

# PIKES PEAK REGIONAL BUILDING DEPARTMENT

## Residential Deck Plan Check

The following items are required for all deck plan reviews; covered decks require additional information. Walk-through plan check is limited to 15 minutes. If more time is required, the plans are checked in at the front counter.

### PLOT PLAN

Drawn to scale and includes:

- Complete street address.**
- Legal description of property.**
- Property lines and dimensions.**  
Include side, front and rear yards.
- All site improvements**, including existing and proposed new construction (deck, patio enclosure, garage, etc.)
- Show window well locations and clearances.**  
Egress window well requires 24" clearance between top of window well and bottom of deck framing. Egress window well opening through the deck must be protected with a guardrail or approved grate cover that requires 30 lbs or less to open. Non-egress window well must have an 18" clearance between top of window well and bottom of deck framing for light and ventilation.

### DECK STRUCTURAL FRAMING PLAN & OVERVIEW PLAN

Drawn to scale (1/4" preferred), fully dimensioned, includes:

- Framing material.**  
Joists and beams must be Hem Fir #2 or better. Use treated material for joists less than 18" and beams 12" from ground.
- Joist sizes and spacing** of all repetitive framing materials.
- Beam sizes.** All beams must have full bearing. Engineered beam products for exterior use must be of wolmanized material or properly weather protected.
- No bolting through joists and beams** without approval stamp of a Colorado licensed design professional or RBD Plan Check approval.
- Beam splices must be directly over post;** mid-span splices are not allowed unless engineered.
- Ledger.** Ledger boards must be weather protected by an approved method; usually 2 - flashing or spacing. Ledgers cannot be attached to a cantilever, brick veneer or manufactured home without the approval stamp of state of Colorado licensed design professional. Information must include:
  - Size
  - Connection type:
    - Size and quantity of lag bolts,
    - Lag screws and/or nails
  - Supporting material:
    - Rim
    - Stud
    - Concrete
    - Concrete masonry unit
  - Specify hangers used
- Posts.** Information must include:
  - Material
  - Size
  - Height

### DECK MATERIAL

Specify material and thickness of decking. Code allows any type of wood that is "naturally resistant to decay." Redwood is commonly used. Composite materials must be ICC approved. Review the ICC Evaluation Reports - a link is available on our web site under Plan Check/Handouts & Drawings. Installations of composite deck materials must comply with the ICC evaluation reports; reports must be on site at inspection.

### FOUNDATION PLAN

- Soil bearing capacity** stated as shown on the soils report. If unknown, 1,500 psf will be assumed.
- Location of piers** shown.
- Diameter of piers** specified.
- Footing detail** provided, (see RBD handout).
- Hot tub** location and dimensions indicated, if any.
- Detached decks less than 30" above grade** may be placed on piers with a 12" depth.

### STAIR SECTIONS

- Stringers:** Material, Size, and Spacing
- Rise/Run dimensions:** 8" maximum rise, 9" minimum run.

### GUARDRAIL & HANDRAIL SYSTEMS

Stairs with 4 or more risers require handrails installed between 34 – 38" above landing and nosing of the stair treads. The grip of the handrail cannot be less than 1 ¼" or more than 2" in diameter. The 2003 International Residential Code allows handrails to be constructed of 2 x 3 or greater material (2 x 4, 2 x 6, etc.) placed on end and provided with a graspable finger recess area on both sides of the handrail profile. For specific information, refer to R311.5.6.3 of the 2003 IRC.

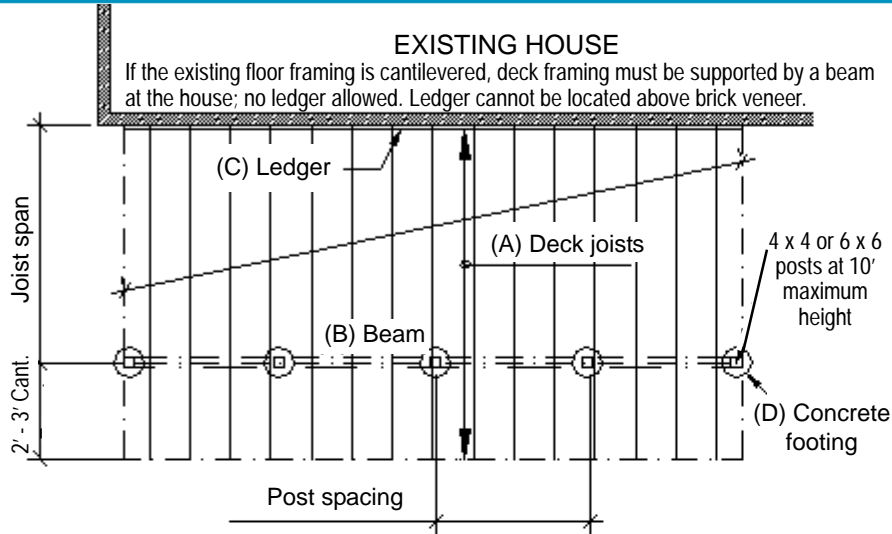
Decks more than 30" above grade require a minimum guardrail height of 36" and maximum 4" spacing between balusters.

Composite materials must be ICC approved. Please review the ICC Evaluation Reports - a link is available on our web site under Plan Check/Handouts & Drawings. Installations of composite guardrail and handrail systems must comply with the ICC evaluation reports; reports must be on site at the time of inspection. (Note: If the composite guardrail differs from the ICC approved installation, stamped engineering drawings are required. Please call our office for detailed requirements.)

### NAIL/SCREW USAGE

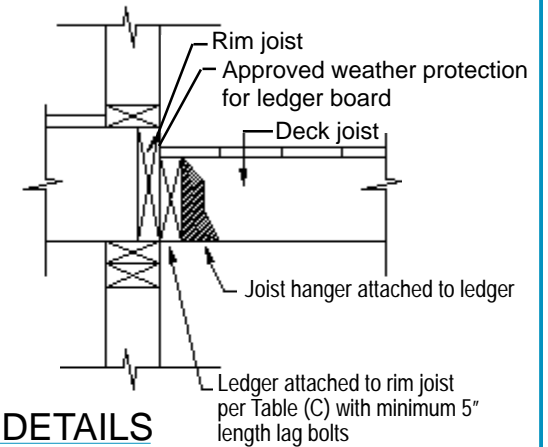
Wood screws can be used on decking planks, but only nails are acceptable for hangers. End nailing or toe nailing of joists is not allowed; use full height hangers for all connections. Contact RBD regarding specific applications of screws/nails.

# RESIDENTIAL SINGLE SPAN DECK

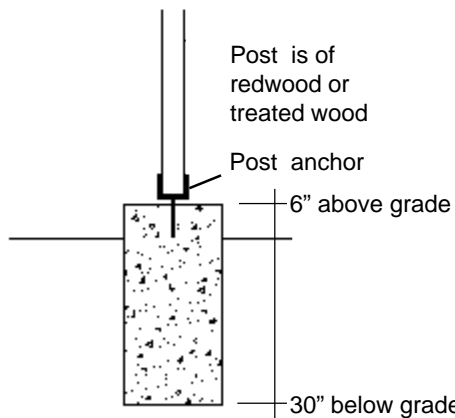


**FRAMING STANDARDS**

NOTE: Screws are not allowed. Tico nails or joist hanger nails must be used for all hardware.

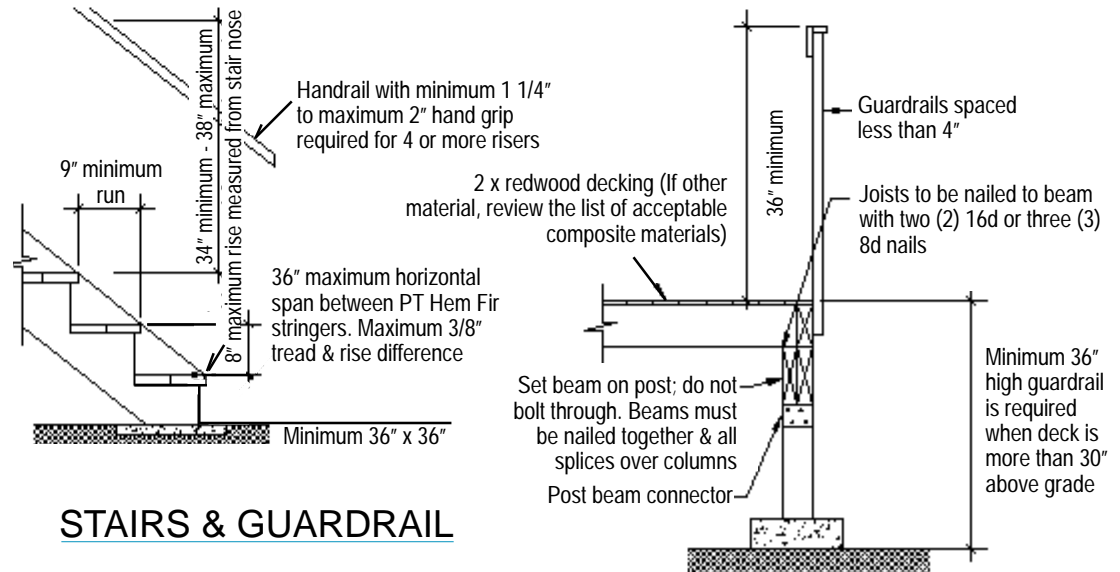


**CONNECTION DETAILS**



\*12" deep piers if deck is detached and 30" above ground

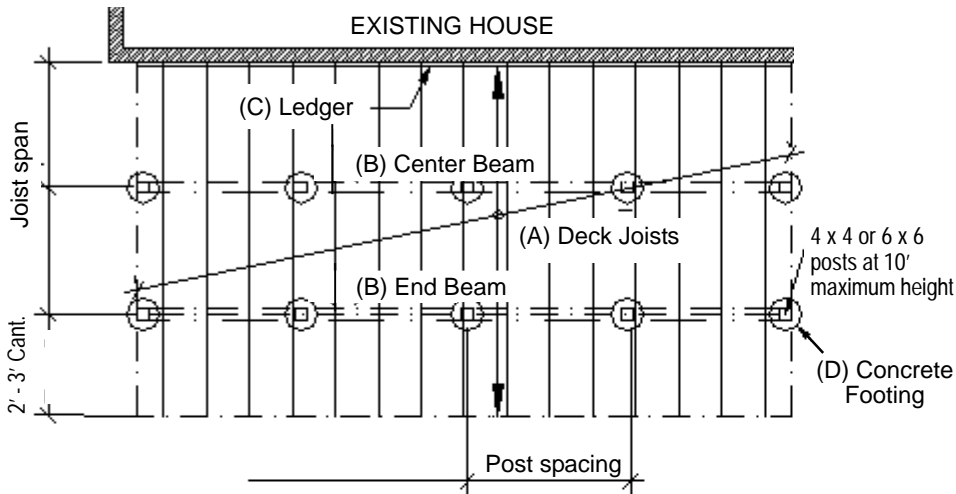
**FOOTING DETAILS**



**STAIRS & GUARDRAIL**



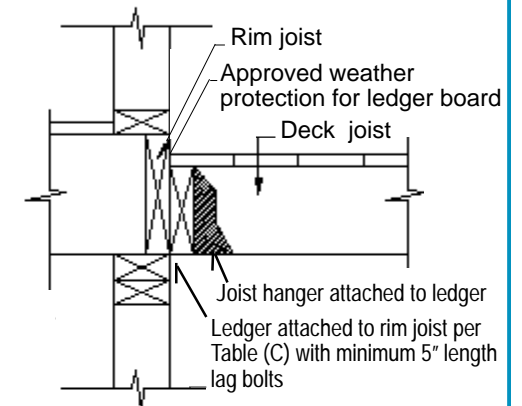
# RESIDENTIAL MULTI-SPAN DECK



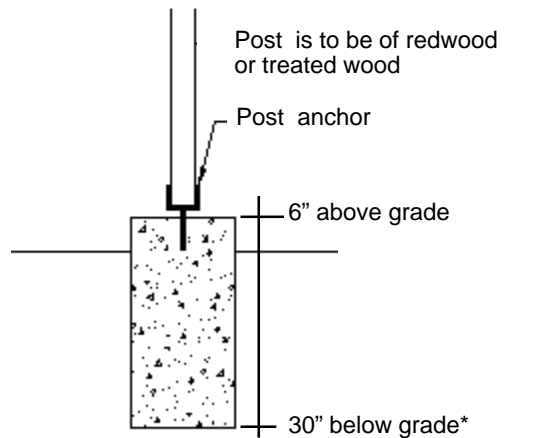
NOTE: If existing floor framing is cantilevered, deck framing must be supported by a beam at the house; no ledger allowed. Ledger cannot be located above brick veneer.

## FRAMING STANDARDS

NOTE: Screws are not allowed. Tico nails or joist hanger nails must be used for all hardware.

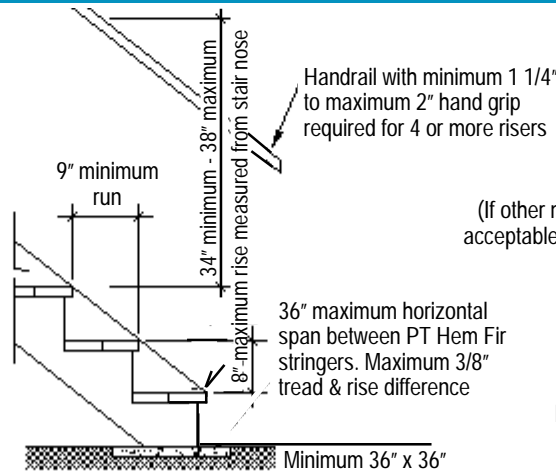


## CONNECTION DETAILS

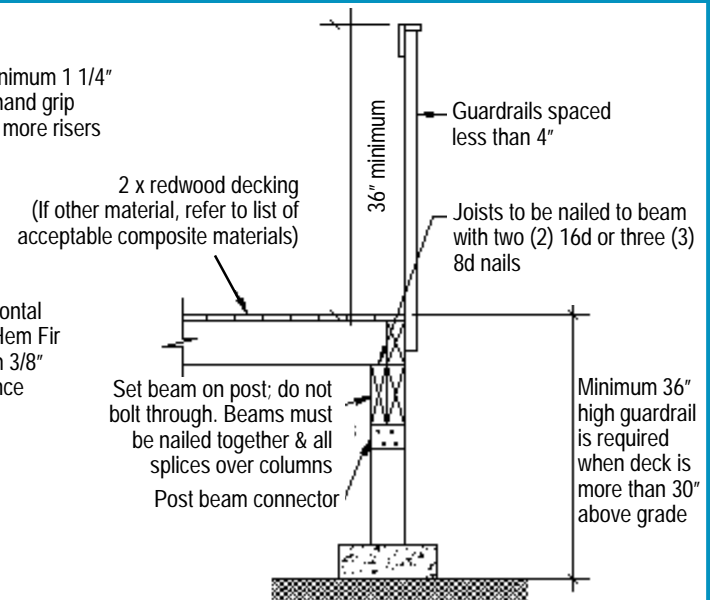


\*12" deep piers if deck is detached and 30" above ground

## FOOTING DETAILS



## STAIRS & GUARDRAIL



# MULTI-SPAN TABLES

Tables are based on HEM FIR #2 lumber (or better), 40 PSF LL, 15 PSF DL, and 1500 PSF soil bearing pressure.  
NOTE: Redwood may not be used for joists and beams.

## NO CANTILEVER

\*Rims require two additional 16d nails per lag bolt

JOIST SPAN (feet)	(A) MINIMUM JOIST SIZE			(B) MINIMUM BEAM SIZE												(C) MINIMUM CONNECTION OF LEDGER								
	12" OC	16" OC	24" OC	END BEAM						CENTER BEAM						STUD			RIM*					
				5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	16" OC	24" OC	12" OC	16" OC	24" OC				
6	2x6	2x6	2x6	2-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	1-7/16	2-5/16	1-3/8	1-3/8	2-3/8				
7	2x6	2x6	2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	-	1-7/16	2-3/8	1-3/8	2-3/8	2-3/8				
8	2x6	2x6	2x8	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	-	2-5/16	2-7/16	1-3/8	2-3/8	2-3/8				
9	2x6	2x8	2x10	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x8	2-2x8	2-2x10	2-2x12	-	2-5/16	2-7/16	2-3/8	2-3/8	3-3/8					
10	2x8	2x10	-	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x8	2-2x10	2-2x10	2-2x12	-	2-3/8	2-7/16	2-3/8	2-3/8	3-3/8					
11	2x10	2x12	-	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x8	2-2x10	2-2x12	2-2x12	-	2-3/8	3-3/8	2-3/8	2-3/8	3-3/8					
12	2x12	-	-	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	2-2x8	2-2x10	2-2x12	-	-	2-7/16	3-3/8	2-3/8	2-3/8	3-3/8					
JOIST SPAN (feet)	(D) MINIMUM DIAMETER OF FOOTINGS (inches)																							
	END BEAM END PIERS						END BEAM CENTER PIERS						CENTER BEAM END PIERS						CENTER BEAM CENTER PIERS					
	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet
6	8	8	8	8	8	8	8	8	8	8	10	8	8	8	8	8	8	10	10	12	14	14	16	
7	8	8	8	8	8	8	8	8	8	8	10	10	10	10	10	10	10	10	10	12	14	14	16	
8	8	8	8	8	8	8	8	8	8	8	10	10	10	10	10	10	10	10	12	12	14	16	18	
9	8	8	8	8	8	8	8	8	8	8	10	10	10	10	10	10	10	10	12	14	16	18	20	
10	8	8	8	8	8	8	8	8	8	8	10	10	10	10	10	10	10	10	14	16	16	18	20	
11	8	8	8	8	8	8	8	8	8	8	10	10	10	10	10	10	10	10	14	16	18	20	22	
12	8	8	8	8	8	8	8	8	8	8	10	10	10	10	10	10	10	10	16	16	18	20	24	

## 2' CANTILEVER

\*Rims require two additional 16d nails per lag bolt

JOIST SPAN (feet)	(A) MINIMUM JOIST SIZE			(B) MINIMUM BEAM SIZE												(C) MINIMUM CONNECTION OF LEDGER								
	12" OC	16" OC	24" OC	END BEAM						CENTER BEAM						STUD			RIM*					
				5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	16" OC	24" OC	12" OC	16" OC	24" OC				
6	2x6	2x6	2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	1-7/16	2-5/16	1-3/8	1-3/8	2-3/8				
7	2x6	2x6	2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	-	1-7/16	2-3/8	1-3/8	2-3/8	2-3/8				
8	2x6	2x6	2x8	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	-	2-5/16	2-7/16	1-3/8	2-3/8	2-3/8				
9	2x6	2x8	2x10	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	2-2x8	2-2x8	2-2x10	2-2x12	-	2-5/16	2-7/16	2-3/8	2-3/8	3-3/8					
10	2x8	2x10	-	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	-	2-2x8	2-2x10	2-2x10	2-2x12	-	2-3/8	2-7/16	2-3/8	2-3/8	3-3/8					
11	2x10	2x12	-	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	-	2-2x8	2-2x10	2-2x12	2-2x12	-	2-3/8	3-3/8	2-3/8	2-3/8	3-3/8					
12	2x12	-	-	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	-	2-2x8	2-2x10	2-2x12	-	-	2-7/16	3-3/8	2-3/8	2-3/8	3-3/8					
JOIST SPAN (feet)	(D) MINIMUM DIAMETER OF FOOTINGS (inches)																							
	END BEAM END PIERS						END BEAM CENTER PIERS						CENTER BEAM END PIERS						CENTER BEAM CENTER PIERS					
	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet
6	8	8	8	8	8	8	8	8	8	8	10	8	8	8	8	8	8	10	10	12	14	14	16	
7	8	8	8	8	8	8	8	8	8	8	10	10	10	10	10	10	10	10	10	12	14	14	16	
8	8	8	8	8	8	8	8	8	8	8	10	10	10	10	10	10	10	10	12	12	14	16	18	
9	8	8	8	8	8	8	8	8	8	8	10	10	10	10	10	10	10	10	12	14	16	18	20	
10	8	8	8	8	8	8	8	8	8	8	10	10	10	10	10	10	10	10	14	16	16	18	20	
11	8	8	8	8	8	8	8	8	8	8	10	10	10	10	10	10	10	10	14	16	18	20	22	
12	8	8	8	8	8	8	8	8	8	8	10	10	10	10	10	10	10	10	16	16	18	20	24	

## 3' CANTILEVER

\*Rims require two additional 16d nails per lag bolt

JOIST SPAN (feet)	(A) MINIMUM JOIST SIZE			(B) MINIMUM BEAM SIZE												(C) MINIMUM CONNECTION OF LEDGER								
	12" OC	16" OC	24" OC	END BEAM						CENTER BEAM						STUD			RIM*					
				5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	16" OC	24" OC	12" OC	16" OC	24" OC				
6	2x6	2x6	2x8	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	1-7/16	2-5/16	1-3/8	1-3/8	2-3/8				
7	2x6	2x6	2x8	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	-	1-7/16	2-3/8	1-3/8	2-3/8	2-3/8				
8	2x6	2x6	2x8	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	-	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	-	2-5/16	2-7/16	1-3/8	2-3/8	2-3/8				
9	2x6	2x8	2x10	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	-	2-2x8	2-2x8	2-2x10	2-2x12	-	2-5/16	2-7/16	2-3/8	2-3/8	3-3/8					
10	2x8	2x10	-	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	-	2-2x8	2-2x10	2-2x10	2-2x12	-	2-3/8	2-7/16	2-3/8	2-3/8	3-3/8					
11	2x10	2x12	-	2-2x6	2-2x8	2-2x10	2-2x12	2-2x12	-	2-2x8	2-2x10	2-2x12	2-2x12	-	2-3/8	3-3/8	2-3/8	2-3/8	3-3/8					
12	2x12	-	-	2-2x8	2-2x8	2-2x10	2-2x12	-	-	2-2x10	2-2x10	2-2x12	-	-	2-7/16	3-3/8	2-3/8	2-3/8	3-3/8					
JOIST SPAN (feet)	(D) MINIMUM DIAMETER OF FOOTINGS (inches)																							
	END BEAM END PIERS						END BEAM CENTER PIERS						CENTER BEAM END PIERS						CENTER BEAM CENTER PIERS					
	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet	5 feet	6 feet	7 feet	8 feet	9 feet	10 feet
6	8	8	8	8	8	10	10	12	14	14	16	8	8	8	8	8	8	10	10	12	14	14	16	
7	8	8	8	8	8	10	12	12	14	14	16	8	8	8	8	8	8	10	10	12	14	14	16	
8	8	8	8	8	8	10	12	14	14	16	16	8	8	8	8	8	8	10	12	12	14	16	18	
9	8	8	8	8	8	10	12	14	16	16	18	8	8	8	8	8	10	10	12	14	16	18	20	
10	8	8	8	8	8	10	12	14	16	18	18	8	8	8	10	10	10	10	14	16	16	18	20	
11	8	8	8	8	8	10	12	14	16	18	18	8	8	10	10	10	10	10	14	16	18	20	22	
12	8	8	8	8	8	10	10	10	10	10	10	10	10	10	10	10	10	10	16	16	18	20	24	