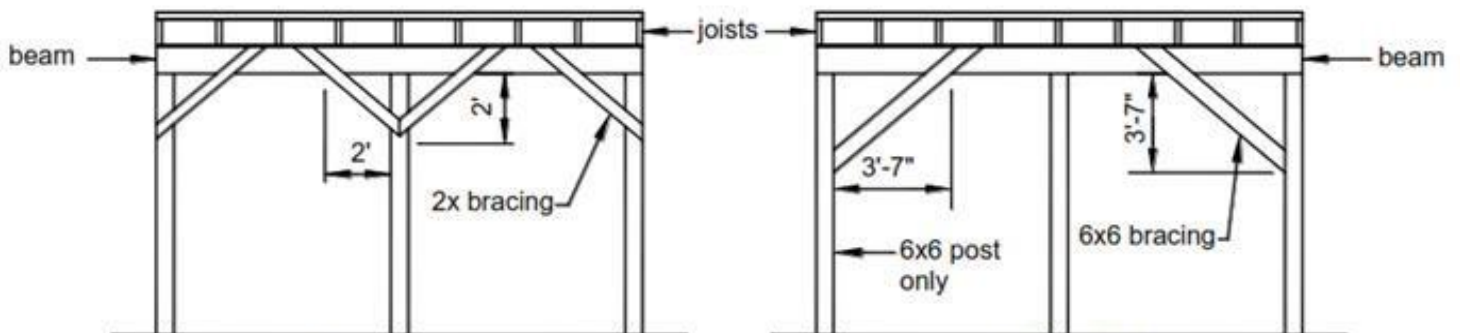
FREE STANDING DECKS

Free-standing decks shall be in accordance with the requirements below or by an engineered design:

- Diagonal bracing shall be required for ALL decks **over 8-foot-tall** and bracing shall be installed at post-beam locations as shown in details below.
- Diagonal bracing shall be 2x members at any post size or 6x6 members at 6x6 posts only.
- Connections of the diagonal bracing shall be in accordance with **the illustrations below**.
- **If free standing deck is taller than the maximum post heights set forth in 507.4 below, an engineered design shall be required.**

| TABLE R507.4 DECK POST HEIGHT ^a | |
|--|--|
| DECK POST SIZE | MAXIMUM HEIGHT ^{a, b} (feet-inches) |
| 4 × 4 | 6 -9 ^c |
| 4 × 6 | 8 |
| 6 × 6 | 14 |
| 8 × 8 | 14 |

Free Standing Deck Bracing examples:

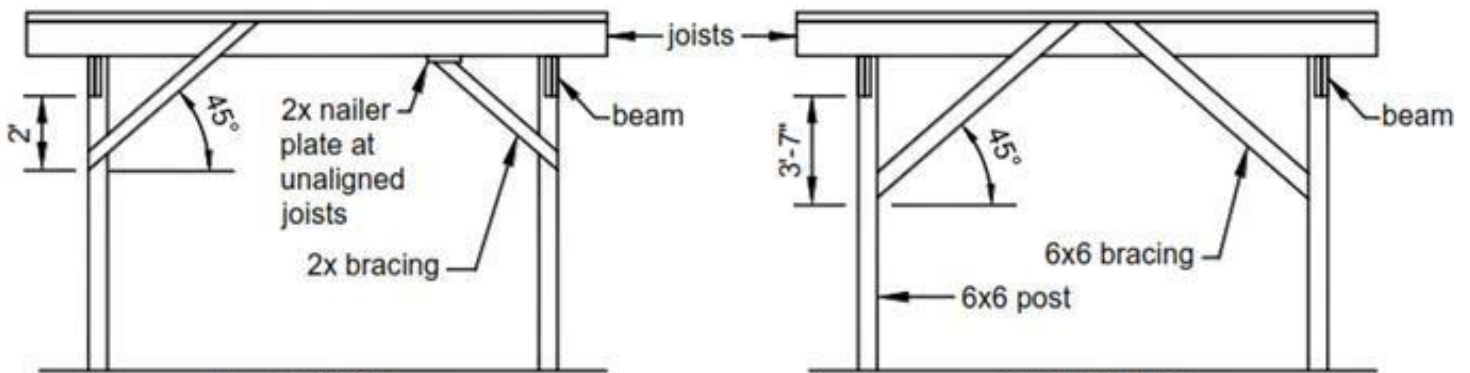


2x BRACING

- Place 2x bracing at all beam-post locations.
- Alternate bracing between front and back of 4x4 or 4x6 posts.

6x6 BRACING

- Permitted at 6x6 post locations only.
- Place 6x6 bracing at end posts and on both sides of every other interior post.



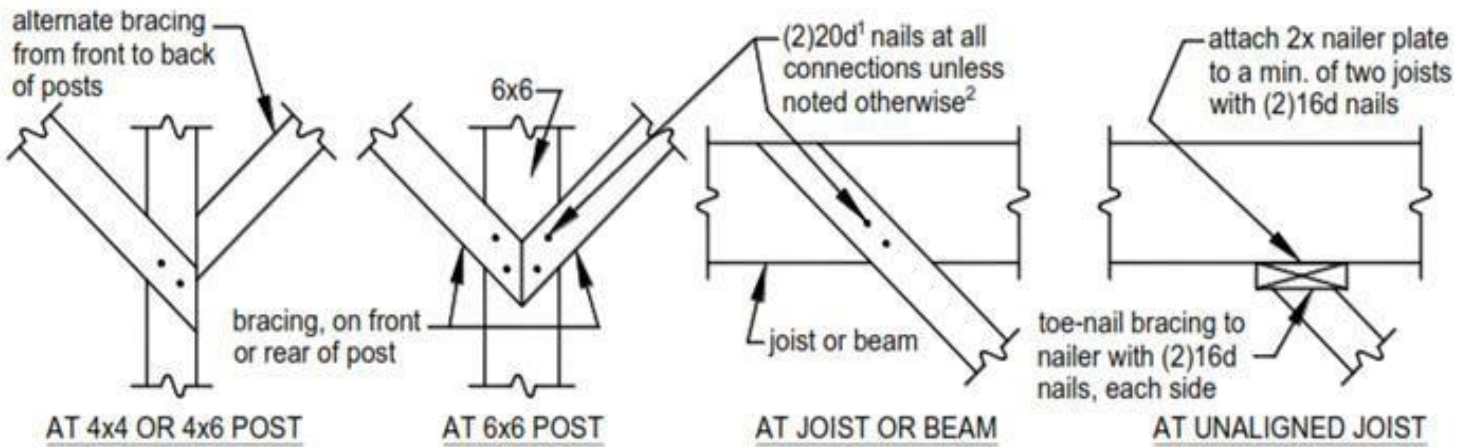
2x BRACING

- Place 2x bracing at all joist-post locations.
- Where bracing does not align with a joist, provide 2x nailer plate.

6x6 BRACING

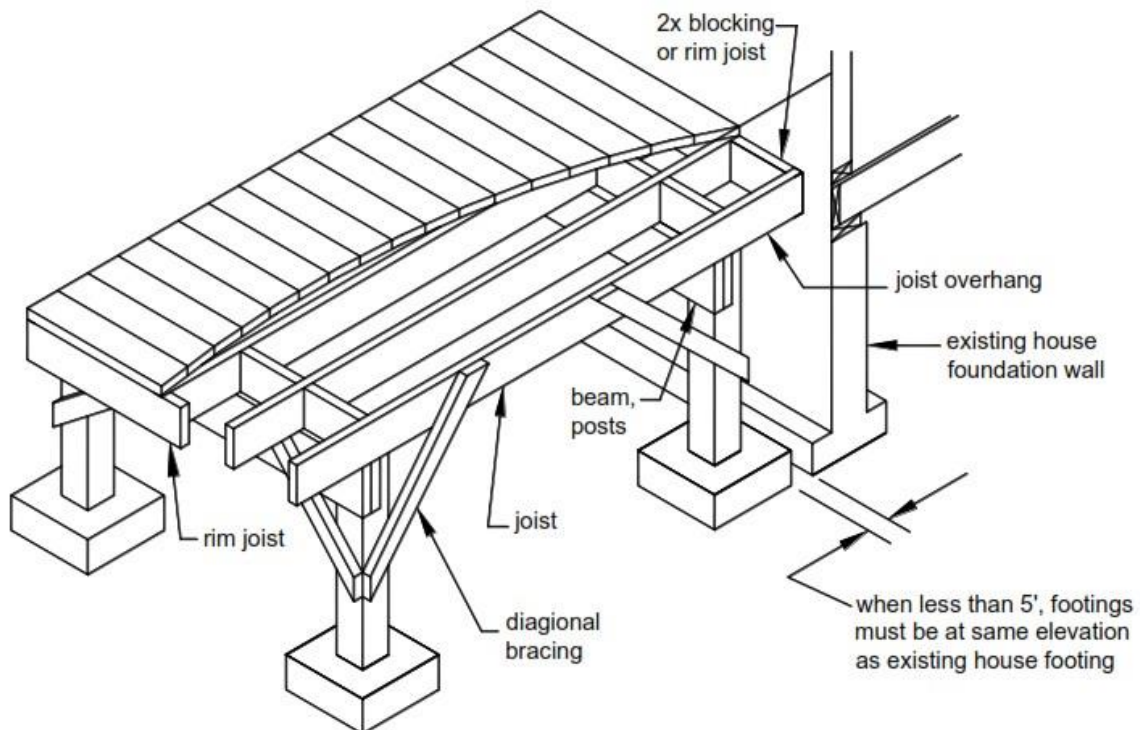
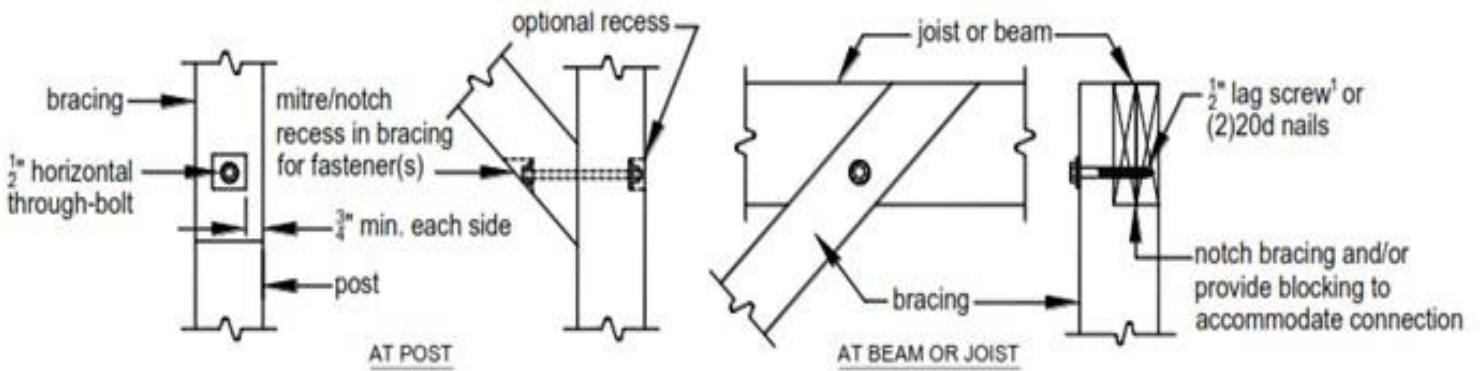
- Permitted at 6x6 post locations only.
- At unaligned joists, notch or add blocking as necessary to accommodate connection.

FREE STANDING DECK BRACING EXAMPLES CONTINUED



¹ Nails maybe be substituted with an equal number of the approved wood screws listed in TABLE 7.

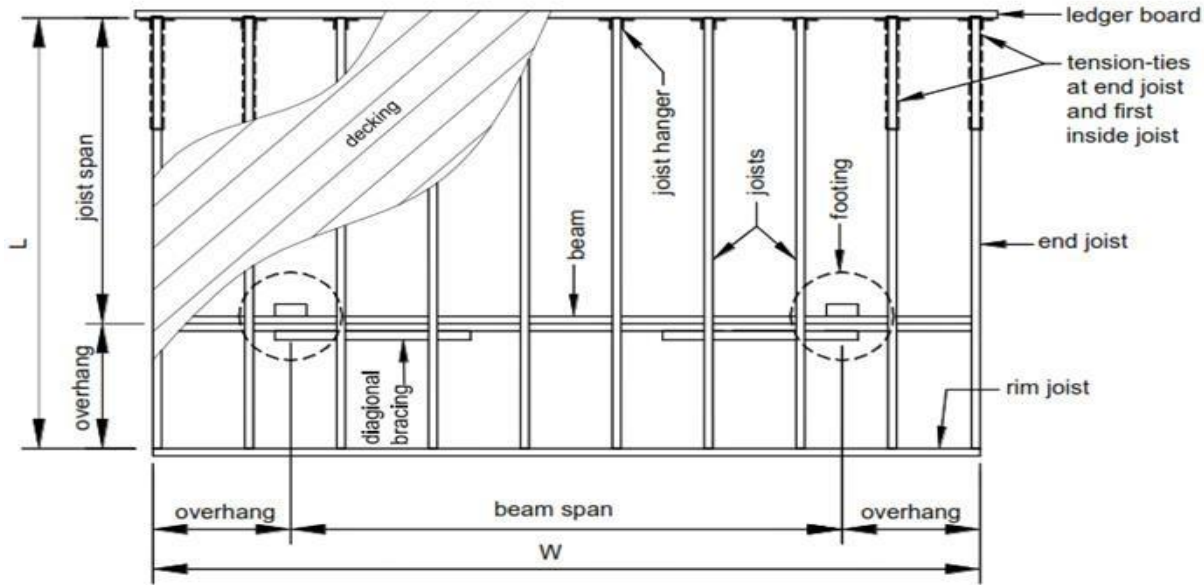
² Nails shall have a distance of $\frac{3}{8}$ inches to all edges and $\frac{1}{4}$ inches to the end of the bracing member.



COMPLETE YOUR DECK

Complete your deck: A framing plan shows a bird's eye view of the joist and beam layout, the location of the deck ledger board, diagonal bracing or hold down devices, posts, footings, and the type, size and spacing of the ledger board fasteners. **Please note that a framing plan drawing shall also be provided along with this deck form.**

If this diagram does not match your deck type, please fill out all applicable boxes and submit with your own drawing.



Size of deck: Length (L) _____ ft. Width (W) _____ ft. Height above grade _____ ft. / In.

Guard rails? (Required where deck is 30" high from grade measured at 36" away) _____

Handrail required with four or more risers and must have returns on both ends

Footings: Square _____ x _____ x _____ thick or Round _____ x _____ thick

Frost Depth: East of Route 151 – 18" deep _____ West of Route 151 – 24" deep _____

Post size: 4x4 _____ 4x6 _____ 6x6 _____ 8x8 _____ Connection to footing (see pg. 4) A _____ B _____ C _____ D _____

Post/Beam Connection: Notched Post _____ Post Caps _____

Ledger Board attachment: Siding removed _____ through Siding _____ Stone or Brick veneer? _____

If other than siding, deck needs to be Free Standing

Deck to be: Attached to house _____ or Free Standing _____ Free Standing decks will require diagonal bracing.

Pressure Treated Ledger size: 2X _____ Ledger Fastener Type _____ Fastener Spacing _____" O.C.

Type of house floor system: Solid Wood _____ I-Joists _____ Floor Trusses _____ House Band must be engineered rim board or nominal solid lumber

Deck Post spacing: (Center-to-Center) _____

Beam: Size _____ Plies _____ Overhang _____ If overhang, Length (ft. – in) _____

Beam: Size _____ Plies _____ Overhang _____ If overhang, Length (ft. – in) _____

Beam: Size _____ Plies _____ Overhang _____ If overhang, Length (ft. – in) _____

Joist: Size 2x _____ O.C. Spacing _____ Clear Span (ft. – in) _____ Type Pressure Treated or Other _____

Joist cantilever _____, if cantilevered, Overhang length (ft.-in) _____

Decking: (wood or composite) _____ Size _____ 2x6, 5/4, Perpendicular or diagonal _____

Stairs: _____ must have risers or 4".

Is glass within 5 feet of the top, middle, or bottom of the stairs? _____ If Yes, window may need protection

I _____ print name _____ **WILL ADHERE TO THIS DECK PACKET FOR DETAILS AS MY CONSTRUCTION PLAN.**

_____ sign name _____