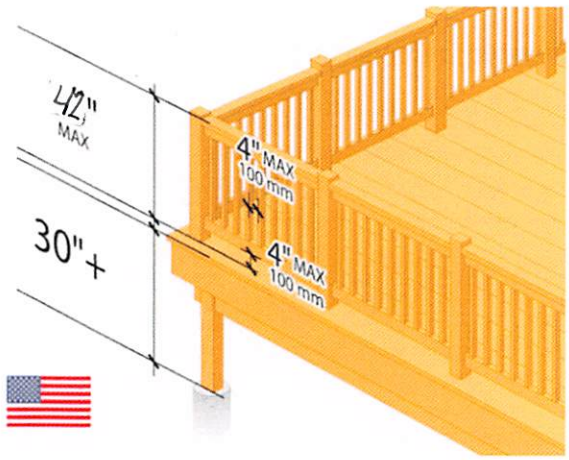
WHAT YOU NEED TO KNOW: About Guard Rails

- 42 "minimum height when surface is 30" + above grade
- 200 lb concentrated load
- 50 lb concentrated load over 1 sqft or balusters
- 50 lbf vertical and horizontal load along top rail
- 4 "maximum gap between deck and underside of bottom rail
- 4 "maximum gap between balusters
- 34 "minimum stair rail height from nosing to top of rail

HEIGHT DIAGRAMS: In the US. Thirty-six inches is the most common residential height, but some jurisdictions vary.



USA RAIL HEIGHT FOR RESIDENCES

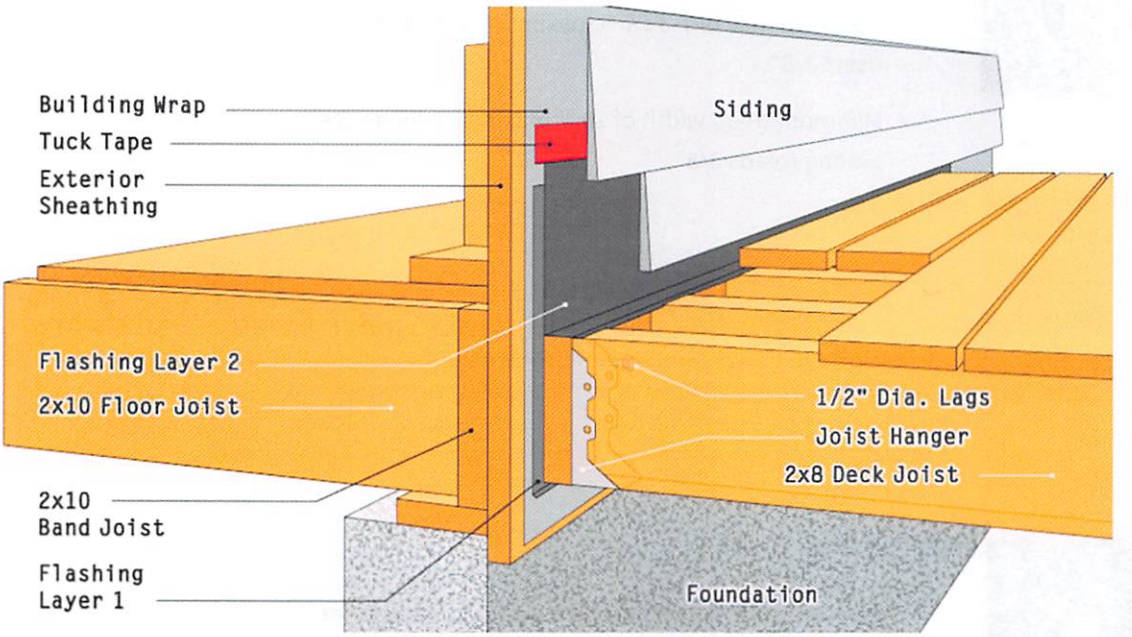
- Guardrails are required once the deck is 30 " or more above grade.
- A 36 "rail measured from the top of rail to the deck surface is required.
- California is the one exception where they Require 42 "guards.

LEDGER BOARD REQUIREMENTS

TIPS

- Through bolts, lag screws or expansion anchors should be at least 1/2 "in diameter.
- Lag screws must go through band board at least 1/2 ".
- Lags must be hot zinc coated or stainless.
- Locate upper bolts at least 2 "below the top edge of ledger.
- Locate upper and lower bolts maximum 5.5 "/ 6.5" / 7.5 "apart vertically for 2x8 / 10/12 respectively.
- Ledger board width must be => deck joist width but = <rim joist width.
- Minimum size is 2x8.
- Corrosion resistant flashing is required for connecting to wood framed buildings.

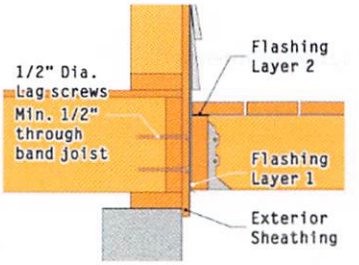
LEDGER BOARD REQUIREMENTS IN A NUTSHELL



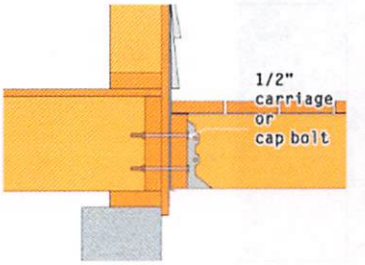
Connection Diagrams:

FIVE DIFFERENT TECHNIQUES

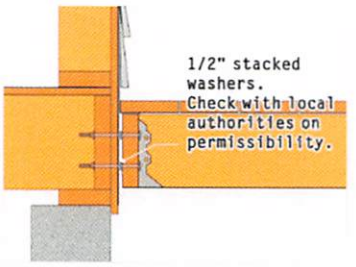
READ MORE



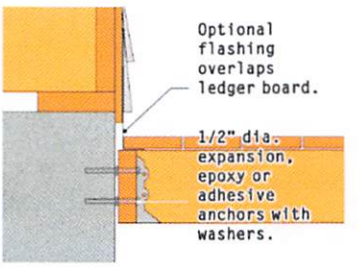
1/2 "LAYER SCREWS



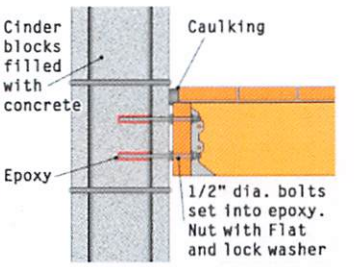
1/2 "CARRIAGE OR CAP BOLTS



WOOD FRAME WITH SPACER



CONCRETE FOUNDATION WALL



CINDER BLOCK WALL

3. STAIRS

REMEMBER THESE THINGS

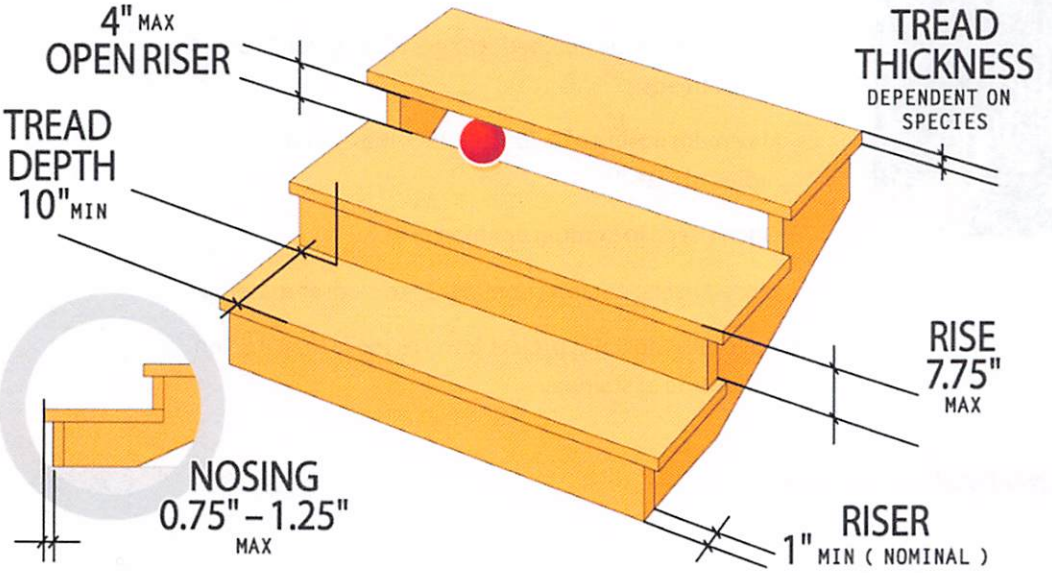
- Minimum 36 "at all points above the permitted handrail height
- Minimum 31.5 "width below handrail height where handrail is on one side
- Minimum 27 "width below handrail where handrails are on both sides
- Maximum rise of 7-3 / 4 "- maximum difference among risers 3/8"
- Minimum tread width of 10 "- maximum difference among treads 3/8"

4. STRINGERS

KEEP IN MIND

- Maximum 16'-6 "span for solid stringer (southern pine)
- Maximum 7'-0 "span for notched stringer (southern pine)
- Minimum 5 "throat recommended

STAIR STRINGER CHEAT SHEET



LAYING OUT STRINGERS

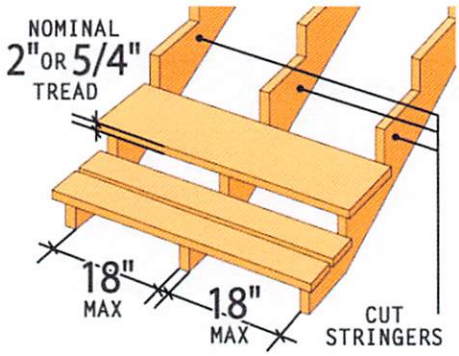
Learn the math and how to trace out the number and size of rises and runs to cut out your stair stringer. Step by step explanation !

5. TREADS & HANDRAILS

DECK BUILDING CODE TIPS

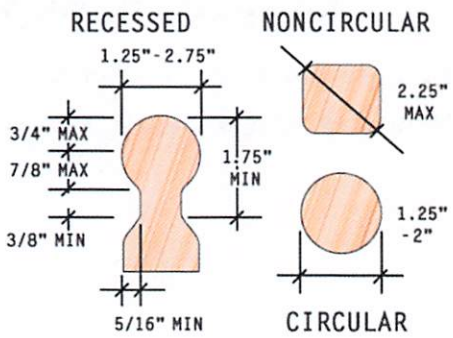
- Maximum 36 "oc solid stringer spacing for 2" thick treads
- Maximum 18 "oc notched stringer spacing for 2" or 5/4 "thick treads
- Maximum nosing of 0.75 "to 1.25" - maximum nosing radius of 9/16 "
- Open risers: maximum opening of 4"
- Closed risers: minimal nominal 1" thick riser material
- Handrails must not project inwards more than 4.5" on either side of stairway

MORE STRINGER AND HANDRAIL TIPS



STAIR TREAD DIAGRAMS

Learn how to trace the number and size of rises and runs to cut out your stair stringer.



HANDRAIL SIZES DIAGRAMS

These are simple handrail shapes that are permitted by building codes for decks

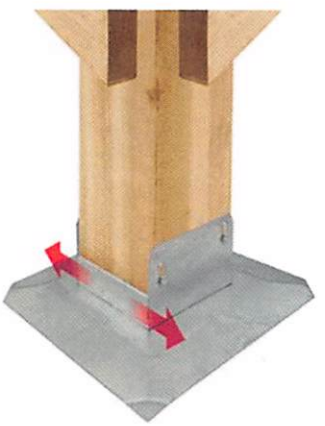
6. FOOTINGS

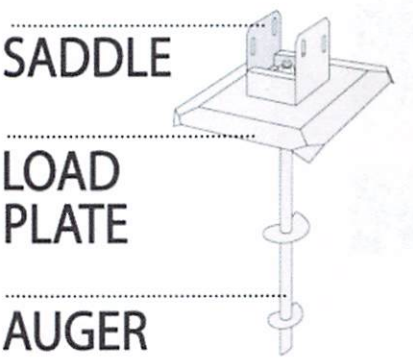
FOOTINGS ARE A BIG TOPIC

And they are the hardest and most labor intensive part of building a deck. So we have lots of help for you to learn how deep to dig, how large a footing should be based on load and soil capacity, how to connect hardware to the pier AND we talk about floating or free standing decks.

This is all great information to learn before you start your big project.

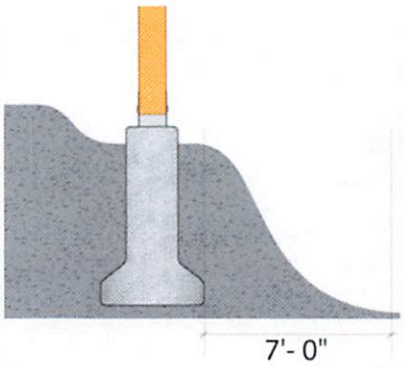
ALTERNATE FOUNDATIONS: FREE STANDING DECK OPTIONS





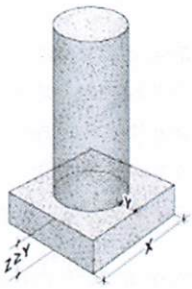
GROUND SCREW ANCHORED FOOTINGS

OTHER IMPORTNANT BUILDING TIPS



SEVEN FOOT RULE

How deep to go for footings on slopes?



SIZES AND SHAPES

Five different ways to form foundations.

FLOATING DECK EXCEPTION

Decks not connected to ledger need not have footings extending below frost line.

Elevations of deck required for Planning review from grade to top of the deck.

Might need Guardrails:

Submit plans to provide sufficient information for review. All plans to be dimensioned in feet and inches. Include details for footings, framing members, spans and spacing and materials for proposed. Indicate if structure is attached to residence and how the ledger is secured through the exterior siding.

Post-to-beam connection, Footing detail, Joist attachments, Blocking attachments.

Note the size and type of lumber used for constructing the deck. (Ex: 2x10 DF #2)

Note on the plans what the distance is from the edge of the deck to the far side of the concrete wall.

Clearly indicate on plans where the footings will be located.

Plans show "6" from dirt". Specify whether the 6" distance is measured from the top or bottom of the proposed deck.

Note on the plans that the project will conform to the provisions of the 2022 California Building Codes as well as the relevant laws, ordinances, rules and regulations for the City of Marina.

Structural calculations: Depending on the size and complexity of the deck, you may need to provide structural calculations certified by a licensed engineer.

Site plan: A site plan showing the location of the deck in relation to the property lines and existing structures is usually required.

Geotechnical report: If the deck is on sloped or unstable ground, a geotechnical report may be required.

Compliance with codes: The deck must be constructed in accordance with the California Building Code.

Erosion control: If the project involves significant grading or excavation, an erosion control plan may be necessary.

A permit is not required if the deck does not exceed 200 sq. ft. in area and no more than 30 inches above grade at any point, are not attached to a dwelling, and do not serve an exit door. However, decks are required to comply with land use and zooming requirements.