Goodhue County
Land Use Management Department Building Permits and Inspections Goodhue County Government Center
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## General Residential Decks Information

## Building Permits

In general, a building permit is required for a deck that is attached to a structure or for any detached deck that is more than 30 inches above grade.

Setbacks<br>Setbacks must comply with applicable Zoning requirements.<br>Frost Footings Frost footings are required for any deck that is attached to a dwelling, a porch, or a garage that has frost footings. The minimum depth to the base of the footing is 42 inches.

Live Loads All decks shall be designed to support a live load of 40 pounds per square foot.
Guardrails Guardrails are required on all decks that are more than 30 inches above grade or above a lower deck. Railing must be a minimum of 36 inches in height. Open guardrails on decks must have intermediate rails or an ornamental pattern that a four-inch (4") sphere cannot pass through. Open railings on stairs must have intermediate rails or an ornamental pattern that a four-and-three-eighths-inch ( $4-3 / 8$ ") sphere cannot pass through. Exception: The triangular opening formed by the riser, the tread, and the bottom element of a guardrail may be sized so that a sixinch ( $6^{\prime \prime}$ ) sphere cannot pass through.

Cantilevers J oists should not overhang beams by more than two feet ( $2^{\prime}$ ). Beams should not overhang posts by more than one foot ( $1^{\prime}$ ) unless a special design is approved.

Flashing All connections between a deck and a dwelling shall be weatherproof. Any cuts in an exterior finish shall be flashed.

## Framing Details

Header beams and joists that frame into ledgers or beams shall be supported by approved framing anchors such as joist hangers.

## Nails and Screws Fasteners must be hot-dipped-zinc-coated-galvanized steel, stainless steel, silicon bronze, or

 copper.Deck Materials All exposed materials used in the construction of a deck must be of approved wood with natural resistance to decay (redwood, cedar, et cetera), approved treated wood, or other materials such as composite plastics that have prior approval of the Building Official. This includes materials for posts, beams, joists, decking, and railings.
Stairs Stairs must be a minimum of 36 inches in width. The maximum rise is seven-and-three-quarters inches ( $7-3 / 4^{\prime \prime}$ ) and the minimum rise is four inches ( $4^{\prime \prime}$ ). The minimum run is ten inches ( 10 "). The largest tread width or riser height shall not exceed the smallest by more than $3 / 8$ inch. Risers must not allow a four-inch (4") sphere to pass through.
Handrails Stairways having four or more risers shall have at least one (1) handrail. The top of the handrail shall be between 34 inches and 38 inches above the nosing of the treads. Handrails shall be continuous for the entire length of the stairs and shall not be interrupted by a post. Handrail ends shall be returned or shall terminate at posts. Handrails must be Type I or Type II graspable design. The handgrip shall have a smooth surface with no sharp corners.

## Special DesignNote

Some deck designs may not be appropriate when the placement of a screen porch or a three- season porch on the deck platform is a future consideration. Setbacks for porches may not be the same as setbacks for decks.


## Deck Permits

Applicants for Building Permits in Goodhue County generally are required to provide the original Township Zoning Approval form, two (2) complete sets of project construction plans, and a site plan for review. County Zoning staff reviews submittals for compliance with the Zoning Ordinance. County Building staff reviews submittals for compliance with the State Building Code. One set of approved construction plans is retained by the County; one set of approved construction plans is returned to the applicant to be kept on-site throughout the construction period.

## Locating a Deck

Decks must meet local zoning requirements for land use and setbacks. When planning a deck, thought should be given to the location of outside gas meters, outside electric meters, wells, and septic systems. Additionally, the electrical code requires that any overhead power lines be a minimum of ten feet (10') above decks and platforms.

## Call Before You Dig

At least two full business days before you dig any footings, call Gopher State One Call. The Federal Communications Commission (FCC) has authorized 811 as a national, toll free "call-before-you-dig" number. The FCC estimates that 40 percent of the incidents that damage underground pipes and cables are caused by those who don't call before digging.

## Site Plans

An acceptable site plan will show the outline of the parcel with dimensions.
It will include the items listed below.
Dimensions.....................Indicate all building dimensions.
Set-Backs............... Show all of the building set-back distances.

- From the property lines: front, side, and rear;
- From the road right-of-way;
• From shorelines; and
• From bluff lines.


## Construction Plans

Deck plans will include the information listed below.
Minimum Scale: $1 /{ }^{\prime \prime}=1^{\prime}$.
Floor Plans ..........Include the size and dimensions of the deck, the location of any stairways, and the location of the deck relative to the house.

Footings .Include the size, the depth, and the spacing of post holes.
Structural $\qquad$ .Indicate post sizes and beam sizes and show details of the attachment to the posts. Include the floor joist sizes and spacing, the deck board size and type, and details of the attachment of the rim joist to the house.

Stairways / Railings $\qquad$ Include the maximum riser height and the minimum tread measurement. Indicate handrail placement and height, guardrail height, and baluster spacing.

## Plan View of Construction Drawings



The plan view of construction drawings for a deck will typically include the following items.

- Proposed Deck Size
- Location and Size of Footing
- Size, Type, Location, and Spacing of Posts
- Size and Type of Beams
- Size and Spacing of Floor J oists
- Size and Type of Decking Material


## Elevation View of Construction Drawings

The elevation view of drawings for a deck will typically include the following items.

- Height of Structure From Grade
- Size, Depth, and Details of Footings
- Guard Height and Spacing
- Stairway Rise, Run, and Handrail Height
- Clearance of Any Overhead Wires


## Deck Footings

Deck footings must extend to the frost depth. In Goodhue County the frost depth is 42 inches. The tables below can help to appropriately size footings.


## Round Footing Sizing Chart

| Minimum Thickness in Inches | Required Footing Size |  |  | Minimum Soil Load Bearing Capacity in Pounds per Square Foot for the Total Column Loading |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Diameter in Inches | Square Inches | Square Feet | 1000 | 1500 | 2000 | 2500 | 3000 |
|  | 8 | 50.27 | 0.35 | 349 | 524 | 698 | 873 | 1047 |
|  | 9 | 63.62 | 0.44 | 442 | 663 | 884 | 1104 | 1325 |
|  | 10 | 78.54 | 0.55 | 545 | 818 | 1091 | 1364 | 1636 |
|  | 11 | 95.03 | 0.66 | 660 | 990 | 1320 | 1650 | 1980 |
|  | 12 | 113.10 | 0.79 | 785 | 1178 | 1571 | 1964 | 2356 |
|  | 13 | 132.73 | 0.92 | 922 | 1383 | 1844 | 2304 | 2765 |
|  | 14 | 153.94 | 1.07 | 1069 | 1604 | 2138 | 2673 | 3207 |
|  | 15 | 176.72 | 1.23 | 1227 | 1841 | 2454 | 3068 | 3682 |
|  | 16 | 201.06 | 1.40 | 1396 | 2094 | 2793 | 3491 | 4189 |
|  | 17 | 226.98 | 1.58 | 1576 | 2364 | 3153 | 3941 | 4729 |
|  | 18 | 254.47 | 1.77 | 1767 | 2651 | 3534 | 4418 | 5301 |
|  | 19 | 283.53 | 1.97 | 1969 | 2953 | 3938 | 4922 | 5907 |
|  | 20 | 314.16 | 2.18 | 2182 | 3273 | 4363 | 5454 | 6545 |
|  | 21 | 346.36 | 2.41 | 2405 | 3608 | 4811 | 6013 | 7216 |
|  | 22 | 380.13 | 2.64 | 2640 | 3960 | 5280 | 6600 | 7919 |
|  | 23 | 415.48 | 2.89 | 2885 | 4328 | 5771 | 7213 | 8656 |
|  | 24 | 452.39 | 3.14 | 3142 | 4712 | 6283 | 7854 | 9425 |
|  | 25 | 490.88 | 3.41 | 3409 | 5113 | 6818 | 8522 | 10227 |
|  | 26 | 530.93 | 3.69 | 3687 | 5531 | 7374 | 9218 | 11061 |
|  | 27 | 572.56 | 3.98 | 3976 | 5964 | 7952 | 9940 | 11928 |
|  | 28 | 615.75 | 4.28 | 4276 | 6414 | 8552 | 10690 | 12828* |
|  | 29 | 660.52 | 4.59 | 4587 | 6880 | 9174 | 11467 | 13761* |
|  | 30 | 706.86 | 4.91 | 4909 | 7363 | 9818 | 12272 | 14726* |
|  | 31 | 754.77 | 5.24 | 5241 | 7862 | 10483 | 13104* | 15724* |
|  | 32 | 804.25 | 5.59 | 5585 | 8378 | 11170 | 13963* | 16755* |
|  | 33 | 855.30 | 5.94 | 5940 | 8909 | 11879 | 14849* | 17819* |
|  | 34 | 907.92 | 6.31 | 6305 | 9458 | 12610* | 15763* | 18915* |
|  | 35 | 962.12 | 6.68 | 6681 | 10022 | 13363* | 16703* | 20044* |
|  | 36 | 1017.88 | 7.07 | 7069 | 10603 | 14137* | 17672* | 21206* |

## Notes

This table is only a guide. Consult with the local Building Code Official for questions or for use of this table.
For total-load figures with an asterisk (*), the large total loading may require special column types, or sizes, or the addition of steel reinforcement.
Concrete compressive strength (psi) may vary. A minimum of Plain Structural Concrete ( $\mathbf{2 5 0 0} \mathbf{~ p s i}$ ) is assumed.
Soil type and bearing capacity must be verified at each site.
When the actual column type, size, and total loading has been determined, then each column footing condition should be reviewed to determine the required round column pad size and thickness.

## Deck Beam and Footing Sizes

Table is based on Number Two (\#2) or better Ponderosa Pine and Southern Pine that is treated for weather and/ or ground exposure.

|  |  | Post Spacing |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 4-feet | 5-feet | 6-feet | 7-feet | 8-feet | 9-feet | 10-feet | 11-feet | 12-feet | 13-feet | 14-feet |
| $\left. \right\rvert\,$ | SouthemPineBeam | 1-2x6 | 1-2x6 | 1-2x6 | 2-2x6 | 2-2x6 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x10 |
|  | PonderosaPine Beam | 1-2x6 | 1-2x6 | 1-2x8 | 2-2x8 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x12 | 2-2x12 | 3-2x10 |
|  | Comer Footing | 6-5-4 | 7-6-5 | 7-6-5 | 8-7-6 | 9-7-6 | 9-7-6 | 10-8-7 | 10-8-7 | 10-9-7 | 11-9-8 | 11-9-8 |
|  | IntermediateFooting | 9-8-7 | 10-8-7 | 10-9-7 | 11-9-8 | 12-10-9 | 13-10-9 | 14-11-10 | 14-12-10 | 15-12-10 | 15-13-11 | 16-13-11 |
| $\left.\begin{array}{\|l\|} \stackrel{\rightharpoonup}{巳} \\ \stackrel{U}{\mathrm{~N}} \end{array} \right\rvert\,$ | SouthemPine Beam | 1-2x6 | 1-2x6 | 1-2x6 | 2-2x6 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x10 | 2-2x12 |
|  | PonderosaPineBeam | 1-2x6 | 1-2x6 | 1-2x8 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x10 | 2-2x12 | 3-2x10 | 3-2x10 |
|  | Comer Footing | 7-5-5 | 7-6-5 | 8-7-6 | 9-7-6 | 9-8-7 | 10-8-7 | 10-8-7 | 11-9-8 | 11-9-8 | 12-10-9 | 12-10-9 |
|  | IntermediateFooting | 9-8-7 | 10-8-7 | 11-9-8 | 12-10-9 | 13-11-9 | 14-11-10 | 15-12-10 | 15-13-11 | 16-13-11 | 17-14-12 | 17-14-12 |
|  | SouthemPineBeam | 1-2x6 | 1-2x6 | 2-2x6 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x12 | 2-2x12 |
|  | PonderosaPineBeam | 1-2x6 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x10 | 3-2x10 | 3-2x10 | 3-2x12 |
|  | Comer Footing | 7-6-5 | 8-6-6 | 9-7-6 | 9-8-7 | 10-8-7 | 10-8-7 | 11-9-8 | 11-9-8 | 12-10-9 | 13-10-9 | 13-11-9 |
|  | IntermediateFooting | 10-8-7 | 11-9-8 | 12-10-9 | 13-11-9 | 14-11-10 | 15-12-10 | 16-13-11 | 16-13-12 | 17-14-12 | 18-15-13 | 18-15-13 |
| $\left\|\begin{array}{l} \mathbf{~} \\ \hline 0.0 \\ 0 \\ 0 \end{array}\right\|$ | SouthemPine Beam | 1-2x6 | 1-2x6 | 2-2x6 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x12 | 2-2x12 | 3-2x10 |
|  | PonderosaPineBeam | 1-2x6 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x10 | 3-2x10 | 3-2x10 | 3-2x12 | 3-2x12 |
|  | Comer Footing | 7-6-5 | 8-7-6 | 9-7-6 | 10-8-7 | 10-9-7 | 11-9-8 | 12-10-8 | 12-10-9 | 13-10-9 | 13-11-9 | 14-11-10 |
|  | IntermediateFooting | 10-9-7 | 12-10-8 | 13-10-9 | 14-11-10 | 15-12-10 | 16-13-11 | 17-14-12 | 17-14-12 | 18-15-13 | 19-15-13 | 20-16-14 |
|  | SouthemPine Beam | 1-2x6 | 1-2x6 | 2-2x6 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x12 | 2-2x12 | 3-2x10 | 3-2x10 |
|  | PonderosaPineBeam | 1-2x6 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x12 | 3-2x10 | $3-2 \times 12$ | 3-2x12 | EngBeam |
|  | Comer Footing | 8-6-6 | 9-7-6 | 10-8-7 | 10-8-7 | 11-9-8 | 12-10-8 | 12-10-9 | 13-11-9 | 14-11-10 | 14-12-10 | 15-12-10 |
|  | IntermediateFooting | 11-9-8 | 12-10-9 | 14-11-10 | 15-12-10 | 16-13-11 | 17-14-12 | 17-14-12 | 18-15-13 | 19-16-14 | 20-16-14 | 21-17-15 |
|  | SouthemPineBeam | 1-2x6 | 2-2x6 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x12 | 2-2x12 | 3-2x10 | 3-2x12 |
|  | PonderosaPineBeam | 2-2x6 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x12 | 2-2x12 | 3-2x10 | 3-2x12 | 3-2x12 | EngBeam |
|  | Comer Footing | 8-7-6 | 9-7-6 | 10-8-7 | 11-9-8 | 12-9-8 | 12-10-9 | 13-11-9 | 14-11-10 | 14-12-10 | 15-12-10 | 15-13-11 |
|  | IntermediateFooting | 12-9-8 | 13-11-9 | 14-12-11 | 15-12-10 | 16-13-11 | 17-14-12 | 17-14-12 | 18-15-13 | 16-16-14 | 20-16-14 | 21-17-15 |
| $\left.\begin{aligned} & \mathbf{U}_{\mathbf{U}}^{\mathbf{U}} \\ & \mathbf{N} \end{aligned} \right\rvert\,$ | SouthemPineBeam | 1-2x6 | 2-2x6 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x12 | 3-2x10 | 3-2x10 | 3-2x12 |
|  | PonderosaPineBeam | 2-2x6 | 2-2x6 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x12 | 2-2x12 | 3-2x12 | 3-2x12 | EngBeam | EngBeam |
|  | ComerFooting | 9-7-6 | 10-8-7 | 10-9-7 | 11-9-8 | 12-10-9 | 13-10-9 | 14-11-10 | 14-12-10 | 15-12-10 | 15-13-11 | 16-13-11 |
|  | IntermediateFooting | 12-10-9 | 14-11-10 | 15-12-10 | 16-13-11 | 17-14-12 | 18-15-13 | 19-16-14 | 20-16-14 | 21-17-15 | 22-18-15 | 23-18-16 |
| $\left.\begin{aligned} & \stackrel{\rightharpoonup}{e} \\ & \underset{y}{0} \\ & \boldsymbol{M} \end{aligned} \right\rvert\,$ | SouthemPine Beam | 1-2x6 | 2-2x6 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x12 | 3-2x10 | 3-2x12 | 3-2x12 |
|  | PonderosaPineBeam | 2-2x6 | 2-2x6 | 2-2x8 | 2-2x10 | 2-2x12 | 2-2x12 | 2-2x12 | $3+2 \times 12$ | 3-2x12 | EngBeam | EngBeam |
|  | Comer Footing | 9-7-6 | 10-8-7 | 11-9-8 | 12-10-8 | 13-10-9 | 13-11-9 | 14-12-10 | 15-12-10 | 15-13-11 | 16-13-11 | 17-14-12 |
|  | IntermediateFooting | 13-10-9 | 14-12-10 | 15-13-11 | 17-14-12 | 18-15-13 | 19-15-13 | 20-16-14 | 21-17-15 | 22-18-15 | 23-19-16 | 24-19-17 |
|  | SouthemPine Beam | 1-2x6 | 2-2x6 | 2-2x6 | 2-2x8 | 2-2x10 | 2-2x10 | 2-2x12 | 3-2x10 | 3-2x12 | 3-2x12 | 3-2x12 |
|  | PonderosaPineBeam | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x12 | 3-2x10 | 3-2x12 | 3-2x12 | EngBeam | EngBeam | EngBeam |
|  | Comer Footing | 9-8-7 | 10-8-7 | 11-9-8 | 12-10-9 | 13-11-9 | 14-11-10 | 15-12-10 | 15-13-11 | 16-13-11 | 17-14-12 | 17-14-12 |
|  | IntermediateFooting | 13-11-9 | 15-12-10 | 16-13-11 | 17-14-12 | 18-15-13 | 20-16-14 | 21-17-15 | 22-18-15 | 23-18-16 | 24-19-17 | 24-20-17 |
|  | SouthemPine Beam | 2-2x6 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x12 | 2-2x12 | 3-2x10 | 3-2x12 | 3-2x12 | EngBeam |
|  | PonderosaPine Beam | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 3-2x10 | 3-2x10 | 3-2x12 | 3-2x12 | EngBeam | EngBeam | EngBeam |
|  | Comer Footing | 10-8-7- | 11-9-8 | 12-10-8 | 13-10-9 | 14-11-10 | 14-12-10 | 15-12-11 | 16-13-11 | 17-14-12 | 17-14-12 | 18-15-13 |
|  | IntermediateFooting | 14-11-10 | 15-12-11 | 17-14-12 | 18-15-13 | 19-16-14 | 20-17-14 | 21-17-15 | 22-18-15 | 23-19-17 | 24-20-17 | 25-21-18 |
|  | SouthemPineBeam | 2-2x6 | 2-2x6 | 2-2x8 | 2-2x8 | 2-2x10 | 2-2x12 | 2-2x12 | 3-2x10 | 3-2x12 | 3-2x12 | EngBeam |
|  | PonderosaPineBeam | 2-2x6 | 2-2x8 | 2-2x10 | 2-2x10 | 3-2x10 | 3-2x10 | 3-2x12 | 3-2x12 | EngBeam | EngBeam | EngBeam |
|  | ComerFooting | 10-8-7 | 11-9-8 | 12-10-9 | 13-11-9 | 14-11-10 | 15-12-10 | 16-13-11 | 16-13-12 | 17-14-12 | 18-15-13 | 18-15-13 |
|  | IntermediateFooting | 14-11-10 | 16-13-11 | 17-14-12 | 18-15-13 | 20-16-14 | 21-17-15 | 22-18-16 | 23-19-16 | 24-20-17 | 25-21-18 | 26-21-18 |

## Notes

1. J oist length is the total length of the joist, including any cantilevers.
2. When the joint extends (cantilevers) beyond the support beam by 18 " or more, add 1 " to the footing dimensions shown.
3. Requirements for future three season porches or screen porches:

- Increase the corner footing size shown by $90 \%$; and
- Increase the center footing size shown by $55 \%$; and
- Locate all footings at extremities of the deck, no cantilevers.
- Beam sizes indicated need not be altered.

4. All footing sizes above are base diameters in inches and are listed for three (3) soil types: clay, sand, gravel, in that order. Example: 6-5-4 indicates a footing size of six (6) inches in clay, five (5) inches in sand, four (4) inches in gravel.

## Deck Joist Spans

- Based On Number Two (2) Or Better Wood Grades
- Design Loads: 40\#LL + 10\# DL/ Deflection: L/360

|  | Ponderosa Pine |  |  | Southern Pine |  |  | Western Cedar |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 12" oc | 16" oc | 24" oc | 12" oc | 16" oc | 24" oc | 12" oc | 16" oc | 24" oc |
| 2x4 | 9-2 | 8-4 | 7-0 | 10-9 | 9-9 | 8-6 | 9-2 | 8-4 | 7-3 |
| 2×8 | 12-1 | 10-10 | 8-10 | 14-2 | 12-10 | 11-0 | 12-1 | 11-0 | 9-2 |
| 2x10 | 15-4 | 13-3 | 10-10 | 18-0 | 16-1 | 13-5 | 15-5 | 13-9 | 11-3 |
| 2×12 | 17-9 | 15-5 | 12-7 | 21-9 | 19-0 | 15-4 | 18-5 | 16-0 | 13-0 |

## Sample Calculations for Using Joist Span, Beam Size and Footing Sizes Tables

Case One


## Case Two



## Case Three



Refer to tables for joist, beam, and footing size requirements.
Example: Span "a" $=12$ '. Post Spacing $=8$ '.
Use the J oist Span Table to find the acceptable joist sizes for a 12 ' span, 2 x 8 s at 12 " oc, $2 \times 10$ s at 16 " oc, or $2 x 12$ s at 24 " oc.
Use the Beam and Footing Sizes Table and find the 8' post spacing column. With a 12 ' deck span, the beam may be either two $2 \times 8 \mathrm{~s}$ or two $2 \times 10$ s, depending on the wood used. Depending on the soil, the footing diameter at the base must be a minimum of $12^{\prime \prime}, 10^{\prime \prime}$, or $9^{\prime \prime}$ for the corner post and $17^{\prime \prime}, 14^{\prime \prime}$, or $12^{\prime \prime}$ for all intermediate posts.

Use "a" to determine joist size and "a" + " 2 b " to determine beam and footing sizes. The length of " $b$ " is restricted by both the length of " $a$ " and the size of the joists.
Example: "a" =8", " $b$ " $=2$ ', Post Spacing $=10$ '.
Refer to the J oist Span Table. For an 8' joist span, either 2x8s at 24 " oc or $2 x 6$ s at 16 " oc are acceptable.
For sizing the beam, use a joist length of $12^{\prime}\left(8^{\prime}+4^{\prime}\right)$ and a post spacing of $10^{\prime}$. The Beam and Footing Sizes Table indicates that the beam may be either two $2 x 10$ s or two $2 x 12 \mathrm{~s}$, depending on wood used. Depending on the type of soil, the footing diameter at the base must be a minimum of 15 ", 12 " or $11^{\prime \prime}$ for the corner post and $20^{\prime \prime}, 17^{\prime \prime}$, or $15^{\prime \prime}$ for all intermediate posts. Note that because of the $2^{\prime}$ cantilever, all footing sizes were increased by 1 " as required by the footnote.

Use "a" or " b ", whichever is greater, to determine the joist size. Use " a " + " b " to determine the size of Beam 1 and the post footing size for the posts supporting Beam 1. Use joist length " b " to determine both the size of Beam 2 and the post footing size for the posts supporting Beam 2.

Example: "a" $=6$ ', "b" $=7$ ', Post Spacing $=9$ '.
J oist size is determined by using the longest span joist (7'). The J oist Span Table indicates the $2 x 6$ s at 24 " oc would be adequate for this span.
For Beam 1 and footings, use a joist length of $13^{\prime}\left(6^{\prime}+7^{\prime}\right)$ and a post spacing of $9^{\prime}$. The Beam and Footing Sizes Table indicates that the beam may be two 2x10s or two 2x12s, depending on the wood used. Depending on the type of soil, the footing diameters for Beam 1 posts shall be 13", 11", or 9 " for the corner (outside) post and $19^{\prime \prime}, 15^{\prime \prime}$, or $13^{\prime \prime}$ for all intermediate posts. For Beam 2 and footings, use a joist length of 7 ' and post spacing of 9 '. The beam may be two $2 x 8$ s or two $2 x 10 \mathrm{~s}$, depending on the wood used. Depending on the type of soil, the footing diameters for Beam 2 shall be $10^{\prime \prime}, 8$ ", or 7 " for the corner posts, and 14 ", $11^{\prime \prime}$, or 10 " for all intermediate posts.

## Stairs

## Illumination.

All stairs shall be provided with illumination. Exterior stairways shall be provided with an artificial light source located in the immediate vicinity of the top landing of the stairway. The illumination of exterior stairways shall be controlled from inside the dwelling unit. (SBC R303.6)

## Width

Stairways shall not be less than 36 -inches in clear width at all points above the permitted handrail height and below the required headroom height. (SBC R311.5.1)

## Stair Treads and Risers



## Open Risers on Stairs



## Guards on Decks

Porches, balconies, ramps, or raised floor surfaces located more than 30 inches above the floor or grade below shall have guards not less than 36 inches in height. (SBC R312.1)


Required guards on open sides of stairway, raised floor areas, balconies, and porches shall have intermediate rails or ornamental closures which do not allow passage of a sphere four inches (4") or more in diameter.
(SBCR312.2)

## Guards on Stairs

Open sides of stairs with a total rise of more than 30 inches above the floor or grade below shall have guards not less than 34 inches in height measured vertically from the nosing of the treads. (SBC R312.1)


## Handrails

## Continuous

Handrails for stairways shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than one-and-one-half inch ( $1-1 / 2^{\prime \prime}$ ) between the wall and the handrail.
(SBCR311.5.6.2)

## Grip Size

Handrails shall be of Type I or Type II or shall provide equivalent graspability. (SBC R311.5.6.3)


PLAN VIEW


ELEVATION VIEW


Handrails with a circular cross section shall have an outside diameter of at least one-and-one-quarter inches ( $1-1 / 4$ ") and not greater than two inches (2").
(SBC R311.5.6.3)

## Type I Non-Circular

If the handrail is not circular, it shall have a perimeter dimension of at least four inches (4") and not greater than six-and-onequarter inches ( $6-1 / 4^{\prime \prime}$ ) with a maximum cross sectional dimension of two-and-one-quarter inches ( $2-1 / 4^{\prime \prime}$ ). (SBCR 311.5.6.3)

## Type II

0.01 IN . RADIUS

Handrails with a perimeter greater than six-and-one-quarter inches ( $6-1 / 4$ ") shall provide a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of threequarter inch ( $3 / 4^{\prime \prime}$ ) measured vertically from the tallest portion of the profile and achieve a depth of at least five-sixteenth inch ( $5 / 16^{\prime \prime}$ ) within seven-eights inch ( $7 / 8^{\prime \prime}$ ) below the widest portion of the profile. This required depth shall continue for at least three-eighths inch (3/8") to a level that is not less than one-and-three quarters inches ( $1-3 / 4^{\prime \prime}$ ) below the tallest portion of the profile. The minimum with of the handrail above the recess shall be one-and-onequarter inches ( $1-1 / 4^{\prime \prime}$ ) to a maximum of two-and-three quarter inches ( $2-3 / 4$ "). Edges shall have a minimum radius of 0.01 inch.
(SBC R 311.5.6.3)


## Equivalent Graspability

Profiles other than Type I and Type II may be determined to provide equivalent graspability (SBCR 311.5.6.3)


## Deck Inspections

## General Inspection Information

Construction or work for which a permit is required is subject to inspection by the building official and the construction or work shall remain accessible and exposed for inspection purposes until approved. (SBC MR 1300.0210, subpart 1)

It shall be the duty of the permit applicant to cause the work to remain accessible and exposed for inspection purposes.
(SBC MR 1300.0210, subpart 1)
The person doing the work authorized by a permit shall notify the building official that the work is ready for inspection. The person requesting an inspection required by the code shall provide acc3ss to and means for inspection of the work. (SBC MR 1300.0210, subpart 4)

Work shall not be done beyond the point indicated in each successive inspection without first obtaining the approval of the building official. (SBCMR 1300.0210, subpart 5)

## Required Inspections

## Footing Inspection.

After the holes are dug; but, prior to the placement of concrete.

## Framing Inspection.

After framing is completed. This inspection can often be completed at the time of the final inspection when all parts of the framing remain visible and accessible.

## Final Inspection.

After completion of the project.

## Schedule Inspections

To schedule your inspection, call the Land Use Management Department at 651/385-3114. Indicate what inspection is being requested and provide the permit number and the jurisdiction (city or township) of the project. Please allow ample time (typically a work day) to place the inspection on the schedule.


