

RESIDENTIAL DECKS & STAIRWAY REQUIREMENTS

SPS 321.225 Decks.

Decks attached to dwellings and detached decks that serve an exit shall comply with the applicable provisions of this chapter including, but not limited to:

- (1) Excavation requirements of s.SPS 321.14;
- (2) Footing requirements of s.SPS 321.15;
- (3) Frost penetration requirements of s.SPS 321.16;
- (4) Load requirements of s.SPS 321.02;
- (5) Stair, handrail and guardrail requirements of s.SPS 321.04; and
- (6) Decay protection requirements of s.SPS 321.10.

OR follow Appendix "B" & "C" Chapter 321 WI State Administrative Codes. Website: http://docs.legis.wisconsin.gov/code/admin_code/sps/safety_and_buildings_and_environment/320_325/325_b

1. Fill out Building Permit Application.

Provide detailed description of all proposed work. All contractors must include their Contractor Certification numbers. Homeowners may obtain permits for construction projects if the house is owner occupied.

2. Provide Site Plan.

Include the following (see sample site plan):

- All streets and graphic scale
- Exterior boundaries of the property including dimensions.
- Location of existing and proposed structures.
- Setback dimensions from property lines and between structures.
- Location and dimension of all easements (water, sewer, electric, etc.).

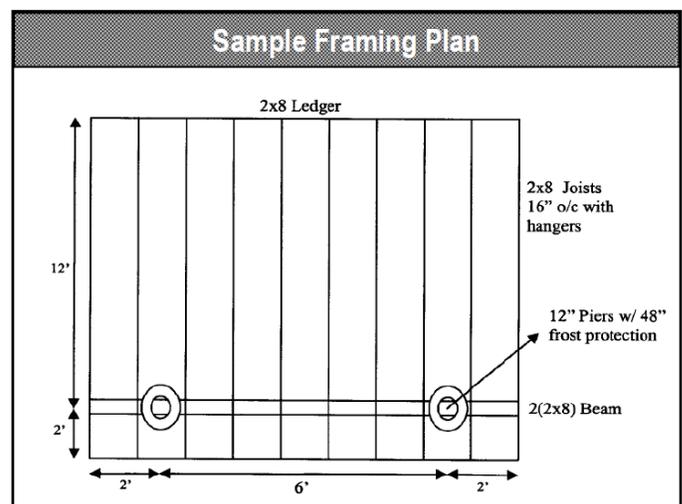
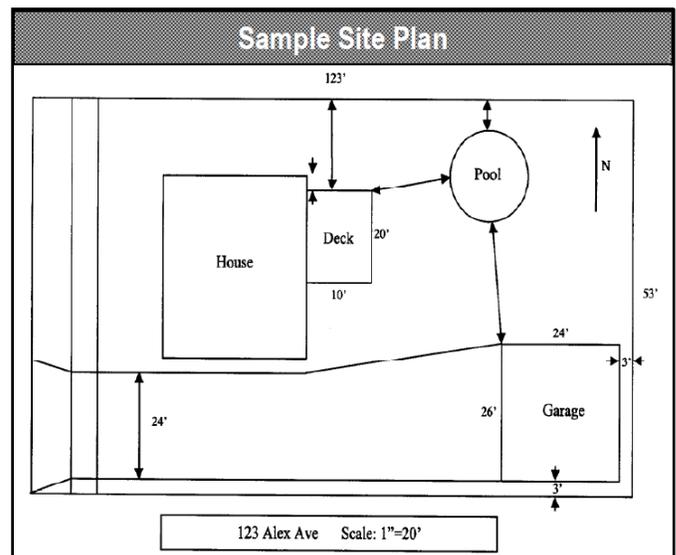
3. Provide Framing Plan.

Use Appendix B, Figure 35 OR provide stamped, engineered plans including:

- Proposed footing sizes and locations.
- Floor joist sizes and spacing
- Beam sizes and locations.
- Height of the deck above grade.
- Guardrail heights and intermediate rail spacing.
- Ledger size, connection and flashing details.

4. Make appointment with the Building Inspector to discuss project and obtain Building Permit.

- Permits are issued by appointment only.
- Call 715-426-3426 or 715-426-3427 24 hours before desired appointment.

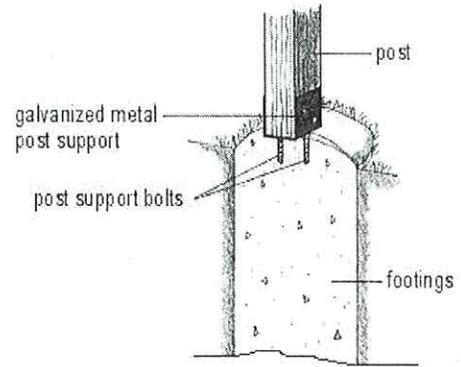


Wood Posts:

Minimum size: 4 x 4 post

Maximum height: 8 feet

The wood posts are required to be attached to the concrete piers with an approved mounting bracket. (see the diagram)



Beams:

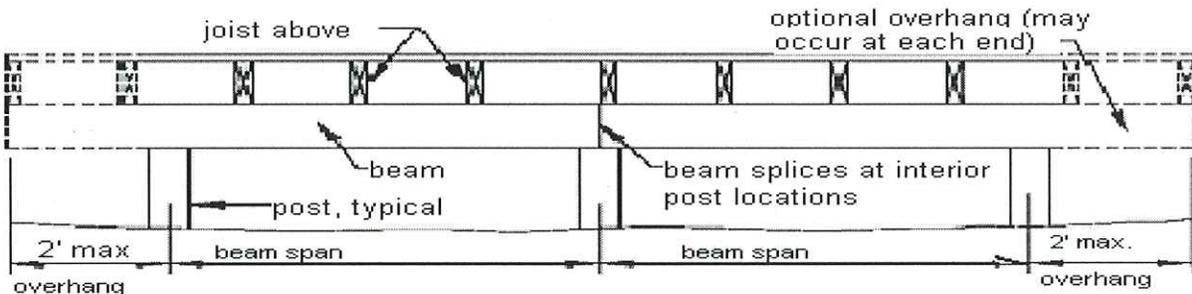
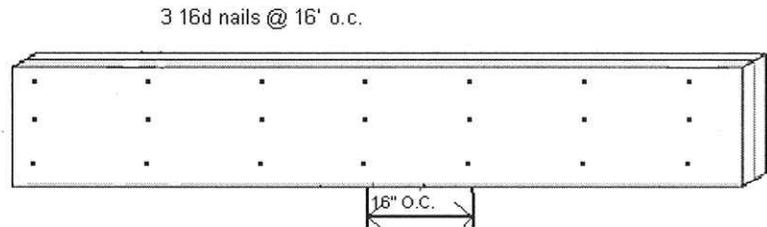
Beams shall be made up of a minimum of 2 plys (i.e. 2(2x8)'s or 2

(2x10)'s. The plys shall be fastened together with a minimum of 3-6d nails @ 16" o/c. Beams may be spaced on each side of the post provided that blocking is installed at 24" o/c between the members.

Beams bearing directly on the post shall be attached with approved metal anchors.

The beams shall be assembled by attaching

the two members in accordance with the diagram above. The beam can not be cantilevered over the column support by more than 2 feet (see the diagram below).



Floor joists:

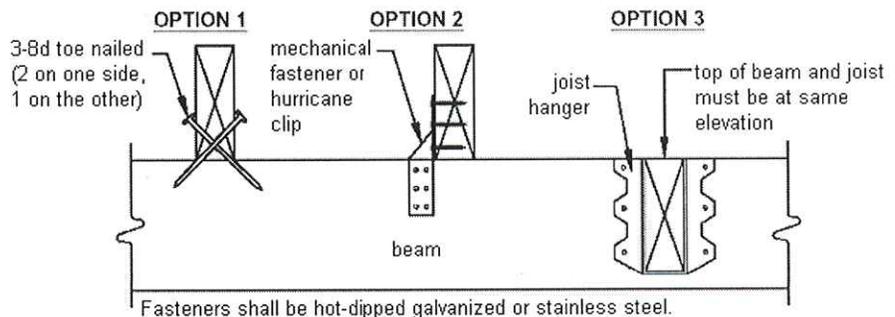
All deck floor joists shall be sized and spaced to meet minimum building code requirements. The allowable spans for deck floor joists can be obtained from the enclosed chart at the end of this packet.

Minimum Bearing: 1 1/2 inches on the beam or ledger board

Blocking: Maximum 8 foot intervals

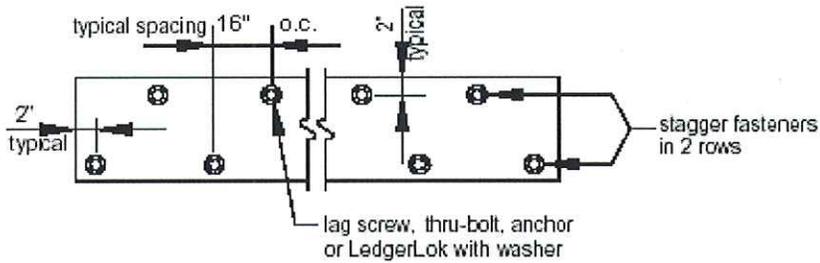
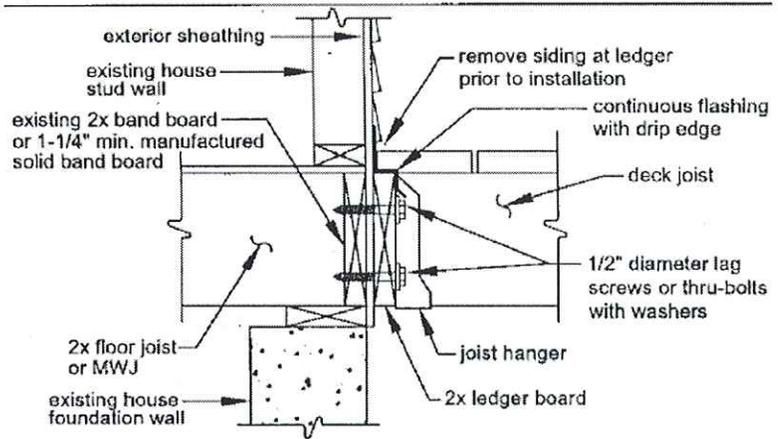
Maximum Cantilever: 2 feet

Joists shall be attached to the beam as shown in the following diagram. Joists may also be attached with joist hangers. Hangers, clips and mechanical fasteners shall be galvanized with 1.85 oz/sf of zinc (G-185 coating) or shall be stainless steel.

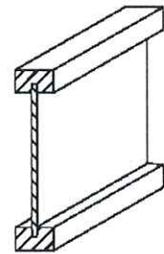


Ledger:

The exterior finish system (siding) is to be removed prior to the installation of the ledger. Flashing is required at any ledger board connection to a wall of wood framed construction. The ledger board shall be equal to or greater than the depth of the floor joist. When attachments are made to the existing house rim board, the rim board shall be capable of supporting the new deck. Many new homes have been constructed with Manufactured "I" Joists and some of these homes were constructed with a plywood rim board that cannot support a deck. In such cases a free-standing deck may be the easiest and only option.

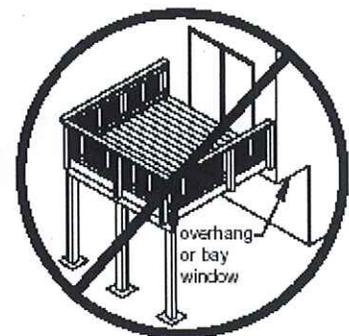
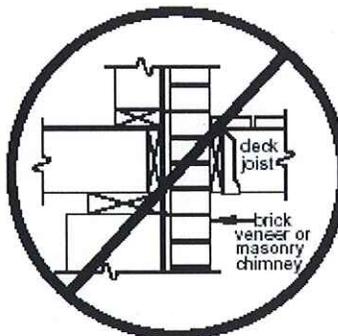
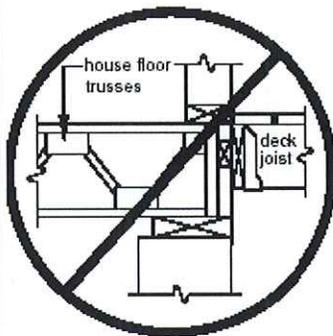


I-Joist



Ledger Attachment: Minimum of 3/8" x 5 1/2" lag bolts or screws with washers @ 16" o/c in a staggered pattern. When using lag screws pilot holes must be drilled and the lag screw must be fully driven to be effective. Pilot holes shall be about 3/4 of the diameter of the screw for the threaded portion and full diameter for the unthreaded shank. Make sure that the lag screw is long enough so that at least half of its length penetrates the member to which it is attached.

These diagrams detail prohibited attachments of the ledger to open web floor trusses, to or through brick veneer, and to any overhangs. Ledgers may be able to be attached to floor trusses by following the Wood Truss Councils Recommendations. (If you encounter this situation please contact our office for more information).



Decking:

All decking material shall be composed of 2x or 5/4 ("five-quarter") boards. Attach decking to each joist with 2(8d) nails or 2(#8) screws. Decking may be placed from an angle perpendicular to the joists to an angle of 45 degrees to the joists. Decking must have a span length such that each board bears on a minimum of 4 joists.

Guardrails:

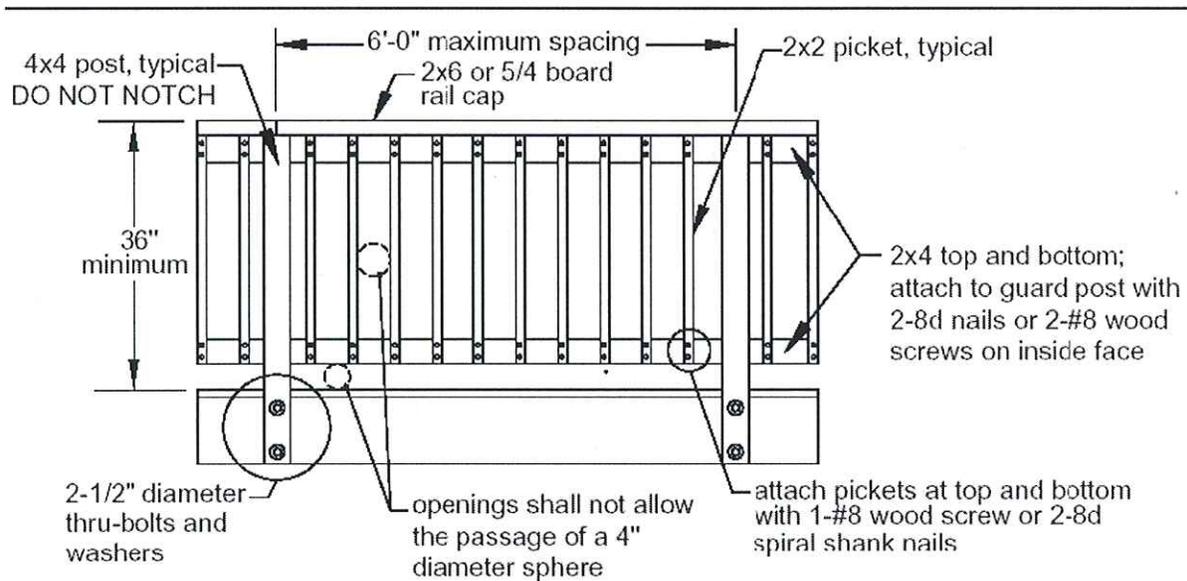
All decks that are located more than 24 inches above grade shall be protected with guardrails. Guardrails shall be provided on all open sides of stairways.

Minimum Height: 36"

Maximum Spindle Spacing: Spaced to prevent the passage of a 4" diameter ball.

Guardrails shall be designed and constructed to withstand a 200 lb load applied in any direction.

EXAMPLE



Handrails:

Every stairway of more than 3 risers shall be provided with at least 1 handrail.

Minimum Height: 30"-38" above the nosing of the treads.

Handrails shall be graspable and shall be composed of decay-resistant and/or corrosion resistant materials. The hand grip portion, if circular, shall be between 1 1/4" and 2" in diameter. Shapes other than circular shall have a gripping dimension between 4" to 6 1/4" with a maximum cross section dimension of 2 7/8" (see the examples on the following page). Handrails shall run continuously from the midpoint of the lowest tread to the top of the landing.

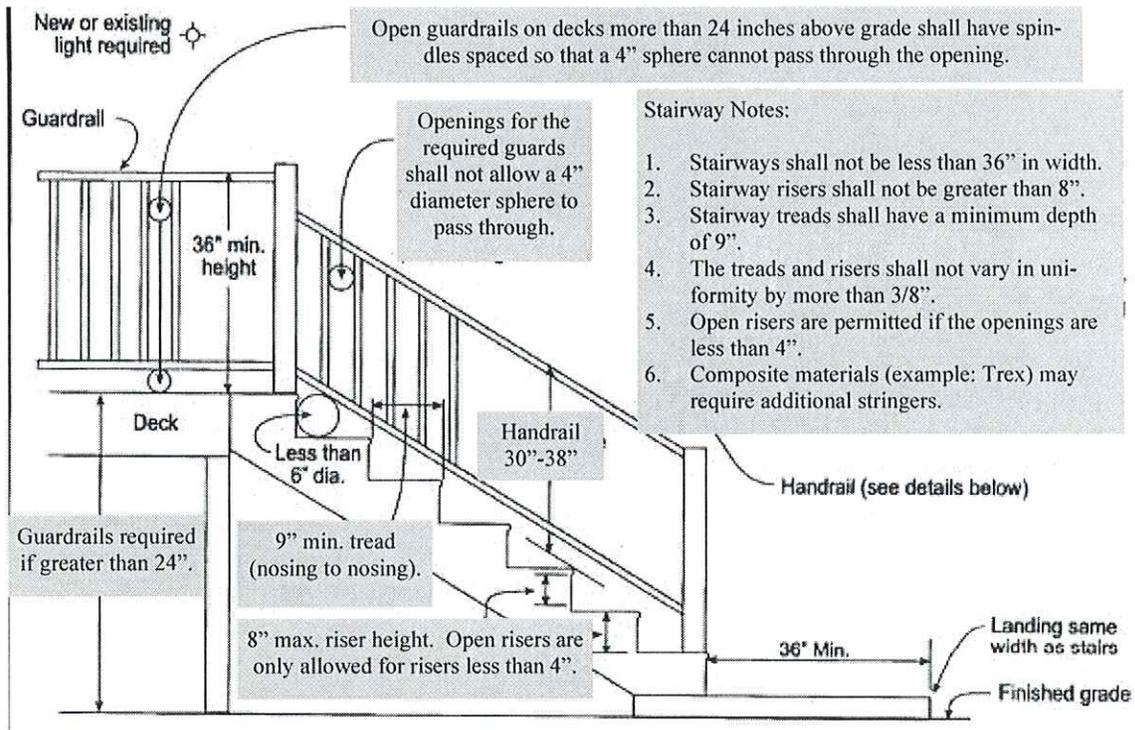
Stairs:

All risers and treads shall not vary in uniformity by more than 3/8" for the entire length of the stairway. All stairways shall be constructed with closed risers or meet the same maximum opening/spindle spacing requirements as guardrails.

Maximum riser height: 8"

Minimum tread depth: 9" (measured horizontally from nosing to nosing)

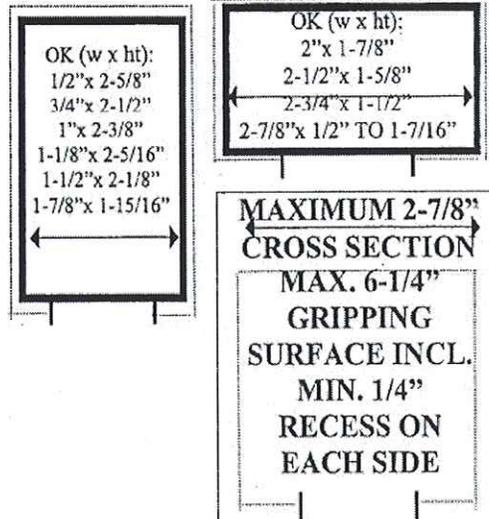
Minimum landing: 3' in the direction of travel (top and bottom of the stairway)



Sample Handrail Shapes:

Make sure to what for the maximum allowable cross section and gripping surface measurements as shown below.

RECTANGULAR



OTHERS



ROUND

