

Decks at single-family and two-family dwellings

A building permit is required when the deck or platform is more than 30 inches above grade; attached to the main structure; or part of an accessible route. The following are minimum required submittals. *Note: this handout addresses basic design and common construction methods for exterior single-story wood-framed decks. Additional requirements and design considerations apply to multi-story decks, elevated decks, decks attached at cantilevers or bays, decks with center beams supporting joists on both sides, and decks where a future screened porch addition is planned. This handout does not apply to other wood framed exterior structures like open porches, screen porches, pergolas, etc.*

Site plan

Example site plan:

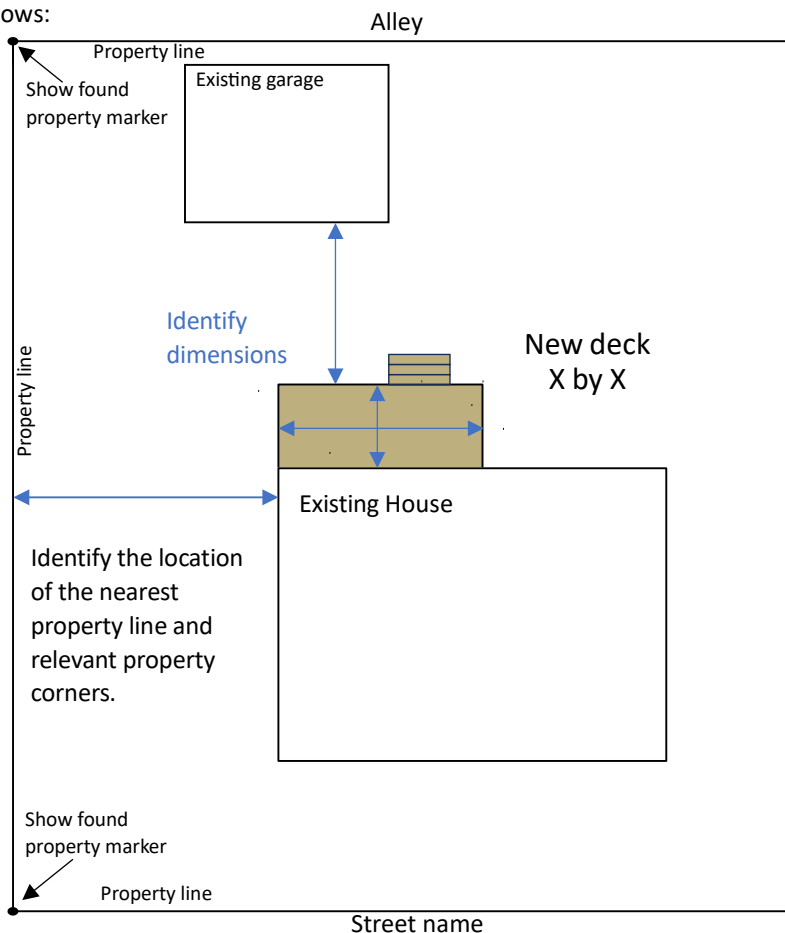
A site plan is a scaled dimensioned drawing that shows:

- location of existing structures and site features (house, garage, shed, fence, retaining wall, pool, sidewalk, patio, exterior stairway, etc.)
- location and size of the new deck
- distance from deck to property lines
- distance from deck to adjacent structures

To establish the location of the property lines, you must either hire a surveyor to locate the corners and prepare a survey or you must find and expose the property markers to create a site plan. A survey prepared by a registered surveyor made be required if determined by the Building Official.

See “[Property Line Location](#)” bulletin for more assistance.

Note: Existing fences are rarely on the property line and cannot be used to determine setbacks.



Deck plans and details

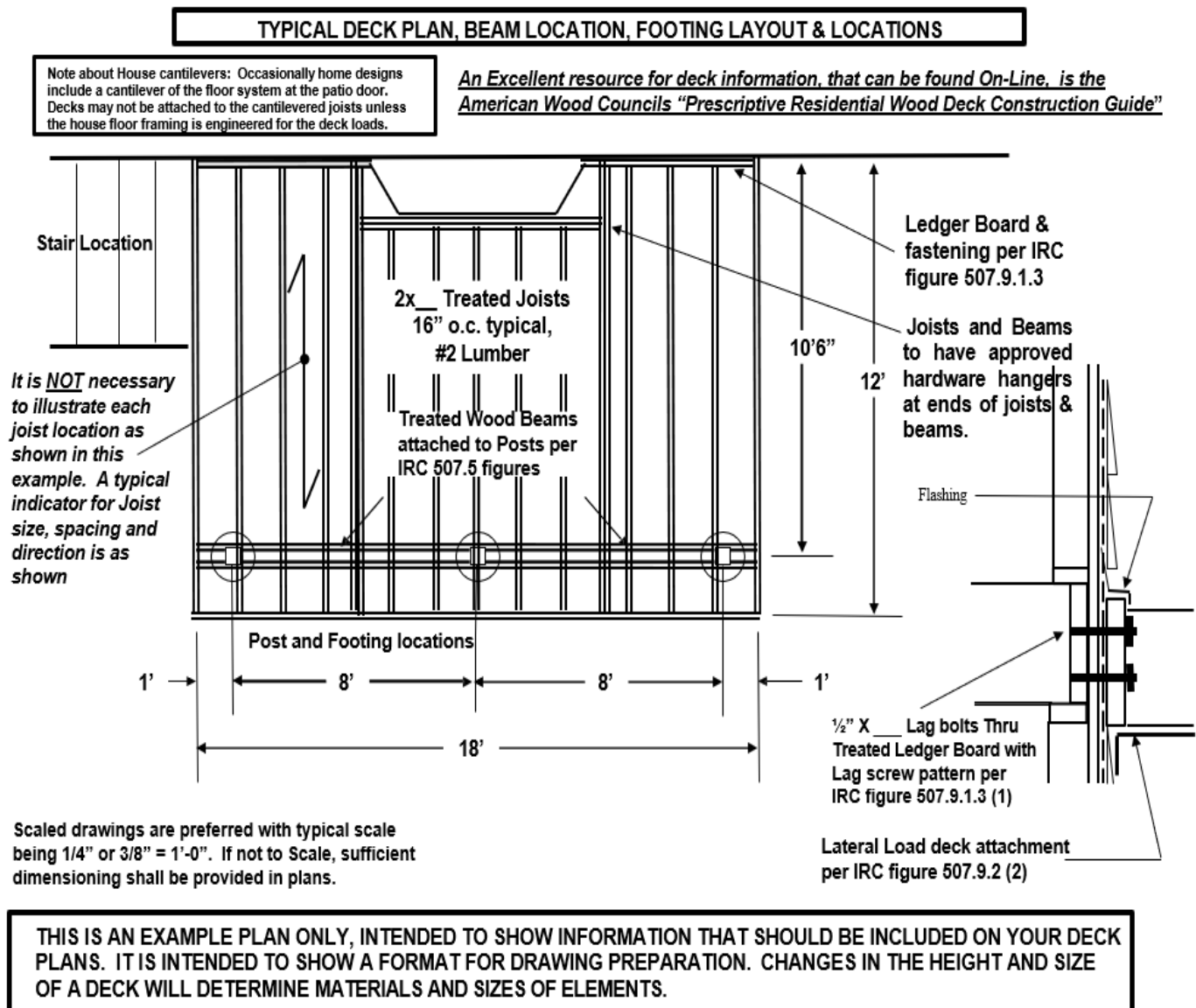
Construction plans and details shall demonstrate methods of construction and compliance with all applicable code requirements. Plans shall be dimensioned, to scale, and show all the following to show how the deck meets code minimums:

- size and location of deck
- size, location, and spacing of footings
- size and location of beams and posts
- size, spacing, and direction of joists
- ledger board attachment
- type of lumber and decking
- size and location of stairs, handrails, and guards
- other materials (post connections, joist hangers, lateral load connections, etc.)
- notations and dimensions

Drawings must identify all actual site conditions and proposed construction materials and methods – generic notations like “per code” or “per site conditions” are not acceptable and will delay the permit approval.

All materials used for posts, joists, beams and decking shall be approved treated wood or approved wood of natural resistance to decay such as cedar or approved composite materials. Identify the name and manufacturer of all composite materials.

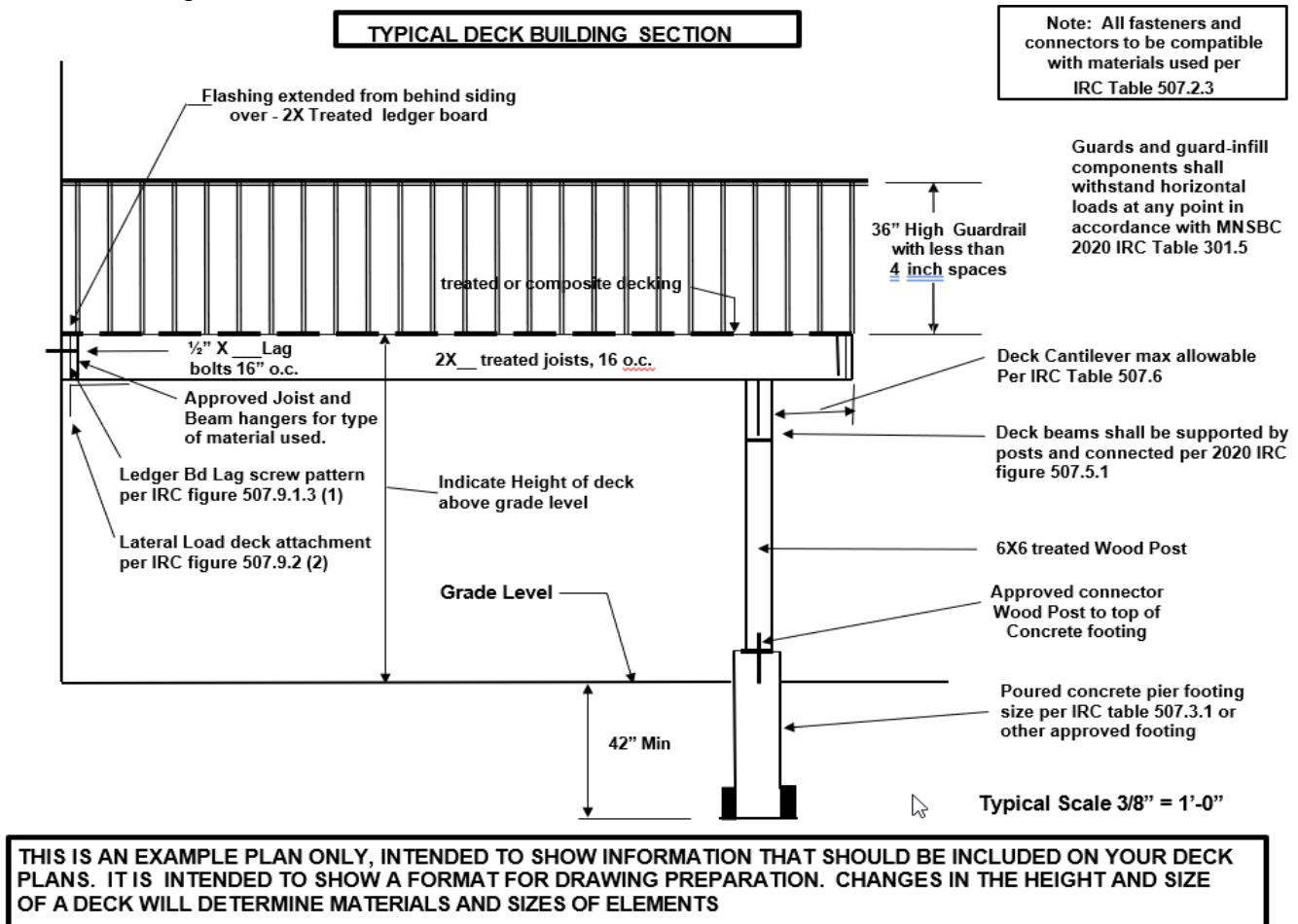
Example deck plan:



Note: Diagrams are for illustrative purposes only – other designs that meet the code are also acceptable.

You also need to include a side view drawing (called a section) that shows all parts of the deck including the footings, posts, beams, joists, decking, guards, and the height of the deck above the ground.

Example section drawing:



- footing type, depth below grade, and width at base (footing width will vary according to load but can be no less than 14" for round footings and 12" for square footings)
- show grade and height from deck walking surface to adjacent grade at all sides of the deck and stairways
- size, location and height of posts
- connection of joists to house (most common method is to use joist hangers to connect joists to ledger board bolted to house rim joist)
- species, size, spacing, and direction of joists
- size and location of beams including details (flush or dropped, dimension cantilevers, blocking, etc.)
- ledger size (2"x8" min. and no less than the deck joists)
- ledger attachment (type, size and spacing)
- lateral load connection (type and locations/spacing)
- post-to-beam and post-to-footing connectors, joist and beam hangers
- locations, materials, dimensions of guards, handrails, and stairways
- material and dimension of bottom landing at stairways (sidewalk, concrete pad, or pavers)

Lateral load connections at floor joists (not applicable at I-joists or floor trusses):

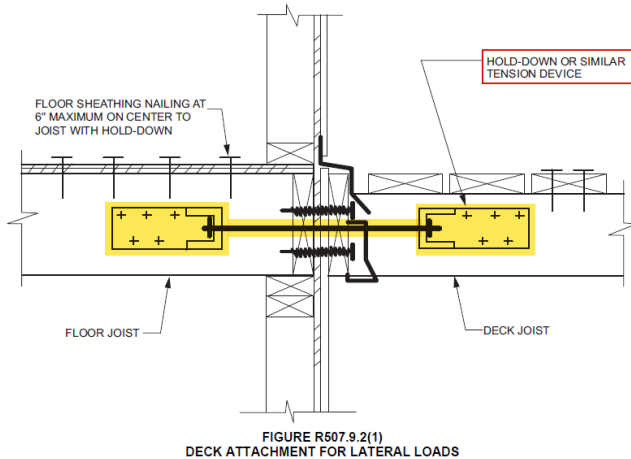


FIGURE R507.9.2(1)
DECK ATTACHMENT FOR LATERAL LOADS

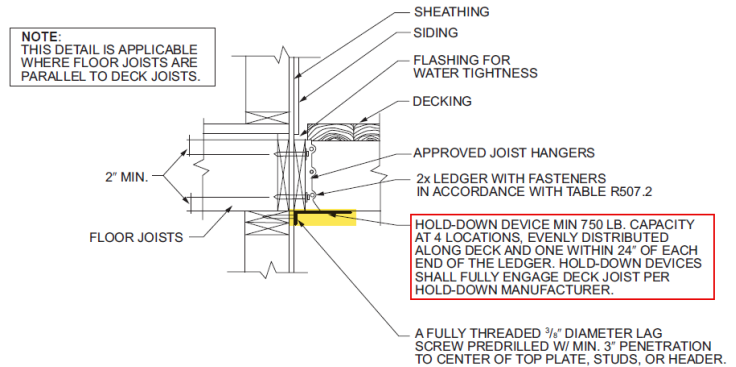
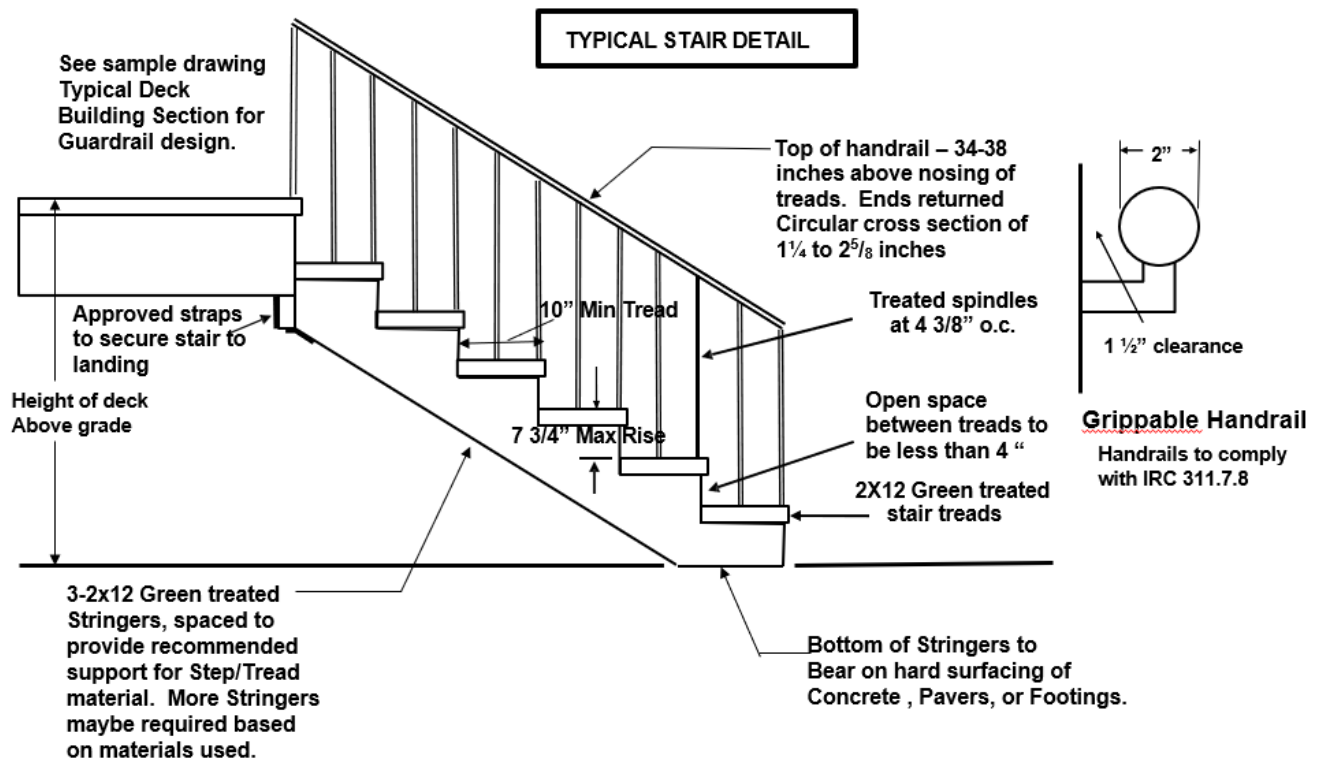


FIGURE R507.9.2(2)
DECK ATTACHMENT FOR LATERAL LOADS

Example stairway section:



Stairs with four or more risers (3 steps + top landing) require a graspable handrail. Guards are required at open sides of deck floors, stairs, ramps, and landings that are located more than 30 inches above the floor or grade below. Required guards shall be not less than 36 inches in height and shall not have openings that allow the passage of a sphere 4 inches in diameter. A bottom landing is required at all stairways. The base of stairs shall not rest on bare ground - placement of patio blocks or a concrete pad is acceptable if deck is near ground level.