

RESIDENTIAL WOOD DECKS CONSTRUCTION GUIDE

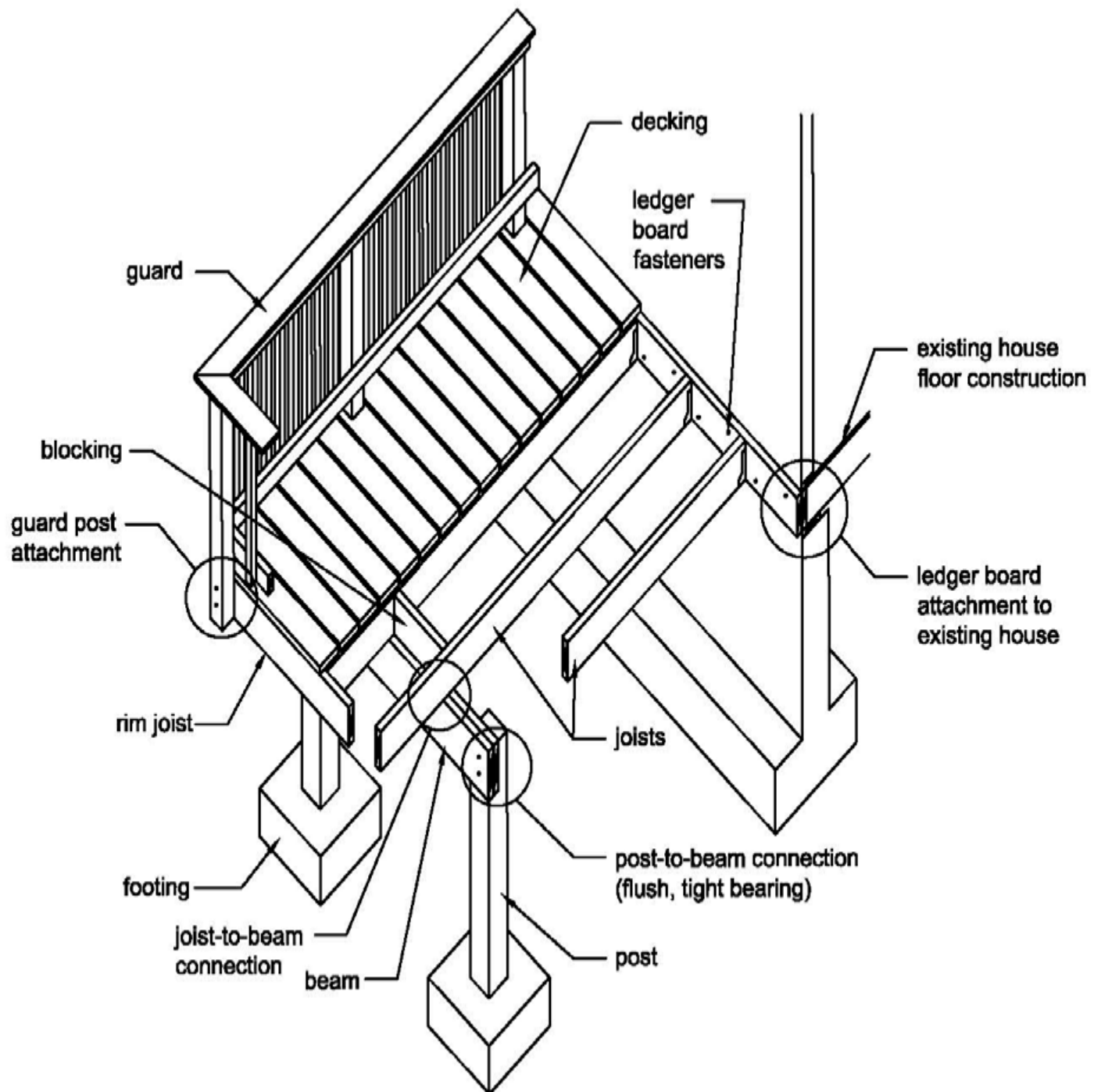


CITY OF STRONGSVILLE, OHIO

BUILDING DEPARTMENT

16099 FOLTZ PARKWAY

440-580-3105



Courtesy of American Wood Council—Leesburg, VA

GENERAL REQUIREMENTS

1. This document shall apply for single level decks only.
2. Decks are not permitted to encroach into the side yard that has been established by the main dwelling. (Strongsville Codified Ordinance (SCO)1252.16).
3. An unenclosed deck may project fourteen (14') feet into the required rear yard. (SCO 1252.06)
4. A deck must be set back not less than five (5') feet from any rear lot line. (SCO) 1252.16)
5. Decks may not encroach into any easement. (SCO 1252.16)
6. Minimum structural posts shall be 4x6 or 6x6. Guard posts may be 4x4.
7. All wood in contact with ground shall be pressure preservative treated wood suitable for ground contact. (Residential Code of Ohio (RCO) 317.2)
8. Decking shall be 2x4, 2x6, five quarter board, or Wood-Plastic Composite sizes per Manufacturer's specifications.
9. Wood-Plastic Composite decking shall be installed per the Manufacturer's Installation instructions.
10. All screws, nails, bolts, washers and nuts used with preservative treated wood shall be hot-dipped zinc-coated galvanized steel, stainless steel, silicon bronze, or copper. (RCO 317.3.1).
11. Decks supporting large concentrated loads (spa tubs, masonry fireplaces, etc.) are beyond the scope of this document and may require submission of professionally designed drawings.
12. Building Code and Codified Ordinance information available at:
www.strongsville.org.
13. THIS DOCUMENT IS NOT INTENDED TO PRECLUDE THE USE OF OTHER CONSTRUCTION METHODS OR MATERIALS NOT SHOWN HEREIN.

JOISTS

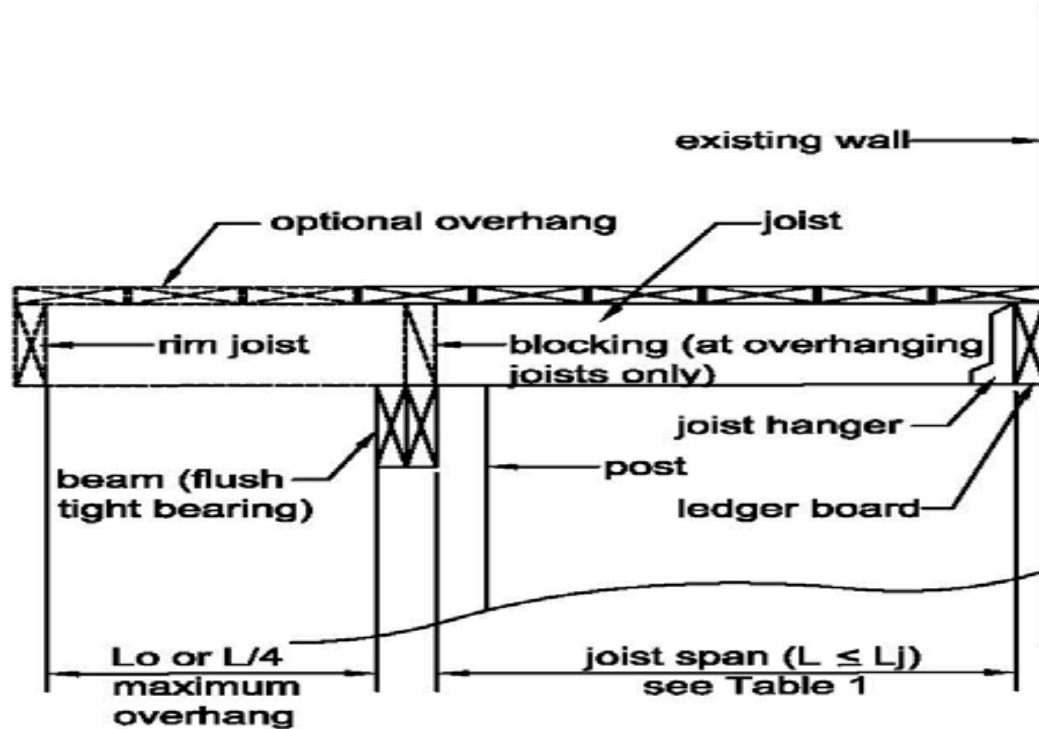
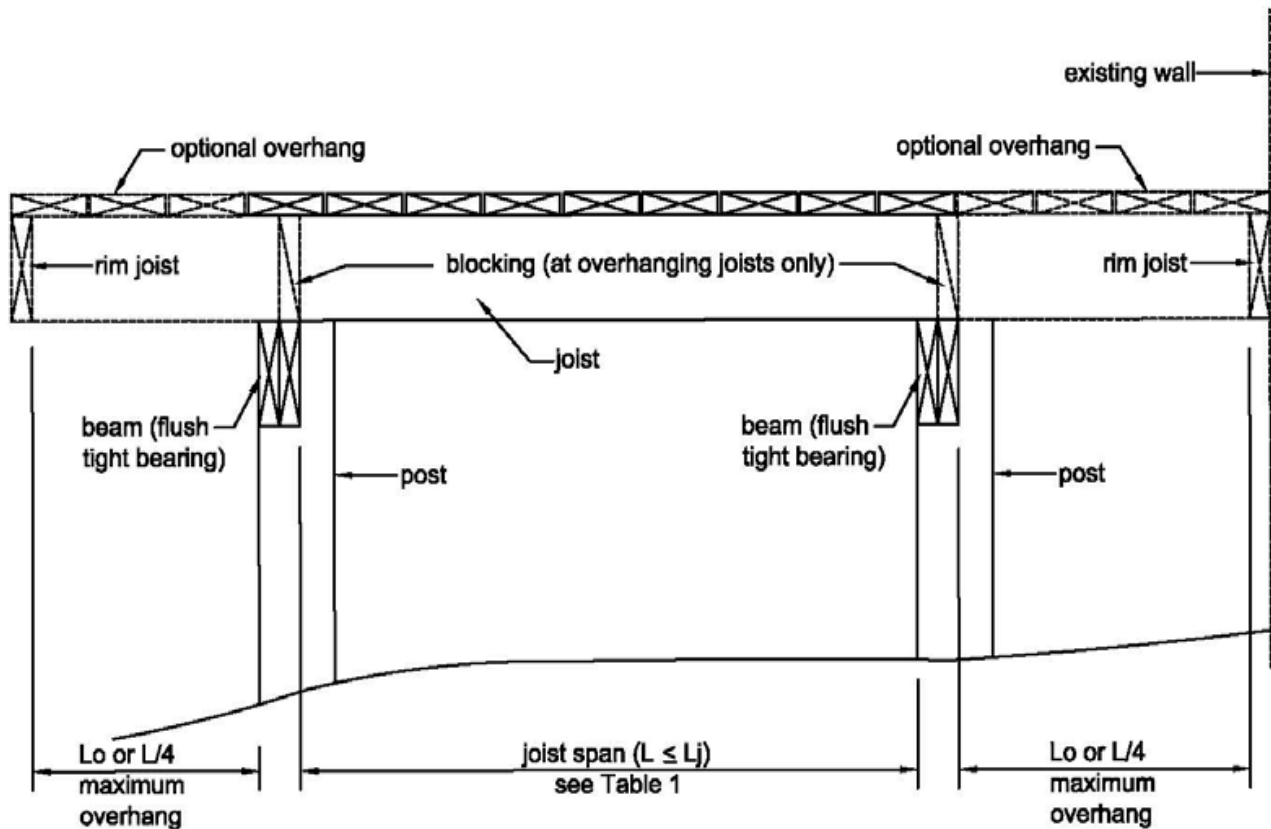


Figure 1. Joist Span – Joist Attached at House and Bearing over Beam

Courtesy of American Wood Council - Leesburg, VA

The joist span is the distance between the two points supporting the joist (i.e. ledger to beam, beam to beam) and does not include any overhang. Allowable cantilever is joist span = $(L)/4$.

JOISTS



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FLOOR JOIST SPANS FOR COMMON LUMBER LIVE LOAD 40 PSF

JOIST SPACING	SPECIES	2 x 6	2 X 8	2 x 10	2 x 12
12" o.c.	#2 SPF	9'11"	13'1"	16'2"	18'0"
16"o.c.	#2 SPF	9'0"	11'10"	14'0"	16'6"

BEAMS

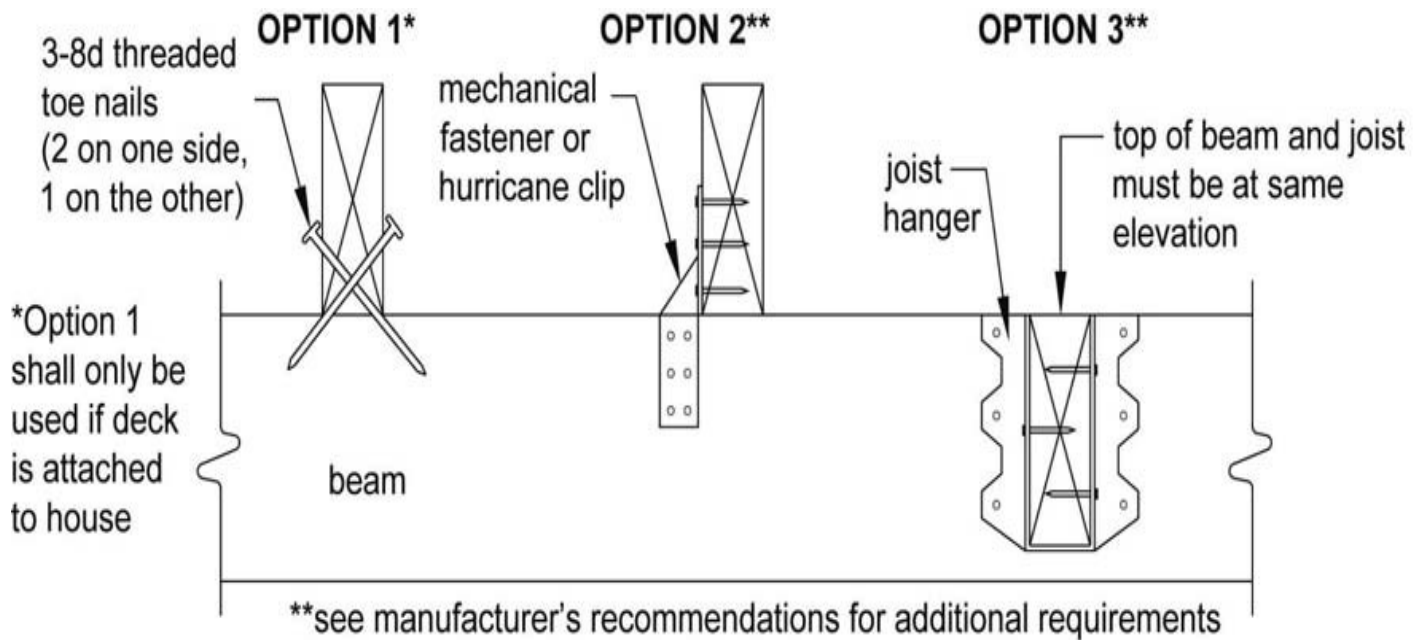
SPECIES	SIZE	SPAN LENGTH
SOUTHERN PINE	(2) 2x6	6'8"
	(2) 2x8	8'6"
	(2) 2x10	10'1"
	(2) 2x12	11'11"
	(3) 2x6	7'11"
	(3) 2x8	10'7"
	(3) 2x10	12'9"
	(3) 2x12	10'4"

STRUCTURAL COMPOSITE LUMBER

Structural Composite Lumber (SCL), which includes laminated veneer lumber (LVL), parallel stranded lumber (PSL), laminated strand lumber (LSL) and oriented strand lumber (OSL) must comply with the requirements of 2013 Residential Code of Ohio Section 317—Protection of Wood and Wood Based Products Against Decay.

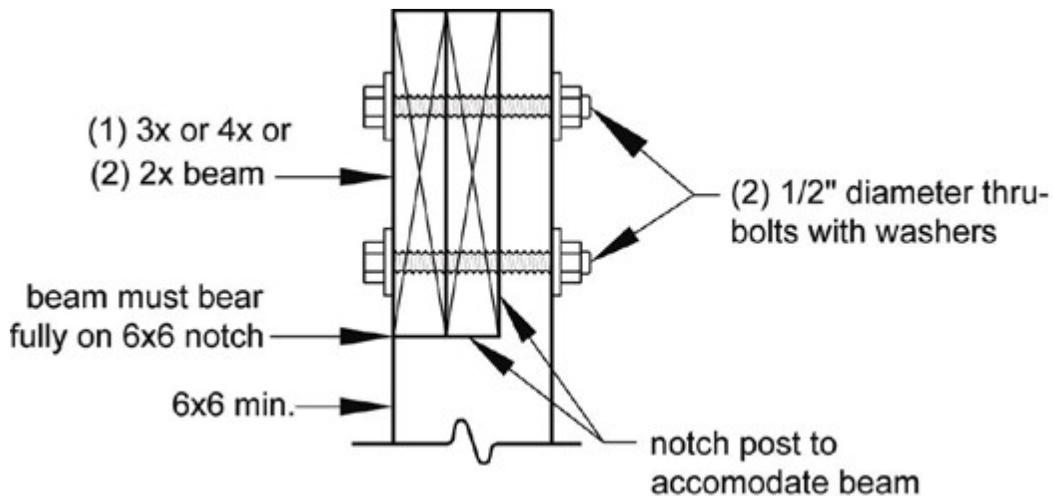
CONNECTIONS

JOIST TO BEAM DETAIL



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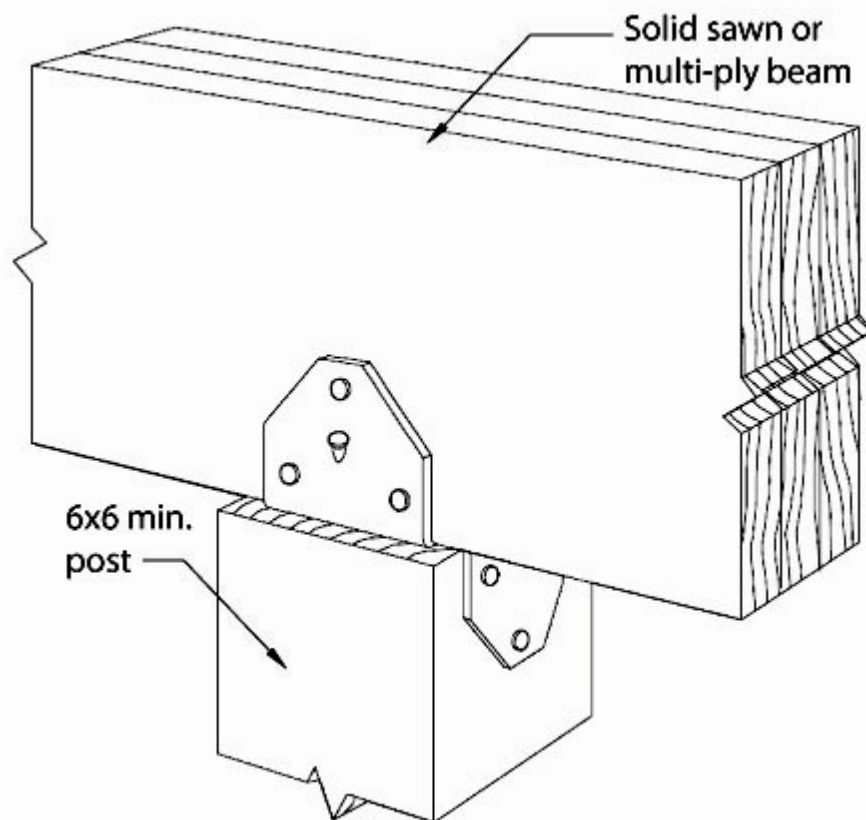
POST TO BEAM CONNECTIONS



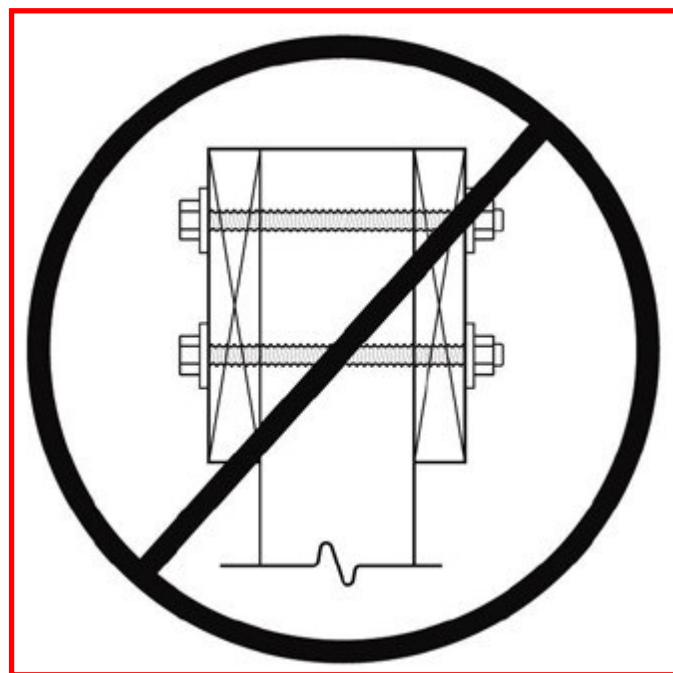
NOTCHED POST

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CONNECTIONS



POST CAP



PROHIBITED CONNECTION

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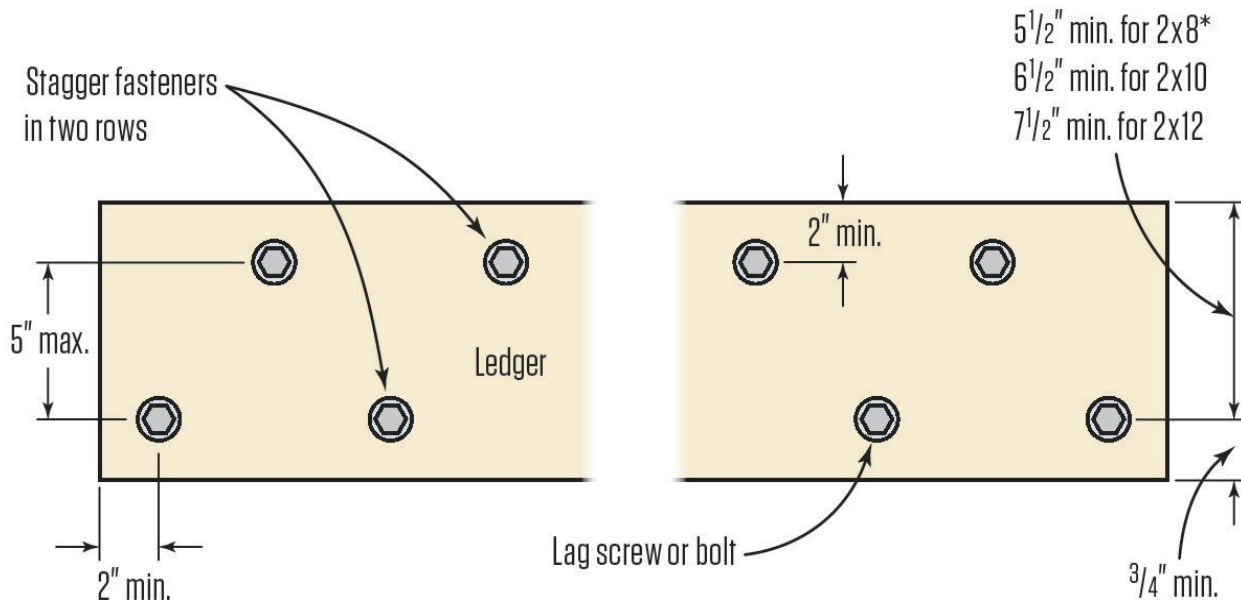
CONNECTIONS

LEDGER BOARD CONNECTIONS

1. Where supported by attachment to an exterior wall, decks shall be positively anchored to the primary structure.
2. Ledger boards shall be equal to or greater than the joist depth.
3. Ledger boards shall not be attached to veneers—brick, stone, masonry; or to cantilevered floors or windows.
4. Exterior finish (siding) shall be removed prior to the placement of a ledger board.
5. Continuous flashing is required when the ledger board is attached to wood-framed construction.
6. TYPES OF FASTENERS:
 - A. LAG SCREWS: Lag Screws shall be hot-dipped galvanized or stainless steel with a 1/2 inch minimum diameter and installed with washers.
 - B. EXPANSION ANCHORS: Expansion anchors, 1/2 inch diameter bolt or threaded rod minimum, equipped with washers installed according to the manufacturer's installation instructions.
 - C. ADHESIVE ANCHORS: Adhesive anchors (Hilti-HY-70; Red Head - Epcon A7) minimum 1/2 inch threaded rod with washers shall be used for concrete, solid or hollow masonry. **Adhesive cartridges must remain on jobsite for inspector verification.**
 - D. WOOD SCREWS: Wood screws (FastenMaster—LedgerLok; Simpson Strong Tie-Strong-Drive Screws(SDS, SDW) with a minimum 1/4 inch diameter may be used to attach to wood frame construction.

CONNECTIONS

Placement of Lag Screws and Bolts in Ledgers



* Distance can be reduced to 4 1/2" if lag screws are used or bolt spacing is reduced to that of lag screws to attach 2x8 ledgers to 2x8 band joists.

LEDGER BOARD FASTENER SPACING, INCHES ON CENTER

FASTENER	JOIST SPANS					
	6'	8'	10'	12'	14'	16'
LAG SCREWS	24"	18"	14"	12"	10"	9"
WOOD SCREWS	18"	13"	11"	9"	8"	7"
EXPANSION ANCHORS	36"	36"	34"	29"	24"	21"
ADHESIVE ANCHORS	32"	32"	32"	24"	24"	16"

GUARDS

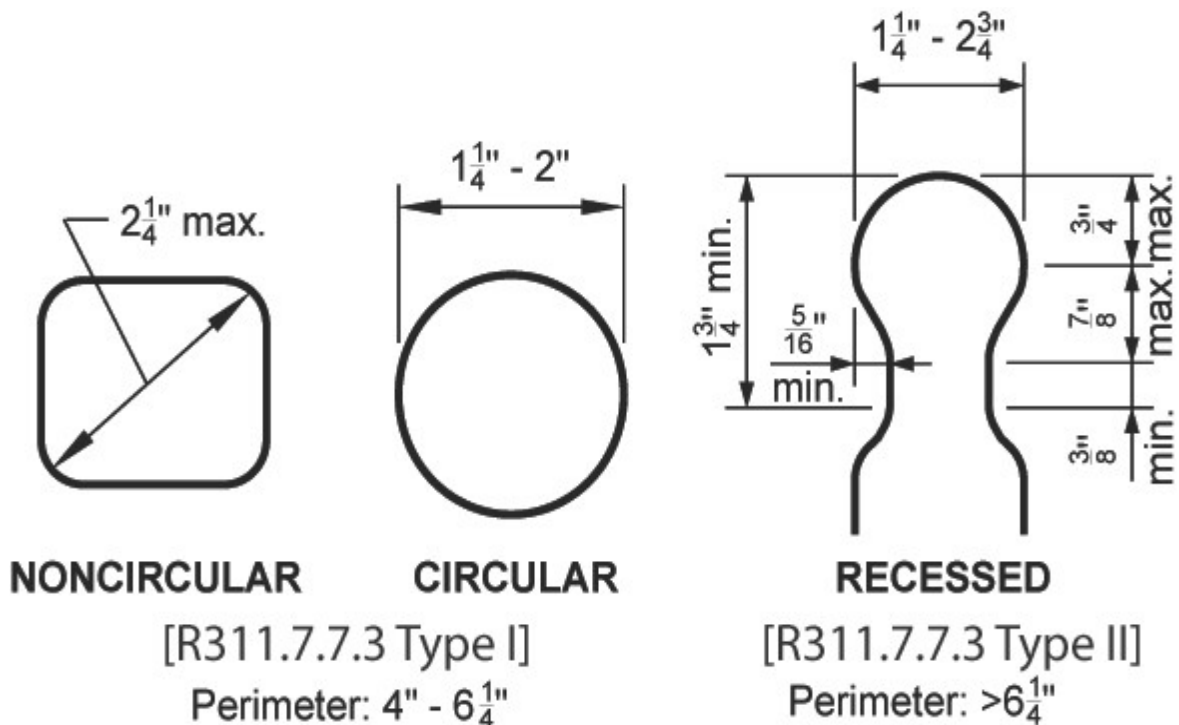
1. A guard is required when a deck is greater than 30" above grade measured vertically at any point within 36" measured horizontally along the deck edge. (2013 Residential Code of Ohio 312.1)
2. The height of the guard shall be not less than 36" measured vertically above the walking surface. (2013 Residential Code of Ohio 312.2)
3. Required guards shall not have openings from the walking surface to the required guard height which allow the passage of a sphere 4" in diameter. (2013 Residential Code 312.3)
4. Guard posts shall be 4x4 minimum.

STAIRS

1. Stairs shall have a minimum clear width 36". (2013 RCO 311.7.1)
2. The maximum riser height shall be 8 1/4". (2013 RCO 311.7.4.1)
3. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8". (2013 RCO 311.7.4.1)
4. The minimum tread depth shall be 9". (2013 RCO 311.7.4.2)
5. Wood-plastic composites used shall bear a label indicating the required performance levels and demonstrating compliance with the provisions of ASTM D 7032.

STAIR HANDRAILS

1. Handrails shall be provided on at least one side of each continuous run of treads or flight with four (4) or more risers. (2013 RCO 311.7.7)
2. Handrail height, measured vertically from the tread nosing shall not be less than 34" and not more than 38". (2013 RCO 311.7.7.1)
3. Handrails shall be continuous for the full length of the flight. (2013 RCO 311.7.7.2)
4. Handrails shall be provided with graspability as illustrated below. (2013 RCO 311.7.7.3)

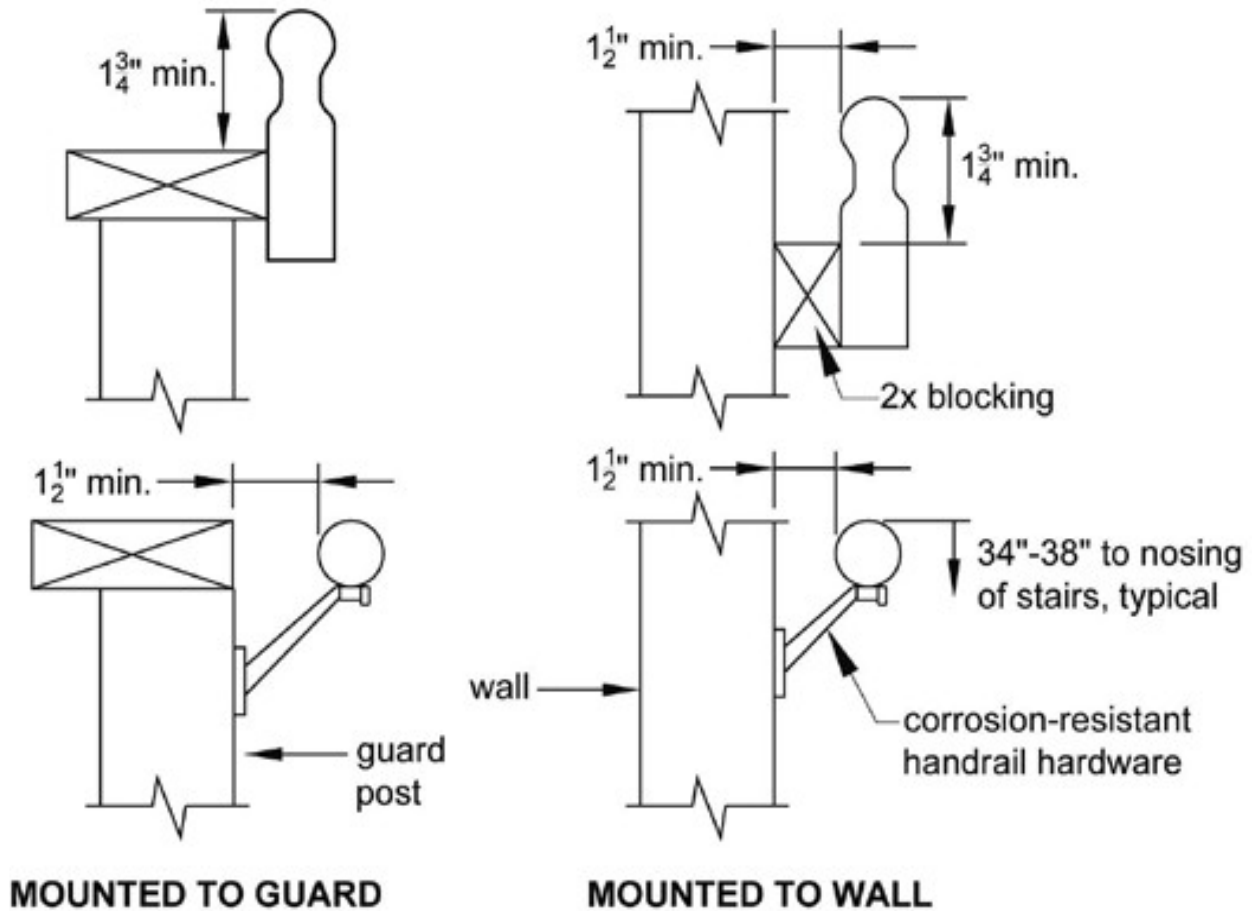


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STAIR HANDRAILS

MOUNTING EXAMPLES

Fasten handrails per manufacturer recommendations



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MINIMUM INFORMATION REQUIRED FOR DECK PERMIT

