Circle all appropriate values on this chart as they apply to your project.

Beam and Footing Sizes for Decks ***(Footing sizes pertain only to decks)***

Design wood is Southern Pine No. 2, must be treated			Post Spacing										
			4'	**5'**	**6'**	**7'**	**8'**	**9'**	**10'**	**11'**	**12'**	**13'**	**14'**
Joist Length	**6'**	Beam Size	1-2x6	1-2x6	1-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10
		Corner Footing	6	7	7	8	9	9	10	10	10	11	11
		Intermediate Footing	9	10	10	11	12	13	14	14	15	15	16
	7'	Beam Size	1-2x6	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	2-2x12
		Corner Footing	7	7	8	9	9	10	10	11	11	12	12
		Intermediate Footing	9	10	11	12	13	14	15	15	16	17	17
	8'	Beam Size	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12
		Corner Footing	7	8	9	9	10	10	11	11	12	13	13
		Intermediate Footing	10	11	12	13	14	15	16	16	17	18	18
	9'	Beam Size	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10
		Corner Footing	7	8	9	10	10	11	12	12	13	13	14
		Intermediate Footing	10	12	13	14	15	16	17	17	18	19	20
	10'	Beam Size	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x10
		Corner Footing	8	9	10	10	11	12	12	13	14	14	15
		Intermediate Footing	11	12	14	15	16	17	17	18	19	20	21
	11'	Beam Size	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12
		Corner Footing	8	9	10	11	12	12	13	14	14	15	15
		Intermediate Footing	12	13	14	15	16	17	17	18	19	20	21
	12'	Beam Size	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x10	3-2x12
		Corner Footing	9	10	10	11	12	13	14	14	15	15	16
		Intermediate Footing	12	14	15	16	17	18	19	20	21	22	23
	13'	Beam Size	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12
		Corner Footing	9	10	11	12	13	13	14	15	15	16	17
		Intermediate Footing	13	14	15	17	18	19	20	21	22	23	24
	14'	Beam Size	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12
		Corner Footing	9	10	11	12	13	14	15	15	16	17	17
		Intermediate Footing	13	15	16	17	18	20	21	22	23	24	24
	15'	Beam Size	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm
		Corner Footing	10	11	12	13	14	14	15	16	17	17	18
		Intermediate Footing	14	15	17	18	19	20	21	22	23	24	25
	16'	Beam Size	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm
		Corner Footing	10	11	12	13	14	15	16	16	17	18	18
		Intermediate Footing	14	15	17	18	20	21	22	23	24	25	26

Minimum footing thickness is 8" unless shaded:

Denotes minimum 10" thick footing

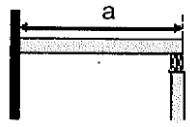
Denotes minimum 12" thick footing

Footing pad sizes are for diameter in inches.

Minimum depth to bottom of footing = 60 inches.

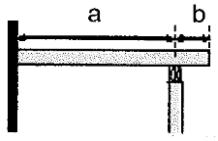
		Ponderosa Pine			Southern Pine			Western Cedar		
		12"O.C.	16" O.C.	24" O.C.	12" O.C.	16" O.C.	24" O.C.	12" O.C.	16" O.C.	24" O.C.
JOIST SPAN	2x6	9-2	8-4	7-0	10-9	9-9	8-6	9-2	8-4	7-3
Based on No. 2 or better wood grades	2x8	12-1	10-10	8-10	14-2	12-10	11-0	12-1	11-0	9-2
(Design Load = 40#LL +	2x10	15-4	13-3	10-10	18-0	16-1	13-5	15-5	13-9	11-3
10#DL, Deflection = L/360)	2x12	17-9	15-5	12-7	21-9	19-0	15-4	18-5	16-0	13-0

Case One 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 the 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.

Case Two Solution

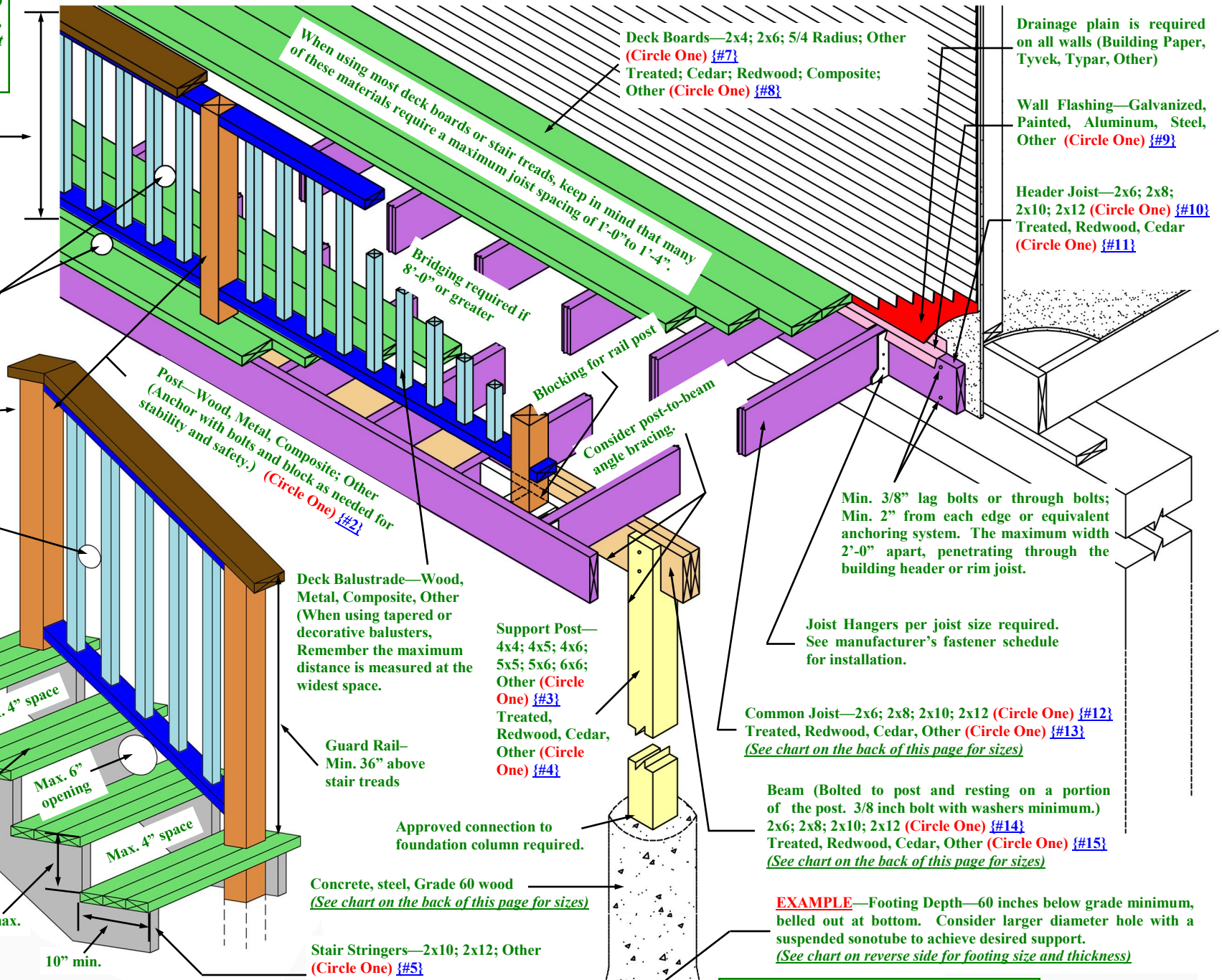


Use "a" to determine joist size and "a" + "2b" to determine beam and footing sizes. The length of "b" is restricted by both the length of "a" and the size of the joists. Example: a = 8', b = 2', Post spacing = 10'. Refer to the joist span table. For an 8' joist span, either 2x8s at 24" O.C. or 2x6s at 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 the 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.a b.

Single Family Residential Deck Assembly (Furnished by the City of Barnesville) (218-354-2292)

Permit No. _____

Use Site Plan handout to indicate dimensions of deck, location of beams, post spacing and elevations.



Cap Rail—Min. 36" above finished deck, typ.

Maximum 4" space between the balustrade and between the bottom rail board and the top of the deck.

Handrail required (not shown for clarity). Required height 34-38 inches above tread nosing.

Maximum 4⅜" space between the balustrade.

Maximum 4" space between treads at the heel of the stair stringers, typ.

Stair Treads—2x4; 2x6; 2x8; 2x10; 2x12; 5/4 radius deck boards. (Circle One) {#1}

Deck Boards—2x4; 2x6; 5/4 Radius; Other (Circle One) {#7}
Treated; Cedar; Redwood; Composite; Other (Circle One) {#8}

Deck Balustrade—Wood, Metal, Composite, Other (When using tapered or decorative balusters, Remember the maximum distance is measured at the widest space.

Guard Rail– Min. 36" above stair treads

Support Post—4x4; 4x5; 4x6; 5x5; 5x6; 6x6; Other (Circle One) {#3}
Treated, Redwood, Cedar, Other (Circle One) {#4}

Approved connection to foundation column required.

Concrete, steel, Grade 60 wood
(See chart on the back of this page for sizes)

Stair Stringers—2x10; 2x12; Other (Circle One) {#5}
Treated; Redwood, Cedar; Other (Circle One) {#6}

Approved fasteners—galvanized or hot dipped, etc.

Drainage plain is required on all walls (Building Paper, Tyvek, Typar, Other)

Wall Flashing—Galvanized, Painted, Aluminum, Steel, Other (Circle One) {#9}

Header Joist—2x6; 2x8; 2x10; 2x12 (Circle One) {#10}
Treated, Redwood, Cedar (Circle One) {#11}

Min. 3/8" lag bolts or through bolts; Min. 2" from each edge or equivalent anchoring system. The maximum width 2'-0" apart, penetrating through the building header or rim joist.

Joist Hangers per joist size required. See manufacturer's fastener schedule for installation.

Common Joist—2x6; 2x8; 2x10; 2x12 (Circle One) {#12}
Treated, Redwood, Cedar, Other (Circle One) {#13}
(See chart on the back of this page for sizes)

Beam (Bolted to post and resting on a portion of the post. 3/8 inch bolt with washers minimum.)
2x6; 2x8; 2x10; 2x12 (Circle One) {#14}
Treated, Redwood, Cedar, Other (Circle One) {#15}
(See chart on the back of this page for sizes)

EXAMPLE—Footing Depth—60 inches below grade minimum, belled out at bottom. Consider larger diameter hole with a suspended sonotube to achieve desired support.
(See chart on reverse side for footing size and thickness)

I agree to follow the building systems provided in this document.

_____ _____
Signature Date

Before submitting permit application, provide information as requested on numbered lines (1-15). A site plan is also required prior to permit issuance.

ENGAN ASSOCIATES ARCHITECTS