

DECK PERMIT REQUIREMENTS

The following information must be submitted to the Building Department before a building permit can be processed and approved. A more detailed description of items 1-4 is listed below.

1. **Building Permit Application form.**
2. **Survey or Site Plan [two copies].**
3. **Building Plans [two copies].**
4. **Miscellaneous as required.**

After a preliminary review additional information may be required. Allow 1-3 working days for processing.

1. **Building Permit Application:** Complete and sign a building permit application form. Forms are available at the Building Department.
2. **Survey or Site Plan:** Provide an updated plan of the property showing all property lines, existing buildings [with dimensions] and project address or PIN number. Diagram the proposed building location, dimensions and proposed setbacks from property lines, existing buildings and all topographical features. a registered survey may be required.
3. **Building Plans [two sets]:**
 - A. **Section drawing** [side, cutaway drawing] showing the footing width and thickness, post size, joist size, beam size, decking, height above grade, guardrail, cantilevers [overhang], anchoring, flashing, connectors and hanger types, include grade and species of lumber.
 - B. **Floor Plans** of the deck showing the length and width of the deck, beam location, post spacing, joist spacing, stair location and type of lumber [pressure treated, redwood, cedar etc.].
4. **Miscellaneous:**

Permit Fees: Building and Zoning fees will be determined after the application and required plans have been approved. Fees must be paid in full before a permit can be issued or work can begin.

General Information

Required Inspections:

1. Footing inspection [before concrete is poured].
2. Framing/Final

For all inspections call **877-333-5620** 24 hours in advance.

Footings/Posts: Footings must be a minimum _____ below final grade. The base of the footing must be wide enough to transfer the weight of the deck to the soil [determine minimum footings]. Posts must be pressure treated, redwood, cedar, concrete or other approved material.

Framing: The joists and beams must be sized to support a 40# per sq. ft. live load and 10# dead load.

Guard: Residential decks 30" or more above adjacent grade must be protected by a guard with a minimum height of 36". Open guardrails shall have intermediate rails or ornamental pattern such that a 4" [four inch] sphere cannot pass through.

Stairs/Residential: The minimum width of a stairway is 36" inches in width. The maximum rise on stairs is 7 3/4". The minimum run of the treads is 10". A handrail is required on all stairs with four or more risers. Open risers are permitted, provided that the opening between treads does not permit the passage of a 4-inch-diameter sphere.

Handrails: A handrail is required on one side of a stairs with four or more risers. The handrail must be 34" to 38" high, be continuous and uninterrupted the full length of the stairs. All required handrails shall be one of the following types. (**TYPE 1**) handrail with a circular cross section shall have an outside diameter not be less than 1 1/4 inches or more than 2 inches. If the handrail is not circular it shall have a perimeter dimension of at least 4 inches and not greater than 6 1/4 inches with a maximum cross sectional dimension of 2 1/4 inches.

(**TYPE 2**) Handrails with a perimeter of greater than 6 1/4 inches shall provide a graspable finger recess area on both sides of the profiles. The finger recess shall begin within a distance of 3/4 inch measured vertically from the tallest portion of the profile and the achieved depth of at least 5/16 inch within 7/8 inch below the widest portion of the profile. This required depth shall continue for at least 3/8 to a level that is not less than 1 3/4 inches below the tallest portion of the profile. The maximum width of the handrail above the recess shall be 1 1/4 to a maximum of 2 3/4 inches. Edges shall have a maximum radius of 0.01 inch.

Special Design Note: Some designs may not be appropriate if a future porch, addition or hot tub is intended to be installed on the deck. Footings, beams and joists should be sized for all future loads.

Excavations: Before excavating call Gopher State One 48 hours in advance at 651-454-0002 or Greater Minnesota; 1-800-252-1166 to verify the location of underground utilities, etc..

If you have any questions, please contact the Building Department, Monday through Friday, 8 a.m. to 4:30 p.m. at: 507-333-5620 or email at: dan@myclearwave.net

Residential Decks

Information Sheet

Building Permits

Required for any deck attached to a structure or any detached deck more than 30 inches above grade.

Setbacks _____

Frost Footings

Required for any deck attached to a dwelling, porch or garage that has frost footings. The minimum depth to the base of the footing is 42" or 60".

Live Load

All decks shall be designed to support a live load of 40 pounds per square foot.

Guardrails

Required on all decks more than 30 inches above grade or a lower deck. Rail must be 36 inches minimum in height. Open guardrails and stair railings must have intermediate rails or an ornamental pattern that a four inch sphere cannot pass through. Exception: The triangular opening formed by the riser, tread and bottom element of a guardrail may be sized so that a six inch sphere cannot pass through.

Cantilevers: "Overhanging Joists and Beams"

Joists should not overhang beams by more than two feet, nor should beams overhang posts by more than one foot unless a special design is approved.

Flashing

All connections between deck and dwelling shall be weatherproof. Any cuts in 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

Use only stainless steel, high strength aluminum or hot-dipped galvanized.

Wood Required

All exposed wood used in the construction of decks is required to be of approved wood of natural resistance to decay (redwood, cedar, etc.) or approved treated wood. This includes posts, beams, joists, decking and railings.

Stairs

Minimum width is 36 inches. Maximum rise is 7 3/4 inches, minimum rise is 4 inches. Minimum run is 10 inches. Largest tread width or riser height shall not exceed the smallest by more than 3/8 inch.

Handrails

The top shall be placed not less than 34 inches or more than 38 inches above the nosing of the treads. Stairways having four or more risers shall have at least one handrail. Handrail ends shall be returned or terminated in posts. The hand grips shall be one of the following type.

TYPE 1 handrail with a circular cross section shall have an outside diameter not be less than 1 1/4 inches or more than 2 inches. If the handrail is not circular it shall have a perimeter dimension of at least 4 inches and not greater than 6 1/4 inches with a maximum cross sectional dimension of 2 1/4 inches.

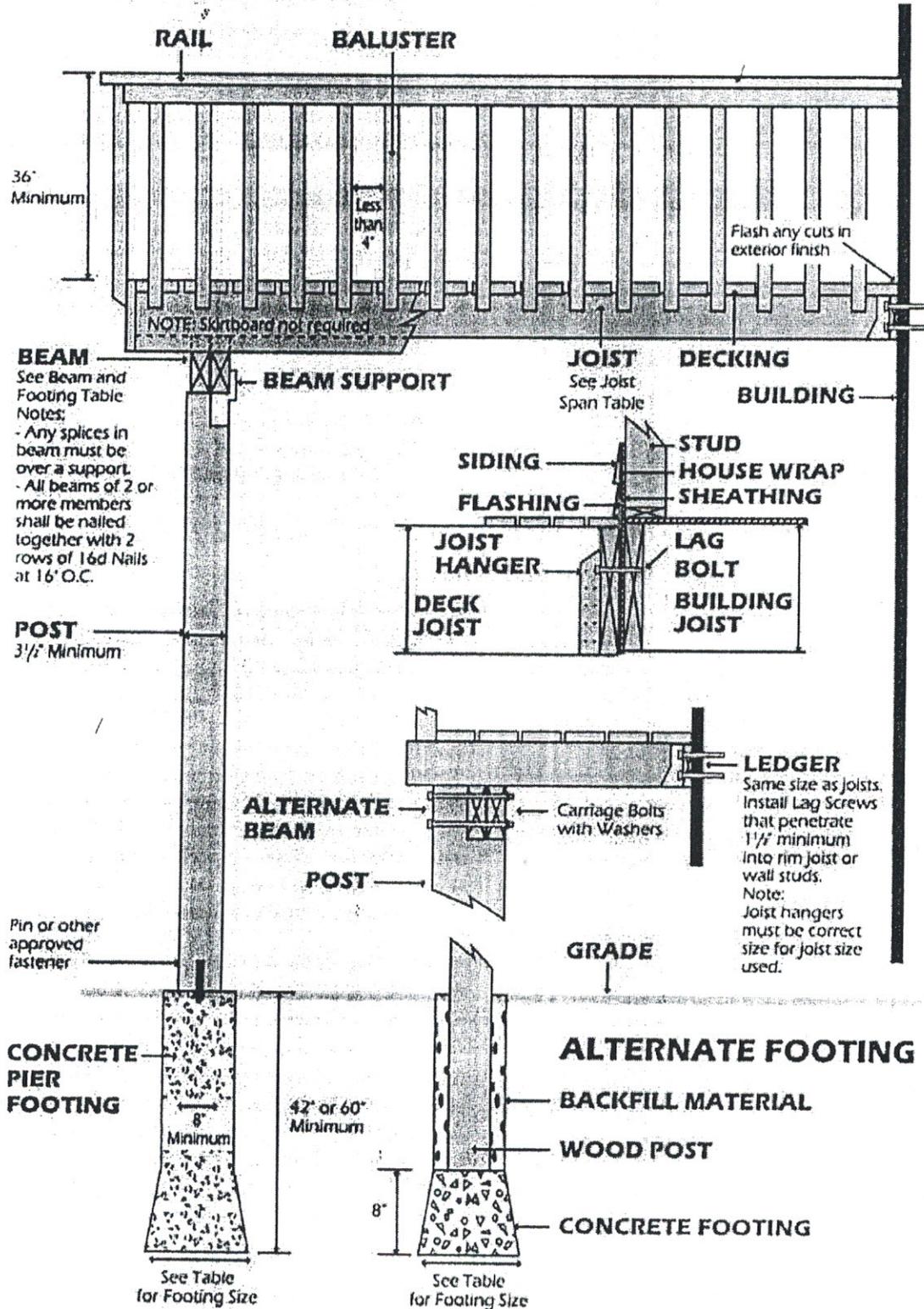
TYPE 2 Handrails with a perimeter of greater than 6 1/4 inches shall provide a graspable finger recess area on both sides of the profiles. The finger recess shall begin within a distance of 3/4 inch measured vertically from the tallest portion of the profile and the achieved depth of at least 5/16 inch within 7/8 inch below the widest portion of the profile. This required depth shall continue for at least 3/8 to a level that is not less than 1 3/4 inches below the tallest portion of the profile. The maximum width of the handrail above the recess shall be 1 1/4 to a maximum of 2 3/4 inches. Edges shall have a maximum radius of 0.01 inch.

Special Design Note

Some deck designs may not be appropriate should the placement of a screen porch or 3-season porch on the deck platform be a future consideration. Setbacks for porches may not be the same as setbacks for decks.

Inspection of footings is required before pouring concrete.

Final inspection of completed work is required.



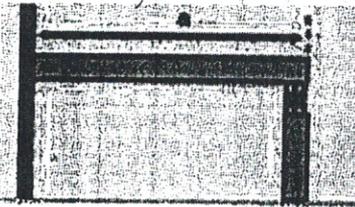
Joist Span

Based on No. 2 or better wood grades.
(Design Load = 40#11 + 10#DL, Deflection = 1/360)

	Ponderosa Pine			Southern Pine			Western Cedar		
	12"OC	16"OC	24"OC	12"OC	16"OC	24"OC	12"OC	16"OC	24"OC
2x6	9-2	8-4	7-0	10-9	9-9	8-6	9-2	8-4	7-3
2x8	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
2x12	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 Size Tables

CASE I SOLUTION:

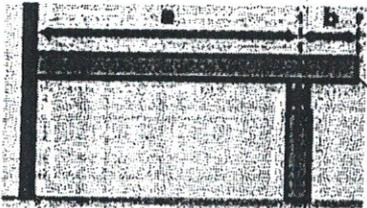


Refer to tables for joist, beam and footing size requirements.

Example: $a = 12'$; Post Spacing = 8'

Use the Joist Span table to find the acceptable joist sizes for a 12' span, 2x8s at 12" O.C., 2x10s at 16" O.C. or 2x12s at 24" O.C.

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 2x8s or two 2x10s, depending on wood used. Depending on the type of soil, the footing diameter at the base must be a minimum of 12", 10" or 9" for the corner post and 17", 14" or 12" for all intermediate posts.



Use "a" to determine joist size and "a" + "2b" to determine beam and footing sizes. The length of "b" is restricted by both the length of "a" and the size of the joists.

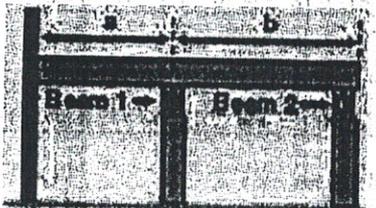
Example: $a = 8'$, $b = 2'$, Post Spacing = 10'

Refer to the Joist Span table. For an 8' joist span, either 2x8s at 24" O.C. or 2x6s at 16" O.C are acceptable.

For sizing the beam, use a joist length of 12' ($8' + 4'$) and a post spacing of 10'. The Beam and Footing Sizes table indicates that the beam may be either two 2x10s or two 2x12s, 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" for the corner post and 20", 17" or 15" for all intermediate posts. Note that because of the 2' cantilever all footing sizes were increased by 1" as required by footnote 2 at the end of the table.

Use "a" or "b", whichever is greater, to determine 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'



Joist size is determined by using the longest span joist (7'). The Joist Span table indicates that 2x6s at 24" O.C. would be adequate for this span.

For Beam 1 and footings, use a joist length of 13' ($6' + 7'$) and a post spacing of 9'. 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", 15" or 13" 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 2x8s or two 2x10s, depending on wood used. Depending on the type of soil, the footing diameters for Beam 2 shall be 10", 8" or 7" for the corner posts, and 14", 11" or 10" for all intermediate posts.

Beam and Footing Sizes

Based on No. 2 or better Ponderosa Pine and Southern Pine
Treated for weather and/or ground exposure)

		Posting Spacing											
		4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	
Joist Length	6"	Southern Pine Beam	1-2x6	1-2x6	1-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10
		Ponderosa Pine Beam	1-2x6	1-2x6	1-2x8	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10
	Corner Footing	6 5 4	7 8 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	11 9 8
	Intermediate Footing	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	16 13 11
	7'	Southern Pine Beam	1-2x6	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	2-2x12
		Ponderosa Pine Beam	1-2x6	1-2x6	1-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	2-2x12	3-2x10	3-2x10
	Corner 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	12 10 9
	Intermediate 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	17 14 12
	8'	Southern Pine Beam	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12
		Ponderosa Pine Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12
	Corner 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	13 11 9
	Intermediate Footing	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	8 15 13	8 15 13
9'	Southern Pine Beam	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	2-2x12	3-2x10	
	Ponderosa Pine Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12	
Corner 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	14 11 10	
Intermediate Footing	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	20 16 14	
10'	Southern Pine Beam	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x10	
	Ponderosa Pine Beam	1-2x6	1-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm	
Corner 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	15 12 10	
Intermediate Footing	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	21 17 15	
11'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x10	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x12	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm	
Corner 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	15 13 11	
Intermediate Footing	12 9 8	13 11 9	14 12 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	21 17 15	
12'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x10	3-2x12	
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x12	3-2x12	Eng Bm	Eng Bm	
Corner Footing	9 7 6	10 8 7	10 9 7	11 9 8	12 10 9	13 10 9	14 11 10	14 11 10	15 12 10	15 13 11	16 13 11	16 13 11	
Intermediate Footing	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 15	23 18 16	
13'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x10	2-2x12	2-2x12	2-2x12	3-2x12	3-2x12	Eng Bm	Eng Bm	
Corner 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	17 14 12	
Intermediate Footing	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	24 19 17	
14'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	3-2x12	
	Ponderosa Pine Beam	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm	Eng Bm	Eng Bm	
Corner 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	17 14 12	
Intermediate Footing	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	21 20 17	21 20 17	
15'	Southern Pine Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm	
	Ponderosa Pine Beam	2-2x6	2-2x8	2-2x8	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12	Eng Bm	Eng Bm	Eng Bm	
Corner 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	18 15 13	
Intermediate Footing	14 11 10	15 12 11	17 14 12	18 15 13	19 16 14	20 17 14	21 17 15	22 18 16	23 19 17	24 20 17	25 21 18	25 21 18	
16'	Southern Pine Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm	
	Ponderosa Pine Beam	2-2x6	2-2x8	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12	Eng Bm	Eng Bm	Eng Bm	
Corner Footing	10 8 7	11 9 8	12 10 9	13 11 9	14 11 10	15 12 10	16 13 11	16 13 11	17 14 12	18 15 13	18 15 13	18 15 13	
Intermediate Footing	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	26 21 18	

Notes :

- Joist length is total length of joist, including any cantilevers.
- When joist extends (cantilevers) beyond support beam by 18" or more, add 1" to footing dimensions shown.
- Requirements for future 3-season porches or screen porches:
 - Increase corner footing size shown by 90%.
 - Increase center footing size shown by 55%.
 - Locate all footings at extremities of deck (no cantilevers).
 - Beam sizes indicated need not be altered.

- All footing sizes above are base diameters (in inches) and are listed for THREE SOIL TYPES:

