

Community Development Department 4001 West River Parkway, Suite 100 Rochester, MN 55901-7090 Phone: 507-328-2600 Email: BuildingSafety@RochesterMN.gov www.rochestermn.gov/departments/building-safety

Residential Decks

1 & 2 Family Dwellings and Townhomes



MR = Minnesota State Residential Code extracted from 2020 Minnesota Rules IRC = International Residential Code-2018 NEC = National Electrical Code-current

Residential Decks

Building Permit Requirements: *apply on line at: <u>https://aca.rochestermn.gov/CitizenAccess/Default.aspx</u> Building permits are required for the construction of all decks that are attached to the home. Building permits are also required for freestanding decks that are elevated 30" or more above grade with supporting beams, joists, or posts. Deck construction shall meet the requirements of the 2020 Minnesota State Residential Code which adopts and amends the 2018 International Residential Code.*

Zoning and Land Use Requirements:

Decks are also required to meet the land use and setback requirements of the Rochester Land Development Manual and Zoning Ordinances. Zoning questions should be directed to the Community Development Department at 507-328-2600.

Permit Fees: https://www.rochestermn.gov/government/departments/building-safety/construction-residential

The building permit fees are based on value of improvements and are designed to offset the cost of the Plan Review and Inspection Services. An estimate of the permit costs are based on the material and labor valuation—which is the either the amount charged by a contractor for the work or for DIY work, double the materials cost. An example would be to take the materials times two for DIY estimates. This keeps the permit costs consistent whether done as DIY or by hired contractor.

Plan Review & Inspections:

A Plan Review is performed by the Plans Examiner in order to identify potential problems prior to construction. If more information is needed during Review, the Plans Examiner will email a correction letter and a copy of the plans to the applicant. Once the corrections are completed, they should be emailed back to the Examiner who requested them. Inspections will be performed during construction to ensure Code compliance and that the materials used are installed correctly. The Plan Review and Inspections are not designed to be a guarantee of the work; rather they are done to provide a reasonable degree of review and observation so the project will be successful, safe and long lasting.

Submittals for permit:

The following information is necessary for the Building Safety Department to do a proper Plan Review and to help the project go as smoothly as possible. Take advantage of do-it-yourself resources on-line (search terms *how-to-build-a-deck*) to help guide you in compiling the documents and plans for submittal with your permit application.

Note: Sample plans provided in this handout are intended as a guide only.

- A completed building permit application form, which is filed live on line on our public portal at: <u>https://aca.rochestermn.gov/CitizenAccess/Default.aspx</u>
- A site plan. The site plan should indicate the existing structures, proposed deck location and lot dimensions (see sample site plan attached). A copy of the existing site plan may be obtained from the Building Safety Department.
 - Send requests for drawings to the City of Rochester Records Manager through the City Clerk's office: <u>https://rochestermn.govqa.us/WEBAPP/_rs/(S(xn0ru2k5t421qp5ustb4btzw))/suppor</u> <u>thome.aspx</u>
 - Sketches are also accepted, or you may obtain a bird's eye view from the County GIS site at:

https://gweb01.co.olmsted.mn.us/WebApps/OlmstedCountyGISMap/

- Construction plans showing the proposed design and materials. Plans shall be drawn to scale and indicate the following information:
 - A. **Floor plan** including the following:
 - 1. Proposed deck size with dimensions
 - 2. Size and spacing of floor joists
 - 3. Size and type of decking material
 - 4. Size, location and spacing of posts including post connection to footing
 - 5. Location of door and window openings adjacent to location of deck
 - 6. Size of beams--also indicating post/beam connection
 - 7. Species and grade of lumber to be used
 - B. **Elevations** indicating the following:
 - 1. Height of structure from established grade
 - 2. Size and depth of footings
 - 3. Guard height and spacing of intermediates
 - 4. Stairway rise/run and handrail requirements
 - 5. Clearance to overhead wires, if applicable

Building Code Requirements:

- Footings shall be designed and constructed below frost depth. A 42" minimum ground cover is required from bottom of footing to grade. MR 1303.1600
- Decks exposed to the weather must be constructed with wood of natural resistance to decay or treated wood. This includes horizontal members such as beams, joists, ledger boards and decking; and vertical members such as posts, poles, guards, handrails and columns. Other man-made products are subject to approval by the Building Safety Department before use. Requirements for installation of composite decking may differ based on the manufacturer's installation instructions or approved testing. IRC R507.3
- Columns and posts supporting decks exposed to the weather or water splash must be supported and connected to concrete piers or metal pedestals. Columns and

posts in contact with the ground or embedded in concrete must be of pressure treated wood approved for ground contact. IRC R317

- Decks shall be designed and constructed to support a minimum live load of 40 pounds per square foot. The dead load is assumed to be a minimum of 10 pounds per square foot, although some composite decks may require additional dead loads. Additional loads shall be considered if a spa or other equipment is to be placed on the deck. IRC R301.4, R301.5
- Ledger boards shall be bolted or lagged to the existing building framing with minimum ¹/₂" x 5" lag screws or bolts with washers. Spacing of lags screws or bolts are determined by joist span length and staggered from top to the bottom along thehorizontal run of the deck ledger. All connections between the deck and dwelling must be flashed with corrosion-resistive flashing. <u>Solid blocking must be provided for the attachment of the deck ledger board.</u> IRC R507
- Verify ledger/rim connection at bump-outs. Alternate construction must be indicated on the plan for independent construction from the house ledger. In lieu ofthis construction, verification must be made prior to permit issuance and at the footing inspection that the house cantilever can support the additional loads of the proposed deck with a positive connection at the ledger/rim board. IRC R507
- Fasteners and hangers to be hot-dipped galvanized steel, stainless steel or copper. Due to new treating processes additional requirements may apply. To meet load requirements the proper fasteners shall be provided, per the hanger manufacturer.IRC R317.3; IRC R507
- Joists shall not cantilever beams by more that 2'-0", nor should beams cantilever posts by more than 1'-0" at each end. If a greater cantilever is desired, additional framing or design may be required. IRC R502.3.3
- Decks built to support a future porch or room addition should be constructed so thatall potential imposed loads are taken into consideration; full porch plans should be submitted for future reference.
- Safety glazing for windows and doors shall be required when the edge of a door is within 24" of a window, within 60" of a hot tub/spa water's edge, within 60" of the top stair landing/bottom stair tread or within 60" of the stair walking surface. IRC R308
- Floor joists and stair stringers spaced at 24" inches on center require a minimum 2" nominal decking. For floor joists and stair stringers spaced at 16" inches on center, 1" decking or 5/4" decking may be used. However, 16" joist spacing cannot be used if 1" or 5/4" decking is placed diagonally. Composite decking used for stair treads may require closer stair stinger spacing per manufacturer instructions, such as, "12 inches on center." IRC R502.2; R507.3
- All decks, balconies or porches which are more than 30" above grade or a floor below must be protected by a guard a minimum of 36" above the finished deck surface. Guards and stair railings shall have horizontal, vertical, diagonal or other ornamental intermediate rails through which a sphere 4" in diameter cannot

passthrough. IRC R312

- Egress windows are allowed under decks, provided the location of the deck allows the emergency escape window to be fully opened and provides a path not less than 36" in height to a yard or court. See emergency escape and rescue window handout.IRC R310.5
- Decks, porches, or balconies added to an existing dwelling must have a GFCI weatherproof receptacle added if the area exceeds 20 sq. ft. and has access from within the dwelling unit. (See electrical handout—*Electrical Permits and Inspections for Homeowners*.)
- The National Electric Code requires overhead power lines to be located a minimum of 10'0" above decks and platforms. Existing lines may need to be raised if a new deck is to be installed beneath them. Contact Rochester Public Utilities at 507-288-1579 with any questions regarding location of power lines.
- If the deck will encroach on a water or electrical meter, and other equipment such as air conditioners, contact Rochester Public Utilities at 507-280-1500 for regulations on clear space requirements. If the deck is encroaching on a gas meter contact Minnesota Energy Resources Corp. at 800-252-1166 or website: www.gopherstateonecall.org, or your gas supplier.

Required Inspections

- Every effort is made to perform all inspections the next business day following the request. Inspections may be scheduled on line at: www.rochestermn.gov/CitizenAccess
 - Or call 507-328-2600 and please have your permit number available when you call. Inspectors' work schedules fill up fast at certain times of the year, so if you can call more than a day in advance you may avoid any potential delays in the progress of your project.
- <u>Footings</u>: To be made after the holes are dug to required depth and size, but <u>prior to</u> <u>pouring of the concrete!!</u>
- <u>Final</u>: To be made upon completion of the deck and finish grading.
- <u>Other Inspections</u>: In addition to the above inspections, the inspector may require other inspections to ensure compliance with the Code.

General Notes

- The stamped approved set of plans, survey & inspection card shall be kept on the job site until the final inspection has been made and approved.
- All contractors must be licensed by the State of Minnesota, or have a Certificate of Exemption from the State of Minnesota.
- Call Gopher One at least 2 full days before you dig at 1-800-252-1166 or see website: <u>www.gopherstateonecall.org</u>. Gopher One's office hours are 7am-5 pm Mon. – Fri.

DECK PERMIT REQUIREMENTS

- □ SITE PLAN with proposed location
- DIMENSIONS of deck
- HEIGHT of deck from grade
- DECKING
 - □ Lumber type/size
 - □ Treated/decay resistant wood or
 - □ Composite-must be a tested and approved deck brand/type
 - Direction of decking
- JOISTS
 - Size
 - Location/direction
 - □ Spacing
 - □ Cantilever over beam
 - □ Connection to ledger
 - Connection to beam

LATERAL LOAD CONNECTORS

- Type/model and number of (each deck needs 3000 total pounds allowable stress capacity: spacing and number of connectors per manufacturer specifications)
- □ Mounting location on joists (bottom/side)

LEDGER BOARD ATTACHMENT

- Flashing
- □ Size/length
- □ Lag screws or pre-approved connectors
- □ Connection pattern and spacing

BEAM(S)

- Size
- □ 3-ply connections (if used)
- □ Cantilever over posts
- □ Treated/decay resistant wood

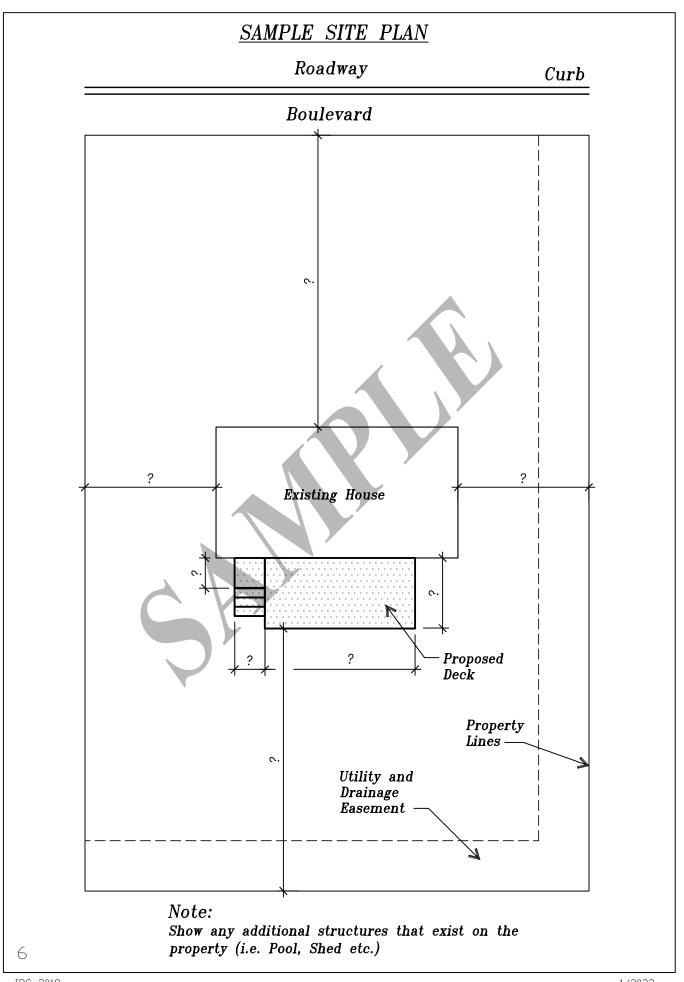
POST AND BEAM CONNECTORS

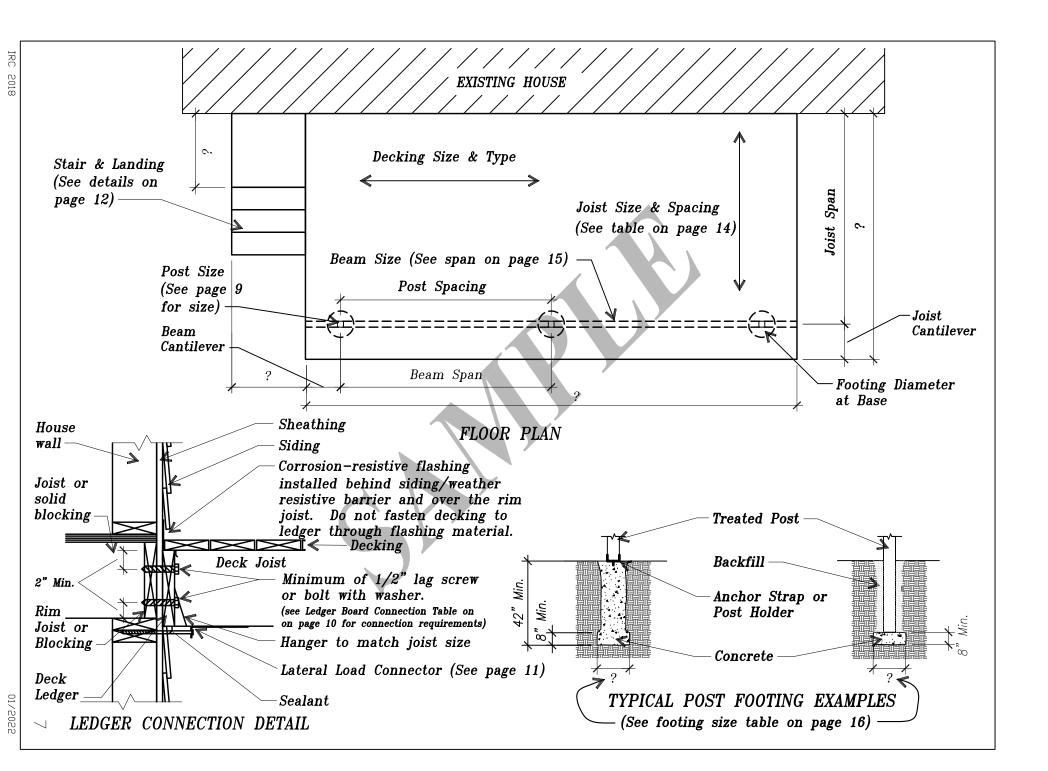
- □ Side mount approved fastener
- □ Cap/top mount approved fastener
- Notch mount with ½" machine bolts and washers (carriage bolts cannot be used on decks)

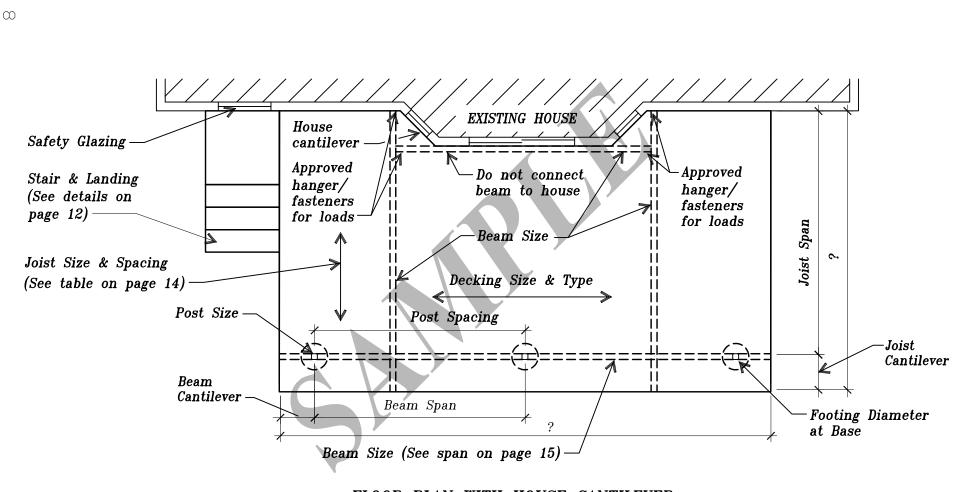
- - Size
 - Location
 - Connection to footings at base
 - □ Treated/decay resistant wood
- - □ Size/diameter of
 - □ Concrete thickness (only if post is buried)
 - Depth—42" minimum
 - Locations

GUARDRAILS

- All decks more than 30" from grade require a guardrail at least 36" in height from decking
- Spindles/balusters may not have an opening greater than 4"
- Spacing between decking and bottom rail may not be greater than 4"
- Assemblies must be rated to withstand 200 pounds of pressure
- Composite/Other than wood-must be A TESTED AND APPROVED BRAND/TYPE
- **STAIRS**
 - □ Width-minimum 36"
 - □ Maximum rise of 7 ¾"
 - □ Minimum tread/run of 10" and nosing
 - Guard on both sides (over 30" above grade)
 - If more than 3 risers, a handrail is required on one side
 - □ Stringer size, spacing and straps used
- □ HANDRAIL ON STAIRS
 - Must be between 34" and 38" from tread of stairs
 - Must be continuous from top nosing to bottom nosing and returned
 - Must meet applicable Codes for graspability (Type 1 or 2)







FLOOR PLAN WITH HOUSE CANTILEVER

Note: House Cantilevers:

Some home designs include a cantilever of the floor system typically at the patio door. Decks shall not be attached to the house cantilever unless the floor framing is designed to support the additional deck loads.

IRC

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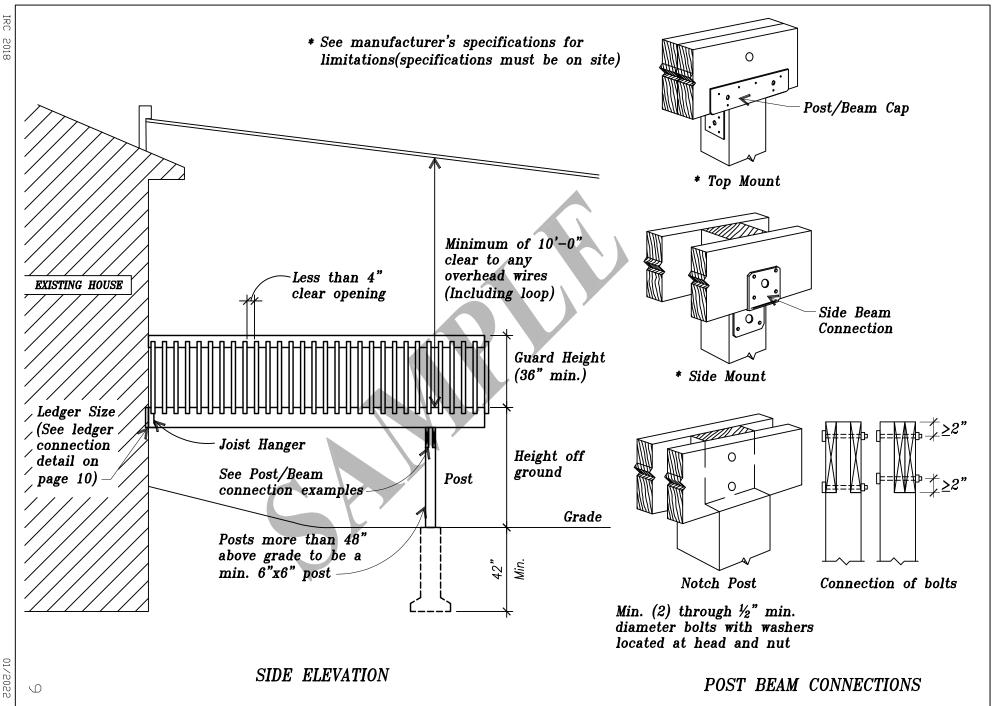


TABLE R507.9.1.3(1)DECK LEDGER CONNECTION TO BAND JOIST

(Deck live load = 40 psf, Deck dead load = 10 psf)

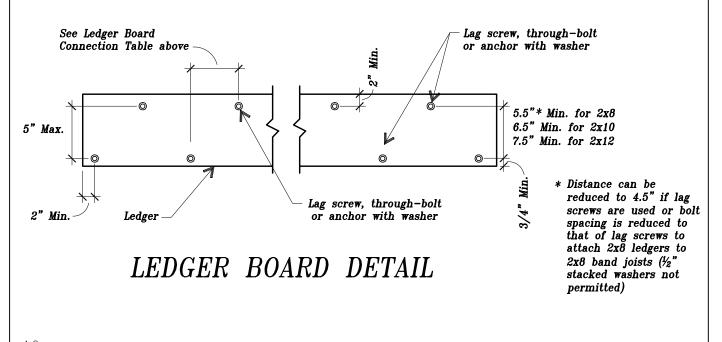
		Joist Span								
Connection Details	6'-0" and less	6'-1" to 8'-0"	8'-1" to 10'-0"	10'-1" to 12'-0"	12'-1" to 14'-0"	14'-1" to 16'-0"	16'-1" to 18'-0"			
	On-Center Spacing of Fasteners									
$\frac{1}{2}$ -inch diameter screw with $\frac{1}{2}$ -inch maximum sheathing ^{b,c}	30"	23"	18"	15"	13"	11"	10"			
½-inch diameter bolt with ½-inch maximum sheathing	36"	36"	34"	29"	24"	21"	19"			
½-inch diameter bolt with 1-inch maximum sheathing ^d	36"	36"	29"	24"	21"	18"	16"			

a. Ledgers shall be flashed in accordance with Section R703.4 to prevent water from contacting the house band joist. (see page 7).

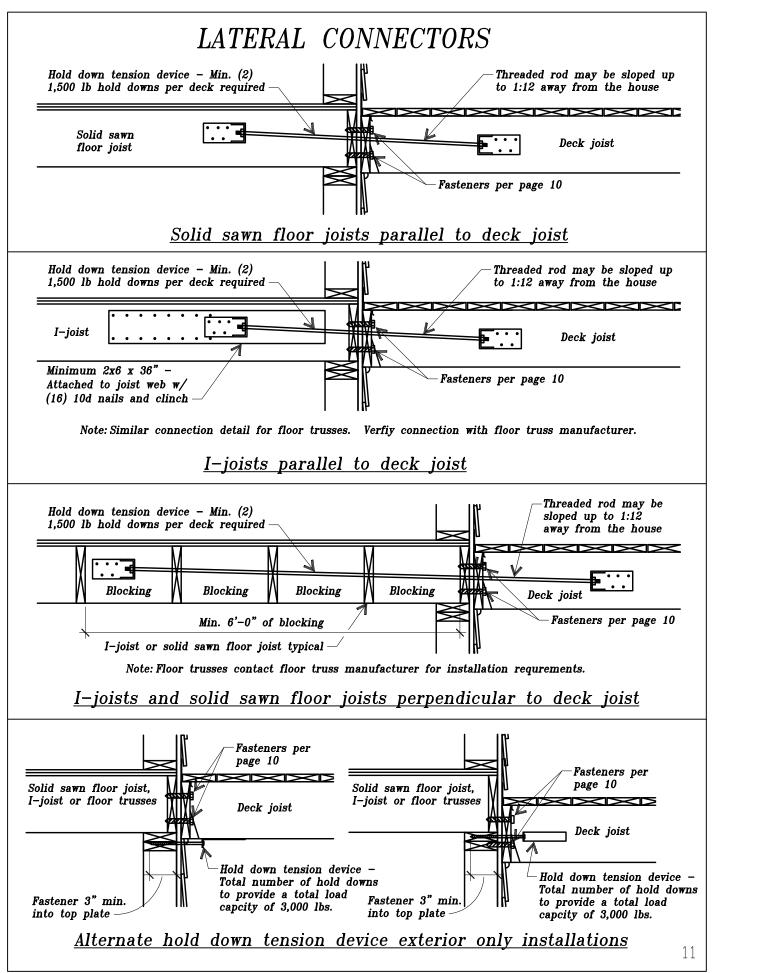
b. The tip of the lag screw shall fully extend beyond the inside face of the band or rim joist.

c. Sheathing shall be wood structural panel or solid sawn lumber.

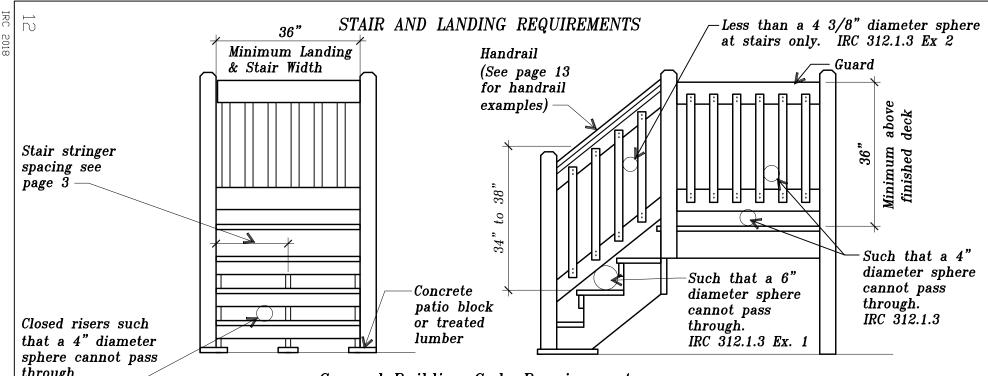
d. Sheathing shall be permitted to be wood structural panel, gypsum board, fiberboard, lumber or foam sheathing. Up to $\frac{1}{2}$ -inch thickness of stacked washers shall be permitted to substitute for up to $\frac{1}{2}$ inch of allowable sheathing thickness where combined with wood structural panel or lumber sheathing.



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General Building Code Requirements

1. Stairways shall be supported on a concrete patio block or treated lumber pad.

2. Stairways to have a minimum width of 36" with a max. rise of 7 3/4" and a min. run of 10". The greatest riser height or tread depth in a flight of stairs shall not exceed the smallest by more than 3/8". IRC R311.7.1.2 and R311.7.5

3. A stairway with 4 or more risers shall have a handrail 34" to 38" above the nose of the tread to the top of the handrail along one side. IRC R311.7.8 and R311.7.8.1

4. The handrail shall be continuous the full length of the stairway and shall terminate at a newel post or safety terminal at each end. IRC R311.7.8.4

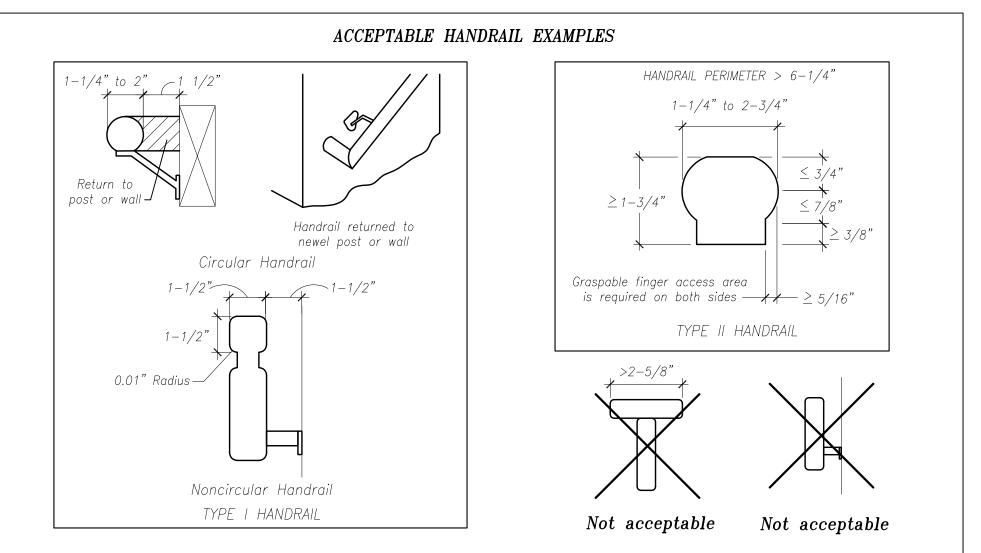
5. A minimum 36" x 36" landing is required at the top of stairs. A landing or flat ground may be used at the bottom of stairs. IRC R311.7.6

6. The triangle area between the stair riser and tread at the bottom of the guard must be such that a sphere 6" in diameter cannot pass through. IRC R312.1.3 EX. 1

7. All decks, balconies or porches which are more than 30" above grade or a floor below must be protected by a guard a minimum of 36" above the finished surface. Guards shall have horizontal, vertical or diagonal intermediate rails through which a sphere 4" in diameter cannot pass through. IRC R312.1.3

inat a 4 diameter sphere cannot pass through IRC 311.7.5.1 ^{10"} ^{Min.} ^{Run} ^{Min.} ^{Run} ^{Min.} 2x12 Stringers

> A nosing of not less than 3/4"but not more than 1 1/4"shall be provided at treads 10" to less than 11".



IRC R311.7.8.5: Handrail Grip Size

All required handrails shall be of one of the following types or provide equivalent graspability. Type I: Handrails with a circular cross section shall have an outside diameter of at least 1-1/4" and not greater than 2". Noncircular shall have a perimeter of at least 4" and not greater than 6-1/4" with a max. cross section of 2-1/4". See the Type I details above.

Type II: Handrails greater than 6-1/4" shall provide a graspable finger access area on both sides of the profile. See the type II detail above.

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JOIST SPAN TABLE

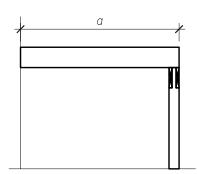
Based on No. 2 or better wood grade (Design load = 40 PSF LL+10 PSF DL, Deflection=1/360)

		Ja	oist Span	Cantilever Length					
a)		12" 0.C.	16" 0.C.	24" 0.C.	12" 0.C.	16" 0.C.	24" 0.C.		
Southern Pine	2x6	9'11"	9'0"	7'7"	1'3"	1'4"	1'6"		
	2x8	13'1"	11'10"	9'8"	2'1"	2' 3"	2'5"		
	2x10	16'2"	14'0"	11'5'	3' 4"	3'6"	2'10"		
*	2x12	18'0"	16'6"	13'6"	4'6"	4'2"	3'4"		

Joists shall be supported laterally at the ends by full depth solid blocking not less than 2" nominal thickness. IRC R502.7

* If a different species and/or grade of lumber is used for joist framing then verify spans for species/grade of lumber provided.

Sample Calculations for Using Joist Span and Beam Size Tables



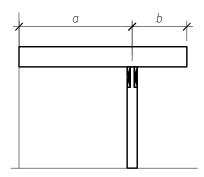
Refer to tables for joist and beam requirements.

Example a=12'; Post Spacing=8'

Use the Joist Span Table to find the acceptable joist sizes for a 12' span, 2x8's at 12" 0.C., 2x10's at 16" 0.C. or 2x12's at 24" 0.C are acceptable.

Use the Beam Table (see page 15) to find the 8' post spacing column.

With a 12' deck span, the beam may be either two 2x12's or three 2x10's, depending on wood used.



Example a=8', b=2', Post Spacing=10'

Use "a" to determine joist size and "a+b" to determine beam size. The length of "b" is restricted by both the length of "a" and the size of the joists.

Refer to the Joist Span Table. For an 8' joist span, 2x8's at 24" O.C. with a 2'-0" cantilever is acceptable.

For sizing the beam, use a joist length of 10' (8'+2')and a post spacing of 10'. The Beam Table (see page 15) indicates that the beam may be either three 2x10's or three 2x12's, depending on wood used.

BEAM SIZE TABLE

Based on No. 2 or better Southern Pine or Ponderosa Pine Treated for Weather and/or ground exposure $(Design \ load = 40 \ PSF \ LL+10 \ PSF \ DL, \ Deflection=1/360)$ Beam sized to include joist cantilever

		POST SPACING (MEASURED CENTER TO CENTER)										
		4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'
	Southern Pine	1–2x6	1–2x6	2–2x6	3–2x6	3–2x6	2–2x10	2–2x10	2–2x12	2–2x12	3-2x12	3–2x12
	Ponderosa Pine	1–2x6	2–2x6	2–2x8	3–2x6	2-2x10	2–2x12	3-2x10	3-2x10	3-2x10	3–2x12	ENG BM
	Southern Pine	1–2x6	1–2x6	2–2x8	2–2x8	2-2x10	2–2x10	2–2x12	3-2x10	3-2x12	3-2x12	ENG BM
	Ponderosa Pine	2–2x6	2–2x8	3–2x6	2-2x10	2–2x12	3-2x10	3-2x10	3–2x12	3–2x12	ENG BM	ENG BM
	Southern Pine	1-2x6	1–2x6	2–2x8	2–2x8	2-2x10	2–2x10	2–2x12	3-2x10	3-2x12	3-2x12	ENG BM
	Ponderosa Pine	2–2x6	2–2x8	3–2x6	2-2x10	2–2x12	3-2x10	3-2x10	3–2x12	3-2x12	ENG BM	ENG BM
	Southern Pine	1-2x6	2–2x6	2–2x8	2-2x10	2-2x10	2–2x12	3-2x10	3-2x12	ENG BM	ENG BM	ENG BM
	Ponderosa Pine	2–2x8	2–2x8	3–2x6	2-2x10	2–2x12	3-2x10	3–2x12	ENG BM	ENG BM	ENG BM	ENG BM
5	Southern Pine	1-2x6	2–2x8	2–2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	ENG BM	ENG BM	ENG BM
	Ponderosa Pine	2–2x6	2–2x6	3–2x6	2-2x10	2–2x12	3-2x10	3–2x12	ENG BM	ENG BM	ENG BM	ENG BM
-	Southern Pine	2–2x6	2–2x6	2–2x8	2-2x10	2–2x12	3-2x10	3-2x12	ENG BM	ENG BM	ENG BM	ENG BM
	Ponderosa Pine	2–2x8	2–2x8	2–2x12	3-2x10	3-2x10	3–2x12	ENG BM	ENG BM	ENG BM	ENG BM	ENG BM
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I	Ponderosa Pine	2–2x8	2–2x10	2–2x12	3-2x10	3-2x12	3-2x12	ENG BM	ENG BM	ENG BM	ENG BM	ENG BM
c	Southern Pine	2–2x6	2–2x8	2–2x10	2–2x12	3–2x12	3–2x12	ENG BM	ENG BM	ENG BM	ENG BM	ENG BM
1	Ponderosa Pine	2–2x8	2–2x8	3–2x8	3-2x10	3-2x12	ENG BM	ENG BM	ENG BM	ENG BM	ENG BM	ENG BM
	Southern Pine	2–2x6	2–2x8	2–2x10	2–2x12	3–2x12	3-2x12	ENG BM	ENG BM	ENG BM	ENG BM	ENG BM
	Ponderosa Pine	2–2x8	2–2x12	3–2x8	3–2x10	3-2x12	ENG BM	ENG BM	ENG BM	ENG BM	ENG BM	ENG BM
	16 15 14 13 12 11 10 9 8 7 6	Ponderosa PinePonderosa PineSouthern PinePonderosa Pine<	Southern Pine $1-2x6$ Ponderosa Pine $1-2x6$ Ponderosa Pine $1-2x6$ Ponderosa Pine $2-2x6$	Southern Pine $1-2x6$ $1-2x6$ Ponderosa Pine $1-2x6$ $2-2x6$ Ponderosa Pine $1-2x6$ $2-2x6$ Ponderosa Pine $2-2x6$ $2-2x8$ Ponderosa Pine $2-2x8$ $2-2x8$ Ponderosa Pine $2-2x8$ $2-2x8$ Ponderosa Pine $2-2x6$ $2-2x8$	4' 5' 6' Southern Pine $1-2x6$ $1-2x6$ $2-2x6$ Ponderosa Pine $1-2x6$ $2-2x6$ $2-2x8$ Southern Pine $1-2x6$ $2-2x8$ $2-2x8$ Ponderosa Pine $2-2x6$ $2-2x8$ $3-2x6$ Southern Pine $1-2x6$ $2-2x8$ $3-2x6$ Ponderosa Pine $2-2x8$ $2-2x8$ $3-2x6$ Southern Pine $1-2x6$ $2-2x8$ $3-2x6$ Ponderosa Pine $2-2x6$ $2-2x8$ $2-2x8$ Ponderosa Pine $2-2x6$ $2-2x8$ $2-2x12$ Southern Pine $2-2x6$ $2-2x12$ $2-2x12$ Ponderosa Pine $2-2x6$ $2-2x10$ $2-2x12$ Southern Pine $2-2x6$ <	4' 5' 6' 7' Southern Pine $1-2x6$ $1-2x6$ $2-2x6$ $3-2x6$ Ponderosa Pine $1-2x6$ $2-2x6$ $2-2x8$ $3-2x6$ Southern Pine $1-2x6$ $2-2x8$ $3-2x6$ $2-2x8$ $3-2x6$ Ponderosa Pine $2-2x6$ $2-2x8$ $3-2x6$ $2-2x8$ $2-2x8$ $2-2x8$ Ponderosa Pine $2-2x6$ $2-2x8$ $3-2x6$ $2-2x10$ $2-2x8$ $2-2x8$ $2-2x10$ Southern Pine $1-2x6$ $2-2x8$ $3-2x6$ $2-2x10$ $2-2x10$ Ponderosa Pine $2-2x6$ $2-2x8$ $3-2x6$ $2-2x10$ Southern Pine $1-2x6$ $2-2x8$ $2-2x10$ $2-2x10$ Ponderosa Pine $2-2x6$ $2-2x8$ $2-2x10$ $2-2x10$ Southern Pine $2-2x6$ $2-2x8$ $2-2x10$ $2-2x10$ Ponderosa Pine $2-2x6$ $2-2x8$ $2-2x10$ $2-2x10$ Southern Pine $2-2x6$ $2-2x8$ <t< td=""><td>4' 5' 6' 7' 8' Southern Pine 1-2x6 1-2x6 2-2x6 3-2x6 3-2x6 Ponderosa Pine 1-2x6 2-2x6 2-2x8 3-2x6 2-2x10 Southern Pine 1-2x6 2-2x8 2-2x8 2-2x10 2-2x12 Ponderosa Pine 2-2x6 2-2x8 3-2x6 2-2x10 2-2x12 Southern Pine 1-2x6 1-2x6 2-2x8 2-2x10 2-2x12 Ponderosa Pine 2-2x6 2-2x8 3-2x6 2-2x10 2-2x12 Southern Pine 1-2x6 2-2x8 3-2x6 2-2x10 2-2x12 Ponderosa Pine 2-2x6 2-2x8 3-2x6 2-2x10 2-2x12 Southern Pine 1-2x6 2-2x8 2-2x10 2-2x10 2-2x10 Ponderosa Pine 2-2x6 2-2x8 2-2x10 2-2x10 2-2x12 Southern Pine 2-2x8 2-2x8 2-2x10 2-2x10 2-2x12 Ponderosa Pine 2-2x8 2-2x10</td><td>4' 5' 6' 7' 8' 9' Southern Pine 1-2x6 1-2x6 2-2x6 3-2x6 3-2x6 2-2x10 Ponderosa Pine 1-2x6 2-2x6 2-2x8 3-2x6 2-2x10 2-2x12 Southern Pine 1-2x6 2-2x8 2-2x8 2-2x8 2-2x10 2-2x10 Ponderosa Pine 2-2x6 2-2x8 3-2x6 2-2x10 2-2x10 2-2x10 Southern Pine 1-2x6 1-2x6 2-2x8 3-2x6 2-2x10 2-2x10 2-2x10 Ponderosa Pine 2-2x6 2-2x8 3-2x6 2-2x10 2-2x10 2-2x10 Southern Pine 1-2x6 2-2x8 3-2x6 2-2x10 2-2x10 2-2x10 Ponderosa Pine 2-2x8 2-2x8 3-2x6 2-2x10 2-2x10 2-2x10 Southern Pine 1-2x6 2-2x8 2-2x8 2-2x10 2-2x10 2-2x10 2-2x10 Ponderosa Pine 2-2x6 2-2x8 2-2x10 2-2x10</td><td>4' 5' 6' 7' 8' 9' 10' Southern Pine 1-2x6 1-2x6 2-2x6 3-2x6 3-2x6 2-2x10 2-2x10 2-2x10 Ponderosa Pine 1-2x6 2-2x6 2-2x8 3-2x6 2-2x10 2-2x12 3-2x10 Southern Pine 1-2x6 2-2x8 3-2x6 2-2x10 2-2x10 2-2x12 3-2x10 Southern Pine 1-2x6 2-2x8 3-2x6 2-2x10 2-2x10 2-2x12 3-2x10 Southern Pine 1-2x6 2-2x8 3-2x6 2-2x10 2-2x12 3-2x10 3-2x10 Southern Pine 1-2x6 2-2x8 3-2x6 2-2x10 2-2x12 3-2x10 3-2x10 Southern Pine 1-2x6 2-2x8 3-2x10 2-2x10 2-2x12 3-2x10 3-2x10 Ponderosa Pine 2-2x8 2-2x8 2-2x10 2-2x12 3-2x10 3-2x12 3-2x10 Southern Pine 1-2x6 2-2x8 2-2x10 2-2x12</td><td>4' 5' 6' 7' 8' 9' 10' 11' 5 Southern Pine 1-2x6 1-2x6 2-2x6 3-2x6 3-2x6 2-2x10 2-2x10 2-2x10 2-2x10 2-2x10 2-2x10 3-2x10 3-2x12 3-2x12 3-2x12 3-2x12</td><td>4' 5' 6' 7' 8' 9' 10' 11' 12' Southern Pine 1-2x6 1-2x6 2-2x6 3-2x6 2-2x10 2-2x10 2-2x12 2-2x12 2-2x10 Ponderosa Pine 1-2x6 2-2x6 2-2x8 2-2x10 2-2x10 2-2x10 3-2x10 3-2x12 3-2x10 3-2x12 3-2x10 3-2x12 3-2x12</td><td>4' 5' 6' 7' 8' 9' 10' 11' 12' 13' Southern Pine 1-2x6 1-2x6 2-2x6 3-2x6 2-2x10 2-2x10 2-2x12 2-2x12 3-2x12 3-2x12</td></t<>	4' 5' 6' 7' 8' Southern Pine 1-2x6 1-2x6 2-2x6 3-2x6 3-2x6 Ponderosa Pine 1-2x6 2-2x6 2-2x8 3-2x6 2-2x10 Southern Pine 1-2x6 2-2x8 2-2x8 2-2x10 2-2x12 Ponderosa Pine 2-2x6 2-2x8 3-2x6 2-2x10 2-2x12 Southern Pine 1-2x6 1-2x6 2-2x8 2-2x10 2-2x12 Ponderosa Pine 2-2x6 2-2x8 3-2x6 2-2x10 2-2x12 Southern Pine 1-2x6 2-2x8 3-2x6 2-2x10 2-2x12 Ponderosa Pine 2-2x6 2-2x8 3-2x6 2-2x10 2-2x12 Southern Pine 1-2x6 2-2x8 2-2x10 2-2x10 2-2x10 Ponderosa Pine 2-2x6 2-2x8 2-2x10 2-2x10 2-2x12 Southern Pine 2-2x8 2-2x8 2-2x10 2-2x10 2-2x12 Ponderosa Pine 2-2x8 2-2x10	4' 5' 6' 7' 8' 9' Southern Pine 1-2x6 1-2x6 2-2x6 3-2x6 3-2x6 2-2x10 Ponderosa Pine 1-2x6 2-2x6 2-2x8 3-2x6 2-2x10 2-2x12 Southern Pine 1-2x6 2-2x8 2-2x8 2-2x8 2-2x10 2-2x10 Ponderosa Pine 2-2x6 2-2x8 3-2x6 2-2x10 2-2x10 2-2x10 Southern Pine 1-2x6 1-2x6 2-2x8 3-2x6 2-2x10 2-2x10 2-2x10 Ponderosa Pine 2-2x6 2-2x8 3-2x6 2-2x10 2-2x10 2-2x10 Southern Pine 1-2x6 2-2x8 3-2x6 2-2x10 2-2x10 2-2x10 Ponderosa Pine 2-2x8 2-2x8 3-2x6 2-2x10 2-2x10 2-2x10 Southern Pine 1-2x6 2-2x8 2-2x8 2-2x10 2-2x10 2-2x10 2-2x10 Ponderosa Pine 2-2x6 2-2x8 2-2x10 2-2x10	4' 5' 6' 7' 8' 9' 10' Southern Pine 1-2x6 1-2x6 2-2x6 3-2x6 3-2x6 2-2x10 2-2x10 2-2x10 Ponderosa Pine 1-2x6 2-2x6 2-2x8 3-2x6 2-2x10 2-2x12 3-2x10 Southern Pine 1-2x6 2-2x8 3-2x6 2-2x10 2-2x10 2-2x12 3-2x10 Southern Pine 1-2x6 2-2x8 3-2x6 2-2x10 2-2x10 2-2x12 3-2x10 Southern Pine 1-2x6 2-2x8 3-2x6 2-2x10 2-2x12 3-2x10 3-2x10 Southern Pine 1-2x6 2-2x8 3-2x6 2-2x10 2-2x12 3-2x10 3-2x10 Southern Pine 1-2x6 2-2x8 3-2x10 2-2x10 2-2x12 3-2x10 3-2x10 Ponderosa Pine 2-2x8 2-2x8 2-2x10 2-2x12 3-2x10 3-2x12 3-2x10 Southern Pine 1-2x6 2-2x8 2-2x10 2-2x12	4' 5' 6' 7' 8' 9' 10' 11' 5 Southern Pine 1-2x6 1-2x6 2-2x6 3-2x6 3-2x6 2-2x10 2-2x10 2-2x10 2-2x10 2-2x10 2-2x10 3-2x10 3-2x12 3-2x12 3-2x12 3-2x12	4' 5' 6' 7' 8' 9' 10' 11' 12' Southern Pine 1-2x6 1-2x6 2-2x6 3-2x6 2-2x10 2-2x10 2-2x12 2-2x12 2-2x10 Ponderosa Pine 1-2x6 2-2x6 2-2x8 2-2x10 2-2x10 2-2x10 3-2x10 3-2x12 3-2x10 3-2x12 3-2x10 3-2x12 3-2x12	4' 5' 6' 7' 8' 9' 10' 11' 12' 13' Southern Pine 1-2x6 1-2x6 2-2x6 3-2x6 2-2x10 2-2x10 2-2x12 2-2x12 3-2x12 3-2x12

<u>Notes:</u> Joist length is the total length of the joist including any cantilevers.

ENG BM = Engineered Beam

Beam cantilever maximum $\frac{1}{4}$ distance of post spacing

						Diar	nete	er					
			POST SPACING (MEASURED CENTER TO CENTER)										
		4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	
	6'	12"	12"	14"	14"	16"	18"	18"	18"	18"	20"	20"	
	7'	12"	14"	14"	16"	16"	18"	18"	18"	20"	20"	22"	
EVER)	8'	12"	14"	16"	16"	18"	18"	18'	20"	20"	22"	22"	
CANTILEVER)	9'	12"	14"	16"	16"	18"	18"	20"	20"	22"	22"	24"	
	10'	14"	14"	16"	18"	18"	20"	20"	22"	22"	24"	24"	
(INCLUDING	11'	14"	16"	16"	18"	18"	20"	22"	22"	24"	24"	24"	
LENGTH	12'	14"	16"	18"	18"	20"	20"	22"	24"	24"	24"	26"	
JOIST LE	13'	14"	16"	18"	18"	20"	22"	22"	24"	24"	26"	26"	
J(14'	16"	16"	18"	20"	20"	22"	24"	24"	26"	26"	28"	
	15'	16"	18"	18"	20"	22"	22"	24"	26"	26"	28"	28"	
	16'	16"	18"	20"	20"	22"	24"	24"	26"	26"	28"	28"	

FOOTING SIZE TABLE

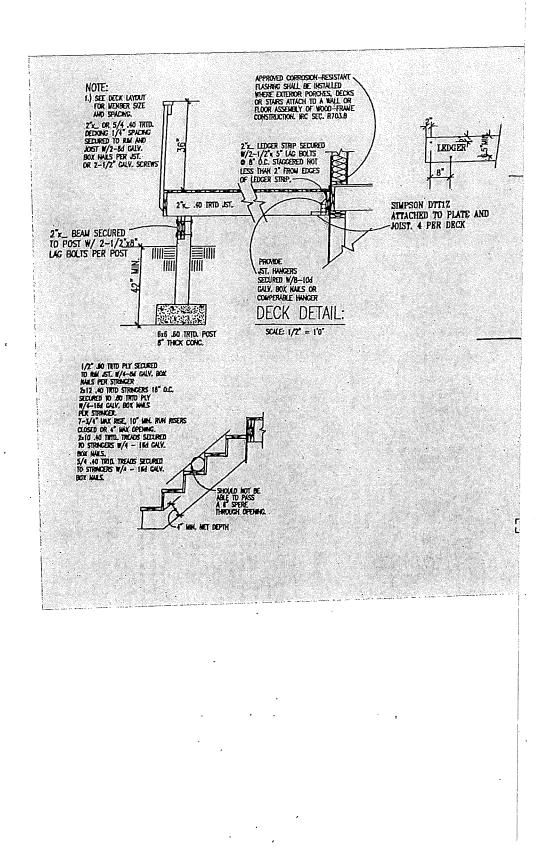
*Notes:

Joist length is the total length of the joist including any cantilevers.

42" minimum ground cover is required from bottom of footing to grade.

The bottom 8" of the footing is required to have the appropriate diameter from the table above. This can be achieved by belling out the bottom of the hole. See page 5 for typical post footing examples.

For footings greater than 20 inches in diameter the thickness shall be increased to 12 inches.

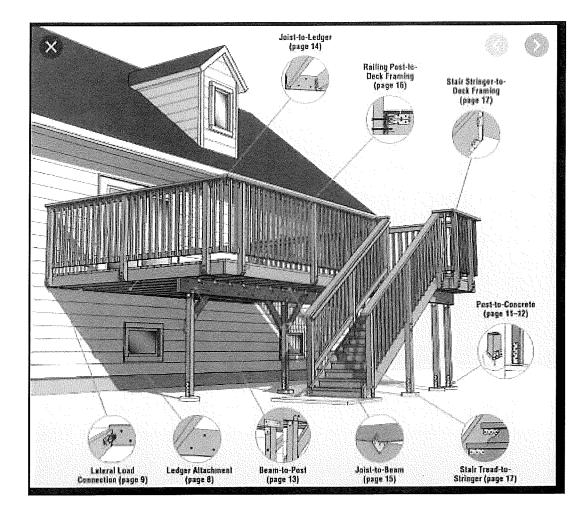


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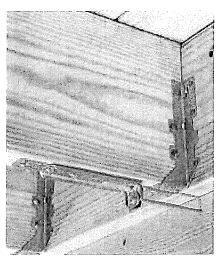
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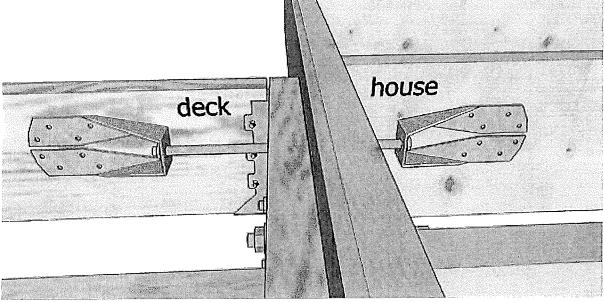
Frahm, Jayne

From: Sent: To: Subject: Frahm, Jayne Friday, May 1, 2020 11:12 AM Frahm, Jayne Sent from Snipping Tool



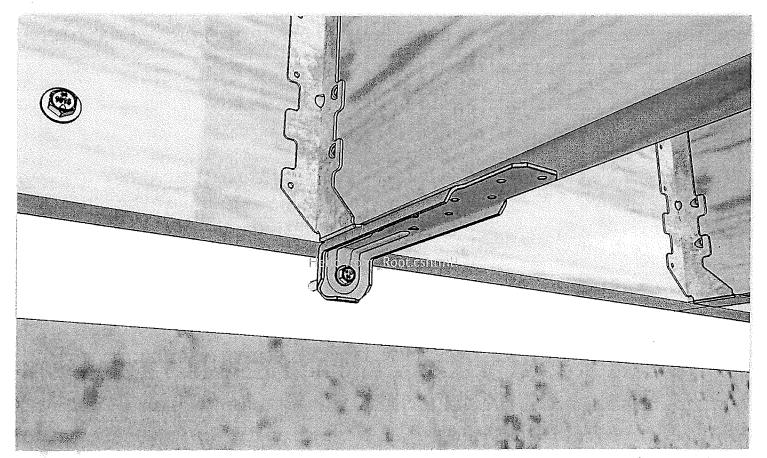
Lateral Load Connector





bateral Load Connector

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